ANSI D 22" x 34"
Approved: R.HILLYER
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Designer: R.HILLYER
Drafter: HEATH ENGINEERING
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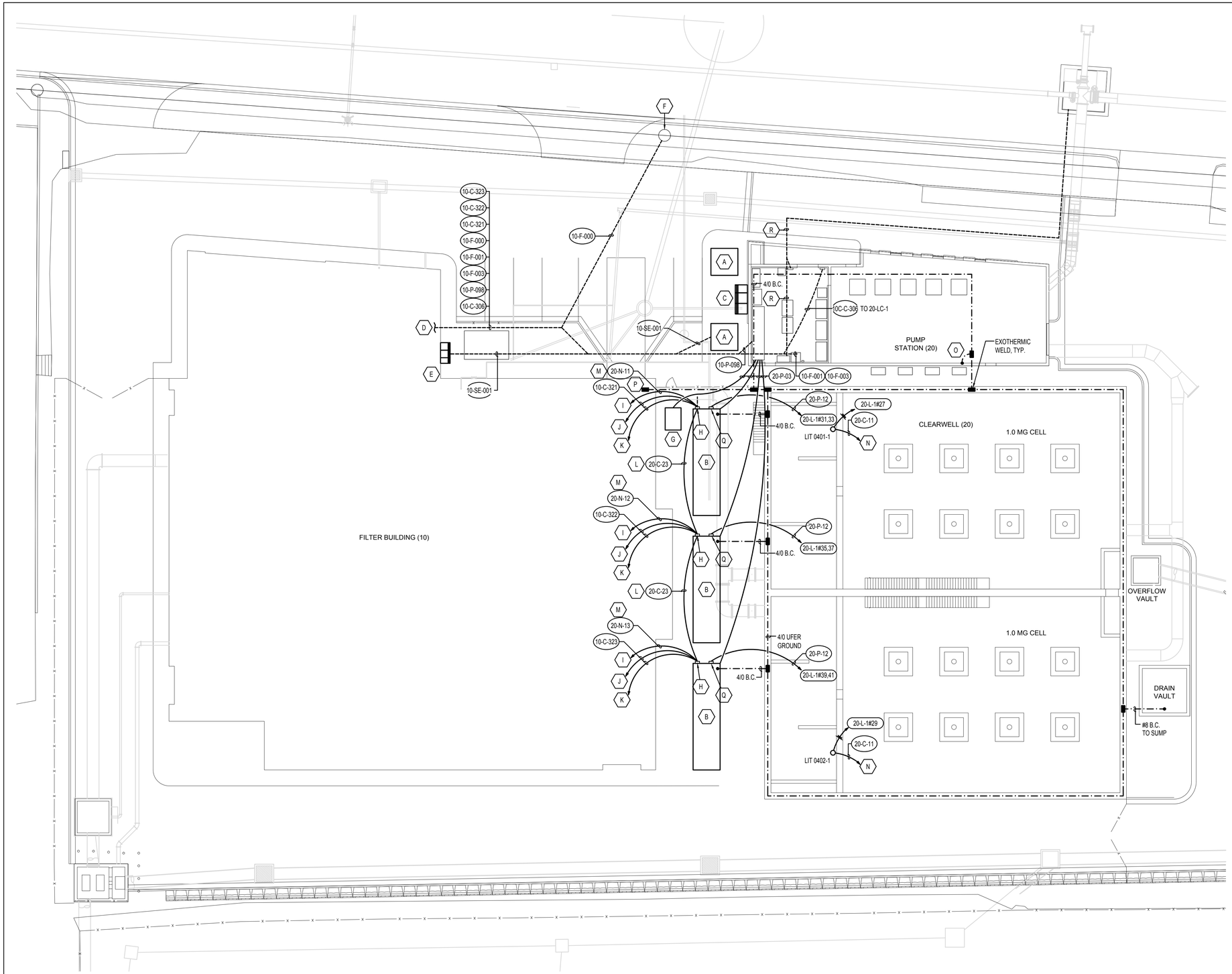

ELECTRICAL SITE PLAN
SCALE: 1/16" = 1'

VERIFY SCALE
BAR IS ONE INCH ON ORIGINAL DRAWING

KEY NOTES

- A UTILITY TRANSFORMER
- B GENERATOR
- C METER AND DISCONNECT 20-MB-1
- D REFER TO 10 SERIES SHEETS FOR CONTINUATION.
- E METER AND DISCONNECT, 10-MB-1
- F STUB-UP CONDUIT AT LEAST 12'-0" AFG. COORDINATE WITH CLIENT FOR THE FIBER OPTIC SERVICE.
- G PAD-MOUNTED 1000kW RESISTIVE LOAD BANK
- H GENERATOR CONTROLLER. EMCP 4.4 OR EQUAL
- I 1" CONDUIT WITH CAT 6 CABLE TO SCADA ETHERNET SWITCH IN PUMP STATION FOR GENERATOR MONITORING AND ALARMS
- J TO FILTER BUILDING ATS
- K TO PUMP STATION ATS
- L CONNECT ETHERNET BETWEEN ALL GENERATOR CONTROLLERS IN A RING
- M SEE NETWORK CONDUIT SCHEDULE
- N TO PLC
- O BOND TO BUILDING STEEL WHERE PRACTICAL
- P TO FILTER BUILDING GROUND GRID
- Q GENERATOR AUXILIARY PANEL
- R SEE 30-E101 AND 30-D101 FOR CONDUIT INFORMATION

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ISSUE/REVISION

I/R	DATE	DESCRIPTION
B	2023-04-07	ISSUED FOR BID
A	2023-01-20	ISSUED FOR 90%

PROJECT NUMBER

AECOM Project No. - 60670884
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SHEET TITLE

PLANT SITE ELECTRICAL SITE PLAN

DRAWING NUMBER

01-E100

Last Plotted: 14-04-2023
Filename: I:\2020\70\10\WG\XREF\22037-PS-G-TBLK.dwg

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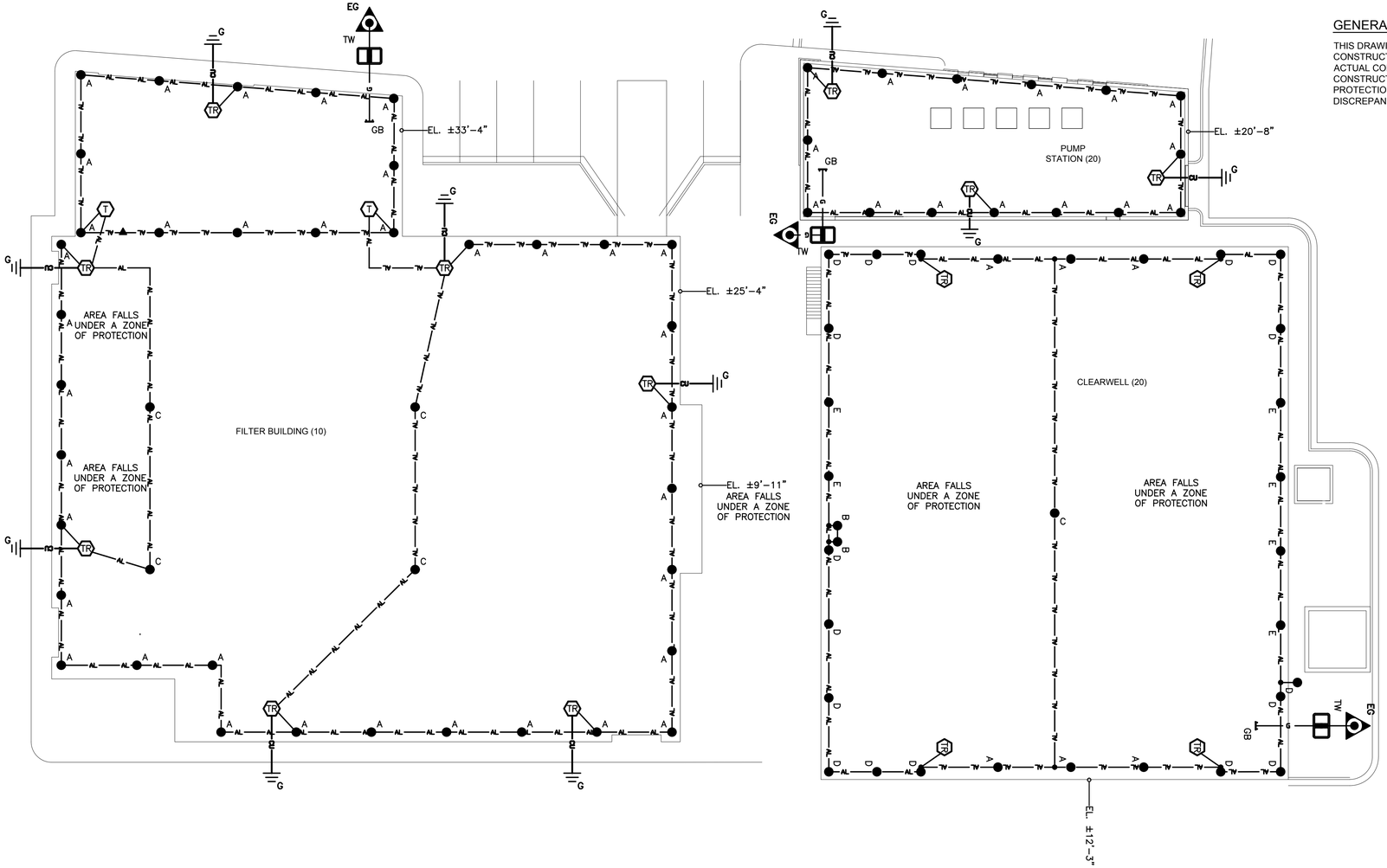


ELECTRICAL LIGHTNING PROTECTION PLAN

SCALE: 1/16" = 1'

GENERAL CONSTRUCTION NOTES

THIS DRAWING IS INTENDED FOR USE AS A CONSTRUCTION DOCUMENT. FIELD VERIFY ACTUAL CONDITIONS PRIOR TO CONSTRUCTION. CONTACT LIGHTNING PROTECTION REF TO CLARIFY ANY DISCREPANCIES.

VERIFY SCALE

BAR IS ONE INCH ON ORIGINAL DRAWING

KEY NOTES

A. LOCATE AIR TERMINALS AS SHOWN. TAKE CARE TO ENSURE THAT ALL POINTS ARE WITHIN 2'-0" (609mm) OF OUTSIDE BUILDING EDGE, OUTSIDE CORNERS, RIDGE ENDS, AND THAT MAX SPACING DOES NOT EXCEED 20'-0" (6,096mm), AND THAT MIN PROJECTION ABOVE OBJECT PROTECTED IS 10" (254mm); POINTS PROJECTING 24" (609mm) MAY BE SPACED @ 25'-0" (7,520mm) MAX.

B. MAINTAIN HORIZONTAL OR DOWNWARD COURSING OF MAIN CONDUCTOR. ENSURE THAT ALL BENDS HAVE AT LEAST AN 8" (203mm) RADIUS AND DO NOT EXCEED 90 DEGREES.

C. ATTACH ALL EXPOSED ROOF, DOWN LEAD AND BONDING CABLES AT 3'-0" (914mm) ON CENTER MAX. VERIFY COMPATIBILITY OF ADHESIVE ON MEMBRANE ROOF APPLICATION PRIOR TO INSTALLATION.

D. GROUND ROD ELECTRODES SHALL BE INSTALLED AS SHOWN, BUT IN NO INSTANCE SHALL THEY BE LESS THAN 1'-0" (304mm) BELOW GRADE AND 2'-0" (609mm) FROM FOUNDATION WALL. DRIVEN RODS SHALL PENETRATE THE EARTH AT LEAST 10'-0" (3,048mm).

E. BOND TO WATER SERVICE AND OTHER PIPING SYSTEMS AS SHOWN AND AS REQUIRED BY CODE.

F. MAIN SIZE LIGHTNING CONDUCTOR BONDED TO MAIN GROUND
BUS FIELD VERIFY LOCATION 1 1/4" CONDUIT FOR ACCESS, INSTALLED BY OTHERS. INTERCONNECT LIGHTNING PROTECTION GROUND TO TELEPHONE AND OTHER BUILDING GROUND SYSTEMS LOCATION FIELD DETERMINED OR AS REQUIRED BY CODE.

G. LB'S AND SIMILAR CONDUIT BODIES MAY NOT BE USED IN THE INSTALLATION OF DOWNLEAD CONDUITS, AS THEY DO NOT ADHERE TO THE REQUIRED 8" (203mm) MINIMUM BEND RADIUS.

H. SYSTEM SHALL BE INSTALLED AS SHOWN TO ENSURE PROPER CODE COMPLIANCE AND SYSTEM CERTIFICATION. ANY MAJOR VARIANCE SHALL BE RESUBMITTED FOR APPROVAL.

I. ALL MATERIALS TO BE UNDERWRITER'S LABORATORIES APPROVED WITH APPROPRIATE UL96 MARKINGS.

J. FINAL SYSTEM INSPECTION AND QUALITY CONTROL

(A) THE CONTRACTOR SHALL FURNISH AN UL CERTIFICATE UPON COMPLETION OF THE INSTALLATION.

(B) UL CERTIFICATION IF REQUIRED, REQUIRES INSPECTION BY THEIR THIRD-PARTY FIELD STAFF AFTER COMPLETION OF THE INSTALLATION.

(C) AS-BUILT DRAWINGS SHALL BE COMPLETED AND STAMPED BY AN UL CERTIFIED MASTER DESIGNER OF LIGHTNING PROTECTION SYSTEMS.

(D) FINAL INSPECTION REPORT - A FINAL INSPECTION AND INSPECTION REPORT SHALL BE COMPLETED BASED ON ANSI/TIA/EIA 607, NEC, NFPA 780, AND UL96A INDUSTRY STANDARDS AS APPLICABLE. THE SCOPE OF THE INSPECTION AND REPORT SHALL INCLUDE;

a. TEST AND EVALUATION OF THE GROUNDING SYSTEM. RECORD FINAL SYSTEMS TO GROUND RESISTANCE LEVEL.
b. EVALUATION AND TESTING OF THE INTERNAL BONDING AND GROUNDING SYSTEMS.
c. EVALUATION AND TESTING OF EQUIPMENT GROUNDING.
d. EVALUATION OF AC SURGE SUPPRESSION INSTALLATION.
e. EVALUATION OF TELCO SURGE SUPPRESSION INSTALLATION.
f. COPY OF THE OR UL LIGHTNING PROTECTION CERTIFICATION.
g. FINAL AS-BUILT REVIEW AND SUBMISSION.

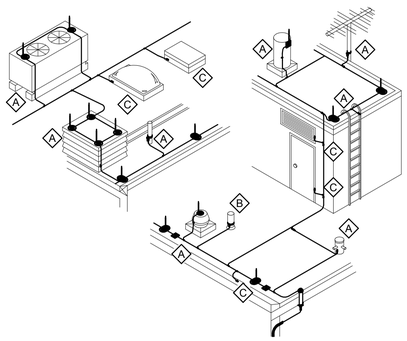
K. (E) REPORT SHALL INCLUDE DETAILED REPORTING AND TEST RESULTS WITH CORRESPONDING PHOTOS OF EACH EVALUATION CATEGORY.

L. SYSTEM TO BE DESIGNED AND INSTALLED BY:

M. SYSTEM DESIGNED UTILIZING UL LISTED MATERIALS.

LEGEND

- AIR TERMINAL
- MECHANICAL CONNECTION
- MISC. BONDING
- TR — THRU-ROOF CONNECTION. SEE DETAIL E005 ON 99-E701
- T — THRU-ROOF CONNECTION - ALUMINUM SEE DETAIL E004 ON 99-E701
- GB — GROUND BAR
- AL — CLASS I ALUMINUM MAIN CONDUCTOR
- CU — CLASS I COPPER MAIN CONDUCTOR
- G — COPPER CLAD GROUND ROD WITH EXOTHERMIC WELD CONNECTION
- EG — ELECTROLYTIC GROUND ROD
- TW — XB36FTTW, TEST WELL WITH GROUND BAR



GENERAL BONDING REFERENCE

A. TYPICAL BODIES OF CONDUCTANCE AS NOTED BELOW. USE FULL SIZE CONDUCTOR AND APPROPRIATE FITTING SHOWN FOR CONNECTION.

B. (PLUMBING STACK) REQUIRES BONDING WITH MAIN SIZE CABLE ONLY IF WITHIN 6'-0" (1,828mm) OF LIGHTNING PROTECTION SYSTEM.

C. TYPICAL BODIES OF INDUCTANCE AS NOTED BELOW. USE SECONDARY SIZE (SMALLER) CONDUCTOR AND APPROPRIATE FITTING SHOWN FOR CONNECTION.

D. BONDING CONNECTIONS AND FITTINGS SHOWN ARE TYPICAL EXAMPLES. MAKE ALL CONNECTIONS REQUIRED TO MEET CODES AS NOTED BELOW. ADJUST FITTING TYPE AS REQUIRED TO SUIT FIELD CONDITIONS.

DETAIL REFERENCES

A - SEE DETAIL E001 ON 99-E701
B - SEE DETAIL E002 ON 99-E701
C - SEE DETAIL E003 ON 99-E701
D - SEE DETAIL E007 ON 99-E701
E - SEE DETAIL E008 ON 99-E701
G - SEE DETAIL E006 ON 99-E701
T - SEE DETAIL E004 ON 99-E701
TR - SEE DETAIL E005 ON 99-E701
TW - SEE DETAIL E009 ON 99-E701
EG - SEE DETAIL E010 ON 99-E701
GB - SEE DETAIL E013 ON 99-E701

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PROJECT NUMBER

AECOM Project No. - 60670884
HAL Project No. - 035.15.420

SHEET TITLE

PLANT SITE ELECTRICAL LIGHTNING PROTECTION PLAN

DRAWING NUMBER

01-E101

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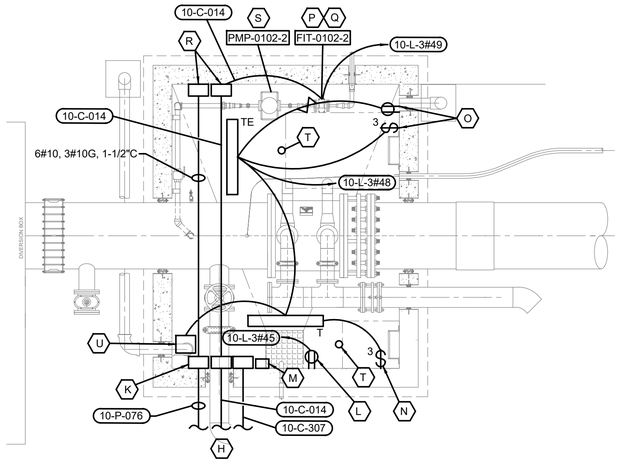
Drafter: HEATH ENGINEERING
QC: R.HILLYER
Checked: R.HILLYER
Approved: R.HILLYER
ANSI D 22" x 34"

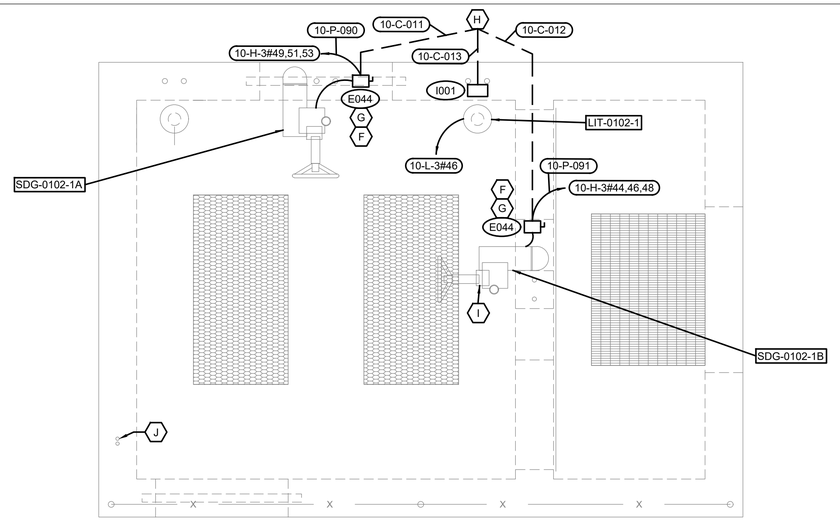
Last Plotted: 14-04-2023
Filename: 1:\2230701\CIVIL\XREF\22037-PS-G-TBLK.dwg

ANSI D 22" x 34"
Approved: C.ADAMS
Checked: S.SHUGARS
Designer: C.SAULS
Drafter: C.SAULS
Project Manager: J.KRINKS



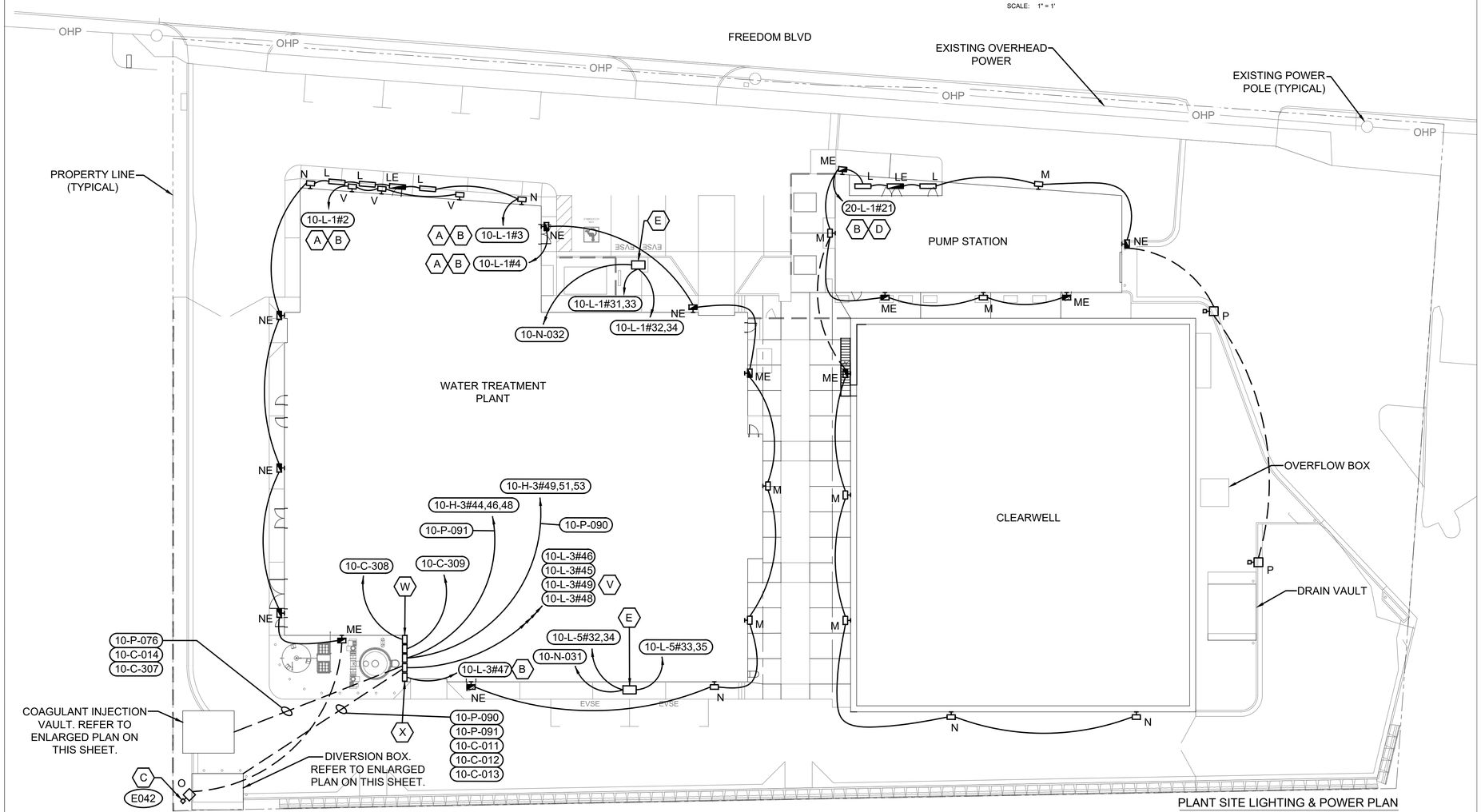
ENLARGED COAGULANT INJECTION VAULT PLAN

SCALE: 1" = 2'



ENLARGED DIVERSION BOX PLAN

SCALE: 1" = 1'



PLANT SITE LIGHTING & POWER PLAN

SCALE: 1" = 20'

VERIFY SCALE

BAR IS ONE INCH ON ORIGINAL DRAWING

N

GENERAL NOTES

1. REFER TO SHEET 10-E611 FOR LIGHT FIXTURE SCHEDULE.

KEYNOTES

A. ROUTE THROUGH EXTERIOR LIGHTING CONTROL PANEL 10-LC-1 IN WTP ELEC 117. REFER TO SHEET 10-E402.

B. 2#10, 1#10G, 1"C. UNLESS NOTED OTHERWISE.

C. SEE AREA LIGHTING POLE BASE DETAIL, SHEET 99-E704.

D. ROUTE THROUGH LIGHTING CONTACTOR 20-LC-1. REFER TO 20 SERIES SHEETS FOR DETAILS AND LOCATION.

E. ELECTRIC VEHICLE CHARGING STATION. PROVIDE DUAL-PORT CHARGERS WITH 9.6kW PER PORT. ROUTE 2 SETS (3#6, 1#10 GND, 1"C) TO EACH STATION.

F. 30/3 NEMA 4X DISCONNECT. CONNECT GATE WITH WFC.

G. FURNISH & INSTALL NEMA 4X J-BOXES BELOW DISCONNECT FOR DISCRETE SIGNALS. CONNECT WITH WFC.

H. REFER TO SITE PLAN FOR CONTINUATION.

I. SLIDE GATE PEDESTAL WITH ELECTRIC ACTUATOR. TYPICAL.

J. ELECTRICAL CONDUITS. SEE SHEET 01-D101 FOR MORE MORE INFORMATION. TYPICAL.

K. THREE NEMA 4X J-BOXES; ONE EACH FOR POWER, DISCRETE SIGNALS, & ANALOG SIGNALS. SEAL ALL CONDUITS. MOUNT AS HIGH AS POSSIBLE ON WALL.

L. PROVIDE 20A, GFI, DUPLEX RECEPTACLE WITH WP COVER FOR SUMP PUMP. MOUNT AS HIGH AS POSSIBLE ON WALL. EXTEND 3/4"C, 2#10, 1#10G TO POWER J-BOX.

M. FLOAT SWITCH. EXTEND 3/4"C, 2#14, 1#12G TO DISCRETE J-BOX.

N. 3-WAY LIGHT SWITCH WITH WP COVER. MOUNT AS HIGH AS POSSIBLE ON WALL NEXT TO LADDER. EXTEND AND CONNECT.

O. PROVIDE 20A, GFI, DUPLEX RECEPTACLE & 3-WAY LIGHT SWITCH WITH WP COVER. MOUNT AS HIGH AS POSSIBLE ON WALL NEXT TO LADDER. EXTEND 3/4"C, 2#10, 1#10G TO POWER J-BOX.

P. CONNECT POWER FROM J-BOX. CONNECT WITH WFC WITH A MAXIMUM LENGTH OF 36". 3/4"C, 2#10, 1#10G.

Q. CONNECT MONITORING FROM J-BOX. CONNECT WITH WFC WITH A MAXIMUM LENGTH OF 36".

R. TWO NEMA 4X J-BOXES; ONE EACH FOR POWER AND ANALOG SIGNALS. SEAL ALL CONDUITS. MOUNT AS HIGH AS POSSIBLE ON WALL.

S. CONNECT POWER FROM LCP-0102-2 TO J-BOX WITH WFC WITH A MAXIMUM LENGTH OF 36". 3/4"C, 2#10, 1#10G.

T. HATCH SWITCH, EXTEND 3/4"C, 2#14, 1#12G TO DISCRETE J-BOX.

U. 150W EXHAUST FAN, BY OTHERS.

V. 8#10, 4#10G, 1-1/2"C.

W. FURNISH & INSTALL FOUR NEMA 4X J-BOXES, ONE EACH FOR 480V POWER, 120V POWER, DISCRETE SIGNALS, & ANALOG SIGNALS. FROM 120V J-BOX ROUTE FEEDER TO LCP-0102-2 FOR PMP-0102-2.

X. LOCATE LCP-0102-2 IRRIGATION SYSTEM CONTROLLER IN THIS AREA INSIDE THE BUILDING.

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B	2023-04-07	ISSUED FOR BID
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PLANT SITE ELECTRICAL LIGHTING AND POWER PLAN

DRAWING NUMBER

01-E102

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