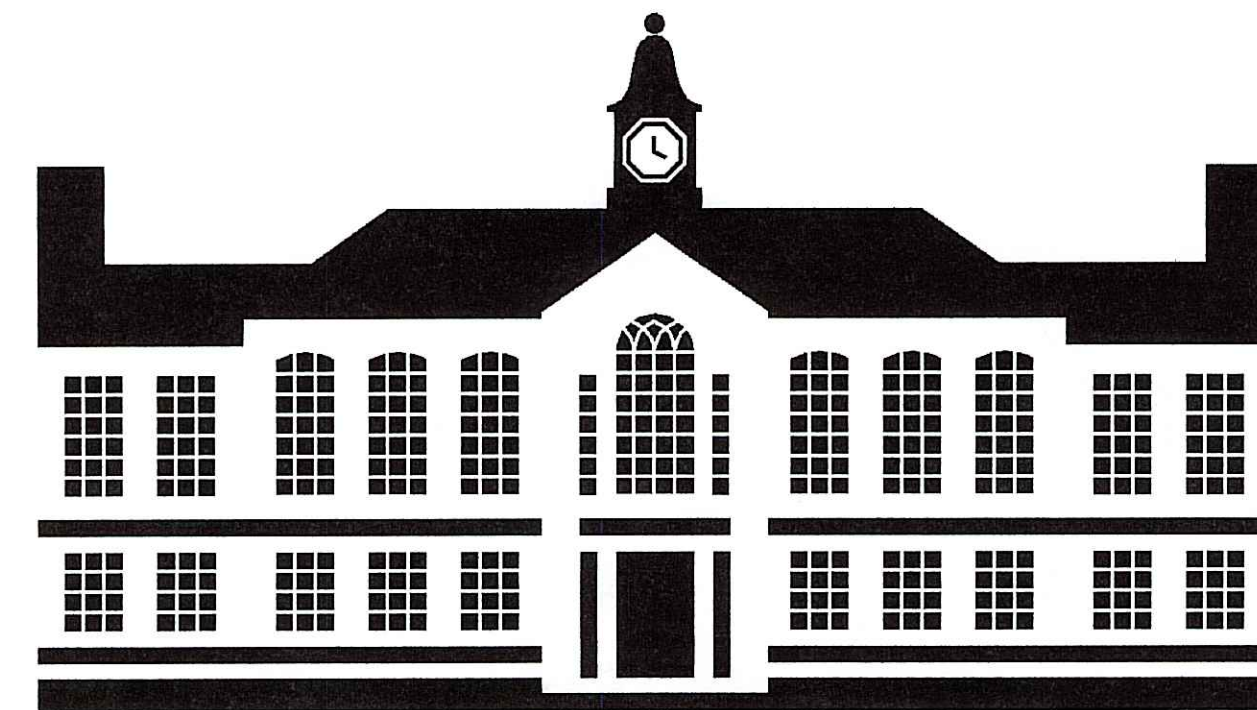


# INDEX

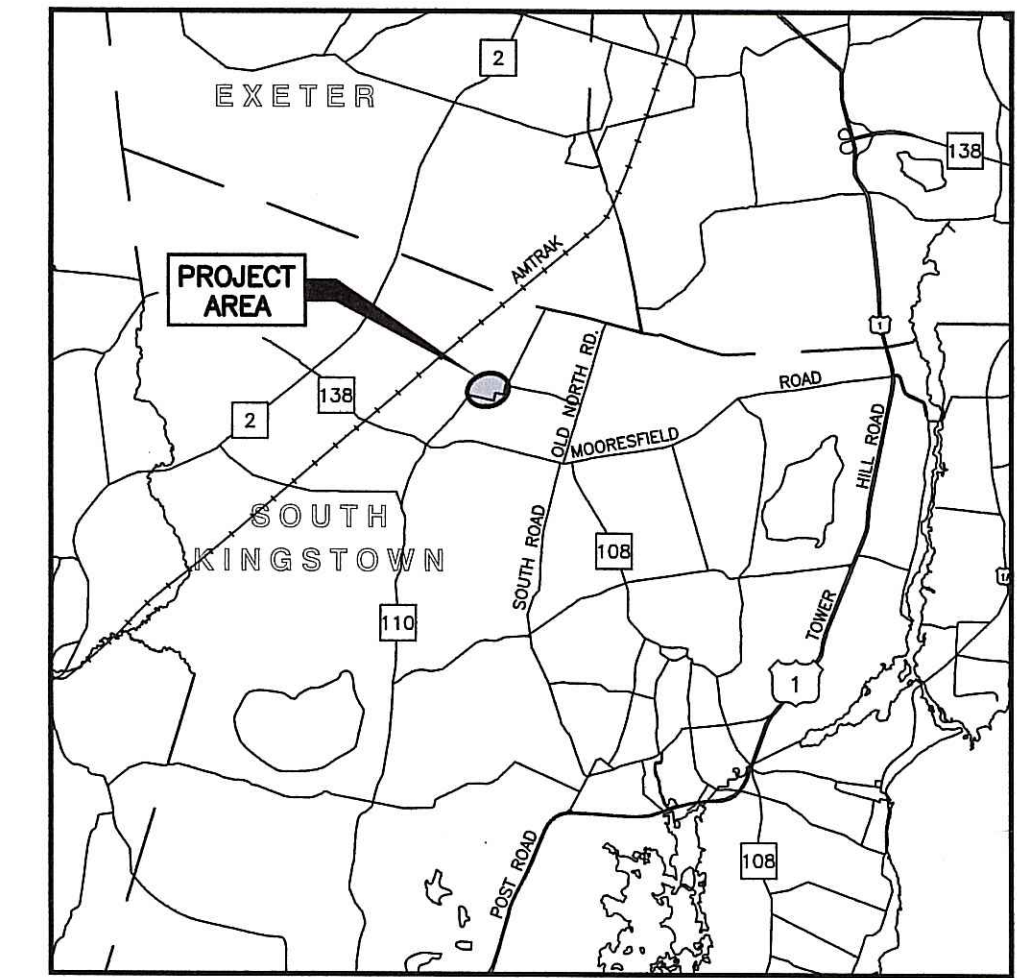
SHEET NO.	DESCRIPTION
1	COVER SHEET
2	LEGEND AND NOTES
3	TYPICAL SECTIONS
4 & 5	GENERAL & LOCATION PLANS 1 & 2
6 - 8	GRADING & DRAINAGE PLANS 1 - 3
9 & 10	DETAIL SHEETS 1 & 2

# UNIVERSITY OF RHODE ISLAND

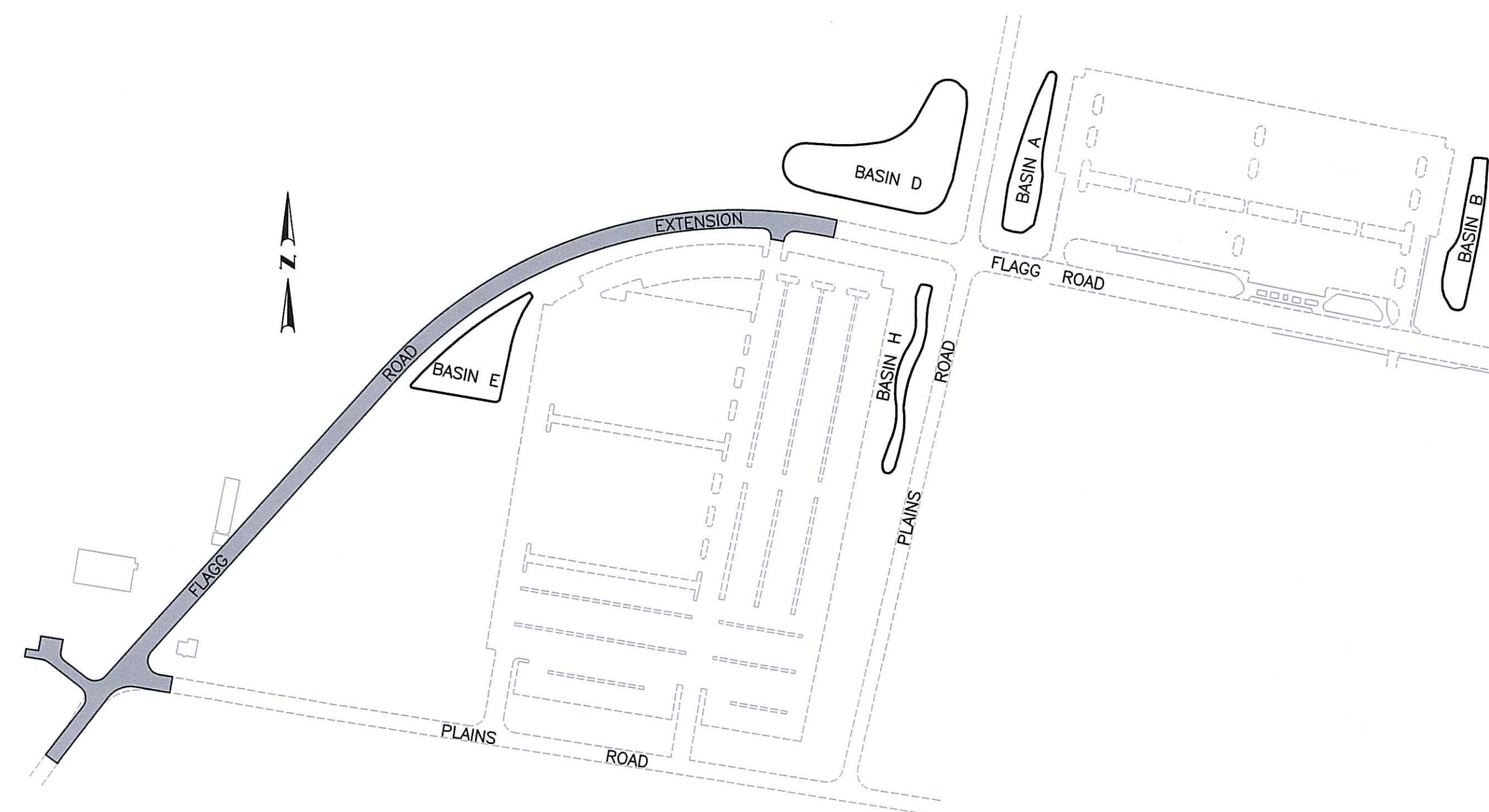
## PLAN AND PROFILE OF PROPOSED FLAGG ROAD EXTENSION



UNIVERSITY OF  
**Rhode Island**



LOCATION MAP  
SCALE: 1" = 2 Miles

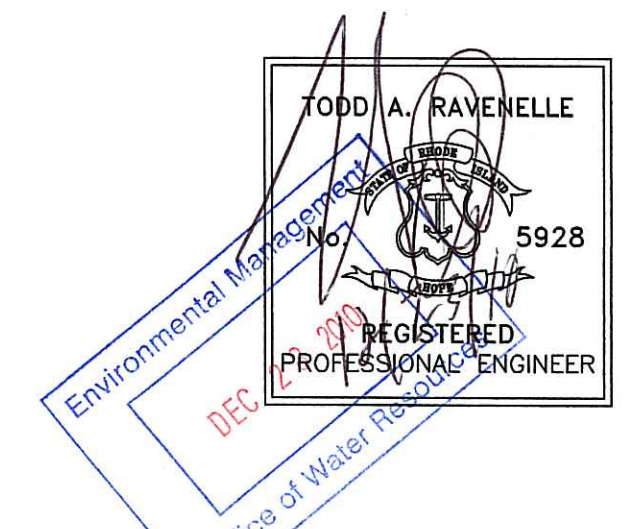


LAYOUT PLAN  
SCALE: 1" = 200'



Gordon R. Archibald, Inc.  
Civil and Environmental Engineers

DEPARTMENT OF ENVIRONMENTAL MANAGEMENT  
OFFICE OF WATER RESOURCES  
FRESHWATER WETLANDS PROGRAM  
APPROVED WITH CONDITIONS  
AS SPECIFIED IN THE LETTER OF APPROVAL  
DATED MAR 02 2011 FILE # 10-0243  
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APPROVED PLANS MUST BE AT CONSTRUCTION SITE

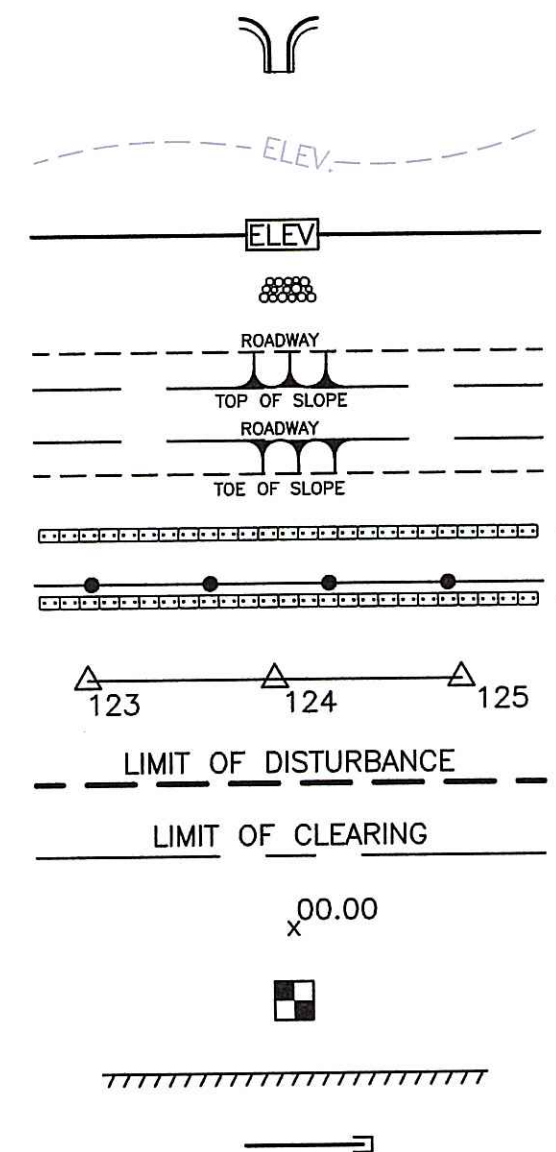


PERMIT SUBMISSION

Number of Sheet 1  
Total Sheets 10

**LEGEND**

- (AB) ADJUST CATCH BASIN TO GRADE
- (CCB) CLEAN CATCH BASIN
- (CFP) CLEAN AND FLUSH PIPE
- (CG) CLEAR & GRUB
- (CMH) CLEAN MANHOLE
- (DC) REMOVE AND DISPOSE CURB
- (DFE) REMOVE AND DISPOSE FLARED END SECTION
- (DH) REMOVE AND DISPOSE HEADWALL
- (DP) REMOVE AND DISPOSE PIPE
- (DHW) REMOVE AND DISPOSE HEADWALL
- (HOS) HIGH ORGANIC SOIL
- (LOD) LIMIT OF DISTURBANCE
- (LS) 4" LOAM AND SEED
- (PCD) PERMANENT CHECK DAM
- (PWW) PAVED WATERWAY
- (RD) REMOVE AND DISPOSE (ITEM)
- (RHH) REMOVE, HANDLE, HAUL, TRIM, RESET CURB EDGING, STRAIGHT, CIRCULAR (ALL TYPES)
- (RRP) RIP RAP PAD (SEE DETAIL)
- (RUP) RELOCATE UTILITY POLE (BY OTHERS)
- (SB) STONE BAFFLE
- (TNP) TIE NEW PIPE INTO EXISTING STRUCTURE
- (1.3.0) CONCRETE CONNECTING COLLAR
- (2.3.0 (DIA.) PRECAST CONCRETE FLARED END SECTION
- (4.2.0) PRECAST 4'-0" ROUND MANHOLE
- (4.4.0 (DIA.) PRECAST 4'-0", 5'-0", OR 6'-0" ROUND CATCH BASIN
- (6.2.1) HEAVY-DUTY ROUND FRAME AND COVER
- (6.3.4) HIGH CAPACITY FRAME AND GRATE (BICYCLE SAFE)
- (7.3.1) 3'-0" GRANITE TRANSITION CURB
- (7.3.8) GRANITE APRON STONE (FOR ROUND CATCH BASIN)
- (9.1.0) BALED HAY EROSION CHECK
- (9.3.0) BALED HAY DITCH EROSION CHECK AND SILT FENCE COMBINED
- (9.4.0) BALED HAY DITCH AND SWALE EROSION CHECK
- (9.8.0) BALED HAY CATCH BASIN INLET PROTECTION
- (A) CATCH BASIN RI. STD. 4.4.0 WITH RI. STD. 6.3.4 FRAME & GRATE, AND RI. STD. 7.3.8 GRANITE APRON STONE
- (C) MANHOLE RI. STD. 4.2.0 WITH RI. STD. 6.2.1 FRAME AND COVER



- PAVED WATERWAY
- EXISTING CONTOUR LINE
- CONTOUR LINE
- RIP-RAP
- CUT SLOPE
- FILL SLOPE
- BALED HAY RI STD 9.1.0
- BALED HAY & SILT FENCE RI STD. 9.3.0
- EDGE OF WETLAND
- LIMIT OF DISTURBANCE
- LIMIT OF CLEARING
- PROPOSED SPOT GRADE
- TEST PIT
- CUT AND MATCH EXISTING PAVEMENT
- CUT AND PLUG EXISTING PIPE

**GENERAL NOTES**

1. REFERENCE IS MADE TO THE RIDOT 2004 EDITION "STANDARDS AND SPECIFICATIONS FOR ROAD AND BRIDGE CONSTRUCTION" INCLUDING ALL APPROVED COMPILATION OF SPECIFICATIONS; AND RIDOT 1998 "STANDARD DETAILS" INCLUDING ALL REVISIONS. ALL PROJECT SITE IMPROVEMENTS SHALL CONFORM TO THESE REGULATIONS AND THE SUB-REFERENCES INCORPORATED THEREIN.
2. EXISTING UTILITIES HAVE BEEN PLOTTED FROM BEST AVAILABLE DATA AND ARE APPROXIMATE ONLY. THE CONTRACTOR SHALL VERIFY THE LOCATIONS OF ALL EXISTING DRAINAGE AND UTILITIES BOTH UNDERGROUND AND OVERHEAD BEFORE EXCAVATION BEGINS IN ACCORDANCE WITH THE "DIG SAFE LAW" ENACTED BY R.I. LEGISLATURE BILL NO. 795-291, WHICH BECAME EFFECTIVE JULY 1, 1979 AND BY CONTACTING THE INDIVIDUAL UTILITY COMPANIES. EXCAVATION SHALL BE IN ACCORDANCE WITH ALL STATUTES, ORDINANCES, RULES AND REGULATIONS OF ANY APPLICABLE CITY, TOWN, STATE OR FEDERAL AGENCY. THE CONTRACTOR SHOULD UNDERSTAND THAT NOT ALL UTILITIES SUBSCRIBE TO THE DIG SAFE PROGRAM. IT IS THE CONTRACTOR'S RESPONSIBILITY TO NOTIFY ALL UTILITY COMPANIES AND ENSURE THAT ALL UTILITIES HAVE BEEN MARKED PRIOR TO COMMENCING THEIR WORK. ANY DAMAGE TO EXISTING UTILITIES MARKED IN THE FIELD, OR AS A RESULT OF FAILING TO CONTACT THE APPROPRIATE UTILITY COMPANY, SHALL BE REPAIRED OR REPLACED AT NO COST TO THE OWNER.
3. CONTRACTOR SHALL RECOGNIZE THAT WORK UNDER EXISTING OVERHEAD UTILITIES IS REQUIRED AND THAT MINIMUM CLEARANCE SHALL CONFORM TO UTILITY COMPANY REQUIREMENTS AND SHALL BE MAINTAINED AT ALL TIMES. THIS MAY REQUIRE SPECIAL CONSTRUCTION TECHNIQUES. SHOULD THE CONTRACTOR ELECT TO RELOCATE THE EXISTING OVERHEAD UTILITIES, THEN THE CONTRACTOR SHALL COORDINATE AND BEAR ALL ASSOCIATED COSTS.
4. THE CONTRACTOR SHALL MAINTAIN ALL EXCAVATION IN A DRY CONDITION. NO SEPARATE PAYMENT OR ALLOWANCE SHALL BE MADE FOR DEWATERING.
5. FILL NEEDED FOR THE ROADWAY EMBANKMENT SHALL MEET SECTION M.01.01 COMMON BORROW OF THE RIDOT STANDARDS AND SPECIFICATIONS, 2004 EDITION UNLESS OTHERWISE NOTED.
6. ALL GRASSED AREAS DISTURBED BY THE CONTRACTOR SHALL BE LOAMED AND SEEDED OR SODDED IF SO DIRECTED BY THE ENGINEER AND RETURNED TO THEIR ORIGINAL CONDITION. ALL OTHER VEGETATED OR WOODED AREAS DISTURBED SHALL BE LOAMED AND SEEDED.
7. ALL EXISTING CURBING, SIDEWALK AND OTHER PAVEMENT DISTURBED BY THE CONTRACTOR SHALL BE REPLACED AND RESTORED, IN KIND AT NO ADDITIONAL COST TO THE OWNER.
8. ALL EXISTING PIPE, SUBSURFACE STRUCTURES, PAVEMENTS, EXCESS EXCAVATED MATERIALS AND MISCELLANEOUS MATERIALS REMOVED DURING THE COURSE OF WORK OF INSTALLING DRAINAGE, WATER AND SEWER PIPING SHALL BE LEGALLY DISPOSED OF OFF THE PROJECT SITE BY THE CONTRACTOR.
9. CONTINUOUS DUST CONTROL, USING CALCIUM CHLORIDE OR OTHER APPROVED METHODS, SHALL BE PROVIDED BY THE CONTRACTOR FOR ALL EARTH STOCKPILES, EARTH PILED ALONG EXCAVATIONS AND SURFACES OF BACK FILLED TRENCHES, AS DIRECTED AND SPECIFIED BY THE ENGINEER.
10. WETLAND BOUNDARIES WERE DELINEATED BY APPLIED BIO-SYSTEMS OF KINGSTON, RHODE ISLAND.
11. THE CONTRACTOR SHALL GIVE NOTICES AND COMPLY WITH ALL PERMITS, LAWS, ORDINANCES, RULES AND REGULATIONS BEARING ON THE CONDUCT OF THE WORK AS DRAWN AND SPECIFIED.
12. ALL SOIL EROSION CONTROL MEASURES TO BE USED ON THE PROJECT ARE INDICATED ON THE PLANS. EROSION CONTROL MEASURES SHALL BE IN CONFORMANCE WITH THE PROVISIONS OF THE RHODE ISLAND SOIL EROSION & SEDIMENT CONTROL HANDBOOK.
13. PRIOR TO COMMENCEMENT OF CONSTRUCTION ACTIVITIES, A CONTINUOUS UNINTERRUPTED LINE OF STAKED HAY BALES OR SILT FENCING SHALL BE INSTALLED IN LOCATIONS SHOWN ON THE PLANS AND MAINTAINED IN EFFECTIVE CONDITION UNTIL DISTURBED AREAS HAVE BEEN STABILIZED WITH VEGETATION. FOLLOWING SUCCESSFUL STABILIZATION OF DISTURBED AREAS, ALL SILT FENCING AND HAY BALES SHALL BE REMOVED. PRIOR TO REMOVAL OF THE SILT FENCING AND HAY BALES, ALL ACCUMULATED TRAPPED SEDIMENTS MUST BE REMOVED TO A SUITABLE UPLAND SITE.
14. UNTIL VEGETATIVE COVER IS ESTABLISHED AND DISTURBED AREAS ARE STABILIZED, ACCUMULATED SEDIMENTS SHALL BE REMOVED AS SOON AS SEDIMENTS HAVE ACCUMULATED TO A DEPTH OF SIX (6) INCHES.
15. THE LIMITS OF ALL CLEARING, GRADING AND DISTURBANCE SHALL BE KEPT TO A MINIMUM WITHIN THE PROPOSED AREA OF CONSTRUCTION. ALL AREAS OUTSIDE THE LIMITS OF DISTURBANCE SHALL BE TOTALLY UNDISTURBED.
16. SOIL STOCKPILES AND DEPOSITION AREAS FOR CONSTRUCTION MATERIALS SHALL BE LOCATED OUTSIDE WETLAND AREAS AND ASSOCIATED BUFFERS AND SHALL BE SURROUNDED BY STAKED HAY BALES.
17. TEMPORARY VEGETATION AND/OR HAY MULCHING SHALL BE USED TO PROTECT BARE AREAS AND STOCKPILES FROM EROSION DURING CONSTRUCTION. BARE EARTH SLOPES AND SOIL STOCKPILES SHALL BE KEPT TO A MINIMUM AT ALL TIMES. TEMPORARY SEEDING OR MULCHING SHALL BE INSTALLED ON ALL BARE EARTH PRIOR TO ENDING CONSTRUCTION FOR WINTER AND AS OTHERWISE NECESSARY. AS SOON AS WEATHER PERMITS AFTER THE COMPLETION OF FINE GRADING, ALL DISTURBED AREAS SHALL BE PERMANENTLY STABILIZED WITH PLACEMENT OF LOAM AND THE SPECIFIED GRASS SEED MIXTURE, AND COVERED WITH A MAT OF LOOSE HAY PRIOR TO THE COMPLETION OF THE PROJECT. APPROVED SOD SHALL BE USED IN LIEU OF SEEDING AS DIRECTED BY THE ENGINEER. AREAS WHERE WORK IS TO CEASE FOR 14 DAYS AND NOT SET TO RESUME WITHIN 21 DAYS SHALL RECEIVE TEMPORARY VEGETATIVE COVER AND BE COMPLETELY COVERED WITH LOOSE HAY MULCH.
18. PLANTING OF GRASS SHALL BE ACCOMPLISHED BY THE CONTRACTOR AS EARLY AS POSSIBLE UPON COMPLETION OF GRADING AND CONSTRUCTION.
19. ALL DISTURBED AREAS NOT TO BE COVERED WITH PAVEMENT WITHIN THE PROJECT WILL RECEIVE PERMANENT VEGETATION. DISTURBED AREAS WILL BE FINE GRADED AND RECEIVE 4 INCHES OF TOP SOIL.
20. AT LEAST TWO TEST PITS SHALL BE DUG AT EACH UNDERGROUND UTILITY TO DETERMINE LOCATION AND MATERIAL.

**EROSION AND SEDIMENT CONTROL NOTES**

1. DENUDE SLOPES SHALL NOT BE UNATTENDED OR EXPOSED IN AREAS WHERE WORK IS TO CEASE FOR 14 DAYS AND NOT SET TO RESUME WITHIN 21 DAYS OR THE INACTIVE WINTER SEASON.
2. ALL DISTURBED SLOPES EITHER NEWLY CREATED OR EXPOSED PRIOR TO OCTOBER 15, SHALL BE SEED OR PROTECTED BY THAT DATE FOR ANY WORK COMPLETED DURING EACH CONSTRUCTION YEAR.
3. THE TOPSOIL SHALL HAVE A SANDY LOAM TEXTURE RELATIVELY FREE OF SUBSOIL MATERIAL, STONES, ROOTS, LUMPS OF SOIL, TREE LIMBS, TRASH OR CONSTRUCTION DEBRIS AND SHALL CONFORM WITH R.I. STANDARD SPECIFICATION M.18.01
4. THE SEED MIX SHALL BE INOCULATED WITHIN 24 HOURS, BEFORE MIXING AND PLANTING, WITH APPROPRIATE INOCULUM FOR EACH VARIETY.
5. THE DESIGN MIX SHALL BE COMPRISED OF THE FOLLOWING:  
PERMANENT SEEDING MIXTURES:  
A. - UPLAND AREA:  

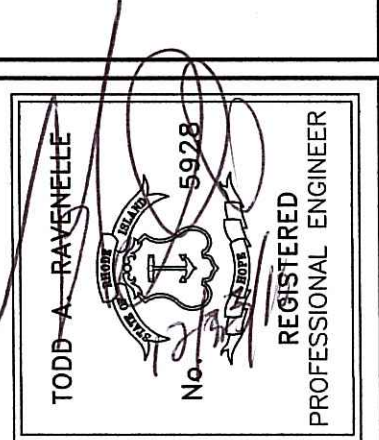
MIXTURE	% BY WT.	SEEDING DATES
RED FESCUE	70	APRIL 1 - JUNE 13
KENTUCKY BLUEGRASS	15	AUG. 15 - OCT. 15
COLONIAL BENTGRASS	5	
PERENNIAL RYEGRASS	10	
TOTAL 100 LBS./ ACRE		

  
 B. - WETLAND AREA:  

MIXTURE	POUNDS PER ACRE	SEEDING DATES
REED CANARY GRASS	20	MAY 1 - JUNE 15
LADING WHITE CLOVER	1	AUG. 15 - SEPT. 30
TOTAL 21 LBS./ ACRE		
6. 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 ENGINEER.
7. HAY OR STRAW APPLICATIONS SHOULD BE IN THE AMOUNT OF 3,000 - 4,000 LBS./ACRE.
8. ALL HAY BALES, SILT FENCES OR TEMPORARY PROTECTION SHALL REMAIN IN PLACE UNTIL AN ACCEPTABLE STAND OF GRASS OR APPROVED GROUND COVER IS ESTABLISHED AND THE PROJECT RECEIVES A FAVORABLE APPROVAL FOR FINAL ACCEPTANCE FROM THE ENGINEER. IF NEEDED TEMPORARY SEEDING CAN HELP TO MINIMIZE EROSION. A TEMPORARY SEEDING GUIDE MUST BE INCLUDED AS A REFERENCE. THE FOLLOWING SPECIES ARE RECOMMENDED:  

SPECIES	LBS./AC.	LBS./1,000 SQ.FT.	SEEDING DATE
ANNUAL RYEGRASS	40-60	1.0-1.5	3/1 - 6/1
PERENNIAL RYEGRASS	40-60	1.0-1.5	3/1 - 6/1
SUDAN GRASS	30-40	0.7-1.0	5/15 - 8/15
MILLET	30-40	0.7-1.0	5/15 - 8/15
WINTER RYE	120	3.0	4/15 - 6/15
OATS	86-120	0.5-5.0	3/1 - 6/15
WEEPING COVERGRASS	5-20	0.5-5.0	5/1 - 7/1
9. THE CONTRACTOR MUST REPAIR AND OR RESEED ANY AREAS THAT DO NOT DEVELOP WITHIN THE PERIOD OF ONE YEAR AND HE SHALL DO SO AT NO ADDITIONAL EXPENSE.
10. THE NORMAL ACCEPTABLE SEASONAL SEEDING DATES ARE APRIL 1ST - JUNE 1ST AND AUGUST 15TH TO OCTOBER 15TH.
11. STABILIZATION OF ONE FORM OR ANOTHER AS DESCRIBED ABOVE SHALL BE ACHIEVED WITHIN 15 DAYS OF FINAL GRADING.
12. STOCKPILES OF TOPSOILS SHALL NOT BE LOCATED NEAR WATERWAYS. THEY SHALL HAVE SIDE SLOPES NO GREATER THAN 30% AND STOCKPILES SHALL ALSO BE SEEDED AND OR STABILIZED.
13. SLOPES SURFACES 3:1 OR STEEPER WHICH ARE DISTURBED DURING CONSTRUCTION SHALL BE COVERED WITH JUTE MESH OR EXCELSIOR MATTING TO AID IN STABILIZING THE SLOPES AND PREVENTING EROSION.
14. DURING CONSTRUCTION, THE CONTRACTOR SHALL BE RESPONSIBLE FOR MAINTAINING DRAINAGE AND RUNOFF FLOW DURING STORMS AND PERIODS OF RAINFALL.
15. EROSION CONTROL DEVICES SHOULD INSPECTED WEEKLY AND AFTER RAINFALL EVENTS OF  $\geq 1/2"$  IN A 24-HOUR PERIOD. MAINTENANCE AND REPAIRS SHALL BE COMPLETED WITHIN 24 HOURS OF THE INSPECTION WHEN NECESSARY.
16. IMMEDIATELY UPON COMPLETION OF THE CLEARING AND GRUBBING OPERATION AND PRIOR TO ANY ROUGH GRADING, TEMPORARY HAYBALES OR SILT FENCES SHALL BE PLACED AS INDICATED ON THE PLANS.
17. ALL EROSION AND SEDIMENTATION CONTROL STRUCTURES SHALL BE PERIODICALLY MAINTAINED AS PER THE RESPECTIVE PROGRAMS DURING THE CONSTRUCTION.

PROJECT  
**FLAGG ROAD EXTENSION**



CLIENT  
**UNIVERSITY OF RHODE ISLAND**

Gordon R. Archibald, Inc.  
Civil and Environmental Engineers  
Pawtucket, Rhode Island



DRAWING TITLE  
**LEGEND & NOTES**

NO.	DATE	BY	REVISIONS	
			DESCRIPTION	DATE

PROJECT NO.: 1255

DATE: DECEMBER 2010

SCALE: NONE

DRAWN BY: LBD

CHECKED BY: TAR

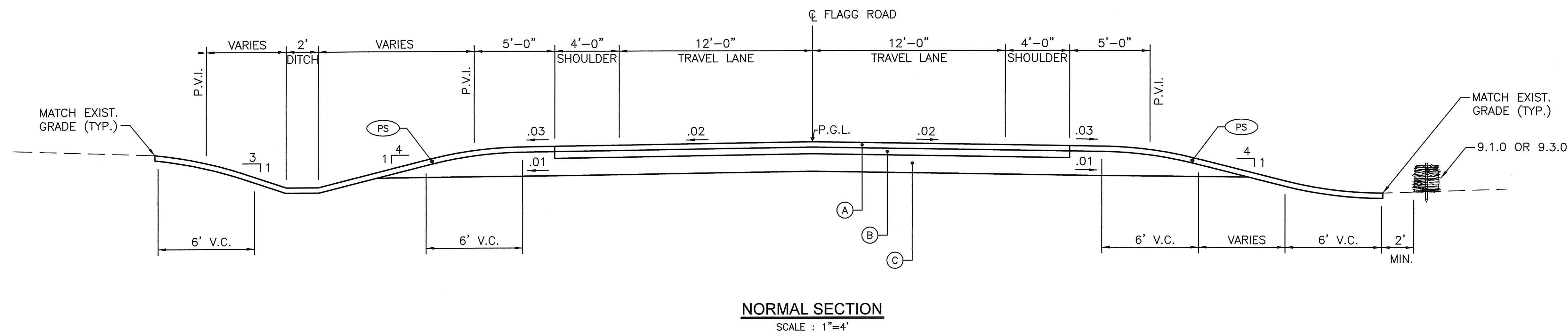
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**2**

SHEET 2 OF 10

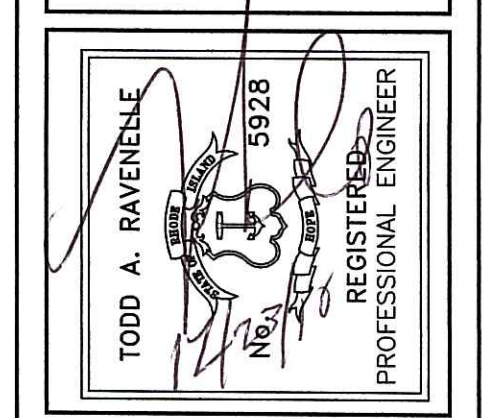
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OFFICE OF WATER RESOURCES  
FRESHWATER WETLANDS PROGRAM  
APPROVED WITH CONDITIONS  
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DATED **MAR 02 2011** FILE # **10-0243**  
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Charles A. Howard  
Environmental Management  
DEC 2 2010  
Office of Water Resources



- LEGEND**
- (A) 2" BITUMINOUS SURFACE COURSE  
TYPE 1-1
  - (B) 3" BITUMINOUS BASE COURSE
  - (C) GRAVEL BORROW SUBBASE COURSE  
12" IN FILL  
18" IN EARTH CUT  
24" IN ROCK CUT
  - (PS) PLANTABLE SOIL & SEED (TYPE 1)
  - P.G.L. PROFILE GRADE LINE

PROJECT  
**FLAGG ROAD  
EXTENSION**



CLIENT  
**UNIVERSITY OF RHODE ISLAND**

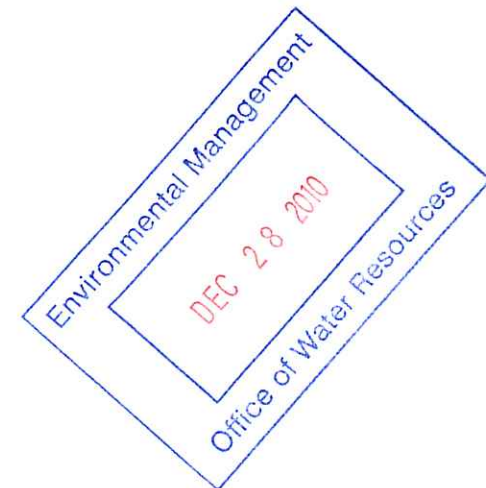
**Gordon R. Archibald, Inc.**  
Civil and Environmental Engineers  
Pawtucket, Rhode Island

DRAWING TITLE  
**TYPICAL SECTIONS**

NO.	DATE	REVISIONS	BY

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*Charles A. Herbert*



PROJECT NO.: 1255

DATE: ~~DECEMBER~~ 2010

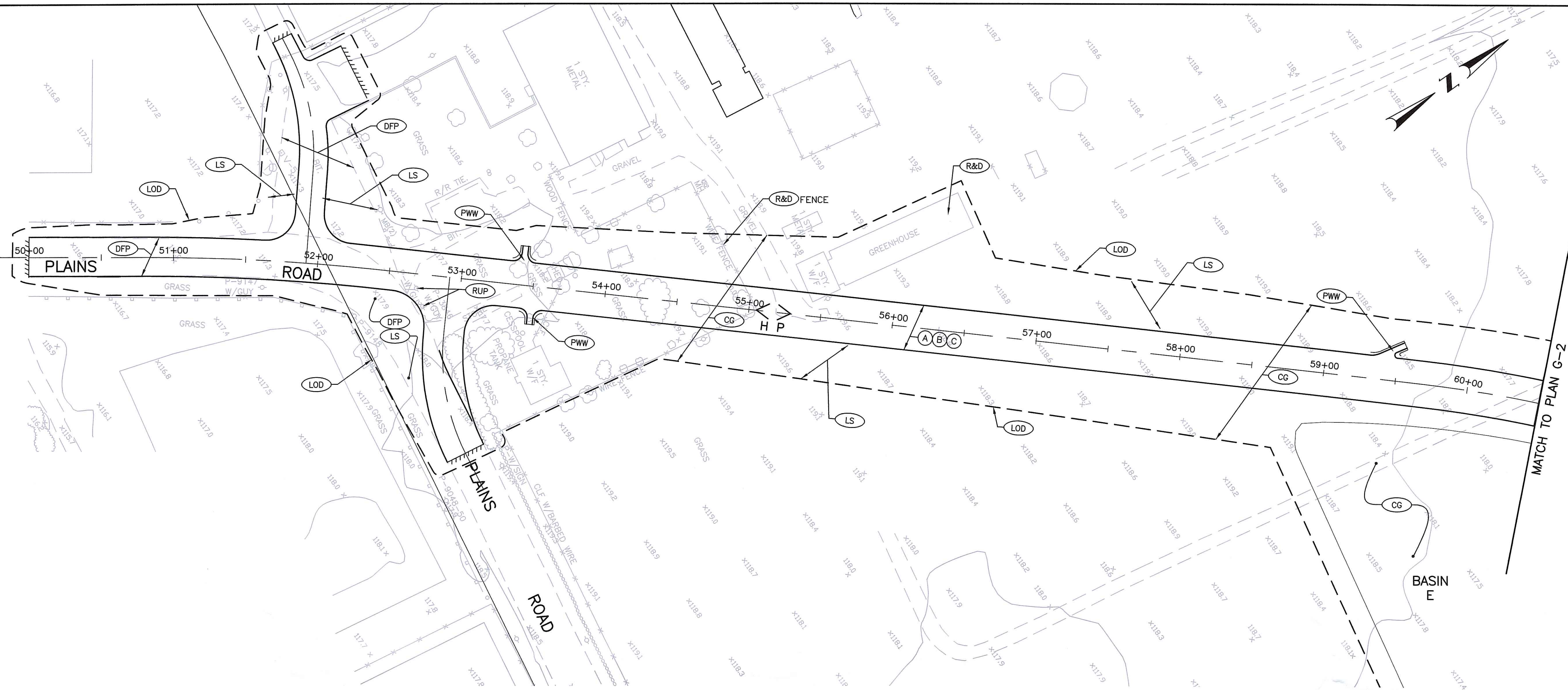
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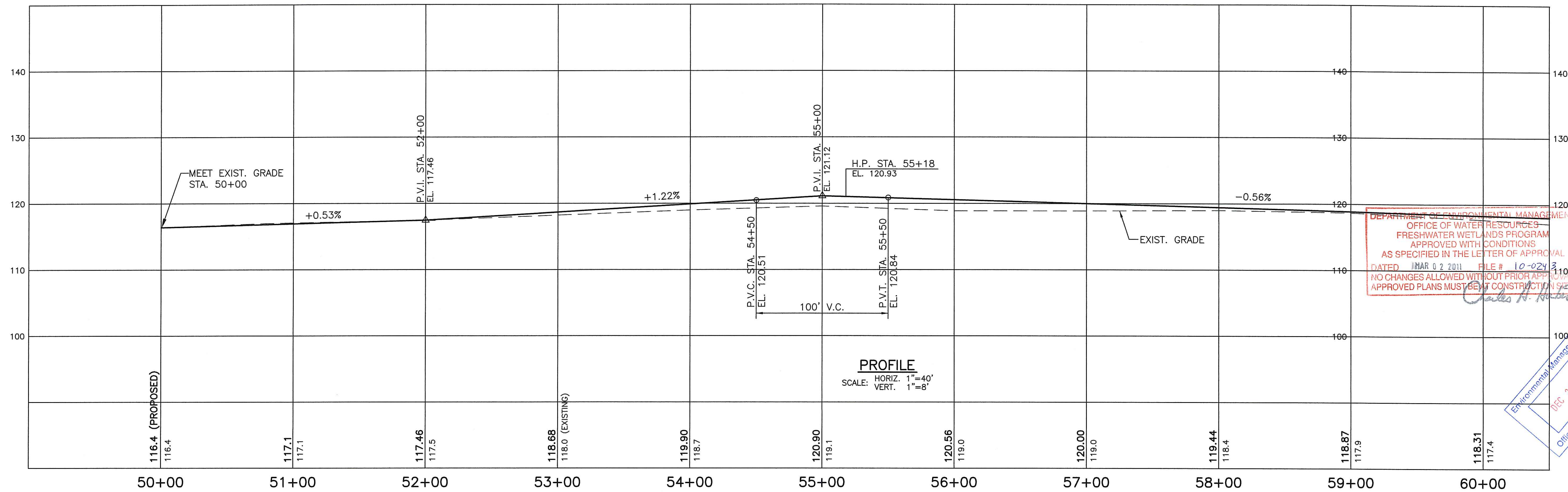
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DRAWING NUMBER  
**3**

SHEET 3 OF 10



PLAN  
SCALE: 1"=40'



PROFILE  
SCALE: HORIZ. 1"=40'  
VERT. 1"=8'

DEPARTMENT OF ENVIRONMENTAL MANAGEMENT  
OFFICE OF WATER RESOURCES  
FRESHWATER WETLANDS PROGRAM  
APPROVED WITH CONDITIONS  
AS SPECIFIED IN THE LETTER OF APPROVAL  
DATED JAN 02 2011 FILE # 10-024310  
NO CHANGES ALLOWED WITHOUT PRIOR APPROVAL  
APPROVED PLANS MUST BE AT CONSTRUCTION SCALE  
*James R. Hester*

Environmental Management  
DEC 28 2010  
Office of Water Resources

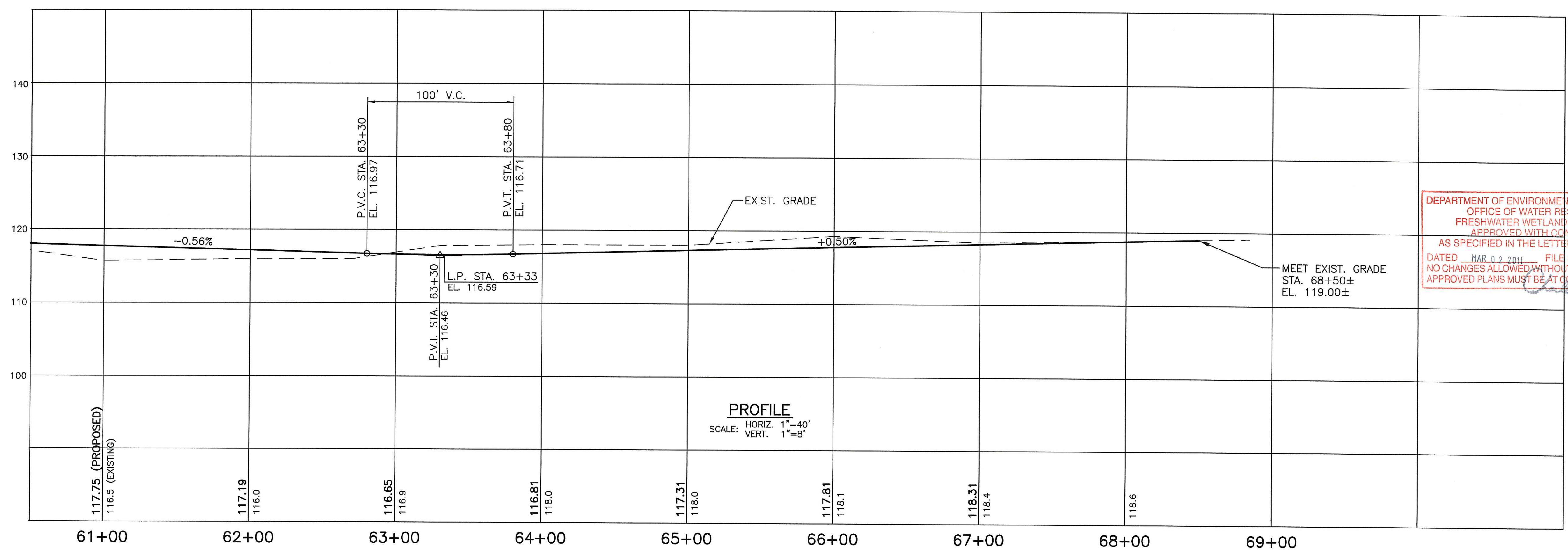
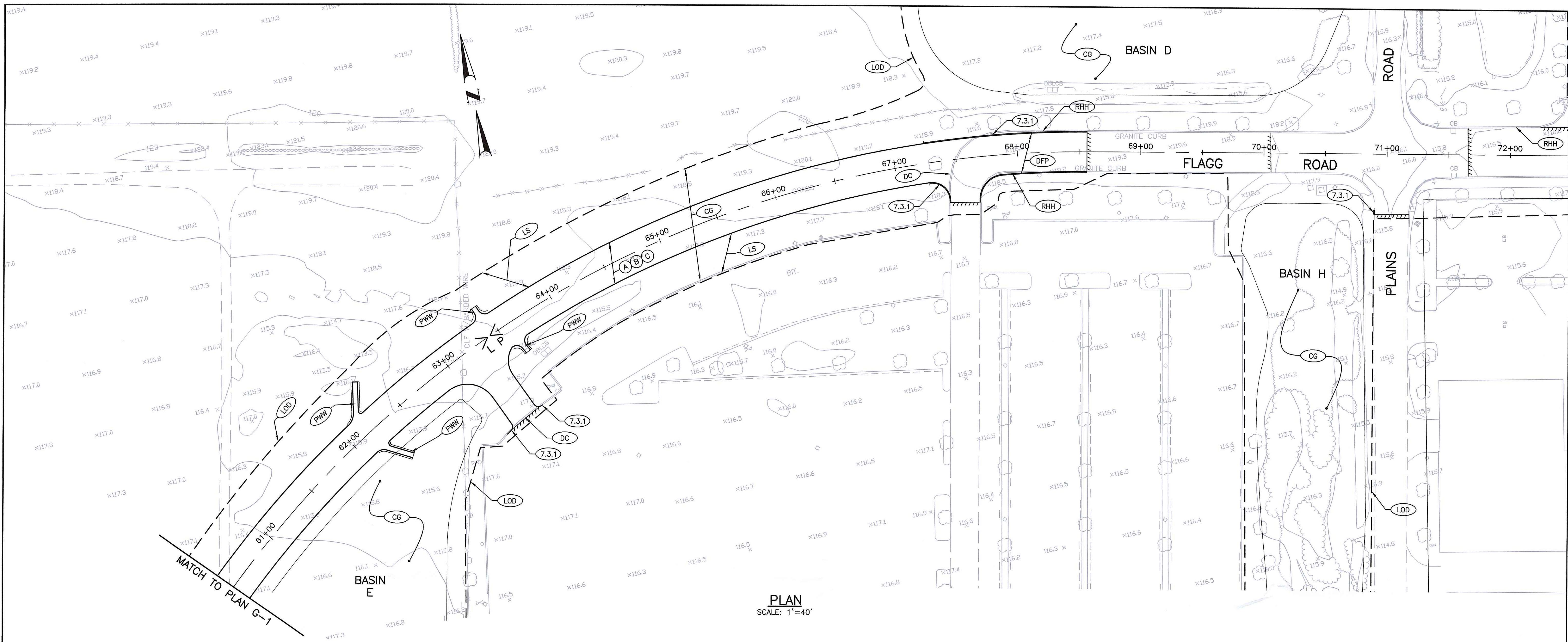
PROJECT		<b>FLAGG ROAD EXTENSION</b>	
CLIENT		UNIVERSITY OF RHODE ISLAND	
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PROJECT NO.:		1255	
DATE:		DECEMBER 2010	
SCALE:		AS SHOWN	
DRAWN BY:		LBD	
CHECKED BY:		TAR	
DRAWING NUMBER		<b>G-1</b>	
SHEET 4 OF 10			

NO. DATE REVISIONS BY

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TODD A. D'AMENELLE  
No. 5928  
REGISTERED PROFESSIONAL ENGINEER

Gordon R. Archibald, Inc.  
Civil and Environmental Engineers  
Pawtucket, Rhode Island



DEPARTMENT OF ENVIRONMENTAL MANAGEMENT  
OFFICE OF WATER RESOURCES  
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APPROVED PLANS MUST BE AT CONSTRUCTION SET

*James H. Haber*

**PROJECT**  
FLAGG ROAD EXTENSION

**CLIENT**  
UNIVERSITY OF RHODE ISLAND

**DRAWING TITLE**  
GENERAL & LOCATION PLAN-2

**PROJECT NO.:** 1255  
**DATE:** DECEMBER 2010  
**SCALE:** AS SHOWN  
**DRAWN BY:** LBD  
**CHECKED BY:** TAR  
**DRAWING NUMBER**  
**G-2**  
SHEET 5 OF 10

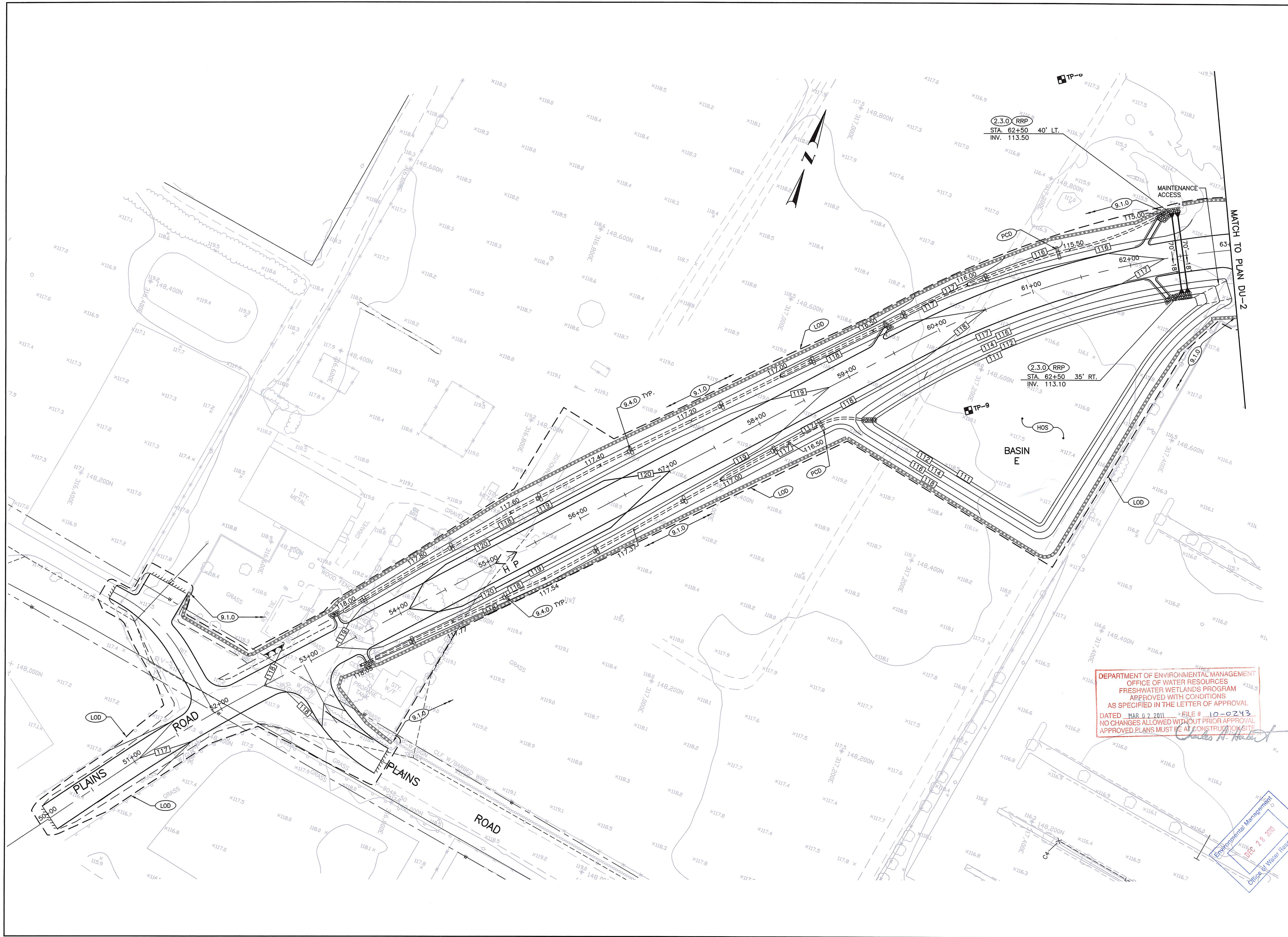
**REVISIONS**

NO.	DATE	BY

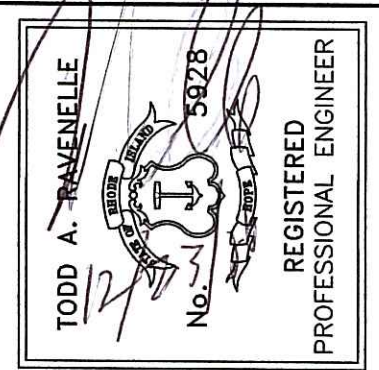

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Pawtucket, Rhode Island

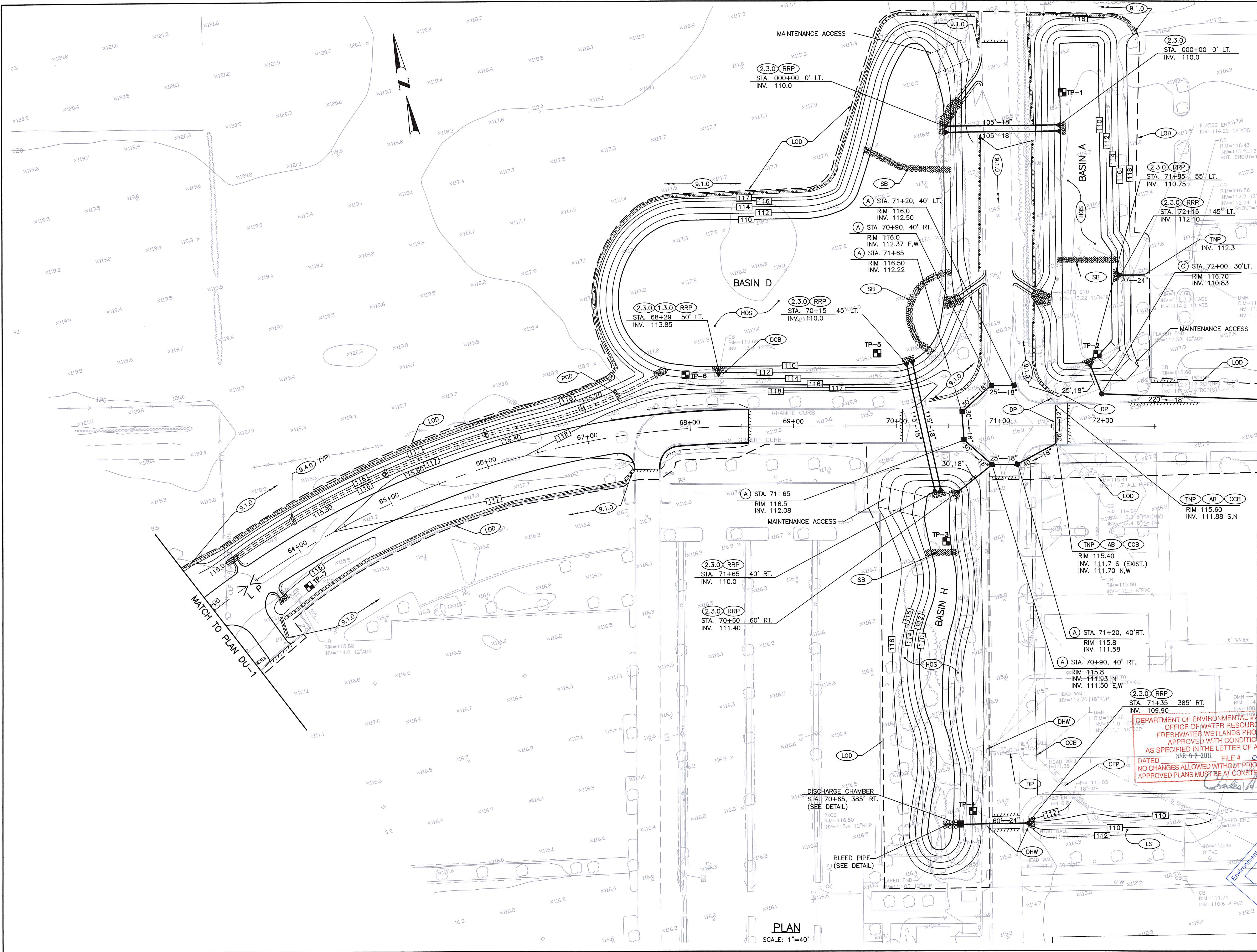
**TODD A. RAVENELLE**  
No. 0528  
REGISTERED PROFESSIONAL ENGINEER

Environmental Management  
DEC 28 2010  
Office of Water Resources



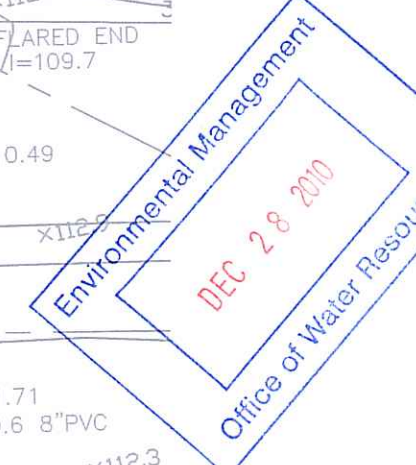
DEPARTMENT OF ENVIRONMENTAL MANAGEMENT  
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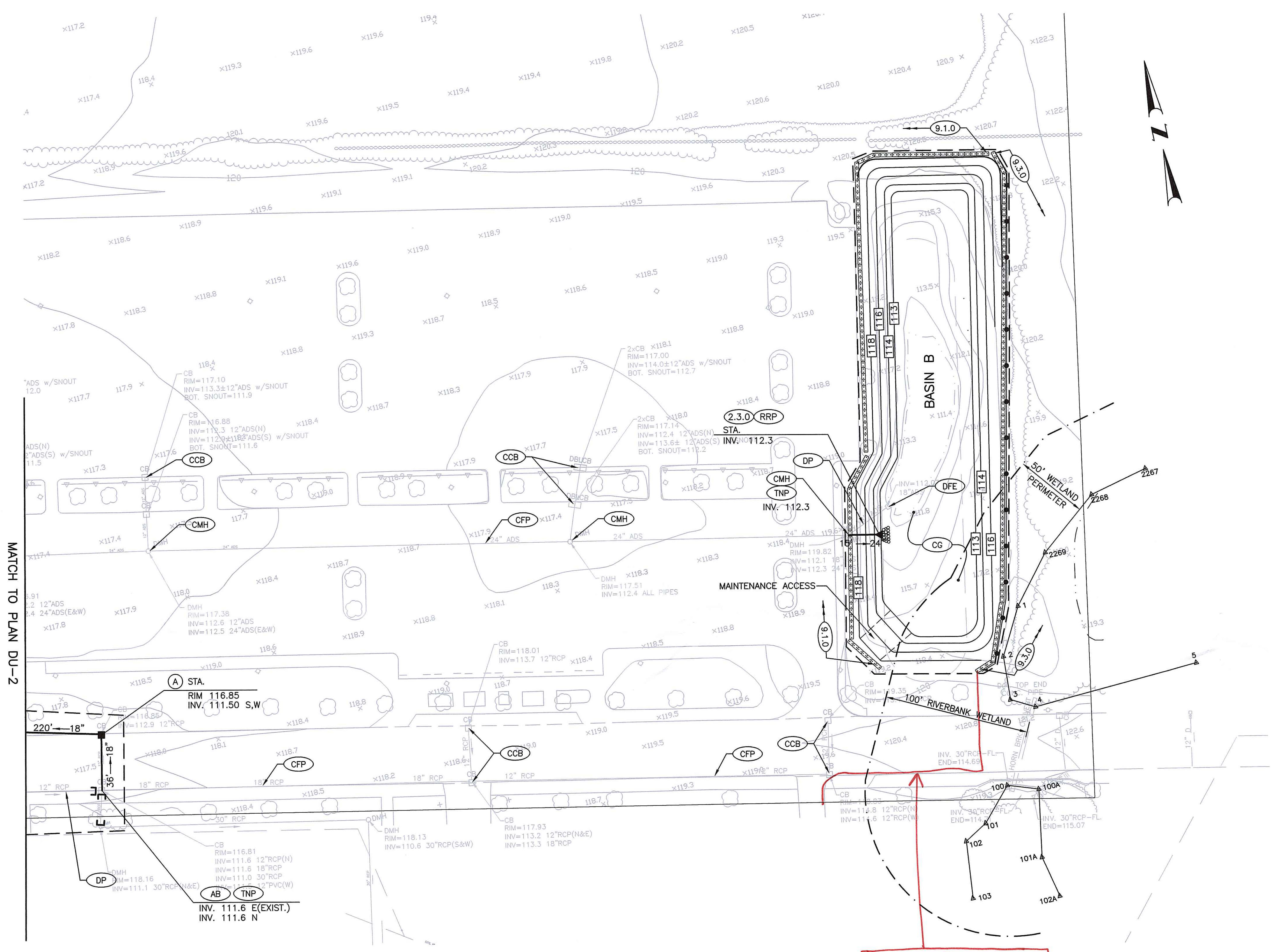
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NO.	DATE						
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<b>SCALE:</b> 1"=40'	<b>DRAWN BY:</b> LBD						
<b>CHECKED BY:</b> TAR	<b>DRAWING NUMBER</b> <b>DU-1</b> SHEET 6 OF 10						



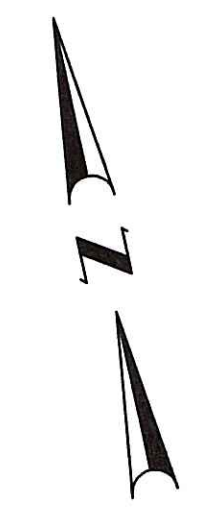
MATCH TO PLAN DU-3

<b>PROJECT</b> <b>FLAGG ROAD</b> <b>EXTENSION</b>									
<b>CLIENT</b> <b>UNIVERSITY OF RHODE ISLAND</b>	<b>REGISTERED PROFESSIONAL ENGINEER</b> <b>Gordon R. Archibald, Inc.</b> Civil and Environmental Engineers Pawtucket, Rhode Island								
<b>DRAWING TITLE</b> <b>GRADING &amp; DRAINAGE PLAN 2</b>	<table border="1" style="width: 100%; border-collapse: collapse;"> <tr> <td style="width: 50%;">NO. DATE</td> <td style="width: 50%;">REVISIONS</td> </tr> <tr> <td> </td> <td> </td> </tr> <tr> <td> </td> <td> </td> </tr> <tr> <td> </td> <td> </td> </tr> </table>	NO. DATE	REVISIONS						
NO. DATE	REVISIONS								
PROJECT NO.: 1255 DATE: DECEMBER 2010 SCALE: 1"=40' DRAWN BY: LBD CHECKED BY: TAR	<b>DRAWING NUMBER</b> <b>DU-2</b> SHEET 7 OF 10								





MATCH TO PLAN DU-2

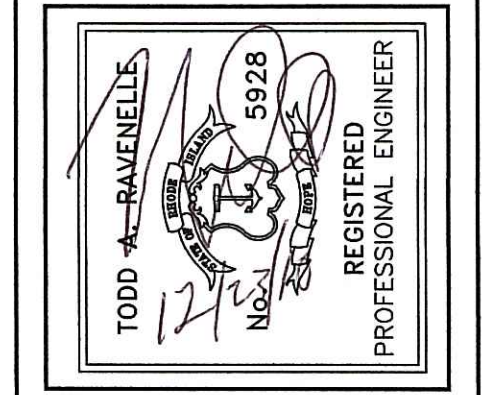


Limit of Disturbance  
Revised per RI DEM

DEPARTMENT OF ENVIRONMENTAL MANAGEMENT  
OFFICE OF WATER RESOURCES  
FRESHWATER WETLANDS PROGRAM  
APPROVED WITH CONDITIONS  
AS SPECIFIED IN THE LETTER OF APPROVAL  
DATED MAR 12 2011 FILE # 10-0243  
NO CHANGES ALLOWED WITHOUT PRIOR APPROVAL  
APPROVED PLANS MUST BE AT CONSTRUCTION SITE  
*Charles A. Haber*

Environmental Management  
DEC 28 2010  
Office of Water Resources

PROJECT  
**FLAG ROAD  
EXTENSION**



CLIENT  
**UNIVERSITY OF RHODE ISLAND**

Gordon R. Archibald, Inc.  
Civil and Environmental Engineers  
Pawtucket, Rhode Island

DRAWING TITLE  
**GRADING & DRAINAGE PLAN 3**

NO.	DATE	REVISIONS	BY

PROJECT NO.: 1255

DATE: DECEMBER 2010

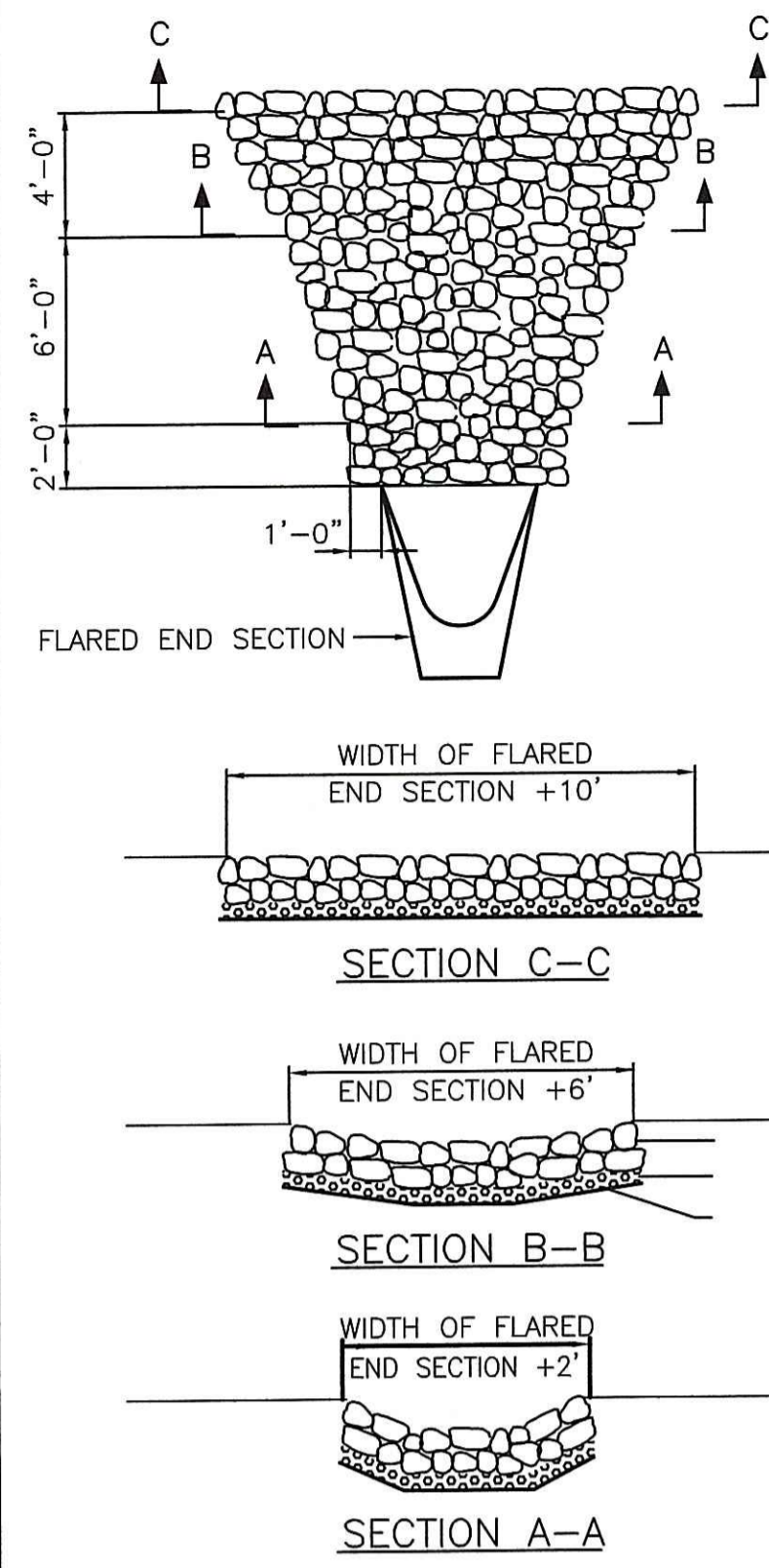
SCALE: 1"=40'

DRAWN BY: LBD

CHECKED BY: TAR

DRAWING NUMBER  
**DU-3**

SHEET 8 OF 10



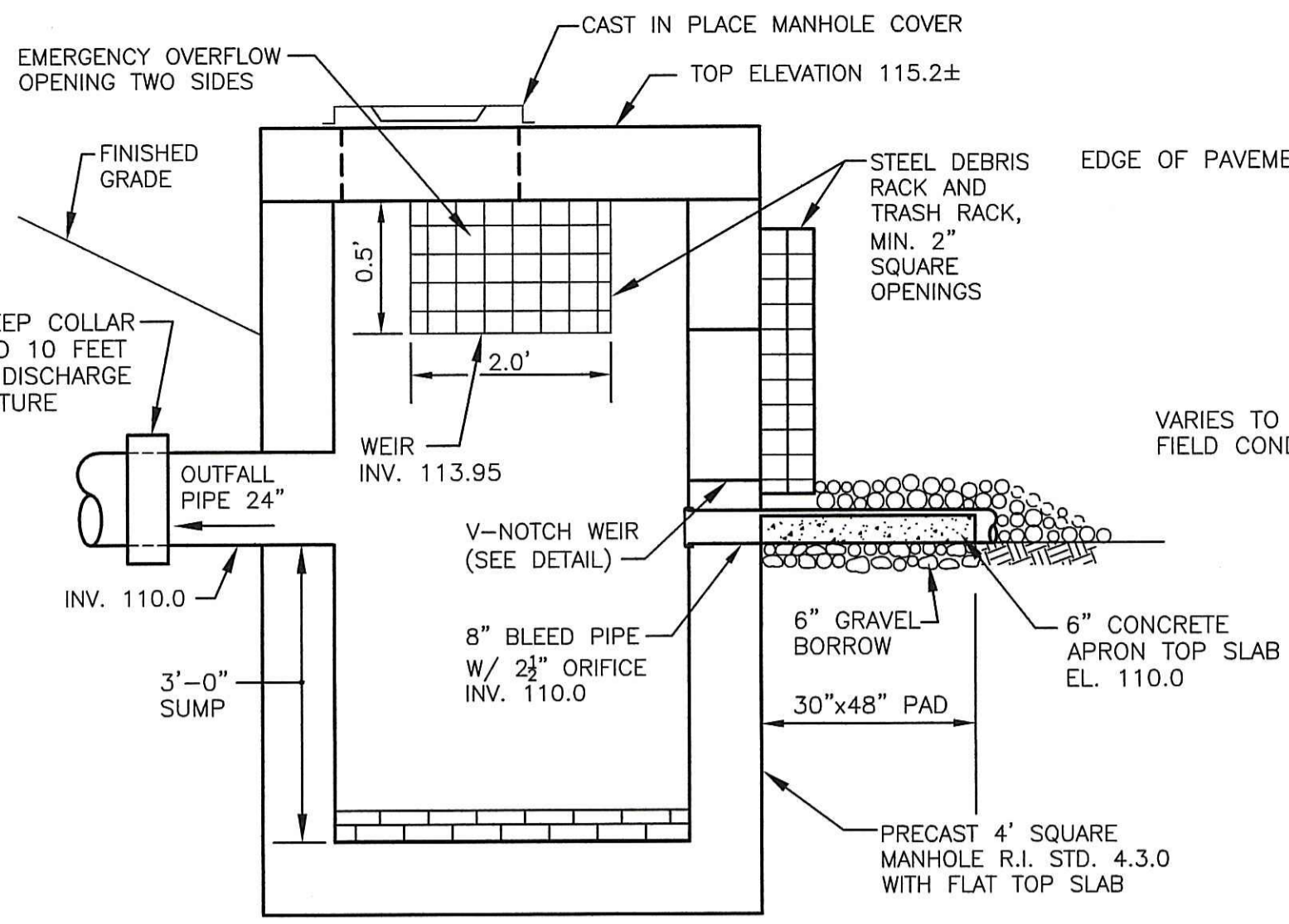
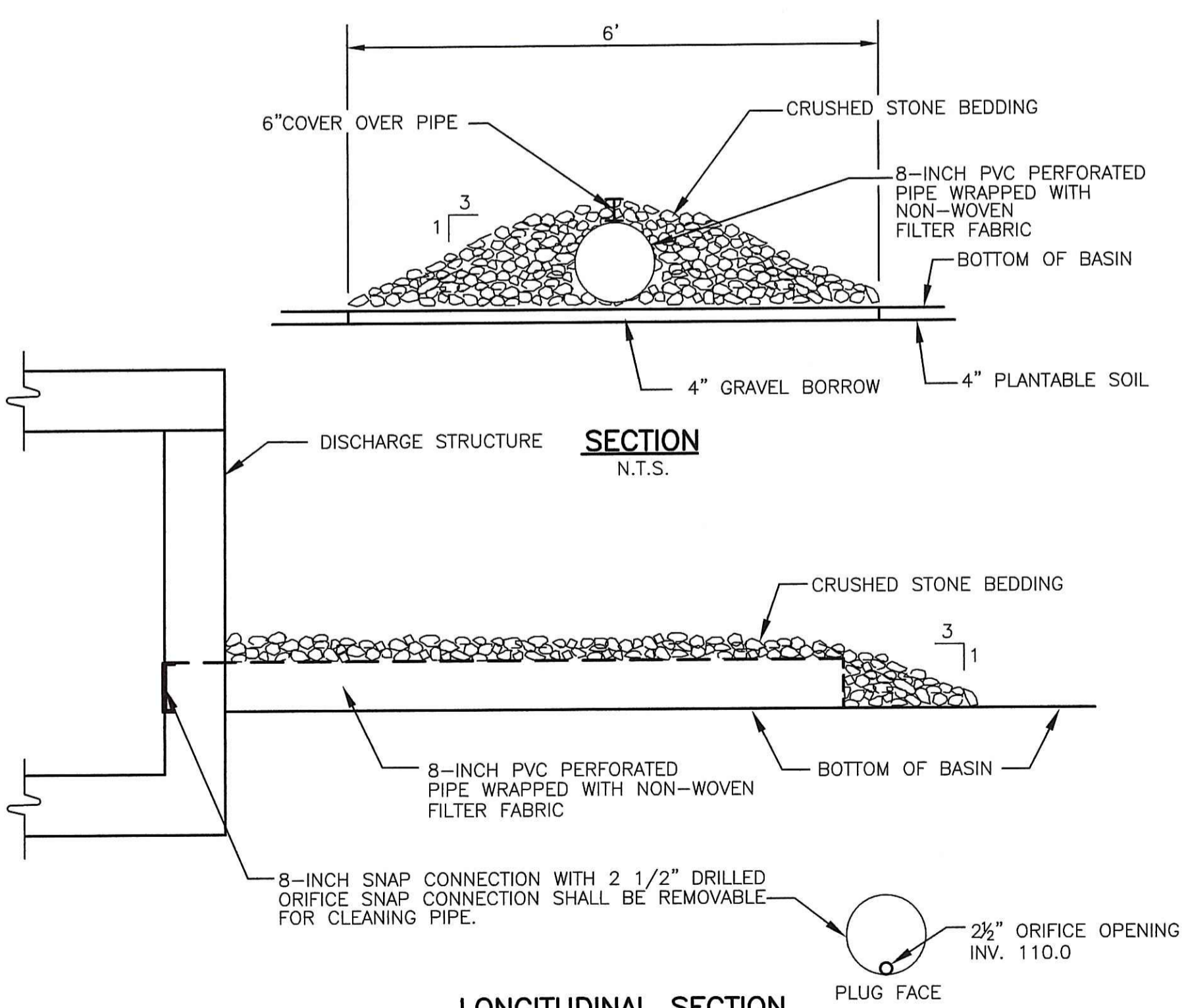
**RIP-RAP PAD DETAIL (RRP)**  
N.T.S.

- NOTES:**
- RIP-RAP AND BEDDING SHALL BE IN ACCORDANCE WITH SECTION M.10 OF THE RI STD. SPECIFICATIONS FOR BRIDGE AND HIGHWAY. RIP-RAP SHALL BE MODIFIED NSA NO. R-4, BEDDING SHALL BE MODIFIED NSA NO. FS-2.
  - DIMENSIONS MAY BE MODIFIED BY ENGINEER TO MEET FIELD CONDITIONS.
  - UNLESS OTHERWISE SPECIFIED, DUMPED RIP-RAP SHALL BE USED.

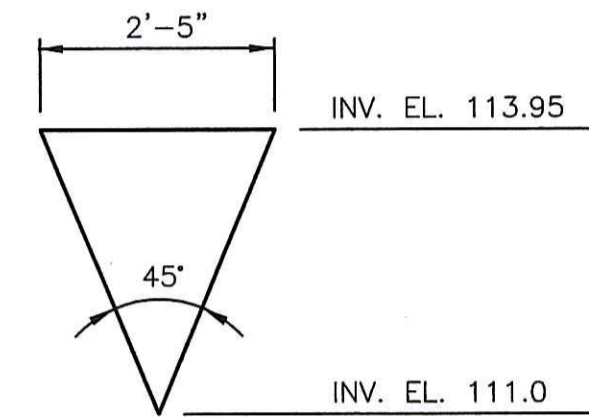
**TYPICAL TRENCH DETAIL FOR DRAINAGE, SEWER LATERALS & SERVICE CONNECTIONS**  
NOT TO SCALE

- NOTES:**
- BEDDING MATERIAL FOR PIPE SHALL CONFORM TO CITY OF WOOSOCKET DEPARTMENT OF PUBLIC WORKS ENGINEERING DIVISION SEWER POLICY.
  - CONTRACTOR SHALL PROTECT ALL UTILITIES FROM DAMAGE AND IS RESPONSIBLE FOR REPAIR OF ALL UTILITIES DAMAGED OUTSIDE THE LIMIT OF DISTURBANCE.
  - SURFACE COVER SHALL BE AS DETAILED ON PLANS. SAWCUT AND PAVEMENT PATCHING SHALL COMPLY WITH THE CITY OF WOOSOCKET DEPARTMENT OF PUBLIC WORKS ENGINEERING DIVISION TYPICAL TRENCH AND PAVEMENT PATCH DETAIL DATED MARCH 2006.

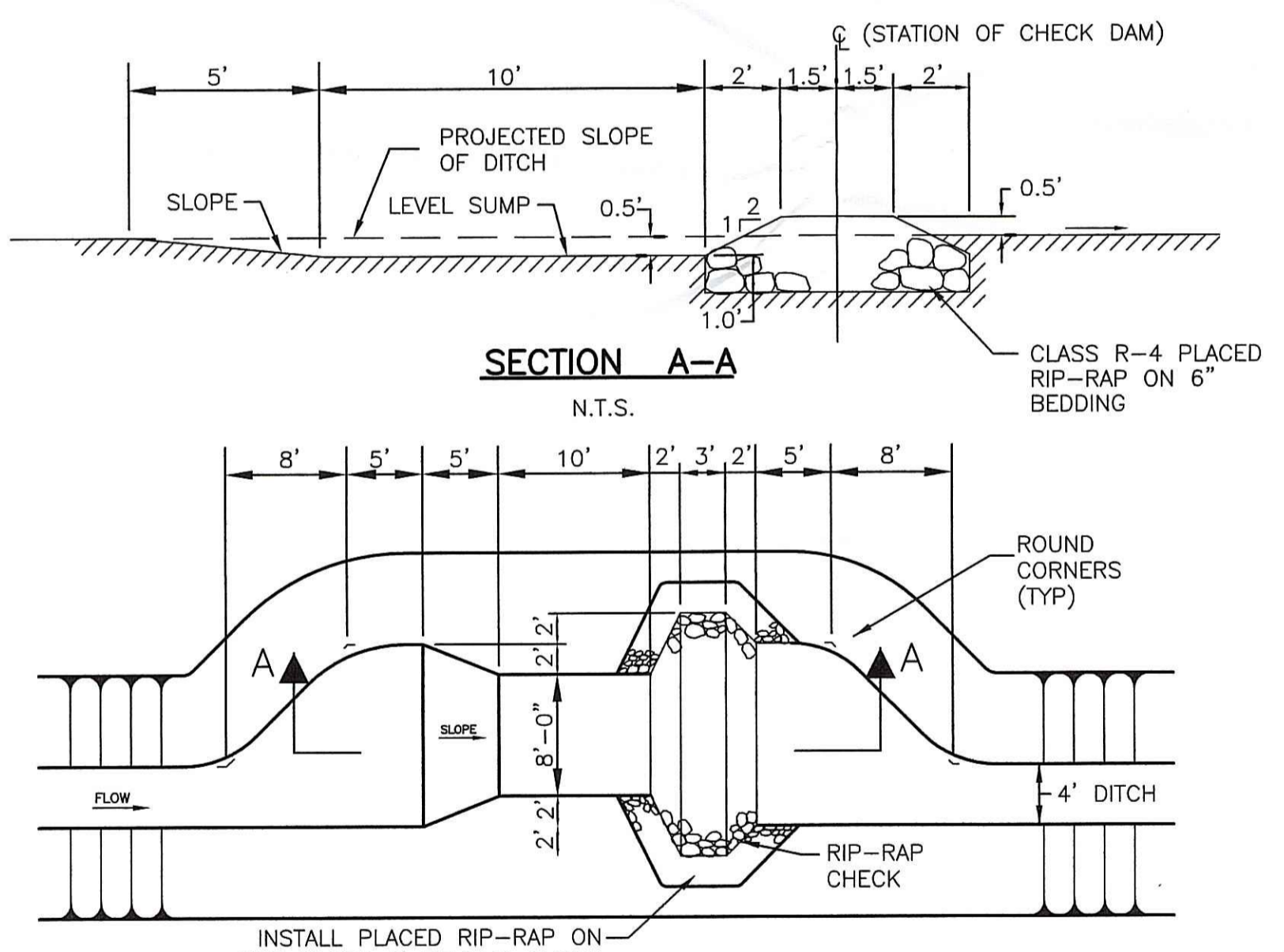
**LONGITUDINAL SECTION BLEED PIPE DETAILS (BASIN H)**  
N.T.S.



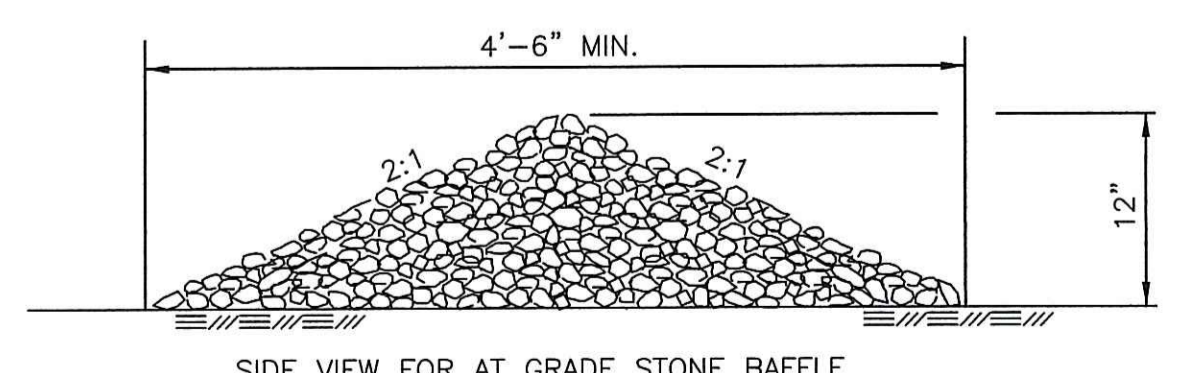
**DISCHARGE STRUCTURE**  
N.T.S.



**ELEVATION WEIR DETAIL**  
N.T.S.

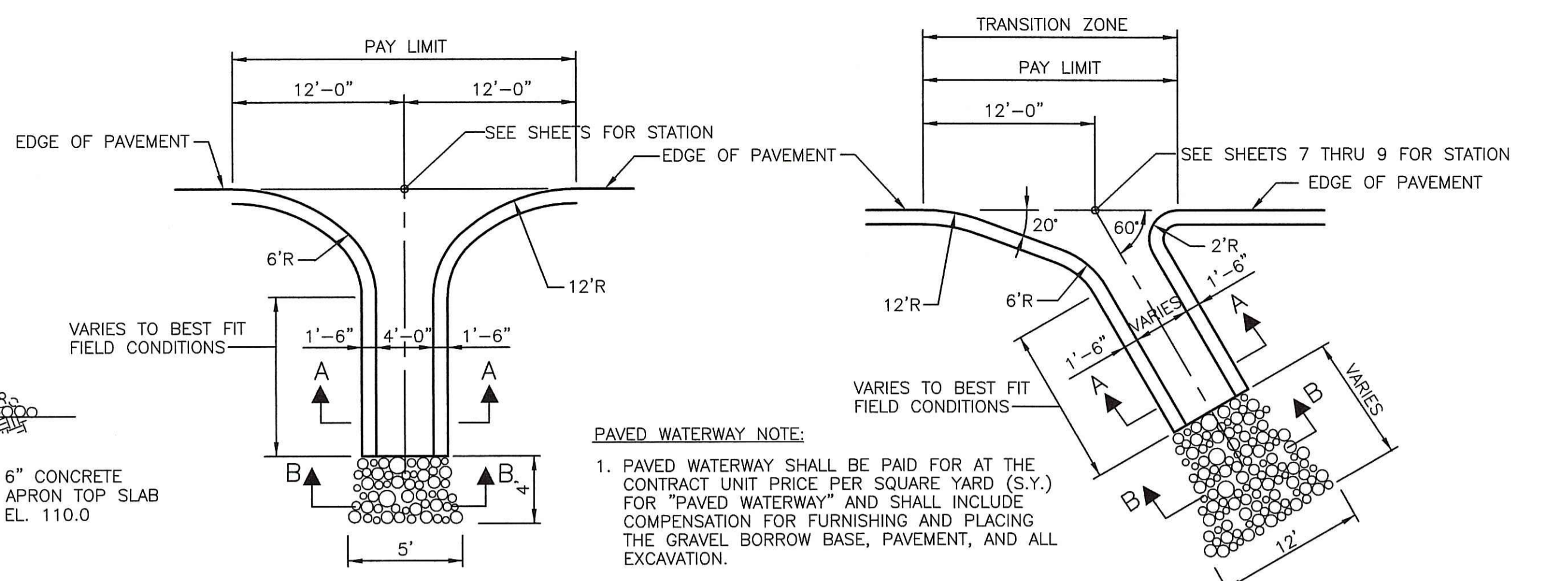


**PERMANENT RIP-RAP DITCH CHECK DAM (PCD)**  
N.T.S.



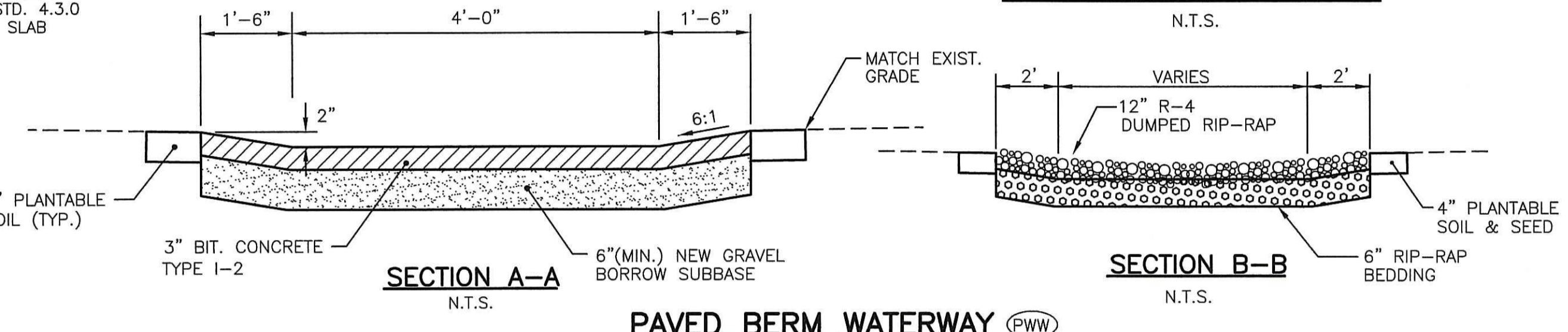
**STONE BAFFLE (SB)**  
N.T.S.

- NOTES:**
- STONE SHALL BE CLASS R-5 RIP-RAP.
  - HAND OR MECHANICAL PLACEMENT SHALL BE NECESSARY TO CONSTRUCT BAFFLE.
  - LENGTH OF STONE BAFFLE VARIES. LENGTH MAY VARY TO MEET FIELD CONDITIONS (10' MINIMUM LENGTH).

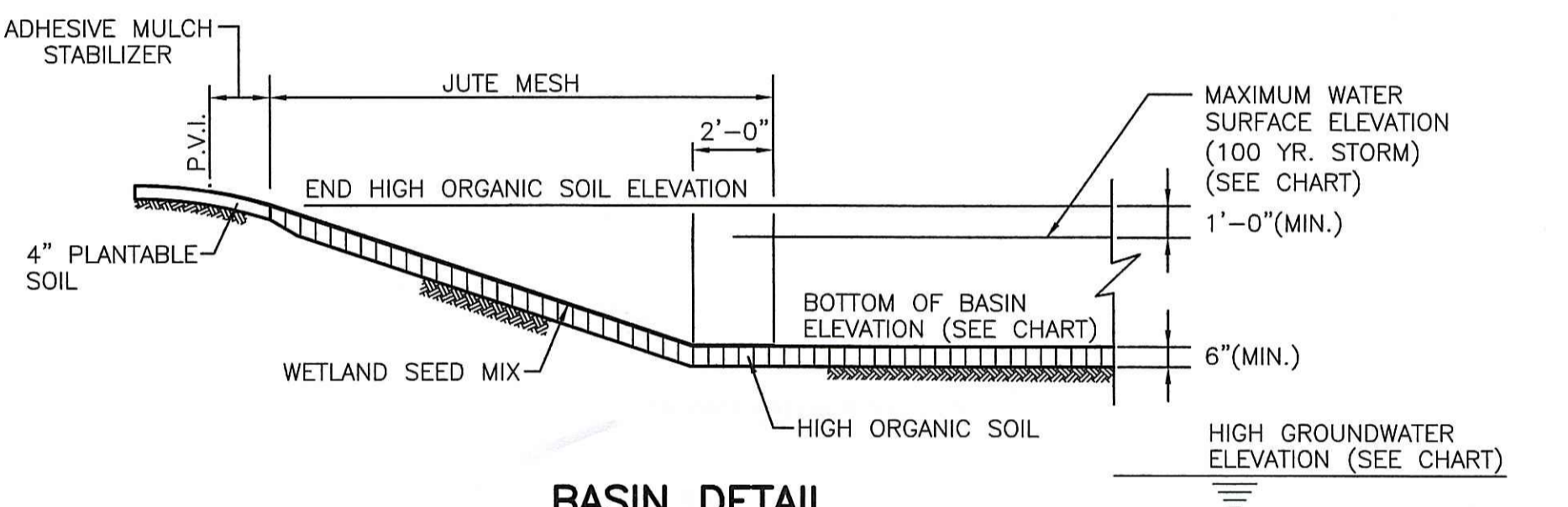


**PAVED WATERWAY AT LOW POINT**  
N.T.S.

**PAVED WATERWAY ON SLOPE**  
N.T.S.



**PAVED BERM WATERWAY (PW)**  
N.T.S.



**BASIN DETAIL**  
N.T.S.

BASIN	PROPOSED BOTTOM EL. ELEVATION (FEET)	SEASONAL HIGH GROUNDWATER ELEVATION (FEET)	MAXIMUM WATER SURFACE ELEVATION (100 YR. STORM) (FEET)
A	110.0	106.3	115.34
B	112.3	NA	116.78
D	110.0	106.3	114.95
E	111.0	108.0	114.49
H	110.0	106.8	113.90

**BASIN MAINTENANCE NOTES:**

- MAINTENANCE RESPONSIBILITIES OF THE OWNER SHALL INCLUDE BUT NOT LIMITED TO:
- MEASURE DEPTH OF ACCUMULATED SILT IN BOTTOM OF BASINS ON A YEARLY CYCLE.
  - REMOVE ACCUMULATED SILT AND SEDIMENT FROM THE BASINS, INLETS AND DISCHARGE STRUCTURES EVERY TEN (10) YEARS, OR MORE FREQUENTLY IF ACCUMULATED DEPTH OF SEDIMENT EXCEEDS 3 INCHES.
  - ALL TRASH, LITTER, DEBRIS AND FOREIGN MATERIALS SHALL BE REMOVED FROM BASINS, INLET AND DISCHARGE STRUCTURES AN "AS NEEDED" BASIS AND AT LEAST DURING EACH YEARLY INSPECTION.
  - ALL REMOVED SEDIMENT IS TO BE PROPERLY DISPOSED IN UPLAND AREAS IN COMPLIANCE WITH LOCAL, STATE AND FEDERAL REGULATIONS.
  - SIDE-SLOPES, EMBANKMENTS AND THE UPPER STAGE OF BASINS SHOULD BE MOWED AT LEAST ONCE PER GROWING SEASON.
  - INSPECTORS SHALL FILE A REPORT SHEET FOLLOWING EACH YEARLY SITE INSPECTION. SAID SHEET SHALL BE KEPT ON FILE WITH URI MAINTENANCE DIVISION AND SHALL BE SIGNED AND DATED BY PERSONNEL CONDUCTING ON-SITE INVESTIGATIONS. INSPECTION REPORTS SHALL CONTAIN COMMENTS ON THE FOLLOWING:
 

A. DEM FILE NO.	F. OUTLET CONDITIONS
B. EMBANKMENT INTEGRITY	G. SEDIMENT ACCUMULATIONS
C. EROSION	H. SLOPE STABILITY
D. TREE GROWTH	J. DISCHARGE STRUCTURE
E. INLET CONDITIONS	
  - ANY DEFICIENCIES NOTED DURING AN INSPECTION SHALL BE REPAIRED OR REPLACED WITHIN 30 DAYS OF DEFICIENCY REPORT. IF AN EMERGENCY SITUATION IS IMMINENT THEN REPAIR MUST BE DONE IMMEDIATELY.

8. Basin E shall be tilled and reseeded every 5-10 years, or earlier, to restore infiltration.

**PROJECT**  
FLAGG ROAD EXTENSION

**CLIENT**  
UNIVERSITY OF RHODE ISLAND

**DRAWING TITLE**  
DETAIL SHEET 1

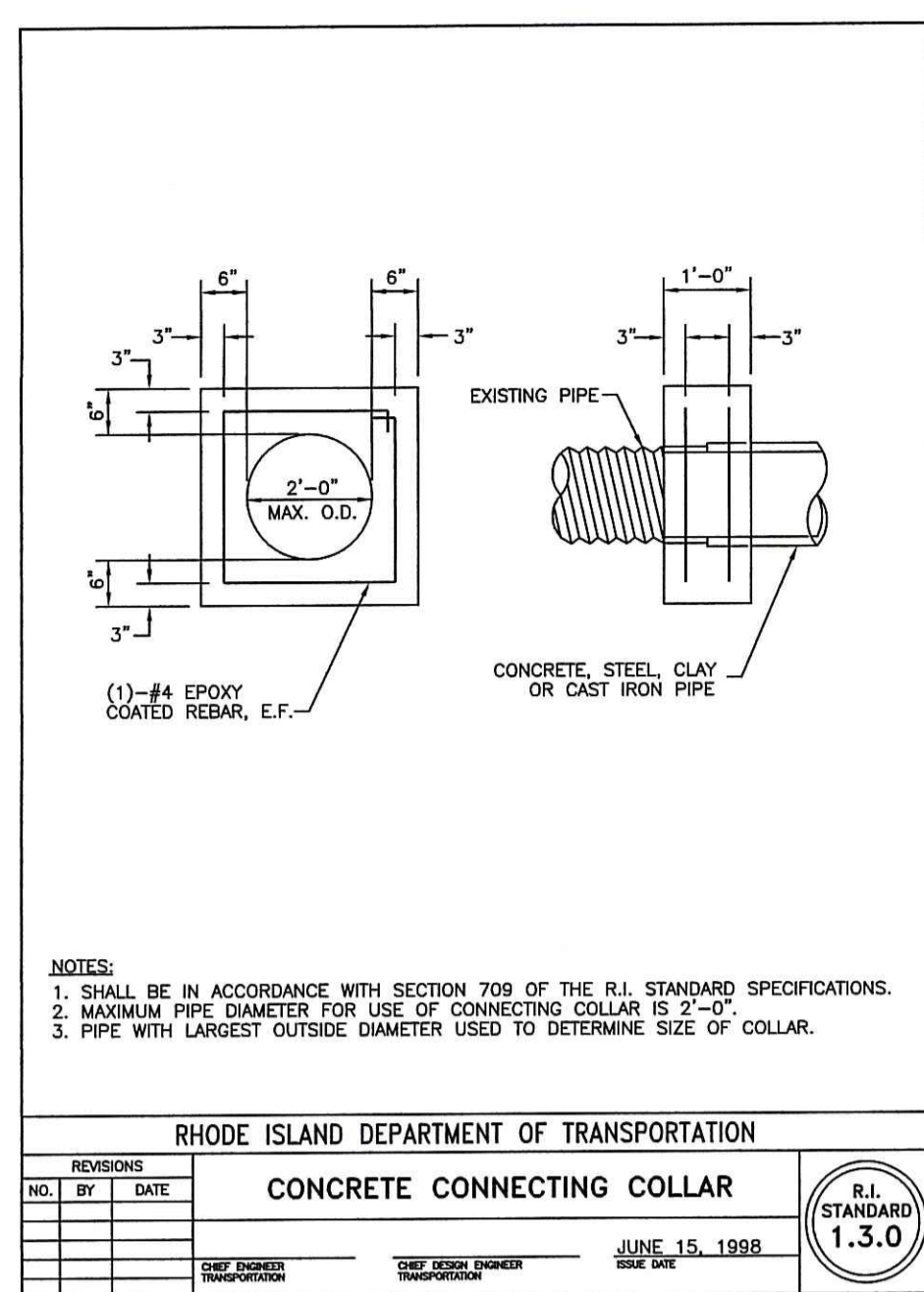
**BY**  
REVISIONS

**NO. DATE**

**PROJECT NO.:** 1255  
**DATE:** DECEMBER 2010  
**SCALE:** AS NOTED  
**DRAWN BY:** TAP  
**CHECKED BY:** TAR  
**DRAWING NUMBER**  
9  
SHEET 9 OF 10

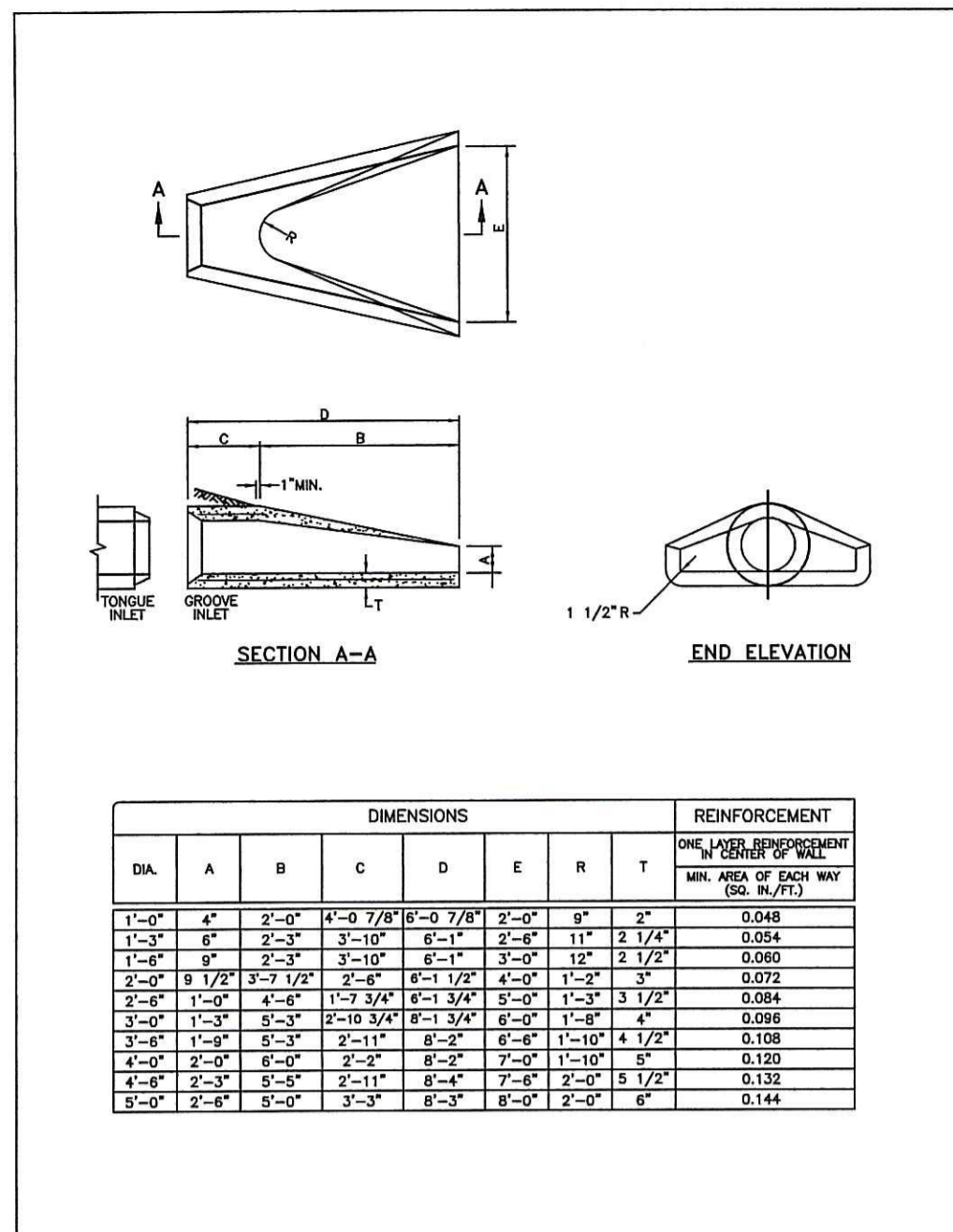
**Professional Engineer**  
Gordon R. Archibald, Inc.  
Civil and Environmental Engineers  
Pawtucket, Rhode Island

**Environmental Management**  
DEC 26 2010  
Office of Water Resources

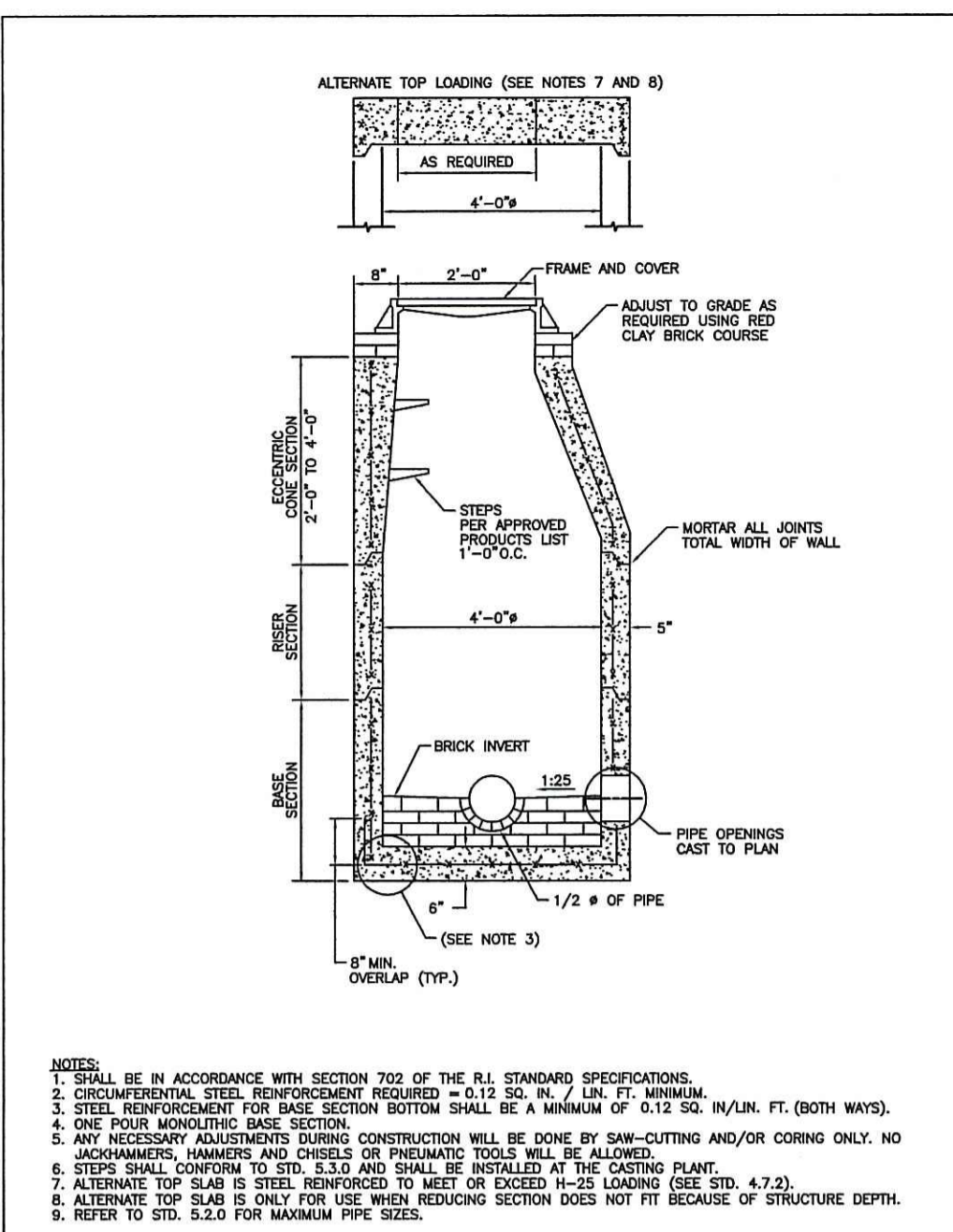


NOTES:  
 1. SHALL BE IN ACCORDANCE WITH SECTION 709 OF THE R.I. STANDARD SPECIFICATIONS.  
 2. MAXIMUM PIPE DIAMETER FOR USE OF CONNECTING COLLAR IS 2'-0".  
 3. PIPE WITH LARGEST OUTSIDE DIAMETER USED TO DETERMINE SIZE OF COLLAR.

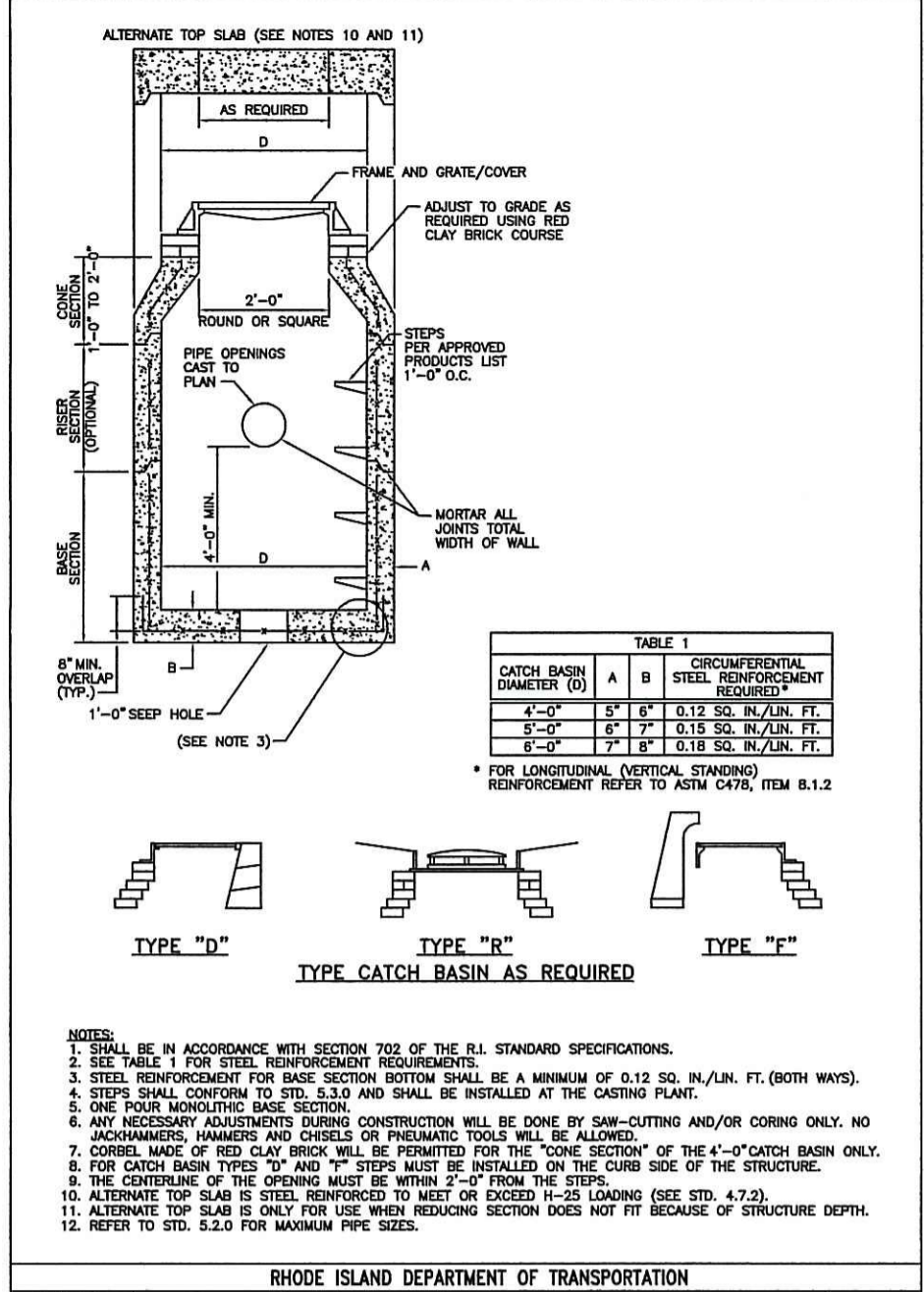
RHODE ISLAND DEPARTMENT OF TRANSPORTATION  
**CONCRETE CONNECTING COLLAR**  
 R.I. STANDARD 1.3.0  
 JUNE 15, 1998



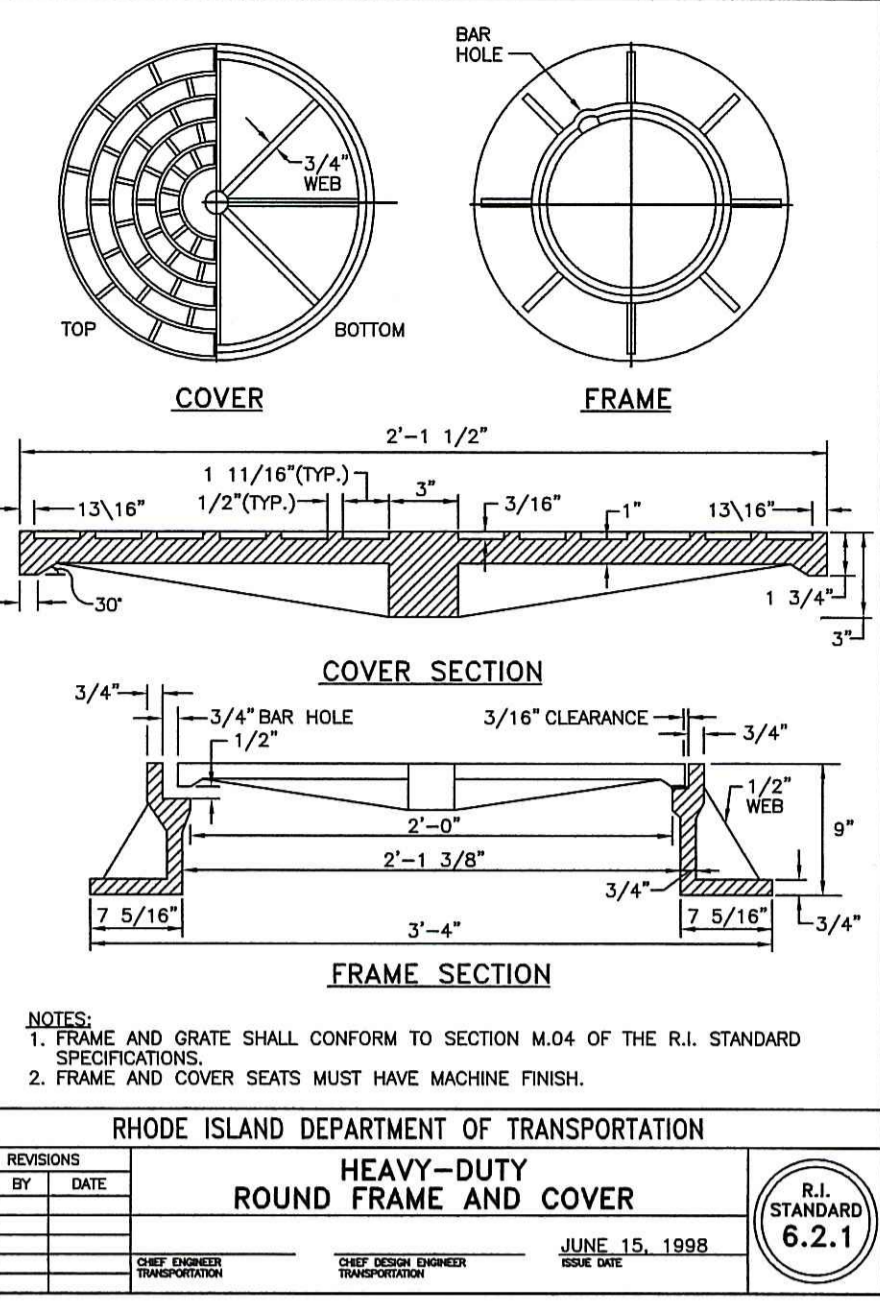
RHODE ISLAND DEPARTMENT OF TRANSPORTATION  
**PRECAST CONCRETE FLARED END SECTION**  
 R.I. STANDARD 2.3.0  
 JUNE 15, 1998



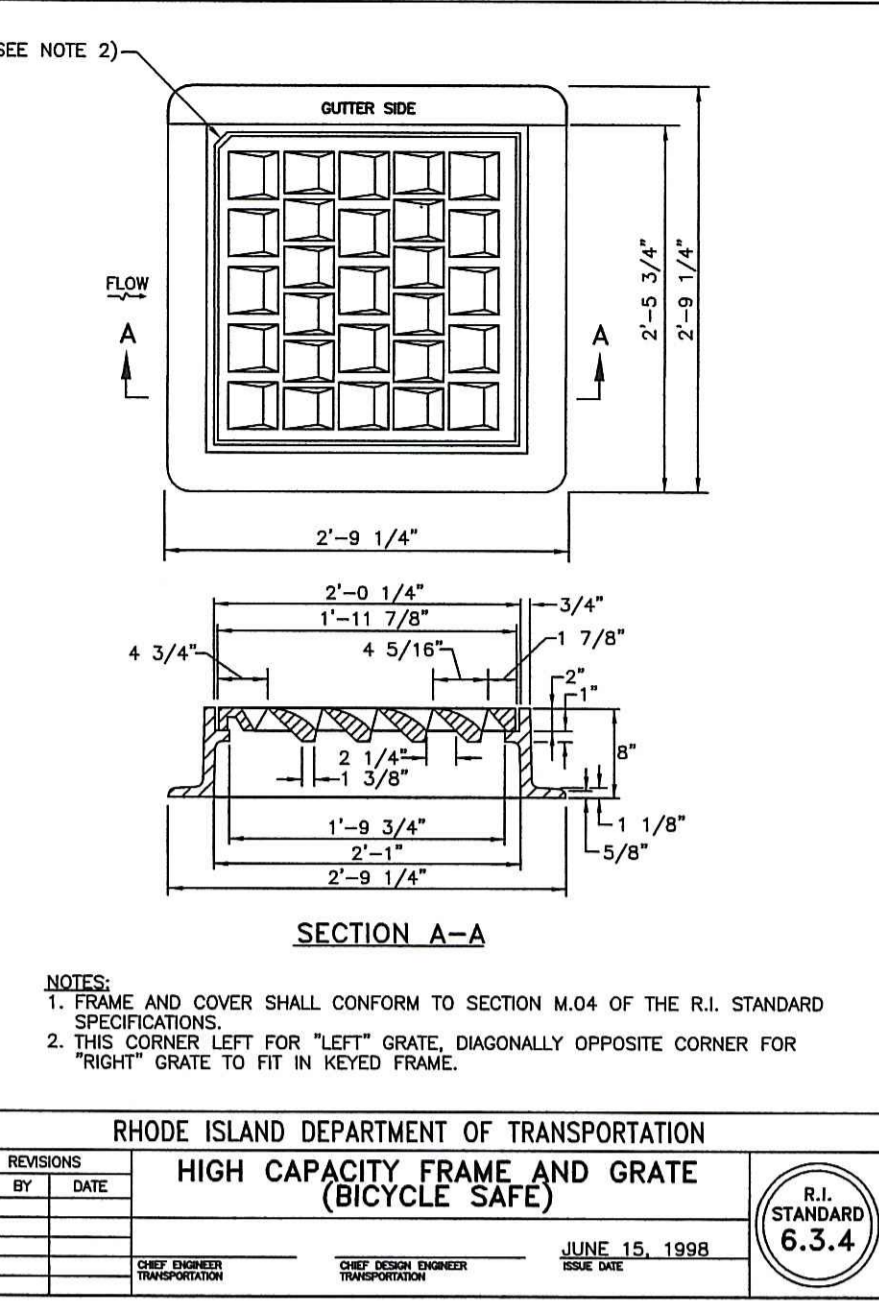
RHODE ISLAND DEPARTMENT OF TRANSPORTATION  
**PRECAST 4'-0" ROUND MANHOLE**  
 R.I. STANDARD 4.2.0  
 JUNE 15, 1998



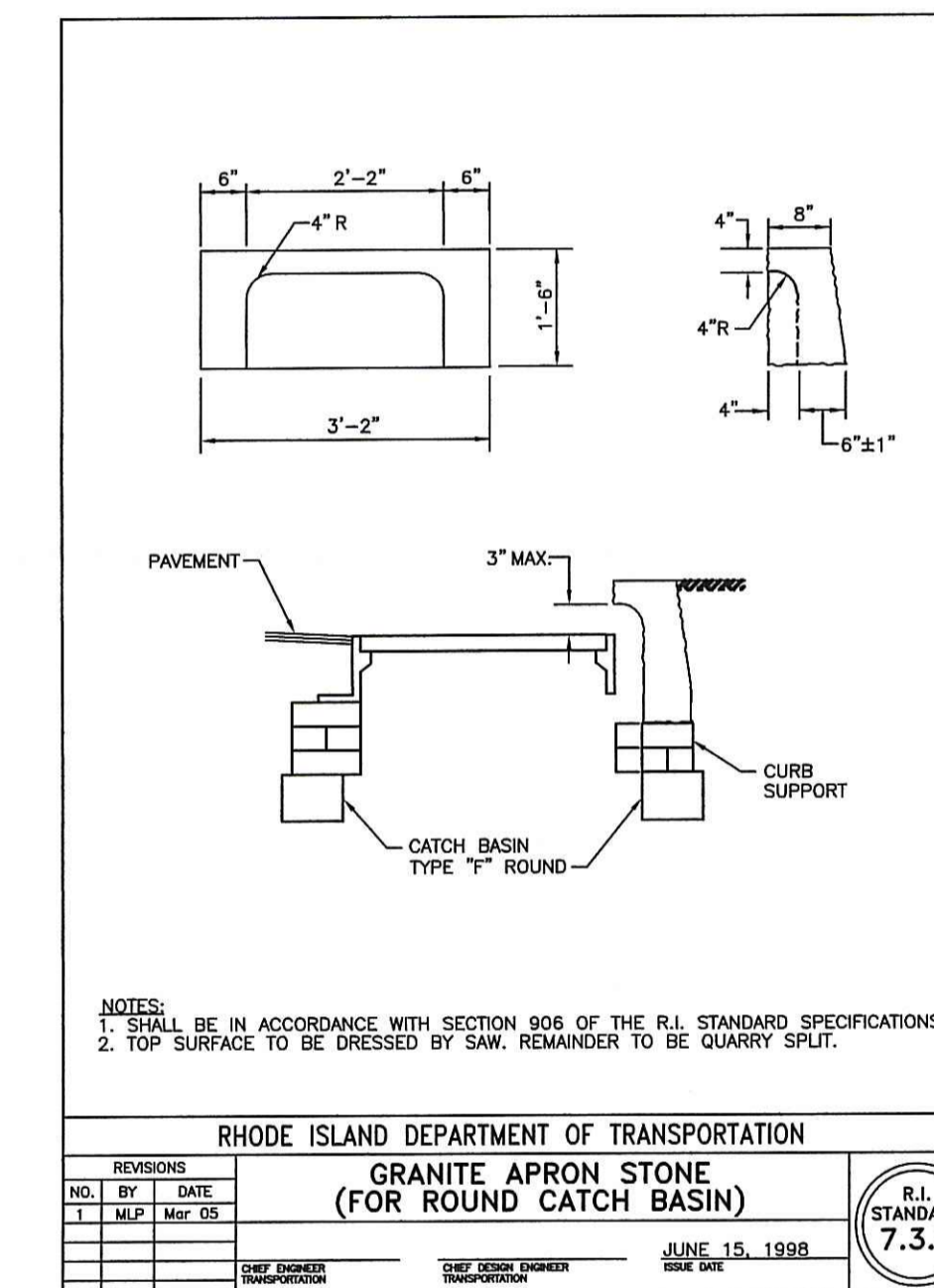
RHODE ISLAND DEPARTMENT OF TRANSPORTATION  
**PRECAST 4'-0", 5'-0", OR 6'-0" ROUND CATCH BASIN**  
 R.I. STANDARD 4.4.0  
 JUNE 15, 1998



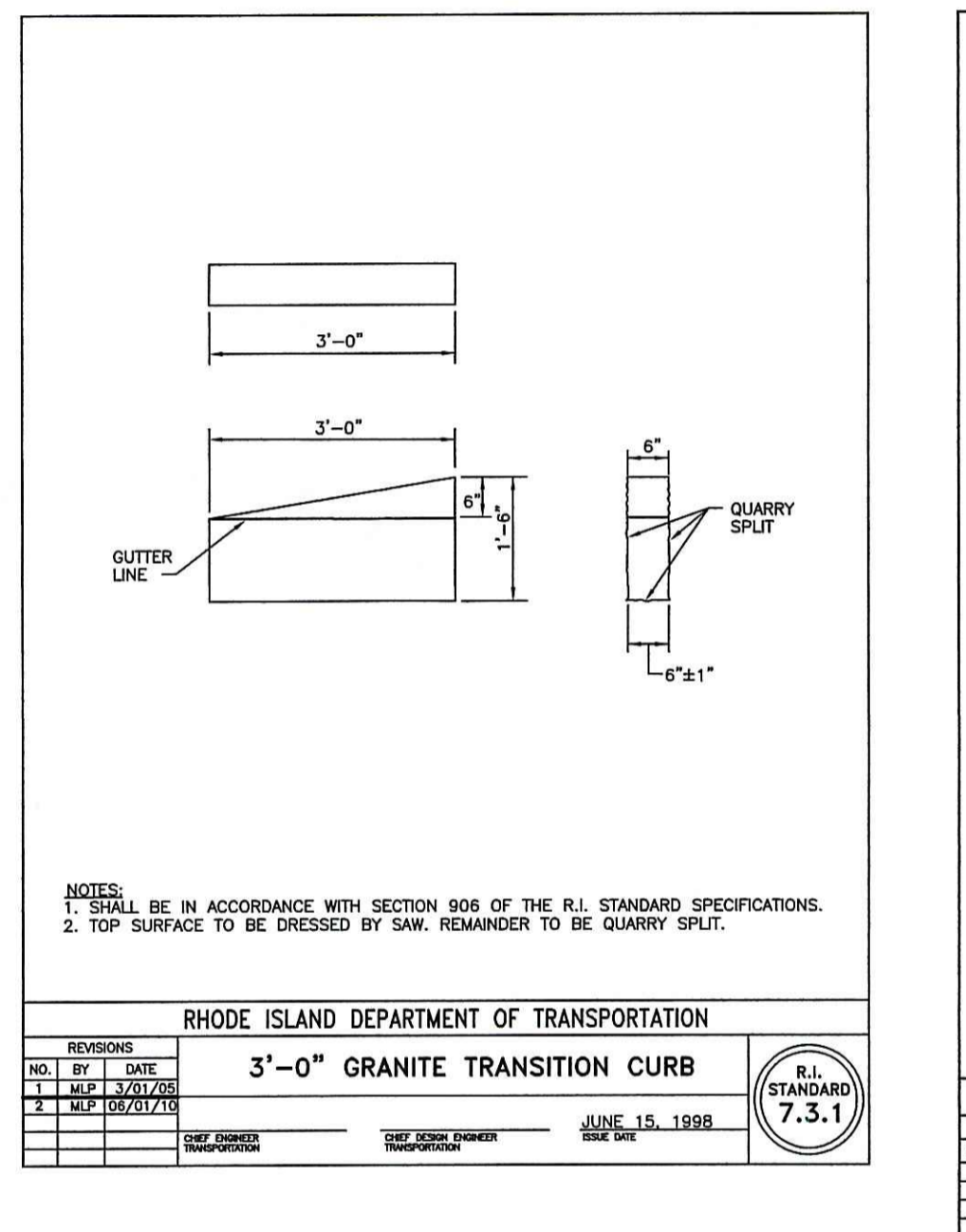
RHODE ISLAND DEPARTMENT OF TRANSPORTATION  
**HEAVY-DUTY ROUND FRAME AND COVER**  
 R.I. STANDARD 6.2.1  
 JUNE 15, 1998



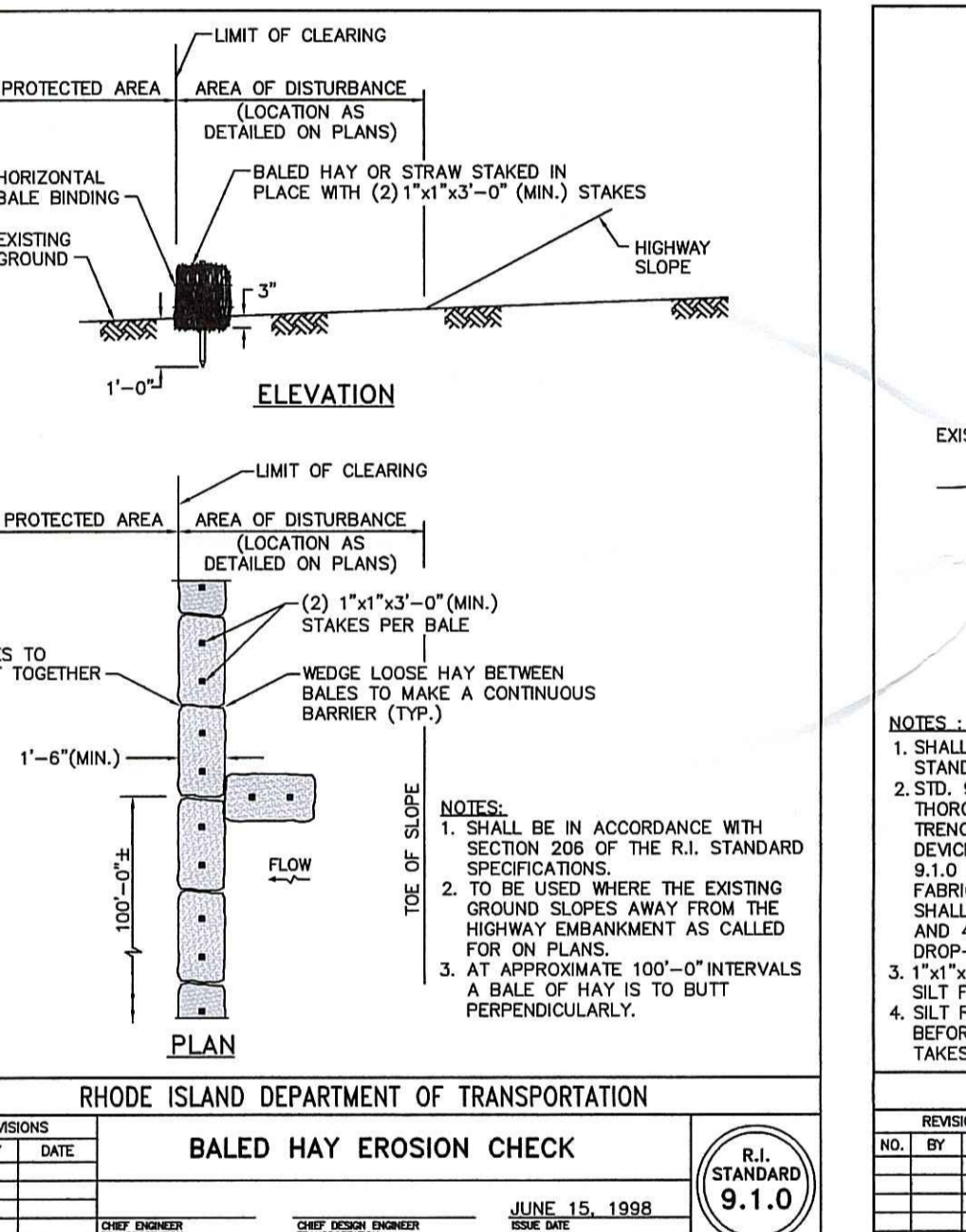
RHODE ISLAND DEPARTMENT OF TRANSPORTATION  
**HIGH CAPACITY FRAME AND GRATE (BICYCLE SAFE)**  
 R.I. STANDARD 6.3.4  
 JUNE 15, 1998



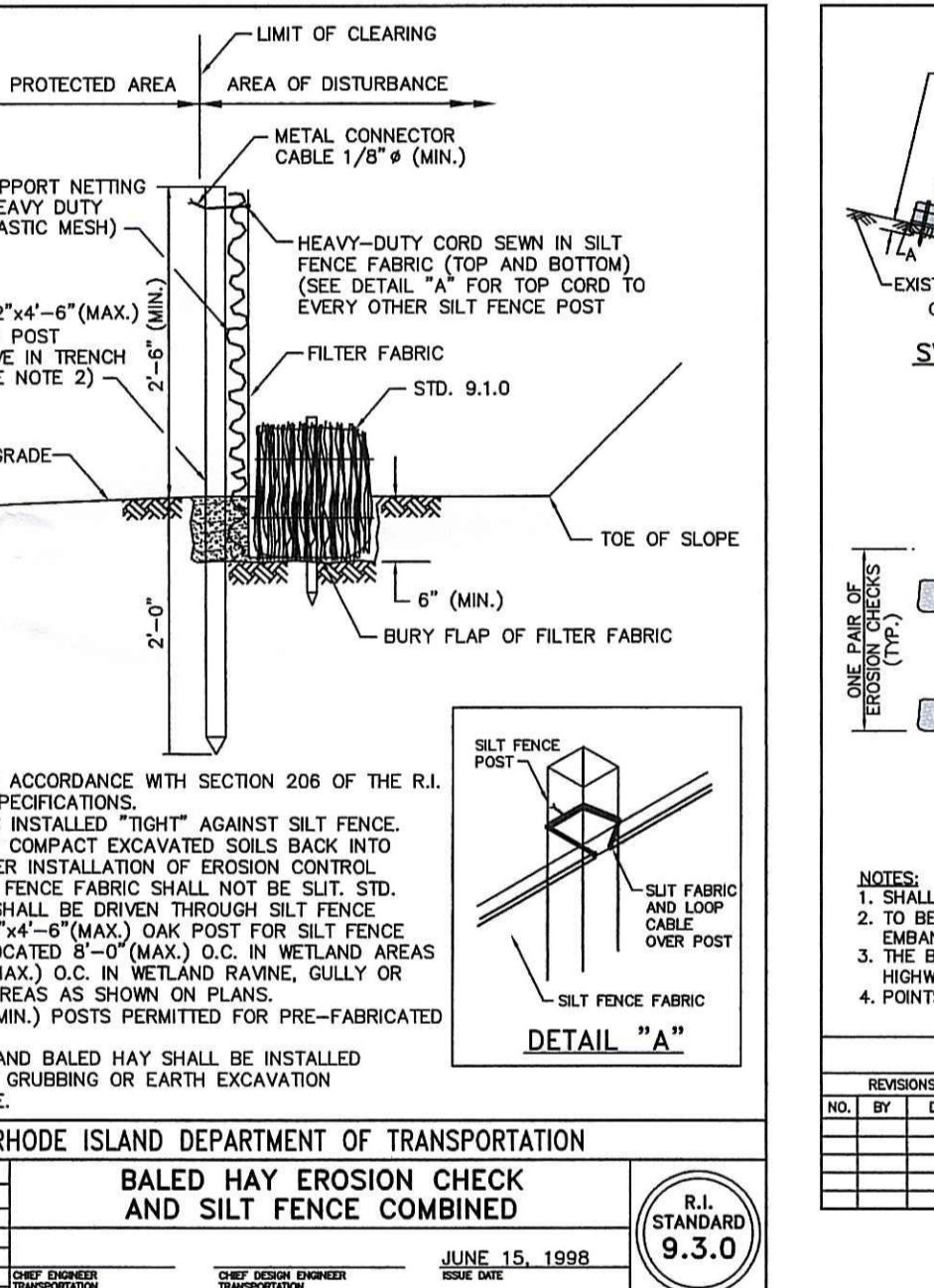
RHODE ISLAND DEPARTMENT OF TRANSPORTATION  
**GRANITE APRON STONE (FOR ROUND CATCH BASIN)**  
 R.I. STANDARD 7.3.8  
 JUNE 15, 1998



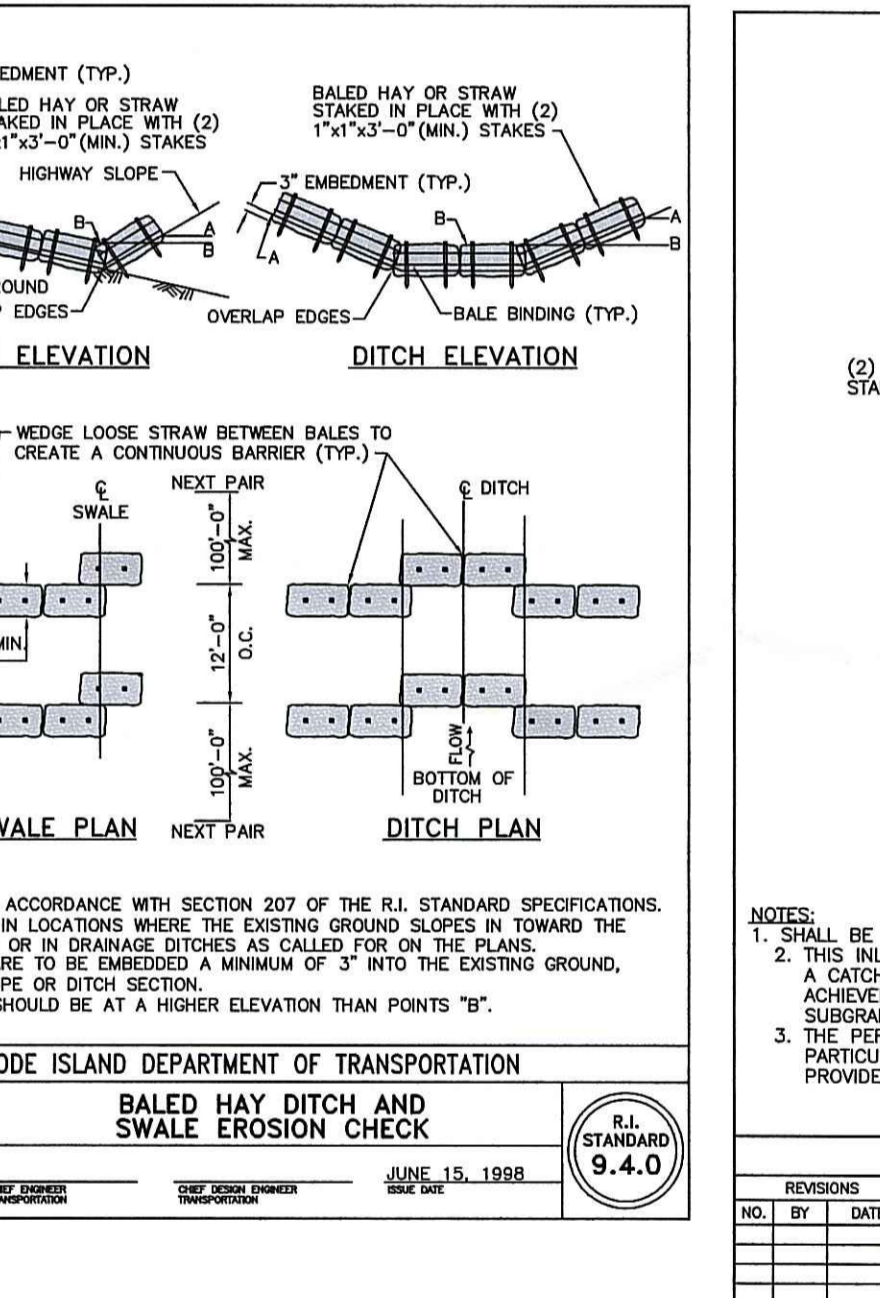
RHODE ISLAND DEPARTMENT OF TRANSPORTATION  
**3'-0" GRANITE TRANSITION CURB**  
 R.I. STANDARD 7.3.1  
 JUNE 15, 1998



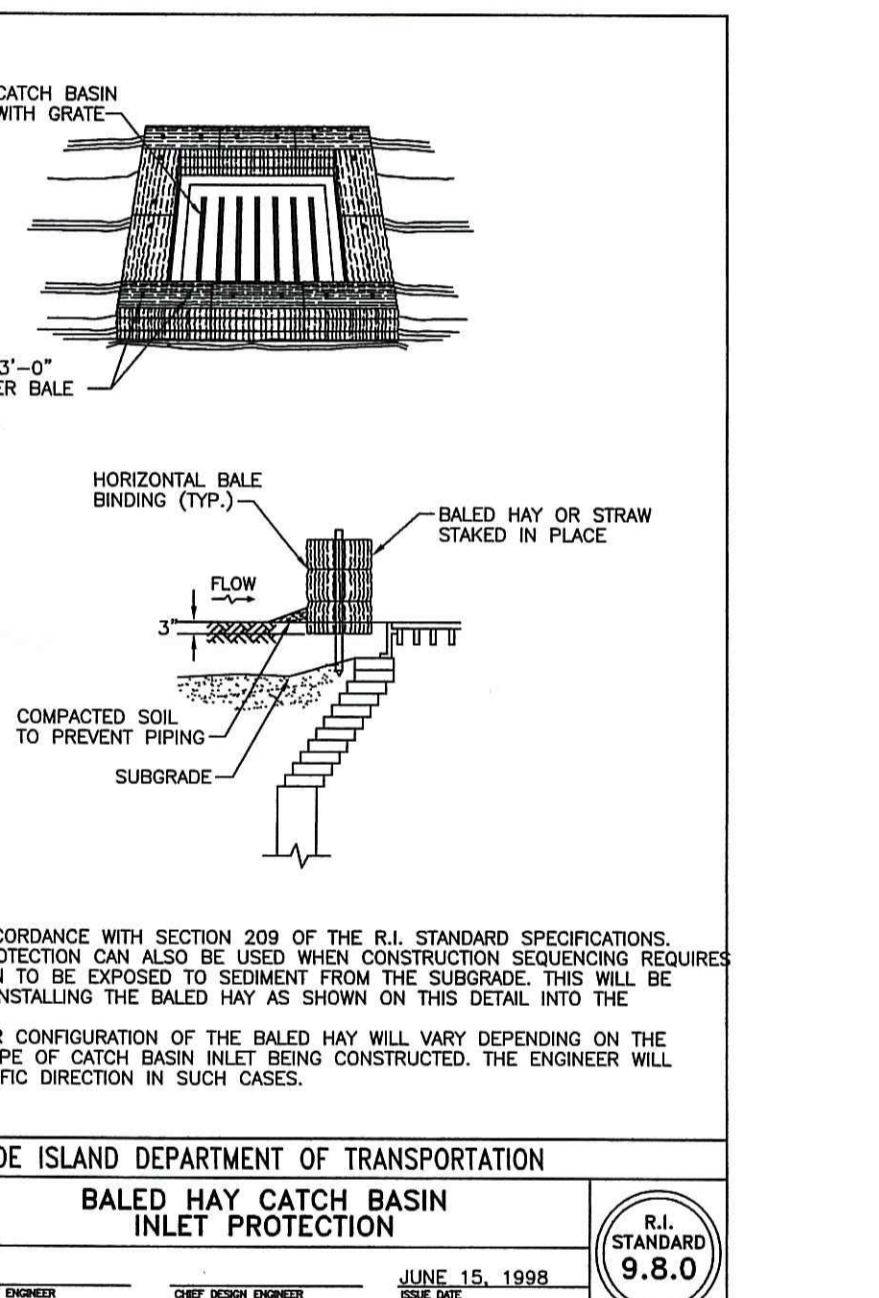
RHODE ISLAND DEPARTMENT OF TRANSPORTATION  
**BALED HAY EROSION CHECK**  
 R.I. STANDARD 9.1.0  
 JUNE 15, 1998



RHODE ISLAND DEPARTMENT OF TRANSPORTATION  
**BALED HAY EROSION CHECK AND SILT FENCE COMBINED**  
 R.I. STANDARD 9.3.0  
 JUNE 15, 1998



RHODE ISLAND DEPARTMENT OF TRANSPORTATION  
**BALED HAY DITCH AND SWALE EROSION CHECK**  
 R.I. STANDARD 9.4.0  
 JUNE 15, 1998



RHODE ISLAND DEPARTMENT OF TRANSPORTATION  
**BALED HAY CATCH BASIN INLET PROTECTION**  
 R.I. STANDARD 9.8.0  
 JUNE 15, 1998

DEPARTMENT OF ENVIRONMENTAL MANAGEMENT  
 OFFICE OF WATER RESOURCES  
 FRESHWATER WETLANDS PROGRAM  
 APPROVED WITH CONDITIONS  
 AS SPECIFIED IN THE LETTER OF APPROVAL  
 DATED MAR 02 2011 FILE # 10-0243  
 NO CHANGES ALLOWED WITHOUT PRIOR APPROVAL  
 APPROVED PLANS MUST BE AT CONSTRUCTION SITE

James A. Harkin

PROJECT  
**FLAGG ROAD EXTENSION**

TODD A. RAYNEHLE  
 REGISTERED PROFESSIONAL ENGINEER  
 3928

UNIVERSITY OF RHODE ISLAND

Gordon R. Archibald, Inc.  
 Civil and Environmental Engineers  
 Pawtucket, Rhode Island

DRAWING TITLE  
**DETAIL SHEET 1**

REVISIONS

NO.	DATE	BY

PROJECT NO.: 1255

DATE: DECEMBER 2010

SCALE: NONE

DRAWN BY: TAP

CHECKED BY: TAR

DRAWING NUMBER  
**10**  
 SHEET 10 OF 10

