

REROOFING AND RELATED WORK: FOR:

AREA F WILLIAM H. HALL HIGH SCHOOL

975 NORTH MAIN STREET

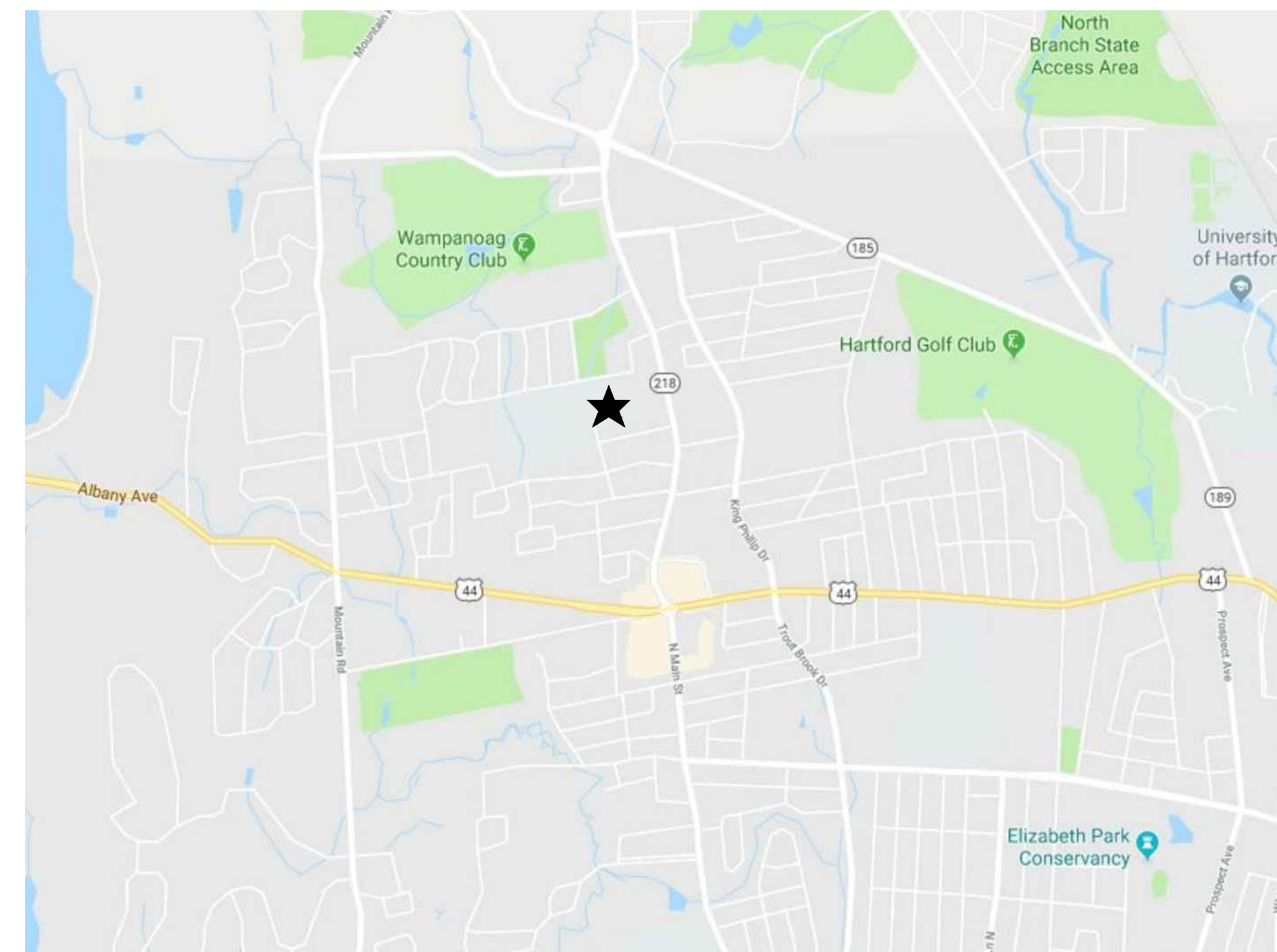
WEST HARTFORD, CONNECTICUT

APRIL 3, 2020

LIST OF DRAWINGS:

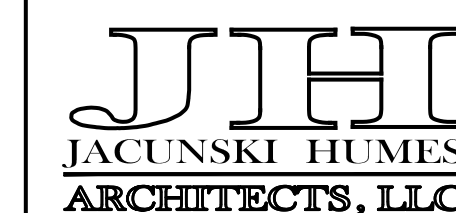
- COVER SHEET
- ABATEMENT DRAWINGS**
- H-1 ROOF F ABATEMENT PLAN
- STRUCTURAL DRAWINGS**
- S-1 NEW WORK FRAMING PLAN AND DETAILS
- ARCHITECTURAL DRAWINGS**
- R-1 PARTIAL DEMOLITION AND NEW WORK ROOF PLANS
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- M-2 MECHANICAL PARTIAL PLANS
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- ELECTRICAL DRAWINGS**
- E-0 ELECTRICAL LEGENDS NOTES AND SCHEDULES
- E-1 DEMOLITION AND NEW WORK ROOF ELECTRICAL PART PLANS
- E-2 ELECTRICAL LIGHTING PART PLANS
- E-4 ELECTRICAL SPECIFICATIONS

LOCATION MAP:



★ PROJECT LOCATION

ARCHITECT:



JACUNSKI HUMES ARCHITECTS, LLC
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CONSULTANTS:

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RZ Design Associates, Inc.
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Rocky Hill, CT 06067
Tel: 860-436-4336
Fax: 860-436-4450

Structural Engineer



Macchi Engineers, LLC
41 Gillett Street
Hartford, CT 06105
Tel: 860-549-6190
Fax: 860-524-5088

Industrial Hygienist



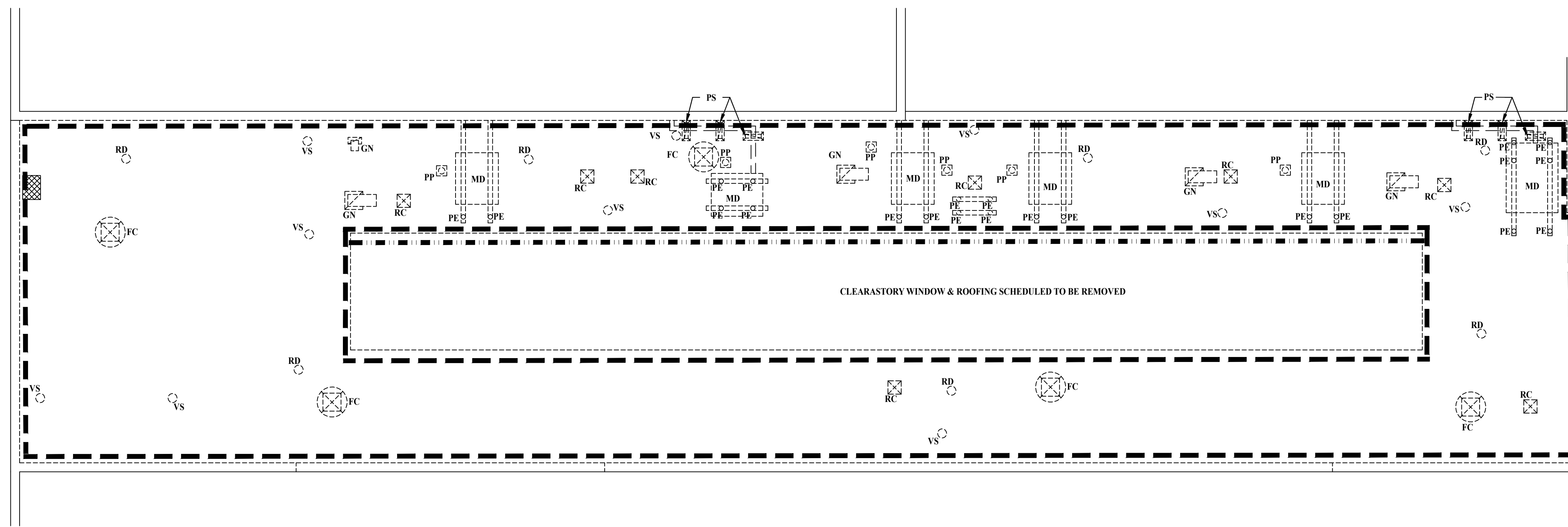
EnviroMed Services, Inc.
470 Murdoch Avenue
Meriden, CT 06450
Tel: 203-238-4846
Fax: 203-238-4243

GENERAL NOTES

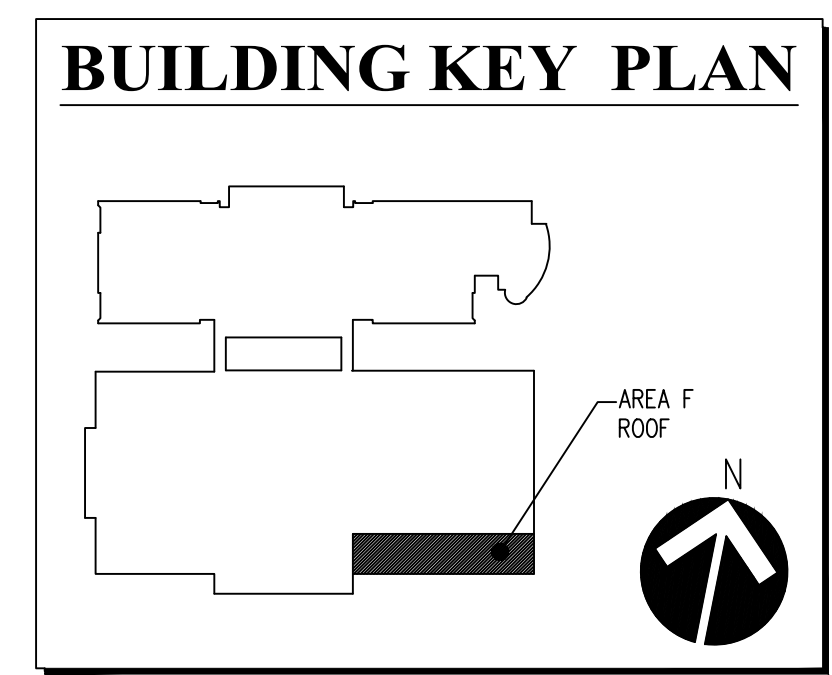
1. CONDUCT ASBESTOS ROOFING ABATEMENT ONLY WHEN NO CHILDREN UNDER AGE 18 ARE IN THE SCHOOL BUILDING OR ON THE SCHOOL GROUNDS.

ABATEMENT PLAN LEGEND

- FC FAN ON CURB – REMOVE AND DISPOSE OF ASBESTOS-CONTAINING FLASHING ON CURB AND 18" OUT INTO MAIN FIELD ROOFING.
- GN GOOSENECK DUCT RISER – REMOVE AND DISPOSE OF ASBESTOS-CONTAINING FLASHING ON CURB AND 18" OUT INTO MAIN FIELD ROOFING.
- MD MECHANICAL UNIT ON DUNNAGE – NO ASBESTOS ABATEMENT AT DUNNAGE.
- PP PITCH POCKET – REMOVE AND DISPOSE OF PITCH POCKET WITH ASBESTOS-CONTAINING ROOFING CEMENT.
- PE PIPE PENETRATION (DUNNAGE) – REMOVE AND DISPOSE OF ASBESTOS-CONTAINING ROOFING CEMENT ON PIPE PENETRATION.
- PS PIPE SUPPORT – PIPE SUPPORT WITH ASBESTOS-CONTAINING ROOFING CEMENT. REMOVE SUPPORT AND DISPOSE AS ASBESTOS WASTE.
- RC ROOF CURB WITH COVER – REMOVE AND DISPOSE OF ASBESTOS-CONTAINING FLASHING ON CURB AND 18" OUT INTO MAIN FIELD ROOFING.
- RD ROOF DRAIN – REMOVE AND DISPOSE OF ASBESTOS-CONTAINING FLASHING AND ROOFING CEMENT ON ROOF DRAIN AND 18" OUT INTO THE MAIN FIELD ROOFING.
- VS VENT STACK – NO ASBESTOS ABATEMENT AT VENT STACK.
- REMOVE AND DISPOSE OF ASBESTOS-CONTAINING FLASHING ON WALL OR CLEARASTORY AND 18" OUT INTO MAIN FIELD ROOFING.
- REMOVE AND DISPOSE OF 2'X120' SECTION OF ASBESTOS-CONTAINING CEMENT PLASTER SOFFIT IN CLEARASTORY STRUCTURE. REMOVE PLASTER USING A NEGATIVE PRESSURE ENCLOSURE IN COMPLIANCE WITH SECTION 02 82 16.



1 ABATEMENT PARTIAL ROOF PLAN - AREA F
SCALE: 1/8" = 1'-0"



SUBMISSIONS & REVISIONS		
MARK	DATE	DESCRIPTION
	4/3/20	BIDDING RELEASE

REROOFING AND RELATED WORK
AREA F
WILLIAM H. HALL HIGH SCHOOL
 975 NORTH MAIN STREET, WEST HARTFORD, CONNECTICUT

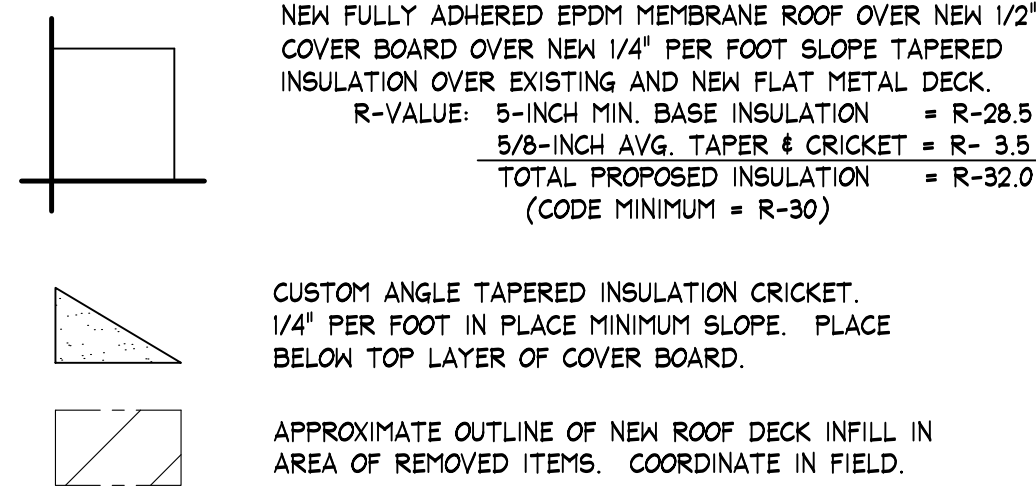
ROOF F ABATEMENT PLAN

PROJ. NO.	JH1905	DRAWING NO.	H-1
SCALE	As Noted		
DATE	4/3/20		

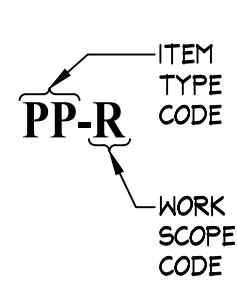
TYPICAL NOTES

1. VERIFY IN THE FIELD EXACT QUANTITY OF PENETRATIONS, EQUIPMENT CURBS, PLUMBING VENTS, AND ELECTRICAL CONDUITS/PIPING, PENETRATIONS ETC..
2. SEE NOT KEYED TYPICAL DETAILS.
3. TRAFFIC PADS NOT SHOWN AROUND MECH. EQUIP. FOR CLARITY (SEE LEGEND FOR LOCATIONS).
4. AT ALL ABANDONED EQUIPMENT (ACTION INDICATOR 'D') REMOVE EXISTING MISCELLANEOUS STEEL FRAMING AT ROOF OPENING AS REQUIRED TO FACILITATE INSTALLATION OF NEW DECK. THIS INCLUDES EDGE ANGLES AND ALL FRAMING THAT MAY PROJECT ABOVE THE MAIN ROOF STEEL ELEVATION. ALL FRAMING MEMBERS BELOW THE ROOF DECK ARE TO REMAIN. CUT BACK AND REMOVE EXISTING DECKING PAST SECONDARY CHANNEL OR ANGLE SUPPORT FRAMING TO PRIMARY STEEL BEAM FRAMING MEMBERS. DECK PLACEMENT SHALL BE FROM MAIN BEAM TO MAIN BEAM.

ROOF TYPE LEGEND



ITEM TAG KEY



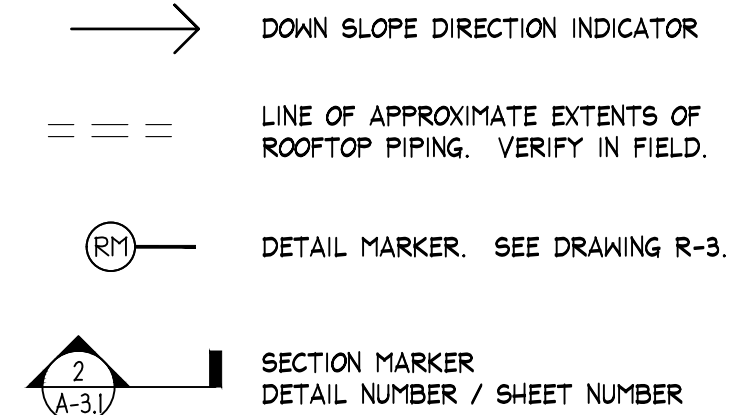
ITEM TYPE CODE LEGEND (DETAILS ON SHEET R-3)

- FC FAN ON CURB
- GN GOOSENECK DUCT RISER
- LD LADDER
- MD MECHANICAL UNIT ON DUNNAGE
- PC PARAPET COPING
- PE PIPE PENETRATION (DUNNAGE)
- PP PITCH POCKET
- PS PIPE SUPPORT
- RC ROOF CURB WITH COVER
- RD ROOF DRAIN
- RM REGLET IN MASONRY
- SO SCUPPER, OVERFLOW
- TP TRAFFIC PAD
- VS VENT STACK

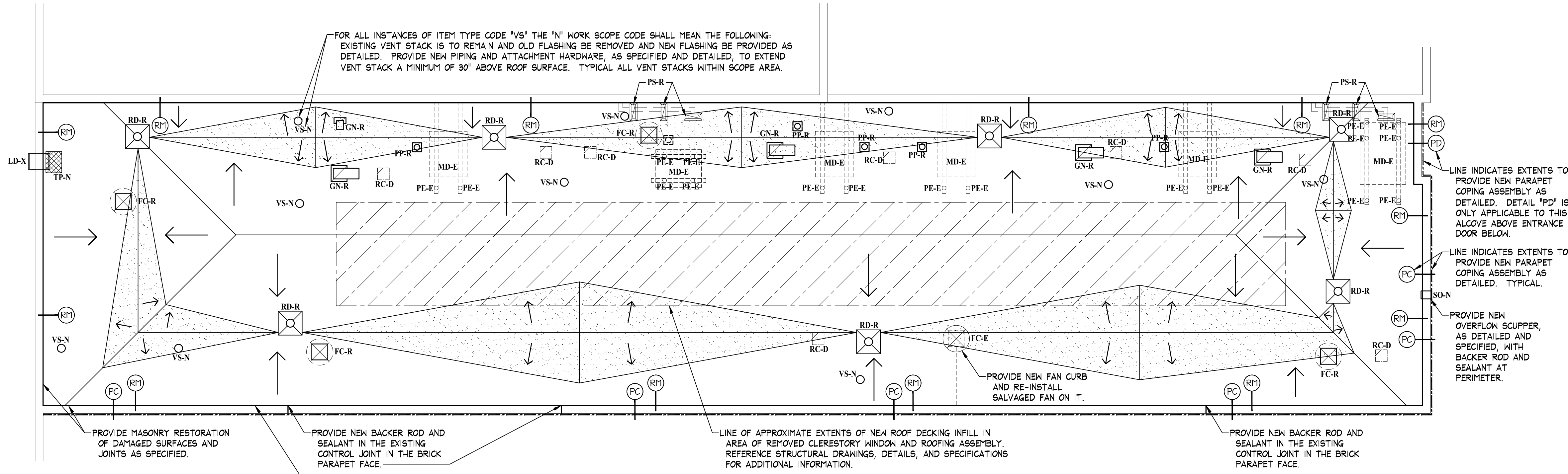
ROOF PLAN LEGEND

WORK SCOPE CODE LEGEND:

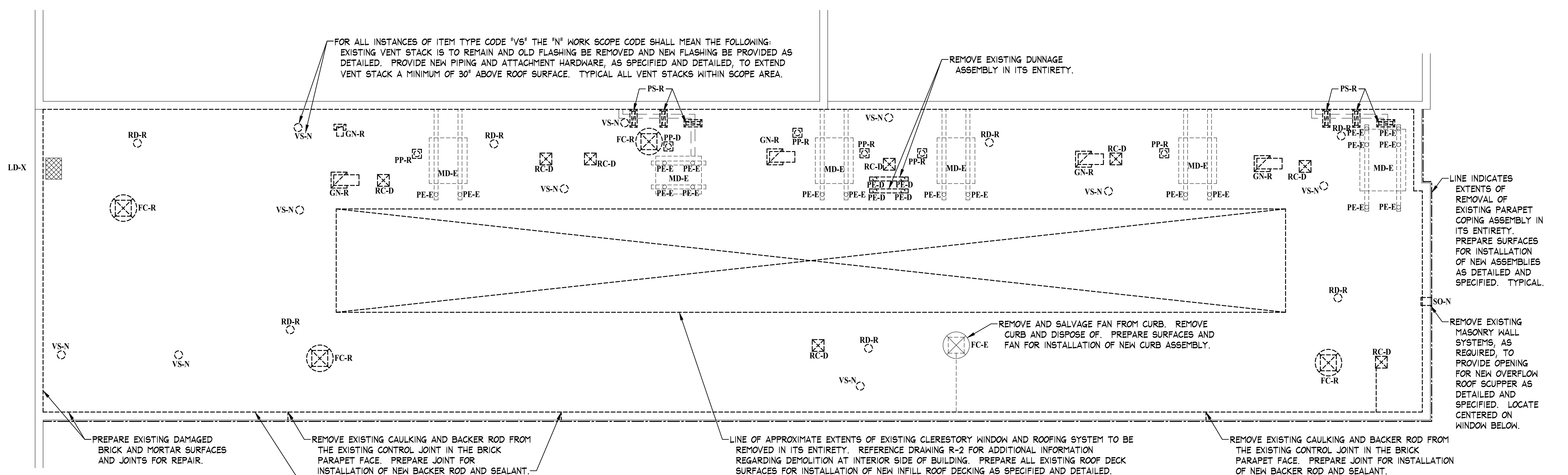
- D = DEMOLITION SCOPE**
PERFORM DISCONNECTION, REMOVAL, AND DISPOSAL OF ITEM. INFILL ROOF DECK AND PROVIDE NEW ROOFING FINISH INSTALLATION OVER AREA OF REMOVED ITEM AS DETAILED AND SPECIFIED.
- E = EXISTING TO REMAIN**
PROVIDE NEW FLASHING AND TERMINATION SYSTEMS TO EXISTING ITEM TO REMAIN AS DETAILED AND SPECIFIED.
- N = NEW WORK SCOPE**
REMOVE EXISTING ROOF DECK AND PROVIDE NEW STRUCTURAL DECK EDGE SUPPORT WHERE REQUIRED. PROVIDE NEW ITEM AND FLASHING AND TERMINATION SYSTEMS AS DETAILED AND SPECIFIED.
- R = REMOVE AND REPLACE SCOPE**
REMOVE EXISTING ITEM AND PROVIDE NEW SIMILAR OR AS INDICATED. PROVIDE NEW FLASHING AND TERMINATION SYSTEMS AS DETAILED AND SPECIFIED.
- X = EXCLUDED FROM SCOPE (EXISTING TO REMAIN)**
NO NEW WORK SCOPE ASSOCIATED. PROTECT EXISTING COMPONENTS DURING ALL ASPECTS OF CONSTRUCTION.



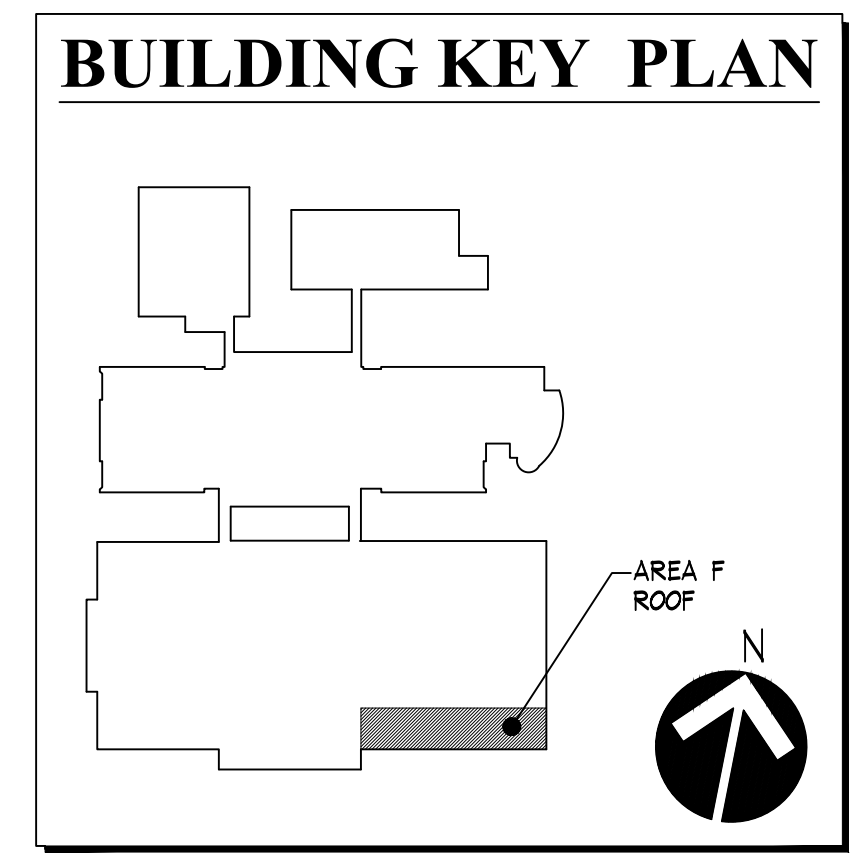
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2 NEW WORK PARTIAL ROOF PLAN - AREA F
SCALE: 1/8" = 1'-0"



1 DEMOLITION PARTIAL ROOF PLAN - AREA F
SCALE: 1/8" = 1'-0"



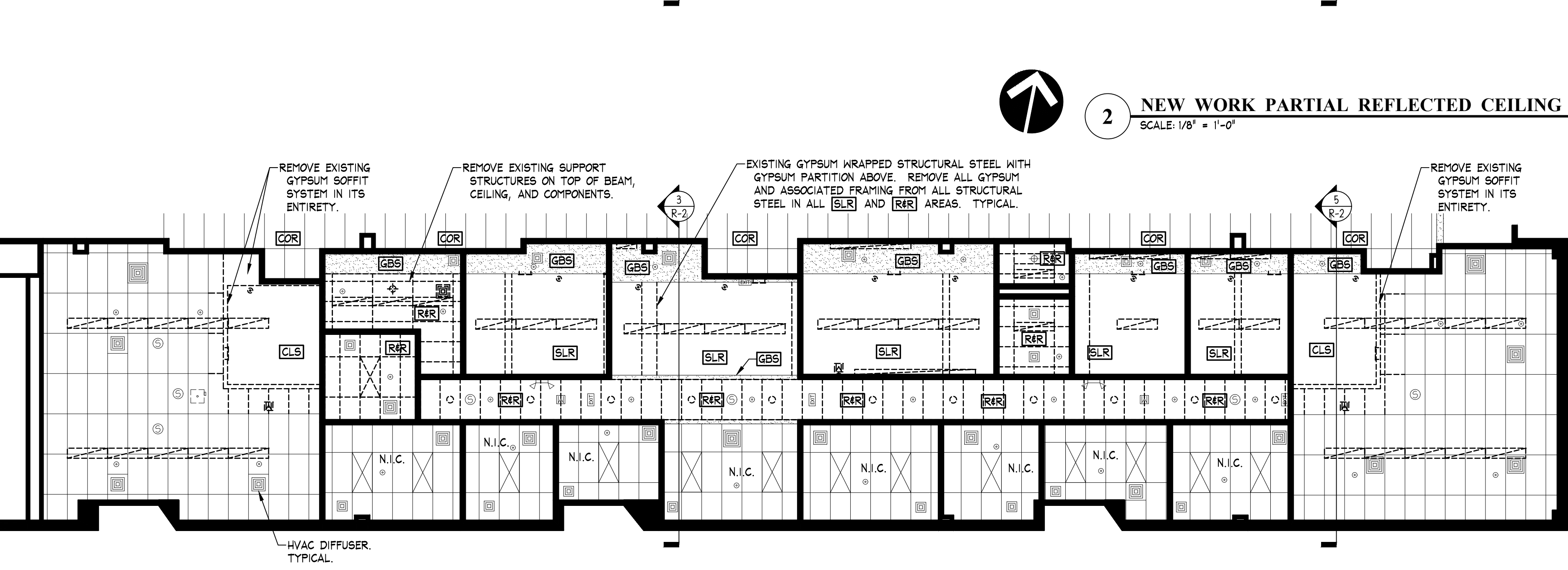
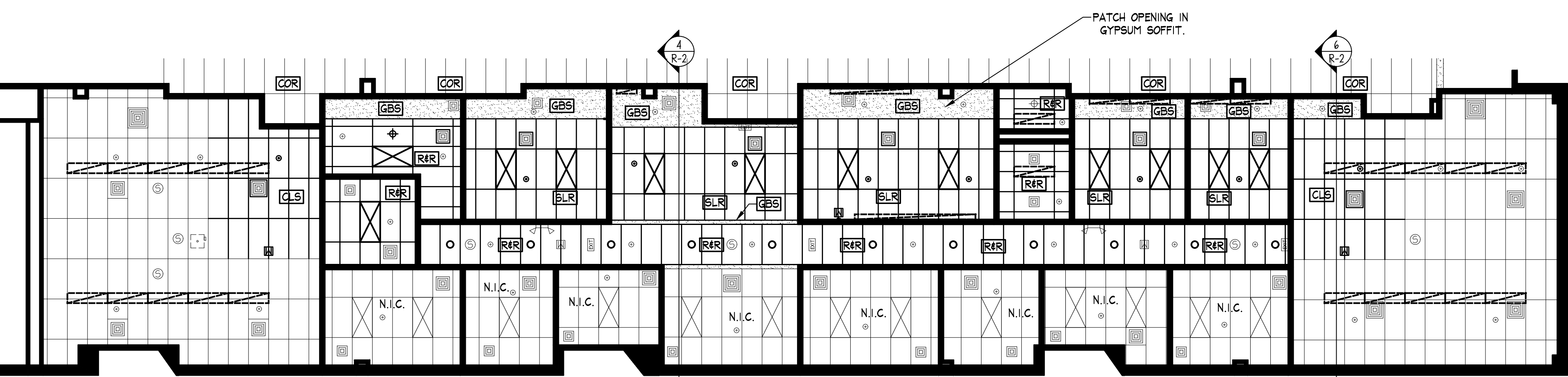
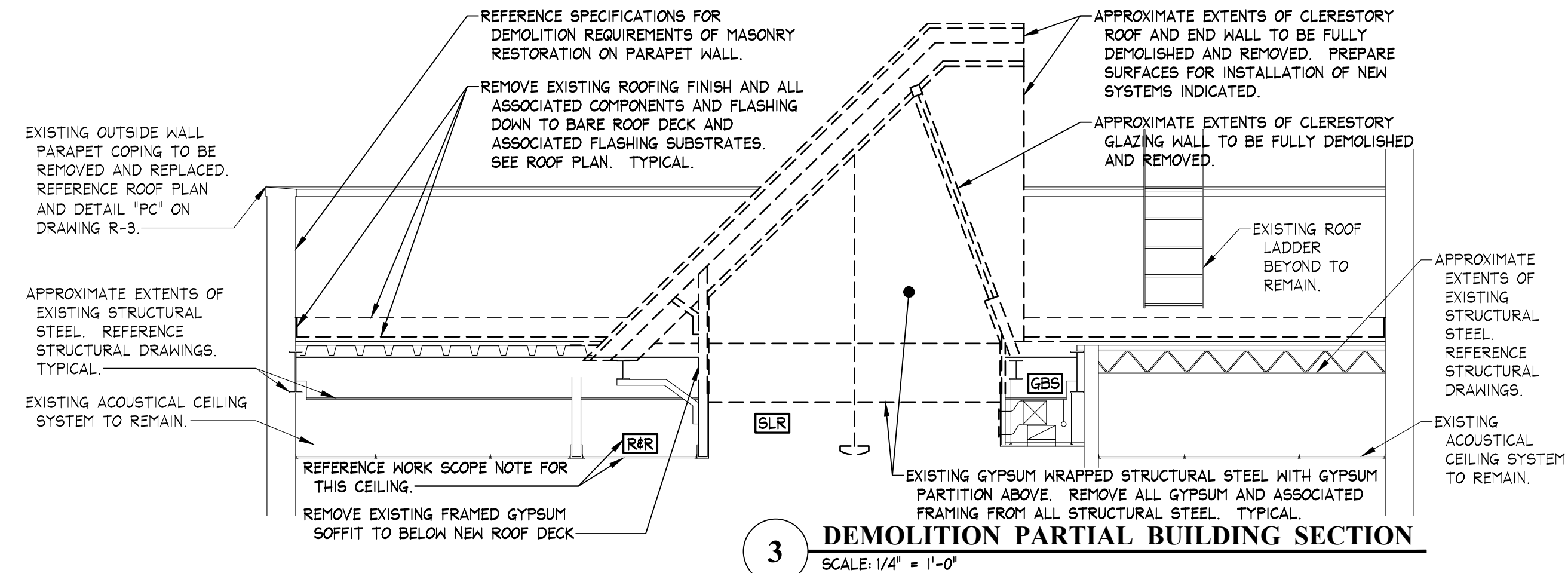
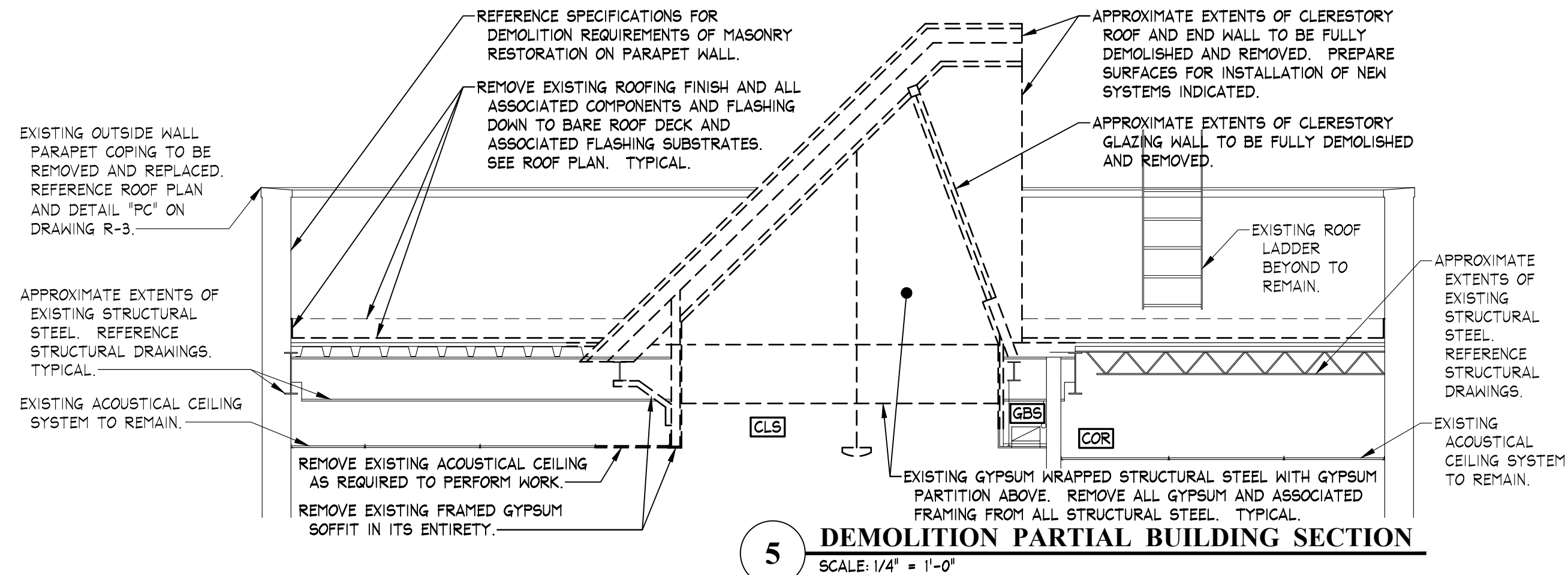
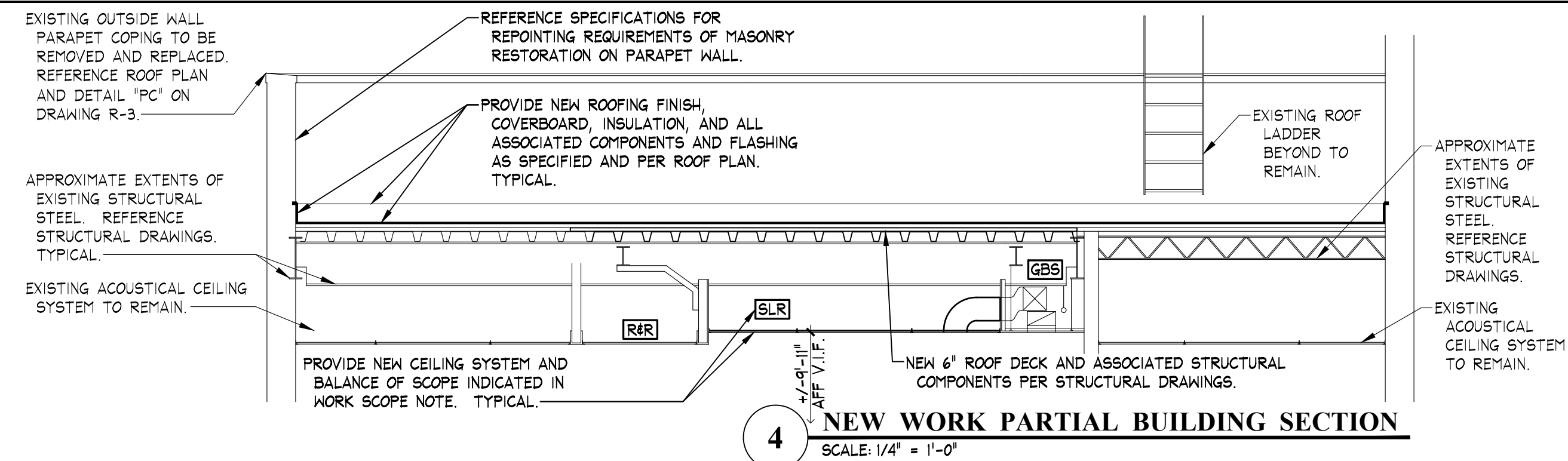
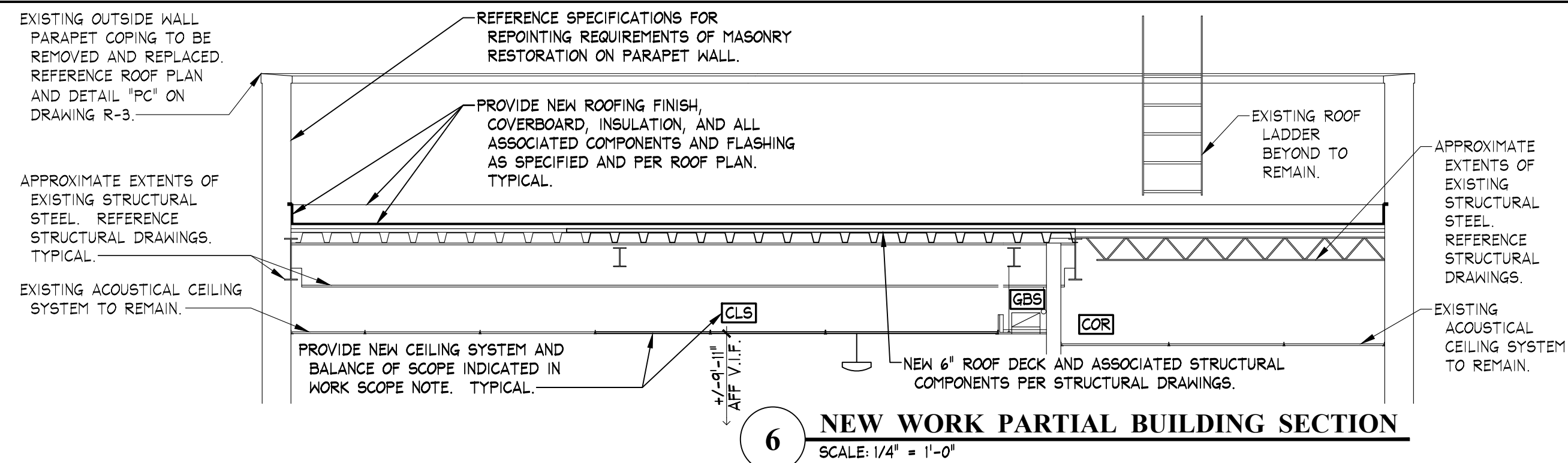
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PARTIAL
DEMOLITION
AND NEW
WORK ROOF
PLANS

PROJ. NO. JH1905
 SCALE As Noted
 DATE APRIL 3, 2020

DRAWING NO. **R-1**



SCOPE NOTE LEGEND

CLS CLASSROOM SKY LIGHT REMOVAL AREA:
DEMOLITION SCOPE: REMOVE ALL EXISTING GYPSUM FINISHES STARTING FROM 8' MIN. ABOVE NEW CEILING SYSTEM. REMOVE EXISTING GYPSUM SOFFIT, WITHIN FIELD OF ROOM, IN ITS ENTIRETY. REMOVE EXISTING MECHANICAL, ELECTRICAL, LIGHTING, AND FIRE PROTECTION SYSTEMS PER THEIR RESPECTIVE DRAWINGS AND SPECIFICATIONS, WITHIN AREA OF SKYLIGHT. REMOVE LIGHTING SYSTEMS PER ELECTRICAL DRAWINGS. REMOVE GYPSUM FRAMING SYSTEMS, AS REQUIRED, TO ACCOMMODATE SKYLIGHT REMOVAL AND NEW STRUCTURAL INSTALLATIONS. PROVIDE TEMPORARY SHORING OF ALL GYPSUM SOFFIT SYSTEMS AFFECTED AS PART OF THE DEMOLITION REQUIREMENTS. REMOVE EXISTING ACOUSTICAL CEILING TILES AND GRID FOR ONE BAY AWAY FROM GYPSUM SOFFIT TO BE REMOVED.
NEW WORK SCOPE: PROVIDE NEW 2x4 ACOUSTICAL CEILING TILE AND GRID TO ALIGN WITH ACOUSTICAL CEILING GRID. TIE IN NEW GRID TO EXISTING GRID SYSTEM. PROVIDE NEW LIGHT GAUGE METAL FRAMING COMPONENTS, AS REQUIRED, TO RESUPPORT DISTURBED EXISTING GYPSUM SOFFIT ASSEMBLIES. INSTALL NEW LIGHTING PER ELECTRICAL DRAWINGS. PROVIDE NEW MECHANICAL, ELECTRICAL, AND FIRE PROTECTION SYSTEMS AS PER THEIR RESPECTIVE DRAWINGS AND SPECIFICATIONS. PATCH AND PAINT ALL DISTURBED GYPSUM SURFACES REMAINING EXPOSED TO VIEW. COORDINATE PAINT COLOR SELECTIONS WITH OWNER.

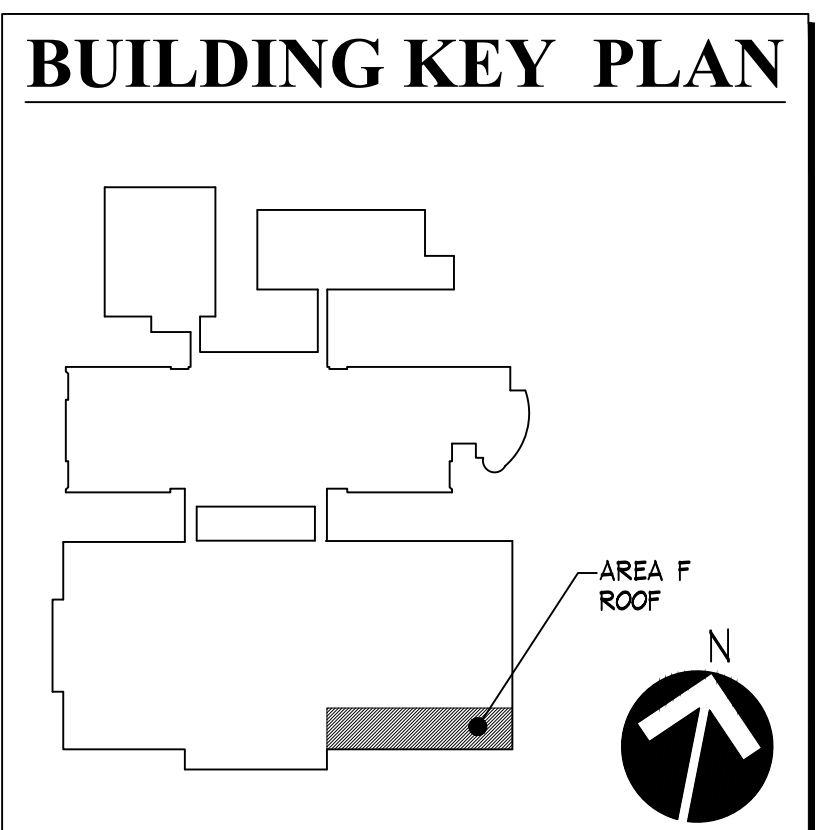
SLR SKY LIGHT REMOVAL AREA:
DEMOLITION SCOPE: REMOVE ALL EXISTING GYPSUM FINISHES STARTING FROM 8' MIN. ABOVE NEW CEILING SYSTEM. REMOVE ALL EXISTING PARTITIONS ON TOP OF EXISTING BEAMS AND BETWEEN ROOMS. REMOVE EXISTING MECHANICAL, ELECTRICAL, LIGHTING, AND FIRE PROTECTION SYSTEMS PER THEIR RESPECTIVE DRAWINGS AND SPECIFICATIONS. REMOVE LIGHTING SYSTEMS PER ELECTRICAL DRAWINGS. REMOVE GYPSUM FRAMING SYSTEMS, AS REQUIRED, TO ACCOMMODATE SKYLIGHT REMOVAL AND NEW STRUCTURAL INSTALLATIONS. PROVIDE TEMPORARY SHORING OF ALL GYPSUM SOFFIT SYSTEMS AFFECTED AS PART OF THE DEMOLITION REQUIREMENTS.
NEW WORK SCOPE: PROVIDE NEW 2x4 ACOUSTICAL CEILING TILE AND GRID TO ALIGN WITH EXISTING GYPSUM SOFFITS. PROVIDE NEW LIGHT GAUGE METAL FRAMING COMPONENTS, AS REQUIRED, TO RESUPPORT DISTURBED EXISTING GYPSUM SOFFIT ASSEMBLIES. INSTALL NEW LIGHTING PER ELECTRICAL DRAWINGS. PROVIDE NEW MECHANICAL, ELECTRICAL, AND FIRE PROTECTION SYSTEMS AS PER THEIR RESPECTIVE DRAWINGS AND SPECIFICATIONS. PATCH AND PAINT ALL DISTURBED GYPSUM SURFACES REMAINING EXPOSED TO VIEW. COORDINATE PAINT COLOR SELECTIONS WITH OWNER.

R/R REMOVE AND REPLACE OFFICE AREA:
DEMOLITION SCOPE: FULLY REMOVE THE EXISTING CEILING GRID, CEILING PADS, AND LIGHTING FIXTURES. BALANCE OF EXISTING COMPONENTS ARE TO REMAIN AND BE TEMPORARILY SUPPORTED, PROTECTED DURING CONSTRUCTION, AND REINSTALLED IN THE NEW CEILING FOLLOWING ITS INSTALLATION.
NEW WORK SCOPE: PROVIDE NEW ACOUSTICAL CEILING TILE AND GRID, WITH HEIGHT TO MATCH EXISTING REMOVED, AS SPECIFIED. PROVIDE NEW ELECTRICAL LIGHTING FIXTURES PER ELECTRICAL DRAWINGS. TYPICAL.

COR EXISTING CORRIDOR ACOUSTICAL CEILING GRID AND TILES ARE TO REMAIN UNLESS OTHERWISE NOTED. CONTRACTOR IS TO FULLY CLEAN THE TOP OF THE CEILING SYSTEM FOLLOWING COMPLETION OF STRUCTURAL DECK INSTALLATIONS ABOVE.

GBS EXISTING GYPSUM SOFFITS TO REMAIN. PROVIDE SUPPLEMENTAL FRAMING AND FASTENERS, AS REQUIRED, TO ENSURE PROPER SUPPORT FOLLOWING REMOVAL OF SKYLIGHT ASSEMBLY. CONTRACTOR IS TO FULLY CLEAN CONCEALED SURFACES OF SOFFIT OF ALL DUST AND DEBRIS JUST PRIOR TO INSTALLATION OF NEW STRUCTURAL DECKING. TYPICAL.

- ### PLAN LEGEND
- HVAC DIFFUSER (SEE MECH. DWGS.)
 - HVAC SIDEWALL DIFF. (SEE MECH. DWGS.)
 - SPEAKER (SEE ELEC. DWGS.)
 - SPRINKLER (SEE FIRE PROT. DWGS.)
 - RECESSED LIGHTING (SEE ELEC. DWGS.)
 - WALL/PENDANT LIGHTING (SEE ELEC. DWGS.)
 - SURFACE LIGHTING (SEE ELEC. DWGS.)
 - EMERGENCY LIGHTING (SEE ELEC. DWGS.)
 - EGRESS SIGNAGE (SEE ELEC. DWGS.)
 - WIRELESS ACCESS POINT (SEE ELEC. DWGS.)
 - OVERHEAD PROJECTOR (E.T.R.)
 - SMOKE DETECTOR (SEE ELEC. DWGS.)
 - GYPSUM FINISHED SURFACE (E.T.R.)
 - N.I.C.** NOT IN CONTRACT

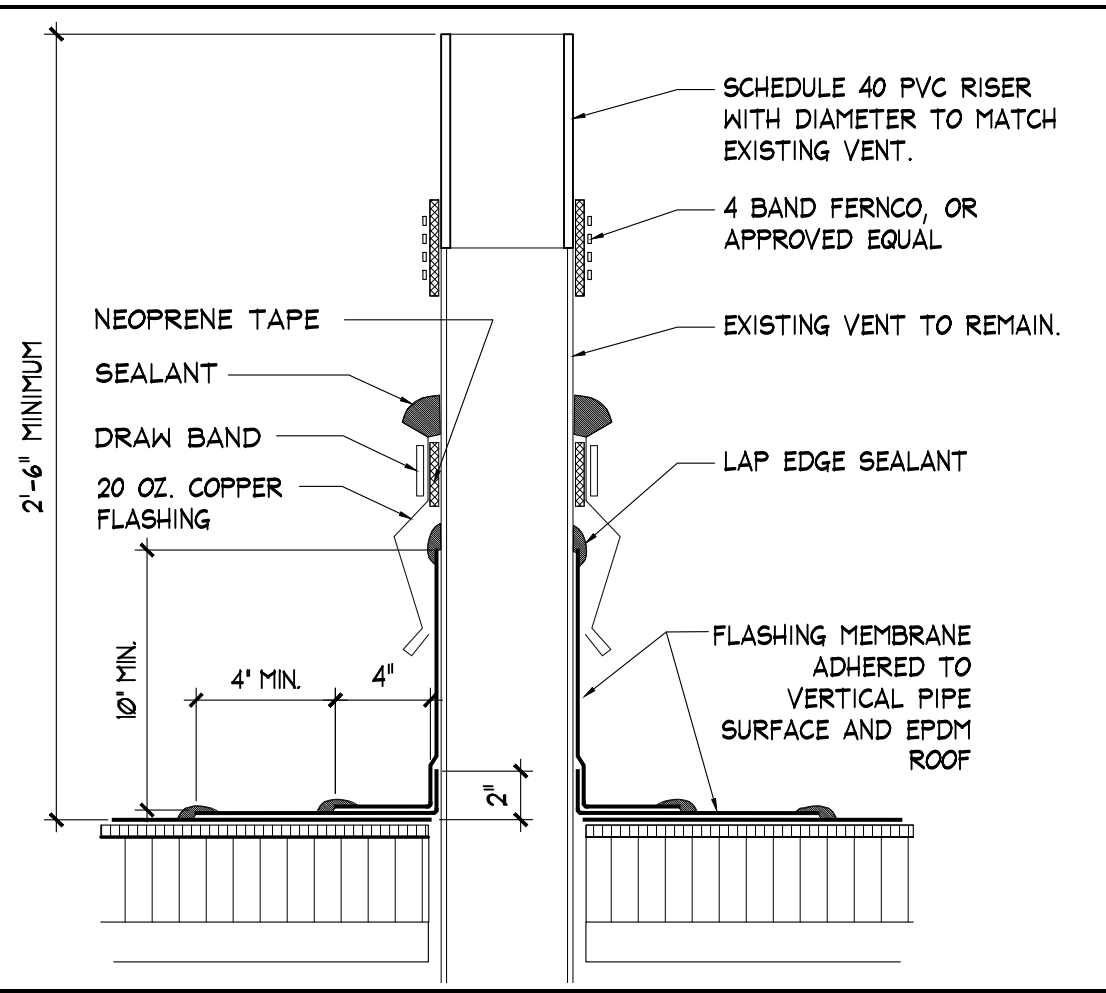


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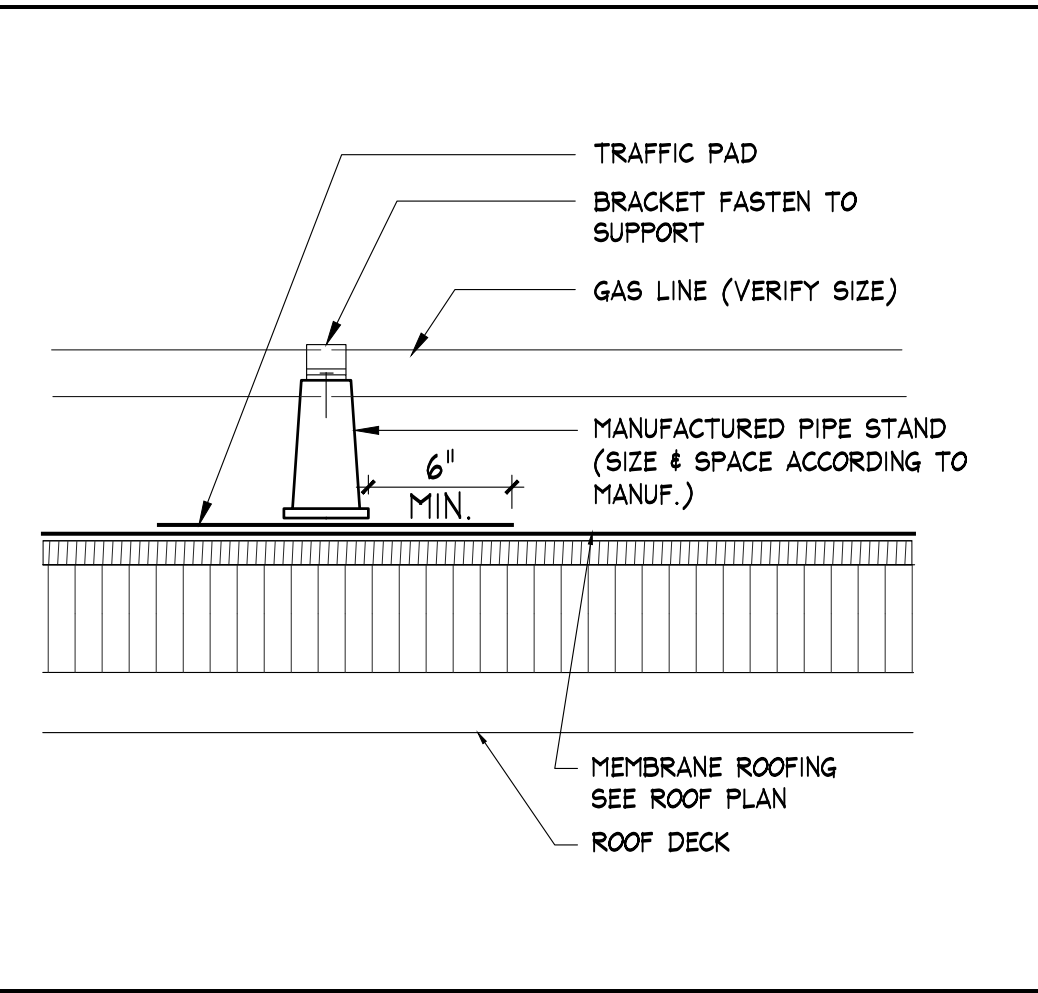
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PARTIAL SECTIONS AND PARTIAL REFLECTED CEILING PLAN
 PROJ. NO. JH1905 DRAWING NO. **R-2**
 SCALE As Noted
 DATE APRIL 3, 2020



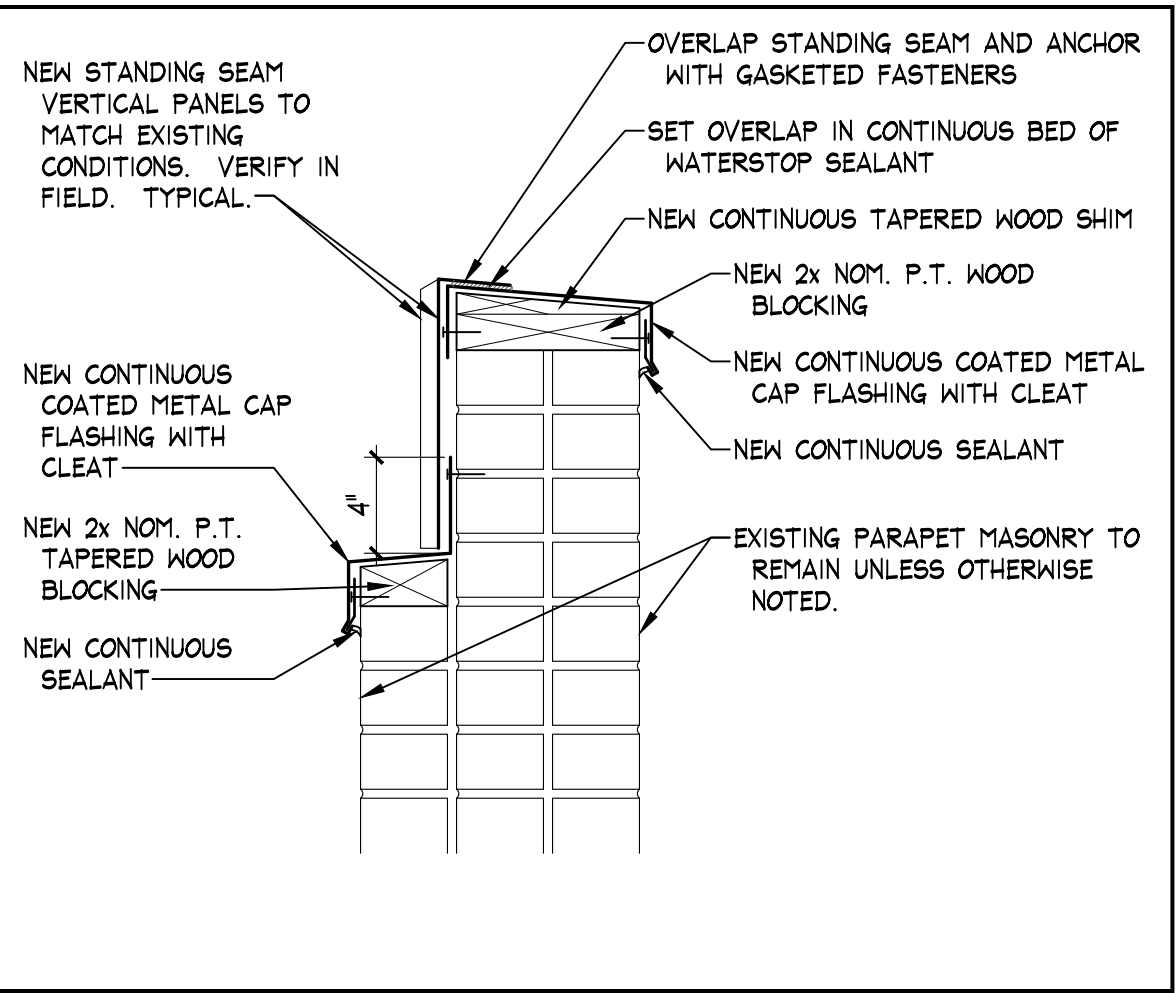
VENT STACK DETAIL
SCALE: 1-1/2" = 1'-0"

VS



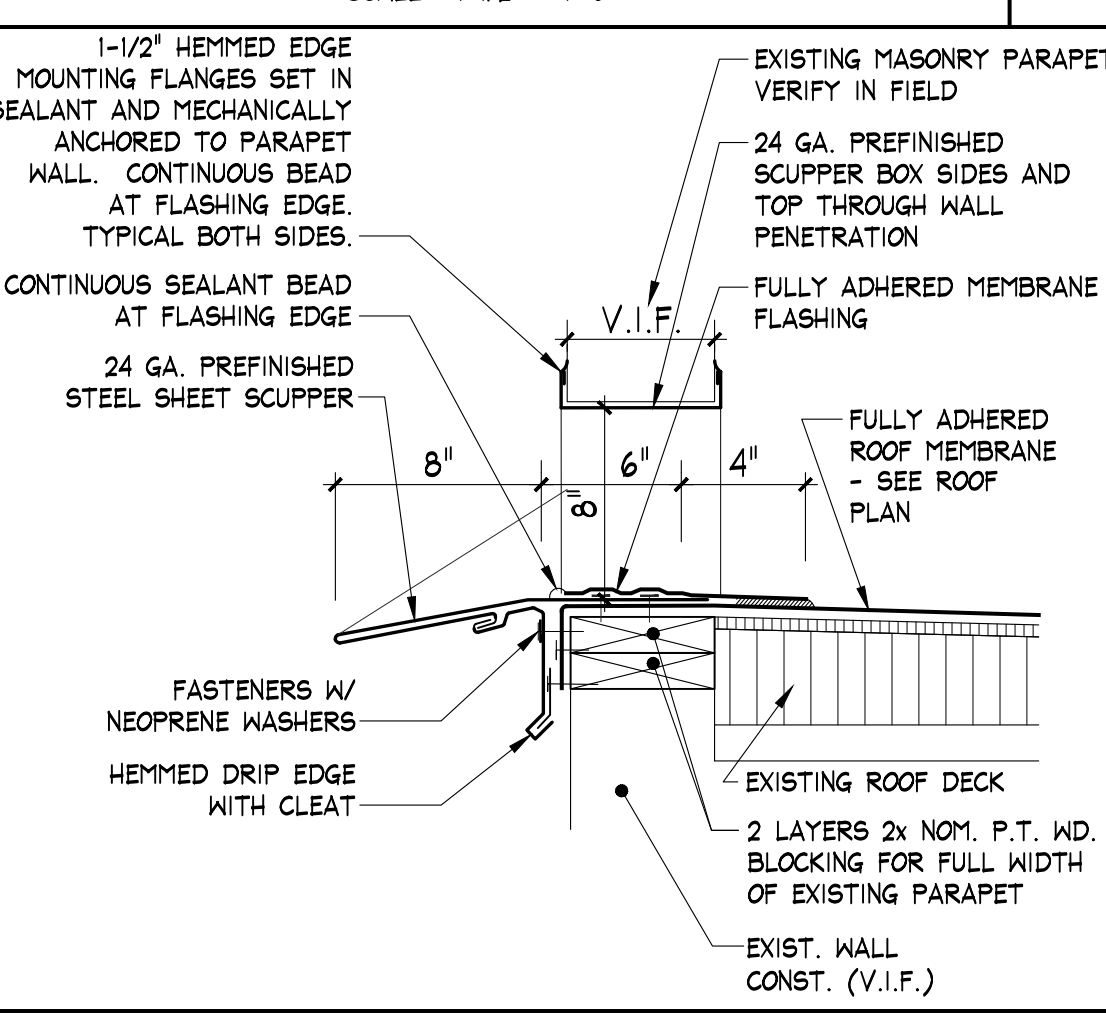
PIPE SUPPORT DETAIL
SCALE: 1-1/2" = 1'-0"

PS



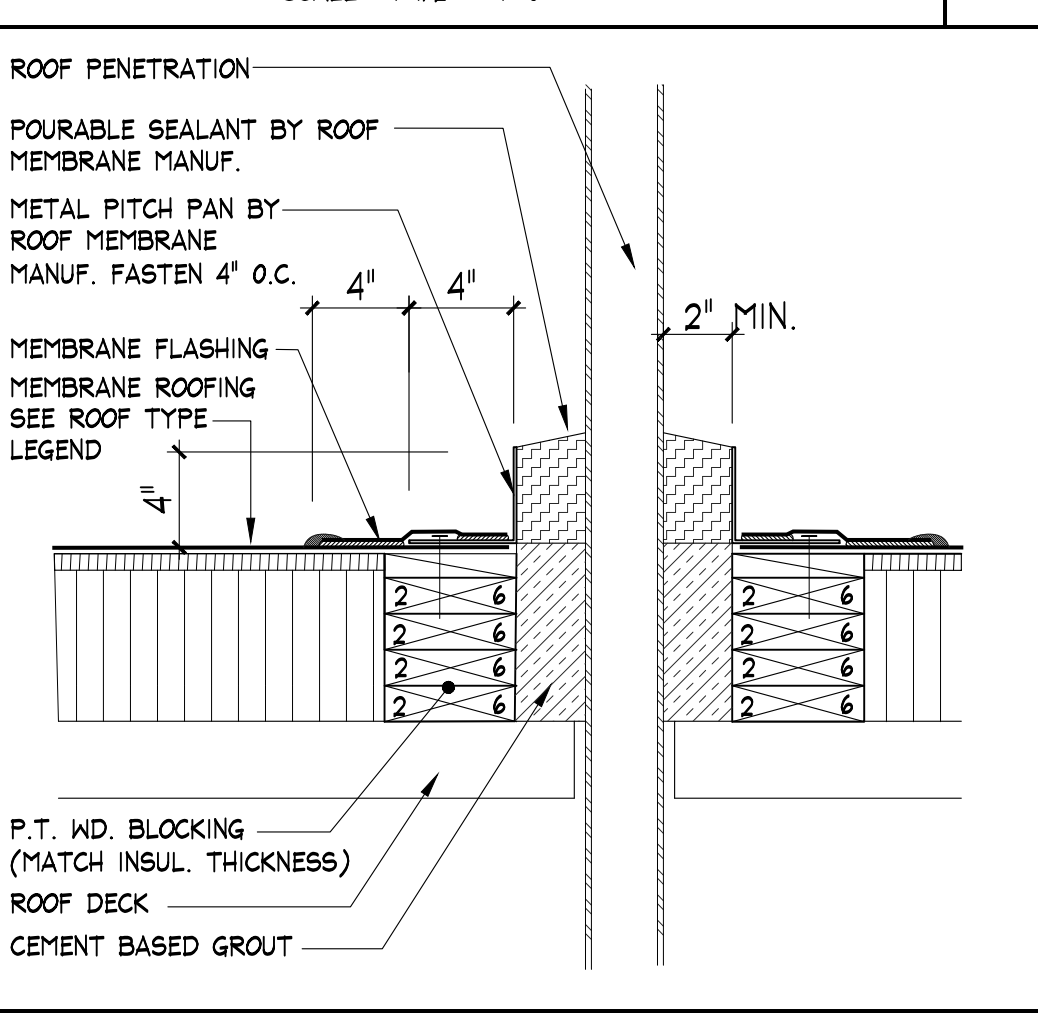
ROOF PARAPET COPING DETAIL
SCALE: 1-1/2" = 1'-0"

PC



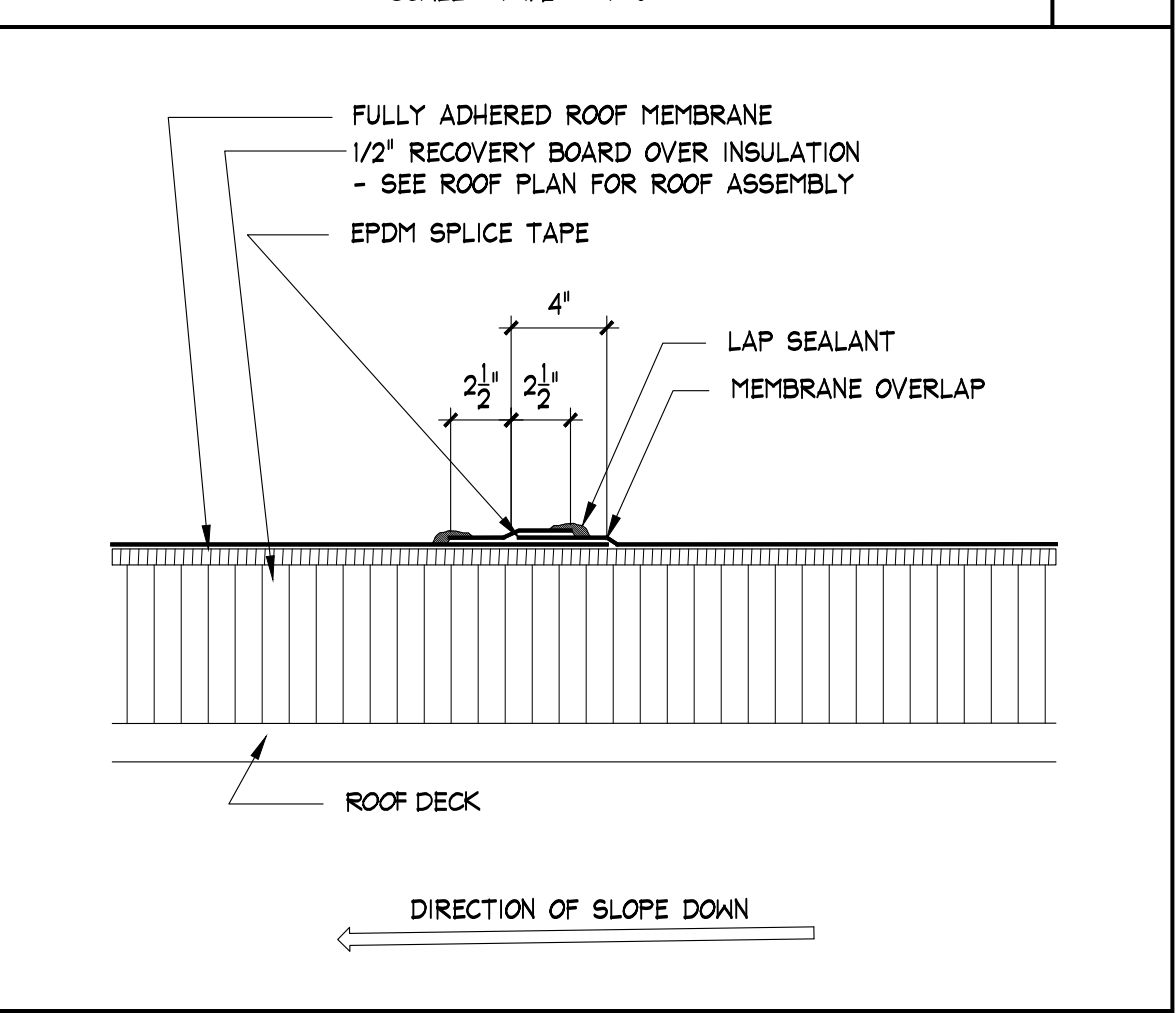
SCUPPER OVERFLOW DETAIL
SCALE: 1-1/2" = 1'-0"

SO



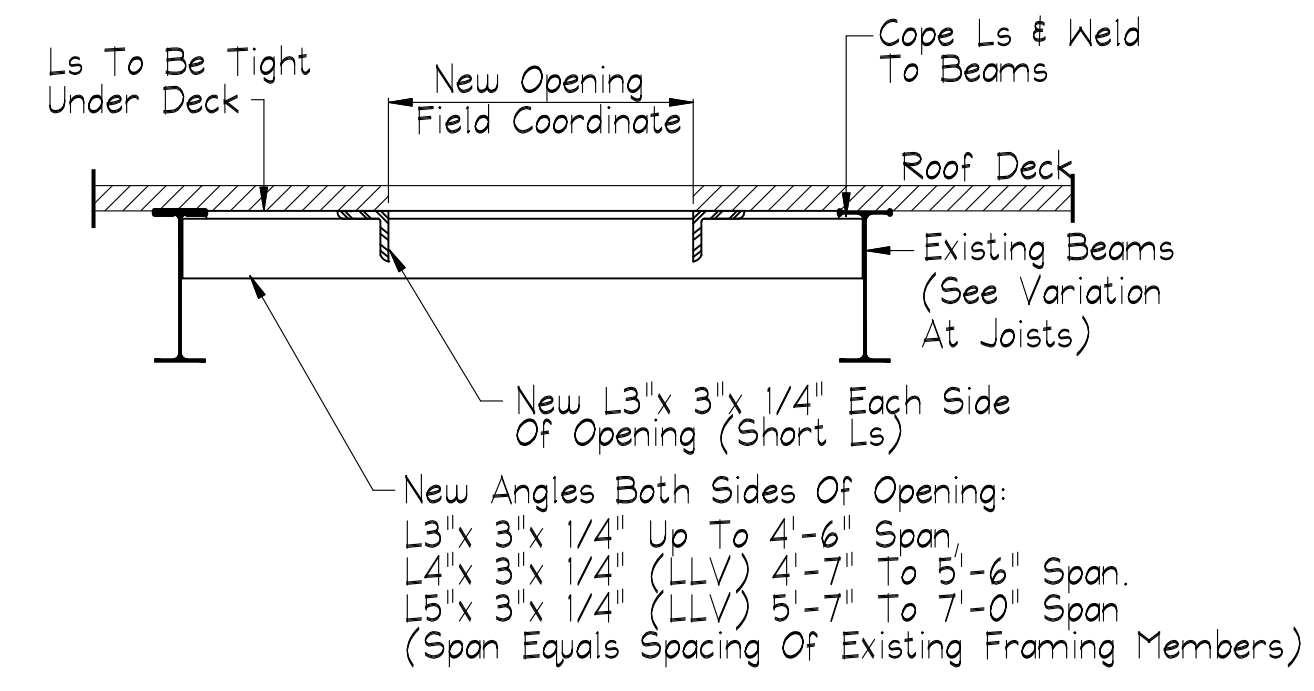
PITCH POCKET DETAIL
SCALE: 1-1/2" = 1'-0"

PP

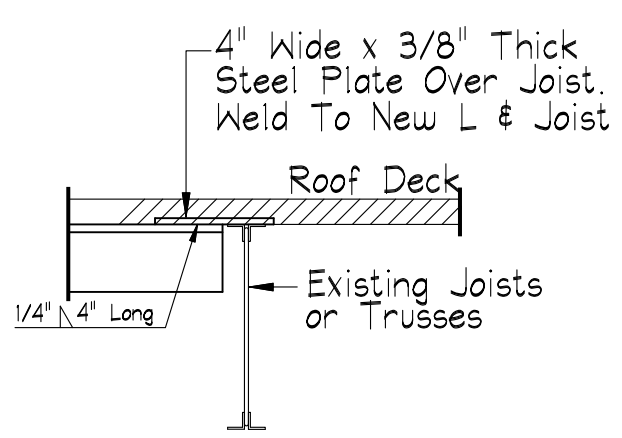


MEMBRANE SEAM DETAIL
SCALE: 1-1/2" = 1'-0"

MS



Section A
Not To Scale



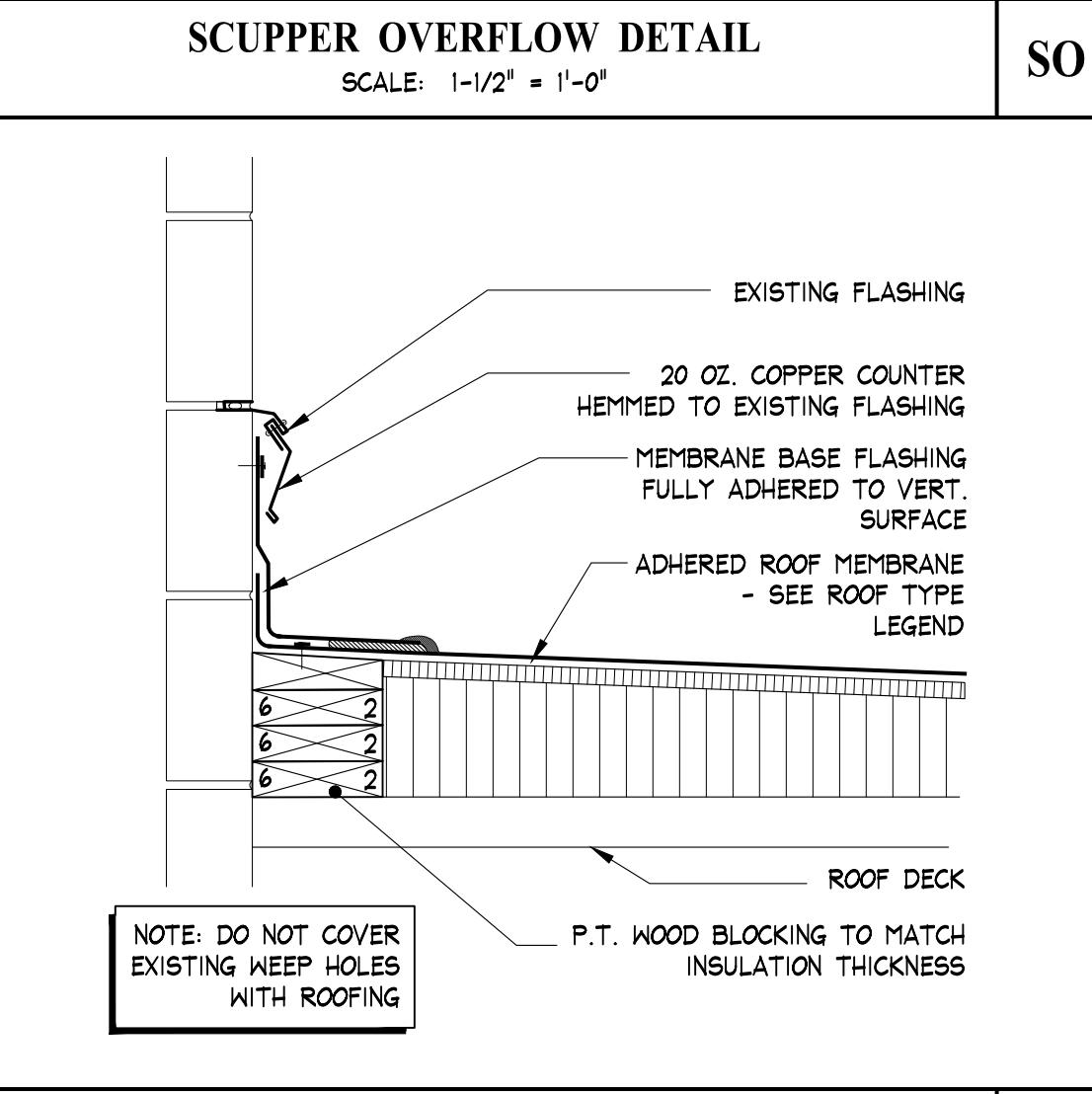
Variation of Section A At Joists and Trusses

Typical Roof Drain Opening Framing Plan Detail
Not to Scale

NOTES:

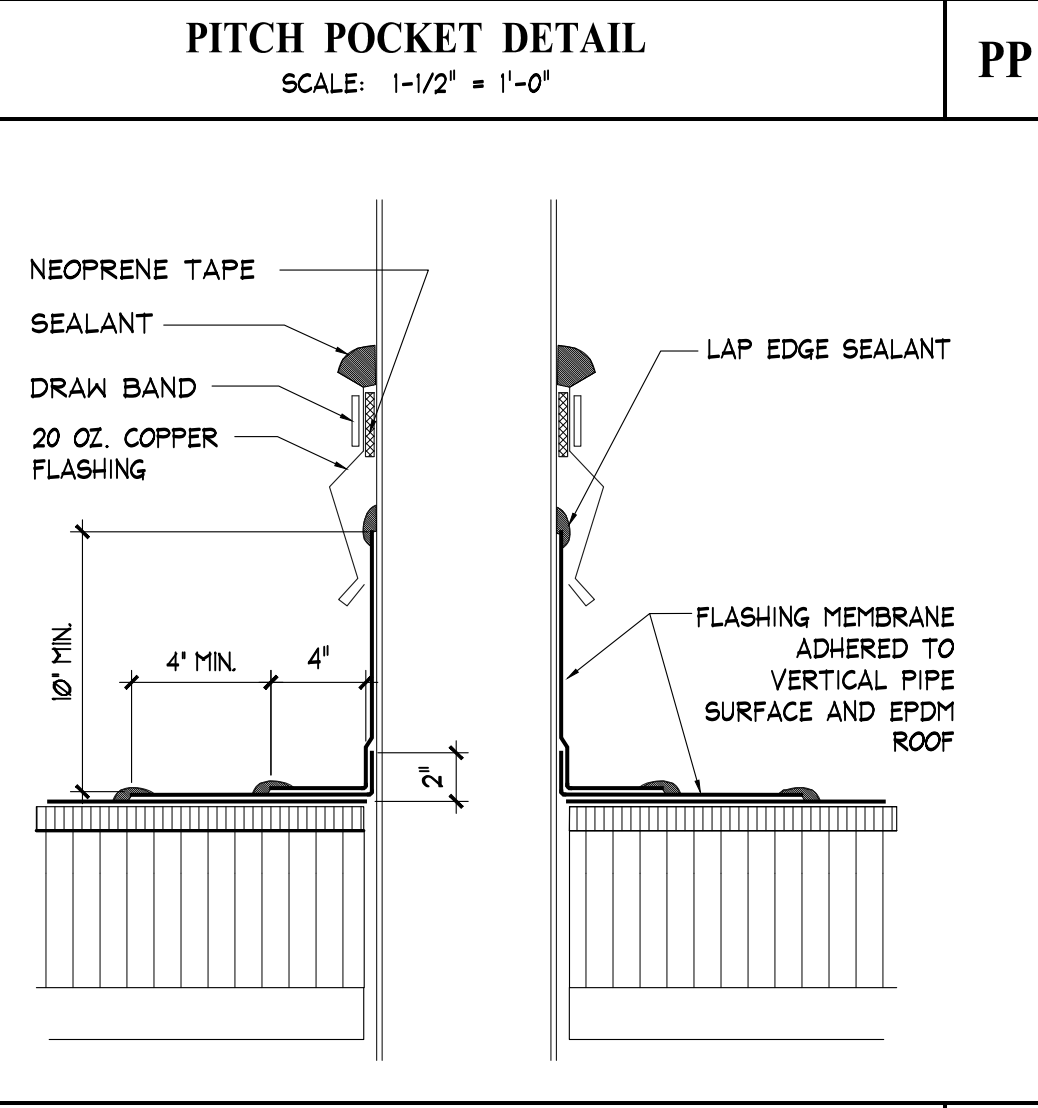
- Details are schematic in nature. Spacings, sizes & shapes of members may vary. Number & orientation of new Ls at each location may vary. Field verify all dimensions & conditions prior to ordering materials.
- This frame detail applies to all decks not having existing subpulin framing (i.e. BulbTees, etc.).
- Continuous steel shim strips (3" minimum wide) will be required to fill gaps between tops of Ls & bottom of deck material only if gaps occur. Deck requires continuous support at edges of openings. Secure shim strips to Ls using self tapping screws spaced at 12" o/c.
- Install frames at all new roof drains penetrations.
- All new steel Angles are to be ASTM A36 structural steel.
- Contractor is to establish installation safety procedures considering fire protection for deck & formboard materials.

S-1 ROOF OPENING DETAIL
SCALE AS NOTED



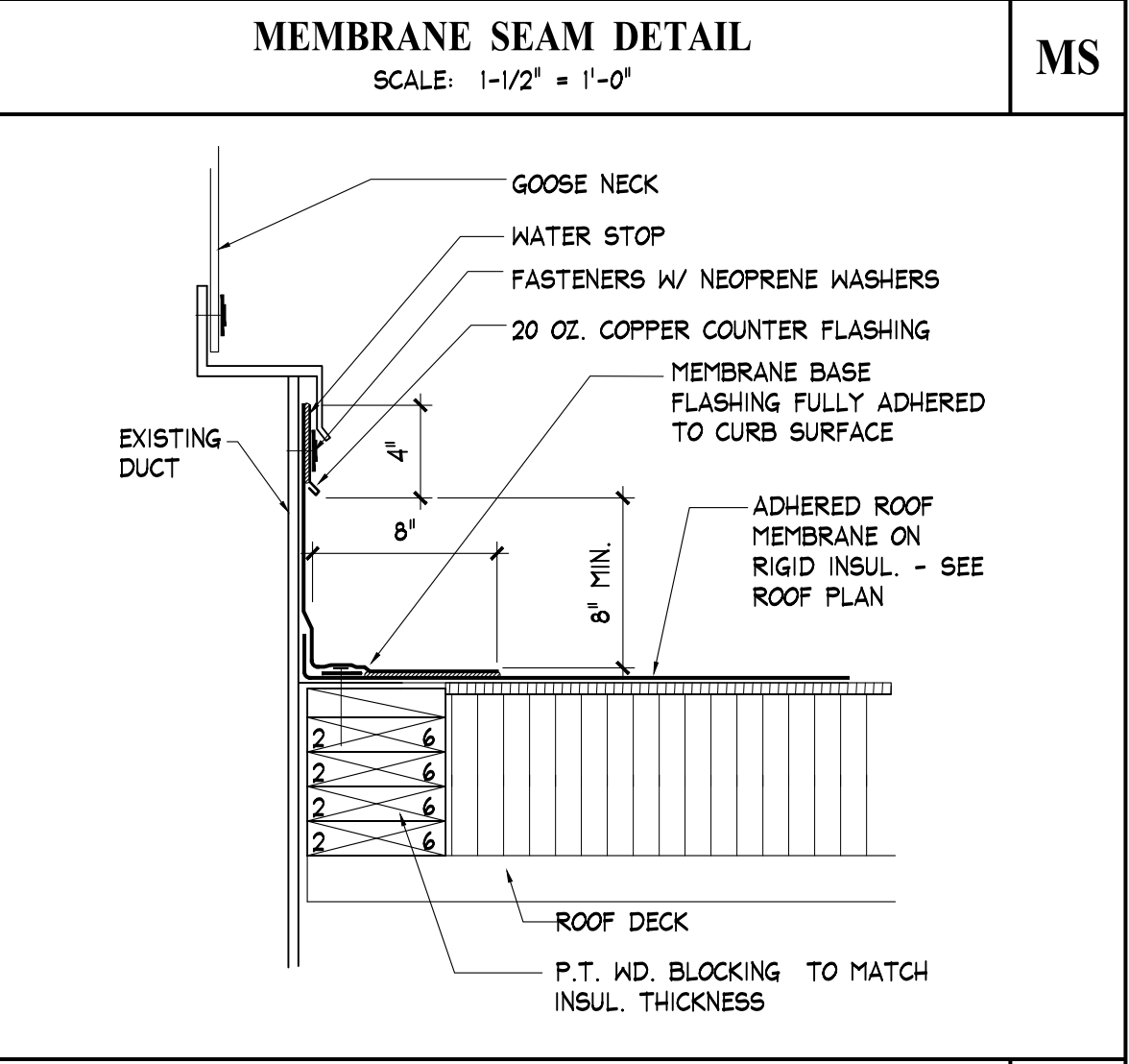
REGLET IN MASONRY DETAIL
SCALE: 1-1/2" = 1'-0"

RM



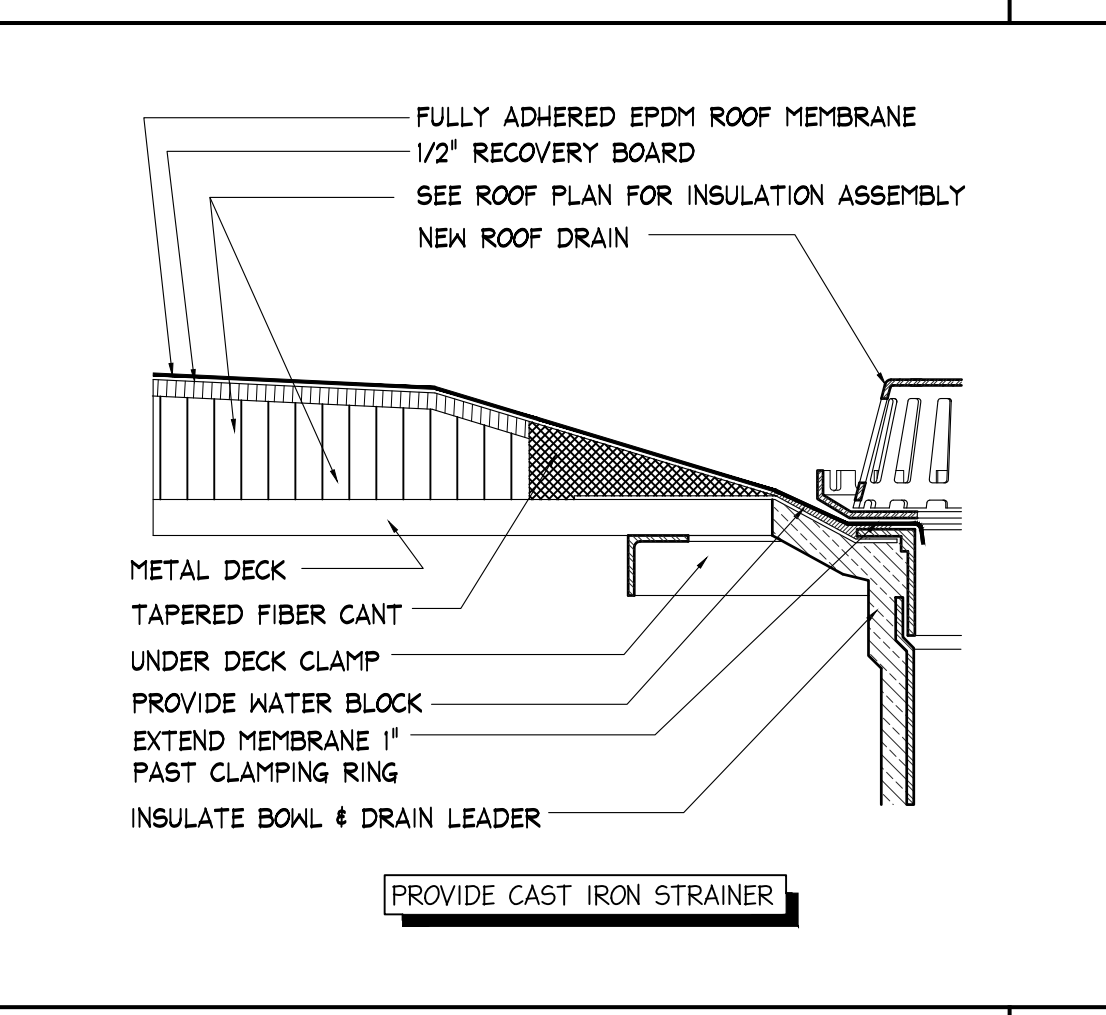
PIPE PENETRATION DETAIL
SCALE: 1-1/2" = 1'-0"

PE



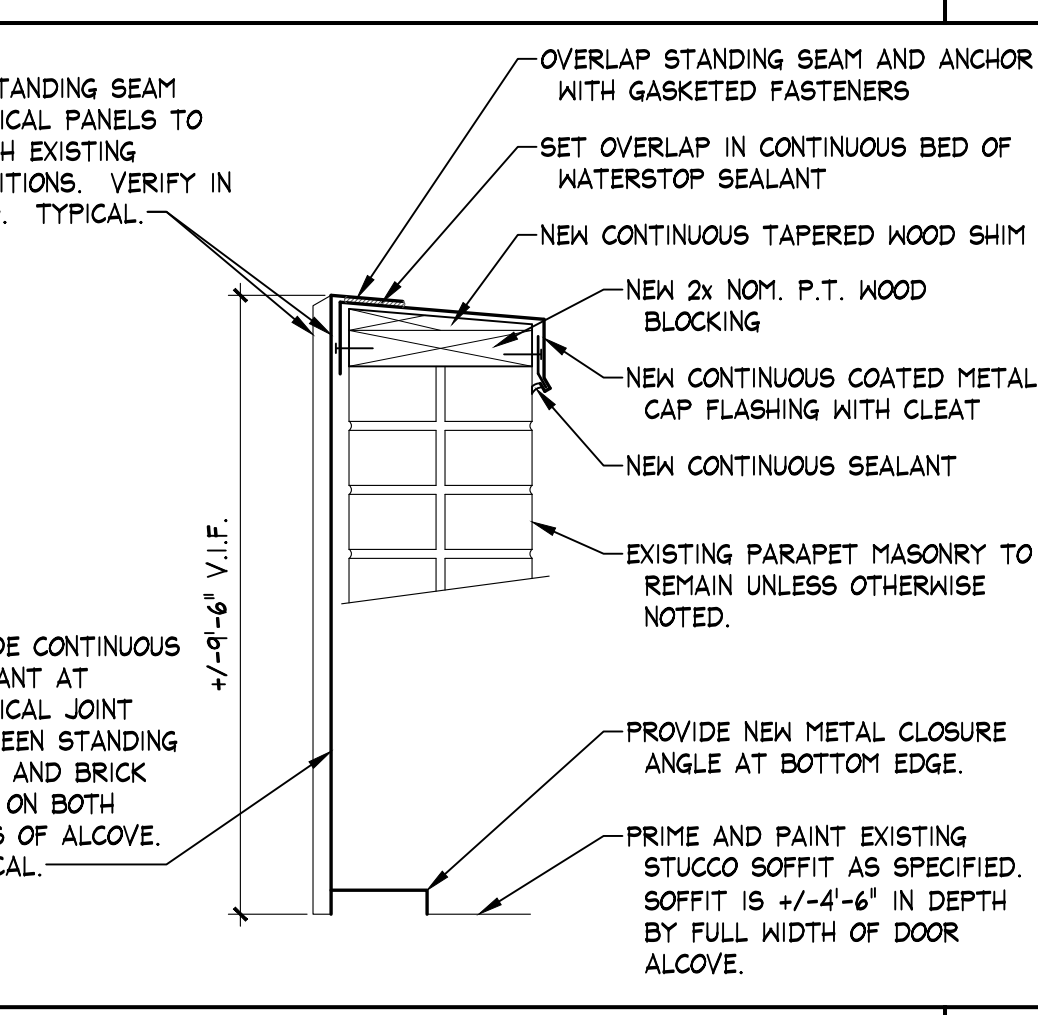
GOOSENECK DUCT DETAIL
SCALE: 1-1/2" = 1'-0"

GN



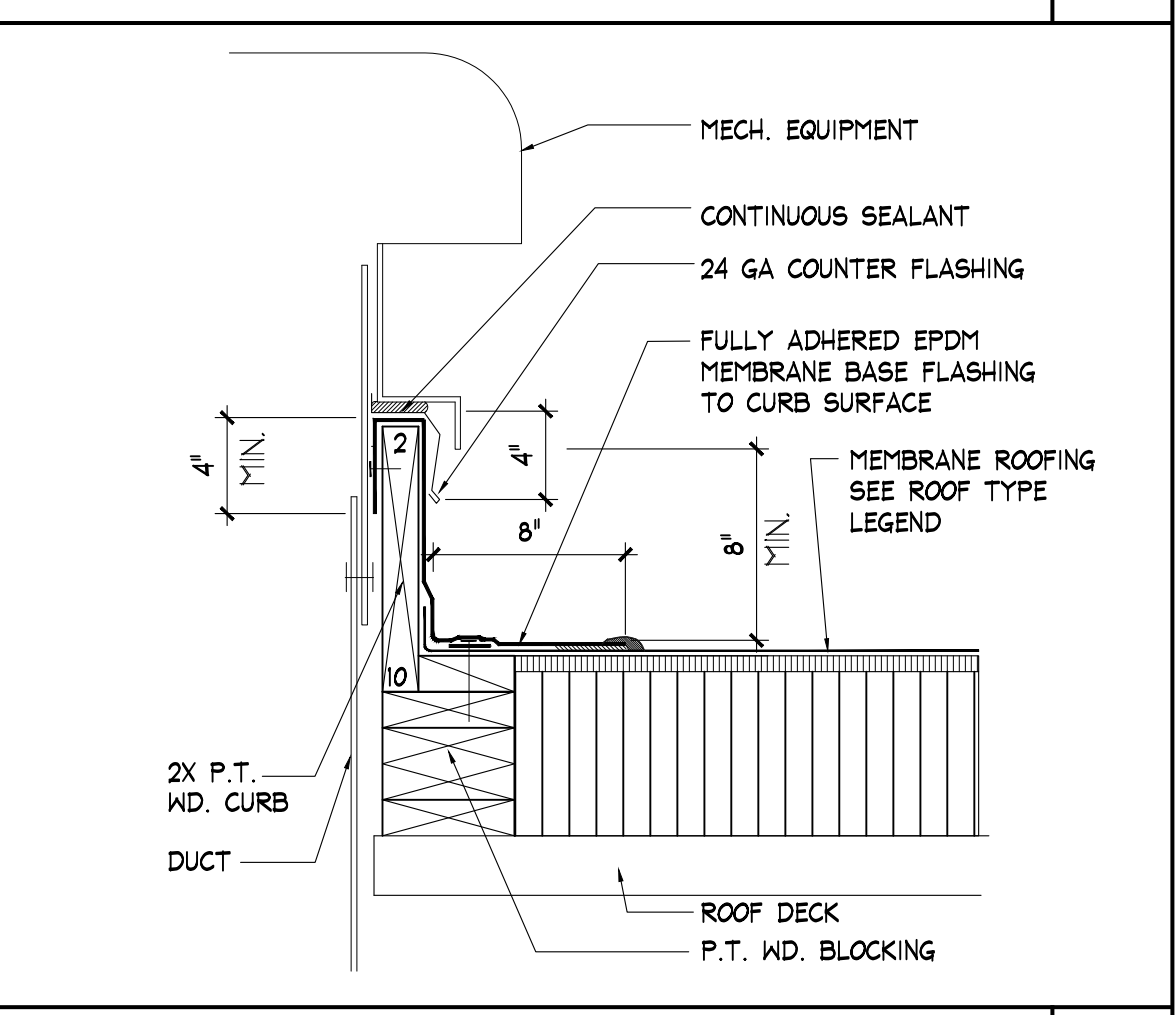
ROOF DRAIN DETAIL
SCALE: 1-1/2" = 1'-0"

RD



ROOF PARAPET COPING ABOVE DOOR DETAIL
SCALE: 1-1/2" = 1'-0"

PD



FAN ON CURB DETAIL
SCALE: 1-1/2" = 1'-0"

FC

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DETAILS

PROJ. NO.	JH1905	DRAWING NO.	R-3
SCALE	As Noted		
DATE	APRIL 3, 2020		

SPRINKLER SYSTEM SPECIFICATIONS:

1. **DESCRIPTION:**
 - A. MODIFY SPRINKLER SYSTEM WITH DROPS TO NEW GRID CEILING WHERE SKYLIGHTS USED TO BE.
 - B. WORK INCLUDES: REMOVE UPRIGHT SPRINKLER HEADS IN SKYLIGHT AREA AND ALL ASSOCIATED PIPING AND CAP AT BRANCH LINE IN SOFFIT FOR FUTURE USE. INSTALL NEW PENDENT SPRINKLER HEADS IN GRID CEILINGS WITH ARM OVER FROM EXISTING FITTINGS.
 - C. FURNISH ALL NECESSARY LABOR, MATERIAL, TOOLS, EQUIPMENT, APPURTENANCES, INSTRUMENTS, ETC., NECESSARY TO FULLY COMPLETE THE FIRE PROTECTION SYSTEM IN ACCORDANCE WITH THE PLANS AND SPECIFICATIONS AND BOTH LOCAL AND STATE FIRE CODES AND N.F.P.A. #13.
2. **CONTRACTOR'S RESPONSIBILITIES:**
 - A. ALL PERMITS AND FEES.
 - B. HOISTING, RIGGING, TRANSPORTATION COSTS AND INSTALLATION OF NECESSARY APPURTENANCES.
 - C. THE CONTRACTOR SHALL VISIT THE PREMISES AND NOTE ALL PERTINENT FACTS AND DETAILS INCLUDING CONDITIONS UNDER WHICH THE WORK MUST BE CARRIED OUT. NO ALLOWANCE WILL BE MADE FOR FAILURE TO HAVE DONE SO.
 - D. THE FIRE PROTECTION CONTRACTOR SHALL PROVIDE NOTIFICATION OF OUTAGE AND IMPAIRMENT TO THE EXISTING FIRE PROTECTION SYSTEMS TO GENERAL CONTRACTOR, BUILDING OWNER AND LOCAL AUTHORITIES. LEAVE SPRINKLER SYSTEM OPERATIONAL DURING CONSTRUCTION TO GREATEST EXTENT POSSIBLE.
 - E. HOLES - CUTTING AND PATCHING. CUTTING WILL BE BY CORE BORING, PATCHING WILL REQUIRE BOTH WATERPROOFING AND FIREPROOFING.
 - F. DRAWINGS ARE DIAGRAMMATIC, DO NOT SCALE DRAWINGS. MAKE SUCH DEVIATIONS AND OFFSETS AS NECESSARY TO MEET SPACE REQUIREMENTS.
 - G. THE CONTRACTOR SHALL BE RESPONSIBLE FOR WATER DAMAGE TO THE PROPERTY OF THE OWNER, THE WORK OF OTHER TRADES, AND TO EXISTING BUILDING SYSTEMS DURING ALL PHASES OF THE WORK.
3. **COORDINATION DRAWINGS:**
 - A. DEVELOP AND SUBMIT COORDINATION DRAWINGS AS OUTLINED.
 - B. SHEET METAL, PLUMBING AND FIRE PROTECTION SHOP DRAWINGS THAT HAVE BEEN COORDINATED WITH ARCHITECTURAL AND STRUCTURAL DRAWINGS SHALL BE SUBMITTED TO ENGINEER FOR REVIEW. DRAWINGS MUST BE RETURNED FROM ENGINEER EITHER "NO EXCEPTIONS TAKEN" OR "MAKE CORRECTIONS NOTED" PRIOR TO BEING USED AS A BASIS FOR COORDINATION DRAWINGS.
 - C. AFTER SHEET METAL AND PIPING DRAWINGS HAVE BEEN REVISED PER ENGINEERS COMMENTS, REPRODUCIBLE COPIES SHALL BE SENT TO THE OTHER TRADES IN THE FOLLOWING SEQUENCE FOR THE INCLUSION OF THEIR WORK:
 - MECHANICAL SHEET METAL
 - PLUMBING CONTRACTOR
 - ELECTRICAL WORK
 - MECHANICAL PIPING
 - D. AFTER ALL TRADES HAVE INCLUDED THEIR WORK ON THE COORDINATION DRAWING AND NOTED CONFLICTS, ALL TRADES SHALL MEET TO RESOLVE CONFLICTS AND AGREE TO ACCEPTABLE SOLUTIONS. EACH TRADE SHALL SIGN COORDINATION DRAWINGS. ITEMS NOT SHOWN ON COORDINATION DRAWING ARE RESPONSIBILITY OF OMITTING CONTRACTOR AND CONTRACTOR IS SUBJECT TO ADDITIONAL COST INCURRED BY OTHER TRADES.
 - E. THE ARCHITECT AND ENGINEER ARE NOT PART OF THE COORDINATION DRAWING PROCESS. THE ENGINEER WILL PROVIDE ASSISTANCE FOR NOTED CONFLICTS ONLY. COORDINATION DRAWINGS ARE NOT TO BE CONSIDERED PIPING OR DUCT SHOP DRAWINGS. THE CONTRACTOR IS REQUIRED TO SUBMIT INDIVIDUAL PIPING AND DUCTWORK SHOP DRAWINGS FOR REVIEW BY THE ENGINEER. PIPING AND DUCTWORK SHOP DRAWINGS SHALL FOLLOW THE DESIGN INTENT OF THE CONTRACT DOCUMENTS.
 - F. SUBMIT FINAL SIGNED COORDINATION DRAWING TO THE ENGINEER FOR REVIEW. ENGINEER WILL REVIEW COORDINATION DRAWINGS FOR GENERAL ARRANGEMENT AND FOR NOTED CONFLICTS ONLY. SPECIFIC INSTALLATION REQUIREMENTS WILL BE REVIEWED ONLY IN INDIVIDUAL TRADE SHOP DRAWINGS.
 - G. ANY WORK FABRICATED OR INSTALLED PRIOR TO SIGN OFF BY ALL TRADES WHICH IS DEEMED TO BE IN CONFLICT WITH COORDINATION DRAWINGS SHALL BE REMOVED AND REINSTALLED IN CONFORMANCE WITH COORDINATION DRAWINGS.
 - H. EACH CONTRACTOR (MENTIONED ABOVE) IS RESPONSIBLE FOR THE COORDINATION OF HIS SUBCONTRACTORS.
 - I. THE OVERALL COORDINATION OF THE COORDINATION PROCESS IS THE RESPONSIBILITY OF THE CONTRACTOR. THE ENGINEER IS NOT RESPONSIBLE FOR THE COORDINATION PROCESS. THE ENGINEER WILL RESPOND TO QUESTIONS THAT ARISE FROM THE COORDINATION PROCESS. DRAWINGS SUBMITTED WILL BE REVIEWED FOR CLEARLY IDENTIFIED CONFLICTS ONLY. SOLUTIONS TO THE CONFLICTS WILL NOT BEAR ADDITIONAL COST.

4. **INTERIOR PIPING:**
 - A. STANDARD WEIGHT SCHEDULE 40 BLACK STEEL PIPE, ASTM A-795 OR A-53, WITH:
 1. VICTUALIC STYLE 905 COUPLINGS AND FULL FLOW FITTINGS, ASTM A-47 AND A-536, IN SIZES 2" AND SMALLER. STANDARD SQUARE CUT GROOVES TO COUPLING MANUFACTURER'S SPECIFICATIONS.
 2. MALLEABLE IRON THREADED FITTINGS 150 LB. ANSI B16.3, OR CAST IRON THREADED FITTINGS 250 LB. ANSI B16.4, IN ALL SIZES.
 - B. LIGHT WALL PIPE SCHEDULE 10, ASTM A-135, VICTUALIC STYLE 905 COUPLINGS AND FULL FLOW FITTINGS, ASTM A-47 AND A-536, IN SIZES 2-1/2" AND LARGER, WITH ROLLED GROOVES. NO CUT GROOVES OR THREADING WILL BE ALLOWED ON SCHEDULE 10.
5. **SPRINKLER DROPS:**

FLEXHEAD COMMERCIAL CEILING SPRINKLER CONNECTIONS ALL 304 STAINLESS STEEL BRAIDED HOSE ASSEMBLY, HD-660 GALVANIZED SHEET METAL BRACKET SYSTEM COMPATIBLE WITH LIGHT, MEDIUM AND HEAVY LOAD CEILING GRID SYSTEM PER ASTM C635 AND C636; FACTORY ASSEMBLED AND TESTED. FM APPROVED.
6. **SPRINKLER HEADS:**

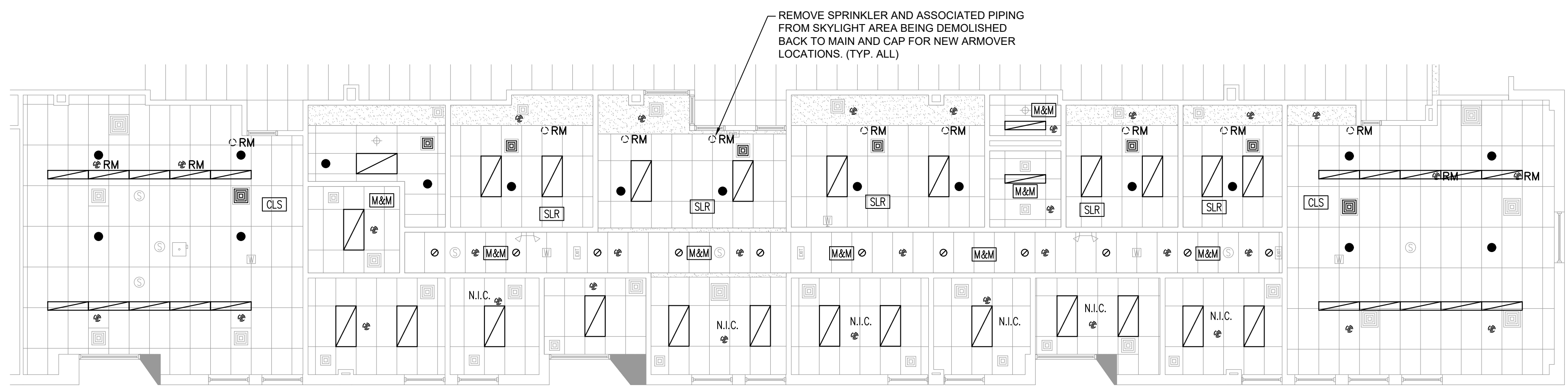
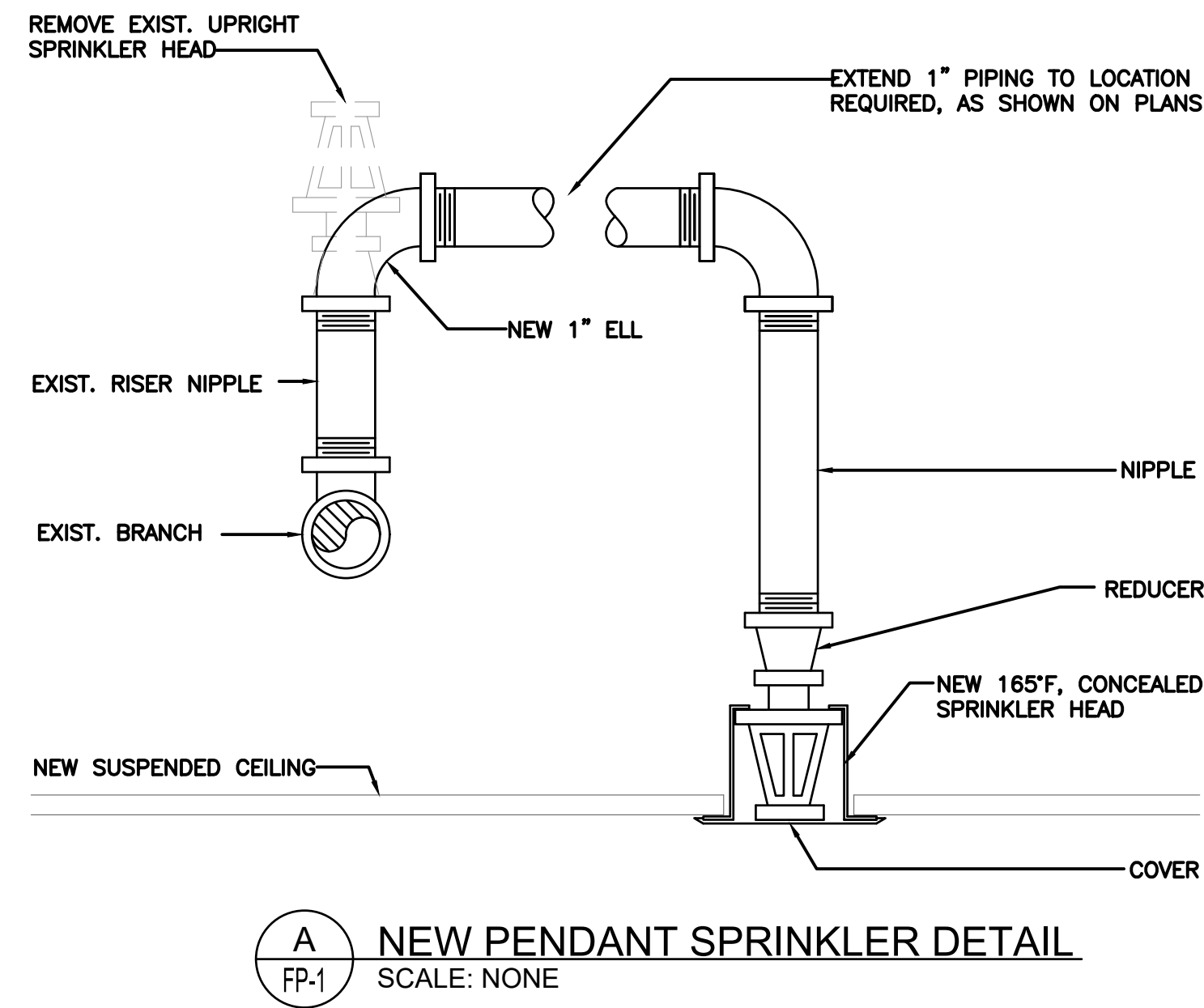
SPRINKLER HEADS SHALL BE VIKING, RELIABLE, VICTUALIC OR TYCO. EQUAL TO THE FOLLOWING MODEL NUMBER(S) AND TYPE(S):

 - A. TYCO MODEL TY3531 CONCEALED PENDENT SPRINKLER, 1/2" ORIFICE, 155°F, WITH WHITE COVER PLATE, 135°F.
7. **VALVES:**

VALVES SHALL BE MILWAUKEE, KENNEDY, NIBCO OR HAMMOND. EQUAL TO THE FOLLOWING MODEL NUMBER(S) AND TYPE(S):

 - A. GLOBE VALVES: HAMMOND FIG. 1B-413-T. UNION BONNET, TEFLON DISC, BRONZE GLOBE VALVE.
 - B. BALL VALVES: HAMMOND FIG. 8501, BRONZE TWO PIECE BODY, BRASS STEM, CHROME PLATED BRASS BALL, TEFON SEATS AND STUFFING BOX RING, LEVEL HANDLE, THREADED END.
8. **EXECUTION:**
 - A. THE COMPLETE SYSTEM SHALL BE INSTALLED IN ACCORDANCE WITH RULES AND REGULATIONS PERTAINING TO ORDINARY HAZARD (NOT TO EXCEED 130 SQ.FT. PER HEAD) - SYSTEM TO BE HYDRAULICALLY CALCULATED; NOT SIZED AS PER PIPE SIZING SCHEDULE) OCCUPANCY AND COMPLY WITH FULL REQUIREMENTS OF THE REGULATORY AGENCIES.
 - B. THE CONTRACTOR SHALL HAVE HYDRANT FLOW TESTS CONDUCTED ON THE FIRE HYDRANTS HYDRAULICALLY CLOSEST TO THE EXISTING WATER SERVICE ENTRANCE, CONDUCT TESTS AND RECORD TEST DATA IN ACCORDANCE WITH NFPA #91.
 1. OBTAIN FLOW TEST DATA, ATTESTED TO BY CLERK OF THE WORKS, WHICH IS ADEQUATE TO BASE THE DESIGN ON. DATA WILL BE JUDGED ADEQUATE IF ACTUAL FLOW VALUES MEASURED DURING FLOW TEST EQUAL OR EXCEED TOTAL SYSTEM DEMAND. FLOW VALUES EXTRAPOLATED FROM MEASURED FLOW VALUES MAY NOT BE USED AS A BASIS FOR DESIGN.
 - C. THE FIRE PROTECTION CONTRACTOR SHALL HAVE PREPARED BY A NICET LEVEL IV CERTIFIED SPRINKLER TECHNICIAN OR UNDER A P.E. WORK INSTALLATION DRAWINGS (SHOP DRAWINGS) AND SHALL SUBMIT THEM TO THE ENGINEER AND RATING BUREAU FOR APPROVAL.
 - D. SHOP DRAWING SHALL INCLUDE ALL HYDRAULIC CALCULATIONS PREPARED ON FORMS SIMILAR TO THOSE IN NFPA #13, APPENDIX A.
 - E. BUILDING DESIGN CRITERIA:
 - ORDINARY HAZARD GROUP II - 0.20 GPM/SF DENSITY OVER THE MOST REMOTE 1500 SQ.FT. PROTECTION AREA LIMITATION 130 SQ.FT.
 - F. BEFORE COMMENCING WORK, THE FIRE PROTECTION CONTRACTOR SHALL COORDINATE WITH OTHER TRADES, SO THAT NO POSSIBLE INTERFERENCE WILL OCCUR. IF, DUE TO INADEQUATE COORDINATION, EXTRA WORK IS ENTAILED, THE FIRE PROTECTION CONTRACTOR SHALL BE HELD FULLY RESPONSIBLE.
9. **PIPING SYSTEMS:**
 - A. SPECIAL CARE MUST BE TAKEN TO INSURE THAT PIPING ABOVE HUNG CEILINGS IS RUN TO MAINTAIN MAXIMUM HEADROOM AND CLEARANCE FOR ACCESS TO THE EQUIPMENT AND TO AVOID CONFLICT WITH THE ELECTRICAL CONDUITS, LIGHTING FIXTURES, OTHER PIPING, DUCTWORK AND EQUIPMENT OF OTHER TRADES.
 - B. THE PIPING SHALL BE SO ARRANGED THAT THE ENTIRE SYSTEM CAN BE FLUSHED AND DRAINED THROUGH ACCESSIBLE LOW POINTS. PROVIDE AUXILIARY DRAINS FOR WATER TRAPPED IN SECTIONS OF PIPE. DRAIN PIPE SHALL BE GALVANIZED.
 - C. RUN PIPING CONCEALED THROUGHOUT FINISHED SPACES, EITHER IN FURRED SPACES, SHAFTS, OR ABOVE FALSE CEILINGS. PIPE SIZE FOR DROPS TO SPRINKLER HEADS LOCATED BELOW SUSPENDED CEILINGS SHALL BE 1" MINIMUM. PIPING SHALL BE SUPPORTED PER REQUIREMENTS OF NFPA #13.

- D. CHROME-PLATED ESCUTCHEONS SHALL BE USED ON ALL EXPOSED PIPING WHICH PENETRATES EITHER WALLS OR CEILINGS. ALL WALL PENETRATIONS SHALL BE SLEEVED AND CAULKED AND RATED SEPARATIONS FIRESTOPPED.
- E. VICTUALIC FITTINGS AND COUPLINGS SHALL BE INSTALLED IN ACCORDANCE WITH THE MANUFACTURER'S RECOMMENDATIONS.
- F. THE ENDS OF PIPES SHALL BE REAMED FREE FROM BURRS AND KEPT FREE OF SCALE, DIRT AND OIL.
- G. THREADED JOINTS SHALL BE MADE WITH TEFLON LIQUID JOINT COMPOUND APPLIED TO MALE THREADS ONLY.
10. **INSTALLATION:**
 - A. SPRINKLER HEADS OF THE PROPER CONFIGURATION AND NUMBERS ARE TO BE INSTALLED AS REQUIRED IN ACCORDANCE WITH REGULATIONS PERTAINING TO ORDINARY HAZARD OCCUPANCIES WITH SPECIAL ATTENTION TO THE RULES ON OBSTRUCTIONS. COMPLY WITH THE FULL REQUIREMENTS OF THE NFPA, LOCAL FIRE DEPARTMENT, STATE FIRE MARSHAL, FIRE INSURANCE COMPANY, RATING BUREAU AND OTHER AGENCIES HAVING JURISDICTION.
 - B. WHERE FLEXIBLE SPRINKLER DROPS ARE USED THE MINIMUM BEND RADIUS SHALL BE 7 INCHES. THE CEILING SUPPORT BRACKETS SHALL BE ATTACHED TO THE MAIN TEE BAR RUNNER IN THE GRID, NOT THE CROSS SUPPORT RAILS. FOLLOW ALL MANUFACTURER'S INSTRUCTIONS.
 - C. SPRINKLERS WHICH ARE SO LOCATED AS TO BE SUBJECT TO MECHANICAL INJURY (IN EITHER UPRIGHT OR THE PENDANT POSITION) SHALL BE PROTECTED WITH APPROVED GUARDS.
 - D. INSTALL HEADS WITH TEFLON LIQUID JOINT COMPOUND APPLIED TO MALE THREADS ONLY.
 - E. SPRINKLER HEADS SHALL BE LOCATED IN CENTER OF CEILING TILES EXCEPT WHERE INDICATED OTHERWISE.
11. **TESTING:**
 - A. TEST ENTIRE SYSTEM AT 200 PSI FOR TWO (2) HOURS AFTER COMPLETION, IN ACCORDANCE WITH NFPA #13.
 - B. FURNISH TO THE RATING BUREAU, THE CERTIFICATE COVERING MATERIALS AND TESTS AS OUTLINED IN NFPA #13.
 - C. DURING AND AFTER COMPLETION, THE ENTIRE INSTALLATION SHALL BE SUBJECT TO INSPECTION AND TEST BY THE RATING BUREAU.
12. **AS-BUILT DRAWINGS:**
 - A. PROVIDE A COMPLETE SET OF AS-BUILT DRAWINGS REFLECTING AS INSTALLED CONDITIONS OF SYSTEMS WITHIN THIS DISCIPLINE.
 - B. DRAWING SHALL BE OF SIMILAR SCALE AS THE CONSTRUCTION DOCUMENTS AND INCLUDE DETAILS AS NECESSARY TO CLEARLY INDICATE THE INSTALLED CONDITION. DRAWINGS SHALL BE BOUND IN A COMPLETE AND CONSECUTIVE SET.
 - C. SUPPLEMENTAL SKETCHES AND LOOSE PAPERWORK WILL NOT BE ACCEPTABLE AND WILL BE RETURNED FOR REVISION. THE CONTRACTOR SHALL COMPLY WITH THE ENGINEER'S COMMENTS TO PRODUCE A CLEAR AND CONCISE SET OF DRAWINGS.
 - D. DRAWINGS SHALL BE SUBMITTED IN BOTH HARD COPY AND ELECTRONIC (AUTO-CAD VERSION AS REQUIRED BY THE OWNER) VERSION. NUMBER OF COPIES OF EACH AS REQUESTED BY THE OWNER.
 - E. PROVIDE A COMPLETE RECORD OF ALL REVISIONS OF THE ORIGINAL DESIGN WORK, INCLUDE ALL CHANGES FOR AN ACCURATE RECORD, ON REPRODUCTIONS OF THE CONTRACT DRAWINGS OR APPROPRIATE SHOP DRAWINGS. DOCUMENT ALL DEVIATIONS, BETWEEN THE WORK SHOWN AND WORK INSTALLED IN A NEAT AND ACCURATE MANNER. INDICATE THE FOLLOWING INSTALLED CONDITIONS:
 - MAINS AND BRANCHES OF PIPING SYSTEMS, WITH VALVES AND SIGNALING DEVICES LOCATED AND NUMBERED, ITEMS REQUIRED FOR MAINTENANCE LOCATED (I.E. LOW PT. DRAINS, UNIONS, FLOW AND PRESSURE SWITCHES, ETC.). VALVE LOCATION DIAGRAMS, COMPLETE WITH VALVES TAG CHART.
 - DOCUMENT ALL PIPING SIZES AND ELEVATIONS. INCLUDE PIPE LENGTHS AND/OR DIMENSION NOTING POSITION OF ALL SPRINKLER HEADS.
 - EQUIPMENT LOCATIONS (EXPOSED AND CONCEALED), DIMENSIONED FROM PROMINENT BUILDING LINES.
 - APPROVED SUBSTITUTIONS, CONTRACT MODIFICATIONS AND ACTUAL EQUIPMENT AND MATERIALS INSTALLED.
 - F. ALSO SUBMIT A COMPLETE MAINTENANCE MANUAL OF ALL EQUIPMENT INSTALLED UNDER THIS CONTRACT. INCLUDE MANUFACTURER'S MANUALS AND OPERATING INSTRUCTIONS.



1 FIRE PROTECTION PLAN
1/8" = 1'-0"

FIRE PROTECTION LEGEND	
○ RM / ◊ RM	REMOVE EXISTING SPRINKLER
◊	EXT'G PENDENT SPRINKLER - TO REMAIN
●	NEW RECESSED PENDENT SPRINKLER

FIELD VERIFY ALL CONDITIONS

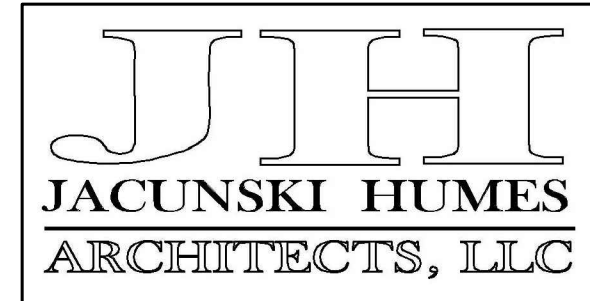
DESIGN DRAWINGS ARE SCHEMATIC AND ARE BASED ON AS-BUILT/RECORD DRAWINGS PROVIDED BY OWNER. THE CONTRACTOR SHALL VISIT THE SITE PRIOR TO BIDDING OR AWARD OF CONTRACT TO INSPECT EXISTING FIELD CONDITIONS. THE CONTRACTOR SHALL BE RESPONSIBLE TO VERIFY THE ACCURACY OF THESE PLANS AND GATHER ADDITIONAL INFORMATION NECESSARY TO PRODUCE DETAILED SHOP DRAWINGS OF THE CHANGES AND MODIFICATIONS REQUIRED TO RENOVATE THE SPACE. THIS CONTRACT SHALL INCLUDE ALL LABOR AND MATERIALS NECESSARY FOR FIELD MODIFICATIONS DUE TO EXISTING CONDITIONS.

THE CONTRACTOR SHALL CONTACT THE ARCHITECT, ENGINEER OR OWNER PRIOR TO BIDDING FOR INTERPRETATIONS AND CLARIFICATIONS OF THE DESIGN AND INCLUDE IN HIS BID ALL COSTS TO MEET THE DESIGN INTENT. CLARIFICATIONS MADE BY THE ARCHITECT, ENGINEER OR OWNER AFTER BIDDING WILL BE FINAL AND SHALL BE IMPLEMENTED AT CONTRACTOR'S COST.

BIDDING CONTRACTORS SHALL HAVE A WORKING KNOWLEDGE OF LOCAL CODES AND ORDINANCES AND SHALL INCLUDE IN THEIR BIDS THE COSTS FOR ALL WORK INSTALLED IN STRICT ACCORDANCE WITH GOVERNING CODES, THE PLANS AND SPECIFICATIONS NOT WITHSTANDING. THE CONTRACTOR SHALL ALERT ARCHITECT, ENGINEER OR OWNER OF ANY APPARENT DISCREPANCIES BETWEEN GOVERNING CODES AND DESIGN INTENT.

SUBMISSIONS & REVISIONS		
MARK	DATE	DESCRIPTION
	4/3/20	BIDDING RELEASE

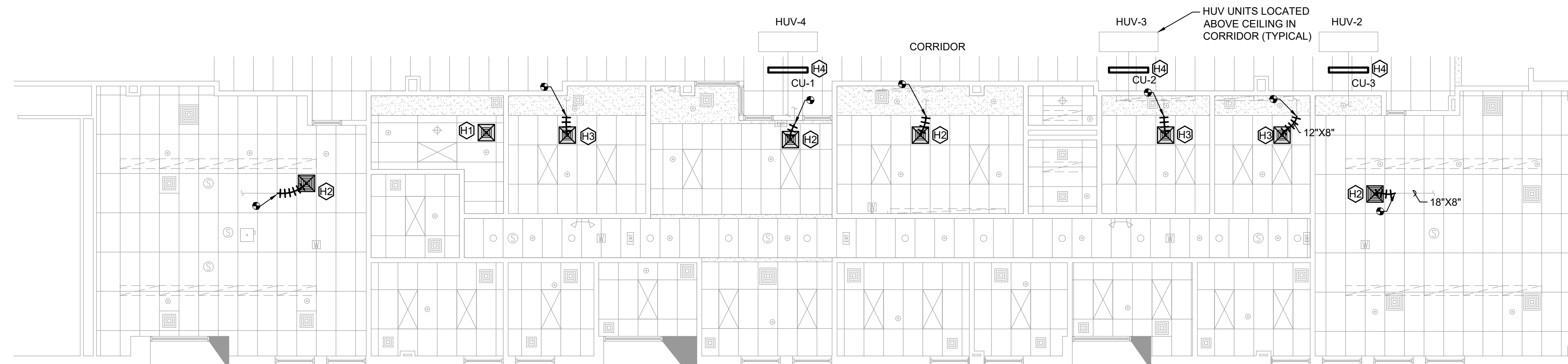
REROOFING AND RELATED WORK
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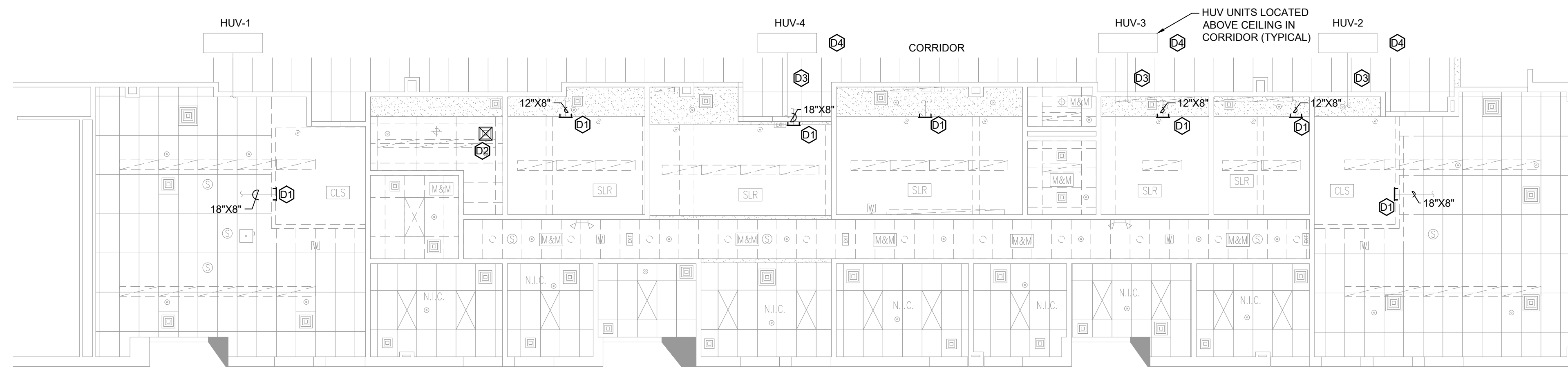
15 MASSIRIO DRIVE
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FIRE PROTECTION PLAN AND SPECIFICATION

PROJ. NO.	JH1905	DRAWING NO.	FP-1
SCALE	As Noted		
DATE	APRIL 3, 2020		



2
M-2
NEW WORK PARTIAL PLAN
SCALE: 1/8" = 1'-0"



1
M-2
DEMOLITION PARTIAL PLAN
SCALE: 1/8" = 1'-0"

HVAC KEYNOTES

- K1** INSTALL EXISTING SUPPLY REGISTER PRESERVED DURING DEMOLITION IN NEW CEILING.
- K2** PROVIDE 24"X24" PRICE MODEL SMD SUPPLY REGISTER (OR EQUIVALENT) WITH 12" NECK. PROVIDE VOLUME DAMPER AT END OF EXISTING DUCTWORK AND BALANCE TO AIR FLOW RECORDED PRIOR TO DEMOLITION.
- K3** PROVIDE 12"X12" PRICE MODEL SMD SUPPLY REGISTER (OR EQUIVALENT) WITH 8" NECK. PROVIDE VOLUME DAMPER AT END OF EXISTING DUCTWORK AND BALANCE TO AIR FLOW RECORDED PRIOR TO DEMOLITION.
- K4** INSTALL DX COOLING COIL PROVIDED WITH THE NOTED CONDENSING UNIT IN THE EXISTING DUCTWORK. PROVIDE DUCT TRANSITIONS AS REQUIRED. CONNECT COOLING COIL CONDENSATE TO THE EXISTING CONDENSATE PIPING.

HVAC DEMOLITION NOTES

- D1** REMOVE SIDEWALL SUPPLY DIFFUSER. PRESERVE DUCTWORK FOR RECONNECTION. PRIOR TO DEMOLITION, MEASURE AND RECORD AIR FLOW FOR USE IN FINAL BALANCING.
- D2** REMOVE SUPPLY DIFFUSER FOR CEILING DEMOLITION; PRESERVE REGISTER FOR REINSTALLATION IN NEW CEILING.
- D3** REMOVE DUCTWORK AS REQUIRED FOR INSTALLATION OF NEW COOLING COIL.
- D4** REMOVE COOLING COIL FROM FAN COIL UNIT AND THE ASSOCIATED REFRIGERANT PIPING. FAN COIL UNIT AND ASSOCIATED DUCTWORK AND HOT WATER PIPING SHALL REMAIN. PRESERVE CONDENSATE PIPING FOR RECONNECTION.

HVAC GENERAL DEMOLITION NOTES

- 1. UNLESS OTHERWISE NOTED, ALL HVAC EQUIPMENT SHALL BE EXISTING TO REMAIN.

SUBMISSIONS & REVISIONS		
MARK	DATE	DESCRIPTION
	4/3/20	BIDDING RELEASE

REROOFING AND RELATED WORK
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WILLIAM H. HALL HIGH SCHOOL
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MECHANICAL
PARTIAL
PLANS

PROJ. NO.	JH1905	DRAWING NO.	M-2
SCALE	As Noted		
DATE	APRIL 3, 2020		

AIR COOLED CONDENSER SCHEDULE							
TAG	MFR	MODEL NUMBER	AMBIENT TEMP(F)	TOTAL HEAT REJECTION (BTU/HR)	NUMBER OF CIRCUITS	REFRIGERANT TYPE	SEER
CU-1	TRANE	4TTA4	95	41,500	1	R-410A	14.25
CU-2	TRANE	4TTA4	95	35,000	1	R-410A	14.50
CU-3	TRANE	4TTA4	95	35,000	1	R-410A	14.50

ELECTRICAL						
TAG	WEIGHT	MCA	MCB	VOLT/PHASE	SERVICES	REMARKS
CU-1	184	8.0	15.0	460/3	GUIDANCE-EXTERIOR	1,2,3
CU-2	155	8.0	15.0	460/3	GUIDANCE-INTERIOR	1,2,3
CU-3	155	8.0	15.0	460/3	COMPUTER LAB	1,2,3

- GENERAL NOTES/ACCESSORIES:
- ACCEPTABLE MANUFACTURERS BY: JCI & DAKIN
 - PROVIDE CORRESPONDING MODEL HPXC DX COOLING COIL. INSTALL COIL IN DUCTWORK DOWNSTREAM OF FAN COIL UNIT. REFER TO DRAWING M-2.
 - CONNECT EXISTING CONTROL WIRING TO NEW CONDENSING UNITS.

FAN SCHEDULE									
TAG	MFR	MODEL NUMBER	TYPE	DRIVE	CFM	ESP (IN WC)	RPM	MOTOR HP	SPEED CONTROL
EF-1	COOK	120C28D (VF)	ROOF	DIRECT	975	0.5	1236	1/3	ECM
EF-2	COOK	101C17DEC	ROOF	DIRECT	525	0.5	1411	1/4	FAN MTD
EF-3	COOK	101C17DEC	ROOF	DIRECT	525	0.5	1411	1/4	FAN MTD
EF-4	COOK	101C17DEC	ROOF	DIRECT	525	0.5	1411	1/4	FAN MTD

TAG	VOLTS/PHASE	EXISTING CURB SIZE	SONES	REMARKS
EF-1	115/1	23" X 23-1/2"	8.0	1, 2, 3, 4, 5
EF-2	115/1	24" X 24"	7.7	1, 2, 3, 4, 5
EF-3	115/1	24" X 24"	7.7	1, 2, 3, 4, 5
EF-4	115/1	18" X 18"	7.7	1, 2, 3, 4, 5

SOUND POWER (dB)								
TAG	1ST OCTAVE	2ND OCTAVE	3RD OCTAVE	4TH OCTAVE	5TH OCTAVE	6TH OCTAVE	7TH OCTAVE	8TH OCTAVE
EF-1	66	69	73	63	60	57	52	47
EF-2	66	68	72	64	59	55	50	47
EF-3	66	68	72	64	59	55	50	47
EF-4	66	68	72	64	59	55	50	47

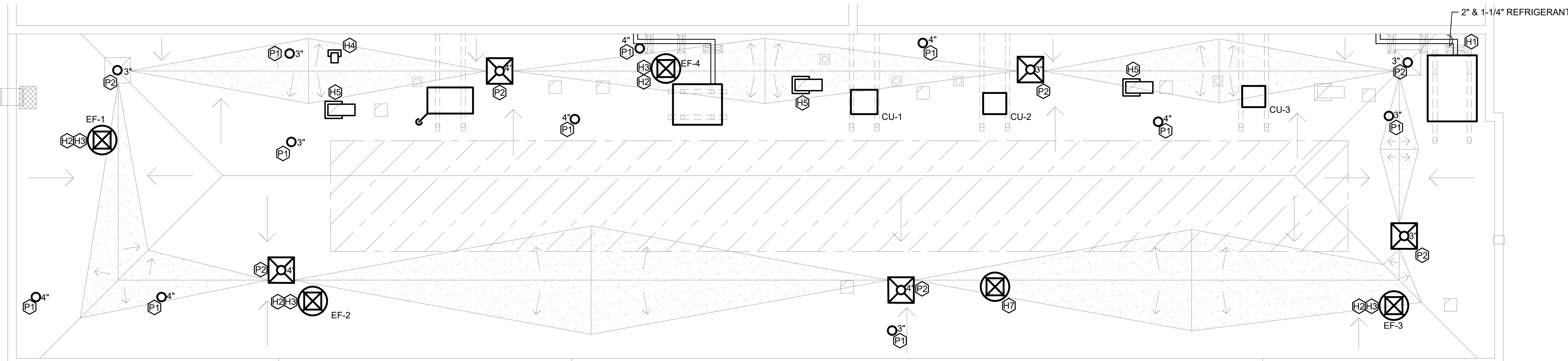
- GENERAL NOTES/ACCESSORIES:
- ACCEPTABLE MANUFACTURERS BY: GREENHECK, TWIN CITY FANS
 - REMOVE EXISTING ROOF CURB AND PROVIDE NEW ROOF CURB. VERIFY EXISTING ROOF CURB DIMENSIONS IN FIELD. PROVIDE ADAPTACURB TO TRANSITION FROM EXISTING CURB TO REPLACEMENT FAN.
 - PROVIDE FAN MOUNTED SPEED CONTROL, PRE-WIRED NEMA 1 DISCONNECT SWITCH AND BACKDRAFT DAMPER SIZED FOR INSTALLATION WITHIN THE REPLACEMENT CURB.
 - PROVIDE STAINLESS STEEL QUICK RELEASE LATCHES.
 - PRIOR TO ORDERING THE EXHAUST FANS, THE CONTRACTOR SHALL OBTAIN THE FOLLOWING INFORMATION FROM THE EXISTING FAN:
 - ALL AVAILABLE MOTOR NAMEPLATE INFORMATION; HORSEPOWER, VOLTAGE, PHASE, ETC.
 - FAN WHEEL DIAMETER
 - BELT PULLEY DIAMETERS
 - ANY ADDITIONAL FAN PERFORMANCE INFORMATION
 THE CONTRACTOR SHALL FORWARD THIS INFORMATION TO THE ENGINEER AND THE FAN VENDOR. THE FAN VENDOR SHALL CONFIRM THE SCHEDULED FAN WILL BE CAPABLE OF PERFORMING AT THE ANTICIPATED OPERATING CONDITION AS DETERMINED BY THE INFORMATION ABOVE. THE CONTRACTOR SHALL PROVIDE LINE ITEM COST DATA IN HIS BID FOR EACH FAN.

PLUMBING KEYNOTES

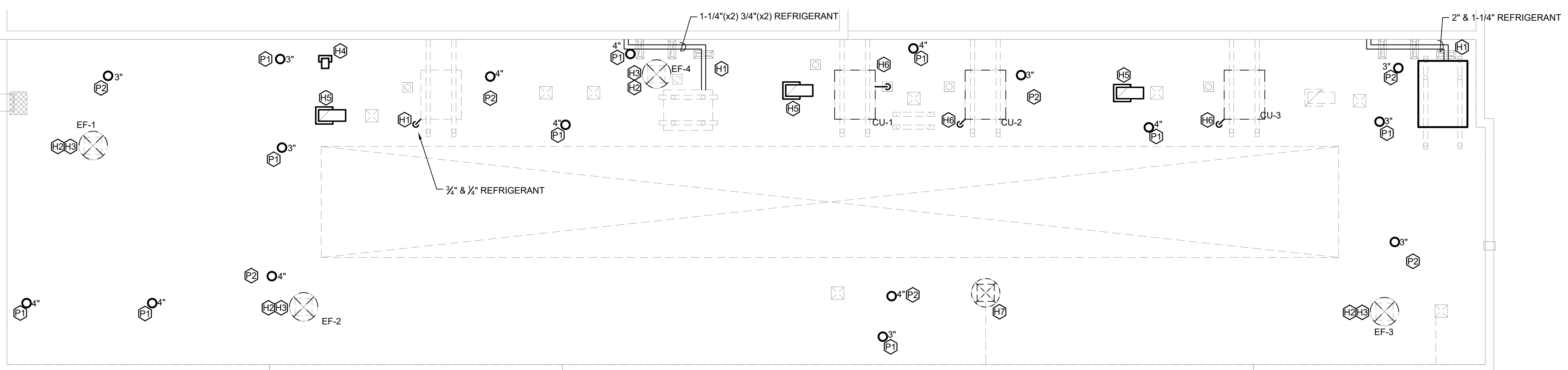
- Ⓜ1 EXTEND EXISTING PLUMBING VENT TO 30" ABOVE FINISHED ROOF. REFER TO ROOF PLAN FOR VENT SIZES. VERIFY VENT SIZE IN FIELD PRIOR TO CONSTRUCTION.
- Ⓜ2 REMOVE EXISTING ROOF DRAIN. PROVIDE FROET 200C4 STANDARD ROOF DRAIN (OR EQUIVALENT) WITH ROOF GUARD AND ACCESSORIES AS REQUIRED BY ROOF CONSTRUCTION AND CONNECT TO EXISTING PIPING. REFER TO ROOF PLAN FOR ROOF DRAIN SIZES. VERIFY ROOF DRAIN SIZE IN FIELD PRIOR TO CONSTRUCTION.

HVAC KEYNOTES

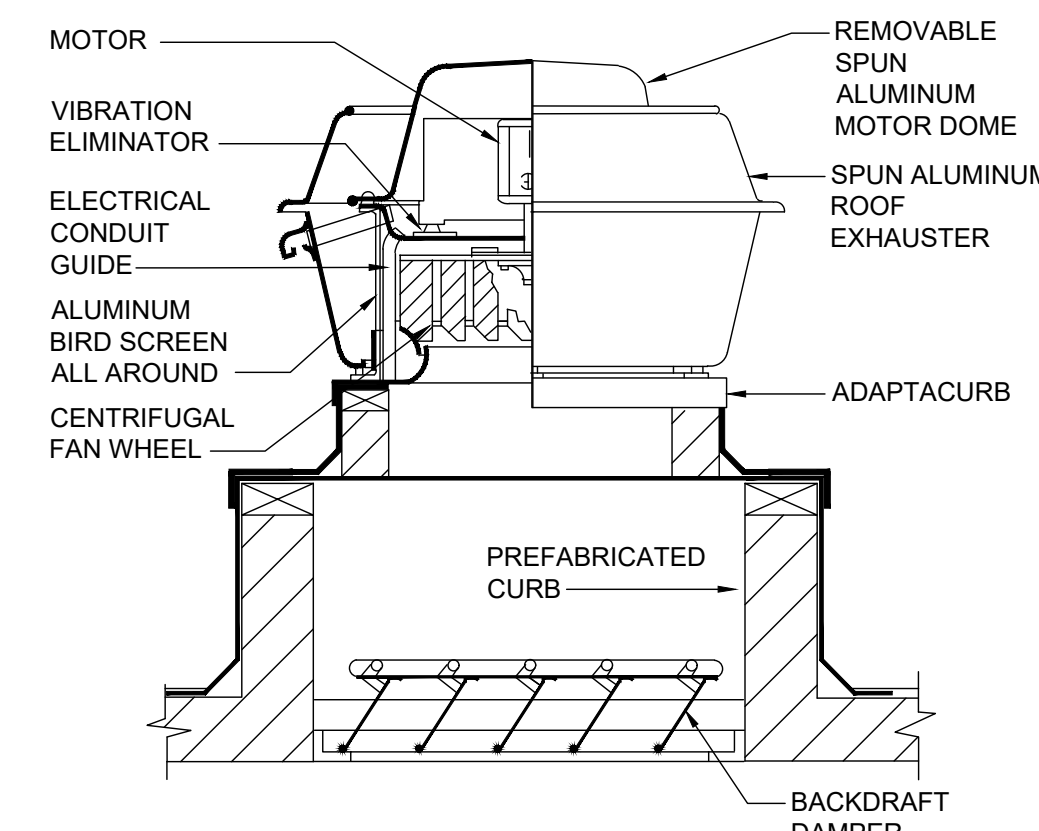
- Ⓜ11 REMOVE INSULATION FROM EXISTING EXTERIOR REFRIGERANT PIPING. PROVIDE NEW FLEXIBLE ELASTOMERIC INSULATION WITH ALUMINUM JACKET ON EXISTING REFRIGERANT PIPING. EXISTING REFRIGERANT PIPING AND CONDENSING UNIT SHALL REMAIN.
- Ⓜ12 REMOVE EXISTING EXHAUST FAN AND ROOF CURB. PROVIDE NEW EXHAUST FAN, ROOF CURB AND ADAPTACURB. REFER TO EXHAUST FAN SCHEDULE.
- Ⓜ13 MEASURE EXISTING EXHAUST FAN AIR FLOW PRIOR TO CONSTRUCTION. FOLLOWING INSTALLATION OF REPLACEMENT FAN, BALANCE THE REPLACEMENT FAN TO MATCH THE PERFORMANCE OF THE EXISTING FAN.
- Ⓜ14 REMOVE EXISTING GOOSENECK AND ROOF CURB. PROVIDE NEW 12" HIGH, 12"x6" ROOF CURB (VERIFY DIMENSIONS IN FIELD). GRAVITY BACKDRAFT DAMPER (SIZED FOR INSTALLATION IN THE ROOF CURB) AND 10"x4" GOOSENECK WITH 1/2" STAINLESS STEEL WIRE MESH SCREEN.
- Ⓜ15 REMOVE EXISTING GOOSENECK AND ROOF CURB. PROVIDE NEW 12" HIGH, 24"x24" ROOF CURB (VERIFY DIMENSIONS IN FIELD). GRAVITY BACKDRAFT DAMPER (SIZED FOR INSTALLATION IN THE ROOF CURB) AND 16"x16" GOOSENECK WITH 1/2" DISCHARGE OPENING WITH 1/2" STAINLESS STEEL WIRE MESH SCREEN.
- Ⓜ16 REMOVE EXISTING CONDENSING UNIT AND ASSOCIATED REFRIGERANT PIPING.
- Ⓜ17 REMOVE EXISTING EXHAUST FAN AND PRESERVE FOR REINSTALLATION. REMOVE EXISTING ROOF CURB. PROVIDE NEW 12" HIGH, 18"x18" ROOF CURB (VERIFY DIMENSIONS IN FIELD) AND GRAVITY BACK DRAFT DAMPER (SIZED FOR INSTALLATION IN THE ROOF CURB.) REINSTALL EXISTING FAN ON NEW ROOF CURB.



2 NEW WORK PARTIAL ROOF PLAN - AREA F
SCALE: 1/8" = 1'-0"



1 DEMOLITION PARTIAL ROOF PLAN - AREA F
SCALE: 1/8" = 1'-0"



4 ROOF EXHAUST FAN DETAIL
N.T.S.

SUBMISSIONS & REVISIONS		
MARK	DATE	DESCRIPTION
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REROOFING AND RELATED WORK
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MECHANICAL
AND PLUMBING
DEMOLITION
AND NEW
WORK ROOF
PLANS

PROJ. NO.	JH1905	DRAWING NO.	MP-1
SCALE	As Noted		
DATE	APRIL 3, 2020		

ELECTRICAL SYMBOL LIST			
NOTE: ALL MOUNTING HEIGHTS GIVEN ARE TO CENTERLINE OF DEVICE UNLESS NOTED OTHERWISE.			
SYMBOL	DESCRIPTION	SYMBOL	DESCRIPTION
	PENDANT MOUNTED LIGHT FIXTURE		EMERGENCY SWITCH - MOUNT AT 48" A.F.F. - M-MASTER - S-SLAVE
	PENDANT MOUNTED LIGHT FIXTURE		JUNCTION BOX
	CEILING MOUNTED LIGHT FIXTURE		JUNCTION BOX WITH 120V POWER FOR TEMPERATURE CONTROLS
	WALL MOUNTED LIGHT FIXTURE		JUNCTION BOX FOR CATV OUTLET WITH 1 1/4" CONDUIT TO CEILING
	SURFACE MOUNTED LIGHT FIXTURE		MOTOR
	RECESSED DOWN LIGHT FIXTURE		NON-FUSED DISCONNECT SWITCH
	RECESSED 2'x4' LIGHT FIXTURE		FUSED DISCONNECT SWITCH
	RECESSED 2'x2' LIGHT FIXTURE		MAGNETIC MOTOR STARTER
	WALL MOUNTED LIGHT FIXTURE		COMBINATION DISCONNECT SWITCH/MAGNETIC MOTOR STARTER
	LINEAR FIXTURE		
	SINGLE FACE EXIT SIGN WITH BATTERY AND DIRECTIONAL ARROWS UNIVERSAL MOUNT		BRANCH CIRCUIT WIRING
	DOUBLE FACE EXIT SIGN WITH BATTERY AND DIRECTIONAL ARROWS UNIVERSAL MOUNT		BRANCH CIRCUIT FEEDER
	EMERGENCY BATTERY UNIT WITH TWO DIRECTIONAL HEADS		ELECTRICAL GROUND
	EMERGENCY REMOTE, WEATHERPROOF, WITH DOUBLE DIRECTIONAL HEADS		FLEXIBLE EQUIPMENT CONNECTION
	EMERGENCY REMOTE, WEATHERPROOF, WITH DOUBLE DIRECTIONAL HEADS		FIXED/HARD - WIRED EQUIPMENT CONNECTION
S	SINGLE POLE TOGGLE SWITCH		
S ₃	THREE WAY TOGGLE SWITCH		
S ₄	FOUR WAY TOGGLE SWITCH		
S _k	SINGLE POLE KEYED TOGGLE SWITCH		
S _{3k}	THREE WAY KEYED TOGGLE SWITCH MOUNT		
S _{4k}	FOUR WAY KEYED TOGGLE SWITCH MOUNT		
S ₁	THERMAL OVERLOAD SWITCH - MOUNT AT FRACTIONAL HP MOTORS		
S ₁	DIMMER SWITCH		
S ₂₃	THREE WAY DIMMER SWITCH		
S ₂₃	PROJECTION SCREEN SWITCH		
S ₂₃	WALL MOUNTED DUAL TECHNOLOGY OCCUPANCY SENSOR SWITCH		
	DOORBELL BUZZER/CHIME - MOUNT 7'-0" A.F.F.		
	CEILING MOUNTED DUAL TECHNOLOGY OCCUPANCY SENSOR		
	PHOTOCELL		
	EMERGENCY ELECTRIC/GAS SHUTOFF PUSHBUTTON OPERATOR		
	GROUNDING DUPLEX RECEPTACLE		
	GROUNDING DUPLEX RECEPTACLE - MOUNT ABOVE COUNTER OR BACKSPLASH 42" A.F.F.		
	GROUNDING DUPLEX RECEPTACLE - MOUNT AT CEILING		
	GROUNDING DUPLEX GFI RECEPTACLE		
	GROUNDING DUPLEX GFI RECEPTACLE "WEATHERPROOF WHILE IN-USE" COVER		
	GROUNDING DUPLEX RECEPTACLE - STUB UP TO 24" A.F.F. ON 1" (MIN) RGS CONDUIT		
	VERTICAL PLUGMOLD WITH OUTLETS AT 12" O.C. - 5' LONG		
	GROUNDING GFI DUPLEX RECEPTACLE DEDICATED FOR MICROWAVE OVEN - VERIFY EXACT MOUNTING LOCATION		
	GROUNDING DOUBLE DUPLEX RECEPTACLE		
	GROUNDING 240V RECEPTACLE		
	GROUNDING GFI DUPLEX RECEPTACLE WITH INTERGRAL USB CHARGING PORT		
	GROUNDING SIMPLEX RECEPTACLE		
	SPECIAL PURPOSE RECEPTACLE - MATCH NEMA CONFIGURATION OF EQUIPMENT SERVED		
	FLOOR MOUNTED DEVICES AS LISTED ABOVE		
	RECESSED MOUNTED PANELBOARD		
	SURFACE MOUNTED PANELBOARD		
	COMBINATION POWER/TEL/DATA POLE		
	TELEPHONE/DATA OUTLETS		
	WIRELESS ACCESS POINT (WAP - WIRELESS ACCESS POINT) INCLUDE CAT 5e CABLE		
		ELECTRICAL LEGEND NOTES: 1. ALL SYMBOLS MAY NOT BE USED.	
ABBREVIATIONS			
A	AMPERE	KW	KILOWATT
AF	ABOVE FINISHED FLOOR	LFMC	LIQUIDTIGHT FLEXIBLE METAL CONDUIT
AFG	ABOVE FINISHED GRADE	MAU	MAKE-UP AIR UNIT
AFI	ARC FAULT CIRCUIT INTERRUPTER	NL	NIGHT LIGHT
AHU	AIR HANDLING UNIT	NLE	NEW LOCATION OF EXISTING
C	CONDUIT	OHD	OVERHEAD DOOR ELECTRIC OPERATOR
CB	CIRCUIT BREAKER	P	POLE
CKT	CIRCUIT	PE	PRIMARY ELECTRIC SERVICE
CUH	CABINET UNIT HEATER	PH or Ø	PHASE
DAC	DOOR ACCESS CONTROLLER	PNL	PANEL
EBB	ELECTRIC BASEBOARD	PVC	POLYVINYL CHLORIDE CONDUIT
EBU	EMERGENCY BATTERY UNIT	RAP	REMOTE ANNUNCIATOR PANEL
EF	EXHAUST FAN	RGS	RIGID GALVANIZED STEEL CONDUIT
EM	EMERGENCY POWERED	RLE	RELOCATE EXISTING
EMT	ELECTRICAL METALLIC TUBING	RMC	RIGID METAL CONDUIT
ETR	EXISTING TO REMAIN	RTU	ROOFTOP UNIT
EWC	ELECTRIC WATER COOLER	SE	SECONDARY ELECTRIC SERVICE
EWL	ELECTRIC WATER HEATER	T	TELEPHONE SERVICE
FA	FIRE ALARM	TV	TELEVISION
FACP	FIRE ALARM CONTROL PANEL	TX	TRANSFORMER
FMC	FLEXIBLE METALLIC TUBING	UNO	UNLESS NOTED OTHERWISE
GFI	GROUND FAULT INTERRUPTER	W	WIRE
IG	ISOLATED GROUND	WAP	WIRELESS ACCESS POINT
JB	JUNCTION BOX	WP	WEATHER PROOF
KVA	KILOVOLT-AMP		

ELECTRICAL GENERAL NOTES

- ALL WORK SHALL BE PERFORMED IN COMPLIANCE WITH CURRENT APPLICABLE CODES, ORDINANCES, THE REGULATORY AGENCIES HAVING JURISDICTION AND THE SPECIFICATIONS. THE SPECIFICATIONS MAY EXCEED THE REQUIREMENTS OF THE CODE, IN WHICH CASE, THE SPECIFICATION MUST BE FOLLOWED.
- THE INTENT OF THESE DOCUMENTS IS FOR THE MEP TRADES TO FURNISH AND INSTALL COMPLETE MECHANICAL AND ELECTRICAL SYSTEMS. THE SPECIFIED ELECTRICAL SYSTEM SHALL BE COMPLETE IN ALL RESPECTS; OPERATIONAL, TESTED, ADJUSTED, APPROVED BY THE AUTHORITIES HAVING JURISDICTION AND READY FOR BENEFICIAL USE BY THE OWNER.
- THE TRADES SHALL OBTAIN AND REVIEW ALL CONTRACT DOCUMENTS BEFORE SUBMITTING A BID. INFORMATION IS PROVIDED ON THE VARIOUS DRAWINGS, SCHEDULES, SPECIFICATIONS AND ALL OF THE VARIOUS DOCUMENTS IN THE BIDDING PACKAGE. THE CONTRACT DOCUMENTS ARE COMPLEMENTARY AND FORM A TOTAL PROJECT DESIGN AND INFORMATION SOURCE FOR CONSTRUCTION PURPOSES.
- THE DRAWINGS ARE DIAGRAMMATIC AND INDICATE THE GENERAL ARRANGEMENT OF SYSTEMS AND WORK INCLUDED IN THE CONTRACT. COORDINATE LOCATIONS OF EQUIPMENT WITH OTHER TRADES AND DURING CONSTRUCTION. ANY MODIFICATION TO THE EQUIPMENT LAYOUT, REQUIRED FOR INSTALLATION, IS TO BE PERFORMED UNDER THE CONTRACT AGREEMENT, AT NO ADDITIONAL COST. REFER TO DETAILS, SCHEDULES AND SPECIFICATIONS FOR ADDITIONAL INFORMATION.
- THE CONTRACTOR SHALL BECOME THOROUGHLY FAMILIAR WITH THE PROJECT DOCUMENTS OF ALL TRADES. THE DRAWINGS ARE DIAGRAMMATIC AND SHOW THE GENERAL ARRANGEMENT OF EQUIPMENT AND CONDUITS. THE CONTRACTOR SHALL COORDINATE THE EXACT LOCATION OF EQUIPMENT AND CONDUITS INSTALLATION WITH ALL THE TRADES BEFORE COMMENCING WORK.
- EQUIPMENT SHALL BE INSTALLED IN ACCESSIBLE LOCATIONS, WHEN EQUIPMENT MUST BE LOCATED ABOVE AN INACCESSIBLE CEILING (GYP BOARD OR EQUIVALENT), OR BEHIND A WALL, AN APPROPRIATE ACCESS DOOR SHALL BE PROVIDED. IF AN ACCESS DOOR IS REQUIRED, IT SHALL BE OF A RATING APPROPRIATE FOR THE WALL/CILING IN WHICH IT IS TO BE INSTALLED. THE CONTRACTOR SHALL COORDINATE LOCATIONS OF ACCESS PANELS FOR ALL DEVICES, REQUIRING ACCESS, WITH THE ARCHITECT, PRIOR TO INSTALLATION OF SUCH DEVICES OR OTHER APPURTENANCES.
- WHERE A CONFLICT OCCURS BETWEEN THE DOCUMENTS, IT SHALL BE BROUGHT TO THE ATTENTION OF THE ARCHITECT. CARRY AS PART OF THE BID THE LARGER QUANTITY AND/OR MORE EXPENSIVE ITEM(S).
- THIS CONTRACT SHALL INCLUDE ALL THE NECESSARY CONDUITS, FITTINGS, TRANSITIONS ETC. AS REQUIRED TO INSTALL CONDUITS AND EQUIPMENT, AND TO AVOID ANY CONFLICTS WITH OTHER TRADES AND THE BUILDING STRUCTURE. THE CONTRACTOR SHALL BE HELD RESPONSIBLE FOR ANY ASSUMPTIONS, OMISSIONS OR ERRORS HE MAKES AS A RESULT OF HIS FAILURE TO COORDINATE WITH OTHER TRADES OR BECOME FULLY FAMILIAR WITH THE PROJECT DOCUMENTS OF ALL TRADES.
- DO NOT INSTALL ANY ELECTRICAL PANELS, TRANSFORMERS, SPECIAL EQUIPMENT, BELOW PIPING OR THROUGH MECHANICAL ROOMS, THAT ARE NOT ASSOCIATED WITH OR SERVE THE RESPECTIVE ROOMS. COORDINATE THE LOCATION OF MECHANICAL EQUIPMENT IN THE FIELD AND ADJUST AS NECESSARY.
- ALL HOMERUNS SHALL BE 2#12, 1#12G, 3/4" TO 20A-1P CIRCUIT BREAKER IN PANEL. DESIGNATED UNLESS OTHERWISE NOTED.
- ALL 120 VAC (277 VAC) CIRCUITS EXCEEDING 150' IN LENGTH SHALL BE INCREASED TO 2#10, 1#10G, 3/4" CONDUIT UNLESS OTHERWISE NOTED.
- ALL BRANCH CIRCUITS SHALL BE PROVIDED WITH SEPARATE NEUTRALS. USE OF COMMON NEUTRALS WILL NOT BE ALLOWED.
- FIELD VERIFY WITH MANUFACTURER'S PROVIDED EXACT ELECTRICAL CHARACTERISTICS AND CONNECTION REQUIREMENTS OF ALL OPERATIONAL EQUIPMENT PRIOR TO MAKING ELECTRICAL POWER CONNECTION. FURNISH AND INSTALL SAFETY DISCONNECT AS REQUIRED BY NEC.
- RECEPTACLES LOCATED WITHIN 6' OF A WATER SOURCE, OR OUTSIDE, AND WHERE REQUIRED BY CODE SHALL BE PROVIDED WITH GFCI PROTECTION, WHETHER INDICATED OR NOT.
- EXTERIOR RECEPTACLES SHALL BE PROVIDED WITH "CAST ALUMINUM" LOCKABLE COVERS RATED "WEATHER-PROOF WHILE IN USE". LOCKS SHALL BE KEVED ALIKE.
- ELECTRICAL CONTRACTOR SHALL PROVIDE ALL REQUIRED SLEEVES AND FIRE STOP FOR CONDUITS AND CABLES PENETRATING FIRE RATED WALLS AND FLOORS.
- ELECTRICAL CONTRACTOR SHALL SEAL ALL CONDUITS PENETRATING EXTERIOR WALLS.
- ALL WIRING SHALL BE IN CONDUIT, UNLESS OTHERWISE INDICATED. CONDUITS SHALL BE RUN CONCEALED IN NEW AND ABOVE CEILINGS.
- ELECTRICAL CONTRACTOR SHALL COORDINATE ALL LOCATIONS OF EQUIPMENT WITH DIV. 21, 22 AND 23 PRIOR TO ROUGHING OR INSTALLING OUTLETS.
- ELECTRICAL CONTRACTOR SHALL COORDINATE WITH THE OWNER. ALL LOCATIONS OF EQUIPMENT BEING FURNISHED BY THE OWNER PRIOR TO ROUGHING OR INSTALLING OUTLETS.
- REFER TO ARCHITECTURAL DRAWINGS FOR ELEVATIONS AND EXACT LOCATION OF DEVICES PRIOR TO ROUGHING OR INSTALLATION OF OUTLETS.
- ELECTRICAL CONTRACTOR SHALL COORDINATE THE LOCATION OF DUCT SMOKE DETECTORS WITH DIV. 23. DUCT SMOKE DETECTORS SHALL BE FURNISHED AND WIRING BY ELECTRICAL CONTRACTOR, INSTALLED BY DIV. 23.
- ALL FIRE ALARM DEVICES LOCATED ON BUILDING EXTERIOR SHALL BE WEATHERPROOF RATED.
- CONDUITS AND/OR WIRING SHALL NOT PENETRATE STAIR ENCLOSURES UNLESS SPECIFICALLY SERVING EQUIPMENT OR DEVICES LOCATED WITHIN STAIR ENCLOSURE.
- WHERE INDICATED, PROVIDE FIXTURES WITH EMERGENCY BATTERY TO OPERATE LAMPS FOR 1 1/2 HOURS UPON LOSS OF NORMAL POWER. WIRE EMERGENCY BATTERY AND EXIT LIGHTS TO LINE SIDE OF AREA LIGHTING CIRCUIT.
- DIRECTIONAL CHEVRONS SHALL CONFORM TO NFPA 5-10.4.1.2 AND SHALL BE IDENTIFIABLE AS A DIRECTIONAL INDICATOR AT A MINIMUM OF 40 FT. UNDER ALL SPACE CONDITIONS. PROVIDE DIRECTIONAL CHEVRONS AS INDICATED ON PLAN.
- BRANCH CIRCUIT WIRING IS SHOWN ON THE FLOOR PLANS. NUMERALS ADJACENT TO THE HOMERUN SYMBOLS FOR LIGHTING, RECEPTACLES, MOTORS, APPLIANCES, ETC. INDICATE THE CIRCUIT NUMBER TO WHICH THE ITEMS ARE TO BE CONNECTED. PROVIDE BRANCH CIRCUIT WIRING FOR ALL ITEMS SHOWN IN ACCORDANCE WITH THESE GENERAL NOTES AND THE ELECTRICAL SPECIFICATIONS.
- ALL 1 POLE, 15 AND 20 AMPERE BRANCH CIRCUITS SERVING RECEPTACLE OR LIGHTING SHALL BE 2 WIRE CIRCUITS PROVIDING AN INDIVIDUAL NEUTRAL CONDUCTOR FOR EACH UNGROUNDED (HOT) CIRCUIT CONDUCTOR. DO NOT SHARE NEUTRAL CONDUCTORS.
- REFER TO ARCHITECTS REFLECTED CEILING PLAN FOR EXACT LOCATIONS OF CEILING MOUNTED DEVICES.
- ALL EXPOSED CABLES OF ANY TYPE IN PLENUM CEILING SPACE SHALL BE PLENUM RATED.
- CONTRACTOR SHALL PROVIDE ALL NECESSARY MISCELLANEOUS STEEL FOR THE SUPPORT OF ALL EQUIPMENT, PIPING, CONDUIT AND DUCTWORK. SUSPENDED FROM SLAB, STEEL WALL OR TRUSSWORK.
- ALL PENETRATIONS OF FLOORS AND WALLS (WHETHER OR NOT FIRE RESISTANCE RATED) SHALL BE PROVIDED WITH A THROUGH PENETRATION PROTECTION SYSTEM (FIRESTOPPING) EACH THROUGH - PENETRATION PROTECTION SYSTEM SHALL BE TESTED IN ACCORDANCE WITH ASTM E814 AND BE LISTED FOR THE TYPE OF FLOOR OR WALL ASSEMBLY PENETRATED AND THE TYPE OF PROTECTION SYSTEM.
- IT IS NOT THE INTENTION TO SHOW EVERY FITTING, HANGER, WIRE OR DEVICE. ALL SUCH ITEMS SHALL BE FURNISHED AND INSTALLED AS NECESSARY FOR A COMPLETE SYSTEM.
- SEE SPECIFICATION SECTION "ELECTRICAL IDENTIFICATION" FOR PROPERLY LABELING EQUIPMENT WIRING, BOXES, ETC.
- CONTRACTOR SHALL DETERMINE THE QUANTITY OF CONDUCTORS REQUIRED FOR PROPER OPERATION OF ALL SWITCHING SCHEMES.
- PROVIDE ALL BONDING AND GROUNDING REQUIRED BY THE NATIONAL ELECTRIC CODE, NFPA 70 AND AS REQUIRED BY LOCAL AUTHORITY HAVING JURISDICTION.
- ALL REQUIRED BONDING CONDUCTORS SHALL BE MINIMUM #8 SOLID INSULATED COPPER. PROVIDE ALL NECESSARY FITTINGS, JUNCTION BOXES, END FITTINGS, ETC., FOR A COMPLETE, CONTINUOUS INSTALLATION.
- ALL BONDING/GROUNDING CONNECTIONS SHALL BE MADE BY LISTED CLAMP OR CONNECTORS AS REQUIRED BY ARTICLE 250 OF NFPA 70, THE NATIONAL ELECTRIC CODE (CURRENT ADOPTED EDITION).
- SEISMICALLY SUPPORT THE EQUIPMENT AS REQUIRED BY CODE. THE AUTHORITY HAVING JURISDICTION, AND/OR AS SPECIFIED. SUBMIT ENGINEERED INSTALLATION DETAILS PER THE SPECIFICATIONS. THE CONTRACTOR'S SEISMIC ENGINEER SHALL REVIEW THE INSTALLATION AND PROVIDE A DETAILED REPORT FOR THE RECORD.

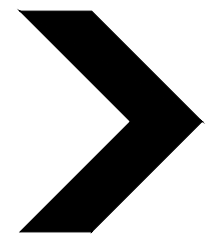
ELECTRICAL DEMOLITION NOTES

- BEFORE SUBMITTING BID, THE CONTRACTORS SHALL VISIT THE JOB SITE AND BECOME FULLY FAMILIAR WITH THE EXISTING CONDITIONS AND THE DOCUMENTS OF OTHER TRADES UNDER WHICH THEIR WORK WILL BE ACCOMPLISHED. THE CONTRACTOR SHALL BE HELD RESPONSIBLE FOR ANY ASSUMPTIONS, OMISSIONS OR ERRORS MADE AS A RESULT OF FAILURE TO BECOME FAMILIAR WITH THE EXISTING CONDITIONS.
- THE CONTRACTOR SHALL COORDINATE AND SCHEDULE ANY DAILY INTERRUPTIONS OR SHUTDOWNS OF THE EXISTING SYSTEMS IN ADVANCE WITH OWNER'S DESIGNATED REPRESENTATIVE. THIS SHALL INCLUDE SERVICES INTERRUPTIONS AND CONNECTIONS, MECHANICAL AND ELECTRICAL DISRUPTIONS AFFECTING OTHER TRADES. INCLUDE ALL WORK REQUIRED TO ALLOW PHASED CONSTRUCTION WHERE NECESSARY.
- DEMOLITION DRAWINGS ARE STRICTLY DIAGRAMMATIC AND SHOW GENERAL ARRANGEMENT AND APPROXIMATE LOCATION OF EXISTING MECHANICAL AND ELECTRICAL EQUIPMENT. IT IS NOT THE INTENT OF THESE DRAWINGS TO SHOW ALL EQUIPMENT, PIPING OR CONDUIT TO BE REMOVED. EQUIPMENT NOT BEING REUSED SHALL BE REMOVED, INCLUDING ALL ASSOCIATED HANGERS, SUPPORTS, PIPES, CONDUITS, WIRES, AND CONTROLS BACK TO THE POINT OF ORIGIN.
- REFER TO THE ARCHITECTURAL DEMOLITION DRAWINGS AND SPECIFICATIONS FOR ADDITIONAL INFORMATION AND REQUIREMENTS. THE FULL EXTENT OF THE DEMOLITION AND RECONSTRUCTION SCOPE OF WORK SHALL BE DETERMINED BY THE ENTIRE SET OF BID DOCUMENTS.
- THE CONTRACTORS SHALL COORDINATE THE DEMOLITION SCOPE OF WORK WITH THE GENERAL CONTRACTORS OR CONSTRUCTION MANAGER'S PHASING SCHEDULE PRIOR TO COMMENCEMENT OF WORK. CARE MUST BE TAKEN SO AS NOT TO DESTROY, REMOVE OR DEMOLISH ANY EQUIPMENT, APPURTENANCES OR DEVICES INTENDED TO REMAIN. PROVIDE TEMPORARY SERVICES AND SYSTEM MODIFICATIONS TO ACCOMMODATE CONTINUOUS OPERATION OF ACTIVE SYSTEM.
- THE LOCATION OF EXISTING ELECTRICAL SYSTEM SHOWN ON FLOOR PLANS, IS BASED ON THE BEST AVAILABLE INFORMATION. THE CONTRACTOR SHALL FIELD VERIFY PRIOR TO COMMENCEMENT OF CONSTRUCTION, EXACT QUANTITY AND LOCATION(S) OF EXISTING EQUIPMENT, PANELS, CONDUITS, LIGHTING, ETC. TO BE REMOVED AND ADJUST AS NECESSARY.
- ALL EQUIPMENT, AND ASSOCIATED WIRING, CONDUITS INDICATED TO BE REMOVED OR RELOCATED, SHALL BE DISCONNECTED AND REMOVED, INCLUDING HANGERS AND OTHER COMPONENTS. NO EQUIPMENT, WIRING OR CONDUITS SHALL BE ABANDONED IN PLACE, UNLESS SPECIFICALLY NOTED.
- ALL SYSTEMS TO BE REMOVED SHALL BE REMOVED BACK TO THE POINT OF SOURCE. THE CONTRACTOR SHALL VERIFY WHICH SYSTEMS MUST REMAIN ACTIVE TO SERVE ADJACENT SPACES DURING CONSTRUCTION. SHOULD THE CONTRACTOR ENCOUNTER, DURING DEMOLITION OF EXISTING WALLS OR CHASES, ANY WIRING OR CONDUIT WHICH MUST REMAIN ACTIVE, IMMEDIATELY GIVE NOTICE TO THE ENGINEER, GENERAL CONTRACTOR OR CONSTRUCTION MANAGER.
- ALL SALVAGEABLE MATERIALS OR EQUIPMENT TO BE REMOVED SHALL BE TURNED OVER TO THE OWNER AT THE END OF EACH DAY. ITEMS REMOVED AND NOT REUSED OR CLAIMED BY THE OWNER SHALL BECOME PROPERTY OF THE TRADE CONTRACTOR AND SHALL BE TRANSPORTED FROM THE SITE. SITE STORAGE OF REMOVED ITEMS WILL NOT BE PERMITTED.
- PROPERLY DISPOSE OF ALL DEMOLISHED EQUIPMENT IN COMPLIANCE WITH CODES AND REGULATIONS. THIS APPLIES TO HAZARDOUS MATERIALS AND CONTAMINATED ITEMS TO BE DEMOLISHED.
- THE CONTRACTOR SHALL OBTAIN EXISTING ELECTRICAL DRAWINGS FROM THE OWNER IF AVAILABLE TO HELP DETERMINE FULL SCOPE OF WORK.

LIGHTING FIXTURE NOTES

- TYPE 'EM' EMERGENCY FIXTURES AND TYPE 'X' EXIT SIGNS SHALL BE WIRED TO LINE SIDE OF AREA LIGHTING CIRCUIT TO SENSE LOSS OF NORMAL POWER AND PROVIDE CONTINUOUS TRICKLE CHARGE, AND SHALL OPERATE AT A MINIMUM OF 1 1/2 HOURS UPON LOSS OF NORMAL POWER. SEE SCHEDULE.
- DIRECTIONAL CHEVRONS SHALL CONFORM TO NFPA 5-10.4.1.2 AND SHALL BE IDENTIFIABLE AS A DIRECTIONAL INDICATOR AT A MINIMUM OF 40 FT. UNDER ALL SPACE CONDITIONS. SEE DETAIL BELOW.
- ALL FIXTURES TO BE LED WITH 0-10V DRIVERS STANDARD. ALL FIXTURES TO BE COLOR TEMPERATURE 3500K.
- PROVIDE ERICO FASTENING PRODUCTS (CADDY) CAT. NO. 515 OR 515A LIGHT FIXTURE SUPPORT CLIPS ON ALL RECESSED LIGHT FIXTURES. PROVIDE MINIMUM FOUR (4) PER FIXTURE.
- IN ADDITION TO THE REQUIREMENTS OF THE IBC AND THE NEC, ALL RECESSED LIGHT FIXTURES SHALL BE PROVIDED WITH SUPPORT WIRES AT A MINIMUM OF FOUR (4) PER FIXTURE AND LOCATED NOT MORE THAN SIX (6) INCHES FROM EACH CORNER, EXTENDED AND ATTACHED TO THE BUILDING STRUCTURE. HANGER WIRES SHALL BE GALVANIZED CARBON STEEL, ASTM A641, SOFT TEMPER, PRE-STRETCHED WITH A YIELD STRESS LOAD OF AT LEAST THREE (3) TIMES DESIGN LOAD BUT NOT LESS THAN 12 GAUGE (0.108"). FOR ROUND FIXTURES OR FIXTURES SMALLER THAN THE CEILING GRID, PROVIDE A MINIMUM OF FOUR (4) WIRES PER FIXTURE AND LOCATE AT EACH CORNER OF THE CEILING GRID IN WHICH THE FIXTURE IS TO BE LOCATED. ADDITIONALLY, WHERE FIXTURES OF SIZES LESS THAN THE CEILING GRID ARE INDICATED TO BE CENTERED IN THE ACOUSTICAL PANEL, SUCH FIXTURES SHALL BE SUPPORTED WITH A MINIMUM OF TWO (2) 3/4" METAL CHANNELS SPANNING AND SECURED TO THE CEILING TEES.
- VERIFY ALL LIGHT FIXTURE FINISHES WITH ARCHITECT PRIOR TO PURCHASE.
- VERIFY ALL LIGHT FIXTURE MOUNTING HEIGHTS WITH ARCHITECT PRIOR TO INSTALLATION.

EXIT SIGN DIRECTIONAL INDICATOR



LIGHTING FIXTURE SCHEDULE												
FIXTURE ITEM	MFG	MODEL #	LAMP TYPE	TEMP	FIXTURE TYPE	DIM	FIXTURE SIZE	MOUNT TYPE	WATTS / FIXTURE	LPW	VOLTS	NOTES
A	LEDALITE	7715LBBVA20DEWN, 83 CRI, 5500LM/FT	LED	3500	DIR/ INDIRECT	0-10	4'	PENDANT	42.3	124.4	120-277	1,2,6
AE	LEDALITE	7715LBBVA20NDEWN, 83 CRI, 5500LM/FT	LED	3500	DIR/ INDIRECT	0-10	4'	PENDANT	42.3	124.4	120-277	1,2,6
B	SELUX	L36-1B30-35-A5-F4-02-WH-UNV-DIM-DL	LED	3500	DIRECT	0-10	2'	SURFACE	30.5	99.64	120-277	1,3
B8	SELUX	L36-1B30-35-A5-F4-08-WH-UNV-DIM-DL	LED	3500	DIRECT	0-10	8'	SURFACE	30.5	99.64	120-277	1,3
B12	SELUX	L36-1B30-35-A5-F4-12-WH-UNV-DIM-DL	LED	3500	DIRECT	0-10	12'	SURFACE	30.5	99.64	120-277	1,3
C	DAY-BRITE	OWL430L835UNVDIM	LED	3500	DIRECT	0-10	1x4	SURFACE	37.2	106	120-277	1,4
D	DAY-BRITE	2FGG38L8354DUNVDIM	LED	3500	DIRECT	0-10	2x4	GRID	32	120	120-277	1,5
DE	DAY-BRITE	2FGG38L8354DUNVDMVLED	LED	3500	DIRECT	0-10	2x4	GRID	32	120	120-277	1,5
EM	CHLORIDE	S18LH6WICDLT	HALOGEN					WALL	17		120-277	
NOTES												
1	COORDINATE COLOR WITH ARCHITECT.											
2	PENDANT TYPE FIXTURE, 8FT AFF, VERIFY CEILING TYPE AND MOUNTING REQUIREMENTS BEFORE ORDER.											
3	CEILING SURFACE MOUNTED, A5 OPTICS, VARIOUS LENGTH, VERIFY MOUNTING CONDITION IN FIELD BEFORE ORDER.											
4	CEILING SURFACE MOUNTED 1X4 LED WRAP AROUND											
5	GRID MOUNTED 2'X4' LED FIXTURE WITH 3800 LUMENS											
6	PROVIDE ALL HARDWARE REQUIRED TO PLACE FIXTURES IN TANDUM											

SUBMISSIONS & REVISIONS		
MARK	DATE	DESCRIPTION
	4/3/20	BIDDING RELEASE

REROOFING AND RELATED WORK
AREA F
WILLIAM H. HALL HIGH SCHOOL
 975 NORTH MAIN STREET, WEST HARTFORD, CONNECTICUT

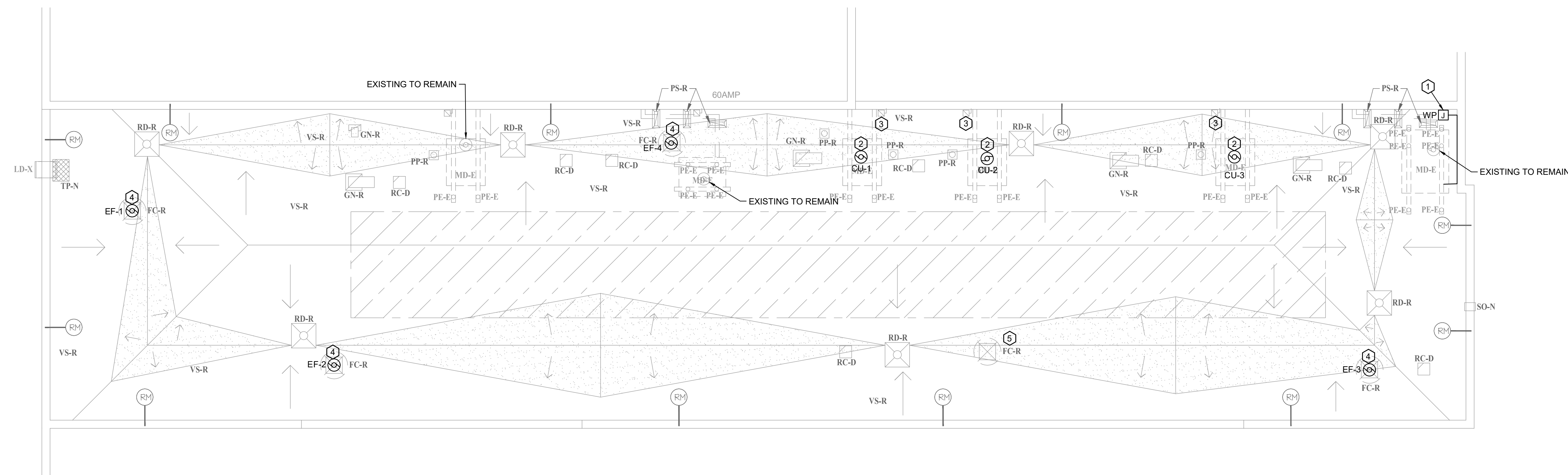
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ARCHITECTS, LLC

15 MASSIRIO DRIVE
 SUITE 101
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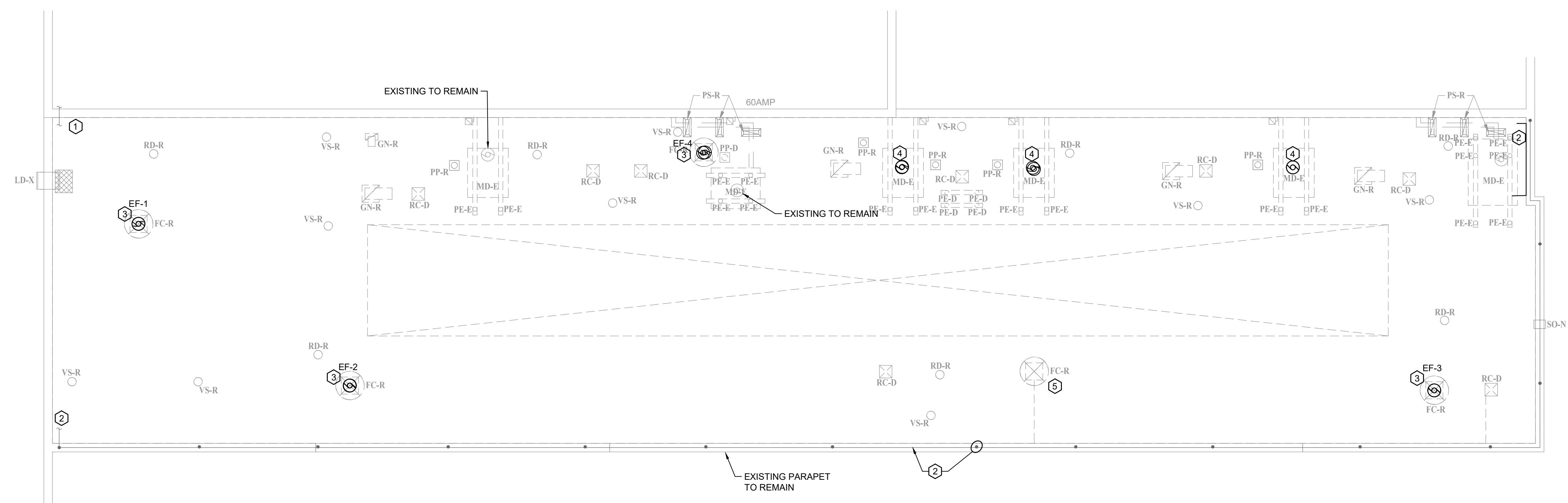
ELECTRICAL
LEGENDS
NOTES AND
SCHEDULES

PROJ. NO.	JH1905	DRAWING NO.	
SCALE	As Noted	E-0	
DATE	APRIL 3, 2020		

SUBMISSIONS & REVISIONS		
MARK	DATE	DESCRIPTION
	4/3/20	BIDDING RELEASE



2 NEW WORK PARTIAL ROOF PLAN - AREA F
SCALE: 1/8" = 1'-0"



1 DEMOLITION PARTIAL ROOF PLAN - AREA F
SCALE: 1/8" = 1'-0"

GENERAL NOTES:

1. ALL CONDENSING UNITS ARE 480V 3PHASE.
2. ALL NEW CONDUCTORS SHALL BE THWN-2
3. LESS THAN 6FT OF LFMC SHALL BE USED TO CONNECT TO VIBRATING MACHINERY. CONTINUE TO DISCONNECT SWITCH WITH RMC TO DISCONNECT SWITCH.

DRAWING NOTES:

- 1 PROVIDE WEATHERPROOF JUNCTION BOX. REMOVE EXISTING BROKEN CONDUIT RUN. PROVIDE NEW RMC RUN WITH NEW CONDUCTORS TO EXISTING HVAC EQUIPMENT. MATCH EXISTING CONDUCTOR AND CONDUIT SIZES. PROVIDE LFMC TO CONNECT TO EQUIPMENT. NEW RUN SHALL REDUCE TRIPPING HAZARD. TEST HVAC EQUIPMENT FOR CORRECT ROTATION AND OPERATION. COORDINATE WITH MAINTENANCE DEPARTMENT AND MECHANICAL CONTRACTOR.
- 2 PROVIDE POWER TO NEW CONDENSER UNIT FROM EXISTING DISCONNECT SWITCH. PROVIDE NEW CONDUCTORS AND RACEWAY IF EXISTING CONDUCTORS ARE TOO SHORT OR NOT ELECTRICALLY SAFE TO BE REINSTALLED.
- 3 ELECTRICAL CONTRACTOR TO ENSURE EXISTING OVERCURRENT PROTECTION DEVICE IS RATED AT 15 AMPS. IF NOT REPLACE FUSES IN DISCONNECT SWITCH WITH DUAL ELEMENT LOW PEAK 15A FUSES. OR PROTECT AT SOURCE WITH NEW 15A TYPE HACR CIRCUIT BREAKER.
- 4 CONNECT NEW EXHAUST FANS TO THE EXISTING BRANCH CIRCUIT.
- 5 ELECTRICALLY RECONNECT THE EXISTING EXHAUST FAN TO THE EXISTING BRANCH CIRCUIT. CONFIRM ROTATION WITH MECHANICAL CONTRACTOR.

DEMOLITION DRAWING NOTES:

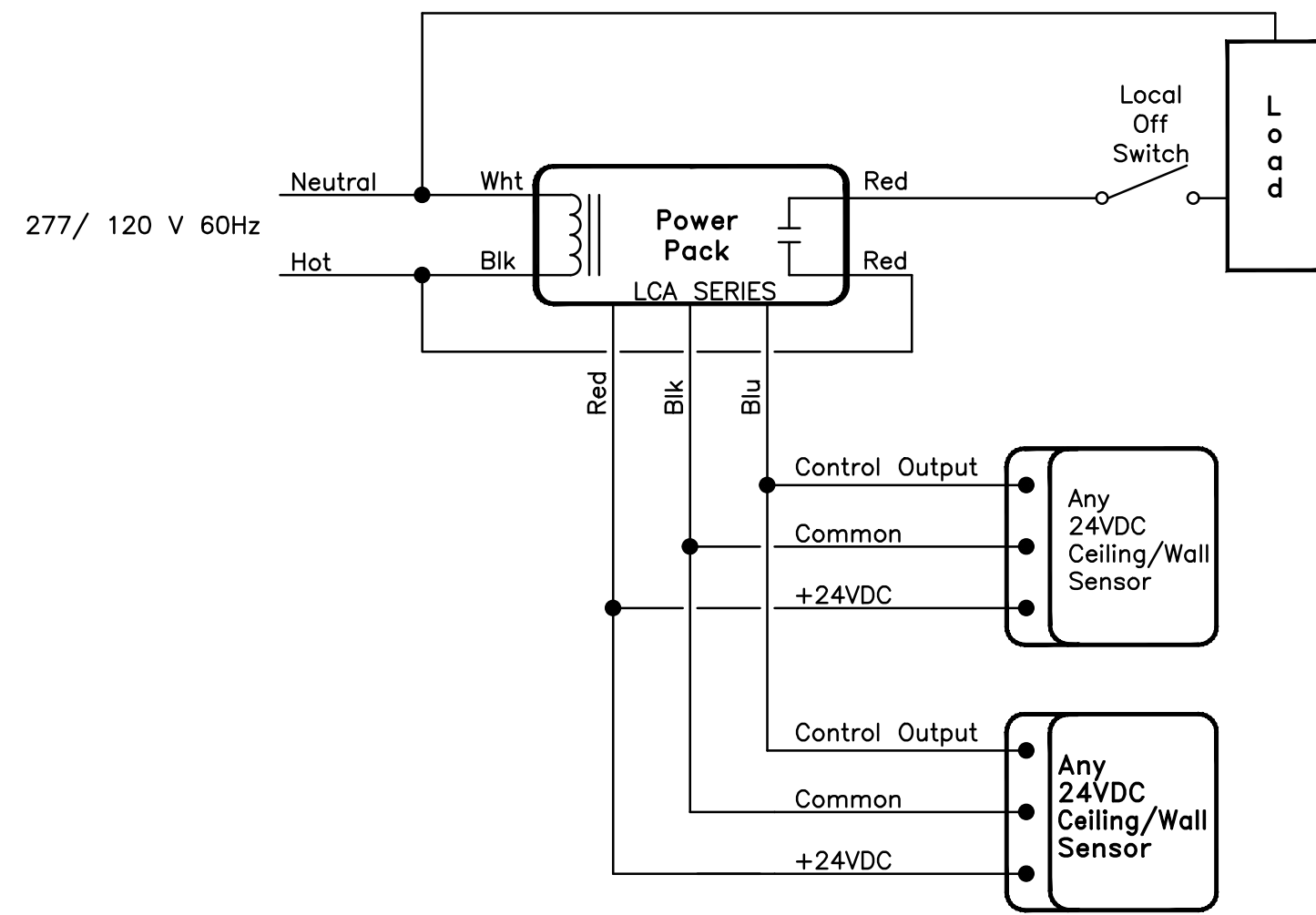
- 1 EXISTING BROKEN END OF LIGHTNING PROTECTION SYSTEM. TERMINATE AND SUPPORT END WITH APPROVED CONNECTOR.
- 2 REMOVE EXISTING LIGHTNING PROTECTION CABLES AND AIR TERMINALS (TYPICAL).
- 3 DISCONNECT POWER FROM EXISTING EXHAUST FANS SO THAT NEW EXHAUST FANS CAN BE INSTALLED.
- 4 ELECTRICALLY DISCONNECT THE EXISTING CONDENSING UNIT. MAKE READY FOR REPLACEMENT CONDENSING UNIT. VERIFY EXISTING CONDUCTORS ARE ELECTRICALLY SAFE TO BE REUSED.
- 5 ELECTRICALLY DISCONNECT THE EXISTING EXHAUST FAN SO THAT A NEW CURB CAN BE INSTALLED BY OTHERS.

REROOFING AND RELATED WORK
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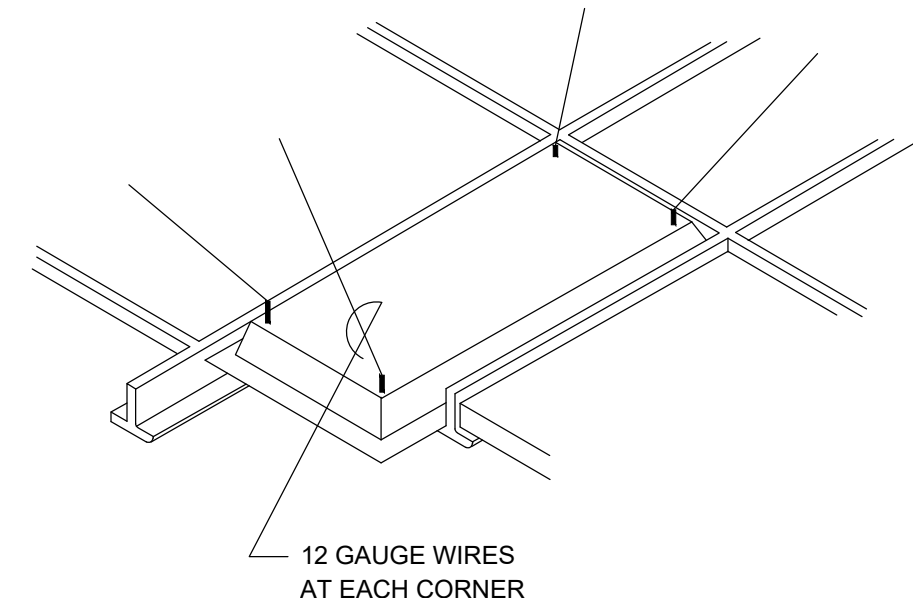
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DEMOLITION AND NEW WORK
ROOF ELECTRICAL PART PLANS

PROJ. NO.	JH1905	DRAWING NO.	E-1
SCALE	As Noted		
DATE	APRIL 3, 2020		

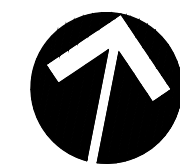
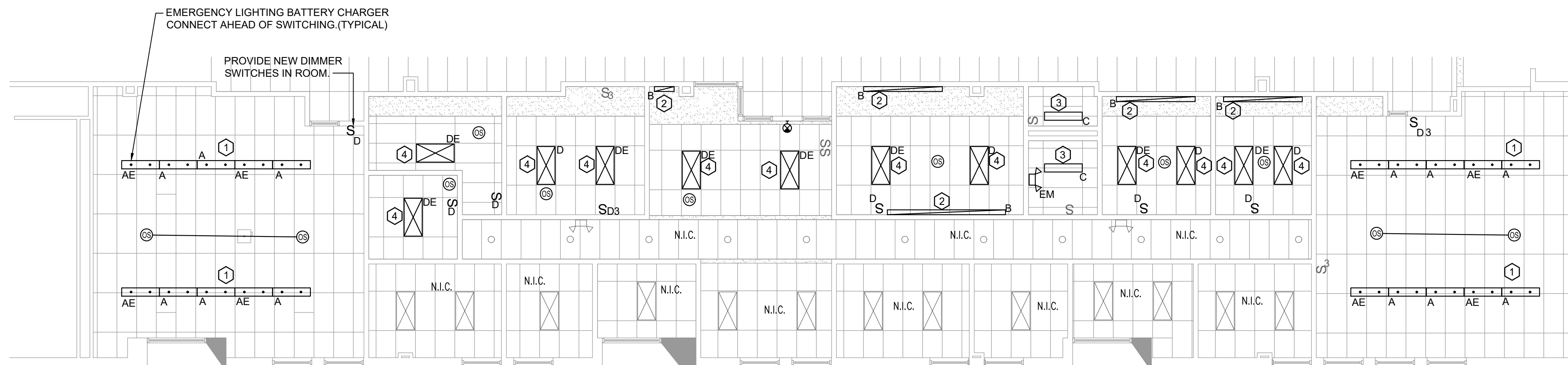


STEINEL DUAL TECH OCCUPANCY # DT QUATTRO 64700DT
STEINEL POWER.PACK # TR150

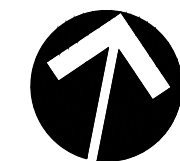
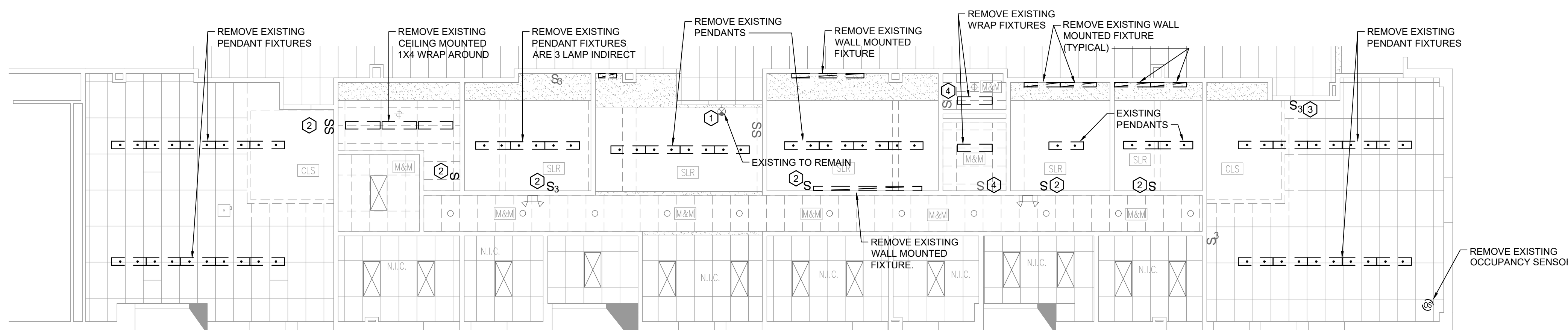


3
E-2 **MULTIPLE VACANCY SENSORS USING ONE POWER PACK**
NOT TO SCALE

4
E-2 **BRACING FOR LIGHT FIXTURES**
NOT TO SCALE



2
E-2 **NEW WORK PARTIAL PLAN**
SCALE: 1/8" = 1'-0"



1
E-2 **DEMOLITION PARTIAL PLAN**
SCALE: 1/8" = 1'-0"

GENERAL NOTES:

1. PROVIDE NEW EMERGENCY LIGHT FIXTURES. CONNECT NEW EMERGENCY LIGHT FIXTURES AHEAD OF LOCAL LIGHTING CIRCUIT CONTROLS.
2. PROVIDE NEW DUAL TECHNOLOGY OCCUPANCY SENSORS. CONNECT NEW SENSORS AHEAD OF LOCAL CONTROLS. INTERFACE EXISTING SWITCHING FOR VACANCY SENSOR CONTROL. ALL LIGHTS IN THE ROOM SHALL BE CONTROLLED BY VACANCY SENSORS. SEE VACANCY DETAIL THIS SHEET.
3. VERIFY EXISTING LIGHTING CIRCUIT VOLTAGE BEFORE PURCHASING ELECTRICAL DEVICES.
4. RE-USE EXISTING ROOM SWITCHES. OR PROVIDE NEW AS INDICATED. SWITCHES SHALL BE LOCATED ON THE WALL WITHIN 12" OF THE DOOR STRIKE. MAINTAIN STANDARD SWITCH HEIGHT. PROVIDE NEW COMPATIBLE DIMMER SWITCHES AS SHOWN.
5. MOUNT FIXTURES AS SHOWN. SEE DETAIL #4 SHOWN ON THIS SHEET.

DRAWING NOTES:

1. MOUNT NEW PENDANT FIXTURES TO GRID CEILING. RE-CONNECT NEW LED INDIRECT/DIRECT PENDANT LIGHT FIXTURES IN THE SAME LOCATIONS. RECONNECT LIGHT FIXTURES TO EXISTING LIGHTING CIRCUIT AND OCCUPANCY SENSOR CONTROLS. PROVIDE NEW VACANCY SENSOR DEVICES AND ADJUST FOR COVERAGE. SEE DETAIL #3 ABOVE. PROVIDE NEW COMPATIBLE DIMMER SWITCH.
2. MOUNT NEW SURFACE LIGHT FIXTURES. RE-CONNECT TO THE EXISTING LIGHTING CIRCUIT AND CONTROLS VIA NEW DUAL TECHNOLOGY VACANCY SENSOR.
3. MOUNT NEW LED 1'X4' WRAP AROUND FIXTURES AND RE-CONNECT TO EXISTING LIGHTING CIRCUIT AND CONTROLS. REPLACE EXISTING SWITCH WITH DUAL TECH OCCUPANCY TYPE SWITCH.
4. GRID MOUNT NEW 2'X4' LED FIXTURES. RE-CONNECT TO EXISTING LIGHTING CIRCUIT AND CONTROLS VIA NEW DUAL TECH OCCUPANCY SENSOR AND ROOM SWITCH. PROVIDE NEW COMPATIBLE DIMMER SWITCH TO REPLACE EXISTING SWITCH.

DEMOLITION GENERAL NOTES:

1. IN EACH ROOM IDENTIFY THE EXISTING CIRCUIT THAT PROVIDES POWER TO THE EXISTING LIGHTING CIRCUIT.
2. REMOVE THE EXISTING LIGHT FIXTURES AND DISCARD ACCORDING TO STATE AND TOWN REQUIREMENTS.
3. RELOCATE EXISTING LIGHTING CIRCUIT CONDUCTORS AND JUNCTION BOXES TO AN ACCESSIBLE AREA ABOVE THE NEW CEILING GRID. NEW LIGHTS TO RE-CONNECT TO THE EXISTING LIGHTING CIRCUIT AND SWITCHING DEVICES.

DRAWING NOTES:

1. REMOVE THE EXIT SIGN DURING THE DAY AND REINSTALL WHEN DEMOLITION IS COMPLETED ABOVE THE EXIT SIGN.
2. REPLACE EXISTING SWITCH WITH NEW DIMMER SWITCH.
3. REPLACE EXISTING SWITCH WITH A NEW 3WAY DIMMER SWITCH.
4. REPLACE EXISTING SWITCH WITH A NEW OCCUPANCY SENSOR SWITCH.

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ELECTRICAL
LIGHTING
PART
PLANS

PROJ. NO.	JH1905	DRAWING NO.	E-2
SCALE	As Noted		
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ELECTRICAL SPECIFICATIONS:

GENERAL:

THE ENTIRE ELECTRICAL SYSTEM SHALL BE INSTALLED IN STRICT ACCORDANCE WITH THE CURRENT CONNECTICUT STATE BUILDING CODE INCLUDING:

- INTERNATIONAL BUILDING CODE
- AMENDMENTS TO THE INTERNATIONAL BUILDING CODE
- INTERNATIONAL PLUMBING CODE
- INTERNATIONAL MECHANICAL CODE
- INTERNATIONAL ENERGY CONSERVATION CODE
- NATIONAL ELECTRICAL CODE
- ANSI ACCESSIBLE AND USEABLE BUILDINGS AND FACILITIES
- OCCUPATIONAL SAFETY AND HEALTH ADMINISTRATION

THE CONTRACTOR SHALL FURNISH ALL MATERIALS, EQUIPMENT AND LABOR TO COMPLETE ELECTRICAL SYSTEMS AS SHOWN ON THE PLANS AND AS SPECIFIED HEREIN.

THE INTENT OF THESE SPECIFICATIONS AND CONTRACT DRAWINGS IS TO PROVIDE COMPLETE INSTALLATION OF THE VARIOUS SYSTEMS DESCRIBED HEREIN AND INDICATED ON THE DRAWINGS. ANY LISTING OR INDICATION OF ITEMS FURNISHED OR WORK TO BE PERFORMED SHALL NOT BE COMPLETE IN ITSELF AND SHALL NOT LIMIT THE GENERAL REQUIREMENTS TO FURNISH AND INSTALL WORK, EQUIPMENT, ACCESSORIES, CONTROLS, ETC., TO COMPLETE THE CONTRACT IN A SUBSTANTIAL MANNER. WORK SHALL INCLUDE BUT NOT BE LIMITED TO THE FOLLOWING:

- SAFETY SWITCHES - HEAVY DUTY - FUSIBLE
- FUSES - TIME DELAY - BUSSMAN LPN-RK (250V)
FAST ACTING - BUSSMAN KTN-R (250V)
- DISCONNECTION AND COMPLETE REMOVAL OF LIGHTING AND EQUIPMENT NOT INTENDED FOR REUSE
- PROVISION OF ALL LIGHTING FIXTURES COMPLETE WITH LAMPS, HANGERS AND SUPPORTS
- BRANCH LIGHTING AND RECEPTACLE WIRING AND CONDUIT, COMPLETE WITH ALL CONNECTIONS
- PROVISION OF ALL OUTLET BOXES, WIRING DEVICES, PLATES, CONDUIT, CONDUIT FITTINGS, HANGERS, SUPPORTS, AND SUCH OTHER ITEMS REQUIRED AND INCIDENTAL FOR A COMPLETE INSTALLATION.
- PROVISION OF ALL DISCONNECT SWITCHES, MANUAL AND MAGNETIC MOTOR STARTERS, AS REQUIRED FOR ALL HVAC AND OTHER ELECTRICAL EQUIPMENT
- PROVISION OF POWER AND TEMPERATURE CONTROL WIRING TO HVAC AND PLUMBING EQUIPMENT SUCH AS AIR HANDLING UNITS, ROOFTOP HEATING/COOLING UNITS, EXHAUST FANS, COMPRESSORS, EVAPORATORS AND THE LIKE COMPLETE WITH ALL CONNECTIONS
- ALL HVAC AND EQUIPMENT WILL BE PROVIDED BY OTHERS FOR WIRING BY THIS ELECTRICAL CONTRACTOR EXCEPT AS NOTED.

PERMITS AND FEES:

- OBTAIN AND PAY FOR ALL NECESSARY PERMITS REQUIRED BY LAW AND LOCAL INSPECTIONS AUTHORITIES TO PERFORM THE ELECTRICAL WORK SPECIFIED HEREIN

WIRING AND RACEWAY:

- THE DRAWINGS SHOW THE GENERAL LAYOUT AND TYPICAL DETAILS. PROVIDE COMPLETE SYSTEMS. DRAWINGS ARE BASED ON THE SPECIFIED EQUIPMENT. RACEWAY LAYOUTS, BOXES, AND WIRING OF THE SYSTEMS ARE SUBJECT TO APPROVED SHOP DRAWINGS.
- ENSURE THAT ITEMS TO BE FURNISHED FIT THE SPACE AVAILABLE. MAKE NECESSARY FIELD MEASUREMENTS TO ASCERTAIN SPACE REQUIREMENTS, INCLUDING THOSE FOR CONNECTIONS, AND PROVIDE SUCH SIZES AND SHAPES OF EQUIPMENT THAT FINAL INSTALLATION SHALL SATISFY THE INTENT OF THE DRAWINGS AND SPECIFICATIONS.
- LOCATIONS OF OUTLETS, SWITCHES, APPLIANCES, ETC. AS SHOWN ON ELECTRICAL PLANS ARE APPROXIMATE. COORDINATE WITH ARCHITECTURAL AND MECHANICAL PLANS AND DETAILS, AND WITH JOB CONDITIONS. INSTALL SWITCHES WITH "OFF" POSITION DOWN. INSTALL RECEPTACLES WITH GROUNDING POLE IN THE UP POSITION FOR VERTICAL MOUNTING AND AT LEFT FOR HORIZONTAL MOUNTING.
- LOCATE AND INSTALL EQUIPMENT, JUNCTION AND PULL BOXES, PANEL BOARDS, SWITCHES, CONTROLS, AND OTHER APPARATUS REQUIRING MAINTENANCE, INSPECTION, AND OPERATION SO AS TO BE READILY ACCESSIBLE.

RACEWAY INSTALLATION:

- IN ALL ARCHITECTURALLY FINISHED SPACES, CONDUITS AND CABLES SHALL BE RUN CONCEALED IN HUNG OR FURRED CEILINGS, SLABS, MASONRY, AND PARTITIONS UNLESS OTHERWISE INDICATED. SAW CUTTING AND FINISHED PATCHING SHALL BE REQUIRED IN EXISTING SLABS AND MASONRY WALLS. IN UNFINISHED SPACES, RACEWAYS MAY BE RUN EXPOSED.
- UNLESS OTHERWISE INDICATED, EXACT ROUTING OF RACEWAYS SHALL BE DETERMINED BY THE CONTRACTOR TO SUIT THE PROJECT REQUIREMENTS AND FIELD CONDITIONS.
- MINIMUM CONDUIT SIZE SHALL BE 3/4" I.D.
 - IN CONCRETE - RIGID METAL CONDUIT
 - UNDERGROUND - RIGID NONMETALLIC CONDUIT
 - EXPOSED AND CONCEALED - ELECTRICAL METALLIC TUBING

WIRING INSTALLATION:

1. DO NOT USE WIRE SMALLER THAN No. 12 AWG FOR ANY POWER OR LIGHTING CIRCUIT. USE LARGER SIZES WHERE INDICATED, AS REQUIRED BY CODES, AND AS FOLLOWS:

30 AMPERE CIRCUIT:	No. 10 AWG
40 AMPERE CIRCUIT:	No. 8 AWG
50 AMPERE CIRCUIT:	No. 6 AWG
60 AMPERE CIRCUIT:	No. 6 AWG

A. MINIMUM HOMERUN AND BRANCH CIRCUIT WIRING SIZES AND MAXIMUM HOMERUN CONDUIT FILL FOR 120 VOLT, 20 AMPERE CIRCUITS SHALL BE AS FOLLOWS:

LENGTH	CIRCUIT HOMERUN CONDUIT SIZE		
	WIRE SIZE	WIRE SIZE	(8 WIRES/CONDUIT)
0' TO 50'	#12	#12	3/4"
51' TO 100'	#12	#10	3/4"
101' TO 200'	#10	#8	1"

GREATER THAN 200' - REQUEST DIRECTION FROM ARCHITECT/ENGINEER

NOTE: PROVIDE DERATING PER CODE WHEN INSTALLING MORE THAN 3 CURRENT CARRYING CONDUCTORS IN CONDUIT.

B. HOMERUNS AND BRANCH CIRCUIT WIRING FOR 277 VOLT, 20 AMPERE CIRCUITS SHALL BE AS FOLLOWS:

LENGTH	CIRCUIT HOMERUN CONDUIT SIZE		
	WIRE SIZE	WIRE SIZE	(8 WIRES/CONDUIT)
0' TO 100'	#12	#12	3/4"
100' TO 200'	#12	#10	3/4"

GREATER THAN 200' - REQUEST DIRECTION FROM ARCHITECT/ENGINEER

NOTE: PROVIDE DERATING PER CODE WHEN INSTALLING MORE THAN 3 CURRENT CARRYING CONDUCTORS IN CONDUIT.

- DO NOT USE WIRE SMALLER THAN No. 14 AWG FOR CONTROL CIRCUITS UNLESS OTHERWISE RECOMMENDED BY THE EQUIPMENT OR SYSTEM MANUFACTURER ON WIRING SHOP DRAWINGS, AND SO APPROVED BY THE ARCHITECT.
- WIRING ABOVE ACCESSIBLE CEILINGS AND IN STUDDED PARTITIONS MAY BE TYPE MC CABLE
- WHERE GREATER THAN THREE (3) CURRENT CARRYING CONDUCTORS ARE INSTALLED IN ANY ONE CONDUIT OR CABLE, CONDUCTORS MUST BE DERATED AND SIZES INCREASED, IF NEEDED, TO ACCOMMODATE CONDUCTOR DERATING AS REQUIRED BY NEC ARTICLE 310, NOTE 8(A) OF AMPACITY TABLES FOR 0-2000 VOLT CONDUCTORS.
- CONDUCTORS SHALL BE COMPLETELY INSTALLED AND CONNECTED. PROVIDE ALL TERMINALS, LUGS, AND CONNECTORS TO SUIT THE APPLICATION, AND IN COMPLIANCE WITH EQUIPMENT MANUFACTURERS' RECOMMENDATIONS.
- BRANCH CIRCUIT WIRING FOR LIGHTING AND OTHER SINGLE PHASE APPLICATIONS SHALL BE MULTI-WIRE, UTILIZING COMMON NEUTRALS, EXCEPT COMPUTER AND WORKSTATION CIRCUITS AND DIMMER CIRCUITS SHALL HAVE SEPARATE NEUTRALS, AND AS OTHERWISE INDICATED.
- UNDER NO CIRCUMSTANCES SHALL ANY SWITCH OR CIRCUIT BREAKER BREAK A NEUTRAL CONDUCTOR.
- THE CIRCUIT NUMBERS INDICATED ON THE DRAWINGS ARE INTENDED AS A GUIDE FOR PROPER CONNECTION OF CIRCUITS TO PANELS. HOWEVER, IT SHALL BE THE RESPONSIBILITY OF THE CONTRACTOR TO ENSURE THAT THE FINAL CIRCUITING WORK FULFILLS THE FOLLOWING CONDITIONS:
 - LOADS ON PANEL BUSES SHALL BE PHASE-BALANCED AS EVENLY AS POSSIBLE.

GROUNDING INSTALLATION:

- PROVIDE ALL ELECTRICAL GROUNDING TO CONFORM TO ARTICLE 250 OF THE NEC.
- EQUIPMENT GROUNDING:
 - INCLUDE AN INSULATED GROUND CONDUCTOR IN ALL CONDUIT RUNS CONTAINING SECTIONS OF FLEXIBLE CONDUIT UNLESS OTHERWISE NOTED.
 - INCLUDE AN INSULATED GROUND CONDUCTOR IN ALL BRANCH CIRCUIT RACEWAYS OR CABLES UNLESS OTHERWISE NOTED.
- TELECOMMUNICATIONS CLOSET GROUNDING
 - PROVIDE A #4 AWG GROUND CONDUCTOR RISER IN 1" EMT CONDUIT TO EACH TELECOMMUNICATIONS CLOSET GROUNDING BUSBAR (TGB) FROM THE TELECOMMUNICATIONS MAIN GROUNDING BUSBAR (TMGB), AND TO MAIN SERVICE GROUNDING ELECTRODE SYSTEM.
 - CONNECT THE GROUND RISER TO TMGB AND TGB'S PER TIA/EIA STANDARD 607 - 1994
- GROUND EACH TELECOMMUNICATIONS, FIRE ALARM, SECURITY, AND BMS SYSTEM EQUIPMENT AND CONTROL PANEL WITHIN EACH TELECOMMUNICATIONS ROOM/CLOSET TO THE ASSOCIATED CLOSET TMGB OR TGB WITH A #4 AWG CONDUCTOR PER TIA/EIA STANDARD 607 - 1994

RACEWAYS FOR TELECOMMUNICATION SYSTEMS:

- PROVIDE EMPTY CONDUIT SYSTEMS FOR TELECOMMUNICATION WORK. COMPLETE WITH PULL BOXES, OUTLET BOXES, AND CONDUIT WITH PULLSTRING AS INDICATED ON THE DRAWINGS.
- PROVIDE MINIMUM INSIDE BENDING RADIUS OF 10 TIMES CONDUIT INSIDE DIAMETER FOR TELECOMMUNICATIONS RACEWAYS.
- WHEN COMPLETED THE CONDUIT SYSTEMS SHALL BE READY FOR INSTALLATION OF WIRING AND EQUIPMENT.
- FROM EACH OUTLET PROVIDE A 1" EMPTY EMT CONDUIT ROUTED INTO THE CEILING CAVITY OR TO THE CLOSEST TELECOMMUNICATIONS CLOSET. PROVIDE A DRAG LINE IN EACH RUN AND TERMINATE IN A BUSHED ELBOW.

SWITCHES AND RECEPTACLES:

- LIGHT SWITCHES - 20 AMP, 120V - PASS & SEYMOUR #PS20AC11
- DUPLEX RECEPTACLES - 20 AMP, 120V - PASS & SEYMOUR #PTS362LI
- SPECIAL PURPOSE RECEPTACLES - AS SPECIFIED AND SHOWN ON THE DRAWINGS OR AS REQUIRED TO MATCH EQUIPMENT SERVED.
- PLATES - PASS & SEYMOUR TP SERIES
- WIRING DEVICES AS SPECIFIED ARE BASED ON PASS AND SEYMOUR CATALOG NUMBERS. DEVICES AS MANUFACTURED BY LEVITON OR HUBBEL WILL BE CONSIDERED, IF THEY ARE OF THE SAME TYPE AND QUALITY.
- ALL DEVICES AND PLATES SHALL BE IVORY UNLESS OTHERWISE NOTED. COORDINATE ALL FINISHES WITH ARCHITECT PRIOR TO PURCHASE.

LIGHTING FIXTURES:

- PROVIDE FIXTURES AND LAMPS AS SHOWN AND SPECIFIED ON THE DRAWINGS.
- ALL LED FIXTURES SHALL BE NEUTRAL WHITE LAMPS UNLESS SPECIFIED OTHERWISE.
- ALL DRIVERS SHALL BE DLC CERTIFIED, ENERGY EFFICIENT, FULL LIGHT OUTPUT TYPES.
- FLUORESCENT BALLASTS SHALL BE AS MANUFACTURED BY ADVANCE, UNIVERSAL OR MOTOROLA.

MECHANICAL EQUIPMENT WIRING:

- UNLESS OTHERWISE NOTED OR SPECIFIED HEREIN, ALL MOTORS, MOTOR STARTERS, MOTOR CONTROLLERS, VARIABLE SPEED/FREQUENCY DRIVES, AND ASSOCIATED CONTROL DEVICES ARE FURNISHED UNDER OTHER DIVISIONS, INSTALLED UNDER THIS DIVISION. COORDINATE INSTALLATION AND LOCATIONS WITH OTHER DIVISION CONTRACTORS.
- POWER WIRING FROM THE INDICATED SOURCE TO THE STARTER/CONTROLLER/DRIVE UNIT, AND FROM THE STARTER/CONTROLLER/DRIVE UNIT TO THE MOTOR, INCLUDING ANY LOCAL DISCONNECT SWITCHES PROVIDED AND INSTALLED BY THIS DIVISION, AND ALL ASSOCIATED LUGS, TERMINALS, AND CONNECTORS, IS THE WORK OF THIS DIVISION.
- CONTROL CIRCUIT WIRING IS GENERALLY FURNISHED AND INSTALLED UNDER OTHER DIVISIONS, EXCEPT THAT ANY SUCH WIRING SHOWN ON ELECTRICAL DRAWINGS IS WORK OF THIS DIVISION.
- COOPERATE AND COORDINATE WITH THE OTHER TRADES IN THE INSTALLATION, CONNECTION, AND TESTING OF MECHANICAL EQUIPMENT. PERFORM WORK OF THIS SECTION IN ACCORDANCE WITH EQUIPMENT MANUFACTURERS' INSTRUCTIONS.

EXAMINATION OF SITE:

- BEFORE SUBMITTING BID, CONTRACTOR SHALL VISIT THE SITE WITH PLANS AND SPECIFICATIONS IN HAND AND SHALL BECOME THOROUGHLY FAMILIAR WITH ALL CONDITIONS UNDER WHICH HIS WORK WILL BE PERFORMED.
- THE SUBMISSION OF A BID SHALL BE TAKEN AS EVIDENCE THAT SUCH EXAMINATION HAS BEEN MADE, AND DIFFICULTIES, IF ANY, NOTED AND REPORTED TO THE ENGINEER. LATTER CLAIMS FOR EXTRA COST OF LABOR, MATERIALS AND EQUIPMENT REQUIRED FOR ANY DIFFICULTIES ENCOUNTERED WHICH COULD HAVE BEEN FORESEEN, SHALL NOT BE RECOGNIZED.

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 CIRCUIT BREAKERS IN PLACE. TEST SYSTEM FREE FROM SHORT CIRCUITS AND GROUND WITH INSULATION RESISTANCE NOT LESS THAN OUTLINED IN THE 2005 NATIONAL ELECTRICAL CODE. PROVIDE TESTING EQUIPMENT NECESSARY AND CONDUCT TEST IN PRESENCE OF OWNER'S AUTHORIZED REPRESENTATIVE.

COORDINATION DRAWINGS:

- DEVELOP AND SUBMIT COORDINATION DRAWINGS AS OUTLINED.
 - SHEET METAL, PLUMBING AND FIRE PROTECTION SHOP DRAWINGS THAT HAVE BEEN COORDINATED WITH ARCHITECTURAL AND STRUCTURAL DRAWINGS SHALL BE SUBMITTED TO ENGINEER FOR REVIEW. DRAWINGS MUST BE RETURNED FROM ENGINEER EITHER "NO EXCEPTIONS TAKEN" OR "MAKE CORRECTIONS NOTED" PRIOR TO BEING USED AS A BASIS FOR COORDINATION DRAWINGS.
 - AFTER SHEET METAL AND PIPING DRAWINGS HAVE BEEN REVISED PER ENGINEERS COMMENTS, REPRODUCIBLE COPIES SHALL BE SENT TO THE OTHER TRADES IN THE FOLLOWING SEQUENCE FOR THE INCLUSION OF THEIR WORK:
 - MECHANICAL SHEET METAL
 - PLUMBING CONTRACTOR
 - ELECTRICAL WORK
 - MECHANICAL PIPING

- AFTER ALL TRADES HAVE INCLUDED THEIR WORK ON THE COORDINATION DRAWING AND NOTED CONFLICTS, ALL TRADES SHALL MEET TO RESOLVE CONFLICTS AND AGREE TO ACCEPTABLE SOLUTIONS. EACH TRADE SHALL SIGN COORDINATION DRAWINGS. ITEMS NOT SHOWN ON COORDINATION DRAWING ARE RESPONSIBILITY OF OMITTING CONTRACTOR AND CONTRACTOR IS SUBJECT TO ADDITIONAL COST INCURRED BY OTHER TRADES.
- THE ARCHITECT AND ENGINEER ARE NOT PART OF THE COORDINATION DRAWING PROCESS. THE ENGINEER WILL PROVIDE ASSISTANCE FOR NOTED CONFLICTS ONLY. COORDINATION DRAWINGS ARE NOT TO BE CONSIDERED PIPING OR DUCT SHOP DRAWINGS. THE CONTRACTOR IS REQUIRED TO SUBMIT INDIVIDUAL PIPING AND DUCTWORK SHOP DRAWINGS FOR REVIEW BY THE ENGINEER. PIPING AND DUCTWORK SHOP DRAWINGS SHALL FOLLOW THE DESIGN INTENT OF THE CONTRACT DOCUMENTS.
- SUBMIT FINAL SIGNED COORDINATION DRAWING TO THE ENGINEER FOR REVIEW. ENGINEER WILL REVIEW COORDINATION DRAWINGS FOR GENERAL ARRANGEMENT AND FOR NOTED CONFLICTS ONLY. SPECIFIC INSTALLATION REQUIREMENTS WILL BE REVIEWED ONLY IN INDIVIDUAL TRADE SHOP DRAWINGS.
- ANY WORK FABRICATED OR INSTALLED PRIOR TO SIGN OFF BY ALL TRADES WHICH IS DEEMED TO BE IN CONFLICT WITH COORDINATION DRAWINGS SHALL BE REMOVED AND REINSTALLED IN CONFORMANCE WITH COORDINATION DRAWINGS.
- EACH CONTRACTOR (MENTIONED ABOVE) IS RESPONSIBLE FOR THE COORDINATION OF HIS SUBCONTRACTORS.
- THE OVERALL COORDINATION OF THE COORDINATION PROCESS IS THE RESPONSIBILITY OF THE CONTRACTOR. THE ENGINEER IS NOT RESPONSIBLE FOR THE COORDINATION PROCESS. THE ENGINEER WILL RESPOND TO QUESTIONS THAT ARISE FROM THE COORDINATION PROCESS. DRAWINGS SUBMITTED WILL BE REVIEWED FOR CLEARLY IDENTIFIED CONFLICTS ONLY. SOLUTIONS TO THE CONFLICTS WILL NOT BEAR ADDITIONAL COST.

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ELECTRICAL SPECIFICATIONS

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