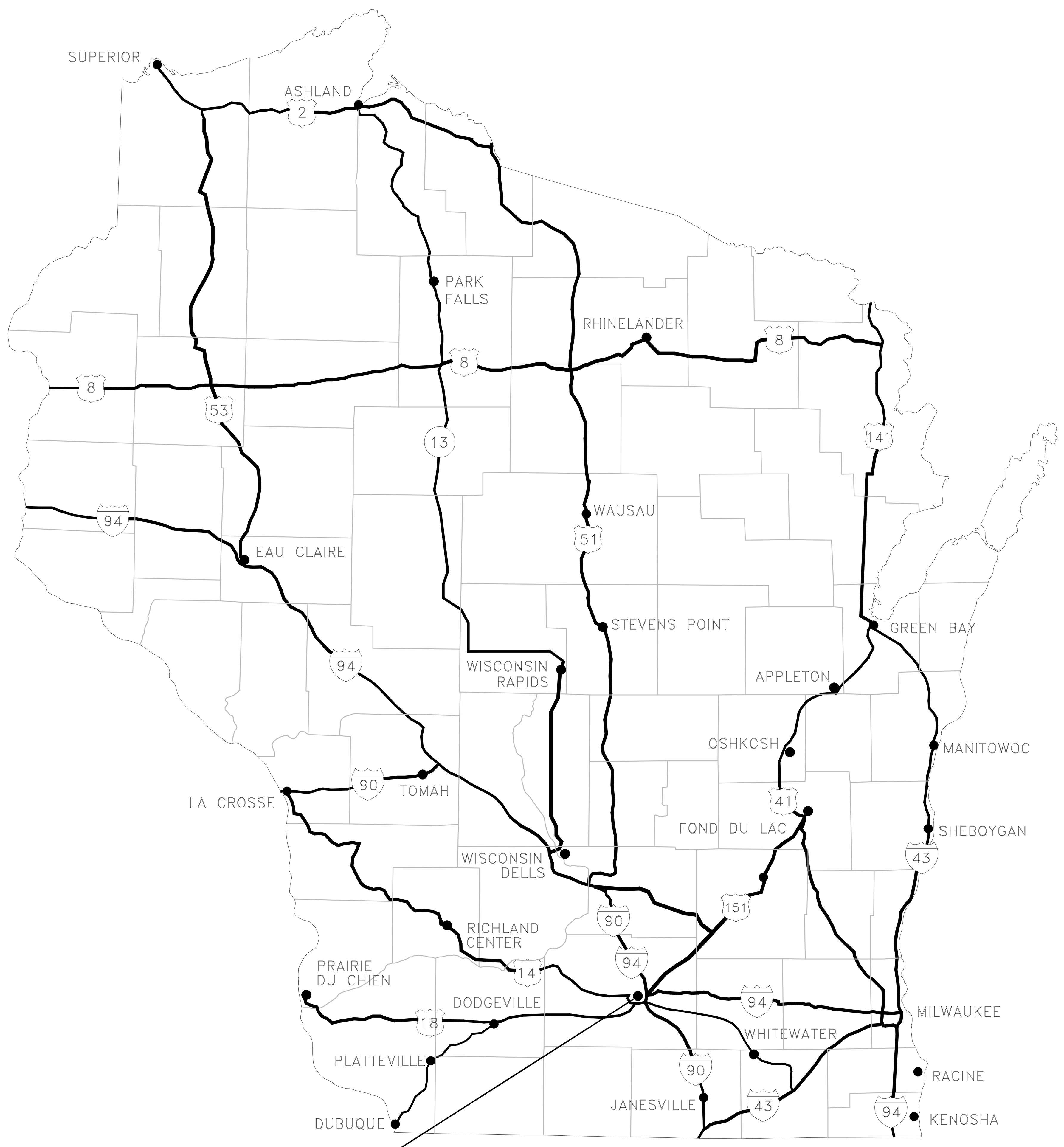
FISH HATCHERY HIGHWAY GARAGE - CNG RETROFIT

2302 FISH HATCHERY RD
MADISON, WI 53713
REQUEST FOR BID NO. 318029



STATE OF WISCONSIN

SHEET INDEX

PLOT DRAWINGS ON 24” X 36” (ARCH D)

GENERAL

T100	TITLE SHEET
PH100	PHASING PLAN

ARCHITECTURAL

D100	PARTIAL FLOOR DEMOLITION PLAN (AREA A)
D101	PARTIAL FLOOR DEMOLITION PLAN (AREA B)
D102	PARTIAL FLOOR DEMOLITION PLAN (AREA C)
A100	PARTIAL FLOOR PLAN (AREA A)
A101	PARTIAL FLOOR PLAN (AREA B)
A102	PARTIAL FLOOR PLAN (AREA C)
A700	PARTITION TYPES, DOOR SCHEDULE AND DETAILS

HEATING AND VENTILATION

HD100	PARTIAL FLOOR PLAN (AREA A) HVAC DEMOLITION WORK
HD101	PARTIAL FLOOR PLAN (AREA B) HVAC DEMOLITION WORK
HD102	PARTIAL FLOOR PLAN (AREA C) HVAC DEMOLITION WORK
H100	PARTIAL FLOOR PLAN (AREA A) HVAC NEW WORK
H101	PARTIAL FLOOR PLAN (AREA B) HVAC NEW WORK
H102	PARTIAL FLOOR PLAN (AREA C) HVAC NEW WORK
H200	HVAC DETAILS
H300	HVAC SCHEDULES

ELECTRICAL

E001	TITLE SHEET AND SYMBOLS - ELECTRICAL
ED100	FLOOR PLAN - AREA A - ELECTRICAL DEMOLITION
ED102	FLOOR PLAN - AREA B - ELECTRICAL DEMOLITION
ED103	FLOOR PLAN - AREA C - ELECTRICAL - DEMOLITION
E100	FLOOR PLAN - AREA A - ELECTRICAL - NEW
E101	FLOOR PLAN - AREA B - ELECTRICAL - NEW
E102	FLOOR PLAN - AREA C - ELECTRICAL - NEW
E200	EMERGENCY - AREA A - EGRESS LIGHTING PLANS
E201	EMERGENCY - AREA B - EGRESS LIGHTING PLANS
E202	EMERGENCY - AREA C - EGRESS LIGHTING PLANS
E300	FLOOR PLAN - AREA A - FIRE ALARM
E301	FLOOR PLAN - AREA B - FIRE ALARM
E302	FLOOR PLAN - AREA C - FIRE ALARM
E401	SCHEDULES - ELECTRICAL
E402	SCHEDULES - ELECTRICAL
E403	SCHEDULES - ELECTRICAL
E501	ENLARGED PLANS, DETAILS, AND ONE-LINE DIAGRAM

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Project No. 18-1216

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02/24/20	ISSUED FOR BIDDING & CONSTRUCTION	
02/11/20	PROGRESS REVIEW DRAWINGS NOT FOR CONSTRUCTION	

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MADISON, WI 53713

DANE COUNTY RFB# 318029

Dane County Department of Public Works, Highway and Tranportation
Public Works Engineering Division
1919 Alliant Energy Center Way
Madison, WI 53713

Drawing Title:
TITLE SHEET

Drawn By: FBN

Drawing No. T100

SHEET PH100 – PHASING SCHEDULE

THE FOLLOWING IS DESCRIPTION OF WORK PHASING THROUGHOUT THE FACILITY

REFERENCE TO PRESUMED TIME IS A PRELIMINARY ENGINEERS ESTIMATE AND A FINAL SCHEDULE SHALL BE DEVELOPED WITH THE CONTRACTORS AND DANE COUNTY HIGHWAY DEPARTMENT

ON SITE CONSTRUCTION START DATE TO BE DETERMINED BASED ON AVAILABILITY OF EQUIPMENT AND MATERIAL.

PHASE ONE – ELECTRICAL SERVICE ROOM:

- PRESUMED CONSTRUCTION TIME: THREE WEEKS.
- ELECTRICAL SERVICE ROOM.
- HIGHWAY DEPARTMENT TO MOVE EXISTING EQUIPMENT AND MATERIAL BEFORE CONTRACTOR START.
- ELECTRICAL SERVICE UPGRADE.
    - O SERVICE SHUT DOWN AND UPGRADE.

O WORK SCHEDULED FROM 4 PM THURSDAY TO 12 MIDNIGHT SUNDAY.

O WORK SHALL START WHEN ALL REQUIRED ELECTRICAL SERVICE EQUIPMENT IS ON SITE.

- NEW ELECTRICAL ROOM CONSTRUCTION.
    - O CONSTRUCTION DURING AND CONTINUING AFTER SERVICE UPGRADE.
- HIGHWAY DEPARTMENT MAY CONTINUE OPERATIONS IN REMAINING AREA OF THE SOUTH SHOP DURING PHASE ONE.

HIGHWAY DEPARTMENT CHANGE OVER BETWEEN PHASE ONE AND PHASE TWO:

- PRESUMED TIME: ONE WEEK.
- HIGHWAY DEPARTMENT MAY MOVE A PORTION OF PHASE TWO OPERATIONS TO PHASE THREE AREA DURING PHASE ONE CONSTRUCTION.

PHASE TWO – SOUTH SHOP:

- PRESUMED CONSTRUCTION TIME: ONE MONTH.
- HIGHWAY DEPARTMENT WILL MOVE THIS OPERATION TO PHASE THREE AREA DURING PHASE TWO CONSTRUCTION.
- CONTRACTOR SHALL PROVIDE HIGHWAY DEPARTMENT ACCESS TO SHOP PARTS AND SHOP OFFICE DURING CONSTRUCTION.

HIGHWAY DEPARTMENT CHANGE OVER BETWEEN PHASE TWO AND PHASE THREE:

- PRESUMED TIME: ONE WEEK.
- HIGHWAY DEPARTMENT WILL MOVE PHASE TWO OPERATIONS TO PHASE TWO AREA.
- HIGHWAY DEPARTMENT WILL MOVE MATERIAL AND EQUIPMENT FORM PHASE THREE AREA NECESSARY TO PERMIT CONSTRUCTION. HIGHWAY DEPARTMENT AND CONTRACTORS SHALL WORK WITH HIGHWAY DEPARTMENT TO DETERMINE IF SOME ITEMS CAN REMAIN IN AREA.

SHEET PH100 – PHASING SCHEDULE 'CONTINUED'

PHASE THREE – NORTH SHOP:

- PRESUMED CONSTRUCTION TIME: TWO MONTHS.
- THE SOUTH AREA OF THIS PHASE INDICATED AS "PRIORITY AREA" ON PHASING DRAWING SHALL BE COMPLETED FIRST TO THE EXTENT POSSIBLE TO PERMIT HIGHWAY DEPARTMENT USE OF THIS AREA.
- CONTRACTOR SHALL PROVIDE HIGHWAY DEPARTMENT ACCESS TO TIME CLOCK AREA, TOILET ROOM AND BREAK ROOM DURING CONSTRUCTION.

HIGHWAY DEPARTMENT CHANGE OVER BETWEEN PHASE THREE AND PHASE FOUR:

- PRESUMED TIME: ONE WEEK.

PHASE FOUR – MUA ON MEZZANINE – WEST (ELECTRICAL) SHOP:

- PRESUMED CONSTRUCTION TIME: ONE MONTH.
- MAKEUP AIR UNIT IS INSTALLED ON MEZZANINE
- MAKEUP AIR ENCLOSURE IS CONSTRUCTED AROUND THE UNIT
- HIGHWAY DEPARTMENT OPERATIONS MAY CONTINUE IS THE SHOP HOWEVER MAYBE INTERRUPTED WHEN CONTRACTORS MOVE EQUIPMENT AND MATERIAL TO MEZZANINE.
- CONTRACTOR WILL REQUIRE ACCESS TO THE MEZZANINE DURING THIS PERIOD.

HIGHWAY DEPARTMENT PHASE FOUR OPERATION MOVE TO PHASE THREE AREA:

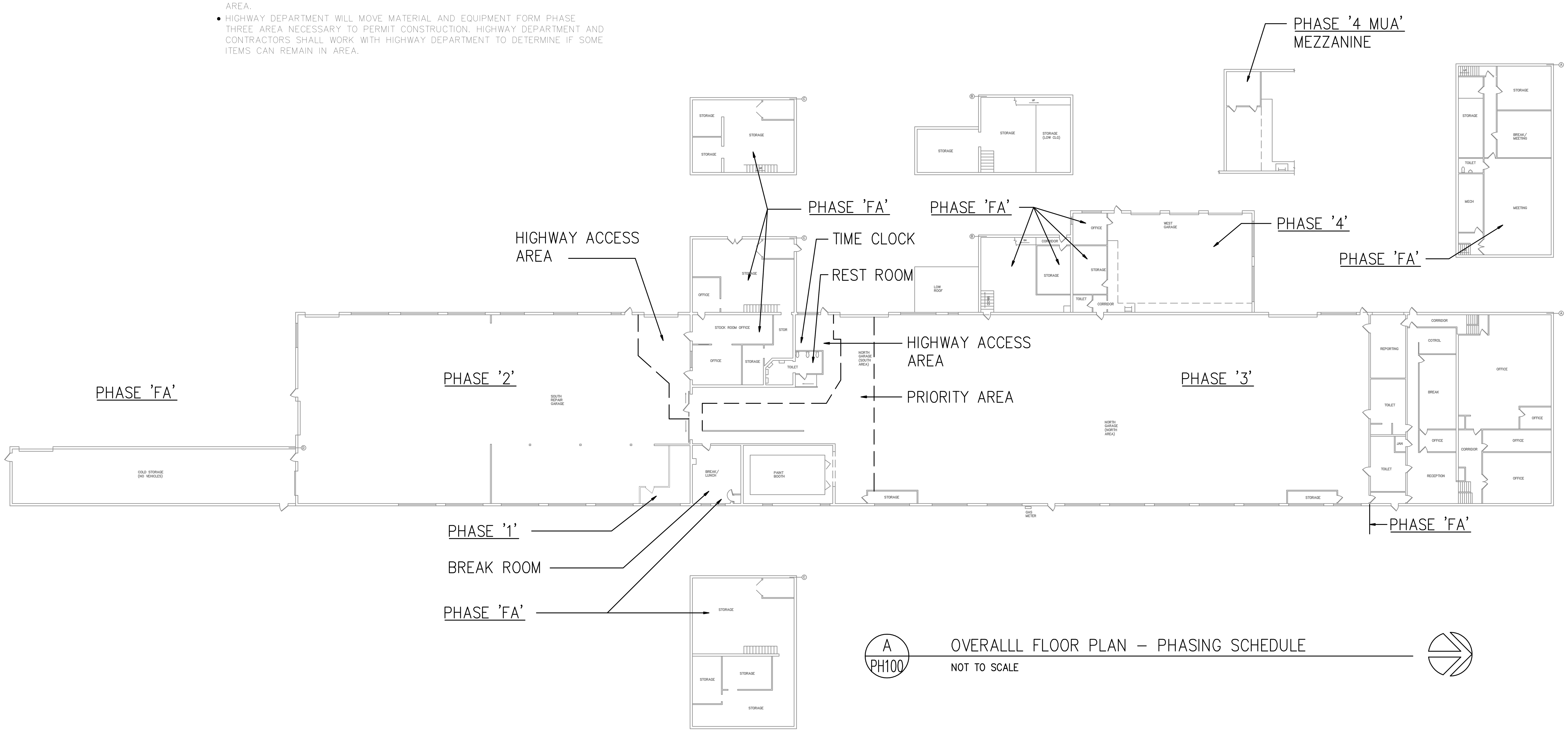
- PRESUMED TIME: ONE WEEK.

PHASE FOUR – WEST (ELECTRICAL) SHOP:

- PRESUMED CONSTRUCTION TIME: THREE WEEKS.
- SHOP AREA CONSTRUCTION.

PHASE FA – FIRE ALARM INSTALLATION:

- IN THE SHOP AREAS THIS INSTALLATION SHOULD GENERALLY OCCUR DURING THAT CONSTRUCTION PHASE.
- ALL OTHER AREAS OF THE FACILITY WILL ALSO HAVE THE FIRE ALARM SYSTEM INSTALLED WHILE THE SPACES ARE OCCUPIED.
- CONTRACTOR SHALL COORDINATE THE ACCESS TO THESE AREAS WITH THE HIGHWAY DEPARTMENT.



A PH100 OVERALLL FLOOR PLAN – PHASING SCHEDULE

NOT TO SCALE

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Public Works Engineering Division
1919 Alliant Energy Center Way
Madison, WI 53713

Drawing Title:

PHASING PLAN

Eng. 370 Project Number: 18-1216

Drawn By: FBN

Drawing No. **PH100**

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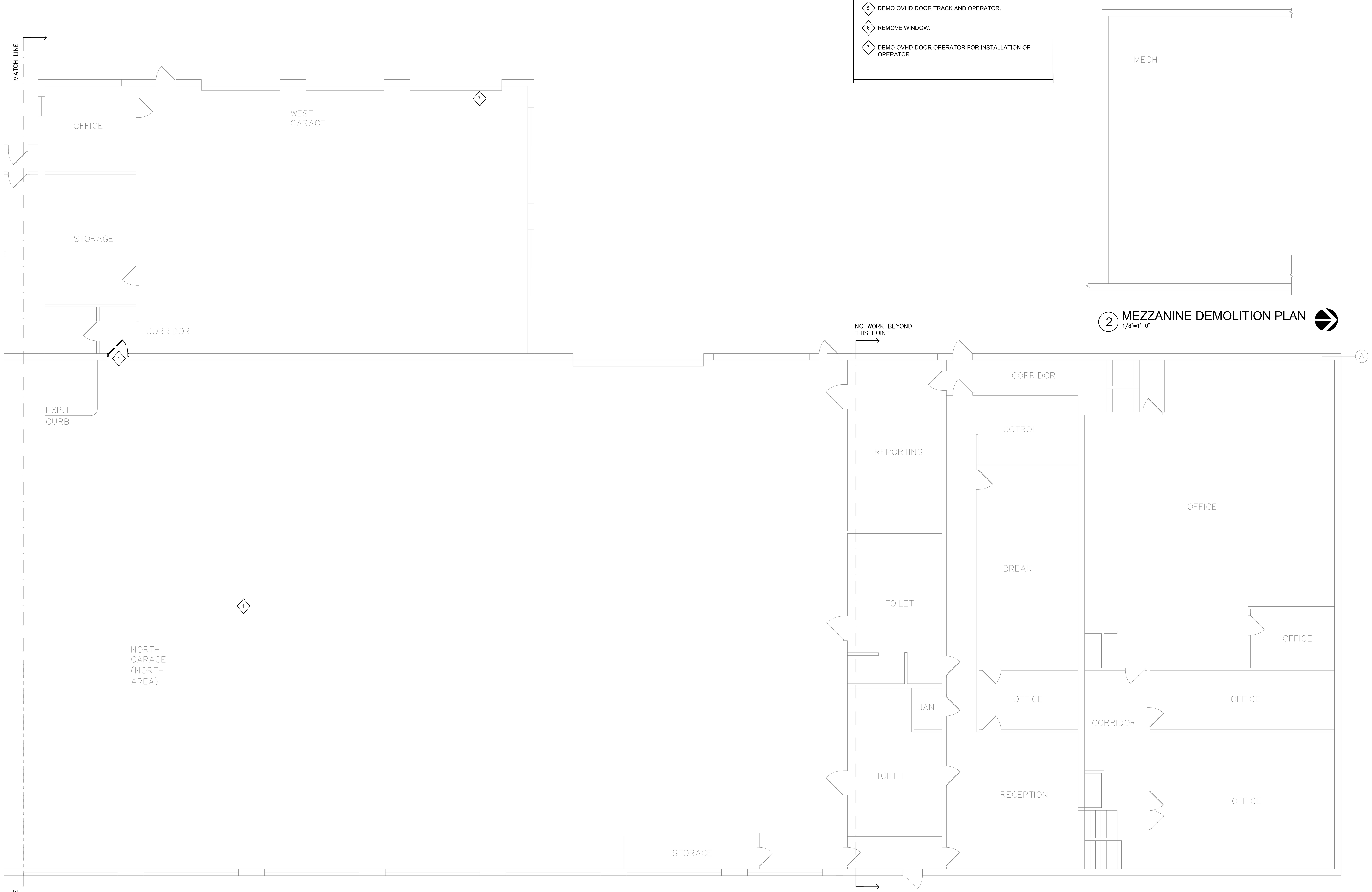
Project No. 18-1216

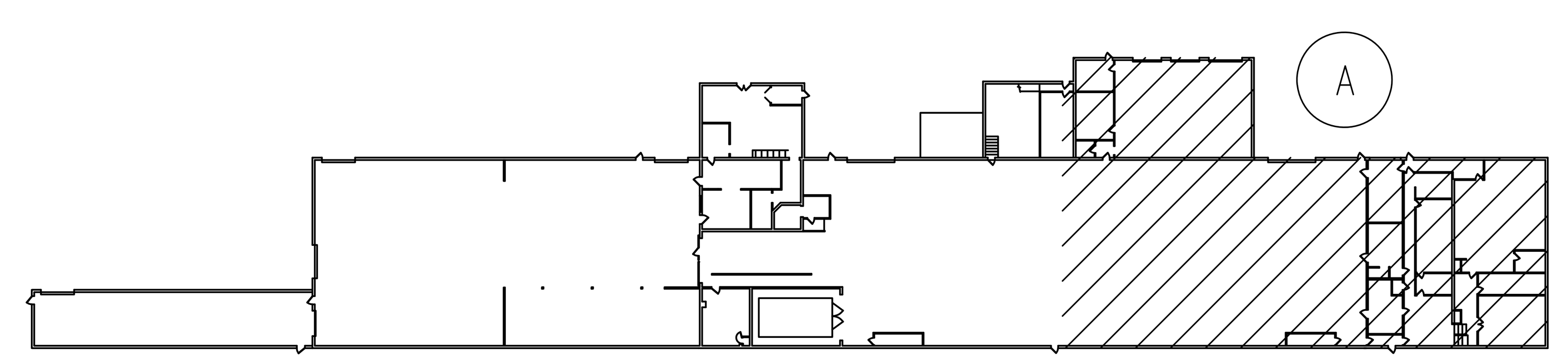
DEMOLITION NOTES

1. REMOVE ACT CEILING TILE, GRID AND HANGERS.
2. REMOVE ACT CEILING TILE, GRID, HANGERS AND INSULATION.
3. DEMO CMU WALL.
4. DEMO DOOR AND HM FRAME.
5. DEMO OVHD DOOR TRACK AND OPERATOR.
6. REMOVE WINDOW.
7. DEMO OVHD DOOR OPERATOR FOR INSTALLATION OF OPERATOR.



2 MEZZANINE DEMOLITION PLAN
1/8"=1'-0"

1 MAIN LEVEL FLOOR DEMOLITION PLAN (AREA A)
1/8"=1'-0"



KEY PLAN

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Madison, WI 53713

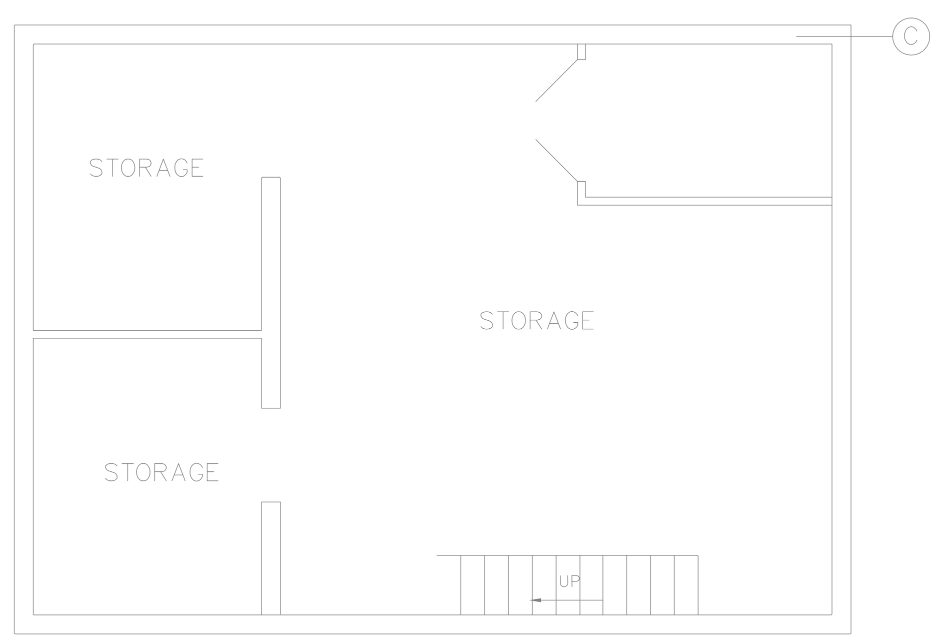
Drawing Title:

PARTIAL FLOOR DEMOLITION PLAN (AREA A)

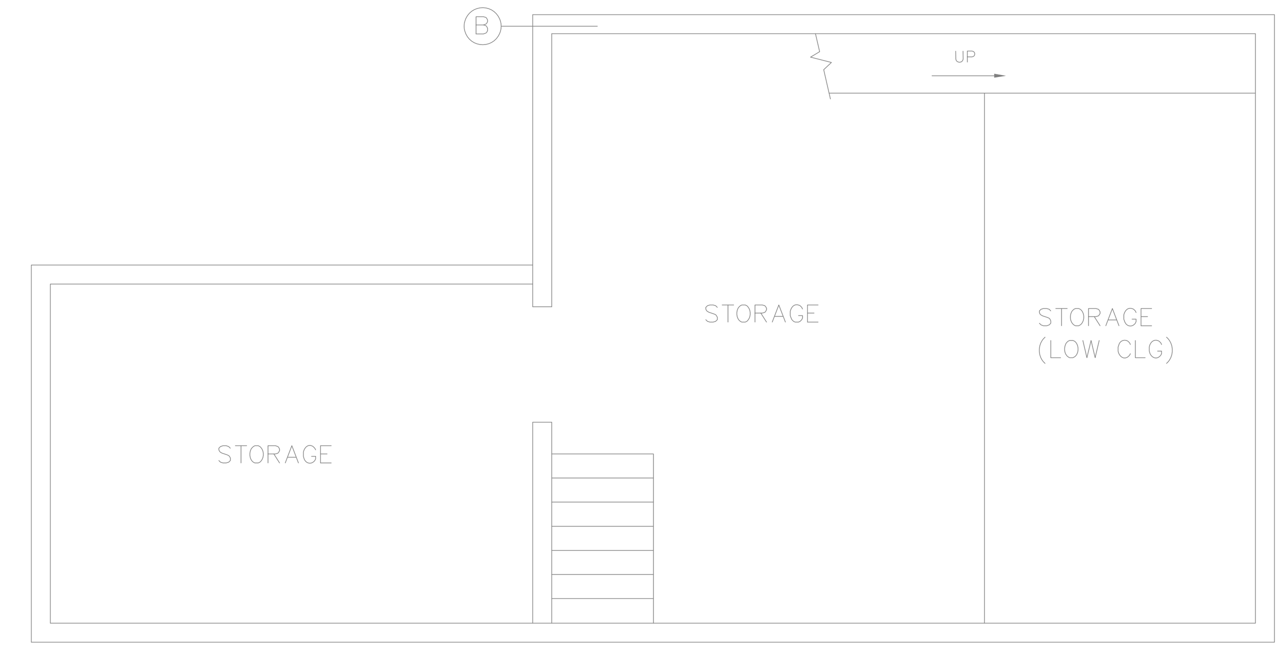
Drawn By:

Drawing No.

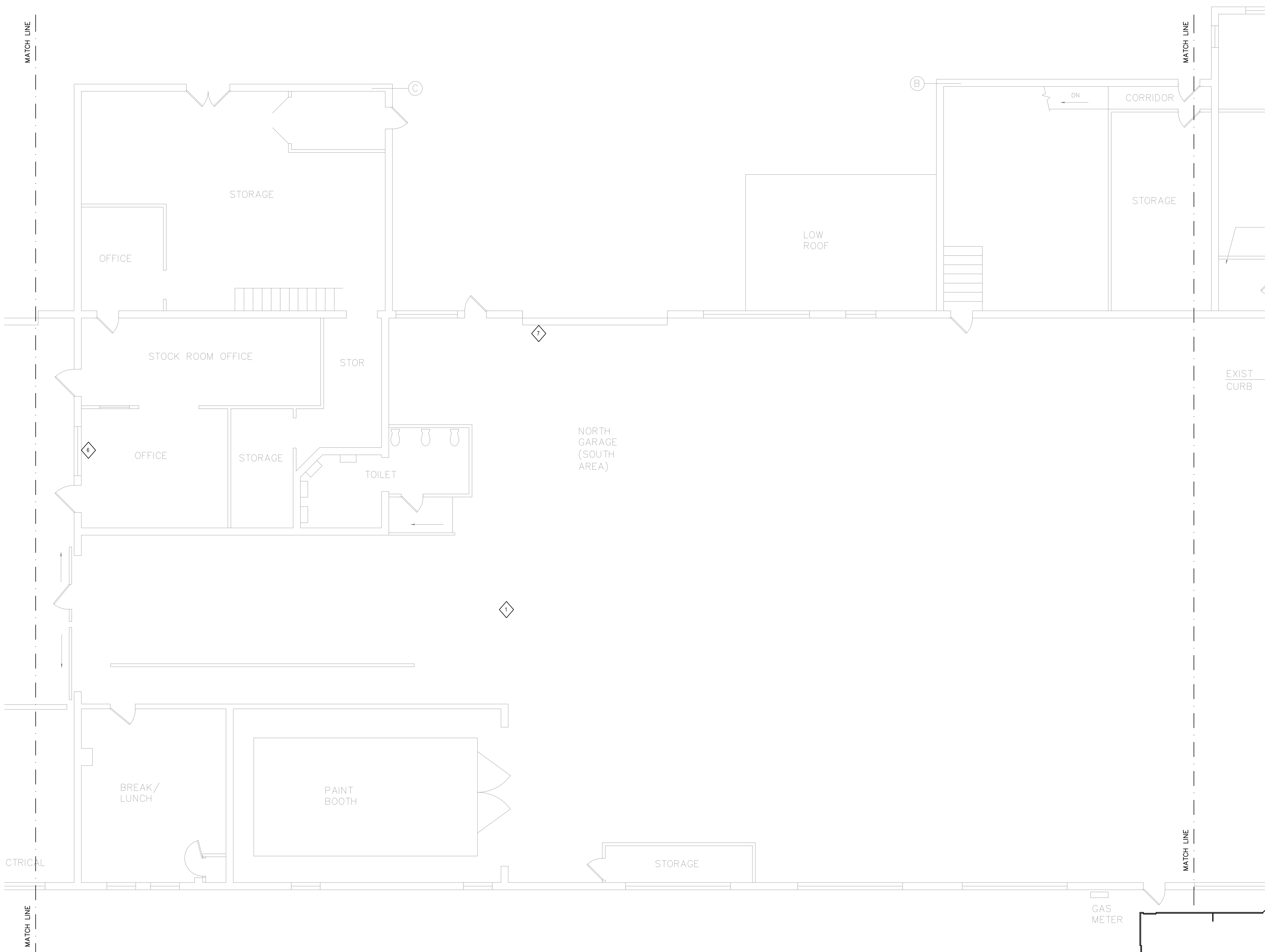
D100



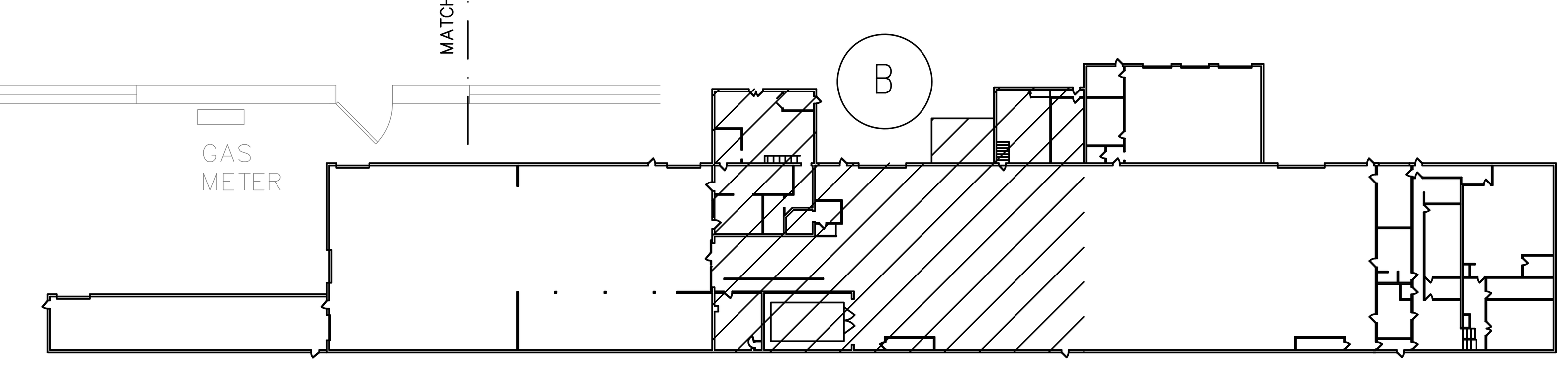
3 LOWER LEVEL DEMOLITION FLOOR PLAN
1/8"=1'-0"



2 LOWER LEVEL DEMOLITION FLOOR PLAN
1/8"=1'-0"



1 MAIN LEVEL DEMOLITION FLOOR PLAN (AREA B)
1/8"=1'-0"



KEY PLAN

DEMOLITION NOTES

1. REMOVE ACT CEILING TILE, GRID AND HANGERS.
2. REMOVE ACT CEILING TILE, GRID, HANGERS AND INSULATION.
3. DEMO CMU WALL.
4. DEMO DOOR AND HM FRAME.
5. DEMO OVHD DOOR TRACK AND OPERATOR.
6. REMOVE WINDOW.
7. DEMO OVHD DOOR OPERATOR FOR INSTALLATION OF OPERATOR.

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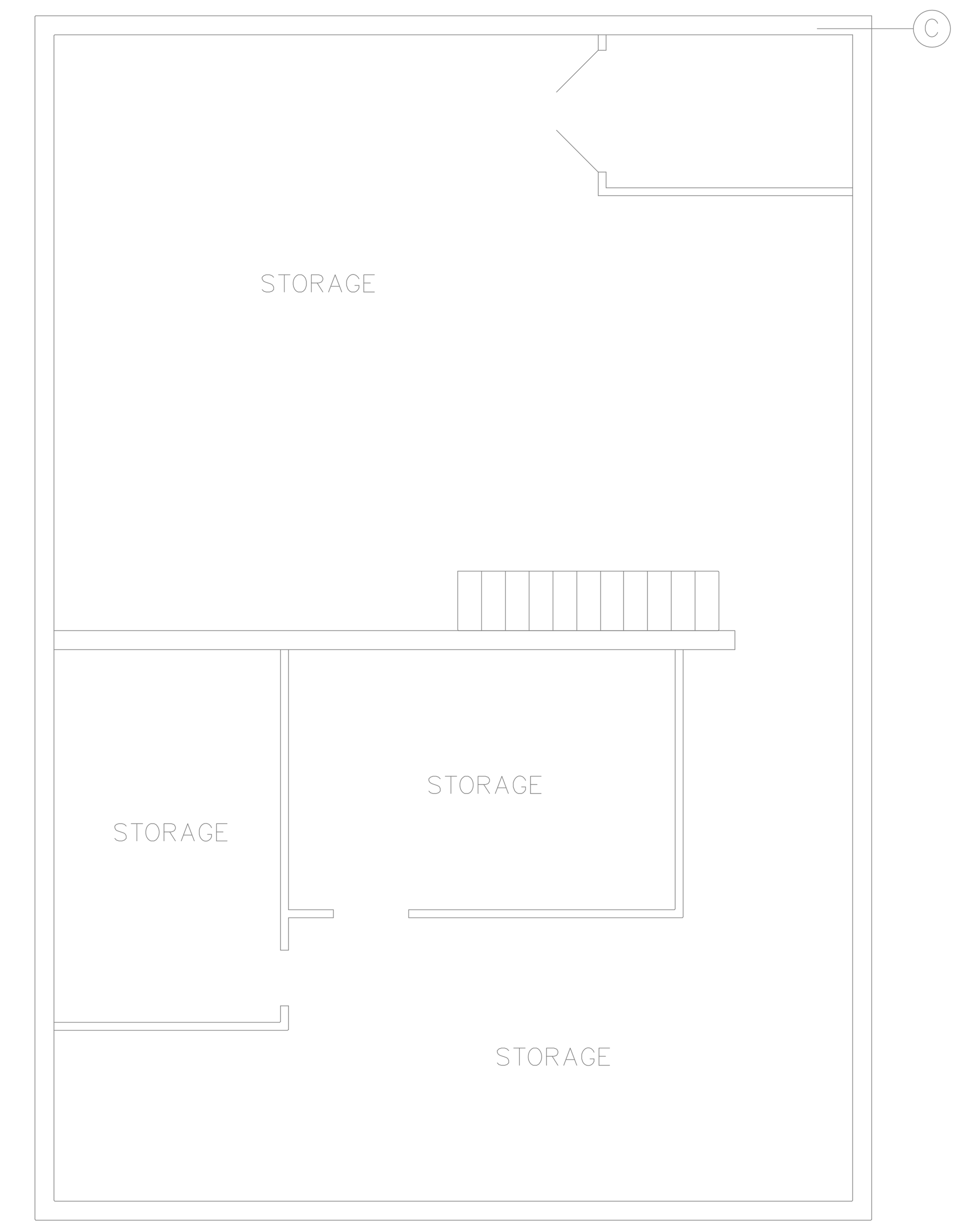
Madison, WI 53713

Drawing Title:
PARTIAL FLOOR DEMOLITION PLAN (AREA B)

Drawn By:

Drawing No.
D101

3 COLD STORAGE DEMOLITION FLOOR PLAN
1/8"=1'-0"

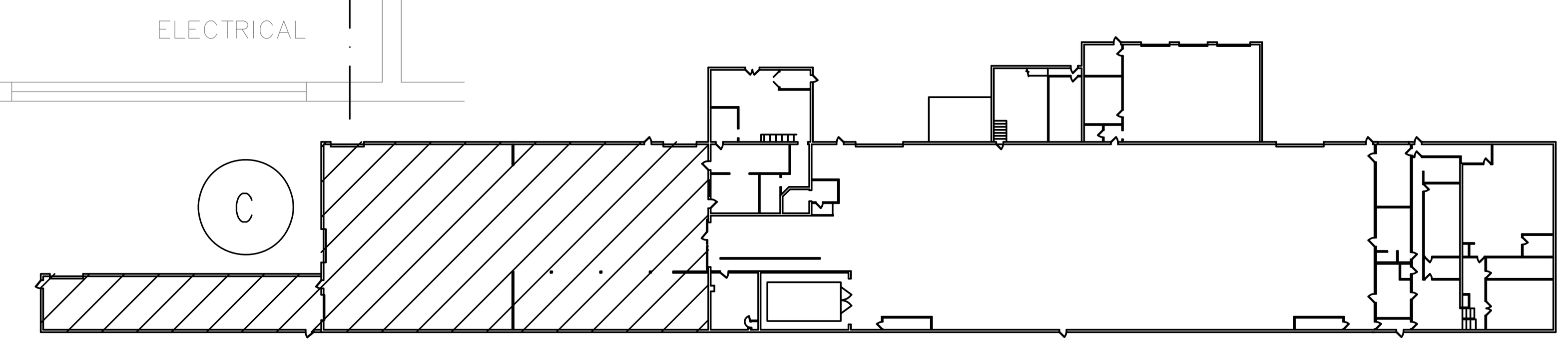


2 UPPER LEVEL DEMOLITION FLOOR PLAN
1/8"=1'-0"

1 MAIN LEVEL DEMOLITION FLOOR PLAN (AREA C)
1/8"=1'-0"

DEMOLITION NOTES

1. REMOVE ACT CEILING TILE, GRID AND HANGERS.
2. REMOVE ACT CEILING TILE, GRID, HANGERS AND INSULATION.
3. DEMO CMU WALL.
4. DEMO DOOR AND HM FRAME.
5. DEMO OVHD DOOR TRACK AND OPERATOR.
6. REMOVE WINDOW.
7. DEMO OVHD DOOR OPERATOR FOR INSTALLATION OF OPERATOR.



KEY PLAN

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Dane County Department of Public Works, Highway and Tranportation
Public Works Engineering Division
1919 Alliant Energy Center Way
Madison, WI 53713

Drawing Title:
PARTIAL FLOOR DEMOLITION PLAN (AREA C)

Drawn By:

Drawing No.
D102

FINISH NOTES:

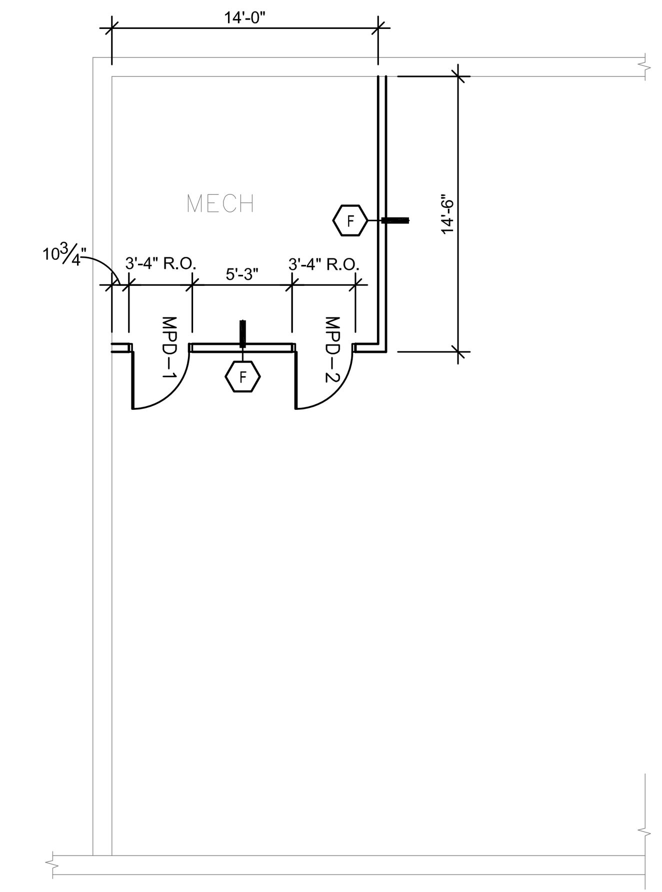
1. PT-1 EXISTING DECK WHERE ACT REMOVED (SEE DEMO NOTE 1 AND 2) PAINT WALL ABOVE WHERE GRID REMOVED, PROTECT AND DO NOT PAINT ANY EXISTING PRIMARY STRUCTURE OR EQUIPMENT.

KEY:

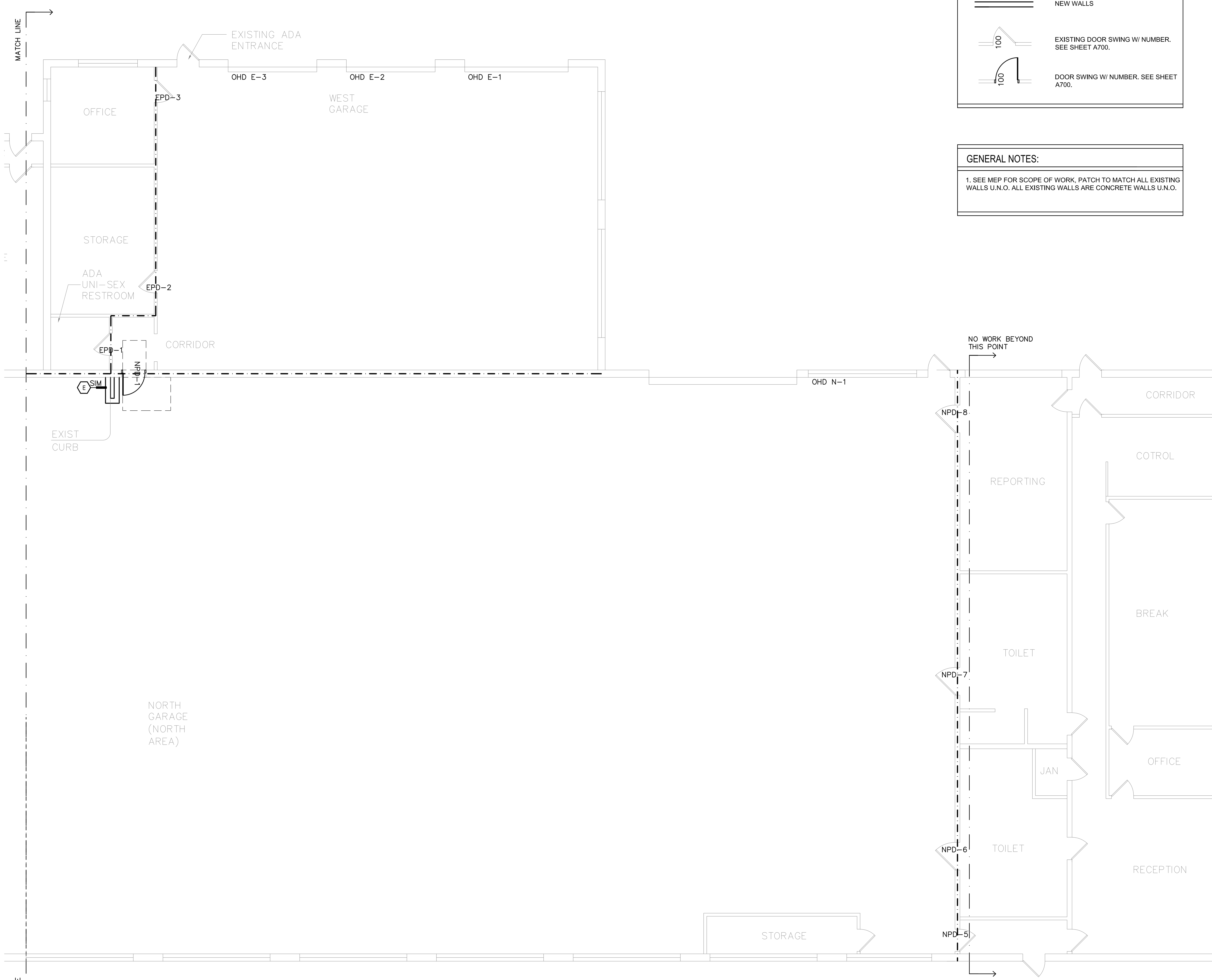
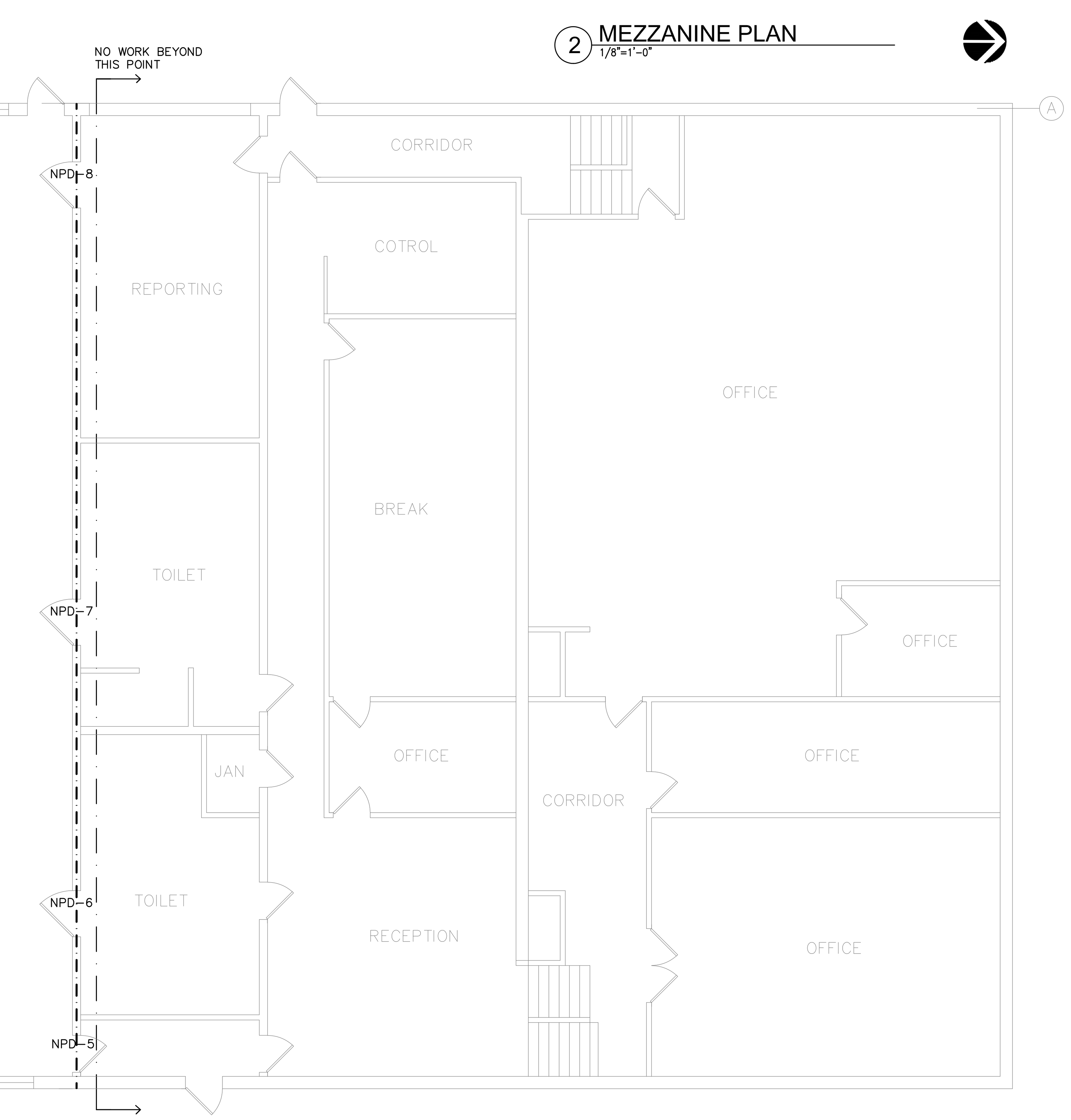
- SEAL WALLS AND OPENINGS TO PREVENT MIGRATION OF GAS. REFER TO DIV. 7 AND 8 FOR OPENINGS. ALL EXISTING WALLS TO BE SEALED AT STRUCTURE. SEAL ALL OPENINGS IN EXISTING WALLS. CUT AND PATCH TO MATCH EXISTING REFER TO MECHANICAL FOR SCOPE OF DEMOLITION.
- X — PARTITION TYPE REF. SEE SHEET A700
- NEW WALLS
- 100 — EXISTING DOOR SWING W/ NUMBER. SEE SHEET A700.
- 100 — DOOR SWING W/ NUMBER. SEE SHEET A700.

GENERAL NOTES:

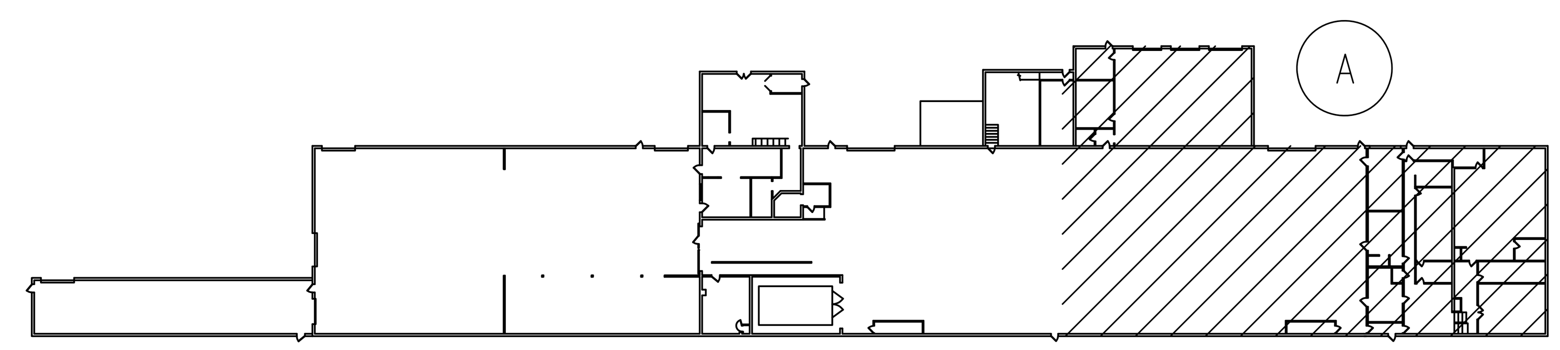
1. SEE MEP FOR SCOPE OF WORK, PATCH TO MATCH ALL EXISTING WALLS U.N.O. ALL EXISTING WALLS ARE CONCRETE WALLS U.N.O.



2 MEZZANINE PLAN
1/8"=1'-0"

1 MAIN LEVEL FLOOR PLAN (AREA A)
1/8"=1'-0"



KEY PLAN

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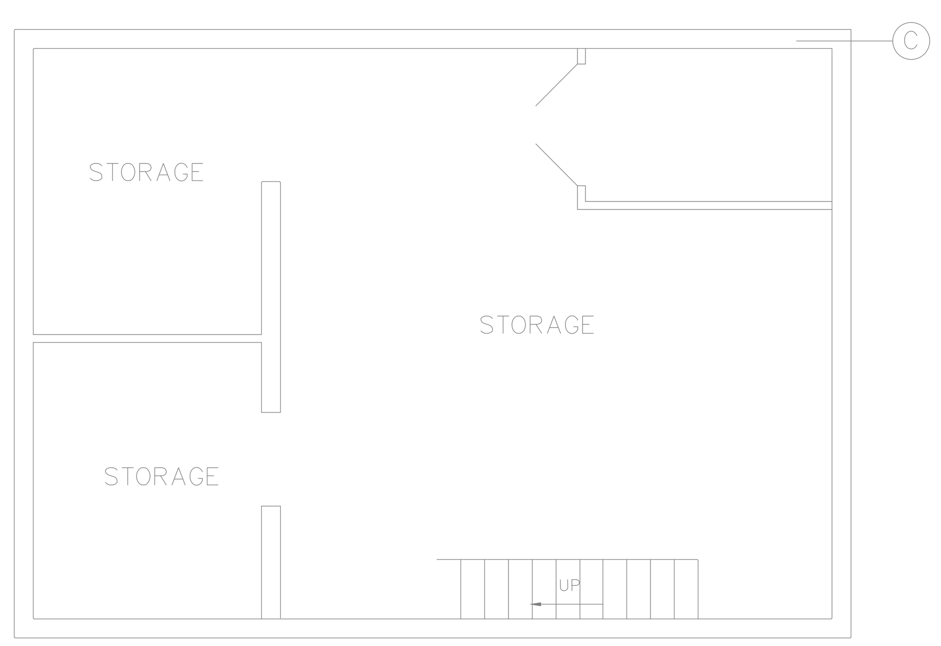
Public Works Engineering Division
1919 Alliant Energy Center Way
Madison, WI 53713

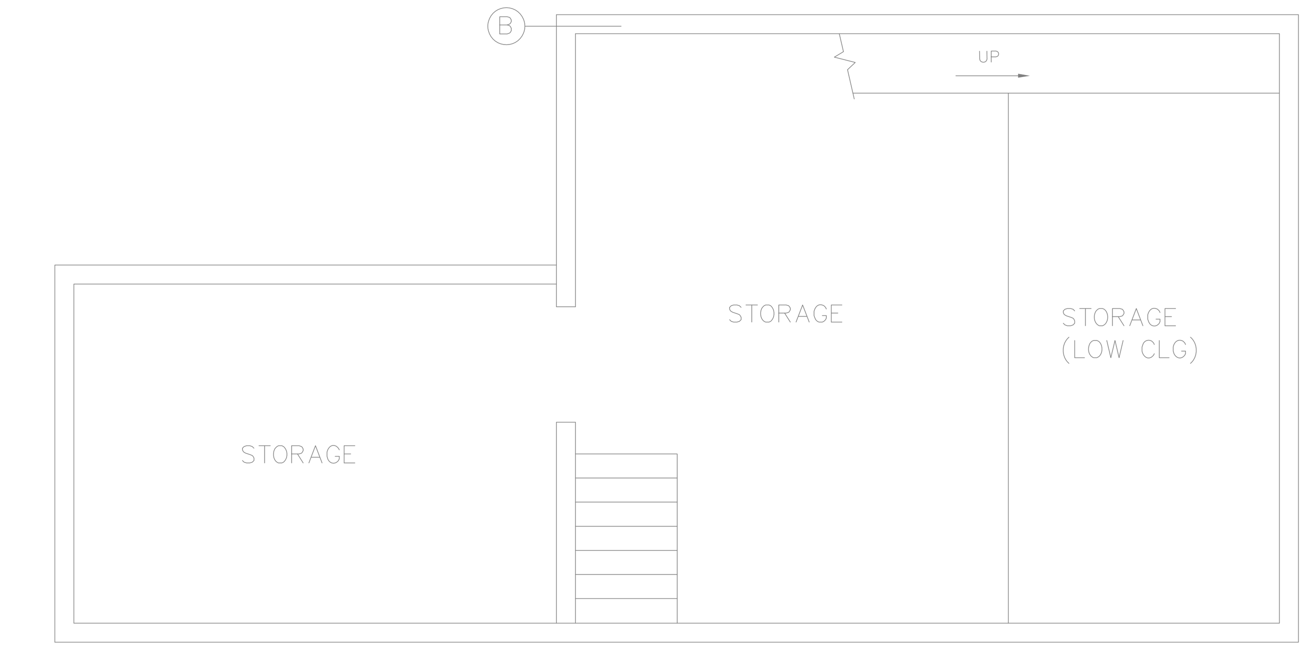
Drawing Title:
PARTIAL FLOOR PLAN (AREA A)

Drawn By:

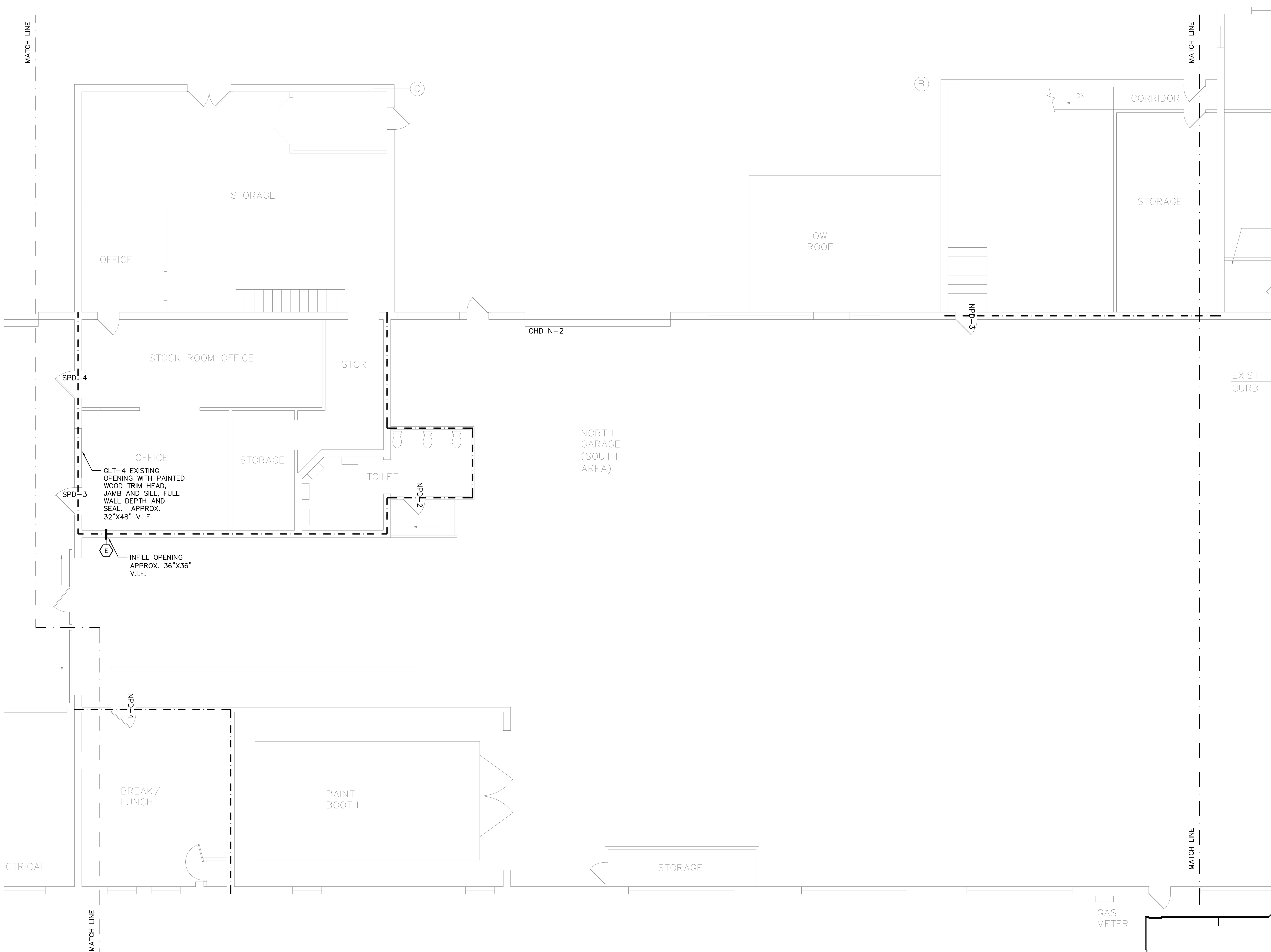
Drawing No.
A100



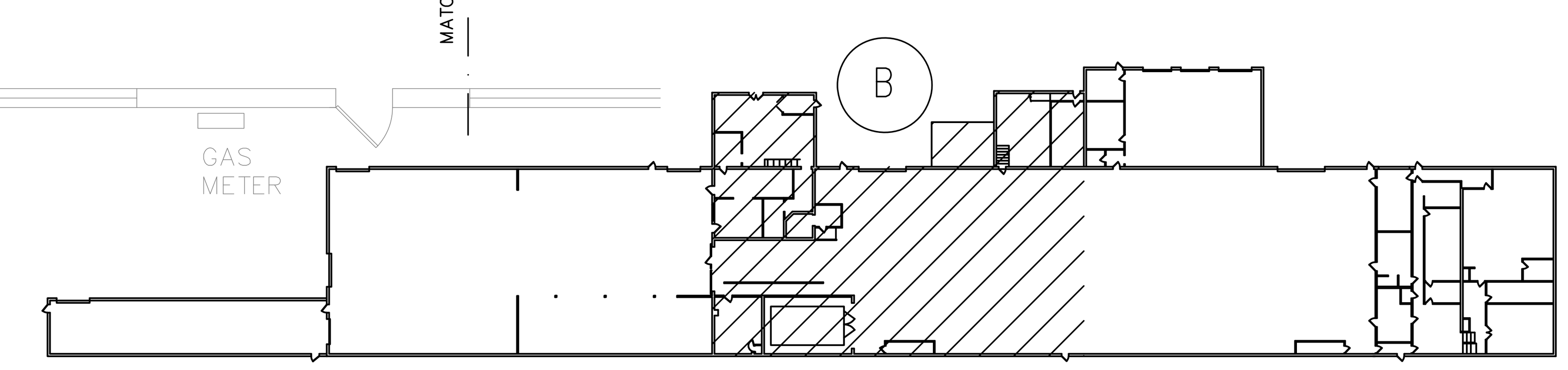
3 LOWER LEVEL FLOOR PLAN
1/8"=1'-0"



2 LOWER LEVEL FLOOR PLAN
1/8"=1'-0"



1 MAIN LEVEL FLOOR PLAN (AREA B)
1/8"=1'-0"



KEY PLAN

FINISH NOTES:

1. PT-1 EXISTING DECK WHERE ACT REMOVED (SEE DEMO NOTE 1 AND 2) PAINT WALL ABOVE WHERE GRID REMOVED, PROTECT AND DO NOT PAINT ANY EXISTING PRIMARY STRUCTURE OR EQUIPMENT.

KEY:

SEAL WALLS AND OPENINGS TO PREVENT MIGRATION OF GAS. REFER TO DIV. 7 AND 8 FOR OPENINGS. ALL EXISTING WALLS TO BE SEALED AT STRUCTURE. SEAL ALL OPENINGS IN EXISTING WALLS. CUT AND PATCH TO MATCH EXISTING REFER TO MECHANICAL FOR SCOPE OF DEMOLITION.

X PARTITION TYPE REF. SEE SHEET A700

NEW WALLS

100 EXISTING DOOR SWING W/ NUMBER. SEE SHEET A700.

100 DOOR SWING W/ NUMBER. SEE SHEET A700.

GENERAL NOTES:

1. SEE MEP FOR SCOPE OF WORK, PATCH TO MATCH ALL EXISTING WALLS U.N.O. ALL EXISTING WALLS ARE CONCRETE WALLS U.N.O.

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Drawing Title:

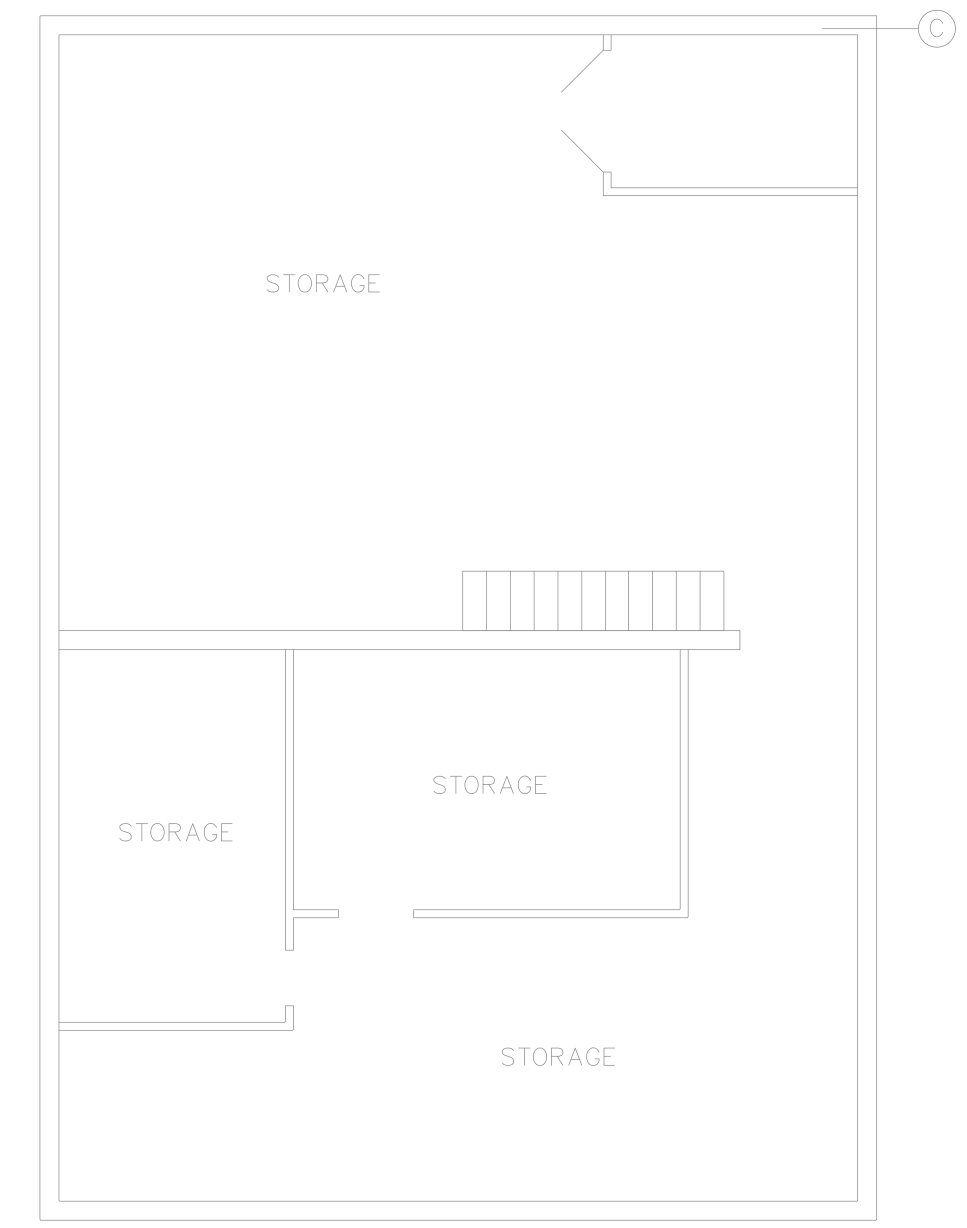
PARTIAL FLOOR PLAN (AREA B)

Drawn By:

Drawing No.

A101

3 COLD STORAGE FLOOR PLAN
1/8"=1'-0"



2 UPPER LEVEL FLOOR PLAN
1/8"=1'-0"

1 MAIN LEVEL FLOOR PLAN (AREA C)
1/8"=1'-0"

FINISH NOTES:

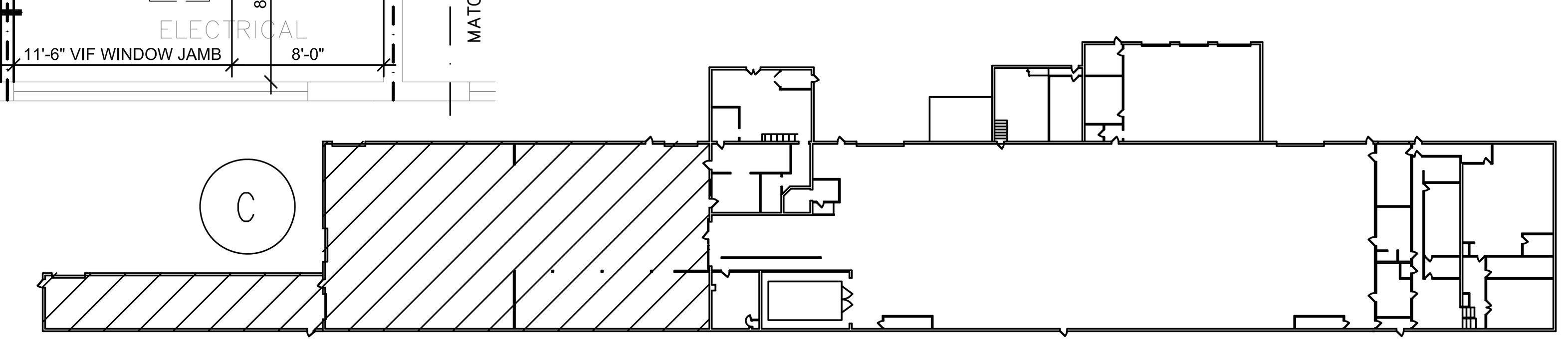
1. PT-1 EXISTING DECK WHERE ACT REMOVED (SEE DEMO NOTE 1 AND 2) PAINT WALL ABOVE WHERE GRID REMOVED, PROTECT AND DO NOT PAINT ANY EXISTING PRIMARY STRUCTURE OR EQUIPMENT.

KEY:

— · — · —	SEAL WALLS AND OPENINGS TO PREVENT MIGRATION OF GAS. REFER TO DIV. 7 AND 8 FOR OPENINGS. ALL EXISTING WALLS TO BE SEALED AT STRUCTURE. SEAL ALL OPENINGS IN EXISTING WALLS. CUT AND PATCH TO MATCH EXISTING REFER TO MECHANICAL FOR SCOPE OF DEMOLITION.
X	PARTITION TYPE REF. SEE SHEET A700
	NEW WALLS
100	EXISTING DOOR SWING W/ NUMBER. SEE SHEET A700.
100	DOOR SWING W/ NUMBER. SEE SHEET A700.

GENERAL NOTES:

1. SEE MEP FOR SCOPE OF WORK, PATCH TO MATCH ALL EXISTING WALLS U.N.O. ALL EXISTING WALLS ARE CONCRETE WALLS U.N.O.



KEY PLAN

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Drawing Title:

PARTIAL FLOOR PLAN (AREA C)

Drawn By:

Drawing No.

A102

DOOR AND FRAME SCHEDULE

DOOR NO.	QNTY	DOOR SIZE W	DOOR SIZE H	DOOR SIZE T	DOOR MATERIAL	DOOR ELEV	DOOR GLASS	DOOR LOUVER OR UNDERCUT	FRAME MATL	FRAME ELEV	FRAME DETAILS HEAD	FRAME DETAILS JAMB	FRAME DETAILS SILL	FIRE LABEL	HDWR GROUP	REMARKS
OHD E-1	1	14-0	14-0	-	EX OHD	-	-	-	-	-	-	-	-	-	SEE REMARKS	1, EXPLOSION PROOF OPERATOR, SEE 08 36 13
OHD E-2	1	12-0	12-0	-	EX OHD	-	-	-	-	-	-	-	-	-		
OHD E-3	1	12-0	12-0	-	EX OHD	-	-	-	-	-	-	-	-	-		
EPD-1	1	3-8	7-0	-	EX HM	-	-	-	EX HM	-	-	-	-	-	1	
EPD-2	1	3-8	7-0	-	EX HM	-	-	-	EX HM	-	-	-	-	-	2	2
EPD-3	1	3-8	7-0	-	EX HM	-	-	-	EX HM	-	-	-	-	-	2	
OHD N-1	1	20-0	16-0	-	EX OHD	-	-	-	-	-	-	-	-	-		
OHD N-2	1	20-0	16-0	-	EX OHD	-	-	-	-	-	-	-	-	-	SEE REMARKS	1, EXPLOSION PROOF OPERATOR, SEE 08 36 13
NPD-1	1	3-8	7-0	-	HM	A	-	-	HM	C	3/A700	3/A700	-	-	3	MAGNETIC HOLD OPEN
NPD-2	1	3-8	7-0	-	EX HM	-	-	-	EX HM	-	-	-	-	-	4	MAGNETIC HOLD OPEN
NPD-3	1	3-8	7-0	-	EX HM	-	-	-	EX HM	-	-	-	-	-	2	
NPD-4	1	3-8	7-0	-	EX HM	-	-	-	EX HM	-	-	-	-	-	2	
NPD-5	1	3-8	7-0	-	EX HM	-	-	-	EX HM	-	-	-	-	-	2	
NPD-6	1	3-8	7-0	-	EX HM	-	-	-	EX HM	-	-	-	-	-	2	
NPD-7	1	3-8	7-0	-	EX HM	-	-	-	EX HM	-	-	-	-	-	2	
NPD-8	1	3-8	7-0	-	EX HM	-	-	-	EX HM	-	-	-	-	-	2	
OHD S-1	1	14-0	14-0	-	EX OHD	-	-	-	-	-	-	-	-	-	SEE REMARKS	1, EXPLOSION PROOF OPERATOR, SEE 08 36 13
OHD S-2	1	20-0	16-0	-	EX OHD	-	-	-	-	-	-	-	-	-	SEE REMARKS	1, EXPLOSION PROOF OPERATOR, SEE 08 36 13
OHD S-3	1	20-0	16-0	-	EX OHD	-	-	-	-	-	-	-	-	-	SEE REMARKS	1, EXPLOSION PROOF OPERATOR, SEE 08 36 13
OHD S-4	1	10'-0"	11'-6"	-	OHD	OHD	-	-	-	-	4/A700	4/A700	-	-	SEE REMARKS	1, INSULATED OHD, NON-EXPLOSION PROOF OPERATOR, LOCATE IN COLD STORAGE
SPD-1	1	3-8	7-0	-	HM	B	GLT 13	-	HM	C	3/A700	5/A700	-	-	5	MAGNETIC HOLD OPEN
SPD-2	1	3-8	7-0	-	HM	A	-	-	HM	C	3/A700	3/A700	-	-	6	
SPD-3	1	3-8	7-0	-	EX HM	-	-	-	EX HM	-	-	-	-	-	2	
SPD-4	1	3-8	7-0	-	EX HM	-	-	-	EX HM	-	-	-	-	-	2	
MPD-1	1	3-8	7-0	-	HM	A	-	-	HM	C	3/A700	3/A700	-	-	7	
MPD-2	1	3-8	7-0	-	HM	A	-	-	HM	C	3/A700	3/A700	-	-	7	

GENERAL NOTES:

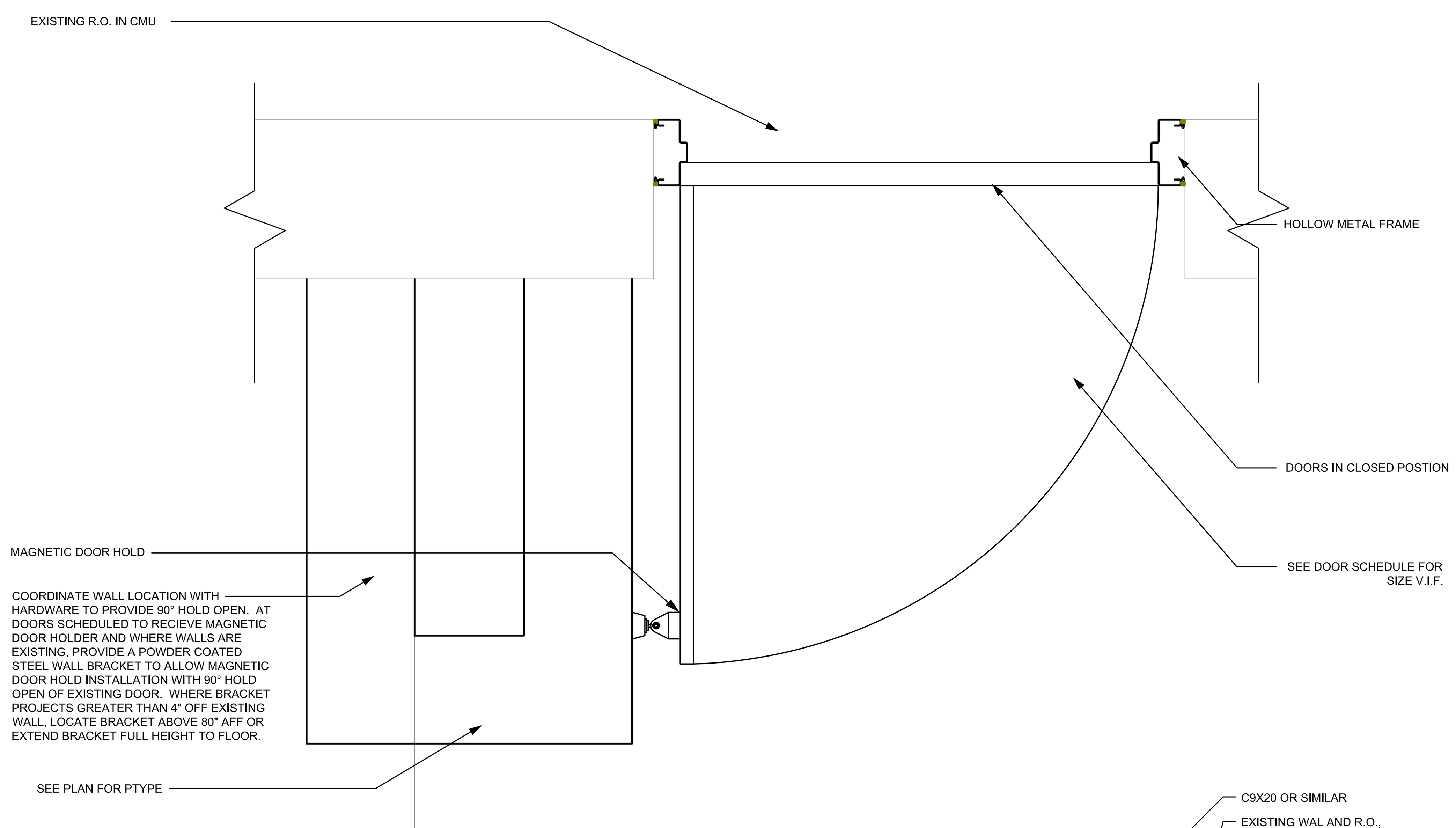
1. PAINT HM DOORS AND FRAMES SCHEDULED AND EXISTING NOTED ON PLAN TO MATCH OWNER'S SAMPLE.
2. STAIN WOOD DOORS TO MATCH OWNER'S SAMPLE.
3. FIELD VERIFY ALL DIMENSIONS TO MATCH EXISTING ROUGH OPENINGS.
4. REFER TO SHEET A700 FOR HOLLOW METAL FRAME ELEVATIONS.

LEGEND

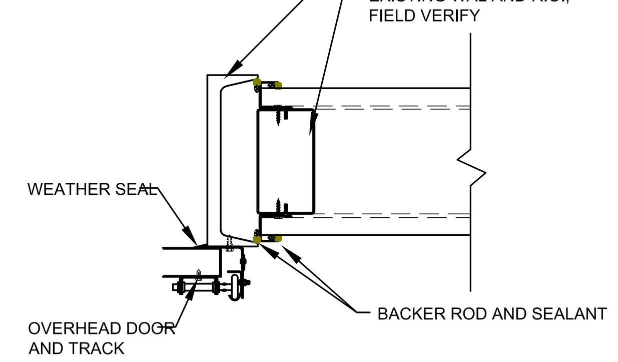
AL	ALUMINUM	OHD	SECTIONAL OVERHEAD DOOR
HM	HOLLOW METAL		
WD	WOOD		
UC	UNDERCUT		

REMARKS:

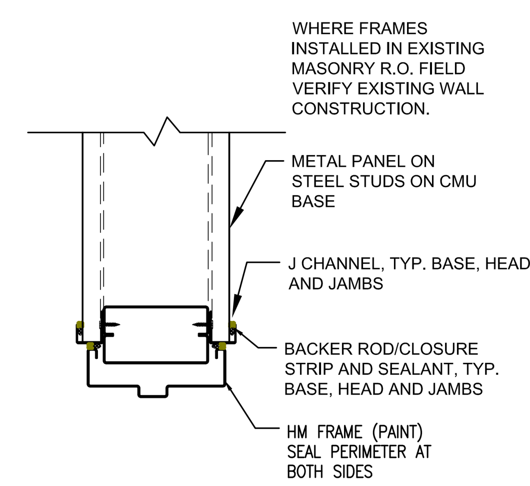
1. FIELD VERIFY EXISTING SECTIONAL OVERHEAD DOORS
2. INSTALL HM TO MATCH DOOR OVER EXISTING LOUVER TO SEAL AND PREVENT THE MIGRATION OF GAS. PAINT DOOR.



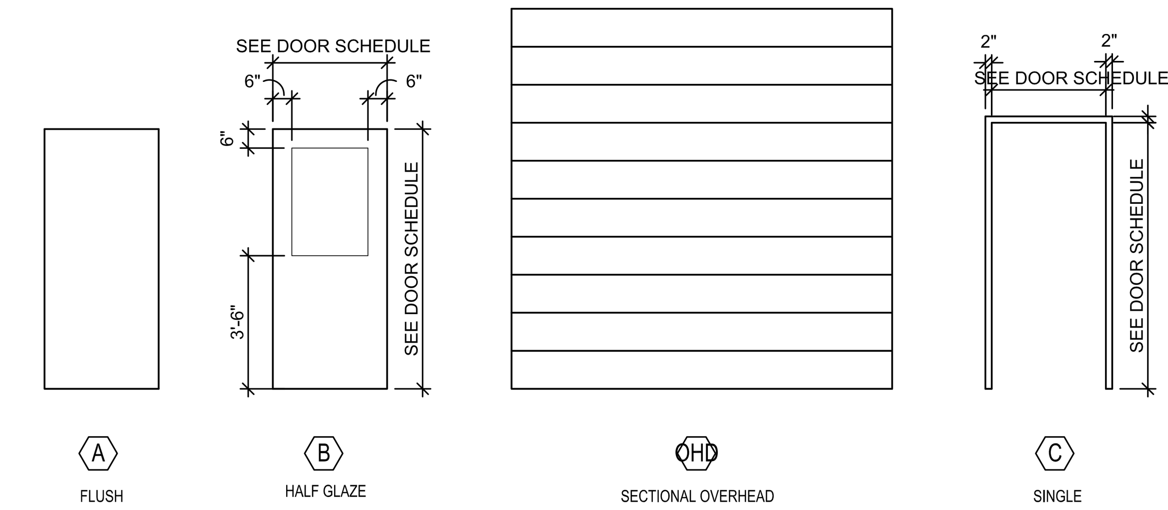
5 HOLD OPEN DOOR JAMB DETAIL
1-1/2"=1'-0"



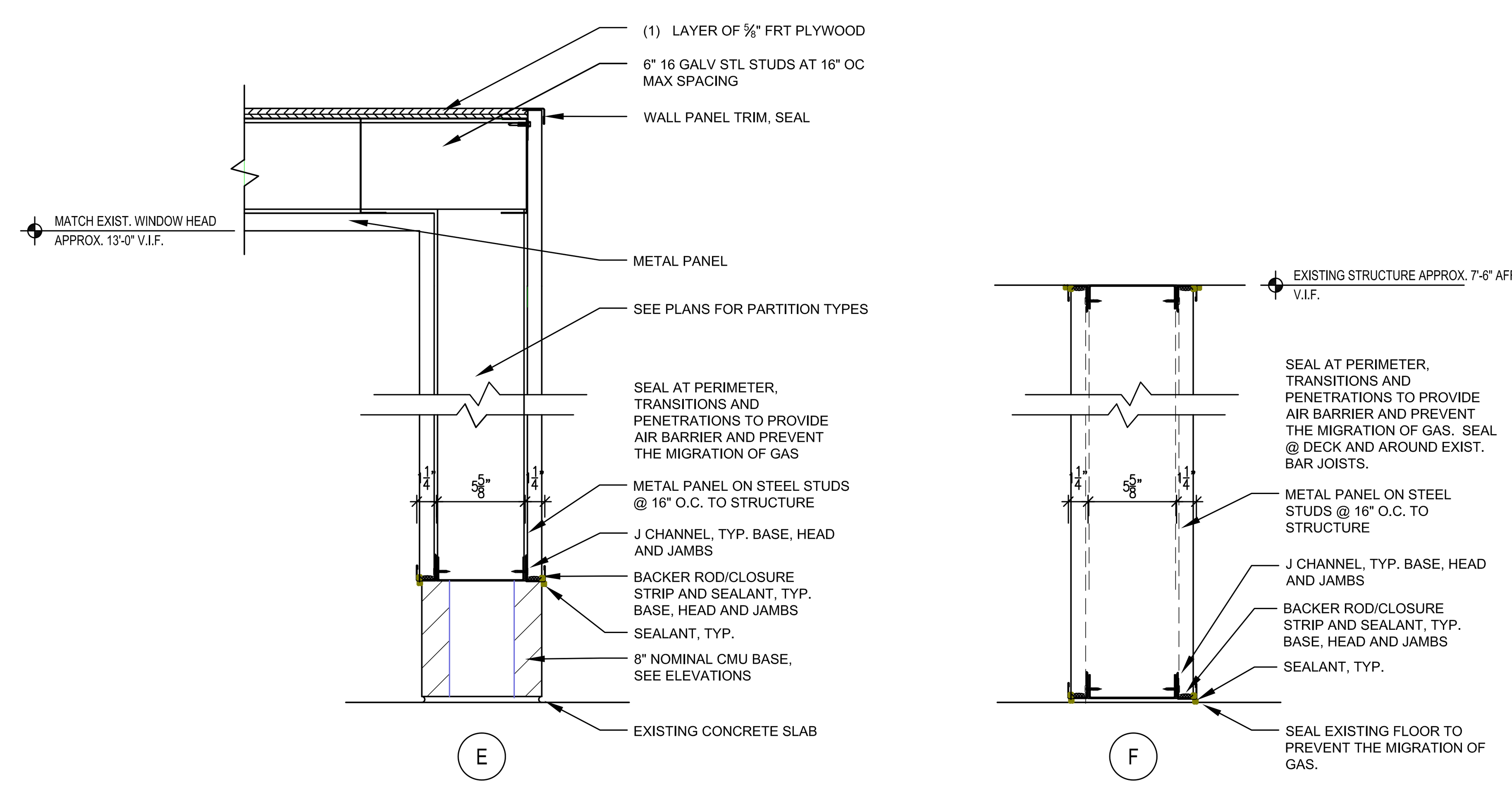
4 OVHD DOOR, HEAD SIM
1-1/2"=1'-0"



3 DOOR JAMB, HEAD SIM
1-1/2"=1'-0"



2 DOOR AND FRAME ELEVATIONS
1/4"=1'-0"



1 PARTITION TYPES
1-1/2"=1'-0"

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Project No. 18-1216

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FISH HATCHERY HIGHWAY GARAGE - CNG RETROFIT

2302 FISH HATCHERY RD,
MADISON, WI 53713

DANE COUNTY RFB# 318029

Dane County Department of Public Works, Highway and Tranportation
Public Works Engineering Division
1919 Alliant Energy Center Way
Madison, WI 53713

Drawing Title:

PARTITION TYPES, DOOR SCHEDULE AND DETAILS

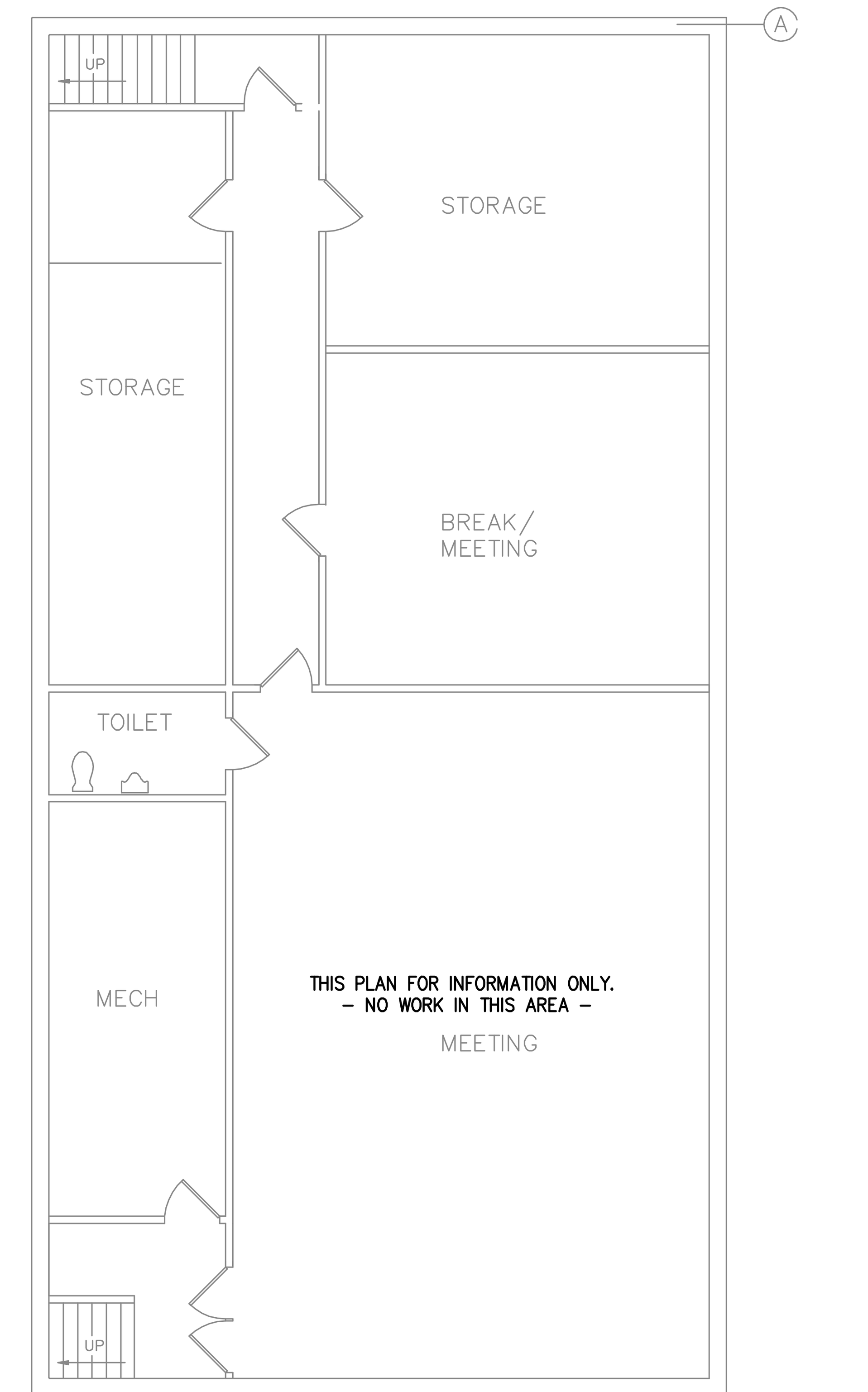
Drawn By:

Drawing No.

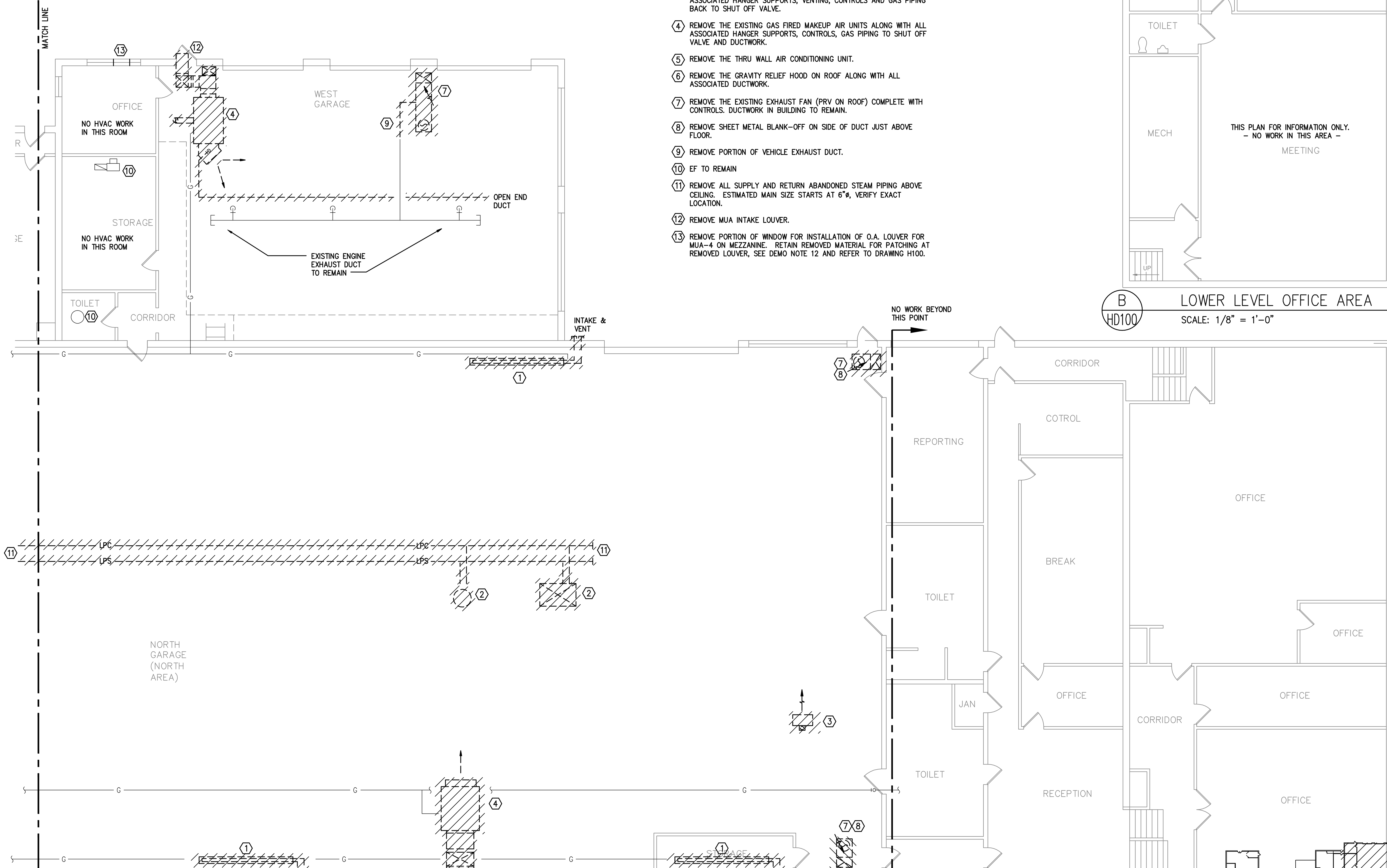
A700

HVAC DEMOLITION NOTES (HD100):

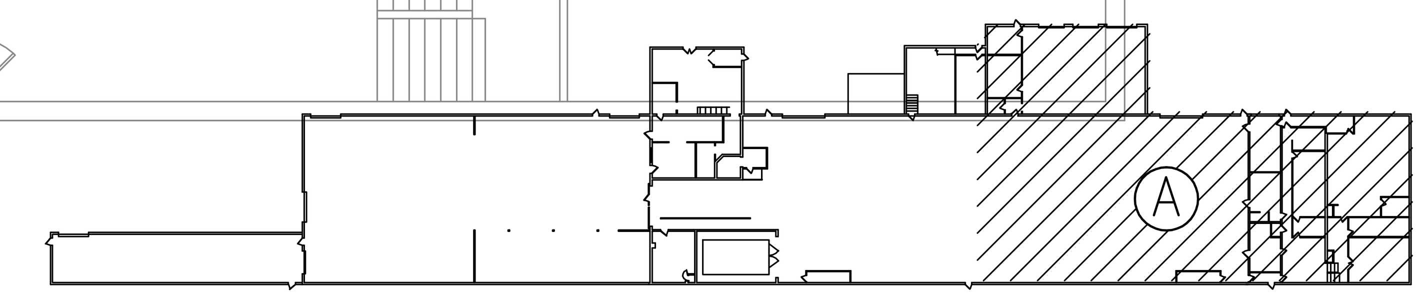
1. REMOVE THE EXISTING GAS FIRED RADIANT HEATER COMPLETE WITH ALL ASSOCIATED VENTING, SUPPORTS AND CONTROLS. REMOVE GAS PIPING BACK TO SHUT OFF VALVE. REMOVE VENTILATION &/OR INTAKE THRU ROOF OR WALL.
2. REMOVE THE EXISTING (ABONDONED) STEAM UNIT HEATERS ALONG WITH ALL ASSOCIATED HANGER SUPPORTS, STEAM PIPING AND CONTROLS.
3. REMOVE THE EXISTING GAS FIRED UNIT HEATERS ALONG WITH ALL ASSOCIATED HANGER SUPPORTS, VENTING, CONTROLS AND GAS PIPING BACK TO SHUT OFF VALVE.
4. REMOVE THE EXISTING GAS FIRED MAKEUP AIR UNITS ALONG WITH ALL ASSOCIATED HANGER SUPPORTS, CONTROLS, GAS PIPING TO SHUT OFF VALVE AND DUCTWORK.
5. REMOVE THE THRU WALL AIR CONDITIONING UNIT.
6. REMOVE THE GRAVITY RELIEF HOOD ON ROOF ALONG WITH ALL ASSOCIATED DUCTWORK.
7. REMOVE THE EXISTING EXHAUST FAN (PRV ON ROOF) COMPLETE WITH CONTROLS. DUCTWORK IN BUILDING TO REMAIN.
8. REMOVE SHEET METAL BLANK-OFF ON SIDE OF DUCT JUST ABOVE FLOOR.
9. REMOVE PORTION OF VEHICLE EXHAUST DUCT.
10. EF TO REMAIN
11. REMOVE ALL SUPPLY AND RETURN ABANDONED STEAM PIPING ABOVE CEILING. ESTIMATED MAIN SIZE STARTS AT 6"ø, VERIFY EXACT LOCATION.
12. REMOVE MUA INTAKE LOUVER.
13. REMOVE PORTION OF WINDOW FOR INSTALLATION OF O.A. LOUVER FOR MUA-4 ON MEZZANINE. RETAIN REMOVED MATERIAL FOR PATCHING AT REMOVED LOUVER, SEE DEMO NOTE 12 AND REFER TO DRAWING H100.



B / HD100 LOWER LEVEL OFFICE AREA
SCALE: 1/8" = 1'-0"



A / HD100 MAIN LEVEL FLOOR PLAN (AREA A) – HVAC DEMOLITION WORK
SCALE: 1/8" = 1'-0"



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1919 Alliant Energy Center Way
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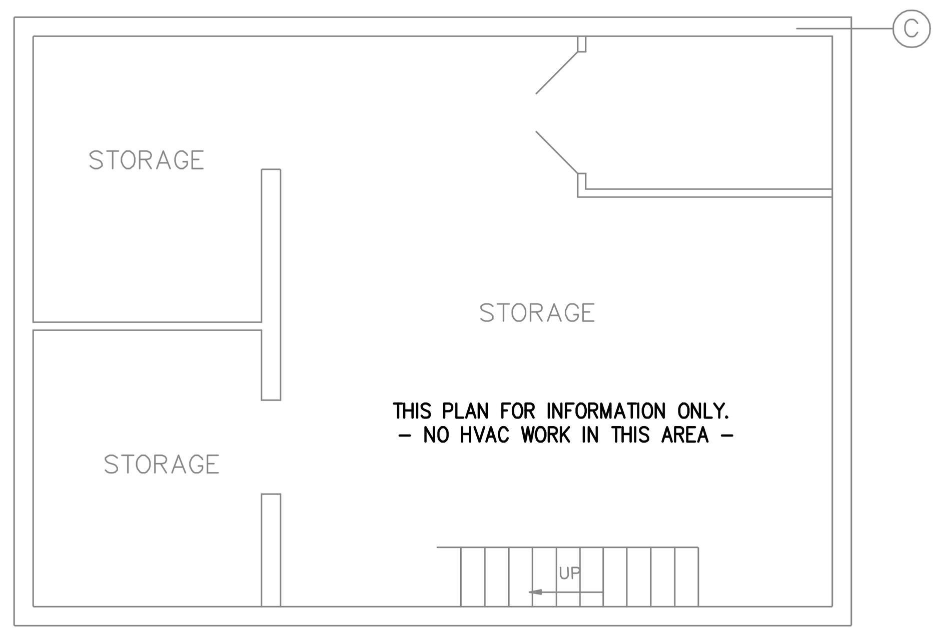
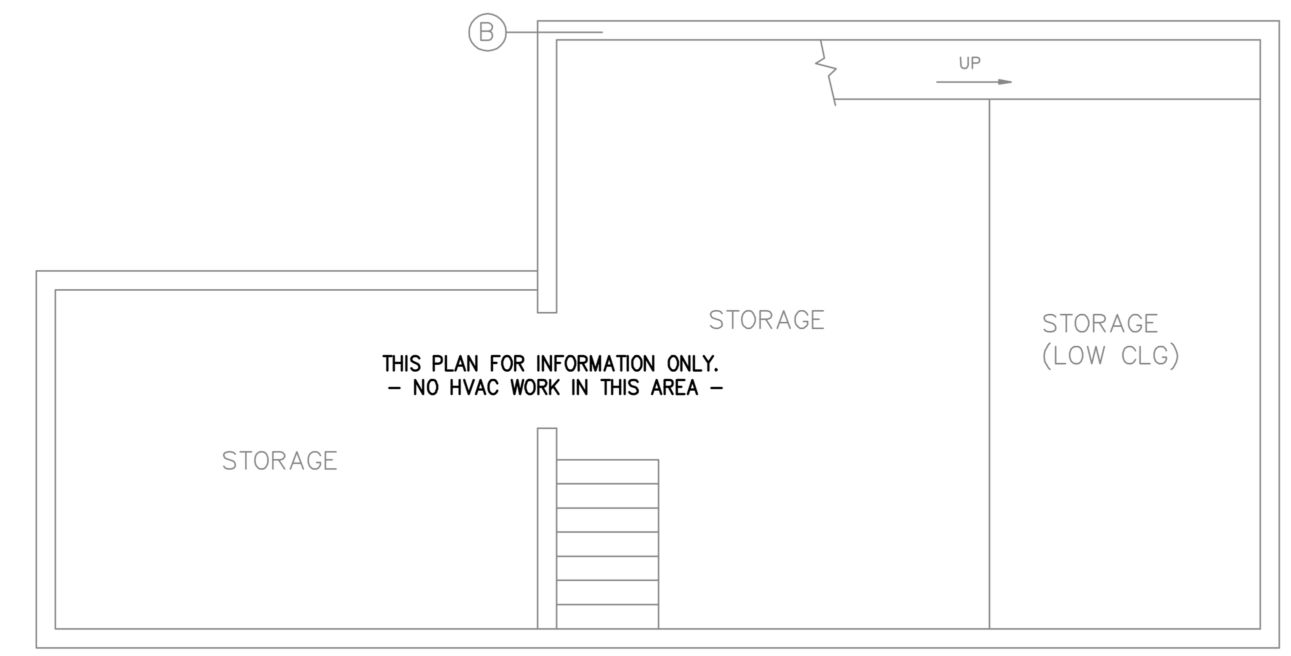
Drawing Title:
PARTIAL FLOOR PLAN (AREA A) HVAC DEMOLTION WORK

Eng. 370 Project Number: 18-1216
Drawn By: FBN
Drawing No. HD100



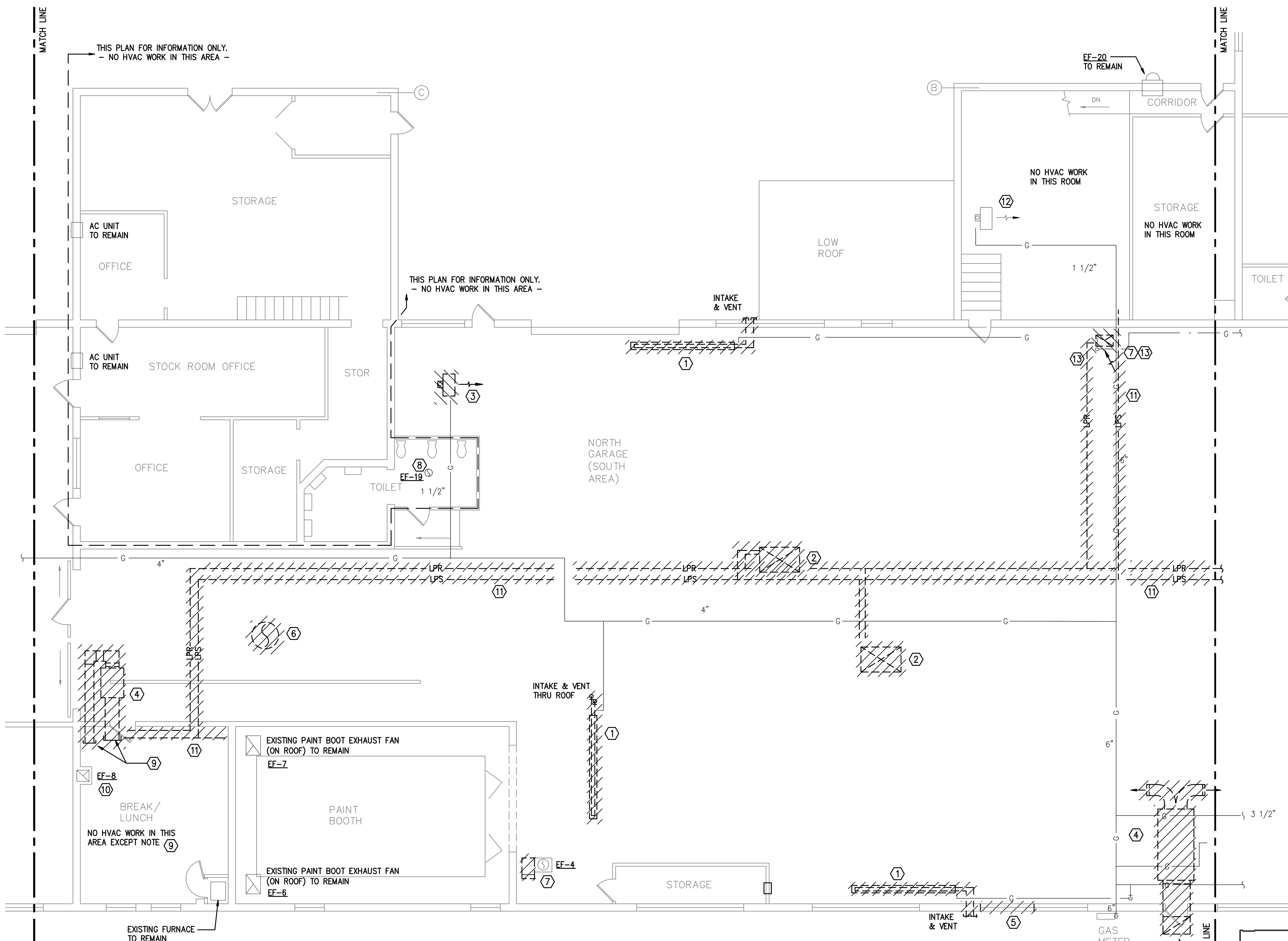
C / HD101 LOWER LEVEL FLOOR PLAN

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



B / HD101 LOWER LEVEL FLOOR PLAN

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

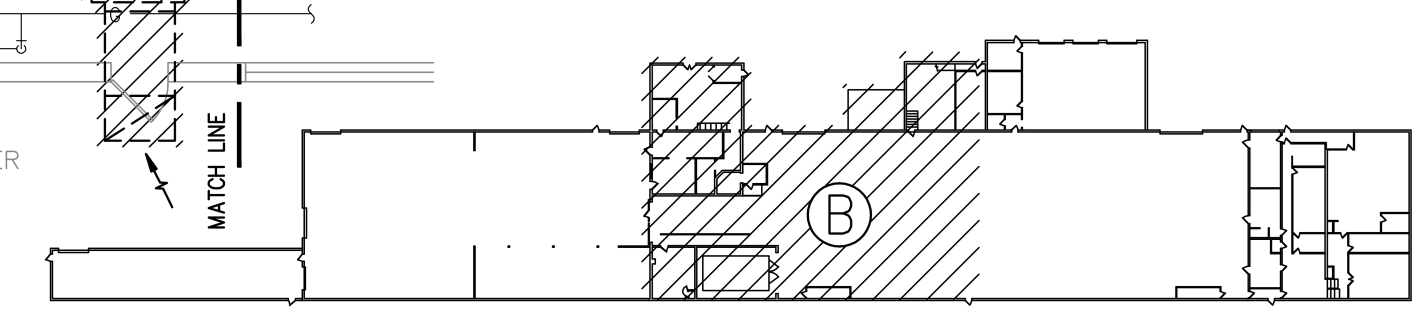


A / HD101 MAIN LEVEL FLOOR PLAN (AREA B) – HVAC DEMOLITION WORK

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

HVAC DEMOLITION NOTES (HD101):

1. REMOVE THE EXISTING GAS FIRED RADIANT HEATER COMPLETE WITH ALL ASSOCIATED VENTING, SUPPORTS AND CONTROLS. REMOVE GAS PIPING BACK TO SHUT OFF VALVE. REMOVE VENT &/OR INTAKE THRU ROOF OR WALL.
2. REMOVE THE EXISTING (ABONDONED) STEAM UNIT HEATERS ALONG WITH ALL ASSOCIATED HANGER SUPPORTS, STEAM PIPING AND CONTROLS. REMOVE INTAKE THRU ROOF.
3. REMOVE THE EXISTING GAS FIRED UNIT HEATERS ALONG WITH ALL ASSOCIATED HANGER SUPPORTS, VENTING, CONTROLS AND GAS PIPING BACK TO SHUT OFF VALVE.
4. REMOVE THE EXISTING GAS FIRED MAKEUP AIR UNITS ALONG WITH ALL ASSOCIATED HANGER SUPPORTS, CONTROLS, GAS PIPING TO SHUT OFF VALVE AND DUCTWORK.
5. REMOVE PORTION OF WINDOW FOR NEW MUA-2 SUPPLY AIR DUCTWORK. REFER TO DRAWING H101.
6. REMOVE THE GRAVITY RELIEF HOOD ON ROOF ALONG WITH ALL ASSOCIATED DUCTWORK.
7. REMOVE THE EXISTING EXHAUST FAN (PRV ON ROOF) COMPLETE WITH CONTROLS. DUCTWORK IN BUILDING TO REMAIN.
8. EXISTING EXHAUST FAN SERVING TOILET ROOM TO REMAIN. REFER TO SPECIFICATION FOR CONTROL REVISION.
9. REMOVE CUT TO ABOVE BREAK ROOM CEILING AND CAP. ABANDON DUCT BEYOND.
10. EXISTING ROOF EXHAUST FAN AND DUCT WORK TO REMAIN. REFER TO SPECIFICATION FOR CONTROL REVISIONS.
11. REMOVE ABANDONED STEAM PIPING ABOVE CEILING. ESTIMATED AT 6"ø. VERIFY EXACT LOCATION.
12. GAS UNIT HEATER TO REMAIN (OUT OF VEHICLE AREA).
13. REMOVE STEAM SUPPLY AND RETURN TO WALL AND CAP.



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Drawing Title:

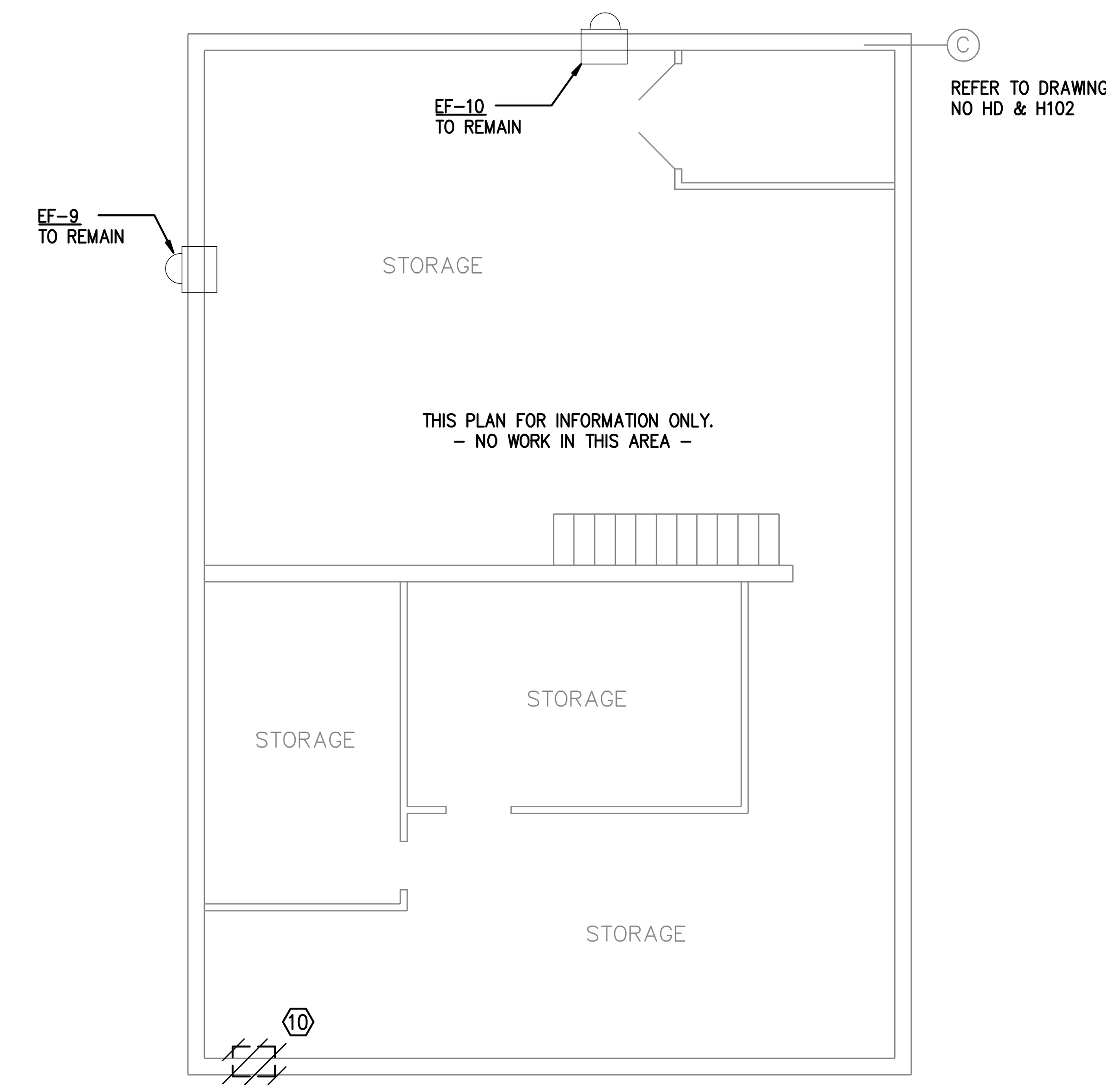
PARTIAL FLOOR PLAN (AREA B) HVAC DEMOLITION WORK

Eng. 370 Project Number: 18-1216

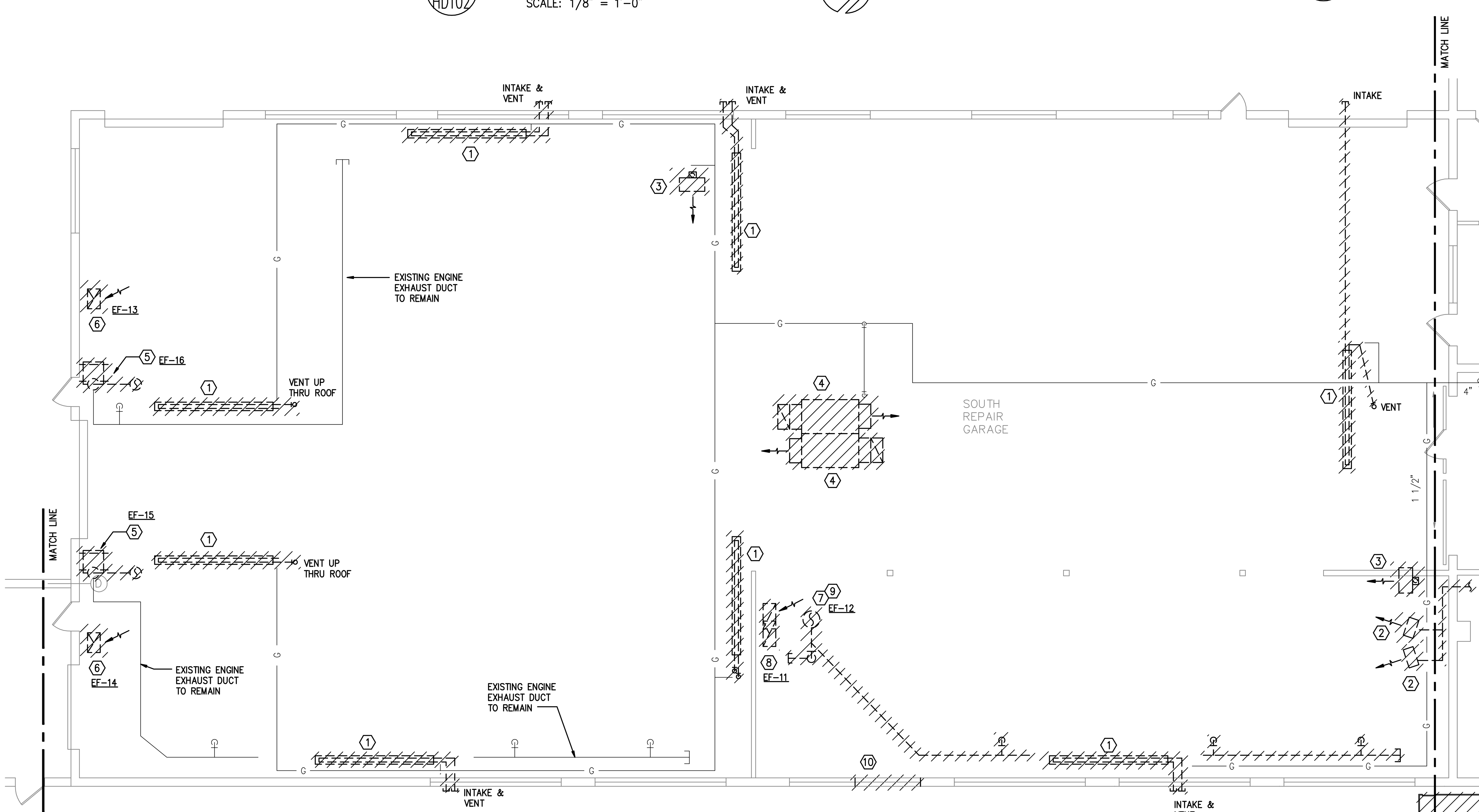
Drawing No. **HD101**

Drawn By: FBN

C
HD102
COLD STORAGE FLOOR PLAN
SCALE: 1/8" = 1'-0"



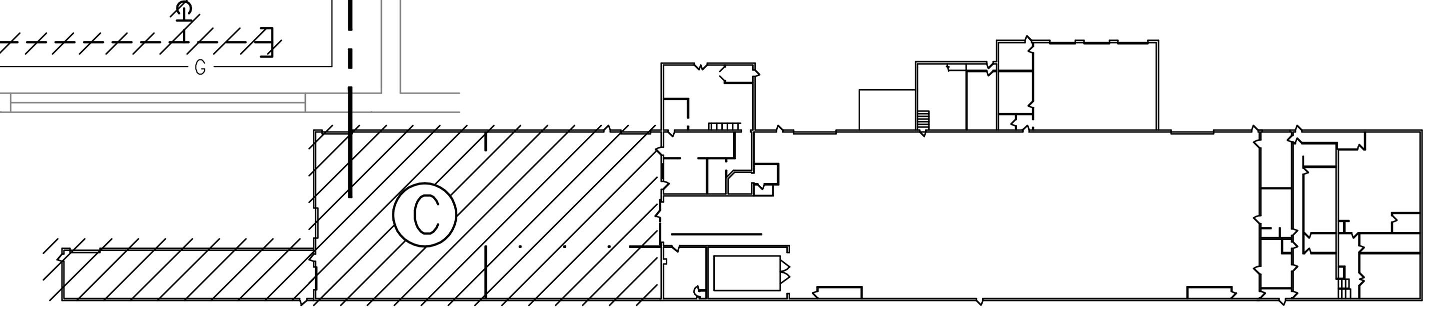
B
HD102
UPPER LEVEL FLOOR PLAN
SCALE: 1/8" = 1'-0"



A
HD102
MAIN LEVEL FLOOR PLAN (AREA C) – HVAC DEMOLITION WORK
SCALE: 1/8" = 1'-0"

HVAC DEMOLITION NOTES (HD102):

1. REMOVE THE EXISTING GAS FIRED RADIANT HEATER COMPLETE WITH ALL ASSOCIATED VENTING, SUPPORTS AND CONTROLS. REMOVE GAS PIPING BACK TO SHUT OFF VALVE. REMOVE VENT AND AIR INTAKE THRU ROOF OR WALL.
2. REMOVE THE EXISTING (ABONDONED) STEAM UNIT HEATERS ALONG WITH ALL ASSOCIATED HANGER SUPPORTS, STEAM PIPING AND CONTROLS.
3. REMOVE THE EXISTING GAS FIRED UNIT HEATERS ALONG WITH ALL ASSOCIATED HANGER SUPPORTS, VENTING THRU ROOF, CONTROLS AND GAS PIPING BACK TO SHUT OFF VALVE.
4. REMOVE THE EXISTING GAS FIRED MAKEUP AIR UNITS ALONG WITH ALL ASSOCIATED HANGER SUPPORTS, CONTROLS, GAS PIPING TO SHUT OFF VALVE AND DUCTWORK THRU THE ROOF. REMOVE HOOD ON ROOF COMPLETE WITH THE ASSOCIATED ROOF CURB AND FLASHING.
5. EXISTING UTILITY FAN MOUNTED ON WALL (HIGH). REMOVE THE EXHAUST FAN COMPLETE WITH CONTROLS AND DUCTWORK UP THRU ROOF. NEW CONNECTION TO BE MADE TO REMAINING DUCT. STEEL SUPPORT TO REMAIN.
6. REMOVE THE EXISTING EXHAUST FAN (PRV ON ROOF) AND CONTROLS. DUCTWORK LOCATED IN BUILDING TO REMAIN.
7. REMOVE EXISTING EXHAUST FAN (PRV ON ROOF) COMPLETE WITH ALL CONTROLS AND DUCTWORK.
8. REMOVE EXHAUST FAN (PRV ON ROOF). ROOF OPENING TO REMAIN FOR NEW DUCT TO NEW EXHAUST FAN. DUCTWORK IN ROOM SHALL REMAIN.
9. REMOVE ROOF CURB.
10. REMOVE PORTION OF WINDOW FOR NEW MUA-3 SUPPLY AIR DUCTWORK AND GRILLES. REFER TO DRAWING H102.



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DANE COUNTY RFB# 318029

Dane County Department of Public Works, Highway and Tranportation
Public Works Engineering Division
1919 Alliant Energy Center Way
Madison, WI 53713

Drawing Title:

PARTIAL FLOOR PLAN (AREA C) HVAC DEMOLTION WORK

Eng. 370 Project Number: 18-1216

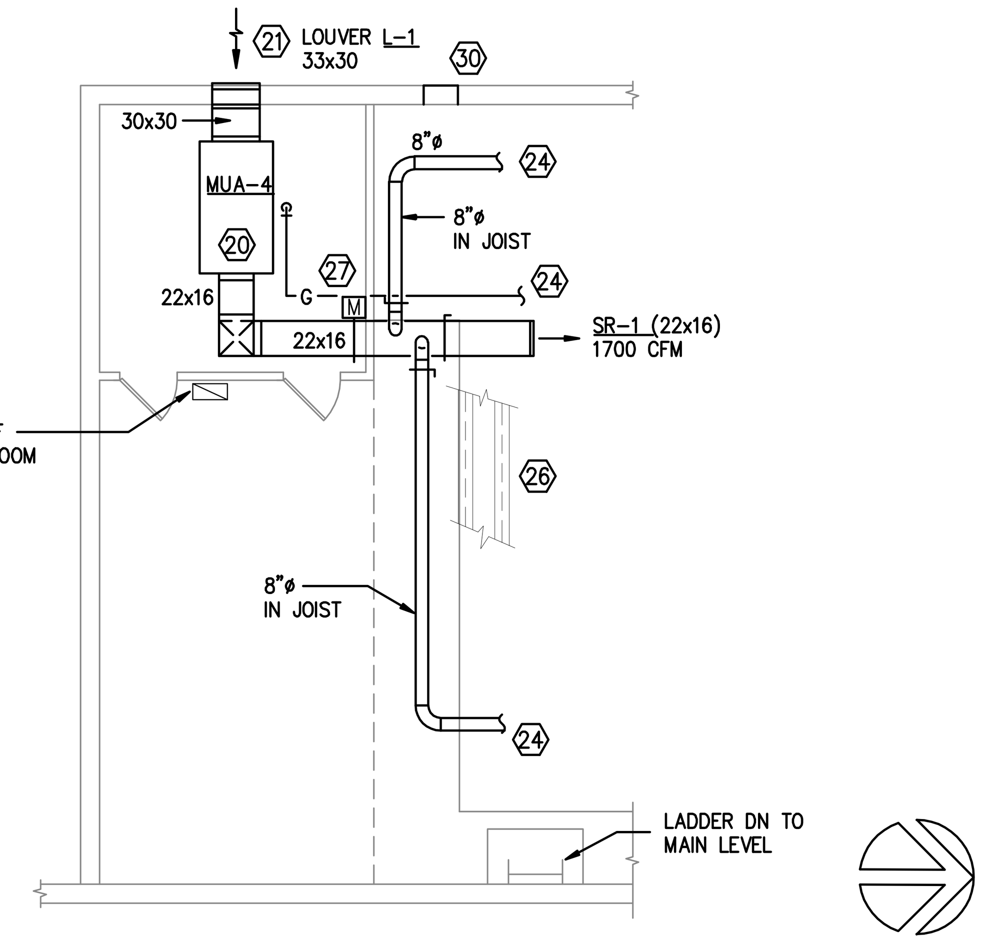
Drawn By: FBN

Drawing No. **HD102**

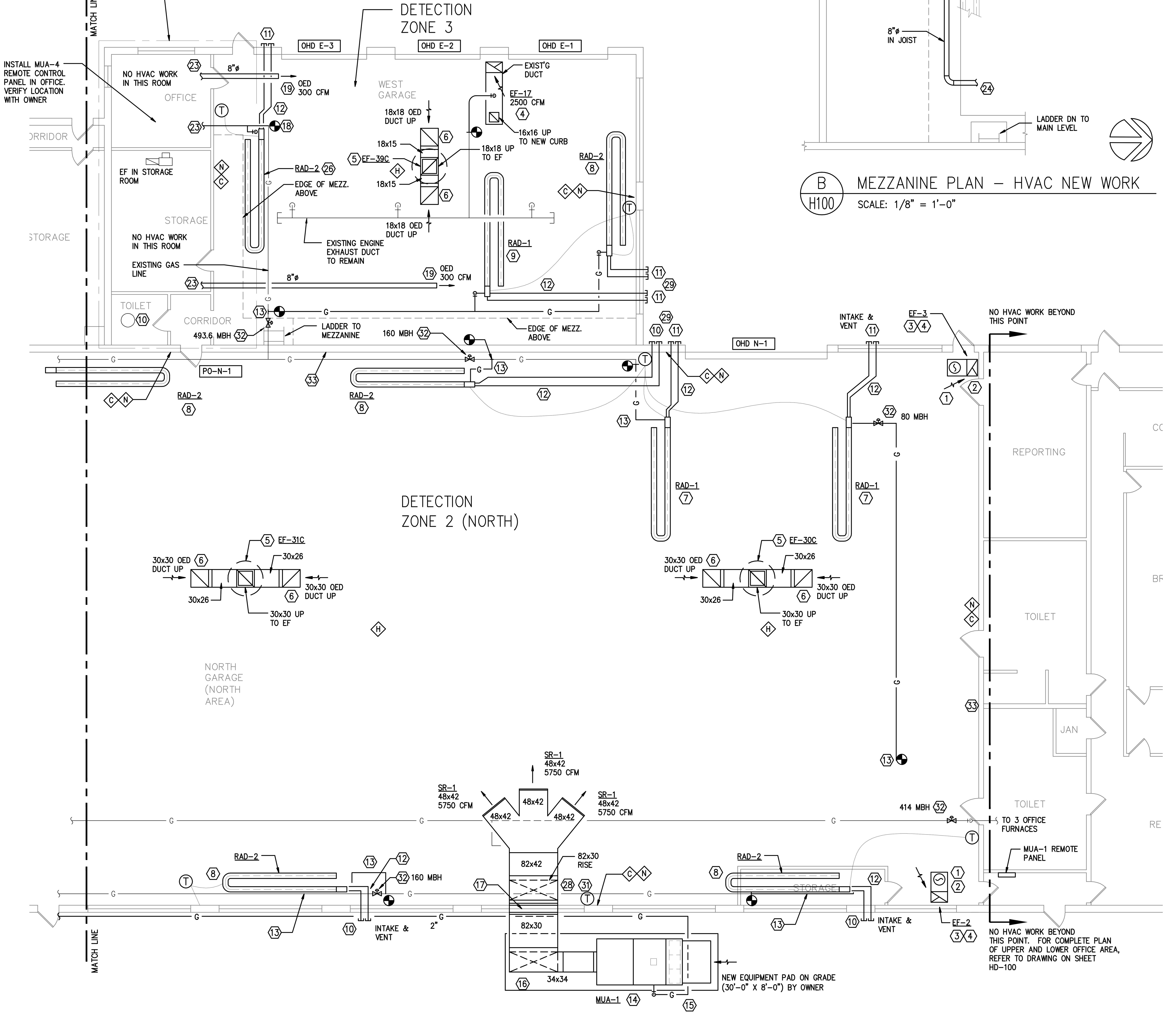
GAS DETECTION SYSTEM LEGEND

- C — CO– CARBON MONOXIDE DETECTOR
- N — NO2 – NITROGEN DIOXIDE DETECTOR
- H — CH4 – METHANE (NATURAL GAS – NG) DETECTOR. MOUNT 6" MIN / 12" MAX. BELOW HIGH POINT OF CEILING.

CH4 (METHANE) HORN-STROBE ALARM IS PROVIDED BY FIRE ALARM SYSTEM



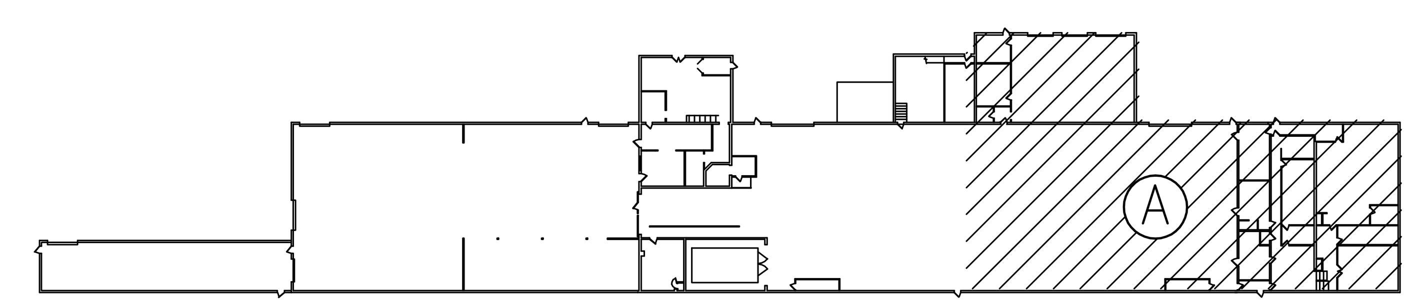
B / H100 — MEZZANINE PLAN – HVAC NEW WORK
SCALE: 1/8" = 1'-0"



A / H100 — MAIN LEVEL FLOOR PLAN (AREA A) – HVAC NEW WORK
SCALE: 1/8" = 1'-0"

HVAC NEW WORK NOTES (H100):

1. REMOVE SHEET METAL BLANKOFF AT BOTTOM OF DUCT AND INSTALL EXPANDED METAL GRILL 18" HIGH, OVERALL WIDTH OF EXISTING DUCT WITH ONE INCH SHEET METAL HEMMED BORDER.
2. PROVIDE SHEET METAL BLANKOFF OVER THE EXISTING EXPANDED METAL GRILLE AT OPENING IN DUCT JUST BELOW THE CEILING. FIELD VERIFY SIZE.
3. INSTALL NEW EXHAUST FAN CURB, OR CURB ADAPTER ON THE EXISTING CURB, AT LOCATION OF EXISTING CURB.
4. INSTALL NEW EXHAUST FAN ON NEW CURB OR CURB ADAPTER.
5. NEW EXHAUST FAN ON NEW CURB.
6. RISE DUCT UP TERMINATING WITH OPEN END DUCT 12 INCHES BELOW ROOF DECK.
7. INSTALL RAD-1 HEATERS SUSPENDED FROM EXISTING STRUCTURE, WITH ELEVATION APPROXMATELY 12 INCHES BELOW THE EXISTING CEILING GRID. COORDINATE EXACT LOCATION WITH LIGHTING FIXTURES SO HEATER IS NOT BLOCKING LIGHTING.
8. INSTALL RAD-2 HEATERS ON WALL (SIMILAR TO REMOVED UNITS). COORDINATE LOCATION WITH EXISTING EQUIPMENT.
9. INSTALL RAD-1 HEATERS SUSPENDED FROM EXISTING STRUCTURE, WITH ELEVATION JUST BELOW THE EXISTING ROOF JOIST. COORDINATE EXACT LOCATION WITH LIGHTING FIXTURES SO HEATER IS NOT BLOCKING LIGHTING.
10. INSTALL RAD HEATING UNIT INTAKE AND EXHAUST WITH MATERIAL AND ACCESSORIES PROVIDED BY UNIT MANIFACTURER. OPENINGS REMAINING FROM REMOVED UNITS MAY BE REUSED WITH MODIFICATIONS NECESSARY FOR THIS INSTALLATION.
11. INSTALL RAD HEATING UNIT INTAKE AND EXHAUST WITH MATERIAL AND ACCESSORIES PROVIDED BY UNIT MANIFACTURER. PROVIDE NEW WALL OR ROOF OPENINGS.
12. PROVIDE VENTING MATERIAL AND ACCESSORIES AS RECOMMENDED BY AND SIZED BY THE RADIANT MANUFACTURER.
13. MAKE CONNECTION TO GAS PREVIOUSLY SERVING HEATING EQUIPMENT OR CONNECTION TO EXISTING GAS LINE AT APPROXMATE LOCATION INDICATED. EXTEND AND CONNECT TO GAS RADIANT HEATING UNIT.
14. MAKEUP AIR UNIT MUA-1. MOUNT UNIT ON 2'-6" HIGH STEEL STRUCTURAL STAND. STAND WILL BE MOUNTED ON CONCRETE PAD PROVIDED BY THE OWNER.
15. CONNECT GAS TO UNIT. PROVIDE FLEXIBLE GAS CONNECTOR.
16. PROVIDE SUPPORT FOR INSULATED DUCT FROM CONCRETE PAD.
17. ENTER BUILDING THOUGH OPENING WHERE AIR INTAKE DUCT WAS REMOVED. PROVIDE SHEET METAL ANGLE ATTACHED TO DUCT WHERE DUCT ENTERS WINDOW OPENING AND CAULK WATER TIGHT.
18. MAKE CONNECTION TO GAS PREVIOUSLY SERVING HEATING EQUIPMENT OR CONNECTION TO EXISTING GAS LINE AT APPROXMATE LOCATION INDICATED. EXTEND AND CONNECT TO MAKE UP AIR UNIT.
19. 8 INCH ROUND, TERMINATE WITH 45 DEGREE ELBOW DOWN OPEN END DUCT.
20. INSTALL MAKEUP AIR UNIT MUA-4 ON MEZZANINE ABOVE THE OFFICE. UNIT TO BE MOUNTED ON STEEL RAILS EACH SIDE OF UNIT AS RECOMMENDED BY MANUFACTURER. UNIT WILL BE ENCLOSED WITH A PARTITION TO PROVIDE AN AIR TIGHT SEPARATION FROM THE GARAGE. SEE ARCHITECTURAL DRAWINGS.
21. INSTALL LOUVER IN UPPER PORTION OF WINDOW. CAULK PERIMETER WATER TIGHT.
22. RISE DUCT WITH TOP WITHIN 6" OF CEILING GRID.
23. CONTINUE ON MAZZANINE FLOOR (B/100) FOR FOR CONTINUATION OF DUCT / PIPE.
24. CONTINUE ON MAIN LEVEL FLOOR PLAN (A/100) FOR FOR CONTINUATION OF DUCT / PIPE.
25. INSTALL RAD-2 18" FROM MEZZANINE. SUSPEND FROM STRUCTURE.
26. RAD-2 : SUSPEND FROM STRUCTURE JUST BEYOND MEZZANINE RAILING AND JOIST BELOW ROOF JOIST.
27. MOTORIZED ISOLATION DAMPER.
28. RISE DUCT UP WITH TOP WITHIN 6" OF CEILING GRID. COORDINATE RISE WITH PIPING AND CONDUIT ON WALL.
29. INTAKE AND VENTING FOR 2 RAD UNITS MAY BE COMBINED WHERE PERMITTED BY MANUFACTURERS REQUIREMENTS.
30. USE SALVAGED MATERIAL FROM LOUVER L-1 LOCATION TO PATCH OPENING AT REMOVED LOUVER.
31. MUA-1 ROOM OVERRIDE THERMOSTAT.
32. 2 PSI TO 14" W.C. CAPACITY LISTED. REFER TO RADIANT GAS PRESSURE REGULATOR DETAIL.
33. SEAL ALL OPENINGS WHERE HVAC OR PLUMBING PIPING OR CONDUIT PASS THRU THIS WALL.



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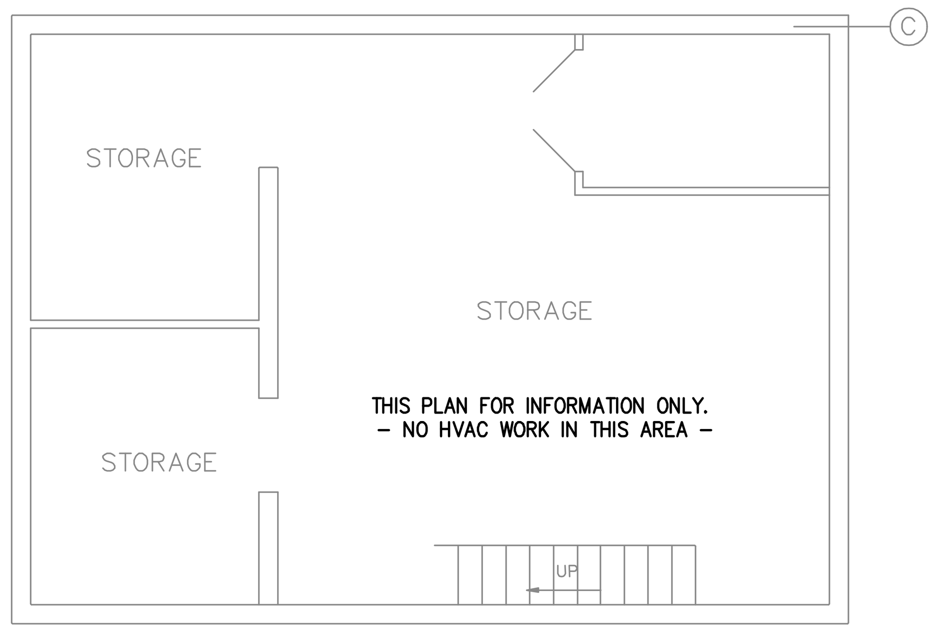
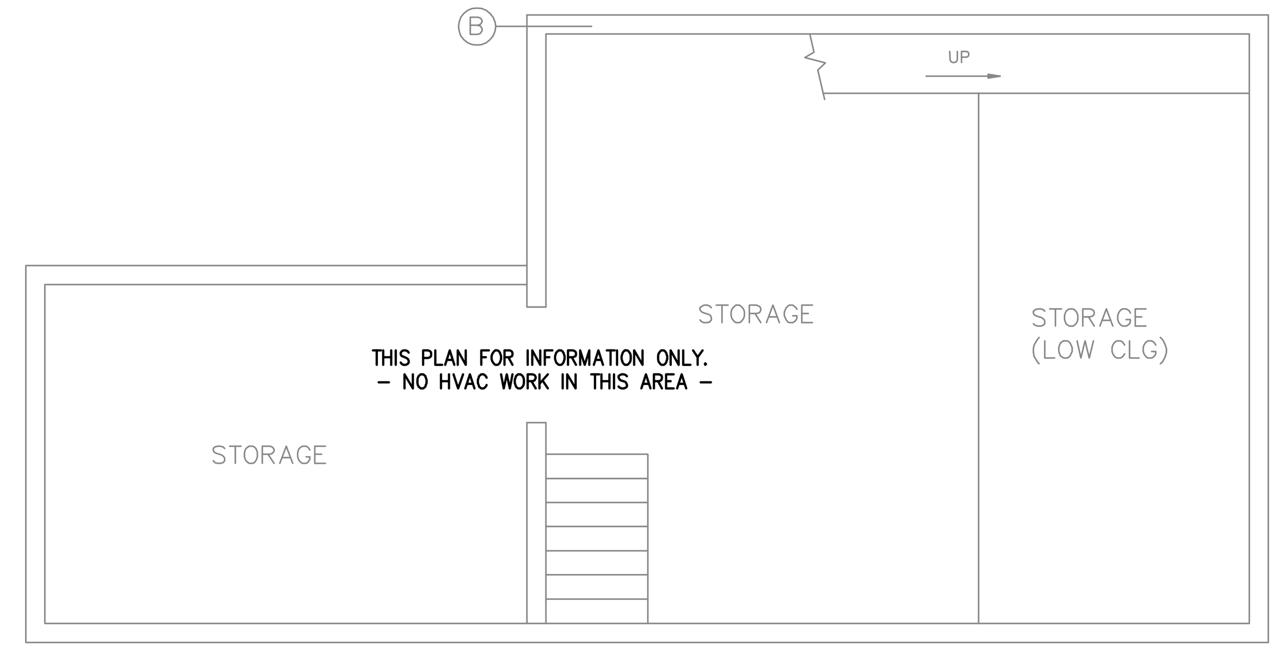
Drawing Title:
PARTIAL FLOOR PLAN (AREA A) HVAC NEW WORK

Eng. 370 Project Number: 18-1216
Drawn By: FBN
Drawing No. **H100**



C / H101 LOWER LEVEL FLOOR PLAN
SCALE: 1/8" = 1'-0"

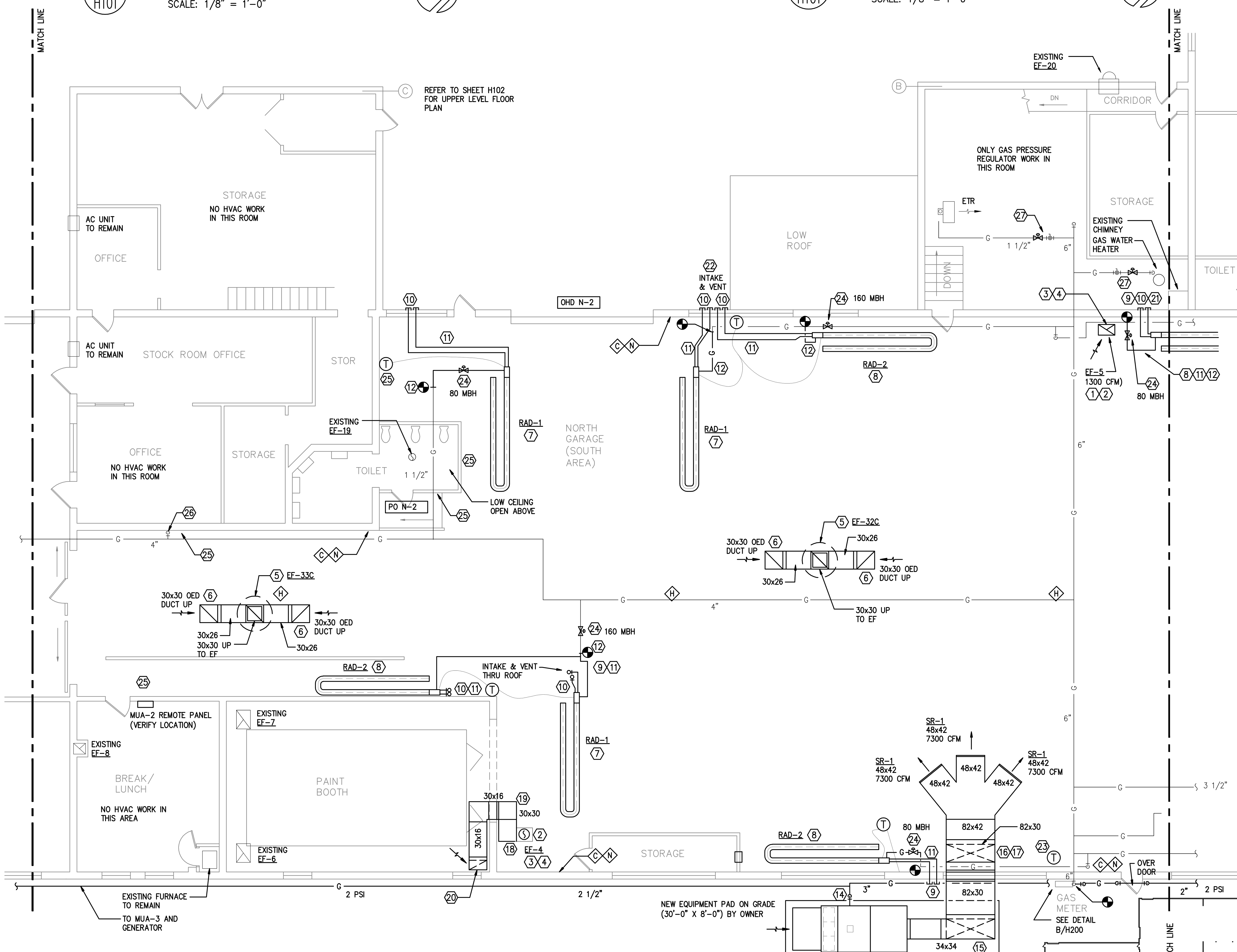


B / H101 LOWER LEVEL FLOOR PLAN
SCALE: 1/8" = 1'-0"

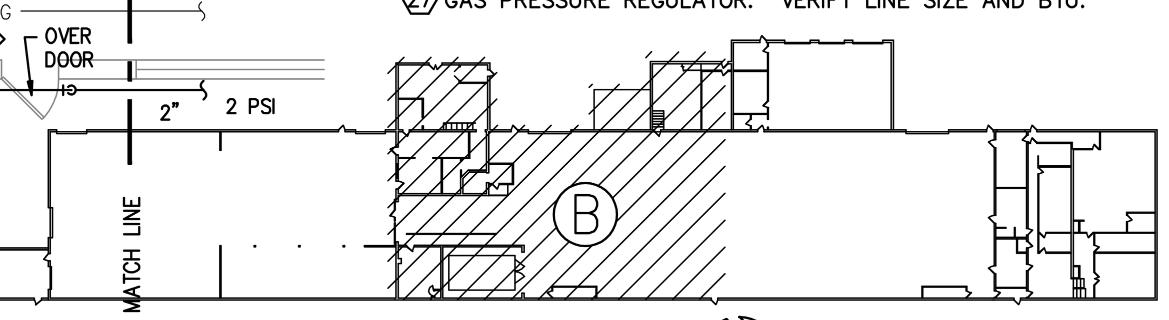
GAS DETECTION SYSTEM LEGEND

- C – CO– CARBON MONOXIDE DETECTOR
- N – NO2 – NITROGEN DIOXIDE DETECTOR
- H – CH4 – METHANE (NATURAL GAS – NG) DETECTOR. MOUNT 6" MIN / 12" MAX. BELOW HIGH POINT OF CEILING.

CH4 (METHANE) HORN-STROBE ALARM IS PROVIDED BY FIRE ALARM SYSTEM



A / H101 MAIN LEVEL FLOOR PLAN (AREA B) – HVAC NEW WORK
SCALE: 1/8" = 1'-0"



KEY PLAN

HVAC NEW WORK NOTES (H101):

1. CONNECT TO EXISTING OPEN END 30" X 16" DUCT (VERIFY SIZE) APPROXIMAATELY 14 FEET ABOVE FLOOR. CONNECT 30" X 16" AND DROP TO 18" INCHES ABOVE FLOOR, TERMINATE WITH EXPANDED METAL GRILLE. OFFSET AWAY FROM WALL TO PASS PIPE AND CONDUIT.
2. PROVIDE SHEET METAL BLANKOFF OVER THE EXISTING EXPANDED METAL GRILLE AT OPENING IN DUCT JUST BELOW THE CEILING. FIELD VERIFY SIZE.
3. INSTALL NEW EXHAUST FAN CURB, OR CURB ADAPTER ON EXISTING CURB, AT LOCATION OF EXISTING CURB.
4. INSTALL NEW EXHAUST FAN ON NEW CURB OR CURB ADAPTER.
5. NEW EXHAUST FAN ON NEW CURB.
6. RISE DUCT UP TERMINATING WITH OPEN END DUCT 12 INCHES BELOW ROOF DECK.
7. INSTALL RAD-1 HEATERS SUSPENDED FROM EXISTING STRUCTURE, WITH ELEVATION APPROXMATELY 12 INCHES BELOW THE EXISTING CEILING GRID. COORDINATE EXACT LOCATION WITH LIGHTING FIXTURES SO HEATER IS NOT BLOCKING LIGHTING.
8. INSTALL RAD-2 HEATERS ON WALL (SIMILAR TO REMOVED UNITS). COORDINATE LOCATION WITH EXISTING EQUIPMENT.
9. INSTALL RAD HEATING UNIT INTAKE AND EXHAUST WITH MATERIAL AND ACCESSORIES PROVIDED BY UNIT MANIFACTURER. OPENINGS REMAINING FROM REMOVED UNITS MAY BE REUSED WITH MODIFICATIONS NECESSARY FOR THIS INSTALLATION.
10. INSTALL RAD HEATING UNIT INTAKE AND EXHAUST WITH MATERIAL AND ACCESSORIES PROVIDED BY UNIT MANIFACTURER. OPENINGS. PROVIDE NEW WALL OR ROOF OPENINGS.
11. PROVIDE VENTING MATERIAL AND ACCESSORIES AS RECOMMENDED BY AND SIZED BY THE RADIANT MANUFACTURER.
12. MAKE CONNECTION TO GAS PREVIOUSLY SERVING HEATING EQUIPMENT OR CONNECTION TO EXISTING GAS LINE AT APPROXMATE LOCATION INDICATED. EXTEND AND CONNECT TO GAS RADIANT HEATING UNIT.
13. MAKEUP AIR UNIT MUA-1. MOUNT UNIT ON 2'-6" HIGH STEEL STRUCTURAL STAND. STAND WILL BE MOUNTED ON CONCRETE PAD PROVIDED BY THE OWNER.
14. CONNECT GAS TO UNIT. PROVIDE FLEXIBLE GAS CONNECTOR.
15. PROVIDE SUPPORT FOR INSULATED DUCT FROM CONCRETE PAD.
16. ENTER BUILDING THOUGH NEW OPENING IN UPPER PART OF WINDOW OPENING. PROVIDE SHEET METAL ANGLE ATTACHED TO DUCT WHERE DUCT ENTERS WINDOW OPENING AND CAULK WATER TIGHT.
17. RISE DUCT WITH TOP WITHIN 6" OF CEILING GRID. COORDINATE RISE WITH PIPING AND CONDUIT ON WALL.
18. CONNECT NEW 30X16 DUCT TO PLENUM WHERE DUCT WAS REMOVED.
19. DROP AND RUN NEW DUCT TIGHT TO TOP OF WALL OPENING.
20. DROP 30X16 DUCT IN CORNER OF ROOM TO 18" ABOVE FLOOR TERMINATE WITH EXPANDED METAL GRILLE.
21. RADIANT INTAKE AND VENT KEPT AS HIGH AS POSSIBLE THRU WALL ABOVE STORAGE ROOM ROOF.
22. INTAKE AND VENTING FOR 2 RAD UNITS MAY BE COMBINED WHERE PERMITTED BY MANUFACTURERS REQUIREMENTS.
23. MUA-2 ROOM OVERRIDE THERMOSTAT.
24. 2 PSI TO 14" W.C. CAPACITY LISTED. REFER TO RADIANT GAS PRESSURE REGULATOR DETAIL.
25. SEAL ALL OPENINGS WHERE HVAC OR PLUMBING PIPING OR CONDUIT PASS THRU THIS WALL.
26. HOTSY HOT WATER WASHER. PROVIDE GAS PRESSURE REGULATOR IN 1" GAS LINE 2 PSI TO 10" W.C. VERIFY LINE SIZE AND BTU.
27. GAS PRESSURE REGULATOR. VERIFY LINE SIZE AND BTU.

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Project No. 18-1216

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FISH HATCHERY HIGHWAY GARAGE - CNG RETROFIT

2302 FISH HATCHERY RD, MADISON, WI 53713

DANE COUNTY RFB# 318029

Dane County Department of Public Works, Highway and Transportation
Public Works Engineering Division
1919 Alliant Energy Center Way
Madison, WI 53713

Drawing Title:
PARTIAL FLOOR PLAN (AREA B) HVAC NEW WORK

Eng. 370 Project Number: 18-1216
Drawing No. **H101**
Drawn By: FBN

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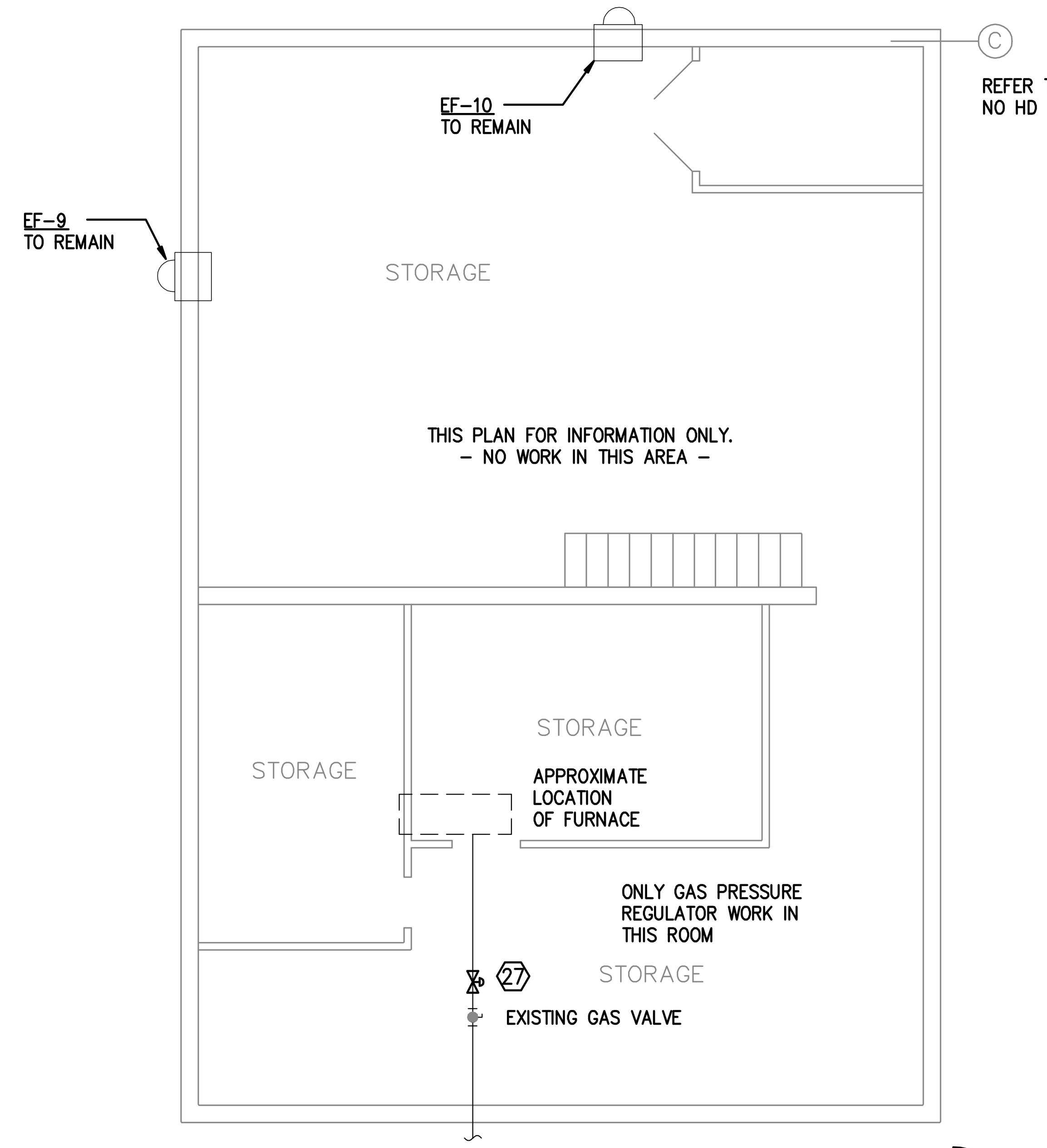
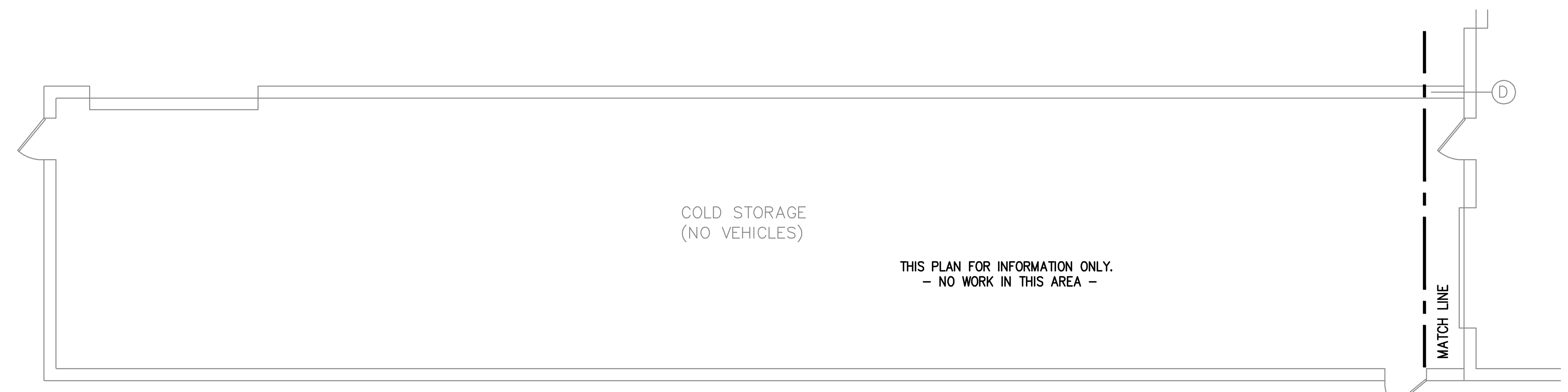


B / H102 UPPER LEVEL FLOOR PLAN
SCALE: 1/8" = 1'-0"



C / H102 COLD STORAGE FLOOR PLAN
SCALE: 1/8" = 1'-0"

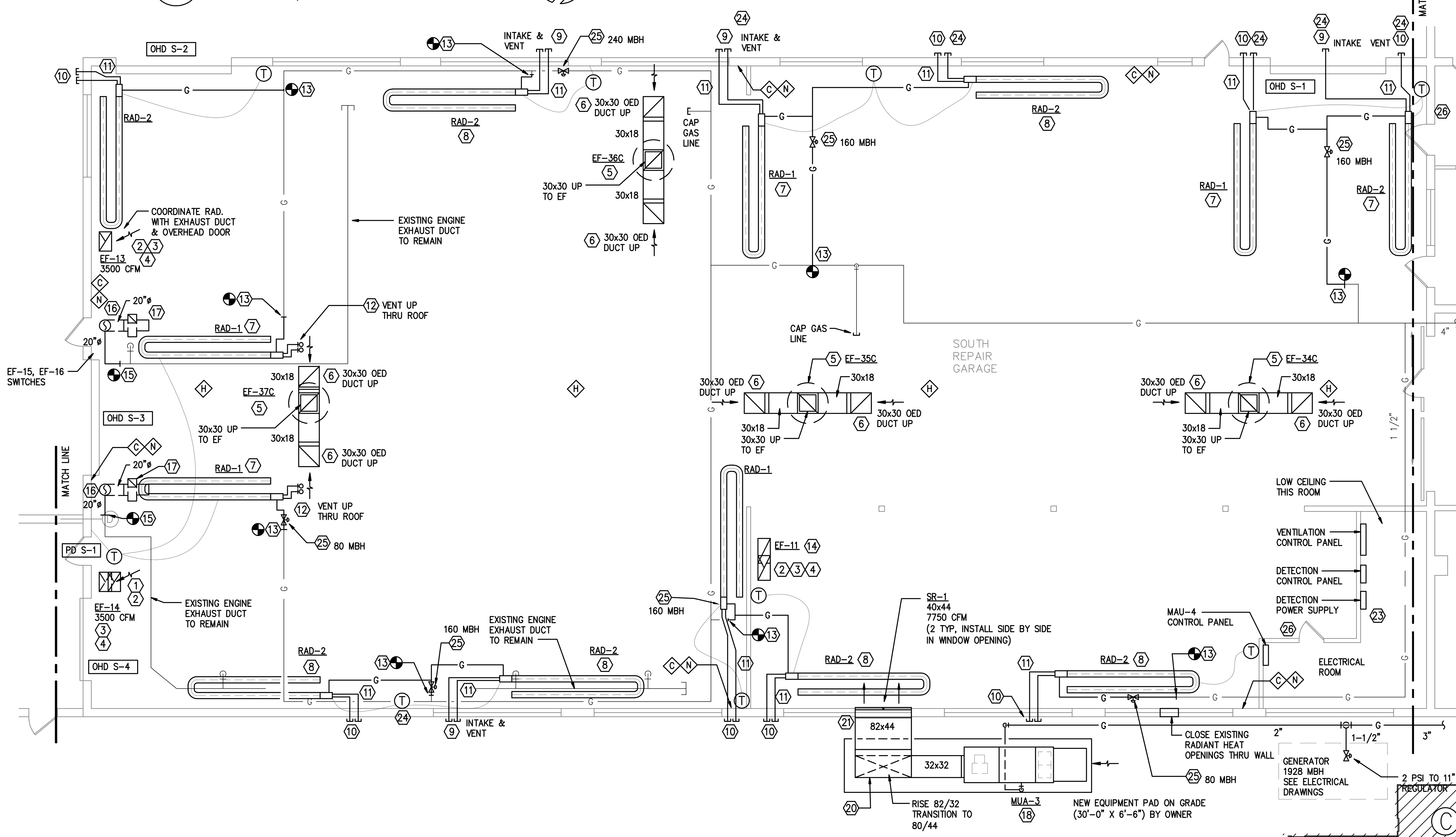
GAS DETECTION SYSTEM LEGEND

- C — CO– CARBON MONOXIDE DETECTOR
- N — NO2 – NITROGEN DIOXIDE DETECTOR
- H — CH4 – METHANE (NATURAL GAS – NG) DETECTOR. MOUNT 6" MIN / 12" MAX. BELOW HIGH POINT OF CEILING.

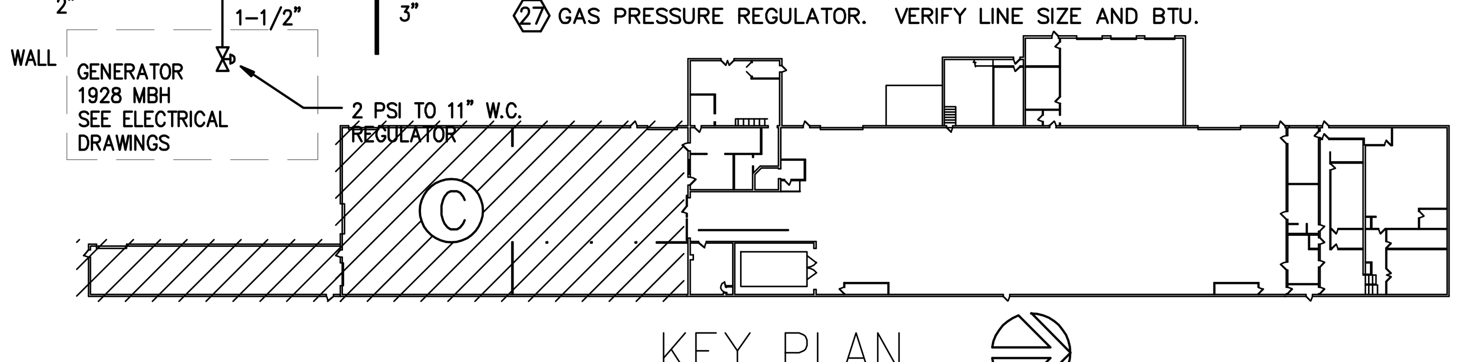
CH4 (METHANE) HORN-STROBE ALARM IS PROVIDED BY FIRE ALARM SYSTEM

HVAC NEW WORK NOTES (H102):

1. CONNECT TO EXISTING OPEN END 36" X 24 " DUCT (VERIFY SIZE) APPROXIMAATELY 7'-3" FEET ABOVE FLOOR. CONNECT TO EXISTING DUCT, TRANSITION TO 36" X 16" AND DROP TIGHT TO WALL TO 18" INCHES ABOVE FLOOR, TERMINATE WITH EXPANDED METAL GRILLE.
2. PROVIDE SHEET METAL BLANKOFF OVER THE EXISTING EXPANDED METAL GRILLE AT OPENING IN DUCT JUST BELOW THE CEILING. FIELD VERIFY SIZE.
3. INSTALL NEW EXHAUST FAN CURB, OR CURB ADAPTER ON EXISTING CURB, AT LOCATION OF EXISTING CURB.
4. INSTALL NEW EXHAUST FAN ON NEW CURB OR CURB ADAPTER.
5. NEW EXHAUST FAN ON NEW CURB.
6. RISE DUCT UP TERMINATING WITH OPEN END DUCT 12 INCHES BELOW ROOF DECK.
7. INSTALL RAD-1 HEATERS SUSPENDED FROM EXISTING STRUCTURE, WITH ELEVATION APPROXIMATELY 12 INCHES BELOW THE EXISTING CEILING GRID. COORDINATE EXACT LOCATION WITH LIGHTING FIXTURES SO HEATER IS NOT BLOCKING LIGHTING.
8. INSTALL RAD-2 HEATERS ON WALL (SIMILAR TO REMOVED UNITS). COORDINATE LOCATION WITH EXISTING EQUIPMENT.
9. INSTALL RAD HEATING UNIT INTAKE AND EXHAUST WITH MATERIAL AND ACCESSORIES PROVIDED BY UNIT MANIFACTURER. OPENINGS REMAINING FROM REMOVED UNITS MAY BE REUSED WITH MODIFICATIONS NECESSARY FOR THIS INSTALLATION.
10. INSTALL RAD HEATING UNIT INTAKE AND EXHAUST WITH MATERIAL AND ACCESSORIES PROVIDED BY UNIT MANIFACTURER. PROVIDE NEW WALL OR ROOF OPENINGS.
11. PROVIDE VENTING MATERIAL AND ACCESSORIES AS RECOMMENDED BY AND SIZED BY THE RADIANT MANUFACTURER.
12. INSTALL RAD HEATING UNIT INTAKE AND EXHAUST WITH MATERIAL AND ACCESSORIES PROVIDED BY UNIT MANIFACTURER. PROVIDE NEW ROOF OPENING FOR INTAKE. EXISTING ROOF OPENING MAY BE USED FOR VENT,
13. MAKE CONNECTION TO GAS PREVIOUSLY SERVING HEATING EQUIPMENT OR CONNECTION TO EXISTING GAS LINE AT APPROXMATE LOCATION INDICATED. EXTEND AND CONNECT TO GAS RADIANT HEATING UNIT.
14. REMOVE LOWER PORTION OF EXHAUST DUCT TO WITHIN 18" OF FLOOR WITH OPEN END DUCT, TERMINATE WITH EXPANDED METAL GRILLE.
15. CONNECT TO 20" ROUNT TO EXISTING ROUND EXHAUST DUCT. VERIFY EXISTING DUCT SIZE AND PROVIDE REQUIRED TRANSITION.
16. OFFSET AND RISE THROUGH ROOF WHERE REMOVED EXHAUST FAN DISCHARGE DUCT EXITED BUILDING. PROVIDE ELBOW, PROVIDE 36" ???? AND CONNECT TO FAN INLET.
17. LOCATE NEW EXHAUST FANS EF-15 AND EF-16 ON ROOF. PROVIDE ROOF CURBSFOR MOUNTING FAN ISOLATION BASE WITH SPRING ISOLATORS.
18. MAKEUP AIR UNIT MUA-3. MOUNT UNIT ON 2'-6" HIGH STEEL STRUCTURAL STAND. STAND WILL BE MOUNTED ON CONCRETE PAD PROVIDED BY THE OWNER.
19. CONNECT GAS TO UNIT. PROVIDE FLEXIBLE GAS CONNECTOR.
20. PROVIDE SUPPORT FOR INSULATED DUCT FROM CONCRETE PAD.
21. ENTER BUILDING THOUGH OPENING AT TOP OF EXISTING WINDOW. PROVIDE SHEET METAL ANGLE ATTACHED TO DUCT WHERE DUCT ENTERS WINDOW OPENING AND CAULK WATER TIGHT
22. INSTALL (2) SR-1 GRILLES, SIDE BY SIDE IN OPENING WHERE SECTIONS OF WINDOW IS REMOVED. PROVIDE SHEET METAL ANGLE ATTACHED TO DUCT WHERE DUCT ENTERS WINDOW OPENING AND CAULK WATER TIGHT.
23. REFER TO DRAWING E102 FOR COORDINATION WITH ELECTRICAL WORK IN THIS ROOM.
24. INTAKE AND VENTING FOR 2 RAD UNITS MAY BE COMBINED WHERE PERMITTED BY MANUFACTURERS REQUIREMENTS.
25. 2 PSI TO 14" W.C. CAPACITY AS LISTED. REFER TO RADIANT GAS PRESSURE REGULATOR DETAIL.
26. SEAL ALL OPENINGS WHERE HVAC OR PLUMBING PIPING OR CONDUIT PASS THRU THIS WALL.
27. GAS PRESSURE REGULATOR. VERIFY LINE SIZE AND BTU.



A / H102 MAIN LEVEL FLOOR PLAN (AREA C) – HVAC NEW WORK
SCALE: 1/8" = 1'-0"



KEY PLAN

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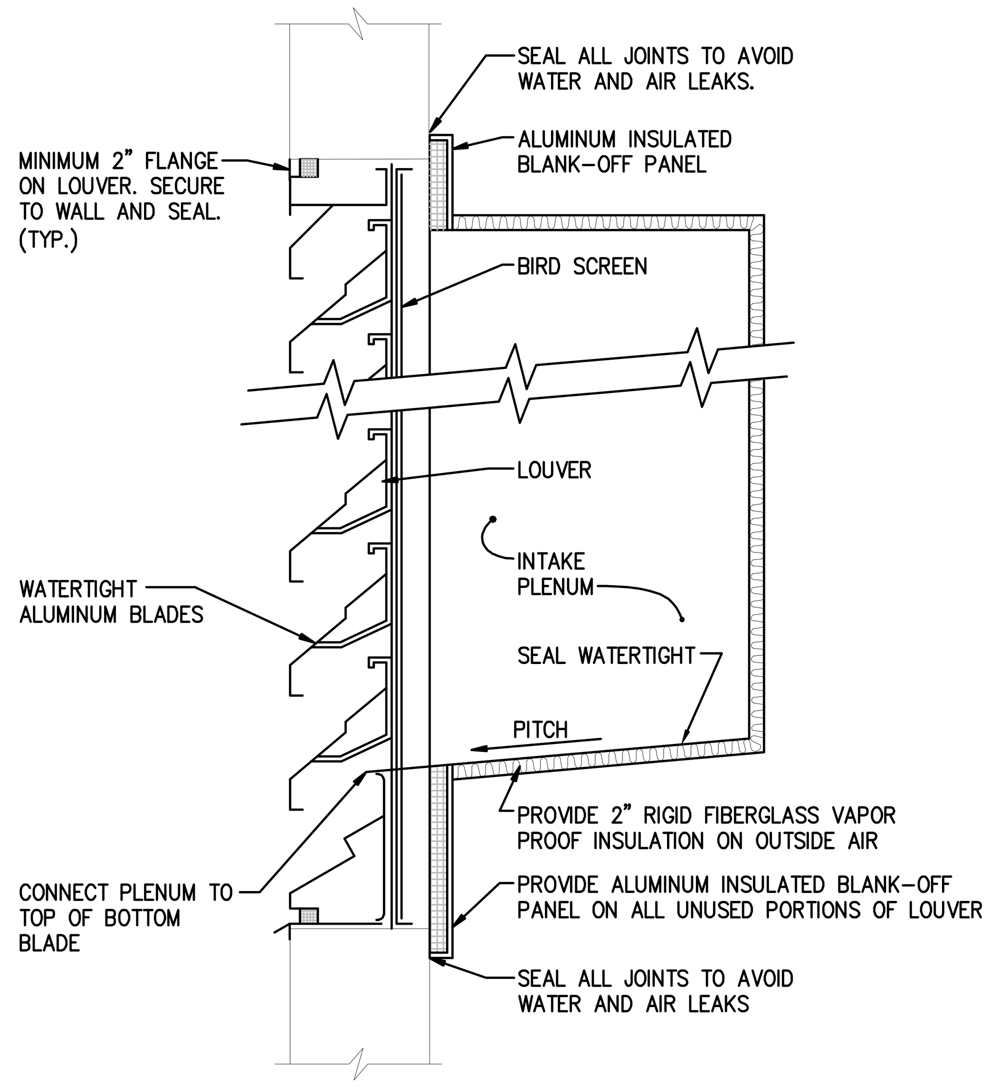
MADISON, WI 53713

DANE COUNTY RFB# 318029

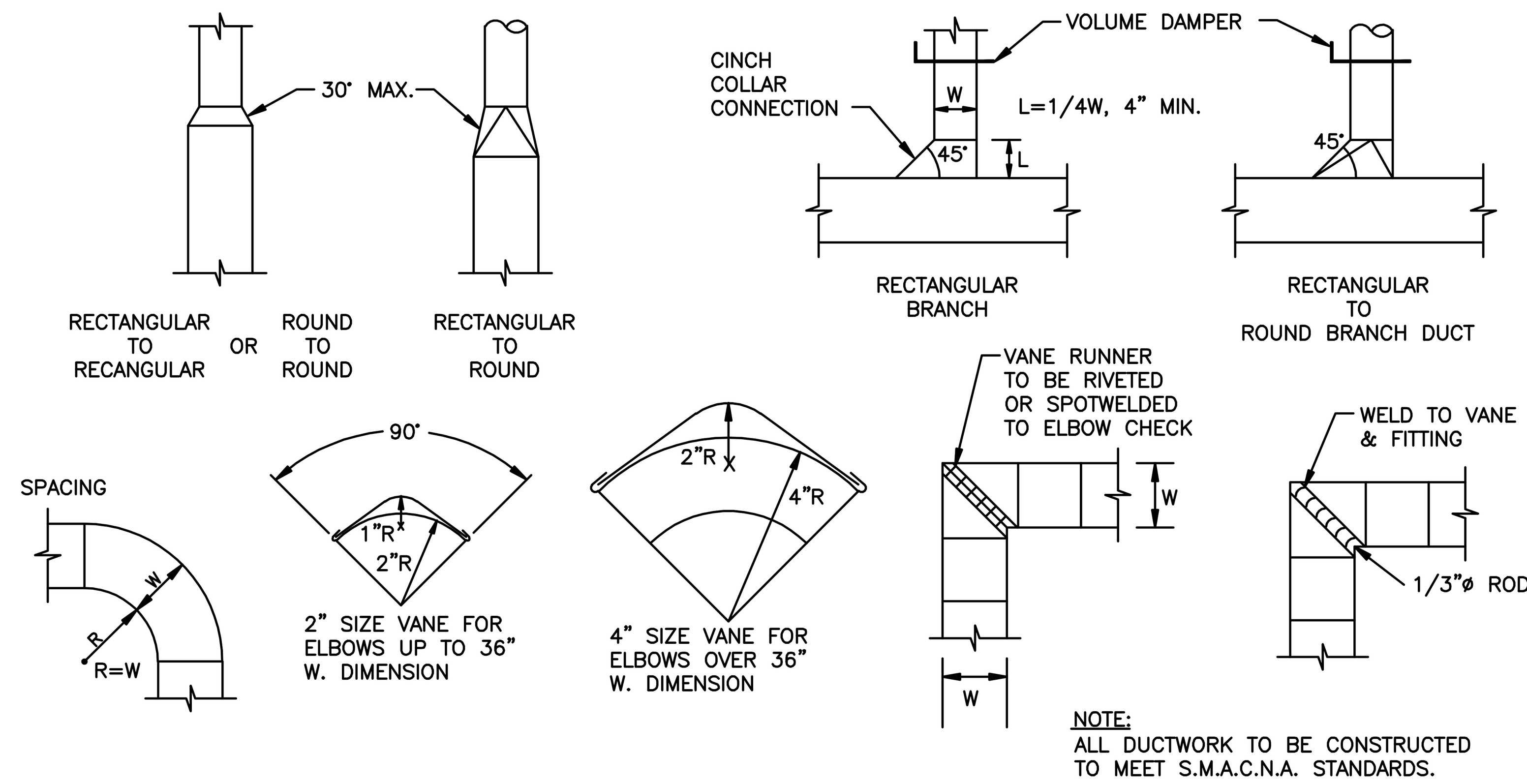
Dane County Department of Public Works, Highway and Tranportation
Public Works Engineering Division
1919 Alliant Energy Center Way
Madison, WI 53713

Drawing Title:
PARTIAL FLOOR PLAN (AREA C) HVAC NEW WORK

Eng. 370 Project Number: 18-1216
Drawing No.: H102
Drawn By: FBN



I / H200 LOUVER DETAIL
NO SCALE

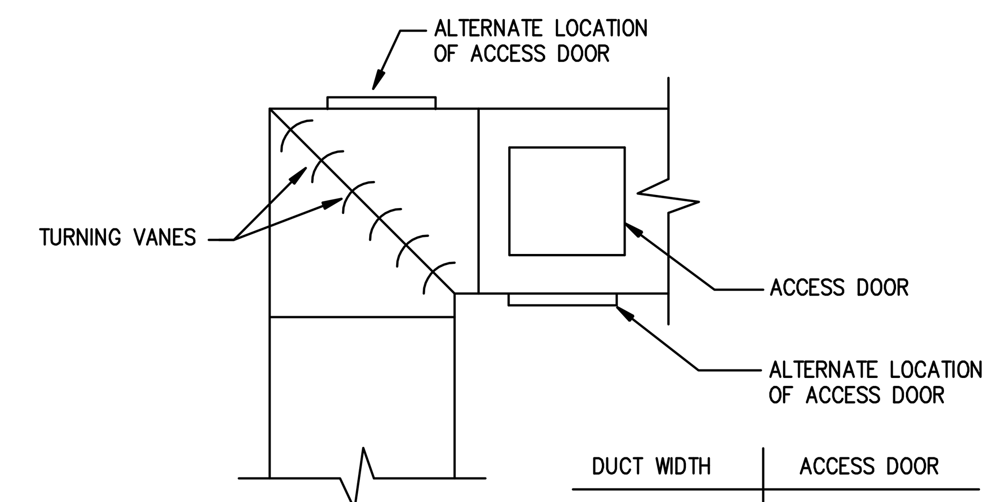


H / H200 GENERAL DUCT DETAILS
NOT TO SCALE

FISH HATCHERY HIGHWAY GARAGE – CNG RETROFIT

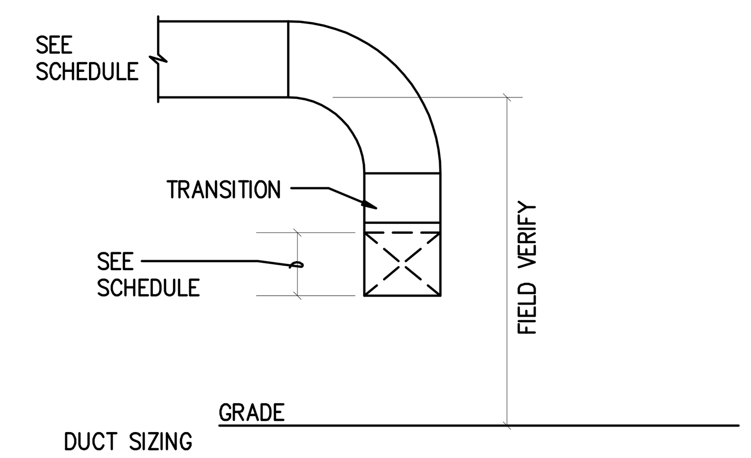
HEATING VENTILATING GENERAL NOTES

1. WORK TO BE PERFORMED BY DANE COUNTY HIGHWAY DEPARTMENT:
   a. PLACING OF CONCRETE PADS AT LOCATIONS OF MAKEUP AIR UNITS AND GENERATOR.
   b. REMOVAL OF EQUIPMENT AND MATERIALS AT LOCATION OF THE NEW ELECTRICAL SERVICE ROOM.
   c. RELOCATION OF EQUIPMENT FOR DUCTWORK EXTENSIONS AT EF-4, EF-5, EF-11, EF-14.
2. THE EXISTING LAY-IN CEILING PANELS AND GRID WILL BE REMOVED BY THE GENERAL CONTRACTOR BEFORE PIPING AND EQUIPMENT AT OR ABOVE CEILING.
3. HV CONTRACTOR SHALL INCLUDE ALL CUTTING AND PATCHING REQUIRED FOR THE DEMOLITION OR INSTALLATION OF MATERIALS AND EQUIPMENT INCLUDED AS PART OF THE HEATING AND VENTILATION SYSTEMS WHICH ARE PART OF THIS PROJECT. ROOFING CONTRACTOR PERFORMING ROOF WORK SHALL BE APPROVED BY DANE COUNTY PUBLIC WORKS PROJECT MANAGER.
4. HV CONTRACTOR SHALL INCLUDE ALL ROOF WORK INCLUDING PATCHING OF ROOF PENETRATIONS AND CUTTING OF NEW OPENINGS REQUIRED FOR THE DEMOLITION OR INSTALLATION OF MATERIALS AND EQUIPMENT INCLUDED AS PART OF THE HEATING AND VENTILATION SYSTEMS INCLUDED IN THIS PROJECT.
5. THE HV CONTRACTOR SHALL REMOVE ALL CONTROL DEVICES, WIRING AND CONDUIT FOR EQUIPMENT REMOVED AS PART OF THIS PROJECT.
6. THE HV CONTRACTOR SHALL SEAL ALL HVAC AND PLUMBING PIPE AND ASSOCIATED CONDUIT PENETRATIONS THROUGH WALLS NOTED ON THE DRAWINGS TO PREVENT MIGRATION OF GAS FROM DETECTION ZONES TO ADJACENT AREAS.
7. DANE COUNTY HIGHWAY DEPARTMENT WILL CONTINUE TO OCCUPY PORTIONS OF THE BUILDING DURING CONSTRUCTION THEREFORE WORK WILL BE PHASED. PHASING WILL BE COORDINATED WITH DANE COUNTY HIGHWAY DEPARTMENT.



DUCT WIDTH	ACCESS DOOR
UP TO 8"	NOT REQ'D
8" TO 12"	6"x12"
13" TO 24"	12"x12"
25" TO 48"	18"x18"
49" AND UP	24"x24"

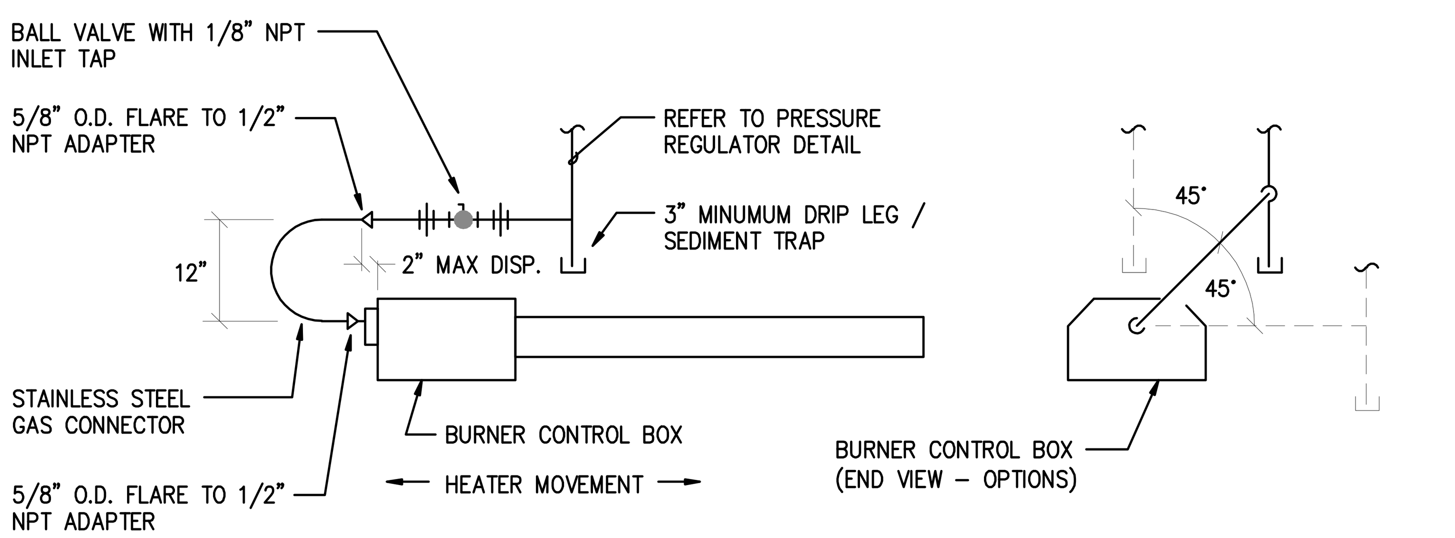
G / H200 TURNING VANE ACCESS DETAIL
NO SCALE



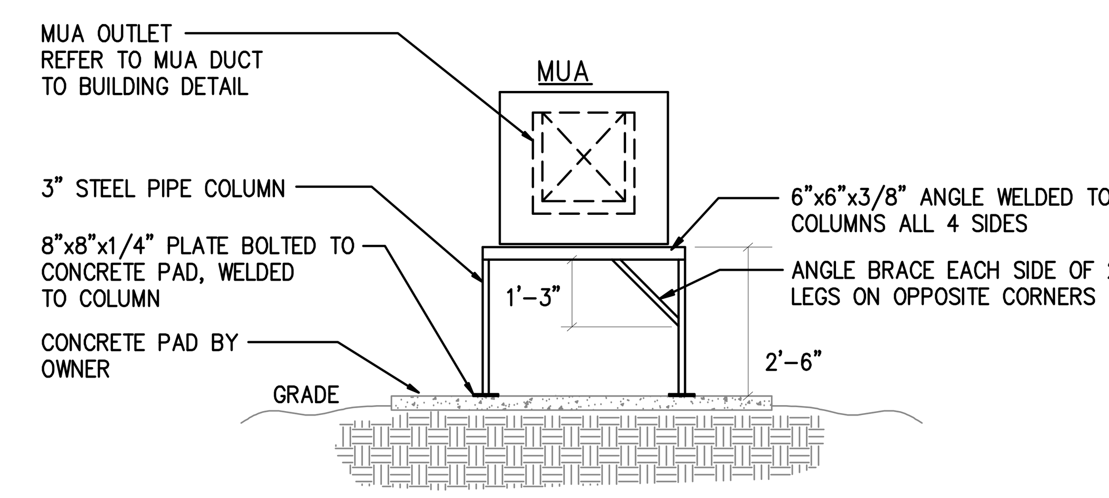
DUCT SIZING

MUA UNIT #	OFF UNIT	RISE CONN	TRANSITION INTO BLDG
1	34x34	82x34	82x30
2	34x34	82x34	82x30
3	32x32	82x32	82x44

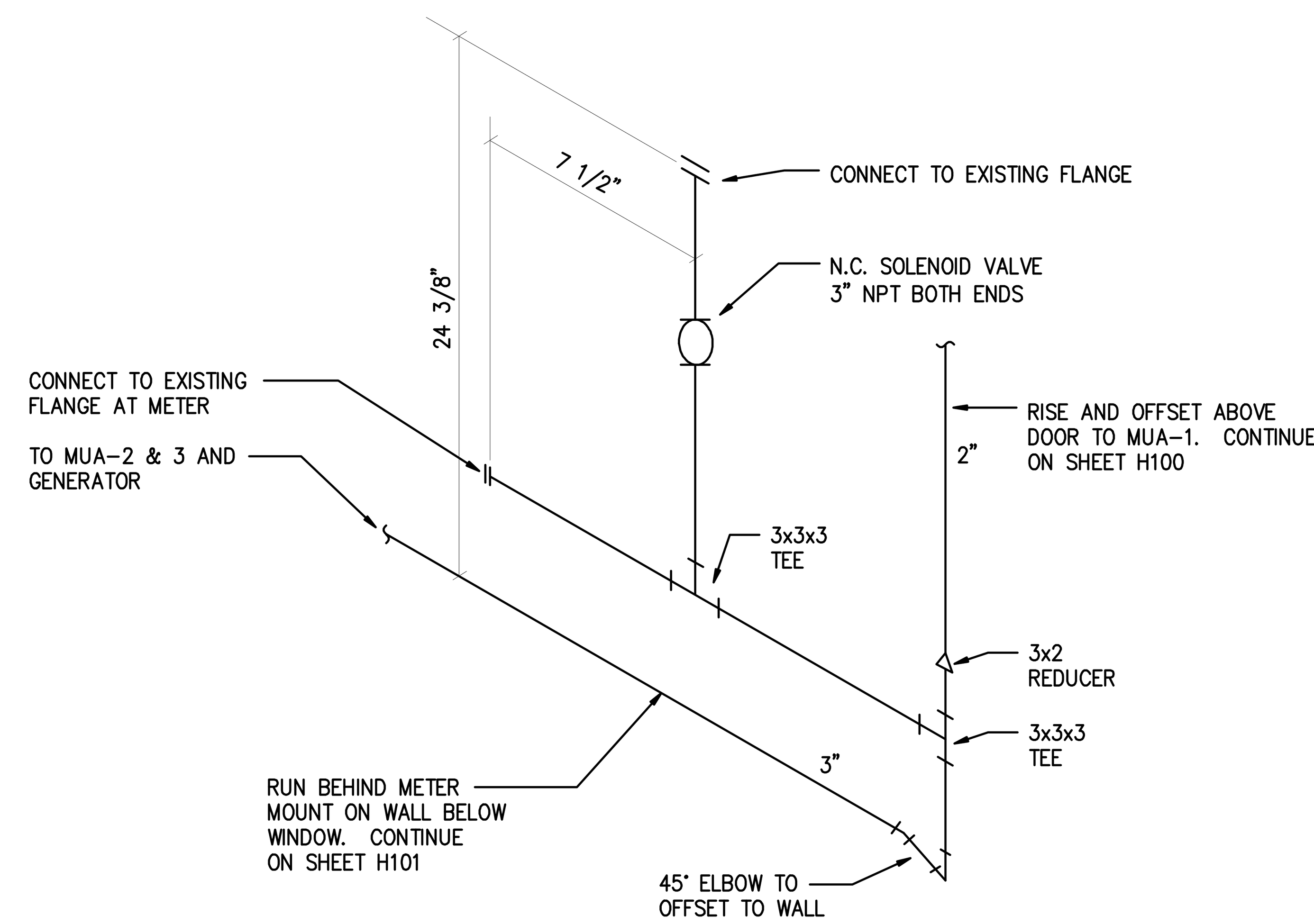
E / H200 MUA 1, 2, 3 DUCT TO BUILDING
NOT TO SCALE



F / H200 RADIANT HEATER PIPING DETAIL
NOT TO SCALE

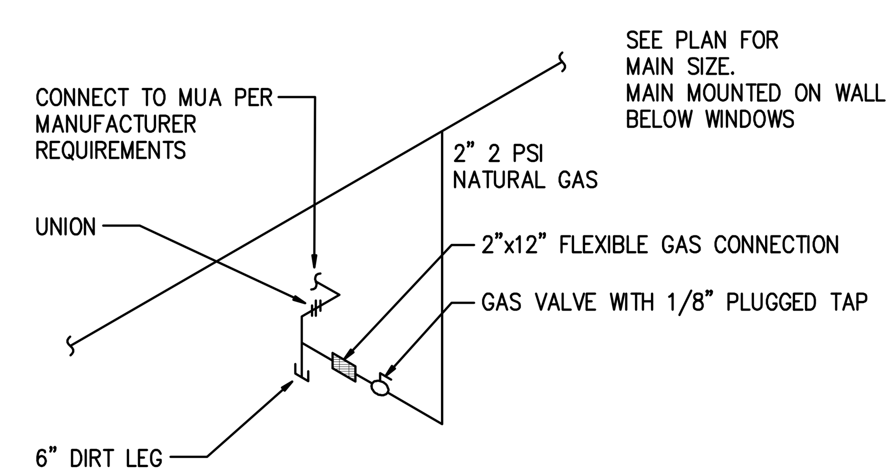


D / H200 MUA UNIT STAND
NOT TO SCALE



NOTES:
1. REMOVE SECTION OF 3" FLANGED PIPING 7 1/2" X 24 3/8".
2. REPLACE WITH NEW PIPING AS DETAILED

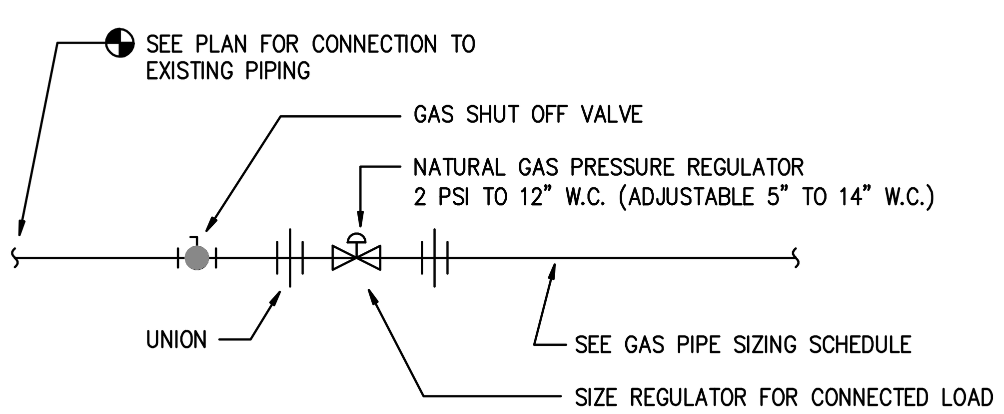
B / H200 GAS METER DOWN STREAM PIPING REVISIONS
NOT TO SCALE



UNIT #	MBH INPUT	PIPE SIZE
1	1817.2	2"
2	2313.8	2"
3	1637.6	2"

A / H200 MUA 1, 2, 3 GAS PIPING DETAIL
NOT TO SCALE

NOTE:
REFER TO GAS PIPE SIZING SCHEDULE FOR REGULATOR CAPACITY AND DOWN STREAM PIPE. PIPE SIZE BASED ON LENGTH AND NUMBER OF UNITS.



C / H200 RADIANT TUBE HEATER GAS PRESSURE REGULATOR
NOT TO SCALE

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Drawing Title:
HVAC DETAILS

Eng. 370 Project Number: 18-1216
Drawn By: FBN
Drawing No. **H200**

GRILLE SCHEDULE

MARK	MFGR	MODEL NO.	DESCRIPTION	MATERIAL	MOUNTING	DAMPER	SIZE	CFM	REMARKS
SR-1	CARNES	RELAH	DOUBLE DEFLECTION INDUSTRIAL GRILLE	STEEL FRAME	DUCT	YES	SEE PLAN	SEE PLAN	1, 2, 3
			3 INCH DEEP BLADES, 3 INCHES O.C.	ALUM. BLADES					

REMARKS
1. PROVIDE ANGLE FLANGE AT OPENING IN DUCT FOR MOUNTING GRILLE
2. O4 GRAY FINISH
3. STANDARD SCREW MOUNTING

LOUVER SCHEDULE

MARK	MFGR	MODEL NO.	INTAKE OR RELIEF	AIR FLOW CFM	SIZE W X H X D INCHES	FREE AREA MIN SF	AIR PRESSURE DROP MAX. " W.C.	CONSTRUCTION BLADE STYLE	MATERIAL	THICKNESS (IN) BLADE	THICKNESS (IN) FRAME	FRAME TYPE	BLADE ANGLE	BLADE ALIGNMENT	REMARKS
L-1	GREENHECK	ESD-435	INTAKE	2,500	33 X 30	3.00	0.15	DRAINABLE	ALUM	0.081	0.081	FLANGE	37.5	HORIZ	1, 2, 3, 4

NOTES
1. FREE AREA IS FOR SCHEDULED SIZE
2. BIRDSCREEN 3/4 IN. X 0.051 IN. FLATTENED EXPANDED ALUMINUM
3. MILL FINISH
4. OPTIONAL FLANGE FRAME

GAS PIPE SIZING SCHEDULE

DISTANCE TO LAST RADIANT UNIT AFTER GAS REGULAOR	NUMBER OF RADIANT UNITS CONNECTED AND MBH MAXIMUM DOWN STREAM OF PRESSURE REGULATOR: 3/4 INCH PIPE NO. OF UNITS	3/4 INCH PIPE MBH	1 INCH PIPE NO. OF UNITS	1 INCH PIPE MBH	1-1/4 INCH PIPE NO. OF UNITS	1-1/4 INCH PIPE MBH
10 FEET	2	160	3	240	4	320
20 FEET	1	80	3	240	4	320
30 FEET	1	80	3	240	4	320
40 FEET	1	80	2	160	4	320
50 FEET	1	80	2	160	4	320

NOTES
1. REGULATOR TO BE SIZED FOR CONNECTED MBH
2. BASED ON 80 MBH RADIANT UNITS

MAKEUP AIR UNIT - SIZE AND WEIGHT

UNIT NUMBER	UNIT BASE SIZE LENGTH	UNIT BASE SIZE WIDTH	UNIT WEIGHT POUNDS
MUA-1	12'-1"	6'-7"	2750
MUA-2	14'-0"	6'-7"	2586
MUA-3	10'-10"	4'-10"	1754

NOTES
1. BASE ON SCHEDULED MANUFACTURER AND MODEL
2. UNIT SIZE ROUNDED UP TO NEXT INCH
3. ADJUST SIZE FOR UNIT PROVIDED
4. PAINT STAND WITH EXTERIOR STEEL WEATHER PROOF PAINT

FAN SCHEDULE

MARK	ZONE	MANUFACTURER	MODEL NO.	FAN DATA: AIR FLOW (CFM)	EXT STATIC PRESS	FAN TYPE	WHEEL TYPE	DRIVE TYPE	RPM MOTOR	RPM FAN	TIP SPEED	NEW ROOF OPENING SIZE	MOTOR DATA: ENCL	FLA	BHP	HP	VOLTS / PHASE	REMARKS
NEW FANS REPLACING EXISTING FANS																		
EF-2	2	GREENHECK	GB-200-15	4,300	0.5	ROOF	BI	BELT	1725	935	5233	X	TEFC	6.6	1.02	1 1/2	208/3	1, 2, 3, 4, 5, 7
EF-3	2	GREENHECK	GB-200-15	4,300	0.5	ROOF	BI	BELT	1725	935	5233	X	TEFC	6.6	1.02	1 1/2	208/3	1, 2, 3, 4, 5, 7
EF-4	2	GREENHECK	GB-200-15	4,300	0.5	ROOF	BI	BELT	1725	935	5233	X	TEFC	6.6	1.02	1 1/2	208/3	1, 2, 3, 4, 5, 7
EF-5	2	GREENHECK	GB-200-15	4,300	0.5	ROOF	BI	BELT	1725	935	5233	X	TEFC	6.6	1.02	1 1/2	208/3	1, 2, 3, 4, 5, 7
EF-11	1	GREENHECK	GB-151-15	3,500	0.5	ROOF	BI	BELT	1725	1359	5914	X	TEFC	6.6	1.02	1 1/2	208/3	1, 2, 3, 4, 5, 8
EF-13	1	GREENHECK	GB-161-15	3,500	0.5	ROOF	BI	BELT	1725	1359	5914	X	TEFC	6.6	1.02	1 1/2	208/3	1, 2, 3, 4, 5, 7
EF-14	1	GREENHECK	GB-161-15	3,500	0.5	ROOF	BI	BELT	1725	1359	5914	X	TEFC	6.6	1.02	1 1/2	208/3	1, 2, 3, 4, 5, 7
EF-15	1 (ENGINE)	GREENHECK	USF-18	2,500	2	SUSPENDED	BI	BELT	1725	1305		X	EXP PROOF	7.5	1.16	2	208/3	10, 11
EF-16	1 (ENGINE)	GREENHECK	USF-18	2,500	2	SUSPENDED	BI	BELT	1725	1305		X	EXP PROOF	7.5	1.6	2	208/3	10, 12
EF-17	3	GREENHECK	GB-161-10	2,500	0.5	ROOF	BI	BELT	1725	1075	4680	X	TEFC	4.6	0.53	1	208/3	1, 2, 3, 4, 5, 7
NEW FANS - CNG EXHAUST																		
EF-30 C	2	GREENHECK	CUBE-300-30	10,750	0.5	ROOF	BI	BELT	1725	739	5900	32.5 X 32.5	TEFC	10.6	2.76	3	208/3	1, 2, 3, 4, 5, 6
EF-31 C	2	GREENHECK	CUBE-300-30	10,750	0.5	ROOF	BI	BELT	1725	739	5900	32.5 X 32.5	TEFC	10.6	2.76	3	208/3	1, 2, 3, 4, 5, 6
EF-32 C	2	GREENHECK	CUBE-300-30	10,750	0.5	ROOF	BI	BELT	1725	739	5900	32.5 X 32.5	TEFC	10.6	2.76	3	208/3	1, 2, 3, 4, 5, 6
EF-33 C	2	GREENHECK	CUBE-300-30	10,750	0.5	ROOF	BI	BELT	1725	739	5900	32.5 X 32.5	TEFC	10.6	2.76	3	208/3	1, 2, 3, 4, 5, 6
EF-34 C	1	GREENHECK	CUBE-300-30	8,250	0.5	ROOF	BI	BELT	1725	609	4865	32.5 X 32.5	TEFC	10.6	1.61	3	208/3	1, 2, 3, 4, 5, 6
EF-35 C	1	GREENHECK	CUBE-300-30	8,250	0.5	ROOF	BI	BELT	1725	609	4865	32.5 X 32.5	TEFC	10.6	1.61	3	208/3	1, 2, 3, 4, 5, 6
EF-36 C	1	GREENHECK	CUBE-300-30	8,250	0.5	ROOF	BI	BELT	1725	609	4865	32.5 X 32.5	TEFC	10.6	1.61	3	208/3	1, 2, 3, 4, 5, 9
EF-37 C	1	GREENHECK	CUBE-300-30	8,250	0.5	ROOF	BI	BELT	1725	609	4865	32.5 X 32.5	TEFC	10.6	1.61	3	208/3	1, 2, 3, 4, 5, 9
EF-38C	NOT USED																	
EF-39 C	3	GREENHECK	CUBE-180-10	3,800	0.3	ROOF	BI	BELT	1725	1093	5295	20.5 X 20.5	TEFC	4.6	0.8	1	208/3	1, 2, 3, 4, 5, 9
EXISTING FANS WITH CONTROL REVISION WORK THIS PROJECT																		
EF-6	2 BOOTH	CONTROL WORK ONLY SEE 23 09 93																
EF-7	2 BOOTH	CONTROL WORK ONLY SEE 23 09 93																
EXISTING FANS NO WORK THIS PROJECT																		
EF-1	OFFICE	NO WORK THIS PROJECT																
EF-8	BREAK RM	NO WORK THIS PROJECT																
EF-9	STORE RM	NO WORK THIS PROJECT																
EF-10	STORE RM	NO WORK THIS PROJECT																
EF-12		REMOVED NOT REPLACED																
EF-18	OFFICE	NO WORK THIS PROJECT																
EF-19	REST ROOM	NO WORK THIS PROJECT																

Notes
1. ALUMINUM SPARK RESISTANT WHEEL.
2. ALUMINUM RUB RING.
3. JUNCTION BOX MOUNTED & WIRED, MOTOR OPERATED DAMPER, END SWITCH, 24 VDC DAMPER ACTUATOR OPENS OFF MOTOR STARTER.
4. COMBINATION STARTER / DISCONNECT BY HV CONTRACTOR, WIRED BY ELECTRICAL CONTRACTOR,
5. DISCONNECT IN FAN BY MECHANICAL CONTRACTOR.
6. PROVIDE CURB FOR MOUNTING FAN. ROOF SLOPE IS APPROXMATELY 2.5/12, CONTRACTOR TO FIELD VERIFY.
7. REPLACES EXISTING FAN, PROVIDE CURB ADAPTER FOR MOUNTING NEW FAN AT LOCATION OF REMOVED FAN. CONTRACTOR TO FIELD VERIFY SIZE OF EXISTING CURB FOR CONSTRUCTION OF CURB ADAPTER.
8. REPLACES EXISTING FAN, PROVIDE CURB ADAPTOR FOR MOUNTING NEW FAN AT LOCATION OF REMOVED FAN. EXISTING CURB IS SET ON SLOPED ROOF WITH SLOPED TOP OF CURB. SLOPE IS APPROXMATELY 4/12, CONTRACTOR TO FIELD VERIFY.
9. PROVIDE CURB FOR MOUNTING FAN. ROOF SLOPE IS NEARLY FLAT, TO APPROXMATELY 1/4" PER FOOT SLOPE.
10. WEATHER HOOD. FAN TO BE MOUNTED ON ROOF RAILS.
11. PROVIDE NEW ROOF CURB FOR DUCT THROUGH ROOF.
12. REUSE EXISTING CURB FOR DUCT THROUGH ROOF. PROVIDE NEW FLASHING AT DUCT TO CURB.

GAS FIRED MAKE-UP AIR UNIT SCHEDULE

MARK	SERVES	MANUFACTURER	MODEL NO.	UNIT ARRANG	DISCH. POSITION	CAPACITY: HEATING TYPE	GAS PRESS. PSI	HEATING MBH: EAT °F	LAT °F	INPUT MBH	OUTPUT MBH	FAN: CFM	EXT SP IN. WC	TOTAL SP	MOTOR RPM	FAN RPM	ELECTRICAL DATA: BHP	HP	MCA - MOP	VOLTS / PHASE	REMARKS
MUA-1	ZONE 2	GREENHECK	DGX-125-H35	HORIZ	HORIZ	DIRECT NAT GAS	2	-15	75	1817.2	1,672	17,200	0.6	1.86	1725	646	11.1	15	59.7 - 100	208/3	1 THRU 18, 22
MAU-2	BOOTH	GREENHECK	DGX-P222-H35-II	HORZ	HORZ	DIRECT NAT GAS	2	-15	75	2313.8	2,129	21,900	0.75	1.898	1770	1985	2 @ 8.55	2 @ 10	79 - 100	208/3	1 THRU 18, 22, 22
MAU-3	ZONE 1	GREENHECK	DGX-P128-H32	HORZ	HORZ	DIRECT NAT GAS	2	-15	75	1637.6	1,507	15,500	0.6	1.784	1180	1624	13.61	15	59.7 - 100	208/3	1 THRU 19
MAU-4	ZONE 3	GREENHECK	DGX-110-H12	HORZ	HORZ	DIRECT NAT GAS	2	-15	75	253.6	233	2,500	0.75	1.787	1725	1328	1.44	2	10.1 - 15	208/3	1 THRU 13, 15,16, 20, 21, 22

REMARKS
1. DIRECT SPARK IGNITION
2. CAST ALUMINUM BURNERS WITH STAINLESS STEEL MIXING PLATES
3. 25:1 TURNDOWN
4. MAXITROL ELECTRONIC MODULATION BURNER CONTROL
5. DISCHARGE TEMPERATURE CONTROL - WITH ROOM OVERRIDE
6. REMOTE CONTROL PANEL
7. ETL & IRI LISTED TO ANSI Z83.4
8. FLAME ROD FLAME SENSING
9. HIGH GAS PRESSURE SWITCH
10. LOW GAS PRESSURE SWITCH
11. GAS PRESSURE REGULATOR IF UNIT REQUIRES GAS INLET PRESSURE BELOW 2 PSI
12. FILTER SECTION WITH 2" MERV 8 FILTERS
13. DIRTY FILTER SWITCH
14. OUTLET DAMPER
15. UNIT INSULATION
16. 100 PERCENT OUTSIDE AIR
17. EXTERIOR UNIT ENCLOSURE - GALVANIZED
18. WEATHER HOOD WITH BIRDSCREEN
19. VAV AIR FLOW - UNIT INCLUDES VARIABLE FREQUENCY DRIVE
20. INLET DAMPER
21. INTERIOR UNIT ENCLOSURE - GALVANIZED
22. CARBON DIOXIDE SENSOR

GAS FIRED RADIANT HEATING UNIT SCHEDULE

MARK	MANUFACTURER	MODEL NO.	STAGES	GAS TYPE	GAS PERSSURE IN. W.C. -MIN / MAX	INPUT BTU/H	MOUNTING ANGLE DEG	TOTAL UNIT LENGTH (FT)	MAXIMUM SUFRECE TEMPERATURE °F	MOUNTING HEIGHT MINIMUM (FT)	ELECTRICAL DATA: IGNITION / RUN AMPS	VOLTS / PHASE	REMARKS
RAD-1	RE-VERBER-RAY	CL3-30-80 U TUBE	2	NATURAL	5.0 / 14.0	80,000	0 DEG	17'-9"	750	12	4.8 / 1.1	120/60/1	1 THROUGH 14
RAD-2	REVERBER-RAY	CL3-30-80 U TUBE	2	NATURAL	5.0 / 14.0	80,000	45 DEG	17'-9"	750	12	4.8 / 1.1	120/60/1	1 THROUGH 14

NOTES
1. PRIOR APPROVED EQUIVALENT UNITS MEETING PERFORMANCE AND CODE REQUIREMENTS ARE ACCEPTABLE
2. COMPLY WITH NATIONAL FUEL GAS CODE, ANSI Z223.1 (NFPA 54), AND ANSI Z83.20, AND APPLICCBLE STATE AND LOCAL CODES.
3. COMPLY WITH NFPA 30A 7.6.6 - NO OPEN FLAME AND EXPOSED SURFACE TEMPERATURE BELOW 750 DEG. F
4. INCLUDE DRAFT INDUCER WITH PERMANENTLY LUBRICATED, TOTALLY ENCLOSED, FAN COOLED, BALL BEARING MOTOR.
5. INCLUDE AIR INTAKE CAP AND BURNER AIR INLET BOOT FOR CONNECTION TO BURNER, AND DUCTING TO BURNER. FOR SIDE WALL OR ROOF INSTALLATION.
6. INLCUDE VENT CAP AND CONNETION TO DRAFT INDUCER. INCLUDE MANUFACTURER RECOMMENDED DUCTING FROM DRAFT INDUCER TO WALL OR ROOFDISCHARGE
7. INCLUDE TUBE HANGERS REFLECTORS, REFLECTOR SUPPORT, COMBUSTION CHAMBER TUBES AND RADIANT TUBES REQUIRED FOR ANGLED SIDE WALL OR SUSPENDED INTALLATION PER MANUFACTURERS REQUIREMENTS
8. INCLUDE 24 INCH STAINLESS STEEL FLEXIBLE GAS CONNECTOR AND SHUT-OFF VALVE
9. PROVIDE REMOTE CONTROL PANEL / THERMOSTAT. COORDINATE FNAL CONTROL LOCATION ON SITE WITH OTHER EQUIPMENT
10. DIRECT SPARK IGNITION AND 100% GAS SHUT-OFF SAFETY CONTROL
11. WARRANTY: 10 YEAR BURNER, 5 YEAR COMBUSTION AND RADIANT TUBES, 3 YEAR BURNER BOX COMPONENTS.
12. POLISHED ALUMINUM REFLECTORS
13. INCLUDE GAS PRESSURE REGULATOR TO PROVIDE REQUIRED GAS INLET PRESSURE
14. UNIT TO INCLUDE 60 INCH GROUNDED POWER CORD

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02/24/20	ISSUED FOR BIDDING & CONSTRUCTION	
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FISH HATCHERY HIGHWAY GARAGE - CNG RETROFIT

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MADISON, WI 53713

DANE COUNTY RFB# 318029

Dane County Department of Public Works, Highway and Tranportation
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1919 Alliant Energy Center Way
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Drawing Title:

HVAC SCHEDULES

Eng. 370 Project Number: 18-1216

Drawn By: FBN

Drawing No. H300

ABBREVIATIONS

&	AND
@	AT
AAP	ALARM ANNUNCIATOR PANEL
ABV	ABOVE
AC	ALTERNATING CURRENT
AFF	ABOVE FINISHED FLOOR
ALT	ALTERNATE
ALUM	ALUMINUM
A, AMP	AMPERE
APROX	APPROXIMATE
ARCH	ARCHITECT / ARCHITECTURAL
ATS	AUTOMATIC TRANSFER SWITCH
AUTO	AUTOMATIC
AIC	AMPERE INTERRUPTING CAPACITY
BLDG	BUILDING
BSMT	BASEMENT
BULL	BULLETIN
BTWN	BETWEEN
°C	DEGREE CELSIUS
C	CONDUIT
CAB	CABINET
CB	CIRCUIT BREAKER
CBAS	COMPUTERIZED BUILDING AUTOMATION SYSTEM
CCT/CKT	CIRCUIT
CCTV	CLOSED CIRCUIT TELEVISION
CFP	CHEMICAL FEED PUMP
CLG	CEILING
CMT	CONDUIT EMPTY
COL	COLUMN
COMB	COMBINATION
COM	COMMUNICATION
CONC	CONCRETE
CONN	CONNECTED / CONNECTION
CONST	CONSTRUCTION
COORD	COORDINATE
CORR	CORRIDOR
CT	CURRENT TRANSFORMER
CTB	COMMUNICATION TERMINAL BOARD
CTC	COMMUNICATION TERMINAL CAB
CUH	CABINET UNIT HEATER
D	DEPTH / DEEP
DC	DIRECT CURRENT
DEPT	DEPARTMENT
DIA	DIAMETER
DIM	DIMENSION
DIST	DISTRIBUTION
DIV	DIVISION
DN	DOWN
DP	DATA PROCESSING
DWG	DRAWING
EA	EACH
ELEC	ELECTRICAL
EMERG	EMERGENCY
EQ	EQUAL
EQUIP	EQUIPMENT
EWC	ELECTRIC WATER COOLER
EXP	EXPANSION
EXT	EXTERIOR
°F	DEGREE FAHRENHEIT
FCP	FIRE CONTROL PANEL
FIN	FINISH
FIXT	FIXTURE
FL	FLOOR
FLEX	FLEXIBLE
FLUOR	FLUORESCENT
FP	FAN POWERED
FUT	FUTURE
FVNR	FULL VOLTAGE NON-REVERSING
GA	GAUGE
GALV	GALVANIZED
GEN	GENERATOR
GETGB	GND ELECTRODE TERM GND BLOCK
GFI	GROUND FAULT INTERRUPTER
GFR	GROUND FAULT RELAY
GND	GROUND
GWA	GENERAL WORK AREA
H	HIGH / HEIGHT
HOA	HAND OFF AUTOMATIC
HORIZ	HORIZONTAL
HP	HORSEPOWER
HTG	HEATING
HTR	HEATER
HZ	HERTZ
ID	INSIDE DIAMETER
KO	KNOCK OUT
KVA	KILOVOLT AMPERES
KW	KILOWATTS
KCMIL	THOUSAND CIRCULAR MIL
LCC	LIGHTING CONTROL CABINET
LCP	LIGHTING CONTROL PANEL
LOC	LOCATION
LT/LTG	LIGHT/LIGHTING
MAN	MANUAL
MAX	MAXIMUM
MCC	MOTOR CONTROL CENTER
MCU	MODULAR COOLING UNIT
MECH	MECHANICAL
MEZZ	MEZZANINE
MFGR	MANUFACTURER
MH	MANHOLE
MIN	MINIMUM
MISC	MISCELLANEOUS
MS	MOTOR STARTER
MSG	MOTOR STARTER GROUP
MSR	MAIN SOUND RACK
MTD	MOUNTED
MTR	MOTOR
MT	EMPTY
MTC	EMPTY CONDUIT
MV	MOTORIZED VALVE
N, NEUT	NEUTRAL
NA	NOT APPLICABLE
N.C.	NORMALLY CLOSED
NEC	NATIONAL ELECTRICAL CODE
NF	NON FUSED
NIC	NOT IN CONTRACT
NO	NUMBER
N.O.	NORMALLY OPEN
#	NUMBER
OC	ON CENTER
OD	OUTSIDE DIAMETER
OH	OVERHEAD
Ø	PHASE
P	POLE
PF	POWER FACTOR
PL	PILOT LIGHT
PNL	PANEL
PRI	PRIMARY
PT	POTENTIAL TRANSFORMER
PVC	POLYVINYL CHLORIDE
PWR	POWER
PDU	POWER DISTRIBUTION UNIT
PS	PLUGSTRIP
REC	RECESSED
RECEPT	RECEPTACLE
REF	REFERENCE
REFR	REFRIGERATOR
REQD	REQUIRED
RM	ROOM
RVAT	REDUCED VOLTAGE AUTO TRANSFORMER
SEC	SECONDARY
SCHED	SCHEDULE
SDC	SYSTEM DIGITAL CONTROLLER-HONEYWELL XLP
SECT	SECTION
SHT	SHEET
SURF	SURFACE
SPC	SPACE
SPEC	SPECIFICATION
SPR	SPARE
SQ	SQUARE
STD	STANDARD
STRUCT	STRUCTURAL
SW	SWITCH
SWBD	SWITCHBOARD
SWGR	SWITCHGEAR
ST	SHUNT TRIP
TEL	TELEPHONE
TELECOM	TELECOMMUNICATIONS
TEMP	TEMPERATURE
TYP	TYPICAL
TERM	TERMINAL/TERMINATE
TV	TELEVISION
TRANS	TRANSITION SECTION
UF	UNDERFLOOR
UG	UNDERGROUND
UH	UNIT HEATER
UPS	UNINTERRUPTABLE POWER SUPPLY
V	VOLTS
VA	VOLT AMPERE
VDT	VIDEO DISPLAY TERMINAL
VERT	VERTICAL
VSD	VARIABLE SPEED DRIVE
W	WATTS
W/	WITH
W/O	WITHOUT
WP	WEATHERPROOF
XFMR	TRANSFORMER
XP	EXPLOSION PROOF

POWER DEVICES

SYMBOL	DESCRIPTION	MTG HGT
	RECEPTACLE (SINGLE)	18"
	RECEPTACLE (DUPLEX)	18"
	RECEPTACLE ON EMERGENCY SYSTEM	18"
	RECEPTACLE (DOUBLE DUPLEX)	18"
	RECEPTACLE (COMB. 120/208 V)	18"
	RECEPTACLE (TYPE NOTED)	18"
GFI, GFI WP	RECEPTACLE (GFI TYPE), WATERPROOF	18"
	FLOOR OUTLET (COMM ONLY)	
	FLOOR OUTLET (PWR ONLY)	
	FLOOR OUTLET (PWR/COMM)	
F	FLOOR OUTLET (PWR/COMM/FIBER)	
TV	FLOOR OUTLET (PWR/COMM/TV)	
	JUNCTION BOX OR EQUIP. OUTLET (WALL/CEILING MTD.)	
TV	CABLE TELEVISION CONNECTION	48"
C	CLOCK	
	PUSHBUTTON	48"
T	TRANSFORMER	
	DISCONNECT SWITCH / TOGGLE DISC.	
	MOTOR STARTER	
	COMBINATION MOTOR STARTER	
VSD	VARIABLE SPEED DRIVE	
ON ROOF	MOTOR CONNECTION / (ON ROOF) SEE MOTOR SCHEDULE	
PS-A	PLUGSTRIP (A,B,C, ETC.=TYPE)	
W	WIREWAY (SIZE AS NOTED)	

LIGHTING DEVICES

SYMBOL	DESCRIPTION	MTG HGT
	RECESSED FLUORESCENT (1x4, 2x2, 2x4 ETC.) SEE SCHEDULE FOR SPECIFICS	
	DOWNLIGHT-RECESSED/SURFACE	
	WALL MOUNTED FIXTURE (SCONCES)	
	SURFACE FLUORESCENT FIXTURE (WALL OR CEILING)	
	SECURITY/LITE - EMERGENCY LIGHT	
	EMERGENCY LIGHT - BATTERY PACK	
	EXIT LIGHT - WITH DIRECTIONAL ARROW(S) AS INDICATED, SHADED AREA INDICATES FACE	
A/2	FIXTURE TYPE DESIGNATION CIRCUIT NUMBER	
a,b,c,etc.	SWITCH DESIGNATION	
	SINGLE POLE SWITCH	48"
2	TWO POLE SWITCH	48"
3	THREE WAY SWITCH	48"
4	FOUR WAY SWITCH	48"
LV	LOW VOLTAGE SWITCH	48"
K	KEY OPERATED SWITCH	48"
	PILOT LIGHT SWITCH	48"
OS	OCCUPANCY SENSOR CEILING MOUNTED	48"
OS	OCCUPANCY SENSOR WALL MOUNTED	48"
	LIGHTING CONTROL STATION	48"
D	DIMMER SWITCH (SEE DETAILS FOR SPECIFIC TYPE)	48"
R	RELAY (LTG. CONTROL)	
P	PHOTOCELL (LTG CONTROL)	
	BRACKET SYMBOL INDICATES TWO DEVICES UNDER ONE COVERPLATE	
	PILOT LIGHT	

FIRE ALARM DEVICES

SYMBOL	DESCRIPTION	MTG HGT
F	MANUAL PULL STATION	48"
S P	SMOKE DETECTOR(P=PHOTO ELEC, I=IONIZATION, D=DUCT)	
H	HEAT DETECTOR	
S D	DUCT MOUNTED SMOKE DETECTOR	
C	COMBINATION FIRE/SMOKE DAMPER	
F	VISUAL ALARM SIGNAL (STROBE)	80"
F	AUDIBLE SIGNAL (HORN)	80"
F	AUDIBLE SIGNAL (BELL)	80"
F	COMB. AUDIBLE SPEAKER/STROBE	80"
F	FLOW SWITCH	
T	TAMPER SWITCH	
H	DOOR HOLDER	SPEC
I	INTERFACE MODULE	
R	CONTROL RELAY	
	REMOTE SMOKE DETECTOR PILOT LIGHT	80"

ELECTRICAL SHEET INDEX

EQUIPMENT IDENTIFICATION KEY

R1N-L-C5A

- EQUIPMENT TYPE
- VOLTAGE
- SYSTEM
- FLOOR
- COLUMN NUMBER LOCATION
- SUFFIX FOR MORE THAN 1 PANEL LOCATION

EQUIPMENT TYPE

A=AUTOMATIC TRANSFER SWITCH
D=DISTRIBUTION PANEL
DIM=DIMMING CONTROL RACK
L=LIGHTING PANEL (277/480)
M=MOTOR CONTROL CENTER
P=POWER PANEL (120/208)
COPIERS, PRINTERS, HVAC MOTORS
R=RECEPTACLE PANEL
COMPUTERS/OFFICES/CLASSROOMS/INCAN LTG
S=SWITCHBOARD
T=TRANSFORMER

MISC. EQUIPMENT TYPE

CTB=COMMUNICATION TERMINAL BOARD

VOLTAGE

1=120/208
2=208
3=277/480
4=480

SYSTEM

N=NORMAL
E=EMERGENCY

FLOOR

L=LOWER LEVEL
1=FIRST FLOOR
2=SECOND FLOOR
3=THIRD FLOOR
4=FOURTH FLOOR
5=FIFTH FLOOR

POWER/COMM EQUIPMENT

SYMBOL	DESCRIPTION	MTG HGT
	DISTRIBUTION PANELBOARD	
	277 V BRANCH CIRCUIT PANELBOARD	
	120 V BRANCH CIRCUIT PANELBOARD	
	MISCELLANEOUS ENCLOSURES/EQUIP	
	TERMINAL CABINET	
	ANNUNCIATOR	
	CONCEALED OR EXPOSED PER SPEC	
UG	UNDERGROUND (POWER)	
UT	UNDERGROUND TELE/COMM	
	RACEWAY SEAL	
C	RACEWAY (C=CAPPED, B=BUSHED)	
	RACEWAY UP	
	RACEWAY DOWN	

R1N- 2,4

- EQUIPMENT IDENTIFICATION
- BRANCH CIRCUIT NUMBERS
- HOMERUN
- ANY CIRCUIT W/OUT DESIGNATION INCLUDES A NEUTRAL AND GROUND WIRE WHERE REQ'D. ANY GREATER NUMBER OF WIRES IS INDICATED BY CROSS MARKS
- INDICATES GROUND WIRE (SIZE PER N.E.C.)

COMMUNICATION DEVICES

SYMBOL	DESCRIPTION	MTG HGT
V	TELECOM OUTLET-VOICE (W=OUTLET AT 48")	18"
V	TELECOM OUTLET-DATA (W=OUTLET AT 48")	18"
V	TELECOM OUTLET-VOICE/DATA (W=OUTLET AT 48")	18"
F	FIBER OPTIC CONNECTION	18"
V	VOLUME CONTROL	18"
M	MICROPHONE OUTLET	
S	SPEAKER (CONE TYPE)	
S	SPEAKER (CONE TYPE, WALL MOUNT)	SPEC
S	SPEAKER (HORN TYPE)	SPEC
	BUZZER	
	CHIME	
	AUDIBLE SIGNAL (BELL)	
	AUDIBLE SIGNAL (HORN)	

SECURITY ALARM DEVICES

SYMBOL	DESCRIPTION		MTG HGT
• CR	SECURITY SYSTEMS DEVICE		
	CR	CARD READER	
	DO	DOOR OPERATOR	
	ES	ELECTRIC STRIKE	
	DC	DOOR CONTACT	
	MD	MOTION DETECTOR	

ELECTRICAL SYMBOL NOTES

1. EQUIPMENT SHALL BE INSTALLED AT THE MOUNTING HEIGHT INDICATED ON SYMBOL SCHEDULE, UNLESS SHOWN OTHERWISE ON THE ARCHITECTURAL ELEVATIONS, NOTED ON THE DRAWINGS, OR IN THE SPECIFICATIONS.
2. ALL MOUNTING HEIGHTS ARE TO CENTER OF DEVICE FROM FINISHED FLOOR, OR ABOVE RAISED ACCESS FLOORING. MOUNTING HEIGHTS INDICATED ON ARCHITECTURAL WALL ELEVATIONS TAKE PRECEDENCE OVER MOUNTING HEIGHTS LISTED.
3. CAPITAL LETTERS ADJACENT TO SYMBOLS INDICATE UNIT TYPE. SEE SPECIFICATIONS.
4. DASHED OR 'LIGHT' LINE WEIGHT SYMBOLS INDICATE EXISTING OR FUTURE FIXTURES AND DEVICES.
5. LIGHT FIXTURE TWO (OR MORE) LEVEL SWITCHING (eg. a/b)
   - INDICATED BY LOWER CASE LETTERS
   - LETTERS REPRESENTS VARIOUS LEVELS OF LIGHTING - SEE FLOOR [PLANS AND SCHEDULES

BRANCH CIRCUIT WIRING

1. MOTORS AND SPECIAL EQUIPMENT BRANCH WIRING IS GENERALLY NOT INDICATED ON THE DRAWINGS. REFER TO EQUIPMENT CONNECTION SCHEDULES AND PANELBOARD SCHEDULES FOR BRANCH CIRCUIT AND FEEDER WIRING REQUIRMENTS.

NOTE AND DETAIL SYMBOLS

SYMBOL	DESCRIPTION
1	SPECIFIC NOTES (SEE NOTE ON SAME DRAWING)
E101 / 1	DETAIL REFERENCE SYMBOL(S) SHEET NUMBER(TOP) DETAIL NUMBER(BOTTOM)

NOTE - SYMBOL LIST IS ALL INCLUSIVE - NOT EVERY SYMBOL MAY BE USED

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BEAR VALLEY
ENGINEERING & CONSULTING

Date	Issuance/Revisions	Symbol
02/11/20	ISSUED FOR OWNER REVIEW	
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FISH HATCHERY HIGHWAY
GARAGE - CNG RETROFIT

2302 FISH HATCHERY RD,
MADISON, WI 53713

DANE COUNTY RFB# 318029

Dane County Department of Public Works, Highway and Tranportation
Public Works Engineering Division
1919 Alliant Energy Center Way
Madison, WI 53713

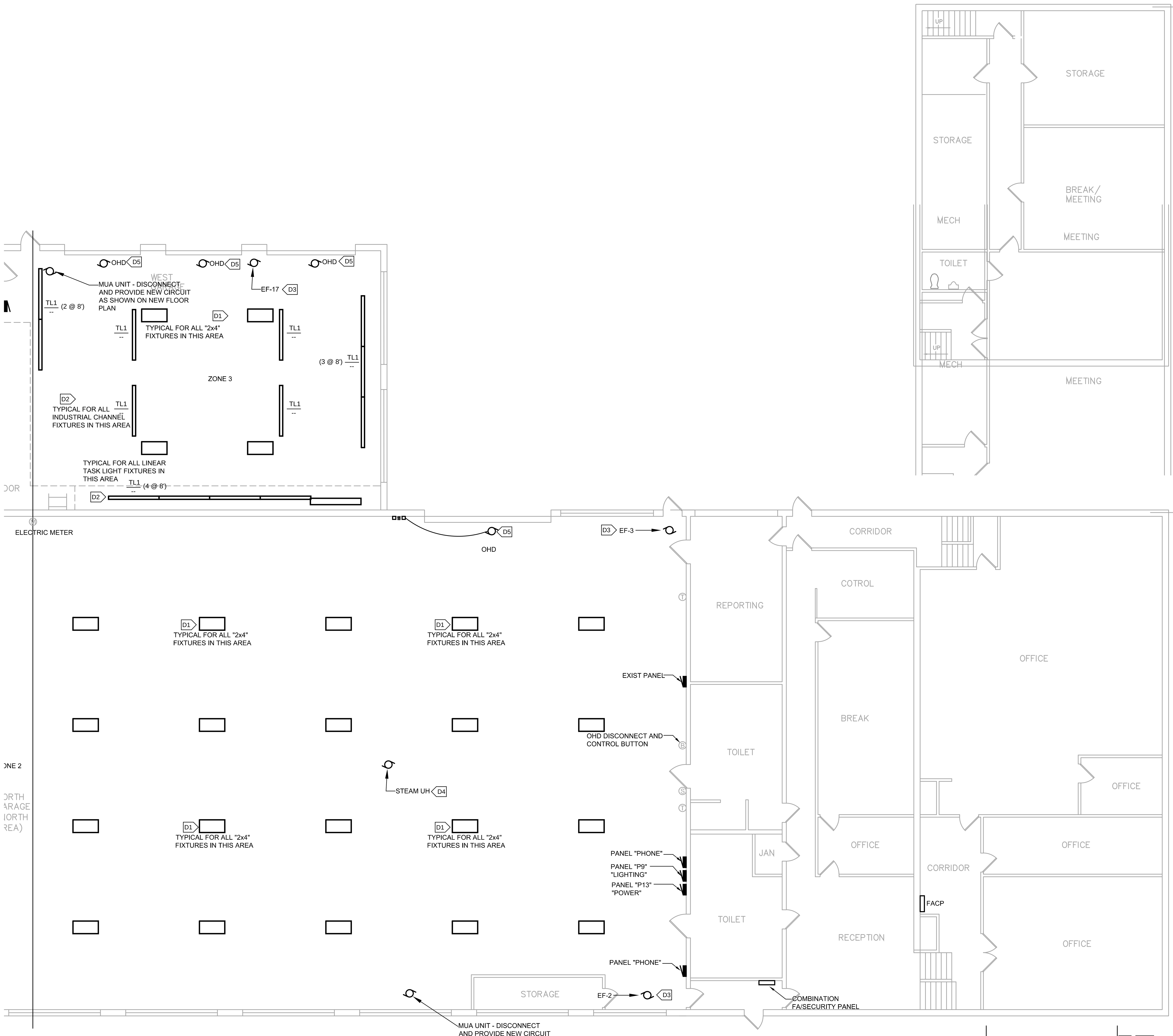
Drawing Title:

TITLE SHEET, INDEX, SYMBOLS

Drawn By:

Drawing No.

E001



1 ED100 MAIN LEVEL FLOOR PLAN (AREA A) - ELECTRICAL DEMOLITION
SCALE: 1/8" = 1' - 0"

SPECIFIC NOTES - DEMOLITION:

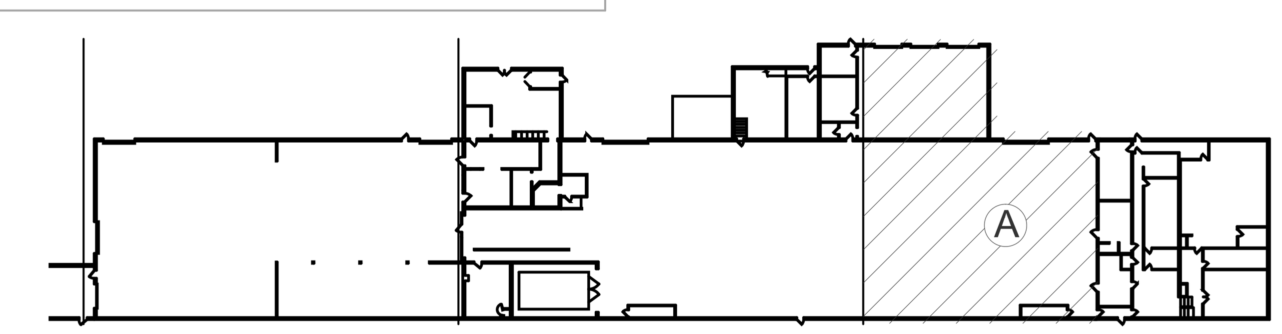
D1 DISCONNECT & REMOVE EXISTING LIGHT FIXTURE
- PROVIDE NEW CIRCUIT FROM EXISTING PANEL TO NEW FIXTURES AS INDICATED ON NEW FLOOR PLANS
- NOTE THAT THE EXISTING ACOUSTICAL CEILING TILES (ACT); CEILING T-BAR SYSTEM; AND OTHER IN-CEILING CAVITY ITEMS ARE BEING REMOVED BY THE GC
- COORDINATE WORK EFFORTS FOR DEMO

D2 DISCONNECT & REMOVE EXISTING LIGHT FIXTURE - REPLACE WITH NEW IN SAME PLACE AS SHOWN ON NEW FLOOR PLAN

D3 DISCONNECT EXISTING HVAC EQUIPMENT AND PROVIDE NEW IN SAME PLACE AS SHOWN ON FLOOR PLAN.
- COORDINATE NEW CONNECTION REQUIRED WITH HVAC CONTRACTOR

D4 DISCONNECT EXISTING HVAC EQUIPMENT - NO NEW CONNECTION REQUIRED.

D5 DISCONNECT EXISTING OHD EQUIPMENT AND PROVIDE NEW IN SAME PLACE AS SHOWN ON FLOOR PLAN.
- PROVIDE NEW CIRCUIT AS SHOWN ON NEW FLOOR PLAN



KEY PLAN

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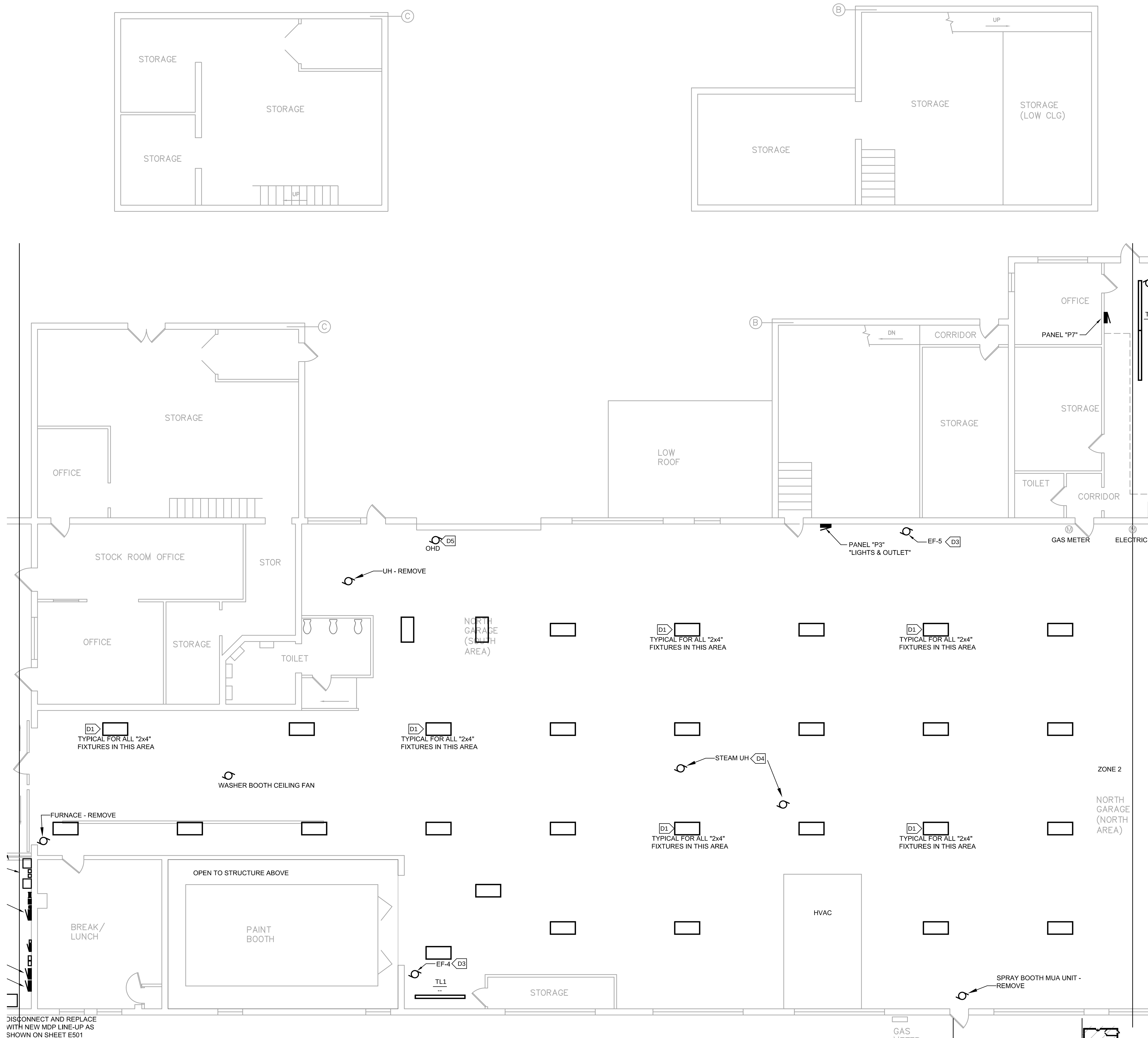
Madison, WI 53713

Drawing Title:
PARTIAL FLOOR PLAN - AREA A - ELECTRICAL DEMOLITION

Drawing No.
Drawn By:
ED100



SPECIFIC NOTES - DEMOLITION:

D1 DISCONNECT & REMOVE EXISTING LIGHT FIXTURE
- PROVIDE NEW CIRCUIT FROM EXISTING PANEL TO NEW FIXTURES AS INDICATED ON NEW FLOOR PLANS
- NOTE THAT THE EXISTING ACOUSTICAL CEILING TILES (ACT); CEILING T-BAR SYSTEM; AND OTHER IN-CEILING CAVITY ITEMS ARE BEING REMOVED BY THE GC
- COORDINATE WORK EFFORTS FOR DEMO

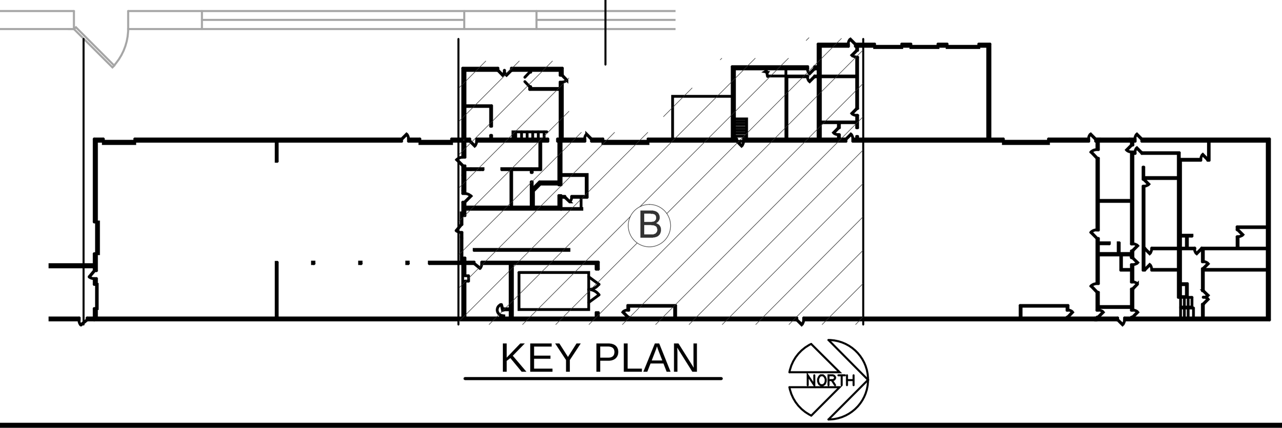
D2 DISCONNECT & REMOVE EXISTING LIGHT FIXTURE - REPLACE WITH NEW IN SAME PLACE AS SHOWN ON NEW FLOOR PLAN

D3 DISCONNECT EXISTING HVAC EQUIPMENT AND PROVIDE NEW IN SAME PLACE AS SHOWN ON FLOOR PLAN.
- COORDINATE NEW CONNECTION REQUIRED WITH HVAC CONTRACTOR

D4 DISCONNECT EXISTING HVAC EQUIPMENT - NO NEW CONNECTION REQUIRED.

D5 DISCONNECT EXISTING OHD EQUIPMENT AND PROVIDE NEW IN SAME PLACE AS SHOWN ON FLOOR PLAN.
- PROVIDE NEW CIRCUIT AS SHOWN ON NEW FLOOR PLAN

1 ED101 MAIN LEVEL FLOOR PLAN (AREA B) - ELECTRICAL DEMOLITION
SCALE: 1/8" = 1' - 0"



KEY PLAN

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MECHANICAL CONSULTING

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Project No. 18-1216

BEAR VALLEY

Date	Issuance/Revisions	Symbol
02/11/20	ISSUED FOR OWNER REVIEW	
02/24/20	ISSUED FOR BIDDING AND CONSTRUCTION	

FISH HATCHERY HIGHWAY GARAGE - CNG RETROFIT

2302 FISH HATCHERY RD,
MADISON, WI 53713

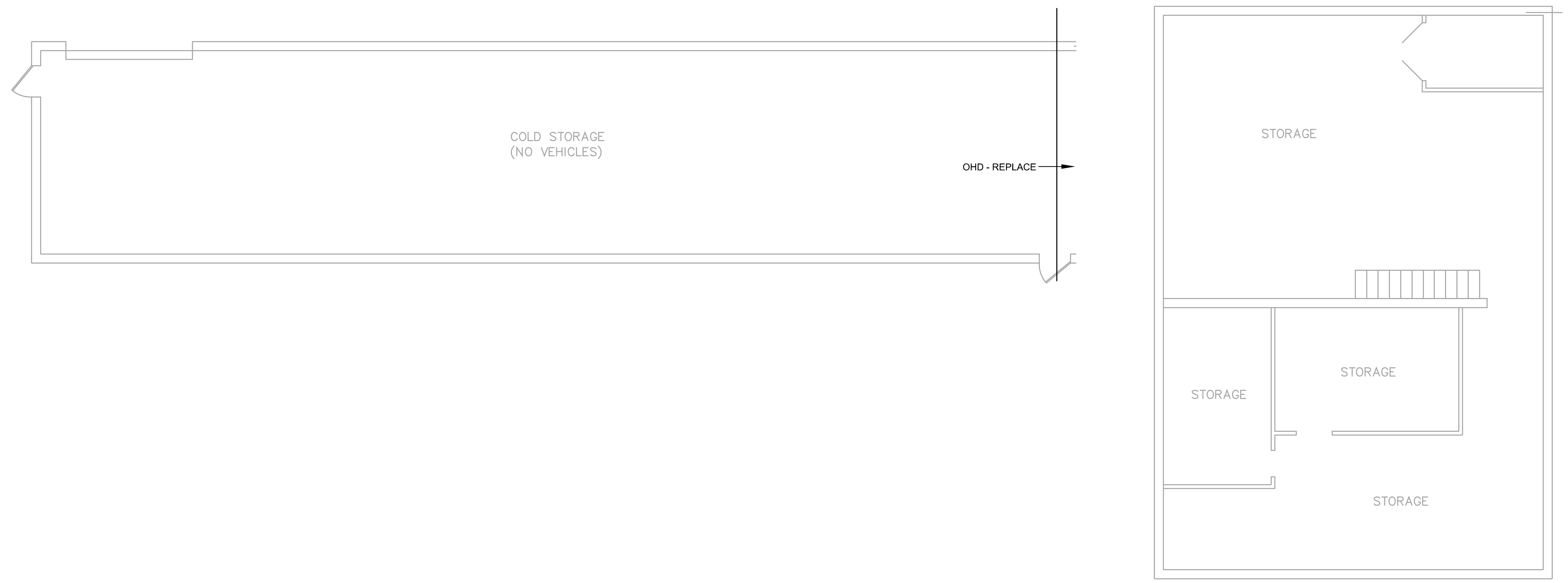
DANE COUNTY RFB# 318029

Dane County Department of Public Works, Highway and Tranportation
Public Works Engineering Division
1919 Alliant Energy Center Way
Madison, WI 53713

Drawing Title:
PARTIAL FLOOR PLAN - AREA B - ELECTRICAL DEMOLITION

Drawn By:

Drawing No.
ED101



SPECIFIC NOTES - DEMOLITION:

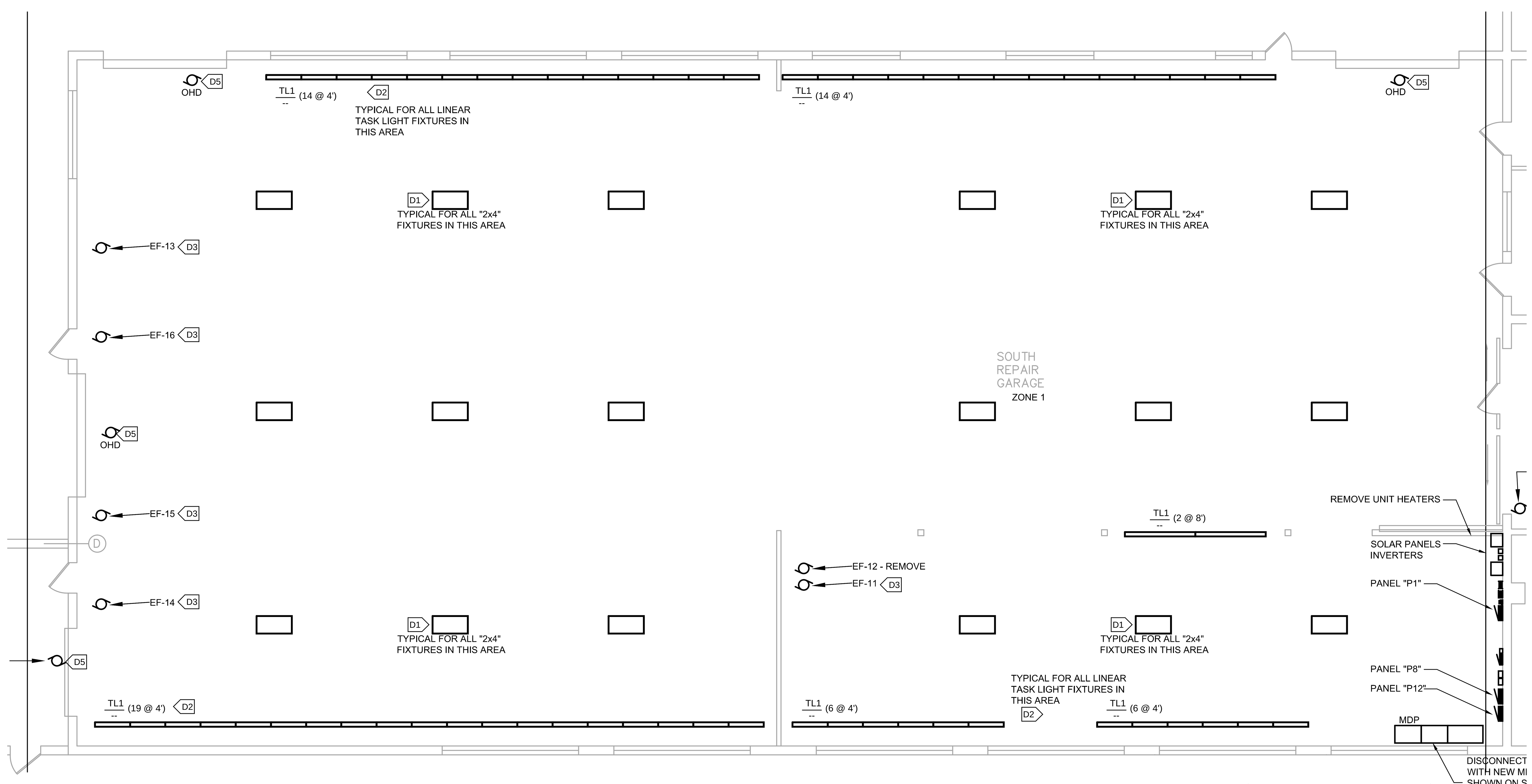
D1 DISCONNECT & REMOVE EXISTING LIGHT FIXTURE
- PROVIDE NEW CIRCUIT FROM EXISTING PANEL TO NEW FIXTURES AS INDICATED ON NEW FLOOR PLANS
- NOTE THAT THE EXISTING ACOUSTICAL CEILING TILES (ACT); CEILING T-BAR SYSTEM; AND OTHER IN-CEILING CAVITY ITEMS ARE BEING REMOVED BY THE GC
- COORDINATE WORK EFFORTS FOR DEMO

D2 DISCONNECT & REMOVE EXISTING LIGHT FIXTURE - REPLACE WITH NEW IN SAME PLACE AS SHOWN ON NEW FLOOR PLAN

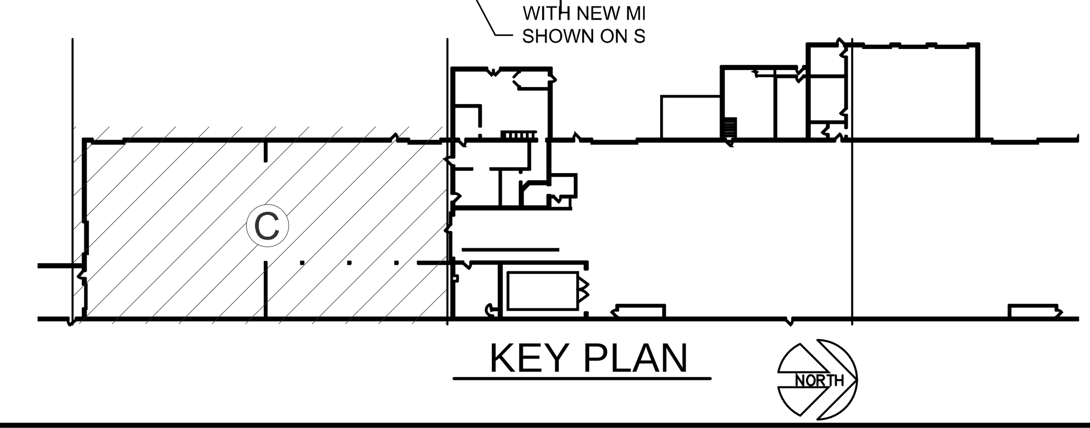
D3 DISCONNECT EXISTING HVAC EQUIPMENT AND PROVIDE NEW IN SAME PLACE AS SHOWN ON FLOOR PLAN.
- COORDINATE NEW CONNECTION REQUIRED WITH HVAC CONTRACTOR

D4 DISCONNECT EXISTING HVAC EQUIPMENT - NO NEW CONNECTION REQUIRED.

D5 DISCONNECT EXISTING OHD EQUIPMENT AND PROVIDE NEW IN SAME PLACE AS SHOWN ON FLOOR PLAN.
- PROVIDE NEW CIRCUIT AS SHOWN ON NEW FLOOR PLAN



1 ED102 MAIN LEVEL FLOOR PLAN (AREA C) - ELECTRICAL DEMOLITION
SCALE: 1/8" = 1' - 0"



KEY PLAN

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Drawing Title:
PARTIAL FLOOR PLAN - AREA C - ELECTRICAL DEMOLITION

Drawn By:

Drawing No.
ED102

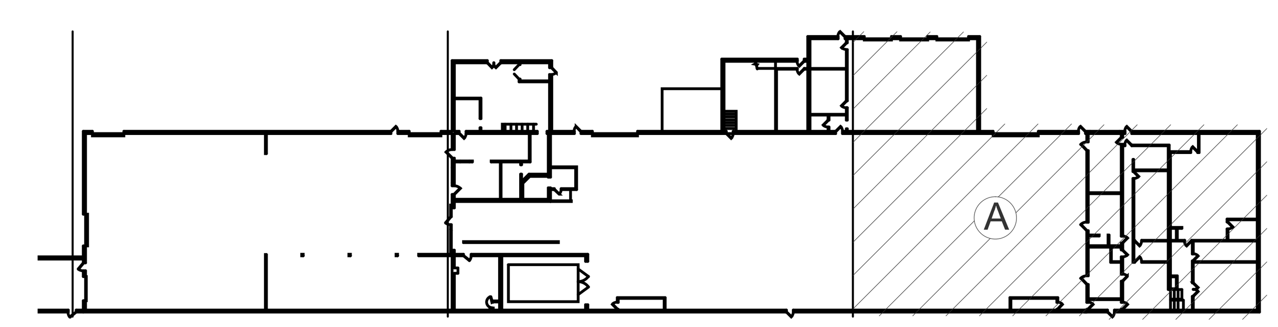
1 E100 MAIN LEVEL FLOOR PLAN (AREA A) - ELECTRICAL NEW WORK

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

SPECIFIC NOTES:

1. PROVIDE CIRCUIT AND CONTROL FROM EXISTING TASK LIGHTS BEING REMOVED - UTILIZE SIMILAR MOUNTING AS EXISTING.
2. PROVIDE CIRCUITS FOR SOUTH GARAGE FROM THIS PANEL, USING SPACE, SPARE, OR CIRCUITS FROM LIGHTS BEING REMOVED - LIGHTING CONTROL FROM "LCP"
- 2LV PROVIDE LOW VOLTAGE OVER-RIDE SWITCH TO CONTROL FIXTURES IN SOUTH GARAGE
3. PROVIDE CIRCUITS FOR NORTH GARAGE FROM THIS PANEL, USING SPACE, SPARE, OR CIRCUITS FROM LIGHTS BEING REMOVED - LIGHTING CONTROL FROM "LCP"
- 3LV PROVIDE LOW VOLTAGE OVER-RIDE SWITCH TO CONTROL FIXTURES IN NORTH GARAGE
4. PROVIDE CIRCUITS FOR ELECTRICAL SHOP FROM THIS PANEL, USING SPACE, SPARE, OR CIRCUITS FROM LIGHTS BEING REMOVED - LIGHTING CONTROL FROM "LCP"
- 4LV PROVIDE LOW VOLTAGE OVER-RIDE SWITCH TO CONTROL FIXTURES IN ELECTRICAL REPAIR SHOP
5. CIRCUIT INDICATED IS REPRESENTATIVE OF CIRCUIT GROUPING ONLY - ACTUAL CIRCUIT TO BE DEPENDANT ON LIGHTS BEING REPLACED, OR USE OF SPARE, SPACES IN EXISTING PANELS - FIELD VERIFY.
- 6A CONNECT NEW OHD MOTOR TO NEW EMERGENCY CIRCUIT INDICATED NOTE: FOR OHD'S, ACQUIRE CONTROLS FROM DOOR SUPPLIER, FOR EC INSTALLATION.
- 6B RECONNECT NEW MOTOR FROM EXISTING CIRCUIT OF EQUIPMENT BEING REPLACED - COORDINATE EXISTING ANEW CIRCUIT REQUIREMENTS WITH HVAC CONTRACTOR
7. PROVIDE NEW CIRCUIT TO NEW EQUIPMENT OR MOTOR FROM NEW PANEL "HVAC"

ABBREVIATIONS:
ETR = EXISTING TO REMAIN



KEY PLAN

NORTH

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2302 FISH HATCHERY RD,
MADISON, WI 53713

DANE COUNTY RFB# 318029

Dane County Department of Public Works, Highway and Tranportation
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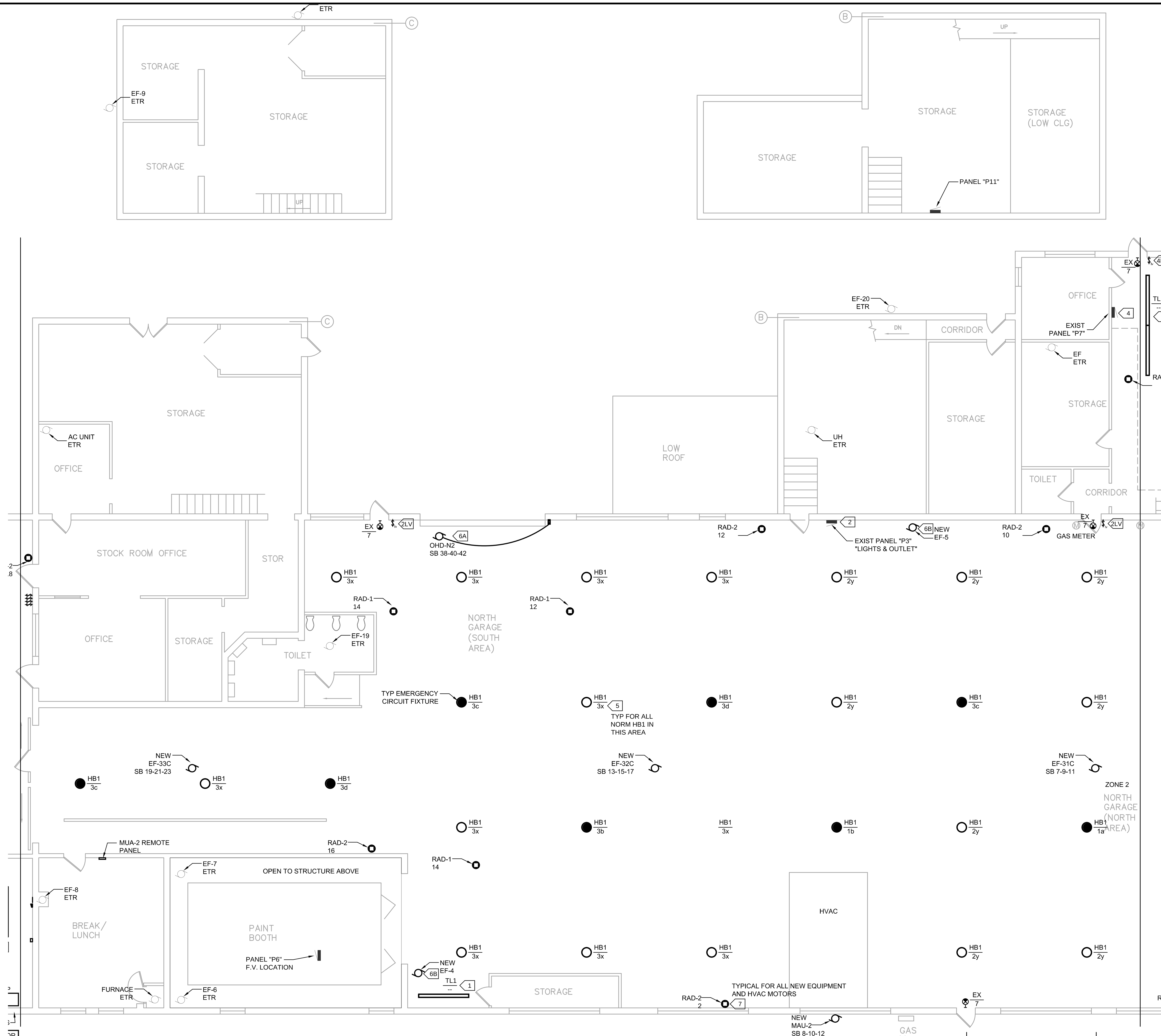
Madison, WI 53713

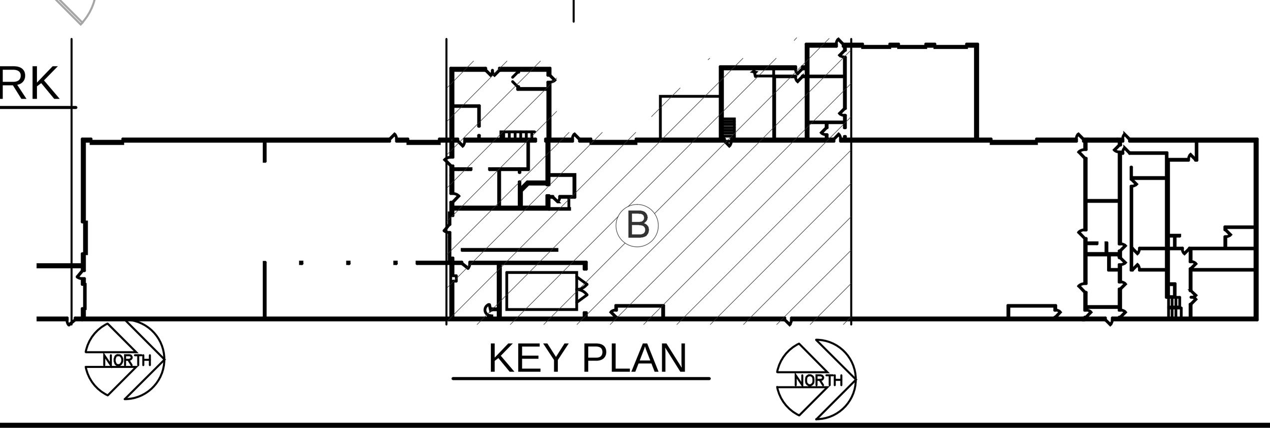
Drawing Title:
PARTIAL FLOOR PLAN - AREA A - ELECTRICAL NEW WORK

Drawn By:

Drawing No.
E100



1
E101
MAIN LEVEL FLOOR PLAN (AREA B) - ELECTRICAL NEW WORK
SCALE: 1/8" = 1' - 0"



KEY PLAN

SPECIFIC NOTES:

1. PROVIDE CIRCUIT AND CONTROL FROM EXISTING TASK LIGHTS BEING REMOVED
- UTILIZE SIMILAR MOUNTING AS EXISTING.

2. PROVIDE CIRCUITS FOR SOUTH GARAGE FROM THIS PANEL, USING SPACE, SPARE, OR CIRCUITS FROM LIGHTS BEING REMOVED - LIGHTING CONTROL FROM "LCP"

2LV. PROVIDE LOW VOLTAGE OVER-RIDE SWITCH TO CONTROL FIXTURES IN SOUTH GARAGE

3. PROVIDE CIRCUITS FOR NORTH GARAGE FROM THIS PANEL, USING SPACE, SPARE, OR CIRCUITS FROM LIGHTS BEING REMOVED - LIGHTING CONTROL FROM "LCP"

3LV. PROVIDE LOW VOLTAGE OVER-RIDE SWITCH TO CONTROL FIXTURES IN NORTH GARAGE

4. PROVIDE CIRCUITS FOR ELECTRICAL SHOP FROM THIS PANEL, USING SPACE, SPARE, OR CIRCUITS FROM LIGHTS BEING REMOVED - LIGHTING CONTROL FROM "LCP"

4LV. PROVIDE LOW VOLTAGE OVER-RIDE SWITCH TO CONTROL FIXTURES IN ELECTRICAL REPAIR SHOP

5. CIRCUIT INDICATED IS REPRESENTATIVE OF CIRCUIT GROUPING ONLY - ACTUAL CIRCUIT TO BE DEPENDANT ON LIGHTS BEING REPLACED, OR USE OF SPARE, SPACES IN EXISTING PANELS - FIELD VERIFY.

6A. CONNECT NEW OHD MOTOR TO NEW EMERGENCY CIRCUIT INDICATED
NOTE: FOR OHD'S, ACQUIRE CONTROLS FROM DOOR SUPPLIER, FOR EC INSTALLATION.

6B. RECONNECT NEW MOTOR FROM EXISTING CIRCUIT OF EQUIPMENT BEING REPLACED
- COORDINATE EXISTING ANEW CIRCUIT REQUIREMENTS WITH HVAC CONTRACTOR

7. PROVIDE NEW CIRCUIT TO NEW EQUIPMENT OR MOTOR FROM NEW PANEL "HVAC"

ABBREVIATIONS:
ETR = EXISTING TO REMAIN

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Drawing Title:
PARTIAL FLOOR PLAN - AREA B - ELECTRICAL NEW WORK

Drawn By:

Drawing No.
E101

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Project No. 18-1216

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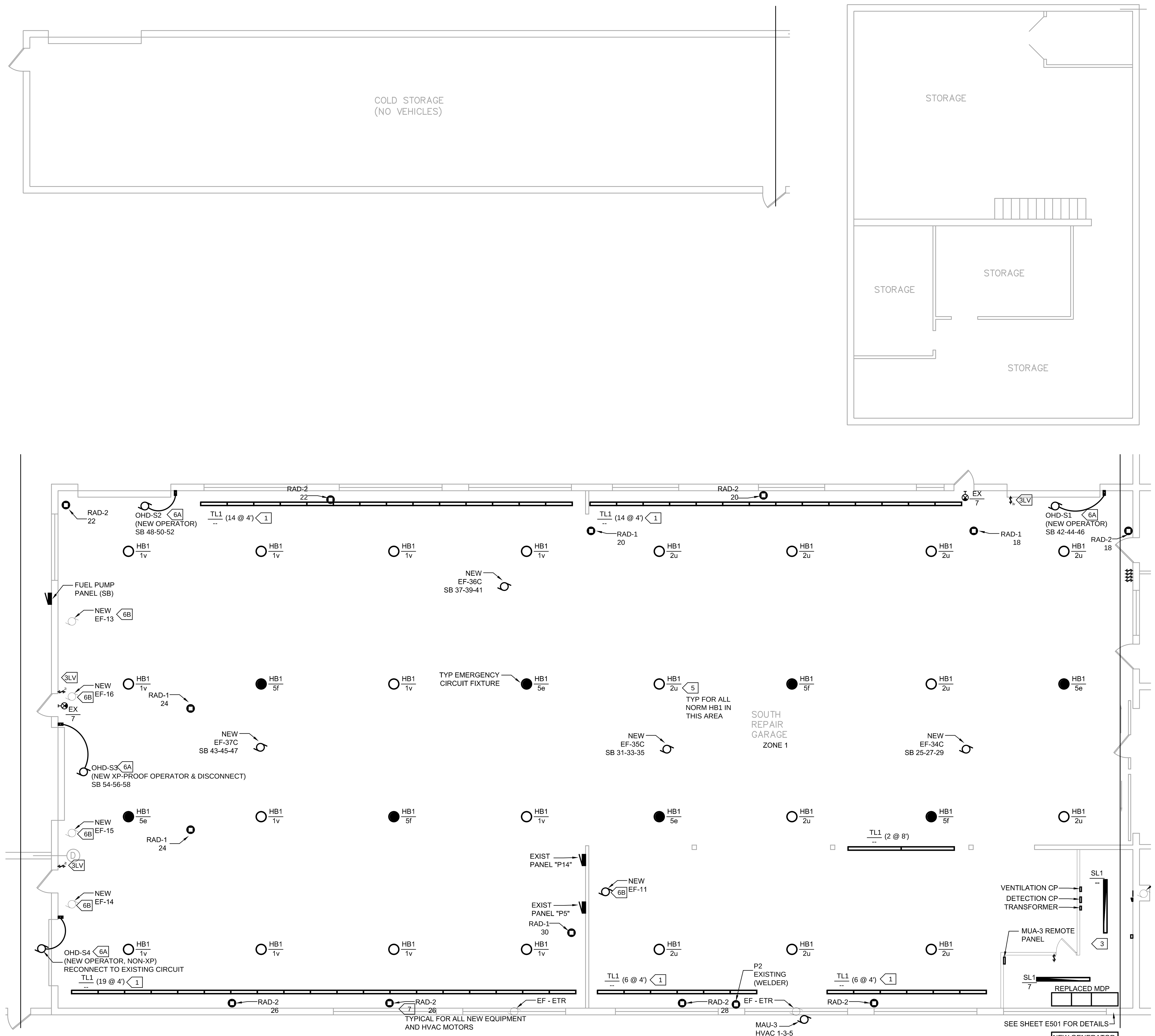
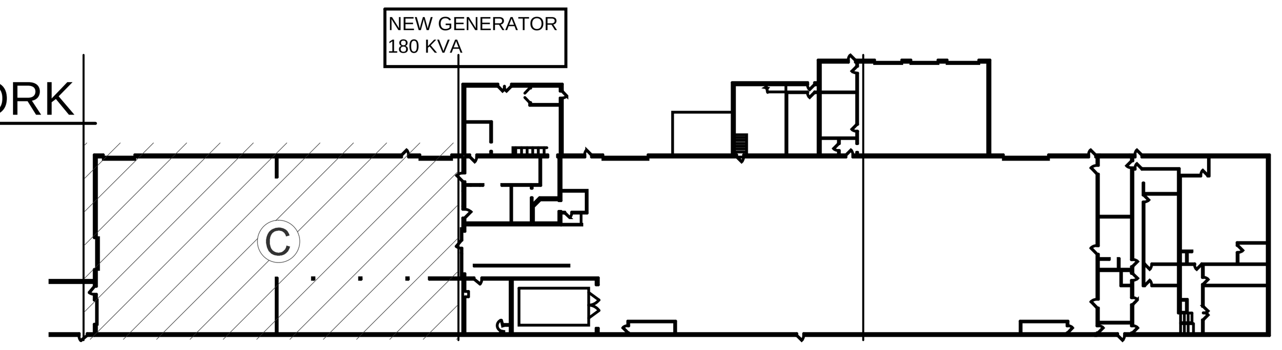


1 E102 MAIN LEVEL FLOOR PLAN (AREA C) - ELECTRICAL NEW WORK
SCALE: 1/8" = 1' - 0"

SPECIFIC NOTES:

1. PROVIDE CIRCUIT AND CONTROL FROM EXISTING TASK LIGHTS BEING REMOVED
   - UTILIZE SIMILAR MOUNTING AS EXISTING.
2. PROVIDE CIRCUITS FOR SOUTH GARAGE FROM THIS PANEL, USING SPACE, SPARE, OR CIRCUITS FROM LIGHTS BEING REMOVED - LIGHTING CONTROL FROM "LCP"
2LV. PROVIDE LOW VOLTAGE OVER-RIDE SWITCH TO CONTROL FIXTURES IN SOUTH GARAGE
3. PROVIDE CIRCUITS FOR NORTH GARAGE FROM THIS PANEL, USING SPACE, SPARE, OR CIRCUITS FROM LIGHTS BEING REMOVED - LIGHTING CONTROL FROM "LCP"
3LV. PROVIDE LOW VOLTAGE OVER-RIDE SWITCH TO CONTROL FIXTURES IN NORTH GARAGE
4. PROVIDE CIRCUITS FOR ELECTRICAL SHOP FROM THIS PANEL, USING SPACE, SPARE, OR CIRCUITS FROM LIGHTS BEING REMOVED - LIGHTING CONTROL FROM "LCP"
4LV. PROVIDE LOW VOLTAGE OVER-RIDE SWITCH TO CONTROL FIXTURES IN ELECTRICAL REPAIR SHOP
5. CIRCUIT INDICATED IS REPRESENTATIVE OF CIRCUIT GROUPING ONLY - ACTUAL CIRCUIT TO BE DEPENDANT ON LIGHTS BEING REPLACED, OR USE OF SPARE, SPACES IN EXISTING PANELS - FIELD VERIFY.
6A. CONNECT NEW OHD MOTOR TO NEW EMERGENCY CIRCUIT INDICATED
   NOTE: FOR OHD'S, ACQUIRE CONTROLS FROM DOOR SUPPLIER, FOR EC INSTALLATION.
6B. RECONNECT NEW MOTOR FROM EXISTING CIRCUIT OF EQUIPMENT BEING REPLACED
   - COORDINATE EXISTING ANEW CIRCUIT REQUIREMENTS WITH HVAC CONTRACTOR
7. PROVIDE NEW CIRCUIT TO NEW EQUIPMENT OR MOTOR FROM NEW PANEL "HVAC"

ABBREVIATIONS:
ETR = EXISTING TO REMAIN



KEY PLAN

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FISH HATCHERY HIGHWAY GARAGE - CNG RETROFIT

2302 FISH HATCHERY RD,
MADISON, WI 53713

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Dane County Department of Public Works, Highway and Transportation
Public Works Engineering Division
1919 Alliant Energy Center Way
Madison, WI 53713

Drawing Title:
PARTIAL FLOOR PLAN - AREA C - ELECTRICAL NEW WORK

Drawn By:

Drawing No.
E102

Luminaire Schedule							
Symbol	Qty	Tag	Label	Description	Lum. Watts	Lum. Lumens	LLF
	24		JCBL_18000LM_ACFR_40K_80CRI_A	JCBL 18000LM ACFR 40K 80CRI ACRFGL	125	17135	0.750

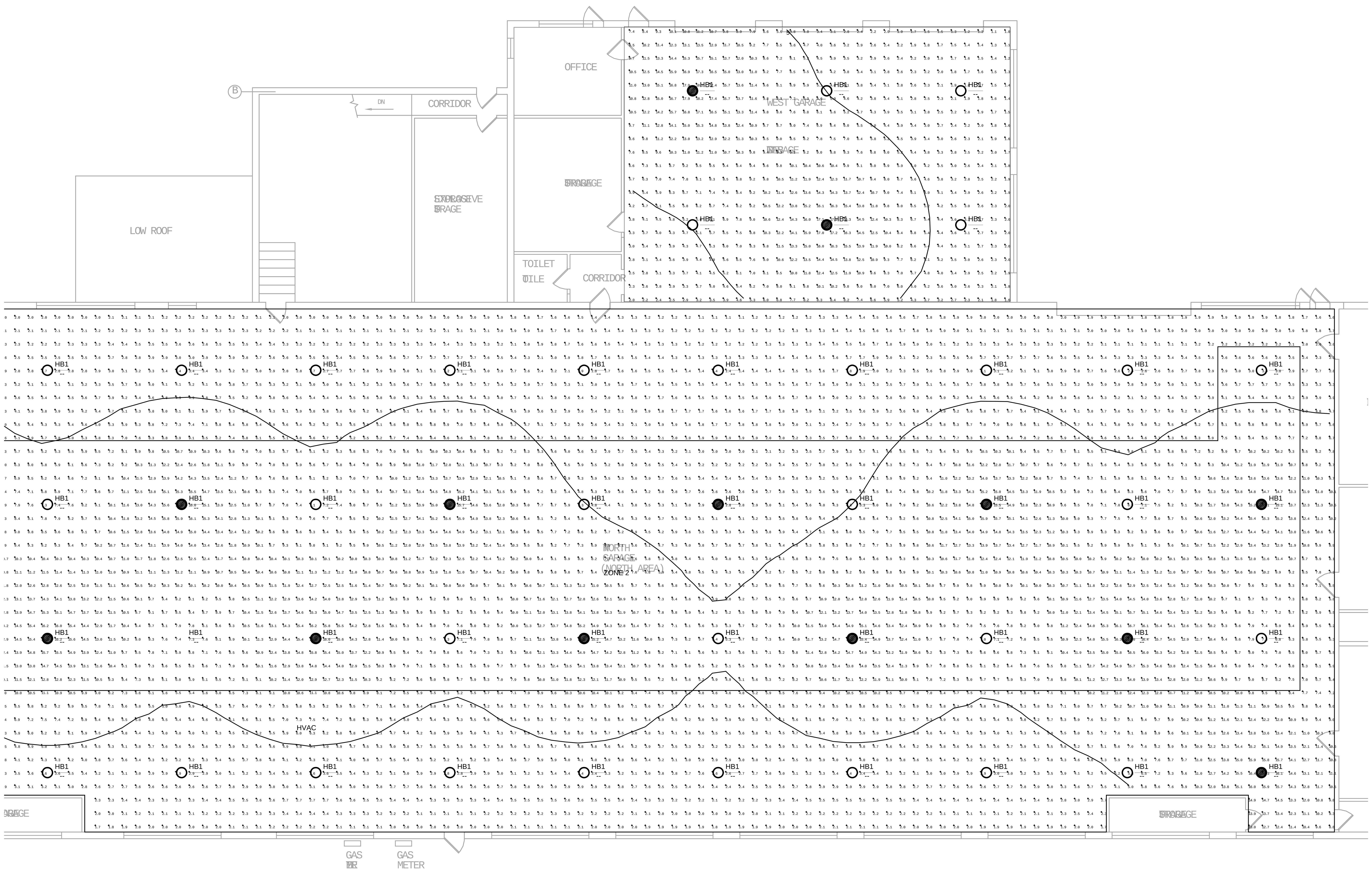
LPDArea_1

Area = 12620 Sq.ft
Total Watts = 1000
LPD = 0.079 Watts/Sq.ft

LPDArea_2

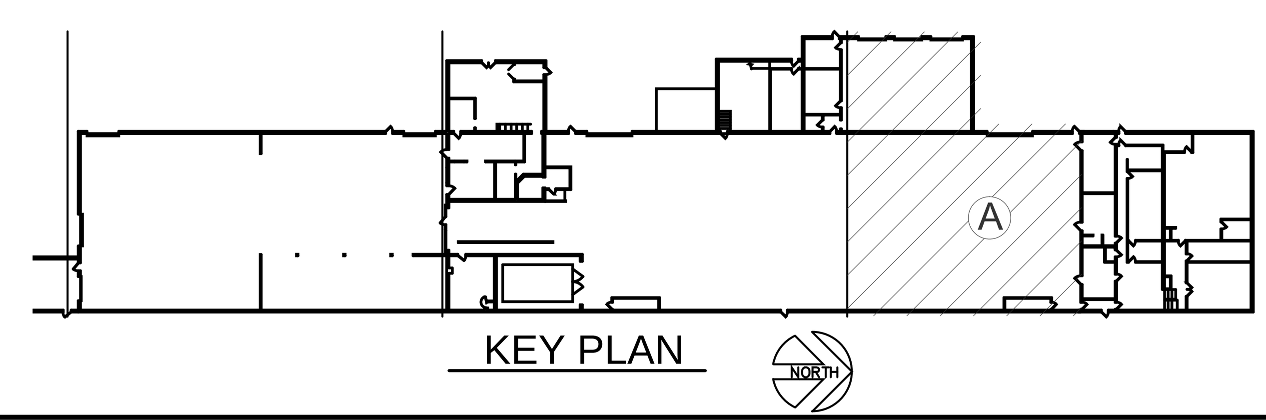
Area = 18723 Sq.ft
Total Watts = 1750
LPD = 0.093 Watts/Sq.ft

Calculation Summary							
Label	CalcType	Units	Avg	Max	Min	Avg/Min	Max/Min
North Garage_Floor	Illuminance	Fc	7.23	19.8	0.2	36.15	99.00
South Repair Garage_Floor	Illuminance	Fc	6.51	17.7	0.7	9.30	25.29
West Garage_Floor	Illuminance	Fc	7.07	18.2	1.0	7.07	18.20
Path of Egress	Illuminance	Fc	9.93	19.8	1.5	6.62	13.20



1 E200 MAIN LEVEL FLOOR PLAN (AREA A) - EMERGENCY EGRESS LIGHTING

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



KEY PLAN

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Project No. 18-1216

BEAR VALLEY
ENGINEERING & CONSULTING

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2302 FISH HATCHERY RD,
MADISON, WI 53713

DANE COUNTY RFB# 318029

Dane County Department of Public Works, Highway and Transportation
Public Works Engineering Division
1919 Alliant Energy Center Way
Madison, WI 53713

Drawing Title:

PARTIAL FLOOR PLAN - AREA A - EMERGENCY EGRESS LIGHTING

Drawn By:

Drawing No.

E200

Luminaire Schedule							
Symbol	Qty	Tag	Label	Description	Lum. Watts	Lum. Lumens	LLF
	24		JCBL_18000LM_ACFR_40K_80CRI_A	JCBL 18000LM ACFR 40K 80CRI ACRFGL	125	17135	0.750

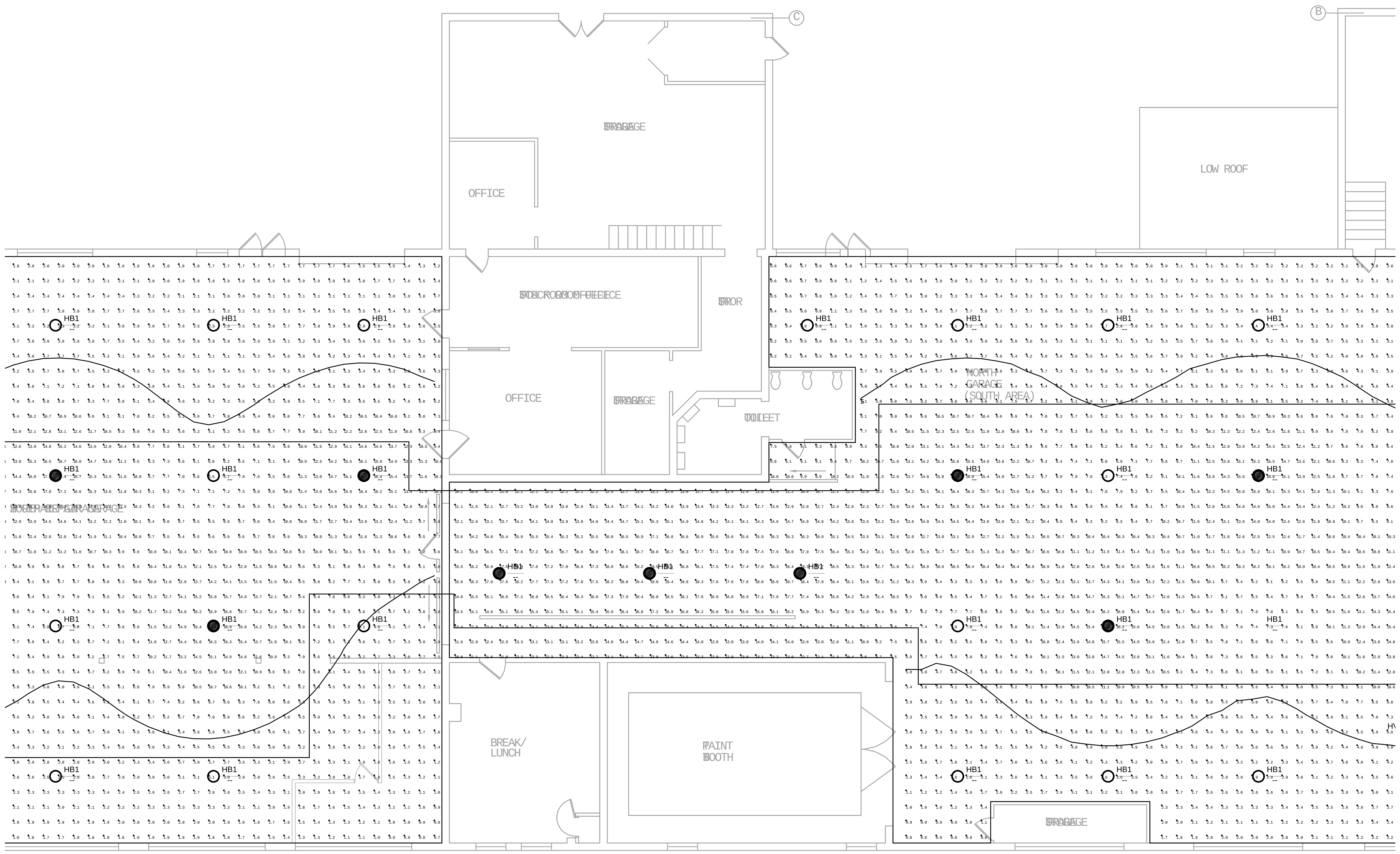
LPDArea_1

Area = 12620 Sq.ft
Total Watts = 1000
LPD = 0.079 Watts/Sq.ft

LPDArea_2

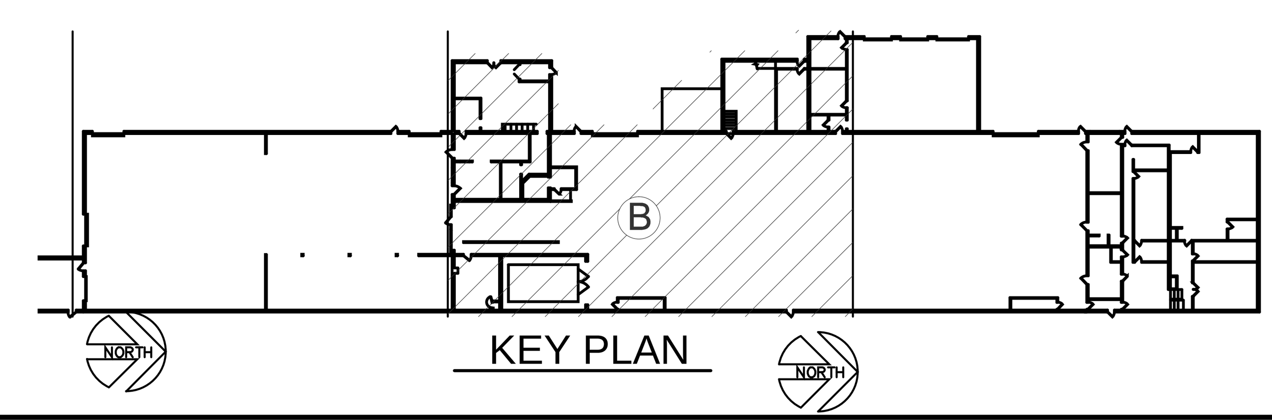
Area = 18723 Sq.ft
Total Watts = 1750
LPD = 0.093 Watts/Sq.ft

Calculation Summary							
Label	CalcType	Units	Avg	Max	Min	Avg/Min	Max/Min
North Garage_Floor	Illuminance	Fc	7.23	19.8	0.2	36.15	99.00
South Repair Garage_Floor	Illuminance	Fc	6.51	17.7	0.7	9.30	25.29
West Garage_Floor	Illuminance	Fc	7.07	18.2	1.0	7.07	18.20
Path of Egress	Illuminance	Fc	9.93	19.8	1.5	6.62	13.20



1 E201 MAIN LEVEL FLOOR PLAN (AREA B) - EMERGENCY EGRESS LIGHTING

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



KEY PLAN

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Public Works Engineering Division
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Madison, WI 53713

Drawing Title:
PARTIAL FLOOR PLAN - AREA B - EMERGENCY EGRESS LIGHTING

Drawing No.
Drawn By:

E201

Luminaire Schedule							
Symbol	Qty	Tag	Label	Description	Lum. Watts	Lum. Lumens	LLF
	24		JCBL_18000LM_ACFR_40K_80CRI_A	JCBL 18000LM ACFR 40K 80CRI ACRFGL	125	17135	0.750

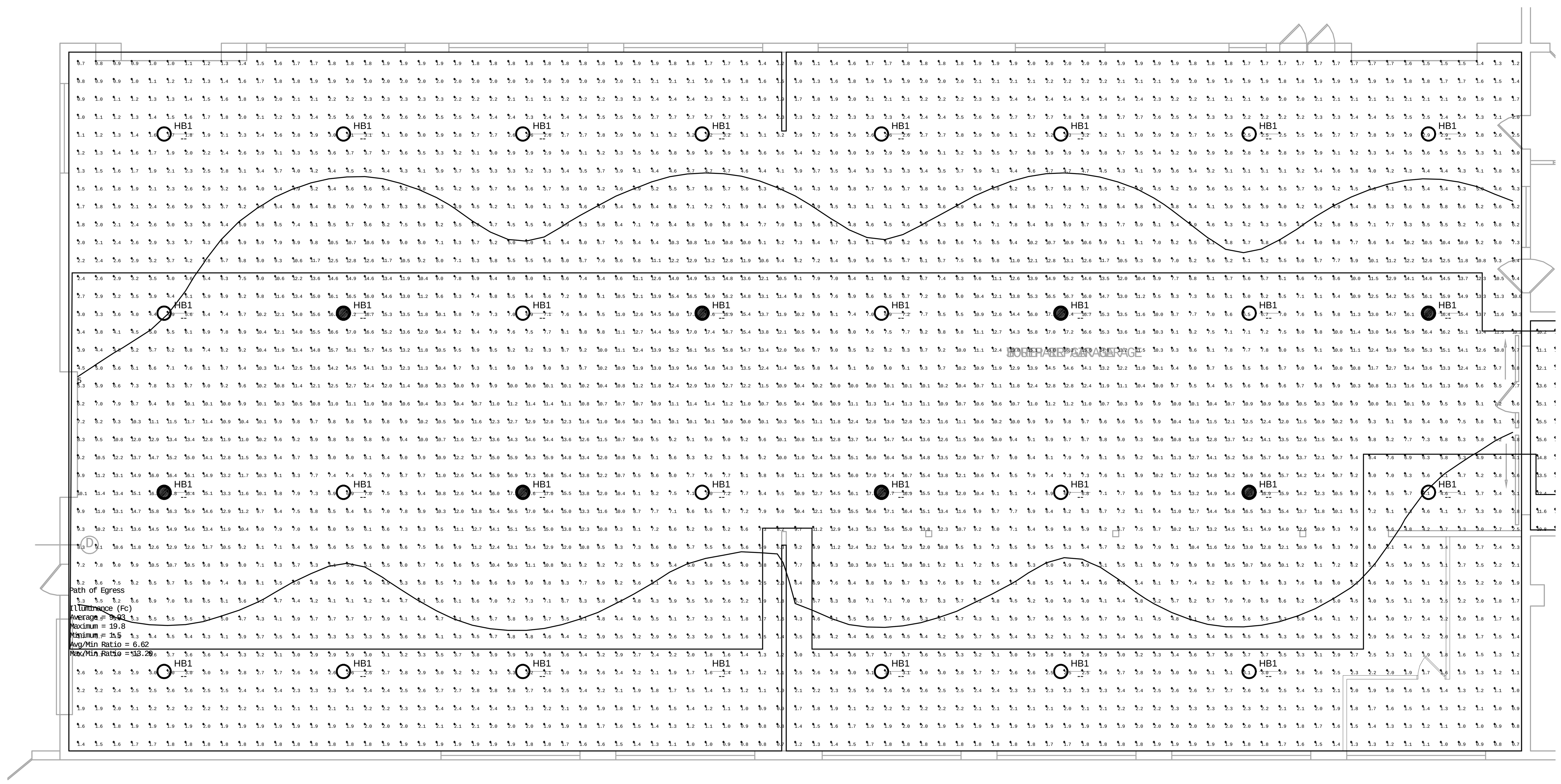
LPDArea_1

Area = 12620 Sq.ft
Total Watts = 1000
LPD = 0.079 Watts/Sq.ft

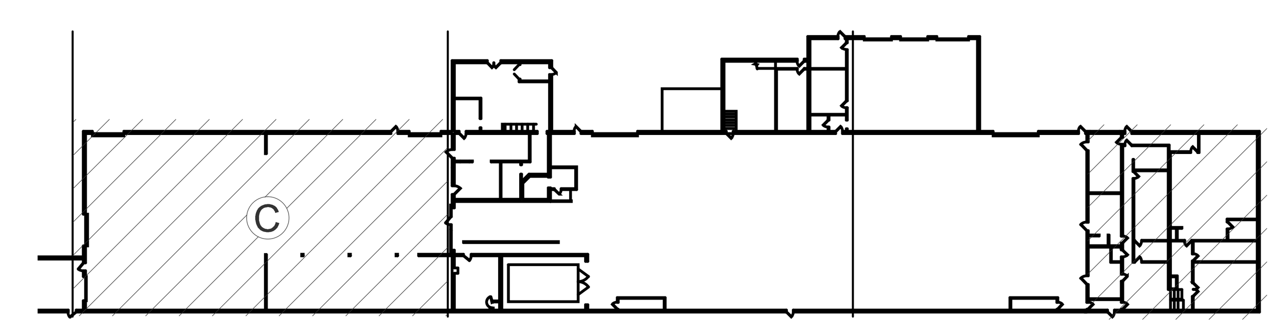
LPDArea_2

Area = 18723 Sq.ft
Total Watts = 1750
LPD = 0.093 Watts/Sq.ft

Calculation Summary							
Label	CalcType	Units	Avg	Max	Min	Avg/Min	Max/Min
North Garage_Floor	Illuminance	Fc	7.23	19.8	0.2	36.15	99.00
South Repair Garage_Floor	Illuminance	Fc	6.51	17.7	0.7	9.30	25.29
West Garage_Floor	Illuminance	Fc	7.07	18.2	1.0	7.07	18.20
Path of Egress	Illuminance	Fc	9.93	19.8	1.5	6.62	13.20



1
E202
MAIN LEVEL FLOOR PLAN (AREA C) - EMERGENCY EGRESS LIGHTING
SCALE: 1/8" = 1' - 0"



KEY PLAN

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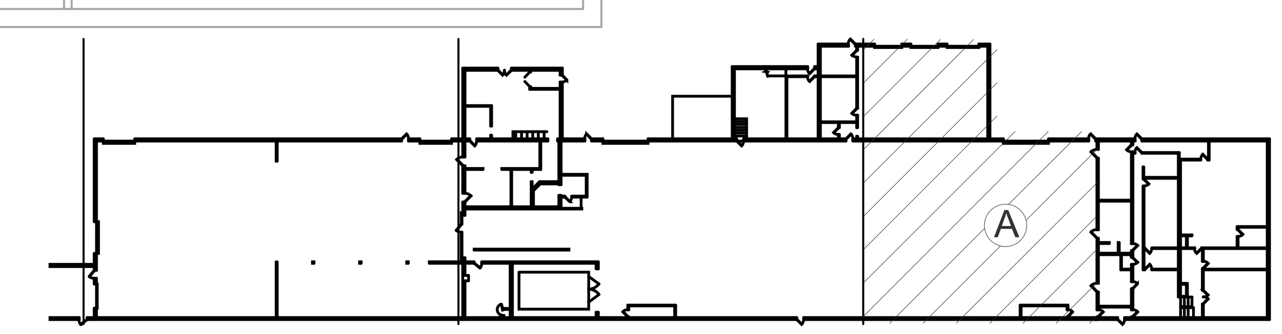
Drawing Title:
PARTIAL FLOOR PLAN - AREA C -EMERGENCY EGRESS LIGHTING

Drawing No.
E202

Drawn By:

1 E300 MAIN LEVEL FLOOR PLAN (AREA A) - FIRE ALARM
SCALE: 1/8" = 1' - 0"



KEY PLAN

NORTH

SPECIFIC NOTES:

1 REMOVE EXISTING DEVICE OR LIGHT FIXTURE - REPLACE WITH NEW IN SAME PLACE

1 REMOVE EXISTING DEVICE OR LIGHT FIXTURE (SHOWN ON DEMOLITION/EXISTING PLAN) & EXTEND WIRING TO NEW LOCATION (SHOWN ON NEW PLAN).
- EITHER REUSE EXISTING DEVICE OR REPLACE WITH NEW, IN REVISED LOCATION AS INDICATED ON NEW PLAN
- EXTEND EXISTING WIRING AS REQUIRED.
- PROVIDE BLANK COVER PLATE OVER REMAINING OPEN BACKBOX

1 RELOCATED (OR NEW) DEVICE OR LIGHT FIXTURE (SHOWN ON NEW PLAN) EXTENDED FROM EXISTING LOCATION.
- REUSE EXISTING DEVICE/FIXTURE, OR PROVIDE NEW AS INDICATED ON PLAN.

1 DISCONNECT AND REMOVE:
- WHEN SHOWN FOR A PARTICULAR DEVICE, REMOVE EXISTING DEVICE AND WIRING - PROVIDE NEW BLANK COVER PLATE.

-WHEN SHOWN FOR AN AREA WHERE WALLS/CEILINGS ARE REMOVED, REMOVE ALL ELECTRICAL DEVICES AND FIXTURES IN INDICATED AREA

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DANE COUNTY RFB# 318029

Dane County Department of Public Works, Highway and Transportation
Public Works Engineering Division
1919 Alliant Energy Center Way
Madison, WI 53713

Drawing Title:
PARTIAL FLOOR PLAN - AREA A - FIRE ALARM

Drawn By:

Drawing No.
E300

1
E301
MAIN LEVEL FLOOR PLAN (AREA B) - FIRE ALARM
SCALE: 1/8" = 1' - 0"

SPECIFIC NOTES:

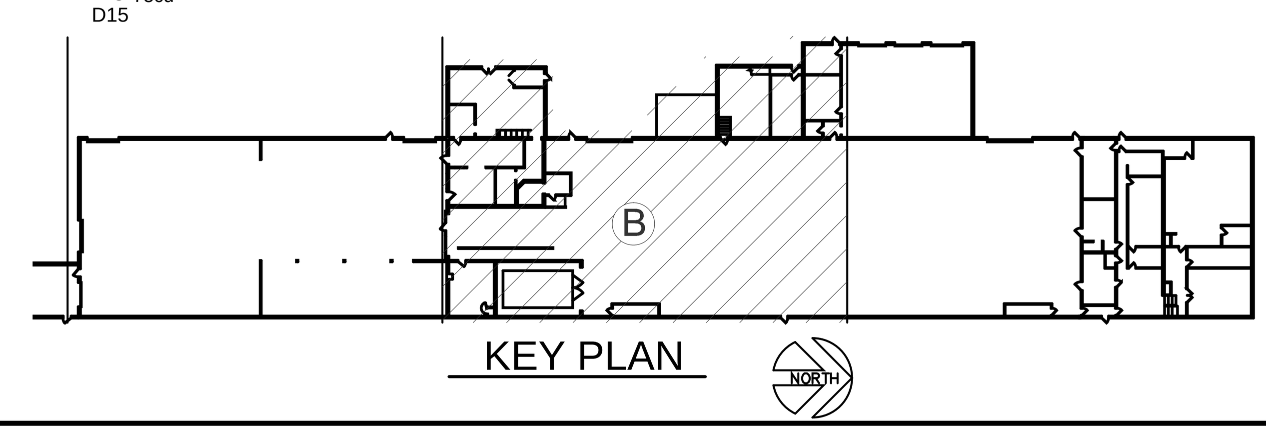
1. REMOVE EXISTING DEVICE OR LIGHT FIXTURE - REPLACE WITH NEW IN SAME PLACE

1. REMOVE EXISTING DEVICE OR LIGHT FIXTURE (SHOWN ON DEMOLITION/EXISTING PLAN) & EXTEND WIRING TO NEW LOCATION (SHOWN ON NEW PLAN).
   - EITHER REUSE EXISTING DEVICE OR REPLACE WITH NEW, IN REVISED LOCATION AS INDICATED ON NEW PLAN
   - EXTEND EXISTING WIRING AS REQUIRED.
   - PROVIDE BLANK COVER PLATE OVER REMAINING OPEN BACKBOX

1. RELOCATED (OR NEW) DEVICE OR LIGHT FIXTURE (SHOWN ON NEW PLAN) EXTENDED FROM EXISTING LOCATION.
   - REUSE EXISTING DEVICE/FIXTURE, OR PROVIDE NEW AS INDICATED ON PLAN.

1. DISCONNECT AND REMOVE:
   - WHEN SHOWN FOR A PARTICULAR DEVICE, REMOVE EXISTING DEVICE AND WIRING - PROVIDE NEW BLANK COVER PLATE.

   -WHEN SHOWN FOR AN AREA WHERE WALLS/CEILINGS ARE REMOVED, REMOVE ALL ELECTRICAL DEVICES AND FIXTURES IN INDICATED AREA



KEY PLAN

Engineering 370, LLC
MECHANICAL CONSULTING

Oregon, WI 53575
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Project No. 18-1216

BEAR VALLEY
ENGINEERING & CONSULTING

Date	Issuance/Revisions	Symbol
02/11/20	ISSUED FOR OWNER REVIEW	
02/24/20	ISSUED FOR BIDDING AND CONSTRUCTION	

FISH HATCHERY HIGHWAY
GARAGE - CNG RETROFIT

2302 FISH HATCHERY RD,
MADISON, WI 53713

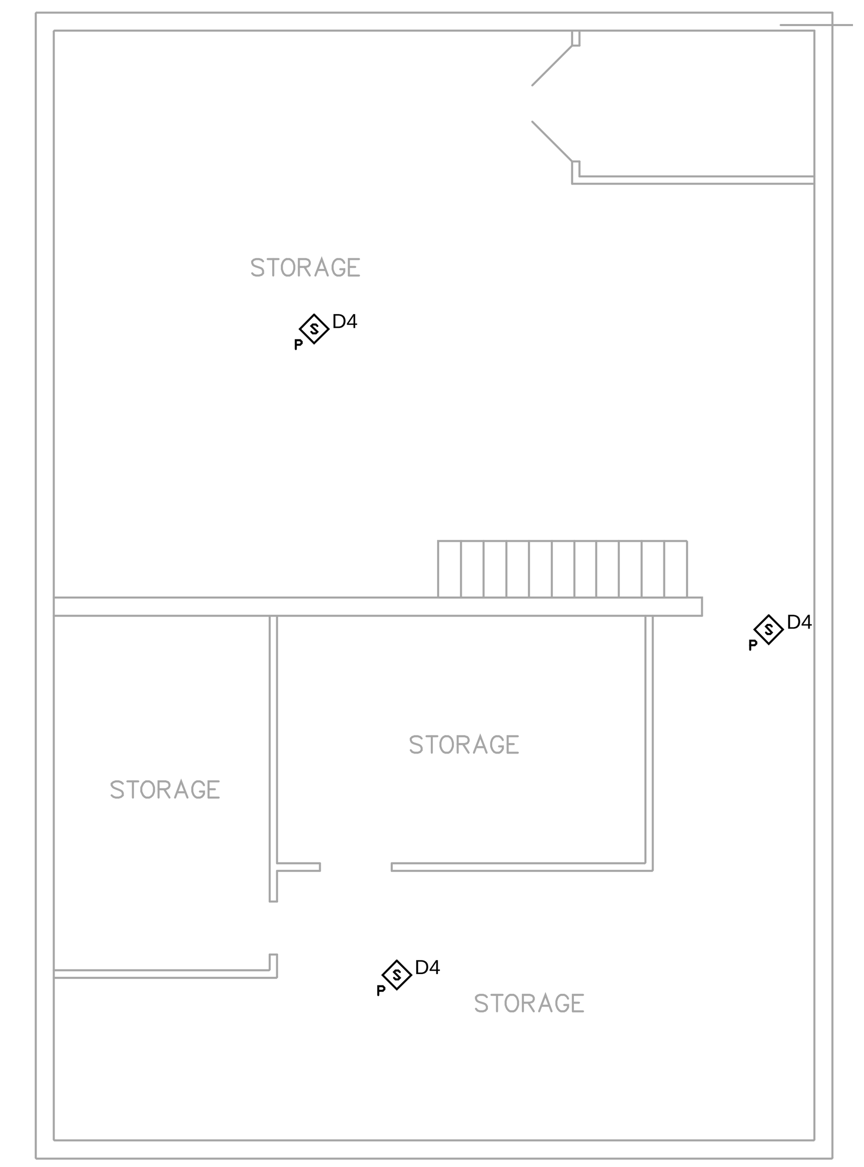
DANE COUNTY RFB# 318029

Dane County Department of Public Works, Highway and Transportation
Public Works Engineering Division
1919 Alliant Energy Center Way
Madison, WI 53713

Drawing Title:
PARTIAL FLOOR PLAN - AREA B - FIRE ALARM

Drawn By:

Drawing No.
E301



SPECIFIC NOTES:

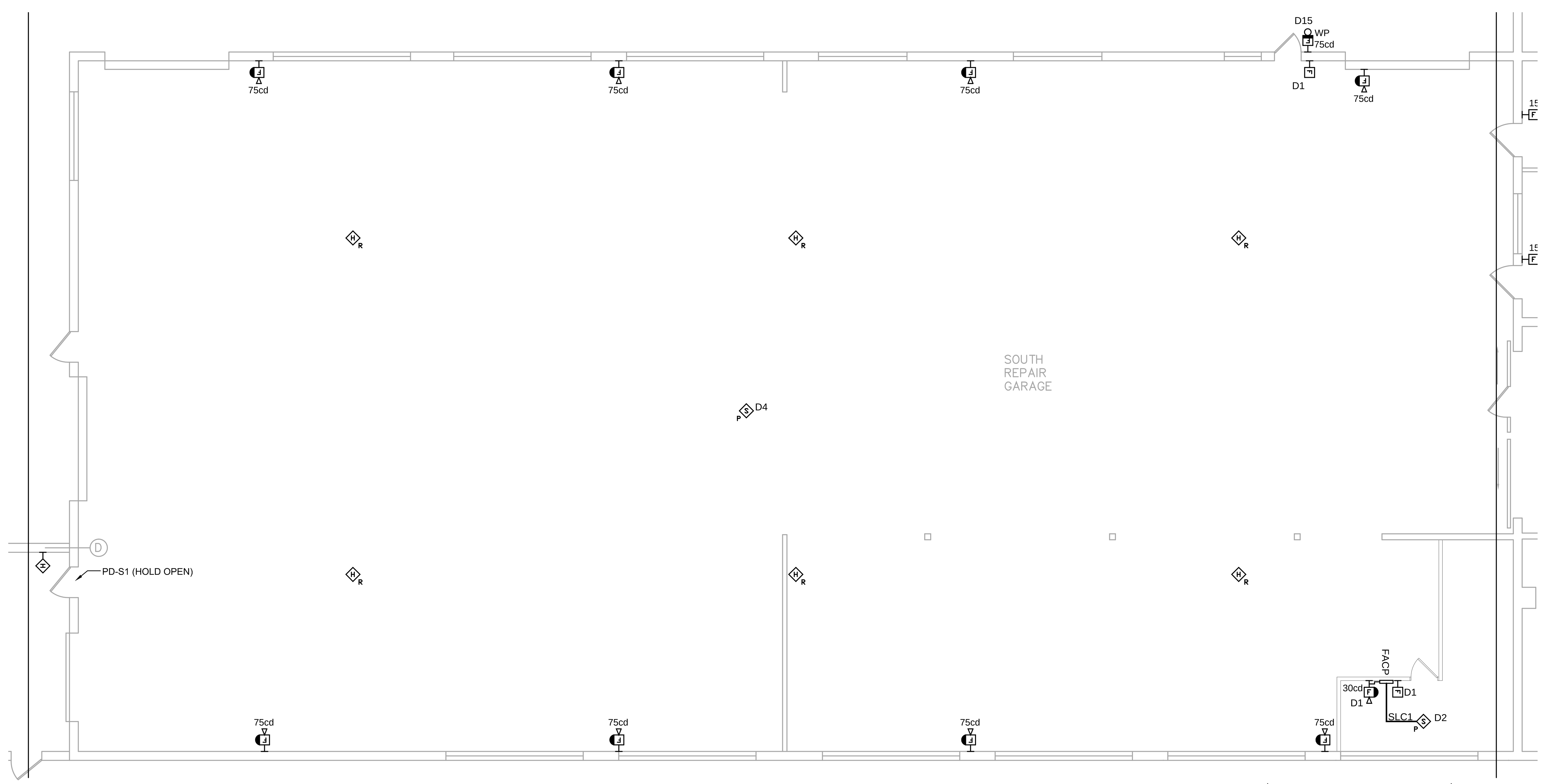
1 REMOVE EXISTING DEVICE OR LIGHT FIXTURE - REPLACE WITH NEW IN SAME PLACE

1 REMOVE EXISTING DEVICE OR LIGHT FIXTURE (SHOWN ON DEMOLITION/EXISTING PLAN) & EXTEND WIRING TO NEW LOCATION (SHOWN ON NEW PLAN).
- EITHER REUSE EXISTING DEVICE OR REPLACE WITH NEW, IN REVISED LOCATION AS INDICATED ON NEW PLAN
- EXTEND EXISTING WIRING AS REQUIRED.
- PROVIDE BLANK COVER PLATE OVER REMAINING OPEN BACKBOX

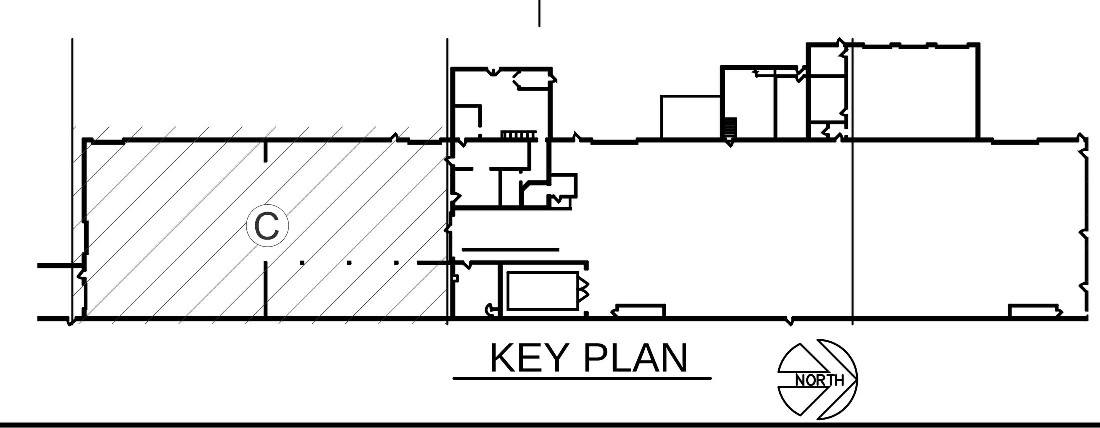
1 RELOCATED (OR NEW) DEVICE OR LIGHT FIXTURE (SHOWN ON NEW PLAN) EXTENDED FROM EXISTING LOCATION.
- REUSE EXISTING DEVICE/FIXTURE, OR PROVIDE NEW AS INDICATED ON PLAN.

1 DISCONNECT AND REMOVE:
- WHEN SHOWN FOR A PARTICULAR DEVICE, REMOVE EXISTING DEVICE AND WIRING - PROVIDE NEW BLANK COVER PLATE.

-WHEN SHOWN FOR AN AREA WHERE WALLS/CEILINGS ARE REMOVED, REMOVE ALL ELECTRICAL DEVICES AND FIXTURES IN INDICATED AREA



1
E302
MAIN LEVEL FLOOR PLAN (AREA C) - FIRE ALARM
SCALE: 1/8" = 1' - 0"



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Public Works Engineering Division
1919 Alliant Energy Center Way
Madison, WI 53713

Drawing Title:

PARTIAL FLOOR PLAN - AREA C - FIRE ALARM

Drawing No.

Drawn By:

E302

PANEL "P1" — Feeds __

225 AMPS 100A MAIN BREAKER 120/208 VOLT 3 PHASE 4 WIRE RECESSED MOUNTING

BREAKER AMPS	POLES	DESCRIPTION	WATTS	CIRCUIT #	PHASE LOADS A	B	C	CIRCUIT #	WATTS	DESCRIPTION	BREAKER AMPS	POLES
		BLANK		1	0			2		DOOR OPENER BY SHOP OFFICE	20	1
20	1	STOCK ROOM HEATER		3		0		4		TIME CLOCK FEED - EXHAUST FANS	30	2
15	1			5			0	6		~	~	~
20	3	WASHER - STEAM CLEANER		7	0			8		LARGE HEATER - NO GARAGE	40	3
~	~	~		9		0		10		~	~	~
~	~	~		11			0	12		~	~	~
20	3	SMALL DRILL PRESS		13	0			14		??	30	3
~	~	~		15		0		16		~	~	~
~	~	~		17			0	18		~	~	~
40	3	ROOF FAN WASH RACK		19	0			20		HORIZONTAL MILL - BAND SAW - DRUM LATHE	30	3
~	~	~		21		0		22		~	~	~
~	~	~		23			0	24		~	~	~
20	3	PAINT SHOP HEATER		25	0			26		VERTICAL MILL	40	3
~	~	~		27		0		28		~	~	~
~	~	~		29			0	30		~	~	~
30	3	PAINT BOOTH FANS		31	0			32		PAINT BOOTH LIGHTS	20	1
~	~	~		33		0		34		PAINT BOOTH LIGHTS	20	1
~	~	~		35			0	36		TIME CLOCK CIRCUIT	20	1
30	3	PAINT BOOTH FANS		37	0			38		EXIT LIGHTS	20	1
~	~	~		39		0		40		SEWING MACHINE	20	1
~	~	~		41			0	42		??	20	1
					0	0	0					
		TOTAL LOADS:	0	WATTS								
			0	AMPS								

"P2 BREAKER" — Feeds

BREAKER AMPS	POLES	DESCRIPTION	WATTS	CIRCUIT #	PHASE LOADS A	B	C	CIRCUIT #	WATTS	DESCRIPTION	BREAKER AMPS	POLES
X	3	WELDER PLUG		1	0			2				
				3		0		4				
				5			0	6				
					0	0	0					
		TOTAL LOADS:	0	WATTS								
			0	AMPS								

PANEL "P3" — Feeds NORTH SHOP WEST WALL LIGHTS (ZONE 2)

225 AMP PANEL 120/208 VOLT 3 PHASE 4 WIRE RECESSED MOUNTING

BREAKER AMPS	POLES	DESCRIPTION	WATTS	CIRCUIT #	PHASE LOADS A	B	C	CIRCUIT #	WATTS	DESCRIPTION	BREAKER AMPS	POLES
20	1	SOUTH MIDDLE LIGHTS		1	0			2			30	1
30	1	SOUTH WEST LIGHTS		3		0		4		SOUTH WEST LIGHTS	30	1
30	1	MIDDLE LIGHTS		5			0	6		MIDDLE LIGHTS	30	1
30	1	MIDDLE LIGHTS		7	0			8		MIDDLE LIGHTS	30	1
30	1	EAST LIGHTS		9		0		10		EAST LIGHTS	30	1
20	1			11			0	12		SAW OUTLET	20	1
20	1	SIGN __ LIGHTS		13	0			14		WEST WALL OUTLETS	20	1
20	1	TIME CLOCK & LIGHTS		15		0		16		BASEMENT LIGHTS	20	1
20	1	SOUTH WEST FANS		17			0	18			20	1
20	1	BOOM ROOM		19	0			20		PRESS ROOM REZNOR UH	20	1
15	1	WEST WALL OUTLETS		21		0		22		FANS	20	1
	1	__BE HEAT		23			0	24			30	2
				25	0			26			~	~
				27		0		28				
				29			0	30				
				31	0			32				
				33		0		34				
				35			0	36				
				37	0			38				
				39		0		40				
				41			0	42				
					0	0	0					
		TOTAL LOADS:	0	WATTS								
			0	AMPS								

PANEL "P5" — Feeds SOUTH SHOP MIDDLE WALL LIGHTING (ZONE 1)

200 AMPS 200A MAIN BREAKER 120/208 VOLT 3 PHASE 4 WIRE RECESSED MOUNTING

BREAKER AMPS	POLES	DESCRIPTION	WATTS	CIRCUIT #	PHASE LOADS A	B	C	CIRCUIT #	WATTS	DESCRIPTION	BREAKER AMPS	POLES
		WEST OUTSIDE LIGHTS		1	0			2		SOUTH EAST OUTSIDE LIGHTS		
15		SOUTH OUTSIDE LIGHTS		3		0		4		SOUTH EAST RECEPTACLE	20	
20		WEST RECEPTACLE		5			0	6		NORTH EAST RECEPTACLE	20	
20		WEST RECEPTACLE		7	0			8		EAST BENCH LIGHTS	20	
20				9		0		10		CONTROL UNIT HEATERS	20	
20		LIGHTS OVER DOORS		11			0	12			20	
20				13	0			14		SECOND ROW LIGHTS	20	
90		BOB'S WELDER		15		0		16			20	
~~				17			0	18		LIGHTS NEW		
20				19	0			20		LIGHTS NEW	20	
20				21		0		22				
~~				23			0	24			50	
					0	0	0					
		TOTAL LOADS:	0	WATTS								
			0	AMPS								

PANEL "P6" — Feeds Spray Booth per MDP, location unknown

BREAKER AMPS	POLES	DESCRIPTION	WATTS	CIRCUIT #	PHASE LOADS A	B	C	CIRCUIT #	WATTS	DESCRIPTION	BREAKER AMPS	POLES
					0	0	0					
		TOTAL LOADS:	0	WATTS								
			0	AMPS								

PANEL "P7" — Feeds ELECTRIC SHOP (ZONE 3)

225 AMPS 225A MAIN BREAKER 120/240 VOLT 1 PHASE 3 WIRE RECESSED MOUNTING

BREAKER AMPS	POLES	DESCRIPTION	WATTS	CIRCUIT #	PHASE LOADS A	B	C	CIRCUIT #	WATTS	DESCRIPTION	BREAKER AMPS	POLES
20		BIG DOOR OPENER		1	0			2		RECEPTS THIS WALL	20	
20		CENTER DOOR OPENER		3		0		4		STORAGE ?	20	
20		SOUTH DOOR OPENER		5			0	6		AIR ? & ELEC HEAT	20	
~~				7	0			8			~~	
20				9		0		10			20	
20				11			0	12			20	
20				13	0			14			20	
20				15		0		16			20	
20				17			0	18		OFFICE	20	
20		LIGHTS B WALL		19	0			20		TOILET & RECEPTS THIS WALL	20	
50		RECEPTS GARAGE WALL		21		0		22			20	
~~				23			0	24			20	
					0	0	0					
		TOTAL LOADS:	0	WATTS								
			0	AMPS								

PANEL "P8" — Feeds SHOP, MACHINE SHOP, BREAK ROOM, PANELS, ETC.

200 AMP PANEL

BREAKER AMPS	POLES	DESCRIPTION	WATTS	CIRCUIT #	PHASE LOADS A	B	C	CIRCUIT #	WATTS	DESCRIPTION	BREAKER AMPS	POLES
~~		SPARE?		1	0			2		PANEL - NORTH END GARAGE	60	
40		PANEL IN PARTS ROOM		3		0		4		~~	~~	
20		MACHINE SHOP BELT SANDER		5			0	6		PANEL IN PARTS OFFICE	80	
20		MACHINE SHOP OUTLETS		7	0			8			~~	
20		GAS PUMP		9		0		10			20	
20		PARTS ROOM CEILING LIGHTS		11			0	12		MACHINE SHOP DRILL PRESS OUTLET	20	
20		STOCK ROOM CEILING LIGHTS & OUTLETS		13	0			14			20	
20		MACHINE SHOP, WELDER SHOP WALL OUTLETS		15		0		16		WASH RACK, PAINT ROOM WALL OUTLETS	20	
20		WELDER SHOP CEILING LIGHTS		17			0	18		A) BREAK RM LTS W/S RECEPTS B)BREAK RM RECEPTS	20	
20		WELDER SHOP CEILING LIGHTS & BENCH LIGHTS		19	0			20		A) BREAK RM NORTH B) BREAK RM KITCH DRAIN P	20	
20				21		0		22		A) BREAK RM NORTH B) BREAK RM COUNTER	20	
20		MACHINE SHOP CEILING LIGHTS		23			0	24		BREAK ROOM WATER HEATER & SOUP VENDOR	30	
20		WASH RACK CEILING LIGHTS		25	0			26		BREAK ROOM MICRO & CIG MACHINE	20	
20		WASH RACK CEILING LIGHTS		27		0		28		WASH RACK CEILING LIGHTS	20	
20		REPAIR SHOP CEILING LIGHTS & BENCH LIGHTS		29			0	30		WASH RACK CEILING LIGHTS	20	
20		SHOP AREA CEILING LIGHTS		31	0			32			20	
20		RON EVERT OFFICE LIGHTS & OUTLETS & RADIO		33		0		34		REPAIR SHOP BENCH OUTLETS	20	
??		MAIN		35			0	36		SHOP AREA CEILING LIGHTS	20	
~~				37	0			38			20	
20				39		0		40			20	
20				41			0	42			20	
					0	0	0					
		TOTAL LOADS:	0	WATTS								
			0	AMPS								

PANEL "P9" — Feeds xxx

400 AMPS 120/240V

BREAKER AMPS	POLES	DESCRIPTION	WATTS	CIRCUIT #	PHASE LOADS A	B	C	CIRCUIT #	WATTS	DESCRIPTION	BREAKER AMPS	POLES
				1	0			2				
				3		0		4				
				5			0	6				
				7	0			8				
				9		0		10				
				11			0	12				
				13	0			14				
				15		0		16				
				17			0	18				
				19	0			20				
				21		0		22				
				23			0	24				
					0	0	0					
		TOTAL LOADS:	0	WATTS								
			0	AMPS								

PANEL "P11" — Feeds xxx

225 AMPS 230 V 3 PH

BREAKER AMPS	POLES	DESCRIPTION	WATTS	CIRCUIT #	PHASE LOADS A	B	C	CIRCUIT #	WATTS	DESCRIPTION	BREAKER AMPS	POLES
20		OHD NORTH END & CARPEPNTER SAW		1	0			2		OHD BY TIME CLOCK	20	
~~				3		0		4			~~	
~~				5			0	6			~~	
20		DISCONNECT BY NORTH OH DOOR		7	0			8		DISCONNECT BY COAL BIN	20	
~~				9		0		10			~~	
~~				11			0	12			~~	
20		DISCONNECT BY COAL BIN		13	0			14		GRINDER ELECT SHOP	20	
~~				15		0		16			~~	
~~				17			0	18			~~	
50				19	0			20			20	
~~				21		0		22			~~	
~~				23			0	24			~~	
				25	0			26		COMPRESSOR	50	
				27		0		28			~~	
				29			0	30			~~	
				31	0			32				
				33		0		34				
				35			0	36				
				37	0			38				
				39		0		40				
				41			0	42				
					0	0	0					
		TOTAL LOADS:	0	WATTS								
			0	AMPS								

PANEL "P12" — Feeds REPAIR SHOP EQ

225 AMP PANEL 120/208 VOLT 3 PHASE 4 WIRE RECESSED MOUNTING

BREAKER AMPS	POLES	DESCRIPTION	WATTS	CIRCUIT #	PHASE LOADS A	B	C	CIRCUIT #	WATTS	DESCRIPTION	BREAKER AMPS	POLES
60	3	HOIST		1	0			2		GRINDER & HOIST		3
~	~	~		3		0		4		~		~
~	~	~		5			0	6		~		~
30	3			7	0			8		STARTER BOX ABOVE SMALL WELDER		3
~	~			9		0		10		~		~
~	~			11			0	12		~		~
20	3	LATHE		13	0			14		JUNCTION BOX BY WELDER		3
~	~	~		15		0		16		~		~
~	~	~		17			0	18		~		~
	3	OUTLET ON POST BY MAIN SERVICE		19	0			20		ELEVATOR		3
	~	~		21		0		22		~		~
	~	~		23			0	24		~		~
	3	HOIST - WEST MACHINE SHOP		25	0			26		LUNCH ROOM HEATER		3
	~	~		27		0		28		~		~
	~	~		29			0	30		~		~
	2	BREAK ROOM AIR CONDITIONER		31	0			32		WELDER - EAST WALL		2
	~			33		0		34		~		~
90	3	MUA-3	5800	35			5800	36				
~	~	~	5800	37	5800			38				
~	~	~	5800	39		5800		40				
				41			0	42				
					5800	5800	5800					
		TOTAL LOADS:	17400	WATTS								
			48	AMPS								

PANEL "P13" — Feeds AIR CONDITIONERS

?? AMPS 240 V

BREAKER AMPS	POLES	DESCRIPTION	WATTS	CIRCUIT #	PHASE LOADS A	B	C	CIRCUIT #	WATTS	DESCRIPTION	BREAKER AMPS	POLES
??		SPARE		1	0			2		SPARE	??	
~~				3		0		4			~~	
~~				5			0	6			~~	
??		SPARE		7	0			8		FIRST FLOOR AIR COND.	??	
~~				9		0		10			~~	
~~				11			0	12			~~	
??		GARAGE LEVEL AIR COND.		13	0			14		BASEMENT AIR COND.	??	
~~				15		0		16			~~	
~~				17			0	18			~~	
					0	0	0					
		TOTAL LOADS:	0	WATTS								
			0	AMPS								

PANEL "P14" — Feeds REPAIR SHOP EQ

200 AMPS 200A MAIN BREAKER 120/208 VOLT 3 PHASE 4 WIRE RECESSED MOUNTING

BREAKER AMPS	POLES	DESCRIPTION	WATTS	CIRCUIT #	PHASE LOADS A	B	C	CIRCUIT #	WATTS	DESCRIPTION	BREAKER AMPS	POLES
50	2	WEST WELDERS		1	0			2				
~~	~~	~~		3		0		4			30	
20	2	PARTS WASHER		5			0	6				
~~	~~	~~		7	0			8				
30	2	WHEEL BALANCER		9		0		10				
~~	~~	~~		11			0	12			60 ?	
				13	0			14				
30	2	DOOR MOTORS		15		0		16		OVERHEAD HOIST	30	
~~				17			0	18				
40	3	METAL PUNCH		19	0			20				
~~	~~			21		0		22		EAST UNIT HEATER - WEST UNIT HEATER	30	
~~	~~			23			0	24				
				25	0			26				
30		NEW EXHAUST FAN - WEST & EAST FAN		27		0		28		TIRE CHANGER	30	
~~				29			0	30				
~~				31	0			32				
40		WEST HOIST PUMP MOTOR		33		0		34		EAST HOISE PUMP MOTOR	40	
~~				35			0	36				
~~				37	0			38		WIRE WELDER	70	3
100		WELDER		39		0		40			~~	~~
~~				41			0	42			~~	~~
					0	0	0					
		TOTAL LOADS:	0	WATTS								
			0	AMPS								

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Drawing Title:
EXISTING PANEL SCHEDULES

Drawn By:

Drawing No.
E401

NEW PANEL "HVAC" — Feeds new HVAC loads

200 AMPS 200A MAIN BREAKER 120/208 VOLT 3 PHASE 4 WIRE SURFACE MOUNTING

BREAKER AMPS	BREAKER POLES	DESCRIPTION	CIRCUIT WATTS	#	PHASE LOADS A	PHASE LOADS B	PHASE LOADS C	CIRCUIT #	WATTS	DESCRIPTION	BREAKER AMPS	BREAKER POLES
90	3	MUA - 3 (15 HP)	6000	1	7200			2	1200	RAD-2 (2) NORTH GARAGE	20	1
~~	~~	~~	6000	3		7200		4	1200	RAD- 1 & 2 NORTH GARAGE	20	1
~~	~~	~~	6000	5			7200	6	1200	RAD- 1 & 2 NORTH GARAGE	20	1
20	3	MUA - 4 (2 HP)	960	7	2160			8	1200	RAD- 1 & 2 ELECT REPAIR	20	1
~~	~~	~~	960	9		2160		10	1200	RAD-2 (2) NORTH GARAGE & ELECT REPAIR	20	1
~~	~~	~~	960	11			2160	12	1200	RAD-1 & 2 NORTH GARAGE	20	1
				13	1200			14	1200	RAD-1 (2) NORTH GARAGE	20	1
				15		600		16	600	RAD-2 (1) NORTH GARAGE	20	1
				17			1200	18	1200	RAD-2 (2) NORTH GARAGE	20	1
				19	1200			20	1200	RAD-1 & 2 SOUTH GARAGE	20	1
				21		1200		22	1200	RAD-2 (2) SOUTH GARAGE	20	1
				23			1200	24	1200	RAD-1 (2) SOUTH GARAGE	20	1
				25	1200			26	1200	RAD-2 (2) SOUTH GARAGE	20	1
				27		1200		28	1200	RAD-2 (2) SOUTH GARAGE	20	1
				29			600	30	600	RAD-1 (1) SOUTH GARAGE	20	1
				31	0			32			20	1
				33		0		34			20	1
				35			0	36			20	1
				37	0			38			20	1
				39		0		40				
				41			0	42				
					12960	12360	12360					
		TOTAL LOADS:	37680	WATTS								
			105	AMPS								
FHJ CNG												

NEW PANEL "EM - LIFE SAFETY" — Feeds EM Lighting

40 AMPS 400A MAIN BREAKER 120/208 VOLT 3 PHASE 4 WIRE SURFACE MOUNTING

BREAKER AMPS	BREAKER POLES	DESCRIPTION	CIRCUIT WATTS	#	PHASE LOADS A	PHASE LOADS B	PHASE LOADS C	CIRCUIT #	WATTS	DESCRIPTION	BREAKER AMPS	BREAKER POLES
20	1	LIGHTING - SOUTH GARAGE	1000	1	1000			2			20	1
20	1	LIGHTING - SOUTH GARAGE	875	3		875		4			20	1
20	1	LIGHTING - NORTH GARAGE	875	5			875	6			20	1
20	1	EXITS AND ELECTRICAL ROOM	100	7	100			8			20	1
				9		0		10			20	1
				11			0	12			20	1
				13	0			14			20	1
				15		0		16			20	1
				17			0	18			20	1
				19	0			20			20	1
				21		0		22			20	1
				23			0	24			20	1
				25	0			26				
				27		0		28				
				29			0	30				
				31	0			32				
				33		0		34				
				35			0	36				
				37	0			38				
				39		0		40				
				41			0	42				
					1100	875	875					
		TOTAL LOADS:	2850	WATTS								
			8	AMPS								
FHJ CNG												

NEW PANEL "STAND-BY" — Feeds Evac Motors and OHD's

400 AMPS MLO 120/208 VOLT 3 PHASE 4 WIRE SURFACE MOUNTING

BREAKER AMPS	BREAKER POLES	DESCRIPTION	CIRCUIT WATTS	#	PHASE LOADS A	PHASE LOADS B	PHASE LOADS C	CIRCUIT #	WATTS	DESCRIPTION	BREAKER AMPS	BREAKER POLES
20	3	EF-30C	1300	1	7100			2	5800	MUA 1 - 15 HP	60	3
~~	~~	~~	1300	3		7100		4	5800	~~	~~	~~
~~	~~	~~	1300	5			7100	6	5800	~~	~~	~~
20	3	EF-31C	1300	7	8800			8	7500	MUA 2 - 20 HP	90	3
~~	~~	~~	1300	9		8800		10	7500	~~	~~	~~
~~	~~	~~	1300	11			8800	12	7500	~~	~~	~~
20	3	EF-32C	1300	13	1900			14	600	OHD E1	20	3
~~	~~	~~	1300	15		1900		16	600	~~	~~	~~
~~	~~	~~	1300	17			1900	18	600	~~	~~	~~
20	3	EF-33C	1300	19	1900			20	600	OHD E2	20	3
~~	~~	~~	1300	21		1900		22	600	~~	~~	~~
~~	~~	~~	1300	23			1900	24	600	~~	~~	~~
20	3	EF-34C	1300	25	1900			26	600	OHD E3	20	3
~~	~~	~~	1300	27		1900		28	600	~~	~~	~~
~~	~~	~~	1300	29			1900	30	600	~~	~~	~~
20	3	EF-35C	1300	31	1900			32	600	OHD N1	20	3
~~	~~	~~	1300	33		1900		34	600	~~	~~	~~
~~	~~	~~	1300	35			1900	36	600	~~	~~	~~
20	3	EF-36C	1300	37	1900			38	600	OHD N2	20	3
~~	~~	~~	1300	39		1900		40	600	~~	~~	~~
~~	~~	~~	1300	41			1900	42	600	~~	~~	~~
20	3	EF-37C	1300	43	1900			44	600	OHD S1	20	3
~~	~~	~~	1300	45		1900		46	600	~~	~~	~~
~~	~~	~~	1300	47			1900	48	600	~~	~~	~~
20	3	EF-38C - NOT USED	0	49	600			50	600	OHD S2	20	3
~~	~~	~~	0	51		600		52	600	~~	~~	~~
~~	~~	~~	0	53			600	54	600	~~	~~	~~
15	3	EF-39C	500	55	1100			56	600	OHD S3	20	3
~~	~~	~~	500	57		1100		58	600	~~	~~	~~
~~	~~	~~	500	59			1100	60	600	~~	~~	~~
				61	1800			62	1800	FUEL PUMP	20	3
				63		1800		64	1800	~~	~~	
				65			1800	66	1800	~~	~~	
				67	1800			68	1800	FUEL PUMP	20	3
				69		1800		70	1800	~~	~~	
				71			1800	72	1800	~~	~~	
				73	0			74				
				75		0		76				
				77			0	78				
				79	0			80				
				81		0		82				
				83			0	84				
					32600	32600	32600					
		TOTAL CONNECTED LOADS:	97800	WATTS								
		TOTAL CONNECTED AMPS:	271	AMPS								
FHJ CNG												

EXISTING PANEL "MDP" — Feeds The Building Panels

800 AMPS MAIN BREAKER 120/208 VOLT 3 PHASE 4 WIRE SURFACE MOUNTING

BREAKER AMPS	BREAKER POLES	DESCRIPTION	CIRCUIT WATTS	#	PHASE LOADS A	PHASE LOADS B	PHASE LOADS C	CIRCUIT #	WATTS	DESCRIPTION	BREAKER AMPS	BREAKER POLES
				1	0			2		PANEL P2 (WELDER OUTLETS - SOUTH SHOP)	100	3
				3		0		4		~	~	~
				5			0	6		~	~	~
				7	0			8		PANEL P3 (WEST WALL NORTH SHOP)	100	3
				9		0		10		~	~	~
				11			0	12		~	~	~
				13	0			14		P4 (LOCKED OUT)		3
				15		0		16		~	~	~
				17			0	18		~	~	~
				19	0			20		P5 (LIGHTING PANEL MIDDLE WALL SOUTH SHOP)	100	3
				21		0		22		~	~	~
				23			0	24		~	~	~
400	3	PANEL P1		25	0			26		P6 (3 PHASE PANEL PAINT BOOTH)	150	3
~~	~~			27		0		28		~	~	~
~~	~~			29			0	30		~	~	~
				31	0			32		P7 (ELECTRIC SHOP)	150	3
				33		0		34		~	~	~
				35			0	36		~	~	~
				37	0			38		P8 (00 A PANEL NEXT TO SERVICE)	200	3
				39		0		40		~	~	~
				41			0	42		~	~	~
				43	0			44		P9 (OFFICE LIGHTING PANEL)	200	3
				45		0		46		~	~	~
				47			0	48		~	~	~
				49	0			50		P10 (LOCKED OUT)		3
				51		0		52		~	~	~
				53			0	54		~	~	~
				55	0			56		P11 (BOILER ROOM)	150	3
				57		0		58		~	~	~
				59			0	60		~	~	~
				61	0			62		P12 (3 PHASE PANEL NEXT TO SERVICE)	200	3
				63		0		64		~	~	~
				65			0	66		~	~	~
				67	0			68		P13 (3 PHASE PANEL OFFICE???)	200	3
				69		0		70		~	~	~
				71			0	72		~	~	~
				73	0			74		P14 (200 A PANEL MIDDLE WALL TO SHOP)	200	3
				75		0		76		~	~	~
				77			0	78		~	~	~
				79	0			80				
				81		0		82				
				83			0	84				
					0	0	0					
		TOTAL LOADS:	0	WATTS								
		TOTAL CONNECTED AMPS:	0	AMPS								
FHJ CNG												

Red =

NEW PANEL "MDP" — Feeds The Building Panels

1200 AMPS MAIN BREAKER 120/208 VOLT 3 PHASE 4 WIRE SURFACE MOUNTING

MAIN BREAKER TO BE CONTROLLED VIA SHUNT TRIP - SIGNAL FROM HVAC CNG SYSTEM

BREAKER AMPS	BREAKER POLES	DESCRIPTION	CIRCUIT WATTS	#	PHASE LOADS A	PHASE LOADS B	PHASE LOADS C	CIRCUIT #	WATTS	DESCRIPTION	BREAKER AMPS	BREAKER POLES
				1	0			2		PANEL P2 (WELDER OUTLETS - SOUTH SHOP)	100	3
		SEE ELEVATIONS ON SHEET E501		3		0		4		~	~	~
				5			0	6		~	~	~
				7	0			8		PANEL P3 (WEST WALL NORTH SHOP)	100	3
				9		0		10		~	~	~
				11			0	12		~	~	~
				13	0			14		P5 (LIGHTING PANEL MIDDLE WALL SOUTH SHOP)	100	3
				15		0		16		~	~	~
				17			0	18		~	~	~
				19	0			20		P6 (3 PHASE PANEL PAINT BOOTH)	150	3
				21		0		22		~	~	~
				23			0	24		~	~	~
400	3	PANEL P1		25	0			26		P7 (ELECTRIC SHOP)	150	3
~~	~~			27		0		28		~	~	~
~~	~~			29			0	30		~	~	~
				31	0			32		P8 (00 A PANEL NEXT TO SERVICE)	200	3
200	3	NEW PANEL "HVAC"		33		0		34		~	~	~
~~	~~			35			0	36		~	~	~
~~	~~			37	0			38		P9 (OFFICE LIGHTING PANEL)	200	3
				39		0		40		~	~	~
				41			0	42		~	~	~
				43	0			44		P10 (LOCKED OUT)		3
40	3	NEW PANEL "LIFE SAFETY"		45		0		46		~	~	~
~~	~~			47			0	48		~	~	~
~~	~~			49	0			50		P11 (BOILER ROOM)	150	3
				51		0		52		~	~	~
				53			0	54		~	~	~
				55	0			56		P12 (3 PHASE PANEL NEXT TO SERVICE)	200	3
200	3	NEW PANEL "STAND-BY"		57		0		58		~	~	~
~~	~~			59			0	60		~	~	~
~~	~~			61	0			62		P13 (3 PHASE PANEL OFFICE???)	200	3
				63		0		64		~	~	~
				65			0	66		~	~	~
				67	0			68		P14 (200 A PANEL MIDDLE WALL TO SHOP)	200	3
				69		0		70		~	~	~
				71			0	72		~	~	~
				73	0			74				
				75		0		76				
				77			0	78				
				79	0			80				
				81		0		82				
				83			0	84				
					0	0	0					
		TOTAL LOADS:	0	WATTS								
		TOTAL CONNECTED AMPS:	0	AMPS								
Fish Hatchery Repair Garage												

MOTOR/EQUIPMENT SCHEDULE - FH

IDENTIFICATION		MUA-1	MUA-2	MUA-3	MUA-4	EF-30C	EF-31C	EF-32C	EF-33C	EF-34C	EF-35C	EF-36C	EF-37C	EF-38C	EF-39C	OHD	RAD-1	RAD-2
PANEL	LABEL	SB	SB	HVAC	HVAC	SB	SB	SB	SB	SB	SB	SB	SB	NOT	SB	SB	HVAC	HVAC
	CIRCUIT	-	-	-	-	-	-	-	-	-	-			USED				
	BREAKER	90/3	20/3	20/3	20/3	20/3	20/3	20/3	20/3	20/3	20/3	20/3	20/3		15/3	20/3	20/1	20/1
WIRING	NUMBER	3 + GR	3 + GR	3 + GR	3 + GR	3 + GR	3 + GR	3 + GR	3 + GR	3 + GR	3 + GR	3 + GR	3 + GR		3 + GR	3 + GR	2 + GR	2 + GR
	TYPE	THWN	THWN	THWN	THWN	THWN	THWN	THWN	THWN	THWN	THWN	THWN	THWN		THWN	THWN	THWN	THWN
	SIZE																	
	CONDUIT																	
ELECTRICAL	VOLTAGE	208	208	208	208	208	208	208	208	208	208	208	208		208	208	120	120
	PHASE	3	3	3	3	3	3	3	3	3	3	3	3		3	3	1	1
	HP	15	20	15	2	3	3	3	3	3	3	3	3		1	1		
	KW																	
	FLA																4.8	4.8
STARTER	TYPE	-	-	-	-													
	SIZE	-	-	-	-													
	BY	-	-	-	-													
DISCONNECT	TYPE	NEMA 1	- -	- -	- -													
	SIZE	100/3	-	-	-													
	MCP	-	-	-	-													
	BY	E.C.	-	-	-	E.C.	E.C.	E.C.	E.C.	E.C.	E.C.	E.C.	E.C.		E.C.	E.C.	E.C.	E.C.
NOTES:		1, 2, 3	1, 2, 3	1, 2, 3	1, 2, 3	1	1	1	1	1	1	1	1		1	1	1	1

NOTES:
1. SEE PLANS FOR LOCATIONS & CIRCUITING.
2. SAFETY SWITCH AND STARTER PROVIDED H.C. SINGLE POINT CONNECTION REQUIRED BY EC - SEE HVAC SCHEDULE FOR DETAILS.
3. COORDINATE CONTROLS WITH HVAC CONTRACTOR
4. PROVIDE GFI RECEPTACLE AT UNIT
5
6
7
8

Engineering 370, LLC
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Project No. 18-1216

BEAR VALLEY
ENGINEERING & CONSULTING

Date	Issuance/Revisions	Symbol
02/11/20	ISSUED FOR OWNER REVIEW	
02/24/20	ISSUED FOR BIDDING AND CONSTRUCTION	

FISH HATCHERY HIGHWAY GARAGE - CNG RETROFIT

2302 FISH HATCHERY RD,
MADISON, WI 53713

DANE COUNTY RFB# 318029

Dane County Department of Public Works, Highway and Tranportation
Public Works Engineering Division
1919 Alliant Energy Center Way
Madison, WI 53713

Drawing Title:
NEW PANEL & ELECTRICAL SCHEDULES

Drawn By:

Drawing No.
E402

TYPE	DESCRIPTION	LAMP SOURCE	DEL. LUMEN	CCT	MOUNTING	MANUFACTURER & SERIES	VOLTAGE	INPUT WATTS	DIMMING	NOTES
HB1	HIGH BAY - 18" ROUND PRISMATIC REFRACTOR - MAINTENANCE BAYS	LED	17135	3500	SURFACE - UNISTRUT	LITHONIA # JCBL-18000LM-ACFR-ACRFGL-MVOLT-GZ10-35K-80CRI-PM-HOCS-DWHXD	UNIV - 120	125	NON-DIM	1, 2
TL1	48" TASK LIGHT - LINEAR - WITH SYMMETRIC REFLECTOR. WHITE FINISH. - MAINTENANCE BAYS	LED	3796	3500	SURFACE - CHAIN - SIM TO EXISTING	LITHONIA # ZL1F-L48-SMR-4500LM-MDD-120-35K-80CRI-WH/ ZLRL48SYM WH/ HC36	UNIV - 120	39	NON-DIM	
SL1	48" STRIP LIGHT LIGHT, CHAIN HANG SET - LINEAR - ELECTRICAL / MECH ROOMS	LED	5087	3500	SURFACE - CEILING	LITHONIA # ZL1F-L48-6000LM-MDD-MVOLT-35K-80CRI-WH/HC36	UNIV - 120	56	NON-DIM	
EXIT	EXIT LIGHT, WHITE THERMOPLASTIC SINGLE FACE, RED LETTERS. UNIVERAL MOUNT	LED	X	X	SURFACE	LITHONIA LQM-S-W-R-120/277	UNV - 120	1	NON-DIM	X
EXIT2	EXIT LIGHT, WHITE THERMOPLASTIC DUAL FACE, RED LETTERS. UNIVERAL MOUNT	LED	X	X	SURFACE	LITHONIA LQM-S-W-3-R-120/277	UNV - 120	1	NON-DIM	X

GENERAL NOTES:
A. ALWAYS REFER TO MANUFACTURER DATA FOR DIMMER COMPATIBILITY AND DETAILS. SOME DIMMERS REQUIRE A NEUTRAL IN THE WALL BOX.

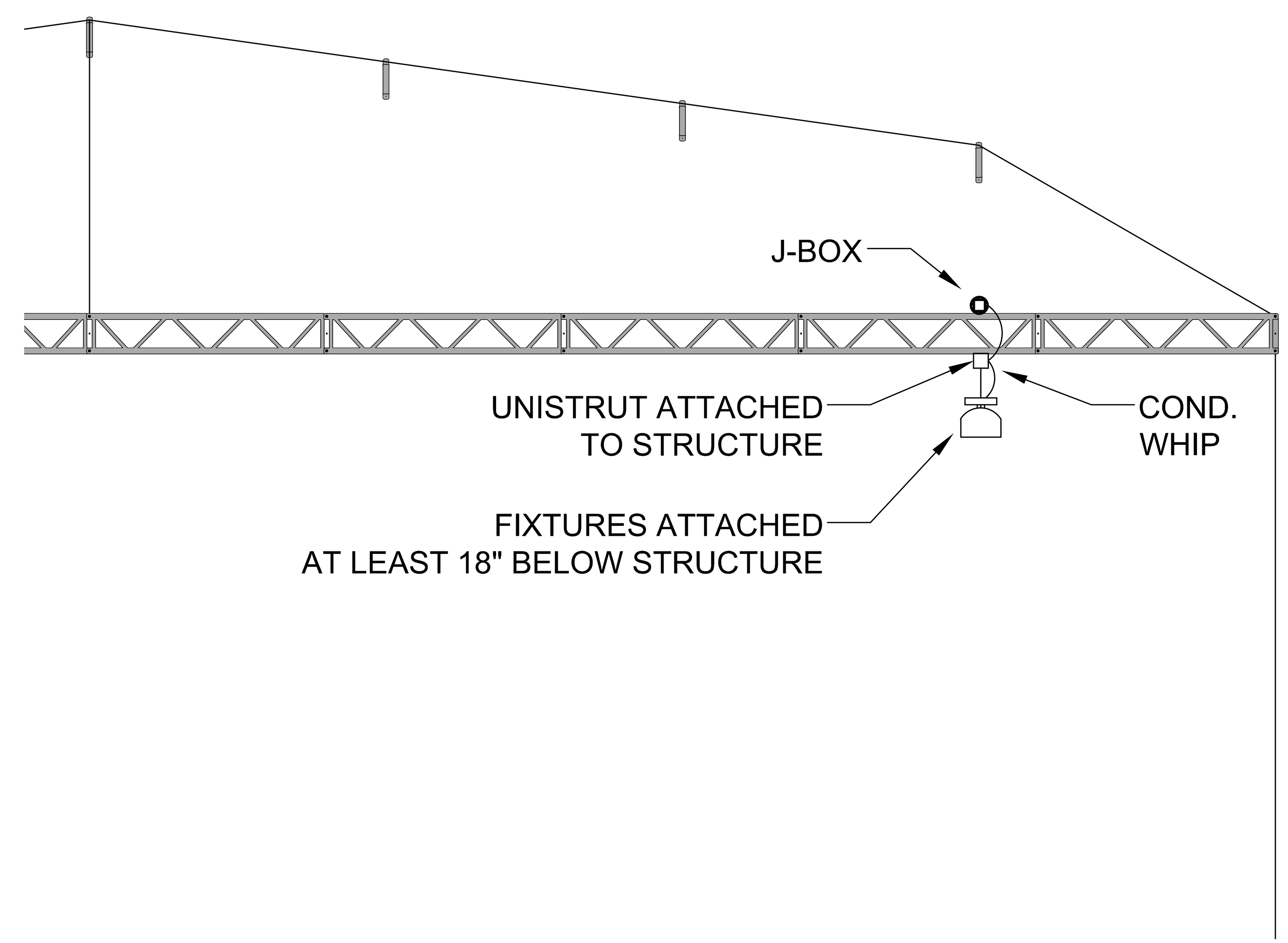
SPECIFIC NOTES:
1. PROVIDE LITHONIA "RELOK" WIRING SYSTEM.
2. MOUNT PER DETAIL XX/ XX

2/20/2020

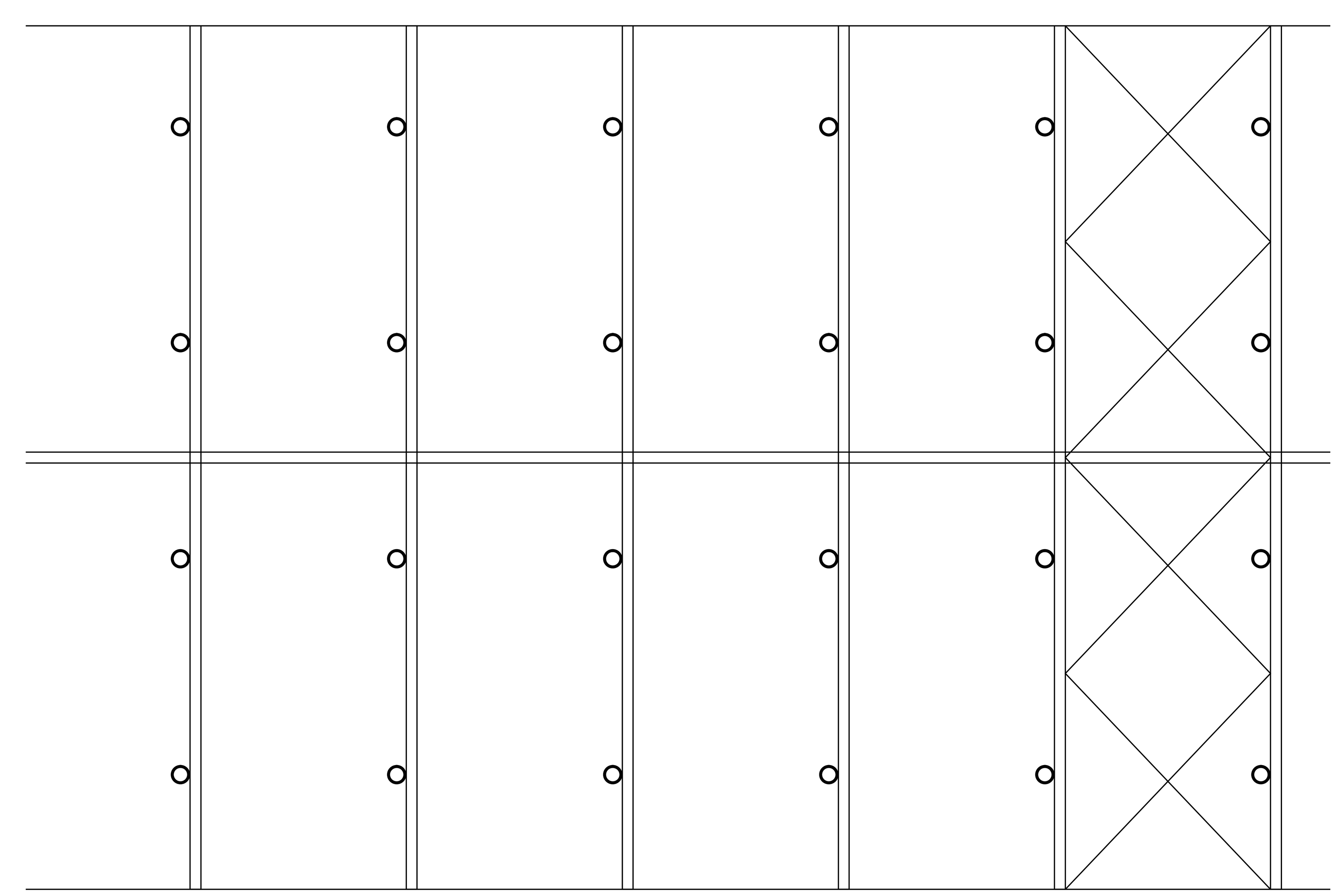
FHHC - LIGHTING CONTROL

Zone ID	Description	Panel	Circuit	Voltage	Normal	Emerg	Relay	Dimmer	OS	DS	Line V sw	Fixture	watts	Quanity	Emerg. Watts	Normal' Watts
z	HB 'NORMAL' LIGHTING - SOUTH REPAIR GARAGE	EXIST PNL P3	Note 1	120	X		X					HB1	125	11		1375
y	HB 'NORMAL' LIGHTING - SOUTH REPAIR GARAGE	EXIST PNL P3	Note 1	120	X		X					HB1	125	11		1375
x	HB 'NORMAL' LIGHTING - SOUTH REPAIR GARAGE	EXIST PNL P3	Note 1	120	X		X					HB1	125	11		1375
w	HB 'NORMAL' LIGHTING - ELECTRICAL MAINTENANCE	EXIST PNL P7	Note 1	120	X		X					HB1	125	4		500
v	HB 'NORMAL' LIGHTING - NORTH REPAIR GARAGE	EXIST PNL PX	Note 1	120	X		X					HB1	125	11		1375
u	HB 'NORMAL' LIGHTING - NORTH REPAIR GARAGE	EXIST PNL PX	Note 1	120	X		X					HB1	125	11		1375
t																
s																
r																
q																
p																
														TOTAL		7375
a	HB 'EM' LIGHTING - SOUTH REPAIR GARAGE	NEW PNL LS	1	120		X	X					HB1	125	4	500	
b	HB 'EM' LIGHTING - SOUTH REPAIR GARAGE	NEW PNL LS	1	120		X	X					HB1	125	4	500	
c	HB 'EM' LIGHTING - SOUTH REPAIR GARAGE	NEW PNL LS	3	120		X	X					HB1	125	4	500	
d	HB 'EM' LIGHTING - SOUTH REPAIR GARAGE	NEW PNL LS	3	120		X	X					HB1	125	3	375	
e	HB 'EM' LIGHTING - NORTH REPAIR GARAGE	NEW PNL LS	5	120		X	X					HB1	125	4	500	
f	HB 'EM' LIGHTING - NORTH REPAIR GARAGE	NEW PNL LS	5	120		X	X					HB1	125	3	375	
NC - 24/7	Exit Lights	Bldg EM	EM	277		X						EX	5	10	50	
														TOTAL	50	0
														BUILDING TOTAL	2800	7875

FISH HATCH
NOTES:



1
E401
TYPICAL HB1 LIGHT FIXTURE MOUNTING DETAIL
SCALE: 1/4" = 1' - 0"



2
E401
TYPICAL HB1 LIGHT FIXTURE RELOCK WIRING LAYOUT
SCALE: 1/8" = 1' - 0"

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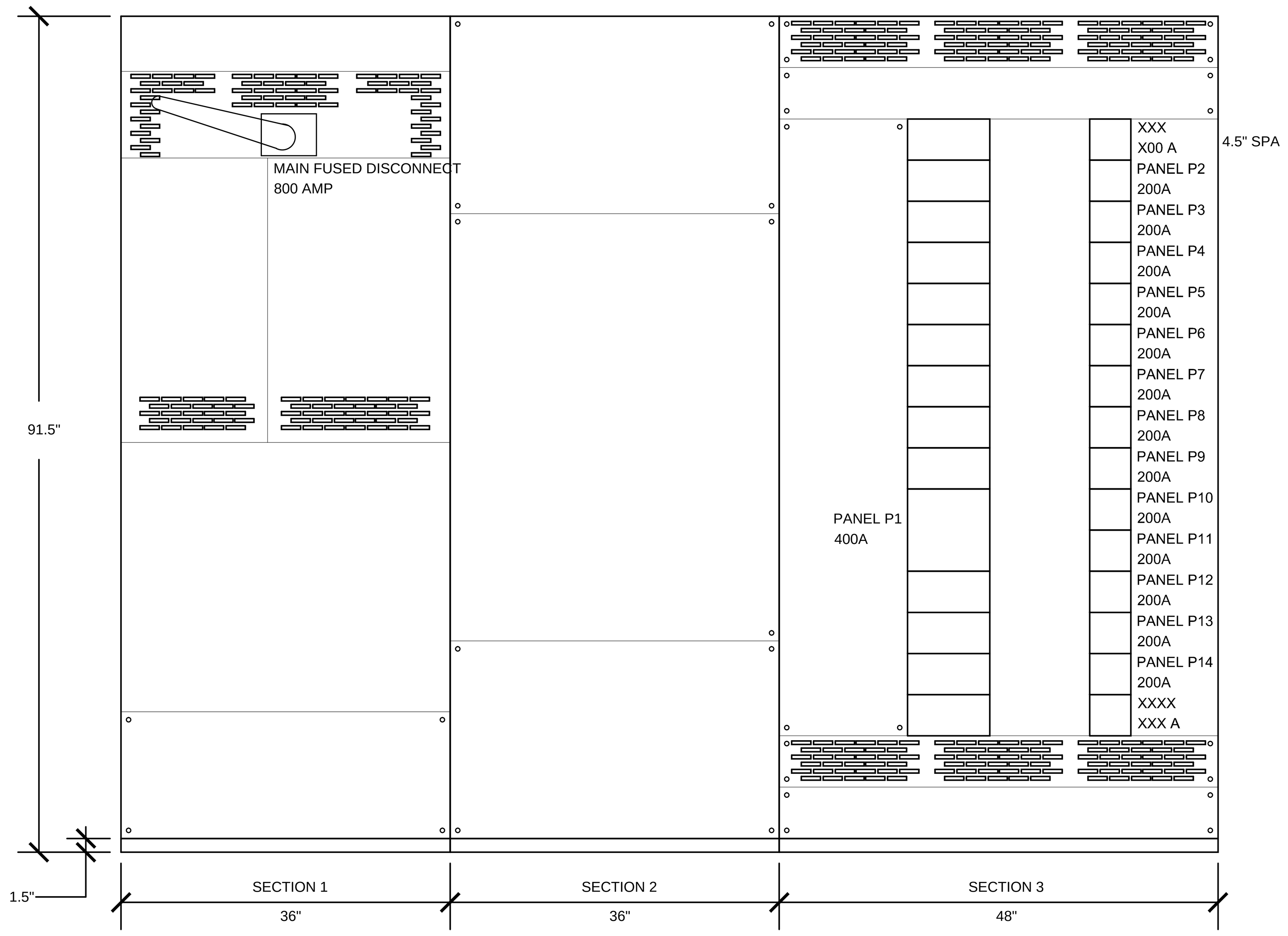
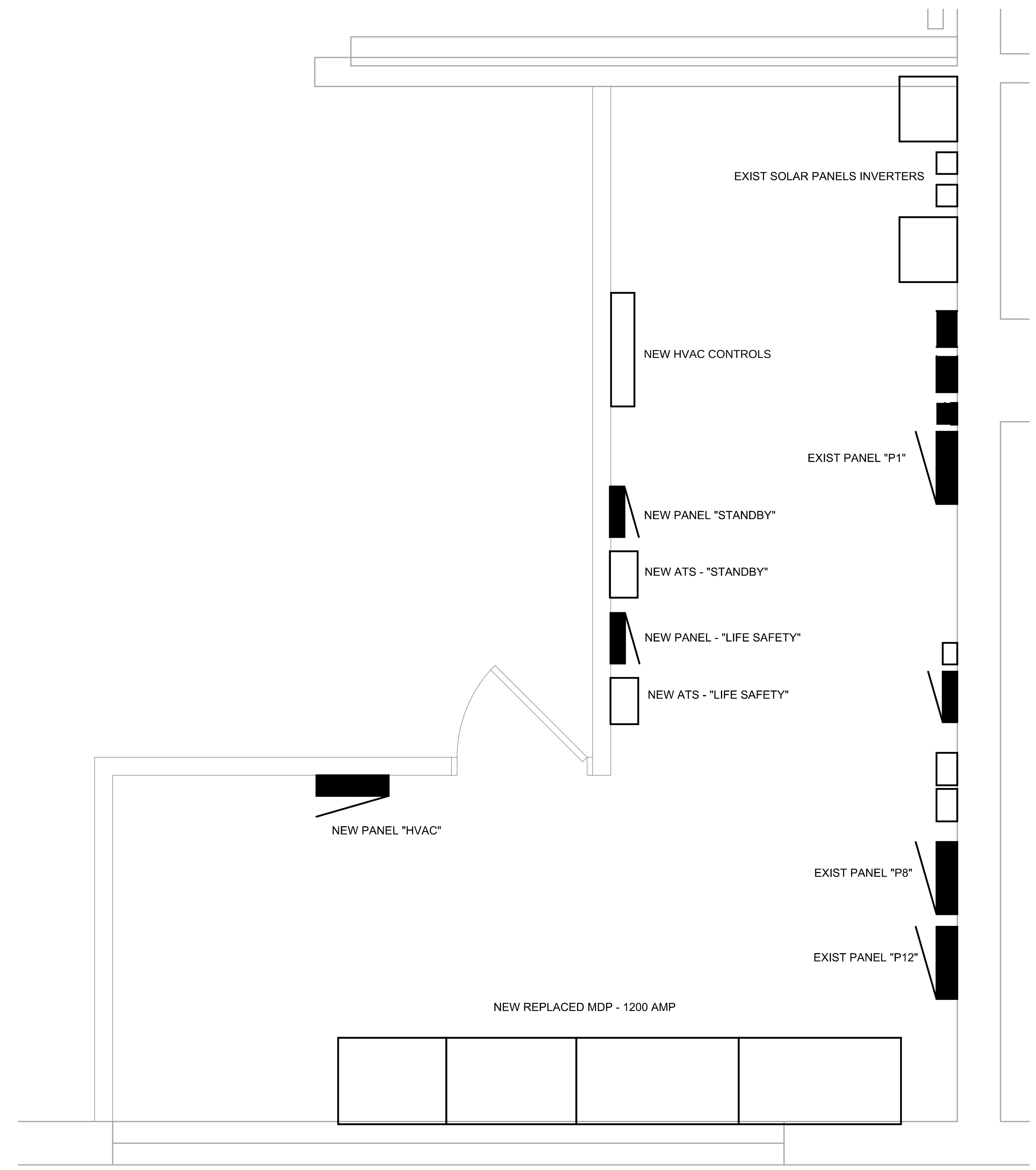
Public Works Engineering Division
1919 Alliant Energy Center Way
Madison, WI 53713

Drawing Title:
LIGHTING SCHEDULES AND DETAILS

Drawing No.
Drawn By:
E403



2 E501 EXISTING MDP ELEVATION
SCALE: 1' - 0" = 1' - 0"

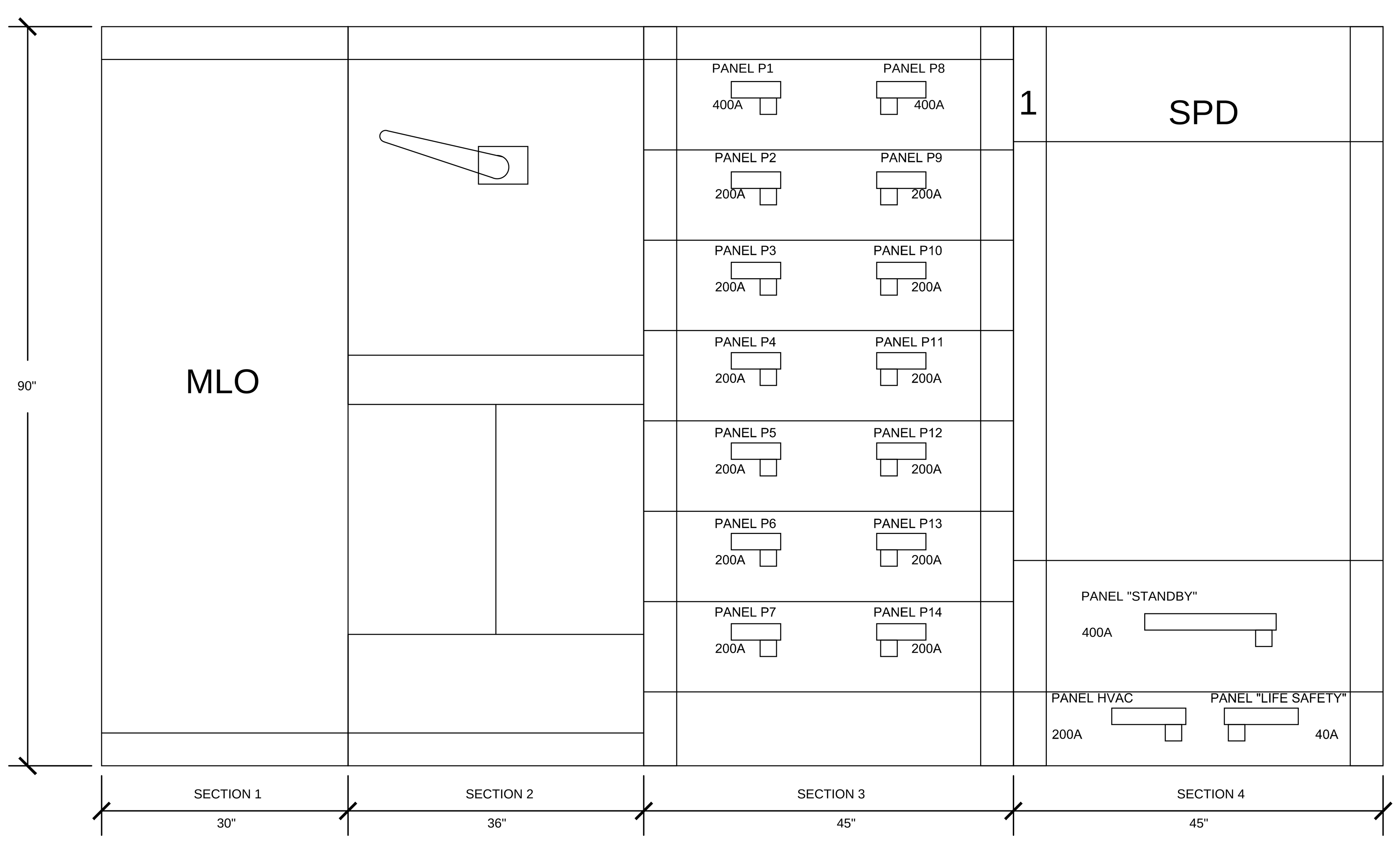


NEW 180 KVA GENERATOR:
KOHLER "REZXB" WITH EXTERIOR ENCLOSURE

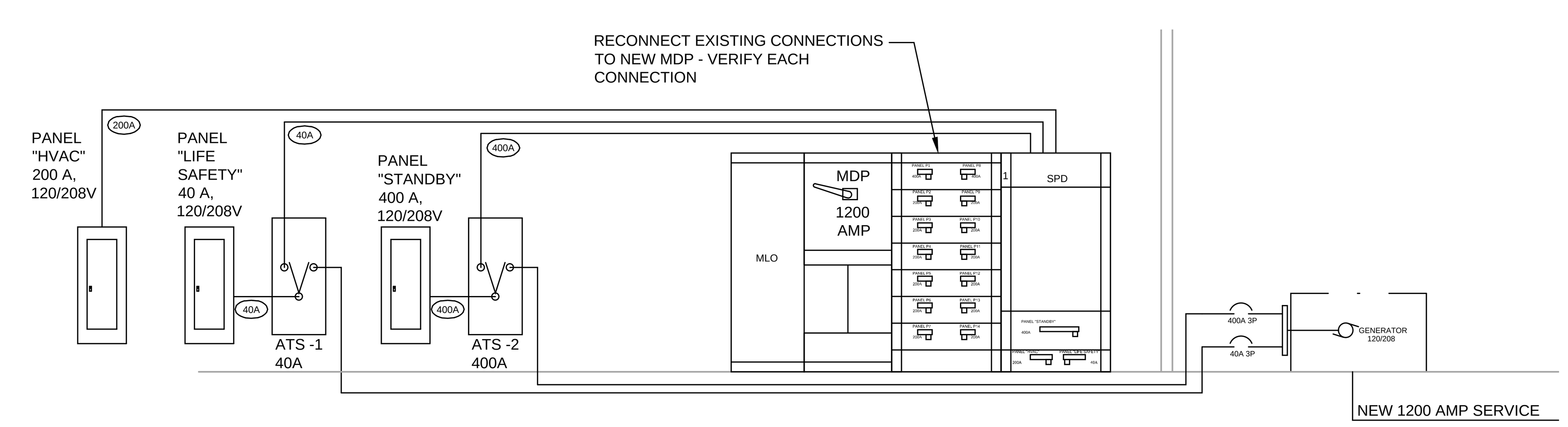
Set equipped with a 4S13X alternator operating at 120/208 volts is rated for 184 kW/230 kVA. Output amperage: 638.

- NOTE: OWNER TO PROVIDE MOUNTING PAD

4 E501 ELECTRICAL ROOM FLOOR PLAN
SCALE: 1/2" = 1' - 0"



3 E501 NEW MDP ELEVATION
SCALE: 1" = 1' - 0"



1 E501 PARTIAL ONE-LINE RISER DIAGRAM
SCALE: 1/4" = 1' - 0"

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GARAGE - CNG RETROFIT

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DANE COUNTY RFB# 318029

Dane County Department of Public Works, Highway and Tranportation
Public Works Engineering Division
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Drawing Title:
ELECTRICAL ROOM, ELEVATIONS, & RISER PLAN

Drawing No.
E501

Drawn By: