

NASONVILLE SUBSTATION

445 DOUGLAS TURNPIKE

BURRILLVILLE, RHODE ISLAND

STORMWATER MANAGEMENT PLAN

SEPTEMBER 20, 2023

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

NOTE PER DEM:

Kindly be advised that this Permit is not equivalent to a verification of the type or extent of freshwater wetlands on site

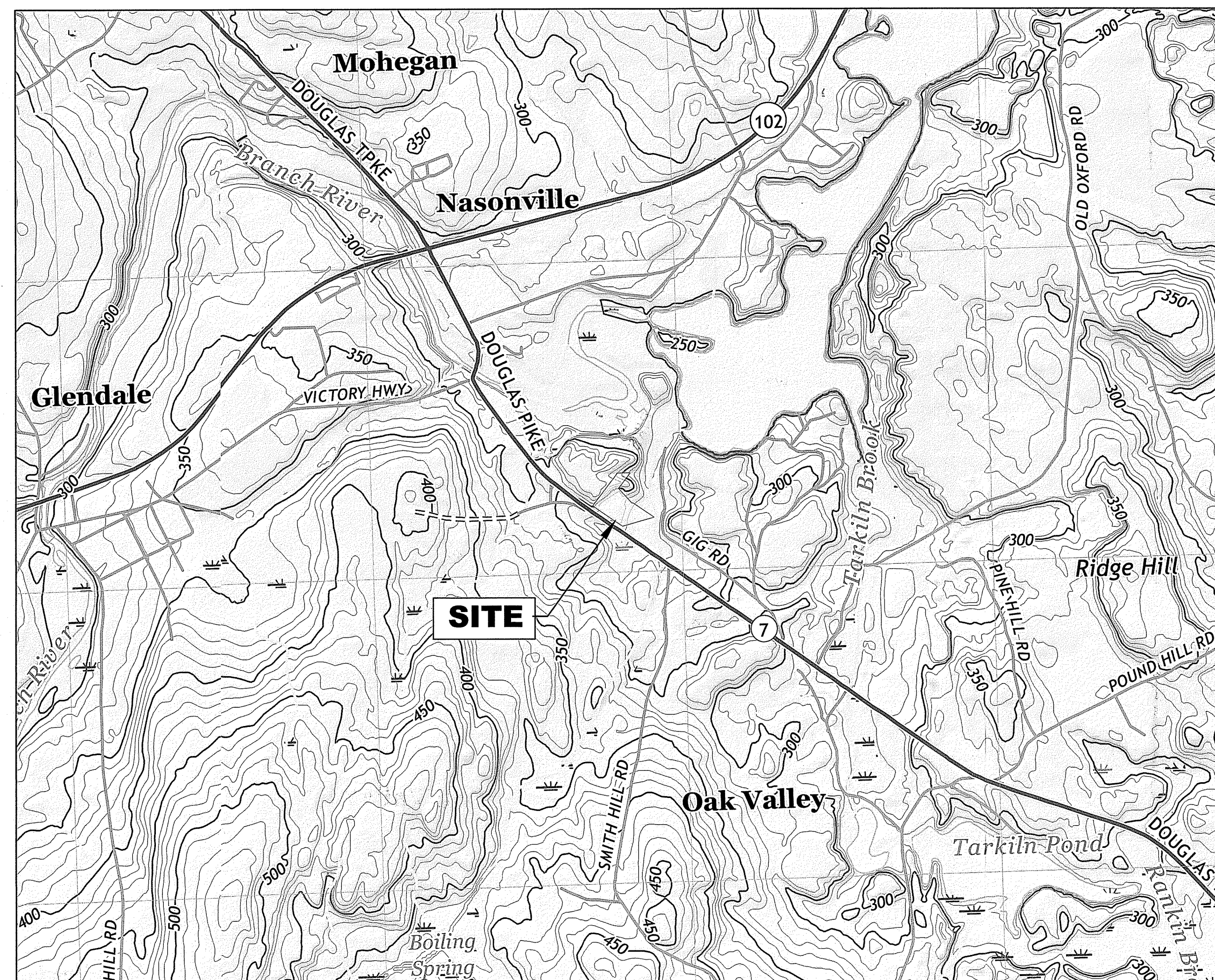
PREPARED FOR:

THE NARRAGANSETT ELECTRIC COMPANY
280 MELROSE STREET
PROVIDENCE, RHODE ISLAND 02907

PREPARED BY:



GZA GEOENVIRONMENTAL, INC.
188 VALLEY STREET, SUITE 300
PROVIDENCE, RHODE ISLAND 02909



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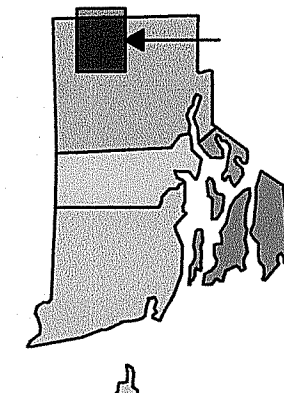
RI DEPARTMENT OF ENVIRONMENTAL MANAGEMENT
OFFICE OF WATER RESOURCES
FRESHWATER WETLANDS PROGRAM

APPROVED WITH CONDITIONS AS SPECIFIED IN THE LETTER OF APPROVAL
DATED: JAN 29 2024 FILE #: 24-0145
NO CHANGES ALLOWED WITHOUT PRIOR APPROVAL
APPROVED PLANS MUST BE AT CONSTRUCTION SITE

Martin D. Senack

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RHODE ISLAND

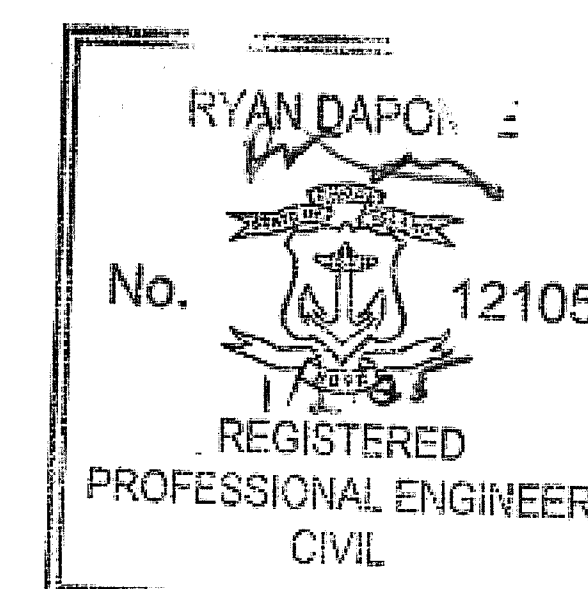
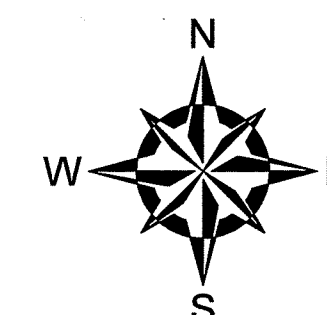


PROJECT LOCUS MAP



SOURCE: BASE MAP FROM THE FOLLOWING USGS QUADRANGLE MAP:
CHEPACHET / GEORGIAVILLE RHODE ISLAND

DIGITAL TOPOGRAPHIC MAPS PROVIDED BY USGSSTORE.GOV.
CONTOUR ELEVATIONS REFERENCE NAVD 88.
CONTOURS ARE SHOWN IN FEET AT 10 FOOT INTERVALS



| | | | |
|---|---|---|--|
| 1 | RIDEM SUBMISSION | RAD | 12-24-2024 |
| NO. | ISSUE/DESCRIPTION | BY | DATE |
| <small>THE INFORMATION SHOWN ON THE DRAWING IS SOLELY FOR USE BY RHODE ISLAND ENERGY (RIE) OR RIE'S DESIGNATED REPRESENTATIVE FOR THE SPECIFIC PROJECT AND LOCATION IDENTIFIED ON THE DRAWING. THE DRAWING SHALL NOT BE TRANSFERRED, REUSED, COPIED, OR ALTERED IN ANY MANNER FOR USE AT ANY OTHER LOCATION OR FOR ANY OTHER PURPOSE WITHOUT THE PRIOR WRITTEN CONSENT OF GZA AND RIE. ANY TRANSFER, REUSE, OR MODIFICATION TO THE DRAWING BY OTHERS, WITHOUT THE PRIOR WRITTEN EXPRESS CONSENT OF GZA AND RIE, WILL BE AT THE USER'S SOLE RISK AND WITHOUT ANY RISK OR LIABILITY TO GZA AND RIE.</small> | | | |
| NASONVILLE SUBSTATION - STORMWATER MANAGEMENT PLAN 445 DOUGLAS TURNPIKE BURRILLVILLE, RHODE ISLAND | | | |
| COVER SHEET | | JAN - 6 2023 | |
| PREPARED BY: GZA GeoEnvironmental, Inc. Engineers and Scientists www.gza.com | | PREPARED FOR: THE NARRAGANSETT ELECTRIC COMPANY | |
| PROJ MGR: RAD DESIGNED BY: ND DATE: SEPTEMBER 20, 2023 | REVIEWED BY: MK DRAWN BY: GRB PROJECT NO.: 35174.01 | CHECKED BY: GRM SCALE: AS NOTED REVISION NO.: 1 | DRAWING G-1 SHEET NO. 1 OF 11 |

PART 1: GENERAL

FIGURE NOTES:

- 1. THE SITE IS LOCATED IN THE TOWN OF BURRILLVILLE, RI ON PLAT 131 LOT 030.
2. PER THE TOWN OF BURRILLVILLE ASSESSORS DATABASE THE SITE AREA IS APPROXIMATELY 2.1784 ACRES.
3. THE SITE PROJECT AREA ENCOMPASSES APPROXIMATELY 42,500 sq.ft. AND PROPOSES A DISTURBED AREA OF THE 42,500 sq.ft.
...
17. THE WETLAND EDGE WAS DELINEATED BY GZA PERSONNEL ON APRIL 27, 2023. WETLAND FLAG LOCATIONS WERE LOCATED WITH RTK GPS.

OTHER PERMITTING REQUIREMENTS

- 1. HOT WORK PERMITS TO BE COMPLETED BY CONTRACTOR WHEN ANY CUTTING OR WELDING WORK RESULTING IN SPARKS IS CONDUCTED.
2. CONTRACTOR SHALL BE RESPONSIBLE FOR OBTAINING ALL PERMITS, LICENSES, AND APPROVALS REQUIRED TO COMPLETE THE WORK IN ACCORDANCE WITH LOCAL, STATE, AND FEDERAL REGULATIONS.

SAFETY

- 1. WORK SHALL CONFORM TO THE RHODE ISLAND ENERGY EMPLOYEES SAFETY HANDBOOK, OSHA REQUIREMENTS, AND ALL LOCAL, STATE AND FEDERAL CODES. WHERE ANY CONFLICTS OF CODES, STANDARDS AND REGULATIONS MAY EXIST, THE MORE STRINGENT CODE, STANDARD OR REGULATION SHALL APPLY.
2. REQUIRED PERSONAL PROTECTIVE EQUIPMENT (PPE) SHALL BE WORN AND UTILIZED IN ACCORDANCE WITH THE CURRENT RHODE ISLAND ENERGY SAFETY POLICY.
...
6. THE CONTRACTOR SHALL BE RESPONSIBLE FOR THE SECURITY OF HIS/HER EQUIPMENT AND MATERIALS DURING THE WORK AT ALL TIMES.

GENERAL CONSTRUCTION NOTES

- 1. CONTRACTOR SHALL FURNISH ALL LABOR, MATERIALS, TOOLS, SUPERVISION, IN ACCORDANCE WITH RI ENERGY AND/OR PPL STANDARD SPECIFICATIONS FOR SUBSTATION CONSTRUCTION TRANSPORTATION, TESTING, AND EQUIPMENT TO PERFORM ALL EARTHWORK AND PAVING, AS SHOWN ON THE DRAWINGS, AND AS NECESSARY TO COMPLETE THE WORK IN ACCORDANCE WITH RI ENERGY AND /OR PPL STANDARD SPECIFICATIONS FOR SUBSTATION CONSTRUCTION.
2. CONTRACTOR SHALL BE PREPARED TO PERFORM EARTHWORK AND PAVING IN CONJUNCTION AND CONCURRENT WITH OTHER CONSTRUCTION ACTIVITIES AS REQUIRED TO COMPLETE THE WORK AS SPECIFIED HEREIN AND AS SHOWN ON THE DRAWINGS.
...
6. CONTRACTOR SHALL PERFORM EARTHWORK AND ALL RELATED ACTIVITIES IN STRICT ACCORDANCE WITH ALL APPLICABLE LOCAL, STATE AND FEDERAL REGULATIONS AND ALL APPLICABLE PERMITS AND APPROVALS.

SCOPE OF WORK

- 1. CONTRACTOR IS RESPONSIBLE FOR BEING FAMILIAR WITH ALL SITE CONDITIONS AND EXISTING AND PROPOSED TOPOGRAPHY PRIOR TO THE START OF THE WORK. CONTRACTOR SHALL BE RESPONSIBLE FOR PERFORMING ALL APPROPRIATE SUBSURFACE UTILITY MARK OUTS PRIOR TO PERFORMING ANY SUBSURFACE WORK AND SHALL PROVIDE SUFFICIENT NOTIFICATION TO THE LOCAL DIG SAFE@ AGENCY AS REQUIRED BY RHODE ISLAND STATE LAW.
2. THE WORK SHALL BE CARRIED OUT IN SUCH MANNER AS TO PREVENT UNDERMINING OR DISTURBING ANY EXISTING UTILITIES, CATCH BASINS, CULVERTS, BUILDINGS, FENCES, OR OTHER STRUCTURES AT OR ADJACENT TO THE SITE (UNLESS OTHERWISE SCHEDULED TO BE ALTERED, AND/OR REPLACED AS PART OF THE WORK).
...
6. UNLESS OTHERWISE SPECIFIED, THE CONTRACTOR SHALL BE RESPONSIBLE FOR FURNISHING ALL LABOR, MATERIALS, EQUIPMENT, SUPERVISION, AND INCIDENTALS TO PERFORM THE FOLLOWING CONSISTENT WITH THESE SPECIFICATIONS AND APPLICABLE PERMITS AND APPROVALS, AND AS SHOWN ON THE DRAWINGS:

SCOPE OF WORK (CONTINUED):

- a. ALL SYSTEM COMPONENTS AND CONSTRUCTION METHODS, SUCH AS PIPE, FITTINGS, CASTINGS, ETC. SHALL BE SUBMITTED TO THE ENGINEER FOR APPROVAL PRIOR TO PURCHASE AND INSTALLATION. THIS SUBMISSION SHALL INCLUDE MANUFACTURERS LITERATURE, SHOP DRAWINGS, PROPOSED CONSTRUCTION METHODS, ETC.
b. CONTRACTOR SHALL IMPORT MATERIALS AS NEEDED TO PERFORM THE WORK (SEE BELOW IMPORT SECTION). NO OTHER MATERIALS WILL BE ALLOWED TO BE IMPORTED. ENGINEER RESERVES THE RIGHT TO REJECT ANY MATERIALS THAT DO NOT MEET THESE REQUIREMENTS.
...
j. CONTRACTOR SHALL PREPARE AN AS BUILT OF WORK COMPLETED. AS BUILT SHALL BE PREPARED TO THE SATISFACTION OF THE ENGINEER.

SOIL EROSION AND SEDIMENT CONTROL NOTES

- 1. THE CONTRACTOR IS RESPONSIBLE FOR ALL SOIL EROSION AND SEDIMENT CONTROL (SESC).
2. ALL EROSION, RUNOFF AND SEDIMENT CONTROL MEASURES TO BE INSTALLED PER THE RHODE ISLAND SOIL EROSION AND SEDIMENT CONTROL HANDBOOK (RISESC), LATEST EDITION AND WITH REGULATIONS / ORDINANCES OF LOCAL AUTHORITIES HAVING JURISDICTION.
3. NOTE THE SOIL EROSION AND SEDIMENT CONTROL SHOWN ON THESE PLANS ARE THE MINIMUM QUANTITY / TYPE OR EROSION CONTROL DEVICES AND MATERIALS DEEMED REQUIRED BY GZA TO MEET THE OBJECTIVES OF THE RISESC HANDBOOK.
...
7. IN ADDITION TO THOSE AREAS SPECIFICALLY DESIGNATED ON THE PLANS, ALL DISTURBED AREAS INCLUDING THE CONTRACTOR'S STOCKPILE AND STAGING AREAS MUST BE RESTORED TO MATCH THE DESIGN PLANS OR THE PRE-CONSTRUCTION CONDITION.

QUALITY CONTROL

- PRE-CAST CONCRETE QUALITY ASSURANCE
1. DEMONSTRATE ADHERENCE TO THE STANDARDS SET FORTH IN NPCA QUALITY CONTROL MANUAL AND/OR ACPA QPC.
2. THE PRE-CAST CONCRETE PRODUCER SHALL BE CERTIFIED BY THE NPCA'S AND/OR THE ACPA'S PLANT CERTIFICATION PROGRAM PRIOR TO AND DURING PRODUCTION OF THE PRODUCTS FOR THIS PROJECT.
3. QUALIFICATIONS, QUALITY CONTROL, AND INSPECTION
A. QUALIFICATIONS: SELECT A PRE-CAST CONCRETE PRODUCER THAT HAS BEEN IN THE BUSINESS OF PRODUCING PRE-CAST CONCRETE UNITS SIMILAR TO THOSE SPECIFIED FOR A MINIMUM OF 3 YEARS.
...
8) LIFTING DEVICE DESIGN CALCULATIONS: SUBMIT DESIGN CALCULATIONS PREPARED AND SEALED BY A PROFESSIONAL ENGINEER DEMONSTRATING COMPLIANCE WITH THE CONNECTION AND EMBEDMENT DETAILS AS SHOWN ON THE DRAWINGS.

C. INSPECTION:

- 1) PRE-CAST MODULES MAY BE REJECTED FOR ANY ONE OF THE FOLLOWING PRODUCT DEFECTS OR INSTALLATION DEFICIENCIES REMAINING AFTER PREAPPROVED REPAIR ATTEMPTS AND CLEANING HAVE BEEN ACCOMPLISHED.
A) NONCONFORMANCE TO SPECIFIED TOLERANCES.
B) AIR VOIDS (BUGHOLES OR BLOWHOLES) LARGER THAN 3/8-INCH DIAMETER.
C) VISIBLE IRREGULARITIES.
D) VISIBLE FOREIGN MATERIAL EMBEDDED IN THE FACE.
E) VISIBLE REPAIRS.
F) VISIBLE REINFORCEMENT SHADOW LINES.
G) VISIBLE CRACKS.
...
4. WEATHER CONDITIONS:
A. ASPHALT SHALL NOT BE PLACED WHEN THE AMBIENT TEMPERATURE IS BELOW 50° FAHRENHEIT, OR WHEN THERE IS FROST IN THE BASE, OR AT ANY OTHER TIME WHEN WEATHER CONDITIONS ARE UNSUITABLE.

LINE AND GRADE CONTROL

- 1. CONTRACTOR IS RESPONSIBLE FOR ESTABLISHING AND MAINTAINING LINE AND GRADE CONTROL FOR ALL ASPECTS OF THE WORK AND AS SPECIFIED ON THE DRAWINGS.
2. SURVEY TOLERANCES FOR THE SUBGRADE, PRE-CAST CONCRETE, AND FINAL GRADE SHALL BE AS FOLLOWS:
a. HORIZONTAL TOLERANCE: 0.1 FEET
b. VERTICAL TOLERANCE: 0.1 FEET
...
5. THE ENGINEER MAY PERFORM SPOT GRADE CHECKS AND LAYOUT REVIEW FOR EACH PHASE OF THE CONSTRUCTION TO VERIFY THE DESIGN GRADES AND STRUCTURE ALIGNMENT HAVE BEEN ESTABLISHED.

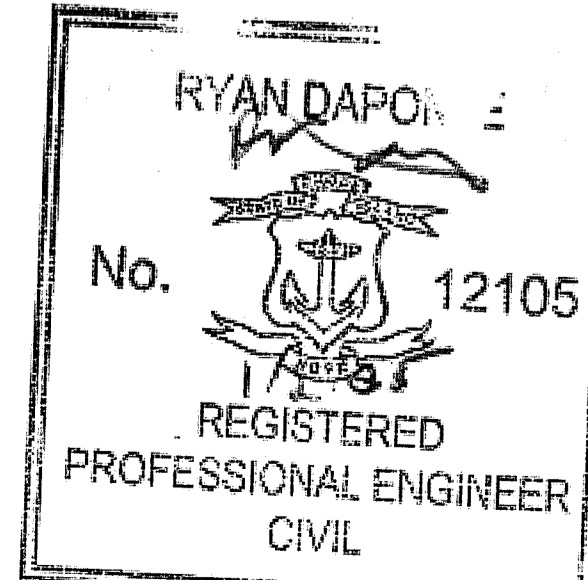
ENVIRONMENTAL NOTES

- 1. WORK SHALL CONFORM TO RI ENERGY ENVIRONMENTAL POLICY AND PROCEDURES.
2. RI ENERGY ENVIRONMENTAL CONTACTS: BILL HOWARD 401-255-2888 WRHOWARD@RIENERGY.COM
3. RI ENERGY ENVIRONMENTAL POLICIES AND PROCEDURES INCLUDE:
a. EP-6: CONTRACTED SERVICES.
b. NGSP-6: BACKGROUND CHECK REQUIREMENTS FOR CONTRACTED SERVICE PROVIDERS.
...
6. ALL REASONABLE CARE MUST BE TAKEN BY THE CONTRACTOR TO PREVENT THE GENERATION OF DUST DURING SOIL EXCAVATION, STOCKPILING, LOADING, AND OTHER SOIL HANDLING ACTIVITIES.

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Form containing project details: RIDEM SUBMISSION NO. 1, ISSUE/DESCRIPTION, RAD 12-24-2024, NASONVILLE SUBSTATION - STORMWATER MANAGEMENT PLAN, 445 DOUGLAS TURNPIKE BURRILLVILLE, RHODE ISLAND, NOTES SHEET (1 OF 2), PREPARED BY: GZA GeoEnvironmental, Inc., ENGINEERS AND SCIENTISTS www.gza.com, THE NARRAGANSETT ELECTRIC COMPANY, PROJ MGR: RAD, REVIEWED BY: MK, CHECKED BY: GRM, DESIGNED BY: ND, DRAWN BY: GRB, SCALE: AS NOTED, DATE: SEPTEMBER 20, 2023, PROJECT NO.: 35174.01, REVISION NO.: 1, DRAWING G-2, SHEET NO. 3 of 10

PART 2: PRODUCTS

CATCH BASIN & CONNECTOR PIPE

1. PRE-CAST CONCRETE CATCH BASIN

- A. CBF1 SHALL BE A PRE-CAST CONCRETE STRUCTURE PROVIDED IN INDIVIDUAL BASE, BRICK, FRAME AND GRATE SECTIONS TO MATCH THE DESIGN ELEVATIONS AND DIMENSIONS AS SHOWN ON THE DRAWINGS.
B. ALL SECTIONS SHALL BE DESIGNED FOR H-20 LOADING CONDITIONS AND SHALL CONFORM TO SECTION 702 OF THE RIDOT STANDARD SPECIFICATIONS FOR ROAD AND BRIDGE CONSTRUCTION.
C. JOINTS BETWEEN SECTIONS SHALL BE EQUIPPED WITH PRE-FORMED BUTYL RUBBER GASKETS. IN ADDITION THE JOINTS WILL BE SEALED WITH HYDRAULIC CEMENT.
D. SECTIONS SHALL BE EQUIPPED WITH KNOCKOUTS FOR INTERCONNECTING PIPES. A MAXIMUM OF TWO-INCHES OF CLEARANCE SHALL BE PROVIDED BETWEEN THE CONCRETE WALL AND THE OUTSIDE OF THE PIPE.
E. CATCH BASINS SHALL BE CONSTRUCTED OF A MINIMUM 4,000 PSI CONCRETE CONSISTENT WITH THE DIMENSIONS SHOWN ON THE DRAWINGS. CATCH BASINS SHALL BE CONSTRUCTED AS PRE-CAST CONCRETE SECTIONS CONSISTENT WITH SPECIFICATIONS SPECIFIED HERE WITHIN.
F. FRAME AND COVER
1) EACH CATCH BASIN SHALL BE EQUIPPED WITH A SQUARE, CAST IRON FRAME SET FLUSH WITH TOP OF THE CATCH BASIN. THE MINIMUM INTERIOR FRAME LENGTH AND WIDTH SHALL BE 24-INCHES. EQUIPPED WITH A SQUARE, HEAVY DUTY, GRATE. OPENINGS ON THE GRATE SHALL BE SQUARE AND HAVE A MINIMUM INTERIOR LENGTH AND WIDTH OF 1.5-INCHES.
2) FRAMES AND COVERS SHALL BE DESIGNED FOR H-20 LOADING CONDITIONS AND SHALL CONFORM TO SECTION M.04 OF THE RIDOT STANDARD SPECIFICATIONS FOR ROAD AND BRIDGE CONSTRUCTION.
3) FRAME AND COVER DIMENSIONS AND LOCATIONS SHALL BE AS SHOWN ON THE DRAWINGS.

G. ACTION SUBMITTALS:

- 1) SUBMIT THE FOLLOWING ITEMS WITHIN 21 DAYS OF NOTICE TO PROCEED, UNLESS OTHERWISE SPECIFIED.
2) SHOP DRAWINGS FOR ALL PRE-CAST CONCRETE UNITS FURNISHED BY THE PRE-CAST CONCRETE PRODUCER FOR APPROVAL. THESE DRAWINGS SHALL DEMONSTRATE THAT THE APPLICABLE INDUSTRY DESIGN STANDARDS AND REQUIREMENTS DESCRIBED IN THESE SPECIFICATIONS HAVE BEEN MET. THE SHOP DRAWINGS SHALL CLEARLY INDICATE THE APPROVED DESIGN ASSUMPTIONS. INCLUDE MANUFACTURER'S RECOMMENDED INSTALLATION AND CONSTRUCTION PROCEDURES ON SHOP DRAWINGS. INCLUDE DETAILS OF STEEL REINFORCEMENT SIZE AND PLACEMENT AS WELL AS SUPPORTING DESIGN CALCULATIONS PREPARED BY A PROFESSIONAL ENGINEER REGISTERED IN RHODE ISLAND.

2. 6-INCH SCHEDULE 80 PVC PIPE

- A. THE MATERIAL USED IN THE MANUFACTURE OF THE PIPE SHALL BE DOMESTICALLY PRODUCED RIGID POLYVINYL CHLORIDE (PVC) COMPOUND, TYPE I GRADE 1, WITH A CELL CLASSIFICATION OF 12654 AS DEFINED IN ASTM D1784, TRADE NAME DESIGNATION H707 PVC.
B. PVC SCHEDULE 80 PIPE SHALL BE MANUFACTURED IN STRICT ACCORDANCE WITH THE REQUIREMENTS OF ASTM D1785 FOR PHYSICAL DIMENSIONS AND TOLERANCES. EACH PRODUCTION RUN OF PIPE MANUFACTURED IN COMPLIANCE TO THIS STANDARD, SHALL ALSO MEET OR EXCEED THE TEST REQUIREMENTS FOR MATERIALS, WORKMANSHIP, BURST PRESSURE, FLATTENING, AND EXTRUSION QUALITY DEFINED IN ASTM D1785. ALL BELLED-END PIPE SHALL HAVE TAPERED SOCKETS TO CREATE AN INTERFERENCE-TYPE FIT, WHICH MEET OR EXCEED THE DIMENSIONAL REQUIREMENTS AND THE MINIMUM SOCKET LENGTH FOR PRESSURE-TYPE SOCKETS AS DEFINED IN ASTM D2672. ALL PVC SCHEDULE 80 PIPE MUST ALSO MEET THE REQUIREMENTS OF NSF STANDARD 14 AND CSA STANDARD B137.3 RIGID PVC PIPE FOR PRESSURE APPLICATIONS, AND SHALL BEAR THE MARK OF THESE LISTING AGENCIES. THIS PIPE SHALL HAVE A FLAME SPREAD RATING OF 0-25 WHEN TESTED FOR SURFACE BURNING CHARACTERISTICS IN ACCORDANCE WITH CANULC-S102-2-M88 OR EQUIVALENT.
C. PRODUCT MARKING SHALL MEET THE REQUIREMENTS OF ASTM D1785 AND SHALL INCLUDE: THE MANUFACTURER'S NAME (OR THE MANUFACTURER'S TRADEMARK WHEN PRIVATELY LABELED); THE NOMINAL PIPE SIZE, THE MATERIAL DESIGNATION CODE, THE PIPE SCHEDULE AND PRESSURE RATING IN PSI FOR WATER @ 73°F; THE ASTM DESIGNATION D1785; THE ASTM DESIGNATION D2665 (WHEN DUAL MARKED).
D. WARNING TAPE
1) WARNING TAPE SHALL BE AT LEAST 2-INCH WIDE, NOMINAL 4.5 MIL (0.0045") OVERALL THICKNESS, WITH A SOLID ALUMINUM FOIL CORE. THE IMPRINTED WARNING MESSAGE SHOULD BE "CAUTION - BURIED DRAINAGE LINE BELOW". THE TAPE SHALL BE IMPERVIOUS TO ACIDS, ALKALIS AND OTHER DESTRUCTIVE ELEMENTS FOUND IN SOIL.
2) WARNING TAPE SHALL BE MANUFACTURED BY SETON, INC. OR ENGINEER APPROVED EQUIVALENT.

3. 2-INCH CRUSHED STONE

- A. CRUSHED STONE SHALL CONSIST OF THE FOLLOWING MATERIALS:
1) DURABLE CRUSHED ROCK CONSISTING OF THE GRANULAR FRAGMENTS OBTAINED BY BREAKING AND CRUSHING SOLID OR SHATTERED NATURAL ROCK, AND FREE FROM A DETRIMENTAL QUANTITY OF THIN, FLAT, ELONGATED, OR OTHER OBJECTIONABLE PIECES.
2) THIN OR ELONGATED PIECES ARE DEFINED AS FOLLOWS: THIN STONES SHALL BE CONSIDERED TO BE SUCH STONES WHOSE AVERAGE WIDTH EXCEEDS FOUR (4) TIMES THEIR AVERAGE THICKNESS. ELONGATED STONES SHALL BE CONSIDERED TO BE SUCH STONES WHOSE AVERAGE LENGTH EXCEEDS FOUR (4) TIMES THEIR AVERAGE WIDTH.
B. DURABLE CRUSHED GRAVEL STONE OBTAINED BY ARTIFICIAL CRUSHING COBBLES, BOULDERS, OR FIELD STONE WITH A MINIMUM DIAMETER BEFORE CRUSHING OF 8 INCHES.
C. CRUSHED STONE SHALL BE REASONABLY FREE FROM CLAY, LOAM, OR DELETERIOUS MATERIAL AND NOT MORE THAN 1.0% OF SATISFACTORY MATERIAL PASSING A NO. 200 SIEVE WILL BE ALLOWED TO ADHERE TO THE CRUSHED STONE.
D. "2-INCH CRUSHED STONE" SHALL BE UNIFORMLY BLENDED ACCORDING TO THE GRADATION REQUIREMENTS IN THE FOLLOWING TABLE:

Table with 2 columns: SIEVE SIZE and 2-INCH CRUSHED STONE (RIDOT M.01.09 TABLE 1, COLUMN II). Rows include 2-INCH, 1 1/2-INCH, 1 1/4-INCH, 1-INCH, 3/4-INCH, 1/2-INCH, 3/8-INCH, NO. 4, NO. 100, NO. 200.

4. BEDDING SAND

- 1) ASTM C-33 SAND
A. ASTM C-33 SHALL CONSIST OF HARD, DURABLE SAND AND GRAVEL AND SHALL BE FREE FROM ICE AND SNOW, ROOTS, SOD, RUBBISH AND OTHER DELETERIOUS OR ORGANIC MATTER. IT SHALL CONFORM TO THE GRADATION SPECIFICATION LISTED BELOW.

Table with 2 columns: PART 1 SIEVE SIZE and PART 2 PERCENT FINER BY WEIGHT. Rows include PART 3 3/8-INCH, PART 5 NO. 4, PART 7 NO. 200, PART 4 100, PART 6 70-100, PART 8 0-6.

5. 8-OUNCE NON-WOVEN GEOTEXTILE

- A. A LAYER OF NON-WOVEN GEOTEXTILE SHALL BE PLACED BETWEEN THE EXPOSED SUBGRADE AND CRUSHED STONE AS WELL AS BETWEEN THE CRUSHED STONE AND THE OVERLYING MATERIALS IF DEEMED APPROPRIATE BY THE ENGINEER.
B. BINDER COURSE ASPHALT
A. COARSE AND FINE AGGREGATE MATERIALS SHALL BE COMBINED TO PRODUCE THE BINDER COURSE MATERIALS.
B. BINDER COURSE SHALL MEET THE REQUIREMENTS OF CLASS 12.5 HMA AS APPROVED BY RIDOT OR "BINDER COURSE" BITUMINOUS CONCRETE IN SECTION M03.01 OF RIDOT'S STANDARD SPECIFICATIONS FOR HIGHWAYS AND BRIDGES AND MEET THE FOLLOWING GRADATION:

Table with 2 columns: PART 1 SIEVE DESIGNATION NO. and PART 2 PERCENT PASSING. Rows include PART 3 1-INCH, PART 5 3/4-INCH, PART 7 3/8-INCH, PART 9 NO. 8, PART 11 NO. 30, PART 13 NO. 50, PART 15 NO. 200, PART 17 BITUMEN, PART 19% VOIDS, PART 4 100, PART 6 70-100, PART 8 46-90, PART 10 22-52, PART 12 10-34, PART 14 6-26, PART 16 2-8, PART 18 4.0-6.5, PART 20 3-8.

7. TOP COURSE ASPHALT

- A. COARSE AND FINE AGGREGATE MATERIALS SHALL BE COMBINED TO PRODUCE THE TOP COURSE MATERIALS.
B. TOP COURSE SHALL MEET THE REQUIREMENTS OF CLASS 9.5 HMA AS APPROVED BY RIDOT IN SECTION M03.01 OF RIDOT'S STANDARD SPECIFICATIONS FOR HIGHWAYS AND BRIDGES AND MEET THE FOLLOWING GRADATION:

Table with 2 columns: SIEVE DESIGNATION NO. and PERCENT PASSING. Rows include 3/4-INCH, 1/2-INCH, 3/8-INCH, NO. 4, NO. 8, NO. 30, NO. 50, NO. 200, BITUMEN, % VOIDS, 100, 70-90, 50-90, 35-50, 18-29, 10-20, 2-8, 5.5-7.0, 3-5.

8. SUBMITTALS

- A. WITHIN 21 DAYS OF NOTICE TO PROCEED, CONTRACTOR SHALL SUBMIT TECHNICAL INFORMATION ON THE MATERIALS PROPOSED FOR USE TO MEET THE REQUIREMENTS OF THIS SECTION. AT A MINIMUM, THE SUBMITTAL SHALL INCLUDE THE FOLLOWING:
a. MIX DESIGN FOR BINDER COURSE.
b. MIX DESIGN FOR TOP COURSE.
c. MIX DESIGN FOR EPOXY RESIN WHITE PAINT.
d. MIX DESIGN FOR EPOXY RESIN BLUE PAINT.
e. MARKING SYMBOL PROPOSED FOR HANDICAP PARKING SPACE.
f. LIST OF PROPOSED EQUIPMENT.
g. SAFETY DATA SHEETS FOR ALL CHEMICALS.

PART 3: EXECUTION (GENERAL)

- 1. ALL WORK SHALL BE PERFORMED IN ACCORDANCE WITH ALL APPLICABLE REGULATIONS AND LAWS OF LOCAL, STATE, FEDERAL AGENCIES AND UTILITY COMPANIES AND ALL PERMIT STIPULATIONS.
2. CONTRACTOR SHALL PROTECT BENCHMARKS, PROPERTY CORNERS AND ALL OTHER SURVEY MONUMENTS FROM DAMAGE OR DISPLACEMENT. IF A BENCHMARK, PROPERTY CORNER, OR MONUMENTS NEEDS TO BE REMOVED OR RELOCATED, IT SHALL BE RE-INSTALLED/RELOCATED BY A STATE OF RHODE ISLAND LICENSED LAND SURVEYOR ENGAGED BY THE CONTRACTOR AND REPLACED, AS NECESSARY, BY THE SAME AT NO ADDITIONAL COST TO THE OWNER.
3. CONTRACTOR SHALL BE RESPONSIBLE FOR ESTABLISHING AND MAINTAINING ALL VERTICAL AND HORIZONTAL SURVEY CONTROLS TO CONSTRUCT THE PROJECT IN ACCORDANCE WITH ALL PLANS AND SPECIFICATIONS.
4. CONTRACTOR SHALL EMPLOY BEST MANAGEMENT PRACTICES AS NECESSARY TO CONTROL DUST, ODOR, VAPOR, NOISE AND VIBRATION GENERATION DURING ALL WORK AS REQUIRED BY APPLICABLE PERMITS AND REGULATIONS.
5. SUBGRADE SHALL BE OBSERVED AND APPROVED BY THE ENGINEER/OWNER PRIOR TO THE PLACEMENT OF FOUNDATIONS, FILLS AND BACKFILLS, AND OTHER NEW WORK.
6. CONTRACTOR SHALL BE RESPONSIBLE FOR DIVERTING STORMWATER RUN-OFF SUCH THAT IT DOES NOT ADVERSELY AFFECT SITE GRADING AND ENTER EXCAVATIONS. STORMWATER RUN-OFF SHALL BE DIRECTED THROUGH EROSION AND SEDIMENTATION CONTROLS PRIOR TO DISCHARGING TO WETLANDS, PERIMETER WETLANDS, WATER COURSES AND STOCKPILE AREAS. ANY STORMWATER THAT COLLECTS AND REQUIRES REMOVAL TO PERFORM WORK SHALL BE MANAGED CONSISTENT WITH APPLICABLE LAWS AND REGULATIONS BY THE CONTRACTOR AT NO ADDITIONAL COST TO THE OWNER.

CONSTRUCTION OF STONE INFILTRATION TRENCH

- A. EXCAVATE TO THE LINES AND GRADES SHOWN ON THE DRAWINGS FOR INSTALLATION OF THE STONE INFILTRATION TRENCH. CARE SHALL BE TAKEN TO ENSURE THAT THE BOTTOM OF THE EXCAVATION IS NOT COMPACTED BY HEAVY EQUIPMENT TRAFFIC.
B. WHERE EXISTING SUBSOIL IS NOT ADEQUATELY SANDY, EXCAVATE AND REPLACE SOILS WITH 4-INCHES OF C33 SAND.
C. BACKFILL THE INFILTRATION TRENCH EXCAVATION WITH 2-INCH CRUSHED STONE ON TOP OF THE PREPARED SUBGRADE. MATCH THE DEPTH, WIDTH, AND LENGTH AS SHOWN ON THE DRAWINGS. THE 2-INCH CRUSHED STONE SHALL BE PLACED LOOSE.

CATCH BASIN

- 1. DELIVERY, STORAGE, AND HANDLING OF PRE-CAST CATCH BASIN
A. DELIVER PRE-CAST UNITS TO THE SITE IN ACCORDANCE WITH THE DELIVERY SCHEDULE TO AVOID EXCESSIVE BUILD-UP OF UNITS IN STORAGE AT THE SITE. UPON DELIVERY, ALL PRE-CAST CONCRETE UNITS WILL BE INSPECTED BY THE ENGINEER FOR QUALITY AND FINAL ACCEPTANCE.
B. STORE UNITS OFF THE GROUND OR IN A MANNER THAT WILL PREVENT POTENTIAL DAMAGE.
C. HANDLE, TRANSPORT, AND STORE PRODUCTS IN A MANNER TO PREVENT DAMAGE. LIFTING DEVICES OR HOLES SHALL BE CONSISTENT WITH INDUSTRY STANDARDS. PERFORM LIFTING WITH METHODS OR DEVICES INTENDED FOR THIS PURPOSE AS INDICATED ON THE SHOP DRAWINGS.
2. INSTALLATION OF PRE-CAST CONCRETE CATCH BASIN AND CONNECTOR PIPE
A. EXCAVATE TO THE LINES AND GRADES SHOWN ON THE DRAWINGS FOR INSTALLATION OF THE CONCRETE CATCH BASIN (CBF1).
B. PROVIDE, INSTALL, AND MAINTAIN ANY NECESSARY EXCAVATION SUPPORT MEASURES FOR INSTALLATION OF CBF1.
C. PLACE A LAYER OF 8-OUNCE NON-WOVEN GEOTEXTILE WITHIN THE BASE OF THE EXCAVATION FOLLOWED BY A MINIMUM OF 6 INCH THICK LAYER OF COMPACTED 2-INCH CRUSHED STONE. 8-OUNCE NON-WOVEN GEOTEXTILE SHALL BE INSTALLED UNDER, ON SIDES, AND ON TOP OF THE STONE SURFACE.

- D. INSTALL PROPOSED CATCH BASIN WITHIN THE EXCAVATION TO THE LINES AND GRADES INDICATED ON THE DRAWING. CONTRACTOR SHALL UTILIZE PROPER RIGGING EQUIPMENT AND ACCESSORIES TO LIFT AND LOWER THE CATCH BASINS INTO THE EXCAVATIONS.
E. JOINTS BETWEEN CATCH BASIN SECTIONS SHALL BE EQUIPPED WITH PRE-FORMED BUTYL RUBBER GASKETS AND SEALED WITH HYDRAULIC CEMENT.
F. INSTALL CATCH BASIN FRAMES AND COVERS FLUSH WITH THE SURROUNDING FINAL GRADING SURFACE AND CONSTRUCTED TO SUPPORT H-20 LOADING.
G. CATCH BASINS SHALL BE BACKFILLED AS SHOWN ON THE DRAWINGS.
H. THE CATCH BASIN SHALL DISCHARGE TO THE STONE TRENCH WITH A 6-INCH SCHEDULE 80 PVC PIPE AT THE LOCATION INDICATED ON THE DRAWINGS:
1) EXCAVATE TO THE LINES AND GRADES SHOWN ON THE DRAWINGS TO ALLOW THE INSTALLATION OF THE 6-INCH SCHEDULE 80 PVC PIPING.
2) THE 6-INCH SCHEDULE 80 PVC PIPING SHALL BE BEDDED ON AND BACKFILLED WITH BEDDING SAND AS SPECIFIED HERE WITHIN.
3) INSTALL 6-INCH SCHEDULE 80 PVC PIPING AS SHOWN ON THE DRAWINGS. PIPING SHOULD BE SECURED INTO THE CATCH BASIN WITH A KNOCKOUT AND HYDRAULIC CEMENT SO THAT THE CONNECTIONS ARE WATER TIGHT. PIPING INTO THE STONE TRENCH SHALL BE BEDDED ON AND BACKFILLED WITH 2-INCH CRUSHED STONE AS SHOWN ON THE DRAWINGS. PIPE INVERTS SHALL BE SET IN ACCORDANCE WITH THE DRAWINGS.
4) CONTRACTOR SHALL INSTALL WARNING TAPE NO MORE THAN 12 INCHES ABOVE THE TOP OF THE 6-INCH SCHEDULE 80 PVC PIPE.

ASPHALT

1. PREPARATION

- A. SUBGRADES
1) CONTRACTOR SHALL PERFORM ALL NECESSARY RE-GRADING AND FINE GRADING TO BRING SUBGRADES TO THE REQUIRED GRADES AND SECTION, INCLUDING RE-COMPACTING OF THE PAVEMENT SUBGRADE.
2) FINAL GRADING PRIOR TO PLACEMENT OF ASPHALT SHALL BE PERFORMED WITH A MOTOR GRADER. FINE GRADING WITH A DOZER SHALL NOT BE PERMITTED.
3) CONTRACTOR SHALL COMPACT ALL SUBGRADE. DO NOT BEGIN WORK OVER UNSUITABLE SUBGRADE. THE SUBGRADE SHALL BE INSPECTED BY THE ENGINEER PRIOR TO PAVING.
B. EXISTING SURFACES
1) THE CONTACT SURFACES OF CASTINGS, INTERFACES BETWEEN NEW AND EXISTING PAVED SURFACES, AND OTHER STRUCTURES (WITH THE EXCEPTION OF CONCRETE) SHALL BE PAINTED WITH A TACK COAT AS SPECIFIED HEREIN. TACK COAT SHALL BE APPLIED AT A RATE OF 0.05 GALLONS PER SQUARE YARD. THE EXISTING SURFACES SHALL BE CLEANED OF ALL FOREIGN MATTER AND LOOSE MATERIAL AND SHALL BE DRY PRIOR TO APPLYING THE TACK COAT.
2) THE EXISTING PAVED SURFACES SHALL BE SAWCUT PRIOR TO PAVING TO CREATE A VERTICAL AND STRAIGHT EDGE. ALL SAW CUT EDGES ABUTTING NEW ASPHALT SHALL BE TACK COATED AT A RATE OF 0.05 GALLONS PER SQUARE YARD.
3) THE EXISTING PAVED SURFACES SHALL BE MILLED BACK 2-FEET FROM THE JOINT INTERSECTION WITH NEW PAVEMENT TO CREATE A JOINT KEY.
4) EXISTING PAVED SURFACES SHALL BE MILLED BACK 2-FEET FROM THE JOINT INTERSECTION WITH NEW PAVEMENT TO CREATE A JOINT KEY.

2. PAVEMENT BINDER AND TOP COURSES

A. GENERAL

- 1) MATERIALS FOR PAVEMENT SHALL BE MIXED, DELIVERED, PLACED AND COMPACTED IN ACCORDANCE WITH THE REFERENCED STANDARD, SECTIONS M3.03 AND 401 AND AS SPECIFIED HEREIN.
2) PLACE ASPHALT MIXTURE ON PREPARED SURFACE FREE FROM STANDING WATER. THE MINIMUM SURFACE TEMPERATURE OF THE BASE SHALL BE 80°F WHEN ONLY ONE ROLLER IS USED FOR BREAKDOWN ROLLING (15 MINUTES) OR 50°F WHEN TWO ROLLERS ARE USED (8 MINUTES). SPREAD MIXTURE AT MINIMUM TEMPERATURE OF 275 DEG. F. PLACE INACCESSIBLE AND SMALL AREAS BY HAND. PLACE EACH COURSE TO REQUIRED GRADE, CROSS-SECTION, AND APPROPRIATE THICKNESS TO YIELD REQUIRED MINIMUM DEPTH AFTER ROLLING.
3) UNDER NO CIRCUMSTANCE SHALL MIXTURE BE PLACED ON MATERIALS CONTAINING FROST OR WITH A SURFACE TEMPERATURE LESS THAN THE REQUIREMENTS LISTED ABOVE.
4) PLACE ASPHALT IN WIDEST STRIP PRACTICAL AND NOT LESS THAN 10 FEET WHERE SPACE PERMITS. AFTER FIRST STRIP HAS BEEN PLACED AND ROLLED, PLACE SUCCEEDING STRIPS AND EXTEND ROLLING TO OVERLAP PREVIOUS STRIPS.
5) EXCESSIVE AND UNNECESSARY WALKING ON THE UNCOMPACTED ASPHALT MATERIAL SHALL NOT BE ALLOWED.
6) NO TRUCKS OR OTHER EQUIPMENT SHALL BE ALLOWED ON FRESHLY PLACED ASPHALT MATERIAL UNLESS SPECIFICALLY PERMITTED BY ENGINEER.
7) THOROUGHLY CLEAN ALL SURFACES BETWEEN PLACEMENT OF LIFTS OF ASPHALT. REMOVE DUST, DIRT, AND OTHER GRANULAR SURFACE DEPOSITS BY SWEEPING, BLOWING WITH COMPRESSED AIR, RINSING WITH WATER, OR A COMBINATION OF THESE METHODS.

3. SPREADING AND FINISHING

- A. ASPHALT MIXTURE SHALL BE LAID UPON AN APPROVED CLEANED SURFACE, SPREAD, AND STRUCK OFF TO THE GRADES AND ELEVATIONS SHOWN ON THE DRAWINGS. ASPHALT PAVERS SHALL BE USED TO DISTRIBUTE THE MIXTURE EITHER OVER THE ENTIRE WIDTH OR OVER SUCH PARTIAL WIDTH AS MAY BE PRACTICABLE.
B. UNLESS OTHERWISE APPROVED BY ENGINEER, EACH SUCCESSFUL COURSE SHALL BE BROOM CLEANED AND TACKED PRIOR TO PLACEMENT OF SUCCESSIVE COURSES.
C. THE MAXIMUM COMPACTED LIFT THICKNESS FOR BINDER COURSE (CLASS 12.5 HMA) SHALL BE 2 INCHES. THE MAXIMUM COMPACTED LIFT THICKNESS FOR TOP COURSE (CLASS 9.5 HMA) SHALL BE 2 INCHES.
D. ALL PAVEMENT THICKNESSES REFERRED TO HEREIN ARE COMPACTED THICKNESSES. CONTRACTOR SHALL PLACE SUFFICIENT MIX TO ENSURE THAT SPECIFIED MINIMUM COMPACTED PAVEMENT THICKNESS OF 6-INCHES IS ACHIEVED.
E. IN AREAS WHERE IRREGULARITIES OR UNAVOIDABLE OBSTACLES MAKE THE USE OF MECHANICAL SPREADING AND FINISHING EQUIPMENT IMPRACTICABLE, THE MIXTURE SHALL BE PLACED AS CLOSE TO ITS FINAL POSITION AS POSSIBLE. IT SHALL THEN BE SPREAD AND RAKED BY HAND TOOLS IN A MANNER WHICH WILL MINIMIZE SEGREGATION AND RESULT IN THE REQUIRED COMPACTED THICKNESS.

5. JOINTS

- A. MAKE JOINTS BETWEEN OLD AND NEW PAVEMENTS, OR BETWEEN SUCCESSIVE DAYS' WORK, TO ENSURE CONTINUOUS BOND BETWEEN ADJOINING WORK. CONSTRUCT JOINTS TO HAVE SAME TEXTURE, DENSITY AND SMOOTHNESS AS OTHER SECTIONS OF ASPHALT. CLEAN CONTACT SURFACES AND APPLY TACK COAT. BOTH LONGITUDINAL AND TRANSVERSE JOINTS IN SUCCESSIVE COURSES SHALL BE STAGGERED SO AS NOT TO BE ONE ABOVE THE OTHER. THE LONGITUDINAL JOINT IN ONE LAYER SHALL OFFSET THE JOINT IN THE LAYER IMMEDIATELY BELOW BY AT LEAST 12 INCHES.
B. PLACING OF THE ASPHALT PAVING SHALL BE AS CONTINUOUS AS POSSIBLE. ROLLERS SHALL NOT PASS OVER THE UNPROTECTED END OF A FRESHLY LAID MIXTURE.
C. SEAL THE FINISHED SURFACE OF EXISTING ASPHALT PAVEMENT TO NEWLY INSTALLED ASPHALT PAVEMENT WITH JOINT SEALER. INSTALLATION OF JOINT SEALER SHALL BE PER THE MANUFACTURER'S REQUIREMENTS.

6. ROLLING

- A. IMMEDIATELY AFTER THE ASPHALT MIXTURE HAS BEEN SPREAD, STRUCK OFF, AND SURFACE IRREGULARITIES ADJUSTED, IT SHALL BE THOROUGHLY AND UNIFORMLY COMPACTED BY ROLLING.
B. THE SURFACE SHALL BE ROLLED WHEN THE MIXTURE IS IN THE PROPER CONDITION AND WHEN ROLLING DOES NOT CAUSE UNDESIRABLE DISPLACEMENT, CRACKING, AND SHOVING.

- C. TWO ROLLERS SHALL BE REQUIRED FOR ALL PAVING OPERATIONS THAT EXCEED A DAILY TOTAL OF 500 TONS. THE NUMBER, WEIGHT AND TYPE OF ROLLER(S) SHALL BE SUFFICIENT TO COMPACT THE MIXTURE TO THE REQUIRED DENSITY BEFORE IT REACHES THE MINIMUM COMPACTION TEMPERATURE. VIBRATORY ROLLERS USED FOR COMPACTION SHALL BE OPERATED IN THE VIBRATORY MODE.
D. THE SPEED OF A STATIC WEIGHT, STEEL WHEEL ROLLER, PNEUMATIC TIRE ROLLER, OR VIBRATORY ROLLER SHALL NOT EXCEED FIVE MILES PER HOUR.
E. ROLLERS SHALL NOT BE TEMPORARILY PARKED ON HOT MIX. WHEN REVERSING DIRECTION, THE ACTION SHOULD BE SMOOTH, NOT ABRUPT. THE DRIVE WHEEL SHOULD APPROACH THE NEW MIX, NOT THE TILLER WHEEL.
F. THE MOTION OF THE ROLLERS SHALL BE SLOW ENOUGH AT ALL TIMES TO AVOID DISPLACEMENT OF THE HOT MIXTURE AND ANY DISPLACEMENT RESULTING FROM REVERSING THE DIRECTION OF THE ROLLERS, OR FROM ANY OTHER CAUSE, SHALL BE SATISFACTORILY CORRECTED. THE WHEELS OF STEEL-WHEEL ROLLERS SHALL BE KEPT MOIST AND CLEAN TO PREVENT ADHESION OF THE FRESH MATERIAL, BUT AN EXCESS OF WATER WILL NOT BE PERMITTED.
G. BEGIN ROLLING WITH A STEEL-WHEELED ROLLER WHEN MIXTURE WILL BEAR ROLLER WEIGHT WITHOUT EXCESSIVE DISPLACEMENT. COMPACT MIXTURE WITH HOT HAND TAMPERS OR VIBRATING PLATE COMPACTORS IN AREAS INACCESSIBLE TO ROLLERS.
H. BREAKDOWN ROLLING: ACCOMPLISH BREAKDOWN OR INITIAL ROLLING IMMEDIATELY FOLLOWING ROLLING OF JOINTS AND CROSS EDGE. CHECK SURFACE AFTER BREAKDOWN ROLLING, AND REPAIR DISPLACED AREAS BY LOOSENING AND FILLING WITH HOT MATERIAL.
I. SECOND ROLLING: FOLLOW BREAKDOWN ROLLING AS SOON AS POSSIBLE, WHILE MIXTURE IS STILL HOT. CONTINUE SECOND ROLLING UNTIL MIXTURE HAS BEEN THOROUGHLY COMPACTED.
J. FINISH ROLLING: PERFORM FINISH ROLLING WHILE MIXTURE IS STILL WARM ENOUGH FOR REMOVAL OF ROLLER MARKS. CONTINUE ROLLING UNTIL ROLLER MARKS ARE ELIMINATED AND COURSE HAS ATTAINED 95 PERCENT MAXIMUM DENSITY AS MEASURED BY IN-PLACE FIELD DENSITY TESTING IN ACCORDANCE WITH THIS SECTION. WHEN A VIBRATORY ROLLER IS USED FOR FINISH ROLLING, IT SHALL BE USED IN THE STATIC MODE.
K. ALONG CURBS, STRUCTURES AND ALL PLACES NOT ACCESSIBLE WITH A ROLLER, THE MIXTURE SHALL BE THOROUGHLY COMPACTED WITH TAMPERS. SUCH TAMPERS SHALL NOT WEIGH LESS THAN 25 POUNDS AND SHALL HAVE A TAMPING FACE OF NOT MORE THAN 50 SQUARE INCHES.
L. REMOVE AND REPLACE PAVING AREAS MIXED WITH FOREIGN MATERIALS OR OTHERWISE DEFECTIVE. CUT-OUT SUCH AREAS AND FILL WITH FRESH, HOT ASPHALT. COMPACT BY ROLLING TO MAXIMUM SURFACE DENSITY AND SMOOTHNESS.
M. AFTER FINAL ROLLING, DO NOT PERMIT VEHICULAR OR EQUIPMENT TRAFFIC ON PAVEMENT UNTIL IT HAS COOLED AND HARDENED (MINIMUM OF 72 HOURS), ERECT TEMPORARY BARRICADES TO PROTECT PAVING FROM TRAFFIC AND EQUIPMENT UNTIL MIXTURE HAS COOLED.
N. THE MINIMUM ACCEPTABLE DENSITY SHALL BE 95 PERCENT OF THE CORRESPONDING DAILY PLANT MARSHALL DENSITY (AASHTO T245).
O. IF SATISFACTORY DENSITY CANNOT BE OBTAINED IN ANY LIFT OR IF THE ENGINEER DETERMINES IT TO BE STRUCTURALLY INADEQUATE AND INCAPABLE OF MAINTAINING MATERIAL INTEGRITY, THE CONTRACTOR SHALL BE REQUIRED TO REMOVE AND REPLACE ANY SUCH AREA AT ITS OWN EXPENSE.
P. THE SURFACE OF THE MIXTURE AFTER COMPACTION SHALL BE SMOOTH AND TRUE TO THE ESTABLISHED LINE AND GRADE. THE PLANE OF THE FINISHED SURFACES OF THE BINDER COURSE AND TOP COURSE SHALL BE TESTED WITH A 16-FOOT STRAIGHT EDGE. IRREGULARITIES WHICH VARY 1/4-INCH FROM A TRUE SURFACE SHALL BE CORRECTED.

DEMOLITION NOTES:

- 1. ALL FEDERAL, STATE AND MUNICIPAL APPROVALS ARE TO BE OBTAINED PRIOR TO THE START OF CONSTRUCTION.
2. THE LOCATION OF EXISTING UNDERGROUND UTILITIES ARE FROM VISIBLE INFORMATION, FIELD SURVEY, DRAWING FROM OTHERS, AND DATA PROVIDED TO GZA. THESE LOCATIONS ARE CONSIDERED APPROXIMATE AND HAVE NOT BEEN FIELD VERIFIED. THE DRAWINGS MAKE NO GUARANTEE THAT THE UNDERGROUND UTILITIES SHOWN COMPRISE ALL SUCH UTILITIES IN THE AREA, EITHER IN-SERVICE OR ABANDONED. THE DRAWINGS DO NOT WARRANT THAT THE UNDERGROUND UTILITIES SHOWN ARE IN THE EXACT LOCATION INDICATED.
3. PRE-MARK WORK AREA AND CALL DIG SAFE® (811 OR 888-344-723) TO NOTIFY MEMBER UTILITIES. PRIOR TO NOTIFYING DIG SAFE®, THE EXCAVATIONS MUST BE PRE-MARKED WITH WHITE PAINT. HAVE THE SITE MARKED AND DIG SAFE® NOTIFIED AT LEAST FIVE (5) DAYS EXCLUDING SATURDAYS, SUNDAYS AND HOLIDAYS) PRIOR TO ANY EXCAVATION OR DEMOLITION. THE CONTRACTOR SHALL COORDINATE ALL UTILITY WORK WITH THE APPROPRIATE UTILITY COMPANY REPRESENTATIVES.
4. CHECK AND VERIFY LOCATIONS AND ELEVATIONS OF ALL UTILITIES, BOTH UNDERGROUND AND OVERHEAD, BEFORE BEGINNING WORK. PRECAUTIONS TO PROTECT ALL UNDERGROUND UTILITIES DURING EXCAVATION AT THE SITE ARE TO BE TAKEN.
5. EXERCISE ALL NECESSARY CARE TO PREVENT ANY DAMAGE TO UTILITIES, EXISTING STRUCTURES OR NEW STRUCTURES. IF THE CONTRACTOR DAMAGES UTILITIES, EXISTING STRUCTURES OR NEW STRUCTURES, THE CONTRACTOR IS TO IMMEDIATELY NOTIFY OWNER AND ENGINEER. THE CONTRACTOR MUST RESTORE THE DAMAGES AT NO ADDITIONAL COST TO OWNER.
6. ALL TYPES OF WASTE GENERATED AT THE SITE SHALL BE DISPOSED OF IN A MANNER CONSISTENT WITH FEDERAL, STATE, LOCAL REGULATIONS AND CONTRACT DOCUMENTS.
7. THE CONTRACTOR MUST NOTIFY THE ENGINEER AND THE TOWN WHEN UNANTICIPATED OR APPARENTLY DANGEROUS CONDITIONS ARE UNCOVERED DURING CONSTRUCTION OR DEMOLITION.
8. IT IS THE CONTRACTOR'S RESPONSIBILITY TO DETERMINE THE ERECTION PROCEDURES AND SEQUENCE ERECTION TO ENSURE THE SAFETY OF THE SITE AND RESPECTIVE COMPONENTS DURING DEMOLITION AND CONSTRUCTION. THIS MAY INCLUDE THE ADDITION OF NECESSARY SHORING AND TEMPORARY BRACING.

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APPROVED WITH CONDITIONS AS SPECIFIED IN THE LETTER OF APPROVAL
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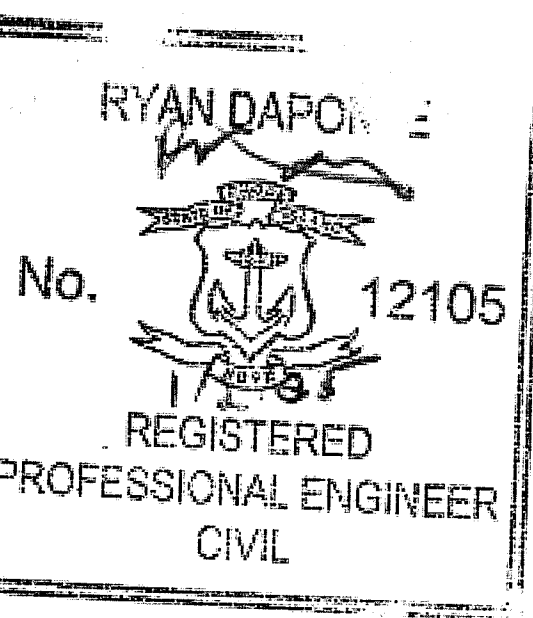


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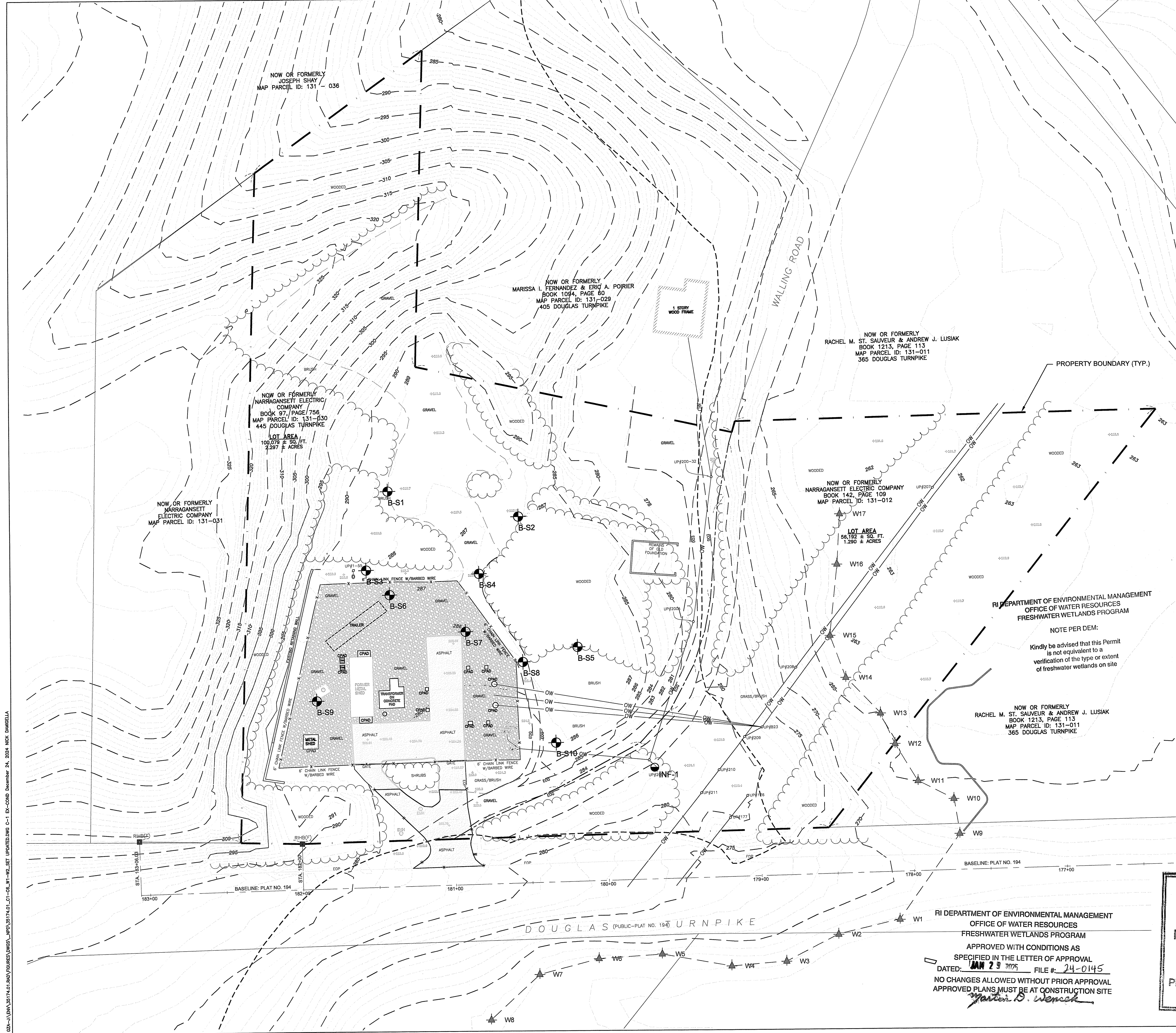
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NASONVILLE SUBSTATION - STORMWATER MANAGEMENT PLAN
445 DOUGLAS TURNPIKE
BURRILLVILLE, RHODE ISLAND

NOTES SHEET (2 OF 2)

PREPARED BY: GZA GeoEnvironmental, Inc. Engineers and Scientists www.gza.com
PREPARED FOR: THE NARRAGANSETT ELECTRIC COMPANY

Table with 4 columns: PROJ MGR, RAD, REVIEWED BY, MK, CHECKED BY, GRM, DRAWING. Row 1: DESIGNED BY: ND, DRAWN BY: GRB, SCALE: AS NOTED, DATE: SEPTEMBER 20, 2023, PROJECT NO.: 35174.01, REVISION NO.: 1, DRAWING: G-3 SHEET NO. 2 OF 10.



- LEGEND:**
- CLF CHAIN LINK FENCE
 - CONC CONCRETE
 - CPAD CONCRETE PAD
 - EMH ⊕ ELECTRIC MANHOLE
 - EOG EDGE OF GRAVEL
 - EOP EDGE OF PAVEMENT
 - GW ↙ GUY WIRE
 - LP ⚡ LIGHT POLE
 - MB [] MAIL BOX
 - OW — OVERHEAD WIRES
 - +123.45 SPOT ELEVATION
 - [] TRANSFORMER
 - UP ⊕ UTILITY POLE
 - UP ⊕ LIGHT UTILITY POLE WITH LIGHT
 - - - CENTER LINE OF UNIMPROVED PUBLIC ROADWAY
 - - - PROPERTY BOUNDARY
 - - - WETLAND BUFFER
 - - - WETLAND BOUNDARY
 - W10 ▲ WETLAND FLAG
 - - - APPROXIMATE LOCATION OF STREAM
 - [] EXISTING ASPHALT
 - [] EXISTING GRAVEL DRIVEWAY
 - [] EXISTING GRAVEL
 - ⊕ INFILTRATION TEST LOCATION
 - ⊕ BORING LOCATION

- SURVEY MONUMENTS**
- RIHB ■ RHODE ISLAND HIGHWAY BOUND FOUND
 - (F)

BORING / TEST PIT DATA

| BORING / TEST PIT ID | GROUND SURFACE ELEVATION | END OF EXPLORATION DEPTH (FT) | END OF EXPLORATION ELEVATION | GROUNDWATER DEPTH (FT)* | GROUNDWATER ELEVATION | BEDROCK ELEVATION |
|----------------------|--------------------------|-------------------------------|------------------------------|-------------------------|-----------------------|-------------------|
| B-S1 | 289 | 32 | 257 | 23.5 | 265.5 | N/A |
| B-S2 | 287 | 32 | 255 | 19 | 268 | N/A |
| B-S3 | 288 | 32 | 256 | 19.5 | 268.5 | N/A |
| B-S4 | 287 | 32 | 255 | 16.5 | 270.5 | N/A |
| B-S5 | 291 | 32 | 259 | 25 | 266 | N/A |
| B-S6 | 287 | 32 | 255 | 14 | 273 | N/A |
| B-S7 | 286 | 32 | 254 | N/A | N/A | N/A |
| B-S8 | 286 | 32 | 254 | 20.5 | 265.5 | N/A |
| B-S9 | 286 | 32 | 254 | N/A | N/A | N/A |
| B-S10 | 286 | 32 | 254 | 20 | 266 | N/A |
| INF-1 | 284 | 7 | 277 | N/A | N/A | N/A |

*GROUNDWATER MEASUREMENTS WERE TAKEN FOLLOWING THE INTRODUCTION OF DRILLING FLUID (WATER) INTO THE BOREHOLE, AND MAY NOT REPRESENT ACTUAL GROUNDWATER LEVELS; WHERE APPLICABLE THE GROUNDWATER ELEVATION WITH THE LONGER STABILIZATION TIME WAS REFERENCED

0 15' 30' 60' 90'
SCALE IN FEET 1" = 30'

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| | | | |
|-----|---|-----|------------|
| 1 | ADDED BORING LOCATIONS (RIDEM SUBMISSION) | RAD | 12-24-2024 |
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445 DOUGLAS TURNPIKE
BURRILLVILLE, RHODE ISLAND

EXISTING CONDITIONS PLAN

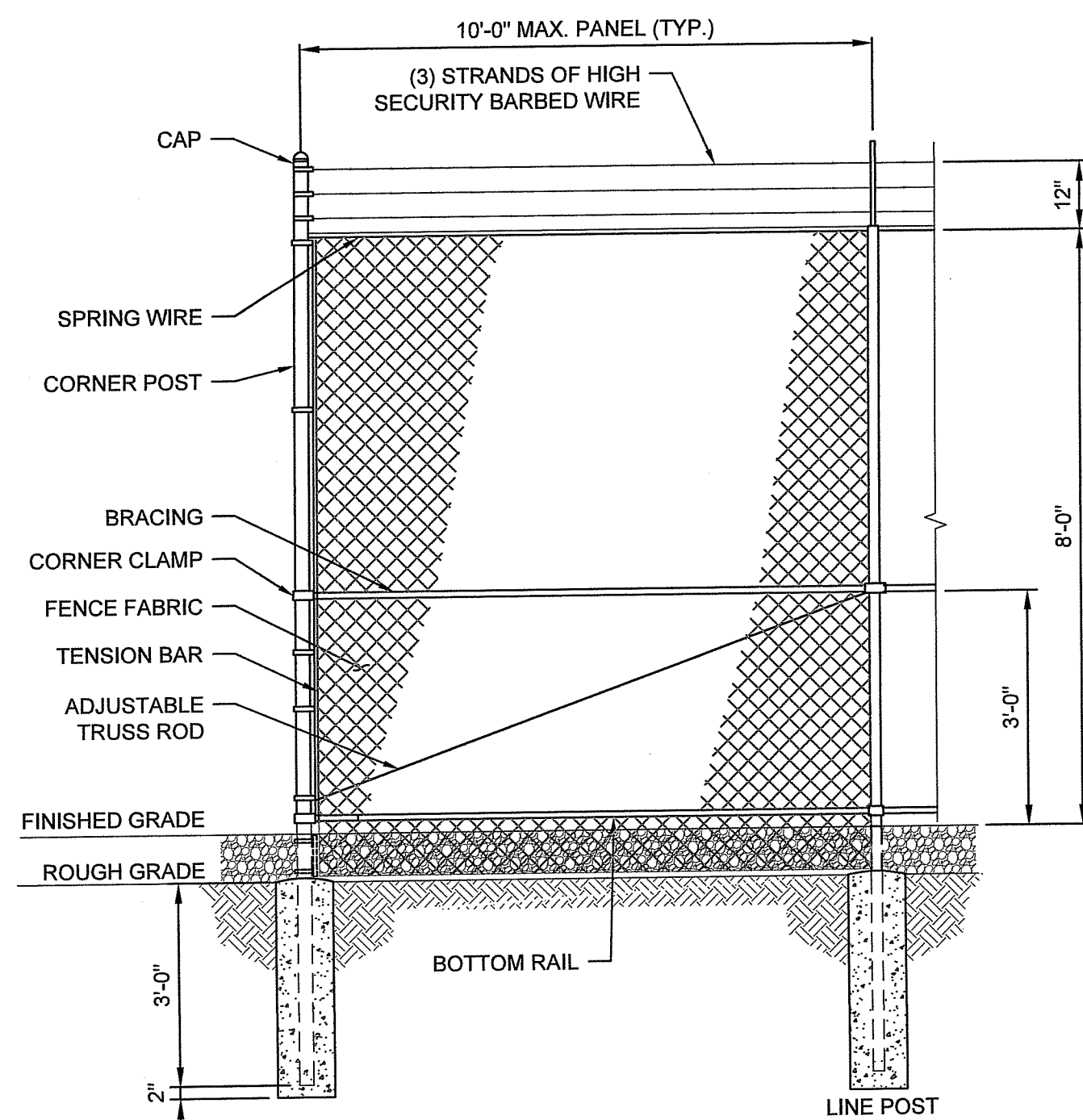
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| CHECKED BY: TRG SCALE: AS NOTED REVISION NO.: 1 | DRAWING C-1 SHEET NO. 404-0- 5 of 11 |

RYAN DAPOT
No. 12105
REGISTERED
PROFESSIONAL ENGINEER
CIVIL

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OFFICE OF WATER RESOURCES
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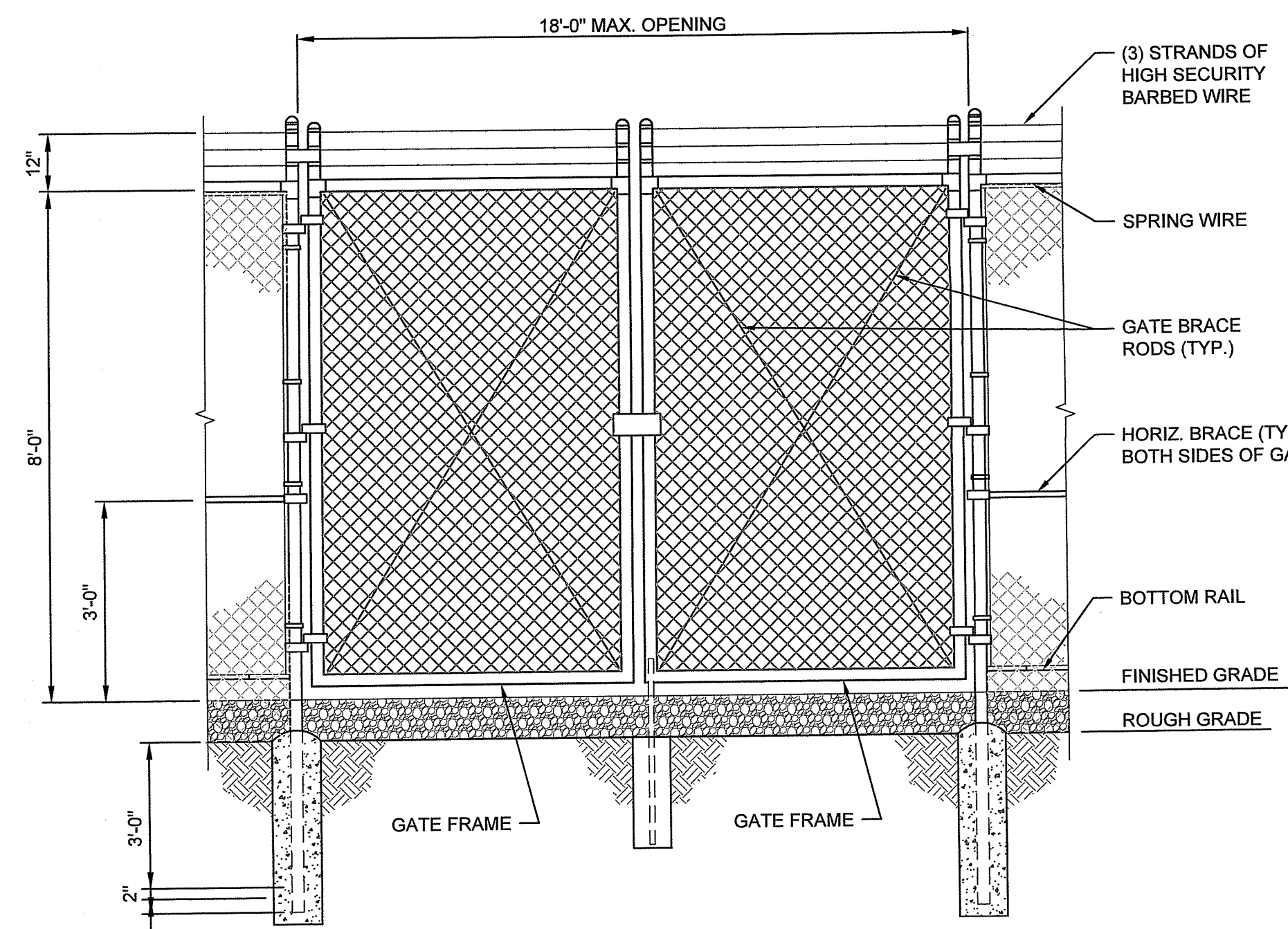
Martin D. Wensch

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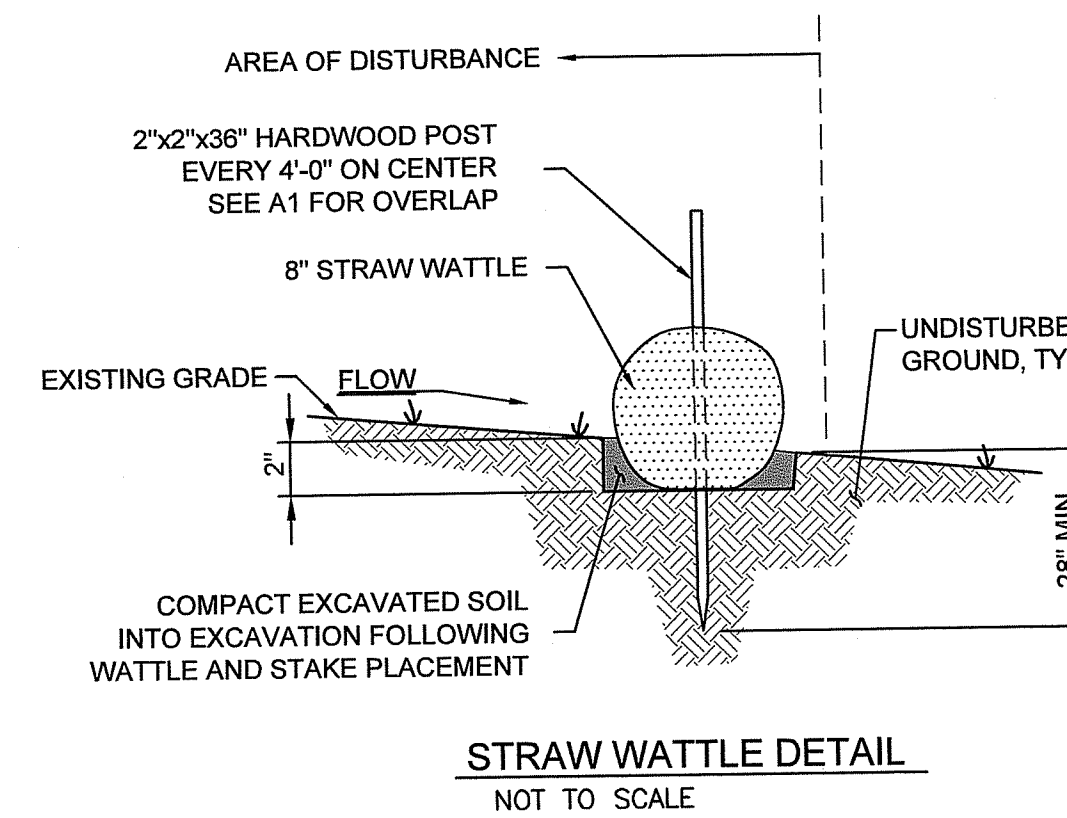
NOTES:
1. REFER TO SECTION 32 31 13 - CHAIN-LINK FENCES AND GATES FOR PERMANENT FENCE AND GATE REQUIREMENTS.

TYPICAL PERMANENT CHAIN LINK FENCE DETAIL
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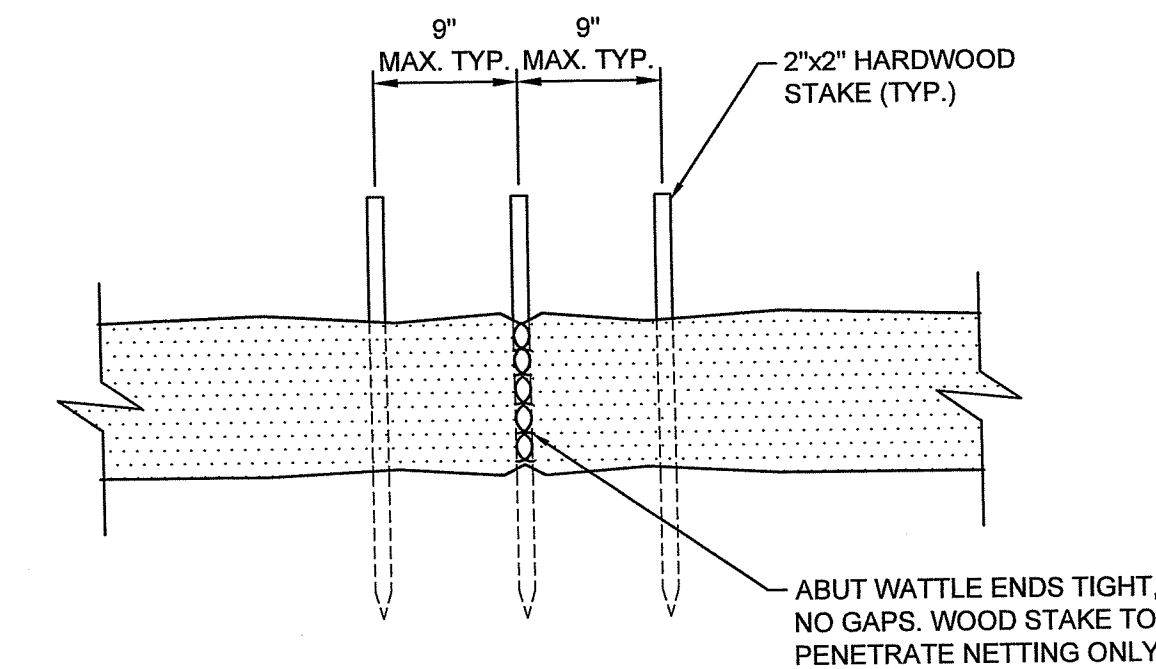


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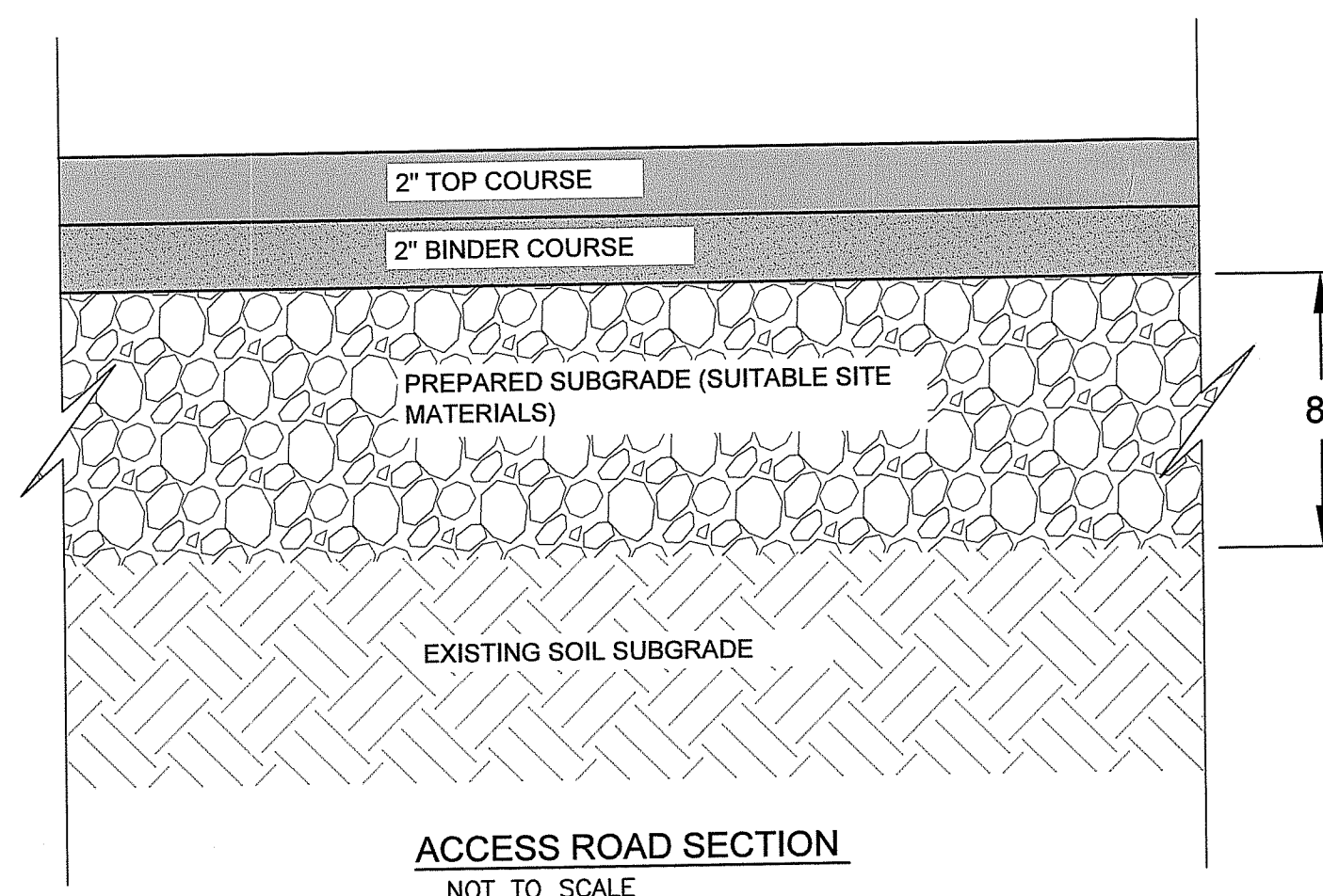
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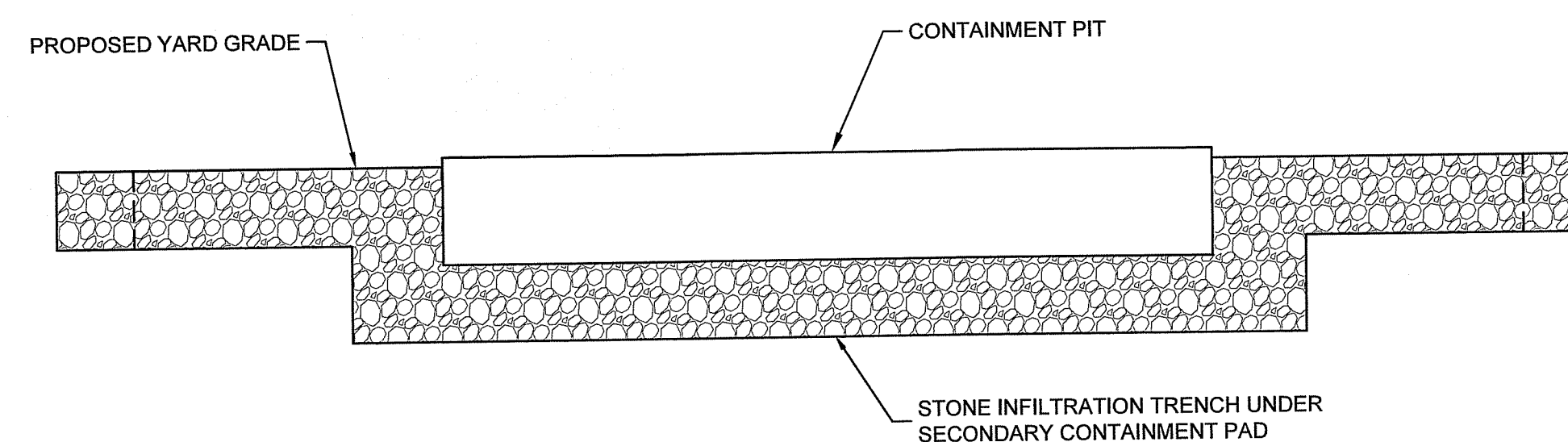
STRAW WATTLE DETAIL
NOT TO SCALE



STRAW WATTLE OVERLAP
NOT TO SCALE



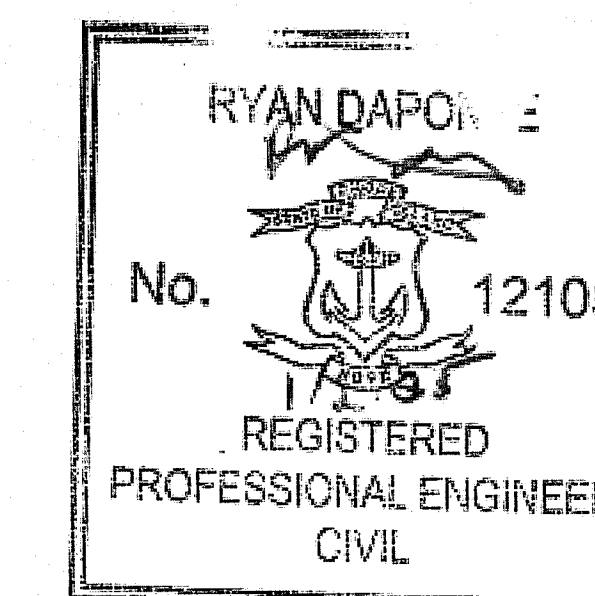
ACCESS ROAD SECTION
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INFILTRATION TRENCH / SECONDARY CONTAINMENT INTERFACE DETAIL
SCALE: 1"=4'

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NASONVILLE SUBSTATION - STORMWATER MANAGEMENT PLAN
445 DOUGLAS TURNPIKE
BURRILLVILLE, RHODE ISLAND

DETAILS (1 OF 2)

| | | | |
|--|--|---|---|
| PREPARED BY: GZA GeoEnvironmental, Inc. Engineers and Scientists www.gza.com | | PREPARED FOR: THE NARRAGANSETT ELECTRIC COMPANY | |
| PROJ MGR: RAD DESIGNED BY: RAD DATE: SEPTEMBER 20, 2023 | REVIEWED BY: MK DRAWN BY: GRB PROJECT NO. 35174.01 | CHECKED BY: TRG SCALE: AS NOTED REVISION NO. 1 | DRAWING C-4 SHEET NO. 7 OF 10 |

NOW OR FORMERLY
MARISSA L. FERNANDEZ & ERIC A. POJRIER
BOOK 1094, PAGE 60
MAP PARCEL ID: 131-029
405 DOUGLAS TURNPIKE

NOW OR FORMERLY
NARRAGANSETT ELECTRIC COMPANY
BOOK 97, PAGE 756
MAP PARCEL ID: 131-030
445 DOUGLAS TURNPIKE
LOT AREA
100,079 ± SQ. FT.
2.297 ± ACRES

NOW OR FORMERLY
NARRAGANSETT ELECTRIC COMPANY
MAP PARCEL ID: 131-031

SC-2
9,017 SF
CN: 31
TC: 16.4 MIN

SC-1
62,814 SF
CN: 49
TC: 13.9 MIN

RACHEL M. ST
BC
MAF
36

NOW OR FORI
NARRAGANSETT ELECT
BOOK 142, PA
MAP PARCEL ID:
LOT A
56,192 ±
1.290 ±

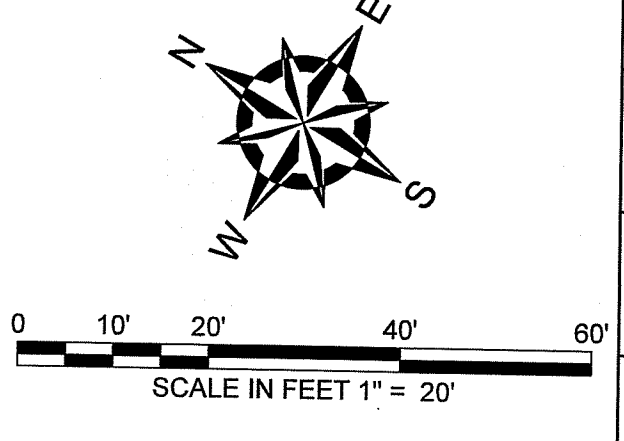
- LEGEND:**
- CLF CHAIN LINK FENCE
 - CONC CONCRETE
 - CPAD CONCRETE PAD
 - EMH (E) ELECTRIC MANHOLE
 - EOG EDGE OF GRAVEL
 - EOP EDGE OF PAVEMENT
 - GW GUY WIRE
 - LP (L) LIGHT POLE
 - MB (M) MAIL BOX
 - OW OVERHEAD WIRES
 - +123.45 SPOT ELEVATION
 - TRN TRANSFORMER
 - UP (U) UTILITY POLE
 - UP (U) UTILITY POLE WITH LIGHT
 - CENTER LINE OF UNIMPROVED PUBLIC ROADWAY
 - WETLAND BOUNDARY
 - W10 WETLAND FLAG
 - APPROXIMATE LOCATION OF STREAM
 - PROPERTY BOUNDARY
 - WETLAND BUFFER
 - DRAINAGE LINE LIMITS
 - SHEET FLOW
 - SHALLOW CONCENTRATED FLOW
 - SC-1 STORMWATER CATCHMENT
 - SC-2 STORMWATER CATCHMENT

- SURVEY MONUMENTS**
- RIHB RHODE ISLAND HIGHWAY BOUND FOUND
 - (F) FOUND

RI DEPARTMENT OF ENVIRONMENTAL MANAGEMENT
OFFICE OF WATER RESOURCES
FRESHWATER WETLANDS PROGRAM
APPROVED WITH CONDITIONS AS
SPECIFIED IN THE LETTER OF APPROVAL
DATED: JAN 29 2025 FILE # 24-0145
NO CHANGES ALLOWED WITHOUT PRIOR APPROVAL
APPROVED PLANS MUST BE AT CONSTRUCTION SITE
W13
W12
W11
RACHEL M. ST.
BO
MAP
36E

NOTE PER DEM:
Kindly be advised that this Permit
is not equivalent to a GRASS/BRUSH
verification of the type or extent
of freshwater wetlands on site.
DL-1: UNNAMED WETLAND COMPLEX

RYAN DAPOLI
No. 12105
REGISTERED
PROFESSIONAL ENGINEER
CIVIL



PERMITTING ONLY
NOT FOR CONSTRUCTION

SURFACE MATERIAL NOT
SHOWN FOR CLARITY
(SEE DRAWING C-2)

DL-1: DOUGLAS TURNPIKE TO
UNNAMED WETLAND COMPLEX
NODE: 11L

DL-1: GRAVEL DRIVEWAY TO
UNNAMED WETLAND COMPLEX
NODE: 12L

| 1 | UPDATED SUBCATCHMENTS (RIDEM SUBMISSION) | RAD | 12-24-2024 |
|-----|--|-----|------------|
| NO. | ISSUE/DESCRIPTION | BY | DATE |

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NASONVILLE SUBSTATION - STORMWATER MANAGEMENT PLAN
445 DOUGLAS TURNPIKE
BURRILLVILLE, RHODE ISLAND

PRE-DEVELOPMENT WATERSHED PLAN

PREPARED BY: **GZA** GeoEnvironmental, Inc.
Engineers and Scientists
www.gza.com

PREPARED FOR: THE NARRAGANSETT ELECTRIC COMPANY

| | | | |
|--------------------------|-----------------------|-----------------|--------------------|
| PROJ MGR: RAD | REVIEWED BY: MK | CHECKED BY: TRG | DRAWING |
| DESIGNED BY: RAD | DRAWN BY: GRB | SCALE: AS NOTED | W-1 |
| DATE: SEPTEMBER 20, 2023 | PROJECT NO.: 35174.01 | REVISION NO.: 1 | SHEET NO. 10 of 10 |

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LOT AREA
 100,079 ± SQ. FT.
 2.297 ± ACRES

NOW OR FORMERLY
 NARRAGANSETT ELECTRIC
 COMPANY
 MAP PARCEL ID: 131-051

NOW OR FORM
 NARRAGANSETT ELECTRIC
 COMPANY
 BOOK 142, PAGE
 MAP PARCEL ID:

LOT AREA
 56,192 ± SQ. FT.
 1.290 ± ACRES

- LEGEND:**
- CLF CHAIN LINK FENCE
 - CONC CONCRETE
 - CPAD CONCRETE PAD
 - EMH ⊕ ELECTRIC MANHOLE
 - EOG EDGE OF GRAVEL
 - EOP EDGE OF PAVEMENT
 - GW ↙ GUY WIRE
 - LP ⚡ LIGHT POLE
 - MB [] MAIL BOX
 - OW — OVERHEAD WIRES
 - +123.45 SPOT ELEVATION
 - [] TRANSFORMER
 - UP ⊕ UTILITY POLE
 - UP ⊕ UTILITY POLE WITH LIGHT
 - ⊕ INFILTRATION TEST LOCATION
 - ⊕ BORING LOCATION
 - CENTER LINE OF UNIMPROVED PUBLIC ROADWAY
 - (275)— PROPOSED CONTOUR WITH ELEVATION
 - WETLAND BUFFER
 - WETLAND BOUNDARY
 - W10 ▲ WETLAND FLAG
 - APPROXIMATE LOCATION OF STREAM
 - PROPOSED FENCE
 - PROPERTY BOUNDARY
 - DRAINAGE LINE LIMITS
 - SHEET FLOW
 - [] CB-1 CATCH BASIN
 - [] ST-1 STONE TRENCH
 - [] SC-10 STORMWATER CATCHMENT (TYP.) (SEE PLAN FOR AREAS)

- SURVEY MONUMENTS**
- RIHB (F) RHODE ISLAND HIGHWAY BOUND FOUND

NO
 ST. 3
 BOOY
 MAP F
 365

DEPARTMENT OF ENVIRONMENTAL MANAGEMENT
 OFFICE OF WATER RESOURCES
 FRESHWATER WETLANDS PROGRAM

APPROVED WITH CONDITIONS AS
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 445 DOUGLAS TURNPIKE
 BURRILLVILLE, RHODE ISLAND

POST-DEVELOPMENT WATERSHED PLAN

PREPARED BY:
GZA GeoEnvironmental, Inc.
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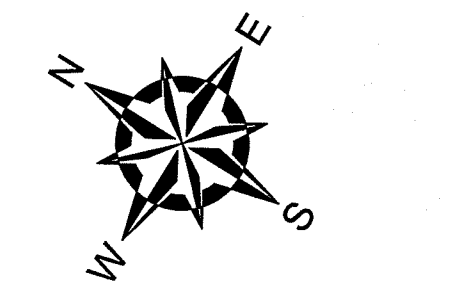
PREPARED FOR:
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PROJ MGR: RAD REVIEWED BY: MK CHECKED BY: TRG DRAWING
 DESIGNED BY: RAD DRAWN BY: GRB SCALE: AS NOTED
 DATE: SEPTEMBER 20, 2023 PROJECT NO. 35174.01 REVISION NO. 1

W-2
 SHEET NO. 40 OF 40

RYAN DAPOT
 No. 12105
 REGISTERED
 PROFESSIONAL ENGINEER
 CIVIL

**PERMITTING ONLY
 NOT FOR CONSTRUCTION**



GZA-A:\DWG\35174.01\35174.01_RWD\POSTDEV.W-2_POST DEV.DWG December 24, 2024 10:06 AM GAB/ELLA