

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.

EXISTING FIXTURES

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

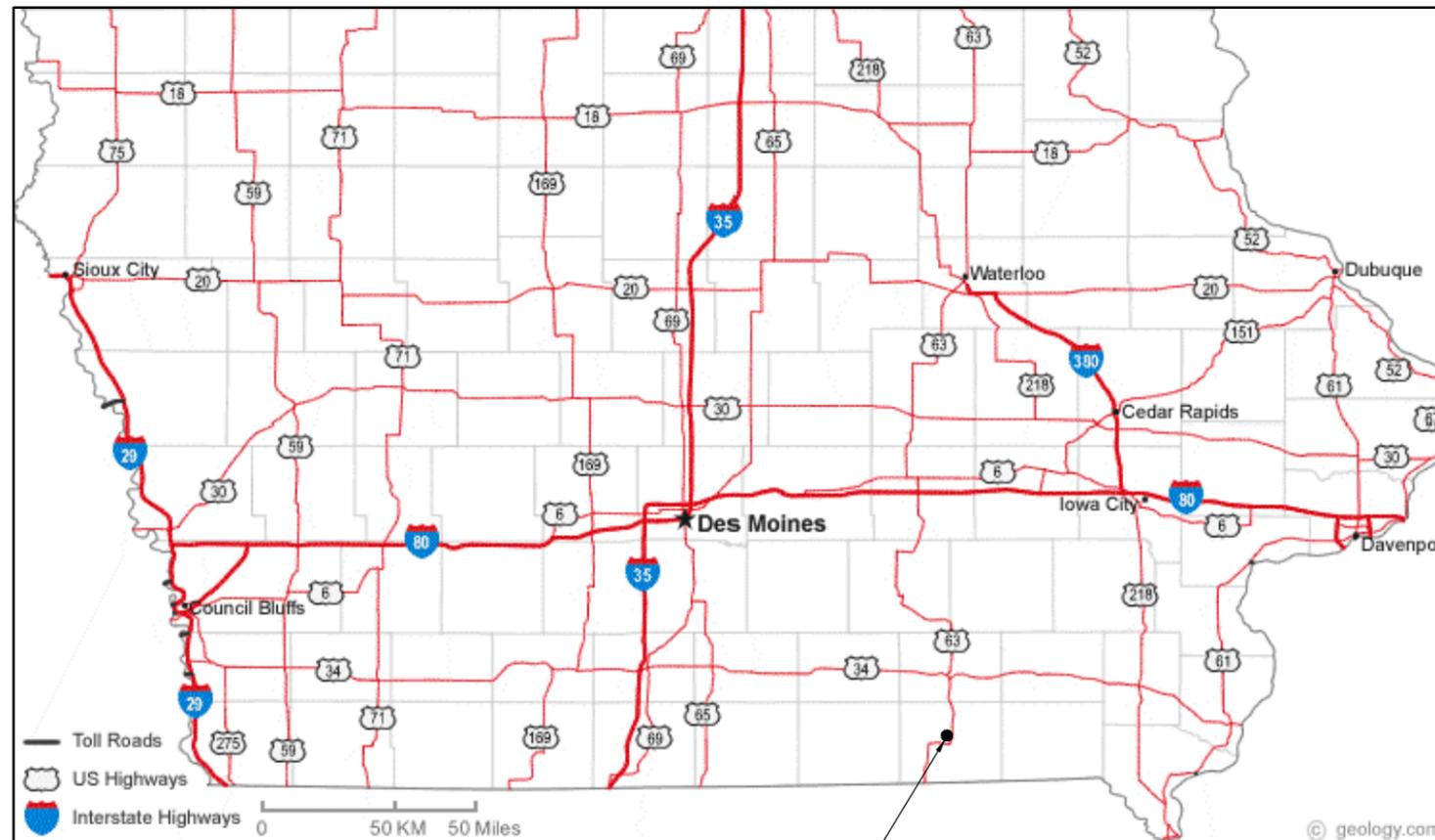
LIGHTING SYMBOLS

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

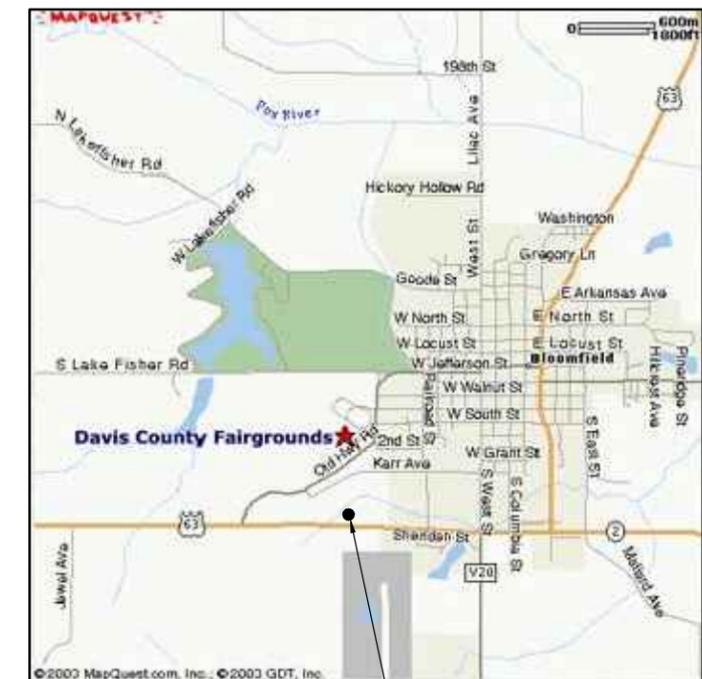
MAINTENANCE FACILITY LIGHTING UPGRADE BLOOMFIELD, IOWA



IOWA DEPARTMENT OF
TRANSPORTATION



PROJECT LOCATION



20836 IOWA 2
BLOOMFIELD, IA 52537

MERCER ENGINEERING, P.C.
3079 COLDWATER CREEK RD.
CRESCO, IA 52136

515-360-5995
RMERCER@MERCERENG.COM
© COPYRIGHT 2015
MERCER ENGINEERING, P.C.

IOWA DEPARTMENT OF TRANSPORTATION
MAINTENANCE FACILITY LIGHTING UPGRADE

SHEET TITLE
BLOOMFIELD
MAINTENANCE
FACILITY

SCALE:
AS NOTED

DRAWN BY:
M.C.

APPROVED:
R.M.

REVISIONS:

DATE:
DECEMBER 21, 2015

PROJECT NO.:
ME 1531

SHEET NO.:
CS

LIGHTING KEYED NOTES

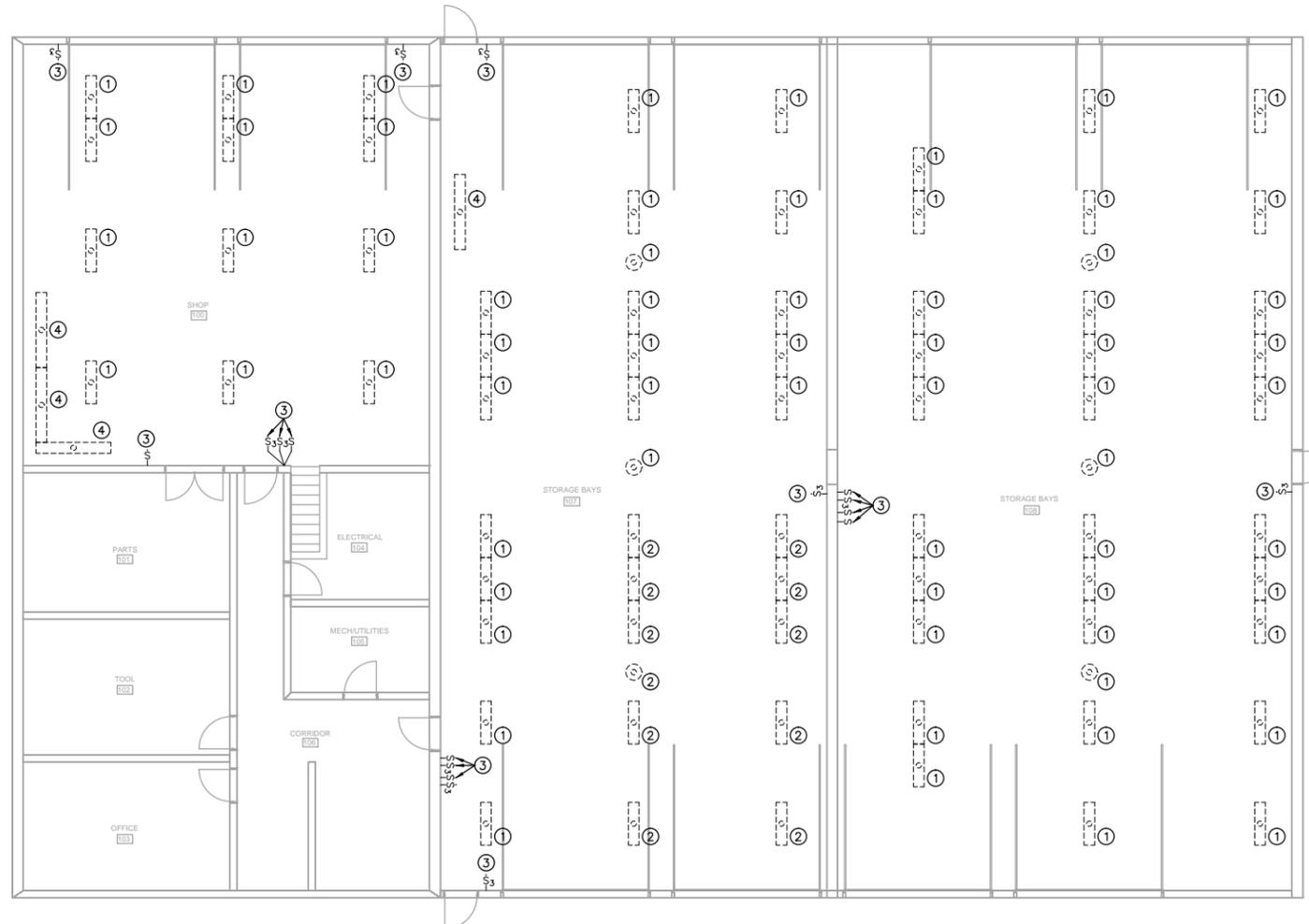
- ① DEMOLISH EXISTING LIGHT FIXTURE AND REPLACE WITH NEW HIGH BAY LIGHT FIXTURE IN LOCATION SHOWN ON SHEET E1. PROVIDE A 4"x4"x2" STEEL JUNCTION BOX WITH COVER IN DEMOLISHED FIXTURE LOCATION. DISPOSE OF DEMOLISHED FIXTURE.
- ①A PROVIDE NEW SURFACE MOUNTED LIGHT FIXTURE IN LOCATION SHOWN. EXTEND NEW CIRCUIT, INCLUDING CONDUIT, CONDUCTORS, AND CONDUIT FITTINGS, FROM JUNCTION BOX TO NEW FIXTURE. REUSE EXISTING CONDUCTORS 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. SUPPORTS INCLUDE GALVANIZED STEEL STRUT, THREADED HANGAR RODS, BEAM CLAMPS, FASTENERS, AND MISCELLANEOUS 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 SHALL BE FURNISHED BY THE MANUFACTURER SPECIFICALLY FOR THE LIGHT FIXTURES FURNISHED. MATCH EXISTING FIXTURE HEIGHT ABOVE FLOOR. VERIFY THERE IS ENOUGH CLEARANCE OVER THE OVERHEAD DOOR WHERE REQUIRED AND TO EXISTING STRUCTURE. MODIFY HEIGHT OF FIXTURES AS REQUIRED TO PROVIDE ADEQUATE CLEARANCES.
- ② DEMOLISH EXISTING LIGHT FIXTURE AND REPLACE WITH NEW WET LOCATION HIGH BAY LIGHT FIXTURE IN LOCATION SHOWN ON SHEET E1. PROVIDE A 4"x4"x2" STEEL JUNCTION BOX WITH COVER IN DEMOLISHED FIXTURE LOCATION. DISPOSE OF DEMOLISHED FIXTURE.
- ②A PROVIDE NEW WET LOCATION SURFACE MOUNTED LIGHT FIXTURE IN LOCATION SHOWN. EXTEND NEW CIRCUIT, INCLUDING CONDUIT, CONDUCTORS, AND CONDUIT FITTINGS, FROM JUNCTION BOX TO NEW FIXTURE. REUSE EXISTING CONDUCTORS 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. SUPPORTS INCLUDE GALVANIZED STEEL STRUT, THREADED HANGAR RODS, BEAM CLAMPS, FASTENERS, AND MISCELLANEOUS 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 SHALL BE FURNISHED BY THE MANUFACTURER SPECIFICALLY FOR THE LIGHT FIXTURES FURNISHED. MATCH EXISTING FIXTURE HEIGHT ABOVE FLOOR. VERIFY THERE IS ENOUGH CLEARANCE OVER THE OVERHEAD DOOR WHERE REQUIRED AND TO EXISTING STRUCTURE. MODIFY HEIGHT OF FIXTURES AS REQUIRED TO PROVIDE ADEQUATE CLEARANCES.
- ③ 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.
- ④ DEMOLISH AND REPLACE EXISTING FLUORESCENT LIGHT FIXTURES OVER THE WORK BENCHES WITH NEW LIGHT FIXTURES IN SAME LOCATION. 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.
- ⑤ FIXTURE IS TO BE ALWAYS ON. PROVIDE A NEW SEPARATE POWER CIRCUIT. EXTEND AND CONNECT CIRCUIT TO 20A 1P CIRCUIT BREAKER IN NEAREST BRANCH PANEL.
- ⑥ DEMOLISH AND REPLACE THE EXISTING EMERGENCY EXIT SIGNS WITH NEW SIGNS IN SAME LOCATION. 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.

EXISTING FIXTURES

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



LIGHTING DEMOLITION PLAN

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



NORTH

LIGHTING KEYED NOTES

- ① DEMOLISH EXISTING LIGHT FIXTURE AND REPLACE WITH NEW HIGH BAY LIGHT FIXTURE IN LOCATION SHOWN ON SHEET E1. PROVIDE A 4"x4"x2" STEEL JUNCTION BOX WITH COVER IN DEMOLISHED FIXTURE LOCATION. DISPOSE OF DEMOLISHED FIXTURE.
- ①A PROVIDE NEW SURFACE MOUNTED LIGHT FIXTURE IN LOCATION SHOWN. EXTEND NEW CIRCUIT, INCLUDING CONDUIT, CONDUCTORS, AND CONDUIT FITTINGS, FROM JUNCTION BOX TO NEW FIXTURE. REUSE EXISTING CONDUCTORS 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. SUPPORTS INCLUDE GALVANIZED STEEL STRUT, THREADED HANGAR RODS, BEAM CLAMPS, FASTENERS, AND MISCELLANEOUS 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 SHALL BE FURNISHED BY THE MANUFACTURER SPECIFICALLY FOR THE LIGHT FIXTURES FURNISHED. MATCH EXISTING FIXTURE HEIGHT ABOVE FLOOR. VERIFY THERE IS ENOUGH CLEARANCE OVER THE OVERHEAD DOOR WHERE REQUIRED AND TO EXISTING STRUCTURE. MODIFY HEIGHT OF FIXTURES AS REQUIRED TO PROVIDE ADEQUATE CLEARANCES.
- ② DEMOLISH EXISTING LIGHT FIXTURE AND REPLACE WITH NEW WET LOCATION HIGH BAY LIGHT FIXTURE IN LOCATION SHOWN ON SHEET E1. PROVIDE A 4"x4"x2" STEEL JUNCTION BOX WITH COVER IN DEMOLISHED FIXTURE LOCATION. DISPOSE OF DEMOLISHED FIXTURE.
- ②A PROVIDE NEW WET LOCATION SURFACE MOUNTED LIGHT FIXTURE IN LOCATION SHOWN. EXTEND NEW CIRCUIT, INCLUDING CONDUIT, CONDUCTORS, AND CONDUIT FITTINGS, FROM JUNCTION BOX TO NEW FIXTURE. REUSE EXISTING CONDUCTORS 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. SUPPORTS INCLUDE GALVANIZED STEEL STRUT, THREADED HANGAR RODS, BEAM CLAMPS, FASTENERS, AND MISCELLANEOUS 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 SHALL BE FURNISHED BY THE MANUFACTURER SPECIFICALLY FOR THE LIGHT FIXTURES FURNISHED. MATCH EXISTING FIXTURE HEIGHT ABOVE FLOOR. VERIFY THERE IS ENOUGH CLEARANCE OVER THE OVERHEAD DOOR WHERE REQUIRED AND TO EXISTING STRUCTURE. MODIFY HEIGHT OF FIXTURES AS REQUIRED TO PROVIDE ADEQUATE CLEARANCES.
- ③ 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.
- ④ DEMOLISH AND REPLACE EXISTING FLUORESCENT LIGHT FIXTURES OVER THE WORK BENCHES WITH NEW LIGHT FIXTURES IN SAME LOCATION. 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.
- ⑤ FIXTURE IS TO BE ALWAYS ON. PROVIDE A NEW SEPARATE POWER CIRCUIT. EXTEND AND CONNECT CIRCUIT TO 20A 1P CIRCUIT BREAKER IN NEAREST BRANCH PANEL.
- ⑥ DEMOLISH AND REPLACE THE EXISTING EMERGENCY EXIT SIGNS WITH NEW SIGNS IN SAME LOCATION. 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.

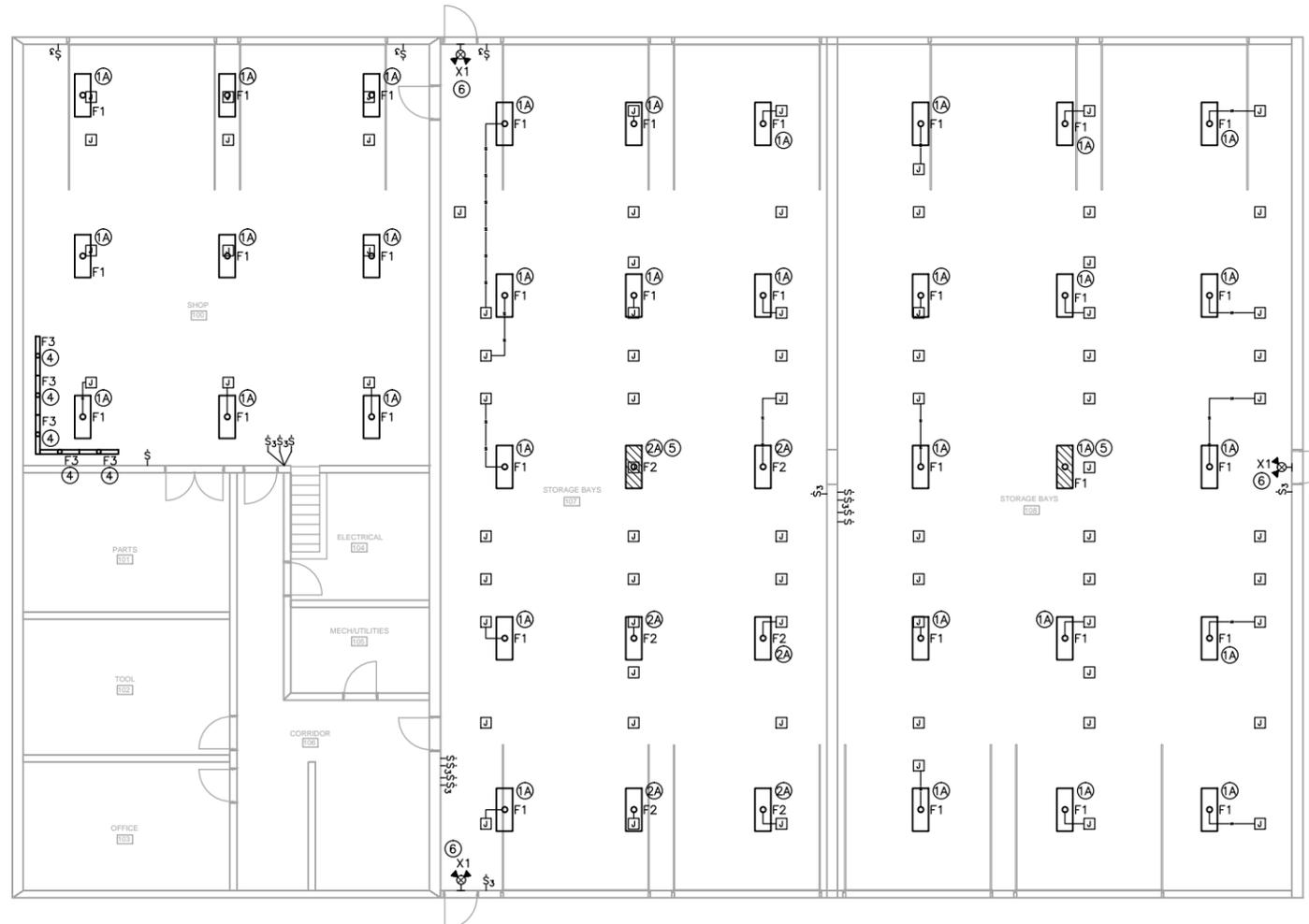
EXISTING FIXTURES

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

LIGHT FIXTURE SCHEDULE

TAG	FIXTURE TYPE	BASE BID		ALTERNATE E1 BID(*)		VOLTS	LAMPS	PROVIDED BY	NOTES
		MANUFACTURER	MODEL	MANUFACTURER	MODEL				
F1	FLUORESCENT HIGH BAY	LITHONIA	FGB24 6 32 N1X20 MVOLT 2/3 GEB10IS L841EX	DAYBRITE	FBX20LL50-UNV-LCA-GRIP10	MULTI	(6) 32W T8	CONTRACTOR	1,3,5
F2	FLUORESCENT WET LOCATION HIGH BAY	LITHONIA	FHE632L 1/4 1/2 GEB10IS LP841EX	DAYBRITE	APX20LL50-UNV-GRIP10	MULTI	(6) 32W T8	CONTRACTOR	1,4,6
F3	LINEAR FLUORESCENT	LITHONIA	XWL232 MV	DAYBRITE	V2WLB51L850-4-UNV	MULTI	(2) 32W T8	CONTRACTOR	1
X1	WALL MOUNTED EMERGENCY EXIT	DAYBRITE	VCRW	DAYBRITE	VCRW	120V	-	CONTRACTOR	1-2

- NOTES:
- * PROVIDE ALTERNATE BID TO PROVIDE LED LIGHT FIXTURES AS SCHEDULED INSTEAD OF FLUORESCENT FIXTURES.
 1. EQUIVALENT PRODUCTS FROM LITHONIA, DAYBRITE, & HUBBELL ARE APPROVED AS EQUALS.
 2. DEMOLISH AND REPLACE THE EXISTING EMERGENCY EXIT SIGNS WITH NEW SIGNS IN SAME LOCATION. 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.
 3. ACCESSORIES: LITHONIA IBA0240 M20 AIRCRAFT CABLE HANGAR ASSEMBLY. REFER TO KEYED NOTES FOR ADDITIONAL INFORMATION.
 4. ACCESSORIES: LITHONIA FHEACT240 AIRCRAFT CABLE HANGAR ASSEMBLY. REFER TO KEYED NOTES FOR ADDITIONAL INFORMATION.
 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.



LIGHTING PLAN

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



NORTH



TO AN
EXIT

SAFETY INSTRUCTIONS
READ AND UNDERSTAND
BEFORE USING
EQUIPMENT

Hansen











