

2



Scale: N.T.S.

CONSULTANTS:

Heapy Engineering
MEP Design Technology Planning Commissioning Energy



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MIAMISBURG, OHIO
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Drawing Title

Approved: Project Director

Project Title

Location	Dayton, Ohio
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Date 07/06/2017

Checked
MSG

Drawn
JRS

Drawing Number

126E001

Dwg. of

 Department of
Veterans Affairs




B SITE PHOTOGRAPH

CONSULTANTS:

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Ph 937-224-0861 Fax 937-224-5777 www.heapy.com
Heapy Project No.: 2016-05088 Firm License No.: 01526

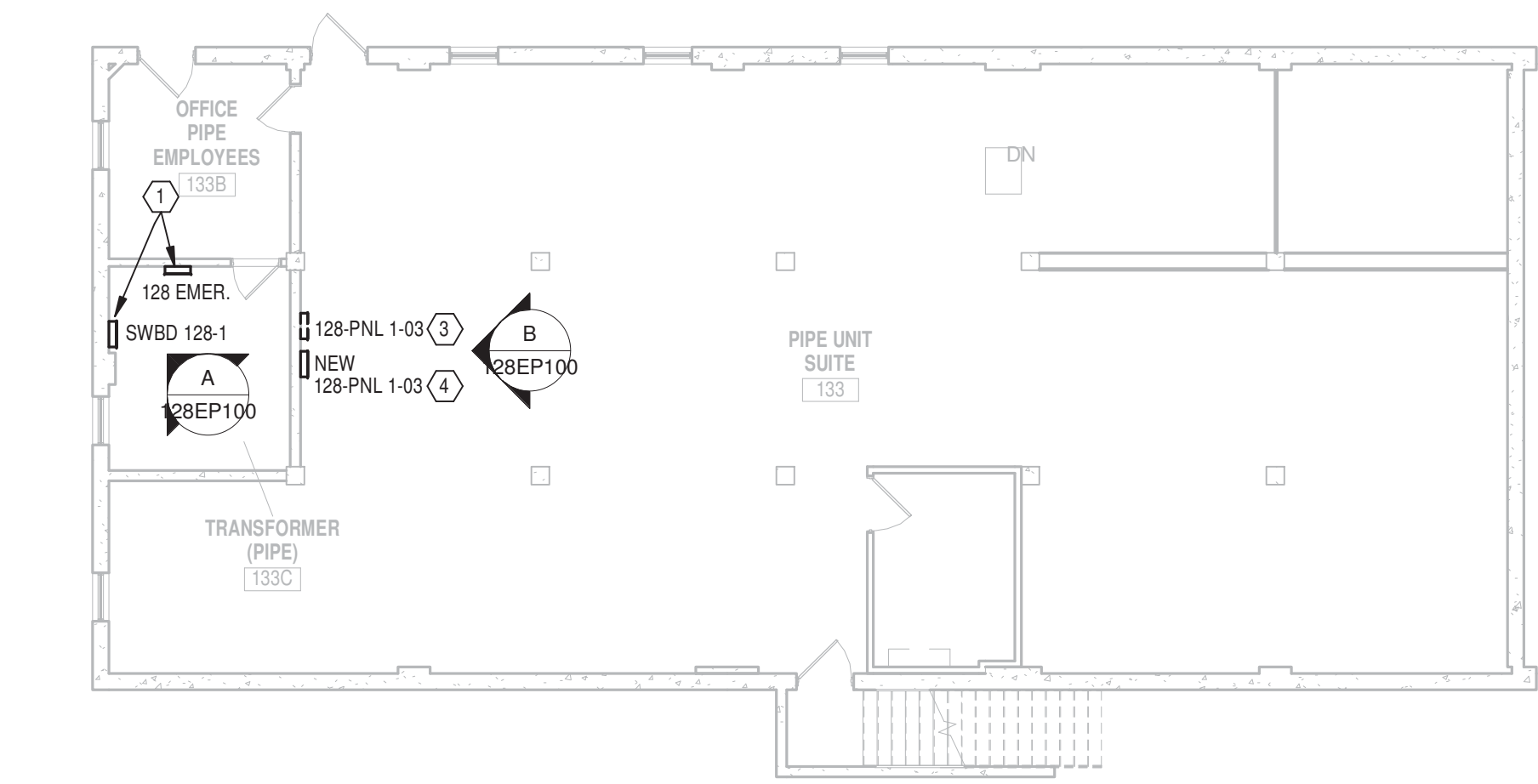


Project Title CORRECT ARC FLASH DEFICIENCIES		Project No. VA Project No. 552-16-551 JPA Project No. -		Office of Construction and Facilities Management
Location Dayton, Ohio		Building Number 126		
		Drawing Number 126EP100		
Date 07/06/2017	Checked MSG	Drawn JRS	Dwg. of	 Department of Veterans Affairs

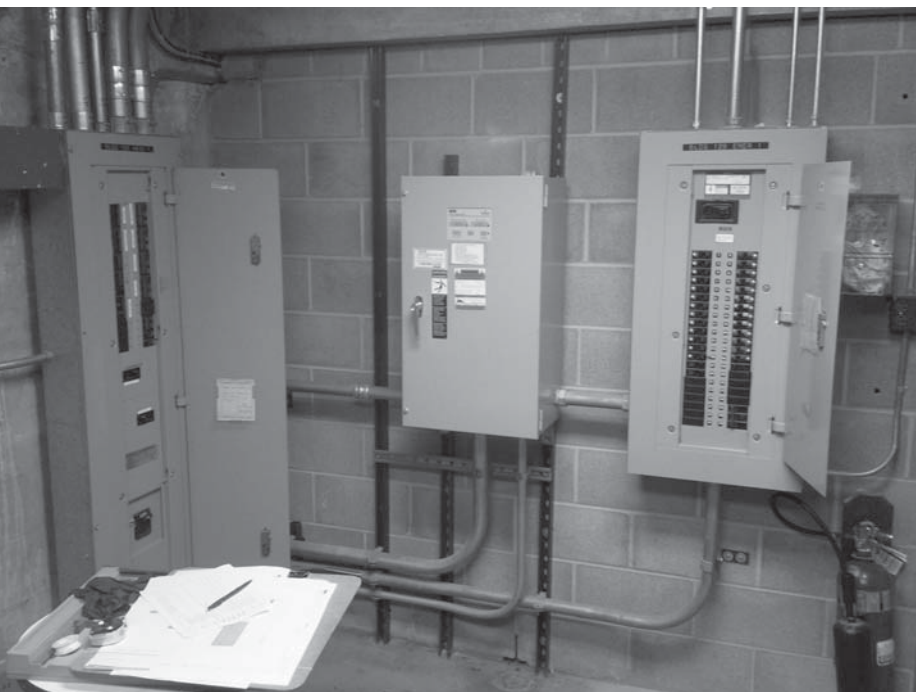
three inches = one foot
one and one-half inches = one foot
one inch = one foot
three-quarters inch = one foot
one-half inch = one foot
three-eighths inch = one foot
one-quarter inch = one foot
one-eighth inch = one foot

- GENERAL NOTES**
- A. SCHEDULE ANY SHUT DOWNS WITH THE COR 4 WEEKS PRIOR TO PERFORMING WORK.
B. SHUTDOWNS IN BUILDING 128 SHALL BE SCHEDULED OUTSIDE OF NORMAL WORKING HOURS AND SHALL BE COMPLETED A MINIMUM OF 2-HOURS BEFORE NORMAL WORKING HOURS.
C. UNDER DEDUCT ALT. #2 TRACE EACH BRANCH CIRCUIT FED BY EACH PANEL MODIFIED UNDER THIS PROJECT AND UPDATE PANEL SCHEDULE ACCORDING TO ROOMS/EQUIPMENT IT SERVES.
D. WORK IN BUILDING 128 TO BE BID AS DEDUCT ALT. #3.

- NOTES**
1. REMOVE PANEL INTERIOR AND REPLACE WITH BUSSING OF ADEQUATE SHORT CIRCUIT CURRENT RATING. REFER TO SINGLE LINE DIAGRAM AND PANEL SCHEDULE FOR ADDITIONAL REQUIREMENTS.
2. REPLACE EXISTING PANELS AS INDICATED ON SINGLE LINE DIAGRAM.
3. REMOVE EXISTING PANEL AND EXTEND CIRCUITRY USING NON-REVERSIBLE COMPRESSION TYPE SPLICES AND CONDUIT TO NEW PANEL.
4. INSTALL NEW PANEL IN LOCATION INDICATED.



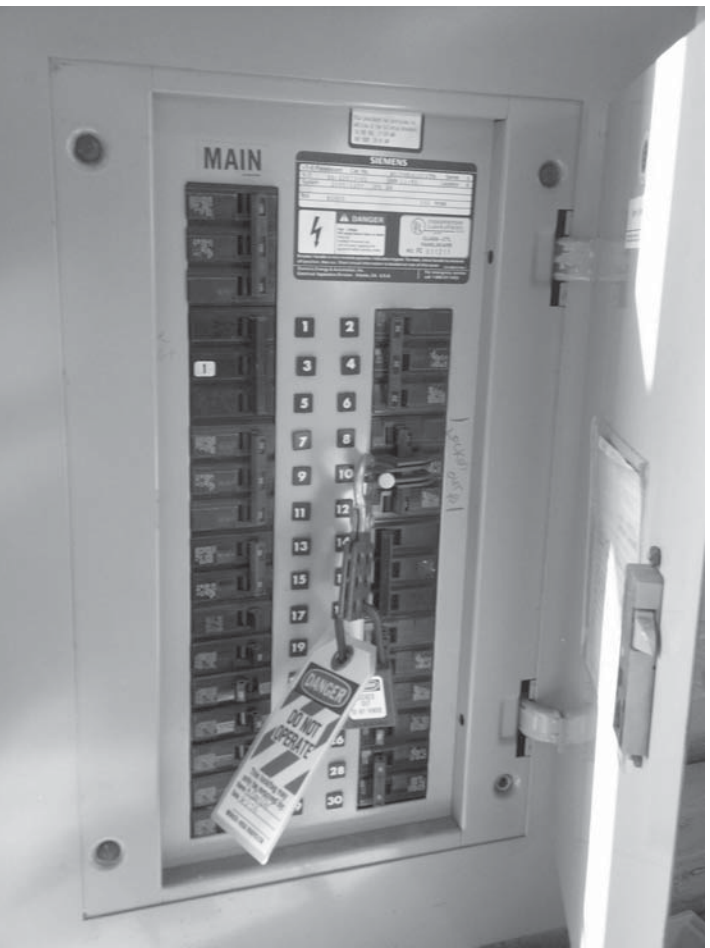
BASEMENT FLOOR PLAN - POWER
Scale: 3/32" = 1'-0"
PROJECT



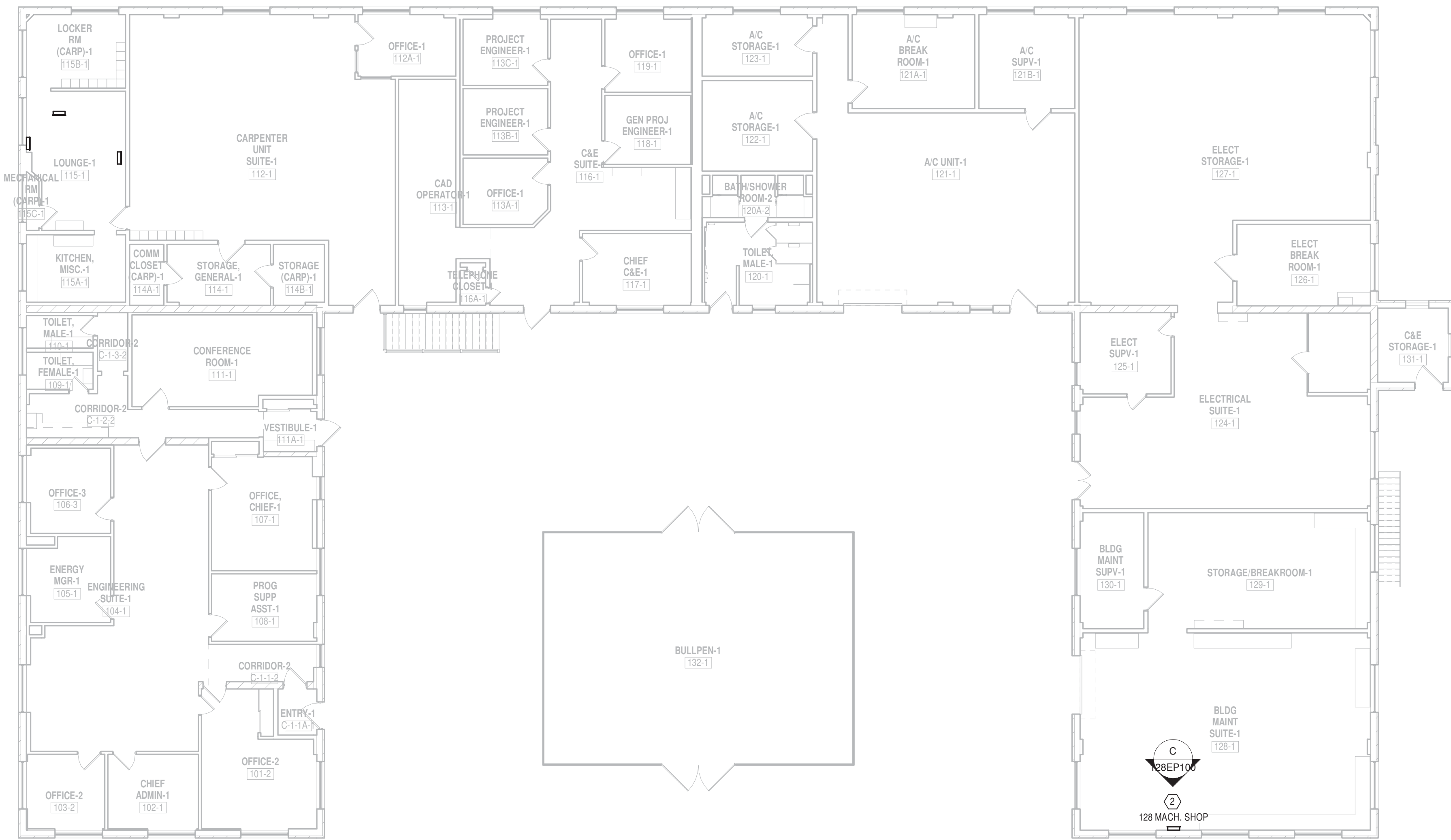
A SITE PHOTOGRAPH



B SITE PHOTOGRAPH



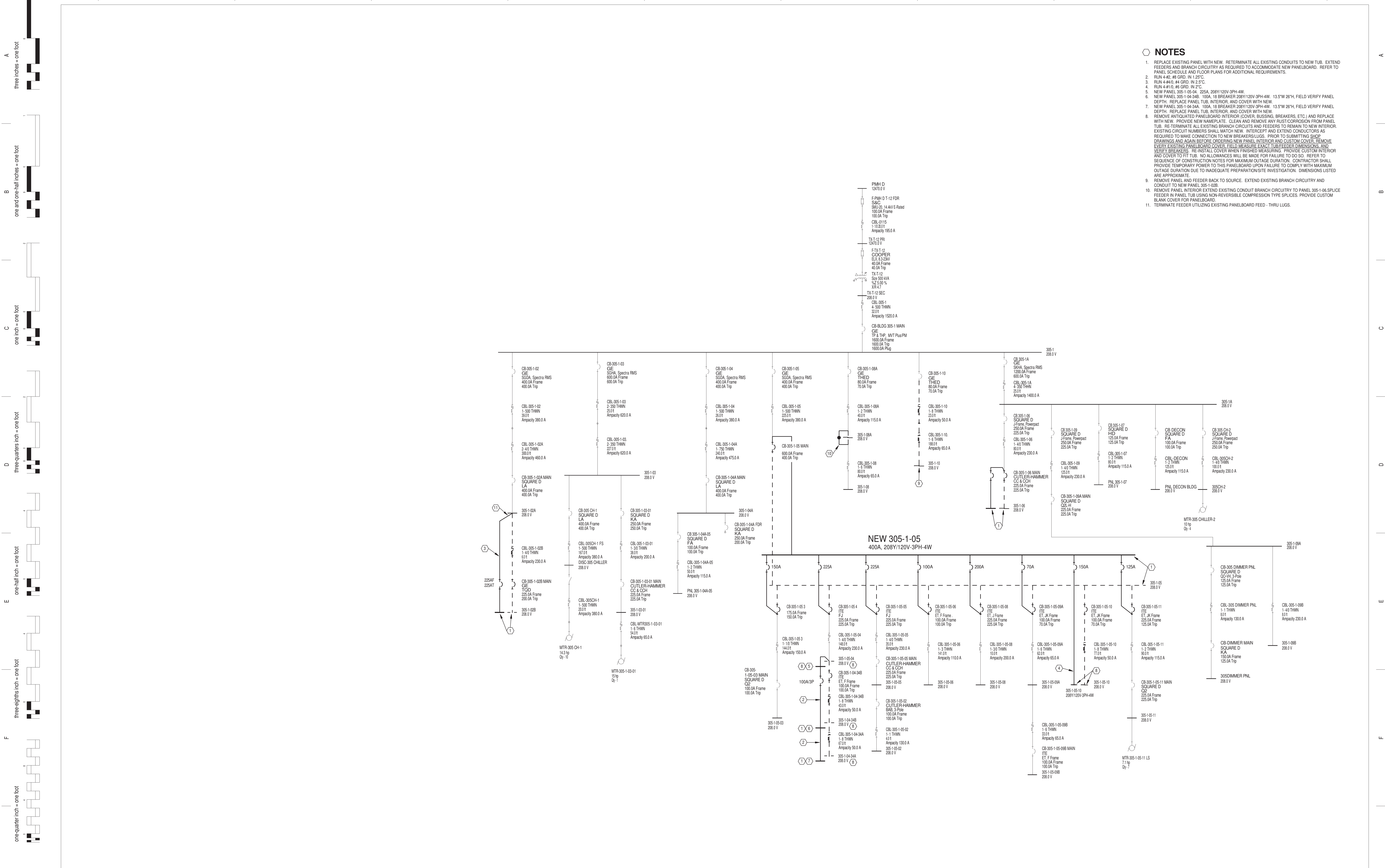
C SITE PHOTOGRAPH



FIRST FLOOR PLAN - POWER
Scale: 3/32" = 1'-0"
PROJECT

Revisions	Date	CONSULTANTS:	Heapy Engineering MEP Design Technology Planning Commissioning Energy <i>Nationally Recognized Leader in Sustainability</i> 1400 W Dorothy Lane, Dayton, OH 45409-1310 Ph 937-224-0861 Fax 937-224-5777 www.heapy.com Heapy Project No.: 2016-05088 Firm License No.: 01528		ARCHITECT/ENGINEERS:	JOHN POE ARCHITECTS 3131 NEWMARK DRIVE, SUITE 200 MIAMI SBURG, OHIO 45342 937 461 3290 PHONE 937 461 0260 FAX jpo@johnpoe.com	Drawing Title	B128 BASEMENT POWER PLAN	Approved: Project Director	Project Title	CORRECT ARC FLASH DEFICIENCIES	Location	Dayton, Ohio	Date	07/06/2017	Checked	MSG	Drawn	JRS	Project No.	VA Project No.	552-16-551	JPA Project No.	Building Number	128	Drawing Number	128EP100	Dwg. of	Office of Construction and Facilities Management Department of Veterans Affairs

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- NOTES
1.

REPLACE EXISTING PANEL WITH NEW. RETERMINATE ALL EXISTING CONDUITS TO NEW TUB. EXTEND FEEDERS AND BRANCH CIRCUITRY AS REQUIRED TO ACCOMMODATE NEW PANELBOARD. REFER TO PANEL SCHEDULE AND FLOOR PLANS FOR ADDITIONAL REQUIREMENTS.
2.

RUN 4-#2, #6 GRD. IN 1/2" C.
3.

RUN 4-#4/0, #4 GRD. IN 2 1/2" C.
4.

RUN 4-#1/0, #6 GRD. IN 2" C.
5.

NEW PANEL 305-1-05-04, 225A, 208Y/120V-3PH-4W.
6.

NEW PANEL 305-1-04-34B, 100A, 18 BREAKER 208Y/120V-3PH-4W, 13.5"W 26"H. FIELD VERIFY PANEL DEPTH. REPLACE PANEL TUB, INTERIOR, AND COVER WITH NEW.
7.

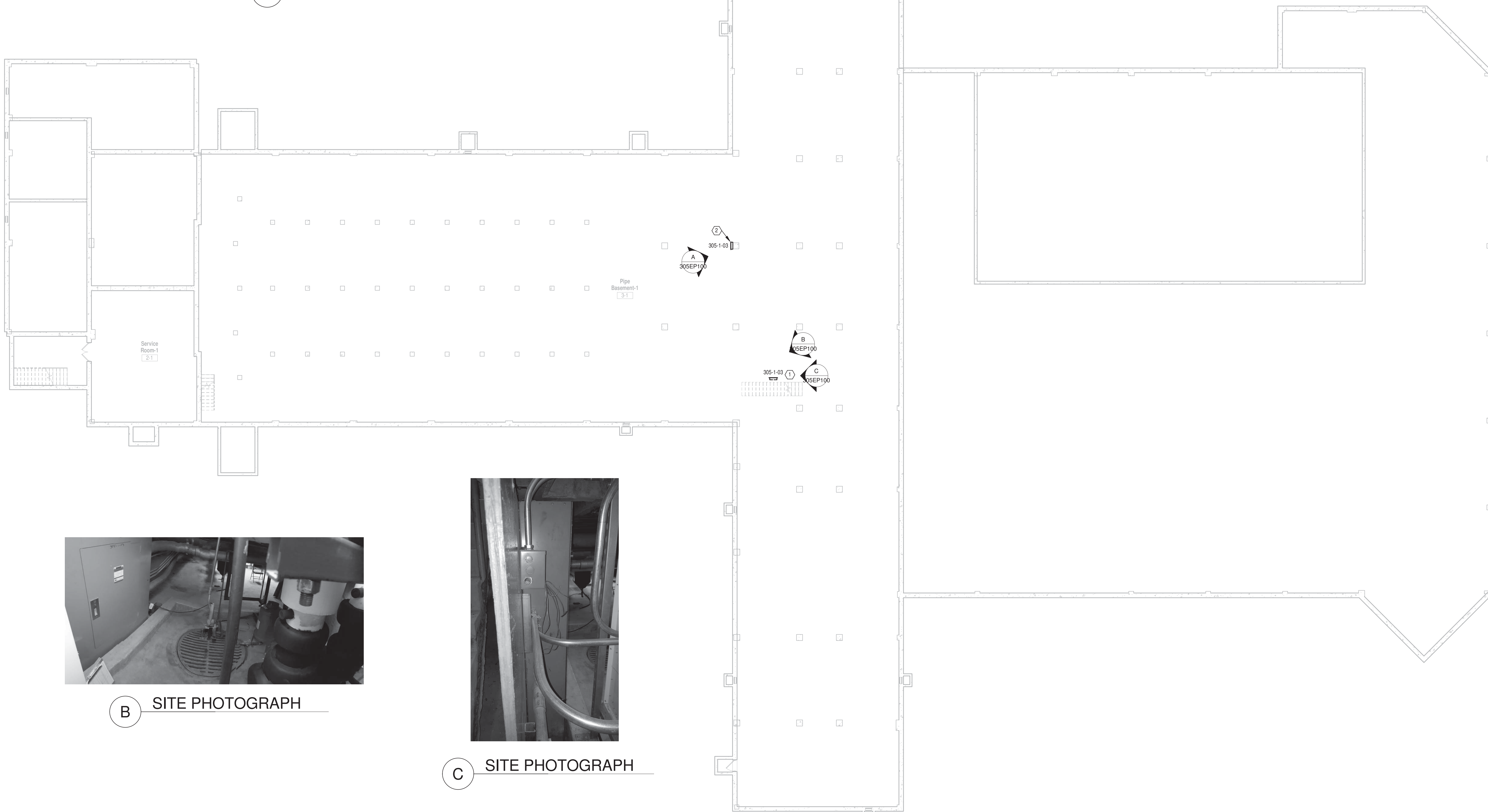
NEW PANEL 305-1-04-34A, 100A, 18 BREAKER 208Y/120V-3PH-4W, 13.5"W 26"H. FIELD VERIFY PANEL DEPTH. REPLACE PANEL TUB, INTERIOR, AND COVER WITH NEW.
8.

REMOVE ANTIQUATED PANELBOARD INTERIOR (COVER, BUSSING, BREAKERS, ETC.) AND REPLACE WITH NEW. PROVIDE NEW NAMEPLATE. CLEAN AND REMOVE ANY RUST/CORROSION FROM PANEL TUB. RETERMINATE ALL EXISTING BRANCH CIRCUITS AND FEEDERS TO REMAIN TO NEW INTERIOR. EXISTING CIRCUIT NUMBERS SHALL MATCH NEW. INTERCEPT AND EXTEND CONDUCTORS AS REQUIRED TO MAKE CONNECTION TO NEW BREAKERS/LUGS. PRIOR TO SUBMITTING SHOP DRAWINGS AND AGAIN BEFORE ORDERING NEW PANEL INTERIOR AND CUSTOM COVER, REMOVE EVERY EXISTING PANELBOARD COVER, FIELD MEASURE EXACT TUB/FEEDER DIMENSIONS, AND VERIFY BREAKERS. RE-INSTALL COVER WHEN FINISHED MEASURING. PROVIDE CUSTOM INTERIOR AND COVER TO FIT TUB. NO ALLOWANCES WILL BE MADE FOR FAILURE TO DO SO. REFER TO SEQUENCE OF CONSTRUCTION NOTES FOR MAXIMUM OUTAGE DURATION. CONTRACTOR SHALL PROVIDE TEMPORARY POWER TO THIS PANELBOARD UPON FAILURE TO COMPLY WITH MAXIMUM OUTAGE DURATION DUE TO INADEQUATE PREPARATION/SITE INVESTIGATION. DIMENSIONS LISTED ARE APPROXIMATE.
9.

REMOVE PANEL AND FEEDER BACK TO SOURCE. EXTEND EXISTING BRANCH CIRCUITRY AND CONDUIT TO NEW PANEL 305-1-05B.
10.

REMOVE PANEL INTERIOR EXTEND EXISTING CONDUIT BRANCH CIRCUITRY TO PANEL 305-1-06. SPLICE FEEDER IN PANEL TUB USING NON-REVERSIBLE COMPRESSION TYPE SPLICES. PROVIDE CUSTOM BLANK COVER FOR PANELBOARD.
11.

TERMINATE FEEDER UTILIZING EXISTING PANELBOARD FEED - THRU LUGS.



A. SCHEDULE ANY OUTAGES WITH THE COR 4 WEEKS PRIOR TO PERFORMING WORK.
B. WORK REQUIRING OUTAGES SHALL BE PERFORMED OUTSIDE OF NORMAL WORKING HOURS.
C. PROVIDE DEDICATED NEUTRAL FOR ALL CIRCUITS UNLESS OTHERWISE INDICATED.
D. EMT CONDUIT SHALL BE 0.75" MINIMUM.
E. CONTRACTOR SHALL INSTALL ELECTRICAL CONDUIT FEEDERS THRU STRUCTURE TO ALLOW FOR REQUIRED CABLES AROUND OTHER TRADES ABOVE GELING EQUIPMENT.
F. (1) EACH BRANCH CIRCUIT HOMERUN SHALL HAVE NO MORE THAN THREE CIRCUITS.
G. (2) BRANCH CIRCUIT HOMERUN SHALL BE SEPARATE FROM TRAIL AND A SH-EGG GREEN INSULATED EQUIPMENT GROUNDING CONDUCTOR WITHIN THE RACEWAY.
H. UNDER DEDUCT ALT. #2: EACH BRANCH CIRCUIT FED BY EACH PANEL MODIFIED UNDER THIS PROJECT SHALL BE IDENTIFIED ON EACH PANEL SCHEDULE ACCORDING TO ROOMS/EQUIPMENT IT SERVES.

1. REMOVE AND RELOCATE PANEL WHERE INDICATED. MOUNT JUNCTION BOX AND UTILIZE NON-REVERSIBLE COMPRESSION TYPE SPLICES TO EXTEND FEEDER AND ALL BRANCH CIRCUITRY TO NEW PANEL LOCATION.
2. NEW PANEL LOCATION. MOUNT PANEL ON UNISTRUT FRAME. MAINTAIN WORKING SPACE CLEARANCES PER NEC.

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Drawing Title

B305 BASEMENT POWER PLANS

Approved: Project Director

Project Title

CORRECT ARC FLASH DEFICIENCIES

Location	Dayton, Ohio
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Date 07/06/2017

Checked	MSG
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Drawn
JRS

Project No.	
VA Project No.	552-16-551
JPA Project No.	-

Building Number
305

	Drawing Number
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305EP100

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Office of
Construction
and Facilities
Management



A three inches = one foot
B one and one-half inches = one foot
C one inch = one foot
D three-quarters inch = one foot
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A
B
C
D
E
F



E SITE PHOTOGRAPH



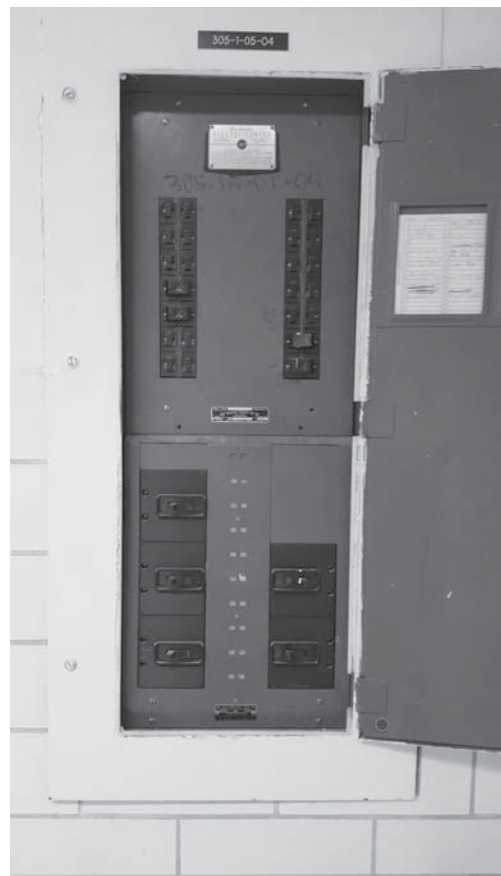
D SITE PHOTOGRAPH



A SITE PHOTOGRAPH



B SITE PHOTOGRAPH



C SITE PHOTOGRAPH

- GENERAL NOTES**
- A. SCHEDULE ANY OUTAGES WITH COR 4 WEEKS PRIOR TO PERFORMING WORK.
 - B. WORK REQUIRING OUTAGES SHALL BE PERFORMED OUTSIDE NORMAL WORKING HOURS.
 - C. PROVIDE DEDICATED NEUTRAL FOR ALL CIRCUITS UNLESS OTHERWISE INDICATED.
 - D. EMT CONDUIT SHALL BE 0.75" MINIMUM.
 - E. CONTRACTOR SHALL INSTALL ELECTRICAL CONDUIT/FEEDERS TIGHT TO STRUCTURE TO ALLOW FOR REQUIRED CLEARANCES AROUND OTHER TRADES ABOVE CEILING EQUIPMENT.
 - F. (1) EACH BRANCH CIRCUIT HOMERUN SHALL HAVE NO MORE THAN THREE CIRCUITS. EACH BRANCH CIRCUIT SHALL HAVE A SEPARATE NEUTRAL AND A SHARED GREEN INSULATED EQUIPMENT GROUNDING CONDUCTOR WITHIN THE RACEWAY.
 - G. UNDER DEDUCT ALF. #5 TRACE EACH BRANCH CIRCUIT FED BY EACH PANEL MODIFIED UNDER THIS PROJECT AND UPDATE PANEL SCHEDULE ACCORDING TO ROOMS/EQUIPMENT IT SERVES.
- NOTES**
- 1. REMOVE PANEL INTERIOR AND TUB AND REPLACE WITH NEW. INTERCEPT AND EXTEND EXISTING CONDUIT AND CIRCUITRY AS REQUIRED TO NEW PANEL. CIRCUIT NUMBERS SHALL MATCH EXISTING.
 - 2. DISCONNECT PANEL FEEDER AND REMOVE FEEDER AND CONDUIT BACK TO SOURCE. REMOVE PANEL AND REPLACE WITH NEW. INTERCEPT AND EXTEND EXISTING CONDUIT AND CIRCUITRY AS REQUIRED TO NEW PANEL. NEW CIRCUIT NUMBERS SHALL MATCH EXISTING. INSTALL NEW FEEDER AND CONDUIT AS INDICATED ON SINGLE-LINE DIAGRAM.
 - 3. INSTALL CONDUIT ON WALL CLOSE TO CEILING. SUPPORT CONDUIT USING 1-HOLE STRAPS WITH ANCHOR ON BOTTOM SIDE OF CONDUIT. PAINT CONDUIT TO MATCH COLOR OF CEILING. REFER TO SINGLE-LINE DIAGRAM FOR CONDUIT SIZING.
 - 4. INSTALL CONDUIT ABOVE CEILING. REFER TO SINGLE-LINE DIAGRAM FOR SIZING.
 - 5. INSTALL 8"x8" PULL BOX.
 - 6. REFER TO SHEET 305EP102 FOR CHILLER PANEL WORK.



Model/PIN		YCAL0043EE17XEB SDTX HXXRLXXX 44XXXXXXX XXXXXXX XXX XXXXXX A3AXXX				Serial # SCBM-925300	
Refrigerant	Max. Allowable Pressure - Bar (psig):		High Side		Low Side		
410A	System Pressure Test On		3/1/14	at	High Side	Low Side	
					45(650)	31(450)	
					45(650)	31(450)	

OUTDOOR USE

	Volt-Phase-Hertz	Voltage Limits	Min. Circuit Ampacity	Max. Dual Element Fuse Size	Max. Circuit Breaker Size (Amps)	Short Circuit Withstand
Unit Control Supply:	115-160	104-126	20	20	20	
Unit Power Supply:	200-360	180-220	724	250	250	8KA

Protection Device Size - Amps

System No.	Min. Circuit Ampacity	Max. Dual Element Fuse Size	Max. Circuit Breaker Size	Max. Running Current
1	N/A	N/A	N/A	---
2	N/A	N/A	N/A	---

Compressor - Amps

No.	Rated Current NLA / Nominal	Start-up LRA
2	46.4/45.4	250/250
2	45.4/45.4	250/250

Fan/Pump

No.	FLA	LRA	Refrigerant kg (lb)
2	7.6	44.0	15.9(35)
2	7.6	44.0	15.9(35)

Heater Loads

No.	Volt-Phase-Hertz
4	115-160
1	115-160

Compressor:

4	115-160
1	115-160

Cooler:

4	115-160
1	115-160

Pump:

4	115-160
1	115-160

Total Watts

4	115-160
1	115-160

Unit Shipping Weight kg (lb)

1334(2942)

Chiller 305-2:

- A.) The compressor contactors 1M, 2M, 4M and 5M (Schneider type LC1D65) are rated for a SCCR of 45 kA. As documentation is available on SCCR with upstream device, these need to be provided with upstream 100 Ampere class J fuses.
- B.) For the contactors to be rated for the needed SCCR, additional suitable fuses (100A) with suitable fuse holders (100A, 600V class J fuses) have to be installed ahead of these contactors.
- C.) Due to space restrictions, these new fuse holders will have to be installed at the present location of the fan contactors 7M, 8M, 10M and 11M which will have to be moved to the top right hand side of the control panel maintaining the present incoming and outgoing wiring. New wires (AWG#12) may be required for this as splicing is not acceptable.
- D.) Also the fuses and controllers CR1, CR2, as well as control transformer will be required to be moved towards the right in order to make space for an additional 3 pole 100A class J fuseblock for controller 1M.
- E.) Utilize existing wires from Main disconnect to compressor controllers for this (now from main disconnect to line side of new fuse blocks). New wires rated to at least 75C, AWG#6 to be utilized to connect from the load side of new fuse blocks to line side of compressor controllers.
- F.) Ensure proper mounting of all components as well as proper terminations.

- [illegible]