MAINTENANCE FACILITY ELECTRICAL UPGRADE WILLIAMSBURG, IOWA

UTILITY COORDINATION NOTES

COORDINATE ALL ELECTRIC UTILITY WORK WITH T.I.P REC ENERGY

T.I.P REC ENERGY CONTACT:
COLE CALKINS
641–522–9223

LOCATE ALL LOCAL UTILITIES IN WORK AREA PRIOR TO STARTING WORK. CONTACT IOWA ONE CALL PRIOR TO DIGGING.

IOWA ONE CALL:
811 or 1–800–292–8989

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.

ELECTRICAL SYMBOLS

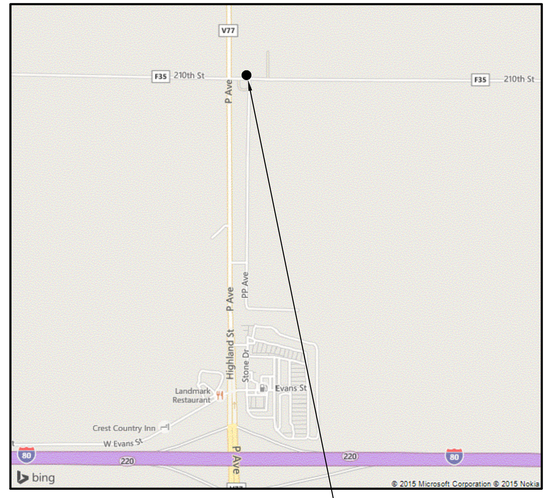
- EXPOSED CONDUIT
  - INDICATES PHASE CONDUCTOR(S)
  - INDICATES NEUTRAL CONDUCTOR
  - INDICATES EQUIPMENT GROUNDING CONDUCTOR
- (5) CIRCUIT KEYED NOTE REFERENCE
- (2) KEYED NOTE REFERENCE
- 1 / E2 DETAIL NUMBER REFERENCE / PAGE NUMBER REFERENCE

ABBREVIATIONS

APPROX. – APPROXIMATE
BLDG. – BUILDING
CONT. – CONTINUATION
DISC. – DISCONNECT
EJ – EXPANSION JOINT
GALV – GALVANIZED
J–BOX – JUNCTION BOX
NEC – NATIONAL ELECTRICAL CODE
RGS – RIGID GALVANIZED STEEL
SCH – SCHEDULE
TYP – TYPICAL
US – UNDERGROUND SECONDARY ELECTRIC
XFMR – TRANSFORMER

IOWA DEPARTMENT OF TRANSPORTATION

PROJECT LOCATION



2507 210TH STREET
WILLIAMSBURG, IA 52361

BID BREAKDOWN

PROVIDE THE BID COST OF THE WORK BROKEN INTO TWO COMPONENTS:
1. BRINE BUILDING:
–200A BREAKER IN AUTOMATIC TRANSFER SWITCH.
–FEEDER CIRCUIT IN CONDUIT TO NEW BRINE BUILDING PANEL.
–NEW 200A NEMA 4X PANEL AT BRINE BUILDING.
–DEMOLITION AND SPLICING OF CIRCUITS FROM EXISTING BRINE BUILDING PANEL.

2. MAINTENANCE FACILITY: ALL OTHER WORK WORK EXCEPT WORK INVOLVING THE BRINE BUILDING LISTED ABOVE.

REFER TO SPECIFICATION SECTION 16010 FOR ADDITIONAL INFORMATION.

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515-360-5995
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MAINTENANCE FACILITY
ELECTRICAL UPGRADE
WILLIAMSBURG, IOWA

SHEET TITLE
COVER SHEET

SCALE:
AS NOTED

DRAWN BY:
M.C., R.M.

APPROVED:
R.M.

REVISIONS:

DATE:
OCTOBER 2, 2015

PROJECT NO.:
ME 1506

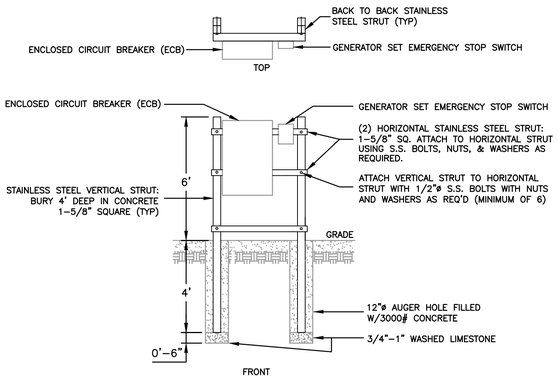
SHEET NO.:
CS

1 GENERATOR EMERGENCY SHUTOFF SWITCH

NOT TO SCALE

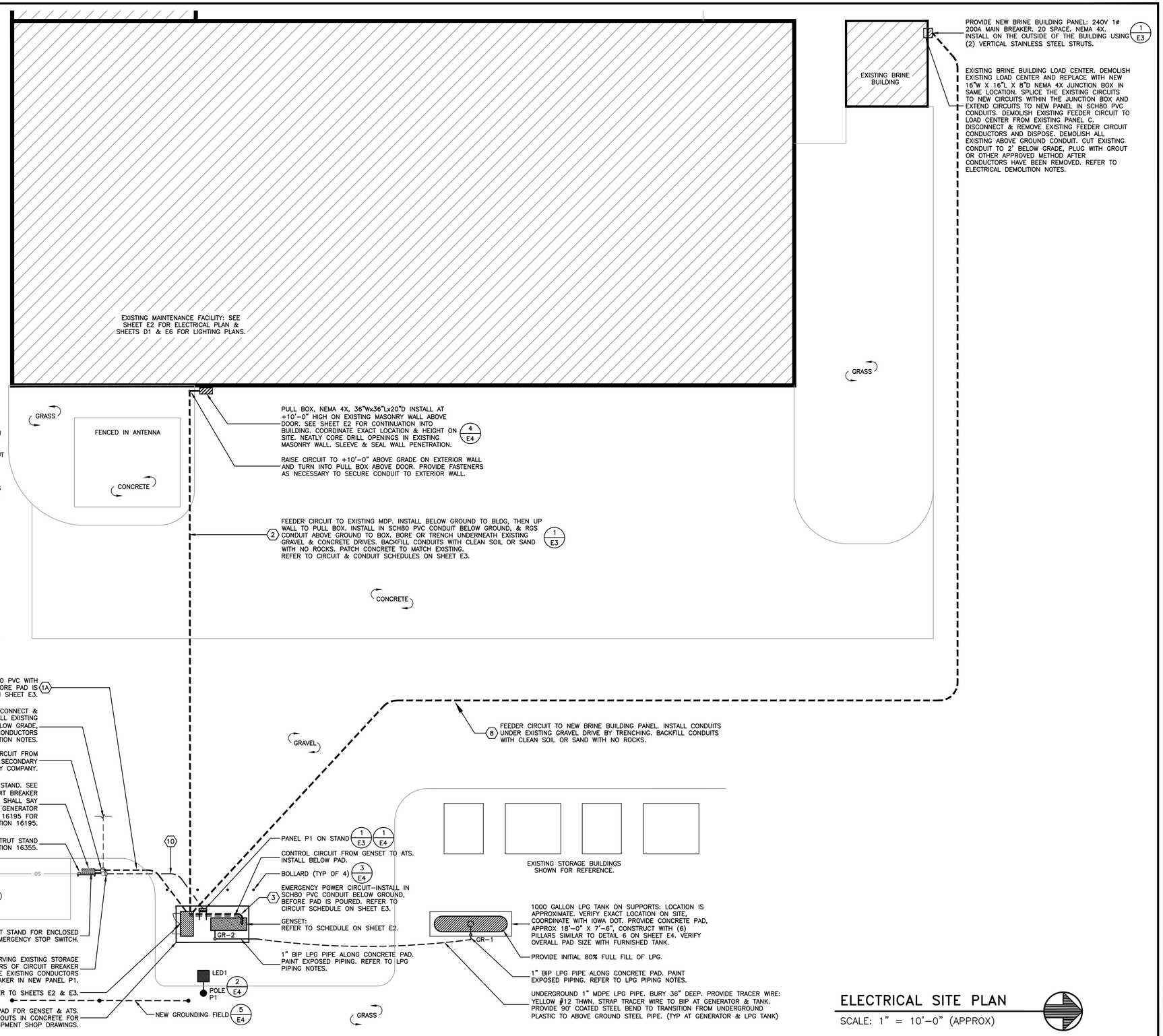
SUPPORT STAND NOTES

STRUTS: 1-5/8"W X 1-5/8"D NOMINAL STAINLESS STEEL. ALL FASTENERS AND HARDWARE SHALL BE STAINLESS STEEL. USE SPRING LOADED NUTS FOR ALL FASTENERS. PROVIDE S.S. FLAT WASHER UNDER ALL BOLT HEADS.



2 EQUIPMENT STAND DETAIL

NOT TO SCALE



ELECTRICAL SITE PLAN

SCALE: 1" = 10'-0" (APPROX)

NORTH

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MAINTENANCE FACILITY
ELECTRICAL UPGRADE

WILLIAMSBURG, IOWA

SHEET TITLE
ELECTRICAL SITE PLAN

SCALE: AS NOTED

DRAWN BY: M.C., R.M.

APPROVED: R.M.

REVISIONS:

DATE: OCTOBER 2, 2015

PROJECT NO.: ME 1506

SHEET NO.: E1

LPG PIPING NOTES

SUMMARY OF WORK: PROVIDE A FULLY FUNCTIONAL LPG FUEL PIPING SYSTEM FOR THE GENSET.

COORDINATE WITH GENSET SUPPLIER AND ENSURE PROPANE VAPOR IS DELIVERED AT THE RIGHT PRESSURE AND QUANTITY AS REQUIRED BY THE GENSET.

CODES
AT A MINIMUM, CONFORM TO THE FOLLOWING:
- UNIFORM PLUMBING CODE (2012)
- NATIONAL FUEL GAS CODE–NFPA 54
- INTERNATIONAL FUEL GAS CODE (2012)

PRODUCTS
STEEL GAS PIPING:
STEEL GAS PIPING, ABOVE GROUND AS NOTED ON THE DRAWING: SCHEDULE 40 BLACK STEEL PIPE, ASTM A53, WITH ANSI/ASME B16.3 MALLEABLE IRON FITTINGS AND SCREWED JOINTS.

GAS PIPING UNIONS: BLACK MALLEABLE IRON, GROUND JOINT WITH BRASS SEAT, ANSI B16.39.

MEDIUM DENSITY POLYETHELENE (MDPE) GAS PIPING:
PROVIDE MDPE PIPING FOR UNDERGROUND PIPING AS NOTED ON THE DRAWING. PROVIDE YELLOW TRACER WIRE THROUGHOUT LENGTH.

VALVES
BALL VALVES: 200 PSI WOG @ 150 F, ALL BRASS OR BRONZE, STRAIGHT WAY PLUG, SCREWED, SQUARE HEAD.

PROVIDE VALVES WITH CSA LABEL.

MISCELLANEOUS MATERIALS

INCLUDE MISCELLANEOUS MATERIALS, NOT SPECIFICALLY DESCRIBED BUT REQUIRED FOR A COMPLETE AND PROPER INSTALLATION, AS SELECTED BY THE CONTRACTOR SUBJECT TO THE APPROVAL OF THE ENGINEER.

INSTALLATION IN GENERAL:
COMPLY WITH ALL APPLICABLE REQUIREMENTS OF NFPA 54, AND THE INTERNATIONAL FUEL GAS CODE
PROTECT PIPING FROM DIRT BY CAPPING ENDS UNTIL READY TO USE.
SUPPORT PIPING INDEPENDENTLY SO THAT WEIGHT OF PIPE WILL NOT BE SUPPORTED BY THE EQUIPMENT.

EXECUTION

SECURELY ANCHOR ALL EQUIPMENT, HANGERS, AND SIMILAR ITEMS IN PLACE. SUPPORT EACH ITEM INDEPENDENTLY FROM OTHER PIPES. DO NOT USE WIRE OR METAL STRAPS FOR HANGING OR STRAPPING PIPES.
PROVIDE UNION AND SHUT_OFF VALVES SUITABLY LOCATED TO FACILITATE MAINTENANCE AND REMOVAL OF EQUIPMENT AND APPARATUS.
SECURELY MOUNT REGULATORS (REFER TO SECTION 16190).

TESTING NATURAL GAS PIPING SYSTEM:
COMPLY WITH NFPA 54.

SUBMIT A TEST REPORT TO THE ENGINEER.

GAS REGULATOR SCHEDULE

TAG	SERVES	MANUFACTURER	PRESSURE		PIPE SIZE		1000 BTU/HR	FLOW RATE (CFH)	NOTES
			INLET	OUTLET	INLET	OUTLET			
GR–1	GENSET (AT LPG TANK)	(SEE NOTE 4)	(SEE NOTE 2)	10 PSI	1"	1"	1250	500	3–5
GR–2	GENSET (AT GENSET)	(SEE NOTE 4)	10 PSI	11" W.C.	1"	1"	1250	500	1,2,4,5

NOTES:
1. GAS REGULATOR SPECIFICATIONS MAY CHANGE DEPENDING ON MANUFACTURER OF THE GENERATOR. VERIFY AND COORDINATE GAS REGULATOR RATINGS BASED ON THE GENERATOR SET MANUFACTURERS RECOMMENDATIONS.
2. CONNECT REGULATOR TO LPG INLET OF GENERATOR.
3. TANK VAPOR PRESSURE: TYPICALLY 25–100 PSI.
4. PROVIDE A CSA APPROVED BALL GAS SHUTOFF VALVE AT EACH REGULATOR.
5. MAXITROL, FISHER, OR APPROVED EQUAL.

GENERATOR SET SCHEDULE

TAG	POWER RATING				NAMEPLATE RATING (kW)	FUEL	NOTES
	VOLTS	PHASE	AMPS	FREQ.			
GENSET	240/120	1	625	60 Hz	150	NATURAL GAS/LPG	1–3

NOTES:
1. ACCEPTABLE MANUFACTURERS: CATERPILLAR, KOHLER, GENERAC.
2. REFER TO SECTION 16355 FOR ADDITIONAL REQUIREMENTS.
3. GENSET WILL BE INITIALLY FUELED BY LPG ONLY, NATURAL GAS CAPABILITY IS FOR FUTURE USE.

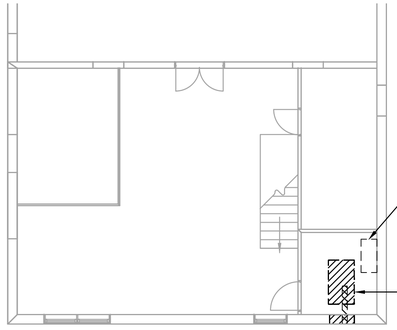
AUTOMATIC TRANSFER SWITCH SCHEDULE

TAG	TYPE	MANUFACTURER	MODEL	RATINGS					ENCLOSURE RATING	NOTES
				VOLTS	POLES	AMPS	FREQ.	SCR		
ATS	AUTOMATIC	ASCO	7000 SERIES	240	2	600	60 Hz	65kA	NEMA 4X	1–4

NOTES:
1. INCLUDE OPEN TRANSITION MAINTENANCE BYPASS WITHIN ENCLOSURE.
2. REFER TO SECTION 16495 FOR ADDITIONAL REQUIREMENTS.
3. INCLUDE (1) 400A 2P DISTRIBUTION BREAKER FOR THE EXISTING MDP, (1) 225A 2P DISTRIBUTION BREAKER FOR PANEL P1, (1) 200A 2P DISTRIBUTION BREAKER FOR NEW BRINE BUILDING PANEL, AND (1) 2P SPACE FOR FUTURE EXPANSION.
4. AMP MODEL EQUIVALENT TO THE ASCO 7000 SERIES.

SPECIAL CONDITIONS

WORK INVOLVING SIGNIFICANT POWER DISRUPTIONS MUST BE PREFORMED WITHOUT MAJOR DISRUPTION TO THE OWNER'S NORMAL ACTIVITIES. REFER TO SPEC SECTION 16010–1.



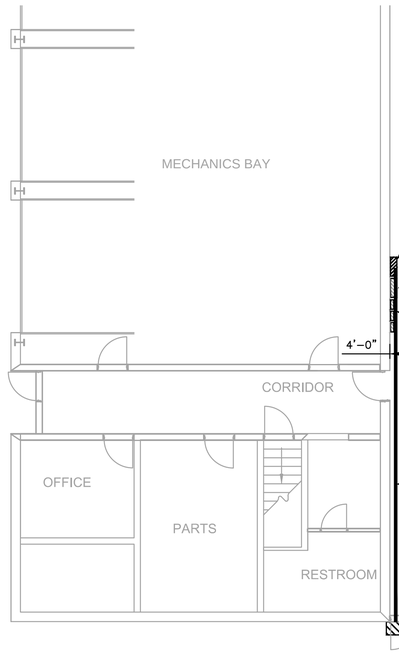
EXISTING ATS: REMOVE FOR OWNER'S SALVAGE. DEMOLISH ALL EXISTING NORMAL & EMERGENCY POWER CIRCUITS ONCE NEW CIRCUITS ARE INSTALLED & FUNCTIONAL. REFER TO ELECTRICAL DEMOLITION NOTES FOR MORE INFORMATION. DELIVER ATS TO AN ON SITE STORAGE BUILDING SPECIFIED BY IOWA DEPT. OF TRANSPORTATION. (1 / E3)

REMOVE AND SALVAGE EXISTING GENERATOR SET, INCLUDING MUFFLER & GAS REGULATOR, FOR OWNER. DEMOLISH EXHAUST PIPING, POWER & CONTROL CIRCUITS TO THE EXISTING ATS, & GAS PIPING. DEMOLISH GAS PIPING BACK TO GAS MAIN & CAP BRANCH AT MAIN. DEMOLISH EXISTING EXHAUST DUCTWORK & MOTORIZED LOUVER AND SEAL WALL PENETRATION CREATED BY REMOVING EXHAUST DUCT. SEE ELECTRICAL DEMOLITION NOTES. DELIVER GENERATOR TO AN ON SITE STORAGE BUILDING SPECIFIED BY IOWA DEPT. OF TRANSPORTATION.

SECOND FLOOR ELECTRICAL PLAN

SCALE: 1/8" = 1' –0"

NORTH



NEW MAIN DISTRIBUTION PANEL (MDP) (1 / E3)

CONVERT EXISTING MDP INTO JUNCTION BOX. DEMOLISH INTERIORS OF PANEL AND FEEDER CIRCUITS TO EXISTING BRANCH PANELS. PROVIDE GALV. SCREW FLAT COVER OVER EXISTING MDP. LEAVE THE OLD SERVICE INTACT UNTIL THE NEW SERVICE IS INSTALLED AND FUNCTIONAL. DISCONNECT AND DEMOLISH EXISTING MDP FEEDER CIRCUIT. DEMOLISH ALL CONDUIT ABOVE GROUND. CUT & PLUG OLD FEEDER CONDUIT WITH GROUT OR OTHER APPROVED METHOD AFTER CONDUCTORS HAVE BEEN REMOVED. REFER TO ELECTRICAL DEMOLITION NOTES FOR MORE INFORMATION. (1,1A / E3)

EXISTING PANELS A, B, & C. DEMOLISH AND REPLACE EXISTING PANELS ONE–FOR–ONE. SEE SHEET E3 AND ELECTRICAL DEMOLITION NOTES FOR ADDITIONAL INFORMATION. (1,1A / E3)

BOLLARD (TYP OF 2) (3 / E4)

2 FEEDER CIRCUIT. INSTALL HIGH ON INTERIOR WALL OF HEATED STORAGE. (1 / E3)

PULL BOX, NEMA 4X, 36"Wx36"Lx20"D INSTALL AT 10'–0" HIGH ON EXISTING MASONRY WALL. COORDINATE EXACT LOCATION & HEIGHT ON SITE. NEATLY CORE DRILL OPENINGS IN EXISTING MASONRY WALL. SLEEVE & SEAL WALL PENETRATION. (4 / E4)

FIRST FLOOR ELECTRICAL PLAN

SCALE: 1/8" = 1' – 0"

NORTH

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MAINTENANCE FACILITY
ELECTRICAL UPGRADE
WILLIAMSBURG, IOWA

SHEET TITLE
ELECTRICAL PLAN

SCALE: AS NOTED

DRAWN BY: M.C., R.M.

APPROVED: R.M.

REVISIONS:

DATE: OCTOBER 2, 2015

PROJECT NO.: ME 1506

SHEET NO.: E2

ELECTRIC DISTRIBUTION NOTES

1. FURNISH & INSTALL CIRCUIT BREAKERS AS SHOWN ON PANEL SCHEDULE (TYP).
2. APPLY ANTIOXIDANT PASTE TO ALL CONDUCTORS WHERE THEY CONNECT TO LUGS. TORQUE ALL CONNECTIONS TO VALUES RECOMMENDED BY THE EQUIPMENT MANUFACTURER.
3. GENERATOR FRAME MOUNTED CIRCUIT BREAKER: INSTALL CB SO IT IS ACCESSIBLE FROM GROUND AT HEIGHT NO GREATER THAN 6'-0" ABOVE GROUND.
4. ROUTE GROUNDING CONDUCTORS AS SHORT & DIRECT AS POSSIBLE. MINIMIZE BENDS. MAKE REQ'D BENDS W/ LARGE RADIUS. STRAP CONDUIT TO WALL W/ PVC STRAPS. INSTALL GROUNDING CONDUCTOR IN CONDUIT EVERYWHERE ABOVE GRADE AND BELOW GRADE TO BURIAL DEPTH IN 1" SCH80 PVC.
5. PROVIDE PENETRATION OF EXTERIOR WALL WITH SCH. 40 GALV. STEEL SLEEVE. EXTEND CONDUIT THROUGH EXISTING WALL. FILL AREA BETWEEN SLEEVE AND CONDUIT WITH SPRAY FOAM. APPLY NEAT FILLET OF URETHANE BASED SEALANT AROUND PERIMETER ON BOTH SIDES OF WALL.
6. PROVIDE A 4" RIGID GALVANIZED CONDUIT EXPANSION JOINT FROM AN APPROVED MANUFACTURER.
7. PROVIDE PULL BOX–REFER TO SHEET E1 & E2.
8. CADWELD UFER GROUNDING CONDUCTOR TO REBAR IN CONCRETE PAD.
9. EXISTING KW/HR METER BY T.I.P REC TO REMAIN. SHOWN FOR REFERENCE.
10. DEMOLISH EXISTING MDP (EMDP) AND CONVERT INTO JUNCTION BOX. REMOVE EXISTING INTERIORS. PROVIDE GALVANIZED STEEL FLAT SCREW COVER OVER EXISTING MDP. VERIFY THAT THE FOLLOWING GROUNDING CONDITIONS ARE PRESENT AND ARE SPLICED OR RECONNECTED AT THE NEW MDP:
    –MDP GROUNDING BAR BONDED TO COLD WATER PIPE AT WATER SERVICE ENTRANCE.
    –JUMPER ACROSS WATER METER AT WATER SERVICE ENTRANCE.
    –GROUNDING BAR BONDED TO BUILDING STEEL IF APPLICABLE.
    –VERIFY THAT THE NEUTRAL AND GROUND BARS ARE NOT BONDED. REMOVE BOND IF IT DOES EXIST.
    DEMOLISH EXISTING FEEDER CIRCUIT TO EXISTING MDP. DISCONNECT & REMOVE EXISTING CONDUCTORS AND DISPOSE. DEMOLISH ALL EXISTING ABOVE GROUND CONDUIT. CUT EXISTING CONDUIT TO FLOOR, PLUG WITH GROUT OR OTHER APPROVED METHOD AFTER CONDUCTORS HAVE BEEN REMOVED. REFER TO GENERAL ELECTRICAL DEMOLITION NOTES FOR MORE INFORMATION.
11. PROVIDE NEW ENCLOSED CIRCUIT BREAKER ON STAINLESS STEEL STRUT STAND ADJACENT TO THE UTILITY POLE.
12. CONVERT EXISTING 100A CIRCUIT BREAKER SERVING EXISTING STORAGE BUILDING INTO JUNCTION BOX. DEMOLISH INTERIORS OF CIRCUIT BREAKER AND SALVAGE 100A BREAKER FOR OWNER. SPLICE EXISTING CONDUCTORS AND EXTEND CIRCUIT TO 100A BREAKER IN NEW PANEL P1.
13. PROVIDE 120V 20A INDUSTRIAL GRADE QUAD GFCI RECEPTACLE IN A 4"x4"x2-1/8" STEEL BOX, MOUNTED WITHIN THE GENSET WEATHER ENCLOSURE FOR BATTERY CHARGER & BATTERY HEATER.
14. VERIFY ENGINE HEATER WATTAGE WITH GENERATOR MANUFACTURER. PROVIDE EITHER A HARDWIRED CONNECTION OR 120V 20A GFCI RECEPTACLE AS REQUIRED BY GENERATOR MANUFACTURER.
15. PROVIDE (1) 120V 20A SWITCH IN A 4"X4"X2-1/8" STEEL BOX FOR LED2'S WITHIN GENERATOR. MOUNT SO SWITCH IS EASILY ACCESSIBLE ON SIDE WALL OF GENSET ENCLOSURE. CIRCUIT TO 20A CIRCUIT BREAKER IN PANEL P1.
16. DEMOLISH EXISTING PANELS A,B,&C AND REPLACE ONE FOR ONE WITH NEW PANELS IN THE SAME LOCATION. DEMOLISH EXISTING FEEDER CIRCUITS TO EXISTING MDP. DISCONNECT AND DISPOSE OF EXISTING FEEDER CIRCUITS. RE–FEED EACH PANEL FROM NEW MDP REPLACE EXISTING PANELS ONE AT A TIME SO NO MORE THAN ONE PANEL IS DISCONNECTED AT A TIME. RE–ESTABLISH POWER TO NEW PANEL BEFORE NEXT EXISTING PANEL IS REPLACED.
17. LIFT STATION PANEL TO REMAIN AS IS. DEMOLISH EXISTING FEEDER CIRCUIT AND RE–FEED FROM NEW 100A 2P CIRCUIT BREAKER IN NEW PANEL PA.
18. REUSE EXISTING WIRE TROUGH. VERIFY CONDITION OF EXISTING WIRE TROUGH. NOTIFY THE ENGINEER OF ANY ISSUES OR UNSAFE CONDITIONS.
19. BOND NEUTRAL AND GROUND BAR TOGETHER AT ONE POINT ONLY.
20. PROVIDE (1) 2P CIRCUIT BREAKER SPACE IN ATS FOR FUTURE USE.
21. SPLICE EXISTING CIRCUITS IN NEW PANEL AS REQUIRED TO CONNECT TO NEW CIRCUIT BREAKERS. (TYP PANELS PA, PB, & PC)
22. SPLICE EXISTING PANEL D CIRCUIT IN EXISTING MDP. PROVIDE NEW CIRCUIT FROM EXISTING MDP TO NEW MDP. ONLY PANEL D FEEDER CIRCUIT IS TO BE SPLICED.
23. ADD GROUNDING LUG IN NEW MDP. PROVIDE GROUNDING CONDUCTOR AND CONNECT TO GENERATOR AND ENCLOSED CIRCUIT BREAKER SET GROUNDING LUGS.

CIRCUIT SCHEDULE

TAG	CIRCUIT SERVES	# OF SETS	CONDUCTOR INFORMATION	CONDUIT SIZE
1	ENCLOSED CIRCUIT BREAKER	(2)	(3) 350 kcmil THWN–2	3"
1A	ATS NORMAL POWER	(2)	(3) 350 kcmil THWN–2 + (1) #1 AWG THWN–2 E.G.C.	3"
2	EXISTING MDP	(1)	(3) 600 kcmil THWN–2 + (1) #3 AWG THWN–2 E.G.C.	4"
3	ATS EMERGENCY POWER	(2)	(3) 350 kcmil THWN–2 + (1) #1 AWG THWN–2 E.G.C.	3"
4	PANEL P1	(1)	(3) #4/0 AWG THWN–2 + (1) #4 AWG THWN–2 E.G.C.	2–1/2"
5	GENERATOR RECEP.	(1)	(2) #10 AWG THWN–2 + (1) #12 AWG THWN–2 E.G.C.	1–1/2"
6	GENERATOR RECEP.	(1)	(2) #10 AWG THWN–2 + (1) #12 AWG THWN–2 E.G.C.	WITH ABOVE
7	GENERATOR RECEP.	(1)	(2) #10 AWG THWN–2 + (1) #12 AWG THWN–2 E.G.C.	WITH ABOVE
8	BRINE BUILDING PANEL	(1)	(3) 350 kcmil THWN–2 + (1) #4 AWG THWN–2 E.G.C.	3"
9	GROUNDING CONDUCTORS	(1)	(1) #2/0 AWG THWN–2 E.G.C.	4
10	EXISTING 100A CIRCUIT BREAKER	(1)	(3) #1 AWG THWN–2 + (1) #8 AWG THWN–2 E.G.C.	1–1/2"
11	BRANCH PANELS (100A)	(1)	(3) #3 AWG THWN–2 + (1) #8 AWG THWN–2 E.G.C.	1–1/2"
12	BRANCH PANELS (200A)	(1)	(3) #3/0 AWG THWN–2 + (1) #6 AWG THWN–2 E.G.C.	2–1/2"
13	GENSET EMERGENCY SHUTOFF SWITCH	(1)	(2) #12 AWG THWN–2 + (1) #12 AWG THWN–2 E.G.C.	3/4"

TVSS SCHEDULE

TAG	MANUFACTURER	MODEL	RATINGS			SURGE CURRENT RATING (kA)	MODES PROTECTED	NOTES
			VOLTS	PHASE	WIRES			
TVSS–1	SQUARE D	TVS1IMA120	240/120	1	3+GRND.	120	L–N/L–L/L–G/N–G	1
TVSS–2	SQUARE D	SDSA1175	240/120	1	3+GRND.	36	L–N/L–L/L–G/N–G	2

NOTES:
1. FACTORY INSTALLED INTEGRAL TO PANEL.
2. NIPPLE MOUNTED TO BOTTOM OF ENCLOSED CIRCUIT BREAKER.

CONDUIT SCHEDULE

REFER TO SECTION 16110 FOR FITTINGS & ADDITIONAL REQUIREMENTS.

PROVIDE CONDUIT IN THE SIZES SHOWN ON THE CIRCUIT SCHEDULE & OF THE TYPES AS FOLLOWS (UNLESS NOTED OTHERWISE ON DRAWINGS):

BELOW GROUND: SCH80 RIGID PVC

ABOVE GROUND, OUTSIDE: SCH40 RIGID GALVANIZED STEEL

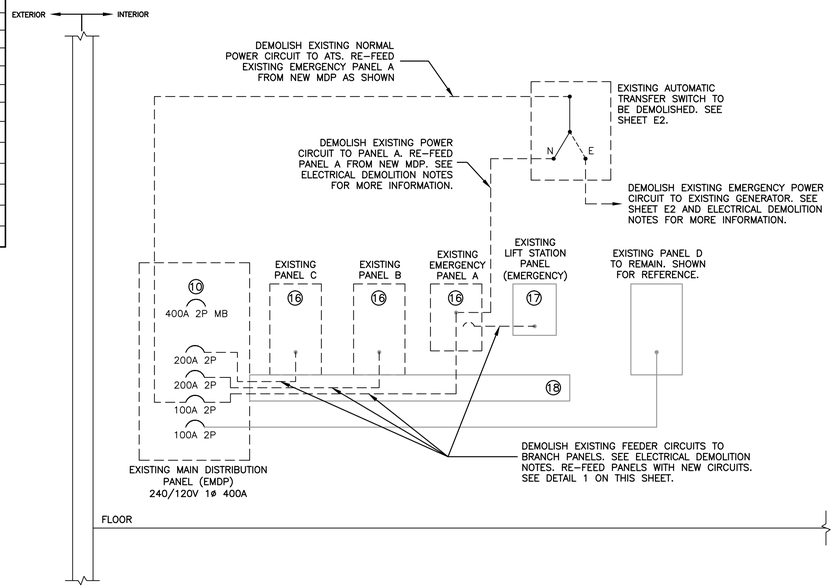
SWEEPS OR ELBOWS, OUTSIDE: SCH40 RIGID GALVANIZED STEEL

GROUNDING CONDUCTOR, ABOVE GROUND: SCH80 RIGID PVC

ABOVE GROUND, WITHIN THE BUILDING: EMT.

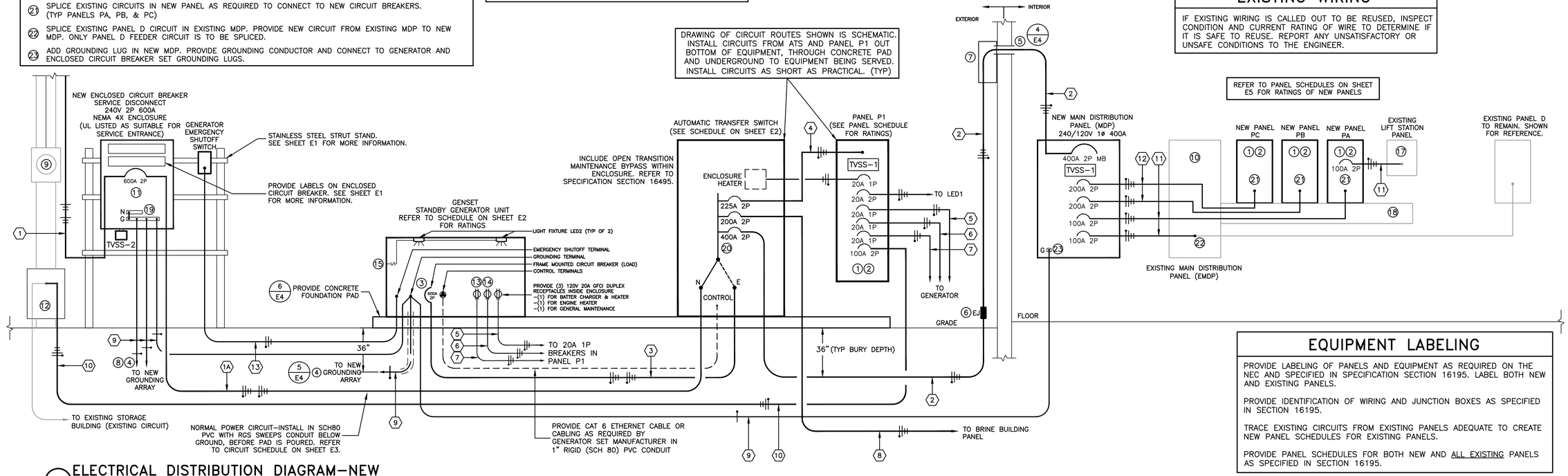
SPECIAL CONDITIONS

WORK INVOLVING SIGNIFICANT POWER DISRUPTIONS MUST BE PREFORMED WITHOUT MAJOR DISRUPTION TO THE OWNER'S NORMAL ACTIVITIES. REFER TO SPEC SECTION 16010–1.



1A ELECTRICAL DISTRIBUTION DIAGRAM–DEMOLITION
NOT TO SCALE

DRAWING OF CIRCUIT ROUTES SHOWN IS SCHEMATIC. INSTALL CIRCUITS FROM ATS AND PANEL P1 OUT BOTTOM OF EQUIPMENT, THROUGH CONCRETE PAD AND UNDERGROUND TO EQUIPMENT BEING SERVED. INSTALL CIRCUITS AS SHORT AS PRACTICAL. (TYP)



1 ELECTRICAL DISTRIBUTION DIAGRAM–NEW
NOT TO SCALE

EXISTING WIRING

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.

EQUIPMENT LABELING

PROVIDE LABELING OF PANELS AND EQUIPMENT AS REQUIRED ON THE NEC AND SPECIFIED IN SPECIFICATION SECTION 16195. LABEL BOTH NEW AND EXISTING PANELS.

PROVIDE IDENTIFICATION OF WIRING AND JUNCTION BOXES AS SPECIFIED IN SECTION 16195.

TRACE EXISTING CIRCUITS FROM EXISTING PANELS ADEQUATE TO CREATE NEW PANEL SCHEDULES FOR EXISTING PANELS.

PROVIDE PANEL SCHEDULES FOR BOTH NEW AND ALL EXISTING PANELS AS SPECIFIED IN SECTION 16195.

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MAINTENANCE FACILITY
ELECTRICAL UPGRADE
WILLIAMSBURG, IOWA

SHEET TITLE
ELECTRICAL DETAILS & SCHEDULES

SCALE: AS NOTED

DRAWN BY: M.C., R.M.

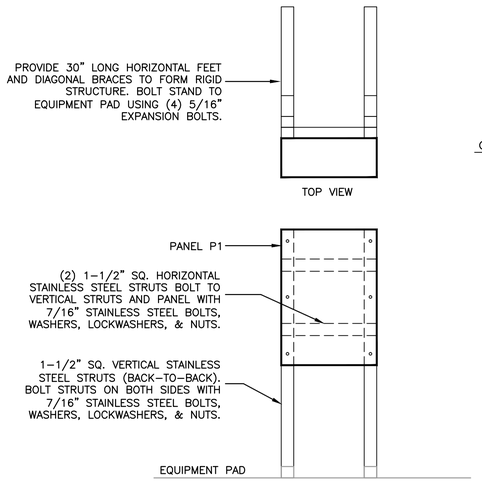
APPROVED: R.M.

REVISIONS:

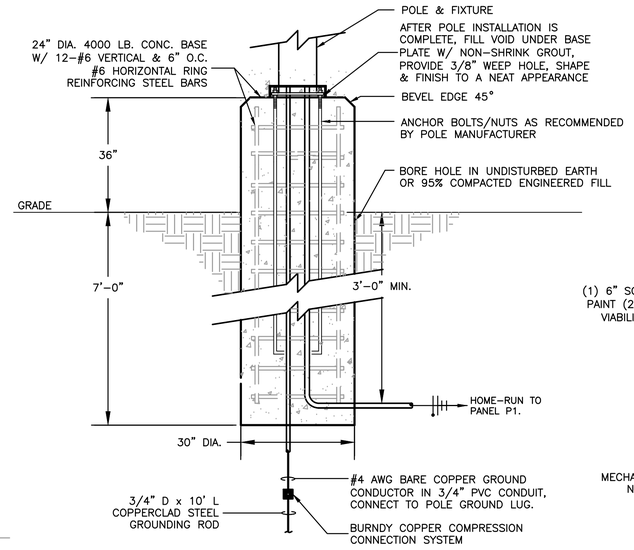
DATE: OCTOBER 2, 2015

PROJECT NO.: ME 1506

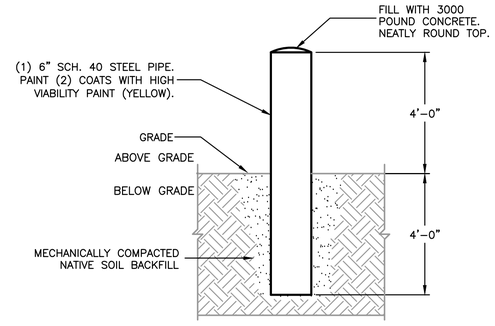
SHEET NO.: E3



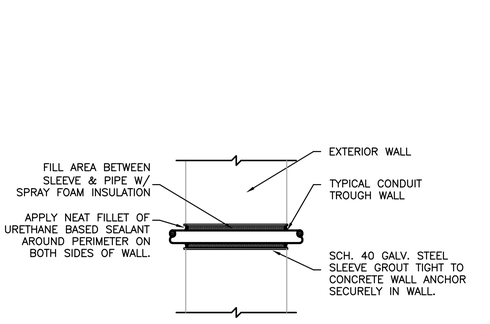
1 PANEL P1 STAND DETAIL
NOT TO SCALE



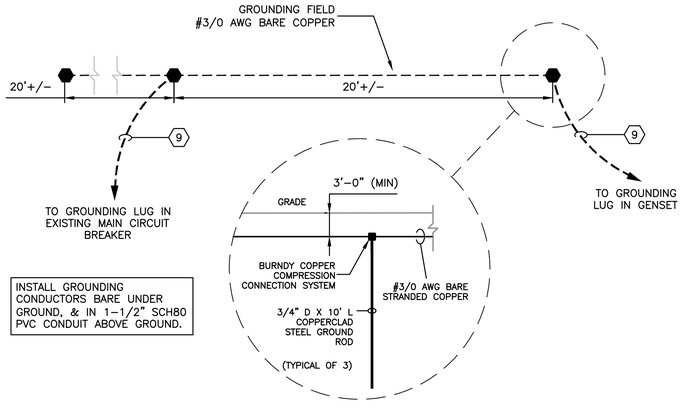
2 POLE BASE DETAIL
NOT TO SCALE



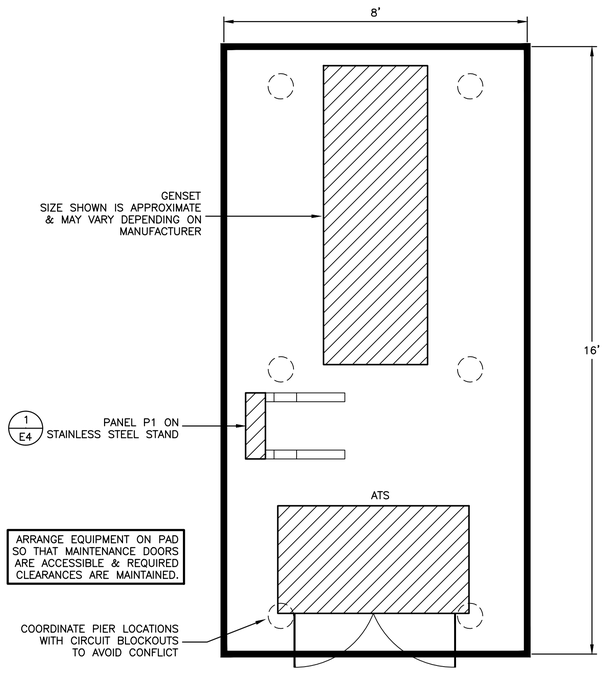
3 BALLARD DETAIL
NOT TO SCALE



4 SLEEVE & SEAL DETAIL – EXTERIOR
NOT TO SCALE



5 GROUNDING ELECTRODE SYSTEM DETAIL
NOT TO SCALE



6 ATS & GENERATOR SET CONCRETE PAD DETAIL
NOT TO SCALE

EQUIPMENT FOUNDATION SUMMARY

CUT EXISTING SOD & SAVE FOR RE-USE. KEEP MOIST. EXCAVATE APPROX. 3 FT. & SAVE SOIL FOR RE-GRADING.

BORE (6) 8"D HOLES 6 FT. BELOW GRADE. PUT 3/4" WASHED LIMESTONE 6" DEEP IN BOTTOM OF EACH HOLE.

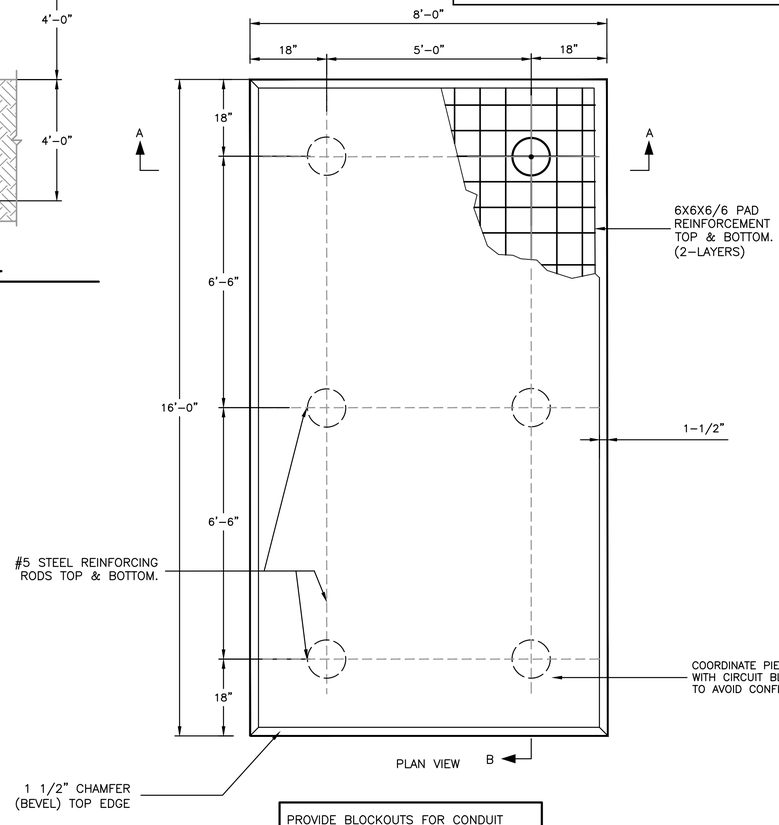
PROVIDE BLOCKOUTS FOR CONDUITS ENTERING EQUIPMENT.

INSTALL BELOW-PAD CONDUITS TO EQUIPMENT AS SHOWN ON THE DRAWINGS.

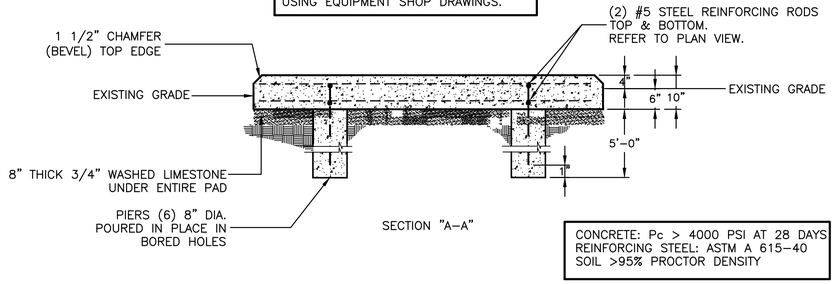
PROVIDE 8" BED OF 3/4" WASHED LIMESTONE IN BOTTOM OF PAD EXCAVATION.

PROVIDE REINFORCED CONCRETE FOUNDATION AS SHOWN BELOW. OVERALL SIZE SHOWN IS APPROXIMATE. COORDINATE EXACT OVERALL SIZE WITH EQUIPMENT SHOP DRAWINGS.

AFTER EQUIPMENT HAS BEEN INSTALLED, FINISH GRADE WITH SLIGHT SLOPE UP TO 4" BELOW TOP OF SLAB. SET REMOVED SOD TO COVER EXPOSED DIRT & WATER.



PROVIDE BLOCKOUTS FOR CONDUIT ENTRY AT EQUIPMENT AS REQUIRED (NOT SHOWN ON DETAIL). COORDINATE LOCATION OF BLOCKOUTS USING EQUIPMENT SHOP DRAWINGS.



CONCRETE: Pc > 4000 PSI AT 28 DAYS
REINFORCING STEEL: ASTM A 615-40
SOIL >95% PROCTOR DENSITY

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MAINTENANCE FACILITY
ELECTRICAL UPGRADE

WILLIAMSBURG, IOWA

SHEET TITLE
ELECTRICAL DETAILS

SCALE: AS NOTED

DRAWN BY: M.C., R.M.

APPROVED: R.M.

REVISIONS:

DATE: OCTOBER 2, 2015

PROJECT NO.: ME 1506

SHEET NO.: E4

MAIN DISTRIBUTION PANEL (MDP)

LOCATION: STORAGE BAYS
ENCLOSURE TYPE: NEMA 12
INSTALLATION: SURFACE

VOLTS: 240/120V 1P 3W+G
MAINS RATING: 400A
NEUTRAL: 100%

AIC RATING: 25,000
400A 2P MAIN BREAKER

CKT. NO.	CIRCUIT BREAKER		CIRCUIT DESCRIPTION	CKT. NO.	CIRCUIT BREAKER		CIRCUIT DESCRIPTION
			TVSS-1				
1	100A/2P		PANEL PA	2	200A/2P		PANEL PB
3	200A/2P		PANEL PC	4	100A/2P		PANEL PD
5	225A/2P		SPACE	6	225A/2P		SPACE
7	225A/2P		SPACE	8	225A/2P		SPACE

PANEL P1

LOCATION: EQUIPMENT PAD
ENCLOSURE TYPE: NEMA 4X
INSTALLATION: STAND

VOLTS: 240/120V 1P 3W+G
MAINS RATING: 225A
NEUTRAL: 100%

AIC RATING: 10,000
MAIN LUGS ONLY

CKT. NO.	CIRCUIT BREAKER	LOAD kVA	CIRCUIT DESCRIPTION	CKT. NO.	CIRCUIT BREAKER	LOAD kVA	CIRCUIT DESCRIPTION
			TVSS-1				
1	20A/1P	–	GENSET OUTLET	2	20A/2P	–	LED1
3	20A/1P	–	GENSET HEATER	4			
5	20A/1P	–	GENSET BATTERY CHARGER	6	100A/2P	–	EXISTING 100A BREAKER
7	20A/1P	–	GENSET LED2 FIXTURES	8			
9	20A/1P	–	ATS ENCLOSURE HEATER	10	20A/1P	–	SPARE
11	20A/1P	–	SPARE	12	20A/1P	–	SPARE
13	20A/1P	–	SPACE	14	20A/1P	–	SPACE
15	20A/1P	–	SPACE	16	20A/1P	–	SPACE
17	20A/1P	–	SPACE	18	20A/1P	–	SPACE
19	20A/1P	–	SPACE	20	20A/1P	–	SPACE
21	20A/1P	–	SPACE	22	20A/1P	–	SPACE
23	20A/1P	–	SPACE	24	20A/1P	–	SPACE
25	20A/1P	–	SPACE	26	20A/1P	–	SPACE
27	20A/1P	–	SPACE	28	20A/1P	–	SPACE
29	20A/1P	–	SPACE	30	20A/1P	–	SPACE

PANEL PA

LOCATION: STORAGE BAYS
ENCLOSURE TYPE: NEMA 12
INSTALLATION: SURFACE

VOLTS: 240/120V 1P 3W+G
MAINS RATING: 100A
NEUTRAL: 100%

AIC RATING: 10,000
MAIN LUGS ONLY

CKT. NO.	CIRCUIT BREAKER	LOAD kVA	CIRCUIT DESCRIPTION	CKT. NO.	CIRCUIT BREAKER	LOAD kVA	CIRCUIT DESCRIPTION
1		–	EXISTING CIRCUIT	2		–	EXISTING CIRCUIT
3		–	EXISTING CIRCUIT	4		–	EXISTING CIRCUIT
5		–	EXISTING CIRCUIT	6		–	EXISTING CIRCUIT
7		–	EXISTING CIRCUIT	8		–	EXISTING CIRCUIT
9		–	EXISTING CIRCUIT	10		–	EXISTING CIRCUIT
11		–	EXISTING CIRCUIT	12		–	EXISTING CIRCUIT
13		–	EXISTING CIRCUIT	14		–	EXISTING CIRCUIT
15		–	EXISTING CIRCUIT	16		–	EXISTING CIRCUIT
17		–	EXISTING CIRCUIT	18		–	EXISTING CIRCUIT
19		–	EXISTING CIRCUIT	20		–	EXISTING CIRCUIT
21	100A/2P	–	EXISTING LIFT STATION PANEL	22	20A/1P	–	SPARE
23				24	20A/1P	–	SPARE
25	20A/1P	–	SPARE	26	20A/1P	–	SPARE
27	20A/1P	–	SPARE	28	20A/1P	–	SPARE
29	20A/1P	–	SPARE	30	20A/1P	–	SPARE

PANEL PB

LOCATION: STORAGE BAYS
ENCLOSURE TYPE: NEMA 12
INSTALLATION: SURFACE

VOLTS: 240/120V 1P 3W+G
MAINS RATING: 200A
NEUTRAL: 100%

AIC RATING: 10,000
MAIN LUGS ONLY

CKT. NO.	CIRCUIT BREAKER	LOAD kVA	CIRCUIT DESCRIPTION	CKT. NO.	CIRCUIT BREAKER	LOAD kVA	CIRCUIT DESCRIPTION
1		–	EXISTING CIRCUIT	2		–	EXISTING CIRCUIT
3		–	EXISTING CIRCUIT	4		–	EXISTING CIRCUIT
5		–	EXISTING CIRCUIT	6		–	EXISTING CIRCUIT
7		–	EXISTING CIRCUIT	8		–	EXISTING CIRCUIT
9		–	EXISTING CIRCUIT	10		–	EXISTING CIRCUIT
11		–	EXISTING CIRCUIT	12		–	EXISTING CIRCUIT
13		–	EXISTING CIRCUIT	14		–	EXISTING CIRCUIT
15		–	EXISTING CIRCUIT	16		–	EXISTING CIRCUIT
17		–	EXISTING CIRCUIT	18		–	EXISTING CIRCUIT
19		–	EXISTING CIRCUIT	20		–	EXISTING CIRCUIT
21		–	EXISTING CIRCUIT	22		–	EXISTING CIRCUIT
23		–	EXISTING CIRCUIT	24		–	EXISTING CIRCUIT
25	20A/1P	–	SPARE	26	20A/1P	–	SPARE
27	20A/1P	–	SPARE	28	20A/1P	–	SPARE
29	20A/1P	–	SPARE	30	20A/1P	–	SPARE

PANEL PC

LOCATION: STORAGE BAYS
ENCLOSURE TYPE: NEMA 12
INSTALLATION: SURFACE

VOLTS: 240/120V 1P 3W+G
MAINS RATING: 200A
NEUTRAL: 100%

AIC RATING: 10,000
MAIN LUGS ONLY

CKT. NO.	CIRCUIT BREAKER	LOAD kVA	CIRCUIT DESCRIPTION	CKT. NO.	CIRCUIT BREAKER	LOAD kVA	CIRCUIT DESCRIPTION
1		–	EXISTING CIRCUIT	2		–	EXISTING CIRCUIT
3		–	EXISTING CIRCUIT	4		–	EXISTING CIRCUIT
5		–	EXISTING CIRCUIT	6		–	EXISTING CIRCUIT
7		–	EXISTING CIRCUIT	8		–	EXISTING CIRCUIT
9		–	EXISTING CIRCUIT	10		–	EXISTING CIRCUIT
11		–	EXISTING CIRCUIT	12		–	EXISTING CIRCUIT
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17		–	EXISTING CIRCUIT	18		–	EXISTING CIRCUIT
19		–	EXISTING CIRCUIT	20		–	EXISTING CIRCUIT
21		–	EXISTING CIRCUIT	22		–	EXISTING CIRCUIT
23		–	EXISTING CIRCUIT	24		–	EXISTING CIRCUIT
25	20A/1P	–	SPARE	26	20A/1P	–	SPARE
27	20A/1P	–	SPARE	28	20A/1P	–	SPARE
29	20A/1P	–	SPARE	30	20A/1P	–	SPARE

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MAINTENANCE FACILITY
ELECTRICAL UPGRADE
WILLIAMSBURG, IOWA

SHEET TITLE
ELECTRICAL PANEL SCHEDULES

SCALE: AS NOTED

DRAWN BY: M.C., R.M.

APPROVED: R.M.

REVISIONS:

DATE: OCTOBER 2, 2015

PROJECT NO.: ME 1506

SHEET NO.: E5

LIGHTING KEYED NOTES

① DEMOLISH EXISTING HIGH BAY METAL HALIDE LIGHT FIXTURE AND REPLACE WITH NEW FLUORESCENT HIGH BAY LIGHT FIXTURE IN NEW LOCATION SHOWN ON PLAN. PROVIDE A 4"X4"X2" STEEL JUNCTION BOX WITH COVER IN DEMOLISHED FIXTURE LOCATION. DISPOSE OF DEMOLISHED FIXTURE.

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 BY 7X19 CONSTRUCTION WITH DIAMETER SELECTED BY THE LIGHT FIXTURE MANUFACTURER. PROVIDE SUPPORTS FROM OVERHEAD STRUCTURE FOR NEW FIXTURES. SUPPORTS INCLUDE GALV. 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 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 AND TO EXISTING STRUCTURE, MODIFY HEIGHT OF FIXTURES AS REQUIRED TO PROVIDE ADEQUATE CLEARANCES.

② DEMOLISH EXISTING HIGH BAY METAL HALIDE LIGHT FIXTURE AND REPLACE WITH NEW WET LOCATION FLUORESCENT HIGH BAY LIGHT FIXTURE IN NEW LOCATION SHOWN ON PLAN. PROVIDE A 4"X4"X2" STEEL JUNCTION BOX WITH COVER IN DEMOLISHED FIXTURE LOCATION. DISPOSE OF DEMOLISHED FIXTURE.

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③ DEMOLISH AND REPLACE EXISTING LIGHT SWITCH AND COVER PLATE ONE-FOR-ONE. REUSE EXISTING BOX & WIRING. SWITCH LOCATIONS SHOWN ARE APPROXIMATE. VERIFY EXACT LOCATION OF EXISTING SWITCH ON SITE.

④ DEMOLISH AND REPLACE THE EXISTING FLUORESCENT LIGHT FIXTURES OVER THE WORK BENCHES WITH NEW FLUORESCENT 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 NEW SEPARATE POWER CIRCUIT. EXTEND AND CONNECT CIRCUIT TO 20A 1P CIRCUIT BREAKER IN NEW PANEL PA.

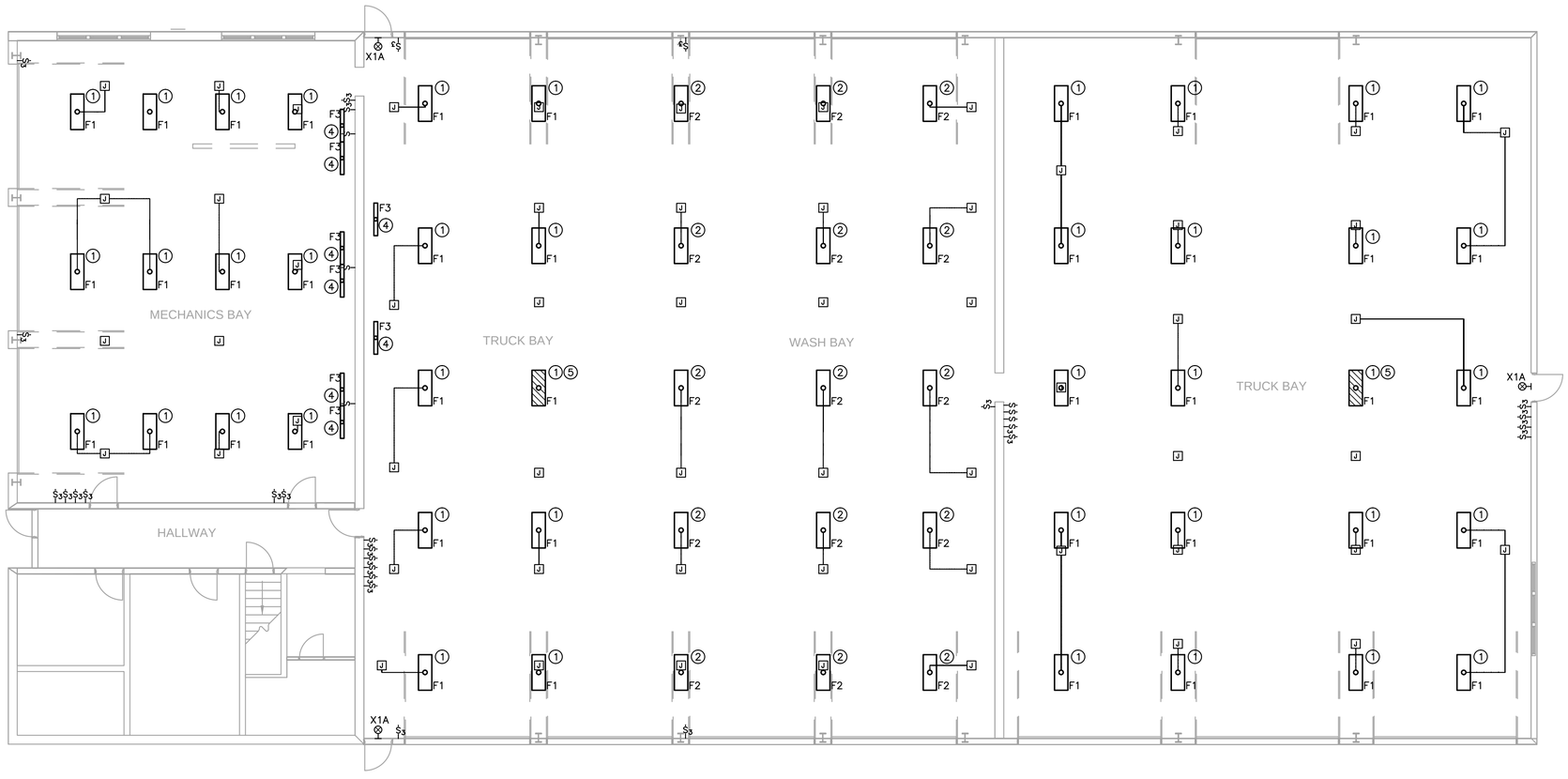
LIGHT FIXTURE SCHEDULE

TAG	FIXTURE TYPE	MANUFACTURER	MODEL	VOLTS	LAMPS	NOTES
F1	FLUORESCENT HIGH BAY	LITHONIA	FGB24 6 32 N1X20 MVOLT 2/3 GEB10IS L841EX	MULTI	(6) 32W T8	4,6
F2	FLUORESCENT WET LOCATION HIGH BAY	LITHONIA	FHE632L 1/4 1/2 GEB10IS LP841EX	MULTI	(6) 32W T8	4,7
F3	LINEAR FLUORESCENT	LITHONIA	XWL232 MV	MULTI	(2) 32W T8	4
LED1	EXTERIOR LED PARKING LOT FIXTURE	GARDCO	ECOFORM ECF-1-5-135LA-6470-NW-UNV-BRP-PC	MULTI	135W LED	1-2,4
LED2	GENERATOR ENCLOSURE LED	LUMINAIRE LED	SWP610-15W-3500K-120-277-BLK	MULTI	15W LED	4
P1	PARKING LOT LIGHTING POLE (25'-0")	KWI	SSP25-5.0-7-BRZ-DM10-BC	-	-	3-4
X1A	WALL MOUNTED EMERGENCY EXIT	MCPHILBIN	CXL1RW	120V	-	4-5

NOTES:
1. INCLUDE BUILT-IN PHOTOCELL & PHOTOCELL SWITCH.
2. HOUSING COLOR: DARK BRONZE.
3. INCLUDE BASE COVER, ANCHOR BOLTS, HANDHOLE, GROUNDING LUG, 12" MOUNTING ARMS, & ALL HARDWARE REQUIRED TO INSTALL THE SPECIFIED LED1 FIXTURE.
4. EQUIVALENT PRODUCTS FROM LITHONIA, DAYBRITE, & HUBBELL ARE APPROVED AS EQUALS.
5. 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.
6. ACCESSORIES: LITHONIA IBAC240 M20 AIRCRAFT CABLE HANGAR ASSEMBLY. REFER TO KEYED NOTES FOR ADDITIONAL INFORMATION.
7. ACCESSORIES: LITHONIA FHEACT240 AIRCRAFT CABLE HANGAR ASSEMBLY. REFER TO KEYED NOTES FOR ADDITIONAL INFORMATION.

LIGHTING SYMBOLS

- WALL SWITCH - 1 WAY
- WALL SWITCH - 3 WAY
- JUNCTION BOX



LIGHTING PLAN

SCALE: 1/8" = 1' (APPROX)

NORTH

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MAINTENANCE FACILITY
ELECTRICAL UPGRADE

WILLIAMSBURG, IOWA

SHEET TITLE
LIGHTING PLAN

SCALE: AS NOTED

DRAWN BY: M.C., R.M.

APPROVED: R.M.

REVISIONS:

DATE: OCTOBER 2, 2015

PROJECT NO.: ME 1506

SHEET NO.: E6

LIGHTING KEYED NOTES

① DEMOLISH EXISTING HIGH BAY METAL HALIDE LIGHT FIXTURE AND REPLACE WITH NEW FLUORESCENT HIGH BAY LIGHT FIXTURE IN NEW LOCATION SHOWN ON PLAN. PROVIDE A 4"X4"X2" STEEL JUNCTION BOX WITH COVER IN DEMOLISHED FIXTURE LOCATION. DISPOSE OF DEMOLISHED FIXTURE.

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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 BY 7X19 CONSTRUCTION WITH DIAMETER SELECTED BY THE LIGHT FIXTURE MANUFACTURER. PROVIDE SUPPORTS FROM OVERHEAD STRUCTURE FOR NEW FIXTURES. SUPPORTS INCLUDE GALV. 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 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 AND TO EXISTING STRUCTURE, MODIFY HEIGHT OF FIXTURES AS REQUIRED TO PROVIDE ADEQUATE CLEARANCES.

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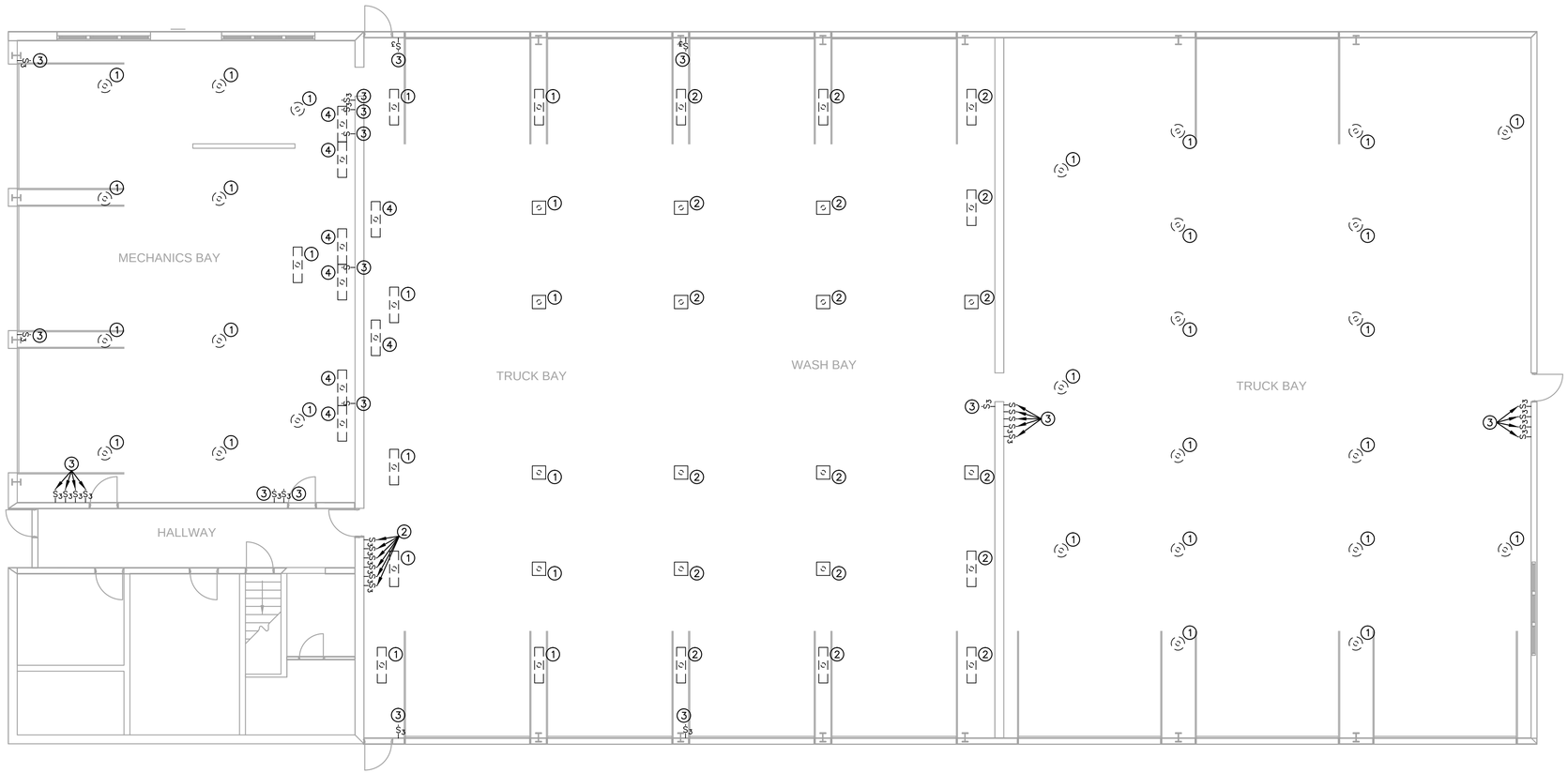
④ DEMOLISH AND REPLACE THE EXISTING FLUORESCENT LIGHT FIXTURES OVER THE WORK BENCHES WITH NEW FLUORESCENT LIGHT FIXTURES IN SAME LOCATION. REUSE EXISTING CIRCUITING AND BRACKETS TO HANG NEW FIXTURES. PROVIDE NEW ATTACHMENT FASTENERS, WIRING, AND MISCELLANEOUS HARDWARE & FIXTURE WHIPS AS REQUIRED. INSPECT 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 NEW SEPARATE POWER CIRCUIT. EXTEND AND CONNECT CIRCUIT TO 20A 1P CIRCUIT BREAKER IN NEW PANEL PA.



LIGHTING DEMOLITION PLAN

SCALE: 1/8" = 1' (APPROX)

NORTH

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MAINTENANCE FACILITY
ELECTRICAL UPGRADE

WILLIAMSBURG, IOWA

SHEET TITLE
LIGHTING DEMOLITION PLAN

SCALE: AS NOTED

DRAWN BY: M.C., R.M.

APPROVED: R.M.

REVISIONS:

DATE: OCTOBER 2, 2015

PROJECT NO.: ME 1506

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