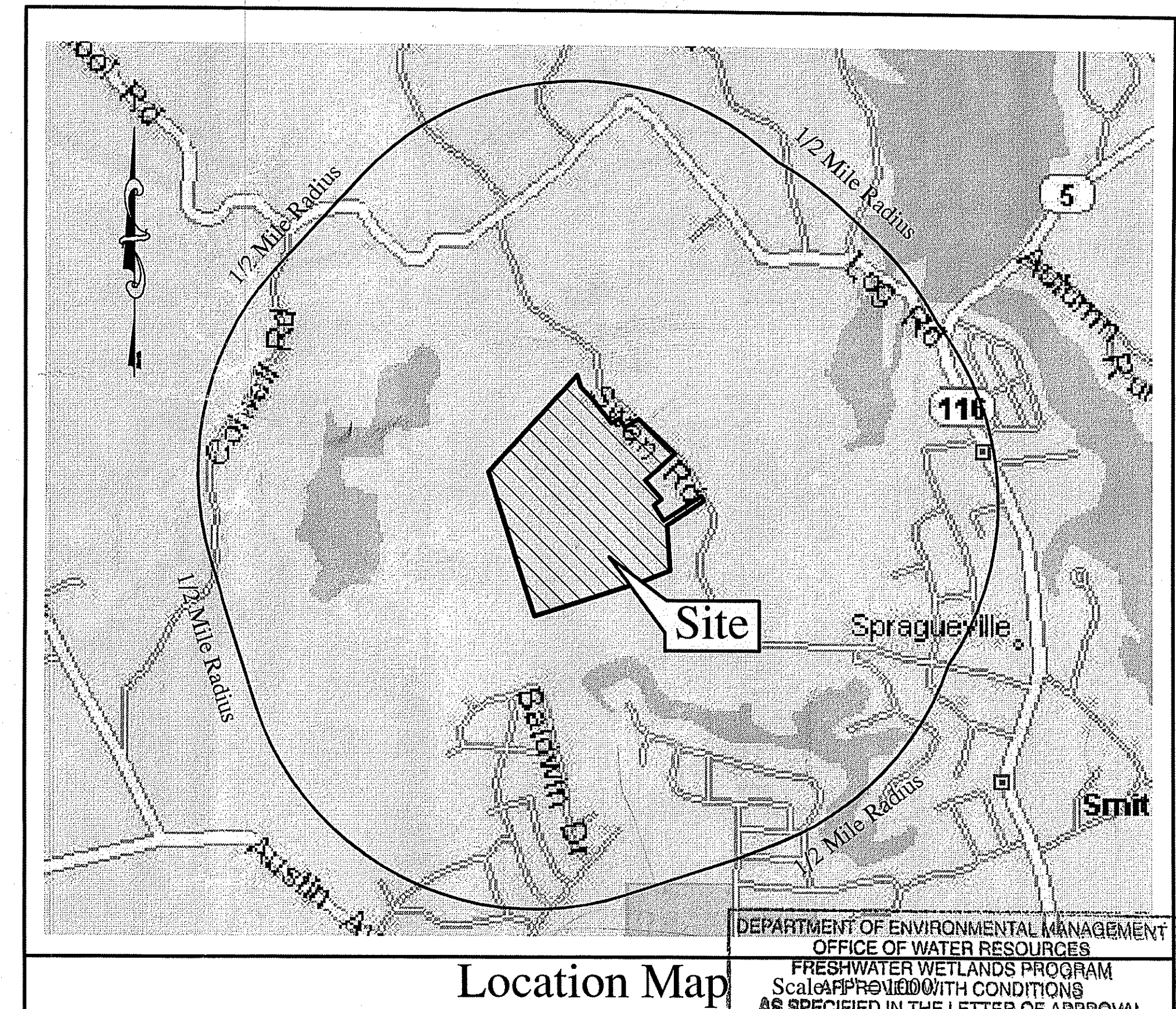


RIDEM Freshwater Wetlands Submission Swan Orchard Farms

Located on Swan Road
Smithfield, Rhode Island
Assessor's Plat 47 Lot 77

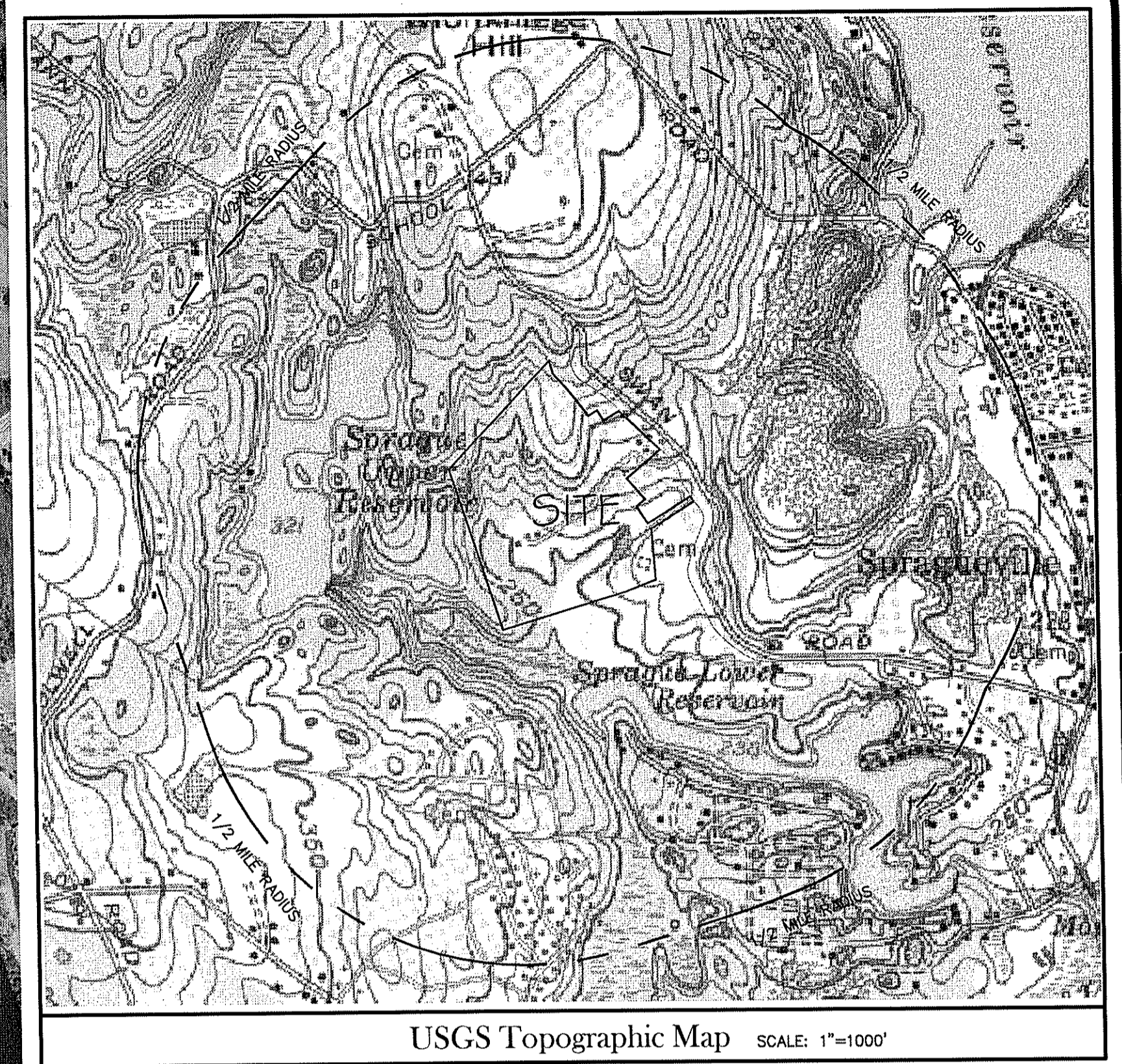
Sheet Index

1. Cover Sheet
2. Aerial 1/2 Mile Radius
3. Existing Conditions Plan
4. Overall Plan
5. Grading Plan
6. Grading Plan
7. Plan and Profile
8. Plan and Profile
9. Off-Site Utility Plan
10. Off-Site Utility Plan
11. Off-Site Utility Plan
12. Detail Sheet
13. Detail Sheet
14. Detail Sheet
15. Detail Sheet
16. Detail Sheet
17. Detail Sheet



DEPARTMENT OF ENVIRONMENTAL MANAGEMENT
OFFICE OF WATER RESOURCES
FRESHWATER WETLANDS PROGRAM
Scale APPROVED WITH CONDITIONS
AS SPECIFIED IN THE LETTER OF APPROVAL
DATED OCT 3 2007 FILE # 07-0217
NO CHANGES ALLOWED WITHOUT PRIOR APPROVAL
APPROVED PLANS MUST BE AT CONSTRUCTION SITE

 CHRISTOPHER A. DUHAMEL No. 1844 PROFESSIONAL LAND SURVEYOR	 CHRISTOPHER A. DUHAMEL No. 5013 REGISTERED PROFESSIONAL ENGINEER	COVER SHEET Swan Orchard Farms ASSESSOR'S PLAT 47 LOT 77 SMITHFIELD, RI PREPARED BY DiPrete Engineering Associates, Inc. ENGINEERING, SURVEYING AND PLANNING CONSULTANTS TWO STAFFORD COURT CRANSTON, R.I. 02920 (401) 943-1000 FAX: (401) 464-4606 PREPARED FOR Churchill & Banks Properties LLC 10 GREENE STREET PROVIDENCE, R.I. 02903-4736 (401) 273-8010 MAY, 2007 DWN. BY: J.M.D.												
<table border="1" style="width: 100%; border-collapse: collapse;"> <thead> <tr> <th style="width: 5%;">NO.</th> <th style="width: 15%;">DATE</th> <th style="width: 60%;">DESCRIPTION</th> <th style="width: 20%;">BY</th> </tr> </thead> <tbody> <tr> <td>2</td> <td>8-17-07</td> <td>WETLANDS SUBMISSION</td> <td>J.M.D.</td> </tr> <tr> <td>1</td> <td>05-14-07</td> <td>PRELIMINARY DETERMINATION</td> <td>J.M.D.</td> </tr> </tbody> </table>		NO.	DATE	DESCRIPTION	BY	2	8-17-07	WETLANDS SUBMISSION	J.M.D.	1	05-14-07	PRELIMINARY DETERMINATION	J.M.D.	SHEET 1 OF 17
NO.	DATE	DESCRIPTION	BY											
2	8-17-07	WETLANDS SUBMISSION	J.M.D.											
1	05-14-07	PRELIMINARY DETERMINATION	J.M.D.											

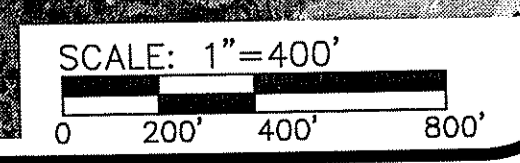


USGS Topographic Map SCALE: 1"=1000'

Legend

- EXISTING TREELINE
- ABUTTING PROPERTY LINE
- SOIL DIVISION LINE
- EXISTING EDGE OF PAVEMENT
- PROPERTY LINE
- EXISTING BUILDING
- 50' FOOT PERIMETER WETLAND LINE
- 100' FOOT RIVERBANK WETLAND LINE
- TWO FOOT CONTOUR
- TEN FOOT CONTOUR
- EDGE OF WETLAND LINE
- UTILITY POLES
- EXISTING STONEWALL
- EXISTING FENCE
- (POINTED) STONE BOUND FOUND
- ASSESSOR'S PLAT
- NOW OR FORMERLY
- TEST PIT
- PROPOSED DWELLING

DEPARTMENT OF ENVIRONMENTAL MANAGEMENT
 OFFICE OF WATER RESOURCES PHOTO OBTAINED FROM THE RI-GIS OF 2004 DIGITAL
 FRESHWATER WETLANDS PERIMETER PHOTOGRAPHY NORTHERN URBAN AREAS OF RI.
 APPROVED WITH CONDITIONS
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Charles A. Haber



CHRISTOPHER A. DUHAMEL No. 1844 PROFESSIONAL LAND SURVEYOR	CHRISTOPHER A. DUHAMEL No. 5013 REGISTERED PROFESSIONAL ENGINEER
--	--

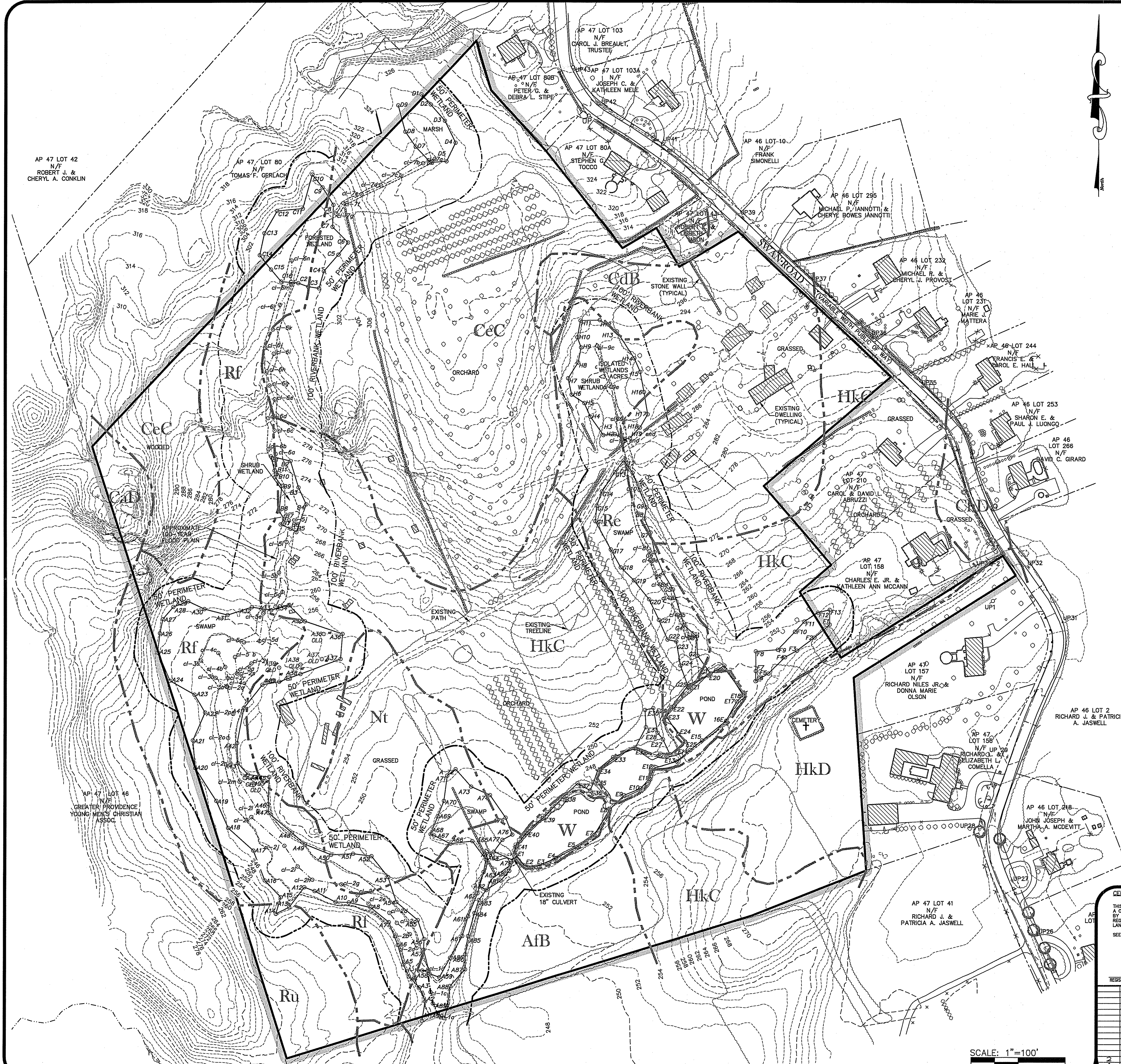
AERIAL 1/2 MILE RADIUS
Swan Orchard Farms
 ASSESSOR'S PLAT 47 LOT 77
 SMITHFIELD, RI

PREPARED BY
DiPrete Engineering Associates, Inc.
 ENGINEERING, SURVEYING AND PLANNING CONSULTANTS
 TWO STAFFORD COURT
 CRANSTON, R.I. 02920
 (401) 943-1000 FAX: (401) 464-6000 2007

PREPARED FOR
Churchill & Banks Properties LLC
 10 GREENE STREET
 PROVIDENCE, R.I.
 02903-4736
 (401) 273-8010

MAY, 2007
 DWN. BY: J.M.D. SHEET 2 OF 17

NO.	DATE	DESCRIPTION	BY
2	8-17-07	WETLANDS RESURVEY	J.M.D.
1	05-14-07	PRELIMINARY DETERMINATION	J.M.D.



GENERAL NOTES

1. PROPERTY FOUND ON TOWN OF SMITHFIELD ASSESSOR'S PLAT 47 LOT 77. THE AREA OF THE PARCEL IS 53.14 ACRES ±.
2. OWNERS OF THE PARCEL ARE ERNEST L. AND ANTONETTA MATTEO, DEED BOOK 241, PAGE 752.
3. APPLICANT IS CHURCHILL & BANKS PROPERTIES, 10 GREENE STREET, PROVIDENCE, R.I. 02903-4736.
4. PROPERTY BOUNDARY FROM PLANS OF RECORD AND PRELIMINARY SURVEY AND IS TO BE CONSIDERED APPROXIMATE AT THIS TIME.
5. EDGE OF WETLANDS WAS FLAGGED BY EA ENGINEERING AND SURVEYED BY DIPRETE ENGINEERING ASSOCIATES, INC.
6. THE SITE IS NOT LOCATED IN A NATURAL HERITAGE AREA (RIDEM), HISTORIC DISTRICT AREAS (TOWN), OR GROUNDWATER PROTECTION OVERLAY DISTRICT (TOWN).
7. TOPOGRAPHY OBTAINED FROM TECHMAP INCORPORATED, 19 INDUSTRIAL DRIVE, SMITHFIELD RI 02917.
8. THERE IS NO 100 YEAR FLOOD ZONE ON SITE. REFERENCE FEMA FLOOD INSURANCE RATE MAP NO. 440025-0004 B, MARCH 4, 1991.
9. THE SITE IS TO BE SERVICED BY PUBLIC WATER, UNDERGROUND UTILITIES, AND LOW PRESSURE SEWER FORCE MAIN.
10. SOIL MAPPING OBTAINED FROM 'SOIL SURVEY OF RHODE ISLAND' PREPARED BY U.S. DEPARTMENT OF AGRICULTURE SOIL CONSERVATION SERVICE.
11. THIS PLAN IS SUBSTANTIALLY CORRECT IN ACCORDANCE WITH A CLASS IV STANDARD AS ADOPTED BY THE RHODE ISLAND BOARD OF REGISTRATION FOR PROFESSIONAL LAND SURVEYORS. THIS PLAN IS NOT TO BE CONSTRUED AS AN ACCURATE BOUNDARY SURVEY AND MAY BE SUBJECT TO SUCH CHANGES AS AN ACCURATE BOUNDARY SURVEY MAY DISCLOSE.
12. A REMEDIATION PLAN FOR SOILS WITHIN THE APPLE ORCHARD IS PENDING RIDEM APPROVAL.

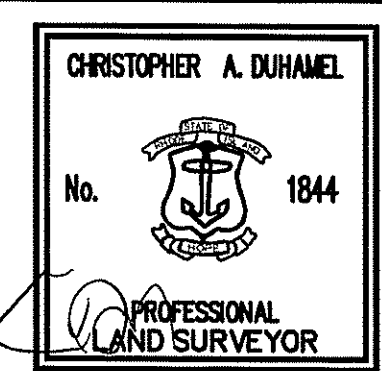
SOIL TYPES

- AfB - AGAWAM FINE SANDY LOAM, 3 TO 8 PERCENT SLOPE - THIS GENTLY SLOPING, WELL DRAINED SOIL IS ON TERRACES AND OUTWASH PLAINS. THE PERMEABILITY OF THIS SOIL IS MODERATELY RAPID IN THE SURFACE LAYER AND UPPER PART OF THE SUBSOIL, MODERATELY RAPID OR RAPID IN THE LOWER PART OF THE SUBSOIL, AND RAPID IN THE SUBSTRATUM. THIS SOIL IS SUITABLE FOR COMMUNITY DEVELOPMENT.
- CdD - CANTON-CHARLTON-ROCK OUTCROP COMPLEX, 3 TO 15 PERCENT SLOPES - THIS COMPLEX CONSISTS OF MODERATELY STEEP TO STEEP, WELL DRAINED SOILS INTERMINGLED WITH AREAS OF BARE, HARD EXPOSED BEDROCK. THE PERMEABILITY OF THE CANTON SOILS IS MODERATELY RAPID IN THE SURFACE LAYER AND SUBSOIL, AND RAPID IN THE SUBSTRATUM. THE PERMEABILITY OF THE CHARLTON SOILS IS MODERATE TO MODERATELY RAPID. NO DEVELOPMENT IS PROPOSED IN THIS SOIL.
- CdB - CANTON AND CHARLTON FINE SANDY LOAMS, 3 TO 8 PERCENT SLOPES - THESE GENTLY SLOPING, WELL DRAINED SOILS ARE ON THE CRESTS AND SIDE SLOPES OF GLACIAL UPLAND HILLS AND RIDGES. THE PERMEABILITY OF THE CANTON SOILS IS MODERATELY RAPID IN THE SURFACE LAYER AND SUBSOIL, AND RAPID IN THE SUBSTRATUM. THE PERMEABILITY OF THE CHARLTON SOILS IS MODERATE TO MODERATELY RAPID. THESE SOILS ARE SUITABLE FOR COMMUNITY DEVELOPMENT.
- CcC - CANTON CHARLTON FINE SANDY LOAMS, VERY ROCKY, 3 TO 15 PERCENT SLOPES - THESE GENTLY SLOPING TO SLOPING, WELL DRAINED SOILS ARE ON SIDE SLOPES AND CRESTS OF GLACIAL UPLAND HILLS AND RIDGES. THE PERMEABILITY OF THE CANTON SOILS IS MODERATE TO MODERATELY RAPID. THESE SOILS ARE SUITABLE FOR COMMUNITY DEVELOPMENT.
- CdD - CANTON AND CHARLTON VERY STONY FINE SANDY LOAMS, 15 TO 25 PERCENT SLOPES - THESE MODERATELY STEEP, WELL DRAINED SOILS ARE ON SIDE SLOPES OF GLACIAL UPLAND HILLS AND RIDGES. THE PERMEABILITY OF THE CANTON SOILS IS MODERATE TO MODERATELY RAPID. NO DEVELOPMENT IS PROPOSED ON THIS SOIL.
- HkC - HINCKLEY GRAVELLY SANDY LOAM, ROLLING - THIS EXCESSIVELY DRAINED SOIL IS ON TERRACES, OUTWASH PLAINS, KAMES, AND ESKERS. THE PERMEABILITY OF THIS SOIL IS RAPID IN THE SURFACE LAYER AND SUBSOIL AND VERY RAPID IN THE SUBSTRATUM. THIS SOIL IS SUITABLE FOR COMMUNITY DEVELOPMENT.
- HkD - HINCKLEY GRAVELLY SANDY LOAM, HILLY - THIS EXCESSIVELY DRAINED SOIL IS ON TERRACES, OUTWASH PLAINS, KAMES, ESKERS, AND RECESSIONAL MORAINES. THE PERMEABILITY OF THIS SOIL IS RAPID IN THE SURFACE LAYER AND SUBSOIL AND VERY RAPID IN THE SUBSTRATUM. NO DEVELOPMENT IS PROPOSED ON THIS SOIL.
- Nt - NINIGRET FINE SANDY LOAM - THIS NEARLY LEVEL, MODERATELY WELL DRAINED SOIL IS IN SLIGHT DEPRESSIONS OF TERRACES AND OUTWASH PLAINS. THE PERMEABILITY OF THIS SOIL IS MODERATELY RAPID IN THE SURFACE LAYER AND SUBSOIL AND RAPID IN THE SUBSTRATUM. THIS SOIL IS SUITABLE FOR COMMUNITY DEVELOPMENT.
- Re - RIDGEBURY FINE SANDY LOAM - THIS NEARLY LEVEL, POORLY DRAINED SOIL IS IN DEPRESSIONS AND DRAINAGEWAYS OF GLACIAL UPLAND HILLS AND DRUMLINS. THE PERMEABILITY OF THIS SOIL IS MODERATE OR MODERATELY RAPID IN THE SURFACE LAYER AND SUBSOIL AND SLOW OR VERY SLOW IN THE SUBSTRATUM. NO DEVELOPMENT IS PROPOSED IN THIS SOIL.
- Rf - RIDGEBURY, WHITMAN, AND LEICESTER EXTREMELY STONY FINE SANDY LOAMS - THESE NEARLY LEVEL, POORLY DRAINED AND VERY POORLY DRAINED SOILS ARE ALONG DRAINAGEWAYS AND IN DEPRESSIONS IN GLACIAL TILL UPLANDS. THE PERMEABILITY OF THE RIDGEBURY AND WHITMAN SOILS IS MODERATE OR MODERATELY RAPID IN THE SURFACE LAYER AND SUBSOIL AND SLOW OR VERY SLOW IN THE SUBSTRATUM. NO DEVELOPMENT IS PROPOSED IN THIS SOIL.
- Ru - RUMNEY FINE SANDY LOAM - THIS NEARLY LEVEL, POORLY DRAINED SOIL IS ON FLOOD PLAINS. THE PERMEABILITY OF THIS SOIL IS MODERATELY RAPID IN THE SURFACE LAYER AND SUBSOIL AND RAPID OR VERY RAPID IN THE SUBSTRATUM. NO DEVELOPMENT IS PROPOSED IN THIS SOIL.
- W - WATER

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Charles A. Horbe

CERTIFICATION:
 THIS SURVEY AND PLAN CONFORM TO
 A CLASS IV STANDARD AS ADOPTED
 BY THE RHODE ISLAND BOARD OF
 REGISTRATION FOR PROFESSIONAL
 LAND SURVEYORS.
 SEE GENERAL NOTE 11.



EXISTING CONDITIONS PLAN
Swan Orchard Farms
 ASSESSOR'S PLAT 47 LOT 77
 SMITHFIELD, RI

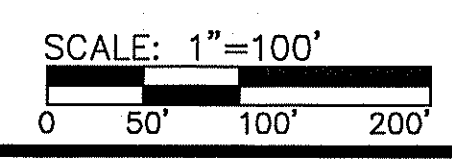
PREPARED BY
DiPrete Engineering Associates, Inc.
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 TWO STAFFORD COURT
 CRANSTON, R.I. 02920
 (401) 943-1000 FAX: (401) 464-6006 AUG 2 0 2007

PREPARED FOR
Churchill & Banks Properties LLC
 10 GREENE STREET
 PROVIDENCE, R.I.
 02903-4736
 (401) 273-8010

MAY, 2007
 DWN. BY: J.M.D.

SHEET **3** OF 17

NO.	DATE	DESCRIPTION	BY
1	8-1-07	WETLANDS REVISION	J.M.D.
2	05-12-07	RIDEM PRELIMINARY DETERMINATION	J.M.D.



GENERAL NOTES

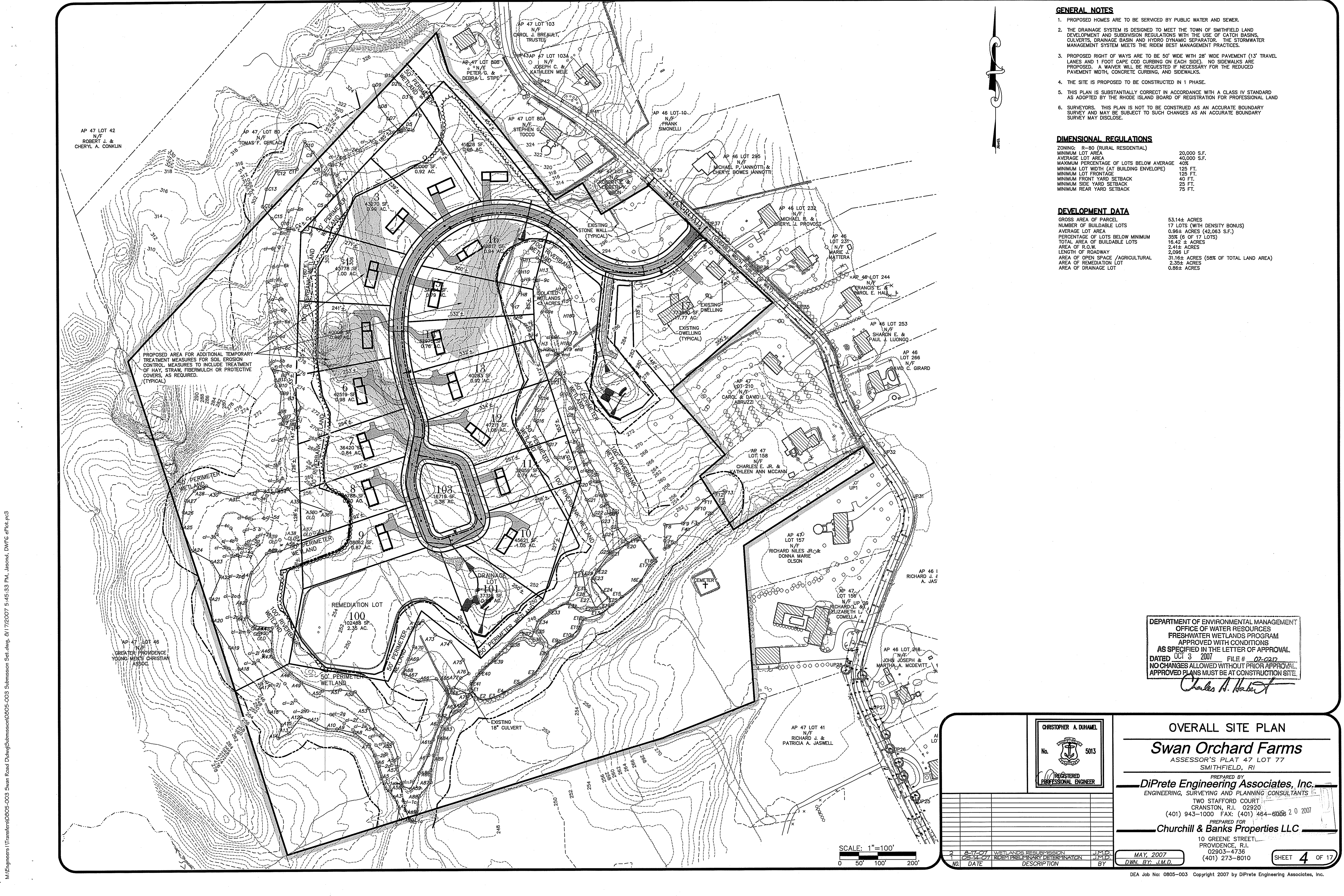
1. PROPOSED HOMES ARE TO BE SERVICED BY PUBLIC WATER AND SEWER.
2. THE DRAINAGE SYSTEM IS DESIGNED TO MEET THE TOWN OF SMITHFIELD LAND DEVELOPMENT AND SUBDIVISION REGULATIONS WITH THE USE OF CATCH BASINS, CULVERTS, DRAINAGE BASIN AND HYDRO DYNAMIC SEPARATOR. THE STORMWATER MANAGEMENT SYSTEM MEETS THE RIDEM BEST MANAGEMENT PRACTICES.
3. PROPOSED RIGHT OF WAYS ARE TO BE 50' WIDE WITH 28' WIDE PAVEMENT (13' TRAVEL LANES AND 1 FOOT CAPE CURBING ON EACH SIDE). NO SIDEWALKS ARE PROPOSED. A WAIVER WILL BE REQUESTED IF NECESSARY FOR THE REDUCED PAVEMENT WIDTH, CONCRETE CURBING, AND SIDEWALKS.
4. THE SITE IS PROPOSED TO BE CONSTRUCTED IN 1 PHASE.
5. THIS PLAN IS SUBSTANTIALLY CORRECT IN ACCORDANCE WITH A CLASS IV STANDARD AS ADOPTED BY THE RHODE ISLAND BOARD OF REGISTRATION FOR PROFESSIONAL LAND SURVEYORS. THIS PLAN IS NOT TO BE CONSTRUED AS AN ACCURATE BOUNDARY SURVEY AND MAY BE SUBJECT TO SUCH CHANGES AS AN ACCURATE BOUNDARY SURVEY MAY DISCLOSE.

DIMENSIONAL REGULATIONS

ZONING:	R-80 (RURAL RESIDENTIAL)	20,000 S.F.
MINIMUM LOT AREA:		40,000 S.F.
AVERAGE LOT AREA:		40%
MAXIMUM PERCENTAGE OF LOTS BELOW AVERAGE:		125 FT.
MINIMUM LOT WIDTH (AT BUILDING ENVELOPE):		125 FT.
MINIMUM LOT FRONTAGE:		40 FT.
MINIMUM FRONT YARD SETBACK:		25 FT.
MINIMUM SIDE YARD SETBACK:		75 FT.
MINIMUM REAR YARD SETBACK:		

DEVELOPMENT DATA

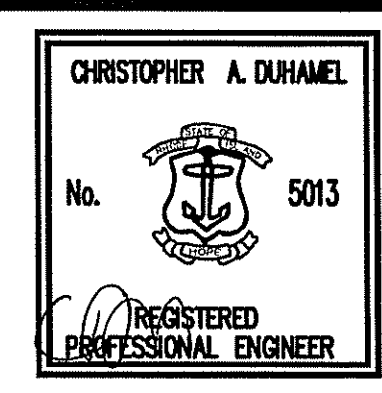
GROSS AREA OF PARCEL:	53.14± ACRES
NUMBER OF BUILDABLE LOTS:	17 LOTS (WITH DENSITY BONUS)
AVERAGE LOT AREA:	0.96± ACRES (42,063 S.F.)
PERCENTAGE OF LOTS BELOW MINIMUM:	35% (6 OF 17 LOTS)
TOTAL AREA OF BUILDABLE LOTS:	16.42 ± ACRES
AREA OF P.O.W.:	2.41± ACRES
LENGTH OF ROADWAY:	2,096 LF
AREA OF OPEN SPACE /AGRICULTURAL:	31.16± ACRES (58% OF TOTAL LAND AREA)
AREA OF REMEDIATION LOT:	2.35± ACRES
AREA OF DRAINAGE LOT:	0.86± ACRES



PROPOSED AREA FOR ADDITIONAL TEMPORARY TREATMENT MEASURES FOR SOIL EROSION CONTROL. MEASURES TO INCLUDE TREATMENT OF HAY, STRAW, FIBERMULCH OR PROTECTIVE COVERS, AS REQUIRED. (TYPICAL)

DEPARTMENT OF ENVIRONMENTAL MANAGEMENT
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Charles A. Roberts



OVERALL SITE PLAN

Swan Orchard Farms
 ASSESSOR'S PLAT 47 LOT 77
 SMITHFIELD, RI

PREPARED BY
DiPrete Engineering Associates, Inc.
 ENGINEERING, SURVEYING AND PLANNING CONSULTANTS

TWO STAFFORD COURT
 CRANSTON, R.I. 02920
 (401) 943-1000 FAX: (401) 464-6006 2.0 2007

PREPARED FOR
Churchill & Banks Properties LLC

10 GREENE STREET
 PROVIDENCE, R.I.
 02903-4736
 (401) 273-8010

SCALE: 1"=100'
 0 50' 100' 200'

NO.	DATE	DESCRIPTION	BY
1	8-17-07	WETLANDS RESUBMISSION	J.M.D.
2	05-14-07	RIDEM PRELIMINARY DETERMINATION	J.M.D.

M:\Engineers\1\Transfer\0805-003 Swan Orchard Farms\Submission\0805-003 Submission Set.dwg, 6/17/2007 5:45:33 PM, Jasad, DWFG.dPlot.pc3

Buffer Zone Markers to be placed in these locations per condition No. 10 of the Permit.

Open Space 102

Open Space 103

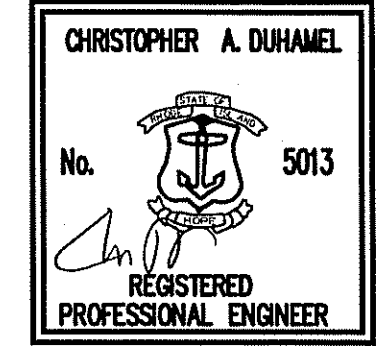
Remediation Lot 100*

Drainage Lot 101

Agricultural Area

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Charles A. Durham



GRADING PLAN

Swan Orchard Farms

ASSESSOR'S PLAT 47 LOT 77
SMITHFIELD, RI

PREPARED BY
DiPrete Engineering Associates, Inc.

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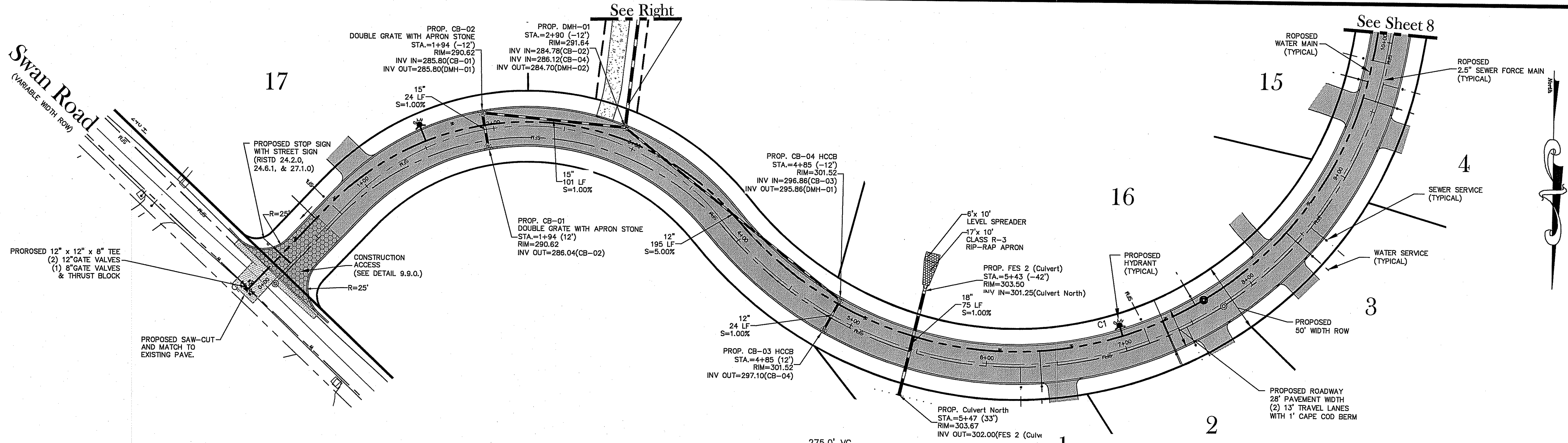
SHEET 6 OF 17

NO.	DATE	DESCRIPTION	BY
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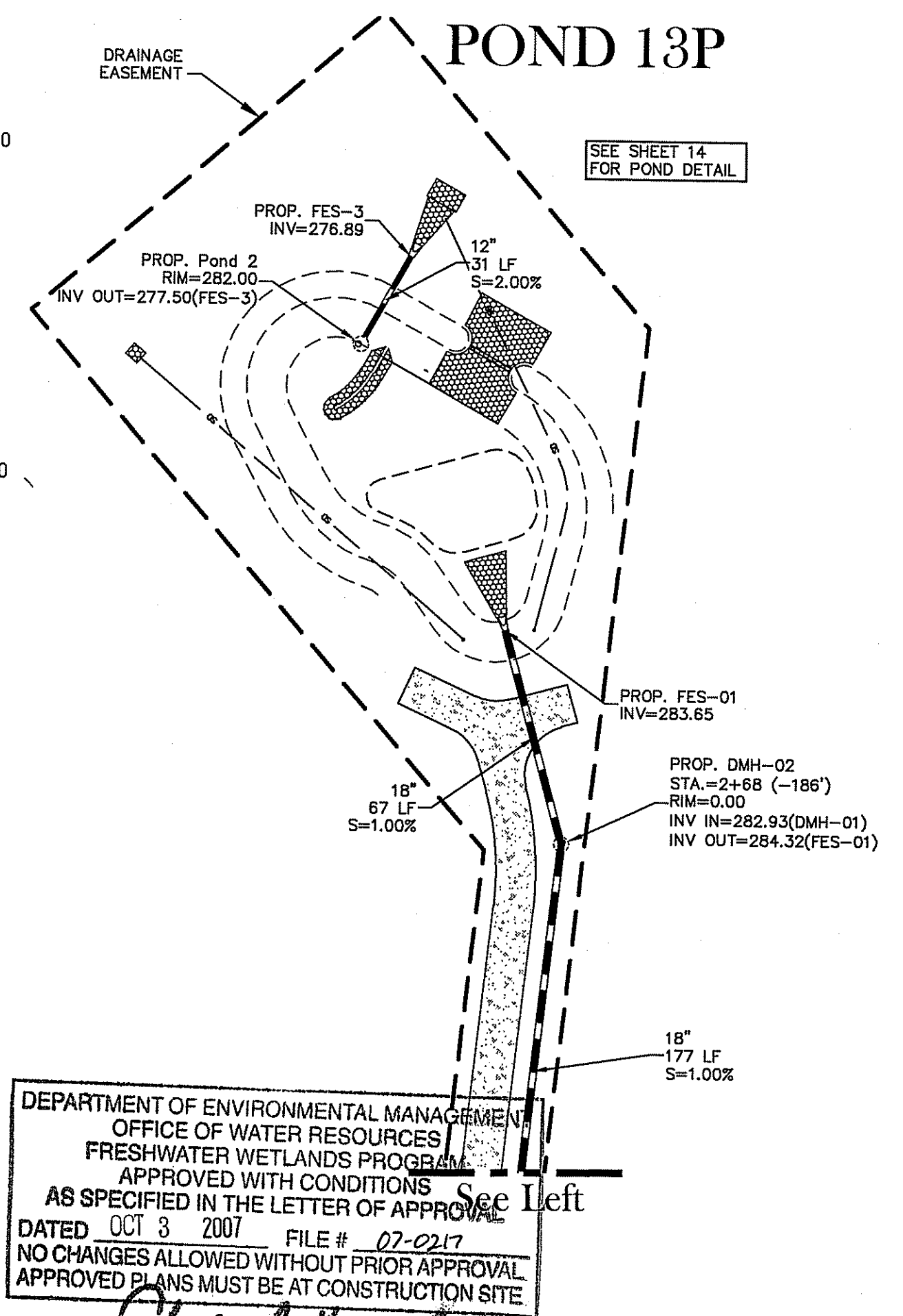
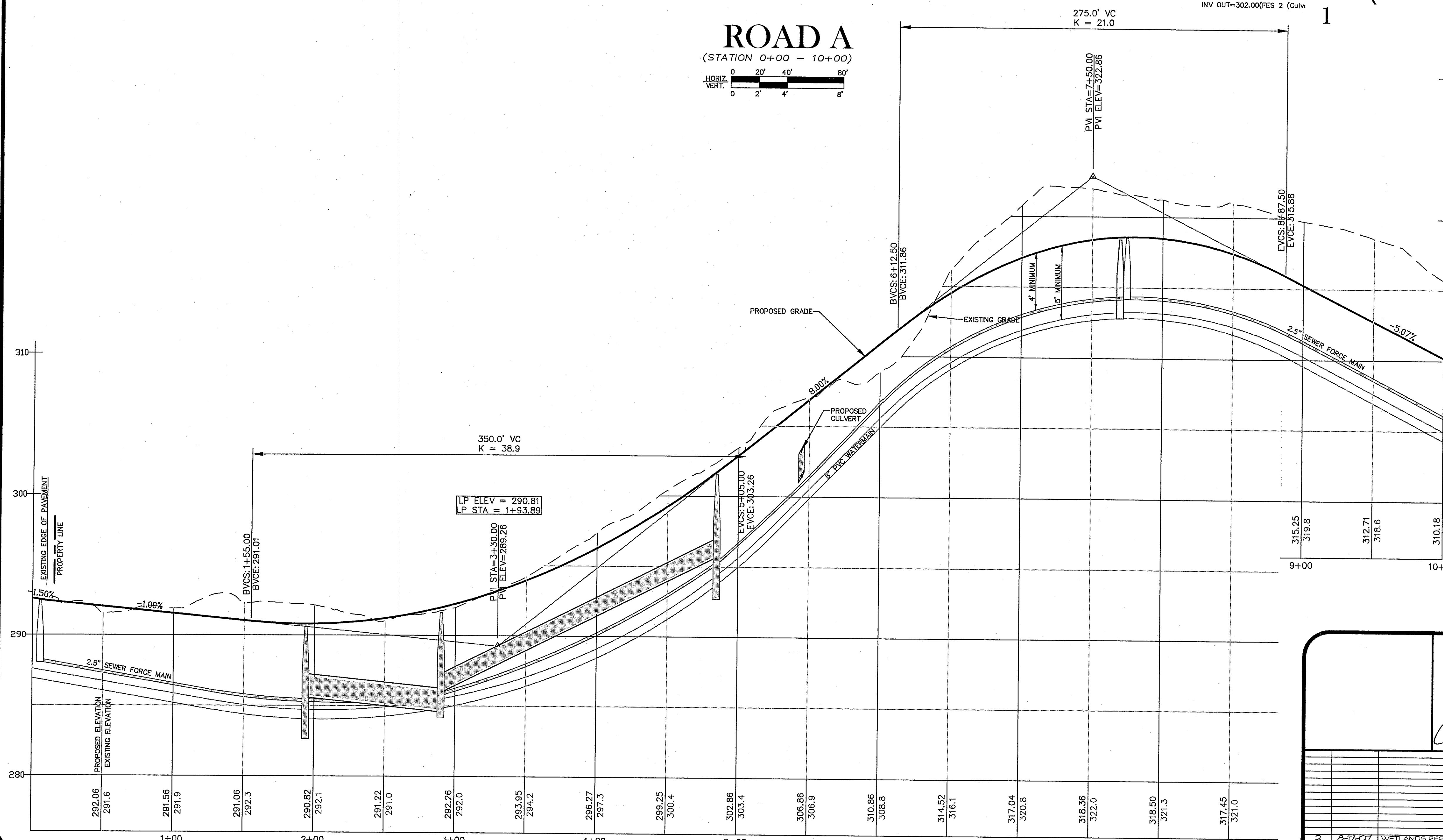
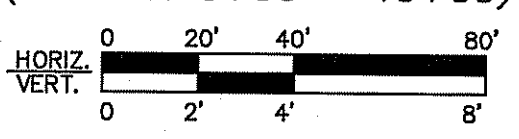
SCALE: 1"=40'
0 20' 40' 80'

*NOTE: REFERENCE RIDEM OFFICE OF WASTE MANAGEMENT (SIR) CASE NUMBER 2004-053 FOR DETAILS OF REMEDIATION LOT CONSTRUCTION.

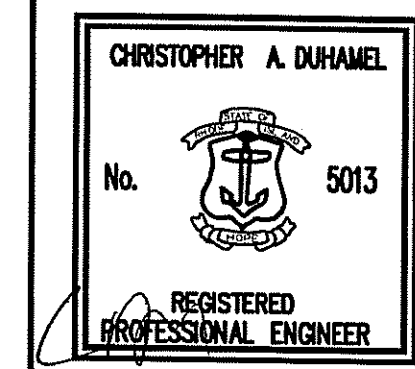
Swan Road
(VARIABLE WIDTH ROW)



ROAD A
(STATION 0+00 - 10+00)



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PLAN & PROFILE
Swan Orchard Farms
ASSESSOR'S PLAT 47 LOT 77
SMITHFIELD, RI

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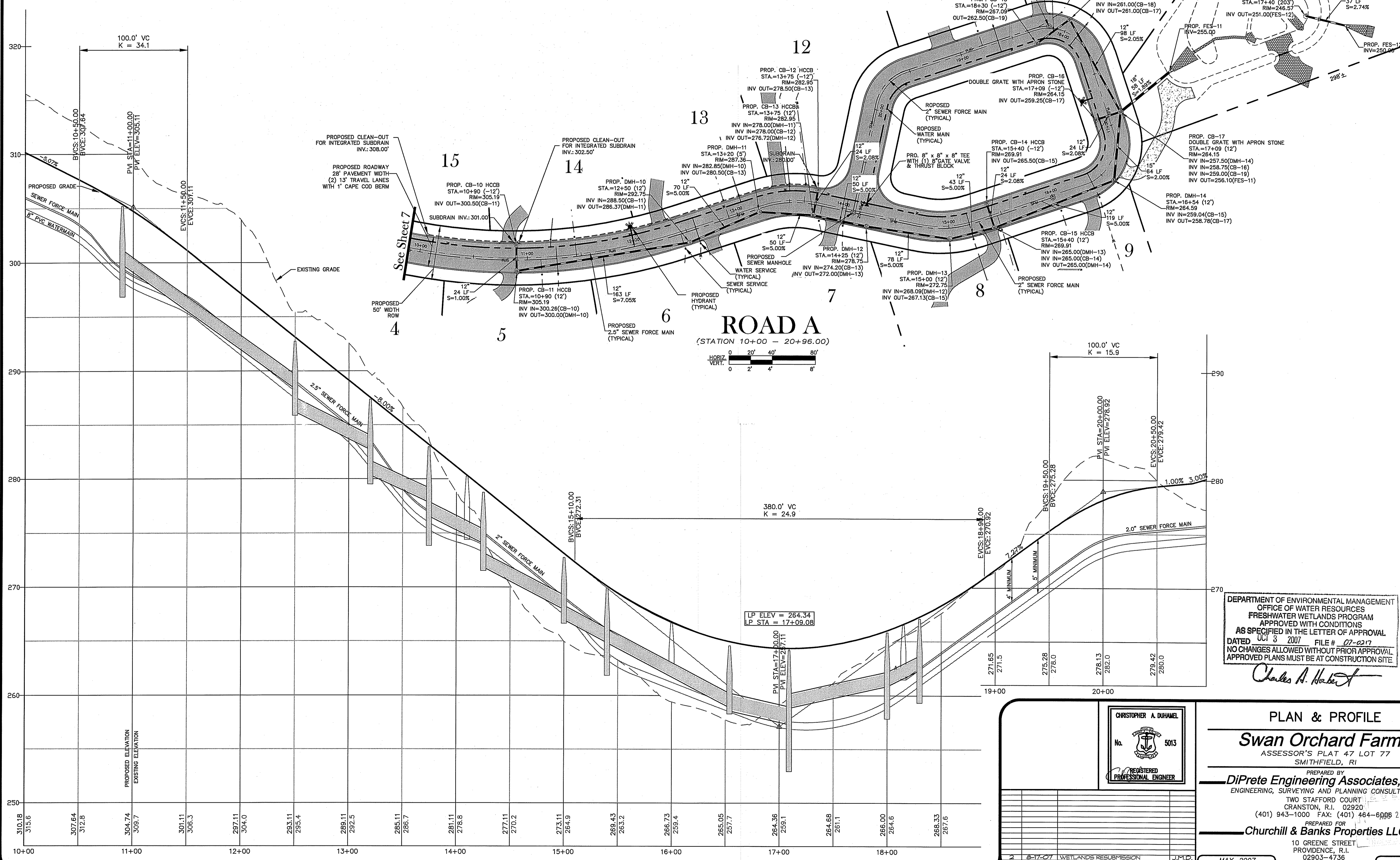
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MAY 2007
DWN. BY: J.M.D.

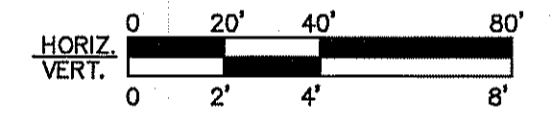
SHEET **7** OF 17

POND 12P

SEE SHEET 13 FOR POND DETAIL

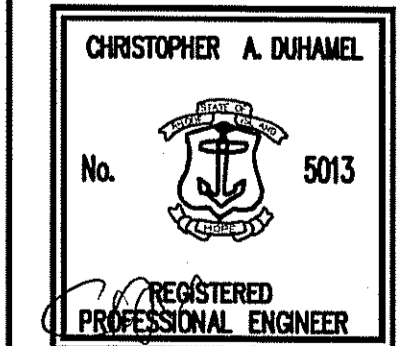


ROAD A
(STATION 10+00 - 20+96.00)



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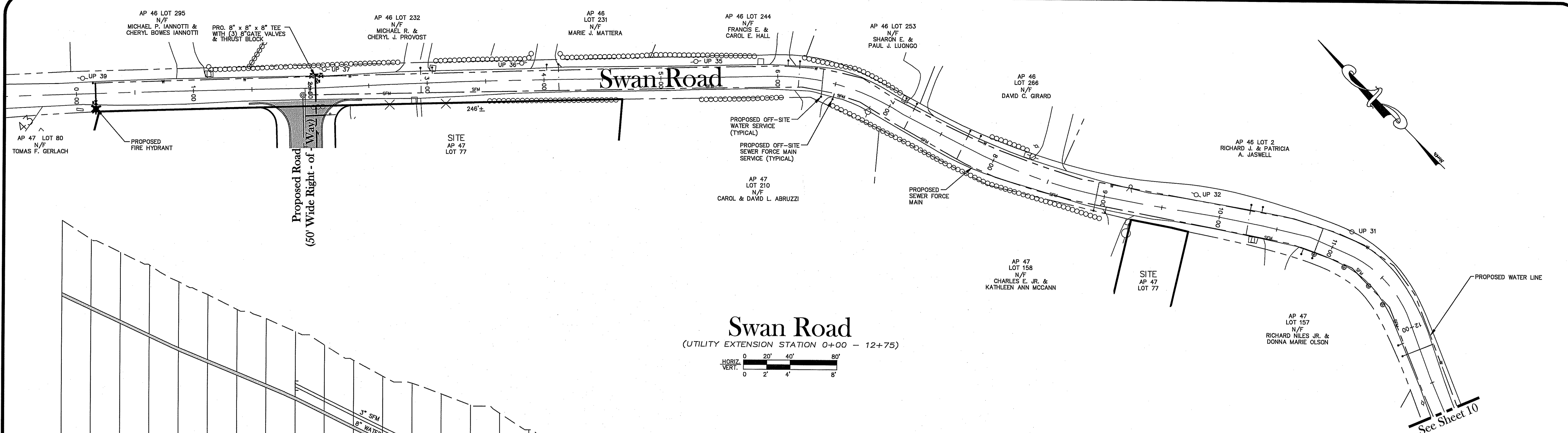
Charles A. Harber



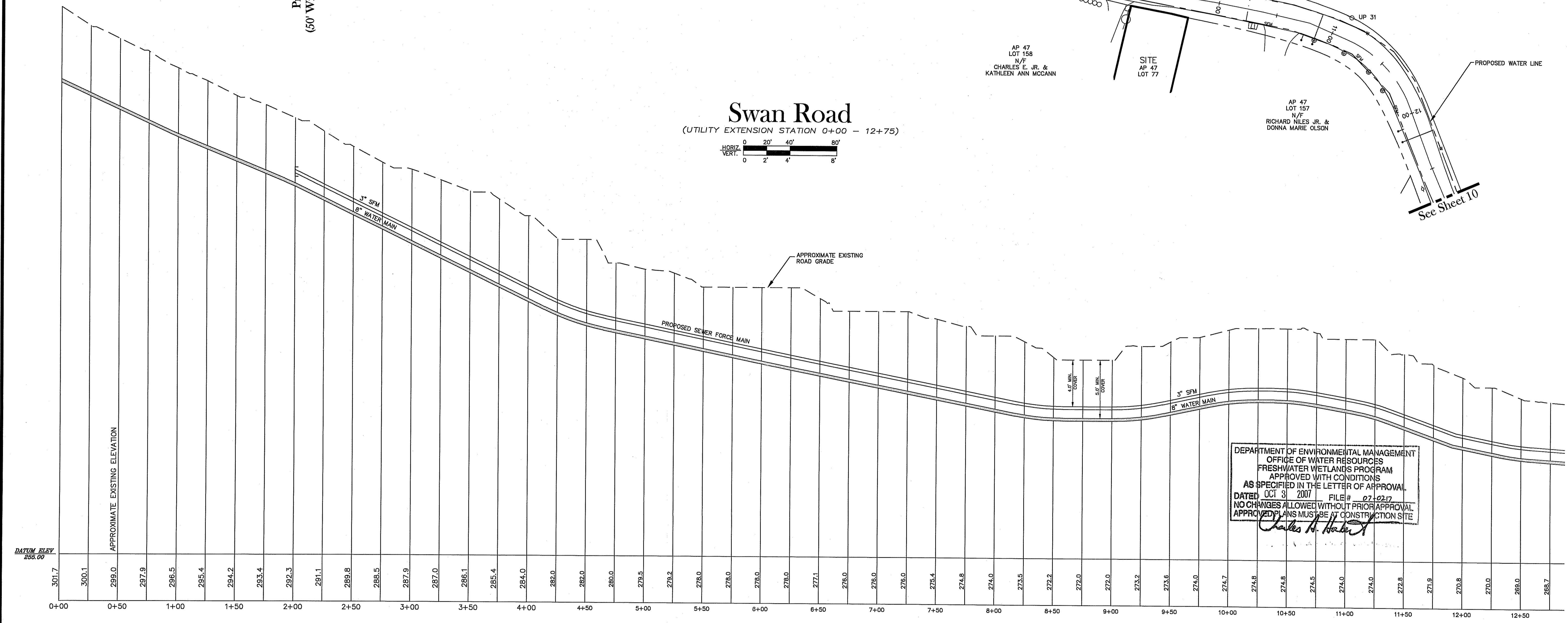
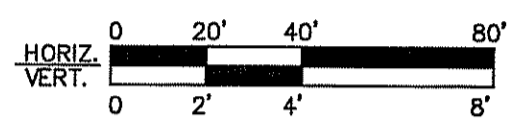
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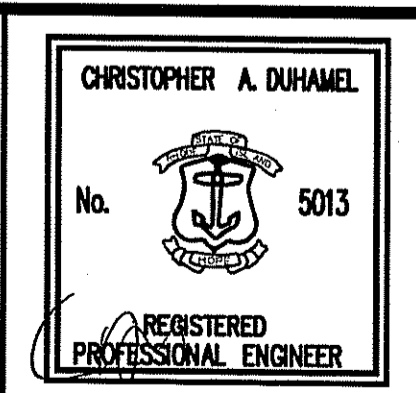


Swan Road
 (UTILITY EXTENSION STATION 0+00 - 12+75)



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 DATED OCT 3 2007 FILE # 07-0212
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 APPROVED PLANS MUST BE AT CONSTRUCTION SITE

Charles A. Harker



OFF-SITE UTILITY PLAN
Swan Orchard Farms

ASSESSOR'S PLAT 47 LOT 77
 SMITHFIELD, RI

PREPARED BY
DiPrete Engineering Associates, Inc.
 ENGINEERING, SURVEYING AND PLANNING CONSULTANTS

TWO STAFFORD COURT
 CRANSTON, R.I. 02920
 (401) 943-1000 FAX: (401) 464-6006

PREPARED FOR
Churchill & Banks Properties LLC

10 GREENE STREET
 PROVIDENCE, R.I.
 02903-4736
 (401) 273-8010

MAY 2007
 DWN. BY: J.M.D.

SHEET **9** OF 17

NO.	DATE	DESCRIPTION	BY
2	8-17-07	WETLANDS REVISION	J.M.D.
1	05-11-07	RD&M PRELIMINARY DETERMINATION	J.M.D.

See Sheet 9

See Sheet 11

AP 47 LOT 157
N/F
RICHARD NILES JR. &
DONNA MARIE
OLSON

AP 46 LOT 2
N/F
RICHARD J. & PATRICIA
A. JASWELL

AP 47 LOT 156
N/F
RICHARD L. &
ELIZABETH L.
COMELLA

PROPOSED OFF-SITE
WATER SERVICE
(TYPICAL)

PROPOSED OFF-SITE
SEWER FORCE MAIN
SERVICE (TYPICAL)

AP 46 LOT 218
N/F
JOHN JOSEPH &
MARTHA A. MCDEVITT

AP 46 LOT 223

AP 46 LOT 233

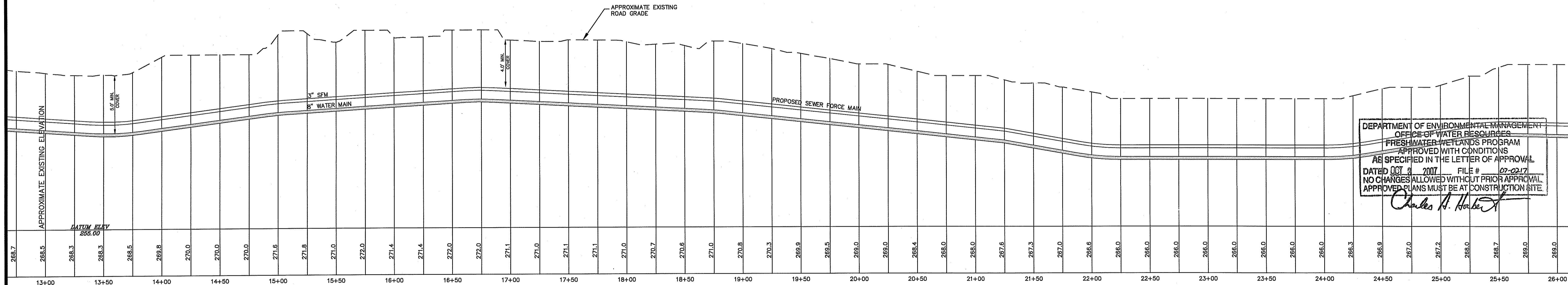
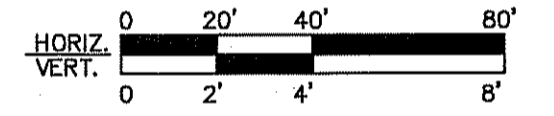
AP 47 LOT 1

Swan Road

AP 47 LOT 41
N/F
RICHARD J. &
PATRICIA A.
JASWELL

Swan Road

(UTILITY EXTENSION STATION 12+75 - 26+00)



DEPARTMENT OF ENVIRONMENTAL MANAGEMENT
OFFICE OF WATER RESOURCES
FRESHWATER WETLANDS PROGRAM
APPROVED WITH CONDITIONS
AS SPECIFIED IN THE LETTER OF APPROVAL
DATED OCT 8 2007 FILE # 07-0217
NO CHANGES ALLOWED WITHOUT PRIOR APPROVAL
APPROVED PLANS MUST BE AT CONSTRUCTION SITE

Charles H. Harbo

CHRISTOPHER A. DUHAMEL
No. 1844
PROFESSIONAL
LAND SURVEYOR

CHRISTOPHER A. DUHAMEL
No. 5013
REGISTERED
PROFESSIONAL ENGINEER

OFF-SITE UTILITY PLAN
Swan Orchard Farms
ASSESSOR'S PLAT 47 LOT 77
SMITHFIELD, RI

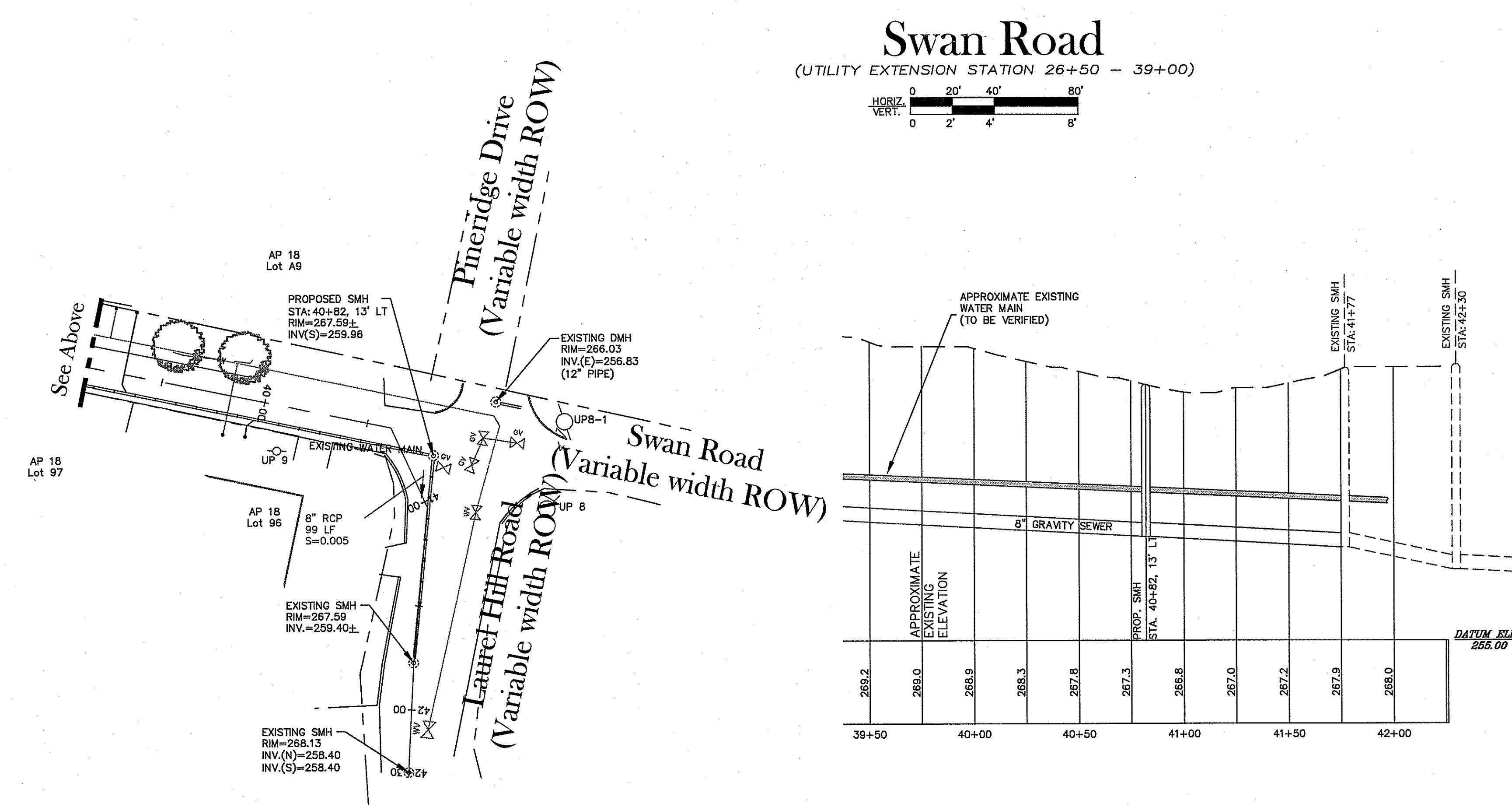
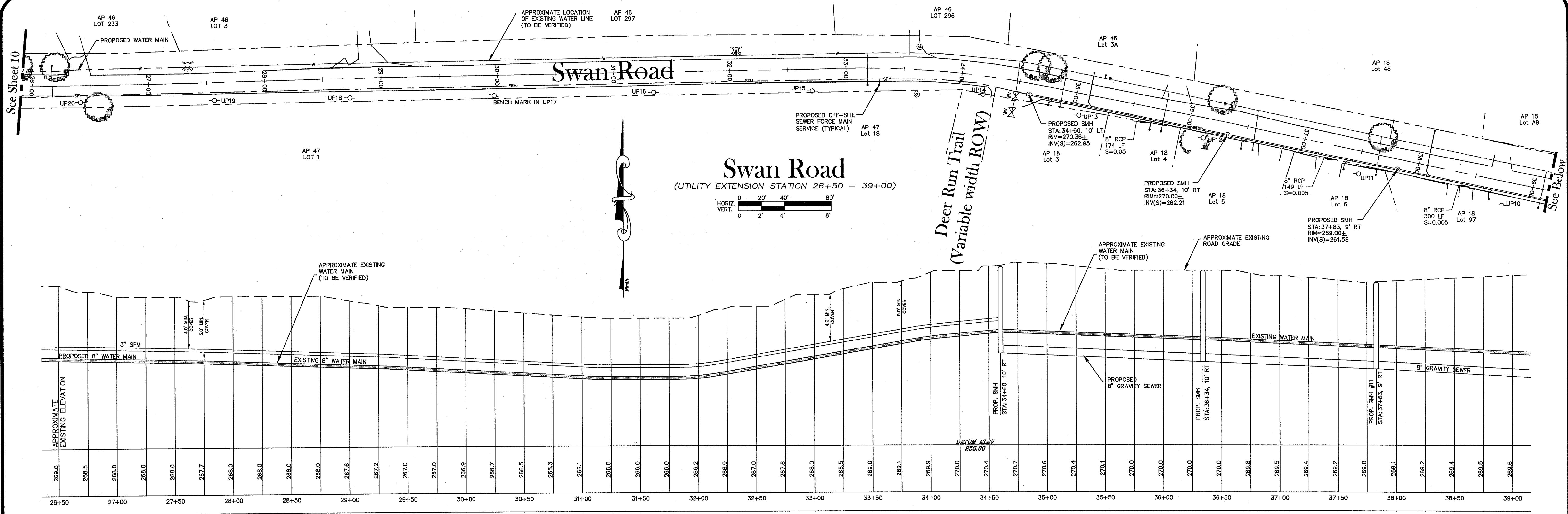
PREPARED BY
DiPrete Engineering Associates, Inc.
ENGINEERING, SURVEYING AND PLANNING CONSULTANTS
TWO STAFFORD COURT
CRANSTON, R.I. 02920 AUG 20 2007
(401) 943-1000 FAX: (401) 464-6006

PREPARED FOR
Churchill & Banks Properties LLC
10 GREENE STREET
PROVIDENCE, R.I.
02903-4736
(401) 273-8010

NO.	DATE	DESCRIPTION	BY
2	8-17-07	WETLANDS RESUBMISSION	J.M.D.
1	05-14-07	PRELIMINARY DETERMINATION	J.M.D.

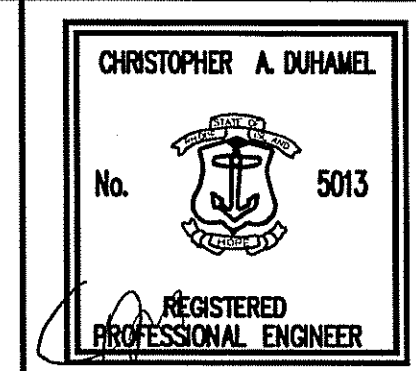
MAY 2007
DWN. BY: J.M.D.

SHEET 10 OF 17



DEPARTMENT OF ENVIRONMENTAL MANAGEMENT
OFFICE OF WATER RESOURCES
FRESHWATER WETLANDS PROGRAM
APPROVED WITH CONDITIONS
AS SPECIFIED IN THE LETTER OF APPROVAL
DATED OCT 3 2007 FILE # 07-02-17
NO CHANGES ALLOWED WITHOUT PRIOR APPROVAL
APPROVED PLANS MUST BE AT CONSTRUCTION SITE.

Charles A. Haber



OFF-SITE UTILITY PLAN
Swan Orchard Farms
ASSESSOR'S PLAT 47 LOT 77
SMITHFIELD, RI

PREPARED BY
DiPrete Engineering Associates, Inc.
ENGINEERING, SURVEYING AND PLANNING CONSULTANTS
TWO STAFFORD COURT
CRANSTON, R.I. 02920
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PREPARED FOR
Churchill & Banks Properties LLC
10 GREENE STREET
PROVIDENCE, R.I.
02903-4736
(401) 273-8010

NO.	DATE	DESCRIPTION	BY
1	8-17-07	WETLANDS RESUBMISSION	J.M.D.
2	08-24-07	REDEVELOPMENT PRELIMINARY DETERMINATION	J.M.D.

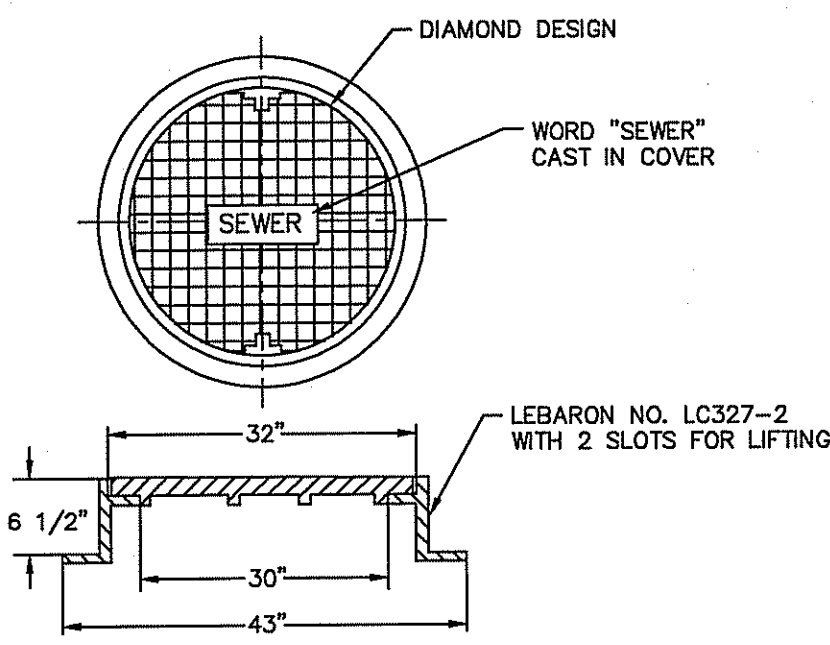
MAY, 2007
DWN. BY: J.M.D.
SHEET 11 OF 17

GENERAL SEWER NOTES

- INSTALLATION OF THE SEWERAGE FACILITIES SHALL BE IN ACCORDANCE WITH THE TOWN OF SMITHFIELD'S "STANDARD SPECIFICATIONS AND DETAILS FOR THE INSTALLATION OF SEWERS AND APPURTENANCES BY PRIVATE DEVELOPERS" IN EFFECT ON THE DATE PART I OF THE SEWER PERMIT AGREEMENT IS EXECUTED.
- PRIOR TO RECEIVING AUTHORIZATION TO CONSTRUCT, ALL MATERIALS SHALL MEET THE STANDARDS AND RECEIVE THE WRITTEN APPROVAL, BASED ON MANUFACTURERS' DRAWINGS AND OTHER DATA, OF THE SEWER AUTHORITY OR ITS REPRESENTATIVE.
- ALL SEWERAGE FACILITIES SHALL BE MEET TESTING AND CLEANING REQUIREMENTS PRIOR TO ACCEPTANCE.
- AS-BUILT DRAWING SHALL BE FURNISHED AS A CONDITION FOR ACCEPTANCE OF THE NEW SEWERAGE FACILITIES.
- NO FLOW WILL BE ACCEPTED UNTIL ALL ABOVE STEPS ARE COMPLETED AND COMPLETION CERTIFICATE IS ISSUED.
- AFTER THE DEVELOPERS HAS "STAKED OUT" THE FACILITIES TO BE CONSTRUCTED AND HAS THE APPROVE MATERIALS ON THE JOB, THE SEWER AUTHORITY SHALL BE NOTIFIED AT LEAST TWO WORKING DAYS IN ADVANCE OF CONSTRUCTION IN ORDER FOR IT TO ARRANGE FOR ITS INSPECTOR.
- ALL CONSTRUCTION SHALL BE IN ACCORDANCE WITH THE APPROVE PLANS AND MATERIALS, STANDARD AND SPECIAL DETAILS, AND STANDARD SPECIFICATION. ANY WORK NOT MEETING THE APPROVED STANDARDS SHALL BE IMMEDIATELY REMOVED AND REPLACED AT THE FULL RESPONSIBILITY AND COST/EXPENSE TO THE DEVELOPER.
- THE CONTRACTOR SHALL BE CONFINE HIS OPERATIONS AND ACTIVATES FOR CONSTRUCTION PURPOSES WITHIN THE STREET LINES, EASEMENTS AND/OR RIGHT-OF-WAY AS SHOWN ON THE DRAWINGS.
- ALL AREAS DISTURBED BY THE CONTRACTOR SHALL BE RESTORED TO THEIR ORIGINAL CONDITION AT NO EXTRA COST TO THE OWNER. ALL GRASSED AREAS DISTURBED BY THE CONTRACTOR'S OPERATIONS SHALL BE LOAMED AND SEEDED.
- LOCATION AND DEPTHS OF EXISTING UTILITIES ARE APPROXIMATE AND HAVE BEEN PLOTTED FROM THE BEST AVAILABLE INFORMATION. THE CONTRACTOR SHALL VERIFY LOCATIONS OF ALL EXISTING UTILITIES AND NOTIFY THE APPROPRIATE UTILITY AUTHORITIES INCLUDING "DIG SAFE" PRIOR TO STARTING WORK. ANY DAMAGE TO UTILITIES CAUSED BY THE CONTRACTOR'S OPERATIONS SHALL BE THE RESPONSIBILITY OF THE CONTRACTOR AND COST OF REPAIRS SHALL BE BORNE BY THE CONTRACTOR AT NO ADDITIONAL COST TO THE OWNER.
- ALL ELEVATIONS ARE BASED ON THE NATIONAL GEODETIC VERTICAL DATUM OF 1929 M.S.L..
- VERTICAL SEPARATION OF SEWER AND WATER MAINS SHALL BE 1.5 CLEAR OR AS OTHERWISE APPROVED IN WRITING BY LOCAL WATER DEPARTMENT HAVING JURISDICTION.
- APPROVAL OF THE ROAD OPENING SHALL BE OBTAINED BY CONTRACTOR PRIOR TO CONSTRUCTION FROM THE TOWN OF SMITHFIELD DIRECTOR OF PUBLIC WORKS.

LEAKAGE AND PRESSURE TESTING FOR SEWER FORCE MAINS AND WATERMANS

- GENERAL**
HYDROSTATIC AND LEAKAGE TESTS SHALL BE PERFORMED ON ALL COMPLETED SECTIONS OF NEWLY INSTALLED SEWER FORCE MAIN AND WATERMAIN PIPELINE IN ACCORDANCE WITH AWWA C500, UNITED WATER, THE TOWN OF SMITHFIELD, AND AS SPECIFIED BELOW.
THE CONTRACTOR IS RESPONSIBLE FOR FURNISHING ALL LABOR, TOOLS AND EQUIPMENT NECESSARY FOR TESTING.
- TESTING PROCEDURES**
ALL AIR SHALL BE EXPELLED AT THE HIGH POINTS AND THE PIPELINE SLOWLY FILLED WITH POTABLE WATER.
THE INTERNAL PRESSURE SHALL BE BUILT UP TO 150 PSI OR 1.25 OPERATING PRESSURE AND MAINTAINED FOR A PERIOD OF NOT LESS THAN TWO (2) HOURS.
ALL LEAKS IN THE PIPELINE SHALL BE STOPPED; CRACKED OR DEFECTIVE PIPE, FITTINGS OR ACCESSORIES SHALL BE REMOVED AND REPLACED WITH NEW BY THE CONTRACTOR.
THE PIPELINE SHALL BE RETESTED AS MAY BE REQUIRED AND NECESSARY UNTIL THE LEAKAGE FALLS WITHIN THE ALLOWABLE DETERMINED FOR THE PIPE NETWORK, AT WHICH TIME THE PIPELINE MAY BE CONSIDERED READY FOR:
a. WATERMANS - DISINFECTION STEP
b. SEWER FORCE MAIN - READY FOR USE
ALL PIPES SHALL BE DISINFECTED PRIOR TO BEING ACTIVATED IN ACCORDANCE WITH AWWA B-300, AWWA C-601, AND TOWN SPECIFICATIONS. CHLORINATION ACCORDING TO AWWA REQUIREMENTS FOR SERVICE AND MAIN INSTALLATION.



SEWER MANHOLE FRAME AND COVER DETAIL

NOT TO SCALE

SEWER LINE / WATER MAIN SEPARATION POLICY FOR DESIGN OF SANITARY SEWERS

A. LATERAL PLACEMENT OF SEWERS AND WATER MAINS

SEWERS SHALL BE LAID AT LEAST 10 FEET HORIZONTALLY FROM ANY EXISTING OR PROPOSED WATERMAIN. THE DISTANCE SHALL BE MEASURED EDGE-TO-EDGE. THERE IS NO MINIMUM VERTICAL SEPARATION REQUIRED PROVIDED THE 10 FOOT HORIZONTAL SEPARATION IS MAINTAINED.

IN CASES WHERE IT IS NOT POSSIBLE TO MAINTAIN A 10 FOOT HORIZONTAL SEPARATION, THE DIVISION MAY ALLOW DEVIATION ON A CASE BY CASE BASIS, IF SUPPORTED BY DATA FROM THE DESIGN ENGINEER. SUCH DEVIATION MAY ALLOW INSTALLATION OF THE SEWER CLOSER TO THE WATERMAIN, PROVIDED THAT:

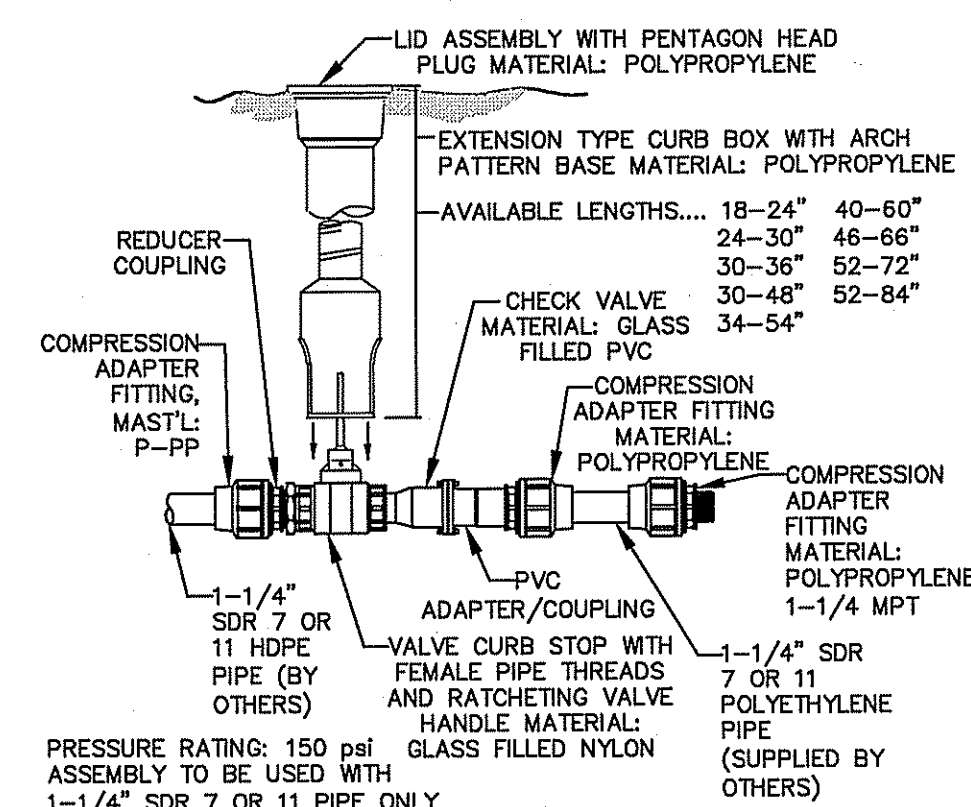
- THE SEWER AND WATER MAIN ARE LAID IN SEPARATE TRENCHES, OR
 - THE SEWER AND WATER MAIN MAY BE INSTALLED IN THE SAME TRENCH WITH THE WATERMAIN PLACED ON A BENCH OF UNDISTURBED EARTH, AND
 - IN EITHER CASE, THE CROWN OF THE SEWER SHALL BE AT LEAST 18 INCHES BELOW THE INVERT OF THE WATERMAIN.
- IN SITUATIONS WHERE IT IS IMPOSSIBLE TO OBTAIN PROPER HORIZONTAL AND VERTICAL SEPARATION AS STIPULATED ABOVE, THE FOLLOWING PROTECTION SHALL BE PROVIDED:
- ENCASEMENT OF THE SEWER PIPE IN CONCRETE (MIN. 6 INCH THICKNESS) OR A CARRIER PIPE FOR AT LEAST 10 FEET EITHER SIDE OF THE AREA NOT COMPLYING WITH THE MINIMUM HORIZONTAL AND VERTICAL SEPARATION, OR
 - DESIGN AND CONSTRUCTION OF THE SEWER EQUAL TO WATER MAIN PIPE (CEMENT-LINED DUCTILE IRON OR OTHER AWWA-APPROVED MATERIAL FOR POTABLE WATER CONVEYANCE), AND PRESSURE TESTED IN ACCORDANCE WITH AWWA SPECIFICATIONS.

B. SEWERS CROSSING WATER MAINS

SEWERS CROSSING OVER WATER MAINS SHOULD BE AVOIDED, BUT IF CONDITIONS WARRANT THIS SITUATION, THEN ADEQUATE STRUCTURAL SUPPORT SHALL BE PROVIDED FOR THE SEWER TO MAINTAIN LINE AND GRADE. SEWERS CROSSING UNDER WATER MAINS SHALL BE LAID TO PROVIDE A MINIMUM VERTICAL SEPARATION OF 18 INCHES BETWEEN THE INVERT OF THE WATER MAIN AND THE CROWN OF THE SEWER. THE CROSSING SHALL BE ARRANGED SO THAT SEWER JOINTS WILL BE EQUIDISTANT AND AS FAR AS POSSIBLE FROM THE WATER MAIN JOINTS. WHERE CONDITIONS PREVENT AN 18 INCH VERTICAL SEPARATION FROM BEING MAINTAINED, THE FOLLOWING METHODS SHALL BE SPECIFIED:

- THE SEWER SHALL BE DESIGNED AND CONSTRUCTED EQUAL TO WATER MAIN PIPE (CEMENT-LINED DUCTILE IRON PIPE, PVC OR OTHER AWWA APPROVED MATERIAL FOR POTABLE WATER CONVEYANCE) FOR A DISTANCE OF 12 FEET ON EACH SIDE OF THE CROSSING, MEASURED PERPENDICULAR TO THE WATER MAIN AND PRESSURE TESTED IN ACCORDANCE WITH AWWA SPECIFICATIONS, OR
- EITHER THE WATER MAIN OR THE SEWER MAY BE ENCASED IN CONCRETE (MIN. 6 INCH THICKNESS) OR A CARRIER PIPE FOR A DISTANCE OF 12 FEET ON EACH SIDE OF THE CROSSING, MEASURED PERPENDICULAR TO THE WATERMAIN. THE CARRIER PIPE SHALL BE DESIGNED AND CONSTRUCTED OF MATERIALS WHICH ARE SATISFACTORY TO THE DIVISION, OR
- ANY OTHER METHODS, IF SUPPORTED BY DATA FROM THE DESIGN ENGINEER, WHICH ENSURE ADEQUATE WATER TIGHTNESS AND ARE SATISFACTORY TO THE DIVISION.

- NOTE:**
- 1-1/4" SDR-7 OR 11 HDPE ARCH PATTERN.

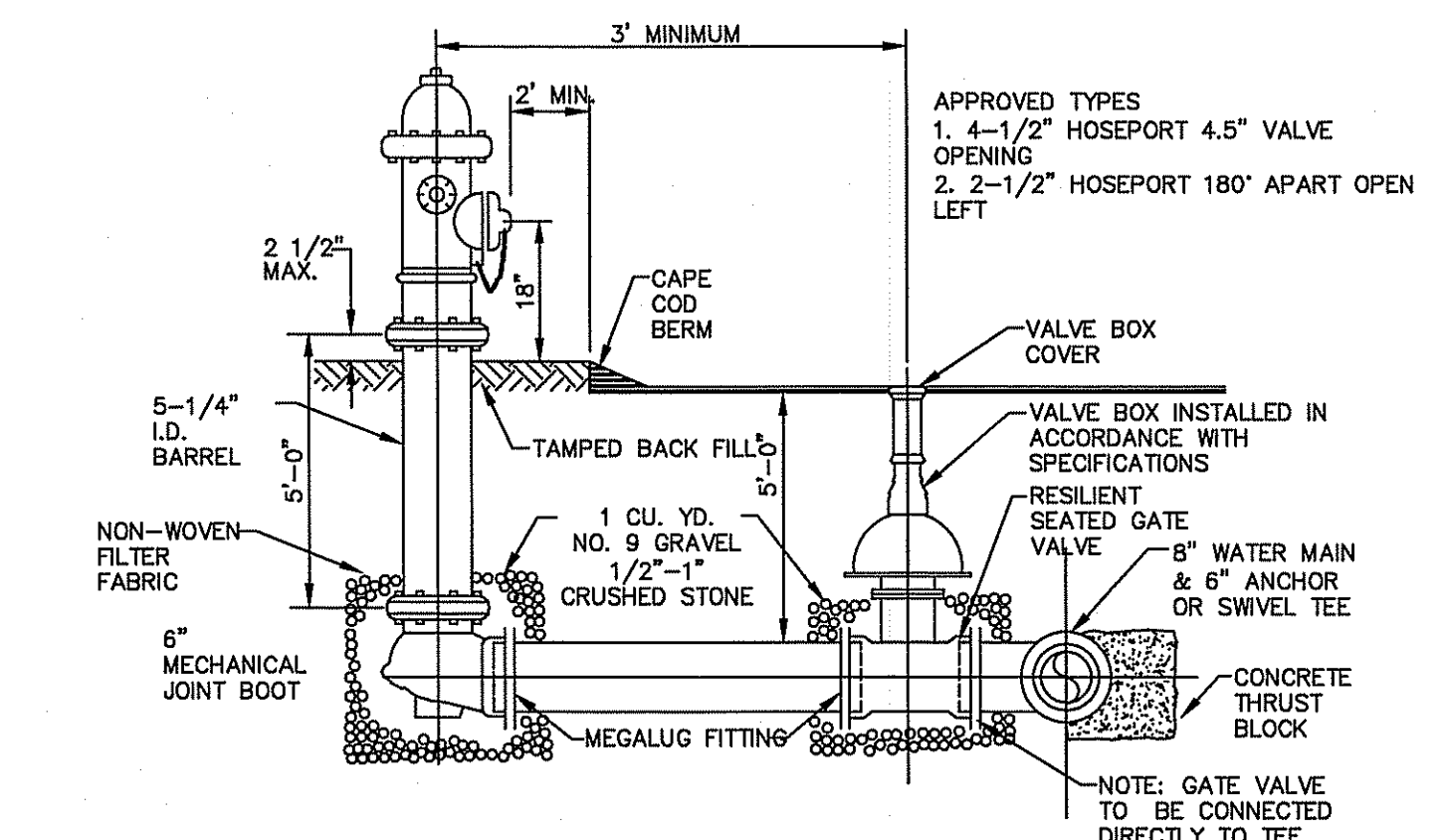


SEWER-PLASTIC LATERAL ASSEMBLY

NOT TO SCALE

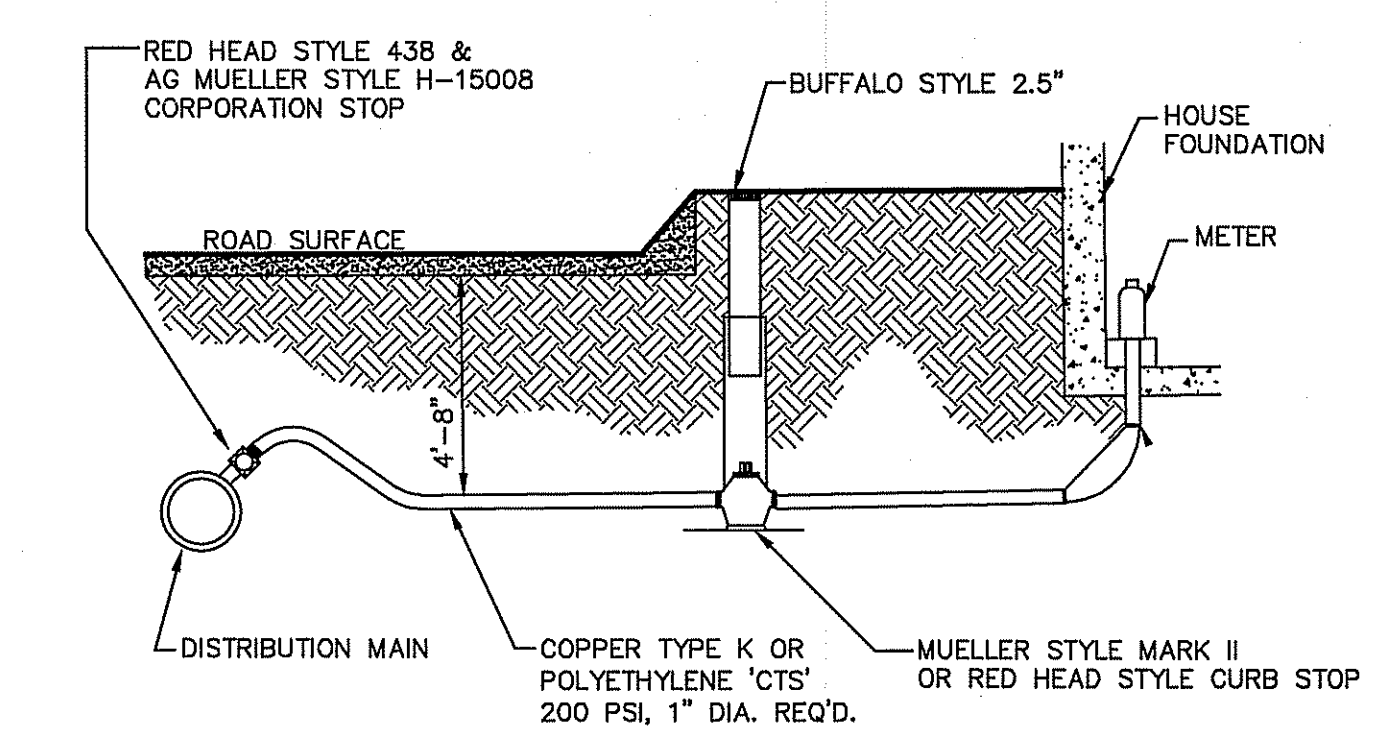
WATER NOTES

- ALL WORK AND MATERIAL OF WATER LINE SHALL CONFORM TO GREENVILLE WATER AUTHORITY (GWA) DISTRICT STANDARD CONSTRUCTION SPECIFICATIONS.
- WATER MAIN INSTALLATION SHALL BE INSPECTED BY (GWA) OR THEIR AGENT PRIOR TO BACK FILLING THE TRENCH.
- CONTRACTOR SHALL CONTACT DIRECTOR FOR PRE-CONSTRUCTION MEETING, INSPECTION FEE CHARGES AND SCHEDULING TEN (10) DAYS PRIOR TO START OF WORK.
- THE (GWA) OR THEIR AGENT WILL BE PRESENT DURING PRESSURE TESTING AND STERILIZATION OF ALL NEW WATER MAINS.
- THE CONTRACTOR SHALL NOTIFY THE (GWA) AT LEAST TWO WORKING DAYS IN ADVANCE FOR FINAL INSPECTION.
- WHENEVER, IN THESE SPECIFICATIONS, REFERENCE IS MADE TO THE REQUIREMENTS OF AWWA, ANSI, ASTM OR ANY OTHER STANDARD SPECIFICATION, THE REFERENCE IS MADE TO THE LATEST REVISIONS OR MODIFICATIONS OF SUCH REQUIREMENTS AND SPECIFICATIONS.
- ALL PIPE, FITTINGS, AND APPURTENANCES SHALL BE INSTALLED IN ACCORDANCE WITH AWWA AND ANSI STANDARDS AND THE MANUFACTURER'S SUGGESTED RECOMMENDATIONS FOR INSTALLATIONS.
- PIPELINES SHALL BE CONSTRUCTED IN DRY TRENCHES AND LAID TO THE LINE GRADE. WHENEVER PIPE IS TO BE INSTALLED IN SATURATED SOIL CONDITIONS A BEDDING OF PROCESSED GRANULAR FILTER MATERIAL SHALL BE PROVIDED.
- MECHANICAL JOINTS SHALL BE GRIPPER RING OR MEGA-LUG TYPE RESTRAINTS IN PLACE OF THRUST BLOCKS. THRUST BLOCKS ARE AT THE DISCRETION OF THE CONTRACTOR.
- JOINTING OF MECHANICAL AND PUSH ON TYPE JOINTS SHALL BE PERFORMED IN STRICT ACCORDANCE WITH AWWA STANDARD C-600 AND THE GREENVILLE WATER AUTHORITY SPECIFICATIONS. RUBBER GASKETS AND RINGS SHALL BE SUITABLE FOR USE WITH POTABLE WATER AND THOROUGHLY CLEANED TO REMOVE OIL, GRIT, AND OTHER FOREIGN MATTER PRIOR TO ASSEMBLY. THE GASKETS SHALL BE INSPECTED BY THE (GWA) OR HIS AGENT TO INSURE THAT THEY ARE ACCEPTABLE.
- ALL FITTINGS USED FOR SERVICE CONNECTIONS SHALL BE IN ACCORDANCE WITH AWWA C-600 AND THE (GWA) SPECIFICATIONS.
- ALL WATER SERVICES SHALL BE SADDLED. NO DIRECT TAPS ARE PERMITTED. CURB STOPS SHALL BE NON-DRAIN TYPE.
- VALVES USED SHALL BE IN ACCORDANCE WITH AWWA C-500 SERIES AND THE (GWA) SPECIFICATIONS.
- BLOW-OFF ASSEMBLIES SHALL BE INSTALLED IN ACCORDANCE WITH AWWA C-800 SERIES AND (GWA) SPECIFICATIONS.
- THE SEWER SHALL BE INSTALLED IN ACCORDANCE WITH AWWA C-502 "WET BARREL FIRE HYDRANTS" AND (GWA) SPECIFICATIONS.
- HYDROSTATIC AND LEAKAGE TESTS SHALL BE PERFORMED ON ALL COMPLETED SECTIONS OF NEWLY INSTALLED PIPELINE IN ACCORDANCE WITH AWWA C-600 AND THE (GWA) SPECIFICATIONS.
- ALL PIPE SHALL BE DISINFECTED PRIOR TO BEING ACTIVATED IN ACCORDANCE WITH AWWA B-300, AWWA C-601 AND THE (GWA) SPECIFICATIONS.
- PIPE SHALL BE 8" PVC 1120 PRESSURE PIPE. POLYVINYL CHLORIDE WATER PIPE SHALL BE CLASS-150, CONFORMING TO THE REQUIREMENTS AWWA C-900-78 STANDARD SPECIFICATIONS FOR POLYVINYL CHLORIDE PRESSURE PIPE FOR PVC 1120 PIPE MADE FROM CLASS 12454-A OR CLASS 12454-B MATERIAL AS DEFINED IN ASTM D1784. THE PIPE SHALL CONFORM WITH THE OUTSIDE DIAMETER DIMENSIONS OF STEEL PIPE OR CAST IRON PIPE AND WITH THE WALL THICKNESS OF DR SERIES 18 FOR CLASS-150 PIPE. THE PIPE SHALL BE OF THE GASKETED BELL OR GASKETED COUPLING TYPE. SOLVENT CEMENT CONNECTIONS WILL NOT BE ALLOWED. RUBBER RING GASKETS CONSIST OF A SOLID CROSS-SECTION ELASTOMETRIC RING WHICH MEETS THE REQUIREMENTS OF ASTM 1869. ALL RING GASKETS SHALL BE SHIPPED SECURELY FITTED IN THE BELL GROOVE OR A COUPLING GROOVE. LOOSE RING GASKETS WHICH MAY CAUSE "FISH MOUTHING" WILL NOT BE ALLOWED.
- ALL FITTINGS USED FOR THE SERVICE CONNECTIONS SHALL BE IN ACCORDANCE WITH AWWA C-600 AND THE (GWA) SPECIFICATIONS. THE K COPPER PIPE OR POLYETHYLENE ASTM D-2239 PIPE WITH STAINLESS STEEL INSERTS AT THE FITTINGS IS TO BE USED BETWEEN THE CORPORATION AND METER.
- THE CONTRACTOR IS RESPONSIBLE FOR OBTAINING ALL FEDERAL, STATE, AND TOWN PERMITS PRIOR TO CONSTRUCTION.
- THE CONTRACTOR IS RESPONSIBLE FOR INITIATING, MAINTAINING AND SUPERVISING ALL SAFETY PRECAUTIONS AND PROGRAMS RELATED TO INSTALLATION OF THE WATER MAIN.
- EXCAVATIONS THAT EXTEND INTO PUBLIC RIGHT-OF-WAY SHALL BE BACK FILLED AND COMPACTED IN 12" LIFTS. A TEMPORARY BINDER COURSE IS TO BE APPLIED. FINAL BINDER AND FINISH COURSE TO BE PLACED AFTER REMOVAL OF TEMPORARY PAVEMENT AND COMPACTION OF GRAVEL BASE. CONTRACTOR SHALL MAKE ROAD PASSABLE FOR ONE LANE OF TRAFFIC AT ALL TIMES. EXCAVATIONS THAT EXTEND INTO PUBLIC RIGHT-OF-WAY SHALL BE BACK FILLED WITH A "FLOW ABLE FILL" TYPE OF MATERIAL.
- CONTRACTOR SHALL NOTIFY DIG SAFE PRIOR TO DIGGING ANY TRENCHES.
- WHEN WORK IS NOT IN PROGRESS AND AT THE END OF EACH DAY, ALL OPEN ENDS OF THE PIPE AND FITTINGS SHALL BE SECURELY CLOSED.
- THE PROPOSED WATER SYSTEM HAS BEEN ANALYZED, MODELED, AND TO BE SIZED BY THE CONSULTING ENGINEERING AND THE SMITHFIELD WATER AUTHORITY. DIPRETE ENGINEERING ASSOCIATES, INC. HAS NOT PERFORMED ANY WATER MODELING OR ANALYSIS AND DOES NOT CERTIFY AS TO THE AVAILABLE WATER PRESSURE WITHIN THE PROPOSED WATER MAIN EXTENSION.



AWWA C502 DRY BARREL FIRE HYDRANT

NOT TO SCALE

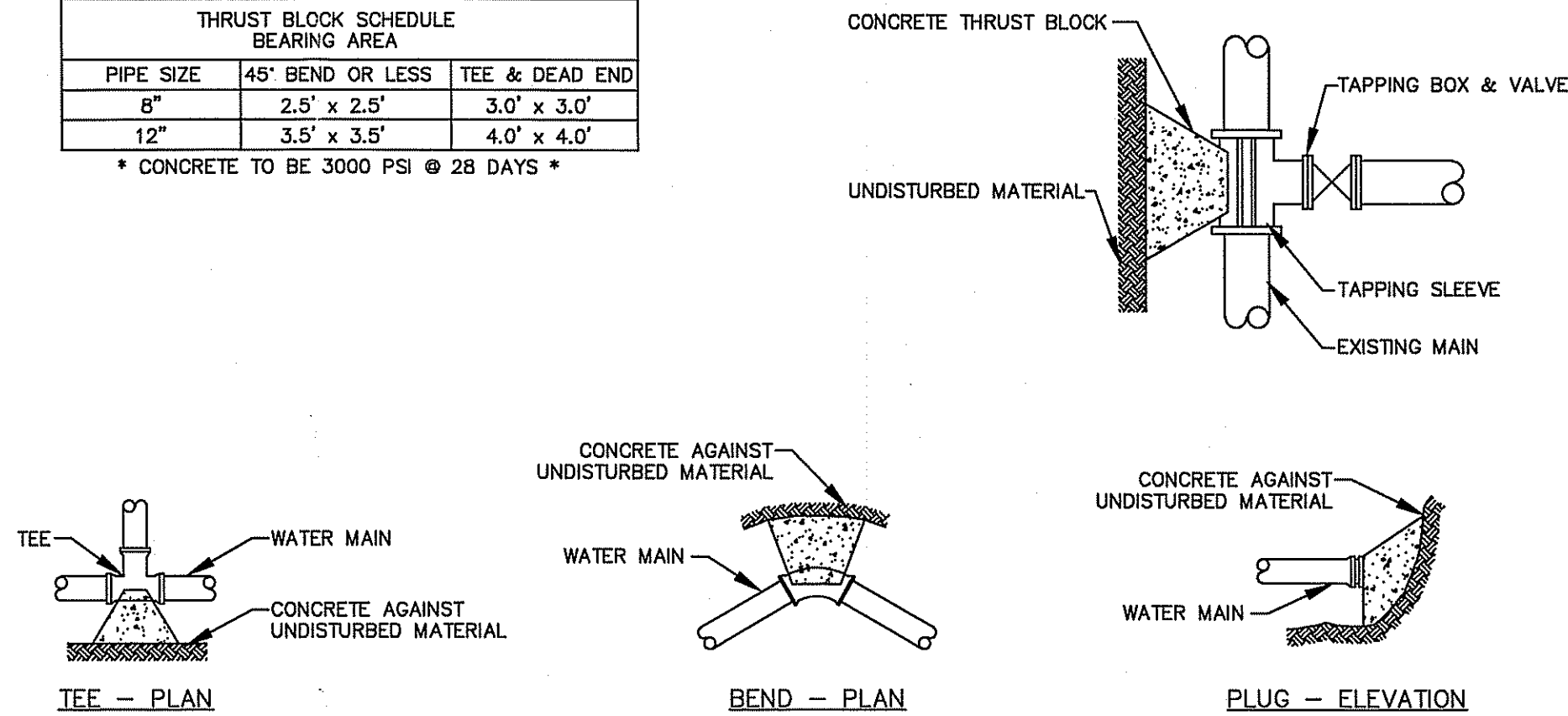


WATER SERVICE INSTALLATION (TYPICAL)

NOT TO SCALE

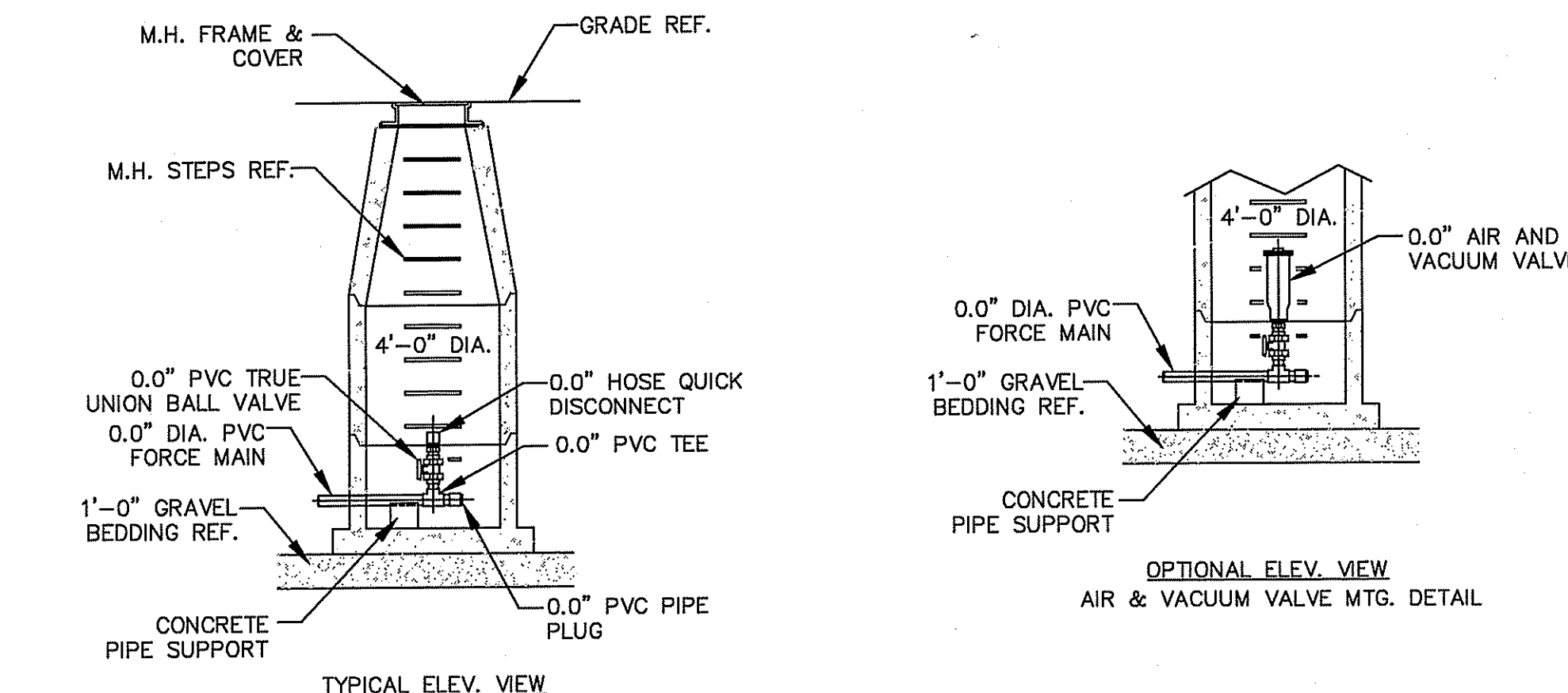
PIPE SIZE	45° BEND OR LESS	TEE & DEAD END
8"	2.5' x 2.5'	3.0' x 3.0'
12"	3.5' x 3.5'	4.0' x 4.0'

* CONCRETE TO BE 3000 PSI @ 28 DAYS *



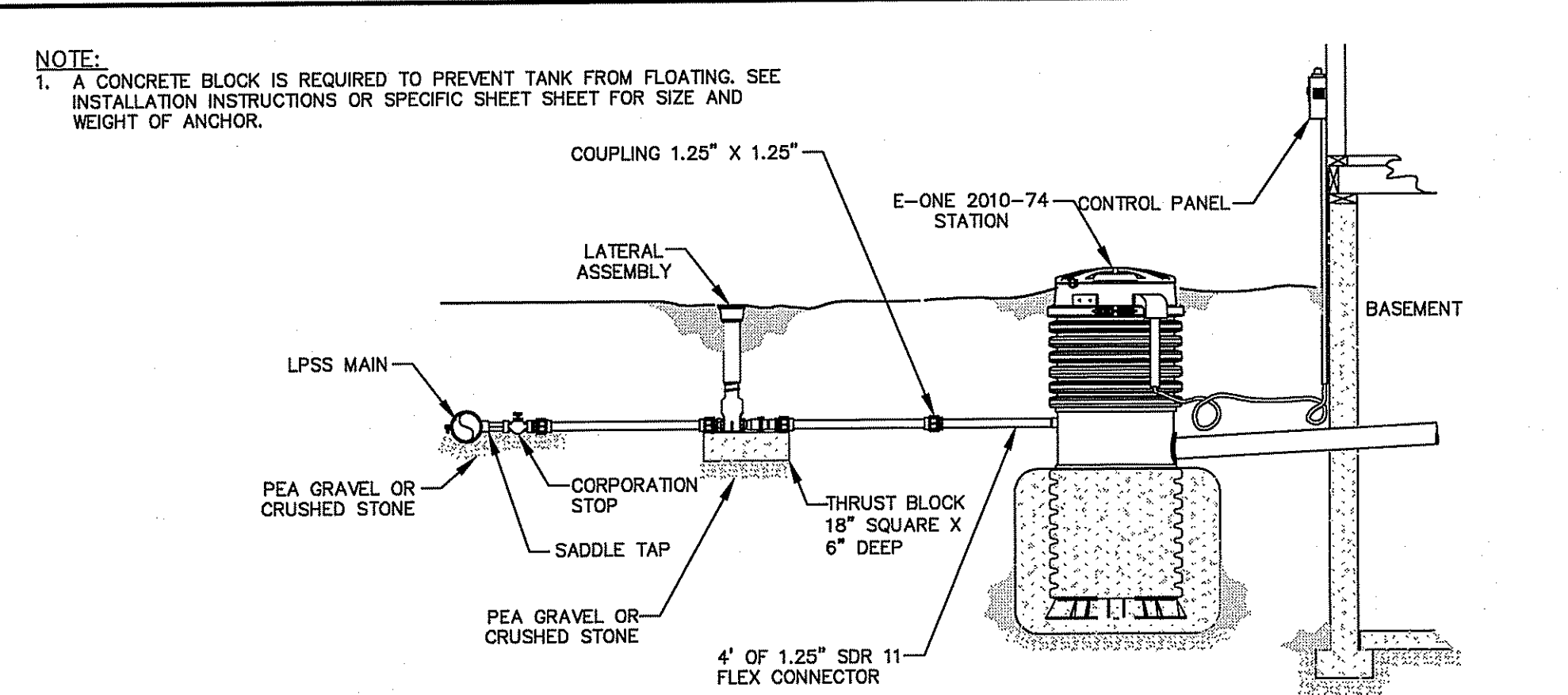
THRUST BLOCK DETAILS

NOT TO SCALE



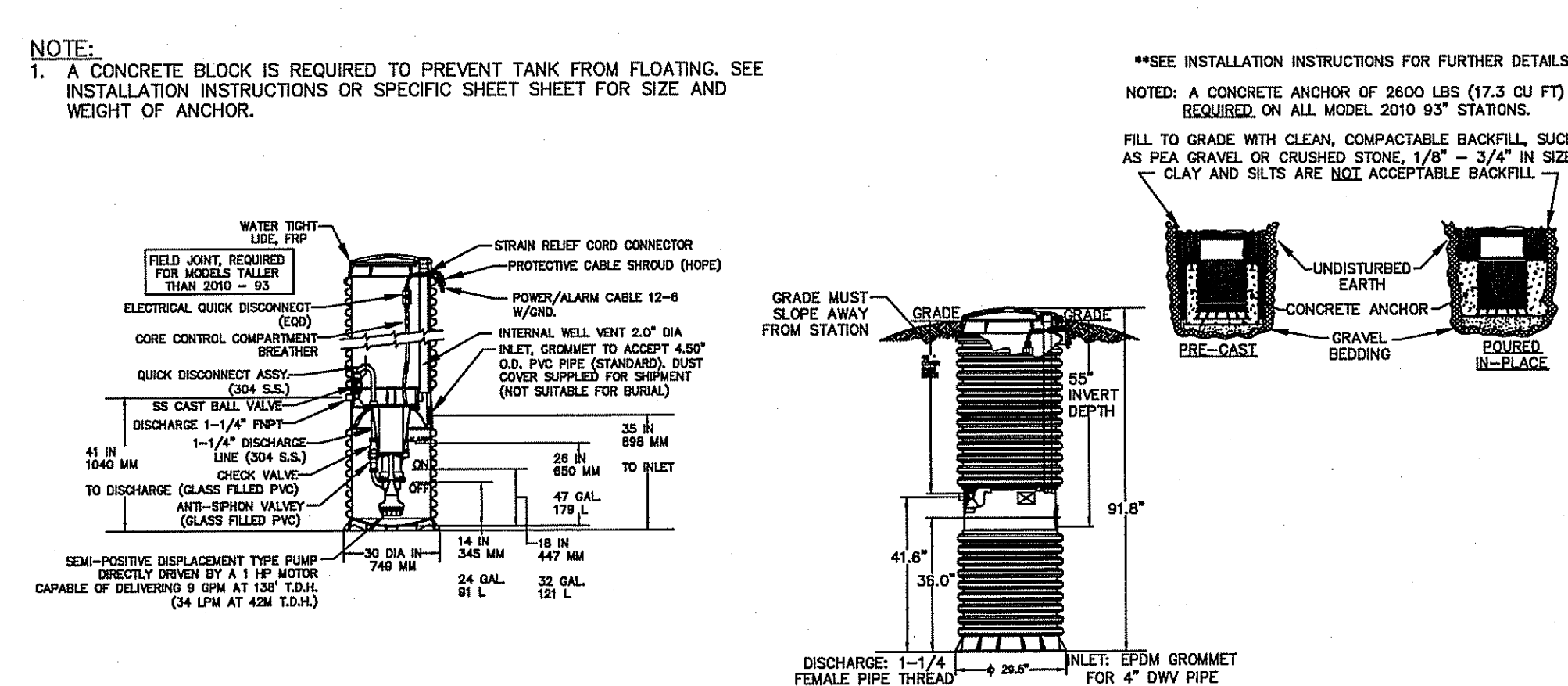
SEWER-TERMINAL FLUSHING MANHOLE WITH OPTIONAL AIR RELEASE VALVE (PVC)

NOT TO SCALE



SEWER-TYPICAL OUTDOOR LATERAL INSTALLATION DETAIL

NOT TO SCALE



SEWER-F-ONE DETAIL

NOT TO SCALE

DEPARTMENT OF ENVIRONMENTAL MANAGEMENT
OFFICE OF WATER RESOURCES
FRESH WATER WETLANDS PROGRAM
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Charles A. Harber

CHRISTOPHER A. DUHAMEL
No. 5013
REGISTERED PROFESSIONAL ENGINEER

DETAIL SHEET
Swan Orchard Farms
ASSESSOR'S PLAT 47 LOT 77
SMITHFIELD, RI

PREPARED BY
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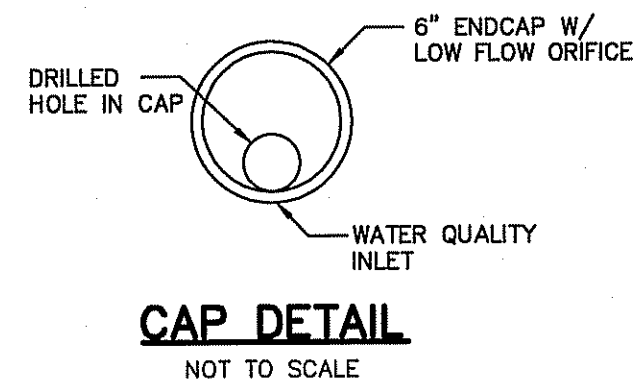
PREPARED FOR
Churchill & Banks Properties LLC
10 GREENE STREET
PROVIDENCE, R.I.
02903-4736
(401) 273-8010

DATE: 8-11-07
DESCRIPTION: WETLANDS REEVALUATION
BY: J.M.D.
DATE: 05-14-07
DESCRIPTION: PRELIMINARY DETERMINATION
BY: J.M.D.

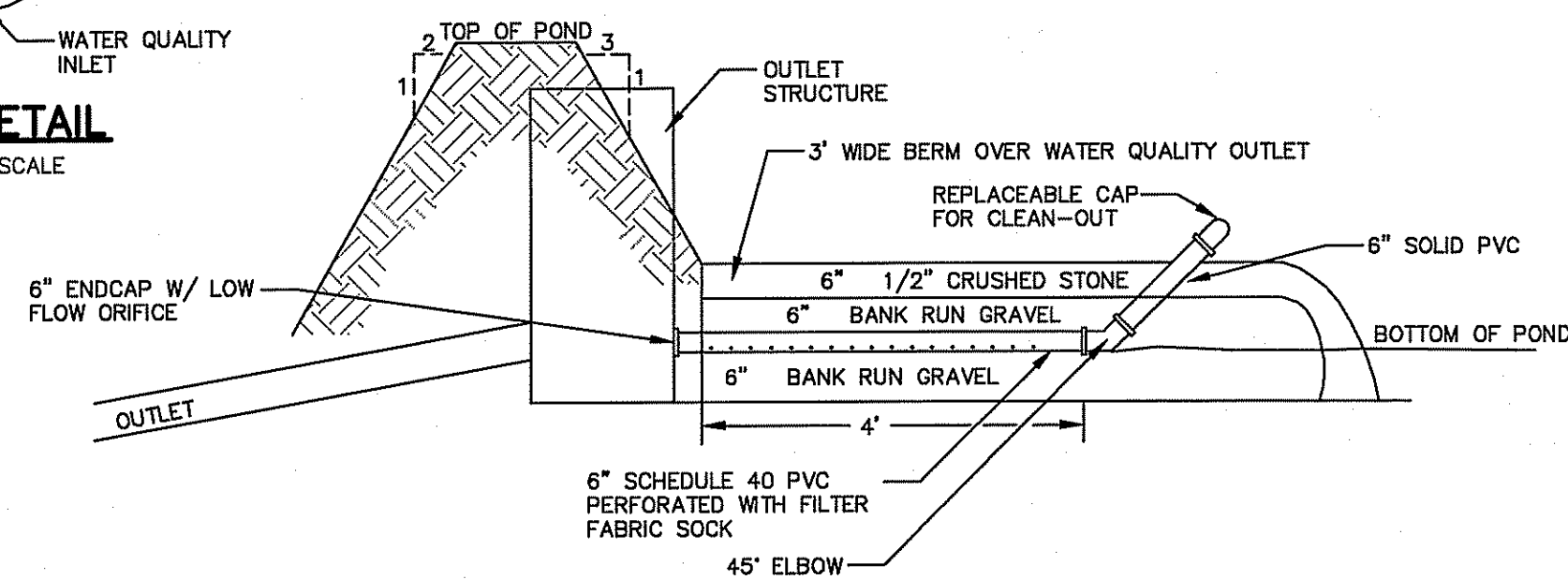
MAY, 2007
DWN. BY: J.M.D.

SHEET 12 OF 17

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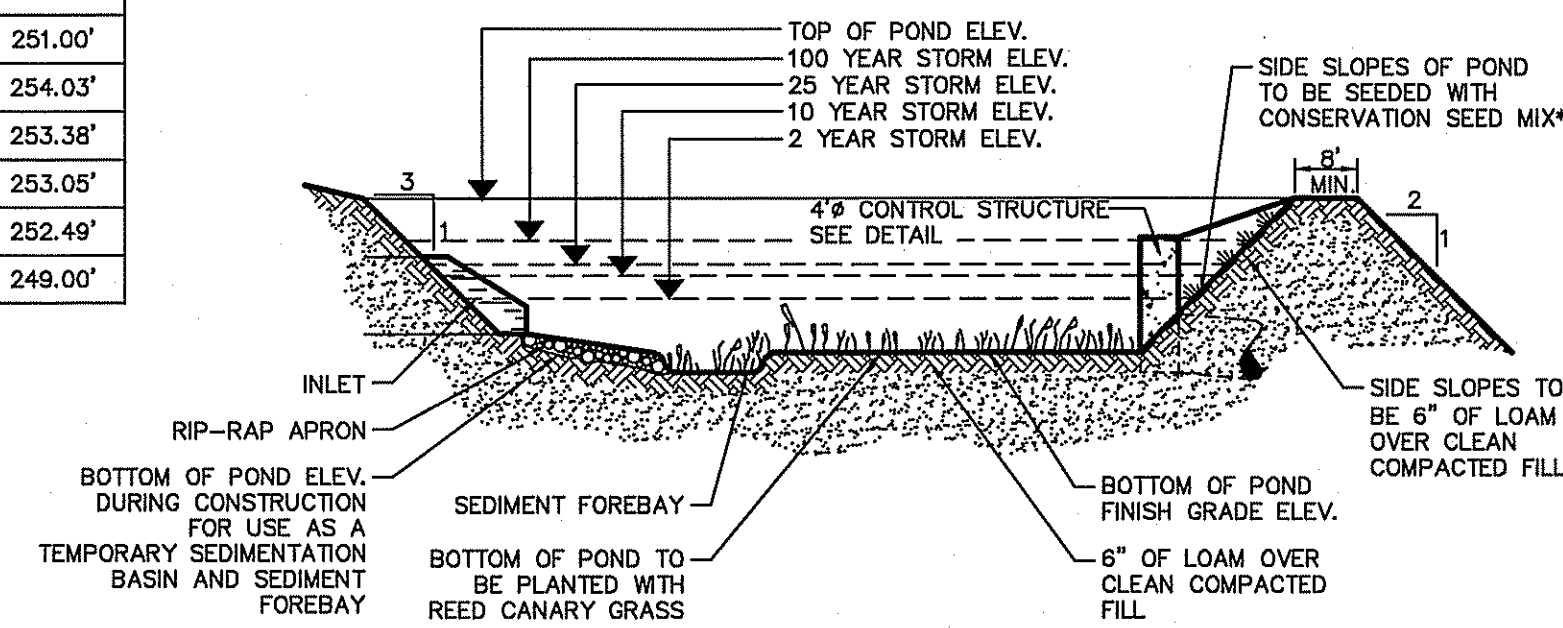


CAP DETAIL
NOT TO SCALE



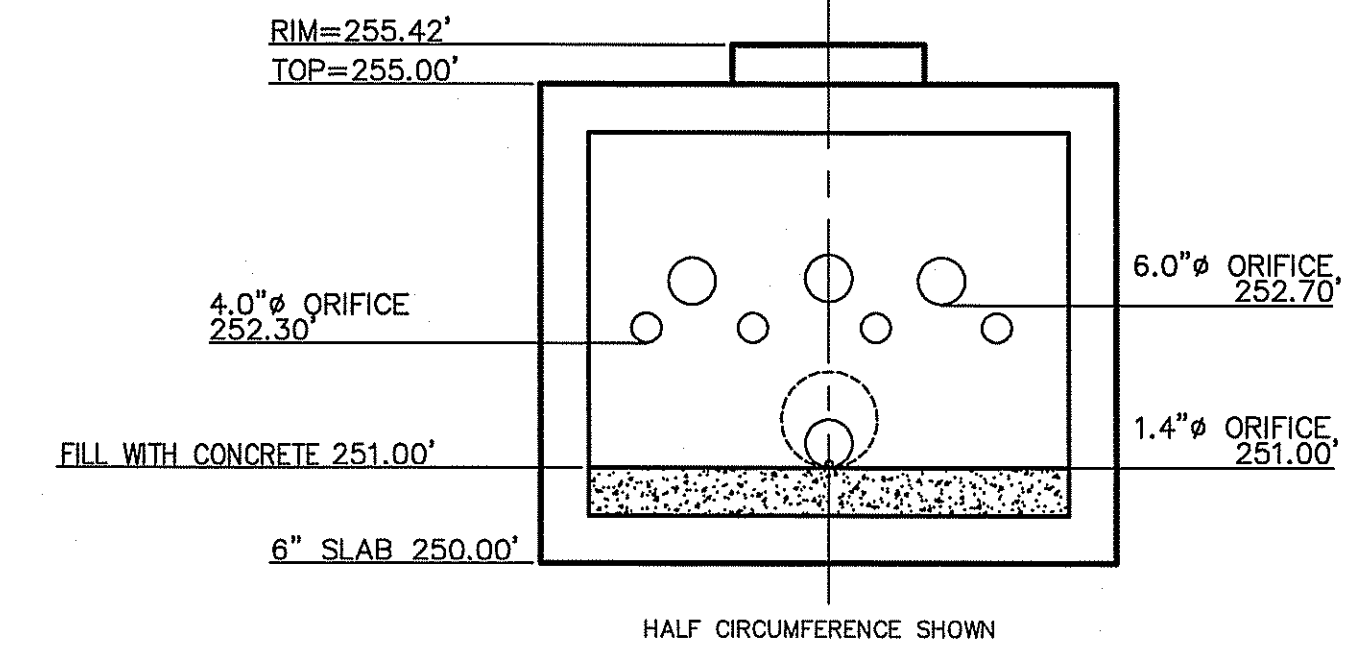
WATER QUALITY OUTLET POND
NOT TO SCALE

DESCRIPTION	POND 12P
TOP OF POND ELEVATION	255.03'
BOTTOM OF POND ELEVATION FOR SEDIMENT FOREBAY	250.50'
BOTTOM OF POND	251.00'
100 YEAR STORM ELEVATION	254.03'
25 YEAR STORM ELEVATION	253.38'
10 YEAR STORM ELEVATION	253.05'
2 YEAR STORM ELEVATION	252.49'
SEASONAL HIGH GWL ELEVATION	249.00'

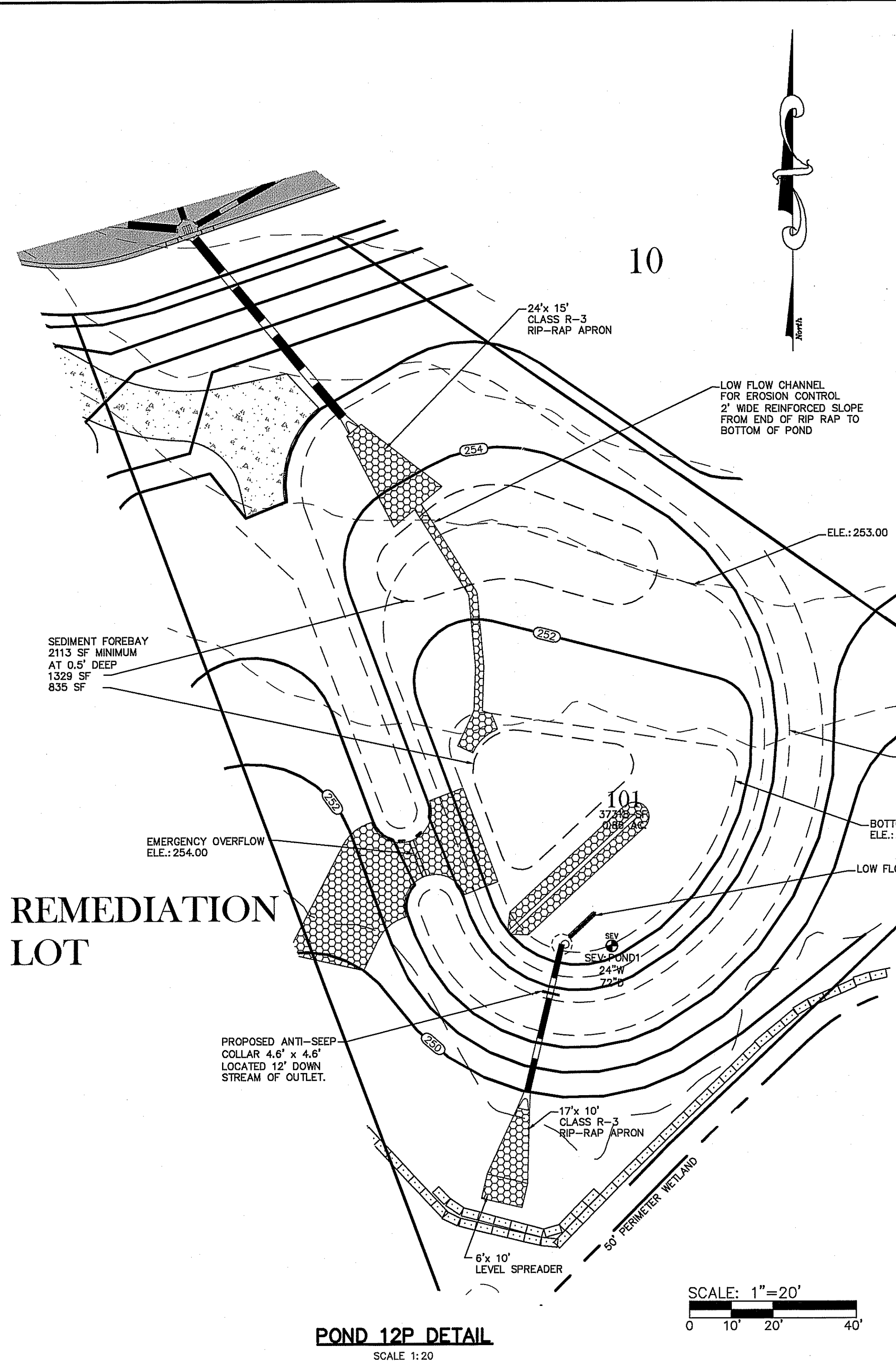


DETENTION POND - TYPICAL CROSS SECTION
NOT TO SCALE

Description	POND 12 OUTLET
Rim Elevation	255.42
Top Elevation	255.00
Orifice #2 Size & Invert	(3) 6.0" @ 252.70'
Orifice #1 Size & Invert	(4) 4.0" @ 252.30'
Water Quality Orifice Size & Invert	1.4" @ 251.00'
Outlet Size & Invert	12" @ 251.00'
Fill With Concrete to Elevation	251.00'
Bottom of Structure	250.00'



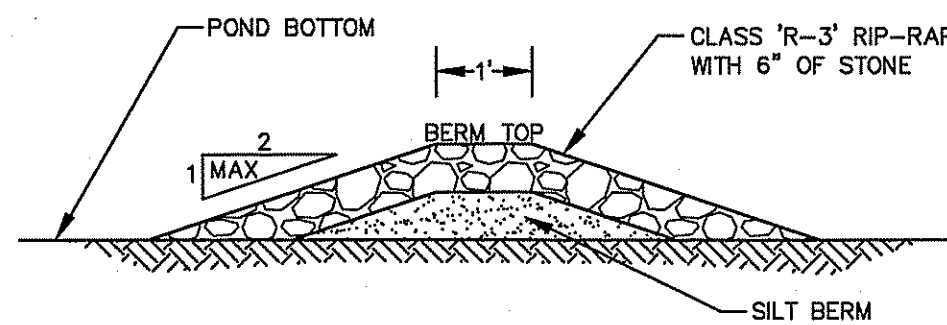
DETENTION BASIN OUTLET (POND 12P)
SCALE 1"=2'



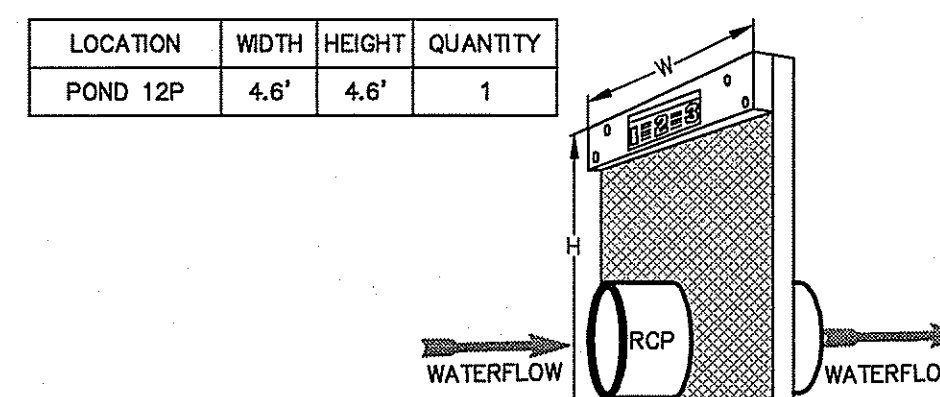
POND 12P DETAIL
SCALE 1"=20'

NOTE:
1. TYPICAL CROSS SECTION OF RIP-RAP BERM LOCATED IN POND.

LOCATION	LENGTH	TOP ELEVATION
POND 12P	45'	252.50'



RIP-RAP BERM
NOT TO SCALE

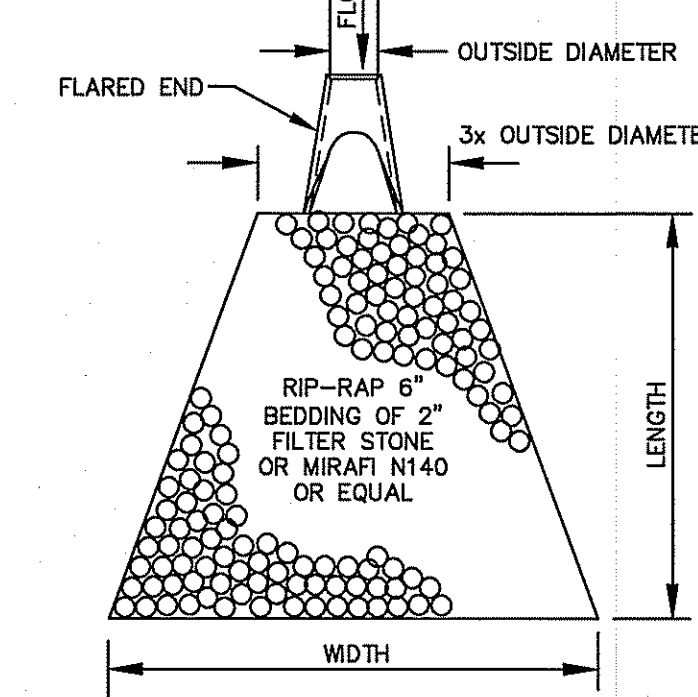


NOTE:
AGRI DRAIN CORP. OR EQUAL

INSTALLATION NOTES:
1. UNROLL THE ANTI-SEEP AND ATTACH THE BOARDS TO THE EDGES TO FORM A SQUARE. (USE THE BOARDS AND NAILS PROVIDED.)
2. CUT A ROUND HOLE IN THE CENTER OF THE RUBBER THAT IS SMALLER THAN THE PIPE SIZE (APPROX. 25% SMALLER). THIS WILL ALLOW THE RUBBER TO STRETCH OVER THE PIPE WHEN THE ANTI-SEEP IS INSTALLED ON THE PIPE. THIS SHOULD PROVIDE A NEARLY WATERPROOF SEAL BETWEEN THE PIPE AND THE ANTI-SEEP.
3. SLIP THE PIPE THROUGH THE ANTI-SEEP. INSPECT THE SEAL BETWEEN THE PIPE AND THE ANTI-SEEP. CAREFULLY BACKFILL AND COMPACT WITH SUITABLE SOIL.

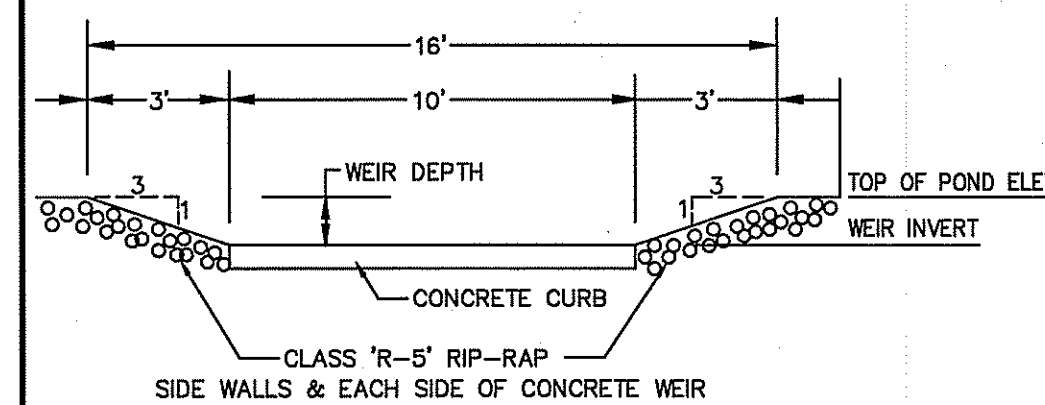
ANTI-SEEP COLLAR
NOT TO SCALE

LOCATION	LENGTH	WIDTH	CLASS
FES-11	24'	15'	R-3
FES-12	17'	10'	R-3

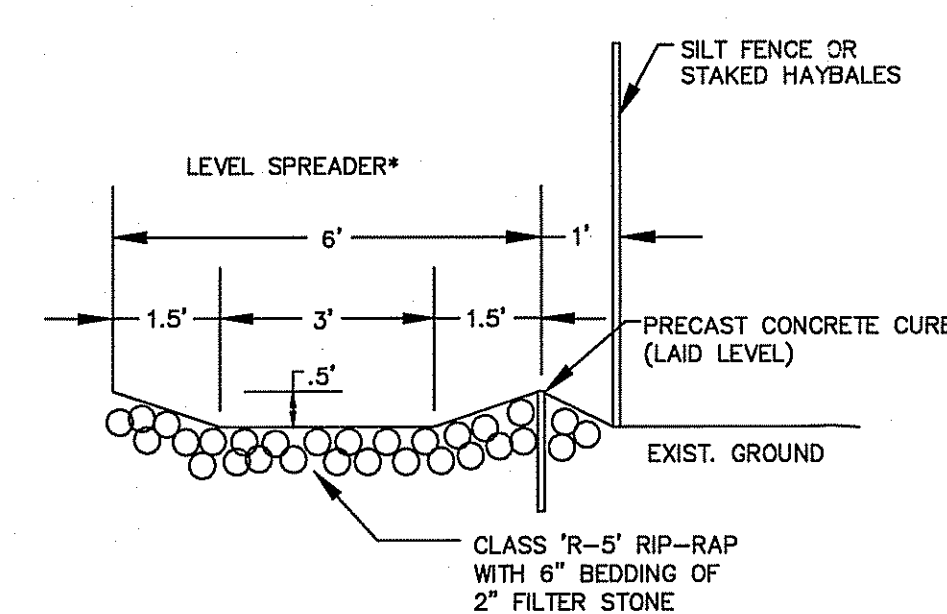


RIP-RAP APRON DETAIL
NOT TO SCALE

LOCATION	TOP OF POND ELEV.	WEIR INVERT	WEIR DEPTH
POND 12P	255.03'	254.00'	1.0'

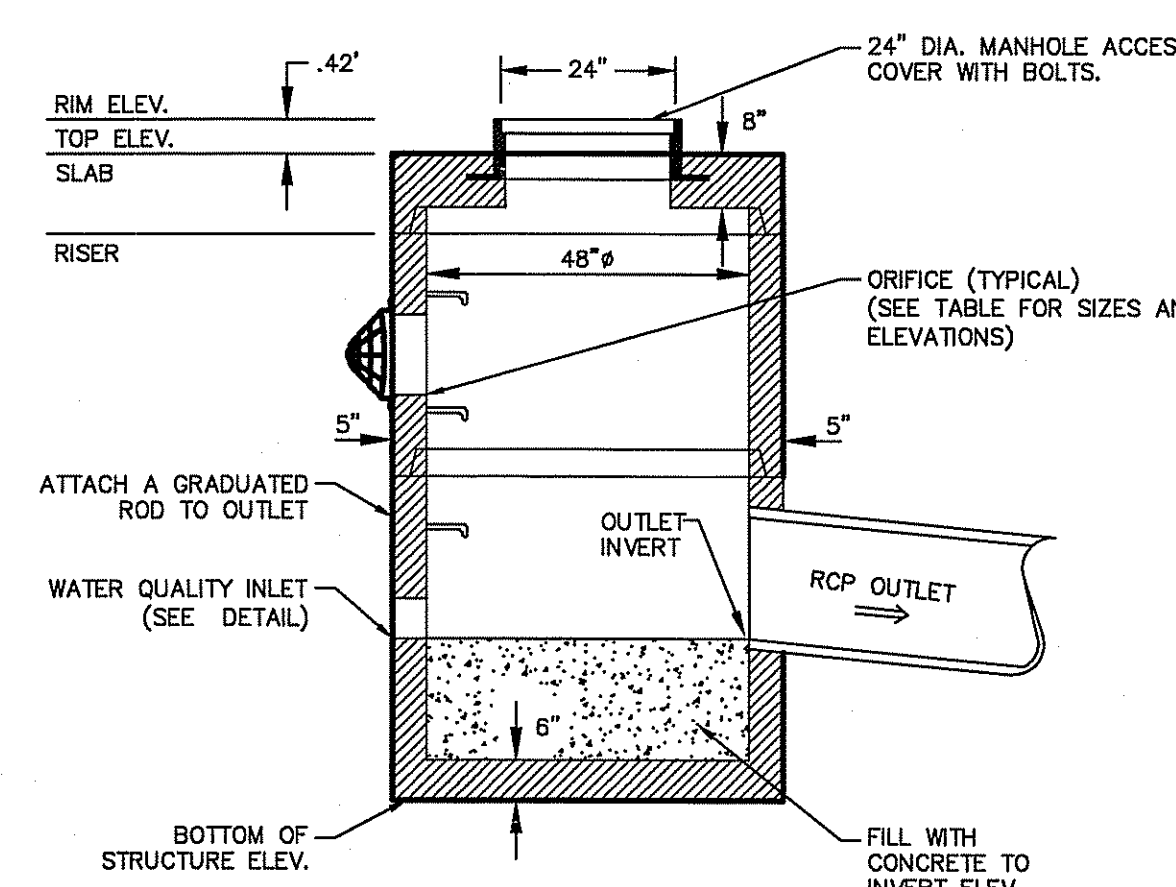


EMERGENCY SPILLWAY DETAIL
NOT TO SCALE



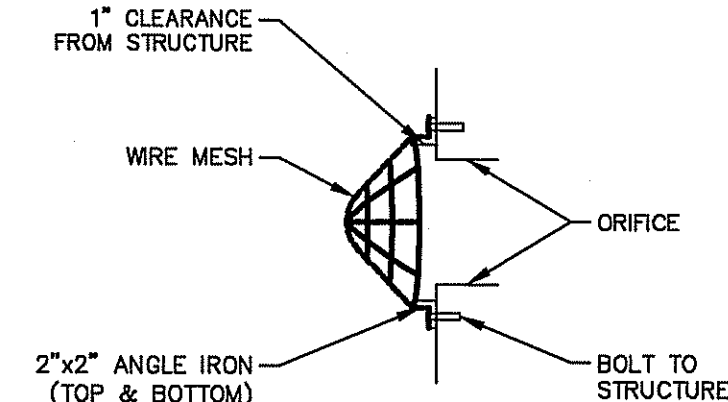
NOTE:
* LENGTHS AS SPECIFIED ON SITE PLANS

LEVEL SPREADER
NOT TO SCALE

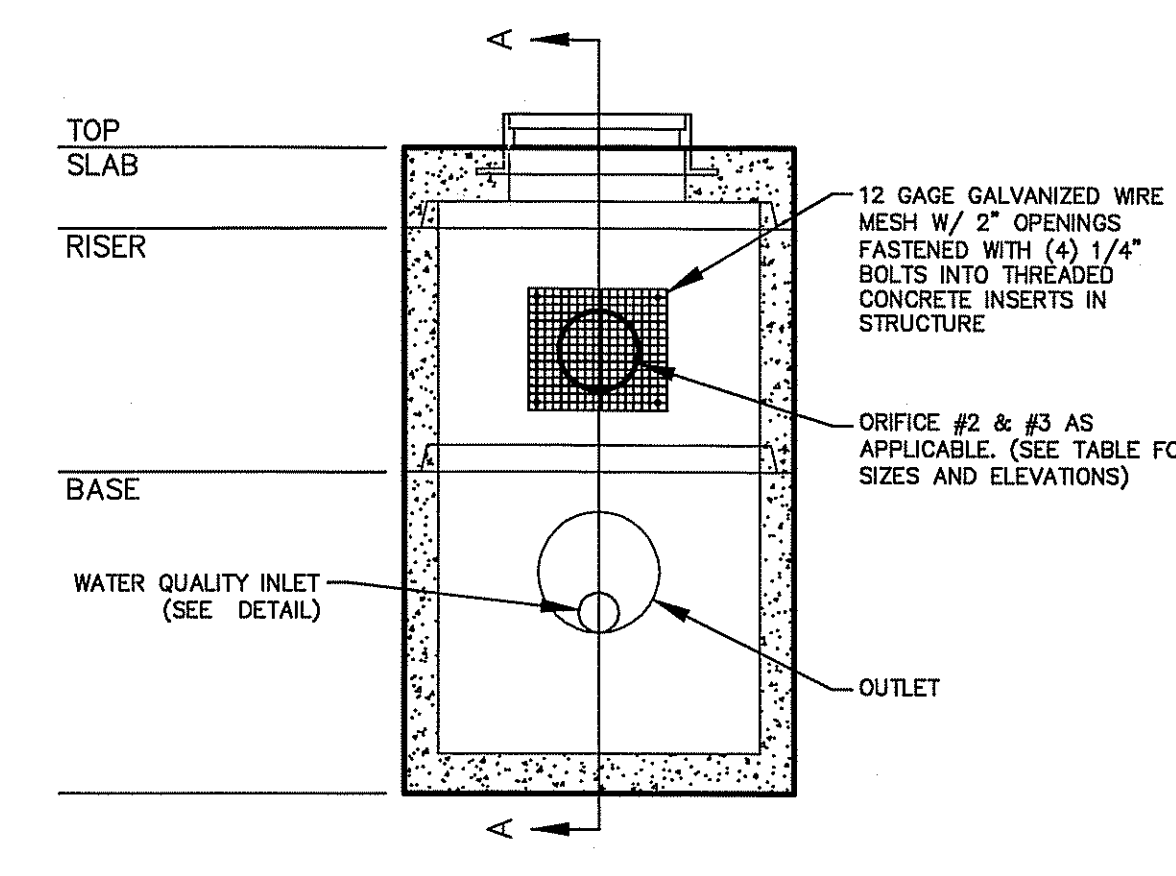


SECTION A-A

NOTE:
ALL 2" WEEP HOLES USED TO PLACE STRUCTURE MUST BE FILLED WITH CONCRETE.



TRASH RACK DETAIL



FRONT VIEW

TOP VIEW

4" DIA. OUTLET STRUCTURE
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 OCT 3 2007 FILE # 07-0217
NO CHANGES ALLOWED WITHOUT PRIOR APPROVAL
APPROVED PLANS MUST BE AT CONSTRUCTION SITE

Charles A. Haber

DETAIL SHEET POND 12P

Swan Orchard Farms

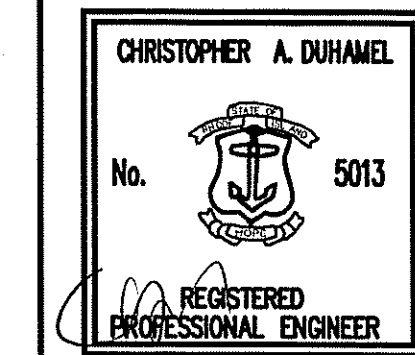
ASSESSOR'S PLAT 47 LOT 77
SMITHFIELD, RI

PREPARED BY
DiPrete Engineering Associates, Inc.
ENGINEERING, SURVEYING AND PLANNING CONSULTANTS

TWO STAFFORD COURT
CRANSTON, R.I. 02920
(401) 943-1000 FAX: (401) 464-6006

PREPARED FOR
Churchill & Banks Properties LLC

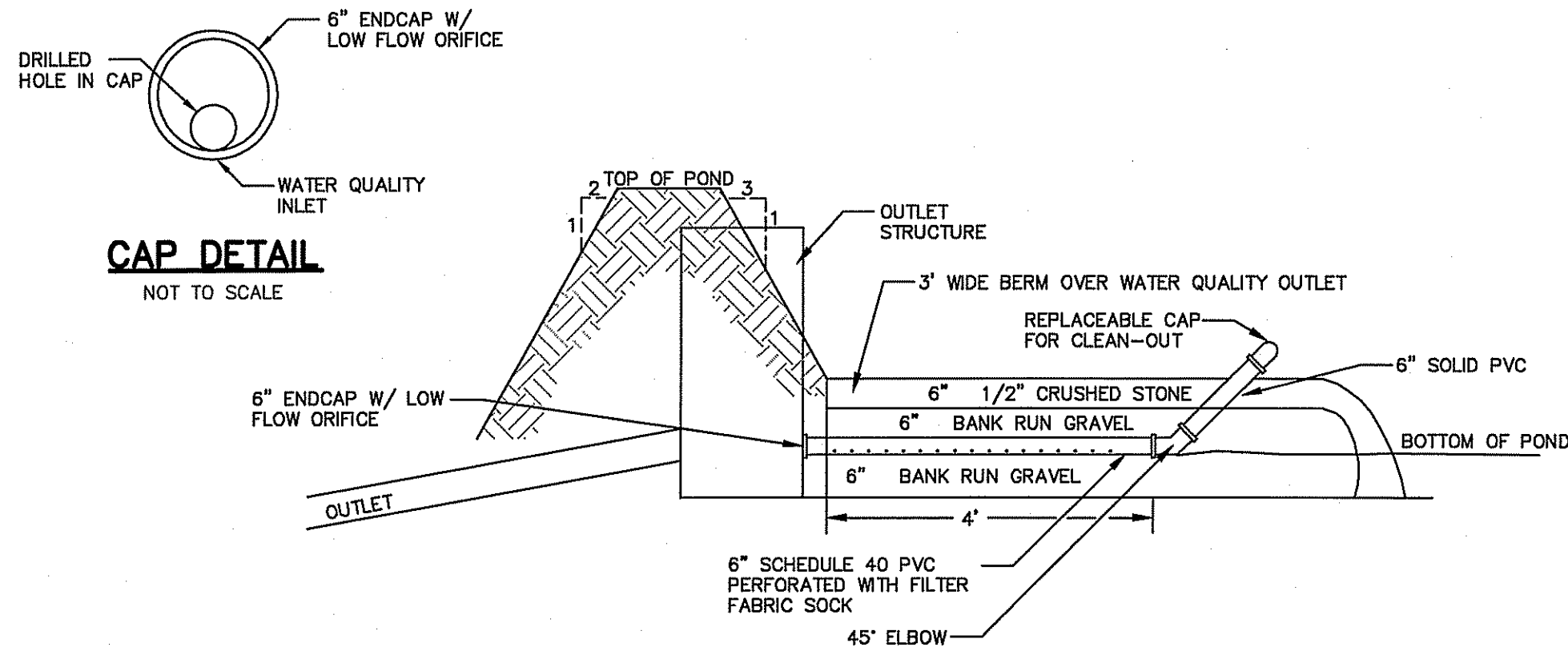
10 GREENE STREET
PROVIDENCE, R.I.
02903-4738
(401) 273-8010



NO.	DATE	DESCRIPTION	BY
2	8-11-07	WETLANDS RESUBMISSION	J.M.D.
1	05-14-07	REPEAT PRELIMINARY DETERMINATION	J.M.D.

MAY 2007
DWN. BY: J.M.D.

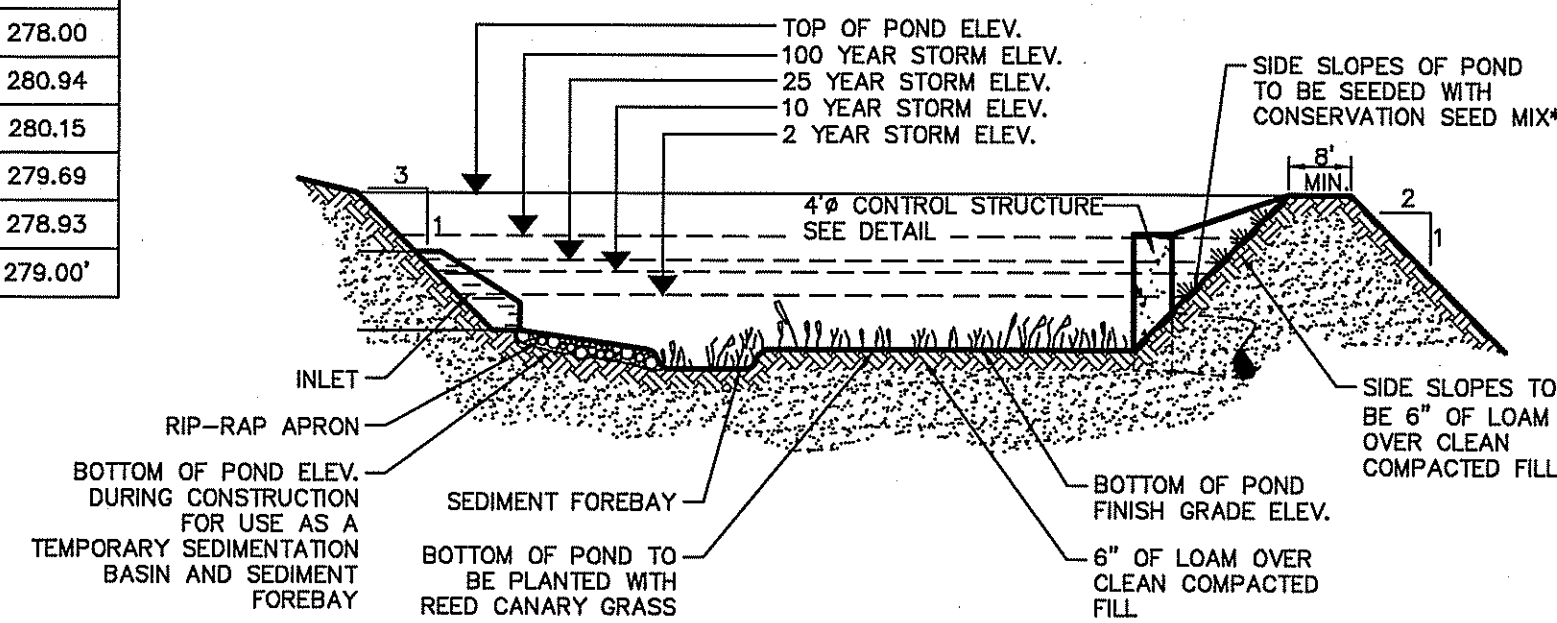
SHEET 13 OF 17



CAP DETAIL
NOT TO SCALE

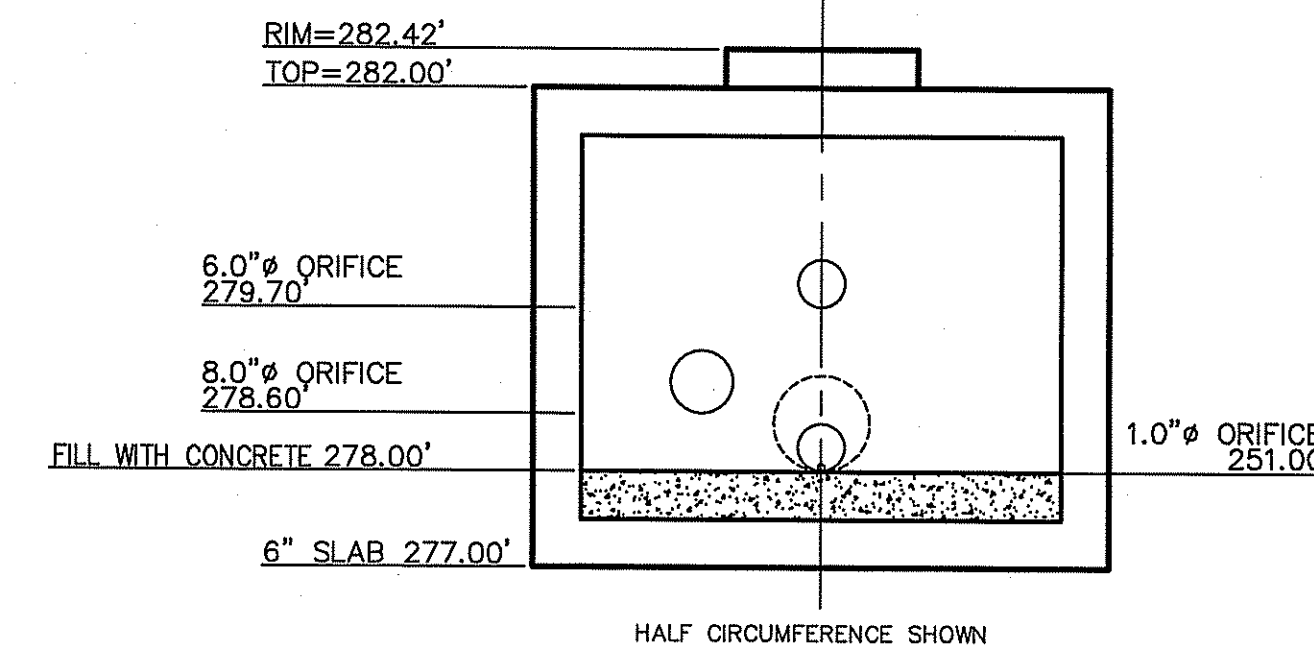
WATER QUALITY OUTLET POND
NOT TO SCALE

DESCRIPTION	POND 13P
TOP OF POND ELEVATION	282.00
BOTTOM OF POND ELEVATION FOR SEDIMENT FOREBAY	277.50
BOTTOM OF POND	278.00
100 YEAR STORM ELEVATION	280.94
25 YEAR STORM ELEVATION	280.15
10 YEAR STORM ELEVATION	279.69
2 YEAR STORM ELEVATION	278.93
SEASONAL HIGH GWL ELEVATION	279.00'

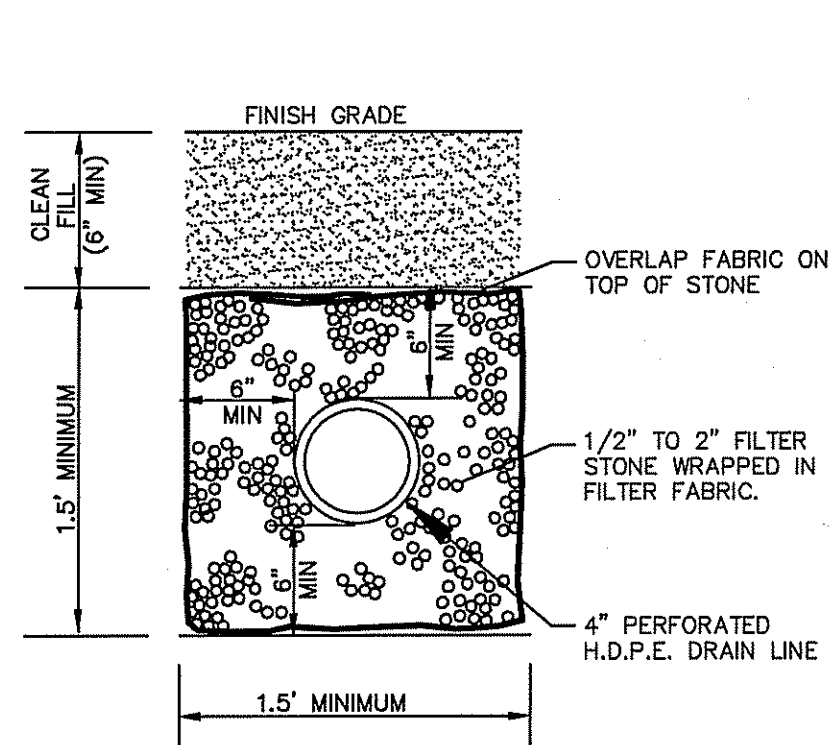


DETENTION POND - TYPICAL CROSS SECTION
NOT TO SCALE

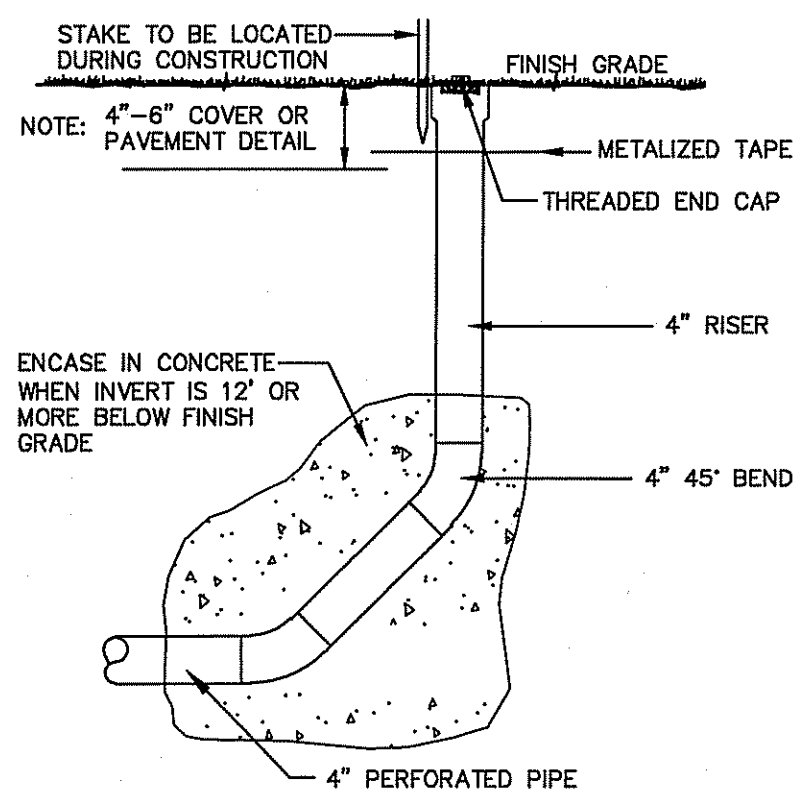
Description	POND 13 OUTLET
Rim Elevation	282.42
Top Elevation	282.00
Orifice #2 Size & Invert	6.0", 279.70'
Orifice #1 Size & Invert	8.0", 278.60'
Water Quality Orifice Size & Invert	1.0", 278.00'
Outlet Size & Invert	12", 278.00'
Fill With Concrete to Elevation	278.00'
Bottom of Structure	277.00'



DETENTION BASIN OUTLET (POND 13P)
SCALE 1"=2'



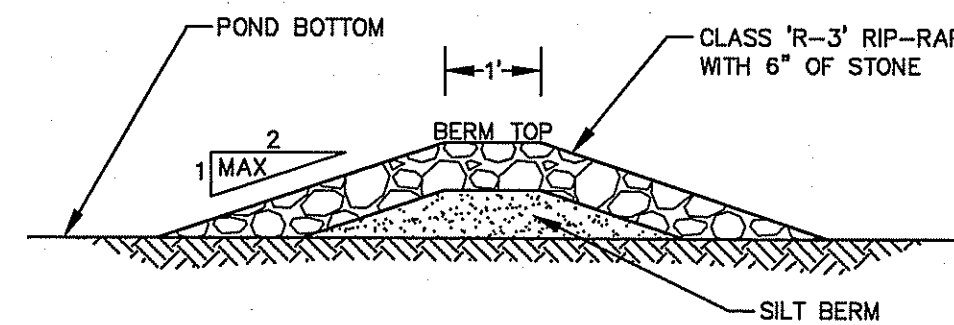
POND SUBDRAIN TRENCH (TYPICAL)
NOT TO SCALE



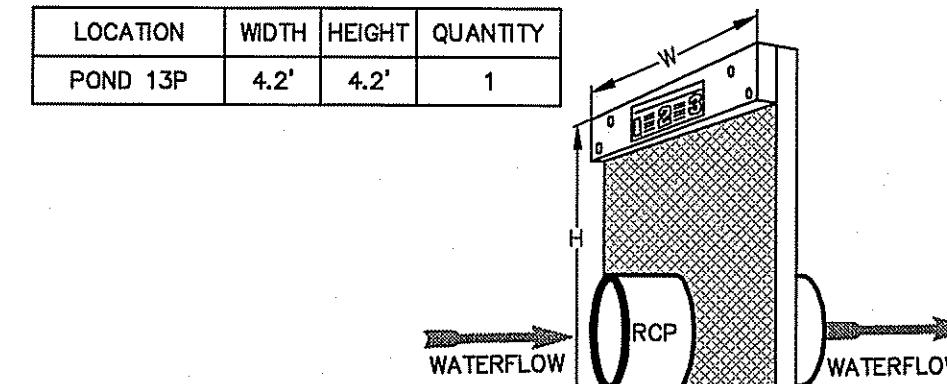
4" SUBDRAIN CLEANOUT (DIRECT DISCHARGE)
NOT TO SCALE

NOTE:
1. TYPICAL CROSS SECTION OF RIP-RAP BERM LOCATED IN POND.

LOCATION	LENGTH	TOP ELEVATION
POND 13P	25'	279.00'



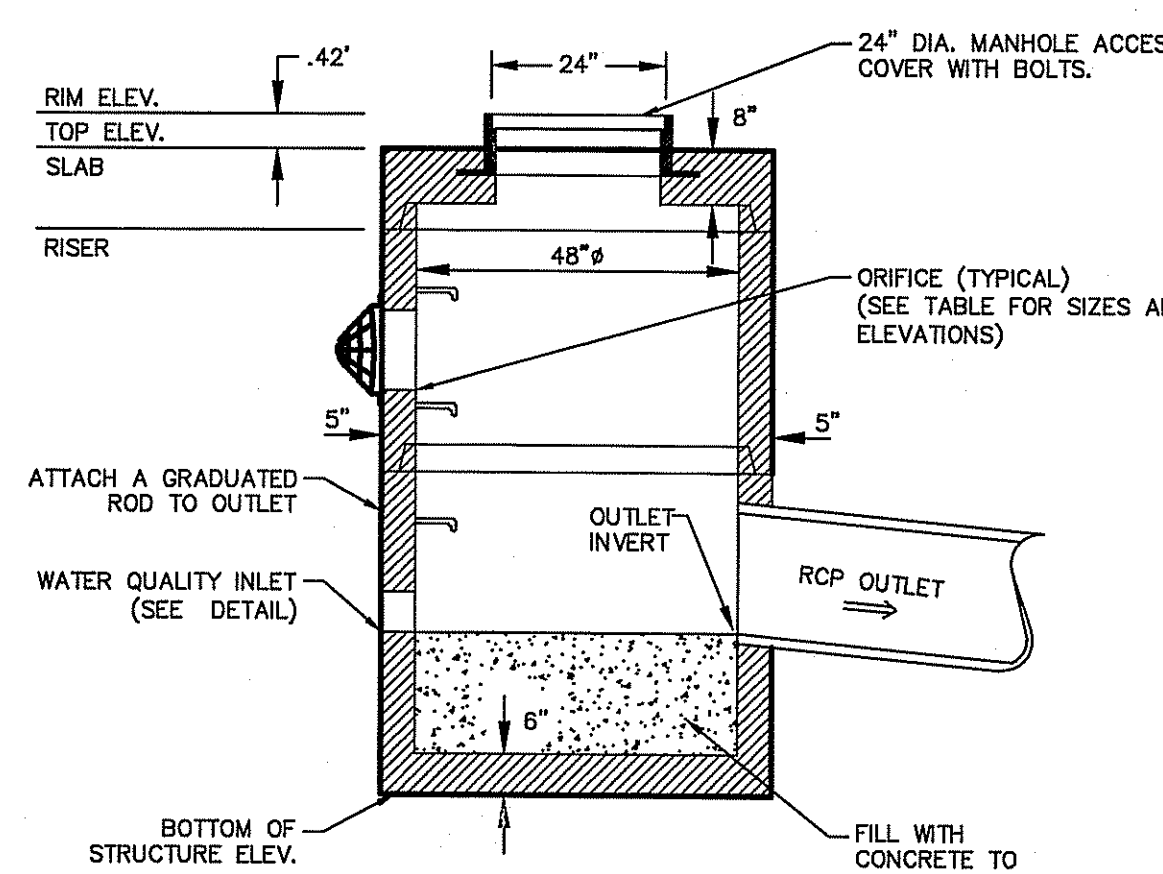
RIP-RAP BERM
NOT TO SCALE



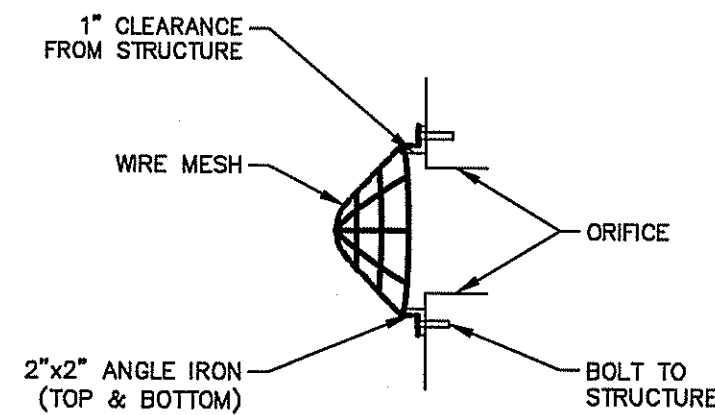
NOTE:
AGRI DRAIN CORP. OR EQUAL

INSTALLATION NOTES:
1. UNROLL THE ANTI-SEEP AND ATTACH THE BOARDS TO THE EDGES TO FORM A SQUARE. (USE THE BOARDS AND NAILS PROVIDED.)
2. CUT A ROUND HOLE IN THE CENTER OF THE RUBBER THAT IS SMALLER THAN THE PIPE SIZE (APPROX. 20% SMALLER). THIS WILL ALLOW THE RUBBER TO STRETCH OVER THE PIPE WHEN THE ANTI-SEEP IS INSTALLED ON THE PIPE. THIS SHOULD PROVIDE A NEARLY WATERPROOF SEAL BETWEEN THE PIPE AND THE ANTI-SEEP.
3. SLIP THE PIPE THROUGH THE ANTI-SEEP. INSPECT THE SEAL BETWEEN THE PIPE AND THE ANTI-SEEP. CAREFULLY BACKFILL AND COMPACT WITH SUITABLE SOIL.

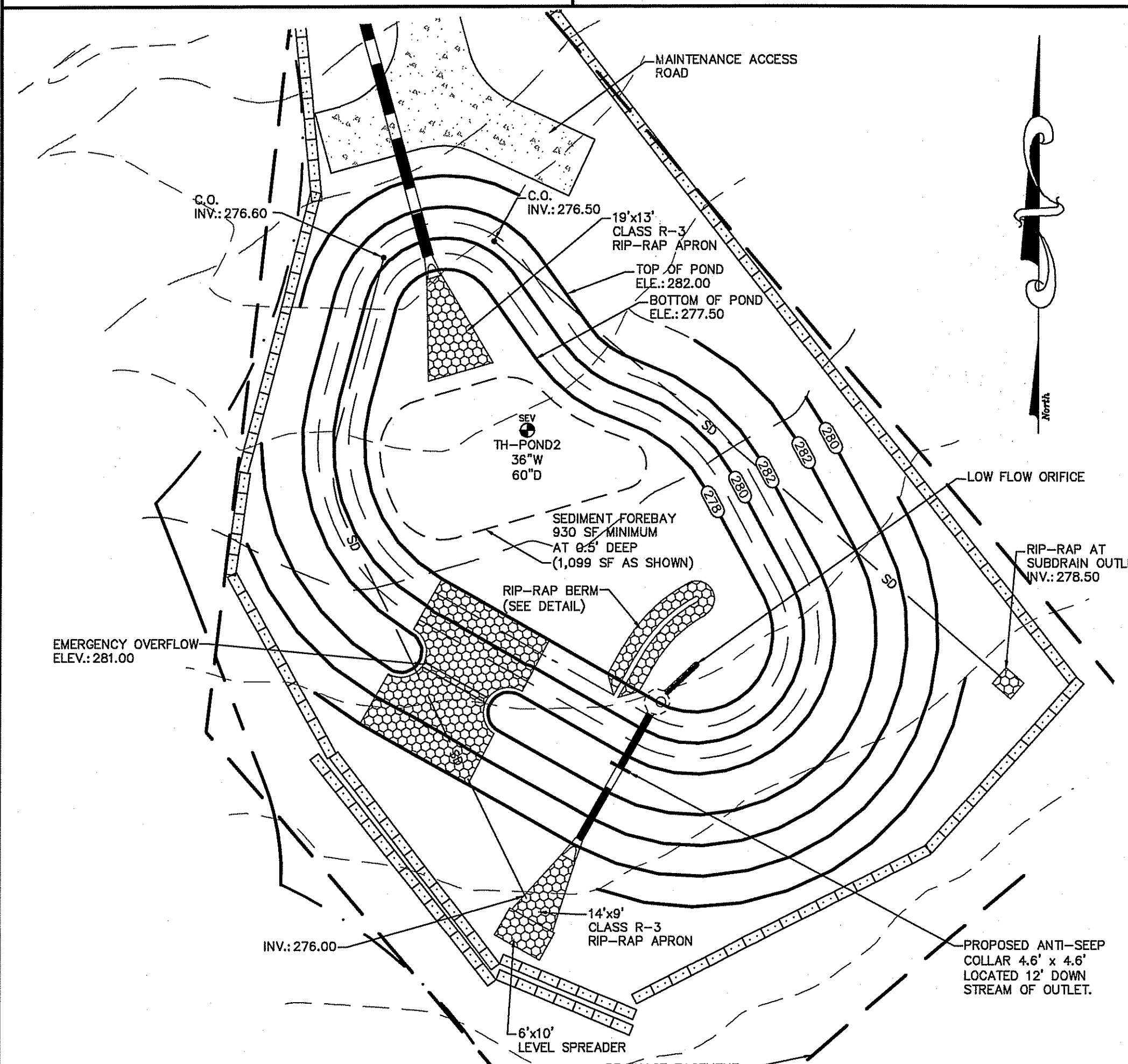
ANTI-SEEP COLLAR
NOT TO SCALE



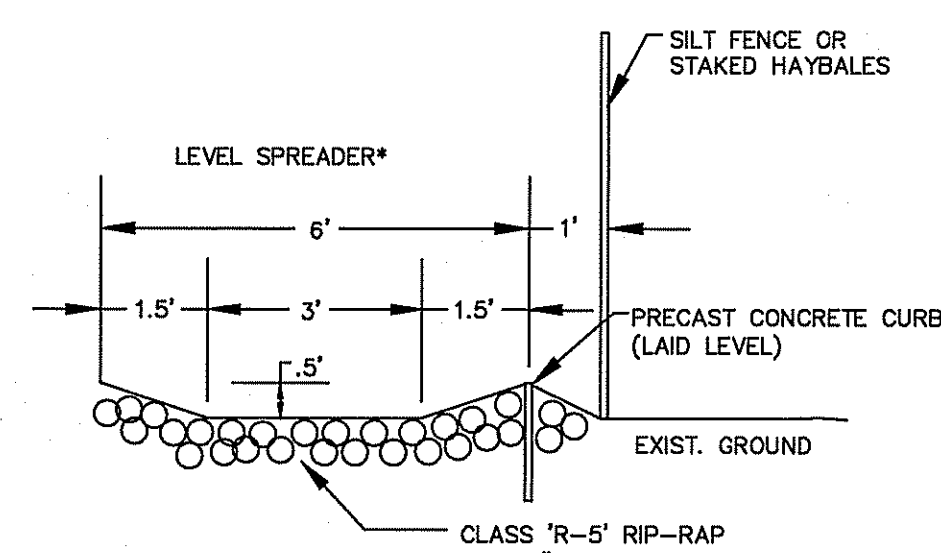
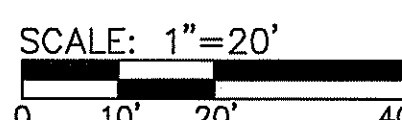
NOTE:
ALL 2" WEEP HOLES USED TO PLACE STRUCTURE MUST BE FILLED WITH CONCRETE.



TRASH RACK DETAIL

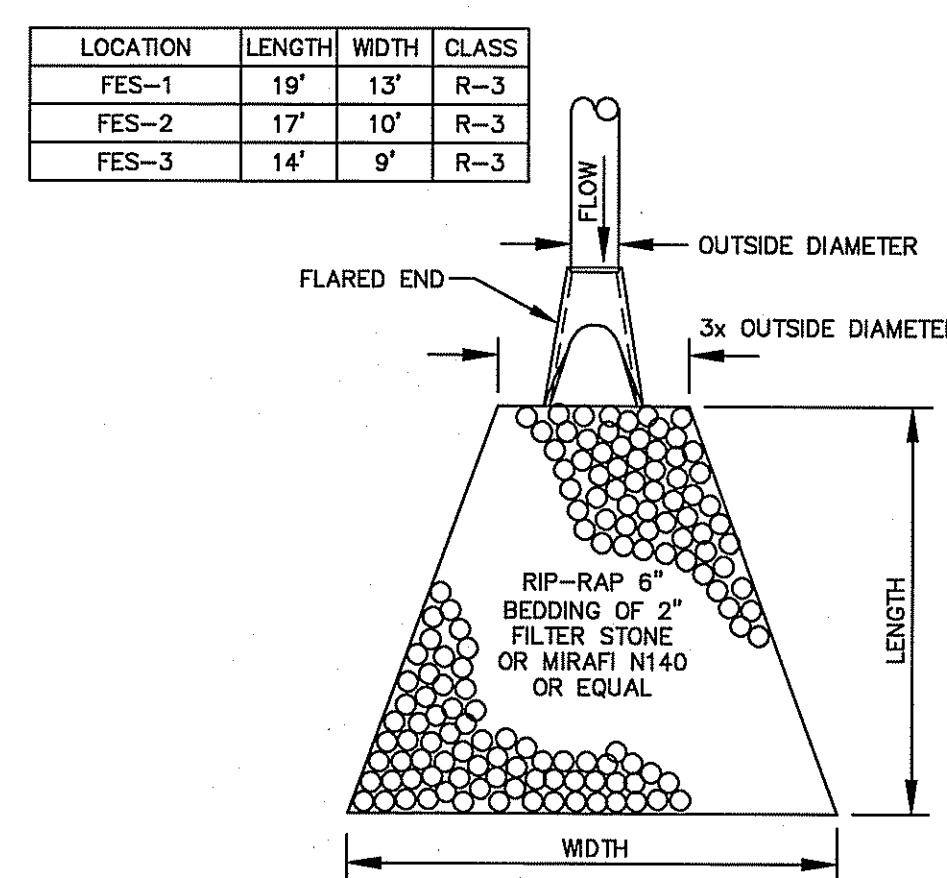


POND 13P DETAIL
SCALE 1"=20'



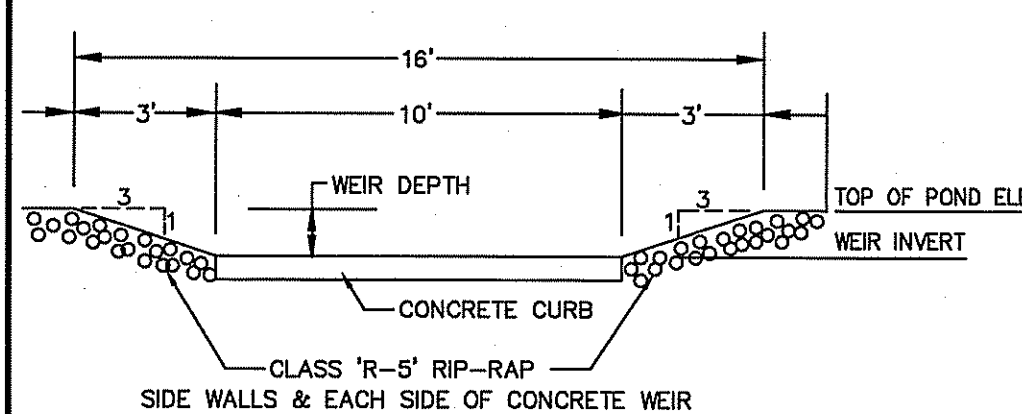
NOTE:
* LENGTHS AS SPECIFIED ON SITE PLANS

LEVEL SPREADER
NOT TO SCALE

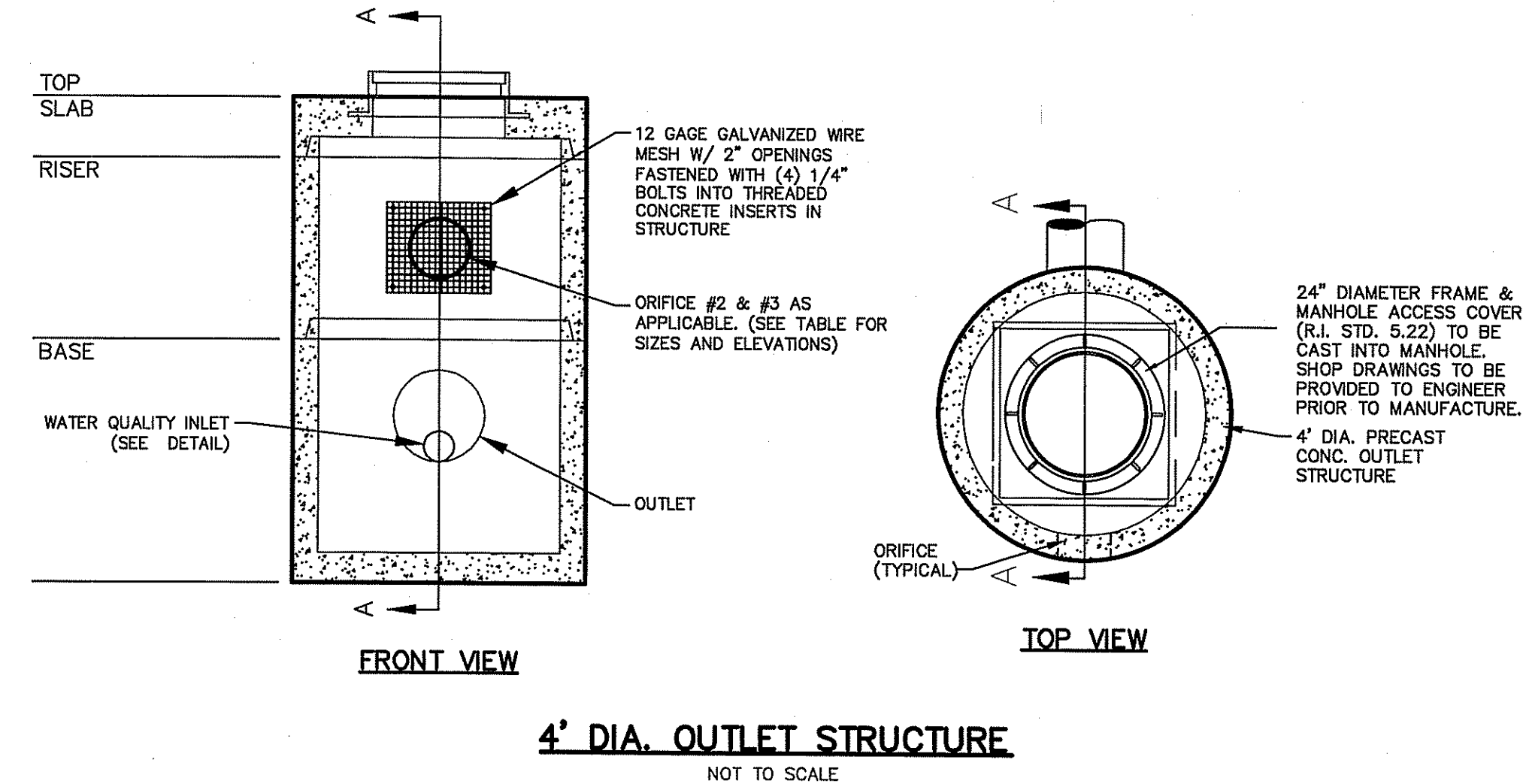


RIP-RAP APRON DETAIL
NOT TO SCALE

LOCATION	TOP OF POND ELEV.	WEIR INVERT	WEIR DEPTH
POND 13P	282.00'	281.00'	1.0'

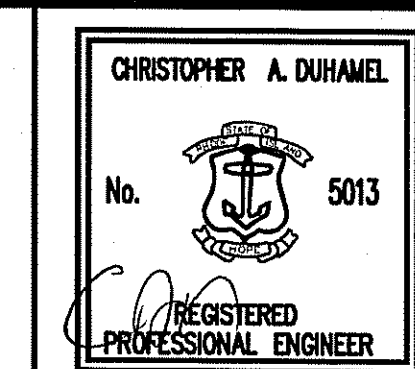


EMERGENCY SPILLWAY DETAIL
NOT TO SCALE



4' DIA. OUTLET STRUCTURE
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 OCT 3 2007 FILE # 07-0217
NO CHANGES ALLOWED WITHOUT PRIOR APPROVAL
APPROVED PLANS MUST BE AT CONSTRUCTION SITE



DETAIL SHEET POND 13P

Swan Orchard Farms

ASSESSOR'S PLAT 47 LOT 77
SMITHFIELD, RI

PREPARED BY
DiPrete Engineering Associates, Inc.
ENGINEERING, SURVEYING AND PLANNING CONSULTANTS

TWO STAFFORD COURT
CRANSTON, R.I. 02920
(401) 943-1000 FAX: (401) 464-6006 2.0 2007

PREPARED FOR
Churchill & Banks Properties LLC

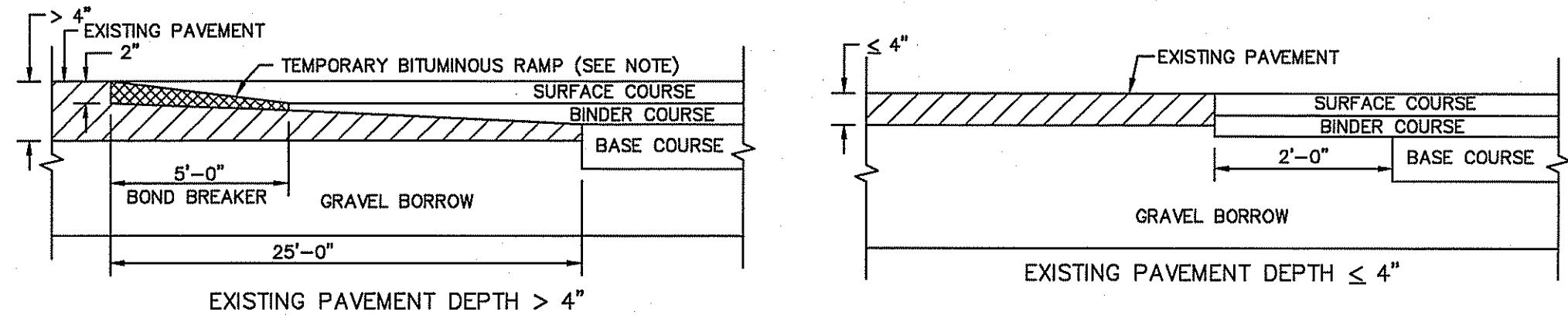
10 GREENE STREET
PROVIDENCE, R.I.
02903-4736
(401) 273-8010

NO.	DATE	DESCRIPTION	BY
2	8-17-07	WETLANDS REEVALUATION	J.M.D.
1	05-14-07	REDEVELOPMENT DETERMINATION	J.M.D.

MAY, 2007
DWN. BY: J.M.D.

NOTES:

A BOND BREAKER (TAPERED OR EQUIVALENT) WILL BE PLACED FROM THE JOINT AND COVERED WITH THE BINDER COURSE AS THE TEMPORARY RAMP. PRIOR TO PLACING THE SURFACE COURSE, THE BINDER COURSE AND BOND BREAKER WILL BE REMOVED.



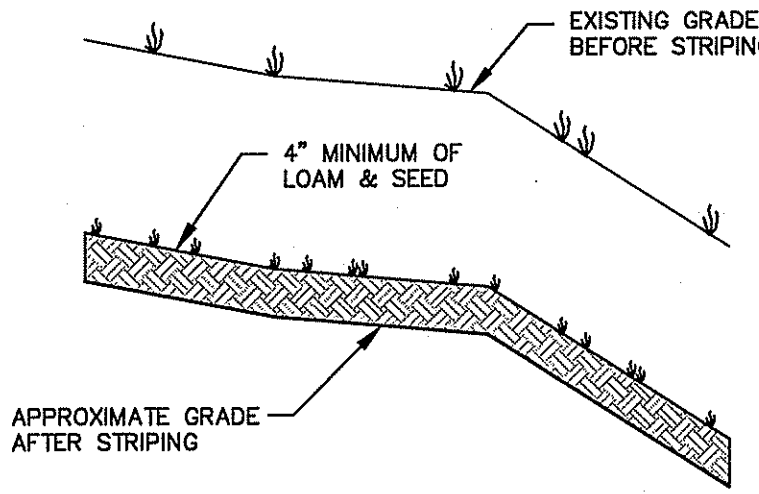
TRANSVERSE PAVEMENT SAWCUT & MATCH

NOT TO SCALE

R.I. STANDARD 47.1.1

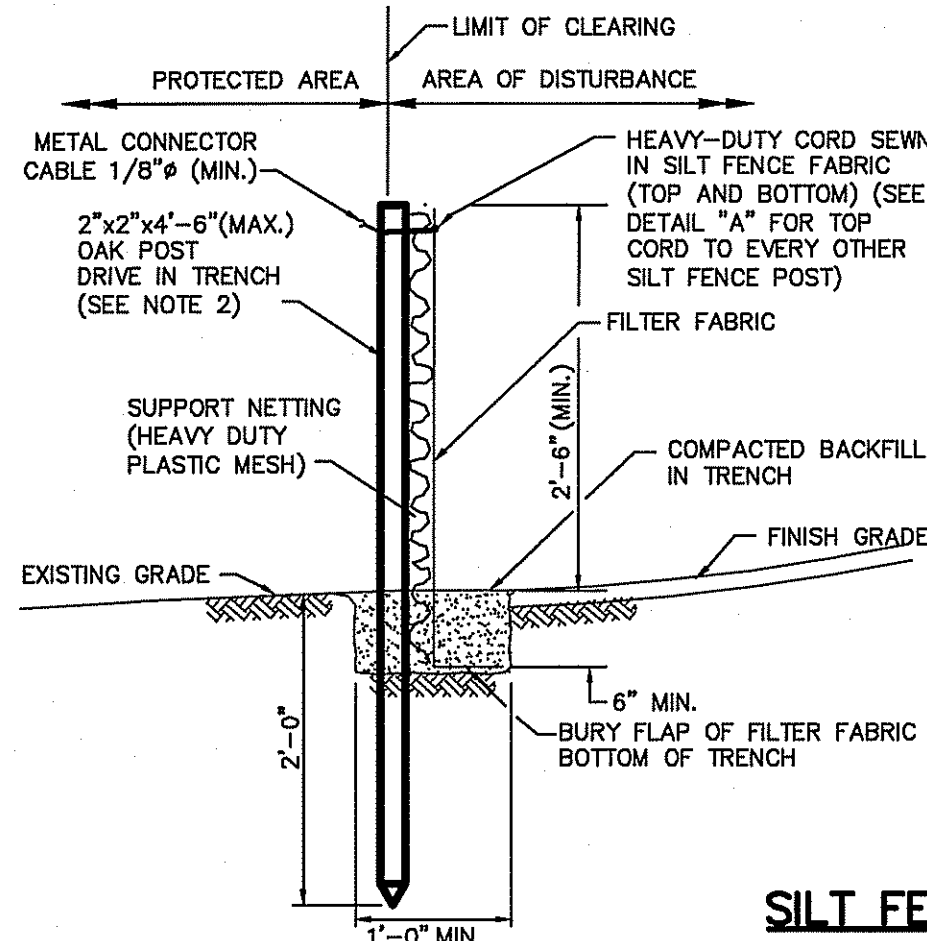
NOTES:

1. THIS DETAIL IS PROVIDED AS THE MINIMUM REQUIREMENTS TO BE MET BY THE CONTRACTOR.
2. THIS DETAIL ONLY IS VOID IN CASES WHERE CONFLICTS OCCURS WITH THE PLANTING DETAILS PROVIDED BY A LANDSCAPE ARCHITECT REGISTERED WITH THE STATE OF RHODE ISLAND.
3. SPECIAL CARE SHALL BE TAKEN TO INSURE THAT THE SOIL EROSION CONTROL MEASURES AND PROCEDURES ARE FOLLOWED.



RE-ESTABLISHMENT OF VEGETATIVE COVER (AREA OF TOPSOIL STRIPING)

NOT TO SCALE



SILT FENCE DETAIL

NOT TO SCALE

R.I. STANDARD 9.2.0

1. SHALL BE IN ACCORDANCE WITH SECTION 206 OF THE R.I. STANDARD SPECIFICATIONS.
2. 2"x2"x4-6" OAK POSTS FOR SILT FENCE SHALL BE LOCATED 8'-0" (MAX.) O.C. IN WETLAND AREAS AN 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.

MAINTENANCE: SHORT TERM / LONG TERM

- 6.4.1 THE STONE STABILIZATION PAD AT THE SITE ENTRANCE SHALL BE MAINTAINED BY THE CONTRACTOR. THE MAINTENANCE SHALL INCLUDE TOP DRESSING WITH ADDITIONAL STONE OR ADDITIONAL LENGTH AS CONDITIONS DEMAND OR AS DIRECTED BY THE ENGINEER. ALL SEDIMENTS SPILLED, DROPPED, WASHED, OR TRACKED ON THE PUBLIC RIGHT OF WAY MUST BE REMOVED IMMEDIATELY BY THE CONTRACTOR.
- 6.4.2 ALL HAY BALES/SILT FENCE, TEMPORARY TREATMENTS (HAY, STRAW, ETC.), AND TEMPORARY PROTECTION SHALL BE MAINTAINED BY THE CONTRACTOR THROUGHOUT CONSTRUCTION. HAY BALES/SILT FENCE SHALL BE INSPECTED BY THE CONTRACTOR WITHIN 24 HOURS AFTER EACH STORM EVENT OR EVERY 7 DAYS, WHICHEVER COMES FIRST, FOR UNDERMINING AND DETERIORATION. A STORM EVENT SHALL BE DEFINED AS 0.25 INCHES OF RAIN WITHIN A 24-HOUR PERIOD. THE HAY BALES/SILT FENCE SHALL BE REPAIRED OR REPLACED AS WARRANTED. THE CONTRACTOR SHALL CLEAN THE ACCUMULATED SEDIMENT IF HALF OF THE ORIGINAL HEIGHT OF THE HAY BALES/SILT FENCE BECOMES FILLED IN WITH SEDIMENT. THE HAY BALES/SILT FENCE SHALL REMAIN IN PLACE UNTIL AN ACCEPTABLE STAND OF GRASS OR APPROVED GROUND COVER IS ESTABLISHED. FOLLOWING CONFIRMATION FROM THE TOWN OF SMITHFIELD AND/OR THE DESIGN ENGINEER THAT AN ACCEPTABLE STAND OF GRASS OR APPROVED GROUND COVER HAS BEEN ESTABLISHED THE HAY BALES/SILT FENCE SHALL BE REMOVED.
- 6.4.3 THE CONTRACTOR SHALL MAINTAIN ALL TOPSOIL STOCKPILES AND SEDIMENT BARRIERS THROUGHOUT CONSTRUCTION. EXTREME CARE SHALL BE TAKEN TO ENSURE THAT SEDIMENTS DO NOT SPILL OVER THE SEDIMENT BARRIER. HAY BALES OR SILT FENCE SHALL BE STAKED AROUND THE STOCKPILES.
- 6.4.4 ALL DISTURBED SLOPES EITHER NEWLY CREATED OR CURRENTLY EXPOSED SHALL BE SEED, PROTECTED, AND MAINTAINED BY THE CONTRACTOR FOLLOWING FINAL GRADING AND CONSTRUCTION. THE CONTRACTOR SHALL CHECK REGULARLY ALL SEEDING AREAS TO SEE THAT A GOOD STAND OF VEGETATION IS MAINTAINED. THE CONTRACTOR MUST REPAIR OR RESEED ANY AREAS THAT DO NOT DEVELOP WITHIN THE PERIOD OF ONE YEAR AND SHALL DO SO AT NO ADDITIONAL EXPENSE TO THE HOMEOWNERS ASSOCIATION (HA).
- 6.4.5 THE CONTRACTOR IS RESPONSIBLE FOR MAINTENANCE AND INSPECTION OF THE BASIN AND HYDRO DYNAMIC SEPARATOR DURING AND UP TO A YEAR AFTER COMPLETION OF CONSTRUCTION AND ACCEPTANCE BY THE TOWN. THE HOMEOWNERS ASSOCIATION (HA) IS RESPONSIBLE FOR INSPECTIONS AND MAINTENANCE THEREAFTER. THE CONTRACTOR'S MAINTENANCE/INSPECTION RESPONSIBILITIES SHALL INCLUDE RESEEDING ANY UNSTABILIZED AREAS WITHIN THE BASIN AT NO ADDITIONAL EXPENSE TO THE HA, REMOVING ACCUMULATED SILT WHEN SEDIMENTS IN THE BASIN REACHES THE HEIGHT SPECIFIED IN THE SEDIMENT VOLUME CALCULATIONS AND MAINTAINING THE GRASS TO A GROWING HEIGHT BETWEEN 2"-10". THE CONTRACTOR SHALL INSPECT RIP RAP PADS AFTER EACH STORM AND REPAIR AS NECESSARY. THE HA'S MAINTENANCE/INSPECTION RESPONSIBILITIES SHALL INCLUDE INSPECTION OF THE BASIN RIP RAP PADS SEMIANNUALLY AND AFTER MAJOR STORMS. IF REPAIRS ARE NEEDED, THEY SHALL BE CARRIED OUT IMMEDIATELY. THE HA SHALL MAINTAIN A GOOD VEGETATIVE COVER (GRASS BETWEEN 2"-10" OR VEGETATION AS SPECIFIED). THE BOTTOM OF THE DETENTION BASIN SHALL BE INSPECTED ON A SEMI-ANNUAL BASIS AND ACCUMULATED SEDIMENTS SHALL BE REMOVED WHEN THEY REACH THE HEIGHT SPECIFIED IN THE SEDIMENT VOLUME CALCULATIONS OR EVERY 10 YEARS, WHICHEVER COMES FIRST.
- 6.4.6 THE CONTRACTOR SHALL MAINTAIN THE DRAINAGE PIPE NETWORK DURING AND UP TO A YEAR AFTER COMPLETION OF CONSTRUCTION AND ACCEPTANCE BY THE TOWN. THE HA IS RESPONSIBLE FOR INSPECTIONS AND MAINTENANCE THEREAFTER. THE ACCUMULATED SEDIMENTS IN THE CATCH BASIN SHALL BE REMOVED AND DRAINAGE PIPES FLUSHED BY THE CONTRACTOR AT THE END OF CONSTRUCTION. CATCH BASIN SUMP SHALL BE CHECKED ANNUALLY AND SEDIMENTS SHALL BE REMOVED IF THEY EXCEED 6" DEPTH OR EVERY 10 YEARS, WHICHEVER COMES FIRST.
- 6.4.7 THE CONSTRUCTION SUPERINTENDENT SHALL HAVE OVERALL RESPONSIBILITY FOR THE MAINTENANCE PROGRAM DURING THE CONSTRUCTION PHASE AND FOR A PERIOD OF ONE YEAR AFTER CONSTRUCTION. THE SUPERINTENDENT SHALL SEE THAT THE APPROPRIATE WORKERS ARE AWARE OF THE PROVISIONS OF THE PLAN.
- 6.4.8 AFTER ACCEPTANCE OF THE ROADWAY BY THE TOWN, THE HA SHALL HAVE OVERALL RESPONSIBILITY FOR IMPLEMENTING THE MAINTENANCE PROGRAM FOR THE DRAINAGE NETWORK.

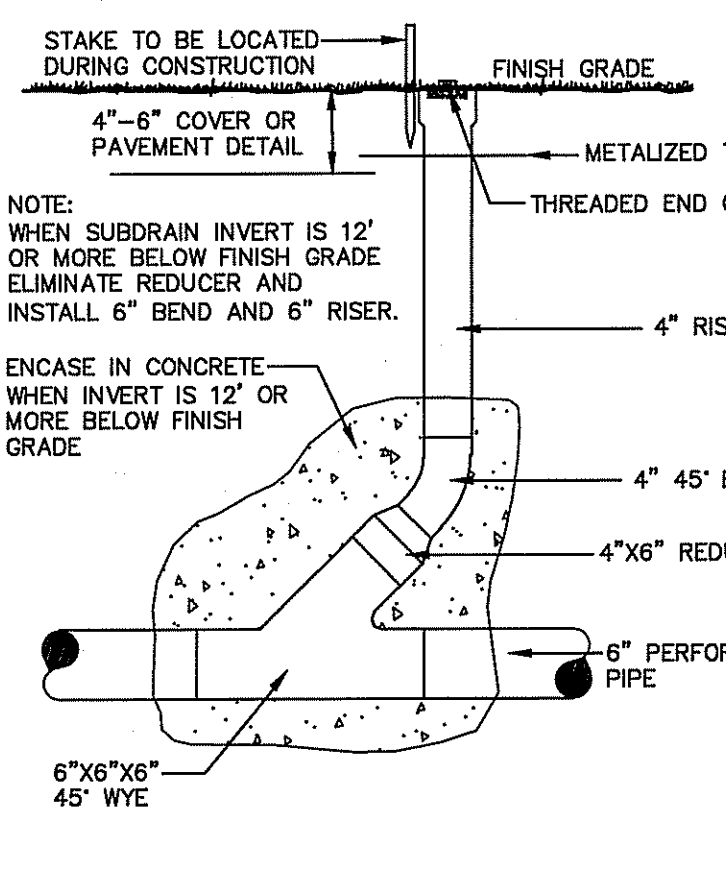
SEQUENCE AND STAGING OF LAND DISTURBING ACTIVITIES

- 6.1 CONSTRUCTION TO BEGIN IN THE FALL OF 2007 OR UPON RECEIPT OF ALL NECESSARY APPROVALS.
- 6.2 SURVEY AND STAKE CENTERLINE OF THE PROPOSED ROAD, DETENTION BASINS, DRAINAGE LINES, AND LIMIT OF SEDIMENTATION BARRIERS/LIMIT OF DISTURBANCE.
- 6.3 PLACE SEDIMENTATION BARRIERS (HAY BALES OR SILT FENCE) AS SHOWN ON THE PLANS AND STAKED OUT IN THE FIELD. IN NO CASE IS THE LIMIT OF WORK TO EXTEND BEYOND THE SEDIMENTATION BARRIERS.
- 6.4 BEGIN CLEARING AND GRUBBING IN AREA OF ROADWAYS AND DETENTION BASINS. TOPSOIL IS TO BE STRIPPED FROM THE AREA OF THE PROPOSED ROADWAY AND DETENTION BASINS AND STOCKPILED IN APPROVED LOCATIONS. TOPSOIL STOCKPILES ARE TO BE PROTECTED BY A ROW OF SEDIMENTATION BARRIERS AND COVERED OR TEMPORARILY SEED.
- 6.5 EXCAVATE AND GRADE THE PROPOSED DETENTION BASIN AND ROADWAY. NOTE: THE DETENTION BASIN SHALL BE PERMANENTLY SEEDING FOLLOWING FINISH GRADING.
- 6.6 INSTALL DRAIN PIPING, DRAINAGE MANHOLES AND CATCH BASINS BEGINNING AT THE DETENTION BASIN AND WORKING UP GRADIENT. PROTECT DISCHARGE OUTLETS WITH RIP-RAP APRONS. PLACE EROSION CONTROLS AT THE DISCHARGE POINTS AND SEED THE DETENTION BASINS AND DISTURBED AREAS OUTSIDE OF THE AREA TO BE PAVED. THE DETENTION BASINS AND DRAINAGE NETWORK ARE TO BE PROTECTED USING BMP'S TO MINIMIZE SEDIMENT ENTERING THE DRAINAGE SYSTEM UNTIL THE UNSTABILIZED AREAS ARE STABILIZED WITH VEGETATION.
- 6.7 ONCE THE INSTALLATION OF THE DRAINAGE NETWORK IS COMPLETE, INSTALL THE WATERLINE AND SEWER FORCE MAIN WITH INDIVIDUAL SERVICES FOR BUILDINGS AND OTHER UNDERGROUND UTILITIES SUCH AS: ELECTRIC, TELEPHONE, AND CABLE IN ACCORDANCE WITH THE APPROVED FINAL PLANS.
- 6.8 PLACE COMPACTED GRAVEL FOUNDATION AND ROUGH GRADE THE ROADWAY IN ACCORDANCE WITH THE SITE PLANS AND IN ACCORDANCE WITH THE TOWN OF SMITHFIELD, RHODE ISLAND, LAND DEVELOPMENT AND SUBDIVISION REGULATIONS.
- 6.9 ONCE ROAD FOUNDATION HAS BEEN PLACED, CONSTRUCTION OF INDIVIDUAL DWELLINGS MAY COMMENCE. CONSTRUCTION TO INCLUDE SURVEYING AND STAKING OF THE PROPOSED LIMIT OF CLEARING (IF NOT COMPLETED WITH 8.2). INSTALLATION OF SEDIMENTATION BARRIERS, CLEARING AND GRUBBING FOR INDIVIDUAL DWELLINGS, REMOVAL OF TOPSOIL, GRADING, EXCAVATION FOR FOUNDATION, DWELLING CONSTRUCTION, WATER SERVICE INSTALLATION, DRIVEWAY INSTALLATION AND LANDSCAPING.
- 6.10 PLACE BITUMINOUS ASPHALT BINDER & BERM PER SITE PLANS AND IN ACCORDANCE WITH THE TOWN OF SMITHFIELD, RHODE ISLAND, LAND DEVELOPMENT AND SUBDIVISION REGULATIONS.
- 6.11 ONCE THE MAJORITY OF THE SITE IS STABILIZED THE DETENTION BASINS AND DRAINAGE NETWORK MAY BE BROUGHT ONLINE WITH THE APPROVAL OF THE DESIGN ENGINEER OR THE TOWN OF SMITHFIELD.
- 6.12 ONCE THE MAJORITY OF THE PROPOSED DWELLINGS ARE BUILT AND THE TOWN HAS APPROVED THAT THE BITUMINOUS ASPHALT IS READY FOR BITUMINOUS ASPHALT TOP COAT, INSTALL BITUMINOUS BERM, RE-GRADE LOAM AND SEED IN RIGHT OF WAY, ADJUST STRUCTURES AND PLACE FINAL BITUMINOUS ASPHALT PAVEMENT.
- 6.13 FINISH PERMANENT STABILIZATION. REPAIR DRAINAGE OUTLETS AND BASIN AS REQUIRED. TREE LIMBS, LEAVES, COBBLES, BOULDERS, ETC. SHALL BE REMOVED FROM THE BOTTOM OF THE BASIN BEFORE THE APPLICATION OF TOPSOIL.
- 6.14 SWEEP THE ROADWAY TO REMOVE ALL SEDIMENTS.
- 6.15 THE CONTRACTOR SHALL CLEAN AND FLUSH THE DRAINAGE STRUCTURES AND PIPES AT THE END OF CONSTRUCTION AND ALL ACCUMULATED SEDIMENTS IN THE DETENTION BASIN SHALL BE REMOVED.
- 6.16 REMOVE ALL TEMPORARY SOIL EROSION AND SEDIMENTATION CONTROL MEASURES FOLLOWING VEGETATIVE ESTABLISHMENT OF ALL DISTURBED AREAS.

ESTABLISHMENT OF VEGETATIVE COVER

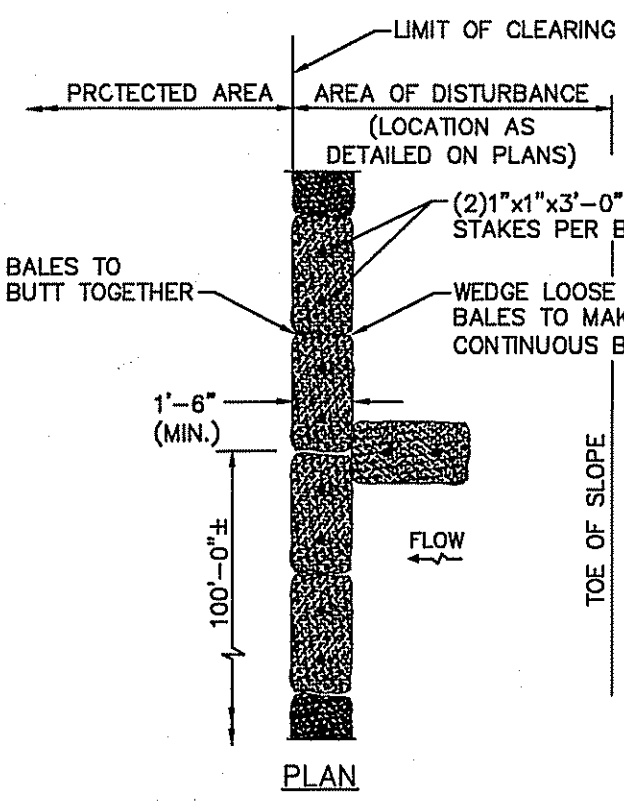
- 6.1.1 SLOPES SHALL NOT BE LEFT UNATTENDED OR EXPOSED FOR EXCESSIVE PERIODS OF TIME SUCH AS THE INACTIVE WINTER SEASON. THE CONTRACTOR SHALL INITIATE APPROPRIATE VEGETATIVE PRACTICES ON ALL DISTURBED AREAS AS SOON AS POSSIBLE BUT NOT MORE THAN FOURTEEN (14) DAYS AFTER THE CONSTRUCTION ACTIVITY IN THAT AREA HAS TEMPORARILY OR PERMANENTLY CEASED, UNLESS THE ACTIVITY IS TO RESUME WITHIN TWENTY-ONE (21) DAYS.
- 6.1.2 ALL DISTURBED SLOPES EITHER NEWLY CREATED OR CURRENTLY EXPOSED SHALL BE SEED OR PROTECTED.
- 6.1.3 THE TOPSOIL SHALL HAVE A SANDY LOAM TEXTURE RELATIVELY FREE OF SUBSOL MATERIAL, STONES, ROOTS, LUMPS OF SOIL, TREE LIMBS, TRASH OR CONSTRUCTION DEBRIS AND SHALL CONFORM WITH RHODE ISLAND'S STANDARD SPECIFICATION, M.20.
- 6.1.4 THE SEEDING DETAIL MIX SHALL BE COMPRISED OF THE FOLLOWING:

TYPE	LBS/AC
CREeping RED FESCUE	75
KENTUCKY BLUE GRASS	15
COLONIAL BENT GRASS	5
EARLY SPRING RYE GRASS	5
- 6.1.5 TEMPORARY TREATMENTS SHALL CONSIST OF HAY, STRAW, OR FIBER MULCH OR PROTECTIVE COVERS SUCH AS A MAT OR FIBER LINING. TEMPORARY HAY MULCH TO BE TACKED IN PLACE WITH NYLON MESH NETTING. SIDE SLOPES OF BASINS SHALL BE TREATED WITH NORTH AMERICAN GREEN EROSION CONTROL BLANKETS SUCH AS S150 OR APPROVED EQUAL. THEY SHALL BE INCORPORATED INTO THE WORK AS WARRANTED OR AS ORDERED BY THE ENGINEER. HAY OR STRAW APPLICATIONS SHALL BE IN THE AMOUNT OF 2 TONS/ACRE.
- 6.1.6 ALL HAY BALES OR TEMPORARY PROTECTION SHALL REMAIN IN PLACE UNTIL AN ACCEPTABLE STAND OF GRASS OR APPROVED GROUND COVER IS ESTABLISHED.
- 6.1.7 ALL FILL SHALL BE THOROUGHLY COMPACTED UPON PLACEMENT IN STRICT CONFORMANCE WITH LOCAL MUNICIPAL REQUIREMENTS AND THE RHODE ISLAND STANDARD SPECIFICATION FOR ROAD AND BRIDGE SECTION 202.
- 6.1.8 STOCKPILES OF TOPSOIL SHALL NOT BE LOCATED NEAR WATERWAYS. THEY SHALL HAVE SIDE SLOPES NO GREATER THAN 2:1 AND SHALL BE TEMPORARILY SEED AND/OR STABILIZED.
- 6.1.9 ALL AREAS PROPOSED TO BE VEGETATED THAT ARE DISTURBED BY CONSTRUCTION SHALL BE STABILIZED WITH PERMANENT SEEDING IMMEDIATELY FOLLOWING FINISH GRADING. PERMANENTLY SEEDING AREAS SHALL BE PROTECTED DURING CONSTRUCTION WITH MULCH. ALL SEEDING AREAS SHALL BE CHECKED REGULARLY TO SEE THAT A GOOD STANDARD IS MAINTAINED. WELL ESTABLISHED VEGETATION SHALL BE MAINTAINED. BARE OR ERODED AREAS SHALL BE IMMEDIATELY REPAIRED AND RESEED BY THE CONTRACTOR. ACTIVITIES SHALL BE CONFINED TO WITHIN THE LIMIT OF WORK AS SHOWN ON THE PLANS.
- 6.1.10 MAXIMUM PERMANENT GRADED SLOPE WITHIN THE SITE IS TO BE 3:1 UNLESS NOTED OTHERWISE.
- 6.1.11 THE CONSTRUCTION SUPERINTENDENT SHALL HAVE OVERALL RESPONSIBILITY FOR PLAN IMPLEMENTATION AND FOR SEEING THAT THE APPROPRIATE WORKERS ARE AWARE OF THE PROVISIONS OF THE PLAN. THE CONTRACTOR MUST REPAIR AND/OR RESEED ANY AREAS THAT DO NOT DEVELOP WITHIN THE PERIOD OF ONE YEAR AND SHALL DO SO AT NO ADDITIONAL EXPENSE TO THE HOMEOWNERS ASSOCIATIONS (HA).
- 6.1.12 REFERENCE THE "RHODE ISLAND SOIL EROSION AND SEDIMENTATION CONTROL HANDBOOK" PREPARED BY THE USDA SOIL CONSERVATION SERVICE 1989 AS A GUIDE.



SUBDRAIN CLEANOUT (TYPICAL)

NOT TO SCALE



BALED HAY EROSION CHECK

NOT TO SCALE

- NOTES:**
1. SHALL BE IN ACCORDANCE WITH SECTION 206 OF THE R.I. STANDARD SPECIFICATIONS.
 2. TO BE USED WHERE THE EXISTING GROUND SLOPES AWAY FROM THE HIGHWAY EMBANKMENT AS CALLED FOR ON PLANS.
 3. AT APPROXIMATE 100'-0" INTERVALS A BALE OF HAY IS TO BUTT PERPENDICULARLY.

SUBDRAIN: CONSTRUCTION, MAINTENANCE, & INSPECTION NOTES

1. SUBDRAIN AREA TO BE STAKED, MARKED, AND REMAIN UNDISTURBED PRIOR TO CONSTRUCTION. THERE IS TO BE NO CONSTRUCTION TRAFFIC ON SUBDRAIN AREA PRIOR TO CONSTRUCTION.
2. STAKE CENTERLINE OF SUBDRAIN.
3. EXCAVATE TRENCH. IF NECESSARY, PUMP GROUNDWATER TO DE-WATERING BASIN. THE TRENCH SHALL BE A MINIMUM OF 36" IN WIDTH.
4. PLACE FILTER FABRIC ALONG THE BOTTOM AND SIDES OF TRENCH AND FILL WITH 1/2" TO 2" DIAMETER FILTER STONE. THE DEPTH OF STONE BELOW THE INVERT OF THE SUBDRAIN SHALL BE A MINIMUM OF 12".
5. PLACE SUBDRAIN AT THE INVERT ELEVATION ALONG WITH CLEAN-OUTS AS INDICATED ON THE PLANS. BACKFILL SIDES AND TOP OF SUBDRAIN WITH FILTER STONE. THERE SHALL BE A MINIMUM OF 12" OF FILTER STONE ON BOTH SIDES OF THE SUBDRAIN. A MINIMUM OF 6" OF FILTER STONE SHALL COVER THE SUBDRAIN.
6. OVERLAP FILTER FABRIC ON THE TOP OF THE FILTER STONE. BACKFILL WITH A MINIMUM OF 6" CLEAN FILL TO FINISH GRADE.
7. MONITORING WATER LEVELS WITHIN THE CLEAN-OUTS AT VARIOUS TIME INTERVALS AFTER A RAINFALL EVENT WILL INDICATE THE EFFECTIVENESS OF THE SYSTEM. IF WATER IS STANDING IN SUBDRAIN 72 HOURS AFTER A STORM EVENT, SYSTEM FAILURE HAS OCCURED AND WILL REQUIRE FLUSHING MAINTENANCE, REPAIR OR REPLACEMENT OF SUBDRAIN BY THE HOMEOWNER.

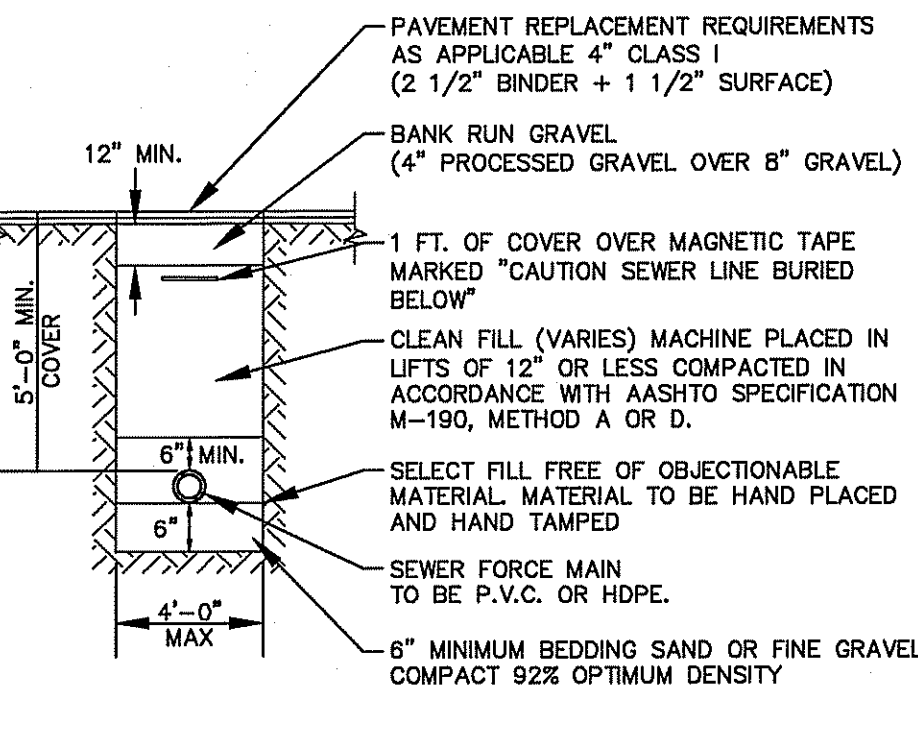
R.I. STANDARD 9.1.0

NON-STRUCTURAL MEASURES

- 6.2.1 CONSTRUCTION TRAFFIC SHALL BE LIMITED TO THE ACCESS ROAD, UTILITY EASEMENTS AND AREAS TO BE GRADED.
- 6.2.2 TOPSOIL SHALL BE STRIPPED FROM AREAS TO BE GRADED AND STOCKPILED FOR LATER USE. STOCKPILE LOCATION SHALL BE SUBJECT TO APPROVAL BY THE PROJECT ENGINEER. A SEDIMENT BARRIER SHALL SURROUND ALL TOPSOIL STOCKPILES.
- 6.2.3 ALL TYPES OF WASTE GENERATED AT THE SITE SHALL BE DISPOSED OF IN A MANNER CONSISTENT WITH STATE LAW AND/OR REGULATIONS. CONSTRUCTION DEBRIS SHALL BE DISPOSED OF DAILY TO AVOID EXPOSURE TO PRECIPITATION.
- 6.2.4 THE CONSTRUCTION SUPERINTENDENT SHALL HAVE OVERALL RESPONSIBILITY FOR PLAN IMPLEMENTATION OF NON-STRUCTURAL MEASURES AND FOR SEEING THAT THE APPROPRIATE WORKERS ARE AWARE OF THE PROVISIONS OF THE PLAN.
- 6.2.5 REFERENCE THE "RHODE ISLAND SOIL EROSION AND SEDIMENT CONTROL HANDBOOK" PREPARED BY THE USDA SOIL CONSERVATION SERVICE 1989, AS A GUIDE.

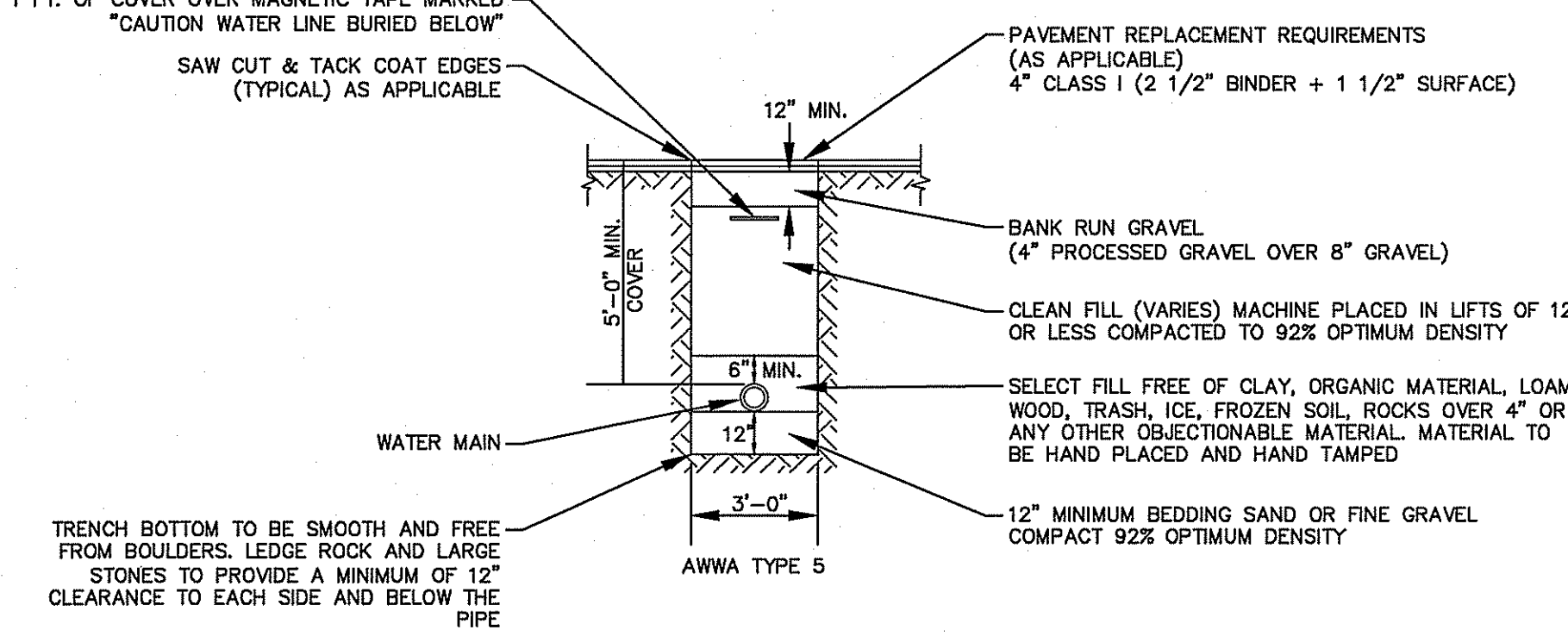
STRUCTURAL MEASURES

- 6.3.1 RUNOFF WATER QUALITY IS IMPROVED UTILIZING WATER QUALITY/SEDIMENTATION AND AN EXTENDED DRY DETENTION BASINS. CONSTRUCTION OF THE DETENTION BASIN SHALL BE SUPERVISED BY THE DESIGN ENGINEER. THE DETENTION BASIN SHALL BE BUILT TO CONTROL RUNOFF FOR 2 THROUGH 100 YEAR STORM FREQUENCIES. SIDE SLOPES WITHIN THE DETENTION BASINS SHALL BE 3:1 MAXIMUM, UNLESS NOTED OTHERWISE. ALL EMBANKMENTS OF THE BASINS SHALL BE THOROUGHLY COMPACTED UPON PLACEMENT IN STRICT CONFORMANCE WITH R.I. STANDARD SPECIFICATION SECTION 202. THE EMERGENCY SPILLWAY SHALL BE PROTECTED BY RIP RAP DOWNSTREAM AND UPSTREAM. A GRADUATED GAGE IS TO BE SET WITHIN THE BASIN TO MONITOR ACCUMULATED SEDIMENTS. A REPORT AND PLAN OF AS-BUILT CONSTRUCTION SHALL BE AVAILABLE TO THE TOWN OF SMITHFIELD.
- 6.3.2 A STONE STABILIZATION PAD IS LOCATED AT THE SITE ENTRANCE TO REDUCE THE TRACKING OR FLOWING OF SEDIMENT ONTO THE PUBLIC RIGHT OF WAY.
- 6.3.3 RIP RAP APRONS AND/OR LEVEL SPREADERS SHALL BE INSTALLED AT THE OUTLETS OF ALL DRAINAGE PIPES.
- 6.3.4 HAY BALES OR SILT FENCE SHALL BE INSTALLED DOWNSTREAM OUTSIDE THE LIMITS OF ANY PROPOSED CONSTRUCTION AS SHOWN ON THE SITE ALTERATION.
- 6.3.5 THE CONSTRUCTION SUPERINTENDENT SHALL HAVE THE OVERALL RESPONSIBILITY FOR STRUCTURAL MEASURE IMPLEMENTATION AND FOR SEEING THAT THE APPROPRIATE WORKERS ARE AWARE OF THE PROVISIONS OF THE PLAN.
- 6.3.6 REFERENCE THE "RHODE ISLAND SOIL EROSION AND SEDIMENT CONTROL HANDBOOK" PREPARED BY USDA SOIL CONSERVATION SERVICE 1989, AS A GUIDE.



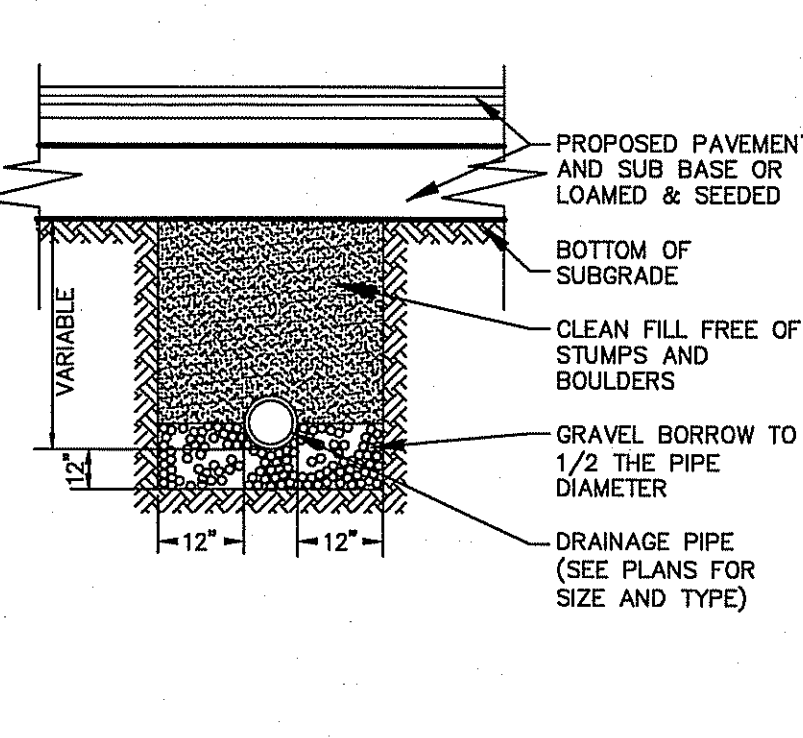
SEWER TRENCH DETAIL

NOT TO SCALE



WATER TRENCH DETAIL

NOT TO SCALE

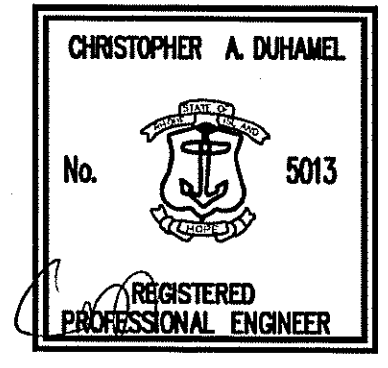


DRAINAGE TRENCH DETAIL

NOT TO SCALE

NOTE: ALL PIPE TO BE HOPE OR RCP CLASS III UNLESS NOTED OTHERWISE

DEPARTMENT OF ENVIRONMENTAL MANAGEMENT
OFFICE OF WATER RESOURCES
FRESHWATER WETLANDS PROGRAM
APPROVED WITH CONDITIONS
AS SPECIFIED IN THE LETTER OF APPROVAL
DATED 03/07 FILE # 02-0217
NO CHANGES ALLOWED WITHOUT PRIOR APPROVAL
APPROVED PLANS MUST BE AT CONSTRUCTION SITE



Charles A. Duhamel
DETAIL SHEET

Swan Orchard Farms
ASSESSOR'S PLAT 47 LOT 77
SMITHFIELD, RI

PREPARED BY
DiPrete Engineering Associates, Inc.
ENGINEERING, SURVEYING AND PLANNING CONSULTANTS
TWO STAFFORD COURT
CRANSTON, R.I. 02920
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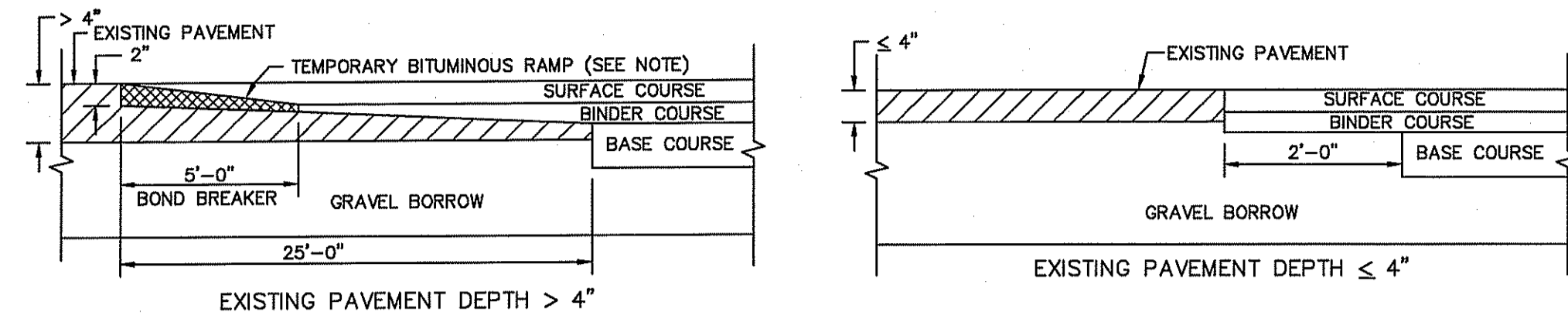
PREPARED FOR
Churchill & Banks Properties LLC
10 GREENE STREET
PROVIDENCE, R.I.
02903-4736
(401) 273-8010

NO.	DATE	DESCRIPTION	BY
2	8-17-07	WETLANDS REEVALUATION	J.M.D.
1	05-14-07	PRELIMINARY DETERMINATION	J.M.D.

MAY, 2007
DWN. BY: J.M.D.

SHEET 15 OF 17

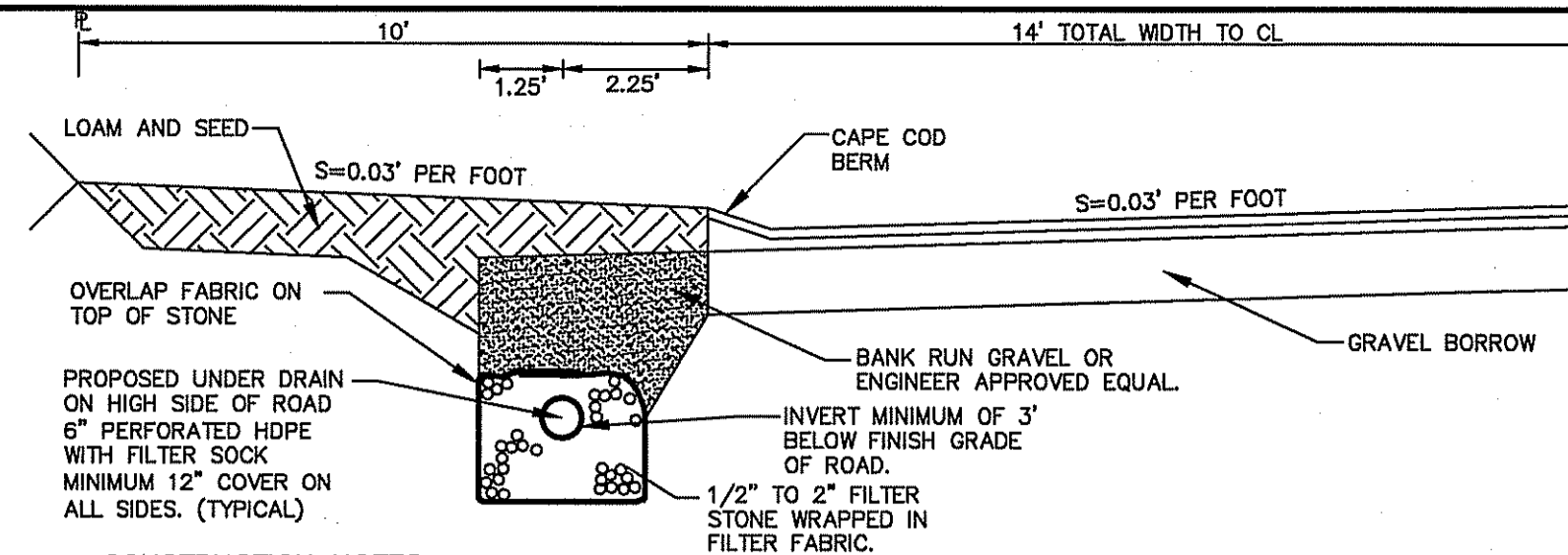
NOTES:
A BOND BREAKER (TAPERED OR EQUIVALENT) WILL BE PLACED FROM THE JOINT AND COVERED WITH THE BINDER COURSE AS THE TEMPORARY RAMP. PRIOR TO PLACING THE SURFACE COURSE, THE BINDER COURSE AND BOND BREAKER WILL BE REMOVED.



TRANSVERSE PAVEMENT SAWCUT & MATCH

NOT TO SCALE

R.I. STANDARD 47.1.1

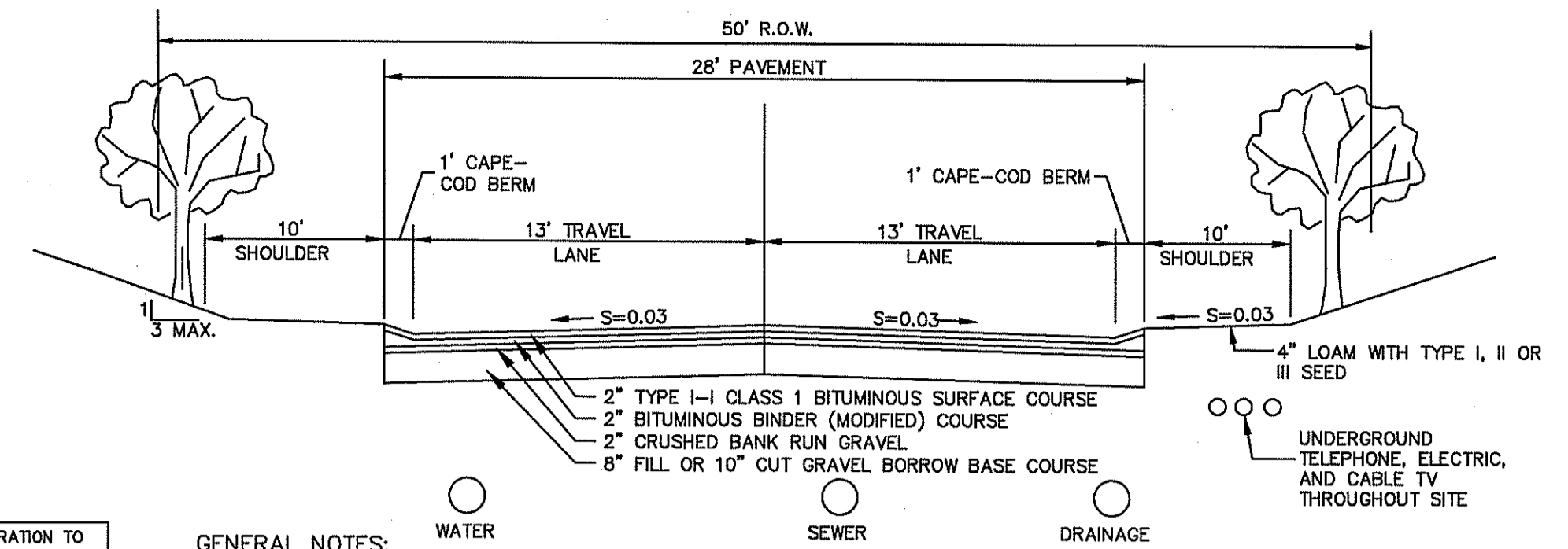


CONSTRUCTION NOTES:

- CLEARING & GRUBBING: ALL ROOT SYSTEMS, TREES, STUMPS, BUSHES, AND OTHER OBJECTIONABLE MATERIALS SHALL BE REMOVED AND DISPOSED OF AS INDICATED BY THE MUNICIPAL ENGINEER. HEALTHY TREES WITHIN THE RIGHTS-OF-WAY WIDTH AND OUTSIDE THE PAVEMENT WIDTH MAY BE LEFT STANDING, PROVIDED SAID TREES ARE NOT MORE THAN 5' (FIVE FEET) FROM THE RIGHT-OF-WAY LINE, EXCEPT WHERE SIDEWALKS ARE REQUIRED.
- EARTH EXCAVATIONS SHALL INCLUDE, BUT NOT BE LIMITED TO, THE REMOVAL OF CLAY, SAND, GRAVEL, LOAM, SOFT OR DISINTEGRATED ROCK WHICH CAN BE REMOVED WITHOUT BLASTING; BOULDERS OF LESS THAN ONE-HALF CUBIC YARD IN VOLUME; AND OTHER UNACCEPTABLE MATERIALS WITHIN THE LIMITS OF ROADWAY, DRAINAGE, OR OTHER EXCAVATION. ROCK AND LEDGE EXCAVATION SHALL INCLUDE REMOVAL AND DISPOSAL OF ALL BOULDERS OF ONE-HALF CUBIC YARD OR MORE IN VOLUME AND ALL HARD LEDGE ROCK WHICH CAN BE REMOVED ONLY BY DRILLING AND SPLITTING MECHANICALLY BY HAND OR BLASTING.
- WHERE GROUND WATER IS ENCOUNTERED WITHIN 5' (FIVE FEET) OF FINISHED GRADE AS DETERMINED BY RI DEPARTMENT OF ENVIRONMENTAL MANAGEMENT, "GROUND WATER PROCEDURES", DURING THE WET SEASON, ADEQUATE SUBSURFACE DRAINAGE SHALL BE CONSTRUCTED TO LOWER THE GROUND WATER LEVEL TO A DEPTH OF AT LEAST 5' (FIVE FEET) BELOW FINISHED GRADE.
- PAVEMENT SHALL BE CONSTRUCTED SO AS TO PROVIDE A MINIMUM CROSS-SECTION AFTER COMPACTION OF 8" (EIGHT INCHES) GRAVEL BORROW BASE COURSE SUB-BASE IN FILL AND 10" (TEN INCHES) GRAVEL BORROW BASE COURSE IN CUTS WITH 2" (TWO INCHES) OF CRUSHED BANK RUN GRAVEL (MEETING TOWN SPECIFICATIONS) AND HOT-MIX ASPHALTIC AND BITUMINOUS CONCRETE MATERIALS CONFORMING TO R.I. STANDARD SPECIFICATIONS.

NOTE: SEWER FORCE MAIN SEPARATION TO WATER MAIN TO BE LOCATED 10' HORIZONTAL OR 2' VERTICAL BELOW WATER MAIN

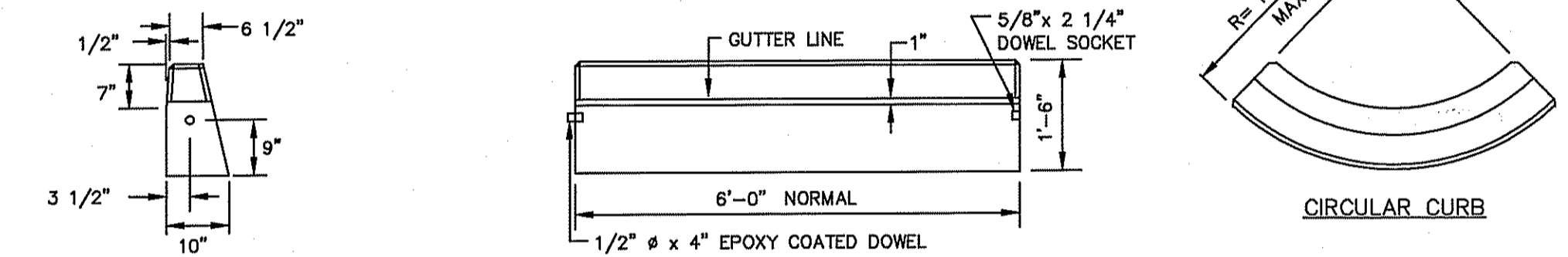
TOWN OF SMITHFIELD TYPICAL ROAD CONSTRUCTION



GENERAL NOTES:

- ROADWAY CROSS SECTION AND MATERIALS SHALL CONFORM TO TOWN OF SMITHFIELD STANDARDS FOR ROAD CONSTRUCTION AND UTILITY LOCATIONS.
- CAPE COD CURBING HALL MANUFACTURING CO. MOLD JEX OR D.P.W. APPROVED EQUAL, SLOPE FACED PRECAST CONCRETE CURBING REQUIRED AT ALL INTERSECTION FILLET CURVES. SEE R.I. DOT STD. 7.2.0.
- WATER MAIN LOCATION SUBJECT TO APPROVAL OF THE DIRECTOR OF PUBLIC WORKS.
- STORM DRAIN MATERIALS AND METHODS SHALL CONFORM TO APPLICABLE TOWN OF SMITHFIELD AND R.I.D.O.T. STANDARDS.
- FIRE ALARMS ARE REQUIRED AND SHALL BE INSTALLED ACCORDING TO TOWN FIRE DEPARTMENT REQUIREMENTS.
- UNDERGROUND UTILITY TRENCH CONSTRUCTION TO CONFORM TO THE NATIONAL GRID "DEVELOPER/ CONTRACTOR/CUSTOMER RESPONSIBILITIES & CONSTRUCTION SPECIFICATIONS FOR UNDERGROUND RESIDENTIAL DEVELOPMENTS".
- SEWER FORCE MAIN SEPARATION TO WATER MAIN TO BE LOCATED 10' HORIZONTAL OR 2' VERTICAL BELOW WATER MAIN.

- NOTES:
- SHALL BE IN ACCORDANCE WITH SECTION 905 OF THE R.I. STANDARD SPECIFICATIONS.
 - MINIMUM LENGTH OF STRAIGHT OR CIRCULAR FILLER PIECES TO BE 3'-0".
 - EXPOSED SURFACES TO HAVE A SPONGE FLOAT FINISH.
 - CIRCULAR CURB IS REQUIRED ON CURVES WITH RADI OF 160'-0" OR LESS. STRAIGHT CURB TO BE USED ON CURVES OF MORE THAN 160'-0" RADIUS.
 - EXPOSED EDGES TO HAVE A 3/4 CHAMFER.

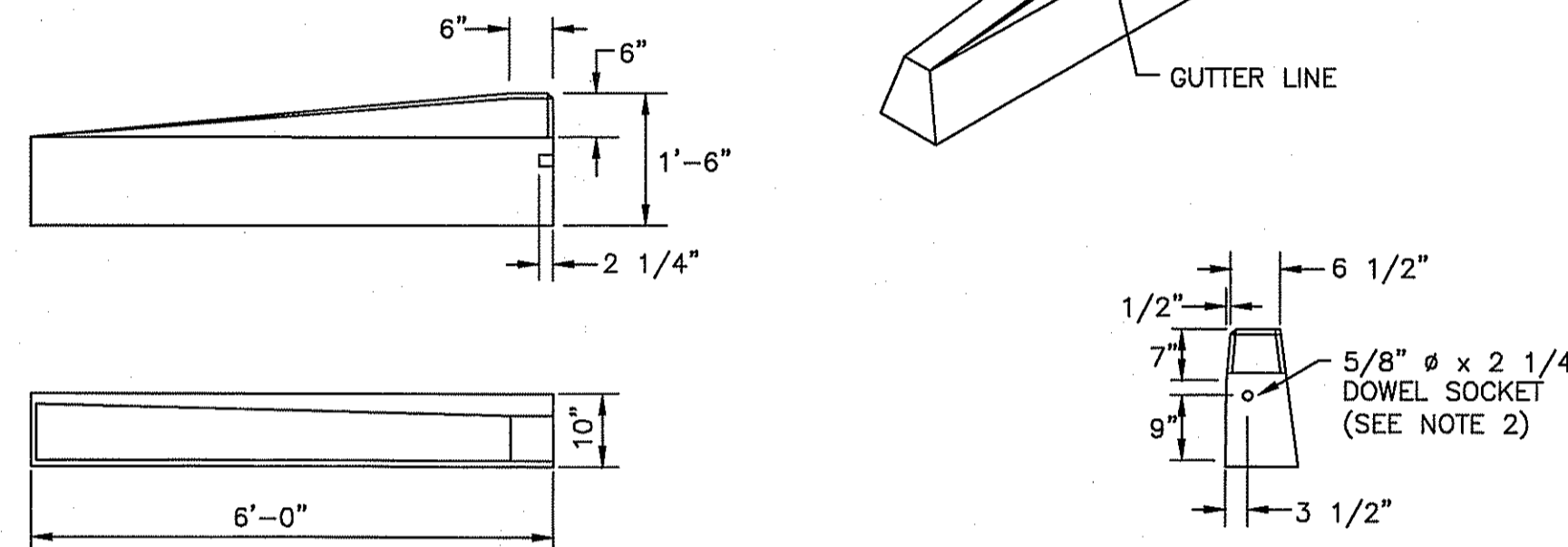


PRECAST CONCRETE CURB

NOT TO SCALE

R.I. STANDARD 7.1.0

- NOTES:
- SHALL BE IN ACCORDANCE WITH SECTION 905 OF THE R.I. STANDARD SPECIFICATIONS.
 - DRAWING SHOWS TRANSITION CURB FOR ONE DIRECTION. FOR OTHER DIRECTION USE OPPOSITE HAND AND INCLUDE A 1/2" x 4" EPOXY COATED DOWEL.
 - EXPOSED SURFACES TO HAVE A SPONGE FLOAT FINISH.
 - EXPOSED EDGES TO HAVE A 3/4" CHAMFER.

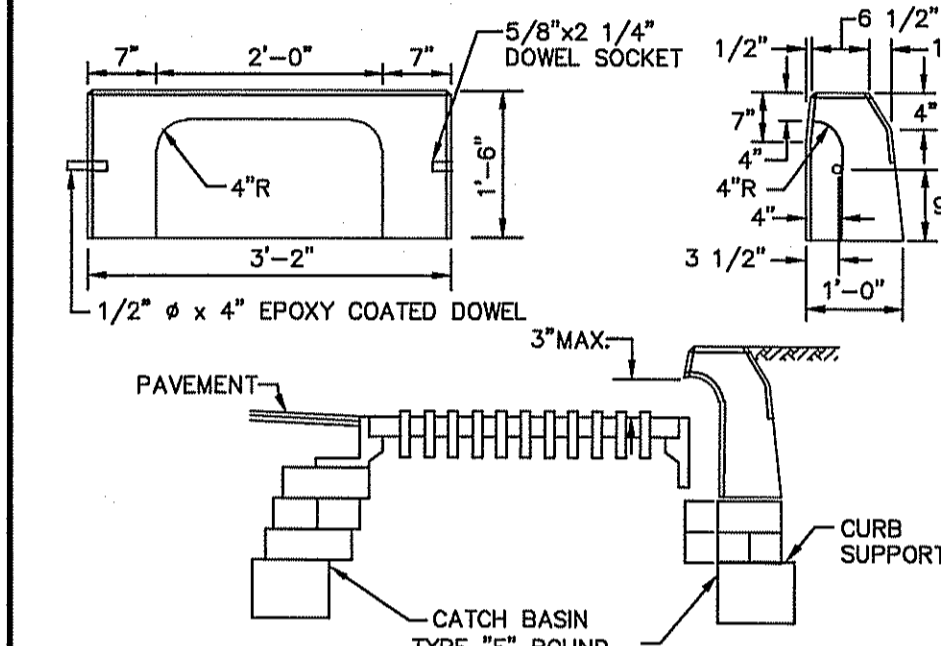


6'-0" PRECAST CONCRETE TRANSITION CURB

NOT TO SCALE

R.I. STANDARD 7.1.2

- NOTES:
- SHALL BE IN ACCORDANCE WITH SECTION 905 OF THE R.I. STANDARD SPECIFICATIONS.
 - EXPOSED SURFACES TO HAVE A SPONGE FLOAT FINISH.
 - EXPOSED EDGES TO HAVE A 3/4" CHAMFER.

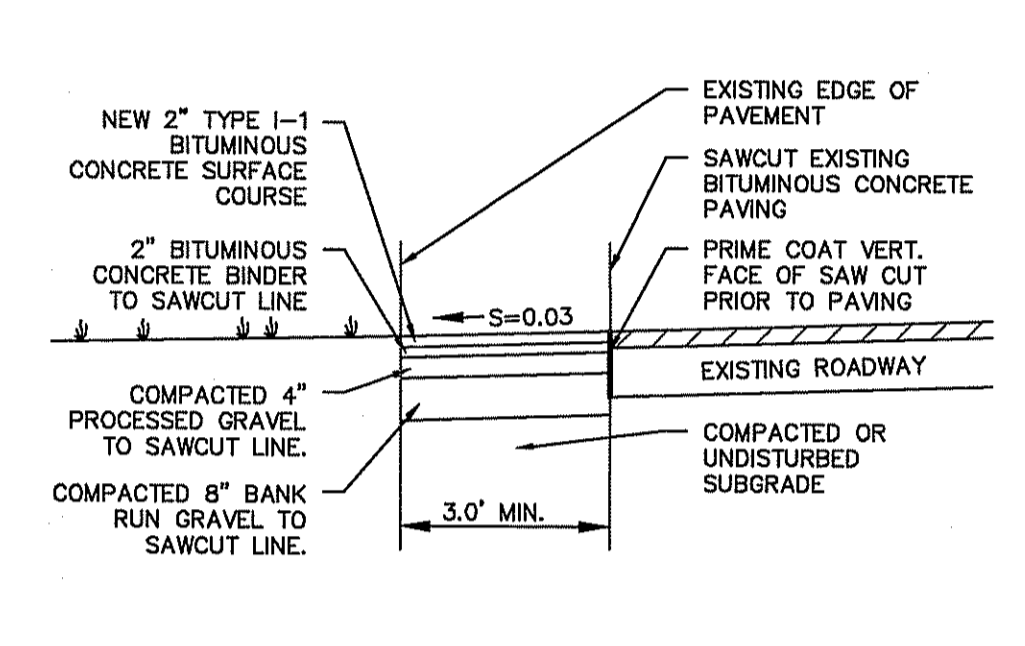


PRECAST CONCRETE APRON STONE (FOR ROUND CATCH BASIN)

NOT TO SCALE

R.I. STANDARD 7.1.8

- NOTES:
- MINIMUM COMPACTION FOR GRAVEL SUB-BASE OR SUBGRADE: 95% MOD PROCTOR.

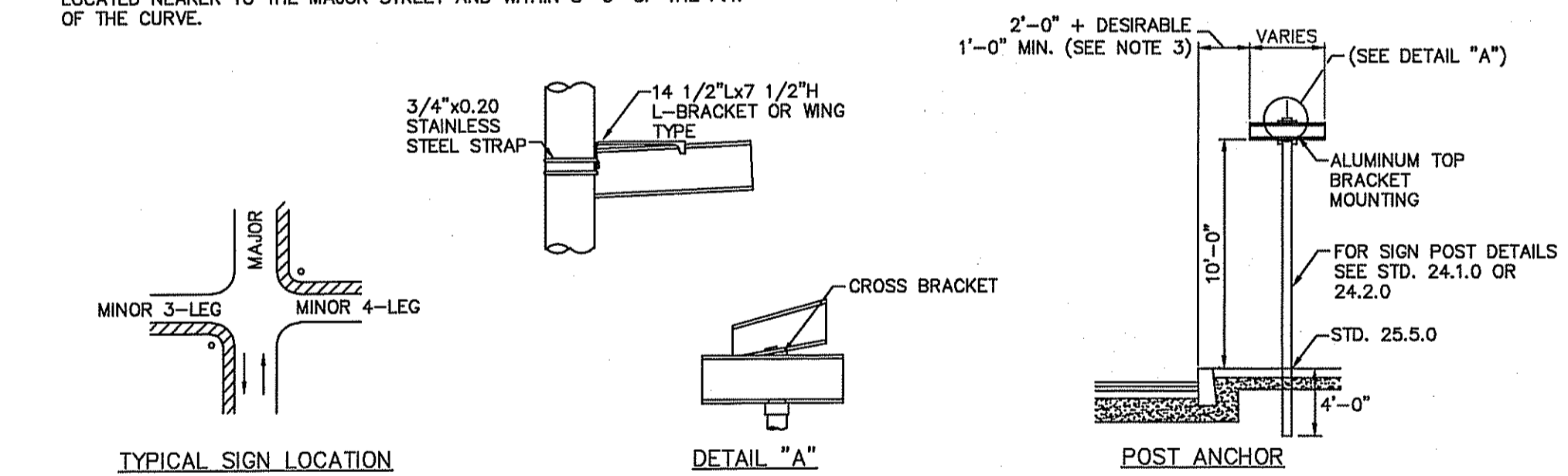


SAWCUT & MATCH

NOT TO SCALE

R.I.D.O.T. APPROVED

- NOTES:
- SHALL BE IN ACCORDANCE WITH SECTION T.15 OF THE R.I. STANDARD SPECIFICATIONS.
 - EACH SIGN SHALL HAVE LEGEND ON BOTH SIDES.
 - POSTS SHALL BE INSTALLED AS CLOSE AS POSSIBLE TO THE BACK OF SIDEWALK, UNLESS SPACE DOES NOT PERMIT.
 - IF SIGNS ARE ON THEIR OWN SUPPORT POST, THE POST SHALL BE LOCATED NEARER TO THE MAJOR STREET AND WITHIN 5'-0" OF THE P.T. OF THE CURVE.



STREET SIGN MOUNTING DETAIL

NOT TO SCALE

R.I. STANDARD 24.6.1

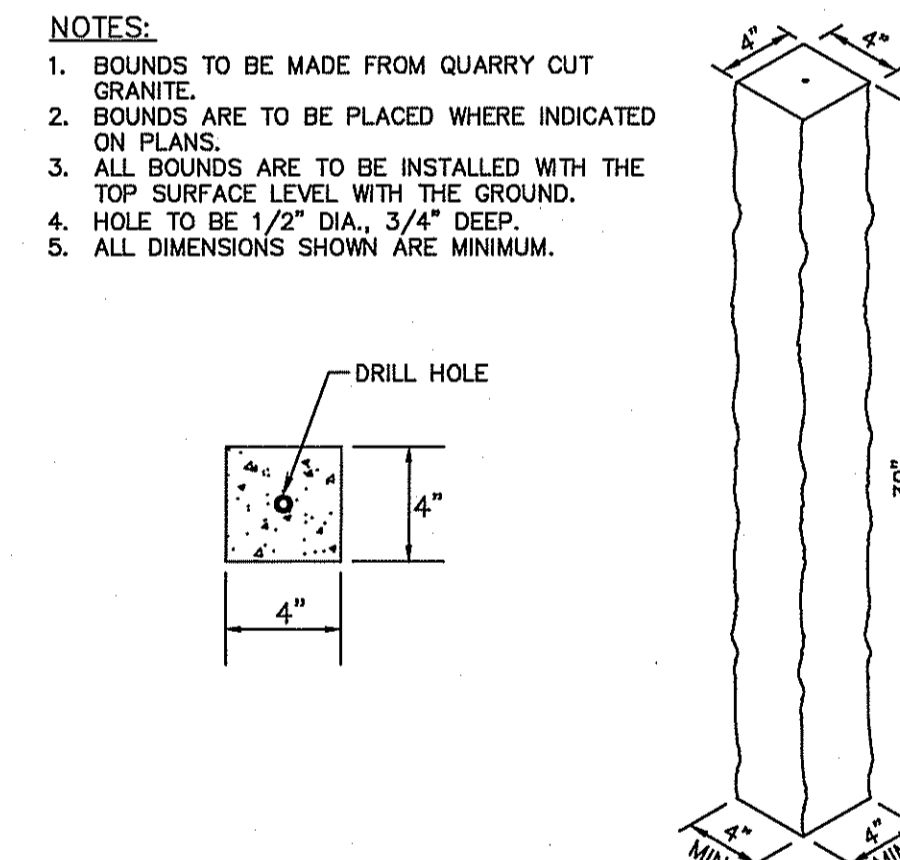
- NOTES:
- BOUNDS TO BE MADE FROM QUARRY CUT GRANITE.
 - BOUNDS ARE TO BE PLACED WHERE INDICATED ON PLANS.
 - ALL BOUNDS ARE TO BE INSTALLED WITH THE TOP SURFACE LEVEL WITH THE GROUND.
 - HOLE TO BE 1/2" DIA., 3/4" DEEP.
 - ALL DIMENSIONS SHOWN ARE MINIMUM.

SIGN NUMBER		RI-1
LEGEND		
COLOR	BACKGROUND	RED
SIGN WIDTH	COPY	WHITE
24"	24"	30"
30"	30"	36"
36"	36"	48"
48"	48"	48"
DIMENSION	HEIGHT	24"
		30"
		36"
		48"

REGULATORY SIGNS

NOT TO SCALE

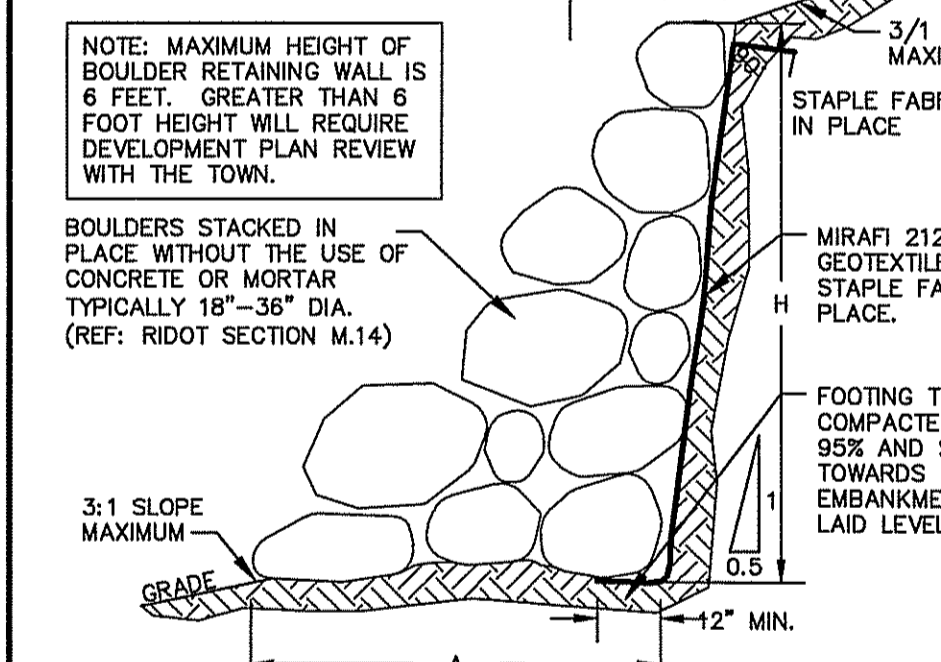
STANDARD 27.1.0



GRANITE BOUND

NOT TO SCALE

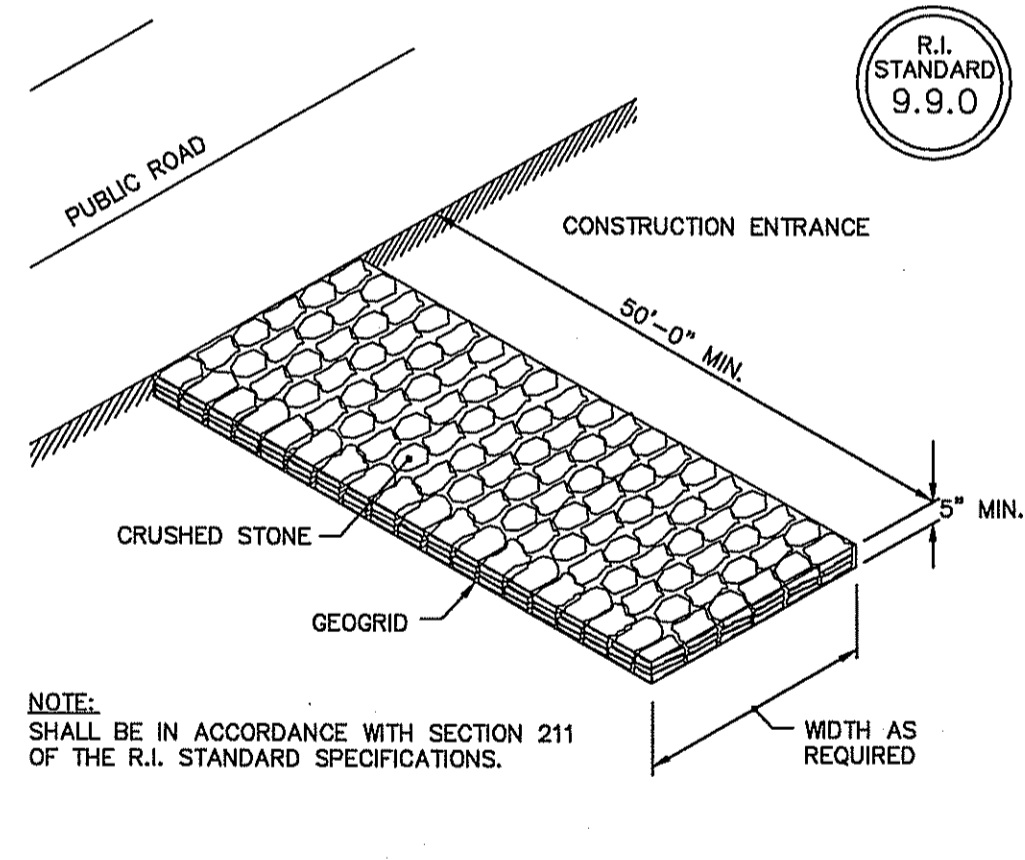
MINIMUM DIMENSIONS	
H	A
3'-0"	2'-6"
4'-0"	3'-0"
5'-0"	3'-6"
6'-0"	3'-10"



BOULDER RETAINING WALL

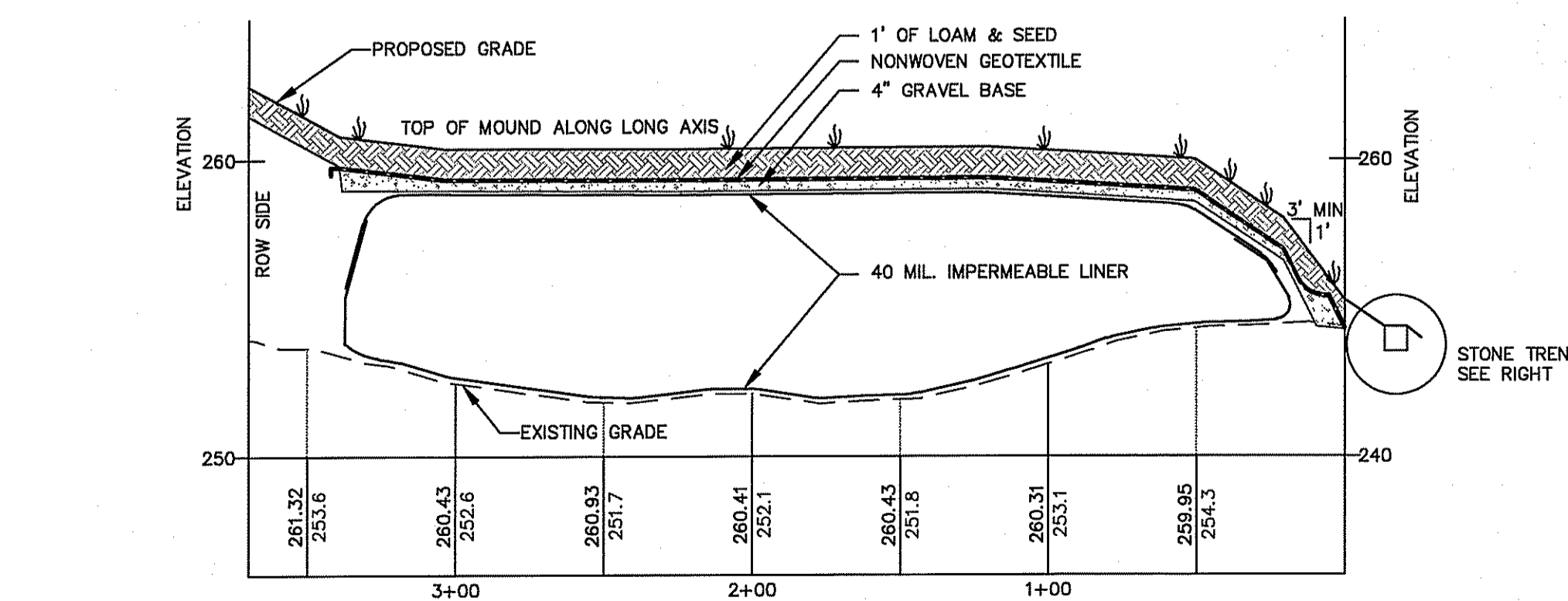
NOT TO SCALE

R.I. STANDARD 9.9.0



CONSTRUCTION ACCESS

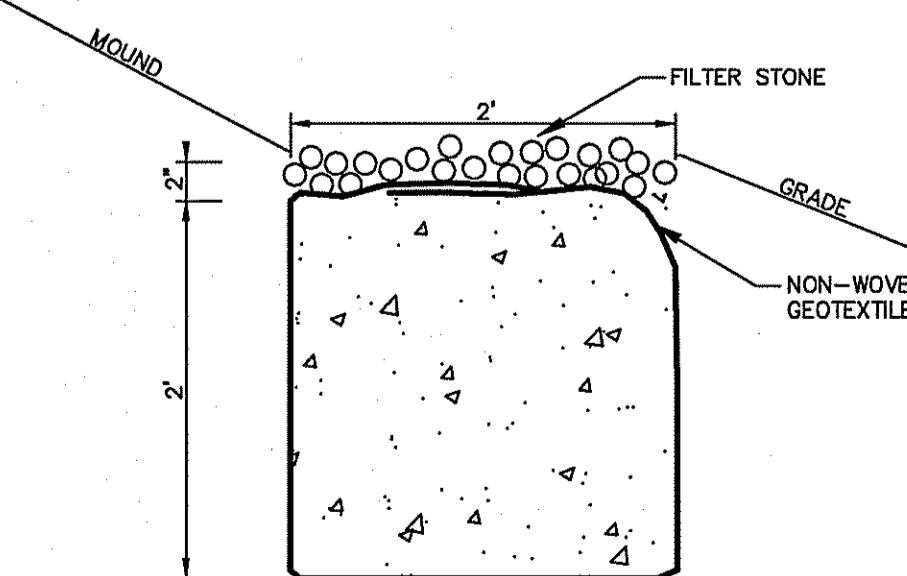
NOT TO SCALE



TYPICAL CONSTRUCTION DETAIL CONTAINMENT CELL CROSS SECTION

HORIZONTAL 1"=50'; VERTICLE 1"=5'

- NOTES:
- CELL WILL BE CONSTRUCTED IN ACCORDANCE WITH REMEDIATION PLAN DETAILS. REFERENCE RIEM OFFICE OF WASTE MANAGEMENT (SIR) CASE NUMBER 2004-053 FOR CONSTRUCTION.
 - IF DISCREPANCIES ARE TO OCCUR, THE REMEDIATION PLAN FOR THE ABOVE REFERENCED CASE NUMBER OVERRIDES THE DETAILS PRESENT ON THESE SITE PLANS.
 - SEE THE ABOVE REFERENCED CASE NUMBER FOR CONSTRUCTION METHODS REGARDING THE CONTAINMENT CELL.



STONE TRENCH

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 OCT 3 2007 FILE # 07-0217
NO CHANGES ALLOWED WITHOUT PRIOR APPROVAL
APPROVED PLANS MUST BE AT CONSTRUCTION SITE

DETAIL SHEET

Swan Orchard Farms
ASSESSOR'S PLAT 47 LOT 77
SMITHFIELD, RI

PREPARED BY
DiPrete Engineering Associates, Inc.
ENGINEERING, SURVEYING AND PLANNING CONSULTANTS
TWO STAFFORD COURT
CRANSTON, R.I. 02920
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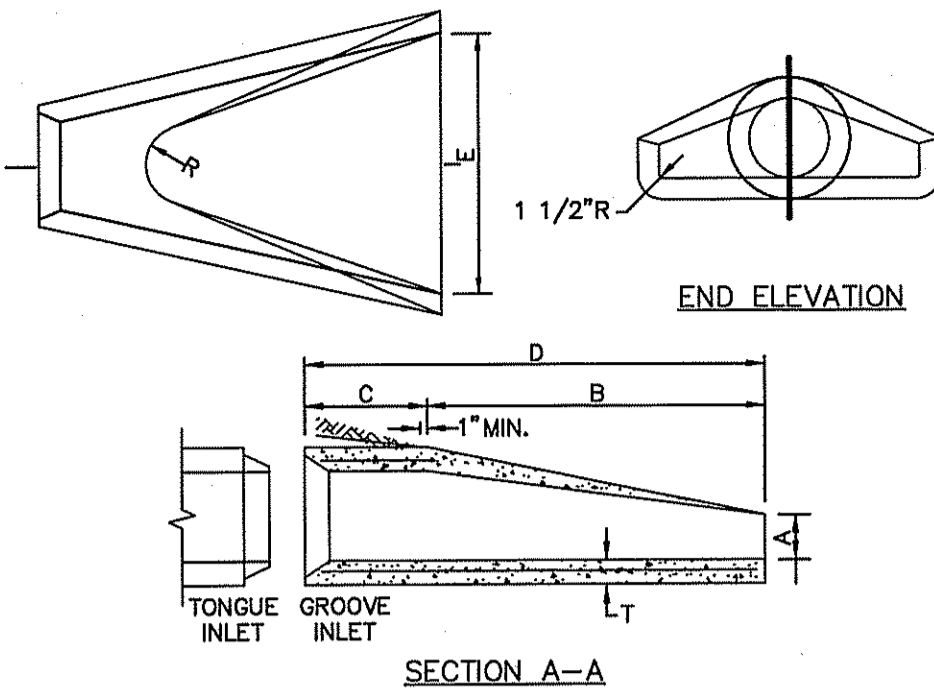
PREPARED FOR
Churchill & Banks Properties LLC
10 GREENE STREET
PROVIDENCE, R.I.
02903-4738
(401) 273-8010

REGISTERED PROFESSIONAL ENGINEER
CHRISTOPHER A. DUHAMEL
No. 5013

MAY, 2007
DWN. BY: J.M.D.

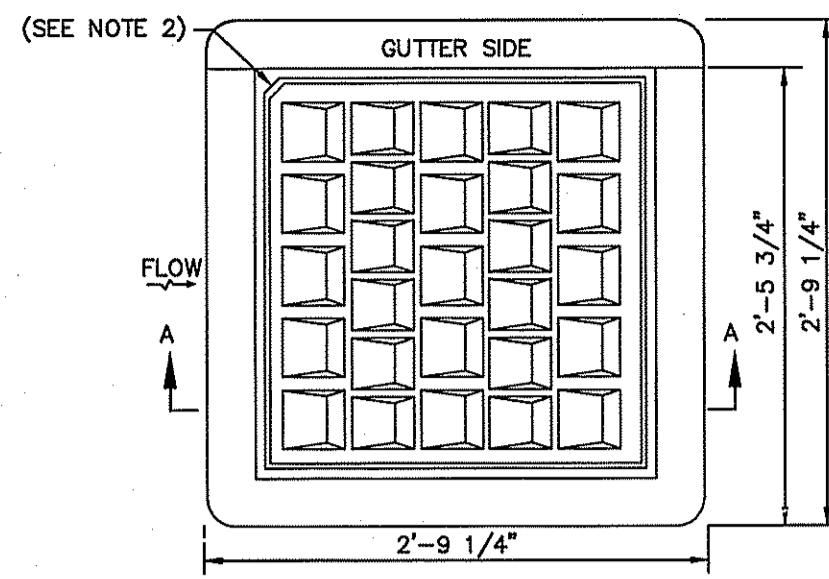
SHEET 16 OF 17

DIMENSIONS								REINFORCEMENT	
DIA.	A	B	C	D	E	R	T	ONE LAYER REINFORCEMENT IN CENTER OF WALL (SQ. IN./LIN. FT.)	
1'-0"	4"	2'-0"	4'-0 7/8"	8'-0 7/8"	2'-0"	9"	2"	0.048	
1'-3"	6"	2'-3"	3'-10"	6'-1"	2'-6"	11"	2 1/4"	0.054	
1'-6"	9"	2'-3"	3'-10"	6'-1"	3'-0"	12"	2 1/2"	0.060	
2'-0"	9 1/2"	3'-7 1/2"	2'-6"	6'-1 1/2"	4'-0"	1'-2"	3"	0.072	
2'-6"	1'-0"	4'-6"	1'-3 3/4"	6'-1 3/4"	5'-0"	1'-3"	3 1/2"	0.084	
3'-0"	1'-3"	5'-3"	2'-10 3/4"	6'-1 3/4"	6'-0"	1'-8"	4"	0.096	
3'-6"	1'-9"	5'-3"	2'-11"	6'-2"	6'-6"	1'-10"	4 1/2"	0.108	
4'-0"	2'-0"	6'-0"	2'-2"	6'-2"	7'-0"	1'-10"	5"	0.120	
4'-6"	2'-3"	5'-5"	2'-11"	6'-4"	7'-6"	2'-0"	5 1/2"	0.132	
5'-0"	2'-6"	5'-0"	3'-3"	6'-3"	8'-0"	2'-0"	6"	0.144	



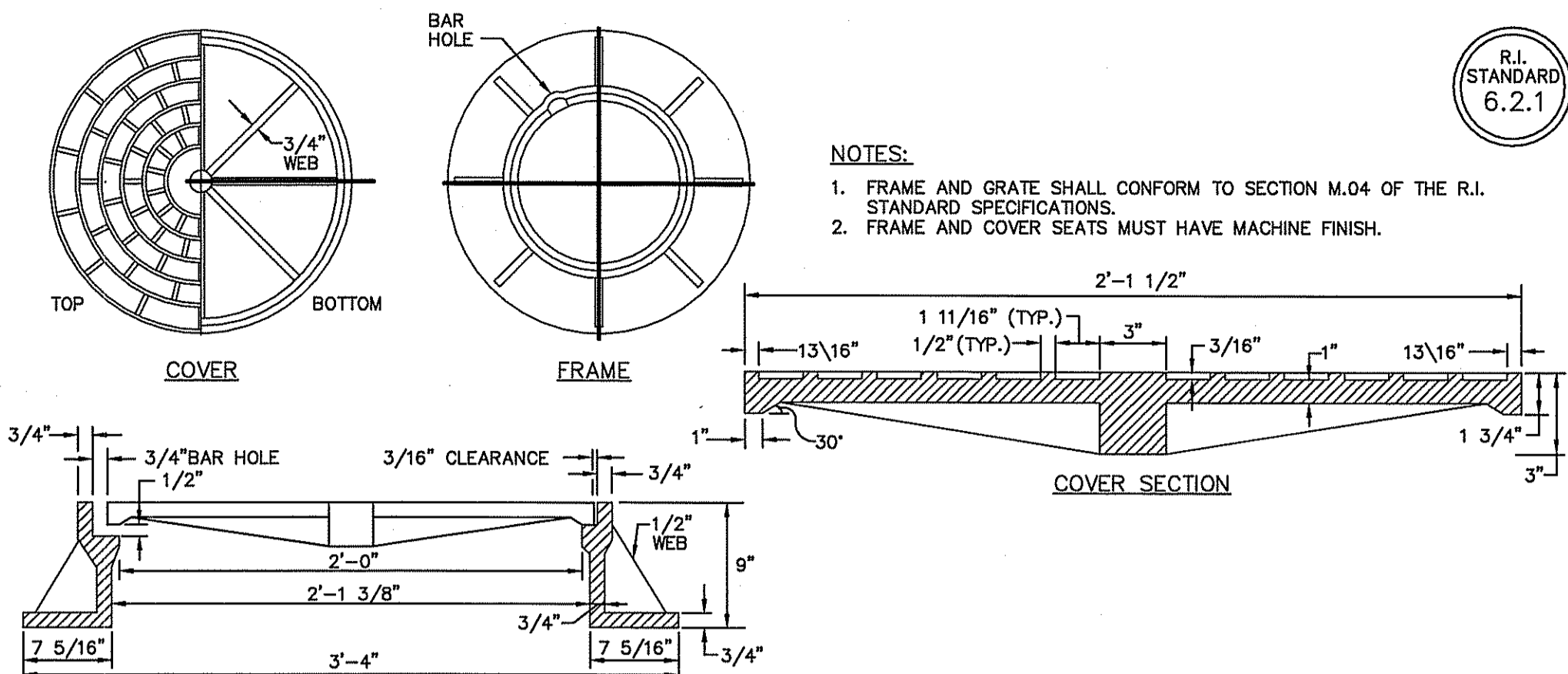
PRECAST CONCRETE FLARED END SECTION

NOT TO SCALE



HIGH CAPACITY FRAME AND GRATE (BICYCLE SAFE)

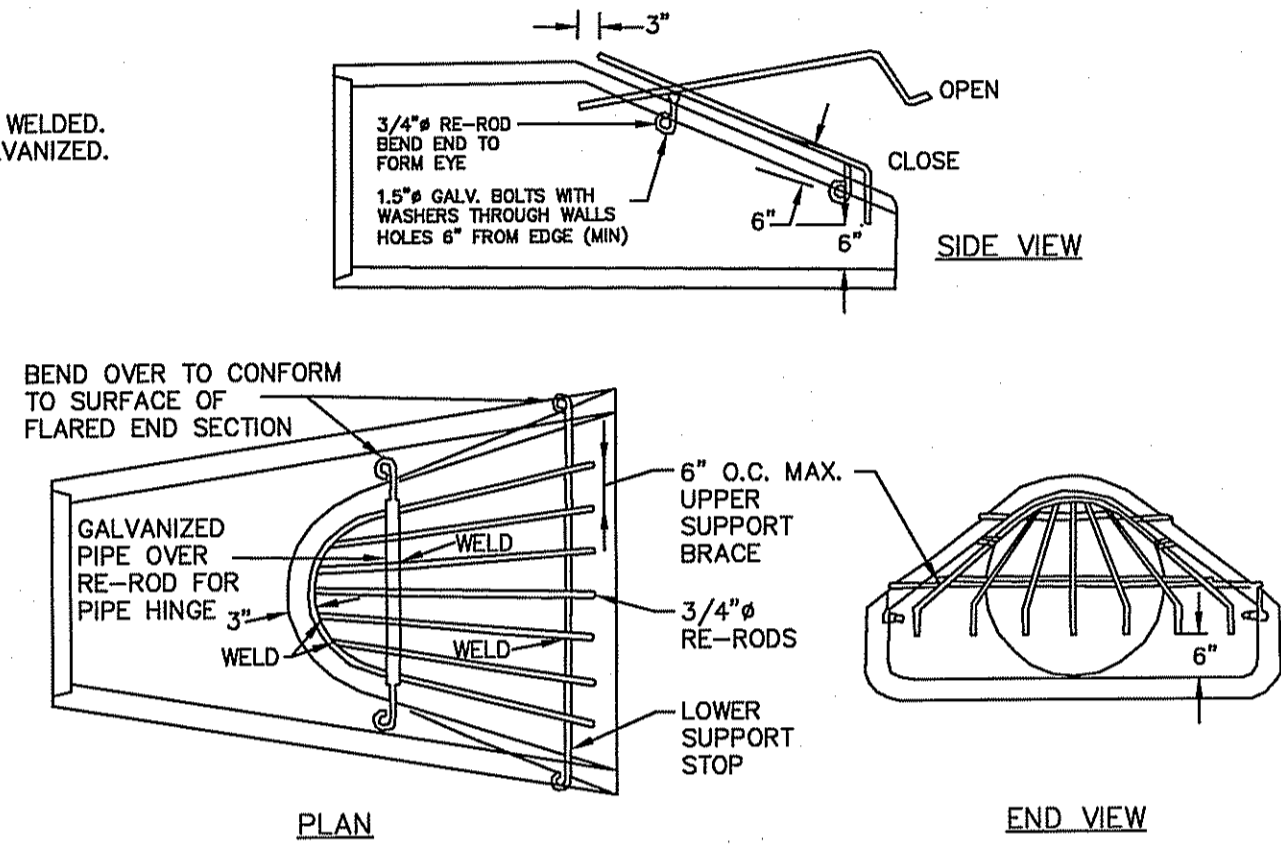
NOT TO SCALE



HEAVY-DUTY ROUND FRAME AND COVER

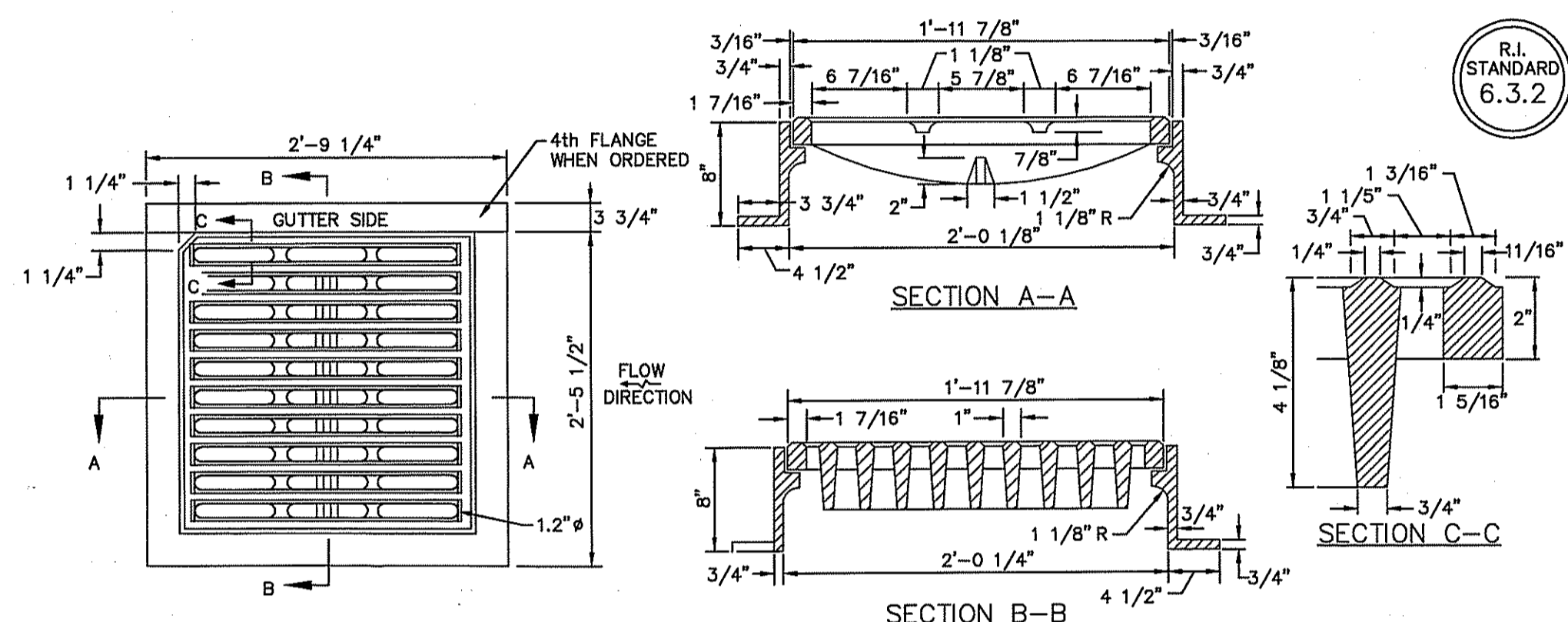
NOT TO SCALE

- NOTES:
1. ALL RE-RODS ARE TO BE WELDED.
 2. ALL RODS ARE TO BE GALVANIZED.



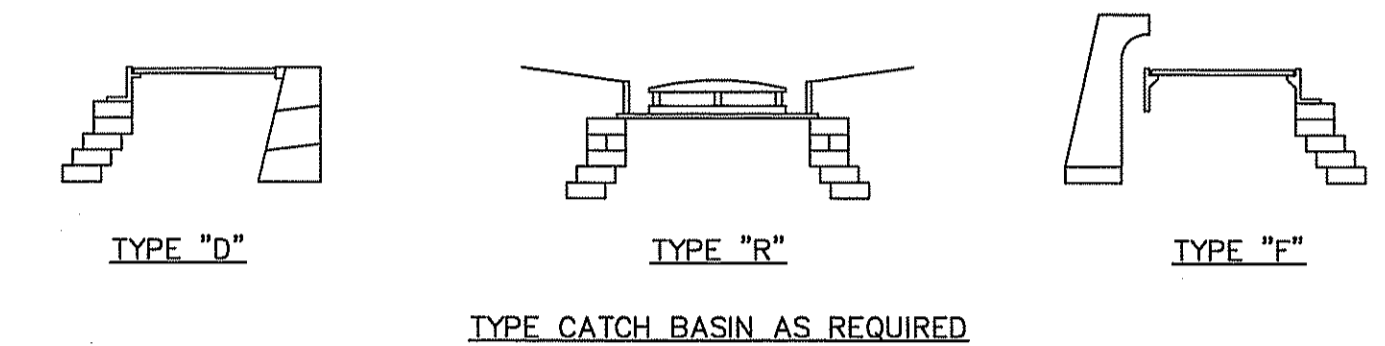
GRATING FOR FLARED END

NOT TO SCALE



SQUARE FRAME AND GRATE (BICYCLE SAFE)

NOT TO SCALE

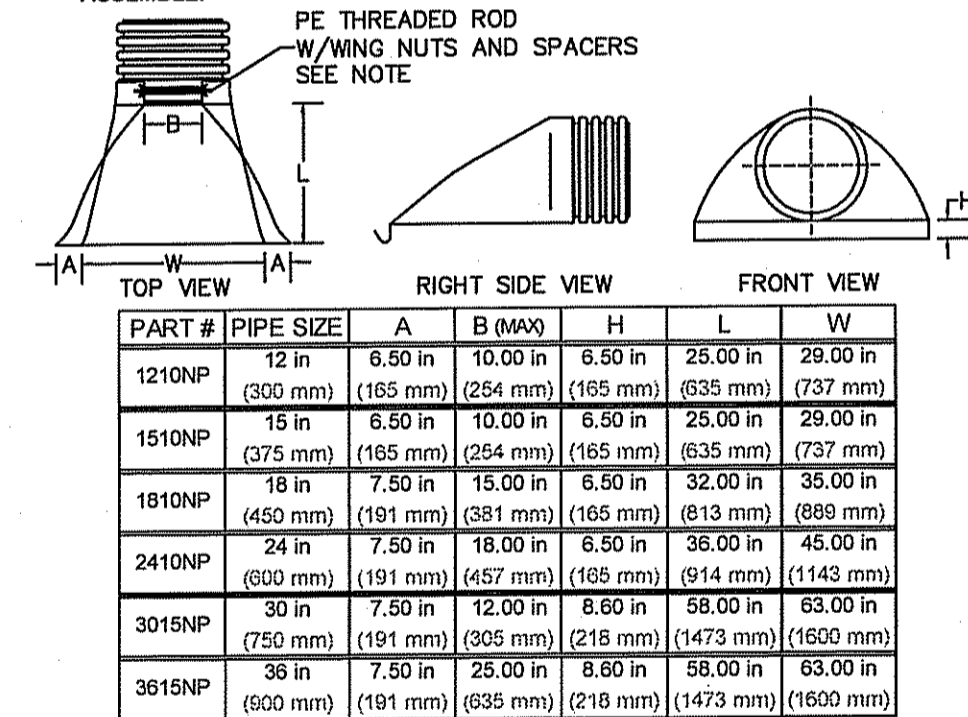


TYPE CATCH BASIN AS REQUIRED

CATCH BASIN DIAMETER (D)	A	B	CIRCUMFERENTIAL STEEL REINFORCEMENT REQUIRED*
4'-0"	5"	6"	0.12 SQ. IN./LIN. FT.
5'-0"	6"	7"	0.15 SQ. IN./LIN. FT.
6'-0"	7"	8"	0.18 SQ. IN./LIN. FT.

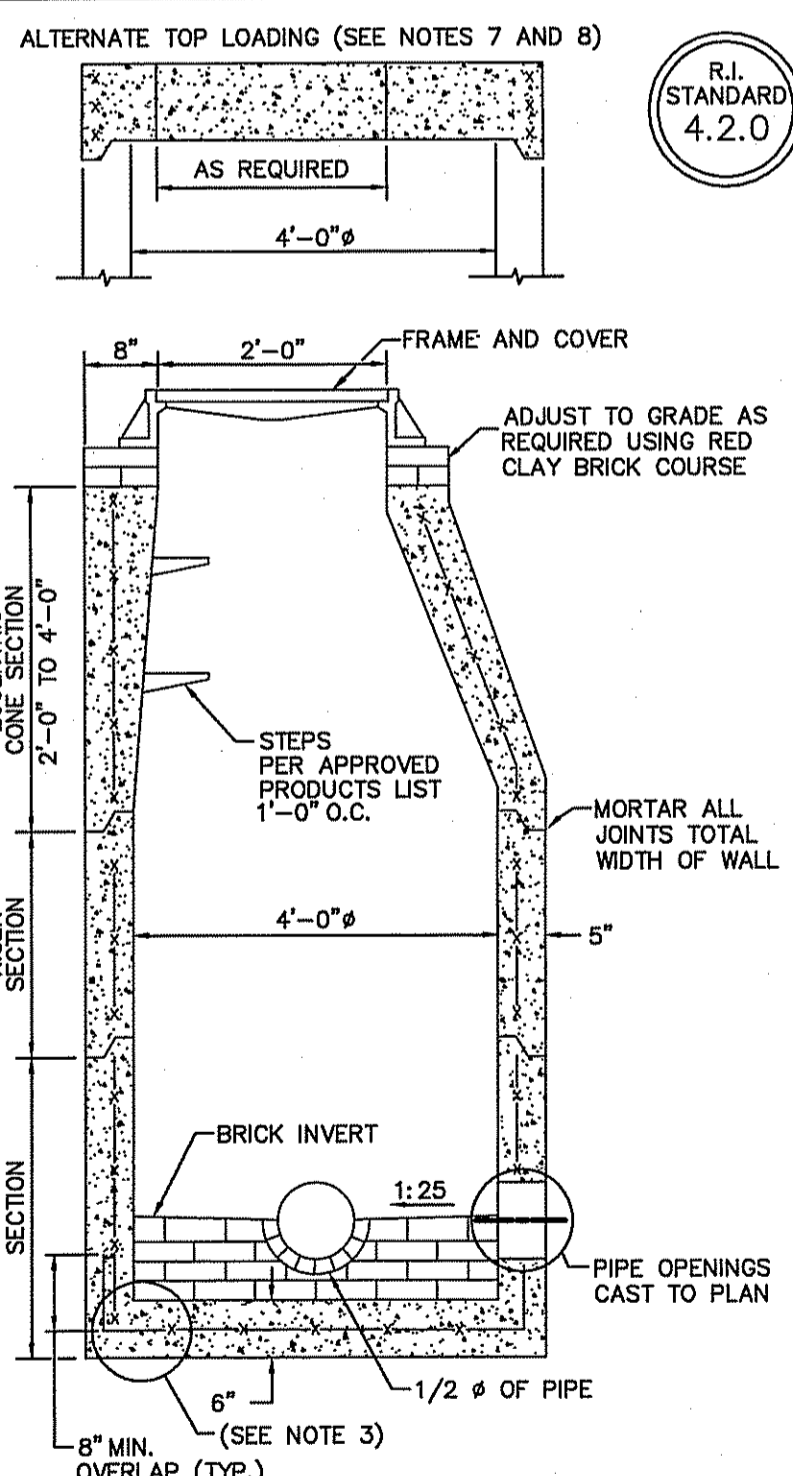
* FOR LONGITUDINAL (VERTICAL STANDING) REINFORCEMENT REFER TO ASTM C475, ITEM 8.1.2

- NOTES:
1. ADS OR APPROVED EQUAL.
 2. ALL DIMENSIONS ARE NOMINAL.
 3. PE THREADED ROD W/WING NUTS PROVIDED FOR END SECTIONS 12"-24".
 4. 30" & 36" END SECTIONS REQUIRE TWO (2) THREADED RODS FOR ASSEMBLY.



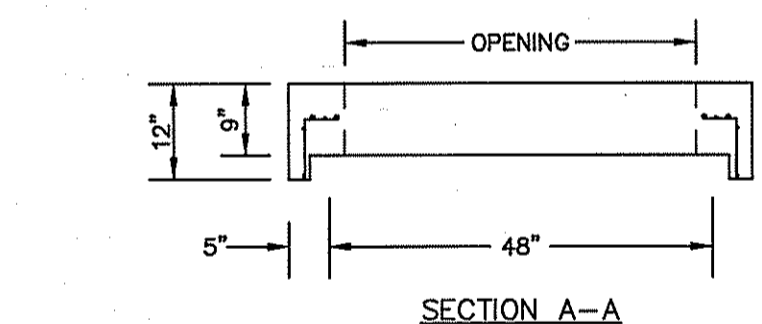
HDPE FLARED END SECTION

NOT TO SCALE

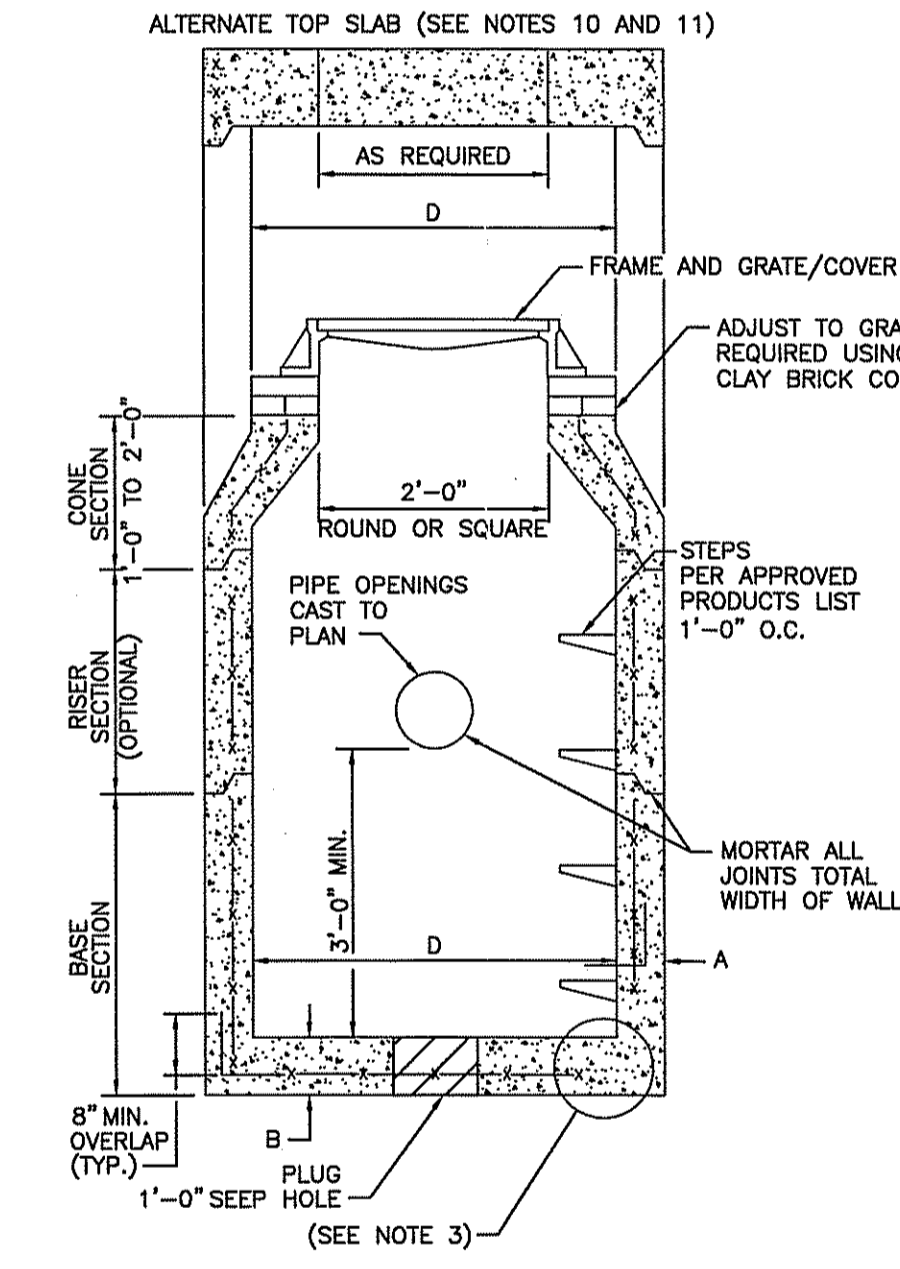


4' DIA. DOUBLE OPENING SLAB COVER HANSON PIPE (OR EQUAL)

NOT TO SCALE



- NOTES:
1. CONCRETE 4000 PSI.
 2. CONSTRUCTION PER ASTM C478.
 3. ALL REBAR SHALL HAVE A MINIMUM OF 1.5" CLEARANCE FROM OPENINGS.
 4. REINFORCING STEEL PER ASTM A-185 & A-615.
 5. FLAT TOP STEEL IS REINFORCED TO MEET OR EXCEED H-20 LOADING.



PRECAST ROUND CATCH BASIN

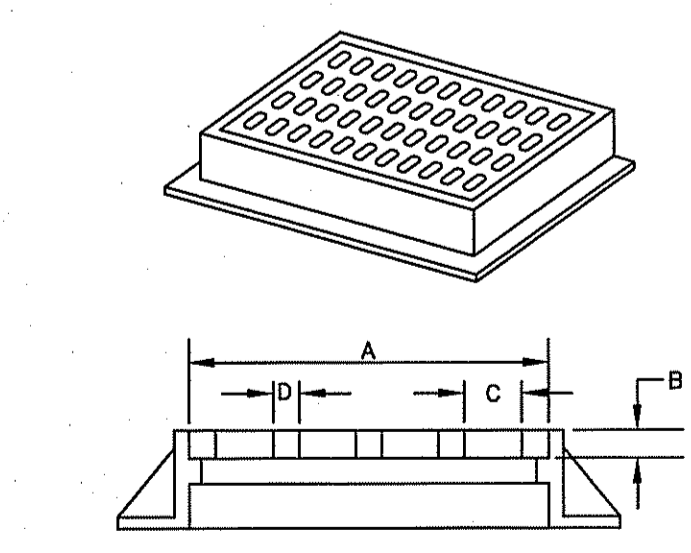
NOT TO SCALE

- NOTES:
1. SHALL BE IN ACCORDANCE WITH SECTION 702 OF THE R.I. STANDARD SPECIFICATIONS.
 2. SEE TABLE 1 FOR STEEL REINFORCEMENT REQUIREMENTS.
 3. STEEL REINFORCEMENT FOR BASE SECTION BOTTOM SHALL BE A MINIMUM OF 0.12 SQ. IN./LIN. FT. (BOTH WAYS).
 4. STEPS SHALL CONFORM TO STD. 5.3.0 AND SHALL BE INSTALLED AT THE CASTING PLANT.
 5. ONE FOUR MONOLITHIC BASE SECTION.
 6. ANY NECESSARY ADJUSTMENTS DURING CONSTRUCTION WILL BE DONE BY SAW-CUTTING AND/OR CORING ONLY. NO JACKHAMMERS, HAMMERS AND CHISELS OR PNEUMATIC TOOLS WILL BE ALLOWED.
 7. CORBEL MADE OF RED CLAY BRICK WILL BE PERMITTED FOR THE "CONE SECTION" OF THE 4'-0" CATCH BASIN ONLY.
 8. FOR CATCH BASIN TYPES "D" AND "F" STEPS MUST BE INSTALLED ON THE CURB SIDE OF THE STRUCTURE.
 9. THE CENTERLINE OF THE OPENING MUST BE WITHIN 2'-0" FROM THE STEPS.
 10. ALTERNATE TOP SLAB IS STEEL REINFORCED TO MEET OR EXCEED H-25 LOADING (SEE STD. 4.7.2).
 11. ALTERNATE TOP SLAB IS ONLY FOR USE WHEN REDUCING SECTION DOES NOT FIT BECAUSE OF STRUCTURE DEPTH.
 12. REFER TO STD. 5.2.0 FOR MAXIMUM PIPE SIZES.

- NOTES:
1. SHALL BE IN ACCORDANCE WITH SECTION 702 OF THE R.I. STANDARD SPECIFICATIONS. MINIMUM.
 2. CIRCUMFERENTIAL STEEL REINFORCEMENT REQUIRED = 0.12 SQ. IN./LIN. FT.
 3. STEEL REINFORCEMENT FOR BASE SECTION BOTTOM SHALL BE A MINIMUM OF 0.12 SQ. IN. / LIN. FT. (BOTH WAYS).
 4. ONE POUR MONOLITHIC BASE SECTION.
 5. ANY NECESSARY ADJUSTMENTS DURING CONSTRUCTION WILL BE DONE BY SAW-CUTTING AND/OR CORING ONLY. NO JACKHAMMERS, HAMMERS AND CHISELS OR PNEUMATIC TOOLS WILL BE ALLOWED.
 6. STEPS SHALL CONFORM TO STD. 5.3.0 AND SHALL BE INSTALLED AT THE CASTING PLANT.
 7. ALTERNATE TOP SLAB IS STEEL REINFORCED TO MEET OR EXCEED H-25 LOADING (SEE STD. 4.7.2).
 8. ALTERNATE TOP SLAB IS ONLY FOR USE WHEN REDUCING SECTION DOES NOT FIT BECAUSE OF STRUCTURE DEPTH.
 9. REFER TO STD. 5.2.0 FOR MAXIMUM PIPE SIZES.

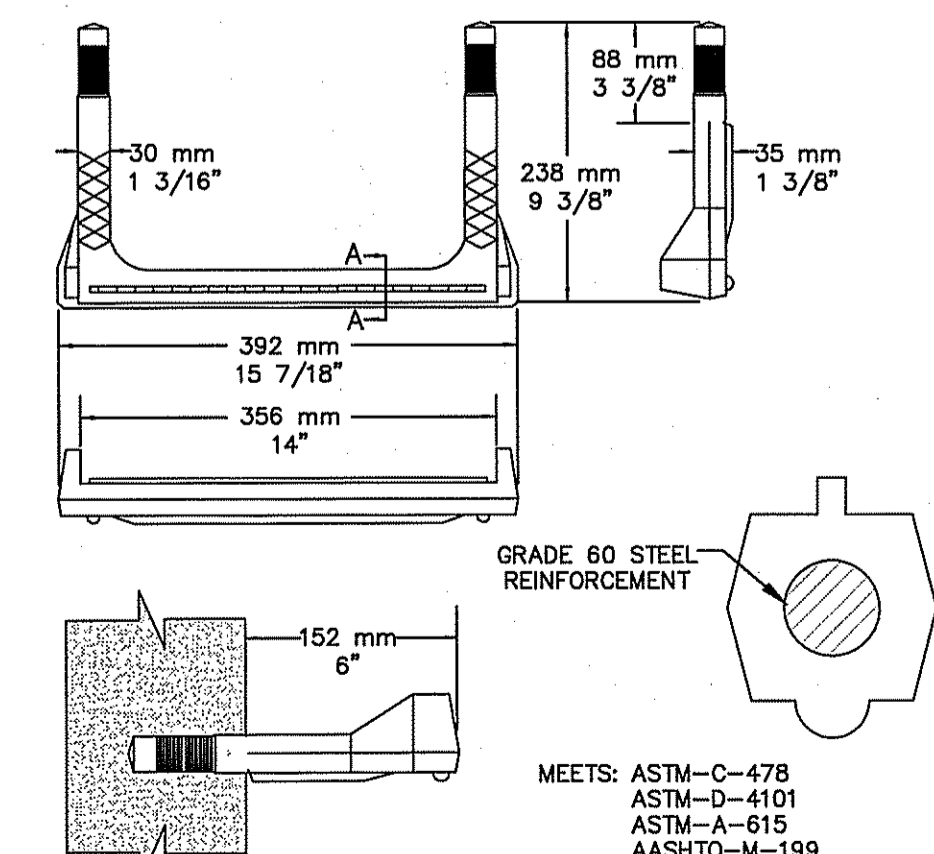
PRECAST 4'-0" ROUND MANHOLE

NOT TO SCALE



DOUBLE FRAME & GRATE NEEHAH FOUNDRY CORP. (OR EQUAL)

NOT TO SCALE



MANHOLE STEP

NOT TO SCALE

CAT. NO.	A	B	C	D	WT. (LBS)
R-4853-A	24"x45"	3"	1 1/2"x 6 1/2"	1 1/2"	520

DEPARTMENT OF ENVIRONMENTAL MANAGEMENT
OFFICE OF WATER RESOURCES
FRESHWATER WETLANDS PROGRAM
APPROVED WITH CONDITIONS
AS SPECIFIED IN THE LETTER OF APPROVAL
DATED OCT 3 2007 FILE # 07-0217
NO CHANGES ALLOWED WITHOUT PRIOR APPROVAL
APPROVED PLANS MUST BE AT CONSTRUCTION SITE.

CHRISTOPHER A. DURAMEL
No. 5013
REGISTERED PROFESSIONAL ENGINEER

DETAIL SHEET

Swan Orchard Farms

ASSESSOR'S PLAT 47 LOT 77
SMITHFIELD, RI

PREPARED BY
DiPrete Engineering Associates, Inc.
ENGINEERING, SURVEYING AND PLANNING CONSULTANTS

TWO STAFFORD COURT
CRANSTON, R.I. 02920
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PREPARED FOR
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SHEET 17 OF 17