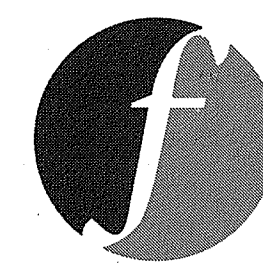


# BID No. 18-011 WELL FIELD ELECTRICAL POWER AND DISTRIBUTION SYSTEM UPGRADE

120 MILL STREET · CUMBERLAND · RHODE ISLAND

APRIL 2019, REVISED MAY 24, 2019

PREPARED FOR  
**PAWTUCKET WATER  
 SUPPLY BOARD**  
 85 BRANCH STREET.  
 PAWTUCKET, RI. 02860



PREPARED BY  
**FUSS & O'NEILL**

317 IRON HORSE WAY, SUITE 204  
 PROVIDENCE, RI 02908  
 401.861.3070  
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### SHEET INDEX

SHEET No.	SHEET TITLE
GI-001	COVER SHEET
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E-200	ELECTRICAL INDEX PLAN
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CS-200	CIVIL INDEX PLAN, NOTES & LEGEND
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CD-501	CIVIL DETAILS



**LOCATION MAP**

SCALE: 1" = 80'

DEPARTMENT OF ENVIRONMENTAL MANAGEMENT  
 OFFICE OF WATER RESOURCES  
 FRESHWATER WETLANDS PROGRAM  
 APPROVED WITH CONDITIONS  
 AS SPECIFIED IN THE LETTER OF APPROVAL  
 DATED JUL 16 2019 FILE # 19-0123  
 NO CHANGES ALLOWED WITHOUT PRIOR APPROVAL  
 APPROVED PLANS MUST BE AT CONSTRUCTION SITE

*Charles A. Hart*

APPROVED  
 JUN 13 2019  
 OFFICE OF WATER RESOURCES  
 DEPARTMENT OF ENVIRONMENTAL MANAGEMENT

ADDENDUM NO. 1 05/24/2019

PROJ. No.: 20180576 A10  
 DATE: APRIL 2019  
**GI-001**  
 SHEET 1 OF 17

File Path: J:\DWG\2018\0576A10\MEP\Electrical\20180576A10\_GEN01.dwg Layout: E-100 PlotTech: Wed, May 23, 2019 - 9:49 AM User: cvera  
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 LAYER STATE: MS VIEW

**ABBREVIATIONS:**

Ø	PHASE
A	AMPERE
BLDG	BUILDING
C	CONDUIT
DISC	DISCONNECT SWITCH
DWG	DRAWING
EMT	ELECTRICAL METALLIC TUBING
FCO	FUSED CUTOUT
GFI	GROUND-FAULT INTERRUPTING
GND	GROUND
KW	KILOWATT
LBE	LOADBREAK
MCB	MAIN CIRCUIT BREAKER
NEC	NATIONAL ELECTRICAL CODE
OC	ON CENTER
PVC	POLYVINYL CHLORIDE
PWSB	PAWTUCKET WATER SUPPLY BOARD
RCPT	RECEPTACLE
R&D	REMOVE AND DISPOSE
R&R	REMOVE AND REPLACE
REL	RELOCATE
RS	RIGID STEEL
V	VOLTS
WP	WEATHERPROOF (NEMA 4X)
XFMR	TRANSFORMER

**LEGEND**

	POLE MOUNTED FUSED CUTOFF (3) NUMBER INDICATES NUMBER OF POLES
	HIGH VOLTAGE FUSE
	TRANSFORMER - SIZED AS INDICATED
	DISCONNECT SWITCH - SIZED AS INDICATED NEMA 4R
	PANELBOARD - SIZED AS INDICATED
	CIRCUIT BREAKER SIZED AS INDICATED
	LOADBREAK ELBOW (LBE)
	LOAD INTERRUPTING SWITCH
	CABLE TERMINATION

**DEMOLITION LEGEND**

	NEW UNDERGROUND ELECTRICAL
	EXISTING UNDERGROUND ELECTRICAL
	JUNCTION BOX OR PULLBOX
	NEW PRIMARY UNDERGROUND DUCTBANK
	NEW UNDERGROUND PRIMARY DISTRIBUTION 13.8KV 3ø, 3ø CLX CABLE
	NEW POLE
	EXISTING POLE
	EXISTING OVERHEAD LINES
	SECONDARY

**GENERAL NOTES**

- ALL ELECTRICAL WORK SHALL BE INSTALLED IN ACCORDANCE WITH THE LATEST EDITION OF THE NATIONAL AND RHODE ISLAND ELECTRICAL CODES AND OTHER STATE OF RHODE ISLAND REQUIREMENTS AND THE NATIONAL ELECTRICAL SAFETY CODE C2.
- ADDITIONAL JUNCTION / PULL BOXES SHALL BE FURNISHED AND INSTALLED AS REQUIRED.
- ALL CONDUITS SHALL CONTAIN A GREEN SAFETY GROUND WIRE. BOND ALL PANELS, CABINETS, ENCLOSURES, CONDUITS, ETC., AS REQUIRED.
- PROVIDE CONDUIT SLEEVES FILLED WITH AN APPROVED FIRE-RESISTANT MATERIAL WHERE FIRE-RATED WALLS ARE PENETRATED. PROVIDE WATERTIGHT CONDUIT SLEEVES WHERE EXTERIOR WALLS ARE PENETRATED EITHER ENTERING OR LEAVING A BUILDING.
- ALL CUTTING, PATCHING AND FIRESTOPPING RELATED TO ELECTRICAL WORK SHALL BE THE RESPONSIBILITY OF THE ELECTRICAL CONTRACTOR.

**DEMOLITION NOTES**

- DEMOLITION OF EXISTING ELECTRICAL SYSTEM SHALL BE PERFORMED IN A PHASED SYSTEM OF DECOMMISSIONING. THE ENTIRE NEW DISTRIBUTION SYSTEM SHALL BE CONSTRUCTIVELY TESTED, APPROVED AND OPERATIONAL BEFORE CUT OVER OF THE NEW SYSTEM.
- EXISTING ELECTRICAL EQUIPMENT INDICATED ON PLANS HAS BEEN DERIVED FROM THE BEST AVAILABLE EXISTING DRAWINGS AND MUST BE FIELD VERIFIED PRIOR TO CONSTRUCTION AS REQUIRED. ANY EQUIPMENT THAT IS NOT IDENTIFIED AND CONFLICTS WITH CONSTRUCTION SHALL NOT BE DISCONNECTED AND SHALL BE BROUGHT TO THE ATTENTION OF THE PWSB / ENGINEER FOR DISPOSITION.
- WHERE WIRING IS TO BE REMOVED, RELOCATED OR RECONNECTED, THE CONTRACTOR SHALL TAKE PRECAUTIONS AND ASSUME THAT THE CIRCUIT MAY BE ACTIVE. CONTRACTOR SHALL TEST, VERIFY AND SECURE ALL CIRCUITS BEFORE REMOVAL. UNKNOWN WIRING SHALL BE IDENTIFIED. ANY WIRING TO REMAIN SHALL BE VERIFIED BY THE CONTRACTOR, TAGGED AND IDENTIFIED AS REQUIRED.
- EXISTING ELECTRICAL EQUIPMENT AND DEVICES INDICATED TO BE REMOVED SHALL BE REMOVED COMPLETELY INCLUDING ALL CONDUIT, WIRING AND ASSOCIATED APPURTENANCES BACK TO EXISTING SOURCE WHERE THE EXISTING SOURCE SHALL BE LABELED AS SPARE.
- EXISTING CONDUITS TO BE REMOVED WHICH ARE EMBEDDED IN A CONCRETE SLAB SHALL HAVE THE WIRING REMOVED AND THE CONDUIT CUT FLUSH WITH CONCRETE AND SEALED IN AN APPROVED MANNER.
- EXISTING ELECTRICAL EQUIPMENT AND WIRING TO REMAIN SHOWN SHALL BE PROTECTED FROM DAMAGE AS REQUIRED DURING THE CONSTRUCTION PERIOD AND LEFT IN GOOD WORKING ORDER AT COMPLETION. ANY EQUIPMENT DAMAGED SHALL BE REPLACED BY THE CONTRACTOR AT NO EXPENSE TO THE OWNER.
- OWNER AND CODE REQUIRED SYSTEMS THAT ARE REQUIRED TO REMAIN ACTIVE DURING CONSTRUCTION SHALL BE TEMPORARILY WIRED AS REQUIRED TO REMAIN ACTIVE THROUGHOUT THE CONSTRUCTION PERIOD UNTIL NEW SYSTEMS ARE INSTALLED, TESTED AND ACCEPTED.
- IN CONDITIONS WHERE IN THE OPINION OF THE CONTRACTOR IT IS NOT CLEAR WHETHER EXISTING ELECTRICAL EQUIPMENT IS TO BE REMOVED OR REMAIN, IT SHOULD BE BROUGHT TO THE ATTENTION OF THE ENGINEER FOR REVIEW AND FINAL DECISION.
- ANY DISRUPTION OF ANY ELECTRICAL SERVICE NECESSITATED BY THE ELECTRICAL RENOVATION SHALL BE COORDINATED WITH THE PWSB IN ORDER FOR PROPER NOTICE TO BE GIVEN PRIOR TO THE DISCONNECTION OF ANY SERVICE. 48 HOUR NOTICE SHALL BE PROVIDED.
- EXISTING ELECTRICAL EQUIPMENT REMOVED SHALL BE BROKEN DOWN INTO MANAGEABLE LENGTHS FOR STORAGE, HANDLING AND DISPOSAL.
- EXISTING ELECTRICAL EQUIPMENT REMOVED SHALL BE PROPERLY DISPOSED OF BY CONTRACTOR NO ITEMS SHALL BE TURNED OVER TO PWSB, UNLESS SPECIFICALLY IDENTIFIED.
- WHERE EXISTING POLES ARE TO BE REMOVED ASSOCIATED GUYING AND HARDWARE SHALL BE REMOVED.
- EXISTING POLE MOUNTED TRANSFORMERS (Ø) MAY CONTAIN PCB'S AND NEED TO BE REMOVED AND DISPOSED. THESE SHALL BE IDENTIFYING, TESTED, TAGGED, PROTECTIVELY WRAPPED. HAZARDOUS MATERIALS WILL BE TEMPORARILY STORED ON-SITE, DOCUMENTED, TRANSPORTED AND PROPERLY DISPOSED OF IN ACCORDANCE WITH STATE AND FEDERAL REGULATIONS. WORK SHALL BE PERFORMED BY A CERTIFIED HAZMAT CONTRACTOR.

**SITE UTILITY NOTES**

- ALL EXCAVATIONS AND BACKFILL AND FOUNDATIONS SHALL BE BY THE ELECTRICAL CONTRACTOR.
- INSTALL A COMPLETE GROUND SYSTEM IN ACCORDANCE WITH ALL CODES, AND AS INDICATED
- DUCT BANKS SHALL BE PROVIDED WITH A 6" WIDE METALIZED CONTINUOUS WARNING TAPE INSTALLED 6" BELOW GRADE ABOVE CENTER OF DUCTBANK.
- USE THE ACCEPTABLE METHOD OF PAVEMENT SAW-CUTTING OF THE EXISTING PAVEMENT FOR UTILITY TRENCHING. CAREFULLY SAW TWO PARALLEL 3/8 INCH WIDE BY 1 INCH DEEP CUTS FOR THE WIDTH OF THE REQUIRED UTILITY TRENCH INTO THE EXISTING PAVEMENT SURFACE ENSURING THE LEAST AMOUNT OF DISTURBANCE TO ADJACENT PAVED AREAS ALONG THE OUTER EDGES OF THE TRENCH-LINE.
- LEGALLY DISPOSE OF ALL EXCAVATED ASPHALT BITUMINOUS PAVEMENT MATERIAL AND UNUSED EXCAVATED MATERIAL OFF-SITE AT AN APPROVED LANDFILL OR RECYCLING FACILITY.
- UPON COMPLETION OF THE SUBSURFACE EXCAVATION TRENCHING AND UTILITY INSTALLATION, BACKFILL THE TRENCH USING SAME EXCAVATED GRAVEL MATERIAL TO A COMPACTION COMPARABLE TO PRE-EXCAVATED CONDITIONS ACCEPTABLE TO THE ENGINEER. MINIMUM 95% COMPACTION REQUIRED.
- REPLACE IN KIND BOTH THE DEPTH AND MATERIAL TYPE AND GRADATION OF HOT MIX ASPHALT TO MATCH THAT OF THE EXCAVATED PAVEMENT MATERIAL. ASPHALT PATCHING OF THE TRENCH SHALL BE PERFORMED AT ONE TIME AND PLACED TO BE FLUSH WITH THE ADJOINING PAVEMENT EDGES ON GRADE AND ELEVATION. SURFACE SHALL BE ROLLED TO ACHIEVE MAXIMUM COMPACTION TO PROHIBIT SETTLEMENT OF THE NEW TRENCH PATCHING.
- ITEMS INDICATED TO BE "REMOVED" SHALL BE REMOVED AND PROPERLY DISPOSED OF.
- SITE UTILITY PLANS HAS BEEN DERIVED FROM THE BEST AVAILABLE EXISTING DRAWINGS AND MUST BE FIELD VERIFIED PRIOR TO CONSTRUCTION. THE CONTRACTOR SHALL ENGAGE AND CONTRACT WITH A SITE UTILITY LOCATION CONTRACTOR TO FIELD LOCATE AND MARK ALL UTILITIES ALONG CONDUIT OR CABLE ROUTING AND EQUIPMENT INSTALLATION LOCATIONS.
- ALL WELL PUMP HOUSE STATIONS HAVE WATER LINES THAT MAY NOT BE INDICATED ON STATION PLANS TAKE CAUTION NOT TO DISTURB THESE LINES.

SCALE:	HORZ.: NOT TO SCALE
	VERT.: NOT TO SCALE
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*Charles A. Hallett*

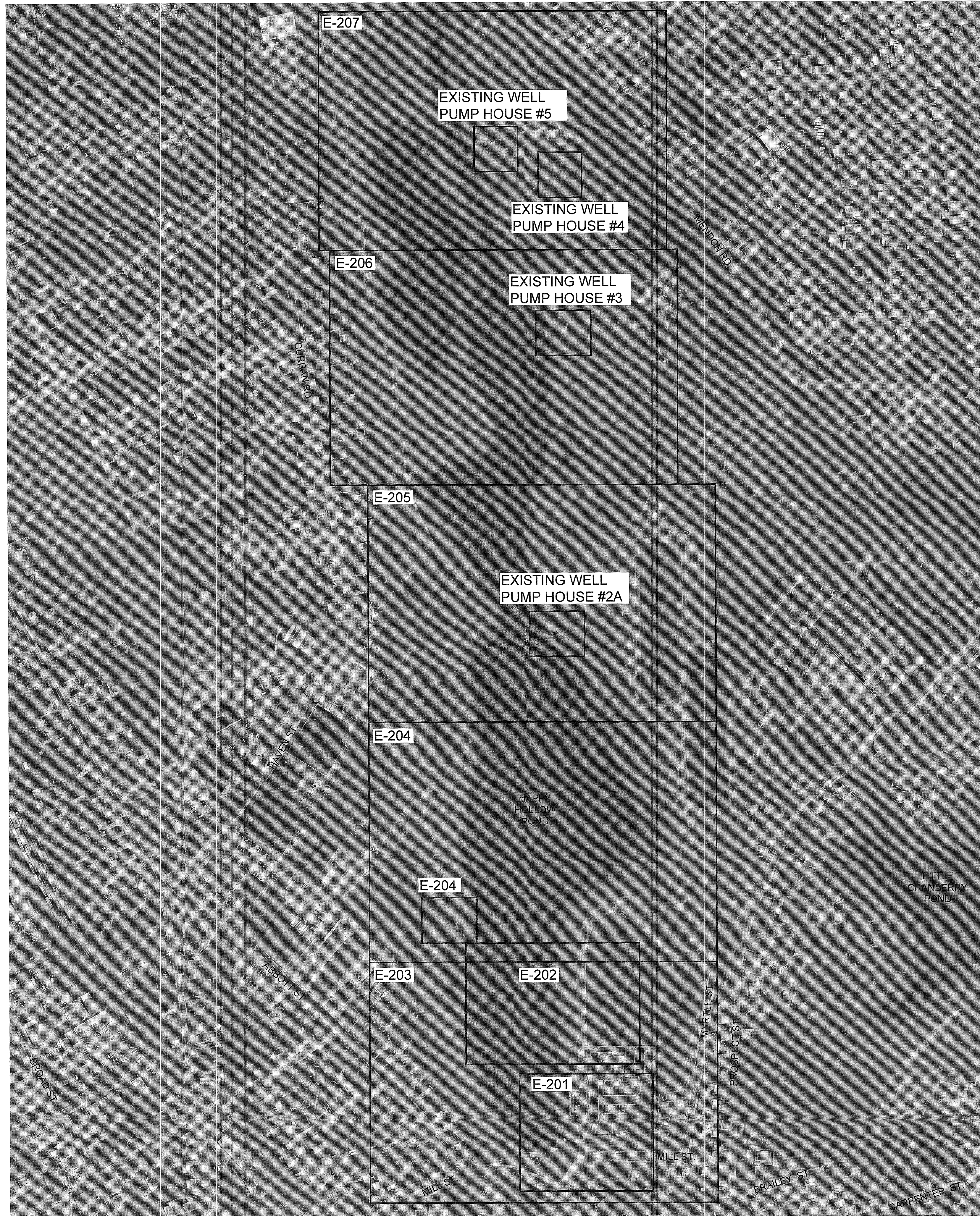
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 Office of Water Resources

PAWTUCKET WATER SUPPLY BOARD  
 ELECTRICAL NOTES & LEGEND  
 BID No. 18-011 WELL FIELD ELECTRICAL  
 POWER AND DISTRIBUTION SYSTEM UPGRADE  
 120 MILL STREET CUMBERLAND, RHODE ISLAND

PROJ. No.: 20180576.A10  
 DATE: APRIL 2019

**E-100**  
 SHEET 2 OF 17

**ADDENDUM NO. 1 05/24/2019**

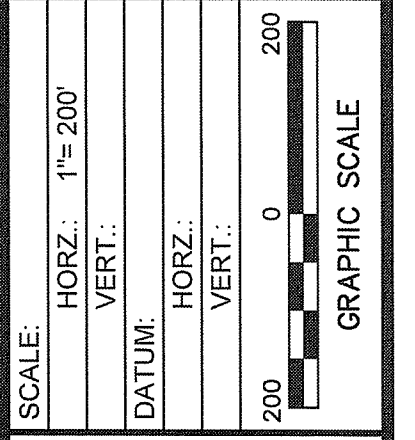


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*Charles A. Hunt*

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1.	5/24/2019			CW/CV	KS/SM



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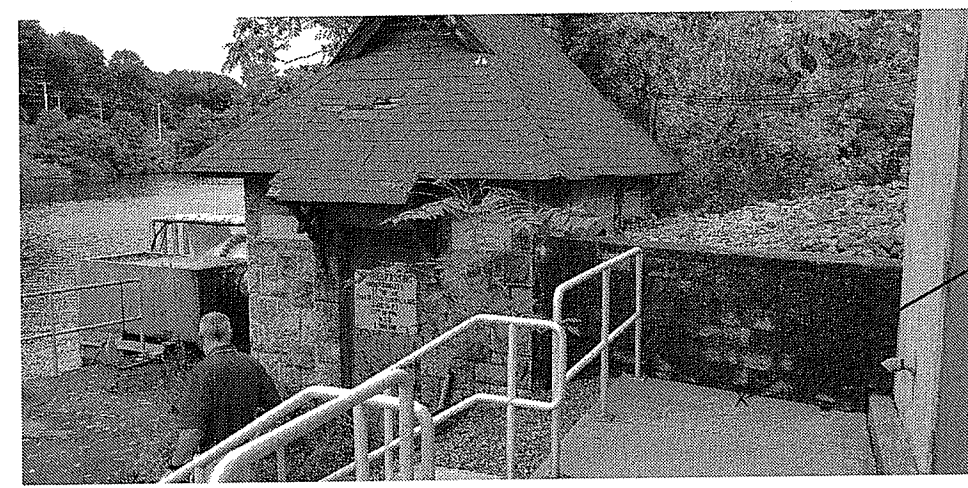
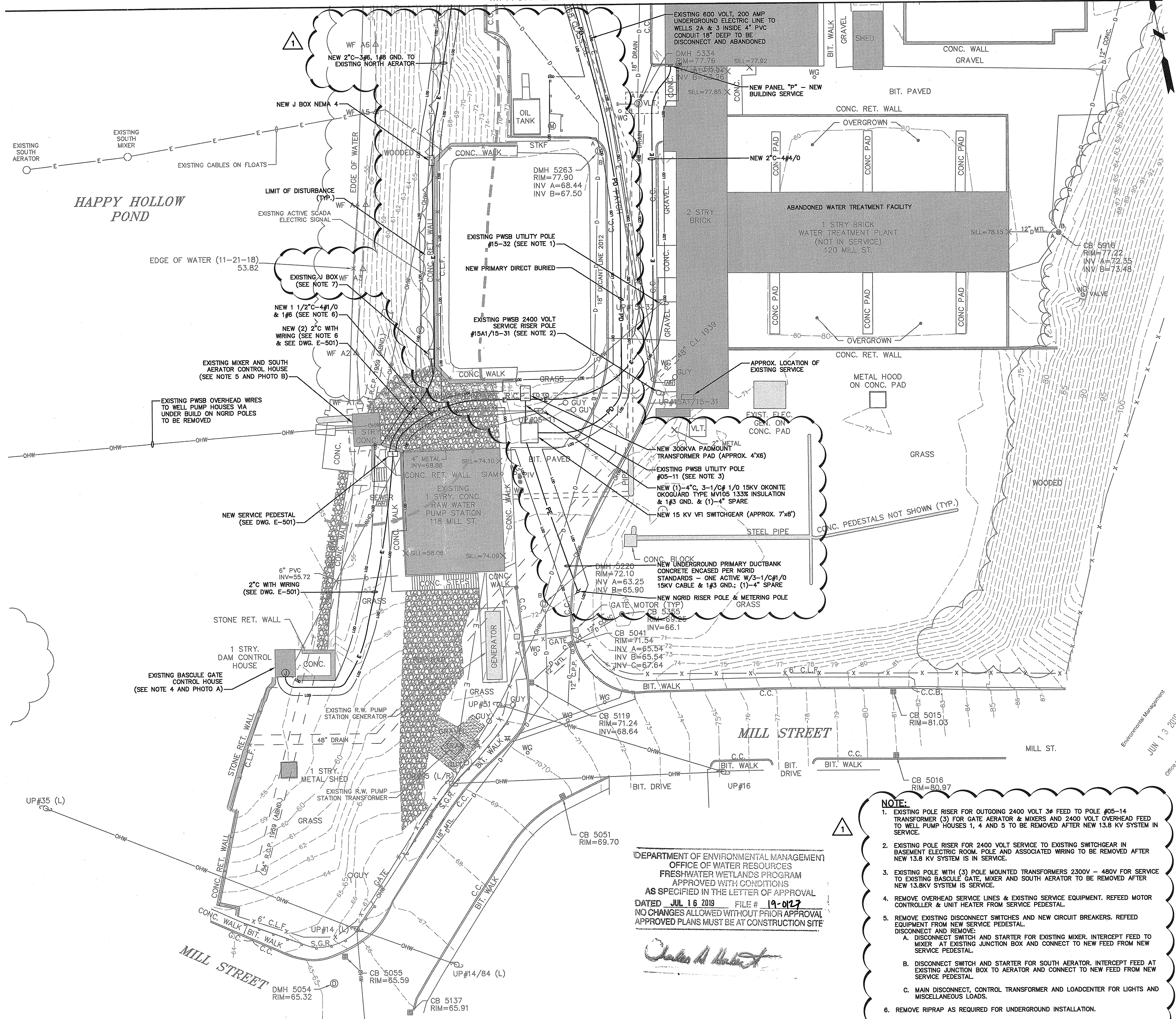
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 ELECTRICAL INDEX PLAN  
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 POWER AND DISTRIBUTION SYSTEM UPGRADE  
 120 MILL STREET CUMBERLAND, RHODE ISLAND

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**E-200**  
 SHEET 3 OF 17

**ADDENDUM NO. 1 05/24/2019**

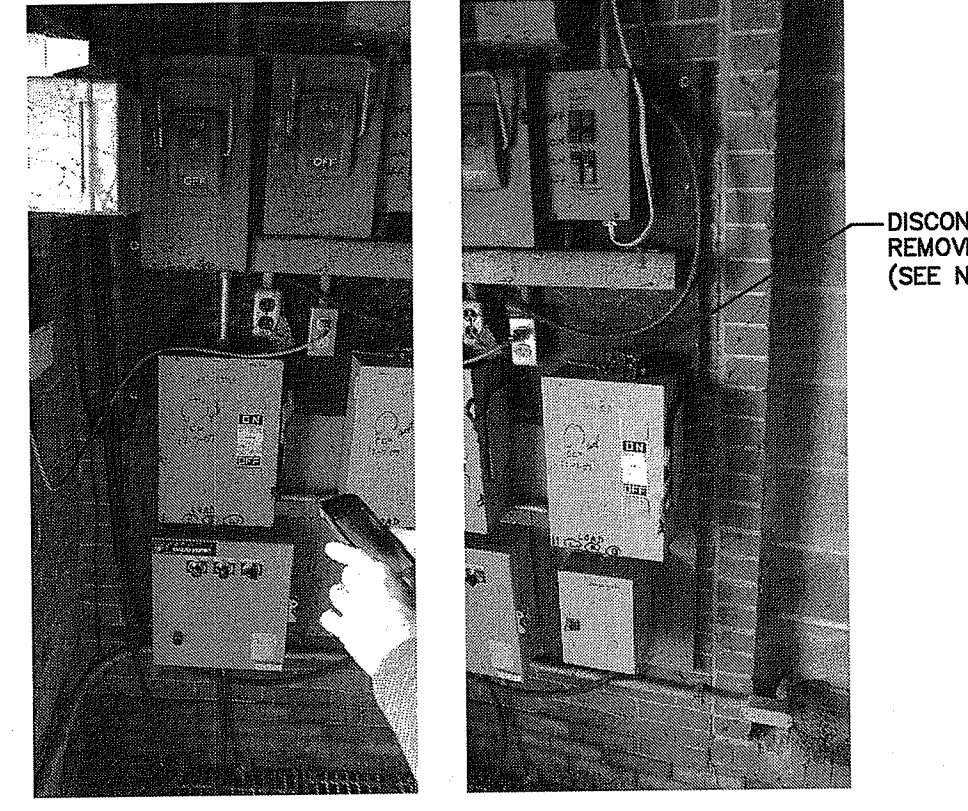
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APPROXIMATE LOCATION FOR NEW SERVICE PEDESTAL, CORE DRILL WALL AS REQUIRED

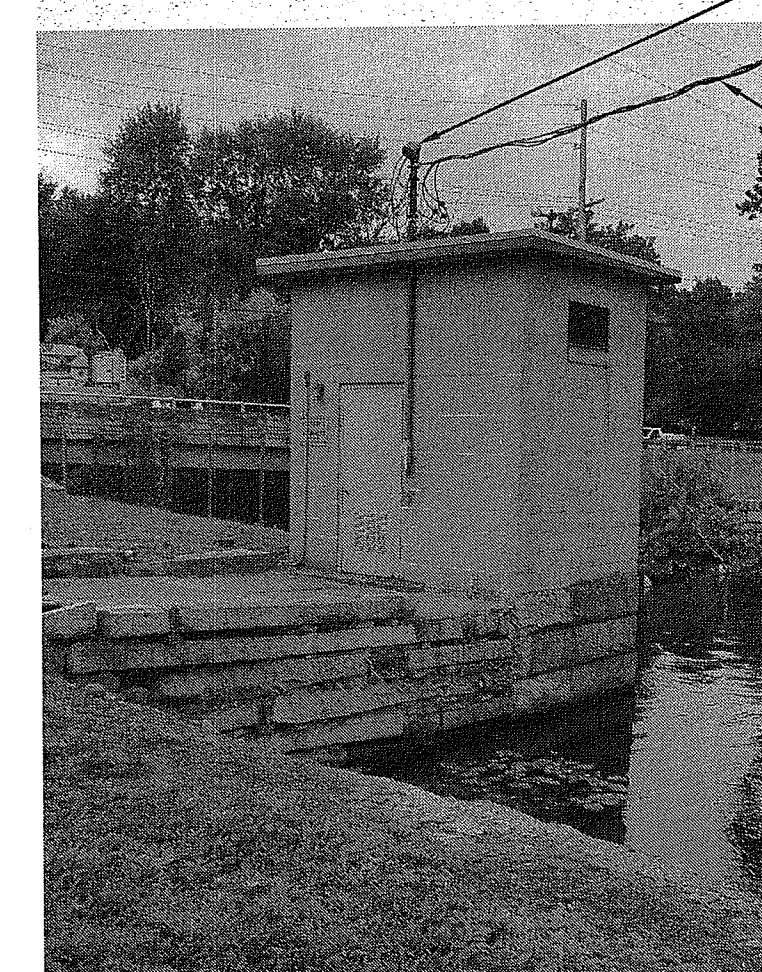


JUNCTION BOX FOR SPLICE; CONNECT CONDUIT AND WIRING FROM SERVICE PEDESTAL; REFEED MIXER AND AERATOR; ADD NEW CABLE TO NORTH AERATOR;

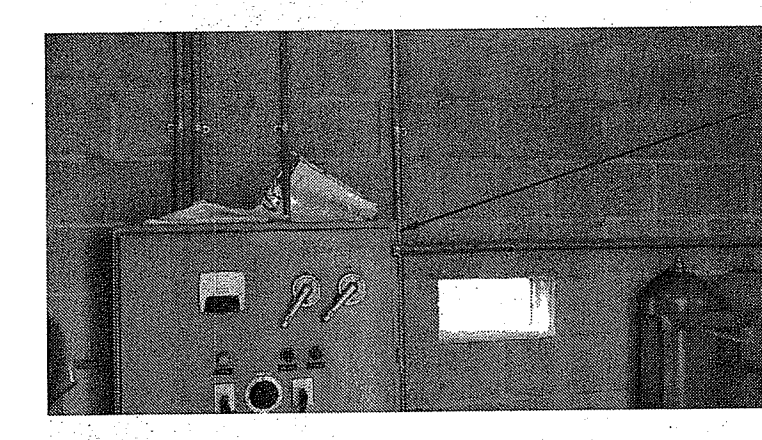


DISCONNECT AND REMOVE ALL EQUIPMENT (SEE NOTE 5)

PHOTOS - EXISTING MIXER AND SOUTH AERATOR CONTROL HOUSE NOT TO SCALE



REMOVE SERVICE SEAL OPENINGS REMOVE AERIAL CABLE FROM POLE #05-14



MOTOR CONTROLLER TO BE REFEED FROM SERVICE PEDESTAL



CIRCUIT BREAKER PANELS TO BE REMOVED

PHOTOS - EXISTING BASCULE GATE CONTROL HOUSE NOT TO SCALE

- NOTE:**
- EXISTING POLE RISER FOR OUTGOING 2400 VOLT 3Ø FEED TO POLE #05-14 TRANSFORMER (3) FOR GATE AERATOR & MIXERS AND 2400 VOLT OVERHEAD FEED TO WELL PUMP HOUSES 1, 4 AND 5 TO BE REMOVED AFTER NEW 13.8 KV SYSTEM IN SERVICE.
  - EXISTING POLE RISER FOR 2400 VOLT SERVICE TO EXISTING SWITCHGEAR IN BASEMENT ELECTRIC ROOM, POLE AND ASSOCIATED WIRING TO BE REMOVED AFTER NEW 13.8 KV SYSTEM IS IN SERVICE.
  - EXISTING POLE WITH (3) POLE MOUNTED TRANSFORMERS 2300V - 480V FOR SERVICE TO EXISTING BASCULE GATE, MIXER AND SOUTH AERATOR TO BE REMOVED AFTER NEW 13.8KV SYSTEM IS IN SERVICE.
  - REMOVE OVERHEAD SERVICE LINES & EXISTING SERVICE EQUIPMENT. REFEED MOTOR CONTROLLER & UNIT HEATER FROM SERVICE PEDESTAL.
  - REMOVE EXISTING DISCONNECT SWITCHES & NEW CIRCUIT BREAKERS. REFEED EQUIPMENT FROM NEW SERVICE PEDESTAL. DISCONNECT AND REMOVE:
    - DISCONNECT SWITCH AND STARTER FOR EXISTING MIXER. INTERCEPT FEED TO MIXER AT EXISTING JUNCTION BOX AND CONNECT TO NEW FEED FROM NEW SERVICE PEDESTAL.
    - DISCONNECT SWITCH AND STARTER FOR SOUTH AERATOR. INTERCEPT FEED AT EXISTING JUNCTION BOX TO AERATOR AND CONNECT TO NEW FEED FROM NEW SERVICE PEDESTAL.
    - MAIN DISCONNECT, CONTROL TRANSFORMER AND LOADCENTER FOR LIGHTS AND MISCELLANEOUS LOADS.
  - REMOVE RIPRAP AS REQUIRED FOR UNDERGROUND INSTALLATION.
  - CONNECT TO EXISTING WIRING FOR MIXER, SOUTH AERATOR, AND AERATOR HEATER.

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DATED JUL 16 2019 FILE # 19-0127  
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*Charles A. Hurd*

No.	DATE	ADDENDUM NO. 1	DESIGNER	REVIEWER
1.	5/24/2019			

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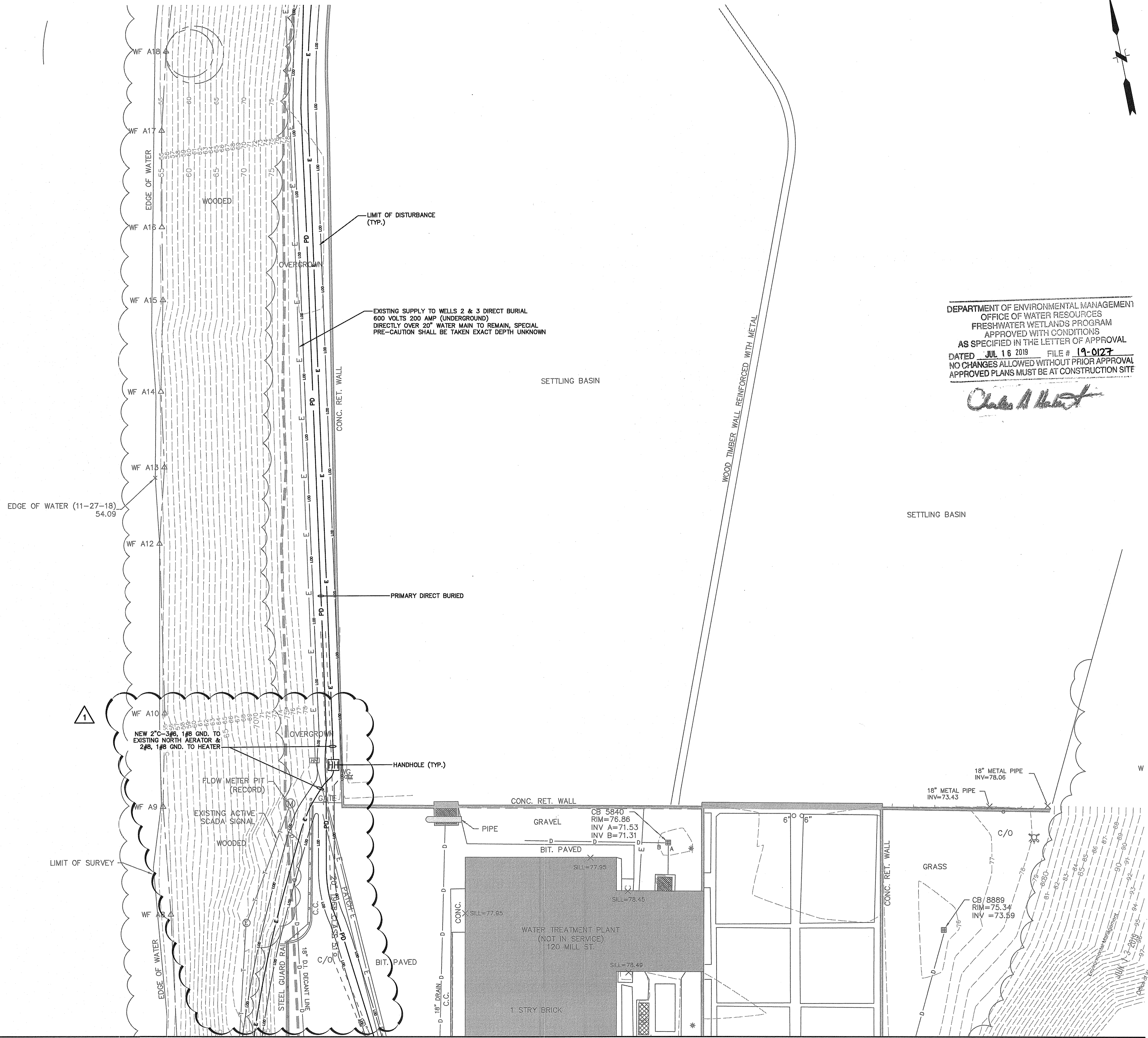
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ENLARGED ELECTRICAL SITE  
PLAN NO. 1  
BID No. 18-011 WELL FIELD ELECTRICAL  
POWER AND DISTRIBUTION SYSTEM UPGRADE  
CUMBERLAND, RHODE ISLAND  
120 MILL STREET

PROJ. No.: 20180576A10  
DATE: APRIL 2019

**E-201**  
SHEET 4 OF 17

HAPPY HOLLOW POND



MATCH LINE SEE SHEET E-201

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*Charles A. Hebert*

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 REVIEWER: KS/SM

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 DATE: 5/24/2019  
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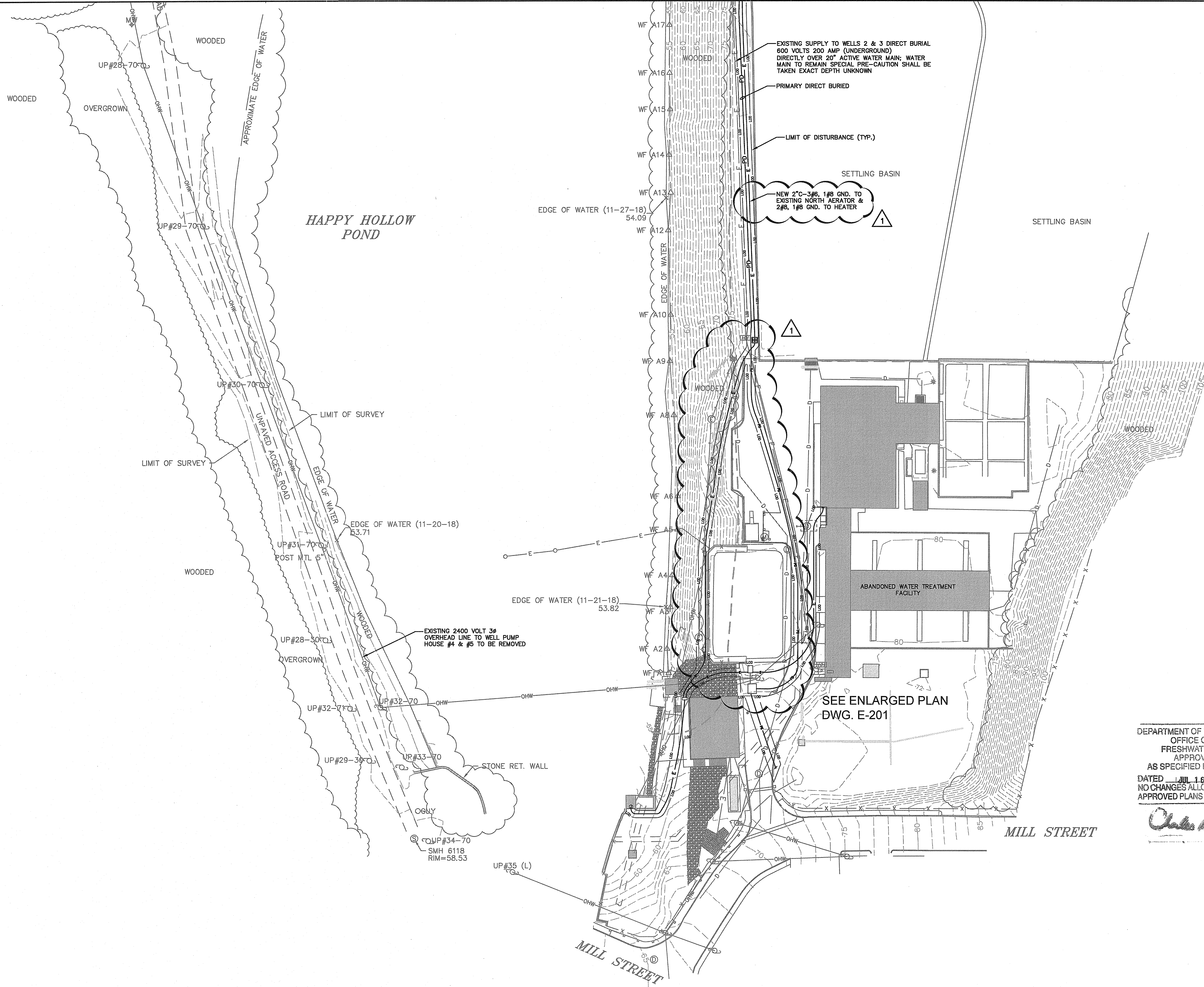
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PROJ. No.: 20180576A10  
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**E-202**  
 SHEET 5 OF 17

MATCH LINE SEE SHEET E-204



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*Charles A. Harter*

NO.	DATE	DESCRIPTION	DESIGNER/REVIEWER
1.	5/24/2019		

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**E-203**  
 SHEET 6 OF 17

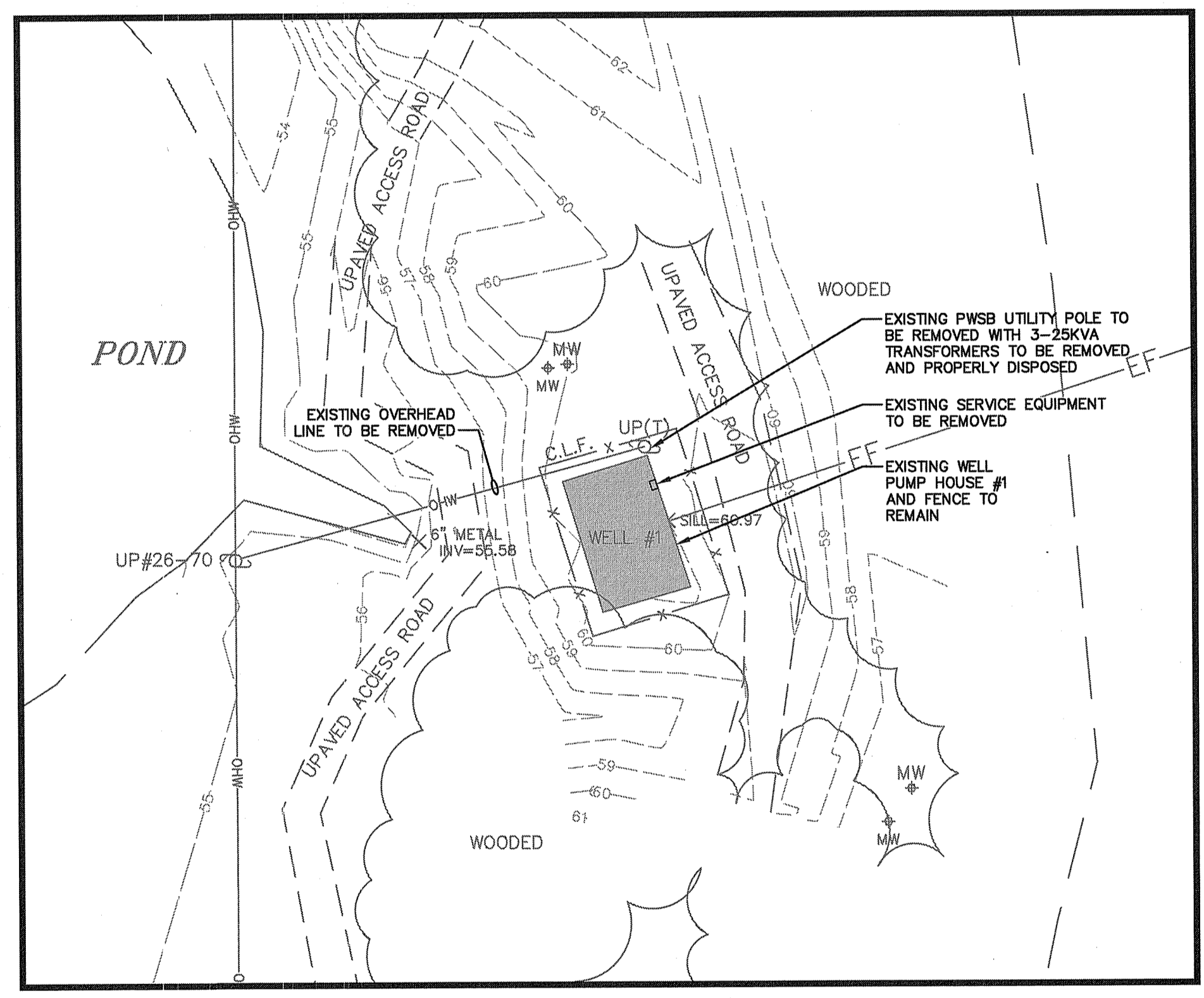
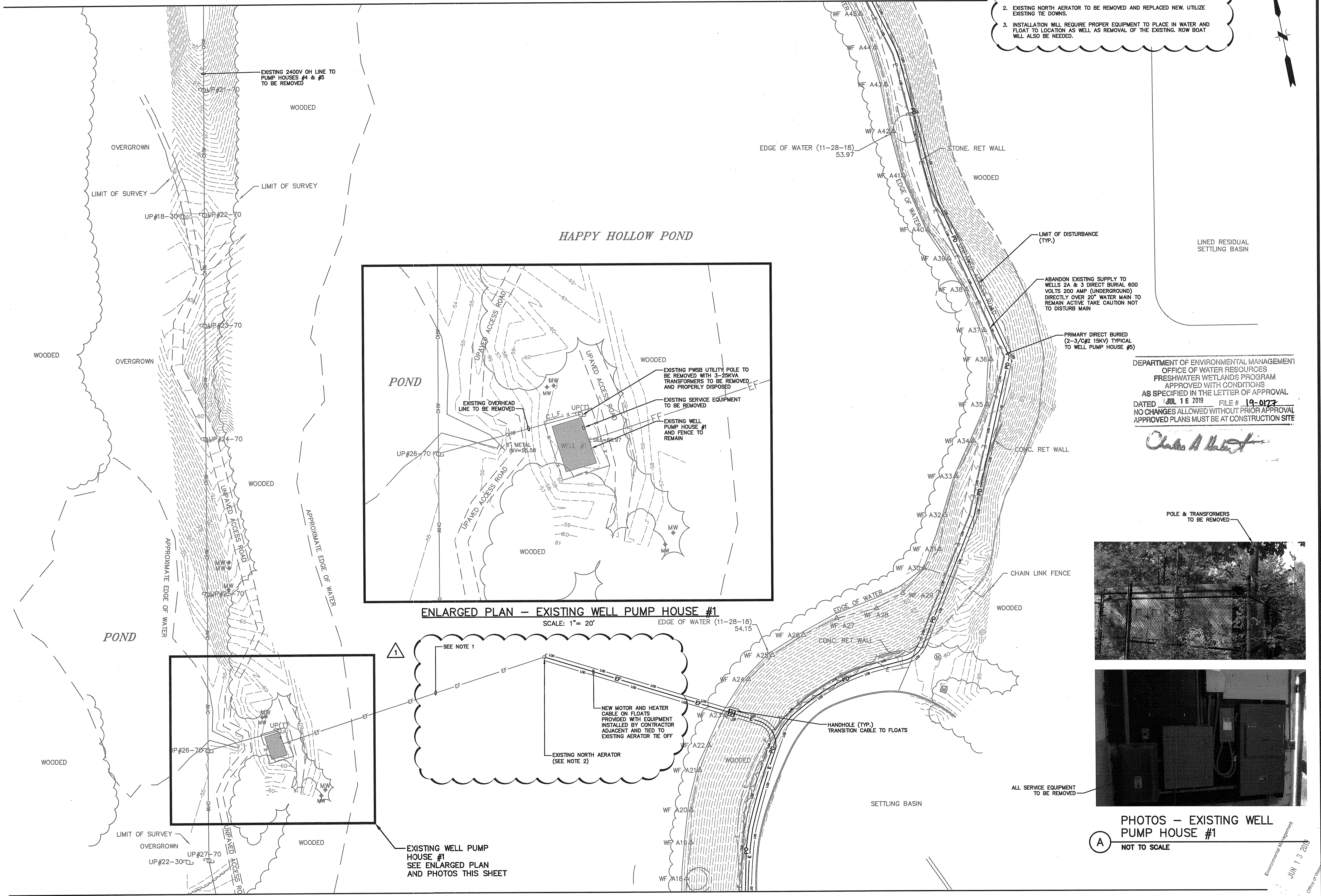
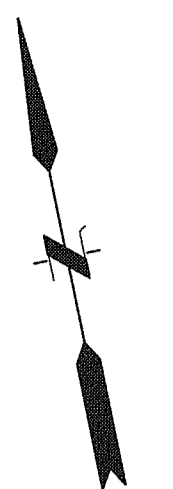
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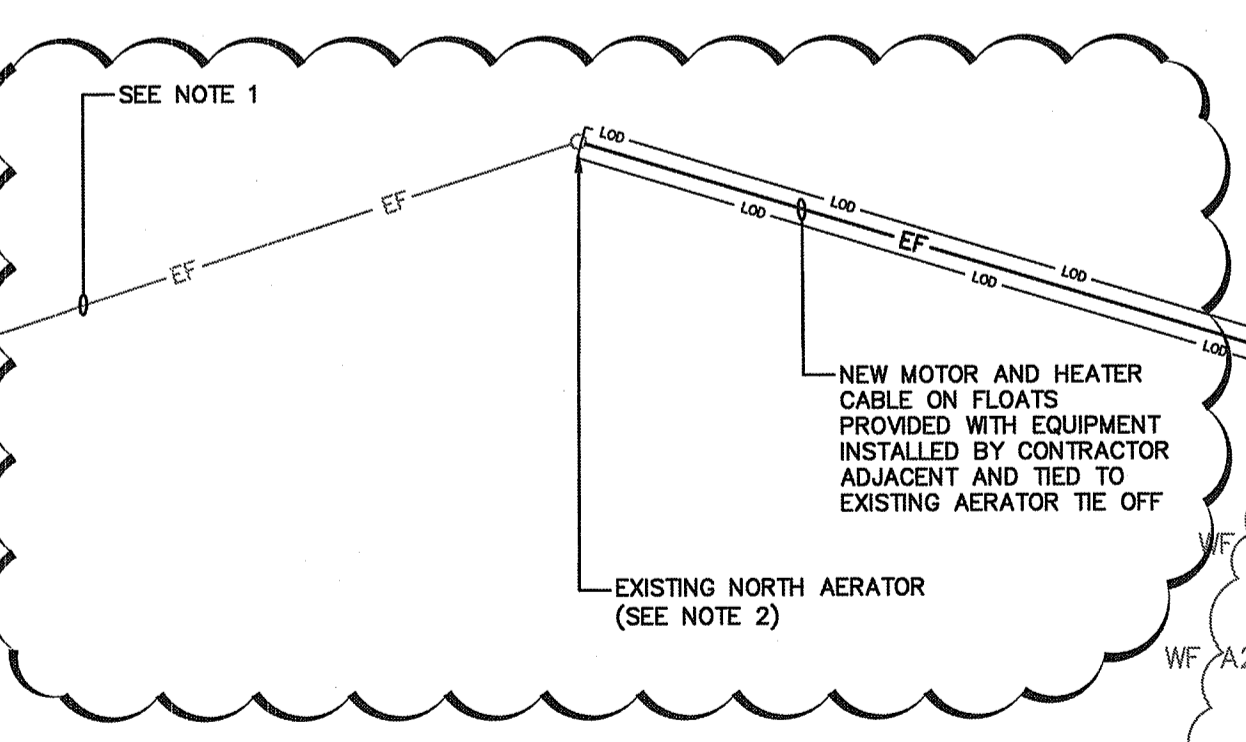
**NOTE:**

1. DISCONNECT & REMOVE EXISTING POWER TO NORTH AERATOR.
2. EXISTING NORTH AERATOR TO BE REMOVED AND REPLACED NEW. UTILIZE EXISTING TIE DOWNS.
3. INSTALLATION WILL REQUIRE PROPER EQUIPMENT TO PLACE IN WATER AND FLOAT TO LOCATION AS WELL AS REMOVAL OF THE EXISTING. ROW BOAT WILL ALSO BE NEEDED.



ENLARGED PLAN - EXISTING WELL PUMP HOUSE #1

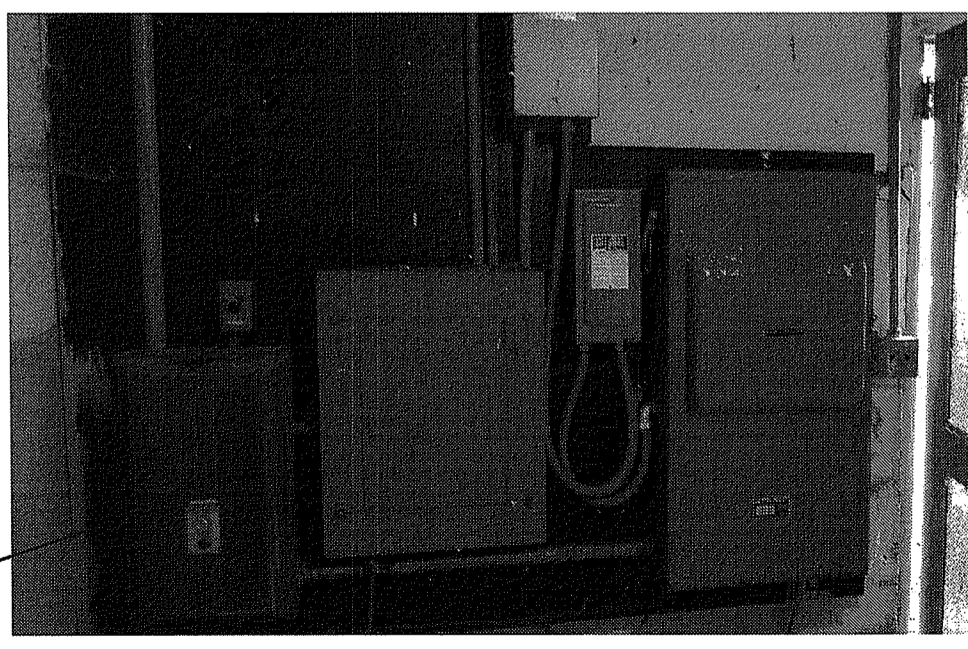
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EXISTING WELL PUMP HOUSE #1  
SEE ENLARGED PLAN AND PHOTOS THIS SHEET

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*Charles A. Hester*



PHOTOS - EXISTING WELL PUMP HOUSE #1  
NOT TO SCALE

No.	DATE	APPENDUM NO. 1	DESIGNER	REVIEWER
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**E-204**  
SHEET 7 OF 17

File Path: J:\DWG\2018\0576A10\MEP\Electrical\20180576A10\_UTL01.dwg Layout: E-204 Plotted: Wed, May 23, 2019 - 9:50 AM User: cviera  
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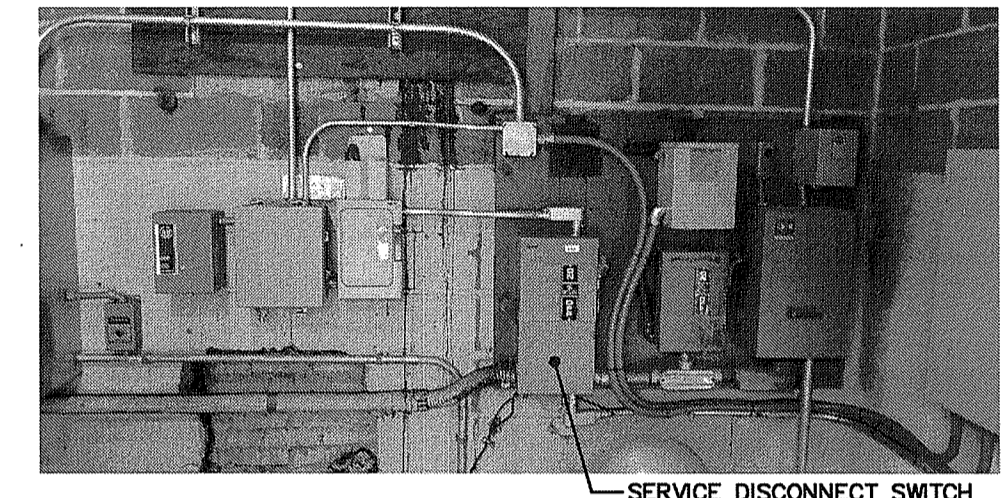
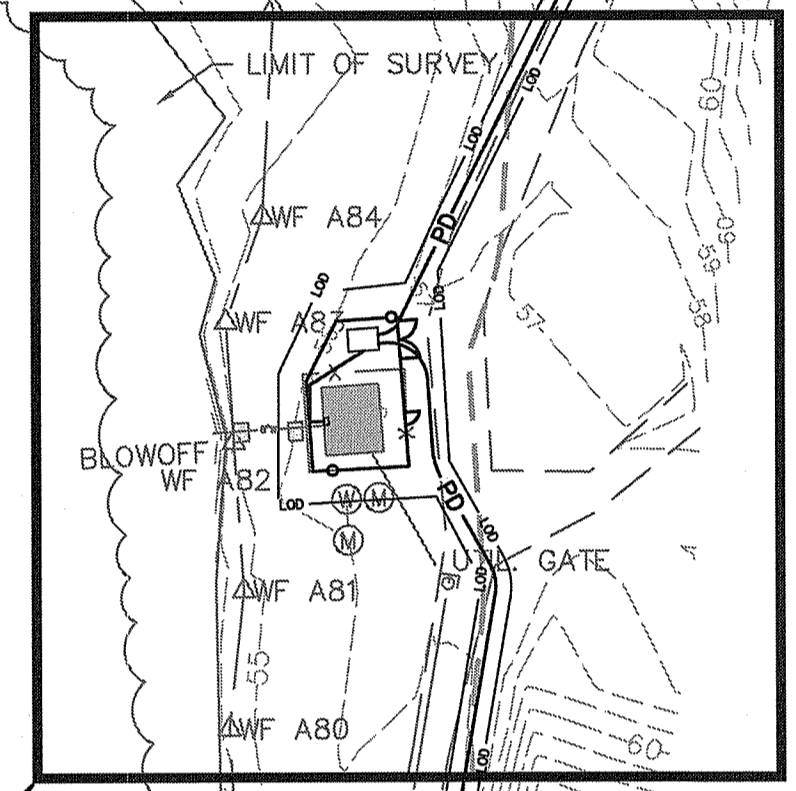
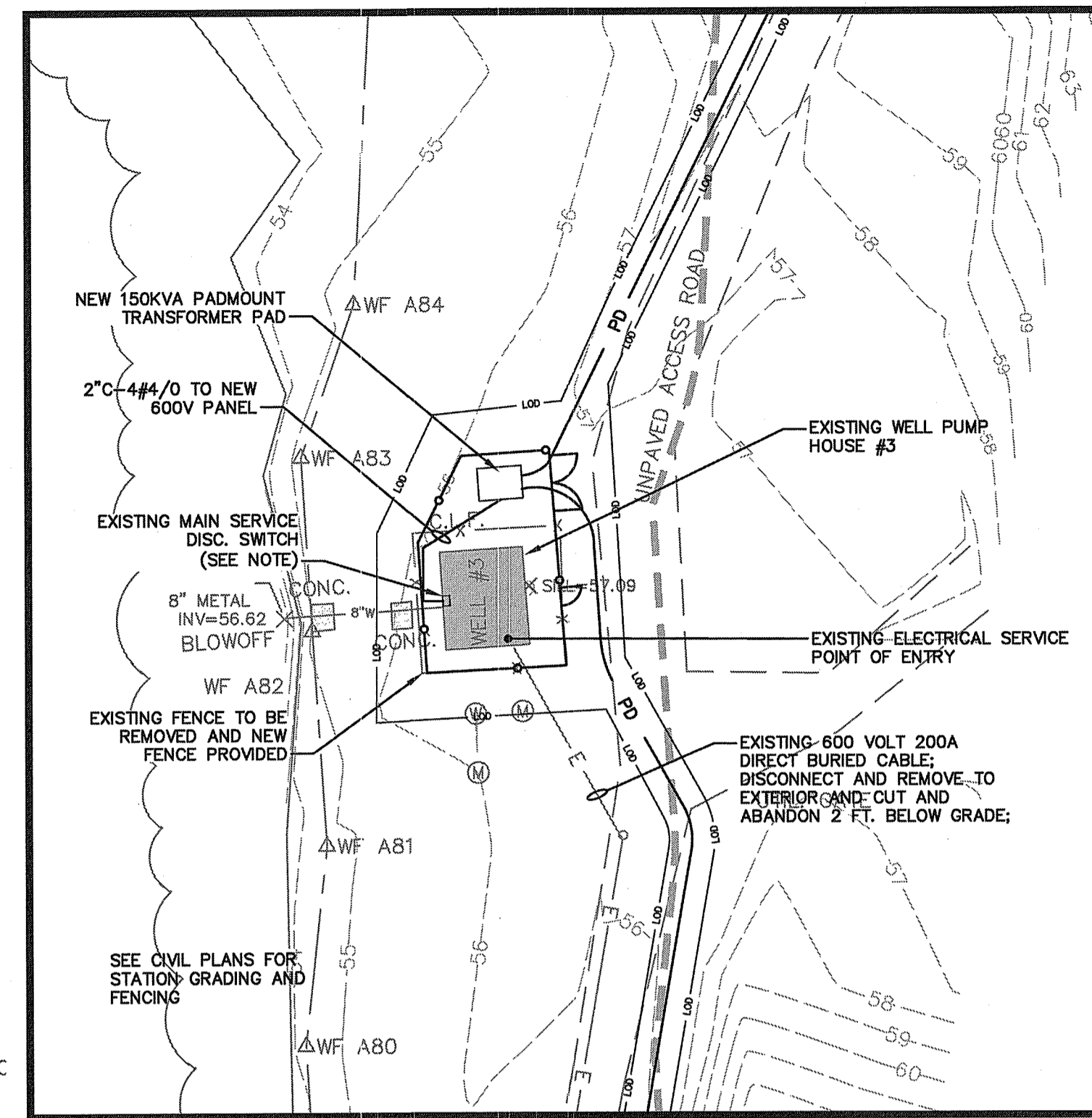
MATCH LINE SEE SHEET E-203

ADDENDUM NO. 1 05/24/2019

Environmental Management  
JUL 13 2019

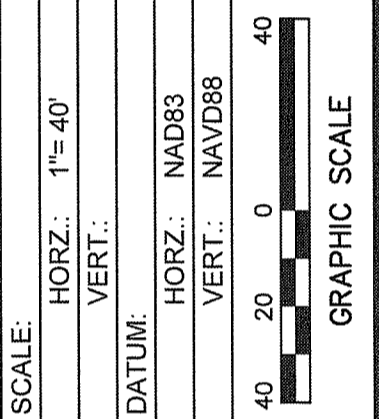


MATCH LINE SEE SHEET E-207



**PHOTOS -- EXISTING WELL PUMP HOUSE #3**  
NOT TO SCALE

- NOTES:**
- EXISTING SERVICE DISCONNECT SWITCH TO REMAIN, ALL OTHER TO REMAIN CONNECT TO NEW SERVICE.
  - EXISTING FENCE TO BE REMOVED AND NEW FENCE INSTALLED. SEE CS SHEET SERIES.



DEPARTMENT OF ENVIRONMENTAL MANAGEMENT  
OFFICE OF WATER RESOURCES  
FRESHWATER WETLANDS PROGRAM  
APPROVED WITH CONDITIONS  
AS SPECIFIED IN THE LETTER OF APPROVAL  
DATED JUL 16 2019 FILE # 19-0177  
NO CHANGES ALLOWED WITHOUT PRIOR APPROVAL  
APPROVED PLANS MUST BE AT CONSTRUCTION SITE

*Charles A. Hester*

**FUSS & O'NEILL**  
317 IRON HORSE WAY, SUITE 204  
PROVIDENCE, RI 02908  
www.fandoc.com

PAWTUCKET WATER SUPPLY BOARD  
ELECTRICAL SITE PLAN NO. 4  
BID No. 18-011 WELL FIELD ELECTRICAL POWER AND DISTRIBUTION SYSTEM UPGRADE  
120 MILL STREET CUMBERLAND, RHODE ISLAND

PROJ. No.: 20180576.A10  
DATE: APRIL 2019

**E-206**  
SHEET 9 OF 17

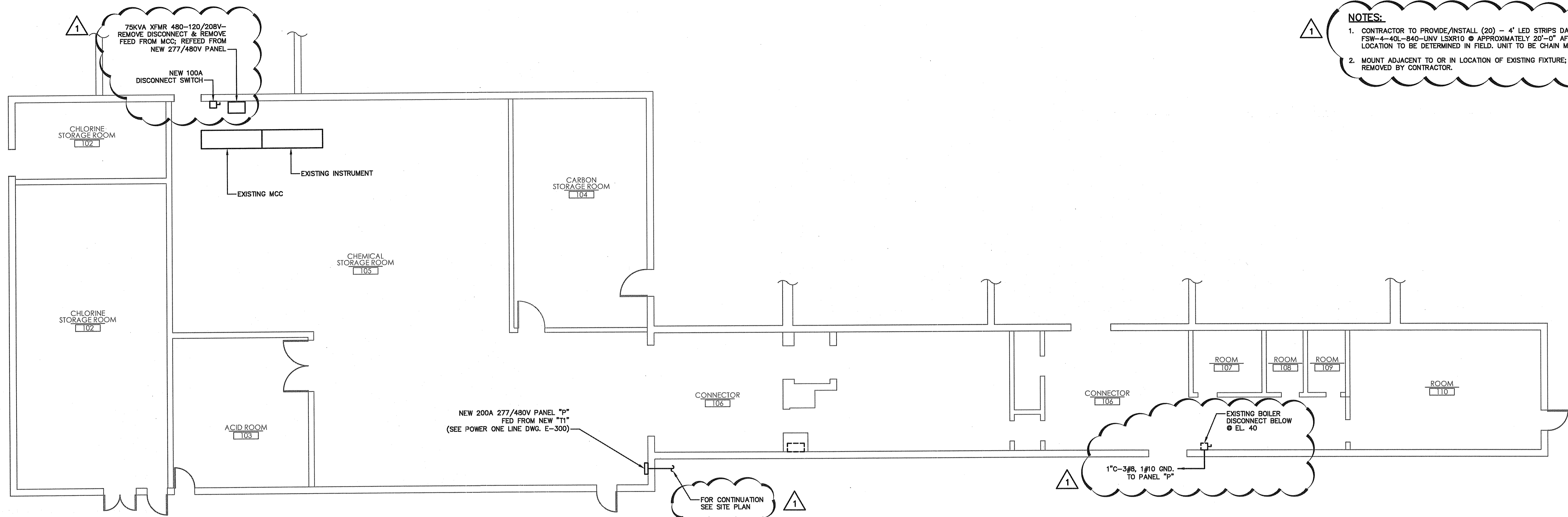
MATCH LINE SEE SHEET E-205

ADDENDUM NO. 1 05/24/2019

File Path: J:\DWG\F20180576\A10\MEP\Electrical\20180576A10\_UTL01.dwg Layout: E-206 Plotted: Wed, May 23, 2019 - 9:50 AM User: celera  
 PLOTTER: AUTOCAD PDF (GENERAL DOCUMENTATION).PC3 CTB File: FO.STB  
 LAYER STATE:



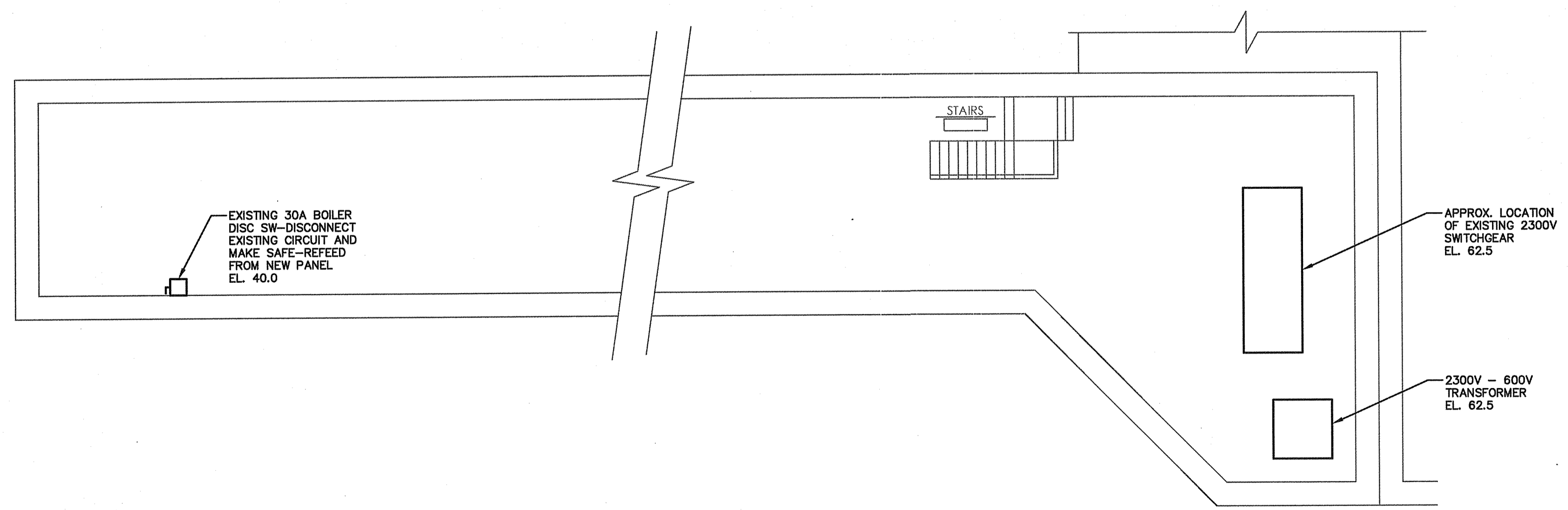
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 LAYER STATE:



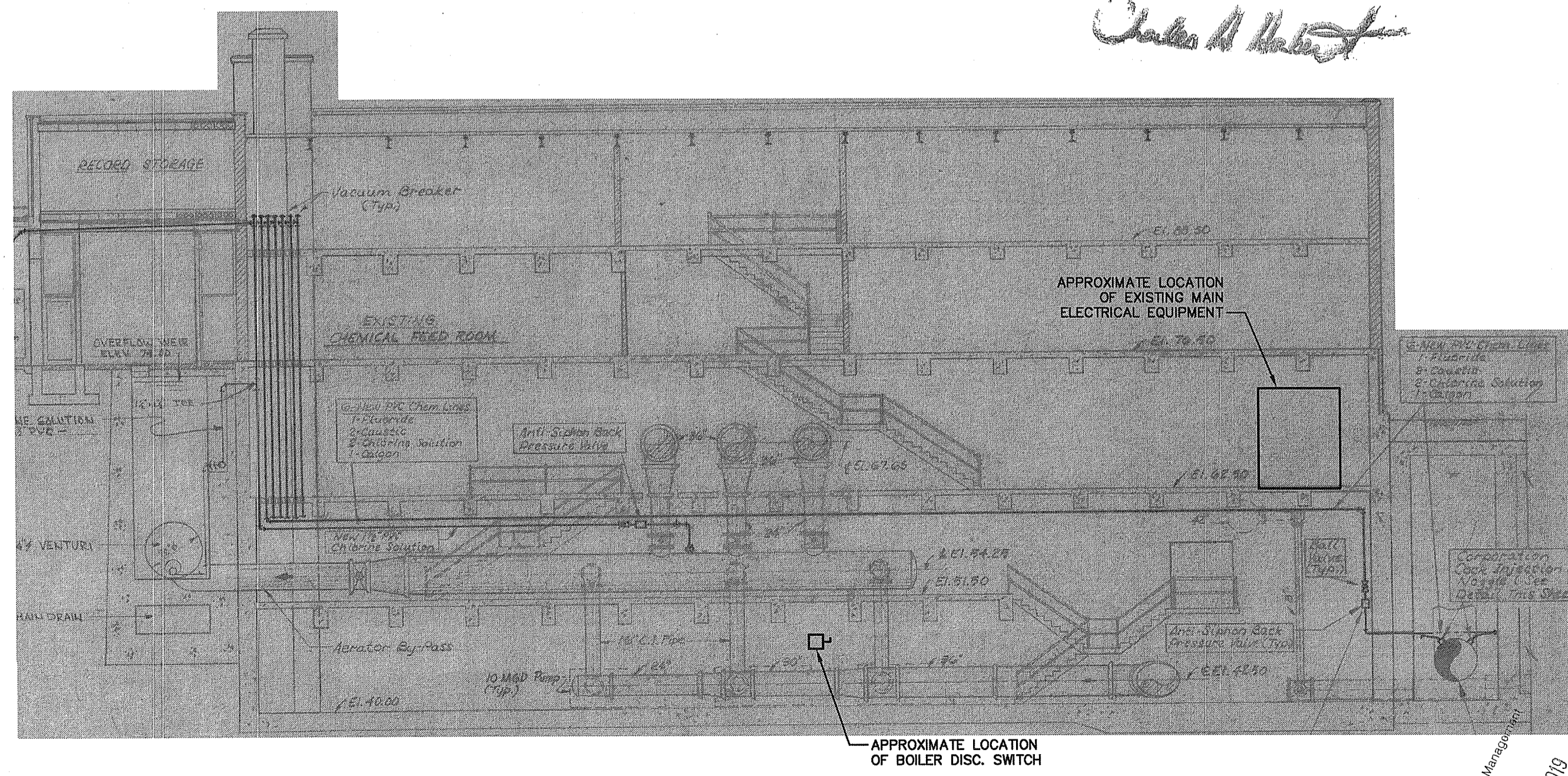
**NOTES:**

- CONTRACTOR TO PROVIDE/INSTALL (20) - 4' LED STRIPS DAY-BRITE FSW-4-40L-840-UNV LXR10 @ APPROXIMATELY 20'-0" AF EXACT LOCATION TO BE DETERMINED IN FIELD. UNIT TO BE CHAIN MTD.
- MOUNT ADJACENT TO OR IN LOCATION OF EXISTING FIXTURE; TO BE REMOVED BY CONTRACTOR.

**A** FIRST FLOOR - EXISTING BUILDING ELEV. 76.5  
 1/8" = 1'-0" ±



**B** BOILER AND PUMP ROOM - FLOOR ELEV. 40.0  
 1/8" = 1'-0" ±



**C** ABANDONED BUILDING - SECTION VIEW  
 NOT TO SCALE

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 FRESHWATER WETLANDS PROGRAM  
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 AS SPECIFIED IN THE LETTER OF APPROVAL  
 DATED JUL 16 2019 FILE # 19-0127  
 NO CHANGES ALLOWED WITHOUT PRIOR APPROVAL  
 APPROVED PLANS MUST BE AT CONSTRUCTION SITE

*Charles H. Hart*

NO.	DATE	ADDENDUM NO. 1	DESCRIPTION	CW/CV	KS/SW	DESIGNER REVIEWER
1.	5/24/2019					

SCALE: 1/8" = 1'-0"  
 HORIZ.: 1/8" = 1'-0"  
 VERT.: 1/8" = 1'-0"  
 DATUM:  
 HORIZ.: 0  
 VERT.: 1/8"  
 GRAPHIC SCALE

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PAWTUCKET WATER SUPPLY BOARD  
 ABANDONED WATER TREATMENT PLANT  
 BID No. 18-011 WELL FIELD ELECTRICAL POWER AND DISTRIBUTION SYSTEM UPGRADE  
 CUMBERLAND, RHODE ISLAND  
 120 MILL STREET

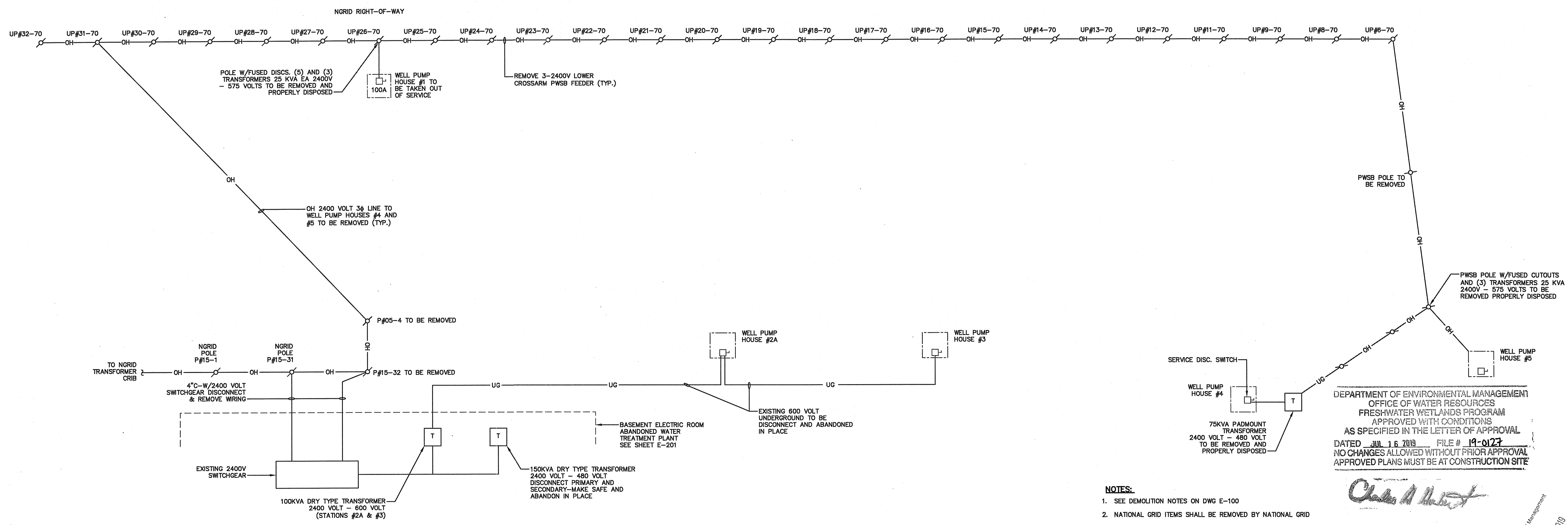
PROJ. No.: 20180576A10  
 DATE: APRIL 2019

**E-208**  
 SHEET 11 OF 17

Environmental Management  
 JUN 13 2019  
 Office of Water Resources

ADDENDUM NO. 1 05/24/2019

File Path: J:\DWG\2018\05\76\A10\MEP\Electrical\20180576A10\_ELE01.dwg Layout: E-300 Plotted: Wed, May 23, 2019 - 9:51 AM User: cvelera  
 PLOTTER: AUTOCAD PDF (GENERAL DOCUMENTATION) PC3 CTB File: FO.STB  
 LAYER STATE:



1 EXISTING CONDITIONS/DEMOLITION PLAN  
 NOT TO SCALE

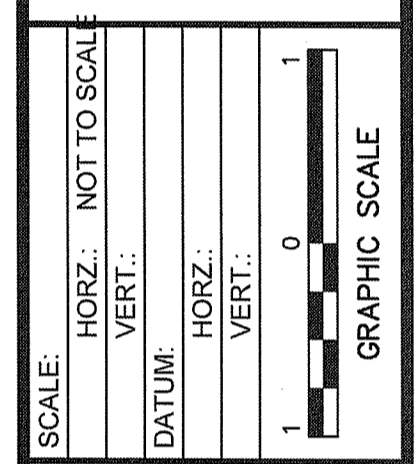
- NOTES:**
1. SEE DEMOLITION NOTES ON DWG E-100
  2. NATIONAL GRID ITEMS SHALL BE REMOVED BY NATIONAL GRID

DEPARTMENT OF ENVIRONMENTAL MANAGEMENT  
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 DATED JUL 16 2019 FILE # 19-0127  
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*Charles A. Matusz*

Environmental Management  
 JUL 13 2019

No.	DATE	DESCRIPTION	DESIGNER/REVIEWER
1.	5/24/2019	ADDENDUM NO. 1	CW/CV



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PAWTUCKET WATER SUPPLY BOARD  
 ONE-LINE DIAGRAM  
 BID No. 18-011 WELL FIELD ELECTRICAL  
 POWER AND DISTRIBUTION SYSTEM UPGRADE  
 CUMBERLAND, RHODE ISLAND  
 120 MILL STREET

PROJ. No.: 20180576.A10  
 DATE: APRIL 2019

**E-300**  
 SHEET 12 OF 17

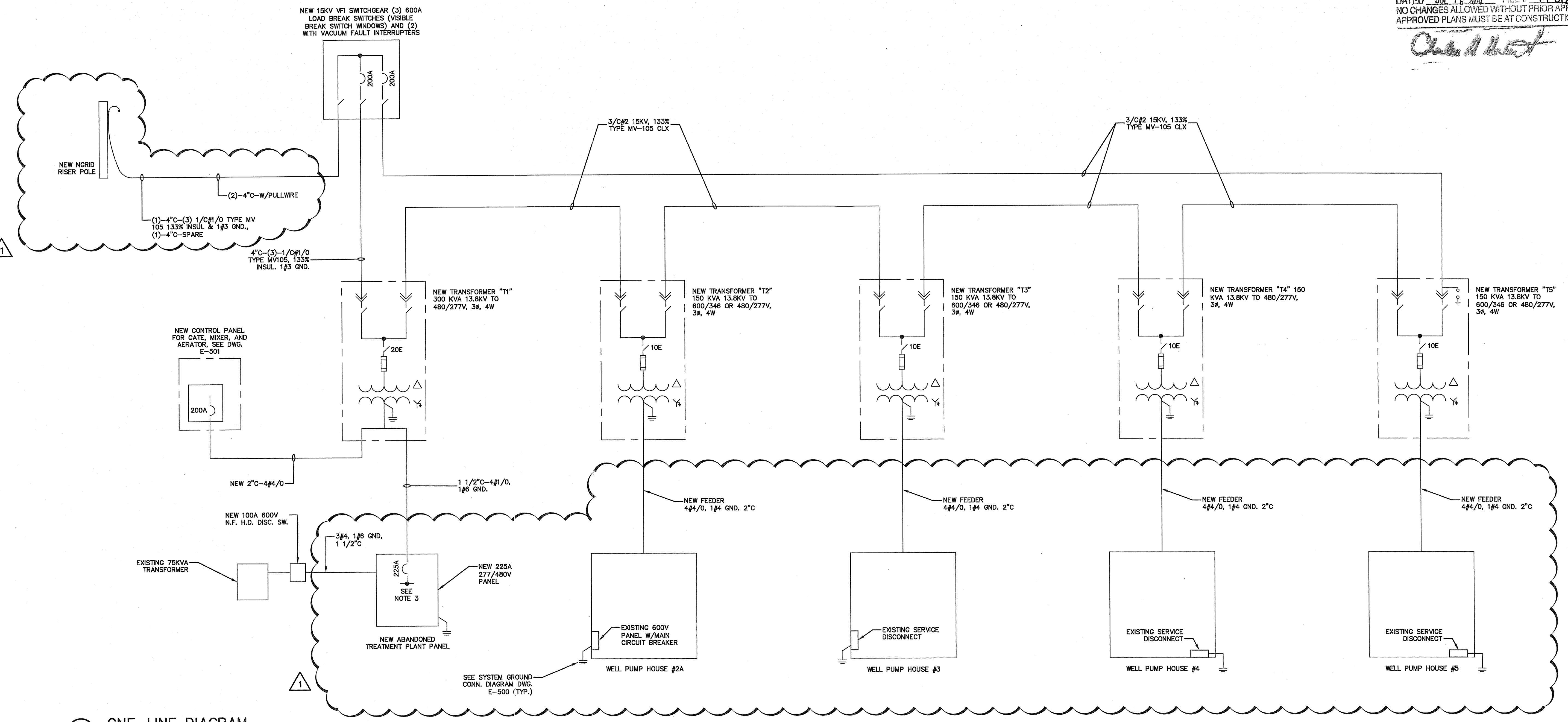
ADDENDUM NO. 1 05/24/2019

- NOTES:**
- FOR GENERAL NOTES AND LEGEND SEE DWG. E-100.
  - PROVIDE NEW SECONDARY SERVICE TO NEW OR EXISTING STATION PANEL.
  - PANEL SHALL BE PROVIDED WITH THE FOLLOWING CIRCUIT BREAKERS:
    - 3P-90A TO REFD 75 KVA TRANSFORMER
    - 3P-30A TO REFD BOILER DISCONNECT SWITCH
    - 3P-20A SPACES

1

DEPARTMENT OF ENVIRONMENTAL MANAGEMENT  
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*Charles A. Neill*



1 ONE-LINE DIAGRAM  
NOT TO SCALE

No.	DATE	ADDENDUM NO.	DESCRIPTION	DESIGNER	REVIEWER
1	5/24/2019			CW/CV	KS/SM

SCALE: NOT TO SCALE

HORIZ.:	VERT.:
DATUM:	VERT.:

GRAPHIC SCALE

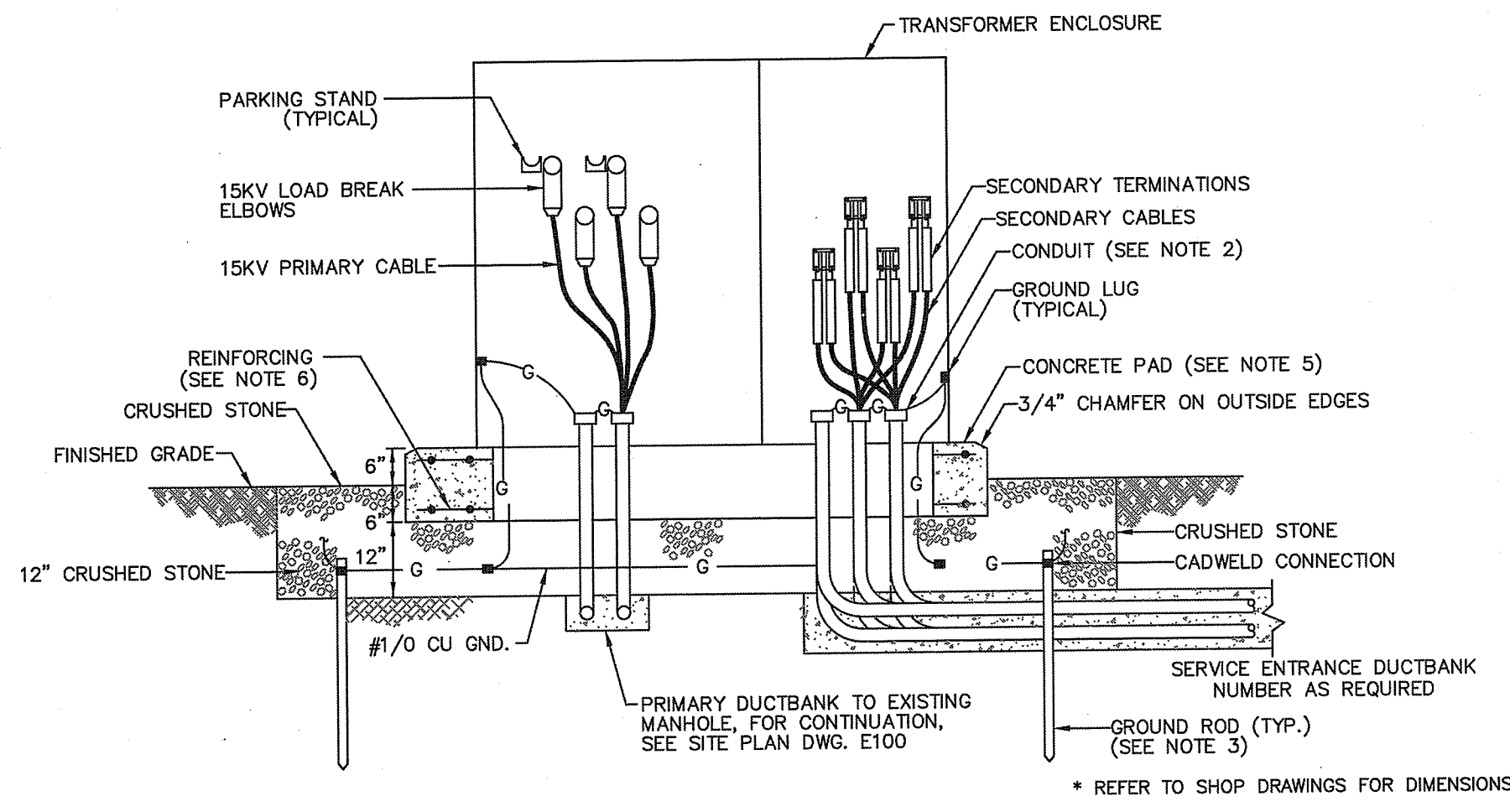
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PAWTUCKET WATER SUPPLY BOARD  
 ONE-LINE DIAGRAM  
 BID No. 18-011 WELL-FIELD ELECTRICAL  
 POWER AND DISTRIBUTION SYSTEM UPGRADE  
 CUMBERLAND, RHODE ISLAND  
 120 MILL STREET

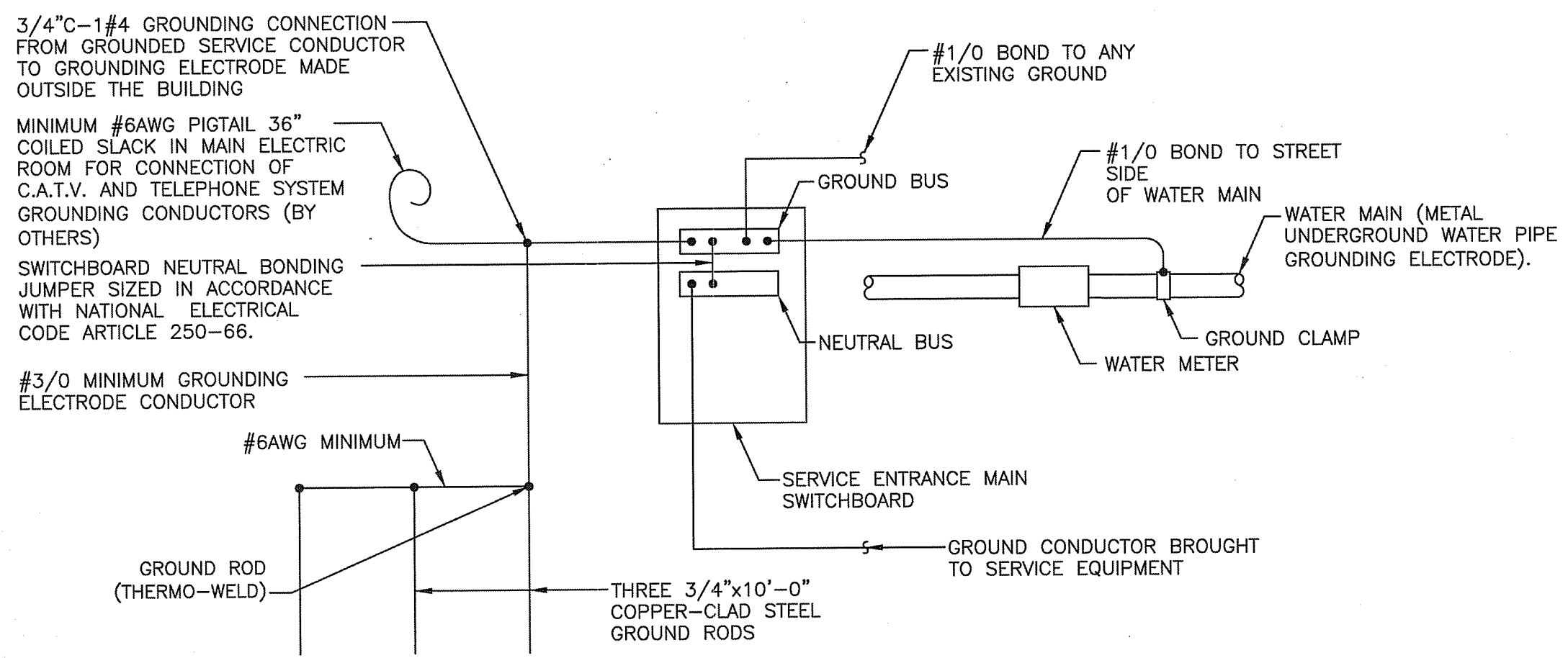
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 DATE: APRIL 2019

**E-301**  
 SHEET 13 OF 17

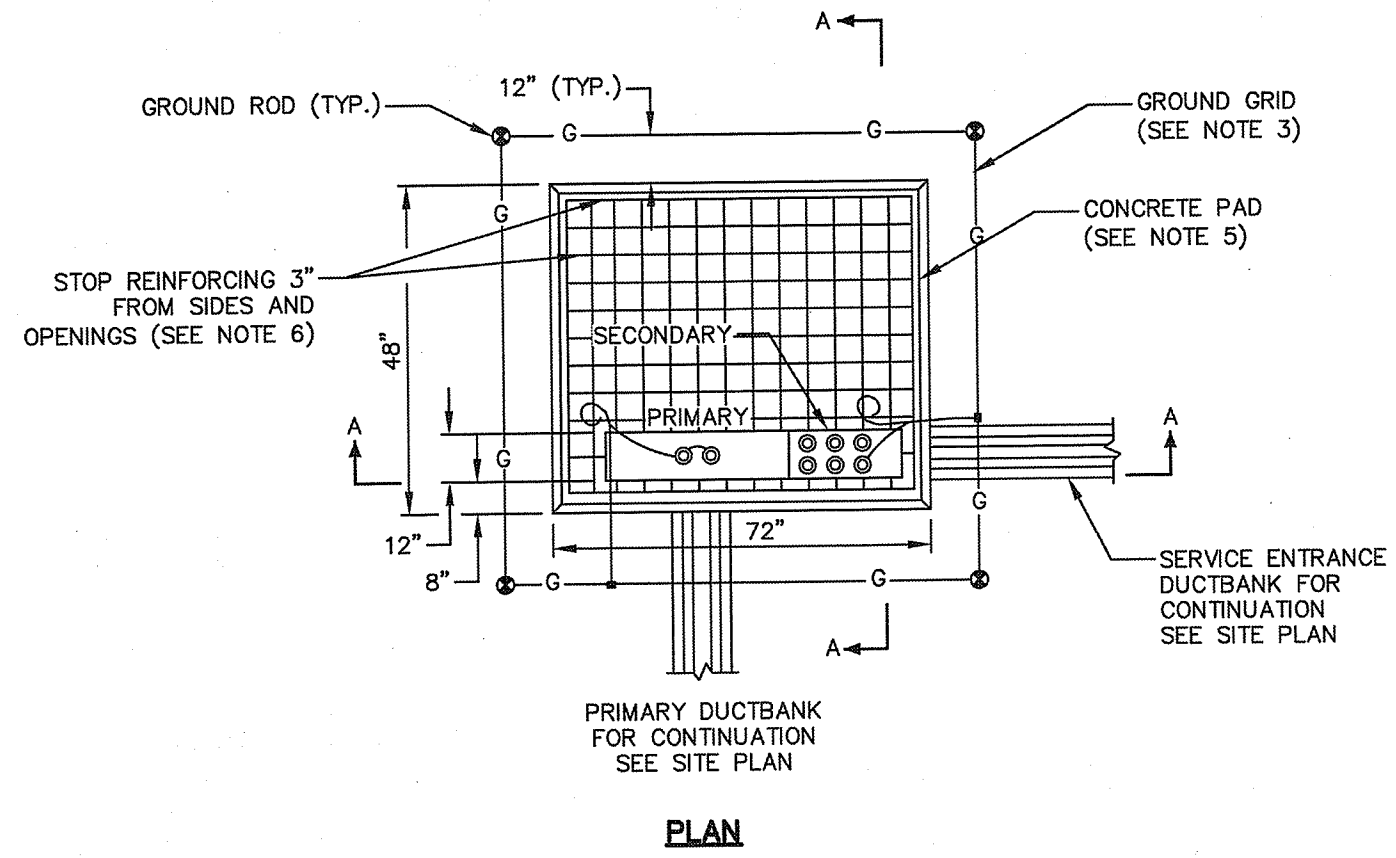
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 Plotter: AUTOCAD PDF (GENERAL DOCUMENTATION).PC3 CTB File: FO.STB  
 LAYER STATE:



SECTION "A-A"



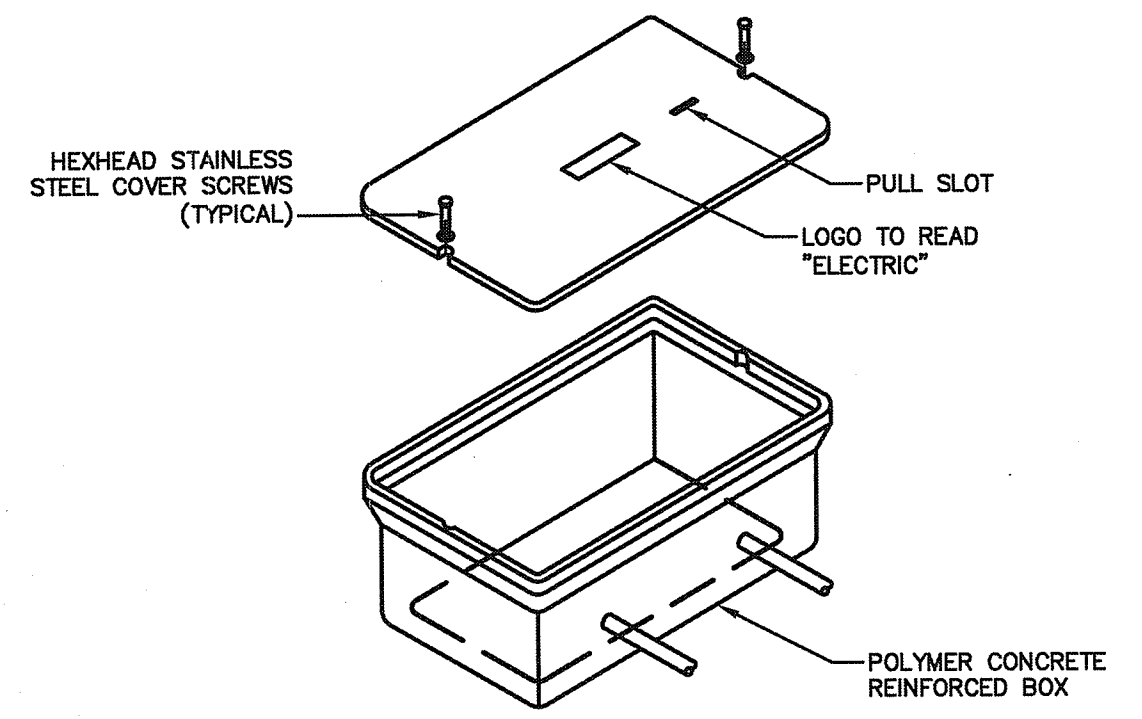
SYSTEM GROUNDING CONNECTIONS DIAGRAM - TYPICAL ALL SERVICES  
SCALE: N.T.S.



PLAN

TRANSFORMER PAD NOTES:

1. ALL WORK SHALL BE APPROVED BY THE PWSB/ENGINEER
2. CONDUIT - INSTALL AS SHOWN BEFORE SLAB IS POURED. USE 36" RADIUS BENDS, WITH COUPLINGS, NIPPLES AND GROUNDING TYPE BUSHINGS AS REQUIRED. TERMINATE AS SHOWN.
3. GROUND GRID - INSTALL AS SHOWN. INSTALL #1/0, 7-STRAND BARE COPPER WIRE LOOP 1'-0" BELOW GRADE BOND ALL EXPOSED METALLIC CONDUIT AND LEAVE 3'-0" OF SLACK WIRE ABOVE PAD FOR GROUNDING TRANSFORMER AT (2) OPPOSITE POINTS IN THE CABLE CONDUIT OPENING. INSTALL COPPER CLAD STEEL 3/4" X 10'-0" GROUND ROD.
4. CRUSHED STONE - SHALL BE COMPACTED AND WETTED JUST BEFORE POURING THE CONCRETE
5. CONCRETE PAD - INSTALL CONCRETE AS SPECIFIED. ALL EXPOSED EDGES SHALL HAVE A 3/4" CHAMFER. PAD SHALL BE A MINIMUM OF 12" THICK EXACT SIZE OF PAD TO BE VERIFIED WITH SUPPLIED TRANSFORMER DIMENSIONS BEFORE PROCEEDING WITH WORK.
6. REINFORCING SHALL BE #4 GRADE 60 REBARS, 12" O.C. EACH WAY, CONFORMING TO THE LATEST STANDARDS OF ASTM STD. A-615. REINFORCING SHALL BE LOCATED AT THE BOTTOM OF THE SLAB, WITH A MINIMUM OF 3" CLEARANCE FROM THE FACE OF CONCRETE.
7. SLOPE PAD 1% TO EDGE DRAINAGE.
8. EXACT TRANSFORMER PAD DIMENSIONS SHALL BE PER APPROVED SHOP DRAWING.

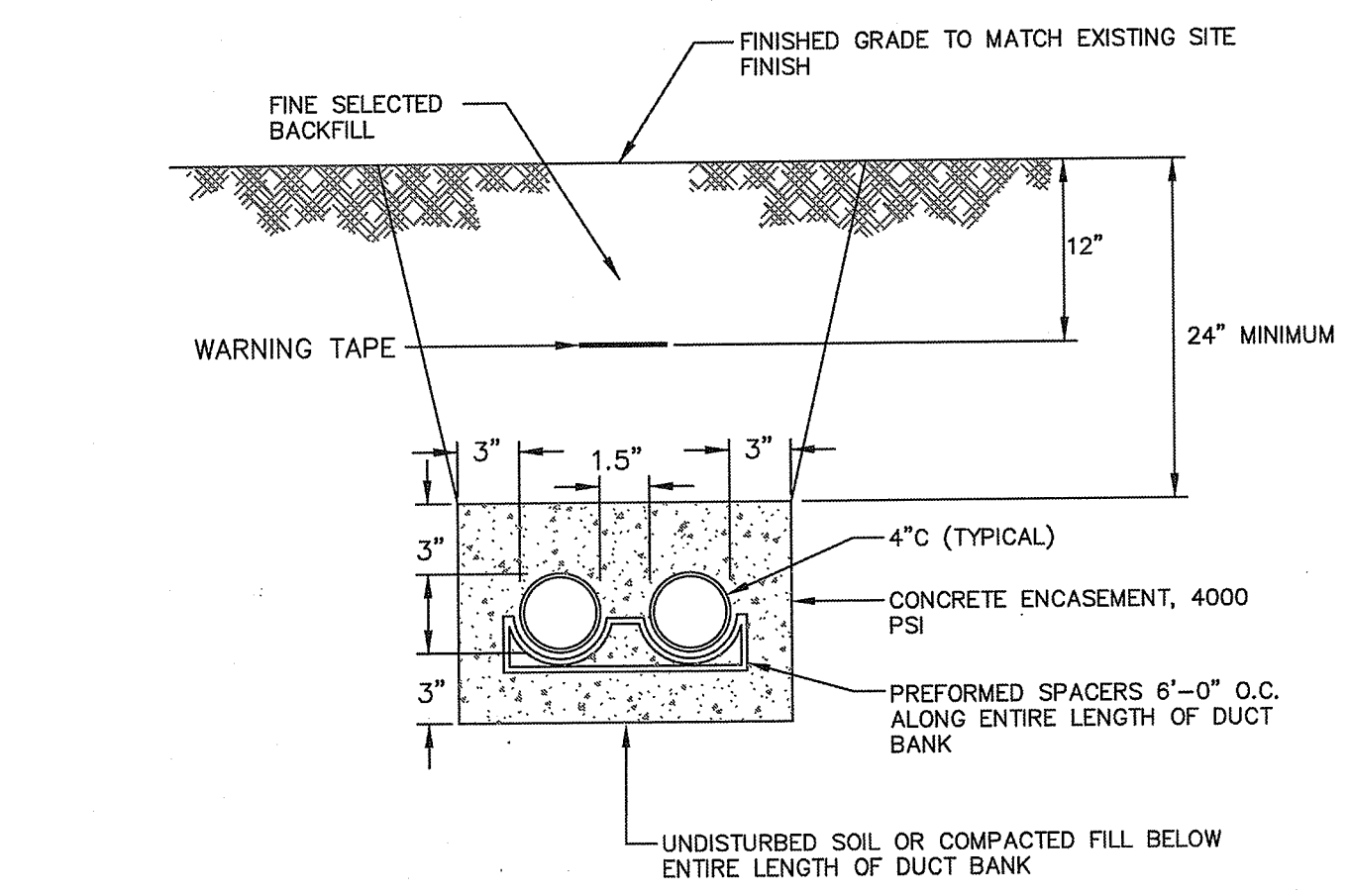


- NOTES:
1. SIZE HANDHOLE IN ACCORDANCE WITH NEC 314.30 & 314.28(A).
  2. ELECTRIC HANDHOLE COVER TO BE STAMPED "ELECTRIC".
  3. HANDHOLE SHALL BE OPEN BOTTOM.
  4. CONDUCTORS FROM POSITIVE AND NEGATIVE ARRAYS SHALL NEVER BE LOCATED IN THE SAME HANDHOLE.
  5. HANDHOLE SHALL CONFORM TO ANSI/SCTE 77-2010 FOR VEHICULAR LOADING.

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DATED JUL 16 2019 FILE # 19-0123  
NO CHANGES ALLOWED WITHOUT PRIOR APPROVAL  
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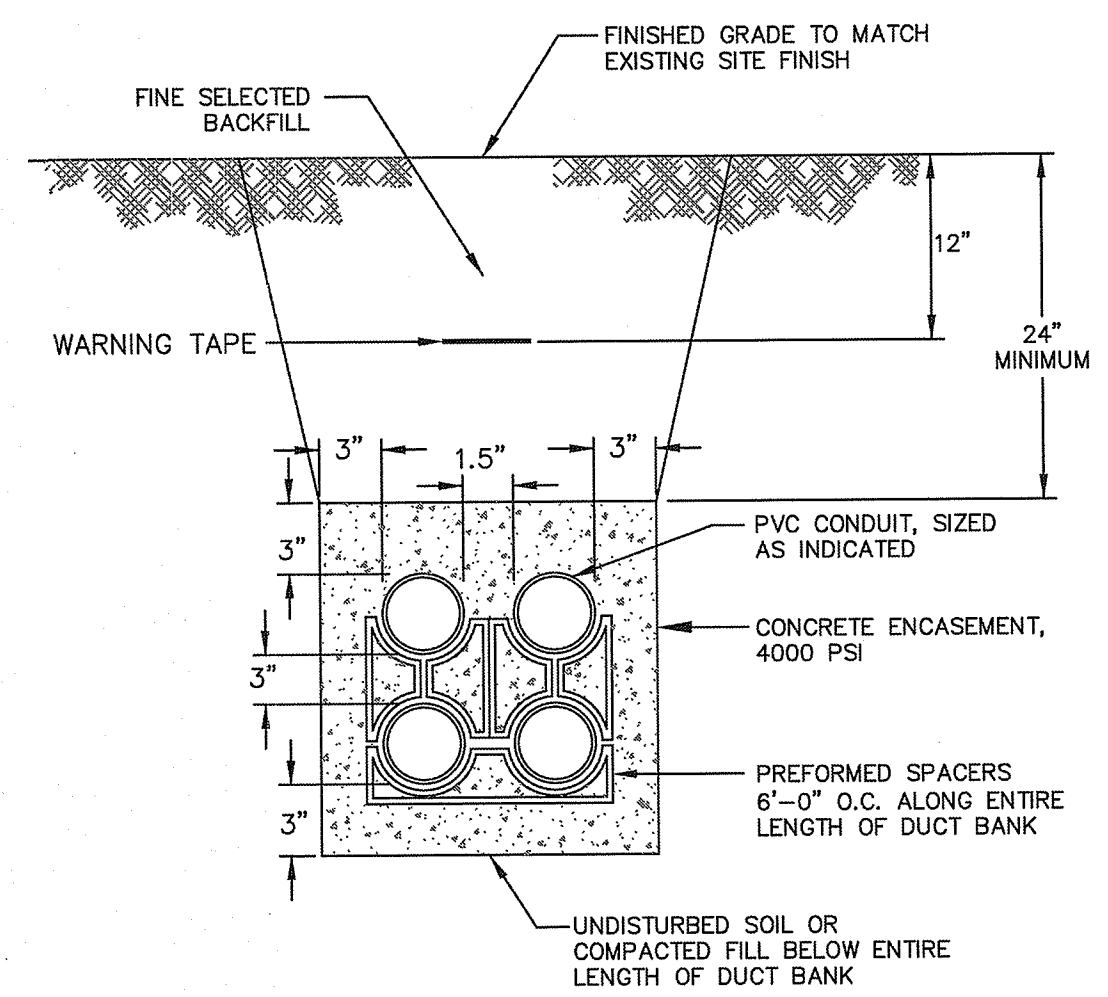
TYPICAL PADMOUNT TRANSFORMER DETAIL  
SCALE: N.T.S.

TYPICAL HANDHOLE DETAIL  
SCALE: N.T.S.



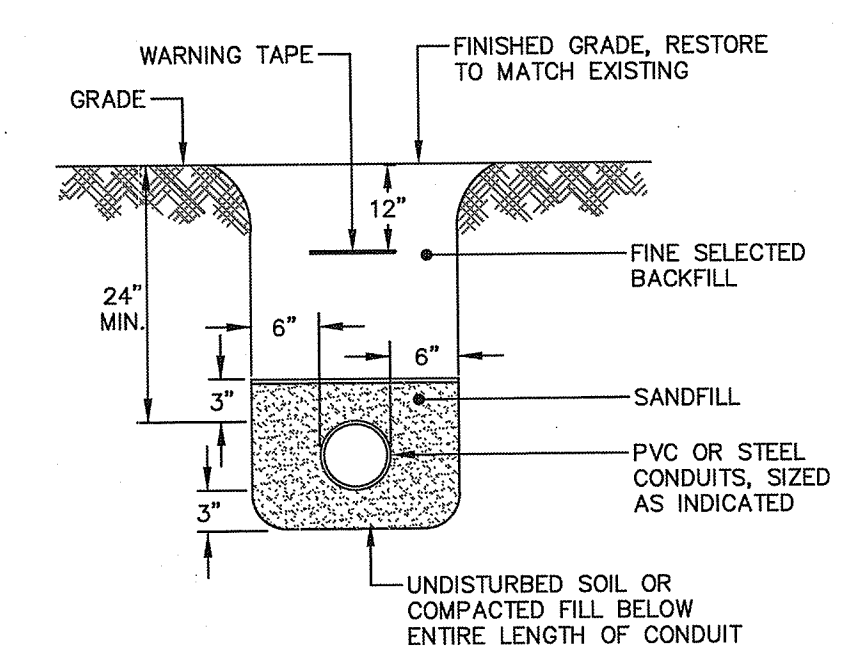
- NOTES:
1. ALL DIMENSIONS ARE MINIMUM REQUIREMENTS.

PRIMARY NGRID DUCTBANK SECTION  
SCALE: N.T.S.



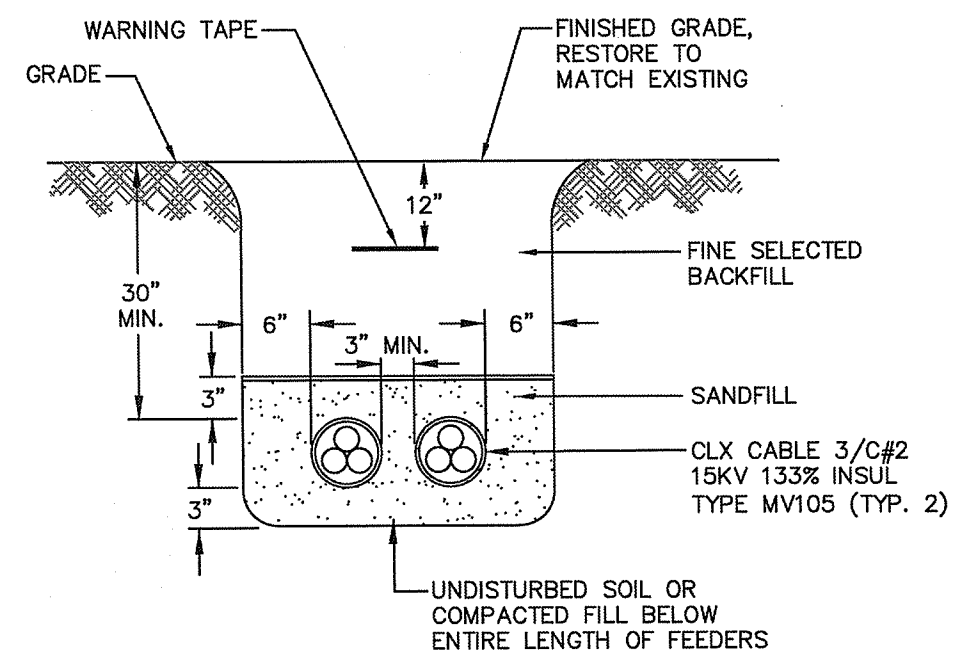
- NOTES:
1. ALL DIMENSIONS ARE MINIMUM REQUIREMENTS.
  2. CONCRETE ENCASUREMENT FOR PRIMARY AND UNDER ROADWAY.

TYPICAL DUCTBANK SECTION  
SCALE: N.T.S.



- NOTES:
1. ALL DIMENSIONS ARE MINIMUM REQUIREMENTS.

TYPICAL SINGLE CONDUIT IN TRENCH DETAIL  
SCALE: N.T.S.



- NOTES:
1. ALL DIMENSIONS ARE MINIMUM REQUIREMENTS.

TYPICAL MEDIUM VOLTAGE DIRECT BURIED CABLES IN TRENCH DETAIL  
SCALE: N.T.S.

No.	DATE	DESCRIPTION	DESIGNER	REVIEWER
1.	5/24/2019	ADDENDUM NO. 1		

SCALE:	HORZ.: AS NOTED
	VERT.: AS NOTED
DATUM:	
	HORZ.: 1" = 10'
	VERT.: 1" = 10'
	GRAPHIC SCALE

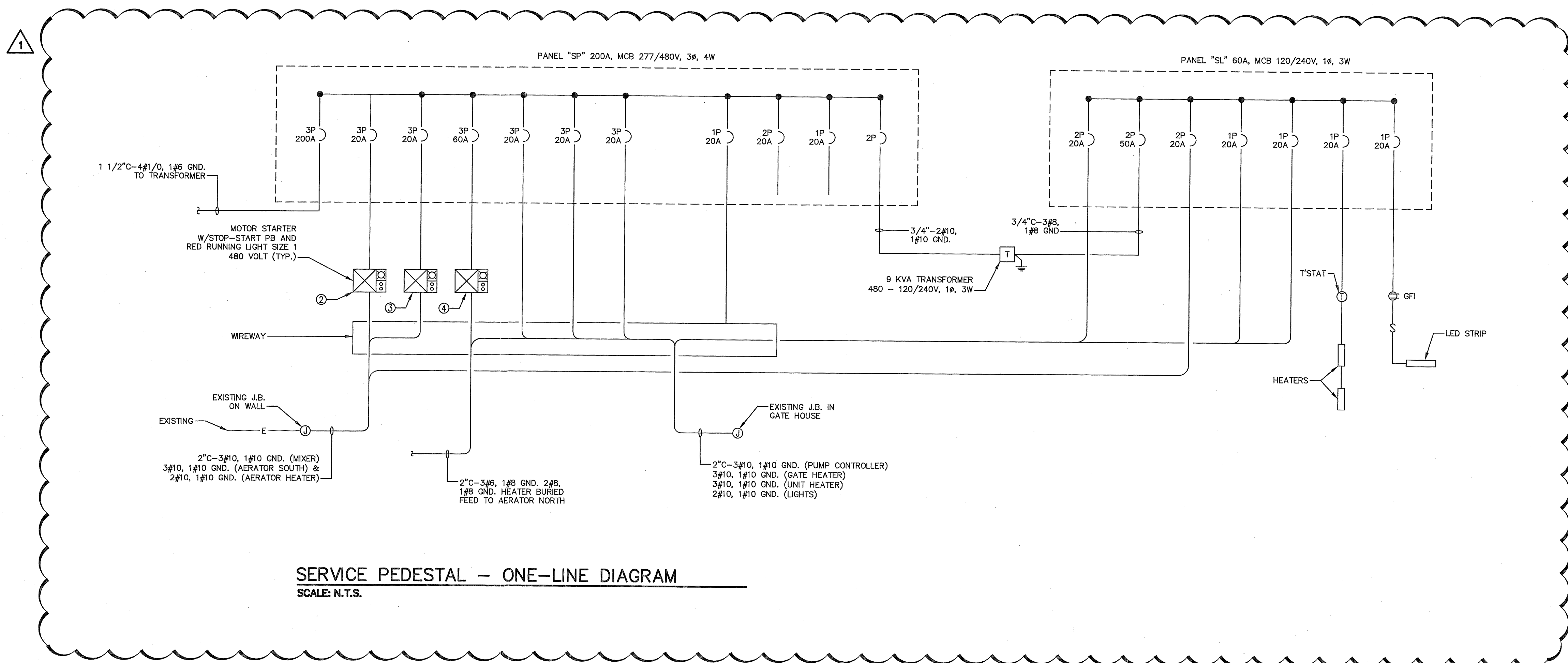
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PAWTUCKET WATER SUPPLY BOARD  
ELECTRICAL DETAILS  
BID No. 18-011 WELL FIELD ELECTRICAL POWER AND DISTRIBUTION SYSTEM UPGRADE  
120 MILL STREET CUMBERLAND, RHODE ISLAND

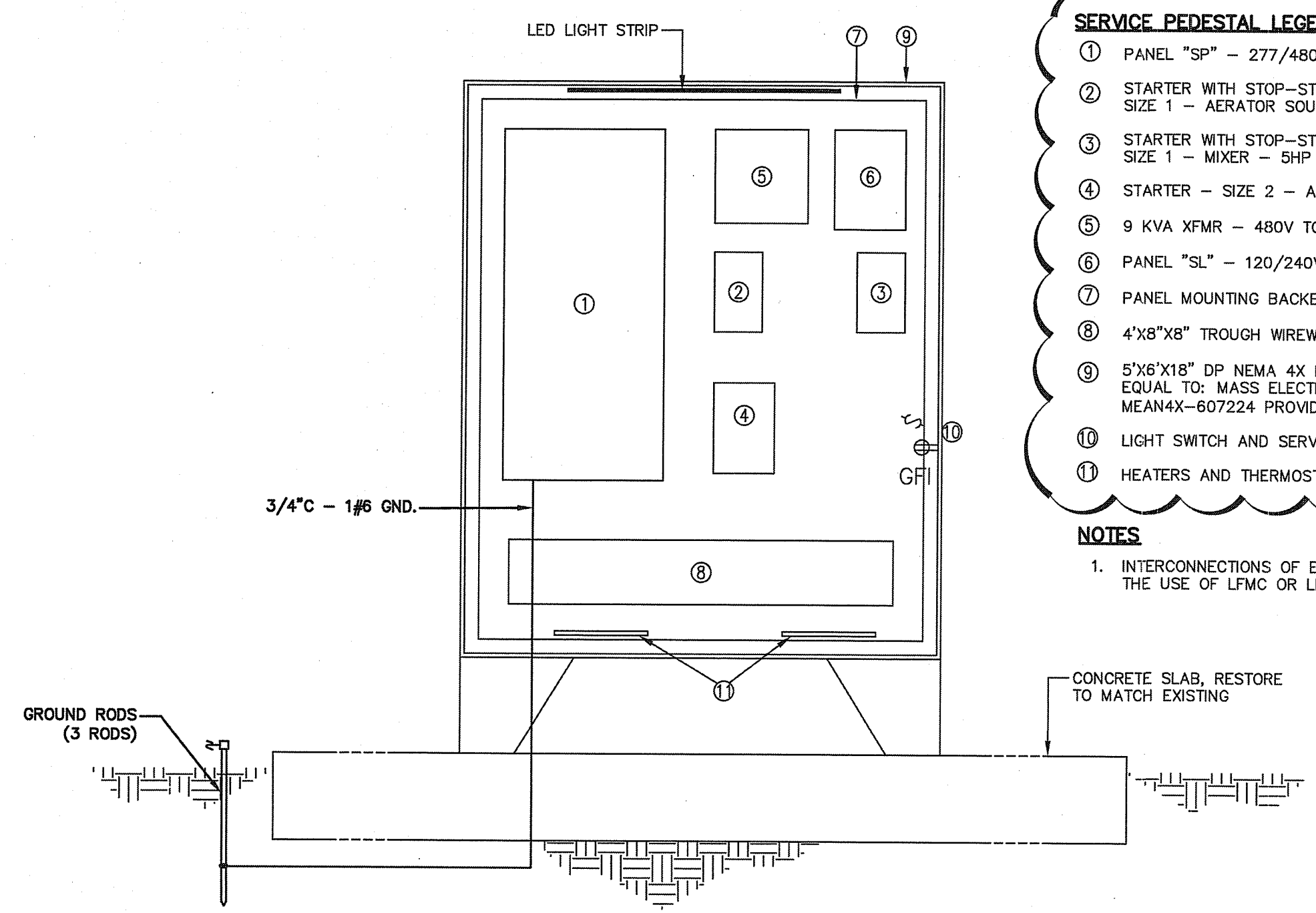
PROJ. No.: 20180576.A10  
DATE: APRIL 2019

E-500  
SHEET 14 OF 17

File Path: J:\DWG\20180576\A10\MEP\Electrical\20180576A10\_DET01.dwg Layout: E-500 Plotted: Wed, May 29, 2019 - 9:51 AM User: cviera  
PLOTTER: AUTOCAD PDF (GENERAL DOCUMENTATION) PC3 CTB File: FO.STB  
LAYER STATE:



**SERVICE PEDESTAL - ONE-LINE DIAGRAM**  
SCALE: N.T.S.



**SERVICE PEDESTAL INTERIOR ELEVATION**  
SCALE: N.T.S.

- SERVICE PEDESTAL LEGEND**
- ① PANEL "SP" - 277/480V, 200 AMP MCB, 30 POLE
  - ② STARTER WITH STOP-START P.B. & RED LED RUN LT - SIZE 1 - AERATOR SOUTH - 5HP
  - ③ STARTER WITH STOP-START P.B. & RED LED RUN LT - SIZE 1 - MIXER - 5HP
  - ④ STARTER - SIZE 2 - AERATOR NORTH - 25HP
  - ⑤ 9 KVA XFMR - 480V TO 240/120V
  - ⑥ PANEL "SL" - 120/240V, 50A MCB 12 POLE
  - ⑦ PANEL MOUNTING BACKBOARD W/2 COATS ENAMEL PAINT
  - ⑧ 4"x8"x8" TROUGH WIREWAY CONDUITS
  - ⑨ 5'x6'x18" DP NEMA 4X ENCLOSURE STAINLESS STEEL EQUAL TO: MASS ELECTRICAL APPARATUS CAT# MEAN4X-607224 PROVIDE W/STRIP HTR & TSTAT
  - ⑩ LIGHT SWITCH AND SERVICE RECEPTACLE
  - ⑪ HEATERS AND THERMOSTAT

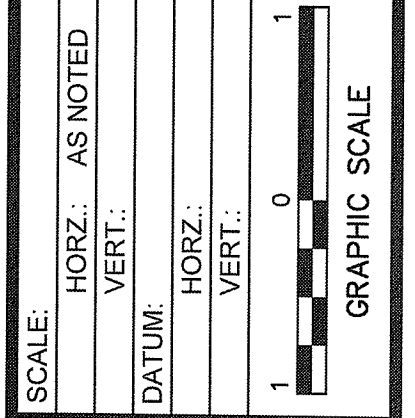
**NOTES**

1. INTERCONNECTIONS OF EQUIPMENT SHALL BE MADE WITH THE USE OF LFMC OR LFNC. NO EXPOSED WIRING WITHIN.

DEPARTMENT OF ENVIRONMENTAL MANAGEMENT  
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DATED **JUL 16 2019** FILE # **19-0127**  
NO CHANGES ALLOWED WITHOUT PRIOR APPROVAL  
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*Charles A. [Signature]*

No.	DATE	ADDENDUM NO.	DESCRIPTION	CW/CV	KS/SM
1.	5/24/2019				



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PAWTUCKET WATER SUPPLY BOARD  
**ELECTRICAL DETAILS**  
BID No. 18-011 WELL FIELD ELECTRICAL  
POWER AND DISTRIBUTION SYSTEM UPGRADE  
120 MILL STREET  
CUMBERLAND, RHODE ISLAND

PROJ. No.: 20180576.A10  
DATE: APRIL 2019

**E-501**  
SHEET 15 OF 17

ADDENDUM NO. 1 05/24/2019

File Path: J:\DWG\2018\0576A10\MEP\Electrical\20180576A10\_DET01.dwg Layout: E-501 Plotted: Wed, May 23, 2019 - 9:51 AM User: cveira  
PLOTTER: AUTOCAD PDF (GENERAL DOCUMENTATION).PC3 CTB File: FO STB  
LAYER STATE:

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 PLOTTER: AUTOCAD PDF (GENERAL DOCUMENTATION).PC3 CTB File: FOSTB  
 LAYER STATE: MS VIEW

**LEGEND**

	EXISTING CONTOUR
	PROPOSED CONTOUR
	WATTLES
	UTILITY POLE
	PRIMARY DISTRIBUTION CABLE
	UNDERGROUND ELECTRIC
	PRIMARY UNDERGROUND DUCTBANK
	PROPOSED SPOT GRADE
	EXISTING TREE LINE
	PROPOSED CLEARING LIMIT
	EXISTING SEWER

**ABBREVIATIONS**

GENERAL	
APPROX	APPROXIMATE
BIT.	BITUMINOUS PAVEMENT
BW	BOTTOM OF WALL
CC	CONCRETE CURB
CCB	CAPE CODE BERM
ELEV	ELEVATION
EXIST	EXISTING
GC	GRANITE CURB
MAX	MAXIMUM
MIN	MINIMUM
NTS	NOT TO SCALE
PCC	PRE CAST CONCRETE CURB
PROP	PROPOSED
REM	REMOVE
R&D	REMOVE AND DISPOSE
R&R	REMOVE AND RESET
R&S	REMOVE AND STACK
TOS	TOP OF SLOPE
TW	TOP OF WALL
TYP	TYPICAL
VGC	VERTICAL GRANITE CURB

**GENERAL NOTES**

- EXISTING CONDITIONS:
  - SURVEY:** PROPERTY BOUNDARY AND TOPOGRAPHICAL INFORMATION WERE OBTAINED FROM A SET OF PLANS ENTITLED, "EXISTING CONDITIONS SURVEY, PAWTUCKET WATER WELL FIELD POWER AND DISTRIBUTION SYSTEM UPGRADE", PREPARED BY ALPHA SURVEY GROUP, LLC., DATED DECEMBER 27, 2018.
  - FLOOD ZONE:** THE SUBJECT SITE LIES WITHIN ZONE A, AN AREA SUBJECT TO INUNDATION BY THE 1% ANNUAL CHANCE FLOOD, AND ZONE X, AN AREA OUTSIDE OF 0.2% ANNUAL CHANCE FLOOD, PER FLOOD INSURANCE RATE MAP (FIRM) PANEL NUMBERS 44007C0192G AND 44007C0194J (EFFECTIVE DATE MARCH 2, 2009), TOWN OF CUMBERLAND, RI.
  - UTILITIES:** THE LOCATIONS OF EXISTING UNDERGROUND UTILITIES SHOWN ARE APPROXIMATE ONLY AND HAVE NOT BEEN INDEPENDENTLY VERIFIED BY THE OWNER OR ITS REPRESENTATIVE.
- SITE WORK:
  - CEMENT CONCRETE SIDEWALKS:** ALL PORTLAND CEMENT CONCRETE USED IN THE CONSTRUCTION OF THE CEMENT CONCRETE SIDEWALKS SHALL BE CLASS XX AND CONFORM TO THE REQUIREMENTS AS SET FORTH IN SUBSECTIONS 601.01.1 AND 601.03.1 OF THE LATEST EDITION OF THE RHODE ISLAND DEPARTMENT OF TRANSPORTATION STANDARD SPECIFICATIONS FOR ROAD AND BRIDGE CONSTRUCTION.
  - LANDSCAPE AREAS:** ALL SURFACED AREAS OR DISTURBED AREAS NOT SPECIFIED ON THE PLANS SHALL RECEIVE FOUR (4) INCHES OF TOPSOIL, SEED, MULCH, AND SHALL BE WATERED UNTIL A HEALTHY STAND OF GRASS IS OBTAINED.

**GENERAL CONSTRUCTION REQUIREMENTS**

- THE CONTRACTOR SHALL VERIFY THE PROPOSED LAYOUT WITH ITS RELATIONSHIP TO THE EXISTING SITE SURVEY. THE CONTRACTOR SHALL ALSO VERIFY ALL DIMENSIONS, SITE CONDITIONS, AND MATERIAL SPECIFICATIONS AND SHALL NOTIFY THE OWNER AND ENGINEER OF ANY ERRORS, OMISSIONS OR DISCREPANCIES BEFORE COMMENCING OR PROCEEDING WITH WORK.
- THE CONTRACTOR SHALL BE RESPONSIBLE FOR OBTAINING ALL NECESSARY PERMITS, INSPECTIONS, BONDS, AND OTHER APPROVAL-RELATED ITEMS WITH THE TOWN OF CUMBERLAND AND THE STATE OF RHODE ISLAND. CONSTRUCTION SHALL NOT COMMENCE UNTIL SUCH PERMITS HAVE BEEN SECURED AND UNTIL THE CONTRACTOR HAS SUPPLIED THE REQUIRED NOTICES. THE OWNER HAS SECURED THE CUMBERLAND SOIL EROSION AND SEDIMENT CONTROL PLAN PERMIT AND THE RIDEM REQUEST FOR PRELIMINARY DETERMINATION.
- METHODS AND MATERIALS USED IN THE CONSTRUCTION OF IMPROVEMENTS FOR THIS PROJECT SHALL CONFORM TO THE CURRENT CONSTRUCTION STANDARDS AND SPECIFICATIONS OF THE RHODE ISLAND DEPARTMENT OF TRANSPORTATION.
- DEVIATIONS OR CHANGES FROM THESE PLANS WILL NOT BE ALLOWED UNLESS APPROVED BY THE ENGINEER/OWNER.
- THE CONTRACTOR SHALL MAKE EXPLORATORY EXCAVATIONS AND LOCATE ANY EXISTING UTILITIES SUFFICIENTLY AHEAD OF CONSTRUCTION TO PERMIT REVISIONS TO PLANS IF NECESSARY. THE EXISTENCE AND/OR LOCATION OF UTILITIES SHOWN ON THESE PLANS MAY BE ONLY APPROXIMATELY CORRECT, AND THE CONTRACTOR IS REQUIRED TO TAKE PRECAUTIONARY MEASURES TO PROTECT THE UTILITIES SHOWN HEREON AND ANY OTHER EXISTING UTILITIES NOT OF RECORD OR NOT SHOWN ON THESE PLANS. THE CONTRACTOR SHALL BE RESPONSIBLE FOR REPAIRING, AT HIS/HER EXPENSE, ANY EXISTING UTILITIES DAMAGED DURING CONSTRUCTION.
- ALL WATER, GAS, SEWER AND OTHER UTILITY SERVICES SHALL BE MAINTAINED AT ALL TIMES DURING CONSTRUCTION.
- RELOCATION OF ANY UTILITIES SHALL BE AT THE OWNER'S EXPENSE AND COMPLETED WITH THE UTILITY WORK. PRIOR TO THE START OF CONSTRUCTION THE OWNER SHALL BE NOTIFIED OF THE RELOCATIONS REQUIRED.
- THE CONTRACTOR SHALL BE RESPONSIBLE FOR REPLACING, WITH MATCHING MATERIALS, ANY PAVEMENT, WALKS, CURBS, ETC. THAT MUST BE CUT OR THAT ARE DAMAGED DURING CONSTRUCTION.
- AN APPROVED SET OF PLANS AND ALL APPLICABLE PERMITS MUST BE AVAILABLE AT THE CONSTRUCTION SITE.
- CALL DIG-SAFE 811 OR 1-888-DIG-SAFE A MINIMUM OF 72 HOURS, EXCLUDING WEEKENDS AND HOLIDAYS, PRIOR TO CONSTRUCTION.
- THE CONTRACTOR SHALL BE RESPONSIBLE FOR JOB SITE CONDITIONS DURING THE COURSE OF CONSTRUCTION OF THIS PROJECT, INCLUDING SAFETY OF ALL PERSONS AND PROPERTY. THIS REQUIREMENT SHALL APPLY CONTINUOUSLY AND NOT BE LIMITED TO NORMAL WORKING HOURS.
- THE STATE OF RHODE ISLAND STANDARD SPECIFICATIONS FOR ROAD AND BRIDGE CONSTRUCTION, 2010 EDITION, REVISIONS AND ALL CURRENT ADDENDA, AND THE RHODE ISLAND STANDARD DETAILS ARE MADE A PART HEREOF, AS IF ATTACHED HERETO.
- THE CONTRACTOR SHALL REMOVE VEGETATION AS REQUIRED TO COMPLETE THE WORK. CONTRACTOR SHALL IDENTIFY TREES TO BE REMOVED PRIOR TO CONSTRUCTION AND MARK THEM WITH CONSTRUCTION TAPE FOR REVIEW BY THE OWNER. CONTRACTOR SHALL NOT REMOVE TREES UNTIL REVIEWED AND APPROVED BY THE OWNER.
- THE CONTRACTOR SHALL RESTORE DISTURBED AREAS TO ORIGINAL CONDITION. AREAS DAMAGED DURING CONSTRUCTION SHALL BE RESEDED, RESEED, OR OTHERWISE RESTORED TO THEIR ORIGINAL STATE. TREES AND OTHER EXISTING VEGETATION SHALL BE RETAINED WHEREVER FEASIBLE. ALL PAVED SURFACES SHALL BE SAW-CUT AND CONCRETE WALKS SHALL BE REMOVED AND RESTORED TO THE NEXT EXISTING JOINT.
- THE LIMITS OF ALL CLEARING AND DISTURBANCE SHALL BE MINIMIZED AND SHALL BE WITHIN THE PROPOSED AREA OF CONSTRUCTION. AREAS OUTSIDE OF CONSTRUCTION LIMITS SHALL NOT BE DISTURBED.
- ALL EXCESS EXCAVATED MATERIALS, EXCESS FILL, EXCESS CONSTRUCTION MATERIALS, AND DEBRIS SHALL BE REMOVED FROM THE SITE AND SHALL BE DISPOSED OF IN ACCORDANCE WITH APPLICABLE LAWS.
- ALL WORK IS TO TAKE PLACE ON OR ABUTTING PROPERTIES OWNED OR CONTROLLED BY THE CITY OF PAWTUCKET ACTING THROUGH THE PAWTUCKET WATER SUPPLY BOARD. ALL OPERATIONS AND ACTIVITIES SHALL BE CONFINED TO THE LIMITS AS DEPICTED ON THE DRAWINGS.
- CONTRACTOR IS HEREBY PUT ON NOTICE THAT THE PROJECT SITE CONTAINS ACTIVE PUBLIC WATER SUPPLY FACILITIES AND OTHER UTILITY INFRASTRUCTURE. CONTRACTOR SHALL TAKE ALL NECESSARY PRECAUTIONS AND EMPLOY ADEQUATE MEANS AND METHODS TO ENSURE THE SAFETY AND INTEGRITY OF THESE FACILITIES AND INFRASTRUCTURE AS WELL AS ABUTTING PROPERTIES TO THE SITES CONTAINING STRUCTURES.
- THE CONTRACTOR SHALL MAINTAIN A SET OF RECORD AS BUILT DRAWINGS OF UTILITIES AND STRUCTURES TO BE SUBMITTED TO OWNER AT THE END OF PROJECT.
- PRIOR TO BIDDING THE PROJECT AND BEGINNING ANY WORK THE CONTRACTOR SHALL VISIT THE PROJECT SITE FOR INSPECTION TO VERIFY AND DOCUMENT EXISTING CONDITIONS. ANY NOTED DISCREPANCIES BETWEEN THE DRAWINGS AND ACTUAL FIELD CONDITIONS THAT AFFECT THE PROPOSED WORK SHALL IMMEDIATELY BE BROUGHT TO THE ATTENTION OF THE OWNER.
- THE LOCATIONS OF PROPOSED EQUIPMENT, UTILITY LINES AND RELATED APPURTENANCES SHALL BE DETERMINED IN THE FIELD BY THE CONTRACTOR AND APPROVED BY THE OWNER.
- CONTRACTOR SHALL PROVIDE ADEQUATE MEANS AND METHODS OF SITE ACCESS TO AUTHORIZED PERSONNEL OF THE OWNER DURING THE COURSE OF THE PROJECT FOR PURPOSES OF NORMAL OPERATION AND MAINTENANCE OF THE WATER SYSTEM.
- ALL WORKMANSHIP AND MATERIALS / EQUIPMENT SHALL BE GUARANTEED FOR ONE YEAR FROM DATE OF START UP AND OPERATION.

**WATERSHED PROTECTION/ FRESHWATER WETLANDS**

- CONTRACTOR SHALL COMPLY WITH THE SITE-SPECIFIC SOIL EROSION AND SEDIMENT CONTROL PLAN.
- ACCESS TO SENSITIVE ENVIRONMENTAL AREAS SHALL BE RESTRICTED. LOCATE ALL CONSTRUCTION EQUIPMENT AND MATERIALS AWAY FROM REGULATED AREAS.
- MINIMIZE THE AREA AND DURATION OF DISTURBANCE WITHIN REGULATED AREAS, INCLUDING PERIMETER WETLANDS. MINIMIZE USE OF HEAVY EQUIPMENT IN REGULATED AREAS AND USE THE SMALLEST EQUIPMENT PRACTICAL THAT IS NECESSARY TO COMPLETE THE SCOPE OF WORK.
- REFUELING OF VEHICLES AND EQUIPMENT SHALL BE CONDUCTED A MINIMUM OF 200 FEET FROM ALL WETLANDS AND WATER COURSES. A SIGN SHALL BE POSTED WITH SPILL RESPONSE PROCEDURES AND LOCAL FIRE OFFICIALS AND RIDEM INCIDENT RESPONSE PHONE NUMBERS.
- ALL DEMOLITION DEBRIS, HAZARDOUS MATERIALS AND OTHER MATERIALS SHALL BE PLACED IN CONTAINERS AND REMOVED OFF SITE AS THE WORK PROGRESSES.
- MAINTENANCE AND SERVICING OF VEHICLES AND EQUIPMENT AT THE PROJECT SITE IS NOT PERMITTED.
- A SUPPLY OF ABSORBENT SPILL RESPONSE MATERIAL E.G. BOOMS, BLANKETS, ETC. SHALL BE AVAILABLE AT THE CONSTRUCTION SITE AT ALL TIMES IN THE EVENT OF A RELEASE OF HAZARDOUS MATERIALS.

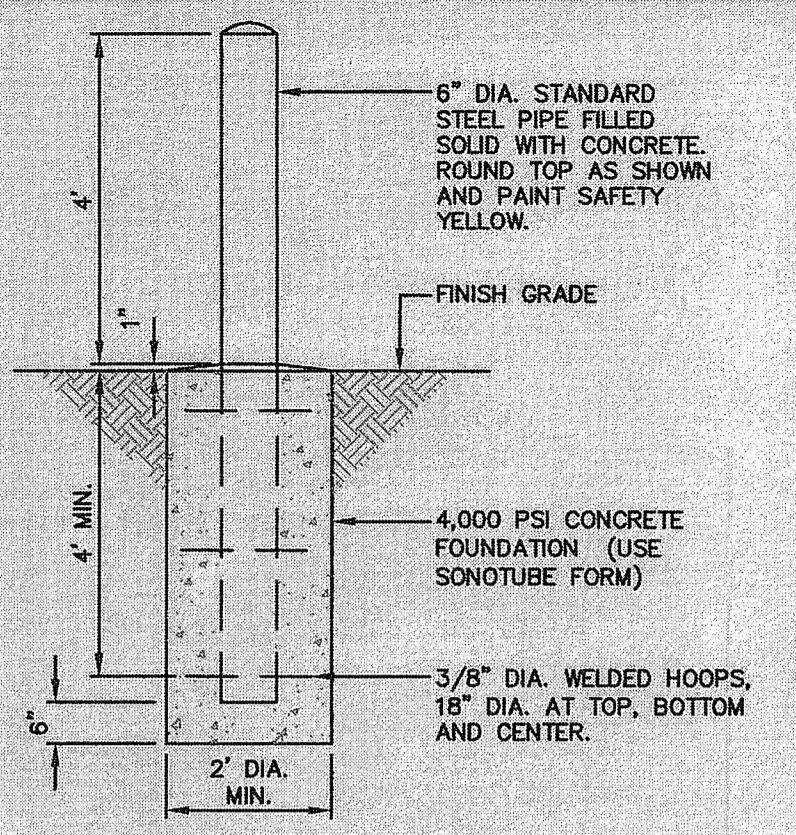


DEPARTMENT OF ENVIRONMENTAL MANAGEMENT  
 OFFICE OF WATER RESOURCES  
 FRESHWATER WETLANDS PROGRAM  
 APPROVED WITH CONDITIONS  
 AS SPECIFIED IN THE LETTER OF APPROVAL  
 DATED JUL 16 2019 FILE # 19-0127  
 NO CHANGES ALLOWED WITHOUT PRIOR APPROVAL  
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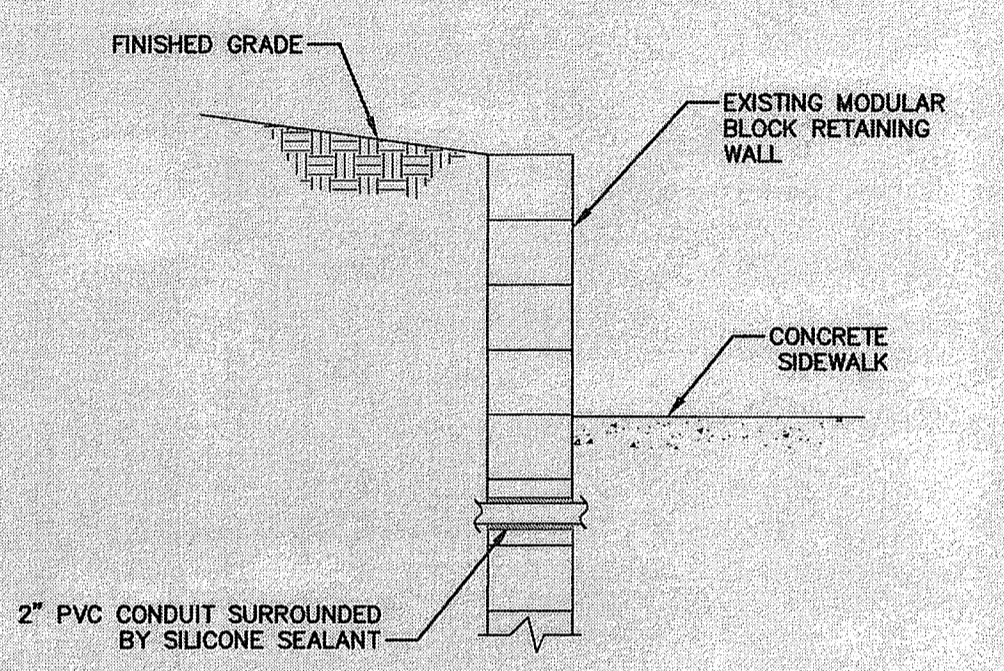
*Charles A. Kelly*  
 Environmental Management  
 July 13 2019  
 Office of Water Resources

SCALE: 1" = 200'	HORIZ. VERT. DATUM: NAD83 NAVD88	VERT. SCALE: 1" = 200'	GRAPHIC SCALE
<p><b>FUSS &amp; O'NEILL</b>          317 IRON HORSE WAY, SUITE 204          PROVIDENCE, RI 02908          www.fuss-o.com</p>			
<p>PAWTUCKET WATER SUPPLY BOARD          CIVIL INDEX PLAN, NOTES, &amp; LEGEND          BID No. 18-011 WELL FIELD ELECTRICAL          POWER AND DISTRIBUTION SYSTEM UPGRADE          120 MILL STREET CUMBERLAND, RHODE ISLAND</p>			
<p>PROJ. No.: 20180576.A10          DATE: APRIL 2019</p>			
<p><b>CS-200</b>          SHEET 16 OF 17</p>			
<p>DESIGNER: SHAWN M. MARTIN, No. 7487, REGISTERED PROFESSIONAL ENGINEER (CIVIL)</p>			<p>DATE: 5/24/2019          APPENDUM NO. 1</p>
<p>NO. 1</p>			<p>DESCRIPTION</p>

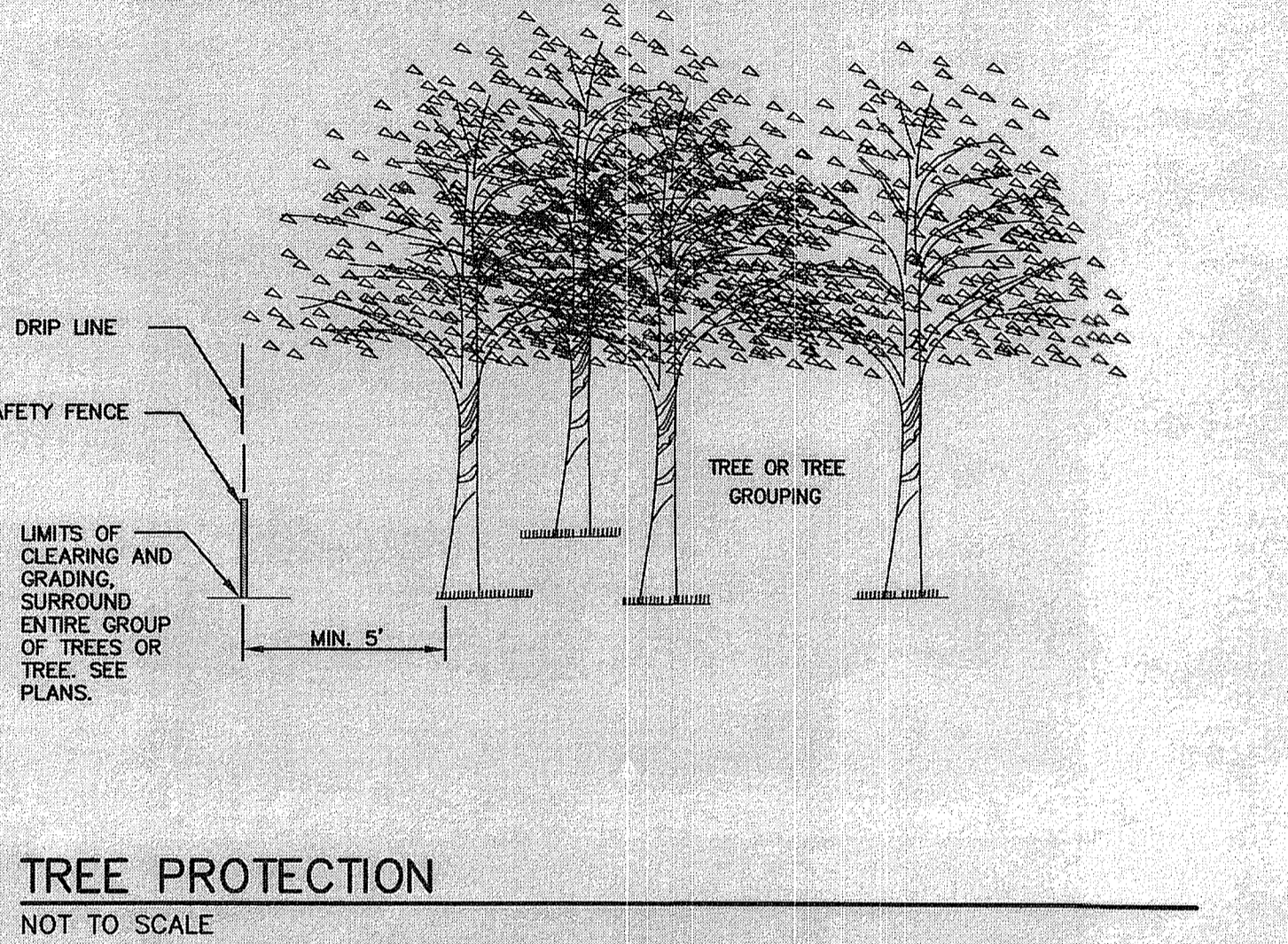
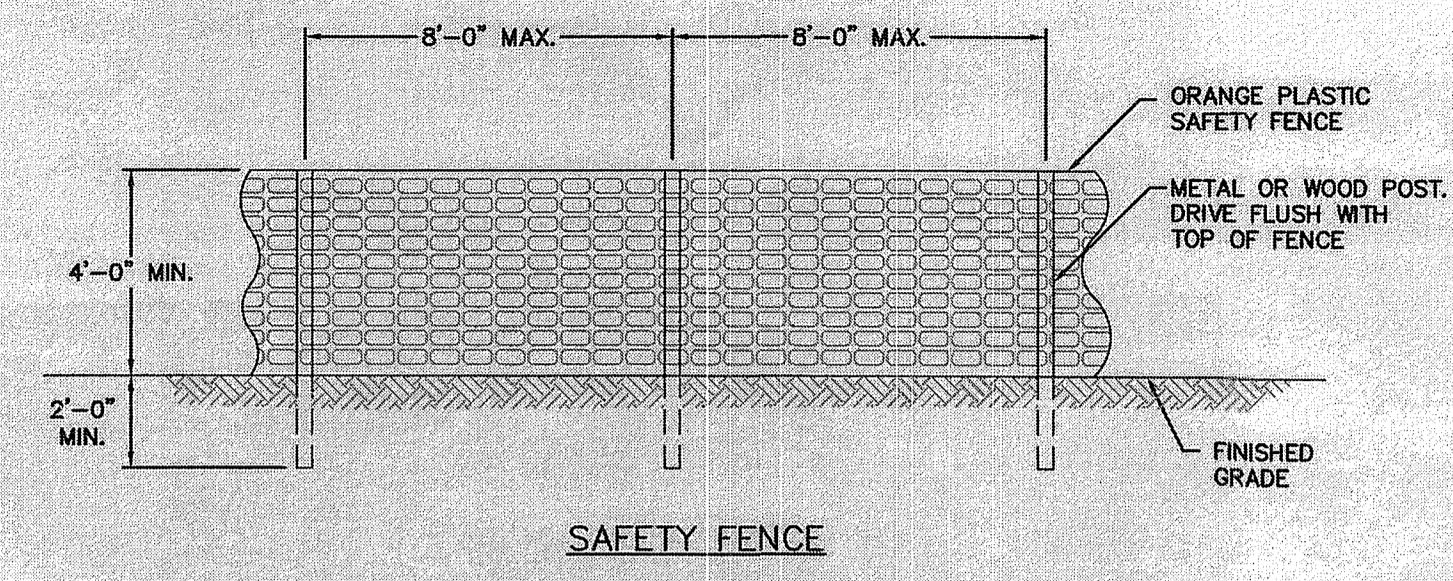
REFERENCE: RIGS AERIAL IMAGERY, DATED 2014.  
**ADDENDUM NO. 1 05/24/2019**



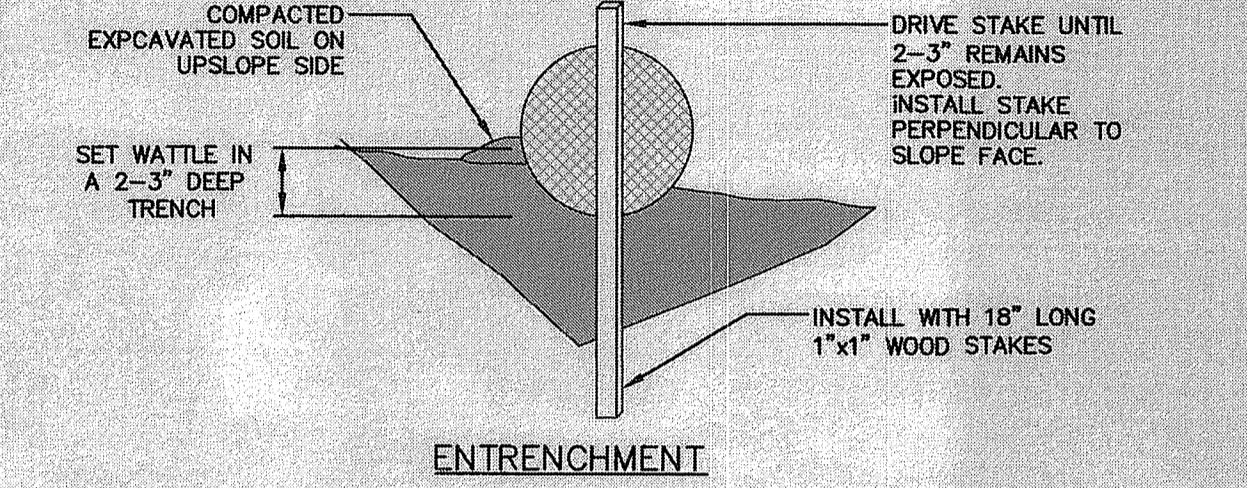
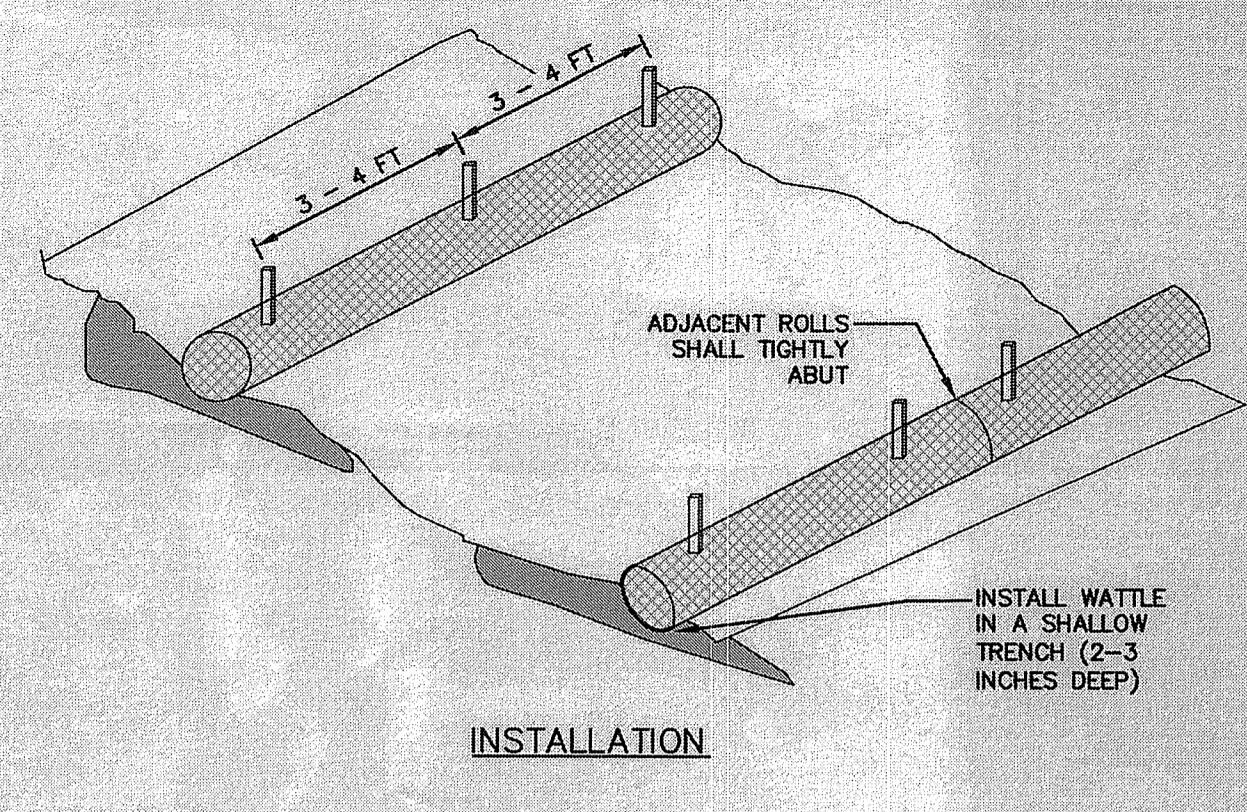
**BOLLARD**  
NOT TO SCALE



**WALL PENETRATION**  
NOT TO SCALE



**TREE PROTECTION**  
NOT TO SCALE



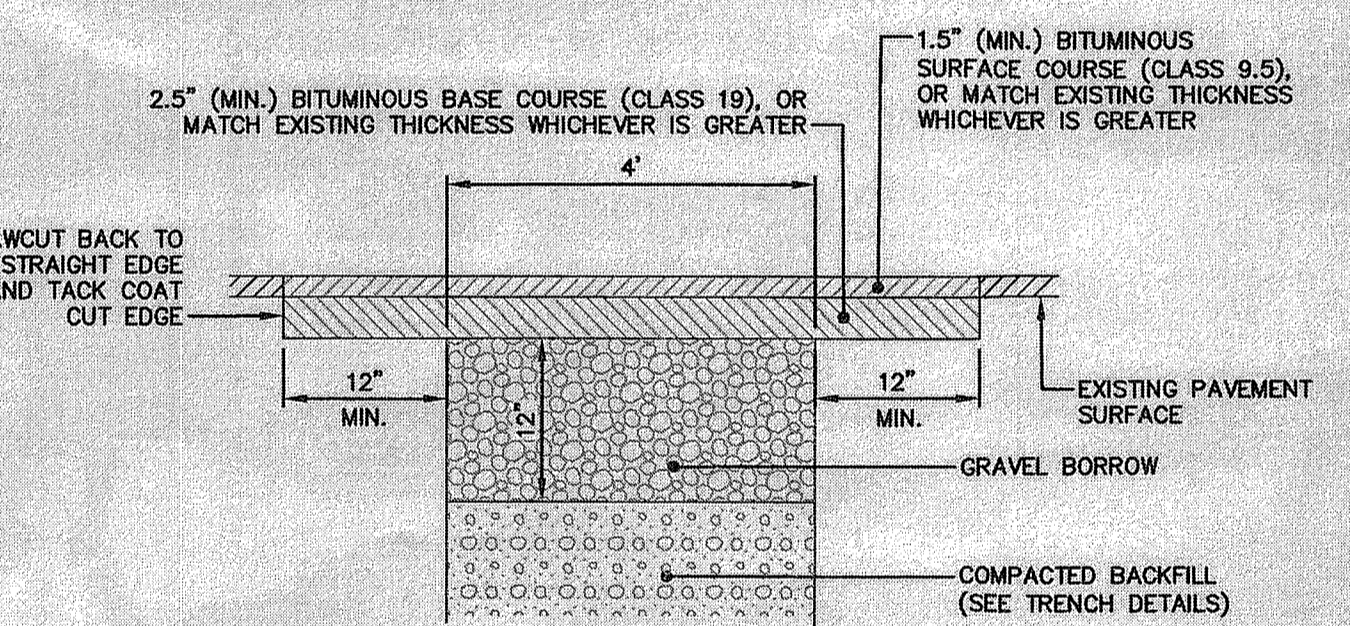
- NOTES:**
- WATTLES SHALL BE TRENCHED APPROXIMATE 2-3 INCHES AND STAKED SUCH THAT WATTLES DIRECTLY CONTACT SOIL AND PRECLUDE UNDERMINING OR BLOWOUTS. THE TRENCH SHALL BE APPROXIMATELY 9 INCHES WIDE. STAKES SHALL BE DRIVEN THROUGH THE CENTER OF THE WATTLE AT A SPACING OF 3-4 FEET ON CENTER AND NO GREATER THAN 6" FROM THE EACH END OF THE WATTLE. STAKES SHALL BE 1-1/2" BY 1-1/2" WOODEN STAKES WITH A LENGTH OF 18 INCHES. COMPACT SOIL EXCAVATED TO CREATE TRENCH ON UPHILL SIDE.
  - ENDS OF ADJACENT WATTLES SHALL BE TIGHTLY BUTTED OR OVERLAPPED SO THAT NO OPENING EXISTS FOR WATER TO PASS THROUGH. WATTLES SHALL BE FREE OF DAMAGE OR DEFECTS WHEN DELIVERED TO THE SHIPPER. NO VEHICLES SHALL BE DRIVEN OVER WATTLES.
  - WATTLES SHALL BE 12-INCH SEDIMAX-SWI2™ MANUFACTURED BY NORTH AMERICAN GREEN, OR APPROVED EQUAL.

**WATTLES**  
NOT TO SCALE

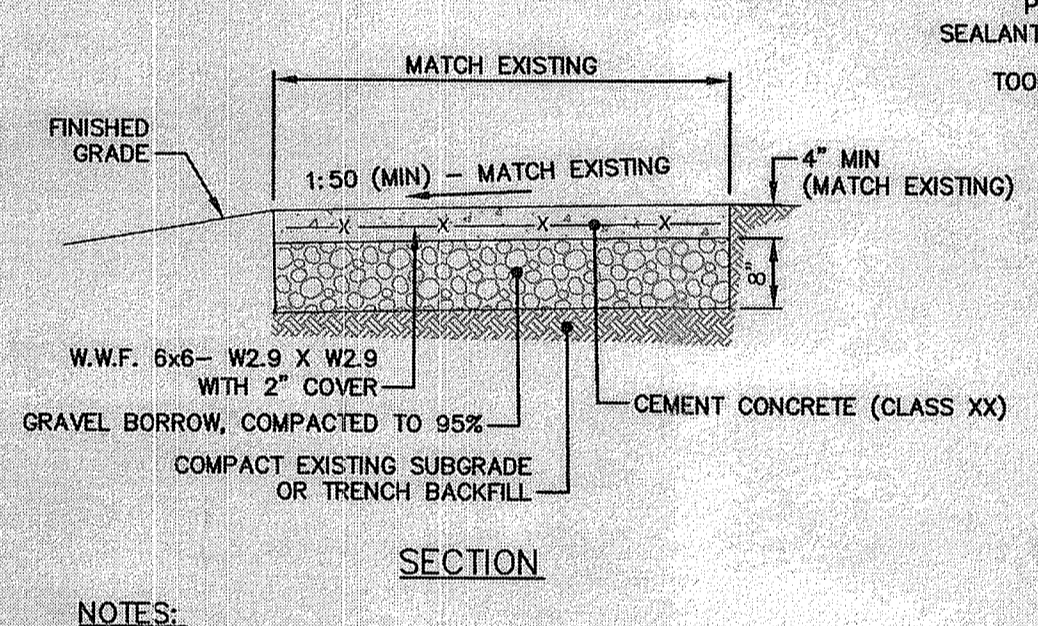
**EROSION CONTROL**

- DISTURBANCE OF SOIL SURFACES IS REGULATED BY STATE LAW AND LOCAL ORDINANCE. ALL WORK SHALL COMPLY WITH THE FOLLOWING CRITERIA TO PREVENT OR MINIMIZE SOIL EROSION.
- THE INSTALLATION AND MAINTENANCE OF EROSION CONTROL DEVICES IS THE RESPONSIBILITY OF THE CONTRACTOR. PRIOR TO THE COMMENCEMENT OF CONSTRUCTION ACTIVITIES, THE CONTRACTOR SHALL INSTALL ALL EROSION AND SEDIMENT CONTROL DEVICES AS SHOWN ON THE PLAN, OR AS DIRECTED BY THE OWNER OR OWNERS REPRESENTATIVE.
- THE CONTRACTOR SHALL USE THE LATEST EDITION OF THE "STATE OF RHODE ISLAND SOIL EROSION AND SEDIMENT CONTROL HANDBOOK" IN CONSTRUCTING THE EROSION AND SEDIMENT CONTROLS INDICATED ON THE PLANS. ALL EROSION AND SEDIMENT CONTROL MEASURES OR WORKS AND REHABILITATION MEASURES MUST CONFORM TO OR EXCEED THE SPECIFICATIONS OR STANDARDS SET OUT IN THIS HANDBOOK.
- THE CONTRACTOR IS RESPONSIBLE FOR THE TIMELY INSTALLATION, INSPECTION, MAINTENANCE, AND/OR REPLACEMENT OF ALL TEMPORARY AND PERMANENT EROSION CONTROL DEVICES TO ENSURE PROPER OPERATION THROUGHOUT THE LIFE OF THE PROJECT. THE CONTRACTOR IS RESPONSIBLE FOR MAINTENANCE OF PERMANENT MEASURES UNTIL CONSTRUCTION OF THE PROJECT IS COMPLETED OR UNTIL IT IS ACCEPTED BY THE OWNER. THE OWNER IS RESPONSIBLE THEREAFTER.
- IT SHALL BE THE CONTRACTOR'S RESPONSIBILITY TO CLEAN ROADS, CONTROL DUST, AND TAKE ALL NECESSARY MEASURES TO ENSURE THAT THE SITE AND ALL ROADS BE MAINTAINED IN A MUD- AND DUST-FREE CONDITION AT ALL TIMES THROUGHOUT THE LIFE OF THE CONTRACT. DUST CONTROL SHALL INCLUDE, BUT IS NOT LIMITED TO, WATER AND/OR CRUSHED STONE OR COARSE GRAVEL, SUBJECT TO THE APPROVAL OF THE ENGINEER.
- THE CONTRACTOR SHALL INSTALL AND MAINTAIN PERIMETER SEDIMENT CONTROL BARRIERS AS SHOWN ON THE SITE PLANS AND AS REQUIRED TO PREVENT SEDIMENT FLOW TO STORM DRAINS, SURFACE WATERS, AND REGULATED AREAS. PERIMETER CONTROLS SHALL REMAIN IN EFFECTIVE CONDITION UNTIL UPGRADATED DISTURBED AREAS HAVE BEEN STABILIZED. REMOVE ACCUMULATED SEDIMENT BEHIND PERIMETER SEDIMENT CONTROL BARRIERS WHEN ONE-HALF THE ORIGINAL HEIGHT OF THE BARRIER BECOMES FILLED WITH SEDIMENT. REPLACE BARRIER IMMEDIATELY IF BARRIER DECOMPOSED OR BECOMES INEFFECTIVE. REMOVE PERIMETER CONTROLS AT THE COMPLETION OF CONSTRUCTION AND DISPOSE OFFSITE.
- SEDIMENT CONTROL FOR UTILITY CONSTRUCTION AREAS OUTSIDE OF DESIGNED CONTROLS.
  - FOR TRENCH EXCAVATIONS, EXCAVATED TRENCH MATERIALS SHALL BE PLACED ON HIGH SIDE OF THE TRENCH. WHERE SITE CONSTRAINTS REQUIRE PLACEMENT OF EXCAVATED MATERIALS DOWNGRADIENT OF TRENCH EXCAVATIONS, WATTLES SHALL BE PLACED DOWNGRADIENT OF DOWNGRADIENT OF WORK.
  - WATTLES SHALL BE PLACED IMMEDIATELY DOWNGRADIENT OF DISTURBED AREAS WITHIN THE 50-FOOT PERIMETER WETLAND AND AREAS INTENDED TO REMAIN DISTURBED FOR MORE THAN ONE (1) DAY.
- STOCKPILES FOR CONSTRUCTION DEBRIS AND MATERIALS SHALL BE, TO THE EXTENT PRACTICAL, LOCATED OUTSIDE WETLAND AREAS AND ASSOCIATED BUFFERS AND SHALL BE SURROUNDED BY STAKED HAY BALES OR WATTLES.
- INSTALL AND MAINTAIN SEDIMENTATION TRAPS WITHIN THE LIMIT OF SURFACE DISTURBANCE, AS REQUIRED FOR CONTROL OF DEWATERING FLOWS. NO WATERS HANDLED DURING THE CONSTRUCTION PROCESS SHALL BE DISCHARGED DIRECTLY INTO REGULATED AREAS.
- TEMPORARY VEGETATIVE COVER SHALL BE APPLIED TO ANY DISTURBED AREAS (INCLUDING SOIL STOCKPILE AREAS) THAT HAVE NOT YET REACHED FINISHED GRADE AS SOON AS POSSIBLE, BUT NOT MORE THAN FOURTEEN (14) DAYS AFTER THE CONSTRUCTION ACTIVITY IN THAT AREA HAS TEMPORARILY CEASED, UNLESS THE ACTIVITY IS TO RESUME WITHIN TWENTY-ONE (21) DAYS. TEMPORARY SEEDING MAY BE APPLIED ANYTIME BETWEEN MARCH 1 THROUGH JUNE 15 AND AUGUST 15 THROUGH OCTOBER 1.

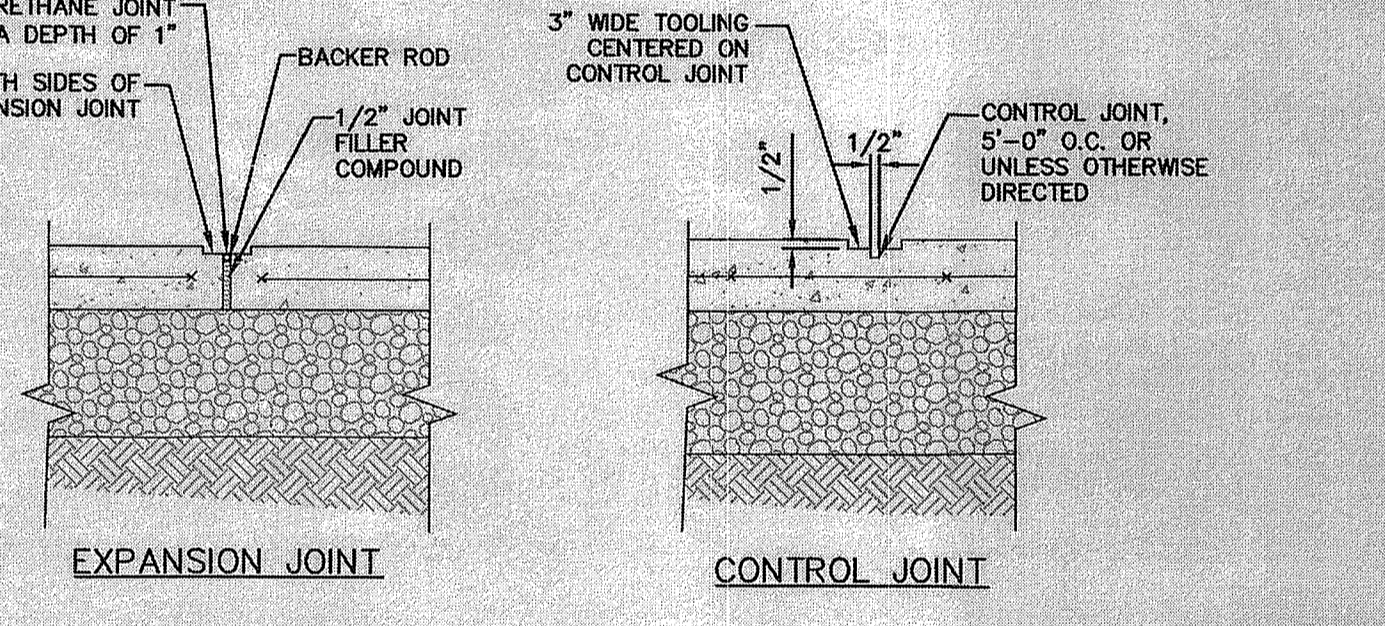
- THIS TEMPORARY VEGETATIVE COVER SHALL CONSIST OF 60% OF ANNUAL OR PERENNIAL RYEGRASS AND 40% OF MILLET OR SUDANGRASS OR WINTER RYE. ANNUAL OR PERENNIAL RYEGRASS SHALL BE PLANTED AT A RATE OF 1.5 POUNDS PER 1,000 SQUARE FEET, WINTER RYE SHALL BE PLANTED AT A RATE OF 2.5 POUNDS PER 1,000 SQUARE FEET, AND MILLET OR SUDANGRASS SHALL BE PLANTED AT A RATE OF 1.0 POUND PER 1,000 SQUARE FEET.
- LIMESTONE AND FERTILIZER SHALL BE APPLIED ACCORDING TO SOIL TEST RECOMMENDATIONS OFFERED BY THE UNIVERSITY OF MASSACHUSETTS SOIL TESTING LABORATORY. IF SOIL TESTING IS NOT FEASIBLE ON SMALL OR VARIABLE SITES, OR WHERE TIMING IS CRITICAL, FERTILIZER MAY BE APPLIED AT THE RATE OF 300 POUNDS PER ACRE OR 7.5 POUNDS PER 1,000 SQUARE FEET OF 10-10-10 OR EQUIVALENT. APPLY LIMESTONE (EQUIVALENT TO 50 PERCENT CALCIUM PLUS MAGNESIUM (DWDE)) AS FOLLOWS: (1) 3 TONS PER ACRE (OR 135 POUNDS PER 1,000 SQUARE FEET) FOR CLAY, CLAY LOAM AND HIGH ORGANIC SOIL, (2) 2 TONS PER ACRE (OR 90 POUNDS PER 1,000 SQUARE FEET) FOR SANDY LOAM, LOAM, OR SILT LOAM, AND (3) 1 TON PER ACRE (OR 45 POUNDS PER 1,000 SQUARE FEET) LOAMY SAND OR SAND. TEMPORARY VEGETATIVE COVER SHALL BE INSTALLED AS OUTLINED IN THE RHODE ISLAND SOIL EROSION AND SEDIMENT CONTROL HANDBOOK.
- AREAS WHICH HAVE BEEN TEMPORARILY OR PERMANENTLY SEEDING SHALL BE MULCHED IMMEDIATELY FOLLOWING SEEDING IN ADDITION TO AREAS WHICH CANNOT BE SEEDING WITHIN THE RECOMMENDED SEEDING DATES AND ANY SOIL STOCKPILE AREAS. TEMPORARY MULCHING SHOULD BE PERFORMED AS SOON AS POSSIBLE, BUT NOT MORE THAN FOURTEEN (14) DAYS AFTER THE CONSTRUCTION ACTIVITY IN THAT AREA HAS TEMPORARILY CEASED UNLESS THE ACTIVITY IS TO RESUME WITHIN TWENTY-ONE (21) DAYS.
- ALL MULCHES MUST BE INSPECTED PERIODICALLY, IN PARTICULAR AFTER RAINSTORMS, TO CHECK FOR RILL EROSION. WHERE EROSION IS OBSERVED, ADDITIONAL MULCH MUST BE APPLIED. IF NETTING IS USED, THE NET SHALL BE INSPECTED AFTER RAINSTORMS FOR DISLOCATION OR FAILURE. IF WASHOUTS OR BREAKAGE OCCUR, THE NET MUST BE REINSTALLED AS NECESSARY AFTER REPAIRING DAMAGE TO SLOPE. INSPECTIONS SHALL TAKE PLACE UNTIL GRASSES ARE FIRMLY ESTABLISHED. GRASS IS CONSIDERED TO BE FIRMLY ESTABLISHED AT A MINIMUM HEIGHT OF THREE (3) INCHES.
- STRAW OR HAY MULCH, WOOD FIBER MULCH, AND HYDROMULCH ARE RECOMMENDED. STRAW OR HAY MULCH SHOULD BE APPLIED AT A RATE OF 2 TONS PER ACRE. WOOD FIBER MULCH SHOULD BE APPLIED AT A RATE OF 1,500 POUNDS PER ACRE, OR HYDROMULCH APPLIED AT A RATE OF 1,500 POUNDS PER ACRE. WOOD FIBER MULCH SHOULD NOT BE USED ALONE IN THE WINTER OR DURING HOT, DRY WEATHER. STRAW OR HAY MULCH MUST BE ANCHORED IMMEDIATELY AFTER SPREADING TO PREVENT WINDSLOWING. MULCH ANCHORING SHOULD ALSO BE USED ON SLOPES GREATER THAN THREE (3) PERCENT AND CONCENTRATED FLOW AREAS SUCH AS DIVERSION AND WATERWAY CHANNELS.
- IF PERMANENT OR TEMPORARY SEEDING CANNOT BE COMPLETED IMMEDIATELY OR WITHIN THE RECOMMENDED SEEDING DATES, USE THE TEMPORARY MULCHING MEASURE TO PROTECT THE SITE AND DELAY SEEDING UNTIL THE NEXT RECOMMENDED SEEDING PERIOD.
- ANY EXISTING OR PROPOSED STORMWATER DRAINAGE STRUCTURES THAT MAY BE SUBJECT TO SEDIMENTATION SHALL BE PROTECTED WITH STAKED HAYBALES, SILT FENCE, SILT SACKS, OR OTHER APPROVED MEASURES THROUGHOUT THE ENTIRE CONSTRUCTION PERIOD.
- ALL EXCESS EXCAVATED MATERIALS, EXCESS FILL, EXCESS CONSTRUCTION MATERIALS, AND DEBRIS SHALL BE REMOVED FROM THE SITE AND SHALL BE DISPOSED OF IN ACCORDANCE WITH APPLICABLE LAWS.
- WASTE DISPOSAL: MATERIALS WHICH COULD BE A POTENTIAL SOURCE OF STORMWATER POLLUTION SUCH AS GASOLINE, DIESEL FUEL, HYDRAULIC OIL, ETC., SHALL BE STORED AT THE END OF EACH DAY IN STORAGE TRAILER OR COVERED LOCATION AND TAKEN OFF-SITE AND PROPERLY DISPOSED OF. ALL TYPES OF WASTE GENERATED AT THIS SITE SHALL BE DISPOSED OF IN A MANNER CONSISTENT WITH STATE LAW AND/OR REGULATIONS.
- CONTROL OF ALLOWABLE NON-STORMWATER DISCHARGES: IF ALLOWABLE NON-STORM WATER DISCHARGES ARE OCCURRING AT THE SITE, SUCH DISCHARGES SHALL BE VISUALLY OBSERVED AND RECORDED AS OUTLINED BELOW AND IN ACCORDANCE WITH PART II OF THE RIDGES GENERAL PERMIT. THE LIST OF EXPECTED SOURCES OF ALLOWABLE NON-STORM WATER DISCHARGES FOR THIS PROJECT ARE AS FOLLOWS: (1) DISCHARGE FROM VEHICLE WASHDOWN WHERE NO DETERGENTS ARE USED, (2) EXTERNAL BUILDING WASHDOWN WHERE NO DETERGENTS ARE USED, (3) THE USE OF WATER TO CONTROL DUST, (4) FIRE HYDRANT FLUSHINGS, (5) LAWN WATERING, (6) POTABLE WATER SOURCES INCLUDING WATERLINE FLUSHINGS, (8) IRRIGATION DRAINAGE, (9) PAVEMENT WASHWATERS WHERE SPILLS OR LEAKS OF TOXIC OR HAZARDOUS MATERIALS HAVE NOT OCCURRED (UNLESS ALL SPILLED MATERIALS HAVE BEEN REMOVED) AND WHERE NO DETERGENTS ARE USED, AND (10) FOUNDATION OR FOOTING DRAINS WHERE FLOWS ARE NOT CONTAMINATED WITH PROCESS SUCH AS SOLVENTS OR CONTAMINATED BY CONTACT WITH SOILS WHERE SPILLS OR LEAKS OF TOXIC OR HAZARDOUS MATERIALS HAS OCCURRED.
- GOOD HOUSEKEEPING: THE PROJECT SITE SHALL PROVIDE FOR THE MINIMIZATION OF EXPOSURE OF CONSTRUCTION DEBRIS (INCLUDING, BUT NOT LIMITED TO, INSULATION, WIRING, PAINTS AND PAINT CANS, SOLVENTS, WALL BOARD, ETC.) TO PRECIPITATION BY MEANS OF DISPOSAL AND/OR PROPER SHELTER OR COVER. CONSTRUCTION WASTE MUST BE PROPERLY DISPOSED OF IN ORDER TO AVOID EXPOSURE TO PRECIPITATION AT THE END OF EACH WORKING DAY.



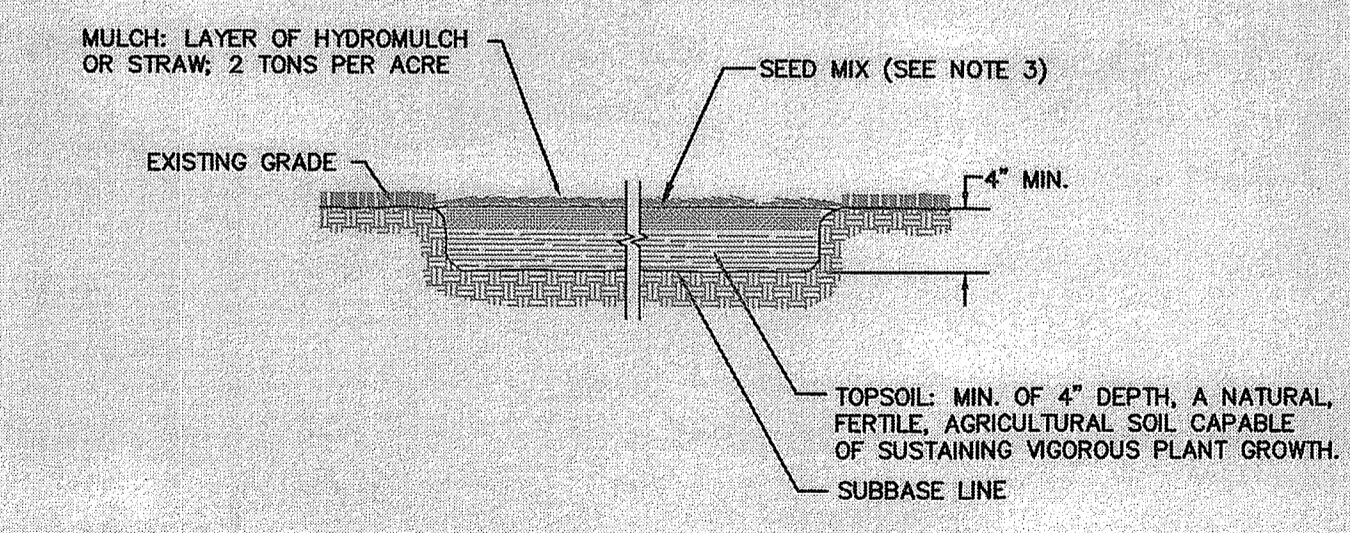
**BITUMINOUS PAVEMENT REPAIR**  
NOT TO SCALE



**CONCRETE SIDEWALK**  
NOT TO SCALE

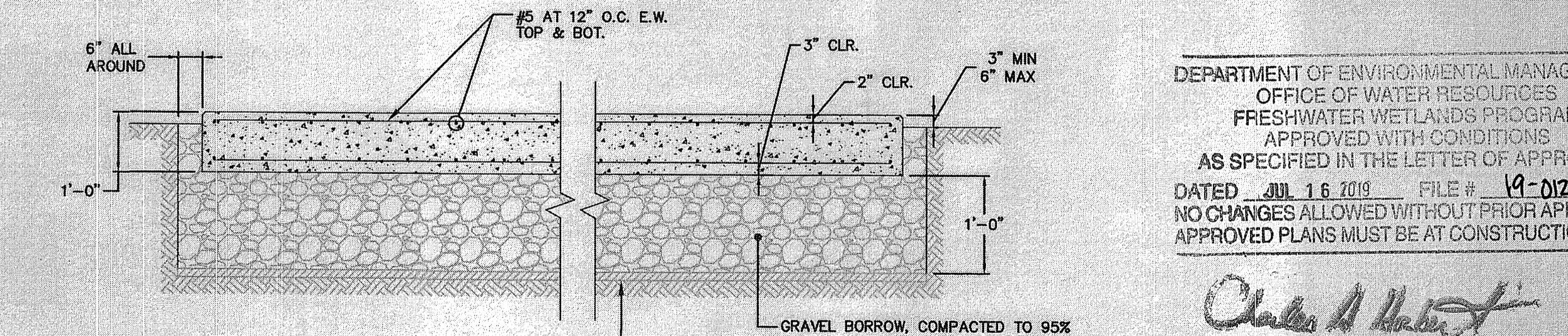


**CONCRETE SIDEWALK**  
NOT TO SCALE



- NOTES:**
- REUSE SURFACE SOIL STOCKPILED ON-SITE. VERIFY SUITABILITY OF STOCKPILED SURFACE SOIL TO PRODUCE TOPSOIL. CLEAN SURFACE SOIL OF ROOTS, PLANTS, SOD, STONES, CLAY LUMPS, AND OTHER EXTRANEOUS MATERIALS HARMFUL TO PLANT GROWTH.
  - SUPPLEMENT WITH IMPORTED OR MANUFACTURED TOPSOIL FROM OFF-SITE SOURCES WHEN QUANTITIES ARE INSUFFICIENT. OBTAIN TOPSOIL DISPLACED FROM NATURALLY WELL-DRAINED CONSTRUCTION OR MINING SITES WHERE TOPSOIL OCCURS AT LEAST 4 INCHES DEE.
  - TOPSOIL SHALL CONFORM TO ASTM D5268, WITH PH BETWEEN 5.5 AND 7, A MINIMUM OF 6 PERCENT ORGANIC MATERIAL CONTENT, FREE OF STONES 0.5-INCH OR LARGER AND FREE OF OTHER EXTRANEOUS MATERIALS. SHALL NOT BE OBTAINED FROM AGRICULTURAL LAND, BOGS, OR MARSHES.
  - SEED MIXES SHALL BE AS FOLLOWS:
    - WOODED AREAS AND 50' PERIMETER WETLAND SHALL BE SEEDING WITH NEW ENGLAND WETLAND PLANTS, INC., "NEW ENGLAND CONSERVATION/WILDLIFE MIX".
    - EXISTING LAWN AREAS SHALL BE SEEDING WITH "NO-MOW GRASS" MIX BY PRAIRIE NURSERY.

**LOAM AND SEED**  
NOT TO SCALE

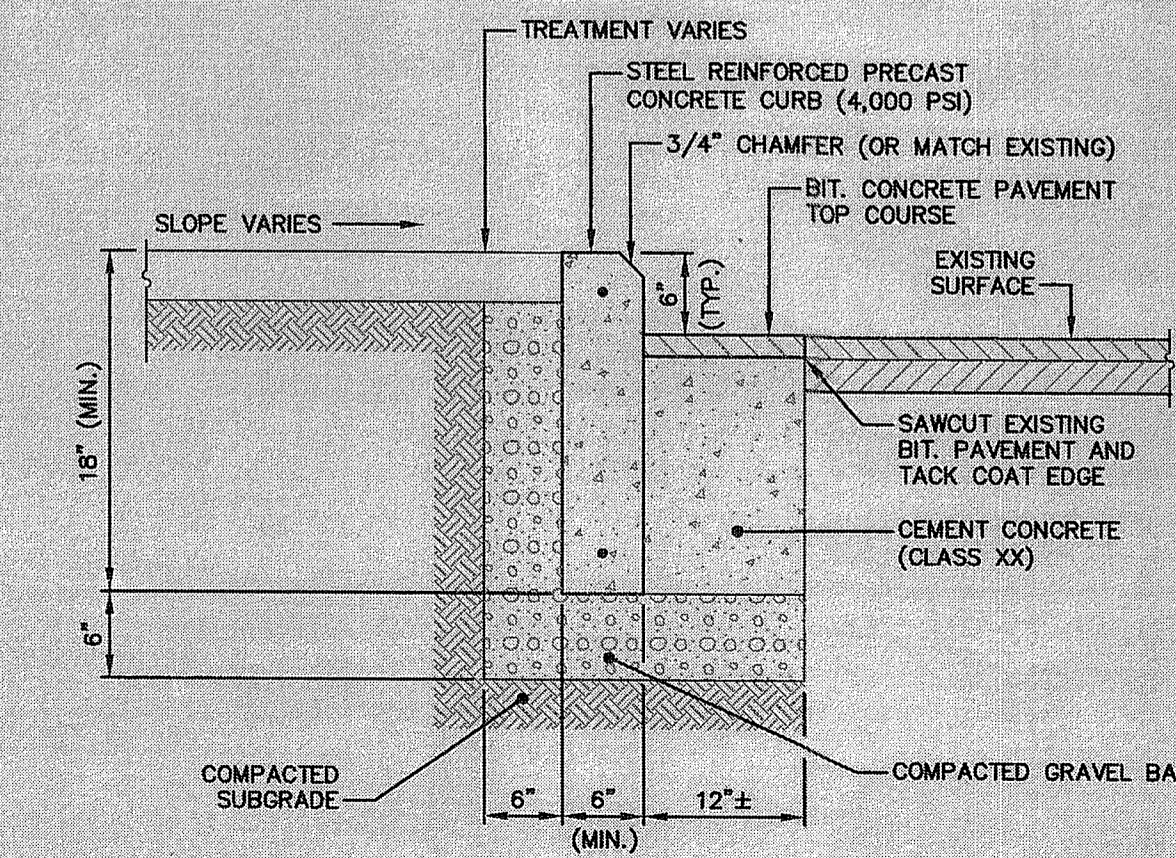


- NOTES:**
- SEE SITE PLAN ENLARGEMENTS FOR DIMENSIONS.
  - ALL CONCRETE WORK SHALL CONFORM TO ACI 301 "SPECIFICATIONS FOR STRUCTURAL CONCRETE FOR BUILDINGS".
  - ALL REINFORCING STEEL SHALL CONFORM TO ASTM A615 GRADE 60 AND BE DETAILED IN ACCORDANCE WITH ACI 315 "MANUAL OF STANDARD PRACTICE FOR DETAILING REINFORCED CONCRETE STRUCTURES".
  - ALL REINFORCING BARS SHALL BE CONTINUOUS AND LAPPED A MINIMUM OF 48 BAR DIAMETERS AT ALL SPLICES, CORNERS, AND INTERSECTIONS UNLESS NOTED OTHERWISE.
  - ALL CONCRETE SHALL DEVELOP A COMPRESSIVE STRENGTH OF 4,000 PSI IN 28 DAYS. CONCRETE SHALL HAVE A MAXIMUM AGGREGATE SIZE OF 3/4 INCH, A MINIMUM CEMENT CONTENT OF 560 LBS/CU. YD., AND A MAXIMUM SLUMP OF 4 INCHES.
  - ALL EXPOSED EDGES OF CONCRETE SHALL HAVE A 3/4 INCH CHAMFER UNLESS NOTED.
  - SIZES AND LOCATIONS OF ALL REQUIRED EMBEDDED ITEMS, SUCH AS ANCHOR BOLTS, PIPING SLEEVES, HOLDOWN ANCHORS, ETC., SHALL BE COORDINATED WITH THE ELECTRICAL PLANS.

**CONCRETE PAD**  
NOT TO SCALE

DEPARTMENT OF ENVIRONMENTAL MANAGEMENT  
OFFICE OF WATER RESOURCES  
FRESHWATER WETLANDS PROGRAM  
APPROVED WITH CONDITIONS  
AS SPECIFIED IN THE LETTER OF APPROVAL  
DATED July 16 2019 FILE # 19-0127  
NO CHANGES ALLOWED WITHOUT PRIOR APPROVAL  
APPROVED PLANS MUST BE AT CONSTRUCTION SITE

*Charles A. Hester*



**PRECAST CONCRETE CURB**  
NOT TO SCALE

PROJ. No: 20180576.A10  
DATE: APRIL 2019

CD-501  
SHEET 17 OF 17

ADDENDUM NO. 1 05/24/2019

PAWUCKET WATER SUPPLY BOARD  
CIVIL DETAILS  
BID No. 18-011 WELL FIELD ELECTRICAL POWER AND DISTRIBUTION SYSTEM UPGRADE  
120 MILL STREET  
CUMBERLAND, RHODE ISLAND

FUSS & O'NEILL  
317 IRON HORSE WAY, SUITE 204  
PROVIDENCE, RI 02908  
401.861.3070  
www.fandoo.com

SHAWN M. MARTIN  
REGISTERED PROFESSIONAL ENGINEER  
(05/19)

SCALE: HORIZ. AS NOTED  
VERT. 1" = 4'-0"  
DATE: 5/24/2019