

# BUCKEYE BROOK RESTORATION

2000 POST ROAD, PLAT 321 LOT 0004  
WARWICK, RHODE ISLAND

ISSUED FOR CONSTRUCTION

PREPARED FOR:  
**CITY OF WARWICK**  
**DEPARTMENT OF PUBLIC WORKS**

925 SANDY LANE  
WARWICK, RI 02889  
(401)-738-2003

OWNER:  
**RHODE ISLAND**  
**DEPARTMENT OF TRANSPORTATION**

TWO CAPITOL HILL, ROOM 350  
PROVIDENCE, RI 02903  
(401)-222-2023

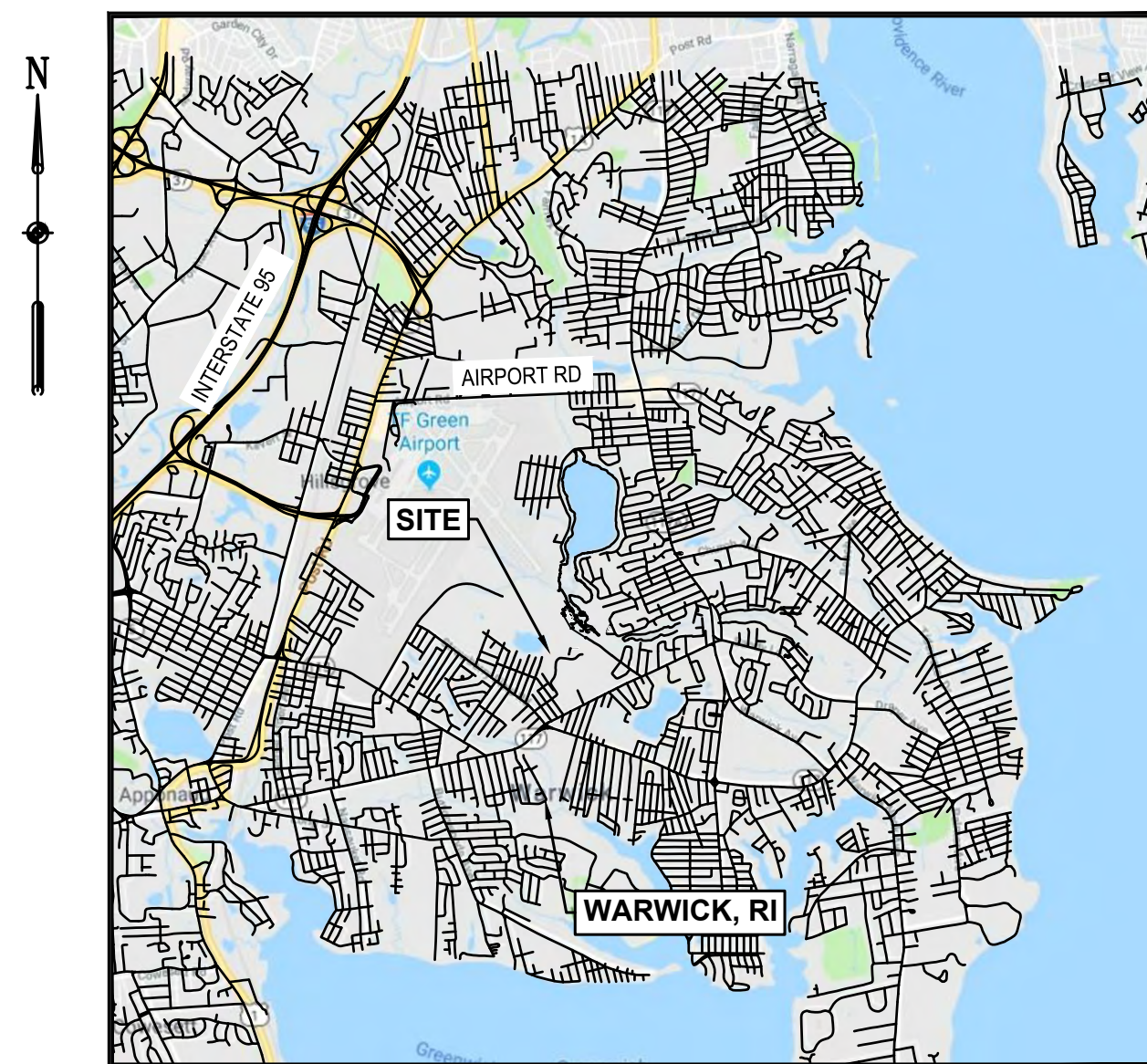
PREPARED BY



301 Metro Center Blvd, Suite 102  
Warwick, Rhode Island 02886  
(401) 736-3440

DRAWING NO.	SHEET NO.	SHEET DESCRIPTION
T-001	1 OF 9	TITLE SHEET
G-001	2 OF 9	GENERAL NOTES AND LEGEND
C-101	3 OF 9	EXISTING CONDITIONS AND RESOURCE AREA MAP KEY
C-102	4 OF 9	EXISTING CONDITIONS AND RESOURCE AREA MAP
C-103	5 OF 9	PROPOSED CONDITIONS PLAN
C-104	6 OF 9	PHRAGMITES REMOVAL, EROSION CONTROL, AND CONSTRUCTION ACCESS & SEQUENCING PLAN
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C-301	8 OF 9	CROSS SECTION AND LONGITUDINAL PROFILE
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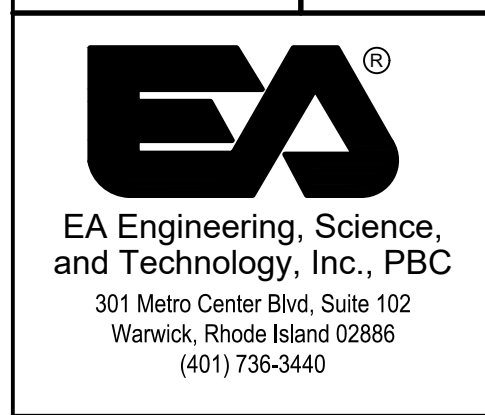
LOCATION MAP  
SCALE: 1"= 1 MILE  
GRAPHIC SCALE IN FEET



VICINITY MAP  
SCALE: 1"= 1500'  
GRAPHIC SCALE IN FEET

DESIGN INFORMATION		REVISIONS	
DESIGNED BY:	AMT	NO.	DATE
DRAWN BY:	DPA	BY	DESCRIPTION
CHECKED BY:	MB		
PROJECT MANAGER:	AEH		

BUCKEYE BROOK RESTORATION  
2000 POST ROAD, PLAT 321 LOT 0004  
CITY OF WARWICK DEPARTMENT OF PUBLIC WORKS / RIDOT  
WARWICK, RHODE ISLAND  
TITLE SHEET



DATE: MARCH 2021  
PROJECT NUMBER: 63293.01  
**T-001**  
SHEET: 1 OF 9

FILE PATH: I:\MANAGEMENT\PROJECTS\BUCKEYE BROOK RESTORATION\BUCKEYE BROOK RESTORATION\DRAWINGS\T-001.TXD; DATE: 3/1/2021 10:45:00 AM; USER: AEAH; PROJECT: BUCKEYE BROOK RESTORATION; ACTION: PLOT; PLOTTER: HP DesignJet T1100PS; PLOT SCALE: 1.0000; PLOT SHEET: 1 OF 9

ISSUED FOR CONSTRUCTION



GENERAL NOTES

MAP NOTES AND REFERENCES:

- 1. ALL ELEVATIONS REFERENCE NORTH AMERICAN VERTICAL DATUM (NAVD) 88.
2. THE PROJECT IS SEPARATED INTO TWO GEOGRAPHIC AREAS: THE FLOOD REDUCTION AREA (FRA), WHICH IS PREDOMINANTLY COMPRISED OF WARWICK POND; AND THE RESTORATION CONSTRUCTION AREA (RCA), WHICH IS A MUCH SMALLER AREA AFFECTED BY THE ACTUAL CONSTRUCTION ACTIVITY WHERE SOIL DISTURBANCES SHALL OCCUR.
3. SITE WHERE PHRAGMITES REMOVAL IS PROPOSED IS LOCATED AT 2000 POST ROAD NO. 8. SURFACE WATER CHANGES EXTEND FROM 5 FEET (FT) DOWNSTREAM OF LAKE SHORE DRIVE DOWNSTREAM OF WARWICK POND TO RIVER STATION 26+02 DOWNSTREAM OF THE RCA PROJECT AREA.
4. 100-YEAR FLOODPLAIN BOUNDARY WAS SOURCED FROM RIGIS. THE SITE DOES NOT FALL WITHIN THE 100-YEAR FLOODPLAIN BOUNDARY AS DELINEATED BY THE FEDERAL EMERGENCY MANAGEMENT AGENCY (FEMA) IN MAP PANEL 44003C0133H.
5. UPSTREAM EXTENT OF SURFACE WATER ELEVATION CHANGE UNDER PROPOSED CONDITIONS WERE ESTIMATED (AS THE GREATEST EXTENT PRACTICALLY) BY USING THE PROPOSED 1.08 FT CHANGE IN APPROXIMATE OBSERVED DAY WATER SURFACE ELEVATION FROM EXISTING TO PROPOSED CONDITIONS AT THE OUTLET OF WARWICK POND.
6. APPROXIMATE EXISTING EDGE OF WATER DIGITIZED FROM GOOGLE EARTH DATED AUGUST 2016; ACCESSED MAY 2018.
7. TREES GREATER THAN 3 INCHES IN DIAMETER WITHIN THE PROPOSED CONSTRUCTION ACCESS ROAD SHOWN HEREIN WERE DELINEATED BY EA IN MAY OF 2018 WITH A GARMIN GLO GLOANSS AND GLOBAL POSITIONING SYSTEM (GPS) SENSOR WITH A 3 METER HORIZONTAL ACCURACY.
8. APPROXIMATE SEWER LINE DIGITALIZED FROM CITY OF WARWICK, RHODE ISLAND - WARWICK SEWER AUTHORITY SYSTEM OF SEWERS, CONTRACT NO. 94\* AUTHORED BY GORDON R. ARCHIBALD (GRA), INC. AND DATED MARCH 2022.
9. CROSS SECTION SURVEY COMPLETED BY EA IN JUNE 2017. TRIMBLE GEO 7X WITH EXTERNAL ZEPHYR ANTENNA USED TO COLLECT DATA WITH REAL-TIME KINEMATIC (RTK) CORRECTIONS BY MEANS OF A VIRTUAL REFERENCE STATION (VRS) NETWORK WITH 2 CM HORIZONTAL ACCURACY AND 4 CM VERTICAL ACCURACY.
10. THE CONTRACTOR SHALL CHECK AND VERIFY THE LOCATIONS OF ALL UTILITIES, BOTH OVERHEAD AND UNDERGROUND, AND "DIG-SAFE" MUST BE NOTIFIED PRIOR TO COMMENCING ANY CONSTRUCTION OPERATIONS.
11. PER FAA AS-BUILT UTILITY PLANS DATED 2007, A #6 BARE COPPER WIRE WAS PLACED 8 TO 12 INCHES ABOVE ALL UNDERGROUND CABLES AND WAS EXOTHERMICALLY WELDED TO GROUND RODS.
12. PROPERTY BOUNDARIES ARE APPROXIMATE AND OBTAINED FROM THE CITY OF WARWICK'S PLANNING DEPARTMENT.
13. WETLAND RESOURCE AND NATURAL HERITAGE AREA LOCATIONS AND DESCRIPTIONS ARE APPROXIMATE ONLY AND AS DIRECTLY OBTAINED FROM THE RIGIS DATABASE AND ARE INTENDED TO SHOW APPROXIMATE LOCATIONS OF SLOPED CORRECTIONS HAVE BEEN MADE TO WETLAND RESOURCE BOUNDARIES WHERE THESE FEATURES BOUND TO THE EDGE OF FIELD DELINEATED WETLANDS WITHIN THE PROJECT'S STUDY AREA.
14. WETLAND FLAGS SHOWN HEREIN WERE DELINEATED BY EA IN MAY AND NOVEMBER OF 2017 WITH A GARMIN GLO GLOANSS AND GLOBAL POSITIONING SYSTEM (GPS) SENSOR WITH A 3 METER HORIZONTAL ACCURACY AND CONFIRMED IN MAY 2018.
15. BUCKEYE BROOK IS GREATER THAN 10 FT IN WIDTH AND THEREFORE HAS A 200 FT RIVERBANK WETLAND SETBACK.
16. THE PROJECT SITE IS WITHIN A NATURAL HERITAGE AREA AS SHOWN ON THE "EXISTING CONDITIONS, RESOURCE AREA, AND 200 FT RADIUS MAP KEY" AND SHEETS 1-3.
17. THIS SITE DOES NOT LIE WITHIN ANY KNOWN AGRICULTURAL USE, CIVIC STRUCTURAL USE, OR FARMLAND CONSERVATION AREAS.
18. THE PROPOSED "AVERAGE OBSERVED DAY" WATER SURFACE ELEVATION IS NOT SHOWN ON THE PLANS HEREIN AS EXISTING BATHYMETRIC SURVEY OF WARWICK POND WAS NOT AVAILABLE FOR THIS PROJECT THEREFORE THE HORIZONTAL EXTENTS IN THE CHANGE IN WATER SURFACE ELEVATION BETWEEN EXISTING AND PROPOSED CONDITIONS WOULD BE APPROXIMATE ONLY.

GENERAL CONSTRUCTION REQUIREMENTS:

- 1. THE CONTRACTOR SHALL VERIFY THE PROPOSED LAYOUT OF THE CONSTRUCTION WITH ITS RELATIONSHIP TO THE EXISTING SITE CONDITIONS.
2. THE CONTRACTOR SHALL MARK OUT IN FIELD PROPOSED LIMITS OF PHRAGMITES AUSTRALIS EXCAVATION AND REMOVAL.
3. THE CONTRACTOR SHALL VERIFY ALL DIMENSIONS, SITE CONDITIONS, AND MATERIAL SPECIFICATIONS AND SHALL NOTIFY THE ENGINEER OF ANY ERRORS, OMISSIONS OR DISCREPANCIES BEFORE COMMENCING OR PROCEEDING WITH SUCH FINDINGS.
4. IF THE RELOCATION OF ANY UTILITIES IS REQUIRED, THE OWNER SHALL BE NOTIFIED AS TO THE RELOCATIONS REQUIRED.
5. 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.
6. AN APPROVED SET OF HARD-COPY PLANS AND ALL APPLICABLE PERMITS MUST BE AVAILABLE AT THE SITE THROUGH ENTIRE PERIOD OF CONSTRUCTION.
7. CONTRACTOR AGREES THAT HE/SHE SHALL ASSUME SOLE AND COMPLETE RESPONSIBILITY FOR JOB SITE CONDITIONS DURING THE COURSE OF CONSTRUCTION OF THIS PROJECT.
8. SITE ACCESS SHALL BE GAINED VIA THE GATED ENTRANCE TO THE RHODE ISLAND AIRPORT CORPORATION PROPERTY AT THE WARWICK CITY YARD OFF RANGE ROAD.
9. A NOTICE OF PROPOSED CONSTRUCTION OR ALTERNATION HAS BEEN SUBMITTED TO THE U.S. DEPARTMENT OF TRANSPORTATION FEDERAL AVIATION ADMINISTRATION (FAA). UNDER THE PROVISIONS OF 49 U.S.C., SECTION 44718 AND TITLE 14 OF THE CODE OF FEDERAL REGULATIONS, PART 77, A MAXIMUM EQUIPMENT HEIGHT OF 20 FT WILL BE ENFORCED.

EROSION CONTROL NOTES:

- 1. DISTURBANCE OF SOIL SURFACES IS REGULATED BY STATE LAW AND LOCAL ORDINANCE. APPROVAL FROM RIDEM FRESHWATER WETLANDS AND RIPDES SECTIONS ARE REQUIRED.
2. THE INSTALLATION AND MAINTENANCE OF EROSION CONTROL DEVICES IS THE RESPONSIBILITY OF THE CONTRACTOR.
3. THE CONTRACTOR SHALL USE THE LATEST EDITION OF THE "STATE OF RHODE ISLAND SOIL EROSION AND SEDIMENT CONTROL HANDBOOK" AS A GUIDE IN CONSTRUCTION THE EROSION AND SEDIMENT CONTROLS INDICATED ON THE PLANS.
4. THE CONTRACTOR SHALL INSPECT EROSION AND SEDIMENT CONTROL DEVICES AT THE END OF EACH WORKING DAY.
5. THE CONTRACTOR IS RESPONSIBLE FOR THE TIMELY INSTALLATION, INSPECTION, MAINTENANCE, AND/OR REPLACEMENT OF ALL TEMPORARY AND PERMANENT EROSION CONTROL DEVICES.
6. IT SHALL BE THE CONTRACTOR'S RESPONSIBILITY TO CLEAN ROADS, CONTROL DUST, AND TAKE ALL NECESSARY MEASURES TO ENSURE THAT THE SITE AND ALL ADJACENT ROADS BE MAINTAINED IN A MUD- AND DUST-FREE CONDITION.
7. ALL VEHICLE TRAFFIC ENTERING OR EXITING THE PROJECT SITE SHALL PASS OVER THE EXISTING CONSTRUCTION ENTRANCE AT THE GATED ENTRANCE TO THE RHODE ISLAND AIRPORT CORPORATION PROPERTY.
8. THE CONTRACTOR SHALL INSTALL ALL PERIMETER SEDIMENT CONTROL BARRIERS (E.G. SILT FENCE) AND TURBIDITY CURTAINS AS SHOWN ON THE PLANS.
9. THE CONTRACTOR SHALL RESTORE DISTURBED AREAS AS INDICATED ON THE PLANS.
10. ALL IN-WATER WORK INCLUDING PHRAGMITES AUSTRALIS REMOVAL, AND THE PRESENCE OF EQUIPMENT IN THE STREAM SHALL BE PERFORMED WITHIN THE IN-WATER WORK WINDOW OF 1 JULY - 31 OCTOBER.
11. TEMPORARY VEGETATIVE COVER SHALL BE APPLIED TO ANY DISTURBED AREAS THAT HAVE NOT YET REACHED FINISHED GRADE AS SOON AS POSSIBLE.
12. IF SEEDING OUTSIDE THE AREA OF PHRAGMITES REMOVAL 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.
13. STRAW OR HAY MULCH, WOOD FIBER MULCH, AND HYDROMULCH ARE RECOMMENDED.
14. 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 A STORAGE TRAILER OR COVERED LOCATION AND TAKEN OFF-SITE AND PROPERLY DISPOSED OF.

EROSION CONTROL NOTES (CONT):

- 15. 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.
16. INSPECTION OF PERIMETER SEDIMENT BARRIERS (INCLUDING THOSE ENCOMPASSING PHRAGMITES DEWATERING AREAS) SHALL BE MADE AFTER EACH STORM EVENT AND REPAIR OR REPLACEMENT SHOULD BE MADE PROMPTLY AS NEEDED.
17. COMPLETE COMPLIANCE WITH THE APPROVED EROSION AND SEDIMENT CONTROL PLAN IS EXPECTED AT ALL TIMES.

PHRAGMITES AUSTRALIS CONSTRUCTION NOTES:

- 1. PHRAGMITES AUSTRALIS REMOVAL SHALL TAKE PLACE IN THE SEQUENCE OUTLINED IN THE PROPOSED SEQUENCE OF CONSTRUCTION ON SHEET C-108 "PHRAGMITES REMOVAL.
2. PRIOR TO CONSTRUCTION, ACCESS AND CONSTRUCTION EASEMENTS WILL BE GRANTED BY PROPERTY OWNERS WHERE ACCESS AND CONSTRUCTION WILL BE REQUIRED ON PRIVATE PROPERTY.
3. ALL OF THE CONSTRUCTION WORK WILL OCCUR WITHIN THE IN-WATER WORK WINDOW OF 1 JULY - 31 OCTOBER.
4. THE SOIL MANAGEMENT PLAN SHALL BE FOLLOWED, INCLUDING BUT NOT LIMITED TO THE COVERING OF STOCKPILED EXCAVATED MATERIALS WHEN WORK IS NOT ACTIVELY BEING PERFORMED.
5. SOIL FROM PHRAGMITES AUSTRALIS REMOVAL SHALL NOT BE REUSED ON SITE.
6. ALL EQUIPMENT, MACHINERY, AND HAND TOOLS SHALL BE CLEANED OF ALL VISIBLE SOIL AND PLANT MATERIAL PRIOR TO ENTERING THE PROJECT SITE.
7. MATERIALS FROM THE CHANNEL DURING THE PHRAGMITES AUSTRALIS REMOVAL MUST BE REMOVED FROM THE SITE AND DISPOSED OF PROPERLY.
8. THE TEMPORARY COFFERDAM SYSTEM AND BYPASS STRUCTURES MUST BE MAINTAINED TO ALLOW A SUITABLE WORKING CONDITION (NO SEDIMENT PLUME) IN THE WATERCOURSE.
9. TEMPORARY COFFERDAM(S) AND WATER DIVERSION STRUCTURE(S) ARE TO BE CONSTRUCTED OF MATERIALS THAT CAN BE COMPLETELY REMOVED FROM THE STREAM UPON COMPLETION OF CONSTRUCTION.
10. THE BYPASS SYSTEM SHALL BE SIZED FOR THE 2-YEAR STORM EVENT (21.2 CFS).
11. CONTRACTOR SHALL BE RESPONSIBLE FOR ANY ACTIVITIES WITHIN THE LIMIT OF DISTURBANCE (LOD), AS WELL AS PROPERLY STORING EQUIPMENT AND MATERIALS AWAY FROM THE WORK AREA.
12. CONTRACTOR SHALL PROTECT ALL OF THE EXISTING STRUCTURES WITHIN OR ADJACENT TO THE PROJECT AREAS WHICH ARE SCHEDULED TO REMAIN.
13. ACCESS, STAGING AND TEMPORARY PHRAGMITES DEWATERING AREAS NOT INDICATED ON THE PLANS SHALL BE DELINEATED BY THE CONTRACTOR FOR APPROVAL PRIOR TO PROJECT INITIATION.
14. VEHICLE STORAGE AND FUELING SHALL BE PERFORMED AT LEAST 50 FT OUTSIDE THE RIVER CHANNEL.

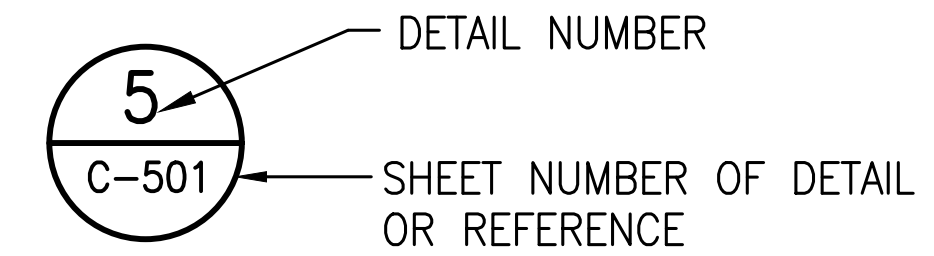
VEGETATIVE RESTORATION NOTES:

- 1. RESTORE DISTURBED AREAS TO ORIGINAL GRADES AS SHOWN ON THE PLANS TO PROMOTE UNIMPEDED DRAINAGE AND OPTIMUM VEGETATIVE GROWTH.
2. PERMANENT VEGETATIVE COVER WILL BE APPLIED TO ALL DISTURBED AREAS THAT HAVE REACHED FINISHED GRADE AS SOON AS POSSIBLE.
3. PERMANENT VEGETATIVE COVER WILL CONSIST OF NATIVE AND WETLAND SEED MIXES IN THE LOCATIONS SPECIFIED ON SHEET C-301 "RESTORATION PLAN" AND REFER TO THE "RESTORATION PLAN" FOR SEED MIXTURE COMPOSITIONS AND APPLICATION RATES.
4. CONTRACTOR SHALL FURNISH AND INSTALL ALL PRODUCTS AND MATERIALS, AND MAINTAIN SUCH INSTALLATIONS, WHERE DIRECTED ON THE CONTRACT DRAWINGS.

ABBREVIATIONS

Table with 2 columns: Abbreviation and Description. Includes CFS (Cubic Feet Per Second), CM (Centimeter), DOT (Department of Transportation), E (Easting), EL (Elevation), EX (Existing), FEMA (Federal Emergency Management Agency), FRA (Flood Reduction Area), FT (Foot), GIS (Geographic Information System), GPS (Global Positioning System), IN (Inches), LIDAR (Light Detection and Ranging), LOD (Limit of Disturbance), N (North), NAVD 88 (North American Vertical Datum of 1988), NO. (Number), P.K. (Parker Kalon (Survey Nail)), PR (Proposed), RCA (Restoration Construction Area), RIDEM (Rhode Island Department of Environmental Management), RIDOT (Rhode Island Department of Transportation), RIGIS (Rhode Island Geographic Information System), RTK (Real-Time Kinematic), TYP (Typical), U.S. (United States), VRS (Virtual Reference Station), W (With), WSEL (Water Surface Elevation).

REFERENCE SYMBOLS



FILE PATH: I:\MARCUS\PROJECTS\WARWICK\PROJECTS\2023\03 - BUCKEYE BROOK RESTORATION\DRAWINGS\GENERAL NOTES - PHRAGMITES AUSTRALIS REMOVAL AND RESTORATION CONSTRUCTION.dwg, DATE: 03/01/2023, TIME: 10:00:00 AM, USER: MARCUS, SCALE: 1:1

Project information block containing: DESIGN INFORMATION (DESIGNED BY: AMT, DRAWN BY: DPA, CHECKED BY: MB, PROJECT MANAGER: AEH), SCALE, PROJECT TITLE (BUCKEYE BROOK RESTORATION, 2000 POST ROAD, PLAT 321 LOT 0004, CITY OF WARWICK DEPARTMENT OF PUBLIC WORKS / RIDOT), LOCATION (WARWICK, RHODE ISLAND), GENERAL NOTES AND LEGEND, EA Engineering, Science, and Technology, Inc., PBC logo and contact info, DATE: MARCH 2022, PROJECT NUMBER: 63293.01, G-001, SHEET: 2 OF 9, and ISSUED FOR CONSTRUCTION stamp.

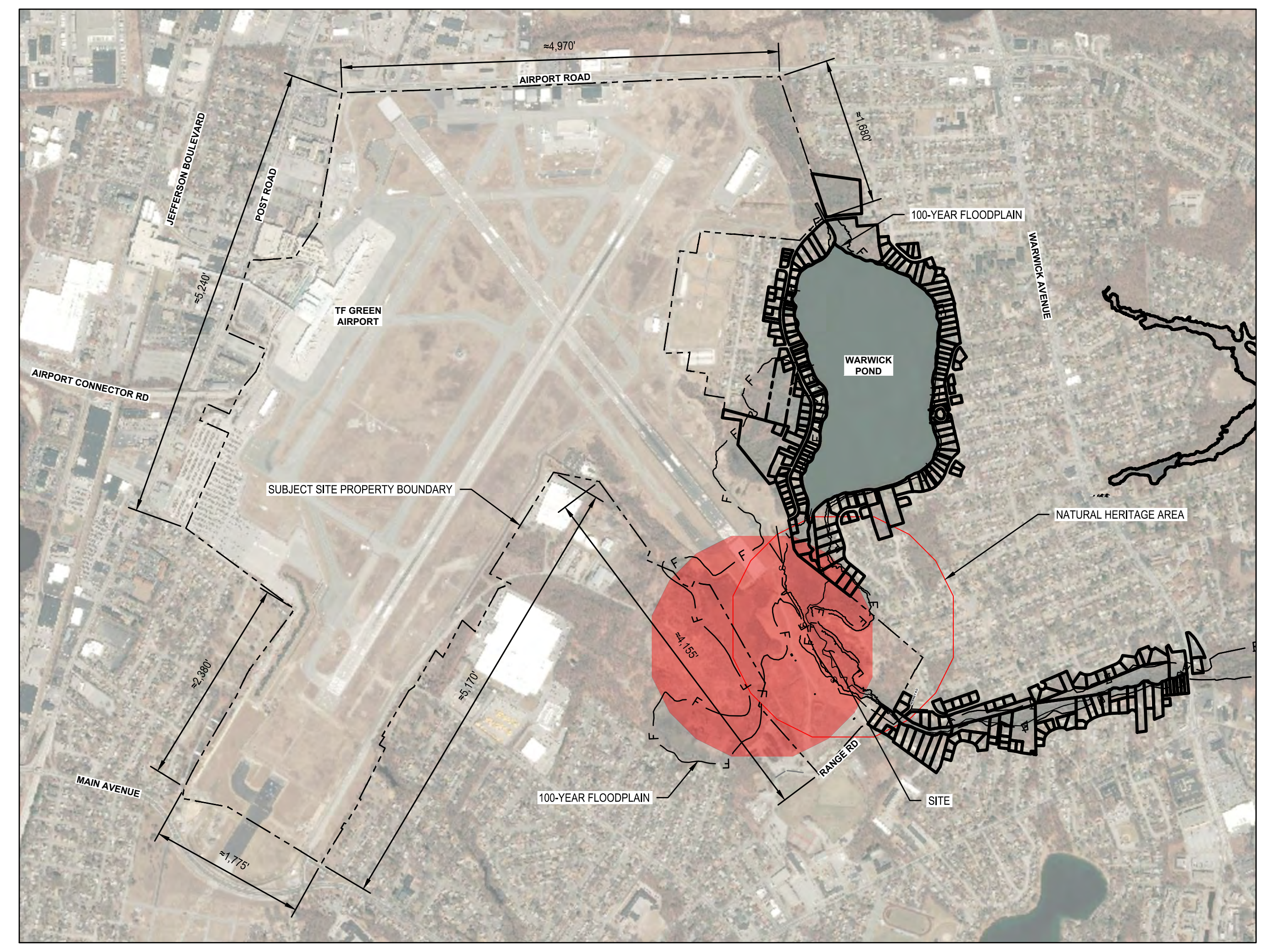


BENCHMARK #1  
P.K. NAIL SET  
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EL. 16.11 FT

BENCHMARK #2  
P.K. NAIL SET  
N: 235160.8626  
E: 351577.4961  
EL. 16.11 FT



SEE SHEET C-102



**SUBJECT SITE BOUNDARY MAP**

1" = 1,000 FT  
0 500 1,000 2,000  
GRAPHIC SCALE IN FEET

- LEGEND:**
- SUBJECT SITE PROPERTY BOUNDARY
  - PROPERTY LINES
  - EXISTING MAJOR CONTOURS
  - EXISTING EDGE OF WATER
  - EXISTING 100-YEAR FLOODPLAIN LINE
  - EXISTING WETLANDS
  - NATURAL HERITAGE AREA
  - APPROXIMATE LOCATION OF SEWER PIPE
  - BUCKEYE BROOK APPROXIMATE CENTERLINE
  - EXISTING EDGE OF WATER
  - 50 FT PERIMETER WETLAND SETBACK
  - 200 FT RIVERBANK WETLAND SETBACK
  - FLOOD REDUCTION AREA LIMIT OF DISTURBANCE
  - RESTORATION CONSTRUCTION AREA LIMIT OF DISTURBANCE
  - FLOW DIRECTION
  - SURVEYED WETLANDS LOCATIONS
  - BENCHMARK

- NOTES**
- AERIAL IS FROM GOOGLE EARTH ONLINE DATABASE; DATED AUGUST 2016.
  - WETLAND RESOURCES ARE FROM THE NATIONAL WETLANDS INVENTORY FOR RHODE ISLAND FROM RIGIS DATABASE; DATED 2014.
  - WETLAND FLAGS SHOWN HEREIN WERE DELINEATED BY EA IN MAY AND NOVEMBER 2017.
  - BENCHMARKS SOURCED FROM RHODE ISLAND AIRPORT CORPORATION T.F. GREEN AIRPORT SITE 3 AS-BUILT NO.1 DRAWING SET DATED APRIL 2016.

SCALE: 1" = 300'  
0 150 300 600  
GRAPHIC SCALE IN FEET

REVISIONS		DESCRIPTION	
NO.	DATE	BY	DESCRIPTION

DESIGNED BY:	AMT	DPA	MB	AEH
DRAWN BY:				
CHECKED BY:				
PROJECT MANAGER:				

SCALE	
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BUCKEYE BROOK RESTORATION  
2000 POST ROAD, PLAT 321 LOT 0004  
CITY OF WARWICK DEPARTMENT OF PUBLIC WORKS / RIDOT

WARWICK, RHODE ISLAND  
EXISTING CONDITIONS AND RESOURCE AREA MAP KEY

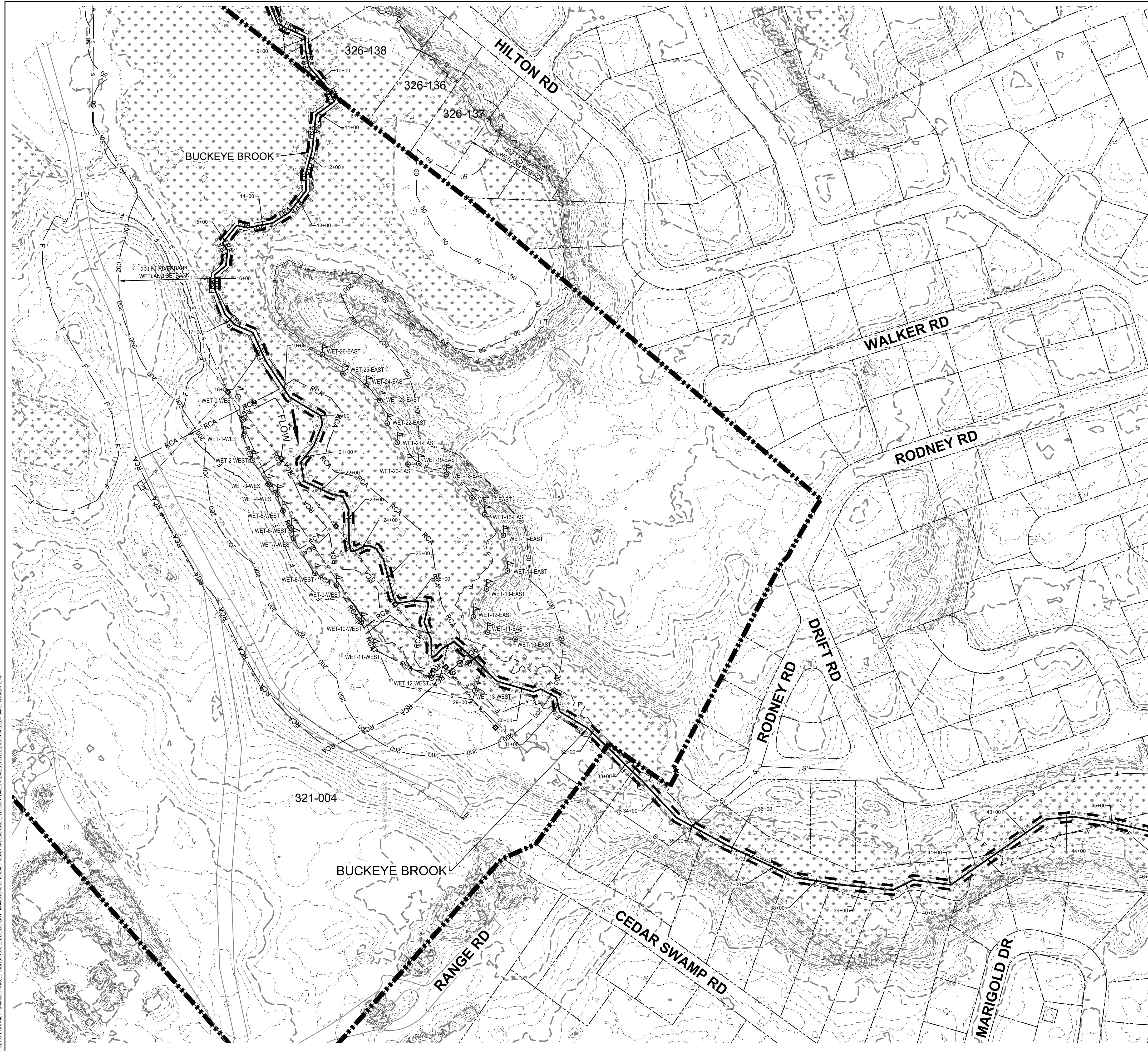
**EA**  
EA Engineering, Science,  
and Technology, Inc., PBC  
301 Metro Center Blvd, Suite 102  
Warwick, Rhode Island 02886  
(401) 736-3440

DATE: MARCH 2022  
PROJECT NUMBER: 63293.01

**C-101**  
SHEET: 3 OF 9

ISSUED FOR CONSTRUCTION



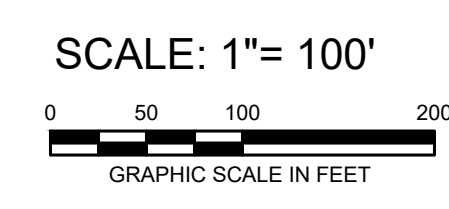
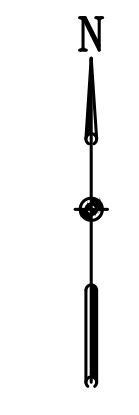


**NOTES**

- DISTANCE OF DOWNSTREAM EXTENT OF PROJECT TO INTERSECTION OF RODNEY ROAD AND DRIFT ROAD IS APPROXIMATELY 800 FT EAST.
- WETLAND RESOURCES ARE FROM THE NATIONAL WETLANDS INVENTORY FOR RHODE ISLAND FROM RIGIS DATABASE; DATED 2014.
- WETLAND FLAGS SHOWN HEREIN WERE DELINEATED BY EA IN MAY AND NOVEMBER 2017.
- ALL POWER CABLES ARE TO BE PROTECTED.

**LEGEND:**

- SUBJECT SITE PROPERTY BOUNDARY
- PROPERTY LINES
- EXISTING MAJOR CONTOURS
- EXISTING MINOR CONTOURS
- EXISTING 100-YEAR FLOODPLAIN LINE
- APPROXIMATE LOCATION OF SEWER PIPE
- EXISTING WETLANDS
- BUCKEYE BROOK APPROXIMATE CENTERLINE
- EXISTING EDGE OF WATER
- 50 FT PERIMETER WETLAND SETBACK
- 200 FT RIVERBANK WETLAND SETBACK
- FLOOD REDUCTION AREA LIMIT OF DISTURBANCE
- RESTORATION CONSTRUCTION AREA LIMIT OF DISTURBANCE
- FLOW DIRECTION
- SURVEYED WETLANDS LOCATIONS
- EXISTING LIGHT TOWER WITH OVERHEAD LINE
- EXISTING LIGHT TOWER WITH UNDERGROUND LINE
- EXISTING SEWER MANHOLE
- EXISTING TREES GREATER THAN 3-IN DIAMETER

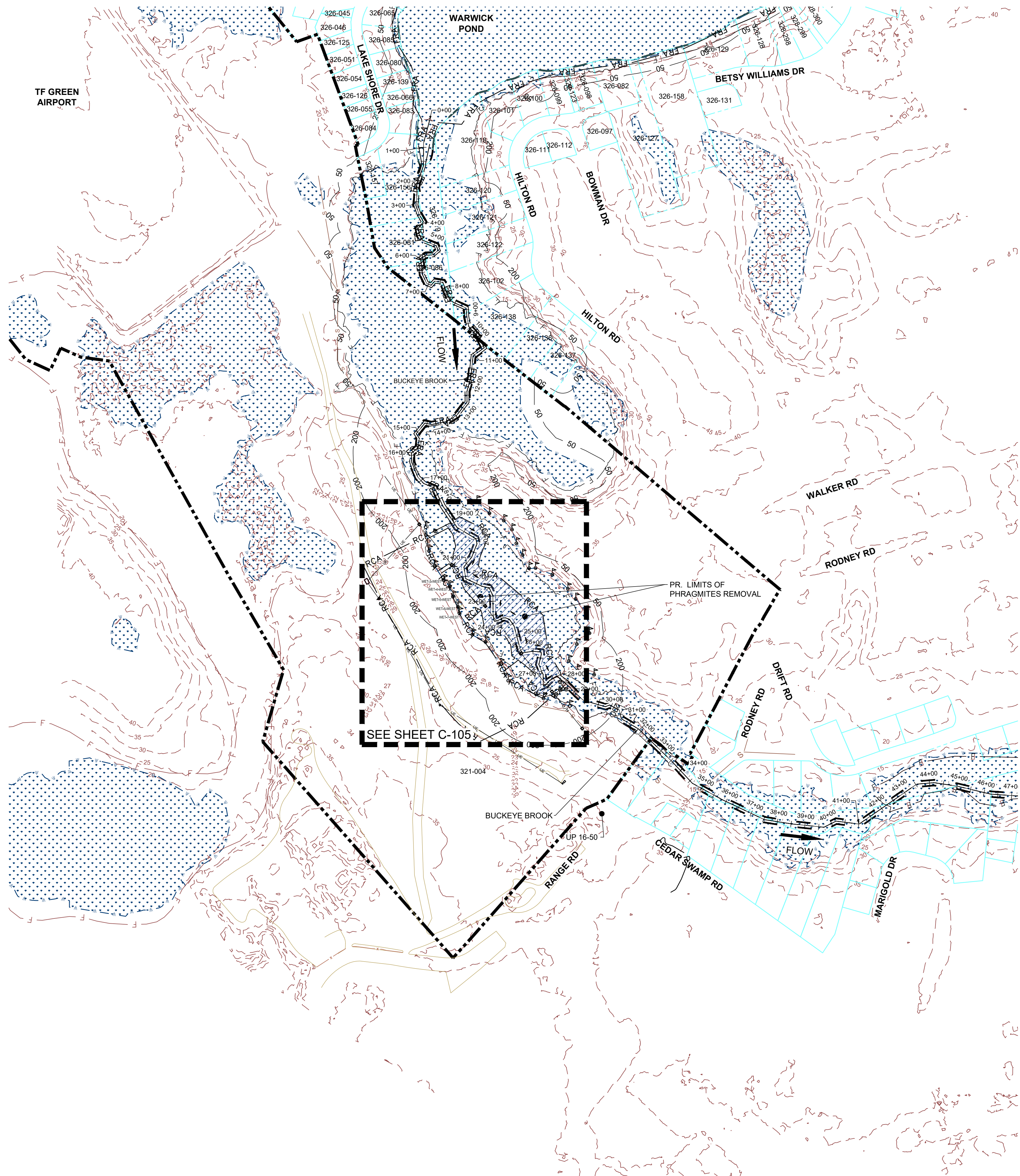


REVISIONS									
DESIGN INFORMATION	NO.	DATE	BY	DESCRIPTION					
DESIGNED BY:	AMT	DRAWN BY:	DPA	CHECKED BY:	MB	PROJECT MANAGER:			
<b>BUCKEYE BROOK RESTORATION</b> 2000 POST ROAD, PLAT 321 LOT 0004 CITY OF WARWICK DEPARTMENT OF PUBLIC WORKS / RIDOT <small>WARWICK, RHODE ISLAND</small>									
EXISTING CONDITIONS AND RESOURCE AREA MAP									
 EA Engineering, Science, and Technology, Inc., PBC 301 Metro Center Blvd, Suite 102 Warwick, Rhode Island 02886 (401) 736-3440									
DATE: MARCH 2022									
PROJECT NUMBER: 63293.01									
<b>C-104</b>									
SHEET: 4 OF 9									

**ISSUED FOR CONSTRUCTION**



FILE PATH: \\MANAGERS\PROJECTS\PROJECTS\321004 - BUCKEYE BROOK RESTORATION\BUREAU\_ACTION\PROJECTS\BUCKEYE BROOK - PLANT - REVISED.DWG (DATE: 03/01/2022) (BY: AMY E. HUNT, DATE: 3/1/2022) (17PM)



- LEGEND:**
- SUBJECT SITE PROPERTY BOUNDARY
  - PROPERTY LINES
  - EXISTING MAJOR CONTOURS
  - 100-YEAR EXISTING FLOODPLAIN LINE
  - 100-YEAR PROPOSED FLOODPLAIN LINE
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  - EXISTING TREES GREATER THAN 3-IN DIAMETER

**NOTE**

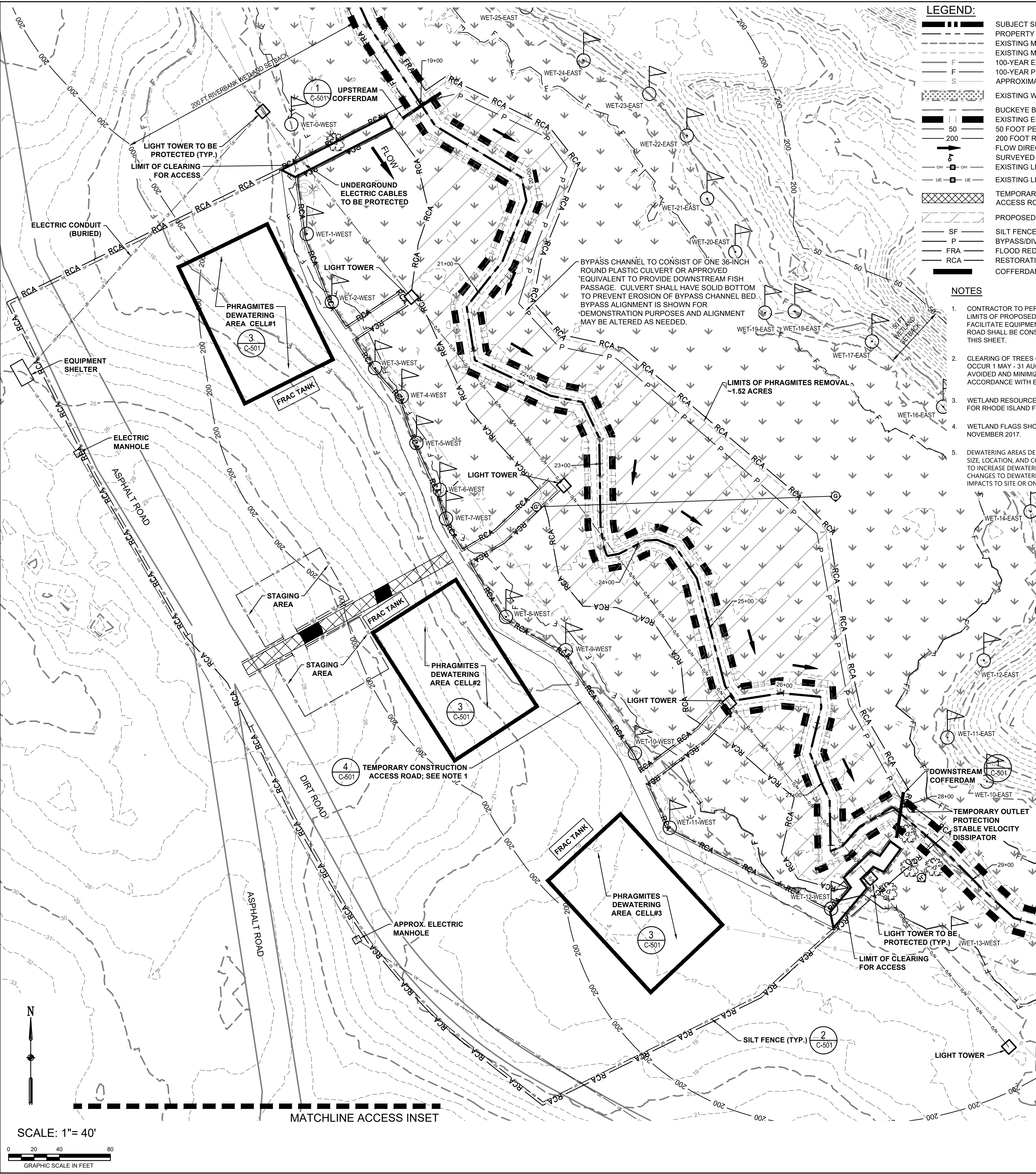
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SCALE: 1" = 200'  
 GRAPHIC SCALE IN FEET

<b>BUCKEYE BROOK RESTORATION</b> 2000 POST ROAD, PLAT 321 LOT 0004 CITY OF WARWICK DEPARTMENT OF PUBLIC WORKS / RIDOT <small>WARWICK, RHODE ISLAND</small> PROPOSED CONDITIONS KEY SOUTH			DESIGN INFORMATION DESIGNED BY: AMT DRAWN BY: DPA CHECKED BY: MB PROJECT MANAGER: AEH	REVISIONS NO. DATE BY DESCRIPTION
<p>EA Engineering, Science, and Technology, Inc., PBC          301 Metro Center Blvd, Suite 102          Warwick, Rhode Island 02886          (401) 736-3440</p>		DATE: MARCH 2022 PROJECT NUMBER: 63293.01 <b>C-106</b> SHEET: 5 OF 9		

ISSUED FOR CONSTRUCTION



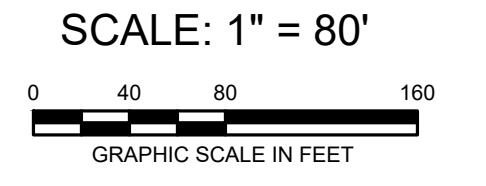
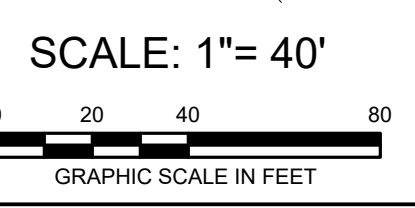
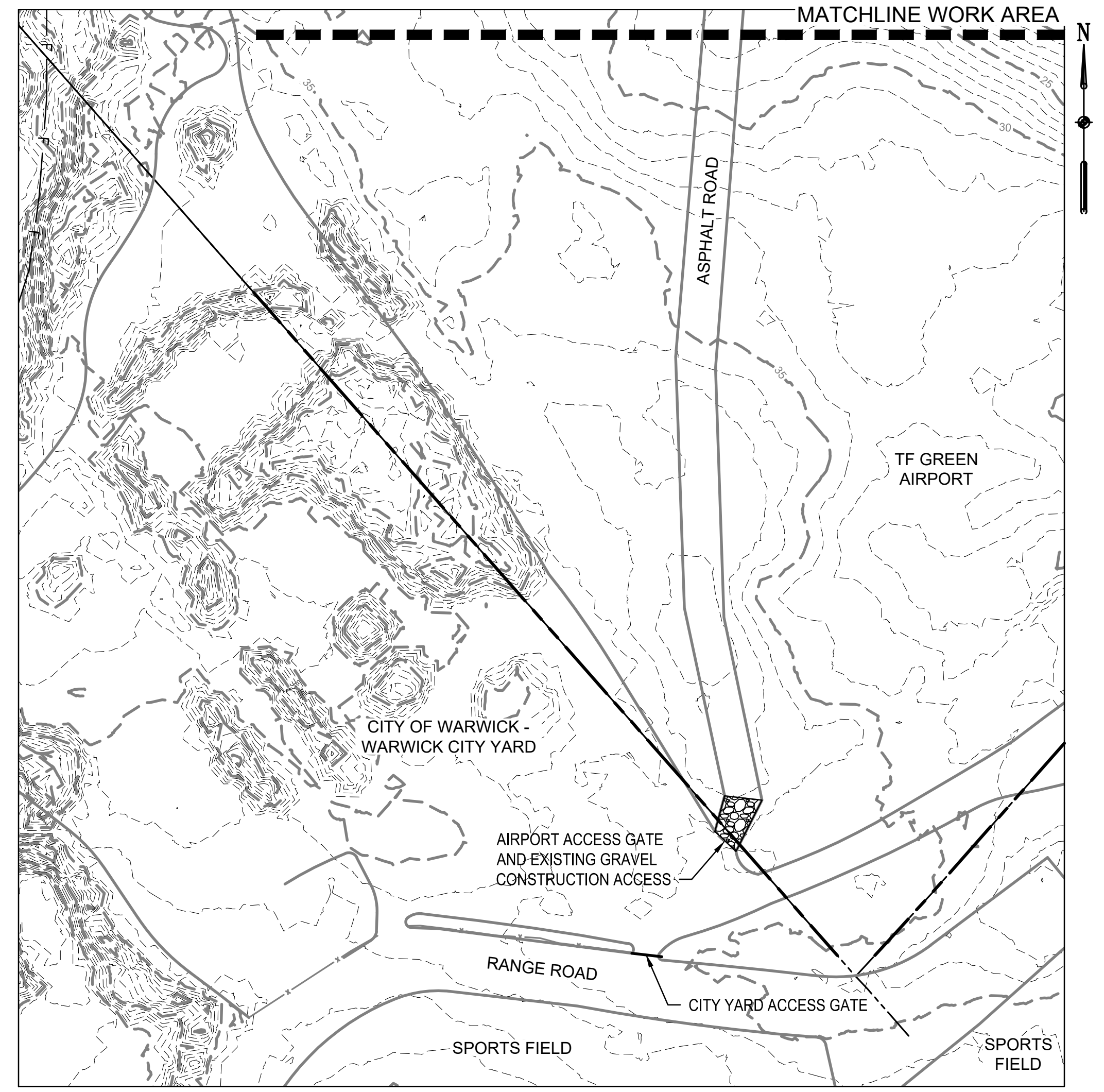


**LEGEND:**

- SUBJECT SITE PROPERTY BOUNDARY
- PROPERTY LINES
- EXISTING MAJOR CONTOURS
- EXISTING MINOR CONTOURS
- 100-YEAR EXISTING FLOODPLAIN LINE
- 100-YEAR PROPOSED FLOODPLAIN LINE
- APPROXIMATE LOCATION OF SEWER PIPE
- EXISTING WETLANDS
- BUCKEYE BROOK APPROXIMATE CENTERLINE
- EXISTING EDGE OF WATER
- 50 FOOT PERIMETER WETLAND SETBACK
- 200 FOOT RIVERBANK WETLAND SETBACK
- FLOW DIRECTION
- SURVEYED WETLANDS LOCATIONS
- EXISTING LIGHT TOWER WITH OVERHEAD LINE
- EXISTING LIGHT TOWER WITH UNDERGROUND LINE
- TEMPORARY CONSTRUCTION ACCESS ROAD
- PROPOSED PHRAGMITES REMOVAL
- SILT FENCE
- BYPASS/DIVERSION
- FLOOD REDUCTION AREA LIMIT OF DISTURBANCE
- RESTORATION CONSTRUCTION AREA LIMIT OF DISTURBANCE
- COFFERDAM

- NOTES**
- CONTRACTOR TO PERFORM SELECTIVE CLEARING AND TRIMMING WITHIN LIMITS OF PROPOSED TEMPORARY CONSTRUCTION ACCESS ROAD TO FACILITATE EQUIPMENT AND ACCESS. TEMPORARY CONSTRUCTION ACCESS ROAD SHALL BE CONSTRUCTED AS NECESSARY WITHIN LIMITS DEFINED ON THIS SHEET.
  - CLEARING OF TREES GREATER THAN 3 INCHES IN DIAMETER SHALL NOT OCCUR 1 MAY - 31 AUGUST. REMOVAL OF SHRUBS OR SAPLINGS SHALL BE AVOIDED AND MINIMIZED TO THE MAXIMUM EXTENT PRACTICAL AND IN ACCORDANCE WITH ENVIRONMENTAL CLEARING REQUIREMENTS.
  - WETLAND RESOURCES ARE FROM THE NATIONAL WETLANDS INVENTORY FOR RHODE ISLAND FROM RIGIS DATABASE, DATED 2014.
  - WETLAND FLAGS SHOWN HEREIN WERE DELINEATED BY EA IN MAY AND NOVEMBER 2017.
  - DEWATERING AREAS DEPICTED ARE SHOWN FOR DEMONSTRATION PURPOSES ONLY. SIZE, LOCATION, AND CONFIGURATION OF DEWATERING AREAS MAY BE AMENDED TO INCREASE DEWATERING EFFICIENCY AND MOBILITY AT SITE PROVIDED THAT CHANGES TO DEWATERING AREA DESIGN DOES NOT RESULT IN ADDITIONAL IMPACTS TO SITE OR ON-SITE UTILITIES.

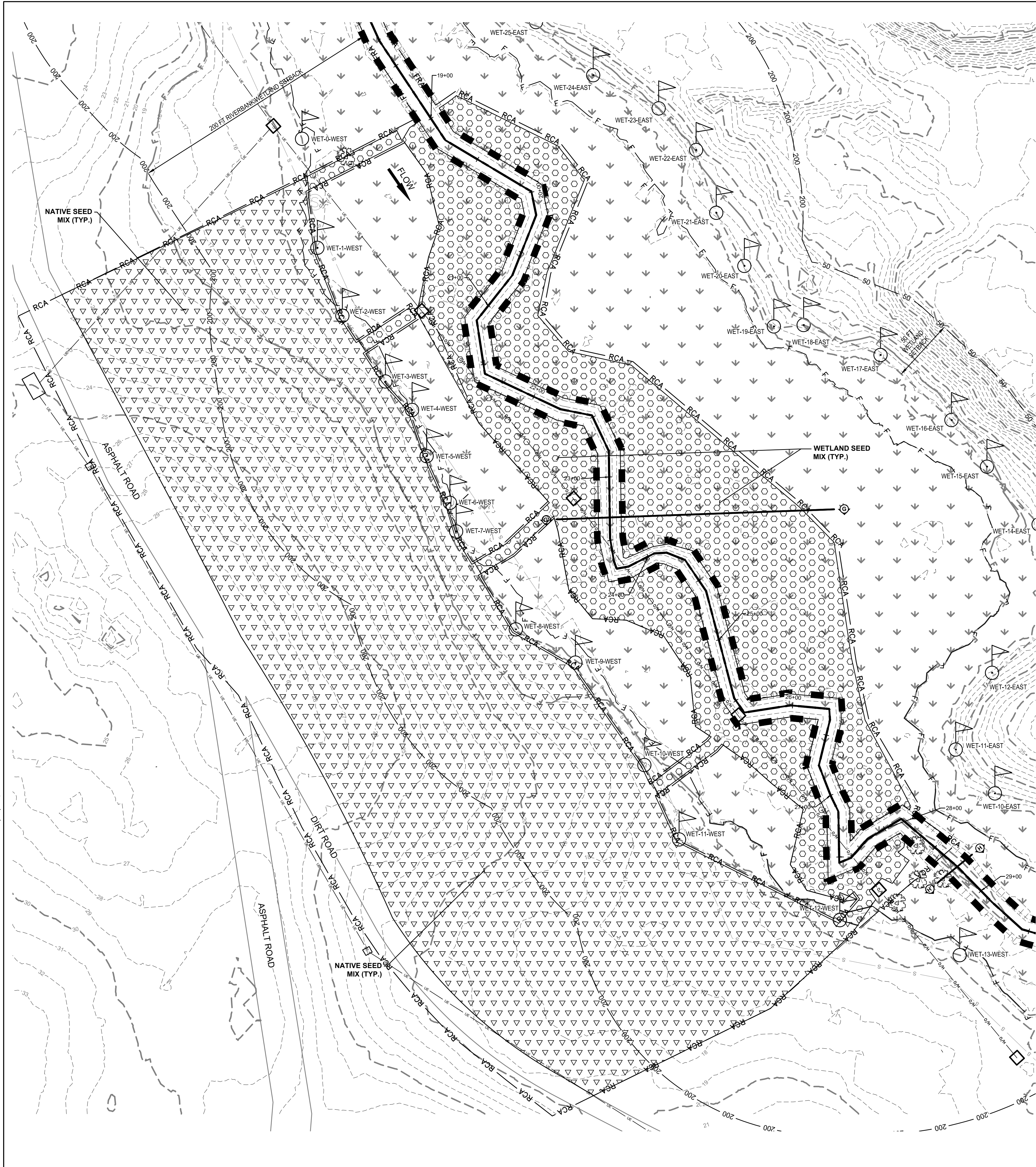
- SEQUENCE OF CONSTRUCTION**
- GENERAL SEQUENCE OF CONSTRUCTION NOTES
- TEMPORARY COFFERDAMMING SHALL BE INSTALLED DURING LOW FLOW PERIOD (1 JULY - 31 OCTOBER) AND BE MAINTAINED SO AS NOT TO ALLOW A SEDIMENT PLUME IN THE WATERCOURSE. SOIL DISTURBANCE IN THE WATERCOURSE MUST BE TEMPORARILY CEASED IN THE EVENT OF A FORECASTED 2-YEAR OR GREATER STORM EVENT, CORRESPONDING TO A FLOW OF 21.2 CFS. ALTERNATIVE MEANS OF WATER DIVERSION, SUCH AS SHEETING, MAY BE PERMISSIBLE BY RIDEM.
  - THE BYPASS PIPE MAY BE SUPPLEMENTED WITH PUMPS TO PROTECT SITE FROM LARGE STORMS PROVIDED DOWNSTREAM PASSAGE IS MAINTAINED THROUGH THE BYPASS.
  - A TRASH RACK MUST BE INSTALLED AT THE UPSTREAM END OF THE BYPASS PIPE WITH OPENINGS SIZED TO PERMIT DOWNSTREAM FISH PASSAGE WHILE PREVENTING LARGER DEBRIS FROM ENTERING. SPECIFICALLY, THE TRASH RACK MUST HAVE VERTICAL BEAMS WITH (6)-INCH VERTICAL SLOTS BETWEEN BEAMS TO ALLOW FOR OUTGOING FISH MIGRATION, INCLUDING BOTH RIVER HERRING AND RESIDENT FISH. TRASH RACKS WITH MESH SQUARES ARE TO BE AVOIDED. IT IS RECOMMENDED THE TRASH RACKS ARE SUBSTANTIALLY LARGER THAN THE DIAMETER OF THE PIPE TO BE COLLECT DEBRIS.
  - THE CONTRACTOR SHALL BE AWARE THAT THE GROUND SURFACE WITHIN THE LOD MAY BE COMPRISED OF PEAT AND BE EXTREMELY UNSTABLE. LOW GROUND PRESSURE EQUIPMENT SHALL BE USED. MARSH/TIMBER MATTING FOR ACCESS WITHIN WETLAND IS RECOMMENDED.
  - CONTRACTOR SHALL SUBMIT A COMPLETE AND DETAILED WATER CONTROL PLAN TO EA FOR REVIEW AT LEAST TWO WEEKS PRIOR TO CONSTRUCTION.
  - THE CONTRACTOR SHALL STAKE OUT ALL LIMITS OF DISTURBANCE PRIOR TO THE PRE-CONSTRUCTION MEETING FOR REVIEW. THE LIMITS OF DISTURBANCE AND EROSION AND SEDIMENT CONTROL REQUIREMENTS WILL BE REVIEWED BY THE TEAM DURING THE PRE-CONSTRUCTION MEETING. THE PARTICIPANTS WILL ALSO DESIGNATE THE CONTRACTOR'S STAGING AREA, DEWATERING AREA, AND FLAG ALL TREES WITHIN THE LIMIT OF DISTURBANCE WHICH WILL BE REMOVED DURING CONSTRUCTION. TREES SHALL NOT BE REMOVED WITHIN THE LIMIT OF DISTURBANCE WITHOUT APPROVAL FROM THE LOCAL AUTHORITY.
  - THE CONTRACTOR SHALL NOT BEGIN CONSTRUCTION UNTIL ALL EROSION AND SEDIMENT CONTROL MEASURES HAVE BEEN INSTALLED AND APPROVED BY THE ENGINEER. THE CONTRACTOR SHALL STAY WITHIN THE LIMITS OF THE DISTURBANCE AS SHOWN ON THE PLANS AND MINIMIZE DISTURBANCE WITHIN THE WORK AREA WHENEVER POSSIBLE.
  - THE CONTRACTOR SHALL BEGIN WORK AT THE UPSTREAM SECTION AND PROCEED DOWNSTREAM BEGINNING WITH THE ESTABLISHMENT OF STABILIZED CONSTRUCTION ACCESS ROADS.
  - TRAVERSING A CHANNEL REACH WITH EQUIPMENT WITHIN THE WORK AREA WHERE NO WORK IS PROPOSED SHALL BE AVOIDED. TEMPORARY STREAM CROSSINGS MAY BE USED.
  - PHRAGMITES AUSTRALIS SHALL BE REMOVED AS INDICATED BY THE DESIGN PLANS AND ALL SURFACES GRADED IN ACCORDANCE WITH THE PLANS AND TYPICAL CROSS-SECTIONS. ALL GRADINGS ABOVE THE WATER SURFACE MUST BE STABILIZED AT THE END OF EACH DAY WITH SEED AND MULCH AS SPECIFIED ON THE PLANS.
  - AFTER CONSTRUCTION, ALL DISTURBED AREAS SHALL BE REVEGETATED AS PER THE PLANTING PLAN.
  - SOIL DISTURBANCE SHALL BE CEASED DURING ANY HIGH FLOW EVENT AS DIRECTED BY THE ENGINEER. THE CONTRACTOR SHALL BE EXPECTED TO CONTROL FLOW AROUND THE SITE.
- PHASE 1: HERBICIDE APPLICATION
- CLEAR WITHIN LIMITS OF CONSTRUCTION ACCESS ROAD AS NECESSARY.
  - DATES: FROM 31 AUGUST TO 30 SEPTEMBER.
  - SPRAY HERBICIDE.
- PHASE 2: PHRAGMITES AUSTRALIS REMOVAL AND REVEGETATION
- DATES: FROM 1 OCTOBER TO 31 OCTOBER. PHRAGMITES AUSTRALIS REMOVAL SHALL OCCUR NO LESS THAN 30 DAYS AFTER HERBICIDE APPLICATION.
  - INSTALL STABILIZED CONSTRUCTION ENTRANCE AND ESTABLISH STAGING AREAS AND PHRAGMITES DEWATERING AREAS. INSTALL EROSION AND SEDIMENT CONTROL DEVICES.
  - ESTABLISH TEMPORARY ACCESS ROAD TO ACCESS THE PROJECT SITE BETWEEN STATION 19+00 FT. AND STATION 28+50 FT.
  - INSTALL TEMPORARY ACCESS BRIDGES AS NECESSARY.
  - OBTAIN CONFIRMATORY ELEVATIONS OF CHANNEL BOTTOM AND ALONG PROPOSED ROUTE OF BYPASS PIPES ALONG STREAMBANK TO VERIFY FLOW REGIME FOR BYPASS SYSTEM.
  - WITH 72 HOURS OF FORECAST DRY WEATHER BEGIN BYPASS WORK IN AN UPSTREAM TO DOWNSTREAM DIRECTION. INSTALL INLET AND OUTLET PROTECTION FOR THE BYPASS PRIOR TO REDIRECTING FLOW.
  - PERFORM PHRAGMITES AUSTRALIS REMOVAL, SALVAGING AND STOCKPILING REMOVED TREES AND OTHER WOODY MATERIAL. PLACE THE EXCAVATED MATERIALS IN THE DESIGNATED DEWATERING AREA AND PUMP WATER TO FRAC TANKS. THE ADEQUACY OF PHRAGMITES AUSTRALIS REMOVAL SHALL BE PERFORMED TO THE ENGINEER'S APPROVAL.
  - DEWATERED WATER SHALL BE PUMPED TO FRAC TANKS AND DISPOSED OF IN ACCORDANCE WITH LOCAL, STATE, AND FEDERAL REGULATIONS.
  - REMOVE TEMPORARY ACCESS BRIDGES AS NECESSARY.
  - ONCE WORK IS COMPLETE, STABILIZE BANKS OF THE BROOK. REMOVE BYPASS PIPES AND COFFERDAMS AND RETURN FLOW TO BROOK.
  - ALL DISTURBED AREAS SHALL BE REGRADED AND STABILIZED WITH THE PROPOSED SEED MIX OR STRAW MULCH AS SPECIFIED.



DESIGNED BY:	AMT	DATE:	NO.	DESCRIPTION:
DRAWN BY:	DPA	CHECKED BY:	MB	PROJECT MANAGER:
<p>BUCKEYE BROOK RESTORATION 2000 POST ROAD, PLAT 321 LOT 0004 CITY OF WARWICK DEPARTMENT OF PUBLIC WORKS / RIDOT WARWICK, RHODE ISLAND</p> <p>PHRAGMITES REMOVAL, EROSION CONTROL, AND CONSTRUCTION ACCESS &amp; SEQUENCING PLAN</p> <p><b>EA</b> EA Engineering, Science, and Technology, Inc., PBC 301 Metro Center Blvd, Suite 102 Warwick, Rhode Island 02886 (401) 736-3440</p>				
<p>DATE: MARCH 2022 PROJECT NUMBER: 63293.01 <b>C-107</b> SHEET: 6 OF 9</p>				

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NOTES:

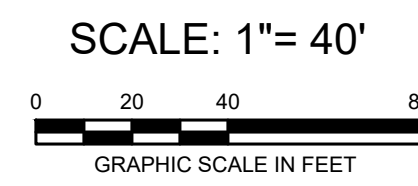
- TEMPORARY ACCESS AREA, STAGING AREA, AND TEMPORARY CONSTRUCTION ENTRANCE SHALL BE REGRADED, RESTORED, AND SEEDED WITH NATIVE SEED MIX AS INDICATED ON THIS SHEET AND AS NECESSARY. TEMPORARY SEED MIX SHALL BE 40% ANNUAL RYEGRASS AND 60% PERENNIAL RYEGRASS.  
APPLICATION RATE: TEMPORARY COVER = 25 LBS/ACRE  
NATIVE SEED MIX = 60 LBS/ACRE  
  
REMOVE CRUSHED STONE AND TEMPORARY CONSTRUCTION ACCESS MATERIALS FROM ALL AREAS TO PRE-CONSTRUCTION GRADES. TOP-DRESS WITH TOPSOIL AND SEED TO ESTABLISH STABLE VEGETATION.
- ANY DISTURBED AREA ABOVE THE WATER SURFACE ELEVATION AND WITHIN FLAGGED WETLAND BOUNDARIES SHALL BE SEEDED WITH WETLAND SEED MIX AS INDICATED ON THIS SHEET. TEMPORARY COVER SHALL BE 40% ANNUAL RYEGRASS AND 60% PERENNIAL RYEGRASS. PLAN VIEW OF THIS AREA IS APPROXIMATE. ACTUAL AREA OF RESTORATION TO BE DETERMINED IN THE FIELD AFTER PHASE II.  
APPLICATION RATE: TEMPORARY COVER = 18 LBS/ACRE  
WETLAND SEED MIX = 18 LBS/ACRE
- WETLAND RESOURCES ARE FROM THE NATIONAL WETLANDS INVENTORY FOR RHODE ISLAND FROM RIGIS DATABASE, DATED 2014.
- WETLAND FLAGS SHOWN HEREIN WERE DELINEATED BY EA IN MAY AND NOVEMBER 2017.
- THE CONTRACTOR SHALL BE RESPONSIBLE FOR A MINIMUM OF 85 PERCENT VEGETATIVE COVERAGE AFTER ONE GROWING SEASON.

NATIVE SEED MIX (TYPE 4 JOB SPECIFIC)			
Botanical Name	Common Name	% By Weight	Vol. By Pure Live Seed
Panicum virgatum	Switch Grass	20	75
Schizachyrium scoparium	Little Bluestem	25	75
Lolium perenne	Perennial Ryegrass	25	90
Festuca ovina	Hard Fescue	30	78

NEW ENGLAND WETMIX (WETLAND SEED MIX)		
Botanical Name	Common Name	Indicator
Carex lurida	Lurid Sedge	OBL
Carex scoparia	Blunt Broom Sedge	FACW
Verbena hastata	Blue Vervain	FACW
Carex lupulina	Hop Sedge	OBL
Scirpus atrovirens	Green Bulrush	OBL
Panicum rigidulum	Redtop Panic Grass	FACW+
Deschampsia cespitosa	Tufted Hairgrass	FACW
Bidens aristosa	Tickseed Sunflower/Bur Marigold	FACW
Eleocharis palustris	Creeping Spike Rush	OBL
Juncus effusus	Soft Rush	FACW+
Carex crinita	Fringed Sedge	OBL
Mimulus ringens	Square Stemmed Monkey Flower	OBL
Aster puniceus	Swamp Aster	OBL
Eupatorium perfoliatum	Boneset	FACW
Glyceria canadensis	Rattlesnake Grass	OBL
Asclepias incarnata	Swamp Milkweed	OBL
Helenium autumnale	Common Sneezeweed	FACW+
Penthorum sedoides	Ditch Stonecrop	OBL

LEGEND:

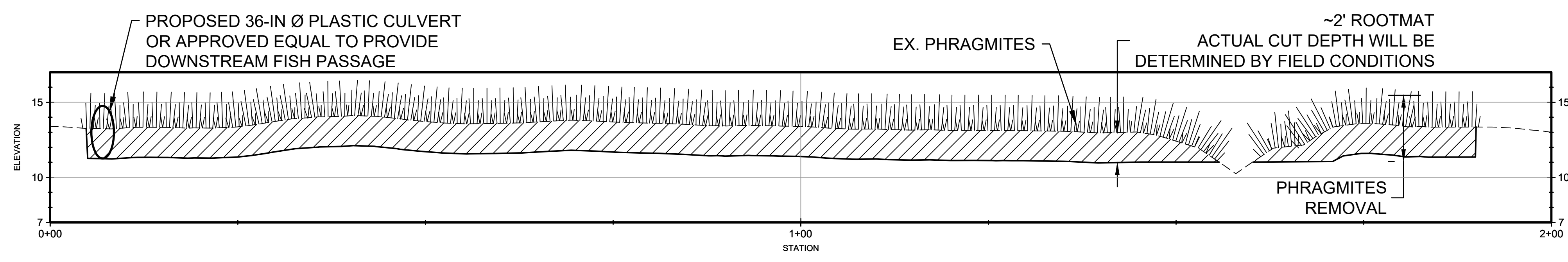
- SUBJECT SITE PROPERTY BOUNDARY
- PROPERTY LINES
- EXISTING MAJOR CONTOURS
- EXISTING MINOR CONTOURS
- 100-YEAR EXISTING FLOODPLAIN LINE
- 100-YEAR PROPOSED FLOODPLAIN LINE
- APPROXIMATE LOCATION OF SEWER PIPE
- EXISTING WETLANDS
- BUCKEYE BROOK APPROXIMATE CENTERLINE
- EXISTING EDGE OF WATER/APPROXIMATE OBSERVED DAY WATER SURFACE ELEVATION
- 50 FT PERIMETER WETLAND SETBACK
- 200 FT RIVERBANK WETLAND SETBACK
- FLOOD REDUCTION AREA LIMIT OF DISTURBANCE
- RESTORATION CONSTRUCTION AREA LIMIT OF DISTURBANCE
- FLOW DIRECTION
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- EXISTING LIGHT TOWER WITH OVERHEAD LINE
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- NATIVE SEED MIX PLACEMENT AREA
- WETLAND SEED MIX PLACEMENT AREA



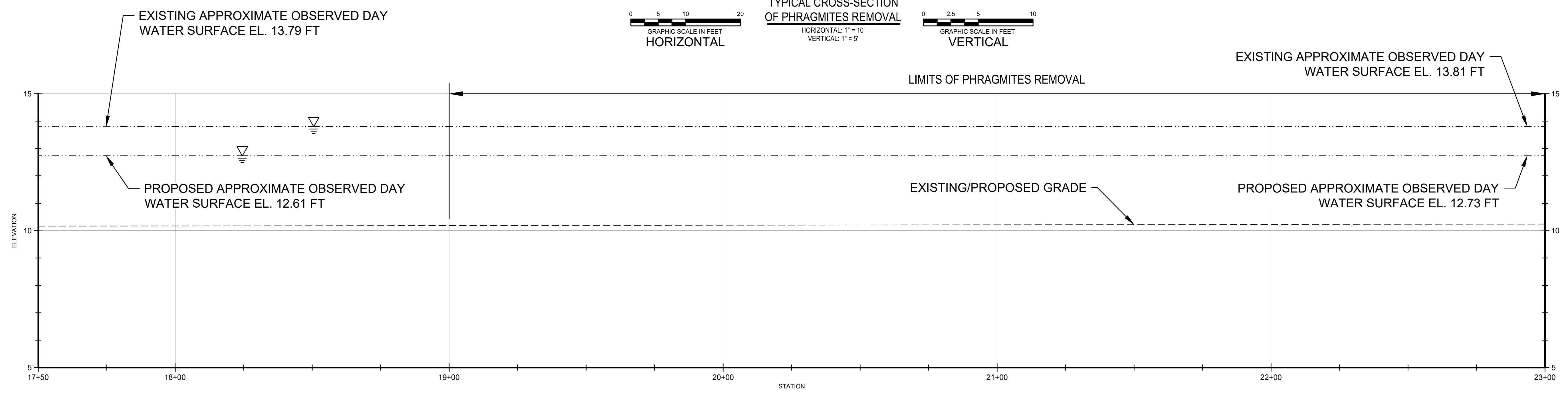
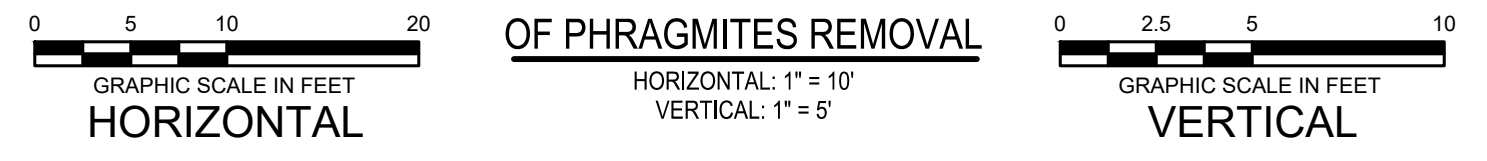
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	NO.:	DATE:	BY:	DESCRIPTION:			
SCALE							
<b>BUCKEYE BROOK RESTORATION</b> 2000 POST ROAD, PLAT 321 LOT 0004 CITY OF WARWICK DEPARTMENT OF PUBLIC WORKS / RIDOT WARWICK, RHODE ISLAND <b>RESTORATION PLAN</b>							
EA Engineering, Science, and Technology, Inc., PBC 301 Metro Center Blvd, Suite 102 Warwick, Rhode Island 02886 (401) 736-3440							
DATE: MARCH 2022 PROJECT NUMBER: 63293.01 <b>C-108</b> SHEET: 7 OF 9							

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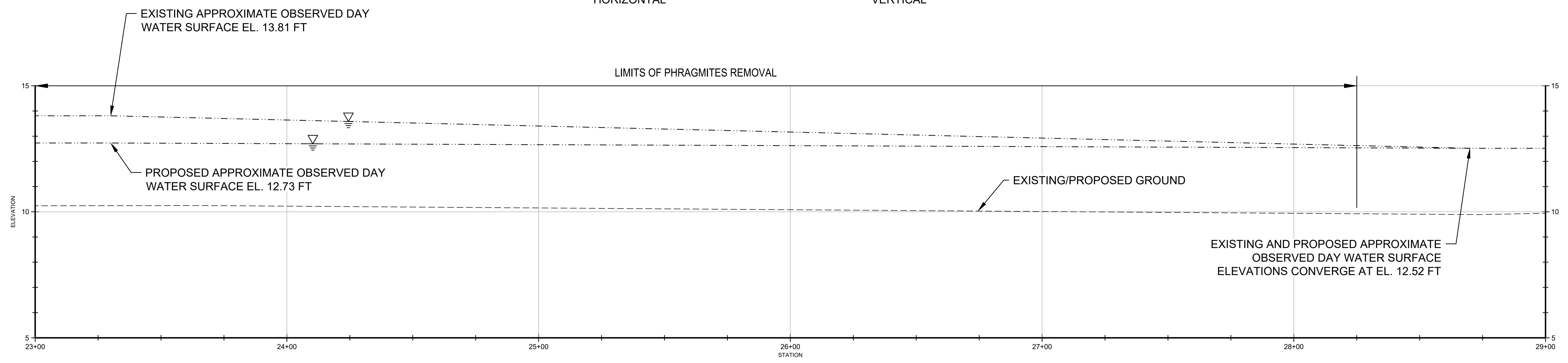
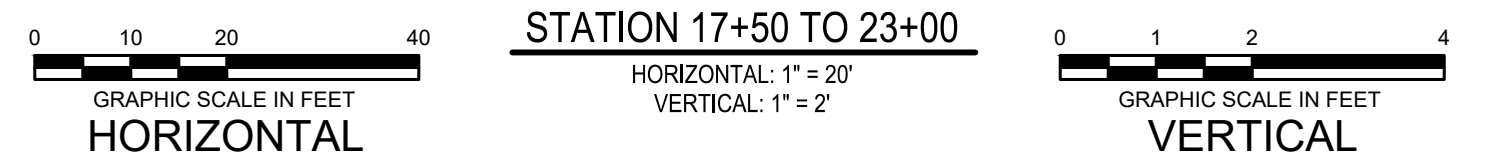




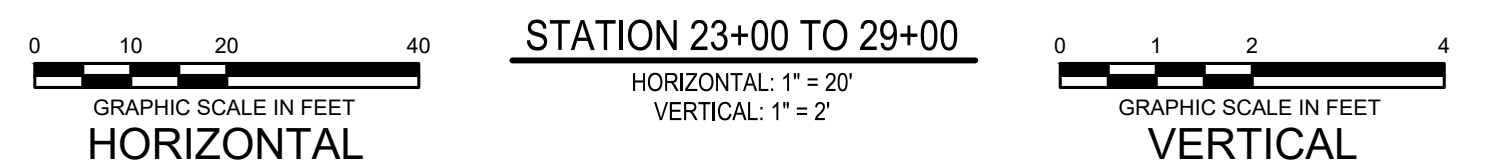
TYPICAL CROSS-SECTION OF PHRAGMITES REMOVAL



BUCKEYE BROOK PROFILE STATION 17+50 TO 23+00



BUCKEYE BROOK PROFILE STATION 23+00 TO 29+00



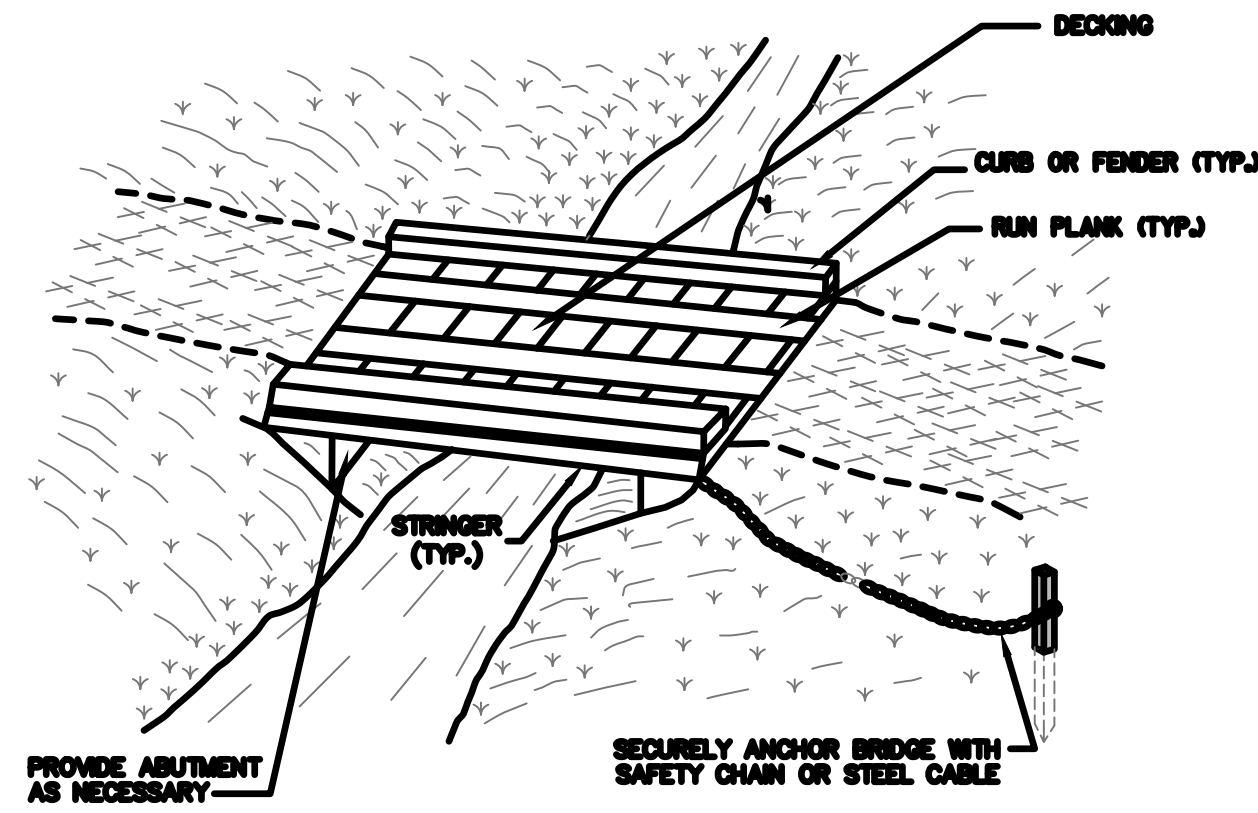
NO.	DATE	BY	DESCRIPTION
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DRAWN BY:	DPA		
CHECKED BY:	MB		
PROJECT MANAGER:	AEH		

BUCKEYE BROOK RESTORATION  
 2000 POST ROAD, PLAT 321 LOT 0004  
 CITY OF WARWICK DEPARTMENT OF PUBLIC WORKS / RIDOT  
 WARWICK, RHODE ISLAND  
 CROSS SECTION AND LONGITUDINAL PROFILE

FILE PATH: I:\MANAGEMENT\PROJECTS\63293 - BUCKEYE BROOK RESTORATION\GENERAL ACTION\PROFILES\BUCKEYE BROOK - PLAT 321 - REVISED 03-23-2022.DWG (P) ALAN DANIEL 3/23/22 4:17 PM

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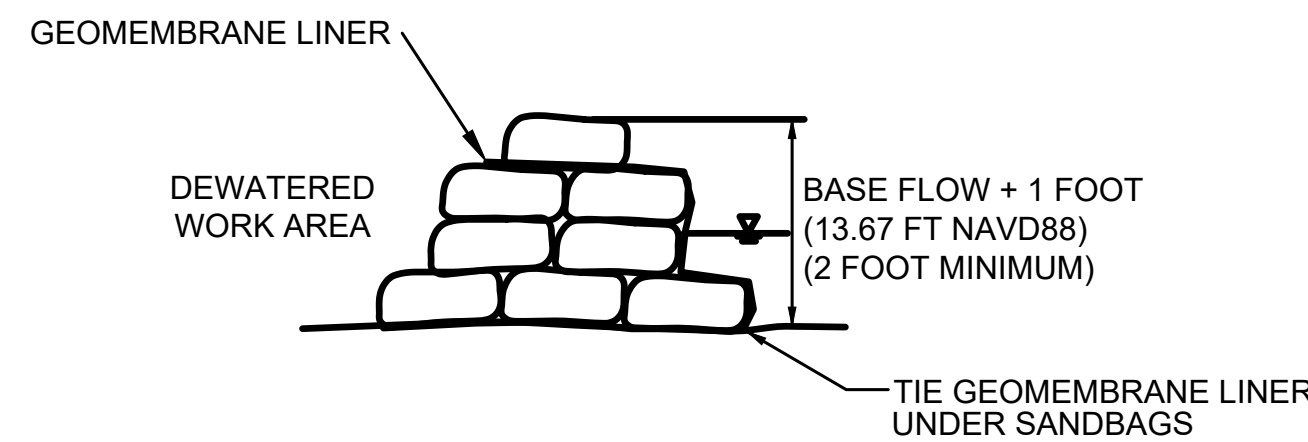
**5 TEMPORARY ACCESS BRIDGE**  
C-501 NOT TO SCALE

**NOTES**

- TEMPORARY ACCESS BRIDGES MAY BE CONSTRUCTED AFTER THE ACCESS ROAD IS COMPLETED AND AT THE CONTRACTOR'S DISCRETION AND SCHEDULE. PRIOR TO PLACING THE TEMPORARY ACCESS BRIDGE, THE CONTRACTOR SHALL UTILIZE A STREAM BYPASS FOR SEDIMENT CONTROL.
- WHERE STREAM CROSSINGS ARE REQUIRED FOR LOCALIZED CONSTRUCTION ACCESS, TEMPORARY ACCESS BRIDGES MAY BE USED AS NEEDED. TEMPORARY ACCESS BRIDGES MAY BE LOCATED AT THE CONTRACTOR'S DISCRETION WITHIN THE LOD, WITH THE APPROVAL OF THE ENGINEER. NO EXCAVATION OR DISTURBANCE OF STREAM BANKS IS PERMITTED FOR PLACEMENT OF THE TEMPORARY ACCESS BRIDGE, UNLESS A PUMP AROUND PRACTICE IS IN PLACE. THE TEMPORARY ACCESS BRIDGE SHALL BE REMOVED BY THE END OF CONSTRUCTION AND ALL DISTURBED AREAS SHALL BE STABILIZED.
- TIME OF YEAR RESTRICTIONS DO NOT APPLY TO THE CONSTRUCTION OR REMOVAL OF A TEMPORARY ACCESS BRIDGE UNLESS THERE IS DISTURBANCE TO THE STREAM CHANNEL.

**CONSTRUCTION SPECIFICATIONS**

- BRIDGE PLACEMENT - A TEMPORARY BRIDGE STRUCTURE SHALL BE CONSTRUCTED AT OR ABOVE THE BANK ELEVATION TO PREVENT THE ENTRAPMENT OF FLOATING MATERIALS AND DEBRIS.
- ABUTMENTS - ABUTMENTS SHALL BE PLACED PARALLEL TO, AND ON, STABLE BANKS.
- BRIDGE SPAN - BRIDGES SHALL BE CONSTRUCTED TO SPAN THE ENTIRE CHANNEL. NO FOOTINGS, PIERS, OR BRIDGE SUPPORTS MAY BE CONSTRUCTED WITHIN THE WATERWAY.
- STRINGERS - STRINGERS SHALL EITHER BE LOGS, SAWN TIMBER, PRESTRESSED CONCRETE BEAMS, METAL BEAMS, OR OTHER APPROVED MATERIALS.
- DECK MATERIAL - DECKING SHALL BE OF SUFFICIENT STRENGTH TO SUPPORT THE ANTICIPATED LOAD, ALL DECKING MEMBER SHALL BE PLACED PERPENDICULAR TO THE STRINGERS, BUTTED TIGHTLY, AND SECURELY FASTENED TO THE STRINGERS. DECKING MATERIALS MUST BE BUTTED TIGHTLY TO PREVENT ANY SOIL MATERIAL TRACKED ONTO THE BRIDGE FROM FALLING INTO THE WATERWAY.
- RUN PLANKS (OPTIONAL) - RUN PLANKING SHALL BE SECURELY FASTENED TO THE LENGTH OF THE SPAN. ONE RUN PLANK SHALL BE PROVIDED FOR EACH TRACK OF THE EQUIPMENT WHEELS. ALTHOUGH RUN PLANKS ARE OPTIONAL, THEY MAY BE NECESSARY TO PROPERLY DISTRIBUTE LOADS.
- AREAS DISTURBED DURING BRIDGE INSTALLATION AND/OR REMOVAL MUST NOT BE LEFT UNSTABILIZED OVERNIGHT UNLESS THE RUNOFF IS DIRECTED TO AN APPROVED SEDIMENT CONTROL DEVICE.
- BRIDGE ANCHORS - BRIDGES SHALL BE SECURELY ANCHORED AT ONLY ONE END USING STEEL CABLE OR CHAIN. ANCHORING AT ONLY ONE END WILL PREVENT CHANNEL OBSTRUCTION IN THE EVENT THAT FLOODWATERS FLOAT THE BRIDGE. ACCEPTABLE ANCHORS ARE LARGE BOULDERS, LARGE TREES, OR DRIVEN STEEL ANCHORS. ANCHORING SHALL BE SUFFICIENT TO PREVENT THE BRIDGE FROM FLOATING DOWNSTREAM AND POSSIBLE CAUSING AN OBSTRUCTION TO FLOW.
- STABILIZATION - AREAS DISTURBED DURING THE BRIDGE INSTALLATION AND/OR REMOVAL SHALL BE STABILIZED BY THE END OF EACH WORK DAY UNLESS THE RUNOFF IS DIRECTED TO AN APPROVED SEDIMENT CONTROL DEVICE.
- STABILIZATION AND EROSION APPROACH - SEDIMENT SHALL BE CLEANED FROM DECKING AND CURBS DAILY BY SCRAPING, SWEEPING, AND/OR VACUUMING. DECKING CURBS SHALL REMAIN TIGHTLY BUTTED WITHOUT GAPS. REMOVE DEBRIS TRAPPED BY BRIDGE. REMOVE DEBRIS TRAPPED BY BRIDGE. MAINTAIN AREAS ADJACENT TO CROSSING TO CONTINUOUSLY MEET REQUIREMENTS FOR ADEQUATE VEGETATIVE ESTABLISHMENT IN ACCORDANCE WITH SECTION B-4 VEGETATIVE STABILIZATION.
- STABILIZE APPROACH TO BRIDGE AND KEEP FREE OF EROSION. CLEAN SEDIMENT FROM DECKING AND CURBS DAILY BY SCRAPING, SWEEPING, AND/OR VACUUMING. ENSURE THAT DECKING AND CURBS REMAIN TIGHTLY BUTTED WITHOUT GAPS. REMOVE DEBRIS TRAPPED BY BRIDGE. MAINTAIN AREAS ADJACENT TO CROSSING TO CONTINUOUSLY MEET REQUIREMENTS FOR ADEQUATE VEGETATIVE ESTABLISHMENT.
- AFTER THE TEMPORARY CROSSING IS NO LONGER NEEDED, REMOVE IT WITHIN 14 CALENDAR DAYS. IF SUBJECT TO THE USE DESIGNATION CLOSURE, REMOVE AT THE END OF CLOSURE PERIOD. PROTECT STREAM BANKS DURING BRIDGE REMOVAL AND STABILIZE ALL DISTURBED AREAS WITH EROSION CONTROL MATTING. ACCOMPLISH REMOVAL OF THE BRIDGE AND CLEAN UP OF THE AREA WITHOUT CONSTRUCTION EQUIPMENT WORKING IN THE WATERWAY CHANNEL. STORE ALL REMOVED MATERIALS IN AN APPROVED STAGING AREA.
- WHERE POSSIBLE, UTILIZE OR UPGRADE EXISTING PATH OR ROAD CROSSINGS TO AVOID OR MINIMIZE NEW WETLAND AND/OR STREAMBED DISTURBANCE.
- WHERE NEW CROSSING MUST BE USED, SELECT THE NARROWEST SECTION OF WETLAND AND/OR STREAM.

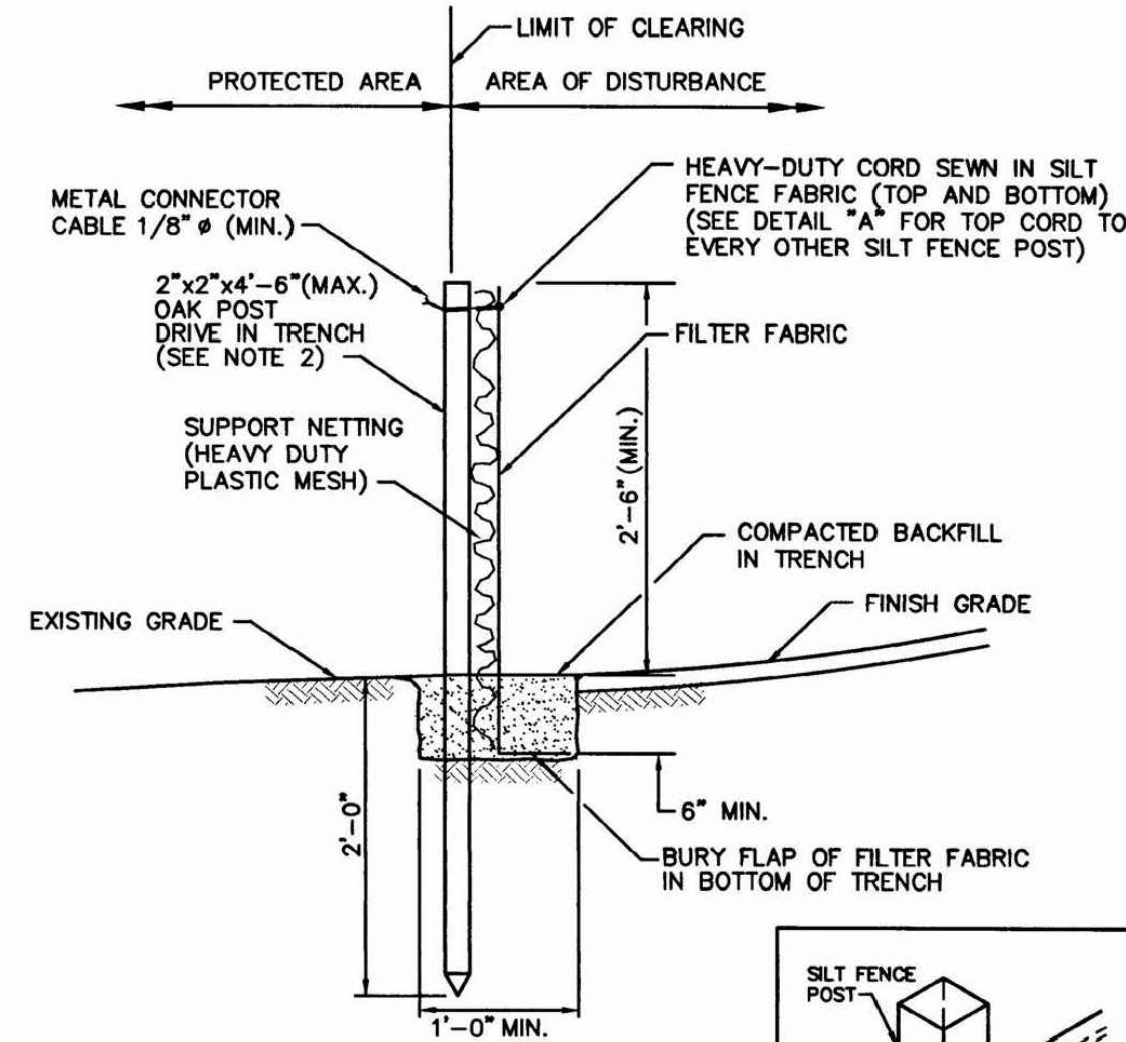


**1 COFFERDAM DETAIL**  
C-501 NOT TO SCALE

DESCRIPTION- THE WORK SHALL CONSIST OF INSTALLING A TEMPORARY BYPASS AND SUPPORTING MEASURES TO DIVERT FLOW AROUND OR THROUGH INSTREAM CONSTRUCTION SITES.

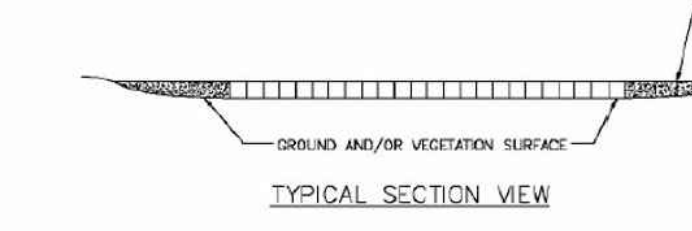
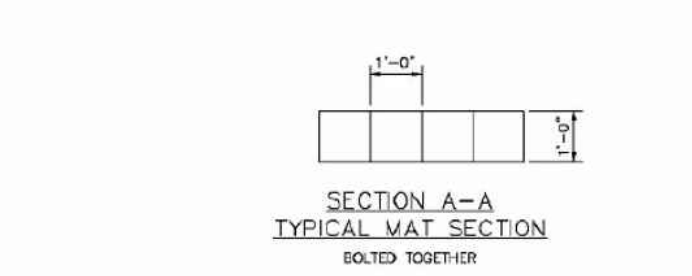
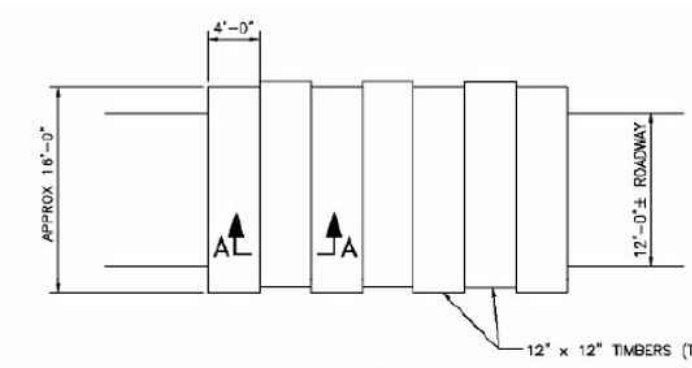
**NOTES:**

- COFFERDAMS, OR ALTERNATIVE MEANS OF DIVERTING WATER AS APPROVED BY RIDEM, SHALL BE SITUATED AT THE UPSTREAM AND DOWNSTREAM ENDS OF THE WORK AREA AS SHOWN ON THE PLANS, AND STREAM FLOW SHALL BE DIVERTED AROUND OR THROUGH THE WORK AREA. THE PIPE SHALL DISCHARGE ONTO A STABLE VELOCITY DISSIPATOR MADE OF RIPRAP OR SANDBAGS. TEMPORARY MEASURE FOR DEWATERING IN CHANNEL CONSTRUCTION SITES.
- THE CONDITION OF THE OUTLET PROTECTION SANDBAGS IS TO BE CHECKED TWICE PER DAY (START OF WORK DAY AND MIDDAY) TO ENSURE THAT SAND IS NOT ESCAPING BAGS. DAMAGED OR LEAKING BAGS ARE TO BE REMOVED AND REPLACED.
- THE CHANNEL SHALL NOT BE ALLOWED TO SCOUR AS A RESULT OF BYPASS DISCHARGE. TO PREVENT SCOUR, PLACE ADEQUATELY SIZED RIPRAP OVER GEOMEMBRANE LINER AT BYPASS OUTLET. REMOVE RIPRAP AND LINER WHEN BYPASS IS NO LONGER NEEDED.
- THE CONTRACTOR SHALL BE RESPONSIBLE FOR EITHER THE IMMEDIATE REMOVAL OF CHANNEL COFFERDAMS OR MANUAL TRANSFERENCE OF HERRING AT ANY SIGNS THAT FISH ARE STRESSED WHILE STAGED UPSTREAM OF COFFERDAMS.

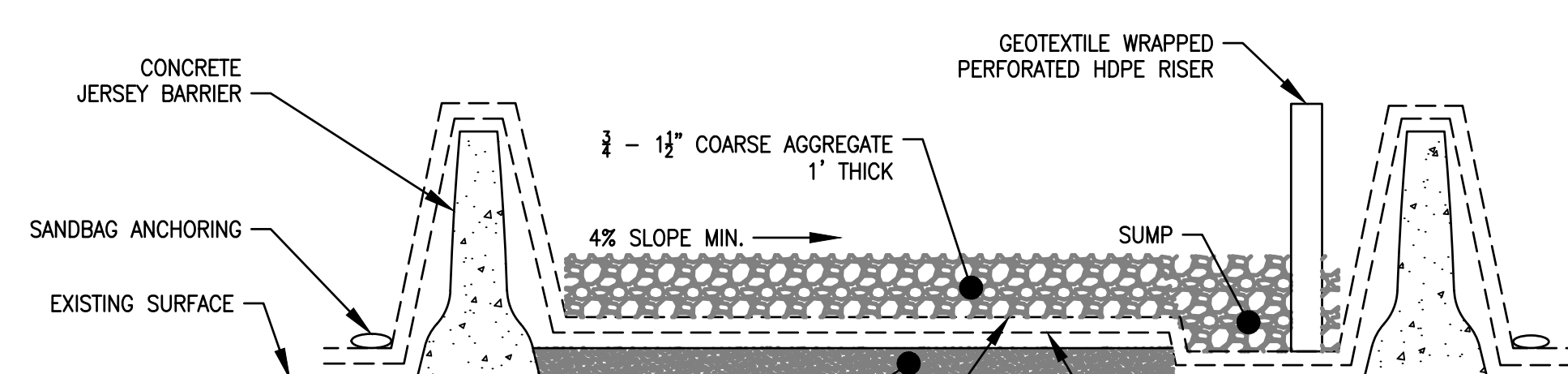


**2 SILT FENCE DETAIL**  
C-501 NOT TO SCALE

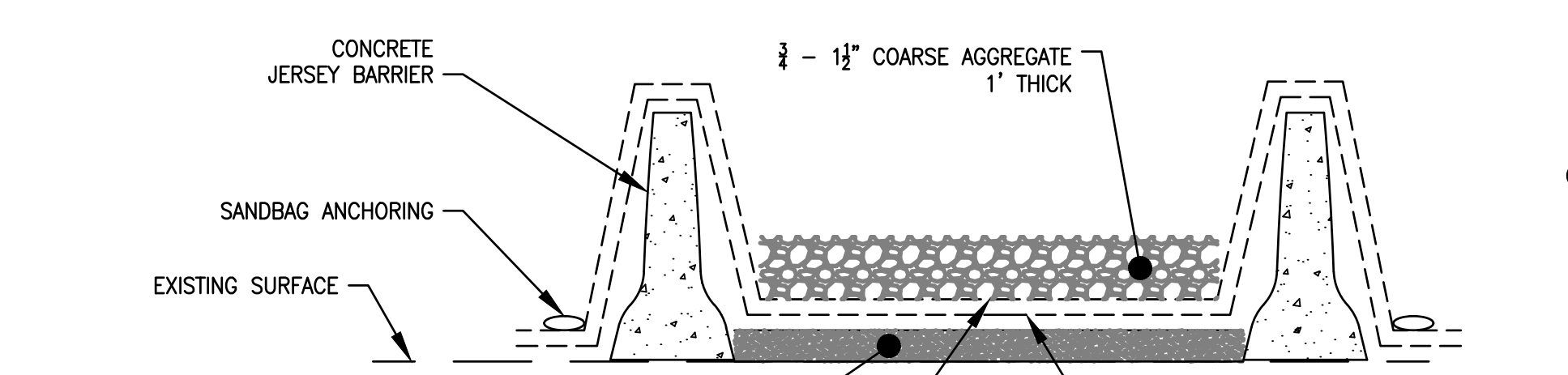
NOTES:  
1. SHALL BE IN ACCORDANCE WITH SECTION 206 OF THE R.I. STANDARD SPECIFICATIONS.  
2. 2"x2"x4"-6"(MAX.) OAK POSTS FOR SILT FENCE SHALL BE LOCATED 8'-0"(MAX.) O.C. IN WETLAND AREAS AND 4'-0"(MAX.) O.C. IN WETLAND RAVINE, GULLY OR DROP-OFF AREAS AS SHOWN ON PLANS.  
3. 1"x1"x4"-6"(MIN.) POSTS PERMITTED FOR PRE-FABRICATED SILT FENCE.  
4. SILT FENCE SHALL BE INSTALLED BEFORE ANY GRUBBING OR EARTH EXCAVATION TAKES PLACE.



**7 TIMBER SWAMP MATTING**  
C-501 NOT TO SCALE

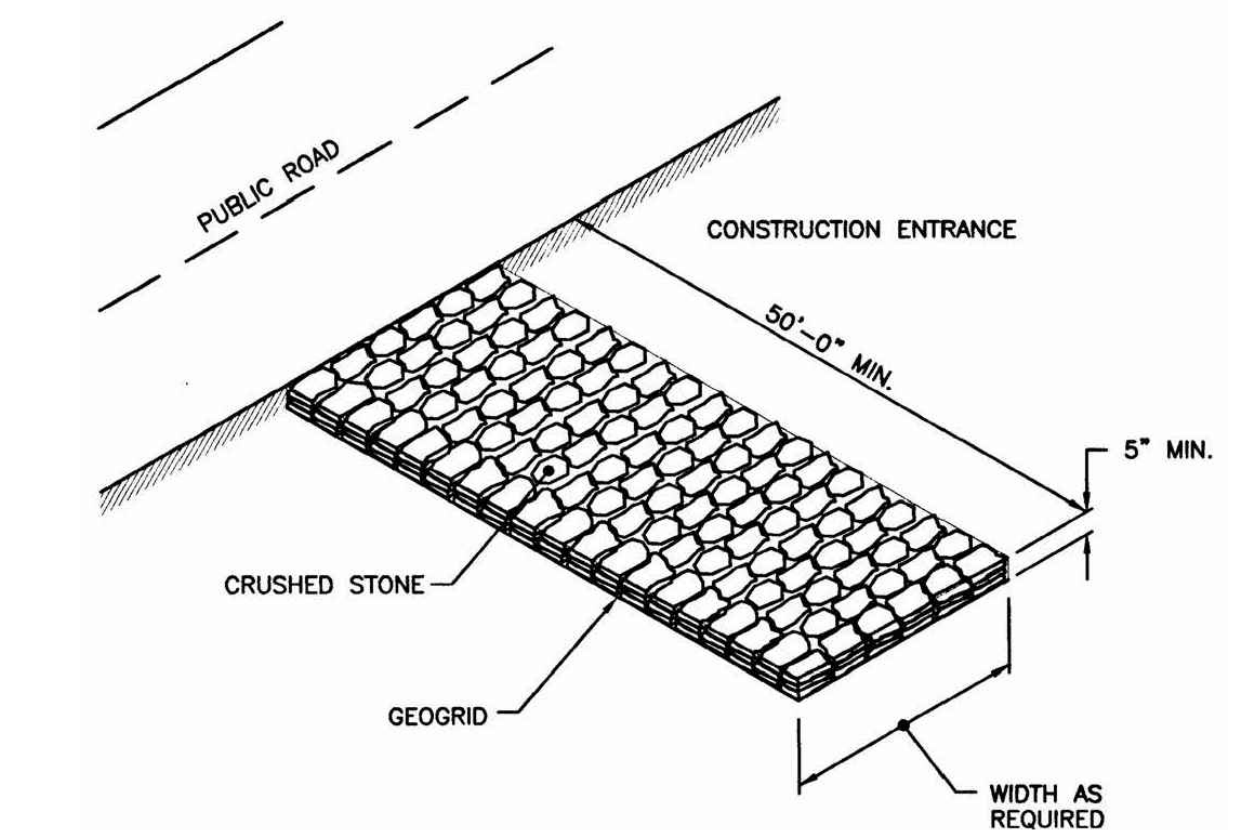


SECTION A-A



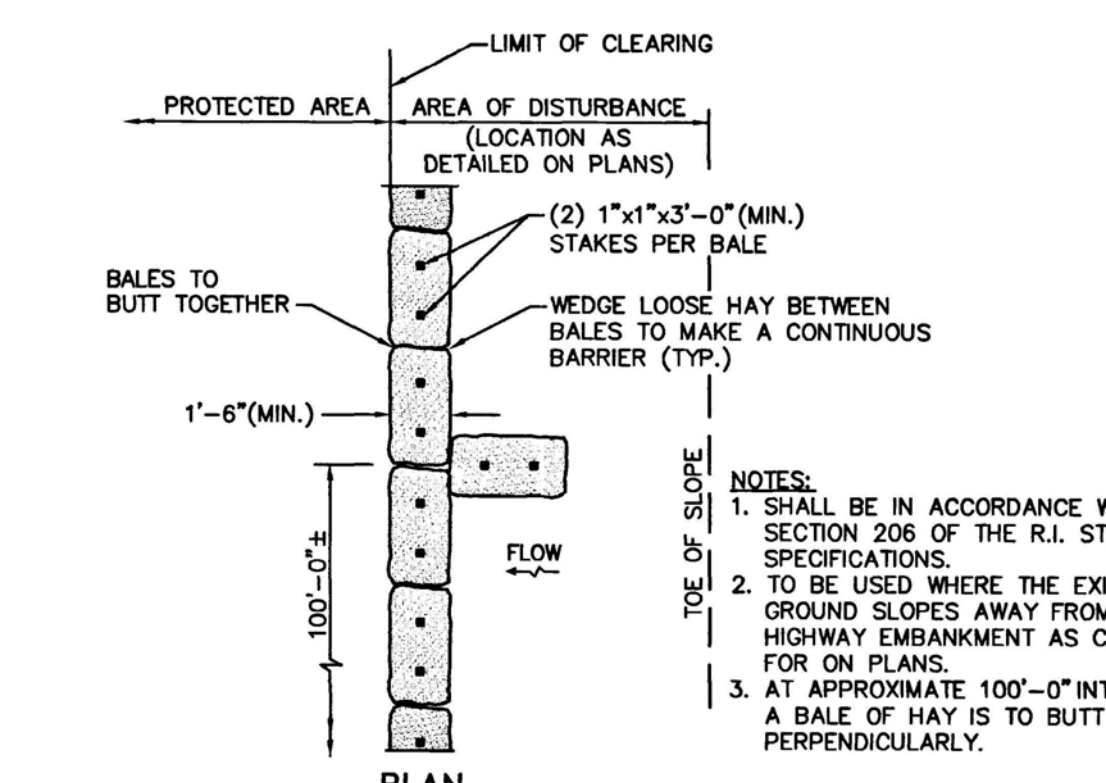
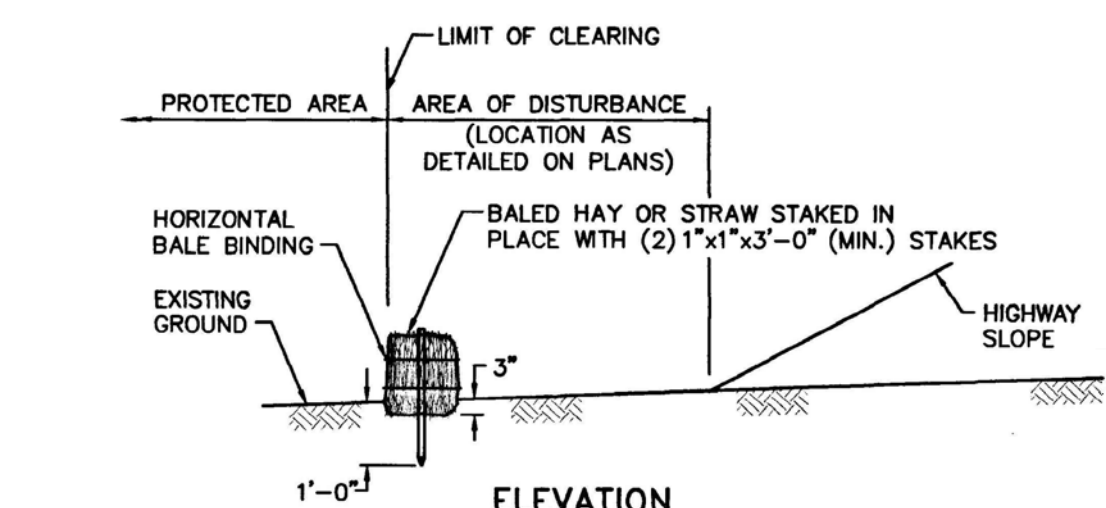
SECTION B-B

**3 PHRAGMITES DEWATERING AREA DETAIL**  
C-501 NOT TO SCALE



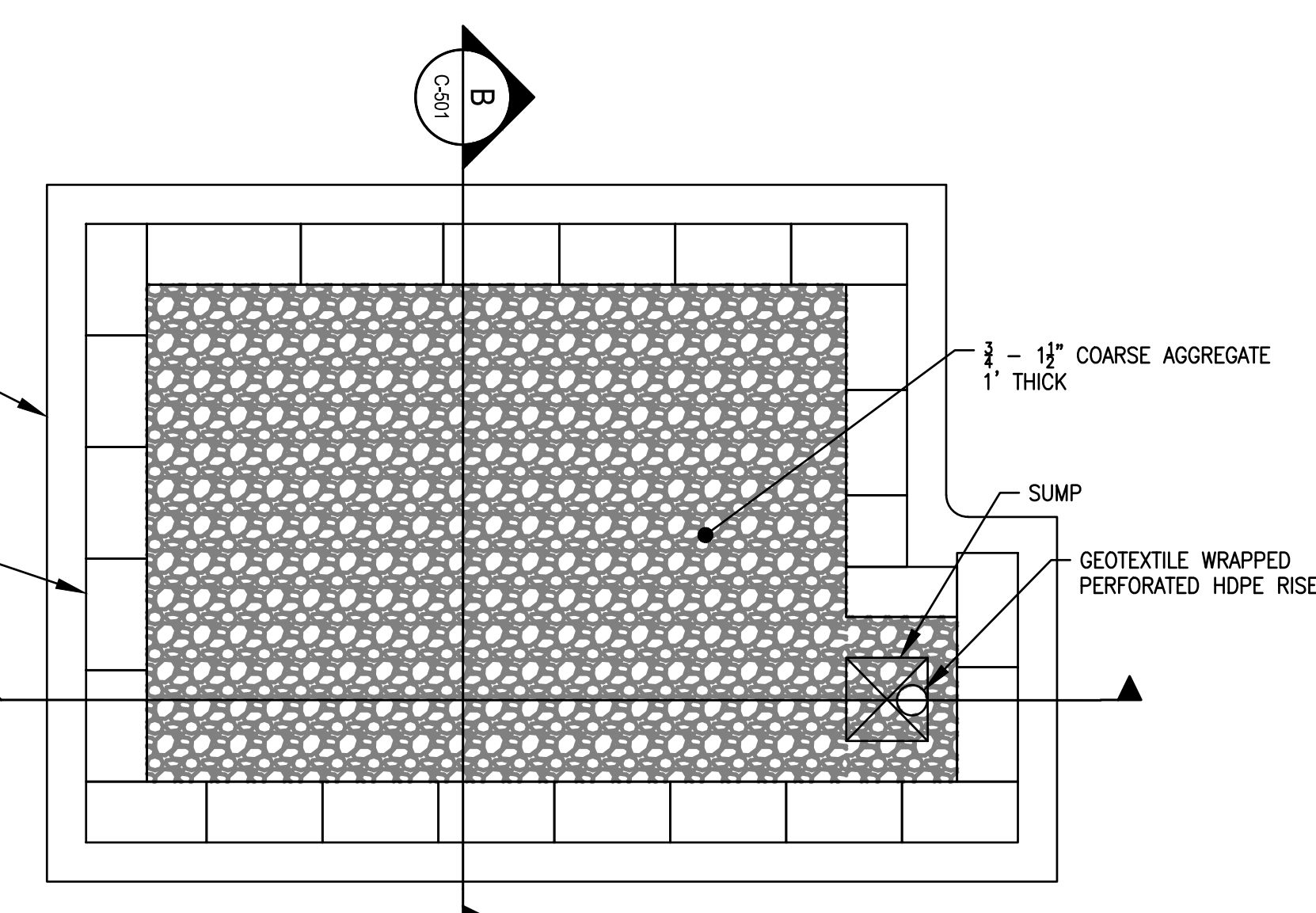
**4 STABILIZED CONSTRUCTION ACCESS ROAD DETAIL**  
C-501 NOT TO SCALE

NOTE: SHALL BE IN ACCORDANCE WITH SECTION 211 OF THE R.I. STANDARD SPECIFICATIONS.



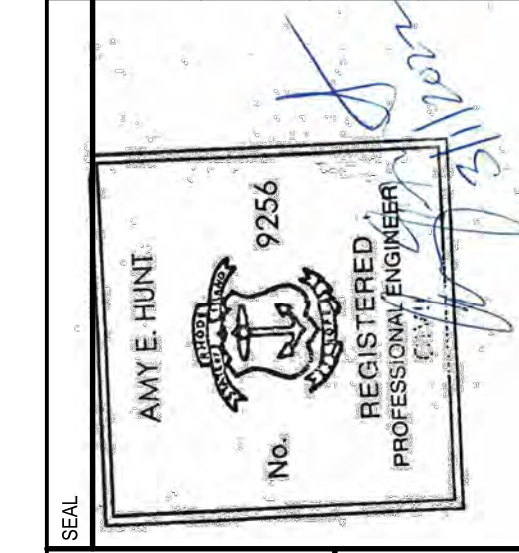
**6 STAKED STRAW BALES**  
C-501 NOT TO SCALE

NOTE: STRAW BALES TO BE USED ONLY.



REVISIONS	DESCRIPTION
BY	
DATE	
NO.	

DESIGN INFORMATION	DESIGNED BY: AMT	DRAWN BY: DPA	CHECKED BY: MB	PROJECT MANAGER: AEH
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BUCKEYE BROOK RESTORATION  
2000 POST ROAD, PLAT 321 LOT 0004  
CITY OF WARWICK DEPARTMENT OF PUBLIC WORKS / RIDOT  
WARWICK, RHODE ISLAND

EROSION AND SEDIMENT CONTROL & WATER CONTROL DETAILS

EA Engineering, Science, and Technology, Inc., PBC  
301 Metro Center Blvd, Suite 102  
Warwick, Rhode Island 02886  
(401) 736-3440

DATE: MARCH 2022  
PROJECT NUMBER: 63293.01  
**C-501**  
SHEET: 9 OF 9

FILE PATH: I:\MIDWEST\PROJECTS\WARWICK\BUCKEYE BROOK RESTORATION\CONSTRUCTION\EROSION AND SEDIMENT CONTROL\DETAILS\C-501.dwg

ISSUED FOR CONSTRUCTION