



GENERAL NOTES:

- 1. THE CONTRACTOR SHALL VERIFY THE LOCATIONS OF ALL EXISTING DRAINAGE AND UTILITIES BOTH UNDERGROUND AND OVERHEAD, BEFORE ANY EXCAVATION BEGINS IN ACCORDANCE WITH "DIS SAFE PROGRAM LAW" ENACTED BY THE R.I. LEGISLATURE AND BY CONTACTING THE INDIVIDUAL UTILITIES COMPANIES. EXCAVATION SHALL BE IN ACCORDANCE WITH ALL STATUTES, ORDINANCES, RULES AND REGULATIONS OF ANY TOWN, STATE OR FEDERAL AGENCY THAT MAY BE APPLICABLE. ANY DAMAGE TO EXISTING UTILITIES SHALL BE THE CONTRACTOR'S RESPONSIBILITY.

TEST PIT NOTES

- 1. THE CONTRACTOR SHALL NOTIFY THE ENGINEER FIVE (5) DAYS IN ADVANCE OF HIS/HER INTENT TO BEGIN WORK ON THE PROJECT.
- 2. THE CONTRACTOR SHALL EXCAVATE TEST PITS TO LOCATE AND VERIFY DEPTHS OF ALL UTILITIES CROSSINGS PRIOR TO STARTING WORK. ANY CONFLICTS WITH THE PROPOSED DRAINAGE PIPING OR GRINDING SHALL BE BROUGHT TO THE ENGINEER'S ATTENTION IMMEDIATELY.
- 3. ALL COSTS FOR TEST PITS SHALL BE INCLUDED IN THE CONTRACTOR'S BID PRICE.

FLOOD ZONE NOTES

THE SITE IS LOCATED IN ZONE X, AREAS DETERMINED TO BE OUTSIDE THE 0.2% ANNUAL CHANCE FLOOD, AS SHOWN ON THE FLOOD INSURANCE RATE MAP, KENT COUNTY, RHODE ISLAND (ALL JURISDICTIONS), PANEL 251 OF 251, MAP NUMBER 4400C0251G, EFFECTIVE DATE DECEMBER 3, 2010

STRIPING NOTES

- 1. PROJECT-WIDE THE CONTRACTOR IS RESPONSIBLE TO REPLACE ALL EXISTING STRIPING THAT FALLS WITHIN THE LIMIT OF WORK OR IS DISTURBED BY THE CONTRACTOR'S OPERATIONS AFTER THE BITUMINOUS SURFACE COURSE HAS BEEN INSTALLED AND ACCEPTED BY THE OWNER OR ENGINEER.
- 2. EPOXY RESIN PAVEMENT MARKINGS SHALL CONFORM TO ALL R.I.D.O.T. SPECIFICATIONS, NEW EPOXY RESIN PAVEMENT MARKINGS SHALL BE PLACED ON THE FINAL SURFACE COURSE NO SOONER THAN TWO (2) WEEKS BUT NO LONGER THAN FOUR (4) WEEKS FROM THE COMPLETION OF EACH DAYS PAVING OPERATION.
- 3. SPECIFICATIONS ASSOCIATED WITH THIS PROJECT PRIOR TO THE INITIATION OF WORK, SHOULD BE REVIEWED BY AND MUST BE ACCEPTABLE TO THE ENGINEER.

MAINTENANCE AND PROTECTION OF TRAFFIC NOTES:

- 1. THE CONTRACTOR SHALL BE RESPONSIBLE FOR ALL MAINTENANCE AND PROTECTION OF PEDESTRIAN AND VEHICULAR TRAFFIC INCLUDING POLICE PROTECTION OR LICENSED PLACEMAN, ALL TEMPORARY CONSTRUCTION SIGNS, BARRICADES, CHANNELING DEVICES AND LANE CLOSURES, ETC. SHALL BE IN CONFORMANCE WITH THE LATEST REVISIONS OF THE MANUAL OF UNIFORM TRAFFIC CONTROL DEVICES (M.U.T.C.D.)
- 2. PLACE PRIOR TO THE START OF WORK IN ANY AREA OPEN TO TRAFFIC.
- 3. THE PRIVATE VEHICLES OF CONSTRUCTION WORKERS WILL NOT BE PARKED IN THE STATE OR TOWN RIGHT-OF-WAY.
- 4. SIGN MOUNTINGS SHALL BE IN ACCORDANCE WITH THE R.I.D.O.T. SPECIFICATIONS FOR BITUMINOUS CONCRETE PAVEMENTS.

PROPOSED PAVEMENT STRUCTURE (NEW)

- 1. BITUMINOUS CONCRETE PAVEMENTS.
- 2. 2" SMA SURFACE COURSE, CLASS 9.5 ASPHALT EMULSION TACK COAT
- 3. 2" HMA BASE COURSE, CLASS 12.5
- 4. 6" PRECAST CONCRETE CURB, R.I. STD. 7.1.0
- 5. 6" PRECAST CONCRETE TRANSDUCTION CURB, R.I. STD. 7.1.2
- 6. 7.5" CURB SETTING DETAIL, R.I. STD. 7.6.0
- 7. 9.3.0. BATED HWY EROSION CHECK AND SILT FENCE COMBINED, R.I. STD. 9.3.0

PROPOSED PAVEMENT NOTE

THE PAVEMENT THICKNESS OF 2.0" REPRESENTS THE MINIMUM IN-PLACE THICKNESS STANDARD TOLERANCES DO NOT APPLY TO THESE VALUES ANY PAVEMENT INSTALLED WHICH IS LESS THAN THE THICKNESS NOTED WILL NOT BE ACCEPTED.

PLAN SYMBOLS

- 2.3.0 PRECAST CONCRETE FLARED END SECTION, R.I. STD. 2.3.0
- 4.3.0 PRECAST 4'-0" OR 6'-0" SQUARE MANHOLE OR CATCH BASIN, R.I. STD. 4.3.0
- 6.2.1 HEAVY-DUTY ROUND FRAME AND COVER, R.I. STD. 6.2.1
- 7.1.0 PRECAST CONCRETE CURB, R.I. STD. 7.1.0
- 7.1.2 PRECAST CONCRETE TRANSDUCTION CURB, R.I. STD. 7.1.2
- 7.6.0 CURB SETTING DETAIL, R.I. STD. 7.6.0
- 9.3.0. BATED HWY EROSION CHECK AND SILT FENCE COMBINED, R.I. STD. 9.3.0
- A PROPOSED PAVEMENT STRUCTURE (NEW AT WIDENING AREA)
- AW ADJUST WATER GATE TO GRADE
- AFG ADJUST FRAME AND GRATE TO GRADE
- AW INSTALL THE NEW PAVEMENT WITHIN 3 DAYS, THEN A 2" TEMPORARY BITUMINOUS PAVEMENT PATCH SHALL BE INSTALLED IMMEDIATELY FOLLOWING PIPE INSTALLATION AT THE CONTRACTOR'S EXPENSE AND NO ADDITIONAL COST TO THE OWNER.
- 22. ONE (1) LANE OF TRAVEL MUST REMAIN OPEN AT ALL TIMES ON ARNOLO ROAD DURING WORK DAYS AND TWO (2) LANES OF TRAVEL MUST BE OPEN DURING ALL NON-WORK DAY PERIODS. THE CONTRACTOR SHALL SEEK APPROVAL FROM THE OWNER AND/OR ENGINEER FOR ANY CHANGES TO THE TRAVEL FLOW.
- 23. THE CONTRACTOR SHALL BE RESPONSIBLE TO NOTIFY THE OWNER AT LEAST TWENTY-FOUR (24) HOURS BEFORE PERFORMING ANY PAVING OPERATIONS. THE OWNER WILL VERIFY WHETHER THE WEATHER CONDITIONS ARE ACCEPTABLE OR NOT FOR THE PROPER HANDLING OR FINISHING OF THE BITUMINOUS MIXTURES. IF, IN THE OPINION OF THE OWNER, THE WEATHER CONDITIONS WILL PRODUCE A WET SURFACE, THEN THE OWNER WILL CONTACT THE CONTRACTOR TO CANCEL THE PAVING OPERATIONS. BITUMINOUS CONCRETE PAVEMENT SHALL NOT BE PLACED ON ANY WET SURFACE OR DURING RAIN.

TREE PROTECTION NOTE

PLANTS LISTED AS SAVE AND PROTECT SHALL BE REVIEWED BY A LICENSED ARBORIST OR AS DIRECTED BY THE OWNER. CUT BROKEN, DEAD OR INJURED BRANCHES ABOVE THE STEM COLLAR ON THE TRUNK OR LIMB. PRUNE THE BROKEN ROOTS ON THE PLANT SIDE OF THE BREAK. PAINT CUTS OVER 3/4" IN DIAMETER WITH TREE WOUND PAINT. PRUNING SHALL NOT DEFORM OR OTHERWISE DESTROY THE TYPICAL SHAPE OR SYMMETRY OF THE PLANT, AND SHALL NOT REDUCE THE HEIGHT BY MORE THAN ONE-THIRD.

BITUMINOUS CONCRETE PAVEMENT WEATHER NOTE:

THE CONTRACTOR SHALL BE RESPONSIBLE TO NOTIFY THE OWNER AT LEAST TWENTY-FOUR (24) HOURS BEFORE PERFORMING ANY PAVING OPERATIONS. THE OWNER WILL VERIFY WHETHER THE WEATHER CONDITIONS ARE ACCEPTABLE OR NOT FOR THE PROPER HANDLING OR FINISHING OF THE BITUMINOUS MIXTURES. IF, IN THE OPINION OF THE OWNER, THE WEATHER CONDITIONS WILL PRODUCE A WET SURFACE, THEN THE OWNER WILL CONTACT THE CONTRACTOR TO CANCEL THE PAVING OPERATIONS. BITUMINOUS CONCRETE PAVEMENT SHALL NOT BE PLACED ON ANY WET SURFACE OR DURING RAIN.

CONSTRUCTION NOTES

- 1. THE CONTRACTOR SHALL NOTIFY THE ENGINEER PRIOR TO THE BEGINNING OF WORK ON SITE. THE COORDINATION IS NECESSARY FOR THE ENGINEER TO SCHEDULE SITE INSPECTIONS, INSTALLATIONS PERFORMED WITHOUT INSPECTIONS BY THE ENGINEER MAY WARRANT COMPLETE REMOVAL AND REINSTALLATION AT THE CONTRACTOR'S SOLE EXPENSE.
- 2. THE CONTRACTOR IS REQUIRED TO MAINTAIN DETAILED AS-BUILT INFORMATION FOR ALL DRAINAGE INSTALLATIONS, AS-BUILT INFORMATION MUST INCLUDE MATERIAL LIST, PIPE DEPTH AND SWING THE LOCATIONS (2 MINIMUM) FROM NEW PIPE TO BUILDING CORNERS OR FIXED OBJECTS. ALL PIPE END/ELBOW/W/TEE LOCATIONS SHALL BE DIMENSIONED. FINAL PAYMENT WILL NOT BE MADE UNTL SUITABLE AS-BUILT DATA IS PROVIDED.
- 3. THE CONTRACTOR SHALL NOTIFY THE OWNER AND ENGINEER AT LEAST 48 HOURS PRIOR TO INSTALLATION OF ANY NEW DRAINAGE. THE COORDINATION IS NECESSARY FOR THE ENGINEER TO SCHEDULE SITE INSPECTIONS, INSTALLATIONS PERFORMED WITHOUT INSPECTIONS BY THE ENGINEER MAY WARRANT COMPLETE REMOVAL AND REINSTALLATION AT THE CONTRACTOR'S SOLE EXPENSE.

DRAINAGE NOTES

- 1. CONTRACTOR IS RESPONSIBLE TO PROVIDE SHOP DRAWINGS AND SPECIFICATIONS FOR ALL DRAINAGE RELATED ITEMS FOR REVIEW AND APPROVAL BY THE ENGINEER, PRIOR TO ORDERING.
- 2. CONTRACTOR TO VERIFY THAT ALL STRUCTURES ARE COMPATIBLE WITH FRAME AND GRATE.
- 3. ALL STRUCTURES SHALL BE DESIGNED FOR H-20 LOADING.
- 4. ALL DRAINAGE PIPE SHALL BE DUCTILE IRON PIPE CLASS 52 WITH WATER TIGHT JOINTS.
- 5. ALL JOINTS AND CONNECTIONS TO STRUCTURES TO BE WATER-TIGHT.
- 6. PROJECT WIDE, CONTRACTOR IS RESPONSIBLE FOR FINE GRADING AND INSTALLING NEW PAVEMENT SURFACE ELEVATIONS IN A MANNER WHICH ALLOWS FOR SURFACE RUNOFF TO DRAIN FREELY AND PREVENTS PONDING OR PUDDING ON THE NEW PAVEMENT SURFACES.
- 7. CATCH BASINS, MANHOLES AND DRAIN LINES WITHIN THE WORK LIMITS ARE TO BE CLEANED AND FLUSHED. THE ENGINEER AND OWNER SHALL BE NOTIFIED TWO (2) DAYS PRIOR TO WORK. THE CONTRACTOR SHALL PROVIDE DOCUMENTATION OF THE WORK TO THE OWNER PRIOR TO ACCEPTANCE.
- 8. CONSTRUCTION OPERATIONS INCLUDING PUMPS, DIKES, BY-PASS HOSES AND ANY OTHER IDENTICAL EQUIPMENT NECESSARY, ALL COSTS FOR PERFORMING THIS WORK THROUGHOUT THE PROJECT SHALL BE INCLUDED IN THE CONTRACTOR'S BID PRICE.
- 9. CONTRACTOR IS RESPONSIBLE FOR ALL DEMATERING AND FLOW DIVERSION OPERATIONS DURING CONSTRUCTION. ALL COSTS FOR DEMATERING AND FLOW DIVERSION OPERATIONS THROUGHOUT THE PROJECT SHALL BE INCLUDED IN THE CONTRACTOR'S BID PRICE.
- 10. CONTRACTOR SHALL CLEAN AND SWEEP THE ENTIRE BITUMINOUS PROJECT LIMITS AT THE END OF THE PROJECT. CLEAN AND SWEEPING SHALL BE DONE BEFORE CLEAN AND FLUSHING PIPES IN ORDER TO PREVENT SEDIMENT FROM ENTERING THE CATCH BASINS OR PIPES.
- 11. ALL FRAME AND GRATES THAT ARE ADJUSTED TO GRADE WILL HAVE BITUMINOUS PAVEMENT INSTALLED SURFACE RUNOFF INTO THE CATCH BASIN.

LAYOUT NOTE

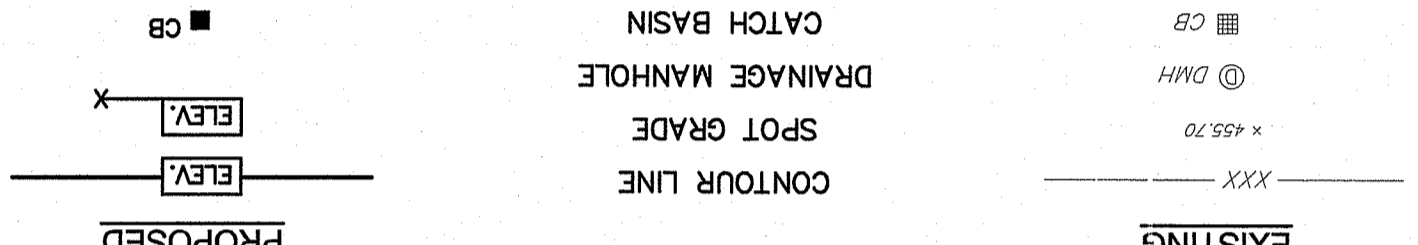
THE LAYOUT SHOWN REPRESENTS A GRAPHICAL DESIGN, AND PRIOR TO CONSTRUCTION, THE CONTRACTOR SHALL ENGAGE A PROFESSIONAL LAND SURVEYOR (L.S.) REGISTERED IN THE STATE OF RHODE ISLAND TO SET AND VERIFY ALL LINES AND GRADES. ALL EXISTING UTILITIES AND ELEVATIONS ARE TO BE CONFIRMED BY THE CONTRACTOR PRIOR TO CONSTRUCTION. ANY ITEM FOUND WHICH DOES NOT MATCH THE PLANS MUST BE BROUGHT TO THE ENGINEER'S ATTENTION PRIOR TO CONSTRUCTION FOR REVIEW. NO WORK SHALL PROCEED UNTIL AUTHORIZED BY THE ENGINEER.

COORDINATION NOTES:

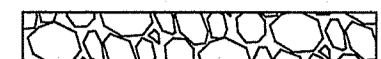
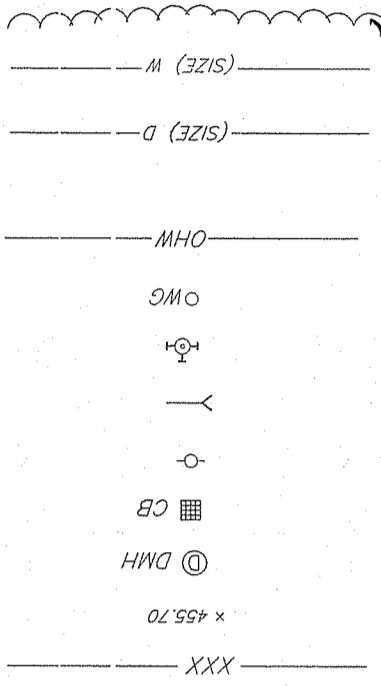
- 1. THE CONTRACTOR IS MADE AWARE THAT OTHER CONSTRUCTION PROJECTS ARE CURRENTLY UNDERWAY IN THE VICINITY OF THE PROPOSED ARNOLO ROAD WIDENING PROJECT.
- 2. THE CONTRACTOR IS RESPONSIBLE TO COORDINATE HIS/HER WORK WITH THE CURRENT ON-GOING WORK.
- 3. THE FOLLOWING PROJECTS ARE KNOWN TO BE UNDER CONSTRUCTION:
  - 1. JOINT FORCE HEADQUARTERS AND READINESS CENTER LOCATION
  - 2. AMMUNITION STORAGE MAGAZINE PROJECT
- 4. THE CONTRACTOR IS RESPONSIBLE TO COORDINATE WITH ALL UTILITY COMPANY PROVIDERS FOR THE PRODUCTS, ELECTRIC, TELEPHONE, CABLE, FIBER OPTIC, WATER, SEWER) PROVIDING SERVICES FOR THE PRODUCTS PRIOR TO BEGINNING NEW WORK.

THE CONTRACTOR SHALL NOTIFY THE SUPERINTENDENTS OF THE ON-GOING PROJECTS AFFECTED BY THE CONSTRUCTION WORK IN WRITING PRIOR TO THE START OF CONSTRUCTION. THE LETTER SHALL STATE THE STARTING DATE OF WORK AND A CONTACT TELEPHONE NUMBER WITH QUESTIONS OR CONCERNS.

LEGEND



EXISTING



FE

FE

12' EPOXY RESIN PAVEMENT MARKINGS - WHITE

THE NEW PIPE INTO EXISTING STRUCTURE

REMOVE AND REST

REMOVE AND DISPOSE

REMOVE AND DISPOSE FLEXIBLE PAVEMENT

REMOVE AND DISPOSE CONCRETE CURB

PROPOSED PAVEMENT STRUCTURE (NEW AT WIDENING AREA)

PROPOSED PAVEMENT STRUCTURE

EXISTING TO REMAIN

LIMIT OF WORK

REMOVE AND REST

REMOVE AND DISPOSE

REMOVE AND STOCKPILE

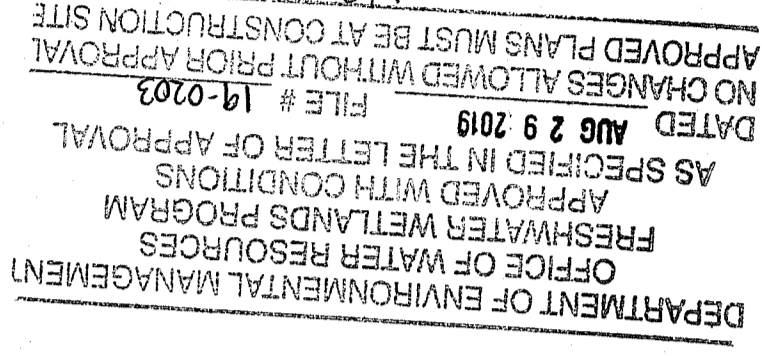
SILT SACK INLET PROTECTION

THE EXISTING PIPE INTO NEW STRUCTURE

12' EPOXY RESIN PAVEMENT MARKINGS - DOUBLE YELLOW

4" EPOXY RESIN PAVEMENT MARKINGS - DOUBLE YELLOW

DEPARTMENT OF ENVIRONMENTAL MANAGEMENT  
OFFICE OF WATER RESOURCES  
FRESHWATER WETLANDS PROGRAM  
APPROVED WITH CONDITIONS  
AS SPECIFIED IN THE LETTER OF APPROVAL  
DATED Aug 29 2019  
FILE # 19-0203  
NO CHANGES ALLOWED WITHOUT PRIOR APPROVAL  
APPROVED PLANS MUST BE AT CONSTRUCTION SITE  
Nancy L. Coleman



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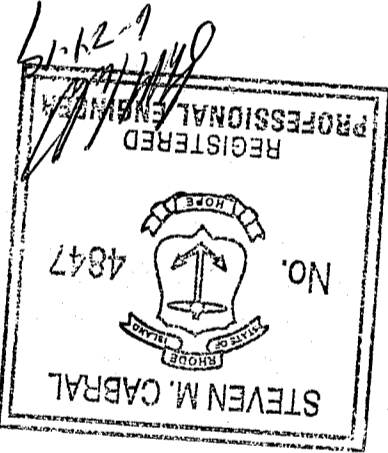
GENERAL NOTES and

ARMY NATIONAL GUARD  
CONSTRUCTION and FACILITIES  
MANAGEMENT OFFICE  
705 NEW LONDON AVENUE  
CRANSTON, RI 02920

PREPARED FOR

CAMP FOGARTY  
ARNOLD ROAD  
WIDENING PROJECT  
2841 SOUTH COUNTY TRAIL  
EAST GREENWICH, RHODE ISLAND

PROJECT TITLE



CROSSMAN ENGINEERING

151 Centralville Road  
North Attleboro, MA 02763  
Phone: (508) 859-1700  
Email: ce@crossmaneng.com

MASSACHUSETTS

Professional Engineer  
Steven M. Cabral  
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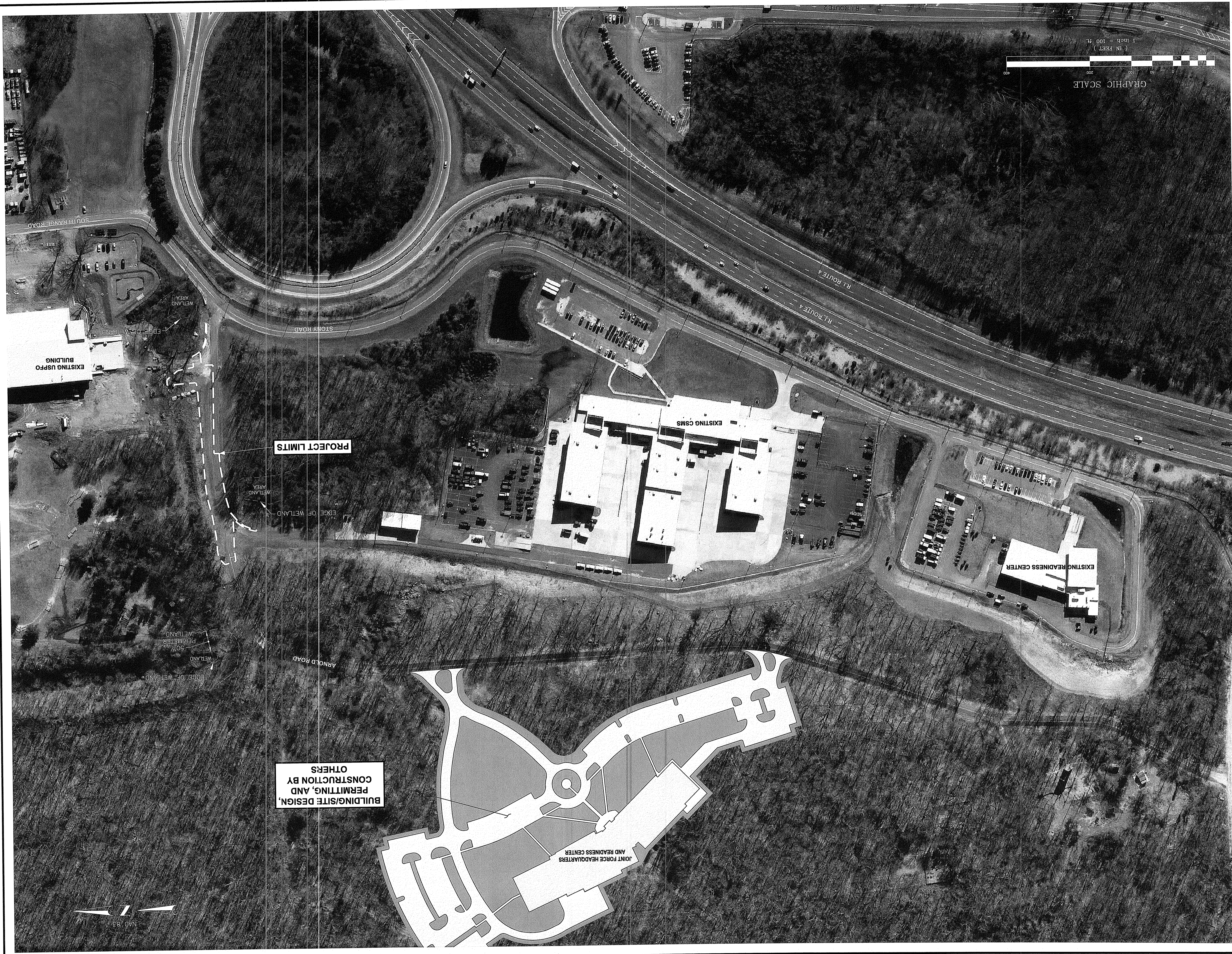
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GRAPHIC SCALE  
 1 inch = 100 ft.  
 (IN FEET)



**BUILDING/SITE DESIGN, PERMITTING, AND CONSTRUCTION BY OTHERS**

**PROJECT LIMITS**

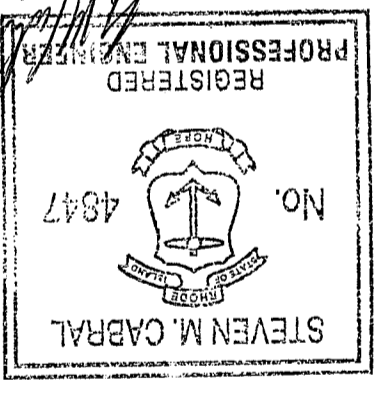
**CROSSMAN ENGINEERING**  
 Rhode Island  
 151 Centerville Road  
 North Attleboro, MA 02763  
 Phone: (401) 738-5660  
 Email: ce@crossmaneng.com

- Civil
- Transportation
- Environmental
- Site Planning
- Surveying
- Permitting
- Landscape Architecture

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DEPARTMENT OF ENVIRONMENTAL MANAGEMENT  
 OFFICE OF WATER RESOURCES  
 FRESHWATER WETLANDS PROGRAM  
 APPLIED WITH CONDITIONS  
 AS SPECIFIED IN THE LETTER OF APPROVAL  
 FILE # 19-0203  
 DATED AUG 9 2019  
 APPROVED PLANS MUST BE AT CONSTRUCTION SITE

*Mary L. McNamee*



KEY PLAN

**PROJECT TITLE:**  
 CAMP FOGARTY  
 ARNOLD ROAD  
 WIDENING PROJECT  
 2841 SOUTH COUNTY TRAIL  
 EAST GREENWICH, RHODE ISLAND

**PREPARED FOR:**  
 RHODE ISLAND  
 ARMY NATIONAL GUARD  
 CONSTRUCTION and FACILITIES  
 MANAGEMENT OFFICE  
 705 NEW LONDON AVENUE  
 CRANSTON, RI 02920

**AERIAL MAP**

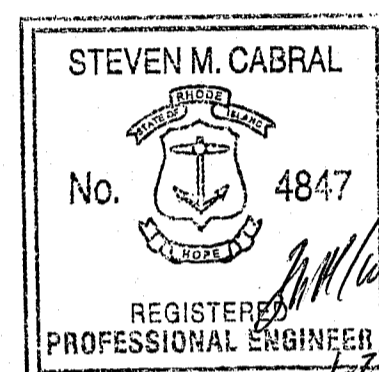
**DATE:** JUNE 2019  
**SCALE:** 1"=100'

**DWG. NAME:** 2338-C02-AERIAL.dwg

REVISIONS	NUMBER	REMARKS	DATE

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KEY PLAN



PROJECT TITLE:

**CAMP FOGARTY  
ARNOLD ROAD  
WIDENING PROJECT**

2841 SOUTH COUNTY TRAIL  
EAST GREENWICH, RHODE ISLAND

APPLICANT:

**RHODE ISLAND  
ARMY NATIONAL GUARD**

**CONSTRUCTION and FACILITIES  
MANAGEMENT OFFICE**

705 NEW LONDON AVENUE  
CRANSTON, RI 02920

DRAWING TITLE:

**EXISTING CONDITIONS PLAN**

DATE: JUNE 2019	SCALE: 1"=20'
DWG. NAME: 2338-C03-EXCN.dwg	

REVISIONS	NUMBER	REMARKS	DATE
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DRAWING NUMBER

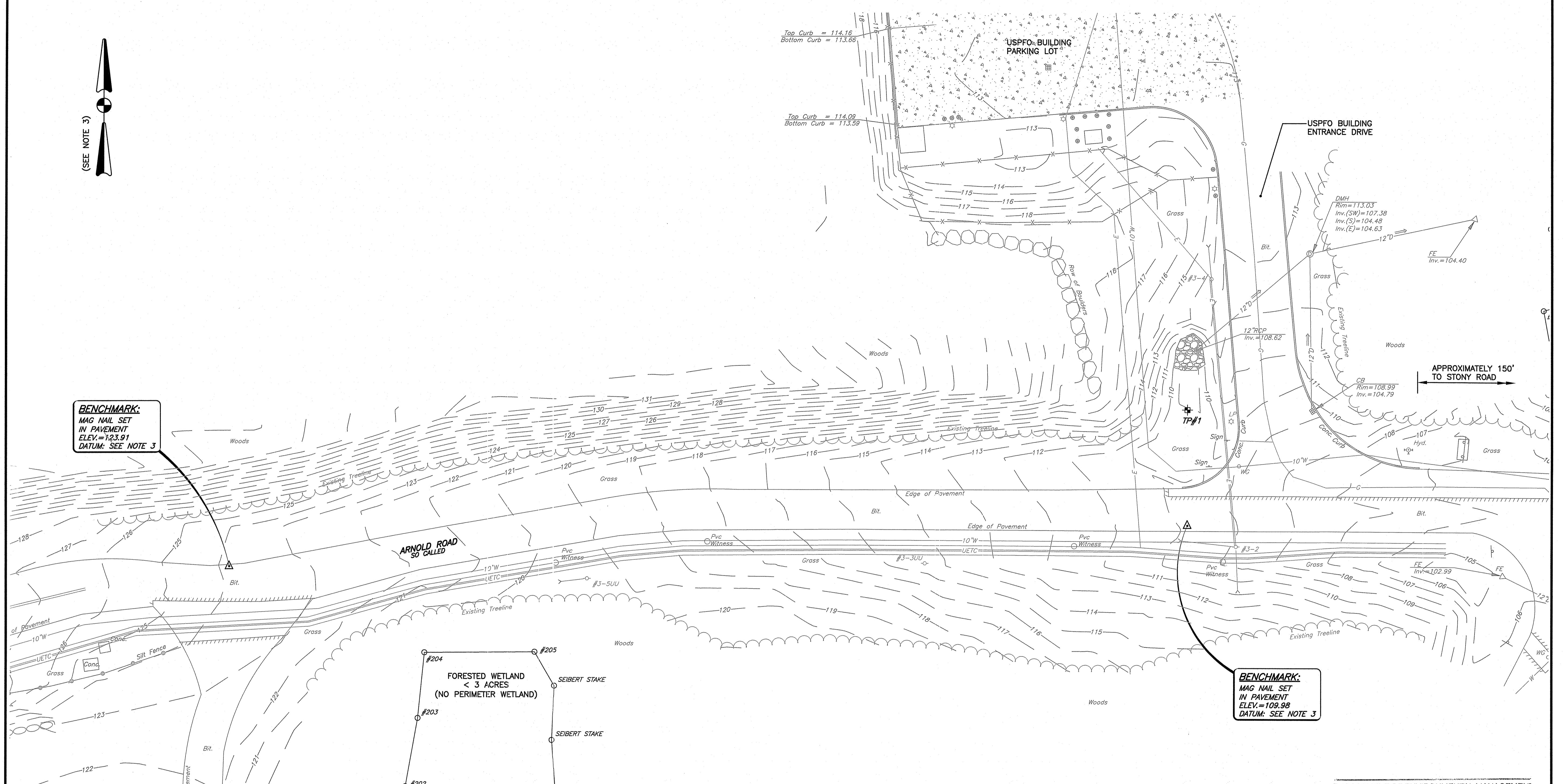
**C3**

SHEET: 4 OF 10



**BENCHMARK:**  
MAG NAIL SET  
IN PAVEMENT  
ELEV.=123.91  
DATUM: SEE NOTE 3

**BENCHMARK:**  
MAG NAIL SET  
IN PAVEMENT  
ELEV.=109.98  
DATUM: SEE NOTE 3



**CERTIFICATION:**

THIS SURVEY HAS BEEN CONDUCTED AND THE PLAN HAS BEEN PREPARED PURSUANT TO SECTION 9 OF THE RULES AND REGULATIONS ADOPTED BY THE RHODE ISLAND STATE BOARD OF REGISTRATION FOR PROFESSIONAL LAND SURVEYORS ON NOVEMBER 25, 2015, AS FOLLOWS:

(a.) TYPE OF BOUNDARY SURVEY	MEASUREMENT SPECIFICATION
-THIS IS NOT A BOUNDARY SURVEY	NOT APPLICABLE
(b.) OTHER TYPE OF SURVEY	MEASUREMENT SPECIFICATION
-DATA ACCUMULATION SURVEY	CLASS III
-TOPOGRAPHICAL SURVEY	CLASS III
-TOPOGRAPHIC SURVEY ACCURACY	CLASS T-1

(c.) STATEMENT OF PURPOSE

THE PURPOSE FOR THE CONDUCT OF THE SURVEY AND FOR PREPARATION OF THE PLAN IS FOR ENGINEERING DESIGN BY CROSSMAN ENGINEERING ONLY.

BY: \_\_\_\_\_  
 PLS: CROSSMAN ENGINEERING MARK D. BOYER #1888  
 COA: CROSSMAN ENGINEERING #A257

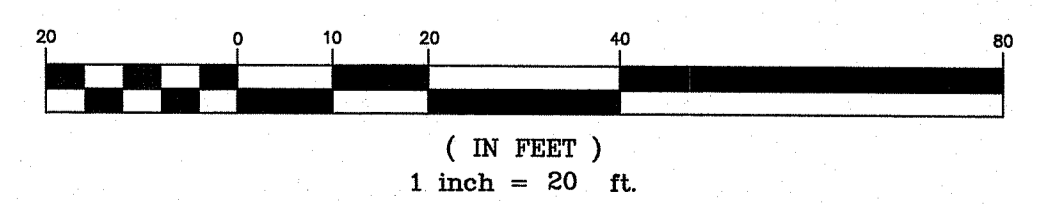
**NOTES**

- EXISTING CONDITIONS HAVE BEEN COMPILED FROM FIELD SURVEY WORK PERFORMED BY CROSSMAN ENGINEERING BETWEEN JANUARY AND APRIL OF 2019.
- UTILITY NOTE: THE UTILITIES INFORMATION SHOWN HEREON MUST BE VERIFIED IN THE FIELD PRIOR TO ANY EXCAVATION OR CONSTRUCTION ON THIS SITE. THE CONTRACTOR OR USERS OF THIS PLAN SHOULD CONTACT DIGSAFE PRIOR TO ANY WORK. CROSSMAN ENGINEERING ASSUMES NO RESPONSIBILITY FOR THE ACCURACY OR COMPLETENESS OF THE INFORMATION SHOWN.
- THE HORIZONTAL DATUM IS THE RHODE ISLAND STATE PLANE COORDINATE SYSTEM (NAD83) AND THE VERTICAL DATUM IS NAVD 88 UTILIZING GPS RTK NETWORK CONTROL.
- WETLAND FLAGS DELINEATED BY APPLIED BIO-SYSTEMS, INC. ON APRIL 10, 2019 AND JUNE 19, 2019 AND FIELD LOCATED BY CROSSMAN ENGINEERING.
- THE PURPOSE OF THIS PLAN IS TO SHOW EXISTING CONDITIONS FOR ENGINEERING DESIGN BY CROSSMAN ENGINEERING.

DEPARTMENT OF ENVIRONMENTAL MANAGEMENT  
OFFICE OF WATER RESOURCES  
FRESHWATER WETLANDS PROGRAM  
APPROVED WITH CONDITIONS

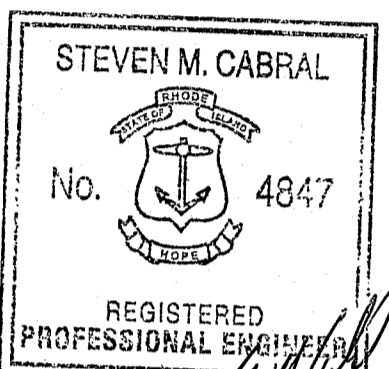
AS SPECIFIED IN THE LETTER OF APPROVAL  
DATED AUG 29 2019 FILE # 19-0203  
NO CHANGES ALLOWED WITHOUT PRIOR APPROVAL  
APPROVED PLANS MUST BE AT CONSTRUCTION SITE  
*Nancy L. Freeman*

GRAPHIC SCALE



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KEY PLAN



PROJECT TITLE:

**CAMP FOGARTY  
ARNOLD ROAD  
WIDENING PROJECT**

2841 SOUTH COUNTY TRAIL  
EAST GREENWICH, RHODE ISLAND

APPLICANT:

**RHODE ISLAND  
ARMY NATIONAL GUARD**

**CONSTRUCTION and FACILITIES  
MANAGEMENT OFFICE**

705 NEW LONDON AVENUE  
CRANSTON, RI 02920

DRAWING TITLE:

**SITE LAYOUT PLAN**

DATE: JUNE 2019 SCALE: 1"=20'

DWG. NAME: 2338-C04-SITE.dwg

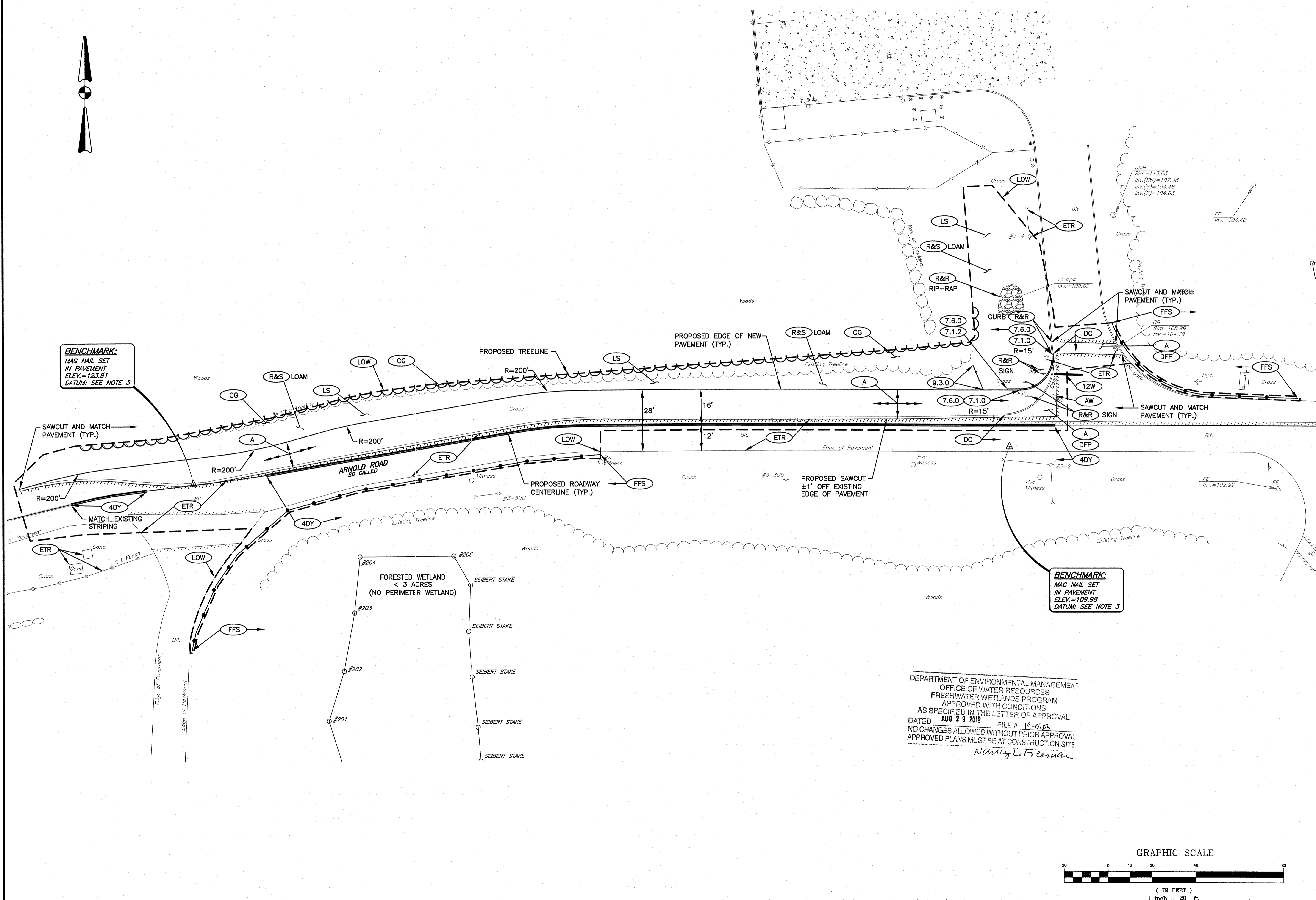
REVISIONS

NUMBER	REMARKS	DATE

DRAWING NUMBER

**C4**

SHEET: 5 OF 10

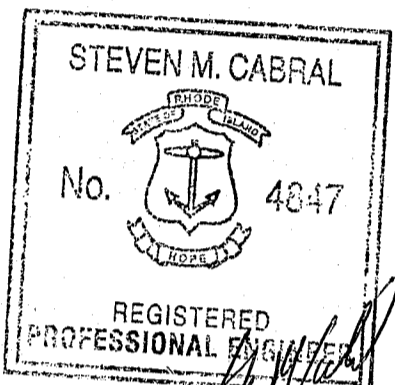


**CROSSMAN ENGINEERING**

Rhode Island: 151 Centerville Road, Warwick, RI 02886  
 Massachusetts: 103 Commonwealth Avenue, North Attleboro, MA 02763  
 Phone: (401) 738-5660    Phone: (508) 695-1700  
 Email: cel@grossmaneng.com

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KEY PLAN



PROJECT TITLE:

**CAMP FOGARTY  
ARNOLD ROAD  
WIDENING PROJECT**

2841 SOUTH COUNTY TRAIL  
EAST GREENWICH, RHODE ISLAND

APPLICANT:

**RHODE ISLAND  
ARMY NATIONAL GUARD**  
**CONSTRUCTION and FACILITIES  
MANAGEMENT OFFICE**  
 705 NEW LONDON AVENUE  
 CRANSTON, RI 02920

DRAWING TITLE:

**GRADING and DRAINAGE  
PLAN**

DATE: JUNE 2019    SCALE: 1"=20'

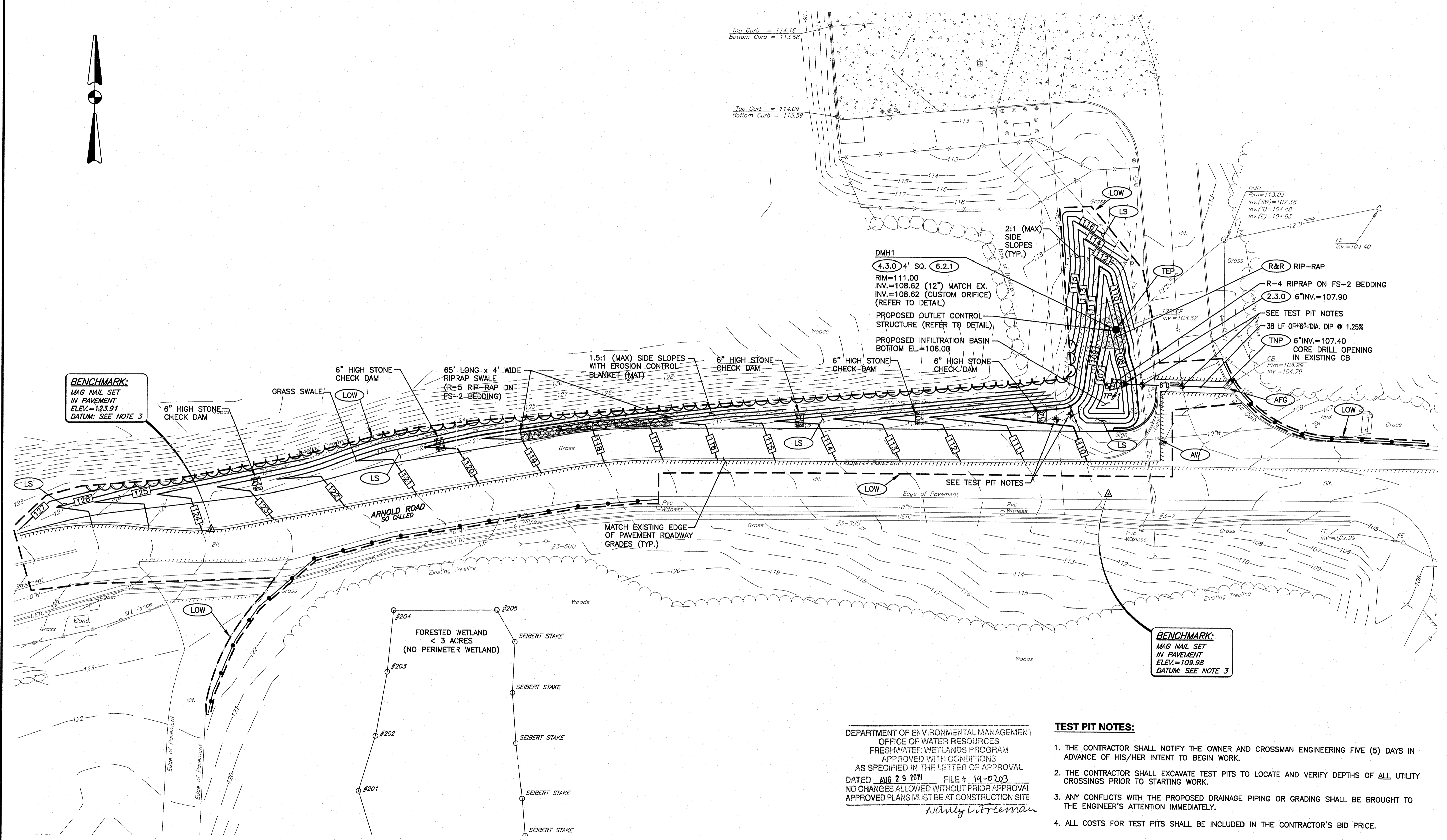
DWG. NAME: 2338-C05-GRADE.dwg

REVISIONS		
NUMBER	REMARKS	DATE

DRAWING NUMBER

**C5**

SHEET: 6 OF 10



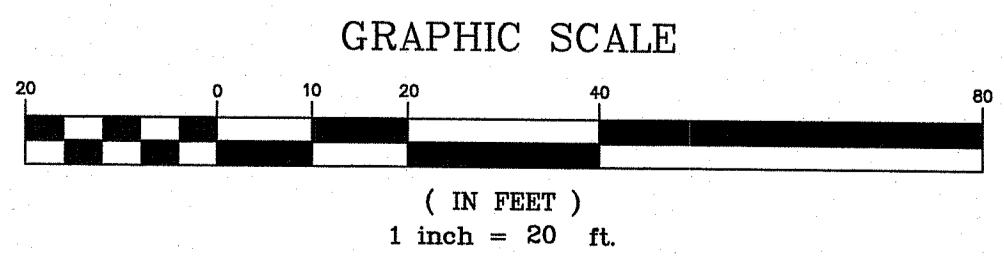
**BENCHMARK:**  
MAG NAIL SET  
ELEV.=123.91  
DATUM: SEE NOTE 3

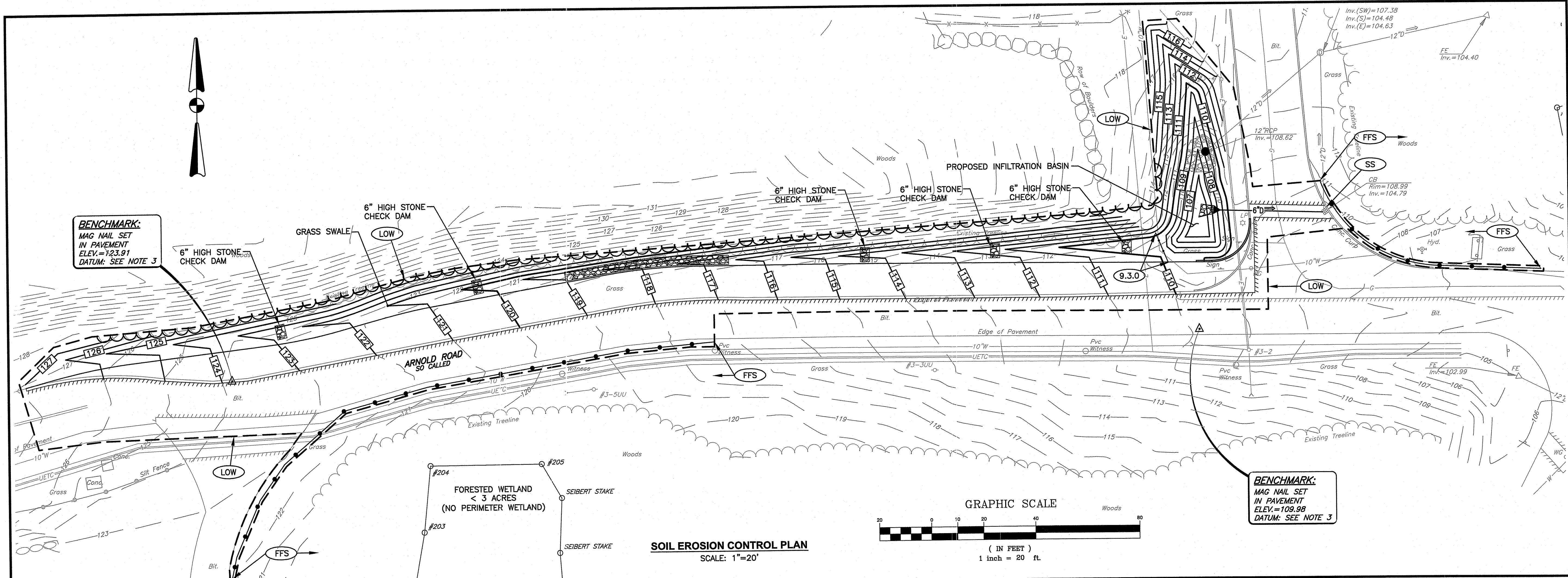
**BENCHMARK:**  
MAG NAIL SET  
ELEV.=109.98  
DATUM: SEE NOTE 3

DEPARTMENT OF ENVIRONMENTAL MANAGEMENT  
 OFFICE OF WATER RESOURCES  
 FRESHWATER WETLANDS PROGRAM  
 APPROVED WITH CONDITIONS  
 AS SPECIFIED IN THE LETTER OF APPROVAL  
 DATED AUG 29 2019    FILE # 19-0263  
 NO CHANGES ALLOWED WITHOUT PRIOR APPROVAL  
 APPROVED PLANS MUST BE AT CONSTRUCTION SITE  
*Nancy L. Freeman*

**TEST PIT NOTES:**

1. THE CONTRACTOR SHALL NOTIFY THE OWNER AND CROSSMAN ENGINEERING FIVE (5) DAYS IN ADVANCE OF HIS/HER INTENT TO BEGIN WORK.
2. THE CONTRACTOR SHALL EXCAVATE TEST PITS TO LOCATE AND VERIFY DEPTHS OF ALL UTILITY CROSSINGS PRIOR TO STARTING WORK.
3. ANY CONFLICTS WITH THE PROPOSED DRAINAGE PIPING OR GRADING SHALL BE BROUGHT TO THE ENGINEER'S ATTENTION IMMEDIATELY.
4. ALL COSTS FOR TEST PITS SHALL BE INCLUDED IN THE CONTRACTOR'S BID PRICE.





**CROSSMAN ENGINEERING**  
 Rhode Island Massachusetts  
 151 Centerville Road 103 Commonwealth Avenue  
 Warwick, RI 02886 North Attleboro, MA 02763  
 Phone: (401) 738-5660 Phone: (508) 695-1700  
 Email: cel@crossmaneng.com

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KEY PLAN

STEVEN M. CABRAL  
 No. 4847  
 REGISTERED PROFESSIONAL ENGINEER

PROJECT TITLE:

**CAMP FOGARTY  
 ARNOLD ROAD  
 WIDENING PROJECT**

2841 SOUTH COUNTY TRAIL  
 EAST GREENWICH, RHODE ISLAND

APPLICANT:

**RHODE ISLAND  
 ARMY NATIONAL GUARD  
 CONSTRUCTION and FACILITIES  
 MANAGEMENT OFFICE**

705 NEW LONDON AVENUE  
 CRANSTON, RI 02920

DRAWING TITLE:

**SOIL EROSION and  
 SEDIMENT CONTROL PLAN**

DATE: JUNE 2019 SCALE: 1"=20'  
 DWG. NAME: 2338-C06-SOIL.dwg

REVISIONS	NUMBER	REMARKS	DATE
△	---	---	---

PROJECT DATA:  
 • LIMITS OF WORK = 0.6± ACRES  
 • LIMITS OF DISTURBANCE = 0.35± ACRES  
 • THE SITE IS NOT LOCATED WITHIN A RIDEM NATURAL HERITAGE AREA. (SOURCE: RIDEM)  
 • THE SITE IS NOT LOCATED WITHIN A WELLHEAD PROTECTION AREA. (SOURCE: R.I.D.E.M.)

DEPARTMENT OF ENVIRONMENTAL MANAGEMENT  
 OFFICE OF WATER RESOURCES  
 FRESHWATER WETLANDS PROGRAM  
 APPROVED WITH CONDITIONS  
 AS SPECIFIED IN THE LETTER OF APPROVAL  
 DATED AUG 29 2019 FILE # 19-0703  
 NO CHANGES ALLOWED WITHOUT PRIOR APPROVAL  
 APPROVED PLANS MUST BE AT CONSTRUCTION SITE

DRAWING NUMBER  
**C6**  
 SHEET: 7 OF 10

**EROSION CONTROL AND SOIL STABILIZATION PROGRAM**

- EXTREME CARE SHALL BE EXERCISED SO AS TO PREVENT ANY UNSUITABLE MATERIAL FROM ENTERING THE ROADWAY DRAINAGE SYSTEM, WETLAND AREAS, AND OUTSIDE THE LIMIT OF WORK.
- ALL PERIMETER EROSION CONTROLS SHALL BE INSTALLED PRIOR TO THE START OF CONSTRUCTION. PERIMETER EROSION CONTROLS ARE FILTREXX FILTER SOXX.
- DENUDED SLOPES SHALL NOT BE UNATTENDED OR EXPOSED FOR EXCESSIVE PERIODS OF TIME.
- ALL DISTURBED SLOPES, EITHER NEWLY CREATED OR EXPOSED PRIOR TO OCTOBER 15, SHALL BE SEEDED OR PROTECTED BY THAT DATE.
- TEMPORARY TREATMENTS SHALL CONSIST OF A HAY, STRAW OR FIBER MULCH OR PROTECTIVE COVERS, SUCH AS A MAT OR FIBER LINING (BURLAP, JUTE, FIBERGLASS NETTING, EXCELSIOR BLANKETS). THEY SHALL BE INCORPORATED INTO THE WORK AS WARRANTED OR AS ORDERED BY THE OWNER.
- STOCKPILES SHALL BE SURROUNDED WITH FILTREXX FILTER SOXX.
- HAY OR STRAW APPLICATIONS SHALL BE IN THE AMOUNT OF 3,000-4,000 LBS./ACRE.
- ALL FILTREXX FILTER SOXX SHALL REMAIN IN PLACE UNTIL AN ACCEPTABLE STAND OF GRASS OR APPROVED GROUND COVER IS ESTABLISHED AND POTENTIAL SEDIMENTATION SOURCES ARE REMOVED. ONCE THE AREAS HAVE AN ACCEPTABLE STAND OF GRASS OR APPROVED GROUND COVER, AND AFTER APPROVAL OF THE OWNER, THE CONTRACTOR SHALL REMOVE ALL FILTREXX FILTER SOXX.
- DURING CONSTRUCTION, THE CONTRACTOR SHALL BE RESPONSIBLE FOR ALL EROSION CONTROL MAINTENANCE AND SHALL INSPECT/REPLACE AS NEEDED.
- ADDITIONAL FILTREXX FILTER SOXX SHALL BE LOCATED AS CONDITIONS WARRANT OR AS DIRECTED BY THE ENGINEER, OWNER OR TOWN REPRESENTATIVES.
- THE CONTRACTOR SHALL BE RESPONSIBLE FOR PROVIDING DUST CONTROL AT NO ADDITIONAL COST.
- CATCH BASINS SHALL BE PROTECTED USING SILT SACKS WHERE NOTED ON THE PLANS.
- TEMPORARY DEWATERING BASINS SHALL BE UTILIZED AS REQUIRED. THE NUMBER AND SIZE OF DEWATERING BASINS REQUIRED WILL VARY DEPENDING ON SITE CONDITIONS.
- THE CONTRACTOR SHALL REFERENCE THE "R.I. SOIL EROSION AND SEDIMENT CONTROL HANDBOOK" PREPARED BY THE R.I. STATE CONSERVATION COMMITTEE, REVISED 2014, UPDATED 2016, MUST BE UTILIZED BY THE CONTRACTOR AS A GUIDE.
- THE CONTRACTOR MUST REFERENCE AND FOLLOW THE REQUIREMENTS AND RECOMMENDATIONS CONTAINED IN THE PROJECT'S SOIL EROSION AND SEDIMENT CONTROL PLAN (SESC). A COPY OF THE SESC PLAN SHALL BE KEPT ON-SITE AT ALL TIMES DURING CONSTRUCTION.

**DUST CONTROL NOTES**

ON AN AS-NEEDED BASIS OR AS DIRECTED BY THE OWNER OR ENGINEER, THE CONTRACTOR SHALL UTILIZE ONE OF THE FOLLOWING METHODS (AS RECOMMENDED BY THE "R.I. SOIL EROSION AND SEDIMENT CONTROL HANDBOOK", ISSUED 1989, REVISED 2014) TO CONTROL DUST:

A. THE EXPOSED SOIL SURFACE SHOULD BE MOISTENED PERIODICALLY WITH ADEQUATE WATER TO CONTROL DUST.

B. CALCIUM CHLORIDE SHOULD BE EITHER LOOSE DRY GRANULES OR FLAKES FINE ENOUGH TO FEED THROUGH A SPREADER AT A RATE THAT WILL KEEP SURFACE MOIST BUT NOT CAUSE POLLUTION OR PLANT DAMAGE.

THE METHODS SHOULD BE REPEATED AS NEEDED, AND SPECIAL ATTENTION MUST BE GIVEN TO THE ACCESS DRIVES.

**INSPECTION/MAINTENANCE NOTES**

- PRIOR TO COMMENCING GRUBBING OPERATIONS OR EARTHWORK, EROSION CONTROLS SHALL BE PLACED TO PREVENT SEDIMENT FROM ENTERING WETLAND AREAS, DRAINAGE SYSTEMS AND AREAS OUTSIDE THE LIMIT OF WORK.
- EXTREME CARE SHALL BE EXERCISED SO AS TO PREVENT ANY UNSUITABLE MATERIAL FROM ENTERING WETLAND AREAS AND THE DRAINAGE SYSTEMS.
- ALL DISTURBED AREAS WHICH BECOME SUBJECT TO EROSION TENDENCIES WHETHER THEY BE NEWLY FILLED OR EXCAVATED SHALL RECEIVE SLOPE PROTECTION - SUCH AS RIP-RAP.
- DURING CONSTRUCTION, THE CONTRACTOR SHALL BE RESPONSIBLE FOR MAINTAINING DRAINAGE AND RUNOFF FLOW DURING PERIODS OF RAINFALL. THE CONTRACTOR IS REQUIRED TO PROTECT HIS/HER WORK FROM DAMAGE DURING ALL STORM EVENTS. THE CONTRACTOR IS RESPONSIBLE FOR THE COST OF REPAIRING ALL STORM DAMAGE.
- DURING CONSTRUCTION, THE CONTRACTOR SHALL BE RESPONSIBLE FOR ALL EROSION CONTROL MAINTENANCE AND SHALL INSPECT / REPLACE DAILY DURING CONSTRUCTION, FOLLOWING RAINFALL AND WEEKLY DURING NON CONSTRUCTION PERIODS.
- ADDITIONAL EROSION CONTROLS SHALL BE LOCATED AS CONDITIONS WARRANT OR AS DIRECTED BY THE OWNER OR ENGINEER.
- THE "R.I. SOIL EROSION AND SEDIMENT CONTROL HANDBOOK" PREPARED BY THE R.I. STATE CONSERVATION COMMITTEE, REVISED 2014, UPDATED 2016, MUST BE UTILIZED BY THE CONTRACTOR AS A GUIDE.
- THE CONTRACTOR IS RESPONSIBLE FOR ALL DUST CONTROL AND FOR THE ENTIRE PROJECT DURATION, INCLUDING TEMPORARY SHUT-DOWN PERIODS, MUST MONITOR AND REPAIR, AS NEEDED, ALL SLOPES TO ENSURE A STABLE PRODUCT.
- AFTER CONSTRUCTION, THE CONTRACTOR SHALL PROVIDE THE OWNER WITH THE INSPECTION REPORTS THAT WERE TAKEN DURING THE CONSTRUCTION ACTIVITIES. THE OWNER IS TO RETAIN THE INSPECTION REPORTS FOR FIVE (5) YEARS FROM THE DATE ON THE REPORT OR APPLICATION.

**GENERAL PROJECT WIDE NOTES**

- EROSION CONTROLS SHALL BE INSTALLED PRIOR TO THE COMMENCEMENT OF CONSTRUCTION, MAINTAINED ON A REGULAR BASIS, AND SHALL BE PLACED TO PREVENT SEDIMENTATION INTO DRAINAGE SYSTEMS AND WETLANDS.
- THE CONTRACTOR MUST REPLACE AND/OR RESEED ANY VEGETATION THAT DOES NOT DEVELOP/SURVIVE WITHIN THE PERIOD OF ONE (1) YEAR AND HE/SHE SHALL DO SO AT NO ADDITIONAL EXPENSE TO THE OWNER.
- ALL EROSION CONTROLS OR TEMPORARY PROTECTION SHALL REMAIN IN PLACE UNTIL AN ACCEPTABLE STAND OF GRASS OR APPROVED GROUND COVER IS ESTABLISHED AND POTENTIAL SEDIMENTATION SOURCES ARE REMOVED.
- TREES AND OTHER EXISTING VEGETATION SHALL BE RETAINED WHENEVER FEASIBLE; THE AREA BEYOND THE DRIPLINE SHALL BE FENCED OR ROPED OFF TO PROTECT TREES FROM CONSTRUCTION EQUIPMENT.
- AREAS DAMAGED DURING CONSTRUCTION SHALL BE RESEDED, RESEED, OR OTHERWISE RESTORED AT THE CONTRACTOR'S EXPENSE.
- THE CONTRACTOR IS RESPONSIBLE TO KEEP THE SITE CLEAN OF TRASH. RECOMMENDED DAILY PATROL OF THE CONSTRUCTION SHOULD BE CONDUCTED TO PICK-UP TRASH. THE OPERATOR SHALL REQUIRE THE CONTRACTOR TO HAVE PORTABLE SANITARY FACILITIES ON SITE. ROUTINE CLEANING AND WASTE DISPOSAL OF THESE PORTABLE SANITARY FACILITIES IS REQUIRED.

**NOTES:**

- CONTRACTOR SHALL INSTALL TEMPORARY MEASURES SUCH AS: FIBER MATTING, CRUSHED STONE, RIP RAP, HAY OR STRAW IN AREAS WHERE SLOPES OR STABILIZATION HAS FAILED.
- CONTRACTOR SHALL INSTALL SILT SACK OR APPROVED EQUAL IN ALL CATCH BASINS AND DROP INLETS WITHIN THE LIMIT OF WORK AND IN ADJACENT AREAS DOWNGRADIENT OF WORK. REMOVE AFTER CONSTRUCTION. REFER TO SOIL EROSION CONTROL PLAN ABOVE FOR LOCATIONS OF SILT SACKS WITHIN CATCH BASINS.
- FILTREXX FILTER SOXX, AS SHOWN, SHALL BE INSTALLED AROUND THE PERIMETER OF THE AREA TO BE DISTURBED BY CONSTRUCTION AS NOTED ON THE PLANS. ADDITIONAL APPLICATIONS OF THESE CONTROLS MEASURES MAY BE REQUIRED DURING THE CONSTRUCTION PROCESS. THE CONTRACTOR SHALL INSPECT THE SITE AT A MINIMUM OF ONCE PER WEEK OR WITHIN 24 HOURS AFTER A STORM EVENT.
- IF EROSION OR EROSION TENDENCIES ARE APPARENT ON THE SITE, THE CONTRACTOR IS RESPONSIBLE TO INSTALL ADDITIONAL CONSTRUCTION BMP'S SUCH AS SAND BAGS AS DIRECTED BY THE OWNER, LOCAL MUNICIPALITY, STATE AGENCIES OR ENGINEER DURING CONSTRUCTION.
- IF SEDIMENT OR DEBRIS IS TRACKED ONTO EXISTING PRIVATE ROADWAYS ADJACENT TO THE CONSTRUCTION AREA, THE CONTRACTOR IS REQUIRED TO SWEEP THE PAVEMENT ON A DAILY BASIS. THE AREA SHALL BE INSPECTED DAILY.
- THE CONTRACTOR IS RESPONSIBLE TO KEEP THE SITE CLEAN OF TRASH. RECOMMENDED DAILY PATROL OF THE CONSTRUCTION SHOULD BE CONDUCTED TO PICK-UP TRASH. THE OPERATOR SHALL REQUIRE THE CONTRACTOR TO HAVE PORTABLE SANITARY FACILITIES ON SITE. ROUTINE CLEANING AND WASTE DISPOSAL OF THESE PORTABLE SANITARY FACILITIES IS REQUIRED.
- PROPOSED TEMPORARY STOCKPILE AREA SHALL NOT BE LOCATED WITHIN THE PROJECT LIMITS. STOCKPILE AREA SHALL BE LOCATED AT A LOCATION AS APPROVED BY THE OWNER. ANY STOCKPILES SHALL BE SURROUNDED BY EROSION CONTROLS (FILTREXX FILTER SOXX).

**ADDITIONAL CONTROLS:**

- ALL TYPES OF WASTE GENERATED AT THE SITE SHALL BE DISPOSED OF IN A MANNER CONSISTENT WITH ALL LOCAL, STATE AND FEDERAL REGULATIONS.
- THE CONTRACTOR IS REQUIRED TO NOTIFY LOCAL AUTHORITIES AND THE RHODE ISLAND DEPARTMENT OF ENVIRONMENTAL MANAGEMENT, OFFICE OF WASTE MANAGEMENT, OF ANY HAZARDOUS MATERIAL SPILL.
- THE CONTRACTOR IS REQUIRED TO MAINTAIN THE SITE IN AN ORDERLY AND CLEAN STATE. ALL CONSTRUCTION WASTE SHALL BE STORED IN APPROPRIATE CONTAINERS PRIOR TO REMOVAL AND CONTACT WITH PRECIPITATION SHALL BE KEPT TO A MINIMUM.
- GENERAL MAINTENANCE PROCEDURES ARE OUTLINED IN THE ACCOMPANYING SITE PLANS. IN ADDITION, THE OPERATOR AND CONTRACTOR ARE REQUIRED TO INSPECT ALL EROSION CONTROLS ON THE SITE AT LEAST ONCE EVERY SEVEN (7) CALENDAR DAYS AND WITHIN TWENTY-FOUR (24) HOURS AFTER A RAIN EVENT, WHICH GENERATES 0.25 INCHES OF RAIN IN A TWENTY-FOUR (24) HOUR PERIOD AND/OR AFTER A SIGNIFICANT AMOUNT OF RUNOFF.
- CONCRETE WASHOUT SHALL BE PERFORMED USING ONE OF THE METHODS LISTED IN SECTION 3 OF THE RI SOIL EROSION AND SEDIMENT CONTROL HANDBOOK. THE WASHOUT AREAS SHALL BE LOCATED OUTSIDE OF THE PROJECT LIMITS AND AWAY FROM ANY WETLAND AREAS OR BUFFER ZONES.
- VEHICLE AND EQUIPMENT WASHING ON-SITE DURING CONSTRUCTION IS NOT ALLOWED.
- A SPILL RESPONSE KIT SHALL BE KEPT ON SITE AT ALL TIMES DURING CONSTRUCTION.
- ALL STOCKPILE AND CONSTRUCTION VEHICLE MAINTENANCE AREAS SHALL BE LOCATED OUTSIDE OF THE PROJECT LIMITS AND AWAY FROM ANY WETLAND AREAS OR BUFFER ZONES.
- PAVEMENT SWEEPING SHALL OCCUR ON A DAILY BASIS AT THE END OF EACH CONSTRUCTION WORK DAY.

**SITE CONSTRUCTION SEQUENCE AND SCHEDULE:**

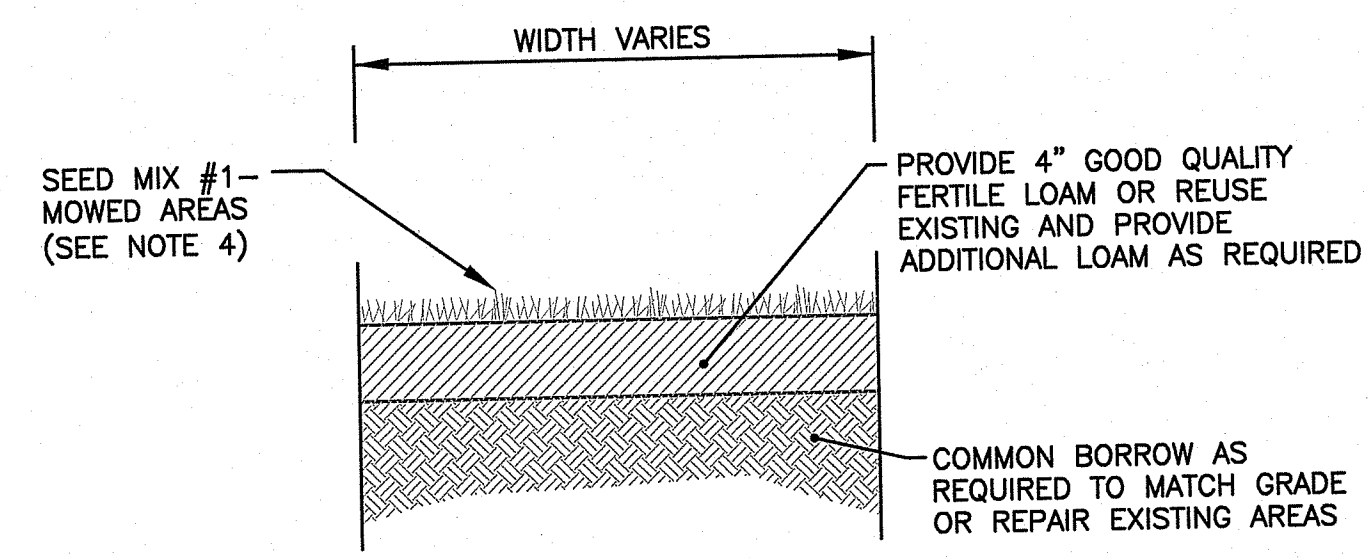
- SITE PREPARATION CONSISTING OF INSTALLING ALL EROSION AND SEDIMENT CONTROL MEASURES, SAWCUTTING AT LIMITS OF WORK, AND CLEARING AND GRUBBING.
- REMOVE AND DISPOSE CURB, REMOVE AND DISPOSE BITUMINOUS PAVEMENT, AND TOP SOIL STRIPPING AND STOCKPILING.
- ROUGH GRADING FOR THE ROADWAY WIDENING, THE GRASS SWALE AND THE INFILTRATION BASIN.
- INSTALLATION OF NEW DRAINAGE INCLUDING OUTLET CONTROL STRUCTURE, TYING EXISTING PIPE INTO NEW STRUCTURE, REMOVE AND DISPOSE BITUMINOUS PAVEMENT, REMOVE AND RESET CURB, TYING NEW PIPE INTO EXISTING STRUCTURE, INSTALLATION OF FLARED END SECTION AND RIP-RAP.
- TRIM AND FINE GRADE GRASS SWALE, INSTALLATION OF RIP-RAP SWALE AND STONE CHECK DAMS FOR PRETREATMENT AND DECREASING STORMWATER VELOCITIES TO PROPOSED INFILTRATION BASIN.
- TRIM AND FINE GRADE INFILTRATION BASIN AND NEW ROADWAY WIDENING AREA.
- INSTALLATION OF NEW CURB.
- INSTALLATION OF NEW BITUMINOUS CONCRETE PAVEMENT BASE COURSE.
- LOAM AND SEED ALL DISTURBED (BARE SOIL) AREAS WITHIN THE LIMITS OF DISTURBANCE.
- STABILIZE GRASS CHANNEL, INFILTRATION BASIN AND SLOPES WITH EROSION CONTROL BLANKET (MAT).
- CLEAN AND SWEEP BITUMINOUS PAVEMENT BASE COURSE IMMEDIATELY PRIOR TO FINAL PAVING.
- INSTALLATION OF NEW BITUMINOUS CONCRETE SURFACE COURSE.
- INSTALLATION OF FINAL PAVEMENT MARKINGS.
- ONCE SEEDED AREAS ARE STABILIZED, AND AFTER APPROVAL OF THE OWNER, REMOVE ALL EROSION CONTROLS.
- ESTIMATED DURATION OF SOIL EXPOSURE: JULY 2019 TO AUGUST 2019.

**PROJECT DATA:**

• LIMITS OF WORK = 0.6± ACRES  
 • LIMITS OF DISTURBANCE = 0.35± ACRES  
 • THE SITE IS NOT LOCATED WITHIN A RIDEM NATURAL HERITAGE AREA. (SOURCE: RIDEM)  
 • THE SITE IS NOT LOCATED WITHIN A WELLHEAD PROTECTION AREA. (SOURCE: R.I.D.E.M.)

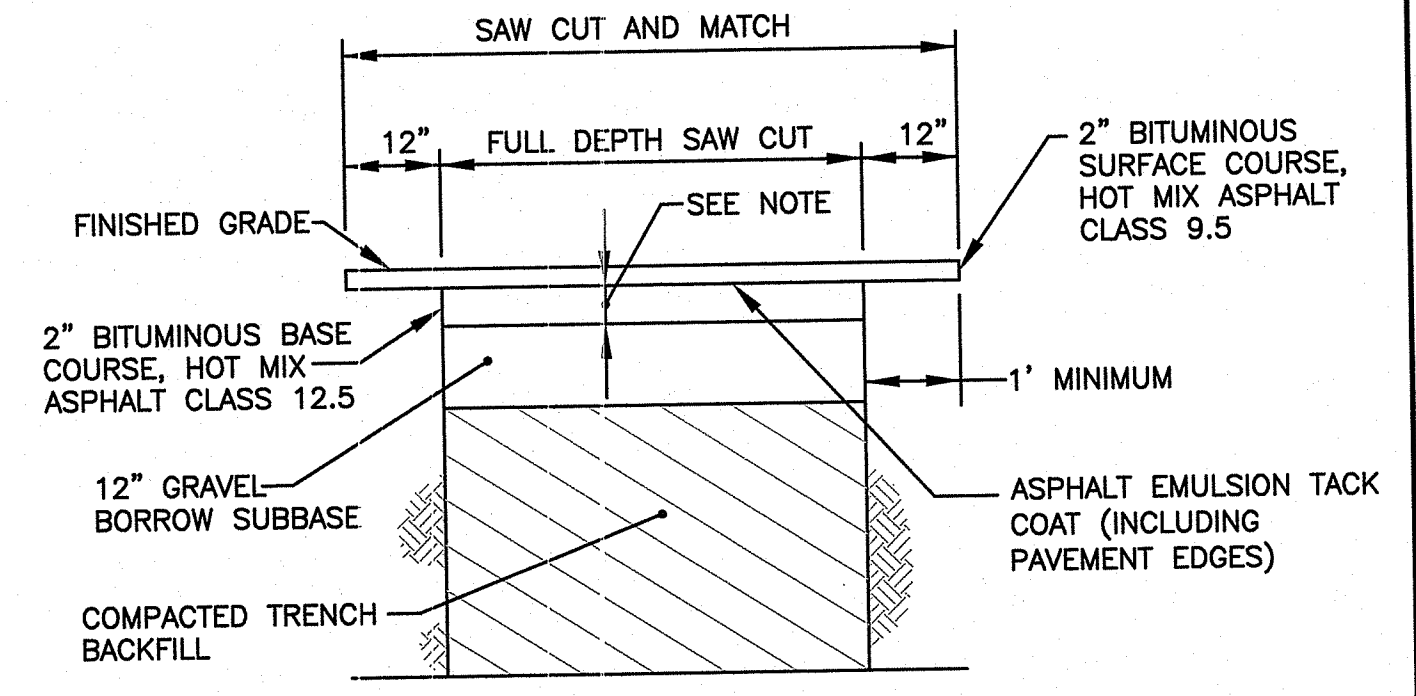
DEPARTMENT OF ENVIRONMENTAL MANAGEMENT  
 OFFICE OF WATER RESOURCES  
 FRESHWATER WETLANDS PROGRAM  
 APPROVED WITH CONDITIONS  
 AS SPECIFIED IN THE LETTER OF APPROVAL  
 DATED AUG 29 2019 FILE # 19-0703  
 NO CHANGES ALLOWED WITHOUT PRIOR APPROVAL  
 APPROVED PLANS MUST BE AT CONSTRUCTION SITE

*Walter L. Peterson*



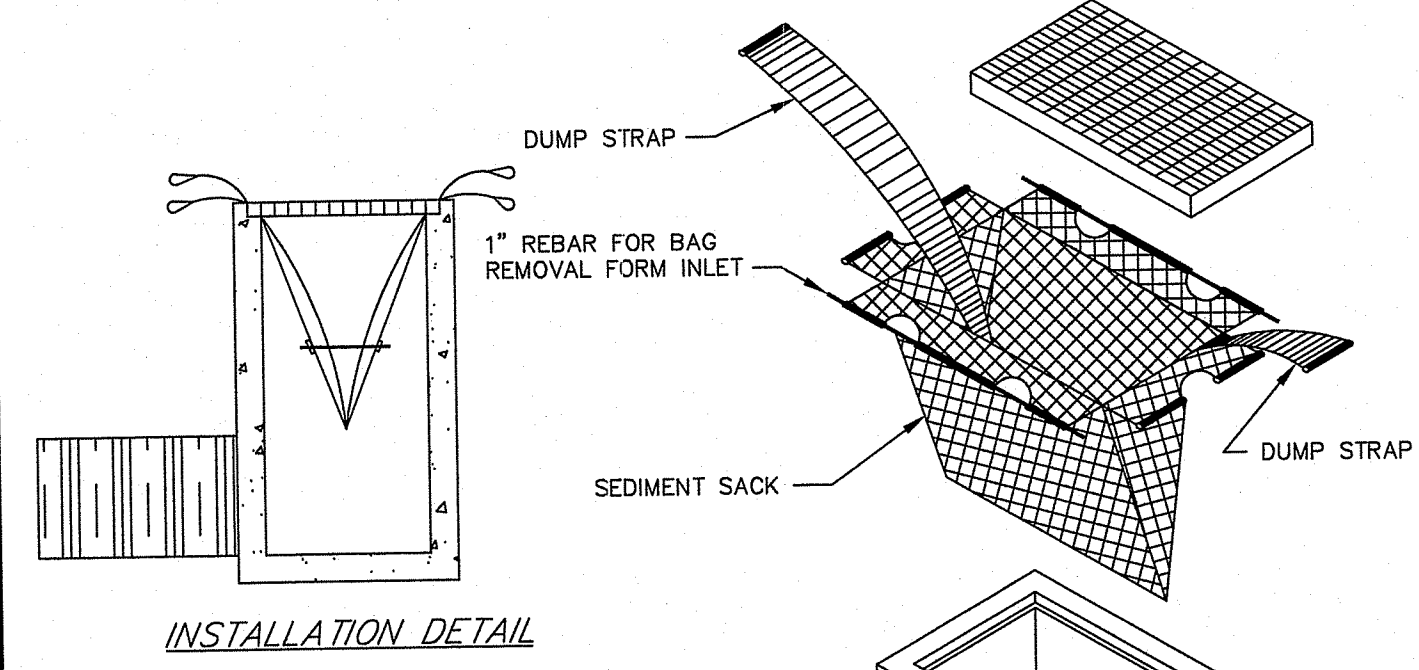
- NOTES:**
1. THE CONTRACTOR WILL BE RESPONSIBLE FOR WATERING DURING THE COURSE OF THE GROWING SEASON FOR A PERIOD OF ONE (1) YEAR.
  2. THE CONTRACTOR SHALL HAND ROLL ALL LOAM AREAS PRIOR TO SEEDING. THE FINAL COMPACTED DEPTH SHALL BE 4 INCHES. ANY AREAS THAT ARE SUBJECT TO EROSION TENDACIES SHALL RECEIVE AN EROSION CONTROL TREATMENT.
  3. THE ACCEPTABLE SEEDING DATES ARE FROM APRIL 1 TO MAY 31 AND AUGUST 15 TO OCTOBER 15.
  4. THE SEEDING RATE FOR SEED MIX #1 SHALL BE 7 POUNDS PER 1,000 SQUARE FEET.

**LS**  
**LOAM - SEED DETAIL**  
NOT TO SCALE



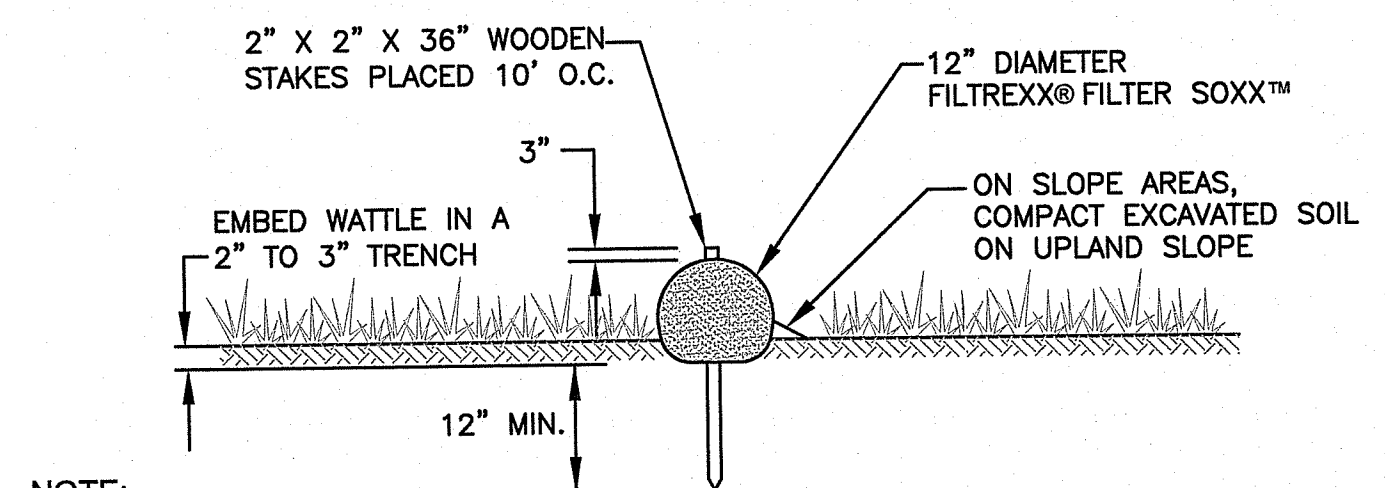
- NOTES:**
1. THE PAVEMENT DEPTH IN TRENCH AREAS FOR PROPOSED DRAINAGE AND UTILITY CONNECTIONS WITHIN ROADWAY SHALL BE REPLACED IN-KIND. BASE COURSE SHALL BE PLACED IN 2" MINIMUM LIFT AND 3" MAXIMUM LIFT. THE CONTRACTOR SHALL COORDINATE ALL PAVING OPERATIONS WITH THE OWNER OR ENGINEER PRIOR TO PLACEMENT.
  2. THE TRENCH BACKFILL TO BE COMPACTED TO 95% DRY DENSITY, MODIFIED PROCTOR METHOD.
  3. THE PAVEMENT THICKNESS OF 2" REPRESENTS THE MINIMUM IN-PLACE THICKNESS. STANDARD TOLERANCES DO NOT APPLY TO THESE VALUES. ANY PAVEMENT INSTALLED WHICH IS LESS THAN THE THICKNESS NOTED WILL NOT BE ACCEPTED.

**A**  
**TYPICAL PAVEMENT REPAIR DETAIL**  
NOT TO SCALE



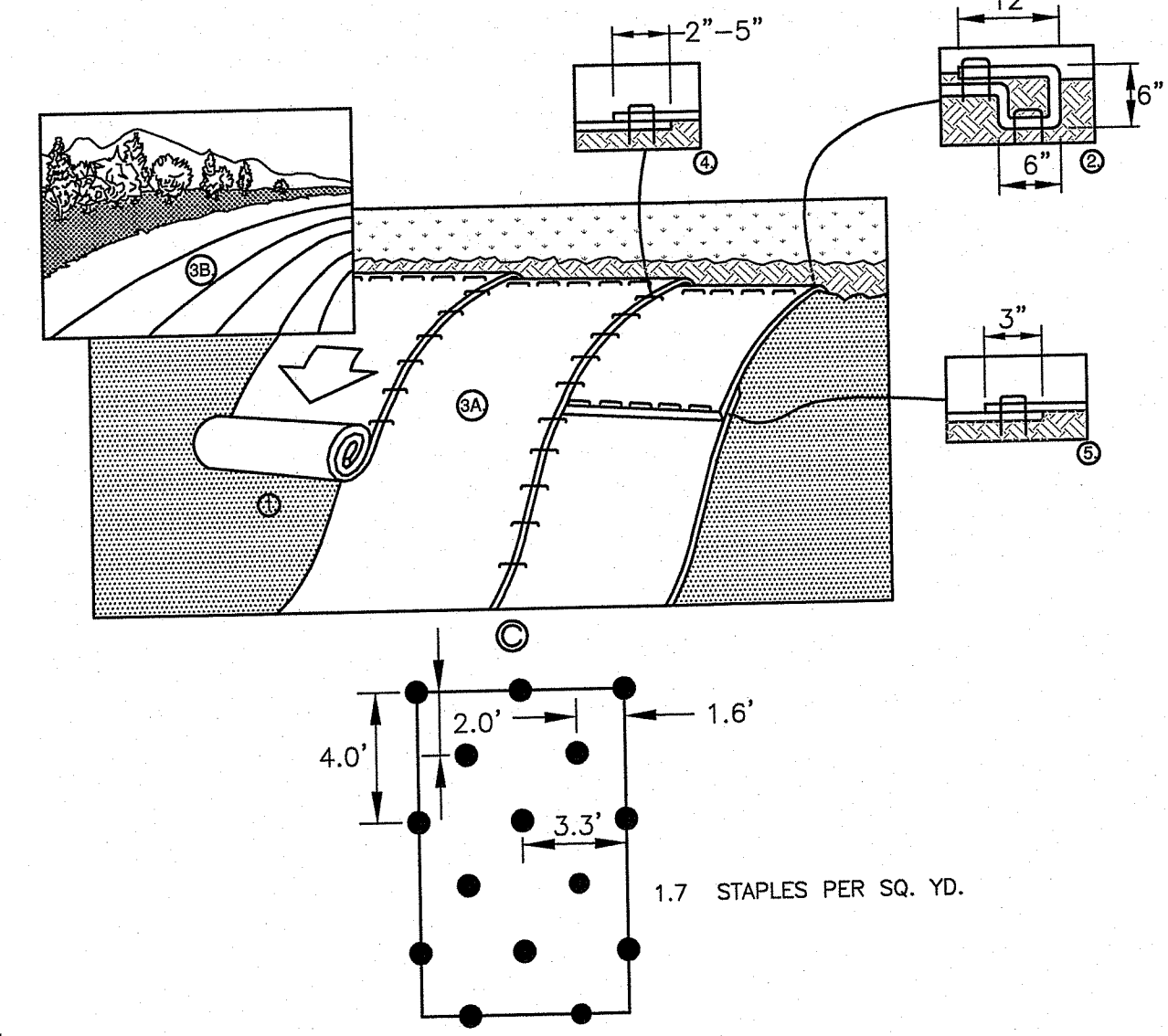
- NOTES:**
1. INSTALL SILT SACK AT CATCH BASINS IN VICINITY OF CONSTRUCTION.
  2. CONTRACTOR SHALL SUBMIT SILT SACK SHOP DRAWING TO ENGINEER FOR APPROVAL.
  3. A FLEX STORM INLET FILTER, AS MANUFACTURED BY ADS PIPE, MAY BE USED IN LIEU OF A SILT SACK. APPROVAL FROM THE ENGINEER IS REQUIRED.

**SS**  
**TYPICAL SILT SACK DETAIL**  
NOT TO SCALE



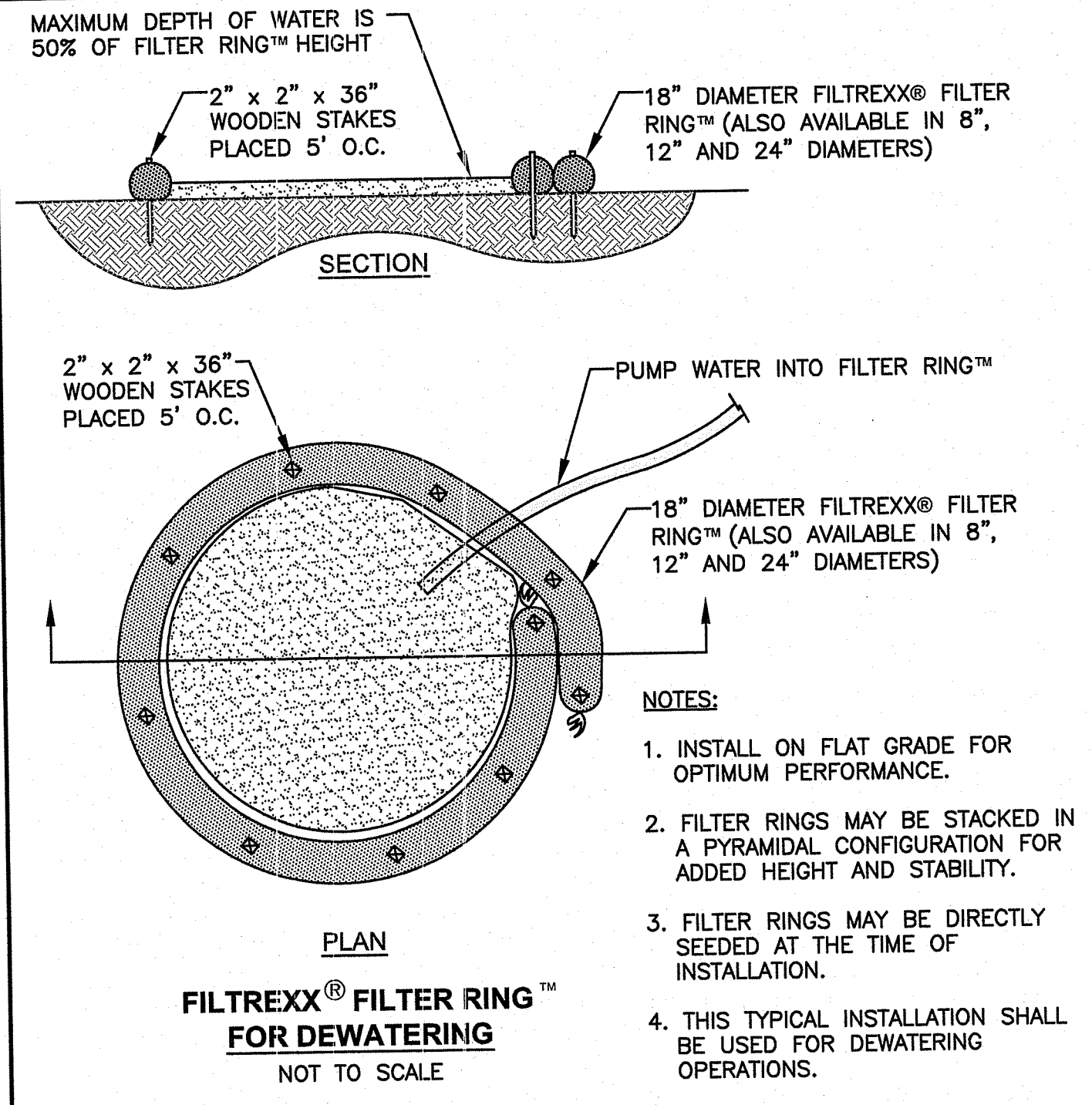
- NOTE:**
1. FILTERXX FILTER SOXX MAY BE USED IN LIEU OF SILT FENCE.
  2. CONTRACTOR IS RESPONSIBLE TO BECOME FAMILIAR WITH THE FILTERXX PRODUCTS AND COORDINATE INSTALLATION SCHEDULES AND METHODS WITH THE ENGINEER PRIOR TO PLACEMENT.
  3. ALL MATERIAL SHALL MEET FILTERXX SPECIFICATIONS.
  4. FILTERXX SOXX TO BE REMOVED AND DISPOSED FROM THE PROJECT AS DETERMINED BY ENGINEER OR OWNER.

**FFS**  
**PERIMETER EROSION CONTROL FILTERXX® FILTER SOXX™ DETAIL**  
NOT TO SCALE



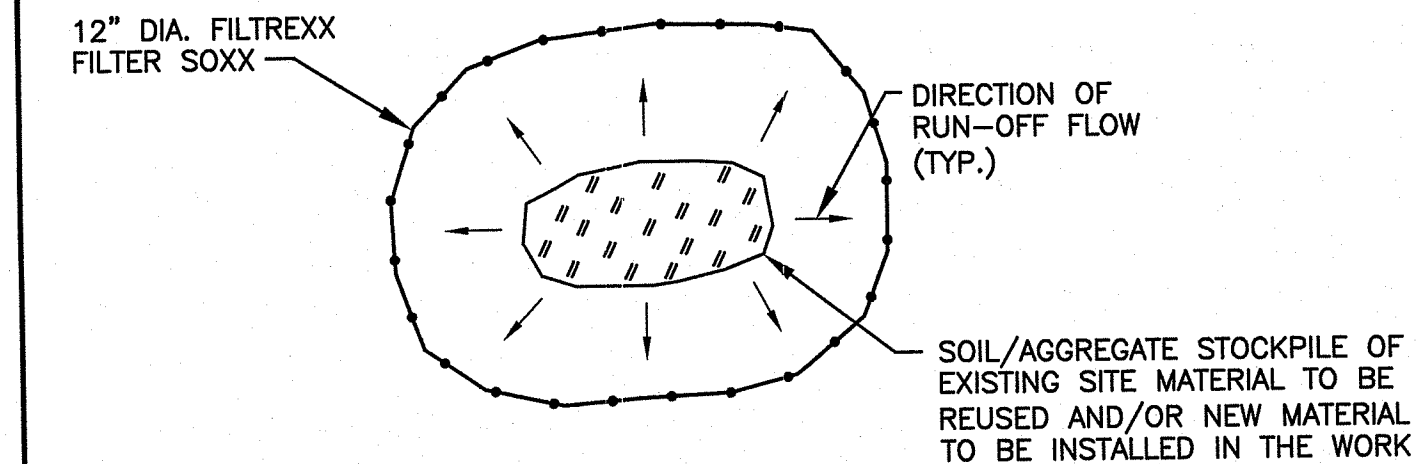
- NOTE:**
1. PREPARE SOIL BEFORE INSTALLING ROLLED EROSION CONTROL PRODUCTS (RECP'S), INCLUDING ANY NECESSARY APPLICATION OF LIME, FERTILIZER, AND SEED. NOTE: WHEN USING CELL-O-SEED DO NOT SEED PREPARED AREA. CELL-O-SEED MUST BE INSTALLED WITH PAPER SIDE DOWN.
  2. BEGIN AT THE TOP OF THE SLOPE BY ANCHORING THE RECP'S IN A 6" (15 CM) DEEP X 6" (15 CM) WIDE TRENCH WITH APPROXIMATELY 12" (30CM) OF RECP'S EXTENDED BEYOND THE UP-SLOPE PORTION OF THE TRENCH. ANCHOR THE RECP'S WITH A ROW OF STAPLES/STAKES APPROXIMATELY 12" (30 CM) APART IN THE BOTTOM OF THE TRENCH. BACKFILL AND COMPACT THE TRENCH AFTER STAPLING. APPLY SEED TO COMPACTED SOIL AND FOLD REMAINING 12" (30 CM) PORTION OF RECP'S BACK OVER SEED AND COMPACTED SOIL. SECURE RECP'S OVER COMPACTED SOIL WITH A ROW OF STAPLES/STAKES SPACED APPROXIMATELY 12" (30 CM) APART ACROSS THE WIDTH OF THE RECP'S.
  3. ROLL THE RECP'S (A.) DOWN OR (B.) HORIZONTALLY ACROSS THE SLOPE. RECP'S WILL UNROLL WITH APPROPRIATE SIDE AGAINST THE SOIL SURFACE. ALL RECP'S MUST BE SECURELY FASTENED TO SOIL SURFACE BY PLACING STAPLES/STAKES IN APPROPRIATE LOCATIONS AS SHOWN IN THE STAPLE PATTERN GUIDE. WHEN USING THE DOT SYSTEM™, STAPLES/STAKES SHOULD BE PLACED THROUGH EACH OF THE COLORED DOTS CORRESPONDING TO THE APPROPRIATE STAPLE PATTERN.
  4. THE EDGES OF PARALLEL RECP'S MUST BE STAPLED WITH APPROXIMATELY 2" - 5" (5 CM - 12.5 CM) OVERLAP DEPENDING ON RECP'S TYPE.
  5. CONSECUTIVE RECP'S SPICED DOWN THE SLOPE MUST BE PLACED END OVER END (SHINGLE STYLE) WITH AN APPROXIMATE 3" (7.5 CM) OVERLAP. STAPLE THROUGH OVERLAPPED AREA, APPROXIMATELY 12" (30 CM) APART ACROSS ENTIRE RECP'S WIDTH.
  6. ALL REQUIRED EROSION CONTROL BLANKET (MAT) OVERLAPS AND ANCHORS SHALL BE INCLUDED IN THE CONTRACTOR'S BID PRICE.

**EROSION CONTROL BLANKET (MAT) PERMANENT AND TEMPORARY INSTALLATION DETAIL**  
NOT TO SCALE



- NOTES:**
1. INSTALL ON FLAT GRADE FOR OPTIMUM PERFORMANCE.
  2. FILTER RINGS MAY BE STACKED IN A PYRAMIDAL CONFIGURATION FOR ADDED HEIGHT AND STABILITY.
  3. FILTER RINGS MAY BE DIRECTLY SEEDED AT THE TIME OF INSTALLATION.
  4. THIS TYPICAL INSTALLATION SHALL BE USED FOR DEWATERING OPERATIONS.

**FILTERXX® FILTER RING™ FOR DEWATERING**  
NOT TO SCALE



- NOTES:**
1. ALL EXISTING EXCAVATED MATERIAL THAT IS NOT TO BE REUSED IN THE WORK IS TO BE IMMEDIATELY LOADED AND HAULED TO A LOCATION AT CAMP FOGARTY AS DETERMINED BY THE OWNER, AT NO ADDITIONAL COST TO THE OWNER.
  2. SOIL/AGGREGATE STOCKPILE SITES TO BE WHERE SHOWN ON THE DRAWINGS.
  3. STOCKPILE HEIGHTS MUST NOT EXCEED 35'. STOCKPILE SLOPES MUST BE 2:1 OR FLATTER.

**MATERIAL STOCKPILE DETAIL**  
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 AUG 29, 2010 FILE # 14-0203  
NO CHANGES ALLOWED WITHOUT PRIOR APPROVAL  
APPROVED PLANS MUST BE AT CONSTRUCTION SITE  
*Nully L. Freeman*

**Crossman Engineering**  
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STEVEN M. GABRAL  
No. 4847  
REGISTERED PROFESSIONAL ENGINEER

PROJECT TITLE:  
**CAMP FOGARTY ARNOLD ROAD WIDENING PROJECT**  
2841 SOUTH COUNTY TRAIL  
EAST GREENWICH, RHODE ISLAND

PREPARED FOR:  
**RHODE ISLAND ARMY NATIONAL GUARD CONSTRUCTION AND FACILITIES MANAGEMENT OFFICE**  
705 NEW LONDON AVENUE  
CRANSTON, R.I.

DRAWING TITLE:  
**MISCELLANEOUS DETAILS PLAN No. 1**

DATE:	SCALE:
JUNE 2019	AS NOTED
DWG. NAME:	
2338-C07.1-DETAIL1.dwg	

REVISIONS	NUMBER	REMARKS	DATE
△			

DRAWING NUMBER  
**C7.1**  
SHEET: 8 OF 10

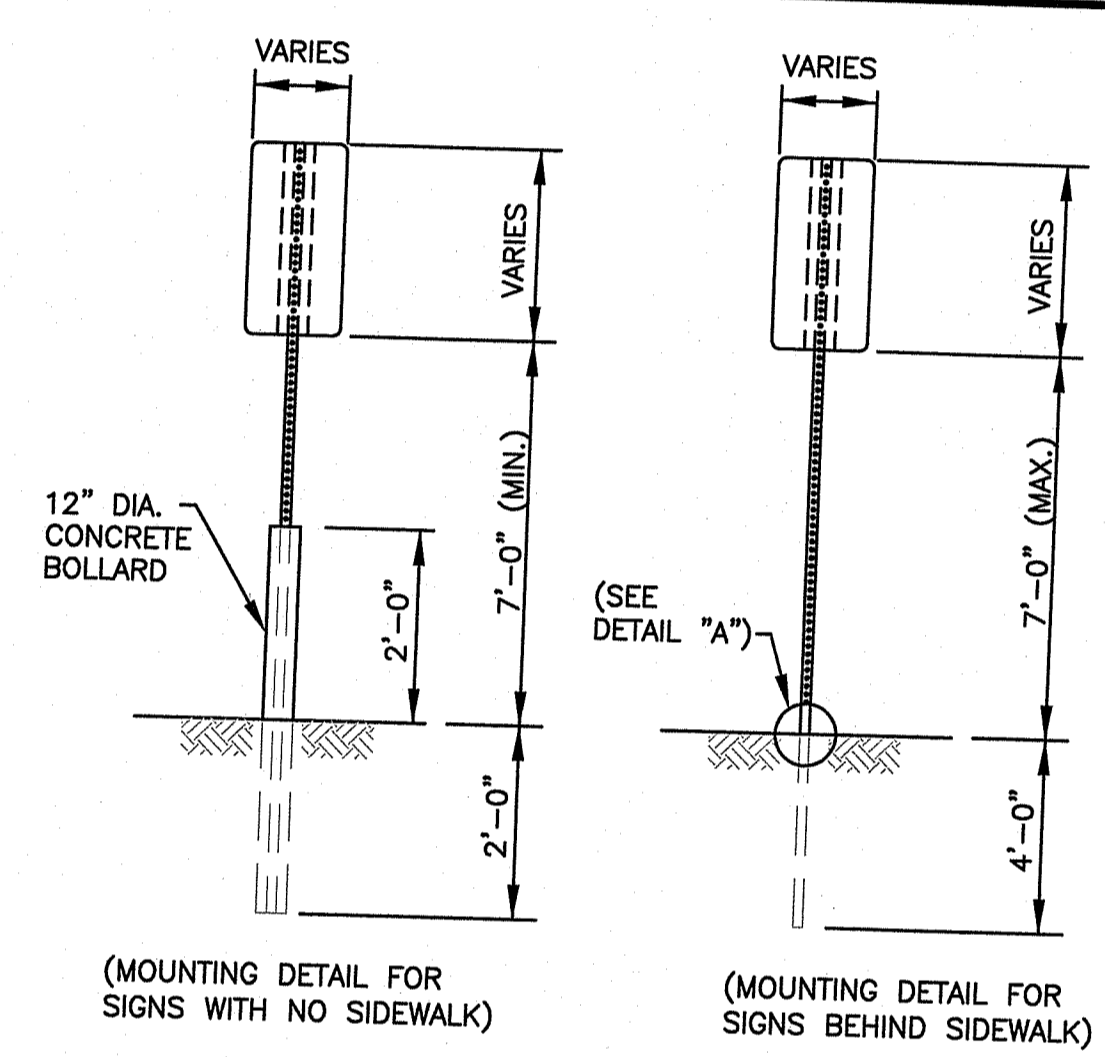


**SEED MIX #1 - MOWED AREAS  
BLACK BEAUTY ULTRA SEED MIX**

TYPE	% BY WEIGHT
DAKOTA TALL FESCUE	30
MONTANA TALL FESCUE	30
TONTO TALL FESCUE	20
KRYPTON KENTUCKY BLUEGRASS	10
FRONTIER PERENNIAL RYEGRASS	10

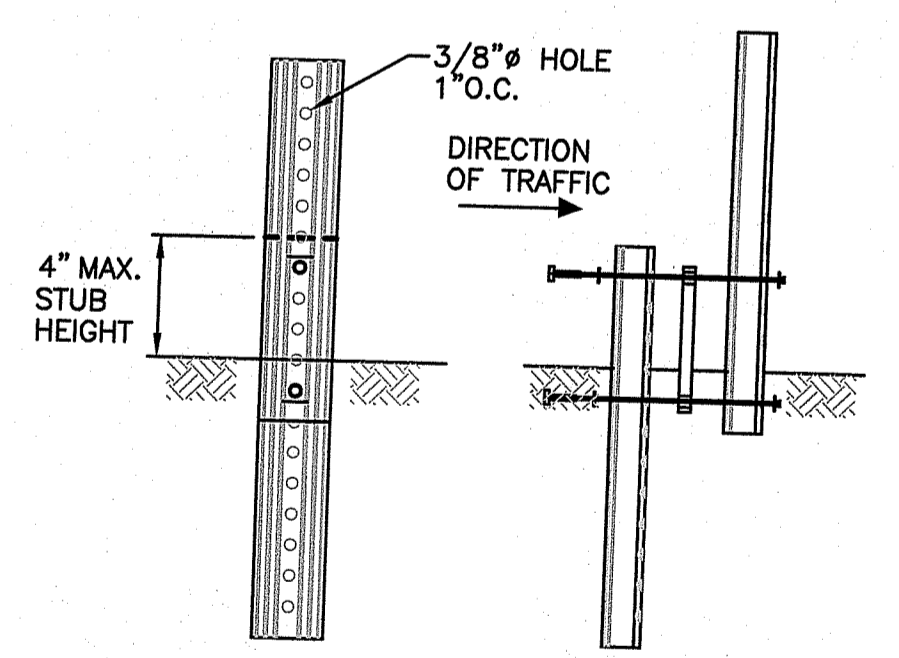
APPLICATION RATE = 7 LBS. / 1000 SF  
AVAILABLE FROM:  
JONATHAN GREEN, INC. • SEEDSMEN • POB 326  
• FARMINGDALE, NJ 07727

**SEED MIXTURE**  
NOT TO SCALE



**RECOMMENDED TORQUE VALUES:**  
BOLTS TO THREADED BAR SPACER  
20 FT. LBS.  
SELF-LOCKING FLANGE NUT TO BOLTS  
20 FT. LBS.

**TOP VIEW**

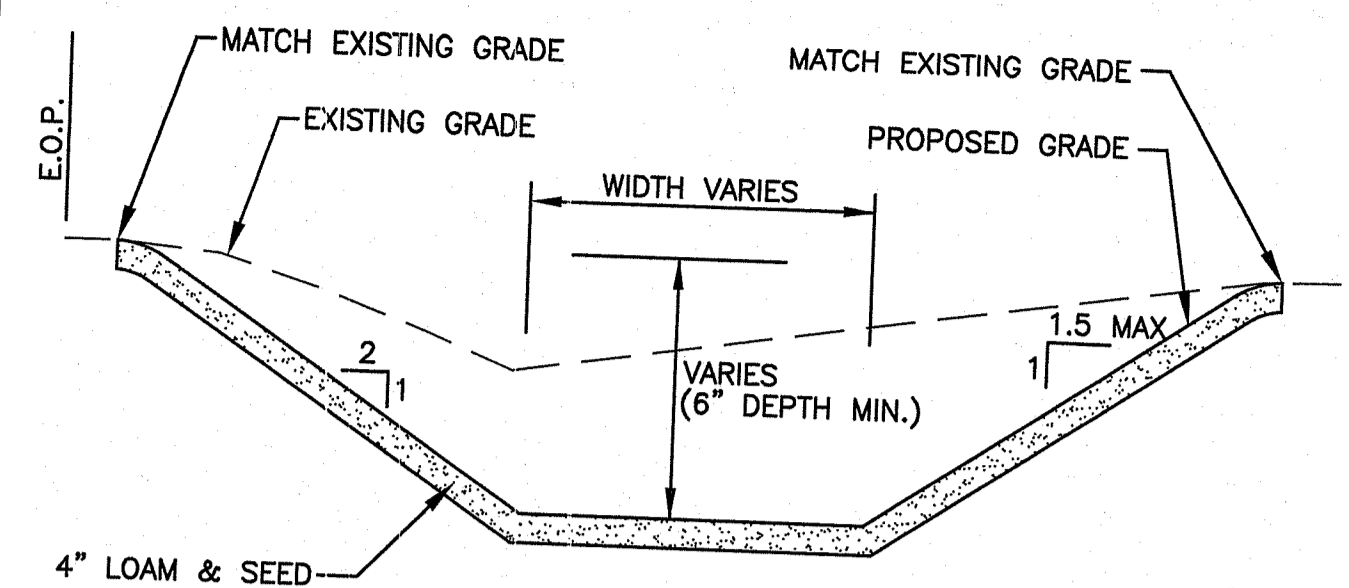


**FRONT VIEW RIGHT SIDE VIEW**  
**DETAIL "A"**

- INSTALLATION PROCEDURE:**
- REMOVE A SPADE FULL OF SOIL (APPROXIMATELY 2" DEEP) FROM WHERE THE BASE POST WILL BE LOCATED.
  - DRIVE THE BASE POST IN THE CENTER OF THE HOLE JUST CREATED, TO WITHIN 4" OF GRADE LEVEL.
  - PLACE ONE BOLT AND FLAT WASHER IN THE TOP HOLE OF THE BASE POST. (IF THE TOP HOLE ON THE BASE POST, OR THE BOTTOM HOLE ON THE TOP POST IS LESS THAN 3/4" FROM END OF THE POST USE THE SECOND AND SIXTH HOLES.) WITH THE THREADED BAR SPACER ALIGNED WITH TOP HOLE ON THE BACK SIDE OF THE BASE POST, SECURELY TIGHTEN THE BOLT TO 20 FT. LBS. OF TORQUE. REPEAT THIS PROCESS FOR THE LOWER BOLT.
  - NEST THE TOP POST OVER THE PROTRUDING BOLTS ON THE BASE POST. PLACE A SELF-LOCKING FLANGE NUT ON EACH BOLT AND TIGHTEN SECURELY TO 20 FT. LBS. OF TORQUE.
  - REPLACE SOIL REMOVED IN STEP 1.

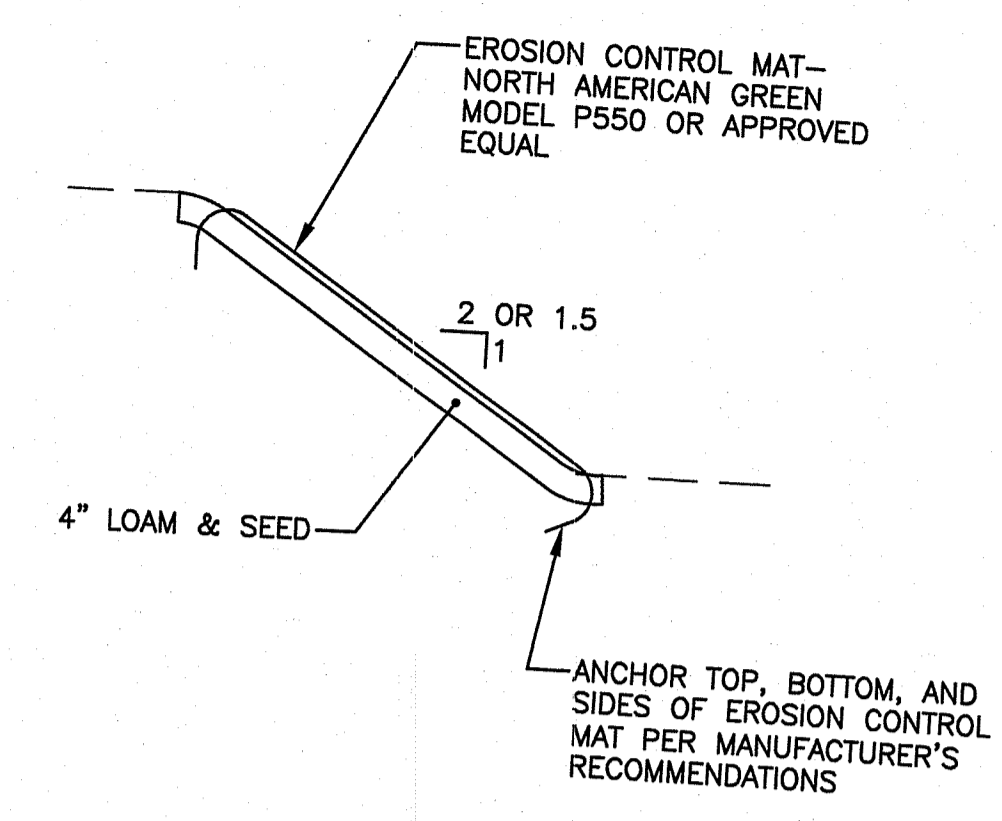
**NOTES:**  
1. SHALL BE IN ACCORDANCE WITH SECTION T.15 OF THE R.I. STANDARD SPECIFICATIONS.

**SIGN MOUNTING DETAIL**  
NOT TO SCALE

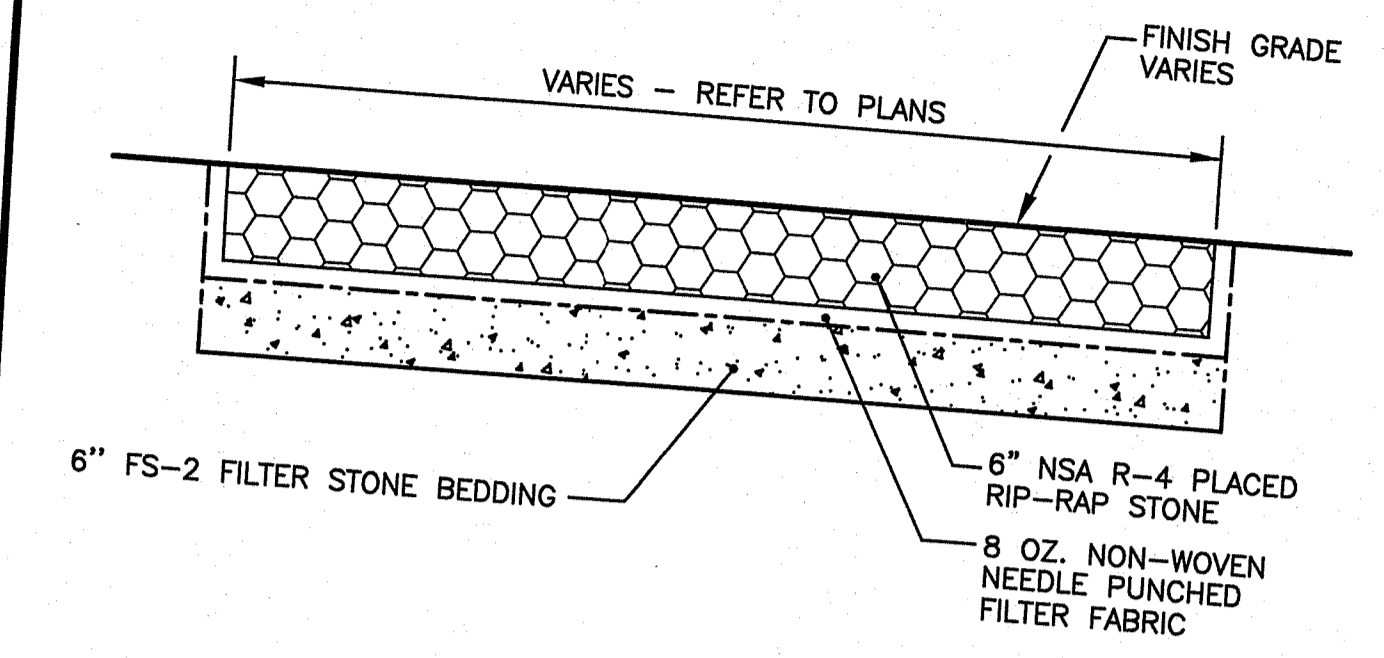


- NOTES:**
- THE CONTRACTOR SHALL HAND ROLL LOAM MATERIAL AFTER INSTALLATION AND PRIOR TO SEEDING.
  - THE CONTRACTOR SHALL INSTALL EROSION CONTROL FABRIC OVER ALL AREAS OF THE NEWLY SEEDDED GRASS SWALE.
  - REFER TO GRADING AND DRAINAGE PLAN FOR PROPOSED SIDE SLOPE.

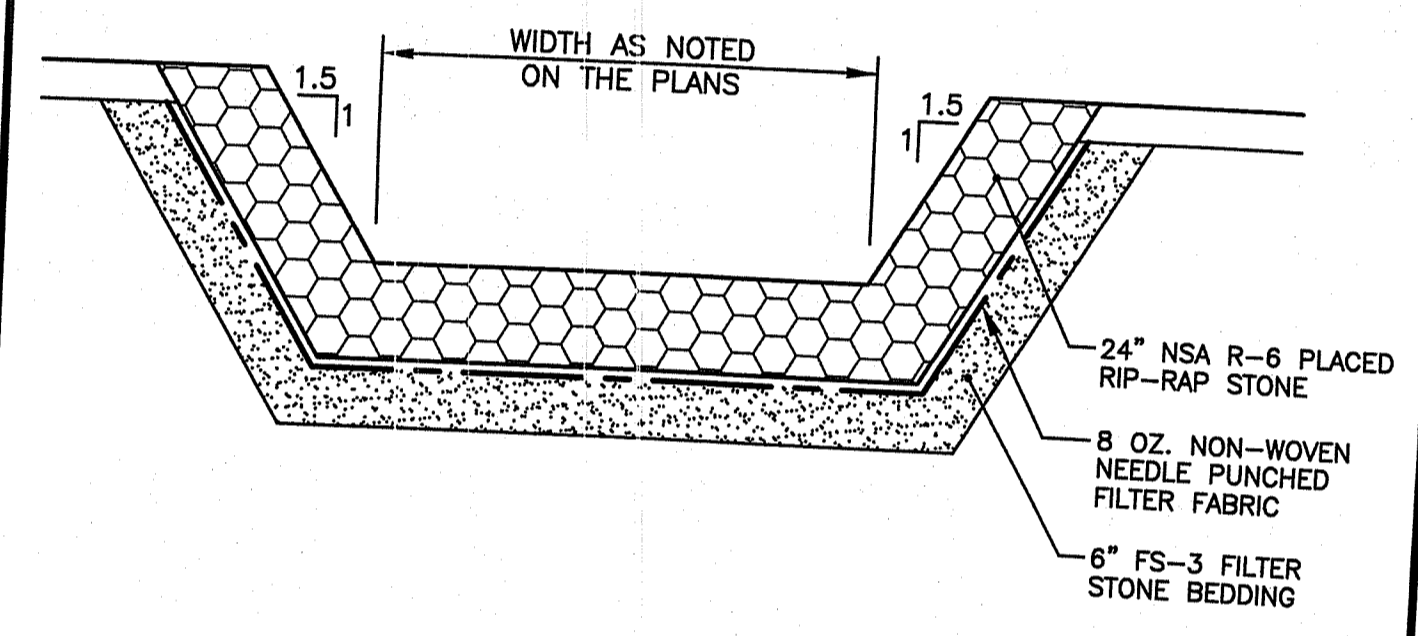
**GRASS SWALE TYPICAL SECTION**  
NOT TO SCALE



**2:1 GRASS SLOPE TYPICAL SECTION**  
NOT TO SCALE

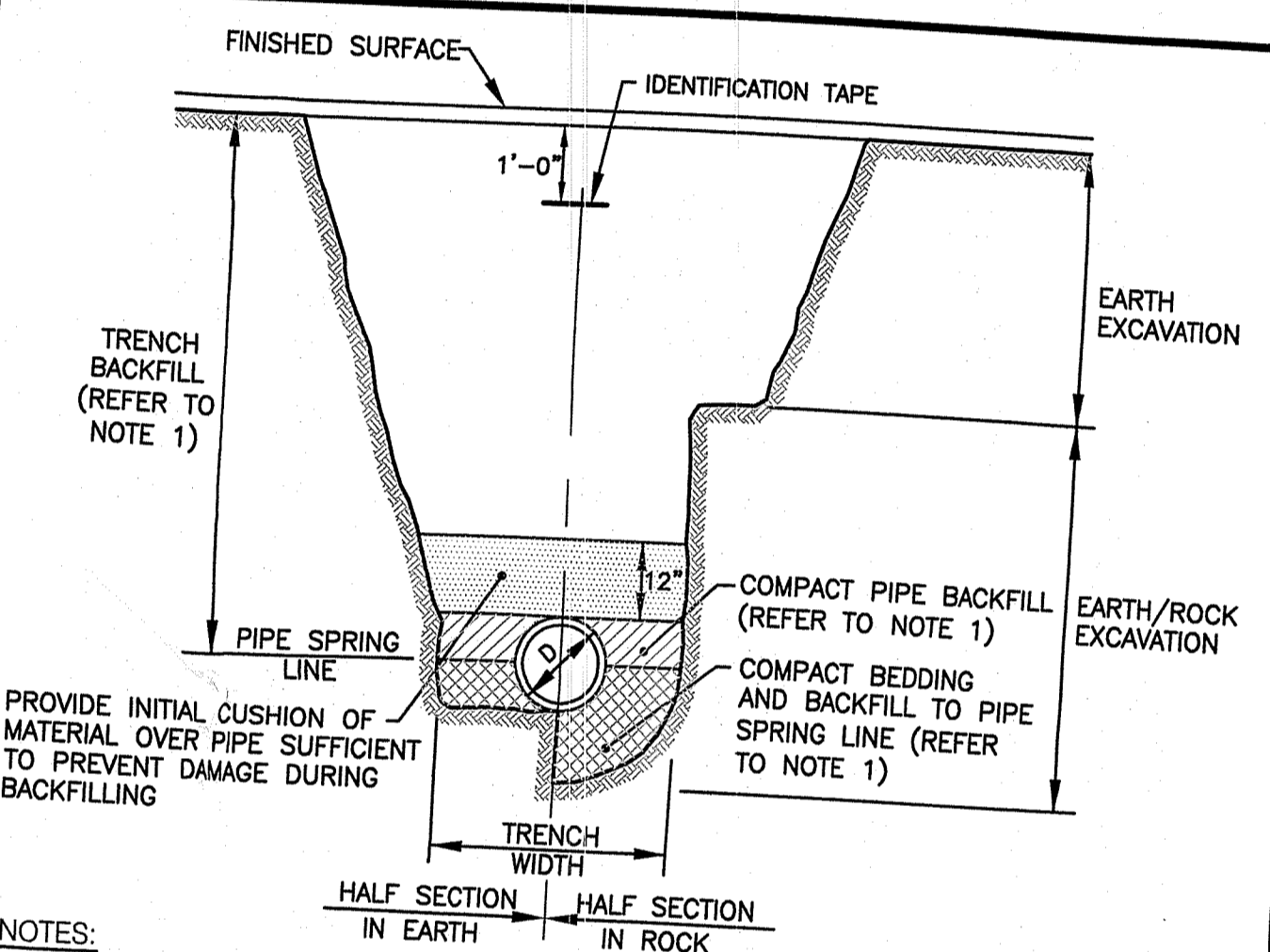


**RIP-RAP OUTLET PROTECTION TYPICAL SECTION**  
NOT TO SCALE



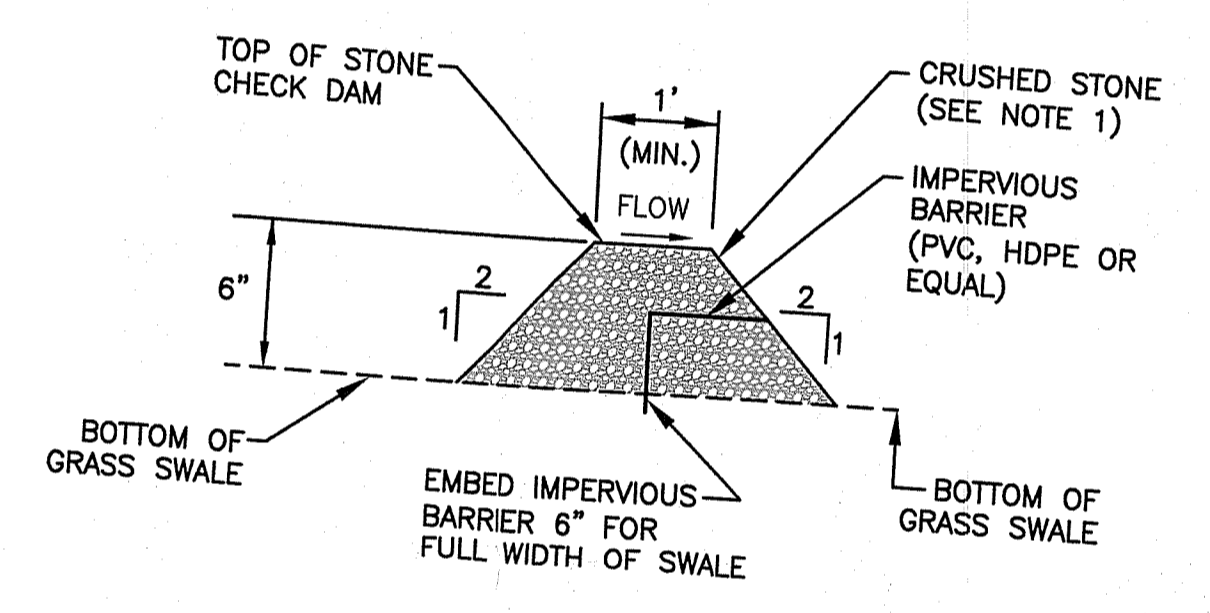
**NOTE:**  
REFER TO GRADING AND DRAINAGE PLAN FOR PROPOSED SIDE SLOPE.

**RIP-RAP SWALE DETAIL**  
NOT TO SCALE



- NOTES:**
- PIPE BEDDING AND BACKFILL TO SPRING LINE SHALL CONSIST OF CRUSHED STONE-3/4" MINUS. PIPE BACKFILL SHALL CONSIST OF CRUSHED STONE (WRAPPED IN FILTER FABRIC) OR GRAVEL (3" MINUS, WITH SIEVE ANALYSIS APPROVED BY ENGINEER), OR OTHER APPROVED MATERIAL. TRENCH BACKFILL SHALL CONSIST OF SUITABLE EXCAVATED MATERIAL OR OTHER APPROVED MATERIAL. ALL BEDDING/BACKFILL TO BE COMPACTED TO 95% DRY DENSITY, MODIFIED PROCTOR METHOD.
  - ALL TRENCH EXCAVATION AND ANY SHEETING AND SHORING SHALL BE DONE IN ACCORDANCE WITH ALL STATE AND LOCAL CODES AND OSHA REGULATIONS.
  - MINIMUM TRENCH WIDTH SHALL BE OUTSIDE DIAMETER OF PIPE AT BELL PLUS 12". MAXIMUM TRENCH WIDTH SHALL BE OUTSIDE DIAMETER OF PIPE AT BELL PLUS 24".

**TRENCH DETAIL**  
NOT TO SCALE

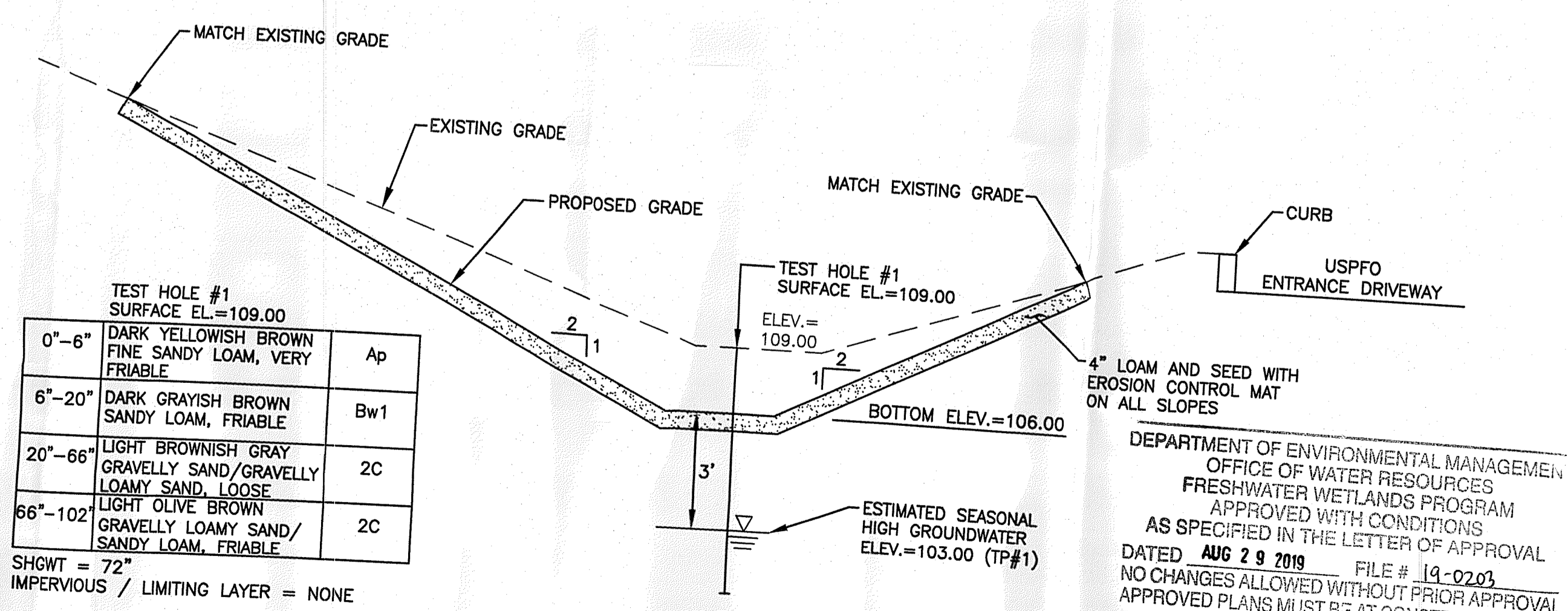


- NOTES:**
- CRUSHED STONE SHALL MEET THE REQUIREMENTS OF R.I.D.O.T. STANDARD SPECIFICATIONS FOR ROAD AND BRIDGE CONSTRUCTION SUBSECTION M.01.09 TABLE 1, COLUMN II CRUSHED STONE.
  - CHECK DAM INSTALLATION SHALL FOLLOW THE GUIDELINES OF SECTION 5 OF THE RHODE ISLAND SOIL EROSION AND SEDIMENT CONTROL HANDBOOK, ISSUED 1989, REVISED 2014.

**6 INCH HIGH STONE CHECK DAM DETAIL**  
NOT TO SCALE

**INFILTRATION BASIN CONSTRUCTION NOTES:**

- WITHIN THE INFILTRATION BASIN, THE CONTRACTOR SHALL REMOVE ALL TOPSOIL AND SUBSOIL AREAS (A AND B HORIZONS) AND ANY EXISTING SOILS THAT YIELD A PERMEABILITY RATE LESS THAN 1.02 INCHES/HOUR. CONTRACTOR SHALL COORDINATE A BOTTOM BED INSPECTION WITH OWNER AND ENGINEER. IF NECESSARY THE AREA SHALL BE PREPARED WITH SAND FILL SOIL MEETING THE MEDIA REQUIREMENTS OF SAND FILTERS, AS DESCRIBED IN THE RHODE ISLAND STORMWATER DESIGN AND INSTALLATION STANDARDS MANUAL, MARCH 2015, SECTION 5.5 (ASTM C-33 SAND). THE DEPTH OF EXISTING SOIL REMOVAL SHALL BE VERIFIED BY THE ENGINEER. THE PLACEMENT OF THE SAND FILL (ASTM-C33 SAND) SHALL BE USED TO BRING THE BOTTOM OF BASIN TO THE DESIGN ELEVATIONS.
- INFILTRATION SYSTEM CONSTRUCTION AND MATERIALS SHALL CONFORM TO THE RHODE ISLAND STORMWATER DESIGN AND INSTALLATION STANDARDS MANUAL, MARCH 2015, APPENDIX F.3 CONSTRUCTION STANDARDS/SPECIFICATIONS FOR INFILTRATION BMP'S. AFTER CONSTRUCTION THE CONTRACTOR SHALL COORDINATE FINAL INSPECTIONS WITH THE OWNER IN ACCORDANCE WITH TABLE F-5 IN APPENDIX F.3.
- GREATER CARE MUST BE TAKEN TO PREVENT THE INFILTRATION AREA FROM COMPACTION BY MARKING OFF THE INFILTRATION SYSTEM LOCATION BEFORE THE START OF CONSTRUCTION, AND BY CONNECTING UPSTREAM DRAINAGE AREAS ONLY AFTER CONSTRUCTION IS COMPLETE AND THE CONTRIBUTING AREA IS STABILIZED.
- IF LARGE ROCKS OR BOULDERS ARE FOUND WITHIN 36" BELOW THE INFILTRATION SYSTEM, THE CONTRACTOR SHALL REMOVE THE ROCKS/BOULDERS AND REPLACE WITH GRAVEL BORROW. CONTRACTOR SHALL COORDINATE WITH OWNER AND ENGINEER.
- CHECK DAM INSTALLATION SHALL FOLLOW THE GUIDELINES OF SECTION 5 OF THE RHODE ISLAND SOIL EROSION AND SEDIMENT CONTROL HANDBOOK, ISSUED 1989, REVISED 2014.



TEST HOLE #1  
SURFACE EL.=109.00

DEPTH	SOIL DESCRIPTION	CLASSIFICATION
0'-6"	DARK YELLOWISH BROWN FINE SANDY LOAM, VERY FRABLE	Ap
6'-20"	DARK GRAYISH BROWN SANDY LOAM, FRABLE	Bw1
20'-66"	LIGHT BROWNISH GRAY GRAVELLY SAND/GRAVELLY LOAMY SAND, LOOSE	2C
66'-102"	LIGHT OLIVE BROWN GRAVELLY LOAMY SAND/SANDY LOAM, FRABLE	2C

SHWT = 72"  
IMPERVIOUS / LIMITING LAYER = NONE

**INFILTRATION BASIN SECTION**  
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 AUG 29 2019 FILE # 19-0203  
NO CHANGES ALLOWED WITHOUT PRIOR APPROVAL  
APPROVED PLANS MUST BE AT CONSTRUCTION SITE  
Nancy L. Trema

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STEVEN M. CABRAL  
No. 4847  
REGISTERED PROFESSIONAL ENGINEER

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ARNOLD ROAD  
WIDENING PROJECT**  
2841 SOUTH COUNTY TRAIL  
EAST GREENWICH, RHODE ISLAND

PREPARED FOR:  
**RHODE ISLAND  
ARMY NATIONAL GUARD  
CONSTRUCTION AND FACILITIES  
MANAGEMENT OFFICE**  
705 NEW LONDON AVENUE  
CRANSTON, R.I.

DRAWING TITLE:  
**MISCELLANEOUS DETAILS  
PLAN No. 3**

DATE: JUNE 2019 SCALE: AS SHOWN  
DWG. NAME: 2338-C07.3-DETAIL3.dwg

REVISIONS	NUMBER	REMARKS	DATE
△			

DRAWING NUMBER  
**C7.3**  
SHEET: 10 OF 10