Tufts Vet Tech Clinic Renovation

Worcester Technical High School

1 Officer Manny Familia Way, Worcester, MA 01605

Final Bid Package



PROJECT TEAM

OWNER

WORCESTER TECHNICAL HIGH SCHOOL
1 OFFICER MANNY FAMILIA WAY
WORCESTER, MA 01605
TELEPHONE: (508) 799-1940

ARCHITECT

LAMOUREUX PAGANO ASSOCIATES, ARCHITECTS
108 GROVE STREET, SUITE 300
WORCESTER, MASSACHUSETTS 01605
TELEPHONE: (508) 752-2831

CONSULTANTS

PLUMBING / HVAC / FIRE PROTECTION ENGINEER

SEAMAN ENGINEERING
22 WEST ST, SUITE 3
MILLBURY, MA 01527
TELEPHONE: (508) 865-1400

STRUCTURAL ENGINEER

BOLTON AND DIMARTINO, INC.
100 GROVE STREET
WORCESTER, MA 01605
TELEPHONE: (508) 756-8972

ELECTRICAL ENGINEER

ART ENGINEERING CORP.
38 FRONT STREET, FLOOR 3
WORCESTER, MA 01608
TELEPHONE: (508) 797-0333

LOCUS MAP



FOR ACCESS TO A "DIGITAL TWIN" MODEL SHOWING EXISTING SITE AND BUILDING CONDITIONS, SEE: https://my.matterport.com/show/?m=avipPwgY8P1

DRAWING LIST

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AD3.2 Partial Roof Demolition Plan
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SC2.1 Access Control Details
TC0.1 Technology Legend
TC1.1 New Technology Plan
TC1.2 Tufts Technology Plan

TUFTS at TECH
Community Veterinary Clinic

Set No: VOLUME I OF I

Date: March 11, 2026

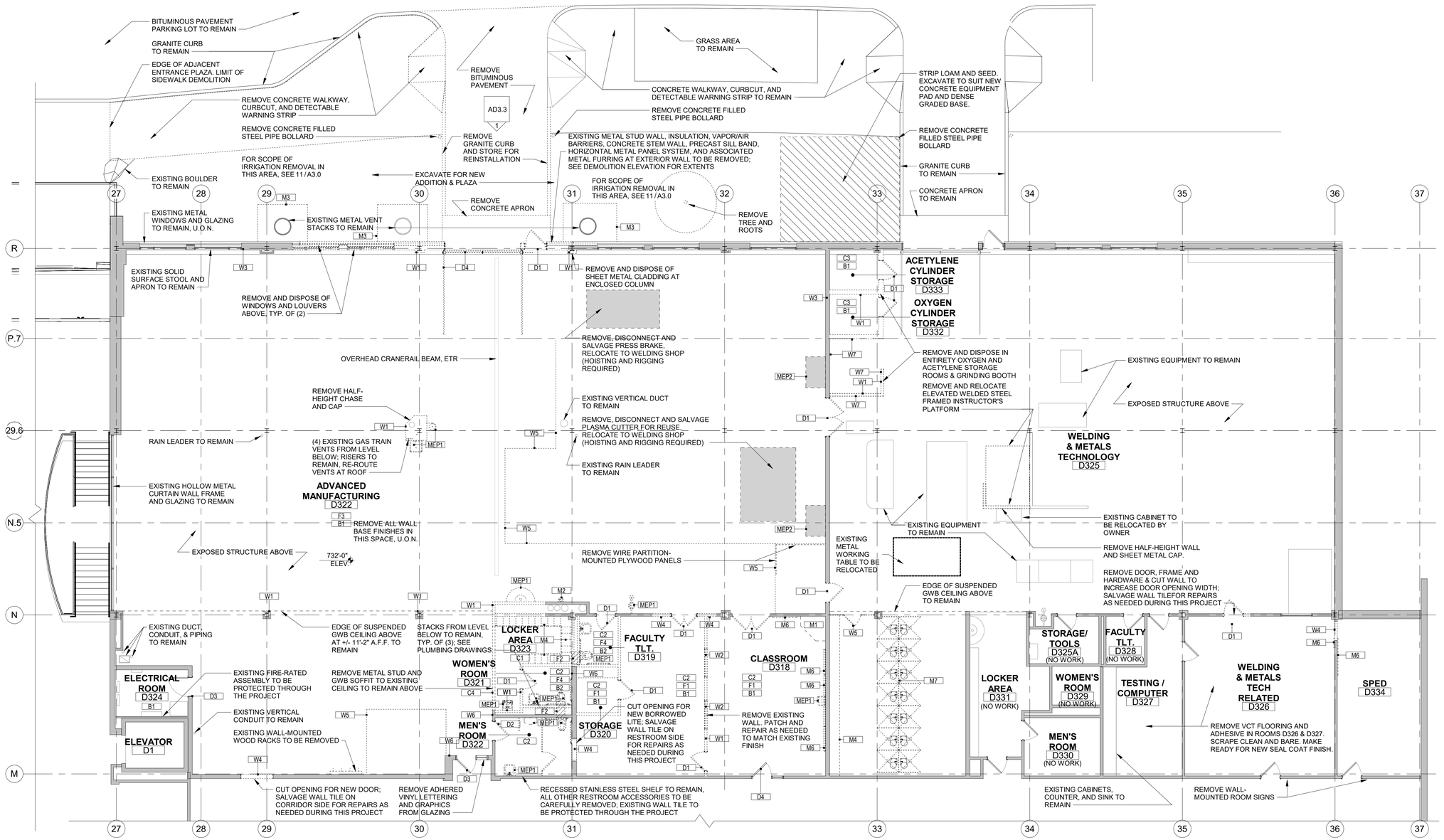
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Project No: 2417

LPA
LAMOUREUX PAGANO ASSOCIATES, ARCHITECTS
108 GROVE STREET SUITE 300
WORCESTER, MASSACHUSETTS 01605
MEMBER OF THE AMERICAN INSTITUTE OF ARCHITECTS



1 AD3.1 Partial Third Floor Demolition Plan
Scale: 1/8" = 1'-0"

DEMOLITION LEGEND & PLAN NOTES

SAWCUT AND REMOVE EXISTING CONCRETE SLAB; SEE PLAN FOR NOTES

EXISTING WALLS TO REMAIN

EXISTING WALLS TO BE DEMOLISHED

EXISTING DOORS TO REMAIN

EXISTING CONDITIONS MODEL

A SCANNED DIGITAL TWIN OF THE EXISTING CONDITIONS WITHIN THE PROJECT AREA CAN BE FOUND AT THE FOLLOWING WEB ADDRESS:

https://my.matterport.com/show/?m=avipPwgY8P1

GENERAL DEMOLITION NOTES:

1. THESE DRAWINGS ARE NOT INTENDED TO BE FULLY COMPREHENSIVE, AND ARE ISSUED AS A CONVENIENCE. REFER TO ALL DRAWINGS AND DETAILS IN THE CONTRACT SET, AND TO THE SPECIFICATIONS; EACH TRADE MAY HAVE CUTTING AND FITTING REQUIRED FOR THEIR WORK IN ADDITION TO THE MAIN DEMOLITION SCOPE.
2. DASHED LINES SHOWN ON THE DEMOLITION DRAWINGS REPRESENT ITEMS TO BE REMOVED, SUCH AS WALLS, DOORS, WINDOWS, ETC., U.O.N.
3. REFER TO SITE, STRUCTURAL, PLUMBING, MECHANICAL AND ELECTRICAL DRAWINGS FOR ADDITIONAL DEMOLITION SCOPE OF WORK.
4. MECHANICALLY ABRADE ALL FLOOR SURFACES TO REMOVE ALL EXISTING FLOOR FINISHES AND ADHESIVES, AND LOOSE MATERIALS DOWN TO BARE CONCRETE, AND FREE OF CONTAMINANTS WHERE NEW RESILIENT FLOORING IS SCHEDULED TO BE INSTALLED; REFER TO ROOM FINISH PLAN AND SCHEDULE.
5. REMOVE WINDOW TREATMENTS AT ALL WINDOWS WITHIN THE WORK AREA.
6. ALL ITEMS TO BE DEMOLISHED SHALL BE CAREFULLY AND PROPERLY REMOVED AND DISPOSED OF, ENSURING THAT ALL ADJACENT AREAS AND SURFACES ARE ADEQUATELY PROTECTED.
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8. REMOVE GWB TO EXPOSE FRAMING TO FACILITATE THE INSTALLATION OF NEW WOOD SUPPORT BLOCKING, PLUMBING PIPING, AND ELECTRICAL SYSTEMS. REFER TO ARCHITECTURAL, PLUMBING, AND ELECTRICAL DRAWINGS FOR LOCATIONS.
9. PATCH ALL WALLS SHOWN EXISTING TO REMAIN WHERE EQUIPMENT, DEVICES AND FIXTURES HAVE BEEN REMOVED.
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11. REFERENCE SHEET A4.2 FOR DEMOLITION EXTENTS IN RELATED ROOM D109.

BASES
- B1 REMOVE RESILIENT BASE.
- B1 REMOVE TILE BASE.

CEILINGS
- C1 REMOVE SUSPENDED ACOUSTIC GWB CEILING SYSTEM.
- C2 REMOVE SUSPENDED ACOUSTIC TILE CEILING & METAL GRID SYSTEM.
- C3 REMOVE WOOD FRAMED CEILING AND GWB FINISH.
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- D2 REMOVE DOOR AND HARDWARE; EXISTING FRAME TO REMAIN
- D3 REMOVE HARDWARE; EXISTING DOOR AND FRAME TO REMAIN
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- F1 REMOVE RESILIENT FLOORING AND ADHESIVE; CLEAN AND/OR MECHANICALLY ABRADE CONCRETE FLOOR SURFACE BELOW TO RECEIVE NEW FLOOR FINISH.
- F2 SAWCUT AND REMOVE SLAB WITHIN THE LIMITS SHOWN.
- F3 MECHANICALLY ABRADE CONCRETE FLOOR SURFACE TO REMOVE SEALED FINISH, BY SECTION 09 05 06.
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- M1 REMOVE CASEWORK; ALL COMPONENTS TO BE REMOVED U.O.N.
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MECHANICAL/ELECTRICAL/PLUMBING (REFER TO PLUMBING, HVAC AND ELECTRICAL DRAWINGS FOR FULL SCOPE)
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Project / True North

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www.lpaa.com

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CONSULTANT

PROJECT

TUFTS at TECH Community Veterinary Clinic

Final Bid Package

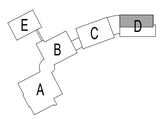
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Worcester Technical High School
1 Officer Manny Familia Way, Worcester, MA 01605

DRAWING TITLE

Partial Third Floor Demolition Floor Plan

KEY PLAN



REVISIONS

No.	Description	Date

FILE:

JOB NO: 2417

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

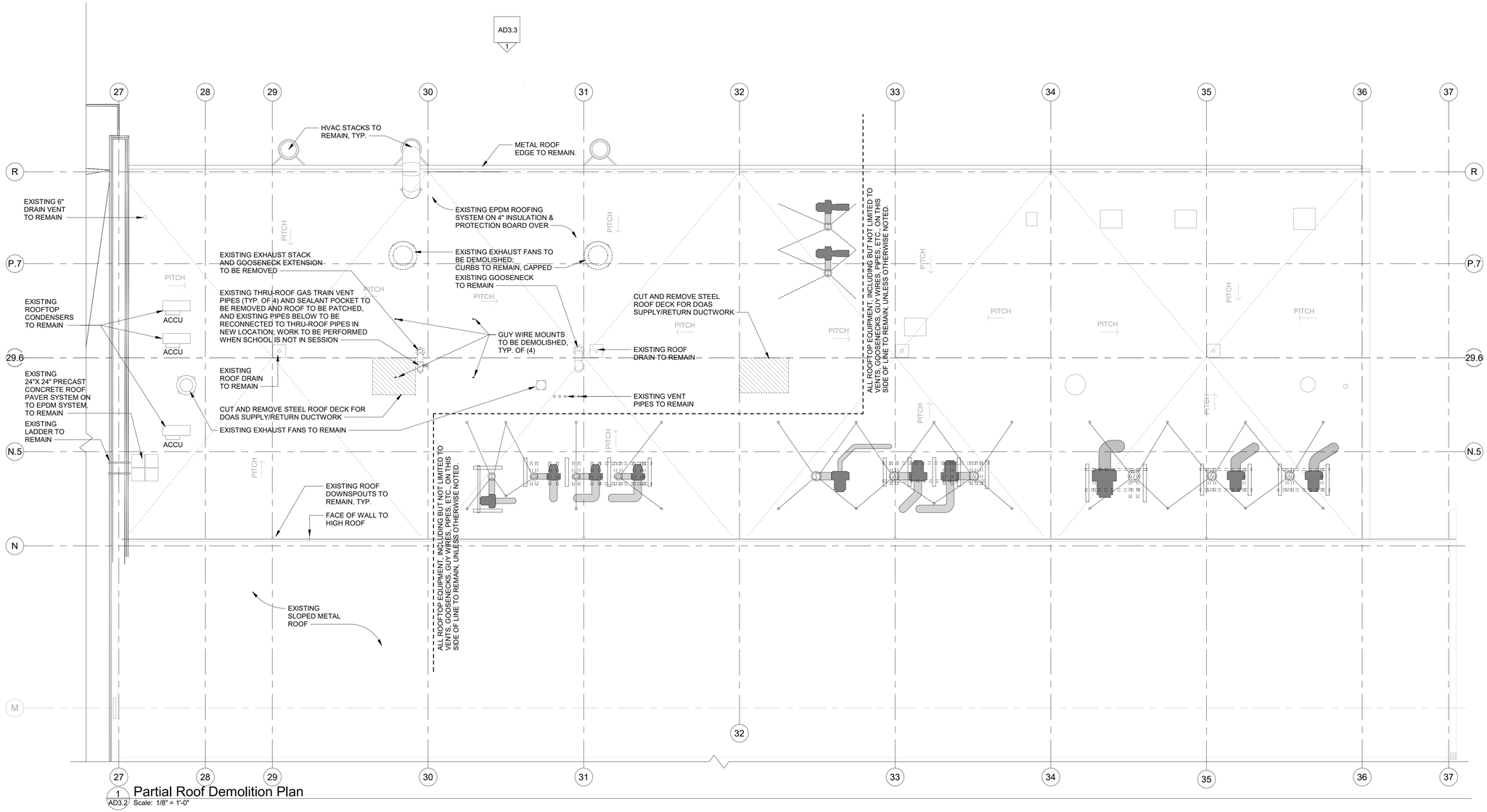
DWN. BY: AD/MW

CKD. BY: RP

DATE: March 11, 2026

AD3.1

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1 Partial Roof Demolition Plan
AD3.2 Scale: 1/8" = 1'-0"

DEMOLITION LEGEND & PLAN NOTES

SAWCUT AND REMOVE EXISTING CONCRETE SLAB; SEE PLAN FOR NOTES

EXISTING WALLS TO REMAIN

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TUFTS at TECH Community Veterinary Clinic

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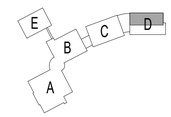
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Partial Roof Demolition Plan

KEY PLAN



REVISIONS

No.	Description	Date

FILE:

JOB NO: 2417

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

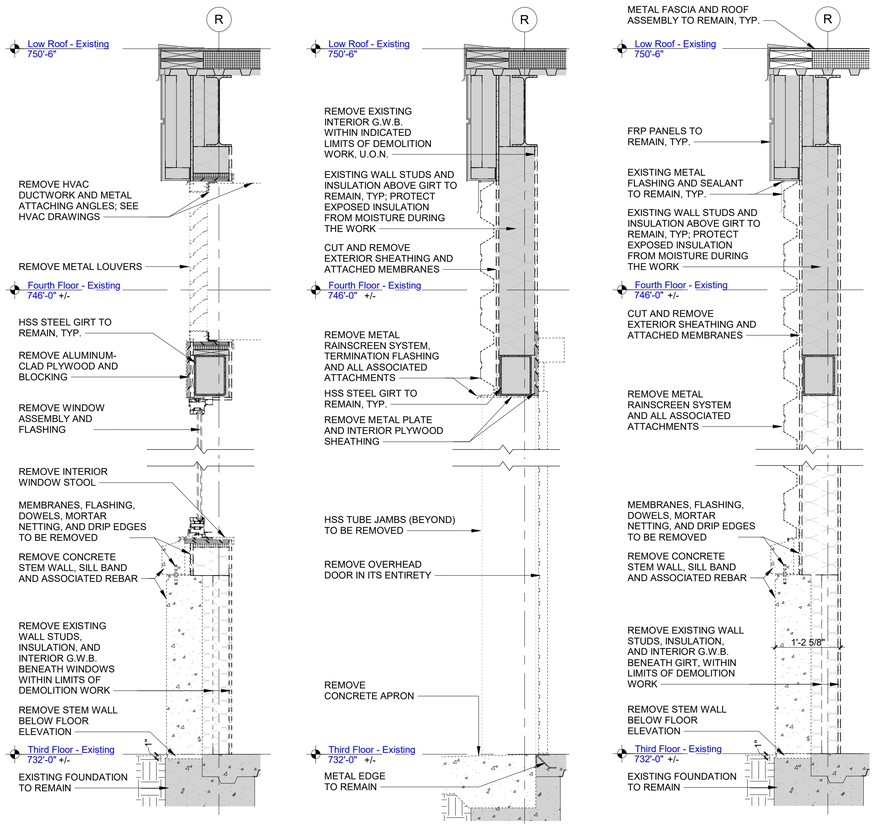
DWN. BY: AD

CKD. BY: RP

DATE: March 11, 2026

AD3.2

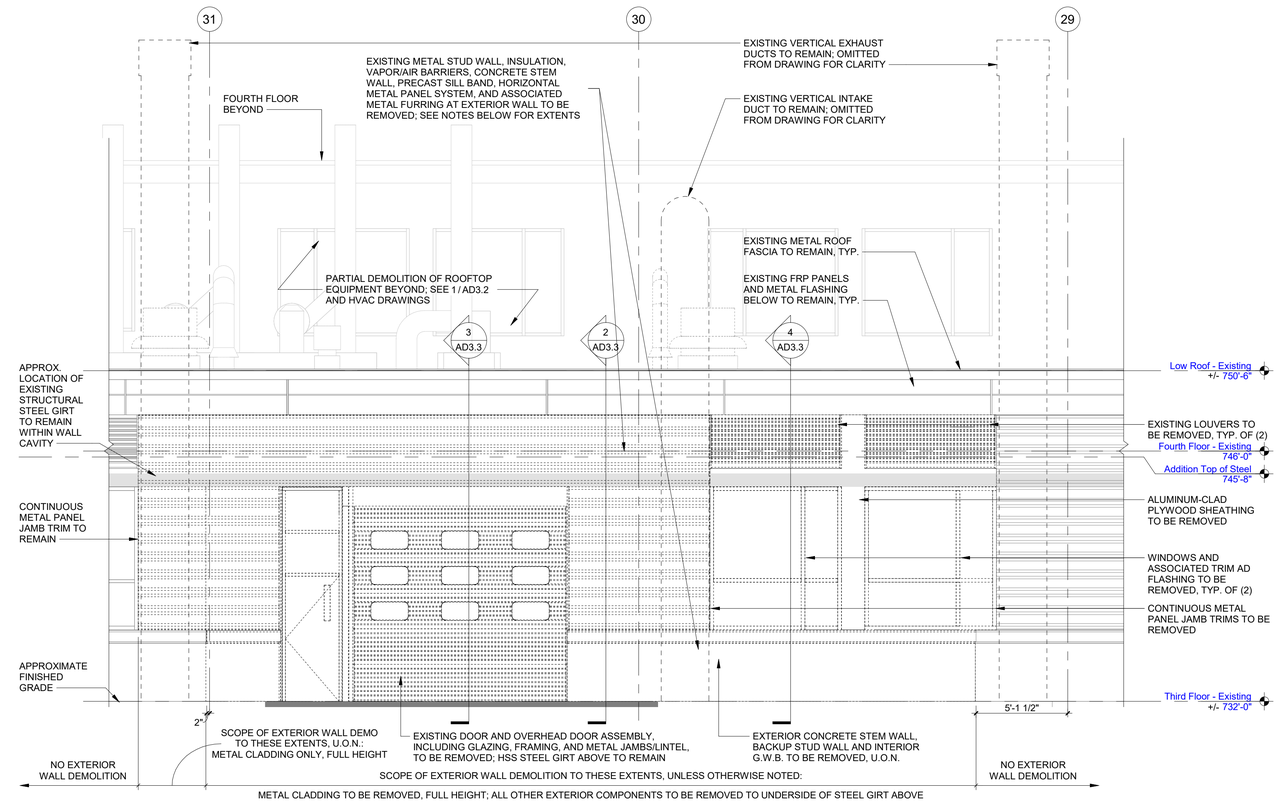
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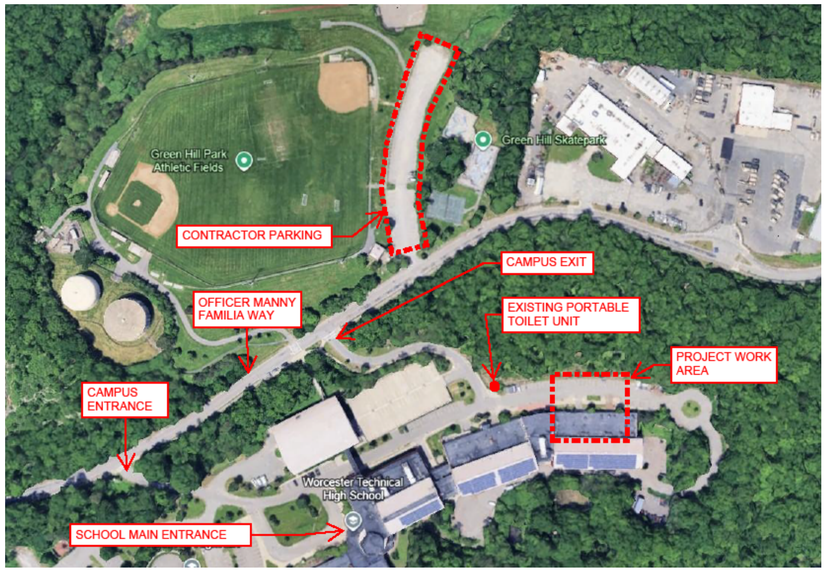
4 AD3.3 Demo Section Thru Window
Scale: 3/4" = 1'-0"

3 AD3.3 Demo Section Thru OH Door
Scale: 3/4" = 1'-0"

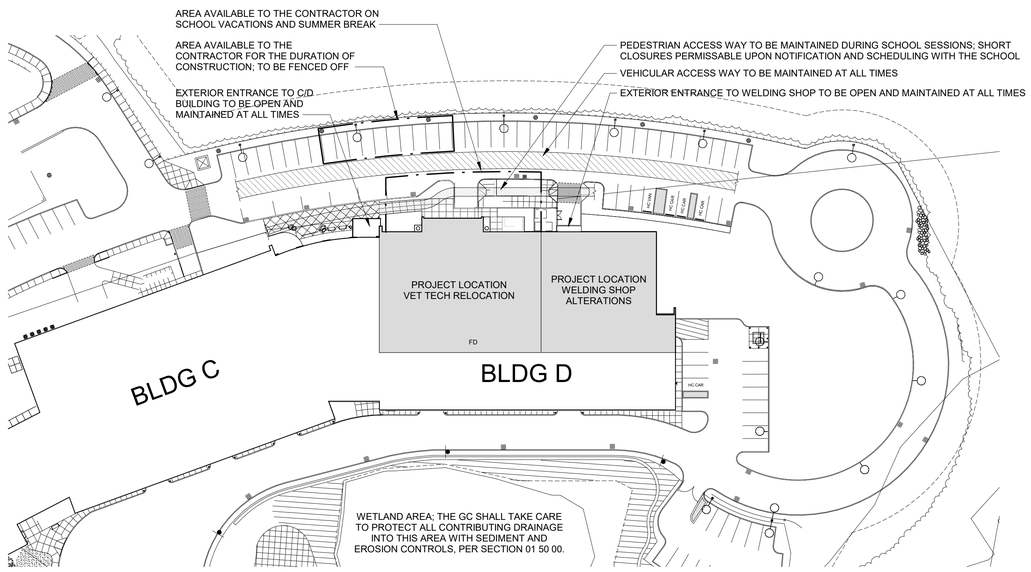
2 AD3.3 Demo Section Thru Rainscreen
Scale: 3/4" = 1'-0"



1 AD3.3 Partial Demolition Elevation
Scale: 1/4" = 1'-0"



6 AD3.3 Partial Campus Plan
Scale: NOT TO SCALE



5 AD3.3 Site Logistics Plan
Scale: 1" = 50'-0"

Project / True North

LPA|A
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DRAWING TITLE

Partial Demolition Elevation, Sections, & Site Logistics Plan

KEY PLAN

REVISIONS

No.	Description	Date

FILE:	
JOB NO:	2417
SCALE:	As indicated
DWN. BY:	AD
CKD. BY:	RP
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AD3.3

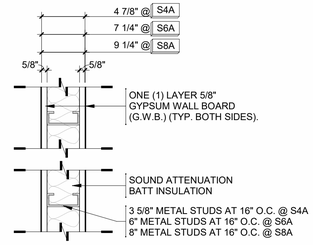
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WALL PARTITION TYPES

INTERIOR STEEL STUD PARTITION WALL TYPES

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

TYPICAL PARTITION BETWEEN OFFICE SPACES

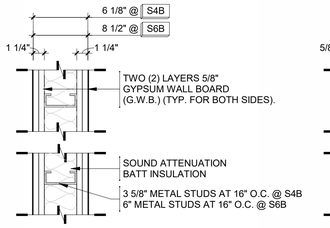


S4A — INTERIOR WALL TYPE No. S4A
STC RATING 45+

S6A — INTERIOR WALL TYPE No. S6A
STC RATING 45+

S8A — INTERIOR WALL TYPE No. S8A
STC RATING 45+

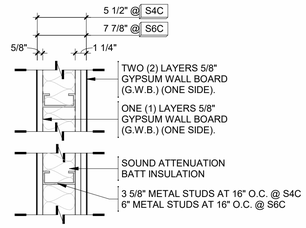
TYPICAL PARTITION BETWEEN EXAM ROOMS



S4B — INTERIOR WALL TYPE No. S4B
STC RATING 50+

S6B — INTERIOR WALL TYPE No. S6B
STC RATING 53+

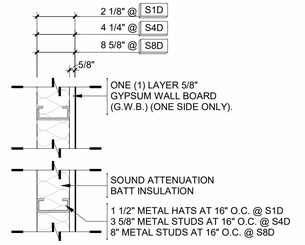
TYPICAL PARTITION BETWEEN EXAM ROOMS AND TEACHING HUB; TEACHING HUB TO CLASSROOMS



S4C — INTERIOR WALL TYPE No. S4C
STC RATING 45+

S6C — INTERIOR WALL TYPE No. S6C
STC RATING 50+

TYPICAL PARTITION AT CHASES AND WET WALLS

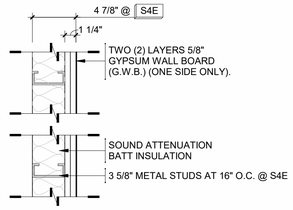


S1D — INTERIOR WALL TYPE No. S1D

S4D — INTERIOR WALL TYPE No. S4D

S8D — INTERIOR WALL TYPE No. S8D

TYPICAL PARTITION AT EXISTING WELDING SHOP SHARED WALL

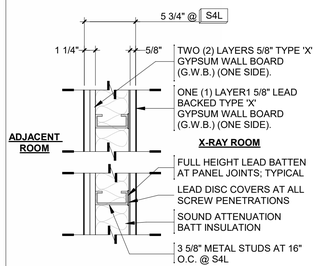


S4E — INTERIOR WALL TYPE No. S4E

LEAD LINED WALLS

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

TYPICAL PARTITION AT X-RAY ROOM



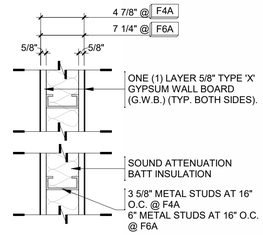
S4L — INTERIOR WALL TYPE No. S4L

NOTE:
1. FOR WALLS ENCLOSING X-RAY ROOM ONLY.
2. ALL WALL PENETRATIONS TO BE DOUBLE LEAD LINED TO PREVENT RADIATION FLANKING

FIRE-RATED WALLS

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

TYPICAL PARTITION AT ONE-HOUR RATED ROOM



F4A — INTERIOR WALL TYPE No. F4A
1-HOUR FIRE RATING UL Des: U465

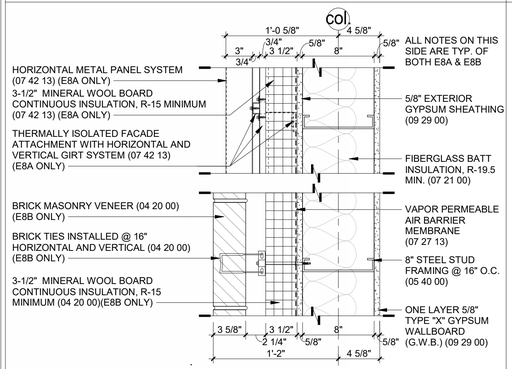
F6A — INTERIOR WALL TYPE No. F6A
1-HOUR FIRE RATING UL Des: U465

TYPICAL PARTITION AT ONE-HOUR RATED SHAFT

F4S — INTERIOR WALL TYPE No. F4S
1-HOUR FIRE RATING UL Des: U415

EXTERIOR WALLS

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

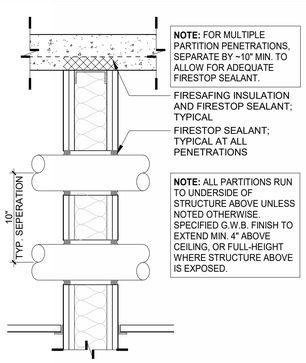


E8A — EXTERIOR WALL TYPE No. E8A
U Factor SCALE: 1 1/2" = 1'-0"

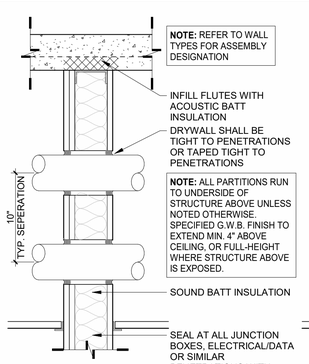
E8B — EXTERIOR WALL TYPE No. E8B
U Factor SCALE: 1 1/2" = 1'-0"

TYPICAL TOP OF PARTITION SECTIONS | PARTITION PENETRATION DETAILS

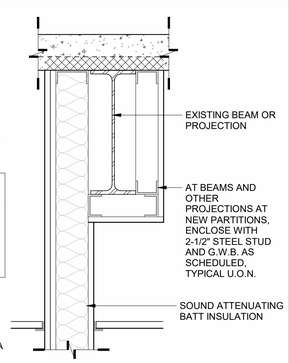
SCALE: 1 1/2" = 1'-0"



TYP. RATED PARTITION SECTION



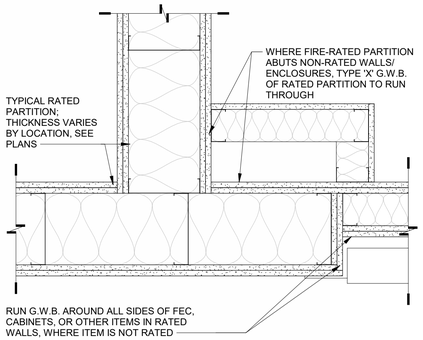
TYP. PARTITION SECTION



PARTITION SECTION @ BEAM

TYP. FIRE-RATED PARTITION CONTINUITY DETAIL

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



TYPICAL DETAIL AT FIRE RATED WALLS

PARTITION TYPE GENERAL NOTES

1. PROVIDE ALL REQ'D BLOCKING FOR FIXTURES, RAILINGS, GRAB BARS, CABINETS, COUNTERS, DISPENSERS, MARKER BOARD & TACK BOARDS, ETC. AS REQ'D. PROVIDE FRAME AND BLOCKING FOR ALL RECESSED ITEMS.
2. METAL STUD BRACING SHALL BE PROVIDED FOR SINGLE SIDED CAVITY WALLS
3. PROVIDE AND INSTALL ALL BLOCKING FOR FIRE AND DRAFT STOPPING REQ'D BY CODE.
4. REFER TO U.L. FIRE RESISTANCE DIRECTORY FOR SPECIFIC ITEMS NOT INDICATED ON THE DRAWINGS (I.E. FASTENERS, CAULKING, BRACING, BLCOKING, FIRE BLCOKING, ETC.).
5. GYPSUM BASE TO BE INSTALLED BEHIND ALL BUILT-INS (INCLUDING: LOCKERS, CASEWORK, MILLWORK, DISPLAY CASES, DISPLAY DEVICES, ETC.);
6. ALL PARTITIONS (INCLUDES FULL ASSEMBLY) EXTEND TO UNDERSIDE OF FLOOR OR ROOF DECKING ABOVE UNLESS NOTED OTHERWISE.
7. REFER TO SPECIFICATIONS FOR DESIGN CRITERIA OF INTERIOR AND EXTERIOR STEEL STUD ASSEMBLIES.
8. PROVIDE SOUND ATTENUATION ON BATT INSULATION AT ALL INTERIOR METAL PARTITIONS UNLESS OTHERWISE NOTED.
9. FOR ALL WALLS RECEIVING SOUND ATTENUATION BATT INSULATION, THE INSULATION SHALL RUN THE FULL HEIGHT OF THE ASSEMBLY.
10. ALL EXPOSED INTERIOR CMU, OTHER THAN WINDOW OPENINGS, SHALL HAVE BULLNOSE CORNERS.
11. PROVIDE 4" HIGH 18GA. BOTTOM TRACK FOR ALL INTERIOR METAL STUD WALLS.
12. REFER TO MILLWORK DRAWINGS FOR PLYWOOD GROUNDS AT MILLWORK AND ADJUSTABLE SHELVING LOCATIONS.
13. 5/8" MOISTURE RESISTANT G.W.B. AT WALLS AND CEILINGS AT RESTROOMS, TYPICAL
14. PROVIDE FIRESTOPPING OR MINERAL WOOL ACOUSTICAL INSULATION AT ALL VOIDS BETWEEN TOP TRACK AND UNDERSIDE OF FLOOR / ROOF DECK; TYPICAL.
15. AT ANY AND ALL ACCESSIBLE CONCEALED FLOORS, FLOOR-CEILINGS OR ATTIC SPACES, THE FIRE WALLS, FIRE BARRIERS, FIRE PARTITIONS AND ANY OTHER WALLS REQUIRED TO HAVE PROTECTED OPENINGS OR PENETRATIONS SHALL BE PERMANENTLY IDENTIFIED WITH STENCILING IN THE CONCEALED SPACE; STENCILED IDENTIFICATION TO COMPLY WITH 2021 IBC / 780 CMR 703.5.

ABBREVIATION LEGEND

(lowercase and capital letter are interchangeable)

ACT.	=ACOUSTICAL CEILING TILE	F.E.C.	=FIRE EXTINGUISHER CABINET	MTL.	=METAL
ADJ.	=ADJUSTABLE	F.O.G.	=FACE OF G.W.B.	N.I.C.	=NOT IN CONTRACT
AFF.	=ABOVE FINISHED FLOOR	F.R.P.	=FIBERGLASS REINFORCED PANELS	O.C.	=ON CENTER
ALUM.	=ALUMINUM	F.R. / FR	=FIRE RATED	O.D.	=OUTSIDE DIAMETER
A.P.	=ACOUSTIC PANEL	F.R.T.	=FIRE RATED TREATED	OFCI	=OWNER FURNISHED, CONTRACTOR INSTALLED
AWNG.	=AWNING	GA.	=GAUGE		
B.B.R.	=BASE BOARD RADIATION	GAL./GALV.	=GALVANIZED	O.H.	=OVERHEAD
BD.	=BOARD	G.C.	=GENERAL CONTRACTOR	PLYWD.	=PLYWOOD
C.C.	=COMMUNICATIONS CENTER	G.F.	=GROUND FACED	PN'L	=PANEL
C.I.	=CAST IRON	GR.	=GRADE	P.T.	=PRESSURE TREATED
C.J.	=CONTROL JOINT	G.W.B.	=GYPSUM WALL BOARD	PT.	=POINT
C.L.	=CENTERLINE	H.C.	=HANDICAP	PTD.	=PAINTED
CLG.	=CEILING	HIGH PT.	=HIGH POINT	R	=R-VALUE
CLR.	=CLEAR	HM	=HOLLOW METAL	R.D.	=ROOF DRAIN
CMU	=CONCRETE MASONRY UNIT	HOR.	=HORIZONTAL	REF.	=REFRIGERATOR
COL.	=COLUMN	HT.	=HEIGHT	REIN. / REINF'G	=REINFORCED
COMP.	=COMPUTER	I.D.	=INSIDE DIAMETER		
CONC.	=CONCRETE	INSUL.	=INSULATION	R.O.	=ROUGH OPENING
CG	=CORNER GUARD	I.W.B.	=INTERACTIVE WHITE BOARD	R.T.U.	=ROOF TOP UNIT
CONT. / COUNT.	=CONTINUOUS	J.T.	=JOINT	R.W.L.	= RAIN WATER LEADER
C'TOP	=COUNTERTOP	L	=LENGTH	SCHED.	=SCHEDULE
CU.#	=CONDENSING UNIT	L.B.	=LATERAL BRACE	SIM.	=SIMILAR
C.U.H.	=CABINET UNIT HEATER	L.C.	=LEAD COATED	STL.	=STEEL
CUST.	=CUSTOM	L.C.C.	=LEAD COATED COPPER	STRUCT'L	=STRUCTURAL
D	=DEPTH	LCKR.	=LOCKER	T.B.	=TACK BOARD
D.F.	=DRINKING FOUNTAIN	LOCS.	=LOCATIONS	TK.P.	=TACK PANEL
DIA.	=DIAMETER	LOW PT.	=LOW POINT	T.O.	=TOP OF
DN	=DOWN	MAX.	=MAXIMUM	T.S.	=TUBE STEEL
D.S.	=DOWNSPOUT	M.B.	=MARKER BOARD	TYP.	=TYPICAL
DTL.	=DETAIL	MFR / MANUF	=MANUFACTURER	VER.	=VERIFY
D.W.	=DISHWASHER	MIN.	=MINIMUM	VERT.	=VERTICLE
DWGS.	=DRAWINGS	MIRR.	=MIRROR	V.I.F.	=VEFIRY IN FIELD
ELEV.	=ELEVATION	M.O.	=MASONRY OPENING	V.T.R.	=VENT THROUGH ROOF
E.P.S.	=EXTRUDED POLYSTYRENE	M.R.	=MOISTURE RESISTANT	W	=WIDTH
F.D.	=FLOOR DRAIN	M.S.	=METAL STUD	W/	=WITH
F.D.V.C.	=FIRE DEPARTMENT VALVE CABINET				

ARCHITECTURAL MATERIALS LEGEND

- EARTH/COMPACT FILL
- CONCRETE
- BRICK (PLAN and SECTION)
- MILLWORK / CASEWORK (PLAN)
- GYPSUM BOARD
- PLYWOOD (LARGE SCALE)
- FINISH WOOD
- WOOD BLOCKING
- WOOD (ROUGH)
- BATT INSULATION
- RIGID INSULATION
- MINERAL WOOL BOARD INSULATION
- STEEL/OTHER METALS
- FIRE RATED GYPSUM WALL PARTITIONS (PLAN)

*SEE PLANS FOR PARTITION TYPE

ARCHITECTURAL GRAPHIC SYMBOLS

- 1 / A101 — View Name, Scale: — PLAN REFERENCE DRAWING NUMBER
- X / AX.X — SECTION REFERENCE DRAWING NUMBER
- 1 / 1 A101 1 / 1 — EXTERIOR ELEVATION REFERENCE
- Name / Elevation — LEVEL (ELEVATION) LINE
- 1 — REVISION SYMBOL
- **Room name** — ROOM / SPACE NUMBER
- 1 / 1 AX.X 1 / 1 — INTERIOR ELEVATION REFERECE
- S6B — PARTITION TYPE
- BL XX — INTERIOR BORROWED LIGHT REFERENCE
- C.L. — COLUMN REFERENCE NUMBER
- A101 — DOOR NUMBER
- 1t — WINDOW TYPE/ LOUVER TYPE
- GB2 — EQUIPMENT TYPE / IDENTIFICATION (SEE EQUIPMENT SCHEDULE)
- X — PRECAST CONCRETE PROFILE REFERENCE NUMBER
- MW # / CW # — MILLWORK / CASEWORK TYPE

LAMOUREUX PAGANO ASSOCIATES|ARCHITECTS
108 Grove Street, Suite 300
Worcester MA 01605
508.752.2831
www.lpaa.com

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TUFTS at TECH Community Veterinary Clinic

Final Bid Package

Tufts Vet Tech Clinic Renovation

Worcester Technical High School
1 Officer Manny Familia Way, Worcester, MA 01605

DRAWING TITLE

Partition Types, Abbreviations, Symbols & Material Legends

KEY PLAN

REVISIONS

No.	Description	Date

FILE:
JOB NO: 2417
SCALE: As indicated
DWN. BY: AD
CKD. BY: RP
DATE: March 11, 2026

A1.0

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CODE REVIEW - OCCUPANT LOAD

Number	Name	Area	Occupancy/Use	Function	Load Factor	Gross/Net	Occupant Load
D317A	LAB	97 SF	Educational (E)	Shop/Vocational Area	50 SF	Net	2
D318	RELATED CLASSROOM A	971 SF	Educational (E)	Classroom Area	20 SF	Net	49
D319	RELATED CLASSROOM B	935 SF	Educational (E)	Classroom Area	20 SF	Net	47
D319A	IDF	107 SF	Storage (S-1)	Mechanical Equipment Area	300 SF	Gross	1
D321	LAUNDRY STORAGE	127 SF	Storage (S-1)	Accessory Storage Area	300 SF	Gross	1
D321A	DAY BOARDING	364 SF	Educational (E)	Shop/Vocational Area	50 SF	Net	8
D321C	LOBBY	146 SF	Business (B)	Assembly - Unconcentrated	15 SF	Net	10
D322	TEACHING HUB*	1358 SF	Educational (E)	Shop/Vocational Area	50 SF	Net	28
D322A	EXAM ROOM 1	115 SF	Educational (E)	Shop/Vocational Area	50 SF	Net	3
D322B	EXAM ROOM 2	115 SF	Educational (E)	Shop/Vocational Area	50 SF	Net	3
D322C	EXAM ROOM 3	117 SF	Educational (E)	Shop/Vocational Area	50 SF	Net	3
D322D	EXAM ROOM 4	106 SF	Educational (E)	Shop/Vocational Area	50 SF	Net	3
D322E	RECEPTION	158 SF	Educational (E)	Shop/Vocational Area	50 SF	Net	4
D322F	EXAM ROOM 5	112 SF	Educational (E)	Shop/Vocational Area	50 SF	Net	3
D322G	EXAM ROOM 6	112 SF	Educational (E)	Shop/Vocational Area	50 SF	Net	3
D322H	EXAM ROOM 7	112 SF	Educational (E)	Shop/Vocational Area	50 SF	Net	3
D322J	BEREAVEMENT	147 SF	Educational (E)	Shop/Vocational Area	50 SF	Net	3
D322K	DENTAL*	246 SF	Educational (E)	Shop/Vocational Area	50 SF	Net	5
D322L	INDUCTION*	157 SF	Educational (E)	Shop/Vocational Area	50 SF	Net	4
D322M	SURGERY*	455 SF	Educational (E)	Shop/Vocational Area	50 SF	Net	10
D322N	X-RAY*	75 SF	Educational (E)	Shop/Vocational Area	50 SF	Net	2
D322P	DOG RECOVERY*	97 SF	Educational (E)	Shop/Vocational Area	50 SF	Net	2
D322Q	CAT RECOVERY*	53 SF	Educational (E)	Shop/Vocational Area	50 SF	Net	2
D323 SUITE	CLINIC & FACULTY OFFICES	642 SF	Business (B)	Business Area	150 SF	Gross	5
D323A	STORAGE	344 SF	Storage (S-1)	Accessory Storage Area	300 SF	Gross	2
D323D	CONFERENCE	421 SF	Business (B)	Assembly - Unconcentrated	15 SF	Net	29
D324	ELECTRICAL ROOM	101 SF	Storage (S-1)	Mechanical Equipment Area	300 SF	Gross	1
		7788 SF					236

NOTES:
*THE FOLLOWING SPACES ARE LEARNING LABORATORY COMPONENTS OF TEACHING HUB D322 AND WOULD THEREFORE NOT BE OCCUPIED SIMULTANEOUSLY WITH TEACHING HUB D322: DENTAL D322K; INDUCTION D322L; SURGERY D322M; X-RAY D322N; DOG RECOVERY D322P; CAT RECOVERY D322Q. PER 780 CMR TABLE 1004.5, TYPICAL OCCUPANT LOAD OF THESE SPACES COMBINED, INCLUDING TEACHING HUB D322, WOULD BE 53 OCCUPANTS; **HOWEVER, DUE TO NON-SIMULTANEOUS USE OF THESE SPACES, PROJECT REQUESTS PERMISSION TO POST MAXIMUM OCCUPANCY OF THIS GROUP OF SPACES AT 45 OCCUPANTS, AS PERMITTED BY THE 780 CMR 1004.5 EXCEPTION.**

EXIT SCHEDULE

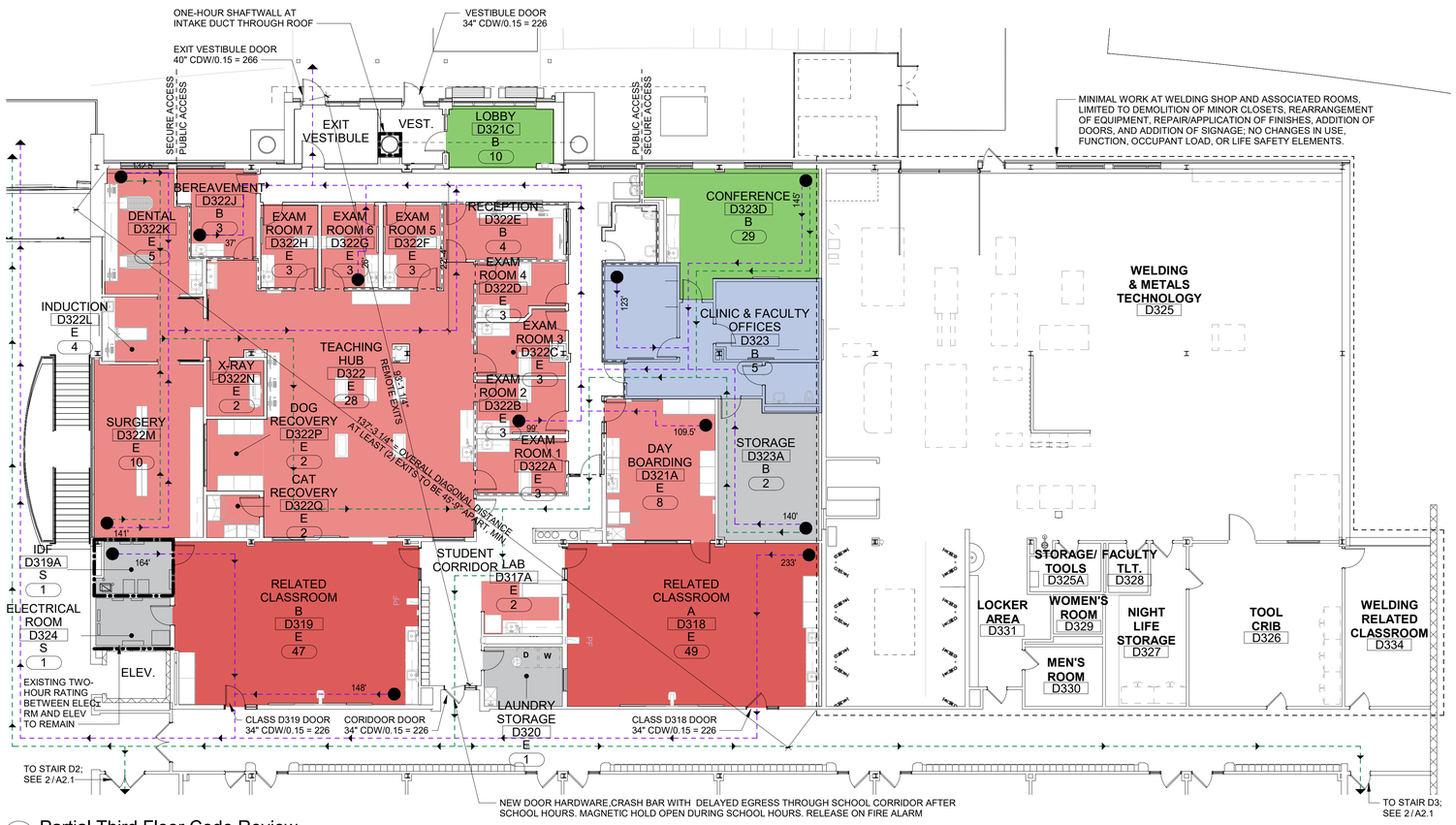
FIRST FLOOR

EXIT	STAIR WIDTH (INCHES)	STAIR EXIT ALLOWANCE (INCHES/OCCUPANT)	STAIR CAPACITY (OCCUPANTS)	DOOR WIDTH (CLEAR OPENING IN INCHES)	DOOR EXIT ALLOWANCE (INCHES/OCCUPANT)	DOOR CAPACITY (OCCUPANTS)	EXIT CAPACITY (OCCUPANTS)
EXIT VEST.	- -	- -	- -	40	0.15	266	266
VESTIBULE	- -	- -	- -	34	0.15	226	226
CORRIDOR	- -	- -	- -	34	0.15	226	226
CLASS D318	- -	- -	- -	34	0.15	226	226
CLASS D319	- -	- -	- -	34	0.15	226	226
						TOTAL EXIT CAPCAITY:	1,170
						REQUIRED EXIT CAPCAITY:	237

PLUMBING FIXTURE COUNTS[A]

STUDENTS; C- AND D-WINGS, THIRD FLOOR ONLY (1996 PLUMBING CODE)[E]				
OCCUPANCY 260 STUDENTS[B]	WATER CLOSETS FEMALE	WATER CLOSETS MALE[D]	LAVATORIES (PER SEX)	DRINKING WATER STATION
LOAD FACTOR	1 per 30	1 per 90	1 per 90	1 per 75
REQUIRED FIXTURES[B]	5	2	2	4
PROVIDED FIXTURES[B]	9	13	7	5
STAFF & PUBLIC; WORK AREA ONLY (CURRENT 2023 PLUMBING CODE)				
OCCUPANCY 40 STAFF & VISITORS[C]	WATER CLOSETS FEMALE	WATER CLOSETS MALE[D]	LAVATORIES (PER SEX)	DRINKING WATER STATION
LOAD FACTOR	1-100: 1 per 20 100+: 1 per 50	1-100: 1 per 25 100+: 1 per 50	1 per 25	1 per set of restrooms
REQUIRED FIXTURES	1	1	1	1
PROVIDED FIXTURES	1	1	1	1

NOTES
A. COUNTS BASED ON 248 CMR 10.10 TABLE 1.
B. STUDENT OCCUPANCY AND STUDENT FIXTURES BASED ON 520 STUDENT ENROLLMENT, WITH MAXIMUM OF 50% PRESENT AT ANY ONE TIME, PER ENROLLMENT AND SCHEDULE INFORMATION PROVIDED BY OWNER. INCLUDES SHOPS AND CLASSROOMS ACROSS ENTIRE FLOOR OF C & D WINGS.
C. STAFF & VISITOR OCCUPANCY BASED ON AVERAGE NUMBER OF VISITORS AND MAXIMUM NUMBER OF STAFF AT PROJECT AREA ONLY (248 CMR 10.10(15)(c)11.a & b.
D. UP TO 50% OF MALE TOILETS MAY BE URINALS.
E. STUDENT PLUMBING FIXTURE COUNTS BASED ON CODE IN EFFECT AT TIME OF ORIGINAL BUILDING PERMIT; THE NUMBER OF FIXTURES PROVIDED WERE SUFFICIENT TO MEET STUDENT POPULATION AT THE TIME, AND THE PROJECT DOES NOT INCREASE THE STUDENT POPULATION.



1 A2.1 **Partial Third Floor Code Review**
Scale: 3/32" = 1'-0"

Tufts @ Tech Relocation - Building Code Summary

Applicable Codes

The general fire protection / life safety features and systems based upon the requirements of the City of Worcester, MA. The following codes are applicable to this project:

Accessibility Massachusetts Architectural Access Board (MAAB), 521-CMR.
Building Massachusetts State Buiding Code (MSBC), 780 CMR Tenth Edition (2021 IBC)
Massachusetts Existing Building Code, Amendments to 2021 IEBC
Electrical Mass. Electrical Code, 527 CMR, 12.00. (2023 NFPA 70
Elevators Mass. Elevator Regulations, 524 CMR (Latest Edition).
Energy Conservation Massachusetts Commercial Stretch Energy Code, 225 CMR 23.00.
Fire Prevention Massachusetts Fire Prevention Regulations (MFPR), 527 CMR 1.00, 2021 NFPA1
M.G.L. Chapter 148 Section 26G - Sprinkler Protection
Mechanical International Mechanical Code, as adopted and amended by the MSBC.
Plumbing Mass. Fuel Gas and Plumbing Codes, 248 CMR
Other National Fire Protection (NFPA) Standards, as referenced by the MSBC and by MFPR.

Project Area (Gross)

Partial Third Floor (existing)	9,057 S.F.
Third Floor Addition	465 S.F.
Total	9,522 S.F.

Occupancy, Use Groups and Functions - Occupant Load Table 1004.5

E - Educational		B - Business**	
Classrooms	20 S.F./occ.	Faculty & Clinic Offices	150 S.F./occ.
Vocational Areas	50 S.F./occ.	Conference Room	15 S.F./occ.
Laundry/Storage	300 S.F./occ.	Lobby	15 S.F./occ.
IDF (Accessory)	300 S.F./occ.	Storage (Accessory)	300 S.F./occ.
Electrical Room, Existing (Accessory)	300 S.F./occ		

*See "Code Review - Occupant Load" table above for area and occupant load of each space.
**Business uses would typically be treated as accessory to the main use group (E); however, because the clinic may operate outside of regular school hours, Business uses shall be considered their own separate use (B).

Travel Distance

Common path of travel distance from all occupied spaces are less than the maximums established below:
Educational (with Sprinklers) = 75 feet
Business (with Sprinklers) = 100 feet

Exit access travel distance from all occupied spaces are less than the maximums established below:
Educational (with Sprinklers) = 250 feet
Business (with Sprinklers) = 300 feet

Height and Area Limits

Construction Type: IIA (Corresponds to Type IIB as defined in the code in force during original permit)
Use Groups: E, B, S-1 - Non-Separated
Allowable: Height - 4 stories, 85 feet Area - 79,500 S.F.
Actual: Height - 4 stories, 65 feet Area - 32,215 S.F. (31,805 S.F. *existing* + 410 S.F. *new construction*)

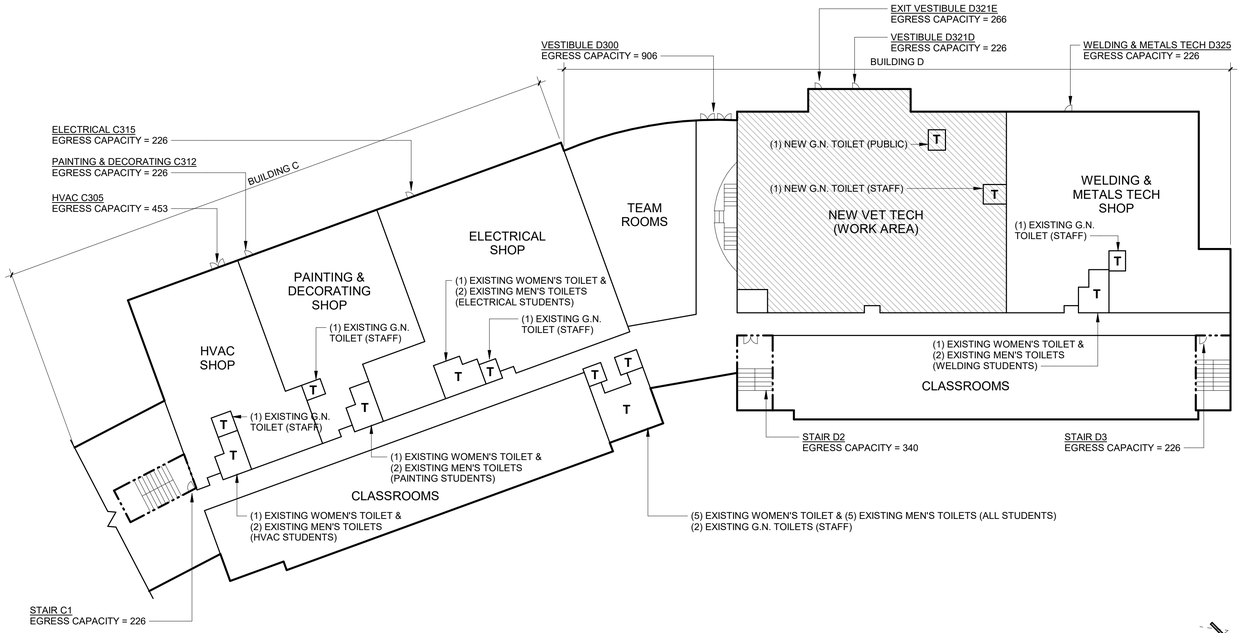
LEGEND

OCCUPANCY OF SPACE	FUNCTION OF SPACE
ROOM NAME / ROOM #	Accessory Storage Area/ Mechanical Equipment Area
A, B, etc... — OCCUPANCY	Assembly - Unconcentrated
## — OCCUPANT LOAD	Business Area
B BUSINESS GROUP	Classroom Area
E EDUCATIONAL GROUP	Shop/Vocational Area
S STORAGE GROUP (ACCESSORY)	
ABBREVIATIONS	
C.D.W. Clear Door Width	
FIRE RATING	**EGRESS PATHS**
1-Hour Rated Wall	Primary
2-Hour Rated Wall	XX' DIST. TO EXIT — Secondary

NOTES

PER TABLE 601 FOR TYPE IIA CONSTRUCTION, THE FOLLOWING FIRE RESISTANCE RATINGS ARE REQUIRED AT NEW CONSTRUCTION:
- PRIMARY STRUCTURAL FRAME: 1-HOUR
- STRUCTURE SUPPORTING 2-HOUR ELEMENTS: 2-HOUR
- BEARING WALLS - EXTERIOR: 1-HOUR (BUT NOT LESS THAN AS REQUIRED IN OTHER SECTIONS OF THIS CODE)
- BEARING WALLS - INTERIOR: 1-HOUR
- NON-BEARING WALLS: 1-HOUR IF FSD GREATER THAN 10'
- FLOOR CONSTRUCTION AND ASSOCIATED SECONDARY MEMBERS: 1-HOUR
- ROOF CONSTRUCTION AND ASSOCIATED SECONDARY MEMBERS: 1-HOUR (EXCEPT THAT A RATING IS NOT REQUIRED FOR ROOF FRAMING AND DECK WHERE EVERY PART OF THE ROOF CONSTRUCTION IS 20 FEET OR MORE ABOVE ANY FLOOR BELOW)
- EXIT STAIR SHAFTS: - 1-HOUR
- OTHER SHAFTS: - 1-HOUR
- ELEVATOR MACHINE ROOM: - 2-HOUR
- EMERGENCY ELECTRIC ROOMS, MAIN ELECTRIC ROOMS, MAIN TELECOM/SERVER ROOM - 2-HOUR
- SUB ELECTRIC ROOMS, IDF ROOMS 1-HOUR

PROVIDE APPLIED CEMETITIOUS FIREPROOFING AS REQUIRED TO ACHIEVE THE ABOVE RATINGS.



2 A2.1 **Building C/D Level 3 Key Plan**
Scale 1" = 30'-0"

Project / True North

LAMOUREUX PAGANO ASSOCIATES|ARCHITECTS
108 Grove Street, Suite 300
Worcester MA 01605
508.752.2831
www.lpaa.com

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TUFTS at TECH Community Veterinary Clinic

Final Bid Package

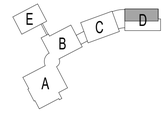
Tufts Vet Tech Clinic Renovation

Worcester Technical High School
1 Officer Manny Familia Way, Worcester, MA 01605

DRAWING TITLE

Code Review

KEY PLAN



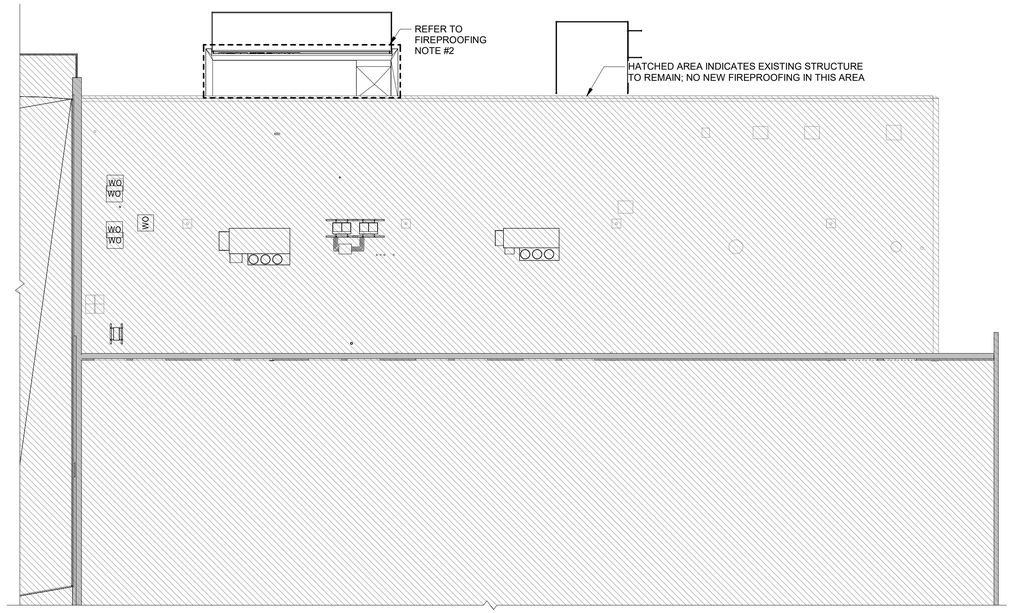
REVISIONS

No.	Description	Date

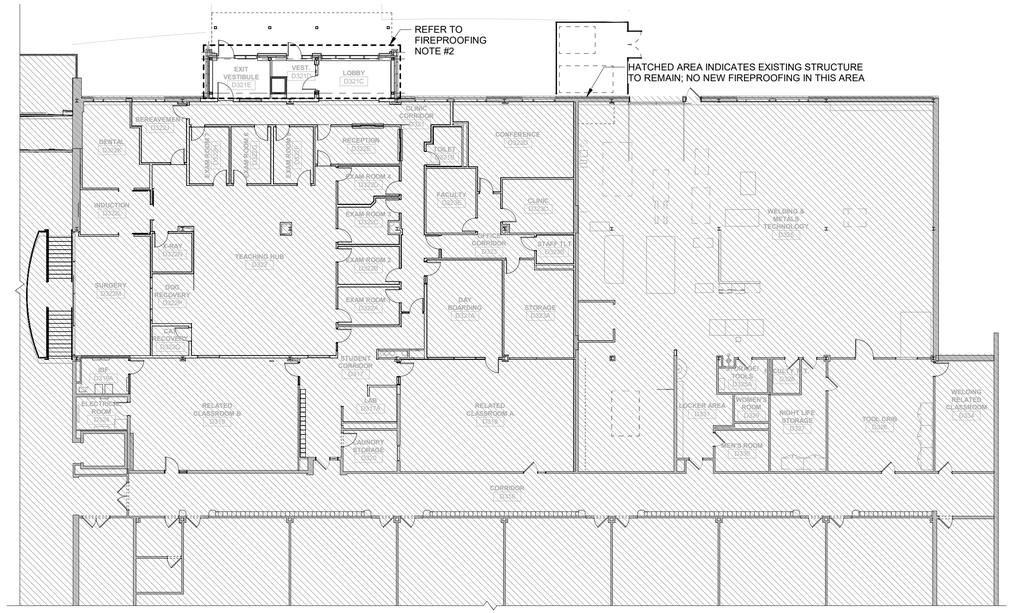
FILE:
JOB NO: 2417
SCALE: As indicated
DWN. BY: AD
CKD. BY: RP
DATE: March 11, 2026

A2.1

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2 A2.2 Roof - Fireproofing Plan
Scale: 1/16" = 1'-0"



1 A2.2 Third Floor - Fireproofing Plan
Scale: 1/16" = 1'-0"

FIRE RESISTANCE RATINGS

PER TABLE 601 FOR TYPE IIA CONSTRUCTION, THE FOLLOWING FIRE RESISTANCE RATINGS ARE REQUIRED AT NEW CONSTRUCTION AND TO BE MAINTAINED AT NEXISTING CONSTRUCTION:

- PRIMARY STRUCTURAL FRAME: 1-HOUR
- STRUCTURE SUPPORTING 2-HOUR ELEMENTS: 2-HOUR
- BEARING WALLS - EXTERIOR: 1-HOUR (BUT NOT LESS THAN AS REQUIRED IN OTHER SECTIONS OF THIS CODE)
- BEARING WALLS - INTERIOR: 1-HOUR
- NON-BEARING WALLS: 1-HOUR IF FSD GREATER THAN 10'
- FLOOR CONSTRUCTION AND ASSOCIATED SECONDARY MEMBERS: 1-HOUR
- ROOF CONSTRUCTION AND ASSOCIATED SECONDARY MEMBERS: 1-HOUR (EXCEPT THAT A RATING IS NOT REQUIRED FOR ROOF FRAMING AND DECK WHERE EVERY PART OF THE ROOF CONSTRUCTION IS 20 FEET OR MORE ABOVE ANY FLOOR BELOW)
- EXIT STAIR SHAFTS: - 1-HOUR
- OTHER SHAFTS: - 1-HOUR
- ELEVATOR MACHINE ROOM: - 2-HOUR
- EMERGENCY ELECTRIC ROOMS, MAIN ELECTRIC ROOMS, MAIN TELECOM/SERVER ROOM - 2-HOUR
- SUB ELECTRIC ROOMS, IDF ROOMS 1-HOUR

PROVIDE APPLIED CEMENTITIOUS FIREPROOFING AS REQUIRED TO ACHIEVE THE ABOVE RATINGS.

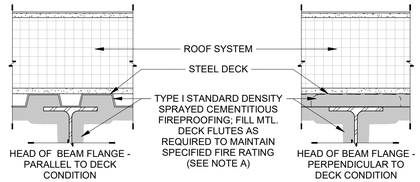
FIREPROOFING NOTES

REFER TO FIREPROOFING PLANS

1. REFER TO "FIRE RESISTANCE RATINGS" NOTES (ELSEWHERE ON THIS SHEET) FOR FIRE RESISTANCE REQUIREMENTS OF BUILDING ELEMENTS, PER TABLE 601 IN 780 CMR.

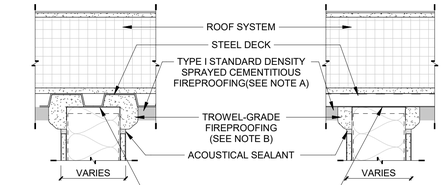
2. UNLESS NOTED OTHERWISE, PROVIDE TYPE I STANDARD DENSITY SPRAYED CEMENTITIOUS FIREPROOFING ON STRUCTURAL STEEL AND ROOF DECK THROUGHOUT.

FIREPROOFING DETAILS: BEAMS, COLUMNS, DECKS



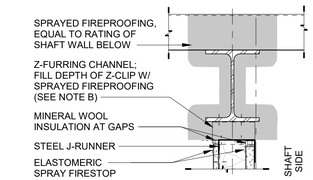
NOTES:
A) SEE FIREPROOFING PLANS FOR EXTENT OF SPRAY FIREPROOFING REQUIRED AT UNDERSIDE OF DECK.

3 A2.2 Typ. Spray-On Fireproofing Detail, Beam @ Deck
Scale: 1 1/2" = 1'-0"



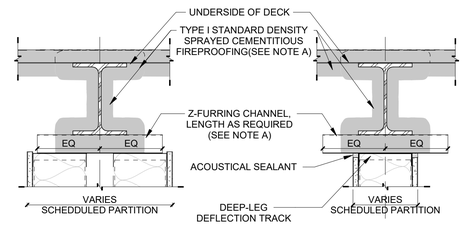
NOTES:
A) SEE CODE PLANS FOR EXTENT/TYPES OF SPRAY FIREPROOFING REQ'D AT UNDERSIDE OF DECK.
B) PATCH SPRAY FIREPROOFING AFTER STUD TRACK BEFORE INSTALLATION OF GYPSUM BOARD

4 A2.2 Typ. Head Detail, Partition @ Deck
Scale: 1 1/2" = 1'-0"



NOTES:
A) REPRESENTATIVE HEAD OF WALL UL DESIGN: HW-D-0571
B) PROVIDE Z-CLIPS AT 1'-0" O.C.. SET Z-CLIP PRIOR TO APPLYING FIREPROOFING

5 A2.2 Typ. Head Detail, Shaftwall @ Beam
Scale: 1 1/2" = 1'-0"



NOTES:
A) PROVIDE Z-CLIPS AT 1'-0" O.C.

6 A2.2 Typ. Head Detail, Partition @ Beam
Scale: 1 1/2" = 1'-0"

WIDE FLANGE BEAMS	HSS COLUMNS	HSS CROSS BRACING	HSS BEAMS	METAL ROOF DECK (<20'-0" ABOVE FLOOR BELOW)
STANDARD DENSITY SPRAYED CEMENTITIOUS 1 HOUR: UL DESIGN NO. N782	STANDARD DENSITY SPRAYED CEMENTITIOUS 1 HOUR: UL DESIGN NO. Y710	STANDARD DENSITY SPRAYED CEMENTITIOUS 1 HOUR: UL DESIGN NO. X790	STANDARD DENSITY SPRAYED CEMENTITIOUS 1 HOUR: UL DESIGN NO. X790	STANDARD DENSITY SPRAYED CEMENTITIOUS 1 HOUR: UL DESIGN NO. P732 BEAM SUBSTITUTION: UL DESIGN NO. S750

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PROJECT

TUFTS at TECH Community Veterinary Clinic

Final Bid Package

Tufts Vet Tech Clinic Renovation

Worcester Technical High School
1 Officer Manny Familia Way, Worcester, MA 01605

DRAWING TITLE

Fireproofing Plan

KEY PLAN

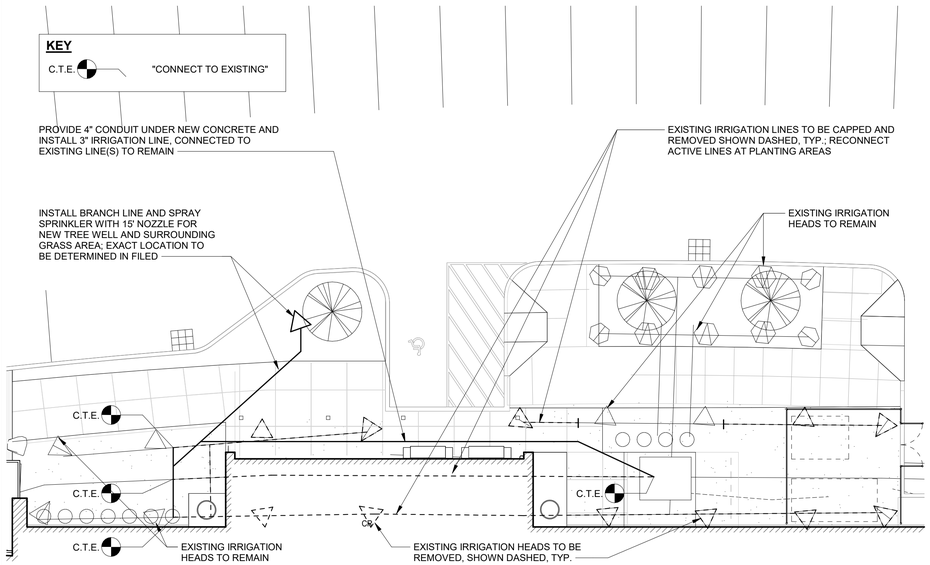
REVISIONS

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FILE:
JOB NO: 2417
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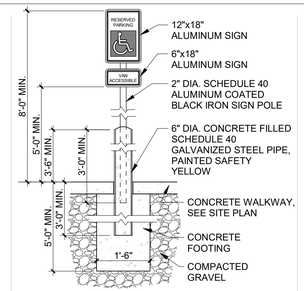
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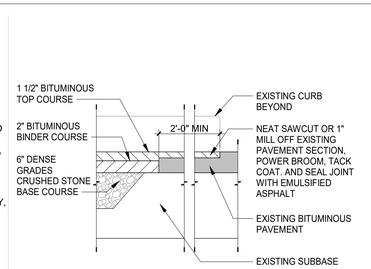


NOTE: THIS PLAN IS BASED ON ORIGINAL DESIGN PLAN, AND ACTUAL INSTALLATION CONDITION MAY VARY. WORK SCOPE SHALL INCLUDE INVESTIGATIONS TO, AND ALTERATION OF, THE EXISTING SYSTEM/HEADS IN ORDER TO IRRIGATE NEW PLANTINGS, AS WELL AS THE INSTALLATION OF NEW MAINS AND BRANCHES AROUND NEW PAVEMENT AND CONSTRUCTION; EXISTING HEADS MAY BE REUSED IN LIEU OF NEW HEADS, IF THEIR CONDITION/CAPACITY IS SUFFICIENT FOR THE NEW IRRIGATION SCOPE.

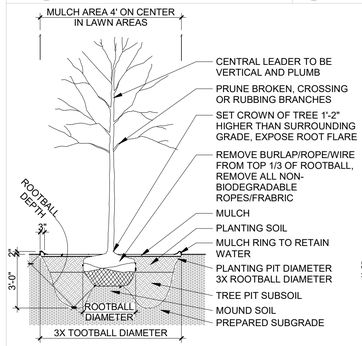
11 A3.0 IRRIGATION ALTERATION PLAN
Scale: 1" = 10'-0"



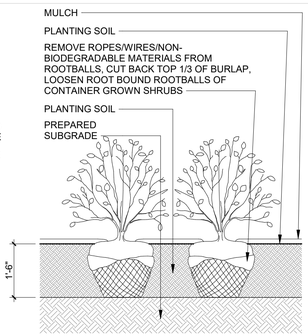
8 A3.0 BOLLARD DETAIL
Scale: 1/2" = 1'-0"



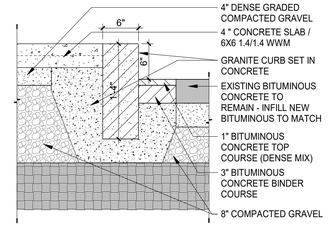
7 A3.0 PAVEMENT TIE-IN DETAIL
Scale: 1" = 1'-0"



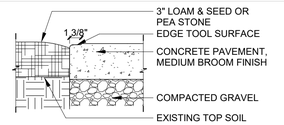
10 A3.0 DECIDUOUS TREE PLANTING
Scale: N.T.S.



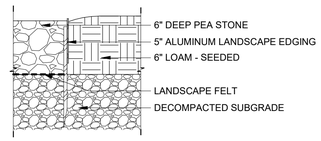
9 A3.0 SHRUB PLANTING BED
Scale: 1/2" = 1'-0"



6 A3.0 GRANITE CURB DETAIL
Scale: 1" = 1'-0"

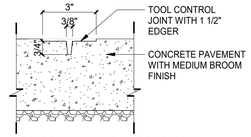


CONCRETE PAVING AT PLANTING BED
5 A3.0 Scale: 1 1/2" = 1'-0"

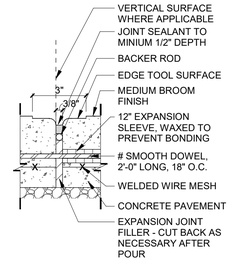


4 A3.0 GRASS @ STONE BED
Scale: 1 1/2" = 1'-0"

CONCRETE EXPANSION & CONTROL JOINTS NOTES
1. EXPANSION JOINTS 20'-0" O.C. UNLESS OTHERWISE NOTED.
2. CONTROL JOINTS 5'-0" O.C. UNLESS OTHERWISE NOTED.
3. TOOLED EDGES AND JOINTS, ALL PANELS
4. PROVIDE EXPANSION JOINTS AT ALL LOCATIONS WHERE CONCRETE PAVEMENT MEETS ANY WALL, BUILDING, CURBING OTHER CONCRETE PAVEMENT OR STRUCTURES

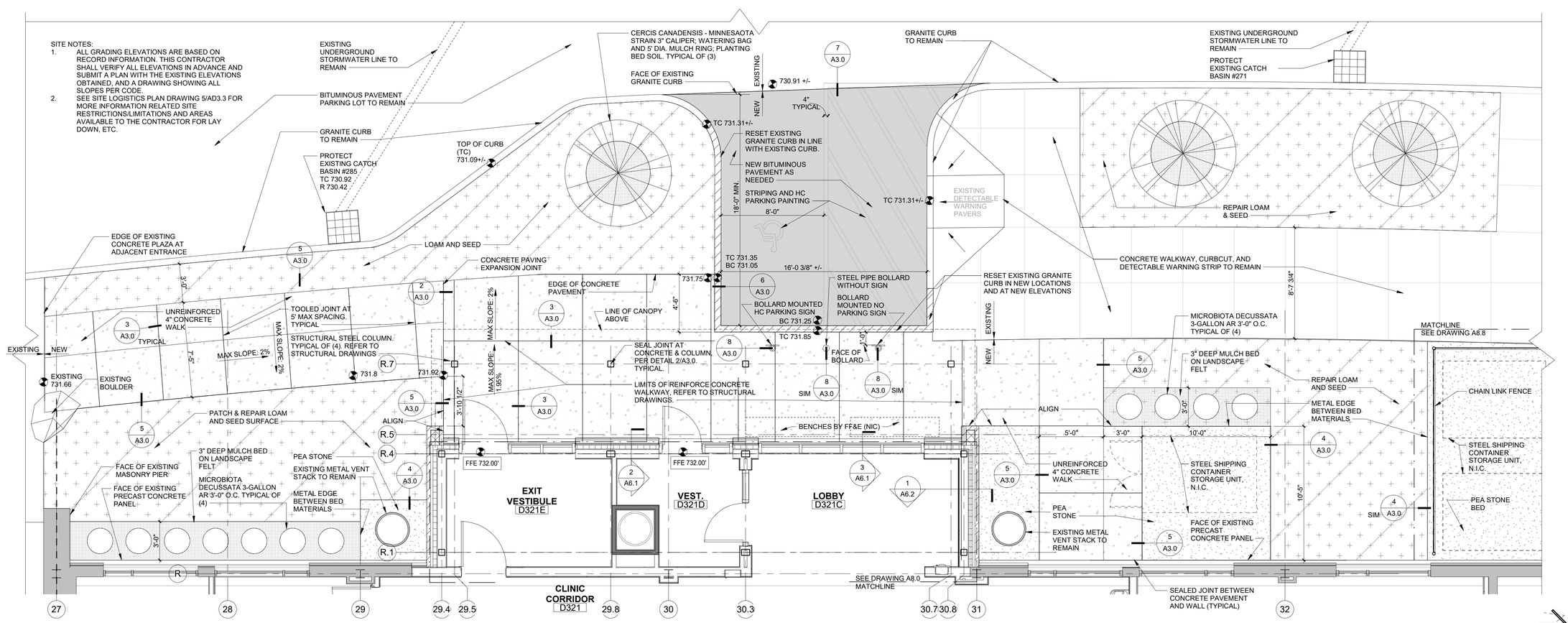


3 A3.0 CONCRETE JOINT DETAIL
Scale: 3" = 1'-0"



2 A3.0 EXPANSION JOINT DETAIL
Scale: 3" = 1'-0"

SITE NOTES:
1. ALL GRADING ELEVATIONS ARE BASED ON RECORD INFORMATION. THIS CONTRACTOR SHALL VERIFY ALL ELEVATIONS IN ADVANCE AND SUBMIT A PLAN WITH THE EXISTING ELEVATIONS OBTAINED, AND A DRAWING SHOWING ALL SLOPES PER CODE.
2. SEE SITE LOGISTICS PLAN DRAWING 5/AD3.3 FOR MORE INFORMATION RELATED SITE RESTRICTIONS/LIMITATIONS AND AREAS AVAILABLE TO THE CONTRACTOR FOR LAY DOWN, ETC.



1 A3.0 Partial Site Plan
SCALE: 1/4" = 1'-0"

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TUFTS at TECH Community Veterinary Clinic

Final Bid Package

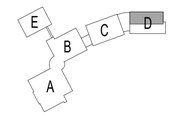
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DRAWING TITLE

Partial Site Plan & Details

KEY PLAN



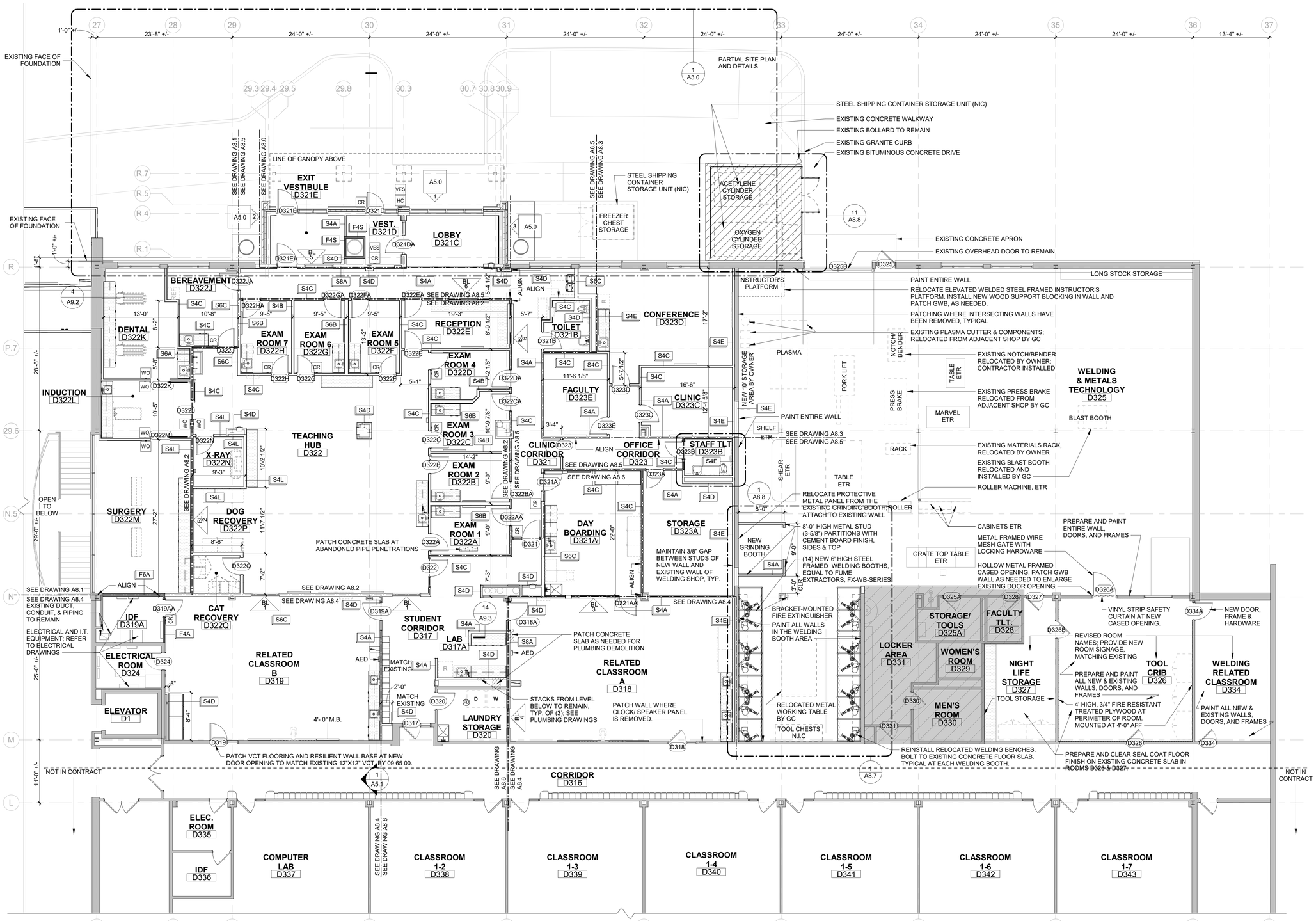
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No.	Description	Date

FILE:
JOB NO: 2417
SCALE: As indicated
DWN. BY: MW
CKD. BY: RP
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A3.0

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1 A3.1 Partial Third Floor Plan - Section D
Scale: 1/8" = 1'-0"

DRAWING KEY

- Existing wall to remain
- New wall
- NOT IN PROJECT SCOPE
- VES VIDEO ENTRANCE SYSTEM
- CR CARD READER
- HC HANDICAP
- WO WAVE TO OPEN

GENERAL NOTES
1. PATCH ALL WALL SURFACES WHERE ABUTTING WALLS, EQUIPMENT, DEVICES, AND FIXTURES HAVE BEEN REMOVED. REFER TO DEMOLITION DRAWINGS.
2. REFER TO DRAWINGS A8.0 THROUGH A8.8 FOR ENLARGED PLANS AND ADDITIONAL INFORMATION.
3. REFER TO DRAWINGS A9.1 to A9.3 FOR CASEWORK/MILLWORK.
4. ALIGN SURFACES OF NEW WALL WITH FACE OF EXISTING ADJACENT WALLS, WHERE APPROPRIATE.

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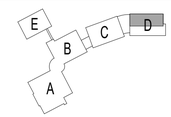
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1 Officer Manny Familia Way, Worcester, MA 01605

DRAWING TITLE

Partial Third Floor Plan - Section D

KEY PLAN



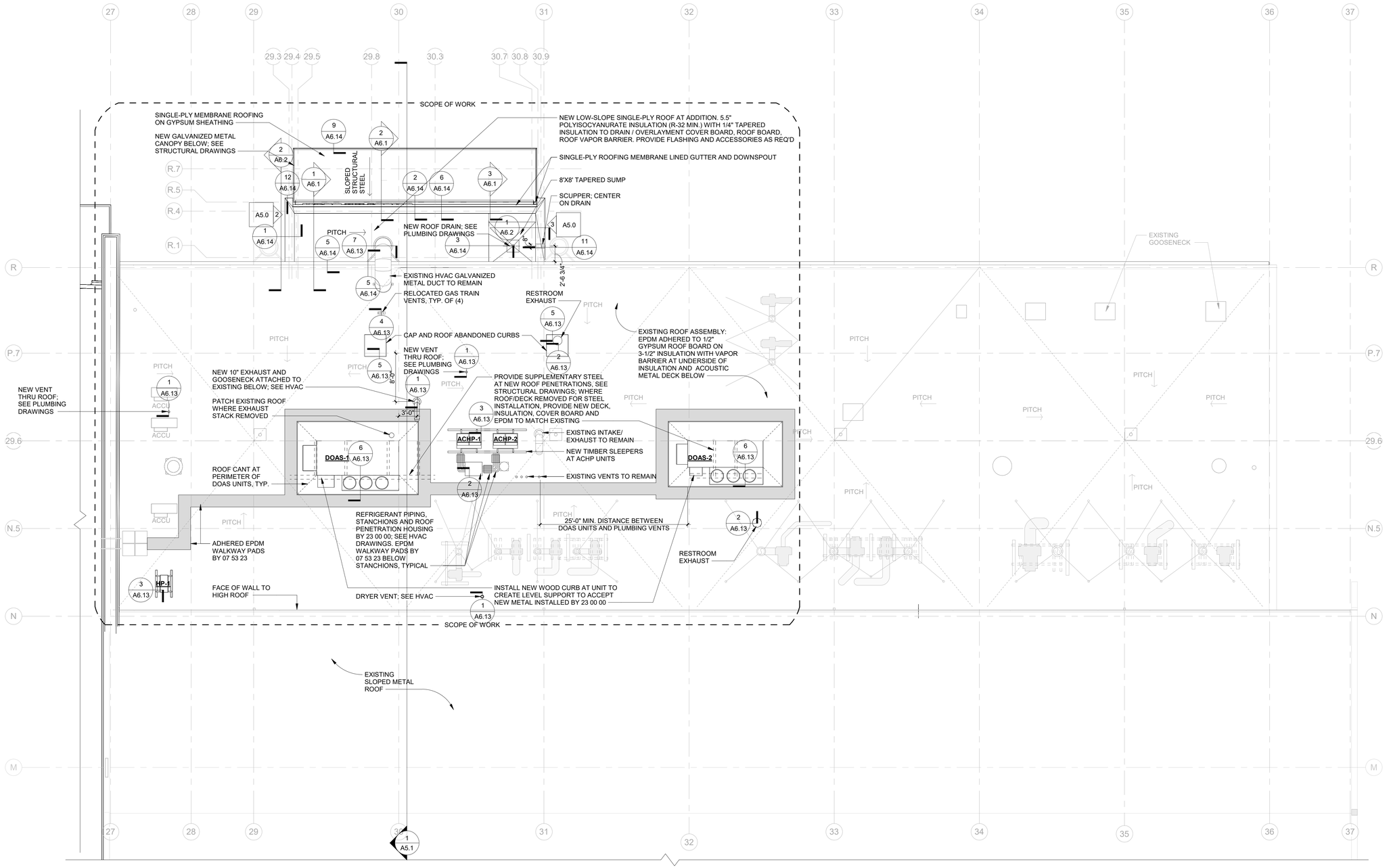
REVISIONS

No.	Description	Date

FILE:
JOB NO: 2417
SCALE: As indicated
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CKD. BY: RP
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1 A3.2 Partial Roof Plan - Section D

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

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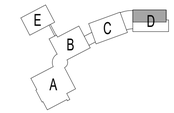
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DRAWING TITLE

Partial Roof Plan - Section D

KEY PLAN



REVISIONS

No.	Description	Date

FILE:	
JOB NO:	2417
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DWN. BY:	AD
CKD. BY:	RP
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A3.2

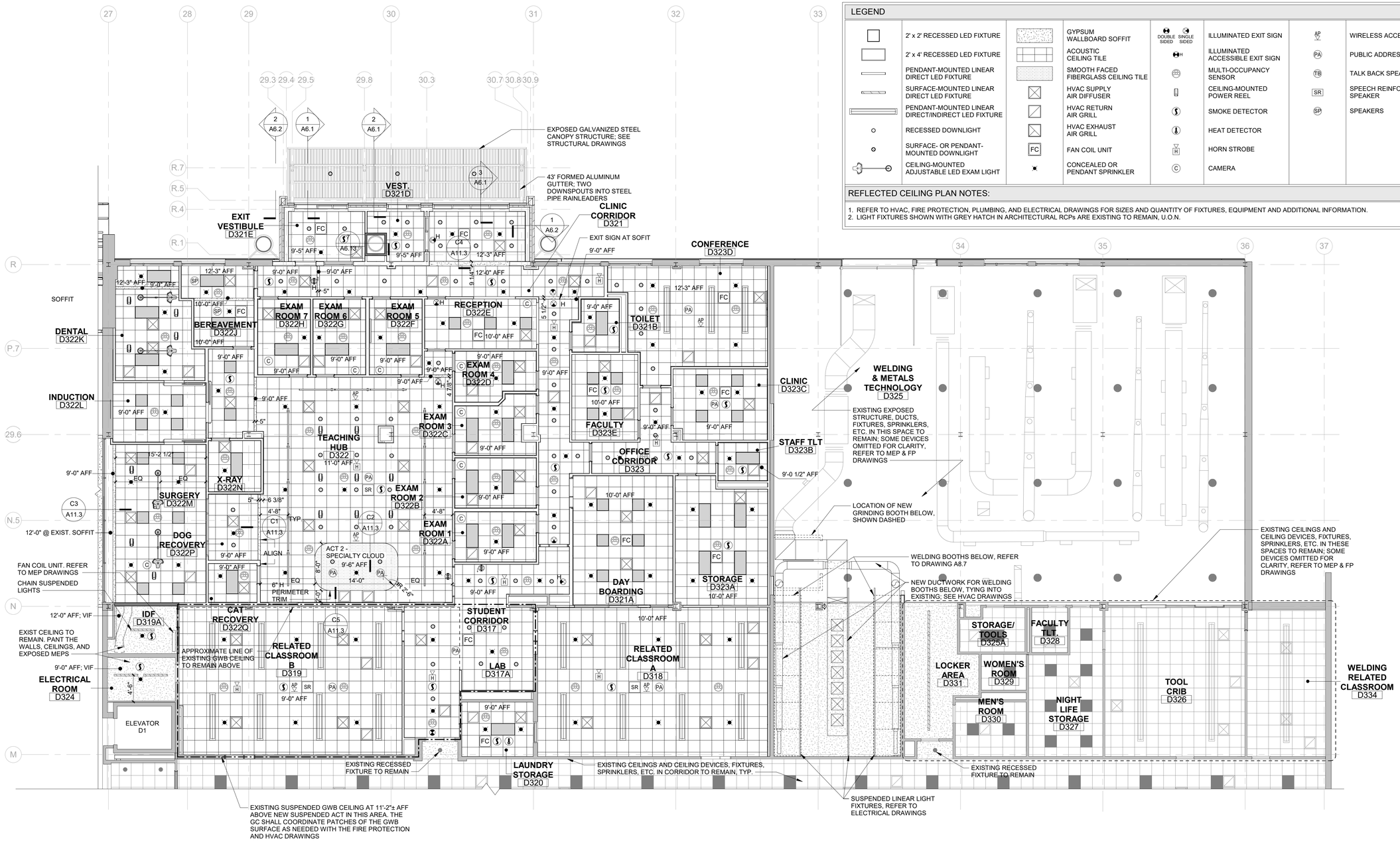
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LEGEND

	2' x 2' RECESSED LED FIXTURE		GYPSUM WALLBOARD SOFFIT	DOUBLE SIDED / SINGLE SIDED	ILLUMINATED EXIT SIGN	AP	WIRELESS ACCESS POINT
	2' x 4' RECESSED LED FIXTURE		ACOUSTIC CEILING TILE		ILLUMINATED ACCESSIBLE EXIT SIGN	PA	PUBLIC ADDRESS SPEAKER
	PENDANT-MOUNTED LINEAR DIRECT LED FIXTURE		SMOOTH FACED FIBERGLASS CEILING TILE		MULTI-OCCUPANCY SENSOR	TB	TALK BACK SPEAKER
	SURFACE-MOUNTED LINEAR DIRECT LED FIXTURE		HVAC SUPPLY AIR DIFFUSER		CEILING-MOUNTED POWER REEL	SR	SPEECH REINFORCEMENT SPEAKER
	PENDANT-MOUNTED LINEAR DIRECT/INDIRECT LED FIXTURE		HVAC RETURN AIR GRILL		SMOKE DETECTOR	SP	SPEAKERS
	RECESSED DOWNLIGHT		HVAC EXHAUST AIR GRILL		HEAT DETECTOR		
	SURFACE- OR PENDANT-MOUNTED DOWNLIGHT	FC	FAN COIL UNIT	H	HORN STROBE		
	CEILING-MOUNTED ADJUSTABLE LED EXAM LIGHT		CONCEALED OR PENDANT SPRINKLER	C	CAMERA		

REFLECTED CEILING PLAN NOTES:

1. REFER TO HVAC, FIRE PROTECTION, PLUMBING, AND ELECTRICAL DRAWINGS FOR SIZES AND QUANTITY OF FIXTURES, EQUIPMENT AND ADDITIONAL INFORMATION.
2. LIGHT FIXTURES SHOWN WITH GREY HATCH IN ARCHITECTURAL RCPs ARE EXISTING TO REMAIN, U.O.N.



1 A4.1 RCP Floor Plan
Scale: 1/8" = 1'-0"

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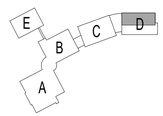
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Worcester Technical High School
1 Officer Manny Familia Way, Worcester, MA 01605

DRAWING TITLE

Reflected Ceiling Plan

KEY PLAN



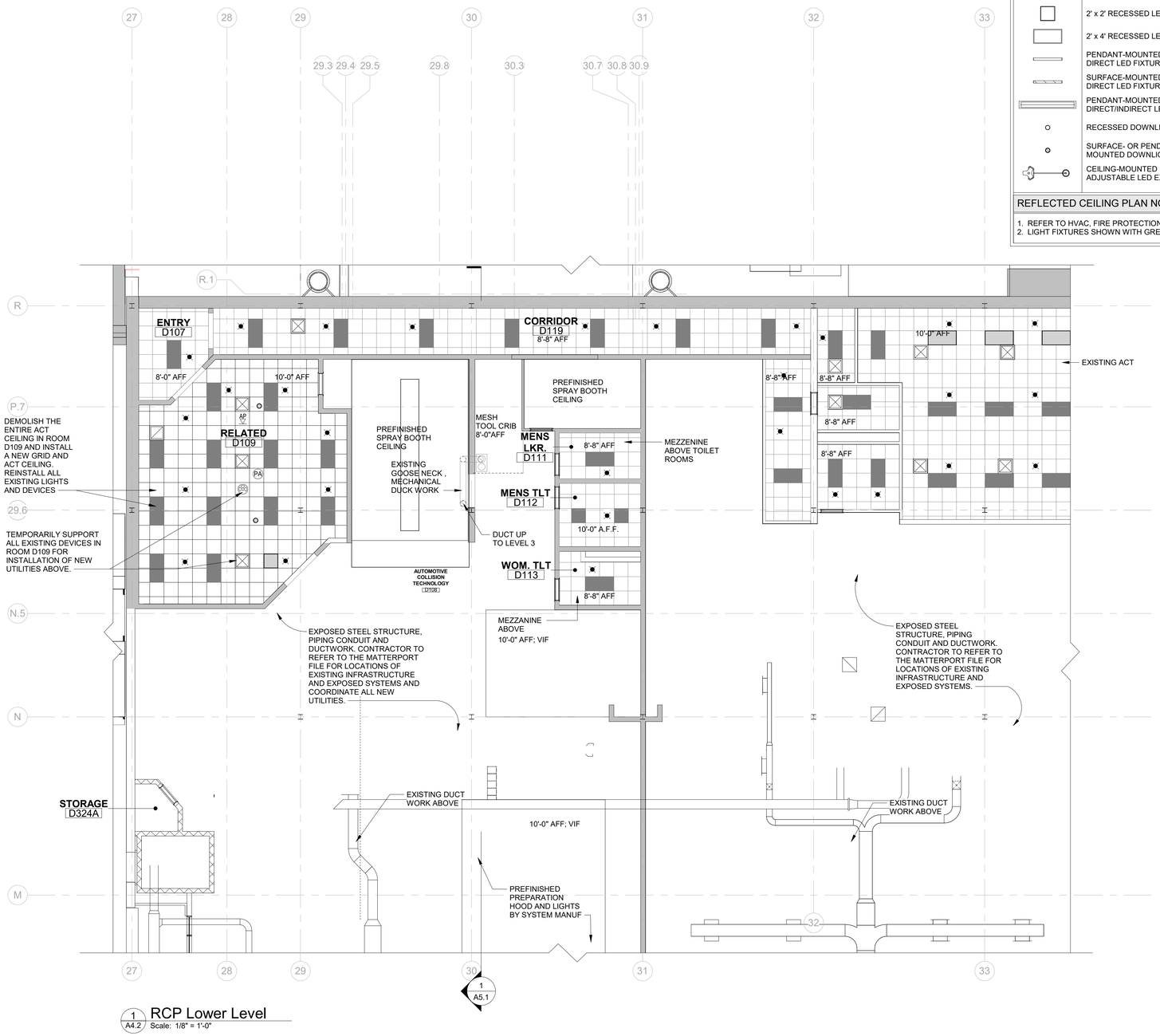
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No.	Description	Date

FILE:	
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SCALE:	1/8" = 1'-0"
DWN. BY:	VL
CKD. BY:	RP
DATE:	March 11, 2026

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1 A4.2 RCP Lower Level
Scale: 1/8" = 1'-0"

LEGEND

	2' x 2' RECESSED LED FIXTURE		GYPSUM WALLBOARD SOFFIT	DOUBLE SIDED / SINGLE SIDED	ILLUMINATED EXIT SIGN	AP	WIRELESS ACCESS POINT
	2' x 4' RECESSED LED FIXTURE		ACOUSTIC CEILING TILE	H	ILLUMINATED ACCESSIBLE EXIT SIGN	PA	PUBLIC ADDRESS SPEAKER
	PENDANT-MOUNTED LINEAR DIRECT LED FIXTURE		SMOOTH FACED FIBERGLASS CEILING TILE		MULTI-OCCUPANCY SENSOR	TB	TALK BACK SPEAKER
	SURFACE-MOUNTED LINEAR DIRECT LED FIXTURE		HVAC SUPPLY AIR DIFFUSER		CEILING-MOUNTED POWER REEL	SR	SPEECH REINFORCEMENT SPEAKER
	PENDANT-MOUNTED LINEAR DIRECT/INDIRECT LED FIXTURE		HVAC RETURN AIR GRILL		SMOKE DETECTOR	SP	SPEAKERS
	RECESSED DOWNLIGHT		HVAC EXHAUST AIR GRILL		HEAT DETECTOR		
	SURFACE- OR PENDANT-MOUNTED DOWNLIGHT	FC	FAN COIL UNIT	H	HORN STROBE		
	CEILING-MOUNTED ADJUSTABLE LED EXAM LIGHT		CONCEALED OR PENDANT SPRINKLER	C	CAMERA		

REFLECTED CEILING PLAN NOTES:

1. REFER TO HVAC, FIRE PROTECTION, PLUMBING, AND ELECTRICAL DRAWINGS FOR SIZES AND QUANTITY OF FIXTURES, EQUIPMENT AND ADDITIONAL INFORMATION.
2. LIGHT FIXTURES SHOWN WITH GREY HATCH IN ARCHITECTURAL RCPs ARE EXISTING TO REMAIN, U.O.N.

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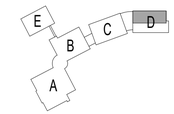
Tufts Vet Tech Clinic Renovation

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DRAWING TITLE

Reflected Ceiling Plan - Lower Level @ Autobody

KEY PLAN



REVISIONS

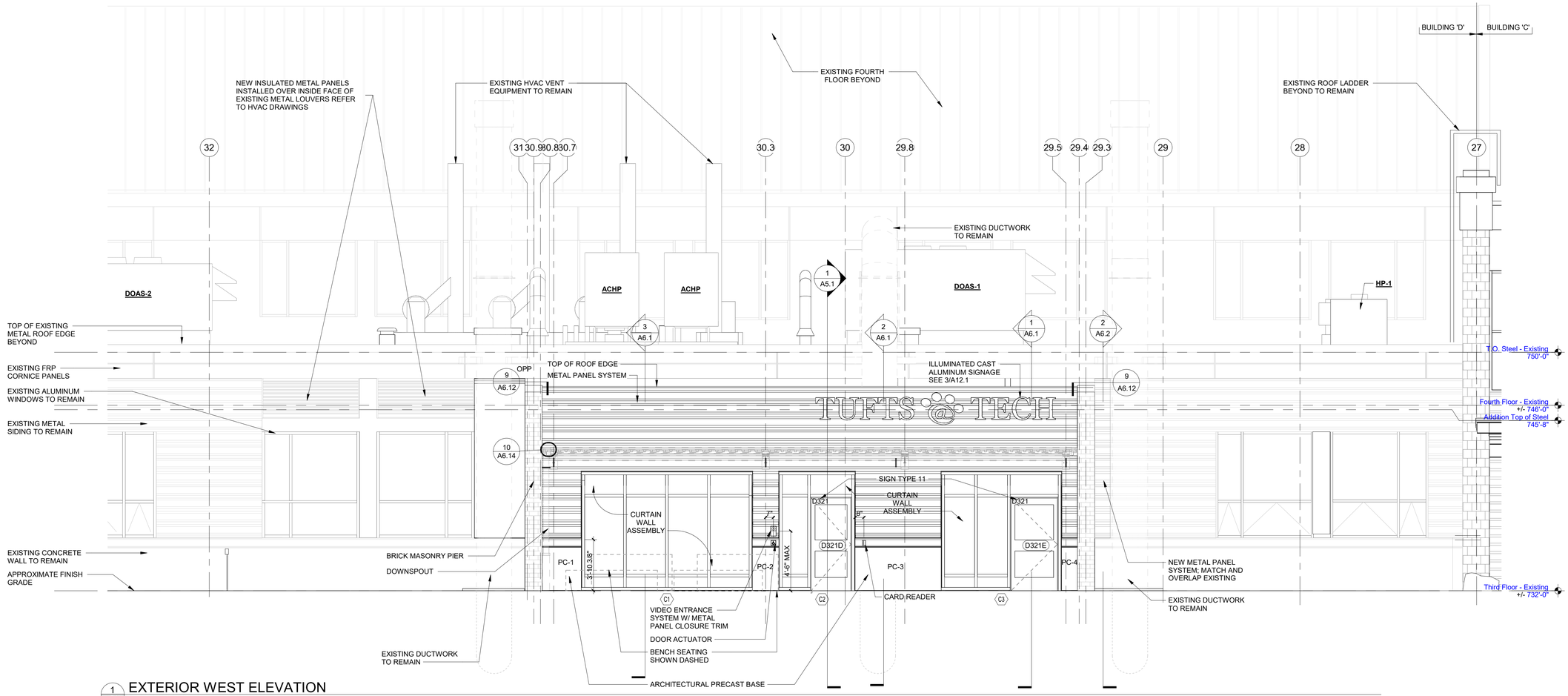
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DWN. BY:	VL
CKD. BY:	RP
DATE:	March 11, 2026

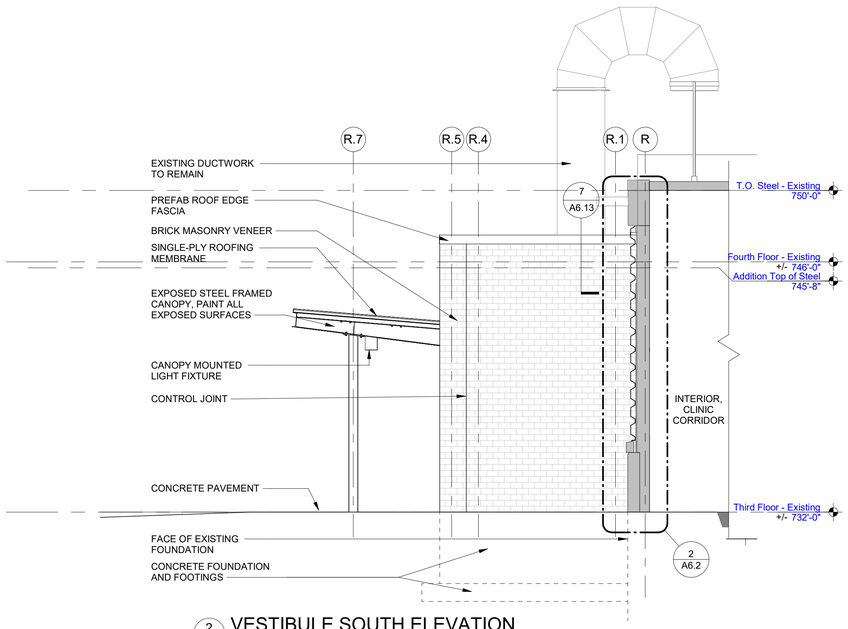
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Project / True North

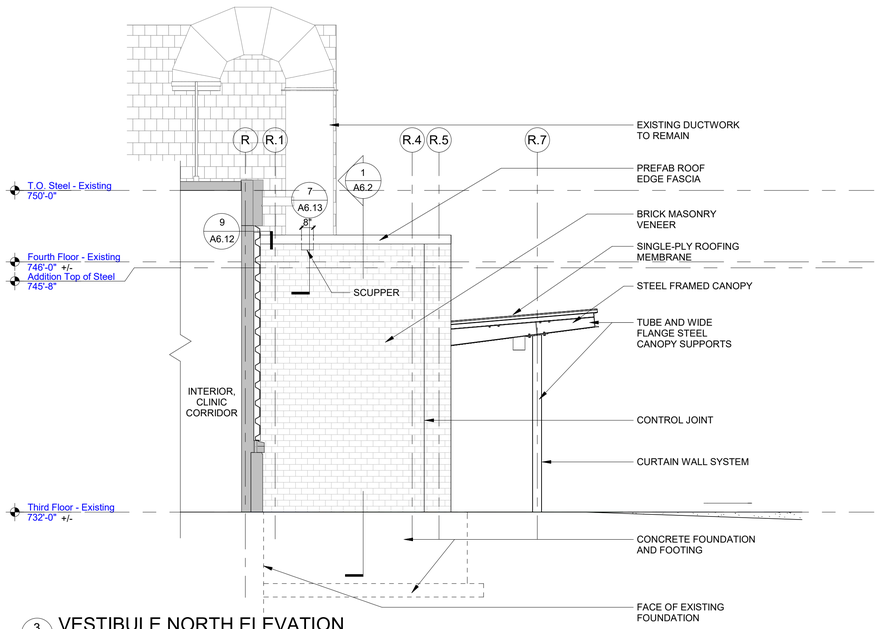
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1 A5.0 EXTERIOR WEST ELEVATION
Scale: 1/4" = 1'-0"



2 A5.0 VESTIBULE SOUTH ELEVATION
Scale: 1/4" = 1'-0"



3 A5.0 VESTIBULE NORTH ELEVATION
Scale: 1/4" = 1'-0"

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PROJECT

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Final Bid Package

Tufts Vet Tech Clinic Renovation

Worcester Technical High School
1 Officer Manny Familia Way, Worcester, MA 01605

DRAWING TITLE

Exterior Elevations

KEY PLAN

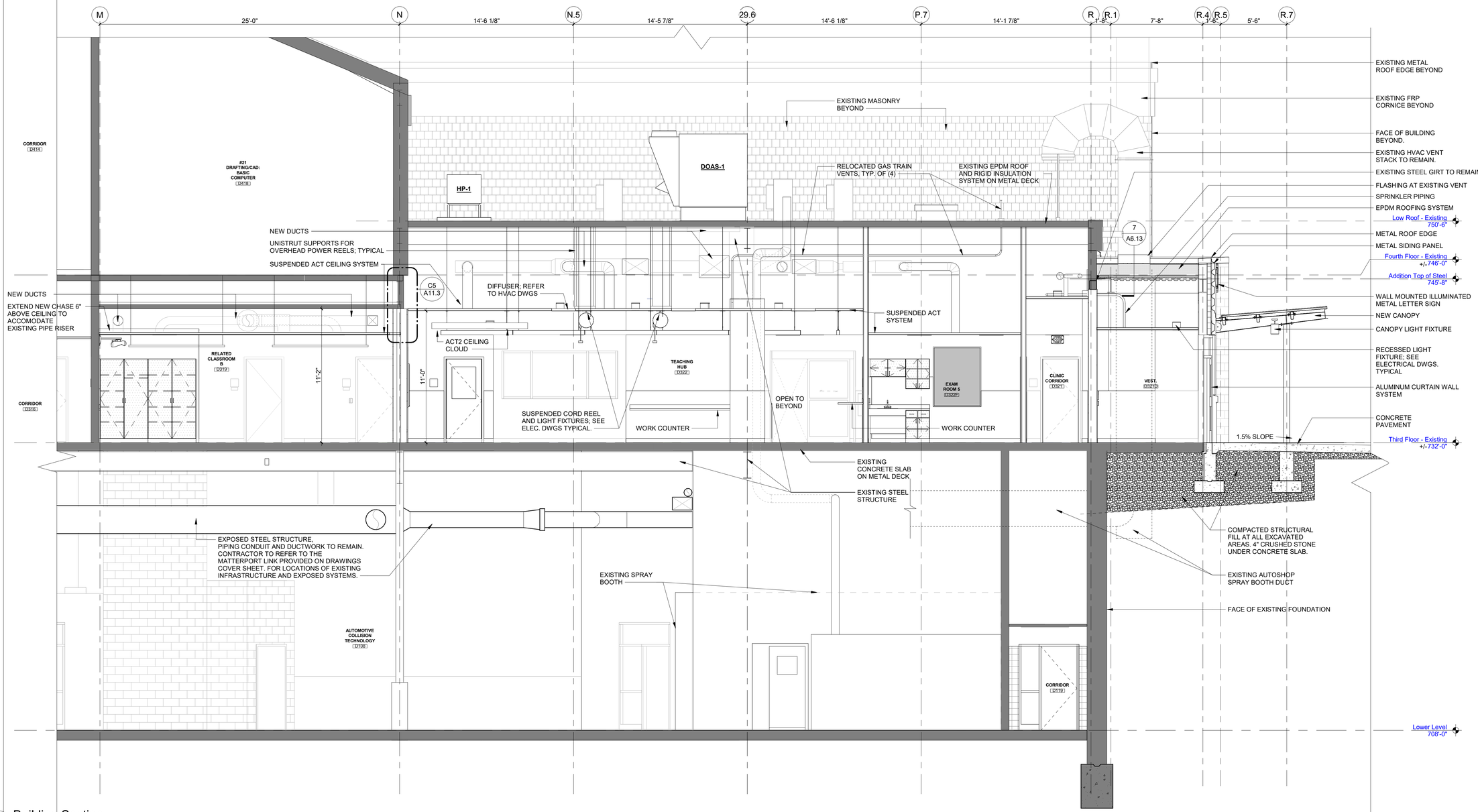
REVISIONS

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SCALE:	1/4" = 1'-0"
DWN. BY:	VL
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DATE:	March 11, 2026

A5.0

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1 A5.1 **Building Section**
Scale 1/4" = 1'-0"

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DRAWING TITLE

Building Section

KEY PLAN

REVISIONS

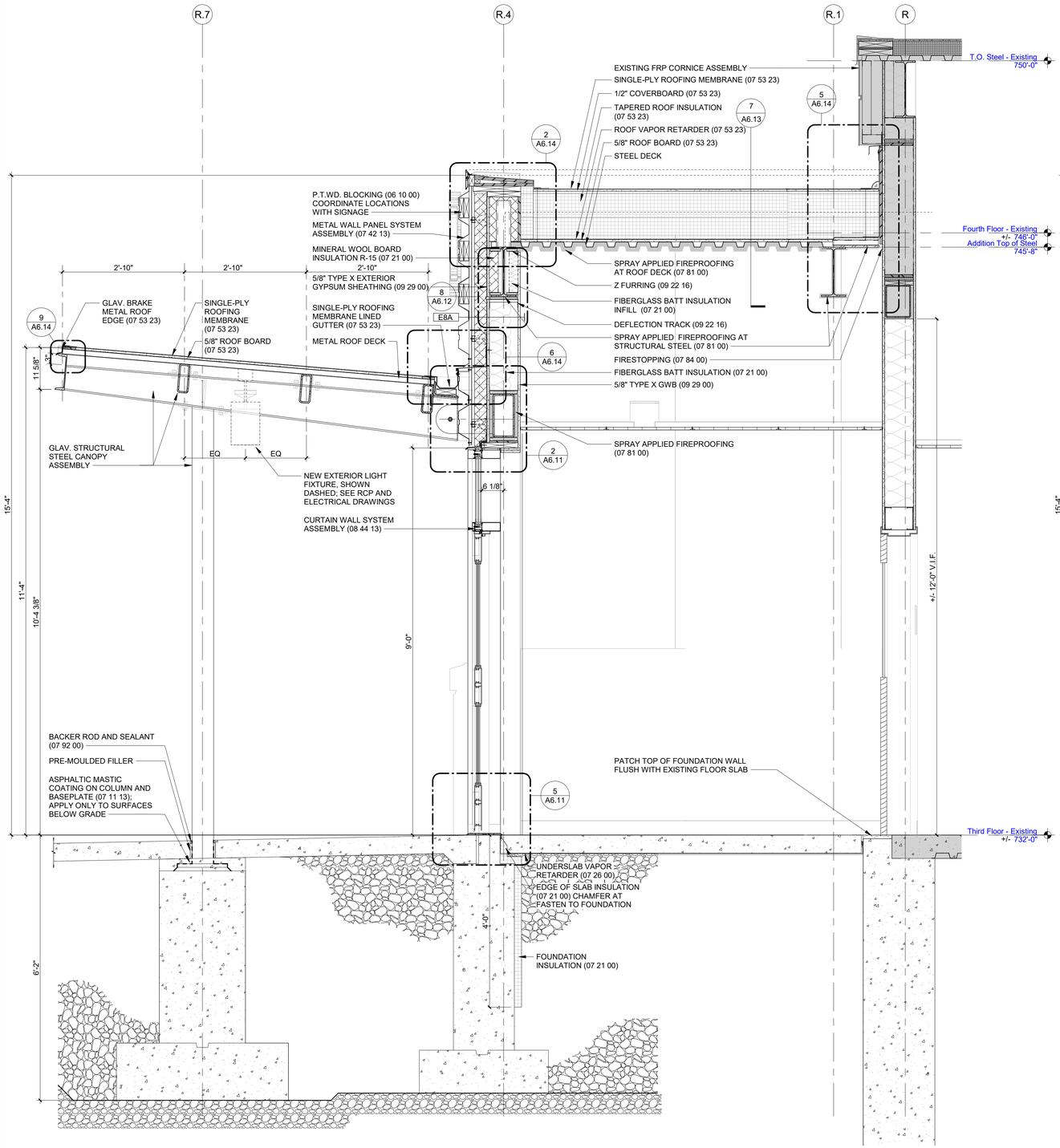
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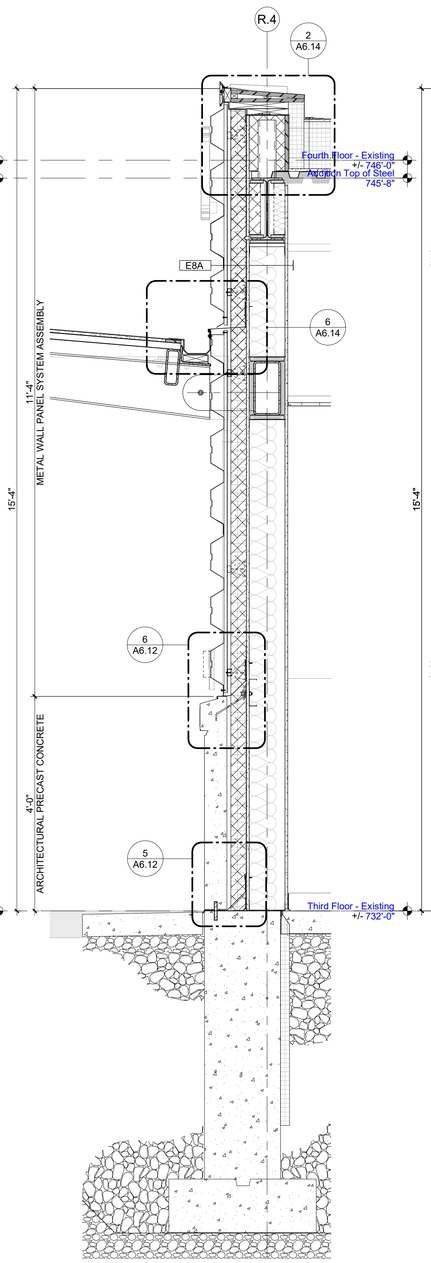
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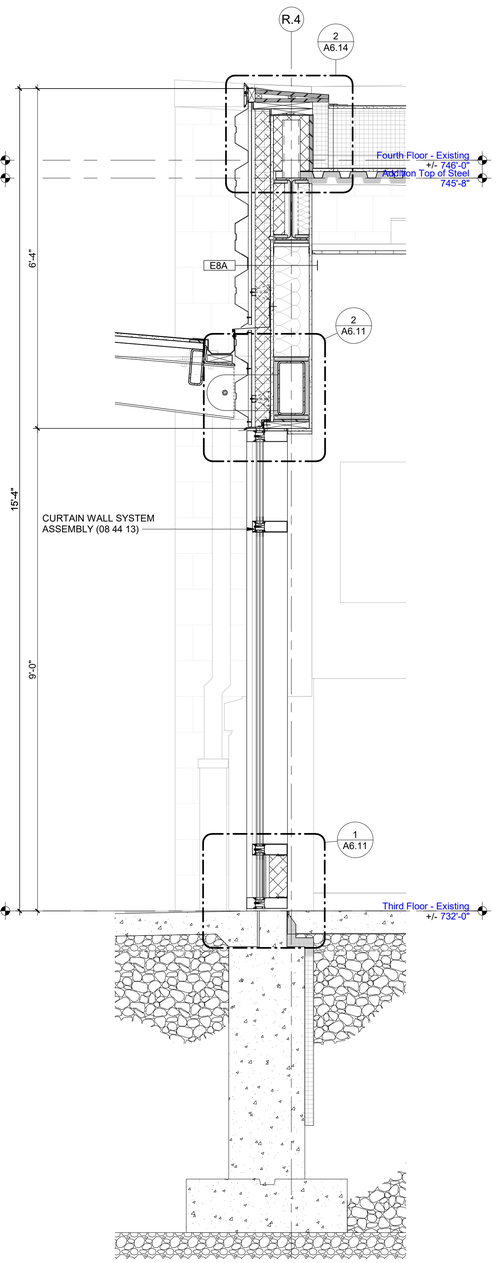
METAL PANEL WALL ASSEMBLY BASIS OF DESIGN:
*APPLIES TO NEW CONSTRUCTION AT WEST WALL
1. CENTRIA MR3-36 0.050" ALUMINUM PANELS; EXPOSED FASTENERS
2. R-15 MIN. (3 1/2") MINERAL WOOL INSULATION
3. VAPOR PERMEABLE AIR BARRIER
4. 5/8" EXTERIOR GYPSUM SHEATHING
5. 6" STEEL STUD FRAMING
6. R-19.5 BATT INSULATION
7. ONE LAYER 5/8" TYPE X GYPSUM WALLBOARD



1 A6.1 Vestibule Curtain Wall Section
Scale 3/4" = 1'-0"



2 A6.1 Vestiule Wall Section
Scale 3/4" = 1'-0"



3 A6.1 Section at Curtain Wall
Scale 3/4" = 1'-0"

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DRAWING TITLE

Wall Sections

KEY PLAN

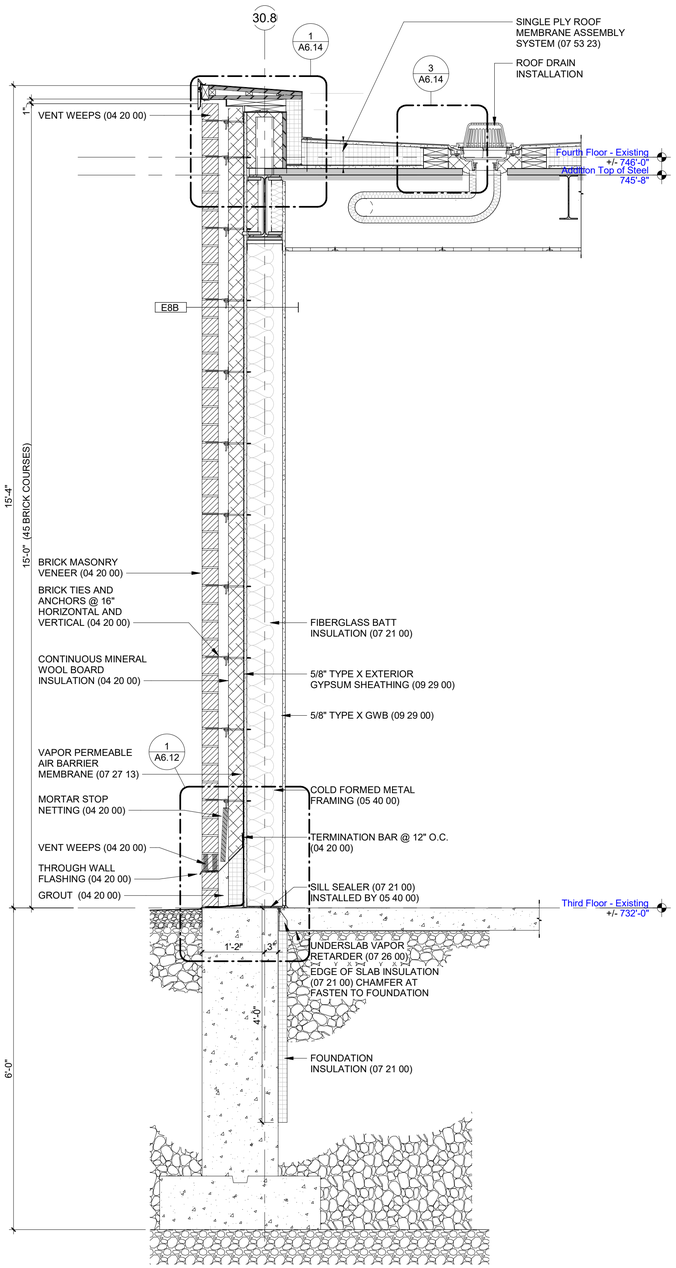
REVISIONS

No.	Description	Date

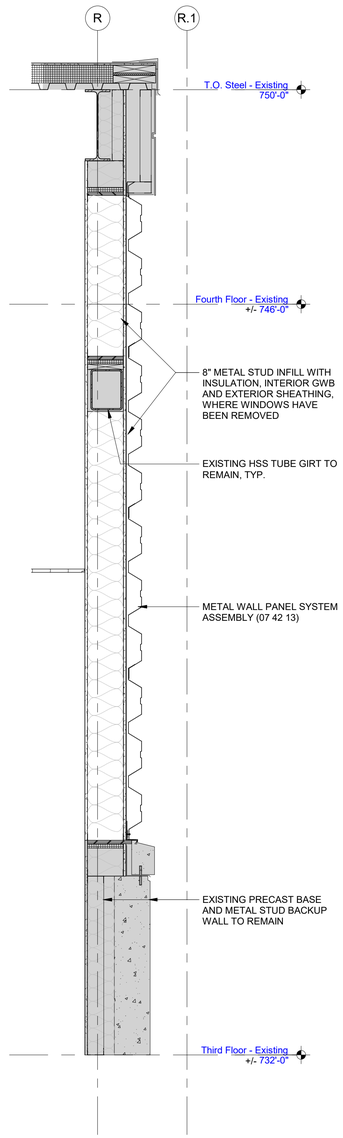
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SCALE:	3/4" = 1'-0"
DWN. BY:	AD
CKD. BY:	RP
DATE:	March 11, 2026

A6.1

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1 A6.2 Vestibule Wall Section
Scale 3/4" = 1'-0"



2 A6.2 Section - Metal Panel Sysem Infill
Scale: 3/4" = 1'-0"

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DRAWING TITLE

Wall Sections

KEY PLAN

REVISIONS

No.	Description	Date

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SCALE:	3/4" = 1'-0"
DWN. BY:	AD
CKD. BY:	RP
DATE:	March 11, 2026

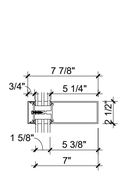
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TYPICAL CURTAIN WALL MULLION DETAILS

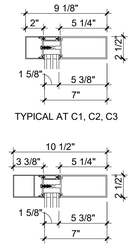
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EXTERIOR



TYPICAL AT ALL EXTERIOR CURTAIN WALLS

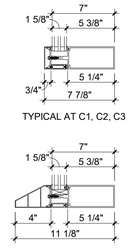
INTERMEDIATE MULLIONS



TYPICAL AT C1, C2, C3

TYPICAL AT C4

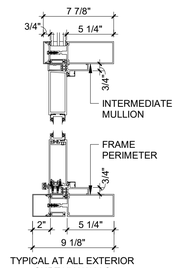
PERIMETER FRAME HEADS AND JAMBS



TYPICAL AT C1, C2, C3

TYPICAL AT C4

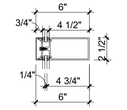
SILLS



TYPICAL AT ALL EXTERIOR CURTAIN WALLS

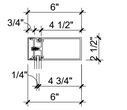
DOOR HEADS AND JAMBS

INTERIOR



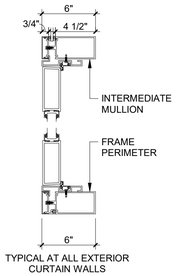
TYPICAL AT ALL INTERIOR CURTAIN WALLS

INTERMEDIATE MULLIONS



TYPICAL AT ALL INTERIOR CURTAIN WALLS

PERIMETER FRAME HEADS, JAMBS & SILLS



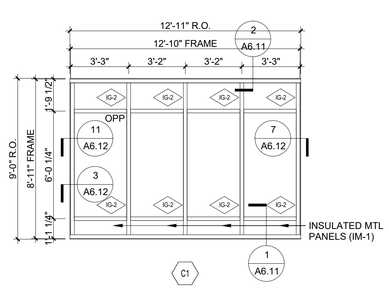
TYPICAL AT ALL EXTERIOR CURTAIN WALLS

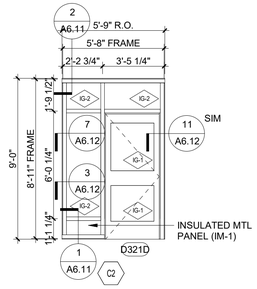
DOOR HEADS AND JAMBS

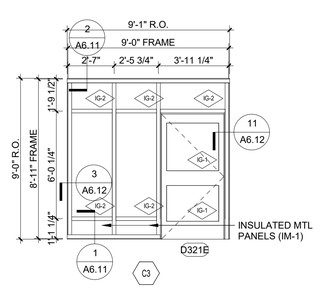
CURTAIN WALL TYPES

SCALE: 1/4" = 1'-0" U.O.N.

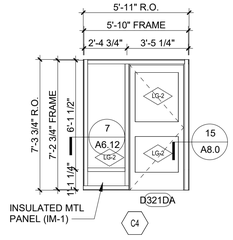
EXTERIOR

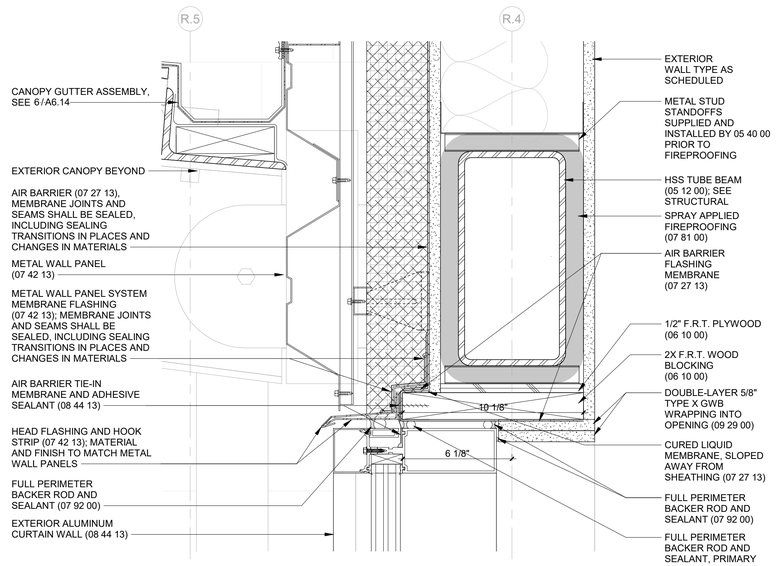




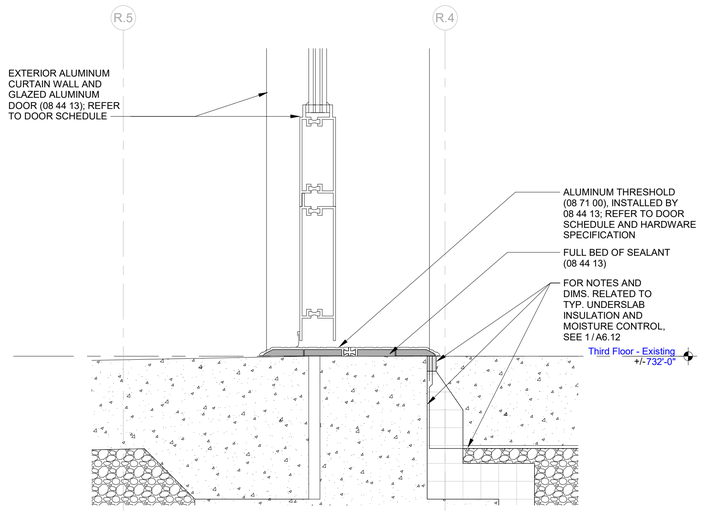


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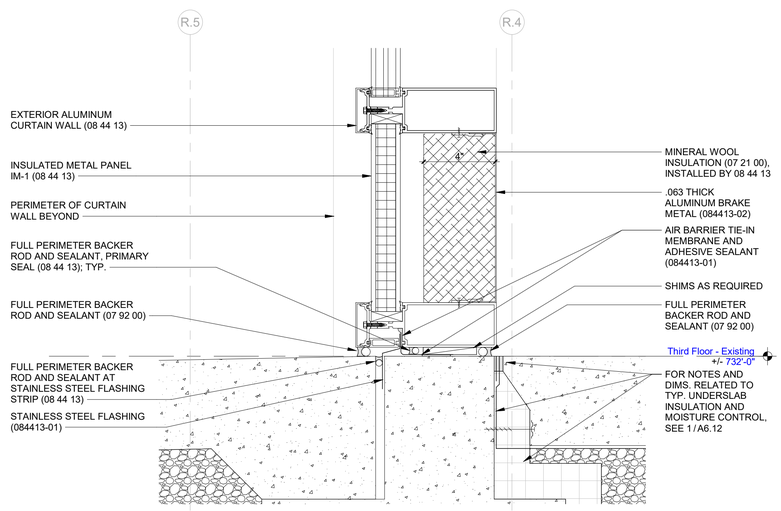




2 / A6.11 Curtain Wall Head at Canopy
Scale: 3" = 1'-0"



5 / A6.11 Curtain Wall Threshold
Scale 3" = 1'-0"



1 / A6.11 Typical Curtain Wall Sill
Scale: 3" = 1'-0"

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DRAWING TITLE

Curtain Wall Types & Details

KEY PLAN

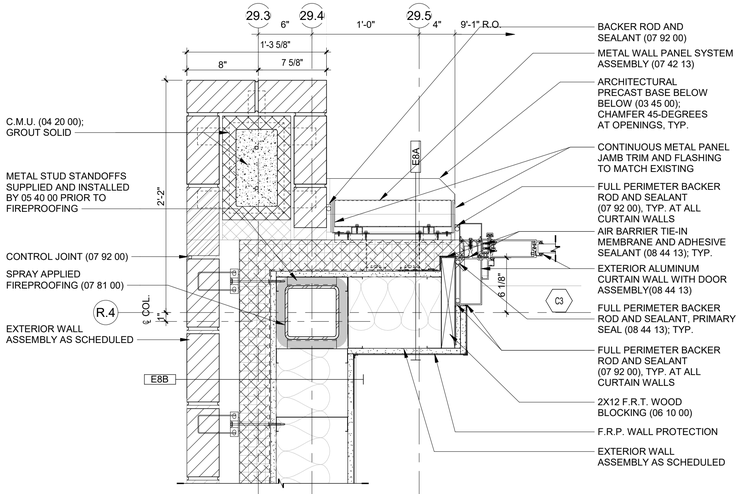
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No.	Description	Date

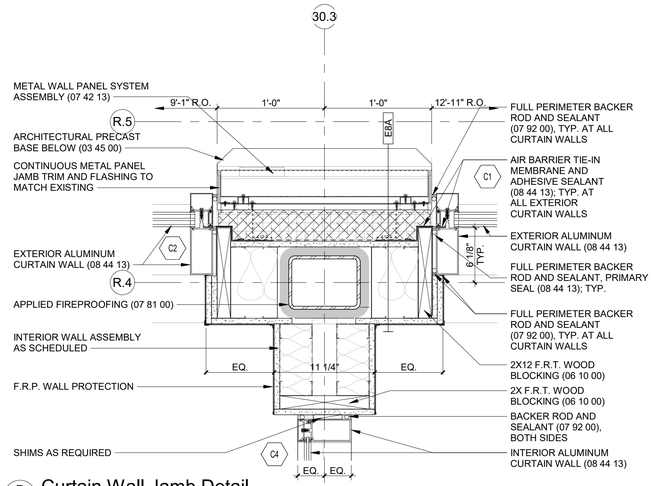
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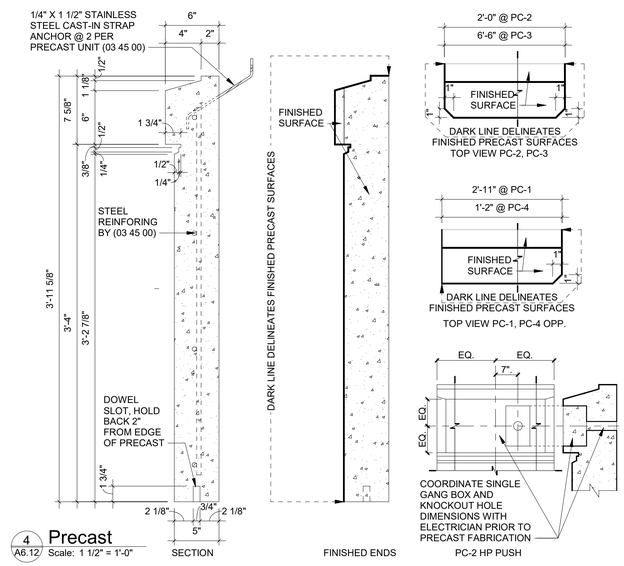
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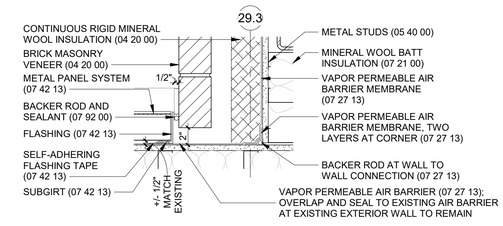
11 A6.12 **Enlarged Plan Detail at Masonry Wing Wall**
Scale: 1 1/2" = 1'-0"



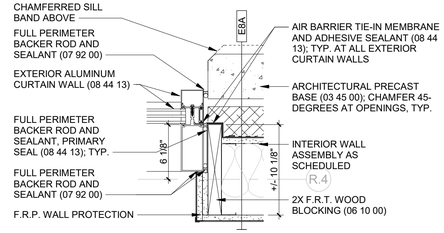
7 A6.12 **Curtain Wall Jamb Detail**
Scale: 1 1/2" = 1'-0"



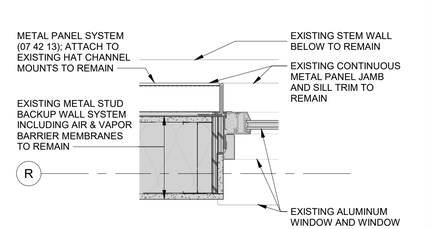
4 A6.12 **Precast**
Scale: 1 1/2" = 1'-0"



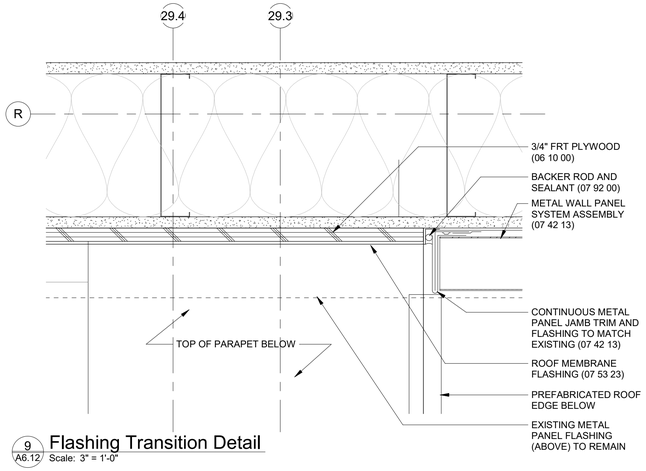
10 A6.12 **Exterior Corner Interface Joint at Masonry**
Scale: 1 1/2" = 1'-0"



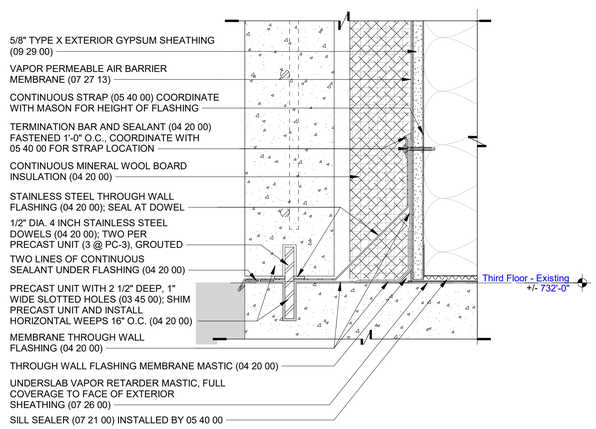
3 A6.12 **Curtain Wall Jamb at Concrete Base**
Scale: 1 1/2" = 1'-0"



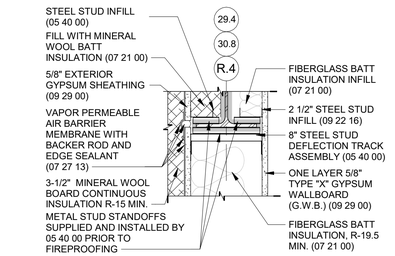
2 A6.12 **Metal Cladding System at Existing Window**
Scale: 1 1/2" = 1'-0"



9 A6.12 **Flashing Transition Detail**
Scale: 3" = 1'-0"

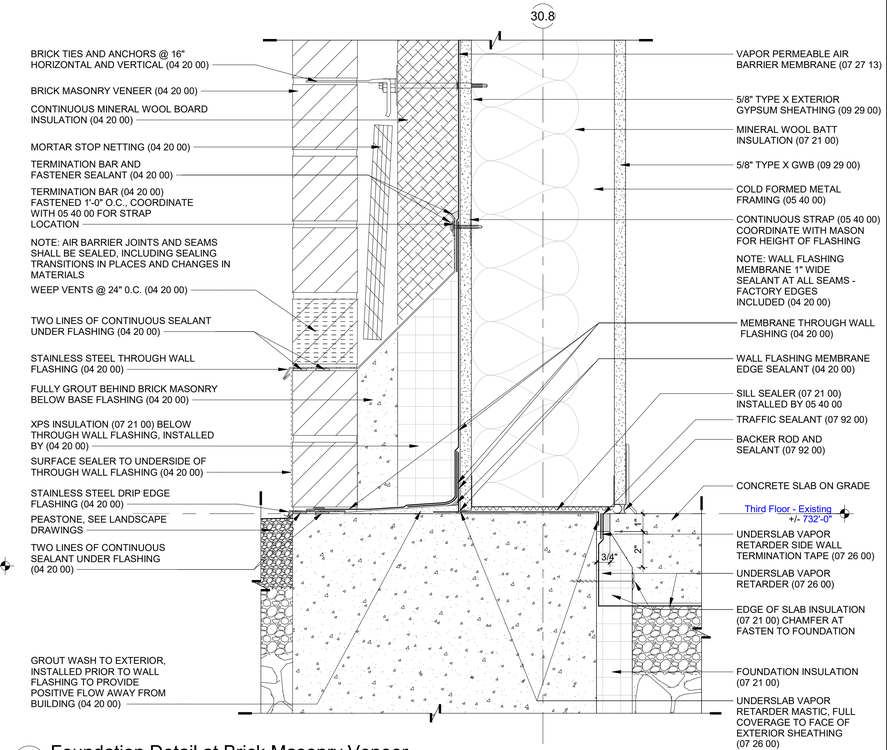


6 A6.12 **Metal Wall Panel Base to Precast**
Scale 3" = 1'-0"



8 A6.12 **Deflection Track**
Scale 1 1/2" = 1'-0"

5 A6.12 **Precast Base Detail**
Scale 3" = 1'-0"



1 A6.12 **Foundation Detail at Brick Masonry Veneer**
Scale: 3" = 1'-0"

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DRAWING TITLE

Exterior Details

KEY PLAN

REVISIONS

No.	Description	Date

FILE:

JOB NO: 2417

SCALE: As indicated

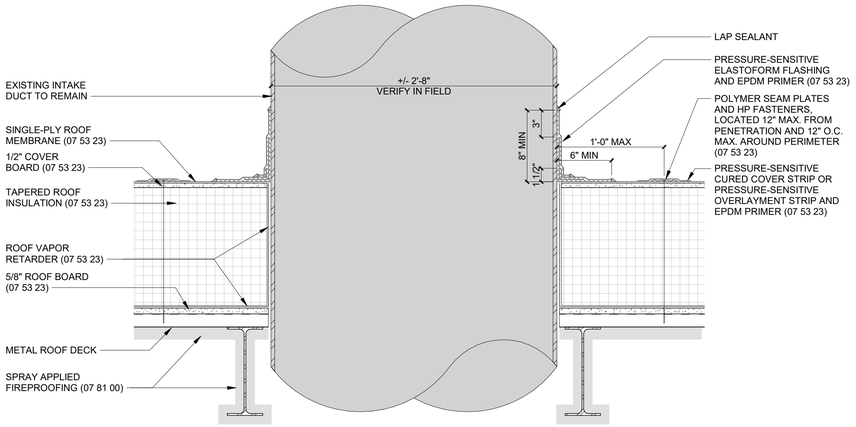
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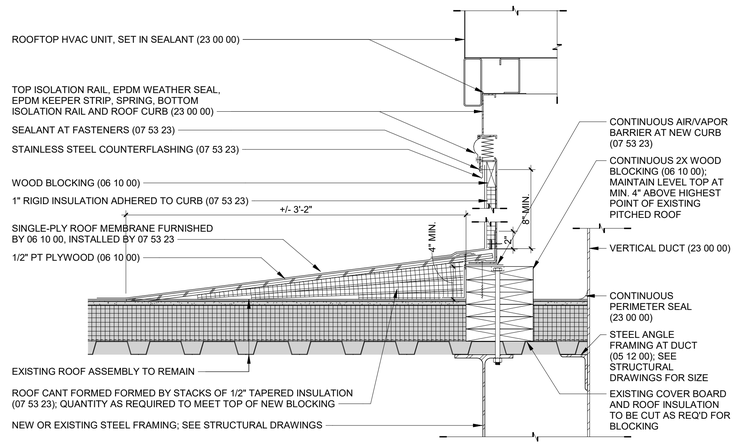
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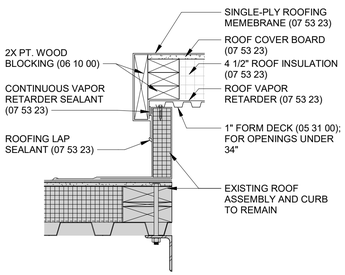
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7 A6.13 **New Roof Detail at Existing Duct**
Scale: 1 1/2" = 1'-0"



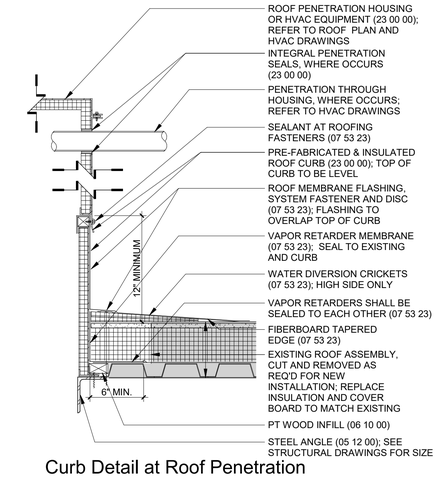
6 A6.13 **Curb Detail at RTU**
Scale: 1 1/2" = 1'-0"



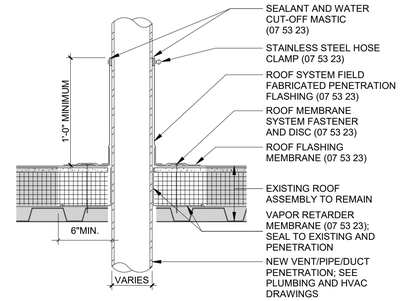
5 A6.13 **Roof Curb Capping Detail**
Scale: 1 1/2" = 1'-0"

4 A6.13 **Detail at Gas Train Vent**
Scale: 1 1/2" = 1'-0"

3 A6.13 **Roof Sleeper Detail**
Scale: 1 1/2" = 1'-0"



2 A6.13 **Curb Detail at Roof Penetration Housing/HVAC Equipment**
Scale: 1 1/2" = 1'-0"



1 A6.13 **Detail at New Roof Vent**
Scale: 1 1/2" = 1'-0"

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Roof Details

KEY PLAN

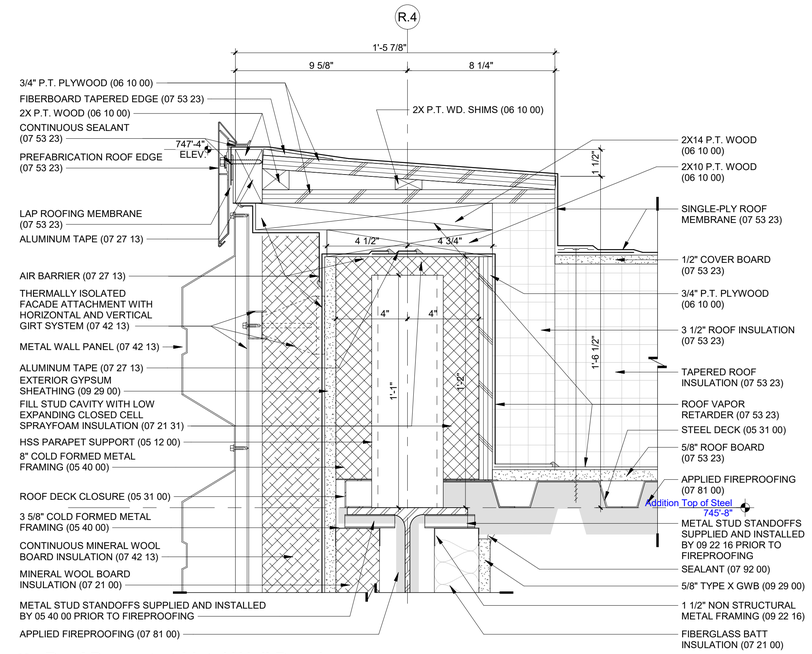
REVISIONS

No.	Description	Date

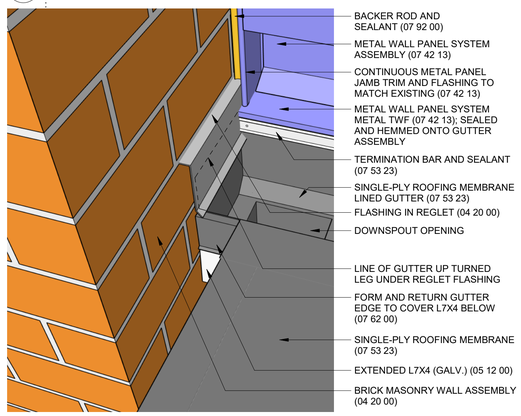
FILE:	
JOB NO:	2417
SCALE:	1 1/2" = 1'-0"
DWN. BY:	AD
CKD. BY:	RP
DATE:	March 11, 2026

A6.13

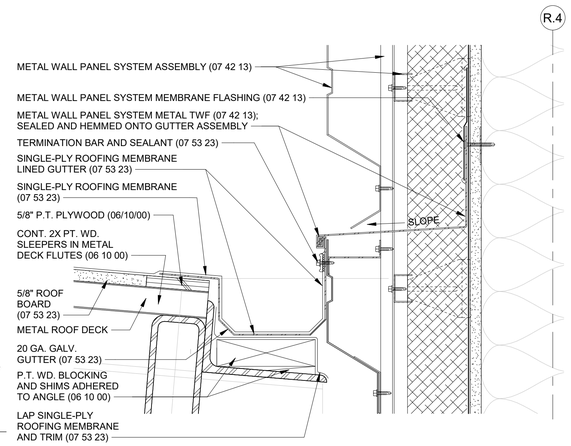
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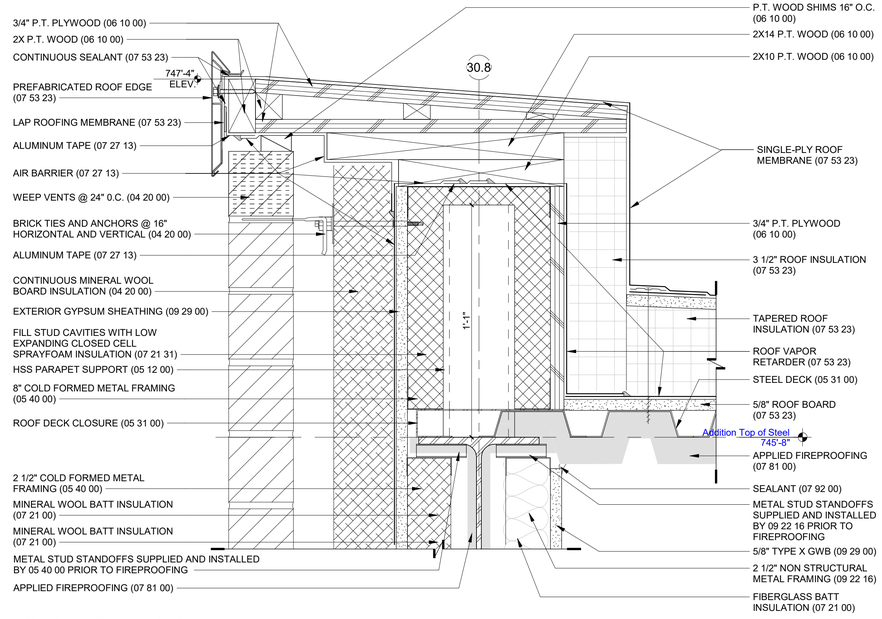
2 Roof Parapet at Metal Wall Panels
A6.14 Scale 3" = 1'-0"



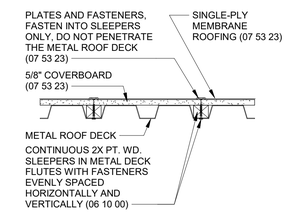
7 Gutter Downspout Connection at Brick Masonry
A6.14 Scale 1 1/2" = 1'-0"



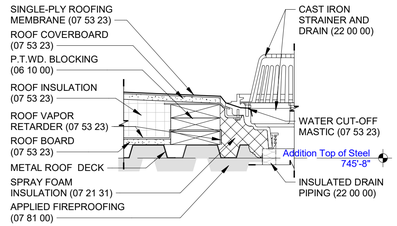
6 Canopy Gutter at Metal Wall Panel
A6.14 Scale 3" = 1'-0"



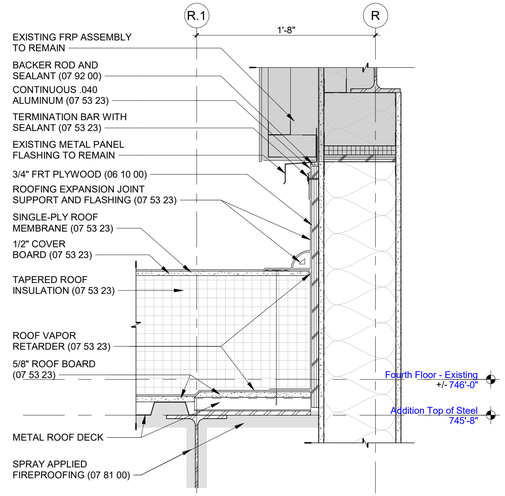
1 Roof Parapet at Brick Masonry
A6.14 Scale: 3" = 1'-0"



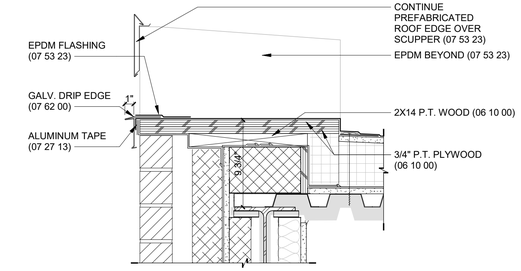
4 Canopy Roof Section
A6.14 Scale 1 1/2" = 1'-0"



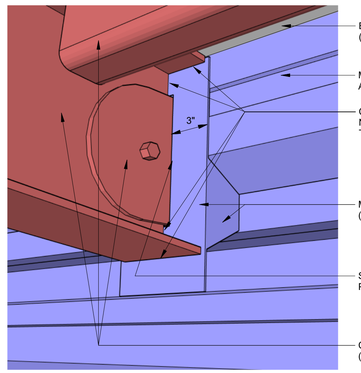
3 New Roof Drain Detail
A6.14 Scale: 1 1/2" = 1'-0"



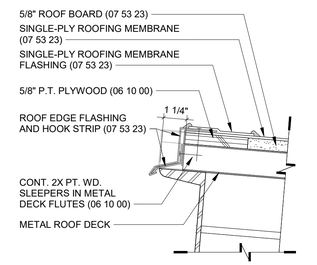
5 Roof Connection to Existing Wall
A6.14 Scale 1 1/2" = 1'-0"



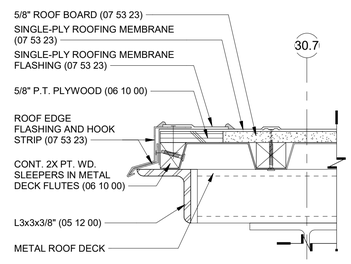
11 Scupper
A6.14 Scale: 1 1/2" = 1'-0"



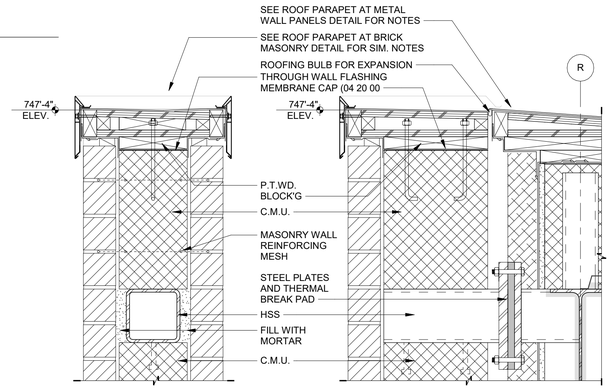
8 Canopy to Metal Panel
A6.14 Scale: 1 1/2" = 1'-0"



9 Canopy Edge Detail at Channel
A6.14 Scale: 3" = 1'-0"



10 Canopy Edge Detail at Angle
A6.14 Scale: 3" = 1'-0"



12 Pier Roofing
A6.14 Scale 1 1/2" = 1'-0"

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108 Grove Street, Suite 300
Worcester MA 01605
508.752.2831
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PROJECT

TUFTS at TECH Community Veterinary Clinic

Final Bid Package

Tufts Vet Tech Clinic Renovation

Worcester Technical High School
1 Officer Manny Familia Way, Worcester, MA 01605

DRAWING TITLE

Roof & Canopy Details

KEY PLAN

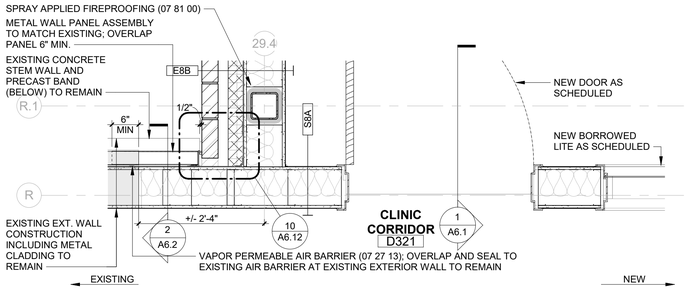
REVISIONS

No.	Description	Date

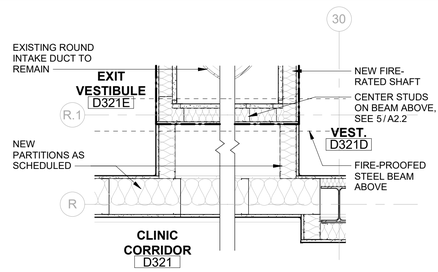
FILE:	
JOB NO:	2417
SCALE:	As indicated
DWN. BY:	MO
CKD. BY:	RP
DATE:	March 11, 2026

A6.14

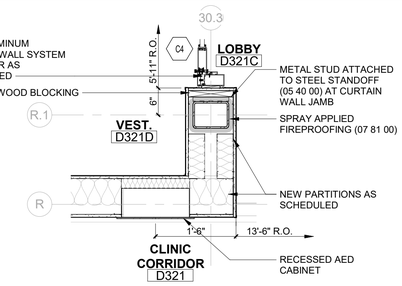
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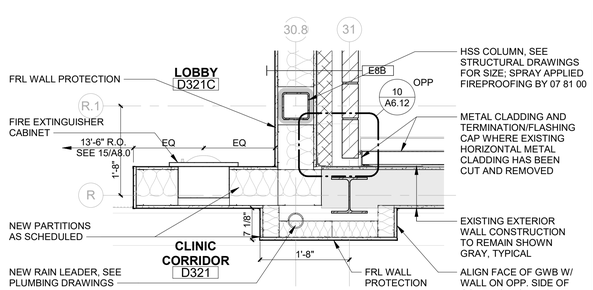
17 A8.0 Enlarged Plan at Exit Vestibule
Scale 3/4" = 1'-0"



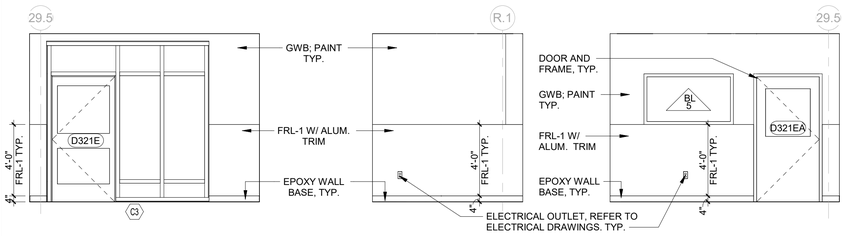
16 A8.0 Enlarged Plan at Existing Intake
Scale: 3/4" = 1'-0"



15 A8.0 Enlarged Plan at Vestibule/Lobby
Scale: 3/4" = 1'-0"



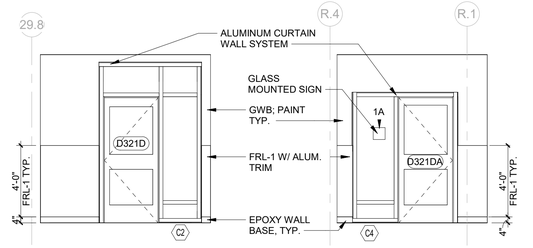
14 A8.0 Enlarged Plan at Lobby
Scale: 3/4" = 1'-0"



13 A8.0 EXIT VEST. D321E - WEST
Scale: 1/4" = 1'-0"

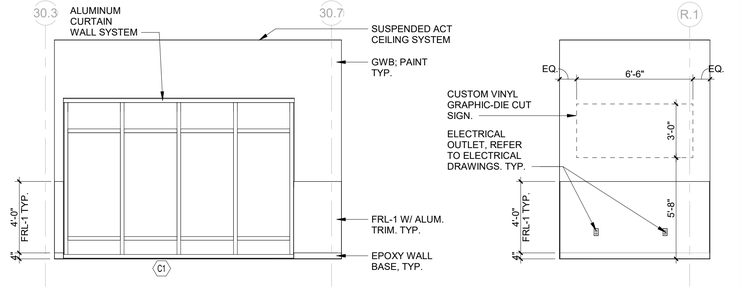
12 A8.0 EXIT VEST. D321E - NORTH
Scale: 1/4" = 1'-0"

11 A8.0 EXIT VEST. D321E - EAST
Scale: 1/4" = 1'-0"



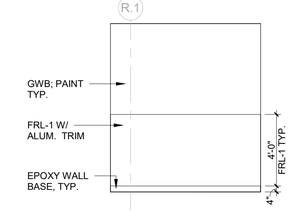
9 A8.0 VESTIBULE D321D - WEST
Scale: 1/4" = 1'-0"

8 A8.0 VESTIBULE D321D - NORTH
Scale: 1/4" = 1'-0"

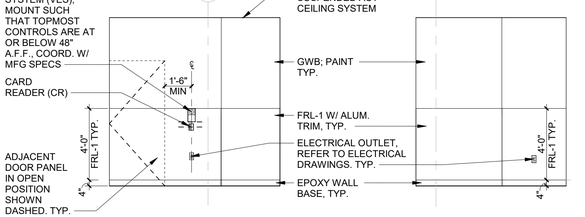


5 A8.0 LOBBY D321C - WEST
Scale: 1/4" = 1'-0"

4 A8.0 LOBBY D321C - NORTH
Scale: 1/4" = 1'-0"

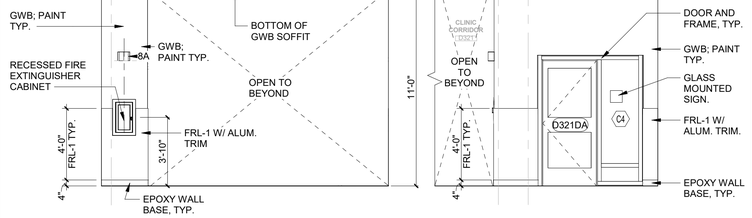


10 A8.0 EXIT VEST. D321E - SOUTH
Scale: 1/4" = 1'-0"



7 A8.0 VESTIBULE D321D - EAST
Scale: 1/4" = 1'-0"

6 A8.0 VESTIBULE D321D - SOUTH
Scale: 1/4" = 1'-0"



3 A8.0 LOBBY D321C - EAST
Scale: 1/4" = 1'-0"

2 A8.0 LOBBY D321C - SOUTH
Scale: 1/4" = 1'-0"

INTERIOR ELEVATIONS GENERAL NOTES:

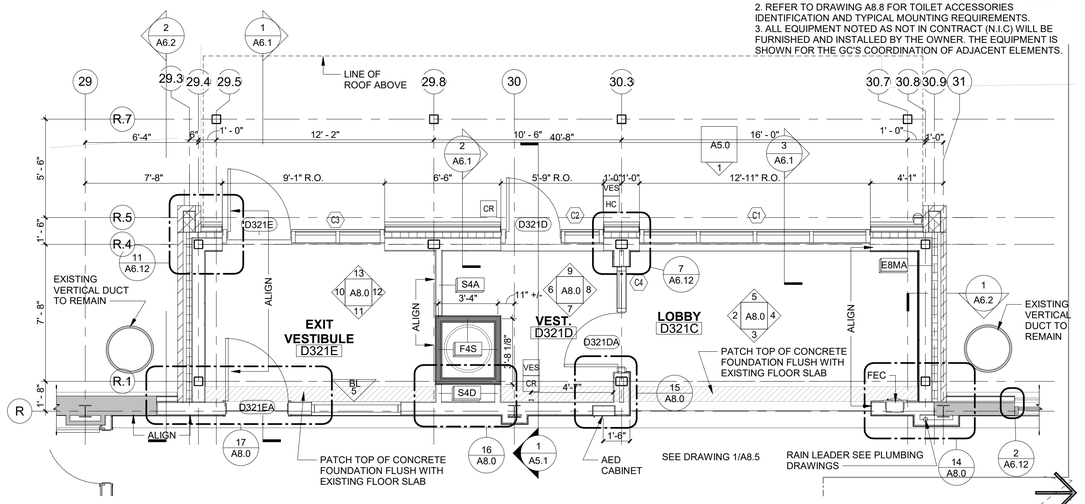
1. REFER TO REFLECTED CEILING PLAN A4.1 FOR ALL HEIGHTS.
2. REFER TO DOOR SCHEDULE A10.1 FOR ALL DOOR AND FRAME MATERIALS AND SIZES.
3. REFER TO SIGNAGE SCHEDULE A12.1 FOR ALL SIGN TYPE AND MOUNTING HEIGHTS.
4. PROVIDE CONTROL JOINTS IN GWB SURFACE AT MORE THAN 30'-0" FROM CORNERS OR OTHER BREAKS IN WALLS, UNLESS OTHERWISE NOTED
5. REFER TO FINISHES DETAILS A11.3 FOR ALL TRANSITION REQUIREMENTS BETWEEN MATERIALS.
6. PROVIDE LEVEL-5 GWB FINISH WHERE FRL AND FRP WALL PROTECTION PANELS ARE INDICATED.



V1 A8.0 EXTERIOR AXONOMETRIC
SCALE: N.T.S.

GENERAL NOTES:

1. COORDINATE ALL NEW FLOOR PENETRATIONS WITH STRUCTURE AND CEILING MOUNTED MEP EQUIPMENT AT THE FLOOR BELOW
2. REFER TO DRAWING A8.8 FOR TOILET ACCESSORIES IDENTIFICATION AND TYPICAL MOUNTING REQUIREMENTS.
3. ALL EQUIPMENT NOTED AS NOT IN CONTRACT (N.I.C) WILL BE FURNISHED AND INSTALLED BY THE OWNER. THE EQUIPMENT IS SHOWN FOR THE GC'S COORDINATION OF ADJACENT ELEMENTS.



1 A8.0 LOBBY AND VESTIBULE PLAN
Scale: 1/4" = 1'-0"

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DRAWING TITLE

Enlarged Plan & Elevations @ Vestibule & Lobby

KEY PLAN

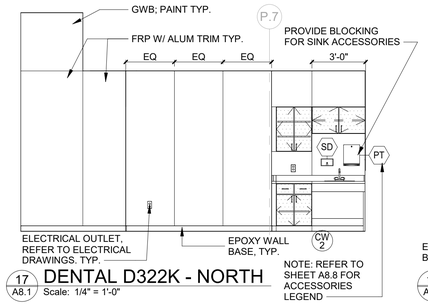
REVISIONS

No.	Description	Date

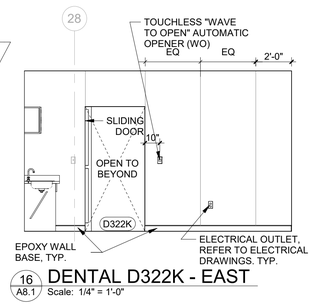
FILE:
JOB NO: 2417
SCALE: As indicated
DWN. BY: LL
CKD. BY: RP
DATE: March 11, 2026

A8.0

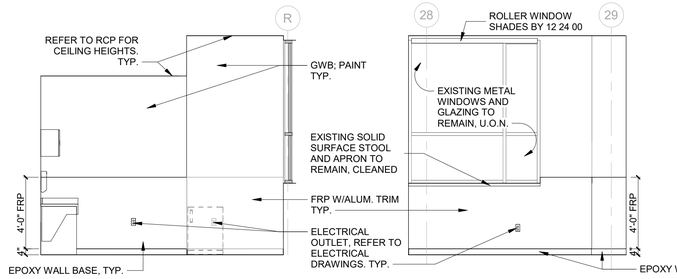
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17 A8.1 DENTAL D322K - NORTH
Scale: 1/4" = 1'-0"

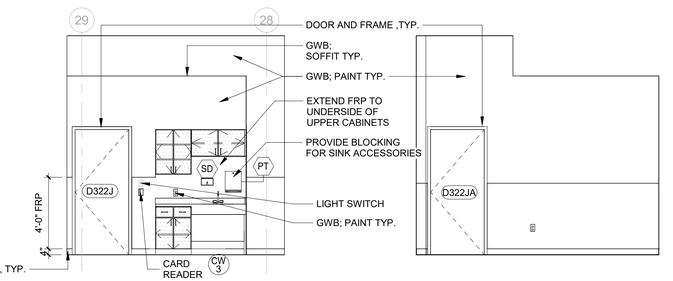


16 A8.1 DENTAL D322K - EAST
Scale: 1/4" = 1'-0"



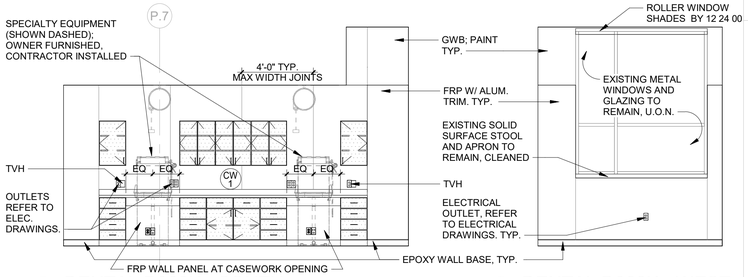
21 A8.1 BEREAVEMENT D322J - SOUTH
Scale: 1/4" = 1'-0"

20 A8.1 BEREAVEMENT D322J - WEST
Scale: 1/4" = 1'-0"



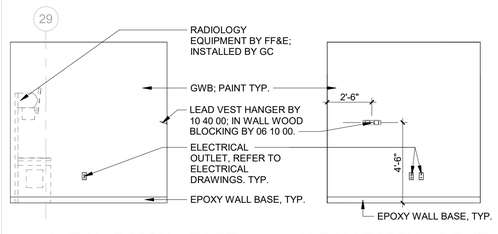
19 A8.1 BEREAVEMENT D322J - EAST
Scale: 1/4" = 1'-0"

18 A8.1 BEREAVEMENT D322J - NORTH
Scale: 1/4" = 1'-0"



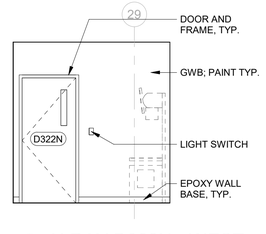
15 A8.1 DENTAL D322K - SOUTH
Scale: 1/4" = 1'-0"

14 A8.1 DENTAL D322K - WEST
Scale: 1/4" = 1'-0"

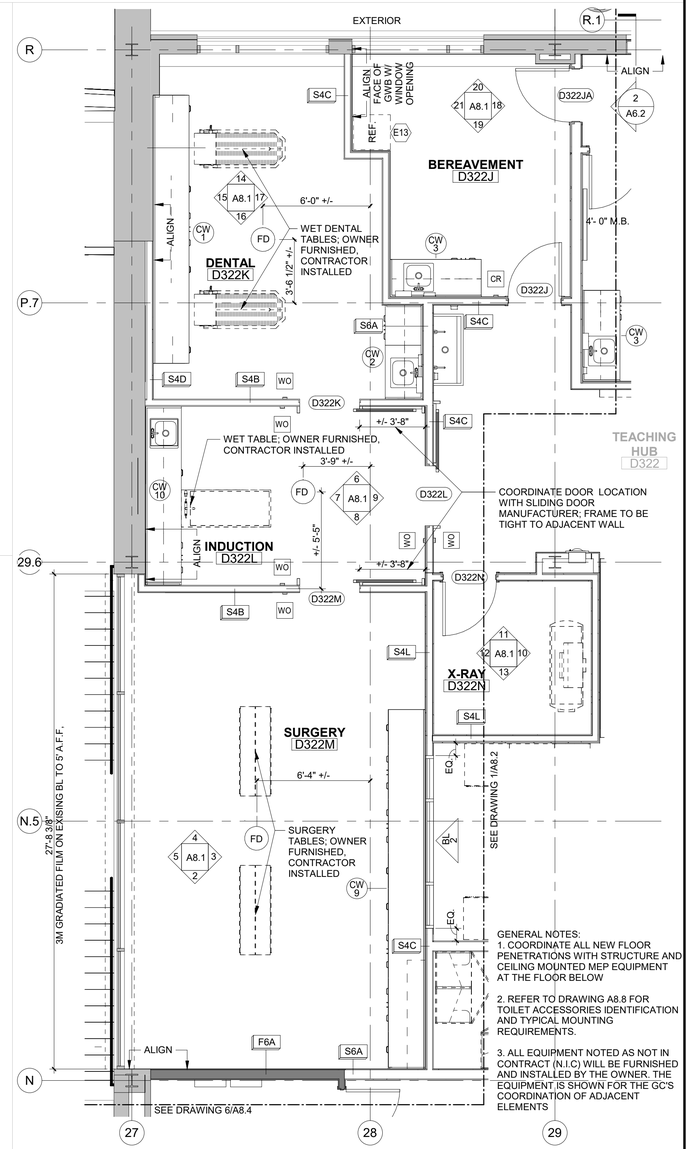


13 A8.1 X-RAY D322N - EAST
Scale 1/4" = 1'-0"

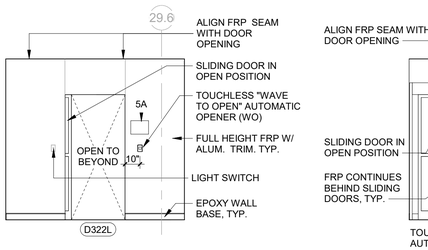
12 A8.1 X-RAY D322N - SOUTH
Scale 1/4" = 1'-0"



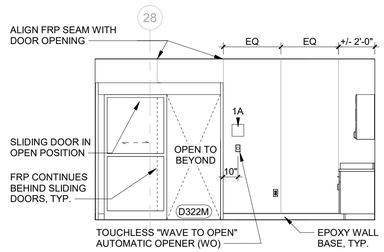
11 A8.1 X-RAY D322N - WEST
Scale: 1/4" = 1'-0"



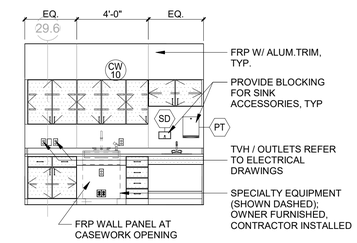
1 A8.1 DENTAL, INDUCTION, SUGERY, AND X-RAY - ENLARGED PLAN
Scale: 1/4" = 1'-0"



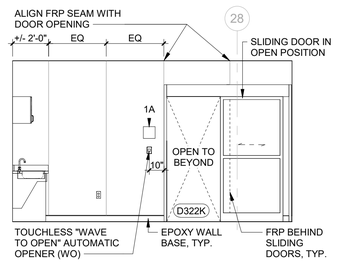
9 A8.1 INDUCTION D322L - NORTH
Scale: 1/4" = 1'-0"



8 A8.1 INDUCTION D322L - WEST
Scale: 1/4" = 1'-0"



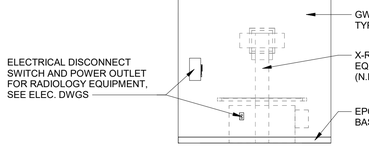
7 A8.1 INDUCTION D322L - SOUTH
Scale: 1/4" = 1'-0"



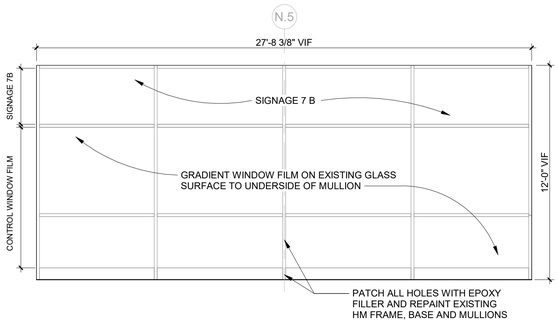
6 A8.1 INDUCTION D322L - EAST
Scale: 1/4" = 1'-0"

INTERIOR ELEVATIONS GENERAL NOTES:

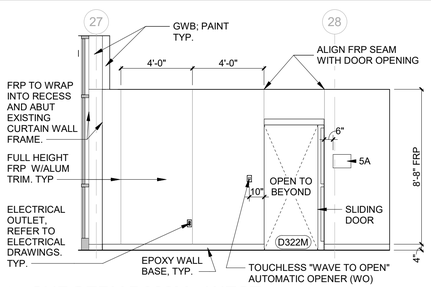
1. REFER TO REFLECTED CEILING PLAN A4.1 FOR ALL HEIGHTS.
2. REFER TO DOOR SCHEDULE A10.1 FOR ALL DOOR AND FRAME MATERIALS AND SIZES.
3. REFER TO SIGNAGE SCHEDULE A12.1 FOR ALL SIGN TYPE AND MOUNTING HEIGHTS.
4. PROVIDE CONTROL JOINTS IN GWB SURFACE AT MORE THAN 30'-0" FROM CORNERS OR OTHER BREAKS IN WALLS, UNLESS OTHERWISE NOTED
5. REFER TO FINISHES DETAILS A11.3 FOR ALL TRANSITION REQUIREMENTS BETWEEN MATERIALS.
6. PROVIDE LEVEL-5 GWB FINISH WHERE FRL AND FRP WALL PROTECTION PANELS ARE INDICATED.



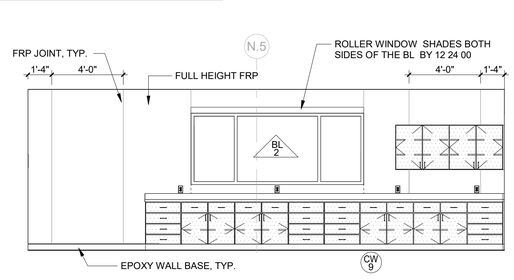
10 A8.1 X-RAY D322N - NORTH
Scale 1/4" = 1'-0"



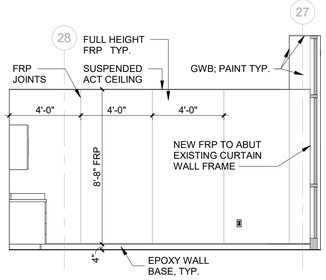
5 A8.1 SURGERY D322M - SOUTH
Scale: 1/4" = 1'-0"



4 A8.1 SURGERY D322M - WEST
Scale: 1/4" = 1'-0"



3 A8.1 SURGERY D322M - NORTH
Scale: 1/4" = 1'-0"



2 A8.1 SURGERY D322M - EAST
Scale: 1/4" = 1'-0"

Project / True North

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LAMOUREUX PAGANO ASSOCIATES|ARCHITECTS
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1 Officer Manny Familia Way, Worcester, MA 01605

DRAWING TITLE

Enlarged Plan & Elevations @ Surgery, Induction, Dental, X-Ray, Bereavement

KEY PLAN

REVISIONS

No.	Description	Date

FILE:	
JOB NO:	2417
SCALE:	1/4" = 1'-0"
DWN. BY:	LL
CKD. BY:	RP
DATE:	March 11, 2026

A8.1

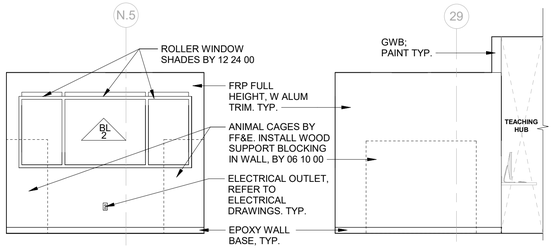
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GENERAL NOTES:

1. COORDINATE ALL NEW FLOOR PENETRATIONS WITH STRUCTURE AND CEILING MOUNTED MEP EQUIPMENT AT THE FLOOR BELOW
2. REFER TO DRAWING A8.8 FOR TOILET ACCESSORIES IDENTIFICATION AND TYPICAL MOUNTING REQUIREMENTS.
3. ALL EQUIPMENT NOTED AS NOT IN CONTRACT (N.I.C) WILL BE FURNISHED AND INSTALLED BY THE OWNER. THE EQUIPMENT IS SHOWN FOR THE GC'S COORDINATION OF ADJACENT ELEMENTS.

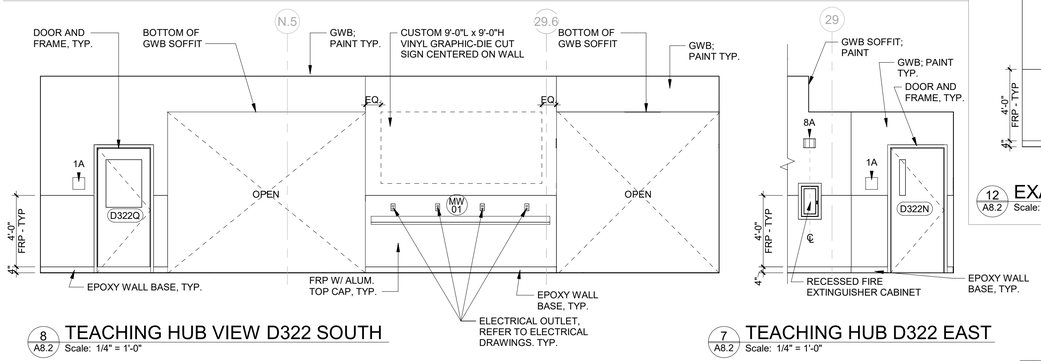
INTERIOR ELEVATIONS GENERAL NOTES:

1. REFER TO REFLECTED CEILING PLAN A4.1 FOR ALL HEIGHTS.
2. REFER TO DOOR SCHEDULE A10.1 FOR ALL DOOR AND FRAME MATERIALS AND SIZES.
3. REFER TO SIGNAGE SCHEDULE A12.1 FOR ALL SIGN TYPE AND MOUNTING HEIGHTS.
4. PROVIDE CONTROL JOINTS IN GWB SURFACE AT MORE THAN 30'-0" FROM CORNERS OR OTHER BREAKS IN WALLS, UNLESS OTHERWISE NOTED
5. REFER TO FINISHES DETAILS A11.3 FOR ALL TRANSITION REQUIREMENTS BETWEEN MATERIALS.
6. PROVIDE LEVEL-5 GWB FINISH WHERE FRL AND FRP WALL PROTECTION PANELS ARE INDICATED.



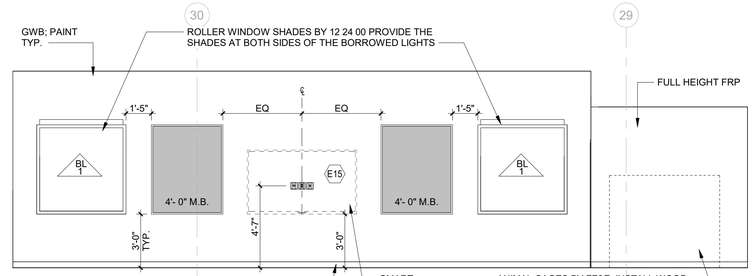
13 A8.2 DOG RECOVERY D322 SOUTH
Scale: 1/4" = 1'-0"

14 A8.2 DOG RECOVEY D322 WEST
Scale: 1/4" = 1'-0"
EAST ELEVATION IS SIMILAR

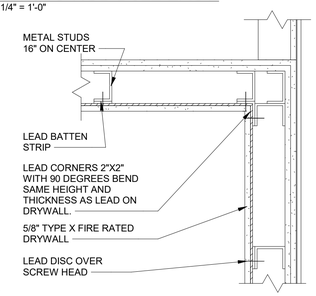


8 A8.2 TEACHING HUB VIEW D322 SOUTH
Scale: 1/4" = 1'-0"

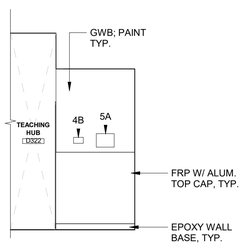
7 A8.2 TEACHING HUB D322 EAST
Scale: 1/4" = 1'-0"



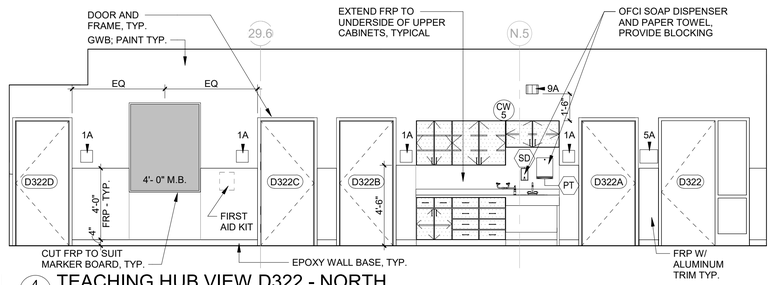
6 A8.2 TEACHING HUB D322 - EAST
Scale: 1/4" = 1'-0"



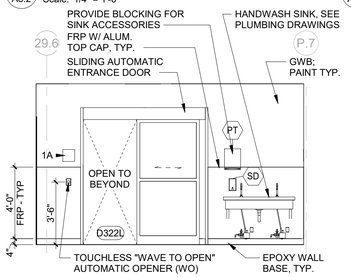
19 A8.2 LEAD LINED WALL DETAIL
Scale: 1 1/2" = 1'-0"



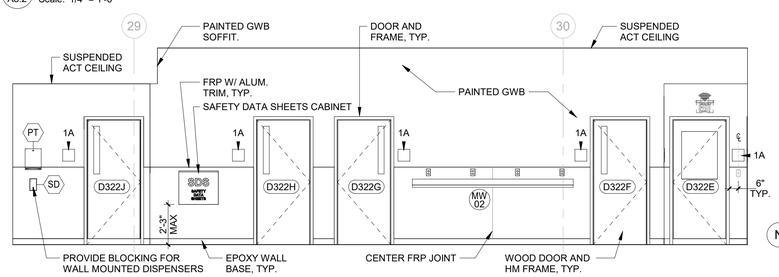
5 A8.2 TEACHING HUB D322 - SOUTH
Scale: 1/4" = 1'-0"



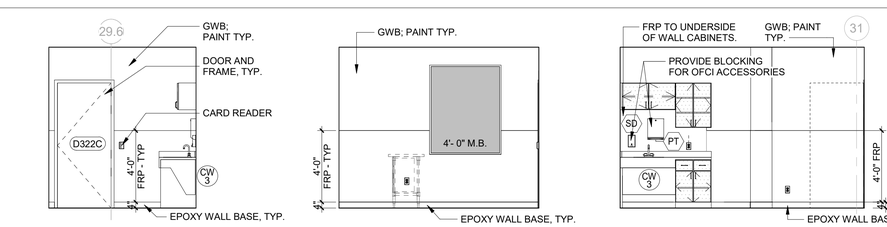
4 A8.2 TEACHING HUB VIEW D322 - NORTH
Scale: 1/4" = 1'-0"



3 A8.2 TEACHING HUB D322 - SOUTH
Scale: 1/4" = 1'-0"



2 A8.2 TEACHING HUB D322 - WEST
Scale: 1/4" = 1'-0"

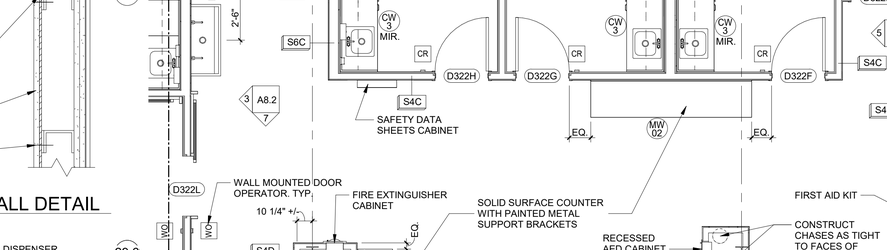


15 A8.2 EXAM ROOM 3 D322C - EAST
Scale: 1/4" = 1'-0"

16 A8.2 EXAM ROOM 3 D322C - SOUTH
Scale: 1/4" = 1'-0"

17 A8.2 EXAM ROOM 3 D322C - WEST
Scale: 1/4" = 1'-0"

18 A8.2 EXAM ROOM 3 D322C - NORTH
Scale: 1/4" = 1'-0"

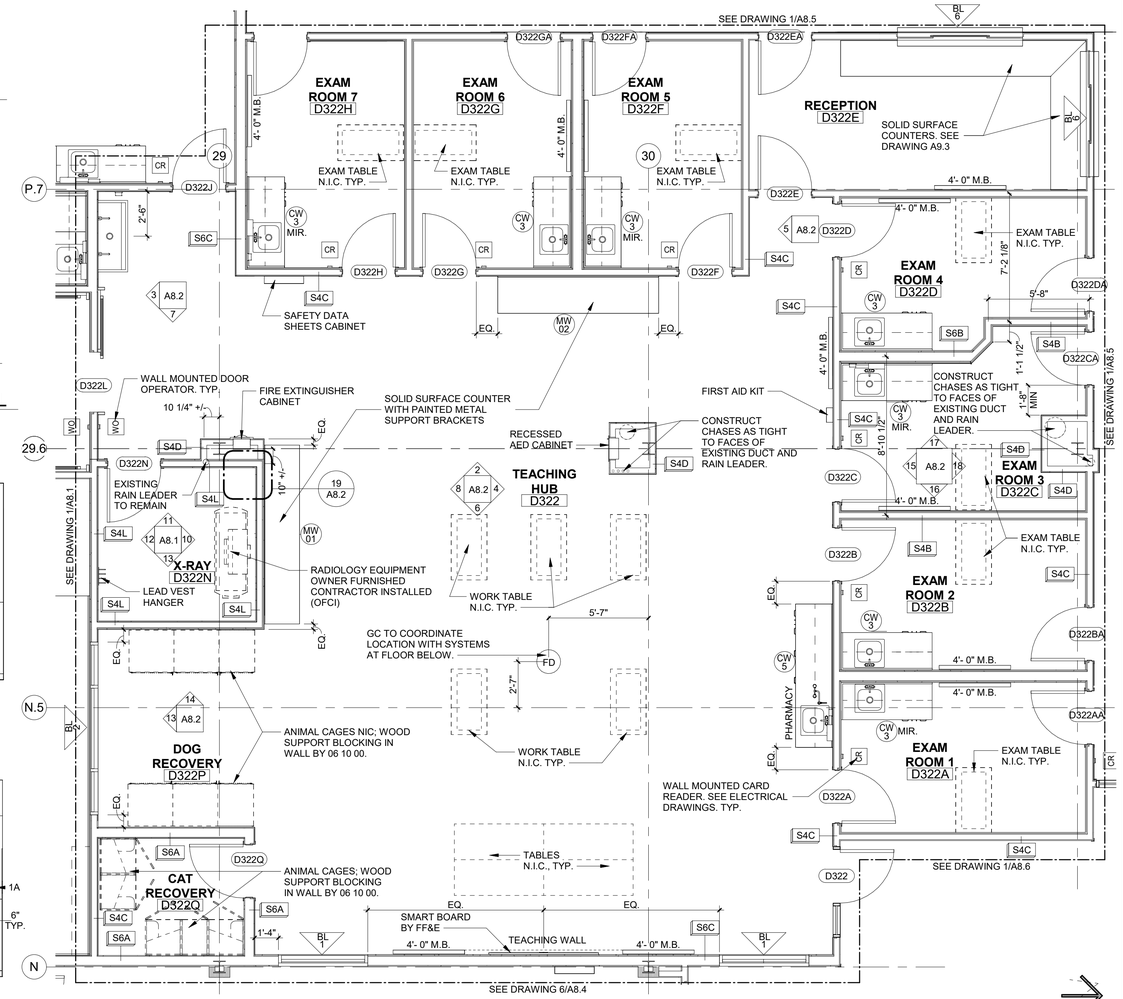


12 A8.2 EXAM ROOM D322H - NORTH
Scale: 1/4" = 1'-0"

11 A8.2 EXAM ROOM D322H - SOUTH
Scale: 1/4" = 1'-0"

10 A8.2 EXAM ROOM D322H - WEST
Scale: 1/4" = 1'-0"

9 A8.2 EXAM ROOM D322H - EAST
Scale: 1/4" = 1'-0"



1 A8.2 TEACHING HUB - ENLARGED PLAN
Scale: 1/4" = 1'-0"

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PROJECT

TUFTS at TECH Community Veterinary Clinic

Final Bid Package

Tufts Vet Tech Clinic Renovation

Worcester Technical High School
1 Officer Manny Familia Way, Worcester, MA 01605

DRAWING TITLE

Enlarged Plan & Elevations @ Teaching Hub, Exam Rooms

KEY PLAN

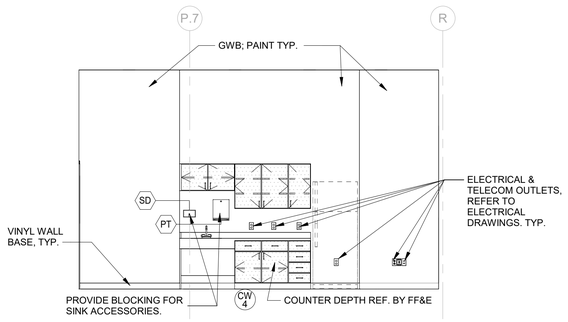
REVISIONS

No.	Description	Date

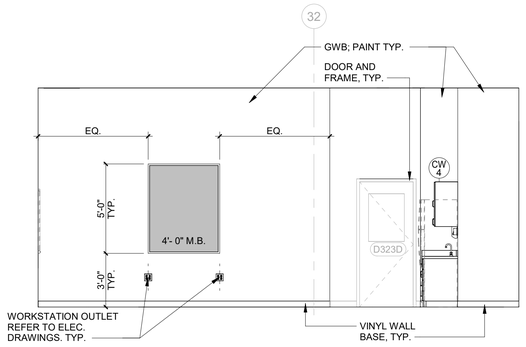
FILE:
JOB NO: 2417
SCALE: As indicated
DWN. BY: LL
CKD. BY: RP
DATE: March 11, 2026

A8.2

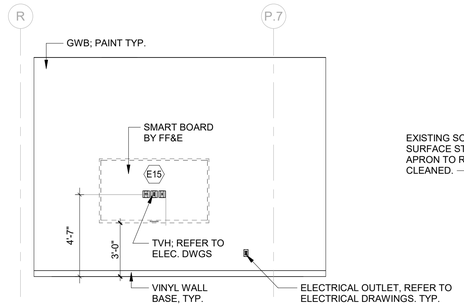
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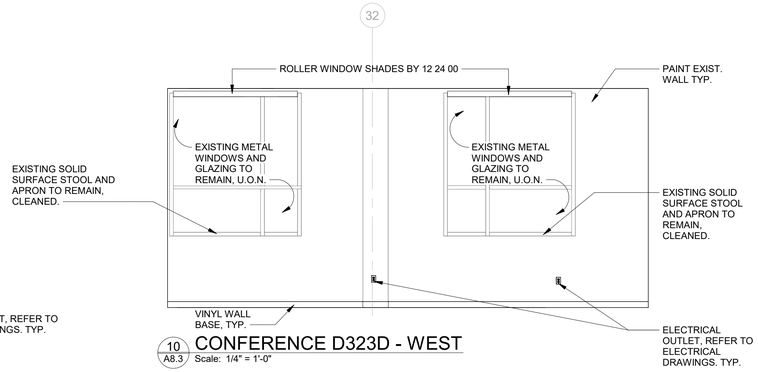
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Scale: 1/4" = 1'-0"



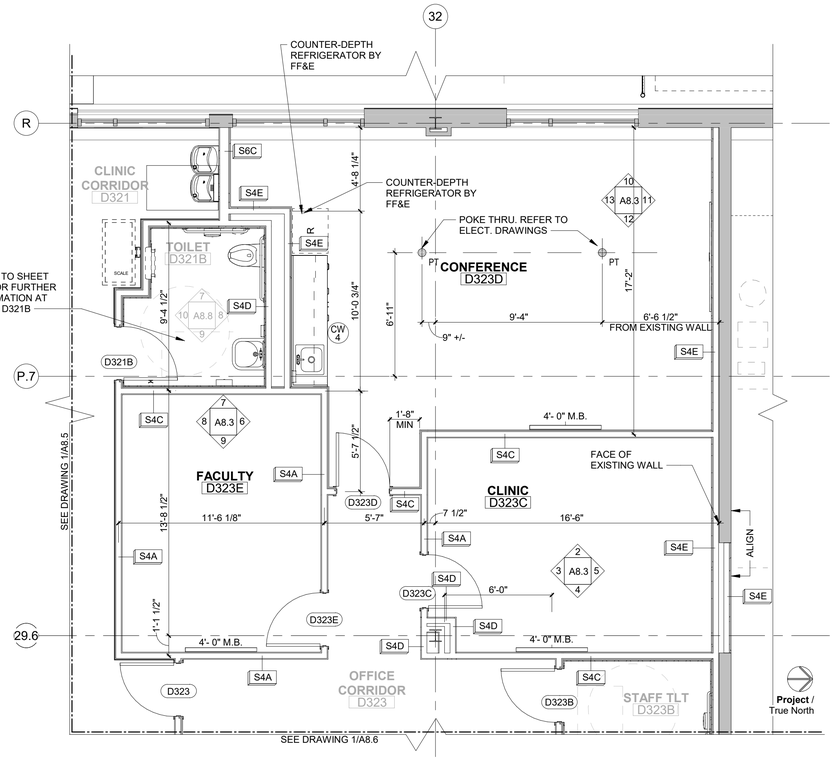
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Scale: 1/4" = 1'-0"



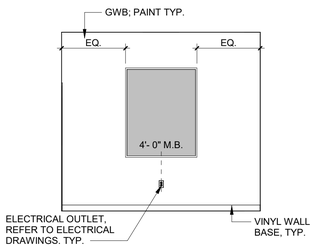
11 A8.3 CONFERENCE D323D - NORTH
Scale: 1/4" = 1'-0"



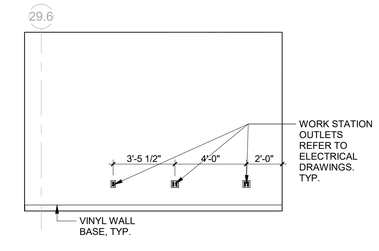
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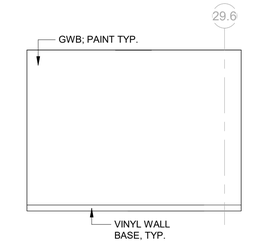
1 A8.3 CONFERENCE, FACUTLY, & CLINIC - ENLARGED PLAN
Scale: 1/4" = 1'-0"



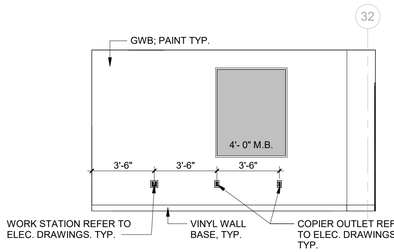
9 A8.3 FACULTY D323E - EAST
Scale: 1/4" = 1'-0"



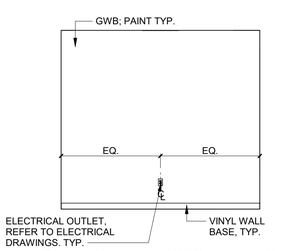
8 A8.3 FACULTY D323E - SOUTH
Scale: 1/4" = 1'-0"



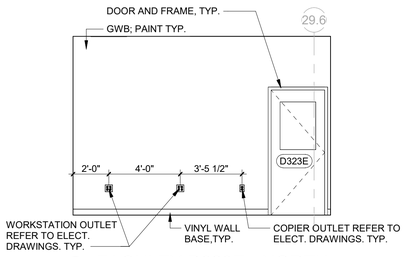
5 A8.3 CLINIC D323C - NORTH
Scale: 1/4" = 1'-0"



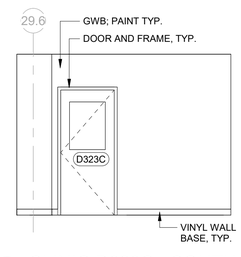
4 A8.3 CLINIC D323C - EAST
Scale: 1/4" = 1'-0"



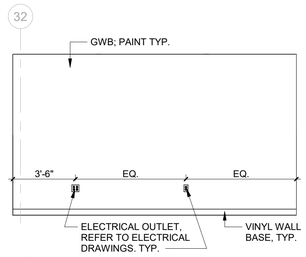
7 A8.3 FACULTY D323E - WEST
Scale: 1/4" = 1'-0"



6 A8.3 FACULTY D323E - NORTH
Scale: 1/4" = 1'-0"



3 A8.3 CLINIC D323C - SOUTH
Scale: 1/4" = 1'-0"



2 A8.3 CLINIC D323C - WEST
Scale: 1/4" = 1'-0"

GENERAL NOTES:

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PROJECT

TUFTS at TECH Community Veterinary Clinic

Final Bid Package

Tufts Vet Tech Clinic Renovation

Worcester Technical High School
1 Officer Manny Familia Way, Worcester, MA 01605

DRAWING TITLE

Enlarged Plan & Elevations @ Conference, Faculty, & Clinic

KEY PLAN

REVISIONS

No.	Description	Date

FILE:

JOB NO: 2417

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

DWN. BY: LL

CKD. BY: RP

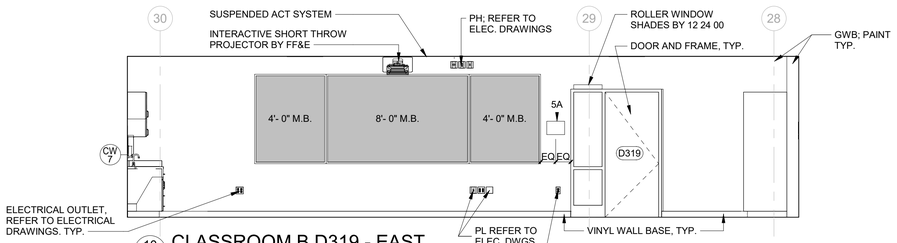
DATE: March 11, 2026

A8.3

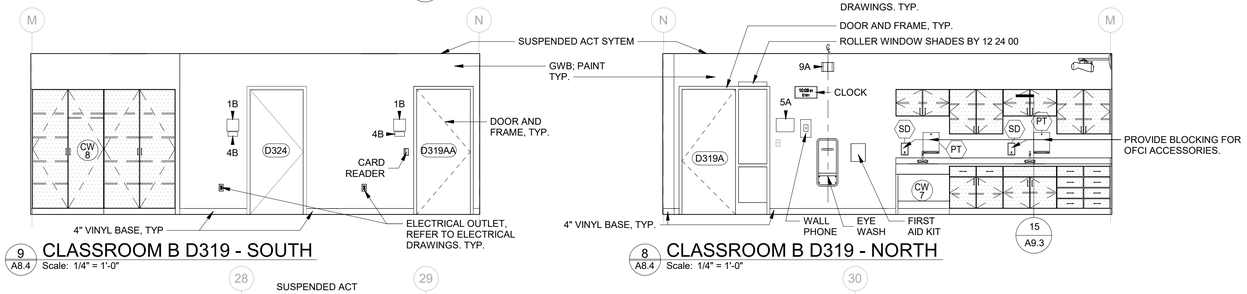
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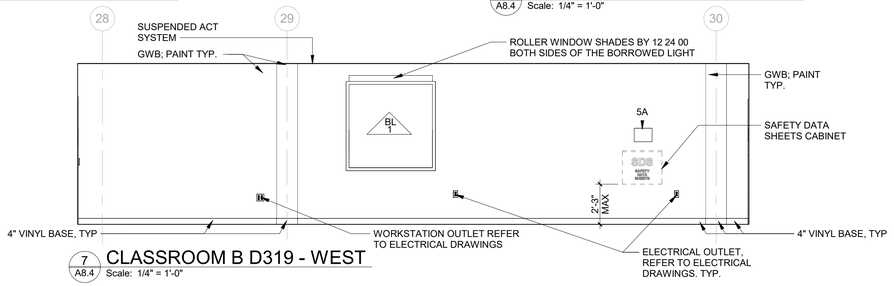


10 A8.4 CLASSROOM B D319 - EAST
Scale: 1/4" = 1'-0"

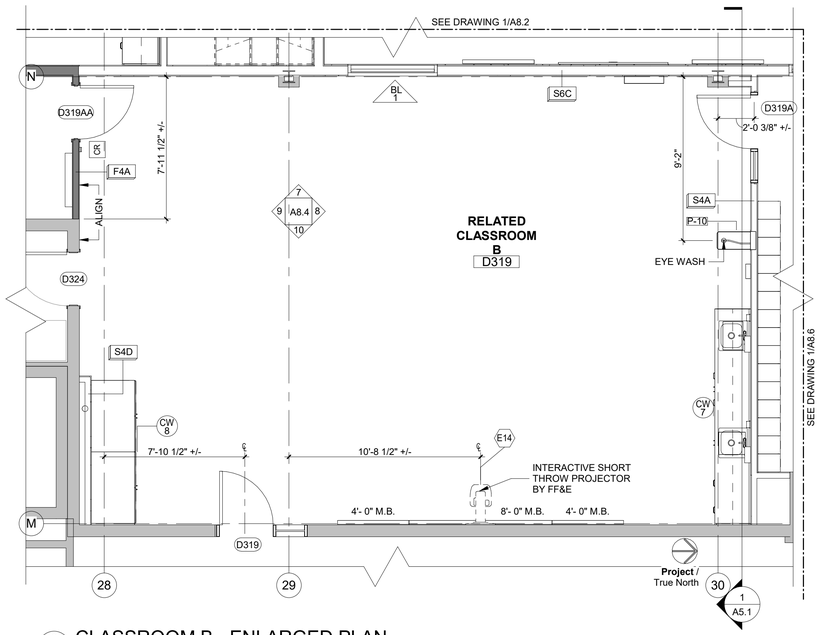


9 A8.4 CLASSROOM B D319 - SOUTH
Scale: 1/4" = 1'-0"

8 A8.4 CLASSROOM B D319 - NORTH
Scale: 1/4" = 1'-0"



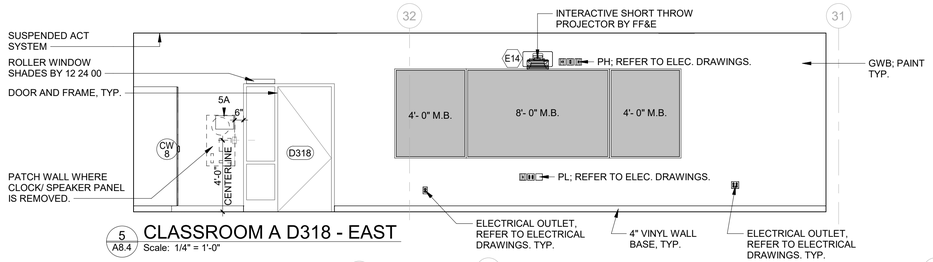
7 A8.4 CLASSROOM B D319 - WEST
Scale: 1/4" = 1'-0"



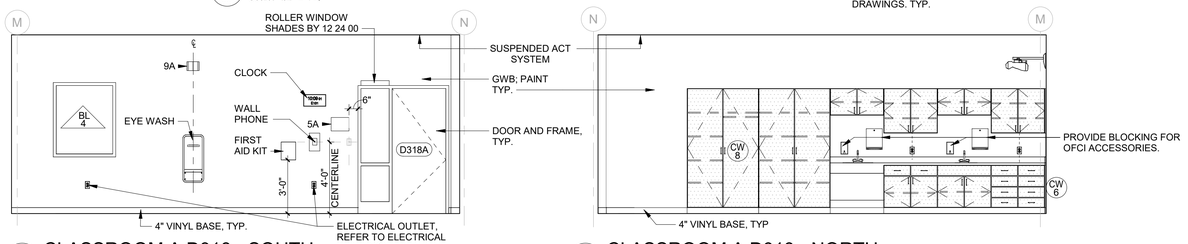
6 A8.4 CLASSROOM B - ENLARGED PLAN
Scale: 1/4" = 1'-0"

GENERAL NOTES:

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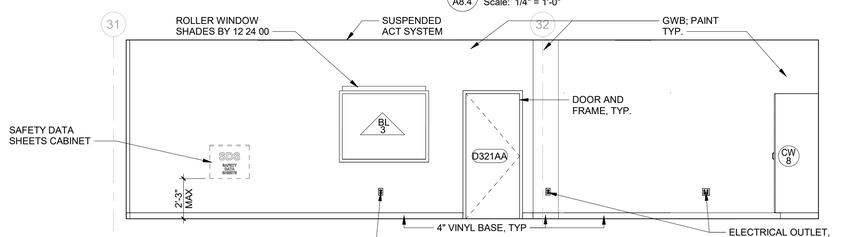


5 A8.4 CLASSROOM A D318 - EAST
Scale: 1/4" = 1'-0"

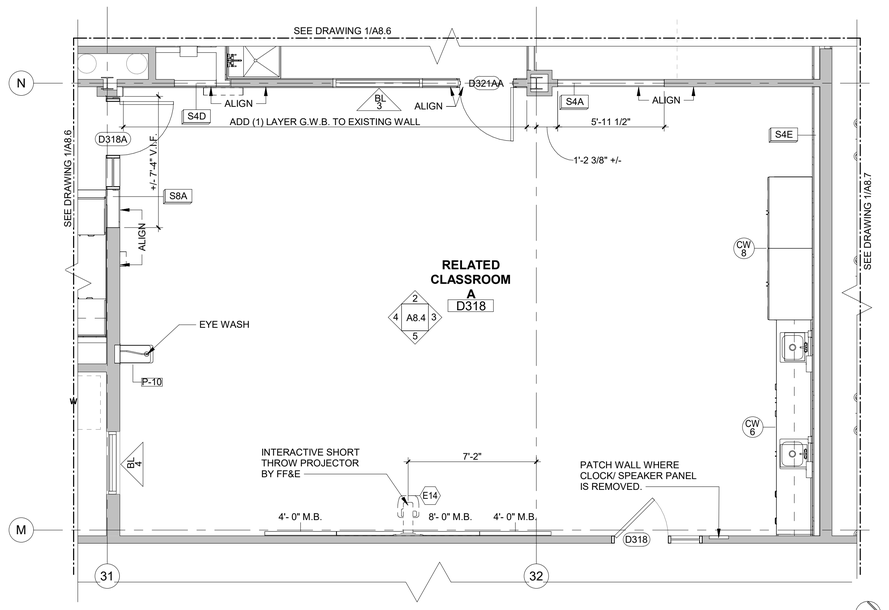


4 A8.4 CLASSROOM A D318 - SOUTH
Scale: 1/4" = 1'-0"

3 A8.4 CLASSROOM A D318 - NORTH
Scale: 1/4" = 1'-0"



2 A8.4 CLASSROOM A D318 - WEST
Scale: 1/4" = 1'-0"



1 A8.4 CLASSROOM A D318 - ENLARGED PLAN
SCALE: 1/4" = 1'-0"

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PROJECT

TUFTS at TECH Community Veterinary Clinic

Final Bid Package

Tufts Vet Tech Clinic Renovation

Worcester Technical High School
1 Officer Manny Familia Way, Worcester, MA 01605

DRAWING TITLE

Enlarged Plan & Elevations @ Classrooms

KEY PLAN

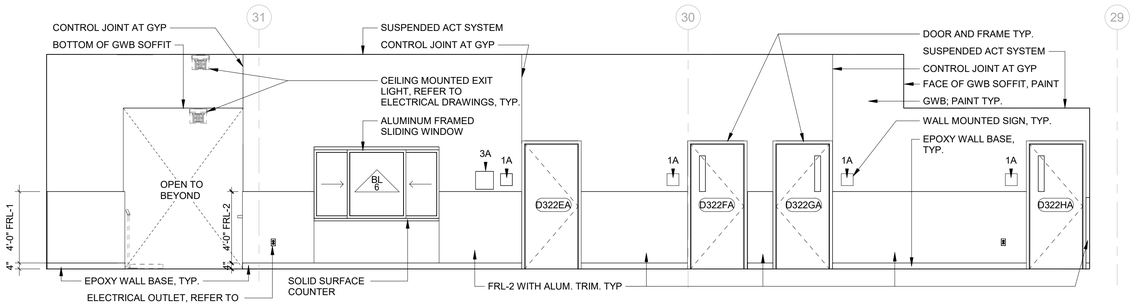
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No.	Description	Date

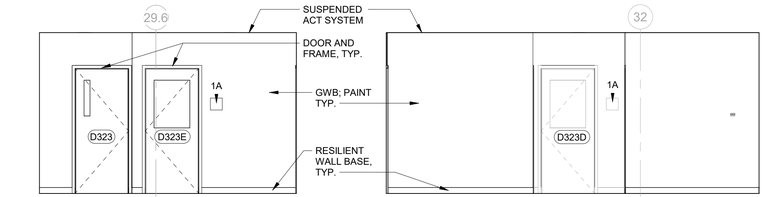
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JOB NO:	2417
SCALE:	1/4" = 1'-0"
DWN. BY:	LL
CKD. BY:	RP
DATE:	March 11, 2026

A8.4

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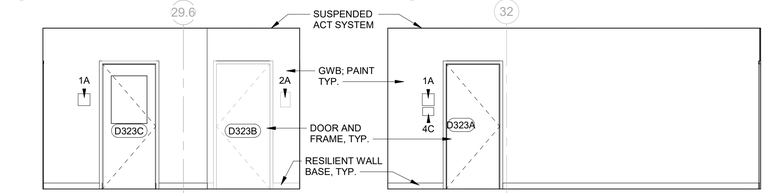


11 A8.5 CLINIC CORRIDOR D321 - SOUTH
Scale: 1/4" = 1'-0"



10 A8.5 OFFICE CORRIDOR D321 - SOUTH
Scale: 1/4" = 1'-0"

9 A8.5 OFFICE CORRIDOR D321 - WEST
Scale: 1/4" = 1'-0"

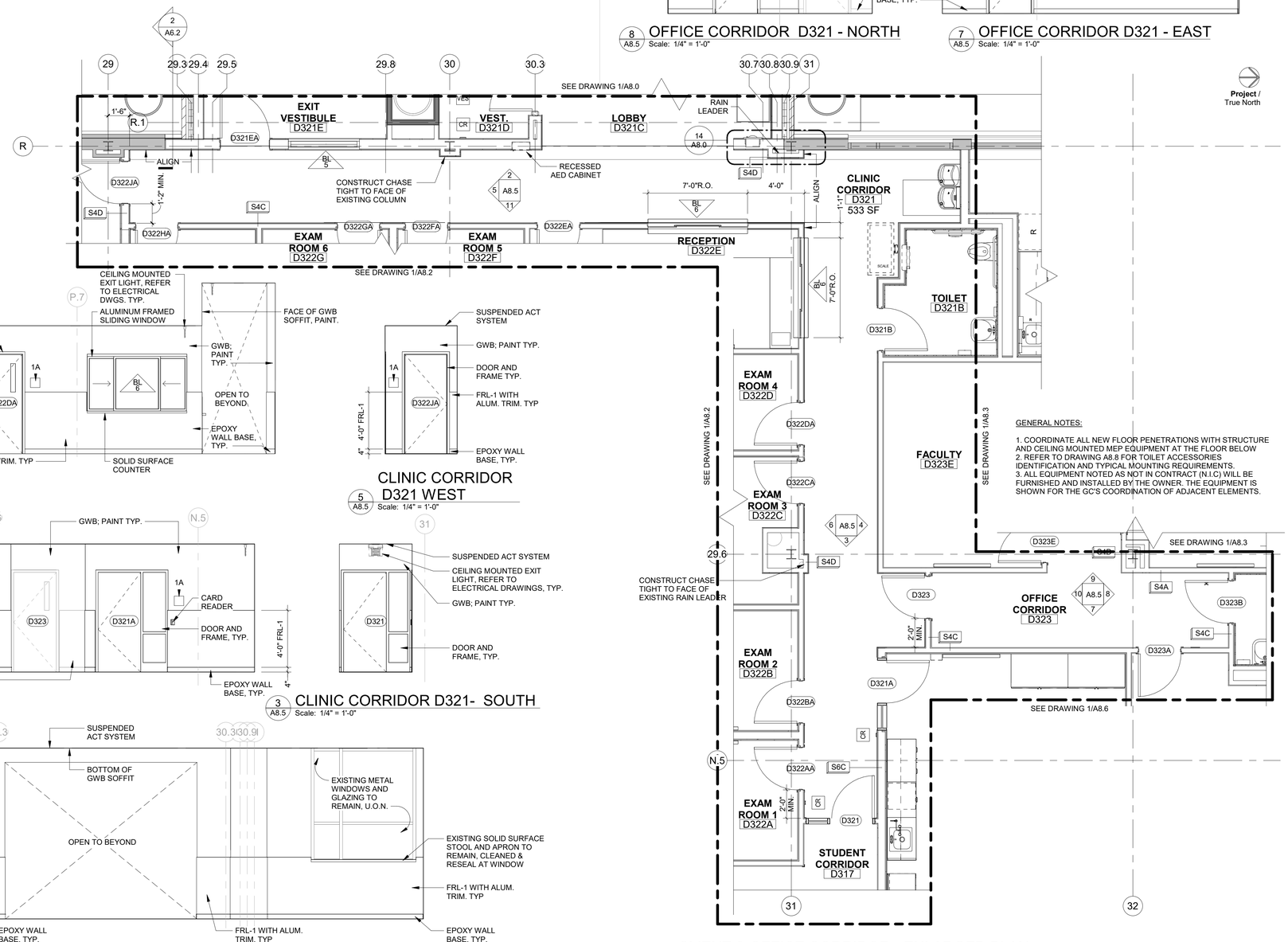


8 A8.5 OFFICE CORRIDOR D321 - NORTH
Scale: 1/4" = 1'-0"

7 A8.5 OFFICE CORRIDOR D321 - EAST
Scale: 1/4" = 1'-0"

INTERIOR ELEVATIONS GENERAL NOTES:

1. REFER TO REFLECTED CEILING PLAN A4.1 FOR ALL HEIGHTS.
2. REFER TO DOOR SCHEDULE A10.1 FOR ALL DOOR AND FRAME MATERIALS AND SIZES.
3. REFER TO SIGNAGE SCHEDULE A12.1 FOR ALL SIGN TYPE AND MOUNTING HEIGHTS.
4. PROVIDE CONTROL JOINTS IN GWB SURFACE AT MORE THAN 30'-0" FROM CORNERS OR OTHER BREAKS IN WALLS, UNLESS OTHERWISE NOTED
5. REFER TO FINISHES DETAILS A11.3 FOR ALL TRANSITION REQUIREMENTS BETWEEN MATERIALS.
6. PROVIDE LEVEL-5 GWB FINISH WHERE FRL AND FRP WALL PROTECTION PANELS ARE INDICATED.



4 A8.5 CLINIC CORRIDOR D321 - EAST
Scale: 1/4" = 1'-0"

3 A8.5 CLINIC CORRIDOR D321- SOUTH
Scale: 1/4" = 1'-0"

2 A8.5 CLINIC CORRIDOR D321 - NORTH
Scale: 1/4" = 1'-0"

1 A8.5 CLIENT & OFFICE CORRIDOR - ENLARGED PLAN
Scale: 1/4" = 1'-0"

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108 Grove Street, Suite 300
Worcester MA 01605
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CONSULTANT

PROJECT

TUFTS at TECH Community Veterinary Clinic

Final Bid Package

Tufts Vet Tech Clinic Renovation

Worcester Technical High School
1 Officer Manny Familia Way, Worcester, MA 01605

DRAWING TITLE

Enlarged Plan & Elevations @ Clinic Corridor & Office Corridor

KEY PLAN

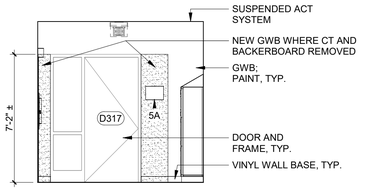
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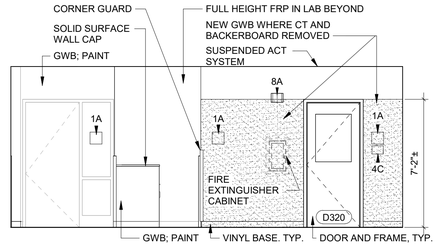
No.	Description	Date

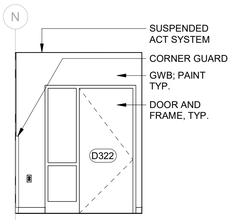
FILE:
JOB NO: 2417
SCALE: 1/4" = 1'-0"
DWN. BY: LL
CKD. BY: RP
DATE: March 11, 2026

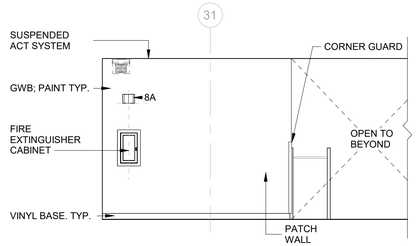
A8.5

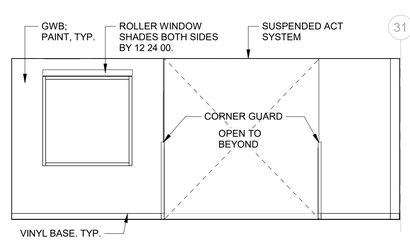
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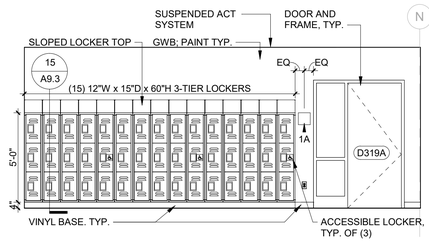
20 A8.6 **STUDENT CORRIDOR D317 - EAST**
Scale: 1/4" = 1'-0"

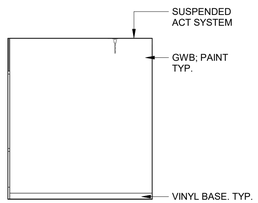
19 A8.6 **STUDENT CORRIDOR D317 - NORTH**
Scale: 1/4" = 1'-0"

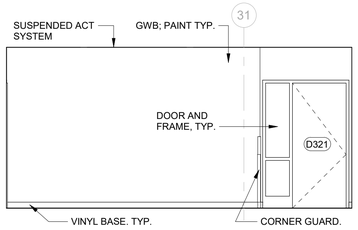
18 A8.6 **STUDENT CORRIDOR D317 - SOUTH**
Scale: 1/4" = 1'-0"

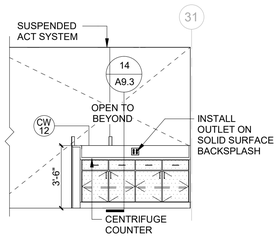
17 A8.6 **STUDENT CORRIDOR D317 - EAST**
Scale: 1/4" = 1'-0"

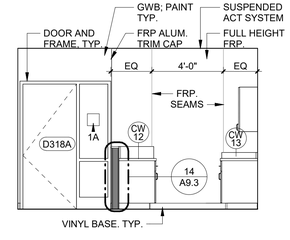
16 A8.6 **STUDENT CORRIDOR D317 - WEST**
Scale: 1/4" = 1'-0"

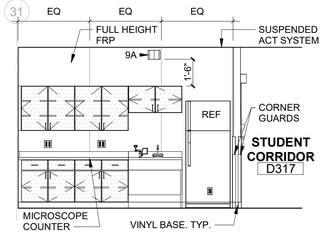












15 A8.6 **STUDENT CORRIDOR D317 - SOUTH**
Scale: 1/4" = 1'-0"

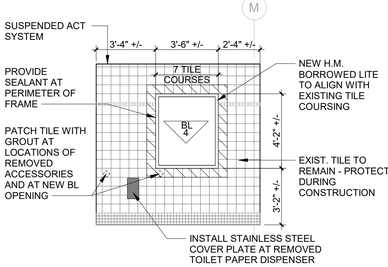
14 A8.6 **STUDENT CORRIDOR D317 - NORTH**
Scale: 1/4" = 1'-0"

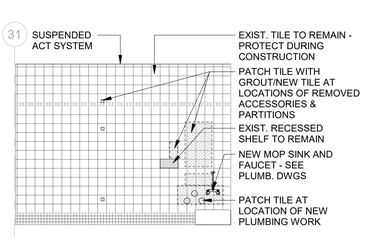
13 A8.6 **STUDENT CORRIDOR D317 - WEST**
Scale: 1/4" = 1'-0"

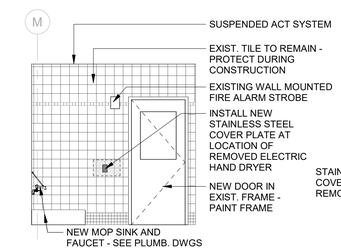
12 A8.6 **LAB D317A - WEST**
Scale 1/4" = 1'-0"

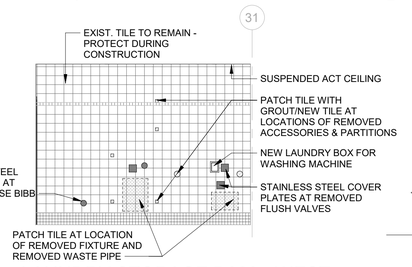
11 A8.6 **LAB D317A - NORTH**
Scale: 1/4" = 1'-0"

10 A8.6 **LAB D317A - EAST**
Scale: 1/4" = 1'-0"







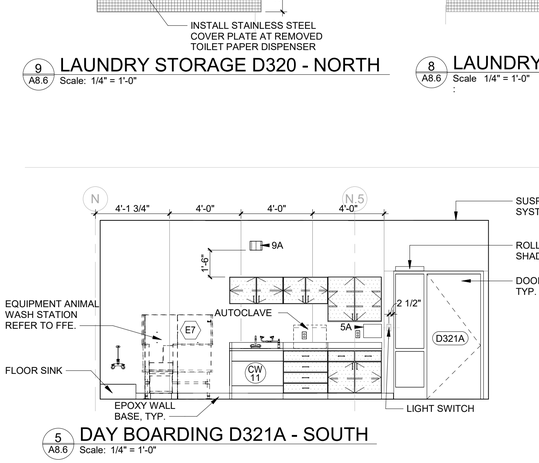


9 A8.6 **LAUNDRY STORAGE D320 - NORTH**
Scale: 1/4" = 1'-0"

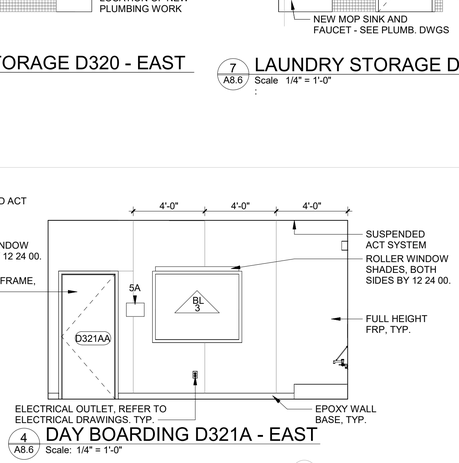
8 A8.6 **LAUNDRY STORAGE D320 - EAST**
Scale 1/4" = 1'-0"

7 A8.6 **LAUNDRY STORAGE D320 - SOUTH**
Scale 1/4" = 1'-0"

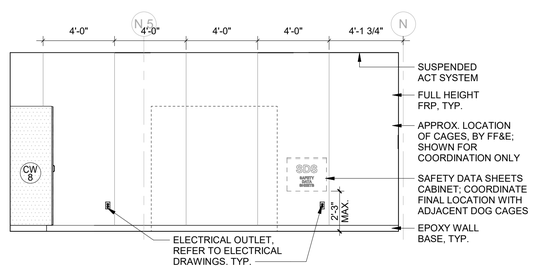
6 A8.6 **LAUNDRY STORAGE D320 - WEST**
Scale 1/4" = 1'-0"



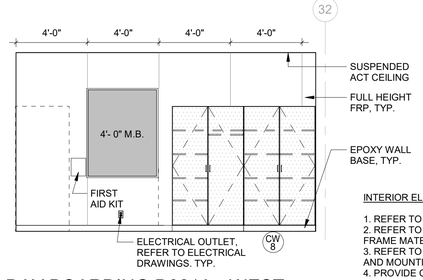
5 A8.6 **DAY BOARDING D321A - SOUTH**
Scale: 1/4" = 1'-0"



4 A8.6 **DAY BOARDING D321A - EAST**
Scale: 1/4" = 1'-0"



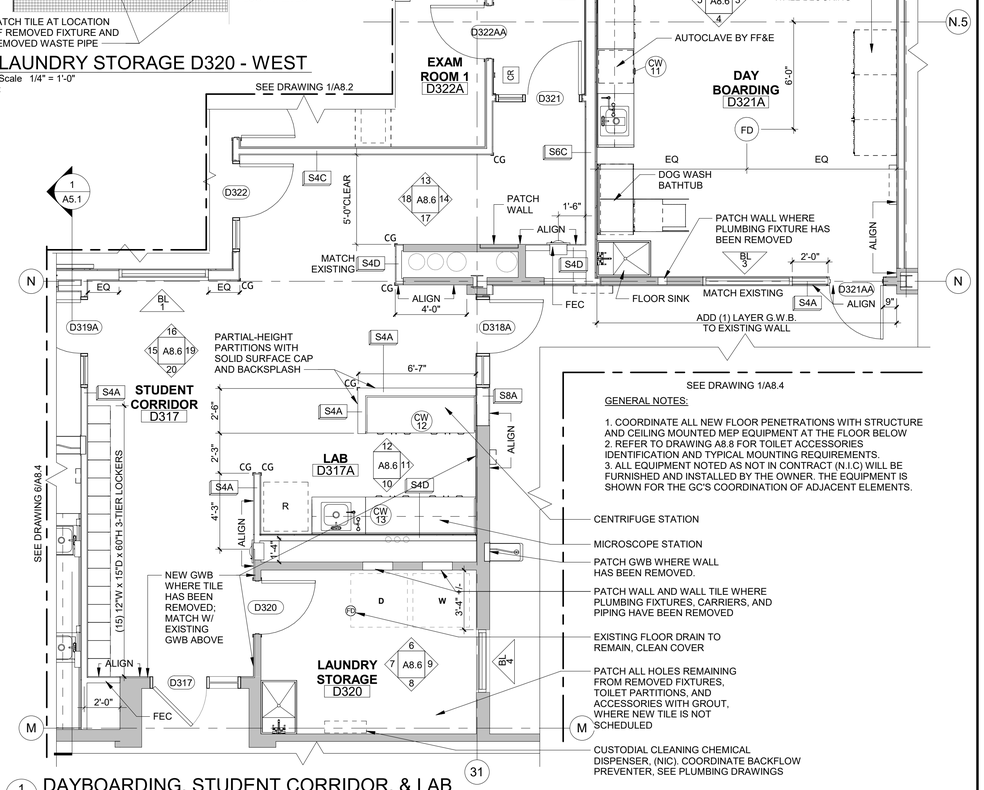
3 A8.6 **DAY BOARDING D321A - NORTH**
Scale: 1/4" = 1'-0"



2 A8.6 **DAY BOARDING D321A - WEST**
Scale: 1/4" = 1'-0"

INTERIOR ELEVATIONS GENERAL NOTES:

1. REFER TO REFLECTED CEILING PLAN A4.1 FOR ALL HEIGHTS.
2. REFER TO DOOR SCHEDULE A10.1 FOR ALL DOOR AND FRAME MATERIALS AND SIZES.
3. REFER TO SIGNAGE SCHEDULE A12.1 FOR ALL SIGN TYPE AND MOUNTING HEIGHTS.
4. PROVIDE CONTROL JOINTS IN GWB SURFACE AT MORE THAN 30'-0" FROM CORNERS OR OTHER BREAKS IN WALLS, UNLESS OTHERWISE NOTED
5. REFER TO FINISHES DETAILS A11.3 FOR ALL TRANSITION REQUIREMENTS BETWEEN MATERIALS.
6. PROVIDE LEVEL-5 GWB FINISH WHERE FRL AND FRP WALL PROTECTION PANELS ARE INDICATED.



1 A8.6 **DAYBOARDING, STUDENT CORRIDOR, & LAB**
Scale: 1/4" = 1'-0"

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PROJECT

TUFTS at TECH Community Veterinary Clinic

Final Bid Package

Tufts Vet Tech Clinic Renovation

Worcester Technical High School
1 Officer Manny Familia Way, Worcester, MA 01605

DRAWING TITLE

Enlarged Plan & Elevations @ Dayboarding, Lab, & Student Corridor

KEY PLAN

REVISIONS

No.	Description	Date

FILE:	
JOB NO:	2417
SCALE:	1/4" = 1'-0"
DWN. BY:	LL
CKD. BY:	RP
DATE:	March 11, 2026

A8.6

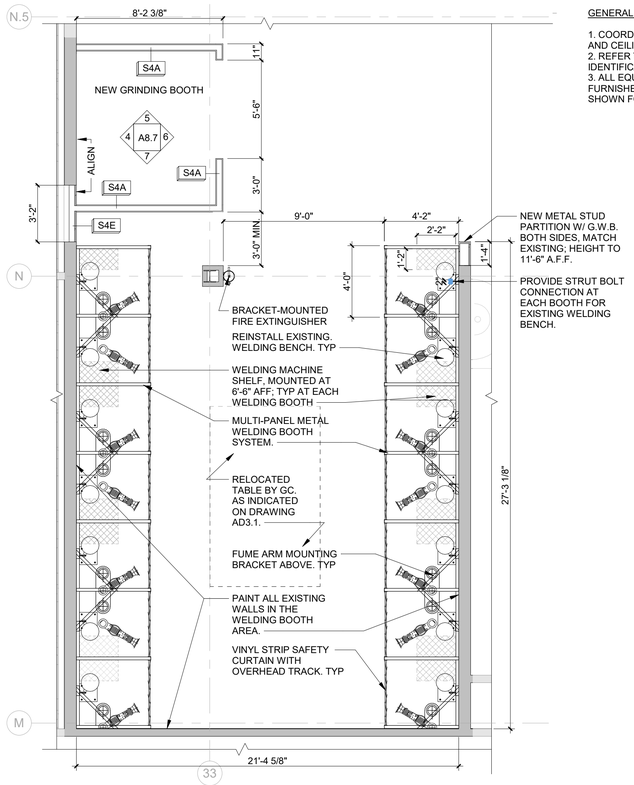
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GENERAL NOTES:

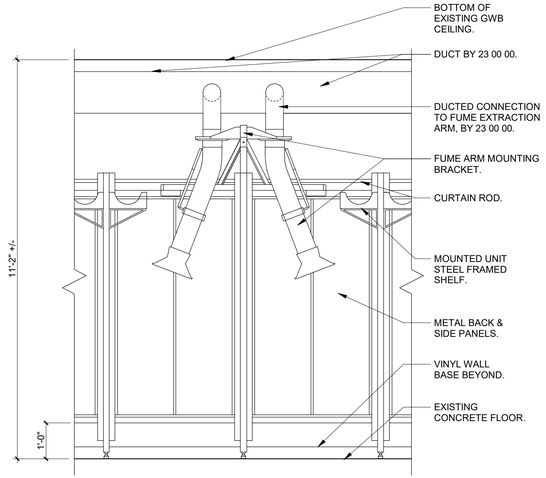
1. COORDINATE ALL NEW FLOOR PENETRATIONS WITH STRUCTURE AND CEILING MOUNTED MEP EQUIPMENT AT THE FLOOR BELOW
2. REFER TO DRAWING A8.8 FOR TOILET ACCESSORIES IDENTIFICATION AND TYPICAL MOUNTING REQUIREMENTS.
3. ALL EQUIPMENT NOTED AS NOT IN CONTRACT (N.I.C) WILL BE FURNISHED AND INSTALLED BY THE OWNER. THE EQUIPMENT IS SHOWN FOR THE GC'S COORDINATION OF ADJACENT ELEMENTS.

INTERIOR ELEVATIONS GENERAL NOTES:

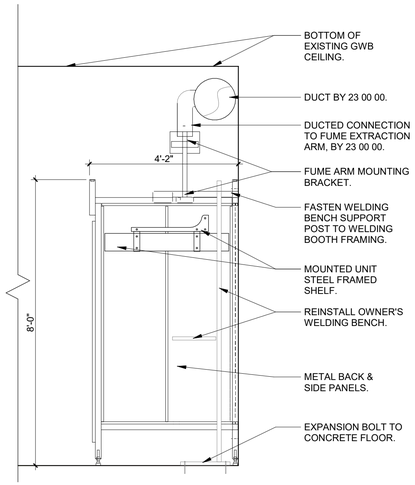
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6. PROVIDE LEVEL-5 GWB FINISH WHERE FRL AND FRP WALL PROTECTION PANELS ARE INDICATED.



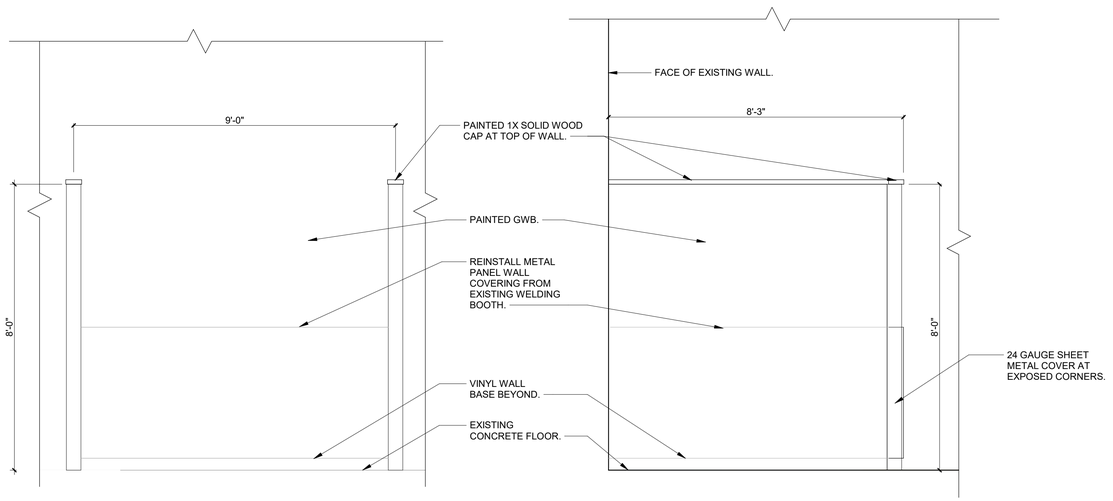
1 A8.7 WELDING & METALS TECH. D325 - ENLARGED PLAN
Scale: 1/4" = 1'-0"



2 A8.7 TYPICAL WELDING BOOTH FRONT ELEVATION
Scale: 1/2" = 1'-0"

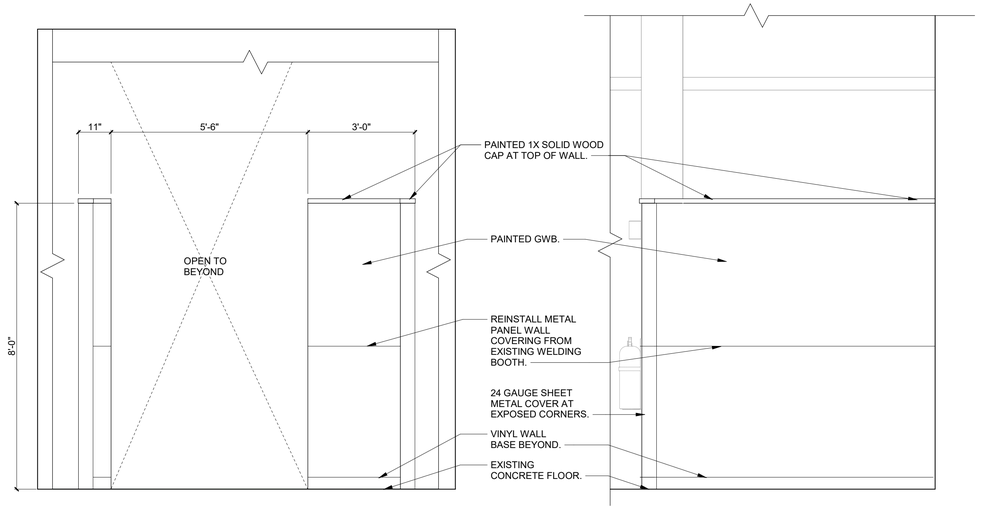


3 A8.7 TYPICAL WELDING BOOTH SIDE ELEVATION D325 - WEST
Scale: 1/2" = 1'-0"
EAST IS SIMILAR



4 A8.7 NEW GRINDING BOOTH D325 - SOUTH
Scale: 1/2" = 1'-0"

5 A8.7 NEW GRINDING BOOTH D325 - WEST
Scale: 1/2" = 1'-0"



6 A8.7 NEW GRINDING BOOTH D325 - NORTH
Scale: 1/2" = 1'-0"

7 A8.7 NEW GRINDING BOOTH D325 - EAST
Scale: 1/2" = 1'-0"

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PROJECT

TUFTS at TECH Community Veterinary Clinic

Final Bid Package

Tufts Vet Tech Clinic Renovation

Worcester Technical High School
1 Officer Manny Familia Way, Worcester, MA 01605

DRAWING TITLE

Enlarged Plan & Elevations @ Welding Shop & Grinding Booth

KEY PLAN

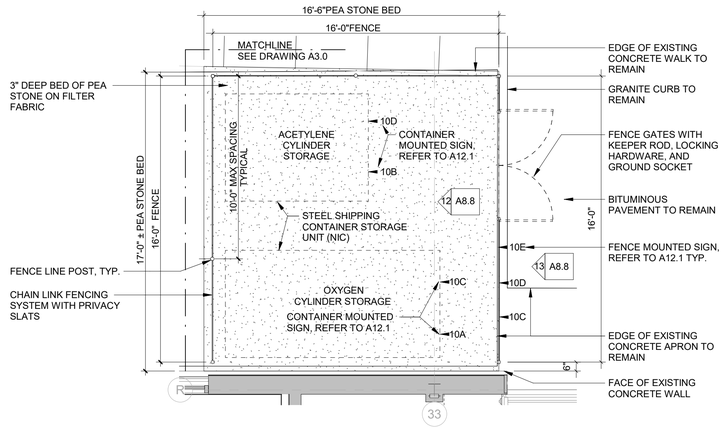
REVISIONS

No.	Description	Date

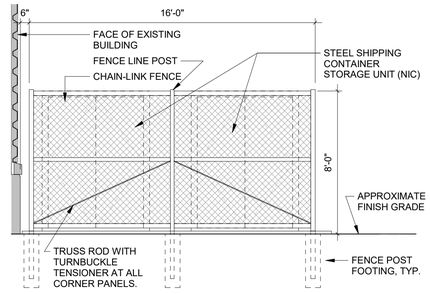
FILE:	
JOB NO:	2417
SCALE:	As indicated
DWN. BY:	LL
CKD. BY:	RP
DATE:	March 11, 2026

A8.7

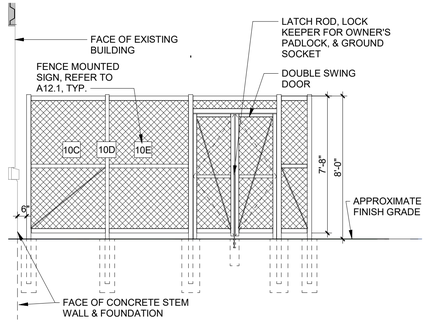
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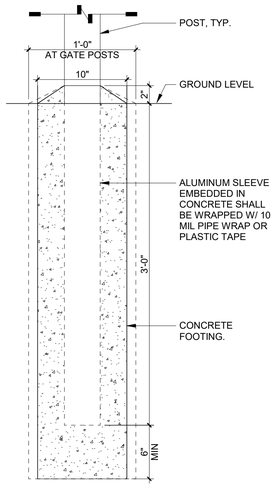
11 A8.8 GAS STORAGE AREA - ENLARGED PLAN
Scale: 1/4" = 1'-0"



12 A8.8 GAS STORAGE AREA - SOUTH
Scale: 1/4" = 1'-0"



13 A8.8 GAS STORAGE AREA - SOUTH
Scale: 1/4" = 1'-0"



FENCE POST BASE DETAIL
14 A8.8 Scale: 1 1/2" = 1'-0"

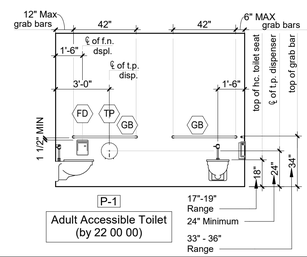
GENERAL NOTES:

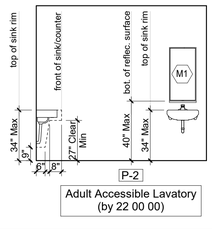
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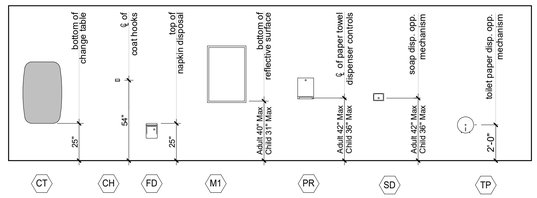
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TYPICAL MOUNTING HEIGHTS OF FIXTURES AND ACCESSORIES





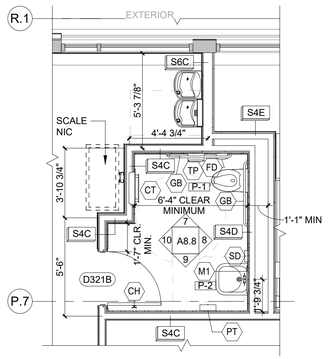


SYMBOLS LEGEND

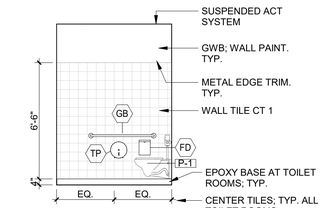
CT	BABY CHANGING STATION
CH	COAT HOOK
FD	FEMININE NAPKIN DISPOSAL (OFCI)
GB	42" GRAB BAR
M1	MIRROR; FRAMED
PT	PAPER TOWEL DISPENSER (OFCI)
SD	SOAP DISPENSER (OFCI)
TP	TOILET PAPER DISPENSER (OFCI)

TOILET ROOM NOTES

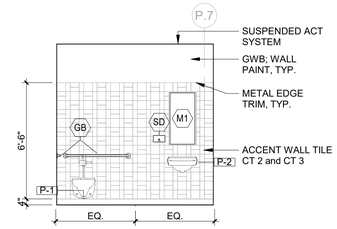
1. Fixture reference numbers are for mounting heights only, refer to plumbing drawings for fixture types, etc.
2. See enlarged plans for toilet accessory locations.
3. See floor finish plans for floor finishes, patterns, notes, and details.
4. See finish wall tile for wall tile types, patterns, notes, and details.
5. Dispensers Owner Furnished Contractor Installed (OFCI), U.O.N.; G.C. shall provide blocking at locations indicated on the drawings.
6. Coordinate with plumbing drawings for fixtures provided by 22 00 00.



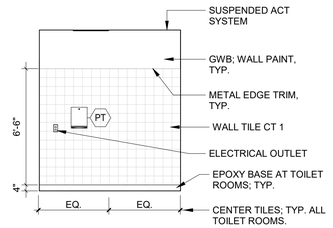
6 A8.8 TOILET ROOM D321B - ENLARGED PLAN
Scale: 1/4" = 1'-0"



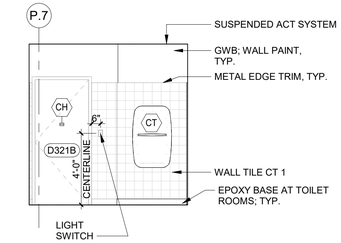
7 A8.8 TOILET ROOM D321B - WEST
Scale: 1/4" = 1'-0"



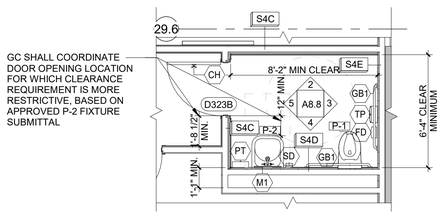
8 A8.8 TOILET ROOM D321B - NORTH
Scale: 1/4" = 1'-0"



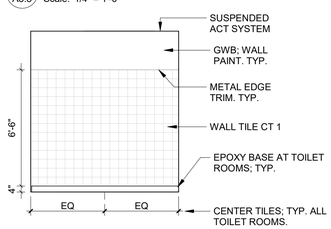
9 A8.8 TOILET ROOM D321B - EAST
Scale: 1/4" = 1'-0"



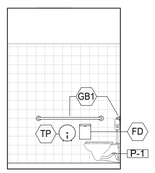
10 A8.8 TOILET ROOM D321B - SOUTH
Scale: 1/4" = 1'-0"



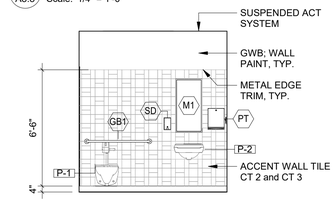
1 A8.8 STAFF TOILET ROOM D323B - ENLARGED PLAN
Scale: 1/4" = 1'-0"



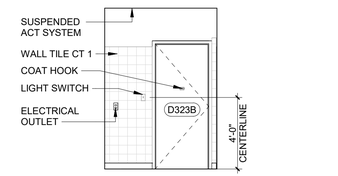
2 A8.8 STAFF TOILET ROOM D323B - WEST
Scale: 1/4" = 1'-0"



3 A8.8 STAFF TOILET ROOM D323B - NORTH
Scale: 1/4" = 1'-0"



4 A8.8 STAFF TOILET ROOM D323B - EAST
Scale: 1/4" = 1'-0"



5 A8.8 STAFF TOILET ROOM D323B - SOUTH
Scale: 1/4" = 1'-0"

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108 Grove Street, Suite 300
Worcester MA 01605
508.752.2831
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PROJECT

TUFTS at TECH Community Veterinary Clinic

Final Bid Package

Tufts Vet Tech Clinic Renovation

Worcester Technical High School
1 Officer Manny Familia Way, Worcester, MA 01605

DRAWING TITLE

Typical Toilet Plans & Exterior Gas Storage Area

KEY PLAN

REVISIONS

No.	Description	Date

FILE:

JOB NO: 2417

SCALE: As indicated

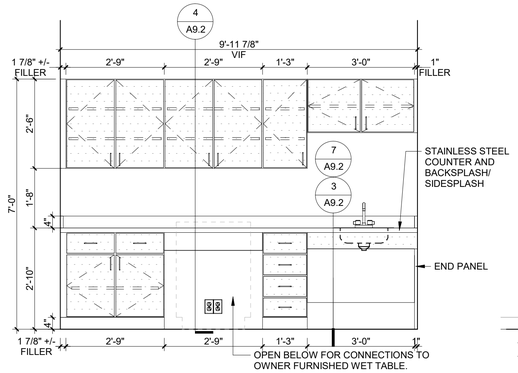
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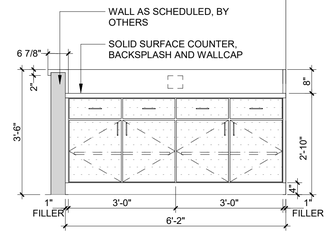
DATE: March 11, 2026

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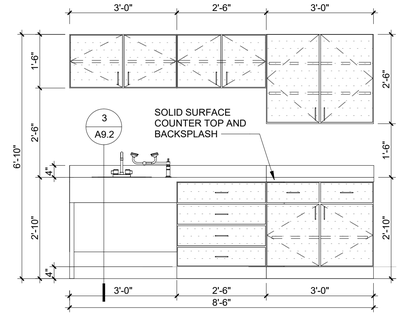
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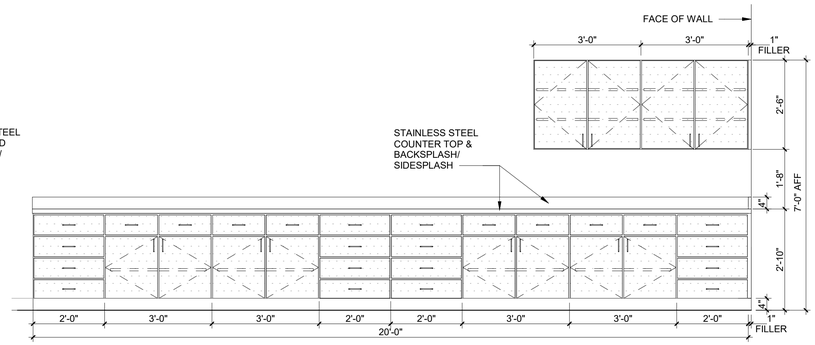
CW 10 INDUCTION CASEWORK ELEVATION
SCALE: 1/2" = 1'-0"



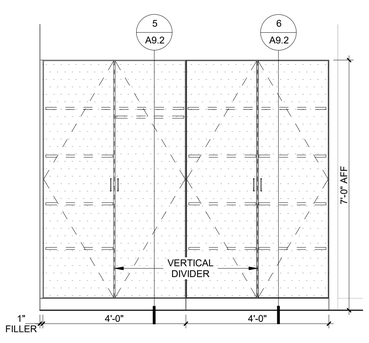
CW 12 CENTRIFUGE CASEWORK
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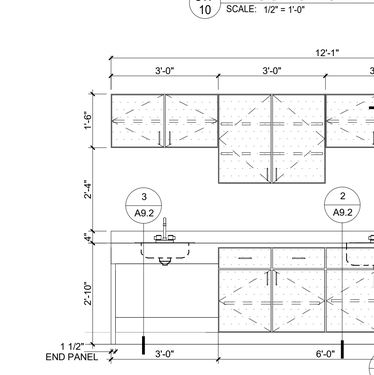
CW 11 DAY BOARDING CASEWORK
SCALE: 1/2" = 1'-0"



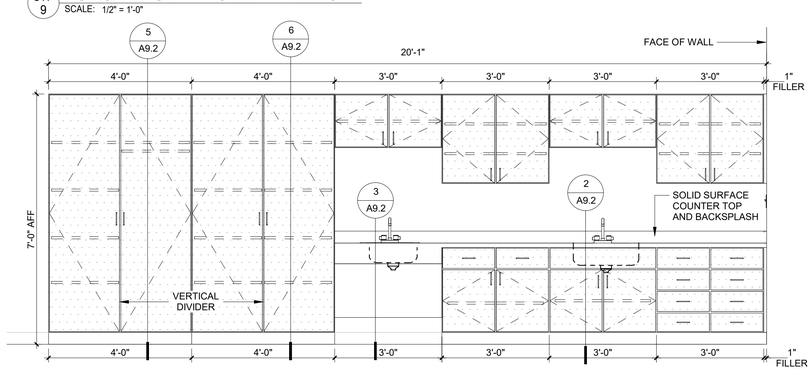
CW 9 SURGERY CASEWORK ELEVATION
SCALE: 1/2" = 1'-0"



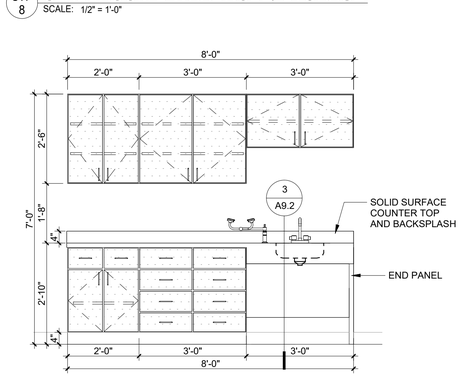
CW 8 CLASSROOM B WARDROBE/ STORAGE
SCALE: 1/2" = 1'-0"



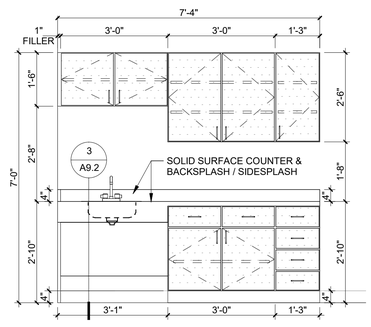
CW 7 RELATED CLASSROOM B CASEWORK ELEVATION
SCALE: 1/2" = 1'-0"



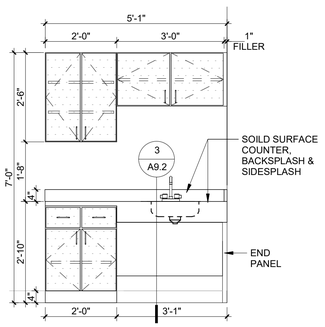
CW 6 RELATED CLASSROOM A CASEWORK ELEVATION
SCALE: 1/2" = 1'-0"



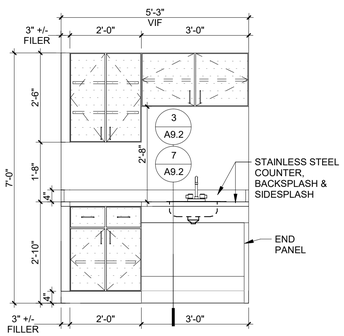
CW 5 PHARMACY CASEWORK ELEVATION
SCALE: 1/2" = 1'-0"



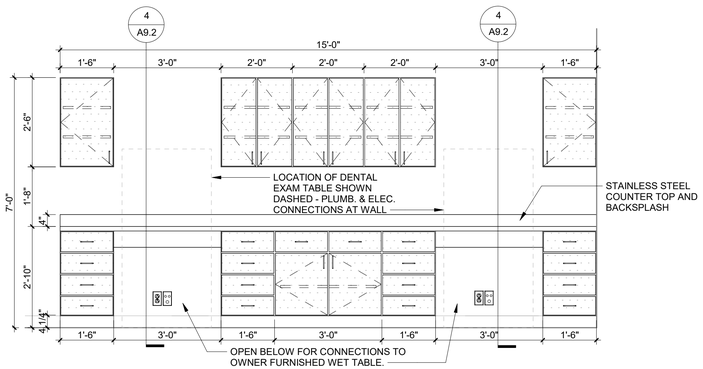
CW 4 CONFERENCE CASEWORK ELEVATION
SCALE: 1/2" = 1'-0"



CW 3 EXAM ROOM CASEWORK ELEVATION
SCALE: 1/2" = 1'-0"



CW 2 DENTAL CASEWORK 2 ELEVATION
SCALE: 1/2" = 1'-0"



CW 1 DENTAL CASEWORK ELEVATION
SCALE: 1/2" = 1'-0"

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1 Officer Manny Familia Way, Worcester, MA 01605

DRAWING TITLE

Casework

KEY PLAN

REVISIONS

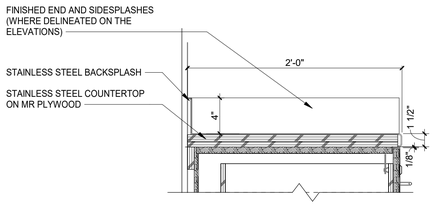
No.	Description	Date

FILE:

JOB NO:	2417
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DWN. BY:	VL
CKD. BY:	RP
DATE:	March 11, 2026

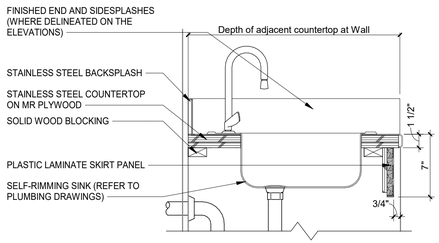
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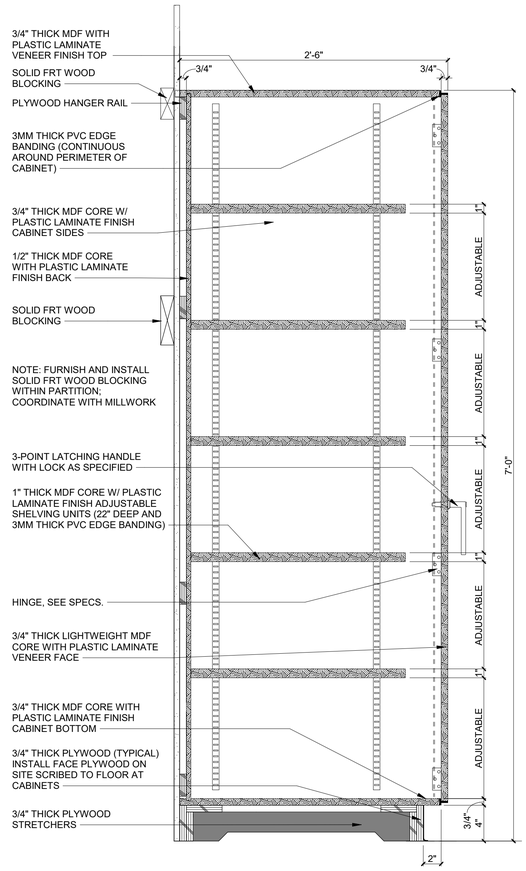
8 A9.2 Stainless Steel Counter Detail

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



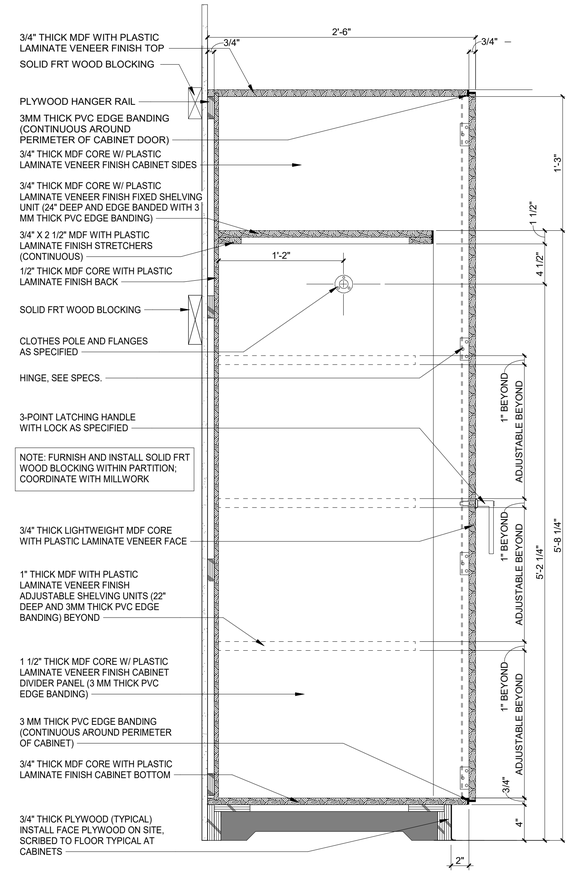
7 A9.2 Accessible Sink at Stainless Steel Counter

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



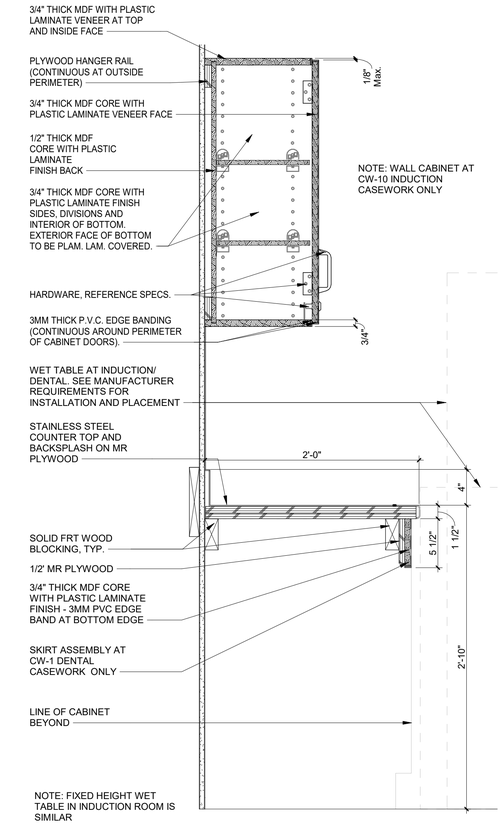
6 A9.2 Full-Height Shelving Millwork Section

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



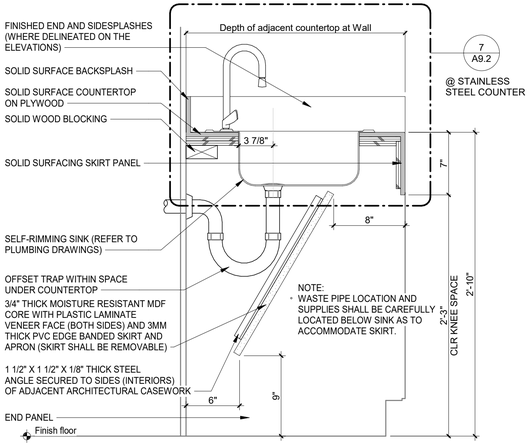
5 A9.2 Typical Wardrobe Section

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



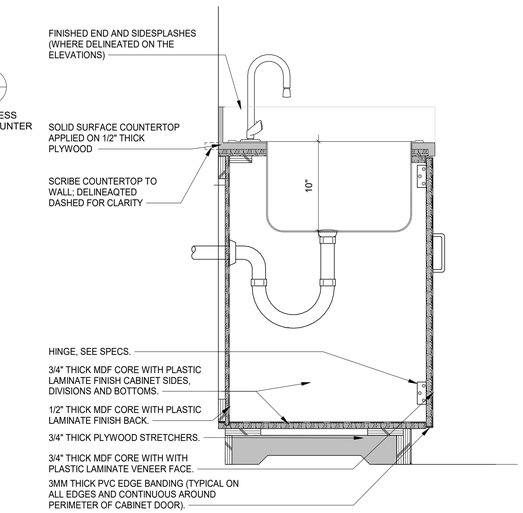
4 A9.2 Section @ Location of Wet Table

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



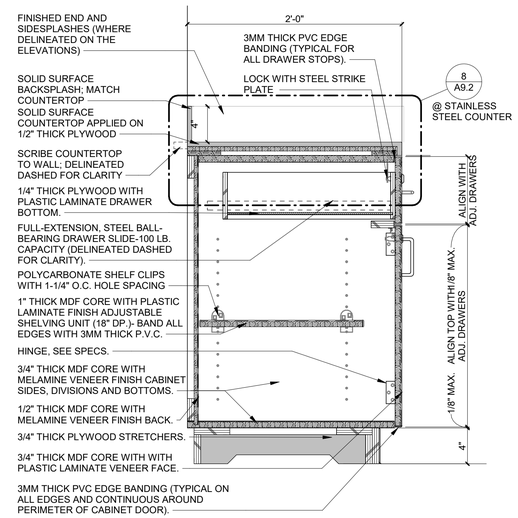
3 A9.2 Accessible Sink at Solid Surface Counter

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



2 A9.2 Base Cabinet With Sink Millwork Section

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



1 A9.2 Base Cabinet Case Work Section

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

GENERAL CASEWORK NOTES

1. ALL CASEWORK DIMENSIONS SHALL BE FIELD VERIFIED PRIOR TO THE FABRICATION AND INSTALLATION OF ANY CASEWORK. ANY VARIATIONS IN DIMENSIONING SHALL BE CLEARLY IDENTIFIED AND INDICATED ON THE SHOP DRAWING SUBMITTALS.
2. ALL FILLERS SHALL BE PROVIDED AS REQUIRED FOR A COMPLETE INSTALLATION (NOTE: REQUIRED FILLERS ARE NOT NECESSARILY INDICATED ON THE DRAWINGS).
3. ALL INTERSECTIONS AND CONNECTIONS TO WALLS, SOFFITS, AND OTHER CABINETS SHALL BE NEATLY SCRIBED AND CAULKED.
4. ALL FULL-HEIGHT CASEWORK CABINETS (84" HIGH) SHALL BE FURNISHED AND INSTALLED WITH OVERHEAD DOORSTOPS ON BOTH DOORS.
5. LOCKS SHALL BE FURNISHED ABOVE DOOR/DRAWER PULLS ON BASE UNITS AND BELOW DOOR PULLS ON UPPER CABINETS, AT ALL CASEWORK. REFER TO SPECIFICATIONS FOR KEYING REQUIREMENTS.
6. ALL TYPICAL CASEWORK SHALL BE FURNISHED WITH SOLID SURFACE COUNTEROPS AND BACKSPLASHES, UNLESS OTHERWISE NOTED ON THE CASEWORK DRAWINGS OR IN THE CASEWORK SPECIFICATIONS. SURGERY, INDUCTION, AND DENTIST ROOMS ARE TO BE STAINLESS STEEL
7. ALL CASEWORK COUNTEROPS ABUTTING WALLS AND TALL CASEWORK SHALL BE FURNISHED WITH 4" HIGH BACKSPLASH AND RETURNS, UNLESS NOTED OTHERWISE ON THE CASEWORK DRAWINGS.
8. EXPOSED SIDES AND BACKS OF ALL CASEWORK SHALL BE FINISHED PANELS.
9. PROVIDE MINIMUM 1" FILLER PANEL WHERE CASEWORK SHALL BE FINISHED PANELS.
10. REFERENCE FLOOR PLANS FOR PIPE CHASE LOCATIONS AND OVERALL DEPTH OF COUNTERTOPS.
11. AT STAND-ALONE FINISHED END PANELS, USE (2) LAYERS 3/4" MDF WITH FULL WITH (1 1/2") PVC EDGE BANDING AND SCHEDULED BASE.
12. TYPICAL TOE KICK HEIGHT SHALL BE 4" UNLESS OTHERWISE NOTED; REFER TO CASEWORK ELECATIONS FOR FURTHER INFORMATION. ADJUST DOOR/DRAWER HEIGHT TO ACCOMMODATE DIFFERENT TOE KICK.
13. UNLESS OTHERWISE NOTED, THE DRAWER IN DRAWER BASE CABINETS SHALL BE EQUAL IN HEIGHT.
14. CONTRACTOR SHALL COORDINATE APPLIANCES WITH REQUIRED DIMENSIONS AND SHALL BE INDICATED ON CASEWORK SHOP DRAWINGS.
15. WHERE AN ACCESSIBLE SINK ABUTS A PARTITION, PROVIDE A 1" THICK END PANEL AGAINST THE PARTITION. IF A WALL CABINET IS SCHEDULED TO BE INSTALLED ABOVE AN ACCESSIBLE SINK, PROVIDE A MINIMUM 1" FILLER PANEL AT WALL CABINET TO ALIGN WITH END PANEL BELOW.
16. SEAL ALL JOINTS BETWEEN BACKSPLASHES, COUNTERS, AND WALLS

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DRAWING TITLE

Casework Details

KEY PLAN

REVISIONS

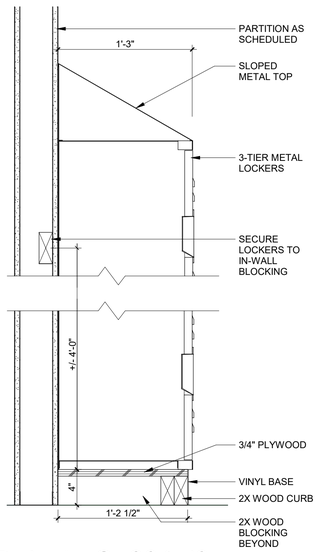
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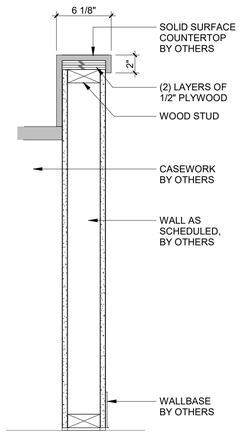
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SCALE:	As indicated
DWN. BY:	VL
CKD. BY:	RP
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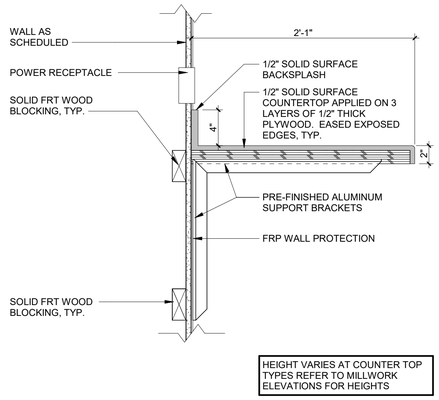
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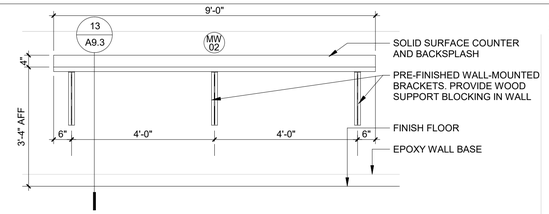
15 A9.3 DETAIL @ LOCKERS
Scale: 1 1/2" = 1'-0"



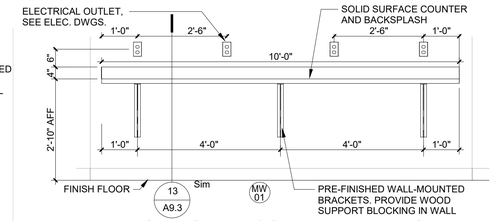
HALF-HEIGHT WALL
14 A9.3 DETAIL @ LAB D317A
Scale: 1 1/2" = 1'-0"



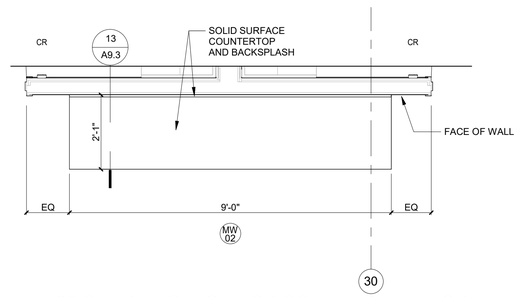
13 A9.3 MW-SECTION AT WORKING COUNTERS
Scale: 1 1/2" = 1'-0"



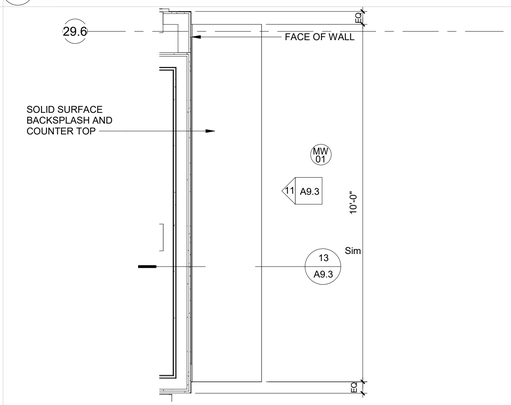
12 A9.3 MW-2 CHARTING HIGH TOP COUNTER MILLWORK
Scale: 1/2" = 1'-0"



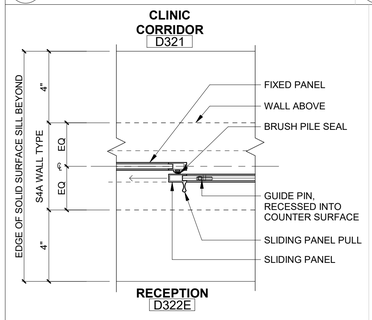
11 A9.3 MW-1 TEACHING HUB COUNTER MILLWORK
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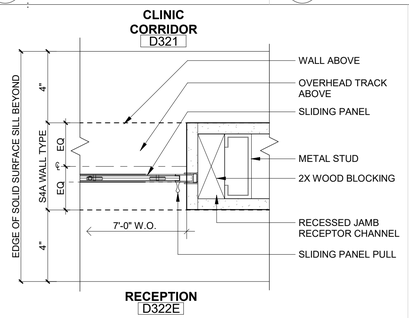
10 A9.3 MW-02 CHARTING HIGH TOP COUNTER MILLWORK
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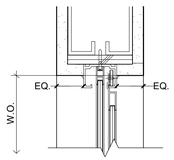
9 A9.3 MW-01 CHARTING HIGH TOP COUNTER
Scale: 1/2" = 1'-0"



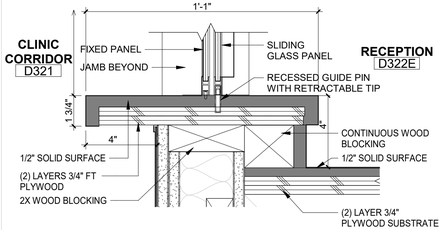
JAMB 2 - ALUM.
8 A9.3 PASS-THROUGH DETAIL
Scale: 3" = 1'-0"



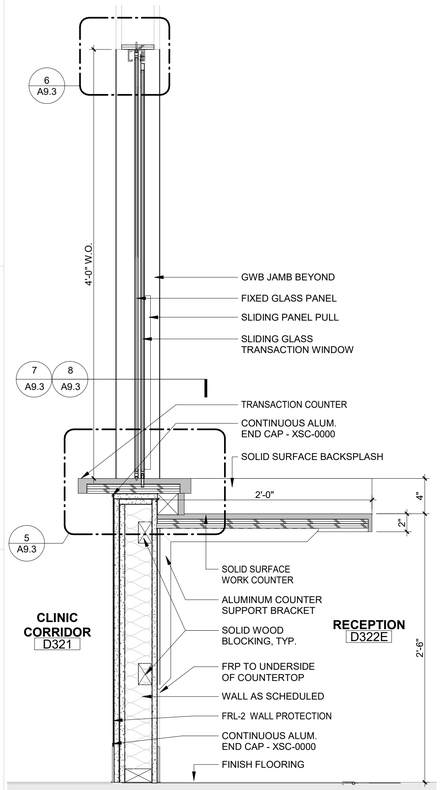
JAMB - ALUM.
7 A9.3 PASS- THROUGH DETAIL
Scale: 3" = 1'-0"



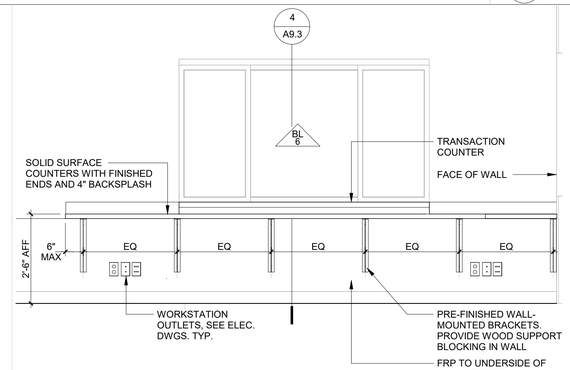
6 A9.3 HEAD - ALUM. PASS- THROUGH DETAIL
Scale: 3" = 1'-0"



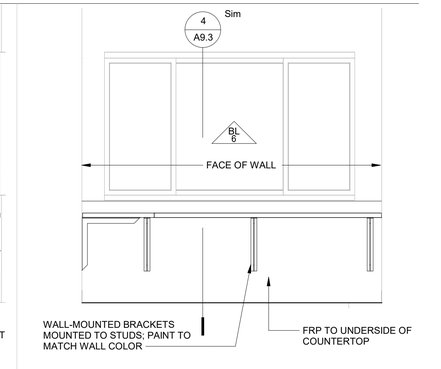
5 A9.3 SILL - ALUM. PASS- THROUGH DETAIL
Scale: 3" = 1'-0"



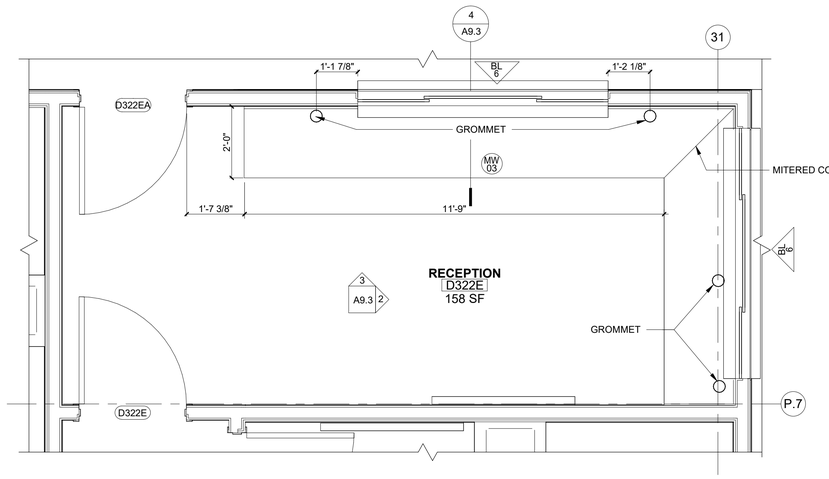
4 A9.3 MW-03 -SECTION COUNTER @ RECEPTION
Scale: 1 1/2" = 1'-0"



3 A9.3 MW-03 RECEPTION COUNTER EAST ELEV
Scale: 1/2" = 1'-0"



2 A9.3 MW-03 RECEPTION COUNTER NORTH ELEV.
Scale: 1/2" = 1'-0"



1 A9.3 MW-03 RECEPTION DESK PLAN - MILLWORK
Scale: 1/2" = 1'-0"

LAMOUREUX PAGANO
ASSOCIATES|ARCHITECTS
108 Grove Street, Suite 300
Worcester MA 01605
508.752.2831
www.lpaa.com

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TUFTS at TECH
Community Veterinary Clinic

Final Bid Package

Tufts Vet Tech Clinic Renovation

Worcester Technical High School
1 Officer Manny Familia Way, Worcester, MA 01605

DRAWING TITLE

Millwork Plans, Elevations & Details

KEY PLAN

REVISIONS

No.	Description	Date

FILE:	
JOB NO:	2417
SCALE:	As indicated
DWN. BY:	VL
CKD. BY:	RP
DATE:	March 11, 2026

A9.3

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Exterior Door Schedule

Door Number	From Room: Name	To Room: Name	To Room: Number	Pair	Door Width	Door Height	Door Thickness	Door Type	Door Material	Door Finish	Door Glass	Door Label	AR / STC	Frame Type	Frame Mat'l	Frame Finish	Frame Jamb	Frame Head	Threshold	Remarks (see Door Keynotes Legend)	Hardware
D321D	EXTERIOR	VEST.	D321D		3'-0"	7'-0"	1 3/4"	AL1	Aluminum	SEE SPEC	IG-1	--	--	C2	Aluminum	SEE SPEC	7/A6.12	2/A6.11	3/A6.11	CR, HC, VES	2.0
D321E	EXTERIOR	EXIT VESTIBULE	D321E		3'-6"	7'-0"	1 3/4"	AL1	Aluminum	SEE SPEC	IG-1	--	--	C3	Aluminum	SEE SPEC	11/A6.12	2/A6.11	3/A6.11	EO	1.0
D325	EXTERIOR	WELDING & METALS TECHNOLOGY	D325		3'-0"	7'-0"	1 3/4"	N	Aluminum	Existing	Existing	--	--	Existing	Existing	Existing	Existing	Existing	Existing		19.0
D325B	EXTERIOR	WELDING & METALS TECHNOLOGY	D325				2"			Existing	Existing	--	--	Existing	Existing	Existing	Existing	Existing	Existing		19.0

Interior Door Schedule

Door Number	From Room: Name	From Room: Number	To Room: Name	To Room: Number	Pair	Door Width	Door Height	Door Thickness	Door Type	Door Material	Door Finish	Door Glass	Door Label	AR / STC	Frame Type	Frame Mat'l	Frame Finish	Frame Jamb	Frame Head	Threshold	Remarks (see Door Keynotes Legend)	Hardware
D317	STUDENT CORRIDOR	D317	CORRIDOR	D316		3'-0"	7'-0"	1 3/4"	F	Wood	STAIN	--	--	--	Existing	Existing	Existing	Existing	Existing	--		12.0
D318	CORRIDOR	D316	RELATED CLASSROOM A	D318		3'-0"	7'-0"	1 3/4"	F	Wood	STAIN	--	--	--	Existing	Existing	Existing	Existing	Existing	--	ADB	13.0
D318A	STUDENT CORRIDOR	D317	RELATED CLASSROOM A	D318		3'-0"	7'-0"	1 3/4"	F	Wood	STAIN	--	--	STC-30	F3	H.M.	PAINT	J-1	H-1	--	ADB	13.0
D319	CORRIDOR	D316	RELATED CLASSROOM B	D319		3'-0"	7'-0"	1 3/4"	F	Wood	STAIN	--	--	STC-30	F3	H.M.	PAINT	J-1	H-1	--	ADB	13.0
D319A	STUDENT CORRIDOR	D317	RELATED CLASSROOM B	D319		3'-0"	7'-0"	1 3/4"	F	Wood	STAIN	--	--	STC-30	F3	H.M.	PAINT	J-1	H-1	--	ADB	13.0
D319AA	RELATED CLASSROOM B	D319	IDF	D319A		3'-0"	7'-0"	1 3/4"	F	Wood	STAIN	--	45 MIN	--	F1	H.M.	PAINT	J-1	H-1	--	CR	15.0
D320	STUDENT CORRIDOR	D317	LAUNDRY STORAGE	D320		3'-0"	7'-0"	1 3/4"	G	Wood	STAIN	LG-1	--	STC-30	Existing	Existing	Existing	Existing	Existing	T1/A11.3	ADB	8.0
D321	STUDENT CORRIDOR	D317	CLINIC CORRIDOR	D321		3'-0"	7'-0"	1 3/4"	F	Wood	STAIN	--	--	STC-30	F3A	H.M.	PAINT	J-1	H-1	T1/A11.3	ADB, CR	16.0
D321A	CLINIC CORRIDOR	D321	DAY BOARDING	D321A		3'-0"	7'-0"	1 3/4"	F	Wood	STAIN	--	--	STC-40	F3	H.M.	PAINT	J-1	H-1	--	ADB, CR	17.0
D321AA	DAY BOARDING	D321A	RELATED CLASSROOM A	D318		3'-0"	7'-0"	1 3/4"	F	Wood	STAIN	--	--	STC-40	F1	H.M.	PAINT	J-1	H-1	T1/A11.3	ADB	8.0
D321B	CLINIC CORRIDOR	D321	TOILET	D321B		3'-0"	7'-0"	1 3/4"	F	Wood	STAIN	--	--	STC-30	F1	H.M.	PAINT	J-1	H-1	--	ADB	10.0
D321DA	VEST.	D321D	LOBBY	D321C		3'-0"	7'-0"	1 3/4"	AL1	Aluminum	SEE SPEC	LG-2	--	--	C4	Aluminum	SEE SPEC	7/A6.12	7/A6.12 SIM	--	CR, VES	3.0
D321EA	CLINIC CORRIDOR	D321	EXIT VESTIBULE	D321E		3'-6"	7'-0"	1 3/4"	G	Wood	STAIN	LG-1	--	--	F1	H.M.	PAINT	J-1	H-1	--		4.0
D322	STUDENT CORRIDOR	D317	TEACHING HUB	D322		3'-0"	7'-0"	1 3/4"	F	Wood	STAIN	--	--	--	F3	H.M.	PAINT	J-1	H-1	--	ADB	13.0
D322A	TEACHING HUB	D322	EXAM ROOM 1	D322A		3'-0"	7'-0"	1 3/4"	F	Wood	STAIN	--	--	STC-30	F1	H.M.	PAINT	J-1	H-1	--	ADB, CR	16.0
D322AA	CLINIC CORRIDOR	D321	EXAM ROOM 1	D322A		3'-0"	7'-0"	1 3/4"	N	Wood	STAIN	LG-1	--	--	F1	H.M.	PAINT	J-1	H-1	--		5.0
D322B	TEACHING HUB	D322	EXAM ROOM 2	D322B		3'-0"	7'-0"	1 3/4"	F	Wood	STAIN	--	--	STC-30	F1	H.M.	PAINT	J-1	H-1	--	ADB, CR	16.0
D322BA	CLINIC CORRIDOR	D321	EXAM ROOM 2	D322B		3'-0"	7'-0"	1 3/4"	N	Wood	STAIN	LG-1	--	--	F1	H.M.	PAINT	J-1	H-1	--		5.0
D322C	TEACHING HUB	D322	EXAM ROOM 3	D322C		3'-0"	7'-0"	1 3/4"	F	Wood	STAIN	--	--	STC-30	F1	H.M.	PAINT	J-1	H-1	--	ADB, CR	16.0
D322CA	CLINIC CORRIDOR	D321	EXAM ROOM 3	D322C		3'-0"	7'-0"	1 3/4"	N	Wood	STAIN	LG-1	--	--	F1	H.M.	PAINT	J-1	H-1	--		5.0
D322D	TEACHING HUB	D322	EXAM ROOM 4	D322D		3'-0"	7'-0"	1 3/4"	F	Wood	STAIN	--	--	STC-30	F1	H.M.	PAINT	J-1	H-1	--	ADB, CR	16.0
D322DA	CLINIC CORRIDOR	D321	EXAM ROOM 4	D322D		3'-0"	7'-0"	1 3/4"	N	Wood	STAIN	LG-1	--	--	F1	H.M.	PAINT	J-1	H-1	--		5.0
D322E	TEACHING HUB	D322	RECEPTION	D322E		3'-0"	7'-0"	1 3/4"	G	Wood	STAIN	LG-1	--	STC-30	F1	H.M.	PAINT	J-1	H-1	--	ADB	8.0
D322EA	CLINIC CORRIDOR	D321	RECEPTION	D322E		3'-0"	7'-0"	1 3/4"	F	Wood	STAIN	--	--	--	F1	H.M.	PAINT	J-1	H-1	--	ADB	13.0
D322F	TEACHING HUB	D322	EXAM ROOM 5	D322F		3'-0"	7'-0"	1 3/4"	F	Wood	STAIN	--	--	STC-30	F1	H.M.	PAINT	J-1	H-1	--	ADB, CR	16.0
D322FA	CLINIC CORRIDOR	D321	EXAM ROOM 5	D322F		3'-0"	7'-0"	1 3/4"	N	Wood	STAIN	LG-1	--	--	F1	H.M.	PAINT	J-1	H-1	--		5.0
D322G	TEACHING HUB	D322	EXAM ROOM 6	D322G		3'-0"	7'-0"	1 3/4"	F	Wood	STAIN	--	--	STC-30	F1	H.M.	PAINT	J-1	H-1	--	ADB, CR	16.0
D322GA	CLINIC CORRIDOR	D321	EXAM ROOM 6	D322G		3'-0"	7'-0"	1 3/4"	N	Wood	STAIN	LG-1	--	--	F1	H.M.	PAINT	J-1	H-1	--		5.0
D322H	TEACHING HUB	D322	EXAM ROOM 7	D322H		3'-0"	7'-0"	1 3/4"	F	Wood	STAIN	--	--	STC-30	F1	H.M.	PAINT	J-1	H-1	--	ADB, CR	16.0
D322HA	CLINIC CORRIDOR	D321	EXAM ROOM 7	D322H		3'-0"	7'-0"	1 3/4"	N	Wood	STAIN	LG-1	--	--	F1	H.M.	PAINT	J-1	H-1	--		5.0
D322J	TEACHING HUB	D322	BEREAVEMENT	D322J		3'-0"	7'-0"	1 3/4"	F	Wood	STAIN	--	--	STC-30	F1	H.M.	PAINT	J-1	H-1	--	ADB, CR	16.0
D322JA	CLINIC CORRIDOR	D321	BEREAVEMENT	D322J		3'-0"	7'-0"	1 3/4"	F	Wood	STAIN	--	--	--	F1	H.M.	PAINT	J-1	H-1	--		5.0
D322K	INDUCTION	D322L	DENTAL	D322K		3'-6"	7'-0"	1 3/4"	AL1A	Aluminum	SEE SPEC	TG-1	--	--	AF-1	Aluminum	SEE SPEC	1/A10.2	2/A10.2	--	WO	18.0
D322L	TEACHING HUB	D322	INDUCTION	D322L		3'-6"	7'-0"	1 3/4"	AL1A	Aluminum	SEE SPEC	TG-1	--	--	AF-1	Aluminum	SEE SPEC	1/A10.2	2/A10.2	--	WO	18.0
D322M	INDUCTION	D322L	SURGERY	D322M		3'-6"	7'-0"	1 3/4"	AL1A	Aluminum	SEE SPEC	TG-1	--	--	AF-1	Aluminum	SEE SPEC	1/A10.2	2/A10.2	--	WO	18.0
D322N	TEACHING HUB	D322	X-RAY	D322N		3'-0"	7'-0"	1 3/4"	N	Wood	STAIN	LX-1	--	STC-30	F1	H.M.	PAINT	J-1	H-1	--	ADB, XL	9.0
D322Q	TEACHING HUB	D322	CAT RECOVERY	D322Q		3'-0"	7'-0"	1 3/4"	G	Wood	STAIN	LG-1	--	STC-30	F1	H.M.	PAINT	J-1	H-1	--	ADB	8.0
D323	CLINIC CORRIDOR	D321	OFFICE CORRIDOR	D323		3'-0"	7'-0"	1 3/4"	N	Wood	STAIN	LG-1	--	STC-30	F1	H.M.	PAINT	J-1	H-1	T1/A11.3	ADB	13.0
D323A	OFFICE CORRIDOR	D323	STORAGE	D323A		3'-0"	7'-0"	1 3/4"	F	Wood	STAIN	--	--	--	F1	H.M.	PAINT	J-1	H-1	--		5.0
D323B	OFFICE CORRIDOR	D323	STAFF TLT	D323B		3'-0"	7'-0"	1 3/4"	F	Wood	STAIN	--	--	STC-30	F1	H.M.	PAINT	J-1	H-1	T1/A11.3	ADB	10.0
D323C	OFFICE CORRIDOR	D323	CLINIC	D323C		3'-0"	7'-0"	1 3/4"	G	Wood	STAIN	LG-1	--	STC-30	F1	H.M.	PAINT	J-1	H-1	--	ADB	7.0
D323D	OFFICE CORRIDOR	D323	CONFERENCE	D323D		3'-0"	7'-0"	1 3/4"	G	Wood	STAIN	LG-1	--	STC-30	F1	H.M.	PAINT	J-1	H-1	--	ADB	6.0
D323E	OFFICE CORRIDOR	D323	FACULTY	D323E		3'-0"	7'-0"	1 3/4"	G	Wood	STAIN	LG-1	--	STC-30	F1	H.M.	PAINT	J-1	H-1	--	ADB	7.0
D324	RELATED CLASSROOM B	D319	ELECTRICAL ROOM	D324		3'-0"	7'-0"	1 3/4"	F	Wood	PAINT	--	--	--	Existing	Existing	Existing	Existing	Existing	--	ADB	14.0
D325A	WELDING & METALS TECHNOLOGY	D325	STORAGE/ TOOLS	D325A		3'-0"	7'-0"	1 3/4"	F	H.M.	PAINT	--	--	--	Existing	Existing	Existing	Existing	Existing	--		19.0
D326	CORRIDOR	D316	TOOL CRIB	D326		3'-0"	7'-0"	1 3/4"	F	Wood	STAIN	--	--	--	Existing	Existing	Existing	Existing	Existing	--		19.0
D326A	TOOL CRIB	D326	WELDING & METALS TECHNOLOGY	D325				0"							F0	H.M.	PAINT	J-2	H-2	--	CO	--
D326B	NIGHT LIFE STORAGE	D327	TOOL CRIB	D326		3'-0"	7'-0"	1 3/4"	F	H.M.	PAINT	--	--	--	Existing	Existing	Existing	Existing	Existing	--		19.0
D327	WELDING & METALS TECHNOLOGY	D325	NIGHT LIFE STORAGE	D327		3'-0"	7'-0"	1 3/4"	F	H.M.	PAINT	--	--	--	Existing	Existing	Existing	Existing	Existing	--		19.0
D328	WELDING & METALS TECHNOLOGY	D325	FACULTY TLT.	D328		3'-0"	7'-0"	1 3/4"	F	H.M.	PAINT	--	--	--	Existing	Existing	Existing	Existing	Existing	--		19.0
D330	LOCKER AREA	D331	MEN'S ROOM	D330		3'-0"	7'-0"	1 3/4"	F	H.M.	PAINT	--	--	--	Existing	Existing	Existing	Existing	Existing	--		19.0
D331	LOCKER AREA	D331	CORRIDOR	D316		3'-0"	7'-0"	1 3/4"	F	Wood	STAIN	--	--	--	Existing	Existing	Existing	Existing	Existing	--		19.0
D334	CORRIDOR	D316	WELDING RELATED CLASSROOM	D334		3'-0"	7'-0"	1 3/4"	F	Wood	STAIN	--	--	--	Existing	Existing	Existing	Existing	Existing	--		19.0
D334A	TOOL CRIB	D326	WELDING RELATED CLASSROOM	D334		3'-0"	7'-0"	1 3/4"	F	Wood	STAIN	--	--	STC-30	F1	H.M.	PAINT	J-1	H-1	--	ADB	11.0

DOOR KEYNOTES LEGEND

ADB. PREPARE DOOR TO RECEIVE MORTISED AUTOMATIC DOOR BOTTOM
CO. CASED OPENING; NO DOOR/HARDWARE
CR. CARD READER
EO. EGRESS ONLY; NO EXTERIOR DOOR PULLS/LEVERS
HC. TOUCH-ACTIVATED AUTOMATIC OPENER
VES. VIDEO ENTRY STATION
WO. TOUCHLESS "WAVE TO OPEN" AUTOMATIC OPERATOR
XL. DOOR AND FRAME TO BE LEAD-LINED FOR X-RAY SAFETY

SCHEDULE NOTES

1. GRAY ▭ ROWS IN DOOR SCHEDULE INDICATE EXISTING DOOR TO REMAIN; DOOR, FRAME AND/OR HARDWARE TO BE MODIFIED AS INDICATED IN SCHEDULE AND SPECIFICATIONS.
2. AT ALL EXISTING HOLLOW METAL DOORS AND FRAMES TO REMAIN, PREPARE AND REPAINT U.O.N.; REFER TO SPECIFICATIONS.
3. NEW AND EXISTING DOORS TO RECEIVE NEW LARGE FORMAT INTERCHANGEABLE CORES. CORES TO BE KEYED TO COINCIDE WITH CITY'S EXISTING KEY FORMAT.

DOOR ACOUSTICAL PROVISIONS LEGEND

DOOR PANEL STC RATING	PERIMETER GASKET	ASTRAGAL GASKET	DOOR DROP SEAL
STC-30	YES, FIELD INSTALLED	YES, FIELD INSTALLED	YES, FIELD INSTALLED
STC-40	YES, FIELD INSTALLED	YES, FIELD INSTALLED	YES, FIELD INSTALLED

GLAZING TYPES

- IG-1 — NOMINAL 1-INCH THICK DOUBLE-PANE LAMINATED SAFETY INSULATED GLAZING UNIT WITH "LOW-E" COATINGS
- IG-2 — NOMINAL 1 5/8-INCH THICK TRIPLE-PANE LAMINATED INSULATED GLAZING UNIT WITH "LOW-E" COATINGS
- LG-1 — NOMINAL 1/4-INCH THICK LAMINATED SAFETY GLASS
- LG-2 — NOMINAL 9/16-INCH THICK LAMINATED SAFETY GLASS
- LX-1 — NOMINAL 7/16-INCH THICK LAMINATED SAFETY GLASS W/ X-RAY SHIELDING
- TG-1 — NOMINAL 1/4-INCH THICK ANTI-REFLECTIVE FULLY TEMPERED SAFETY GLASS

LPA|A
LAMOUREUX PAGANO ASSOCIATES|ARCHITECTS
108 Grove Street, Suite 300
Worcester MA 01605
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www.lpaa.com

STAMP

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PROJECT

TUFTS at TECH Community Veterinary Clinic

Final Bid Package

Tufts Vet Tech Clinic Renovation

Worcester Technical High School
1 Officer Manny Familia Way, Worcester, MA 01605

DRAWING TITLE

Door Schedule, HM Frame Types and Details

KEY PLAN

REVISIONS

No.	Description	Date

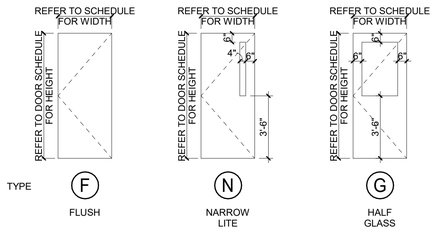
FILE:
JOB NO: 2417
SCALE: 1/4" = 1'-0"
DWN. BY: AD
CKD. BY: RP
DATE: March 11, 2026

A10.1

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H.M. DOOR TYPES:

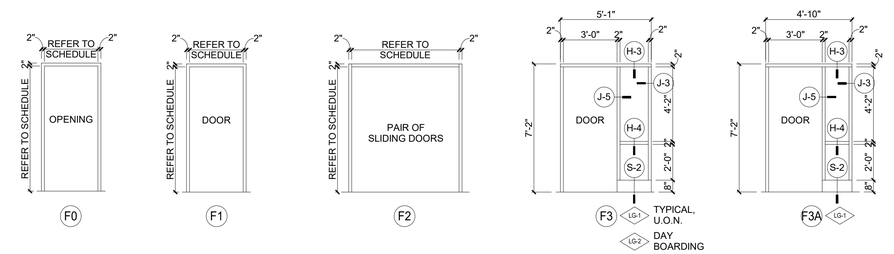
SCALE: 1/4" = 1'-0"



NOTES
1. REFER TO DOOR SCHEDULE FOR DOOR MATERIALS, LOCATIONS, AND REMARKS.
2. REFER TO STOREFRONT DRAWINGS FOR ENTRY DOOR TYPES.

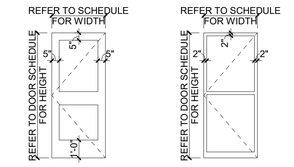
HOLLOW METAL DOOR FRAME TYPES

Scale: 1/4" = 1'-0" U.O.N.



ALUMINUM DOOR TYPES:

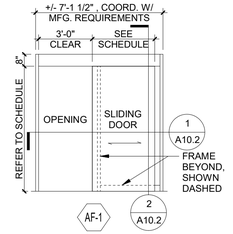
SCALE: 1/4" = 1'-0"



NOTES
1. REFER TO DOOR SCHEDULE FOR DOOR MATERIALS, LOCATIONS, AND REMARKS.
2. REFER TO STOREFRONT DRAWINGS FOR ENTRRY DOOR TYPES.

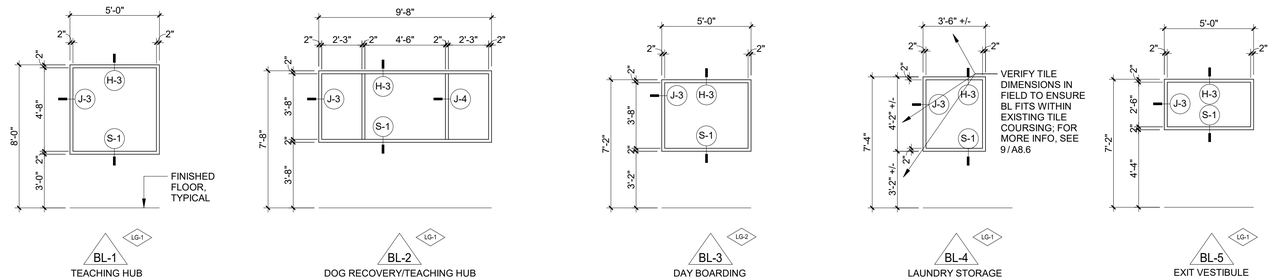
ALUMINUM FRAME TYPES

Scale: 1/4" = 1'-0" U.O.N.



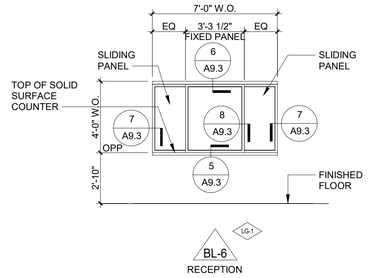
HOLLOW METAL BORROWED LIGHT TYPES

Scale: 1/4" = 1'-0" U.O.N.



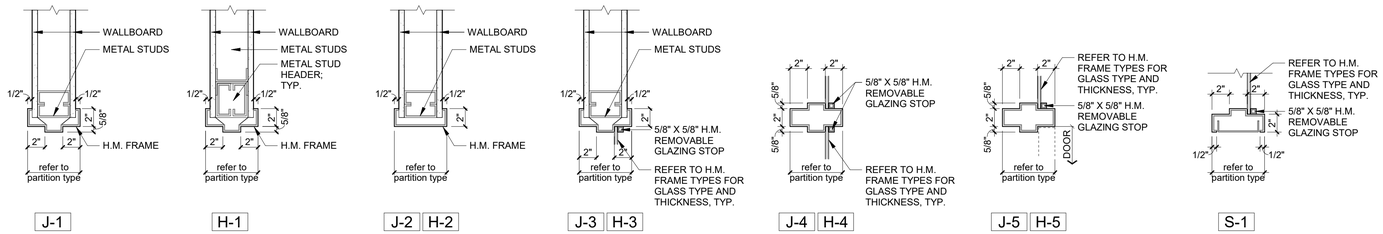
ALUMINUM PASS-THROUGH TYPES

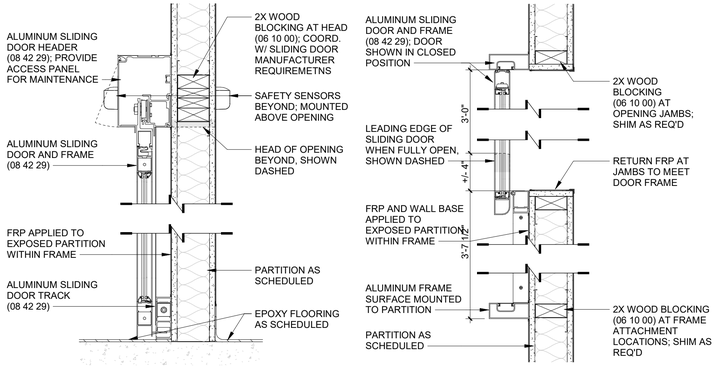
Scale: 1/4" = 1'-0" U.O.N.



TYP. HOLLOW METAL FRAME DETAILS

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





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108 Grove Street, Suite 300
Worcester MA 01605
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PROJECT

TUFTS at TECH Community Veterinary Clinic

Final Bid Package

Tufts Vet Tech Clinic Renovation

Worcester Technical High School
1 Officer Manny Familia Way, Worcester, MA 01605

DRAWING TITLE

Door HM Frame Types and Details

KEY PLAN

REVISIONS

No.	Description	Date

FILE:	
JOB NO:	2417
SCALE:	As indicated
DWN. BY:	AD
CKD. BY:	RP
DATE:	March 11, 2026

A10.2

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ROOM FINISH SCHEDULE

Room Number	Room Name	Floor Finish	Base Finish	Wall Finish	Ceiling Finish	Comments
D317	STUDENT CORRIDOR	LINOLEUM TILE	4" VINYL	GWB: PAINT	ACT-1	
D317A	LAB	LINOLEUM TILE	4" VINYL	FRP / GWB: PAINT	ACT-1	
D318	RELATED CLASSROOM A	LINOLEUM TILE	4" VINYL	GWB: PAINT	ACT-1	
D319	RELATED CLASSROOM B	LINOLEUM TILE	4" VINYL	GWB: PAINT	ACT-1	
D319A	IDF	EXISTING CONCRETE	-	EXIST.; PAINT	EXIST.; PAINT	
D320	LAUNDRY STORAGE	EXISTING EPOXY PAINTED CONCRETE; PAINT	EXISTING CT	PATCH EXISTING CERAMIC TILE	ACT-1	
D320H	EXAM ROOM 6	EPOXY	4" EPOXY	FRP / GWB: PAINT	ACT-1	W1
D321	CLINIC CORRIDOR	LINOLEUM TILE	4" VINYL	GWB: PAINT/ FRL-1/ FRL-2	ACT-1	W1
D321A	DAY BOARDING	EPOXY	4" EPOXY	FRP / GWB: PAINT	ACT-1	W2
D321B	TOILET	EPOXY	4" EPOXY	CERAMIC TILE	ACT-1	
D321C	LOBBY	EPOXY	4" EPOXY	FRL-1 / GWB: PAINT	ACT-1	W1
D321D	VEST.	EPOXY	4" EPOXY	FRL-1 / GWB: PAINT	ACT-1	W1
D321E	EXIT VESTIBULE	EPOXY	4" EPOXY	FRL-1 / GWB: PAINT	ACT-1	W1
D322	TEACHING HUB	EPOXY	4" EPOXY	FRP / GWB: PAINT	ACT-1/ACT-2/GWB; PAINT	W1
D322A	EXAM ROOM 1	EPOXY	4" EPOXY	FRP / GWB: PAINT	ACT-1	W1
D322B	EXAM ROOM 2	EPOXY	4" EPOXY	FRP / GWB: PAINT	ACT-1	W1
D322C	EXAM ROOM 3	EPOXY	4" EPOXY	FRP / GWB: PAINT	ACT-1	W1
D322D	EXAM ROOM 4	EPOXY	4" EPOXY	FRP / GWB: PAINT	ACT-1	W1
D322E	RECEPTION	EPOXY	4" EPOXY	GWB: PAINT	ACT-1	

ROOM FINISH SCHEDULE (CONTINUED)

Room Number	Room Name	Floor Finish	Base Finish	Wall Finish	Ceiling Finish	Comments
D322F	EXAM ROOM 5	EPOXY	4" EPOXY	FRP / GWB: PAINT	ACT-1	W1
D322G	EXAM ROOM 6	EPOXY	4" EPOXY	FRP / GWB: PAINT	ACT-1	W1
D322H	EXAM ROOM 7	EPOXY	4" EPOXY	FRP / GWB: PAINT	ACT-1	W1
D322J	BEREAVEMENT	EPOXY	4" EPOXY	FRP / GWB: PAINT	ACT-1	W1
D322K	DENTAL	EPOXY	4" EPOXY	FRP / GWB: PAINT	ACT-1	W2
D322L	INDUCTION	EPOXY	4" EPOXY	FRP / GWB: PAINT	ACT-1	W2
D322M	SURGERY	EPOXY	4" EPOXY	FRP / GWB: PAINT	ACT-1	W2
D322N	X-RAY	EPOXY	4" EPOXY	GWB: PAINT	ACT-1	
D322P	DOG RECOVERY	EPOXY	4" EPOXY	FRP/ GWB: PAINT	ACT-1	W2
D322Q	CAT RECOVERY	EPOXY	4" EPOXY	FRP/ GWB: PAINT	ACT-1	W2
D323	OFFICE CORRIDOR	LINOLEUM TILE	4" VINYL	GWB; PAINT	ACT-1	
D323A	STORAGE	LINOLEUM TILE	4" VINYL	GWB; PAINT	ACT-1	
D323B	STAFF TLT	EPOXY	4" EPOXY	CERAMIC TILE	ACT-1	
D323C	CLINIC	LINOLEUM TILE	4" VINYL	GWB: PAINT	ACT-1	
D323D	CONFERENCE	LINOLEUM TILE	4" VINYL	GWB: PAINT	ACT-1	
D323E	FACULTY	LINOLEUM TILE	4" VINYL	GWB: PAINT	ACT-1	
D324	ELECTRICAL ROOM	EXISTING CONCRETE	-	EXIST.; PAINT	EXIST.; PAINT	

* SEE FLOOR PLAN NOTES FOR FINISHES IN WELDING & METAL TECHNOLOGY SUITE D325

FINISH KEYNOTE LEGEND

WALLS

W1- FRL/FRP WALL PROTECTION PANELS 4' ABOVE WALL BASE
FRL-1- STANDARD FINISH WALL PROTECTION
FRL-2- CUSTOM PRINTED WALL PROTECTION
FRP- FIBERGLASS REINFORCED PLASTIC

W2- FULL HEIGHT FRP

FINISH KEY

ACT - ACOUSTICAL CEILING TILE
CT- CERAMIC TILE
ES- EXPOSED STRUCTURE
FRL- FIBER REINFORCED LAMINATE
FRP- FIBERGLASS REINFORCED PLASTIC
AR GWB- ABUSE RESISTANT GYPSUM WALL BOARD
IR GWB- IMPACT RESISTANT GYPSUM WALL BOARD
PLAM- PLASTIC LAMINATE
CG - CONER GUARD

FINISH LEGEND

LINOLEUM TILE

TL1 — 10X40 TILES, RUNNING BOND INSTALL

TL2 — 10X40 TILES, RUNNING BOND INSTALL

EPOXY

EP1

EP2

CONCRETE

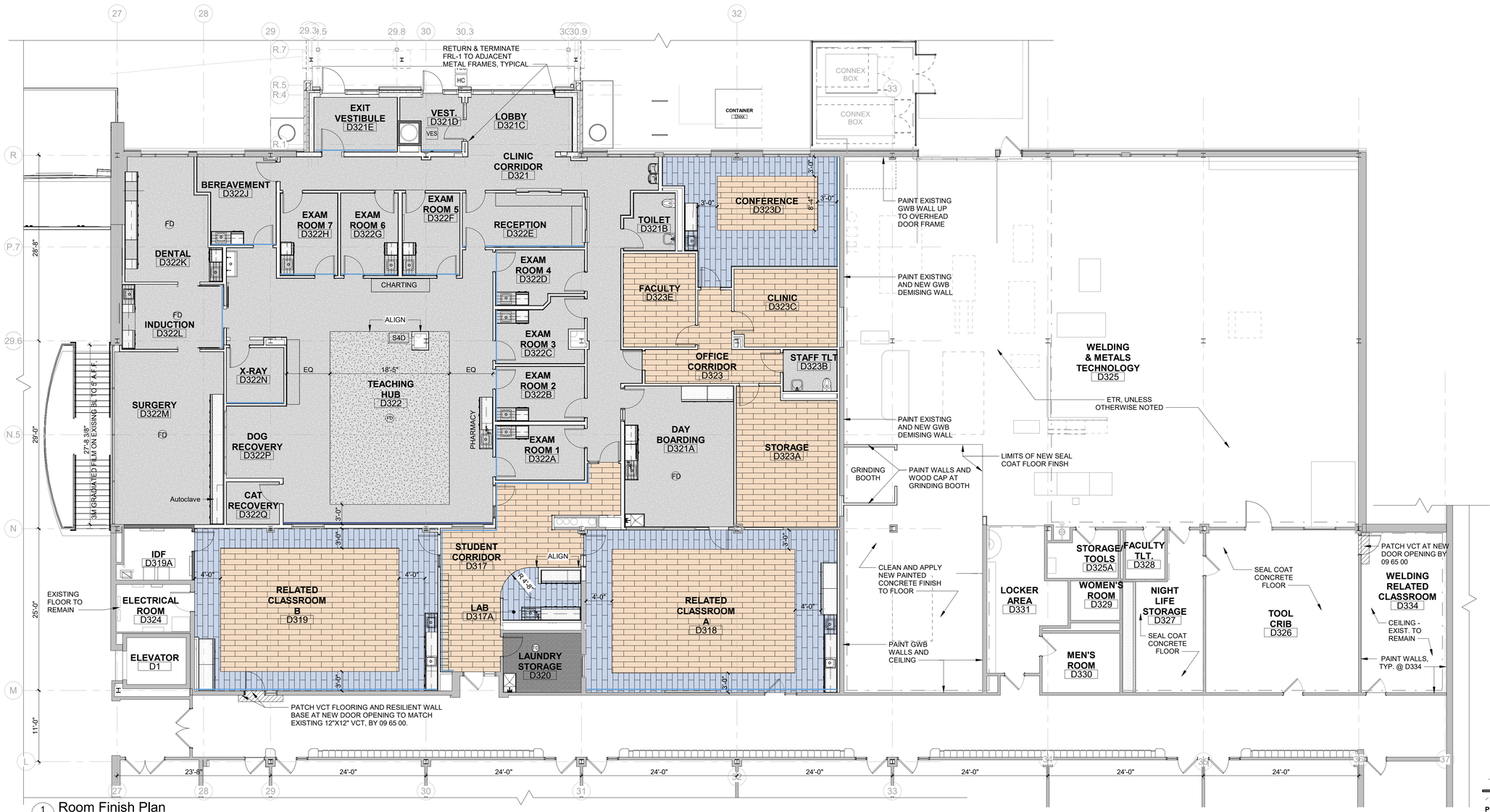
CP — PAINTED CONCRETE

ACCENT PAINT

PT-2 — LIGHT BLUE

PT-3 — DARK BLUE

GENERAL FINISH NOTES:
1. ALL EXISTING CONCRETE FLOOR SURFACES SCHEDULED TO RECEIVE EPOXY OR RESILIENT FLOORING SHALL BE PREPARED BY MECHANICALLY ABRASION AND FULLY COVERED WITH LEVELING COMPOUND IN ACCORDANCE WITH 09 05 06.
2. COORDINATE LOCATION OF ALL FLOOR BOXES WITH ARCHITECT
3. FLOOR TRANSITION DETAILS LOCATED ON DRAWINGS A11.3
4. WALL BASE DETAILS ARE LOCATED ON DRAWING A11.3
5. ALL TRANSITIONS ARE TO BE CENTERED UNDER DOOR; AS OCCURS; U.O.N
6. ALL PAINTED WALLS TO BE PT-1 U.O.N.



1 A11.1 Room Finish Plan
Scale: 1/8" = 1'-0"

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Final Bid Package

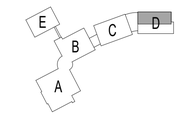
Tufts Vet Tech Clinic Renovation

Worcester Technical High School
1 Officer Manny Familia Way, Worcester, MA 01605

DRAWING TITLE

Room Finish Plans and Finish Schedule

KEY PLAN



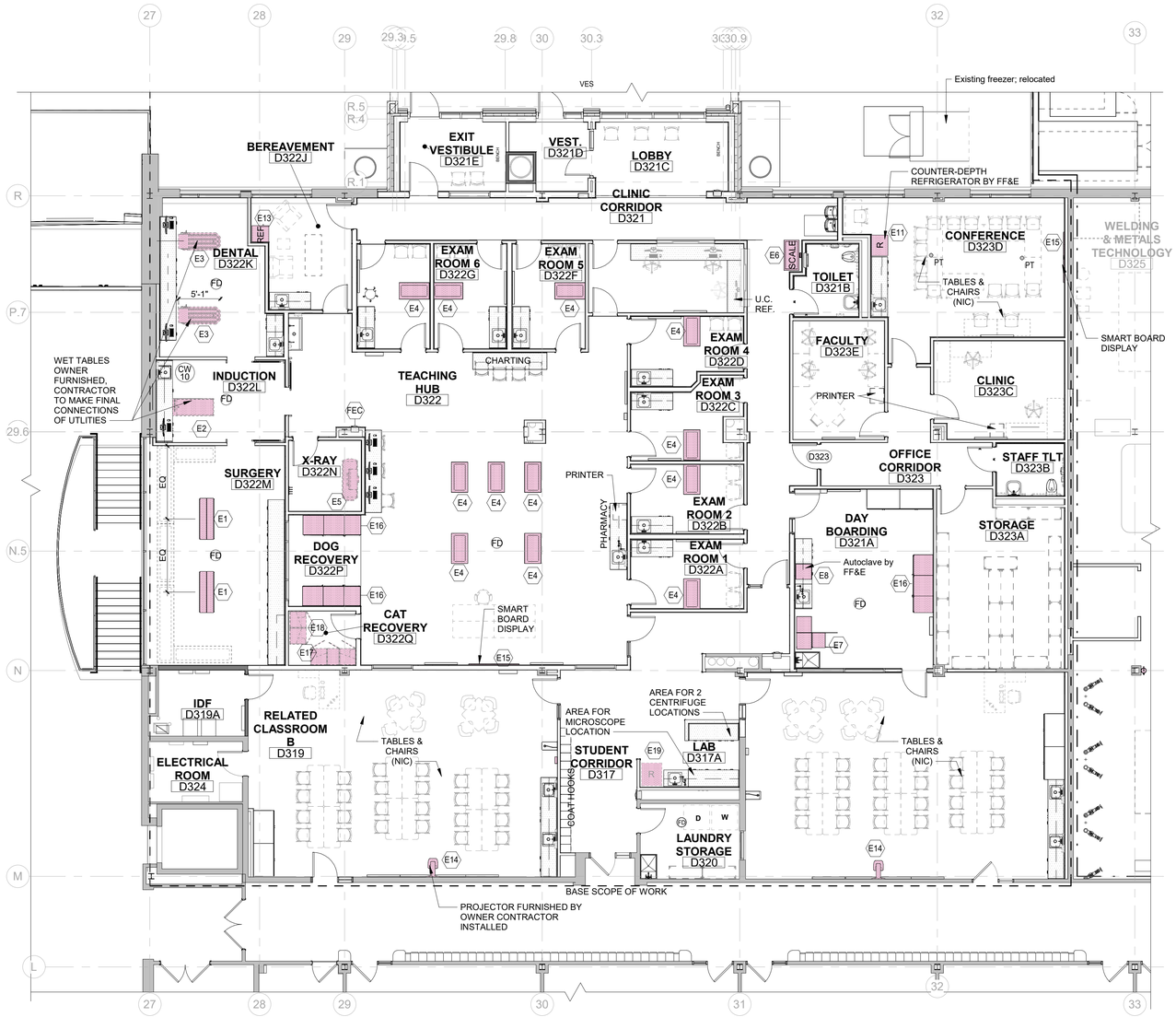
REVISIONS

No.	Description	Date

FILE:	
JOB NO:	2417
SCALE:	1/8" = 1'-0"
DWN. BY:	VL
CKD. BY:	RP
DATE:	March 11, 2026

A11.1

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1 A11.2 Partial Floor Plan - Section D - Furnishings and Equipment Plan

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

Specialty Equipment									
Type Mark	Name	Count	Manufacturer	Power	Water	Waste	Image	Keynotes	URL
E1	V-TOP SURGERY TABLE - HYDRAULIC COLUMN	2	MIDMARK	Yes	No	No		1	https://www.midmark.com/animal-health/products/tables/detail/v-top-surgery-table-adjustable-hydraulic
E2	FIXED WET TREATMENT TABLE	1	MIDMARK	Yes	Yes	Yes		1	https://www.midmark.com/animal-health/products/tables/detail/fixed-height-wet-treatment-table
E3	WET DENTAL -TREATMENT LIFT TABLE	2	MIDMARK	Yes	Yes	Yes		1	https://www.pattersonvet.com/ProductItem/078441359
E4	EXAM TABLE	12	MIDMARK	No	No	No		1	https://www.midmark.com/animal-health/products/exam-tables/detail/fixed-height-island-exam-table
E5	X-RAY	1	Avant	Yes	No	No		2	https://storage.googleapis.com/drevet/documents/Avante_Digital_X-Ray_Station.pdf
E6	PLATFORM SCALE	1	MIDMARK	Yes	No	No		1	https://technicallibrary.midmark.com/Scales/CM/WayScale-CM-00000.htm?tocpath=Animal%20Health%7CScales%7CThe%20Midmark%20Way%20Scale%7C_____0
E7	ANIMAL WASH STATION	1	Aquaquest	No	Yes	Yes		1	https://petlift.com/product/the-aquaquest-walk-in-tub-2/
E8	AUTOCLAVE	1	BioClave-28	Yes				1	https://www.benchmarkscientific.com/wp-content/uploads/2020/10/B4000-28-BioClave-28L-Brochure-HR-EM-.pdf
E11	REFRIGERATOR COUNTER DEPTH	1	TBD	Yes	No	No		1	
E13	REFRIGERATO-SMALL	1	True	Yes	No	No		1	https://equipment.mwiah.com/Handlers/File.ashx?id=3cd114f5-cb5f-4280-a737-4e0194b07c93
E14	PROJECTOR	2	EPSON	Yes	No	No		2	https://epson.com/brightlink-interactive-displays-whiteboard-projectors#products
E15	SMART BOARD	2	Panasonic	Yes	No	No		2	https://eu.connect.panasonic.com/sites/default/files/media/document/2022-09/TH-80_LFB70%20series%20Spec%20Sheet%20-%20.pdf
E16	ANIMAL CAGES	4	MIDMARK	No	No	No		1	https://equipment.mwiah.com/Category.aspx?id=17ce3daf-bffd-4c82-b1a4-6afb153703f3
E17	CAT CAGES	1	MIDMARK	No	No	No		1	https://www.midmark.com/animal-health/products/boarding-containment/detail/raintree-cat-condos
E18	CAT CAGES WITH LITER	1	MIDMARK	No	No	No		1	https://www.midmark.com/animal-health/products/boarding-containment/detail/raintree-cat-condos
E19	REFRIGERATOR	1	TBD	Yes	No	No		1	

SPECIALTY EQUIPMENT KEYNOTES

1. SPECIALTY EQUIPMENT TO BE PROVIDED BY OWNER INSTALLED BY CONTRACTOR
2. SPECIALTY EQUIPMENT TO BE PROVIDED BY OWNER INSTALLED BY VENDOR. VENDOR TO CONNECT AND VERIFY OPERATION.

FURNITURE NOTES:

1. UNLESS NOTED OTHERSWISE, FURNISHINGS WILL BE PROVIDED BY OTHERS UNDER SEPERATE CONTRACT. FURNITURE DRAWINGS ARE NOT IN CONTRACT (NIC) AND INCLUDED FOR COORDINATION PURPOSES ONLY.

Project / True North

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Final Bid Package

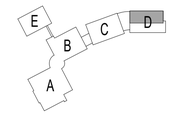
Tufts Vet Tech Clinic Renovation

Worcester Technical High School
1 Officer Manny Familia Way, Worcester, MA 01605

DRAWING TITLE

Furnishings and Equipment Plan

KEY PLAN



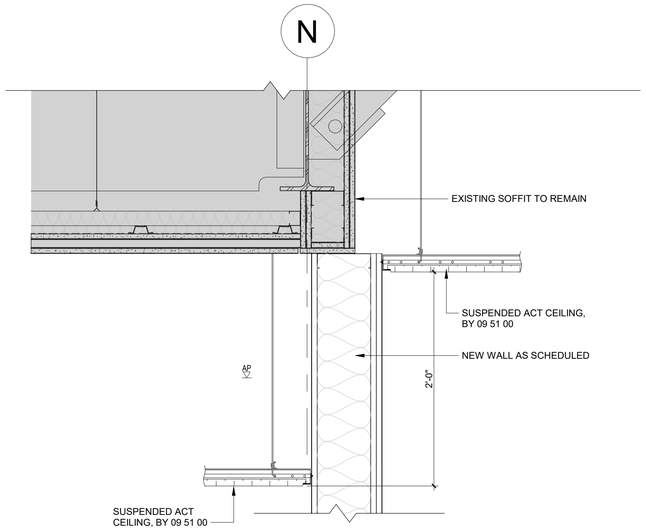
REVISIONS

No.	Description	Date

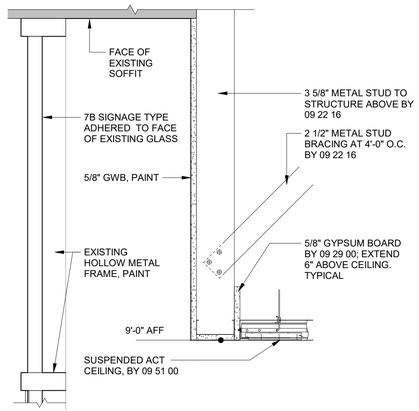
FILE:	
JOB NO:	2417
SCALE:	1/8" = 1'-0"
DWN. BY:	VL
CKD. BY:	RP
DATE:	March 11, 2026

A11.2

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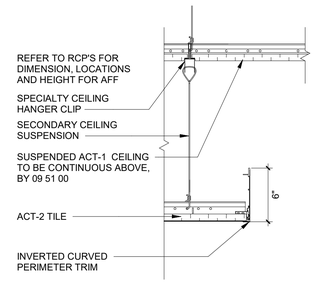


C5 A11.3 SOFFIT/SUSPENDED ACOUSTIC CEILING DETAIL
Scale 1 1/2" = 1'-0"

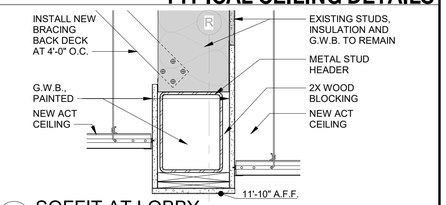


C3 A11.3 SOFFIT AT SURGERY
Scale 1 1/2" = 1'-0"

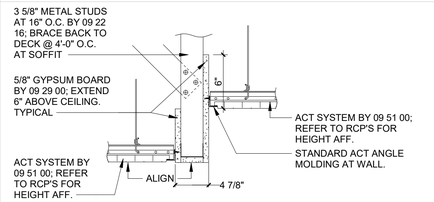
TYPICAL CEILING DETAILS



C2 A11.3 METAL PERIMETER EDGE TRIM
Scale 1 1/2" = 1'-0"

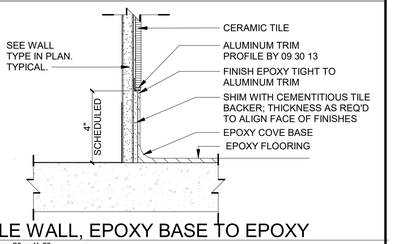


C4 A11.3 SOFFIT AT LOBBY
Scale 1 1/2" = 1'-0"



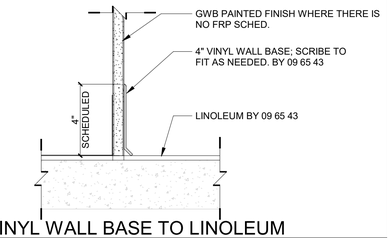
C1 A11.3 ACT TO SOFFIT & ACT HEIGHT CHANGE
Scale 1 1/2" = 1'-0"

TYPICAL WALL BASE DETAILS



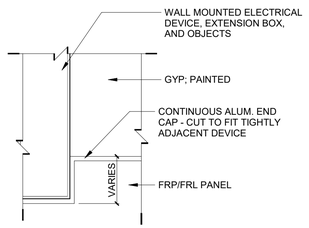
B3 A11.3 TILE WALL, EPOXY BASE TO EPOXY
Scale: 3" = 1'-0"

B2 A11.3 FRP/FRL WALL, EPOXY BASE TO EPOXY
Scale: 3" = 1'-0"

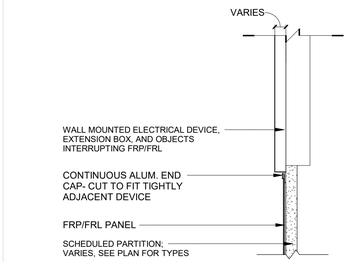


B1 A11.3 VINYL WALL BASE TO LINOLEUM
Scale: 3" = 1'-0"

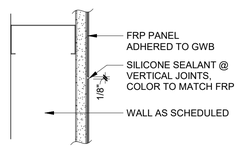
FRL/FRP TRIM DETAILS



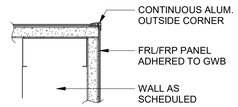
7 A11.3 TYPICAL WALL MOUNTED DEVICE DETAIL
Scale: 3" = 1'-0"



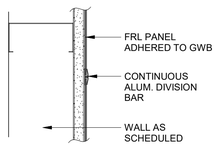
8 A11.3 TYPICAL SECTION DETAIL TRIM
Scale: 3" = 1'-0"



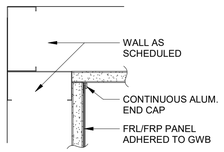
F5 A11.3 FRP VERTICAL JOINT DETAIL
Scale 3" = 1'-0"



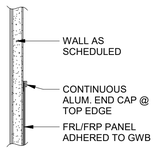
F4 A11.3 FRL/FRP CORNER PLAN TRIM DETAIL
SCALE: 3" = 1'-0"



F3 A11.3 FRL DIVIISION BAR DETAIL
SCALE: 3" = 1'-0"

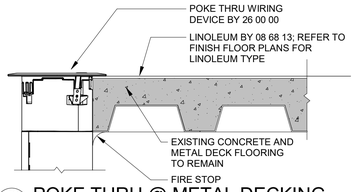


F2 A11.3 FRL/FRP END TRIM
SCALE: 3" = 1'-0"

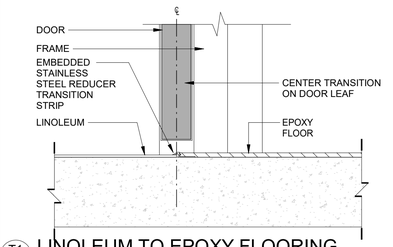


F1 A11.3 FRL/FRP TOP CAP
SCALE: 3" = 1'-0"

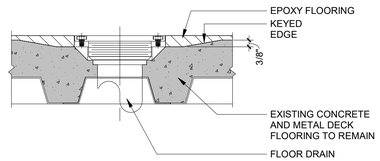
TYPICAL TRANSITION FLOOR DETAILS



T2 A11.3 POKE THRU @ METAL DECKING
Scale: 3" = 1'-0"



T1 A11.3 LINOLEUM TO EPOXY FLOORING
Scale: 3" = 1'-0"



T3 A11.3 TYP.FLOOR DRAIN AT EPOXY FLOORING
Scale: 3" = 1'-0"

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DRAWING TITLE

Finishes Details

KEY PLAN

REVISIONS

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JOB NO:	2417
SCALE:	As indicated
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CKD. BY:	RP
DATE:	March 11, 2026

A11.3

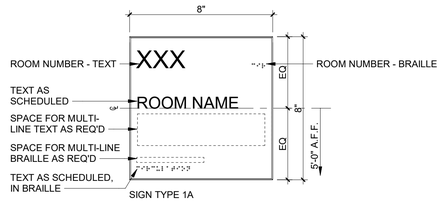
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Signage Schedule

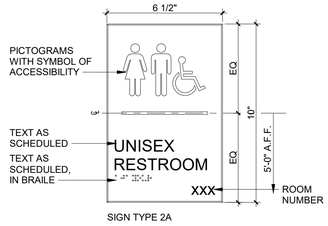
Room Number	Room Name	Sign Type	Signage Text	Notes
--	EXTERIOR	6A	[SEE 3/A12.1 FOR TEXT/GRAPHICS]	
D317	STUDENT CORRIDOR	1A	VETERINARY CLINIC	Provide Glass Backer
D317	STUDENT CORRIDOR	5A	[NONE; HOLDER ONLY]	
D317	STUDENT CORRIDOR	8A	FIRE EXTINGUISHER	
D317	STUDENT CORRIDOR	8A	FIRE EXTINGUISHER	
D317A	LAB	1A	LAB	
D317A	LAB	9A	EYE WASH STATION	
D318	RELATED CLASSROOM A	1A	RELATED CLASSROOM A	Provide Glass Backer
D318	RELATED CLASSROOM A	1A	RELATED CLASSROOM A	Provide Glass Backer
D318	RELATED CLASSROOM A	5A	[NONE; HOLDER ONLY]	
D318	RELATED CLASSROOM A	5A	[NONE; HOLDER ONLY]	
D318	RELATED CLASSROOM A	9A	EYE WASH STATION	
D319	RELATED CLASSROOM B	1A	RELATED CLASSROOM B	
D319	RELATED CLASSROOM B	1A	RELATED CLASSROOM B	
D319	RELATED CLASSROOM B	5A	[NONE; HOLDER ONLY]	
D319	RELATED CLASSROOM B	5A	[NONE; HOLDER ONLY]	
D319	RELATED CLASSROOM B	9A	EYE WASH STATION	
D319A	IDF	1A	IDF	
D319A	IDF	4A	NOT FOR STORAGE	
D320	LAUNDRY STORAGE	1A	LAUNDRY STORAGE	
D320	LAUNDRY STORAGE	4C	STAFF AND VOLUNTEER ACCESS ONLY	
D321	CLINIC CORRIDOR	3A	[SEE SIGN TYPE ELEVATION FOR TEXT]	
D321	CLINIC CORRIDOR	8B	AED	
D321A	DAY BOARDING	1A	DAY BOARDING	
D321A	DAY BOARDING	5A	[NONE; HOLDER ONLY]	
D321A	DAY BOARDING	5A	[NONE; HOLDER ONLY]	
D321A	DAY BOARDING	9A	EYE WASH STATION	
D321B	TOILET	2A	UNISEX RESTROOM	
D321C	LOBBY	1A	LOBBY	Provide Glass Backer
D321C	LOBBY	8A	FIRE EXTINGUISHER	
D321E	EXIT VESTIBULE	1A	EXIT VESTIBULE	
D322	TEACHING HUB	4B	MAX OCCUPANCY 45	
D322	TEACHING HUB	5A	[NONE; HOLDER ONLY]	
D322	TEACHING HUB	5A	[NONE; HOLDER ONLY]	
D322	TEACHING HUB	5A		
D322	TEACHING HUB	7A	[SEE 5/A12.1 FOR TEXT/GRAPHICS]	
D322	TEACHING HUB	8A	FIRE EXTINGUISHER	
D322	TEACHING HUB	8B	AED	
D322	TEACHING HUB	9A	EYE WASH STATION	
D322A	EXAM ROOM 1	1A	EXAM ROOM 1	
D322A	EXAM ROOM 1	1A	EXAM ROOM 1	
D322B	EXAM ROOM 2	1A	EXAM ROOM 2	
D322B	EXAM ROOM 2	1A	EXAM ROOM 2	
D322C	EXAM ROOM 3	1A	EXAM ROOM 3	
D322C	EXAM ROOM 3	1A	EXAM ROOM 3	
D322D	EXAM ROOM 4	1A	EXAM ROOM 4	
D322D	EXAM ROOM 4	1A	EXAM ROOM 4	
D322E	RECEPTION	1A	RECEPTION	
D322E	RECEPTION	1A	RECEPTION	
D322F	EXAM ROOM 5	1A	EXAM ROOM 5	
D322F	EXAM ROOM 5	1A	EXAM ROOM 5	
D322G	EXAM ROOM 6	1A	EXAM ROOM 6	
D322G	EXAM ROOM 6	1A	EXAM ROOM 6	
D322H	EXAM ROOM 7	1A	EXAM ROOM 7	
D322H	EXAM ROOM 7	1A	EXAM ROOM 7	
D322J	BEREAVEMENT	1A	BEREAVEMENT	
D322J	BEREAVEMENT	1A	BEREAVEMENT	
D322K	DENTAL	1A	DENTAL	
D322K	DENTAL	5A	[NONE; HOLDER ONLY]	
D322L	INDUCTION	1A	INDUCTION	
D322L	INDUCTION	5A	[NONE; HOLDER ONLY]	
D322M	SURGERY	1A	SURGERY	
D322M	SURGERY	5A	[NONE; HOLDER ONLY]	
D322M	SURGERY	7B		
D322N	X-RAY	1A	X-RAY	
D322Q	CAT RECOVERY	1A	CAT RECOVERY	
D323A	STORAGE	1A	STORAGE	
D323A	STORAGE	4C	STAFF AND VOLUNTEER ACCESS ONLY	
D323B	STAFF TLT	2A	STAFF RESTROOM	
D323C	CLINIC	1A	CLINIC	
D323D	CONFERENCE	1A	CONFERENCE	
D323D	CONFERENCE	5A	[NONE; HOLDER ONLY]	
D323E	FACULTY	1A	FACULTY	
D324	ELECTRICAL ROOM	1A	ELECTRICAL ROOM	
D324	ELECTRICAL ROOM	4A	NOT FOR STORAGE	
D325	WELDING & METALS TECHNOLOGY	8A	FIRE EXTINGUISHER	

TYPICAL SIGN TYPES

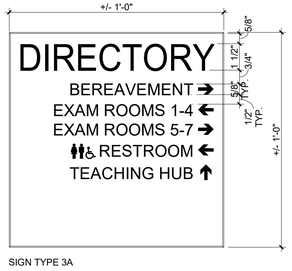
SCALE: 3" = 1'-0"



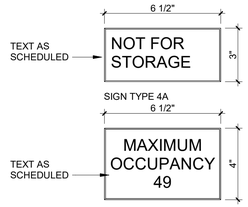
SIGN TYPE 1A



SIGN TYPE 2A

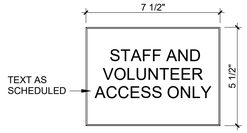


SIGN TYPE 3A

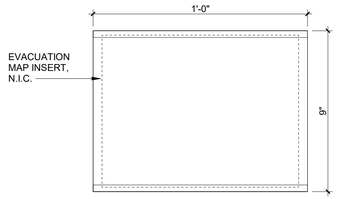


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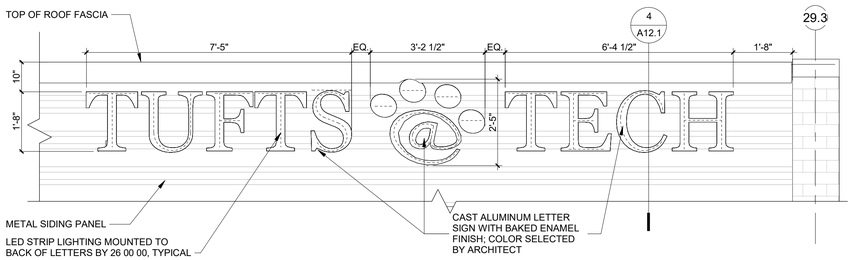
SIGN TYPE 4B



SIGN TYPE 4C



SIGN TYPE 5A



3 A12.1/ Sign Type 6A "TUFTS @ TECH"
Scale: 1/2" = 1'-0"



NOTE: ARCHITECT TO PROVIDE VECTOR FILE FOR PRINTING

5 A12.1/ Sign Type 7A "TUFTS @ TECH Vinyl Sign
Scale: 12" = 1'-0"

SIGN TYPE LEGEND - INTERIOR

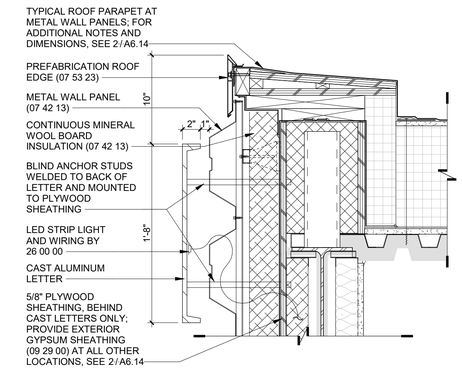
1A	8" X 8" PHOTOPOLYMER, RAISED BRAILLE.
2A	8" X 8 1/8" PHOTOPOLYMER, RAISED CHARECTER AND BRAILLE.
3A	CUSTOM WAYFINDING SIGNAGE; SEE SCHEDULE AND DETAILS 1' X 1" PHOTOPOLYMER, RAISED BRAILLE.
4A	6 1/2" X 3" PHOTOPOLYMER
4B	6 1/2" X 4" PHOTOPOLYMER
4C	7 1/2" X 5 1/2" PHOTOPOLYMER
5A	9" X 1" INSERT HOLDER; MOUNTING ORIENTATION TBD BASED ON INSERT.
6A	CUSTOM EXTERIOR "TUFTS @ TECH" SIGN - ALUMINUM FACE & RETURNS WITH BAKED ENAMEL FINISH. COLOR SELECTED BY ARCHITECT.
7A	CUSTOM VINYL GRAPHIC-DIE CUT SIGN. GWB FINISH TO BE PREPARED TO LEVEL-5 AT THE LOCATION OF APPLIED VINYL GRAPHIC. IN TEACHING HUB, AND LOBBY, REFER TO ELEVATION FOR SIZE AND LOCATION. DIMENSIONS VARY.
7B	CUSTOM GRAPHIC SIGN AT SURGERY ON EXISTING GLASS. REFER TO ELEVATION 5/A8.1 FOR LOCATION.
7C	3-INCH HIGH PAINTED LETTERING ABOVE CEILINGS AT BOTH SIDES OF NEW AND EXISTING FIRE-RATED ASSEMBLES. TO BE PLACED NO MORE THAN 15-FEET PART; "FIRE RATED ASSEMBLY - PROTECT ALL OPENINGS."
8A	6"(H) PROJECTING V-SHAPE ACRYLIC FIRE EXTINGUISHER SIGN.
8B	6"(H) PROJECTING V-SHAPE ACRYLIC AED SIGN.
9A	6"(H) PROJECTING V-SHAPE ACRYLIC EYE WASH STATION SIGN.
10A	6 1/2" X 6 1/2" PHOTOPOLYMER RAISED BRAILLE (OXYGEN CYLINDER STORAGE).
10B	6 1/2" X 6 1/2" PHOTOPOLYMER RAISED BRAILLE (ACETYLENE CYLINDER STORAGE).
10C	10" X 14" ALUMINUM FACE (OXYGEN/FLAMMABLE STORAGE).
10D	10" X 7" ALUMINUM FACE (OXYGEN/ACETYLENE CYLINDER STORAGE).
10E	10" X 14" ALUMINUM FACE (GASES STORAGE)
11	1 1/2" HIGH REFLECTIVE CAST ADHERED VINYL FILM LETTERS

SIGN KEYNOTES LEGEND

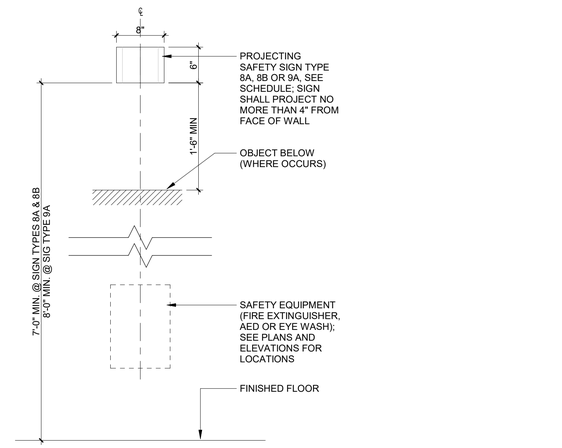
1	TYPE 8A SIMILAR TO PART #S-4663-RD-AC-5x6-V FROM www.mysafetysign.com or APPROVED EQUAL
2	TYPE 8B SIMILAR TO PART #S-4544-AC-5x6-V FROM www.mysafetysign.com OR APPROVED EQUAL
3	TYPE 9A SIMILAR TO PART #S2-0582 FROM www.mysafetysign.com or APPROVED EQUAL
4	TYPE 10C SIMILAR TO PART #SAF-SKU-S-1845 FROM www.mysafetysign.com or APPROVED EQUAL
5	TYPE 10D SIMILAR TO PART #G5579-AL FROM www.mysafetysign.com or APPROVED EQUAL
6	TYPE 10E SIMILAR TO PART #S2-2869 FROM www.mysafetysign.com or APPROVED EQUAL
7	TYPE 11 VINYL FILM LETTERS TO BE ADHERED TO CORNERS OF EXTERIOR DOOR, INTERIOR AND EXTERIOR; TYP. OF (2) AT EACH DOOR

SIGN TYPE - NOTES

1. REFER TO "10 14 00 - SIGNAGE" SPECIFICATION FOR ADDITIONAL INFORMATION, TYP. U.O.N.
2. REFER TO "10 40 00 - SAFETY SPECIALTIES" SPECIFICATION FOR ADDITIONAL INFORMATION RELATED TO SIGN TYPES 8A, 8B & 9A
3. PROVIDE BLANK GLASS BACKER AT SIGNS MOUNTED TO GLASS, TYP; REFER TO ELEVATIONS



4 A12.1/ Detail at Sign Type 6A
Scale: 1 1/2" = 1'-0"



6 A12.1/ Sign Types 8A, 8B & 9A
Scale: 1" = 1'-0"

LPA|A

LAMOUREUX PAGANO ASSOCIATES|ARCHITECTS
108 Grove Street, Suite 300
Worcester MA 01605
508.752.2831
www.lpaa.com

STAMP

CONSULTANT

PROJECT

TUFTS at TECH Community Veterinary Clinic

Final Bid Package

Tufts Vet Tech Clinic Renovation

Worcester Technical High School
1 Officer Manny Familia Way, Worcester, MA 01605

DRAWING TITLE

Signage Schedule

KEY PLAN

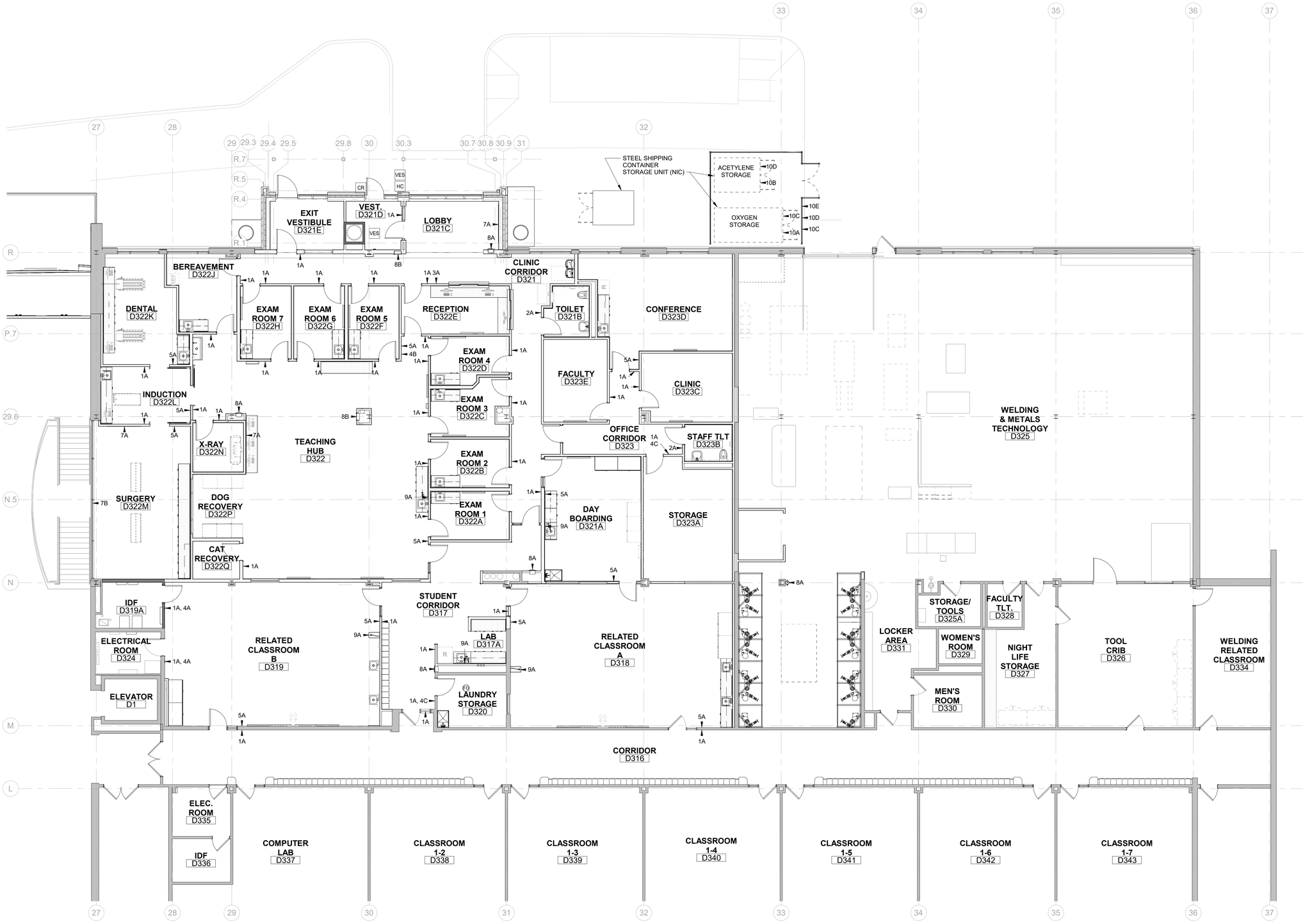
REVISIONS

No.	Description	Date

FILE:	
JOB NO:	2417
SCALE:	As indicated
DWN. BY:	LL
CKD. BY:	RP
DATE:	March 11, 2026

A12.1

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1 A12.2 Partial Third Floor Signage Plan - Section D

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

SIGNAGE KEY

SIGN TYPE(S)

Project / True North

LAMOUREUX PAGANO ASSOCIATES|ARCHITECTS
108 Grove Street, Suite 300
Worcester MA 01605
508.752.2831
www.lpaa.com

STAMP

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TUFTS at TECH Community Veterinary Clinic

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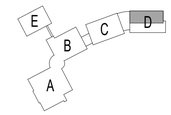
Tufts Vet Tech Clinic Renovation

Worcester Technical High School
1 Officer Manny Familia Way, Worcester, MA 01605

DRAWING TITLE

Signage Plans

KEY PLAN



REVISIONS

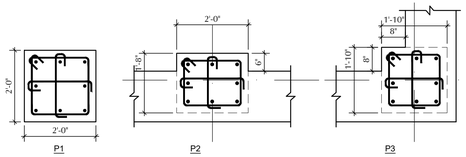
No.	Description	Date

FILE:	
JOB NO:	2417
SCALE:	1/8" = 1'-0"
DWN. BY:	LL
CKD. BY:	RP
DATE:	March 11, 2026

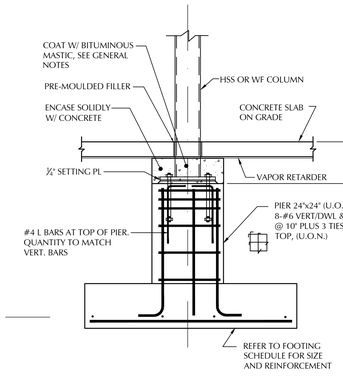
A12.2

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CONCRETE PIER / PILASTER SCHEDULE			
PIER TYPE	PIER SIZE (W x L)	VERT. REINF.	TIES
P1	24" x 24"	(8) #6	#4 @ 10" o.c.
P2	20" x 24"	(8) #6	#4 @ 10" o.c.
P3	22" x 22"	(8) #6	#4 @ 10" o.c.



CONCRETE PIER / PILASTER SCHEDULE



TYPICAL PIER FOOTING DETAIL

CONCRETE BLOCK MASONRY NOTES

B1
ALL LOAD BEARING BLOCK MASONRY SHALL CONFORM TO ACI 531 "BUILDING CODE REQUIREMENTS FOR CONCRETE MASONRY STRUCTURES".

B2
ALL LOAD BEARING CONCRETE MASONRY SHALL HAVE A MINIMUM PRISM STRENGTH F'm = 1,500 PSI AT 28 DAYS OR AS NOTED ON THE DRAWINGS.

B3
ALL CONCRETE MASONRY SHALL BE LAID IN TYPE M OR S MORTAR. DO NOT USE CALCIUM CHLORIDE IN MORTAR OR GROUT.

B4
ALL VERTICAL REINFORCING SHALL BE SOLIDLY GROUTED IN 4" OR WIDER CELLS.

B5
MINIMUM WALL REINFORCING, UNLESS NOTED OTHERWISE:
8" CMU: #5 @ 48" o.c VERT & 2-#5 CONTINUOUS IN 8" BOND BEAMS.

B6
REFER TO ARCHITECTURAL DRAWINGS FOR LOCATIONS OF ALL CMU BOND BEAMS. THE MAXIMUM VERTICAL SPACING FOR CMU BOND BEAMS SHALL BE 4'-0" O.C., EXCEPT AS OTHERWISE NOTED.

B7
ALL CONCRETE MASONRY WALLS SHALL BE REINFORCED HORIZONTALLY WITH 9 GAGE WIRE TRUSS REINFORCING SPACED AT 16" o.c.

B8
THE CONTROL ENGINEER SHALL INSPECT ALL GROUTING OPERATIONS AND THE INSTALLATION OF REINFORCING IN LOAD BEARING CONCRETE MASONRY WALLS.

GENERAL NOTES

FOUNDATION NOTES

F1
REFER TO SPECIFICATIONS FOR ADDITIONAL REQUIREMENTS.

F2
FOUNDATIONS DESIGNED FOR A MAXIMUM ALLOWABLE NET BEARING PRESSURE OF 6.0 KSF. BEARING PRESSURE TO BE CONFIRMED BY OWNER'S GEOTECHNICAL ENGINEER PRIOR TO CONSTRUCTION.

F3
ELEVATIONS FOR BOTTOM OF FOOTINGS AS DETERMINED BY THE PLANS ARE ANTICIPATED FOR THE PURPOSE OF ESTIMATION ONLY. FOOTINGS MUST REST ON BEDROCK OR COMPACTED STRUCTURAL FILL PREPARED UNDER THE SUPERVISION OF THE OWNER'S GEOTECHNICAL ENGINEER FOR THE REQUIRED BEARING PRESSURE.

F4
NO FOOTING SHALL HAVE ITS BASE HIGHER THAN THAT OF ANY NEARBY FOOTING OR OTHER EXCAVATION BY MORE THAN HALF THE SHORTEST HORIZONTAL DISTANCE BETWEEN THEM UNLESS OTHERWISE SHOWN ON THE PLANS.

F5
SLAB-ON-GRADE PREPARATION:
1. PROVIDE 12" (MINIMUM) COMPACTED STRUCTURAL FILL PLACED DIRECTLY OVER THE NATURAL SOIL AND VAPOR RETARDER BELOW EACH CONCRETE SLAB-ON-GRADE.

F6
DO NOT PLACE FOOTINGS IN WATER OR ON FROZEN GROUND.

F7
DO NOT BACK-FILL AGAINST FOUNDATION WALLS UNTIL LATERAL SUPPORTS, TOP AND BOTTOM, ARE EFFECTIVE AND WALLS ARE ADEQUATELY BRACED. CONCRETE WALLS AND SLABS MUST ATTAIN 28 DAY DESIGN STRENGTH PRIOR TO BACK-FILLING.

F8
THE BEARING SOILS ARE SUSCEPTIBLE TO DISTURBANCE BY FREEZING. SOIL BEARING SURFACES BELOW COMPLETED FOUNDATIONS MUST BE PROTECTED AGAINST FREEZING BEFORE AND AFTER FOUNDATION CONSTRUCTION. IF CONSTRUCTION IS PERFORMED DURING FREEZING WEATHER, FOOTINGS SHOULD BE BACK-FILLED TO A SUFFICIENT DEPTH (UP TO FOUR FEET) AS SOON AS POSSIBLE AFTER THEY ARE CONSTRUCTED. ALTERNATIVELY, INSULATING BLANKETS OR OTHER MEANS MAY BE USED FOR PROTECTION AGAINST FREEZING.

F9
COORDINATE UNDER FLOOR AND PERIMETER DRAIN REQUIREMENTS WITH ARCHITECTURAL, CIVIL, AND PLUMBING DRAWINGS AND THE REQUIREMENTS OF THE OWNER'S SOIL ENGINEER.

F10
COORDINATE PIPING PASSING THROUGH EXTERIOR FOUNDATION WALLS SO PIPING DOES NOT PASS THROUGH OR BELOW WALL FOOTING. STEP DOWN FOOTING AS REQUIRED SO PIPING PASSES THROUGH WALL ABOVE FOOTING.

F11
USE SIDE FORMS FOR ALL FOOTINGS. CLEAN REINFORCEMENT IMMEDIATELY PRIOR TO CONCRETE PLACEMENT. PLACE CONCRETE FOR EACH FOOTING IN CONTINUOUS POUR. LIMIT CONCRETE WALL POUR LENGTHS TO 65 FEET.

CONCRETE NOTES

C1
REFER TO SPECIFICATIONS FOR ADDITIONAL REQUIREMENTS.

C2
CONCRETE STRENGTHS (ALL CONCRETE NORMAL WEIGHT, EXCEPT AS NOTED)

CONCRETE	STRENGTH AT 28 DAYS
FOOTINGS	3,000 PSI
FOUNDATION WALLS & PIERS	4,000 PSI
SLABS-ON-GRADE (EXCEPT AS NOTED)	3,000 PSI
CONCRETE FOR EXTERIOR WORK	4,500 PSI (AIR-ENTRAINED)
ALL OTHER CONCRETE	4,000 PSI

C3
ALL WORK SHALL CONFORM TO THE BUILDING CODE REQUIREMENTS FOR REINFORCED CONCRETE OF THE AMERICAN CONCRETE INSTITUTE AND THE MASSACHUSETTS STATE BUILDING CODE, TENTH EDITION. IN CASE OF CONFLICT, THE MASSACHUSETTS STATE BUILDING CODE SHALL GOVERN.

C4
MINIMUM CONCRETE COVER FOR REINFORCEMENT:

CONCRETE PLACED AGAINST EARTH	CONCRETE COVER 3"
FORMED CONCRETE EXPOSED TO EARTH, WEATHER	2"
FORMED CONCRETE NOT EXPOSED TO EARTH, WEATHER	1½"
SUSPENDED CONCRETE SLABS, TOP BARS	¾"
SUSPENDED CONCRETE SLABS, BOTTOM BARS	1"

C5
CONTROLLED CONCRETE SHALL BE PROPORTIONED, MIXED, AND PLACED UNDER THE SUPERVISION OF AN APPROVED CONCRETE CONTROL ENGINEER.

C6
REINFORCING MATERIALS

TYPICAL BARS	ASTM A 615-60
WELDED WIRE FABRIC	ASTM A 185

C7
WELDED WIRE FABRIC SHALL BE SUPPLIED IN FLAT SHEETS.

C8
PROVIDE LAP SPLICE OF 40 DIAMETERS, UNLESS OTHERWISE NOTED. PROVIDE DOWELS TO MATCH MAIN REINFORCEMENT SIZE AND SPACING, UNLESS OTHERWISE NOTED.

C9
PROVIDE KEY AND #4 x 3'-0" LONG,@16" O.C. DOWELS AT CONSTRUCTION JOINTS UNLESS OTHERWISE SHOWN ON THE PLANS. SEE "TYPICAL SLAB ON GRADE DETAIL" FOR DOWELS AT CONSTRUCTION JOINTS IN SLABS ON GRADE.

C10
ALL NECESSARY SLEEVES AND INSERTS ARE TO BE FURNISHED AND PLACED BY THE VARIOUS TRADES IN FULL COOPERATION WITH THE CONTRACTOR.

C11
PROVIDE #4@12" HORIZONTAL AND VERTICAL, EACH FACE, IN ALL CONCRETE WALLS AND 2- #6 CONTINUOUS ON TOP AND BOTTOM OF CONCRETE WALLS, UNLESS OTHERWISE INDICATED ON THE DRAWINGS.

C12
STRUCTURAL DRAWINGS SHALL BE USED IN CONJUNCTION WITH THE ARCHITECTURAL, HVAC, PLUMBING, AND ELECTRICAL DRAWINGS AND THESE DRAWINGS SHALL BE REFERRED TO FOR SIZES AND LOCATIONS OF OPENINGS, DENTS, PIPES, INSERTS, BOXES, AND HANGERS.

C13
CALCIUM CHLORIDE SHALL NOT BE USED IN ANY CONCRETE.

C14
PIPES AND SLEEVES EMBEDDED IN CONCRETE SHALL NOT BE LARGER IN OUTSIDE DIAMETER THAN ONE-FOURTH THE THICKNESS OF THE SLAB, WALL, OR BEAM IN WHICH THEY ARE EMBEDDED, NOR SHALL THEY BE PLACED CLOSER THAN THREE DIAMETERS OR BE LOCATED SO AS TO IMPAIR THE STRENGTH OF THE CONCRETE.

C15
SAWCUT SLABS IN PATTERN SHOWN ON PLANS AND TYPICAL DETAILS. START SAWCUTTING AS SOON AS SAW WILL NOT RAVEL EDGES OR DISLODGE AGGREGATE, BUT IN NO CASE MORE THAN 12 HOURS AFTER THE SLAB IS PLACED.

STRUCTURAL STEEL DECK NOTES

MD1
REFER TO SPECIFICATIONS FOR ADDITIONAL REQUIREMENTS.

MD2
DESIGN, FABRICATION, AND INSTALLATION OF ALL STEEL DECK SHALL BE IN ACCORDANCE WITH THE "SPECIFICATIONS FOR THE DESIGN OF COLD FORMED STEEL STRUCTURAL MEMBERS" OF AMERICAN IRON AND STEEL INSTITUTE (AISI). ALL METAL DECK SHALL BE GALVANIZED.

MD3
PROVIDE CONTINUOUS SHEET METAL CLOSURES AT ALL SLAB OPENINGS AND SLAB EDGES AND CONTINUOUS DECK CLOSURES AT ALL DECK ENDS. PROVIDE COLUMN CLOSURES, RIDGE AND VALLEY PLATES, CANT STRIPS, RECESSED DRAIN SUMP PANS, ETC. PROVIDE SUPPLEMENTAL FRAMING AT OPENINGS AS REQUIRED FOR SUPPORT OF STEEL DECK. PROVIDE STRAP ANCHORS OR TEMPORARY SHORING AS NECESSARY TO CONTROL CANTILEVER DEFLECTIONS AT FLOOR SLAB EDGES.

MD4
STEEL DECK SHALL HAVE OPEN SIDE LAPS. SIDE LAPS SHALL BE FASTENED WITH #12 SELF TAPPING STEEL SCREWS SPACED AT 36" ON CENTER, MAXIMUM. WELDED OR BUTTON PUNCHED SIDE LAPS ARE NOT PERMISSIBLE.

MD5
1 ½" ROOF DECK SHALL BE FASTENED TO SUPPORT STEEL WITH A MINIMUM ⅝" DIAMETER PUDDLE WELD AT 12" ON CENTER AT INTERMEDIATE SUPPORTS AND AT 6" ON CENTER AT END SUPPORTS.

DESIGN LOADS

BUILDING CODE: 780 CMR MASSACHUSETTS STATE BUILDING CODE, TENTH EDITION, CONSISTING OF THE 2021 INTERNATIONAL BUILDING CODE AS MODIFIED BY MASSACHUSETTS.

BUILDING OCCUPANCY RISK CATEGORY: CAT. III

OCCUPANCY LOADS:

3rd FLOOR SHOPS (ORIG. DESIGN LOAD)	150 PSF
CLASSROOMS (50 PSF + 20 PSF PARTITIONS)	70 PSF
STAIRS & CORRIDORS	100 PSF
FLEXIBLE OPEN AREAS	100 PSF

ROOF LOAD:

LIVE LOAD	20 PSF
SNOW LOAD	(SEE BELOW)

SNOW LOAD
GROUND SNOW LOAD, P_g (WORCESTER, MA) 50 PSF
FLAT ROOF SNOW LOAD, P_f (SCHOOL ROOF) 38.5 PSF
EXPOSURE FACTOR, C_e = 1.0
THERMAL FACTOR, C_T = 1.0 (BUILDING ROOFS)
THERMAL FACTOR, C_T = 1.2 (UNHEATED ROOFS, CANOPIES)
IMPORTANCE FACTOR, I_s = 1.1
SNOW DRIFT IN ACCORDANCE WITH BUILDING CODE

WIND LOADS
BASIC WIND SPEED (WORCESTER, MA), V_{ULT} = 127 MPH (V_{ASD} = 98 MPH)
BUILDING RISK CATEGORY = III
EXPOSURE CATEGORY = B
INTERNAL PRESSURE COEFFICIENT = +/- 0.18

SEISMIC LOADS
PER MASSACHUSETTS STATE BUILDING CODE, TENTH EDITION
ANALYSIS PROCEDURE: EQUIVALENT LATERAL FORCE PROCEDURE
SEISMIC DESIGN CATEGORY = B
SITE CLASS = D
IMPORTANCE FACTOR, I_E = 1.25
LOCATION FACTORS: (WORCESTER, MA)
S_s = 0.210
S_1 = 0.060
F_a = 1.6
F_v = 2.4
STEEL SYSTEM NOT SPECIFICALLY DETAILED FOR SEISMIC RESISTANCE
RESPONSE MODIFICATION FACTOR, R = 3.0
OVERSTRENGTH FACTOR, Ω = 3.0
DEFLECTION AMPLIFICATION FACTOR, Cd = 3.0
Sds = 0.22
Sd1 = 0.10
SEISMIC RESPONSE FACTOR, Cs = 0.09
DESIGN BASE SHEAR (ASD) = 5 K

STRUCTURAL STEEL NOTES

S1
REFER TO SPECIFICATIONS FOR ADDITIONAL REQUIREMENTS.

S2
STRUCTURAL STEEL SHALL BE NEW STEEL CONFORMING TO THE FOLLOWING ASTM STANDARD SPECIFICATIONS:

W-SHAPES	ASTM A 992
PLATES AND ANGLES	ASTM A 36
CHANNELS	ASTM A 36
STRUCTURAL TUBING	ASTM A 500, GRADE B, FY = 46 KSI
PIPE	ASTM A 53, GRADE B
HIGH STRENGTH BOLTS	ASTM A325, F1852, A490 & F2280
ANCHOR RODS	ASTM F 1554, GRADE 36 & 55

S3
DETAILS, FABRICATION, AND ERECTION SHALL CONFORM TO THE SPECIFICATIONS AND TO THE LATEST STANDARD SPECIFICATIONS OF THE AMERICAN INSTITUTE OF STEEL CONSTRUCTION. ASD USED FOR DESIGN.

S4
NO FABRICATION SHALL BE STARTED UNTIL THE SHOP DRAWINGS COVERING THE WORK HAVE BEEN APPROVED BY THE ARCHITECT IN WRITING.

S5
ALL STRUCTURAL STEEL SHALL BE SHOP-WELDED OR HIGH STRENGTH BOLTED, UNLESS OTHERWISE SHOWN. FIELD CONNECTIONS SHALL BE MADE WITH TORQUE CONTROLLED HIGH STRENGTH BOLTS. FIELD WELDING, OR ½" UNFINISHED BOLTS MAY BE USED FOR ANGLES AND CHANNELS LESS THAN 8" IN SIZE.

S6
INDIVIDUAL COLUMNS SHALL STAND PLUMB WHEN CONNECTED BY ANCHOR BOLTS TO THEIR SUPPORTS WITHOUT THE BENEFIT OF GUYS OR BRACING WITHIN A TOLERANCE OF ½" IN 30 FEET.

S7
PROVIDE FITTED WELDED ⅛" WEB STIFFENER PLATES ON EACH SIDE OF ALL BEAMS SEATED ON COLUMNS UNLESS OTHERWISE NOTED.

S8
PAINT STRUCTURAL STEEL ONE SHOP COAT. SEE SPECIFICATIONS FOR EXEMPTIONS (NO PAINT AT STEEL TO RECEIVE FIRE PROTECTION SYSTEMS OR TOP FLANGE OF BEAMS TO RECEIVE SHEAR STUDS).

S9
ALL STRUCTURAL STEEL BELOW GROUND FLOOR SLAB SHALL BE COATED WITH AN APPROVED BITUMINOUS MASTIC AND ENCASED IN CONCRETE. BITUMINOUS MASTIC MUST BE COMPATIBLE WITH UNDERSLAB VAPOR RETARDER.

S10
ALL WELDS SHALL BE PERFORMED BY APPROVED CERTIFIED WELDERS USING E70XX ELECTRODES.

S11
SPLICING OF STRUCTURAL MEMBERS OTHER THAN WHERE DETAILED ON STRUCTURAL DRAWINGS IS PROHIBITED WITHOUT WRITTEN APPROVAL OF THE STRUCTURAL ENGINEER.

MISCELLANEOUS NOTES

M1
THE INTENT OF THE STRUCTURAL DRAWINGS IS TO SHOW THE MAIN STRUCTURAL FEATURES AND STRUCTURAL DESIGN FOR THE PROJECT. ARCHITECTURAL DETAILS ARE SHOWN INCIDENTALLY ONLY AND NOT COMPLETELY. THEREFORE ARCHITECTURAL, MECHANICAL, PLUMBING AND ELECTRICAL DRAWINGS MUST BE USED IN CONJUNCTION WITH STRUCTURAL DRAWINGS DURING ALL PHASES OF CONSTRUCTION.

M2
CONSULT THE ARCHITECTURAL, MECHANICAL, PLUMBING AND ELECTRICAL DRAWINGS FOR LOCATION AND SIZE OF CHASES, INSERTS, OPENINGS, SLEEVES, DEPRESSIONS AND OTHER PROJECT REQUIREMENTS. COMBINE THE REQUIREMENTS INTO THE SHOP DRAWINGS COVERING THE WORK. PROVIDE STRUCTURAL FRAMING PER TYPICAL DETAILS AS REQUIRED AT FLOOR AND ROOF OPENINGS WHERE STRUCTURAL FRAMING IS NOT SHOWN.

M3
THE STRUCTURE IS DESIGNED TO FUNCTION AS A UNIT UPON COMPLETION OF CONSTRUCTION OF THE PROJECT AND THEN, ONLY TO SUPPORT THE DESIGN LOADS INDICATED. THE CONTRACTOR IS RESPONSIBLE FOR MEANS, METHODS AND SEQUENCE OF CONSTRUCTION AND FOR THE ADEQUACY OF THE STRUCTURE TO SUPPORT LOADS OCCURRING DURING CONSTRUCTION. FURNISH ALL TEMPORARY BRACING, SHORING, AND/OR SUPPORT AS REQUIRED.

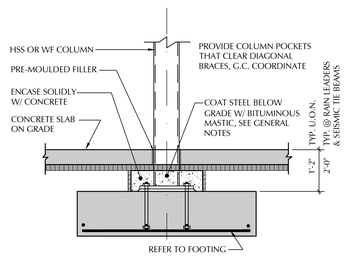
M4
THE BUILDINGS DERIVE LATERAL STABILITY FROM STEEL BRACES, STEEL MOMENT FRAMES, CONCRETE FOUNDATION WALLS, CONCRETE FLOOR SLABS, AND STEEL ROOF DECK. ALL STRUCTURAL STEEL MUST BE TEMPORARILY BRACED AND GUYED UNTIL THE BUILDING IS LATERALLY STABLE. COLUMN ANCHOR BOLTS ARE NOT DESIGNED TO TEMPORARILY CANTILEVER FROM THE FOUNDATION.

M5
CHECK ALL DIMENSIONS AGAINST THE REQUIREMENTS OF OTHER CONTRACT DOCUMENTS. RESOLVE APPARENT CONSISTENCIES IN THE CONTRACT DOCUMENTS WITH THE ARCHITECT/ENGINEER BEFORE PROCEEDING WITH THE WORK.

M6
SHOW ALL OPENINGS THROUGH STRUCTURAL MEMBERS ON THE SHOP DRAWINGS SUBMITTED FOR REVIEW. OPENINGS WHICH ARE NOT SHOWN ON THE STRUCTURAL DRAWINGS ARE SUBJECT TO REVIEW AND ACCEPTANCE AND SHALL BE CLEARLY INDICATED FOR REVIEW AND ACCEPTANCE ON THE SHOP DRAWINGS.

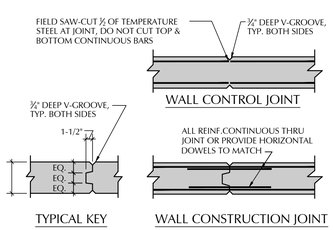
M7
WHEREVER THERE IS CONFLICT BETWEEN DETAILS OR TWO DETAILS APPLYING TO THE SAME CONDITION, THE MOST RESTRICTIVE, AS DETERMINED BY THE ENGINEER SHALL APPLY.

M8
PROMPTLY NOTIFY THE ENGINEER OF ANY STRUCTURAL MEMBERS CALLED OUT ON THE ARCHITECTURAL, MECHANICAL, PLUMBING, OR ELECTRICAL DRAWINGS THAT IS NOT IDENTIFIED ON THE STRUCTURAL DRAWINGS. DESIGN OF THESE MEMBERS WILL BE PROVIDED AS NECESSARY BY THE STRUCTURAL ENGINEER UPON NOTIFICATION.



NOTE: IF ROCK IS PRESENT AT FOOTING BEARING ELEVATIONS, OVER-EXCAVATE 12" MIN. AND PROVIDE COMPACTED GRANULAR FILL TO REQUIRED GRADE.

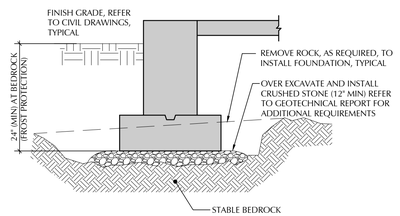
TYPICAL COLUMN FOOTING DETAIL



LOCATE ALL EXTERIOR FOUNDATION WALL JOINTS AT LOCATIONS NOT TO IMPAIR THE STRENGTH OF THE FOUNDATION WALL. LOCATE JOINTS TO MATCH BRICK CONTROL JOINTS. TYPICAL (REFER TO ARCH. DWG'S FOR BRICK CONTROL JOINT LOCATIONS)

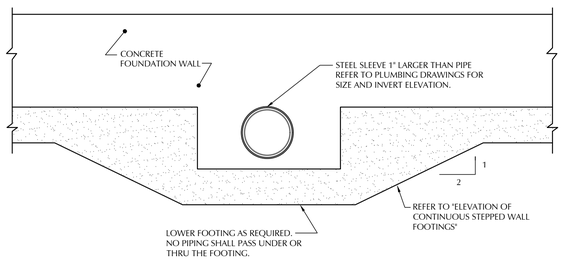
PROVIDE WALL CONSTRUCTION JTS @ 40' o.c. (MAX), ALTERNATE PLACING OF PANELS, ALLOWING 36 HOURS FROM THE END OF ONE POUR TO THE BEGINNING OF ADJACENT POURS. (U.O.N.)
FROST WALLS ONLY: CONSTRUCTION JOINT SPACING MAY BE INCREASED TO 80' o.c. (MAX) PROVIDED WALL CONTROL JOINTS ARE INSTALLED AT 24' o.c. (MAX) BETWEEN CONSTRUCTION JOINTS. LOCATE ALL JOINTS IN EXTERIOR WALLS AT BRICK CONTROL JOINT LOCATIONS.

TYPICAL CONSTR./CONTROL JOINTS IN CONCRETE WALLS

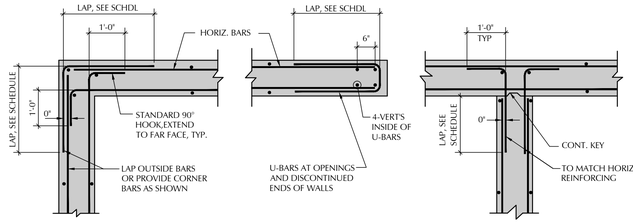


NOTE: CONTINUOUS FROST WALL FOOTING MAY BE RAISED AT SUITABLE BEDROCK LOCATIONS, AS NOTED. G.C. MUST SUBMIT ALL FOOTING ELEVATION CHANGES TO STRUCTURAL ENGINEER FOR REVIEW PRIOR TO INSTALLATION. DETAIL DOES NOT APPLY TO RETAINING WALLS.

TYPICAL FOUNDATION BEARING AT BEDROCK



TYPICAL FOUNDATION WALL PIPE PENETRATION DETAILS



PLAN OF HORIZONTAL REINFORCING OF CONCRETE WALLS AND GRADE BEAMS

LAMOUREUX PAGANO ASSOCIATES|ARCHITECTS
108 Grove Street, Suite 300
Worcester MA 01605
508.752.2831
www.lpaa.com

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PROJECT

TUFTS at TECH Community Veterinary Clinic

100% Construction Documents

Tufts at Tech Relocation

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DRAWING TITLE

Typical Details and General Notes

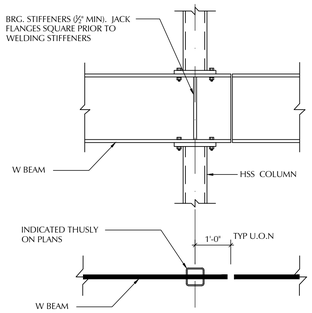
REVISIONS

No.	Description	Date

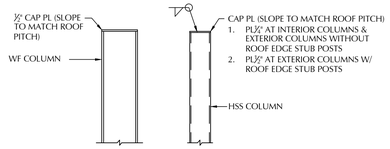
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SCALE: As indicated
DWN. BY: CJT
CKD. BY: BDI
DATE: March 11, 2026

S1.1

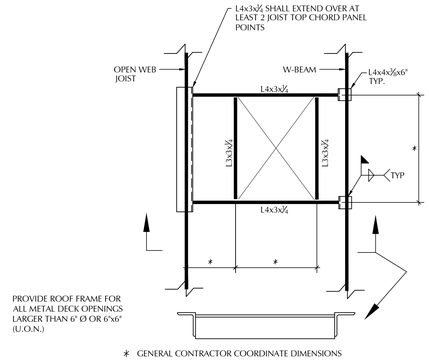
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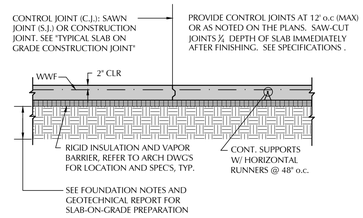
TYPICAL BEAM OVER OR THRU COLUMN



TYPICAL COLUMN CAP PLATE



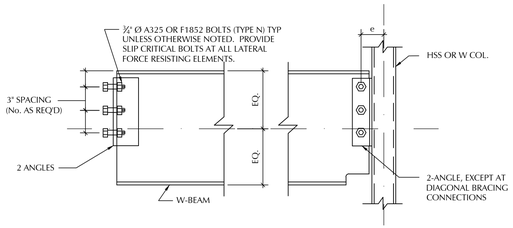
TYPICAL OPENINGS IN ROOF



TYPICAL SLAB ON GRADE DETAIL

ABBREVIATIONS

ADD'L	ADDITIONAL
ALT	ALTERNATE
A.B.	ANCHOR BOLT
ARCH	ARCHITECT
B.P.	BASE PLATE
B	BOTTOM
BEW	BOTTOM EACH WAY
BM	BEAM
BOF	BOTTOM OF FOOTING
BRG	BEARING
BS	BOTH SIDES
C	POSITIVE CAMBER
CIP	CAST-IN-PLACE
COL	COLUMN
COMP DK	COMPOSITE DECK
CONC	CONCRETE
CMU	CONCRETE MASONRY UNIT
C.J.	CONTROL JOINT
CL	CENTER LINE
CONST JT	CONSTRUCTION JOINT
CONT	CONTINUOUS
DIA	DIAMETER
DWL'S	DOWELS
DWG	DRAWING
EA	EACH
EF	EACH FACE
EW	EACH WAY
EL OR ELEV	ELEVATION
E.J.	EXPANSION JOINT
EQ	EQUAL
FF	FAR FACE
FDN	FOUNDATION
FTG	FOOTING
H	HORIZONTAL
HSS	HOLLOW STRUCTURAL SHAPE
IF	INSIDE FACE
LLV	LONG LEG VERTICAL
LW	LONG WAY
MAX	MAXIMUM
M.C.	MOMENT CONNECTION
MECH	MECHANICAL
M.M.	METAL FABRICATIONS (05 50 00)
MIN	MINIMUM
NF	NEAR FACE
N-S	NON-SHRINK
NTS	NOT TO SCALE
O.C.	ON CENTER
PL	PLATE
REINF	REINFORCING
SC	SHEAR CONNECTOR
SLV	SHORT LEG VERTICAL
SOG	SLAB ON GRADE
SW	SHORT WAY
S.S.	STAINLESS STEEL
STIFF	STIFFENER
STL	STEEL
S.J.	SAWN JOINT
T	TOP
TOC	TOP OF CONCRETE
TOF	TOP OF FOOTING
TOW	TOP OF WALL
TSL	TOP OF SLAB
TST	TOP OF STEEL
TYP	TYPICAL
U.O.N.	UNLESS OTHERWISE NOTED
V	VERTICAL
WWF	WELDED WIRE FABRIC
W/	WITH
W.P.	WORKING POINT

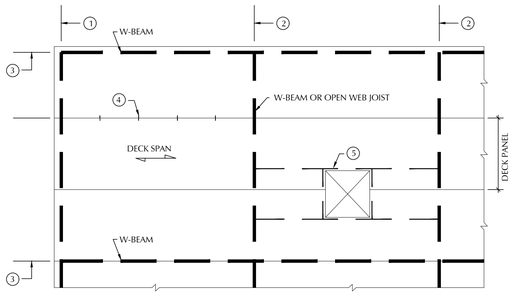


CONNECTION DESIGN FORCES			
NON-COMPOSITE BEAMS		COMPOSITE BEAMS	
BEAM DEPTH	DESIGN END REACTION	BEAM DEPTH	DESIGN END REACTION
ALL BEAMS	0.50 x R	W8 TO W18	1.00 x R
		≥ W21	0.75 x R

R = THE TOTAL UNIFORM LOAD (ASD) CAPACITY SHOWN IN THE "MAXIMUM TOTAL UNIFORM LOAD" TABLES, PART 3 OF THE AISC MANUAL OF STEEL CONSTRUCTION FOR THE GIVEN BEAM SIZE, SPAN, AND GRADE OF STEEL UNLESS OTHERWISE NOTED ON THE PLANS.

1. SPACING OF BOLTS SHALL EXTEND BEYOND THE MID-DEPTH OF THE BEAM. MINIMUM NUMBER OF ROWS OF BOLTS:
   W8, W10- 2 ROWS W21, W24- 5 ROWS
   W12, W14- 3 ROWS W27, W30- 6 ROWS
   W16, W18- 4 ROWS W33, W36- 7 ROWS
2. SECONDARY W8,W10, AND W12 BEAMS FRAMING OPENINGS NEED NOT APPLY TO THE REQUIREMENTS OF THE TABLE OF ABOVE.
3. CONNECTIONS SHALL CONFORM TO THE REQUIREMENTS OF PART 9, "CONNECTIONS" OF THE AISC MANUAL OF STEEL CONSTRUCTION, FOURTEENTH EDITION.
4. ALTERNATE BEAM CONNECTIONS MAY BE SUBMITTED BY THE STRUCTURAL STEEL FABRICATOR FOR CONSIDERATION BY THE STRUCTURAL ENGINEER. DO NOT START SHOP DRAWING PREPARATION OF ALTERNATE BEAM CONNECTIONS WITHOUT WRITTEN APPROVAL FROM THE STRUCTURAL ENGINEER.
5. BOLTS FOR CONNECTIONS TO HSS COLUMNS SHALL BE DESIGNED OF THE ECCENTRICITY 'e'
6. REFER TO DWGS S5.1, S5.2, S5.3, & S5.4 "DIAGONAL BRACING ELEVATIONS AND DETAILS" FOR THRU PLATE CONNECTION DETAILS AT DIAGONAL BRACES.

MINIMUM REQUIREMENTS FOR BEAM CONNECTIONS



ROOF DECK

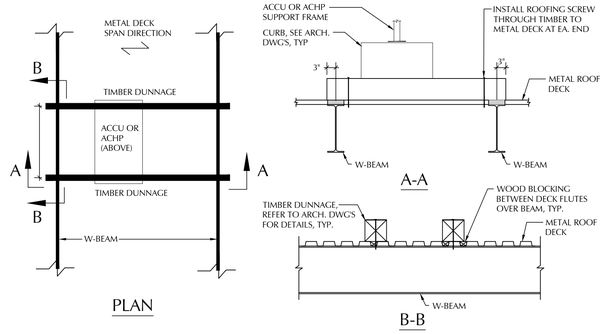
1. DECK PANEL END SUPPORT, ¾" Ø PUDDLE WELD AT EACH RIB (6" OR 8" o.c. DEPENDING ON RIB SPACING).
2. DECK PANEL INTERIOR SUPPORT, ¾" Ø PUDDLE WELD AT EACH RIB AND SPACED AT 12" o.c. (⁵⁄₆ OR ²⁄₃ PATTERN, DEPENDING ON DECK PANEL WIDTH).
3. DECK PANEL EDGE SUPPORT, ½" Ø WELD AT 24" o.c. OR AT EACH SUPPORT (JOIST OR HSS2.5x2.5 INTERMEDIATE SUPPORT).
4. DECK SIDELAPS, SELF-DRILLING #12 (MIN) SCREWS AT 24" o.c. (MAX) BETWEEN SUPPORTS.
5. OPENINGS LARGER THAN 12" IN ANY DIRECTION, ¾" Ø PUDDLE WELD AT EACH CORNER, AND AT 8" o.c. (MAX) EACH SIDE.

COMPOSITE DECK

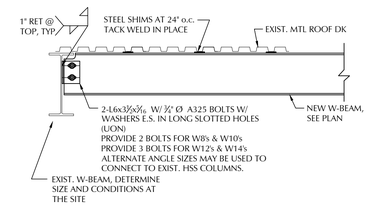
1. DECK PANEL END SUPPORT, ¾"Ø PUDDLE WELD AT EACH RIB (12" o.c.)
2. DECK PANEL INTERIOR SUPPORT, ¾"Ø PUDDLE WELD AT EACH RIB (12" o.c.)
3. DECK PANEL EDGE SUPPORT, ¾"Ø PUDDLE WELDS AT 24" o.c.
4. DECK SIDELAPS, #12 SELF-TAPPING STEEL SCREWS AT 24" o.c. (MAX) BETWEEN SUPPORTS.
5. OPENINGS LARGER THAN 18" IN ANY DIRECTION, ¾"Ø PUDDLE WELDS AT EACH CORNER AND AT 12" o.c (MAX) EACH SIDE.

NOTE:
1. PUDDLE WELD SIZES REFER TO WELD FUSION DIAMETER, PROPERLY SIZE WELD SURFACE DIAMETER TO ACHIEVE FUSION DIAMETER, ESPECIALLY AT LAPPED DECKS AND HEAVY GAUGE DECK.
2. REFER TO SPECIFICATION FOR ADDITIONAL DECK ATTACHMENT INFORMATION. IN CASE OF CONFLICT, THE MORE STRINGENT SHALL APPLY.
3. INSTALL DECK IN 3-SPAN CONDITION WHERE POSSIBLE.

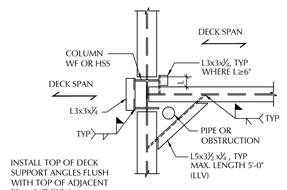
TYPICAL METAL DECK ATTACHMENT DETAILS



TYPICAL ROOF DUNNAGE

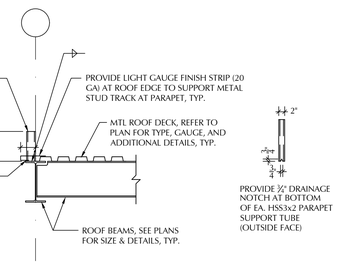


TYPICAL BEAM INSTALLATION AT EXISTING FRAMING



PROVIDE SIMILAR DETAIL AT COLUMN BASE PLATES BEARING ON STEEL BEAMS, AND AT FIELD WELDED BEAM TO BEAM MOMENT CONNECTIONS (4-SIDES)

TYPICAL STEEL DECK SUPPORT AT COLUMNS



TYPICAL ROOF EDGE DETAILS

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100 GROVE STREET, WORCESTER, MA
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PROJECT

TUFTS at TECH Community Veterinary Clinic

100% Construction Documents

Tufts at Tech Relocation

1 Officer Manny Familia Way, Worcester, MA 01605

DRAWING TITLE

Typical Details

REVISIONS

No.	Description	Date

FILE:

JOB NO: 2417

SCALE: As indicated

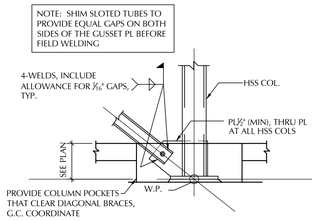
DWN. BY: CJT

CKD. BY: BDI

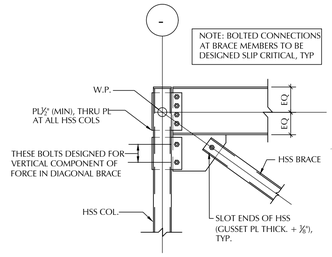
DATE: March 11, 2026

S1.2

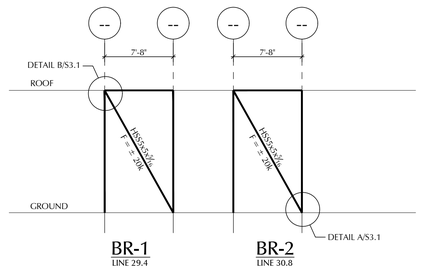
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DETAIL A S5.1



DETAIL B S5.1
(ROOF W-BEAMS)



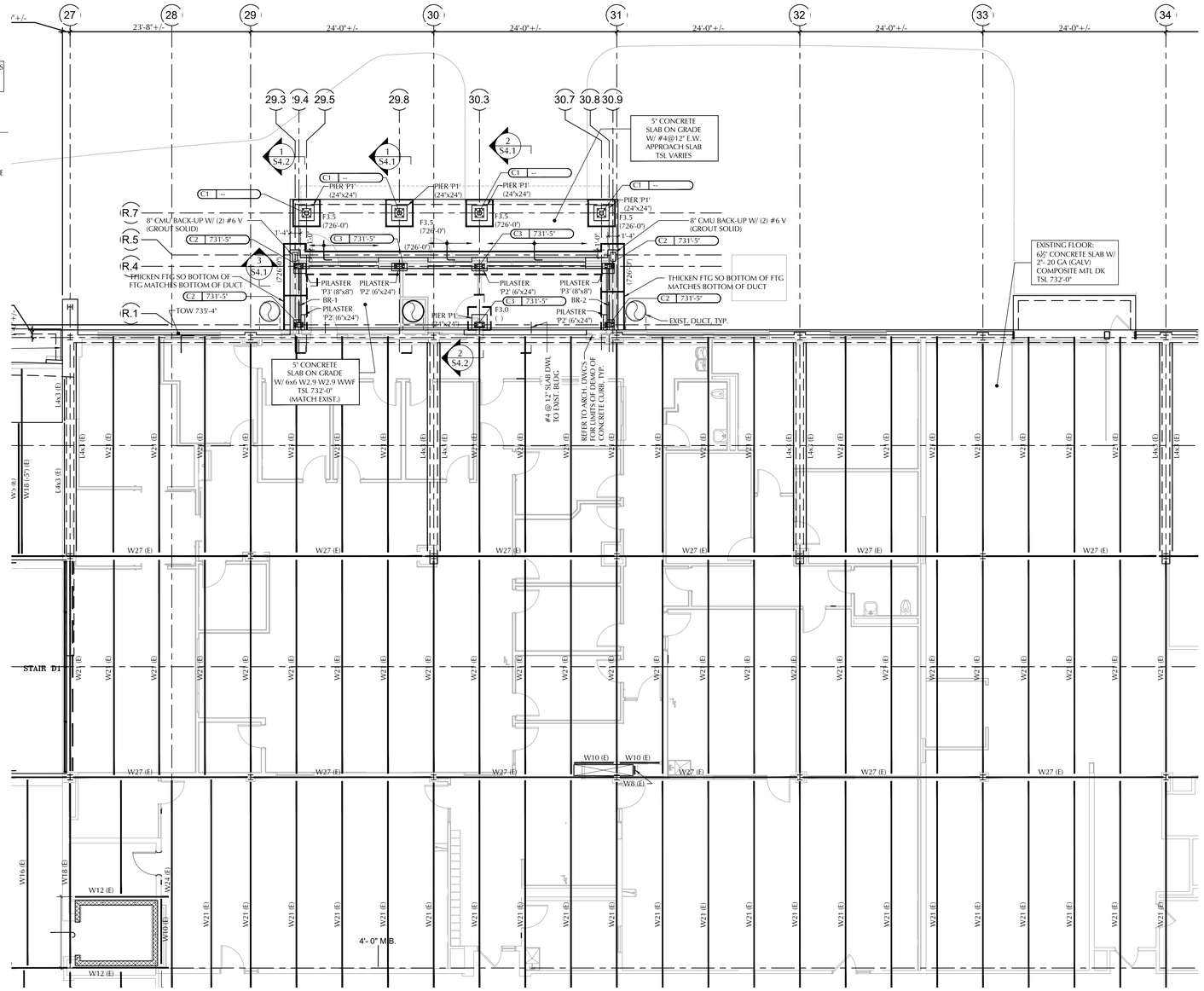
BR-1
LINE 29.4

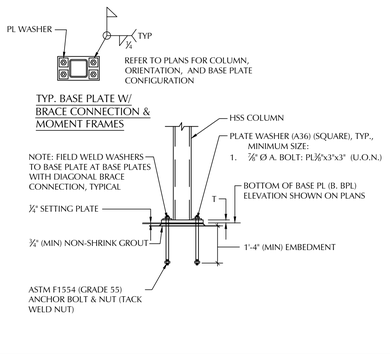
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LINE 30.8

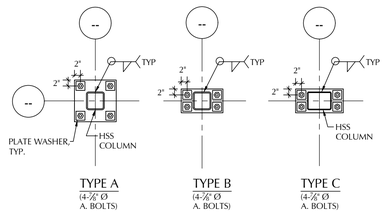
DIAGONAL BRACING ELEVATIONS

NOTE:
1. BRACING ELEVATIONS ARE INTENDED AS SCHEMATIC REPRESENTATION ONLY. REFER TO PLANS, SECTIONS, AND DETAILS FOR ADDITIONAL INFORMATION.
2. FORCES SHOWN ON BRACING ELEVATIONS ARE FOR DESIGN OF CONNECTIONS (ALLOWABLE STRESS DESIGN)

BRACED FRAME NOTES:
1. REFER TO S1.1 & S1.2 FOR TYPICAL DETAILS AND GENERAL NOTES.
2. REFER TO PLANS AND ARCH. DWGS FOR TOP OF STEEL ELEVATIONS.
3. (F = ±100K) INDICATES THE DIAGONAL BRACE AXIAL FORCE TO BE USED FOR BRACE JOINT DESIGN. (+ = TENSION, - = COMPRESSION)
4. REFER TO 'MINIMUM REQUIREMENTS FOR BEAM CONNECTIONS,' S1.2 FOR VERTICAL BEAM REACTION, R, TO BE USED FOR CONNECTION DESIGN.
4. BRACED JOINT CONNECTION DESIGN SHALL ACCOUNT FOR THE FORCES F AND R ACTING SIMULTANEOUSLY. THESE FORCES ARE ALLOWABLE STRESS LEVEL TO BE USED WITH AISC PROCEDURES.
5. BRACED JOINT CONNECTIONS THAT ARE NOT WELDED SHALL HAVE SLIP CRITICAL BOLTS.







TYPICAL BASE PL DETAILS

COLUMN SCHEDULE

MARK	COLUMN	BASE PL SIZE	BASE PL TYPE
C1	HSS6x6x5/16	1" x 14" x 14"	A
C2	HSS6x6x3/16	1" x 8" x 14"	B
C3	HSS8x6x3/16	1" x 8" x 16"	C
C4			

NOTE:
1. REFER TO PLANS, SECTIONS, AND DETAILS FOR ADDITIONAL COLUMN INFORMATION.
2. PROVIDE HSS6x6x3/8 COLUMNS WITH BASE PLATE TYPE 'A', UNLESS OTHERWISE NOTED.
3. COLUMN EXTENDS FROM BASE PLATE TO ROOF, UNLESS OTHERWISE NOTED ON THE PLANS.
4. BASE PLATE DIMENSIONS MAY BE INCREASED TO ALLOW FOR DIAGONAL BRACE CONNECTION PLATES.

C1 100'-0"
COLUMN DESIGNATION, REFER TO "COLUMN SCHEDULE"
INDICATES BOTTOM OF BASE PLATE ELEVATION

FOOTING SCHEDULE

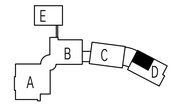
ALLOWABLE BEARING CAPACITY = 6 KSF (3 TON/SF)

MARK	SIZE	REINFORCEMENT
F3.0	3'-0" x 3'-0" x 1'-0"	5 - #4 BEW
F3.5	3'-6" x 3'-6" x 1'-0"	6 - #4 BEW

NOTE:
1. REFER TO DRAWINGS S1.1 & S1.2 FOR TYPICAL DETAILS AND GENERAL NOTES.
2. ELEVATIONS FOR BOTTOM OF FOOTINGS (BOF) SHOWN ON PLANS.
3. FOUNDATIONS TO BE SUPPORTED ON UNDISTURBED GLACIAL TILL OR COMPACTED STRUCTURAL FILL APPROVED BY THE OWNER'S SOILS ENGINEER FOR THE DESIGN BEARING CAPACITY. REFER TO SITE DRAWINGS AND SPECIFICATIONS FOR ADDITIONAL INFORMATION.

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PROJECT

TUFTS at TECH Community Veterinary Clinic

100% Construction Documents

Tufts at Tech Relocation

1 Officer Manny Familia Way, Worcester, MA 01605

DRAWING TITLE

Floor & Foundation Plan

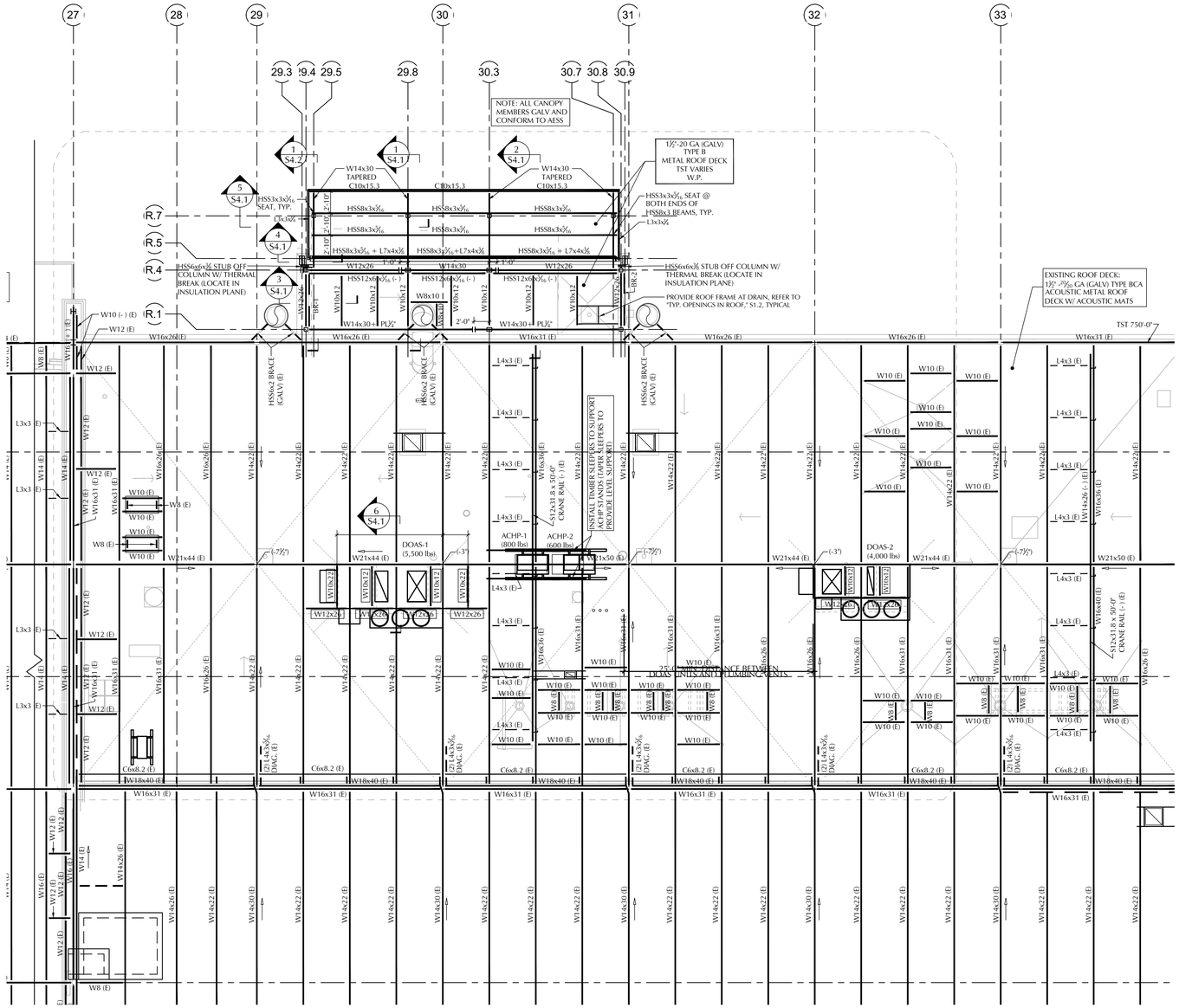
REVISIONS

No.	Description	Date

FILE:	
JOB NO:	2417
SCALE:	As indicated
DWN. BY:	CJT
CKD. BY:	BDI
DATE:	March 11, 2026

S3.1

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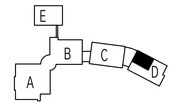
ROOF NOTES:

1. REFER TO DRAWINGS S1.1 & S1.2 FOR TYPICAL DETAILS AND GENERAL NOTES.
2. TST = TOP OF STRUCTURAL STEEL (BOTTOM OF METAL DECK)
3. ⟵ INDICATES SLOPED MEMBER
4. G.C.: COORDINATE ALL ROOF-TOP HVAC LOCATIONS AND DIMENSIONS. VERIFY UNIT WEIGHTS DO NOT EXCEED DESIGN WEIGHTS AS SHOWN ON PLANS.
5. ▶— INDICATES FULL CAPACITY MOMENT CONNECTION.

1. (AESS) INDICATES MEMBERS AND CONNECTIONS TO CONFORM TO THE REQUIREMENTS OF ARCHITECTURALLY EXPOSED STRUCTURAL STEEL.
2. REFER TO ARCHITECTURAL DRAWINGS FOR LOCATIONS OF ALL ACCESS HOLES.
3. ALL CONNECTIONS ARE TO BE WELDED ALL AROUND.
4. REFER TO ARCH. DWG'S FOR TOP OF STEEL ELEV.
5. AESS SURFACE PREPARATION TO CONFORM TO REQUIREMENTS OF SSPC-SP6 "COMMERCIAL BLAST CLEANING."
6. GRIND RAISED MARKS SMOOTH ON SURFACES EXPOSED TO VIEW.
7. G.C. COORDINATE PRIMER FOR AESS MEMBERS W/ FINISH PAINT SYSTEM.

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PROJECT

TUFTS at TECH Community Veterinary Clinic

100% Construction Documents

Tufts at Tech Relocation

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DRAWING TITLE

Roof Framing Plan

REVISIONS

No.	Description	Date

FILE:

JOB NO: 2417

SCALE: As indicated

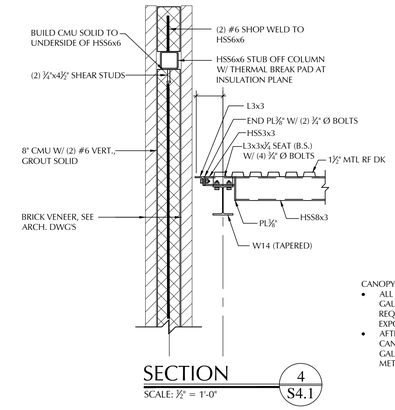
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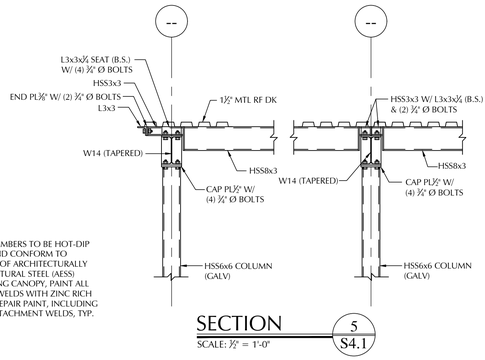
DATE: March 11, 2026

S3.2

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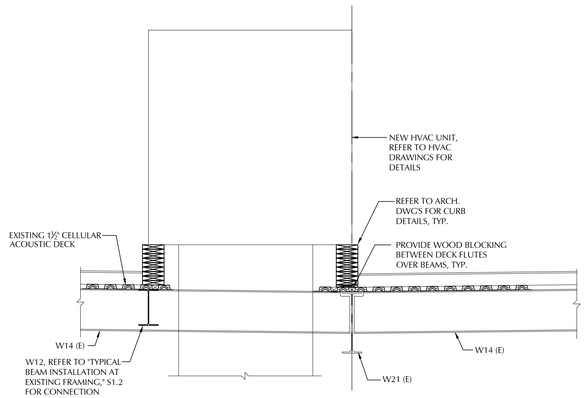


SECTION 4 / S4.1
SCALE: ½" = 1'-0"

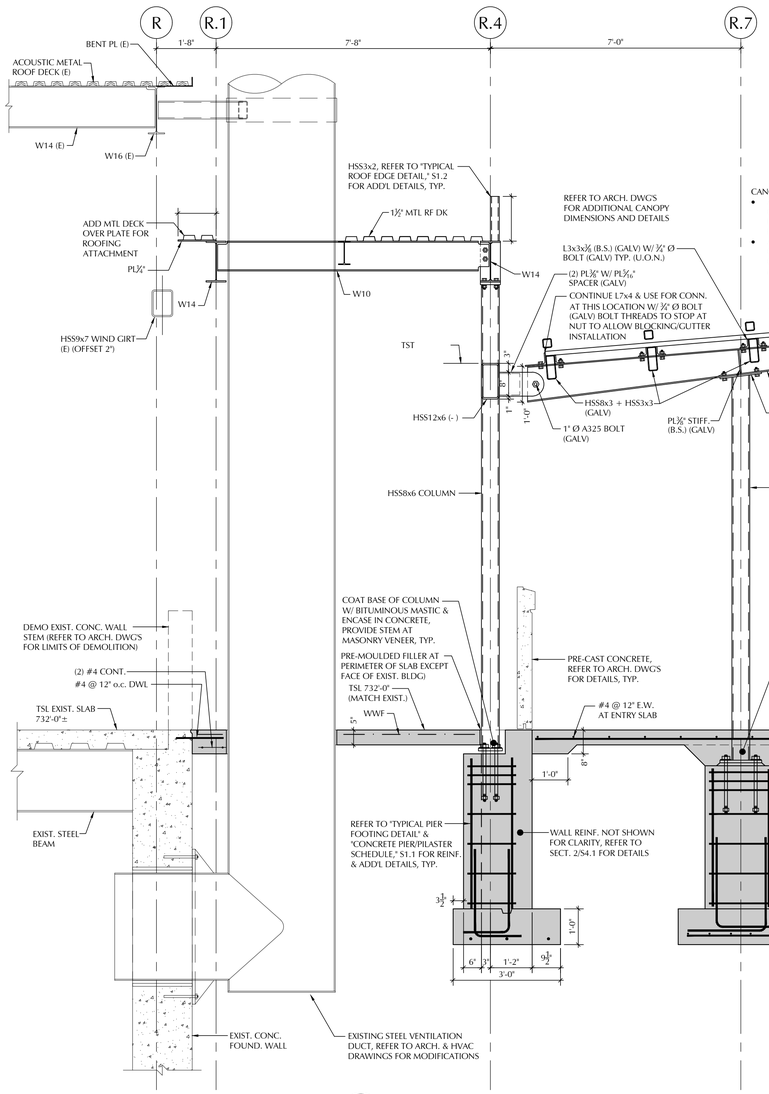


SECTION 5 / S4.1
SCALE: ½" = 1'-0"

CANOPY NOTE:
- ALL CANOPY MEMBERS TO BE HOT-DIP GALVANIZED AND CONFORM TO REQUIREMENTS OF ARCHITECTURALLY EXPOSED STRUCTURAL STEEL (AESS)
- AFTER INSTALLING CANOPY, PAINT ALL CANOPY FIELD WELDS WITH ZINC RICH GALVANIZING REPAIR PAINT, INCLUDING METAL DECK ATTACHMENT WELDS, TYP.

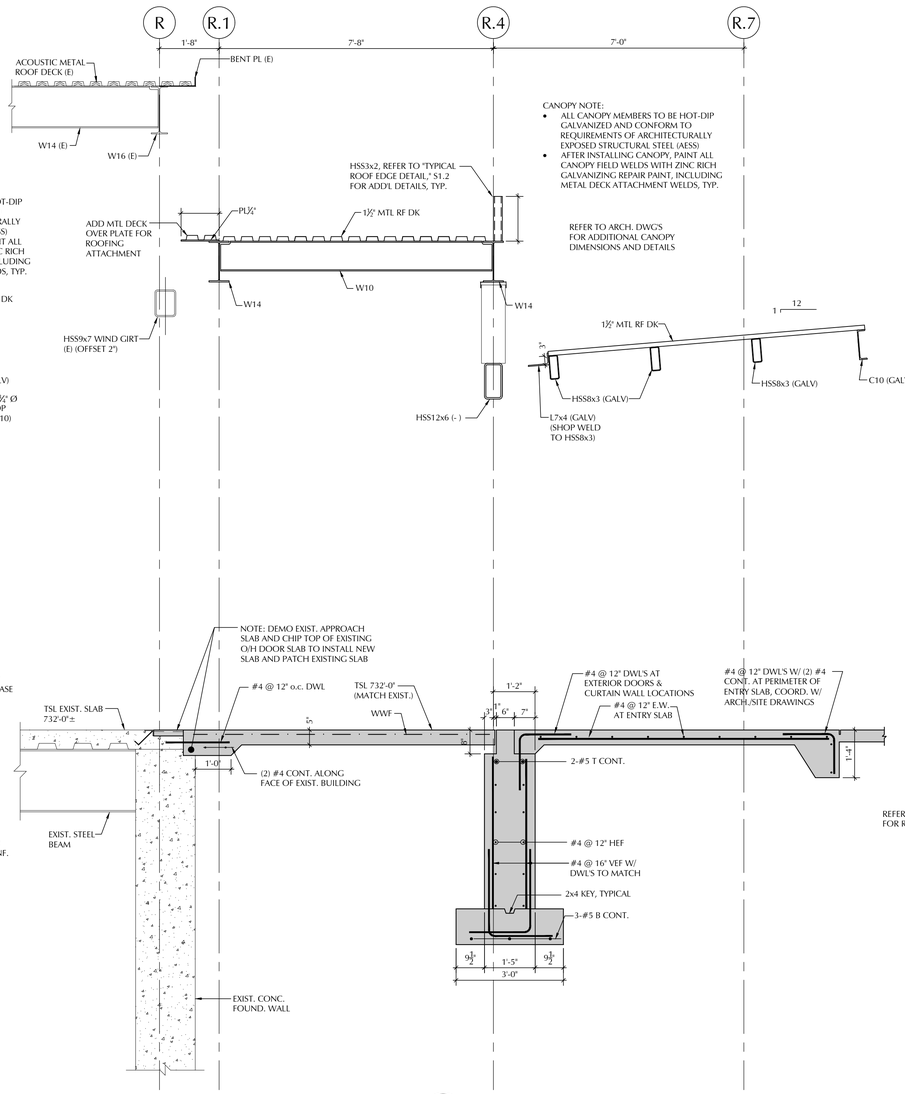


SECTION 6 / S4.1
SCALE: ½" = 1'-0"

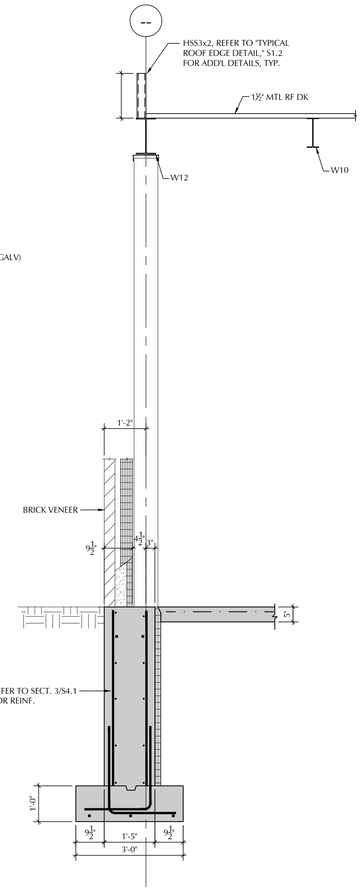


SECTION 1 / S4.1
SCALE: ½" = 1'-0"

CANOPY NOTE:
- ALL CANOPY MEMBERS TO BE HOT-DIP GALVANIZED AND CONFORM TO REQUIREMENTS OF ARCHITECTURALLY EXPOSED STRUCTURAL STEEL (AESS)
- AFTER INSTALLING CANOPY, PAINT ALL CANOPY FIELD WELDS WITH ZINC RICH GALVANIZING REPAIR PAINT, INCLUDING METAL DECK ATTACHMENT WELDS, TYP.



SECTION 2 / S4.1
SCALE: ½" = 1'-0"



SECTION 3 / S4.1
SCALE: ½" = 1'-0"

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PROJECT

TUFTS at TECH Community Veterinary Clinic

100% Construction Documents

Tufts at Tech Relocation

1 Officer Manny Familia Way, Worcester, MA 01605

DRAWING TITLE

Sections

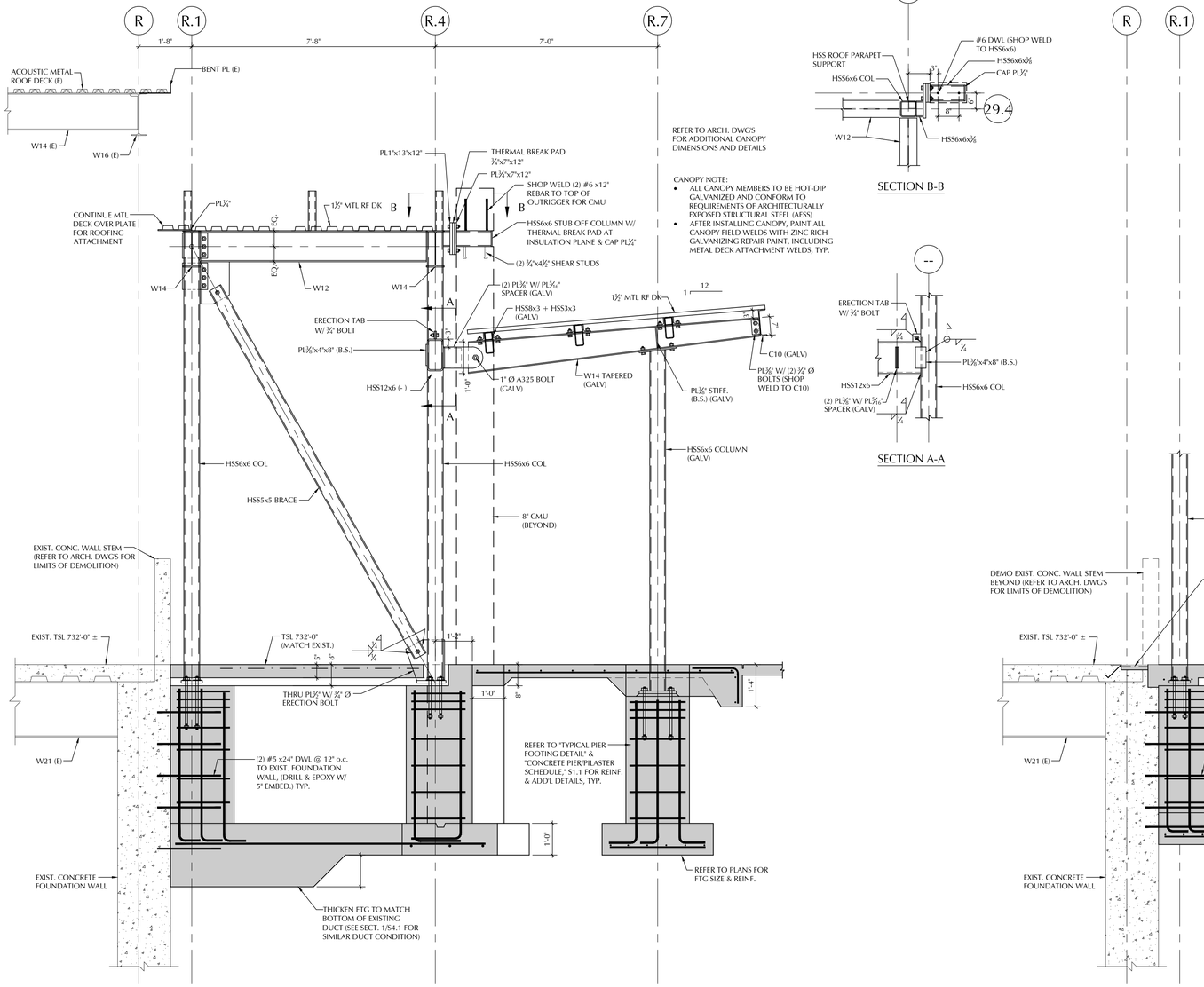
REVISIONS

No.	Description	Date

FILE:	
JOB NO:	2417
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DWN. BY:	CJT
CKD. BY:	BDI
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S4.1

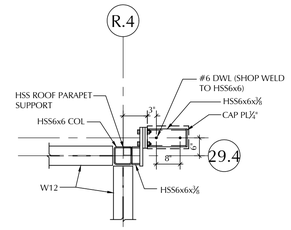
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SECTION 1
SCALE: ½" = 1'-0"
S4.2

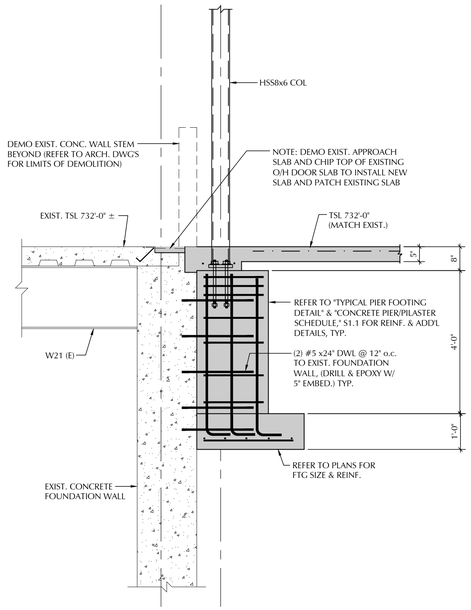
REFER TO ARCH. DWG'S FOR ADDITIONAL CANOPY DIMENSIONS AND DETAILS

CANOPY NOTE:
- ALL CANOPY MEMBERS TO BE HOT-DIP GALVANIZED AND CONFORM TO REQUIREMENTS OF ARCHITECTURALLY EXPOSED STRUCTURAL STEEL (AESS)
- AFTER INSTALLING CANOPY, PAINT ALL CANOPY FIELD WELDS WITH ZINC RICH GALVANIZING REPAIR PAINT, INCLUDING METAL DECK ATTACHMENT WELDS, TYP.



SECTION B-B

SECTION A-A



SECTION 2
SCALE: ½" = 1'-0"
S4.2

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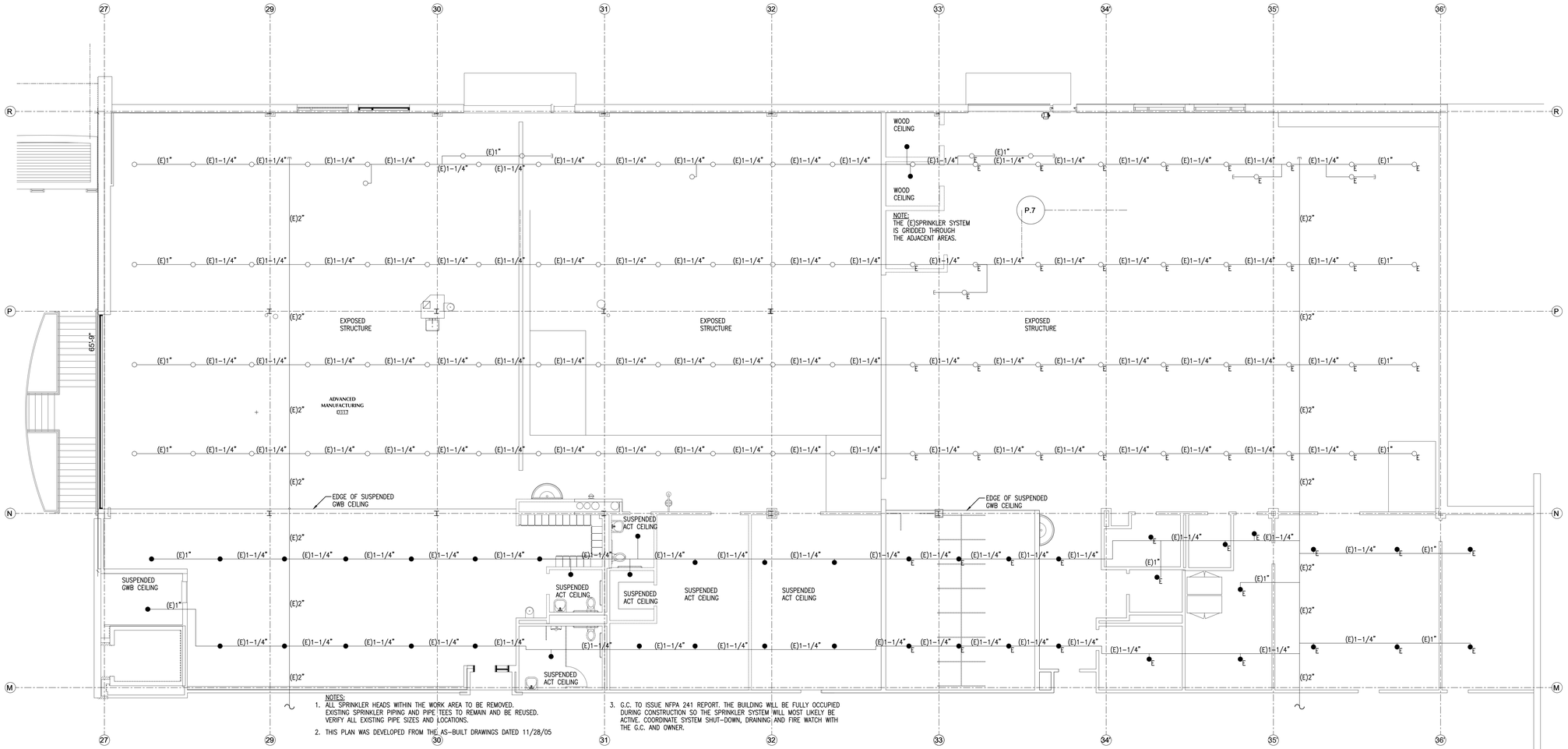
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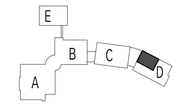
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1 PARTIAL THIRD FLOOR EXISTING FIRE PROTECTION PLAN
SCALE: 1/8"=1'-0"

Key Plan



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PROJECT

TUFTS at TECH Community Veterinary Clinic

Final Bid Package

Tufts at Tech Relocation

1 Officer Manny Familia Way, Worcester, MA 01605

DRAWING TITLE

Partial Third Floor Existing Fire Protection Plan

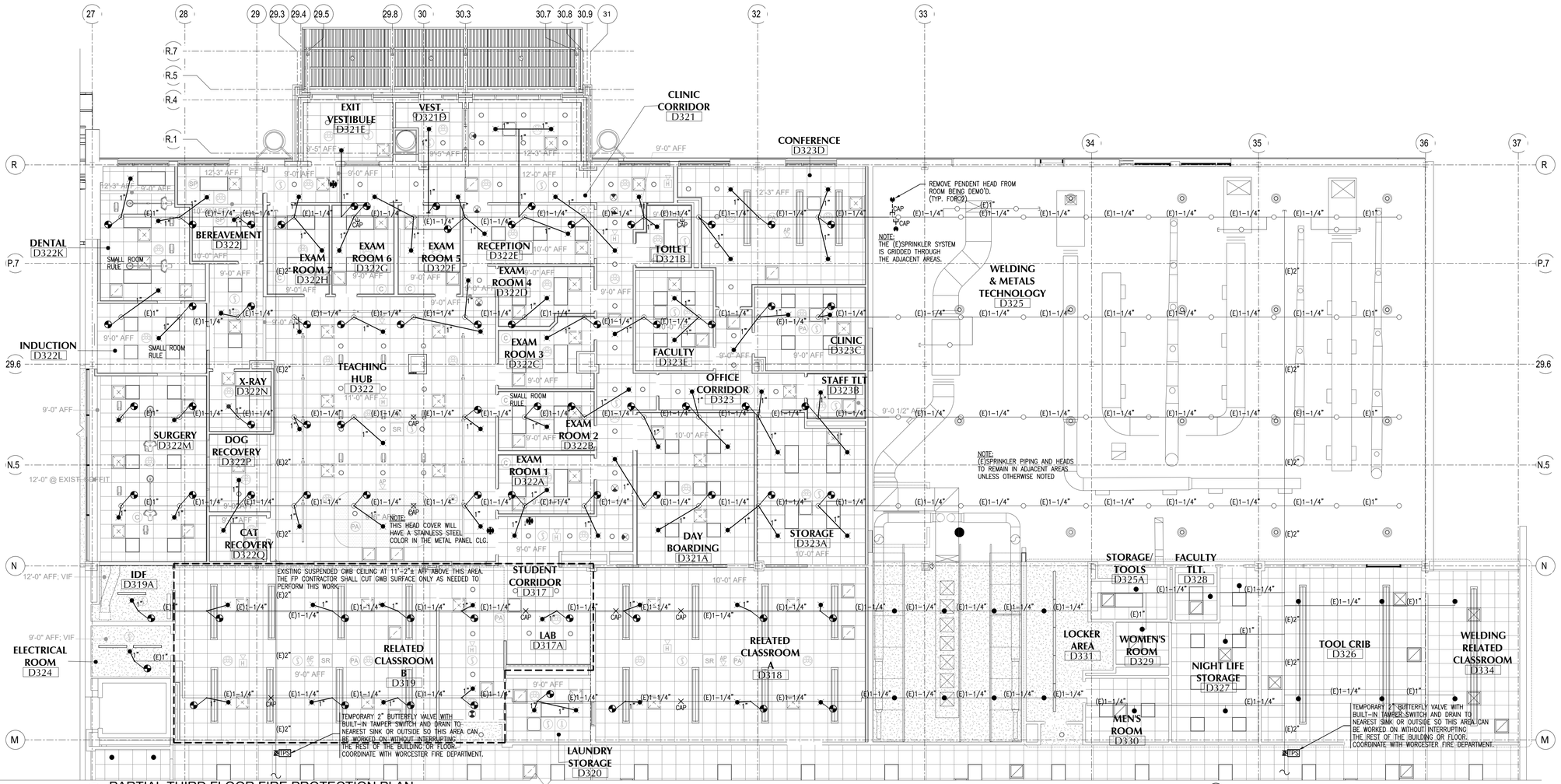
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DWN. BY:	CDR
CKD. BY:	KRS
DATE:	March 11, 2026

FP1.1

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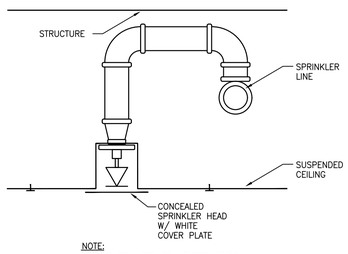


1 PARTIAL THIRD FLOOR FIRE PROTECTION PLAN

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

FIRE PROTECTION GENERAL NOTES:

1. A SET OF WORKING DRAWINGS & HYDRAULIC CALCULATIONS SHALL BE SUBMITTED TO THE AUTHORITY HAVING JURISDSICTION FOR APPROVAL PRIOR TO SUBMISSION TO THE ARCHITECT.
2. DOCUMENTS SHALL BE PREPARED AND THE SYSTEM FURNISHED AND INSTALLED PURSUANT TO THE REQUIREMENTS OF NFPA 13 AND ALL OTHER APPLICABLE STATE AND LOCAL CODES (INCLUDING HYDRAULIC CALCULATIONS). CONTRACTOR TO USE EXISTING HYDRAULIC DATA FURNISHED BY OWNER. DRAWINGS AND HYDRAULIC CALCULATIONS SHALL BE STAMPED BY A REGISTERED FIRE PROTECTION ENGINEER.
3. THE EXISTING BUILDING IS FULLY SPRINKLERED. THE CONTRACTOR SHALL BE RESPONSIBLE FOR MODIFYING THE EXISTING SYSTEM AS REQUIRED INCLUDING INSTALLATION OF NEW HEADS IN THE NEW CEILING SYSTEM. THIS CONTRACTOR SHALL ALSO BE RESPONSIBLE FOR ALL ASSOCIATED DEMOLITION AND/OR ISOLATION OF THE EXISTING SYSTEM WHERE REQUIRED. NO ABANDONED SPRINKLER PIPING SHALL REMAIN.
4. CONCEALED SPRINKLER HEADS SHALL BE CENTERED IN CEILING TILES.
5. SPRINKLER HEADS SHALL BE ORDINARY TEMPERATURE CLASSIFICATION OF THE STYLE AND TYPE TO MATCH EXISTING. HEADS SHALL BE QUICK RESPONSE TYPE UNLESS INSTALLED IN AN AREA WHERE EXISTING STANDARD RESPONSE HEADS ARE INSTALLED, THEN STANDARD RESPONSE HEADS SHALL BE USED.
6. ALL PIPING LESS THAN 1-1/2" IN DIAMETER SHALL BE SCHEDULE 40, PIPING LARGER THAN 1-1/2" SHALL BE SCHEDULE 10. F-I-T TYPE FITTING SHALL NOT BE ALLOWED.
7. SUBMIT DIGITAL OR HARD COPIES OF SHOP DRAWINGS AND PRODUCT DATA TO ARCHITECT FOR APPROVAL. SUBMIT ON SPRINKLER HEADS, PIPING, HANGERS AND FITTINGS ALONG WITH THE PLANS AND HYDRAULIC CALCULATIONS.
8. COORDINATE ALL SHUT-DOWNS OF SPRINKLER SYSTEM WITH WORCESTER VOKE.

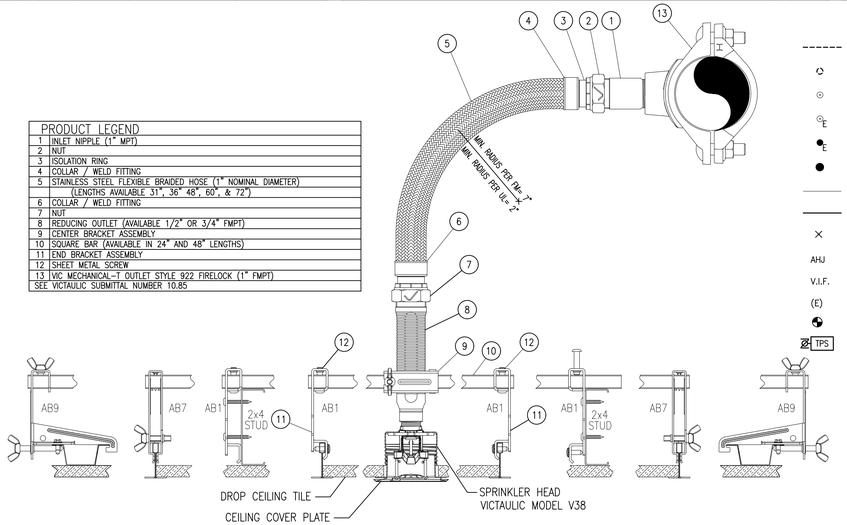


NOTE: USE AS REQUIRED TO CENTER HEADS IN LAY-IN ACOUSTICAL CEILING SYSTEM.

RETURN BEND PIPING DETAIL

NO SCALE

PRODUCT LEGEND	
1	INLET NIPPLE (1" MPT)
2	NUT
3	ISOLATION RING
4	COLLAR / WELD FITTING
5	STAINLESS STEEL FLEXIBLE BRAIDED HOSE (1" NOMINAL DIAMETER) (LENGTHS AVAILABLE 31", 36" 48", 60", & 72")
6	COLLAR / WELD FITTING
7	NUT
8	REDUCING OUTLET (AVAILABLE 1/2" OR 3/4" FMPT)
9	CENTER BRACKET ASSEMBLY
10	SQUARE BAR (AVAILABLE IN 24" AND 48" LENGTHS)
11	END BRACKET ASSEMBLY
12	SHEET METAL SCREW
13	VIC MECHANICAL-T OUTLET STYLE 922 FIRELOCK (1" FMPT)
SEE VICTAULIC SUBMITTAL NUMBER 10.85	



NOTE: REFER TO ENGINEERING MANUAL FOR FRICTION LOSS OF FLEXIBLE SPRINKLER PIPING. THIS FRICTION LOSS MUST BE ACCOUNTED FOR IN HYDRAULIC CALCULATIONS.

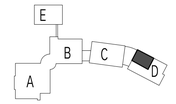
BRAIDED FLEXIBLE HOSE SPRINKLER ASSEMBLIES FOR CONCEALED PENDENT SPRINKLERS

c UL us LISTED FM

LEGEND

------	DISCONNECT AND REMOVE EXISTING SPRINKLER PIPING
	DISCONNECT AND REMOVE EXISTING UPRIGHT SPRINKLER HEAD
	EXISTING UPRIGHT SPRINKLER HEAD LOCATION. REMOVE HEAD
E	EXISTING UPRIGHT SPRINKLER HEAD TO REMAIN
E	EXISTING CONCEALED PENDENT SPRINKLER HEAD TO REMAIN
	PROPOSED CONCEALED PENDENT SPRINKLER HEAD WITH WHITE COVER PLATE
	EXISTING SPRINKLER PIPING TO REMAIN
	PROPOSED SPRINKLER PIPING
×	CAP EXISTING SPRINKLER PIPING TEE
AHJ	AUTHORITY HAVING JURISDICTION
V.I.F.	VERIFY IN FIELD
(E)	EXISTING
	CONNECT NEW TO EXISTING
TPS	BUTTERFLY VALVE WITH TAMPER SWITCH

Key Plan



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PROJECT

TUFTS at TECH Community Veterinary Clinic

Final Bid Package

Tufts at Tech Relocation

1 Officer Manny Familia Way, Worcester, MA 01605

DRAWING TITLE

Partial Third Floor Fire Protection Plan

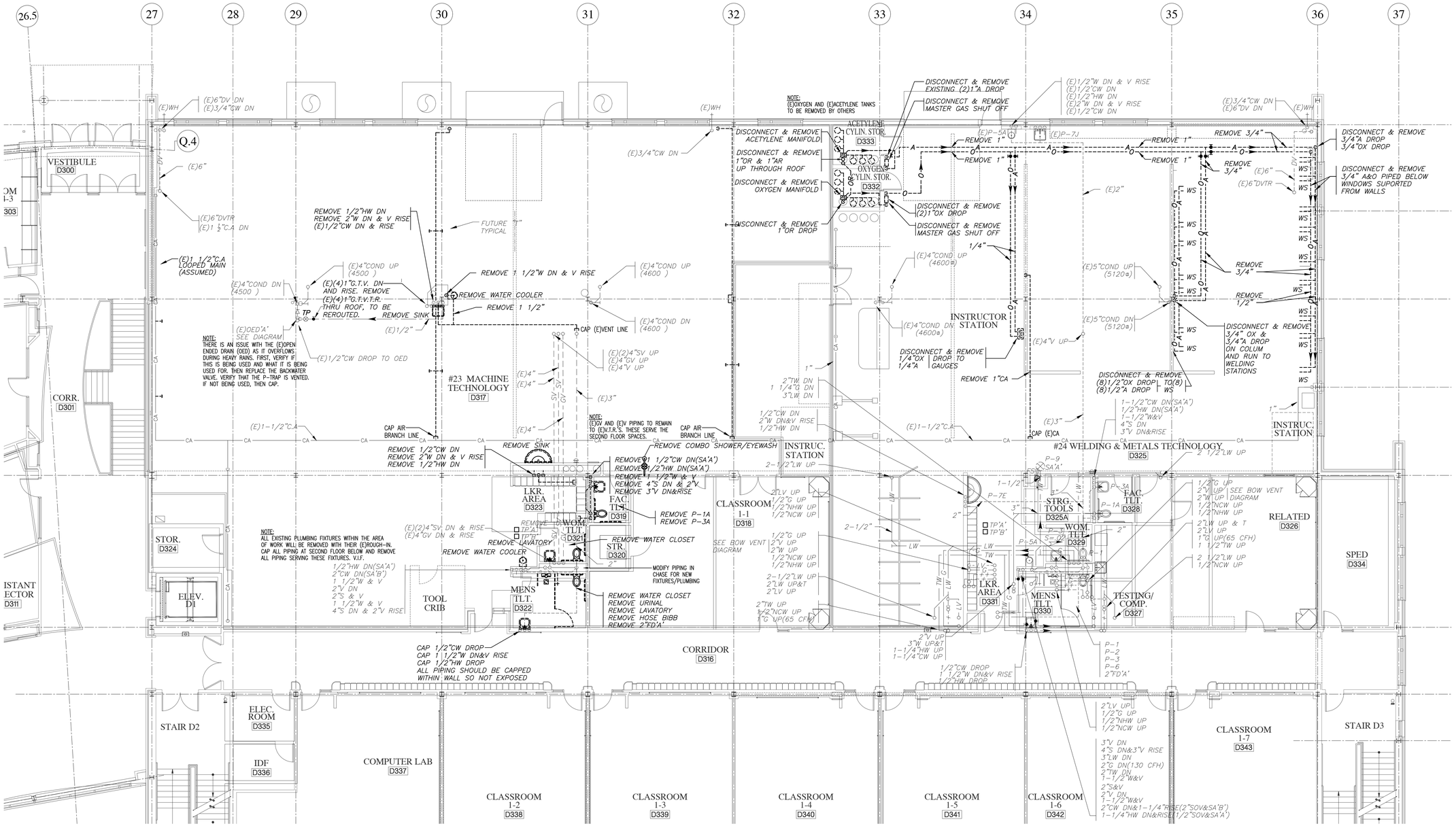
REVISIONS

No.	Description	Date

FILE:	
JOB NO:	2417
SCALE:	1/8" = 1'-0"
DWN. BY:	CDR
CKD. BY:	KRS
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FP3.1

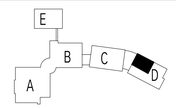
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1 P1.1 Partial Third Floor Plumbing Demolition Plan

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

Key Plan



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Partial Third Floor Plumbing Demolition Plan

REVISIONS

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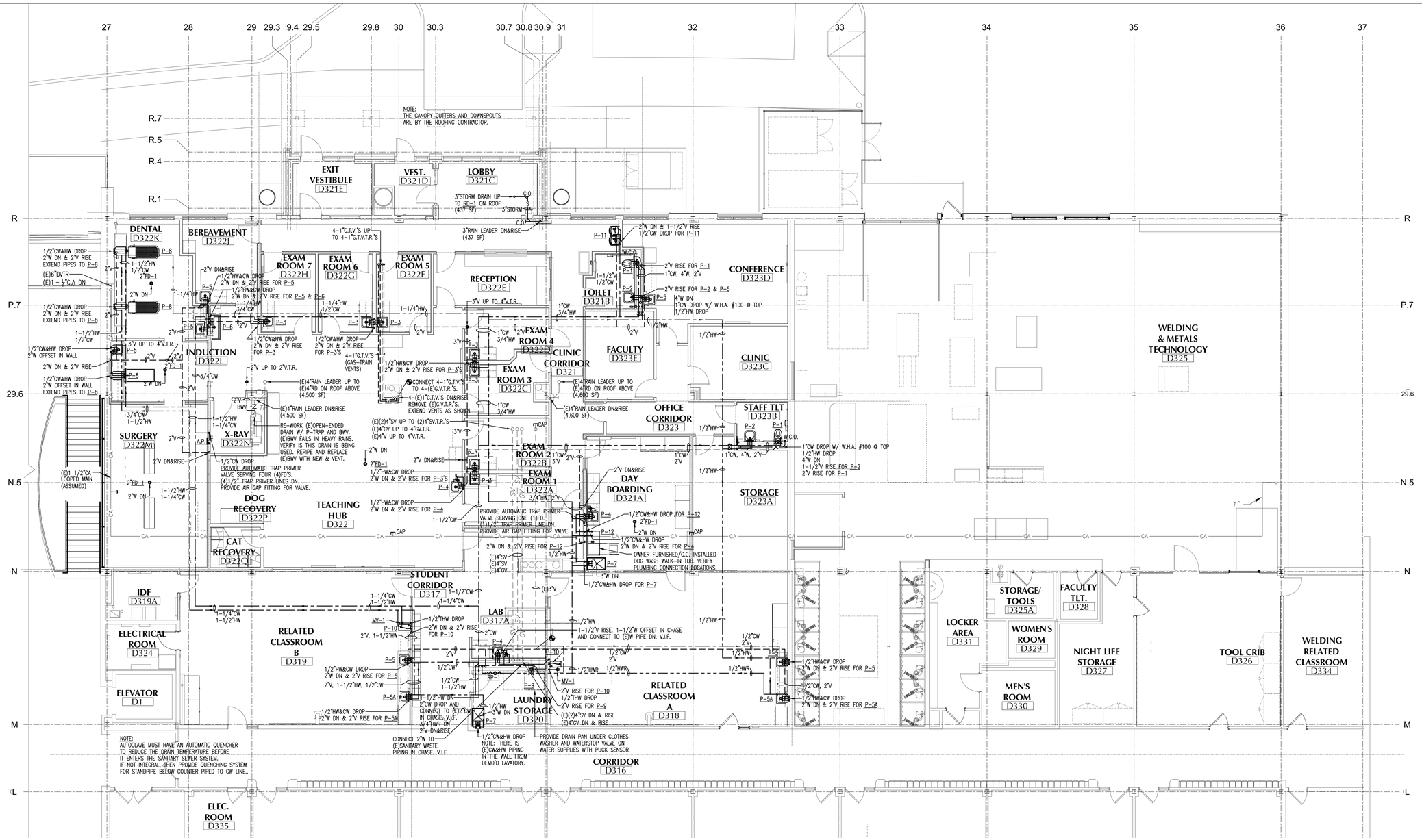
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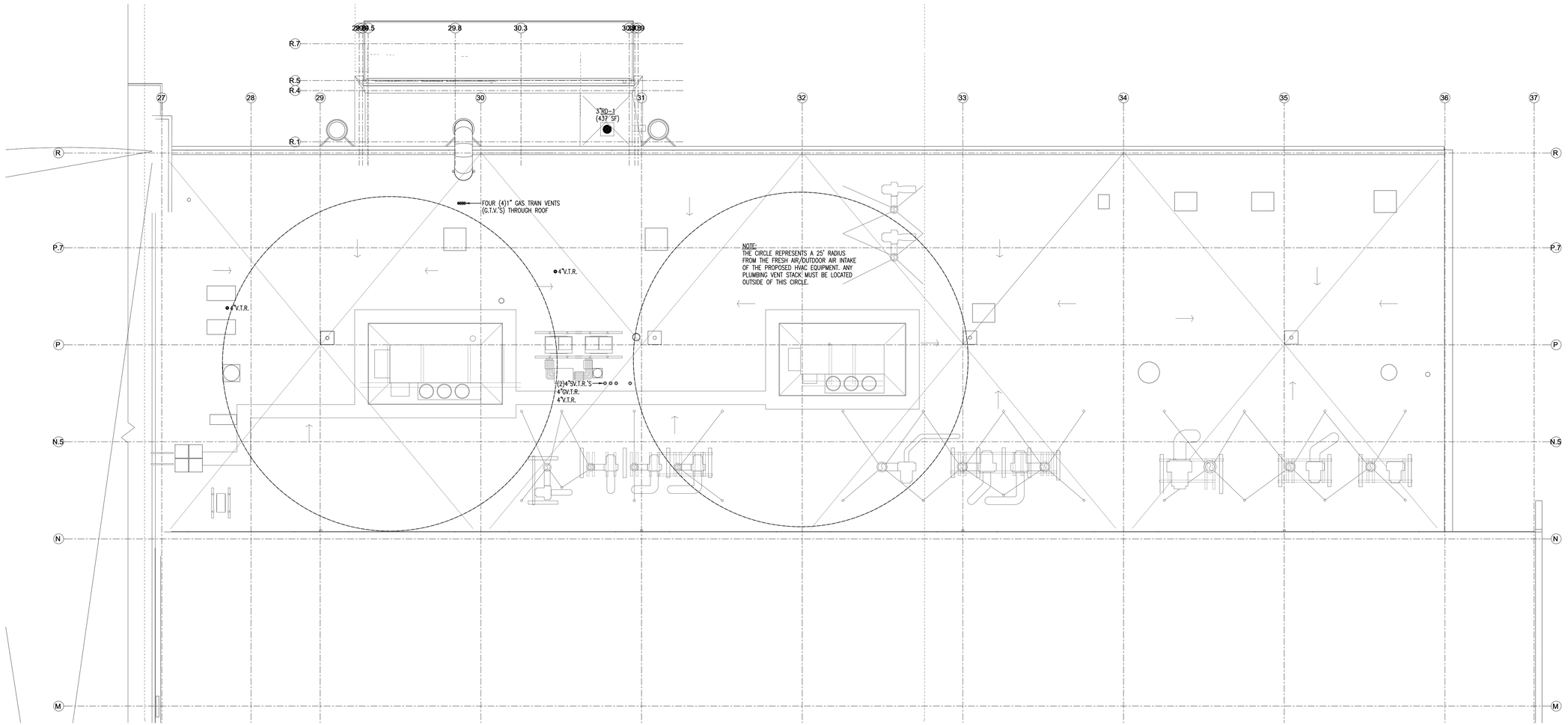
CKD. BY: KRS

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P1.1

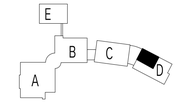
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NOTE:
THE CANOPY GUTTERS AND DOWNSPOUTS ARE BY THE ROOFING CONTRACTOR.
EXIT VESTIBULE D321E
VEST. D321D
LOBBY D321C
3"STORM DRAIN UP TO RD-1 ON ROOF (437 SF)
3"STORM
3"RAIN LEADER DN&RISE (437 SF)
DENTAL D322K
BEREAVEMENT D322J
EXAM ROOM 7 D322H
EXAM ROOM 6 D322G
EXAM ROOM 5 D322F
RECEPTION D322E
TOILET D321B
CONFERENCE D323D
EXAM ROOM 4 D322D
CLINIC CORRIDOR D321
FACULTY D323E
CLINIC D323C
WELDING & METALS TECHNOLOGY D325
INDUCTION D322L
EXAM ROOM 3 D322C
OFFICE CORRIDOR D323
STAFF TLT D323B
SURGERY D322M
X-RAY D322N
EXAM ROOM 2 D322B
EXAM ROOM 1 D322A
DAY BOARDING D321A
STORAGE D323A
DOG RECOVERY D322P
TEACHING HUB D322
CAT RECOVERY D322Q
STUDENT CORRIDOR D317
LAB D317A
STORAGE/ TOOLS D325A
FACULTY TLT. D328
LOCKER AREA D331
WOMEN'S ROOM D329
NIGHT LIFE STORAGE D327
TOOL CRIB D326
WELDING RELATED CLASSROOM D334
IDF D319A
ELECTRICAL ROOM D324
RELATED CLASSROOM B D319
LAUNDRY STORAGE D320
RELATED CLASSROOM A D318
MEN'S ROOM D330
ELEVATOR D1
CORRIDOR D316
ELEC. ROOM D335
NOTE:
AUTOCLAVE MUST HAVE AN AUTOMATIC QUENCHER TO REDUCE THE DRAIN TEMPERATURE BEFORE IT ENTERS THE SANITARY SEWER SYSTEM.
IF NOT INTEGRAL, THEN PROVIDE QUENCHING SYSTEM FOR STANDPIPE BELOW COUNTER PIPED TO CW LINE.
PROVIDE AUTOMATIC TRAP PRIMER VALVE SERVING FOUR (4)P'D'S. (4)1/2" TRAP PRIMER LINES DN. PROVIDE AIR GAP FITTING FOR VALVE.
RE-WORK (E)OPEN-ENDED DRAIN W/ P-TRAP AND BWV. (E)BWV FAILS IN HEAVY RAINS. VERIFY IS THIS DRAIN IS BEING USED. REPIPE AND REPLACE (E)BWV WITH NEW & VENT.
CONNECT 4-1"G.T.V.'S TO 4-(E)G.V.T.R.'S.
REMOVE (E)G.V.T.R.'S. EXTEND VENTS AS SHOWN.
4-(E)1"G.T.V.'S DN&RISE
4-1"G.T.V.'S (GAS-TRAIN VENTS)
4-1"G.T.V.'S UP TO 4-1"G.T.V.T.R.'S
(E)4"RAIN LEADER UP TO (E)4"RD ON ROOF ABOVE (4,500 SF)
(E)4"RAIN LEADER DN&RISE (4,500 SF)
(E)4"RAIN LEADER UP TO (E)4"RD ON ROOF ABOVE (4,600 SF)
(E)4"RAIN LEADER DN&RISE (4,600 SF)
(E)(2)4"SV UP TO (2)4"SV.T.R.'S
(E)4"V UP TO 4"V.T.R.
(E)1 1/2"CA LOOPED MAIN (ASSUMED)
PROVIDE AUTOMATIC TRAP PRIMER VALVE SERVING ONE (1)FD. (1)1/2" TRAP PRIMER LINE DN. PROVIDE AIR GAP FITTING FOR VALVE.
OWNER FURNISHED/G.C. INSTALLED DOG WASH WALK-IN TUB. VERIFY PLUMBING CONNECTION LOCATIONS.
CONNECT 2"W TO (E)SANITARY WASTE PIPING IN CHASE. V.I.F.
2"CW DROP AND CONNECT TO (E)2"CW IN CHASE. V.I.F.
3/4"HWR DN 2"V DN&RISE
PROVIDE DRAIN PAN UNDER CLOTHES WASHER AND WATERSTOP VALVE ON WATER SUPPLIES WITH PUCK SENSOR
NOTE: THERE IS (E)CW&HW PIPING IN THE WALL FROM DEMO'D LAVATORY.
1"CW DROP W/ W.H.A. #100 @ TOP
1/2"HW DROP
4"W DN
1-1/2"V RISE FOR P-2
2"V RISE FOR P-1
1-1/2"V RISE. 1-1/2"W OFFSET IN CHASE AND CONNECT TO (E)W PIPE DN. V.I.F.
1/2"CW&HW DROP 2"W DN & 2"V RISE FOR P-5
1/2"CW&HW DROP FOR P-12
1/2"CW&HW DROP FOR P-7
1/2"HW&CW DROP 2"W DN & 2"V RISE FOR P-3'S
1/2"HW&CW DROP 2"W DN & 2"V RISE FOR P-4
1/2"CW&HW DROP 2"W DN & 2"V RISE FOR P-5A
1/2"CW&HW DROP 2"W DN & 2"V RISE FOR P-8
1/2"CW&HW DROP 2"W OFFSET IN WALL
1/2"CW&HW DROP 2"W DN & 2"V RISE
1/2"CW&HW DROP 2"W DN & 2"V RISE EXTEND PIPES TO P-8
(E)6"DVTR
(E)1-1/2"CA DN
2"V DN&RISE
1/2"HW&CW DROP 2"W DN & 2"V RISE FOR P-5 & P-6
2"V UP TO 2"V.T.R.
3"V UP TO 4"V.T.R.
2"W DN
2"V DN&RISE
1/2"CW DROP
1/2"HW DROP 2"W DN & 2"V RISE FOR P-5
1/2"HW&CW DROP 2"W DN & 2"V RISE FOR P-5 & P-6
1/2"HW&CW DROP 2"W DN & 2"V RISE FOR P-3'S
1/2"HW&CW DROP 2"W DN & 2"V RISE FOR P-3
1/2"HW&CW DROP 2"W DN & 2"V RISE FOR P-3'S
1/2"HW&CW DROP 2"W DN & 2"V RISE FOR P-4
1/2"HW&CW DROP 2"W DN & 2"V RISE FOR P-5A
1/2"HW&CW DROP 2"W DN & 2"V RISE FOR P-5
1/2"HW&CW DROP 2"W DN & 2"V RISE FOR P-5A
1/2"HW DROP 2"W DN & 2"V RISE FOR P-10
1/2"THW DROP 2"W DN & 2"V RISE FOR P-10
1/2"CW&HW DROP FOR P-12
1/2"CW&HW DROP FOR P-7
1/2"HW DROP 2"W DN & 2"V RISE FOR P-5
1/2"HW DROP 2"W DN & 2"V RISE FOR P-5A
1/2"CW&HW DROP 2"W DN & 2"V RISE FOR P-5
1/2"CW&HW DROP 2"W DN & 2"V RISE FOR P-5A
1/2"CW&HW DROP 2"W DN & 2"V RISE FOR P-8
1/2"CW&HW DROP 2"W DN & 2"V RISE EXTEND PIPES TO P-8
1/2"CW&HW DROP 2"W OFFSET IN WALL
1/2"CW&HW DROP 2"W DN & 2"V RISE
1/2"CW&HW DROP 2"W OFFSET IN WALL EXTEND PIPES TO P-8
1-1/2"HW 1/2"CW
1-1/2"HW 1-1/4"CW
1-1/4"CW 1-1/2"HW
1-1/4"CW 1-1/2"HW
1-1/2"CW 1-1/2"HW
1-1/2"HW 1-1/4"CW
1-1/2"HW 1-1/2"CW
1-1/4"CW 1-1/2"HW
1-1/4"CW 1-1/2"HW
1-1/4"CW 1-1/2"H



1 / P3.2 Partial Roof Plumbing Plan
Scale: 1/8" = 1'-0"

Key Plan



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ASSOCIATES|ARCHITECTS
108 Grove Street, Suite 300
Worcester MA 01605
508.752.2831
www.lpaa.com

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DRAWING TITLE

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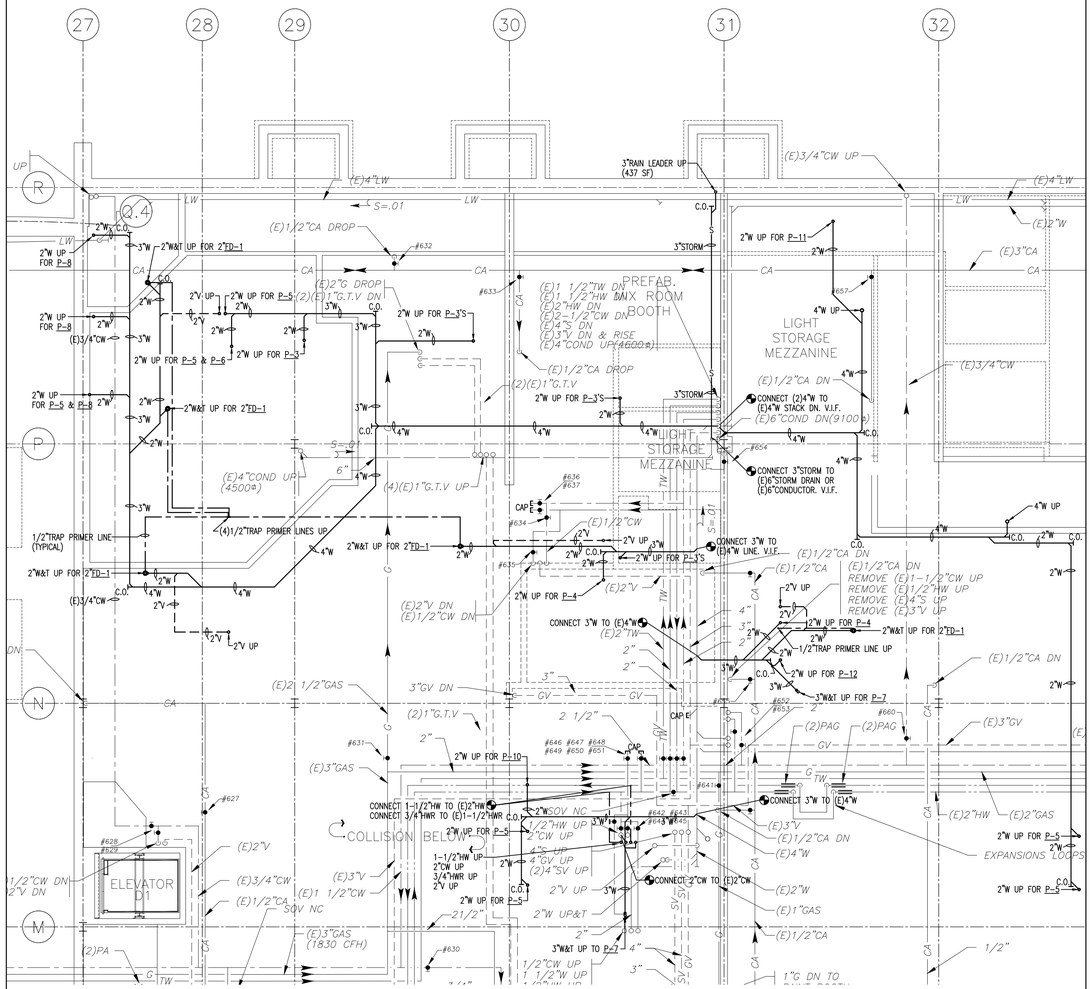
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No.	Description	Date

FILE:	
JOB NO:	2417
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DWN. BY:	CDR
CKD. BY:	KRS
DATE:	March 11, 2026

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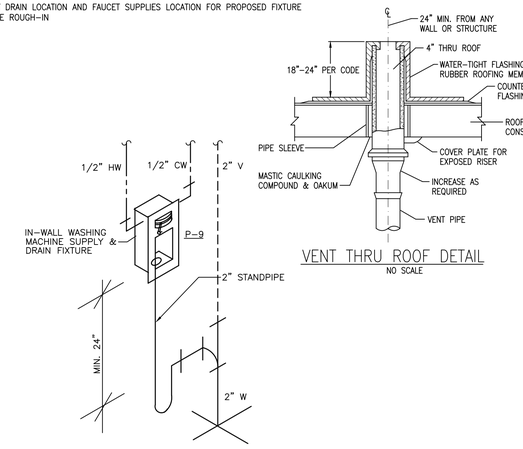


1 P3.3 Proposed Partial Second Floor Plumbing Plan
Scale: 1/8" = 1'-0"

PLUMBING FIXTURE SCHEDULE

KEY		P-1	P-2	P-3	P-4	P-5	P-5A	P-6	P-7	P-8	P-9	P-10	P-11	P-12
FIXTURE		WALL HUNG FLUSHOMETER HC WATER CLOSET	WALL HUNG LAVATORY (HANDICAP)	HC EXAM RM COUNTERTOP SINK	HC SINGLE COMPARTMENT SINK & EYEWASH	HC SINGLE COMPARTMENT SINK	SINGLE COMPARTMENT SINK	WALL HUNG 2-STATION HAND WASH SINK	FLOOR MOUNT MOP SINK	WET TABLE	LAUNDRY BOX	RECESSED EYEWASH	HC BI-LEVEL WATER COOLER & BOTTLE FILLER	WALK-IN 48" DOG WASH TUB
PIPING CONNECTIONS	TRAP	——	1-1/2"	1-1/2"	1-1/2"	1-1/2"	1-1/2"	2"	3"	2"	2"	2"	1-1/2"	2"
	WASTE	4"	1-1/2"	1-1/2"	1-1/2"	1-1/2"	1-1/2"	2"	3"	2"	2"	2"	1-1/2"	2"
	VENT	2"	1-1/4"	1-1/2"	1-1/2"	1-1/2"	1-1/2"	1-1/2"	2"	1-1/2"	1-1/2"	1-1/2"	1-1/2"	2"
	CWS	1/2"	3/8"	1/2"	1/2"	1/2"	1/2"	(2)1/2"	1/2"	1/2"	1/2"	——	1/2"	1/2"
	HWS	——	3/8"	1/2"	1/2"	1/2"	1/2"	(2)1/2"	1/2"	1/2"	1/2"	1/2" THW	——	1/2"
MOUNTING HEIGHT FL. TO RIM		17"	34" PER ADA AND ARCH.	PER ARCH	PER ARCH	PER ARCH	PER ARCH	PER ARCH	——	PER MFR.	36" TO DRAIN	PER ARCH	36" MAX. TO ADA SPOUT	PER MFR.
MATERIAL		VITREOUS CHINA	VITREOUS CHINA	STAINLESS STEEL	STAINLESS STEEL	STAINLESS STEEL	STAINLESS STEEL	STAINLESS STEEL	MOLDED STONE	STAINLESS STEEL	——	STAINLESS STEEL	STAINLESS STEEL	STAINLESS STEEL
FITTINGS		SLOAN ROYAL MANUAL WATER CLOSET FLUSHOMETER VALVE MODEL #111-1.28 1.28 GPF CODE #3910168 OPEN FRONT ELONG. SEAT WITHOUT LID	CHICAGO FAUCETS METERING LAVATORY FAUCET #3501-E2805ABCP DECK MOUNT SINGLE HOLE 0.5 GPM OFFSET GRID DRAIN	DECK MOUNTED TWO HANDLE GOOSENECK FAUCET ELKAY #LK406GN04T4 ELKAY #LK18B DRAIN ELKAY #LK500 P-TRAP	CHICAGO FAUCETS SAFETY FITTING #8452-TE64VPABCP DUAL-HANDLE EMERGENCY EYEWASH WITH FAUCET, ASSE 1071 VALVE, GAUGE AND LOCKING BALL VALVE OFFSET GRID DRAIN	CHICAGO FAUCETS MANUAL FAUCET #786-GN8FCABCP DECK MOUNT FAUCET WITH WITH 8" CENTERS, GOOSENECK SPOUT 1.5 GPM CUP STRAINER	CHICAGO FAUCETS MANUAL FAUCET #786-GN8FCABCP DECK MOUNT FAUCET WITH WITH 8" CENTERS, GOOSENECK SPOUT 1.5 GPM CUP STRAINER	(2)WALL MOUNTED SENSOR FAUCETS ELKAY #LKB722C AC PLUG-IN 8-AA BATTERIES (2)THERMOSTATIC MIXING VALVES ELKAY #LK723 #LK18B GRID DRAIN	CHICAGO FAUCETS MANUAL FAUCET #445-897SRCXKCP WALL MOUNT 3-3/8" BODY ADJUSTABLE ARMS 8-3/8" HOT&COLD WATER SINK FAUCET HOSE&BRACKET 832-AA MOP HANGER 889-CC	1 FAUCET FURNISHED WITH SINK	——	GUARDIAN EQUIPMENT #G6020 THERMOSTATIC MIXING VALVE	P-TRAP & AIR GAP	1 FAUCET FURNISHED WITH SINK SEE NOTE 6
	MANUF.	AMERICAN STANDARD	AMERICAN STANDARD	ELKAY	ELKAY	ELKAY	ELKAY	ELKAY	FIAT	FIXTURE BY OWNER INSTALLED BY PLUMBER	SIOUX CHIEF	GUARDIAN EQUIPMENT	ELKAY	FIXTURE BY OWNER INSTALLED BY G.C.
	MODEL	AFWALL MILLENIUM FLOWISE 2257.101	DECORUM 9024.001EC	LRAD172065	LRAD-1919-60-3	LRAD-1919-60-3	DLR191910PD	EWMA4820SACTMC	MSBID-3624	FIXTURE BY OWNER INSTALLED BY PLUMBER	OXBOX 696-A2313BMF	GBF1735DP	LZSTL8WSLK	FIXTURE BY OWNER INSTALLED BY G.C.
RP-1		TACO MODEL #006ST4 RECIRCULATION PUMP; 2 GPM @ 7 FT HEAD, 1/40 HP, 115V-1ø, 0.52 AMPS												

NOTES:
1. REFER TO SPECIFICATIONS FOR ADDITIONAL INFORMATION.
2. ALL DIMENSIONS ARE AS IS UNLESS NOTED OTHERWISE ON DRAWINGS.
3. VERIFY ALL MOUNTING HEIGHTS WITH ARCHITECTURAL PLANS AND ALL APPLICABLE CODES BEFORE INSTALLATION.
4. PROVIDE WHEELCHAIR LAVATORY STRAINERS ON ALL HANDICAP LAVATORIES. INSTALL PVC COATED INSULATION ON ALL PIPING BELOW HANDICAP LAVATORIES UNLESS PIPING IS ENCLOSED. PIPE INSULATION UNDER FIXTURE P-2 SHALL BE TRUEBRO LAV GUARD MODEL #103,
5. PROVIDE POINT OF USE MIXING VALVES AT ALL LAVATORIES SIMILAR TO LEONARD MODEL #170-LF
6. VERIFY DRAIN LOCATION AND FAUCET SUPPLIES LOCATION FOR PROPOSED FIXTURE BEFORE ROUGH-IN

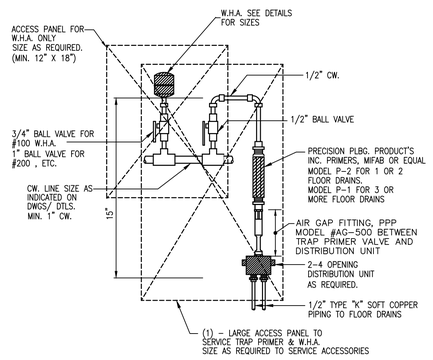


VENT THRU ROOF DETAIL
NO SCALE

PLUMBING NOTES:

1. CONTRACTOR RESPONSIBLE FOR PROVIDING ALL MATERIAL, LABOR, SUPERVISION AND TRANSPORTATION REQUIRED TO COMPLETE THE WORK DESCRIBED ON THESE DRAWINGS AND IN THE SPECIFICATIONS UNLESS NOTED OTHERWISE.
2. CONTRACTOR TO VERIFY ALL DIMENSIONS AND LOCATION IN THE FIELD.
3. CONTRACTOR IS RESPONSIBLE FOR OBTAINING ALL NECESSARY PERMITS.
4. ALL PIPING TO BE INSTALLED PER LOCAL, STATE, AND FEDERAL CODES.
5. CONTRACTOR IS RESPONSIBLE FOR ALL OFFSETS & MODIFICATIONS AS REQUIRED TO CLEAR BUILDING STRUCTURES.
6. NATURAL GAS PIPING SHALL BE SCREWED SCHEDULE 40 STEEL UNDER 2" IN SIZE AND WELDED FOR 2-1/2" & OVER. ALL NEW NATURAL GAS PIPING SHALL BE CLEARLY LABELED OR PAINTED "SAFETY" YELLOW TO DESIGNATE "GAS PIPING".
7. ALL PIPING TO BE PRESSURE TESTED BEFORE INSULATION. LEAVE VALVES OPEN, READY FOR OPERATION.
8. INSULATE ALL COLD AND HOT WATER LINES INSTALLED WITH FIBERGLASS PIPE INSULATION, SEE SPEC.
9. REPAIR OF ANY DAMAGE TO THE NEW CONSTRUCTION DURING THE EXECUTION OF THIS WORK SHALL BE THE RESPONSIBILITY OF THIS CONTRACTOR.
10. ALL EXPOSED PIPING/FITTINGS TO BE CHOME PLATED COPPER/BRASS.
11. ALL WATER SUPPLY PIPING TO BE RIGID TYPE L COPPER UNLESS STATED OTHERWISE.
12. ALL WASTE AND VENT PIPING TO BE CAST IRON OR DWV COPPER AS ALLOWED BY THE MA PLUMBING CODE.
13. ALL WASTE PIPING 4" AND UNDER TO HAVE A CLEANOUT EVERY 50 FT AND AT EACH CHANGE IN PIPE SIZE. NOT ALL CLEANOUTS SHOWN ON DRAWINGS. CLEANOUTS SHALL BE EVERY 100 FT PER PIPING OVER 4" IN SIZE.
14. PIPING RUNS ARE SHOWN AS REPRESENTATIVE OF REQUIRED SIZES. ROUTING MAY BE CHANGED BY CONTRACTOR AS NECESSITATED BY STRUCTURAL CONSIDERATIONS.
15. REFER TO ARCHITECTURAL DRAWINGS FOR EXACT LOCATIONS AND ELEVATION OF PLUMBING FIXTURES.
16. A WATER HAMMER ARRESTOR (MECHANICAL DEVICE) SHALL BE ISNTALLED ON EACH SUPPLY LINE (HOT AND COLD) AT ALL SINKS AND RESTROOMS (METERING FAUCETS).
17. ALL DOMESTIC AND WASTE PIPING IS DIAGRAMMATIC. CONTRACTOR IS RESPONSIBLE TO PROVIDE COMPLETE AND WORKING FIXTURES.

WASHING MACHINE SUPPLY & DRAIN PIPING DETAIL
NO SCALE



DETAIL OF TRAP PRIMERS & WATER HAMMER ARRESTORS
NOT TO SCALE

LEGEND

- - - - - -	EXISTING PIPING TO BE DEMOLISHED AND REMOVED		PRESSURE REDUCING VALVE
———	EXISTING SANITARY WASTE PIPING - (W)		GAS COCK
———	EXISTING STORM DRAIN PIPING - (S)		BALANCE VALVE
- - - - - -	EXISTING VENT PIPING (V)		PIPE UNION
———	EXISTING COLD WATER PIPING - (CW)		DRAIN VALVE
- - - - - -	EXISTING HOT WATER PIPING - (HW)		THERMOMETERS (STRAIGHT)-(DIAL)
———	SANITARY OR WASTE PIPING (SAN)		PRESSURE GAUGE
- - - - - -	VENT PIPING (V)		FIXTURE STOP
- - - - - -	COLD WATER PIPING - (CW)		THERMOSTATIC MIXING VALVE
- - - - - -	HOT WATER PIPING (112'F) - (HW)	F.D.	FLOOR DRAIN
——02——	OXYGEN PIPING (O2)	A.P.	ACCESS PANEL
———	CLEANOUT - (CO)	W.H.A.	WATER HAMMER ARRESTOR
	FLOOR LEVEL CLEANOUT - (FCO)	H.B.	HOSE BIBB
	PIPE UP	FPSC	FREEZE PROOF SILLCOCK
	PIPE DOWN OR DROP	P-#	PLUMBING FIXTURE CALLOUT
	BALL VALVE	INV.	INVERT
	GATE VALVE (G.V.)	F.F. EL.	FINISHED FLOOR ELEVATION
	CHECK VALVE	W&T	WASTE AND TRAP
	STRAINER	L.O.W.	LIMIT OF WORK
	GLOBE VALVE	MV-1	PLUMBING EQUIPMENT CALLOUT
HC	HANDICAP	B.F.P.	BACKFLOW PREVENTER
MV	MIXING VALVE	V.T.R.	VENT THROUGH ROOF

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LAMOUREUX PAGANO ASSOCIATES|ARCHITECTS
108 Grove Street, Suite 300
Worcester MA 01605
508.752.2831
www.lpaa.com

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CONSULTANT

SEAMAN ENGINEERING CORPORATION
22 West Street, Unit C ph:508-865-1400
Millbury, MA 01527 fx:508-865-1401

PROJECT

TUFTS at TECH Community Veterinary Clinic

Final Bid Package

Tufts at Tech Relocation

1 Officer Manny Familia Way, Worcester, MA 01605

DRAWING TITLE

Partial Second Floor Plumbing Plan, Details, Notes and Schedules

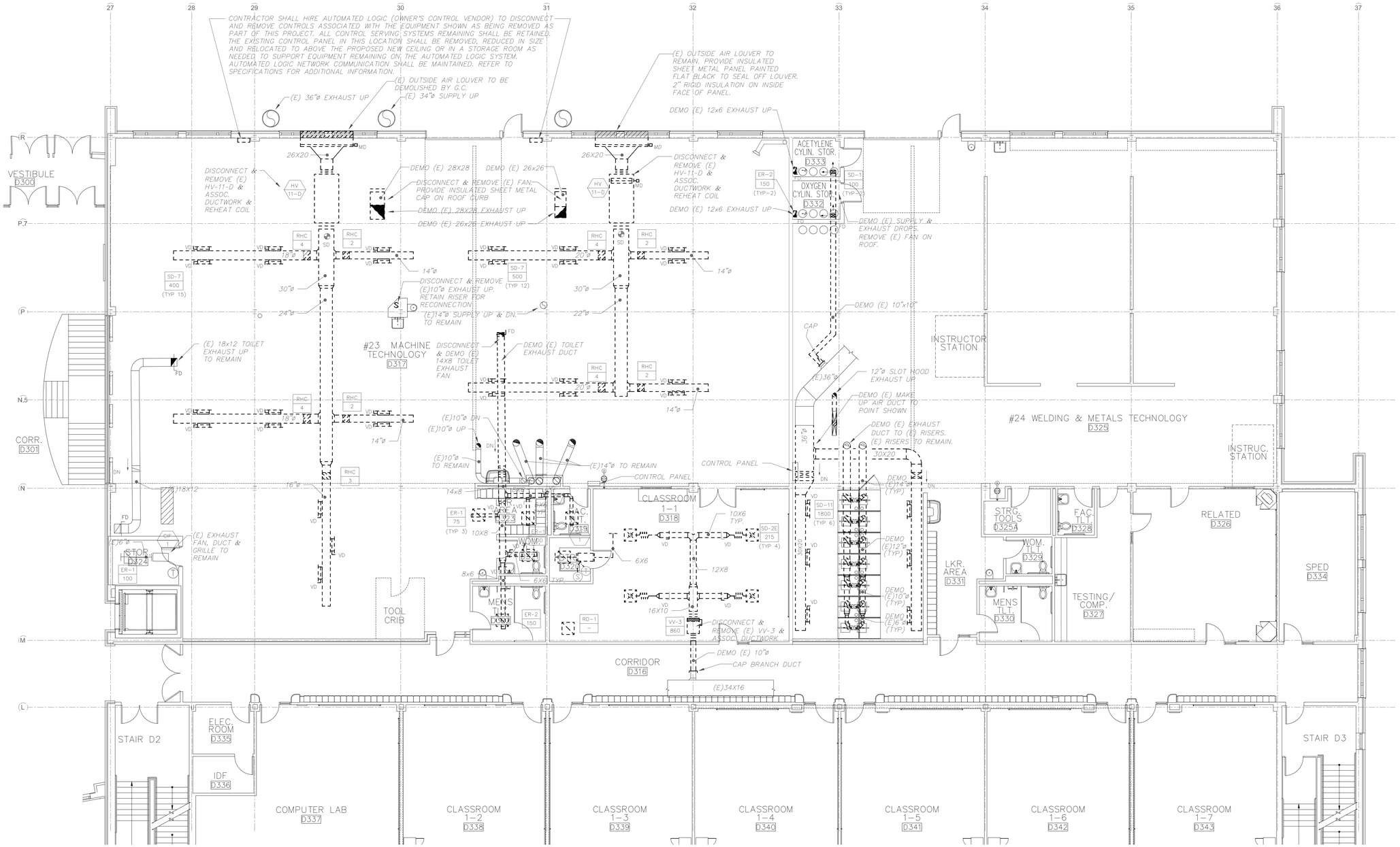
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CKD. BY: KRS
DATE: March 11, 2026

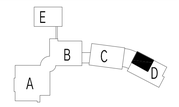
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1 DH3.1 Proposed Partial Third Floor HVAC DEMO Plan
Scale: 1/8" = 1'-0"

Key Plan



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Worcester MA 01605
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DRAWING TITLE

Partial Third Floor HVAC DEMO Plan

REVISIONS

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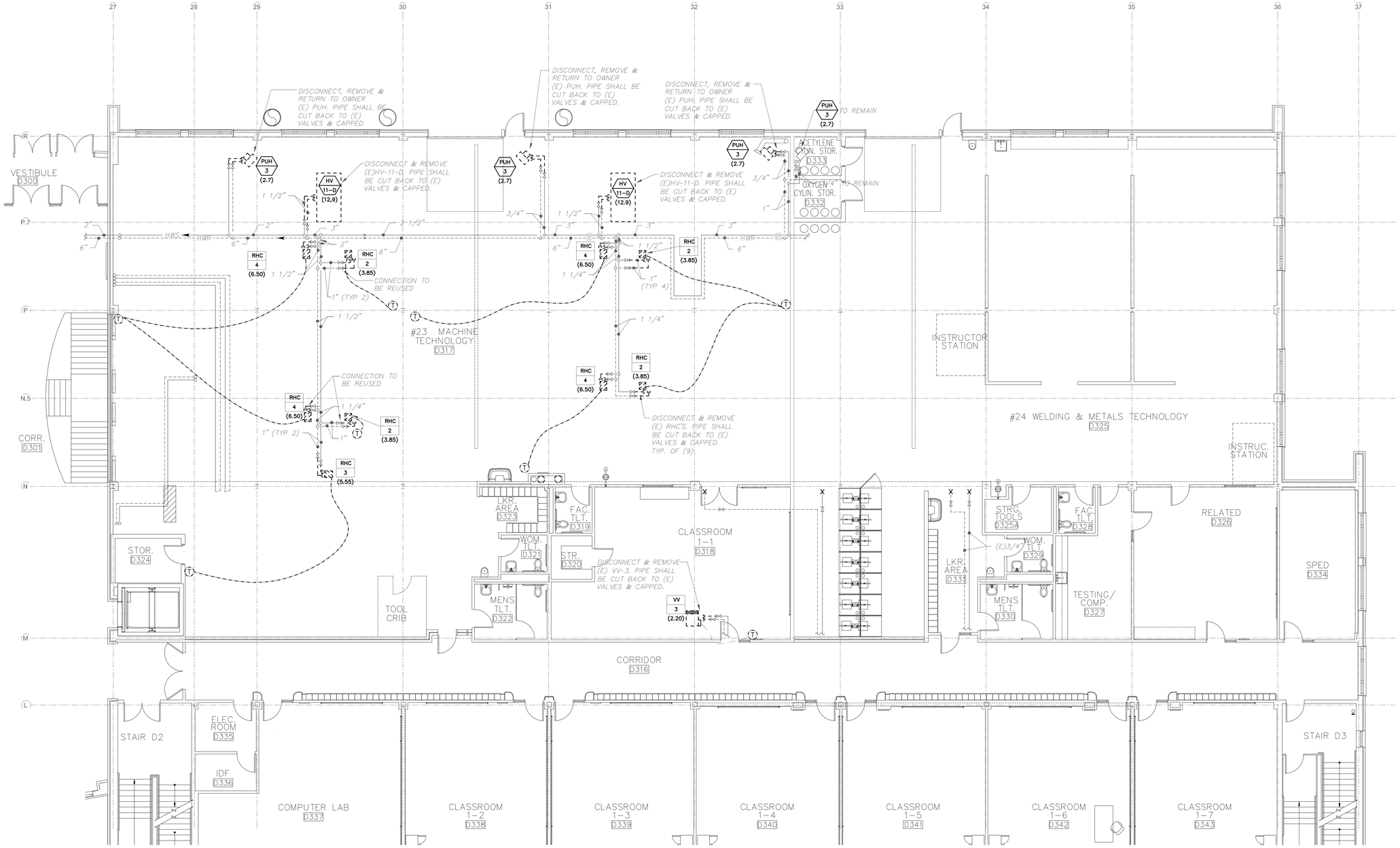
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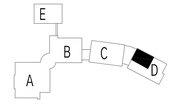
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1 DH4.1 Proposed Partial Third Floor HVAC PIPING DEMO Plan

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Key Plan



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22 West Street, Unit C ph:508-865-1400
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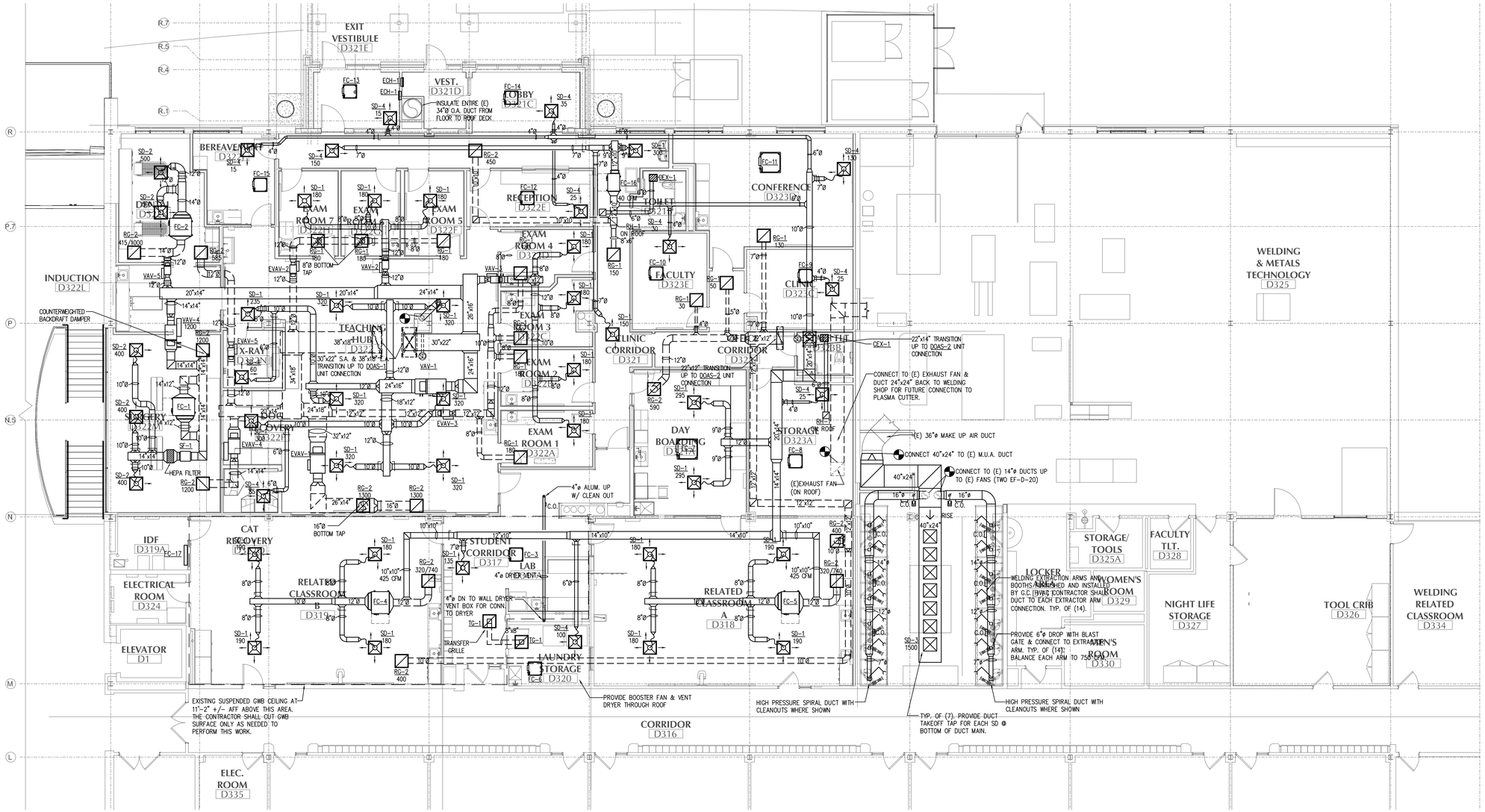
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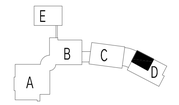
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1 / H3.1 Proposed Partial Third Floor HVAC Plan

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Key Plan



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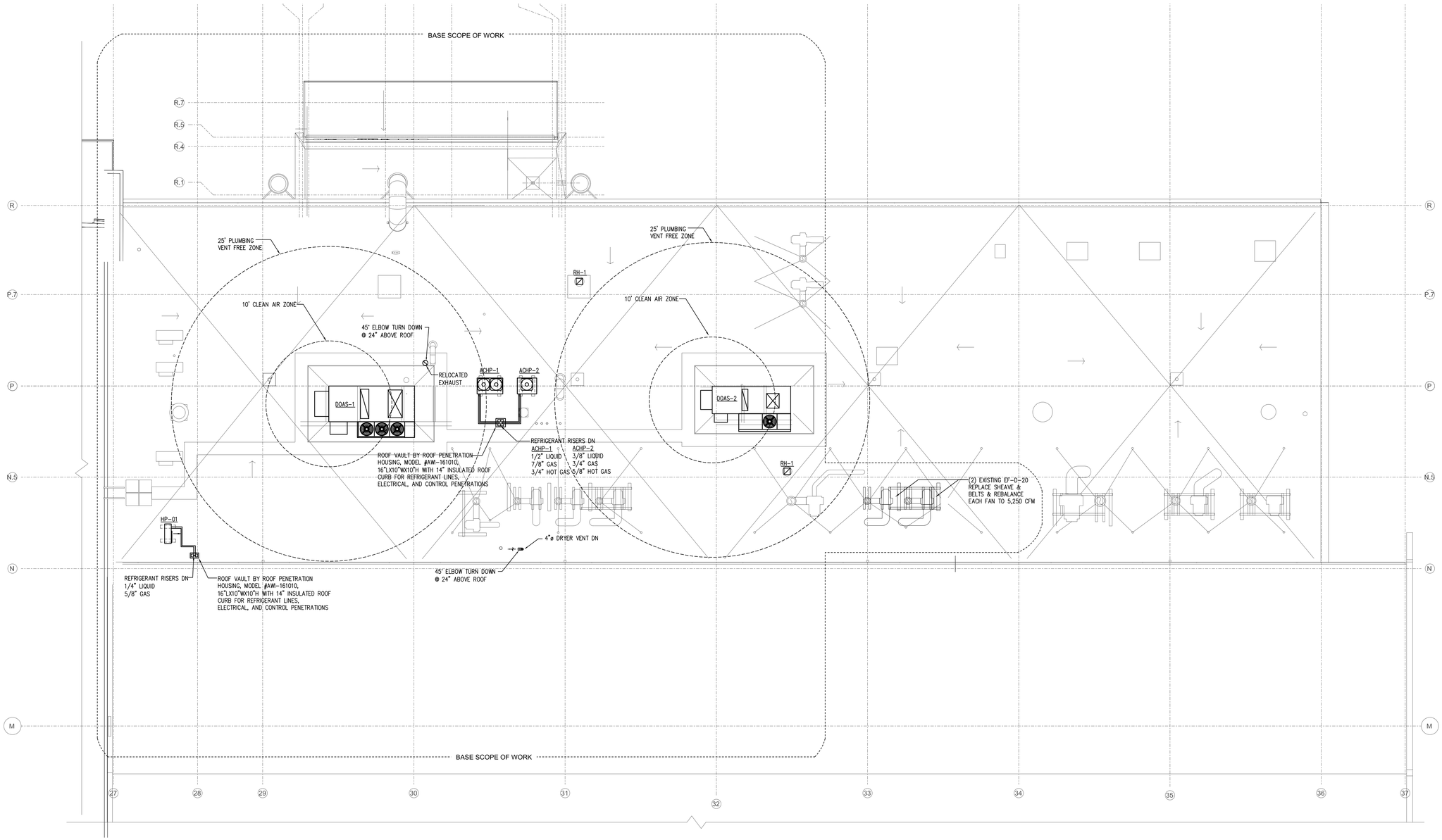
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CKD. BY:	KRS
DATE:	March 11, 2026

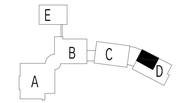
H3.1

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1 H3.2 Proposed Roof HVAC Plan
Scale: 1/8" = 1'-0"

Key Plan



Project / True North

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Millbury, MA 01527 fx:508-865-1401

PROJECT

TUFTS at TECH Community Veterinary Clinic

Final Bid Package

Tufts at Tech Relocation

1 Officer Manny Familia Way, Worcester, MA 01605

DRAWING TITLE

Roof HVAC Plan

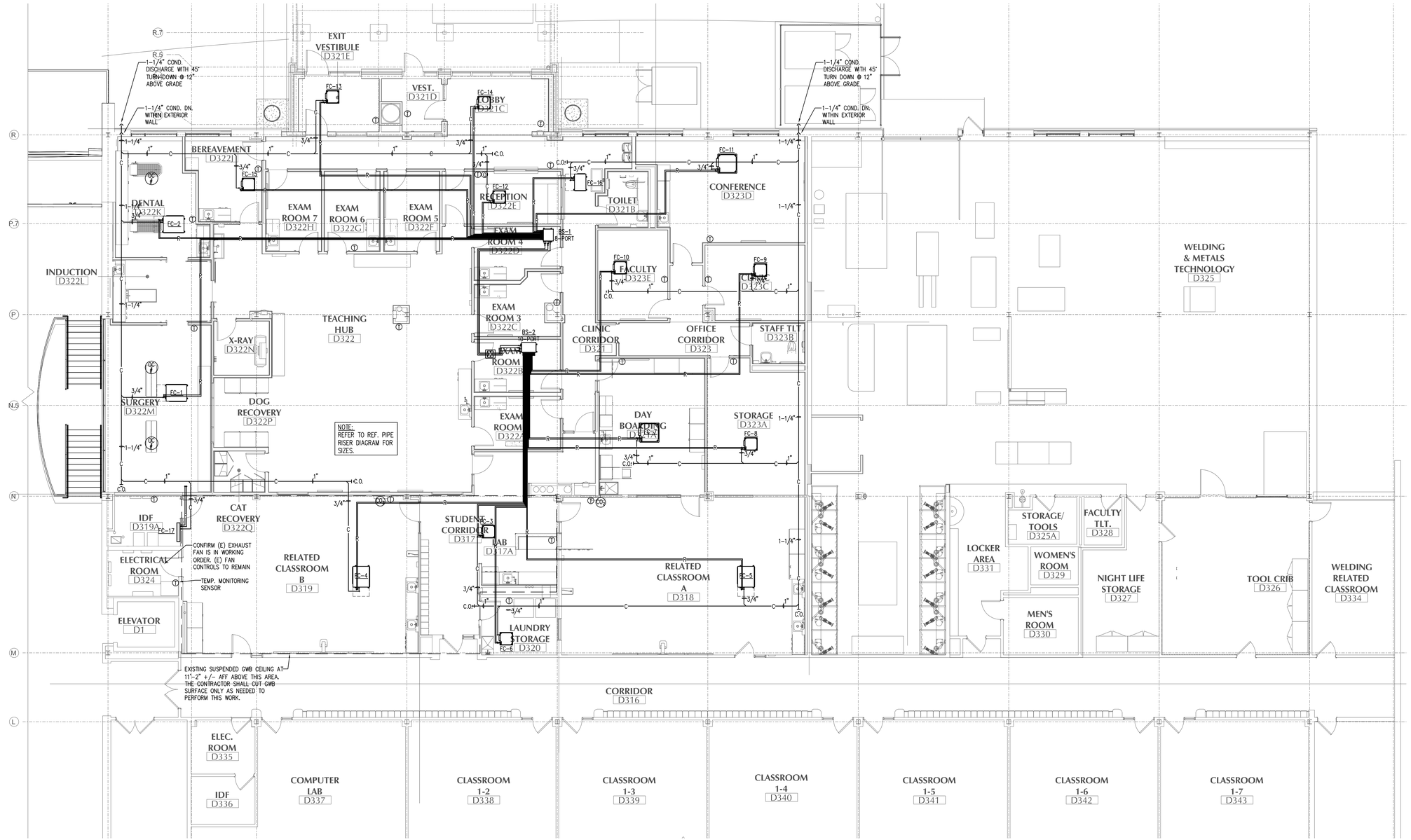
REVISIONS

No.	Description	Date

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DWN. BY:	MWS
CKD. BY:	KRS
DATE:	March 11, 2026

H3.2

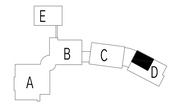
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1 / H4.1 Proposed Partial Third Floor HVAC REF. & COND. PIPING Plan

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

Key Plan



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1 Officer Manny Familia Way, Worcester, MA 01605

DRAWING TITLE

Partial Third Floor HVAC Ref. & Cond. Piping Plan

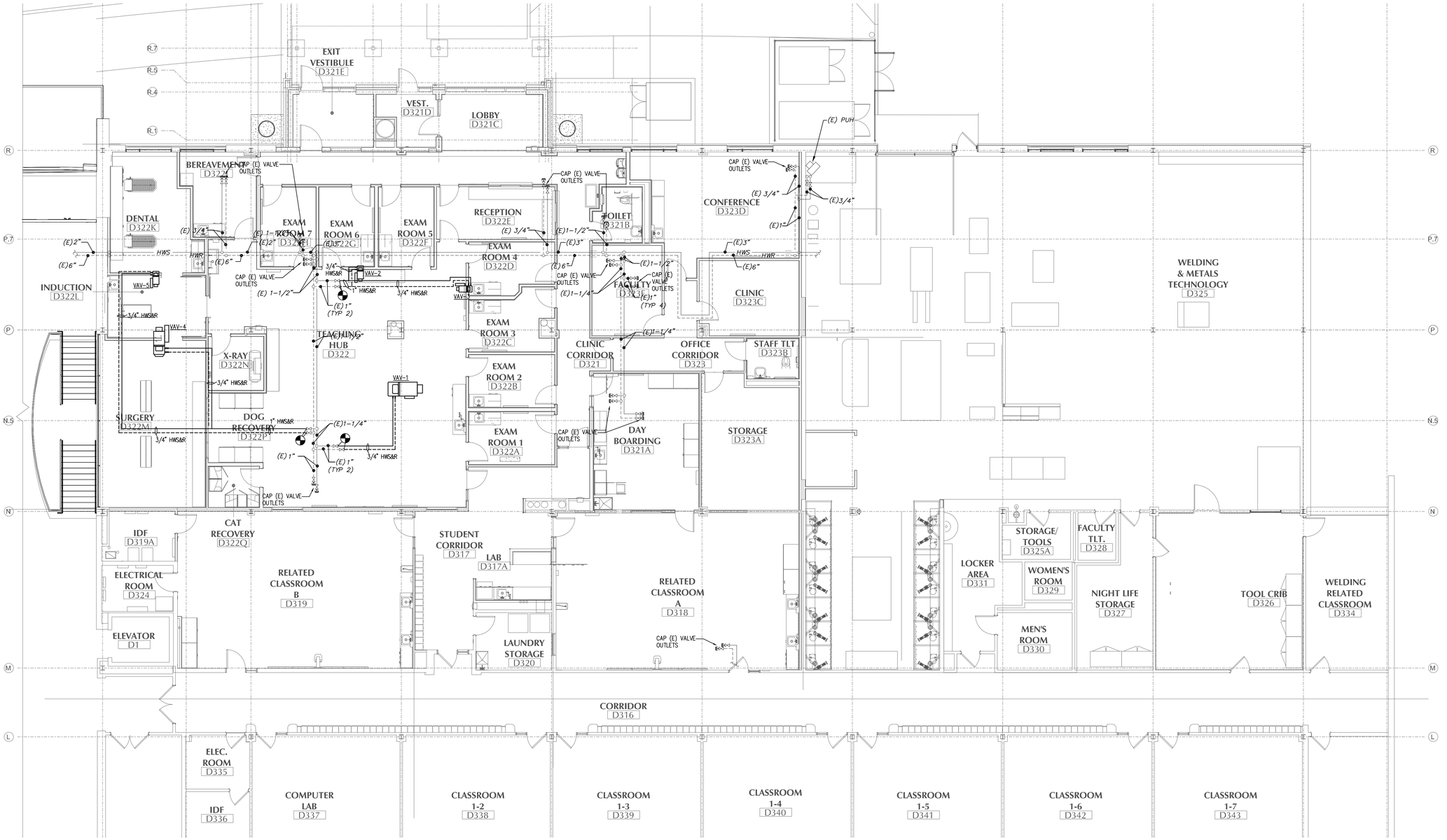
REVISIONS

No.	Description	Date

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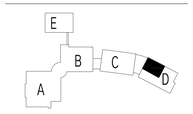
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1 H4.2 Proposed Partial Third Floor HVAC HOT WATER PIPING Plan
Scale: 1/8" = 1'-0"

Key Plan



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Tufts at Tech Relocation

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DRAWING TITLE

Partial Third Floor HVAC Hot Water Piping Plan

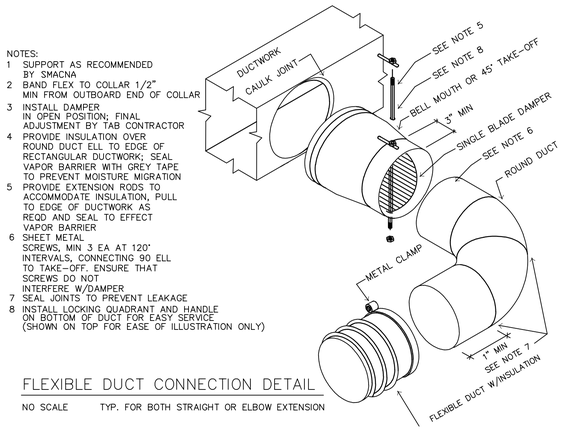
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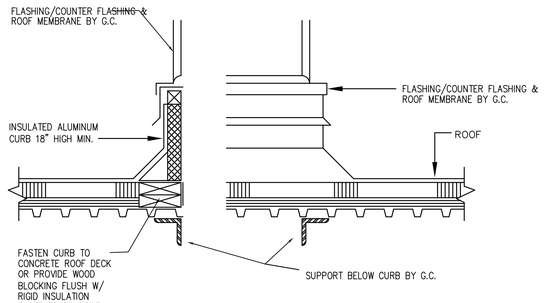
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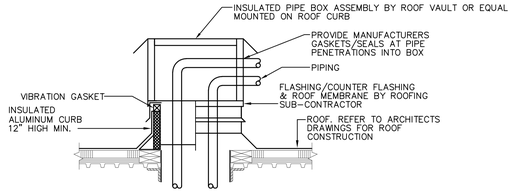
FLEXIBLE DUCT CONNECTION DETAIL

NO SCALE TYP. FOR BOTH STRAIGHT OR ELBOW EXTENSION



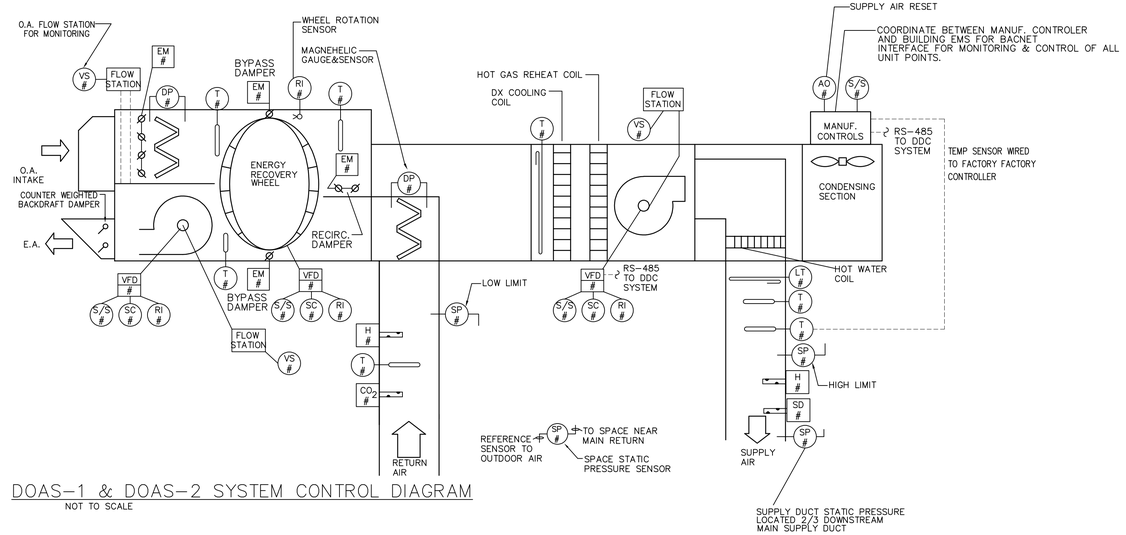
TYPICAL ROOF CURB DETAIL

NOT TO SCALE
TYPICAL



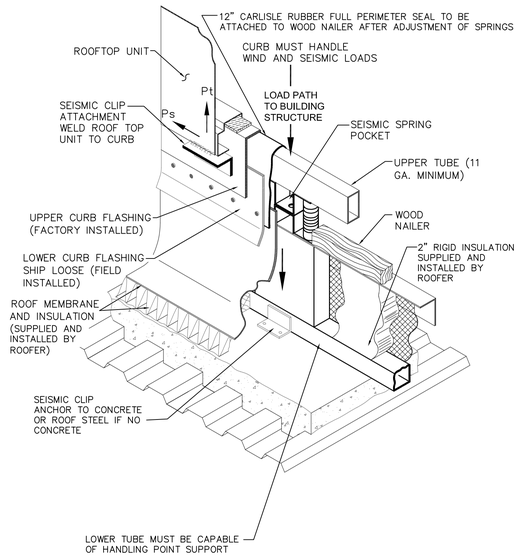
TYPICAL ROOF PIPE PENETRATION HOUSING DETAIL

NO SCALE



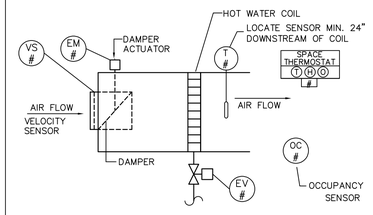
DOAS-1 & DOAS-2 SYSTEM CONTROL DIAGRAM

NOT TO SCALE



ATTACHMENT OF ISOLATED WIND AND SEISMIC ROOF CURB ON LEVELED ROOF

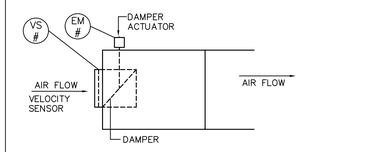
NO SCALE
TYPICAL FOR ALL RTU'S AND AHU'S



NOTE:
1. MECHANICAL CONTRACTOR TO COORDINATE INTERLOCKING HARDWARE, DAMPER & VALVE ACTUATORS AND VELOCITY FLOW TRANSDUCERS W/ CONTROLS CONTRACTOR & TERMINAL MANUF. BEFORE ORDERING.
2. INTERLOCK HEAT WITH PERIMETER RADIATION IN APPLICABLE ZONES.

VAV TERMINAL WITH HOT WATER COIL CONTROL DIAGRAM – TYP.

NO SCALE



NOTE:
1. MECHANICAL CONTRACTOR TO COORDINATE INTERLOCKING HARDWARE, DAMPER & VALVE ACTUATORS AND VELOCITY FLOW TRANSDUCERS W/ CONTROLS CONTRACTOR & TERMINAL MANUF. BEFORE ORDERING.
2. INTERLOCK HEAT WITH PERIMETER RADIATION IN APPLICABLE ZONES.

EVAV TERMINAL CONTROL DIAGRAM – TYP.

NO SCALE

DUCT SIZE	HOLE SIZE	MINIMUM DUCT HEIGHT
6x4	7.5x5.5	7.5
10x4	11.5x5.5	7.5
16x4	17.5x5.5	7.5
24x4	25.5x5.5	7.5
6x5	7.5x6.5	8.5
10x5	11.5x6.5	8.5
16x5	17.5x6.5	8.5
24x5	25.5x6.5	8.5
6x6	7.5x7.5	9.5
10x6	11.5x7.5	9.5
16x6	17.5x7.5	9.5
24x6	25.5x7.5	9.5
8x8	9.5x9.5	11.5
16x8	17.5x9.5	11.5
24x8	25.5x9.5	11.5
10x10	11.5x11.5	13.5
16x10	17.5x11.5	13.5
24x10	25.5x11.5	13.5

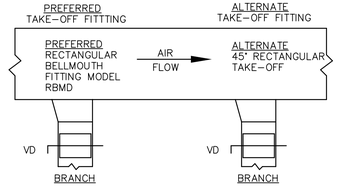
NOTES:

ALL ROUND AND RECTANGULAR BELLMOUTH FITTINGS SHALL BE INCLUDED WITH THE FOLLOWING STANDARD FEATURES:

1. NEOPRENE GASKET TO MINIMIZE AIR LEAKAGE.
2. PRE-DRILLED HOLES FOR QUICK MOUNTING.
3. CONSTRUCTED OF HEAVY DUTY GALVANIZED STEEL

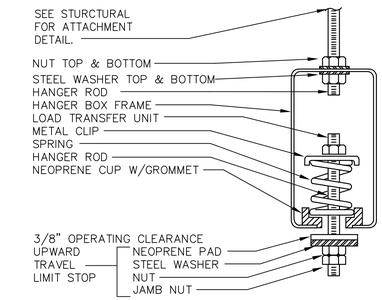
OPTIONAL FEATURES SHALL INCLUDE THE FOLLOWING:

1. 26 GUAGE GALVANIZED QUANDRANT VOLUME DAMPER WITH TIGHT FITTING GASKETING TO MINIMIZE LEAKAGE AT DAMPER PIVOT POINTS.
2. HEAVY DUTY HARDWARE IS AVAILABLE FOR APPLICATIONS WITH INCREASED STATIC PRESSURE.



ALTERNATE RECTANGULAR BRANCH DUCT TAKE-OFF

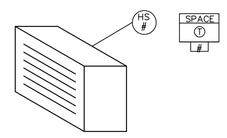
NTS



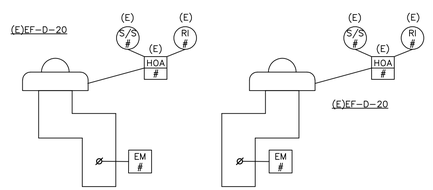
NOTES:
1. ADJUST VERTICAL TRAVEL LIMIT STOP AFTER SYSTEM IS OPERATIONAL.
2. UPWARD TRAVEL LIMIT STOP MUST NOT SHORT CIRCUIT ISOLATOR OR REDUCE ISOLATION PERFORMANCE.
3. REFER TO SPECIFICATIONS FOR SEISMIC REQUIREMENTS.

VIBRATION ISOLATOR DETAIL

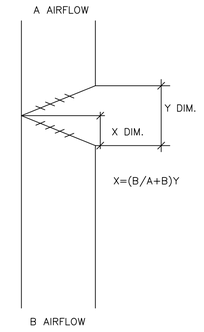
NTS



ELECTRIC PANEL, CABINET OR UNIT HEATER



WELDING HOOD EXHAUST CONTROL DIAGRAM



TYPICAL DUCTWORK SPLIT DETAIL

NOT TO SCALE

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PROJECT

TUFTS at TECH Community Veterinary Clinic

Final Bid Package

Tufts at Tech Relocation

1 Officer Manny Familia Way, Worcester, MA 01605

DRAWING TITLE

HVAC CONTROLS

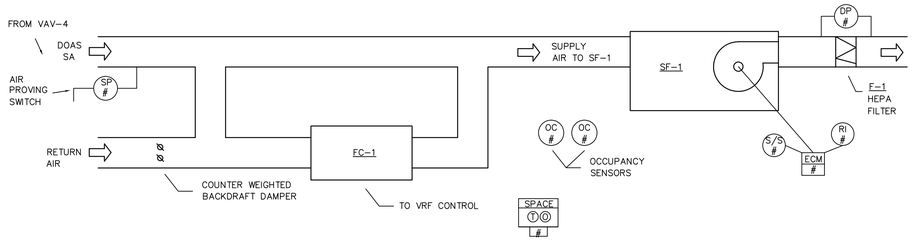
REVISIONS

No.	Description	Date

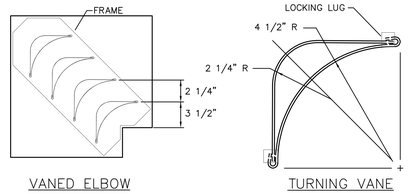
FILE:
JOB NO: 2417
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SF-1/FC-1 SURGERY FAN CONTROL DIAGRAM



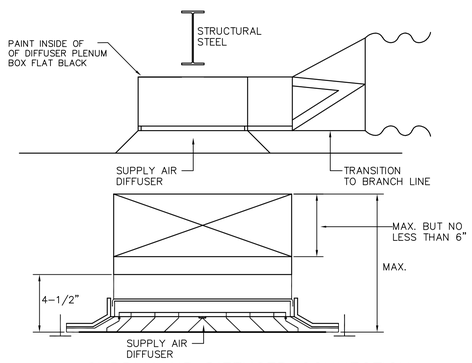
VANED ELBOW

TURNING VANE

NOTES:
1. LOCKING LUGS INTEGRAL WITH VANE
2. MAXIMUM UNSUPPORTED VANE LENGTH 48"
3. FRAMES-BOLTED OR RIVETED TO ELBOW
4. VANES AND FRAMES-SAME GAUGE AS ELBOW

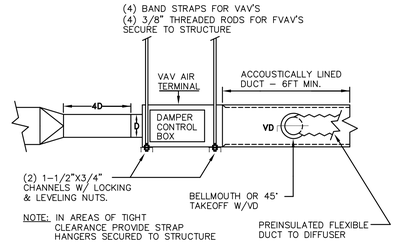
DOUBLE THICKNESS TURNING VANES FOR SQUARE ELBOW

NO SCALE
TYPICAL



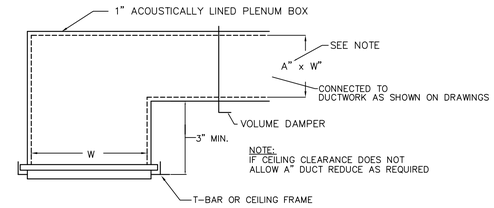
SUPPLY AIR DIFFUSER CONNECTION TYPICAL AT ALL OBSTRUCTIONS TO STRUCTURAL STEEL OR OTHER

NO SCALE TYPICAL



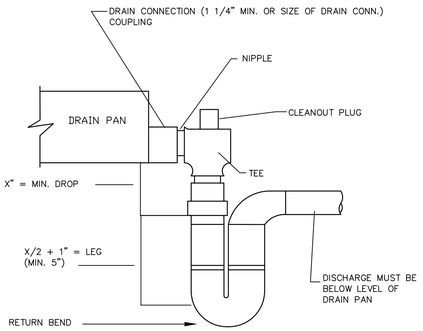
VAV TERMINAL INSTALLATION DETAIL

NOT TO SCALE
TYPICAL



TYPICAL RETURN/EXHAUST GRILLE DETAIL

NOT TO SCALE

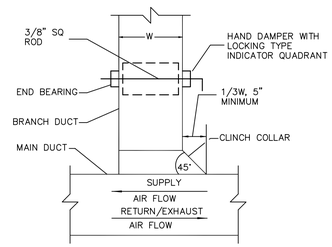


X = NEGATIVE INTERNAL STATIC PRESSURE AT FAN INLET

NOTES:
1. ALLOW SUFFICIENT SPACE BELOW DRAIN PAN FOR TRAP
2. PITCH DRAIN FOR PROPER RUN-OFF
3. MANUALLY PRIME FILL TRAP BEFORE START-UP TO FORM INITIAL DRAIN SEAL
4. SUPPORT LENGTHY DRAIN LINES TO PREVENT SAG AND CONDENSATE OVERFLOW

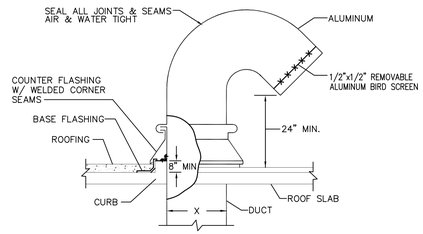
DRAIN PAN WATER SEAL PIPING - DETAIL - TYPICAL

NOT TO SCALE



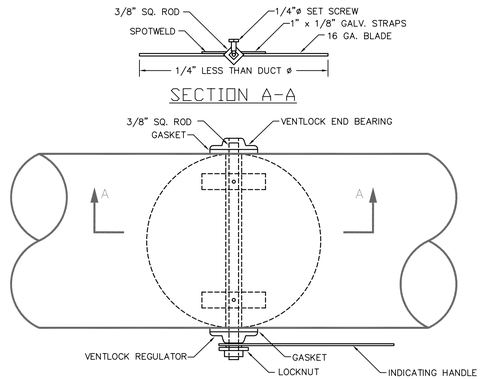
RECTANGULAR DUCT TAP WITH VOLUME DAMPER

NO SCALE TYPICAL



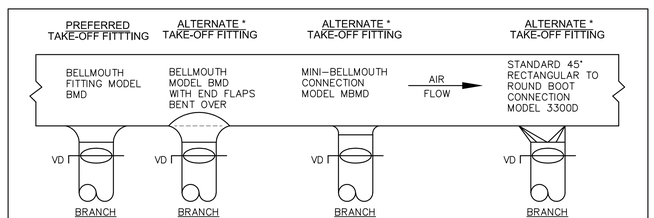
EXHAUST GOOSENECK DETAIL

NO SCALE
TYPICAL



ROUND VOLUME DAMPER - UP TO 14" DIAMETER, LOW PRESSURE

NO SCALE
TYPICAL



DUCT SIZE	HOLE SIZE	MINIMUM DUCT HEIGHT
5"	8"	9"
6"	9"	10"
7"	10"	11"
8"	11"	12"
9"	12"	13"
10"	13"	14"
12"	15"	16"
14"	17"	18"
16"	19"	20"

DUCT SIZE	HOLE SIZE	MINIMUM DUCT HEIGHT
5"	–	–
6"	7"	9"
7"	–	–
8"	9"	11"
9"	–	–
10"	11"	13"
12"	–	–
14"	–	–
16"	–	–

DUCT SIZE	HOLE SIZE	MINIMUM DUCT HEIGHT
5"	5"x10"	7"
6"	6"x12"	8"
7"	6"x12"	8"
8"	6.5"x12"	8.5"
9"	6.5"x14"	8.5"
10"	6.5"x16"	8.5"
12"	8.5"x18"	12"
14"	10"x20"	10.5"
16"	–	–

* ALTERNATE FITTINGS TO BE USED WHEN DUCT HEIGHT DOES NOT PERMIT THE USE OF THE FULL SIZE BELLMOUTH.

ALTERNATE ROUND BRANCH DUCT TAKE-OFF

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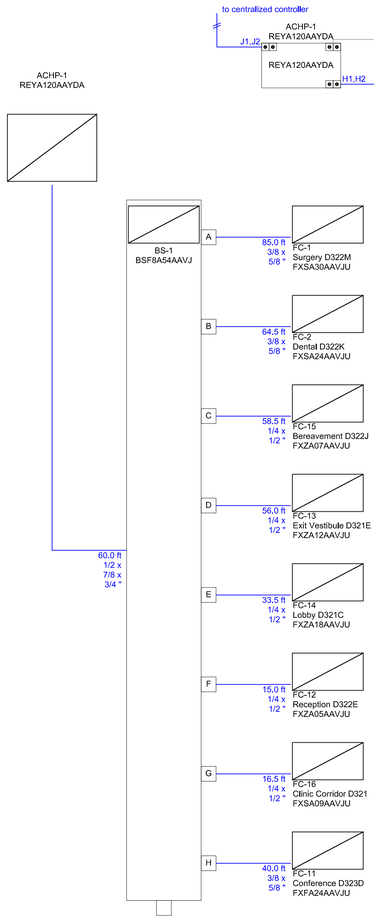
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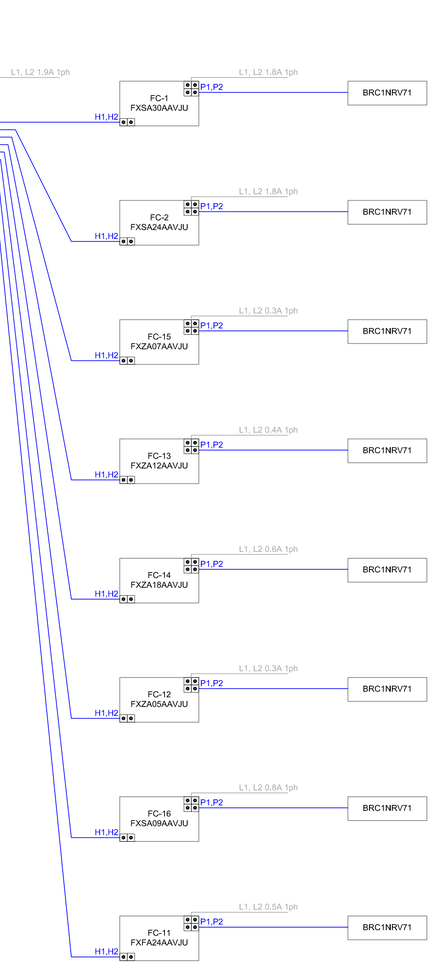
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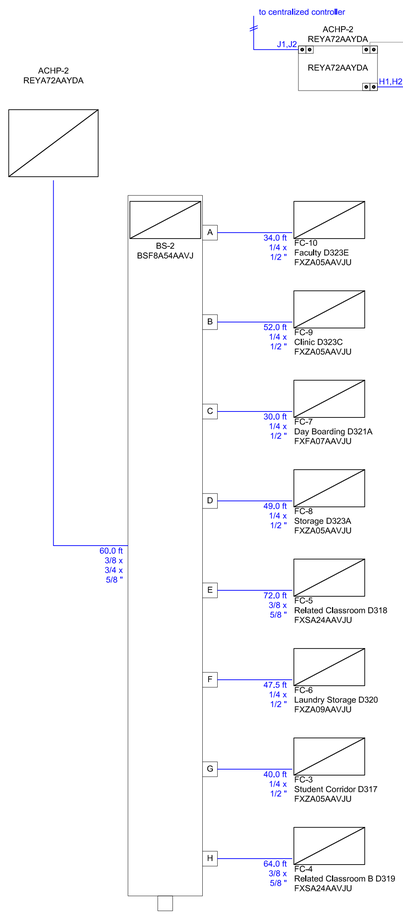
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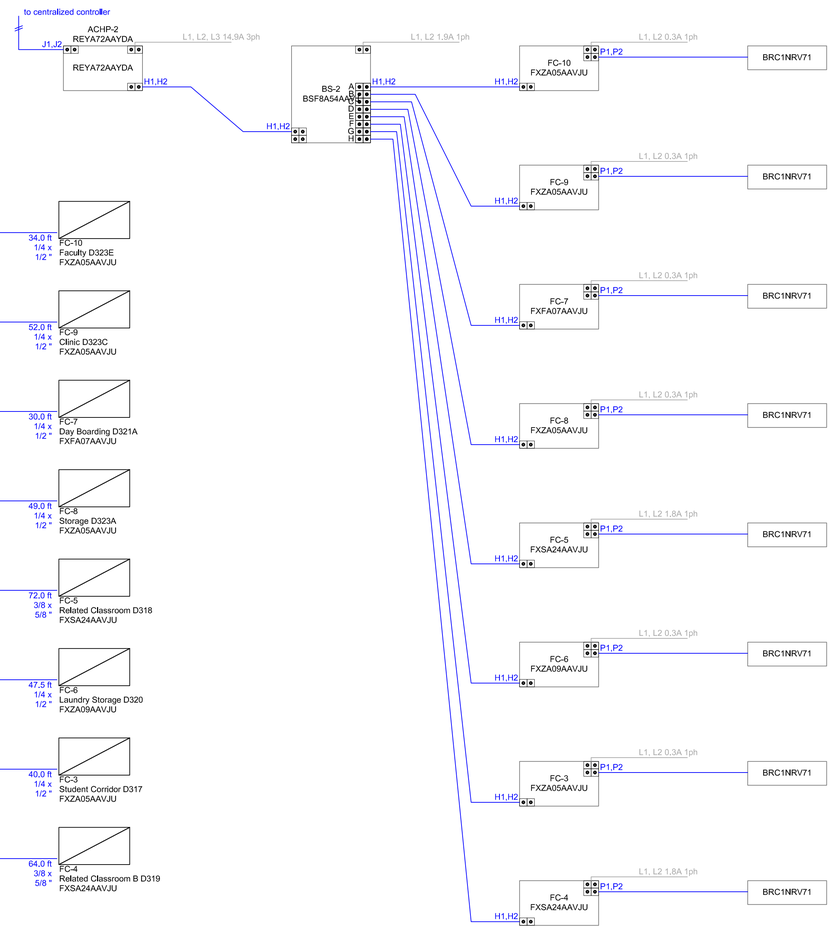
VRF SYSTEM ACHP-1
PIPING SCHEMATICS
NO SCALE



VRF SYSYEM ACHP-1 WIRING SCHEMATICS
SCALE: NONE



VRF SYSTEM ACHP-2
PIPING SCHEMATICS
NO SCALE



VRF SYSYEM ACHP-2 WIRING SCHEMATICS
SCALE: NONE

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Final Bid Package

Tufts at Tech Relocation

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DRAWING TITLE

HVAC VRF SYSTEM LADDER DIAGRAMS

REVISIONS

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ROOFTOP ENERGY RECOVERY UNIT SCHEDULE

			DOAS–1		DOAS–2	
	UNIT NUMBER		DOAS–1		DOAS–2	
	SERVICE		SEE PLANS		SEE PLANS	
	MANUFACTURER		VALENT		VALENT	
	MODEL #		VXE–212–58D–17.5A–1–A2		VXE–112–41D–5A–1–A2	
	ISMRE2 / ISCOP2		7.1 / 4.61		8.5 / 3.91	
	WEIGHT (LBS)(WITHOUT CURB)		4,737		3,293	
FANS DATA	MAX C.F.M., SUPPLY/EXHAUST		5,650 / 6,000		2,200/ 2,200	
	OUTDOOR AIR		100%		100%	
	SUPPLY TOTAL STATIC PRESS./E.S.P (IN WG)		3.091" / 1.0"		2.344" / 1.0"	
	EXHAUST TOTAL STATIC PRESS./E.S.P (IN WG)		2.322" / 1.0"		1.817" / 1.0"	
	SUPPLY/EXHAUST FAN RPM		1590 / 1524		1565 / 1473	
	SUPPLY/EXHAUST FAN BHP		4.26 / 3.77		1.27 / 1.1	
	SUPPLY/EXHAUST FAN HP		5 / 5		1.5 / 1.5	
ENERGY RECOVERY	SEASON		SUMMER	WINTER	SUMMER	WINTER
	AMBIENT AIR TEMP. DB/WB (°F)		91.0/73.0	0.0/–1.7	91.0/73.0	0.0/–1.7
	RETURN AIR TEMP. DB/WB (°F)		75.0/62.5	72.0/55.8	75.0/62.5	72.0/55.8
	WHEEL LAT DB/WB (°F)		–	–	–	–
	TOTAL EFFECTIVENESS, TOTAL/SENSIBLE		67.8/70.1	69.4/70.5	71.1/73.5	72.7/73.8
	WHEEL PRESSURE DROP (IN H20)		–		–	
	RECOVERED CAPACITY (BTUH)		–	–	–	–
COIL DATA	DX AIR DATA	SERVICE	COOL	HEAT	COOL	HEAT
		FACE VEL. (FPM)	–	–	–	–
		TEMP. ENTERING (DB/WB)	79.6/66.0	49/41.6	79.1/65.7	51.5/43.2
		TEMP. LEAVING UNIT (DB/WB)	54.4/54.4	64.8/–	54.9/54.9	66.3/–
		TOTAL/SENSIBLE CAP. (MBH)	195.6/149.6	94.8	71.1/56.0	34.9
	HOT GAS REHEAT EAT/LAT		55 / 75		55 / 75	
HEAT	ELECTRIC CAPACITY (kW)		50		15	
	ELECTRIC HEAT CAPACITY (BTUH)		170,607		51,182	
	ELECTRIC ENTERING/LEAVING DB (°F)		64.8/92.7		66.3/87.9	
ELECTRICAL	V–PH–HZ		460–3–60		460–3–60	
	MCA		115.1		43.0	
	MOCP		125		45	
	STARTER	TYPE	INTEGRAL		INTEGRAL	
		NEMA SIZE	INTEGRAL		INTEGRAL	
		CONTROL	INTEGRAL		INTEGRAL	
		AUX. CONTACTS	INTEGRAL		INTEGRAL	
ACCESSORIES			①②③④⑤⑥⑦⑧		①②③④⑤⑥⑦⑧	

① PROVIDE THREE (3) 2" MERV 13 SPARE SETS OF FILTERS, IN ADDITION TO THOSE SUPPLIED IN THE UNIT
② PROVIDE PREMIUM EFFICIENCY O.D.P. MOTORS, PROVIDE V–F–D ON SUPPLY AND EXHAUST FAN
③ PROVIDE DOUBLE WALL CONSTRUCTION & IAQ DRAIN PAN.
④ MANUFACTURER TO PROVIDE FLOW STATIONS ON OUTDOOR, RETURN, SUPPLY, AND EXHAUST AIR.
⑤ PROVIDE FACTORY INSTALLED BACNET/MSTP CARD BMS INTERFACE KIT
⑥ PROVIDE SEISMIC VIBRATION ISOLATING SPRING ROOD CURB.
⑦ PROVIDE MODULATING TOTAL ENTHALPY ECONOMIZER. DOUBLE WALL CONSTRUCTION. PROVIDE NEMA 3R DISCONNECT SWITCH
⑧ PROVIDE UNIT POWERED 115V GFI OUTLET AND PHASE FAILURE MONITOR

VAV TERMINAL SCHEDULE

UNIT NUMBER	VAV–1	VAV–2	VAV–3	VAV–4	VAV–5
MANUFACTURER	PRICE	PRICE	PRICE	PRICE	PRICE
MODEL	SDV	SDV	SDV	SDV	SDV
SERVICE	SEE PLANS	SEE PLANS	SEE PLANS	SEE PLANS	SEE PLANS
UNIT SIZE	16"ø	8"ø	9"ø	12"ø	8"ø
HOT WATER COIL (EAT/LAT)	55°F/80°F	55°F/80°F	55°F/80°F	55°F/75°F	55°F/75°F
HOT WATER COIL ROWS	2	1	1	1	1
COIL GPM / FT–HEAD	2.5 / 1.3'	1.5 / 1.2'	2 / 1.9'	2 / 0.7'	1 / 0.6'
COIL MBH	70	14.5	20	26	12.5
MAX. CFM	2,600	540	720	1200	585
MIN. CFM (COOLING)	1,000	200	290	300	230
MIN. CFM (HEATING)	1,000	200	290	300	230

1. DDC CONTROLS FURNISHED AND FIELD MOUNTED BY EMS CONTRACTOR
2. VAV BOX'S SHALL BE 120V–1ø AS SCHEDULED, AND STEP DOWN CONTROL TRANSFORMER COORDINATE ATC CONTRACTOR FOR CONTROL VOLTAGE.
3. PROVIDE 1" LINING.
4. PROVIDE DUCT TRANSITIONS TO AND FROM BOX'S.
5. HOT WATER COILS ARE BASED ON 180°F EWT. HOT WATER COIL LAT BASED ON MAXIMUM CFM.
6. INLET STATIC = 0.75"

EXHAUST VAV TERMINAL SCHEDULE

UNIT NUMBER	EVAV–1	EVAV–2	EVAV–3	EVAV–4	EVAV–5
MANUFACTURER	PRICE	PRICE	PRICE	PRICE	PRICE
MODEL	SDE	SDE	SDE	SDE	SDE
SERVICE	SEE PLANS	SEE PLANS	SEE PLANS	SEE PLANS	SEE PLANS
UNIT SIZE	16"ø	8"ø	9"ø	12"ø	8"ø
MAX. CFM	2,600	540	720	1,200	585
MIN. CFM	1,000	200	290	300	230

1. DDC CONTROLS FURNISHED AND FIELD MOUNTED BY EMS CONTRACTOR
2. VAV BOX'S SHALL BE 120V–1ø AS SCHEDULED, AND STEP DOWN CONTROL TRANSFORMER COORDINATE ATC CONTRACTOR FOR CONTROL VOLTAGE.
3. PROVIDE 1" LINING.
4. PROVIDE DUCT TRANSITIONS TO AND FROM BOX'S.
5. ALL TERMINALS SHALL COME WITH 3' LONG SOUND ATTENUATORS. ATTENUATOR MAY BE REMOVED AND REPLACED WITH LINED INTAKE DUCT IF SITE CONDITIONS REQUIRE.

FAN COIL SCHEDULE

	UNIT NUMBER	FC–1	FC–2,4,5	FC–3,8,9,10,12	FC–6	FC–7	FC–11	FC–13	FC–14	FC–15	FC–16
	SERVICE	SEE PLANS	SEE PLANS	SEE PLANS	SEE PLANS	SEE PLANS	SEE PLANS	SEE PLANS	SEE PLANS	SEE PLANS	SEE PLANS
FAN COIL	TONS	2.5	2.0	0.5	0.8	0.6	1.9	1.0	1.5	0.6	0.8
	MANUFACTURER MAKE	DAIKIN	DAIKIN	DAIKIN	DAIKIN	DAIKIN	DAIKIN	DAIKIN	DAIKIN	DAIKIN	DAIKIN
	MANUFACTURER MODEL #	FXSA30AAVJU	FXSA24AAVJU	FXZA05AAVJU	FXZA09AAVJU	FXFA07AAVJU	FXFA24AAVJU	FXZA12AAVJU	FXZA18AAVJU	FXZA07AAVJU	FXSA09AAVJU
	C.F.M. (HI SPEED)	812	742	300	317	441	777	353	511	307	318
	E.S.P. (IN WG)	–	–	–	–	–	–	–	–	–	–
	FAN RPM (SPEED)	–	–	–	–	–	–	–	–	–	–
	HP	–	–	–	–	–	–	–	–	–	–
	MIN. OUTDOOR AIR (CFM)	–	–	–	–	–	–	–	–	–	–
ELEC	V–PH–HZ	208–1–60	208–1–60	208–1–60	208–1–60	208–1–60	208–1–60	208–1–60	208–1–60	208–1–60	208–1–60
	MCA / MOCP	1.8/15	1.8/15	0.3/15	0.3/15	0.3/15	0.5/15	0.4/15	0.6/15	0.3/15	0.8/15
DX COOLING	NOMINAL CAPACITY (TONS)	2.5	2.0	0.5	0.8	0.6	1.9	1.0	1.5	0.6	0.8
	TOTAL / SENSIBLE CAPACITY (MBH)	25.9 / 20.4	20.6 / 15.4	4.9 / 4.4	8.0 / 5.9	6.5 / 5.1	20.6 / 15.2	10.2 / 7.0	15.2 / 11.5	6.5 / 5.2	8.3 / 6.2
	COOLING EDB / EWB (°F)	75 / 62.5	75 / 62.5	75 / 62.5	75 / 62.5	75 / 62.5	75 / 62.5	75 / 62.5	75 / 62.5	75 / 62.5	75 / 62.5
	COOLING LDB / LWB (°F)	– / –	– / –	– / –	– / –	– / –	– / –	– / –	– / –	– / –	– / –
	ENTERING REFRIGERANT TEMP. (°F)	–	–	–	–	–	–	–	–	–	–
	SATURATED SUCTION TEMP. (°F)	–	–	–	–	–	–	–	–	–	–
DX HEAT	AMBIENT TEMP (°F)	–	–	–	–	–	–	–	–	–	–
	CAPACITY (MBH)	34	27	6.5	10.6	8.5	27	13.6	20.1	8.5	10.5
	HEATING EDB / EWB (°F)	70 / –	70 / –	70 / –	70 / –	70 / –	70 / –	70 / –	70 / –	70 / –	70 / –
	HEATING LDB / LWB (°F)	– / –	– / –	– / –	– / –	– / –	– / –	– / –	– / –	– / –	– / –
	ENTERING REFRIGERANT TEMP (°F)	–	–	–	–	–	–	–	–	–	–
	SATURATED SUCTION TEMP. (°F)	–	–	–	–	–	–	–	–	–	–
	REMARKS	①②③	①②③	②③	②③	①②③	①②③	②③	②③	②③	①②③

① PROVIDE 2" PLEATED MERV 13 FILTER. PROVIDE 3 SPARE SETS OF FILTERS FOR THE FAN COIL UNIT. PROVIDE MERV–13 FILTER KIT FOR FC–7 & FC–11.
② REFER TO ACHP & ACCU SCHEDULES FOR AMBIENT AIR TEMPS
③ WIRE CONDENSATE PUMP TO FAN COIL CONTROL CIRCUIT FOR SHUT–DOWN COOLING MODE FLOAT ALARM, PROVIDE DRAIN PAN LEVEL SENSORS

AIR COOLED VRF HEAT PUMP SCHEDULE

		UNIT NUMBER	ACHP–1	ACHP–2
		SERVICE	SEE PLAN	SEE PLAN
		MANUFACTURER	DAIKIN	DAIKIN
		MODEL NUMBER	REYA120AAYDA	REYA72AAYDA
		NOMINAL/CORRECTED COOLING CAPACITY (BTUH)	120,000/102,783	72,000/64,463
		NOMINAL/CORRECTED HEATING CAPACITY (BTUH)	130,000/81,375	82,000/59,183
		NET WEIGHT (LBS)	725	525
		MODULE	– –	– –
		MODULE NET WEIGHT (LBS)	– –	– –
		POWER SOURCE	460V–3ø–60Hz	460V–3ø–60Hz
		MCA / MOCP	18.2 / 25	14.9 / 20
		INPUT POWER COOLING/HEATING (KW)	–	–
	UNIT INFO.	OVERALL DIMENSIONS (WxHxD)	49"x66"x30"	37"x66"x30"
		MAX. TOTAL REFRIGERANT LINE LENGTH	–	–
		MAX. REFRIG. LINE LENGTH (ODU TO IDU)	540 FEET	540 FEET
		AIRFLOW RATE (CFM)	8965	8965
		LIQUID/GAS PIPE SIZES	–	–
	AIR DATA	DUCTED EER	12.8	12.8
		DUCTED IEER	25.3	25.3
		DUCTED COP @47°F	2.3	2.3
		DUCTED SCHE	21.10	21.10
		SOUND PRESSURE LEVEL dBA	61	61

NOTES:
① CONTROL FEATURES:
AUTO OPERATION, AUTO RESTART OPERATION, DEFROST/DEICING, INVERTER(VARIABLE SPEED COMPRESSOR), RESTART DELAY(3–MINUTES), SELF DIAGNOSIS, SOFT START, FACTORY INSTALLED DRAIN PAN HEATER. PROVIDE DISCONNECT SWITCH. PROVIDE TOUCH SCREEN CONTROLLER & BACNET COMM. CARD FOR INTERFACE TO BLDG EMS.
② REFRIGERANT LINE SIZES SHALL BE BY EQUIP. MFR. RECOMMENDED SIZES PER RUN LGTH. VERIFY W/ MFR.
③ PROVIDE NEMA 3R WEATHERPROOF DISCONNECT SWITCH
④ PROVIDE 18" HIGH SNOW STAND FLASHED INTO ROOFING SYSTEM
⑤ PROVIDE WIND BAFFLES & SNOW HOOD
⑥ PROVIDE MULTIPLE 8 AND 10 PORT BRANCH SELECTOR BOXES TO SUPPORT THE RESPECTIVE ZONES.
⑦ PROVIDE TOUCH SCREEN INTERFACE AND BACNET INTEGRATION CONTROLS

VRF HEAT REC. BRANCH SELECTOR BOX SCHEDULE

		UNIT NUMBER	BS–1	BS–2
		SERVICE	ACHP–1 VRF SYSTEM	ACHP–2 VRF SYSTEM
		MANUFACTURER	DAIKIN	DAIKIN
		MODEL NUMBER	BSF8A54AAVJ	BSF8A54AAVJ
		NUMBER OF BRANCHES	8	8
		POWER SOURCE	208V–1ø–60Hz	208V–1ø–60Hz
		POWER INPUT (WATTS)	86	86
		MCA	1.9A	1.9A
	UNIT INFO.	OVERALL DIMENSIONS (WxHxD)	33.4"x9.5"x27.7"	33.4"x9.5"x27.7"
		NEW UNIT WEIGHT (LBS)	110 LBS	110 LBS
		MAXIMUM CAPACITY (PER PORT)	54,000 BTUH	54,000 BTUH
		MAXIMUM UNIT CAPACITY (SUM OF PORTS)	378,000 BTUH	378,000 BTUH
		REFRIG. CONNECTIONS – GAS & LIQUID	1–1/8" / 5/8"	1–1/8" / 5/8"

NOTES: 1) PROVIDE BALL VALVES TO ISOLATE INDIVIDUAL BRANCHES

FAN SCHEDULE

		UNIT NUMBER	CEX–1	SF–1
		SERVICE	SEE PLANS	SEE PLANS
		TYPE	CEILING EXH. FAN	–
		MANUFACTURER	GREENHECK	GREENHECK
		MODEL #	SP–80L–VG	SQ–120–VG
FANS		C.F.M.	75	1,200
		STATIC PRESS. (IN WG)	0.5"	1.0"
		FAN RPM	–	1,597
		FAN BHP	–	0.38
		HVI RATED FAN SONES	2.1	7.9
MOTOR & STARTER	MOTOR	TYPE	DC	ECM
		H.P	–	0.5
		MOTOR RPM	–	1,597
		POWER (WATTS)	6.1	–
		AMPS (MOP)	0.1	4.0 (15)
		VOLTAGE/PHASE	115–1	208–1
	STARTER	TYPE	INTERGRAL	–
		NEMA SIZE	–	–
		CONTROL	MOTION SENSOR	EMS
		AUX. CONTACTS	–	–
			②③	①

① PROVIDE VIBRATION ISOLATING HANGERS, DUCTED CONNECTIONS, UNIT MOUNTED SPEED CONTROLLER & DISCONNECT SWITCH.
② PROVIDE VIBRATION ISOLATING HANGERS, DUCTED CONNECTIONS, BACKDRAFT DAMPERS, DISCONNECT SWITCH, AND UNIT MOUNTED SPEED CONTROLS.
③ PROVIDE GRILLE MOUNTED MOTION SENSOR

DIFFUSER, REGISTER & GRILLE SCHEDULE

KEY	SD–1	SD–2	SD–3	SD–4	RG–1	RG–2
MANUFACTURER	PRICE	PRICE	PRICE	PRICE	PRICE	PRICE
MODEL	AMDA	AMDA	PDC	AMDA	630	7D DAL
NECK SIZE	9"x9"	12"x12"	18"x18"	6"x6"	10"x10"	20"x20"
MODULE SIZE	24"x24"	24"x24"	24"x24"	24"x24"	24"x24"	24"x24"
BORDER	LAY–IN	LAY–IN	SURFACE	LAY–IN	LAY–IN	LAY–IN
FINISH	SEE NOTE 4	SEE NOTE 4	SEE NOTE 4	SEE NOTE 4	SEE NOTE 4	SEE NOTE 4
THROW PATTERN	SEE PLANS	SEE PLANS	SEE PLANS	SEE PLANS	SEE PLANS	SEE PLANS
DAMPER	–	–	OBD	–	–	–
NOTES	①②③	①②③	①②③	①②③	①②③	①②③

① COORDINATE WITH ARCHITECTURAL CEILING PLAN FOR FINAL LOCATION;
② TRANSITION FROM DIFFUSER/REGISTER/GRILLE CONNECTION SIZE TO DUCT SIZE
③ REFER TO SPECIFICATIONS FOR ADDITIONAL INFORMATION & APPROVED ALTERNATIVE EQUIPMENT MANUFACTURERS.
④ FINISH AND COLOR SELECTION BY ARCHITECT.

SYMBOLS LEGEND

- DIRECTION OF AIRFLOW
- VOLUME DAMPER
- SUPPLY AIR DUCTWORK
- DEMO DUCTWORK
- RETURN/EXHAUST AIR DUCTWORK
- EXISTING DUCTWORK
- (E) EXISTING
- SD–1 / CFM — DIFFUSER CALLOUT, CUBIC FEET PER MINUTE (CFM)
- AHU–1 — EQUIPMENT CALLOUT
- (T) THERMOSTAT
- (H) HUMIDITY SENSOR
- (SD) DUCT SMOKE DETECTOR
- EWT — ENTERING WATER TEMPERATURE
- LWT — LEAVING WATER TEMPERATURE
- EAT — ENTERING AIR TEMPERATURE
- HWS — HOT WATER SUPPLY PIPING (HWS)
- HWR — HOT WATER RETURN PIPING (HWR)
- X — PIPE ANCHOR
- 2–WAY CONTROL VALVE
- S Ø S Ø M — MOTORIZED DAMPER
- R — REFRIGERANT PIPE
- C — CONDENSATE
- CONNECT TO EXISTING

EQUIPMENT NOTES:

ECH–1 — QMARK MODEL #AWH–4408F ELECTRIC CABINET HEATER;
4000 WATTS @ 277V–1ø–60HZ, – AMPS; 13,649 BTUH HEAT OUTPUT; RECESSED STYLE(UNLESS NOTED OTHERWISE); INTEGRAL TAMPERPROOF DISCONNECT, FAN SWITCH & THERMOSTAT. COLOR SELECTION BY ARCHITECT.

FC–17/HP–1 — 2–TON DUCTLESS SPLIT HEAT PUMP SYSTEM SERVING IDF D319A
OUTDOOR UNIT POWER: 208 VOLT–1ø–60HZ, MCA=19.8A, MOCP=20A.
SEER2 = 19, HSPF2 = 10, EER2 = 11.5, COP2 = 3.56, MAX. PIPING LENGTH = 98.4 FT
INDOOR HIGH–WALL FAN COIL/EVAPORATOR
DAIKIN MODEL #FTX24WVJU9, 33 LBS
643/494/350/328 CFM @ HI/MED/LO/SUPER LO SPEED
21,200 BTUH (9,000 – 25,800) TOTAL COOLING CPACITY
24,000 BTUH (9,000 – 32,000) TOTAL HEATING CPACITY
POWERED BY OUTDOOR UNIT
208V–1ø, POWER = 78W, RUNNING CURRENT = 0.64A
PROVIDE REMOTE PROGRAMABLE THERMOSTAT.
5/8" GAS, 1/4" LIQUID REFRIG. CONNECTIONS. 5/8" DRAIN CONN.
OUTDOOR HEAT PUMP UNIT: DAIKIN MODEL #RXMZ4WVJU9
AIRFLOW = 2179 CFM, WEIGHT = 132 LBS
COMPRESSOR RLA = 18.3A, SOUND PRESSURE LEVEL = 55 dB(A)
PROVIDE CRANKCASE HTR, WIND BAFFLE & FIELD SETTINGS FOR WINTER START PACKAGE & LOW AMBIENT CONTROLS. PROVIDE DISCONNECT SWITCH.
MOUNT UNIT 24" ABOVE ROOF ON SNOW STAND WITH OPEN BASE

CP–A — SAUERMANN SI–20 OMEGA PACK CONDENSATE PUMP
3 GPH @ 10' HEAD, 14 WATTS, 115V–1ø;
PROVIDE COMPLETE KIT WITH RESERVOIR, FLOAT SWITCH, ALARM SWITCH, WIRING HARNESS, BRACKETS, TUBING, & PVC PIPE & PUMP ENCLOSURE SYSTEM

RH–1 — GREENHECK #GRSR–8 ALUMINUM RELIEF HOOD WITH BIRD SCREEN
8"x8" THROAT, 19"x19" CURB CAP
PROVIDE 14" HIGH INSULATED ROOF CURB

F–1 — CUSTOM FILTER RACK WITH 20"x20"x4" MERV–15
AIR FILTER AS MANUFACTURED BY AAF VARICEL 2+ WITH GASKETED RACK ASSEMBLY
PROVIDE (3) SPARE SETS OF FILTERS IN ADDITION TO STARTER SET

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108 Grove Street, Suite 300
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508.752.2831
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PROJECT

TUFTS at TECH Community Veterinary Clinic

Final Bid Package

Tufts at Tech Relocation

1 Officer Manny Familia Way, Worcester, MA 01605

DRAWING TITLE

HVAC SCHEDULES & DETAILS

REVISIONS

No.	Description	Date

FILE:
JOB NO: 2417
SCALE: 1/8" = 1'-0"
DWN. BY: MWS
CKD. BY: KRS
DATE: March 11, 2026

H5.4

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NETWORK LIGHTING CONTROL

- BTE - EMERGENCY RATED DIMMING MODULE
- BTN - DIMMING MODULE
- SS - 16A RELAY MODULE
- OS - WIRELESS OCCUPANCY SENSOR
- DS - WIRELESS DAYLIGHT SENSOR
  LOCATE AS PER MANUFACTURER'S RECOMMENDATIONS
- $ - SINGLE POLE SNAP SWITCH
- $2 - WIRED MAESTO ON/OFF SWITCH
- $2W - WIRELESS MAESTO ON/OFF SWITCH
- $3D - WIRED THREE BUTTON RAISE/LOW
- $3DW - WIRELESS THREE BUTTON RAISE/LOW
- $4SC - WIRELESS FOUR BUTTONS SCENE CONTROLLER
- $M - WIRED MAESTO WALL OCCUPANCY SWITCH
- HUB - WIRELESS HUB WITH BACNET IP. FURNISH AND INSTALL CATEGORY 6A CABLE IN 3/4" EMT AND RUN BACK TO TELECOM. TERMINATE CABLE IN CATEGORY 6A PATCH PANEL. WIRE ALL HUBS VIA INVERTER AND POWER SUPPLY FROM NEAREST EMERGENCY CIRCUIT, SEE DETAIL ON DRAWING EL2.1.

NOTES FOR NETWORK LIGHTING CONTROL:

1. REFER TO LIGHTING CONTROL SYSTEM DRAWINGS FOR TYPICAL DETAILS.
2. WHERE THE FIELD RELAY SWITCHPACK IS USED TO CONTROL RECEPTACLE PLUG LOADS IN LIEU OF WIRELESS CONTROLLED RECEPTACLES:
   a) RECEPTACLE CONTROL SHALL INCLUDE A CONSTANT HOT AND CONTROLLED OUTLET AT EACH DUPLEX RECEPTACLE DESIGNATED TO BE CONTROLLED ON THE DRAWINGS.
   b) WIRE EACH DUPLEX RECEPTACLE SO THAT ONLY THE TOP HALF IS CONTROLLED.
   c) THE RECEPTACLE CONTROL SHALL BE CLEARLY MARKED "CONTROLLED" AND WITH THE NEMA DEFINED CONTROLLED SYMBOL.
   d) ONLY THE RECEPTACLES DESIGNATED TO BE CONTROLLED ON THE DRAWINGS SHALL BE SWITCHED.
   e) WHERE CONTROLLED AND NON-CONTROLLED RECEPTACLES ARE FED FROM THE SAME CIRCUIT, THE NON-CONTROLLED RECEPTACLES SHALL BE WIRED AHEAD OF THE RELAY SWITCHPACK SO THAT THEY ARE NOT SWITCHED.
   f) FURNISH AND INSTALL FIELD RELAY SWITCHPACK FOR EACH CONTROLLED CIRCUIT.
3. ALL EXPOSED WIRING SHALL BE INSTALLED IN CONDUIT.
4. FOR ALL INTEGRAL AND EXTERNAL EMERGENCY CONTROL UNITS, PROVIDE NORMAL POWER SENSING WIRING FROM NEAREST NORMAL POWER LIGHTING CIRCUIT.
5. ALL LIGHT FIXTURES WITH INTEGRAL SENSORS ARE OCCUPANCY/VACANCY/DAYLIGHT SENSORS.
6. FOR LIGHT FIXTURES CONTROLLED BY WAVELINX CONTROL SYSTEM, PROVIDE WSP FOR EACH NORMAL LIGHTING FIXTURE AND WSP/RRU/CEPC-2 FOR EACH EMERGENCY LIGHT FIXTURE. UNLESS NOTED OTHERWISE.

WIRING DEVICES

GENERAL NOTE: COORDINATE EXACT LOCATION OF ALL WIRING DEVICES WITH ARCHITECTURAL ELEVATION PLANS PRIOR TO ROUGH-IN

- DUPLEX RECEPTACLE, WALL MOUNTED
- DUPLEX RECEPTACLE, WALL MOUNTED
- DOUBLE DUPLEX RECEPTACLE, WALL MOUNTED
- ABOVE COUNTER DOUBLE DUPLEX RECEPTACLE, WALL MOUNTED
- DUPLEX RECEPTACLE, WALL MOUNTED, TOP HALF CONTROLLED
- CR - CORD REEL, CEILING MOUNTED
- GFCI DUPLEX RECEPTACLE, WALL MOUNTED
- HG - GFCI DUPLEX RECEPTACLE, WALL MOUNTED, ABOVE COUNTER, HOSPITAL GRADE
- DUPLEX RECEPTACLE, WALL MOUNTED,
  ONE DUPLEX RECEPTACLES WITH (2) TYPE C USB CHARGING PORTS
- PH - PROJECTOR OUTLET - MOUNTED HIGH
  HEIGHT PER ARCHITECTURAL ELEVATION PLANS, PROVIDE:
  (1) DUPLEX RECEPTACLE
  (2) DATA PORTS
  (1) 2-GANG AV BACKBOX WITH (2) 1-1/4" CONDUITS, WITH PULL STRING AND BUSHING
- PL - PROJECTOR OUTLET - LOW
  MOUNTED AT 18" AFF, PROVIDE:
  (1) DUPLEX RECEPTACLE
  (2) DATA PORTS
  (1) 2-GANG AV BACKBOX WITH (2) 1-1/4" CONDUITS, WITH PULL STRING AND BUSHING
- TVH - LARGE FORMAT DISPLAY MONITOR OUTLETS - HIGH & LOW
  HEIGHT PER ARCHITECTURAL ELEVATION PLANS, PROVIDE:
  OUTLETS MOUNTED HIGH, PROVIDE:
  (1) DUPLEX RECEPTACLE WITH TOP HALF CONTROLLED
  (2) DATA PORTS
  (1) 2-GANG AV BACKBOX WITH (1) 1-1/4" CONDUIT, PULL STRING AND BUSHING, STUB UP ABOVE ACCESSIBLE CEILING
- TVHL - DISPLAY MONITOR OUTLETS
  OUTLETS MOUNTED AT 58" AFF:
  PROVIDE (1) DUPLEX RECEPTACLE WITH TOP HALF CONTROLLED
  PROVIDE (4) DATA PORTS;
  PROVIDE (1) 1-GANG BOX AV OUTLET WITH 1-1/4" CONDUIT STUB ABOVE ACCESSIBLE CEILING WITH PULL STRING AND BUSHING
  OUTLETS MOUNTED AT 18" AFF:
  PROVIDE (1) DUPLEX RECEPTACLES WITH TOP HALF CONTROLLED
  PROVIDE (1) DATA PORT;
  PROVIDE (1) 2-GANG BOX AV OUTLET WITH 1-1/4" CONDUIT STUB ABOVE ACCESSIBLE CEILING WITH PULL STRING AND BUSHING
- CP - COPIER OUTLET, WALL MOUNTED
  (1) DUPLEX RECEPTACLE WITH TOP HALF CONTROLLED
  (2) DATA PORTS
- WS - WORKSTATION OUTLET, WALL MOUNTED
  (1) DUPLEX RECEPTACLE WITH TOP HALF CONTROLLED
  (1) DUPLEX RECEPTACLE WITH (2) TYPE C USB PORTS
  (2) DATA PORTS

LIGHTING

- A / a / P-4 - LIGHT FIXTURE
  "A" DENOTES FIXTURE TYPE
  "a" DENOTES SWITCH CODE
  "P-4" DENOTES PANEL AND CIRCUIT NUMBER
- LIGHT FIXTURE ON EMERGENCY CIRCUIT
  "NL" DENOTES NIGHTLIGHT
- EXIT SIGN, SINGLE SIDED
- EXIT SIGN, DUAL SIDED

NOTES FOR EGRESS LIGHTING:

1. CONNECT EXIT SIGNS TO THE LINE SIDE OF THE NEAREST LIFE SAFETY EMERGENCY LIGHTING CIRCUIT IN THE AREA. COORDINATE LOCATIONS OF ALL EXIT SIGNS WITH THE ARCHITECT PRIOR TO ROUGH-IN.

FLOOR MOUNTED WIRING DEVICES

- PT - POKE-THRU

FLOOR MOUNTED WIRING DEVICES ABBREVIATIONS:

"2DP2D" - DENOTES: (2) DUPLEX RECEPTACLES
(2) DATA PORTS

NOTES FOR FLOOR MOUNTED DEVICES:

1. PROVIDE CATEGORY 6A JACKS AND CABLES TO ALL VOICE AND DATA OUTLETS.
2. ALL FLOOR MOUNTED DEVICES ON SLAB ON GRADE SHALL BE OF FLOOR BOX TYPE. COORDINATE SLAB SAW CUT WITH THE ARCHITECT.
3. ALL FLOOR MOUNTED DEVICES NOT ON GRADE LEVEL SHALL BE OF THE POKE-THRU TYPE UNLESS NOTED OTHERWISE. COORDINATE EXACT LOCATION WITH THE ARCHITECT.
4. COORDINATE LOCATIONS OF ALL FLOOR BOXES AND POKE-THRUS PRIOR TO ROUGH-IN AND CONCRETE POUR WITH THE ARCHITECT.
5. ALL FLOOR BOXES AND POKE-THRUS SHALL BE SET INTO THE FLOOR FLUSH, UNLESS NOTED OTHERWISE. COORDINATE TYPE AND COVER STYLE WITH THE ARCHITECT PRIOR TO ORDERING.
6. PROVIDE MINIMUM OF (2) 1-1/2"COMMUNICATIONS CONDUITS FROM FLOOR BOX OR POKE-THRU TO ABOVE SUSPENDED CEILING. ROUTE CONDUIT CONCEALED WITHIN WALL AND FLOOR SLAB. PROVIDE WITH PULL STRING AND BUSHING.
7. REFER TO FLOOR MOUNTED WIRING DEVICES ABBREVIATIONS FOR DUPLEX RECEPTACLE, AV OUTLET, MICROPHONE JACK AND DATA DROP QUANTITIES.
8. SEE NOTES FOR TELECOMMUNICATIONS DEVICES AND VOICE/DATA ABBREVIATIONS FOR CABLING REQUIREMENTS.

EQUIPMENT

- 30AS / 20AF - FUSED DISCONNECT SWITCH
  "30AS" - DENOTES 30A SWITCH
  "20AF" - DENOTES 20A FUSE
- $T - SAFETY DISCONNECT SNAP SWITCH
  HORSE POWER RATED
- $T2 - SAFETY DISCONNECT SNAP SWITCH
  HORSE POWER RATED - 208V
- J - JUNCTION BOX
- VFD - VARIABLE FREQUENCY/SPEED DRIVE. FURNISHED BY RESPECTIVE SUBCONTRACTOR

DEMOLITION LEGEND

- LIGHTING FIXTURE
- LIGHTING FIXTURE
- LIGHTING FIXTURE
- EXIT SIGN
- SWITCH
- SMOKE DETECTOR
- COMBINATION AUDIOVISUAL APPLIANCE
- RECEPTACLE
- QUAD RECEPTACLE
- SPECIAL RECEPTACLE
- VOICE/DATA OUTLET
- ELECTRICAL PANEL
- DISCONNECT SWITCH
- CLOCK
- PUBLIC ADDRESS SPEAKER
- WIFI ACCESS POINT, SURFACE MOUNTED
- WIFI ACCESS POINT, CEILING MOUNTED
- SPEAKER
- OCCUPANCY SENSOR
- EXISTING DEVICES/EQUIPMENT TO BE REMOVED TOGETHER WITH ASSOCIATED WIRING, CONDUIT, ETC. UNLESS NOTED OTHRWISE.

DEMOLITION ABBREVIATIONS:

"XR" - DENOTES EXISTING DEVICE/OUTLET/FIIXTURE/EQUIPMENT TO BE REMOVED TOGETHER WITH ASSOCIATED WIRING, CONDUIT, SURFACE RACEWAY, ETC. AND CIRCUIT PULLED BACK TO NEXT ACTIVE OUTLET/BACK TO SOURCE. UNLESS NOTED OTHERWISE.

"ETR" - DENOTES EXISTING DEVICE/OUTLET/FIXTURE/EQUIPMENT TO REMAIN.

"RP" - EXISTING DEVICE/OUTLET/EQUIPMENT TO BE REMOVED AND NEW DEVICE, EQUIPMENT OR FIXTURE AS SPECIFIED INSTALLED ON EXISTING OUTLET, RECONNECT TO EXISTING CIRCUIT. UNLESS NOTED OTHERWISE.

"XRL" - EXISTING DEVICE/OUTLET/FIXTURE/EQUIPMENT TO BE DISCONNECTED, REMOVED AND RELOCATED, EXTEND CONDUIT AND WIRING AS REQUIRED.

"XL" - NEW LOCATION OF RELOCATED EXISTING DEVICE/OUTLET/EQUIPMENT. EXTEND CONDUIT AND FEEDERS TO NEW LOCATION.

"XMR" - DENOTES EXISTING MECHANICAL EQUIPMENT TO BE REMOVED TOGETHER WITH ASSOCIATED WIRING, CONDUIT, SURFACE RACEWAY, ETC. AND CIRCUIT PULLED BACK TO NEXT ACTIVE OUTLET/BACK TO SOURCE. UNLESS NOTED OTHERWISE. FOR TYPE OF EQUIPMENT, REFER TO MECHANICAL PLANS.

"XMRP" - EXISTING MECHANICAL EQUIPMENT TO BE REMOVED AND REPLACED WITH NEW, RECONNECT TO EXISTING CIRCUIT. UNLESS NOTED OTHERWISE.

NOTES FOR DEMOLITION:

1. ALL DEVICES, OUTLETS, FIXTURES AND EQUIPMENT SHOWN ARE TO BE DEMOLISHED UNLESS NOTED OTHERWISE. SEE ABBREVIATIONS.
2. MAKE SAFE, DISCONNECT AND REMOVE EXISTING DEVICES, OUTLETS, FIXTURES AND EQUIPMENT TO BE REMOVED OR RELOCATED TOGETHER WITH ASSOCIATED WIRING, CONDUIT, BOXES, SURFACE RACEWAY, ETC. AND CIRCUIT PULLED BACK TO NEXT ACTIVE OUTLET/BACK TO SOURCE. UNLESS NOTED OTHERWISE.
3. FOR ALL EXISTING DEVICES AND EQUIPMENT BEING RE-INSTALLED IN NEW CEILING, RECONNECT TO EXISTING POWER SOURCE. UNLESS NOTED OTHERWISE.
4. PROVIDE BLANK FACEPLATES FOR ALL EXISTING DEVICES AND OUTLETS BEING REMOVED, FOR BOXES THAT ARE TO REMAIN.
5. FOR ALL DEVICES AND EQUIPMENT THAT ARE TO BE REMOVED, SALVAGED AND REINSTALLED. RE-USE EXISTING FEEDERS AND CABLING, COIL EXISTING CABLING WITH CARE TO PREVENT DAMAGE. EXTEND CONDUIT, FEEDERS AND CABLING TO NEW LOCATION OF EXISTING DEVICES AND EQUIPMENT. UNLESS NOTED OTHERWISE.
6. TRACE ALL EXISTING CIRCUITS IN THE SCOPE OF WORK AND UPDATE THE PANEL CIRCUIT DIRECTORY. MARK CIRCUIT BREAKERS AS SPARE FOR CIRCUITS NOT BEING USED.
7. EXISTING ELECTRICAL SERVICE WITHIN THE AREA BEING RENOVATED: MAKE SAFE, DISCONNECT, AND REMOVE SERVICE FEEDERS TO LOCAL PANELBOARDS SLATED FOR DEMOLITION, AND ASSOCIATED BRANCH WIRING AND HARDWARE IDENTIFIED FOR DEMOLITION. OBSOLETE CABLES SHALL BE REMOVED BACK TO THE SOURCE AND REMOVED FROM THE SPACE ABOVE THE CEILING AND SPACE BELOW THE RAISED FLOOR. NO WORK SHALL BEGIN WITHOUT PROPER PERMITS AND AUTHORIZATIONS. DISABLE SYSTEM ONLY TO MAKE SWITCHOVERS AND CONNECTIONS. OBTAIN PERMISSION FROM OWNER AT LEAST (2) WEEKS BEFORE PARTIALLY OR COMPLETELY DISABLING SYSTEM.
8. EXISTING ELECTRICAL PANELS IN ROOMS OUTSIDE SCOPE OF WORK THAT SERVE SPACE BEING RENOVATED: THERMAL IMAGES OF THE EXISTING DISTRIBUTION PANELS SHALL BE TAKEN TO IDENTIFY RESISTIVE CONNECTIONS AND OR OVERLOADED CIRCUITS PRIOR TO RENOVATION.

ABBREVIATIONS

AFF	-	ABOVE FINISHED FLOOR
AHJ	-	AUTHORITY HAVING JURISDICTION
ATS	-	AUTOMATIC TRANSFER SWITCH
AIC	-	AMPERES INTERRUPTING CAPACITY
BDA	-	BI-DIRECTIONAL AMPLIFIER
BMS	-	BUILDING MANAGEMENT SYSTEM
BOF	-	BOTTOM OF FIXTURE
C	-	RECEPTACLE ABOVE COUNTER, HEIGHT PER ARCHITECTURAL ELEVATION PLANS
CLG	-	CEILING MOUNTED
CT	-	COOKTOP
DAS	-	DISTRIBUTED ANTENNA SYSTEM
DAC	-	NETWORK LIGHTING DIGITAL TO ANALOG CONVERTER
EC	-	ELECTRICAL SUBCONTRACTOR
EMS	-	ENERGY MANAGEMENT SYSTEM
EX	-	EXISTING DEVICE TO REMAIN
F	-	FRACTIONAL HORSEPOWER
FACP	-	FIRE ALARM CONTROL PANEL
FBO	-	FURNISHED BY RESPECTIVE SUBCONTRACTOR
FR	-	NETWORK LIGHTING FIELD RELAY
FZ	-	FREEZER
GC	-	GENERAL CONTRACTOR
GFCI	-	GROUND FAULT CIRCUIT INTERRUPTER
GFP	-	GROUND FAULT PROTECTION
H	-	DEVICE MOUNTED AT CUSTOM HEIGHT PER ARCHITECTURAL ELEVATION PLANS
HB	-	HIGH BAY
HD	-	HAND DRYER
HH	-	HANDHOLE
KEC	-	KITCHEN EQUIPMENT CONTRACTOR
LCP	-	LIGHTING CONTROL PANEL
LR	-	LONG RANGE
LRP	-	LIGHTING RELAY PANEL
LV	-	LOW VOLTAGE
M	-	MICROWAVE
MC	-	MICROPHONE
MCB	-	MAIN CIRCUIT BREAKER
MH	-	MOUNTING HEIGHT
MLO	-	MAIN LUGS ONLY
MD	-	MOTORIZED DAMPER
NTS	-	NOT TO SCALE
NTS	-	NOT TO SCALE
OV	-	OVEN
RF	-	REFRIGERATOR
TBD	-	TO BE DETERMINED
T	-	TOASTER OVEN
TC	-	TIME CLOCK
TV	-	DENOTES OUTLET FOR TV, COORDINATE MOUNTING HEIGHT WITH THE ARCHITECT.
VFD	-	VARIABLE FREQUENCY DRIVE
VP	-	VANDAL PROOF
VSD	-	VARIABLE SPEED DRIVE
W	-	WALL MOUNTED
WG	-	WIRE GUARD
WIC	-	WHILE IN-USE COVER
WP	-	WEATHERPROOF
WP/WIC	-	DENOTES WEATHER PROOF WITH WHILE-IN-USE COVER
XFMR	-	TRANSFORMER
XP	-	EXPLOSION PROOF

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LAMOUREUX PAGANO ASSOCIATES|ARCHITECTS
108 Grove Street, Suite 300
Worcester MA 01605
508.752.2831
www.lpaa.com

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PROJECT

TUFTS at TECH Community Veterinary Clinic

Final Bid Package

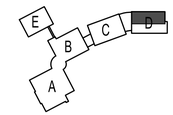
Tufts Vet Tech Clinic Renovation

Worcester Technical High School
1 Officer Manny Familia Way, Worcester, MA 01605

DRAWING TITLE

Electrical Legend

KEY PLAN



REVISIONS

No.	Description	Date

FILE:
JOB NO: 2417
SCALE: NTS
DWN. BY: TN
CKD. BY: ASR
DATE: March 11, 2026

E0.1

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BRANCH CIRCUITS SCHEDULE

120V OR 277V - 1Ø, 2W CIRCUITS

CIRCUIT BREAKER	CONDUCTOR
20A-1P	2-12 AWG & 1-12 AWG EGC IN 3/4"C
30A-1P	2-10 AWG & 1-10 AWG EGC IN 3/4"C
40A-1P	2-8 AWG & 1-10 AWG EGC IN 3/4"C
50A-1P	2-6 AWG & 1-10 AWG EGC IN 3/4"C
60A-1P	2-4 AWG & 1-10 AWG EGC IN 1"C

208V OR 480V - 1Ø, 2W CIRCUITS

20A-2P	2-12 AWG & 1-12 AWG EGC IN 3/4"C
30A-2P	2-10 AWG & 1-10 AWG EGC IN 3/4"C
40A-2P	2-8 AWG & 1-10 AWG EGC IN 3/4"C
50A-2P	2-6 AWG & 1-10 AWG EGC IN 3/4"C
60A-2P	2-4 AWG & 1-10 AWG EGC IN 1"C

208/120V OR 480/277V - 1Ø, 3W CIRCUITS

20A-2P	3-12 AWG & 1-12 AWG EGC IN 3/4"C
30A-2P	3-10 AWG & 1-10 AWG EGC IN 3/4"C
40A-2P	3-8 AWG & 1-10 AWG EGC IN 3/4"C
50A-2P	3-6 AWG & 1-10 AWG EGC IN 1"C
60A-2P	3-4 AWG & 1-10 AWG EGC IN 1"C

208V OR 480V - 3Ø, 3W CIRCUITS

20A-3P	3-12 AWG & 1-12 AWG EGC IN 3/4"C
30A-3P	3-10 AWG & 1-10 AWG EGC IN 3/4"C
40A-3P	3-8 AWG & 1-10 AWG EGC IN 3/4"C
50A-3P	3-6 AWG & 1-10 AWG EGC IN 1"C
60A-3P	3-4 AWG & 1-10 AWG EGC IN 1"C

208V OR 480V - 3Ø, 4W CIRCUITS

20A-3P	4-12 AWG & 1-12 AWG EGC IN 3/4"C
30A-3P	4-10 AWG & 1-10 AWG EGC IN 3/4"C
40A-3P	4-8 AWG & 1-10 AWG EGC IN 3/4"C
50A-3P	4-6 AWG & 1-10 AWG EGC IN 1"C
60A-3P	4-4 AWG & 1-10 AWG EGC IN 1"C

NOTES:

1. TYPE MC CABLE SHALL INCLUDE FULL SIZE INSULATED GROUND CONDUCTOR. SIZES AS INDICATED IN SCHEDULE.
2. UPGRADE WIRE SIZE ACCORDING TO VOLTAGE DROP CHART.
3. UPGRADE FEEDER SIZES NOT INCLUDED IN VOLTAGE DROP CHART TO REQUIREMENTS IN ACCORDANCE WITH THE NEC.

VOLTAGE DROP CHART

LOAD UP TO	CONDUCTOR SIZE #12	CONDUCTOR SIZE #10	CONDUCTOR SIZE #8
120V CKTS. / MAX. LENGTH			
800 VA	155 FT	245 FT	390 FT
1000 VA	125 FT	195 FT	310 FT
1200 VA	105 FT	165 FT	260 FT
1400 VA	90 FT	140 FT	220 FT
1600 VA	80 FT	125 FT	195 FT
1800 VA	70 FT	110 FT	175 FT
277V CKTS. / MAX. LENGTH			
2000 VA	330 FT	525 FT	830 FT
2500 VA	265 FT	420 FT	665 FT
3000 VA	220 FT	350 FT	555 FT
3500 VA	190 FT	300 FT	475 FT
4000 VA	165 FT	260 FT	415 FT

BRANCH CIRCUIT WIRING

1. WIRING SHOWN ON DRAWINGS IS FOR SPECIFIC ROUTES OR SPECIAL CONDITIONS.
2. NEW WIRING AND CONDUIT SHALL BE REQUIRED BETWEEN ALL OUTLETS INDICATED WITH CIRCUIT NUMBERS AND PANEL DESIGNATIONS.
3. ALL SWITCH CONTROLS SHALL BE PROVIDED WITH NEW WIRING AND CONDUIT AS REQUIRED.
4. ALTHOUGH ALL BRANCH CIRCUIT WIRE AND CONDUIT IS NOT SHOWN, IT IS THE INTENT OF THESE DRAWINGS THAT A COMPLETE BRANCH CIRCUIT WIRING SYSTEM BE INSTALLED.
5. ALL 120V SINGLE PHASE CIRCUITS SHALL HAVE DEDICATED NEUTRALS. NO SHARED NEUTRALS WILL BE ALLOWED.

ELECTRICAL DEMOLITION NOTES

1. EXISTING CONDITIONS WERE OBTAINED FROM DRAWINGS AND DATA PROVIDED BY THE OWNER AND A/E FIELD SURVEY. THE CONTRACTOR SHALL VERIFY ALL CONDITIONS PRIOR TO START OF CONSTRUCTION.
2. THE CONTRACTOR SHALL CAREFULLY INVESTIGATE AND EXAMINE THE AREA OF WORK SO AS TO SATISFY HIMSELF AS TO THE NATURE AND LOCATION OF WORK.
3. THE ELECTRICAL SUBCONTRACTOR SHALL BE RESPONSIBLE FOR FIELD VERIFICATION OF EXISTING ELECTRICAL SERVICES AND CONNECTION REQUIREMENTS. THE CONTRACTOR SHALL NOTIFY THE ENGINEER IMMEDIATELY OF ANY CONFLICTS OR DISCREPANCIES FOUND.
4. THE ELECTRICAL SUBCONTRACTOR SHALL REFER TO ARCHITECTURAL, MECHANICAL, PLUMBING, FIRE PROTECTION AND ELECTRICAL DRAWINGS AND SHALL CARRY IN THE BID ALL DEVICES AND EQUIPMENT WHICH ARE TO BE DISCONNECTED AND REMOVED OR RELOCATED ON THESE DRAWINGS. SUBMISSION OF BID IS CONSIDERED EVIDENCE THAT THIS CONTRACTOR HAS VERIFIED ALL EQUIPMENT THAT NEEDS TO BE DISCONNECTED, REMOVED OR RELOCATED.
5. THE ELECTRICAL SUBCONTRACTOR SHALL FIELD VERIFY AND COORDINATE WITH OWNER ALL DEVICES THAT ARE BEING REMOVED AND THAT ARE TO REMAIN PRIOR TO COMMENCING WORK.
6. THE ELECTRICAL SUBCONTRACTOR SHALL ASSUME THAT ALL WALLS, FLOORS, AND CEILINGS THAT ARE SCHEDULED TO BE DEMOLISHED CONTAIN ELECTRICAL DEVICES, CONDUIT AND ASSOCIATED WIRING TO BE REMOVED. THE ELECTRICAL SUBCONTRACTOR SHALL ASSUME FULL RESPONSIBILITY FOR REMOVING ALL ELECTRICAL DEVICES, CONDUIT AND ASSOCIATED WIRING IN WALLS, FLOORS AND CEILINGS THAT ARE SCHEDULED TO BE DEMOLISHED. NO ADDITIONAL COMPENSATION WILL BE CONSIDERED AFTER THE AWARD OF THE ELECTRICAL CONTRACT.
7. THE CONTRACTOR SHALL THOROUGHLY REVIEW THESE ELECTRICAL CONSTRUCTION DOCUMENTS PRIOR TO PREPARING A BID FOR THE ELECTRICAL WORK SHOWN. THE ELECTRICAL DEMOLITION PLANS AND DETAILS INDICATE THE GENERAL INTENT AND ARE NOT INTENDED TO SHOW ALL ITEMS TO BE REMOVED OR RETAINED. THE ELECTRICAL SUBCONTRACTOR SHALL FIELD VERIFY AND COORDINATE WITH ARCHITECT ALL DEVICES THAT ARE BEING REMOVED AND THAT ARE TO REMAIN.
8. VERIFY FIELD MEASUREMENTS AND CIRCUITING ARRANGEMENTS. THE ELECTRICAL SUBCONTRACTOR SHALL CIRCUIT TRACE AND LABEL ALL EXISTING BRANCH CIRCUITS AND FEEDERS WITHIN THE AREA OF DEMOLITION SCOPE PRIOR TO DE-ENERGIZING AND DISCONNECTION. ALL CIRCUITS WITHIN PANELBOARDS IDENTIFIED FOR REMOVAL SHALL BE TRACED AND LABELED TO ENSURE THAT NO AREA OUTSIDE THE DEMOLITION SCOPE LIMIT IS AFFECTED. ALL CIRCUIT BREAKERS ASSOCIATED WITH THE DEMOLITION SCOPE SHALL BE DE-ENERGIZED AND LABELED SPARE.
9. THE ELECTRICAL SUBCONTRACTOR SHALL TEMPORARILY SUPPORT ALL ITEMS TO REMAIN THAT ARE AFFECTED BY THE DEMOLITION OF BUILDING STRUCTURAL COMPONENTS (WALLS, CEILINGS, ETC.). TEMPORARILY SUPPORTED ITEMS SHALL BE PERMANENTLY SUPPORTED AND INSTALLED WHEN FINALIZED STRUCTURES ARE IN PLACE.
10. REPORT DISCREPANCIES TO THE ARCHITECT/ENGINEER BEFORE DISTURBING EXISTING SYSTEMS IN SERVICE DURING CONSTRUCTION.
11. DISCONNECT ELECTRICAL SYSTEMS IN WALLS, FLOORS AND CEILINGS SCHEDULED FOR REMOVAL, REMOVE FEEDERS TOGETHER WITH ASSOCIATED CONDUIT, BOXES, ETC. BACK TO THE SOURCE. REFER TO ARCHITECTURAL DRAWINGS.
12. SCHEDULE WITH OWNER WORK TO BE PERFORMED IN EXISTING FACILITIES. PERFORM WORK AT TIMES AND UNDER CONDITIONS APPROVED BY THE OWNER.
13. PROVIDE TEMPORARY WIRING AND CONNECTIONS TO MAINTAIN EXISTING SYSTEMS IN SERVICE DURING CONSTRUCTION.
14. MAKE SAFE, DISCONNECT AND REMOVE ELECTRICAL DEVICES, WIRING, CONDUIT, ETC, ASSOCIATED WITH MECHANICAL EQUIPMENT BEING REMOVED. COORDINATE WITH HVAC, PLUMBING AND FIRE ALARM DRAWINGS. REMOVE CONDUCTORS BACK TO THE SOURCE, UNLESS NOTED OTHERWISE. MARK EXISTING UNUSED CIRCUIT BREAKERS AS SPARE.
15. REMOVE ELECTRICAL FIXTURES, DEVICES AND EQUIPMENT NOT REQUIRED TO REMAIN IN SERVICE. RECONNECT EXISTING CIRCUITS TO OTHER SOURCES OF SUPPLY. REMOVE ABANDONED WIRING TO SOURCE OF SUPPLY.
16. REMOVE EXPOSED ABANDONED CONDUIT INCLUDING ABANDONED CONDUIT. CUT CONDUIT FLUSH WITH WALLS AND FLOORS, AND PATCH SURFACES.
17. REMOVE EXPOSED ABANDONED CONDUIT INCLUDING ABANDONED CONDUIT. CUT CONDUIT FLUSH WITH WALLS AND FLOORS, AND PATCH SURFACES.
18. PROVIDE MOUNTING PARTS AND ACCESSORIES FOR ALL DEVICES, FIXTURES, EQUIPMENT, RACEWAY, ETC THAT ARE TO BE RELOCATED.
19. VERIFY ABANDONED WIRING AND EQUIPMENT SERVE ONLY THE AREAS BEING RENOVATED.
20. DISCONNECT ABANDONED OUTLETS AND REMOVE DEVICES. REMOVE ABANDONED OUTLETS IF CONDUIT SERVICING THEM IS ABANDONED AND REMOVED. PROVIDE BLANK COVERS FOR ABANDONED BOXES WHICH ARE NOT REMOVED. COORDINATE FINISH AND COLOR WITH THE ARCHITECT.
21. DISCONNECT AND REMOVE ABANDONED PANELBOARDS AND DISTRIBUTION EQUIPMENT BACK TO THE SOURCE OF SUPPLY.
22. DISCONNECT AND REMOVE ABANDONED LUMINARIES. REMOVE BRACKETS, STEMS, HANGERS AND OTHER ACCESSORIES.
23. MAKE SAFE DISCONNECT AND REMOVE EQUIPMENT, LIGHT FIXTURES OR DEVICES BEING RELOCATED. RE-USE EXISTING CIRCUIT TO RECONNECT RELOCATED DEVICES, UNLESS NOTED OTHERWISE.
24. WHEN A CIRCUIT IS INTERRUPTED BY REMOVAL OF A DEVICE OR FIXTURE FROM THAT CIRCUIT, INSTALL WIRE, CONDUIT, AND ACCESSORIES TO RESTORE SERVICE TO REMAINING DEVICES AND FIXTURES ON THAT CIRCUIT.
25. WHERE EQUIPMENT/DEVICES ARE REMOVED FROM EXISTING TO REMAIN PANELBOARDS, THE EXISTING CIRCUIT BREAKER SERVING THE EQUIPMENT/ DEVICES SHALL REMAIN AS SPARE UNLESS NOTED OTHERWISE. PROVIDE NEW TYPED, UPDATED DIRECTORIES IN EXISTING TO REMAIN PANELS TO REFLECT CHANGES BY THIS RENOVATION AND EXISTING CONDITIONS.
26. WHERE REMOVAL OF EXISTING FIRE ALARM, COMMUNICATIONS, ELECTRICAL FIXTURE, DEVICE OR EQUIPMENT WILL RESULT IN OUTAGES IN AREA NOT TO BE DEMOLISHED, THIS CONTRACTOR SHALL IMMEDIATELY RECONNECT THAT CIRCUIT OR RE-ESTABLISH SERVICE IN THE REMAINING PORTION OF THE CIRCUIT.
27. USE SUITABLE METHODS TO LIMIT AMOUNT OF DUST AND DIRT RISING AND SCATTERING IN AIR TO THE LOWEST LEVEL OF AIR POLLUTION PRACTICAL. PROVIDE BARRICADES AND OBSERVE SAFETY REGULATIONS.
28. MAINTAIN ACCESS TO EXISTING ELECTRICAL INSTALLATIONS WHICH REMAIN ACTIVE. EXTEND EXISTING INSTALLATIONS USING MATERIALS AND METHODS COMPATIBLE WITH EXISTING ELECTRICAL INSTALLATIONS.
29. WHERE PRESENT WORK, ADJACENT CONSTRUCTION AND FINISHES ARE DAMAGED IN THE EXECUTION OF THIS CONTRACT, OR WHERE OPENINGS ARE LEFT DUE TO THE REMOVAL OF CONDUITS, EQUIPMENT, DEVICES OR APPARATUS, THE SAME SHALL BE REPAIRED OR PATCHED TO CORRESPOND IN MATERIAL, QUALITY, SHAPE, AND FINISH WITH THAT OR SIMILAR AND ADJOINING WORK BY GENERAL CONTRACTOR.
30. SHOULD ANY DAMAGE DUE TO THE EXECUTION OF THIS CONTRACT OCCUR TO THE FIXTURES, OR ANY OTHER EQUIPMENT OR APPARATUS, SUCH DAMAGES SHALL BE PROPERLY REPAIRED WITH THE SUPPLY OF NEW ARTICLES AND MADE GOOD WITHOUT EXTRA CHARGE.
31. CHECK TIGHTNESS OF ELECTRICAL CONNECTIONS IN PANELBOARDS. PROVIDE CLOSURE PLATES FOR VACANT POSITIONS. MARK UNUSED EXISTING BREAKERS/FUSES AS SPARE. PROVIDE TYPED CIRCUIT DIRECTORY SHOWING REVISED CIRCUITING ARRANGEMENT.
32. ANY EXISTING EQUIPMENT THAT IS REMOVED SHALL BE INVENTORIED AND TURNED OVER TO THE OWNER PRIOR TO FINAL INSPECTION. UPON INSPECTION BY THE OWNER, THE CONTRACTOR SHALL DISPOSE OF ANY EQUIPMENT THAT ARE DEEMED USELESS TO THE OWNER. DISPOSE LAMPS ACCORDING TO LOCAL, STATE OR FEDERAL LAWS.
33. EXISTING CONDUIT MAY BE REUSED IF IT IS IN GOOD CONDITION WHEN REMOVED. ALL EXISTING CONDUIT NOT INTENDED TO BE REUSED SHALL BE REMOVED IF POSSIBLE. WHERE IT IS NOT POSSIBLE TO REMOVE CONDUIT (I.E., EMBEDDED IN CONCRETE FLOOR, ETC.) AND WIRING BACK TO THE SOURCE, CUT WIRING AND CONDUIT FLUSH TO THE WALLS, TAG CABLES PER THE NEC, AND ABANDON IN PLACE. WHERE POSSIBLE REUSE BOXES WHERE EXISTING ELECTRICAL DEVICES ARE SHOWN TO BE REMOVED AND REPLACED WITH NEW.

MEP COORDINATION

1. ALL ELECTRICALLY POWERED HVAC, FIRE PROTECTION AND PLUMBING EQUIPMENT TO BE PROVIDED WITH LOCAL DISCONNECT SWITCHES. THE SWITCHES SHALL BE PROVIDED BY THE ELECTRICAL SUBCONTRACTOR UNLESS NOTED OTHERWISE.
2. VARIABLE FREQUENCY DRIVES / VARIABLE SPEED DRIVES (VFDs/VSDs) SHALL BE SUPPLIED BY THE MECHANICAL CONTRACTOR AND INSTALLED BY THE ELECTRICAL SUBCONTRACTOR. COORDINATE EXACT LOCATION OF VARIABLE FREQUENCY DRIVES / VARIABLE SPEED DRIVES WITH MECHANICAL PLANS. THE ELECTRICAL SUBCONTRACTOR SHALL PROVIDE AUX CONTACTS / MICRO-SWITCHES IN THE DISCONNECT WIRED TO THE VFD. ALL CONTROL WIRING SHALL BE BY THE MECHANICAL CONTRACTOR.
3. LINE VOLTAGE THERMOSTATS SHALL BE SUPPLIED BY THE MECHANICAL CONTRACTOR, INSTALLED AND WIRED BY THE ELECTRICAL SUBCONTRACTOR.
4. THE ELECTRICAL SUBCONTRACTOR SHALL COORDINATE THE EXACT LOCATIONS OF THE HVAC, FIRE PROTECTION AND PLUMBING SYSTEM DEVICES AND EQUIPMENT IN THE FIELD PRIOR TO ROUGH-IN.
5. ALL EXTERIOR MOUNTED DISCONNECT SWITCHES, SAFETY SNAP SWITCHES, AND ASSOCIATED DEVICES SHALL BE WEATHERPROOF AND RATED NEMA 3R.
6. PROVIDE WEATHERPROOF RECEPTACLES WITH WHILE-IN-USE COVERS FOR ALL EXTERIOR OUTLETS.
7. PROVIDE MEP/FP COORDINATION DRAWINGS FOR APPROVAL PRIOR TO INSTALLATION OF WORK.
8. COORDINATE THE EXACT LOCATION OF ALL ELECTRICAL DEVICES WITH THE ARCHITECT PRIOR TO ROUGH-IN.
9. DUCT MOUNTED SMOKE DETECTORS ARE TO BE SUPPLIED BY THE ELECTRICAL SUBCONTRACTOR (FIRE ALARM EQUIPMENT SUPPLIER), INSTALLED IN THE DUCTWORK BY THE HVAC CONTRACTOR. WIRED BY THE ELECTRICAL SUBCONTRACTOR.
10. ALL EQUIPMENT, DEVICES AND INSTALLATION MATERIALS LOCATED IN THE SHOWER ROOM, COLD ROOM, ICE RINK, GARAGES, BUILDING EXTERIOR AND SIMILAR AREAS SHALL BE OF WEATHER PROOF TYPE.
11. FURNISH AND INSTALL FIRE RATED 3/4" PLYWOOD PAINTED BLACK ON BOTH SIDES, ON ALL THE WALLS IN THE COMMUNICATIONS ROOMS, DATA ROOMS, TELECOM ROOMS, AND SERVER ROOMS/CLOSETS AND IN ALL ROOMS AND CLOSETS WHERE COMMUNICATIONS AND SECURITY EQUIPMENT IS TO BE INSTALLED. THE PLYWOOD SHALL BE INSTALLED FROM 2'-0" AFF TO 8'-0' AFF.

GENERAL NOTES

1. ALL RACEWAY SHALL BE CONCEALED UNLESS OTHERWISE NOTED. PROVIDE PULL STRINGS FOR ALL RACEWAYS. COORDINATE ROUTING OF ALL EXPOSED CONDUITS WITH THE ARCHITECT.
2. THE SIZES OF ELECTRICAL RACEWAY SHALL BE AS INDICATED ON THE CONTRACT DRAWINGS AND SHALL MEET THE REQUIREMENTS OF THE LOCAL ELECTRIC CODE, 3/4" MINIMUM, OR AS SHOWN ELSEWHERE.
3. CONDUIT FOR WIRING CONCEALED IN FLOOR SLABS, OR BELOW GRADE SHALL BE 1" MINIMUM.
4. ALL WORK INCLUDING DEVICES, OUTLETS, FIXTURES, WIRING, CONDUIT, RACEWAY, EQUIPMENT, ETC. SHOWN ON THE ELECTRICAL PLANS IS NEW WORK AND SHALL BE FURNISHED AND INSTALLED BY THE ELECTRICAL SUBCONTRACTOR OR THEIR SUB-CONTRACTORS, UNLESS NOTED OTHERWISE.
5. ALL NEW OUTLETS, DEVICES, FIXTURES, WIRING, CONDUIT, RACEWAY, EQUIPMENT, ETC SHOWN ON THE ELECTRICAL PLANS SHALL BE PROVIDED WITH ALL PARTS AND ACCESSORIES FOR A COMPLETE INSTALLATION.
6. ALL WIRE AND CABLE FOR POWER, LIGHTING, CONTROL INDICATION, ALARM, SIGNAL AND COMMUNICATION SYSTEM, UNLESS OTHERWISE NOTED, SHALL HAVE TYPE THHN INSULATION AND SHALL BE RATED FOR 600V MINIMUM.
7. MINIMUM WIRE SHALL BE #12. ALL WIRING SHALL BE NEW, UNLESS NOTED OTHERWISE. WIRING IN EXCESS OF 70 FEET FOR 120/208V AND 165 FEET FOR 277/480V MUST BE SIZED FOR VOLTAGE DROP. UPGRADE FEEDER SIZES IN ACCORDANCE WITH THE NEC. LIMIT VOLTAGE DROP TO LESS THAN 3%. FEEDERS SHALL FOLLOW SIMILAR GUIDELINES AND BE LIMITED TO 2% DROP.
8. ALL WIRING INSTALLATION SHALL BE COLOR CODED AS PER THE ELECTRICAL CODE. ALL CONDUCTORS SHALL BE STRANDED TYPE.
9. CIRCUIT RUNS ARE SHOWN DIAGRAMMATICALLY ONLY AND SHALL BE INSTALLED IN A MANNER TO PREVENT CONFLICTS WITH EQUIPMENT AND STRUCTURAL CONDITIONS. CONDUITS AND CABLES SHALL BE INSTALLED PARALLEL TO BEAMS AND WALLS.
10. ALL WIRING, INCLUDING BUT NOT LIMITED TO VIDEO SURVEILLANCE SYSTEM, SOUND SYSTEM, ACCESS CONTROL, FIRE ALARM, LIGHTING CONTROL, LOW VOLTAGE SYSTEMS, DATA, VOICE, BRANCH CIRCUITS AND FEEDERS SHALL BE INSTALLED IN RIGID METAL CONDUIT WHERE EXPOSED, UNLESS OTHERWISE NOTED. EMT IS ALLOWED IF NOT SUBJECT TO SEVERE PHYSICAL DAMAGE.
11. WIRING (NOT SHOWN) FOR THE VIDEO SURVEILLANCE SYSTEM, SOUND SYSTEM, ACCESS CONTROL, FIRE ALARM, LIGHTING CONTROL, LOW VOLTAGE SYSTEMS, SHALL BE FURNISHED AND INSTALLED AS PER MANUFACTURER'S RECOMMENDATIONS, SEE ELECTRICAL SPECIFICATIONS FOR ADDITIONAL SCOPE OF WORK. EXPOSED WIRING SHALL BE INSTALLED IN RIGID METAL CONDUIT. EMT IS ALLOWED IF NOT SUBJECT TO SEVERE PHYSICAL DAMAGE.
12. CONDUITS SHALL BE TERMINATED SO AS TO PERMIT NEAT CONNECTIONS TO MOTORS AND OTHER EQUIPMENT.
13. WIRING (NOT SHOWN) FOR THE VIDEO SURVEILLANCE SYSTEM, SOUND SYSTEM, ACCESS CONTROL, FIRE ALARM, LIGHTING CONTROL, LOW VOLTAGE SYSTEMS, SHALL BE FURNISHED AND INSTALLED AS PER MANUFACTURER'S RECOMMENDATIONS, SEE ELECTRICAL SPECIFICATIONS FOR ADDITIONAL SCOPE OF WORK. EXPOSED WIRING SHALL BE INSTALLED IN RIGID METAL CONDUIT.
14. ALL CONDUIT RUNS CROSSING EXPANSION JOINTS SHALL HAVE EXPANSION OR EXPANSION AND DEFLECTION TYPE FITTINGS.
15. ALL WIRING DEVICES, PANEL BOARDS, DISTRIBUTION BOARDS, MOTORS, ETC., SHALL BE GROUNDED AS PER THE NEC.
16. ARCHITECTURAL DRAWINGS, INDICATE REQUIRED LOCATION OF WIRING DEVICES, COORDINATE ALL COVER PLATE COLORS WITH ARCHITECT.
17. ALL WORK SHALL BE INSTALLED IN FULL ACCORDANCE WITH LOCAL, STATE & FEDERAL CODES, STATE AND LOCAL AUTHORITIES. FILE ALL PLANS, OBTAIN ALL PERMITS, PAY ALL FEES, SCHEDULE ALL INSPECTIONS, MAKE ALL TESTS AND OBTAIN ALL APPROVALS REQUIRED. THE ELECTRICAL WORK SHALL BE PERFORMED IN ACCORDANCE WITH THE LATEST ADOPTED EDITION OF NATIONAL ELECTRIC CODE AND LOCAL AUTHORITIES HAVING JURISDICTION. ALL COMPONENTS SHALL BE UL LISTED.
18. WHERE CONFLICTS ARE FOUND BETWEEN DRAWINGS, SPECIFICATIONS, LAWS & ORDINANCES, THE MOST STRINGENT SHALL APPLY.
19. SUBMIT FOR APPROVAL, COMPLETE SHOP DRAWINGS, LIST OF MATERIALS AND DETAILED DATA OF EQUIPMENT GIVING THE MANUFACTURERS NAME, CATALOG NUMBER, SIZE, CAPACITY AND DIMENSIONS. SUBMIT SHOP DRAWINGS FOR APPROVAL ONLY AFTER VERIFYING ALL DIMENSIONS, CONFIRM THAT THE EQUIPMENT, DEVICES, FIXTURES, ETC. CAN BE INSTALLED WITHOUT MODIFICATIONS. NO EQUIPMENT SHALL BE INSTALLED OR FABRICATED WITHOUT OBTAINING APPROVAL. ANY MODIFICATIONS REQUIRED, SHALL BE PROVIDED AT NO ADDITIONAL COST TO THE OWNER.
20. SUBMIT FOR APPROVAL PRODUCTS THAT ARE APPROVED EQUAL ONLY. IT SHALL BE THE RESPONSIBILITY OF THE ELECTRICAL SUBCONTRACTOR TO VERIFY THAT THE SUBSTITUTED SYSTEMS ARE APPROVED EQUAL. IN THE EVENT THAT UNAPPROVED SYSTEMS ARE SUBMITTED FOR APPROVAL, THE ELECTRICAL SUBCONTRACTOR SHALL RETURN THESE SYSTEMS TO THE VENDOR AND FURNISH AND INSTALL APPROVED SYSTEMS AT NO ADDITIONAL COST TO THE OWNER.
21. ELECTRICAL SUBCONTRACTOR SHALL FURNISH AND INSTALL MOTOR STARTERS FOR ALL MOTORS, UNLESS CLEARLY INDICATED OTHERWISE ON THE CONTRACT DOCUMENTS. PROVIDE WITH NEMA ENCLOSURE SUITABLE TO THE ENVIRONMENT.THREE PHASE MOTORS SHALL BE PROVIDED WITH A COMBINATION MAGNETIC MOTOR STARTER WITH AMBIENT COMPENSATED OVERLOAD HEATERS IN EACH UNGROUNDED LEG. SHORT CIRCUIT AND GROUND FAULT PROTECTION SHALL BE BY FUSED DISCONNECT SWITCH AS SHOWN OR SPECIFIED. PROVIDE (1) SET OF NO AND (1) SET OF NC AUXILIARY CONTACTS.
22. MANUALLY CONTROLLED SINGLE PHASE MOTORS SHALL HAVE FULLY RATED MANUAL MOTOR STARTER SWITCHES WITH O.L. HEATERS IN EACH UNGROUNDED LEG.
23. THE WIRING DIAGRAMS, QUANTITY AND SIZE OF WIRES AND CONDUIT REPRESENT A SUGGESTED ARRANGEMENT BASED UPON SELECTED STANDARD COMPONENTS OF ELECTRICAL EQUIPMENT. MODIFICATIONS ACCEPTABLE TO THE ENGINEER MAY BE MADE BY THE CONTRACTOR TO ACCOMMODATE EQUIPMENT ACTUALLY PURCHASED.
24. SWITCHES SHALL BE MOUNTED 4'-0" MAX ABOVE FINISHED FLOOR UNLESS OTHERWISE NOTED. RECEPTACLES SHALL BE MOUNTED 1'-6" ABOVE FINISHED FLOOR UNLESS OTHERWISE NOTED.
25. ALL PANELBOARDS SHALL BE MOUNTED SO THAT THE DISTANCE FROM THE TOP CIRCUIT BREAKER OPERATING HANDLE TO THE FLOOR SHALL NOT EXCEED 6'-6". PROVIDE A MINIMUM OF 3'-0" CLEARANCE FOR ALL 208V ELECTRICAL PANELS AND 3'-6" CLEARANCE FOR ALL 480V ELECTRICAL PANELS.
26. ALL 15A AND 20A, 125V AND 250V NON-LOCKING RECEPTACLES IN DAMP AND WET LOCATIONS SHALL BE LISTED AS WEATHER RESISTANT TYPE PER NEC.
27. REFER TO ARCHITECTS INTERIOR ROOM ELEVATIONS FOR EXACT LOCATIONS OF CLOCK OUTLETS/SPEAKER UNITS, INTERCOM HANDSETS, LIGHT FIXTURES, RECEPTACLES AND LIGHT SWITCHES AND OTHER WALL MOUNTED ELECTRICAL EQUIPMENT PRIOR TO ROUGH-IN. CONSULT ARCHITECT PRIOR TO ROUGH-IN SHOULD THE ELECTRICAL DRAWINGS DIFFER WITH THE ARCHITECT'S INTERIOR ELEVATIONS.
28. ALL RACEWAY SHALL BE CONCEALED UNLESS OTHERWISE NOTED. PROVIDE VERIFY EXACT LOCATION OF CASEWORK AND FURNITURE WITH ARCHITECT AND GENERAL CONTRACTOR PRIOR TO ROUGH-IN.
29. COORDINATE EXACT LOCATION AND MOUNTING HEIGHTS OF DEVICES IN AREA'S BEING PROVIDED WITH FIN TUBE RADIATION WITH ARCHITECT PRIOR TO ROUGH-IN.
30. REFER TO HVAC, FIRE PROTECTION, SECURITY, DATA, KITCHEN AND PLUMBING CONSULTANTS DRAWINGS AND ASSOCIATED PROJECT SPECIFICATIONS FOR ADDITIONAL SCOPE OF RELATED ELECTRICAL WORK.
31. FOR EXACT LOCATION OF HVAC, FIRE PROTECTION, SECURITY, DATA, KITCHEN AND PLUMBING EQUIPMENT REQUIRING ELECTRICAL CONNECTION, REFER TO HVAC, FIRE PROTECTION, SECURITY, DATA, KITCHEN AND PLUMBING CONSULTANTS DRAWINGS.
32. CONFIRM EXACT POWER REQUIREMENTS AND CONNECTION LOCATIONS FOR ALL EQUIPMENT PRIOR TO INSTALLATION WITH HVAC, FIRE PROTECTION, ELEVATOR, PLUMBING AND GENERAL CONTRACTOR.
33. SWITCHGEAR & PANEL DESIGNATIONS ARE INTENDED TO BE INTERPRETED AS INDICATED BELOW:

BLANK: CONTAINS NECESSARY BUS AND HARDWARE FOR FUTURE ADDITION OF BREAKERS OR STARTERS WITHIN SIZE RANGE

SHOWN BLANK: CONTAINS NECESSARY BUS AND HARDWARE FOR FUTURE ADDITION OF BREAKERS OR STARTERS WITHIN SIZE RANGE

SHOWN SPARE: CONTAINS A COMPLETE BREAKER OR STARTER INSTALLED, SIZE AS INDICATED AVAILABLE FOR FUTURE USE.

34. ELECTRICAL SUBCONTRACTOR TO VERIFY ACTUAL CEILING CONSTRUCTION TYPE AND FURNISH ALL LIGHTING FIXTURES WITH THE CORRECT MOUNTING DEVICE, ALL PARTS AND ACCESSORIES WHETHER OR NOT SUCH VARIATIONS ARE INDICATED BY THE FIXTURE CATALOG NUMBER. THE CONTRACTOR SHALL VERIFY DEPTH OF ALL RECESSED LIGHTING FIXTURES PRIOR TO ORDERING FIXTURES. ANY DISCREPANCIES THAT WOULD CAUSE RECESSED FIXTURES NOT TO FIT INTO CEILING SHALL BE REPORTED TO THE ARCHITECT PRIOR TO ORDERING FIXTURES.
35. THE ELECTRICAL SUBCONTRACTOR SHALL COORDINATE THE EXACT LOCATION OF OUTLETS FOR THE SMARTBOARDS, PROJECTORS AND SCREENS WITH THE OWNER AND ARCHITECT PRIOR TO INSTALLATION.
36. ALL RACKS FOR VOICE/DATA/SERVER/PUBLIC ADDRESS/VIDEO SURVEILLANCE/VIDEO DISTRIBUTION, ETC. SHALL BE FURNISHED AND INSTALLED BY THE ELECTRICAL SUBCONTRACTOR. IN TELECOMMUNICATIONS EQUIPMENT ROOM (TER) ALL RACKS SHALL BE 4-POST, IN TELECOMMUNICATION ROOMS (TR) ALL THE RACKS SHALL BE 2-POST, UNLESS NOTED OTHERWISE.
37. THE ELECTRICAL SUBCONTRACTOR SHALL BE RESPONSIBLE FOR FIELD VERIFICATION OF EXISTING ELECTRICAL SERVICES AND CONNECTION REQUIREMENTS. THE CONTRACTOR SHALL NOTIFY THE ENGINEER IMMEDIATELY OF ANY CONFLICTS OR DISCREPANCIES FOUND PRIOR TO BID.
38. THE WORK IS TO BE DONE IN AN OCCUPIED BUILDING. THE ELECTRICAL CONTRACTOR SHALL COORDINATE ANY SHUTDOWN WITH THE OWNER. SHUTDOWNS MAY ONLY OCCUR AS OFF HOURS WHEN THE BUILDING IS UNOCCUPIED.

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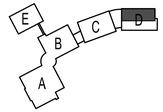
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Electrical Notes

KEY PLAN



REVISIONS

No.	Description	Date

FILE:

JOB NO: 2417

SCALE: NTS

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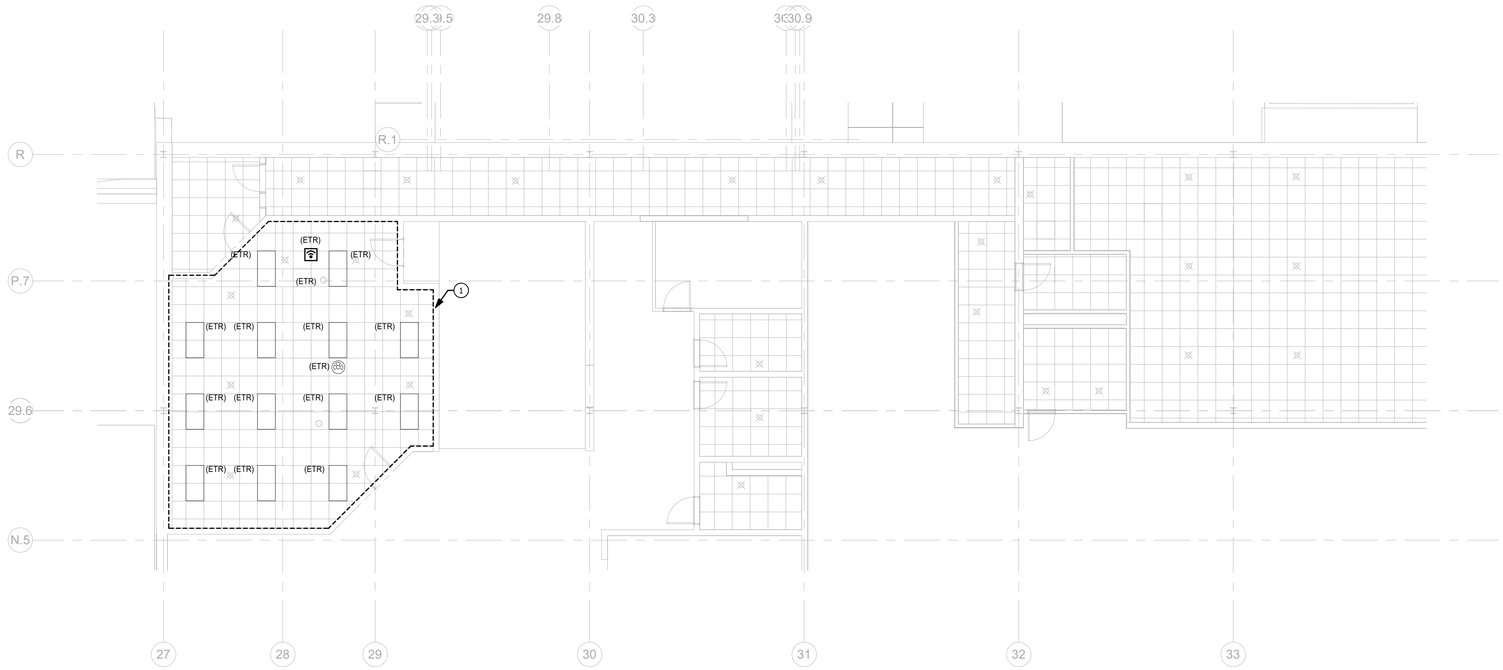
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E0.2

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KEYED NOTES FOR ED1.1

1. EXISTING LIGHT FIXTURES AND DEVICES IN THE AREA SHALL BE TEMPORARILY SUPPORTED IN PLACE DURING CONSTRUCTION AND INSTALLATION OF NEW CEILING.



1 Lower Level Ceiling Demolition
1/8" = 1'-0"

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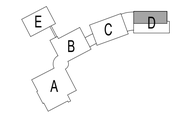
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DRAWING TITLE

Electrical Demolition Ground Floor Ceiling Plan

KEY PLAN



REVISIONS

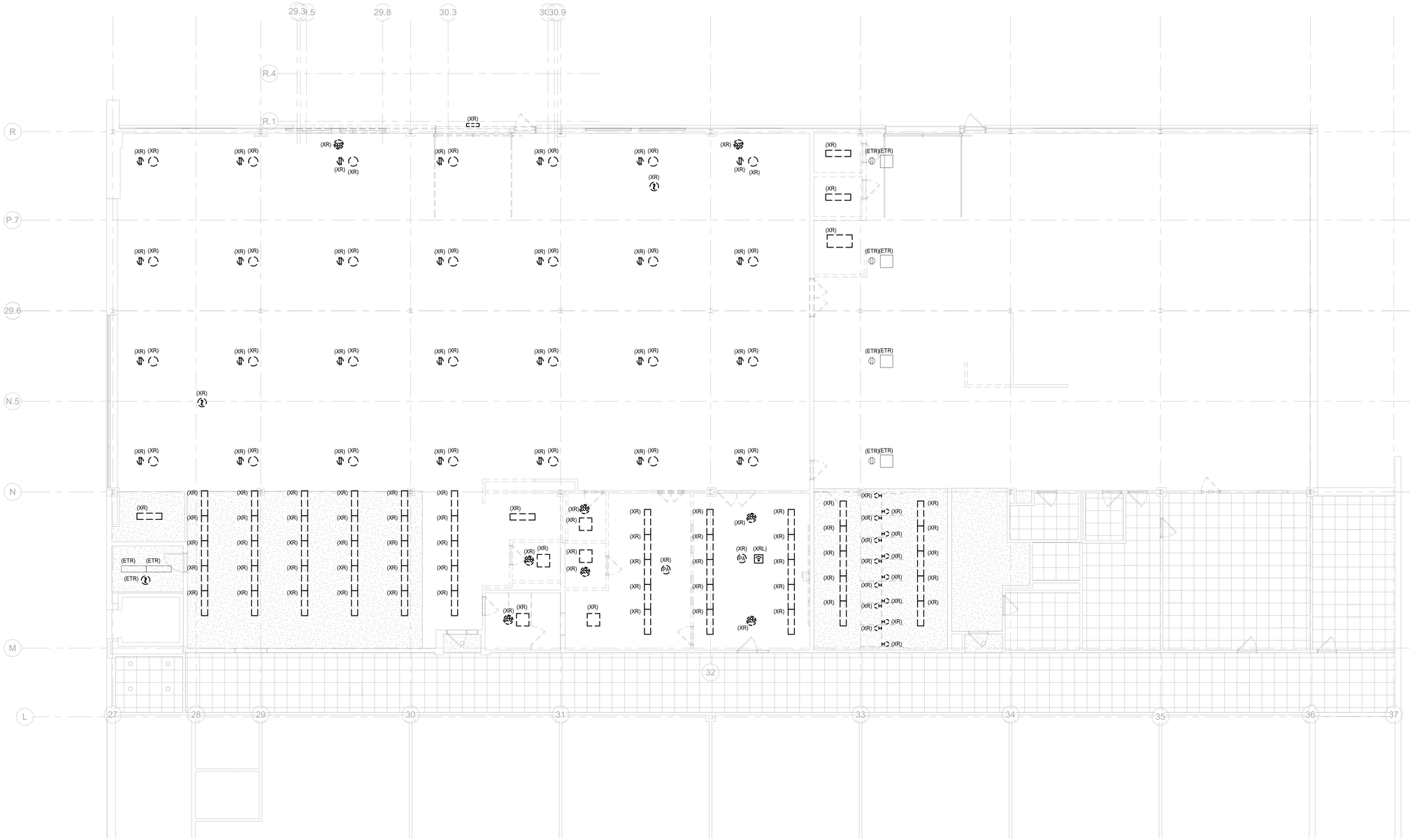
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ED1.1

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1 Demolition Ceiling Plan
1/8" = 1'-0"

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GENERAL NOTE FOR ED1.1

1. MAKE SAFE, DISCONNECT AND REMOVE EXISTING LIGHTING FIXTURES. MAINTAIN EXISTING CIRCUIT FOR RECONNECTION.

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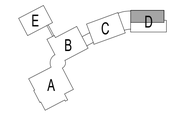
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Electrical Demolition Third Floor Ceiling Plan

KEY PLAN



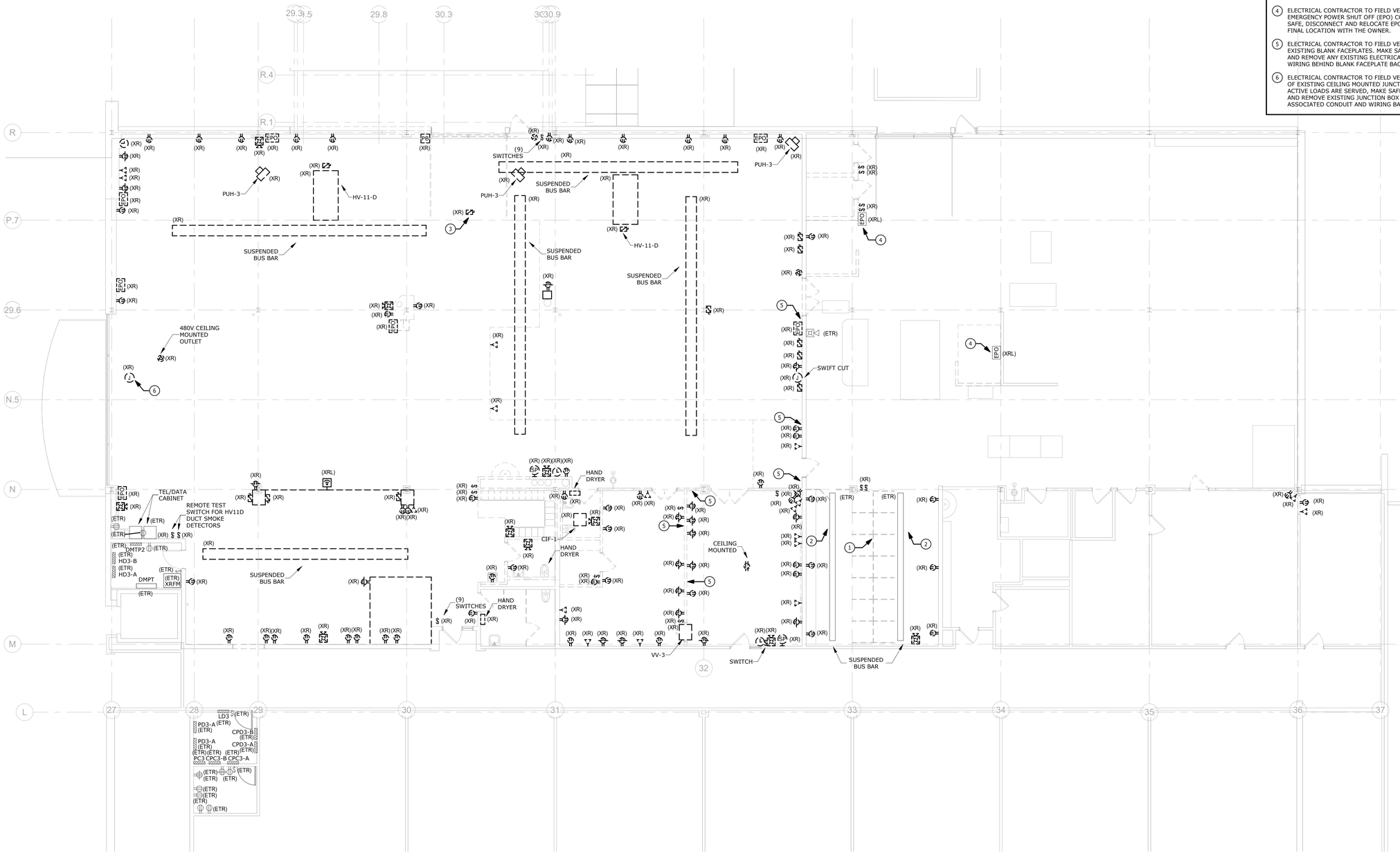
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1 Demolition Floor Plan
1/8" = 1'-0"

GENERAL NOTE FOR ED1.2

1. MAKE SAFE, DISCONNECT AND REMOVE EXISTING DEVICES/OUTLETS/ EQUIPMENT ALONG WITH ASSOCIATED WIRING AND EXPOSED SURFACE MOUNTED RACEWAYS BACK TO SOURCE.

KEYED NOTES FOR ED1.2

1. MAKE SAFE, DISCONNECT TO REMOVE POWER FOR EXISTING (14) WELDING BOOTHS.
2. MAKE SAFE AND DE-ENERGIZE EXISTING SUSPENDED BUSSWAY TO FACILITATE THE REMOVAL OF WELDING BOOTHS. EXISTING BUSSWAY TO REMAIN IN PLACE.
3. MAKE SAFE, DISCONNECT AND REMOVE POWER OF OVERHEAD DOOR ALONG WITH ASSOCIATED WIRING AND PUSHBUTTON.
4. ELECTRICAL CONTRACTOR TO FIELD VERIFY EXISTING EMERGENCY POWER SHUT OFF (EPO) CONNECTION. MAKE SAFE, DISCONNECT AND RELOCATE EPO. COORDINATE FINAL LOCATION WITH THE OWNER.
5. ELECTRICAL CONTRACTOR TO FIELD VERIFY CONDITION OF EXISTING BLANK FACEPLATES. MAKE SAFE, DISCONNECT AND REMOVE ANY EXISTING ELECTRICAL COMPONENT AND WIRING BEHIND BLANK FACEPLATE BACK TO SOURCE.
6. ELECTRICAL CONTRACTOR TO FIELD VERIFY CONNECTION OF EXISTING CEILING MOUNTED JUNCTION BOX. IF NO ACTIVE LOADS ARE SERVED, MAKE SAFE, DISCONNECT AND REMOVE EXISTING JUNCTION BOX ALONG WITH ASSOCIATED CONDUIT AND WIRING BACK TO SOURCE.

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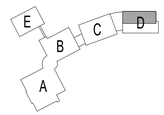
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Electrical Demolition Third Floor Plan

KEY PLAN



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KEYED NOTES FOR EH1.1

1. FC-17 TO BE POWERED FROM ROOFTOP UNIT HP-1.



1 HVAC Power Plan
1/8" = 1'-0"

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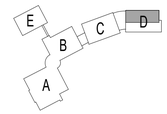
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New HVAC Power Plan

KEY PLAN



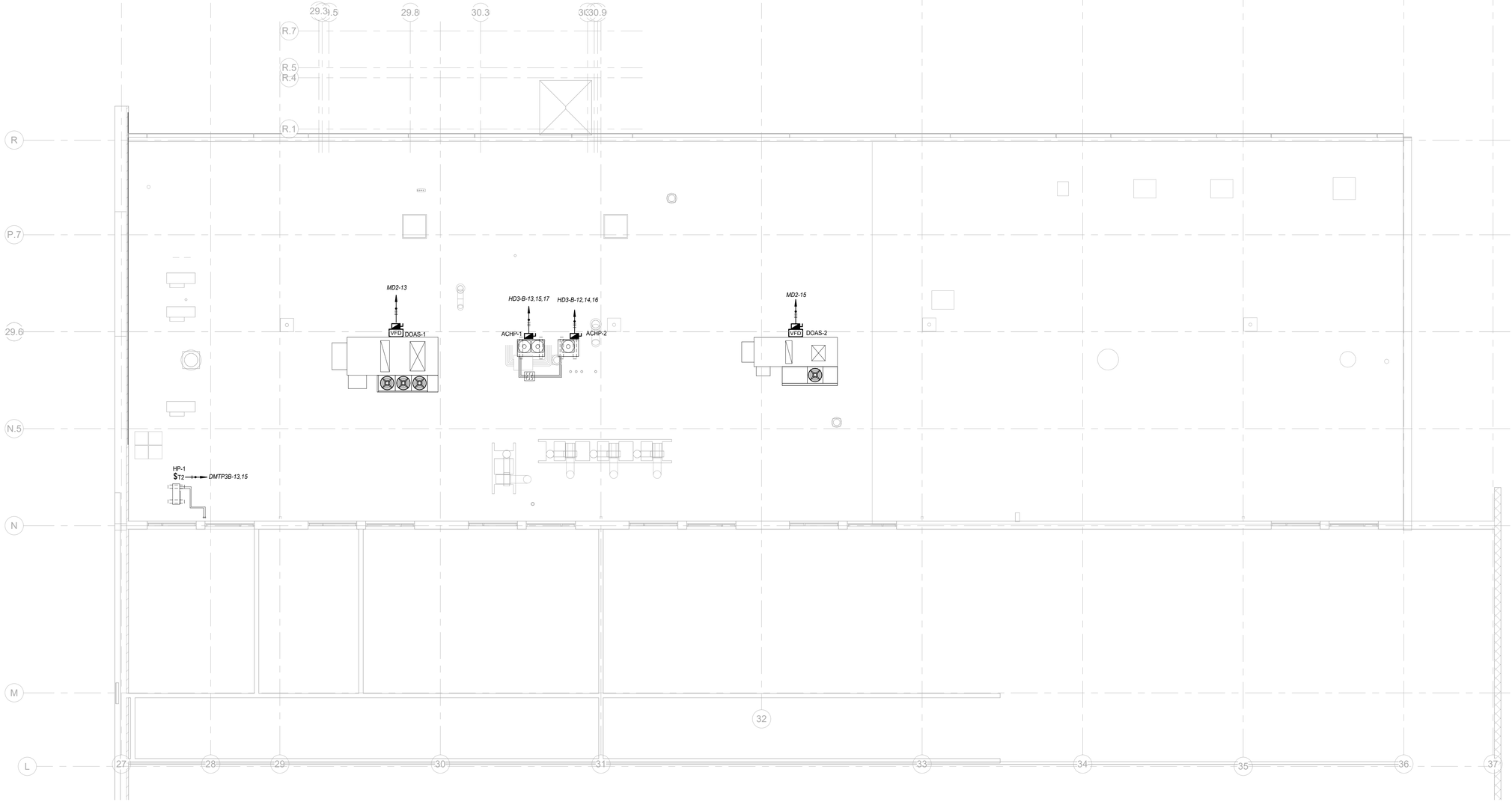
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1 Roof - HVAC Plan
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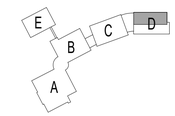
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New HVAC Power Roof Plan

KEY PLAN



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ELECTRICAL EQUIPMENT SCHEDULE

TAG	DESCRIPTION	FLA	MCA	MOCP	VOLTAGE	POLES	DISC./FUSE	PANEL	CKT #	FEEDER	TAG
ACHP-1	AIR COOLED VRF HEAT PUMP	14.56	18.2 A	25 A	480 V	3	30AS/20AF	HD3-B	13,15,17	3/4"C, 3#10, #10G	ACHP-1
ACHP-2	AIR COOLED VRF HEAT PUMP	11.92	14.9 A	20 A	480 V	3	30AS/20AF	HD3-B	12,14,16	3/4"C, 3#12, #12G	ACHP-2
BS-1	BRANCH SELECTOR	1.52	1.9 A	20 A	208 V	2		DMTP3B	17,19	3/4"C, 2#12, #12G	BS-1
BS-2	BRANCH SELECTOR	1.52	1.9 A	20 A	208 V	2		DMTP3B	21,23	3/4"C, 2#12, #12G	BS-2
CEX-1	CEILING EXHAUST FAN	0.1	0.13 A	20 A	120 V	1		DMTP	30	3/4"C, 2#12, #12G	CEX-1
CEX-1	CEILING EXHAUST FAN	0.1	0.13 A	20 A	120 V	1		DMTP	30	3/4"C, 2#12, #12G	CEX-1
DOAS-1	ROOFTOP ENERGY RECOVERY UNIT	92.08	115.1 A	125 A	480 V	3	200AS/125AF	MD2	13	1-1/4"C, 3#1, #6G	DOAS-1
DOAS-2	ROOFTOP ENERGY RECOVERY UNIT	34.4	43 A	45 A	480 V	3	60AS/45AF	MD2	15	1"C, 3#6, #10G	DOAS-2
ECH-1	ELECTRIC CABINET HEATER	14.44	18.05 A	20 A				HD3-B	8	3/4"C, 2#12, #12G	ECH-1
ECH-1	ELECTRIC CABINET HEATER	14.44	18.05 A	20 A				HD3-B	10	3/4"C, 2#12, #12G	ECH-1
EVAV-1	EXHAUST VARIABLE AIR VOLUME TERMINAL	0.42	0.52 A	20 A	120 V	1		DMTP	31	3/4"C, 2#12, #12G	EVAV-1
EVAV-2	EXHAUST VARIABLE AIR VOLUME TERMINAL	0.42	0.52 A	20 A	120 V	1		DMTP	31	3/4"C, 2#12, #12G	EVAV-2
EVAV-3	EXHAUST VARIABLE AIR VOLUME TERMINAL	0.42	0.52 A	20 A	120 V	1		DMTP	31	3/4"C, 2#12, #12G	EVAV-3
EVAV-4	EXHAUST VARIABLE AIR VOLUME TERMINAL	0.42	0.52 A	20 A	120 V	1		DMTP	31	3/4"C, 2#12, #12G	EVAV-4
EVAV-5	EXHAUST VARIABLE AIR VOLUME TERMINAL	0.42	0.52 A	20 A	120 V	1		DMTP	31	3/4"C, 2#12, #12G	EVAV-5
FC-1	FAN COIL	1.12	1.4 A	20 A	208 V	2		DMTP	25,27	3/4"C, 2#12, #12G	FC-1
FC-2	FAN COIL	1.12	1.4 A	20 A	208 V	2		DMTP	25,27	3/4"C, 2#12, #12G	FC-2
FC-3	FAN COIL	0.24	0.3 A	20 A	208 V	2		DMTP	26,28	3/4"C, 2#12, #12G	FC-3
FC-4	FAN COIL	1.12	1.4 A	20 A	208 V	2		DMTP	26,28	3/4"C, 2#12, #12G	FC-4
FC-5	FAN COIL	1.12	1.4 A	15 A	208 V	2		DMTP3B	25,27	3/4"C, 2#12, #12G	FC-5
FC-6	FAN COIL	0.24	0.3 A	20 A	208 V	2		DMTP3B	25,27	3/4"C, 2#12, #12G	FC-6
FC-7	FAN COIL	0.24	0.3 A	20 A	208 V	2		DMTP3B	29,31	3/4"C, 2#12, #12G	FC-7
FC-8	FAN COIL	0.24	0.3 A	20 A	208 V	2		DMTP3B	29,31	3/4"C, 2#12, #12G	FC-8
FC-9	FAN COIL	0.24	0.3 A	20 A	208 V	2		DMTP3B	29,31	3/4"C, 2#12, #12G	FC-9
FC-10	FAN COIL	0.24	0.3 A	20 A	208 V	2		DMTP3B	37,39	3/4"C, 2#12, #12G	FC-10
FC-11	FAN COIL	1.2	1.5 A	20 A	208 V	2		DMTP3B	37,39	3/4"C, 2#12, #12G	FC-11
FC-12	FAN COIL	0.24	0.3 A	20 A	208 V	2		DMTP3B	33,35	3/4"C, 2#12, #12G	FC-12
FC-13	FAN COIL	0.24	0.3 A	20 A	208 V	2		DMTP3B	33,35	3/4"C, 2#12, #12G	FC-13
FC-14	FAN COIL	1.2	1.5 A	20 A	208 V	2		DMTP3B	33,35	3/4"C, 2#12, #12G	FC-14
FC-15	FAN COIL	0.24	0.3 A	20 A	208 V	2		DMTP	25,27	3/4"C, 2#12, #12G	FC-15
FC-16	FAN COIL	1.12	1.4 A	20 A	208 V	2		DMTP3B	37,39	3/4"C, 2#12, #12G	FC-16
FC-17	FAN COIL	0.38	0.47 A	20 A	208 V	2				3/4"C, 2#12, #12G	FC-17
HP-1	HEAT PUMP	15.84	19.8 A	20 A	208 V	2		DMTP3B	13,15	3/4"C, 2#12, #12G	HP-1
RP-1	RECIRCULATION PUMP	0.52	0.65 A	20 A	120 V	1		DMTP	32	3/4"C, 2#12, #12G	RP-1
SF-1	FAN COIL	5.4	6.75 A	20 A	208 V	2		DMTP3B	41,43	3/4"C, 2#12, #12G	SF-1
VAV-1	VARIABLE AIR VOLUME TERMINAL	0.83	1 A	20 A	120 V	1		DMTP	29	3/4"C, 2#12, #12G	VAV-1
VAV-2	VARIABLE AIR VOLUME TERMINAL	0.83	1 A	20 A	120 V	1		DMTP	29	3/4"C, 2#12, #12G	VAV-2
VAV-3	VARIABLE AIR VOLUME TERMINAL	0.83	1 A	20 A	120 V	1		DMTP	29	3/4"C, 2#12, #12G	VAV-3
VAV-4	VARIABLE AIR VOLUME TERMINAL	0.83	1 A	20 A	120 V	1		DMTP	29	3/4"C, 2#12, #12G	VAV-4
VAV-5	VARIABLE AIR VOLUME TERMINAL	0.83	1 A	20 A	120 V	1		DMTP	29	3/4"C, 2#12, #12G	VAV-5

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PROJECT

TUFTS at TECH
Community Veterinary Clinic

Final Bid Package

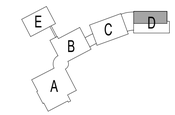
Tufts Vet Tech Clinic Renovation

Worcester Technical High School
1 Officer Manny Familia Way, Worcester, MA 01605

DRAWING TITLE

Electrical Equipment Schedule

KEY PLAN



REVISIONS

No.	Description	Date

FILE:

JOB NO: 2417

SCALE:

DWN. BY: TN

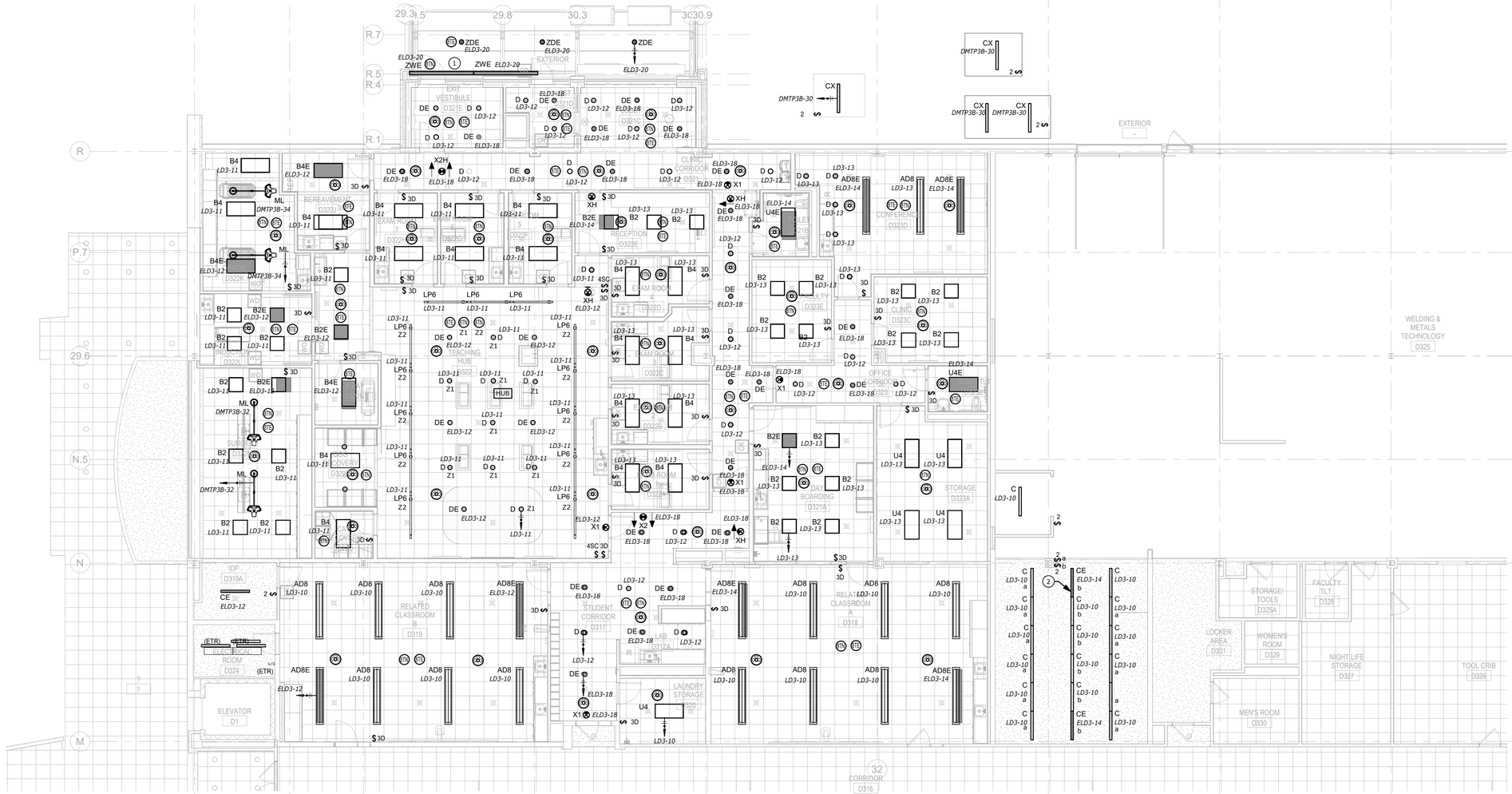
CKD. BY: ASR

DATE: March 11, 2026

EH1.3

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1 Lighting Plan
1/8" = 1'-0"

LIGHTING FIXTURE SCHEDULE

TAG	DESCRIPTION	MANUF.	MODEL	VOLTAGE	DRIVER	NOTES
AD8	DIRECT/INDIRECT LED PENDANT	CORELITE	DSI-WS-40L935-1D-UNV-STD-W-AC20-T1-8'-COORDINATE PENDANT LENGTH WITH THE ARCHITECT	277 V		
AD8E	DIRECT/INDIRECT LED PENDANT	CORELITE	DSI-WS-40L935-1D-UNV-STD-W-AC20-T1-8'-COORDINATE PENDANT LENGTH WITH THE ARCHITECT	277 V		
B2	2X2 RECESSED LED FIXTURE	METALUX	22RLN-LD5-40-UNV-L935-CD1	277 V		
B2E	2X2 RECESSED LED FIXTURE	METALUX	22RLN-LD5-40-UNV-L935-CD1	277 V		
B4	2X4 RECESSED LED FIXTURE	METALUX	24RLN-LD5-42-UNV-L935-CD1	277 V		
B4E	2X4 RECESSED LED FIXTURE	METALUX	24RLN-LD5-42-UNV-L935-CD1	277 V		
C	4' LENGTH LINEAR LED STRIPLIGHT	METALUX	4SNX-41SL-LW-UNV-L835-CD1-WAA-AYC-CHAIN/SET-U	277 V		
CE	4' LENGTH LINEAR LED STRIPLIGHT	METALUX	4SNX-41SL-LW-UNV-L835-CD1-WAA-AYC-CHAIN/SET-U	277 V		
CX	4' LENGTH LINEAR LED STRIPLIGHT	METALUX	4SNX-41SL-LW-UNV-L835-CD1-WAA-AYC-CHAIN/SET-U	120 V		
D	RECESSED DOWNLIGHT	PORTFOLIO	LD6B-10-D010-EU6B-1020-8035-6LBW0L1	277 V		
DE	RECESSED DOWNLIGHT	PORTFOLIO	LD6B-10-D010-EU6B-1020-8035-6LBW0L1	277 V		
LP6	PENDANT LINEAR FIXTURE	NULITE	RP24-D-FRF-03-L35-UNV-D-1-1-WH-SR-W-048-72	277 V		
ML	AIM LED EXAM LIGHT	BURTON MEDICAL	FURNISH BY OTHERS	120 V		
U4	2X4 RECESSED LED FIXTURE	METALUX	24-GRFA-LD5-56-A125-UNV-L935-CD1-U	277 V		
U4E	2X4 RECESSED LED FIXTURE	METALUX	24-GRFA-LD5-56-A125-UNV-L935-CD1-U	277 V		
X1	EXIT SIGN - SINGLE SIDED WITH BATTERY BACKUP	MULE	CEL-1-B-XX-WH-R-SD-PANEL COLOR: WHITE	277 V		
X2	EXIT SIGN - DOUBLE SIDED WITH BATTERY BACKUP	MULE	CEL-2-B-XX-WH-R-SD-PANEL COLOR: WHITE	277 V		
X2H	EXIT SIGN - SINGLE SIDED WITH HANDICAP SYMBOL AND WITH BATTERY BACKUP	MULE	ML-OL2-HE-SA-XX-2-X-XX-SW-HE-PANEL COLOR: WHITE	277 V		
XH	EXIT SIGN - SINGLE SIDED WITH HANDICAP SYMBOL AND WITH BATTERY BACKUP	MULE	ML-OL2-HE-SA-XX-1-X-XX-SW-HE-PANEL COLOR: WHITE	277 V		
ZDE	LED PENDANT MOUNT	WAC LIGHTING	DS-PD0517-F35-XX	277 V		
ZWE	LED WALL LETTERING	NOVA FLEX	NF-PRO-W-120-24V-3000K-NF-PS-UNV-96W-24V-COORDINATE EXACT CONFIGURATION WITH ARCHITECT PRIOR TO ORDERING	277 V		

GENERAL NOTES FOR EL1.1

1. COORDINATE COLOR, FINISH, EXACT LENGTH AND MOUNTING TYPE WITH ARCHITECT PRIOR TO ORDERING.
2. THE ELECTRICAL CONTRACTOR SHALL DETERMINE ACTUAL LIGHT FIXTURE COUNTS FROM THE DRAWINGS.
3. THE ELECTRICAL CONTRACTOR IS RESPONSIBLE FOR PROVIDING THE REQUIRED FLANGE TYPES. COORDINATE WITH THE ARCHITECTURAL PLANS FOR CEILING TYPES.
4. PROVIDE GWB FLANGES FOR ALL THE LIGHT FIXTURES TO BE INSTALLED IN GWB CEILINGS.
5. ALL LIGHT FIXTURES SHALL BE SUPPORTED FROM THE BUILDING STRUCTURE, AND SHALL BE INDEPENDENT OF DUCTS, PIPES CEILINGS AND THEIR SUPPORTING MEMBERS.
6. PROVIDE 90 MINUTES BACK UP BATTERY FOR ALL EXIT SIGNS.
7. ALL LIGHT FIXTURE COLORS SHALL BE SELECTED BY THE ARCHITECT PRIOR TO ORDERING THE LIGHT FIXTURES. COORDINATE WITH THE ARCHITECT.
8. COORDINATE PENDANT LENGTHS FOR ALL SUSPENDED FIXTURES WITH THE ARCHITECT.
9. COORDINATE MOUNTING TYPE OF ALL EXIT SIGNS WITH THE ARCHITECT PRIOR TO ORDERING.

KEYED NOTES FOR EL1.1

1. LIGHTING FIXTURES TO BE WALL MOUNTED ABOVE THE CANOPY. REFER TO DETAIL 3 ON ARCHITECTURAL DRAWING A12.1.
2. COORDINATE MOUNTING LOCATION WITH HVAC DUCT AND EQUIPMENT PRIOR TO INSTALLATION.

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PROJECT

TUFTS at TECH Community Veterinary Clinic

Final Bid Package

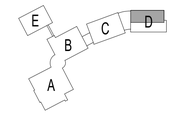
Tufts Vet Tech Clinic Renovation

Worcester Technical High School
1 Officer Manny Familia Way, Worcester, MA 01605

DRAWING TITLE

New Lighting Ceiling Plan

KEY PLAN



REVISIONS

No.	Description	Date

FILE:
JOB NO: 2417
SCALE: 1/8" = 1'-0"
DWN. BY: TN
CKD. BY: ASR
DATE: March 11, 2026

EL1.1

Project / True North

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WIRING LEGEND:

- ◪ INPUT POWER (NORMAL-EMERGENCY)
- □ INPUT POWER (NORMAL)
- ● 2 #12AWG (4 mm²)
- ◆ 0-10V SIGNAL: 2 #18AWG (1.0 mm²)
- ◇ ECOSYSTEM BUS/LOOP: LUTRON CABLE C-CBL-216-GR-1 (2 #16 CONDUCTOR NON-PLENUM) OR C-PCBL-216-CL-1 (2 #16 CONDUCTOR PLENUM RATED). OTHERWISE USE 2 #16 AWG (1.5 mm²) BY OTHERS.
- 1-WAY RF COMMUNICATION
- 2-WAY RF COMMUNICATION
- ●● 2 #18AWG (1.0 mm²)
- [E] CAT5E OR BETTER CABLE FOR LUTRON NETWORK TERMINATED WITH RJ45 CONNECTORS (TO BE PROVIDED BY OTHERS). 328 ft (100 m) MAXIMUM RUN.

WIRING NOTES:

LUTRON LIGHTING MANAGEMENT NETWORK

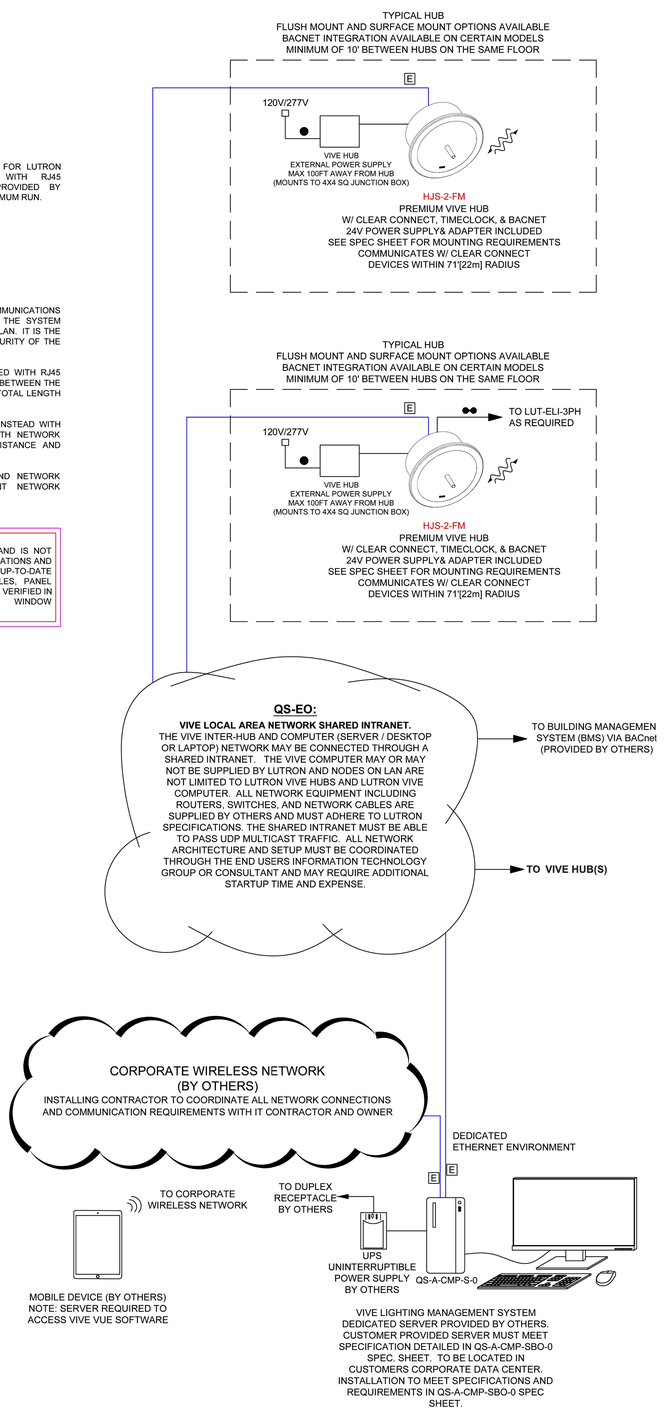
WHEN A LIGHTING MANAGEMENT NETWORK (LMN) IS REQUIRED TO ENABLE COMMUNICATIONS BETWEEN INDIVIDUAL LIGHT MANAGEMENT HUBS (LMH) AND BETWEEN LMH AND THE SYSTEM SERVER/DESKTOP/LAPTOP (Q-MANAGER). THE LMN REQUIRES A DEDICATED LAN OR VLAN. IT IS THE RESPONSIBILITY OF THE NETWORK PROVIDER TO ENSURE THE RELIABILITY AND SECURITY OF THE LMN.

CAT5E OR BETTER ETHERNET CABLE TO BE RUN FOR DEDICATED LMN TERMINATED WITH RJ45 CONNECTORS (PROVIDED BY OTHERS). THE NUMBER OF ETHERNET HOPS/SEGMENTS BETWEEN THE SERVER/DESKTOP/LAPTOP (Q-MANAGER) AND ANY LMN NODE SHALL NOT EXCEED 6. TOTAL LENGTH OF ETHERNET CABLE SHALL NOT EXCEED 328 FT (100M) POINT-TO-POINT.

IF LONGER RUNS ARE REQUIRED, MULTI-MODE FIBER OPTIC CABLE CAN BE USED INSTEAD WITH APPROPRIATE FIBER OPTIC CONNECTORS (PROVIDED BY OTHERS). CONSULT WITH NETWORK PROVIDER FOR STANDARD ETHERNET AND FIBER OPTIC WIRING RULES FOR DISTANCE AND SEPARATION AS WELL AS FOR PLACEMENT OF SWITCHES, ROUTERS, HUBS, ETC.

FOR MORE INFORMATION REGARDING NETWORK EQUIPMENT REQUIREMENTS AND NETWORK CONFIGURATION, PLEASE REFER TO THE QUANTUM LIGHTING MANAGEMENT NETWORK SPECIFICATION SHEET OR CONTACT LUTRON.

CONCEPT DRAWING NOTES:
CONTROL SYSTEM DRAWING IS PROVIDED FOR CONCEPTUAL PURPOSES ONLY AND IS NOT INTENDED FOR CONSTRUCTION. EXACT EQUIPMENT REQUIREMENTS, INCLUDING LOCATIONS AND QUANTITIES, SHOULD BE VERIFIED IN ACCORDANCE WITH THE MOST UP-TO-DATE LIGHTING/ELECTRICAL REFLECTED CEILING PLANS, LIGHTING FIXTURE SCHEDULES, PANEL SCHEDULES, CONTROL INTENT AND SPECIFICATIONS. SHADE EQUIPMENT SHOULD BE VERIFIED IN ACCORDANCE WITH ARCHITECTURAL PLANS, SPECIFICATIONS AND WINDOW SCHEDULES/DETAILS.



NOTES:

1. THE LIGHTING CONTROL SYSTEM PROVIDES FOR FULL SCHEDULING FOR OCCUPIED AND UNOCCUPIED SPACES BY TIME AND OVERRIDE THROUGH OCCUPANCY SENSORS.

2. INDIVIDUAL OCCUPANT SPACES, WILL BE PROVIDED WITH INDIVIDUAL LIGHTING CONTROLS THAT ENABLE OCCUPANTS TO ADJUST THE LIGHTING TO SUIT THEIR INDIVIDUAL TASKS AND PREFERENCES, WITH AT LEAST THREE LIGHTING LEVELS OR SCENES (ON, OFF, MIDLEVEL). MIDLEVEL LIGHTING SCENE SHOULD BE 30% - 70% OF THE MAXIMUM ILLUMINATION LEVEL WITHOUT ACCOUNTING FOR DAYLIGHT CONTRIBUTIONS.

3. FOR ALL SHARED MULTI-OCCUPANT SPACES, MULTI-ZONE CONTROL SYSTEMS THAT ENABLE OCCUPANTS TO ADJUST THE LIGHTING TO MEET GROUP NEEDS AND PREFERENCES, WITH AT LEAST THREE LIGHTING LEVELS OR SCENES (ON, OFF, MIDLEVEL).

4. LIGHTING FOR ANY PRESENTATION OR PROJECTION WALL SHALL BE SEPARATELY CONTROLLED.

5. SWITCHES OR MANUAL CONTROLS SHALL BE LOCATED IN THE SAME SPACE AS THE CONTROLLED LUMINAIRES.

A. OCCUPANTS IN PUBLIC SPACES WILL HAVE NO ABILITY TO ADJUST SYSTEMS CONTROLS.

6. AUTOMATION:

A. INTERIOR LIGHTING SHALL BE CONTROLLED WITH AN AUTOMATIC CONTROL DEVICE TO SHUT OFF BUILDING LIGHTING IN ALL SPACES. THIS AUTOMATIC CONTROL DEVICE SHALL FUNCTION ON EITHER:
   1) A SCHEDULED BASIS USING A TIME OF DAY OPERATED CONTROL DEVICE THAT TURNS LIGHTING OFF AT SPECIFIC PROGRAMMED TIMES;
   2) AN OCCUPANT SENSOR THAT SHALL TURN LIGHTING OFF WITHIN 20 MINUTES OF AN OCCUPANT LEAVING A SPACE
   3) AN UNSCHEDULED BASIS BY OCCUPANT INTERVENTION
   4) EACH SPACE ENCLOSED BY CEILING-HEIGHT PARTITIONS SHALL HAVE AT LEAST ONE CONTROL DEVICE TO INDEPENDENTLY CONTROL THE GENERAL LIGHTING WITHIN THE SPACE. EACH CONTROL DEVICE SHALL BE ACTIVATED EITHER MANUALLY BY AN OCCUPANT OR AUTOMATICALLY BY SENSING AN OCCUPANT.

B. EACH PERIMETER OFFICE SPACE ENCLOSED BY CEILING-HEIGHT PARTITIONS SHALL HAVE A MANUAL CONTROL TO ALLOW THE OCCUPANT TO UNIFORMLY REDUCE THE CONNECTED LIGHTING LOAD BY AT LEAST 50% OR SHALL BE PROVIDED WITH AUTOMATIC DAYLIGHTING CONTROLS.

C. EACH PERIMETER CLASSROOM SPACE SHALL HAVE A MANUAL CONTROL TO ALLOW THE OCCUPANT TO UNIFORMLY REDUCE THE CONNECTED LIGHTING LOAD BY AT LEAST 50% AND SHALL BE PROVIDED WITH AUTOMATIC DAYLIGHTING CONTROLS. THE CLASSROOMS SHALL HAVE THE ABILITY TO DIM OR SWITCH OFF LIGHTS AT THE PRESENTATION/TEACHING FRONT WALL. THE LIGHTING CONTROLS SHALL BE INTEGRATED WITH THE HVAC CONTROLS

D. FLEXIBILITY: EASILY EXPANDED.

E. MAINTENANCE REQUIREMENTS: MINIMAL MAINTENANCE - ONCE THE SYSTEM IS COMMISSIONED PROGRAMMING CHANGES AND SOFTWARE UPDATES CAN BE ACCOMPLISHED REMOTELY.

F. EFFICIENCY TARGET: INTEGRATE LIGHTING CONTROL SYSTEM WITH THE BMS SYSTEM TO OPTIMIZE ENERGY PERFORMANCE OF THE BUILDING.

7. THE SENSORS WILL BE PROGRAMMED AS "VACANCY SENSORS" EXCEPT FOR IN REST ROOMS AND IN ROOMS WHERE MULTI-LEVEL LIGHTING IS NOT REQUIRED (STORAGE, CLOSETS AND SIMILAR SPACES).

8. VACANCY SENSOR: LIGHTS WILL NEED TO BE MANUALLY TURNED ON AND WILL TURN OFF THE LIGHTS WHEN NO OCCUPANCY IS DETECTED, TO TURN THE LIGHTS BACK TO ON, THEY WILL NEED TO BE MANUALLY TURNED ON.

9. OCCUPANCY SENSOR: LIGHT WILL TURN ON/OFF BASED ON OCCUPANCY DETECTION.

10. IN THE HALLWAYS, CORRIDORS, AND COMMON AREAS, DURING BUSINESS HOURS, LIGHTS WILL BE PROGRAMMED TO TURN ON/OFF ON A SCHEDULE. THE OCCUPANCY SENSORS WILL BE PROGRAMMED TO FUNCTION AFTER HOURS ONLY. A MASTER LIGHT SWITCH WILL BE PROVIDED AT THE MAIN ENTRANCE THAT WILL BE PROGRAMMED TO FUNCTION AFTER HOURS ONLY, THIS SWITCH WILL BE PROGRAMMED TO TURN ON ALL THE LIGHTS, PROVIDE CLEAR LOCKING COVER.

11. LIGHTS IN THE STAIRWELL WILL REMAIN ON 24HRS, AFTER HOURS WHEN NO OCCUPANCY IS DETECTED, THE LIGHTS WILL DIM TO 50%.

12. THE EXTERIOR LIGHTS, IF POWERED FROM THE BUILDING, WILL BE PROGRAMMED TO BE CONTROLLED VIA THE PHOTOCELL TIED INTO LIGHTING CONTROL SYSTEM AS WELL AS ON A TIME SCHEDULE. FIXTURES SHALL BE WIRED VIA RELAYS. FOR BUILDING MOUNTED AND ALL OTHER EXTERIOR SITE LIGHTS, PROVIDE RELAYS FOR EACH ZONE OR EACH LIGHTING CIRCUIT IF NOT ZONED. THE RELAYS SHALL BE DIMMING TYPE, UNLESS THE LIGHT FIXTURES ARE NON-DIMMING. FURNISH AND INSTALL EXTERIOR PHOTOCELL.

13. ENHANCED DIGITAL LIGHTING CONTROLS. INTERIOR LIGHTING IN THE BUILDING SHALL HAVE THE FOLLOWING ENHANCED LIGHTING CONTROLS:

A. LUMINAIRES SHALL BE CONFIGURED FOR CONTINUOUS DIMMING.

B. LUMINAIRES SHALL BE ADDRESSED INDIVIDUALLY. WHERE INDIVIDUAL ADDRESSABILITY IS NOT AVAILABLE FOR THE LUMINAIRE CLASS TYPE, A CONTROLLED GROUP OF NOT MORE THAN FOUR LUMINARIES SHALL BE ALLOWED IF NOTED ON THE CONTRACT DOCUMENTS, OTHERWISE ALL LUMINAIRES SHALL BE ADDRESSED INDIVIDUALLY, IN TOILETS, UTILITY ROOMS, STORAGE AND CLOSETS A MAXIMUM OF FOUR LIGHT FIXTURES OF THE SAME TYPE CAN BE WIRED TO BE CONTROLLED TOGETHER.

C. NOT MORE THAN EIGHT LUMINAIRES SHALL BE CONTROLLED TOGETHER IN A DAYLIGHT ZONE.

14. LIGHT FIXTURES SHALL BE CONTROLLED THROUGH A DIGITAL CONTROL SYSTEM THAT INCLUDES THE FOLLOWING FUNCTION:

A. CONTROL RECONFIGURATION BASED ON DIGITAL ADDRESSABILITY.

B. LOAD SHEDDING.

C. OCCUPANCY SENSORS SHALL BE CAPABLE OF BEING RECONFIGURED THROUGH THE DIGITAL CONTROL SYSTEM

15. EXTERIOR LIGHTING CONTROLS:

A. AUTO OFF WHEN SATISFACTORY DAYLIGHT AVAILABLE.

B. DECORATIVE LIGHTING SHUT OFF - AUTO OFF UP TO ONE HOUR AFTER BUSINESS CLOSE TO 1 HOUR BEFORE BUSINESS OPEN.

C. LIGHTING SETBACK - REDUCE ALL OTHER LIGHTING >30% NO LATER THAN MIDNIGHT TO 6AM, ONE HOUR AFTER CLOSING TO ONE HOUR BEFORE OPENING.

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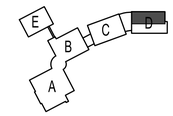
Tufts Vet Tech Clinic Renovation

Worcester Technical High School
1 Officer Manny Familia Way, Worcester, MA 01605

DRAWING TITLE

Lighting Control System Details

KEY PLAN



REVISIONS

No.	Description	Date

FILE:
JOB NO: 2417
SCALE: NTS
DWN. BY: TN
CKD. BY: ASR
DATE: March 11, 2026

EL2.1

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MAX OF 30' TO LOAD DEVICES - MAX OF 71' FROM VIVE HUB AND LOCATED ON THE SAME FLOOR



PJL-3BRL-GWH-XXX
434 MHZ LINE VOLTAGE PICO WIRELESS, LIGHT
3 BUTTON CONTROL WITH RAISE/LOWER
SHOWN WITH CW-1-WH
CLARO WALLPLATE
*SEE SPECIFICATION SHEET FOR
DIMENSIONS, ENGRAVING OPTIONS,
& MOUNTING INSTRUCTIONS
LOCATION TBD



PJL-2B-GWH-XXX
434 MHZ LINE VOLTAGE PICO WIRELESS
2 BUTTON CONTROL
SHOWN WITH CW-1-WH
CLARO WALLPLATE
*SEE SPECIFICATION SHEET FOR
DIMENSIONS, ENGRAVING OPTIONS,
& MOUNTING INSTRUCTIONS
LOCATION TBD



PJL-2BRL-GWH-XX
434 MHZ LINE VOLTAGE PICO WIRELESS
2 BUTTON CONTROL WITH RAISE/LOWER
SHOWN WITH CW-1-WH
CLARO WALLPLATE
*SEE SPECIFICATION SHEET FOR
DIMENSIONS, ENGRAVING OPTIONS,
& MOUNTING INSTRUCTIONS
LOCATION TBD

TYPICAL WIRELESS RECEPTACLES

MAX OF 71' FROM VIVE HUB AND LOCATED ON SAME FLOOR



CAR2S-15-DTR-WH
15A TAMPER RESISTANT,
DUPLEX RECEPTACLE
120V~, 50/60 Hz
DUAL SWITCHING
SINGLE POLE/DOWNSTREAM
W/ 431-437 MHZ CLEAR CONNECT RF
(1 GANG US BACKBOX BY OTHERS)
LOCATION TBD



CAR2S-15-STR-WH
15A TAMPER RESISTANT,
SPLIT DUPLEX RECEPTACLE
120V~, 50/60 HZ
HALF SWITCHING
SINGLE POLE/DOWNSTREAM
W/ 431-437 MHZ CLEAR CONNECT RF
(1 GANG US BACKBOX BY OTHERS)
LOCATION TBD



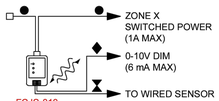
CAR2S-20-DTR-WH
20A TAMPER RESISTANT,
DUPLEX RECEPTACLE
120V~, 50/60 Hz
DUAL SWITCHING
SINGLE POLE/DOWNSTREAM
W/ 431-437 MHZ CLEAR CONNECT RF
(1 GANG US BACKBOX BY OTHERS)
LOCATION TBD



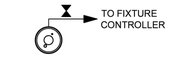
CAR2S-20-STR-WH
20A TAMPER RESISTANT,
SPLIT DUPLEX RECEPTACLE
120V~, 50/60 Hz
HALF SWITCHING
SINGLE POLE/DOWNSTREAM
W/ 431-437 MHZ CLEAR CONNECT RF
(1 GANG US BACKBOX BY OTHERS)
LOCATION TBD

TYPICAL PER FIXTURE LOAD CONTROL MODULES & SENSORS

MAX OF 71' FROM VIVE HUB AND LOCATED ON SAME FLOOR



FCJS-010
POWPAK WIRELESS FIXTURE CONTROL
120-277V~, 50/60 Hz
FOR 0-10 V CONTROL
DIMENSIONS:
3.42"(H) X 2.82"(W) X 1.25"(D)
(87mm X 72mm X 32mm)
LOCATION TBD



FC-SENSOR
POWPAK FIXTURE SENSOR
OCCUPANCY VACANCY
1.5"(DIA) X 0.65"(D)
(38mm X 17mm)
*DEVICE IS SURFACE-MOUNTED
LOCATION TBD

TYPICAL SENSORS & REMOTE CONTROLS

MAX OF 30' TO LOAD DEVICES - MAX OF 71' FROM VIVE HUB AND LOCATED ON THE SAME FLOOR

OTHER SENSOR OPTIONS AVAILABLE
(SEE SPEC SHEET)

UP TO 10 PER MODULE



LRF2-OCR2B-P-WH
434MHZ WIRELESS
OCCUPANCY/VACANCY SENSOR
3.57"[90,7mm] (DIA) X 1.13"[28,7mm] (D)
*DEVICE IS SURFACE-MOUNTED AND
BATTERY POWERED, DOES NOT
REQUIRE POWER FEED

(OPTION:WITH L-CRMK-WH
RECESS MOUNT KIT FOR
NON-METALLIC CEILINGS)
LOCATION TBD

OTHER BUTTON CONFIGURATIONS AVAILABLE
(SEE SPEC SHEET FOR OPTIONS)

UP TO 10 PER MODULE



PJ2-3BRL-GWH-XXX
434 MHZ PICO WIRELESS, LIGHT
3 BUTTON CONTROL WITH RAISE/LOWER
SHOWN WITH CW-1-WH
CLARO WALLPLATE
*SEE SPECIFICATION SHEET FOR
DIMENSIONS, ENGRAVING OPTIONS,
& MOUNTING INSTRUCTIONS
LOCATION TBD

UP TO 1 PER MODULE



LRF2-DCRB-WH
434MHZ WIRELESS
DAYLIGHT SENSOR
1.6"[40,6mm] (DIA) X 0.7"[17,8mm] (D)
*DEVICE IS SURFACE-MOUNTED AND
BATTERY POWERED, DOES NOT
REQUIRE POWER FEED

LOCATION TBD

LAMOUREUX PAGANO
ASSOCIATES|ARCHITECTS
108 Grove Street, Suite 300
Worcester MA 01605
508.752.2831
www.lpaa.com

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ART Engineering
we build the future.
38 Front Street, FL 3, Worcester, MA 01608
www.artengineering.us

PROJECT

TUFTS at TECH
Community Veterinary Clinic

Final Bid Package

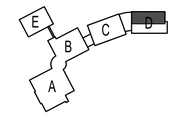
Tufts Vet Tech Clinic Renovation

Worcester Technical High School
1 Officer Manny Familia Way, Worcester, MA 01605

DRAWING TITLE

Lighting Control System Details

KEY PLAN



REVISIONS

No.	Description	Date

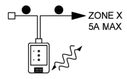
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DWN. BY:	TN
CKD. BY:	ASR
DATE:	March 11, 2026

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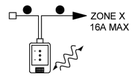
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TYPICAL LOAD CONTROL MODULES

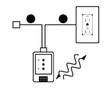
MAX OF 71' FROM VIVE HUB AND LOCATED ON SAME FLOOR



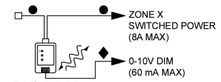
RMJS-5R-DV-B
POWPAK RELAY MODULE
120/277V~, 50/60 Hz
W/ (1) 5A RELAY
DIMENSIONS:
3.42"(H) X 2.82"(W) X 1.25"(D)
(87mm X 72mm X 32mm)
LOCATION TBD



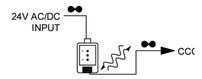
RMJS-16R-DV-B
POWPAK RELAY MODULE
120/277V~, 50/60 Hz
W/ (1) 16A SOFTSWITCH RELAY
DIMENSIONS:
3.42"(H) X 2.82"(W) X 1.25"(D)
(87mm X 72mm X 32mm)
LOCATION TBD



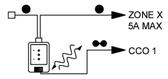
RMJS-20R-DV-B
POWPAK 20A RELAY MODULE
120/277V~, 50/60 Hz
CAPABLE OF SWITCHING GENERAL PURPOSE
LOADS & 20A RECEPTACLES
*SHOWN WITH DUPLEX RECEPTACLE
**NOT INTENDED FOR CONTROL OF
PERMANENTLY INSTALLED LIGHTING FIXTURES
3.42"(H) X 2.82"(W) X 1.25"(D)
(87mm X 72mm X 32mm)
LOCATION TBD



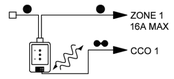
RMJS-8T-DV-B
POWPAK DIMMING MODULE
120/277V~, 50/60 Hz
W/ 0-10 V CONTROL
DIMENSIONS:
3.42"(H) X 2.82"(W) X 1.25"(D)
(87mm X 72mm X 32mm)
LOCATION TBD



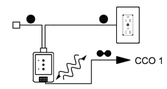
RMJS-CCO1-24-B
POWPAK CCO MODULE
W/ (1) CONTACT CLOSURE OUTPUT
DIMENSIONS:
3.42"(H) X 2.82"(W) X 1.25"(D)
(87mm X 72mm X 32mm)
LOCATION TBD



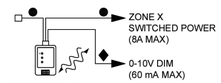
RMJS-5RCCO1-DV-B
POWPAK RELAY MODULE
120/277V~, 50/60 Hz
W/ (1) 5A RELAY &
CONTACT CLOSURE OUTPUT
DIMENSIONS:
3.42"(H) X 2.82"(W) X 1.25"(D)
(87mm X 72mm X 32mm)
LOCATION TBD



RMJS-16RCCO1-DV-B
POWPAK RELAY MODULE
120/277V~, 50/60 Hz
W/ (1) 16A RELAY
& (1) CONTACT CLOSURE OUTPUT
DIMENSIONS:
3.42"(H) X 2.82"(W) X 1.25"(D)
(87mm X 72mm X 32mm)
LOCATION TBD



RMJS-20RCCO1DV-B
POWPAK 20A RELAY MODULE
120/277V~, 50/60 Hz
CAPABLE OF SWITCHING GENERAL PURPOSE
LOADS & 20A RECEPTACLES,
W/ (1) CONTACT CLOSURE OUTPUT
*SHOWN WITH DUPLEX RECEPTACLE
**NOT INTENDED FOR CONTROL OF
PERMANENTLY INSTALLED LIGHTING FIXTURES
3.42"(H) X 2.82"(W) X 1.25"(D)
(87mm X 72mm X 32mm)
LOCATION TBD

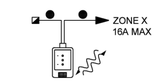


RMJS-8TN-DV-B
POWPAK DIMMING MODULE
120/277V~, 50/60 Hz
W/ 0-10 V CONTROL
DIMENSIONS:
3.42"(H) X 2.82"(W) X 1.25"(D)
(87mm X 72mm X 32mm)
LOCATION TBD

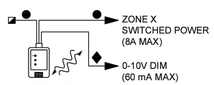
(1

TYPICAL EMERGENCY LOAD CONTROLS

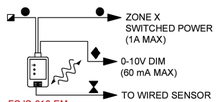
MAX OF 71' FROM VIVE HUB AND LOCATED ON SAME FLOOR



RMJS-16R-DV-B-EM
NORMAL/EMERGENCY POWPAK
RELAY MODULE
120/277V~, 50/60 Hz
W/ (1) 16A SOFTSWITCH RELAY
DIMENSIONS:
3.42"(H) X 2.82"(W) X 1.25"(D)
(87mm X 72mm X 32mm)
LOCATION TBD

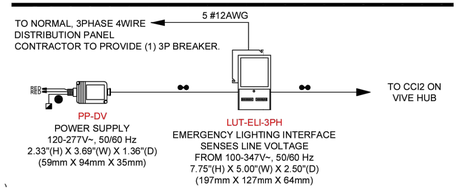


RMJS-8T-DV-B-EM
NORMAL/EMERGENCY POWPAK
DIMMING MODULE
120/277V~, 50/60 Hz
W/ 0-10 V CONTROL
DIMENSIONS:
3.42"(H) X 2.82"(W) X 1.25"(D)
(87mm X 72mm X 32mm)
LOCATION TBD



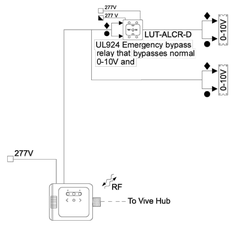
FCJS-010-EM
NORMAL/EMERGENCY POWPAK
WIRELESS FIXTURE CONTROL
120-277V~, 50/60 Hz
FOR 0-10 V CONTROL
DIMENSIONS:
3.42"(H) X 2.82"(W) X 1.25"(D)
(87mm X 72mm X 32mm)
LOCATION TBD

TYPICAL EMERGENCY LIGHTING INTERFACE

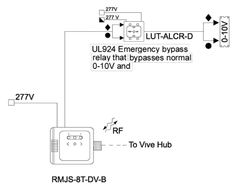


PP-DV
POWER SUPPLY
120-277V~, 50/60 Hz
2.33"(H) X 3.69"(W) X 1.36"(D)
(59mm X 94mm X 35mm)

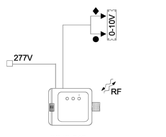
LUT-ELI-3PH
EMERGENCY LIGHTING INTERFACE
SENSES LINE VOLTAGE
FROM 100-347V~, 50/60 Hz
7.75"(H) X 5.00"(W) X 2.50"(D)
(197mm X 127mm X 64mm)



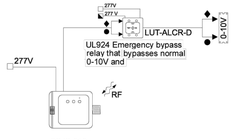
RMJS-8T-DV-B
PowPak 0-10 V
PowPak Dimming Module with
0-10 V Control.



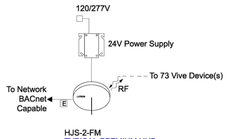
RMJS-8T-DV-B



FCJS-010
PowPak 0-10 V
PowPak wireless fixture control
that controls a single 0-10 V
fixture and can be wired to a
PowPak Fixture Sensor.



FCJS-010
PowPak 0-10 V
PowPak wireless fixture control
that controls a single 0-10 V
fixture and can be wired to a
PowPak Fixture Sensor.



HJS-2-FM
TYPICAL PREMIUM HUB
Hub
Premium Vive Hub, flush-mount adapter, and power supply

ONE-LINE

WIRE LEGEND

- QS CONTROL LINK (CONNECT WIRES 1, 2, 3 AND 4)*
- QS CONTROL LINK (CONNECT WIRES 1, 3 AND 4. DO NOT CONNECT WIRE 2)*
- PANEL CONTROL LINK (CONNECT WIRES 1, 2, 3, 4 AND 5)*
- PANEL CONTROL LINK (CONNECT WIRES 1, 2, 3 AND 4. DO NOT CONNECT WIRE #5)*
- PANEL CONTROL LINK (CONNECT WIRES 1, 3, 4 AND 5. DO NOT CONNECT WIRE #2)*
- QS SIVOIA SHADE CONTROL LINK*
- BELDEN CABLE 1387LA(OR EQUIVALENT)
- NORMAL INPUT POWER 2 #12 AWG (4 SQ MM) + GROUND
- NORMAL-EMERGENCY INPUT POWER 2 #12 AWG (4 SQ MM) + GROUND
- 3 PHASE 4 WIRE INPUT POWER, 4 #12 AWG (4 SQ MM) + GROUND
- 2 #12 AWG (4 SQ MM) + GROUND
- 3 #12 AWG (4 SQ MM) + GROUND
- 0-10 V SIGNAL: 2#18AWG (1.0 SQ MM)
- 2#18 AWG (1.0 SQ MM)
- 3#18 AWG (1.0 SQ MM)
- ECOSYSTEM BUS/LOOP*
- DALI LOOP
- T-SERIES TUNABLE-WHITE LOOP
- LUTRON SENSOR CABLE C-CBL-522S OR USE 4#22 AWG (1.0 SQ MM)
- LUTRON SENSOR CABLE C-CBL-522S OR USE 3#22 AWG (1.0 SQ MM)
- DMX CABLE. USE LUTRON GRX-CBL-DMX-250/GRX-CBL-DMX-500 OR BELDEN #9729 (NON-PLENUM) OR BELDEN #89729 (PLENUM) OR DURA FLEX 22/4 WA CABLE.
- ETHERNET CABLE. CAT5E OR BETTER CABLE FOR LUTRON NETWORK TERMINATED WITH RJ45 CONNECTORS (NOT PROVIDED BY LUTRON). 328 FT (100 M) MAXIMUM RUN.
- FIBER OPTIC CABLE FOR LUTRON NETWORK TERMINATED WITH APPROPRIATE FIBER OPTIC CONNECTORS (NOT PROVIDED BY LUTRON). REQUIRES DEDICATED FIBER OPTIC LINK (SINGLE-MODE OR MULTI-MODE)
- RF CONNECTION
- WIRED CONNECTION

LAMOUREUX PAGANO
ASSOCIATES|ARCHITECTS
108 Grove Street, Suite 300
Worcester MA 01605
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PROJECT

TUFTS at TECH Community Veterinary Clinic

Final Bid Package

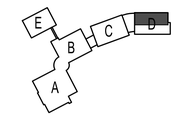
Tufts Vet Tech Clinic Renovation

Worcester Technical High School
1 Officer Manny Familia Way, Worcester, MA 01605

DRAWING TITLE

Lighting Control System Details

KEY PLAN



REVISIONS

No.	Description	Date

FILE:

JOB NO: 2417

SCALE: NTS

DWN. BY: TN

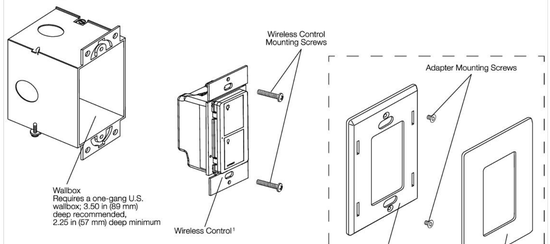
CKD. BY: ASR

DATE: March 11, 2026

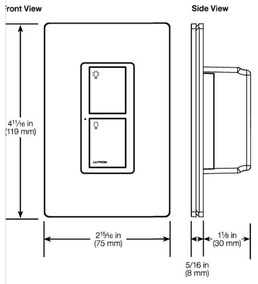
EL2.3

Copyright © LPA|A

Mounting



Dimensions



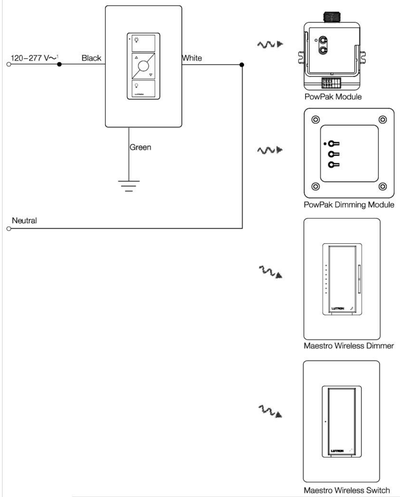
Pico Line-Powered Wireless Control

The Pico line-powered wireless control is a flexible and easy-to-use device that allows the user to control Lutron wireless load-control devices from anywhere line voltage power is present in the space. This control requires connection to line voltage for power, but needs no wires for communication.

Features

- Provides control for the following:
  - Vive systems and compatible controls, including:
    - Maestro Wireless controls
    - PowPak modules
    - Wireless fixture controls
    - Wireless receptacle controls
- Powered by line voltage – supports applications that may require compliance to 2023 NEC, 210.70
- Can provide wireless control of lighting devices within a range of 30 ft (9 m) through walls and 60 ft (18 m) line-of-sight.
- Control available in Gloss finishes.
- This product is TAA compliant.
- Wallplate adapter / wallplate purchased separately (Claro wallplate [CW-1] shown).

Wiring Diagram

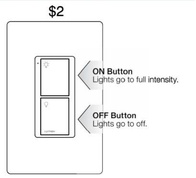


Product wires directly to line-voltage. It does not wire in series with a light fixture, on/off switch, or dimmer.

Operation

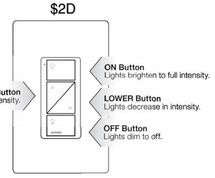
2 Button Controls (2B)

Lights Models: **L01**



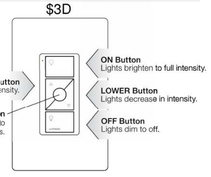
2 Button Controls with Raise/Lower (2BRL)

Lights Model: **L01**



3 Button Controls with Raise/Lower (3BRL)

Lights Models: **L01**



Pico Line-Powered Wireless Control Model Number

PJL – XXXX – XXX – XXX

Button Marking Code (next page)

Frequency/Channel Code*

Code	Frequency Range
J	431.0 – 437.0 MHz

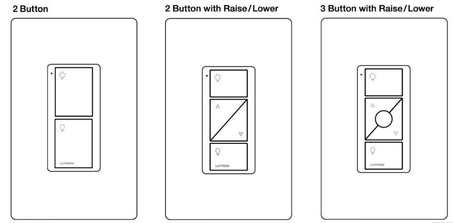
For questions about frequency/channel code compatibility, contact your local Lutron sales office or visit us at www.lutron.com

Button Configuration Codes

Code	Button Configuration
2B	2 Button
2BRL	2 Button with Raise/Lower
3BRL	3 Button with Raise/Lower

Color/Finish Codes

Color	Finish
	Gloss
White	GWH
Black	GBL
Ivory	GIV
Light Almond	GLA



Application Note #628

Emergency Lighting and Optional Fire Alarm Integration using a Vive Hub and Emergency PowPak Modules

Note: The system will respond identically whether the signal comes from a fire alarm system or from the loss of normal power.

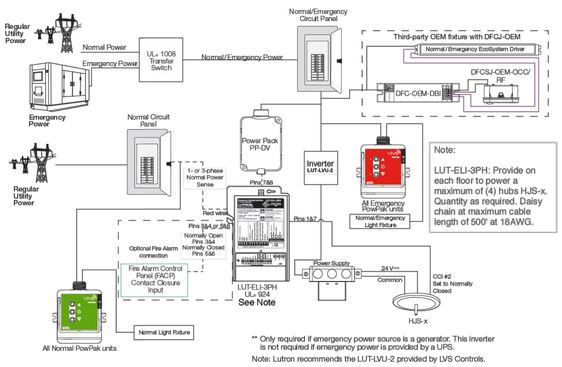
If emergency power source is a generator, an inverter must be added to supply power to the Vive hub. Hub cannot lose power during transfer from normal to emergency. If emergency power source is a UPS and thus will not experience a dropout of power between utility and inverter power, no additional inverter on the Vive hub is required.

In this application, the Vive hub, Vive integral fixture controllers designated as emergency and emergency PowPak modules are powered by normal and emergency power. The LUT-ELI-3PH is powered by normal and emergency power, and senses normal power. During regular operation, the Automatic Transfer Switch is in the Normal position, allowing regular utility power to the Vive hub, Vive integral fixture controllers designated as emergency, emergency PowPak modules and LUT-ELI-3PH.

During emergency operation, the Automatic Transfer Switch is in the Emergency position, allowing emergency backup power to power the device. As a result, the LUT-ELI-3PH senses the loss of normal power and will open the contact closure input (CCI2) on the Vive hub. The Vive hub will send the Vive integral fixture controllers designated as emergency and emergency PowPak modules to their emergency lighting level until the LUT-ELI-3PH senses normal power and re-makes the contact with CCI2 on the Vive hub. The Vive hub will then release the Vive integral fixture controllers designated as emergency and emergency PowPak modules to their normal operation.

During fire alarm operation, normal power may still be present. The Fire Alarm Control Panel will set a contact on the LUT-ELI-3PH which will cause the LUT-ELI-3PH to open the contact closure input (CCI2) on the Vive hub. The Vive hub will send the Vive integral fixture controllers designated as emergency and emergency PowPak modules to their emergency lighting level. When the FACP contact is cleared, the LUT-ELI-3PH will re-make the contact with CCI2 on the Vive hub. The Vive hub will then release the Vive integral fixture controllers designated as emergency and emergency PowPak modules to their normal operation.

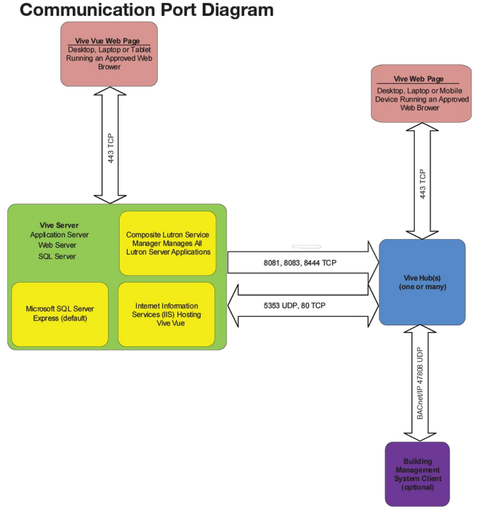
Wiring Schematic



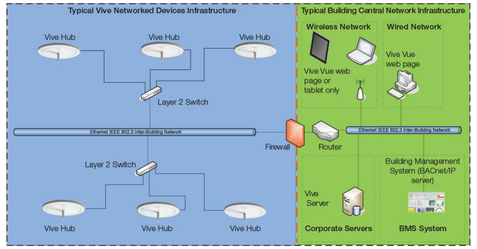
** Only required if emergency power source is a generator. This inverter is not required if emergency power is provided by a UPS.

Note: Lutron recommends the LUT-LVU-2 provided by LVS Controls.

Communication Port Diagram



Typical System Network Diagram



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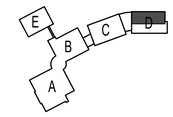
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Worcester Technical High School
1 Officer Manny Familia Way, Worcester, MA 01605

DRAWING TITLE

Lighting Control System Details

KEY PLAN



REVISIONS

No.	Description	Date

FILE:

JOB NO: 2417

SCALE: NTS

DWN. BY: TN

CKD. BY: ASR

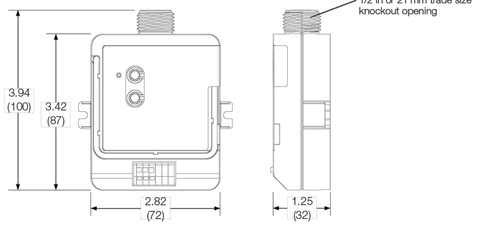
DATE: March 11, 2026

EL2.4

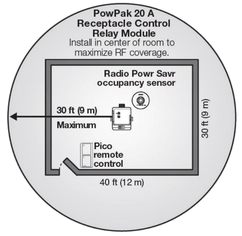
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Dimensions

Dimensions are shown as: in (mm)

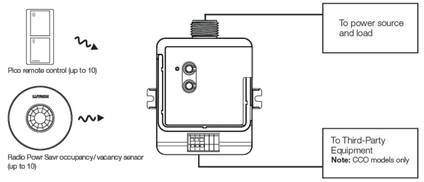


Range Diagrams

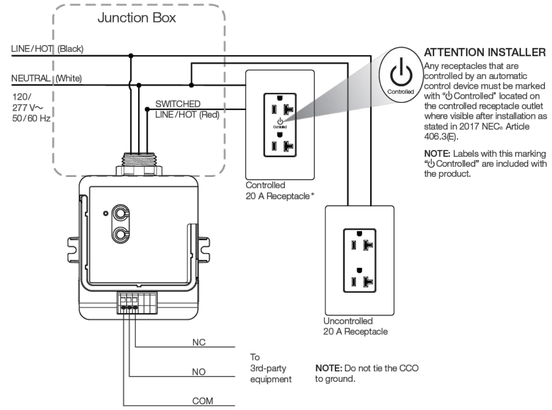


NOTE: Wireless sensors and controls must be located within 60 ft (18 m) line of sight, or 30 ft (9 m), through walls, of the associated control module. The 60 ft (18 m) range is not reduced by a ceiling tile obstruction.

System Diagram

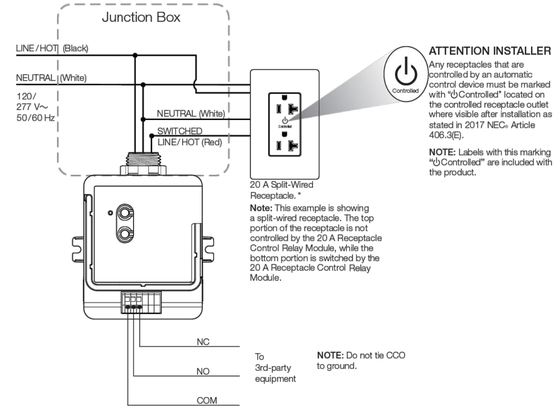


Wiring Diagram - for Duplex Receptacle



NOTE: Some applications (in USA) require the PowPak 20 A Receptacle Control Relay Module to be installed inside an additional junction box. For information about how to perform this installation, please see Application Note #423 (P/N 048423) at www.lutron.com Please consult all local and national electric codes for proper installation methods.

Wiring Diagram - for Split-Wired Duplex Receptacle



NOTE: Some applications (in USA) require the PowPak 20 A Receptacle Control Relay Module to be installed inside an additional junction box. For information about how to perform this installation, please see Application Note #423 (P/N 048423) at www.lutron.com Please consult all local and national electric codes for proper installation methods.

Vive Wireless Hub

The Vive hub provides a connection point for Lutron Vive devices such as PowPak wireless dimming and switching modules, PowPak Wireless Fixture Controllers, PowPak 20 A Relay Modules, Maestro Wireless dimmers and switches, Wireless Receptacle controls, Pico remote controls, Radio Powr Savr occupancy sensors, and daylight sensors. For a complete list of compatible devices, see the last page of this document.

For more information on the Vive hub, including training materials, design information and software updates, please visit www.lutron.com/vive


Vive Hub

Features

Can be easily programmed with any Wi-Fi enabled iOS® or Android® compatible device using the free Lutron Vive app (available for download from the *App Store* or Google Play®) or by using web-based software.

iOS® and Android® Apps – Helper apps act as an intermediary between Vive systems and the Lutron Cloud without the need of a permanent internet connection. It connects to hubs when on-site and passes data back and forth when the smart device reconnects to the Internet. Visit www.lutron.com/VivePrivacyNotice for more about this data.

– Registration of jobs/users for extended warranty.
– Manage multiple jobs with contacts and job info.
– Invite facility users to have access to hubs/job.
– Automatically send handoff documentation personalized to your firm to facility management team. Including programming user guide, online "How-to" videos, and support number.
– Connection to hub browser user interface for setup. Normal web browser still works and the app is not required.
– Connection to hub browser dashboard for control and monitor. Normal web browser still works and the app is not required.
– Backup the database to the Lutron Cloud for hub replacement.
– Download reports that list the inventory of hubs and devices commissioned in your job.

Communicates with controls on a floor using Lutron wireless Clear Connect technology.

Distributed system architecture.

– Wireless sensors and controls must be located within 60 ft (18 m) line of sight, or 30 ft (9 m) through walls, of the associated device.

- Supports timeclock events based on both sunrise and sunset or fixed time-of-day.
- Timeclock events can control individual devices, areas, or groups of areas.
  – Note: This feature is not available once a hub is paired with a Vive Vue server.
- Uses Lutron RF signal strength measurements to find devices nearby for quick association and programming without having to climb ladders.
- Dashboard of current status for control and monitoring of the system. Also shows current energy usage.
- Integrated multi-color LED provides feedback on what mode the hub is in.
- Connects directly to any smartphone, tablet or computer using built in Wi-Fi. 2.4 GHz 802.11b/g. using WPA2 Security.
- Each hub presents a dashboard of devices and areas which it controls.
- If all the hubs on a job are networked using Ethernet, you can easily navigate from one hub to another to view its dashboard.

Range Diagrams

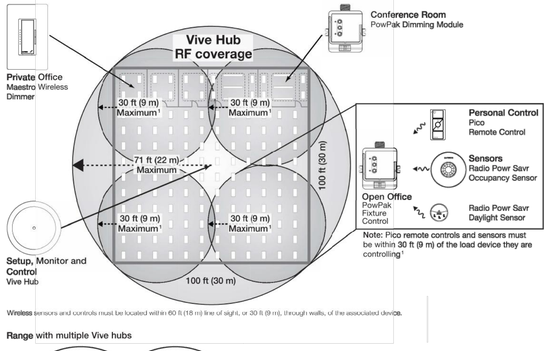
All wireless devices to be associated to the Vive hub must be within 71 ft (22 m) of the Vive hub and must be on the same floor as the Vive hub.

Note: Vive hubs should be mounted greater than 10 ft (3 m) apart on the same floor.

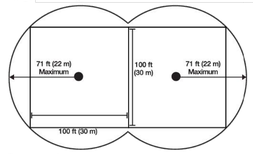
Note: A corporate Wi-Fi network can interfere with the Wi-Fi on the Vive hub. Where a corporate Wi-Fi network exists, it is recommended to do the following:

Connect the Vive hub to the corporate network using the Ethernet connection on the hub and disable Wi-Fi on the hub.

Note: Vive hubs should be mounted greater than 10 ft (3 m) from a Wi-Fi router or access point.

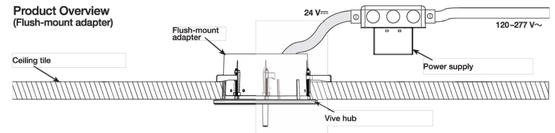


Range with multiple Vive hubs



Wiring

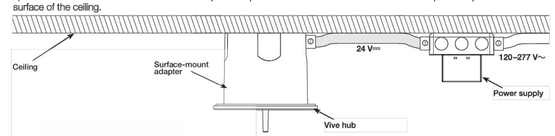
Product Overview (Flush-mount adapter)



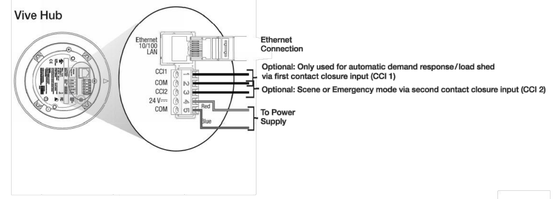
See Lutron Application Note #628 (P/N 048628) at www.lutron.com for information on wiring Emergency Lighting with a Vive System.

Product Overview (Surface-mount adapter)

Note: For Chicago plenum space applications the power supply has a metal enclosure and can be mounted in the plenum space. The Vive hub cannot be mounted in the plenum space and needs to be mounted outside the plenum space on the surface of the ceiling.



Vive Hub



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Final Bid Package

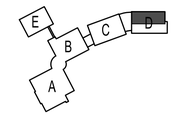
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Worcester Technical High School
1 Officer Manny Familia Way, Worcester, MA 01605

DRAWING TITLE

Lighting Control System Details

KEY PLAN



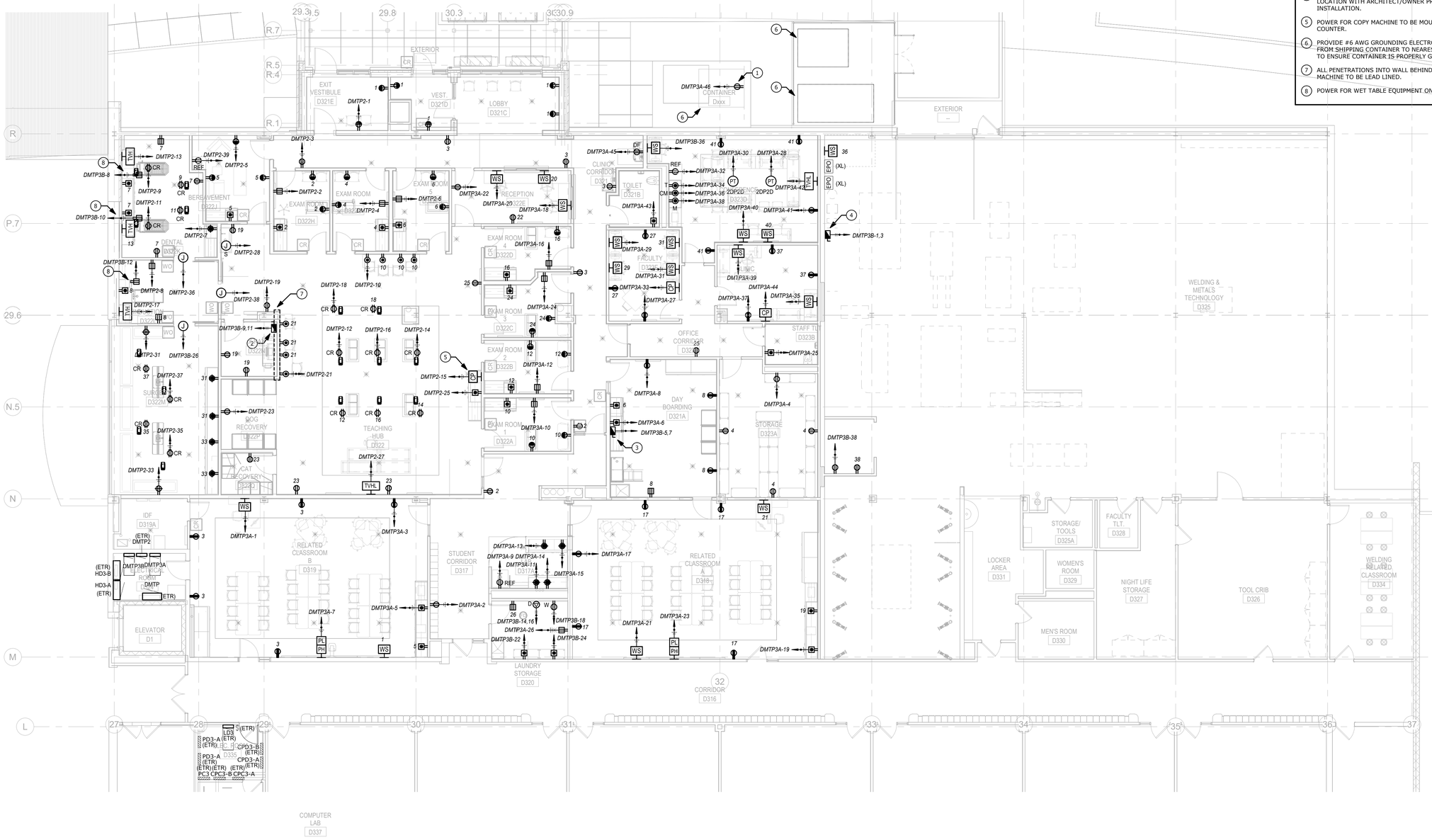
REVISIONS

No.	Description	Date

FILE:	
JOB NO:	2417
SCALE:	NTS
DWN. BY:	TN
CKD. BY:	ASR
DATE:	March 11, 2026

EL2.5

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1 Power Plan
1/8" = 1'-0"

GENERAL NOTE FOR EP1.1

1. WIRING FOR DEVICES MOUNTED ON EXISTING WALL SHALL RUN CONCEALED IN EXISTING WALL. FISH WIRING THROUGH EXISTING WALL CAVITY.
2. CONNECTIONS TO THE EQUIPMENT LISTED IN KEYED NOTES SHALL BE PERFORMED BY ELECTRICAL CONTRACTOR. REFER TO DRAWING A11.2 FOR EQUIPMENT INFORMATION.

KEYED NOTES FOR EP1.1

1. POWER FOR FREEZER CHEST IN CONTAINER STORAGE. RUN UNDERGROUND CONNECTION FROM BUILDING TO SHIPPING CONTAINER. REFER TO DETAIL 1 ON DRAWING EP4.6.
2. POWER FOR RADIOGRAPHY SYSTEM.
3. POWER FOR AUTOCLAVE MACHINE.
4. POWER FOR PLASMA CUTTER. COORDINATE EXACT LOCATION WITH ARCHITECT/OWNER PRIOR TO INSTALLATION.
5. POWER FOR COPY MACHINE TO BE MOUNTED ABOVE COUNTER.
6. PROVIDE #6 AWG GROUNDING ELECTRODE CONDUCTOR FROM SHIPPING CONTAINER TO NEAREST EARTH GROUND TO ENSURE CONTAINER IS PROPERLY GROUNDED.
7. ALL PENETRATIONS INTO WALL BEHIND RADIOGRAPHY MACHINE TO BE LEAD LINED.
8. POWER FOR WET TABLE EQUIPMENT ON CASEWORK PANEL.

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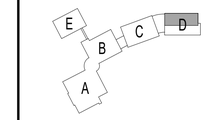
Tufts Vet Tech Clinic Renovation

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DRAWING TITLE

New Floor Power Plan

KEY PLAN



REVISIONS

No.	Description	Date

FILE:	
JOB NO:	2417
SCALE:	1/8" = 1'-0"
DWN. BY:	TN
CKD. BY:	ASR
DATE:	March 11, 2026

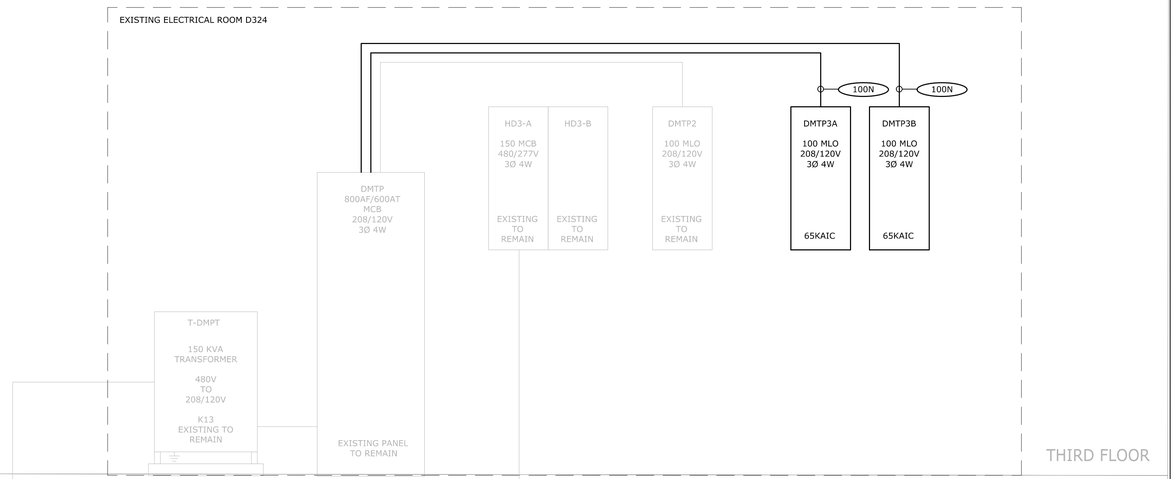
EP1.1

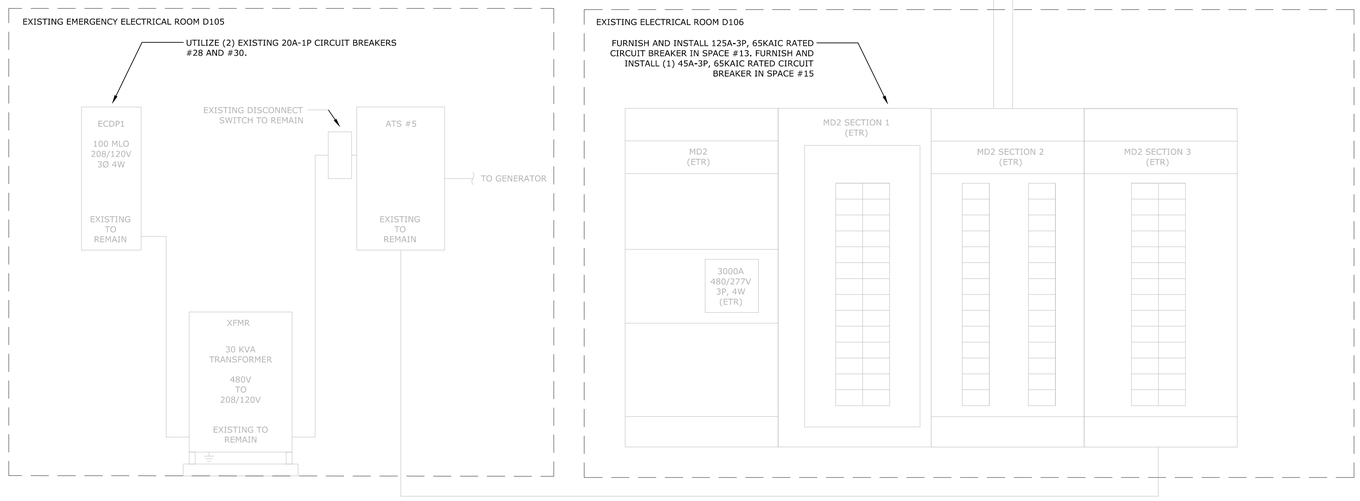
Project / True North

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FEEDER SCHEDULE - COPPER

FEEDER SYMBOL	COPPER CONDUCTORS	CONDUIT	NOMINAL AMPERE RATING
100N	4-1 AWG & 1-6 AWG GND	1-1/2"	100





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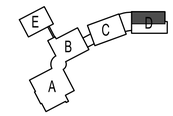
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Worcester Technical High School
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DRAWING TITLE

Electrical Distribution Riser

KEY PLAN



REVISIONS

No.	Description	Date

FILE:

JOB NO: 2417

SCALE: NTS

DWN. BY: TN

CKD. BY: ASR

DATE: March 11, 2026

EP2.1

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Panel: DMTP

EXISTING TO REMAIN

Location: ELECTRICAL ROOM D324
Mounting: Surface
Supply From:

Volts: 120/208 3PH
Phases: 3
Wires: 4
Calc. AIC: UTILITY
Rated AIC:

Mains Type: MCB
Bus Amps: 600
Trip Size: 600
Lugs: Standard

#	Circuit Description	Type	Wire	Trip	Poles	A		B		C		Poles	Trip	Wire	Type	Circuit Description	#
1						0 VA	--										2
3	(ETR) BUS DUCT C	--	--	100 A	3			0 VA	--			3	--	--	--	(ETR) SPACE	4
5										0 VA	--						6
7						0 VA	0 VA										8
9	(ETR) BUS DUCT F	--	--	100 A	3			0 VA	0 VA			3	100 A	--	--	(ETR) BUS DUCT D	10
11										0 VA	0 VA						12
13						0 VA	0 VA										14
15	(ETR) BUS DUCT E	--	--	100 A	3			0 VA	0 VA			3	100 A	--	--	(ETR) BUS DUCT A	16
17										0 VA	0 VA						18
19						0 VA	0 VA										20
21	(ETR) PANEL DMTP2	--	--	100 A	3			0 VA	0 VA			3	100 A	--	--	(ETR) BUS DUCT	22
23										0 VA	0 VA						24
25	FC - 1, FC - 2, FC - 15		#12	20 A	2	258 VA	141 VA					2	20 A	#12		FC-17, FC-4, FC-3	26
27								258 VA	141 VA								28
29	VAVs		#12	20 A	1					498 VA	24 VA	1	20 A	#12		CEX-1, CEX-1	30
31	EVAV-1		#12	20 A	1	252 VA	62 VA					1	20 A	#12		RP-1	32
33	(ETR) SPARE	--	--	20 A	1			0 VA	0 VA			1	20 A	--	--	(ETR) SPARE	34
35	(ETR) SPARE	--	--	20 A	1					0 VA	0 VA	1	20 A	--	--	(ETR) SPARE	36
37	(ETR) SPACE	--	--	--	1	--	--					1	--	--	--	(ETR) SPACE	38
39	(ETR) SPACE	--	--	--	1			--	--			1	--	--	--	(ETR) SPACE	40
41	(ETR) SPACE	--	--	--	1					--	--	1	--	--	--	(ETR) SPACE	42
43	(ETR) SPACE	--	--	--	1	--	9064 VA										44
45								9060 VA	8422 VA			3	100 A	#1		DMTP3B	46
47	DMTP3A (N)		#1	100 A	3					9660 VA	3083 VA						48
49						8220 VA	--										50
51								0 VA	--			3	--	--	--	(ETR) SPACE	52
53	(ETR) PANEL SMSW	--	--	200 A	3					0 VA	--						54
55						0 VA	--										56
57	MAIN BREAKER	--	--	--	2			--	--			3	--	--	--	(ETR) SPACE	58
59										--	--						60
61						0 VA	--										62
63	MAIN BREAKER	--	--	600 A	3			0 VA	--			3	--	--	--	(ETR) SPACE	64
65										0 VA	--						66
					Total Load:	17997 VA		17881 VA		13265 VA							

Notes:

1. (ETR) - DENOTES EXISTING CIRCUIT BREAKER TO REMAIN.
2. (N) - DENOTES NEW BREAKER.

Panel Totals	
Total Conn. Load:	49144 VA
Total Est. Demand:	37319 VA
Total Conn.:	136 A
Total Est. Demand:	104 A

Panel: DMTP2

EXISTING TO REMAIN

Location: ELECTRICAL ROOM D324
Mounting: Surface
Supply From:

Volts: 120/208 3PH
Phases: 3
Wires: 4

Mains Type: MLO
Bus Amps: 100
Trip Size: MLO
Lugs: Standard

#	Circuit Description	Type	Wire	Trip	Poles	Poles	Trip	Wire	Type	Circuit Description	#
1	RECEPTACLE D321E, D321D, D321C		#12	20 A	1	1	20 A	#12		RECEPTACLE EXAM RM 7, D322H	2
3	RECEPTACLE CORRIDOR D321		#12	20 A	1	1	20 A	#12		RECEPTACLE EXAM RM 6, D322G	4
5	RECEPTACLE BEREAVEMENT D322J		#12	20 A	1	1	20 A	#12		RECEPTACLE EXAM RM 5, D322E	6
7	RECEPTACLE DENTAL D322K		#12	20 A	1	1	20 A	#12		RECEPTACLE D322L	8
9	CORD REEL DENTAL D322K		#12	20 A	1	1	20 A	#12		RECEPTACLE D322	10
11	CORD REEL DENTAL D322K		#12	20 A	1	1	20 A	#12		CORD REEL D322	12
13	TVH D322K		#12	20 A	1	1	20 A	#12		CORD REEL D322	14
15	COPY MACHINE RECEPTACLE D322		#12	20 A	1	1	20 A	#12		CORD REEL D322	16
17	TVH D322L		#12	20 A	1	1	20 A	#12		CORD REEL D322	18
19	RECEPTACLE D322		#12	20 A	1	1	20 A	--	--	(ETR) OVERHEAD DOOR	20
21	RECEPTACLE D322		#12	20 A	1	2	20 A	--	--	(ETR) TOILET HAND DRYERS D319, 320	22
23	RECEPTACLE D322P, D322Q, D322		#12	20 A	1						24
25	RECEPTACLE D322		#12	20 A	1	1	20 A	--	--	(ETR) TOILET TRANSFORMERS	26
27	TVH 322		#12	20 A	1	1	20 A	#12		APPLIANCE D322	28
29	(ETR) CUH6 VEST D300	--	--	20 A	1	2	20 A	--	--	(ETR) TOILET HAND DRYERS D322	30
31	RECEPTACLE D322M		#12	20 A	1						32
33	RECEPTACLE D322M		#12	20 A	1	1	20 A	--	--	(ETR) GARAGE DOOR	34
35	CORD REEL D322M		#12	20 A	1	1	20 A	#12		POWER FOR SLIDING DOOR	36
37	CORD REEL D322M		#12	20 A	1	1	20 A	#12		POWER FOR SLIDING DOOR	38
39	REFRIGERATOR - D322J	GFCI	#12	20 A	1	1	20 A	--	--	(ETR) PROVISIONS FOR FUTURE	40
41	(ETR) SHUNT TRIP	--	--	20 A	1	1	20 A	--	--	(ETR) PROVISIONS FOR FUTURE	42

Notes:

1. (ETR) - DENOTES EXISTING CIRCUIT BREAKER TO REMAIN.

Panel: DMTP3A

Location: ELECTRICAL ROOM D324
Mounting: Surface
Supply From: DMTP

Volts: 120/208 3PH
Phases: 3
Wires: 4
Calc. AIC: 50,380
Rated AIC: 65,000

Mains Type: MLO
Bus Amps: 100
Trip Size: MLO
Lugs: Standard

#	Circuit Description	Type	Wire	Trip	Poles	A		B		C		Poles	Trip	Wire	Type	Circuit Description	#
1	WORKSTATION RECEPTACLE D319	GFCI	#12	20 A	1	1080 VA	540 VA					1	20 A	#12		RECEPTACLE CORRIDOR D317, CORRIDOR...	2
3	RECEPTACLE D319	GFCI	#12	20 A	1			900 VA	720 VA			1	20 A	#12		RECEPTACLE STORAGE D323A	4
5	RECEPTACLE D319		#12	20 A	1					360 VA	360 VA	1	20 A	#12		RECEPTACLE D321A	6
7	PH/PL RECEPTACLE D319	GFCI	#12	20 A	1	540 VA	720 VA					1	20 A	#12		RECEPTACLE D321A	8
9	REFRIGERATOR - GFCI BREAKER D317A	GFCI	#12	20 A	1			480 VA	720 VA			1	20 A	#12		RECEPTACLE EXAM RM 1, D322A	10
11	RECEPTACLE D317A	GFCI	#12	20 A	1					360 VA	720 VA	1	20 A	#12		RECEPTACLE EXAM RM 2, D322B	12
13	RECEPTACLE D317A	GFCI	#12	20 A	1	360 VA	360 VA					1	20 A	#12	GFCI	RECEPTACLE D317A	14
15	RECEPTACLE D317A	GFCI	#12	20 A	1			360 VA	540 VA			1	20 A	#12		RECEPTACLE EXAM RM 4, D322D	16
17	RECEPTACLE D318	GFCI	#12	20 A	1					900 VA	540 VA	1	20 A	#12		WORKSTATION RECEPTACLE D322E	18
19	RECEPTACLE D318		#12	20 A	1	360 VA	1080 VA					1	20 A	#12		WORKSTATION RECEPTACLE D322E	20
21	WORKSTATION RECEPTACLE D318	GFCI	#12	20 A	1			1080 VA	360 VA			1	20 A	#12		RECEPTACLE D322E	22
23	PH/PL RECEPTACLE D318	GFCI	#12	20 A	1					540 VA	720 VA	1	20 A	#12		RECEPTACLE EXAM RM 3, D322C	24
25	RECEPTACLE CORRIDOR D323, TOILET S....		#12	20 A	1	360 VA	360 VA					1	20 A	#12		RECEPTACLE D320	26
27	RECEPTACLE FACULTY D323E		#12	20 A	1			540 VA	360 VA			1	20 A	#12		POKE THRU D323D	28
29	WORKSTATION RECEPTACLE D323E		#12	20 A	1					1080 VA	360 VA	1	20 A	#12		POKE THRU D323D	30
31	WORKSTATION RECEPTACLE D323E		#12	20 A	1	1080 VA	480 VA					1	20 A	#12	GFCI	REFRIGERATOR - GFCI BREAKER D323D	32
33	RECEPTACLE COPY MACHINE D323E		#12	20 A	1			540 VA	480 VA			1	20 A	#12	GFCI	COFFEE MAKER - GFCI BREAKER D323D	34
35	WORKSTATION RECEPTACLE D323C		#12	20 A	1					540 VA	480 VA	1	20 A	#12	GFCI	COFFEE MAKER - GFCI BREAKER D323D	36
37	RECEPTACLE D323C		#12	20 A	1	540 VA	480 VA					1	20 A	#12	GFCI	MICROWAVE - GFCI BREAKER D323D	38
39	WORKSTATION RECEPTACLED D323C		#12	20 A	1			540 VA	1080 VA			1	20 A	#12		RECEPTACLE D323D	40
41	RECEPTACLE D323D		#12	20 A	1					720 VA	540 VA	1	20 A	#12		TVH D323D	42
43	RECEPTACLE TOILET D321B		#12	20 A	1	180 VA	540 VA					1	20 A	#12		COPY MACHINE - D323C	44
45	DRINKING FOUNTAIN, CORRIDOR D321		#12	20 A	1			480 VA	480 VA			1	20 A	#12	GFCI	FREEZER - GFCI BREAKER	46
47	Spare	--	--	20 A	1					0 VA	0 VA	1	20 A	--	--	Spare	48
49	Spare	--	--	20 A	1	0 VA	0 VA					1	20 A	--	--	Spare	50
51	Spare	--	--	20 A	1			0 VA	0 VA			1	20 A	--	--	Spare	52
53	Spare	--	--	20 A	1					0 VA	0 VA	1	20 A	--	--	Spare	54
					Total Load:	9060 VA		9660 VA		8220 VA							

Notes:

Panel Totals	
Total Conn. Load:	26940 VA
Total Est. Demand:	20150 VA
Total Conn.:	75 A
Total Est. Demand:	56 A

Panel: DMTP3B

Location: ELECTRICAL ROOM D324
Mounting: Surface
Supply From: DMTP

Volts: 120/208 3PH
Phases: 3
Wires: 4
Calc. AIC: 46,593
Rated AIC: 65,000

Mains Type: MLO
Bus Amps: 100
Trip Size: MLO
Lugs: Standard

#	Circuit Description	Type	Wire	Trip	Poles	A		B		C		Poles	Trip	Wire	Type	Circuit Description	#
1	PLASMA CUTTER D325		#12	20 A	2	0 VA	2800 VA					1	30 A	#10		POWER FOR TUFTS DATA CABINET	2
3								0 VA	2800 VA			1	30 A	#10		POWER FOR TUFTS DATA CABINET	4
5	AUTOCLAVE MACHINE D321A		#12	20 A	2					0 VA	0 VA	1	20 A	#12		POWER FOR ACCESS CONTROL D139A	6
7						0 VA	180 VA					1	20 A	#12		POWER FOR WET TABLE	8
9	RADIOGRAPHY SYSTEM		#12	20 A	2			0 VA	180 VA			1	20 A	#12		POWER FOR WET TABLE	10
11										0 VA	180 VA	1	20 A	#12		POWER FOR WET TABLE	12
13	POWER FOR HP-1		#12	20 A	2	1647 VA	2496 VA					2	30 A	#10	GFCI	DRYER (208V-30A/2P)- GFCI BREAKER	14
15								1647 VA	2496 VA								16
17	BS-1		#12	20 A	2					158 VA	480 VA	1	20 A	#12	GFCI	WASHER - GFCI BREAKER	18
19						158 VA	360 VA					1	20 A	#12		RECEPTACLE LAUNDRY STORAGE D320	20
21	BS-2		#12	20 A	2			158 VA	180 VA			1	20 A	#12		RECEPTACLE LAUNDRY STORAGE D320	22
23										158 VA	180 VA	1	20 A	#12		RECEPTACLE LAUNDRY STORAGE D320	24
25	FC-6, FC-5		#12	20 A	2	141 VA	0 VA					1	20 A	#12		POWER FOR SLIDING DOOR	26
27								141 VA	360 VA			1	20 A	#12		SPEECH REINFORCEMENT D318, D319	28
29	FC-7, FC-8, FC-9		#12	20 A	2					75 VA	36 VA	1	20 A	#12		LIGHTING CONTAINER STORAGE	30
31						75 VA	18 VA					1	20 A	#12		MEDICAL LIGHT SURGERY D322M	32
33	FC-12, FC-13, FC-14		#12	20 A	2			175 VA	18 VA			1	20 A	#12		MEDICAL LIGHT DENTAL D322K	34
35										175 VA	1080 VA	1	20 A	#12		WORKSTATION D323D & WELDING SHOP	36
37	FC-16, FC-10, FC-11		#12	20 A	2	266 VA	360 VA					1	20 A	#12		RECEPTACLE WELDING SHOP	38
39								266 VA	0 VA			1	20 A	--	--	Spare	40
41	SF-1		#12	20 A	2					562 VA	0 VA	2	20 A	--	--	Spare	42
43						562 VA	0 VA										44
45	Spare	--	--	20 A	2			0 VA	0 VA			2	20 A	--	--	Spare	46
47										0 VA	0 VA						48
49	Spare	--	--	20 A	1	0 VA	0 VA					2	20 A	--	--	Spare	50
51	Spare	--	--	20 A	1			0 VA	0 VA								52
53	Spare	--	--	20 A	1					0 VA	0 VA	1	20 A	--	--	Spare	54
					Total Load:	9064 VA		8422 VA		3083 VA							

Notes:

Panel Totals	
Total Conn. Load:	20569 VA
Total Est. Demand:	20174 VA
Total Conn.:	57 A
Total Est. Demand:	56 A

Project / True North

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LAMOUREUX PAGANO ASSOCIATES|ARCHITECTS
108 Grove Street, Suite 300
Worcester MA 01605
508.752.2831
www.lpaa.com

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PROJECT

TUFTS at TECH Community Veterinary Clinic

Final Bid Package

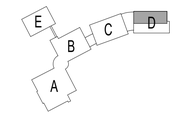
Tufts Vet Tech Clinic Renovation

Worcester Technical High School
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DRAWING TITLE

Electrical Panel Schedules

KEY PLAN



REVISIONS

No.	Description	Date

FILE:
JOB NO: 2417
SCALE:
DWN. BY: TN
CKD. BY: ASR
DATE: March 11, 2026

EP3.1

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Panel: ECDP1

EXISTING TO REMAIN

Location: EMERGENCY ELECTRIC D105
Mounting: Surface
Supply From: ATS #5

Volts: 120/208 3PH
Phases: 3
Wires: 4

Mains Type: MLO
Bus Amps: 100
Trip Size: MLO
Lugs: Standard

#	Circuit Description	Type	Wire	Trip	Poles	Poles	Trip	Wire	Type	Circuit Description	#
1	(ETR) UNIT HEATERS IN SHOPS	--	--	20 A	1	1	20 A	--	--	(ETR) UNIT HEATERS IN SHOPS 3RD FLR C	2
3	(ETR) UNIT HEATERS IN BLDG D	--	--	20 A	1	1	20 A	--	--	(ETR) UNIT HEATERS IN BLDG D	4
5	(ETR) AUTO IN BLDG D	--	--	20 A	1	1	20 A	--	--	(ETR) ELECT RM RECS	6
7	(ETR) RM106 REC	--	--	20 A	1	1	20 A	--	--	(ETR) ELECT RM RECS	8
9	(ETR) ELEC RM RECS	--	--	20 A	1	1	20 A	--	--	(ETR) EMERG ELEC RM RECS	10
11	(ETR) EMERG ELEC RM RECS	--	--	20 A	1	1	20 A	--	--	(ETR) CIRCULATOR CP "C"	12
13	(ETR) GWH-1D	--	--	20 A	1	1	20 A	--	--	(ETR) SPARE	14
15	(ETR) PUH-3	--	--	20 A	1	1	20 A	--	--	(ETR) CARBON MONOXIDE SYSTEM	16
17	(ETR) PUMP D	--	--	20 A	1	1	20 A	--	--	(ETR) SPARE	18
19	(ETR) SPARE	--	--	20 A	1	1	20 A	--	--	(ETR) SPARE	20
21						1	20 A	--	--	(ETR) PHONE AUTO	22
23	(ETR) PANEL ECDP4 AND IDF D101A	--	--	50 A	3	1	20 A	--	--	(ETR) CAB	24
25						1	20 A	--	--	(ETR) PIT LIGHT/POWER	26
27	(ETR) PUH-3 3RD FLR D	--	--	20 A	1	1	20 A	#12		POWER FOR DOOR OPERATOR	28
29	(ETR) HOLDS DOOR	--	--	20 A	1	1	20 A	#12		POWER FOR ACCESS CONTROL D139A	30
31	(ETR) SPARE	--	--	20 A	1	1	20 A	--	--	(ETR) SPARE	32
33	(ETR) SPAE	--	--	20 A	1	1	20 A	--	--	(ETR) SPARE	34
35	(ETR) FIRE ALARM	--	--	20 A	1	1	20 A	--	--	(ETR) SPARE	36
37	(ETR) SPACE PROVISION FOR FUTURE	--	--	--	1	1	--	--	--	(ETR) SPACE PROVISION FOR FUTURE	38
39	(ETR) SPACE PROVISION FOR FUTURE	--	--	--	1	1	--	--	--	(ETR) SPACE PROVISION FOR FUTURE	40
41	(ETR) SPACE PROVISION FOR FUTURE	--	--	--	1	1	--	--	--	(ETR) SPACE PROVISION FOR FUTURE	42
43	(ETR) EXISTING	--	--	20 A	1	1	--	--	--	(ETR) SPACE	44
45	(ETR) EXISTING	--	--	20 A	1	1	--	--	--	(ETR) SPACE	46
47	(ETR) EXISTING	--	--	20 A	1	1	--	--	--	(ETR) SPACE	48
49						1	--	--	--	(ETR) SPACE	50
51	(ETR) MAIN BREAKER	--	--	100 A	3	1	--	--	--	(ETR) SPACE	52
53						1	--	--	--	(ETR) SPACE	54

Notes:

1. (ETR) - DENOTES EXISTING CIRCUIT BREAKER TO REMAIN.

Panel: HD3-B

EXISTING TO REMAIN

Location: ELECTRICAL ROOM D324
Mounting: Surface
Supply From:

Volts: 480/277 3PH
Phases: 3
Wires: 4

Mains Type: MLO
Bus Amps: 150
Trip Size: MLO
Lugs: Feed Through

#	Circuit Description	Type	Wire	Trip	Poles	Poles	Trip	Wire	Type	Circuit Description	#
1											2
3	(ETR) DISCONNECT #1	--	--	60 A	3	3	60 A	--	--	(ETR) DISCONNECT #2	4
5											6
7						1	20 A	#12		ECH-1	8
9	(ETR) 480 VOLT OUTLET	--	--	30 A	3	1	20 A	#12		ECH-1	10
11											12
13						3	20 A	#12		ACHP-2	14
15	ACHP-1		#10	25 A	3						16
17						1	--	--	--	(ETR) SPACE	18
19	Space	--	--	--	1	1	--	--	--	(ETR) SPACE	20
21	Space	--	--	--	1	1	--	--	--	(ETR) SPACE	22
23	Space	--	--	--	1	1	--	--	--	(ETR) SPACE	24
25	(ETR) SPACE	--	--	--	1	1	--	--	--	(ETR) SPACE	26
27	(ETR) SPACE	--	--	--	1	1	--	--	--	(ETR) SPACE	28
29	(ETR) SPACE	--	--	--	1	1	--	--	--	(ETR) SPACE	30
31	(ETR) SPACE	--	--	--	1	1	--	--	--	(ETR) SPACE	32
33	(ETR) SPACE	--	--	--	1	1	--	--	--	(ETR) SPACE	34
35	(ETR) SPACE	--	--	--	1	1	--	--	--	(ETR) SPACE	36
37	(ETR) SPACE	--	--	--	1	1	--	--	--	(ETR) SPACE	38
39	(ETR) SPACE	--	--	--	1	1	--	--	--	(ETR) SPACE	40
41	(ETR) SPACE	--	--	--	1	1	--	--	--	(ETR) SPACE	42

Notes:

1. (ETR) - DENOTES EXISTING CIRCUIT BREAKER TO REMAIN.

Panel: ELD3

EXISTING TO REMAIN

Location:
Mounting: Surface
Supply From: ELCD

Volts: 480/277 3PH
Phases: 3
Wires: 4

Mains Type: MLO
Bus Amps: 200
Trip Size: MLO
Lugs: Standard

#	Circuit Description	Type	Wire	Trip	Poles	Poles	Trip	Wire	Type	Circuit Description	#
1	(ETR) PAINTING & DECORATING/RPE3D(1)	--	--	20 A	1	1	20 A	--	--	(ETR) HVAC SHOP/RPE3D (2)	2
3	(ETR) MACHINE SHOP D317/RPE3D (17)	--	--	20 A	1	1	20 A	--	--	(ETR) "C" OUTSIDE WALL PKS/RPE3D	4
5	(ETR) SPARE	--	--	20 A	1	1	20 A	--	--	(ETR) ELECTRIC SHOP C325/RPE3D (4,5)	6
7	(ETR) C318, C319, C320, C306, C307, C308	--	--	20 A	1	1	20 A	--	--	(ETR) HVAC SHOP C305/RPE3D (21,22)	8
9	(ETR) CORRIDOR C300	--	--	20 A	1	1	20 A	--	--	(ETR) EXIT SIGN D302	10
11	(ETR) ELEC RMS/PREP RMS LTS	--	--	20 A	1	1	20 A			Lighting	12
13	(ETR) CORRIDOR D400 LTS	--	--	20 A	1	1	20 A			Lighting	14
15	(ETR) TOILETS/PREP RMS LTS	--	--	20 A	1	1	20 A	--	--	(ETR) CORRIDOR C400 LTS	16
17	(ETR) EXITS C303/C344,C345,C327/EXITS C306	--	--	20 A	1	1	20 A			Lighting	18
19	(ETR) CORRIDOR D301	--	--	20 A	1	1	20 A			Lighting	20
21	(ETR) WELDING SHOP D325/RPE3D (23)	--	--	20 A	1						22
23	(ETR) SPARE	--	--	20 A	1						24
25	(ETR) CORRIDOR D414	--	--	20 A	1	1	20 A	--	--	(ETR) D426, D421	26
27	(ETR) D491A, D402, D404	--	--	20 A	1	1	20 A	--	--	(ETR) CORRIDOR C402 LTS	28
29	(ETR) C420, C421, C422, C423	--	--	20 A	1	1	20 A	--	--	(ETR) SPARE "D" OUTSIDE WALL PKS/RPE3D	30
31	(ETR) CORRIDOR D302	--	--	20 A	1	1	20 A	--	--	(ETR) SPARE	32
33	(ETR) SPARE	--	--	20 A	1	1	20 A	--	--	(ETR) SPARE	34
35	(ETR) EXIT SIGNS D335, D336, D316, D324,D300	--	--	20 A	1	1	20 A	--	--	(ETR) MACHINE SHOP BATHROOMS	36
37	(ETR) MACHINE SHOP & BATHROOMS	--	--	20 A	1	1	20 A	--	--	(ETR) MACHINE SHOP BATHROOMS	38
39	(ETR) SPARE	--	--	20 A	1	1	20 A	--	--	(ETR) EXISTING	40
41	(ETR) LOW VOLTAGE RELAY PANEL RPE3D	--	--	20 A	1	1	20 A	--	--	(ETR) SPARE	42

Notes:

1. (ETR) - DENOTES EXISTING CIRCUIT BREAKER TO REMAIN.

Panel: LD3

EXISTING TO REMAIN

Location: ELEC. ROOM D335
Mounting: Surface
Supply From:

Volts: 480/277 3PH
Phases: 3
Wires: 4

Mains Type: MLO
Bus Amps: 225
Trip Size: MLO
Lugs: Standard

#	Circuit Description	Type	Wire	Trip	Poles	Poles	Trip	Wire	Type	Circuit Description	#
1	(ETR) CR D337, D338	--	--	20 A	1	1	20 A	--	--	(ETR) CR D339, D340, D341	2
3	(ETR) CR D342, D343	--	--	20 A	1	1	20 A	--	--	(ETR) D327, D326, D334	4
5	(ETR) TESTING D327 BYPASS RELAY FOR BR	--	--	20 A	1	1	20 A	--	--	(ETR) SHOP D325/RP3D (3,4) WELDING	6
7	(ETR) SHOP D325/RP3D (5,6) WELDING	--	--	20 A	1	1	20 A	--	--	(ETR) SHOP D325/RP3D (7,8) WELDING	8
9	(ETR) DO NOT USE	--	--	20 A	1	1	20 A			LIGHTING	10
11	LIGHTING			20 A	1	1	20 A			LIGHTING	12
13	LIGHTING			20 A	1	1	20 A	--	--	Spare	14
15	(ETR) CORRIDOR D316/RP3D (19)	--	--	20 A	1	1	20 A	--	--	(ETR) TOILET RMS/CORR C303/RP3D (27)	16
17	(ETR) CR C340, C341, C342	--	--	20 A	1	1	20 A	--	--	(ETR) CR CC36-C339	18
19	(ETR) CR C309	--	--	20 A	1	1	20 A	--	--	(ETR) SHOP C305/RP3D (20, 21) HVAC	20
21	(ETR) LIGHTS ELEC SHOP	--	--	20 A	1	1	20 A	--	--	(ETR) C332-C335	22
23	(ETR) C312/RP3D (24) PAINTING	--	--	20 A	1	1	20 A	--	--	(ETR) C323-C330	24
25	(ETR) ELECT. SHOP C325/RP3D (25, 26)	--	--	20 A	1	1	20 A	--	--	(ETR) C313-C314	26
27	(ETR) VDV C326	--	--	20 A	1	1	20 A	--	--	(ETR) BASIC ELECTRICAL	28
29						1	20 A	--	--	(ETR) TOOL CRIB LIGHTS D317	30
31	(ETR) SPARE	--	--	70 A	3	1	20 A	--	--	(ETR) CORRIDOR D302/RP3D (18)	32
33						1	20 A	--	--	(ETR) TEAM ROOMS 303, 304, 305, 306	34
35	(ETR) SPARE	--	--	20 A	1	1	20 A	--	--	(ETR) MEETING D308	36
37	(ETR) CORRIDOR D301/RP3D (17)	--	--	20 A	1	1	20 A	--	--	(ETR) C305/ RP3D	38
39	(ETR) CORRIDOR C300/RP3D (18)	--	--	20 A	1	1	20 A	--	--	(ETR) SPARE	40
41	(ETR) 318	--	--	20 A	1	1	20 A	--	--	(ETR) SPARE	42

Notes:

1. (ETR) - DENOTES EXISTING CIRCUIT BREAKER TO REMAIN.

Project / True North

LPA|A
LAMOUREUX PAGANO ASSOCIATES|ARCHITECTS
108 Grove Street, Suite 300
Worcester MA 01605
508.752.2831
www.lpaa.com

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PROJECT

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Community Veterinary Clinic

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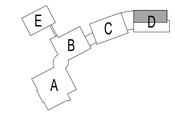
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DRAWING TITLE

Electrical Panel Schedules

KEY PLAN



REVISIONS

No.	Description	Date

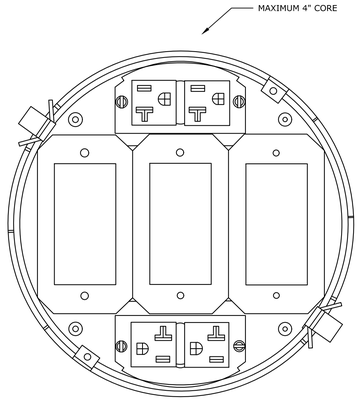
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SCALE:
DWN. BY: TN
CKD. BY: ASR
DATE: March 11, 2026

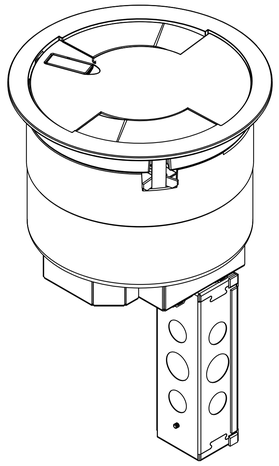
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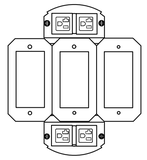
NOTES:

1. PROVIDE 2-HOUR RATED FLOOR BOXES AND POKE-THRUS WHERE CODE DRAWINGS SPECIFY 2-HOUR RATING. REFER TO CODE PLANS.

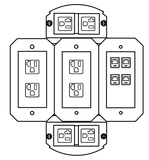




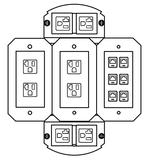
1 POKE-THRU DETAIL - TYPE 2DP, 4DP4D, & 2DP2D *NTS*



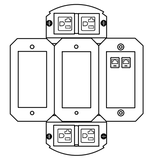
TYPE 2DP



TYPE 4DP4D



TYPE 4DP2V4D

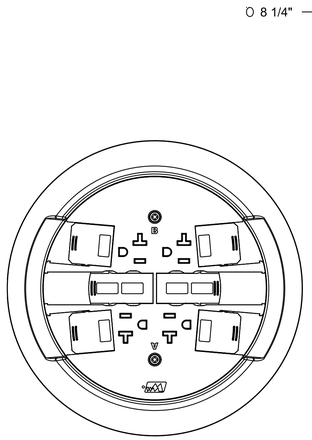


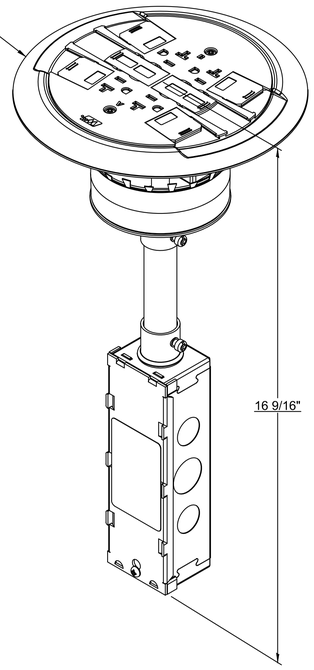
TYPE 2DP2D

2 POKE-THRU DETAIL - TYPE 2DP1V2D, 4DP4D, 4DP2V4D, & 2DP2D *NTS*

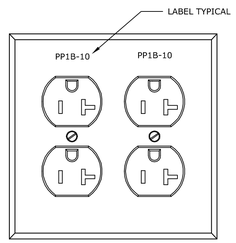
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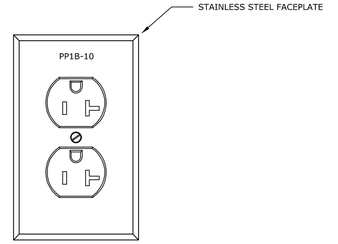
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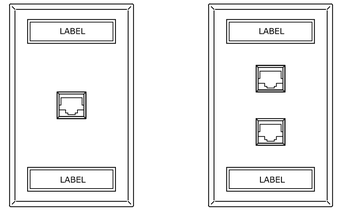


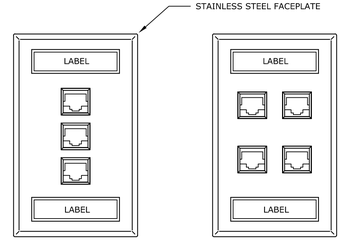


3 POKE-THRU TYPE DETAIL - TYPE 4SP *NTS*









RECEPTACLE & TEL/DATA OUTLET LABEL REQUIREMENTS

4 RECEPTACLE & TEL/DATA OUTLET LABEL REQUIREMENTS *NTS*

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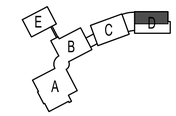
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Worcester Technical High School
1 Officer Manny Familia Way, Worcester, MA 01605

DRAWING TITLE

Electrical Details

KEY PLAN



REVISIONS

No.	Description	Date

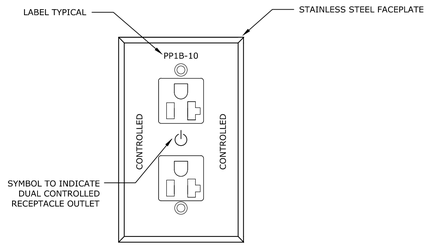
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SCALE:	NTS
DWN. BY:	TN
CKD. BY:	ASR
DATE:	March 11, 2026

EP4.1

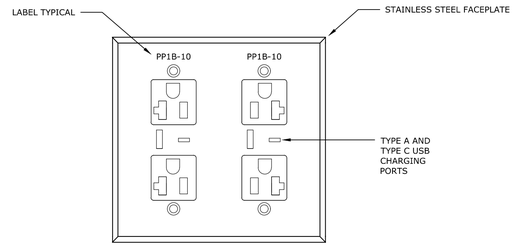
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NOTES:

1. ALL CONTROLLED RECEPTACLES SHALL BE MARKED PER NEC 406.3(E)



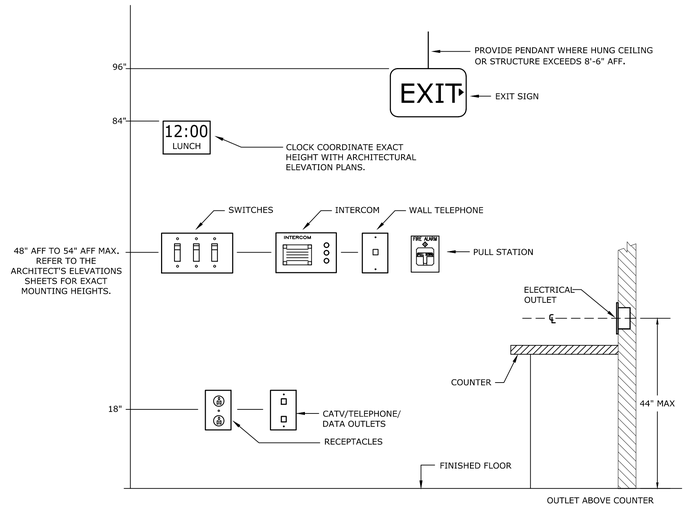
1 CONTROLLED RECEPTACLE DETAIL *NTS*



2 WORK STATION RECEPTACLE DETAIL *NTS*

NOTES:

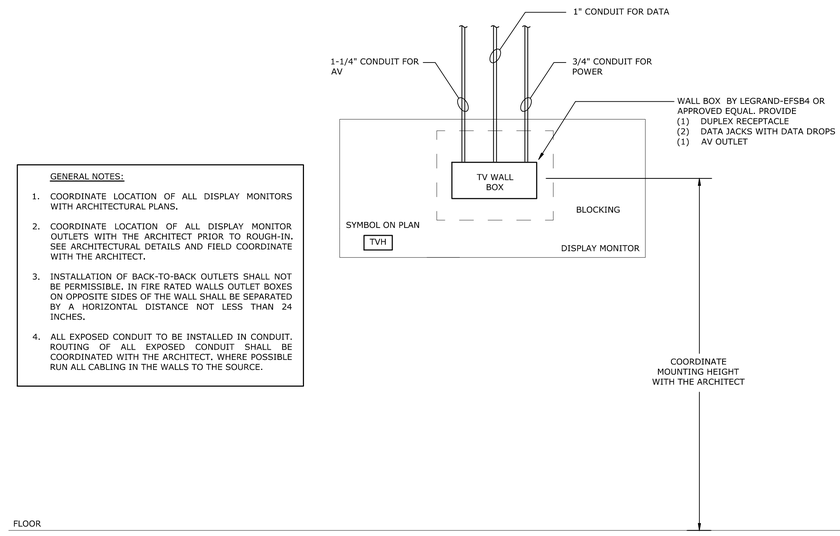
1. ALL MOUNTING HEIGHTS SHALL BE MEASURED FROM FINISHED FLOOR TO CENTERLINE OF DEVICE EXCEPT EXIT SIGN AND WITH EXCEPTION OF UNLESS OTHERWISE INDICATED ON ARCHITECTURAL DRAWINGS.
2. DEVICES SHALL BE INSTALLED ON A COMMON VERTICAL CENTERLINE WHEREVER POSSIBLE.
3. HEIGHTS AND LOCATIONS OF DEVICES SHALL BE COORDINATED WITH ARCHITECTURAL DRAWINGS.



3 ELECTRICAL DEVICE MOUNTING HEIGHTS DETAIL *NTS*

GENERAL NOTES:

1. COORDINATE LOCATION OF ALL DISPLAY MONITORS WITH ARCHITECTURAL PLANS.
2. COORDINATE LOCATION OF ALL DISPLAY MONITOR OUTLETS WITH THE ARCHITECT PRIOR TO ROUGH-IN. SEE ARCHITECTURAL DETAILS AND FIELD COORDINATE WITH THE ARCHITECT.
3. INSTALLATION OF BACK-TO-BACK OUTLETS SHALL NOT BE PERMISSIBLE. IN FIRE RATED WALLS OUTLET BOXES ON OPPOSITE SIDES OF THE WALL SHALL BE SEPARATED BY A HORIZONTAL DISTANCE NOT LESS THAN 24 INCHES.
4. ALL EXPOSED CONDUIT TO BE INSTALLED IN CONDUIT. ROUTING OF ALL EXPOSED CONDUIT SHALL BE COORDINATED WITH THE ARCHITECT. WHERE POSSIBLE RUN ALL CABLING IN THE WALLS TO THE SOURCE.



4 DISPLAY MONITOR OUTLETS SURFACE MOUNTED HIGH (TVH) *NTS*

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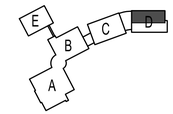
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DRAWING TITLE

Electrical Details

KEY PLAN



REVISIONS

No.	Description	Date

FILE:

JOB NO: 2417

SCALE: NTS

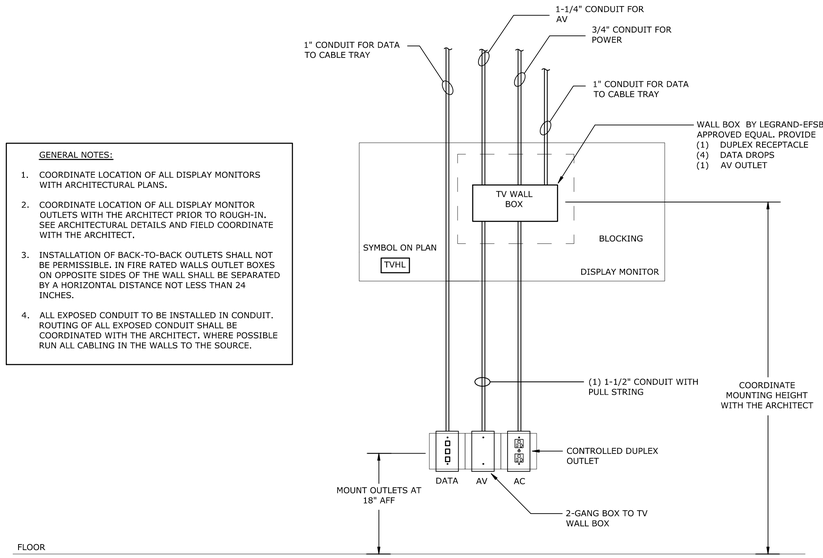
DWN. BY: TN

CKD. BY: ASR

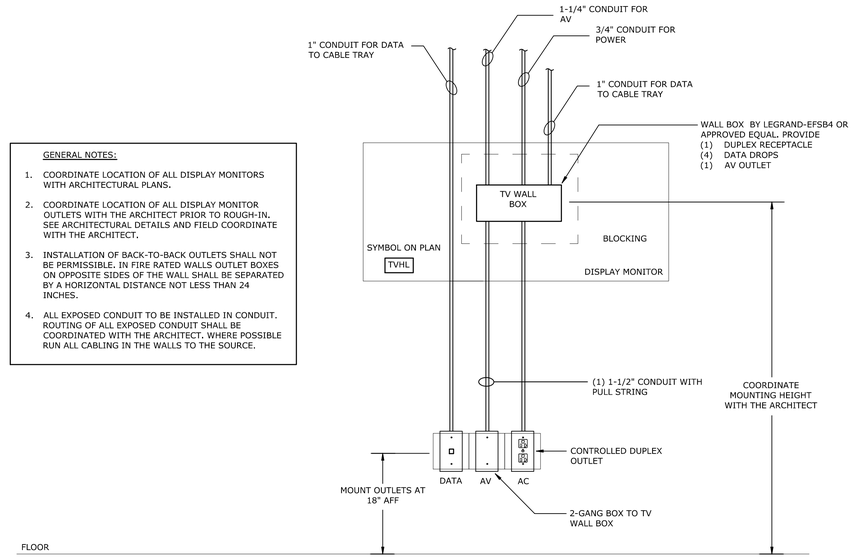
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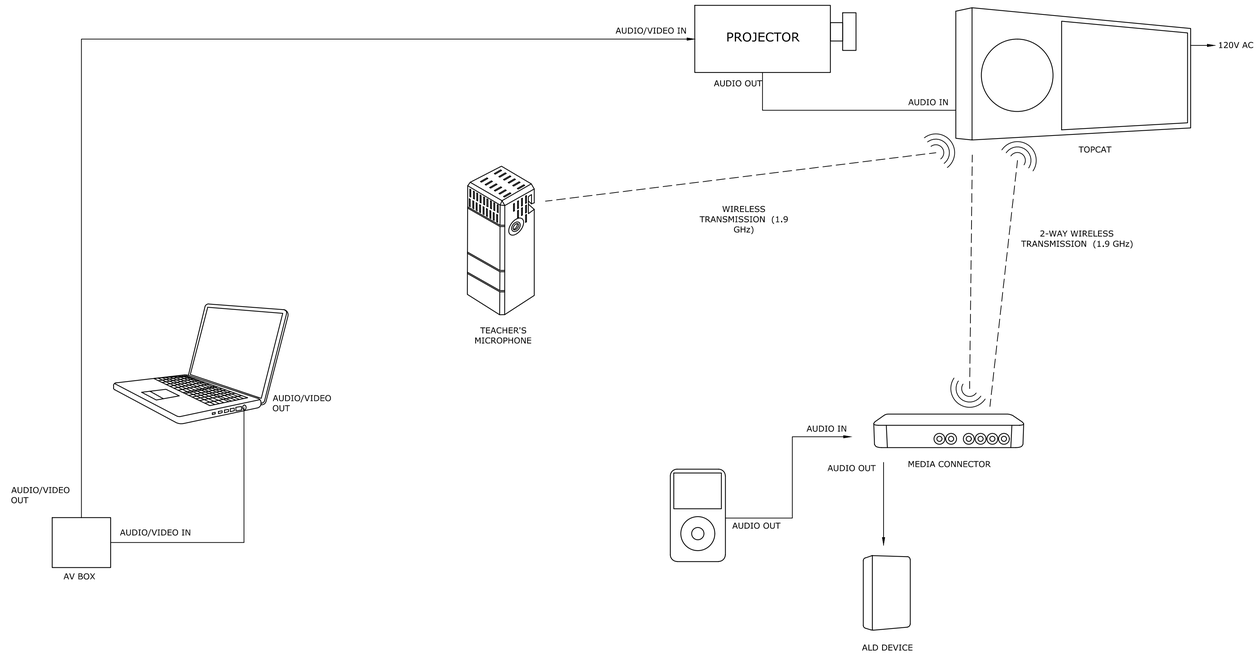
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1 | DISPLAY MONITOR OUTLETS SURFACE MOUNTED HIGH/LOW (TVHL) CONFERENCE ROOM | *NTS*

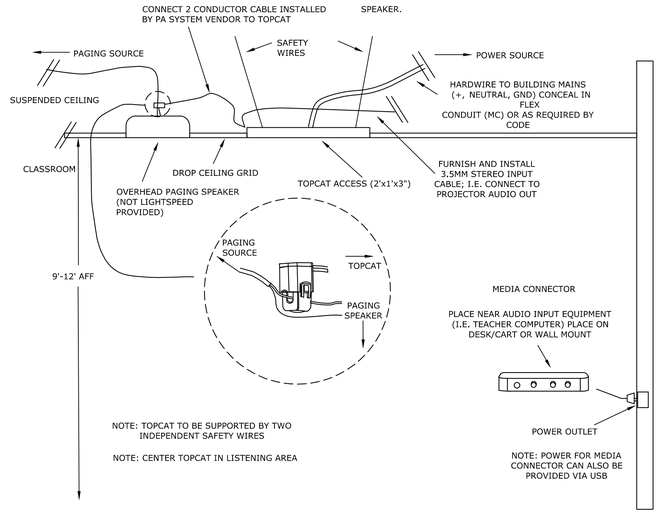


2 | DISPLAY MONITOR OUTLETS SURFACE MOUNTED HIGH/LOW (TVHL) TEACHING HUB | *NTS*



ROOM WITH SINGLE TOPCAT

SCALE: NTS



3 | SPEECH REINFORCEMENT DETAIL | *NTS*

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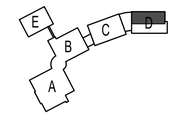
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JOB NO: 2417

SCALE: NTS

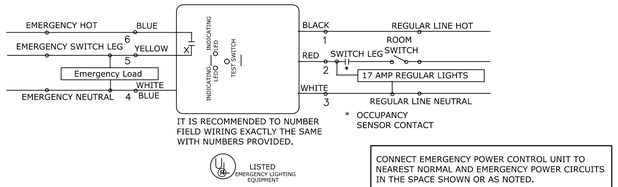
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DATE: March 11, 2026

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IT IS RECOMMENDED TO NUMBER FIELD WIRING EXACTLY THE SAME WITH NUMBERS PROVIDED.

LISTED EMERGENCY LIGHTING EQUIPMENT

EMERGENCY POWER CONTROL RELAY BY LVS, INC. OR APPROVED EQUAL

CONNECT EMERGENCY POWER CONTROL UNIT TO NEAREST NORMAL AND EMERGENCY POWER CIRCUITS IN THE SPACE SHOWN OR AS NOTED.

PROVIDE EMERGENCY POWER CONTROL UNIT WITH A FEATURE TO DISABLE SELF-TEST ROUTINE. THE SELF-TEST ROUTINE SHALL BE DISABLED BY THE ELECTRICAL CONTRACTOR WITH JUMPER SETTINGS. COORDINATE WITH THE MANUFACTURER.

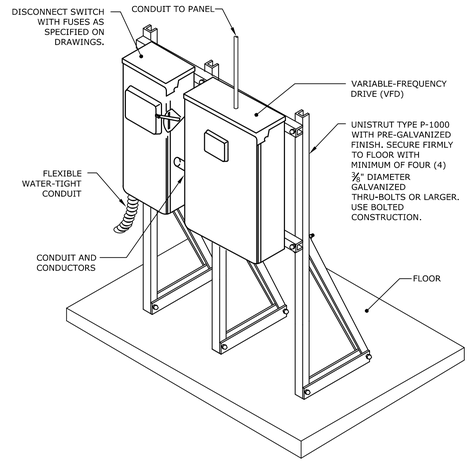
PROVIDE WITH CONTACT FOR FIRE ALARM.

NORMALLY ON / NORMALLY OFF / SWITCHED - (EPC-N)

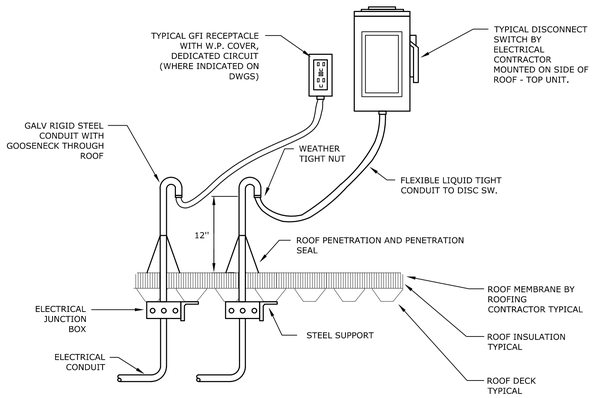
1 | EMERGENCY LIGHTING CONTROL UNIT | *NTS*

NOTES:

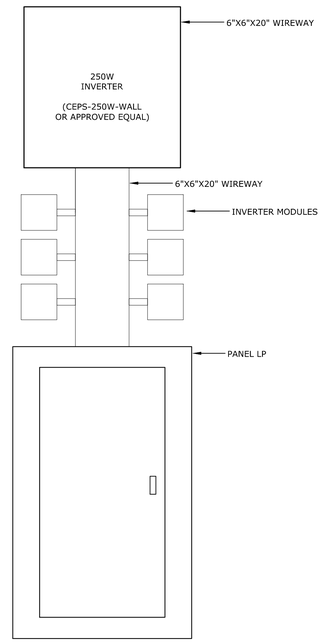
1. FASTEN DISCONNECT SWITCH AND/OR VFD TO EQUIPMENT OR COLUMNS WHERE APPROPRIATE.
2. THE ELECTRICAL CONTRACTOR SHALL BE RESPONSIBLE FOR LOCATING AND MOUNTING THE DISCONNECT SWITCH AND VFD TO MEET THE CLEARANCES PER THE NEC.



2 | SAFETY DISCONNECT SWITCH AND VFD MOUNTING DETAIL | *NTS*



3 | ROOFTOP CONDUIT PENETRATION DETAIL | *NTS*



4 | LIGHTING INVERTER PANEL CONNECTION DETAIL | *NTS*

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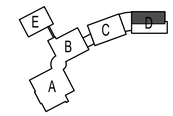
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DRAWING TITLE

Electrical Details

KEY PLAN



REVISIONS

No.	Description	Date

FILE:

JOB NO: 2417

SCALE: NTS

DWN. BY: TN

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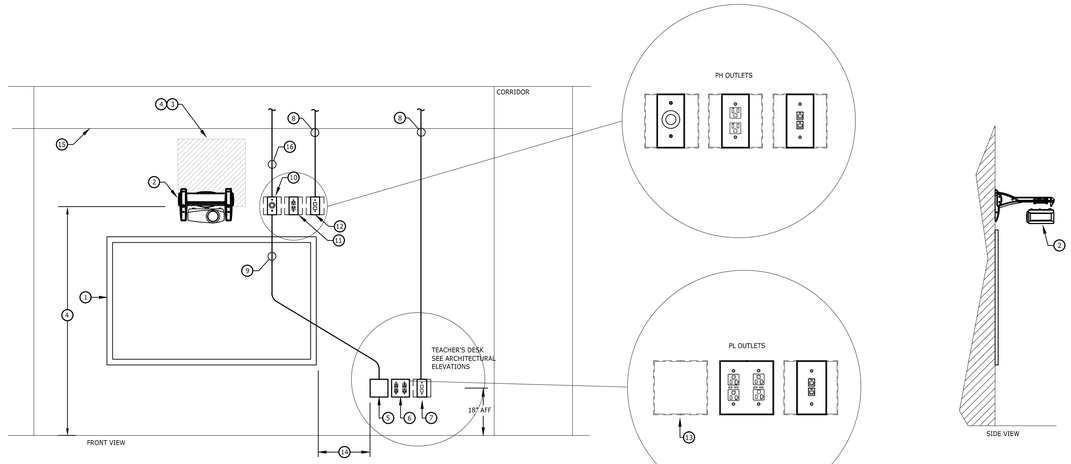
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KEYED NOTES:

1. WHITEBOARD.
2. PROJECTOR.
3. 24"X24" BLOCKING BY CONSTRUCTION MANAGER CENTERED ON WHITEBOARD.
4. COORDINATE EXACT HEIGHT OF BLOCKING AND PROJECTOR IN THE FIELD WITH ARCHITECT AND OWNER PRIOR TO WORK.
5. EMPTY AV OUTLET BOX - 4"X4"X3-1/2". CABLES, OUTLET JACKS, AND COVER BY AV VENDOR.
6. DOUBLE DUPLEX RECEPTACLES WITH TWO TYPE C USB CHARGING PORTS.
7. TWO DATA OUTLETS AND CABLES.
8. 1-1/4" EMT WITH PULL STRING AND BUSHING. STUB UP ABOVE ACCESSIBLE CEILING.
9. (2) 1-1/4" EMT WITH PULL STRING.
10. EMPTY AV OUTLET BOX WITH GROMMET - 4"X4"X3-1/2" WITH SINGLE GANG STAINLESS STEEL COVER.
11. DUPLEX RECEPTACLE.
12. TWO DATA OUTLETS WITH CABLES.
13. 4" BACKBOX. (TYPICAL)
14. COORDINATE LOCATION OF ALL PL OUTLETS WITH THE ARCHITECT PRIOR TO ROUGH-IN IN EACH SPACE.
15. ACCESSIBLE CEILING.
16. 3/4" EMT WITH PULL STRING TO PH OUTLETS.



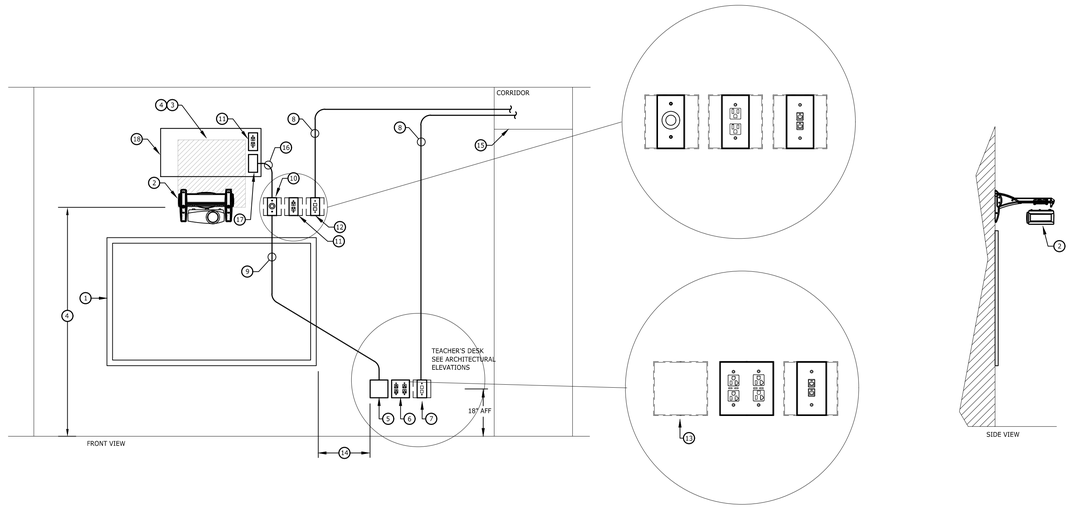
GENERAL NOTES:

1. COORDINATE LOCATION OF ALL PROJECTORS WITH ARCHITECTURAL PLANS.
2. COORDINATE LOCATION OF ALL PROJECTOR OUTLETS WITH THE ARCHITECT PRIOR TO ROUGH-IN. SEE ARCHITECTURAL DETAILS AND FIELD COORDINATE WITH THE ARCHITECT. ALL OUTLETS TO BE INSTALLED A MINIMUM OF 12" FROM THE CENTERLINE OF THE MARKER BOARD.
3. INSTALLATION OF BACK-TO-BACK OUTLETS SHALL NOT BE PERMISSIBLE. IN FIRE RATED WALLS OUTLET BOXES ON OPPOSITE SIDES OF THE WALL SHALL BE SEPARATED BY A HORIZONTAL DISTANCE NOT LESS THAN 24 INCHES.

1 CLASSROOM PROJECTOR OUTLETS MOUNTING DETAIL FOR PH AND PL (CLASSROOMS WITH DROP CEILING) — NTS

KEYED NOTES:

1. WHITEBOARD.
2. PROJECTOR.
3. 24"X24" BLOCKING BY CONSTRUCTION MANAGER CENTERED ON WHITEBOARD.
4. COORDINATE EXACT HEIGHT OF BLOCKING AND PROJECTOR IN THE FIELD WITH ARCHITECT AND OWNER PRIOR TO WORK.
5. EMPTY AV OUTLET BOX - 4"X4"X3-1/2". CABLES, OUTLET JACKS, AND COVER BY AV VENDOR.
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7. TWO DATA OUTLETS AND CABLES.
8. 1-1/4" EMT WITH PULL STRING AND BUSHING. STUB UP ABOVE ACCESSIBLE CEILING.
9. (2) 1-1/4" EMT WITH PULL STRING.
10. EMPTY AV OUTLET BOX WITH GROMMET - 4"X4"X3-1/2" WITH SINGLE GANG STAINLESS STEEL COVER.
11. DUPLEX RECEPTACLE.
12. TWO DATA OUTLETS WITH CABLES.
13. 4" BACKBOX. (TYPICAL)
14. COORDINATE LOCATION OF ALL PL OUTLETS WITH THE ARCHITECT PRIOR TO ROUGH-IN IN EACH SPACE.
15. ACCESSIBLE CEILING.
16. 3/4" EMT WITH PULL STRING TO PH OUTLETS.
17. SINGLE GANG BOX.
18. SPEECH REINFORCEMENT SPEAKER.



GENERAL NOTES:

1. COORDINATE LOCATION OF ALL PROJECTORS WITH ARCHITECTURAL PLANS.
2. COORDINATE LOCATION OF ALL PROJECTOR OUTLETS WITH THE ARCHITECT PRIOR TO ROUGH-IN. SEE ARCHITECTURAL DETAILS AND FIELD COORDINATE WITH THE ARCHITECT. ALL OUTLETS TO BE INSTALLED A MINIMUM OF 12" FROM THE CENTERLINE OF THE MARKER BOARD.
3. INSTALLATION OF BACK-TO-BACK OUTLETS SHALL NOT BE PERMISSIBLE. IN FIRE RATED WALLS OUTLET BOXES ON OPPOSITE SIDES OF THE WALL SHALL BE SEPARATED BY A HORIZONTAL DISTANCE NOT LESS THAN 24 INCHES.

2 CLASSROOM PROJECTOR OUTLETS MOUNTING DETAIL FOR PH AND PL (CLASSROOMS WITHOUT DROP CEILING) — NTS

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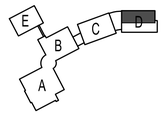
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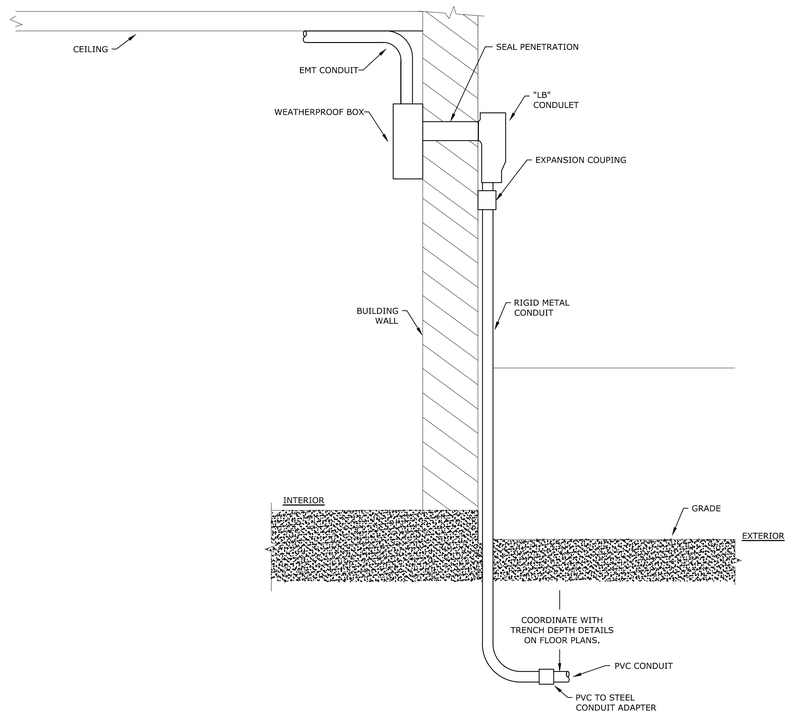
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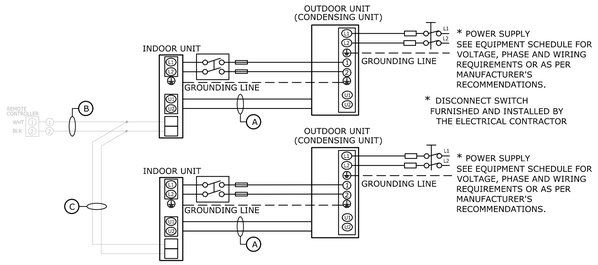
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1 CONDUIT STUB-OUT DETAIL *NTS*

(A) INTER-UNIT CONTROL WIRING	(B) REMOTE CONTROL WIRING	(C) CONTROL WIRING FOR GROUP CONTROL
BY ELECTRICAL CONTRACTOR. FURNISH AND INSTALL 2-#16 AWG IN 1"C OR AS RECOMMENDED BY THE MANUFACTURER	BY AUTOMATIC TEMPERATURE CONTROL (ATC) OR MECHANICAL CONTRACTOR	BY AUTOMATIC TEMPERATURE CONTROL (ATC) OR MECHANICAL CONTRACTOR



NOTES:

1. FURNISH AND INSTALL INTER-UNIT CONTROL WIRING BETWEEN ALL FAN COIL UNITS, SPLIT SYSTEM UNITS, AIR CONDITIONING UNITS AND THEIR RESPECTIVE OUTDOOR (CONDENSING) UNITS AS PER THE MANUFACTURER'S RECOMMENDATIONS.
2. INDOOR UNIT MAY BE REQUIRED TO BE FED FROM THE OUTDOOR UNIT. COORDINATE WITH MANUFACTURER'S WIRING DIAGRAMS PRIOR TO ROUGH-IN.
3. WIRE SIZE AND QUANTITY SHALL BE AS RECOMMENDED BY THE SYSTEM MANUFACTURER.

2 WIRING DETAIL FOR FAN COIL AND SPLIT SYSTEM UNITS *NTS*

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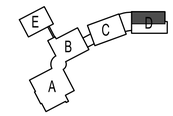
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DRAWING TITLE

Electrical Details

KEY PLAN



REVISIONS

No.	Description	Date

FILE:

JOB NO: 2417

SCALE: NTS

DWN. BY: TN

CKD. BY: ASR

DATE: March 11, 2026

EP4.6

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FIRE ALARM NOTES

1. ALL WORK SHALL BE INSTALLED IN FULL ACCORDANCE WITH LOCAL, STATE & FEDERAL CODES, STATE AND LOCAL AUTHORITIES IRRESPECTIVE OF THE FIRE ALARM DEVICES SHOWN ON THE DRAWINGS. FILE ALL PLANS, OBTAIN ALL PERMITS, PAY ALL FEES, SCHEDULE ALL INSPECTIONS, MAKE ALL TESTS AND OBTAIN ALL APPROVALS REQUIRED. THE FIRE ALARM WORK SHALL BE PERFORMED IN ACCORDANCE WITH THE ADOPTED EDITIONS OF NFPA-72, NATIONAL ELECTRIC CODE AND LOCAL AUTHORITIES HAVING JURISDICTION. ALL COMPONENTS SHALL BE UL LISTED.
2. THE FIRE ALARM RISER IS FOR REFERENCES ONLY. THE ELECTRICAL SUBCONTRACTOR SHALL USE THE FIRE ALARM RISER PROVIDED BY THE MANUFACTURER.
3. THE ELECTRICAL SUBCONTRACTOR SHALL DETERMINE DEVICE COUNTS FROM THE FIRE ALARM DRAWINGS.
4. ALL VISUAL DEVICES SHALL BE SYNCHRONIZED AS PER NFPA 72.
5. SMOKE DETECTORS SHALL NOT BE LOCATED WITHIN 3'-0" OF A SUPPLY DIFFUSER.
6. ALL EQUIPMENT AND DEVICES LOCATED IN THE SHOWER ROOM, COLD ROOM, ICE RINK, GARAGES, BUILDING EXTERIOR AND SIMILAR AREAS SHALL BE OF WEATHER PROOF TYPE.
7. CIRCUIT BREAKER FOR FIRE ALARM CONTROL UNIT SHALL HAVE RED MARKING WITH A CIRCUIT BREAKER LOCK LISTED FOR USE WITH THE CIRCUIT BREAKER.
8. THE LOCATION OF THE CIRCUIT DISCONNECTING MEANS SHALL BE PERMANENTLY IDENTIFIED AT THE FIRE ALARM CONTROL UNIT.
9. THE ROOM CONTAINING THE FIRE ALARM CONTROL UNIT MUST BE PROVIDED WITH A SIGN IDENTIFYING THE FIRE PROTECTION EQUIPMENT AND EQUIPMENT LOCATION.
10. THE ROOM CONTAINING THE BDA SHALL BE PROVIDED WITH A SIGN IDENTIFYING THE FIRE PROTECTION EQUIPMENT AND EQUIPMENT LOCATION.
11. PROVIDE CONDUIT, WIRING AND FIRE ALARM SYSTEM CONNECTION TO HVAC DUCT MOUNTED SMOKE DETECTORS. DUCT SMOKE DETECTORS SHALL BE PROVIDED WITH A REMOTE TEST SWITCH IN A LOCATION ACCEPTABLE TO THE FIRE DEPARTMENT. COORDINATE EXACT LOCATION OF REMOTE TEST SWITCH WITH THE FIRE DEPARTMENT PRIOR TO INSTALLATION.
12. PROVIDE DUCT SMOKE ALARM INDICATOR IN THE CEILING OR WALL BELOW THE DETECTOR.
13. PROVIDE CONTROL AND RELAY MODULES AND INTERCONNECT ELEVATOR DAMPER WITH FIRE ALARM CONTROL PANEL. THE ELEVATOR DAMPER SHALL OPEN UPON ACTIVATION OF THE FIRE ALARM CONTROL PANEL, POWER FAILURE OR TEMPERATURE RISE IN THE SHAFT, SEE MECHANICAL PLANS.
14. THE WHITE BEACON, BLUE BEACON AND RED BEACON ADJACENT TO THE MAIN ENTRANCE SHALL BE PROVIDED WITH SIGNAGE TO INDICATE THE PURPOSE OF EACH VISUAL SIGNALING DEVICE IN ORDER TO REDUCE CONFUSION WITH THE FIRE ALARM AND/OR CARBON MONOXIDE SYSTEM.
15. EQUIPMENT IN THE ROOM CONTAINING THE BDA SYSTEM SHALL BE PROVIDED WITH A SIGN IDENTIFYING THE EQUIPMENT.

FIRE ALARM

- SMOKE DETECTOR
- EXTERIOR BEACON 150,000 CANDLE POWER. COORDINATE EXACT LOCATION WITH AHJ
- HEAT DETECTOR, FIXED 135 DEGREES - UNLESS NOTED OTHERWISE

RAI - REMOTE ALARM INDICATOR. PROVIDE PERMANENTLY ATTACHED PLACARD TO INDICATE BOTH THE FUNCTION AND ANY DEVICE OR EQUIPMENT ASSOCIATED PER NFPA REQUIREMENTS. INDICATORS SHOULD BE WALL MOUNTED TO MAKE ATTACHING PLACARD AT THE INDICATOR EASIER. SUBMIT THE PLACARD TO ARCHITECT FOR APPROVAL PRIOR TO INSTALLATION

F - PULL STATION

TS - TAMPER SWITCH

110cd - VISUAL APPLIANCE, CEILING MOUNTED "110cd" - DENOTES CANDELA RATING

110cd - COMBINATION AUDIOVISUAL APPLIANCE, CEILING MOUNTED "110cd" - DENOTES CANDELA RATING

110cd - VISUAL APPLIANCE, WALL MOUNTED "110cd" - DENOTES CANDELA RATING

110cd - COMBINATION AUDIOVISUAL APPLIANCE, WALL MOUNTED "110cd" - DENOTES CANDELA RATING

NOTES FOR FIRE ALARM DEVICES:

1. THE FIRE ALARM SUB CONTRACTOR SHALL BE RESPONSIBLE FOR MAKE MODIFICATIONS TO THE EXSTING FIRE ALARM SYSTEM TO PROVIDE THE APPROPRIATE PROTECTION DURING THE WORK IN ACCORDANCE WITH THE GENERAL CONTRACTOR'S NFPA 241 PLAN.
2. COORDINATE EXACT LOCATION OF ALL SPRINKLER SYSTEM ASSOCIATED DEVICES WITH THE SPRINKLER CONTRACTOR PRIOR TO ROUGH-IN.
3. COORDINATE LOCATION OF KNOX BOX, EXTERIOR BEACON AND FIRE ALARM BELL WITH AHJ PRIOR TO ROUGH-IN.
4. COORDINATE WITH ARCHITECT THE LOCATION OF PULL STATIONS AND ANNUNCIATOR PANELS IN AND AROUND VESTIBULES FOR COORDINATION.
5. ALL EXPOSED WIRING SHALL BE INSTALLED IN CONDUIT.

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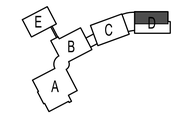
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DRAWING TITLE

Fire Alarm Legend

KEY PLAN



REVISIONS

No.	Description	Date

FILE:

JOB NO: 2417

SCALE: NTS

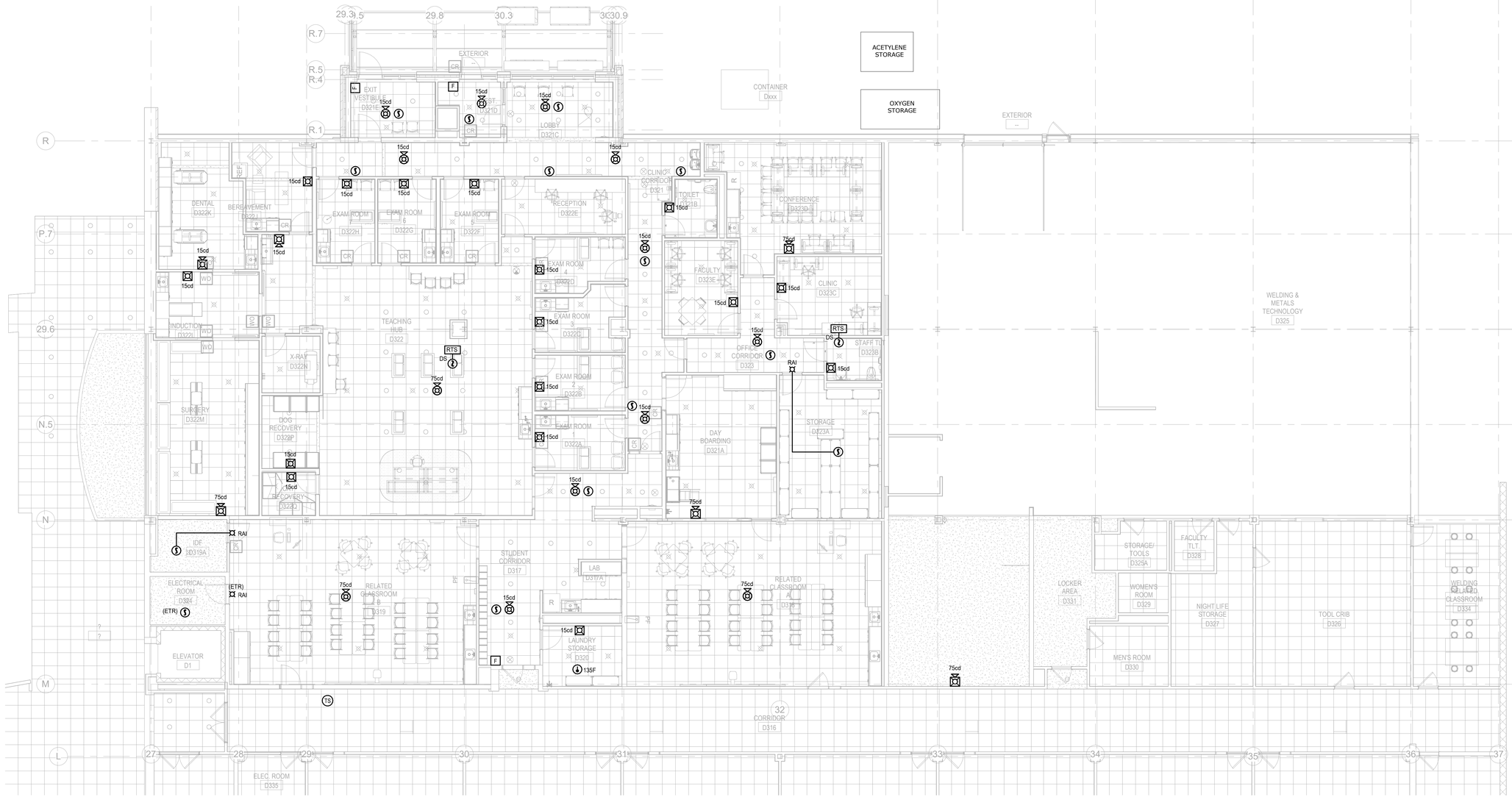
DWN. BY: TN

CKD. BY: ASR

DATE: March 11, 2026

FA0.1

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1 Fire Alarm Plan
1/8" = 1'-0"

GENERAL NOTES FOR FA1.1

1. THE FIRE ALARM SUBCONTRACTOR SHALL BE RESPONSIBLE FOR MAKING MODIFICATIONS TO THE EXISTING FIRE ALARM SYSTEM TO PROVIDE APPROPRIATE PROTECTION DURING THE WORK IN ACCORDANCE WITH THE GENERAL CONTRACTOR'S NFPA 241 PLAN.
2. PROVIDE NEW SIGNALING CIRCUIT FOR NEW SIGNALING DEVICES AND REMOTE ALARM INDICATORS.
3. PROVIDE NEW INITIATING CIRCUIT FOR NEW SMOKE DETECTORS, HEAT DETECTORS AND PULL STATIONS.
4. ALL NEW FIRE ALARM DEVICES TO BE CONNECTED TO EXISTING SIMPLEX 4100U FIRE ALARM SYSTEM.

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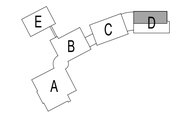
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DRAWING TITLE

New Fire Alarm Ceiling Plan

KEY PLAN



REVISIONS

No.	Description	Date

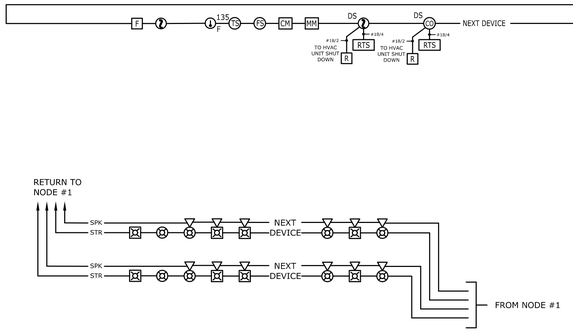
FILE:	
JOB NO:	2417
SCALE:	1/8" = 1'-0"
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Project / True North

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SECTION A | SECTION B | SECTION C | SECTION D



THIRD FLOOR

SECOND FLOOR

ADMIN ROOM
A BUILDING

EXISTING TO REMAIN

FIRE ALARM CONTROL PANEL (FACP)

WITH MICROPHONE INTEGRAL TO UNIT

SIMPLEX 4100U

RADIO MASTERBOX EXISTING TO REMAIN

PRIMARY EMERGENCY ELECTRIC D105

EXISTING TO REMAIN

FIRE ALARM NODE

WITH MICROPHONE INTEGRAL TO UNIT

SIMPLEX 4100U

FIRST FLOOR

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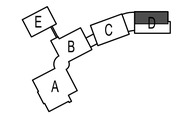
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DRAWING TITLE

Fire Alarm Riser

KEY PLAN



REVISIONS

No.	Description	Date

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SCALE: NTS

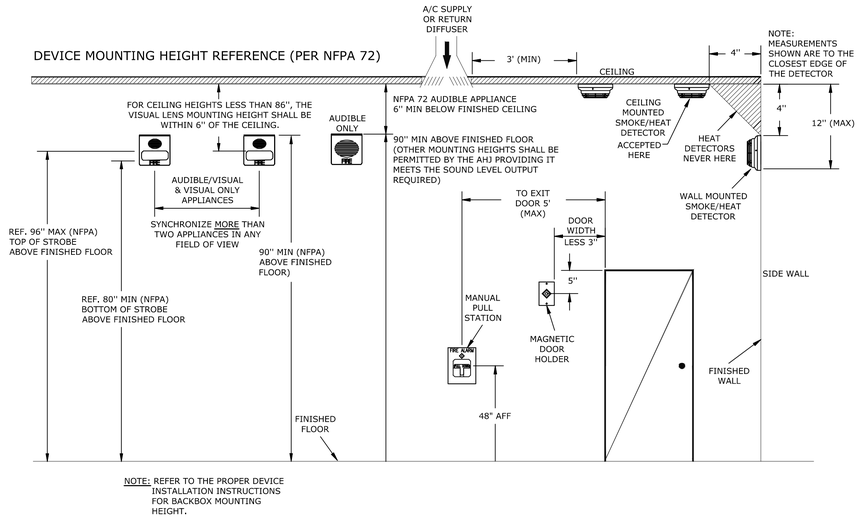
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FA2.1

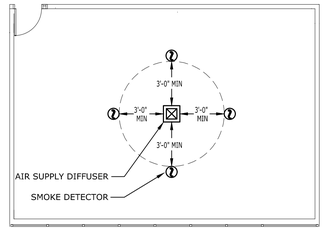
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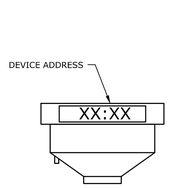
VISUAL APPLIANCE MOUNTING HEIGHT CONSIDERATIONS IN SLEEPING ROOMS

1. MIN DISTANCE IN SLEEPING ROOMS IS 24" FROM CEILING TO TOP OF LENS FOR 110CD STROBES WITHIN 16' OF THE PILLOW.
2. 177CD STROBES, USED IN SLEEPING ROOMS, CAN BE WITHIN THE 24" MINIMUM DISTANCE FROM THE CEILING. THE HIGHER INTENSITY IS TO COMPENSATE FOR A POSSIBLE SMOKE LAYER.

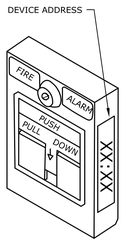
1 FIRE ALARM DEVICE MOUNTING HEIGHTS DETAIL *NTS*



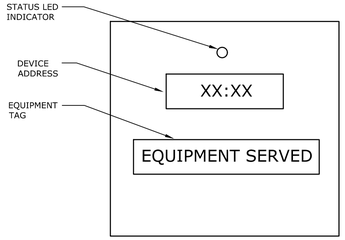
2 FIRE ALARM SMOKE DETECTOR LOCATION DETAIL *NTS*



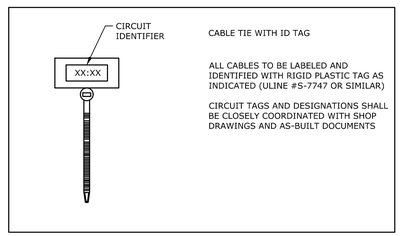
DETECTOR



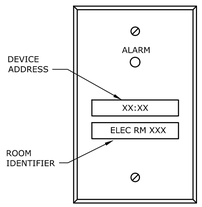
MANUAL PULL STATION



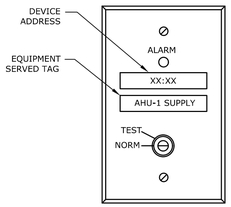
ADDRESSABLE MODULE IN JUNCTION BOX



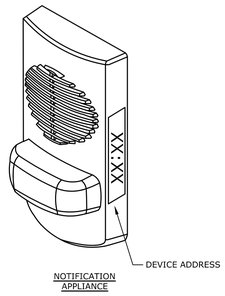
CIRCUIT TERMINATION LABELING



REMOTE ALARM INDICATOR



REMOTE ALARM INDICATOR/TEST STATION



NOTIFICATION APPLIANCE

NOTES

1. PROVIDE A LABEL (P-TOUCH OR SIMILAR) ON ALL FIRE ALARM DEVICES TO IDENTIFY EACH DEVICES' ADDRESS OR DEVICE DESIGNATION AND CIRCUIT REFERENCE. UTILIZE CLEAR SELF-ADHESIVE VINYL LABELS WITH LETTERING EASILY VISIBLE WITHOUT A LADDER.
2. LABEL ALL DEVICES WITH ADDRESS/ZONE INFORMATION AND EQUIPMENT MONITORED (I.E. AHU-1 SUPPLY) WHERE APPLICABLE. COMPLY WITH THE OWNER'S REQUIREMENTS FOR BAR CODE INVENTORY MANAGEMENT AND TEST & INSPECTION RECORD KEEPING.

3 FIRE ALARM DEVICE LABEL AND CIRCUIT TAGGING *NTS*

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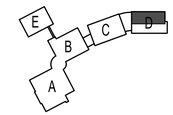
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DRAWING TITLE

Fire Alarm Details

KEY PLAN



REVISIONS

No.	Description	Date

FILE:

JOB NO: 2417

SCALE: NTS

DWN. BY: TN

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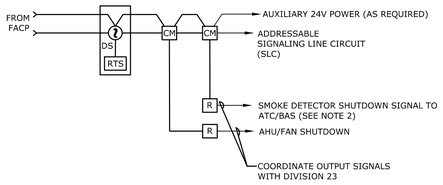
NOTES

1. COORDINATE DETECTOR SELECTION, QUANTITIES, LOCATIONS AND INSTALLATION WITH DIVISION 23.
2. PROVIDE THE FOLLOWING AT EACH LOCATION IDENTIFIED: SMOKE DETECTION LOCATED TO SERVE THE AHU , WITH TWO (2) ASSOCIATED CONTROL OUTPUT/RELAY MODULES TO SUPPORT SIMULTANEOUS EQUIPMENT SHUTDOWN AND DIRECT BAS INTERFACE TO REPORT FIRE ALARM-INITIATED SHUTDOWN.
3. DETECTOR SHOWN FOR REFERENCE ONLY; SAMPLING -TUBE STYLE DETECTORS, IN-DUCT SPOT DETECTORS, AIR SAMPLING DETECTION OR AREA DETECTION MAY BE ASSOCIATED WITH THIS DEVICE. REFER TO FLOOR PLANS FOR INTENDED SMOKE DETECTOR LOCATIONS.
4. THE SYSTEM SUPPLIER/DESIGNER SHALL SELECT THE DETECTOR TYPE BASED ON THE APPLICATION AND MANUFACTURER'S RECOMMENDATIONS, AND COORDINATE ACTUAL DETECTOR QUANTITIES AND LOCATIONS WITH THE DUCTWORK TO COMPLY WITH NFPA 72 SPACING REQUIREMENTS.
5. COORDINATE EQUIPMENT SELECTION AND LOCATIONS WITH DIVISION 23, TO INCLUDE DETECTOR QUANTITIES, INSTALLATION, DEVICE ACCESS AND TESTING.

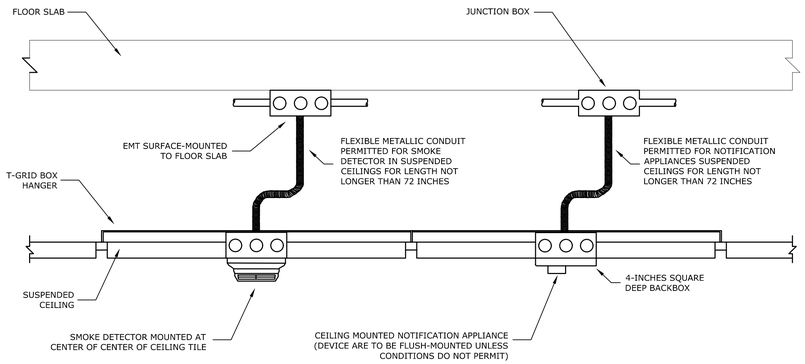
SEQUENCE OF OPERATIONS

ACTIVATION OF A DUCT SMOKE DETECTOR LOCATED AT A FAN OR AIR HANDLING UNIT (AHU) SHALL:

A. REPORT AS A SUPERVISORY DUCT SMOKE DETECTOR ACTIVATION.
B. INITIATE SHUTDOWN OF THE ASSOCIATED AIR HANDLING UNIT AND CONTROL ASSOCIATED EQUIPMENT SEQUENCING.
C. TRANSMIT SMOKE DETECTOR SHUTDOWN SIGNAL TO THE ATC/BAS SYSTEM.



1 DUCT SMOKE/AHU INTERFACE *NTS*



2 FIRE ALARM DEVICE MOUNTING IN ACCESSIBLE CEILINGS DETAIL *NTS*

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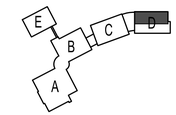
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Fire Alarm Details

KEY PLAN



REVISIONS

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ACCESS CONTROL

C	-	DOOR POSITION SWITCH
CR	-	CARD READER
EL	-	ELECTRIC LOCK
DO	-	DOOR OPERATOR
HC	-	PUSH BUTTON FOR DOOR OPENER
RX	-	REQUEST TO EXIT
VES	-	VIDEO ENTRANCE STATION
VMS	-	VIDEO MASTER STATION

NOTES FOR ACCESS CONTROL / INTRUSION:

1. PROVIDE BOXES AND 3/4" CONDUIT STUBS ABOVE ACCESSIBLE CEILING FOR ALL ACCESS CONTROL DEVICES.
2. MULLION MOUNTED CARD READERS SHALL BE 4.6"L x 2.4"W x 1.4"H, SMALL PROFILE, WEATHERPROOF (FOR EXTERIOR APPLICATION), OR APPROVED EQUAL.
3. COORDINATE WITH ARCHITECT THE ELEVATION FOR VIDEO ENTRY STATION (VES) LOCATIONS RELATIVE TO DOORWAYS AND MOUNTING HARDWARE AND IF UNITS ARE TO BE RECESSED OR SURFACE MOUNTED. REQUEST AN ELEVATION OF CARD READERS, FIRE ALARM PULL STATIONS, ANNUNCIATOR PANELS AND WALL PLAQUES IN AND AROUND VESTIBULES FOR COORDINATION.

SURVEILLANCE SYSTEM

	-	VANDAL PROOF, FIXED DOME CAMERA, CEILING MOUNTED
180°	-	VANDAL PROOF FIXED 180° DOME CAMERA, CEILING MOUNTED
360°	-	VANDAL PROOF, FIXED 360° DOME CAMERA, CEILING MOUNTED
	-	VANDAL PROOF, FIXED DOME CAMERA, WALL MOUNTED
180°	-	VANDAL PROOF FIXED 180° DOME CAMERA, WALL MOUNTED
	-	VANDAL PROOF FIXED DOME CAMERA, BRACKET MOUNTED
180°	-	VANDAL PROOF FIXED 180° DOME CAMERA, BRACKET MOUNTED

NOTES FOR VIDEO SURVEILLANCE DEVICES:

1. PROVIDE (1) DATA OUTLET WITH CATEGORY 6A JACK AND CABLE TO EACH CAMERA AND VAPE DETECTOR.
2. ALL EXTERIOR CAMERAS SHALL BE BUILDING OR POLE MOUNTED AND SHALL BE WEATHER-PROOF.
3. COORDINATE CAMERA LOCATIONS WITH ARCHITECT PRIOR TO ROUGH-IN.
3. ALL CAMERAS SHALL BE VANDAL PROOF.
4. ALL PTZ CAMERAS SHALL BE WIRED WITH 12/2 POWER CONDUCTORS IN ADDITION TO CATEGORY 6A CABLE OR FIBER CABLE AS SCHEDULED.

VIDEO SURVEILLANCE DEVICE ABBREVIATIONS:

"EXT"	-	DENOTES EXTERIOR
"PTZ"	-	DENOTES PAN/TILT/ZOOM
"WP"	-	DENOTES WEATHERPROOF

INTRUSION

PN	-	PANIC BUTTON
GB	-	GLASS BREAK SENSOR

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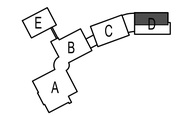
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Worcester Technical High School
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Security Legend

KEY PLAN



REVISIONS

No.	Description	Date

FILE:

JOB NO: 2417

SCALE: NTS

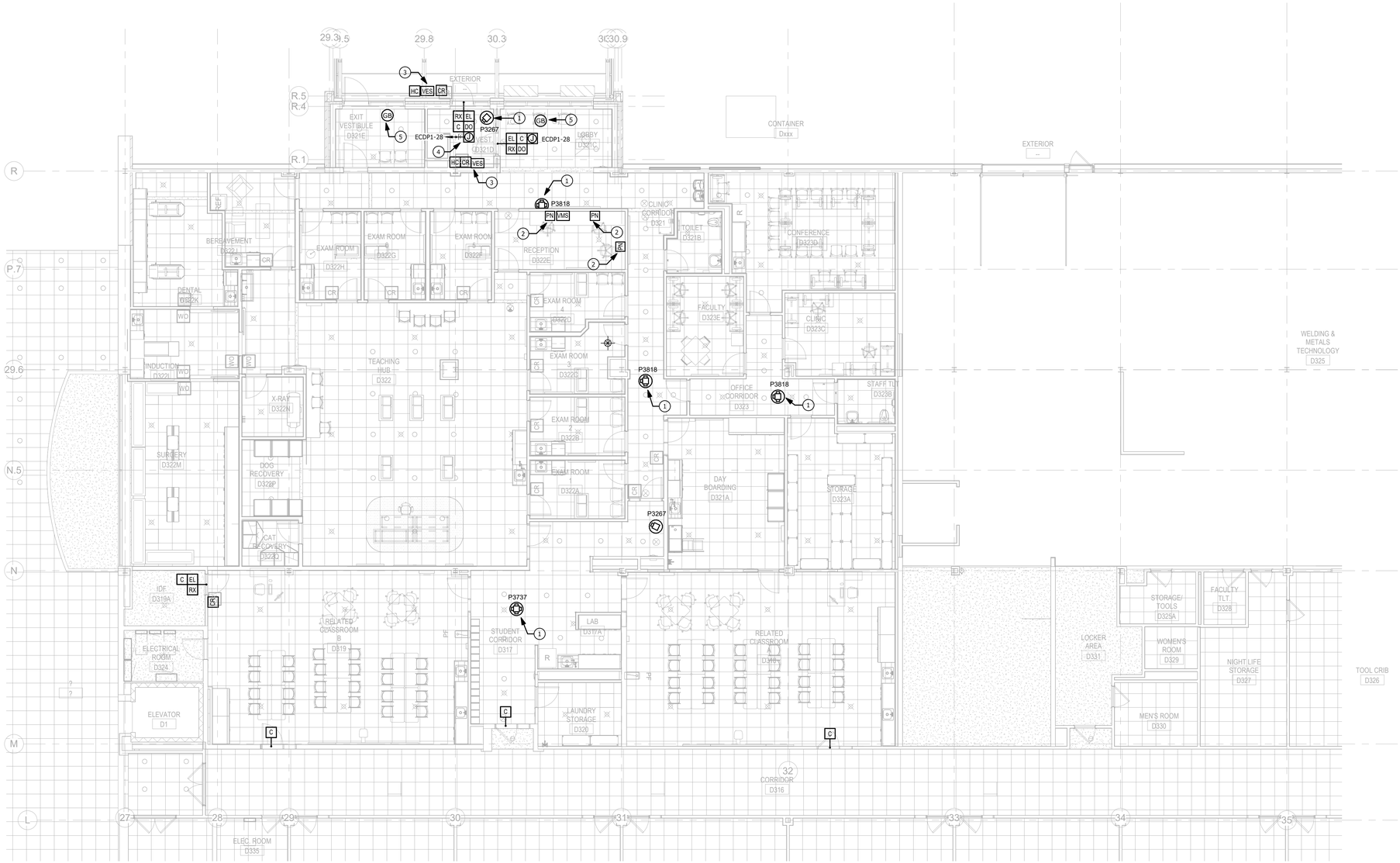
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1 Security Plan
1/8" = 1'-0"

KEYED NOTES FOR SC1.1

1. FURNISH AND INSTALL NEW AXIS CAMERA. CONNECT TO EXISTING SECURITY SURVEILLANCE SYSTEM. PROVIDE LICENSES.
2. FURNISH AND INSTALL PANIC BUTTON. CONNECT TO EXISTING INTRUSION DETECTION SYSTEM.
3. FURNISH AND INSTALL (1) CATEGORY 6A CABLE TO EXISTING DATA CABINET. TERMINATE IN NEW PATCH PANEL AND PROVIDE TESTING. PROGRAM THE VES SUCH THAT WHEN THE CALL BUTTON IS PRESSED, THE AXIS I8116-E INITIATES A SIP CALL TO A PRE-CONFIGURED SIP PHONE (OR GROUP OF PHONES) CONNECTED TO A PBX SERVER, ALLOWING THE PERSON WHO ANSWERS THE CALL TO SEE VIDEO FROM THE DOOR STATION. FROM THE SIP PHONE'S INTERFACE, THE USER CAN THEN ENTER A CODE ON THE PHONE TO TRIGGER THE I8116-E'S BUILT-IN RELAY, WHICH IN TURN SIGNALS THE ACCESS CONTROL PANEL TO UNLOCK THE DOOR.
4. POWER FOR DOOR OPERATOR. FURNISH AND INSTALL 2-12 AWG AND 1-12 AWG GND IN 3/4" EMT CONDUIT TO 20A-1P CIRCUIT BREAKER #28 IN PANEL ECDP1 LOCATED IN EMERGENCY ELECTRIC D105.
5. FURNISH AND INSTALL GLASS BREAKER SENSOR. CONNECT TO EXISTING SECUIRTY SYSTEM IN THE AREA.

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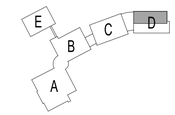
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New Security Plan

KEY PLAN



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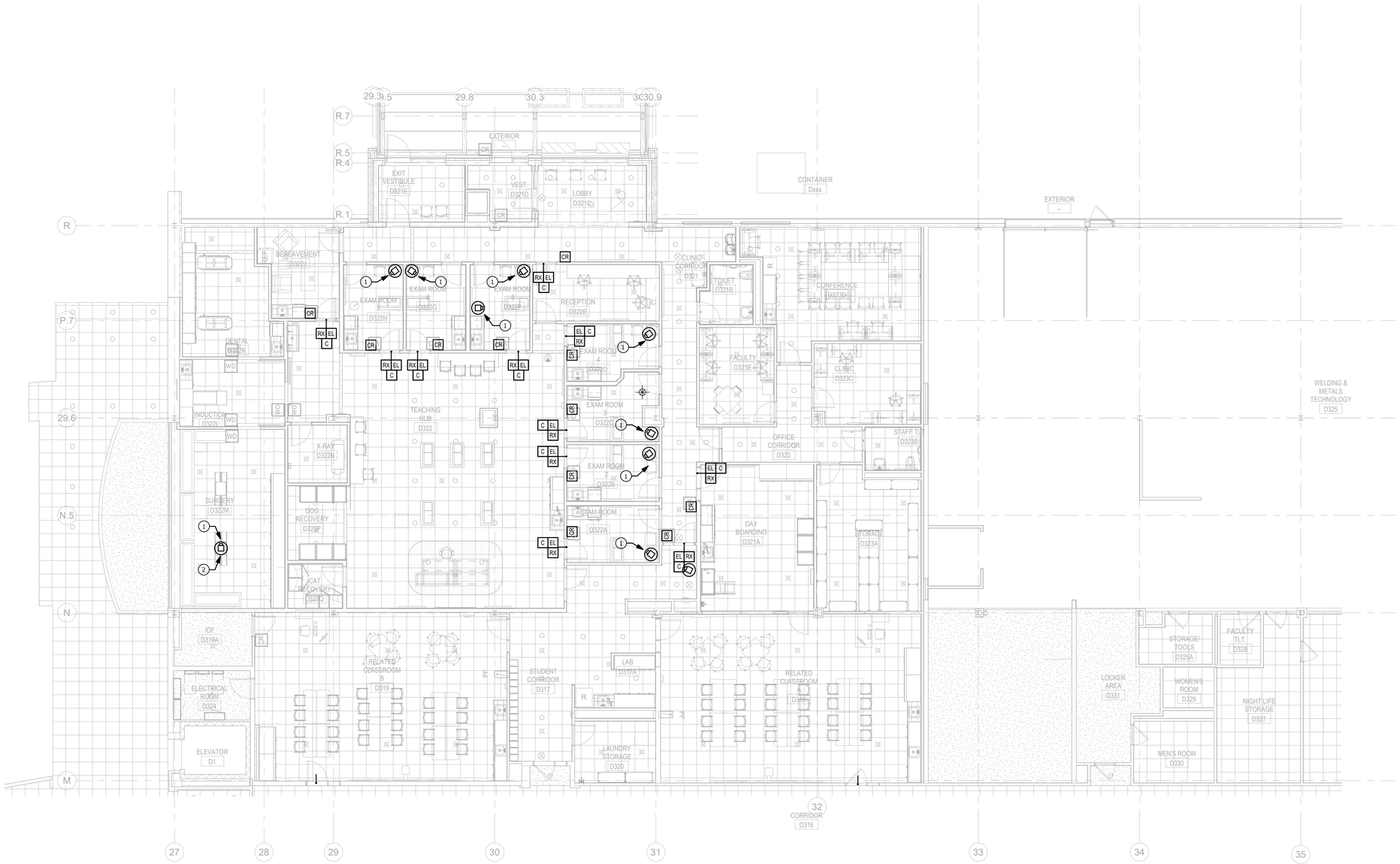
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SC1.1

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1 TUFTS Security Plan
1/8" = 1'-0"

KEYED NOTES FOR SC1.2
1 FURNISH AND INSTALL (2) CATEGORY 6A CABLES TO TUFTS DATA RACK IN IDF D319A. CAMERA TO BE FURNISHED AND INSTALLED BY TUFTS' SECURITY CONTRACTOR.
2 FURNISH AND INSTALL 1-1/2" CONDUIT FROM CAMERA TO TVH IN TEACHING HUB.

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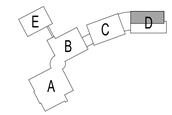
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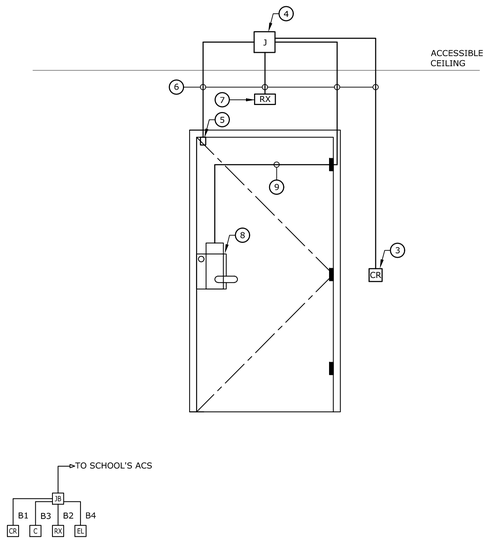
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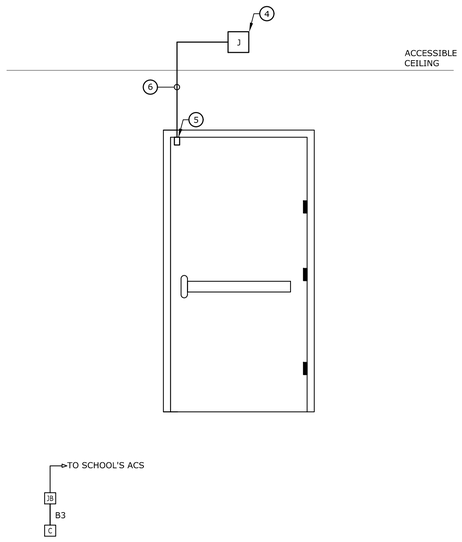
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1 | SCHOOL'S SINGLE DOOR WITH CR, EL, C, AND RX | NTS



2 | SCHOOL'S SINGLE DOOR WITH C | NTS

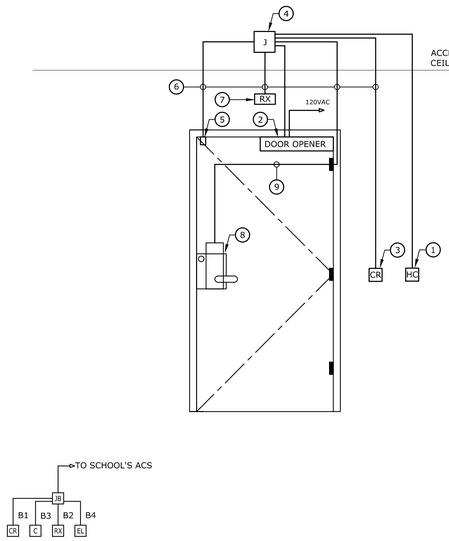
KEYED NOTES:

1. DOOR OPERATOR PUSH BUTTON FURNISHED BY DOOR HARDWARE VENDOR, INSTALLED AND WIRED BY ELECTRICAL CONTRACTOR.
2. DOOR OPENER FURNISHED BY DOOR HARDWARE VENDOR, INSTALLED AND WIRED BY ELECTRICAL CONTRACTOR. FURNISH AND INSTALL NORMALLY OPEN RELAYS AT ALL DOORS WITH DOOR OPENERS.
3. CARD READER FURNISHED AND INSTALLED BY ELECTRICAL CONTRACTOR.
4. JUNCTION BOX FURNISHED AND INSTALLED BY ELECTRICAL CONTRACTOR.
5. DOOR CONTACT FURNISHED AND INSTALLED BY ELECTRICAL CONTRACTOR.
6. 3/4" CONDUIT, BACKBOXES, AND WIRING BY ELECTRICAL CONTRACTOR.
7. REQUEST-TO-EXIT DEVICE FURNISHED AND INSTALLED BY THE ELECTRICAL CONTRACTOR.
8. ELECTRIC LOCK FURNISHED AND INSTALLED BY DOOR HARDWARE VENDOR, WIRED BY ELECTRICAL CONTRACTOR.
9. POWER TRANSFER WIRING INSTALLED BY THE ELECTRICAL SUBCONTRACTOR.
10. CARD READER FURNISHED AND INSTALLED BY TUFTS' CONTRACTOR.
11. DOOR CONTACT FURNISHED AND INSTALLED BY TUFTS' CONTRACTOR.
12. REQUEST-TO-EXIT DEVICE FURNISHED AND INSTALLED BY TUFTS' CONTRACTOR.
13. POWER TRANSFER WIRING INSTALLED BY TUFTS' CONTRACTOR.
14. ELECTRIC LOCK FURNISHED AND INSTALLED BY DOOR HARDWARE VENDOR, WIRED TUFTS' CONTRACTOR.

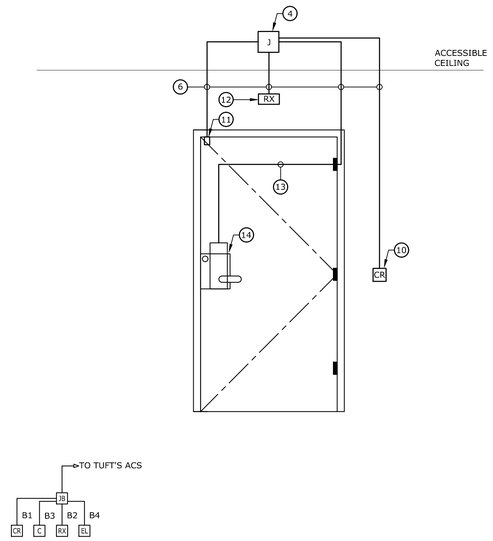
GENERAL NOTES:

1. ACCESS CONTROL SYSTEM POWER SUPPLY SHALL BE SIZED, FURNISHED, AND INSTALLED BY THE ELECTRICAL CONTRACTOR.
2. POWER SUPPLIES SHALL BE INSTALLED NEXT TO THE ACCESS CONTROL PANELS.
3. REFER TO FLOOR PLANS FOR CARD READER LOCATIONS AND QUANTITIES.
4. TYPICAL WIRING SHOWN. REQUIRED WIRING MAY BE DIFFERENT DEPENDING ON THE TYPE OF SYSTEMS PROCURED. COORDINATE ALL SYSTEM WIRING PRIOR TO INSTALLATION.
5. POWER, ACCESS CONTROL, INTRUSION DETECTION, ETC. WIRING FURNISHED AND INSTALLED BY ELECTRICAL CONTRACTOR. COORDINATE MANUFACTURER RECOMMENDED WIRING FOR EACH SYSTEM PRIOR TO INSTALLATION.
6. POWER SUPPLIES SHALL BE INSTALLED NEXT TO THE ACCESS CONTROL PANELS OR WITHIN 50 FT. OF ACCESS CONTROL DEVICES, REFER TO APPROVED SHOP DRAWINGS FOR EXACT LOCATION PRIOR TO INSTALLATION.

3 | DOOR HARDWARE WIRING NOTES | NTS



4 | SCHOOL'S SINGLE DOOR WITH CR, EL, C, RX, DO AND HC | NTS



5 | TUFTS' SINGLE DOOR WITH CR, EL, C, AND RX | NTS

CABLE LEGEND

SYMBOL	DESCRIPTION	CABLE	MAX DISTANCE
A	NETWORK	4PR 23AWG TW, SOLID, CAT6	328'
B	B1 – CARD READER	6C 18AWG, ST, SH	500'
	B2 – REQUEST TO EXIT	4C 18AWG, ST, SH	
	B3 – DOOR CONTACT	2C 22AWG, ST, SH	
	B4 – LOCK POWER	4C 14AWG, ST, SH	
C	SDI2	4C 18AWG, TW, ST	500'
D	ADDRESSABLE POPIT LOOP	2C 18AWG, TW, ST	500'
E	POWER	2C 16AWG, TW, ST	500'

LEGEND

SYM.	DESCRIPTION	SYM.	DESCRIPTION
A	ADDRESSABLE POPIT INPUT MODULE	RX	DOOR EXIT DEVICE
CR	ACCESS CONTROL READER		
C	DOOR CONTACT		
DO	DOOR OPERATOR		
HC	PUSH BUTTON		
EL	ELECTRIC LOCK		

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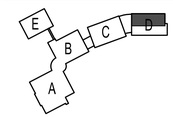
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Access Control Details

KEY PLAN



REVISIONS

No.	Description	Date

FILE:
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SPEECH REINFORCEMENT

SR - SPEECH REINFORCEMENT SPEAKER, RECESSED MOUNTED

PUBLIC ADDRESS & CLOCK

PA - PUBLIC ADDRESS SPEAKER, RECESSED MOUNTED

TB - TALK BACK SPEAKER, RECESSED MOUNTED

PUBLIC ADDRESS & CLOCK DEVICES ABBREVIATIONS:

"S" - DENOTES SURFACE MOUNTED SPEAKER

"WP" - DENOTES WEATHERPROOF SPEAKER

"P" - DENOTES PENDANT MOUNTED SPEAKER

TELECOMMUNICATIONS

- WALL PHONE OUTLET - (1) VOICE PORT
  WALL MOUNTED AT 54" AFF., PROVIDE 2-GANG BOX AND 1" CONDUIT STUB TO ACCESSIBLE CEILING

- DATA OUTLET WITH TWO DATA JACKS, WALL MOUNTED
  WITH CATEGORY 6A CABLES UNSHIELDED CABLES
  2-GANG BOX AND 1" CONDUIT STUB TO ACCESSIBLE CEILING
  UNLESS OTHERWISE NOTED

- DATA OUTLET WITH TWO DATA JACKS, CEILING MOUNTED
  WITH CATEGORY 6A CABLES UNSHIELDED CABLES
  2-GANG BOX AND 1" CONDUIT STUB TO ACCESSIBLE CEILING
  UNLESS OTHERWISE NOTED

- DATA OUTLET - (2) DATA PORTS
  WALL MOUNTED, ABOVE COUNTER, PROVIDE 2-GANG BOX AND 1" CONDUIT STUB TO ACCESSIBLE CEILING

- WIFI ACCESS POINT OUTLET - (2) DATA PORTS
  MOUNTED ABOVE CEILING, PROVIDE 2-GANG BOX AND 20 FT. COIL

TGB - TELECOM GROUNDING BUS BAR

PH - PROJECTOR OUTLET - MOUNTED HIGH
HEIGHT PER ARCHITECTURAL ELEVATION PLANS, PROVIDE:
(1) DUPLEX RECEPTACLE
(2) DATA PORTS
(1) 2-GANG AV BACKBOX WITH (2) 1-1/4" CONDUITS, WITH PULL STRING AND BUSHING

PL - PROJECTOR OUTLET - LOW
MOUNTED AT 18" AFF, PROVIDE:
(1) DUPLEX RECEPTACLE
(2) DATA PORTS
(1) 2-GANG AV BACKBOX WITH (2) 1-1/4" CONDUITS, WITH PULL STRING AND BUSHING

TVH - LARGE FORMAT DISPLAY MONITOR OUTLETS - HIGH & LOW
HEIGHT PER ARCHITECTURAL ELEVATION PLANS, PROVIDE:
OUTLETS MOUNTED HIGH, PROVIDE:
(1) DUPLEX RECEPTACLE WITH TOP HALF CONTROLLED
(2) DATA PORTS
(1) 2-GANG AV BACKBOX WITH (1) 1-1/4" CONDUIT, PULL STRING AND BUSHING, STUB UP ABOVE ACCESSIBLE CEILING

TVHL - DISPLAY MONITOR OUTLETS
OUTLETS MOUNTED AT 58" AFF:
PROVIDE (1) DUPLEX RECEPTACLE WITH TOP HALF CONTROLLED
PROVIDE (4) DATA PORTS;
PROVIDE (1) 1-GANG BOX AV OUTLET WITH 1-1/4" CONDUIT STUB ABOVE ACCESSIBLE CEILING WITH PULL STRING AND BUSHING
OUTLETS MOUNTED AT 18" AFF:
PROVIDE (1) DUPLEX RECEPTACLES WITH TOP HALF CONTROLLED
PROVIDE (1) DATA PORT;
PROVIDE (1) 2-GANG BOX AV OUTLET WITH 1-1/4" CONDUIT STUB ABOVE ACCESSIBLE CEILING WITH PULL STRING AND BUSHING

CP - COPIER OUTLET, WALL MOUNTED
(1) DUPLEX RECEPTACLE WITH TOP HALF CONTROLLED
(2) DATA PORTS

WS - WORKSTATION OUTLET, WALL MOUNTED
(1) DUPLEX RECEPTACLE WITH TOP HALF CONTROLLED
(1) DUPLEX RECEPTACLE WITH (2) TYPE C USB PORTS
(2) DATA PORTS

ABBREVIATIONS

"1D" - DENOTES: (1) DATA PORT

"2D" - DENOTES: (2) DATA PORTS

"4D" - DENOTES: (4) DATA PORTS

NOTES FOR TELECOMMUNICATIONS DEVICES:

1. PROVIDE CATEGORY 6A JACKS AND CABLES TO ALL VOICE AND DATA OUTLETS.
2. VOICE/DATA OUTLETS SHALL BE PROVIDED WITH BOX AND CONDUIT STUBBED UP ABOVE THE CEILING (UNLESS OTHERWISE NOTED) AND WITH PULL STRING AND NYLON BUSHINGS AT CONDUIT STUBS, TO PREVENT DAMAGE TO CABLES WHEN PULLED. SIZE CONDUIT AS REQUIRED. MINIMUM CONDUIT SIZE SHALL BE 1".
3. MOUNT VOICE, DATA AND VIDEO OUTLETS A MAXIMUM OF 12" FROM A POWER OUTLET. COORDINATE LOCATIONS WITH ELECTRICAL DRAWINGS.
4. TERMINATE ALL VOICE/DATA CABLING IN VOICE/DATA RACKS.
5. REFER TO VOICE DATA ABBREVIATIONS FOR CABLE DROP QUANTITIES.
6. ALL EXPOSED VOICE/DATA/TV/AV CABLING SHALL BE INSTALLED IN CONDUIT.
7. THE DATA DROPS FOR ACCESS POINTS AT DROP CEILINGS, SHALL BE INSTALLED IN A BOX ATTACHED TO A CABLE WHIP ABOVE THE CEILING FOR FUTURE FLEXIBILITY IN LOCATING THE ACCESS POINT. AT HARD CEILINGS, THE DATA DROPS FOR ACCESS POINTS SHALL BE INSTALLED BELOW OR FLUSH WITH THE CEILING.

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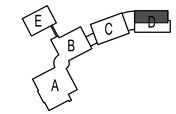
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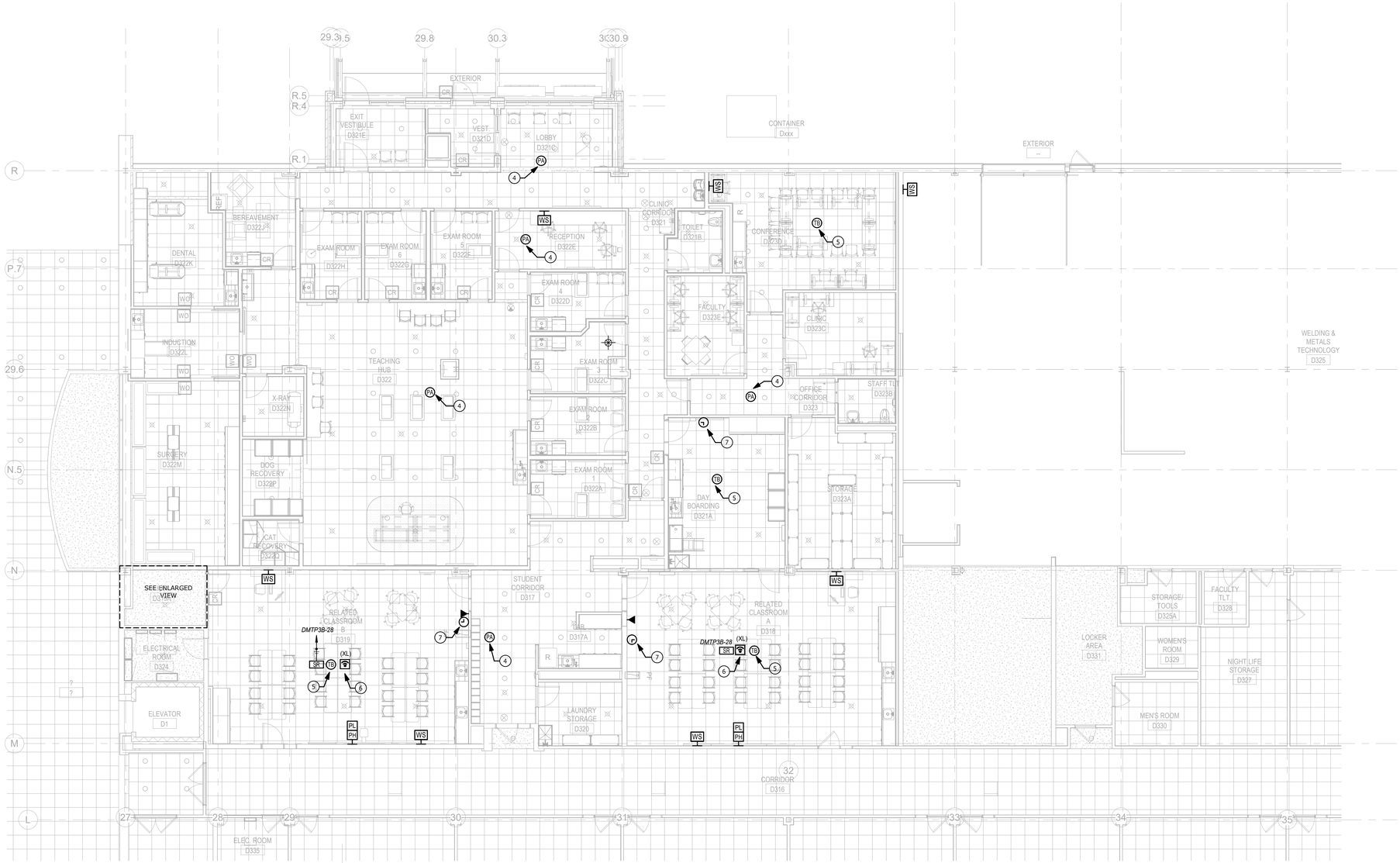
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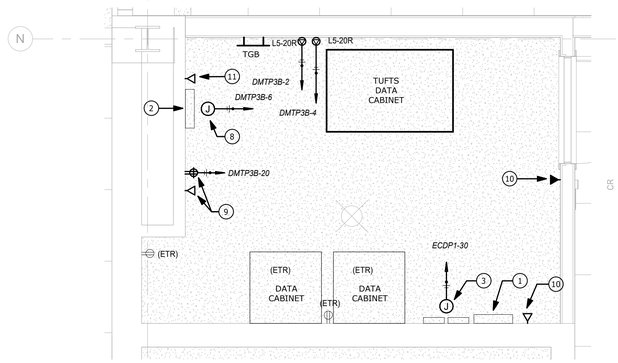
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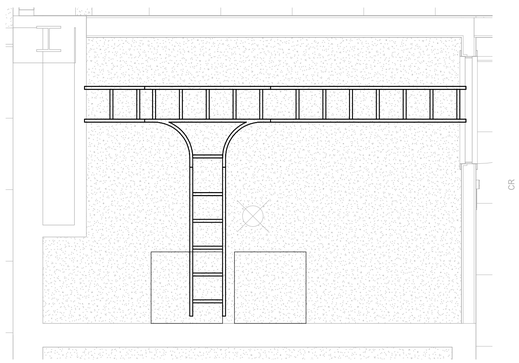
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1 Technology Plan
1/8" = 1'-0"



2 Enlarged IDF Room D319A
1/2" = 1'-0"



3 Cable Trays - Enlarged IDF Room D319A
1/2" = 1'-0"

KEYED NOTES FOR TC1.1

1. ACCESS CONTROL PANEL FOR WORCESTER TECHNICAL HIGH SCHOOL. CONNECT TO THE EXISTING ACCESS CONTROL SYSTEM.
2. ACCESS CONTROL PANEL FOR TUFTS.
3. POWER SUPPLIES FOR ACCESS CONTROL PANEL. FURNISH AND INSTALL 2-12 AWG AND 1-12 AWG GND IN 3/4" EMT CONDUIT TO 20A-1P CIRCUIT BREAKER #30 IN PANEL ECDP1 LOCATED IN EMERGENCY ELECTRIC D105.
4. FURNISH AND INSTALL NEW PUBLIC ADDRESS SPEAKER. CONNECT TO EXISTING SPEAKER CIRCUIT IN THE AREA. THE EXISTING BUILDING COMMUNICATIONS SYSTEM IS SIMPLEX 5100 SERIES.
5. FURNISH AND INSTALL NEW PUBLIC ADDRESS SPEAKER WITH TALK-BACK FEATURE. CONNECT TO EXISTING SPEAKER CIRCUIT IN THE AREAS. THE EXISTING BUILDING COMMUNICATIONS SYSTEM IS SIMPLEX 5100 SERIES.
6. NEW LOCATION FOR RELOCATED EXISTING WIRELESS ACCESS POINT. EXTEND WIRING TO NEW LOCATION.
7. SIMPLEX CLOCK TO BE CONNECTED TO EXISTING SYNCHRONOUS CLOCK SYSTEM.
8. POWER FOR TUFTS ACCESS CONTROL PANEL.
9. POWER AND DATA FOR TUFTS SECUIRTY SYSTEM. COORDINATE EXACT LOCATION PRIOR TO INSTALLATION. FURNISH AND INSTALL CATEGORY 6A CABLE TO TUFTS DATA CABINET.
10. FURNISH AND INSTALL CATEGORY 6A CABLES TO EXISTING WALL MOUNTED DATA CABINET. TERMINATE IN NEW PATCH PANEL.
11. FURNISH AND INSTALL CATEGORY 6A CABLES TO NEW TUFTS DATA CABINET.

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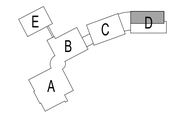
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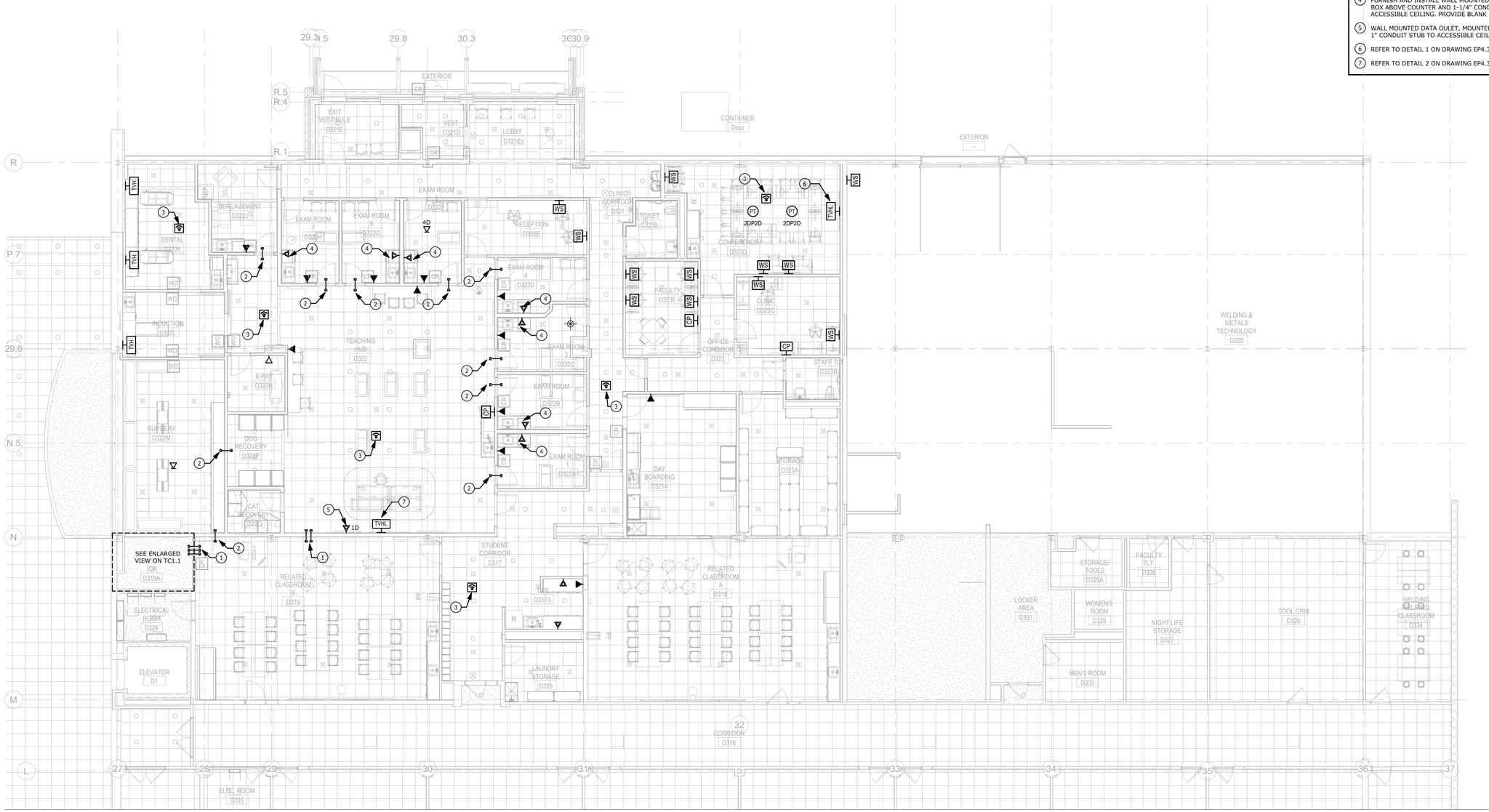
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GENERAL NOTES FOR TC1.2

1. ALL DATA CABLES TO BE TERMINATED IN TUFTS DATA CABINET.

KEYED NOTES FOR TC1.2

1. STI FS400: 4" FIRESTOP SLEEVE THROUGH WALL.
2. STI FS200: 2" FIRESTOP SLEEVE THROUGH WALL.
3. FURNISH AND INSTALL (2) CATEGORY 6A CABLES TO TUFTS DATA CABINET. WIRELESS ACCESS POINT TO BE FURNISHED AND INSTALL BY TUFTS.
4. FURNISH AND INSTALL WALL MOUNTED, EMPTY 2-GANG BOX ABOVE COUNTER AND 1-1/4" CONDUIT STUB TO ACCESSIBLE CEILING. PROVIDE BLANK FACEPLATES.
5. WALL MOUNTED DATA OULET, MOUNTED AT 48"AFF WITH 1" CONDUIT STUB TO ACCESSIBLE CEILING.
6. REFER TO DETAIL 1 ON DRAWING EP4.3.
7. REFER TO DETAIL 2 ON DRAWING EP4.3.

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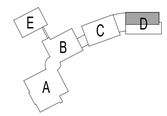
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