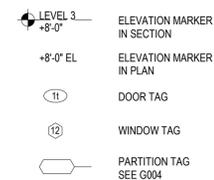
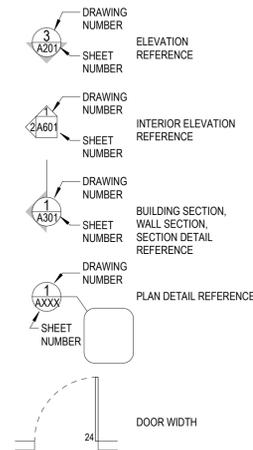


EASTERN ACROBATICS

NOTE:
 THE DRAWINGS PROVIDED ARE PRELIMINARY. COMPLETE DRAWINGS WILL BE PROVIDED FOR PERMIT AND CONSTRUCTION. THESE DRAWINGS ARE MEANT FOR BALLPARK PRICING ONLY, AND NOT FOR APPLICATION FOR PERMIT OR FOR CONSTRUCTION.

PLEASE CONTACT ARCHITECT WITH ANY QUESTIONS: marilyn@runciblestudios.com



GENERAL NOTES

1. ANY REFERENCE TO "CODE" SHALL REFER TO MASSACHUSETTS STATE BUILDING CODE, 780 CMR, 9TH EDITION, UNLESS OTHERWISE NOTED.
2. ALL DIMENSIONS ARE TO FACE OF STUD OR FACE OF MASONRY ON NEW WALLS AND TO CENTERLINE OF OPENING, UNLESS OTHERWISE NOTED. DIMENSIONS ON EXISTING WALLS ARE TO FACE OF WALL.
3. DRAWINGS SHALL NOT BE SCALED; USE WRITTEN DIMENSIONS ONLY.
4. GENERAL CONTRACTOR SHALL VERIFY ALL DIMENSIONS AND CONDITIONS IN FIELD.
5. ALL UNDERGROUND UTILITIES SHALL BE CONFIRMED WITH DIG SAFE AND/OR LOCAL JURISDICTION.
6. BLOCKING SHALL BE PROVIDED AT ALL LOCATIONS AS REQUIRED TO COMPLETE THE WORK.
7. FIRE RESISTIVE WALLS ARE NOT TO BE INTERRUPTED BY UNPROTECTED OPENINGS, RECESSED EQUIPMENT, OR CASEWORK. RECESSES AND VOIDS SHALL BE BUILT IN SUCH A MANNER AS TO ASSURE CONTINUITY OF RATED CONSTRUCTION.
8. ANY VISIBLE ITEM, OF ANY TRADE, WHICH IS NOT SPECIFICALLY LOCATED THE DRAWINGS, SHALL BE INSTALLED AS LOCATED AND COORDINATED WITH THE ARCHITECT IN THE FIELD.
9. GENERAL CONTRACTOR SHALL SECURE ALL PERMITS, APPROVALS, VARIANCES (IF NECESSARY), AND INSPECTIONS REQUIRED FOR CONSTRUCTION.
10. "ALIGN" SHALL MEAN TO ACCURATELY LOCATE FINISH FACES IN THE SAME PLANE.
11. "TYPICAL" OR "TYP" SHALL MEAN THAT THE CONDITION IS REPRESENTATIVE FOR SIMILAR CONDITIONS THROUGHOUT, UNLESS NOTED OTHERWISE.
12. THESE DRAWINGS REQUIRE THE SELECTIVE REMOVAL AND SUBSEQUENT DISPOSAL OF VARIOUS BUILDING ELEMENTS AND MATERIALS; PROTECTIVE MEASURES MUST BE PROVIDED AS REQUIRED BY OSHA AND OTHER LOCAL CODES, AS WELL AS TO PROTECT EXISTING FINISHED TENANT AREAS BEYOND THE SCOPE OF THIS FIT-OUT.
13. ANY DISCREPANCIES BETWEEN DRAWINGS AND FIELD CONDITIONS SHALL BE BROUGHT TO THE ARCHITECT'S IMMEDIATE ATTENTION. ANY WORK PURSUED, INSTALLED, OR CHANGED BY THE CONTRACTOR WITHOUT PRIOR DISCUSSION WITH THE ARCHITECT IS THE SOLE RESPONSIBILITY OF THE CONTRACTOR, INCLUDING ANY FIXES OR REWORK REQUIRED.

EASTERN ACROBATICS

28 Eliot Street
 Natick, MA 01760

OWNER

THE ENTRUST INC.
 FBO AUSTIN S. LIN

28 ELIOT ST.
 NATICK, MA 01760

CLIENT

RUNCIBLE STUDIOS, LLC

MARILYN MOEDINGER AIA, LEED AP
 CAMBRIDGE, MA 02139
 617-939-9888
marilyn@runciblestudios.com

ARCHITECT

CONTRACTOR

SOUTH MOUNTAIN
 PO BOX 1260
 WEST TISBURY, MA 02575
 508-693-4850
 SOUTHMOUNTAIN.COM

STRUCTURE

BLW ENGINEERS, INC
 311 GREAT ROAD
 LITTLETON, MA 01460
 978-486-4301
 BLWENGINEERS.COM

MEP

DRAFT

NOT FOR CONSTRUCTION
 OR APPLICATION FOR
 BUILDING PERMIT.

STAMP

DD/PRICING FEB 4, 2022

PHASE 2 PRELIMINARY PRICING DRAWINGS

12 JULY 2024

PHASE

2021-003

PROJECT NUMBER

COVER

G000

EASTERN ACROBATICS

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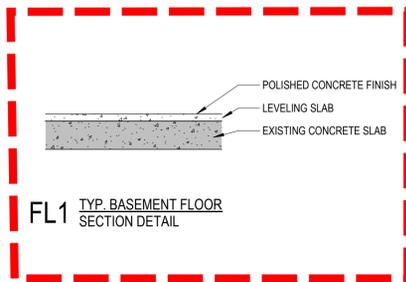
12 JULY 2024

PHASE

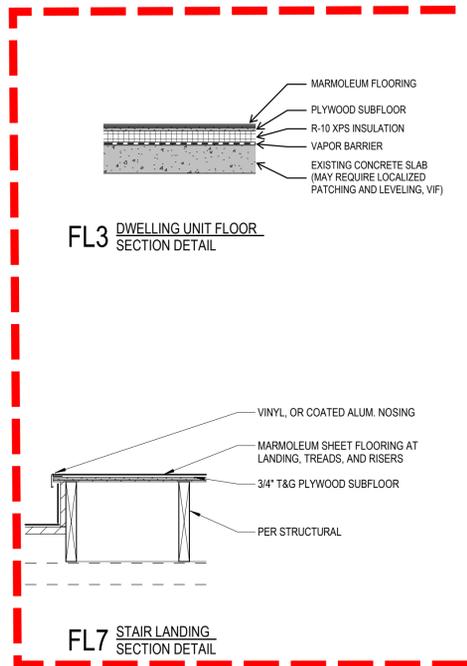
2021-003 PROJECT NUMBER

TYP. ASSEMBLIES

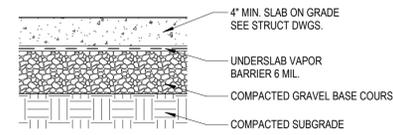
G004



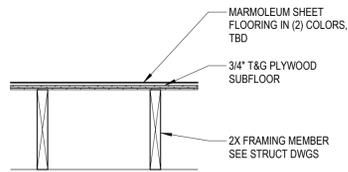
FL1 TYP. BASEMENT FLOOR SECTION DETAIL



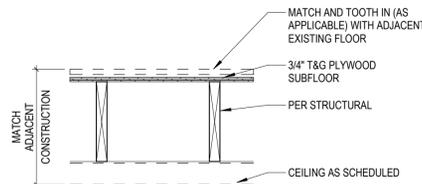
FL3 DWELLING UNIT FLOOR SECTION DETAIL



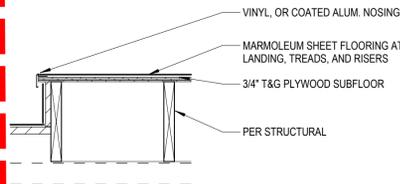
FL4 NEW CONCRETE SLAB SECTION DETAIL



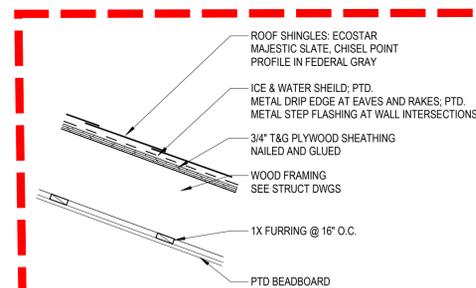
FL5 LULA LOBBY FLOOR SECTION DETAIL



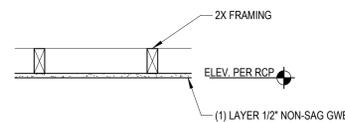
FL6 INFILL FLOOR SECTION DETAIL



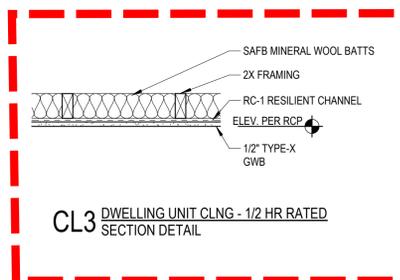
FL7 STAIR LANDING SECTION DETAIL



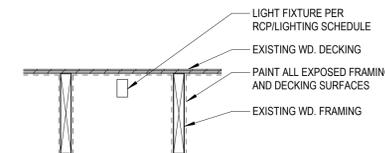
RF1 VESTIBULE ROOF SECTION DETAIL



CL2 DROPPED GWB CEILING SECTION DETAIL



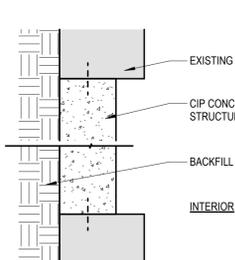
CL3 DWELLING UNIT CLING - 1/2 HR RATED SECTION DETAIL



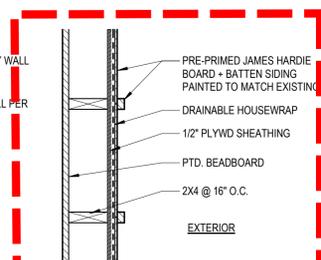
CL4 DANCE STUDIO CEILING SECTION DETAIL

2 FLOOR, CEILING, & ROOF TYPES
DETAIL 1" = 1'-0"

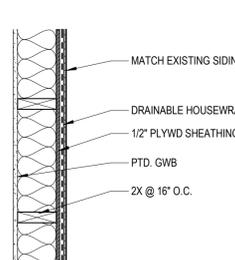
DASHED LINE INDICATES PART OF PHASE 2 SCOPE. OTHER WALL AND FLOOR TYPES DESCRIBE EXISTING CONDITIONS AND ARE FOR REFERENCE ONLY. (TYPICAL)



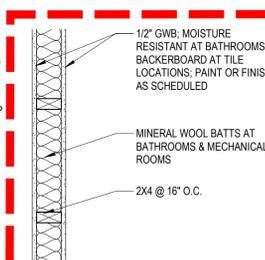
E1 BASEMENT WALL INFILL PLAN DETAIL



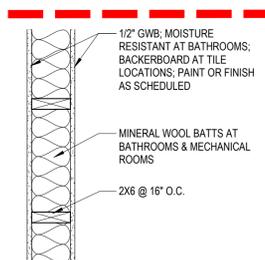
E2 VESTIBULES WALLS PLAN DETAIL



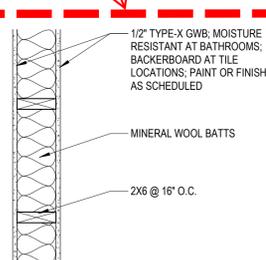
E3 EXTERIOR WALL INFILL PLAN DETAIL



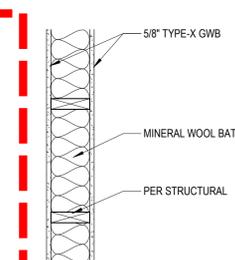
1 TYP. INTERIOR PARTITION PLAN DETAIL



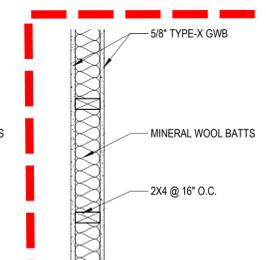
2 2X6 INTERIOR PARTITION PLAN DETAIL



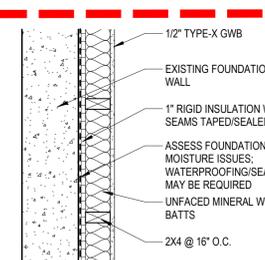
3 DWELLING UNIT SEPARATION - 1/2 HR RATED PLAN DETAIL



4 LIFT SHAFT - 1 HR FIRE BARRIER PLAN DETAIL



5 1-HR RATED PARTITION PLAN DETAIL



6 DWELLING UNIT PERIMETER FURRED WALL PLAN DETAIL

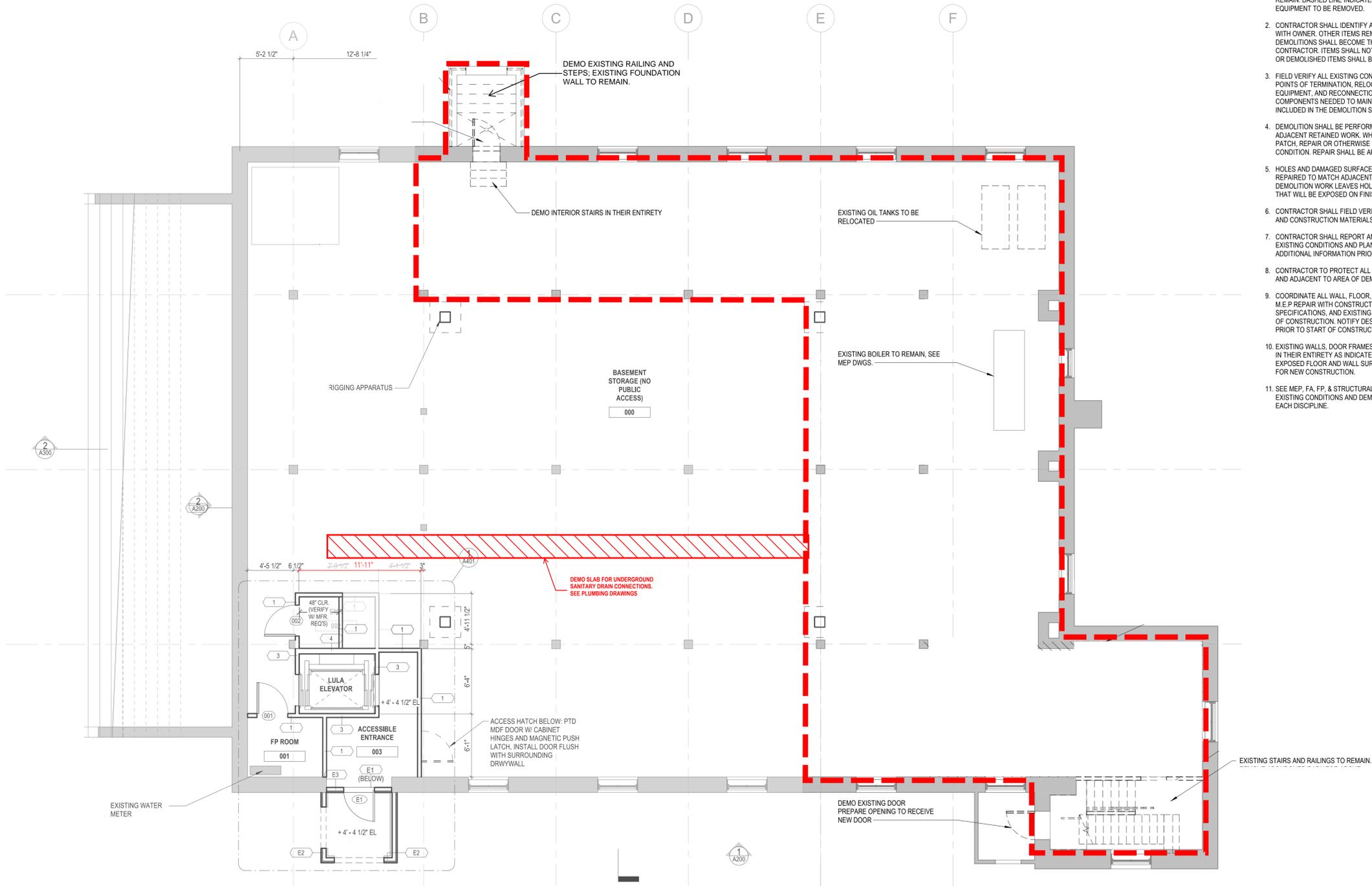
1 WALL TYPES
DETAIL 1" = 1'-0"

DEMOLITION LEGEND

- - - - - EXISTING TO DEMOLISH
- ▬ EXISTING TO REMAIN
- - - - - NEW OPENING IN EXISTING WALL/FLOOR/ROOF

GENERAL DEMO NOTES

1. SOLID LINE INDICATES STRUCTURE AND / OR EQUIPMENT TO REMAIN. DASHED LINE INDICATES STRUCTURE AND / OR EQUIPMENT TO BE REMOVED.
2. CONTRACTOR SHALL IDENTIFY ANY ITEMS TO BE SALVAGED WITH OWNER. OTHER ITEMS REMOVED FROM AREA OF DEMOLITIONS SHALL BECOME THE PROPERTY OF THE CONTRACTOR. ITEMS SHALL NOT BE SOLD ON SITE. REMOVED OR DEMOLISHED ITEMS SHALL BE REMOVED FROM THE SITE.
3. FIELD VERIFY ALL EXISTING CONDITIONS TO COORDINATE POINTS OF TERMINATION, RELOCATION OF EXISTING EQUIPMENT, AND RECONNECTION AND / OR REPLACEMENT OF COMPONENTS NEEDED TO MAINTAIN EXISTING AREAS NOT INCLUDED IN THE DEMOLITION SCOPE OF THE WORK.
4. DEMOLITION SHALL BE PERFORMED WITHOUT DAMAGE TO ADJACENT RETAINED WORK. WHERE SUCH DAMAGE OCCURS, PATCH, REPAIR OR OTHERWISE RESTORE TO ITS ORIGINAL CONDITION. REPAIR SHALL BE APPROVED BY THE ARCHITECT.
5. HOLES AND DAMAGED SURFACES SHALL BE PATCHED AND REPAIRED TO MATCH ADJACENT SURFACES WHERE DEMOLITION WORK LEAVES HOLES AND DAMAGED SURFACES THAT WILL BE EXPOSED ON FINISHED WORK.
6. CONTRACTOR SHALL FIELD VERIFY ALL EXISTING CONDITIONS AND CONSTRUCTION MATERIALS.
7. CONTRACTOR SHALL REPORT ANY DISCREPANCIES BETWEEN EXISTING CONDITIONS AND PLANS TO ARCHITECT FOR ADDITIONAL INFORMATION PRIOR TO STARTING WORK.
8. CONTRACTOR TO PROTECT ALL STRUCTURAL ELEMENTS IN AND ADJACENT TO AREA OF DEMOLITION.
9. COORDINATE ALL WALL, FLOOR, CEILING, STRUCTURE AND M.E.P. REPAIR WITH CONSTRUCTION DRAWINGS, SPECIFICATIONS, AND EXISTING CONDITIONS PRIOR TO START OF CONSTRUCTION. NOTIFY DESIGN TEAM OF DISCREPANCIES PRIOR TO START OF CONSTRUCTION.
10. EXISTING WALLS, DOOR FRAMES, AND DOORS TO BE REMOVED IN THEIR ENTIRETY AS INDICATED. PATCH AND REPAIR EXPOSED FLOOR AND WALL SURFACES AS REQUIRED TO PREP FOR NEW CONSTRUCTION.
11. SEE MEP, FA, FP, & STRUCTURAL DRAWINGS AND SPECS FOR EXISTING CONDITIONS AND DEMO INFORMATION RELATED TO EACH DISCIPLINE.



1 BASEMENT LEVEL
DEMOLITION PLAN
3/16" = 1'-0"

EASTERN ACROBATICS

28 Eliot Street
Natick, MA 01760

OWNER

THE ENTRUST INC.
FBO AUSTIN S. LIN

28 ELIOT ST.
NATICK, MA 01760

CLIENT

RUNCIBLE STUDIOS, LLC

MARILYN MOEDINGER AIA, LEED AP
CAMBRIDGE, MA 02139
617-939-9888
marilyn@runciblestudios.com

ARCHITECT

CONTRACTOR

SOUTH MOUNTAIN
PO BOX 1260
WEST TISBURY, MA 02575
508-693-4850
SOUTHMOUNTAIN.COM

STRUCTURE

BLW ENGINEERS, INC
311 GREAT ROAD
LITTLETON, MA 01460
978-486-4301
BLWENGINEERS.COM

MEP

DRAFT

NOT FOR CONSTRUCTION
OR APPLICATION FOR
BUILDING PERMIT.

STAMP

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PHASE 2 PRELIMINARY PRICING DRAWINGS

12 JULY 2024

PHASE

2021-003

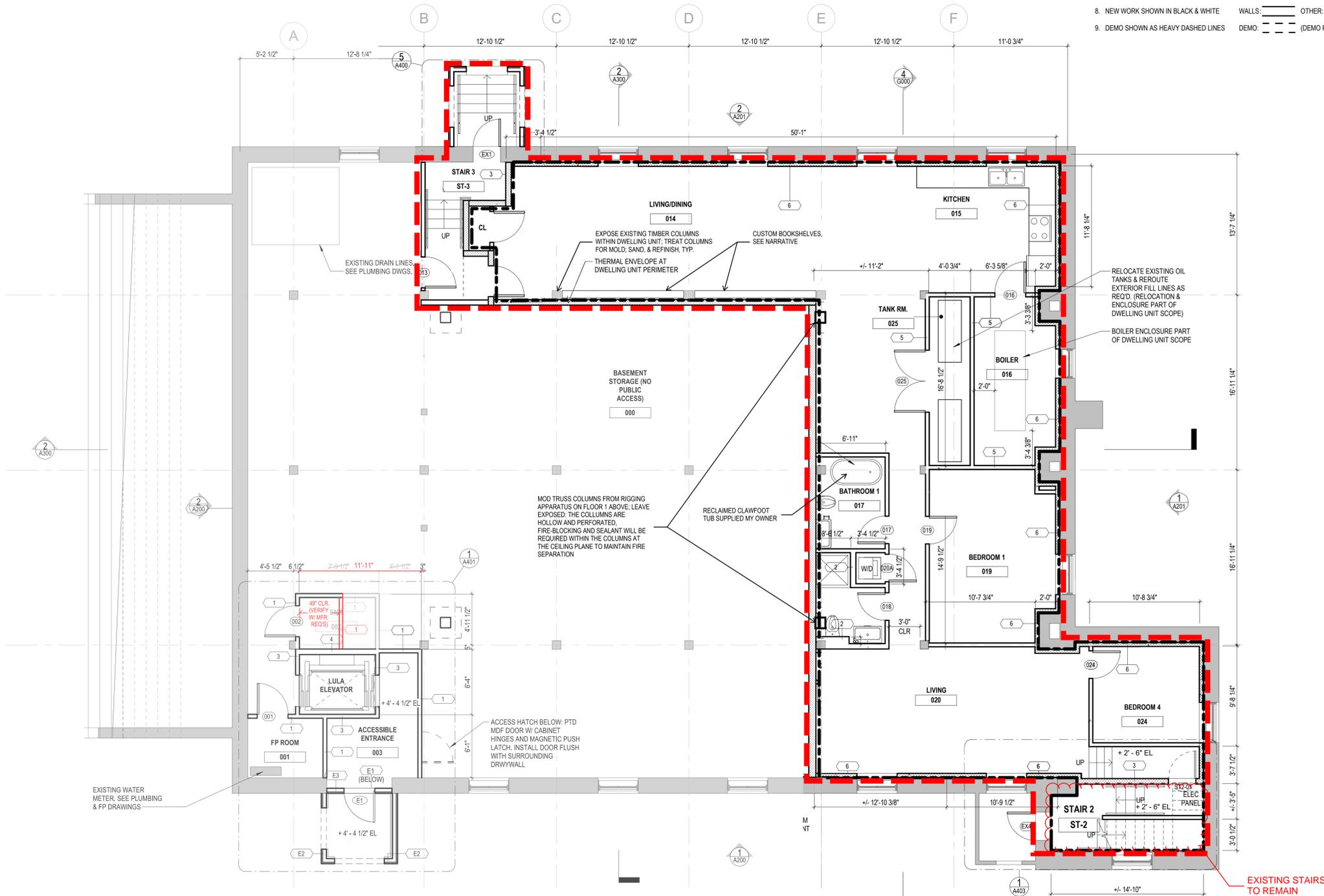
PROJECT NUMBER

DEMO PLAN -
BASEMENT

AD100

PLAN NOTES

1. LIGHTING, SWITCHING, AND POWER RECEPTACLES TO BE LOCATED AND INSTALLED PER CODE. COORDINATE FINAL LOCATIONS AND FIXTURE SPECIFICATION WITH OWNER AND ARCHITECT PRIOR TO ROUGH-IN.
2. ANY REQUIRED MODIFICATIONS AND/OR ADDITIONS TO HVAC SYSTEM TO BE DONE PER CODE, AND COORDINATED WITH OWNER AND ARCHITECT PRIOR TO ROUGH-IN. DUCT WORK TO BE ROUTED THROUGH FLOOR JOIST BAYS, DROPPED CEILING, EAVE SPACE, CHASES, & SOFFITS ONLY AS PROVIDED FOR IN THE DRAWINGS. WHERE CONFLICTS ARISE, COORDINATE IN THE FIELD WITH THE ARCHITECT PRIOR TO INSTALLATION. DO NOT CREATE ADDITIONAL SOFFITS, OR CHASES WITHOUT COORDINATION WITH AND APPROVAL OF THE ARCHITECT.
3. ALL DIMENSIONS ARE TO FACE OF STUD OR FACE OF MASONRY ON NEW WALLS, AND TO CENTERLINE OF OPENING, UNLESS NOTED OTHERWISE. DIMENSIONS ON EXISTING WALLS ARE TO FACE OF WALL.
4. DRAWINGS SHALL NOT BE SCALED; USE WRITTEN DIMENSIONS ONLY.
5. GENERAL CONTRACTOR SHALL VERIFY ALL DIMENSIONS AND CONDITIONS IN THE FIELD.
6. CENTER NEW EXTERIOR WINDOWS & DOORS IN EXISTING OPENINGS UNLESS NOTED OTHERWISE.
7. EXISTING TO REMAIN SHOWN IN GRAY WALLS: OTHER:
8. NEW WORK SHOWN IN BLACK & WHITE WALLS: OTHER:
9. DEMO SHOWN AS HEAVY DASHED LINES DEMO: (DEMO PLANS ONLY)



1 BASEMENT LEVEL
FLOOR PLAN 3/16" = 1'-0"

EASTERN ACROBATICS

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PHASE 2 PRELIMINARY PRICING DRAWINGS
12 JULY 2024

PHASE

2021-003 PROJECT NUMBER

BASEMENT
FLOOR PLAN -
PROPOSED

A100

EASTERN ACROBATICS

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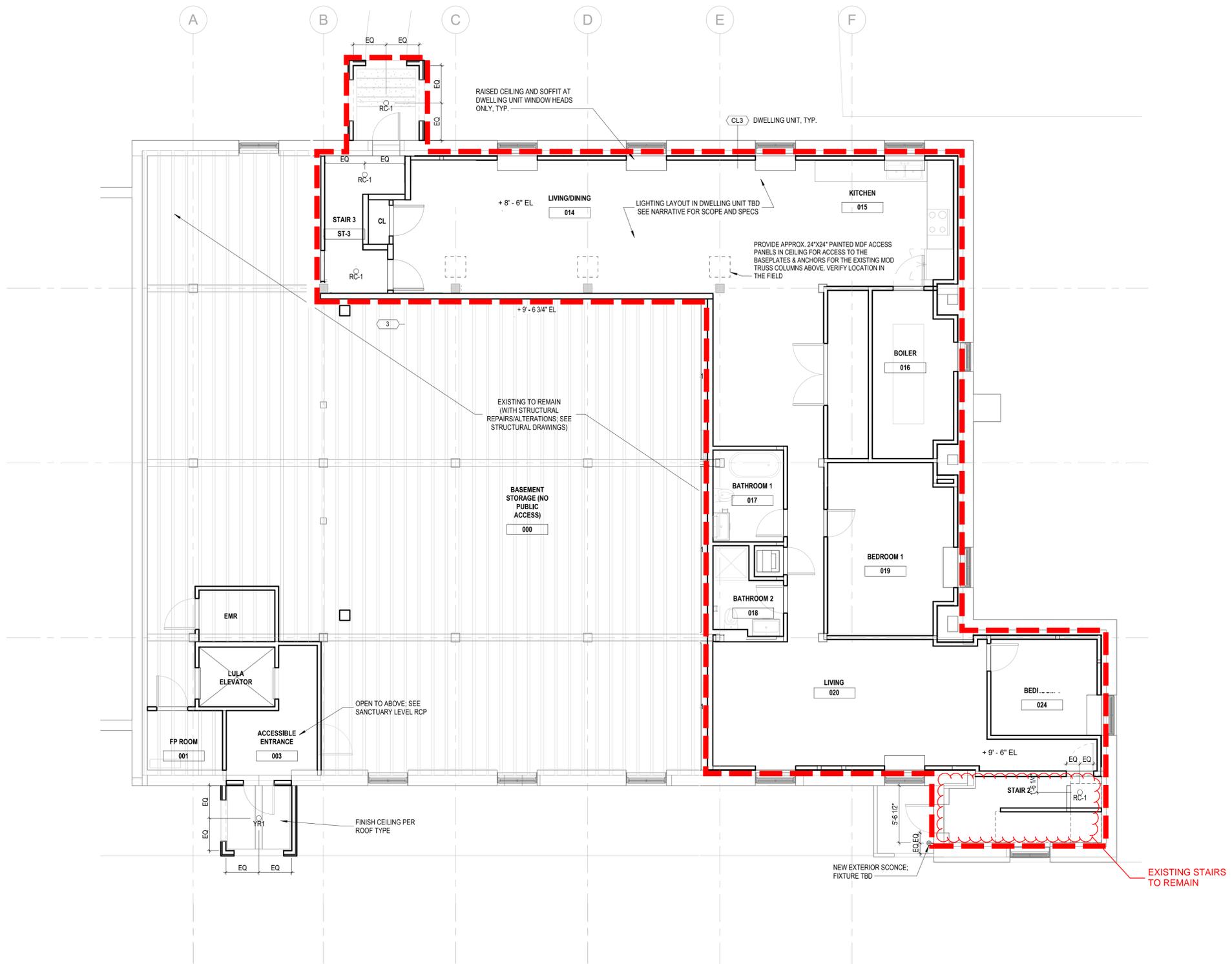
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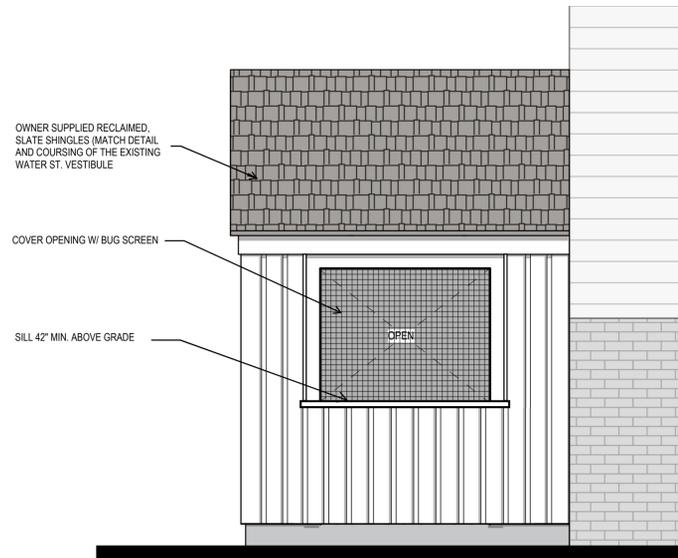
PROJECT NUMBER

**BASEMENT
CEILING PLAN -
PROPOSED**

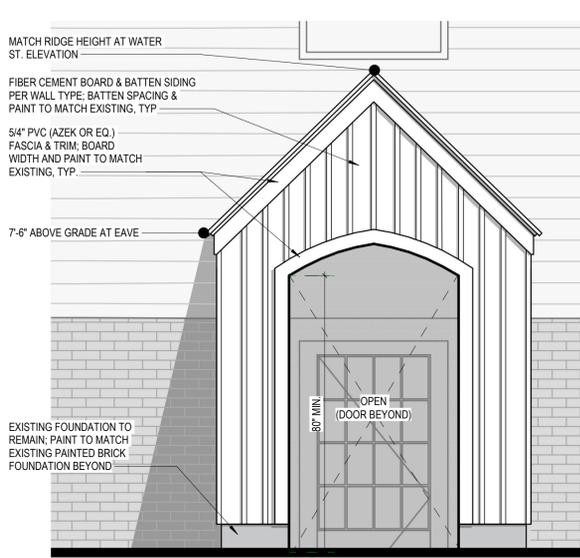
A110



1 BASEMENT LEVEL
CEILING PLAN 3/16" = 1'-0"



4 LINCOLN ST. VESTIBULE - NORTH/SOUTH ELEVATION
ENLARGED ELEVATION 12" = 1'-0"



3 LINCOLN ST. VESTIBULE - EAST ELEVATION
ENLARGED ELEVATION 12" = 1'-0"



1 REAR ELEVATION - PROPOSED
BUILDING ELEVATION 1/8" = 1'-0"

2 LINCOLN ST. SIDE ELEVATION - PROPOSED
BUILDING ELEVATION 1/8" = 1'-0"

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12 JULY 2024

PHASE

2021-003 PROJECT NUMBER

EXTERIOR ELEVATIONS

A201

EASTERN ACROBATICS

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PROJECT NUMBER

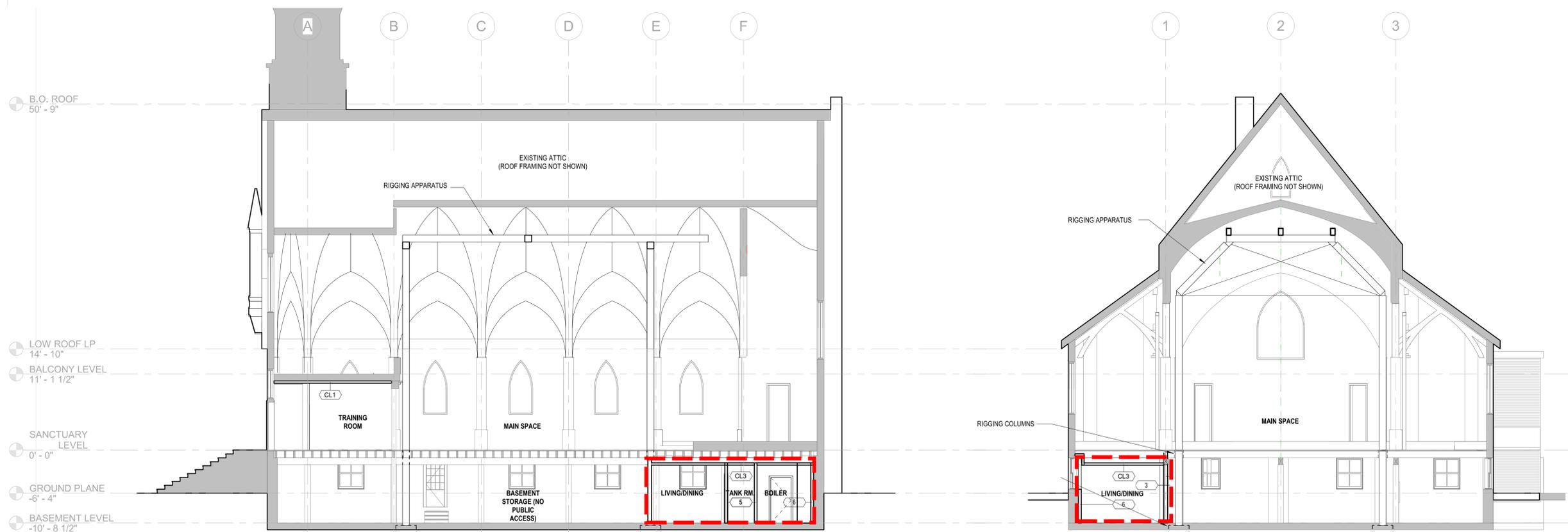
BUILDING SECTIONS

A300



6 LINCOLN ST ENTRY LONG SECTION
STAIR SECTION 3/8" = 1'-0"

5 LINCOLN ST ENTRY CROSS SECTION
STAIR SECTION 3/8" = 1'-0"



2 DIAGRAMMATIC LONG SECTION
BUILDING SECTION 1/8" = 1'-0"

1 DIAGRAMMATIC CROSS SECTION
BUILDING SECTION 1/8" = 1'-0"

FIRE PROTECTION LEGEND

	SPRINKLER HEAD - CONCEALED PENDANT ORDINARY TEMPERATURE, QUICK RESPONSE	ARCH	ARCHITECT
	SPRINKLER HEAD - UPRIGHT, ORDINARY TEMPERATURE, QUICK RESPONSE TYPE	AFF	ABOVE FINISHED FLOOR
	SPRINKLER HEAD - SIDEWALL, ORDINARY TEMPERATURE, QUICK RESPONSE TYPE. REFER TO FLOOR PLANS FOR TYPE.	CLG	CEILING
	SPRINKLER HEAD GUARD	CONT	CONTINUATION
	ELBOW UP OR RISE	CTE	CONNECT TO EXISTING
	ELBOW DOWN OR DROP	DCV	DOUBLE CHECK VALVE ASSEMBLY
	WS WET SYSTEM SPRINKLER PIPING	DR	DRINKING FOUNTAIN
	DS DRY SYSTEM SPRINKLER PIPING	DS	DRY SYSTEM
	CAP	DWG	DRAWING
	FDC FIRE DEPARTMENT CONNECTION	EC	ELECTRICAL CONTRACTOR
	FVC FLOOR CONTROL VALVE ASSEMBLY	ELEC	ELECTRICAL
	DCV DOUBLE CHECK VALVE ASSEMBLY	ETBR	EXISTING TO BE REMOVED
	ALARM CHECK VALVE	ETR	EXISTING TO REMAIN
	CHECK VALVE	FCV	FLOOR CONTROL VALVE ASSEMBLY
	RPBFP REDUCED PRESSURE ZONE BACKFLOW PREVENTER	FFE	FINISHED FLOOR ELEVATION
	HYDRAULIC CALCULATION NODE	FT	FOOT/FEET
	KEYNOTE DESIGNATION / DRAWING KEYNOTE	GC	GENERAL CONTRACTOR
	DETAIL DESIGNATION NUMBER	GPM	GALLON PER MINUTE
	DRAWING NUMBER	MIN	MINIMUM
		MAX	MAXIMUM
		NFPA	NATIONAL FIRE PROTECTION ASSOCIATION
		NIC	NOT IN CONTRACT
		NTS	NOT TO SCALE
		OED	OPEN-END DRAIN
		PC	PLUMBING CONTRACTOR
		SPR	SPRINKLER PIPING
		WS	WET SYSTEM

FLOW DATA

HYDRAULIC CALCULATIONS FOR THIS DESIGN HAS BEEN BASED ON THE FOLLOWING MINIMUM FLOW CRITERIA:

STATIC PRESSURE XX PSI
RESIDUAL PRESSURE X PSI
FLOW XX GPM

LOCATION: XXXX

DATE OF FLOW TEST: XXX

THE HYDRANT FLOW TEST DATA LISTED SHALL NOT BE USED BY THE SPRINKLER CONTRACTOR TO PERFORM THE HYDRAULIC CALCULATIONS FOR THE SPRINKLER CONTRACTOR SHOP DRAWINGS. THE SPRINKLER CONTRACTOR SHALL PERFORM A NEW HYDRANT FLOW TEST TO OBTAIN CURRENT FLOW AND PRESSURE, AND SHALL USE THIS NEWLY OBTAINED DATA TO PERFORM THE HYDRAULIC CALCULATIONS OF THE SPRINKLER SYSTEMS. THE HYDRANT FLOW TEST SHALL BE PERFORMED IN ACCORDANCE WITH THE NFPA-13. THE SPRINKLER CONTRACTOR SHALL PROVIDE ALL LABOR, EQUIPMENT, PAY ALL FEES, AND PERFORM ALL REQUIRED COORDINATION WITH THE LOCAL WATER AUTHORITY TO PERFORM THE FLOW TEST.

DESIGN CRITERIA

GENERAL BUILDING AND RESIDENTIAL AREAS	MECHANICAL ROOMS, RETAIL AND GARAGE AREAS
LIGHT HAZARD OCCUPANCY 0.10 GPM PER 1,500 SQUARE FEET 100 GPM HOSE STREAM ALLOWANCE	ORDINARY HAZARD GROUP 1 & 2 0.15/0.20 GPM PER 2,000 SQUARE FEET 250 GPM HOSE STREAM ALLOWANCE

NOTES: ALL DESIGN CRITERIA SHALL BE PER NFPA-13, UNLESS DIRECTED OTHERWISE BY BUILDINGS' INSURANCE AUTHORITIES.

TYPICAL SPRINKLER BRANCH PIPING SCHEDULE (WHERE NOT EXPLICITLY INDICATED ON PLANS)

PIPE SIZE (in.)	NUMBER OF SPRINKLER HEADS						
	1	2	3	4	5	8	12
1	X						
1 1/2		X	X				
1 1/2				X	X		
2						X	
2 1/2							X

GENERAL NOTES

- ALL NEW FIRE PROTECTION SYSTEMS SHALL BE SEISMICALLY BRACED, IF REQUIRED, ACCORDING TO THE APPLICABLE SECTIONS OF THE MASSACHUSETTS STATE BUILDING CODE, AND NFPA-13 LATEST ACCEPTED EDITIONS.
- ALL FIRE PROTECTION SYSTEMS, EQUIPMENT AND PIPING SHALL BE DESIGNED, INSTALLED AND TESTED BY A SPRINKLER CONTRACTOR LICENSED OR EXPERIENCED IN THE STATE OF MASSACHUSETTS IN THE DESIGN, INSTALLATION, AND TESTING OF SPRINKLER SYSTEMS.
- ALL WORK PERFORMED SHALL CONFORM TO THE APPLICABLE SECTIONS OF THE MASSACHUSETTS STATE BUILDING CODE AND NFPA-13 LATEST ACCEPTED EDITION AS WELL AS ALL RULES AND REGULATIONS OF THE AUTHORITY HAVING JURISDICTION.
- ALL PIPING SHALL BE RUN CONCEALED AND ABOVE CEILING, UNLESS OTHERWISE NOTED. CARE SHALL BE TAKEN TO RUN ALL PIPING AS TIGHT TO CEILING AND WALLS AS POSSIBLE. ALL PIPING SHALL FOLLOW THE BUILDING LINES AND SHALL RUN PARALLEL TO WALL IN A NEAT MANNER.
- CONTRACTOR SHALL PROVIDE FIRESTOPPING FOR ALL PENETRATIONS THRU FIRE WALLS AND FIRE RATED SEPARATIONS.
- ALL SPRINKLER PIPING AND HEADS ARE SHOWN DIAGRAMMATICALLY. ALL SPRINKLER HEADS SHALL BE INSTALLED SYMMETRICALLY AND HARMONIOUSLY IN ALIGNMENT. CONTRACTOR SHALL COORDINATE WITH OTHER TRADES BEFORE WORK BEGINS TO ENSURE THAT NO INTERFERENCES EXIST AND THAT ALL COMPONENTS OF THE SPRINKLER SYSTEM WILL FIT INTO THE SPACE.
- CONTRACTOR SHALL COORDINATE WITH MECHANICAL AND ELECTRICAL CONTRACTORS CONDITIONS FOR LOCATIONS OF DUCTWORK, DIFFUSERS, AND LIGHT FIXTURES.
- CONTRACTOR SHALL FURNISH, INSTALL, AND MAINTAIN ALL SCAFFOLDING, HOISTING EQUIPMENT, AND DERRICKS NECESSARY FOR INSTALLATION OF WORK.
- THE DRAWINGS ARE FOR PRICING PURPOSES ONLY. THE CONTRACTOR SHALL PRODUCE A COMPLETE SET OF WORKING FIRE PROTECTION DRAWINGS IN ACCORDANCE WITH NFPA-13 LATEST ACCEPTED EDITION. THE SYSTEM SHALL BE HYDRAULICALLY CALCULATED PER THE DESIGN CRITERIA REQUIRED BY CODE. ALL DRAWINGS AND CALCULATIONS SHALL BE STAMPED AND SIGNED BY THE CONTRACTOR'S REGISTERED FIRE PROTECTION ENGINEER, AND SHALL BE SUBMITTED TO THE LOCAL FIRE DEPARTMENT FOR APPROVAL. THIS SHALL BE DONE PRIOR TO THE COMMENCEMENT OF ANY SPRINKLER WORK.
- AN ADDITIONAL SET OF STAMPED FIRE PROTECTION DRAWINGS AND CALCULATIONS AS DESCRIBED ABOVE SHALL BE SUBMITTED TO THE OWNERS FOR APPROVAL. THIS SHALL BE DONE PRIOR TO THE COMMENCEMENT OF ANY SPRINKLER WORK.
- WRITTEN APPROVAL OF THE SPRINKLER CONTRACTOR'S SHOP DRAWINGS AND HYDRAULIC CALCULATIONS SHALL BE OBTAINED FROM THE LOCAL FIRE DEPARTMENT AND THE OWNER PRIOR TO THE COMMENCEMENT OF ANY WORK.
- THE DRAWINGS ARE NOT INTENDED TO SHOW EXACT SPRINKLER HEAD LOCATIONS, NUMBER OF SPRINKLER HEADS, OR THE EXACT ROUTING OF PIPING. THIS SHALL BE THE RESPONSIBILITY OF THE CONTRACTOR. THE CONTRACTOR SHALL COORDINATE WITH THE ARCHITECTURAL DRAWINGS FOR ALL CEILING TYPES.
- SPRINKLER CONTRACTOR SHALL PROVIDE ALL CUTTING AND PATCHING IN ORDER TO ACCOMMODATE THE SPRINKLER WORK.
- ACTIVE STANDPIPE SYSTEMS SHALL BE PROVIDED THROUGHOUT CONSTRUCTION. COORDINATE LOCATIONS WITH LOCAL FIRE DEPARTMENT.
- THE CONTRACTOR SHALL MAKE REASONABLE CHANGES TO THE SPRINKLER HEAD LOCATIONS AND SPRINKLER PIPE ROUTES, AS A RESULT OF COORDINATION WITH THE OTHER TRADES AT NO EXTRA COST.
- THE TERM "CONTRACTOR" SHALL MEAN "SPRINKLER CONTRACTOR".
- PROVIDE WIRE CAGE GUARD PROTECTION FOR ALL SPRINKLER HEADS INSTALLED WITHIN 8'-0" OFF THE FLOOR.
- THE FIRE DEPARTMENT CONNECTION TYPES AND LOCATIONS SHALL BE APPROVED BY THE LOCAL FIRE DEPARTMENT PRIOR TO PURCHASE AND INSTALLATION.
- THE CONTRACTOR SHALL PROVIDE A FIRE DEPARTMENT PERSONNEL STAFFED "FIRE WATCH" DURING ALL WELDING OPERATIONS.
- ALL MATERIALS AND EQUIPMENT USED FOR FIRE PROTECTION SYSTEMS SHALL BE UL LISTED OR FM APPROVED FOR FIRE PROTECTION SERVICE, AND SHALL BE RATED AT 175 PSI WORKING PRESSURE.
- THE CONTRACTOR SHALL COORDINATE WITH THE LOCAL FIRE DEPARTMENT FOR TESTING AND ACCEPTANCE OF ALL SPRINKLER WORK. THE CONTRACTOR SHALL FIX ANY DEFICIENCY FOUND DURING TESTING AND SHALL RETEST ALL SPRINKLER SYSTEMS UNTIL THE ENTIRE SYSTEM IS ACCEPTED BY THE LOCAL FIRE DEPARTMENT.
- THE CONTRACTOR SHALL TEST AND FLUSH ALL SPRINKLER SYSTEMS IN ACCORDANCE WITH NFPA-13 & NFPA-25, AND SHALL PROVIDE FLUSHING AND TESTING REPORTS IN ACCORDANCE WITH NFPA-13 & NFPA-25, AND SHALL SUBMIT THESE REPORTS TO THE LOCAL FIRE DEPARTMENT PRIOR TO FINAL ACCEPTANCE OF THE SPRINKLER SYSTEMS.
- THE DRAWINGS ARE NOT INTENDED TO SHOW ALL LOCATIONS WHERE FIRE RATED SLEEVES, SEALS OR CORE DRILLING WILL BE REQUIRED. IT SHALL BE THE RESPONSIBILITY OF THE SPRINKLER CONTRACTOR TO COORDINATE WITH THE OWNER FOR LOCATIONS OF ALL FIRE RATED WALLS AND FLOORS AND TO DETERMINE THE LOCATIONS OF ALL FIRE RATED SLEEVES, SEALS AND CORE DRILLING.
- IT SHALL BE THE RESPONSIBILITY OF THE SPRINKLER CONTRACTOR TO SELECT ALL DESIGN AREAS AND DESIGN DENSITIES AS WELL AS THE NUMBER OF SPRINKLER HEADS IN ALL AREAS OF OPERATION THAT WILL BE USED TO CREATE THE SPRINKLER CONTRACTOR'S SHOP DRAWINGS, AND HYDRAULIC CALCULATIONS. ALL DESIGN AREAS, DESIGN DENSITIES AND THE NUMBER OF OPERATING SPRINKLER HEADS SHALL BE SELECTED BY THE SPRINKLER CONTRACTOR IN ACCORDANCE WITH NFPA-13.
- THE DRAWINGS ARE NOT INTENDED TO SHOW ALL CEILING CONDITIONS, LIGHT FIXTURES, HVAC DIFFUSER, MOLDING, SOFFITS OR ANY OTHER FIXTURES OR EQUIPMENT IN THE CEILINGS. THE CONTRACTOR SHALL BE RESPONSIBLE FOR COORDINATING ALL LIGHT FIXTURES, HVAC DIFFUSERS, MOLDING, SOFFITS, AND ALL OTHER FIXTURES OR EQUIPMENT IN THE CEILINGS AND SHALL INDICATE THESE CONDITIONS ON THE SPRINKLER SYSTEM SHOP DRAWINGS. THE CONTRACTOR SHALL USE THIS COORDINATION INFORMATION TO LOCATE HEADS IN THE BUILDING AND TO CREATE THE SPRINKLER SYSTEM SHOP DRAWINGS. PRIOR TO THE CREATING OF THE SPRINKLER SYSTEM SHOP DRAWINGS, THE CONTRACTOR SHALL COORDINATE WITH ARCHITECTURAL DRAWINGS TO VERIFY ALL CEILING ELEVATIONS.
- THE CONTRACTOR SHALL PAY ALL FEES, OBTAIN ALL PERMITS AND APPROVALS, AND SHALL FURNISH ALL LABOR AND MATERIALS NEEDED FOR THE COMPLETE INSTALLATION OF ALL FIRE PROTECTION SYSTEMS SHOWN ON THE PLANS.
- PROVIDE SPRINKLER COVERAGE IN COMBUSTIBLE AREAS, AS REQUIRED PER NFPA-13. COMBUSTIBLE SHALL INCLUDE, BUT NOT BE LIMITED TO, SPACES ABOVE CEILINGS, BALCONIES, APPLICABLE EXTERIOR PROJECTIONS. SPRINKLER CONTRACTOR SHALL COORDINATE SPRINKLER COVERAGE IN SUCH SPACES WITH OTHER TRADES, INCLUDING, BUT NOT LIMITED TO, HVAC, ELECTRICAL, INSULATION, STRUCTURAL. SPRINKLER COVERAGE SHALL BE PROVIDED IN FAN COIL CLOSETS AND CHASES, AS REQUIRED PER NFPA-13.
- THE SPRINKLER CONTRACTOR SHALL CONDUCT A NEW FIRE HYDRANT FLOW TEST IN ORDER TO OBTAIN CURRENT FLOW AND PRESSURE DATA. THE CONTRACTOR SHALL USE THIS NEWLY OBTAINED DATA TO PERFORM HYDRAULIC CALCULATIONS FOR THE SPRINKLER SYSTEM SHOP DRAWINGS. HYDRAULIC CALCULATIONS SHALL BE STAMPED AND SIGNED BY THE CONTRACTOR'S FIRE PROTECTION ENGINEER, AND SHALL BE SUBMITTED WITH THE SPRINKLER SYSTEM SHOP DRAWINGS TO THE LOCAL FIRE DEPARTMENT AND OWNER INSURANCE AUTHORITY FOR FINAL APPROVAL. THIS SHALL BE DONE PRIOR TO THE COMMENCEMENT OF ANY SPRINKLER WORK.
- THE SPRINKLER CONTRACTOR SHALL PROVIDE ALL LABORS, MATERIALS, TOOLS, EQUIPMENT AND SHALL PAY ALL FEES AND PERFORM ALL COORDINATION WITH LOCAL WATER AUTHORITY, FIRE DEPARTMENT AND OWNER, THAT IS REQUIRED FOR THE CONDUCTING OF THE NEW FLOW TEST.

GENERAL NOTE

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12 JULY 2024

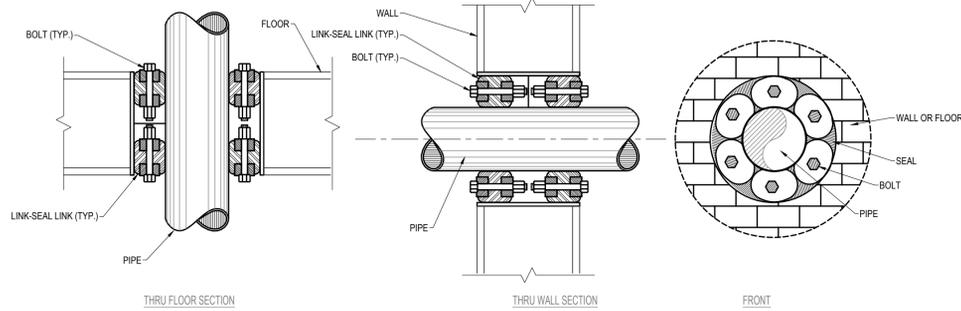
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2021-003

PROJECT NUMBER

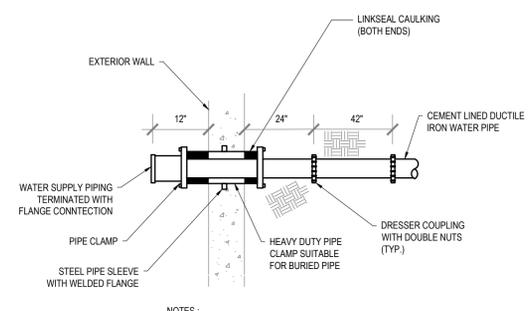
FIRE PROTECTION
LEGEND, NOTES,
AND
ABBREVIATIONS

FP001



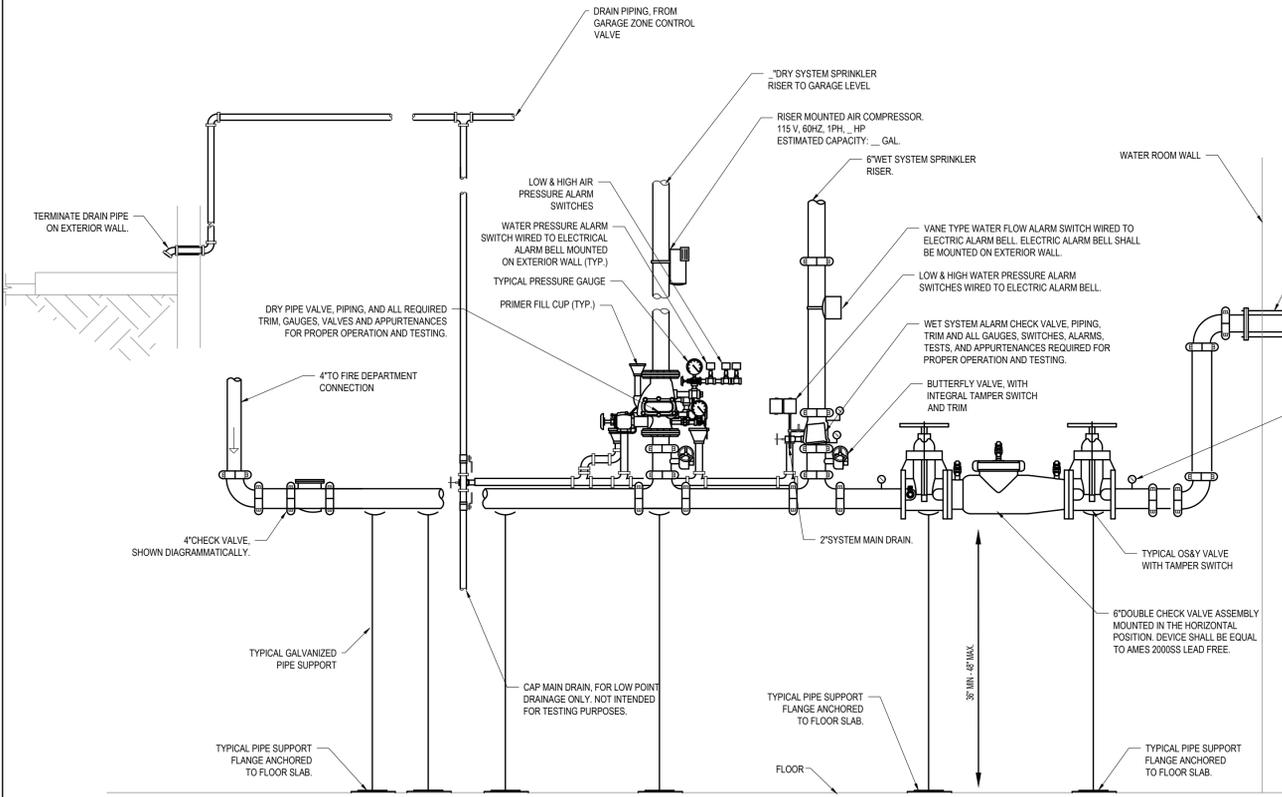
3 TYPICAL PIPING SLEEVE THRU WALL/FLOOR
 FP002 NOT TO SCALE

- NOTE:
1. INSTALL LINK-SEAL ON BOTH ENDS OF THE CORE DRILLED OPENING.
 2. PROVIDE PROTECTIVE SLEEVE, COATING AND WRAPPING ON PIPING PENETRATIONS ALL THRU CONCRETE.

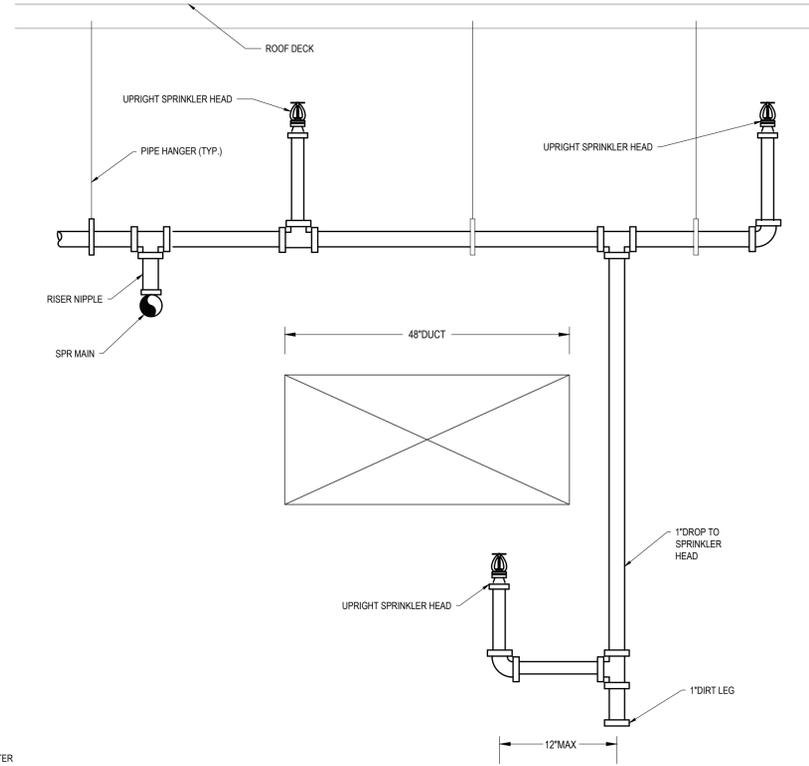


1 WATER SERVICE ENTRANCE DETAIL
 FP002 NOT TO SCALE

- NOTES:
1. INCOMING WATER SERVICE INSTALLATION SHALL CONFORM TO ALL LOCAL & STATE REGULATIONS.
 2. COORDINATE WITH LOCAL WATER AUTHORITY AND SITE UTILITIES PLAN.
 3. COORDINATE SIZE AND REQUIREMENTS OF PIPING WALL SLEEVES WITH STRUCTURAL PLANS.



8 INCOMING FIRE PROTECTION SERVICE DETAIL
 FP002 NOT TO SCALE



9 SPRINKLER UNDER DUCTWORK TYPICAL DETAIL
 FP002 NOT TO SCALE

- NOTES:
1. THE DETAIL SHOWN APPLIES ANYWHERE THERE IS DUCT (OR SIMILAR OBSTRUCTION) OVER 48" WIDE OR IF TWO DUCTS, RUNNING PARALLEL, ARE LESS THAN 12" APART AND THE TOTAL WIDTH IS OVER 48". SPRINKLER SPACING SHALL BE 7'-0" ALONG LENGTH OF DUCT.

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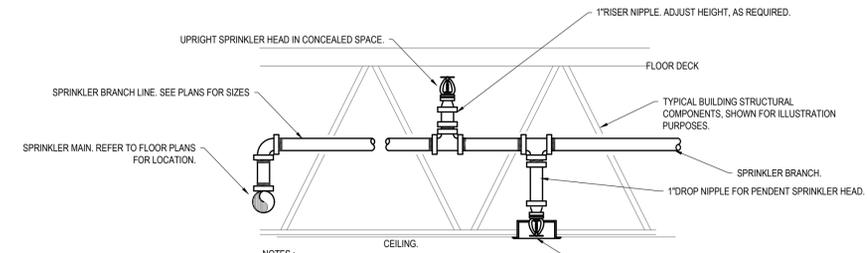
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FIRE PROTECTION DETAILS

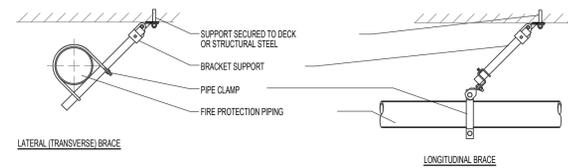
FP002



NOTES:

1. SPRINKLER HEAD COVER SHALL COME WITH FACTORY APPLIED FINISH. COORDINATE FINISH WITH ARCHITECT AND PROVIDE ACCORDINGLY.
2. REGARDLESS OF SPRINKLER PIPE MATERIAL USED IN THE CONCEALED COMBUSTIBLE SPACES, UPRIGHT SPRINKLER HEAD USED SHALL BE LISTED FOR COMBUSTIBLE CONCEALED SPACES. COORDINATE HEIGHT, INSULATION WITH ARCHITECTURAL PLANS AND PROVIDE COVERAGE IN ACCORDANCE WITH NFPA-13.
3. ALL COMBUSTIBLE CONCEALED SPACES ABOVE CEILINGS SHALL BE PROVIDED WITH UPRIGHT SPRINKLER HEAD COVERAGE. THE SPRINKLER CONTRACTOR SHALL BE RESPONSIBLE FOR THE DESIGN OF THE UPRIGHT SPRINKLER SYSTEM IN THE COMBUSTIBLE CONCEALED SPACES ABOVE THE CEILING, AND SHALL SHOW ALL OF THIS WORK ON THE SPRINKLER SYSTEM SHOP DRAWINGS.
4. COORDINATE WORK RELATED TO INSULATION W/ ARCHITECTURAL PLANS AND PROVIDE SYSTEMS ACCORDINGLY.
5. REFER TO SPRINKLER'S MANUFACTURER INSTRUCTIONS FOR STEEL / CPVC PIPING INSTALLATION, AND PROVIDE SPRINKLER SYSTEMS ACCORDINGLY.

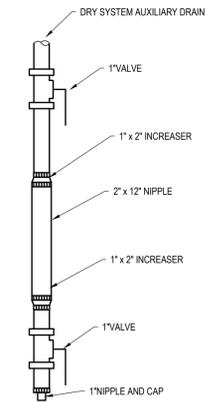
2 SPRINKLER ABOVE AND BELOW CEILING
NOT TO SCALE



NOTE:

ALL APPLICABLE SPRINKLER PIPING SYSTEMS SHALL BE SEISMICALLY BRACED AND INSTALLED PER APPLICABLE SECTIONS OF THE STATE BUILDING CODE 8TH EDITION & NFPA 13 LATEST ACCEPTED EDITION. SEISMIC BRACINGS SHALL BE BY TOLCO

4 TYPICAL SEISMIC BRACING DETAIL
FP002 NOT TO SCALE



NOTES:

1. PROVIDE DRAINAGE, AS REQUIRED PER NFPA-13
2. ALL LOW POINT SHALL BE PROVIDED WITH DRAINAGE.
3. FINAL LOCATION OF DRAIN SHALL BE COORDINATED W/ ARCHITECT.

1 DRY SYSTEM DRAIN DIAGRAM
FP0.3 NOT TO SCALE

GENERAL NOTE

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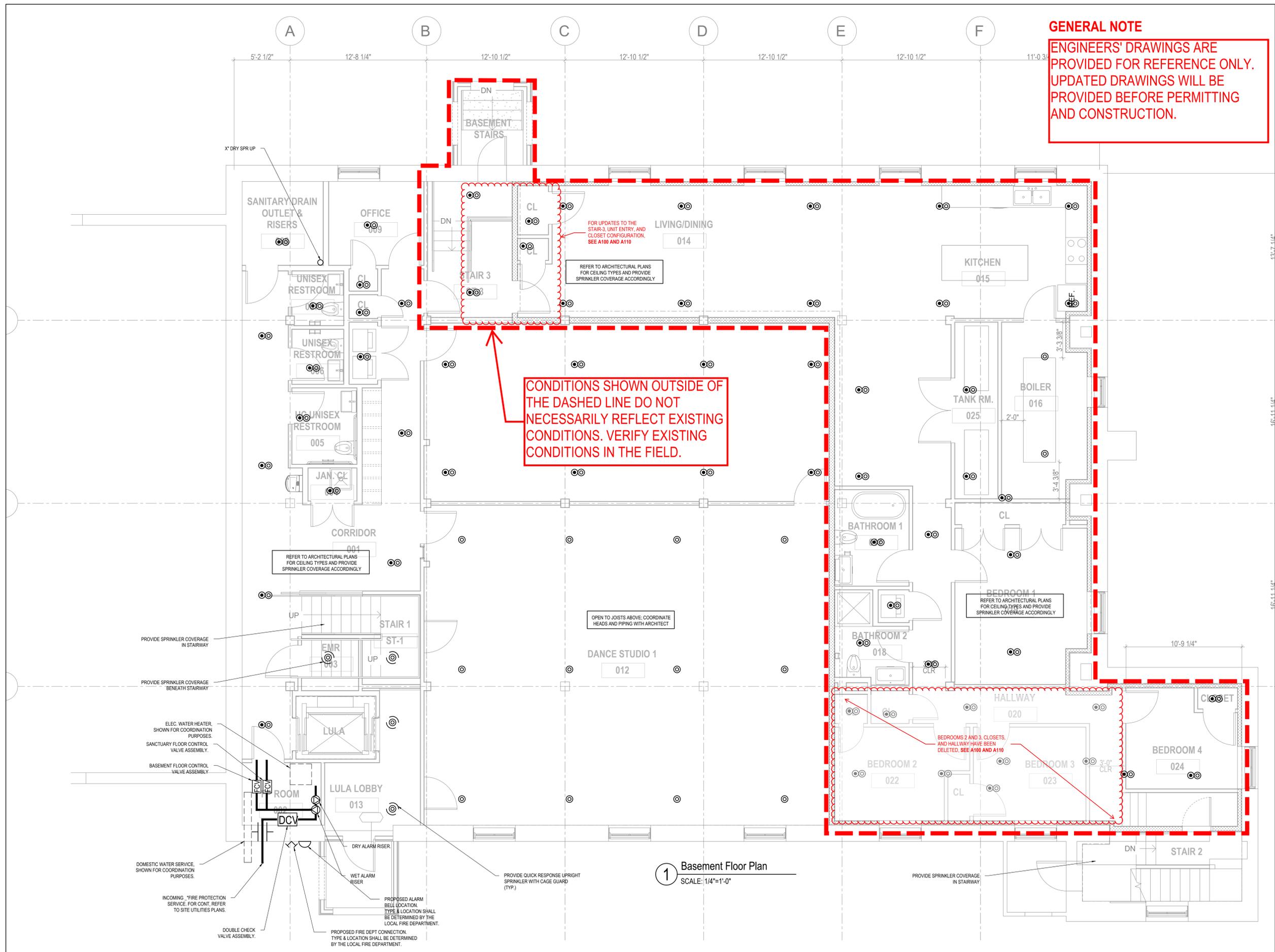
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FIRE PROTECTION
DETAILS

FP003



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**FIRE PROTECTION
BASEMENT NEW
WORK FLOOR
PLAN**

FP100

GENERAL NOTES

- ALL PLUMBING WORK SHALL BE DONE IN ACCORDANCE WITH THE MASSACHUSETTS STATE FUEL GAS AND PLUMBING CODE, LATEST ACCEPTED EDITION.
- CAREFULLY COORDINATE LOCATION OF PIPING WITH ALL OTHER TRADES.
- ALL PIPING SHOWN DIAGRAMMATICALLY AND EXACT LOCATION SHALL BE DETERMINED IN THE FIELD.
- ALL PIPING SHALL BE RUN CONCEALED ABOVE CEILINGS, IN WALLS AND IN CHASES, UNLESS OTHERWISE NOTED.
- NO STRUCTURAL MEMBERS SHALL BE CUT WITHOUT THE APPROVAL OF THE STRUCTURE ENGINEER.
- ALL PIPING SHALL BE SUPPORTED FROM BUILDING STRUCTURE.
- THE TERM "PROVIDE" SHALL MEAN FURNISH AND INSTALL.
- RUN WATER PIPE ON THE WARM SIDE OF BUILDING INSULATION. NO WATER PIPING SHALL BE RUN ON EXTERIOR WALLS.
- PROVIDE DRAINOFFS WITH BALL VALVE, HOSE END VACUUM BREAKER, CAP & CHAIN AT ALL DOMESTIC WATER LOW POINTS AND PITCH PIPING TO DRAIN.
- ALL SANITARY WASTE PIPING SHALL PITCH A MIN OF 1/8" PER FT. FOR PIPING 4" & LARGER, AND 1/2" PER FT FOR PIPING UP TO 3".
- WHERE DIFFERENT SIZES ARE SHOWN ON PLANS, THE LARGER SIZE SHALL SUPERCEDE.
- LAUNDRY STACK HORIZONTAL OFFSETS SHALL RUN A MINIMUM 10-STACK PIPE DIAMETER PRIOR TO CONNECTION TO SANITARY/WASTE MAIN AND/OR BRANCH.
- PROVIDE BALANCING VALVES ON THE HOT WATER RE-CIRCULATION SYSTEM AS REQUIRED, AND/OR AS SHOWN.
- PROVIDE DANDY CLEAN-OUT AT THE BOTTOM OF ALL SANITARY AND STORM DRAIN STACKS. PROVIDE ACCESS PANEL WHERE REQUIRED. DANDY CLEAN-OUT SHALL BE LOCATED AT MINIMUM 0'-6" ABOVE FLOOR.
- PROVIDE SHOCK ABSORBERS ON ALL PIPING SERVICING QUICK CLOSING FIXTURES.
- ACCESSIBLE CLEANOUTS SHALL BE PROVIDED AT THE BOTTOM OF ALL STACKS/RISERS.
- ALL PIPING SHALL BE NEW, INSTALLED PARALLEL TO BUILDING LINES AND PITCHED TO LOW POINTS.
- PLUMBING CONTRACTOR SHALL PROVIDE FIRESTOPPING FOR ALL PENETRATIONS THRU FIRE WALLS AND FIRE RATED SEPARATIONS. COORDINATE WITH ARCHITECTURAL DRAWINGS FOR THESE AREAS.
- PLUMBING CONTRACTOR SHALL FURNISH, INSTALL AND MAINTAIN ALL SCAFFOLDING, HOISTING EQUIPMENT DERRICKS, ETC., NECESSARY FOR INSTALLATION OF WORK.
- ALL PLUMBING PIPING AND DRAINS SHALL BE KEPT CLEAR OF BLOCKAGE WHILE CONSTRUCTION IS UNDERWAY. ALL PLUMBING PIPING SHALL BE DEBURRED BEFORE JOINTS ARE MADE.
- THE PLUMBING CONTRACTOR SHALL PROVIDE ALL CUTTING AND PATCHING IN ORDER TO ACCOMMODATE THE PLUMBING WORK.
- WHERE PLUMBING DROPS ONLY ARE SHOWN TO FIXTURES OR GROUPS OF FIXTURES, THE PLUMBING CONTRACTOR SHALL MAKE ALL FINAL CONNECTIONS OF WATER, SANITARY AND VENT TO EACH FIXTURE. PLUMBING CONNECTIONS TO FIXTURES SHALL BE IN ACCORDANCE WITH THE PLUMBING FIXTURE SCHEDULE. PROVIDE SERVICE STOP AT EACH FIXTURE.
- ALL ISOLATION VALVES, BALANCING VALVES AND BUTTERFLY VALVES INSTALLED IN WALLS OR ABOVE CEILINGS SHALL BE PROVIDED WITH ACCESS PANELS. WHERE REMOVABLE SUSPENDED CEILING TILES ARE USED, NO ACCESS PANELS ARE REQUIRED.
- ALL PIPING RISER PENETRATIONS THRU FLOORS SHALL BE SEALED WATER TIGHT.
- PROVIDE ANCHOR AND EXPANSION ON DOMESTIC WATER PIPING WHERE REQUIRED.
- ALL VENT THRU ROOF PIPING SHALL BE LOCATED NO LESS THAN 2'-0" FROM ALL FRESH AIR INTAKE. PLUMBING CONTRACTOR SHALL BE RESPONSIBLE FOR COORDINATING VENT PIPING AT THE TOP FLOOR AND COMBINE VENT PIPING TO THE EXTENT POSSIBLE PRIOR TO ROOF PENETRATION. VENT PIPING SHALL BE IN STRICT ACCORDANCE WITH 248 CMR MASSACHUSETTS STATE PLUMBING CODE. ALL VENT THRU ROOF LOCATIONS SHALL BE CAREFULLY COORDINATED W/ OWNER PRIOR TO INSTALLATION.

DEMOLITION NOTES

- PLUMBING CONTRACTOR SHALL FAMILIARIZE THEMSELVES WITH ALL EXISTING ELEMENTS OF CONSTRUCTION PRIOR TO COMMENCING DEMOLITION WORK. ALL WORK SHALL COMPLY WITH APPLICABLE REQUIREMENTS OF MASSACHUSETTS BUILDING CODE, AND HEALTH REGULATIONS AND BE PERFORMED IN SUCH A MANNER AS TO ENSURE HUMAN SAFETY.
- ALL ITEMS TO BE RE-USED SHALL BE CAREFULLY REMOVED FREE OF DAMAGE AND STORED IN A SECURE LOCATION.
- ALL EXISTING PLUMBING PIPING TO BE REMOVED SHALL BE CAPPED AT A POINT NEAREST ACTIVE MAIN, OR AT POINT OF ORIGIN.
- ALL DEMOLITION SHALL BE PERFORMED IN SUCH A MANNER AS TO MINIMIZE DAMAGE TO CONSTRUCTION THAT IS TO REMAIN.
- PLUMBING CONTRACTOR SHALL COORDINATE WITH BUILDING MANAGER/OWNER ON SHUTDOWN TIME WHEN WORKING ON EXISTING SYSTEMS.
- PLUMBING CONTRACTOR SHALL RECOGNIZE THAT THE BUILDING MIGHT REMAIN OCCUPIED THROUGHOUT DEMOLITION AND SHALL USE EVERY EFFORT AND MEANS POSSIBLE TO MINIMIZE NOISE CAUSED BY THE DEMOLITION OPERATIONS.
- REMOVAL OF EXISTING PLUMBING FIXTURES/EQUIPMENT SHALL INCLUDE, BUT NOT LIMITED TO, UTILITY PIPING, FITTINGS, ACCESSORIES AND SUPPORT. REMOVAL, WHERE NECESSARY, SHALL BE COORDINATED WITH OTHER TRADES.
- ALL WORK RELATED TO DEMOLITION SHALL BE CAREFULLY COORDINATED WITH OWNER, ARCHITECT, AND OTHER TRADES.
- ABATEMENT AND/OR REMOVAL OF ASBESTOS AND HAZARDOUS MATERIALS SHALL BE CAREFULLY COORDINATED WITH THE GENERAL CONTRACTOR.

CONSTRUCTION PHASING

- THE BUILDING WILL BE CONSTRUCTED IN A PHASING APPROACH THAT MAY REQUIRE PORTIONS OF THE BUILDING TO BE TURNED OVER TO THE OWNER AND MADE READY FOR OCCUPANCY AS PART OF A PHASE CONSTRUCTION TIMELINE.
- THE CONTRACTOR SHALL COORDINATE WITH THE OWNER AND THE GENERAL CONTRACTOR FOR THE PHASED BUILDING COMPLETION PLAN.
- THE CONTRACTOR SHALL PROVIDE PIPING, VALVES, CAPPING, AS REQUIRED, TO ISOLATE EACH PHASE OF CONSTRUCTION SO THAT AS ONE PHASE OF CONSTRUCTION IS COMPLETED, THE FOLLOWING PHASE MAY BE CONNECTED AT A LATER DATE, WITHOUT SHUTTING DOWN, OR LIMITING, ANY PLUMBING SYSTEMS OF ANY PORTION OF THE BUILDING.

PLUMBING LEGEND & ABBREVIATIONS

	CW	COLD WATER ABOVE FLOOR	AF	ABOVE FINISHED FLOOR
	CWB	COLD WATER BELOW FLOOR	ARCH	ARCHITECT
	HW	HOT WATER ABOVE FLOOR	BWV	BACKWATER VALVE
	HWB	HOT WATER BELOW FLOOR	CFH	CUBIC FEET PER HOUR
	HWR	HOT WATER RETURN ABOVE FLOOR	CLG	CEILING
	HWRB	HOT WATER RETURN BELOW FLOOR	CO	CLEANOUT
	FW	FILTERED WATER ABOVE FLOOR	CONN	CONNECTION
	NPCW	NON-POTABLE COLD WATER	CONT	CONTINUATION
	NPHW	NON-POTABLE HOT WATER	CTE	CONNECT TO EXISTING
	TW	TEMPERED WATER ABOVE FLOOR	DF	DRINKING FOUNTAIN
	TWR	TEMPERED WATER RETURN ABOVE FLOOR	DW	DISHWASHER MACHINE
	SAW OR W	SANITARY WASTE	DWG	DRAWING
	PD	PUMP DISCHARGE ABOVE FLOOR	EC	ELECTRICAL CONTRACTOR
	IW	INDIRECT WASTE	ELEC	ELECTRICAL
	CD	CONDENSATE DRAIN	ETBR	EXISTING TO BE REMOVED
	V	VENT ABOVE FLOOR	ETR	EXISTING TO REMAIN
	RL	RAIN LEADER ABOVE FLOOR	FCO	FLOOR CLEANOUT
	G	NATURAL GAS LINE ABOVE FLOOR	FDD	FLOOR DRAIN
	TP	TRAP PRIMER SUPPLY ABOVE FLOOR	FFE	FINISHED FLOOR ELEVATION
		HEAT-TRACED PIPING	GC	GENERAL CONTRACTOR
	FCO	FLOOR CLEANOUT	GI	GREASE INTERCEPTOR
	GCO	GRADE CLEANOUT	GP	GALLON PER FLUSH
	CO	CLEANOUT	GRM	GALLON PER MINUTE
	WCO	WALL CLEANOUT - PROVIDE ACCESS PANEL	GWH	GAS-FIRED WATER HEATER
		CAPPED PIPE	HB	HOSE BIBB
		UNION	INV. EL	INVERT ELEVATION
		FLOW ARROW	INV. EL	INVERT ELEVATION
		DIRECTION OF SLOPE	LAV.	LAVATORY
		PIPE BREAK	LPC	LIMIT OF PLUMBING CONTRACT
		PIPE SLEEVE	MIN	MINIMUM
		PIPE GUIDE	MAX	MAXIMUM
		PIPE ANCHOR	NIC	NOT IN CONTRACT
		BALL VALVE	NTS	NOT TO SCALE
		BALL VALVE - NORMALLY CLOSED	OED	OPEN-END DRAIN
		GAS SHUT OFF VALVE	P.F	PLUMBING FIXTURE DESIGNATION
		GAS COOK	PC	PLUMBING CONTRACTOR
	TMV	THERMOSTATIC MIXING VALVE	RD	ROOF DRAIN
		GATE VALVE	SI	SOLIDS INTERCEPTOR
		BALANCING VALVE	SH	SHOWER
	PRV	PRESSURE REGULATING VALVE	T	TRAP
		SOLENOID VALVE	TP	TRAP PRIMER
		CHECK VALVE	UR	URNAL
	BWV	BACKWATER VALVE	VTR	VENT THRU ROOF
	RPB/P	REDUCED PRESSURE ZONE BACKFLOW PREVENTER	WC	WATER CLOSET
	SA / WHA	SHOCK ABSORBER, WATER HAMMER ARRESTOR	WH	WALL HYDRANT
		TRAP PRIMER VALVE		
		ELBOW UP OR RISE		
		ELBOW DOWN OR DROP		
		TEE DROP		
		OPEN-END DRAIN, P-TRAP		
	HB	HOSE BIBB		
	WH	WALL HYDRANT		
	CTE	CONNECT TO EXISTING PIPING		
	FD	FLOOR DRAIN		
	RD	ROOF/AREA DRAIN		
	# @	KEYNOTE DESIGNATION / DRAWING KEYNOTE		
	HC	HANDICAPPED ACCESSIBLE		
	#	DETAIL DESIGNATION NUMBER		
	#	DRAWING NUMBER		
	#	REVISION CLOUD, REVISION NUMBER		

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PHASE 2 PRELIMINARY PRICING DRAWINGS

12 JULY 2024

PHASE

2021-003

PROJECT NUMBER

PLUMBING LEGEND, NOTES, AND ABBREVIATIONS

P001

PLUMBING FIXTURE SCHEDULE																
TAG NO	TYPE	MANUFACTURER	MODEL	SIZE	CW (in)	HW (in)	SAN (in)	V (in)	FLOW RATE	FITTINGS				CARRIER	REMARKS	
										SUPPLIES	TYPE	MANUFACTURER	MODEL			TRAP
P-1	WATER CLOSET	AMERICAN STANDARD	2403.128 OR 2403.813	-	1/2"	-	3"	2"	1.28 GPF	1/2" SWEAT X 1/2" COMP. EQUAL TO MCGUIRE LFH173LK	TANK-TYPE	-	-	INTEGRAL	FLOOR MOUNTED	PROVIDE TOILET FLANGE, WAX RING AND TOILET FLANGE BOLTS. WAX RING AND BOLT SET AS MANUFACTURED BY HARVEY MFG. SEAT SHALL BE SOFT CLOSE, ELONGATED. PROVIDE COMPLETE WITH CHROME SUPPLY AND SERVICE STOP. COORDINATE TRIP LEVER LOCATION W/ ARCHITECTURAL PLANS AND PROVIDE FIXTURE ACCORDINGLY.
P-1A	WATER CLOSET, PUBLIC	TOTO	CT 705 ELN	-	1"	-	4"	2"	1.28 GPF	FLUSH VALVE	SELF-GENERATING, SENSOR-OPERATED	TOTO	TET1LA32#CP	INTEGRAL	PROVIDED TO SUIT	SEAT SHALL BE TOTO SC134. INSTALL PER ADA REQUIREMENTS. PROVIDE SAA' ON CW SUPPLY. PROVIDE TOILET FLANGE, WAX RING AND TOILET FLANGE BOLTS. WAX RING AND BOLT SET AS MANUFACTURED BY HARVEY MFG.
P-2	LAVATORY	KOHLER	K-2000	21 1/2" X 14 1/2"	1/2"	1/2"	2"	2"	0.5 GPM	1/2" SWEAT X 1/2" COMP. EQUAL TO MCGUIRE LFH173LK	SINGLE LEVER FAUCET, W/ PUSH-ON DRAIN	SYMMONS	SLS-3512-STN-0.5	1 1/2" x 1 1/2" 17GA CAST BRASS CHROME PLATED P-TRAP W/ CO PLUG, EQUAL TO MCGUIRE B8902	PROVIDE TO SUIT	PROVIDE 0.5GPM FLOW RESTRICTOR. PROVIDE WITH POP-UP DRAIN, LIFT ROD AND GRID STRAINER ASSEMBLY. PROVIDE SAA' ON CW & HW SUPPLIES
P-2A	LAVATORY, PUBLIC	TOTO	LT 540	21 1/2" X 14 1/2"	1/2"	1/2"	2"	2"	0.5 GPM	1/2" SWEAT X 1/2" COMP. EQUAL TO MCGUIRE LFH173LK	SELF-GENERATING, SENSOR-OPERATED	TOTO	TEL105-C20E	1 1/2" x 1 1/2" 17GA CAST BRASS CHROME PLATED P-TRAP W/ CO PLUG, EQUAL TO MCGUIRE B8902	PROVIDE TO SUIT	PROVIDE 0.5GPM FLOW RESTRICTOR. PROVIDE WITH POP-UP DRAIN, LIFT ROD AND GRID STRAINER ASSEMBLY. PROVIDE SAA' ON CW & HW SUPPLIES
P-3	BATHTUB	MAXX	RUBIX 6030, MODEL 105815	60" X 30" X 18"	1/2"	1/2"	2"	2"	1.5 GPM	CW & HW SUPPLIES W/ SAA'	COMPLETE TUB SHOWER SYSTEM W/ VALVE ASSEMBLY, SPOUT, SHOWER HEAD	SYMMONS	3502-CYL-B-X-CHKS-1.5-STN	2"P-TRAP	FLOOR MOUNTED	PROVIDE W/ DRAIN & TRIP LEVER ASSEMBLY. PROVIDE 1.5 GPM FLOW RESTRICTOR ON SHOWER HEAD. PROVIDE SAA' ON CW & HW SUPPLIES.
P-4	SHOWER	KOHLER	-	-	1/2"	1/2"	2"	2"	1.5 GPM	CW & HW SUPPLIES W/ SAA'	COMPLETE SHOWER SYSTEM W/ VALVE ASSEMBLY, SHOWER HEAD	SYMMONS	3505-H-321-V-CYL-B-X-CHKS-1.5-STN	2"P-TRAP	FLOOR MOUNTED	PROVIDE SHOWER MODULE DRAIN EQUAL TO SIOUX CHIEF 827-2B. PROVIDE 1.5 GPM FLOW RESTRICTOR ON SHOWER HEAD. PROVIDE FLOOR DRAIN OUTSIDE SHOWER. COORDINATE LOCATION OF ADA SHOWER WITH ARCHITECTURAL PLANS AND PROVIDE PIPING ACCORDINGLY. PROVIDE SAA' ON CW & HW SUPPLIES. PROVIDE FOLD-UP SEAT, GRAB BARS ACCESSORIES AS REQUIRED.
P-5	KITCHEN SINK, DOUBLE BOWL	ELKAY	-	-	1/2"	1/2"	2"	2"	1.75 GPM	1/2" SWEAT X 1/2" COMP. EQUAL TO MCGUIRE LFH173LK	SINGLE HANDLE FAUCET, W/ PULL DOWN SPRAY	SYMMONS	SPP-3510-1.5-STN	1 1/2" x 1 1/2" 17 GA CAST BRASS CHROME PLATED P-TRAP W/ CO PLUG, EQUAL TO MCGUIRE B8912	UNDERMOUNTED	PROVIDE BASKET STRAINER & 1 1/2" OD 17GA BRASS TAILPIECE EQUAL TO WATTS BRASS #763171B. PROVIDE DISPOSER EQUAL TO INSINKERATOR PRO 750 (1/2 HP, 120 V) W/ SWITCH CONTROL EQUAL TO INSINKERATOR SINKTOP SWITCH W/ POWER MODULE. COORDINATE FINISHES WITH ARCHITECT. PROVIDE FILTER ASSEMBLY AS NOTED DETAILS.
P-6	WASHING MACHINE OUTLET	WATTS	A2C-M1-WB	-	1/2"	1/2"	2"	2"	-	CW & HW SUPPLIES W/ SAA'	-	-	-	2" STANDPIPE DRAIN	-	PROVIDE WITH LEAD-FREE VALVE AND ARRESTERS.
P-7	MOP SINK	SWANSTONE	SS-3448	34" x 48"	1/2"	1/2"	3"	2"	-	1/2" COLD & HOT WATER	MANUAL	FIAT	830AA	3"P-TRAP	FLOOR	PROVIDE RPBFP ON CW & HW SUPPLIES. PROVIDE WITH MOP HANGER FIAT FIAT MODEL 889-CC.
P-8	DRINKING FOUNTAIN, BOTTLE FILLING STATION, 8-L LEVEL	ELKAY	LZ88WSP	-	1/2"	-	2"	2"	-	-	-	-	-	2" P-TRAP	PROVIDED TO SUIT	COORDINATE WITH ELECTRICAL CONTRACTOR (115 V, 5.0 AMP). PROVIDE W/ FLEXI GUARD BUBBLER. PROVIDE WITH SPARE FILTER SYSTEMS (x3).

NOTES: FIXTURE SELECTION SHALL BE CAREFULLY COORDINATED WITH OWNER, AND ARCHITECT. COORDINATE ALL FIXTURE MOUNTING HEIGHTS WITH ARCHITECTURAL PLANS. PLUMBING FIXTURES SHALL BE COORDINATED WITH ARCHITECTURAL PLANS

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WATER HAMMER SCHEDULE			
TAG NO	FIXTURE UNIT RATING	MANUFACTURER	MODEL
SAA'	1-11	J.R. SMITH	5005
SAB'	12-32	J.R. SMITH	5010
SAC'	33-60	J.R. SMITH	5020
SAD'	61-113	J.R. SMITH	5030
SAE'	114-154	J.R. SMITH	5040
SAP'	155-330	J.R. SMITH	5050

NOTES: WATER HAMMER ARRESTORS SHALL BE BY J.R. SMITH, WATTS, SIOUX CHIEF OR APPROVED EQUAL.

DRAIN SCHEDULE					
TAG NO	TYPE	MANUFACTURER	MODEL	STRAINER	REMARKS
FD-A	FLOOR	J.R. SMITH	2010C-P050	6"NB	LOCATED IN ADA BATHROOM. PROVIDE WITH TRAP PRIMER CONNECTION.
FD-B	FLOOR	J.R. SMITH	2230C-P050	12"CI	LOCATED IN WATER ROOM, MECHANICAL ROOM, COMPACTOR ROOM. PROVIDE WITH TRAP PRIMER CONNECTION AND SEDIMENT BUCKET.

NOTES: COORDINATE FLASHING REQUIREMENTS WITH G.C.

TEMPERATURE MIXING VALVE						
TAG NO	LO (GPM)	MANUFACTURER	MODEL	INLET	OUTLET	REMARKS
TMV-1	1	LEONARD	PNV-125-LF-BPS	-	-	MIXING VALVE SHALL BE MOUNTED ON GALVANIZED PIPING SET UP SHALL BE PER MANUFACTURER'S RECOMMENDATIONS. PROVIDE START-UP BY FACTORY-TRAINED PERSONNEL AND ADJUST PIPING ACCORDINGLY. COORDINATE W/ ELECTRICAL CONTRACTOR.
TMV-2	1	LEONARD	TM-26-LF-##	-	-	MIXING VALVE SHALL BE MOUNTED ON GALVANIZED PIPING SET UP SHALL BE PER MANUFACTURER'S RECOMMENDATIONS. PROVIDE START-UP BY FACTORY-TRAINED PERSONNEL AND ADJUST PIPING ACCORDINGLY.

NOTES:

EXPANSION TANK SCHEDULE				
TAG NO	MANUFACTURER	MODEL	TANK VOLUME (GAL.)	REMARKS
ET-1	ELBI	DTS-XXX	-	LEAD FREE AND LISTED FOR POTABLE WATER USE.

NOTES: EXPANSION TANK SHALL BE BY ELBI, WATTS, AMTROL, OR APPROVED EQUAL.

ELECTRIC WATER HEATER SCHEDULE										
TAG NO	TYPE	MANUFACTURER	MODEL	STORAGE (GAL.)	TEMPERATURE SETTING (°F)	RECOVERY @100°F (GPH)	ELECTRICAL REQUIREMENTS			REMARKS
							KW	VOLTS	PH	
EW-1	STORAGE	A.O. SMITH	DEL-50	50	140	27	6	240	1	PROVIDE W/ DRAIN PAN AND LEAK DETECTION. COORDINATE WITH ELECTRICAL CONTRACTOR.
EW-2	STORAGE	A.O. SMITH	DEL-50	50	140	18	4.5	240	1	PROVIDE W/ DRAIN PAN AND LEAK DETECTION. COORDINATE WITH ELECTRICAL CONTRACTOR.

NOTES: COORDINATE WITH ALL ELECTRICAL REQUIREMENTS W/ E.C., PRIOR TO PURCHASE AND INSTALLATION. WATER HEATER SHALL BE BY A.O. SMITH, EEMAX, STATE, BRADFORD WHITE, OR APPROVED EQUAL.

RE-CIRCULATING PUMP SCHEDULE								
TAG NO	SYSTEM	MANUFACTURER	MODEL	ELECTRICAL REQUIREMENTS				REMARKS
				VOLTS	HZ	PH	AMP	
CP-1	IN-LINE	TACO	0034 E PLUS	115	60	1	170	PROVIDE W/ FLANGES ON INLET AND OUTLET. PUMP SHALL BE LEAD FREE, NSF-CERTIFIED AND LISTED FOR POTABLE WATER USE.
CP-2	IN-LINE	TACO	0034 E PLUS	115	60	1	170	PROVIDE W/ FLANGES ON INLET AND OUTLET. PUMP SHALL BE LEAD FREE, NSF-CERTIFIED AND LISTED FOR POTABLE WATER USE.

NOTES: RE-CIRCULATING PUMP SHALL BE BY TACO, GRUNDFOS, APPOLLO OR APPROVED EQUAL. RE-CIRCULATION PUMP SHALL BE NSF/ANSI 372 CERTIFIED.

EJECTOR PUMP SCHEDULE												
TAG NO	TYPE	LOCATION	MANUFACTURER	MODEL	FLOW (GPM)	HEAD (FT)	INLET (in)	OUTLET (in)	ELECTRICAL REQUIREMENTS			REMARKS
									VOLTS	HP	PH	
EP-1	DUPLEX SEWAGE, AUTOMATIC	DRAIN ROOM	WEIL	2533	100	15	4	3"	230	2	1	PROVIDE POLYETHYLENE DUPLEX BASIN W/ RAIL SYSTEM, LIFTING CABLES, DUPLEX ALTERNATOR, FLOAT SWITCHES & FLOAT HOLDERS. REFER TO DETAILS AND SPECS FOR ADDITIONAL INFO.

NOTES: COORDINATE W/ ELECTRICAL CONTRACTOR. PUMPING SYSTEM ASSEMBLY SHALL BE CAREFULLY COORDINATED WITH BUILDING STRUCTURAL COMPONENTS.

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PHASE 2 PRELIMINARY PRICING DRAWINGS
12 JULY 2024

PHASE

2021-003

PROJECT NUMBER

PLUMBING SCHEDULES

P002

EASTERN ACROBATICS

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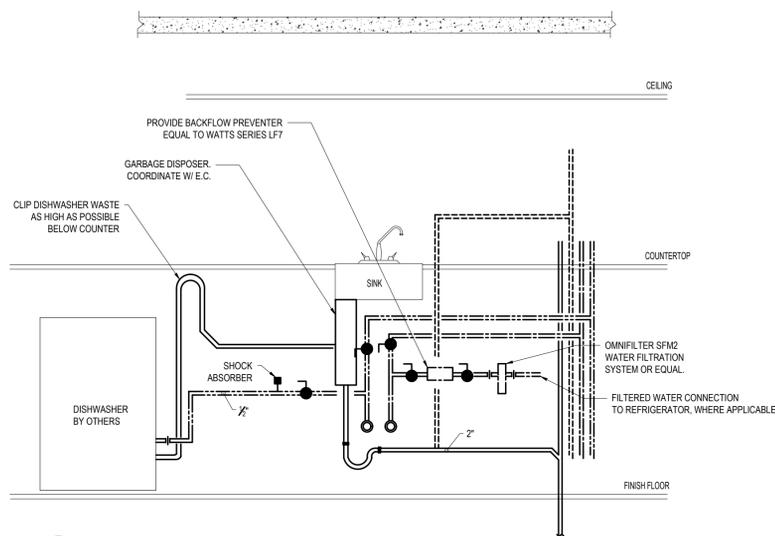
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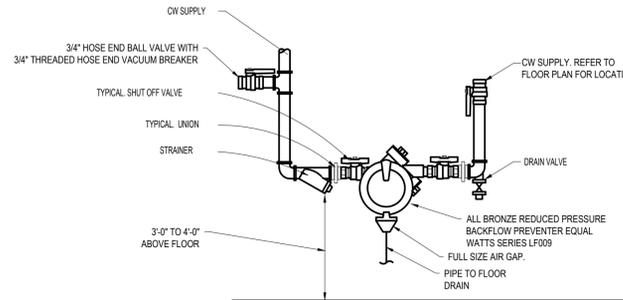
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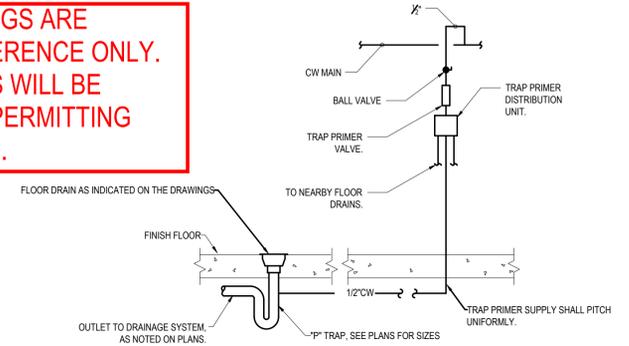


5 TYPICAL KITCHEN SINK & DISHWASHER DETAIL
P003A NOT TO SCALE



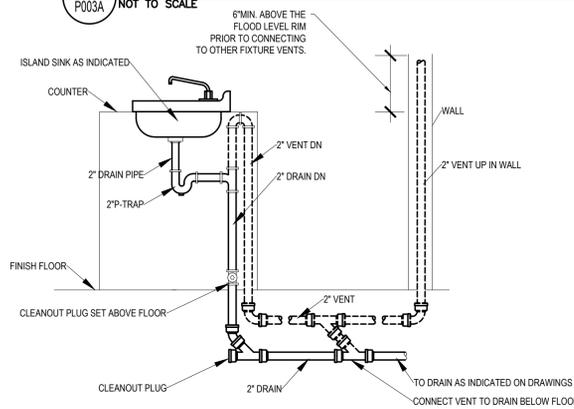
- NOTES:
- FURNISH TO OWNER ONE TEST KIT AND SPARE PARTS KIT.
 - P.C. SHALL ACT AS THE OWNER'S AGENT IN SEEKING APPROVAL FROM ALL LOCAL AND STATE AUTHORITIES, AND SUBMIT ALL PLANS, SPECS, AND APPLICATIONS REQUIRED FOR APPROVAL AND PAY ALL FEES.
 - SEE FLOOR PLANS FOR SIZES AND LOCATIONS.
 - MAINTAIN 1'-0" CLEARANCE FROM WALL.
 - TEST AND CERTIFY EACH INSTALLATION.
 - PROVIDE ADJUSTABLE FLOOR SUPPORT.

9 REDUCED PRESSURE BACKFLOW PREVENTER
P003A NOT TO SCALE

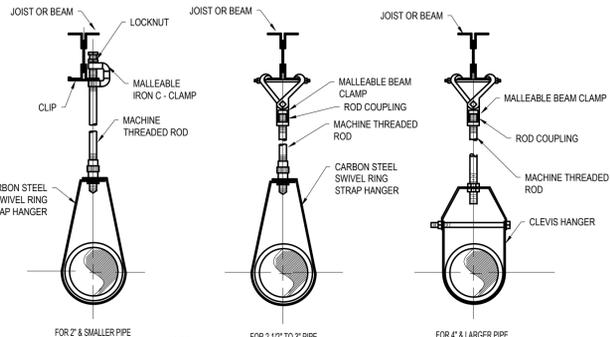


4 TYPICAL TRAP PRIMER AT FLOOR DRAIN
P003A NOT TO SCALE

- NOTE:
- TRAP PRIMER SHALL BE BY PRECISION PLUMBING PRODUCT, MI-FAB, SIOUX CHIEF OR APPROVED EQUAL.
 - INSTALL TRAP PRIMER AS CLOSE TO WALL AS POSSIBLE.
 - PROVIDE HEAT TRACING ON GARAGE FLOOR DRAIN TRAP PRIMER PIPING.
 - PROVIDE TRAP PRIMER DEVICE WITH MULTIPLE OUTLETS WHERE REQUIRED.
 - PROVIDE TRAP PRIMER DISTRIBUTION UNITS AS REQUIRED.
 - TRAP PRIMERS SHALL BE PROVIDED WHERE REQUIRED AND/OR WHERE SHOWN ON PLANS.

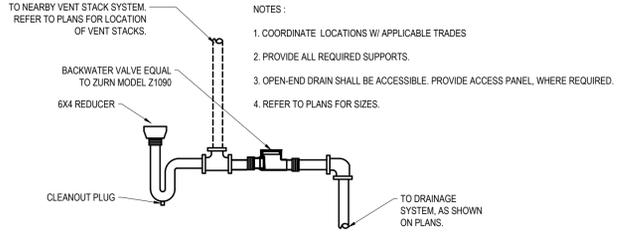


6 TYPICAL ISLAND SINK BOW VENT PIPING DIAGRAM
P003A NOT TO SCALE



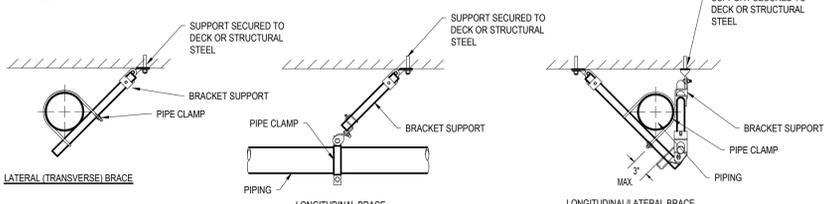
- NOTE:
- HANGER ROD SHALL BE INSTALLED PER MANUFACTURER'S GUIDELINES.
 - PROVIDE 1'-0" GALVANIZED STEEL SHIELD AT THE BOTTOM OF INSULATED PIPING.

8 BAND HANGER
P003A NOT TO SCALE



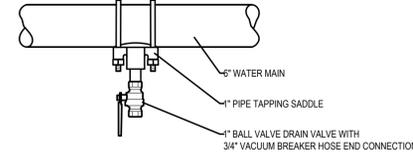
3 TYPICAL OPEN END DRAIN DETAIL
P003A NOT TO SCALE

- NOTES:
- COORDINATE LOCATIONS W/ APPLICABLE TRADES.
 - PROVIDE ALL REQUIRED SUPPORTS.
 - OPEN END DRAIN SHALL BE ACCESSIBLE. PROVIDE ACCESS PANEL, WHERE REQUIRED.
 - REFER TO PLANS FOR SIZES.



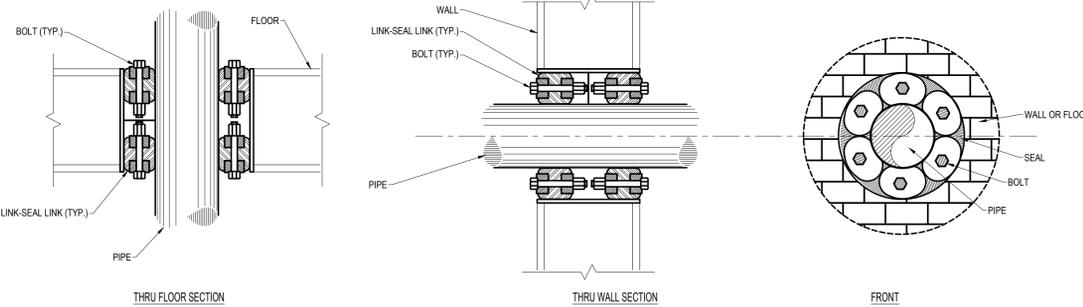
- NOTES:
- ALL APPLICABLE PLUMBING PIPING SYSTEMS SHALL BE SEISMICALLY BRACED AND INSTALLED PER APPLICABLE SECTIONS OF THE STATE BUILDING.
 - SEISMIC BRACING SHALL BE BY TOLCO.

7 SEISMIC BRACING DETAILS
P003A NOT TO SCALE



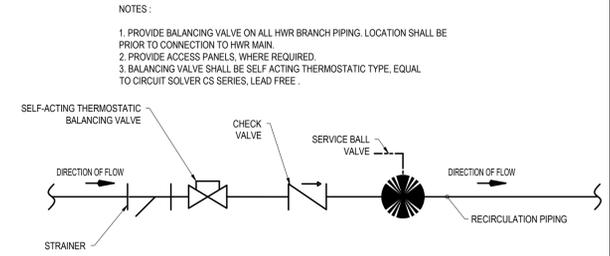
- WATER MAINS SHALL BE PITCHED TO LOW POINT DRAIN VALVES IN SUCH A MANNER AS TO ALLOW FOR THE COMPLETE DRAINING OF THE WATER MAINS
- DRAIN VALVES SHALL BE LOCATED IN AREAS THAT ARE READILY ACCESSIBLE

X/XX TYPICAL DRAIN VALVE
NOT TO SCALE

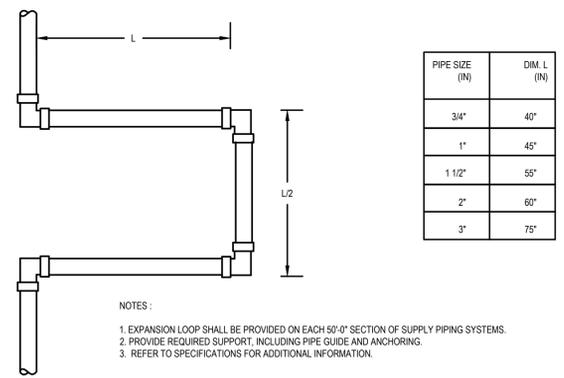


- NOTE:
- INSTALL LINK-SEAL ON BOTH ENDS OF THE CORE DRILLED OPENING.
 - PROVIDE PROTECTIVE SLEEVE, COATING AND WRAPPING ON PIPING PENETRATIONS ALL THRU CONCRETE.

1 PIPE SLEEVES THRU WALL / FLOOR
P003B NOT TO SCALE



11 TYPICAL BALANCING VALVE STATION
P003A NOT TO SCALE



- NOTES:
- EXPANSION LOOP SHALL BE PROVIDED ON EACH 50'-0" SECTION OF SUPPLY PIPING SYSTEMS.
 - PROVIDE REQUIRED SUPPORT, INCLUDING PIPE GUIDE AND ANCHORING.
 - REFER TO SPECIFICATIONS FOR ADDITIONAL INFORMATION.

10 TYPICAL EXPANSION LOOP DETAIL
P003A NOT TO SCALE

PHASE 2 PRELIMINARY PRICING DRAWINGS
12 JULY 2024

PHASE
2021-003 PROJECT NUMBER

PLUMBING DETAILS

P003

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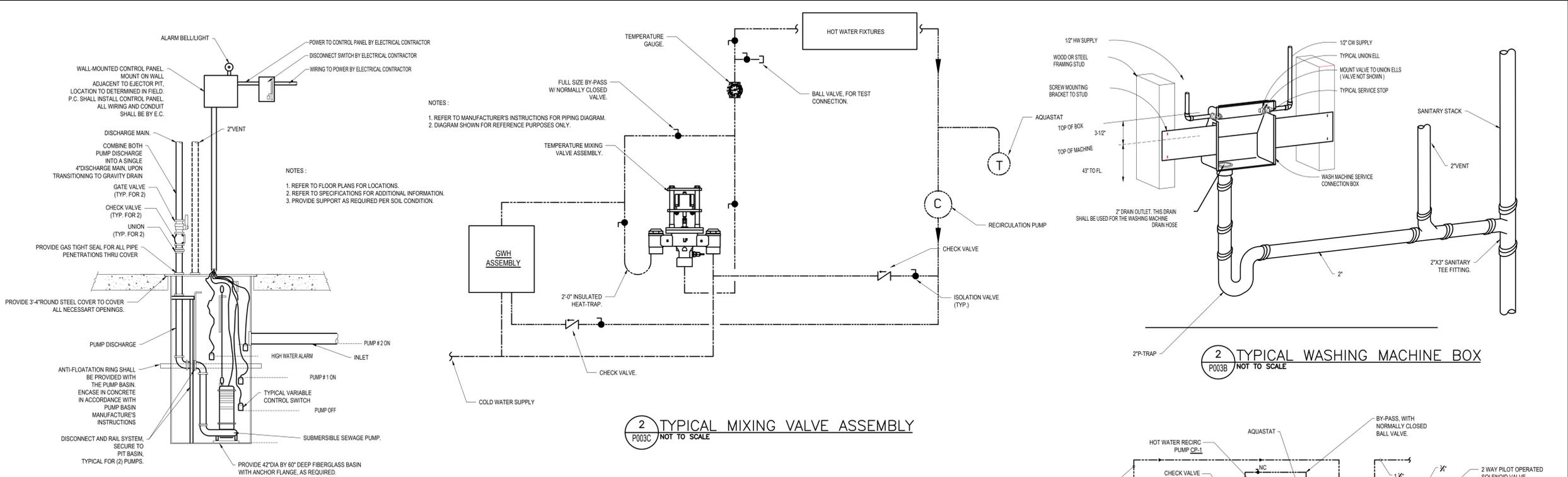
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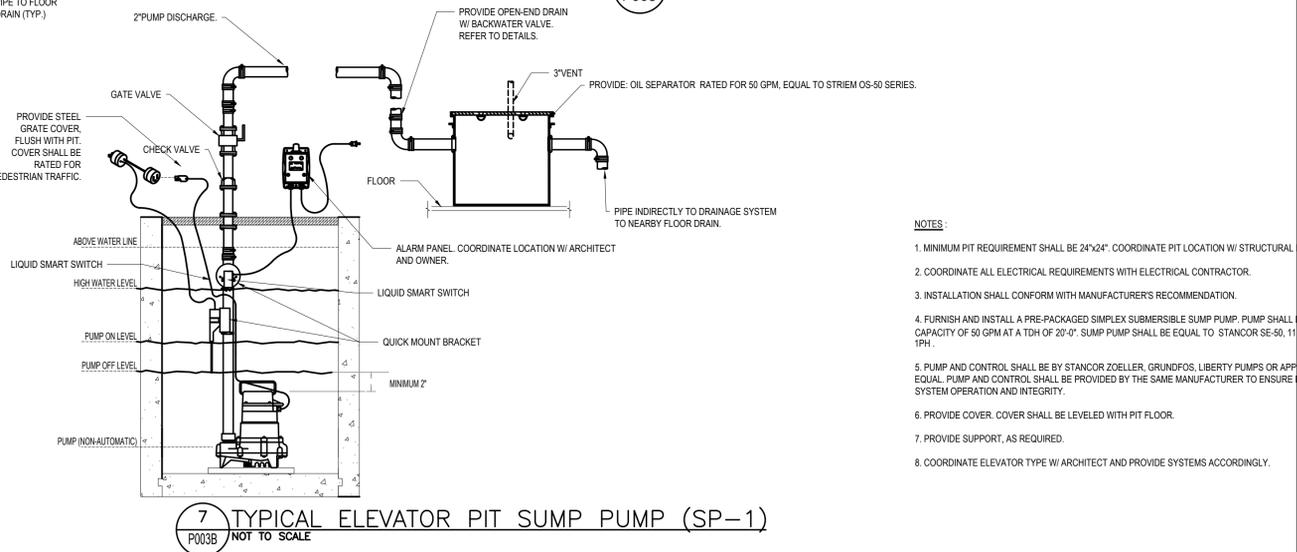
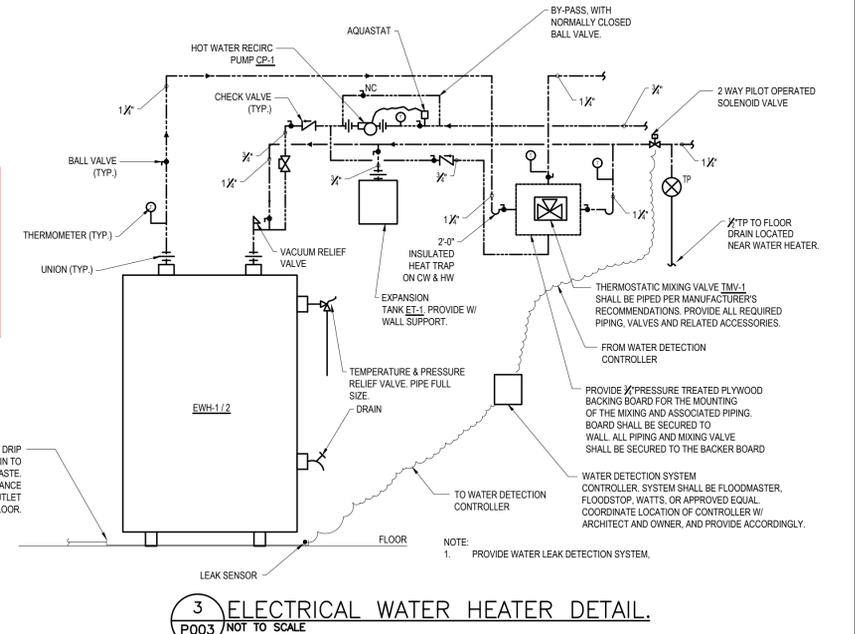
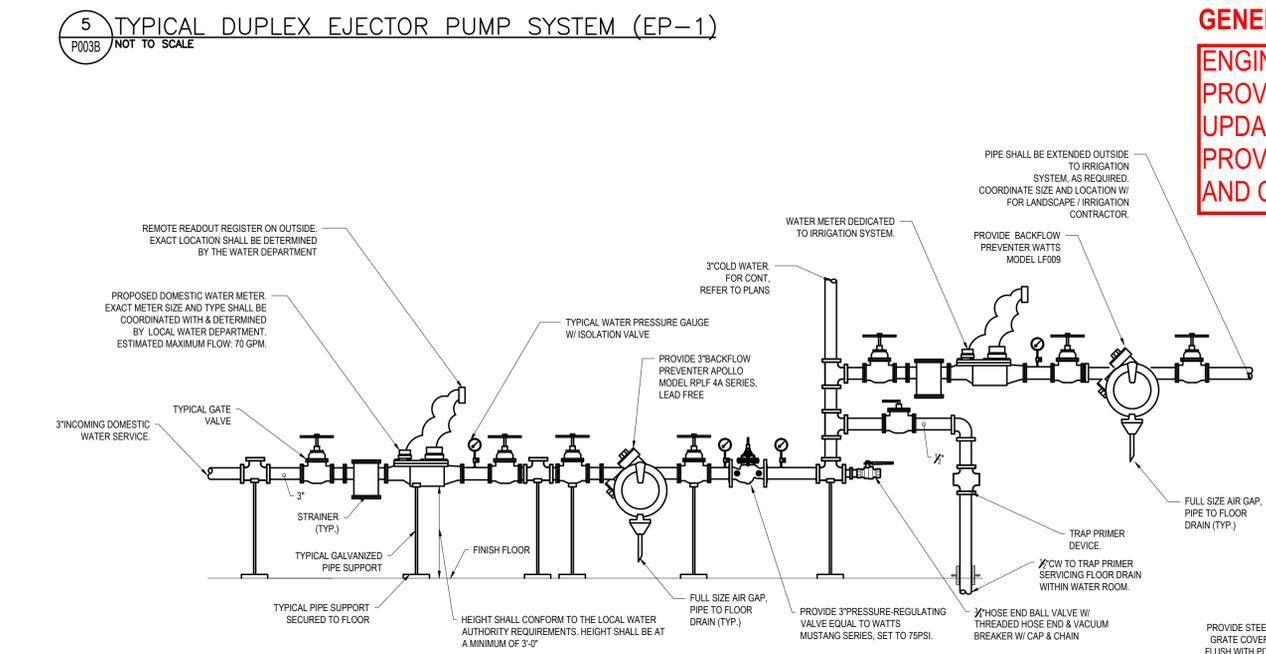
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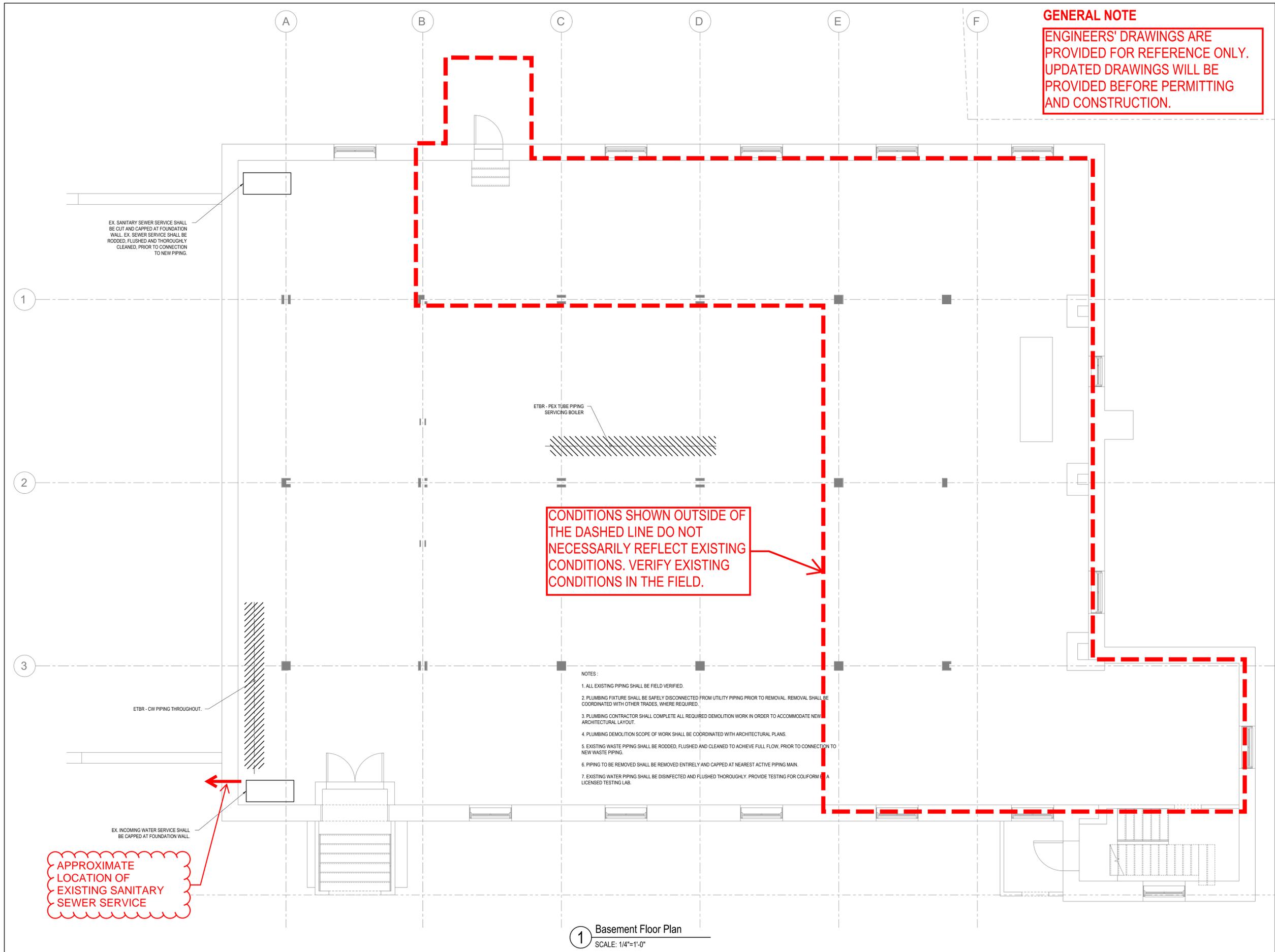
PLUMBING DETAILS

P004



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EX. SANITARY SEWER SERVICE SHALL BE CUT AND CAPPED AT FOUNDATION WALL. EX. SEWER SERVICE SHALL BE RODDED, FLUSHED AND THOROUGHLY CLEANED, PRIOR TO CONNECTION TO NEW PIPING.

ETBR - PEX TUBE PIPING SERVING BOILER

CONDITIONS SHOWN OUTSIDE OF THE DASHED LINE DO NOT NECESSARILY REFLECT EXISTING CONDITIONS. VERIFY EXISTING CONDITIONS IN THE FIELD.

- NOTES:
1. ALL EXISTING PIPING SHALL BE FIELD VERIFIED.
 2. PLUMBING FIXTURE SHALL BE SAFELY DISCONNECTED FROM UTILITY PIPING PRIOR TO REMOVAL. REMOVAL SHALL BE COORDINATED WITH OTHER TRADES, WHERE REQUIRED.
 3. PLUMBING CONTRACTOR SHALL COMPLETE ALL REQUIRED DEMOLITION WORK IN ORDER TO ACCOMMODATE NEW ARCHITECTURAL LAYOUT.
 4. PLUMBING DEMOLITION SCOPE OF WORK SHALL BE COORDINATED WITH ARCHITECTURAL PLANS.
 5. EXISTING WASTE PIPING SHALL BE RODDED, FLUSHED AND CLEANED TO ACHIEVE FULL FLOW, PRIOR TO CONNECTION TO NEW WASTE PIPING.
 6. PIPING TO BE REMOVED SHALL BE REMOVED ENTIRELY AND CAPPED AT NEAREST ACTIVE PIPING MAIN.
 7. EXISTING WATER PIPING SHALL BE DISINFECTED AND FLUSHED THOROUGHLY. PROVIDE TESTING FOR COLIFORMS AT A LICENSED TESTING LAB.

ETBR - CW PIPING THROUGHOUT.

EX. INCOMING WATER SERVICE SHALL BE CAPPED AT FOUNDATION WALL.

APPROXIMATE LOCATION OF EXISTING SANITARY SEWER SERVICE

1 Basement Floor Plan
 SCALE: 1/4"=1'-0"

EASTERN ACROBATICS
 28 Eliot Street
 Natick, MA 01760
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THE ENTRUST INC.
 FBO AUSTIN S. LIN
 28 ELIOT ST.
 NATICK, MA 01760
 CLIENT

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 12 JULY 2024

PHASE
 2021-003 PROJECT NUMBER

PLUMBING BASEMENT DEMOLITION PLAN

PD100

EASTERN ACROBATICS

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2021-003 PROJECT NUMBER

PLUMBING BASEMENT UNDERGROUND PLAN

P100U

GENERAL NOTE

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NOT EXISTING OR PART OF THIS SCOPE.

PROPOSED UNDERGROUND PLUMBING FOR DWELLING UNIT

DIAGRAM OF APPROXIMATE EXISTING CONDITION OF CAPPED SANITARY DRAIN FOR CONNECTION TO DWELLING UNIT

PROPOSED NEW UNDERGROUND CONNECTION FROM DWELLING UNIT TO EXISTING CAPPED SANITARY LINE

CONDITIONS SHOWN OUTSIDE OF THE DASHED LINE DO NOT NECESSARILY REFLECT EXISTING CONDITIONS. VERIFY EXISTING CONDITIONS IN THE FIELD.

BEDROOMS 2 AND 3, CLOSETS, AND HALLWAY HAVE BEEN DELETED. SEE A100 AND A110

FOR UPDATES TO THE STAIR-3, UNIT ENTRY, AND CLOSET CONFIGURATION, SEE A100 AND A110

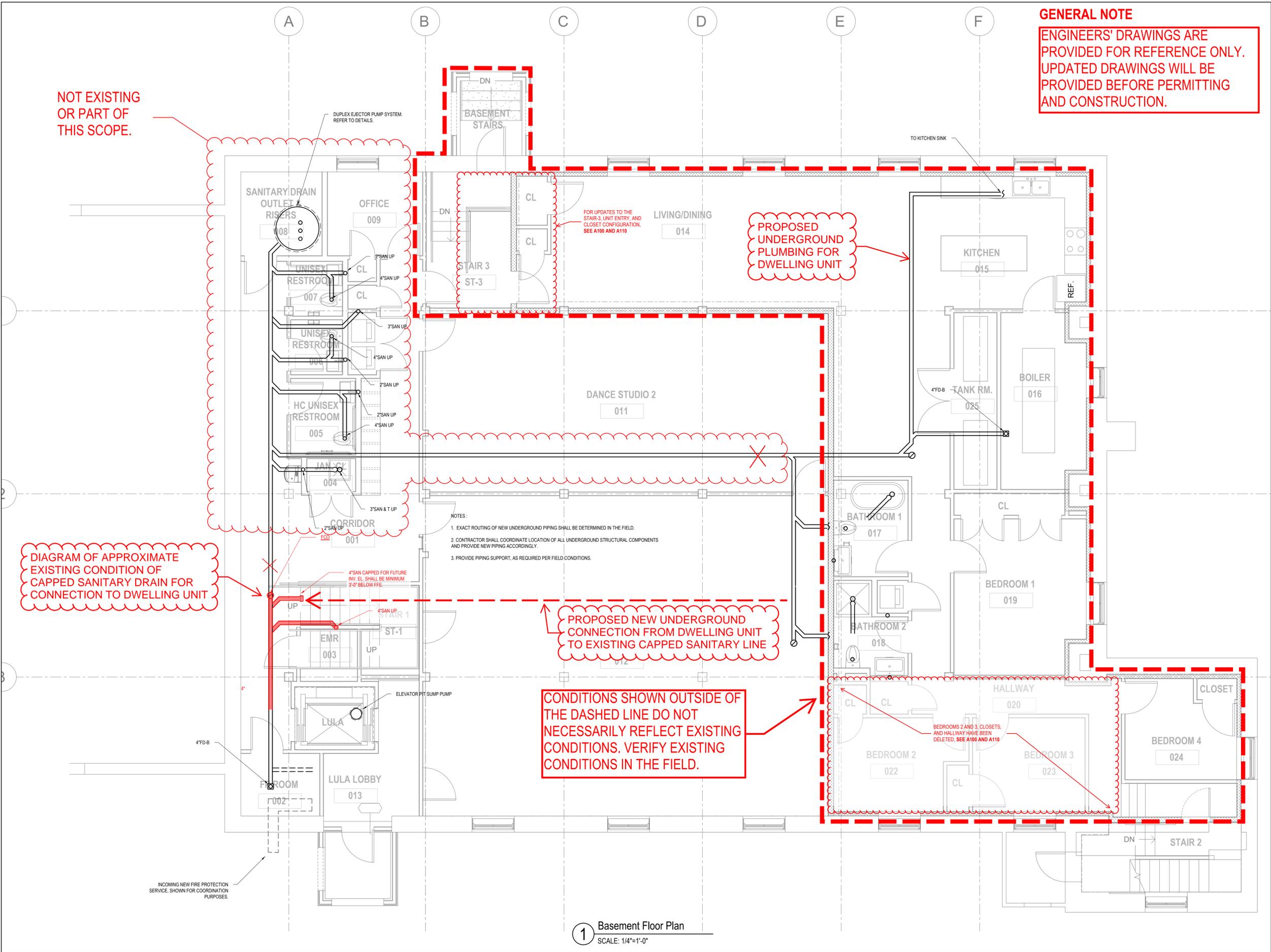
DUPLEX EJECTOR PUMP SYSTEM. REFER TO DETAILS.

TO KITCHEN SINK

INCOMING NEW FIRE PROTECTION SERVICE. SHOWN FOR COORDINATION PURPOSES.

- NOTES:
1. EXACT ROUTING OF NEW UNDERGROUND PIPING SHALL BE DETERMINED IN THE FIELD.
 2. CONTRACTOR SHALL COORDINATE LOCATION OF ALL UNDERGROUND STRUCTURAL COMPONENTS AND PROVIDE NEW PIPING ACCORDINGLY.
 3. PROVIDE PIPING SUPPORT, AS REQUIRED PER FIELD CONDITIONS.

1 Basement Floor Plan
SCALE: 1/4"=1'-0"



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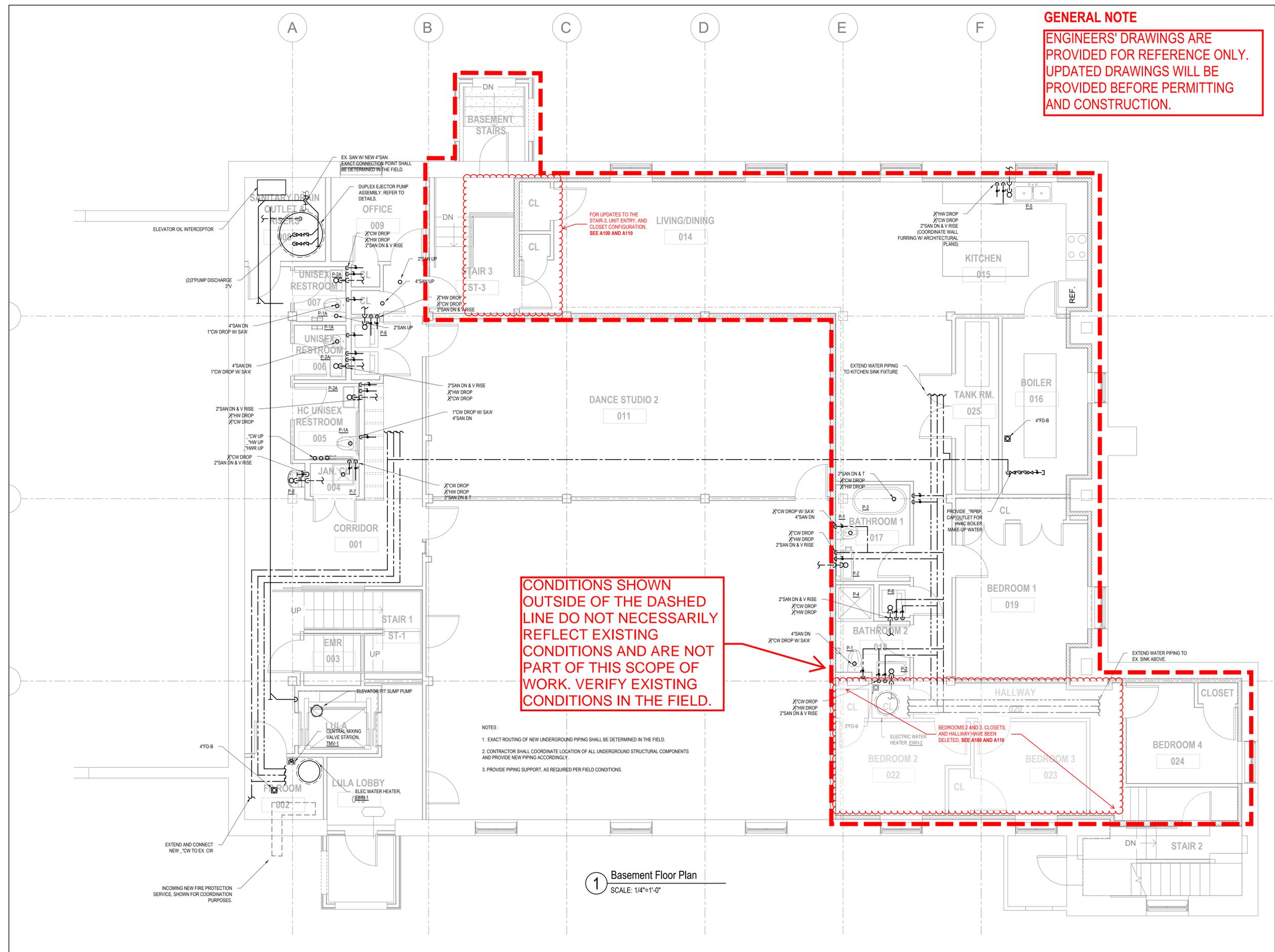
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2021-003 PROJECT NUMBER

PLUMBING BASEMENT NEW FLOOR PLAN

P100



1 Basement Floor Plan
 SCALE: 1/4"=1'-0"

PIPING LEGEND		
	HWS	HOT WATER SUPPLY
	HWR	HOT WATER RETURN
	D	A.C. CONDENSATE DRAIN
	FOS	FUEL OIL SUPPLY
		PIPING TO BE REMOVED
		EXISTING PIPING TO REMAIN
		PIPE OFF BOTTOM
		PIPE OFF TOP
		RUN-OUT OFF TOP
		RUN-OUT OFF BOTTOM
		BRANCH CONNECTION (DIRECTION TO BE FIELD DETERMINED)
		PIPE UP
		PIPE DOWN
		STUB UP TO TERMINAL
		DIRECTION OF FLOW
		PIPE BREAK
		DRAIN PIPE PITCH AND FLOW

VALVE LEGEND		
	IS	ISOLATION VALVE REFER TO DETAILS AND SPEC.
	ACV	TWO WAY AUTOMATIC CONTROL VALVE

CONTROL SCHEMATIC LEGEND		
	CO2	CO2 SENSOR
	T	HEAT/COOL THERMOSTAT
	T _R	REVERSE ACTING THERMOSTAT
	S	SWITCH CONTROLLER
	C	TIME CLOCK CONTROLLER
	H	HUMIDITY SENSOR
	TS	TEMPERATURE SENSOR
	DSD	DUCT SMOKE DETECTOR
		CONTROL LINE

DAMPERS		
	ACD	MOTORIZED OR AUTOMATIC CONTROL DAMPER
	BD	BACK DRAFT DAMPER
	FD	FIRE DAMPER
	FSD	FIRE & SMOKE DAMPER
	VD	VOLUME DAMPER

DUCTWORK LEGEND		
	12"x8"	RECTANGULAR DUCTWORK - FIRST DIMENSION IS SIDE SHOWN (IN.)
	12"Ø	ROUND DUCTWORK - DIMENSION IS DUCT DIAMETER (IN.)
		RECTANGULAR SUPPLY DUCTWORK UP
		RECTANGULAR SUPPLY DUCTWORK DOWN
		RECTANGULAR RETURN/EXHAUST DUCTWORK UP
		RECTANGULAR RETURN/EXHAUST DUCTWORK DOWN
		ROUND DUCTWORK UP
		ROUND DUCTWORK DOWN
		BEAM PENETRATION BY DUCTWORK
		CAPPED DUCTWORK
		ACOUSTICALLY LINED DUCTWORK
		FLEXIBLE CONNECTION
		RECTANGULAR TO ROUND DUCTWORK TRANSITION
		MITERED ELBOW WITH TURNING VANES
		1/2" WIRE MESH SCREEN (ON OPEN END DUCT)

AIR DEVICE LEGEND		
	SG	SIDEWALL SUPPLY REGISTER
	SD	SUPPLY DIFFUSER
	RG	RETURN GRILLE
	EG	EXHAUST REGISTER OR GRILLE
	EG/RG	SIDEWALL EXHAUST/RETURN REGISTER
		SUPPLY AIR
		RETURN OR EXHAUST AIR
		UNDERCUT DOORWAY (BY G.C.)
		DOOR LOUVER (BY G.C.)

EQUIPMENT TAGS		
B	BOILER	
EH	ELECTRIC HEATER	
EF	EXHAUST FAN	
ERV	ENERGY RECOVERY VENTILATION UNIT	
ER	EXHAUST REGISTER	
EUH	ELECTRIC UNIT HEATER	
FTR	FIN TUBE RADIATION	
P	PUMP	
SD	SUPPLY DIFFUSER	
SR	SUPPLY REGISTER	
VI	VIBRATION ISOLATION	

DRAWING NOTES		
	NECK SIZE OR LENGTH IF LINEAR DIFFUSER SUPPLY DIFFUSER DESIGNATION AIR VOLUME (CFM) QUANTITY	
	EQUIPMENT DESIGNATION	
	DRAWING REVISION NOTE	
	DRAWING WORK NOTE	
	DRAWING WORK NOTE	
	CONNECT TO EXISTING	
	CAP EXISTING	
	LIMIT OF DEMOLITION	
	REVISION CLOUD	

ABBREVIATIONS		
AAV	AUTOMATIC AIR VENT	
AD	ACCESS DOOR	
AFF	ABOVE FINISHED FLOOR	
AP	ACCESS PANEL	
ARCH.	ARCHITECT	
ATC	AUTOMATIC TEMPERATURE CONTROL	
BTU	BRITISH THERMAL UNIT	
BTUH	BRITISH THERMAL UNIT PER HOUR	
CAP	CAPACITY	
CD	CONDENSATE DRAIN	
CFM	CUBIC FEET PER MINUTE	
CONTR	CONTRACTOR	
CV	CONTROL VALVE	
DB	DRY BULB TEMPERATURE (°F)	
DIA.	DIAMETER	
DN	DOWN	
EA	EXHAUST AIR	
EAT	ENTERING AIR TEMPERATURE	
EC	ELECTRICAL CONTRACTOR	
EF	EXHAUST FAN	
ER	EXHAUST AIR REGISTER	
ERV	ENERGY RECOVERY VENTILATION UNIT	
ESP	EXTERNAL STATIC PRESSURE	
ET	EXPANSION TANK	
ETR	EXISTING TO REMAIN	
EUH	ELECTRIC UNIT HEATER	
EWT	ENTERING WATER TEMPERATURE	
EX.	EXISTING	
EXH	EXHAUST	
FA	FREE AREA	
FAI	FRESH AIR INTAKE	
FPI	FINIS PER INCH	
FT	FEET	
GAL	GALLONS	
GC	GENERAL CONTRACTOR	
GE	GENERAL EXHAUST	
GPM	GALLONS PER MINUTE	
HP	HORSE POWER	
HVAC	HEATING, VENTILATION AND AIR CONDITIONING	
KE	KITCHEN EXHAUST	
KW	KILOWATTS	
LAT	LEAVING AIR TEMPERATURE	
LWT	LEAVING WATER TEMPERATURE	
MBH	THOUSANDS OF BRITISH THERMAL UNITS PER HOUR	
NTS	NOT TO SCALE	
OA	OUTSIDE AIR	
OAT	OUTSIDE AIR TEMPERATURE	
OBD	OPPOSED BLADE DAMPER	
PC	PLUMBING CONTRACTOR	
PD	PRESSURE DROP	
SA	SUPPLY AIR	
SAT	SUPPLY AIR TEMPERATURE	
SR	SUPPLY AIR REGISTER	
TSTAT	THERMOSTAT	
TYP	TYPICAL	
UC	UNDERCUT DOOR	
WB	WET BULB TEMPERATURE (°F)	

GENERAL NOTES		
1.	MECHANICAL WORK INDICATED IS DIAGRAMMATIC. EXACT LOCATIONS OF ALL COMPONENTS ARE TO BE DETERMINED IN THE FIELD (SPACING SUBJECT TO ARCHITECT'S REVIEW AND APPROVAL) TO AVOID CONFLICT WITH OTHER TRADES AND EXISTING SITE CONDITIONS.	
2.	THE CONTRACTOR SHALL VISIT AND CAREFULLY EXAMINE THE SITE TO IDENTIFY EXISTING CONDITIONS AND DIFFICULTIES THAT WILL AFFECT THE WORK OF THIS SECTION. REPORT IN WRITING TO THE ARCHITECT CONDITIONS WHICH MIGHT ADVERSELY AFFECT WORK. NO EXTRA PAYMENT WILL BE PROVIDED FOR ADDITIONAL WORK CAUSED BY UNFAMILIARITY WITH SITE CONDITIONS THAT ARE VISIBLE OR READILY CONSTRUCTED BY AN EXPERIENCED OBSERVER.	
3.	WORK REQUIRING INTERRUPTION OF BUILDING SERVICES SHALL BE CAREFULLY REVIEWED AND COORDINATED WITH THE OWNER TO MINIMIZE FREQUENCY AND DURATION OF SERVICE INTERRUPTIONS.	
4.	REFER TO ARCHITECTURAL PLANS FOR EXACT LOCATION OF CEILING GRID, DIFFUSERS, AND GRILLES.	
5.	ALL INSTALLATIONS SHALL PERMIT AND PROVIDE ACCESSIBILITY FOR SERVICE AND REPLACEMENT OF ALL NEW EQUIPMENT AND EXISTING EQUIPMENT IMPACTED BY THIS WORK.	
6.	COORDINATE ALL OPENINGS IN FLOORS WITH STRUCTURAL DRAWINGS AND GENERAL CONTRACTOR.	
7.	COORDINATE ALL ROOF OPENINGS WITH ARCHITECT AND STRUCTURAL ENGINEER.	
8.	REFER TO STRUCTURAL FRAMING PLANS FOR EXACT LOCATION OF ALL ROOF MOUNTED EQUIPMENT.	
9.	ALL MECHANICAL EQUIPMENT, PIPING, AND DUCTWORK SHALL BE INSTALLED IN ACCORDANCE WITH THE REQUIREMENTS OF GOVERNING LOCAL, STATE, AND FEDERAL SEISMIC CODES. PARTICULAR ATTENTION SHALL BE MADE TO VIBRATION ISOLATION, ANCHORING, AND BALANCING REQUIREMENTS.	
10.	PROVIDE SMOKE DETECTORS AND SMOKE DAMPERS WHERE SHOWN ON THE MECHANICAL DRAWINGS. COORDINATE THE QUANTITY AND EXACT LOCATION WITH ACTUAL SHEET METAL SHOP DRAWINGS. TO BE PRODUCED BY MECHANICAL CONTRACTOR, AND APPROVED BY ENGINEER. PROVIDE SMOKE DETECTORS AND SMOKE DAMPERS IN BOTH SUPPLY AND RETURN DUCTS ON ALL AIR HANDLERS AS SHOWN IN MECHANICAL DRAWINGS.	
11.	ALL DUCTWORK SHALL BE INSTALLED IN ACCORDANCE WITH CODES AND STANDARDS SET FORTH IN NFPA, SMACNA, AND ASHRAE FOR MEDIUM AND LOW PRESSURE DUCTWORK SYSTEMS.	
12.	ALL EXPOSED DUCTWORK SHALL BE PAINTED TO MATCH CEILING. REFER TO ARCHITECTURAL DRAWINGS.	
13.	PROVIDE MANUAL VOLUME DAMPERS AT ALL BRANCH DUCTS FOR AIR BALANCING.	
14.	ALL SHEET METAL PLENUMS AT OUTSIDE AIR LOUVERS SHALL BE INSULATED WITH RIGID INSULATION, AS PER SPECIFICATION.	
15.	RUN-OUTS TO RETURN AND EXHAUST REGISTERS, OR GRILLES ABOVE GYP BOARD CEILINGS, SHALL BE RIGID DUCTED. NO FLEXIBLE DUCT WORK SHALL BE ALLOWED ON RETURN OR EXHAUST REGISTERS.	
16.	ALL DUCTS, PIPES, AND EQUIPMENT SHALL BE INDEPENDENTLY SUPPORTED FROM THE BUILDING STRUCTURE WITH PROPER ALLOWANCES FOR CONTRACTION, EXPANSION, AND VIBRATION ELIMINATION.	
17.	PROVIDE COPPER 1" RUN-OUTS TO HOT WATER REHEAT COILS, CABINET HEATERS AND UNIT HEATERS UNLESS NOTED OTHERWISE.	
18.	PROVIDE SWING JOINTS AT ALL BRANCH CONNECTIONS TO HYDRONIC EQUIPMENT.	
19.	ROOM THERMOSTATS SHALL BE MOUNTED 4'-6" ABOVE FINISHED FLOOR UNLESS OTHERWISE SHOWN OR DIRECTED.	
20.	COORDINATE EXACT LOCATION OF UNIT HEATERS WITHIN ELECTRIC ROOMS WITH ELECTRICAL CONTRACTOR.	
21.	REFER TO SPECIFICATIONS FOR TYPE OF VALVE TO BE USED. VALVES ARE SHOWN ON PLANS FOR PLACEMENT ONLY.	
22.	ALL DUCT DIMENSIONS SHOWN ARE INSIDE CLEAR FREE AREA REQUIRED.	
23.	ALL DIFFUSER, REGISTER, AND GRILLE SIZES INDICATED ON FLOOR PLANS ARE NECK SIZE REQUIRED.	
24.	ALL PIPING IS TO BE SLOPED A MINIMUM OF 1/4" PER HUNDRED FEET IN THE DIRECTION OF DRAINAGE.	
25.	NOT ALL SYMBOLS OR ABBREVIATIONS ARE USED ON THIS PROJECT.	
26.	COORDINATE ENTIRE INSTALLATION WITH THE WORK OF ALL OTHER TRADES PRIOR TO ANY FABRICATION OR INSTALLATIONS.	
27.	OBTAIN ALL REQUIRED PERMITS AND PAY ALL FEES RELATED TO SAME.	
28.	ALL PIPING AND DUCTWORK SHOWN IS DIAGRAMMATIC ONLY. DETERMINE THE EXACT LOCATION IN THE FIELD.	
29.	REVIEW ALL ARCHITECTURAL, STRUCTURAL, PLUMBING, ELECTRICAL, FIRE PROTECTION AND SITE DRAWINGS BEFORE STARTING ANY WORK TO BECOME FAMILIAR WITH THE DETAILS OF CONSTRUCTION, AND COORDINATE WITH OTHER TRADES.	
30.	OBTAIN ALL REQUIRED PERMITS AND PAY ALL FEES RELATED TO SAME.	
31.	PROVIDE ALL NECESSARY PIPING, EQUIPMENT AND SUPPORTS AS WELL AS ANY ADDITIONAL EQUIPMENT, ETC. NOT SHOWN ON THE DRAWINGS OR CALLED FOR IN THE SPECIFICATIONS BUT NECESSARY TO PROVIDE COMPLETE AND WORKABLE SYSTEMS.	
32.	PROVIDE ACCESS TO ALL EQUIPMENT REQUIRING PERIODIC SERVICE AND MAINTENANCE.	
33.	DO NOT SCALE THESE DRAWINGS. TAKE ALL MEASUREMENTS IN THE FIELD IN COORDINATION WITH ALL EQUIPMENT AS APPROVED AND WITH ALL OTHER TRADES.	
34.	FOR EQUIPMENT SCHEDULES, SEE THIS DRAWING	
35.	ALL DUCTWORK SHALL BE INSTALLED ON ACCORDANCE WITH THE LATEST EDITION OF SMACNA	
36.	ALL HOT WATER AND CHILLED WATER PIPING SHALL BE INSULATED IN ACCORDANCE WITH THE MASSACHUSETTS STATE BUILDING CODE.	
37.	ALL PIPING HIGH POINTS SHALL HAVE 3/4 INCH VENTS AND LOW POINTS SHALL HAVE 3/4" DRAINS.	
38.	ALL ROTATING EQUIPMENT SHALL HAVE FLEXIBLE PIPE ON DUCT CONNECTIONS AND APPROVED VIBRATION ISOLATORS.	
39.	DETAILS SHOWN ON SHEET H5 ARE APPLICABLE TO ALL EQUIPMENT, EXCEPT WHERE INDICATED.	
40.	PROVIDE AIRTIGHT ACCESS DOOR FOR INSPECTION OF FIRE DAMPERS, FILTERS, AND COILS.	
41.	CONTRACTOR SHALL VERIFY DUCT, PIPING AND EQUIPMENT LOCATIONS FOR INTERFERENCES BEFORE INSTALLATION.	
42.	PROVIDE VERTICAL SUPPORTS FOR HOT/CHILLED/CONDENSER WATER PIPING AT THE FOLLOWING MAXIMUM INTERVALS: 15' FOR 6" & 5" DIAMETER PIPE; 12' FOR 4" DIAMETER PIPE; 10' FOR 3" & 2-1/2" DIAMETER PIPE; 8' FOR 2" DIAMETER PIPE; 7' FOR 1-1/2" & 1-1/4" DIAMETER PIPE; 5' FOR 1" & 3/4" DIAMETER PIPE.	
43.	REFERENCE DRAWING H6 FOR SEQUENCE OF OPERATION OF NEW EQUIPMENT.	
44.	ALL EQUIPMENT SHALL BE INSTALLED IN STRICT ACCORDANCE WITH MANUFACTURER'S WRITTEN INSTALLATION INSTRUCTIONS.	

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PHASE 2 PRELIMINARY PRICING DRAWINGS
 12 JULY 2024

PHASE

2021-003 PROJECT NUMBER

HVAC LEGENDS AND ABBREVIATIONS

H001

EASTERN ACROBATICS

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INDOOR ENERGY RECOVERY VENTILATOR SCHEDULE

TAG No.	SERVICE	MANUFACTURER (AS STANDARD)	MODEL No. (AS STANDARD)	TYPE	ENERGY RECOVERY SECTION																				ELECTRICAL DATA					FILTER TYPE	APPROX. WEIGHT (LBS)	REMARKS											
					SUPPLY FAN DATA					EXHAUST FAN DATA					WINTER SUPPLY AIR					WINTER RETURN/EXHAUST AIR					SUMMER SUPPLY AIR								SUMMER RETURN/EXHAUST AIR										
					CFM (TOT)	CFM (OA)	ESP (IN W.C.)	RPM	HP	CFM (EA)	ESP (IN W.C.)	RPM	HP	TYPE	CFM	EAT DB(°F)	LAT DB(°F)	PD (IN W.C.)	CFM	EAT DB(°F)	LAT DB(°F)	PD (IN W.C.)	CFM	EAT DB(°F)	LAT DB(°F)	PD (IN W.C.)	CFM	EAT DB(°F)	LAT DB(°F)				PD (IN W.C.)	VOLTS	PHASE	HZ	MCA	MOCP	EER				
ERV-1	REFER TO DRAWINGS	RENEWAIRE	HE 1X1NH	INDOOR	860	860	0.75	-	1.5	860	0.75	-	1.5	CORE	860	0	53	-	860	70	23	-	860	91	73	80	63	-	860	75	62	86	72	-	208	1	60	10.1	15	-	MERV 13	325	1,2,3,4
ERV-2	REFER TO DRAWINGS	RENEWAIRE	EV PREMIUM M	INDOOR	160	160	0.75	-	173 W	160	0.75	-	173 W	CORE	160	0	53	-	160	70	23	-	160	91	73	80	68	-	160	75	62	85	72	-	120	1	60	10	10	-	MERV 13	36	1,2,3,4,5
ERV-3	REFER TO DRAWINGS	RENEWAIRE	HE 2X1NH	INDOOR	1830	1830	0.75	-	2.0	1830	0.75	-	2.0	CORE	1830	0	53	-	1830	70	23	-	1830	91	73	80	68	-	1830	75	62	85	72	-	208	1	60	24.3	35	-	MERV 13	600	1,2,3,4

NOTES:
1. PROVIDE WITH DISCONNECT, EXTERIOR VENT HOODS, COORDINATE ALL ELECTRICAL REQUIREMENTS WITH EC PRIOR TO INSTALLATION.
2. PROVIDED WITH ISOLATION HANGERS.
3. PROVIDE ECM CONTROLS WITH ALL ASSOCIATED SYSTEM APPURTENANCES.
4. EACH ERV TO BE PROVIDED WITH (1) SPARE SET OF FILTERS. STORE PER OWNER.
5. PROVIDE WITH BOOST MODE.

FAN SCHEDULE

TAG No.	LOCATION(S) SERVED	MANUFACTURER (AS STANDARD)	MODEL No. (AS STANDARD)	TYPE	FAN DATA			ELECTRICAL DATA			REMARKS
					CFM	RPM	SP(IN)	VOLTS	PHASE	HP	
EF-1	JANITOR CLOSET	GREENHECK	SP-A90-130-VG	CEILING	100	1725	0.5	115	1	12 W	-
TEF-1	RESTROOM	PANASONIC	FV-0511VK2	CEILING	80	1113	0.25	120	1	9.6 W	-

NOTES:
1. PROVIDE DISCONNECT, HANGERS, EXTERIOR VENT HOOD

DUCT INSULATION TABLE

SERVICE/LOCATION	INSULATION & FITTING TYPE
OUTSIDE AIR DUCT INSULATION (CONDITIONED SPACE)	2" FIBERGLASS DUCT WRAP WITH FSK FACING
EXHAUST DUCT INSULATION (CONDITIONED SPACE)	NONE
EXHAUST DUCT INSULATION (UNCONDITIONED SPACE)	3" FIBERGLASS DUCT WRAP WITH FSK FACING

REGISTER, GRILLE & DIFFUSER SCHEDULE

TAG	TYPE	CFM	NECK SIZE	FRAME TYPE	MOUNTING	DAMPER	MATERIAL	FINISH	MANUFACTURER/MODEL No.	NC	NECK VELOCITY FPM
SD-CFM	FRESH AIR SUPPLY	REFER TO PLANS	REFER TO PLANS	SQUARE	CEILING	YES	AS PER ARCH.	AS PER ARCH.	TITUS/TDC	<25	<500
SR-CFM	FRESH AIR SUPPLY	REFER TO PLANS	REFER TO PLANS	RECT.	SIDEWALL	YES	AS PER ARCH.	AS PER ARCH.	TITUS/300	<25	<500
ER-CFM	EXHAUST	REFER TO PLANS	REFER TO PLANS	RECT./SQ.	CEILING	YES	AS PER ARCH.	AS PER ARCH.	TITUS/350RL	<25	<500

NOTES:
1. COORDINATE MOUNTING REQUIREMENTS WITH ARCHITECTURAL REFLECTED CEILING PLANS.
2. COORDINATE MATERIAL, FINISH & COLOR WITH ARCHITECT.
3. PROVIDE FRAME SUITABLE FOR SURFACE MOUNTING, CEILING OR SIDEWALL.
4. PROVIDE SQUARE TO ROUND TRANSITIONS WHERE NEEDED.
5. REFER TO DRAWINGS FOR NECK SIZES AND CFM UNLESS NOTED ABOVE.
6. PROVIDE OPPOSED BLADE DAMPER WITH SCREW DRIVER ADJUSTMENT CONTROL FOR ALL SUPPLY AND RETURN, REGISTERS, GRILLES, AND DIFFUSERS.
7. PROVIDE RADIATION DAMPERS FOR ALL REGISTERS, GRILLES, AND DIFFUSERS WHERE THERE IS A FLOOR/CEILING ASSEMBLY.

ELECTRIC CABINET HEATER SCHEDULE

TAG	MANUFACTURER (AS STANDARD)	MODEL No. (AS STANDARD)	TYPE	AIR DATA			ELECTRIC CAPACITY		ELECTRICAL DATA			REMARKS
				CFM	EAT(°F)	LAT(°F)	MBH	KW	VOLTS	PHASE	AMPS	
EH-1	QMARK	AWH4404	WALL MOUNT	-	55	98	10.2	3.0	208	1	14.4	-

NOTES:
1. PROVIDE DISCONNECT SWITCH & BUILT-IN THERMOSTAT, PROVIDE SURFACE MOUNTING KIT.

CABINET UNIT HEATER SCHEDULE

TAG	MANUFACTURER (AS STANDARD)	MODEL No. (AS STANDARD)	TYPE	LENGTH (LINEAR HEIGHT)	AIR DATA			HOT WATER CAPACITY					REMARKS
					CFM	EAT(°F)	LAT(°F)	EW(°F)	LWT(°F)	MBH	GPM	WPD	
CUH-1	STERLING	RFG-A 6XX-32	WALL MOUNTED FULLY RECESSED	60"	-	55	90	180	160	17.4	1.8	0.8	-

NOTES:
1. PROVIDE THERMOSTAT, ACCESS PANEL, MOUNTING KIT, VALVE, PIPE CONNECTIONS.
2. UNIT FRONT OUTLET TO BE 32" NOMINAL LINEAR HEIGHT.
3. PROVIDE WITH FRONT INLET GRILLE.

ELECTRIC WALL HEATER SCHEDULE

TAG No.	MANUFACTURER (AS STANDARD)	MODEL No. (AS STANDARD)	ELECTRIC CAPACITY		ELECTRICAL DATA				REMARKS
			MBH	KW	VOLTS	PHASE	AMP	HP	
EH-1	STELPRO	AWF1501T	5.1	1.5	120	1	-	-	PROVIDE DISCONNECT, BUILT-IN THERMOSTAT
EH-2	STELPRO	ARUH2CHAR	5.1	1.5	208	1	-	-	PROVIDE DISCONNECT, BUILT-IN THERMOSTAT

ELECTRIC UNIT HEATER SCHEDULE

TAG	MANUFACTURER (AS STANDARD)	MODEL No. (AS STANDARD)	TYPE	AIR DATA			ELECTRIC CAPACITY		ELECTRICAL DATA			REMARKS
				CFM	EAT(°F)	LAT(°F)	MBH	KW	VOLTS	PHASE	AMPS	
EUH-1	QMARK	MUH0381	CEILING HUNG	350	55	115	10.2	3.0	208	1	14.5	-

NOTES:
1. PROVIDE DISCONNECT SWITCH, VIBRATION ISOLATION & INTERNAL THERMOSTAT (TYPICAL QMARK MODEL UHMT1).
2. COORDINATE COLOR & FINISH.

FIN TUBE RADIATION SCHEDULE

TAG No.	MANUFACTURER (AS STANDARD)	MODEL No. (AS STANDARD)	TYPE	TUBE SIZE (IN)	FINS/FT	FIN THICKNESS (IN)	AVERAGE WATER TEMP °F	RATING (BTU/FT)	LENGTH (LINEAR FT)	REMARKS
FT-1 LF	STERLING	KP-3/4-50-2 KOM-PAK	BASEBOARD	3/4"	32	0.020	180	590	REFER TO PLANS	-

NOTES:
1. PROVIDE THERMOSTAT, VALVE, FULL LENGTH ENCLOSURES.
2. FINISH AND COLOR TO BE COORDINATED WITH ARCHITECT/OWNER.

PIPE INSULATION SCHEDULE

LOCATION	INSULATION TYPE	FITTING INSULATION TYPE	FOR PIPE DIA. (INCHES)			
			RUNOUTS	< 1-1/2"	1-1/2" - 2-1/2"	3"-6"
INSULATION WALL THICKNESS (INCHES)						
HEATING HOT WATER PIPING HWS & HWR	FIBERGLASS WITH ALL SERVICE PVC JACKET	FIBERGLASS WITH PVC JACKET	1-1/2"	1-1/2"	2"	2"

PIPE SCHEDULE

SERVICE	LOCATION	PIPING	FITTINGS	JOINTS
HYDRONIC HEATING WATER & CONDENSER WATER 2-1/2" AND SMALLER	ABOVE GROUND	TYPE "L" SEAMLESS COPPER TUBING	WROUGHT COPPER	SWEAT SOLDER
3" AND LARGER		SCHEDULE 40 SEAMLESS BLACK STEEL	SCHEDULE 40 SEAMLESS	WELDED/ MECHANICAL

GENERAL NOTE

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STAMP

PHASE 2 PRELIMINARY PRICING DRAWINGS
12 JULY 2024

PHASE

2021-003

PROJECT NUMBER

HVAC SCHEDULES

H002

EASTERN ACROBATICS

28 Eliot Street
Natick, MA 01760

OWNER

THE ENTRUST INC.
FBO AUSTIN S. LIN

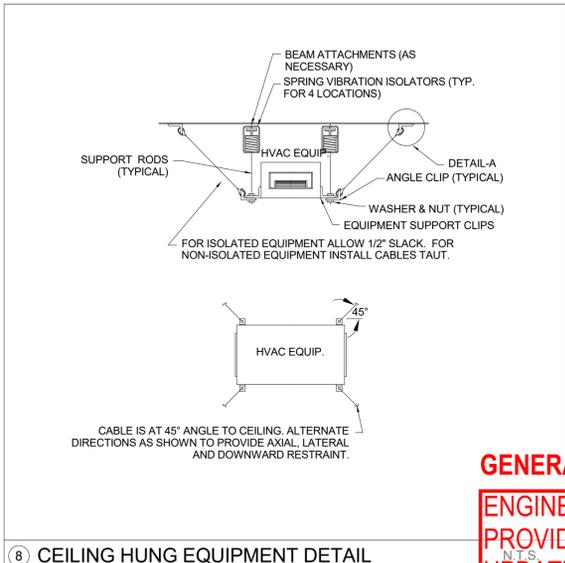
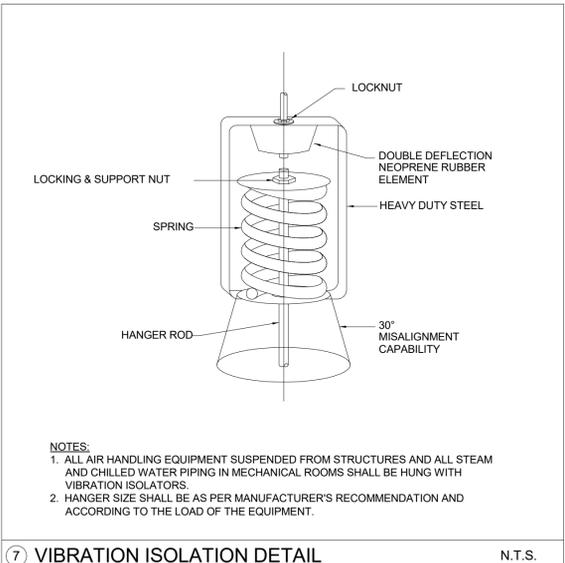
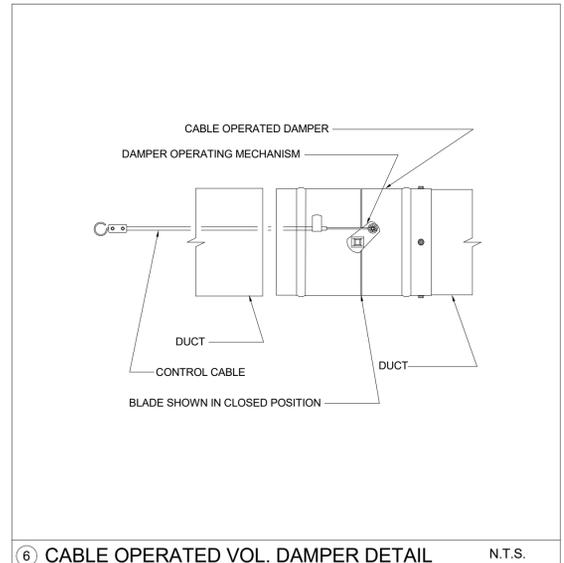
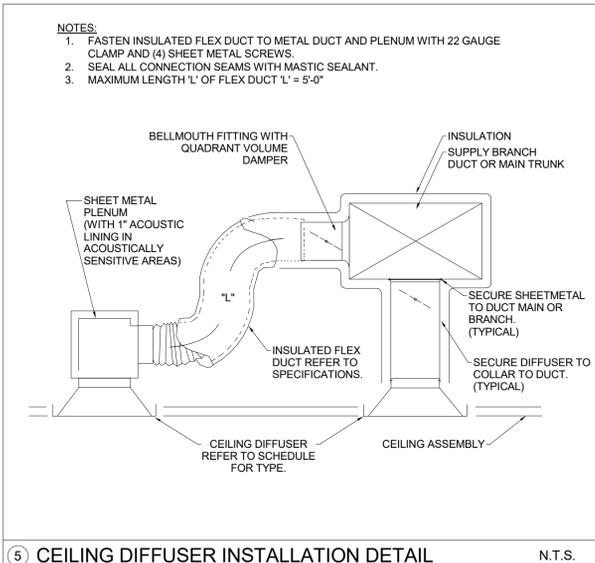
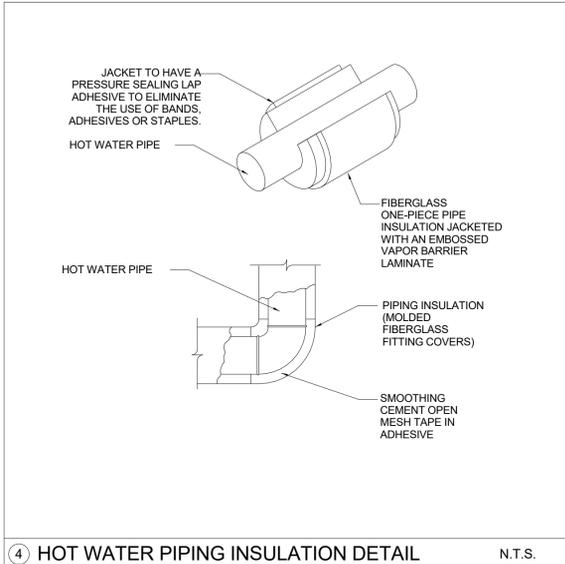
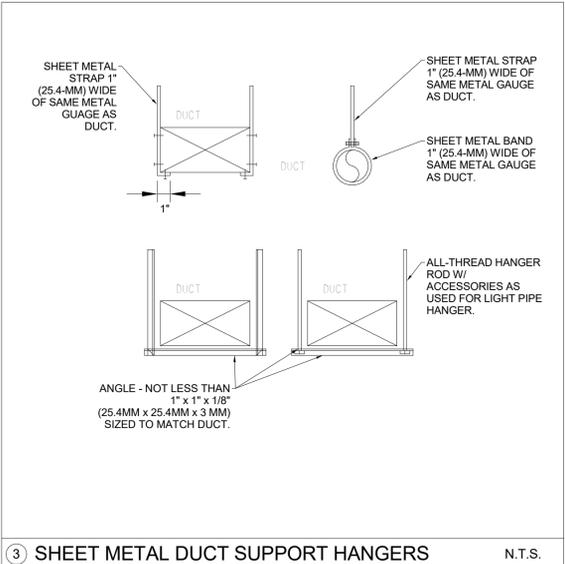
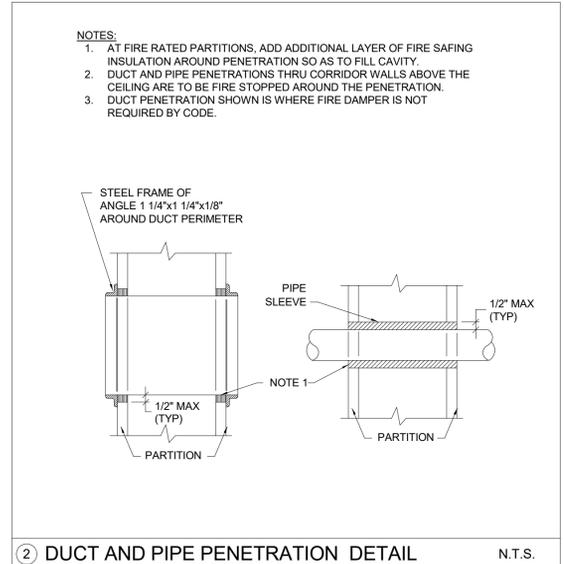
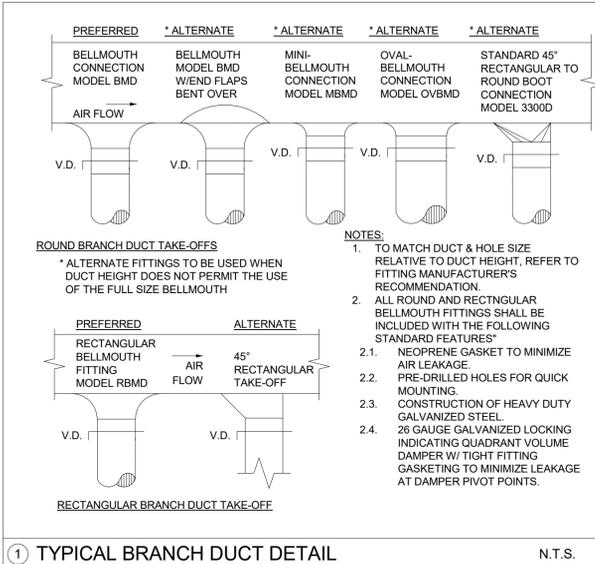
28 ELIOT ST.
NATICK, MA 01760

CLIENT

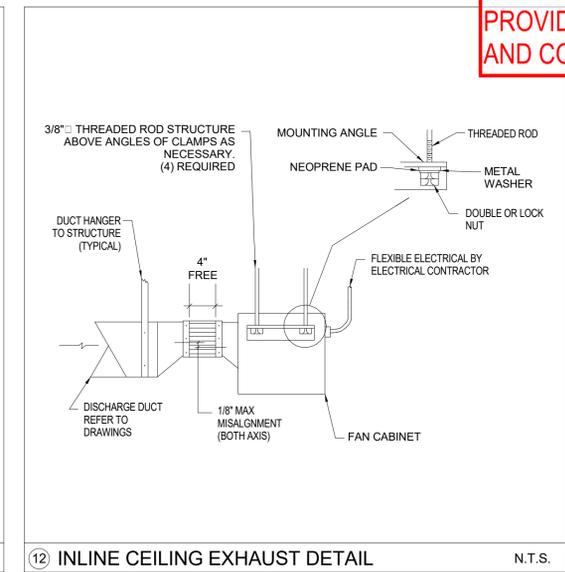
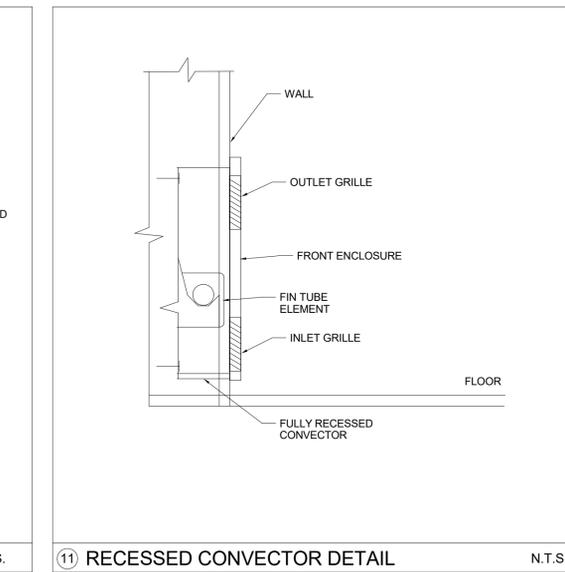
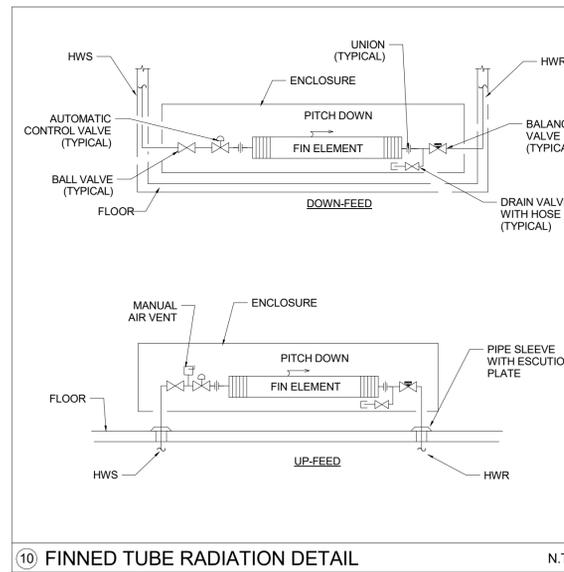
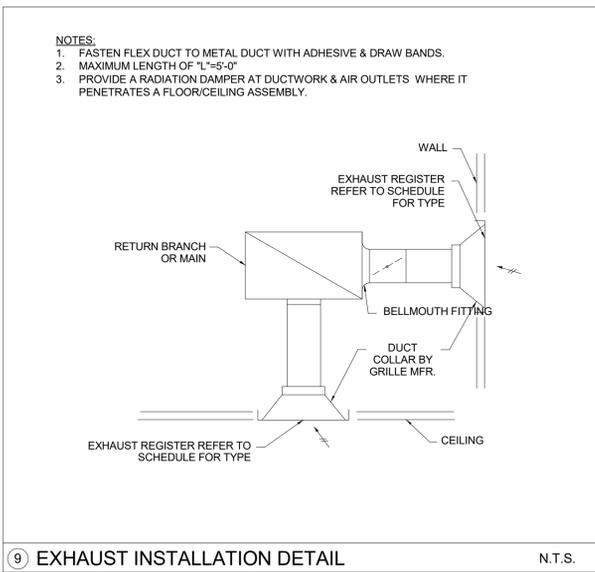
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ARCHITECT



GENERAL NOTE
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PHASE 2 PRELIMINARY PRICING DRAWINGS
12 JULY 2024

2021-003 PROJECT NUMBER

HVAC DETAILS

H003

EASTERN ACROBATICS

28 Eliot Street
Natick, MA 01760

OWNER

THE ENTRUST INC.
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STAMP

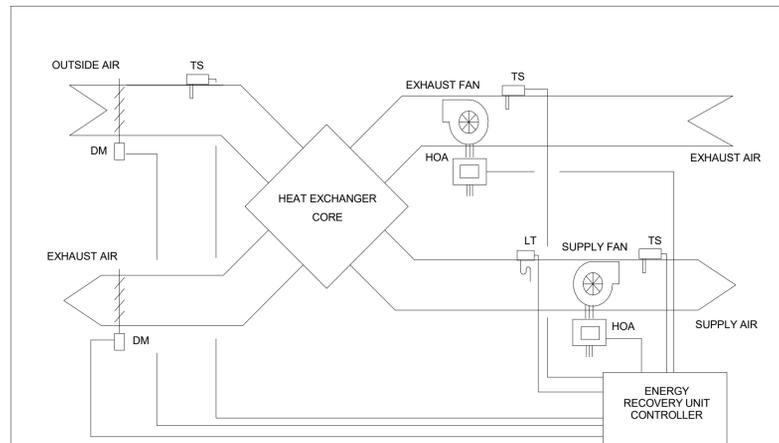
PHASE 2 PRELIMINARY PRICING DRAWINGS
12 JULY 2024

PHASE

2021-003 PROJECT NUMBER

HVAC SEQUENCE OF CONTROLS

H004



APPLICATION TABLE
ENERGY RECOVERY VENTILATION UNIT
ERV-1,2,3

ENERGY RECOVERY UNIT SCHEDULE OPERATION

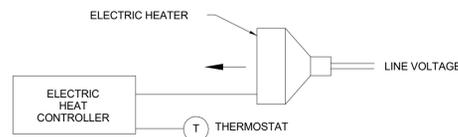
THE ENERGY RECOVERY UNIT SHALL BE CONTROLLED THROUGH THE APPLICATION SPECIFIC CONTROLLER. THE SEQUENCE LISTED BELOW IS REVERSIBLE UNLESS NOTED OTHERWISE.

OCCUPIED HOURS: THE UNIT'S SUPPLY AND EXHAUST FANS SHALL BE ENERGIZED AND OPERATE CONTINUOUSLY. THE OUTDOOR AIR AND EXHAUST AIR DAMPERS SHALL BE OPEN.

DEFROST CYCLE: THE UNIT SHALL BE PROVIDED WITH A DEFROST CYCLE DURING THE WINTER OPERATION.

UNOCCUPIED HOURS: THE UNIT'S SUPPLY AND EXHAUST FANS SHALL BE DE-ENERGIZED AND OA & EA DAMPERS SHALL CLOSE.

ALARM: WHEN THE UNIT'S FREEZESTAT SENSES A LOW TEMPERATURE CONDITION. THE UNIT'S FANS SHALL BE DE-ENERGIZED. THE UNIT'S OUTDOOR AIR DAMPER SHALL CLOSE.



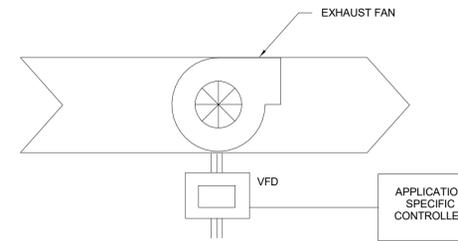
APPLICATION TABLE
ELECTRIC HEATERS
EUH, EH

ELECTRIC HEATER UNIT SEQUENCE OF OPERATION

THE ELECTRIC UNIT HEATER SHALL BE CONTROLLED BY AN INTEGRATED THERMOSTAT. THE SEQUENCE LISTED BELOW IS REVERSIBLE UNLESS NOTED OTHERWISE.

THE UNIT'S HEATING ELEMENT SHALL BE DE-ENERGIZED. UPON A CALL FOR HEAT FROM THE THERMOSTAT, THE ELEMENT SHALL ENERGIZE AND OPERATE THE STAGES OF HEATING AS REQUIRED TO MAINTAIN THE SPACE TEMPERATURE SETPOINT OF 60°F (ADJUSTABLE).

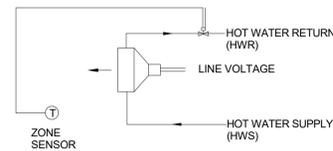
UPON SATISFYING THE CALL FOR HEAT, THE UNIT ELEMENT SHALL BE DE-ENERGIZED.



APPLICATION TABLE
JANITOR CLOSET EXHAUST FAN
EF-1

EXHAUST FAN SEQUENCE OF OPERATION

THE EXHAUST FAN SHALL RUN CONTINUOUSLY AND BE MONITORED THROUGH THE ASC.

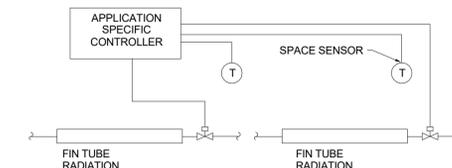


APPLICATION TABLE
CABINET UNIT HEATER
CUH-1

HOT WATER HEATER SEQUENCE OF OPERATION

THE SEQUENCE LISTED BELOW IS REVERSIBLE UNLESS NOTED OTHERWISE.

UPON A CALL FOR HEAT FROM THE SPACE SENSOR, THE UNIT'S SUPPLY FAN SHALL BE ENERGIZED AND THE TWO WAY CONTROL VALVE SHALL MODULATE OPEN AS REQUIRED TO MAINTAIN THE OCCUPIED SETPOINT.



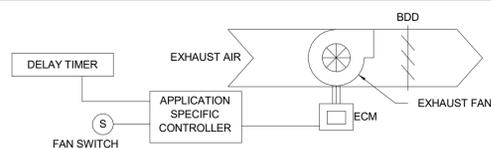
APPLICATION TABLE
FINNED TUBE BASEBOARD
TYPICAL FTR

HOT WATER FIN TUBE RADIATION/CONVECTOR SEQUENCE OF OPERATION

THE HOT WATER FIN TUBE RADIATION/CONVECTOR SHALL BE CONTROLLED THROUGH THE BMS SYSTEM. THE SEQUENCE LISTED BELOW IS REVERSIBLE UNLESS NOTED OTHERWISE.

OCCUPIED HOURS: THE FIN TUBE TWO WAY CONTROL VALVE SHALL BE CLOSED. UPON A CALL FOR HEAT FROM THE SPACE TEMPERATURE SENSOR, THE FIN TUBE'S TWO WAY CONTROL VALVE SHALL MODULATE OPEN AS REQUIRED TO MAINTAIN THE SPACE TEMPERATURE SETPOINT, 72° F (ADJUSTABLE).

UNOCCUPIED HOURS: THE FIN TUBE TWO WAY CONTROL VALVE SHALL BE CLOSED. UPON A CALL FOR HEAT FROM THE SENSOR, THE TWO WAY CONTROL VALVE SHALL OPERATE TO ACHIEVE THE NIGHT SETBACK SETPOINT, 55° F (ADJUSTABLE).



APPLICATION TABLE
TOILET EXHAUST FAN
TEF-1

TOILET EXHAUST FAN SEQUENCE OF OPERATION

THE TOILET EXHAUST FAN SHALL BE CONTROLLED BY AN APPLICATION SPECIFIC CONTROLLER.

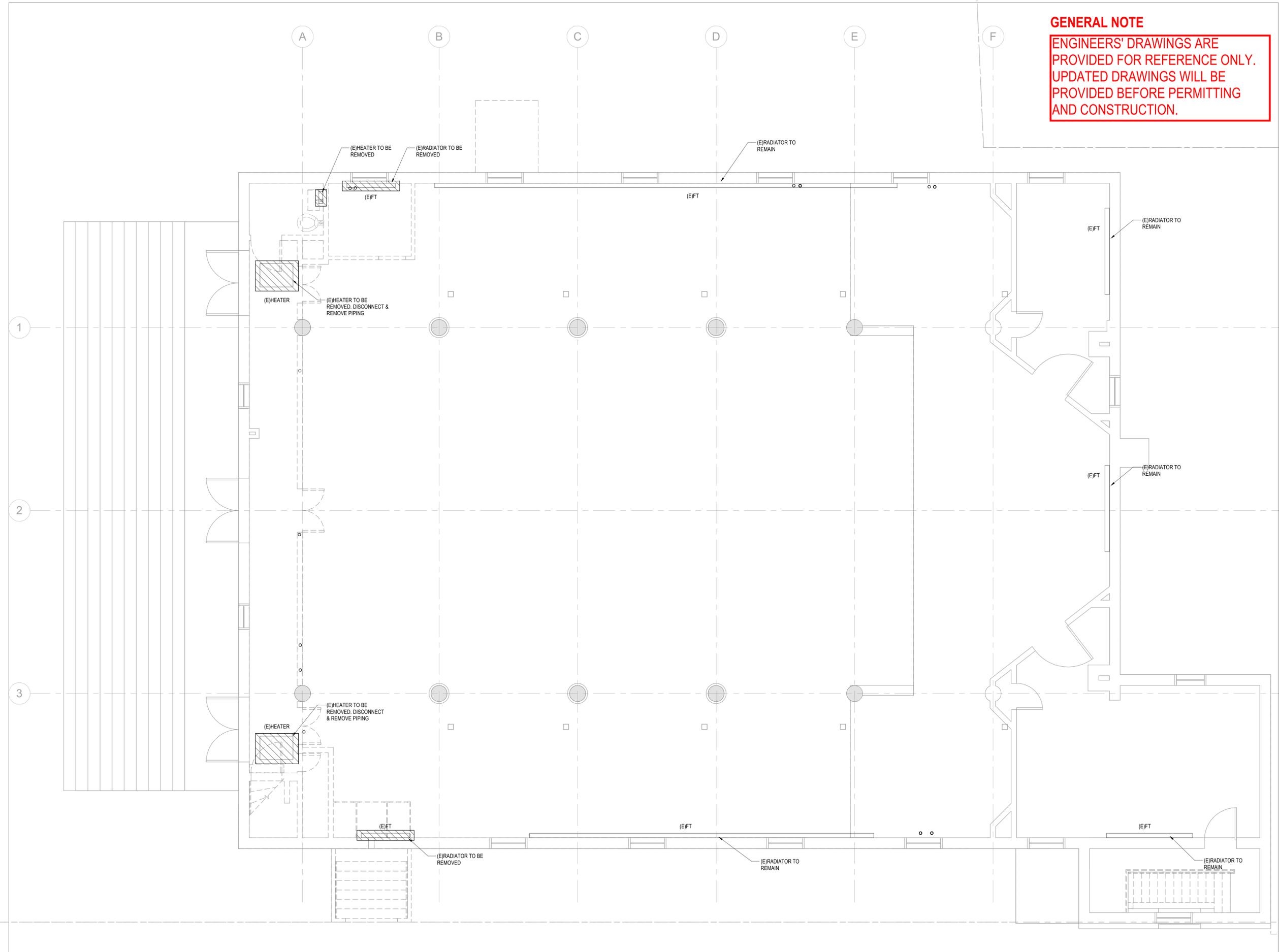
THE EXHAUST FAN SHALL RUN CONTINUOUSLY AT LOW SPEED.

WHEN THE FAN SWITCH IS TURNED ON, THE TOILET EXHAUST FAN SHALL RAMP UP TO HIGH SPEED.

WHEN THE FAN SWITCH IS TURNED OFF, THE TOILET EXHAUST FAN SHALL REMAIN ON HIGH SPEED PER SET DELAY TIMER THEN RETURN TO LOW SPEED.

GENERAL NOTE

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 ARCHITECT

PHASE 2 PRELIMINARY PRICING DRAWINGS
 12 JULY 2024

PHASE
 2021-003
 PROJECT NUMBER

HVAC
 SANCTUARY
 DEMOLITION
 PLAN

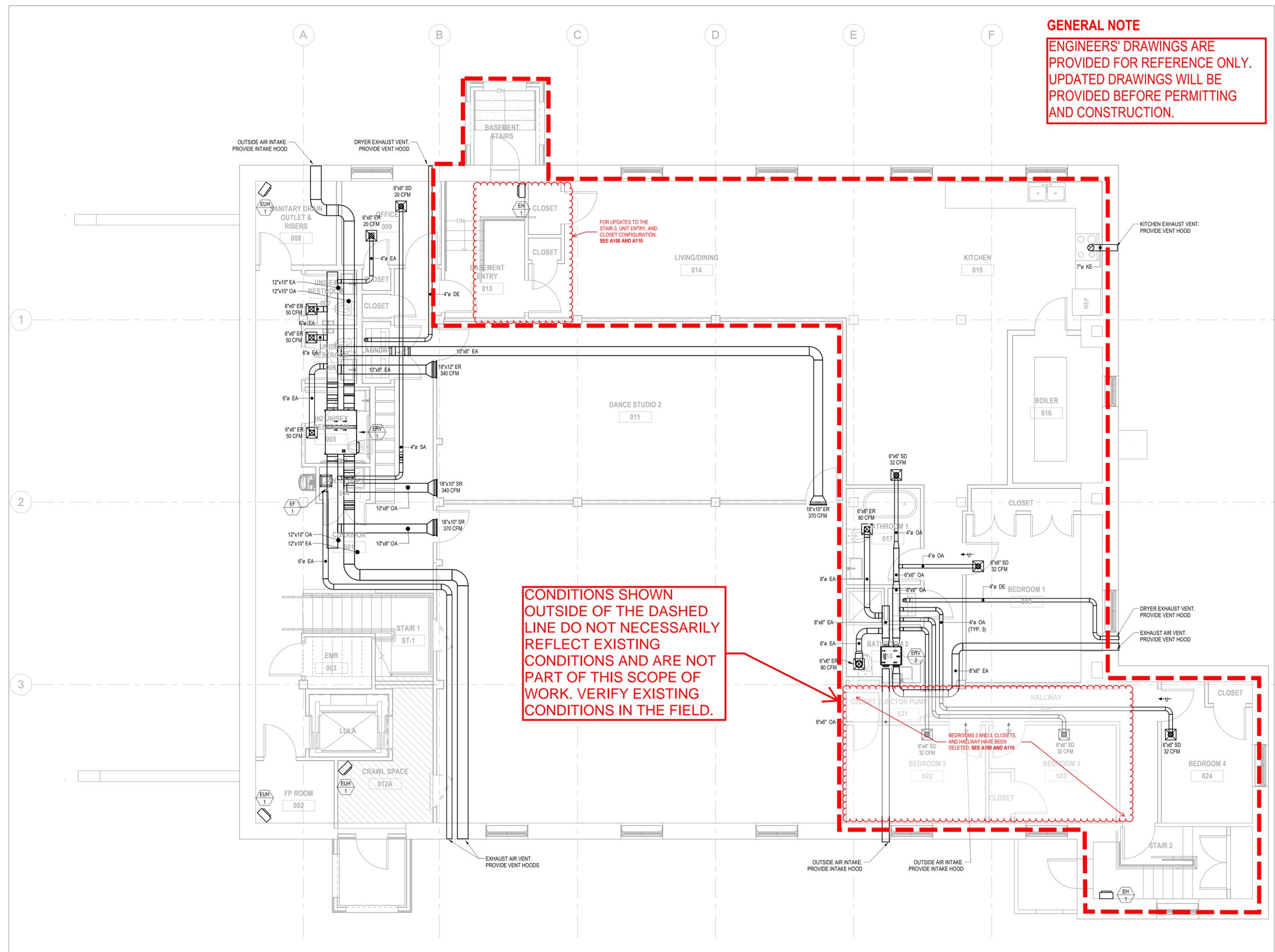
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CONDITIONS SHOWN OUTSIDE OF THE DASHED LINE DO NOT NECESSARILY REFLECT EXISTING CONDITIONS AND ARE NOT PART OF THIS SCOPE OF WORK. VERIFY EXISTING CONDITIONS IN THE FIELD.

BEDROOMS 2 AND 3, CLOSETS, AND HALLWAY HAVE BEEN DELETED. SEE A100 AND A110.

PHASE 2 PRELIMINARY PRICING DRAWINGS
 12 JULY 2024

PHASE
 2021-003 PROJECT NUMBER

HVAC BASEMENT DUCTWORK FLOOR PLAN

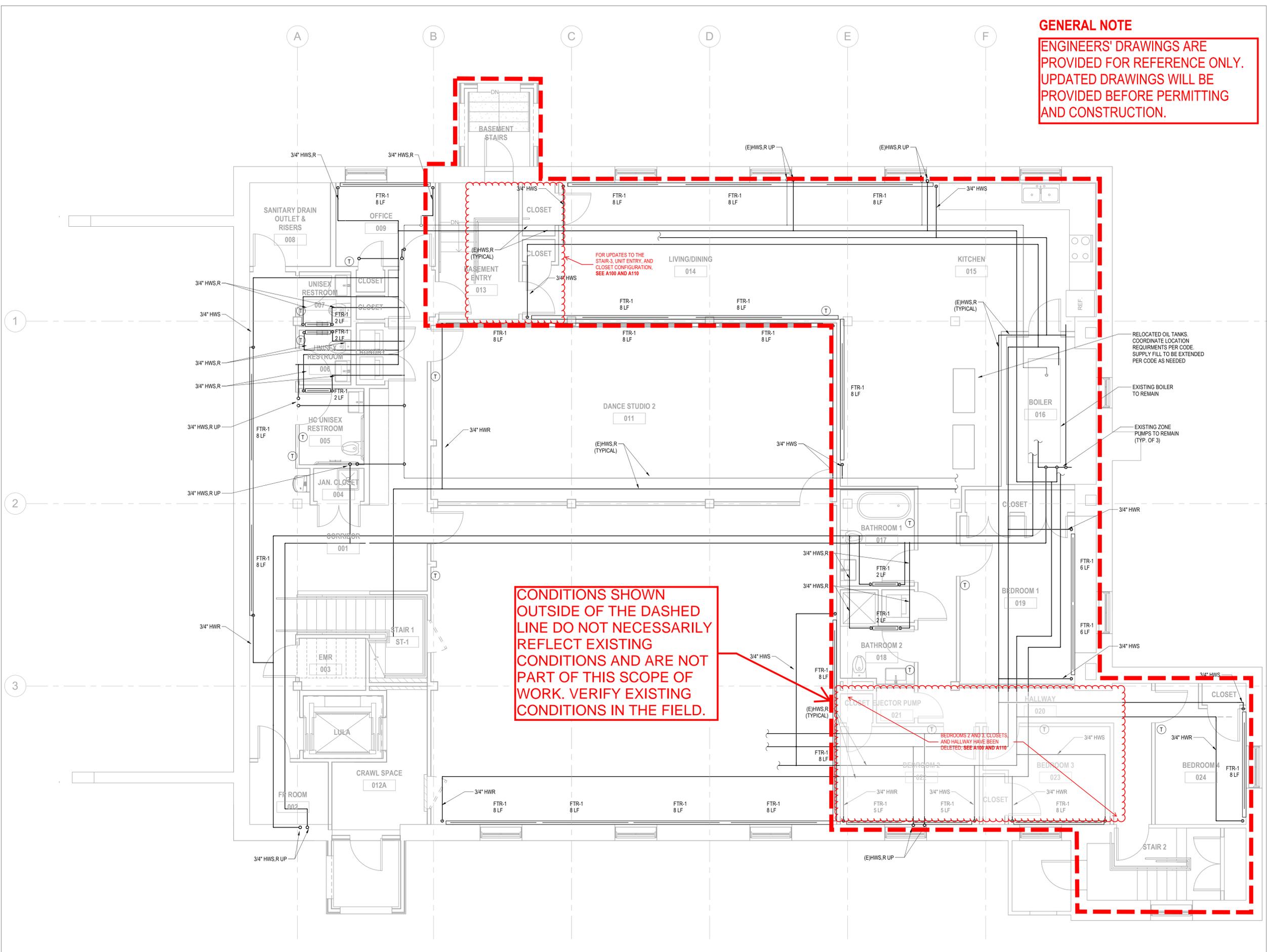
H100

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 ARCHITECT



CONDITIONS SHOWN OUTSIDE OF THE DASHED LINE DO NOT NECESSARILY REFLECT EXISTING CONDITIONS AND ARE NOT PART OF THIS SCOPE OF WORK. VERIFY EXISTING CONDITIONS IN THE FIELD.

RELOCATED OIL TANKS. COORDINATE LOCATION REQUIREMENTS PER CODE. SUPPLY FILL TO BE EXTENDED PER CODE AS NEEDED

EXISTING BOILER TO REMAIN

EXISTING ZONE PUMPS TO REMAIN (TYP. OF 3)

BEDROOMS 2 AND 3, CLOSETS AND HALLWAY HAVE BEEN DELETED. SEE A100 AND A110

PHASE 2 PRELIMINARY PRICING DRAWINGS
 12 JULY 2024

PHASE
 2021-003 PROJECT NUMBER

HVAC BASEMENT PIPING FLOOR PLAN

H200

GENERAL NOTES	
1.	REFER TO ARCHITECTURAL PLANS AND ELEVATIONS FOR MOUNTING HEIGHTS AND EXACT LOCATIONS OF ALL DEVICES.
2.	PERFORM WORK AND PROVIDE MATERIALS AND EQUIPMENT TO MAKE INSTALLATION COMPLETE IN EVERY DETAIL UNDER THIS CONTRACT WHETHER OR NOT SPECIFICALLY SHOWN ON DRAWINGS.
3.	ALL CONDUIT, WIRING AND ELECTRICAL EQUIPMENT SHALL BE INSTALLED AND GROUNDED IN ACCORDANCE WITH THE LATEST STANDARDS OF THE NATIONAL & STATE ELECTRICAL CODES AND ANY APPLICABLE LOCAL REGULATIONS.
4.	ALL FLOOR, MASONRY WALLS AND STRUCTURAL CEILING PENETRATIONS SHALL BE SLEEVED.
5.	PROVIDE FIRE/MOISTURE SEAL FOR WALL, FLOOR OR CEILING PENETRATIONS.
6.	DO NOT LAY CABLES OR RACEWAY ON, OR SUPPORT FROM SUSPENDED CEILING OR PIPING AND DUCTWORK.
7.	OUTLET BOXES SHALL BE MOUNTED FLUSH. CONDUIT SHALL BE RUN CONCEALED. WHERE WALLS ARE BLOCK, DEVICES AND WIRING SHALL BE SURFACE MOUNTED. PROVIDE WIREMOLD OR EQUAL TO SURFACE MOUNTED RACEWAY WITH FINISHED BOXES.
8.	NO CONDUIT SMALLER THAN 3/4 INCH ELECTRICAL TRADE SIZE SHALL BE USED, UNLESS SPECIFICALLY CALLED FOR ON THE DRAWINGS.
9.	ALL WIRING WITHIN UTILITY CLOSETS MAY BE IN SURFACE MOUNTED CONDUIT. EMT MAY BE UTILIZED.
10.	FLEXIBLE CONDUIT CONNECTIONS SHALL BE A MAXIMUM OF 6'-0".
11.	MC TYPE CONDUCTOR WITH INTEGRAL GROUND WIRE MAY BE UTILIZED FOR POWER AND LIGHTING CIRCUITS. MC CABLE SHALL BE UTILIZED ONLY WHERE COMPLETELY CONCEALED AND INSTALLED IN ACCORDANCE WITH CODE.
12.	STEEL OR FIRE-RATED ELECTRICAL BOXES (SWITCHES, OUTLETS, JUNCTION BOXES, ETC.) SHALL BE PROVIDED AND INSTALLED IN ALL FIRE RATED ASSEMBLIES AS IN ACCORDANCE WITH BUILDING AND ELECTRICAL CODES. UNLISTED MOLDABLE PUTTY PADS OR FIREBLOCK/SPRAY FOAM INSULATE SHALL BE USED TO SEAL ALL ANNULAR SPACES/PENETRATIONS AROUND OUTLET BOXES. FIRE RATED ASSEMBLIES INCLUDE EXTERIOR WALLS, FIRE-RATED WALLS, FLOOR/CEILING ASSEMBLIES AND ROOF/CEILING ASSEMBLIES.
13.	RECESSED ELECTRICAL ENCLOSURES SUCH AS BUT NOT LIMITED TO PANELBOARDS, LOW VOLTAGE MEDIA CENTERS, ETC. SHALL BE PROVIDED WITH FIRE-RATED BOXES WHERE INSTALLED IN FIRE-RESISTANCE-RATED ASSEMBLIES. REFER TO ARCHITECTURAL PLANS FOR LOCATIONS OF FIRE-RATED ASSEMBLIES.
14.	ALL EQUIPMENT AND WIRING ON DWGS IS SHOWN DIAGRAMMATICALLY. EXACT LOCATION AND METHOD OF SUPPORT SHALL BE DETERMINED IN THE FIELD, EXCEPT WHERE SPECIFIC DIMENSIONS AND DETAILS ARE SHOWN. ALL CONDUIT RUNS SHALL BE RIGIDLY SUPPORTED.
15.	COORDINATE WITH ARCHITECTURAL FURNITURE LAYOUTS FOR EXACT LOCATION OF WALL MOUNTED POWER AND COMMUNICATIONS DEVICES. COORDINATE ALL LIGHTING FIXTURES, UNDER CABINET LIGHTING FIXTURES AND SWITCH LOCATIONS WITH ARCHITECTURAL REFLECTED CEILING PLANS AND ELEVATIONS.
LIGHTING NOTES	
1.	ALL CONDUIT, FIXTURES AND OUTLETS ARE SHOWN DIAGRAMMATICALLY. EXACT LOCATION AND METHOD OF SUPPORT SHALL BE DETERMINED IN THE FIELD, EXCEPT WHERE SPECIFIC DIMENSIONS AND DETAILS ARE SHOWN.
2.	ALL LIGHTING FIXTURE SPACING DIMENSIONS AND MOUNTING HEIGHTS ARE RECOMMENDED LOCATIONS. SLIGHT VARIATIONS WHERE NECESSARY TO AVOID INTERFERENCE SHALL BE DETERMINED IN THE FIELD.
3.	WHERE REQUIRED, ADDITIONAL SUPPORT STEEL FOR THE LIGHTING INSTALLATION SHALL BE FURNISHED AND INSTALLED BY ELECTRICAL CONTRACTOR. SEISMIC RESTRAINTS SHALL BE INCLUDED AS PER STATE BUILDING CODE.
4.	PROVIDE SEPARATE UN-SWITCHED NEUTRAL TO ALL EXIT SIGNS, EMERGENCY BATTERY UNITS AND EMERGENCY LIGHT FIXTURES CONTAINING EMERGENCY BALLASTS.
5.	FIRE-RATED BOXES/ENCLOSURES FOR RECESSED LIGHTING FIXTURES SHALL BE PROVIDED AND INSTALLED IN FIRE-RATED ASSEMBLIES AS IN ACCORDANCE WITH BUILDING AND ELECTRICAL CODES. FIRE-RATED ASSEMBLIES INCLUDE: FIRE-RATED WALLS, FLOOR/CEILING ASSEMBLIES AND ROOF/CEILING ASSEMBLIES. REFER TO ARCHITECTURAL PLANS FOR LOCATIONS OF FIRE-RATED ASSEMBLIES.
POWER NOTES	
1.	ALL CONDUITS ARE SHOWN DIAGRAMMATICALLY. EXACT LOCATION AND METHOD OF SUPPORT SHALL BE DETERMINED IN THE FIELD, EXCEPT WHERE SPECIFIC DIMENSIONS AND DETAILS ARE SHOWN. ALL CONDUIT RUNS SHALL BE RIGIDLY SUPPORTED.
2.	NEC - 406.12 TAMPER-RESISTANT RECEPTACLES - IN ALL AREAS SPECIFIED IN 406.12 PARAGRAPHS (1-7) AND ASSEMBLY SUBSETS LISTED IN NEC 518.2, ALL NONLOCKING-TYPE, 125 VOLT, 15 AND 20 AMPERE RECEPTACLES SHALL BE LISTED TAMPER RESISTANT RECEPTACLES.
3.	CONDUCTORS AND CABLE SHALL BE MINIMUM #12 AWG, 600 VOLT, COPPER WITH TYPE THINWALL INSULATION. PROVIDE SEPARATE GREEN GROUND IN ALL FEEDERS. WIRE SIZE #8 AWG AND LARGER SHALL BE STRANDED, #10 AWG AND SMALLER SHALL BE SOLID. COLOR CODE CONDUCTORS BLACK, RED, BLUE, WITH WHITE NEUTRAL AND GREEN GROUND EXCEPT AS NOTED FOR 120 VOLT.
4.	ELECTRICAL CONTRACTOR SHALL CONFIRM ALL NEMA CONFIGURATIONS AND REQUIRED ELECTRICAL REQUIREMENTS OF ALL EQUIPMENT SPECIFICATIONS PRIOR TO ROUGH-IN.
DEMOLITION NOTES	
1.	REFER TO THE ARCHITECTURAL DRAWINGS FOR THE FULL EXTENT OF THE SCOPE OF DEMOLITION. DISCONNECT AND MAKE SAFE ALL ELECTRICAL EQUIPMENT IDENTIFIED FOR REMOVAL ON THE HVAC, PLUMBING AND FIRE PROTECTION PLANS. THE ELECTRICAL SCOPE MAY EXTEND BEYOND THE AREA DEFINED BY THE ARCHITECTURAL DEMOLITION LIMITS TO FULLY COMPLY WITH VARIOUS REQUIREMENTS DEFINED BY THESE NOTES.
2.	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 CONTRACTOR SHALL VISIT THE SITE PRIOR TO THE SUBMISSION OF BIDS TO BECOME FAMILIAR WITH THE ACTUAL CONDITIONS AND EXTENT OF WORK. DEVICES AND EQUIPMENT LOCATED ON WALLS AND/OR CEILINGS TO BE REMOVED SHALL BE DISCONNECTED AND MADE SAFE. THE ELECTRICAL CONTRACTOR SHALL NOTIFY THE OWNER'S REPRESENTATIVE OF ANY UNANTICIPATED HIDDEN CONDITIONS ENCOUNTERED DURING DEMOLITION.
3.	THE ELECTRICAL CONTRACTOR SHALL BE RESPONSIBLE FOR THE REPAIR OF ALL SYSTEMS OR BUILDING COMPONENTS DAMAGED DURING THE EXECUTION OF THE WORK. DAMAGE SHALL INCLUDE BUT NOT BE LIMITED TO DESTRUCTION OR DISPOSAL OF ITEMS INTENDED TO REMAIN OR TO BE SALVAGED.
4.	THE ELECTRICAL CONTRACTOR 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.
5.	THE ELECTRICAL CONTRACTOR SHALL IDENTIFY ALL BRANCH CIRCUITS, FEEDERS AND SYSTEM COMPONENTS, WHICH ARE TO REMAIN WITHIN THE AREA OF DEMOLITION SCOPE. THERE SHALL BE NO INTERRUPTION OF SERVICE TO ANY AREA OUTSIDE THE SCOPE LIMITS WITHOUT APPROVAL FROM THE OWNER'S REPRESENTATIVE. EXISTING EQUIPMENT TO REMAIN SHALL BE LEFT IN A CODE COMPLIANT MANNER.
6.	THE ELECTRICAL CONTRACTOR SHALL DE-ENERGIZE AND REMOVE ALL CONDUCTORS AND RACEWAYS TO THEIR POINTS OF ORIGIN WITHIN THE AREA OF DEMOLITION SCOPE. ITEMS IDENTIFIED FOR DEMOLITION SHALL NOT BE ABANDONED IN PLACE. RACEWAYS THAT ENTER MASONRY WALLS AND FLOORS SHALL BE CUT FLUSH AT THE SURFACE FOR PATCHING BY OTHERS. ALL CIRCUIT BREAKERS ASSOCIATED WITH THE DEMOLITION SCOPE SHALL BE DE-ENERGIZED AND LABELED SPARE.
7.	THE ELECTRICAL CONTRACTOR 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.
8.	ALL REMOVED ITEMS SHALL BE LEGALLY DISPOSED OF UNLESS IDENTIFIED FOR REUSE. THE OWNER'S REPRESENTATIVE SHALL INSPECT ALL RETAINED ITEMS PRIOR TO PLACEMENT IN THE IDENTIFIED STORAGE LOCATION BY THE ELECTRICAL CONTRACTOR.
9.	THE EXISTING FIRE ALARM SYSTEM SHALL REMAIN FULLY FUNCTIONAL DURING THE ENTIRE DEMOLITION AND CONSTRUCTION PERIOD. REUSE OF EXISTING FIRE ALARM SYSTEM RACEWAYS SHALL NOT BE ALLOWED. ALL REQUIRED SYSTEM SHUTTINGS SHALL BE COORDINATED WITH AND APPROVED BY THE OWNER'S REPRESENTATIVE AND THE AUTHORITY HAVING JURISDICTION. DEMOLITION OF THE EXISTING SYSTEM SHALL NOT COMMENCE UNTIL THE NEW SYSTEM HAS BEEN COMPLETELY INSTALLED, TESTED AND APPROVED BY THE AUTHORITY HAVING JURISDICTION.
10.	ALL DEMOLITION SCOPE ASSOCIATED WITH LOW VOLTAGE SYSTEMS INCLUDING BUT NOT LIMITED TO TELEPHONE, DATA, SECURITY, PAGING, CCTV, ETC. SHALL BE INCLUDED IN THIS CONTRACT.
11.	REMOVED FLUORESCENT AND HID LAMPS AND BATTERIES SHALL BE RECYCLED BY A FACILITY APPROVED BY THE OWNER'S REPRESENTATIVE. A UNIFORM HAZARDOUS WASTE MANIFEST SHALL BE PREPARED FOR ALL DISPOSALS AND RETURNED WITH ALL APPLICABLE SIGN OFF'S PRIOR TO APPLICATION FOR FINAL PAYMENT.
12.	ALL BALLAST IN LIGHTING FIXTURES TO BE DISPOSED SHALL BE VERIFIED TO BE PCB FREE. ALL BALLAST MANUFACTURED PRIOR TO 1979 AND NOT LABELED AS PCB FREE SHALL BE CONSIDERED TO CONTAIN PCBs. PROVIDE WRITTEN VERIFICATION TO THE OWNER'S REPRESENTATIVE THAT CONTAINS PCB FREE WASTE. WHERE PCB FREE WASTE CANNOT BE VERIFIED, BALLAST SHALL BE RECYCLED BY A FACILITY APPROVED BY THE OWNER'S REPRESENTATIVE, WITH PCB COMPONENTS ELIMINATED BY A HIGH TEMPERATURE INCINERATION. A UNIFORM HAZARDOUS WASTE MANIFEST SHALL BE PREPARED FOR ALL DISPOSALS AND RETURNED WITH ALL APPLICABLE SIGN OFF'S PRIOR TO APPLICATION FOR FINAL PAYMENT. ALL HANDLING SHALL CONFORM TO EPA REQUIREMENTS. PROVIDE BREAKOUT COST FOR THIS SCOPE.

ABBREVIATIONS			
A/AMP	AMPERE	IMC	INTERMEDIATE METALLIC CONDUIT
AC	ALTERNATING CURRENT	JB	JUNCTION BOX
AF	AMPERE FRAME	KVA	KILOVOLT-AMPERE
AFB	ABOVE FINISHED FLOOR	KW	KILOWATT
AFG	ABOVE FINISHED GRADE	LTG	LIGHTING
AIC	AMPERE INTERRUPTING CAPACITY	MCC	MAIN CIRCUIT BREAKER
AL	ALUMINUM	MCCB	MOTOR CONTROL CENTER
AT	AMPERE TRIP	MEC	MASSACHUSETTS ELECTRICAL CODE
ATS	AUTOMATIC TRANSFER SWITCH	MLO	MAIN LUGS ONLY
AWG	AMERICAN WIRE GAUGE	MTD	MOUNTED
C	CONDUIT	MTG	MOUNTING
CB	CIRCUIT BREAKER	NEC	NATIONAL ELECTRICAL CODE
CKT	CIRCUIT	No. #	NUMBER
CL	CENTERLINE	NS	NON-SYSTEM
CU	COPPER	NTS	NOT TO SCALE
DC	DIRECT CURRENT	PC	PLUMBING CONTRACTOR
DE	DUAL ELEMENT	PWR	POWER
DWG	DRAWING	RGS	RIGID STEEL CONDUIT
EC	ELECTRICAL CONTRACTOR	RMS	ROOT MEAN SQUARE VALUE
EMH	ELECTRICAL MANHOLE	RPM	REVOLUTIONS PER MINUTE
EMT	ELECTRIC METALLIC CONDUIT	SF	SQUARE FOOT
EWC	ELECTRIC WATER COOLER	SN	SOLID NEUTRAL
G/GND	GROUND	ST	SHUNT TRIP CIRCUIT BREAKER
GC	GENERAL CONTRACTOR	SWBD	SWITCHBOARD
GE	GROUND-FAULT PROTECTION FOR EQUIPMENT (GFPE CB)	TYP	TYPICAL
GF	GROUND-FAULT PROTECTION FOR PERSONNEL (GFPI CB)	V	VOLTS
GFCI	GROUND-FAULT CIRCUIT-INTERRUPTER	VA	VOLT-AMPERE
HP	HORSEPOWER	VFD	VARIABLE FREQUENCY DRIVE
HVAC	HEATING, VENTILATION AND AIR CONDITIONING	WP	WEATHERPROOF

EXISTING EQUIPMENT DESIGNATIONS	
X	EXISTING TO BE REMOVED, REMOVE ALL ASSOCIATE CONDUIT AND CONDUCTORS
XM	EXISTING TO REMAIN
XN	EXISTING EQUIPMENT TO BE REPLACED WITH NEW, CONNECT TO NEW EQUIPMENT CIRCUIT
XR	EXISTING EQUIPMENT TO BE RELOCATED, JUNCTION AND EXTEND EXISTING CONDUIT AND CONDUCTORS
XC	NEW EQUIPMENT TO BE CONNECTED TO NEAREST AVAILABLE BRANCH CIRCUIT, PROVIDE NEW BRANCH CIRCUITRY FROM NEAREST EXISTING DEVICE (TO REMAIN) TO NEW DEVICE AS REQUIRED
XL	NEW LOCATION OF EXISTING EQUIPMENT, JUNCTION AND EXTEND CONDUIT AND CONDUCTORS AS REQUIRED

BRANCH CIRCUIT AND FEEDER SYMBOLS	
	HOMERUN TO PANELBOARD "PP1" CIRCUIT NUMBER "2" REFER TO PANEL SCHEDULE FOR BREAKER SIZE AND NUMBER OF POLES CONCEALED UNLESS OTHERWISE NOTED
	NUMBER OF ARROWS INDICATES NUMBER OF INDIVIDUAL HOMERUNS "2", "4", AND "6" UNLESS NOTED OTHERWISE. WIRING FOR EACH CIRCUIT SHALL BE: 20A1P - 2#12 #12G 1/2" 20A2P - 3#12 #12G 1/2" 20A3P - 4#12 #12G 1/2"
	WIRING FOR MULTIPLE HOMERUNS MAY BE COMBINED IN CONDUIT IN ACCORDANCE WITH NEC REQUIREMENTS
	HOMERUN FEEDER / BRANCH CIRCUIT CALLOUT: INDICATES (3) #1 AWG (PHASE), (1) #1 AWG (NEUTRAL), (1) #6 GROUND IN A 1 1/2" CONDUIT
	BRANCH CIRCUIT OR FEEDER CONCEALED UNLESS OTHERWISE NOTED. BRANCH CIRCUIT DIAGONAL LINES INDICATE NUMBER OF CONDUCTORS, GROUND WIRE(S) NOT INDICATED. MINIMUM SIZE CONDUCTOR #12 AWG AND 3/4" CONDUIT, UNLESS OTHERWISE NOTED.
	FLEXIBLE CONNECTION TO MOTOR OR EQUIPMENT

ANNOTATIONS	
	MECHANICAL EQUIPMENT TAG, REFER TO MECHANICAL EQUIPMENT COORDINATION SCHEDULE FOR ELECTRICAL REQUIREMENTS
	SHEET NOTE TAG "N" INDICATES CALL OUT TO CORRESPONDING SHEET NOTE
	REVISION TAG
	DETAIL CALLOUT "D" INDICATES THE DETAIL REFERENCE NUMBER "E101" INDICATES THE DRAWING ON WHICH THE DETAIL CAN BE FOUND

MOTORS AND CONTROLS	
	MOTOR, NUMERAL INDICATES HORSEPOWER
	MANUAL MOTOR STARTED, RATED 20A, 250V, COORDINATE MOUNTING HEIGHT IN FIELD, MOUNTING HEIGHT SHALL NOT EXCEED 6'-7" AFF
	DISCONNECT SWITCH RATED 30A, 3-POLE, IN NEMA TYPE 1 ENCLOSURE, UNLESS OTHERWISE NOTED "3R" INDICATES NEMA TYPE 3R ENCLOSURE "2P" INDICATES 2-POLE, SINGLE PHASE DISCONNECT "60A" INDICATES 60A SWITCH
	FUSED DISCONNECT SWITCH RATED 30A, 3-POLE, IN NEMA TYPE 1 ENCLOSURE, UNLESS OTHERWISE NOTED "3R" INDICATES NEMA TYPE 3R ENCLOSURE "2P" INDICATES 2-POLE, SINGLE PHASE DISCONNECT "60AF" INDICATES 60A FUSE SIZE "40A" INDICATES 40A TRIP RATING
	ENCLOSED CIRCUIT BREAKER IN NEMA 1 TYPE ENCLOSURE, UNLESS OTHERWISE NOTED "30A" INDICATES BREAKER RATING "3R" INDICATES NEMA TYPE 3R ENCLOSURE "ST" INDICATES SHUNT-TRIP

LIGHTING AND CONTROLS	
	FIXTURE SYMBOLS SHOWN BELOW ARE REPRESENTATIVE. NOT ALL SYMBOLS FROM THE PLANS HAVE BEEN SHOWN ON THIS LEGEND. FIXTURE TAG AND CIRCUIT NUMBER LOCATIONS ARE ALSO REPRESENTATIVE. ACTUAL TAG AND CIRCUIT NUMBER LOCATIONS MAY VARY ON PLANS.
	LIGHTING FIXTURE (SEE LIGHTING FIXTURE SCHEDULE) "4" INDICATES LIGHTING FIXTURE TYPE "F" INDICATES CIRCUIT NUMBER "S" INDICATES SWITCH CONTROL "NL" INDICATES NIGHT LIGHT (UNSWITCHED) CIRCUIT
	SHADING INDICATES EMERGENCY FIXTURE WITH EMERGENCY DRIVER
	EMERGENCY BATTERY UNIT WITH (2) TWO HEADS
	EXIT SIGN, SHADING INDICATES FACE, ARROW INDICATES DIRECTION OF CHEVRON
	SINGLE POLE SWITCH, RATED 20A, 120/277V, MOUNTING HEIGHT 48" TO CENTERLINE OF TOGGLE SWITCH IN "ON" POSITION "S" INDICATES FIXTURE SWITCH CONTROL "3" INDICATES 3-WAY SWITCH CONTROL "4" INDICATES 4-WAY SWITCH CONTROL "D" INDICATES DIMMING CONTROL
	LIGHTING CONTROL SYSTEM DEVICES "SC" INDICATES SCENE CONTROLLER "TS" INDICATES TOUCH SCREEN "LC" INDICATES LOCAL CONTROL "PC" INDICATES PHOTOCELL, MOUNTED AT HIGHEST POINT ON ROOF FACING NORTH "TC" INDICATES TIMECLOCK, SURFACE MOUNTED
	TYPICAL SENSOR ANNOTATION: "6" INDICATES FIXTURE SWITCH CONTROL "3" INDICATES 3-WAY SWITCH CONTROL "4" INDICATES 4-WAY SWITCH CONTROL "D" INDICATED DIMMING CONTROL
	WALL OCCUPANCY SENSOR, MULTI-TECHNOLOGY, 180°, 300SF OF COVERAGE
	CEILING MOUNTED OCCUPANCY SENSOR, LOW VOLTAGE, 360° TWO-SIDED, 2000SF COVERAGE
	TWO DOTS INDICATES DUAL CIRCUIT CEILING OR WALL MOUNTED OCCUPANCY SENSOR

RECEPTACLES AND DEVICES	
	TYPICAL RECEPTACLE ANNOTATION: "2" INDICATES CIRCUIT NUMBER "WP" INDICATES WEATHERPROOF IN-USE COVER "FB" INDICATES FLOOR BOX CONFIGURATION, REFER TO FLOOR BOX SCHEDULE / DETAILS FOR ADDITIONAL INFORMATION REFER TO SPECIFICATIONS FOR ADDITIONAL RECEPTACLE AND DEVICE DETAILS
	DUPLEX CONVENIENCE RECEPTACLE OUTLET
	DUPLEX CONVENIENCE RECEPTACLE OUTLET, COUNTERTOP MOUNTING
	DUPLEX CONVENIENCE RECEPTACLE OUTLET, COORDINATE MOUNTING HEIGHT WITH ARCHITECT
	SWITCHED DUPLEX CONVENIENCE RECEPTACLE OUTLET
	USB DUPLEX CONVENIENCE RECEPTACLE OUTLET
	DUPLEX GROUND FAULT CIRCUIT INTERRUPTING RECEPTACLE OUTLET
	DUPLEX GROUND FAULT CIRCUIT INTERRUPTING RECEPTACLE OUTLET, COUNTERTOP MOUNTING
	USB DUPLEX GROUND FAULT CIRCUIT INTERRUPTING RECEPTACLE OUTLET
	DUPLEX CONVENIENCE RECEPTACLE OUTLET, FLOOR MOUNTING
	DUPLEX RECEPTACLE OUTLET, CEILING MOUNTING
	DOUBLE DUPLEX CONVENIENCE RECEPTACLE OUTLET
	WIRELESS ACCESS POINT (WAP)
	JUNCTION BOX, COORDINATE MOUNTING HEIGHT WITH ARCHITECT, "HT" INDICATES HEAT TRACE
	SPECIAL PURPOSE RECEPTACLE, REFER TO SPECIAL PURPOSE RECEPTACLE SCHEDULE, "N" INDICATES TYPE

TEL / DATA / COMM OUTLETS	
	REFER TO SPECIFICATIONS FOR ADDITIONAL TEL / DATA DEVICE DETAILS
	CABLE TELEVISION CONNECTION, FLUSH MOUNTING WITH SINGLE GANG BACK BOX AND COVER PLATE WITH "F"-CONNECTOR.
	TELEPHONE / COMPUTER OR DATA OUTLET (RJ45), WITH SINGLE GANG BACK BOX AND COVER PLATE, 1/2" CONDUIT BACK TO SERVER ROOM

PANELBOARD AND TERMINAL CABINET	
	120/208V PANEL, SURFACE MOUNTED, REFER TO PANEL SCHEDULES
	120/208V PANEL, RECESSED MOUNTED, REFER TO PANEL SCHEDULES
	TELEPHONE TERMINAL, 4x8 1/2" PLYWOOD BACKBOARD, PAINTED BLACK

MISCELLANEOUS	
	UTILITY METER
	SURFACE MOUNT RACEWAY, REFER TO DETAILS

GENERAL NOTE
ENGINEERS' DRAWINGS ARE PROVIDED FOR REFERENCE ONLY. UPDATED DRAWINGS WILL BE PROVIDED BEFORE PERMITTING AND CONSTRUCTION.

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PHASE 2 PRELIMINARY PRICING DRAWINGS
12 JULY 2024

PHASE

2021-003 PROJECT NUMBER

ELECTRICAL LEGEND & NOTES

E001

ELECTRICAL SPECIFICATIONS

PART 1 - GENERAL

1. THE OWNERS GENERAL CONDITIONS, SPECIAL CONDITIONS AND SUPPLEMENTAL CONDITIONS OR REQUIREMENTS ARE PART OF THIS WORK.
2. EXAMINATION OF SITE AND CONTRACT DOCUMENT: BEFORE SUBMITTING HIS PROPOSAL, THIS CONTRACTOR SHALL VISIT THE PREMISE AND REVIEW THE ENTIRE PROJECT. THE CONTRACTOR SHALL DETERMINE THE DIFFICULTIES, CONDITIONS, AND DISPOSAL REQUIREMENTS WHICH MAY BE ENCOUNTERED DURING THE WORK. ALL CHARGES RELATED TO MEETING THE INTENT OF THE DRAWINGS AND SPECIFICATIONS SHALL BE INCORPORATED INTO THE BID. IF DISCREPANCIES ARISE BETWEEN THE DRAWINGS AND SPECIFICATIONS, THE MORE STRINGENT REQUIREMENT SHALL APPLY. NO ADDITIONAL CHARGES WILL BE ALLOWED DUE TO EXISTING CONDITIONS.
3. THE INSTALLATION OF ALL ELECTRICAL SYSTEMS SHALL CONFORM TO THE REQUIREMENTS OF THE STATE BUILDING CODE, ELECTRIC CODE, NATIONAL FIRE PROTECTION ASSOCIATION AND ALL OTHER APPLICABLE FEDERAL, STATE AND LOCAL LAWS AND ORDINANCES.
4. ALL MATERIALS SHALL BE NEW AND SHALL BEAR THE UNDERWRITERS' LABEL. SHALL BE PROVIDED IN QUANTITIES NECESSARY TO COMPLETE THE WORK AND SHALL BEAR ALL APPLICABLE LABELS FOR INTENDED USE.
5. OBTAIN AND PAY FOR ALL REQUIRED PERMITS, LICENSES AND CERTIFICATES. INCLUDE ALL FEDERAL, STATE AND LOCAL TAXES.
6. WORKMANSHIP: THE ENTIRE WORK PROVIDED IN THIS SPECIFICATION SHALL BE CONSTRUCTED AND FINISHED IN EVERY RESPECT IN A WORKMANLIKE AND SUBSTANTIAL MANNER. EQUIPMENT SHALL BE SECURELY INSTALLED PLUMB AND/OR LEVEL. NO ELECTRICAL EQUIPMENT SHALL BE SUPPORTED BY WORK OF OTHER TRADES. OBTAIN DETAILED INFORMATION FROM THE MANUFACTURERS OF APPARATUS AS TO THE PROPER METHOD OF INSTALLING AND CONNECTING EQUIPMENT. OBTAIN ALL INFORMATION FROM THE GENERAL CONTRACTOR AND OTHER SUBCONTRACTORS, WHICH MAY BE NECESSARY TO FACILITATE WORK AND THE COMPLETION OF THE WHOLE PROJECT.
7. DRAWINGS ARE DIAGRAMMATIC AND INDICATE GENERAL ARRANGEMENT OF SYSTEMS. PROVIDE DEVICES AND COMPONENTS SHOWN ON PLANS BUT NOT ON RISERS AND VICE VERSA AS IF EXPRESSLY SHOWN ON BOTH.
8. THE ELECTRICAL CONTRACTOR (EC) SHALL VERIFY THE LOCATIONS AND MOUNTING HEIGHTS OF ALL EQUIPMENT, LIGHT FIXTURES, PANELBOARDS, OUTLETS AND MECHANICAL EQUIPMENT WITH THE OWNER OR ARCHITECT PRIOR TO COMMENCING ANY WORK.
9. THE EC SHALL NOT BORE, NOTCH OR IN ANY WAY CUT INTO THE STRUCTURAL MEMBER, WITHOUT PROPER WRITTEN APPROVAL OF THE STRUCTURAL ENGINEER.
10. EXAMINE ALL DRAWINGS FOR REQUIREMENTS WHICH AFFECT THE WORK OF THIS SECTION. COORDINATE WORK WITH OTHER TRADES.
11. THE ELECTRICAL CONTRACTOR SHALL PROVIDE A COMPLETE TEMPORARY LIGHTING AND POWER SYSTEM FOR THE CONSTRUCTION OF THE PROJECT AND SHALL PAY FOR THE COST OF INSTALLATION. THE EC SHALL INCLUDE ALL CHARGES FROM THE UTILITY COMPANY TO CONNECT AND DISCONNECT THE TEMPORARY SERVICE. THE COST OF ELECTRICITY SHALL BE BY THE OWNER OR GENERAL CONTRACTOR.
12. RECORD DRAWINGS: IN ACCORDANCE WITH REQUIREMENTS, FURNISH AND KEEP IN THE JOB AT ALL TIMES, TWO (2) COMPLETE AND SEPARATE SETS OF BLACKLINE PRINTS OF THE ELECTRICAL WORK ON WHICH SHALL BE CLEARLY, NEATLY AND ACCURATELY NOTED PROMPTLY AS THE WORK PROGRESSES. ALL ELECTRICAL CHANGES, REVISIONS AND ADDITIONS TO THE WORK, WHENEVER WORK IS INSTALLED OTHERWISE THAN AS SHOWN ON THE CONTRACT DRAWINGS, SUCH CHANGES SHALL BE NOTED AT THE CONCLUSION OF WORK, PREPARE RECORD DRAWINGS IN ACCORDANCE WITH GENERAL CONDITIONS.
13. THE COMPLETED ELECTRICAL INSTALLATION SHALL BE GUARANTEED IN WRITING BY THE ELECTRICAL CONTRACTOR TO BE FREE FROM DEFECTS OF MANUFACTURE AND INSTALLATION FOR A PERIOD OF ONE YEAR FROM THE DATE OF WRITTEN ACCEPTANCE BY THE OWNER. ANY FAULT DUE TO DEFECTIVE OR IMPROPER MATERIAL, EQUIPMENT WORKMANSHIP OR DESIGN WHICH MAY DEVELOP SHALL BE MADE GOOD FORTHWITH BY AND AT THE EXPENSE OF THE ELECTRICAL CONTRACTOR, INCLUDING ALL OTHER DAMAGES DUE TO AREAS, MATERIALS AND OTHER SYSTEMS RESULTING FROM THIS FAILURE.
14. THE EC SHALL NOTIFY THE OWNER/ENGINEER UPON: (1) COMPLETION OF ALL ROUGH WIRING BEFORE CLOSURE OF ALL WALLS AND (2) UPON "SUBSTANTIAL COMPLETION" OF ALL ELECTRICAL WORK. AFTER SUBSTANTIAL COMPLETION, THE OWNERS REPRESENTATIVE SHALL PREPARE A PUNCH LIST OF ITEMS TO BE CORRECTED. THE EC SHALL CORRECT, AT NO ADDITIONAL COST, ANY DEFICIENCIES FOUND.
15. RELATED WORK BY OTHERS
 - 15.1. THERMOSTATS AND CONTROL WIRING SHALL BE SUPPLIED AND INSTALLED BY THE HVAC CONTRACTOR.
 - 15.2. STARTERS FOR MECHANICAL EQUIPMENT SHALL BE SUPPLIED BY THE MECHANICAL CONTRACTOR, INSTALLED AND WIRED BY THE ELECTRICAL CONTRACTOR. U.N.O.
- 15.3. DUCT SMOKE DETECTORS ARE PURCHASED AND SUPPLIED BY THE MECHANICAL CONTRACTOR. THE MECHANICAL CONTRACTOR SHALL INSTALL DUCT SMOKE DETECTORS IN DUCT AND PROVIDE SHUTDOWN CONTROL. WIRING FROM THE DUCT SMOKE DETECTOR TO THE MOTOR CONTROLLER. WIRING FROM THE DUCT SMOKE DETECTOR TO THE FIRE ALARM CONTROL PANEL SHALL BE PROVIDED BY THE ELECTRICAL CONTRACTOR.
- 15.4. CUTTING, PATCHING AND TRENCHING SHALL BE PROVIDED BY THE GENERAL CONTRACTOR.

16. SUBMITTALS: EC SHALL PROVIDE ELECTRONIC PDF SUBMITTALS FOR ELECTRICAL EQUIPMENT TO THE ENGINEER FOR APPROVAL PRIOR TO CONSTRUCTION. SUBMITTALS SHALL INDICATE ALL MATERIALS, DIMENSIONS AND RATINGS. PROVIDE INFORMATION ON THE FOLLOWING ITEMS (ALLOW TEN DAYS FOR SUBMITTAL REVIEW):
 - 16.1. SWITCHES AND RECEPTACLES
 - 16.2. PANELBOARDS
 - 16.3. SWITCHBOARDS
 - 16.4. LIGHTING FIXTURES AND CONTROLS
 - 16.5. ALL FIRE DETECTION SYSTEM COMPONENTS
 - 16.6. CIRCUIT BREAKERS
 - 16.7. FUSIBLE SWITCHES
 - 16.8. WIRING DEVICES
 - 16.9. CONDUIT & WIRE
 - 16.10. FIRE ALARM (EQUIPMENT CUTS, RISERS, WIRE SIZING, ETC.)
 - 16.11. TEST REPORTS
 - 16.12. SUBSTITUTIONS SHOULD BE NOTED WHEN SUBMITTED WITH AN EXPLANATION FOR THE SUBSTITUTION.
 - 16.13. ELEVATIONS OF ALL ELECTRIC ROOMS, WITH PROPOSED MANUFACTURERS EQUIPMENT SHALL BE SUBMITTED TO SHOW COMPLIANCE WITH NEC CODE REQUIREMENTS.
 - 16.14. THE ACCEPTANCE OF SYSTEMS, EQUIPMENT AND DATA SHEETS IS A GENERAL APPROVAL SUBJECT TO THE CONTRACT DRAWINGS, SPECIFICATIONS, AND VERIFICATION OF ALL MEASUREMENTS AT THE JOB. ACCEPTANCE DOES NOT RELIEVE THE ELECTRICAL CONTRACTOR FROM THE RESPONSIBILITY OF DATA SHEET ERRORS OR OMISSIONS. QUANTITY OF ITEMS INDICATED ON SUBMITTAL IS THE RESPONSIBILITY OF THE ELECTRICAL CONTRACTOR.

PART 2 - PRODUCTS

1. GENERAL
 - 1.1. AS PART OF THIS CONTRACT, THE ELECTRICAL CONTRACTOR SHALL FURNISH AND INSTALL ALL ELECTRICAL EQUIPMENT, DEVICES, MATERIALS AND EQUIPMENT NECESSARY TO MAKE THE INSTALLATION COMPLETE AND OPERATIONAL IN EVERY DETAIL, WHETHER OR NOT SPECIFICALLY INDICATED ON THE DRAWINGS OR SPECIFIED HEREIN.
 - 1.2. ALL MATERIALS AND EQUIPMENT SHALL BE NEW AND INCLUDE MANUFACTURERS WARRANTY.
 - 1.3. IT IS THE INTENT OF THE SPECIFICATIONS THAT ONE MANUFACTURER BE SELECTED, NOT A COMBINATION, FOR ANY PARTICULAR CLASSIFICATION OF MATERIAL. FOR EXAMPLE, ALL WIRE OF ONE MANUFACTURER, ALL SWITCHES OF ONE MANUFACTURER, ETC., EXCEPT SPECIFIC MATERIAL CLASSIFICATIONS IN WHICH DELIVERY TIME BECOMES A PROBLEM. THE ENGINEER MAY GIVE SPECIFIC EXEMPTION FROM THE REQUIREMENTS.
 - 1.4. WHERE MATERIALS, EQUIPMENT, APPARATUS, OR OTHER PRODUCTS ARE SPECIFIED BY MANUFACTURER, BRAND NAME, TYPE OR CATALOG NUMBER, SUCH DESIGNATION IS TO ESTABLISH STANDARDS OF PERFORMANCE, QUALITY, TYPE, AND STYLE.
2. FEEDERS: ALL FEEDERS BETWEEN PANELBOARDS AND SWITCHBOARDS SHALL BE PROVIDED IN TYPE EMT OR GRS CONDUIT, TYPE MC CABLE IS NOT PERMITTED, UNLESS NOTED OTHERWISE.
3. CONCEALED BRANCH CIRCUITS: ALL BRANCH CIRCUIT WIRING SHALL BE CONCEALED WHENEVER POSSIBLE. WITHIN CONCEALED SPACES SUCH AS ABOVE HUNG CEILING AREAS AND WITH WALL PARTITIONS.
 - 3.1. BRANCH CIRCUIT WIRING SHALL BE TYPE MC CABLE, 1/2" OR 1/3" WITH FULL SIZE INSULATED GROUND WIRE.
 - 3.2. MC TYPE CABLE MAY BE UTILIZED FOR FOR POWER AND LIGHTING CIRCUITS.
4. CONDUIT: ALL EXPOSED, OR SURFACE MOUNTED BRANCH CIRCUIT RUNS ABOVE 8'-0" SHALL BE INSTALLED USING TYPE EMT CONDUIT. BELOW 8'-0" RIGID GALVANIZED STEEL CONDUIT SHALL BE INSTALLED.
 - 4.1. MINIMUM SIZE CONDUIT USED SHALL BE 3/4"
 - 4.2. PROVIDE FIRE RESISTANT RATING AROUND ALL CONDUITS PENETRATING THROUGH FIRE-RATED WALLS OR FLOORS. RATING OF FIRE PROOFING SHALL MATCH RATINGS OF WALLS.
 - 4.3. ALL CONDUIT AND EQUIPMENT SHALL BE INSTALLED AND GROUNDED IN ACCORDANCE WITH THE LATEST RULES AND REGULATIONS OF THE NATIONAL ELECTRICAL CODE.
 - 4.4. ALL CONDUITS SHALL HAVE A PROPER SIZE GROUNDING CONDUCTOR.
 - 4.5. ALL CONNECTIONS TO MACHINERY AND EQUIPMENT SUBJECT TO VIBRATION SHALL BE MADE WITH FLEXIBLE LIQUID/TIGHT CONDUIT, NOT IN EXCESS OF 6'-0". PROVIDE SUFFICIENT SLACK TO PREVENT VIBRATION TRANSMISSION.
 - 4.6. PROVIDE EXPANSION FITTINGS ON ALL CONDUIT PASSING THROUGH BUILDING EXPANSION JOINTS.
 - 4.7. CONDUITS ARE SHOWN DIAGRAMMATICALLY EXACT LOCATION AND METHOD OF SUPPORT SHALL BE DETERMINED BY FIELD CONDITIONS. ALL CONDUITS SHALL BE RIGIDLY SUPPORTED.
5. WIRING: WIRING SHALL BE A MINIMUM OF #12 AWG SOLID. ALL WIRE AND CABLE SHALL BE COPPER. NO ALUMINUM IS PERMITTED, WITHOUT APPROVAL OF THE OWNER/ENGINEER ON A WAVE ENGINEERING BASIS. WIRE AND CABLE SHALL BE MANUFACTURED BY PHELPS DODGE COPPER PRODUCTS CORP., GENERAL CABLE CO., TRIANGLE CONDUIT AND CABLE CO., OR EQUAL.
 - 5.1. NON-METALLIC CONDUIT TYPE NMC/ROMEX SHALL ONLY BE ALLOWED WITH OWNER/ENGINEER APPROVAL & MUST BE ALLOWED BY CODE & BE INSTALLED IN ACCORDANCE WITH CODE REQUIREMENTS.
 - 5.2. AWG #8 & LARGER SHALL BE STRANDED. AWG #10 AND SMALLER SHALL BE SOLID.
 - 5.1. ALL WIRING (LOW VOLTAGE, TEL/DATA, FIRE ALARM, POWER BRANCH CIRCUIT) SHALL BE PLENUM RATED, NO EXCEPTIONS. NON-PLENUM RATED CABLES OF ANY KIND SHALL NOT BE PROVIDED.
 - 5.2. ALL NEW WIRING SHALL BE THIRTYTHREE RATED 75-90 DEGREES, 800V, WET-DRY LOCATIONS.
 - 5.3. BRANCH CIRCUITS LONGER THAN 150 FEET FOR 120V OR 250FT FOR 277V SHALL BE AT LEAST #10AWG FROM PANEL TO LAST OUTLET.
 - 5.4. CIRCUITING SHOWN ON THE DWGS IS DIAGRAMMATIC PROVIDE COMPLETE WIRING SYSTEM WHETHER OR NOT INDICATED GRAPHICALLY.
 - 5.5. PROVIDE AT LEAST ONE HOT AND ONE NEUTRAL CONDUCTOR FOR ALL INDIVIDUAL BRANCH CIRCUIT WIRING.

6. GROUNDING:
 - 6.1. ALL GROUNDING SHALL BE PERFORMED IN ACCORDANCE WITH THE NATIONAL ELECTRICAL CODE ARTICLE 250, AS AMENDED BY LOCAL AND STATE CODES.
 - 6.2. PROVIDE A COMPLETE GROUNDING ELECTRODE SYSTEM AND EQUIPMENT GROUNDING SYSTEM.
 - 6.3. CONDUCTORS UTILIZED FOR GROUNDING AND BONDING SHALL HAVE TYPE THHN OR BETTER INSULATION.
 - 6.4. EACH FEEDER OR LINE OF LIGHTING AND APPLIANCE BRANCH CIRCUITRY, INCLUDE EQUIPMENT AND RACEWAY GROUNDING CONDUCTORS RUN WITHIN THE RACEWAYS. THE INDICATED QUANTITIES OF CONDUCTORS DO NOT INCLUDE THE GROUND WIRES.
7. OUTLET BOXES AND ACCESSORIES:
 - 7.1. STEEL OR FIRE RATED ELECTRICAL BOXES (SWITCHES, OUTLETS, JUNCTION BOXES, ETC) SHALL BE PROVIDED AND INSTALLED IN ALL FIRE RATED ASSEMBLIES AS IN ACCORDANCE WITH BUILDING & ELECTRICAL CODES. PROVIDE UL LISTED MOLDABLE PUTTY PADS TO SEAL ANNUAL SPACES/PENETRATIONS AROUND ALL JUNCTION BOXES.
 - 7.1.1. FIRE RATED ASSEMBLIES INCLUDE EXTERIOR WALLS, FIRE RATED WALL, FLOOR/CEILING ASSEMBLIES AND ROOFING/CEILING ASSEMBLIES.
 - 7.2. PROVIDE GALVANIZED SHEET STEEL OUTLET BOXES FOR ALL OUTLETS UNLESS OTHERWISE NOTED.
 - 7.3. ALL OUTLET BOXES FOR PENDANT MOUNTED FIXTURES SHALL BE GALVANIZED, STAMPED STEEL FURNISHED WITH A FIXTURE STUD, SECURELY MOUNTED TO FRAMING.
 - 7.4. ALL OUTLET BOXES FOR CONCEALED WORK SHALL BE GALVANIZED, STAMPED STEEL, THOSE FOR FIXTURES, FURNISHED WITH A FIXTURE STUD.
 - 7.5. OUTLET BOXES SHALL BE OF SIZE AND TYPE TO ACCOMMODATE (1) STRUCTURAL CONDITIONS, (2) SIZE AND NUMBER OF RACEWAYS, CONDUCTORS OR CABLES ENTERING, AND (3) DEVICES OR FIXTURES FOR WHICH THEY ARE REQUIRED.
 - 7.6. INSTALL BLANK PLATES ON ALL OUTLET BOXES, IN WHICH NO APPARATUS IS INSTALLED, WHICH DO NOT INTEGRALLY PROVIDE A COVER FOR THE BOX.
 - 7.7. SPECIAL CARE SHALL BE TAKEN TO SET ALL BOXES CORRECTLY SQUARE AND TRUE WITH THE BUILDING FINISH.
 - 7.8. FIXTURE OUTLET BOXES SHALL HAVE 3/8" SODD MALE FIXTURE STUDS AND AUXILIARY FIXTURE STEMS SHALL BE SUPPORTED FROM 3/8" MALE FIXTURE STUDS.
 - 7.9. OUTLET BOXES AND ACCESSORIES SHALL BE AS MANUFACTURED BY STEEL CITY, APPLETON, RACO, OR EQUAL.
8. WIRING DEVICES: ALL WIRING DEVICES SHALL BE OF A SINGLE MANUFACTURER, AS MANUFACTURED BY PASS AND SEYMOUR, GENERAL ELECTRIC, HUBBELL, BRYANT ELECTRIC COMPANY, LEVITON, OR EQUAL. MANUFACTURERS LISTED BELOW ESTABLISH MINIMUM REQUIREMENTS. COORDINATE COLOR WITH ARCHITECT.
 - 8.1. 20A COMMERCIAL GRADE RECEPTACLES SHALL BE GROUNDING TYPE, 125V, RECEPTACLES SHALL BE BACK AND SIDE WIRED WITH SCREW TYPE TERMINALS OR PRESSURE TYPE, SCREWLESS TERMINALS.
 - 8.2. PROVIDE TANK RESISTANT GRADE RECEPTACLES IN ALL LOCATIONS AS REQUIRED BY CODE: DWELLING UNIT, CHILD CARE, PRESCHOOLS, BUSINESS OFFICES, MEDICAL, DENTAL AND OUT PATIENT FACILITIES, SUBSETS OF ASSEMBLY GROUPS AND DORMITORIES.
 - 8.3. WIRING DEVICES WITHIN COMMERCIAL, KITCHEN AND BAR AREAS SHALL BE PROVIDED WITH IN-USE, CLEAR WEATHER PROOF COVER.
 - 8.4. SPECIAL EQUIPMENT RECEPTACLES AS REQUIRED SHALL HAVE AN ADDITIONAL GROUNDING LEG AND SHALL BE OF CAPACITY AND CONFIGURATION FOR THE EQUIPMENT TO BE CONNECTED, CONTRACTOR SHALL CONFIRM CONFIGURATION PRIOR TO ROUGH IN.
 - 8.5. GFI RECEPTACLES SHALL EACH HAVE GFI TRIPPING (NO FEED THROUGH IS PERMITTED).
 - 8.6. DAMP LOCATION WEATHERPROOF RECEPTACLES SHALL HAVE AN ENCLOSURE THAT IS WEATHERPROOF WHEN THE RECEPTACLE IS COVERED.
 - 8.7. RECESSED POKE THROUGH/FLOOR BOX DEVICE:
 - 8.7.1. 6 GANG, WITH OPEN/LOSE COVER PLATE AND ADJUSTABLE FIRE BARRIER.
 - 8.7.2. POKE THROUGH: 4" APPROXIMATE HOLE SIZE, 8 1/4" DEVICE DIAMETER, 1" DEEP FEED FROM CEILING BELOW.
 - 8.7.3. FLOOR BOX: PROVIDE CONDUIT FOR TEL/DATA AND POWER FROM NEAREST AVAILABLE WALL.
 - 8.7.4. CONFIGURED WITH THE FOLLOWING:
 - 8.7.4.1. (1) DUPLEX OUTLET
 - 8.7.4.2. (2) RJ45 JACKS
 - 8.7.4.3. (2) AUDIOVISUAL (COORDINATE EXACT REQUIREMENTS WITH OWNER)
 - 8.7.5. MINIMUM (2) 1" CONDUIT CONNECTIONS FOR TEL/DATA & AUDIOVISUAL.
 - 8.7.6. 3/4" CONDUIT FOR POWER.
 - 8.7.7. FINISH - COORDINATE FINISH WITH ARCHITECT.
 - 8.7.8. WET LOCATION WEATHERPROOF RECEPTACLES SHALL CONFORM TO NEC ARTICLE 408(B)(6) AND SHALL HAVE AN ENCLOSURE THAT IS WEATHERPROOF WHETHER OR NOT THE ATTACHMENT PLUG CAP IS INSERTED. PROVIDE RECEPTACLE WITH COVER.
 - 8.9. LIGHT SWITCHES: ALL LOCAL WALL SWITCHES SHALL BE OF THE FLUSH QUIET DECORA OR TOGGLE TYPE (AS COORDINATED WITH ARCHITECT), SINGLE-POLE, DOUBLE-POLE, OR THREE-WAY AS REQUIRED.
 - 8.10. SENSORS: THE DESIRED SWITCH CONTROL IS SHOWN ON THE DWGS. THE CONTRACTOR SHALL PROVIDE THE SWITCHING AS REQUIRED. ALL NECESSARY APPURTENANCES SHALL BE PROVIDED FOR THE TYPE SWITCHING SELECTED BY THE CONTRACTOR.
 - 8.10.1. THE GENERAL INTENT OF THE SENSOR DESIGN IS FOR ALL WALL SWITCHES WORKING INDEPENDENTLY TO BE LINE VOLTAGE. CEILING SENSORS AND WALL SWITCHES WORKING IN CONJUNCTION WITH CEILING SENSORS SHALL BE LOW VOLTAGE. ALLOW VOLTAGE SENSORS SHALL BE PROVIDED WITH ALL POWER PACKS AS REQUIRED. SENSORS SHALL BE MOUNTED IN LOCATIONS AS RECOMMENDED BY THE MANUFACTURER. NO ADDITIONAL COMPENSATION WILL BE RECEIVED IF CONTRACTOR HAS TO RELOCATE SENSORS. TIME DELAY SETTINGS SHALL BE SET TO NO LESS THAN 10 MINUTES. COVERAGE DIMENSIONS APPLY TO DEVICE BEING CENTERED. ACTUAL COVERAGES CAN VARY ON THE SHAPE AND USE OF APPLICABLE SPACE. COVERAGE MAY BE REDUCED IF DEVICE IS MOUNTED GREATER THAN 12 FEET HIGH.
 - 8.10.0.1. CEILING MOUNTED, LOW VOLTAGE, INFRARED/ULTRASONIC
 - 8.10.0.2. HALLWAY SENSOR, LOW VOLTAGE, ULTRASONIC.
 - 8.10.0.3. WALL SWITCH, LINE VOLTAGE, ULTRASONIC, SINGLE POLE OCCUPANCY
 - 8.10.0.4. WALL SWITCH, LINE VOLTAGE, INFRASONIC, DUAL POLE OCCUPANCY
 - 8.10.0.5. WALL SWITCH, LINE VOLTAGE, SINGLE POLE DIMMING VACANCY SENSOR
 - 8.10.0.4. WALL SWITCH, LINE VOLTAGE, INFRARED/ULTRASONIC, SINGLE POLE VACANCY
 - 8.10.0.5. WALL SWITCH, LINE VOLTAGE, INFRARED/ULTRASONIC, DUAL POLE VACANCY, 1000SQFT AREA
 - 8.10.0.5. CEILING, LOW VOLTAGE, INFRARED/ULTRASONIC, VACANCY
 - 8.10.0.6. LOW VOLTAGE LIGHT SWITCH (MOMENTARY) FOR USE WITH CEILING MOUNT SENSORS. # OF BUTTONS REQUIRED SHALL MATCH SWITCH CONTROL INDICATED ON DWGS.
 - 8.10.0.6. LOW VOLTAGE DIMMING LIGHT SWITCH (MOMENTARY) FOR USE WITH CEILING MOUNT SENSORS. # OF BUTTONS REQUIRED SHALL MATCH SWITCH CONTROL INDICATED ON DWGS.
 - 8.10.0.7. CEILING MOUNTED DAYLIGHT DIMMING PHOTOCELL.
 - 8.10.0.8. 360 CEILING MOUNT DUAL TECH VACANCY SENSOR LINE VOLTAGE WITH DIMMING PHOTOCCELL.
 - 8.10.0.9. ON/OFF SWITCH (2 BUTTON) TO BE USED WITH LINE VOLTAGE CEILING SENSOR, SINGLE ZONE OR DIMMING (4 BUTTON).
9. CIRCUIT BREAKERS:
 - 9.1. ALL GFI CIRCUIT BREAKERS:
 - 9.1.1. PROVIDED FOR PERSONNEL PROTECTION SHALL BE 5-6pA IN ACCORDANCE WITH NEC REQUIREMENTS.
 - 9.1.2. PROVIDED FOR EQUIPMENT PROTECTION SHALL BE 30mA IN ACCORDANCE WITH NEC REQUIREMENTS.
 - 9.2. ALL MULTI-POLE CIRCUIT BREAKERS SHALL BE COMMON INTERNAL TRIP. HANDLE TIES SHALL NOT BE PERMITTED.
 - 9.3. ALL CIRCUIT BREAKERS FEEDING 120V SINGLE PHASE LOADS WITHIN DWELLING UNITS SHALL BE ARC FAULT RATED AS REQUIRED BY CODE.
 - 9.4. MINIMUM SHORT CIRCUIT INTERRUPTING CAPACITY SHALL BE 10,000AIC AT 240V & 14,000AIC AT 480V.
 - 9.5. WHERE REQUIRED BY CODE, PROVIDE COMBINATION ARC-FAULT/GFI BREAKERS.
10. EXISTING PANELBOARDS
 - 10.1. EXISTING PANELBOARDS ARE SUITABLE FOR THEIR RATED VOLTAGE AS LABELED. ONLY NEW LOADS OF THE SAME VOLTAGE SHALL BE WIRED TO EXISTING PANELS.
 - 10.2. WHERE CONNECTIONS ARE MADE IN EXISTING PANELBOARDS, THE PANEL INDEX SHALL BE REVISED TO INDICATE THE NEW LOADS SERVED. ALL EXISTING PANELBOARDS THAT DO NOT HAVE A CIRCUIT DIRECTORY CARD MOUNTED IN A FRAME WITH NONCOMBUSTIBLE PLASTIC COVER SHALL HAVE ONE INSTALLED ON THE INSIDE OF THE DOOR. ALL DIRECTORY CARDS SHALL BE PROPERLY FILLED IN, AND INDICATE AREAS AND DEVICES SERVED BY EACH UNIT.
 - 10.3. NEW CIRCUIT BREAKERS ADDED TO EXISTING PANELBOARDS SHALL BE THE SAME FRAME SIZE AND INTERRUPTING CAPACITY AS EXISTING PANELBOARDS AND CIRCUIT BREAKERS. CURRENT LIMITING CIRCUIT BREAKERS SHALL NOT BE USED.
11. PANELBOARDS: PROVIDE DEAD FRONT LIGHTING AND POWER PANEL BOARDS WITH PROPER VOLTAGE AND AMP RATING AS REQUIRED.
 - 11.1. PANELBOARDS SHALL BE SURFACE-OR FLUSH-MOUNTED AS REQUIRED. PROVIDE COPPER BUS BARS AND FULL SIZE INSULATED NEUTRAL BUS.
 - 11.2. PANEL BUSWORK SHALL BE RATED TO CARRY, AS MINIMUM, AMPERE RATING OF OVERCURRENT DEVICE THAT SERVES PANEL.
 - 11.3. PANELS WITH FEED, THROUGH BUSING SHALL NOT BE USED.
 - 11.4. PROVIDE ANTI TURN, SOLDERLESS LUGS SUITABLE FOR COPPER OR ALUMINUM WIRE PROVIDE SEPARATELY MOUNTED GROUND BUS FOR EACH PANELBOARD.
 - 11.5. GROUND BUS SHALL BE BONDED TO PANELBOARD ENCLOSURE.
 - 11.6. PROVIDE BOLT ON, MOLDED CASE, CIRCUIT BREAKERS WITH THERMAL, MAGNETIC TRIPS. MULTIPLE POLE BREAKERS SHALL BE SINGLE HANDLE, COMMON TRIP.
 - 11.7. PROVIDE HANDLE LOCKS FOR EMERGENCY LIGHTING CIRCUITS, FIRE ALARM, SECURITY, OR OTHER SIMILAR FUNCTIONS. MAIN CIRCUIT BREAKERS SHALL BE MOUNTED VERTICALLY, SEPARATE FROM THE BRANCH BREAKERS.
 - 11.8. CURRENT LIMITING CIRCUIT BREAKERS SHALL NOT BE USED.
 - 11.9. PANELBOARD TRIM SHALL BE PROVIDED WITH DOOR-IN-DOOR CONSTRUCTION. PANELBOARD SHALL BE CAPABLE OF SUPPORTING ADDITIONAL BOLT-ON CIRCUIT BREAKERS WITHOUT MODIFICATION UP TO THE FRAME SIZE SPECIFIED ON THE DRAWINGS.
 - 11.10. PROVIDE FULLY RATED CIRCUIT BREAKERS EQUAL TO SHORT CIRCUIT INTERRUPTING CAPACITY SPECIFIED.
 - 11.11. PROVIDE TYPED NAME CARD IN EACH PANELBOARD. CARD SHALL INDICATE EQUIPMENT, LIGHTING AREAS, OR RECEPTACLE AREAS FED BY EACH BRANCH CIRCUIT BREAKER.
 - 11.12. PANELBOARD DOORS SHALL HAVE FLUSH MOUNTED CATCH AND LOCK WITH TWO KEYS. ALL KEYS FOR PANELBOARDS SHALL BE KEYS A-LIKE. PANELBOARDS SHALL BE MANUFACTURED BY EATON, SIEMENS, SQUARE D, OR APPROVED EQUAL.
12. LIGHTING FIXTURES:
 - 12.1. SUBSTITUTIONS FOR SCHEDULED LIGHTING EQUIPMENT WILL BE REJECTED UNLESS RECEIVED WITHIN TEN DAYS AFTER CONTRACT AWARDED.
 - 12.2. LIGHTING FIXTURES SHALL BE PROVIDED COMPLETE, WITH LAMPS AND DRIVERS AS REQUIRED AND AS SHOWN ON THE FIXTURE SCHEDULE. FURNISH ALL FITTINGS AND OTHER MISCELLANEOUS MATERIALS FOR COMPLETE INSTALLATION OF FIXTURES.
 - 12.3. SPARE: CONTRACTOR SHALL PROVIDE (3) ADDITIONAL EMERGENCY FIXTURES AND (2) ADDITIONAL EXIT SIGNS. EACH SHALL BE OF THE TYPE SCHEDULED.
13. DISCONNECT SWITCHES: ALL SAFETY SWITCHES SHALL BE NEMA GENERAL-DUTY TYPE HD AND UNDERWRITERS' LABORATORIES LISTED
 - 13.1. ALL SWITCHES SHALL HAVE SWITCHBLADES WHICH ARE FULL Y VISIBLE IN THE OFF POSITION WITH THE DOOR OPEN. ALL CURRENT CARRYING PARTS SHALL BE PLATED THROUGH ELECTROLYTIC PROCESSES TO RESIST CORROSION AND PROMOTE COOL OPERATION.
 - 13.2. SWITCHES SHALL BE QUICK MAKE AND QUICK BREAK SUCH THAT DURING NORMAL OPERATION OF THE SWITCH, THE OPERATION OF THE CONTACTS SHALL BE NOT CAPABLE OF BEING RESTRAINED BY THE OPERATING HANDLE AFTER THE CLOSING OR OPENING ACTION OF THE CONTACTS HAS STARTED. THE HANDLE AND MECHANISM SHALL BE AN INTEGRAL PART OF THE BOX, NOT THE COVER, WITH POSITIVE PADLOCKING PROVISIONS IN THE OFF POSITION.

- 13.3. SWITCHES SHALL BE FURNISHED IN NEMA 1 GENERAL PURPOSE ENCLOSURES. ENCLOSURES SHALL BE OF CODE GAUGE (UL 98) SHEET STEEL (NEMA 1) OR CODE GAUGE PHOSPHATE TREATMENT AND GRAY BAKED ENAMEL FINISH.
 - 13.3.1. EXTERIOR SWITCHES SHALL BE IN A NEMA 3R (RANTIGHT) ENCLOSURE.
 - 13.4. SWITCHES SHALL BE HORSEPOWER RATED FOR 800 VOLTS AC AND ALL SWITCHES SHALL BE FUSED TYPE WITH DUAL ELEMENT FUSES. FUSES SHALL BE NON RENEWABLE TYPE, UL CLASS J UP TO 600 AMP, AND CLASS I OVER 600 AMP. FUSES SHALL BE CURRENT LIMITING TYPE WITH A MINIMUM INTERRUPTING RATING OF 200,000 RMS AMP.
 - 14.1. FUSES FOR MOTOR FEEDERS OR MOTOR CIRCUITS SHALL BE CLASS KS OF A VOLTAGE CLASSIFICATION RATED FOR THE MOTOR WITH A MINIMUM INTERRUPTING CAPACITY OF 100,000 RMS AMP AND WITH TIME DELAY OF A MINIMUM OF 10 SECONDS AT 50% OF MOTOR FULL LOAD AMPS.
 - 14.2. FURNISH AND INSTALL ALL FUSES AND ONE COMPLETE SET OF THREE SPARE FUSES FOR EACH SIZE USED.
 - 14.3. FUSES SHALL BE MANUFACTURED BY BUSSMAN, GOSAU, SHAWMUT, LITTLE OR APPROVED EQUAL.
15. EMPTY TELEPHONE/DATA SYSTEM
 - 15.1. PROVIDE ACCESS FOR TELEPHONE, DATA, POS AND CABLE TV CABLEING TO BE INSTALLED BY OTHERS. AT ALL LOCATIONS SHOWN ON THE DRAWINGS PROVIDE A SINGLE-GANG BACKBOX AND A 1/2" CONDUIT TO THE ACCESSIBLE CEILING SPACE ABOVE.
 - 15.2. NYLON PULL STRINGS SHALL BE INSTALLED IN ALL EMPTY CONDUITS IN EXCESS OF TEN FEET LONG.
 - 15.3. SECURELY THE PULL STRING AT EACH END.
 - 15.4. ALL CONDUITS SHALL BE CONCEALED UNLESS OTHERWISE NOTED.
 - 15.5. PURCHASE AND INSTALLATION OF DATA, TELEPHONE WIRING AND JACKS SHALL BE PROVIDED BY OWNERS CHOSEN CONTRACTOR.
- PART 3 - EXECUTION
 1. SERVICE TO THE FACILITY: ELECTRICAL POWER OUTAGES MUST BE MINIMIZED AS NOT TO INTERFERE WITH THE BUILDING'S OPERATION. THE TIME AND DURATION OF ANY POWER OUTAGE MUST BE APPROVED BY AND SCHEDULED WITH THE BUILDING OWNER/AUTHORITY. THE ELECTRICAL CONTRACTOR SHALL NOTIFY THE OWNER/AUTHORITY AT LEAST TEN CALENDAR DAYS FROM THE DATE OF PROPOSED POWER OUTAGE IN THE FACILITY.
 2. DEMOLITION, RELOCATION AND REMOVAL OF EXISTING WIRING
 - 2.1. THE ELECTRICAL CONTRACTOR SHALL PROVIDE ALL ELECTRICAL DEMOLITION, RELOCATION OF CIRCUITS, AND REMOVAL OF EXISTING WIRING NECESSARY FOR THE ELECTRICAL WORK AS SHOWN ON THE DWGS.
 - 2.2. THE ELECTRICAL CONTRACTOR SHALL COMPLETELY REMOVE ALL ELECTRICAL SYSTEMS WITHIN THE BUILDING THAT ARE DESIGNATED FOR REMOVAL.
 - 2.3. OUTLETS THAT ARE EXISTING FOR USE AS LIGHTING OR RECEPTACLES MAY BE USED AS JUNCTION BOXES FOR THE RE-WIRING OF THE BUILDING IF NECESSARY AND PRACTICAL.
 - 2.4. THE CONTRACTOR SHALL MAINTAIN, EXTEND, AND CONNECT EXISTING BRANCH CIRCUITS WHICH PASS THROUGH THE CONSTRUCTION AREA, MAINTAINING POWER TO ALL EQUIPMENT AND LIGHTING OUTSIDE OF THE CONSTRUCTION AREA.
 3. SPECIAL COORDINATION INSTRUCTIONS
 - 3.1. COORDINATION WITH WORK OF OTHER TRADES IS REQUIRED. THE FOLLOWING SPECIAL INSTRUCTIONS SHALL ALSO BE CAREFULLY NOTED.
 - 3.1.1. LOCATIONS AND MOUNTING HEIGHT OF ALL WALL OUTLETS AND LIGHTING FIXTURES SHALL BE VERIFIED WITH THE ARCHITECT/ENGINEER PRIOR TO ROUGHING IN CONDUIT.
 - 3.1.2. ALL FEEDER, BRANCH CIRCUIT OR AUXILIARY SYSTEM WIRING PASSING THROUGH PULL BOXES AND/OR BEING MADE UP IN PANELBOARDS SHALL BE PROPERLY GROUPED, BOUND, AND TIED TOGETHER IN A NEAT AND ORDERLY MANNER, IN KEEPING WITH THE HIGHEST STANDARDS OF THE TRADE, WITH PLASTIC CABLE TIES.
 - 3.1.3. ALL DUPLEX CONVENIENCE AND POWER RECEPTACLES SHALL BE MOUNTED VERTICALLY WITH THE GROUNDING POST TO THE BOTTOM AS THE OUTLET IS VIEWED FROM THE FRONT.
 - 3.1.4. ALL MISCELLANEOUS HARDWARE AND SUPPORT ACCESSORIES, INCLUDING SUPPORT RODS, NUTS, BOLTS, SCREWS, AND OTHER SUCH ITEMS, SHALL BE OF A GALVANIZED OR CROMIUM PLATED FINISH, OR OF OTHER APPROVED RUST INHIBITING COATINGS. CARE SHOULD BE TAKEN THAT FIXTURES SHALL NOT BE INSTALLED ON BOTH SIDES OF EXISTING OR NEW BUILDING EXPANSION JOINTS.
 - 3.1.5. THE ELECTRICAL CONTRACTOR SHALL PROVIDE ALL MATERIALS, EQUIPMENT, AND WORKMANSHIP TO PROVIDE FOR ADEQUATE PROTECTION OF ALL ELECTRICAL EQUIPMENT DURING THE COURSE OF CONSTRUCTION OF THE PROJECT.
 - 3.1.6. THE ELECTRICAL CONTRACTOR SHALL FURNISH AND INSTALL APPROVED INSULATION AT TERMINAL CONNECTION POINTS FOR ALL ELECTRICAL CONDUCTING MATERIALS, SUCH AS TRANSFORMER TERMINALS, TERMINAL STUDS, AND AT ANY OTHER SPECIAL LOCATIONS AS DIRECTED BY THE ENGINEER.
 - 3.1.7. PRIOR TO INSTALLATION OF CONDUIT AND WIRE, THE ELECTRICAL CONTRACTOR SHALL COORDINATE WIRING REQUIREMENTS WITH ACTUAL EQUIPMENT SUPPLIER.
 - 3.1.8. THE ELECTRICAL DRAWINGS INDICATE WIRE, CONDUIT, AND OVERCURRENT PROTECTIVE DEVICES TO BE INSTALLED FOR CERTAIN HVAC UNITS. THESE SIZES ARE BASED ON CERTAIN MANUFACTURERS REQUIREMENTS. SHOULD THE GENERAL CONTRACTOR ALLOW THE MECHANICAL CONTRACTOR TO SUBSTITUTE HVAC EQUIPMENT DIFFERENT THAN SPECIFIED, THEN THE GENERAL CONTRACTOR SHALL PROVIDE THE REQUIRED REVISED ELECTRICAL WIRING, CONDUIT, AND OVERCURRENT PROTECTIVE DEVICES IN ACCORDANCE WITH THE MANUFACTURERS RECOMMENDATIONS AT NO ADDITIONAL CHARGE TO THE OWNER.
 4. CUTTING, PATCHING, AND DRILLING: THE GENERAL CONTRACTOR SHALL PERFORM PLASTER CUTTING AND CHANNELING AND DRILLING THROUGH STRUCTURAL BEAMS NECESSARY FOR THE INSTALLATION OF ELECTRICAL WORK. THE GENERAL CONTRACTOR SHALL BE RESPONSIBLE FOR ALL PAINTING AND PATCHING WHICH SHALL MATCH EXISTING BASE MATERIALS IN LOOKS AND COLOR. THE ELECTRICAL CONTRACTOR SHALL PROVIDE ROUTINE DRILLING THROUGH 2 X 4 AND 2 X 6 WOOD FRAME WALLS AND 2 X 10 AND/OR 2 X 12 FLOOR JOISTS IN ORDER TO INSTALL WIRING.
 5. COOPERATION AND WORK PROGRESS
 - 5.1. THE ELECTRICAL WORK SHALL BE CARRIED ON UNDER THE USUAL CONSTRUCTION CONDITIONS, IN CONJUNCTION WITH ALL OTHER WORK AT THE SITE. THE ELECTRICAL CONTRACTOR SHALL COOPERATE WITH THE ENGINEER AND ALL CONTRACTORS AND EQUIPMENT SUPPLIERS WORKING ON THE SITE. COORDINATE THE WORK, AND PROCEED IN A MANNER SO AS NOT TO DELAY THE PROGRESS OF THE PROJECT.
 - 5.2. THE ELECTRICAL CONTRACTOR HAS A RESPONSIBILITY TO COORDINATE THE EXACT MOUNTING ARRANGEMENT AND LOCATION OF EQUIPMENT INDICATED ON THE DRAWINGS TO ALLOW FOR PROPER SPACE REQUIREMENTS FOR EQUIPMENT ACCESS, OPERATION, AND MAINTENANCE.
 - 5.3. IT SHALL BE THE RESPONSIBILITY OF THE ELECTRICAL CONTRACTOR TO COORDINATE THE DELIVERY OF ELECTRICAL EQUIPMENT TO THE PROJECT PRIOR TO THE TIME INSTALLATION OF EQUIPMENT WILL BE REQUIRED.
 6. INSTALLATION OF WIRING, CONDUIT AND BOXES:
 - 6.1. ALL CONDUIT AND WIRING SHALL BE INSTALLED CONCEALED.
 - 6.2. OUTLET BOXES SHALL BE MOUNTED FLUSH. CONDUIT SHALL BE RUN CONCEALED. WIRELESS WALLS ARE BLOCK. DEVICES SHALL BE SURFACE MOUNTED. PROVIDE WIRE MOLD OR EQUAL TO SURFACE MOUNTED RACEWAY WITH FINISHED BOXES.
 - 6.3. UNLESS OTHERWISE INDICATED, ALL WIRING SHALL BE (2)1/2" AND (1)1/2" GROUND, 34"C.
 - 6.4. CONDUIT ENDS SHALL BE CUT SQUARE, THREADED, AND REAMED TO REMOVE BURRS AND SHARP EDGES. OFFSETS AND BENDS FOR CHANGES IN ELEVATION OF EXPOSED CONDUIT RUNS SHALL BE MADE AT WALLS OR BEAMS AND NOT IN OPEN SPACES BETWEEN WALLS OR BEAMS. CONDUITS SHALL BE ROUTED SO AS NOT TO INTERFERE WITH THE OPERATION OR MAINTENANCE OF ANY EQUIPMENT. STEEL SUPPORTS OR RACKS SHALL BE GALVANIZED STEEL CHANNEL AND FITTINGS.
 - 6.5. EXPOSED CONDUITS SHALL BE RUN PARALLEL TO, OR AT RIGHT ANGLES TO, THE WALLS OF THE BUILDING, AND ALL BENDS SHALL BE MADE WITH STANDARD CONDUIT ELBS OR CONDUITS BENT TO NOT LESS THAN THE SAME RADIUS. HORIZONTAL RUNS OF EXPOSED CONDUITS SHALL BE CLOSE TO CEILING BEAMS, PASSING OVER WATER OR OTHER PIPING WHERE POSSIBLE AND SHALL BE SUPPORTED BY PIPE STRAPS OR BY OTHER APPROVED MEANS, NOT MORE THAN 8' APART. INSTALLATION OF EXPOSED CONDUITS IN FINISHED AREAS OF THE BUILDING SHALL BE CHECKED WITH THE ENGINEERS FOR LAYOUT BEFORE INSTALLATION TO CONFORM TO THE PATTERN OF THE STRUCTURAL MEMBERS, AND WHEN COMPLETED, IS TO PRESENT THE MOST UNOBTRUSIVE APPEARANCE POSSIBLE. NO EXPOSED CONDUITS WILL BE PERMITTED ON WALLS OR PARTITIONS IN PUBLIC AREAS, UNLESS SPECIFICALLY NOTED. CONDUITS SHALL NOT BE INSTALLED WITHIN 3" OF HOT WATER PIPES, OR APPLIANCES, EXCEPT WHERE CROSSING IS UNAVOIDABLE AND, IN THAT CASE, THE CONDUIT SHALL BE KEPT AT LEAST 1" FROM COVERING OR PIPE CROSSED. DO NOT LAY CABLE OR RACEWAY ON, OR SUPPORT FROM SUSPENDED CEILING OR PIPING AND DUCTWORK.
 - 6.7. CONDUITS SHALL BE SUPPORTED ON APPROVED TYPE GALVANIZED WALL BRACKETS, CEILING TRAPEZE, STRAP HANGERS, OR PIPE STRAPS, SECURED BY MEANS OF TOGGLE BOLTS ON HOLLOW MASONRY UNITS OR EXPANSION BOLTS IN CONCRETE OR BRICK.
 - 6.9. IN GENERAL, NO SPLICES OR JOINTS WILL BE PERMITTED IN EITHER FEEDER OR BRANCHES EXCEPT AT OUTLETS OR ACCESSIBLE JUNCTION BOXES.
 - 6.10. ALL SPLICES IN WIRE #8 AWG AND SMALLER SHALL BE STANDARD PITGALT, MADE MECHANICALLY TIGHT AND INSULATED WITH PROPER THICKNESS OF INSULATING TAPE.
 - 6.11. WIRE #8 AND LARGER SHALL BE CONNECTED TO PANELS AND APPARATUS BY MEANS OF APPROVED LUGS OR CONNECTORS. CONNECTORS SHALL BE SOLDERLESS TYPE, SUFFICIENTLY LARGE TO ENCLOSE ALL STRANDS OF THE CONDUCTOR AND SECURELY FASTENED.
 - 6.12. PROVIDE ALL REQUIRED BRANCH CIRCUIT WIRING FOR ELECTRICAL DEVICES AND LIGHTING FIXTURES. DESIGNATIONS SHOWN ON DRAWINGS ARE DIAGRAMMATIC ONLY. CIRCUIT NUMBERS BESIDE RECEPTACLES AND LIGHTING FIXTURES COVERING THAT A COMPLETE BRANCH CIRCUIT IS REQUIRED BACK TO ELECTRICAL PANELBOARD SWITCH CONTROL. LETTERS ADJACENT TO LIGHTING FIXTURES INDICATE BRANCH WIRING REQUIRED FROM LIGHTING FIXTURE TO LIGHT SWITCH OR DIMMER.
 7. COLOR CODING
 - 7.1. PROVIDE COLOR CODING FOR SECONDARY SERVICE, FEEDERS, AND BRANCH CIRCUITS AS FOLLOWS, IN ACCORDANCE WITH NEC RECOMMENDATIONS AND STANDARD PRACTICES.
 - 7.2. MAKE CONNECTIONS TO TERMINALS FROM LEFT TO RIGHT ARRANGED PHASE A, B, AND C.
 - 7.3. PROVIDE SAME COLOR CODING FOR SWITCH LEGS AS CORRESPONDING PHASE CONDUCTOR. PROVIDE COLORED PLASTIC TAPE OF SPECIFIED COLOR CODE IDENTIFICATION FOR LARGE SIZE CONDUCTORS AVAILABLE ONLY IN BLACK.
 8. MOTORS, CONNECTIONS, AND CONTROLS
 - 8.1. SPLICES AND TERMINATIONS.
 - 8.1.1. MAKE SPLICES AND TERMINATIONS EQUIVALENT ELECTRICALLY AND MECHANICALLY TO CONDUCTOR INSULATION.
 - 8.1.2. MAKE SPLICES AT MOTOR JUNCTION BOXES WITH PRESSURE INDENT CONNECTORS OR SPLIT BOLT CONNECTORS AS SPECIFIED HEREIN.
 - 8.1.3. PROVIDE STANDARD BOLT ON LUGS WITH ALLEN CAP SCREWS TO ATTACH COPPER WIRE AND CABLE TO DISCONNECT SWITCHES AND OTHER ELECTRICAL EQUIPMENT.

9. TEMPERATURE CONTROL WIRING: THE TEMPERATURE CONTROL SYSTEM SHALL BE AN ELECTRIC SYSTEM INSTALLED BY THE HEATING AND AIR-CONDITIONING CONTRACTOR.
10. SALVAGE: THE ELECTRICAL CONTRACTOR SHALL REMOVE ALL ELECTRICAL EQUIPMENT NOT TO BE USED. ALL ELECTRICAL EQUIPMENT REMOVED AND DEEMED SALVAGEABLE BY THE OWNER SHALL BE STORED IN AN AREA DESIGNATED BY THE OWNER. ANY ELECTRICAL EQUIPMENT REMOVED THAT IS NOT DESIRED BY THE OWNER SHALL BE DISPOSED OF AT THE EXPENSE OF THE ELECTRICAL CONTRACTOR.
11. SUPPORTS AND ATTACHMENTS: BOXES AND PENDANTS FOR SURFACE-MOUNTED FIXTURES SHALL BE SUPPORTED IN AN APPROVED MANNER. BOXES AND SUPPORTS SHALL BE FASTENED WITH BOLTS AND EXPANSION SHIELDS ON CONCRETE OR BRICK, WITH TOGGLE BOLTS ON HOLLOW MASONRY UNITS, WITH MACHINE SCREWS ON STEEL WORK WITH LOCKNUTS THREADED STUDS SHALL BE PROVIDED WITH LOCK WASHERS AND NUTS.
12. QUIET OPERATION: ALL EQUIPMENT AND MATERIAL FURNISHED BY THE ELECTRICAL CONTRACTOR SHALL OPERATE UNDER ALL CONDITIONS OF LOAD WITHOUT OBJECTIONABLE NOISES OR VIBRATIONS, WHICH, IN THE OPINION OF THE ENGINEER, IS OBJECTIONABLE. WHERE SOUND OR VIBRATION CONDITIONS ARISE WHICH ARE CONSIDERED OBJECTIONABLE BY THE ENGINEER, THE ELECTRICAL CONTRACTOR SHALL ELIMINATE SAME IN A MANNER APPROVED BY THE ENGINEER.
13. TESTS: FURNISH ALL LABOR, MATERIAL, INSTRUMENTS, SUPPLIES, AND SERVICES AND BEAR ALL COSTS FOR THE ACCOMPLISHMENT OF TESTS HEREIN SPECIFIED. CORRECT ALL DEFECTS APPEARING UNDER TEST. REPEAT THE TESTS UNTIL NO DEFECTS ARE DISCLOSED. LEAVE THE EQUIPMENT CLEAN AND READY FOR USE.
 - 13.1. THE ELECTRICAL CONTRACTOR SHALL PERFORM ANY TEST OTHER THAN HEREIN SPECIFIED WHICH MAY BE SPECIFIED BY LEGAL AUTHORITIES OR BY AGENCIES TO WHOSE REQUIREMENTS THIS WORK IS TO CONFORM.
14. FINAL INSPECTION AND TEST: PRIOR TO TEST, FEEDERS AND BRANCHES SHALL BE CONTINUOUS FROM SERVICE CONTACT POINT TO EACH OUTLET, ALL PANELS, FEEDERS, AND DEVICES CONNECTED AND FUSES IN PLACE. TEST SYSTEM FREE FROM SHORT CIRCUITS AND GROUNDS WITH INSULATION RESISTANCES NOT LESS THAN OUTLINES IN THE NATIONAL ELECTRICAL CODE. PROVIDE TESTING EQUIPMENT NECESSARY AND CONDUCT TEST IN PRESENCE OF THE OWNERS AUTHORIZED REPRESENTATIVE. THE FINAL INSPECTION AND TEST SHALL INCLUDE THE FOLLOWING:
 - 14.1. TESTING OF THE EMERGENCY LIGHTING SYSTEM.
 - 14.2. TESTING OF THE IMPEDANCE OF THE GROUNDING SYSTEM.
 - 14.3. TESTING OF EACH OUTLET.
 - 14.4. TESTING OF THE FIRE ALARM SYSTEM.
 - 14.5. TESTING OF BRANCH AND FEEDER CONDUCTORS FOR CONTINUITY.
 - 14.6. TESTING OF PANELBOARDS TO VERIFY PROPER CURRENT BALANCE AND VOLTAGE.
 - 14.7. TESTING OF MOTORS, VERIFYING PROPER CURRENT BALANCE AND VOLTAGE.
 - 14.8. TESTING, TARGETING, AND FOCUSING OF ALL ADJUSTABLE LIGHTING FIXTURES.
 - 14.9. TESTING OF ALL GROUND FAULT PROTECTIVE DEVICES IN ACCORDANCE WITH THE NATIONAL ELECTRICAL CODE, SECTION 230-95.

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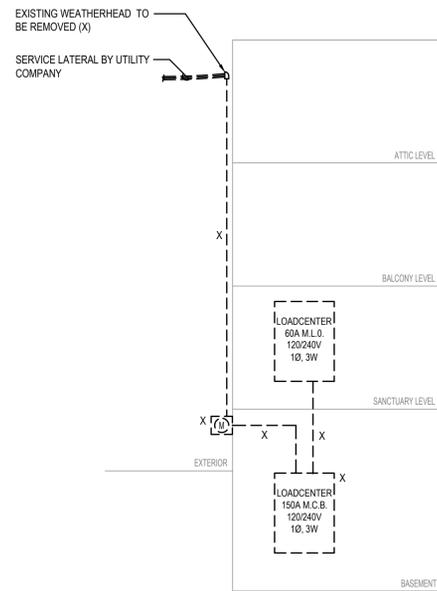
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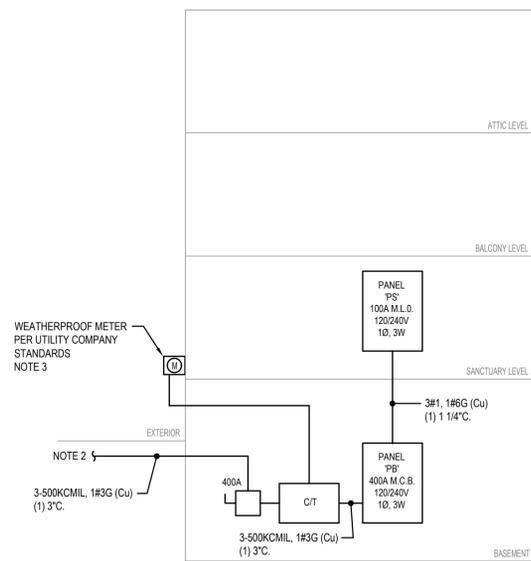
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NEW

POWER RISER DIAGRAM

N.T.S.

NOTES PERTAINING TO POWER RISER DIAGRAM:

- ELECTRICAL CONTRACTOR SHALL GROUND IN ACCORDANCE WITH NEC ARTICLE 250 AS AMENDED BY MASSACHUSETTS ELECTRICAL CODE. REFER TO SERVICE GROUNDING DETAIL ON DRAWING E004.
- REFER TO SITE PLAN E100 FOR APPROXIMATE LOCATION. VERIFY EXACT REQUIREMENTS WITH LOCAL UTILITY COMPANY PRIOR TO INSTALLATION.
- UTILITY METER CAPABLE OF FULL 400A REQUIRED. '320' TYPE METER WILL NOT BE APPROVED.

GENERAL NOTE

ENGINEERS' DRAWINGS ARE PROVIDED FOR REFERENCE ONLY. UPDATED DRAWINGS WILL BE PROVIDED BEFORE PERMITTING AND CONSTRUCTION.

MECHANICAL EQUIPMENT SCHEDULE															
TAG	DESCRIPTION	LOAD			PANEL	PANEL SOURCE	CKT BRKR	BRANCH CIRCUIT	CONNECTIONS AND EQUIPMENT					NOTES	
		HP	KVA	V					PH	Sm	☒	☐	↺		Ⓢ
ECH-1	CABINET UNIT HEATER	.34	120	1	PB	15A/1P	(2)#12 & (1)#12G, 3/4"	X	-	-	-	X	-	X	-
ECH-1	CABINET HEATER	3.0	208	1	PB	20A/2P	(2)#12 & (1)#12G, 3/4"	-	-	-	X	X	-	X	-
EF-1	EXHAUST FAN	.001	120	1	PB	15A/1P	(2)#12 & (1)#12G, 3/4"	X	-	-	-	X	-	X	-
ERV-1	ENERGY RECOVERY VENTILATOR	2.1	208	1	PB	15A/2P	(2)#12 & (1)#12G, 3/4"	-	-	-	X	X	-	X	-
ERV-2	ENERGY RECOVERY VENTILATOR	2.1	208	1	PB	15A/2P	(2)#12 & (1)#12G, 3/4"	-	-	-	X	X	-	X	-
ERV-3	ENERGY RECOVERY VENTILATOR	2.1	208	1	PB	35A/2P	(2)#8 & (1)#10G, 3/4"	-	-	-	X	X	-	X	-
EUH-1	UNIT HEATER	3.02	208	1	PB	20A/2P	(2)#12 & (1)#12G, 3/4"	-	-	-	X	X	-	X	-
EWH-1	WALL HEATER	1.5	120	1	PB	15A/1P	(2)#12 & (1)#12G, 3/4"	X	-	-	-	X	-	X	-
EWH-2	WALL HEATER	1.5	208	1	PB	15A/2P	(2)#12 & (1)#12G, 3/4"	-	-	-	X	X	-	X	-
-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-

- NOTES:
 1. DISCONNECT PROVIDED BY MECHANICAL CONTRACTOR.
 2. FAN COIL UNIT SERVED FROM HEAT PUMP. VERIFY EXACT WIRING REQUIREMENTS WITH EQUIPMENT MANUFACTURER PRIOR TO ROUGH IN.

LIGHTING FIXTURE SCHEDULE							
FIXTURE TYPE	DESCRIPTION	MANUFACTURER AND CATALOG NUMBER	LAMPS			VOLTAGE	NOTES
			No.	WATTAGE	TYPE		
B1E	2X2 LED WITH EMERGENCY BATTERY	H.E. WILLIAMS: LT-22-L39I35-AF-EM10W-DIM-UNV	-	33	LED	120	1
M1	BARE 120V SOCKET	MIXMATCH LIGHTING: FM-1BL-R99N10	-	-	LED	120	-
P1	PENDANT DOWNLIGHT	LIGHTOLIER: C2C-x	-	-	LED	120	-
R2	RECESSED 2" ROUND LED	DAY-LITE: NASL-RND-SEIES	-	-	LED	120	-
S1	LED TAPE LIGHT	DIODE LED: DI-24V-VLX-xx-xx-xx	-	-	LED	120	1
S2	FLEXIBLE LED STRIP LIGHT	DIODE LED: DI-24V-N09-xx-xx-xx-xx	-	-	LED	120	1
S3	NARROW LED STRIP	H.E. WILLIAMS: 75-x-Lxx-xx-x-DIM	-	-	LED	120	1
S3E	NARROW LED STRIP WITH EMERGENCY BATTERY	H.E. WILLIAMS: 75-x-Lxx-xx-EM10WLP-DIM	-	-	LED	120	1
T	TRACK LIGHTING	LIGHTOLIER: TRACK HEAD: TH-x-930-x-120-x TRACK: 60-x-x	-	-	LED	120	3,4,5
W1	SLIM LED STRIP	H.E. WILLIAMS: LLM-x-Lxx-xx-S-xx-DIM-120	-	-	LED	120	1
W1E	SLIM LED STRIP WITH EMERGENCY BATTERY	H.E. WILLIAMS: LLM-x-Lxx-xx-S-EM10WLP-DIM-120	-	-	LED	120	1
W2	ARCHITECTURAL LINEAR LED	TECHOLED: TECHOLED-BX-2-x-xx-xx-xx	-	-	LED	120	1
W3	INCANDESCENT MARQUEE LIGHT	STARFIRE LIGHTING: 150-IB-x-x-x	-	-	-	120	1
YG1	LED BOLLARD	PERFORMANCE IN LIGHTING: MIMK 10 BOLLARD 600 (071790)	-	11	LED	120	-
YG2	LED BOLLARD	PERFORMANCE IN LIGHTING: MIMK 10 BOLLARD 1000 (071812)	-	11	LED	120	-
YG3	LED POLE MOUNTED LUMINAIRE	SELUX: OURAY 400 # U4-x-x-x-x-x-x	-	-	LED	120	1
YG4	LED HANDRAIL LIGHTING	WAGNER ARCHITECTURAL SYSTEMS: LUMENPOD 28 # LULR8640AKS	-	-	LED	120	-
YS1	LED TAPE LIGHT	DIODE LED: DI-xxV-BLX-xx-xx-xx	-	-	LED	120	1
YW1	LED WALL SCONCE	PERFORMANCE IN LIGHTING: QUASAR 20 TECH (070170)	-	11	LED	120	-
EXIT SIGN	EXIT SIGN WITH EMERGENCY BATTERY	EXTRONIX: VEX-U-SP-WH-WH-G2	-	5	LED	277	2

- NOTES:
 1. ARCHITECT TO CONFIRM FINISH & TRIM OPTIONS.
 2. PROVIDE EXIT SIGNS WITH ARROW(S) AND NUMBER OF FACES AS INDICATED ON PLANS(S).
 3. PROVIDE NUMBER OF TRACK HEADS PER TRACK SECTION AS INDICATED ON PLANS.
 4. PROVIDE ALL ACCESSORIES AS REQUIRED FOR A COMPLETE AND FULLY FUNCTIONAL INSTALLATION.
 5. PROVIDE 2A CURRENT LIMITING DEVICE FOR EACH TRACK SECTION FOR IECC COMPLIANCE.

EASTERN ACROBATICS

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MEAC Electrical Planning Firm

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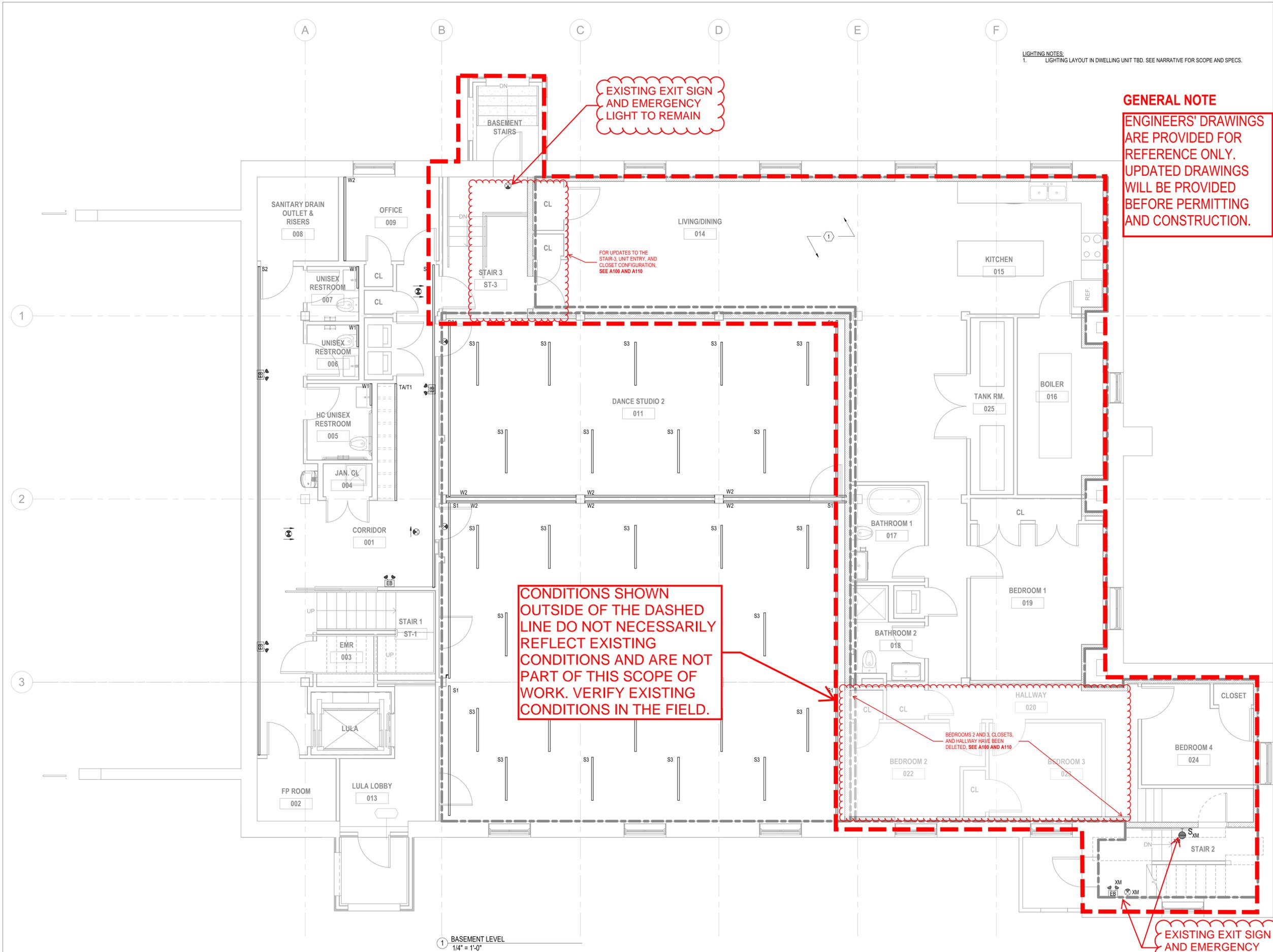
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12 JULY 2024

PHASE

2021-003 PROJECT NUMBER

ELECTRICAL SCHEDULES & RISER DIAGRAMS

E003



LIGHTING NOTES:
1. LIGHTING LAYOUT IN DWELLING UNIT TBD. SEE NARRATIVE FOR SCOPE AND SPECS.

GENERAL NOTE
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CONDITIONS SHOWN OUTSIDE OF THE DASHED LINE DO NOT NECESSARILY REFLECT EXISTING CONDITIONS AND ARE NOT PART OF THIS SCOPE OF WORK. VERIFY EXISTING CONDITIONS IN THE FIELD.

EXISTING EXIT SIGN AND EMERGENCY LIGHT TO REMAIN

EXISTING EXIT SIGN AND EMERGENCY LIGHTING TO REMAIN

EASTERN ACROBATICS

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3
PHASE 2 PRELIMINARY PRICING DRAWINGS
12 JULY 2024

PHASE
2021-003 PROJECT NUMBER

ELECTRICAL LIGHTING PLAN

E101

EASTERN ACROBATICS

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PHASE 2 PRELIMINARY PRICING DRAWINGS
12 JULY 2024

PHASE

2021-003 PROJECT NUMBER

ELECTRICAL POWER PLAN

E201

GENERAL NOTE

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UPDATED DRAWINGS
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AND CONSTRUCTION.

CONDITIONS SHOWN
OUTSIDE OF THE DASHED
LINE DO NOT NECESSARILY
REFLECT EXISTING
CONDITIONS AND ARE NOT
PART OF THIS SCOPE OF
WORK. VERIFY EXISTING
CONDITIONS IN THE FIELD.

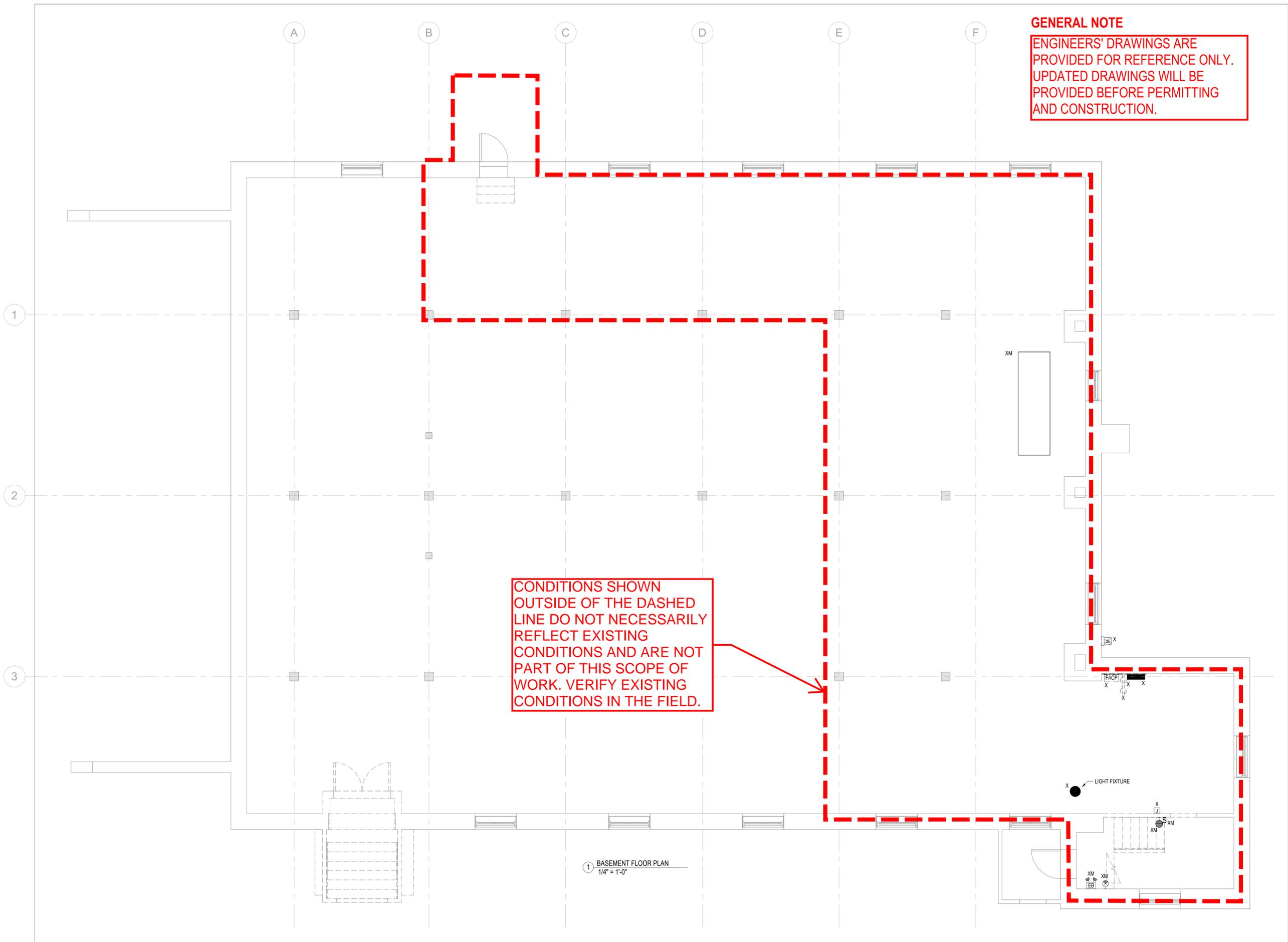
EXISTING
ELECTRICAL &
FIRE ALARM
PANELS TO
REMAIN

EXISTING
ELECTRICAL
PANEL TO
REMAIN

FOR UPDATES TO THE
STAIR-3, UNIT ENTRY, AND
CLOSET CONFIGURATION,
SEE A100 AND A110

BEDROOMS 2 AND 3, CLOSETS,
AND HALLWAY HAVE BEEN
DELETED, SEE A100 AND A110

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



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

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PHASE 2 PRELIMINARY PRICING DRAWINGS
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PHASE
 2021-003 PROJECT NUMBER

ELECTRICAL BASEMENT DEMOLITION

ED100

FIRE ALARM SPECIFICATION

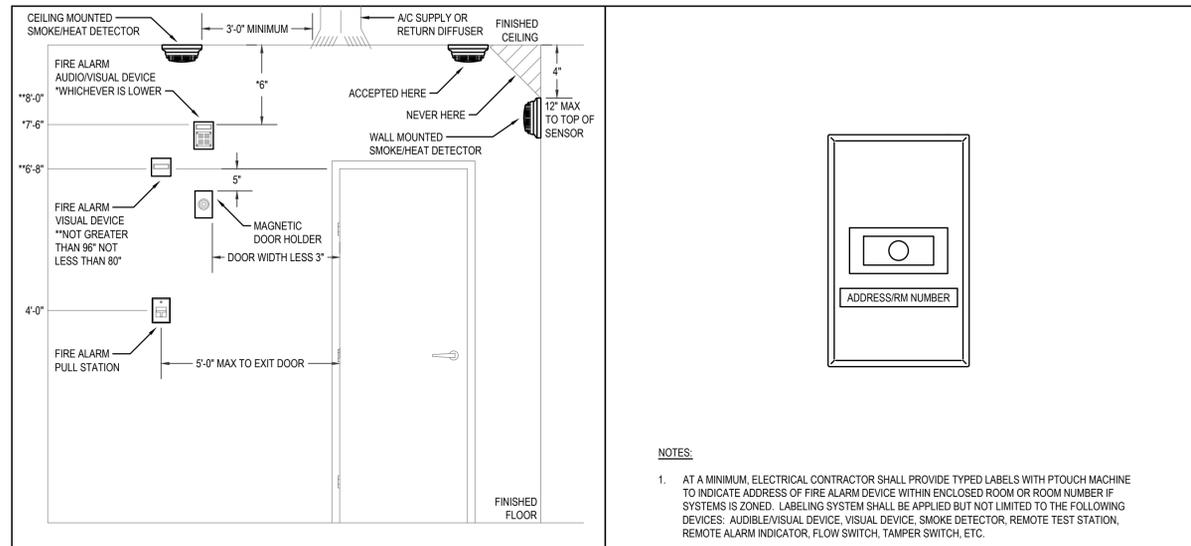
1. FIRE DETECTION AND ALARM SYSTEM

- 1.1. GENERAL
- 1.1.1. REFER TO FRONT END ELECTRICAL SPECIFICATIONS SHEETS FOR ALL PROJECT REQUIREMENTS.
- 1.1.2. FOR REPLACEMENT OR MODIFIED FIRE ALARM SYSTEMS AT NO TIME DURING CONSTRUCTION SHALL THE BUILDING BE WITHOUT FIRE ALARM PROTECTION.
- 1.1.3. THE CONTRACTOR MUST OBTAIN A PERMIT FROM THE FIRE DEPARTMENT PRIOR TO COMMENCEMENT OF EQUIPMENT INSTALLATION. ALL WORK SHALL BE DONE IN CONFORMANCE WITH THE LOCAL FIRE DEPARTMENT INSTALLATION REQUIREMENTS AND SYSTEM INSTALLATION GUIDELINES.
- 1.1.4. ALL FIRE ALARM WORK BEYOND THE MASTER BOX AND INSIDE OF THE BUILDING SHALL BE THE RESPONSIBILITY OF THE CONTRACTOR. ABSOLUTELY NO CONNECTIONS SHALL BE MADE TO THE MUNICIPAL FIRE ALARM CIRCUITS, EXCEPT BY THE LOCAL FIRE DEPARTMENT.
- 1.1.5. ALL FIRE ALARM DEVICES AND EQUIPMENT USED SHALL BE APPROVED FOR USE BY THE LOCAL FIRE DEPARTMENT.
- 1.1.6. THE CONTRACTOR SHALL FURNISH, INSTALL AND PLACE IN OPERATION AN ADDRESSABLE, SUPERVISED, GENERAL EVACUATION FIRE ALARM SYSTEM FOR THE COMPLETE BUILDING, UNLESS NOTED OTHERWISE.
- 1.1.7. THE COMPLETED FIRE ALARM SYSTEM SHALL MEET ALL LOCAL AND STATE CODES.
- 1.1.8. EQUIPMENT AND COMPLETED INSTALLATION SHALL BE U.L. LISTED OR APPROVED AND SHALL MEET APPROVAL OF THE LOCAL FIRE DEPARTMENT, STATE FIRE MARSHALL, AUTHORITIES HAVING JURISDICTION AND SHALL BE IN ACCORDANCE WITH THE APPLICABLE SECTIONS OF THE LATEST EDITION OF THE NATIONAL ELECTRICAL CODE, ADA CODE, NFPA 70, 72 AND 72E.
- 1.1.9. THE COMPLETE SYSTEM SHALL CONTAIN SMOKE DETECTION, AUDIOVISUAL ALARMS, PULL STATIONS, DUCT SMOKE DETECTORS, WATER AND TAMPER FLOW SWITCHES AND OTHER DEVICES INCLUDING POWER SUPPLIES AS REQUIRED FOR A COMPLETE SYSTEM.
- 1.1.10. THE OWNER SHALL BE RESPONSIBLE FOR TELEPHONE CONNECTION COMPANY CHARGES AND/OR SECOND PARTY MONITORING COMPANY FEES.
- 1.1.11. DEVICE ADDRESSES SHALL BE LEGIBLE WITHOUT REMOVAL OF THE DETECTOR. THE DETECTOR ADDRESS SHALL BE CONCEALED WHEN PLACED INTO THE BASE.
- 1.1.12. THE CONTRACTOR SHALL BE RESPONSIBLE FOR INSTALLATION OF DEDICATED TELEPHONE HOMERUN WIRING.
- 1.2. MAIN FIRE ALARM CONTROL PANEL (FACP)
- 1.2.1. ELECTRICAL CONTRACTOR SHALL PROVIDE AN ADDRESSABLE MAIN FIRE ALARM CONTROL PANEL. CONTROL PANEL SHALL CONTAIN THE REQUIRED NUMBER OF SUPERVISED INITIATING AND INDICATING CIRCUITS FOR THE BUILDING.
- 1.2.2. THE SYSTEMS SHALL HAVE BUILT-IN 24 VOLTS DC POWER SUPPLY AND INTEGRAL BATTERY CHARGER.
- 1.2.3. TWENTY-FOUR (24) HOURS OF BATTERY STANDBY POWER SHALL BE PROVIDED WITH FIVE (5) MINUTES OF ALARM SIGNALING AT THE END OF THIS TWENTY-FOUR (24) HOUR PERIOD, AS REQUIRED BY NFPA 72. ALSO PROVIDE 20% ADDITIONAL BATTERY CAPACITY.
- 1.2.4. LIGHTNING PROTECTION SHALL BE INCLUDED WITHIN THE FACP TO PROTECT THE PANEL FROM LIGHTNING SURGES ON THE 120 VOLT SUPPLY CIRCUIT.
- 1.2.5. THE FACP SHALL TRANSMIT AN ALARM SIGNAL TO THE LOCAL FIRE DEPARTMENT VIA A METHOD COORDINATED WITH THE LOCAL FIRE DEPARTMENT. IN ACCORDANCE WITH NFPA 72, COMMON METHODS ARE INDICATED BELOW:
- 1.2.5.1. THE FACP SHALL HAVE A DIGITAL ALARM COMMUNICATOR TRANSMITTER (DACT) TO ENABLE AUTOMATIC TRANSMISSION OF THE ALARM SIGNAL TO THE FIRE DEPARTMENT.
- 1.2.5.2. DUCT CELLULAR COMMUNICATOR
- 1.2.5.3. AES MESH NETWORK COMMUNICATOR PER LOCAL FIRE DEPARTMENT REQUIREMENTS
- 1.2.5.4. STANDARD GAMBELL CITY CONNECTED MASTER BOX
- 1.3. SEQUENCE OF OPERATIONS: REFER TO SEQUENCE OF OPERATIONS INPUT/OUTPUT MATRIX
- 1.4. REMOTE DEVICES
- 1.4.1. SMOKE DETECTORS SHALL BE ADDRESSABLE PHOTOELECTRIC TYPE (UNLESS NOTED OTHERWISE) AND SHALL OPERATE AT 24 VOLTS DC. PROVIDE DOUBLE CONTACT BASE FOR SMOKE DETECTORS USED FOR ELEVATOR RECALL AND TO OPERATE REMOTE LEDS.
- 1.4.2. HEAT DETECTORS SHALL BE ADDRESSABLE (UNLESS NOTED OTHERWISE), LOW PROFILE, MATTE WHITE, 200 DEGREE FIXED TEMPERATURE OR 135 DEGREE RATE OF RISE TYPE.
- 1.4.3. SMOKE/CARBON MONOXIDE DETECTOR (SYSTEM)
- 1.4.3.0.1. THE DETECTOR SHALL INCORPORATE A PHOTOELECTRIC SMOKE SENSOR WITH NOMINAL SENSITIVITY OF 2.05%FT
- 1.4.3.0.2. THE CARBON MONOXIDE SENSOR SHALL BE A FUEL CELL DESIGN AND SHALL MEET SENSITIVITY REQUIREMENTS OF UNDERWRITERS LABORATORIES UL 2034.
- 1.4.3.0.3. THE DETECTOR SHALL INCLUDE A TEST BUTTON SWITCH THAT WILL ELECTRONICALLY SIMULATE THE PRESENCE OF SMOKE AND CARBON MONOXIDE AND CAUSE THE UNIT TO GO INTO BOTH MODES OF ALARM.
- 1.4.3.0.4. THE COMBINATION DETECTOR SHALL HAVE TWO SEPARATE AND DISTINCT METHODS OF WARNING AND SHALL WORK IN CONJUNCTION WITH A SOUNDER BASE.
- 1.4.3.0.5. THE CARBON MONOXIDE SENSOR WILL NOT ALARM TO LEVELS OF CO BELOW 30 PPM AND WILL ALARM IN THE FOLLOWING TIME RANGE WHEN EXPOSED TO THE CORRESPONDING LEVELS OF CO:
- 1.4.3.0.5.1. 70 PPM CO CONCENTRATION 60 - 240 MINUTES
- 1.4.3.0.5.2. 150 PPM CO CONCENTRATION 10 - 50 MINUTES
- 1.4.3.0.5.3. 400 PPM CO CONCENTRATION 4 - 15 MINUTES
- 1.4.4. SOUNDER BASE SHALL BE AN ADDRESSABLE, SYNCHRONIZABLE, INTELLIGENT SOUNDER BASE. LOW FREQUENCY SHALL BE PROVIDED IN RESIDENTIAL UNITS.
- 1.4.4.1. BASE SHALL ENABLE QUICK AND SECURE DETECTOR PLUG-IN.
- 1.4.4.2. UL LISTINGS: S911, S1115, FM APPROVED, MEA 22-95-E, 205-94 VOL 2, 257-05-E.
- 1.4.5. DUCT SMOKE DETECTORS SHALL BE ADDRESSABLE PHOTOELECTRIC TYPE. COMPLETE WITH REMOTE TEST STATIONS AND SAMPLING TUBES. REMOTES TEST STATIONS SHALL HAVE RED LED INDICATING LIGHT AND STAINLESS STEEL FACEPLATE. DUCT SMOKE DETECTORS SHALL SHUT OFF ASSOCIATED AIR HANDLING UNIT UPON ACTIVATION. DETECTORS SHALL BE PURCHASED BY THE ELECTRICAL CONTRACTOR AND INSTALLED BY THE MECHANICAL CONTRACTOR.
- 1.4.5.1. PROVIDE AND INSTALL ALL NECESSARY WIRE, CONDUIT, RELAYS AND CONNECTIONS FROM ALL DUCT SMOKE DETECTORS TO THEIR ASSOCIATED RETURN AND SUPPLY FAN CONTROLLERS. UPON ACTIVATION OF A DUCT SMOKE DETECTOR, IN ADDITION TO SOUNDING THE GENERAL ALARM, THE DUCT SMOKE DETECTOR SHALL IMMEDIATELY SHUT DOWN THE ASSOCIATED FAN.
- 1.4.6. PULL STATIONS SHALL BE ADDRESSABLE (UNLESS NOTED OTHERWISE), SEMI-FLUSH, DOUBLE ACTION, AUDIBLE DEVICES INSTALLED IN SLEEPING AREAS SHALL BE RATED 520HZ AND HAVE A SOUND LEVEL OF AT LEAST 15dB ABOVE THE AVERAGE AMBIENT SOUND LEVEL OR 5dB ABOVE THE MAXIMUM SOUND LEVEL HAVING A DURATION OF AT LEAST 60 SECONDS OR A SOUND LEVEL OF AT LEAST 75dB, WHICHEVER IS GREATER, MEASURED AT THE PULL LEVEL IN THE AREA REQUIRED TO BE SERVED BY THE SYSTEM USING THE A-WEIGHTED SCALE (dB).
- 1.4.8. HORNSTROBE DEVICES SHALL BE PROVIDED IN A COMMON ENCLOSURE. THE VISIBLE STROBE SHALL MEET ALL THE REQUIREMENTS OF THE ADA.
- 1.4.9. BOOSTER PANEL - BOOSTER PANEL SHALL PROVIDE REMOTE POWER WITH BUILT IN BATTERY CHARGER CONNECTED TO ANY 12 OR 24 VOLT FIRE ALARM CONTROL PANEL. PRIMARY APPLICATIONS INCLUDE NAC SYNCHRONIZATION OR AUXILIARY POWER TO SUPPORT 24 VOLT ACCESSORIES.
- 1.4.10. MONITOR MODULES SHALL BE PROVIDED TO MONITOR AND CONNECT CONVENTIONAL INITIATING DEVICES ONTO THE ADDRESSABLE LOOP.
- 1.4.11. EXTERIOR ALARM BELLS SHALL BE 120 VOLTS AC, 6 INCH DIAMETER RED, SUITABLE FOR WET LOCATION. BELLS ARE PROVIDED BY FPC, 120 VOLT WIRED BY ELECTRICAL CONTRACTOR.
- 1.4.12. REMOTE ALARM INDICATORS SHALL BE LED INDICATORS ON SINGLE PLASTIC PLATES.
- 1.4.13. CONTROL & RELAY MODULES SHALL BE USED TO CONTROL CONVENTIONAL DEVICES (NOTIFICATION CIRCUITS, AHUS, DOOR HOLDERS, ETC), OVER THE ADDRESSABLE LOOP. MODULES SHALL PROVIDE A SUPERVISED OUTPUT RATED FOR 2 AMP AT 24 VOLTS DC AND 0.5 AMP AT 120 VOLT.
- 1.4.14. DOOR HOLDERS SHALL BE RATED 24 VOLTS AC/DC/MAGNETIC FLUSH, SEMI FLUSH, SURFACE AND/OR FLOOR MOUNTED AS INDICATED ON THE DRAWINGS. MINIMUM HOLDING FORCE SHALL BE 25 POUNDS. BODY SHALL BE DIECAST WITH POLISHED CHROME FINISH. PROVIDE SWIVEL CATCH WITH REQUIRED ROD LENGTHS AND BACK PLATES FOR SECURE MOUNTING TO DOOR.
- 1.4.15. PROVIDE A SUPERVISED EXTERIOR ROTATING BEACON 24 VOLTS DC WITH A RED LENS. BEACON SHALL MEASURE OVER FIVE (5) INCHES IN HEIGHT FOR VISIBILITY. LOCATION SHALL BE DETERMINED BY THE LOCAL FIRE DEPARTMENT.
- 1.4.16. KNOX BOX SHALL BE RECESSED MOUNTED NEAR THE FRONT ENTRY. BOX SHALL BE ALUMINUM WITH

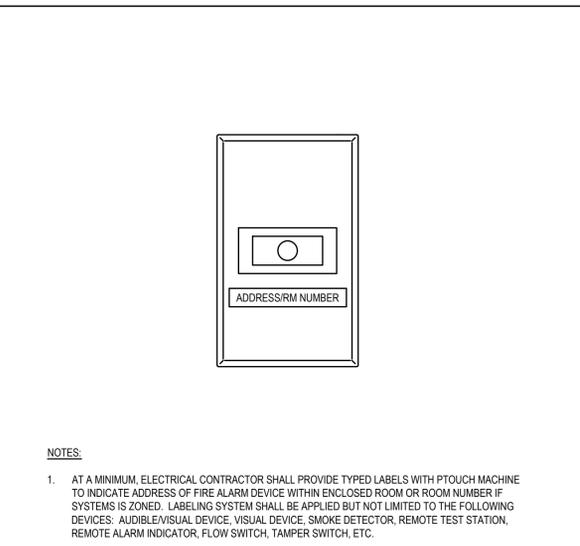
- TAMPER SWITCH. ELECTRICAL CONTRACTOR SHALL PURCHASE THROUGH LOCAL FIRE DEPARTMENT.
- 1.4.17. STROBE ONLY DEVICES SHALL BE PROVIDED AND SHALL MEET ALL REQUIREMENTS OF NFPA AND ADA CODES.
- 1.4.17.1. STROBE ONLY DEVICES FOR CARBON MONOXIDE NOTIFICATION SHALL BE PROVIDED WITH AMBER LEDS.
- 1.4.18. PROVIDE LED TYPE REMOTE ANNUNCIATOR, POSITIONED AS SHOWN ON THE DRAWINGS. THE ANNUNCIATOR SHALL BE FLUSH MOUNTED TYPE AND SHALL BE SUPERVISED FOR SYSTEM TROUBLE. ALL ALARM LEDS AND WIRING SHALL BE SUPERVISED. THE NUMBER OF ZONES SHALL BE AS SHOWN ON THE DRAWINGS.
- 1.4.19. 120 VOLTS AC DETECTORS
- 1.4.19.1. COMBINATION SMOKE/CARBON MONOXIDE DETECTORS SHALL BE 120 VOLTS AC WITH A 9 VOLT BATTERY BACKUP. THE OPERATING TEMPERATURE SHALL BE BETWEEN 40 DEGREES FAHRENHEIT AND 100 DEGREES FAHRENHEIT AND THE HUMIDITY OPERATING RANGE SHALL BE 5%-85% RELATIVE HUMIDITY.
- 1.4.19.1.1. THE DETECTOR SHALL INCORPORATE A PHOTOELECTRIC SMOKE SENSOR WITH NOMINAL SENSITIVITY OF 2.05%FT
- 1.4.19.1.2. THE CARBON MONOXIDE SENSOR SHALL BE A FUEL CELL DESIGN AND SHALL MEET SENSITIVITY REQUIREMENTS OF UNDERWRITERS LABORATORIES UL 2034.
- 1.4.19.1.3. THE DETECTOR SHALL INCLUDE A TEST BUTTON SWITCH THAT WILL ELECTRONICALLY SIMULATE THE PRESENCE OF SMOKE AND CARBON MONOXIDE AND CAUSE THE UNIT TO GO INTO BOTH MODES OF ALARM.
- 1.4.19.1.4. THE COMBINATION DETECTOR SHALL HAVE TWO METHODS OF WARNING:
- 1.4.19.1.4.1. A PIEZOELECTRIC HORN THAT IS RATED AT NO LESS THAN 80dB AT 10FT
- 1.4.19.1.4.1.1. IN A REPETITIVE MANNER, 4 BEEPS, PAUSE, 4 BEEPS, PAUSE AND VOICE MESSAGE OF "WARNING CARBON MONOXIDE"
- 1.4.19.1.4.2. A VOICE WARNING THAT IDENTIFIES DANCER
- 1.4.19.1.4.2.1. IN A REPETITIVE MANNER, 3 BEEPS, PAUSE, 3 BEEPS, PAUSE AND A VOICE MESSAGE OF "FIRE! FIRE!"
- 1.4.19.1.5. THE DETECTOR SHALL INCORPORATE TWO (2) LED. A GREEN LED WHEN AC POWER IS PRESENT, AND A RED LED THAT WILL FLASH IN UNISON WITH THE SOUNDER PATTERN.
- 1.4.19.1.6. THE CARBON MONOXIDE SENSOR WILL NOT ALARM TO LEVELS OF CO BELOW 30 PPM AND WILL ALARM IN THE FOLLOWING TIME RANGE WHEN EXPOSED TO THE CORRESPONDING LEVELS OF CO:
- 1.4.19.1.6.1. 70 PPM CO CONCENTRATION 60 - 240 MINUTES
- 1.4.19.1.6.2. 150 PPM CO CONCENTRATION 10 - 50 MINUTES
- 1.4.19.1.6.3. 400 PPM CO CONCENTRATION 4 - 15 MINUTES
- 1.4.19.2. SMOKE DETECTORS SHALL BE KIDDE MODEL # KN-COPE-1, OR APPROVED EQUAL AND SHALL MEET THE REQUIREMENTS OF UL 2034, UL 217, NFPA 72, NFPA 101, FHA, AND HUD.
- 1.5. WIRING
- 1.5.1. ALL FIRE ALARM WIRE AND CABLE SHALL BE U.L. LISTED FOR FIRE ALARM USE.
- 1.5.2. THE FIRE ALARM SYSTEM SHALL BE A COMPLETE AUTOMATIC AND MANUAL, CLOSED CIRCUIT, CLASS A, 4 WIRE, CONNECTED AND LEFT IN FIRST-CLASS OPERATING CONDITION.
- 1.5.3. FOR FIRE ALARM WIRING IN ENCLOSED SPACES, PROVIDE PLENUM RATED, TYPE FPLP, WITH RED OUTER JACKET. INSTALLATION SHALL MEET REQUIREMENTS OF NEC ARTICLE 770 AND 725. CONDUCTORS SHALL BE SOLID COPPER #14 MINIMUM, WITH LOW SMOKE, LOW FLAME TYPE JACKET.
- 1.5.4. FOR FIRE ALARM WIRING IN EXPOSED AREAS, PROVIDE TYPE THHN INSULATION. WIRE SIZE SHALL BE #14 AWG MINIMUM. ALL SURFACE MOUNTED WIRING RELATED TO THE FIRE ALARM SYSTEM SHALL BE INSTALLED IN TYPE EMT/RGS CONDUIT.
- 1.5.5. ALL JOINTS AND CONNECTIONS SHALL BE IN JUNCTION BOXES. ALL CONNECTIONS NOT ON APPROVED TERMINAL STRIPS SHALL BE SOLDERED AND TAPED. ALL JUNCTION BOXES SHALL BE PAINTED RED.
- 1.6. TWO-HOUR RESISTIVE CABLES
- 1.6.1. CABLES SHALL MEET IBC 2015, NFPA 70, NFPA 72, UL CATEGORY FHT SYSTEM 40A.
- 1.6.2. CABLES SHALL BE EQUAL TO COMTRAN CABLE'S VITALINK FHT SYSTEM 40A TWO-HOUR FIRE RATED CIRCUIT INTEGRITY (C/IC) CABLE.
- 1.7. MANUFACTURERS
- 1.7.1. COMPLETE SYSTEMS SHALL BE MANUFACTURED BY AUTOCALL, FCI (FIRE CONTROL INSTRUMENTS), EDWARDS, NOTIFIER OR EQUAL.
- 1.7.2. FOR EXISTING SYSTEMS BEING REUSED, DEVICES SHALL BE COMPATIBLE WITH EXISTING MANUFACTURER.
- 1.8. TESTING
- 1.8.1. THE CONTRACTOR SHALL BE RESPONSIBLE FOR ALL FIRE ALARM TESTING AND CERTIFICATION CHARGES.
- 1.8.2. CERTIFY THE INSTALLATION WITH ACCEPTANCE TESTING. THE ELECTRICAL CONTRACTOR SHALL CONDUCT THE ACCEPTANCE TEST WITH THE LOCAL FIRE DEPARTMENT IN ACCORDANCE WITH NFPA 72. TEST INCLUDE BUT MAY NOT BE LIMITED TO THE FOLLOWING: MEGGER (INSULATION) TESTING, LOOP CONTINUITY, GROUND, SHORT, OPEN CIRCUIT. A WRITTEN REPORT SHALL BE SUBMITTED DETAILING THE RESULTS OF THE PRELIMINARY TESTS SHALL ACCOMPANY THE REQUEST FOR FINAL ACCEPTANCE TEST.

GENERAL NOTE

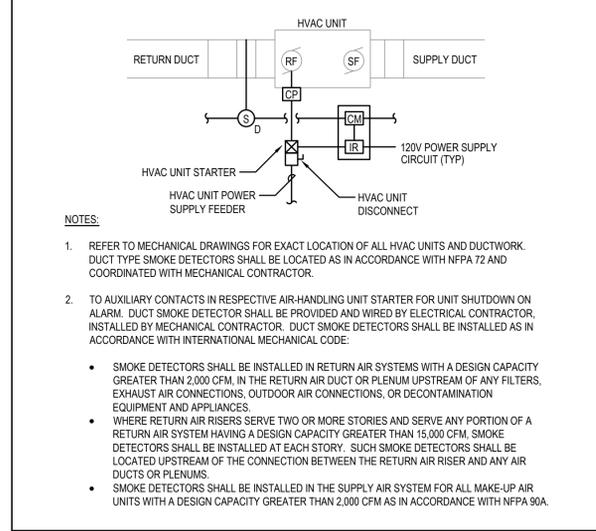
ENGINEERS' DRAWINGS ARE PROVIDED FOR REFERENCE ONLY. UPDATED DRAWINGS WILL BE PROVIDED BEFORE PERMITTING AND CONSTRUCTION.



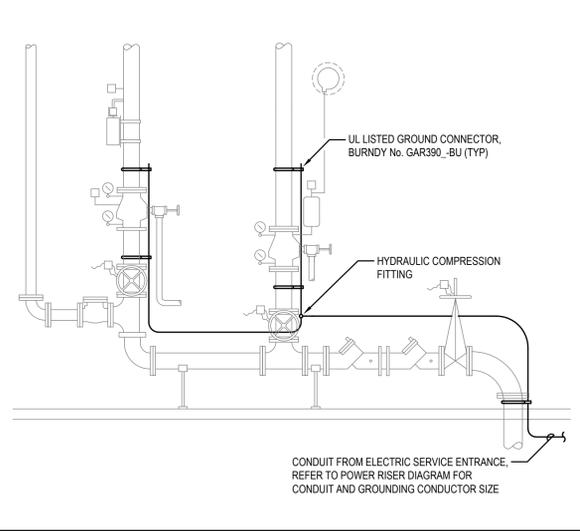
1) DEVICE MOUNTING HEIGHT DETAIL N.T.S.



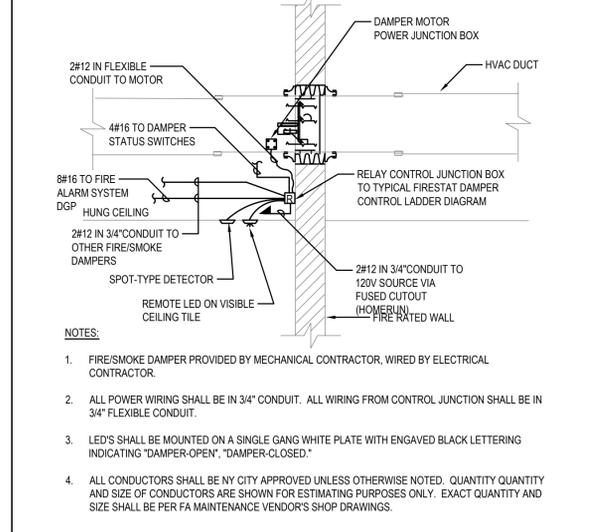
2) TYPICAL FIRE ALARM DEVICE LABELING DETAIL N.T.S.



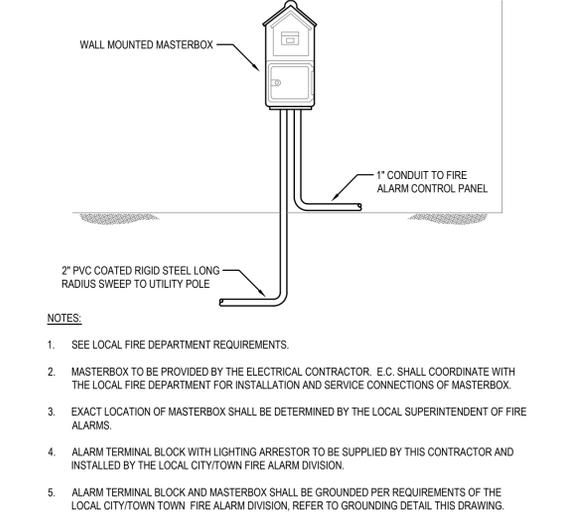
3) TYPICAL DUCT SMOKE DETECTOR MOUNTING DETAIL N.T.S.



4) FIRE PROTECTION SERVICE GROUNDING DETAIL N.T.S.



5) TYPICAL FIRE/SMOKE DAMPER INTERCONNECT DETAIL N.T.S.



6) FIRE ALARM MASTERBOX DETAIL N.T.S.

EASTERN ACROBATICS

28 Eliot Street
Natick, MA 01760

OWNER

THE ENTRUST INC.
FBO AUSTIN S. LIN

28 ELIOT ST.
NATICK, MA 01760

CLIENT

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HVAC "Eastern Planning" Fee-Exemption

STAMP

PHASE 2 PRELIMINARY PRICING DRAWINGS
12 JULY 2024

PHASE
2021-003 PROJECT NUMBER

FIRE ALARM DETAILS & SPECIFICATIONS

FA002

GENERAL NOTE

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ARCHITECT

CONDITIONS SHOWN OUTSIDE OF THE DASHED LINE DO NOT NECESSARILY REFLECT EXISTING CONDITIONS AND ARE NOT PART OF THIS SCOPE OF WORK. VERIFY EXISTING CONDITIONS IN THE FIELD.

BEDROOMS 2 AND 3, CLOSETS, AND HALLWAY HAVE BEEN DELETED. SEE A100 AND A110

PHASE 2 PRELIMINARY PRICING DRAWINGS
12 JULY 2024

PHASE

2021-003 PROJECT NUMBER

FIRE ALARM BASEMENT PLANS

FA101

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