Exhaust System Improvements

2930 North Court Road
Ottumwa, Iowa 52501

Project: BG–2T11(008)–80–90

IOWA DOT
SMARTER I SIMPLER I CUSTOMER DRIVEN

OFFICE OF SUPPORT SERVICES
800 LINCOLN WAY, AMES, IOWA 50010

FOR CONSTRUCTION QUESTIONS CALL:
DANIEL APATIGA (515) 239–1627

FOR CONTRACT DOCUMENT QUESTIONS CALL:
(515) 239–1298

INDEX OF DRAWINGS:

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PB-1	POLE BUILDING FLOOR AND REFLECTED CEILING PLANS
PB-2	POLE BUILDING ELECTRICAL AND MECHANICAL PLANS

OFFICE OF
SUPPORT SERVICES

FACILITIES ENGINEER	DATE	TELEPHONE: (515) 239–1443
FIELD FACILITIES MANAGER	DATE	TELEPHONE: (515) 239–1627
FACILITIES DIRECTOR	DATE	TELEPHONE: (515) 239–1327

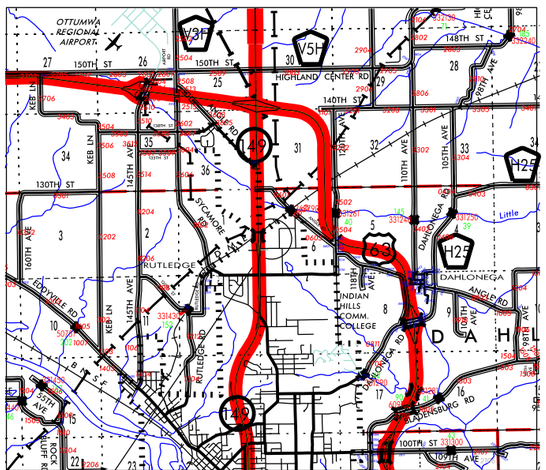
I hereby certify that the portion of this technical submission described below was prepared by me or under my direct supervision and responsible charge. I am a duly registered architect under the laws of the state of Iowa.

Printed or typed name

Signature Date

Registration expires Date issued

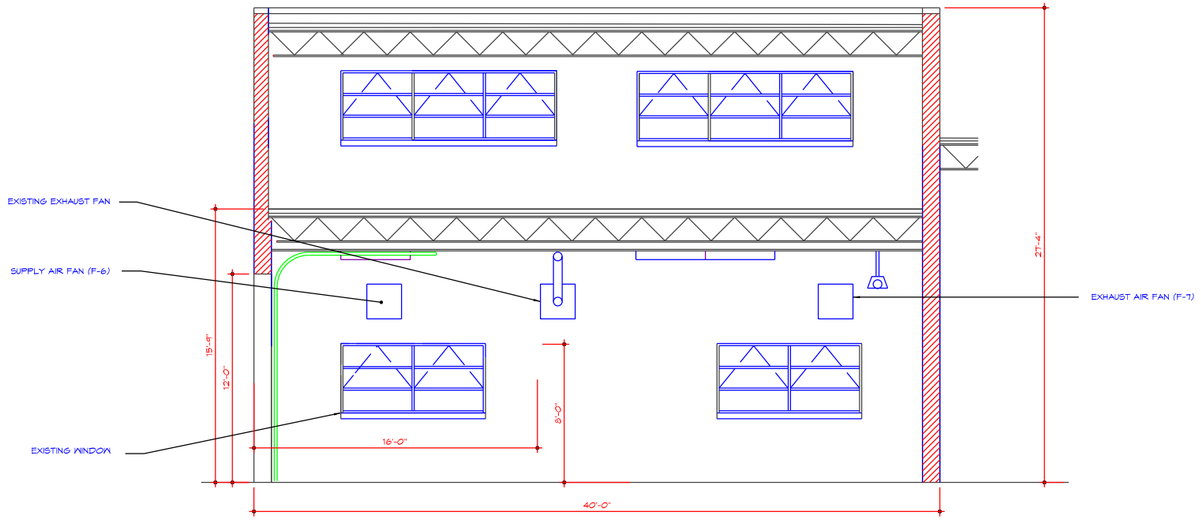
Pages or sheets covered by this seal:



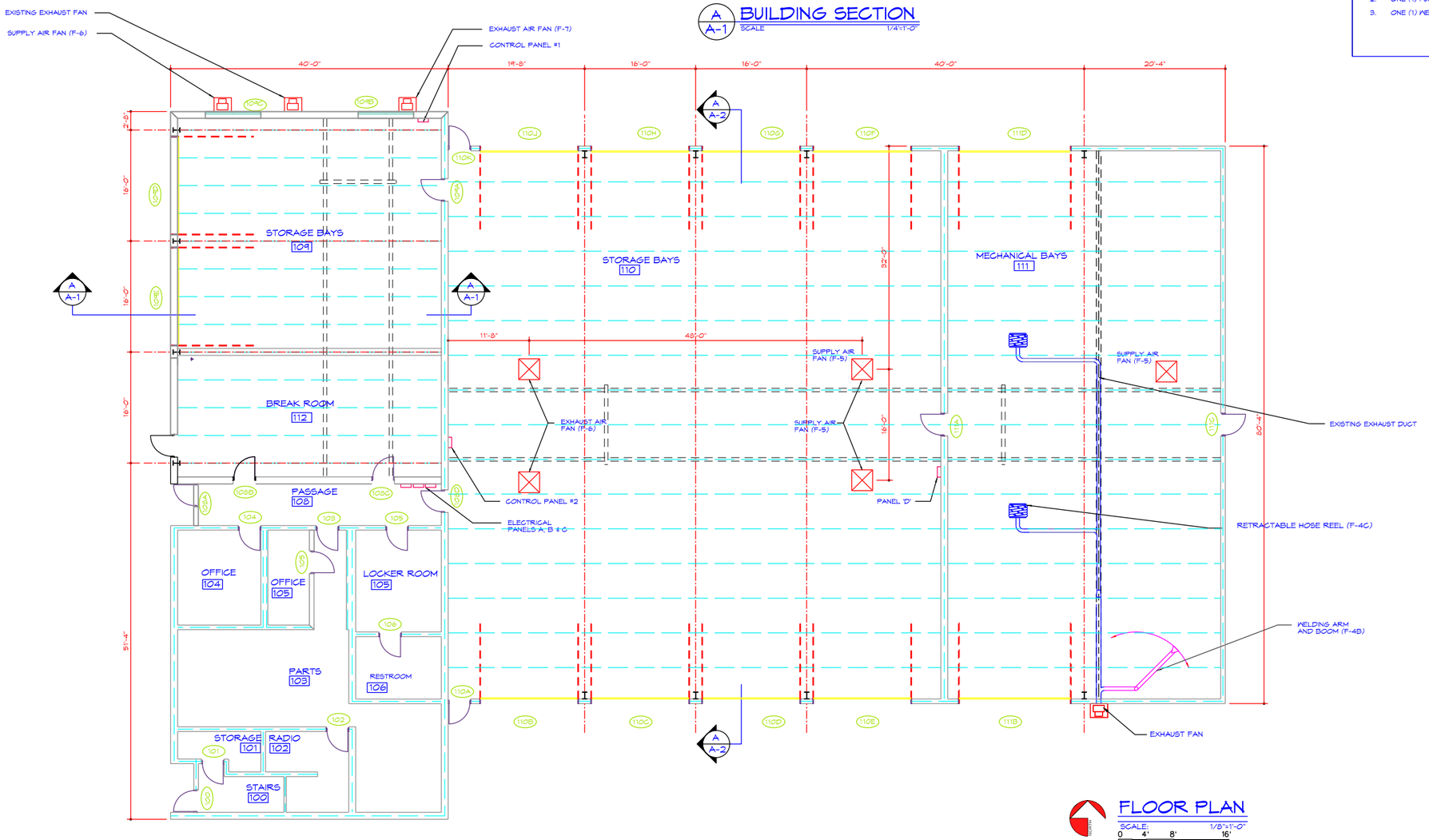
PROJECT LOCATION
SCALE: 1" = 1 MILE

NORTH

DGN_LOC



A A-1 BUILDING SECTION
SCALE 1/4"=1'-0"



FLOOR PLAN
SCALE: 1/8"=1'-0"
0 4' 8' 16'

NOTES:

1. LOCATIONS SHOWN FOR EQUIPMENT IS APPROXIMATE. VERIFY EXACT LOCATIONS IN THE FIELD. COORDINATE WITH OWNER.
2. COORDINATE CONTROL PANEL LOCATIONS IN THE FIELD AVOID "WET" LOCATIONS.
3. ALL EXISTING FIXTURES AND EQUIPMENT TO REMAIN, PROTECT AS NECESSARY.
4. EXACT LOCATIONS OF EQUIPMENT WILL BE DETERMINED IN THE FIELD BY THE OWNER.
5. NEW WIRING IS REQUIRED FOR NEW INSTALLATIONS.
6. INSULATE NEW ROOF AND WALL OPENINGS.
7. FOLLOW MANUFACTURERS RECOMMENDATIONS FOR INSTALLATION.

ITEM #1

ADD THE FOLLOWING

MECHANICS BAYS - 111

1. ONE (1) SUPPLY AIR FAN (F-1)
2. ONE (1) EXHAUST AIR FAN (F-2)
3. ONE (1) WELDING ARM AND BOOM (F-4B)
4. ONE (1) RETRACTABLE HOSE REEL WITH BOOT (F-4C)

STORAGE BAYS - 110

1. TWO (2) SUPPLY AIR FANS (F-5)
2. TWO (2) EXHAUST AIR FANS (F- 6)

POLE BUILDING

1. ONE (1) SUPPLY AIR FAN (F-1)
2. ONE (1) FUME EXHAUST AIR FAN (F-4)
3. ONE (1) WELDING ARM AND BOOM (F-4B)

DISTRICT: 05

COUNTY: WAPELLO

PROJECT NUMBER: BG-2T11(008)--80--90

OTTUMWA, IOWA

HIGHWAY MAINTENANCE GARAGE

FLOOR PLAN

IOWADOT
SMARTER & SIMPLER & CUSTOMER DRIVEN
OFFICE OF LOCATION SERVICES
800 LINCOLN WAY
AMES, IOWA 50010 (515)239-1299

DATE: January 2015

DRAWN BY: J. Frank

APPROVED: J. Burnes

REVISIONS:

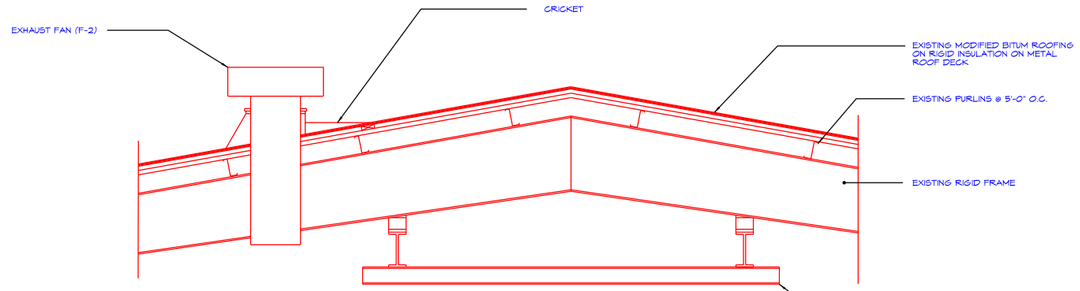
1 SHEET OF 7

A-1

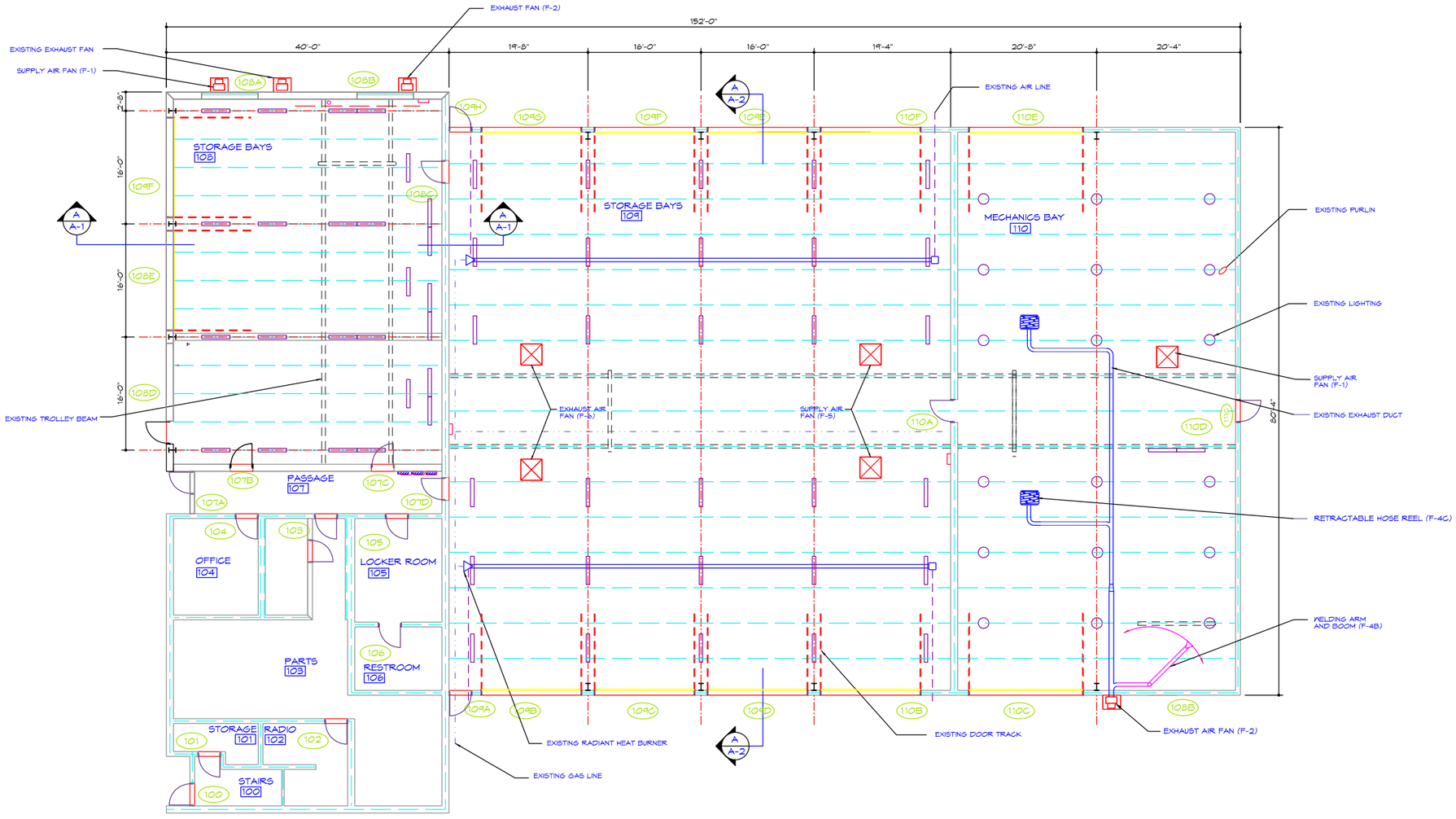
DGN_LOC

NOTES:

1. LOCATIONS SHOWN FOR EQUIPMENT IS APPROXIMATE, VERIFY EXACT LOCATIONS IN THE FIELD, COORDINATE WITH OWNER.
2. COORDINATE CONTROL PANEL LOCATIONS IN THE FIELD AVOID "WET" LOCATIONS
3. ALL EXISTING FIXTURES AND EQUIPMENT TO REMAIN, PROTECT AS NECESSARY
4. EXACT LOCATIONS OF EQUIPMENT WILL BE DETERMINED IN THE FIELD BY THE OWNER.
5. NEW WIRING IS REQUIRED FOR NEW INSTALLATIONS
6. INSULATE NEW ROOF AND WALL OPENINGS
7. FOLLOW MANUFACTUERS RECOMMENDATIONS FOR INSTALLATION
8. COORDINATE ROOFTOP FAN LOCATIONS WITH BUILDING STEEL



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



A / A-2 REFLECTED CEILING PLAN
SCALE: 1/8"=1'-0"
0 4' 8' 16'

DISTRICT: 05
COUNTY: WAPELLO
PROJECT NUMBER: BG-2T11(008)--80--90

OTTUMWA, IOWA

HIGHWAY MAINTENANCE GARAGE

REFLECTED CEILING PLAN

IOWADOT
SMARTER & SIMPLER & CUSTOMER DRIVEN
OFFICE OF SUPPORT SERVICES
800 LINCOLN WAY
AMES, IOWA 50010 (515)239-1299

DATE: January 2015
DRAWN BY: J. Frank
APPROVED: J. Burnes
REVISIONS:

SHEET 2 OF 7

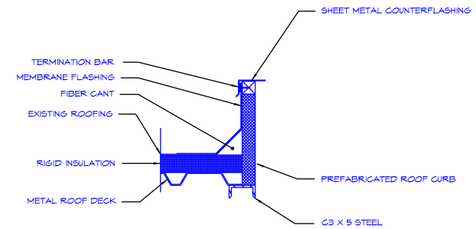
A-2

DGN_LOC

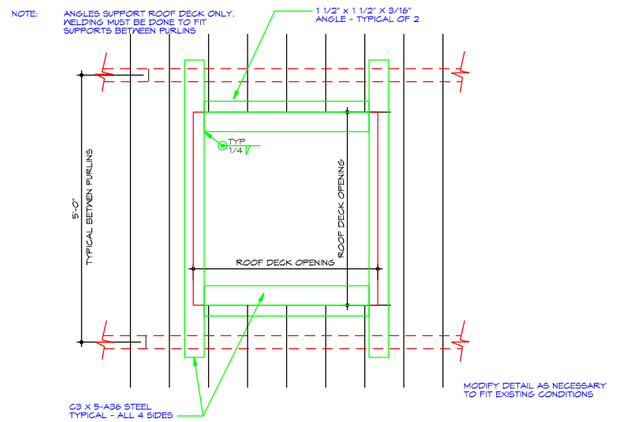
ITEM #2

CONTRACTOR TO PROVIDE A 3 TON AIR CONDITIONER MODEL AMANA ASX-13036 OR EQUAL AIR CONDITIONER UNIT SHALL BE SET OUTSIDE ON GROUND LEVEL.
ALL DUCT WORK INTO THE BREAK ROOM SHALL BE INSTALLED AS SHOWN ON THE PLAN.

NOTE:
MODEL AMH-8080
EXISTING FURNACE
INSTALLED ON NOV-2014

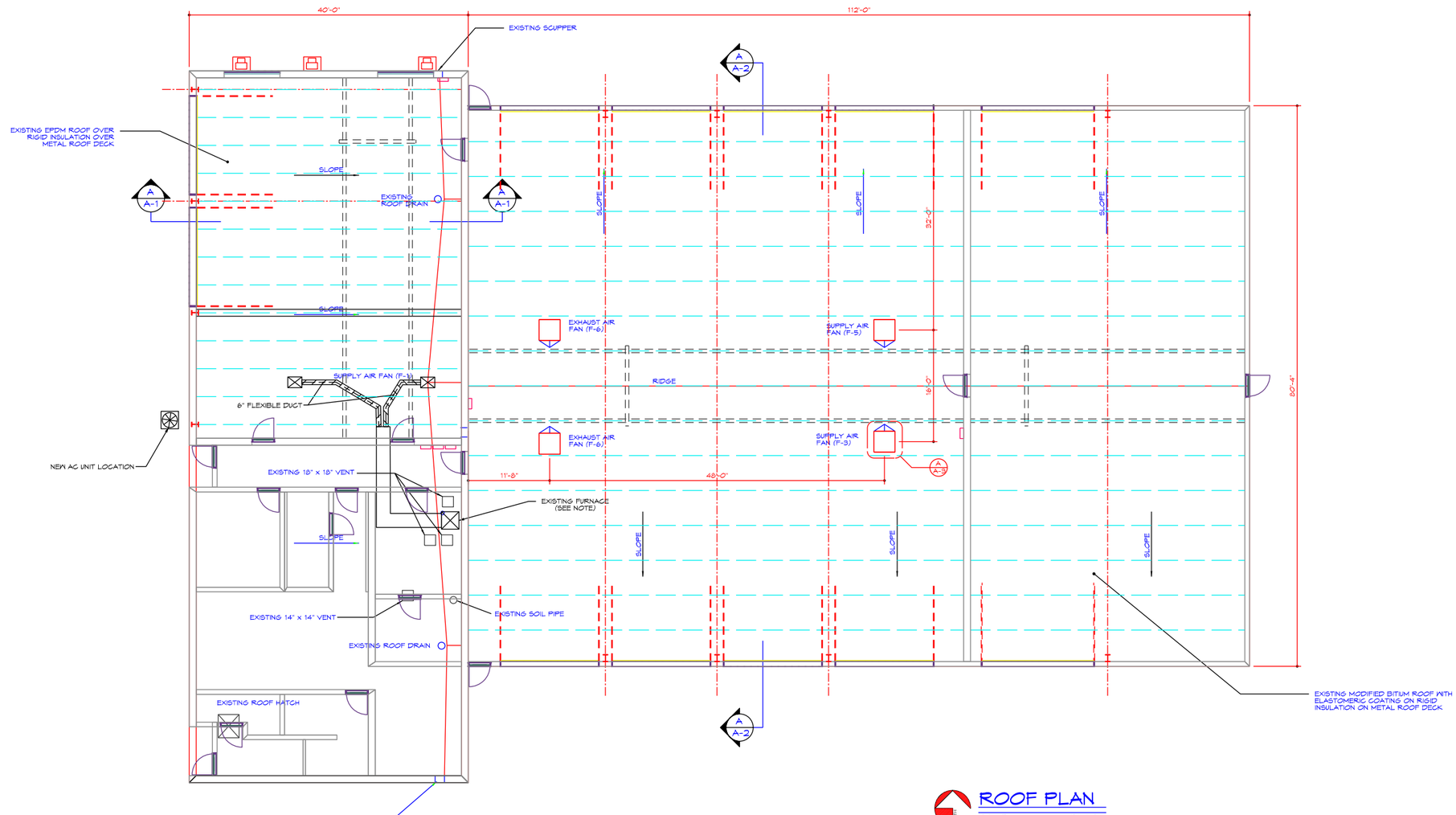


B / A-3 DETAIL
SCALE: 1 1/2"=1'-0"



TOP VIEW ONLY

A / A-3 DETAIL
SCALE: 3/4"=1'-0"



ROOF PLAN
SCALE: 1/8"=1'-0"
0 4' 8' 16'

DISTRICT: 05
COUNTY: WAPELLO
PROJECT NUMBER: BG-2T11(008)--80--90

HIGHWAY MAINTENANCE GARAGE
OTTUMWA, IOWA
ROOF PLAN

IOWA DOT
SMARTER TRANSPORTATION | CUSTOMER DRIVEN
OFFICE OF LOCAL SYSTEMS
800 LINCOLN WAY
AMES, IOWA 50010 (515)239-1299

DATE: January 2015
DRAWN BY: J. Frank
APPROVED: J. Burnes
REVISIONS:

SHEET 3 OF 7
A-3

DGN_LOC

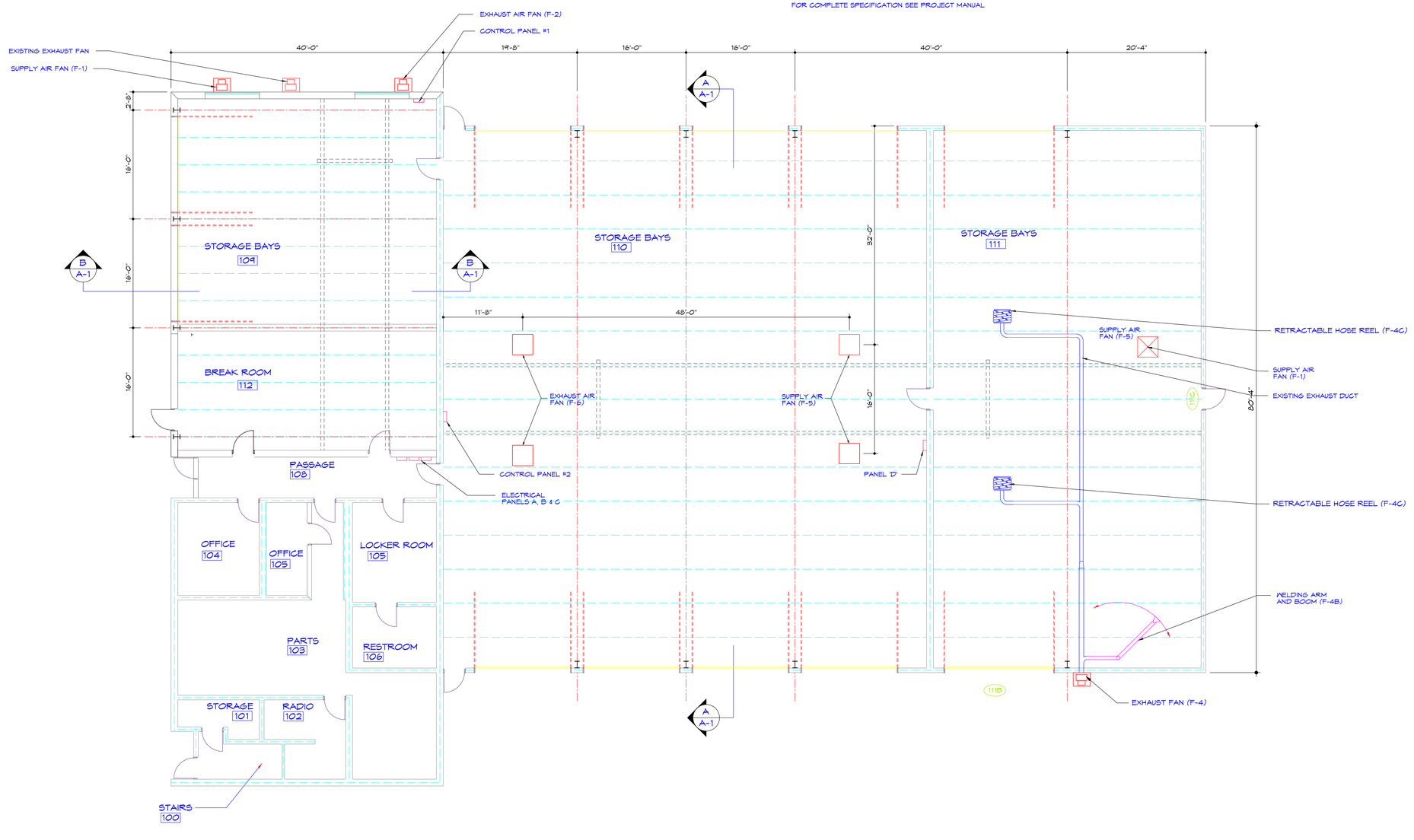
NOTES:

1. CONTRACTOR SHALL FURNISH AND INSTALL ONE NON-FUSED MASTER DISCONNECT AND ONE SPRING-WOUND TIMER TO CONTROL ALL FANS IN THE STORAGE BAYS, (ROOM #110) TOGETHER. TWO FANS SHALL BE HARD-WIRED TO EXHAUST AND TWO SHALL BE HARD-WIRED FOR INTAKE. TIMER SHALL BE 30-MINUTE TIMER.
2. CONTRACTOR SHALL FURNISH AND INSTALL ONE NON-FUSED MASTER DISCONNECT AND ONE SPRING WOUND TIMER TO CONTROL BOTH FANS IN THE MECHANICS BAY ROOM #109, TOGETHER, ONE FAN SHALL BE HARD WIRED TO INTAKE AND ONE FAN HARD WIRED TO EXHAUST. TIMER SHALL BE A 30 MINUTE TIMER.
3. CONTRACTOR TO VERIFY EXISTING ELECTRICAL SYSTEMS.
4. F-4B: PROVIDE MONOXIVENT, MODEL 15714-BA SWIVEL BOOM WITH CAPTURE ARM; 7' LONG, 6" DIAMETER FLEXIBLE EXTRACTION ARM WITH SERIES 6000 WELD PROOF HOSE AND POLY CARBONATE COLLECTION HOOD WITH HANDLE AND DAMPER.
5. F-4C: MONOXIVENT EXHAUST HOSE REEL, MODEL 9246, SPRING OPERATED, 24' OF 6" DIA. 4000 SERIES HIGH TEMPERATURE HOSE WITH MODEL TPA-RB-6 RUBBER ADAPTER WITH LIFTING SLEEVE, MAGNET, AND BUILDING IN SPRING HINGE ADAPTER; MODEL LP-10-H LIFTING POLE

FAN SCHEDULE

UNIT NUMBER	F-1	F-2	F-3	F-4	F-5	F-6
MANUFACTURER	GREENHECK	GREENHECK	NOT USED	MONOXIVENT	GREENHECK	GREENHECK
MODEL	SQ1-16-428-A5	CNB-180-5		90-MHA-HD	RBCS-3H30-5	RBCE-3H30-5
FUNCTION	SUPPLY	EXHAUST		EXHAUST	SUPPLY	EXHAUST
TYPE	WALL	WALL		WALL	ROOF	ROOF
AIR FLOW (CFM)	3,257	3,551		1,800	2,972	3,587
EX. STATIC (IN.)	0.10	0.10		4.0	0.30	0.30
MOTOR (HP)	1/2	1/2		3	1/2	1/2
FAN RPM	1750	940		2,387	749	764
DRIVE TYPE	DIRECT	BELT		BELT	BELT	BELT
ELECTRICAL	208/1/60	208/1/60		208/1/60	208/1/60	208/1/60

FOR COMPLETE SPECIFICATION SEE PROJECT MANUAL



HVAC PLAN

SCALE: 1/8"=1'-0"
0 4' 8' 16'

DISTRICT: 05
COUNTY: WAPELLO
PROJECT NUMBER: BG-2T11(008)-80-90

OTTUMWA, IOWA

HIGHWAY MAINTENANCE GARAGE

HVAC PLAN

IOWA DOT
SMARTER | SIMPLER | CUSTOMER-DRIVEN
OFFICE OF SUPPORT SERVICES
800 LINCOLN WAY
AMES, IOWA 50010 (515)239-1299

DATE: January 2015
DRAWN BY: J. Frank
APPROVED: J. Burnes
REVISIONS: 7 APR 15

4 SHEET OF 7

M-1

DGN_LOC

EXISTING PANEL 'A'
120/240-VOLT, 1-PHASE, 3-WIRE W/GROUND
100-AMP 20 SPACE

CKT NO	LOAD DESCRIPTION	LOAD AMPS	BREAKER P	BREAKER AMPS
1	GAS PUMPS		1	40
2	ISLAND LIGHTS		1	15
3	PHOTO ELECTRIC LIGHTS		1	15
4	LIGHTING - OFFICE, HALL		1	15
5	LIGHTING & OUTLETS - SHOP		1	15
6	LIGHTING		1	15
7	LIGHTING & OUTLETS - 2nd FLOOR		1	15
8	DUPLEX RECEPTACLES - OFFICE, PARTS		1	15
9	DUPLEX RECEPTACLES - RADIO, PARTS		1	20
10	FURNACE #1		1	15
11	FURNACE #2		1	15
12	FURNACE #4		1	15
13	FURNACE #7		1	15
14	FURNACE #8		1	15
15	FURNACE #9		1	15
16	EXHAUST AIR FAN		1	15
17				
18	SUPPLY AIR FAN		1	20
19				
20				
	PANEL TOTALS			

PANEL 'A' NOTES:

ADD THE FOLLOWING:

1. EXHAUST AIR FAN - CIRCUITS 16, 17
2. SUPPLY AIR FAN - CIRCUITS 18, 19

PANEL LABELING SHOWN IS FROM EXISTING PANEL - VERIFY

EXISTING PANEL 'B'
120/240-VOLT, 1-PHASE, 3-WIRE W/GROUND
200-AMP 24 SPACE

CKT NO	LOAD DESCRIPTION	LOAD AMPS	BREAKER P	BREAKER AMPS
1	LIGHTING - PARTS		1	15
2	LIGHTING & OUTLETS - RESTROOM		1	15
3	LIGHTING - SHOP		1	15
4	LIGHTING - SHOP		1	15
5	LIGHTING - SHOP		1	15
6	LIGHTING - STORAGE		1	15
7	LIGHTING - STORAGE		1	15
8	LIGHTING - STORAGE		1	15
9	LIGHTING - STORAGE		1	15
10	LIGHTING - STORAGE		1	15
11	LIGHTING - STORAGE		1	15
12	LIGHTING - STORAGE		1	15
13	WATER COOLER		1	15
14	FURNACE #3		1	15
15	FURNACE #5		1	15
16	FURNACE #6		1	15
17	EXHAUST AIR FANS		2	20
18				
19	SUPPLY AIR FANS		2	20
20				
21				
22				
23				
24				
	PANEL TOTALS			

PANEL 'B' NOTES:

ADD THE FOLLOWING:

1. EXHAUST AIR FAN - CIRCUITS 17, 18
2. SUPPLY AIR FAN - CIRCUITS 19, 20

PANEL LABELING SHOWN IS FROM EXISTING PANEL - VERIFY

EXISTING PANEL 'C'
120/240-VOLT, 1-PHASE, 3-WIRE W/GROUND
200-AMP 24 SPACE

CKT NO	LOAD DESCRIPTION	LOAD AMPS	BREAKER P	BREAKER AMPS
1	GRINDER		2	15
2				
3	WELDER		2	70
4				
5	WELDER		2	70
6				
7	COMPRESSOR		2	40
8				
9	OVERHEAD EXHAUST SYSTEM		2	30
10				
11	SALT SHED		1	40
12	DUPLEX RECEPTACLES - SHOP		1	15
13	DUPLEX RECEPTACLES - SHOP		1	15
14	DUPLEX RECEPTACLES - SHOP		1	15
15	DUPLEX RECEPTACLES - SHOP		1	15
16	DUPLEX RECEPTACLES - STORAGE		1	15
17	DUPLEX RECEPTACLES - STORAGE		1	15
18	DUPLEX RECEPTACLES - STORAGE		1	15
19	DUPLEX RECEPTACLES - STORAGE		1	15
20	DUPLEX RECEPTACLES - STORAGE		1	15
21	SPARE		2	10
22				
23	SPARE		1	15
24	SPARE		1	15
	PANEL TOTALS			

PANEL 'C' NOTES:

PANEL LABELING SHOWN IS FROM EXISTING PANEL - VERIFY

EXISTING PANEL 'D'
120/240-VOLT, 1-PHASE, 3-WIRE W/GROUND
125-AMP 20 SPACE

CKT NO	LOAD DESCRIPTION	LOAD AMPS	BREAKER P	BREAKER AMPS
1	STAIRWAY & HALL		1	15
2	LIGHTING - 2nd FLOOR OFFICE		1	15
3	LIGHTING - 2nd FLOOR OFFICE		1	15
4	LIGHTING - 2nd FLOOR OFFICE		1	15
5	LIGHTING - DRAFTING ROOM		1	15
6	LIGHTING - DRAFTING ROOM		1	15
7	LIGHTING - DRAFTING ROOM		1	15
8	DUPLEX RECEPTACLES - 2nd FLOOR		1	15
9	DUPLEX RECEPTACLES - 2nd FLOOR		1	15
10	DUPLEX RECEPTACLES - 2nd FLOOR		1	15
11	DUPLEX RECEPTACLES - 2nd FLOOR		1	15
12	DUPLEX RECEPTACLES - 2nd FLOOR		1	15
13	DUPLEX RECEPTACLES - 2nd FLOOR		1	15
14	DUPLEX RECEPTACLES - 2nd FLOOR		1	20
15	DUPLEX RECEPTACLES - 2nd FLOOR		1	15
16	WATER COOLER		1	15
17	AIR CONDITIONER #8		3	70
18				
19	AIR CONDITIONER #9		3	40
20				
21	WATER HEATER		2	20
22				
23	SPARE		1	15
24	SPARE		1	15
	PANEL TOTALS			

PANEL 'D' NOTES:

PANEL LABELING SHOWN IS FROM EXISTING PANEL - VERIFY

NOTES:

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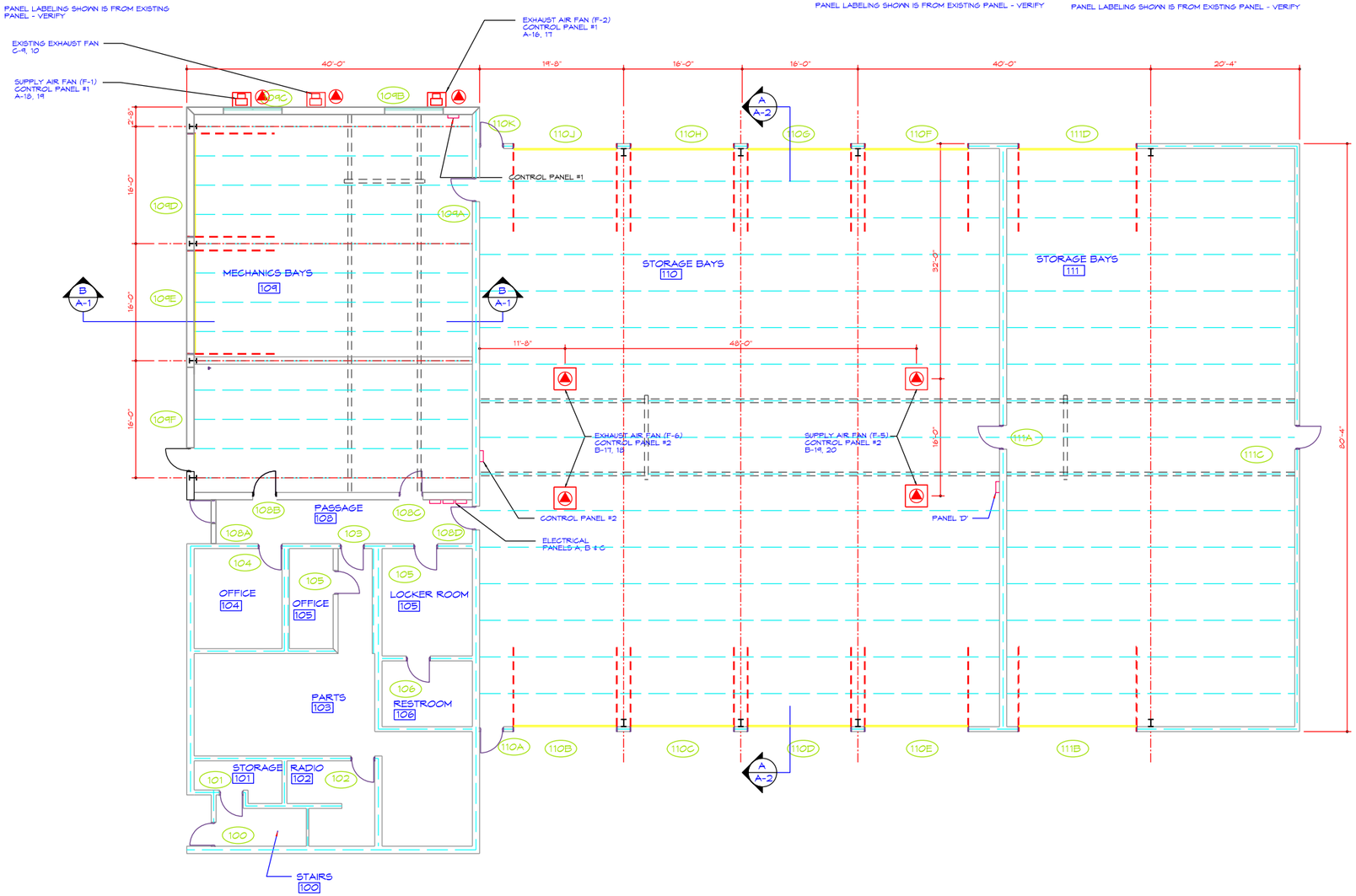
2. CONTRACTOR SHALL FURNISH AND INSTALL ONE NON-FUSED MASTER DISCONNECT AND ONE SPRING WOUND TIMER TO CONTROL BOTH FANS IN THE MECHANIC'S BAY ROOM #109, TOGETHER. ONE FAN SHALL BE HARD WIRED TO INTAKE AND ONE FAN HARD WIRED TO EXHAUST. TIMER SHALL BE A 30 MINUTE TIMER.



ELECTRICAL PLAN
SCALE: 1/8"=1'-0"
0 4' 8' 16'

DISTRICT: 05
COUNTY: WAPELLO
PROJECT NUMBER: BG-2T11(008)-80-90

HIGHWAY MAINTENANCE GARAGE
OTTUMWA, IOWA
ELECTRICAL PLAN

IOWA DOT
SMARTER TRANSPORTATION FOR A CUSTOMER-DRIVEN ECONOMY
OFFICE OF LOCAL GOVERNMENT SERVICES
800 LINCOLN WAY
AMES, IOWA 50010 (515)239-1299

DATE: January 2015
DRAWN BY: J. Frank
APPROVED: J. Burnes
REVISIONS:

SHEET 5 OF 7

E-1

DESIGN_LOC