

ELECTRICAL NOTES – GENERAL

ALL WORK SHALL COMPLY WITH APPLICABLE REQUIREMENTS OF THE 2014 NATIONAL ELECTRIC CODE (NEC).

DETERMINE EXISTING CONDITIONS THAT MAY AFFECT THIS WORK, BY ON-SITE INSPECTION PRIOR TO BIDDING.

LABEL CIRCUIT BREAKER NUMBER & PANEL DESIGNATION ON EACH JUNCTION BOX COVER INSTALLED OR ACCESSED AS PART OF THE WORK.

VERIFY POWER REQUIREMENTS AND EXACT LOCATION OF EQUIPMENT FURNISHED. COMPLY WITH ELECTRICAL ROUGH-IN REQUIREMENTS FOR THIS EQUIPMENT.

ALL CIRCUITS SHALL BE IN CONDUIT AND SHALL INCLUDE AN EQUIPMENT GROUNDING CONDUCTOR, GREEN #12 STRANDED COPPER MINIMUM.

ALL CONDUCTORS SHALL BE STRANDED COPPER, #12 AWG MINIMUM. INCREASE CONDUCTOR SIZES A MINIMUM OF ONE SIZE OVER NEC TABLE 310-16 IN CIRCUITS WITH A LENGTH OVER 75 FEET.

IF EXISTING WIRING IS CALLED OUT TO BE REUSED, INSPECT CONDITION AND CURRENT RATING OF WIRE TO DETERMINE IF IT IS SAFE TO REUSE. REPORT ANY UNSATISFACTORY OR UNSAFE CONDITIONS TO THE ENGINEER.

ELECTRICAL DEMOLITION NOTES

DEMOLITION OF ALL ELECTRICAL DEVICES, CIRCUITS, AND OTHER MISCELLANEOUS MATERIALS IS TO BE BY THE ELECTRICAL CONTRACTOR.

INCLUDE IN REMOVAL OF CIRCUITS: WIRING, BOXES, CONDUITS, STRAPS, AND OTHER MISCELLANEOUS MATERIALS BACK TO THE BRANCH PANEL OR TO A JUNCTION BOX THAT IS TO REMAIN. CIRCUITS THAT TERMINATE IN A JUNCTION BOX MAY BE LEFT FOR FUTURE USE AFTER MARKING AS NOTED BELOW.

CIRCUITS THAT ARE REMOVED, AND NOT REUSED, SHALL BE DISCONNECTED AT THE CIRCUIT BREAKER IN THE EXISTING PANEL. FOLD OVER ENDS OF WIRE, DOUBLE WRAP WITH UL LISTED BLACK VINYL TAPE, AND TAG TO IDENTIFY TO WHICH JUNCTION BOX THE CIRCUIT IS TERMINATED. LABEL UNUSED CIRCUIT BREAKERS AS "SPARE".

REMOVE DEMOLISHED MATERIALS PROMPTLY FROM THE SITE AND DISPOSE OF PROPERLY.

LEAVE OLD CIRCUITS INTACT UNTIL NEW CIRCUITS ARE INSTALLED AND FULLY FUNCTIONAL.

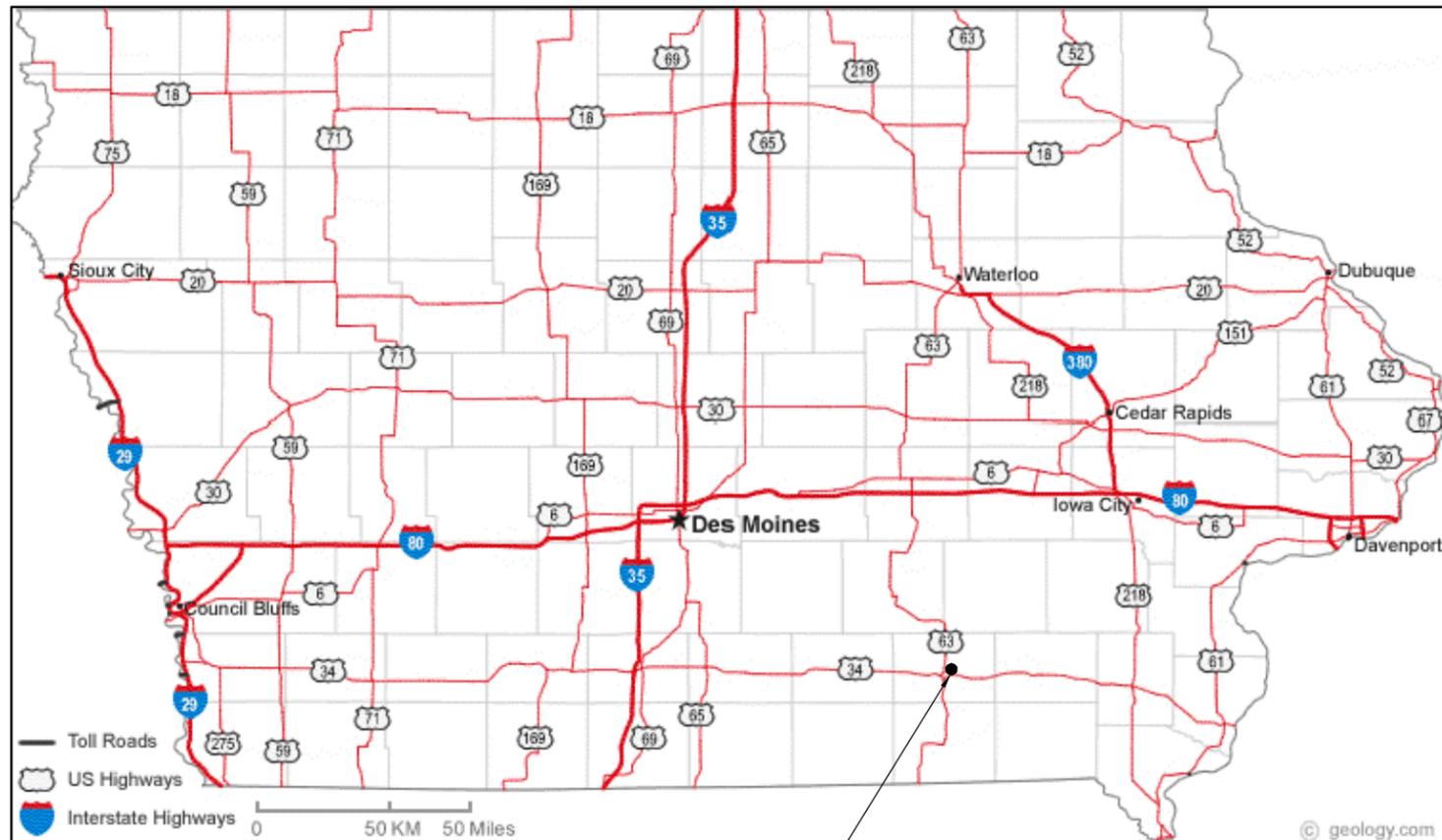
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EXISTING LIGHT FIXTURE AND SWITCH QUANTITIES AND LOCATIONS SHOWN ARE APPROXIMATE. LOCATIONS AND QUANTITIES MAY HAVE CHANGED FROM WHAT IS SHOWN. VERIFY EXACT QUANTITY AND LOCATIONS ON SITE PRIOR TO BIDDING.

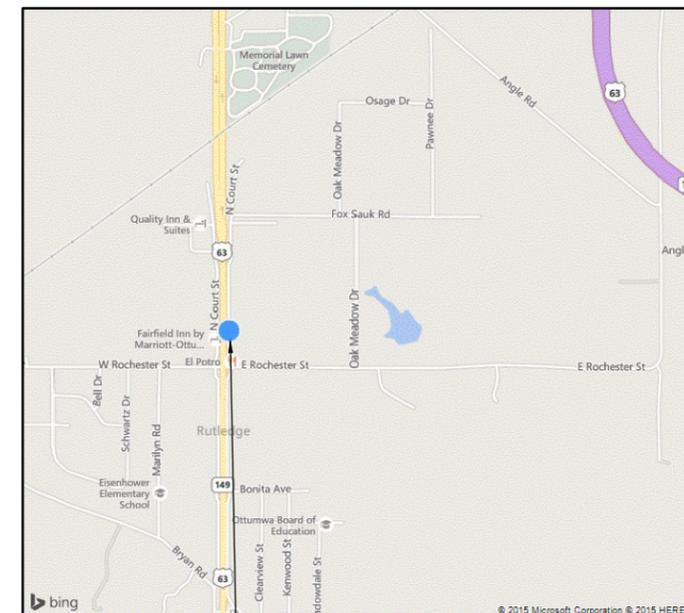
LIGHTING SYMBOLS

- § WALL SWITCH – 1 WAY
- §3 WALL SWITCH – 3 WAY
- JUNCTION BOX
- ① KEYED NOTE REFERENCE

MAINTENANCE FACILITY LIGHTING UPGRADE OTTUMWA, IOWA



PROJECT LOCATION



2930 N. COURT RD.
OTTUMWA, IA 52501

MERCER ENGINEERING, P.C.
3079 COLDWATER CREEK RD.
CRESCO, IA 52136
515-360-5995
RMERCER@MERCERENG.COM
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MERCER ENGINEERING, P.C.

IOWA DEPARTMENT OF TRANSPORTATION
MAINTENANCE FACILITY LIGHTING UPGRADE
OTTUMWA, IOWA

SHEET TITLE
COVER SHEET

SCALE:
AS NOTED

DRAWN BY:
M.C.

APPROVED:
R.M.

REVISIONS:

DATE:
AUGUST 1, 2016

PROJECT NO.:
1608

SHEET NO.:
CS

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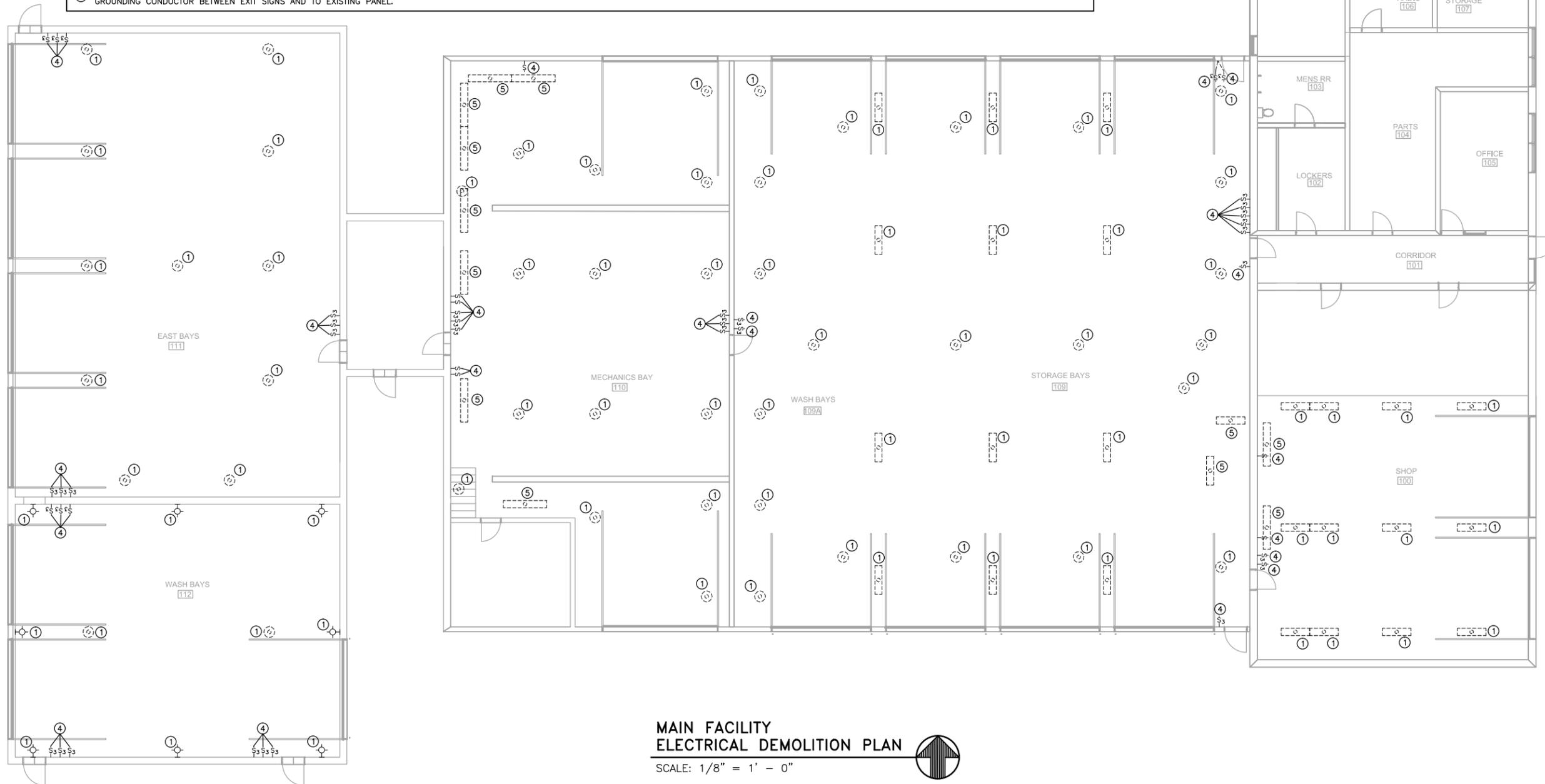
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- ② INSTALL NEW LED HIGH BAY LIGHT FIXTURE IN LOCATION SHOWN. NEW FIXTURES ARE FURNISHED BY THE IOWA DEPARTMENT OF TRANSPORTATION (IA DOT) AND ARE CURRENTLY STORED ON SITE. COORDINATE WITH SITE SUPERVISOR FOR THE LOCATION OF THE NEW FIXTURES. LAMPS ARE INCLUDED WITH FIXTURES. CONTRACTOR SHALL TRANSPORT FIXTURES FROM WHERE THE FIXTURES ARE LOCATED ON SITE TO THE PROJECT AREA, UN-BOX FIXTURES, AND INSTALL FIXTURES. EXTEND NEW CIRCUIT, INCLUDING CONDUIT, CONDUCTORS, AND CONDUIT FITTINGS, FROM NEAREST JUNCTION BOX TO NEW FIXTURE. REUSE EXISTING CIRCUIT FROM JUNCTION BOX TO EXISTING SWITCH. VERIFY THAT THERE IS AN EQUIPMENT GROUNDING CONDUCTOR. INSPECT EXISTING WIRING FOR DEFECTS OR POTENTIAL SAFETY ISSUES. REPORT ANY ISSUES OR UNSAFE CONDITIONS TO THE ENGINEER.

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MAIN FACILITY ELECTRICAL DEMOLITION PLAN

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



ELECTRICAL KEYED NOTES

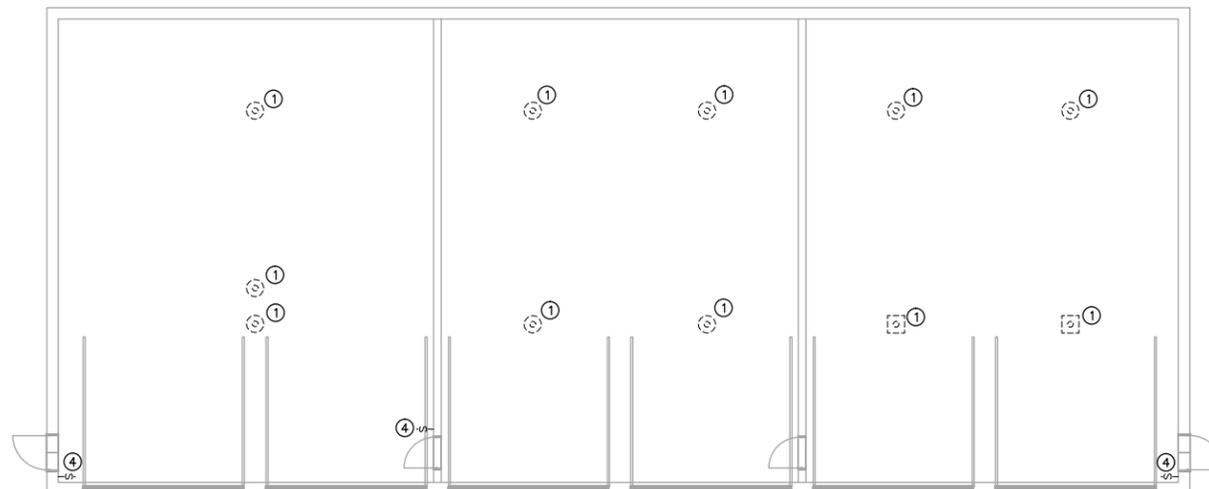
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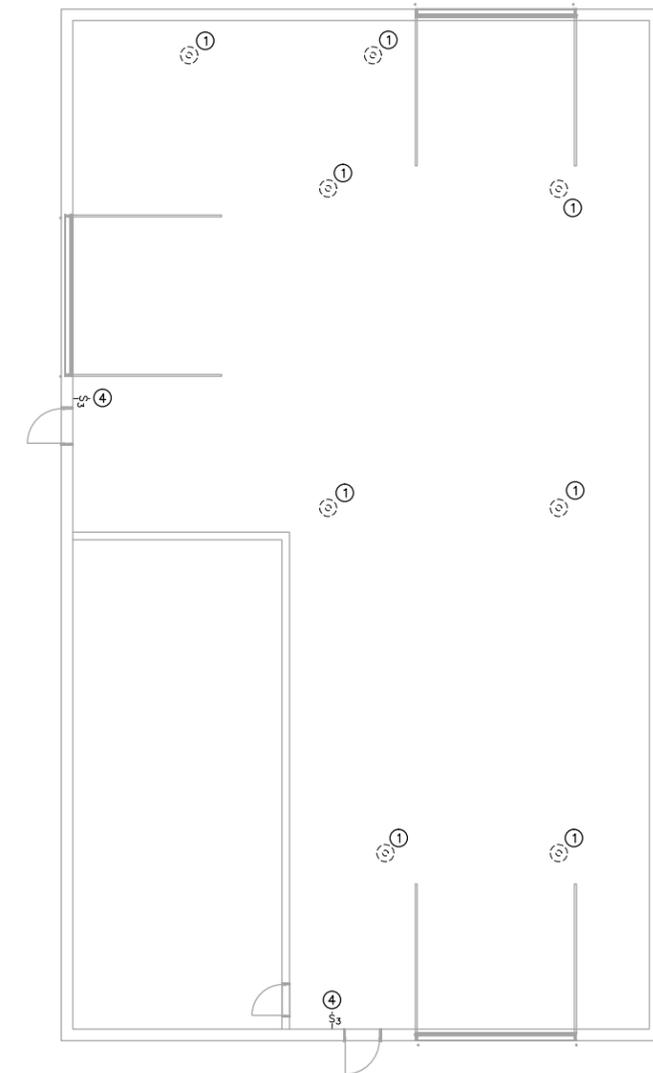


**STORAGE BUILDING
ELECTRICAL DEMOLITION PLAN**

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



NORTH



**BRIDGE REPAIR CREW BUILDING
ELECTRICAL DEMOLITION PLAN**

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



NORTH

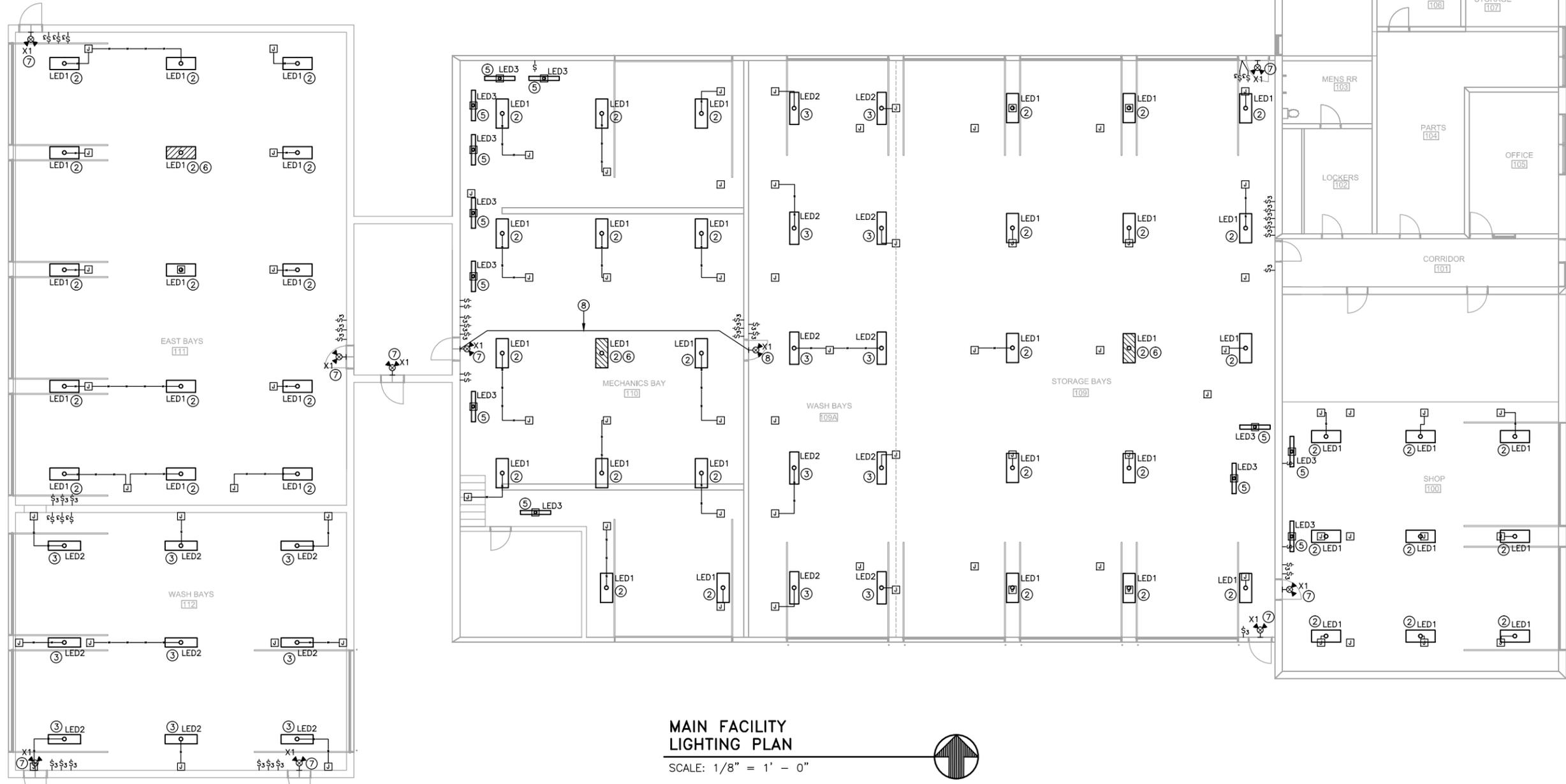
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LIGHT FIXTURE SCHEDULE

TAG	FIXTURE TYPE	MANUFACTURER	MODEL	VOLTS	LAMPS/LUMENS	PROVIDED BY	NOTES
LED1	LED HIGH BAY	METALUX	HBLED-LD4-4/-W-AL-UNV-LB40-CD2-U	MULTI	18,000 lm	OWNER	3,5
LED2	LED WET LOCATION HIGH BAY	METALUX	VT4LED-LD4-19-DR-UNV-LB40-CD2-WL-U	MULTI	19,000 lm	OWNER	4,6
LED3	LINEAR LED	LITHONIA	FEM4 LED 4L/ IMACD	MULTI	4,000 lm	CONTRACTOR	1,5
X1	EMERGENCY EXIT	DUAL LITE	SESRW	120V	-	CONTRACTOR	1,5

- NOTES:
1. EQUIVALENT PRODUCTS FROM LITHONIA, DAYBRITE, & HUBBELL ARE APPROVED AS EQUALS.
 2. NOTE NOT USED.
 3. ACCESSORIES: METALUX SS AIRCRAFT CABLE "Y" TOGGLE MOUNTING KIT. REFER TO KEYED NOTES FOR ADDITIONAL INFORMATION.
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 5. PROVIDE 6' 3-WIRE FIXTURE WHIPS AND ASSOCIATED FITTINGS AS REQUIRED PER FIXTURE. INSTALL SHORTER FIXTURE WHIPS IF POSSIBLE.
 6. PROVIDE 6' 3-WIRE FIXTURE WHIPS WITH NON-METALLIC LIQUIDTIGHT CONDUIT AND ASSOCIATED FITTINGS AS REQUIRED PER FIXTURE. INSTALL SHORTER FIXTURE WHIPS IF POSSIBLE.



MAIN FACILITY LIGHTING PLAN
 SCALE: 1/8" = 1' - 0"
 NORTH

MERCER ENGINEERING, P.C.
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 515-360-5995
 RMERCER@MERCERENG.COM
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 MERCER ENGINEERING, P.C.

IOWA DEPARTMENT OF TRANSPORTATION
 MAINTENANCE FACILITY LIGHTING UPGRADE
 OTTUMWA, IOWA

SHEET TITLE
MAIN FACILITY LIGHTING PLAN

SCALE:
 AS NOTED

DRAWN BY:
 M.C.

APPROVED:
 R.M.

REVISIONS:

DATE:
 AUGUST 1, 2016

PROJECT NO.:
 1608

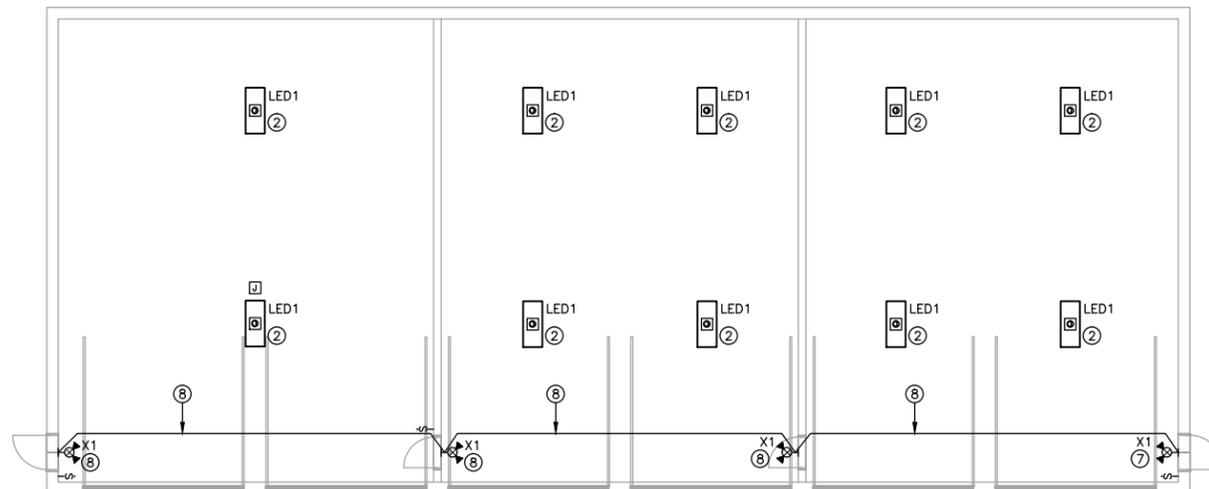
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E1

ELECTRICAL KEYED NOTES

- ① DEMOLISH EXISTING LIGHT FIXTURE. PROVIDE A 4"x4"x2" JUNCTION BOX WITH COVER IN DEMOLISHED FIXTURE LOCATION. REFER TO SPECIFICATION SECTION 16130 FOR MATERIAL INFORMATION. PROPERLY DISPOSE OF DEMOLISHED FIXTURE.
- ② INSTALL NEW LED HIGH BAY LIGHT FIXTURE IN LOCATION SHOWN. NEW FIXTURES ARE FURNISHED BY THE IOWA DEPARTMENT OF TRANSPORTATION (IA DOT) AND ARE CURRENTLY STORED ON SITE. COORDINATE WITH SITE SUPERVISOR FOR THE LOCATION OF THE NEW FIXTURES. LAMPS ARE INCLUDED WITH FIXTURES. CONTRACTOR SHALL TRANSPORT FIXTURES FROM WHERE THE FIXTURES ARE LOCATED ON SITE TO THE PROJECT AREA, UN-BOX FIXTURES, AND INSTALL FIXTURES. EXTEND NEW CIRCUIT, INCLUDING CONDUIT, CONDUCTORS, AND CONDUIT FITTINGS, FROM NEAREST JUNCTION BOX TO NEW FIXTURE. REUSE EXISTING CIRCUIT FROM JUNCTION BOX TO EXISTING SWITCH. VERIFY THAT THERE IS AN EQUIPMENT GROUNDING CONDUCTOR. INSPECT EXISTING WIRING FOR DEFECTS OR POTENTIAL SAFETY ISSUES. REPORT ANY ISSUES OR UNSAFE CONDITIONS TO THE ENGINEER.

 PROVIDE CABLE HANGAR ASSEMBLIES, (2) PER FIXTURE, AS NOTED IN THE LIGHT FIXTURE SCHEDULE, CONSISTING OF 20' ADJUSTABLE AIRCRAFT CABLE (ADJUST LENGTH AS REQUIRED FOR FIXTURE HEIGHT), 2-HOOKS, AND Y HANGARS. CABLE SHALL BE 7X19 CONSTRUCTION WITH DIAMETER SELECTED BY THE LIGHT FIXTURE MANUFACTURER. PROVIDE SUPPORTS FROM OVERHEAD STRUCTURE FOR NEW FIXTURES AS REQUIRED. SUPPORTS INCLUDE STAINLESS STEEL STRUT, THREADED HANGAR RODS, BEAM CLAMPS, FASTENERS, AND MISC. MATERIALS REQUIRED TO SUPPORT THE NEW FIXTURES FROM CABLE HANGAR ASSEMBLIES. PROVIDE WASHERS BEHIND ALL NUTS. PROVIDE NEW BLANK COVER PLATES FOR EXISTING JUNCTION BOXES IF REQUIRED. THE CABLE HANGAR ASSEMBLIES SPECIFIED ON THE LIGHT FIXTURE SCHEDULE HAVE BEEN SELECTED BY THE MANUFACTURER SPECIFICALLY FOR THE LIGHT FIXTURES SPECIFIED. THERE SHALL BE NO SUBSTITUTIONS. MATCH EXISTING FIXTURE HEIGHT ABOVE FLOOR. VERIFY THERE IS ENOUGH CLEARANCE OVER THE OVERHEAD DOOR AND TO EXISTING STRUCTURE, MODIFY HEIGHT OF FIXTURES AS REQUIRED TO PROVIDE ADEQUATE CLEARANCES.
- ③ INSTALL NEW LED HIGH BAY WEATHERPROOF LIGHT FIXTURE IN LOCATION SHOWN. NEW FIXTURES ARE FURNISHED BY THE IOWA DEPARTMENT OF TRANSPORTATION (IA DOT) AND ARE CURRENTLY STORED ON SITE. COORDINATE WITH SITE SUPERVISOR FOR THE LOCATION OF THE NEW FIXTURES. LAMPS ARE INCLUDED WITH FIXTURES. CONTRACTOR SHALL TRANSPORT FIXTURES FROM WHERE THE FIXTURES ARE LOCATED TO THE PROJECT AREA, UN-BOX FIXTURES, AND INSTALL FIXTURES. EXTEND NEW CIRCUIT, INCLUDING CONDUIT, CONDUCTORS, AND CONDUIT FITTINGS, FROM JUNCTION BOX TO NEW FIXTURE. REUSE EXISTING CIRCUIT FROM JUNCTION BOX TO EXISTING SWITCH. VERIFY THAT THERE IS AN EQUIPMENT GROUNDING CONDUCTOR. INSPECT EXISTING WIRING FOR DEFECTS OR POTENTIAL SAFETY ISSUES. REPORT ANY ISSUES OR UNSAFE CONDITIONS TO THE ENGINEER.

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- ④ DEMOLISH AND REPLACE EXISTING LIGHT SWITCH AND COVER PLATE ONE-FOR-ONE. REUSE EXISTING BOX & WIRING. SWITCH LOCATIONS AND QUANTITIES SHOWN ARE APPROXIMATE. VERIFY EXACT LOCATION AND QUANTITY OF EXISTING SWITCHES ON SITE.
- ⑤ DEMOLISH AND REPLACE THE EXISTING FLUORESCENT LIGHT FIXTURES OVER THE WORK BENCHES WITH NEW LED LIGHT FIXTURES IN SAME LOCATION. NEW FIXTURES ARE PROVIDED BY CONTRACTOR, REFER TO LIGHT FIXTURE SCHEDULE. REUSE EXISTING CIRCUITING AND BRACKETS TO HANG NEW FIXTURES. PROVIDE NEW ATTACHMENT FASTENERS, WIRING, AND MISCELLANEOUS HARDWARE & FIXTURE WHIPS AS REQUIRED. INSPECT EXISTING WIRING FOR DEFECTS OR POTENTIAL SAFETY ISSUES. REPORT ANY ISSUES OR UNSAFE CONDITIONS TO THE ENGINEER. VERIFY THAT THERE IS AN EQUIPMENT GROUNDING CONDUCTOR.
- ⑥ FIXTURE IS TO BE ALWAYS ON. PROVIDE A NEW SEPARATE 20A 1P POWER CIRCUIT. EXTEND AND CONNECT CIRCUIT TO 20A 1P CIRCUIT BREAKER IN NEAREST BRANCH PANEL.
- ⑦ DEMOLISH AND REPLACE THE EXISTING EMERGENCY EXIT SIGNS WITH NEW SIGNS IN SAME LOCATION. CONTRACTOR SHALL PURCHASE EXIT LIGHTS. DISPOSE OF DEMOLISHED FIXTURE. REUSE EXISTING CIRCUITING. VERIFY THAT THERE IS AN EQUIPMENT GROUNDING CONDUCTOR. INSPECT EXISTING WIRING FOR DEFECTS OR POTENTIAL SAFETY ISSUES. REPORT ANY ISSUES OR UNSAFE CONDITIONS TO THE ENGINEER.
- ⑧ PROVIDE NEW EXIT SIGNS IN NEW LOCATION. CONTRACTOR SHALL PURCHASE EXIT SIGNS. CIRCUIT WITH EXISTING EXIT FIXTURE TO EXISTING PANEL. PROVIDE NEW CIRCUITING: (2) #12 AWG THHN-2 + (1) #12 AWG THHN-2 EQUIPMENT GROUNDING CONDUCTOR BETWEEN EXIT SIGNS AND TO EXISTING PANEL.

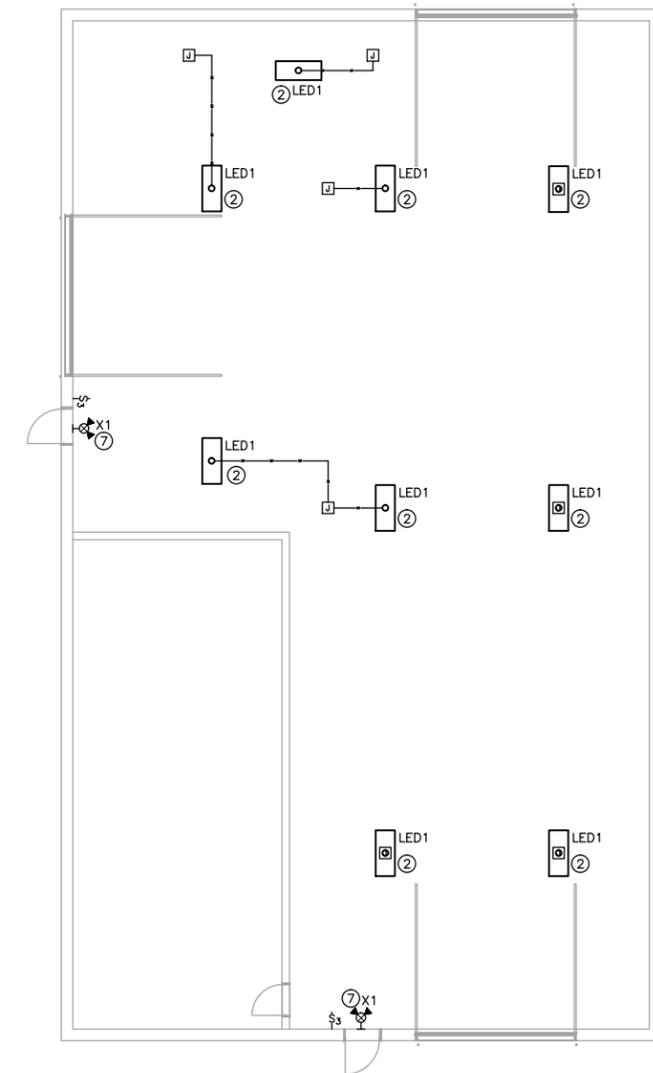


**STORAGE BUILDING
LIGHTING PLAN**

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



NORTH



**BRIDGE REPAIR CREW BUILDING
LIGHTING PLAN**

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



NORTH