

CITY OF DULUTH STREET MAINTENANCE TOOLHOUSE HVAC AND LIGHTING REPLACEMENT

105 N 40TH AVE WEST, DULUTH, MN 55806



VICINITY MAP
NOT TO SCALE



PROJECT LOCATION MAP
NOT TO SCALE



- ARCHITECTURE
- LANDSCAPE ARCHITECTURE
- INTERIOR DESIGN
- ENGINEERING
- TECHNOLOGY

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CITY OF DULUTH
STREET MAINTENANCE
TOOLHOUSE

DULUTH, MINNESOTA

PROJECT NO.: 14-033

DATE: 02-OCT-14

DRAWN BY: JDL

REVISIONS:

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Mark R. Udd
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APPLICABLE CODES

2007 MINNESOTA STATE BUILDING CODE

- 2006 INTERNATIONAL BUILDING CODE ADOPTED WITH STATE AMENDMENTS, CHAPTER 1305, EFFECTIVE JULY 10, 2007
- 2014 NATIONAL ELECTRICAL CODE, CHAPTER 1315, EFFECTIVE JULY 1, 2014.
- MINNESOTA ENERGY CODE CHAPTERS 1322 & 1323 EFFECTIVE JUNE 1, 2009
- MINNESOTA ACCESSIBILITY CODE (2006 IBC, 2003 ICC/ANSI 117.1) ADOPTED WITH STATE AMENDMENTS, CHAPTER 1341, EFFECTIVE JULY 10, 2007
- 2006 INTERNATIONAL MECHANICAL & FUEL GAS CODES ADOPTED WITH STATE AMENDMENTS, CHAPTER 1346, EFFECTIVE OCTOBER 26, 2009
- 2003 MINNESOTA STATE MECHANICAL CODE
- 2012 MINNESOTA STATE PLUMBING CODE, CHAPTER 4715
- 2000 GUIDELINES FOR THE REHABILITATION OF EXISTING BUILDINGS ADOPTED WITH STATE AMENDMENTS, CHAPTER 1311, EFFECTIVE MARCH 31, 2003.

2007 MINNESOTA STATE FIRE CODE:

- 2006 INTERNATIONAL FIRE CODE ADOPTED WITH STATE AMENDMENTS, CHAPTER 7511, EFFECTIVE JULY 10, 2007

OTHER GUIDELINES

- MINNESOTA HEALTH DEPARTMENT RULES
- AIA GUIDELINES FOR DESIGN AND CONSTRUCTION OF HOSPITAL AND HEALTH CARE FACILITIES, 2010
- LIFE SAFETY CODE - NFPA 101

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ELECTRICAL E0.1 E1.1	ELECTRICAL DEMOLITION PLAN ELECTRICAL POWER AND LIGHTING PLAN

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BASEBID
#1 EXHAUST & MAKEUP AIR
#2 LIGHTING REPLACEMENT
#3 FURNACE REPLACEMENT
#4 UNIT HEATER REPLACEMENT

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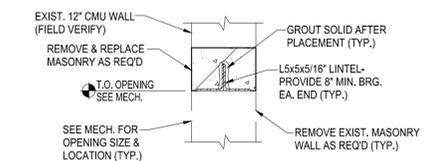
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PLAN, SCHEDULE, ELEVATIONS & DETAILS

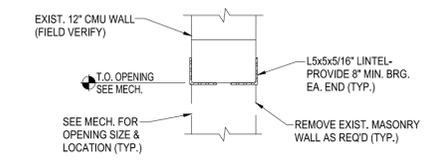
A 1.1

ROOM FINISH SCHEDULE															
RM#	NAME	FLOOR	BASE	NORTH WALL	FIN.	EAST WALL	FIN.	SOUTH WALL	FIN.	WEST WALL	FIN.	CEILING	HT	FIN.	REMARKS
100	MECHANICAL	EXIST.	RUB	GYP.	PT	GYP.	PT	EXIST.	PT	EX/GYP.	PT	---	---	---	
101	OFFICE	EXIST.	EX/RUB	EXIST.	--	EX/GYP.	PT	EX/GYP.	PT	EX/GYP.	PT	EXIST.	---	---	

DOOR SCHEDULE									
DR#	SIZE	DOOR TYPE	FRAME MATERIAL	FRAME ELEV.	DETAIL	HW/GRUP	LABEL	REMARKS	
100	(2) 3'-0"x7'-0"x1 3/4"	A	H.M.	1	3/A1.1	1			



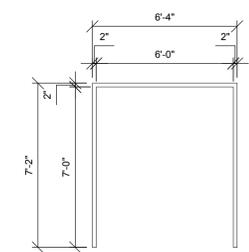
OPTION "A"



OPTION "B"

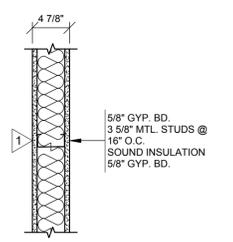
A LINTEL SECTIONS @ EXIST
3/4" = 1'-0"

NOTE: CONTRACTOR SHALL PROVIDE TEMP. SHORING OF EXISTING STRUCTURE AS REQ'D PRIOR TO EXISTING WALL REMOVAL.



1 H.M.
FRAME ELEVATIONS
2 A1.1

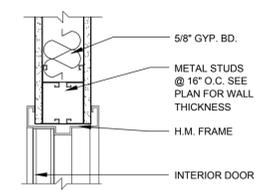
0 1' 2' 4' 8'
SCALE



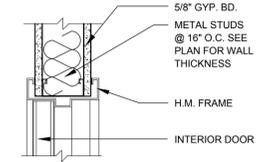
WALL TYPES
2 A1.1

0 3" 6" 1' 2'
SCALE

HEAD

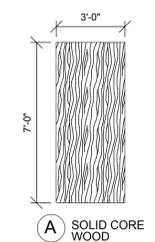


JAMB



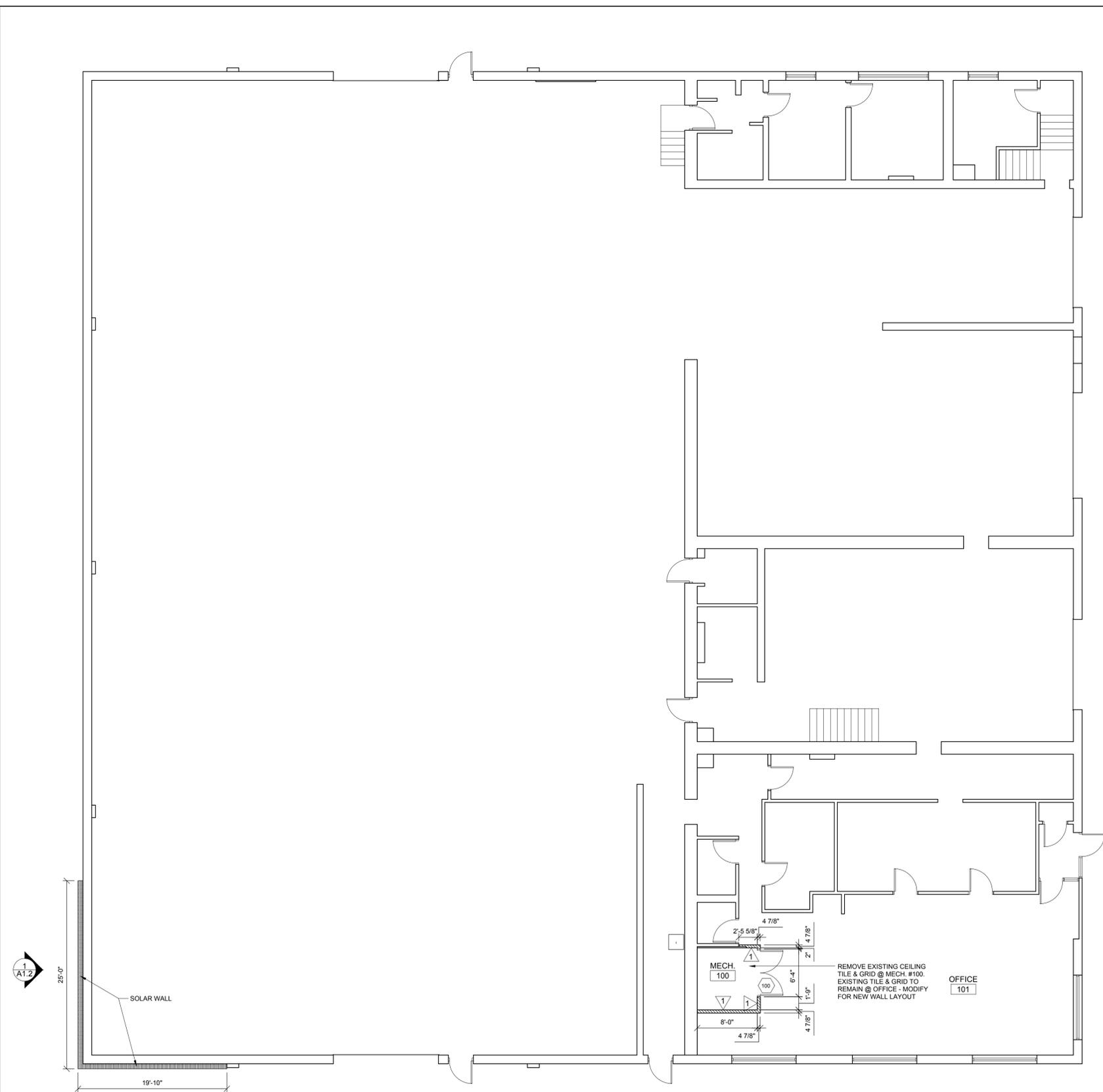
H.M. DOOR DETAIL
3 A1.1

0 3" 6" 12" 24"
SCALE



1 A1.1
DOOR ELEVATIONS

0 1' 2' 4' 8'
SCALE



PLAN
0 1' 2' 4' 8' 16'
SCALE

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REVISIONS	

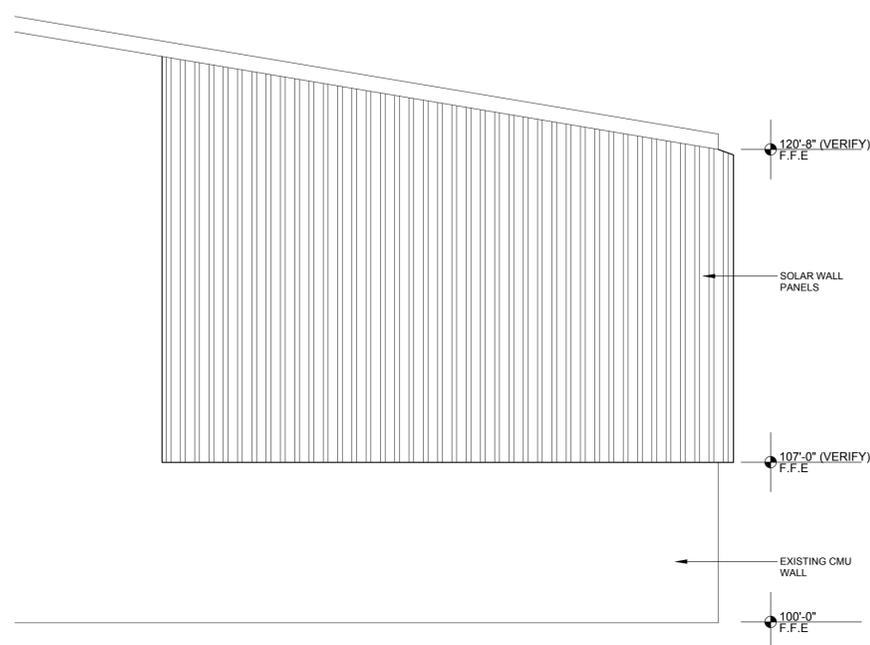
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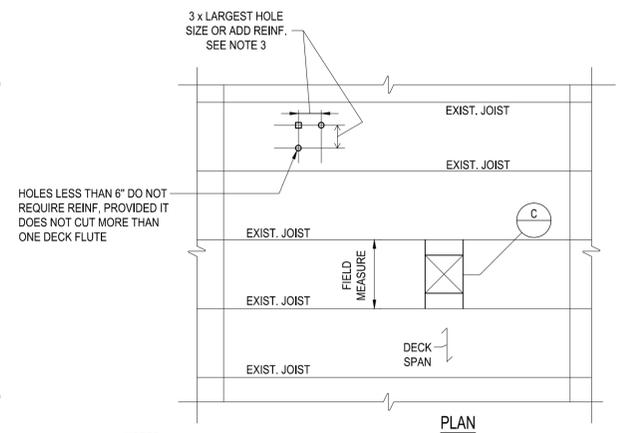
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ELEVATIONS & DETAILS

A 1.2

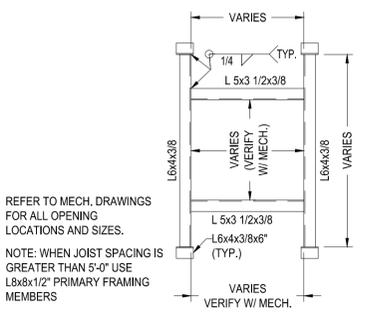


PARTIAL SOUTH ELEVATION

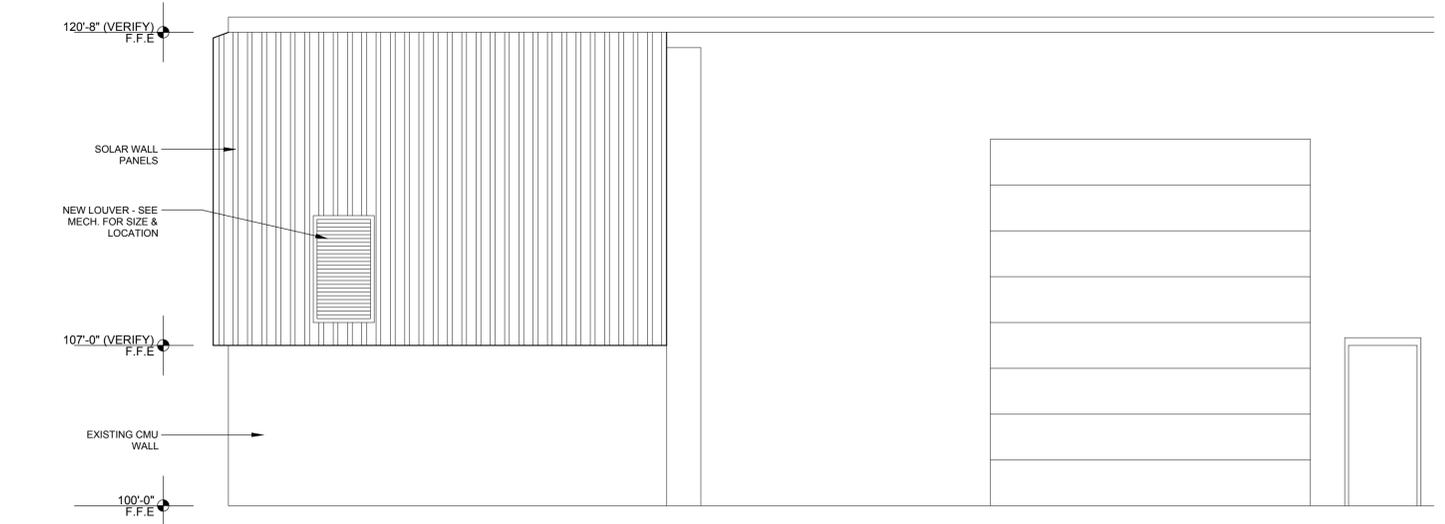


- NOTES:**
1. INSTALL REINFORCING BEFORE CUTTING HOLES.
 2. CONTRACTOR SHALL COORDINATE OPENING SIZE AND LOCATION WITH MECHANICAL AND ELECTRICAL CONTRACTORS.
 3. THE OPENING NOTED REQUIRES A CLEAR SPACING FROM ADJACENT OPENINGS OF THREE TIMES MAXIMUM OPENING DIMENSION. IF REQUIRED LAYOUT CANNOT CONFORM TO THESE REQUIREMENTS, REINFORCE GROUP AS IF ONE COMBINED PENETRATION.

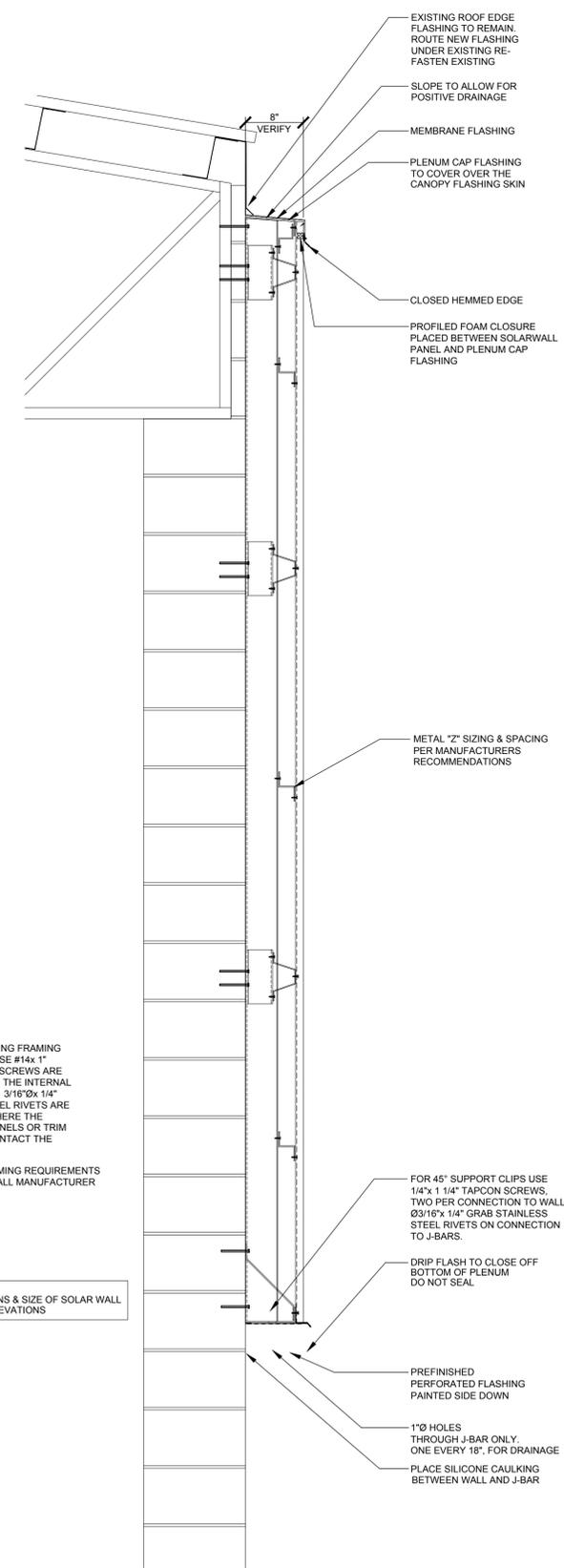
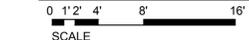
B TYPICAL ROOF DECK OPENING - 5'-0" OPENINGS & LESS
NO SCALE



C TYP. ROOF OPNG. FRAME
NO SCALE



PARTIAL EAST ELEVATION



SECTION @ SOLAR WALL



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DRAWN MRW

REVISIONS

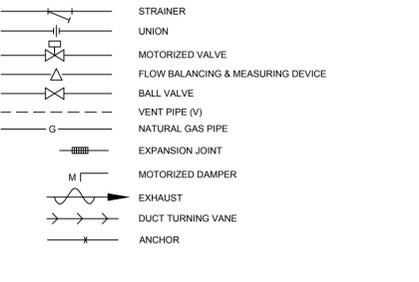
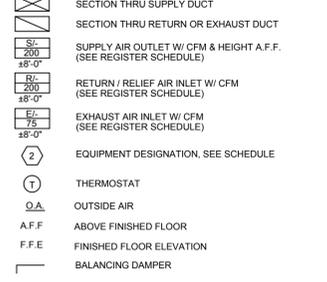
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MECHANICAL DEMOLITION PLAN

M 0.1

MECHANICAL LEGEND

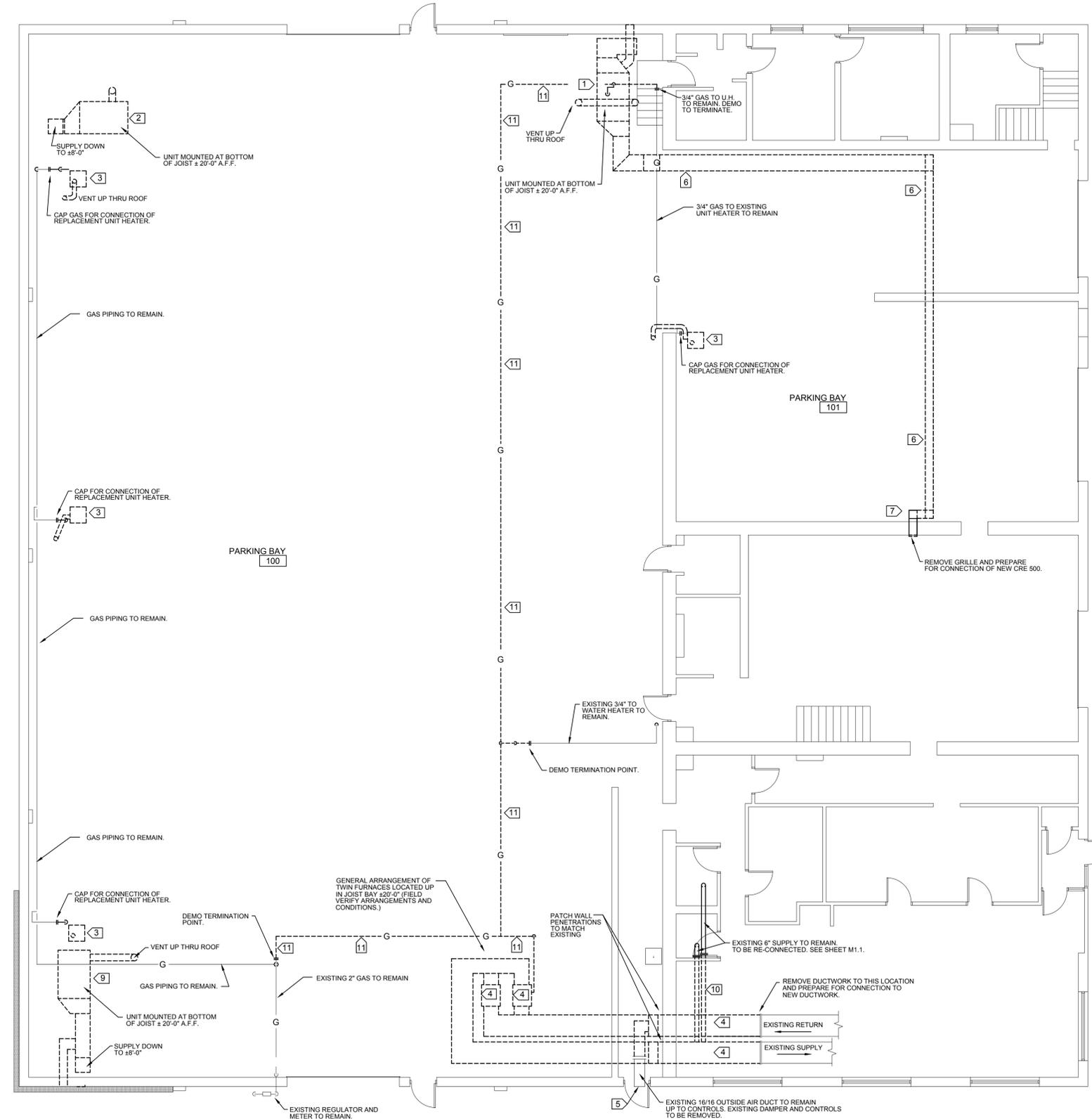
	
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KEYED NOTES - DEMOLITION

- 1 EXISTING GAS FIRED AIR HANDLING UNIT TO BE REMOVED. REMOVE CONTROLS AND ALL ASSOCIATED DUCTWORK AND APPURTENANCES. VENTING TO BE REMOVED UP TO BELOW ROOF LINE. INSULATE ABANDONED VENT THROUGH ROOF AND CAP AND SEAL WEATHER TIGHT BELOW ROOF LINE. EXISTING VENT THROUGH ROOF AND RAIN CAP TO REMAIN. OUTSIDE AIR LOUVER TO BE INSULATED AND SEALED WEATHER TIGHT. CAP GAS SERVICE.
- 2 EXISTING OIL FIRED AIR HANDLING UNIT TO BE REMOVED. REMOVE CONTROLS AND ALL ASSOCIATED DUCTWORK, OIL LINES AND APPURTENANCES. VENTING TO BE REMOVED UP TO BELOW ROOF LINE. INSULATE ABANDONED VENT THROUGH ROOF AND CAP AND SEAL WEATHER TIGHT BELOW ROOF LINE. EXISTING VENT THROUGH ROOF AND RAIN CAP TO REMAIN.
- 3 EXISTING GAS FIRED UNIT HEATER TO BE REMOVED. REMOVE ASSOCIATED CONTROLS. REMOVE GAS APPURTENANCES AND CAP SERVICE LINE FOR FOR REPLACEMENT UNIT HEATER AT INDICATED LOCATION.
- 4 REMOVE TWIN FURNACES AND ASSOCIATED DUCTWORK TO LOCATION INDICATED AND PREPARE FOR CONNECTION OF NEW DUCT. FURNACES (TWO) TO BE TURNED OVER TO OWNER FOR FUTURE USE. REMOVE FURNACE VENTING, CONTROLS, GAS PIPING, WIRING CONDENSATE AND ALL APPURTENANCES. REMOVE VENTING UP TO ROOF LINE AND INSULATE AND SEAL VENT WEATHER TIGHT. ROOF PENETRATION AND VENT THROUGH ROOF TO REMAIN. DUCT PENETRATIONS THRU WALL TO BE PATCHED TO MATCH EXISTING.
- 5 WALL LOUVER TO REMAIN IN WALL. 16/16 OUTSIDE AIR DUCT TO REMAIN TO LOCATION INDICATED.
- 6 REMOVE DUCTWORK, HANGERS AND APPURTENANCES.
- 7 REMOVE DUCTWORK DOWN TO APPROXIMATELY 9 FT A.F.F. AND PREPARE FOR CONNECTION TO NEW EXHAUST. WALL GRILLE TO BE REMOVED.
- 8 NOT USED.
- 9 EXISTING OIL FIRED AIR HANDLING UNIT TO BE REMOVED. REMOVE CONTROLS AND ALL ASSOCIATED DUCTWORK, OIL LINES AND APPURTENANCES. VENTING TO BE REMOVED UP TO BELOW ROOF LINE. INSULATE ABANDONED VENT THROUGH ROOF AND CAP AND SEAL WEATHER TIGHT BELOW ROOF LINE. EXISTING VENT THROUGH ROOF AND RAIN CAP TO REMAIN. OUTSIDE AIR LOUVER TO BE INSULATED AND SEALED WEATHER TIGHT.
- 10 REMOVE 6" DUCTS TO INDICATED LOCATION. PREPARE FOR CONNECTION OF NEW 6" DUCTS (2 THUS).
- 11 EXISTING GAS PIPING AND HANGERS TO BE REMOVED.

GENERAL DEMOLITION NOTES:

1. CONTRACTOR SHALL COORDINATE WITH OWNER AND OTHER TRADES IN ORDER TO AVOID ALL INTERFERENCE.
2. CONTRACTOR SHALL VERIFY ALL EXISTING SIZES, FUNCTIONS, LOCATIONS AND CONDITIONS PRIOR TO BID. CONTRACTOR SHALL NOTIFY ENGINEER OF ANY DISCREPANCIES.
3. ALL MATERIALS REMOVED BY THIS CONTRACTOR SHALL BE REVIEWED BY THE OWNER. MATERIAL NOT WANTED BY THE OWNER SHALL BECOME THE PROPERTY OF THIS CONTRACTOR AND SHALL BE REMOVED FROM THE PREMISES. MATERIAL THE OWNER ELIGITS TO KEEP SHALL BE STORED BY THE OWNER. THIS CONTRACTOR SHALL DISCONNECT AND REMOVE EXISTING EQUIPMENT, PIPING, DUCTS, ETC. AS INDICATED ON THE DRAWINGS OR AS REQUIRED TO COMPLETE THE WORK, AND CAP OFF PIPING OR DUCTS AIRTIGHT THAT ARE NOT TO BE REUSED UNDER OR BEHIND FINISHED SURFACES. CONCEALED ITEMS NOT TO BE REUSED MAY BE ABANDONED IF DISCONNECTED FROM THE SYSTEM.
4. WHEN REMOVING EXISTING EQUIPMENT AS SHOWN AND AS NOTED, PIPING, WIRING, TUBING, DUCTWORK, AND ANY OTHER CONNECTIONS SHALL BE CAPPED AIRTIGHT BELOW FLOORS, INSIDE WALLS AND/OR ABOVE CEILINGS. EXISTING EQUIPMENT INCLUDES, BUT IS NOT LIMITED TO THE FOLLOWING: PLUMBING FIXTURES, TEMPERATURE CONTROLS, CONTROL WIRING, HVAC EQUIPMENT AND ANY OTHER DEMOLITION WORK. THE FLOORS, WALLS, AND/OR CEILINGS SHALL BE PATCHED TO MATCH THE EXISTING CONDITIONS BY THE MECHANICAL CONTRACTOR.
5. UPON COMPLETION OF MODIFICATION AND / OR REMOVAL OF TEMPERATURE CONTROL COMPONENTS, THE REMAINING MODIFIED TEMPERATURE CONTROL SYSTEM IS TO BE OPERATIONAL. CONTRACTOR TO VERIFY EXISTING OPERATING CONDITIONS PRIOR TO MODIFICATION.



MECHANICAL DEMO PLAN

0 1' 2' 4' 8' 16'
SCALE

CITY OF DULUTH STREET MAINTENANCE TOOLHOUSE

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DRAWN JDL

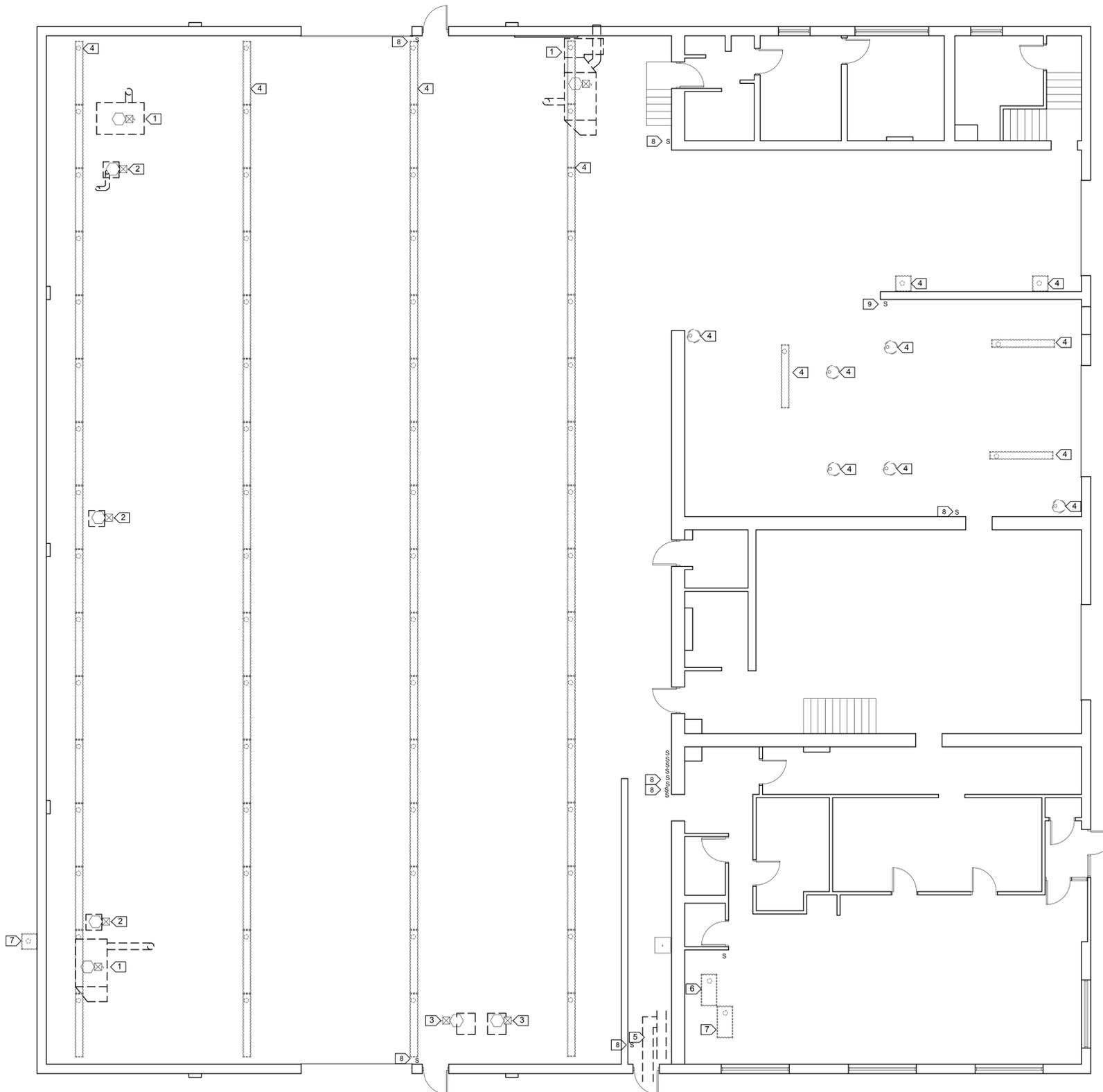
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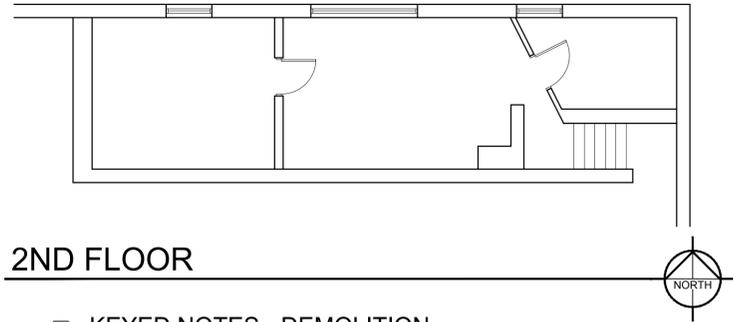
DAVID JORDAN 42696
ENGINEER REG. NO.

ELECTRICAL DEMOLITION PLAN

E 0.1



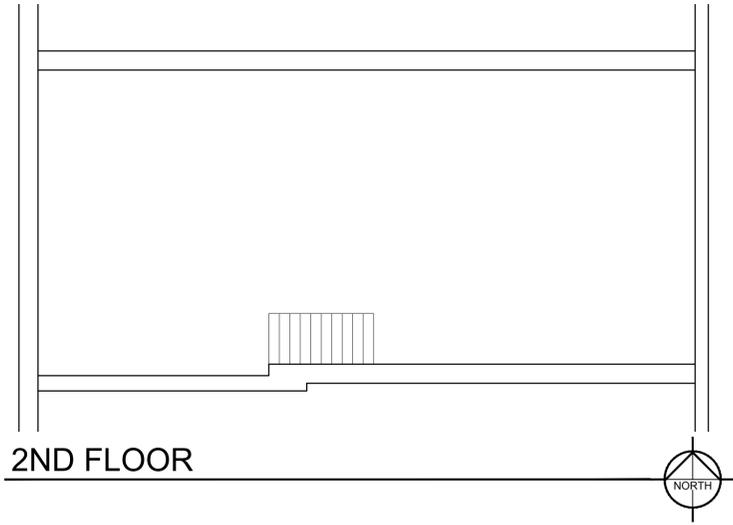
ELECTRICAL DEMOLITION PLAN FIRST FLOOR



2ND FLOOR

KEYED NOTES - DEMOLITION

- 1 DISCONNECT POWER TO EXISTING GAS FIRED AIR HANDLING UNIT. UNIT TO BE REMOVED BY OTHERS. REMOVE CONDUIT & WIRE AS REQUIRED FOR NEW CONNECTION TO NEW UNIT.
- 2 DISCONNECT POWER TO EXISTING GAS FIRED UNIT HEATER. UNIT TO BE REMOVED. REMOVE CONDUIT & WIRE AS REQUIRED FOR NEW CONNECTION TO NEW UNIT.
- 3 DISCONNECT POWER TO EXISTING FURNACES. UNITS TO BE RELOCATED BY OTHERS. EXTEND & MODIFY CONDUIT & WIRE AS REQUIRED FOR NEW CONNECTION AT NEW LOCATION.
- 4 DISCONNECT & REMOVE EXISTING LIGHTS. REMOVE ALL HANGERS & BRACKETS. REMOVE CONDUIT & WIRE TO BREAKER PANELS. REUSE EXISTING CIRCUIT BREAKERS FOR NEW LIGHTS. PROVIDE & MODIFY CONDUIT, WIRE, & J-BOXES AS NEEDED.
- 5 DISCONNECT & RELOCATE DUCT SMOKE DETECTOR. SEE MECHANICAL SHEET FOR NEW DUCT LAYOUT.
- 6 RELOCATE EXISTING LIGHT FIXTURE. SEE ELECTRICAL SHEET E1.0 FOR NEW LOCATION.
- 7 DISCONNECT & RELOCATE EXISTING LIGHT FIXTURE IN SAME LOCATION ON FACE OF SOLAR WALL. SEE ELECTRICAL SHEET E1.0 FOR NEW LOCATION.
- 8 REMOVE EXISTING SWITCH AND PREPARE FOR NEW IN SAME LOCATION.



2ND FLOOR

LIGHT FIXTURE SCHEDULE

TYPE	MANUFACTURER	VOLTAGE	LAMPS	SPECIFICATION
TYPE "A" □	LITHONIA VAP LED VAP114LED-SYMMLEFEND2 METALUX VAPORTIGHT VTL22 58DR WLUV L840C02 WLU COLUMBIA EXTREME ENVIRONMENT LXEM8-40HL-RFA-EU OR PRIOR APPROVED EQUAL.	MVOLT	LED 114W	1X8' WET LOCATION LED FIXTURE OR 2 1X4' FIXTURES. HOUSING CONSTRUCTION SHALL BE STURDY, COLD ROLLED STEEL.
TYPE "C" □	LITHONIA TWH LED 200-1000-40K-T3M MVOLT D08XD SPECGRADE W/60-4100K-180-120-277 V-BZ HUBBELL OUTDOOR - PGM3-30LU-4K-8Z OR PRIOR APPROVED EQUAL.	MVOLT	LED 68W	WALLPACK LED FIXTURE HOUSING CONSTRUCTION SHALL BE STURDY, COLD ROLLED STEEL.

KEYED NOTES - DEMOLITION

- 1 RECONNECT TO EXISTING CIRCUIT EXTEND WIRE AND CIRCUIT FROM EXISTING LOCATION TO NEW LOCATION.
- 2 RECONNECT TO EXISTING CIRCUIT PROVIDE 20AMP RELAY [R] AND CONNECT TO BMS SYSTEM FOR CONTROL. SEE 23-09-93.
- 3 CONNECT TO EXISTING PANEL. PROVIDE NEW CIRCUIT BREAKER AS NECESSARY.
- P PUSH BUTTON, 2 STATION FOR OVERRIDE "ON", OVERRIDE "OFF." LIGHT SHALL BE SCHEDULED ON BMS. CONNECT TO BMS. SEE 23-09-93.
*PROGRAM PUSH BUTTONS TO RELAYS OF SAME NUMBER.

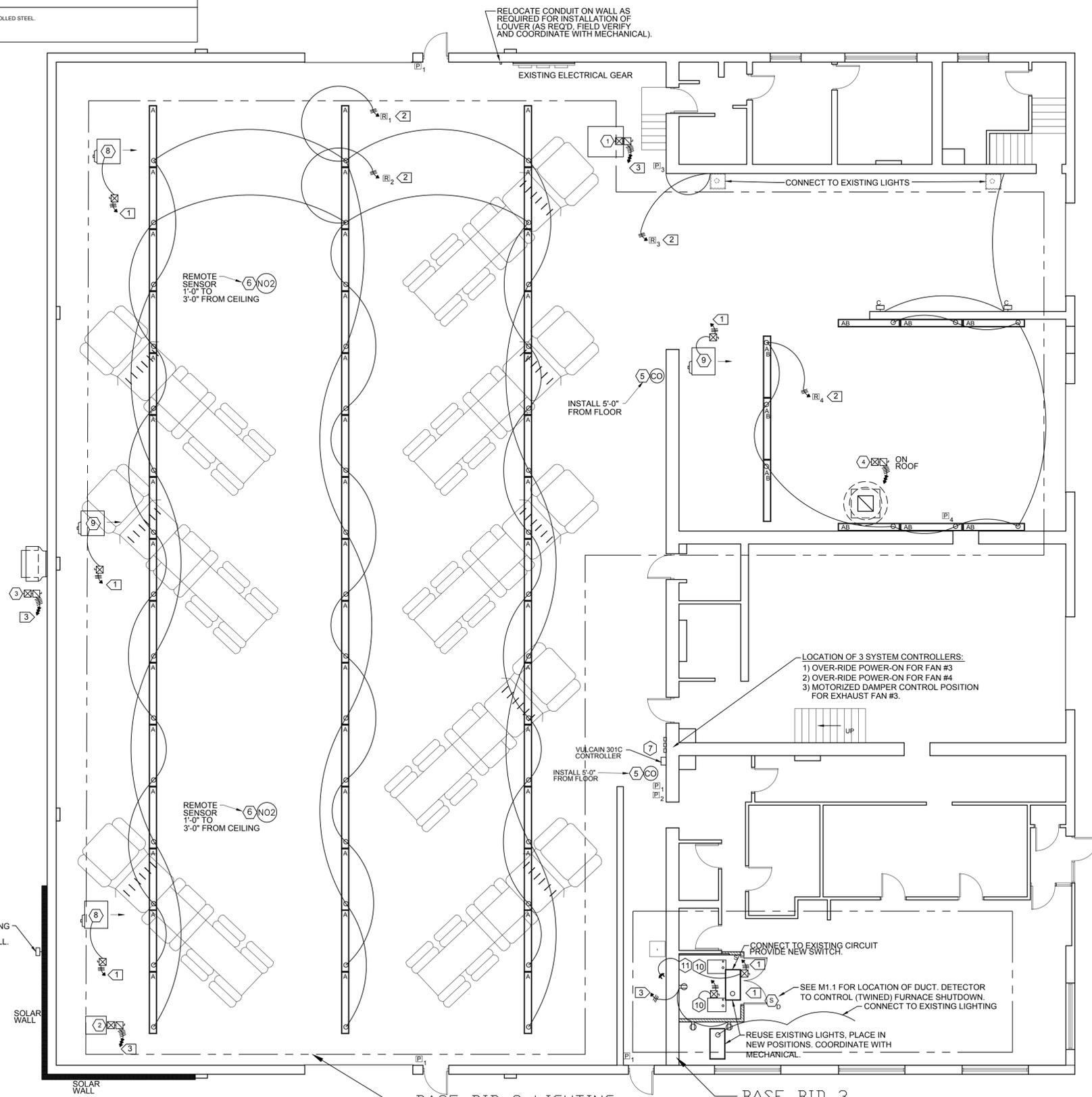
ELECTRICAL LEGEND

---	IN GROUND WIRING
---	EXPOSED WIRING
---	CONCEALED WIRING
▬	ELECTRIC BASEBOARD
—A1	HOME RUN: A = PANEL, 1 = CIRCUIT NO.
○	FLUORESCENT FIXTURE; SEE SCHEDULE.
□	WALL PAK
➔	EXIT LIGHT W/ DIRECTION ARROW
⊙	30 AMP RECEPTACLE
⊙	50 AMP RECEPTACLE
⊕	DUPLEX GROUNDING RECEPTACLE
⊕GFI	GROUND FAULT INTERRUPTER
⊕WP	WP = WEATHERPROOF
⊕+36	+36 = INCHES A.F.F.
⊕	DOUBLE DUPLEX GROUNDING RECEPT.
S	SWITCH: SINGLE POLE
S ₃	SWITCH: 3-WAY
⊕	LOW VOLTAGE SWITCH
⊕	EQUIPMENT DESIGNATION; SEE SCHEDULE
⊕	JUNCTION BOX
⊕	TIMELOCK
⊕	TRANSFORMER
A.F.F.	ABOVE FINISH FLOOR
▬	PANEL
⊕	FUSED DISCONNECT
⊕	STARTER
⊕ _D	DUCT SMOKE DETECTOR

POWER & LIGHTING PLAN FIRST FLOOR

BASE BID 2 LIGHTING REPLACEMENT WORK

BASE BID 3 ELECTRICAL WORK



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ELECTRICAL POWER & LIGHTING PLAN

E
1.1