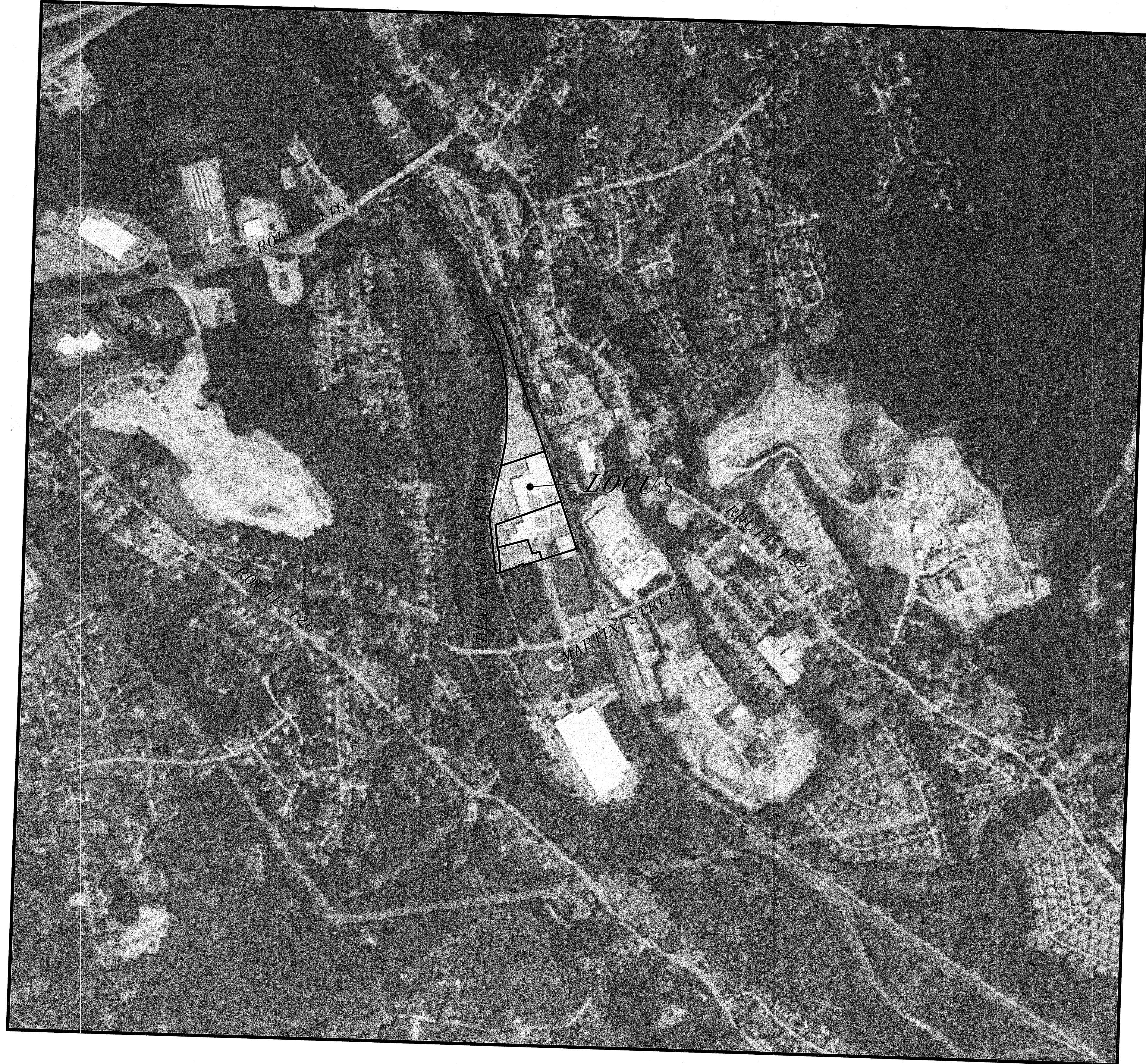
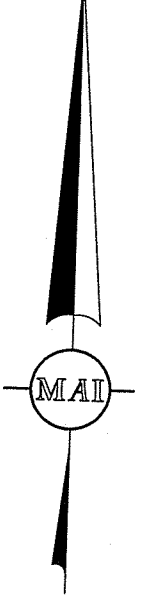
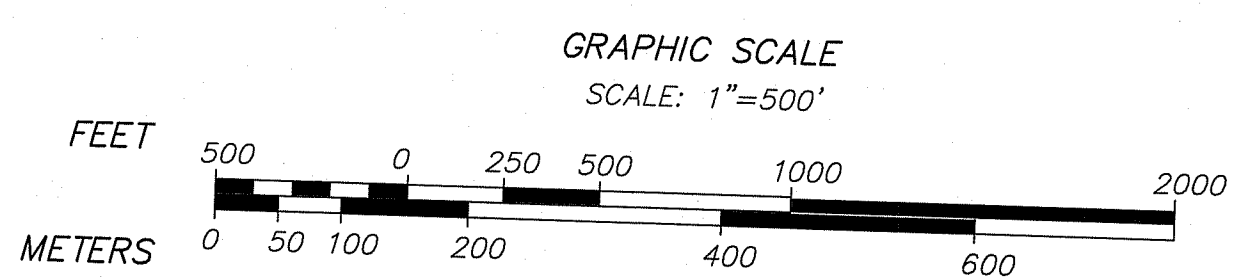


N



LOCUS CONTEXT MAP



THIS PLAN IS INTENDED TO BE PRINTED IN COLOR

BLACKSTONE VALLEY PREP SCHOOL BUS ELECTRIFICATION
PERMIT SITE DEVELOPMENT PLANS
(TO ACCOMPANY A FRESHWATER WETLANDS PERMIT TO THE RHODE ISLAND DEPARTMENT OF ENVIRONMENTAL MANAGEMENT)

FOR
1 JOHN C. DEAN MEMORIAL HIGHWAY
CUMBERLAND ASSESSOR'S PLAT 58 - LOT 69
CUMBERLAND ASSESSOR'S PLAT 34 - LOT 254
CUMBERLAND ASSESSOR'S PLAT 34 - LOT 234
CUMBERLAND ASSESSOR'S PLAT 34 - LOT 252

LOCATED IN
CUMBERLAND, RHODE ISLAND

PROVIDENCE COUNTY
DATE: JANUARY 12, 2024
REV: MARCH 12, 2024
REV: APRIL 16, 2024


PREPARED FOR:
HIGHLAND ELECTRIC FLEETS
200 CUMMINGS CENTER, SUITE 273D
BEVERLY, MA 01915

RECORD OWNERS:
BERKELEY ACQUISITION INC ETAL
& BERKELEY ACQUISITION CORP
P.O. BOX 8
PAWTUCKET, RI 02860

PROJECT SURVEYOR:
SARDELLI SURVEY, LLC
& ENVIRONMENTAL SERVICES
P.O. BOX 1017
CHARLESTOWN, RI 02813

PROJECT ELECTRICAL ENGINEER:
HURRICANE HILL DEVELOPMENT
COMPANY PLLC
1042 HURRICANE HILL ROAD
MASON, NH 03048

SITE CIVIL ENGINEER:

 **MERIDIAN ASSOCIATES**
300 CUMMINGS CENTER SUITE 200
BEVERLY, MASSACHUSETTS 01915
TELEPHONE: (978) 299-0447
WWW.MERIDIANASSOC.COM

RI DEPARTMENT OF ENVIRONMENTAL MANAGEMENT
OFFICE OF WATER RESOURCES
FRESHWATER WETLANDS PROGRAM

APPROVED WITH CONDITIONS AS
SPECIFIED IN THE LETTER OF APPROVAL
DATED: JUN 03 2024 FILE #: 24-0097
NO CHANGES ALLOWED WITHOUT PRIOR APPROVAL
APPROVED PLANS MUST BE AT CONSTRUCTION SITE

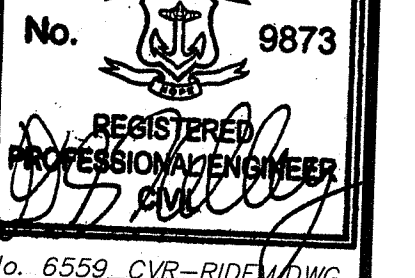
DRAWING INDEX:

- C-00 COVER SHEET
- C-01 PERMIT SITE DEVELOPMENT PLAN
- C-02 PERMIT SITE DEVELOPMENT PLAN
- C-10 PERMIT KEY PLAN
- C-50 PERMIT CONSTRUCTION DETAILS

REFERENCE PLANS:

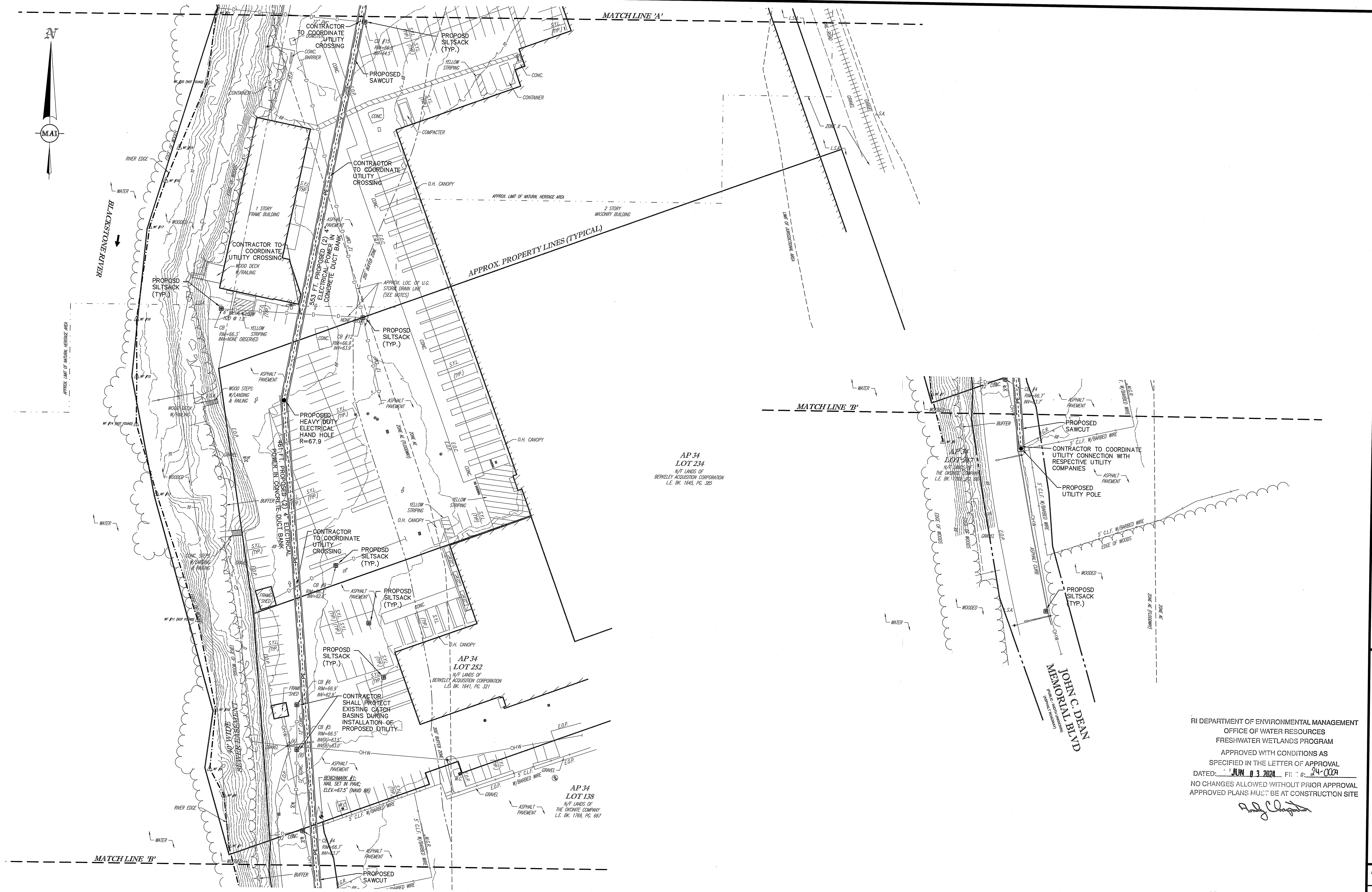
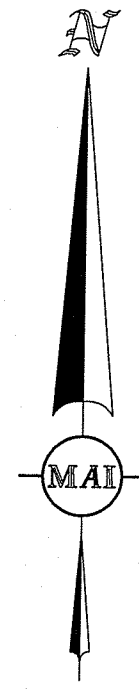
- 1 OF 2 BOUNDARY & TOPOGRAPHIC SURVEY
- 2 OF 2 BOUNDARY & TOPOGRAPHIC SURVEY
- EV-00 COVER PAGE
- EV-01 ELECTRICAL NOTES
- EV-02 SITE PLAN
- EV-03 SITE PLAN-2
- EV-04 SINGLE LINE DIAGRAM
- EV-05 WIRE TABLE
- EV-06 GROUNDING PLAN
- EV-07 CONDUIT PLAN
- EV-08 TRENCHING PLAN
- EV-09 EV CHARGER DETAILS
- EV-10 SWITCHBOARD PAD DETAILS
- EV-11 TRANSFORMER PAD DETAILS
- EV-12 HAND HOLE AND POLE DETAILS
- EV-13 CIVIL SKETCH
- EV-14 DATA SHEETS
- EV-15 NEC LABELS

RI Environmental Management
APR 05 2024
Office of Water Resources

DAVID S. KELLEY
No. 9873
REGISTERED PROFESSIONAL ENGINEER


Plot Date: April 12, 2024 File: P:\6559_1 JOHN C. DEAN MEMORIAL BLVD. CUMBERLAND AND R.I. CAD\CIVIL 3D\6559_CVR-RIDEM.DWG

PLOT DATE: April 12, 2024. FILE: P:\6559_1 JOHN C DEAN MEMORIAL BLVD CUMBERLAND RI CAD\CIVIL\3D\6559_SITE.DWG



REVISIONS	
DATE	DESCRIPTION
4/16/24	RAISED CONCRETE PAD

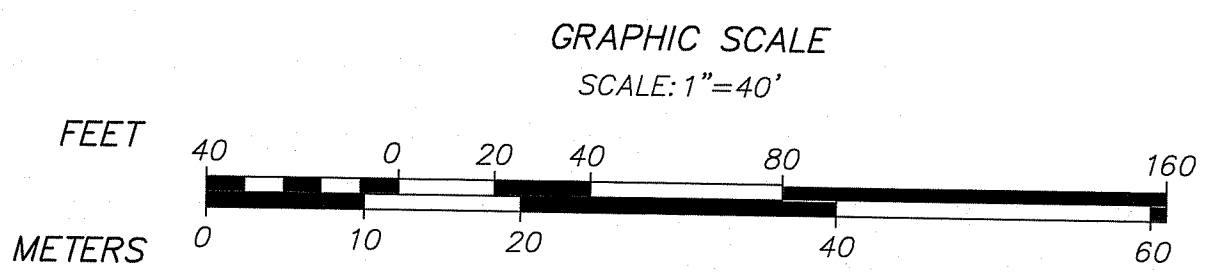
DAVID S. KELLEY
 No. 9873
 REGISTERED PROFESSIONAL ENGINEER

1 JOHN C. DEAN MEMORIAL HIGHWAY
 PERMIT SITE DEVELOPMENT PLAN
 LOCATED IN
CUMBERLAND, RHODE ISLAND
 (PROVIDENCE COUNTY)
 PREPARED FOR
HIGHLAND ELECTRIC FLEETS

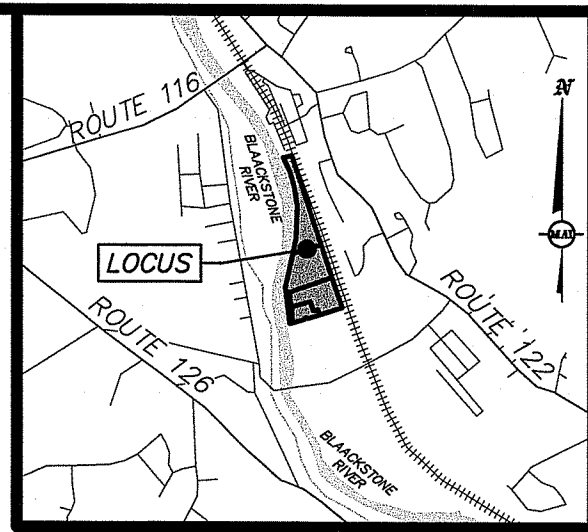
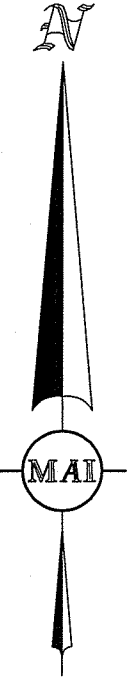
RI DEPARTMENT OF ENVIRONMENTAL MANAGEMENT
 OFFICE OF WATER RESOURCES
 FRESHWATER WETLANDS PROGRAM
 APPROVED WITH CONDITIONS AS
 SPECIFIED IN THE LETTER OF APPROVAL
 DATED: JUN 03 2024 FILE #: 24-0009
 NO CHANGES ALLOWED WITHOUT PRIOR APPROVAL
 APPROVED PLANS MUST BE AT CONSTRUCTION SITE

Paul J. Cloutier

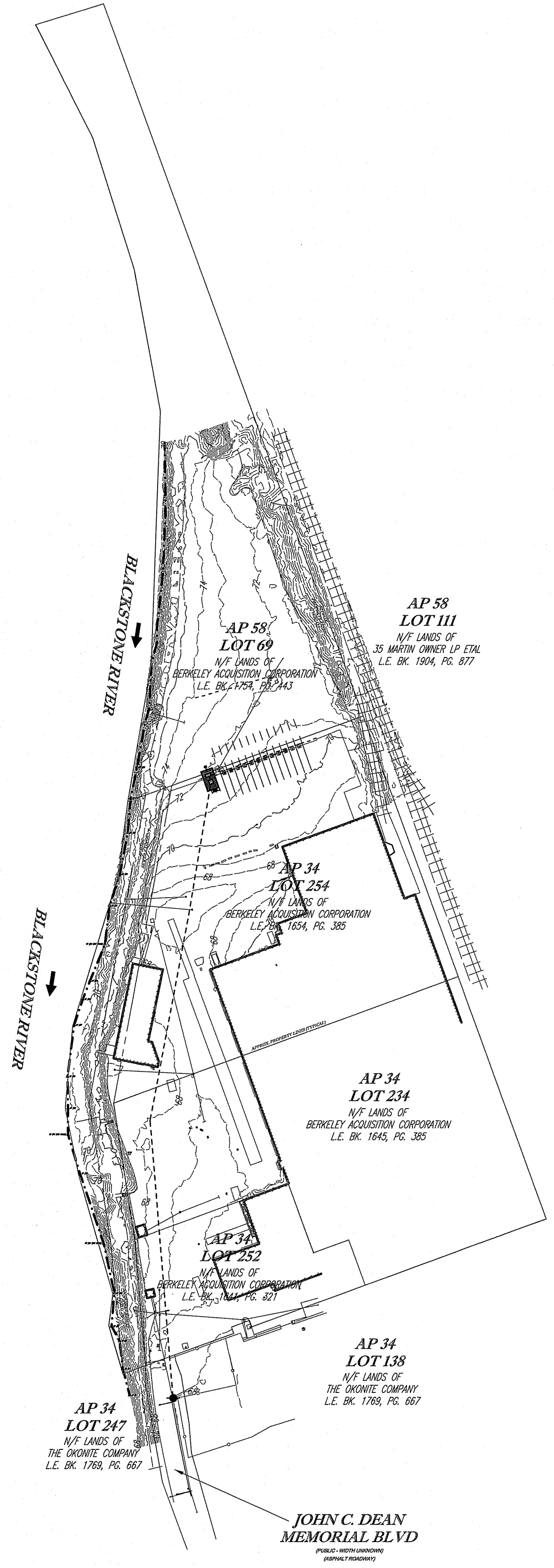
DATE: APRIL 16, 2024
 SCALE: 1"=40'
 SHEET No. C-02
 PROJECT No. 6559



THIS PLAN IS INTENDED TO BE PRINTED IN COLOR
 SEE SHEET C-01 FOR NOTES AND LEGEND

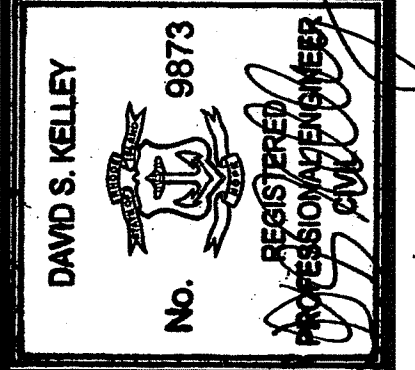


LOCUS MAP:
(NOT TO SCALE)



- LEGEND**
- EXISTING**
- 124 --- EXISTING CONTOUR
 - 125 --- EXISTING CONTOUR
 - OH OVERHEAD WIRES
 - WATER VALVE
 - UNKNOWN VALVE
 - UNKNOWN MANHOLE
 - CATCH BASINS
 - MONITORING WELL
 - MONITORING WELL ON CONC.
 - GUY WIRE
 - UTILITY POLE
 - UTILITY POLE/LIGHT POLE/SOLAR PANEL
 - PAINTED ARROWS
 - METAL COVERS
 - SIGN
 - DOUBLE SIGN
 - BOLLARD
 - METAL GUIDE RAIL
 - AIR CONDITIONING UNIT
 - WHEEL STOP
 - AREA LIGHT
 - CLF CHAIN LINK FENCE
 - EOC EDGE OF CONC.
 - EOG EDGE OF GRAVEL
 - EOP EDGE OF PAVEMENT
 - LSA LANDSCAPED AREA
 - MC METAL COVER
 - SBL SOLID BLUE LINE
 - SYL SOLID YELLOW LINE
 - TP TYPICAL
 - UNKNOWN TERMINUS
 - RESOURCE AREA
 - WETLAND FLAG
 - PROPERTY LINES
 - PUBLIC RIGHT OF WAY
- PROPOSED**
- PROPOSED CONCRETE
 - PE PROPOSED ELECTRICAL CONDUIT
 - PROPOSED BOLLARD
 - PROPOSED PAVEMENT MARKING
 - PROPOSED FAST CHARGER
 - PROPOSED UTILITY POLE

REVISIONS	DATE	DESCRIPTION
	4/16/24	RAISED CONCRETE PAD



1 JOHN C. DEAN MEMORIAL HIGHWAY
PERMIT KEY PLAN
LOCATED IN
CUMBERLAND, RHODE ISLAND
(PROVIDENCE COUNTY)
PREPARED FOR
HIGHLAND ELECTRIC FLEETS

RI Environmental Management
APR 5 2024
Office of Water Resources

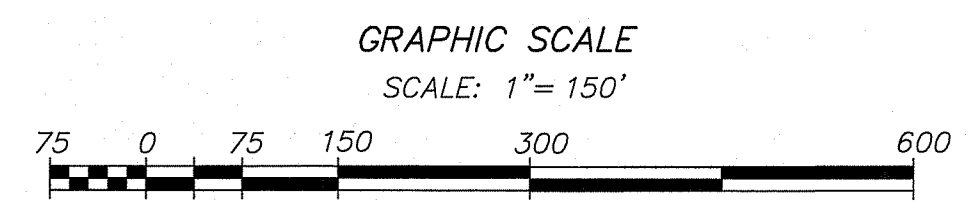
MERIDIAN ASSOCIATES
500 CUMMINGS CENTER, SUITE 500
BERKELEY, MASSACHUSETTS 01915
WWW.MERIDIANASSOC.COM

CHECKED BY: DSK
DESIGNED BY: CSB

DATE:
APRIL 16, 2024
SCALE:
1"=150'
SHEET No.
C-10
PROJECT No.
6559

RI DEPARTMENT OF ENVIRONMENTAL MANAGEMENT
OFFICE OF WATER RESOURCES
FRESHWATER WETLANDS PROGRAM
APPROVED WITH CONDITIONS AS
SPECIFIED IN THE LETTER OF APPROVAL
DATED: APR 3 2024 FILE # 24-004
NO CHANGES ALLOWED WITHOUT PRIOR APPROVAL
APPROVED PLANS MUST BE AT CONSTRUCTION SITE

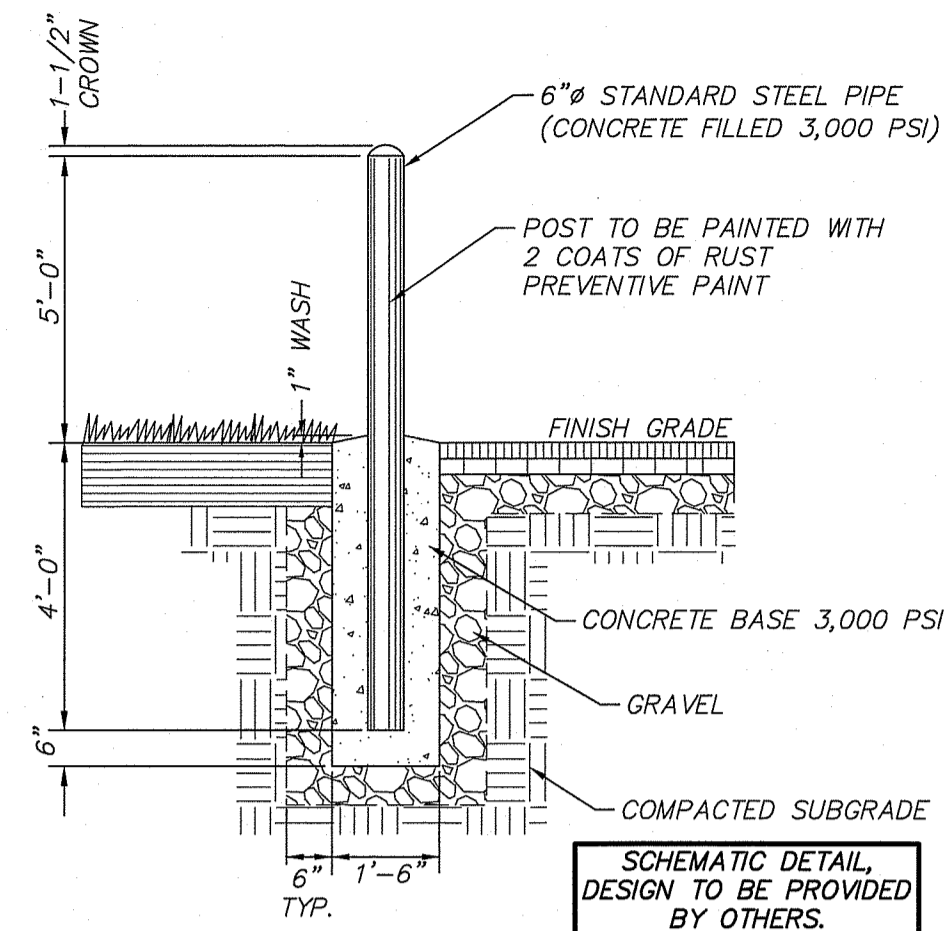
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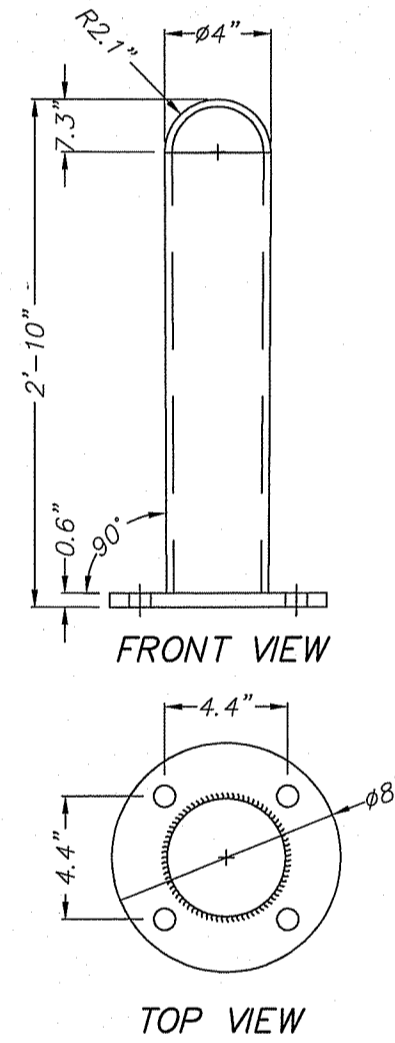
Plot Date: April 12, 2024 File: P:\6559_1 JOHN C DEAN MEMORIAL BLVD CUMBERLAND RI\CAD\CIVIL_3D\6559_SITE.DWG

THIS PLAN IS INTENDED TO BE PRINTED IN COLOR SEE SHEET C-01 FOR NOTES AND LEGEND

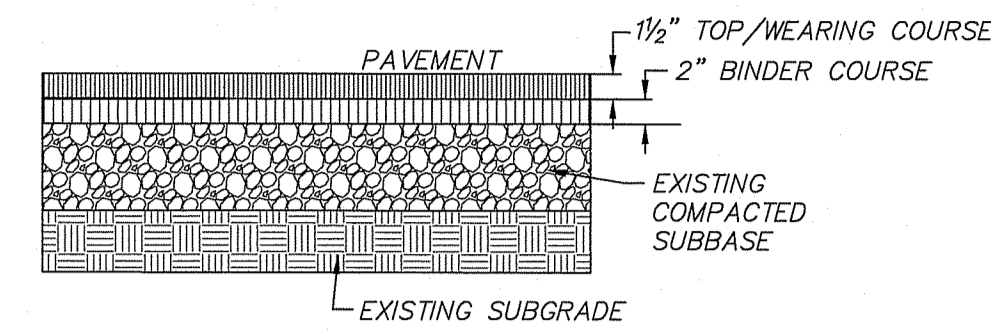
Plot Date: April 12, 2024. File: P:\6559_1\JOHN C DEAN MEMORIAL BLVD CUMBERLAND RI\CAD\CIVIL_3D\6559_DET.DWG



TYPICAL BOLLARD DETAIL
(NOT TO SCALE)



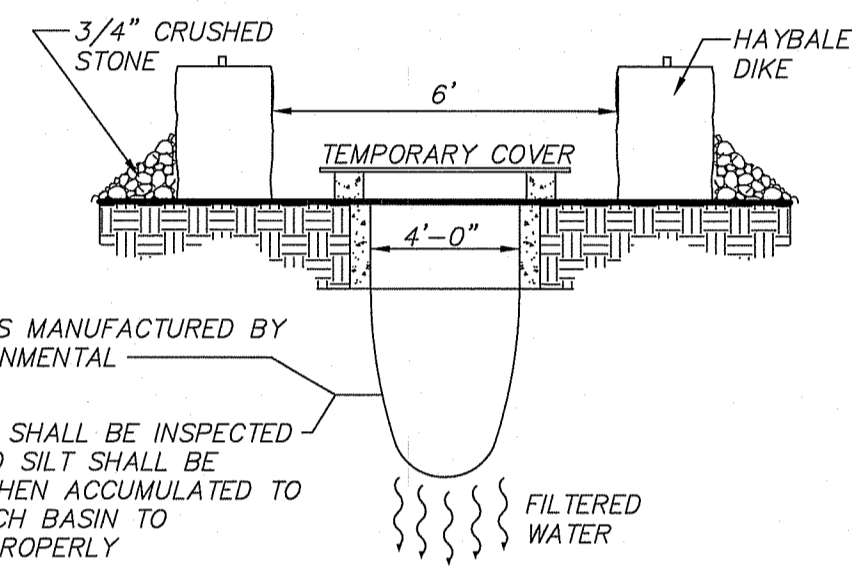
TYPICAL STAINLESS STEEL BOLT DOWN BOLLARD DETAIL
(NOT TO SCALE)



THE PAVEMENT DEPTH SHALL MATCH OR EXCEED THE EXISTING DEPTH OF THE PAVEMENT WITHIN THE PARKING LOT.

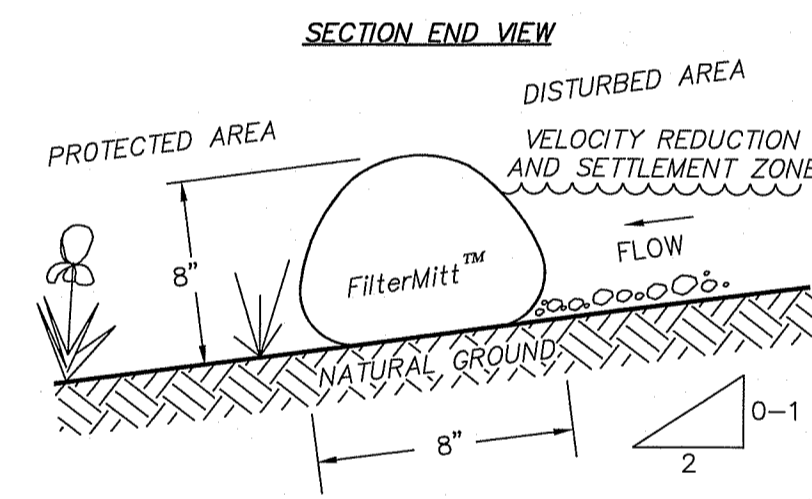
NOTE: THE WEARING AND BINDER COURSES SHALL CONSIST OF CLASS 1 TYPE I-1 BITUMINOUS CONCRETE

BITUMINOUS CONCRETE PAVEMENT SECTION
(NOT TO SCALE)

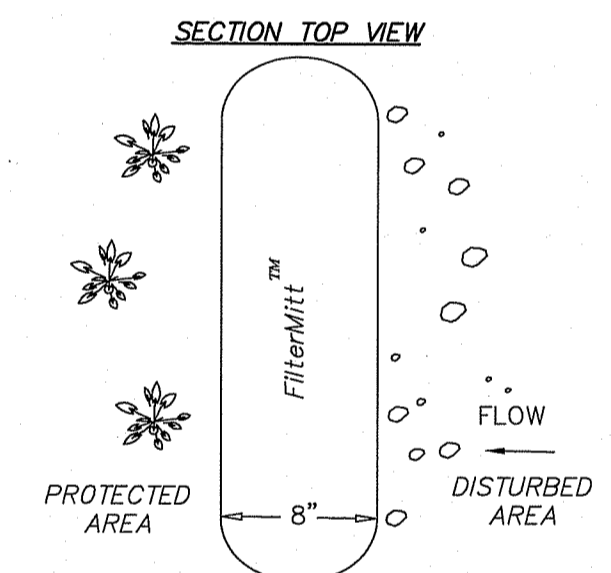


SILT SACK DETAIL
(NOT TO SCALE)

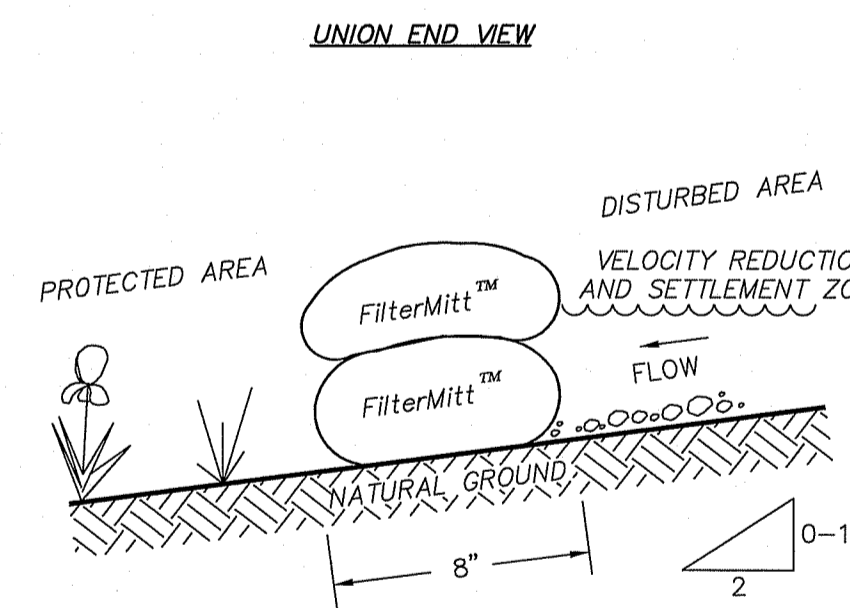
NOTE: SILT SACK TO BE INSTALLED IN CATCH BASINS UPON INSTALLATION OF BINDER COURSE



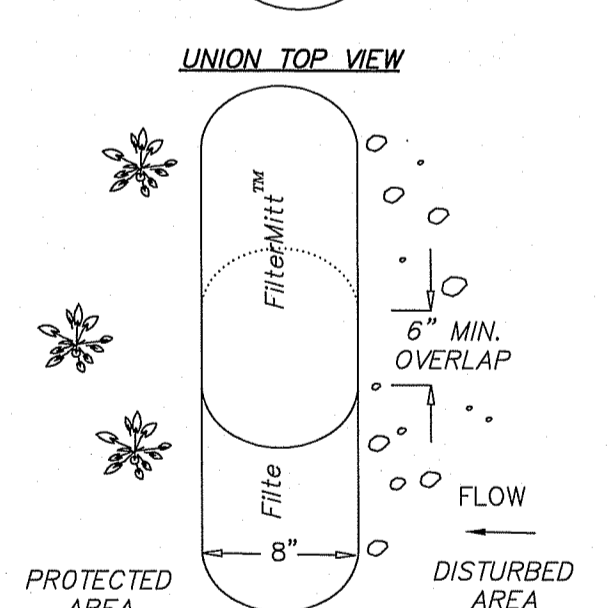
SECTION END VIEW



SECTION TOP VIEW



UNION END VIEW



UNION TOP VIEW

FilterMitt™ COMPONENTS:

- OUTSIDE CASING: 100% organic hessian.
- FILLER INGREDIENT: FiberRoot Mulch™
- A BLEND OF COARSE AND FINE COMPOST AND SHREDDED WOOD.
- PARTICLE SIZES: 100% PASSING A 3" SCREEN; 90-100% PASSING A 1" SCREEN; 70-100% PASSING A 0.75" SCREEN; 30-75% PASSING A 0.25" SCREEN.
- WEIGHT: APPROX. 310 LBS./CU.YD. (AVE. 11.5 LBS./L.F.)

FilterMitt™ INSTALLATION:

WITH THE NEWEST TECHNOLOGY AND EQUIPMENT, SECTIONS CAN BE CONSTRUCTED ON SITE IN LENGTHS FROM 1' TO 100'.
SECTIONS CAN ALSO BE DELIVERED TO THE SITE IN LENGTHS FROM 1' TO 8'.
THE FLEXIBILITY OF FilterMitt™ ALLOWS IT TO CONFORM TO ANY CONTOUR OR TERRAIN WHILE HOLDING A SLIGHTLY ROUND SHAPE AT 8" HIGH BY 8" WIDE.

WHERE SECTION ENDS MEET, THERE SHALL BE AN OVERLAP OF 6" MIN. OVERLAP.

For more information visit:
www.groundscapexpress.com or contact us at:
Groundscapes Express, Inc.
P.O. Box 737
Wrentham, MA 02093
(508) 384-7140

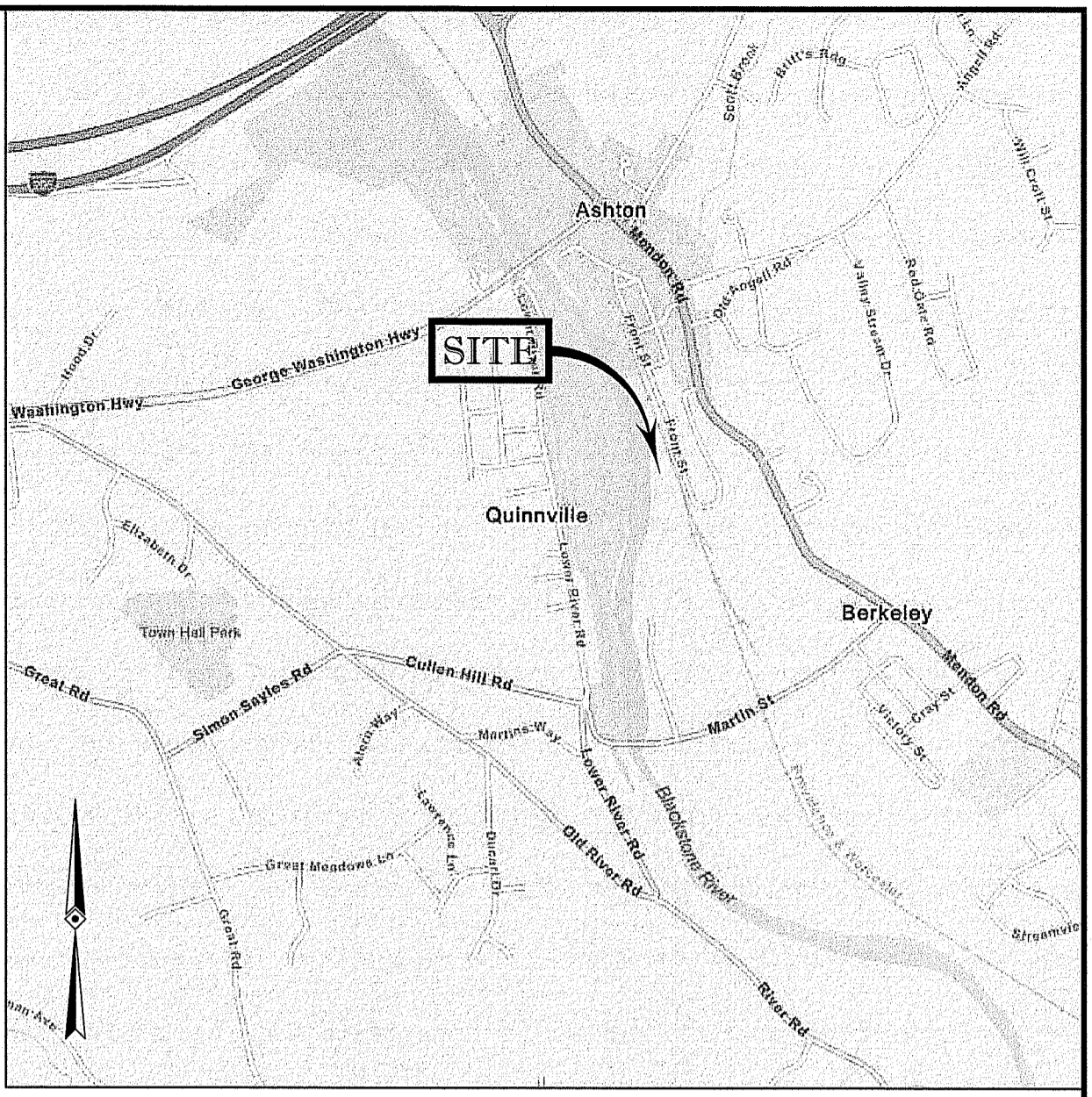
FILTERMITT 2:1 SLOPES OR LESS
(NOT TO SCALE)

APPROVED WITH CONDITIONS AS SPECIFIED IN THE LETTER OF APPROVAL
DATED: JUN 03 2024 FILE # 24-0009
NO CHANGES ALLOWED WITHOUT PRIOR APPROVAL
APPROVED PLANS MUST BE CONSTRUCTION SITE
DATE: APRIL 16, 2024
SCALE: NOT TO SCALE
SHEET No. C-50
PROJECT No. 6559
DWG. No. 6559_DET.DWG

EROSION CONTROL AND SEDIMENTATION NOTES:

1. EROSION CONTROL & SILTATION DEVICES SHALL BE INSTALLED ALONG THE EDGE OF PROPOSED DEVELOPMENT AS INDICATED ON THE PLAN PRIOR TO THE COMMENCEMENT OF CONSTRUCTION OPERATIONS.
2. ALL STOCKPILED AREAS SHALL BE LOCATED OUTSIDE ALL WETLAND BUFFERS.
3. SURROUND ALL STOCKPILES WITH SEDIMENT BARRIER.
4. FOR STOCKPILES THAT WILL BE UNUSED FOR 14 OR MORE DAYS, PROVIDE A COVER OR APPROPRIATE TEMPORARY STABILIZATION.
5. ALL DEBRIS GENERATED DURING SITE PREPARATION ACTIVITIES SHALL BE LEGALLY DISPOSED OF OFF-SITE.
6. ALL POINTS OF CONSTRUCTION EGRESS OR INGRESS SHALL BE MAINTAINED TO PREVENT TRACKING OR FLOWING OF SEDIMENT ONTO PUBLIC ROADS. ANY SEDIMENT TRACKED ONTO PUBLIC RIGHT-OF-WAYS OR PARKING AREAS SHALL BE SWEEPED AT THE END OF EACH WORKING DAY.
7. DUST SHALL BE CONTROLLED BY SPRINKLING WATER OR OTHER APPROVED METHODS AS NECESSARY, OR AS DIRECTED BY THE OWNER OR HIS REPRESENTATIVE.
8. CATCH BASIN SILTSACKS SHALL BE PROVIDED IN ALL PROPOSED DRAIN INLETS PRIOR TO PERMANENT PAVEMENT TO CONTROL SILTATION.
9. CLEAN AND MAINTAIN EROSION CONTROL BARRIER AS REQUIRED DURING CONSTRUCTION OPERATIONS TO ENSURE ITS CONTINUED FUNCTIONALITY.
10. CONTRACTOR SHALL CLEAN ALL EXISTING DRAINAGE STRUCTURES WITHIN THE LIMIT OF WORK AT THE COMPLETION OF CONSTRUCTION ACTIVITIES.
11. THE CONTRACTOR SHALL REMOVE ALL SILTATION DEVICES AFTER REVEGETATION OF DISTURBED AREAS AND AFTER WRITTEN APPROVAL OF THE PROJECT ENGINEER.
12. THE CONTRACTOR SHALL INITIATE THE INSTALLATION OF STABILIZATION MEASURES IMMEDIATELY IN AREAS OF EXPOSED SOIL WHERE CONSTRUCTION ACTIVITIES HAVE PERMANENTLY CEASED OR WILL BE TEMPORARILY INACTIVE FOR 14 OR MORE CALENDAR DAYS AND COMPLETE THE INSTALLATION OF STABILIZATION MEASURES AS SOON AS PRACTICABLE, BUT NOT LATER THAN 14 CALENDAR DAYS AFTER STABILIZATION HAS BEEN INITIATED.
13. SEDIMENT FROM THE STORMWATER RUNOFF IS PROHIBITED FROM BEING DISCHARGED INTO THE SANITARY SEWER SYSTEM. SEDIMENT SHALL BE MAINTAINED ON SITE.
14. CONTRACTOR SHALL MAINTAIN EXISTING VEGETATION AND PRESERVE TOPSOIL.
15. CONTRACTOR SHALL MINIMIZE THE AREA OF DISTURBANCE.
16. CONTRACTOR SHALL MINIMIZE THE DISTURBANCE OF STEEP SLOPES.
17. CONTRACTOR SHALL CONTROL TEMPORARY INCREASES IN STORMWATER VELOCITY, VOLUME, AND PEAK FLOWS DURING CONSTRUCTION.

REVISIONS					
DAVID S. KELLEY	No. 9873	REGISTERED PROFESSIONAL ENGINEER	4/16/24	DATE	RAISED CONCRETE PAD
1 JOHN C. DEAN MEMORIAL HIGHWAY PERMIT CONSTRUCTION DETAILS LOCATED IN CUMBERLAND, RHODE ISLAND (PROVIDENCE COUNTY) PREPARED FOR HIGHLAND ELECTRIC FLEETS					
All Environmental Management APR 25 2024 Office of Water Resources					
MERIDIAN ASSOCIATES 500 CUMMINGS CENTER, SUITE 5950 BEVERLY, MASSACHUSETTS 01915 TELEPHONE: (978) 299-0447 WWW.MERIDIANASSOC.COM					
DRAWN BY: TJC	DESIGNED BY: CSB	CHECKED BY: DSK			
DATE: APRIL 16, 2024 SCALE: NOT TO SCALE SHEET No. C-50 PROJECT No. 6559					



LOCUS MAP
© 2021 ESRI WORLD STREET MAPS

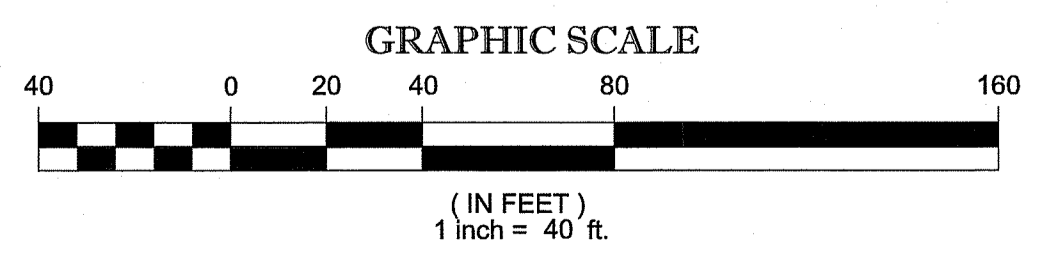
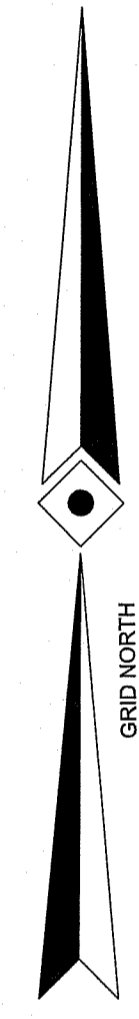
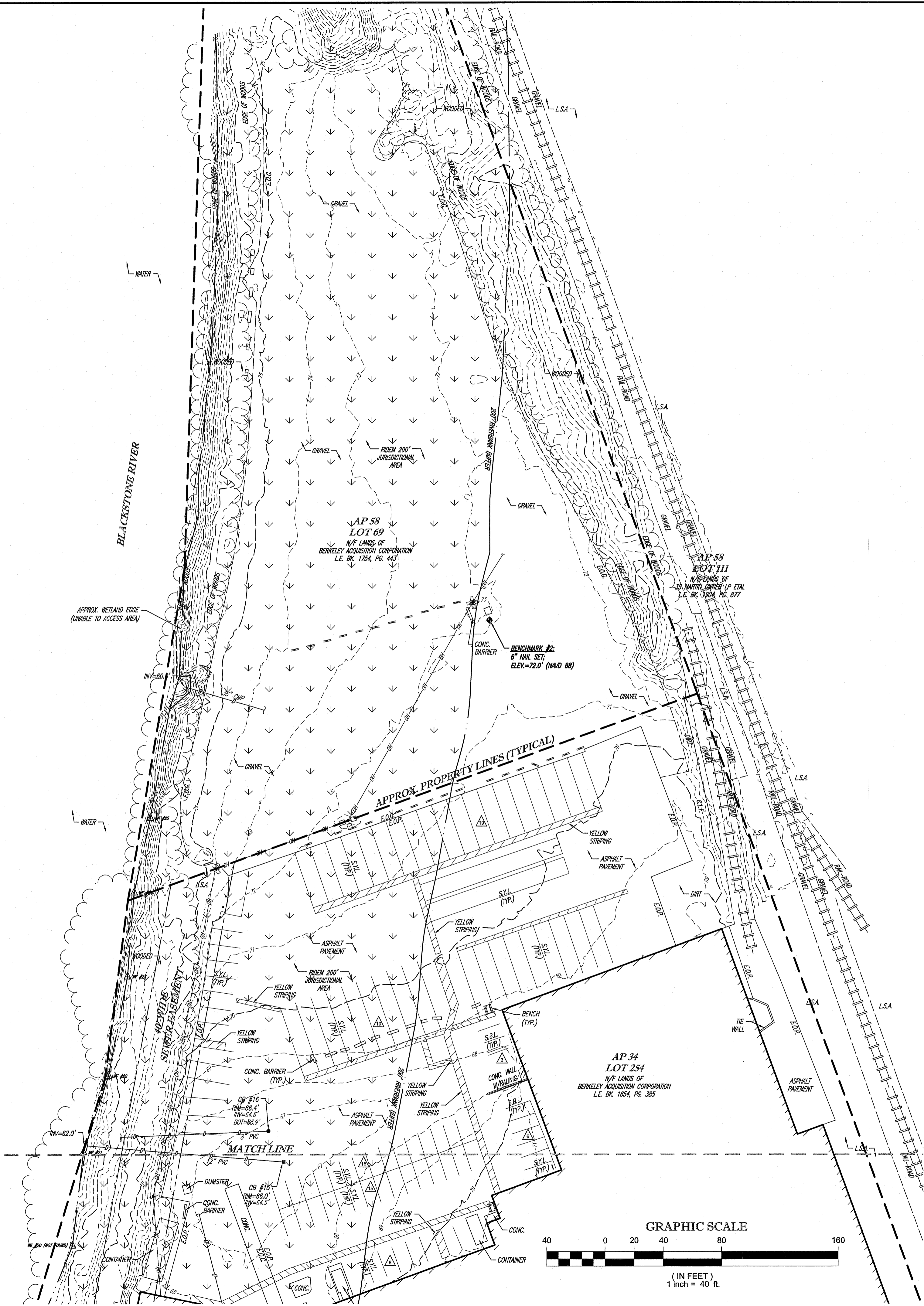
- NOTES:
- PROPERTY KNOWN AS LOT 69 ON THE TOWN OF CUMBERLAND, PROVIDENCE COUNTY, STATE OF RHODE ISLAND TAX ASSESSORS MAP NO. 58.
 - AREA = TO BE DETERMINED.
 - UNDERGROUND UTILITIES HAVE NOT BEEN SHOWN. BEFORE ANY SITE EVALUATION, PREPARATION OF DESIGN DOCUMENTS OR EXCAVATION IS TO BEGIN, THE LOCATION OF UNDERGROUND UTILITIES SHOULD BE VERIFIED BY THE PROPER UTILITY COMPANIES.
 - THIS PLAN IS BASED ON INFORMATION PROVIDED BY A SURVEY PREPARED IN THE FIELD BY SARDELLI SURVEY, LLC AND OTHER REFERENCE MATERIAL AS LISTED HEREON.
 - THIS SURVEY WAS PREPARED WITHOUT THE BENEFIT OF A TITLE REPORT AND IS SUBJECT TO THE RESTRICTIONS, COVENANTS AND/OR EASEMENTS THAT MAY BE CONTAINED THEREIN.
 - BY GRAPHIC PLOTTING ONLY PROPERTY IS LOCATED IN FLOOD HAZARD ZONE AE (SPECIAL FLOOD HAZARD AREAS; BASE FLOOD ELEVATION DETERMINED; ELEV. VARIES 74.2 - 76.0 FEET) PER REF. #2.
 - ELEVATIONS REFER TO THE NORTH AMERICAN VERTICAL DATUM OF 1988 (NAVD88), BASED ON GPS OBSERVATIONS UTILIZING THE LEICA SMARTNET VRS NETWORK (MAINE TECH.).
 - THE OFFSETS SHOWN ARE NOT TO BE USED FOR THE CONSTRUCTION OF ANY STRUCTURE, FENCE, PERMANENT ADDITION, ETC.
 - THIS SITE IS MOSTLY GRAVEL AND PAVED PARKING FOR BUSES. NO ENCROACHMENTS WERE OBSERVED AT THE TIME OF THE FIELD SURVEY. APPARENT LIMITS OF OCCUPATION ARE AS SHOWN.
 - SITE WAS FLOWN ON NOVEMBER 15, 2023 BY SARDELLI SURVEY, LLC USING A DJI MATRICE 300 RTK QUADROPTER AT ROUGHLY 280' ALTITUDE.
 - DUE TO THE LACK OF PHYSICAL EVIDENCE FOUND THROUGH THE COURSE OF THE FIELD SURVEY, THE BOUNDARY LINES SHOWN HEREON ARE APPROXIMATE AND DO NOT REPRESENT AN OPINION OR BOUNDARY ANALYSIS BY SARDELLI SURVEY, LLC. FURTHER FIELD SURVEYING IS NEEDED TO RESOLVE THE EXACT BOUNDARY LINE LOCATION.

- REFERENCES:
- THE TAX ASSESSOR'S MAP OF THE TOWN OF CUMBERLAND, PROVIDENCE COUNTY, STATE OF RHODE ISLAND, SHEET #58.
 - MAP ENTITLED "NATIONAL FLOOD INSURANCE PROGRAM, FIRM, FLOOD INSURANCE RATE MAP, PROVIDENCE COUNTY, RHODE ISLAND (ALL JURISDICTIONS), PANEL 191," MAP NUMBER 44007C0191H, EFFECTIVE DATE: OCTOBER 2, 2016.
 - RAILROAD VALUATION MAP #3353.

RI DEPARTMENT OF ENVIRONMENTAL MANAGEMENT
OFFICE OF WATER RESOURCES
FRESHWATER WETLANDS PROGRAM
APPROVED WITH CONDITIONS AS
SPECIFIED IN THE LETTER OF APPROVAL
DATED: JUN 03 2024 FILE #: 24-0009
NO CHANGES ALLOWED WITHOUT PRIOR APPROVAL
APPROVED PLANS MUST BE AT CONSTRUCTION SITE

Andy Chapman

- LEGEND
- 124 --- EXISTING CONTOUR
 - 125 --- OVERHEAD WIRES
 - OH OVERHEAD WIRES
 - WATER VALVE
 - UNKNOWN VALVE
 - UNKNOWN MANHOLE
 - CATCH BASINS
 - MONITORING WELL
 - MONITORING WELL ON CONC.
 - GUY WIRE
 - UTILITY POLE
 - UTILITY POLE/LIGHT POLE/SOLAR PANEL
 - PAINTED ARROWS
 - METAL COVERS
 - SIGN
 - DOUBLE SIGN
 - BOLLARD
 - METAL GUIDE RAIL
 - AIR CONDITIONING UNIT
 - WHEEL STOP
 - AREA LIGHT
 - PARKING SPACE COUNT
 - CL.F. CHAIN LINK FENCE
 - E.O.C. EDGE OF CONC.
 - E.O.G. EDGE OF GRAVEL
 - E.O.P. EDGE OF PAVEMENT
 - L.S.A. LANDSCAPED AREA
 - M.C. METAL COVER
 - S.B.L. SOLID BLUE LINE
 - S.Y.L. SOLID YELLOW LINE
 - TYP. TYPICAL
 - UNKNOWN TERMINUS



STREET INDEX:
1) JOHN C. DEAN
MEMORIAL BOULEVARD

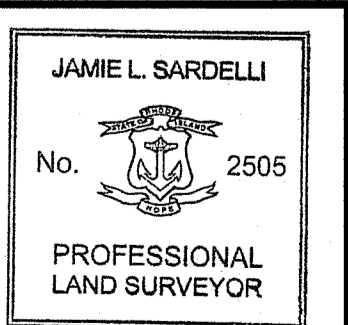
THE PURPOSE OF THIS SURVEY IS TO SHOW THE EXISTING SITE FEATURES RELATIVE TO THE PROPERTY BOUNDARY LINES.

THIS SURVEY HAS BEEN CONDUCTED AND THE PLAN HAS BEEN PREPARED PURSUANT TO 435-RICR-00-00-19 OF THE RULES AND REGULATIONS ADOPTED BY THE RHODE ISLAND BOARD OF REGISTRATION FOR PROFESSIONAL LAND SURVEYORS ON OR AFTER NOVEMBER 25, 2016.

COMPREHENSIVE BOUNDARY SURVEY
HORIZONTAL ACCURACY: CLASS IV (SEE NOTE #11)
VERTICAL ACCURACY: T-1 (SEE NOTE #7)

NOT A VALID ORIGINAL DOCUMENT UNLESS EMBOSSED WITH RAISED IMPRESSION OR STAMPED WITH A BLACK INK SEAL

J. L. Sardelli
JAMIE L. SARDELLI
RHODE ISLAND PROFESSIONAL LAND SURVEYOR #2505, COA #710



FIELD DATE	11-15-23	BOUNDARY & TOPOGRAPHIC SURVEY HIGHLAND ELECTRIC FLEETS <small>an Environmental Management</small>
FIELD BOOK NO.	-	
FIELD BOOK PG.	-	95 JOHN C. DEAN MEMORIAL HIGHWAY A.P. 58, LOT 69 TOWN OF CUMBERLAND STATE OF RHODE ISLAND
FIELD CREW	J.L.S.	Sardelli Survey, LLC & Environmental Services
DRAWN	J.L.S.	WWW.SARDELLISURVEY.COM MAILING: P.O. BOX 1017 CHARLESTOWN, RI 02813 Services OFFICE - (401)837-3364
REVIEWED	J.L.S.	DATE: 11-26-23 SCALE: 1"=40' FILE NO.: SS23080 DWG. NO.: 1 OF 2

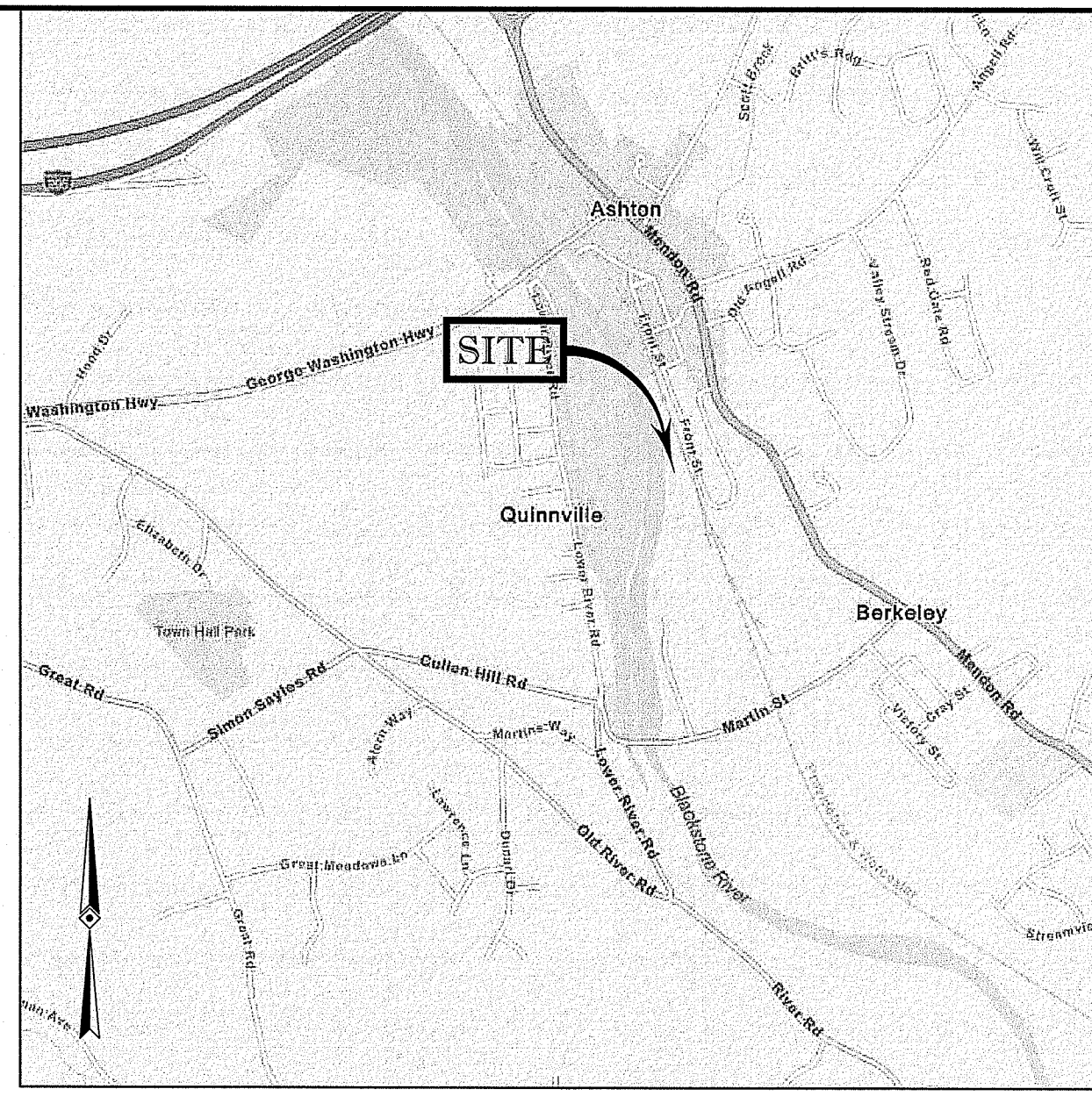
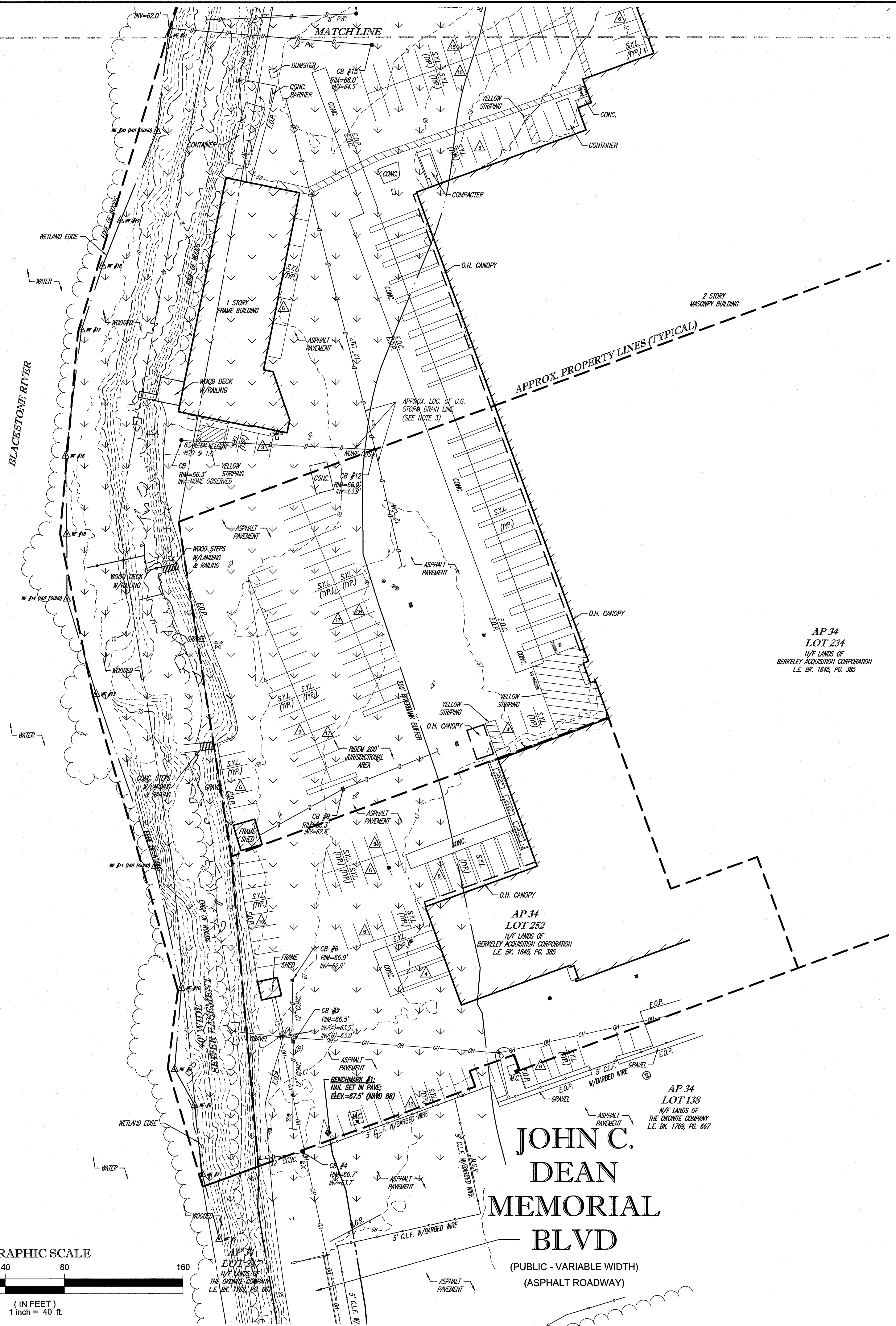
SARDELLI SURVEY, LLC - ALL RIGHTS RESERVED. THE COPYING OR REUSE OF THIS DOCUMENT OR PARTS THEREOF FOR OTHER THAN THE ORIGINAL PROJECT OR THE PURPOSES INTENDED THEREIN WITHOUT THE WRITTEN PERMISSION OF SARDELLI SURVEY, LLC IS PROHIBITED.



THE STATE OF RHODE ISLAND REQUIRES NOTIFICATION BY EXCAVATORS, DESIGNERS, OR ANY PERSON PREPARING TO DISTURB THE EARTH'S SURFACE ANYWHERE IN THE STATE.

LEGEND

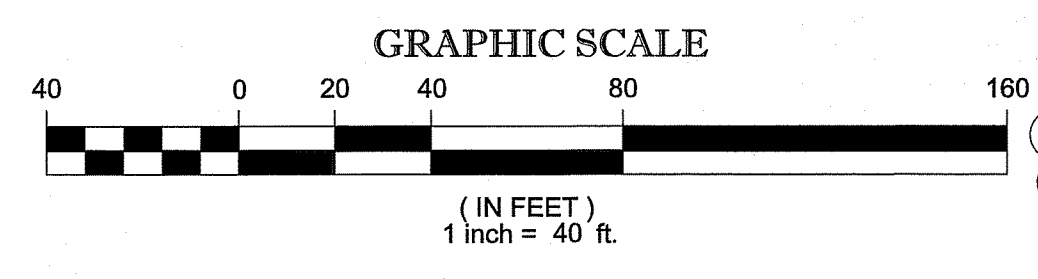
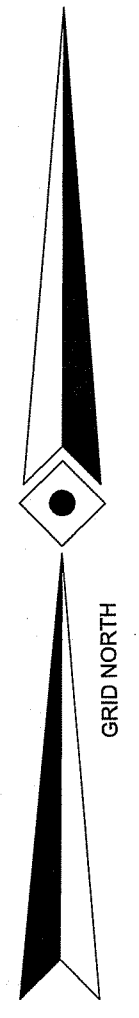
- 124 --- EXISTING CONTOUR
- 125 --- OVERHEAD WIRES
- OH WATER VALVE
- UNKNOWN VALVE
- UNKNOWN MANHOLE
- CATCH BASINS
- MONITORING WELL
- MONITORING WELL ON CONC.
- GUY WIRE
- UTILITY POLE
- UTILITY POLE/LIGHT POLE/SOLAR PANEL
- PAINTED ARROWS
- METAL COVERS
- SIGN
- DOUBLE SIGN
- BOLLARD
- METAL GUIDE RAIL
- AIR CONDITIONING UNIT
- WHEEL STOP
- AREA LIGHT
- PARKING SPACE COUNT
- CLF CHAIN LINK FENCE
- E.O.C. EDGE OF CONC.
- E.O.G. EDGE OF GRAVEL
- E.O.P. EDGE OF PAVEMENT
- LSA LANDSCAPED AREA
- MC METAL COVER
- S.B.L. SOLID BLUE LINE
- S.Y.L. SOLID YELLOW LINE
- TYP. TYPICAL
- UNKNOWN TERMINUS



LOCUS MAP
© 2021 ESRI WORLD STREET MAPS

- NOTES:**
1. PROPERTY KNOWN AS LOT 69 ON THE TOWN OF CUMBERLAND, PROVIDENCE COUNTY, STATE OF RHODE ISLAND TAX ASSESSORS MAP NO. 58.
 2. AREA = TO BE DETERMINED.
 3. UNDERGROUND UTILITIES HAVE NOT BEEN SHOWN. BEFORE ANY SITE EVALUATION, PREPARATION OF DESIGN DOCUMENTS OR EXCAVATION IS TO BEGIN, THE LOCATION OF UNDERGROUND UTILITIES SHOULD BE VERIFIED BY THE PROPER UTILITY COMPANIES.
 4. THIS PLAN IS BASED ON INFORMATION PROVIDED BY A SURVEY PREPARED IN THE FIELD BY SARDELLI SURVEY, LLC AND OTHER REFERENCE MATERIAL AS LISTED HEREON.
 5. THIS SURVEY WAS PREPARED WITHOUT THE BENEFIT OF A TITLE REPORT AND IS SUBJECT TO THE RESTRICTIONS, COVENANTS AND/OR EASEMENTS THAT MAY BE CONTAINED THEREIN.
 6. BY GRAPHIC PLOTTING ONLY PROPERTY IS LOCATED IN FLOOD HAZARD ZONE AE (SPECIAL FLOOD HAZARD AREAS; BASE FLOOD ELEVATION DETERMINED; ELEV. VARIES 74.2 - 76.0 FEET) PER REF. #2.
 7. ELEVATIONS REFER TO THE NORTH AMERICAN VERTICAL DATUM OF 1988 (NAV88), BASED ON GPS OBSERVATIONS UTILIZING THE LEICA SMARTNET VRS NETWORK (MAINE TECH).
 8. THE OFFSETS SHOWN ARE NOT TO BE USED FOR THE CONSTRUCTION OF ANY STRUCTURE, FENCE, PERMANENT ADDITION, ETC.
 9. THIS SITE IS MOSTLY GRAVEL AND PAVED PARKING FOR BUSES. NO ENCROACHMENTS WERE OBSERVED AT THE TIME OF THE FIELD SURVEY. APPARENT LIMITS OF OCCUPATION ARE AS SHOWN.
 10. SITE WAS FLOWN ON NOVEMBER 15, 2023 BY SARDELLI SURVEY, LLC USING A DJI MATRICE 300 RTK QUADCOPTER AT ROUGHLY 250' ALTITUDE.
 11. DUE TO THE LACK OF PHYSICAL EVIDENCE FOUND THROUGH THE COURSE OF THE FIELD SURVEY, THE BOUNDARY LINES SHOWN HEREON ARE APPROXIMATE AND DO NOT REPRESENT AN OPINION OR BOUNDARY ANALYSIS BY SARDELLI SURVEY, LLC. FURTHER FIELD SURVEYING IS NEEDED TO RESOLVE THE EXACT BOUNDARY LINE LOCATION.

- REFERENCES:**
1. THE TAX ASSESSOR'S MAP OF THE TOWN OF CUMBERLAND, PROVIDENCE COUNTY, STATE OF RHODE ISLAND, SHEET #58.
 2. MAP ENTITLED "NATIONAL FLOOD INSURANCE PROGRAM, FIRM, FLOOD INSURANCE RATE MAP, PROVIDENCE COUNTY, RHODE ISLAND (ALL JURISDICTIONS), PANEL 191," MAP NUMBER 44007C0191H, EFFECTIVE DATE: OCTOBER 2, 2015.
 3. RAILROAD VALUATION MAP #3353.



JOHN C. DEAN MEMORIAL BLVD
(PUBLIC - VARIABLE WIDTH)
(ASPHALT ROADWAY)

STREET INDEX:
1) JOHN C. DEAN MEMORIAL BOULEVARD

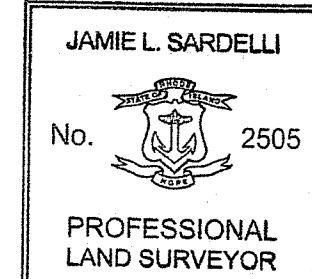
THE PURPOSE OF THIS SURVEY IS TO SHOW THE EXISTING SITE FEATURES RELATIVE TO THE PROPERTY BOUNDARY LINES.

THIS SURVEY HAS BEEN CONDUCTED AND THE PLAN HAS BEEN PREPARED PURSUANT TO 435-RICR-00-00-1.9 OF THE RULES AND REGULATIONS ADOPTED BY THE RHODE ISLAND BOARD OF REGISTRATION FOR PROFESSIONAL LAND SURVEYORS ON OR AFTER NOVEMBER 25, 2015.

COMPREHENSIVE BOUNDARY SURVEY
HORIZONTAL ACCURACY: CLASS IV (SEE NOTE #11)
VERTICAL ACCURACY: T-1 (SEE NOTE #7)

NOT A VALID ORIGINAL DOCUMENT UNLESS EMBOSSED WITH RAISED IMPRESSION OR STAMPED WITH A BLACK INK SEAL.

J. L. Sardelli
JAMIE L. SARDELLI
RHODE ISLAND PROFESSIONAL LAND SURVEYOR #2505, COA #710



11-26-23
DATE

FIELD DATE 11-15-23	BOUNDARY & TOPOGRAPHIC SURVEY HIGHLAND ELECTRIC FLEETS
FIELD BOOK NO. -	
FIELD BOOK PG. -	95 JOHN C. DEAN MEMORIAL HIGHWAY A.P. 58, LOT 69 TOWN OF CUMBERLAND STATE OF RHODE ISLAND
FIELD CREW J.L.S.	Sardelli Survey, LLC & Environmental Services
DRAWN J.L.S.	
REVIEWED J.L.S.	APPROVED J.L.S.
DATE 11-26-23	SCALE 1"=40'
FILE NO. SS23080	DWG. NO. 2 OF 2

RI DEPARTMENT OF ENVIRONMENTAL MANAGEMENT
OFFICE OF WATER RESOURCES
FRESHWATER WETLANDS PROGRAM
APPROVED WITH CONDITIONS AS SPECIFIED IN THE LETTER OF APPROVAL
DATED: JUN 03 2024 FILE # 24-009
NO CHANGES ALLOWED WITHOUT PRIOR APPROVAL
APPROVED PLANS MUST BE AT CONSTRUCTION SITE

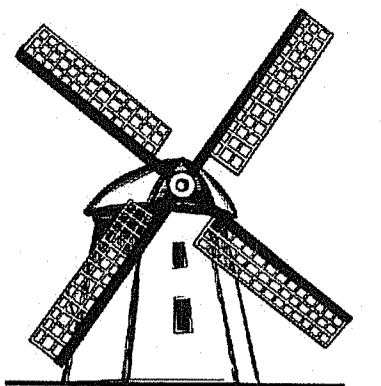
Randy Chapman

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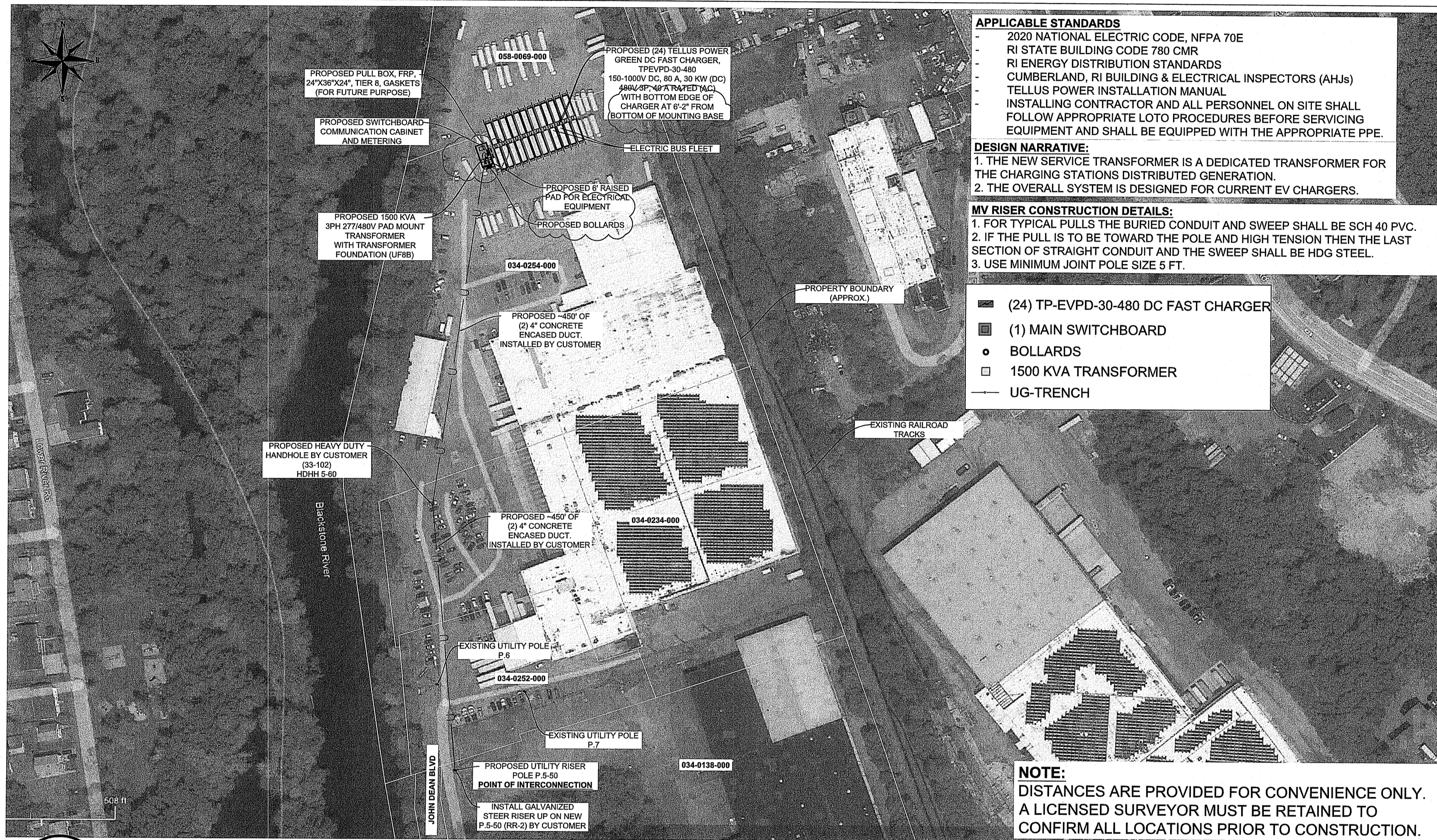
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**ELECTRIC VEHICLE CHARGING STATION
USING (24) 30 KW EV DC FAST CHARGER SYSTEMS:
TOTAL 720.0 kW DC, 797.76 kW AC (NEW SERVICE)
FOR HIGHLAND ELECTRIC FLEETS
SITE - 1 JOHN C DEAN MEMORIAL BLVD, CUMBERLAND, RI 02864**



H2DC PLLC
Professional Electrical Engineering

HURRICANE HILL DEVELOPMENT
COMPANY PLLC
1042 HURRICANE HILL ROAD
MASON, NH 03048-1726
PHONE: 603-887-1726 (OFFICE)
WEB: WWW.H2DC.COM



APPLICABLE STANDARDS

- 2020 NATIONAL ELECTRIC CODE, NFPA 70E
- RI STATE BUILDING CODE 780 CMR
- RI ENERGY DISTRIBUTION STANDARDS
- CUMBERLAND, RI BUILDING & ELECTRICAL INSPECTORS (AHJs)
- TELLUS POWER INSTALLATION MANUAL

DESIGN NARRATIVE:

- THE NEW SERVICE TRANSFORMER IS A DEDICATED TRANSFORMER FOR THE CHARGING STATIONS DISTRIBUTED GENERATION.
- THE OVERALL SYSTEM IS DESIGNED FOR CURRENT EV CHARGERS.

MV RISER CONSTRUCTION DETAILS:

- FOR TYPICAL PULLS THE BURIED CONDUIT AND SWEEP SHALL BE SCH 40 PVC.
- IF THE PULL IS TO BE TOWARD THE POLE AND HIGH TENSION THEN THE LAST SECTION OF STRAIGHT CONDUIT AND THE SWEEP SHALL BE HDG STEEL.
- USE MINIMUM JOINT POLE SIZE 5 FT.

- (24) TP-EVPD-30-480 DC FAST CHARGER
- (1) MAIN SWITCHBOARD
- BOLLARDS
- 1500 KVA TRANSFORMER
- UG-TRENCH

NOTE:
DISTANCES ARE PROVIDED FOR CONVENIENCE ONLY.
A LICENSED SURVEYOR MUST BE RETAINED TO
CONFIRM ALL LOCATIONS PRIOR TO CONSTRUCTION.

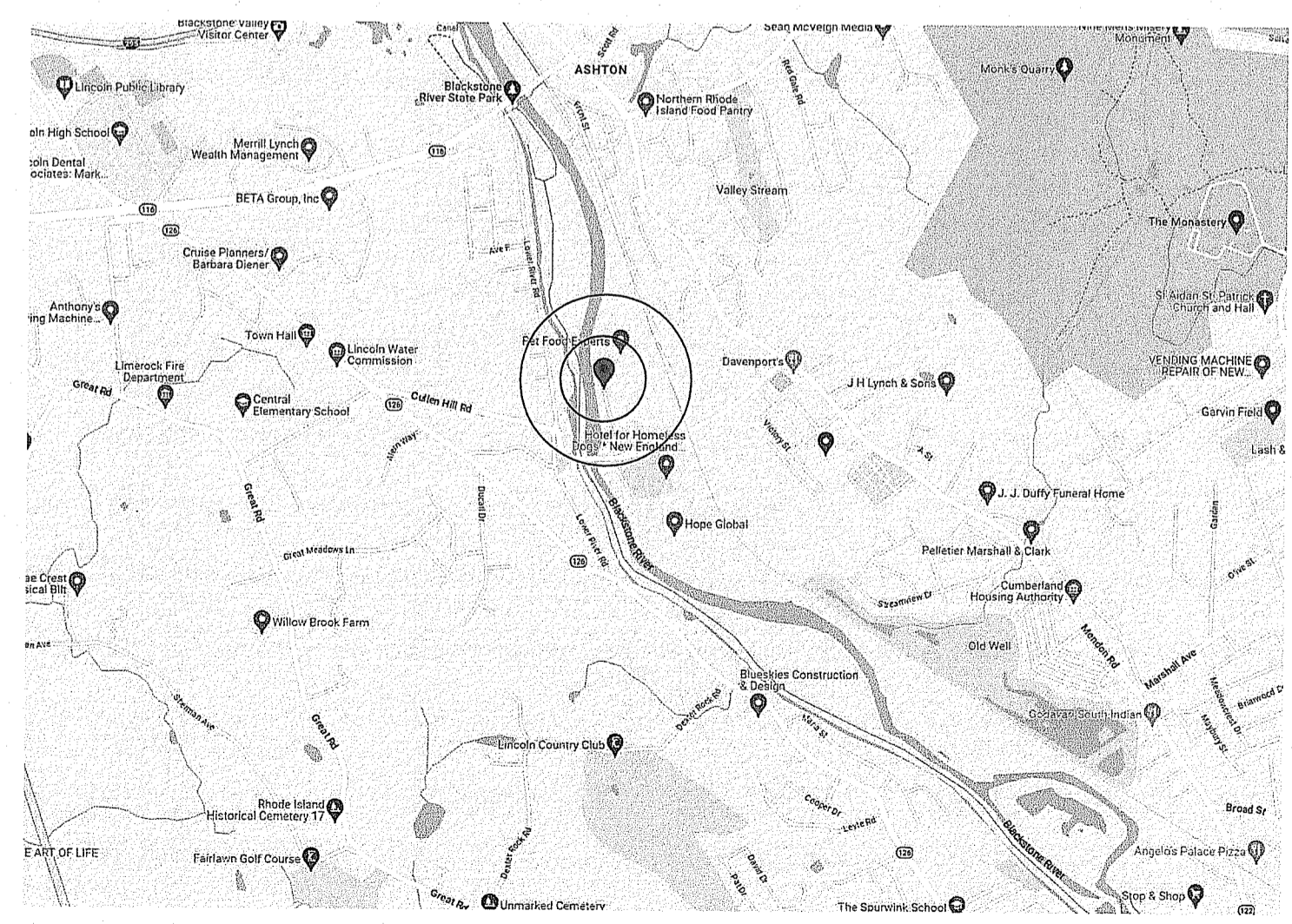
SCALE: 1" = 120'

1 PROPOSED LAYOUT
EV-00

CONTRACTOR
SAM SINKLER
HIGHLAND ELECTRIC FLEETS
SAM@HIGHLANDFLEETS.COM

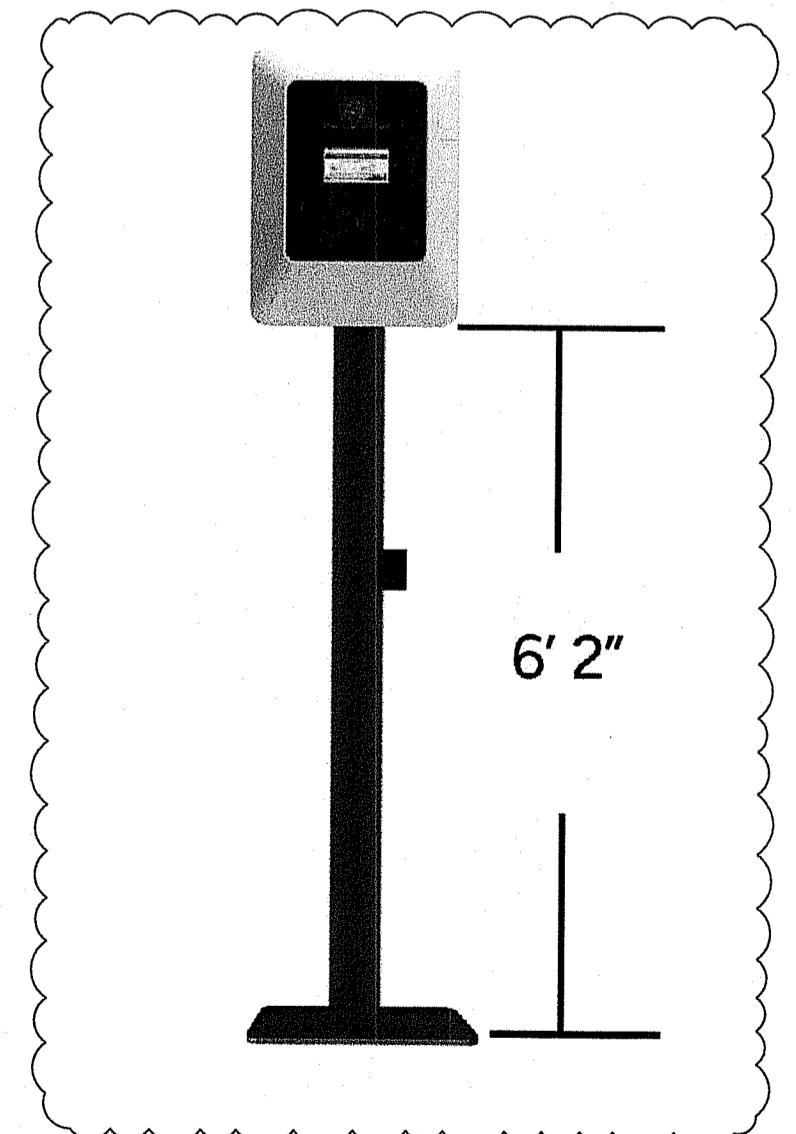
PROFESSIONAL ENGINEER
MICHAEL A MCGUIRE, P.E.
H2DC PLLC
RI CoA#: 8402
MIKE@H2DC.COM

DESIGN ENGINEER
SIDDHARTH RATHOD, EIT
H2DC PLLC
SIDDHARTH@H2DC.COM



2 LOCUS MAP
EV-00 SCALE: NOT TO SCALE

EV CHARGER DETAILS (PER UNIT)	
EV CHARGER MODEL	TP-EVPD-30KW
VOLTAGE RATING	277/480 V AC
CURRENT RATING	40 A
POWER RATING	30.0 KW
ENCLOSURE	NEMA 3S, IK 10
CORD LENGTH	16 FT (5M)
DIMENSIONS	HEIGHT 27"
	LENGTH 21"
	DEPTH 12"
TEMPERATURE RATING	-30°C TO +55°C



3 SIMILAR EV CHARGERS
EV-00 SCALE: NOT TO SCALE

SHEET INDEX	
SHEET NUMBER	SHEET TITLE
EV-00	COVER PAGE
EV-01	ELECTRICAL NOTES
EV-02	SITE PLAN
EV-03	SITE PLAN-2
EV-04	SINGLE LINE DIAGRAM
EV-05	WIRE TABLE
EV-06	GROUNDING PLAN
EV-07	CONDUIT PLAN
EV-08	TRENCHING PLAN
EV-09	EV CHARGER DETAILS
EV-10	SWITCHBOARD PAD DETAILS
EV-11	TRANSFORMER PAD DETAILS
EV-12	RAISED PAD DETAILS-1
EV-13	RAISED PAD DETAILS-2
EV-14	RAISED PAD DETAILS-3
EV-15	HAND HOLE AND POLE DETAILS
EV-16	CIVIL SKETCH
EV-17	DATASHEET-1
EV-18	DATASHEET-2
EV-19	NEC LABELS

REVISIONS		
DESCRIPTION	DATE	REV
IFC SET	12/07/2023	0
IFC SET	01/09/2024	1
IFC SET	03/19/2024	2
IFC SET	04/09/2024	3

SIGNATURE WITH SEAL

SEALED ON 04/09/2024
RI CoA # 8402
H2DC PLLC
MIKE@H2DC.COM
ELECTRICAL ONLY

CLIENT INFORMATION

HIGHLAND ELECTRIC FLEETS
200 CUMMINGS CTR,
STE 273D
BEVERLY, MA 01915

PROJECT INFORMATION

720.0 KW DC
STAND ALONE
EV CHARGING STATION
AT
1 JOHN C DEAN
MEMORIAL BLVD,
CUMBERLAND RI 02864

DESIGNED BY SR
CHECKED BY MM
APPROVED BY MM

SHEET NAME
COVER PAGE

SHEET SIZE
ARCH D
24" X 36"

SHEET NUMBER
EV-00

ELECTRICAL CONNECTION:

1. THE EV CHARGER MUST BE INSTALLED BY A LICENSED ELECTRICIAN AND IN ACCORDANCE WITH ALL LOCAL ELECTRICAL CODES, ORDINANCES, AND ALL AUTHORITIES HAVING JURISDICTION.
2. DO NOT INSTALL THE EV CHARGER NEAR FLAMMABLE, EXPLOSIVE, OR COMBUSTIBLE MATERIALS. DO NOT LOCATE OR STORE FLAMMABLE, EXPLOSIVE, OR COMBUSTIBLE MATERIALS NEAR THE EV CHARGER.
3. THE AC ELECTRICAL CONNECTION MUST HAVE A GROUNDED, DEDICATED SERVICE-MAIN. NO OTHER LOADS SHALL BE CONNECTED TO THE SAME CIRCUIT. USE OF A NON-DEDICATED CIRCUIT COULD EXCEED THE CURRENT RATING OF THE CIRCUIT BREAKER AND CAUSE IT TO TRIP OR OPEN.
4. FOR THE (EARTH) GROUND CONNECTION, ALWAYS CONNECT THE NEUTRAL AT THE SERVICE PANEL TO EARTH GROUND. GROUND FAULT PROTECTION IS NOT POSSIBLE UNLESS THE NEUTRAL (CENTER TAP ON THE SERVICE TRANSFORMER) IS CONNECTED TO AN EARTH GROUND.
5. IN THE AREAS OF FLOODS, HEAVY RAINS, STORMS, SNOW, OR SIMILAR HARSH WEATHER CONDITIONS, TELLUS RECOMMENDS A CANOPY FOR THE CHARGER FOR PROTECTION. THE CHARGER IS IP54.
6. RELIABLE PROTECTIVE GROUNDING MUST BE PROVIDED. IT IS RECOMMENDED TO HAVE SEPARATE DEDICATED GROUND EXCLUSIVELY FOR THE CHARGER CONSIDERING THE SAFETY ASPECTS.

WIRE COLOR SPECIFICATIONS:

	AC CONDUCTORS	
	277/480 VOLT	240 VOLT
PHASE A	BROWN	BLACK
PHASE B	ORANGE	RED
PHASE C	YELLOW	BLUE
GROUNDED CONDUCTOR	GREY OR WHITE	WHITE
GROUNDED CONDUCTOR	GREEN OR BARE	GREEN OR BARE
GROUNDED ELECTRODE CONDUCTOR	GREEN W/ ORANGE	GREEN W/ ORANGE

WIRING METHODS:

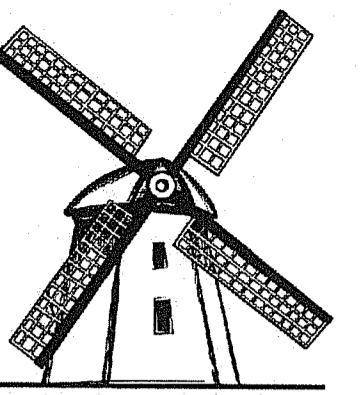
1. ALL WIRING METHODS AND INSTALLATION PRACTICES SHALL CONFORM TO THE NATIONAL ELECTRIC CODE, LOCAL STATE CODES, AND OTHER APPLICABLE LOCAL CODES.
2. LIQUID TIGHT FLEXIBLE METAL CONDUIT IS GENERALLY SUITABLE FOR INSTALLATION IN WET AND DRY LOCATIONS. SHOULD IT BE EMPLOYED, SUPPORTS WILL BE NO MORE 12 INCHES FROM BOXES (JUNCTION BOX, CABINETS OR CONDUIT FITTING) AND NO MORE THAN 36 INCHES APART (NEC 350.30).
3. UNLESS MARKED AS UV RESISTANT, PVC IS NOT APPROVED FOR INSTALLATION IN LOCATIONS SUBJECTED TO DIRECT SUNLIGHT AND SHALL NOT BE EMPLOYED IN ANY SUCH LOCATIONS.
4. LONG STRAIGHT CONDUIT RUNS, 100 FEET OR MORE, SHALL HAVE EXPANSION FITTINGS INSTALLED PER NEC 300.7(B). EXPANSION FITTINGS SHALL ALSO BE USED WHEN CONDUIT SPANS AN EXPANSION JOINT.
5. WHEN TRANSITIONING UNDERGROUND PVC CONDUIT TO ABOVE GROUND RMC, IMC OR EMT CONDUIT, USE 20 MIL PIPE WRAP TAPE HALD-LAPPED FROM 6" PAST TRANSITION POINT PVC TO 6" ABOVE GROUND ON METALLIC CONDUIT. AN EXPANSION JOINT SHALL BE USED IN THE TRANSITION TO ABOVE GROUND CONDUIT WHERE REQUIRED BY NEC 300.5 (J).
6. CONDUITS LONGER THAN 200' WITH NEGATIVE SLOPE TOWARD ELECTRICAL EQUIPMENT SHALL HAVE A PULL BOX OR VAULT ADJACENT TO THE ENTRY POINT INTO THE ELECTRICAL EQUIPMENT.
7. WHEN TRANSITIONING FROM FREE AIR TO CONDUCTORS IN A CONDUIT A LISTED FITTING SHALL BE USED TO PREVENT THE ENTRY OF MOISTURE.
8. ANY METAL SHAVINGS RESULTING FROM SITE WORK SHALL BE CLEANED FROM ENCLOSURE INTERIORS, TOP SURFACES OF ENCLOSURE, ROOF SURFACE, AND ANY ADDITIONAL AREAS WHERE OXIDATION OR CONDUCTIVE METAL SHAVINGS MAY CAUSE RUST, ELECTRICAL SHORT CIRCUIT OR OTHER DAMAGE.
9. METALLIC T CONDUIT BODIES SHALL NOT BE USED.
10. ALL COPPER TERMINATION AC AND DC SHALL HAVE KOPR-SHIELD OR EQUIVALENT APPLIED.
11. BENDS SHALL NOT DAMAGE THE RACEWAY OR SIGNIFICANTLY CHANGE THE INTERNAL DIAMETER OF RACEWAY.
12. SUPPORT CONDUCTORS IN VERTICAL CONDUITS IN ACCORDANCE WITH THE REQUIREMENTS OF NEC 300.19.
13. CONNECTORS TO BE TORQUED PER DEVICE LISTING, OR MANUFACTURER'S RECOMMENDATIONS. CONNECTORS ARE TO BE MARKED WITH PERMANENT MARKING PAINT, AFTER TORQUING. (REFER TO NEC110.14(D) AND ANNEX I)
14. ALL BARE CU WIRES SHALL BE INSTALLED TO NOT COME INTO CONTACT WITH DISSIMILAR METALS.
15. SPLICES/CONNECTORS SHALL BE INSULATED AND WILL REQUIRE PROJECT ENGINEER APPROVAL. UL LISTED ELECTRICAL TAPE ALONE IS NOT SUITABLE AS THE ONLY INSULATION MEANS. FOLLOW MANUFACTURERS INSTRUCTION FOR INSTALLATION, AND APPLICATION OF INSULATING PRODUCT. SPLICE METHOD IN ANY OUTDOOR ENCLOSURE SHALL BE LISTED TO UL 486D.
16. ALL LV AC WIRING SHALL BE TYPE THWN-2 RATED 90° C, XHHW-2 IS AN APPROVED ALTERNATE. THIS NOTE WILL BE SUPERCEDED BY ANY INVERTER SPECIFICATIONS REQUIRING LV AC WIRE TO MEET HIGHER VOLTAGE OR INSULATION STANDARDS.
17. USE MYERS (OR APPROPRIATE EQUIVALENT) HUB LISTED TO PROVIDE MOISTURE PROTECTION FOR CONDUIT ENTRANCES IN ALL APPLICABLE LOCATIONS AS REQUIRED BY NEC 314.15.
18. PROTECT WIRE FROM SHARP EDGES WITH LISTED/RECOGNIZED UV RATED SPIRAL WRAP, EDGE-GUARD, OR SPLIT LOOM.

SAFETY:

1. TURN OFF THE CIRCUIT BREAKER AT THE SERVICE OR DISTRIBUTION PANEL BEFORE PERFORMING ANY ELECTRICAL WORK OR REPAIRS.
2. THE EV CHARGER SHOULD BE INSTALLED BY A LICENSED ELECTRICIAN IN ACCORDANCE WITH ALL LOCAL ELECTRICAL CODES, ORDINANCES, AND ALL AUTHORITIES HAVING JURISDICTION.
3. DO NOT INSTALL THE EV CHARGER NEAR FLAMMABLE, EXPLOSIVE, OR COMBUSTIBLE MATERIALS. DO NOT LOCATE OR STORE FLAMMABLE, EXPLOSIVE, OR COMBUSTIBLE MATERIALS NEAR THE EV CHARGER.
4. IMPROPER INSTALLATION OF THE EV CHARGER CAN RESULT IN PERSONAL INJURY OR PRODUCT DAMAGE.
5. THIS EV CHARGER INSTALLATION GUIDE IS NOT A SUBSTITUTE FOR ELECTRICAL SAFETY PRECAUTIONS.
6. USE THIS EV CHARGER WITHIN THE SPECIFIED OPERATING PARAMETERS. FAILURE TO DO SO MAY RESULT IN INJURY OR DEATH.
7. LOCATE AND INSTALL THIS EV CHARGER IN A LOCATION WHERE THE CHARGE CABLE WILL NOT BE STEPPED ON, TRIPPED OVER, OR SUBJECT TO DAMAGE OR STRESS.
8. THE EV CHARGER MUST BE CONNECTED TO A GROUNDED, METAL, PERMANENT WIRING SYSTEM, OR AN EQUIPMENT-GROUNDING CONDUCTOR MUST BE RUN WITH THE CIRCUIT CONDUCTORS AND CONNECTED TO THE EQUIPMENT GROUNDING TERMINAL ON THE EV CHARGER.
9. INCORRECT INSTALLATION OF THE EV CHARGER CAN RESULT IN DAMAGE TO THE VEHICLE'S BATTERY AND TO THE EV CHARGER ITSELF. THESE DAMAGES WILL VOID THE WARRANTY FOR THE VEHICLE AND THE EV CHARGER.
10. DO NOT OPERATE THE EV CHARGER IN TEMPERATURES BEYOND ITS OPERATING RANGE OF -30°C TO +55°C.

GROUNDING:

1. SEE ELECTRICAL DIAGRAM AND ELECTRICAL DETAILS FOR MORE GROUNDING INFORMATION.
2. EQUIPMENT GROUNDING CONDUCTORS AND SYSTEM GROUNDING CONDUCTORS WILL HAVE AS SHORT A DISTANCE TO GROUND AS POSSIBLE AND A MINIMUM NUMBER OF TURNS.
3. NON-CURRENT CARRYING METAL PARTS SHALL BE CHECKED FOR PROPER GROUNDING; NOTHING THAT TERMINAL LUGS BOLTED ON AN ENCLOSURE'S FINISHED SURFACE MAY BE INSULATED BECAUSE OF PAINT/FINISH. PAINT/FINISH AT POINT OF CONTACT SHALL BE PROPERLY REMOVED.
4. STRUCTURAL SUPPORTS MUST BE ELECTRICALLY BONDED TOGETHER BY AN ACCEPTABLE MEANS.
5. GROUNDING SYSTEM COMPONENTS SHALL BE LISTED FOR THEIR PURPOSE, INCLUDING BUT NOT LIMITED TO GROUNDING RODS, GROUNDING LUGS, GROUNDING CLAMPS, ETC.
6. ALL GROUNDING CONNECTIONS SHALL BE RATED FOR DIRECT BURIAL. CONTRACTORS IS TO SUPPLY DOCUMENTATION PROVIDING THIS DURING PROJECT SUBMITTALS.
7. EQUIPMENT GROUNDING CONDUCTORS MUST BE COPPER.



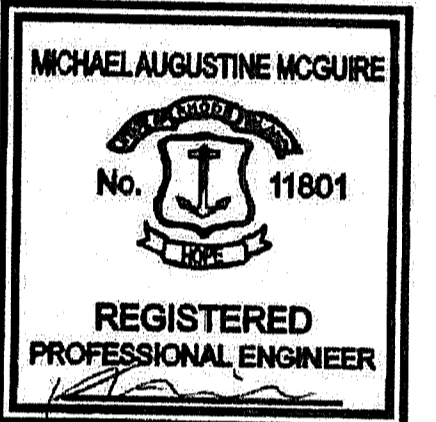
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SIGNATURE WITH SEAL



SEALED ON 04/09/2024
RI COA # 8402
H2DC PLLC
MIKE@H2DC.COM
ELECTRICAL ONLY

CLIENT INFORMATION



HIGHLAND ELECTRIC
FLEETS
200 CUMMINGS CTR,
STATE 273D
BEVERLY, MA 01915

DEPARTMENT OF ENVIRONMENTAL MANAGEMENT
OFFICE OF WATER RESOURCES
FRESHWATER WETLANDS PROGRAM
APPROVED WITH CONDITIONS AS
SPECIFIED IN THE LETTER OF APPROVAL
DATED JUN 03 2024. FILE # 24-0009
NO CHANGES ALLOWED WITHOUT PRIOR APPROVAL
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PROJECT INFORMATION

720.0 KW DC
STAND ALONE
EV CHARGING STATION
AT
1 JOHN C DEAN
MEMORIAL BLVD.
CUMBERLAND RI 02864

DESIGNED BY	SR
CHECKED BY	MM
APPROVED BY	MM

SHEET NAME ELECTRICAL NOTES

SHEET SIZE

ARCH D
24" X 36"

SHEET NUMBER

EV-01



PROPOSED PULL BOX, FRP, 24"X36"X24", TIER 8, GASKETS (FOR FUTURE PURPOSE)

PROPOSED SWITCHBOARD COMMUNICATION CABINET AND METERING

PROPOSED 1500 KVA 3PH 277/480V PAD MOUNT TRANSFORMER WITH TRANSFORMER FOUNDATION (UF8B)

PROPOSED HEAVY DUTY HANDHOLE BY CUSTOMER (33-102) HDHH 5-60

058-0069-000

PROPOSED (24) TELLUS POWER GREEN DC FAST CHARGER, TPEVPD-30-480 150-1000V DC, 80 A, 30 KW (DC) 480V-3P, 40 A RATED (AC) WITH BOTTOM EDGE OF CHARGER AT 6'-2" FROM BOTTOM OF MOUNTING BASE

ELECTRIC BUS FLEET

PROPOSED 6' RAISED PAD FOR ELECTRICAL EQUIPMENT

PROPOSED BOLLARDS

034-0254-000

PROPOSED ~450' OF (2) 4" CONCRETE ENCASED DUCT. INSTALLED BY CUSTOMER

PROPERTY BOUNDARY (APPROX.)

EXISTING RAILROAD TRACKS

PROPOSED ~450' OF (2) 4" CONCRETE ENCASED DUCT. INSTALLED BY CUSTOMER

034-0234-000

EXISTING UTILITY POLE P.6

034-0252-000

EXISTING UTILITY POLE P.7

PROPOSED UTILITY RISER POLE P.5-50 POINT OF INTERCONNECTION

034-0138-000

INSTALL GALVANIZED STEER RISER UP ON NEW P.5-50 (RR-2) BY CUSTOMER

JOHN DEAN BLVD

Astor Park Way

Blackstone River

Lower River Rd
Ave B
Ave A

APPLICABLE STANDARDS
 - 2020 NATIONAL ELECTRIC CODE, NFPA 70E
 - RI STATE BUILDING CODE 780 CMR
 - RI ENERGY DISTRIBUTION STANDARDS
 - CUMBERLAND, RI BUILDING & ELECTRICAL INSPECTORS (AHJs)
 - TELLUS POWER INSTALLATION MANUAL
 - INSTALLING CONTRACTOR AND ALL PERSONNEL ON SITE SHALL FOLLOW APPROPRIATE LOTO PROCEDURES BEFORE SERVICING EQUIPMENT AND SHALL BE EQUIPPED WITH THE APPROPRIATE PPE.

DESIGN NARRATIVE:
 1. THE NEW SERVICE TRANSFORMER IS A DEDICATED TRANSFORMER FOR THE CHARGING STATIONS DISTRIBUTED GENERATION.
 2. THE OVERALL SYSTEM IS DESIGNED FOR CURRENT EV CHARGERS.

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- (1) MAIN SWITCHBOARD
- BOLLARDS
- 1500 KVA TRANSFORMER
- UG-TRENCH

RI DEPARTMENT OF ENVIRONMENTAL MANAGEMENT
 OFFICE OF WATER RESOURCES
 FRESHWATER WETLANDS PROGRAM
 APPROVED WITH CONDITIONS AS SPECIFIED IN THE LETTER OF APPROVAL
 DATED: JUN 03 2024 FILE # 24-0009
 NO CHANGES ALLOWED WITHOUT PRIOR APPROVAL
 APPROVED PLANS MUST BE AT CONSTRUCTION SITE



H2DC PLLC
 Professional Electrical Engineering
 HURRICANE HILL DEVELOPMENT COMPANY PLLC
 1042 HURRICANE HILL ROAD
 MASON, NH 03048-1726
 PHONE: 603-887-1726 (OFFICE)
 WEB: WWW.H2DC.COM

REVISIONS

DESCRIPTION	DATE	REV
IFC SET	12/07/2023	0
IFC SET	01/09/2024	1
IFC SET	03/19/2024	2
IFC SET	04/09/2024	3

SIGNATURE WITH SEAL



SEALED ON 04/09/2024
 RI COA # 8402
 H2DC PLLC
 MIKE@H2DC.COM
 ELECTRICAL ONLY

CLIENT INFORMATION



HIGHLAND ELECTRIC FLEETS
 200 CUMMINGS CTR,
 STE 273D
 BEVERLY, MA 01915

PROJECT INFORMATION

720.0 KW DC
 STAND ALONE
 EV CHARGING STATION
 AT
 1 JOHN C DEAN MEMORIAL BLVD
 CUMBERLAND RI 02864

DESIGNED BY	SR
CHECKED BY	MM
APPROVED BY	MM

SHEET NAME

SITE PLAN

SHEET SIZE

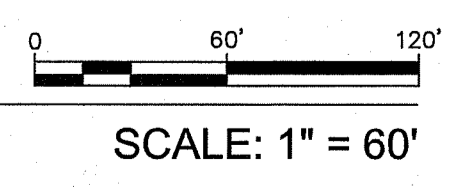
ARCH D
 24" X 36"

SHEET NUMBER

EV-02

1 SITE PLAN

EV-02



NOTE: DISTANCES ARE PROVIDED FOR CONVENIENCE ONLY AND A LICENSED SURVEYOR MUST BE RETAINED TO CONFIRM ALL LOCATIONS PRIOR TO CONSTRUCTION

- (24) TP-EVPD-30-480 DC FAST CHARGER
- (1) MAIN SWITCHBOARD
- BOLLARDS
- 1500 KVA TRANSFORMER
- UG-TRENCH

PROPOSED PULL BOX, FRP,
24"X36"X24", TIER 8, GASKETS
(FOR FUTURE PURPOSE)

PROPOSED SWITCHBOARD
COMMUNICATION CABINET
AND METERING

PROPOSED 1500 KVA
3PH 277/480V PAD MOUNT
TRANSFORMER
WITH TRANSFORMER
FOUNDATION (UF8B)

058-0069-000

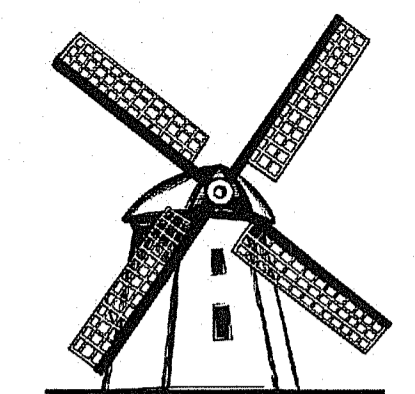
PROPOSED (24) TELLUS POWER
GREEN DC FAST CHARGER,
TPEVPD-30-480
150-1000V DC, 80 A, 30 KW (DC)
480V 3P, 40 A RATED (AC)
WITH BOTTOM EDGE OF
CHARGER AT 6'-2" FROM
BOTTOM OF MOUNTING BASE

ELECTRIC BUS FLEET

PROPOSED 6' RAISED
PAD FOR ELECTRICAL
EQUIPMENT

PROPOSED BOLLARDS

034-0254-000



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RI COA # 8402
H2DC PLLC
MIKE@H2DC.COM
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CLIENT INFORMATION

**HIGHLAND ELECTRIC
FLEETS**
200 CUMMINGS CTR,
STE 273D
BEVERLY, MA 01915

RI DEPARTMENT OF ENVIRONMENTAL MANAGEMENT
OFFICE OF WATER RESOURCES
FRESHWATER WETLANDS PROGRAM
APPROVED WITH CONDITIONS AS
SPECIFIED IN THE LETTER OF APPROVAL
DATED: JUN 03 2024, FILE #: 24-0009
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APR 25 2024

AT
1 JOHN C DEAN
MEMORIAL BLVD
CUMBERLAND RI 02864

PROJECT INFORMATION

720.0 KW DC

STAND ALONE
EV CHARGING STATION

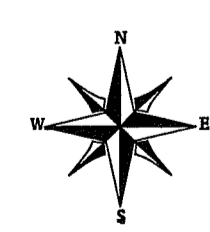
DESIGNED BY	SR
CHECKED BY	MM
APPROVED BY	MM

SHEET NAME
SITE PLAN-2

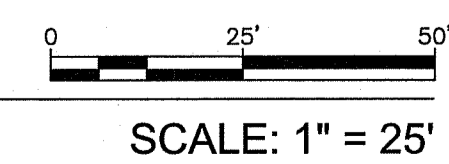
SHEET SIZE
ARCH D
24" X 36"

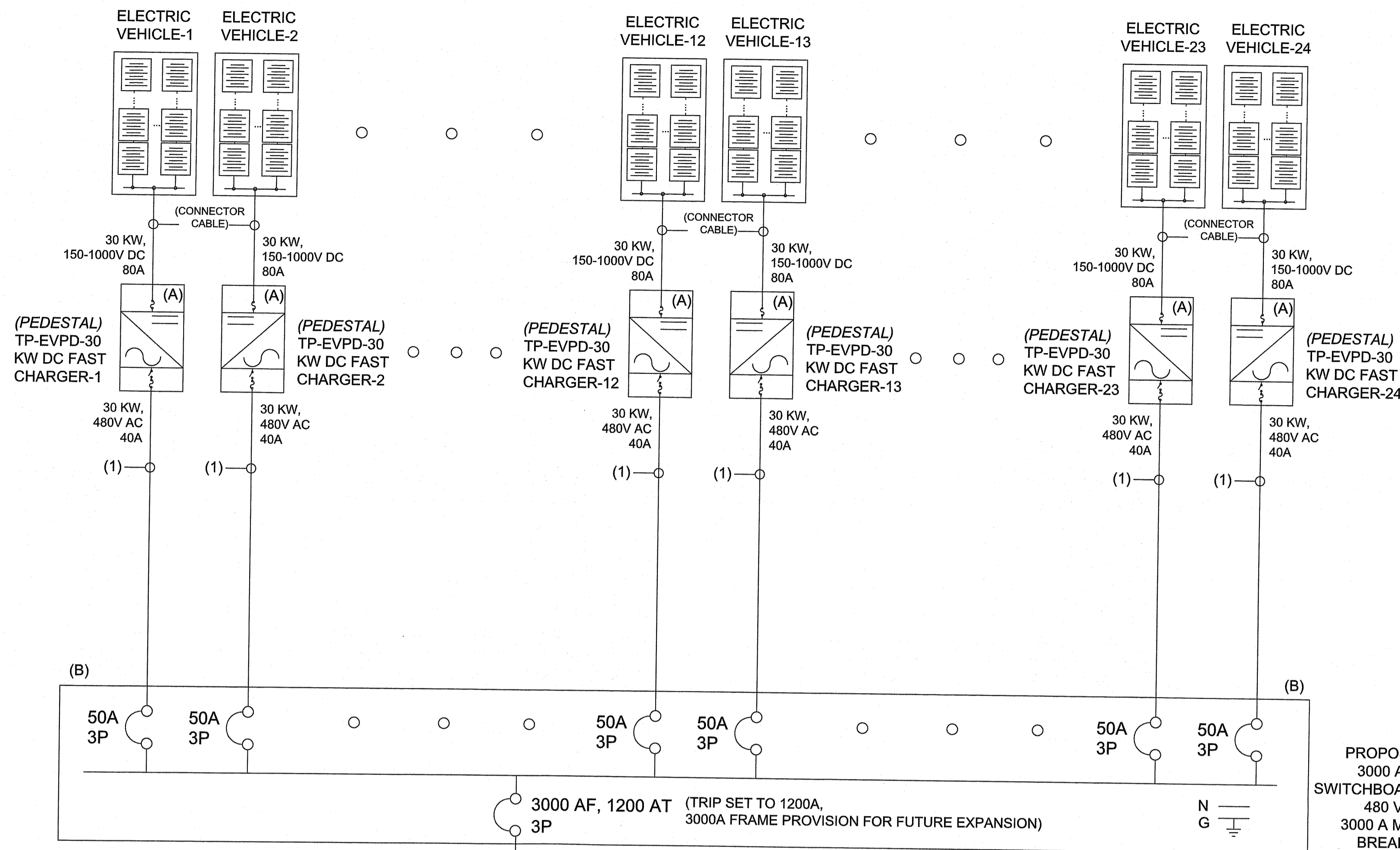
SHEET NUMBER
EV-03

NOTE: DISTANCES ARE PROVIDED FOR CONVENIENCE
ONLY AND A LICENSED SURVEYOR MUST BE RETAINED TO
CONFIRM ALL LOCATIONS PRIOR TO CONSTRUCTION



1 SITE PLAN-2
EV-03





- CONDUIT & WIRING NOTES**
- CONDUIT TYPES (UNLESS OTHERWISE NOTED):
 - RMC FOR EXTERIOR USE.
 - PVC SCH 40 IN UNDERGROUND TRENCHES, SCH 80 SWEEPS
 - WIRE COLOR SPECIFICATION: (TAPE AT TERMINATIONS OR INSTALL COLORED WIRE WHERE REQUIRED BY NEC)
 - DC POSITIVE UNGROUNDED WIRING: RED
 - DC NEGATIVE UNGROUNDED WIRING: BLACK
 - DC GROUND: GREEN OR BARE
 - AC PHASE WIRES: BROWN/ORANGE/YELLOW
 - AC NEUTRAL: GRAY
 - AC GROUND: GREEN
 - WIRE TYPE NOTES:
 - ALL WIRING IS COPPER, UNLESS OTHERWISE NOTED
 - ALL WIRING TO BE STRANDED, UNLESS OTHERWISE NOTED
 - ALL WIRING TO BE RATED FOR 90C IN WET LOCATIONS, UNLESS OTHERWISE NOTED
 - TAPE BOTH POLARITIES OF HOME RUN WIRING AT TERMINATIONS IN TRANSITION BOX, AND IDENTIFY SOURCE CIRCUIT BY ID NUMBER.
 - AMPACITY AND AMPERAGE
 - ALL DC CURRENTS ARE SHORT CIRCUIT CURRENT VALUES
 - ALL AC CURRENTS ARE NOMINAL PER-PHASE VALUES
 - WIRE AMPACITY IS BASED ON NUMBER OF WIRES PER CONDUIT AND HEIGHT ABOVE ROOF.
 - IF CONDUITS ARE INSTALLED DIFFERENTLY THAN SHOWN, THE WIRE SIZES MAY BE AFFECTED
 - VOLTAGE DROP CALCULATIONS ARE BASED ON THE LONGEST WIRE RUN
 - GROUNDING
 - ALL CONDUIT TO BE BONDED AS REQUIRED
 - ALL GROUND WIRE IN ≥10 FT OF CONDUIT SHALL BE INSULATED.
 - LENGTH OF TYPE (1) WIRE TO BE CONFIRMED BASED ON ADDITIONAL PCS LOCATIONS

- SERVICE DISCONNECT SWITCH NOTES:**
- SWITCH WILL BE SERVICE RATED AND ACCESSIBLE AND LOCKABLE 24/7.
 - SWITCH RATED FOR 200KA FAULT CURRENT WITH CLASS R, J, OR L FUSES
 - SELECT FUSES TO BE SERIES RATED WITH MAIN PANELBOARD BREAKERS OR KAIC OF BREAKERS TO BE SUFFICIENT FOR AVAILABLE FAULT CURRENT

- GROUNDING NOTES**
- TRANSFORMER AND SERVICE DISCONNECT GEC TO BE SIZED PER NEC 250.66. COPPER GROUNDING ELECTRODE ROD 3/4" x 10' MIN TO BE USED. FROM TRANSFORMER EARTH GROUND TO COPPER GEC, GROUND SYSTEM RESISTANCE SHALL BE 25 OHMS OR LESS. TWO GROUND RODS TO BE DRIVEN SIX FEET APART IF 25 OHM VALUE IS NOT OBTAINED.
 - GROUNDING ELECTRODE SYSTEM FOR BOTH TRANSFORMER AND SERVICE DISCONNECT TO BE BONDED BELOW FINISHED SLAB OR GRADE

- ARC FLASH NOTES**
- ARC FLASH RISK ASSESSMENT/LABELING REQUIRED PRIOR TO COMMISSIONING
- MV RISER CONSTRUCTION DETAILS**
- FOR TYPICAL PULLS THE BURIED CONDUIT AND SWEEP SHALL BE SCH 40 PVC.
 - IF THE PULL IS TO BE TOWARD THE POLE AND HIGH TENSION THEN THE LAST SECTION OF STRAIGHT CONDUIT AND THE SWEEP SHALL BE HDG STEEL.
 - USE MINIMUM JOINT POLE SIZE 5 FT.

SITE CONDITIONS
 LOCATION: CUMBERLAND, RI
 MAX AVG TEMP: 32
 MIN EXPECTED TEMP: -17

TP-EVPD-30 KW DC FAST CHARGER
 DC OUTPUT POWER: 30.0 KW
 INPUT VOLTAGE: 480 V 3 PHASE
 FREQUENCY: 60 HZ
 MAXIMUM AC CURRENT: 40 A AC

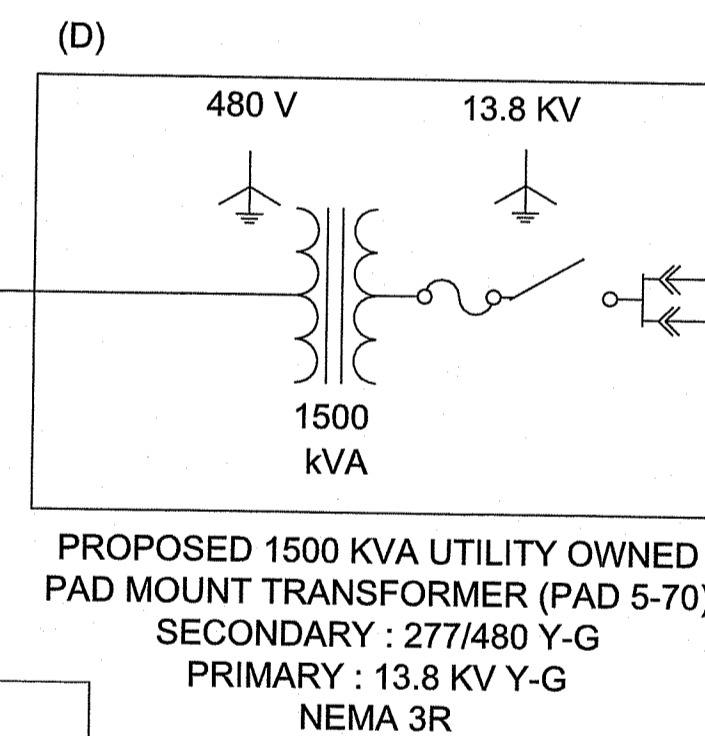
CONDUIT AND WIRING SCHEDULE (EV CHARGER SYSTEM)

ID	AMPERAGE (A)	OCPD (A)	CIRCUIT	MAX EST. 1-WAY LENGTH (FT)	# OF WIRES	WIRE SIZE (AWG)	VOLTAGE DROP	GROUND SIZE	CONDUIT SIZE
1	40	50	TP-EVPD-30 KW DC FAST CHARGER	180	3 + N + G	#6 AWG THWN-2 CU	1.47%	#10 CU THWN-2	1"
2	960	3000	SWITCHBOARD OUTPUT	25	3 + N + G	8 SETS OF 600 MCM CU	0.02%	#400 KCMIL CU	4"
3	33.39	50	1500 KVA MV TRANSFORMER	1000	3 + G	#2 AL MV-105 133% INSULATED	0.13%	N/A	4"

* ALL AC CURRENTS ARE MAXIMUM CONTINUOUS CURRENTS.
 ** AC NEUTRAL CONDUCTORS ARE REQUIRED FOR SENSING BUT ARE NOT CURRENT CARRYING CONDUCTORS. NEUTRAL WIRE MAY BE REDUCED IN SIZE PER NEC
 *** ALL CABLES USE IN TRENCH TO BE LISTED FOR DIRECTED BURIAL
 **** VALUES IN THIS TABLE ARE FOR REFERENCE ONLY. REFER TO DC AND AC CONDUIT AND WIRE SCHEDULE FOR DETAILS

PROPOSED 3000 A AC SWITCHBOARD, 480 V 3P, 3000 A MAIN BREAKER

(NEW) UTILITY SERVICE METER
 METERING VOLTAGE: 480 V
 METERING AMPERAGE: 1200A MIN
 CT RATED, NEMA 3R
 POINT OF COMMON COUPLING

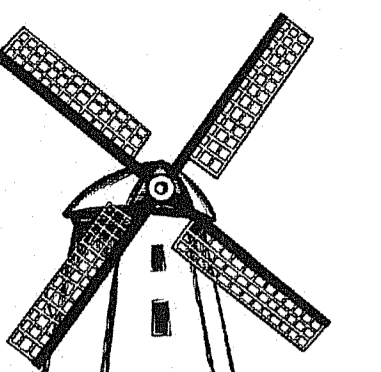


PROPOSED 1500 KVA UTILITY OWNED PAD MOUNT TRANSFORMER (PAD 5-70)
 SECONDARY : 277/480 Y-G
 PRIMARY : 13.8 KV Y-G
 NEMA 3R

RI DEPARTMENT OF ENVIRONMENTAL MANAGEMENT
 OFFICE OF WATER RESOURCES
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EQUIPMENT SCHEDULE

#	EQUIPMENT	QUANTITY
A	TP-EVPD-30 KW DC FAST CHARGERS, 480 VAC, 40 A MAX, 30 KW (AC), 150-1000V DC, 80 A, 30 KW (DC), IP 54, UL-2202	24
B	MAIN SWITCHBOARD, 3000A BUS, 277/480 V 3P 4W, 3000 AF, 3000 AT MAIN BREAKER (TRIP SET TO 1200A FOR PROPOSED APPLICATION), NEMA 3R	1
C	PROPOSED NEW UTILITY METER, CT RATED, MIN. 1200 A RATED	1
D	PROPOSED NEW UTILITY OWNED PAD-MOUNT 1500 KVA TRANSFORMER, 277/480V SECONDARY SIDE	1



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CLIENT INFORMATION



HIGHLAND ELECTRIC FLEETS
 200 CUMMINGS CTR,
 STE 273D
 BEVERLY, MA 01915

PROJECT INFORMATION

720.0 KW DC
 STAND ALONE
 EV CHARGING STATION

AT
 1 JOHN C DEAN
 MEMORIAL BLVD,
 CUMBERLAND RI 02864

DESIGNED BY: SR
 CHECKED BY: MM
 APPROVED BY: MM

SHEET NAME
 SINGLE LINE
 DIAGRAM

SHEET SIZE

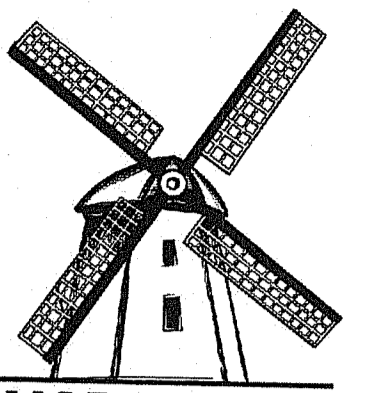
ARCH D
 24" X 36"

SHEET NUMBER

EV-04

(24) 30 kWac EV CHARGERS - TOTAL 720 KW DC, 797.76 KW AC (NEW SERVICE)

SCALE: NOT TO SCALE



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COMPANY PLLC
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H2DC PLLC
MIKE@H2DC.COM
ELECTRICAL ONLY

CLIENT INFORMATION

HIGHLAND ELECTRIC FLEETS
200 CUMMINGS CTR,
STE 273D
BEVERLY, MA 01915

PROJECT INFORMATION
720.0 KW DC
STAND ALONE
EV CHARGING STATION
AT
1 JOHN C DEAN
MEMORIAL BLVD
CUMBERLAND RI 02864

DESIGNED BY	SR
CHECKED BY	MM
APPROVED BY	MM

SHEET NAME
WIRE TABLE

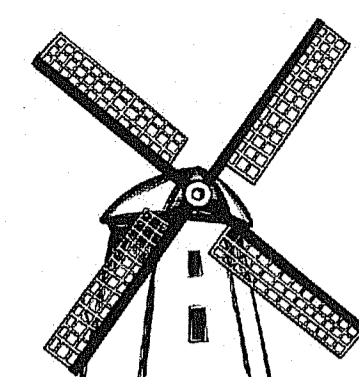
SHEET SIZE
ARCH D
24" X 36"

SHEET NUMBER
EV-05

CIRCUIT DETAILS	VOLTAGE (V)	DESIGN CURRENT (A)	ADJUSTED CURRENT (A)	OC PD (A)	ONE-WAY LENGTH (FT)	WIRE SIZE	CONDUCTOR MATERIAL	WIRE TYPE	NEUTRAL SIZE (CU)	GROUND SIZE (CU)	CONDUCTOR SETS QTY	CONDUCTORS PER SET	# CURRENT CARRYING CONDUCTORS	# TOTAL CONDUCTORS	TEMP (°C)	CONDUIT TYPE	CONDUIT SETS	CONDUIT SIZE	CONDUIT FILL %	TEMP. DERATE	BUNDLE DERATE	RATED AMPACITY (A)	ADJUSTED AMPACITY (A)	% VOLTAGE DROP
CHARGER 1	480	40.00	50.00	50	180	#6	Cu	THWN-2	#6	#12	1	3	4	5	32	PVC sch 40	1	1"	25.97%	0.96	0.8	65	49.92	1.47%
CHARGER 2	480	40.00	50.00	50	180	#6	Cu	THWN-2	#6	#12	1	3	4	5	32	PVC sch 40	1	1"	25.97%	0.96	0.8	65	49.92	1.47%
CHARGER 3	480	40.00	50.00	50	165	#6	Cu	THWN-2	#6	#12	1	3	4	5	32	PVC sch 40	1	1"	25.97%	0.96	0.8	65	49.92	1.47%
CHARGER 4	480	40.00	50.00	50	165	#6	Cu	THWN-2	#6	#12	1	3	4	5	32	PVC sch 40	1	1"	25.97%	0.96	0.8	65	49.92	1.35%
CHARGER 5	480	40.00	50.00	50	150	#6	Cu	THWN-2	#6	#12	1	3	4	5	32	PVC sch 40	1	1"	25.97%	0.96	0.8	65	49.92	1.35%
CHARGER 6	480	40.00	50.00	50	150	#6	Cu	THWN-2	#6	#12	1	3	4	5	32	PVC sch 40	1	1"	25.97%	0.96	0.8	65	49.92	1.23%
CHARGER 7	480	40.00	50.00	50	135	#6	Cu	THWN-2	#6	#12	1	3	4	5	32	PVC sch 40	1	1"	25.97%	0.96	0.8	65	49.92	1.23%
CHARGER 8	480	40.00	50.00	50	135	#6	Cu	THWN-2	#6	#12	1	3	4	5	32	PVC sch 40	1	1"	25.97%	0.96	0.8	65	49.92	1.10%
CHARGER 9	480	40.00	50.00	50	120	#6	Cu	THWN-2	#6	#12	1	3	4	5	32	PVC sch 40	1	1"	25.97%	0.96	0.8	65	49.92	1.10%
CHARGER 10	480	40.00	50.00	50	120	#6	Cu	THWN-2	#6	#12	1	3	4	5	32	PVC sch 40	1	1"	25.97%	0.96	0.8	65	49.92	0.98%
CHARGER 11	480	40.00	50.00	50	105	#6	Cu	THWN-2	#6	#12	1	3	4	5	32	PVC sch 40	1	1"	25.97%	0.96	0.8	65	49.92	0.98%
CHARGER 12	480	40.00	50.00	50	105	#6	Cu	THWN-2	#6	#12	1	3	4	5	32	PVC sch 40	1	1"	25.97%	0.96	0.8	65	49.92	0.86%
CHARGER 13	480	40.00	50.00	50	90	#6	Cu	THWN-2	#6	#12	1	3	4	5	32	PVC sch 40	1	1"	25.97%	0.96	0.8	65	49.92	0.86%
CHARGER 14	480	40.00	50.00	50	90	#6	Cu	THWN-2	#6	#12	1	3	4	5	32	PVC sch 40	1	1"	25.97%	0.96	0.8	65	49.92	0.74%
CHARGER 15	480	40.00	50.00	50	75	#6	Cu	THWN-2	#6	#12	1	3	4	5	32	PVC sch 40	1	1"	25.97%	0.96	0.8	65	49.92	0.74%
CHARGER 16	480	40.00	50.00	50	75	#6	Cu	THWN-2	#6	#12	1	3	4	5	32	PVC sch 40	1	1"	25.97%	0.96	0.8	65	49.92	0.61%
CHARGER 17	480	40.00	50.00	50	60	#6	Cu	THWN-2	#6	#12	1	3	4	5	32	PVC sch 40	1	1"	25.97%	0.96	0.8	65	49.92	0.61%
CHARGER 18	480	40.00	50.00	50	60	#6	Cu	THWN-2	#6	#12	1	3	4	5	32	PVC sch 40	1	1"	25.97%	0.96	0.8	65	49.92	0.49%
CHARGER 19	480	40.00	50.00	50	45	#6	Cu	THWN-2	#6	#12	1	3	4	5	32	PVC sch 40	1	1"	25.97%	0.96	0.8	65	49.92	0.49%
CHARGER 20	480	40.00	50.00	50	45	#6	Cu	THWN-2	#6	#12	1	3	4	5	32	PVC sch 40	1	1"	25.97%	0.96	0.8	65	49.92	0.37%
CHARGER 21	480	40.00	50.00	50	30	#6	Cu	THWN-2	#6	#12	1	3	4	5	32	PVC sch 40	1	1"	25.97%	0.96	0.8	65	49.92	0.37%
CHARGER 22	480	40.00	50.00	50	30	#6	Cu	THWN-2	#6	#12	1	3	4	5	32	PVC sch 40	1	1"	25.97%	0.96	0.8	65	49.92	0.25%
CHARGER 23	480	40.00	50.00	50	15	#6	Cu	THWN-2	#6	#12	1	3	4	5	32	PVC sch 40	1	1"	25.97%	0.96	0.8	65	49.92	0.25%
CHARGER 24	480	40.00	50.00	50	15	#6	Cu	THWN-2	#6	#12	1	3	4	5	32	PVC sch 40	1	1"	25.97%	0.96	0.8	65	49.92	0.12%
SWITCHBOARD	480	960.00	1200.00	3000	25	#500	Cu	THWN-2	#500	#400	10	3	4	5	32	PVC sch 40	10	4"	31.88%	0.96	0.8	4300	3302.40	0.12%
TRANSFORMER	13800	33.39	41.74	50	1000	#2	Al	MV-105	N/A	N/A	1	3	3	3	32	PVC sch 40	1	4"	19.15%	0.96	1	90	86.40	0.13%

1
EV-05
WIRE TABLE

SCALE: NOT TO SCALE



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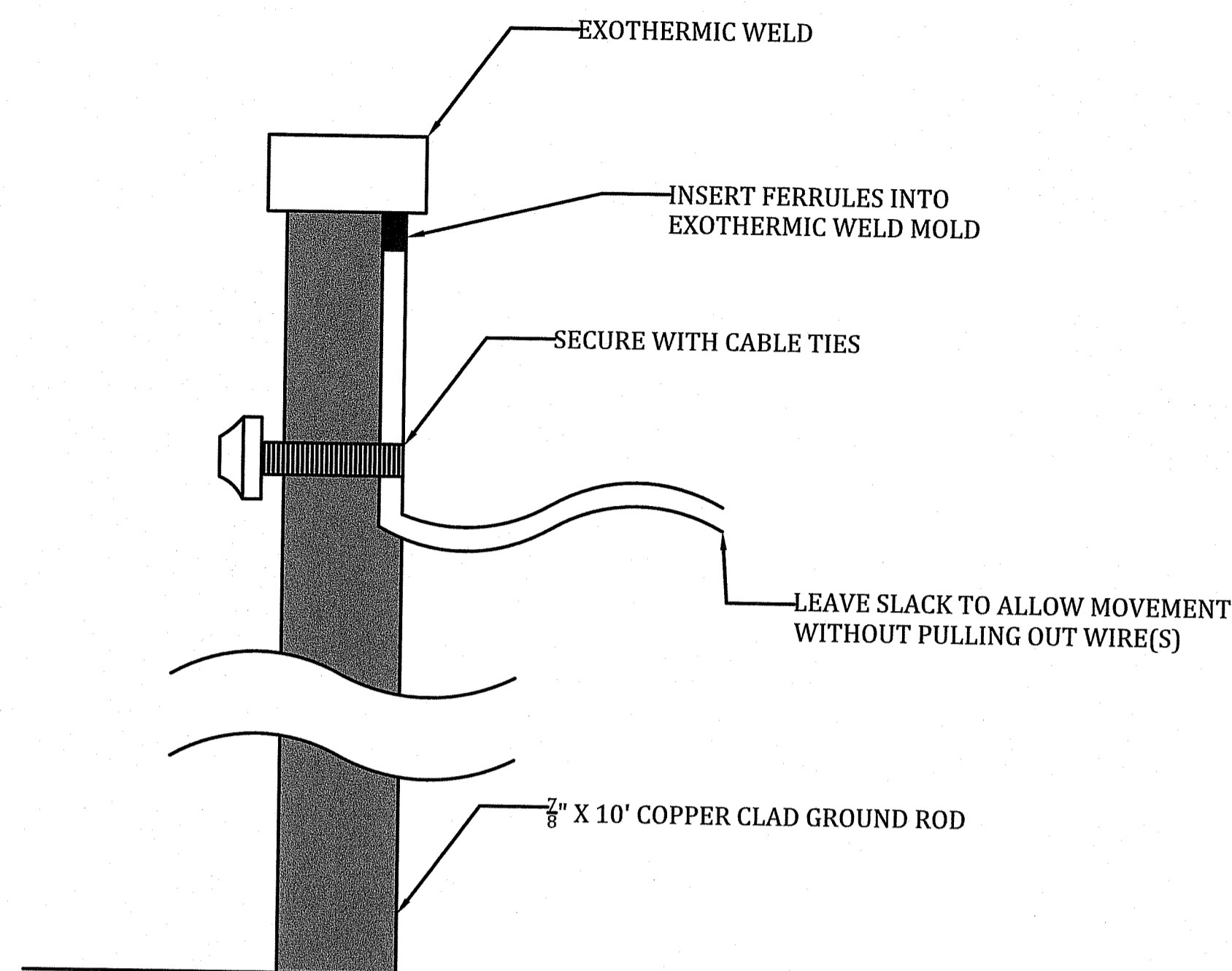
SHEET NAME
GROUNDING
PLAN

SHEET SIZE

ARCH D
24" X 36"

SHEET NUMBER

EV-06



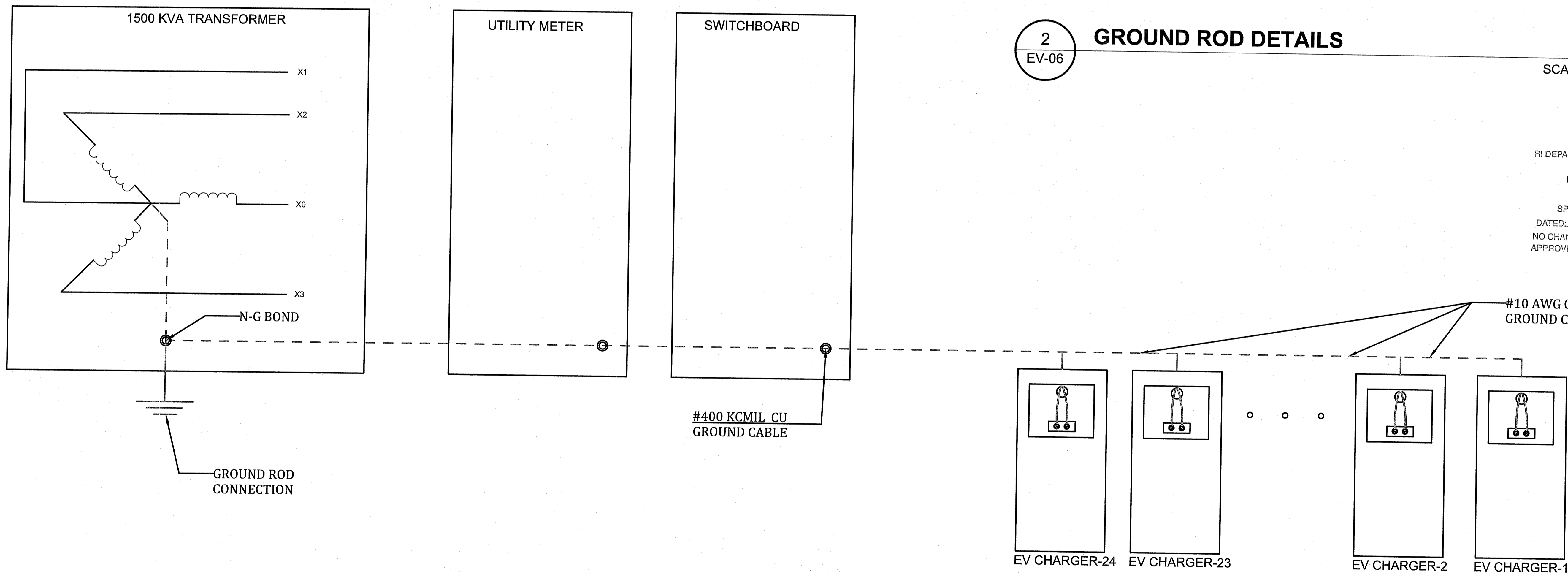
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EV-06

GROUND ROD DETAILS

SCALE: NTS

RI DEPARTMENT OF ENVIRONMENTAL MANAGEMENT
OFFICE OF WATER RESOURCES
FRESHWATER WETLANDS PROGRAM
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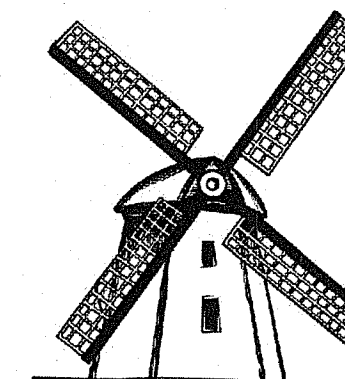
Andy Cloutier



1
EV-06

GROUNDING PLAN

SCALE: NTS



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PROJECT INFORMATION

720.0 KW DC

STAND ALONE
EV CHARGING STATION

AT
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CUMBERLAND RI 02864

DESIGNED BY SR

CHECKED BY MM

APPROVED BY MM

SHEET NAME
CONDUIT
PLAN

SHEET SIZE

ARCH D
24" X 36"

SHEET NUMBER

EV-07

PROPOSED (3) 2" PVC
SCHEDULE 40 CONDUITS
FROM MAIN SWITCHBOARD
TO PULL BOX FOR FUTURE

PROPOSED (10) 4" PVC
SCHEDULE 40 CONDUITS
FROM MAIN SWITCHBOARD
TO TRANSFORMER

PROPOSED 1" PVC
SCHEDULE 40 CONDUIT
FROM EACH EV CHARGER TO
MAIN SWITCHBOARD
(TOTAL 24 CONDUITS)

PROPOSED (2) 4" PVC
SCHEDULE 40 CONDUITS
CONCRETE ENCASED
FROM TRANSFORMER TO HAND HOLE

RI DEPARTMENT OF ENVIRONMENTAL MANAGEMENT
OFFICE OF WATER RESOURCES
FRESHWATER WETLANDS PROGRAM
APPROVED WITH CONDITIONS AS
SPECIFIED IN THE LETTER OF APPROVAL
DATED: JUN 03 2024 FILE # 24-0089
NO CHANGES ALLOWED WITHOUT PRIOR APPROVAL
APPROVED PLANS MUST BE AT CONSTRUCTION SITE

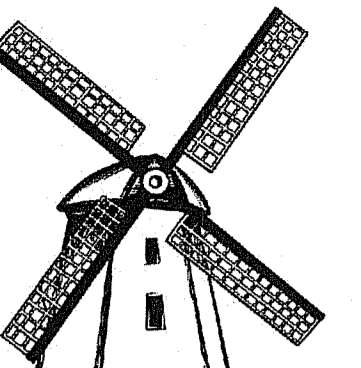
Andy McGuire

APR 25 2024

1
EV-07

CONDUIT PLAN

SCALE: 1" = 10'



H2DC PLLC
Professional Electrical Engineering

HURRICANE HILL DEVELOPMENT
COMPANY PLLC
1042 HURRICANE HILL ROAD
MASON, NH 03048-1726
PHONE: 603-887-1726 (OFFICE)
WEB: WWW.H2DC.COM

REVISIONS

DESCRIPTION	DATE	REV
IFC SET	12/07/2023	0
IFC SET	01/09/2024	1
IFC SET	03/19/2024	2
IFC SET	04/09/2024	3

SIGNATURE WITH SEAL



SEALED ON 04/09/2024
RI COA # 8402
H2DC PLLC
MIKE@H2DC.COM
ELECTRICAL ONLY

CLIENT INFORMATION



**HIGHLAND ELECTRIC
FLEETS**
200 CUMMINGS CTR,
STE 273D
BEVERLY, MA 01915

PROJECT INFORMATION

720.0 KW DC
STAND ALONE
EV CHARGING STATION
AT
1 JOHN C DEAN
MEMORIAL BLVD
CUMBERLAND RI 02864

DESIGNED BY	SR
CHECKED BY	MM
APPROVED BY	MM

SHEET NAME
TRENCHING
PLAN

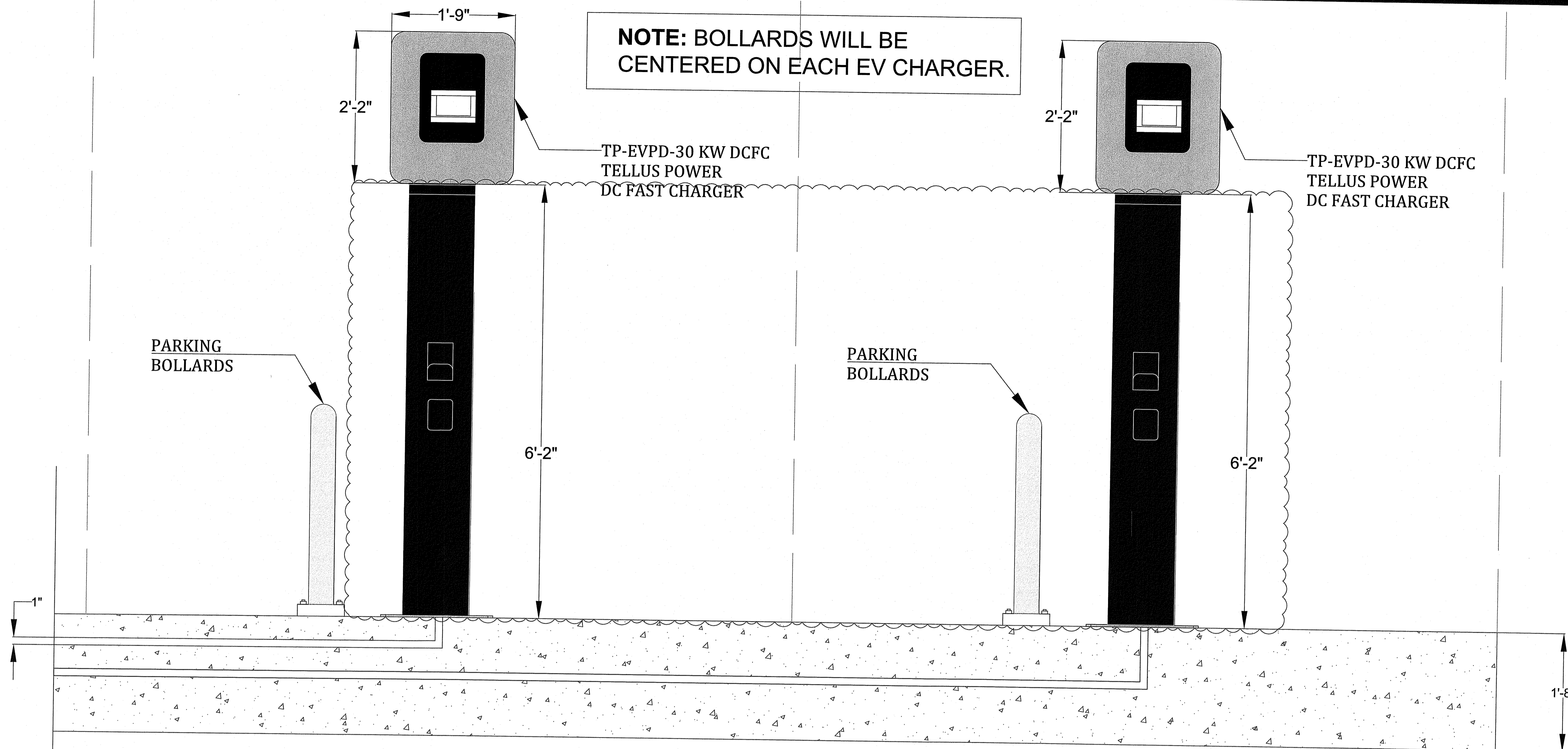
SHEET SIZE

ARCH D
24" X 36"

SHEET NUMBER

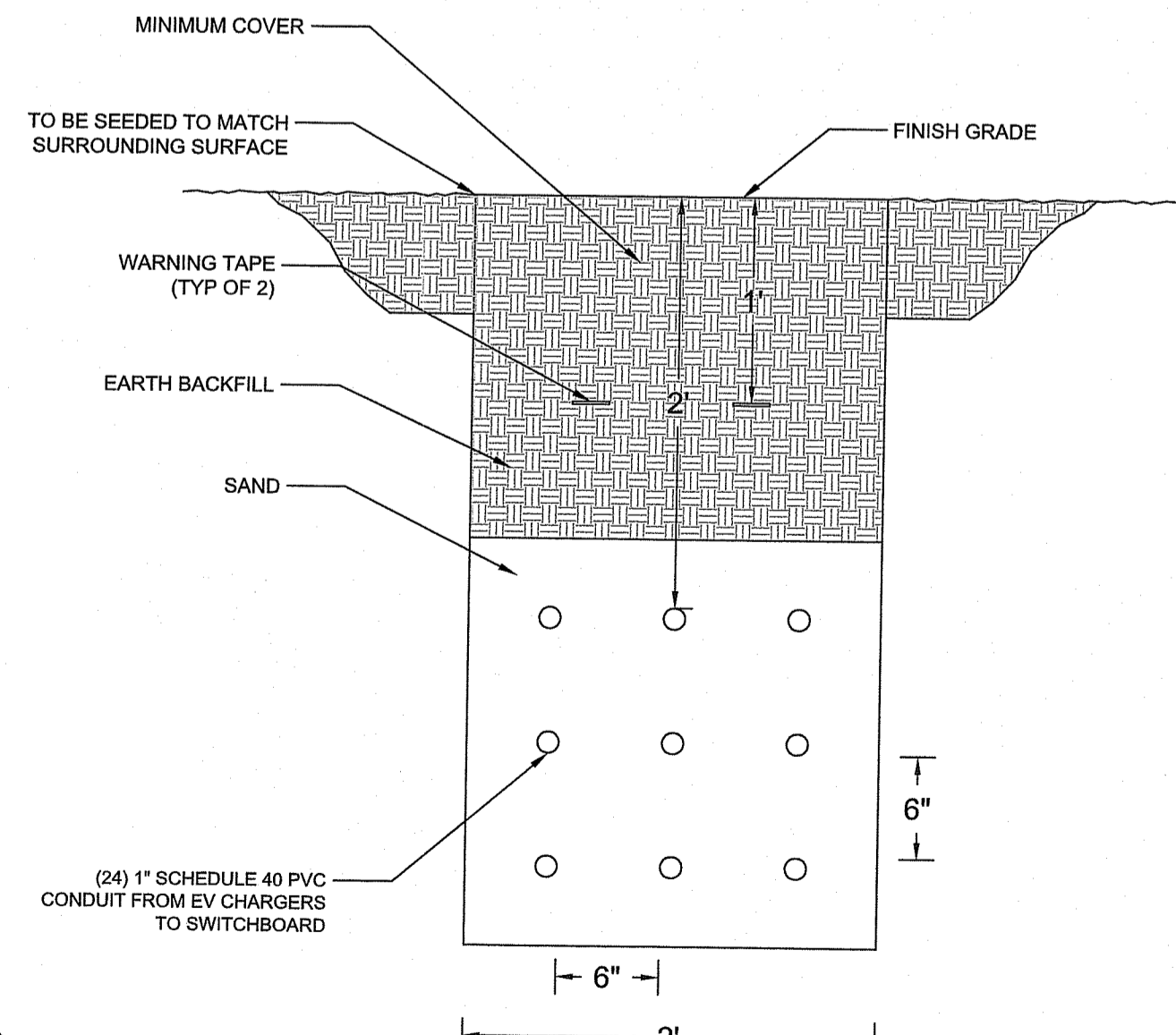
EV-08

**NOTE: BOLLARDS WILL BE
CENTERED ON EACH EV CHARGER.**

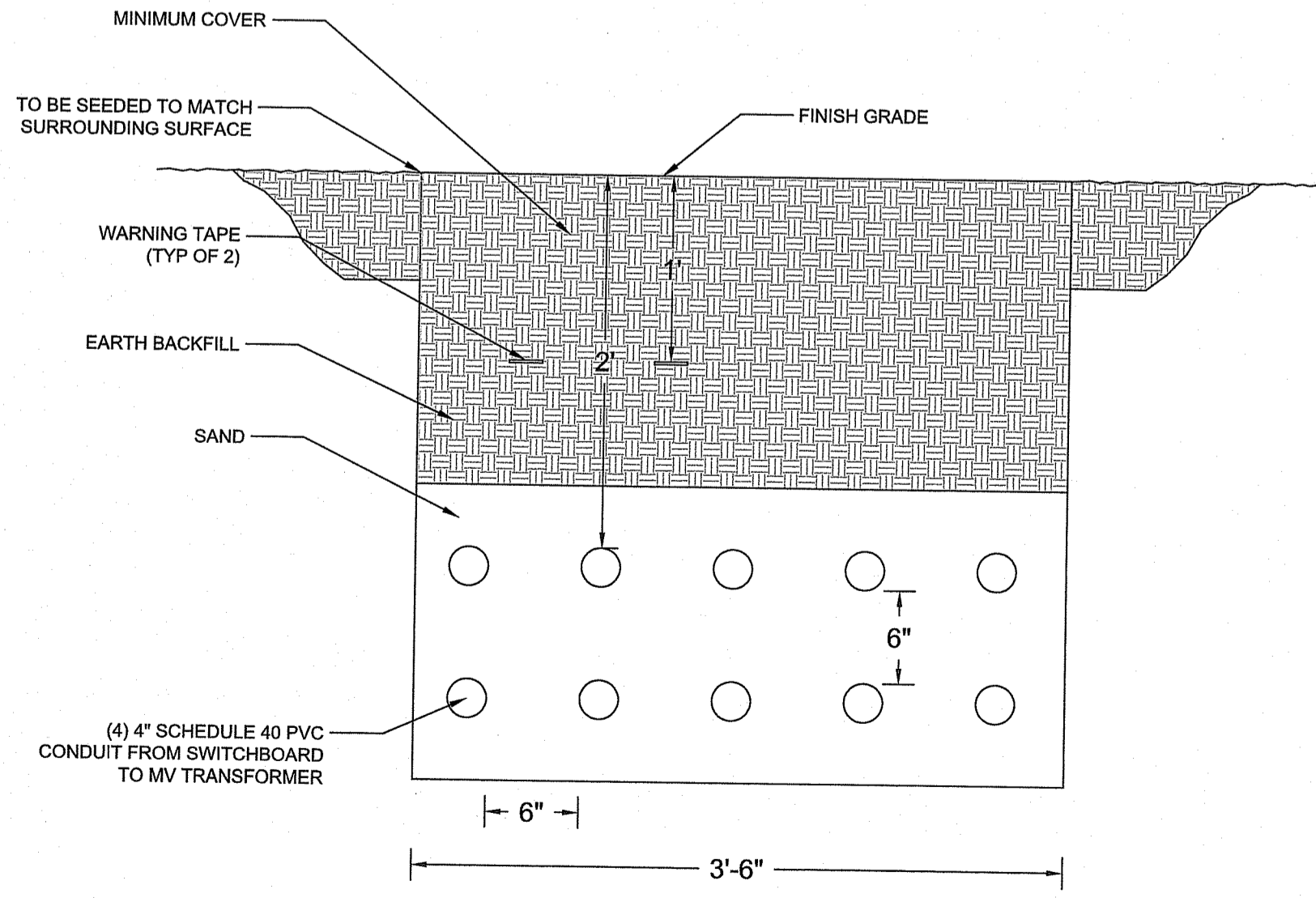


**1 CONDUITS AND TRENCHING SECTION VIEW
EV CHARGERS-1 AND 2**

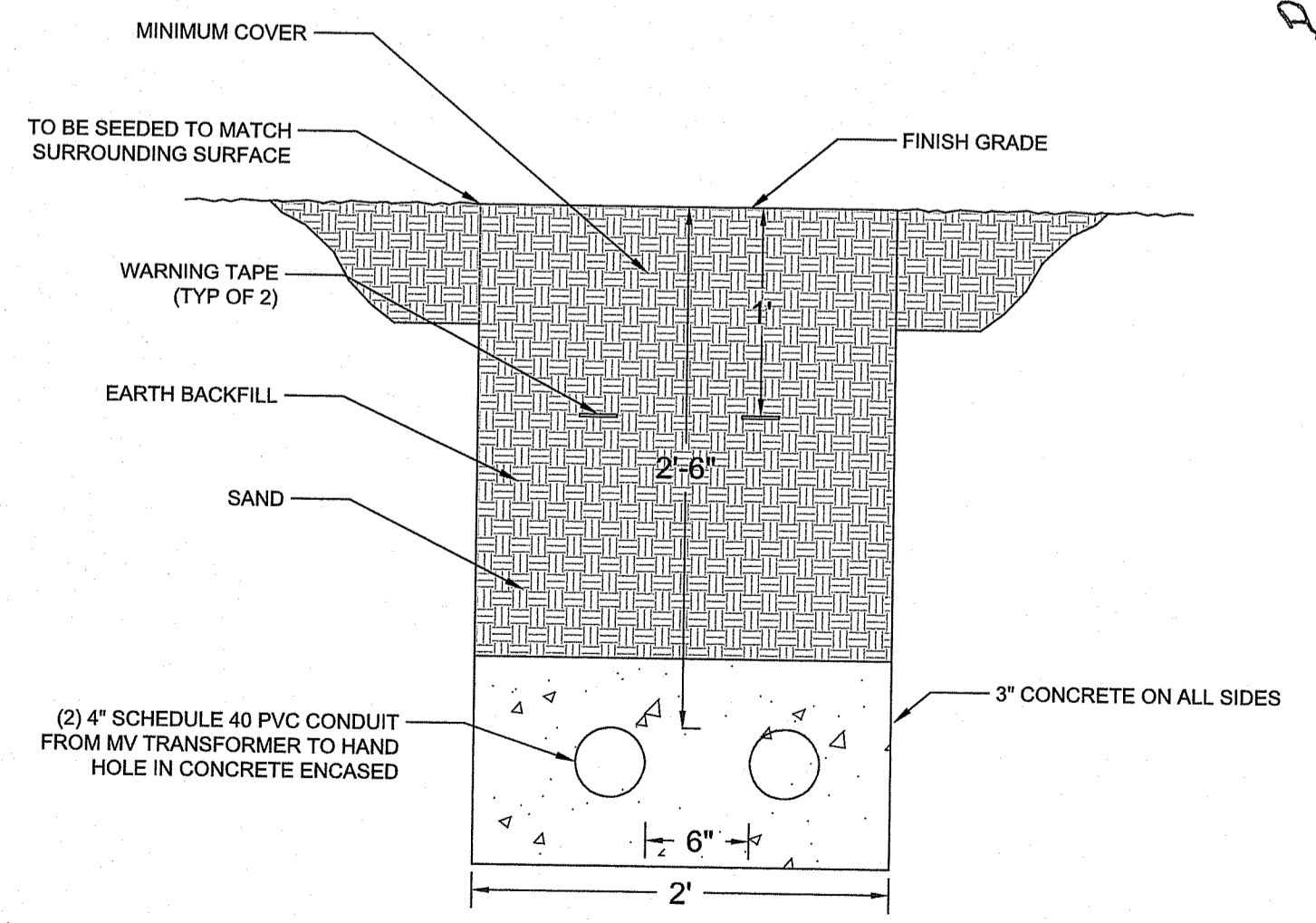
RI DEPARTMENT OF ENVIRONMENTAL MANAGEMENT
OFFICE OF WATER RESOURCES
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DATED: APR 03 2024 FILE #: 24-0009
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Andy Clayton



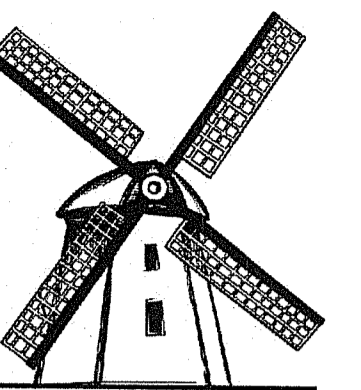
**2 CONDUITS AND TRENCHING SECTION VIEW
EV CHARGERS TO SWITCHBOARD**



**3 CONDUITS AND TRENCHING SECTION VIEW
SWITCHBOARD TO MV TRANSFORMER**



**4 CONDUITS AND TRENCHING SECTION VIEW
MV TRANSFORMER TO HANDHOLE**



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CUMBERLAND RI 02864

DESIGNED BY	SR
CHECKED BY	MM
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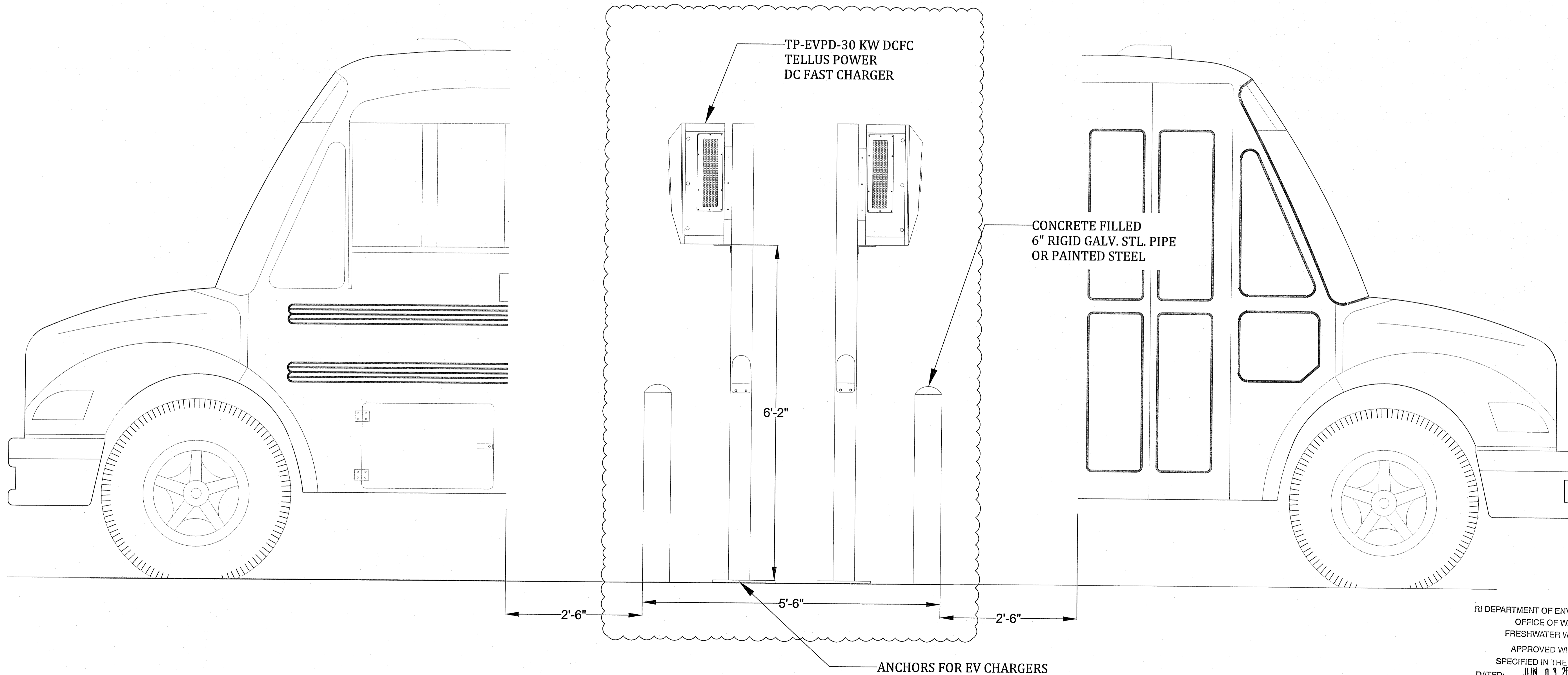
SHEET NAME
EV CHARGER
DETAILS

SHEET SIZE

ARCH D
24" X 36"

SHEET NUMBER

EV-09



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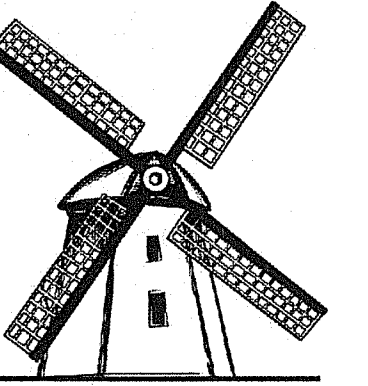
Michael McGuire

1 EV CHARGER - PLAN VIEW
EV-09

NOTE:

LAYOUT IS DIAGRAMMATIC ONLY. EXACT LOCATIONS TO BE DETERMINED BY ELECTRICAL CONTRACTOR BASED ON FINAL EQUIPMENT DIMENSIONS FROM SUBMITTAL AND EXISTING SITE CONDITIONS.

BOLLARDS MAY BE ADDED PER ELECTRICAL CONTRACTOR'S DISCRETION IF REQUIRED TO AVOID PHYSICAL DAMAGE.



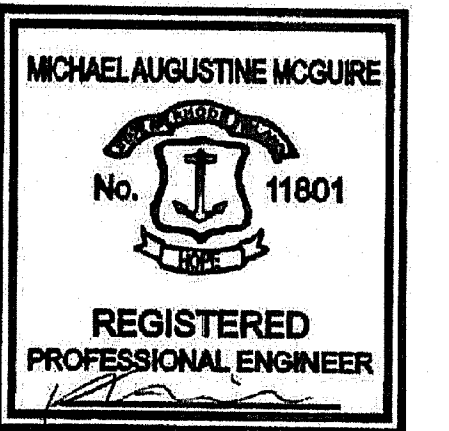
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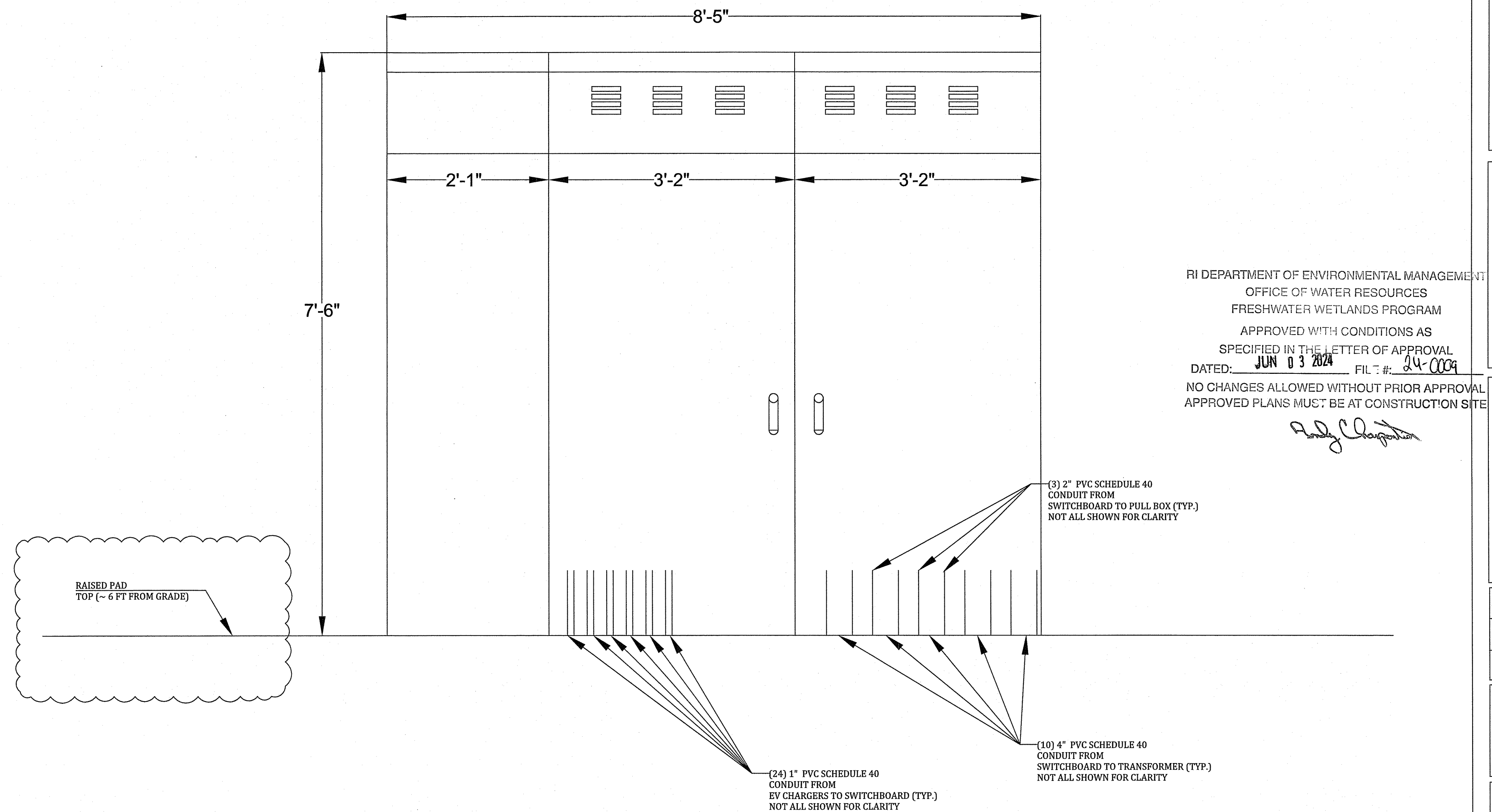
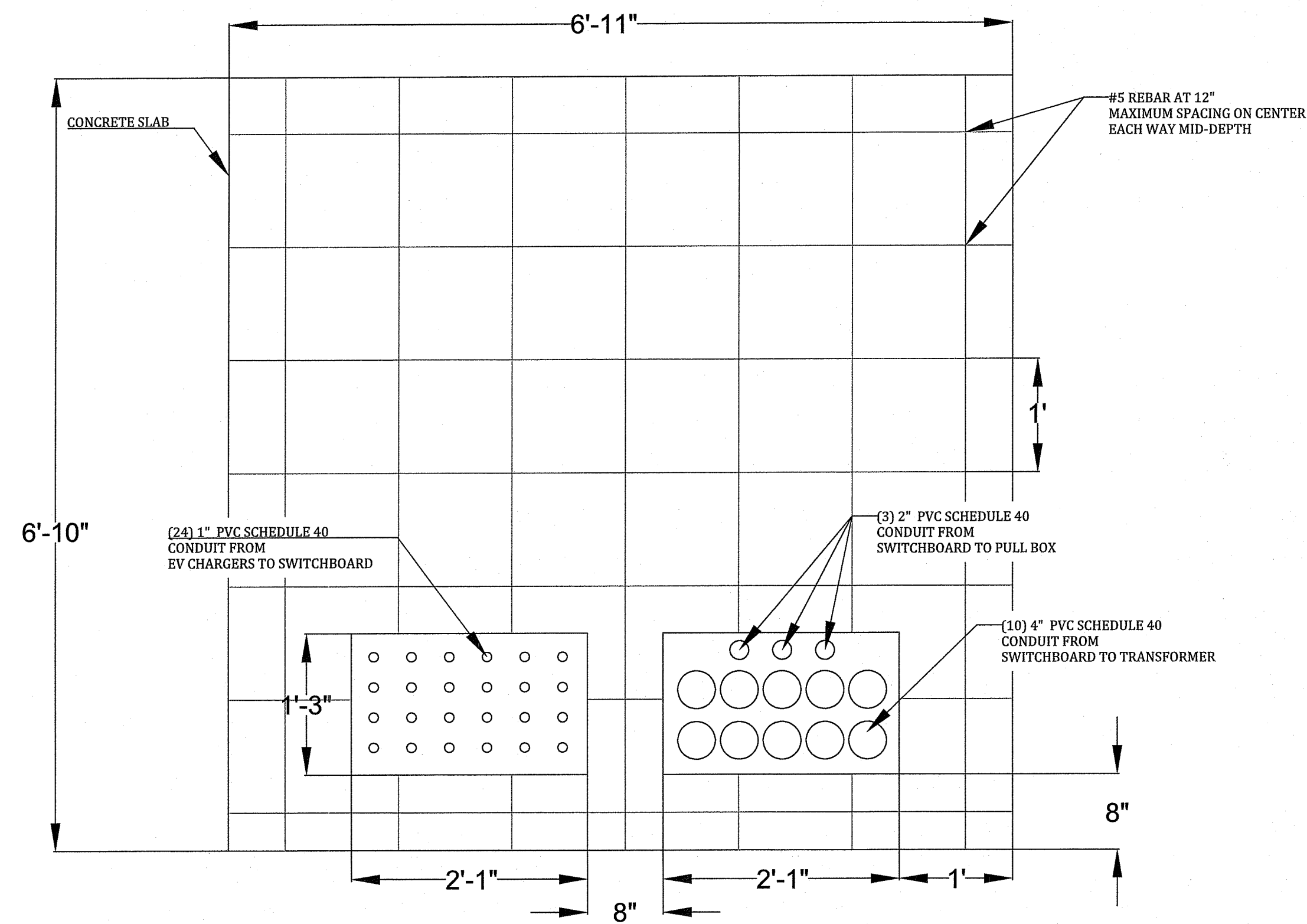
SHEET NAME
SWITCHBOARD
PAD DETAILS

SHEET SIZE

ARCH D
24" X 36"

SHEET NUMBER

EV-10



1
EV-10

SWITCHBOARD PAD - TOP VIEW

SCALE: 1" = 1'-0"

2
EV-10

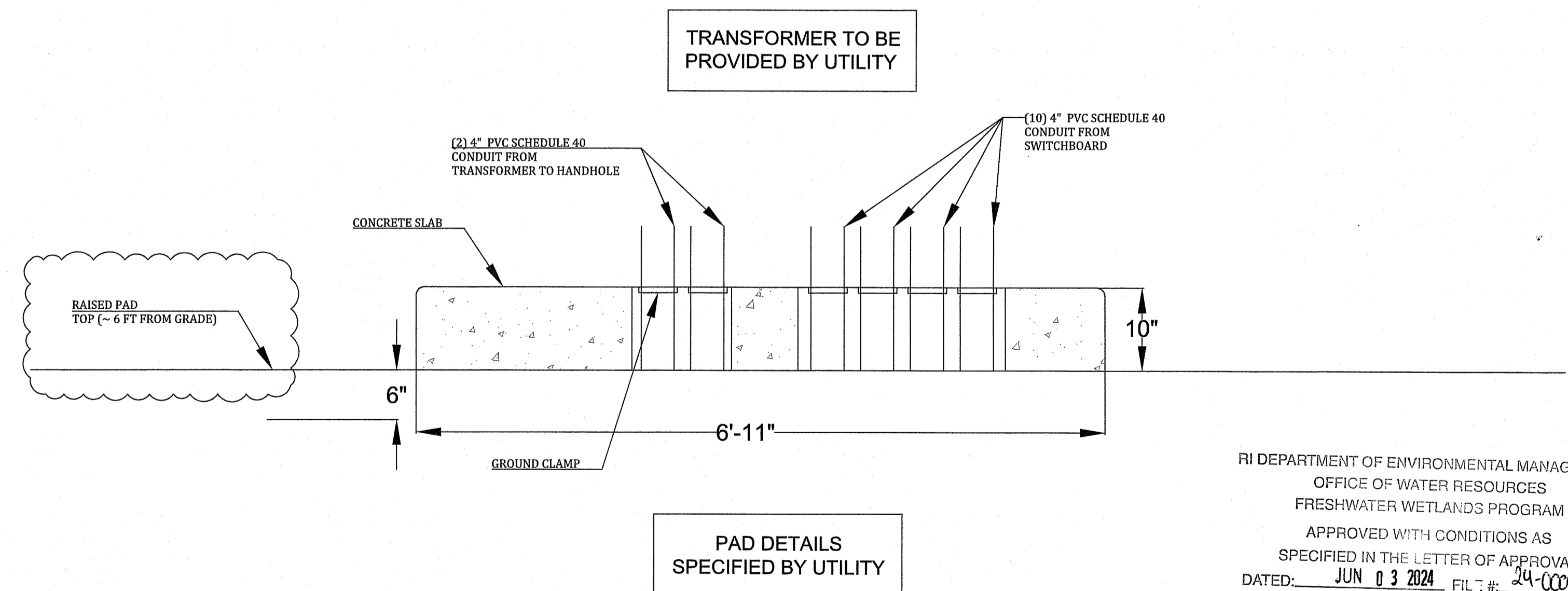
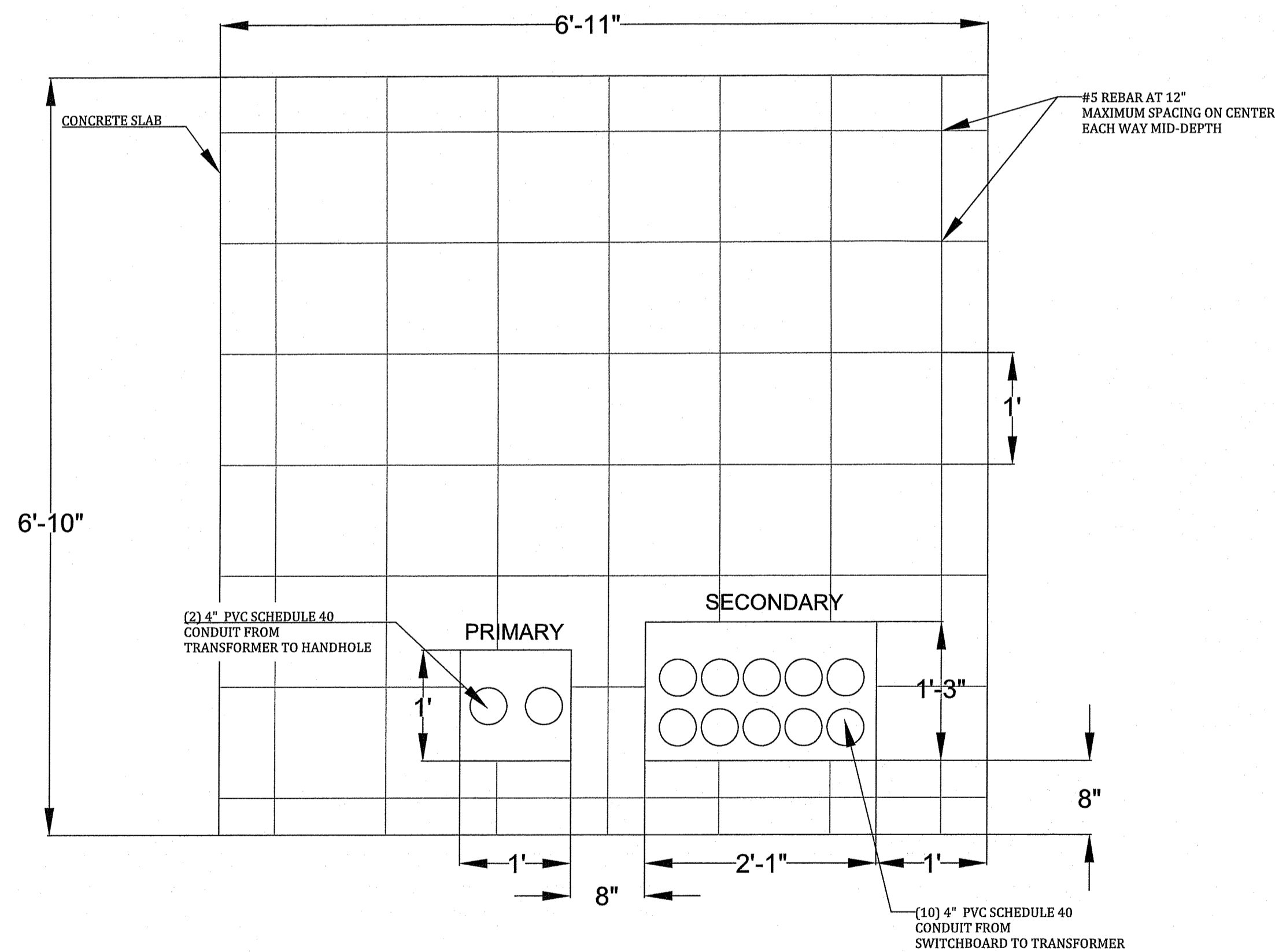
SWITCHBOARD PAD - FRONT VIEW

SCALE: 1" = 1'-0"

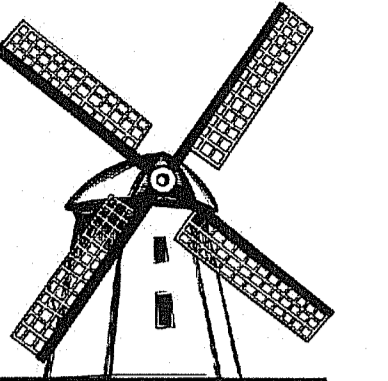
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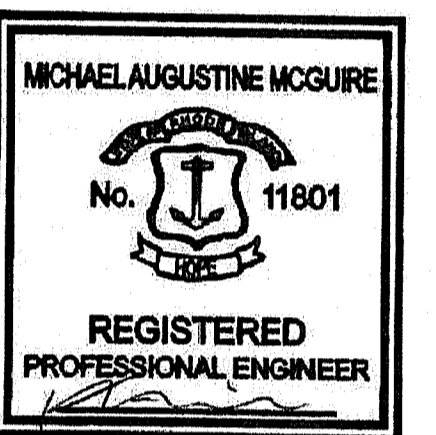
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DESIGNED BY	SR
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APPROVED BY	MM

SHEET NAME
TRANSFORMER
PAD DETAILS

SHEET SIZE

ARCH D
24" X 36"

SHEET NUMBER

EV-11

1
EV-11

TRANSFORMER PAD - TOP VIEW

SCALE: 1" = 1'-0"

2
EV-11

TRANSFORMER PAD - FRONT VIEW

SCALE: 1" = 1'-0"

GENERAL NOTES:

- THE INTENT OF THE STRUCTURAL DRAWINGS IS TO SHOW THE MAIN STRUCTURAL FEATURES AND DESIGN FOR THE COMPLETED PROJECT. OTHER DETAILS AND COMPONENTS THAT MAY BE NECESSARY TO CONSTRUCT THE PROJECT ARE SHOWN INCIDENTALLY ONLY, AND NOT COMPLETELY. THEREFORE ALL CONTRACT DRAWINGS AND SPECIFICATIONS MUST BE USED IN CONJUNCTION WITH THE STRUCTURAL DRAWINGS DURING ALL PHASES OF CONSTRUCTION.
- THE CONTRACTOR SHALL INFORM THE ENGINEER OF ALL DISCREPANCIES BETWEEN DRAWINGS OF DIFFERENT TRADES, PRIOR TO INITIATION OF ANY WORK.
- THE DESIGN IS IN ACCORDANCE WITH THE GOVERNING STATE BUILDING CODE, LATEST EDITION, INCLUDING ALL INTERIM REVISIONS AND STATE ISSUED DIRECTIVES AND AMENDMENTS AS OF THE START OF CONSTRUCTION.
- THE CONTRACTOR SHALL BE COMPLETELY RESPONSIBLE FOR THE SAFETY OF ADJACENT STRUCTURES, PROPERTY, AND THE PUBLIC.
- THE CONTRACTOR SHALL FURNISH AND INSTALL ALL HARDWARE REQUIRED FOR THE PROPER INSTALLATION OF ALL EQUIPMENT IN ACCORDANCE WITH THE MANUFACTURER'S REQUIREMENTS.
- WORK INDICATED ON A PART OF THE DRAWINGS, BUT REASONABLY IMPLIED TO BE SIMILAR TO THAT SHOWN AT CORRESPONDING LOCATIONS, SHALL BE INCLUDED.
- DETAILS SHOWN AS TYPICAL ARE APPLICABLE TO ALL SIMILAR CONDITIONS.
- THIS PROJECT HAS BEEN DESIGNED FOR THE WEIGHTS OF PERMANENT MATERIALS AND LOADS INDICATED IN THE DESIGN DATA. IT SHALL BE THE CONTRACTOR'S RESPONSIBILITY TO DETERMINE PERMISSIBLE CONSTRUCTION LOADS AND TO PROVIDE PROPER DESIGN AND CONSTRUCTION OF FALSEWORK, FORMWORK, STAGING, BRACING, SHEETING SHORING, ETC. AS REQUIRED BY THE LOCAL BUILDING CODE(S).
- THE CONTRACTOR SHALL BE SOLELY RESPONSIBLE FOR THE CORRECTNESS OF DIMENSIONS OR QUANTITIES AND FOR THE FITTING TO OTHER WORK; FOR WORK TO BE CONFIRMED AND CORRELATED AT THE SITE; FOR INFORMATION PERTAINING TO THE FABRICATION PROCEDURE OR TO THE MEANS, METHODS, AND TECHNIQUES, SEQUENCES AND PROCEDURES OF CONSTRUCTION; AND FOR THE COORDINATION OF STRUCTURAL WORK WITH THE WORK OF ALL OTHER TRADES. THE VERIFICATION OF THE PHYSICAL INTERRELATIONSHIPS OF ELEMENTS OF THE WORK FROM THE CONSTRUCTION DOCUMENTS AND IN THE FIELD IS THE CONTRACTOR'S SOLE RESPONSIBILITY. REVIEW OF THE CONTRACTOR'S SUBMISSIONS DOES NOT RELIEVE THE CONTRACTOR FROM THESE RESPONSIBILITIES.
- FOR GROUNDING REQUIREMENTS, MECHANICAL AND ELECTRICAL CONNECTIONS, SEE ELECTRICAL DRAWINGS.
- EXISTING STRUCTURES SHALL BE PROTECTED, SHORED OR SHIELDED, AS REQUIRED TO PROTECT THEM. ANY DAMAGE CAUSED BY THE CONTRACTOR'S ACTIVITIES TO EXISTING STRUCTURES OR PROPOSED WORK TO REMAIN SHALL BE REPAIRED OR REPLACED IN KIND AT THE CONTRACTOR'S EXPENSE.

REINFORCEMENT, LAPS AND EMBEDMENT:

THIS TABLE ASSUMES A CLEAR COVER OF 2 INCHES AND A MINIMUM REINFORCING SPACING OF 6 INCHES.

REINFORCING WHICH DOES NOT COMPLY WITH THE ABOVE SHALL HAVE EMBEDMENT & LAP SPLICES NOTED ON THE DRAWINGS.

BAR SIZE	MINIMUM EMBEDMENT LENGTH (INCHES)		MINIMUM LAP SPlice LENGTH (INCHES)**	
	TOP BARS*	OTHER BARS	TOP BARS*	OTHER BARS
#4	15	12	19	16
#5	18	14	24	18
#6	22	17	29	22

* HORIZONTAL REINFORCEMENT THAT IS PLACED SUCH THAT MORE THAN 12 INCHES OF CONCRETE IS CAST IN THE MEMBER BELOW THE REINFORCEMENT SHALL BE CONSIDERED TOP BARS.

** WHEN BARS OF DIFFERENT SIZES ARE SPLICED THE SPLICE LENGTH SHALL BE THAT REQUIRED FOR THE SMALLER BAR.

CONCRETE NOTES

- CONCRETE WORK SHALL CONFORM TO ACI SPECIFICATION 318-19, BUILDING CODE REQUIREMENTS FOR STRUCTURAL CONCRETE, AND ACI SPECIFICATION 301-16, SPECIFICATIONS FOR STRUCTURAL CONCRETE.
- ALL CONCRETE SHALL BE SAND AND GRAVEL, OR LIGHTWEIGHT AGGREGATE, USING TYPE I OR TYPE II PORTLAND CEMENT, AND SHALL DEVELOP THE FOLLOWING STRENGTH AT 28 DAYS FOR THE LOCATIONS LISTED:

EXPOSED FOOTINGS, SLABS ON GRADE: 4000 PSI, 3/4" AGGREGATE MAX WATER-CEMENT RATIO = 0.45 SLUMP LIMIT = 3" TO 5" AIR CONTENT = 3.5% ± 0.5% FLY ASH = MAX 25% BY WEIGHT	SUBGRADE FOOTINGS 3500 PSI, 1 1/2" AGGREGATE MAX WATER-CEMENT RATIO = 0.50 SLUMP LIMIT = 4" TO 6" AIR CONTENT = 2.5% ± 0.5% FLY ASH = MAX 25% BY WEIGHT
--	--
- ALL EXPOSED CONCRETE CORNERS SHALL HAVE A 3/4" 45° CHAMFER.
- STEEL REINFORCEMENT, FOR BARS, TIES & STIRRUPS SHALL CONFORM WITH ASTM A615, GRADE 60.
- UNLESS NOTED OTHERWISE, CLEAR COVER SHALL BE 2 INCHES FOR ALL SURFACES, EXCEPT CONCRETE CAST AGAINST SOIL, IN WHICH CLEAR COVER SHALL BE 3 INCHES.
- WELDED WIRE FABRIC SHALL CONFORM WITH ASTM A185 MINIMUM LAP SPLICE AND EMBEDMENT LENGTHS FOR REINFORCING BARS SHALL BE IN ACCORDANCE WITH THE FOLLOWING TABLE UNLESS OTHERWISE NOTED ON THE DRAWINGS.
- WIRE FABRIC (WHERE SPECIFIED) SHALL BE PLACED SO AS TO HAVE A MINIMUM COVER OF 2 INCHES FROM THE JOINTS AND FINISHED SURFACES.
- DETAILING, FABRICATION, AND INSTALLATION OF REINFORCING STEEL SHALL CONFORM TO "BUILDING CODE REQUIREMENTS FOR REINFORCED CONCRETE (ACI 318)", "ACI DETAILING MANUAL-1994 (SP-66)", "CRSI MANUAL OF STANDARD PRACTICE (27th EDITION)", AND "STRUCTURAL WELDING CODE - REINFORCING STEEL (AWS D 1.4-98)".
- WELDED WIRE FABRIC SHALL LAP 8 INCHES OR 1 1/2 SPACES, WHICHEVER IS LARGER, AND SHALL BE WIRED TOGETHER.
- CONTROL JOINTS SHALL BE PROVIDED AT 12 FEET ON CENTER WHEN SLABS EXCEED 20 FEET IN AN PLAN DIRECTION.
- SLAB EXPANSION JOINTS SHALL BE PROVIDED FOR LONGER SLABS WHICH EXCEED 40 FEET IN LENGTH OF HAVE LENGTH TO WIDTH RATIOS THAT EXCEED 3.0
- REINFORCEMENT SHALL BE CONTINUOUS THROUGH CONSTRUCTION JOINTS AND DISCONTINUOUS THROUGH EXPANSION JOINTS.

FOUNDATION NOTES

- PRIOR TO EXCAVATION, ALL UTILITIES SHOULD BE LOCATED AND IDENTIFIED. THE CONTRACTOR MUST CONTACT "DIG SAFE" A MINIMUM OF 30 DAYS PRIOR TO EXCAVATION. ALL AFFECTED UTILITY OWNERS SHOULD BE NOTIFIED.
- FOUNDATIONS ARE DESIGNED TO BEAR ON COMPACTED SUBGRADE WITH A MINIMUM OF ALLOWABLE BEARING PRESSURE OF 2.0 KSF
- EXISTING PAVEMENT, CONCRETE, TOPSOIL, VEGETATION, ROOTS, AND ALL DELETERIOUS MATERIALS SHALL BE REMOVED PRIOR TO THE START OF EXCAVATION.
- FOOTINGS SHOULD BE CONSTRUCTED ON COMPACTED, BUT OTHERWISE MINIMALLY UNDISTURBED SUBGRADE SOILS CONSISTING OF NATURAL GRANULAR MATERIALS OR IMPORTED STRUCTURAL FILL.
- FOUNDATIONS AND SLABS ON GRADE SHALL NOT BE PLACED ON LOOSE, DISTURBED, WET, UNSTABLE OR FROZEN SUBGRADE SOILS. UNSUITABLE SUBGRADE CONDITIONS (SUCH AS SLIT, ORGANIC, PEAT, MUCK, ROCK, BOULDERS, OR CLAY) SHALL BE REMOVED AND REPLACED WITH STRUCTURAL FILL.
- A MINIMUM OF 3 INCHES OF COMPACTED CRUSHED STONE DUST SHALL BE PLACED BENEATH ALL SLABS ON GRADE, OR AS SPECIFIED ON THE PLANS AND DETAILS SHOWN.
- EXISTING EXCAVATED GRANULAR SOILS MAY BE SUITABLE FOR BACKFILL PROVIDED THEY ARE SCREENED TO REMOVE ANY DELETERIOUS MATERIALS.
- BACKFILLING AGAINST FOUNDATION WALLS SHALL NOT TAKE PLACE UNTIL THE WALLS ARE ADEQUATELY BRACED AGAINST UNBALANCE SOIL AND CONSTRUCTION LOADS.
- BACKFILL SHALL BE PLACED IN 6 INCH LOOSE LIFTS AND BE COMPACTED TO 95% OF ITS MAXIMUM DRY DENSITY AT OPTIMUM MOISTURE CONTENT AS DETERMINED BY THE MODIFIED PROCTOR DENSITY TEST (ASTM D1557).

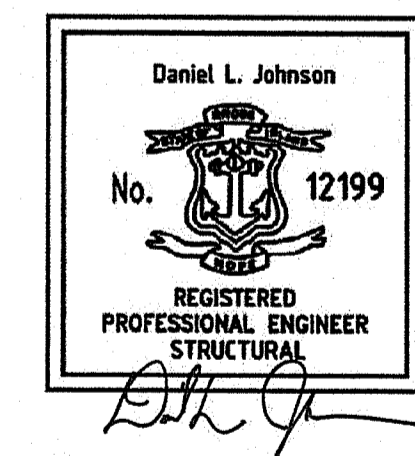
STRUCTURAL STEEL AND ANCHOR BOLTS

- STRUCTURAL STEEL WORK SHALL CONFORM TO "SPECIFICATIONS FOR STRUCTURAL STEEL BUILDINGS (AISC 2016)"; "CODE OF STANDARD PRACTICE FOR STEEL BUILDINGS & BRIDGES (AISC 2016)"; AND "STRUCTURAL WELDING CODE - STEEL (AWS D1.1- 2007)" AND DETAILED IN ACCORDANCE WITH "DETAILING FOR STEEL CONSTRUCTION, 3rd EDITION (AISC)".
- PROPOSED STRUCTURAL STEEL SHALL BE IN ACCORDANCE WITH THE FOLLOWING; WIDE FLANGE SHAPES, PLATE GIRDERS AND BUILT UP SECTIONS SHALL CONFORM TO ASTM A992 OR ASTM A572; GRADE 50; ANGLES, CHANNELS AND PLATES SHALL CONFORM TO ASTM A36; HOLLOW STRUCTURAL SECTIONS (HSS) SHALL CONFORM TO ASTM A500 GRADE B ALL BOLTS, NUTS, AND WASHERS SHALL CONFORM TO ASTM A325. ALL STRUCTURAL STEEL, INCLUDING ALL BOLTS, NUTS, WASHERS AND ACCESSORIES SHALL BE HOT DIPPED GALVANIZED.
- U.N.O., ANCHOR BOLTS AND ACCESSORIES SHALL CONFORM TO ASTM F1554 GRADE 55, AND SHALL BE GALVANIZED. IN LIEU OF CAST-IN-PLACE ANCHORS POST CONCRETE CURING DRILLED MECHANICAL FASTENERS ARE ACCEPTABLE. HILTI KWIK BOLTS, GALVANIZED OR STAINLESS SHALL BE USED. ALL FIELD CONNECTIONS SHALL BE BOLTED.
- ALL SHOP CONNECTIONS SHALL BE WELDED, AND SHALL BE MADE BY APPROVED CERTIFIED WELDERS USING E70XX ELECTRODES.
- FIELD CUTTING OF STRUCTURAL STEEL OR ANY FIELD MODIFICATIONS OF STRUCTURAL STEEL SHALL NOT BE MADE WITHOUT PRIOR WRITTEN APPROVAL OF THE STRUCTURAL ENGINEER AND SHALL BE CASE SPECIFIC.
- THE CONTRACTOR SHALL SUPPLY ALL PLATES, CLIPS, SEAT ANGLES, CONNECTIONS, ETC. AS REQUIRED FOR COMPLETION OF THE STRUCTURE, EVEN IF SUCH ITEMS ARE NOT EXPLICITLY CALLED FOR ON THE CONTRACT DRAWINGS.

DESIGN LOADS

- DESIGN LOADS ARE IN ACCORDANCE WITH ASCE STANDARD 7-16, MINIMUM DESIGN LOADS AND ASSOCIATED CRITERIA FOR BUILDINGS AND OTHER STRUCTURES
- SLABS ARE DESIGNED FOR THE FOLLOW EQUIPMENT:
ONE (1) - TRANSFORMER, MAX. WEIGHT = 11,000 LBS.
ONE (2) - SWITCH GEAR UNIT, MAX WEIGHT = 3500 LBS.
- IN ACCORDANCE WITH THE GOVERNING STATE BUILDING CODE:
LOCATION: CUMBERLAND, RHODE ISLAND
- WIND LOADS
BASIC WIND SPEED = 123 MPH
RISK CAT. II
EXPOSURE CATEGORY = C
WIND IMPORTANCE FACTOR = 0.80
- SEISMIC LOADS
SEISMIC DESIGN CATEGORY = B
SITE CLASSIFICATION = D
RESPONSE ACCELERATION (S_s) = 0.178
RESPONSE ACCELERATION (S₁) = 0.063
- SNOW LOADS
MINIMUM FROST DEPTH = 54 INCHES
P_g = 40 PSF (BASE GROUND SNOW LOAD)
P_{g1} = 30 PSF (MIN. FLAT ROOF SNOW LOAD)
- LIVE LOAD = 60 PSF (WALKWAY OR ELEVATED PLATFORM)
- STAIR LOAD = 100 PSF
- HAND RAILS = SINGLE 200 LBS. CONCENTRATED FORCE APPLIED IN ANY DIRECTION OR 50 PLF APPLIED IN ANY DIRECTION.

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RAISED SLAB DETAILS
SCALE: AS NOTED

Daniel L. Johnson, P.E.
Structural Engineering,
166 Independence Avenue, Hanson MA 02341

THE NARRAGANSETT ELECTRIC COMPANY
95 JOHN DEAN BOULEVARD,
CUMBERLAND, RI

REVISIONS	
MM/DD/YY	REMARKS
1 04/05/2024	ISSUE FOR CONSTRUCTION
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3	
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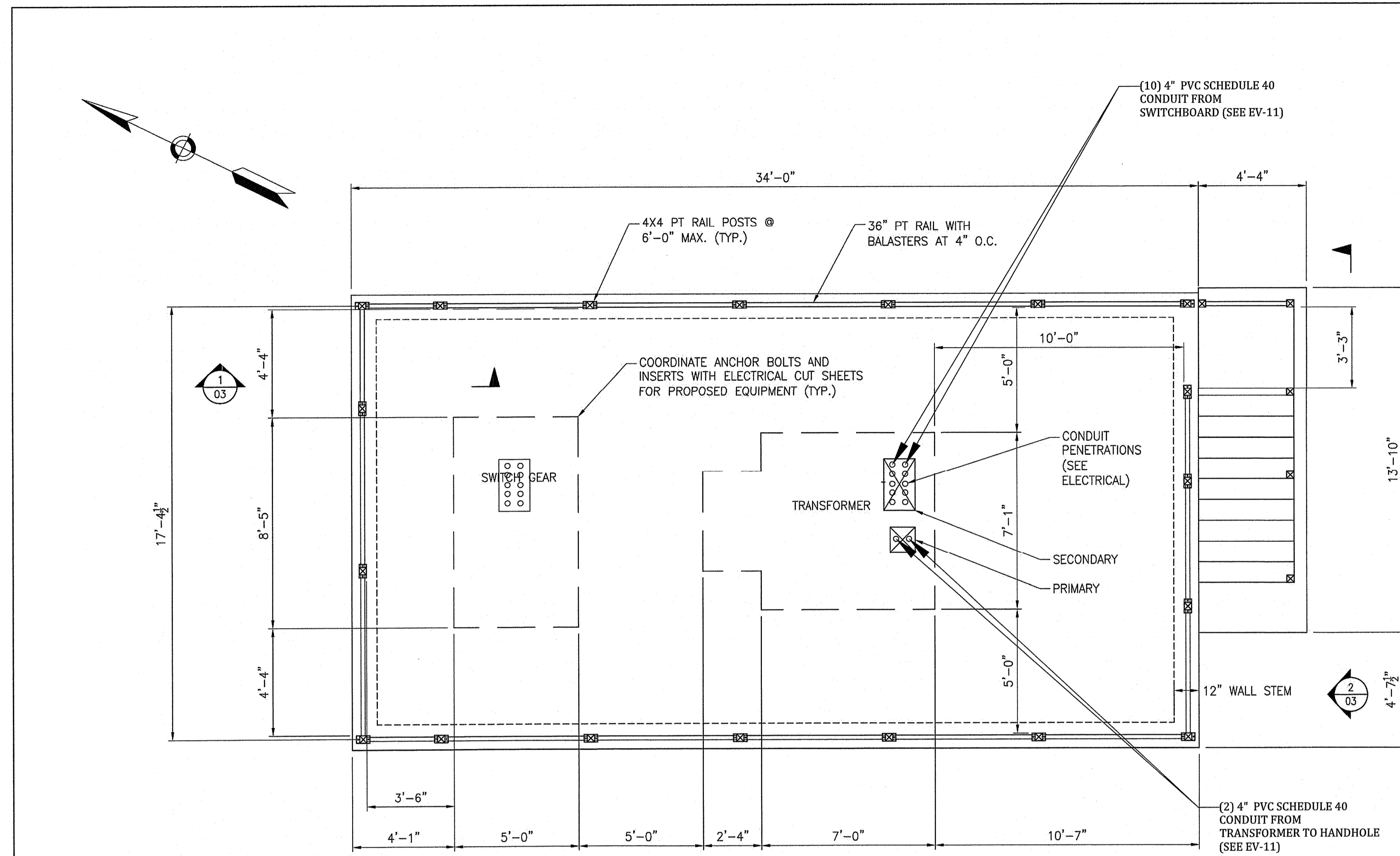
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DETAILS-1

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SHEET NUMBER
EV-12

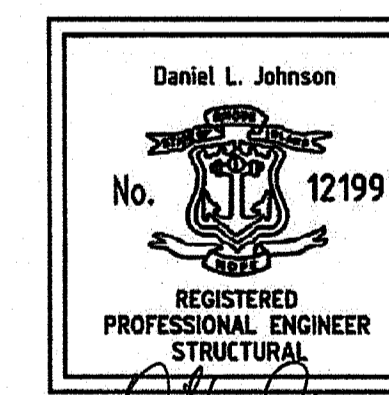


RAISED SLAB PLAN
SCALE: 3/8"=1'-0"

SEE EV-11 FOR CONDUIT ELEVATION DETAILS.

SEE SHEET S-01 FOR GENERAL NOTES

RI DEPARTMENT OF ENVIRONMENTAL MANAGEMENT
OFFICE OF WATER RESOURCES
FRESHWATER WETLANDS PROGRAM
APPROVED WITH CONDITIONS AS
SPECIFIED IN THE LETTER OF APPROVAL
DATED: JUN 03 2024 FILE #: 24-0009
NO CHANGES ALLOWED WITHOUT PRIOR APPROVAL
APPROVED PLANS MUST BE AT CONSTRUCTION SITE



[Signature]

Daniel L. Johnson, P.E.
Structural Engineering,
166 Independence Avenue, Hanson MA 02341

THE NARRAGANSETT ELECTRIC COMPANY
95 JOHN DEAN BOULEVARD,
CUMBERLAND, RI

REVISIONS	
MM/DD/YY	REMARKS
1 04/05/2024	ISSUE FOR CONSTRUCTION
2 / /	
3 / /	
4 / /	
5 / /	

02
5

REVISIONS		
DESCRIPTION	DATE	REV
IFC SET	12/07/2023	0
IFC SET	01/09/2024	1
IFC SET	03/19/2024	2
IFC SET	04/09/2024	3

SIGNATURE WITH SEAL

SEALED ON 04/09/2024
RI COA # 8402
H2DC PLLC
MIKE@H2DC.COM
ELECTRICAL ONLY

CLIENT INFORMATION

HIGHLAND ELECTRIC FLEETS
200 CUMMINGS CTR,
STE 273D
BEVERLY, MA 01915

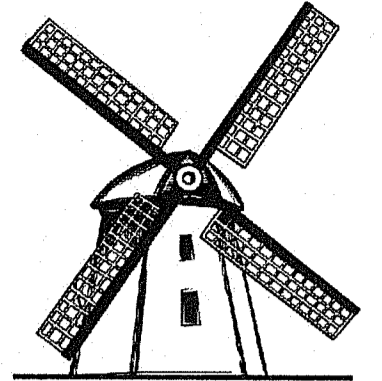
PROJECT INFORMATION
720.0 KW DC
STAND ALONE
EV CHARGING STATION
AT
1 JOHN C DEAN MEMORIAL BLVD
CUMBERLAND RI 02864

DESIGNED BY	SR
CHECKED BY	MM
APPROVED BY	MM

SHEET NAME
RAISED PAD
DETAILS-2

SHEET SIZE
ARCH D
24" X 36"

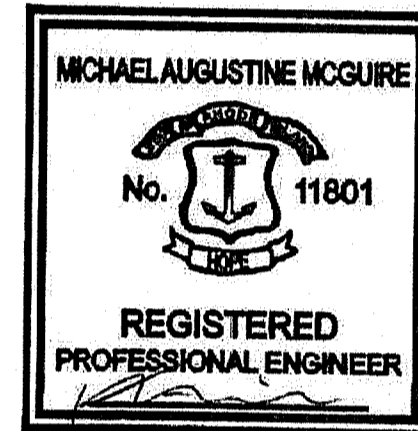
SHEET NUMBER
EV-13



H2DC PLLC
Professional Electrical Engineering
HURRICANE HILL DEVELOPMENT
COMPANY PLLC
1042 HURRICANE HILL ROAD
MASON, NH 03048-1726
PHONE: 603-887-1726 (OFFICE)
WEB: WWW.H2DC.COM

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PROJECT INFORMATION

720.0 KW DC
STAND ALONE
EV CHARGING STATION
AT
1 JOHN C DEAN
MEMORIAL BLVD
CUMBERLAND RI 02864

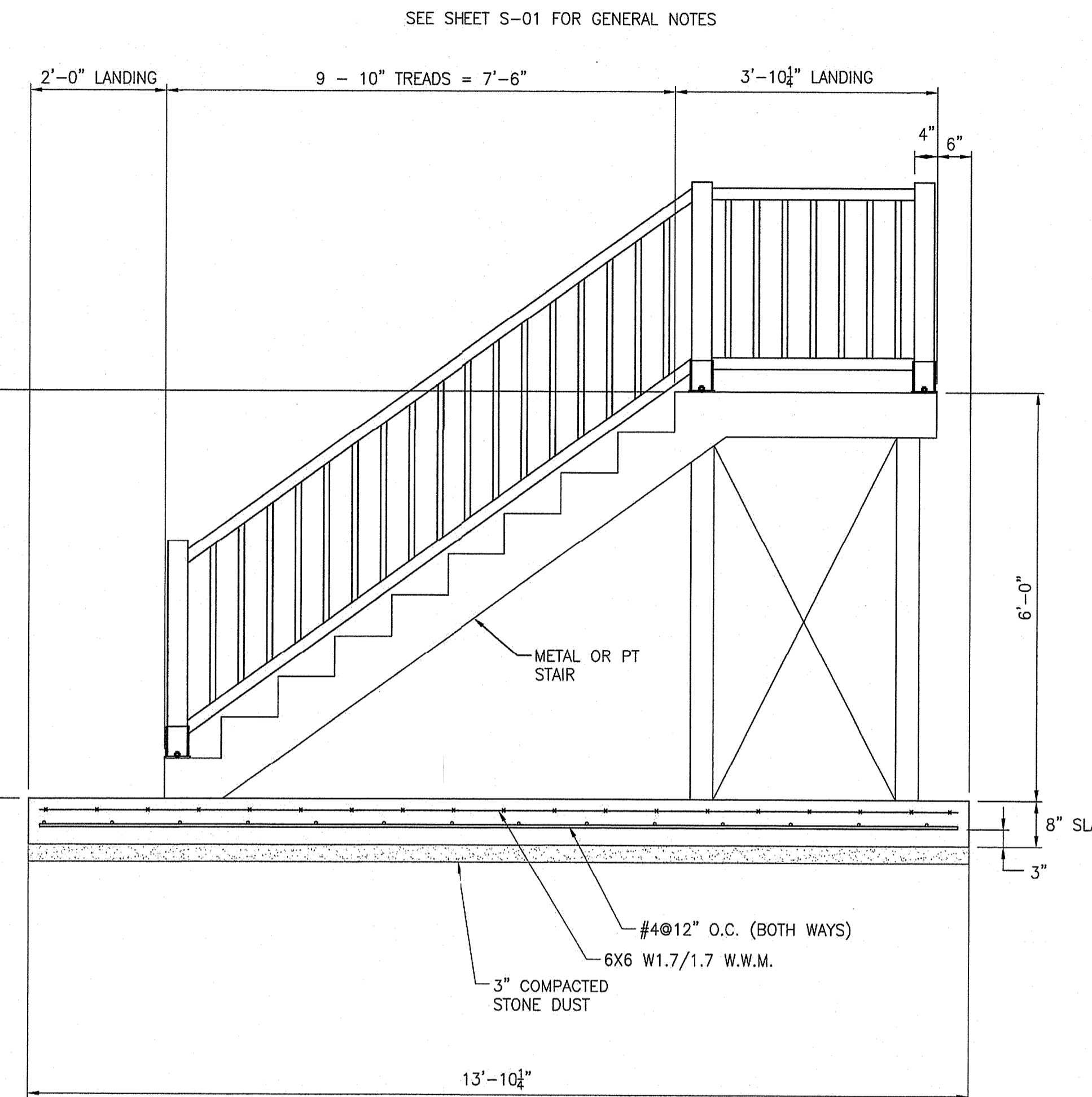
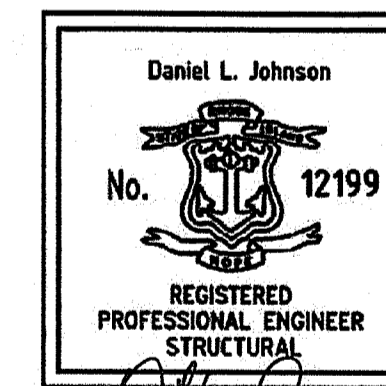
DESIGNED BY	SR
CHECKED BY	MM
APPROVED BY	MM

SHEET NAME
RAISED PAD
DETAILS-3

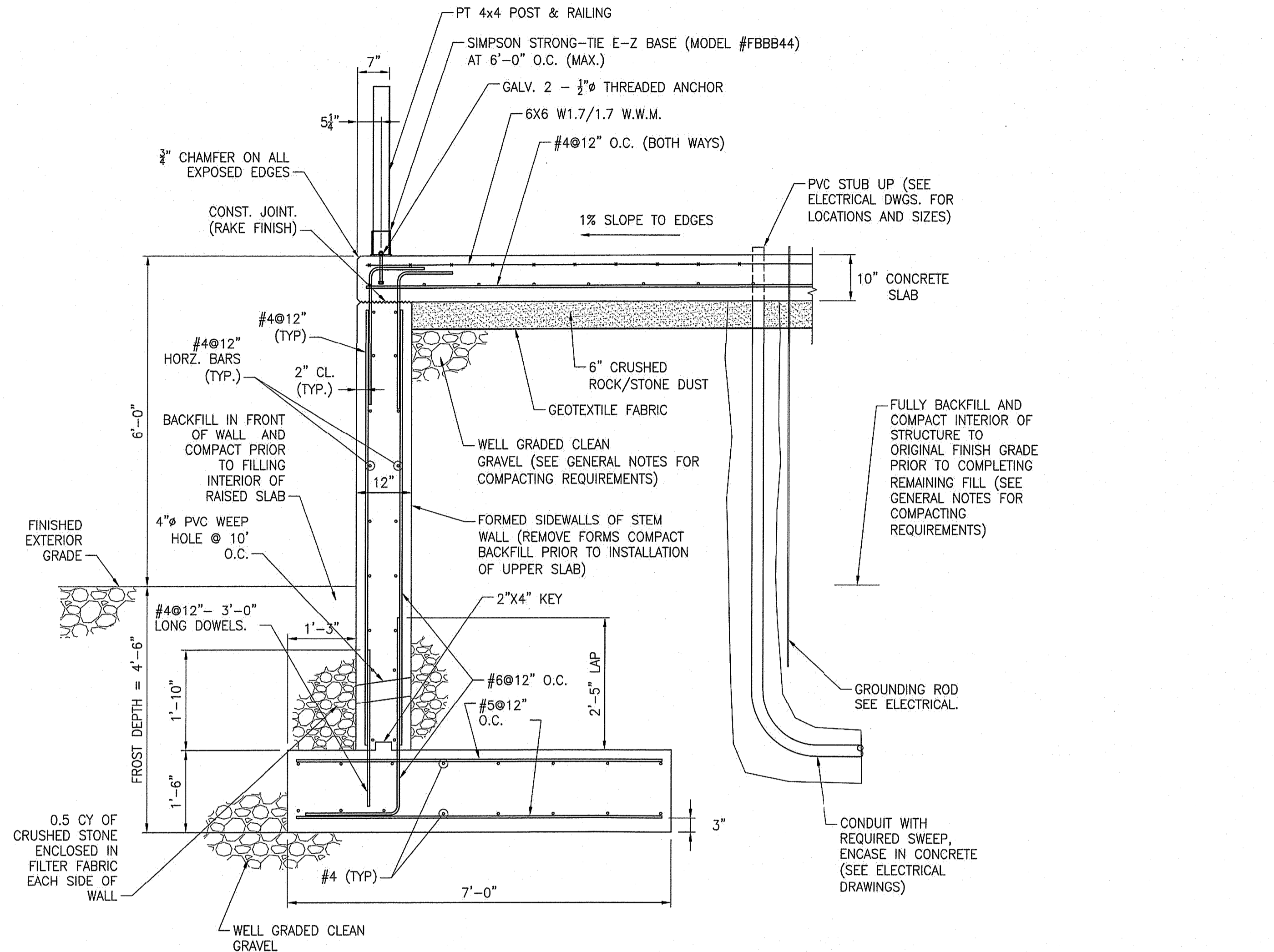
SHEET SIZE
ARCH D
24" X 36"

SHEET NUMBER
EV-14

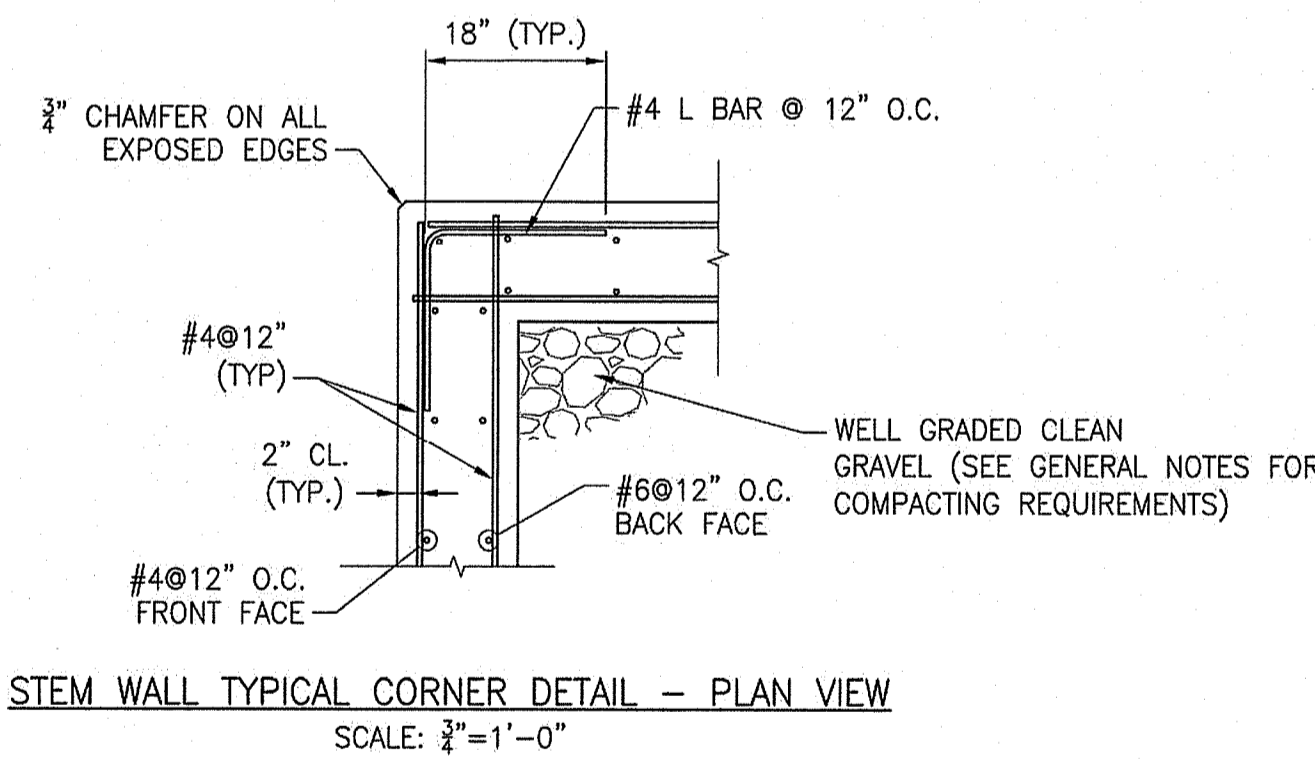
RI DEPARTMENT OF ENVIRONMENTAL MANAGEMENT
OFFICE OF WATER RESOURCES
FRESHWATER WETLANDS PROGRAM
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DATED: JUN 03 2024 FIL # 24-0609
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SECTION 2 - STAIR ELEVATION
SCALE: 3/8"=1'-0"



SECTION 1 - SLAB WITH PERIMETER WALL
SCALE: 3/8"=1'-0"



STEM WALL TYPICAL CORNER DETAIL - PLAN VIEW
SCALE: 3/8"=1'-0"

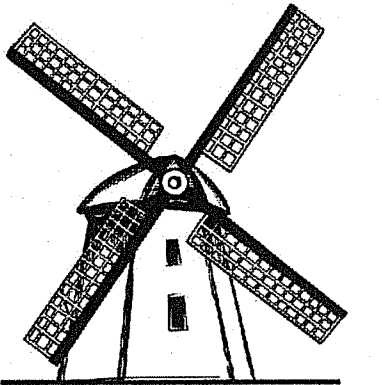
Daniel L. Johnson, P.E.
Structural Engineering,
166 Independence Avenue, Hanson MA 02341

THE NARRAGANSETT ELECTRIC COMPANY
95 JOHN DEAN BOULEVARD,
CUMBERLAND, RI

MM/DD/YY	REVISIONS	REMARKS
04/05/2024	1	ISSUE FOR CONSTRUCTION
	2	
	3	
	4	
	5	

03
S

PROVIDED BY OTHERS



H2DC PLLC
Professional Electrical Engineering

HURRICANE HILL DEVELOPMENT
COMPANY PLLC
1042 HURRICANE HILL ROAD
MASON, NH 03048-1726
PHONE: 603-887-1726 (OFFICE)
WEB: WWW.H2DC.COM

REVISIONS

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RI COA # 8402
H2DC PLLC
MIKE@H2DC.COM
ELECTRICAL ONLY

CLIENT INFORMATION



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200 CUMMINGS CTR,
STE 273D
BEVERLY, MA 01915

PROJECT INFORMATION

720.0 KW DC

STAND ALONE
EV CHARGING STATION

AT
1 JOHN C DEAN
MEMORIAL BLVD,
CUMBERLAND RI 02864

DESIGNED BY	SR
CHECKED BY	MM
APPROVED BY	MM

SHEET NAME

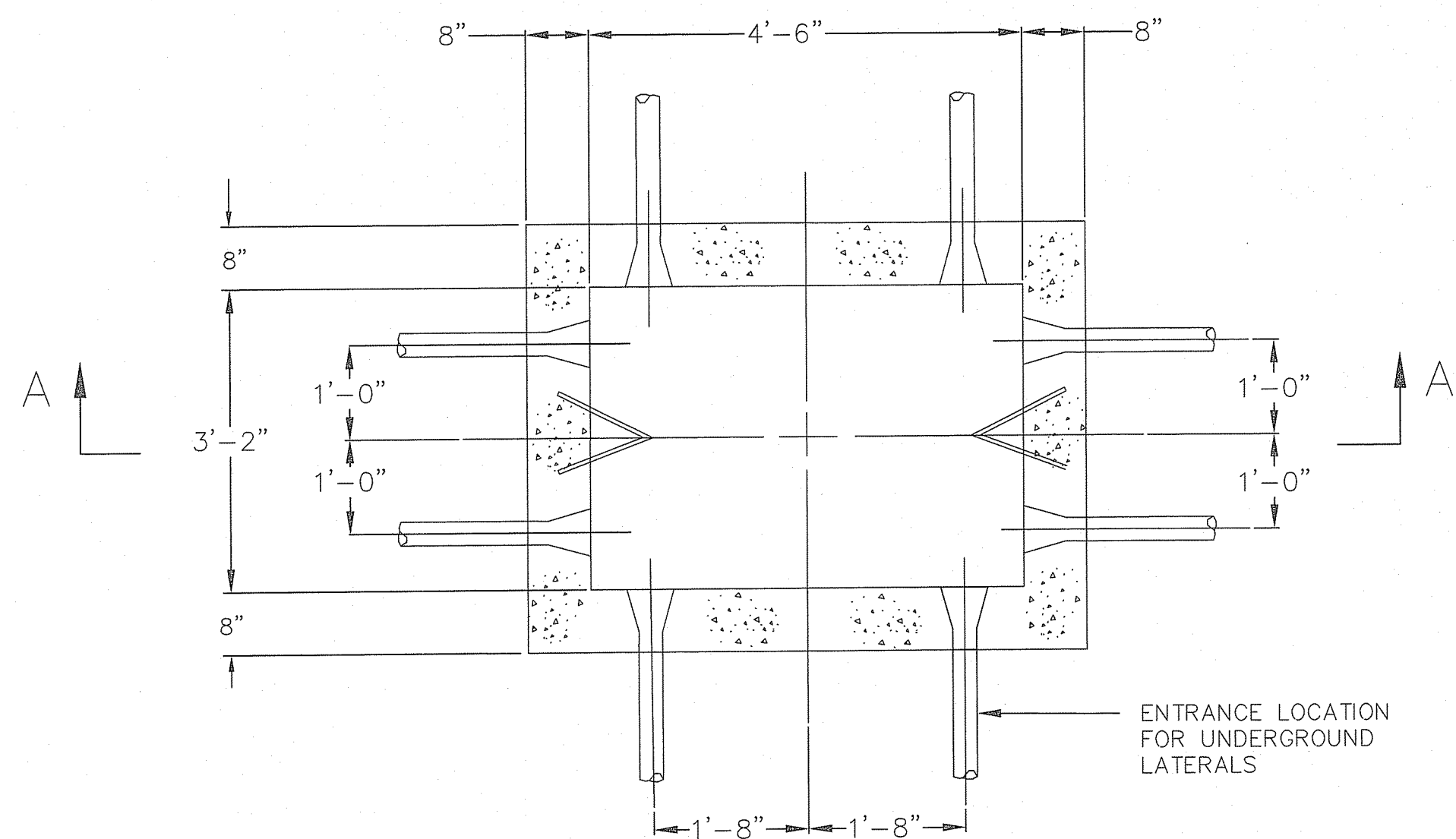
HAND HOLE AND
POLE DETAILS

SHEET SIZE

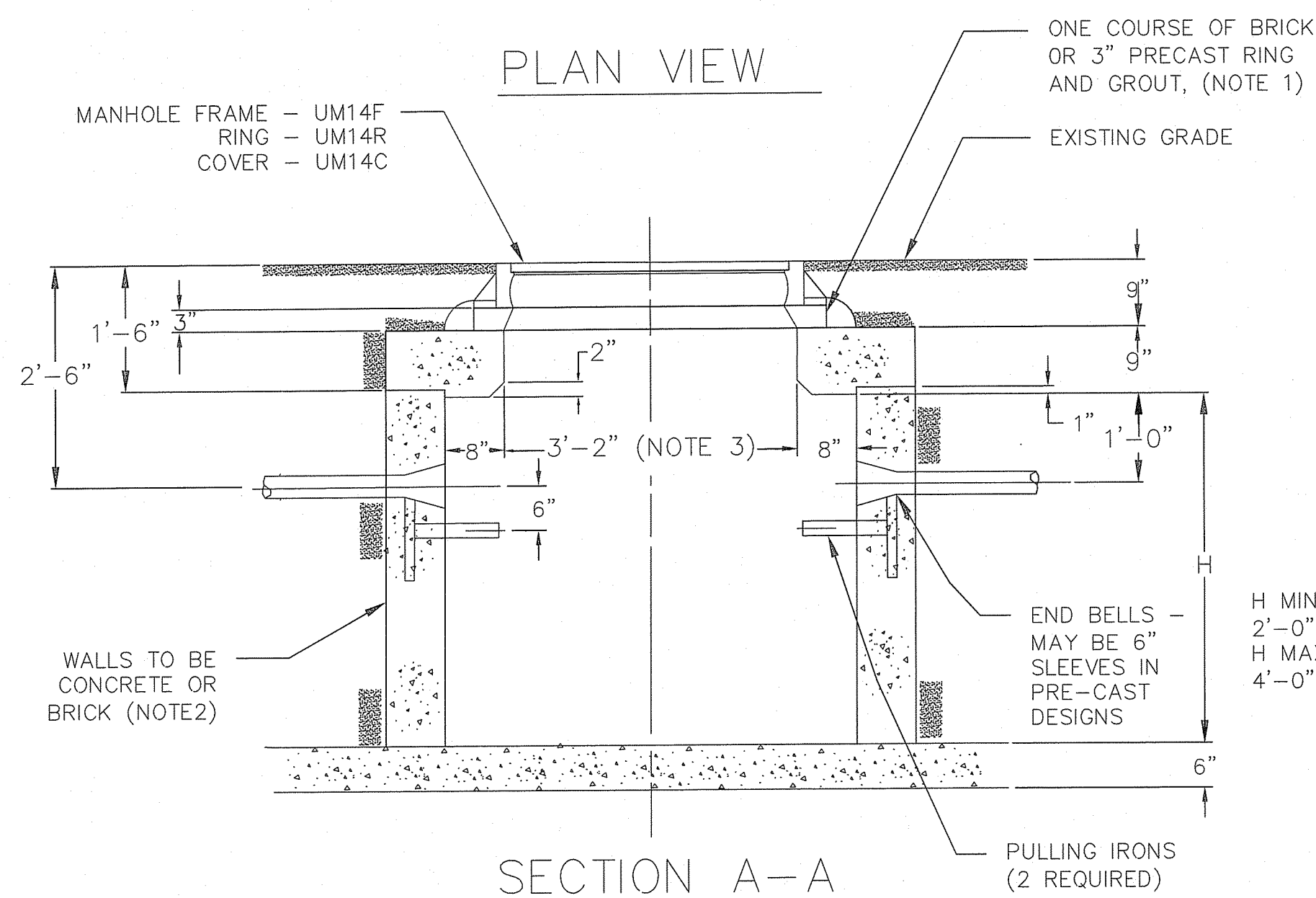
ARCH D
24" X 36"

SHEET NUMBER

EV-15

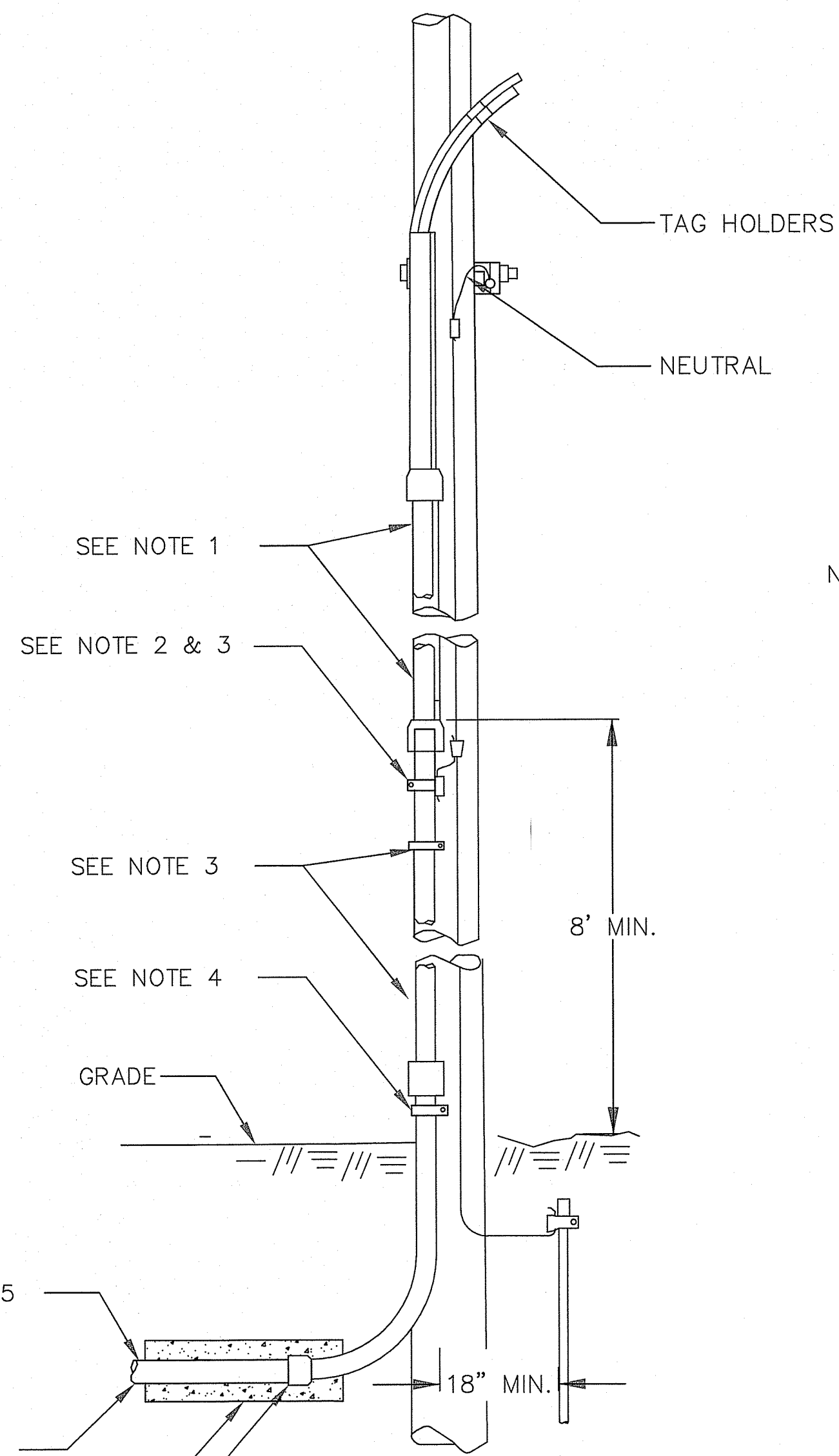


PLAN VIEW



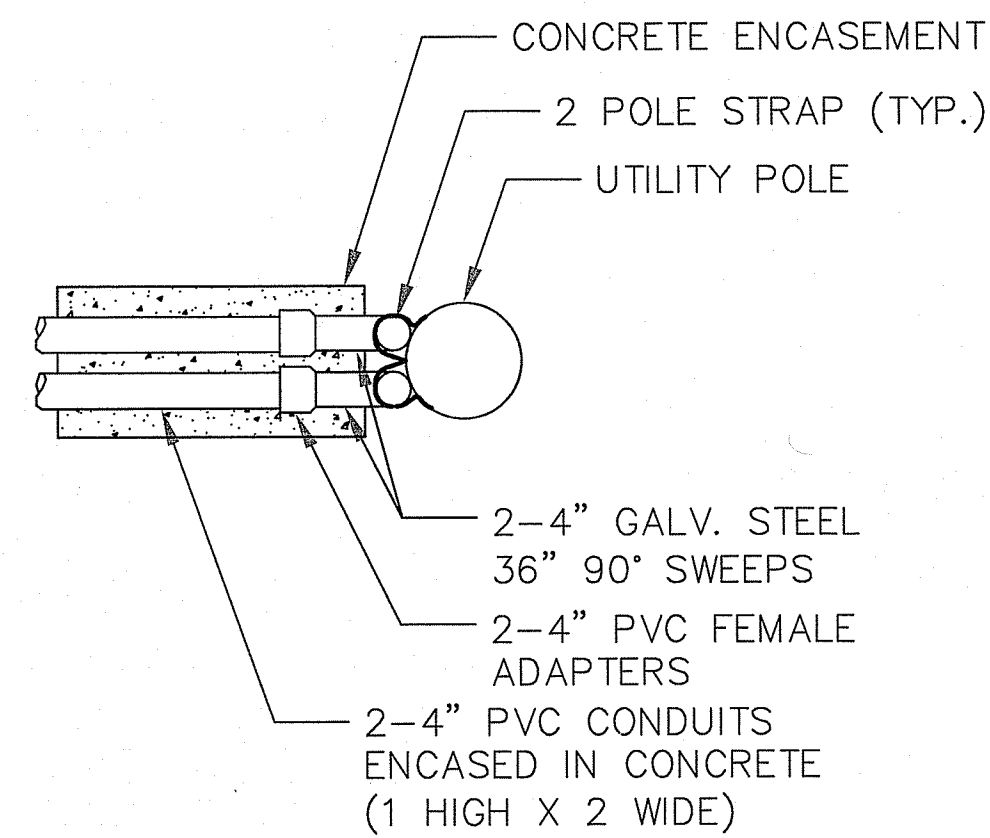
SECTION A-A

- NOTES:
1. CHIMNEY HEIGHT IS KEPT TO A MINIMUM TO FACILITATE PLACING COMPLETED SPLICES IN HANDHOLE FROM ABOVE GRADE.
 2. CONCRETE MINIMUM STRENGTH
 3. ROOF OPENING 3'-2" INCHES X 3'-2"



SECTION VIEW

2-4" PVC CONDUITS ENCASED IN CONCRETE (1 X 2 WIDE)
CONCRETE ENCASEMENT
4" PVC FEMALE ADAPTER (TYP.2)



NOTES:

1. U-GUARD
2. GALVANIZED STEEL CONDUIT AND BEND ARE TO BE USED, THEY SHALL BE GROUNDED BY BONDING TO AN APPROVED U-BOLT TYPE GROUND CLAMP 6" (150MM) FROM TOP OF THE CONDUIT. A 24" (600MM) CONDUCTOR SHALL BE PROVIDED TO EXTEND TO THE COMPANY'S GROUNDING CONDUCTOR. THE CONDUCTOR SHALL BE SIZED AS REQUIRED BY NATIONAL ELECTRICAL CODE, ARTICLE 250, BUT IN NO CASE SHALL IT BE SMALLER THAN #4 AWG COPPER. RECOMMEND USE OF CORROSION RESISTANT BEND IN LOCATIONS SUBJECT TO HIGHWAY SALTING.
3. GALVANIZED STEEL CONDUIT, GALVANIZED STEEL SWEEP, ATTACHMENT CLAMPS, GROUNDING CLAMP AND 24" GROUNDING CONDUCTOR SHALL BE FURNISHED AND INSTALLED BY CUSTOMER. NORMALLY THE CONDUIT SHALL RISE ON THE SIDE OF POLE AWAY FROM TRAFFIC UP TO 8FT. (2.5M) TO 11FT. (3.4M). CONSULT COMPANY FOR PROPER LOCATION ON POLE.
4. PIPE STRAPS, INSTALL AT NOT MORE THAN 30" (750MM) INTERVALS.
5. THE CONDUIT BURIAL DEPTH SHALL BE 30" (750MM) MINIMUM.

RI DEPARTMENT OF ENVIRONMENTAL MANAGEMENT
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Andy Clapton

1
EV-15

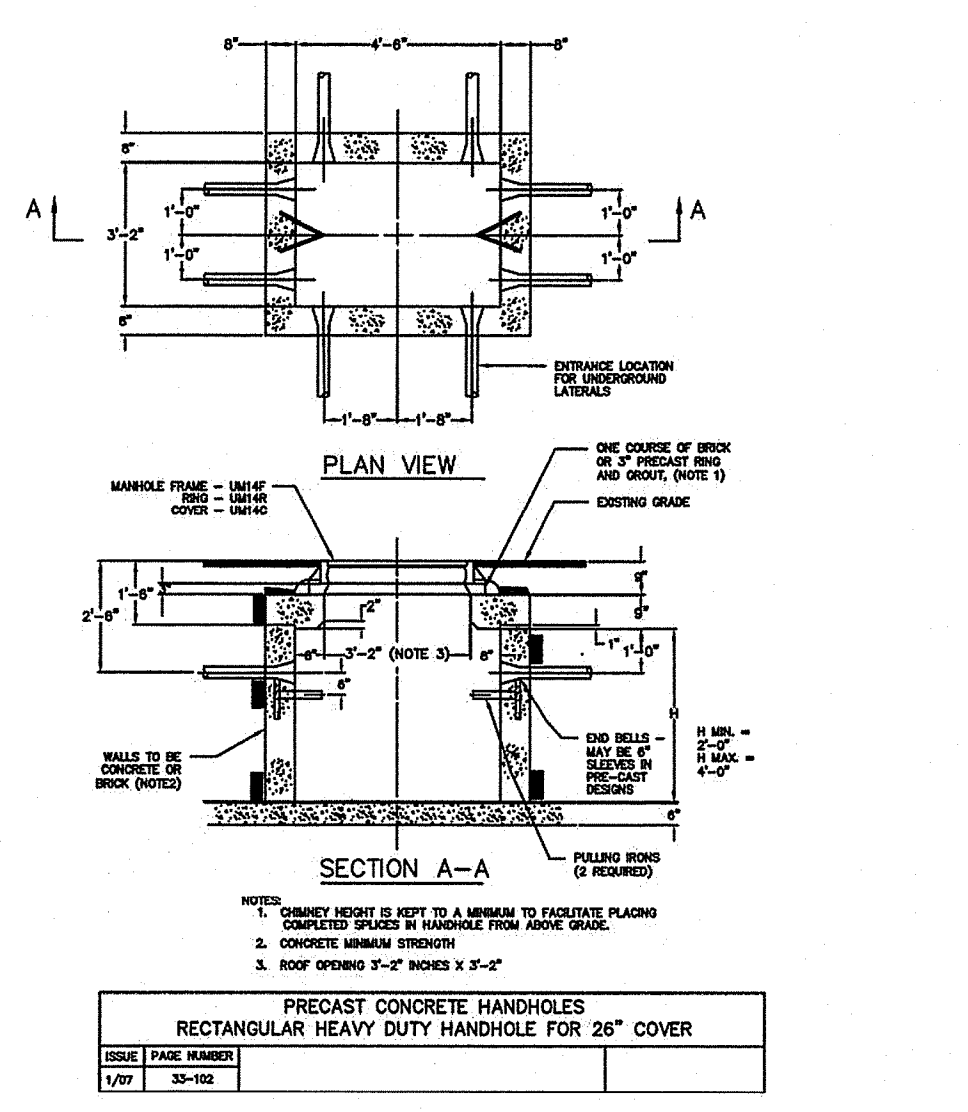
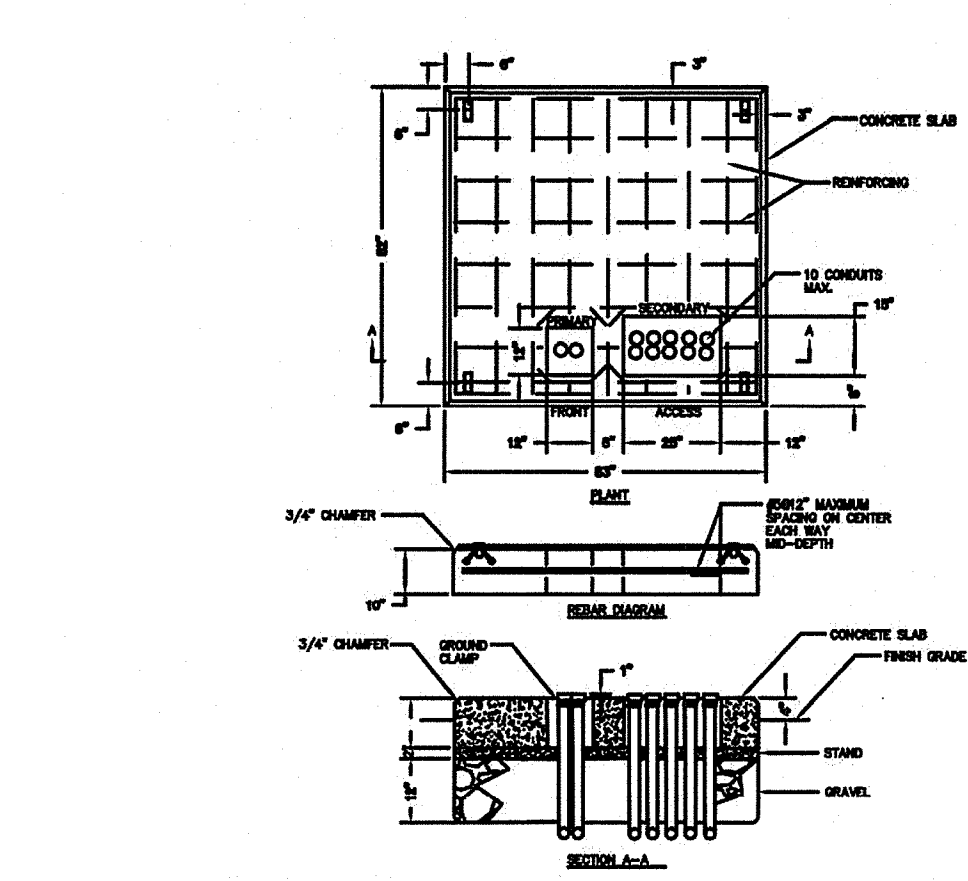
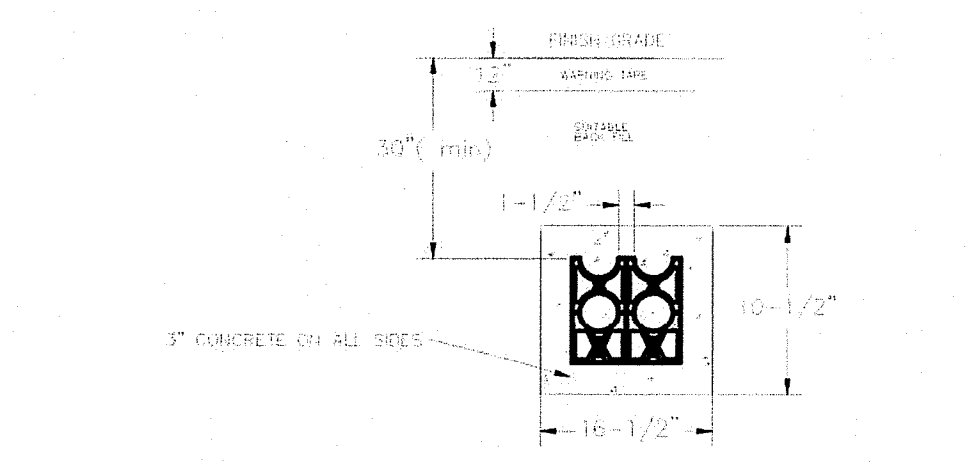
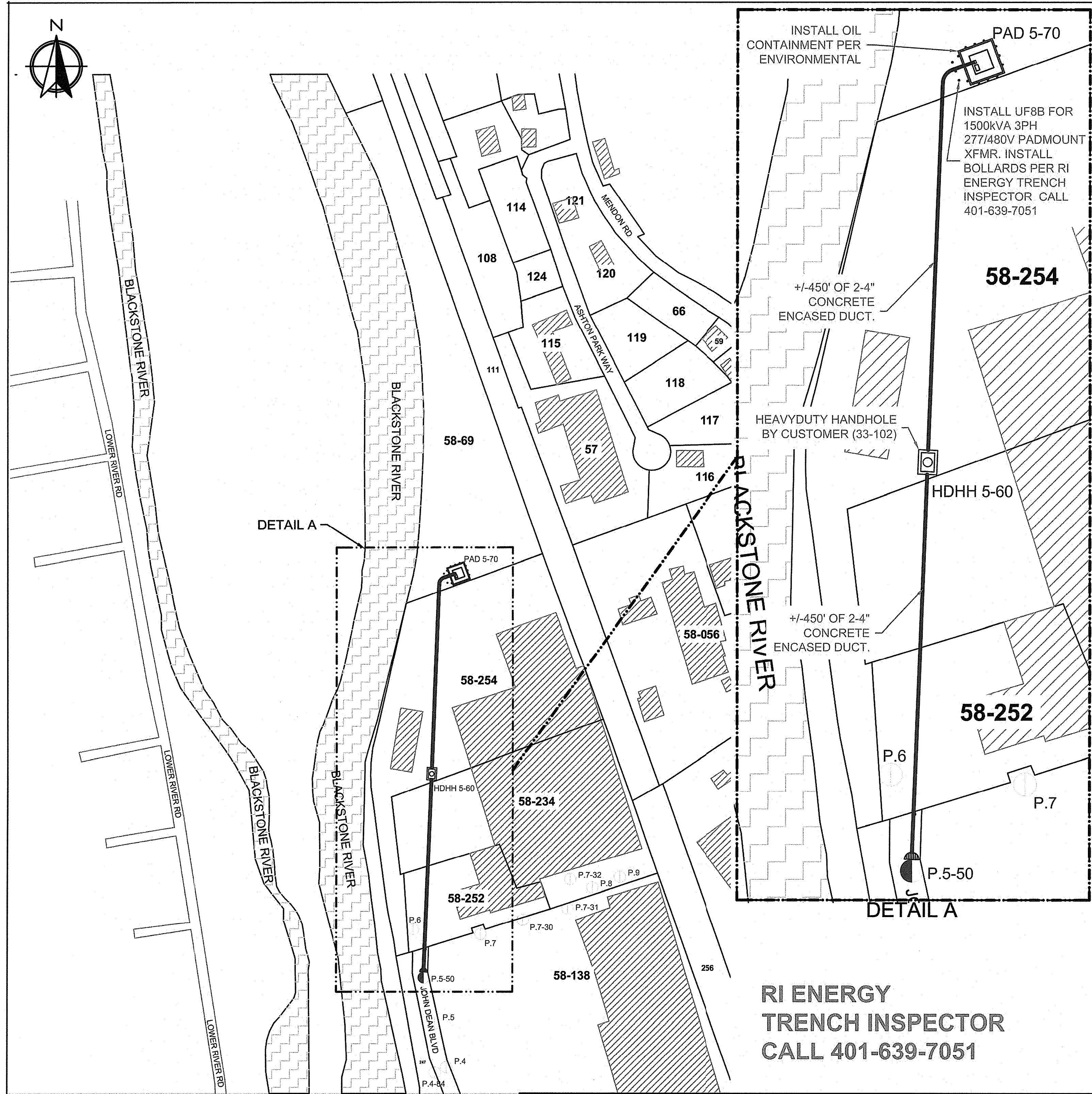
**HAND HOLE DETAILS
PROVIDED BY OTHERS**

SCALE: AS NOTED

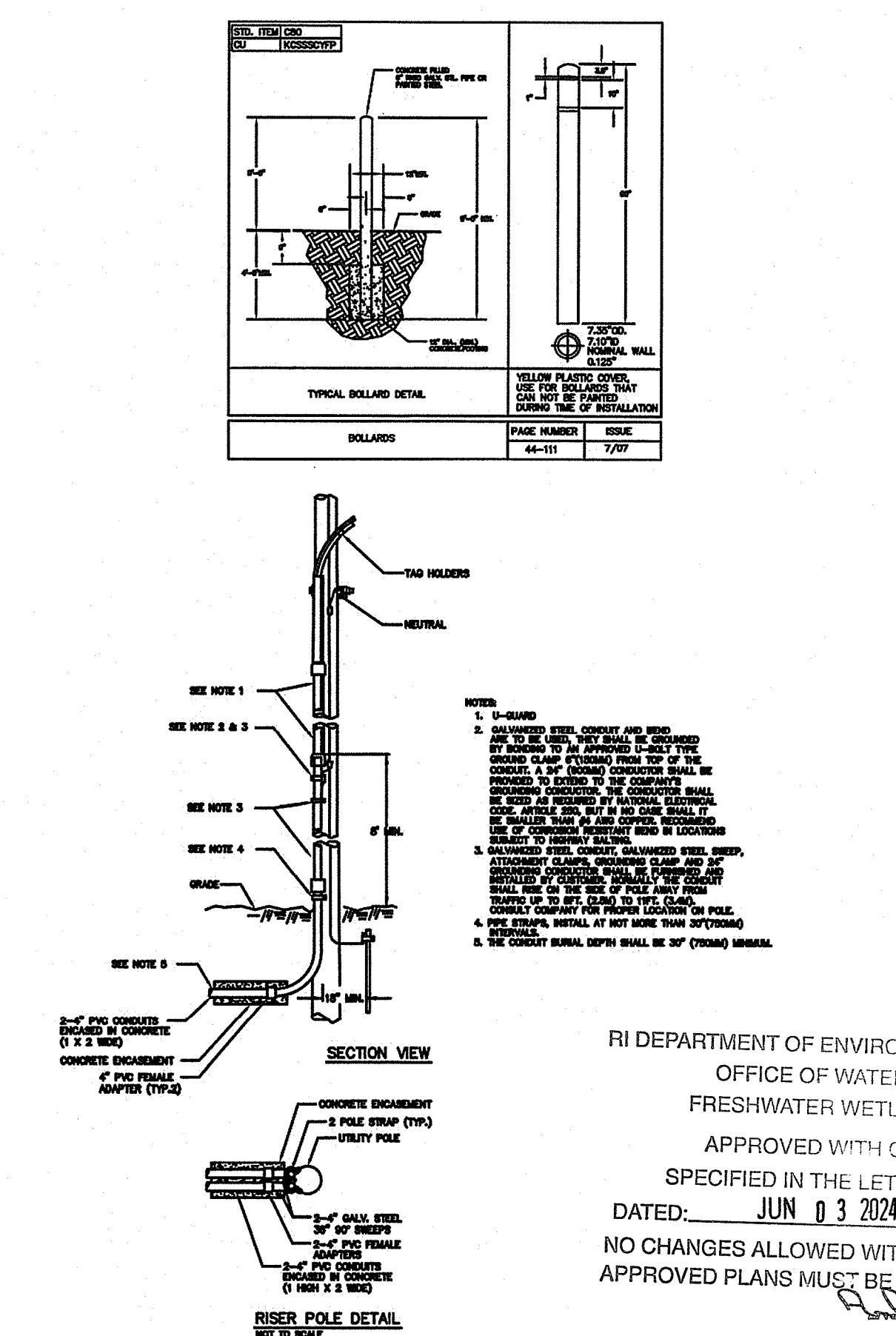
2
EV-15

**POLE DETAILS
PROVIDED BY OTHERS**

SCALE: AS NOTED



WR# 30729573
 95 JOHN-DEAN BLVD. CUMBERLAND, RI
 FEEDER | VOLTAGE | PHASE : 126W51 | 13.8KV | ABC
 ABRA SENG
 CELL#: 401-895-1714
 EMAIL: ASENSG@RIENERGY.COM
 SCOPE OF WORK:
 CUSTOMER:
 -TO INSTALL GALVANIZED STEEL RISER UP NEW P.5-50 (RR-2).
 -TO INSTALL TRANSFORMER FOUNDATION (UFBB) FOR 1500KVA 3PH 277/480V PADMOUNT XFMR.
 -TO INSTALL BOLLARDS PER RI ENERGY TRENCH INSPECTOR.
 -TO INSTALL OIL CONTAINMENT PER ENVIRONMENTAL.
 -TO INSTALL HEAVY-DUTY HANDHOLE 5-60 (33-102).
 -INSTALL +/-450' OF 2-4" CONCRETE ENCASED CONDUIT FROM HDHH 5-60 TO RISER P.5-50
 -INSTALL +/-450' OF 2-4" CONCRETE ENCASED CONDUIT FROM HDHH 5-60 TO TRANSFORMER PAD 5-70
 RI ENERGY LINE:
 -SET NEW SO 45' C2 RISER POLE 5-50 (STD.# 18-126)
 -INSTALL 3-100K FUSED CUTOUPS ON P.5-50
 -PER DPAM, NO MODIFICATIONS TO UPSTREAM FUSES WILL BE MADE.
 -INSTALL 1500KVA 3PH 277/480V PAD MOUNT XFMR.
 -PULL +/- 950' 3-#2 AL (UC11BJ) FROM PAD 5-70 UP RISER P.5-50
 -USE HDHH TO COLD SHRINK SPLICE #2 AL IF REQUIRED.
 -CONNECT CUSTOMER SECONDARY SERVICE AT XFMR PAD
 -ALL METERING WORK TO BE DONE BY METERING DEPARTMENT



PLEASE REFER TO WEBSITES FOR CONSTRUCTION SPECIFICATIONS, LIST OF PARTS AND APPROVED SUPPLIERS:
 ELECTRIC SYSTEM BULLETIN NO. 750: https://www.rienergy.com/media/ri-energy/pdfs/pronet/constr_esb750.pdf
 ELECTRICAL SPECIFICATION ERRATA & REVISIONS: https://www.rienergy.com/media/ri-energy/pdfs/pronet/constr_errata.pdf
 URD INSTALLATION & RESPONSIBILITY GUIDE: https://www.rienergy.com/media/ri-energy/pdfs/pronet/shared_constr_esb759a.pdf
 UCD INSTALLATION & RESPONSIBILITY GUIDE: https://www.rienergy.com/media/ri-energy/pdfs/pronet/shared_constr_esb759b.pdf

REV. #	DATE	DESCRIPTION	DONE BY:
01	08/19/2023	INITIAL RELEASE	A. SENG
02	09/07/2023	REMOVED FUTURE EXPANSION. (CHANGED 4-4" TO 2-4")	A. SENG

SYMBOL	DESCRIPTION
—	CUSTOMER INSTALLED CONDUIT
●	INSTALL NEW RISER
○	EXISTING POLE
○	PROPOSED POLE
●	INSTALL BOLLARDS PER RI TRENCH INSPECTOR
□	INSTALL NEW UFBB PAD W/ OIL CONTAINMENT

PROPOSED CIVIL SKETCH
 Date: 08/21/2023
 Designer: A. SENG
 95 JOHN-DEAN BLVD CUMBERLAND, RI W/R: 30729573
 NOT TO SCALE
The Narragansett Electric Company
 SHEET 1 OF 1

H2DC PLLC
 Professional Electrical Engineering
 HURRICANE HILL DEVELOPMENT COMPANY PLLC
 1042 HURRICANE HILL ROAD
 MASON, NH 03048-1726
 PHONE: 603-887-1726 (OFFICE)
 WEB: WWW.H2DC.COM

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SIGNATURE WITH SEAL

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 RI COA # 8402
 H2DC PLLC
 MIKE@H2DC.COM
 ELECTRICAL ONLY

CLIENT INFORMATION

HIGHLAND ELECTRIC FLEETS
 200 CUMMINGS CTR,
 STE 273D
 BEVERLY, MA 01915

PROJECT INFORMATION
 720.0 KW DC
 STAND ALONE EV CHARGING STATION
 AT
 1 JOHN C DEAN MEMORIAL BLVD,
 CUMBERLAND RI 02864

DESIGNED BY	SR
CHECKED BY	MM
APPROVED BY	MM

SHEET NAME
 CIVIL SKETCH

SHEET SIZE

ARCH D
 24" X 36"

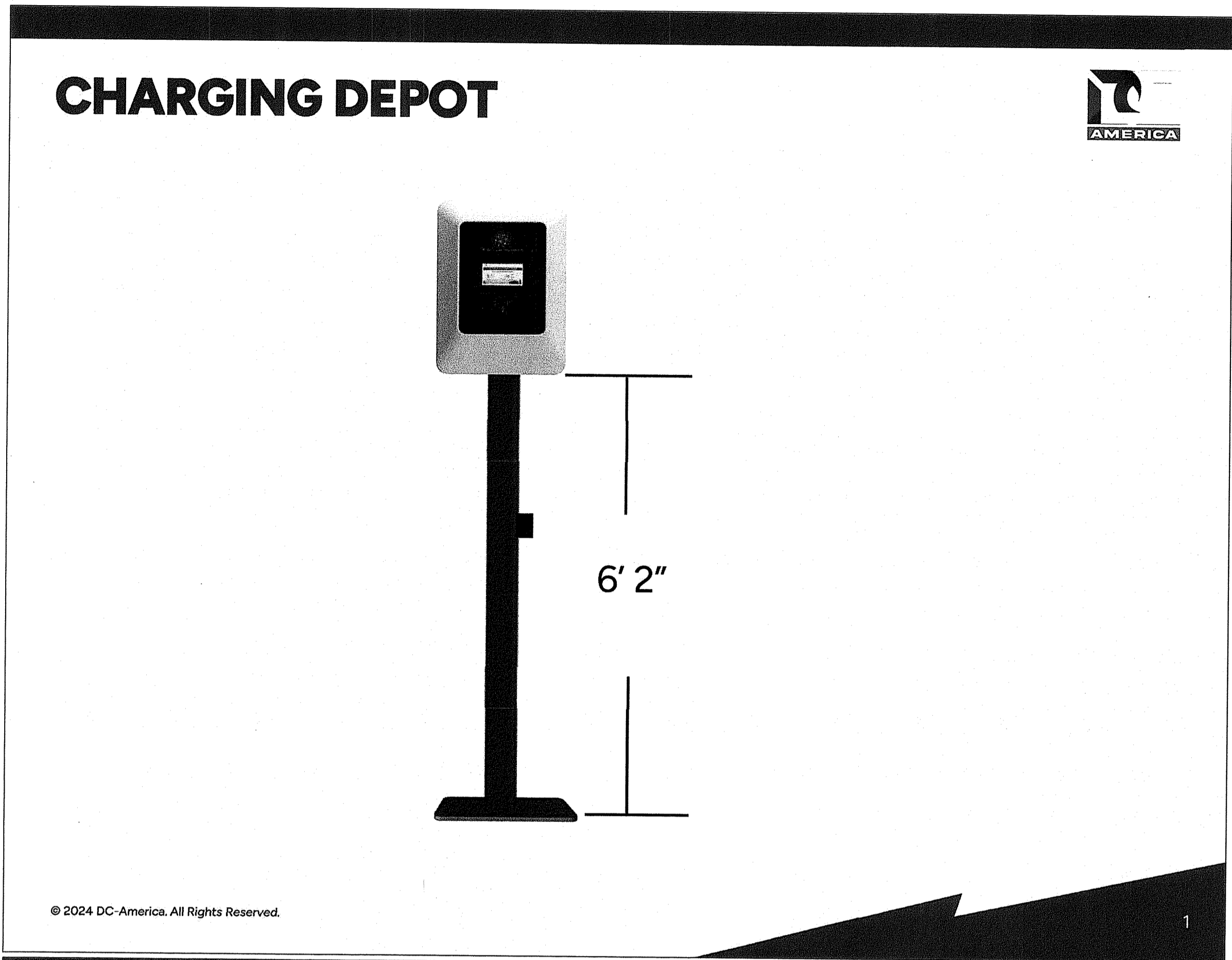
SHEET NUMBER
 EV-16



TELLUS POWER GREEN DC FAST CHARGER Specifications

Product #	TP5-30-480
Input	480VAC (3P+N+PE)
Frequency	60Hz
Output Voltage	150 to 1000VDC
Output Current	0 to 100A
Connector(s)	CCS1 or CHAdeMO
Efficiency	≥94% at nominal output power
Power Factor	> 0.98
Operating Temperature	22°F to 131°F (-30°C to 55°C)
Working Storage humidity	≤ 95% RH ≤ 99% RH (Non-condensing)
Altitude	< 6600ft (2000m)
Display	7" LCD with touch screen
RFID system	ISO IEC 14443A/B
Dimensions (l x d x h)	21" x 12" x 27"
Protective Class	NEMA 3S, IK 10
Cooling System	Air cooled
Weight	176 lbs (80kg)
Charging Protocol	Mode 4, IEC-61851, ISO-15118, DIN SPEC 70121
Length of charging cable	16ft (5m)
Interface protocol	OCPP 1.6J
Communication	Ethernet / 4G WI-FI
Electrical Safety: GFCI	RCD 20 mA Type A (UL)
Electrical Safety: Surge Protection	20 kA
Electrical Safety: General	Over Voltage, Under Voltage, Over Current, Missing Ground
Electrical Safety: Output Short	Output power disabled when output is short circuited
Electrical Safety: Temperature	Temperature Sensors @ Charge Coupler and Power Electronics
Emergency Stop	Emergency Stop Button Disables Output Power
Regulatory Compliance	UL-2202 EMC: EN 61000-6-1:2007, EN 61000-6-3:2007/A1:2011/AC:2012

Tellus Power Green
23541 Ridge Route Drive Suite B
Laguna Hills, CA 92653
United States
www.telluspowersgreen.com



SCOPE CLARIFICATION

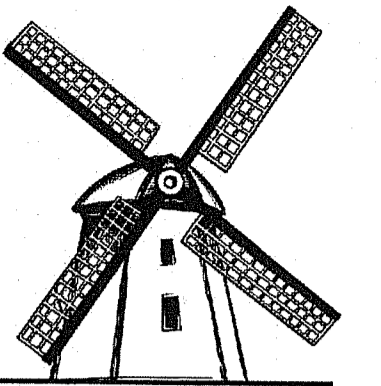
BASE PACKAGE COST SCOPE CLARIFICATIONS

- DC-America to manufacturer aluminum charging pedestal for Tellus 30kW charger.
- Bottom edge of charger to sit 6' 2" from bottom of mounting base.
- Aluminum to be coated black.
- Total height approximately 8'

GENERAL CLARIFICATIONS / EXCLUSIONS

- Modifications to this proposal must be approved via change order by both DC-America and the client.
- Freight estimate based on LTL Freight services.

RI DEPARTMENT OF ENVIRONMENTAL MANAGEMENT
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CUMBERLAND RI 02864

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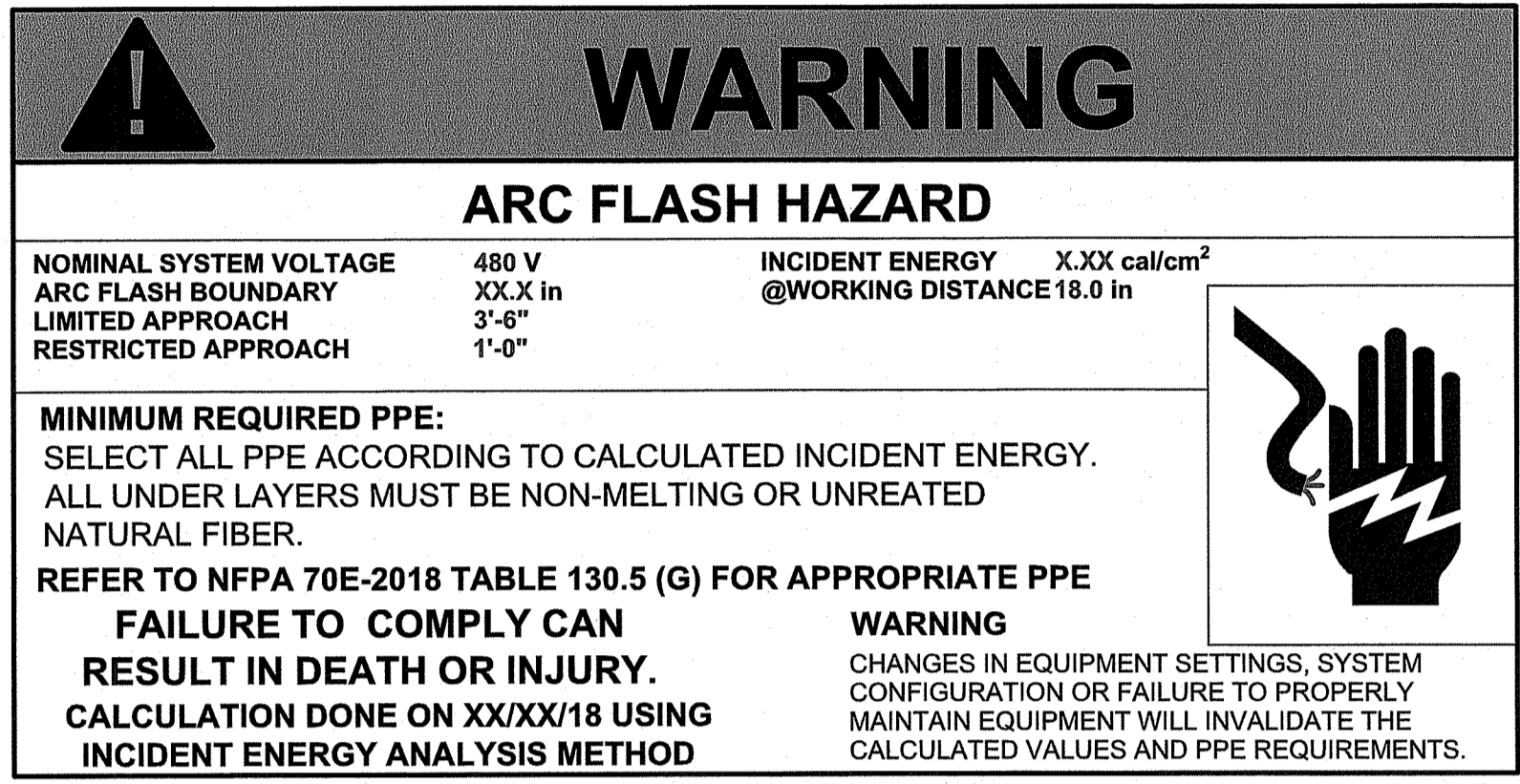
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DATA
SHEETS-1

SHEET SIZE

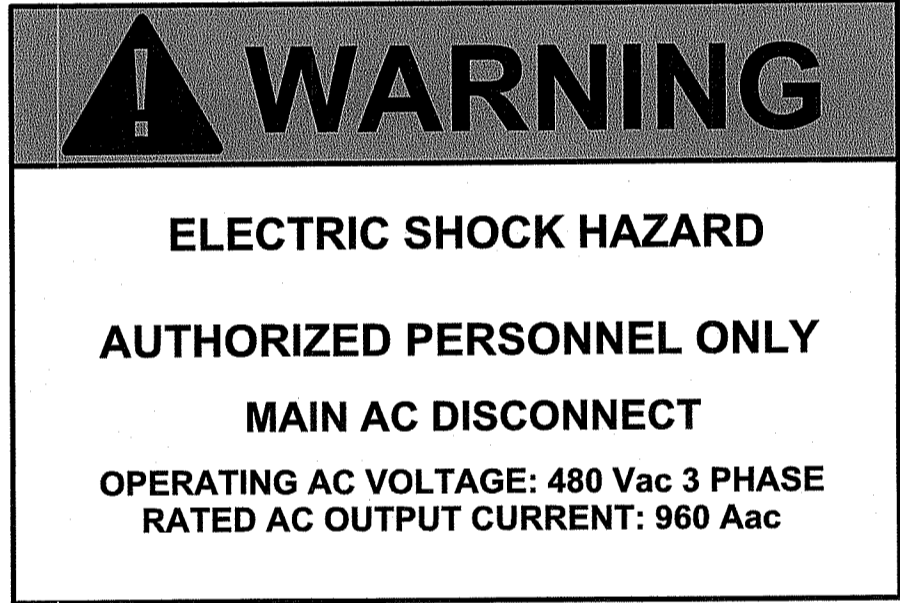
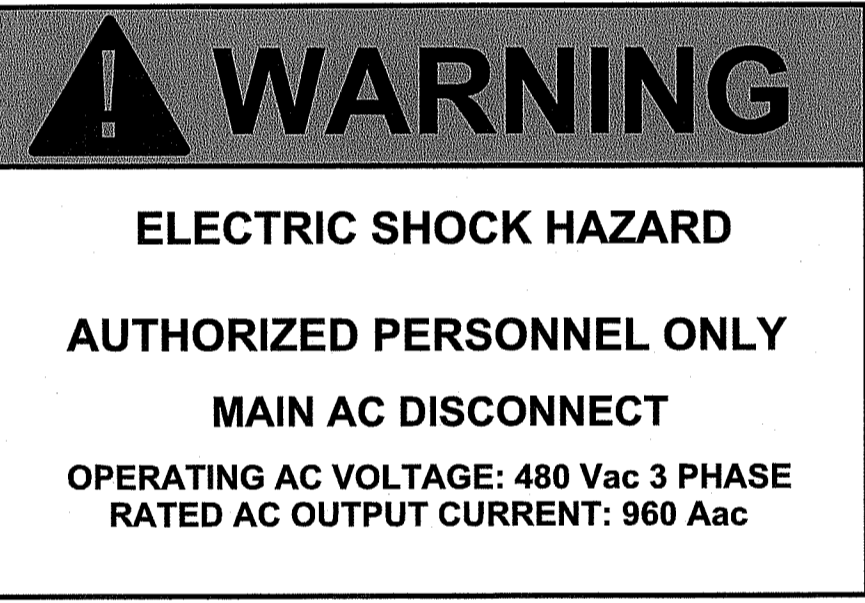
ARCH D
24" X 36"

SHEET NUMBER

EV-17

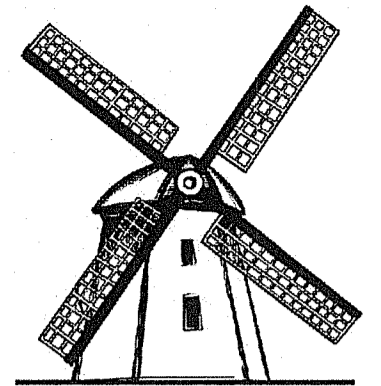
NEC ARTICLE	625.15 (A)																	
SPECIFICATION	REFLECTIVE, MINIMUM 3/8" CAPITAL LETTERS	BLACK LETTERS WITH PART ORANGE BACKGROUND																
LOCATION	INSTALL LABEL ON CONDUIT, EVERY 10 FEET PULL BODIES AND WORK BOXES	MAIN DISTRIBUTION PANEL																
SIGN SIZE AND TEXT	<div style="border: 1px solid black; padding: 5px; width: fit-content; margin: auto;"> <p>FOR USE WITH ELECTRIC VEHICLES</p> </div>	<div style="border: 1px solid black; padding: 10px; text-align: center;">  <p>WARNING</p> <p>ARC FLASH HAZARD</p> <table border="0" style="font-size: small;"> <tr> <td>NOMINAL SYSTEM VOLTAGE</td> <td>480 V</td> <td>INCIDENT ENERGY</td> <td>X.XX cal/cm²</td> </tr> <tr> <td>ARC FLASH BOUNDARY</td> <td>XX.X In</td> <td>@WORKING DISTANCE</td> <td>18.0 In</td> </tr> <tr> <td>LIMITED APPROACH</td> <td>3'-8"</td> <td></td> <td></td> </tr> <tr> <td>RESTRICTED APPROACH</td> <td>1'-0"</td> <td></td> <td></td> </tr> </table> <p>MINIMUM REQUIRED PPE: SELECT ALL PPE ACCORDING TO CALCULATED INCIDENT ENERGY. ALL UNDER LAYERS MUST BE NON-MELTING OR UNREATED NATURAL FIBER.</p> <p>REFER TO NFPA 70E-2018 TABLE 130.5 (G) FOR APPROPRIATE PPE</p> <p>FAILURE TO COMPLY CAN RESULT IN DEATH OR INJURY.</p> <p>CALCULATION DONE ON XX/XX/18 USING INCIDENT ENERGY ANALYSIS METHOD</p> <p>WARNING CHANGES IN EQUIPMENT SETTINGS, SYSTEM CONFIGURATION OR FAILURE TO PROPERLY MAINTAIN EQUIPMENT WILL INVALIDATE THE CALCULATED VALUES AND PPE REQUIREMENTS.</p> </div>	NOMINAL SYSTEM VOLTAGE	480 V	INCIDENT ENERGY	X.XX cal/cm ²	ARC FLASH BOUNDARY	XX.X In	@WORKING DISTANCE	18.0 In	LIMITED APPROACH	3'-8"			RESTRICTED APPROACH	1'-0"		
NOMINAL SYSTEM VOLTAGE	480 V	INCIDENT ENERGY	X.XX cal/cm ²															
ARC FLASH BOUNDARY	XX.X In	@WORKING DISTANCE	18.0 In															
LIMITED APPROACH	3'-8"																	
RESTRICTED APPROACH	1'-0"																	
QUANTITY	TBD IN FIELD	1																

VALUES USED ON LABELS EXTRACTED FROM ARC FLASH STUDY BASED ON AS-BUILT DATA

NEC ARTICLE		
SPECIFICATION	ORANGE WARNING, WHITE WITH BLACK LETTERS	ORANGE WARNING WHITE WITH BLACK LETTERS
LOCATION	EV CHARGER 3000 A SWITCHBOARD	EV CHARGER AC DISCONNECT
SIGN SIZE AND TEXT	<div style="border: 1px solid black; padding: 10px; text-align: center;">  <p>WARNING</p> <p>ELECTRIC SHOCK HAZARD</p> <p>AUTHORIZED PERSONNEL ONLY</p> <p>MAIN AC DISCONNECT</p> <p>OPERATING AC VOLTAGE: 480 Vac 3 PHASE RATED AC OUTPUT CURRENT: 960 Aac</p> </div>	<div style="border: 1px solid black; padding: 10px; text-align: center;">  <p>WARNING</p> <p>ELECTRIC SHOCK HAZARD</p> <p>AUTHORIZED PERSONNEL ONLY</p> <p>MAIN AC DISCONNECT</p> <p>OPERATING AC VOLTAGE: 480 Vac 3 PHASE RATED AC OUTPUT CURRENT: 960 Aac</p> </div>
QUANTITY	1	1

NEC ARTICLE	408.4	408.4	408.4
SPECIFICATION	WHITE WITH BLACK LETTERS	WHITE WITH BLACK LETTERS	WHITE WITH BLACK LETTERS
LOCATION	3000 A SWITCHBOARD	UTILITY METER	EV CHARGER SYSTEM AC DISCONNECT
SIGN SIZE AND TEXT	<div style="border: 1px solid black; padding: 10px; text-align: center;"> <p>MAIN SWITCHBOARD</p> <p>SWITCHBOARD</p> <p>OPERATING AC VOLTAGE: 277/480 V RATED AC CURRENT: 960 A ADJUSTED AC CURRENT: 1200 A AC</p> </div>	<div style="border: 1px solid black; padding: 10px; text-align: center;"> <p>UTILITY METER</p> </div>	<div style="border: 1px solid black; padding: 10px; text-align: center;"> <p>AC DISCONNECT</p> <p>EV CHARGER SYSTEM AC DISCONNECT</p> </div>
QUANTITY	1	1	1

NOTES:
-All labels must comply with NEC 110.21(B) and be suitable for the environment.
- Labels shall be approved by [engineer/designer] prior to purchase.



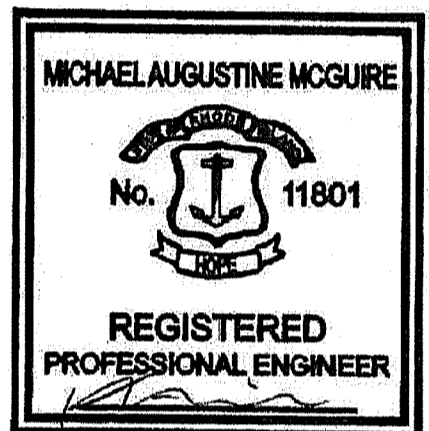
H2DC PLLC
Professional Electrical Engineering

HURRICANE HILL DEVELOPMENT
COMPANY PLLC
1042 HURRICANE HILL ROAD
MASON, NH 03048-1726
PHONE: 603-887-1726 (OFFICE)
WEB: WWW.H2DC.COM

REVISIONS

DESCRIPTION	DATE	REV
IFC SET	12/07/2023	0
IFC SET	01/09/2024	1
IFC SET	03/19/2024	2
IFC SET	04/09/2024	3

SIGNATURE WITH SEAL



SEALED ON 04/09/2024
RI COA # 8402
H2DC PLLC
MIKE@H2DC.COM
ELECTRICAL ONLY

CLIENT INFORMATION



HIGHLAND ELECTRIC FLEETS
200 CUMMINGS CTR,
STE 273D
BEVERLY, MA 01915

PROJECT INFORMATION

720.0 KW DC
STAND ALONE
EV CHARGING STATION
AT
1 JOHN C DEAN
MEMORIAL BLVD
CUMBERLAND RI 02864

RI DEPARTMENT OF ENVIRONMENTAL MANAGEMENT
OFFICE OF WATER RESOURCES
FRESHWATER WETLANDS PROGRAM
APPROVED WITH CONDITIONS AS
SPECIFIED IN THE LETTER OF APPROVAL
DATED: JUN 03 2024 FILE # 24-0009
NO CHANGES ALLOWED WITHOUT PRIOR APPROVAL
APPROVED PLANS MUST BE AT CONSTRUCTION SITE

Handwritten signature

DESIGNED BY	SR
CHECKED BY	MM
APPROVED BY	MM

SHEET NAME

NEC LABELS

SHEET SIZE

ARCH D
24" X 36"

SHEET NUMBER

EV-19