Final Submission

Orchard - Phase 1

North Pleasant Street
West Warwick, Rhode Island
Assessor's Plat 1, Lots 85, 145 & 529

DEPARTMENT OF ENVIRONMENTAL MANAGEMENT
OFFICE OF WATER RESOURCES
FRESHWATER WETLANDS PROGRAM
APPROVED WITH CONDITIONS
AS SPECIFIED IN THE LETTER OF APPROVAL
DATED MAY 2 2016 FILE # 07-0235
NO CHANGES ALLOWED WITHOUT PRIOR APPROVAL
APPROVED PLANS MUST BE AT CONSTRUCTION SITE
Charles A. Horbert

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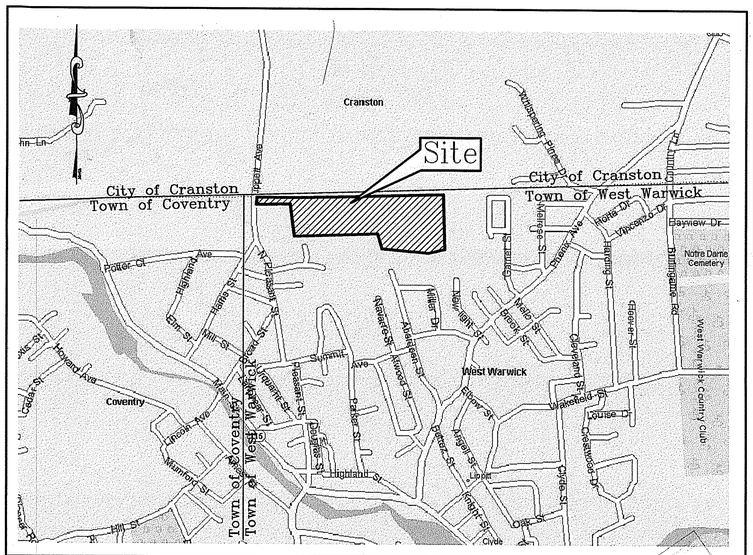

LOCATION MAP

FORMERLY "HUNTERS RESERVE"

PLANNING BOARD APPROVED – WEST WARWICK, RI

CHAIRMAN:_____

DATE:_____

Not for Construction

THIS PLAN IS NOT TO BE UTILIZED FOR CONSTRUCTION ACTIVITIES. ONLY PLANS STAMPED "ISSUED FOR CONSTRUCTION" AND SIGNED BY A DIPRETE ENGINEERING REPRESENTATIVE SHALL BE UTILIZED FOR CONSTRUCTION ACTIVITIES.

Final Submission

CHRISTOPHER A. DUHAMEL
No. 1844
PROFESSIONAL LAND SURVEYOR

DAVID A. RUSSO
No. 14355
REGISTERED PROFESSIONAL ENGINEER CIVIL

NO.	DATE	DESCRIPTION	BY
10		FINAL SUBMISSION	
9	3-03-08	TRC / FIRE CHIEF COMMENTS	J.M.D.
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0	5-22-07	RIDEM WETLANDS SUBMISSION	D.A.R.

COVER SHEET

Orchard - Phase 1

ASSESSOR'S PLAT 1 LOTS 85, 145 & 529
NORTH PLEASANT STREET, WEST WARWICK, RHODE ISLAND

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
David Fromm
PO BOX 76
BROOKFIELD, MA 01506

APRIL, 2007
DWN. BY: D.A.R.

SHEET 1 OF 19

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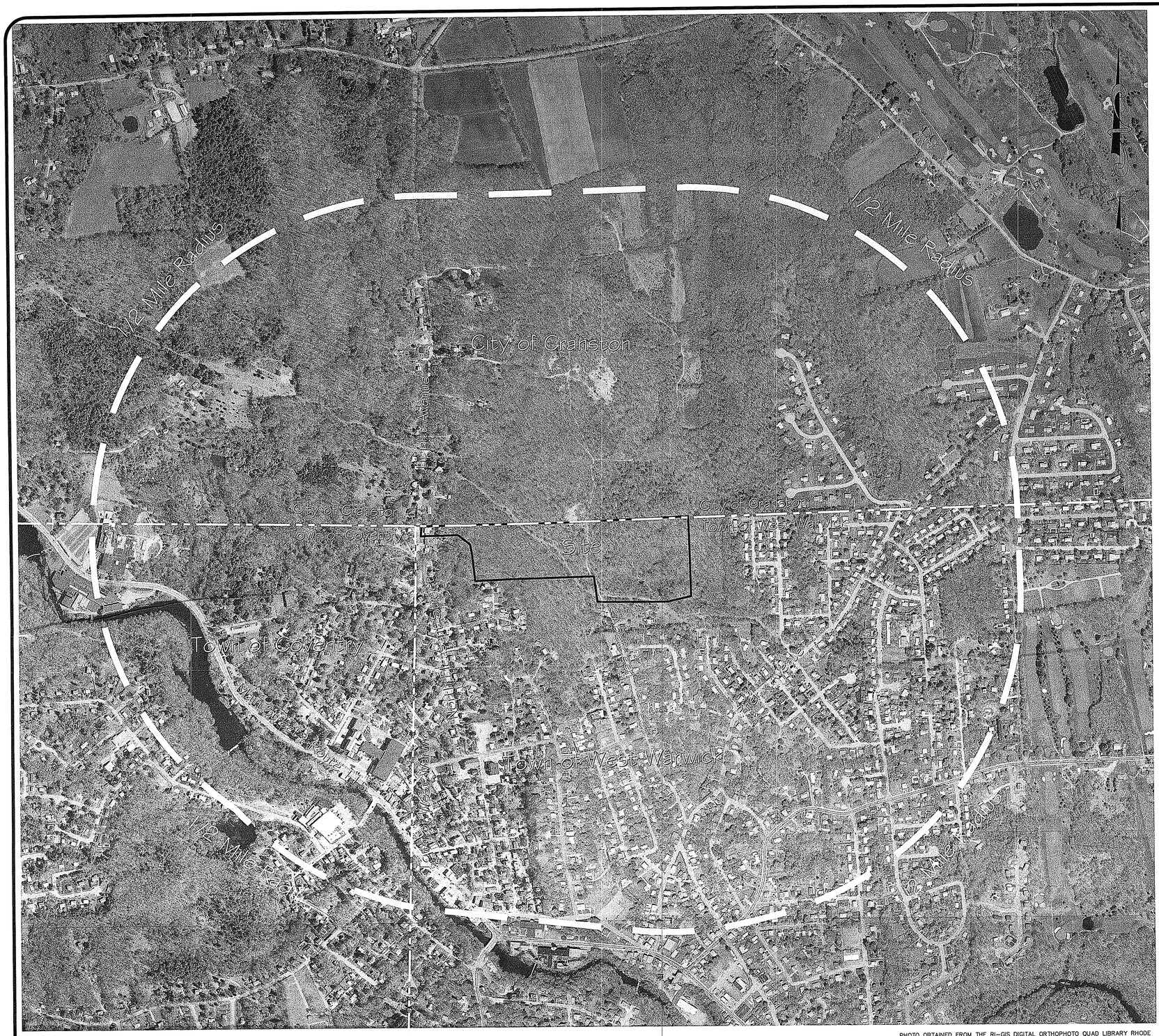
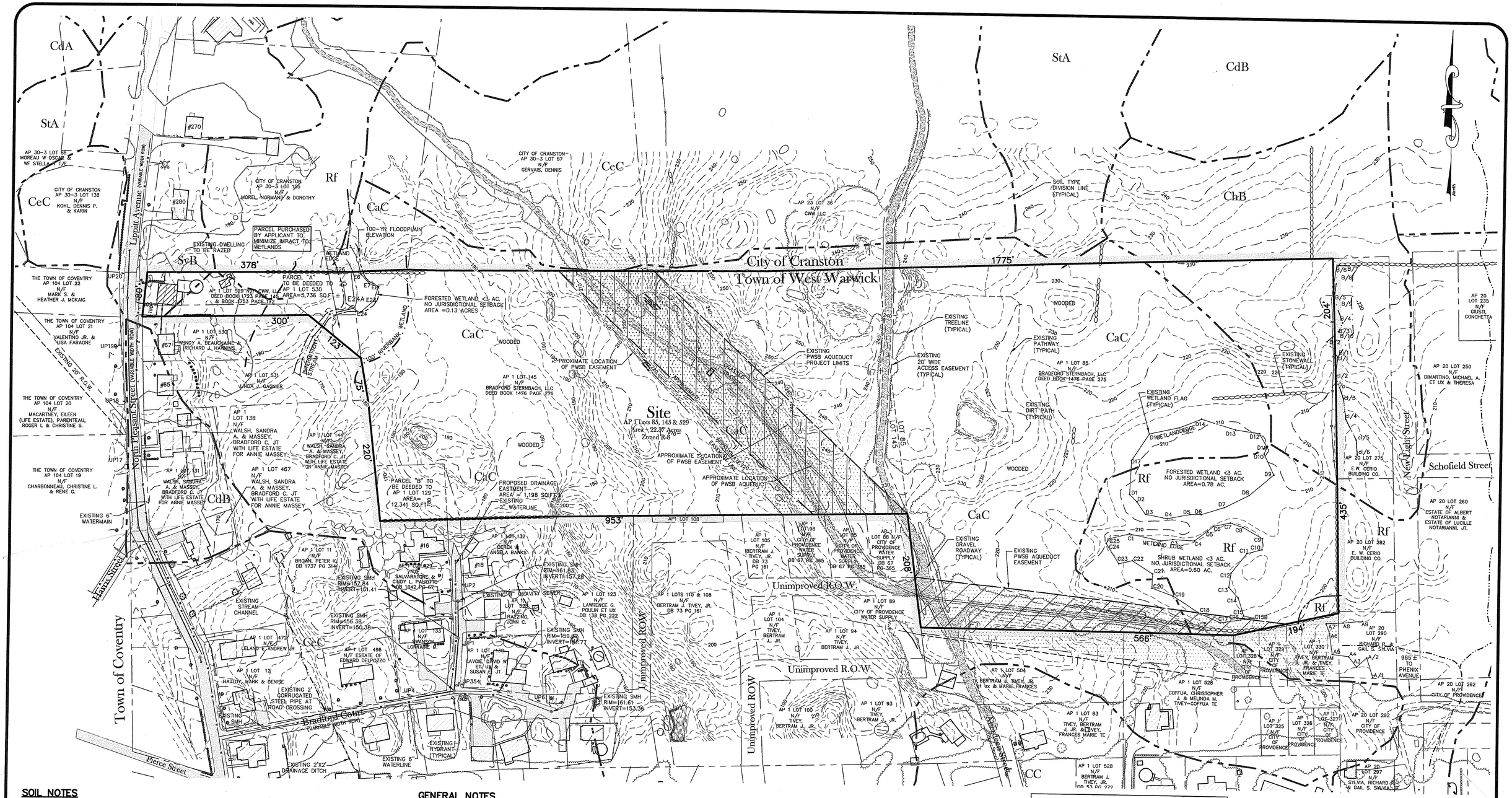

1/2 Mile Radius
1/2 Mile Radius
1/2 Mile Radius
City of Cranston
City of Cranston
Town of Coventry
City of Cranston
Town of West Warwick
Site
Town of Coventry
Town of West Warwick
Nottingham Rd
Nottingham Rd
Nottingham Rd


City of Cranston
Town of West Warwick
Site
AP 1 Lots 85, 145 & 529
Area = 22.37 Acres
Zoned R-8
Town of Coventry
North Pleasant Street (VARIABLE WIDTH ROW)
Lippitt Avenue (VARIABLE WIDTH ROW)
Harris Street
Bradford Court (VARIABLE WIDTH ROW)
Pierce Street
New Light Street
Schofield Street
EXISTING 20' R.O.W.
Unimproved R.O.W.
Unimproved ROW
PARCEL PURCHASED BY APPLICANT TO MINIMIZE IMPACT TO WETLANDS
PARCEL "A" TO BE DEEDED TO AP 1 LOT 530 AREA=5,736 SQ.FT.±
PARCEL "B" TO BE DEEDED TO AP 1 LOT 129 AREA= 12,341 SQ.FT.±
EXISTING DWELLING TO BE RAZED
100-YR FLOODPLAIN ELEVATION
WETLAND EDGE
100' RIVERBANK WETLAND
FORESTED WETLAND <3 AC. NO JURISDICTIONAL SETBACK AREA =0.13 ACRES
FORESTED WETLAND <3 AC. NO JURISDICTIONAL SETBACK AREA=0.78 AC.
SHRUB WETLAND <3 AC. NO JURISDICTIONAL SETBACK AREA=0.60 AC.
INTERMITTENT STREAM
PROPOSED DRAINAGE EASTMENT AREA = 1,198 SQ.FT.±
EXISTING 2" WATERLINE
EXISTING 6" WATERMAIN
EXISTING 2'X2' DRAINAGE DITCH
EXISTING 2" CORRUGATED STEEL PIPE AT ROAD CROSSING
EXISTING HYDRANT (TYPICAL)
EXISTING 6" WATERLINE
EXISTING SMH RIM=161.83 INVERT=157.28
EXISTING SMH RIM=157.84 INVERT=151.41
EXISTING SMH RIM=156.38 INVERT=150.39
EXISTING SMH RIM=159.39 INVERT=154.77
EXISTING SMH RIM=161.61 INVERT=153.36
EXISTING STREAM CHANNEL
EXISTING PWSB AQUEDUCT PROJECT LIMITS
APPROXIMATE LOCATION OF PWSB EASEMENT
APPROXIMATE LOCATION OF PWSB AQUEDUCT
EXISTING 20' WIDE ACCESS EASEMENT (TYPICAL)
EXISTING TREELINE (TYPICAL)
EXISTING PATHWAY (TYPICAL)
EXISTING DIRT PATH (TYPICAL)
EXISTING WETLAND FLAG (TYPICAL)
EXISTING STONEWALL (TYPICAL)
EXISTING GRAVEL ROADWAY (TYPICAL)
EXISTING PWSB AQUEDUCT EASEMENT
SOIL TYPE/DIVISION LINE (TYPICAL)
PROXIMATE LOCATION OF PWSB EASEMENT
PROPOSED 6" DRAIN
PROPOSED 2" WATERLINE
PROPOSED 8" SEWER
PROPOSED SEWER MANHOLE
PROPOSED DRAIN MANHOLE
PROPOSED CATCH BASIN
PROPOSED DRAIN MANHOLE
PROPOSED 6" WATERLINE
PROPOSED 8" WATERLINE
PROPOSED 2" WATERLINE
PROPOSED GATE VALVE
PROPOSED HYDRANT
PROPOSED 6" DRAIN
PROPOSED 8" SEWER
PROPOSED SEWER MANHOLE
PROPOSED DRAIN MANHOLE
PROPOSED CATCH BASIN
PROPOSED 6" WATERLINE
PROPOSED 8" WATERLINE
PROPOSED GATE VALVE
PROPOSED HYDRANT
AP 30-3 LOT 86 MOREAU W OSCAR & WF STELLA ET UX
CITY OF CRANSTON AP 30-3 LOT 138 N/F KOHL, DENNIS P. & KARIN
CITY OF CRANSTON AP 30-3 LOT 155 N/F MOREL, NORMAND & DOROTHY
CITY OF CRANSTON AP 30-3 LOT 87 N/F GERVAIS, DENNIS
AP 23 LOT 36 N/F CWW LLC
AP 1 LOT 529 N/F CWW, LLC & AP 1 LOT 530 DEED BOOK 1723 PAGE 145 & BOOK 1753 PAGE 172
AP 1 LOT 530 N/F WENDY A. BEAUCHAINE & RICHARD J. HAWKINS
AP 1 LOT 531 N/F LINDA J. GAGNIER
AP 1 LOT 138 N/F WALSH, SANDRA A. & MASSEY, BRADFORD C. JT WITH LIFE ESTATE FOR ANNIE MASSEY
AP 1 LOT 141 N/F WALSH, SANDRA A. & MASSEY, BRADFORD C. JT WITH LIFE ESTATE FOR ANNIE MASSEY
AP 1 LOT 131 N/F WALSH, SANDRA A. & MASSEY, BRADFORD C. JT WITH LIFE ESTATE FOR ANNIE MASSEY
AP 1 LOT 467 N/F WALSH, SANDRA A. & MASSEY, BRADFORD C. JT WITH LIFE ESTATE FOR ANNIE MASSEY
AP 1 LOT 145 N/F BRADFORD STERNBACH, LLC DEED BOOK 1476 PAGE 276
AP 1 LOT 85 N/F BRADFORD STERNBACH, LLC DEED BOOK 1476 PAGE 275
AP 1 LOT 108
AP 1 LOT 132 N/F CLERK & ANGELA BANKS
AP 1 LOT 11 N/F BROWN, PETER K. DB 1737 PG 314
AP 1 LOT 123 N/F LAWRENCE G. POULIN ET UX DB 138 PG 222
AP 1 LOT 472 N/F LELAND E. ANDREW JR
AP 1 LOT 133 N/F SWANSON LORRAINE M.
AP 1 LOT 496 N/F ESTATE OF EDWARD DELPOZZO
AP 1 LOT 12 N/F HAZLEY, MARK & DENISE
AP 1 LOT 130 N/F LAVOIE, DAVID W ET/ UX & SUSAN E JT
AP 1 LOTS 110 & 108 N/F BERTRAM J. TIVEY, JR. DB 73 PG 161
AP 1 LOT 105 N/F TIVEY, BERTRAM J. JR. DB 73 PG 161
AP 1 LOT 98 N/F CITY OF PROVIDENCE WATER SUPPLY DB 67, PG 365
AP 1 LOT 89 N/F CITY OF PROVIDENCE WATER SUPPLY DB 67 PG 365
AP 1 LOT 104 N/F TIVEY, BERTRAM J. JR.
AP 1 LOT 94 N/F TIVEY, BERTRAM J. JR.
AP 1 LOT 100 N/F TIVEY, BERTRAM J. JR.
AP 1 LOT 93 N/F TIVEY, BERTRAM J. JR.
AP 1 LOT 504 N/F BERTRAM J. TIVEY, JR. ET UX & MARIE FRANCES
AP 1 LOT 83 N/F TIVEY, BERTRAM J. JR. & TIVEY, FRANCES MARIE TE
AP 1 LOT 528 N/F COFFUA, CHRISTOPHER J. & MELINDA M. TIVEY-COFFUA TE
AP 1 LOT 528 N/F BERTRAM J. TIVEY, JR. DB 53 PG 272
AP 1 LOT 328 N/F CITY OF PROVIDENCE
AP 1 LOT 330 N/F TIVEY, BERTRAM J. JR. & TIVEY, FRANCES MARIE TE
AP 1 LOT 325 N/F CITY OF PROVIDENCE
AP 1 LOT 326 N/F CITY OF PROVIDENCE
AP 1 LOT 327 N/F CITY OF PROVIDENCE
AP 20 LOT 250 N/F DIMARTINO, MICHAEL A. ET UX & THERESA
AP 20 LOT 235 N/F GUSTI, CONCHETTA
AP 20 LOT 275 N/F E.W. CERIO BUILDING CO.
AP 20 LOT 260 N/F ESTATE OF ALBERT NOTARIANNI & ESTATE OF LUCILLE NOTARANNI, JT.
AP 20 LOT 282 N/F E. W. CERIO BUILDING CO.
AP 20 LOT 290 N/F RICHARD, P. & GAIL S. SYLVIA
AP 20 LOT 292 N/F CITY OF PROVIDENCE
AP 20 LOT 297 N/F SYLVIA, RICHARD P. & GAIL S. SYLVIA ET
AP 20 LOT 262 N/F CITY OF PROVIDENCE
THE TOWN OF COVENTRY AP 104 LOT 22 N/F MARK S. & HEATHER J. MCKAIG
THE TOWN OF COVENTRY AP 104 LOT 21 N/F VALENTINO JR. & LISA FARAONE
THE TOWN OF COVENTRY AP 104 LOT 20 N/F MACARTNEY, EILEEN (LIFE ESTATE), PARENTEAU, ROGER L & CHRISTINE S.
THE TOWN OF COVENTRY AP 104 LOT 19 N/F CHARBONNEAU, CHRISTINE L. & RENE G.
#270
#260
#67
#65
#16
#22
#18
#20
#15
#14
#12
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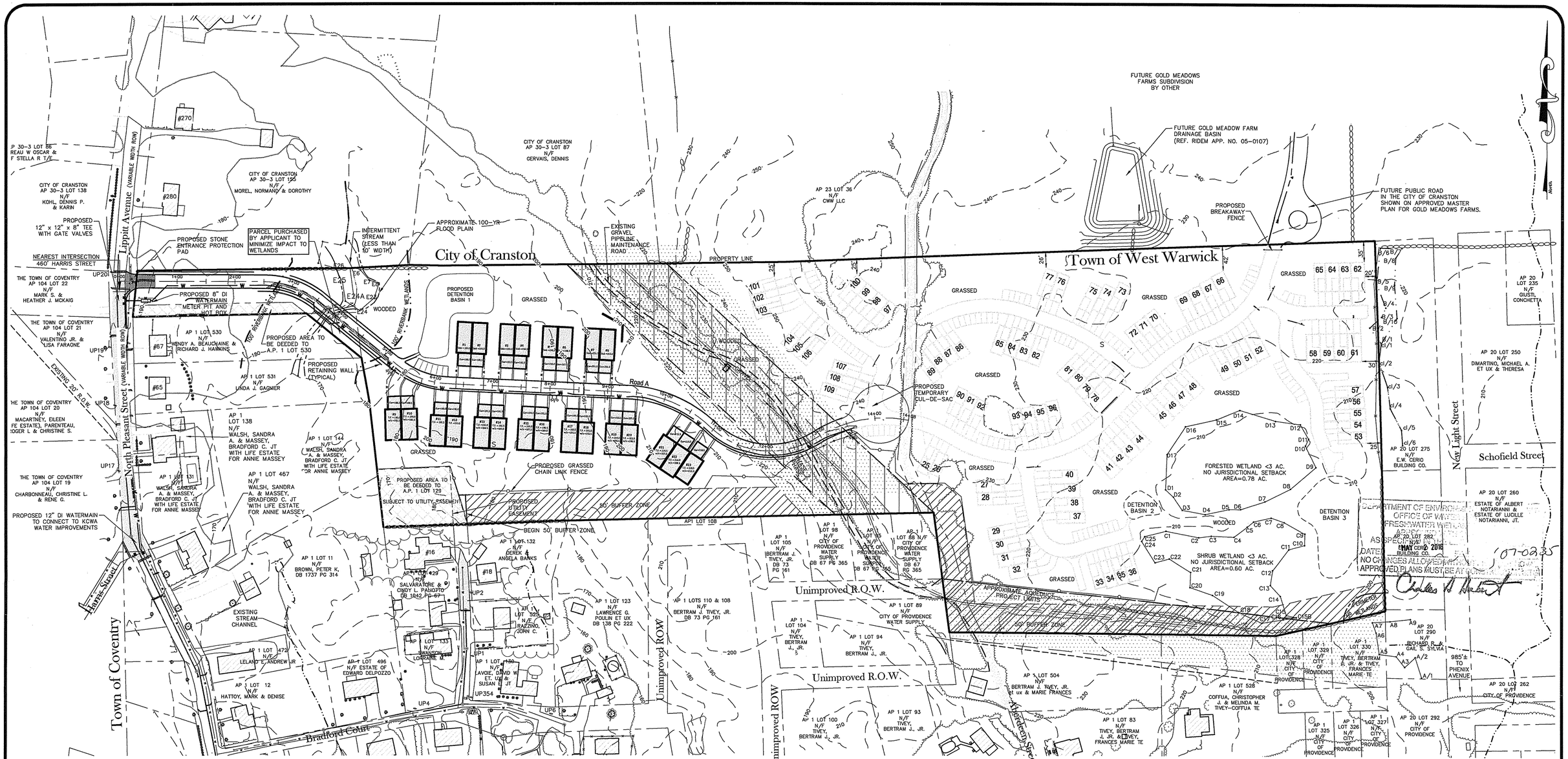

GENERAL NOTES

1. THE PROPOSED CONDOMINIUM DEVELOPMENT IS TO BE SERVICED BY A PRIVATE ROADWAY AND DRAINAGE TO BE MAINTAINED BY A CONDOMINIUM ASSOCIATION (C.A.)
2. THE PROPOSED CONDOMINIUMS ARE TO BE SERVICED BY PUBLIC SEWERS THAT WILL CONNECT TO THE WEST WARWICK REGIONAL WASTEWATER TREATMENT FACILITY. THERE ARE BOTH GRAVITY AND LOW-PRESSURE SEWERS PROPOSED ON SITE.
3. THE PROPOSED CONDOMINIUMS WILL BE SERVICED BY PUBLIC WATER UNDER JURISDICTION OF THE KENT COUNTY WATER AUTHORITY. THE WATERMAIN IS PRIVATELY MAINTAINED WITHIN THE DEVELOPMENT.
4. THE DRAINAGE SYSTEM IS DESIGNED TO MEET THE TOWN OF WEST WARWICK LAND DEVELOPMENT REGULATIONS WITH THE USE OF CATCH BASINS, CULVERTS AND DRAINAGE DETENTION BASINS. THE DRAINAGE BASINS ARE SIZED TO CONTROL THE DISCHARGE OF STORMWATER TO LEVELS WHICH PRESENTLY EXIST FOR THE 2 -100 FREQUENCY YEAR STORM EVENTS. THE STORMWATER MANAGEMENT MEETS THE BEST MANAGEMENT PRACTICES OF RIDEM.
5. WETLANDS ON SITE HAVE BEEN DELINEATED BY NATURAL RESOURCE SERVICES, INC. P.O. BOX 311, HARRISVILLE, RI 02830 AND HAVE BEEN LOCATED ONSITE BY DIPRETE ENGINEERING ASSOCIATES, INC.. THE WETLAND EDGE HAS BEEN VERIFIED BY RIDEM FRESHWATER WETLANDS UNDER APPLICATION NO. 05-0388 DATED OCTOBER 13, 2005.
6. THE SITE IS PROPOSED IN TWO PHASES.
   PHASE 1 LOTS 1-23.
   PHASE 2 LOTS 25-109
7. THE UNIT FOOTPRINT, SIZES AND DESIGN, SHOWN ARE SCHEMATIC ONLY. THE ACTUAL UNIT PLANS, AND DESIGNS ARE TO BE SUBMITTED TO THE BUILDING INSPECTOR AT THE TIME OF EACH BUILDING PERMIT APPLICATION. IN NO EVENT SHALL THERE BE MORE THAN 123 UNITS.
8. THE FIFTY(50) FOOT "NO CUT BUFFER" SHOWN ON THIS PLAN SHALL BE MAINTAINED IN ACCORDANCE WITH THE RECORDED BUFFER DOCUMENT. ANY ALTERATION TOT THE 50' "NO CUT BUFFER" SHALL BE APPROPRIATELY RESTORED.
9. THE CONTRACTOR IS RESPONSIBLE FOR DETERMINING FINISH GRADING AND DRAINAGE AROUND THE BUILDINGS TO ENSURE SURFACE WATER AND/OR GROUND WATER ARE DIRECTED AWAY FROM THE STRUCTURE. THIS PLAN SHOWS GENERAL GRADING ONLY AND ADDITIONAL DETAIL IS LIKELY TO BE REQUIRED AROUND THE BUILDING.
10. THE CONTRACTOR SHALL COORDINATE WITH ALL OF THE APPROPRIATE UTILITY COMPANIES FOR AGREEMENTS TO SERVICE THE PROPOSED BUILDING. THIS SHALL BE DONE PRIOR TO CONSTRUCTION. NO REPRESENTATIONS ARE MADE BY DEA THAT UTILITY SERVICE IS AVAILABLE.
11. ALL EXISTING UTILITIES SHOWN ARE FROM VISIBLE INFORMATION, DRAWINGS BY OTHERS, OR INFORMATION PROVIDED TO DEA AND ARE SUBJECT TO CHANGE. NO ONE SHOULD RELY ON THE UTILITY LOCATIONS SHOWN FOR CONSTRUCTION AND DIG SAFE SHOULD BE NOTIFIED PRIOR TO ANY WORK.
12. BASED ON THE 100-YEAR FLOOD PLAIN ANALYSIS CONDUCTED FOR THE INTERMITTENT STREAM ON THE SUBJECT PROJECT SITE, IT HAS BEEN DETERMINED THAT ALL CONSTRUCTION FOR THE PROPOSED SITE DEVELOPMENT IS ABOVE AND BEYOND THE STREAM'S 100-YEAR FLOOD PLAIN LINE AND ELEVATION, AND THE STREAM'S 100 YEARS FLOOD PLAIN IS NOT ADVERSELY IMPACTED BY THE PROPOSED DEVELOPMENT SHOWN ON THESE PLANS.

DEVELOPMENT DATA:

AREA OF SITE:	22.37 ACRES
NUMBER OF UNITS:	108 UNITS (23-PH 1, 85-PH 2)
BUILDING LOT COVERAGE:	3.13 ACRES
LENGTH OF PRIVATE DRIVE PH 1:	1,458± LINEAR FEET
AREA OF OPEN SPACE:	14.20 ACRES
PERCENT OF GREEN SPACE:	65%

WATER MAIN DATA:

OFF-SITE WATERMAIN EXTENSION:	490 LF±
OFF-SITE SERVICE TO CURB STOP:	115 LF±
PHASE 1 WATERMAIN:	1,365 LF±
PHASE 1 SERVICE TO CURB STOP:	1,035 LF±
PHASE 2 WATERMAIN:	2,830 LF±
PHASE 2 SERVICE TO CURB STOP:	1,300 LF±

PH 1 PARKING SUMMARY:

TOTAL PARKING SPACES	98 SPACES
GARAGE SPACE	46 SPACES
FRONT OF GARAGE	46 SPACES
ADDITIONAL SPACES	6 SPACES
SPACES PER UNIT	4 SPACES PER UNIT

GENERAL CONSTRUCTION NOTES

1. THE CONTRACTOR IS TO NOTIFY DIG SAFE PRIOR TO THE START OF CONSTRUCTION.
2. THE CONTRACTOR IS TO SUBMIT A CONSTRUCTION TRAFFIC SAFETY PLAN TO THE DIRECTOR OF PUBLIC SAFETY PRIOR TO THE START OF CONSTRUCTION. APPROVAL OF SUCH PLAN IS REQUIRED.
3. NO STOCKPILING OF MATERIAL IS TO BE ALLOWED WITHIN A PUBLIC R.O.W. NO OPEN TRENCHES ARE TO BE LEFT OVERNIGHT.
4. ALL LOAM IN DISTURBED AREAS TO BE STOCKPILED FOR FUTURE USE. CUT & FILL CALCULATIONS TO BE VERIFIED BY THE CONTRACTOR.
5. CONTRACTOR TO OBTAIN ALL FEDERAL, STATE, AND MUNICIPAL APPROVALS PRIOR TO THE START OF CONSTRUCTION.
6. THE CONTRACTOR IS TO NOTIFY THE DIRECTOR OF PUBLIC WORKS, THE TOWN ENGINEER, AND R.I. DEPT. OF ENVIRONMENTAL MANAGEMENT AT LEAST 48 HOURS PRIOR TO THE START OF CONSTRUCTION.
7. ALL WORK PERFORMED HEREIN SHALL BE GOVERNED BY THE RHODE ISLAND STANDARD SPECIFICATION FOR ROAD AND BRIDGE CONSTRUCTION AND TOWN OF WEST WARWICK STANDARD SPECIFICATIONS AND DETAILS.
8. ALL EXCESS SOIL, STUMPS, TREES, ROCKS, BOULDERS, AND OTHER REFUSE, SHALL BE DISCARDED OFF SITE IN AN ACCEPTABLE MANNER AT AN APPROVED LOCATION.
9. THE SITE IS TO BE SERVICED BY PUBLIC WATER & PUBLIC SEWER.
10. THE UNITS DEPICTED ON THE SITE PLAN ARE FOR PLANNING PURPOSES ONLY. UNITS MAY BE INTERCHANGED AS MARKET CONDITIONS WARRANT.
11. UNDERGROUND UTILITIES ARE PROPOSED THROUGHOUT THE SITE.
12. ROADWAYS ARE PROPOSED WITH TWO 11' TRAVEL LANES AND CAPE COD BERM ON BOTH SIDES UNLESS NOTED OTHERWISE.
13. INSPECTIONS FOR ALL DRAINAGE, WATER, & SEWER COMPONENTS OF THE DEVELOPMENT AND ROADWAY SHALL BE CONDUCTED BY A PROFESSIONAL ENGINEER. FOLLOWING CONSTRUCTION, A PROFESSIONAL ENGINEER SHALL PROVIDE REPORTS THAT DRAINAGE AND ROADWAY COMPONENTS HAVE BEEN CONSTRUCTED IN CONFORMANCE WITH THE PROJECT SPECIFICATIONS. SUCH REPORTS SHALL BE SUBMITTED TO THE TOWN'S DEPARTMENT OF PUBLIC WORKS.
14. INSPECTIONS FOR ELECTRIC, CABLE, AND TELEPHONE UTILITIES SHALL BE COMPLETED BY THE RESPECTIVE UTILITY COMPANIES.
15. COMPACTION AND EXCAVATION EFFORTS BY THE CONTRACTOR SHALL BE MONITORED UNDER THE DIRECTION OF A PROFESSIONAL ENGINEER. THE ENGINEER SHALL CONDUCT FIELD OR LABORATORY TESTING AS NECESSARY TO DETERMINE CONFORMANCE TO SPECIFICATIONS. THESE REPORTS SHALL BE SUBMITTED TO THE TOWN'S DEPARTMENT OF PUBLIC WORKS.
16. BEFORE CONSTRUCTION, AN EXCAVATION PERMIT SHALL BE OBTAINED FOR ALL WORK IN THE TOWN RIGHT OF WAY.
17. ALL SUBDRAIN AND FOUNDATION DRAINS SHALL BE 6" PVC. THE CONTRACTOR IS TO TAKE FIELD MEASUREMENTS OF INSTALLATION WITH TIES TO ALL CLEANOUTS AND BENDS. THE AS-BUILT FIELD MEASUREMENTS ARE TO BE SKETCHED INTO A FIELD BOOK AND PROVIDED TO THE DESIGN ENGINEER FOR AS-BUILT DRAWINGS.

PHASE 1 FIRE SAFETY DATA:

1. THREE (3) FIRE HYDRANTS ARE PROPOSED.
2. REQUIRED FIRE FLOW FOR THE DEVELOPMENT IS 1,000 GPM AT 20 PSI FOR A 2 HOUR DURATION.
3. TURN AROUNDS WERE REQUESTED ON ROADS F, G & I AND WILL BE STRIPED "FIRE LANE". THE TURN AROUND DIMENSION FOR ROAD G IS 12' X 50', ROADS F & I ARE 12' x 60'.

PROPOSED PHASE 1 ROAD NAMES

ROAD A: JOE FROMM'S WAY

SCALE: 1"=80'

0 40' 80' 160'

CERTIFICATIONS:

1. THIS PLAN AND ALL IMPROVEMENTS CONFORM TO ALL STANDARDS OF THE STATE OF RHODE ISLAND AND PROVIDENCE PLANTATIONS, BOARDS OF REGISTRATION FOR PROFESSIONAL ENGINEERS AND LAND SURVEYORS.
2. THE BOUNDARY LINES AS SHOWN ON THIS PLAN CONFORM TO CLASS I STANDARD GEOMETRY; HOWEVER THE PLAN ITSELF ONLY CONFORM TO A CLASS 3 STANDARD AS ADOPTED BY THE RHODE ISLAND BOARD OF REGISTRATION FOR PROFESSIONAL LAND SURVEYORS. THIS EXISTING CONDITIONS PLAN MAY NOT BE USED FOR CONVEYANCE PURPOSES. ONLY THE FINAL PLAN APPROVED BY THE PLANNING BOARD AND SUBSEQUENTLY RECORDED MAY BE USED FOR CONVEYANCE PURPOSES

PLANNING BOARD APPROVED - WEST WARWICK, RI

CHAIRMAN:_____

DATE:_____

Final Submission

DAVID A. RUSSO
No. 14345
REGISTERED PROFESSIONAL ENGINEER
CIVIL

NO.	DATE	DESCRIPTION	BY
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OVERALL PLAN

Orchard - Phase 1

ASSESSOR'S PLAT 1 LOTS 85, 145 & 529

NORTH PLEASANT STREET, WEST WARWICK, RHODE ISLAND

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
David Fromm
PO BOX 76
BROOKFIELD, MA 01506

APRIL, 2007
DWN. BY: D.A.R.

SHEET 4 OF 19

DEPARTMENT OF ENVIRONMENTAL MANAGEMENT
OFFICE OF WATER RESOURCES
FRESHWATER WETLANDS PROGRAM
APPROVED
DATE: MAY 2 2008
NO CHANGES ALLOWED WITHOUT APPROVAL
APPROVED PLANS MUST BE AT SITE

07-0235

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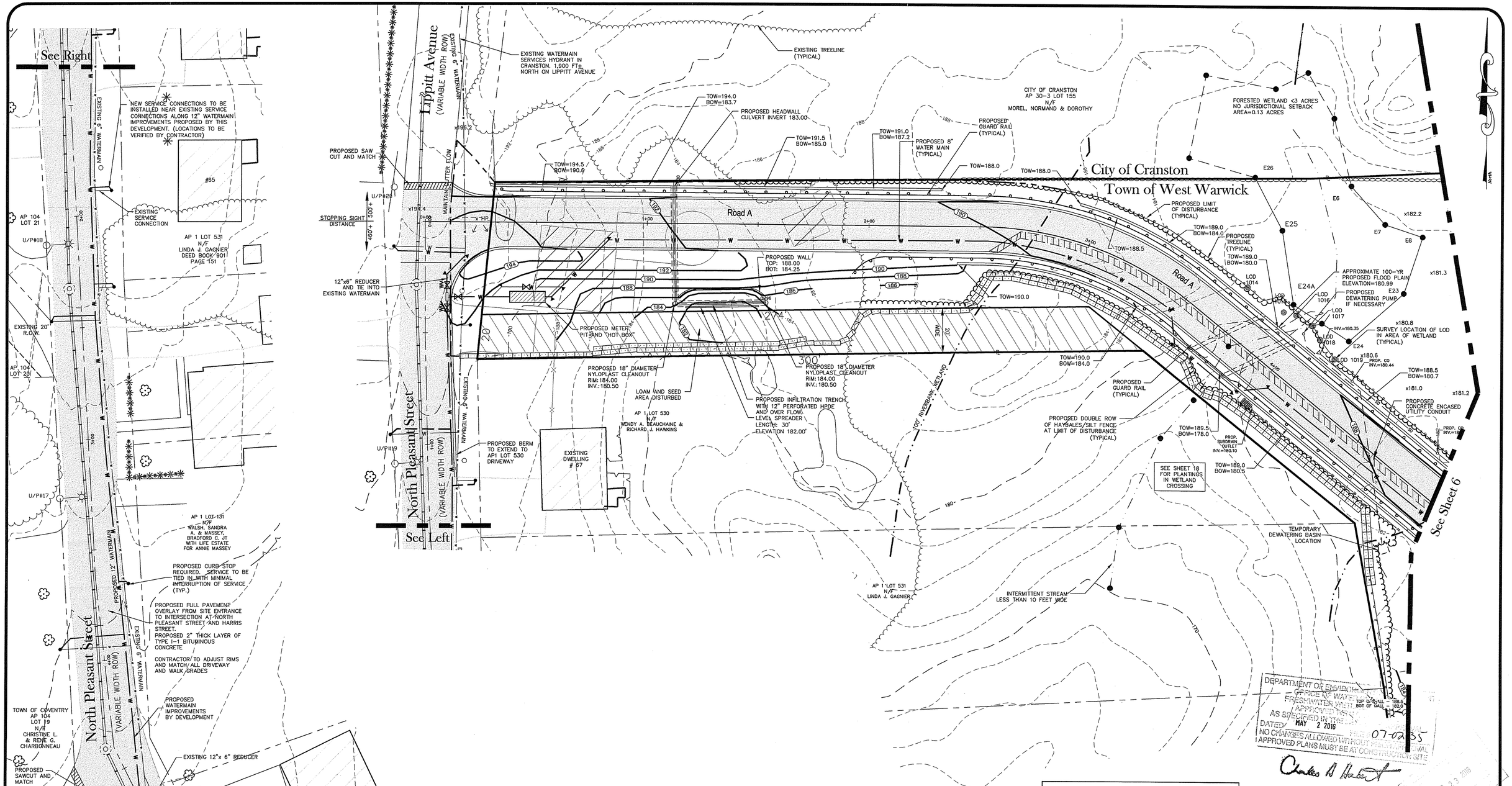
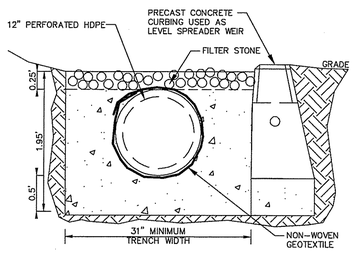


NOTES:
1. CURB SETTING SHALL BE IN ACCORDANCE WITH SECTION 905 OF THE R.I. STANDARD SPECIFICATIONS.
2. GRAVEL SHALL BE BROUGHT UP TO THE BOTTOM OF THE CURB BASE.



INFILTRATION TRENCH
NOT TO SCALE

GENERAL NOTES

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SCALE: 1"=20'
0 10' 20' 40'

PLANNING BOARD APPROVED - WEST WARWICK, RI

CHAIRMAN:_____

DATE:_____

Final Submission

DAVID A. RUSSO
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5	11-28-07	SEWER REVISIONS	J.M.D.
4	11-15-07	UTILITY REVISIONS	J.M.D.
3	10-13-07	RIDEM WETLAND COMMENTS	J.M.D.
2	8-09-07	UTILITY SUBMISSION	J.M.D.
1	6-26-07	UTILITY SUBMISSION	J.M.D.
0	5-22-07	RIDEM WETLANDS SUBMISSION	D.A.R.

GRADING PLAN

Orchard - Phase 1

ASSESSOR'S PLAT 1 LOTS 85, 145 & 529
NORTH PLEASANT STREET, WEST WARWICK, RHODE ISLAND

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
David Fromm
PO BOX 76
BROOKFIELD, MA 01506

APRIL, 2007
DWN. BY: D.A.R.

SHEET 5 OF 19

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City of Cranston

Town of West Warwick

BENCHMARK SET IN 24" TREE ELEVATION=187.58

EXISTING STONEWALL

PROPOSED 10' X 6' CLASS R-5 RIP RAP LEVEL SPREADER

PROPOSED 17' X 11' CLASS R-4 RIP RAP APRON

FES. 182.3

PROP. CO INV.=181.30

INV.=182.3

PROPOSED 2:1 SLOPE REINFORCED WITH NORTH AMERICAN GREEN C-350

PROPOSED 4' HIGH CHAINLINK FENCE

PROP. CO INV.=181.46

PROP. CO INV.=181.00

APPROXIMATE 100-YR FLOOD PLAIN DEPTH OF 1.28'

FORESTED WETLAND 3 AC. NO JURISDICTIONAL SETBACK AREA=0.13 AC.

100' RIVERBANK WETLAND

DETENTION BASIN SUBDRAIN (TYP.)

TH DP-3A GWT=0.7' L=7.0'

DETENTION BASIN #1
BOTTOM = 184.00
SUB DRAIN=181.50
SEDIMENT FOREBAY=183.50

PROPOSED DOUBLE ROW OF SILT FENCE AT LIMIT OF DISTURBANCE (TYPICAL)

BASIN 1 EMERGENCY SPILLWAY ELEVATION=187.00

PROP. CO INV.=181.26

PROP. CO INV.=180.88

SEDIMENT FOREBAY ELEVATION=183.33 MINIMUM 1,798 SF

PROP. CO INV.=181.17

TH DP-3B GWT=0.7' L=7.0'

PROP. CO INV.=180.84

PROP. CO INV.=180.92

APPROXIMATE LOCATION OF THESE 3 POLES

APPROXIMATE LOCATION OF PROPERTY LINES PROJECT LIMITS

END OF WALL = 204.0

EXISTING TREELINE (TYPICAL)

TOP OF WALL = 212.0
BOT OF WALL = 203.0

EXISTING GRAVEL PATH

TOP OF WALL = 210.0
BOT OF WALL = 203.0

PROPOSED GUARD RAIL (TYPICAL)

TOW=184.0

TOW=188.5
BOW=181.0

PROP. CO INV.=180.69

TOW=188.0
BOW=182.2

x183.02

PROP. CO INV.=181.05

PROP. 12' GATE

PROPOSED 14' x 8' CLASS R-3 RIP RAP APRON

TOW=188.5
BOW=182.8

TOW=188.0

PROP. CO INV.=180.75

PROP. CO INV.=180.82

PROPOSED 18' X 12' CLASS R-4 RIP RAP APRON

TEMPORARY DEWATERING BASIN LOCATION

TH GWT=24" L=5.0'

Road A

PROPOSED 4' HIGH CHAINLINK FENCE

6+00

8+00

10+00

See Sheet 5

See Sheet 7

#1	Slab = 191.0	Gar=190.5
#2	Slab =191.0	Gar=190.5
#3	Slab =193.0	Gar=192.5
#4	Slab =194.0	Gar=193.5
#5	Slab =196.5	Gar=196.0
#6	Slab =198.5	Gar=197.5
#7	Slab =201.5	Gar=201.0
#8	Slab =203.0	Gar=202.5
#9	T.F. = 190.0 w/o =182.5	Gar=188.5
#10	T.F. = 190.0 w/o =182.5	Gar=188.5
#11	T.F. =190.5	Gar=190.0
#12	T.F. =191.0	Gar=190.0
#13	T.F. =192.0 w/o =184.5	Gar=191.5
#14	T.F. = 192.5 w/o =185.0	Gar=191.5
#15	T.F. = 195.0 w/o =187.5	Gar=194.5
#16	T.F. = 196.5 w/o =189.0	Gar=195.5
#17	T.F. = 200.0 w/o =192.5	Gar=199.5
#18	T.F. = 201.0 w/o =193.5	Gar=200.5
#19	T.F. = 204.0 w/o =196.5	Gar=203.5
#20	T.F. = 205.5 w/o =198.0	Gar=205.0
#21	T.F. = 214.5 w/o =207.0	Gar=213.5

TOP OF WALL = 188.5
BOT OF WALL = 182.0

PROPERTY LINE

TOP OF WALL = 182.5
BOT OF WALL = 172.0

TOP OF WALL = 212.0
BOT OF WALL = 203.0

END OF WALL = 186.0

PROPOSED SILT FENCE AT LIMIT OF DISTURBANCE (TYPICAL)

END OF 6' TALL CHAIN LINK FENCE

PROPOSED TREELINE (TYPICAL)

PROP. CO INV.=181.30

PROPOSED UTILITY EASEMENT

PROPOSED AREA TO BE DEEDED TO A.P. 1 LOT 129 SUBJECT TO UTILITY EASEMENTS

12' WIDE GATE

PROPOSED LIMIT OF DISTURBANCE

50' BUFFER ZONE

APPROXIMATE LOCATION OF PROPERTY LINES PROJECT LIMITS

APPROXIMATE EASEMENT LINE

PROP. 8" WATERMAIN (TYP.)

DEPARTMENT OF ENVIRONMENTAL MANAGEMENT
OFFICE OF WATER RESOURCES
FRESHWATER WETLANDS
APPROVED WITH CONDITIONS
AS SPECIFIED IN THE LETTER OF APPROVAL
DATED MAY 2 2016 FILE # 07-0235
NO CHANGES ALLOWED WITHOUT PRIOR APPROVAL
APPROVED PLANS MUST BE AT CONSTRUCTION SITE

PLANNING BOARD APPROVED – WEST WARWICK, RI

CHAIRMAN:

DATE:

Final Submission

SCALE: 1"=20'

0 10' 20' 40'

NO.	DATE	DESCRIPTION	BY
10		FINAL SUBMISSION	
9	3-03-08	TRC / FIRE CHIEF COMMENTS	J.M.D.
8	2-01-08	PRELIMINARY SUBMISSION	J.M.D.
7	12-26-07	KCWA RE-SUBMISSION	J.M.D.
6	11-30-07	KCWA RE-SUBMISSION	J.M.D.
5	11-26-07	SEWER REVISIONS	J.M.D.
4	11-15-07	UTILITY REVISIONS	J.M.D.
3	11-13-07	RIDEM WETLAND COMMENTS	J.M.D.
2	8-09-07	UTILITY SUBMISSION	J.M.D.
1	6-26-07	UTILITY SUBMISSION	J.M.D.
0	5-22-07	RIDEM WETLANDS SUBMISSION	D.A.R.

DAVID A. RUSSO
No. 14356
REGISTERED PROFESSIONAL ENGINEER
CIVIL

GRADING PLAN

Orchard - Phase 1

ASSESSOR'S PLAT 1 LOTS 85, 145 & 529
NORTH PLEASANT STREET, WEST WARWICK, RHODE ISLAND

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
David Fromm
PO BOX 76
BROOKFIELD, MA 01506

APRIL, 2007
DWN. BY: D.A.R.

SHEET 6 OF 19

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City of Cranston
Town of West Warwick

See Sheet 6

APPROXIMATE AQUEDUCT PROJECT LIMITS

APPROXIMATE LOCATION OF THE PWSB AQUEDUCT PROJECT LIMITS

EXISTING DIRT PATHWAY (TYP.)

EXISTING GRAVEL PATHWAY

PROP. 8" WATERMAIN (TYP.)

PROPOSED SILT FENCE AT LIMIT OF DISTURBANCE

APPROXIMATE LOCATION OF PWSB AQUEDUCT

APPROXIMATE EASEMENT LINE

APPROXIMATE LOCATION OF PWSB AQUEDUCT PROJECT LIMITS

PROPOSED TREELINE (TYP.)

PROPOSED GUARD RAIL

PROPOSED CHAINLINK GATES

PROPOSED 6' CHAIN LINK FENCE

50' NO CUT BUFFER ZONE

Road A

END OF WALL - 204.0

TOP OF WALL - 212.0
BOT OF WALL - 203.0

Gar=199.5 Gar=200.5 Gar=203.5 Gar=205.0 Gar=213.5 Gar=215.5 Gar=218.0

#17 T.F. = 200.0 w/o =192.5
#18 T.F. = 201.0 w/o =193.5
#19 T.F. = 204.0 w/o =196.5
#20 T.F. = 205.5 w/o =198.0
#21 T.F. = 214.5 w/o =207.0
#22 T.F. = 216.0 w/o =208.5
#23 T.F. = 218.5 w/o =211.0

Phase 2

EXISTING ACCESS EASEMENT

EXISTING GRAVEL PATHWAY

STAKED SILTFENCE AT LIMIT OF DISTURBANCE

PROPOSED CRUSHED STONE WITHIN TEMPORARY CUL-DE-SAC

50 FT RADIUS

PROPOSED TEMPORARY END CAP IN SMH FOR TIE IN OF PHASE II SEWER

PROPOSED 8" WATERMAIN (TYP.)

TH GWT=8.0' L=9.5'
TH GWT=8.0' L=10.0'
TH GWT=8.0' L=8.0'
TH GWT=7.5'
TH GWT=4.0'
TH GWT=4.0'
TH GWT=12"
TH GWT=14"
TH GWT=24"
TH GWT=3.0' L=3.0'

SCALE: 1"=20'
0 10' 20' 40'

DEPARTMENT OF ENVIRONMENTAL MANAGEMENT
OFFICE OF WATER RESOURCES
FRESHWATER WETLANDS PROGRAM
AS SPECIFIED IN THE RIGHT TO FARM ACT
DATED MAY 2 2016
NO CHANGES ALLOWED WITHOUT PRIOR APPROVAL
APPROVED PLANS MUST BE AT CONSTRUCTION
07-0235

PLANNING BOARD APPROVED - WEST WARWICK, RI
CHAIRMAN:
DATE:

Final Submission

DAVID A. RUSSO
No. 14355
REGISTERED PROFESSIONAL ENGINEER
CIVIL

NO.	DATE	DESCRIPTION	BY
10		FINAL SUBMISSION	
9	3-03-08	TRC / FIRE CHIEF COMMENTS	J.M.D.
8	2-01-08	PRELIMINARY SUBMISSION	J.M.D.
7	12-26-07	KCWA RE-SUBMISSION	J.M.D.
6	11-30-07	KCWA RE-SUBMISSION	J.M.D.
5	11-26-07	SEWER REVISIONS	J.M.D.
4	11-15-07	UTILITY REVISIONS	J.M.D.
3	11-13-07	RIDEM WETLAND COMMENTS	J.M.D.
2	8-09-07	UTILITY SUBMISSION	J.M.D.
1	6-28-07	UTILITY SUBMISSION	J.M.D.
0	5-22-07	RIDEM WETLANDS SUBMISSION	D.A.R.

GRADING PLAN

Orchard - Phase 1

ASSESSOR'S PLAT 1 LOTS 85, 145 & 529
NORTH PLEASANT STREET, WEST WARWICK, RHODE ISLAND

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
David Fromm
PO BOX 76
BROOKFIELD, MA 01506

APRIL, 2007
DWN. BY: D.A.R.

SHEET 7 OF 19

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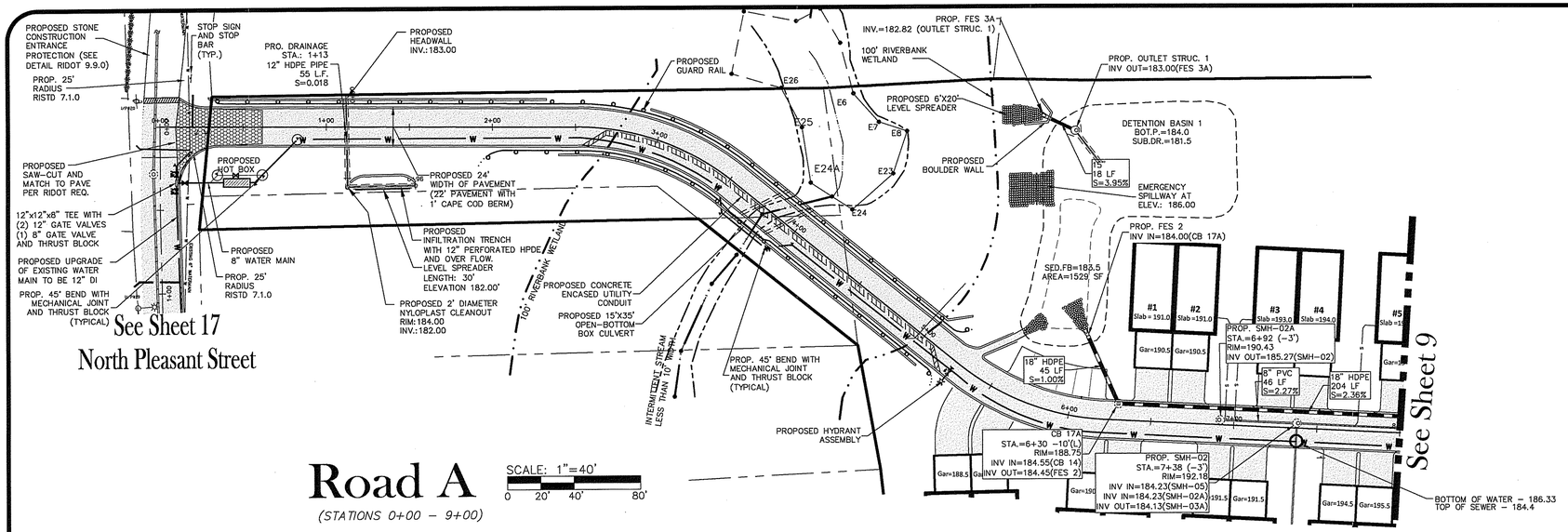


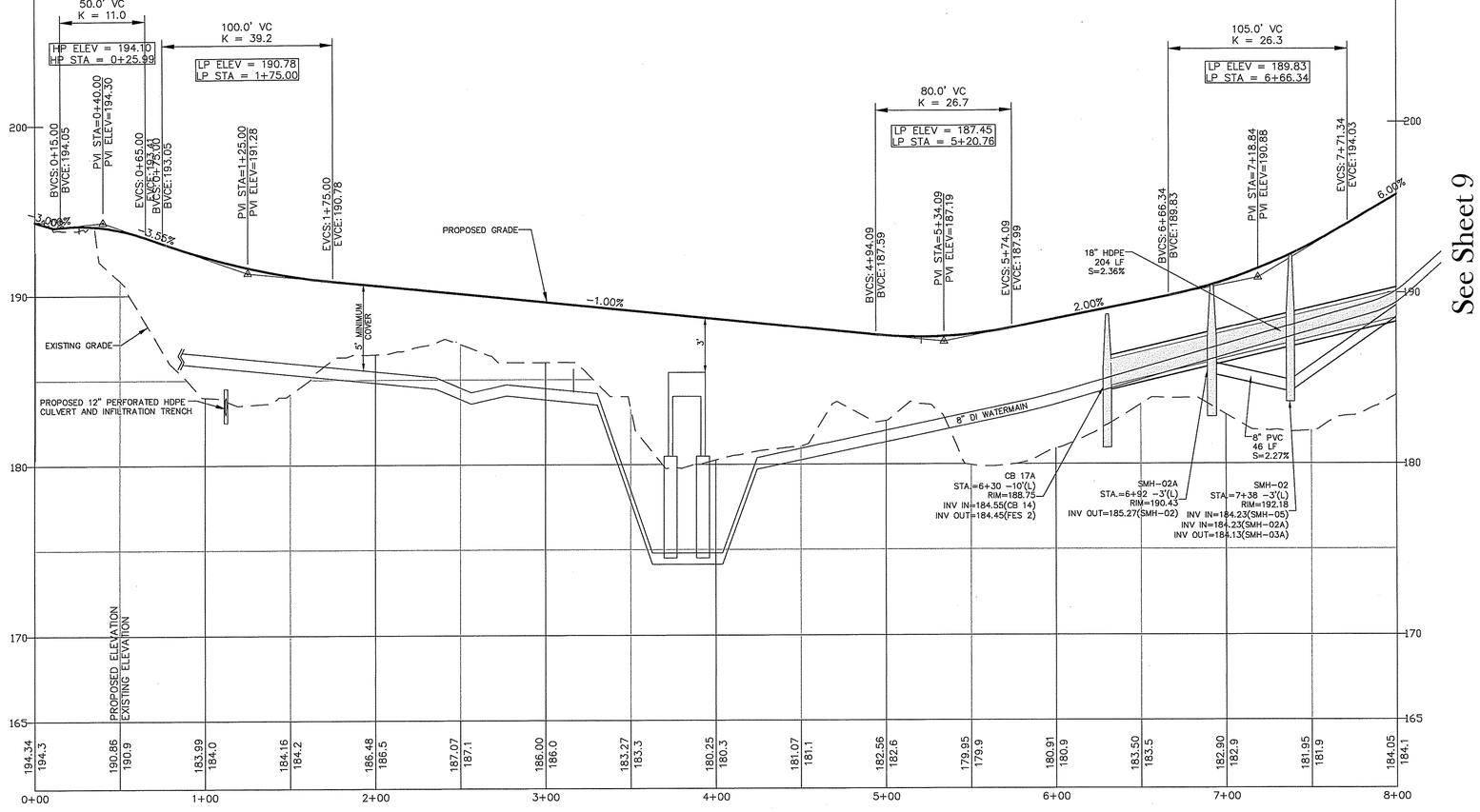
Road A

(STATIONS 0+00 - 9+00)

SCALE: 1"=40'

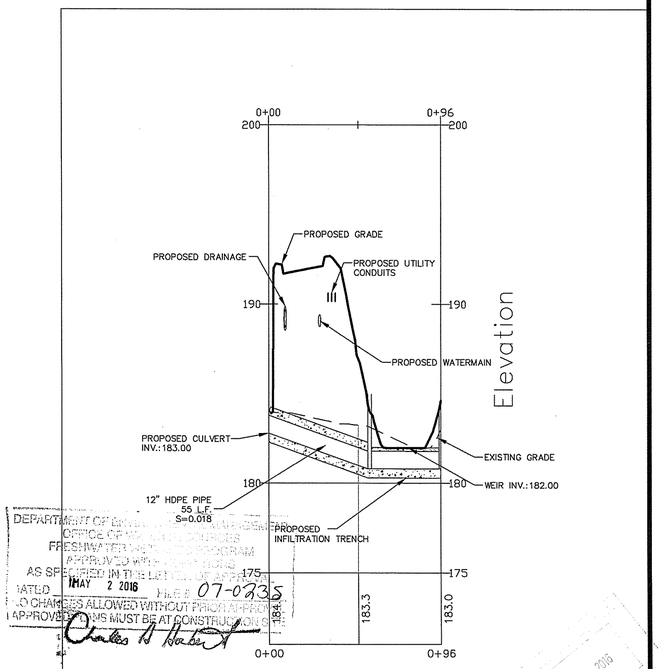
0 20' 40' 80'

Station



See Sheet 11

See Sheet 9



Proposed Cross Culvert @ Sta.: 1+13

DEPARTMENT OF ENVIRONMENTAL MANAGEMENT
OFFICE OF WATER RESOURCES
FRESHWATER WETLANDS PROGRAM
APPROVED WITH CONDITIONS
AS SPECIFIED IN THE LETTER DATED MAY 2 2016
07-0235
NO CHANGES ALLOWED WITHOUT PRIOR APPROVAL
APPROVED ITEMS MUST BE AT CONSTRUCTION SITE

RECEIVED MAY 3 2016

PLANNING BOARD APPROVED - WEST WARWICK, RI

CHAIRMAN:_____

DATE:_____

Final Submission

NOTE: ANY CATCH BASINS ALONG STEEP ROADS (6% OR GREATER) SHALL BE CONSTRUCTED WITH HIGH CAPACITY GRATES.

DAVID A. RUSSO
No. 14356
REGISTERED PROFESSIONAL ENGINEER
CIVIL

NO.	DATE	DESCRIPTION	BY
10		FINAL SUBMISSION	
9	3-03-08	TRC / FIRE CHIEF COMMENTS	J.M.D.
8	2-01-08	PRELIMINARY SUBMISSION	J.M.D.
7	12-26-07	RIDEM RE-SUBMISSION	J.M.D.
6	11-30-07	RIDEM RE-SUBMISSION	J.M.D.
5	11-26-07	SEWER REVISIONS	J.M.D.
4	11-15-07	UTILITY REVISIONS	J.M.D.
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1	6-26-07	UTILITY SUBMISSION	J.M.D.
0	5-22-07	RIDEM WETLANDS SUBMISSION	D.A.R.

PLAN & PROFILE (STA: 0+00-9+00)

Orchard - Phase 1

ASSESSOR'S PLAT 1 LOTS 85, 145 & 529
NORTH PLEASANT STREET, WEST WARWICK, RHODE ISLAND

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APRIL, 2007
DWN. BY: D.A.R.

SHEET 8 OF 19

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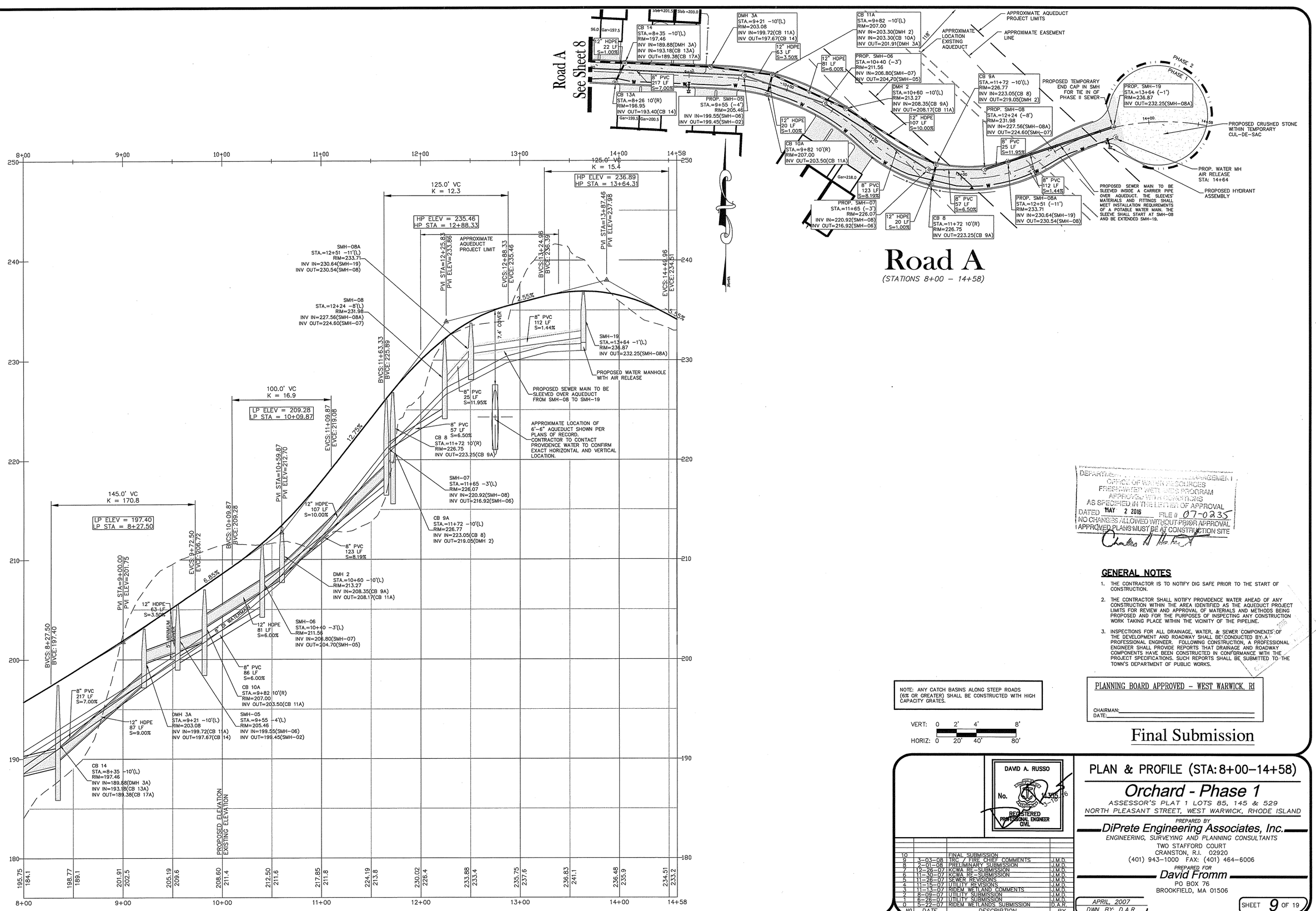
Road A
See Sheet 8
CB 14
STA.=8+35 -10'(L)
RIM=197.46
INV IN=189.88(DMH 3A)
INV IN=193.18(CB 13A)
INV OUT=189.38(CB 17A)
12" HDPE
22 LF
S=1.00%
CB 13A
STA.=8+26 10'(R)
RIM=196.95
INV OUT=193.40(CB 14)
8" PVC
217 LF
S=7.00%
PROP. SMH-05
STA.=9+55 (-4')
RIM=205.46
INV IN=199.55(SMH-06)
INV OUT=199.45(SMH-02)
DMH 3A
STA.=9+21 -10'(L)
RIM=203.08
INV IN=199.72(CB 11A)
INV OUT=197.67(CB 14)
12" HDPE
63 LF
S=3.50%
12" HDPE
81 LF
S=6.00%
CB 11A
STA.=9+82 -10'(L)
RIM=207.00
INV IN=203.30(DMH 2)
INV IN=203.30(CB 10A)
INV OUT=201.91(DMH 3A)
PROP. SMH-06
STA.=10+40 (-3')
RIM=211.56
INV IN=206.80(SMH-07)
INV OUT=204.70(SMH-05)
DMH 2
STA.=10+60 -10'(L)
RIM=213.27
INV IN=208.35(CB 9A)
INV OUT=208.17(CB 11A)
12" HDPE
107 LF
S=10.00%
12" HDPE
20 LF
S=1.00%
CB 10A
STA.=9+82 10'(R)
RIM=207.00
INV OUT=203.50(CB 11A)
8" PVC
123 LF
S=8.19%
PROP. SMH-07
STA.=11+65 (-3')
RIM=226.07
INV IN=220.92(SMH-08)
INV OUT=216.92(SMH-06)
12" HDPE
20 LF
S=1.00%
CB 8
STA.=11+72 10'(R)
RIM=226.75
INV OUT=223.25(CB 9A)
8" PVC
57 LF
S=6.50%
CB 9A
STA.=11+72 -10'(L)
RIM=226.77
INV IN=223.05(CB 8)
INV OUT=219.05(DMH 2)
PROP. SMH-08
STA.=12+24 (-8')
RIM=231.98
INV IN=227.56(SMH-08A)
INV OUT=224.60(SMH-07)
8" PVC
25 LF
S=11.95%
8" PVC
112 LF
S=1.44%
PROP. SMH-08A
STA.=12+51 (-11')
RIM=233.71
INV IN=230.64(SMH-19)
INV OUT=230.54(SMH-08)
PROP. SMH-19
STA.=13+64 (-1')
RIM=236.87
INV OUT=232.25(SMH-08A)
APPROXIMATE AQUEDUCT PROJECT LIMITS
APPROXIMATE EASEMENT LINE
APPROXIMATE LOCATION EXISTING AQUEDUCT
PROPOSED TEMPORARY END CAP IN SMH FOR TIE IN OF PHASE II SEWER
PHASE 2
PHASE 1
PROPOSED CRUSHED STONE WITHIN TEMPORARY CUL-DE-SAC
PROP. WATER MH AIR RELEASE STA: 14+64
PROPOSED HYDRANT ASSEMBLY
PROPOSED SEWER MAIN TO BE SLEEVED INSIDE A CARRIER PIPE OVER AQUEDUCT. THE SLEEVES' MATERIALS AND FITTINGS SHALL MEET INSTALLATION REQUIREMENTS OF A POTABLE WATER MAIN. THE SLEEVE SHALL START AT SMH-08 AND BE EXTENDED SMH-19.
Road A
(STATIONS 8+00 - 14+58)
See Sheet 8
8+00
9+00
10+00
11+00
12+00
13+00
14+00
14+58
125.0' VC
K = 15.4
HP ELEV = 236.89
HP STA = 13+64.31
125.0' VC
K = 12.3
HP ELEV = 235.46
HP STA = 12+88.33
APPROXIMATE AQUEDUCT PROJECT LIMIT
100.0' VC
K = 16.9
LP ELEV = 209.28
LP STA = 10+09.87
145.0' VC
K = 170.8
LP ELEV = 197.40
LP STA = 8+27.50
SMH-08A
STA.=12+51 -11'(L)
RIM=233.71
INV IN=230.64(SMH-19)
INV OUT=230.54(SMH-08)
SMH-08
STA.=12+24 -8'(L)
RIM=231.98
INV IN=227.56(SMH-08A)
INV OUT=224.60(SMH-07)
SMH-19
STA.=13+64 -1'(L)
RIM=236.87
INV OUT=232.25(SMH-08A)
PROPOSED WATER MANHOLE WITH AIR RELEASE
PROPOSED SEWER MAIN TO BE SLEEVED OVER AQUEDUCT FROM SMH-08 TO SMH-19
APPROXIMATE LOCATION OF 6'-6" AQUEDUCT SHOWN PER PLANS OF RECORD. CONTRACTOR TO CONTACT PROVIDENCE WATER TO CONFIRM EXACT HORIZONTAL AND VERTICAL LOCATION.
8" PVC
112 LF
S=1.44%
8" PVC
25 LF
S=11.95%
8" PVC
57 LF
S=6.50%
CB 8
STA.=11+72 10'(R)
RIM=226.75
INV OUT=223.25(CB 9A)
SMH-07
STA.=11+65 -3'(L)
RIM=226.07
INV IN=220.92(SMH-08)
INV OUT=216.92(SMH-06)
CB 9A
STA.=11+72 -10'(L)
RIM=226.77
INV IN=223.05(CB 8)
INV OUT=219.05(DMH 2)
12" HDPE
107 LF
S=10.00%
8" PVC
123 LF
S=8.19%
DMH 2
STA.=10+60 -10'(L)
RIM=213.27
INV IN=208.35(CB 9A)
INV OUT=208.17(CB 11A)
SMH-06
STA.=10+40 -3'(L)
RIM=211.56
INV IN=206.80(SMH-07)
INV OUT=204.70(SMH-05)
12" HDPE
81 LF
S=6.00%
8" PVC
86 LF
S=6.00%
CB 10A
STA.=9+82 10'(R)
RIM=207.00
INV OUT=203.50(CB 11A)
8" PVC
217 LF
S=7.00%
12" HDPE
87 LF
S=9.00%
DMH 3A
STA.=9+21 -10'(L)
RIM=203.08
INV IN=199.72(CB 11A)
INV OUT=197.67(CB 14)
SMH-05
STA.=9+55 -4'(L)
RIM=205.46
INV IN=199.55(SMH-06)
INV OUT=199.45(SMH-02)
CB 14
STA.=8+35 -10'(L)
RIM=197.46
INV IN=189.88(DMH 3A)
INV IN=193.18(CB 13A)
INV OUT=189.38(CB 17A)
12" HDPE
63 LF
S=3.50%
8" DI WATERLINE
5' MINIMUM COVER
7.4' COVER
2.55%
12.75%
6.85%
6.35%
BVCS:11+63.33
BVCE:225.89
EVCS:11+09.87
EVCE:219.08
PVI STA=10+59.87
PVI ELEV=212.70
BVCS:10+09.87
BVCE:209.28
EVCS:9+72.50
EVCE:206.72
PVI STA=9+00.00
PVI ELEV=201.75
BVCS:8+27.50
BVCE:197.40
PVI STA=12+25.83
PVI ELEV=233.86
EVCS:12+88.33
EVCE:235.46
BVCS:13+24.96
BVCE:236.39
PVI STA=13+87.46
PVI ELEV=237.98
EVCS:14+49.96
EVCE:234.51
PROPOSED ELEVATION
EXISTING ELEVATION
195.75 184.1
198.77 189.1
201.91 202.5
205.19 209.6
208.60 211.4
212.50 211.6
217.85 211.8
224.19 213.8
230.02 226.4
233.88 233.4
235.75 237.6
236.83 241.1
236.48 235.9
234.51 233.2
North
DEPARTMENT OF ENVIRONMENTAL MANAGEMENT
OFFICE OF WATER RESOURCES
FRESHWATER WETLANDS PROGRAM
APPROVED WITH CONDITIONS
AS SPECIFIED IN THE LETTER OF APPROVAL
DATED MAY 2 2016 FILE # 07-0235
NO CHANGES ALLOWED WITHOUT PRIOR APPROVAL
APPROVED PLANS MUST BE AT CONSTRUCTION SITE
GENERAL NOTES
1. THE CONTRACTOR IS TO NOTIFY DIG SAFE PRIOR TO THE START OF CONSTRUCTION.
2. THE CONTRACTOR SHALL NOTIFY PROVIDENCE WATER AHEAD OF ANY CONSTRUCTION WITHIN THE AREA IDENTIFIED AS THE AQUEDUCT PROJECT LIMITS FOR REVIEW AND APPROVAL OF MATERIALS AND METHODS BEING PROPOSED AND FOR THE PURPOSES OF INSPECTING ANY CONSTRUCTION WORK TAKING PLACE WITHIN THE VICINITY OF THE PIPELINE.
3. INSPECTIONS FOR ALL DRAINAGE, WATER, & SEWER COMPONENTS OF THE DEVELOPMENT AND ROADWAY SHALL BE CONDUCTED BY A PROFESSIONAL ENGINEER. FOLLOWING CONSTRUCTION, A PROFESSIONAL ENGINEER SHALL PROVIDE REPORTS THAT DRAINAGE AND ROADWAY COMPONENTS HAVE BEEN CONSTRUCTED IN CONFORMANCE WITH THE PROJECT SPECIFICATIONS. SUCH REPORTS SHALL BE SUBMITTED TO THE TOWN'S DEPARTMENT OF PUBLIC WORKS.
NOTE: ANY CATCH BASINS ALONG STEEP ROADS (6% OR GREATER) SHALL BE CONSTRUCTED WITH HIGH CAPACITY GRATES.
VERT: 0 2' 4' 8'
HORIZ: 0 20' 40' 80'
PLANNING BOARD APPROVED - WEST WARWICK, RI
CHAIRMAN:
DATE:
Final Submission
DAVID A. RUSSO
No. 14395
REGISTERED PROFESSIONAL ENGINEER
CIVIL
PLAN & PROFILE (STA: 8+00-14+58)
Orchard - Phase 1
ASSESSOR'S PLAT 1 LOTS 85, 145 & 529
NORTH PLEASANT STREET, WEST WARWICK, RHODE ISLAND
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
David Fromm
PO BOX 76
BROOKFIELD, MA 01506
APRIL, 2007
DWN. BY: D.A.R.
SHEET 9 OF 19
NO. DATE DESCRIPTION BY
10 FINAL SUBMISSION
9 5-03-08 TRC, FIRE CHIEF COMMENTS J.M.D.
8 2-01-08 PRELIMINARY SUBMISSION J.M.D.
7 12-26-07 KCWA RE-SUBMISSION J.M.D.
6 11-30-07 KCWA RE-SUBMISSION J.M.D.
5 11-26-07 SEWER REVISIONS J.M.D.
4 11-15-07 UTILITY REVISIONS J.M.D.
3 11-13-07 RIDEM WETLAND COMMENTS J.M.D.
2 8-09-07 UTILITY SUBMISSION J.M.D.
1 6-26-07 UTILITY SUBMISSION J.M.D.
0 5-22-07 RIDEM WETLANDS SUBMISSION D.A.R.
Final Submission
DEA Job No. 0351-003 Copyright 2016 by DiPrete Engineering Associates, Inc.
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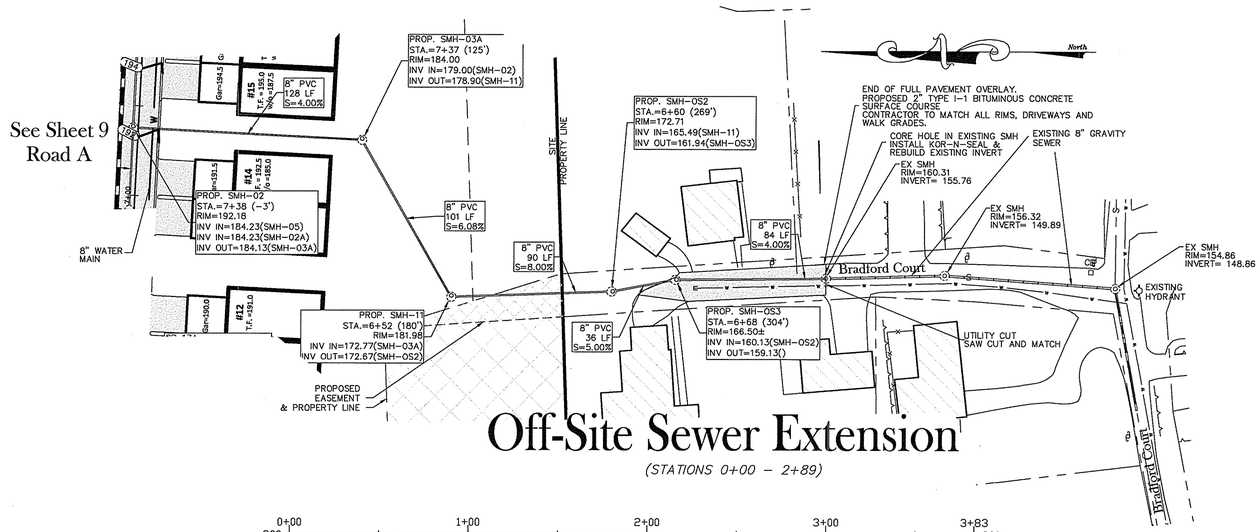
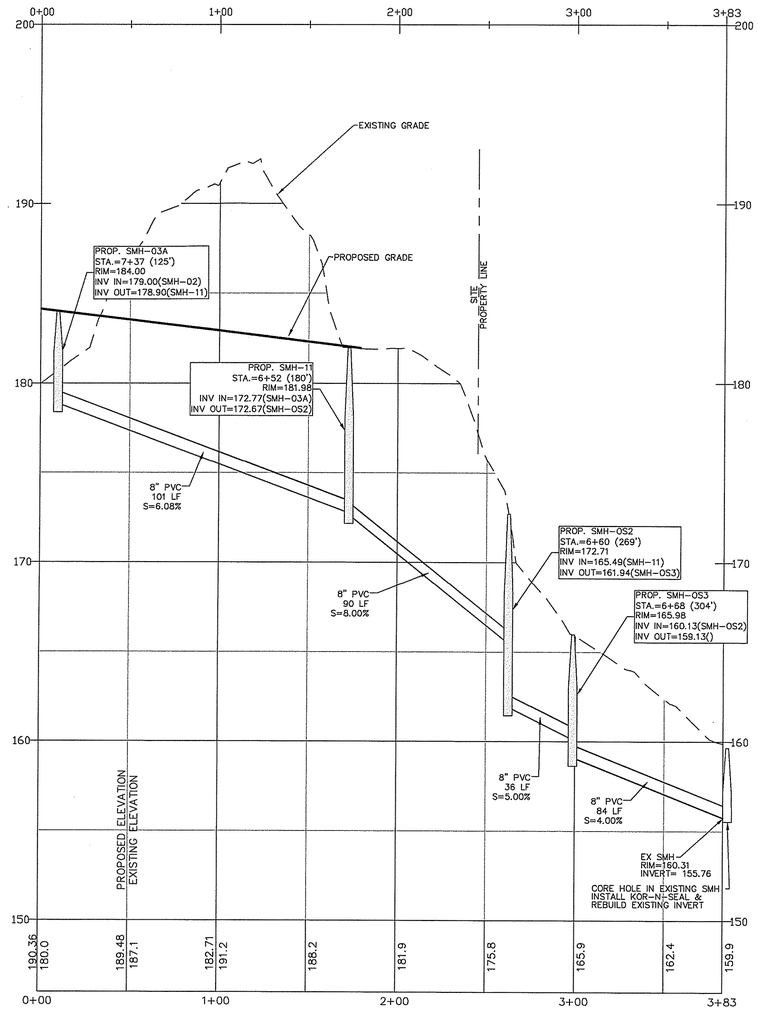


Off-Site Sewer Extension

(STATIONS 0+00 – 2+89)



VERT: 0 2' 4' 8'

HORIZ: 0 20' 40' 80'

DEPARTMENT OF ENVIRONMENTAL MANAGEMENT
OFFICE OF WATER RESOURCES
FRESHWATER WETLANDS PROGRAM
APPROVED WITH CONDITIONS
AS SPECIFIED IN THE LETTER OF APPROVAL
DATED: MAY 2 2016 FILE # 07-0235
NO CHANGES ALLOWED WITHOUT PRIOR APPROVAL
APPROVED PLANS MUST BE AT CONSTRUCTION SITE

RECEIVED
MAR 23 2016

PLANNING BOARD APPROVED – WEST WARWICK, RI

CHAIRMAN:_____
DATE:_____

Final Submission

DAVID A. RUSSO
No. 14355
REGISTERED PROFESSIONAL ENGINEER
CIVIL

NO.	DATE	DESCRIPTION	BY
10		FINAL SUBMISSION	
9	3-03-08	DEM / CRMC COMMENTS	J.M.D.
8	2-01-08	PRELIMINARY SUBMISSION	J.M.D.
7	12-26-07	KCWA RE-SUBMISSION	J.M.D.
6	11-30-07	KCWA RE-SUBMISSION	J.M.D.
5	11-26-07	SEWER REVISIONS	J.M.D.
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2	8-09-07	UTILITY SUBMISSION	J.M.D.
1	6-26-07	UTILITY SUBMISSION	J.M.D.
0	5-22-07	RIDEM WETLANDS SUBMISSION	D.A.R.

PLAN & PROFILE (OFFSITE SEWER PROFILE)

Orchard - Phase 1

ASSESSOR'S PLAT 1 LOTS 85, 145 & 529
NORTH PLEASANT STREET, WEST WARWICK, RHODE ISLAND

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
David Fromm
PO BOX 76
BROOKFIELD, MA 01506

APRIL, 2007
DWN. BY: D.A.R.

SHEET 10 OF 19

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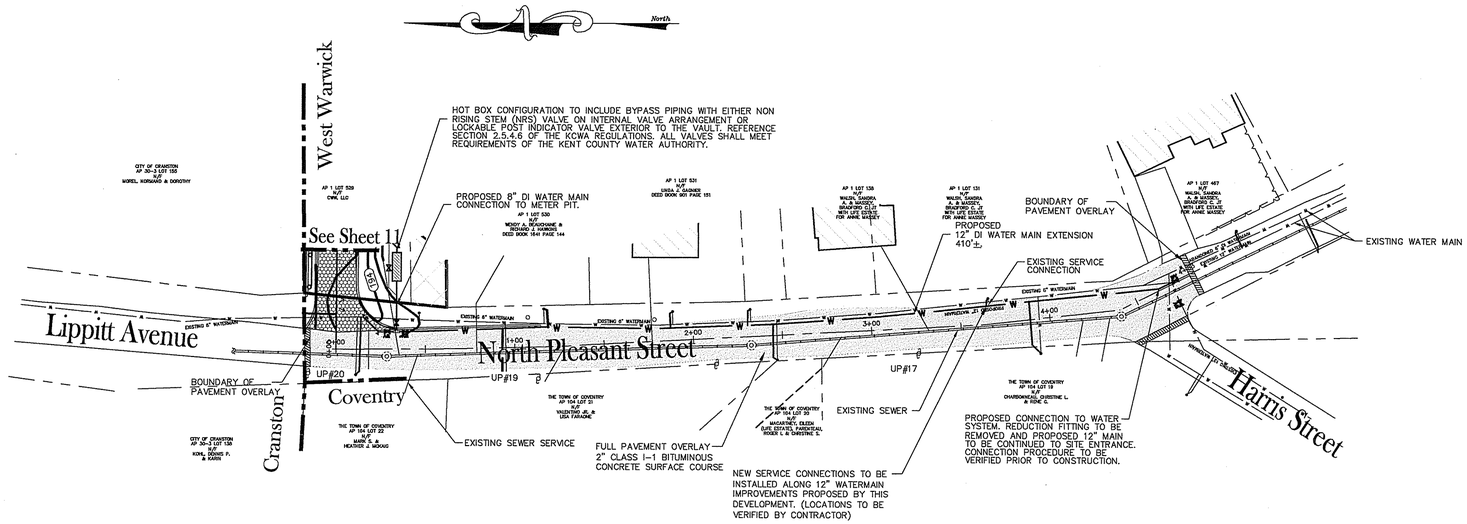
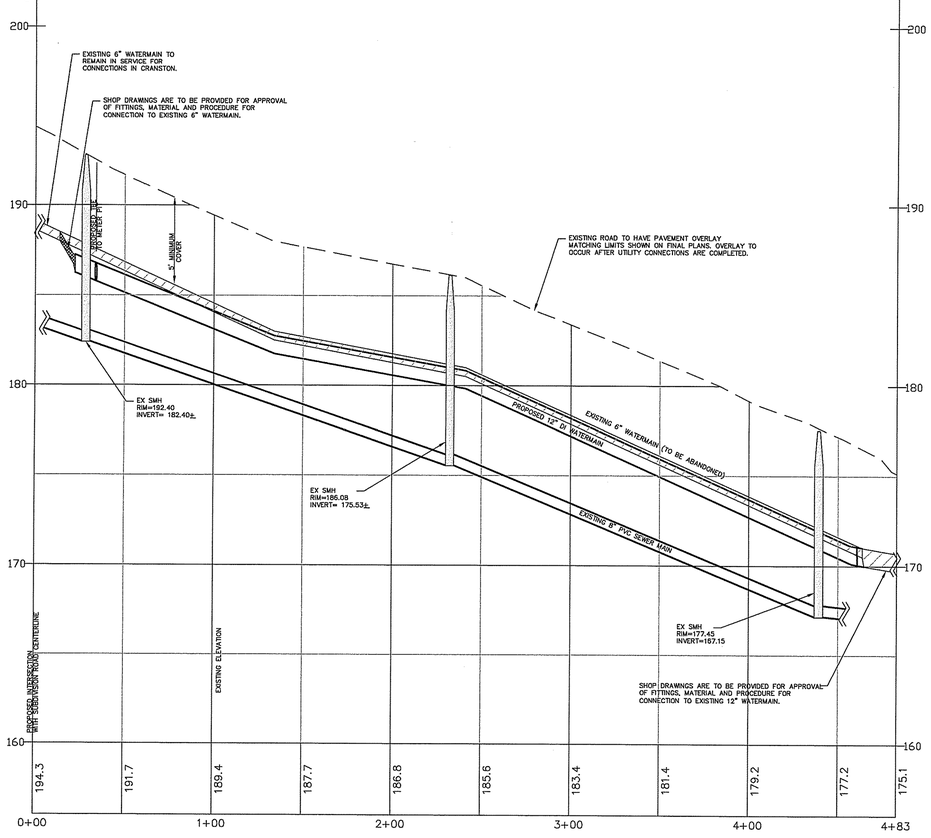


North Pleasant Street

(STATIONS 0+00 – END)

VERT: 0 2' 4' 8'

HORIZ: 0 20' 40' 80'



GENERAL NOTES

1. CONTRACTOR SHALL PROVIDE SHOP DRAWINGS FOR TEMPORARY WATER SERVICE DURING WATERMAIN CONSTRUCTION. NO INTERRUPTION IN SERVICE IS PROPOSED AS PART OF THIS APPROVAL.
2. ALL EXISTING UTILITIES SHOWN ARE FROM VISIBLE INFORMATION, DRAWINGS BY OTHERS, OR INFORMATION PROVIDED TO DEA AND ARE SUBJECT TO CHANGE. NO ONE SHOULD RELY ON THE UTILITY LOCATIONS SHOWN FOR CONSTRUCTION AND DIG SAFE SHOULD BE NOTIFIED PRIOR TO ANY WORK.
3. CONTRACTOR TO OBTAIN ALL FEDERAL, STATE, AND MUNICIPAL APPROVALS PRIOR TO THE START OF CONSTRUCTION.
4. ALL WORK PERFORMED HEREIN SHALL BE GOVERNED BY THE RHODE ISLAND STANDARD SPECIFICATION FOR ROAD AND BRIDGE CONSTRUCTION, KCWA RULES AND REGULATIONS AND TOWN OF WEST WARWICK STANDARD SPECIFICATIONS AND DETAILS.
5. THE CONTRACTOR IS TO NOTIFY DIG SAFE PRIOR TO THE START OF CONSTRUCTION.
6. THE CONTRACTOR IS TO SUBMIT A CONSTRUCTION TRAFFIC SAFETY PLAN TO THE DIRECTOR OF PUBLIC SAFETY PRIOR TO THE START OF CONSTRUCTION. APPROVAL OF SUCH PLAN IS REQUIRED.
7. BEFORE CONSTRUCTION, AN EXCAVATION PERMIT SHALL BE OBTAINED FOR ALL WORK IN THE TOWN RIGHT OF WAY.
8. NO STOCKPILING OF MATERIAL IS TO BE ALLOWED WITHIN A PUBLIC R.O.W. NO OPEN TRENCHES ARE TO BE LEFT OVERNIGHT.
9. THE CONTRACTOR IS TO NOTIFY THE DIRECTOR OF PUBLIC WORKS AND THE TOWN ENGINEER AT LEAST 48 HOURS PRIOR TO THE START OF CONSTRUCTION.
10. CONTRACTOR TO MAINTAIN EXISTING SERVICES DURING THE CONSTRUCTION OF THE PROPOSED WATERMAIN.
11. KCWA RULES AND REGULATIONS: SECTION 3.11 NOTIFICATION
    3.11.1.1 NO LESS THAN (5) WORKING DAYS PRIOR TO CONSTRUCTION COMMENCEMENT ON ANY TYPE OF SERVICE OR MAIN EXTENSION INSTALLED WITHIN THE SYSTEM.
12. INSPECTIONS FOR ALL DRAINAGE, WATER, & SEWER COMPONENTS OF THE DEVELOPMENT AND ROADWAY SHALL BE CONDUCTED BY A PROFESSIONAL ENGINEER. FOLLOWING CONSTRUCTION, A PROFESSIONAL ENGINEER SHALL PROVIDE REPORTS THAT DRAINAGE AND ROADWAY COMPONENTS HAVE BEEN CONSTRUCTED IN CONFORMANCE WITH THE PROJECT SPECIFICATIONS. SUCH REPORTS SHALL BE SUBMITTED TO THE TOWN'S DEPARTMENT OF PUBLIC WORKS.
13. CONTRACTOR TO MATCH ALL RIMS, DRIVEWAYS AND WALK GRADES.

DEPARTMENT OF ENVIRONMENTAL MANAGEMENT
OFFICE OF WATER RESOURCES
FRESHWATER WETLANDS
APPROVED WITH CONDITIONS
AS SPECIFIED IN THE LETTER OF
DATED MAY 2 2016 FILE # 07-0335
NO CHANGES ALLOWED WITHOUT PRIOR APPROVAL
APPROVED PLANS MUST BE AT CONSTRUCTION SITE
Charles A. Horbert

PLANNING BOARD APPROVED – WEST WARWICK, RI

CHAIRMAN:_____

DATE:_____

RECEIVED MAR 23 2016

Final Submission

DAVID A. RUSSO
No. 10345
REGISTERED PROFESSIONAL ENGINEER
CIVIL

NO.	DATE	DESCRIPTION	BY
10		FINAL SUBMISSION	
9	3-03-08	TRC / FIRE CHIEF COMMENTS	J.M.D.
8	2-01-08	PRELIMINARY SUBMISSION	J.M.D.
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0	5-22-07	RIDEM WETLANDS SUBMISSION	D.A.R.

PLAN & PROFILE

Orchard - Phase 1

ASSESSOR'S PLAT 1 LOTS 85, 145 & 529
NORTH PLEASANT STREET, WEST WARWICK, RHODE ISLAND

PREPARED BY
DiPrete Engineering Associates, Inc.
ENGINEERING, SURVEYING AND PLANNING CONSULTANTS
TWO STAFFORD COURT
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PREPARED FOR
David Fromm
PO BOX 76
BROOKFIELD, MA 01506

APRIL, 2007
DWN. BY: D.A.R.

SHEET 11 OF 19

DEA Job No. 0351-003 Copyright 2016 by DiPrete Engineering Associates, Inc.

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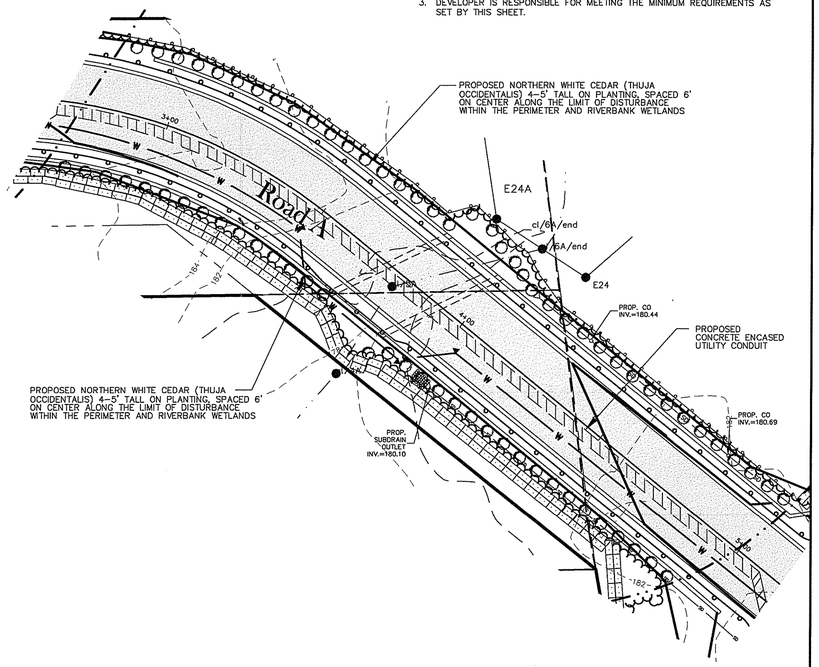
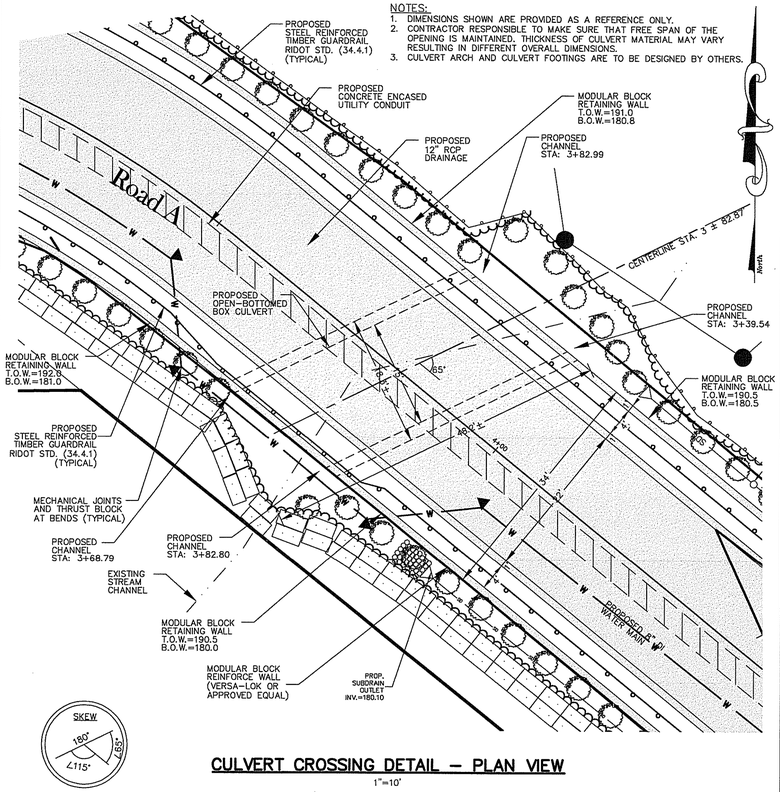
NOTES:
1. PLANTING DETAIL PROVIDED AS A REFERENCE.
2. SEE LANDSCAPE SHEETS FOR A MORE DETAILED DESCRIPTION OF PLANTINGS AND MATERIALS.
3. DEVELOPER IS RESPONSIBLE FOR MEETING THE MINIMUM REQUIREMENTS AS SET BY THIS SHEET.



CULVERT CROSSING – PLANTING DETAIL
1"=20'

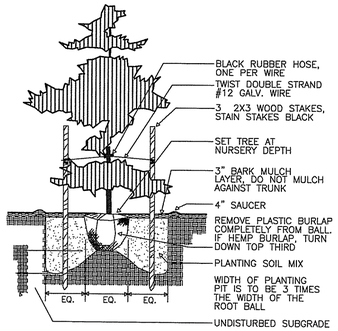
NOTES:
1. DIMENSIONS SHOWN ARE PROVIDED AS A REFERENCE ONLY.
2. CONTRACTOR RESPONSIBLE TO MAKE SURE THAT FREE SPAN OF THE OPENING IS MAINTAINED. THICKNESS OF CULVERT MATERIAL MAY VARY RESULTING IN DIFFERENT OVERALL DIMENSIONS.
3. CULVERT ARCH AND CULVERT FOOTINGS ARE TO BE DESIGNED BY OTHERS.



CULVERT CROSSING DETAIL – PLAN VIEW
1"=10'

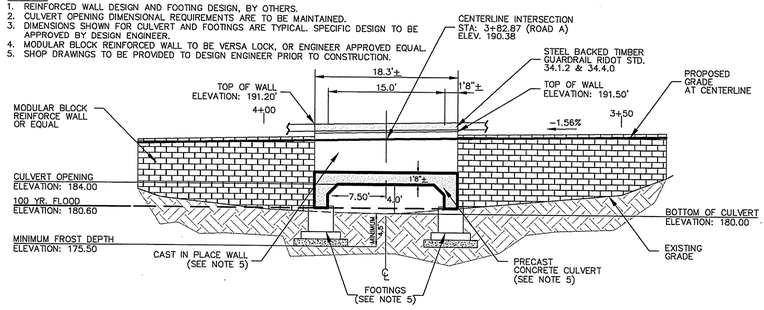
SEQUENCE OF CULVERT CONSTRUCTION

1. SURVEY AND STAKE CENTERLINE OF THE PROPOSED ROADWAY AND CULVERT CROSSING. THE DRAINAGE STRUCTURES AND PIPES, AND THE LIMIT OF DISTURBANCE.
2. 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.
3. CULVERT CROSSING WORK TO BE PERFORMED DURING THE DRY SEASON.
4. BEGIN CULVERT CROSSING WORK: UTILIZE THE EXISTING TRAILS TO ALLOW EQUIPMENT TO ACCESS UPLAND SIDE OF PROJECT. INSTALL DEWATERING PUMP UPSTREAM (IF NECESSARY). REMOVE TREES AND BRUSH WITHIN LIMIT OF CULVERT CROSSING. INSTALL 8" WATERMAIN. EXCAVATE FOR CULVERT FOOTINGS AND POUR CULVERT FOOTINGS. BACKFILL FOOTING EXCAVATION WITH EXCEPTION TO BEARING KEYWAY. PERFORM WETLAND REPLICATION WORK UNDER AND AROUND CULVERT STRUCTURE. INSTALL REINFORCED CONCRETE RETAINING WALLS. BACKFILL AROUND CULVERT STRUCTURE.
5. BEGIN ROAD, AND DRAINAGE WORK (CLEARING AND GRUBBING, EXCAVATING AND GRADING, ETC.). TOPSOIL TO BE STRIPPED AND STOCKPILED IN APPROVED AREAS. THE STOCKPILES ARE TO BE PROTECTED BY A ROW OF SEDIMENTATION BARRIER AND COVERED OR TEMPORARILY SEEDED. DIVERT ALL THE RUNOFF FROM DISTURBED AREAS TO THE PROPOSED BASINS.
6. INSTALL UTILITIES, AND DRAINAGE PIPES. IMMEDIATELY PLACE THE RIP RAP AND EROSION CONTROLS AT THE DISCHARGE POINTS AND SEED THE BASINS AND DISTURBED AREAS.
7. CLEAN CULVERT SPAN AS REQUIRED. THE TREE LIMBS, LEAVES, BOULDERS, ETC. SHALL BE REMOVED FROM THE BOTTOM OF THE CHANNEL BEFORE THE APPLICATION OF TOPSOIL. PLACE TOPSOIL IN BOTTOM OF CHANNEL AND BRING TO PERMANENT BOTTOM ELEVATION.
8. REMOVE ALL TEMPORARY SOIL EROSION AND SEDIMENTATION CONTROL MEASURES FOLLOWING VEGETATIVE ESTABLISHMENT OF ALL DISTURBED AREAS.
9. ALL WORK ON THE CULVERT CROSSING IS TO TAKE PLACE DURING PERIODS OF LOW FLOW DURING DRY SEASON.
10. CONTRACTOR TO PROVIDE SHOP DRAWING OF GEOTECHNICAL ENGINEERING ANALYSIS FOR RETAINING WALL PRIOR TO CONSTRUCTION.



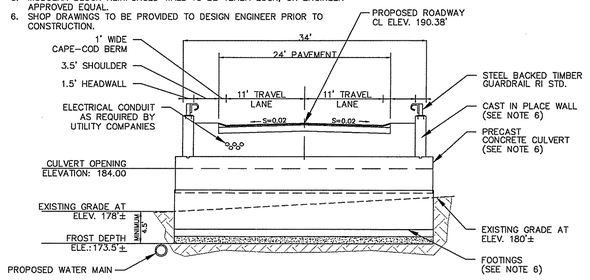
EVERGREEN TREE PLANTING DETAIL
NOT TO SCALE

NOTES:
1. REINFORCED WALL DESIGN AND FOOTING DESIGN, BY OTHERS.
2. CULVERT OPENING DIMENSIONAL REQUIREMENTS ARE TO BE MAINTAINED.
3. DIMENSIONS SHOWN FOR CULVERT AND FOOTINGS ARE TYPICAL. SPECIFIC DESIGN TO BE APPROVED BY DESIGN ENGINEER.
4. MODULAR BLOCK REINFORCED WALL TO BE VERSA LOCK, OR ENGINEER APPROVED EQUAL.
5. SHOP DRAWINGS TO BE PROVIDED TO DESIGN ENGINEER PRIOR TO CONSTRUCTION.



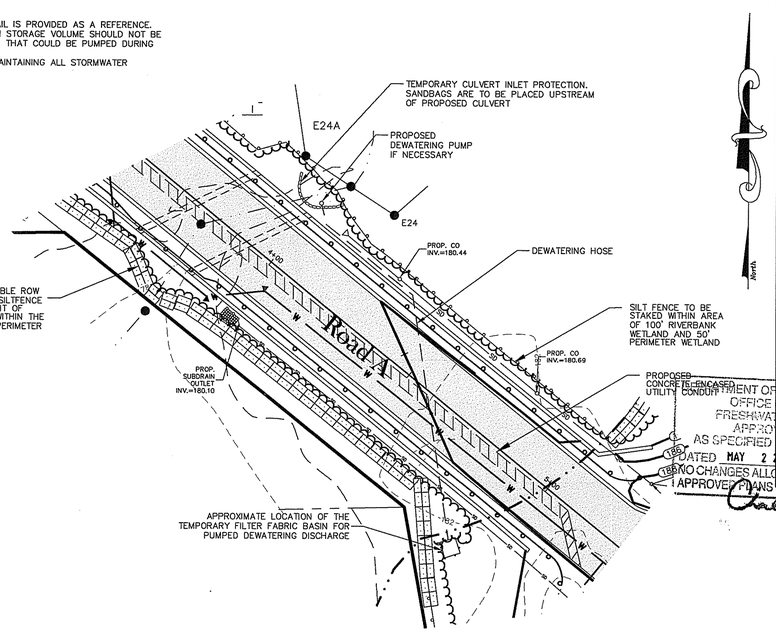
CULVERT CROSSING DETAIL – NORTH ELEVATION
1"=10' (LOOKING SOUTH)

NOTES:
1. DIMENSIONS SHOWN ARE PERPENDICULAR TO THE CENTERLINE OF THE PROPOSED ROAD.
2. REINFORCED WALL DESIGN AND FOOTING DESIGN, BY OTHERS.
3. CULVERT OPENING DIMENSIONAL REQUIREMENTS ARE TO BE MAINTAINED.
4. DIMENSIONS SHOWN FOR CULVERT AND FOOTINGS ARE TYPICAL. SPECIFIC DESIGN TO BE APPROVED BY DESIGN ENGINEER.
5. MODULAR BLOCK REINFORCED WALL TO BE VERSA LOCK, OR ENGINEER APPROVED EQUAL.
6. SHOP DRAWINGS TO BE PROVIDED TO DESIGN ENGINEER PRIOR TO CONSTRUCTION.



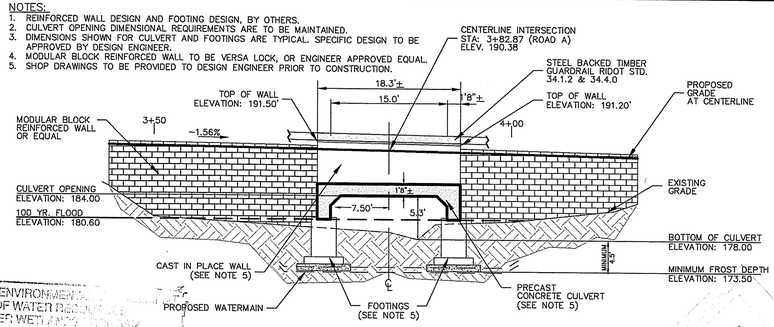
(LOOKING WEST)

NOTES:
1. THE TEMPORARY CULVERT CROSSING DETAIL IS PROVIDED AS A REFERENCE.
2. IF DEWATERING IS REQUIRED, 1. THE BASIN STORAGE VOLUME SHOULD NOT BE LESS THAT THE TOTAL VOLUME OF WATER THAT COULD BE PUMPED DURING A 4–HOUR PERIOD.
3. THE CONTRACTOR IS RESPONSIBLE FOR MAINTAINING ALL STORMWATER MEASURES.



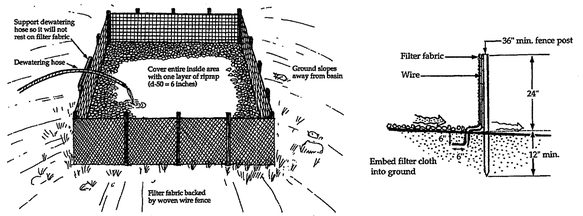
TEMPORARY CULVERT CROSSING DETAIL
1"=20'

NOTES:
1. REINFORCED WALL DESIGN AND FOOTING DESIGN, BY OTHERS.
2. CULVERT OPENING DIMENSIONAL REQUIREMENTS ARE TO BE MAINTAINED.
3. DIMENSIONS SHOWN FOR CULVERT AND FOOTINGS ARE TYPICAL. SPECIFIC DESIGN TO BE APPROVED BY DESIGN ENGINEER.
4. MODULAR BLOCK REINFORCED WALL TO BE VERSA LOCK, OR ENGINEER APPROVED EQUAL.
5. SHOP DRAWINGS TO BE PROVIDED TO DESIGN ENGINEER PRIOR TO CONSTRUCTION.

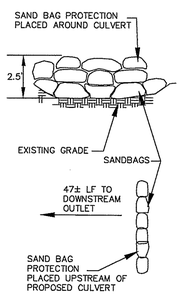


CULVERT CROSSING DETAIL – SOUTH ELEVATION
1"=10' (LOOKING NORTH)

NOTES:
1. THE BASIN STORAGE VOLUME SHOULD NOT BE LESS THAT THE TOTAL VOLUME OF WATER THAT COULD BE PUMPED DURING A 4–HOUR PERIOD.
2. FILTER FABRIC BASINS SHOULD BE CONSTRUCTED ON LEVEL OR NEARLY LEVEL GROUND.
3. THE AREA AROUND THE FILTER FABRIC BASIN MUST BE STABILIZED TO PREVENT EROSION BY WATER EXITING THE BASIN.
4. REMOVE SEDIMENT WHEN ACCUMULATION REACHES ONE–HALF THE ORIGINAL HEIGHT OF THE FILTER FABRIC.
5. THE CONTRACTOR IS RESPONSIBLE FOR MAINTAINING THE STRUCTURE IN PROPER WORKING CONDITION AS LONG AS IT IS IN PLACE.
6. FILTER FABRIC BASINS AND ACCUMULATED SEDIMENT MUST BE REMOVED WHEN THE BASINS USEFUL LIFE HAS BEEN COMPLETED. THE AREA COVERED BY THE BASIN SHALL BE SEEDED AND MULCHED IMMEDIATELY AFTER THE BASIN IS REMOVED.



FILTER FABRIC BASIN FOR PUMPED DEWATERING DISCHARGE
NOT TO SCALE



TEMPORARY CULVERT INLET PROTECTION DETAIL
1"=5'

PLANNING BOARD APPROVED – WEST WARWICK, RI

CHAIRMAN:_____

DATE:_____

DEPARTMENT OF ENVIRONMENTAL MANAGEMENT
OFFICE OF WATER RESOURCES
FRESHWATER WETLANDS PROGRAM
APPROVED WITH CONDITIONS
AS SPECIFIED IN THE LETTER OF APPROVAL
DATED MAY 2 2016 FILE # 07-0235
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APPROVED PLANS MUST BE AVAILABLE ON CONSTRUCTION SITE
Charles A. Horbert

MAY 23 2016

Final Submission

DAVID A. RUSSO
No. 14395
REGISTERED PROFESSIONAL ENGINEER
CIVIL

NO.	DATE	DESCRIPTION	BY
10		FINAL SUBMISSION	
9	3-03-08	TRC / FIRE CHIEF COMMENTS	J.M.D.
8	2-01-08	PRELIMINARY SUBMISSION	J.M.D.
7	12-26-07	KCWA RE-SUBMISSION	J.M.D.
6	11-29-07	KCWA RE-SUBMISSION	J.M.D.
5	11-28-07	SEWER REVISIONS	J.M.D.
4	11-15-07	UTILITY REVISIONS	J.M.D.
3	11-13-07	RIDEM WETLAND COMMENTS	J.M.D.
2	8-09-07	UTILITY SUBMISSION	J.M.D.
1	6-26-07	UTILITY SUBMISSION	J.M.D.
0	5-22-07	RIDEM WETLANDS SUBMISSION	D.A.R.

DETAIL SHEET

Orchard - Phase 1

ASSESSOR'S PLAT 1 LOTS 85, 145 & 529
NORTH PLEASANT STREET, WEST WARWICK, RHODE ISLAND

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

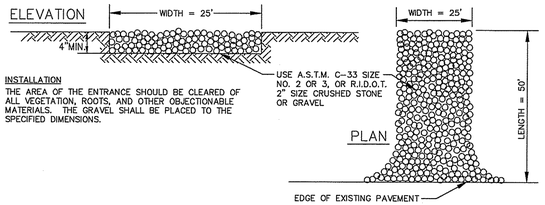
PREPARED FOR
David Fromm
PO BOX 76
BROOKFIELD, MA 01506

APRIL, 2007
DWN. BY: D.A.R.

SHEET 12 OF 19

DEA Job No. 0351–003 Copyright 2016 by DiPrete Engineering Associates, Inc.

z:\dems\projects\0351_003 hunters reserve\autocad drawing\0351-003-dsn.dwg Plotted: 3/22/2016



INSTALLATION

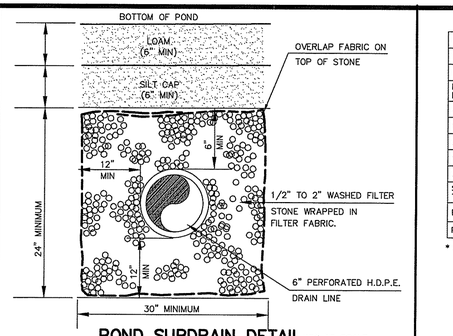
THE AREA OF THE ENTRANCE SHOULD BE CLEARED OF ALL VEGETATION, ROOTS, AND OTHER OBJECTIONABLE MATERIALS. THE GRAVEL SHALL BE PLACED TO THE SPECIFIED DIMENSIONS.

MAINTENANCE

THE ENTRANCE SHALL BE MAINTAINED TO A CONDITION WHICH WILL PREVENT TRACKING OR FLOWING OF SEDIMENTS ONTO PUBLIC RIGHT- OF-WAYS. THIS WILL REQUIRE PERIODIC TOP DRESSING WITH ADDATIONAL STONE, OR ADDITIONAL LENGTH, AS CONDITIONS DEMAND, AND REPAIR, AND/OR CLEANOUT OF ANY MEASURES USED TO TRAP SEDIMENT. ALL SEDIMENT SPILLED, DROPPED, WASHED OR TRACKED ONTO PUBLIC RIGHT-OF-WAYS MUST BE REMOVED IMMEDIATELY.

CONSTRUCTION ENTRANCE PROTECTION STONE STABILIZATION PAD

NOT TO SCALE

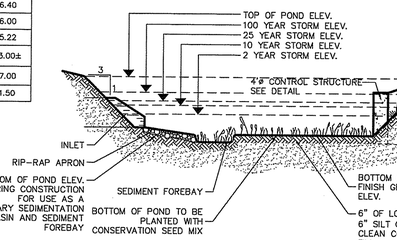


POND SUBDRAIN DETAIL

NOT TO SCALE

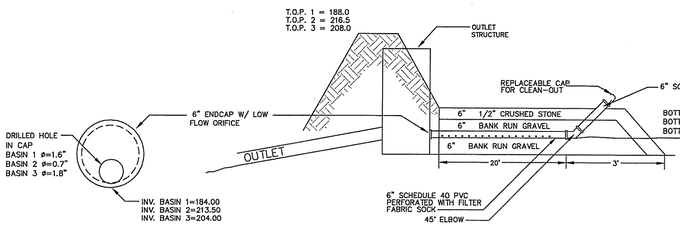
DESCRIPTION	BASIN 1
TOP OF POND ELEVATION	188.00
BOTTOM OF POND	184.00
BOTTOM OF POND ELEVATION FOR TEMP. SEDIMENTATION BASIN	183.00
SEDIMENT FOREBAY	183.33
100 YEAR STORM ELEVATION	186.94
25 YEAR STORM ELEVATION	186.40
10 YEAR STORM ELEVATION	186.00
2 YEAR STORM ELEVATION	185.22
SEASONAL HIGH GROUNDWATER TABLE ELEVATION*	183.00±
EMERGENCY OVERFLOW WEIR ELEVATION	187.00
PVC SUBDRAIN ELEVATION	181.50

* SEASONAL HIGH GROUNDWATER TABLE FOR PONDS WILL BE CONTROLLED BY A 4" PVC SUBDRAIN.



DETENTION BASIN & WATER QUALITY BASIN TYPICAL CROSS SECTION

NOT TO SCALE



CAP DETAIL

NOT TO SCALE

WATER QUALITY OUTLET

NOT TO SCALE

SEQUENCE OF CONSTRUCTION AND STAGING OF LAND DISTURBING ACTIVITIES

1. SURVEY AND STAKE CENTERLINE OF THE PROPOSED ROAD, THE DRAINAGE STRUCTURES AND PIPES, THE DETENTION PONDS, AND THE LIMIT OF SEDIMENTATION BARRIERS.
2. 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.
3. BEGIN ROAD AND DRAINAGE WORK (CLEARING AND GRUBBING, EXCAVATING AND GRADING, ETC.), TOPSOIL TO BE STRIPPED AND STOCKPILED IN APPROVED AREAS. THE STOCKPILES ARE TO BE PROTECTED BY A ROW OF SEDIMENTATION BARRIERS AND COVERED OR TEMPORARILY SEEDED. DIVERT ALL THE RUNOFF FROM DISTURBED AREAS TO THE PROPOSED BASINS.
4. BEGIN CULVERT CROSSING WORK: UTILIZE THE EXISTING GRAVEL ROAD TO ALLOW EQUIPMENT TO ACCESS UPLAND SIDE OF PROJECT. INSTALL DEWATERING PUMP UPSTREAM, ALSO INSTALL LOG AND HAY CHECK DAM. REMOVE TREES AND BRUSH WITHIN LIMIT OF CULVERT CROSSING. INSTALL 8" WATER MAIN. EXCAVATE FOR CULVERT FOOTINGS. POUR CULVERT FOOTINGS. BACKFILL THE FOOTING EXCAVATION WITH EXCEPTION TO THE BEARING KEYWAY. PERFORM WETLAND REPLICATION WORK UNDER AND AROUND THE CULVERT STRUCTURE. INSTALL REINFORCED CONCRETE RETAINING WALLS AND BACKFILL AROUND CULVERT STRUCTURE. CULVERT CROSSING IS TO BE PERFORMED DURING DRY SEASON WHEN THE STREAMS ARE DRY.
5. INSTALL UTILITIES AND DRAINAGE PIPES. IMMEDIATELY PLACE THE EROSION CONTROLS AT THE DISCHARGE POINTS AND SEED THE BASIN AND DISTURBED AREAS.
6. BEGIN ROAD PAVING, LAYOUT OF CONDOMINIUMS AND GRADING.
7. BEGIN LANDSCAPING WHILE CONDOMINIUMS ARE UNDER CONSTRUCTION.
8. FINISH HOMES AND ROAD CONSTRUCTION.
9. FINISH LANDSCAPING AND PERMANENT STABILIZATION.
10. REPAIR DRAINAGE OUTLETS AS REQUIRED. THE TREE LIMBS, LEAVES, BOULDERS, ETC. SHALL BE REMOVED FROM THE BOTTOM OF SUMPS BEFORE ACCEPTANCE BY THE CONDOMINIUM ASSOCIATION (C.A.)
11. REMOVE ALL TEMPORARY SOIL EROSION AND SEDIMENTATION CONTROL MEASURES FOLLOWING VEGETATIVE ESTABLISHMENT OF ALL DISTURBED AREAS.
12. CONSTRUCTION TO COMMENCE SUMMER 2009 OR UPON RECEIPT OF ALL NECESSARY APPROVALS.
13. PRIOR TO COMMENCING CONDOMINIUM UNIT CONSTRUCTION, THE PROPOSED LIMITS OF CLEARING SHALL BE SURVEYED AND FLAGGED TO LIMIT TREE CLEARING.

STRUCTURAL MEASURES

1. RUNOFF WATER QUALITY IS IMPROVED UTILIZING EXTENDED DETENTION BASINS AND OVERSIZED CATCH BASINS ACTING AS OIL/WATER SEPARATORS. DISCHARGE INLETS/OUTLETS ARE PROTECTED WITH RIP RAP APRONS AND/OR LEVEL SPREADERS.
2. A PERMANENT COVER SHALL BE ESTABLISHED IN THE BASINS IMMEDIATELY AFTER GRADING. THE SEEDING SHALL EXTEND TO AT LEAST THE DESIGN TOP WIDTH OF THE BMP'S AND INCLUDE ANY OTHER AREAS DISTURBED BY CONSTRUCTION ACTIVITIES. ACTIVITIES SHALL BE CONFINED TO WITHIN THE LIMIT OF WORK AS SHOWN ON THE PLANS.
3. VIGOROUS VEGETATION SHALL BE MAINTAINED. BARE OR ERODED AREAS SHALL BE IMMEDIATELY REPAIRED AND RESEEDED BY THE CONTRACTOR.
4. HE CONTRACTOR IS RESPONSIBLE FOR MAINTENANCE AND INSPECTION OF THE BASINS DURING AND UP TO A YEAR AFTER COMPLETION OF CONSTRUCTION. THE CONDOMINIUM ASSOCIATION (C.A) IS RESPONSIBLE THEREAFTER. ANY UNDEVELOPED VEGETATIVE COVER IN THE BASINS SHALL BE THE RESPONSIBILITY OF THE CONTRACTOR. THE CONTRACTOR SHALL RESEED ANY UNSTABILIZED AREAS AFTER A FULL GROWING SEASON AT NO ADDITIONAL EXPENSE TO THE OWNER.
5. THE GRASS IN THE BASINS SHALL BE ALLOWED TO GROW BETWEEN 2 TO 10 INCHES.
6. THE DETENTION BASINS SHALL BE BUILT TO CONTROL RUNOFF FOR 2 THROUGH 100 YEAR STORM FREQUENCIES.
7. SIDE SLOPES OF THE BASINS SHALL BE SEEDED. THE SIDE SLOPES SHALL BE 3:1 MAXIMUM, UNLESS NOTED OTHERWISE.
8. ALL EMBANKMENTS OF THE BASINS SHALL BE THOROUGHLY COMPACTED UPON PLACEMENT IN STRICT CONFORMANCE WITH R.I. STANDARD SPECIFICATION SECTION 202.
9. THE CONTRACTOR SHALL BE RESPONSIBLE FOR MAINTAINING THE SEDIMENTATION BASIN DURING CONSTRUCTION AND THE DETENTION BASINS UP TO THE ACCEPTANCE BY THE C.A. THE ASSOCIATION SHALL BE RESPONSIBLE THEREAFTER FOR MAINTAINING THE BASINS. THE C.A. SHALL INSPECT THE BASINS SEMIANNUALLY AND AFTER MAJOR STORMS.
10. A GRADUATED GAGE IS TO BE SET WITHIN THE BASINS TO MONITOR ACCUMULATED SEDIMENTS.
11. RIP RAP APRONS SHALL BE INSTALLED AT THE OUTLETS OF ALL CULVERTS. THE EMERGENCY SPILLWAY SHALL BE PROTECTED BY RIP RAP DOWNSTREAM AND UPSTREAM.
12. RIP RAP PADS SHALL BE INSPECTED SEMIANNUALLY AND AFTER MAJOR STORMS. IF REPAIRS ARE NEEDED, THEY SHALL BE ACCOMPLISHED IMMEDIATELY.
13. THE CONSTRUCTION SUPERINTENDENT SHALL HAVE THE OVERALL RESPONSIBILITY FOR STRUCTURAL MEASURE IMPLEMENTATION AND FOR SEEING THAT APPROPRIATE WORKERS ARE AWARE OF THE PROVISIONS OF THE PLAN.
14. REFERENCE THE 'RHODE ISLAND SOIL EROSION AND SEDIMENT CONTROL HANDBOOK" PREPARED BY USDA SOIL CONSERVATION SERVICE 1989, AS A GUIDE.

ESTABLISHMENT OF VEGETATIVE COVER

1. SLOPES SHALL NOT BE LEFT UNATTENDED OR EXPOSED FOR EXCESSIVE PERIODS OF TIME SUCH AS THE INACTIVE WINTER SEASON. THE CONTRACTOR SHOULD 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.
2. ALL DISTURBED SLOPES EITHER NEWLY CREATED OR CURRENTLY EXPOSED SHALL BE SEEDED OR PROTECTED.
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 RHODE ISLAND'S STANDARD SPECIFICATION, M20.
4. THE SEEDING DESIGN MIX SHALL BE COMPRISED OF THE FOLLOWING:

TYPE	LBS/AC
CREEPING RED FESCUE	75
KENTUCKY BLUE GRASS	15
COLONIAL BENT GRASS	5
PERENNIAL RYE GRASS	5

EARLY SPRING OR LATE SUMMER SEEDING IS RECOMMENDED. SEED AS REQUIRED BY SOIL TESTING TO COMPLIMENT OR UPGRADE EXISTING CONDITIONS. THE SEED MIX SHALL BE INOCULATED WITHIN 24 HOURS AND BEFORE MIXING AND PLANTING, WITH APPROPRIATE INOCULUMS FOR EACH VARIETY.

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. ALL HAY BALES OR TEMPORARY PROTECTION SHALL REMAIN IN PLACE UNTIL AN ACCEPTABLE STAND OF GRASS OR APPROVED GROUND COVER IS ESTABLISHED.
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.
8. STOCKPILES OF TOPSOIL SHALL NOT BE LOCATED NEAR WATERWAYS. THEY SHALL HAVE SIDE SLOPES NO GREATER THAN 2:1 AND SHALL BE TEMPORARILY SEEDED AND/OR STABILIZED.
9. ALL AREAS PROPOSED TO BE VEGETATED THAT ARE DISTURBED BY CONSTRUCTION SHALL BE STABILIZED WITH PERMANENT SEEDING IMMEDIATELY FOLLOWING FINISH GRADING. PERMANENTLY SEEDED AREAS SHALL BE PROTECTED DURING ESTABLISHMENT WITH MULCH. ALL SEEDED AREAS SHALL BE CHECKED REGULARLY TO SEE THAT A GOOD STAND IS MAINTAINED. VIGOROUS VEGETATION SHALL BE MAINTAINED. BARE OR ERODED AREAS SHALL BE IMMEDIATELY REPAIRED AND RESEEDED BY THE CONTRACTOR. ACTIVITIES SHALL BE CONFINED TO WITHIN THE LIMIT OF WORK AS SHOWN ON THE PLANS.
10. MAXIMUM PERMANENT GRADED SLOPE WITHIN THE SITE IS TO BE 2:1 UNLESS NOTED OTHERWISE.
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 OWNER.
12. REFERENCE THE "RHODE ISLAND SOIL EROSION AND SEDIMENTATION CONTROL HANDBOOK" PREPARED BY THE USDA SOIL CONSERVATION SERVICE 1989 AS A GUIDE.

NON STRUCTURAL MEASURES

1. CONSTRUCTION TRAFFIC SHALL BE LIMITED TO THE ACCESS ROAD, UTILITY/DRAINAGE EASEMENTS AND AREAS TO BE GRADED.
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.
3. THE CONTRACTOR SHALL MAINTAIN THE ENTRANCE. 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 ONTO THE PUBLIC RIGHT OF WAY MUST BE REMOVED IMMEDIATELY BY THE CONTRACTOR.
4. 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.
5. HAY BALES OR SILT FENCE SHALL BE INSTALLED DOWNSTREAM OUTSIDE THE LIMITS OF ANY PROPOSED CONSTRUCTION AS SHOWN ON THE SITE PLANS AND PRIOR TO THE COMMENCEMENT OF THE PROPOSED ALTERATION.
6. HAYBALES SHALL BE MAINTAINED BY THE CONTRACTOR. INSPECTION SHALL BE MADE AFTER EACH STORM EVENT AND REPAIRED OR REPLACED AS WARRANTED. THE CONTRACTOR SHALL CLEAN THE ACCUMULATED SEDIMENT IF HALF OF THE ORIGINAL HEIGHTS OF THE BALES BECOME FILLED IN WITH SEDIMENT.
7. 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.
8. 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.
9. REFERENCE THE "RHODE ISLAND SOIL EROSION AND SEDIMENT CONTROL HANDBOOK" PREPARED BY THE USDA SOIL CONSERVATION SERVICE 1989, AS A GUIDE.

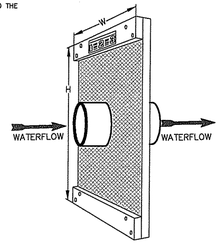
MAINTENANCE: SHORT TERM/LONG TERM

1. ALL DISTURBED SLOPES EITHER NEWLY CREATED OR CURRENTLY EXPOSED SHALL BE SEEDED, PROTECTED, AND MAINTAINED BY THE CONTRACTOR FOLLOWING FINAL GRADING AND CONSTRUCTION. THE CONTRACTOR SHALL CHECK REGULARLY ALL SEEDED AREAS TO SEE THAT A GOOD STAND IS MAINTAINED.
2. 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.
3. ALL HAY BALES, TEMPORARY TREATMENTS (HAY, STRAW, ETC.), AND TEMPORARY PROTECTION SHALL BE MAINTAINED BY THE CONTRACTOR THROUGHOUT CONSTRUCTION AND SHALL REMAIN IN PLACE UNTIL AN ACCEPTABLE STAND OF GRASS OR APPROVED GROUND COVER IS ESTABLISHED.
4. 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. HAYBALES OR SILT FENCE SHALL BE STAKED AROUND THE STOCKPILES.
5. THE CONTRACTOR SHALL CHECK THE HAYBALES OR SILT FENCE ON A WEEKLY BASIS AND AFTER EACH STORM FOR UNDERMINING OR DETERIORATION. THE CONTRACTOR SHALL REPAIR OR REPLACE THE HAYBALES AS NECESSARY. THE CONTRACTOR SHALL CLEAN THE ACCUMULATED SEDIMENT IF HALF OF THE ORIGINAL HEIGHT OF THE HAYBALES BECOMES FILLED IN WITH SEDIMENTS.
6. 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.
7. THE CONTRACTOR IS RESPONSIBLE FOR MAINTENANCE AND INSPECTION OF THE BASINS DURING AND UP TO ACCEPTANCE OF CONSTRUCTION BY THE TOWN. MAINTENANCE SHALL INCLUDE RESEEDING ANY UNDEVELOPED AREAS AFTER A FULL GROWING SEASON AT NO ADDITIONAL EXPENSE, REMOVING ACCUMULATED SILT WHEN SEDIMENTS IN THE BASINS EXCEED 4", AND MAINTAINING THE GRASS TO A GROWING HEIGHT BETWEEN 2"-10".
8. THE CONTRACTOR SHALL INSPECT RIP RAP PADS AFTER EACH STORM AND REPAIR AS NECESSARY.
9. THE CONSTRUCTION SUPERINTENDENT SHALL HAVE OVERALL RESPONSIBILITY FOR THE MAINTENANCE PROGRAM INCLUDING MAINTENANCE OF THE HAYBALES, TOPSOILS, AND DRAINAGE COMPONENTS DURING THE CONSTRUCTION PHASE. THE SUPERINTENDENT SHALL SEE THAT THE APPROPRIATE WORKERS ARE AWARE OF THE PROVISIONS OF THE PLAN. THE ACCUMULATED SEDIMENTS IN THE CATCH BASINS SHALL BE REMOVED AND DRAINAGE PIPES FLUSHED BY THE CONTRACTOR AT THE END OF CONSTRUCTION.
10. THE CONDOMINIUM ASSOCIATION (C.A.) IS RESPONSIBLE FOR THE LONG TERM MAINTENANCE OF THE DETENTION BASINS, RIP RAP PADS, DRAINAGE STRUCTURES, AND PIPING.
11. ALL DRAINAGE SYSTEM COMPONENTS INCLUDING THE CATCH BASINS, DRAINAGE MANHOLES, AND PIPING WITHIN THE RIGHT OF WAY SHALL REMAIN THE RESPONSIBILITY OF THE C.A. THE DRAINAGE SYSTEM COMPONENTS SHALL BE CHECKED SEMI-ANNUALLY AND ACCUMULATED SEDIMENTS SHALL BE REMOVED WHEN THEY EXCEED 3" DEPTH OR EVERY 10 YEARS, WHICHEVER COMES FIRST. CATCH BASIN SUMPS SHALL BE CHECKED ANNUALLY AND SEDIMENTS SHALL BE REMOVED IF THEY EXCEED 6" DEPTH OR EVERY 10 YEARS, WHICHEVER COMES FIRST.
12. THE CONDOMINIUM ASSOCIATION SHALL CHECK THE RIP-RAP PADS AND EMERGENCY OUTLETS AFTER MAJOR STORMS AND ON A SEMI ANNUAL BASIS. REPAIRS SHALL BE PERFORMED BY THE C.A. IMMEDIATELY AS CONDITIONS WARRANT.
13. THE C.A. SHALL MAINTAIN THE DETENTION BASINS. THE C.A. SHALL MAINTAIN A GOOD VEGETATIVE COVER (GRASS BETWEEN 2"-10" OR VEGETATION AS SPECIFIED). BOTTOM OF DETENTION BASINS SHALL BE INSPECTED BY THE C.A. ON A BIANNUAL BASIS AND ACCUMULATED SEDIMENTS SHALL BE REMOVED WHEN THEY REACH A 4" DEPTH OR EVERY 10 YEARS IN THE DETENTION BASINS.
14. CONSTRUCTION OF DETENTION BASINS SHALL BE SUPERVISED BY A PROFESSIONAL ENGINEER. A REPORT AND PLAN OF AS-BUILT CONSTRUCTION SHALL BE MADE AVAILABLE TO THE TOWN ENGINEER.

INSTALLATION NOTES:

1. UNROLL THE ANTI-SEEP AND ATTACH THE BOARDS TO THE EDGES TO FORM A SQUARE. (USE THE BOARDS AND NAILS PROVIDED.)(4"X4" & LARGER)
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.

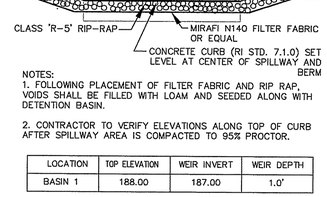
Location	W	H	Quantity
BASIN 1 OUTLET	6	6	1



NOTE:
AGRI DRAIN CORP. OR EQUAL

ANTI-SEEP COLLAR

NOT TO SCALE



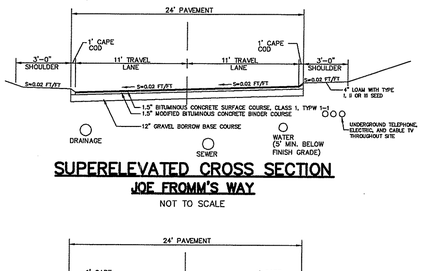
NOTES:
1. FOLLOWING PLACEMENT OF FILTER FABRIC AND RIP RAP, VOIDS SHALL BE FILLED WITH LOAM AND SEEDED ALONG WITH DETENTION BASIN.

2. CONTRACTOR TO VERIFY ELEVATIONS ALONG TOP OF CURB AFTER SPILLWAY AREA IS COMPACTED TO 95% PROCTOR.

LOCATION	TOP ELEVATION	WEIR INVERT	WEIR DEPTH
BASIN 1	188.00	187.00	1.0'

EMERGENCY SPILLWAY DETAIL

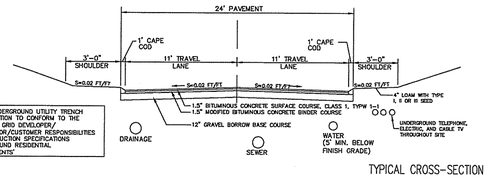
NOT TO SCALE



SUPERELEVATED CROSS SECTION

JOE FROMM'S WAY

NOT TO SCALE



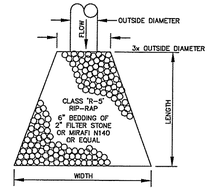
NOTE: UNDERGROUND UTILITY TRENCH CONSTRUCTION TO CONFORM TO THE 'NATIONAL GRID DEVELOPER'S/ CONTRACTOR/CUSTOMER RESPONSIBILITIES & CONSTRUCTION SPECIFICATIONS UNDERGROUND RESIDENTIAL DEVELOPMENTS"

TYPICAL CROSS-SECTION

TYPICAL ROAD CONSTRUCTION CROSS SECTION

JOE FROMM'S WAY

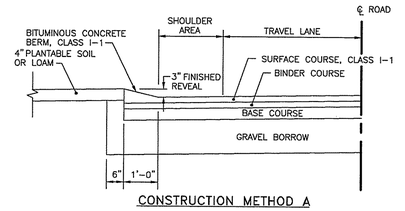
NOT TO SCALE



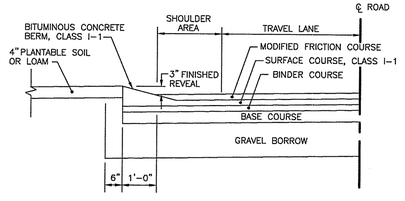
BASIN 1		
LOCATION	LENGTH	WIDTH
BASIN INLET FES 1	14'	9'
BASIN INLET FES 2	18'	12'
BASIN OUTLET FES 3A	17'	11'

RIP-RAP APRON DETAIL

NOT TO SCALE



CONSTRUCTION METHOD A



CONSTRUCTION METHOD B

NOTES:
1. SHALL BE IN ACCORDANCE WITH SECTION 905 OF THE R.I. STANDARD SPECIFICATIONS.
2. BITUMINOUS BERM CAN BE PLACED AT THE SAME TIME THAT THE SURFACE COURSE LAYER IS PLACED ON THE PROJECT ROADWAY, OR IT CAN BE INSTALLED IN A SEPARATE OPERATION.

BITUMINOUS BERM

NOT TO SCALE

R.I. STANDARD 7.5.1

R.I. STANDARD 27.1.0

SIGN NUMBER		R1-1			
LEGEND		STOP			
COLOR	BACKGROUND	RED			
	COPY	WHITE			
SIGN DIMENSION	WIDTH	24"	30"	36"	48"
	HEIGHT	24"	30"	36"	48"

DEPARTMENT OF PUBLIC WORKS
AS SPECIFIED IN R.I.M.U.T.C.D. 2003 EDITION
REGULATORY SIGNS
DATED MAY 2 2016 NOT TO SCALE APPROVAL
NO CHANGES ALLOWED WITHOUT PRIOR APPROVAL
APPROVED PLANS MUST BE AT CONSTRUCTION SITE
FILE # 07-0235

PLANNING BOARD APPROVED - WEST WARWICK, RI

CHAIRMAN:
DATE:

MAR 23 2016

Final Submission

NO.	DATE	DESCRIPTION	BY
10		FINAL SUBMISSION	
9	3-03-08	TRC / FIRE CHIEF COMMENTS	J.M.D.
8	2-01-08	PRELIMINARY SUBMISSION	J.M.D.
7	12-26-07	RCWA RE-SUBMISSION	J.M.D.
6	11-30-07	RCWA RE-SUBMISSION	J.M.D.
5	11-26-07	SEWER REVISIONS	J.M.D.
4	11-15-07	UTILITY REVISIONS	J.M.D.
3	11-13-07	RIDEM WETLAND COMMENTS	J.M.D.
2	8-08-07	UTILITY SUBMISSION	J.M.D.
1	6-26-07	UTILITY SUBMISSION	J.M.D.
0	5-22-07	RIDEM WETLANDS SUBMISSION	D.A.R.

DAVID A. RUSSO
No. 4365
REGISTERED PROFESSIONAL ENGINEER
CIVIL

DETAIL SHEET

Orchard - Phase 1

ASSESSOR'S PLAT 1 LOTS 85, 145 & 529
NORTH PLEASANT STREET, WEST WARWICK, RHODE ISLAND

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

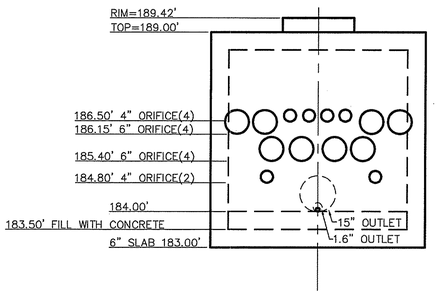
PREPARED FOR
David Fromm
PO BOX 76
BROOKFIELD, MA 01506

APRIL, 2007
DWN. BY: D.A.R.

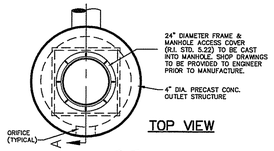
SHEET 13 OF 19

DEA Job No. 0351-003 Copyright 2016 by DiPrete Engineering Associates, Inc.

\\destorage\design\projects\0351-003 hunters reserve\autocad drawings\0351-003 detail sheets.dwg Plotted: 3/22/2016

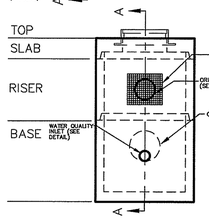


PRIMARY OUTLET
SCALE: 1"=2'

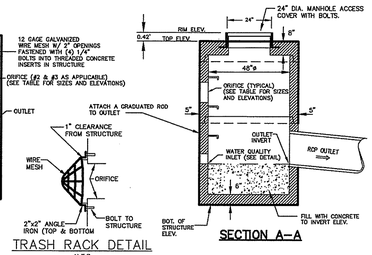


TOP VIEW

Description	
Rim Elevation	189.42'
Top Elevation	189.00'
Orifice #1 Size & Invert	4.0"(2), 184.80'
Orifice #2 Size & Invert	6.0"(4), 185.40'
Orifice #3 Size & Invert	6.0"(4), 186.15'
Orifice #4 Size & Invert	4.0"(4), 186.50'
Water Quality Orifice Size & Invert	1.6"ø, 184.00'
Outlet Size & Invert	12", 184.00'
Fill With Concrete to Elevation	183.50'
Bottom of Structure	183.00'



FRONT VIEW

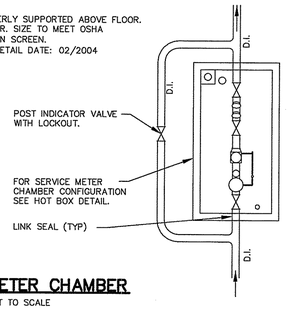


TRASH RACK DETAIL
N.T.S.

SECTION A-A

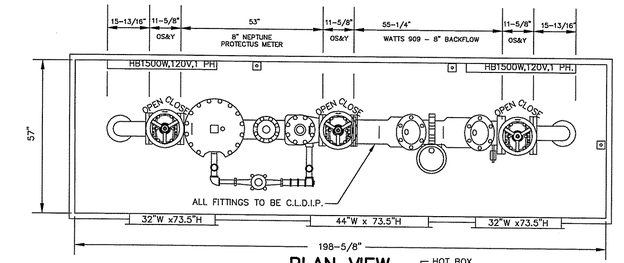
BASIN 1
4' DIAMETER OUTLET STRUCTURE

NOTES:
1. ALL EXTERIOR PIPING, VALVES AND FITTING JOINTS TO HAVE RESTRAINED JOINTS.
2. SUMP PUMP DISCHARGE PIPING TO HAVE 2 CHECK VALVES AND SHUT OFF VALVE.
3. ARB METER READER TO BE MOUNTED ON 4X4 PRESSURE TREATED LUMBER.
4. PROVIDE LIGHTING, HEATER WITH THERMOSTAT AND POWER VENTILATION SYSTEM. SWITCH FOR LIGHTS AND VENTILATION TO BE MOUNTED AT OPENING.
5. INTERIOR PIPING AND VALVE JOINTS TO BE FLANGED.
6. PIT MUST HAVE POSITIVE DRAINAGE SUFFICIENT FOR RPZ FLOW OR RPZ MUST BE LOCATED IN AN ABOVE GROUND ENCLOSURE.
7. SLOPE FLOOR TO SUMP PIT.
8. METER AND BACKFLOW PREVENTERS TO BE PROPERLY SUPPORTED ABOVE FLOOR.
9. GOOSENECK VENT PIPE AT EACH END OF CHAMBER. SIZE TO MEET OSHA REQUIREMENTS W/S.S. INSECT SCREEN AND VERMIN SCREEN.
10. LAYOUT FROM KENT COUNTY WATER AUTHORITY DETAIL DATE: 02/2004



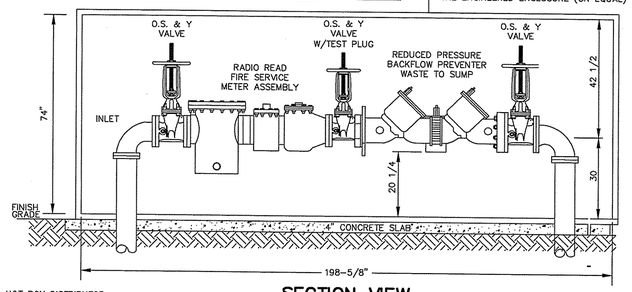
SERVICE METER CHAMBER
NOT TO SCALE

NOTES:
ENCLOSURE TO BE HOT BOX OR EQUAL AS APPROVED BY ENGINEER.
HOT BOX SPECIFICATIONS
1. INSIDE DIMENSION ARE 198-5/8"L X 57"W X 74"H. THE ENCLOSURE SHALL BE CONSTRUCTED OF 18 GA. ALUMINUM, IN FOUR SECTIONS. ONE 44"W X 72.5"H AND TWO 32"W X 72.5"H ACCESS OPENINGS ON THE ENCLOSURE'S FRONT SECTIONS SHALL ASSURE EASIER TESTING AND MAINTENANCE. EACH OPENING HAS A REMOVABLE PANEL WITH A FOUR-PRONGED LOCKING SYSTEM AND AN EXTERNAL HANDLE THAT ACCOMMODATES A PADLOCK. THIS DETERS UNAUTHORIZED ENTRY, THEFT, AND VANDALISM. NO EXTERIOR HARDWARE IS USED WITH THE EXCEPTION OF THE DOOR AND LIFTING HANDLES ANCHORING IS INTERNAL AND THE ANCHOR KIT IS PROVIDED WITH THE ENCLOSURE.
2. TWO 1500W, 120V, SINGLE-PHASE HEATERS SHALL BE MOUNTED TO THE ENCLOSURE'S INTERIOR WALLS. EACH HEATER IS ETL CERTIFIED TO UL AND CSA STANDARDS. EACH HAS A SIX- FOUR CORD AND PLUG FOR EASY CONNECTION. THE THERMOSTAT IS PRE-SET TO MAINTAIN 40°F WITHIN THE ENCLOSURE WHILE THE EXTERNAL TEMPERATURE MAY GO AS LOW AS -30°F. CONTRACTORS OTHER THAN HOT BOX R ARE RESPONSIBLE FOR THE INSTALLATION OF THE ELECTRICAL SERVICES AND G.F.I. PROTECTED RECEPTACLES.



PLAN VIEW

HOT BOX... THE ENGINEERED ENCLOSURE (OR EQUAL)



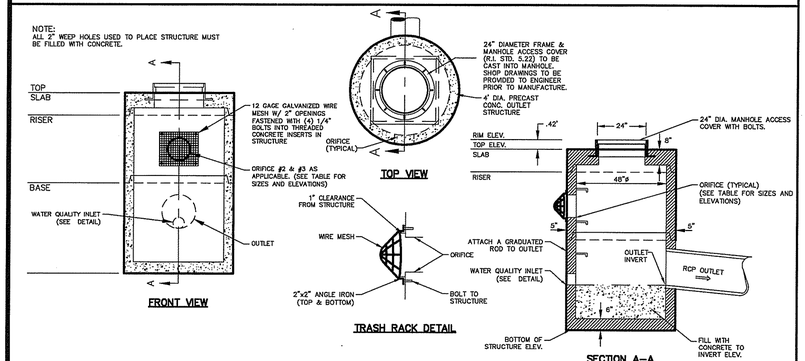
SECTION VIEW

LOCAL HOT BOX DISTRIBUTOR
RED HED SUPPLY
38 ALBION ROAD
LINCOLN ,RI 02865
PHONE: (401) 333-1317
FAX: (401) 333-9035

KCWA HOT BOX DETAIL
NOT TO SCALE

HOT BOX
250 LANE AVE N.
JACKSONVILLE, FLORIDA 32254
(800) 736-0238
FAX (904) 783-6965
HTTP://WWW.HOT-BOX.COM

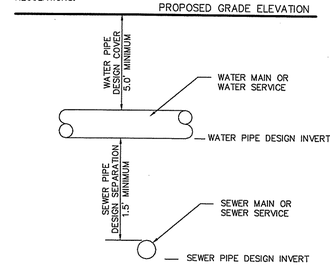
NOTE:
ALL 2" WEEP HOLES USED TO PLACE STRUCTURE MUST BE FILLED WITH CONCRETE.



FRONT VIEW
TOP VIEW
TRASH RACK DETAIL
SECTION A-A

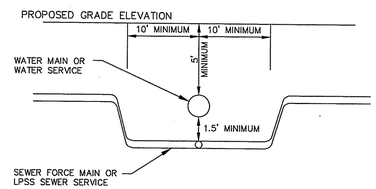
4' DIA. OUTLET STRUCTURE
NOT TO SCALE

NOTE:
1. DETAIL PROVIDED TO DEFINE TERMINOLOGY USED IN SEWER/WATER CROSSING CALCULATION TABLE.
2. CONTRACTOR RESPONSIBLE TO VERIFY THAT PROPER SEPARATION IS MAINTAINED IN ACCORDANCE WITH THE KENT COUNTY WATER AUTHORITY REGULATIONS.



SEWER/WATER CROSSING DETAIL
NOT TO SCALE

NOTES:
1. THE VERTICAL SEPARATION BETWEEN THE WATER MAIN AND THE PROPOSED UTILITY SHALL BE A MINIMUM OF 18 INCHES.
2. THE HORIZONTAL SEPARATION BETWEEN THE WATER MAIN AND THE PROPOSED UTILITY SHALL BE A MINIMUM OF 10 FEET.
3. SEWER MAIN AND SERVICES ARE NOT ALLOWED TO CROSS OVER THE TOP OF THE WATER MAIN.
4. CONCRETE ENCASEMENT IS NOT ALLOWED PER KCWA REGULATIONS.



LOW PRESSURE SEWER CROSSING PROFILE VIEW
N.T.S.

DEPARTMENT OF ENVIRONMENTAL MANAGEMENT
OFFICE OF WATER RESOURCES
FRESHWATER WETLANDS SECTION
APPROVED WITH CONDITIONS
AS SPECIFIED IN THE LETTER OF APPROVAL
DATED MAY 2 2016 FILE # 07-0235
NO CHANGES ALLOWED WITHOUT PRIOR APPROVAL
APPROVED PLANS MUST BE AT CONSTRUCTION SITE
Charles A. Horbert

PLANNING BOARD APPROVED - WEST WARWICK, RI

CHAIRMAN:_____
DATE:_____

MAR 23 2016

Final Submission

DAVID A. RUSSO
No. 14355
REGISTERED PROFESSIONAL ENGINEER
CIVIL

NO.	DATE	DESCRIPTION	BY
10		FINAL SUBMISSION	
9	3-03-08	TRC / FIRE CHIEF COMMENTS	J.M.D.
8	2-01-08	PRELIMINARY SUBMISSION	J.M.D.
7	12-26-07	KCWA RE-SUBMISSION	J.M.D.
6	11-30-07	KCWA RE-SUBMISSION	J.M.D.
5	11-26-07	SEWER REVISIONS	J.M.D.
4	11-15-07	UTILITY REVISIONS	J.M.D.
3	11-13-07	RIDEM WETLAND COMMENTS	J.M.D.
2	8-09-07	UTILITY SUBMISSION	J.M.D.
1	6-26-07	UTILITY SUBMISSION	J.M.D.
0	5-22-07	RIDEM WETLANDS SUBMISSION	D.A.R.

DETAIL SHEET

Orchard - Phase 1

ASSESSOR'S PLAT 1 LOTS 85, 145 & 529
NORTH PLEASANT STREET, WEST WARWICK, RHODE ISLAND

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
David Fromm
PO BOX 76
BROOKFIELD, MA 01506

APRIL, 2007
DWN. BY: D.A.R.

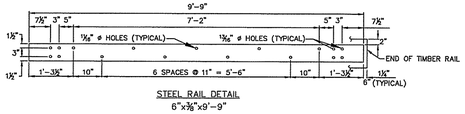
SHEET 14 OF 19

DEA Job No. 0351-003 Copyright 2016 by DiPrete Engineering Associates, Inc.

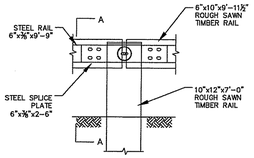
\\destorage\dema\projects\0351-003 hunters reserve\autocad drawings\0351-003 detail sheets.dwg Plotted: 3/22/2016

NOTES:
1. SHALL BE IN ACCORDANCE WITH SECTION 900 OF THE R.I. STANDARD SPECIFICATIONS.
2. ALL STRUCTURAL STEEL AND FASTENER HARDWARE SHALL BE WEATHERING STEEL AS SPECIFIED.

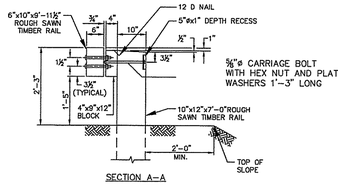
R.I. STANDARD 34.4.0



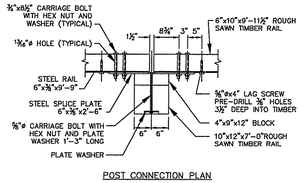
STEEL RAIL DETAIL
6"x3⅛"x9'-9"



POST CONNECTION ELEVATION



SECTION A-A



POST CONNECTION PLAN

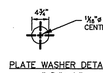
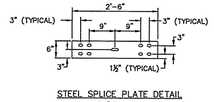
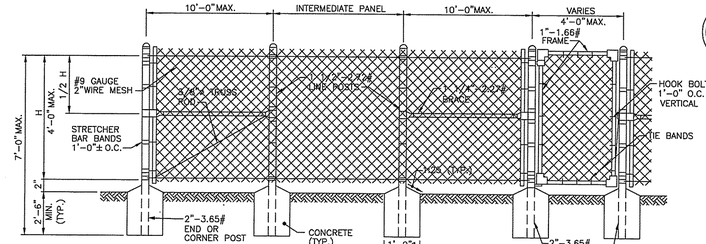


PLATE WASHER DETAIL
4"x3¼"øx¼"



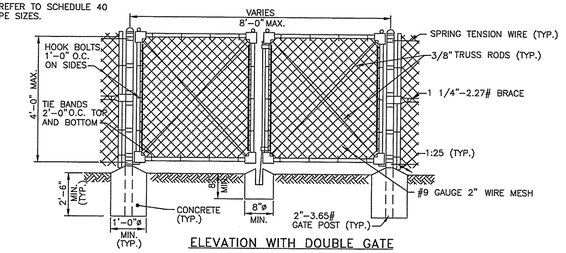
STEEL SPLICE PLATE DETAIL
6"x⅜"x2'-6"

STEEL BACKED TIMBER GUARDRAIL
NOT TO SCALE



ELEVATION WITH SINGLE GATE

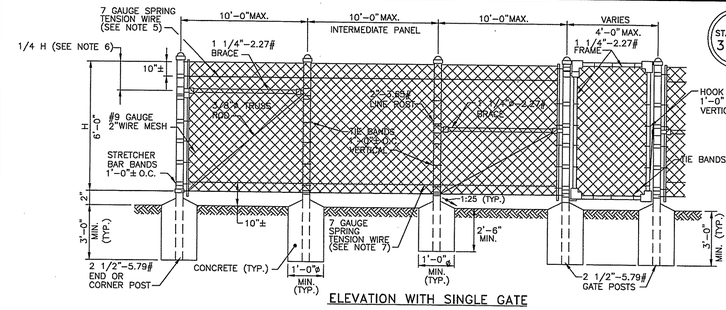
NOTES:
1. SHALL BE IN ACCORDANCE WITH SECTION 902 OF THE R.I. STANDARD SPECIFICATIONS.
2. INTERMEDIATE POSTS REQUIRED EVERY 200'-0".
3. ALL PIPES REFER TO SCHEDULE 40 NOMINAL PIPE SIZES.



ELEVATION WITH DOUBLE GATE

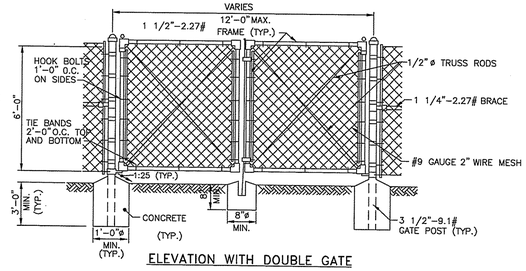
BLACK VINYL COATED 4' CHAIN LINK FENCE DETAIL
(LOCATED AROUND DETENTION POND 1)
NOT TO SCALE

R.I. STANDARD 31.1.0



ELEVATION WITH SINGLE GATE

NOTES:
1. SHALL BE IN ACCORDANCE WITH SECTION 902 OF THE R.I. STANDARD SPECIFICATIONS.
2. 6 GAUGE STREET CLIPS TO BE USED TO FASTEN SPRING TENSION WIRE TO LINE POST.
3. SPRING TENSION WIRE – NO. 7 GAUGE CORRUGATED HEAVILY GALVANIZED (2.0 OZ. PER SQ. FT.) ALUMINUM COATED (0.4 OZ. PER SQ. FT.)
4. ALL PIPES REFER TO SCHEDULE 40 NOMINAL PIPE SIZES.
5. A 1 1/4"-2.27# TOP RAIL MAY BE SUBSTITUTED FOR THE TOP TENSION WIRE WHEN THE FENCE IS NOT LOCATED IN THE CLEAR ZONE.
6. WHEN A TOP RAIL IS USED, LOCATE THE BRACE RAIL AT 1/2 H.
7. WHEN A TOP RAIL IS USED, DELETE THE BOTTOM SPRING TENSION WIRE.
8. BLACK VINYL COATED



ELEVATION WITH DOUBLE GATE

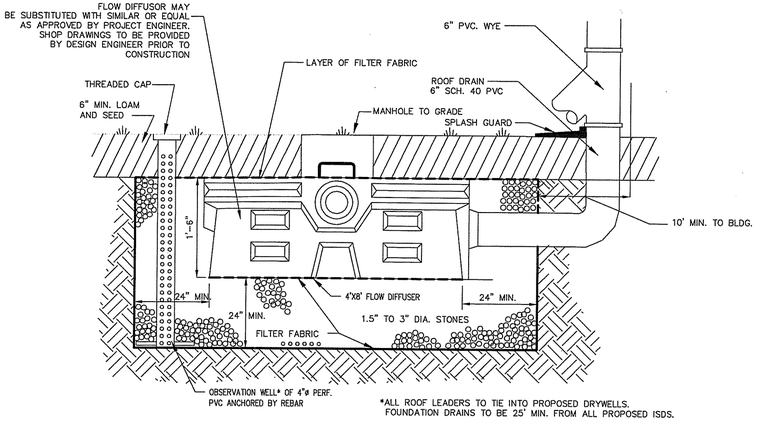
BLACK VINYL COATED 6' CHAIN LINK FENCE DETAIL
(LOCATED ALONG SOUTHERN PROPERTY 50' BUFFER BOUNDARY)
NOT TO SCALE

Unit #'s	Elevation				Separation Distance (ft.)
	Prop. Ground	Top of Drywell Facility	Bottom of Drywell Facility (w/ 24" stone)	Seasonal High GWT	
7-8	198.00	196.50	193.00	188.00	5.0
11-12	189.00	186.50	183.00	181.00	2.0
13-14	190.50	188.50	185.00	183.00	2.0
17-18	196.00	195.50	192.00	180.00	12.0
19-20	202.00	200.50	197.00	195.00	2.0
21-23	216.00	214.50	211.00	209.00	2.0

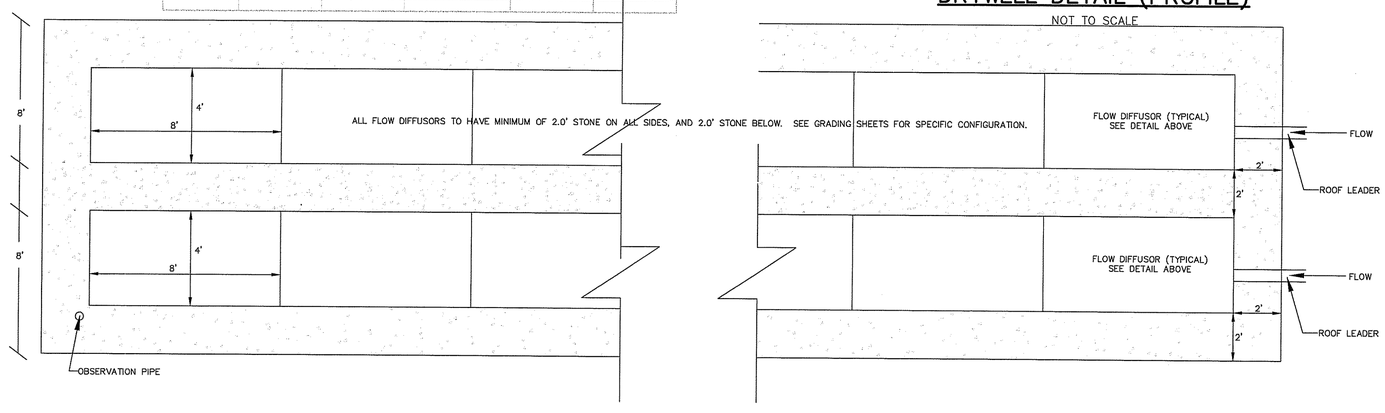
NOTES:

NO STONE BETWEEN CONSECUTIVE DRYWELLS.

*SCHEDULE OF INSPECTION FOR OBSERVATION WELL: MONITORING WATER LEVELS WITHIN THE PIPE AT VARIOUS TIME INTERVALS AFTER A RAINFALL EVENT WILL INDICATE THE INFILTRATION ABILITY AND PERFORMANCE OF THE SYSTEM. IF WATER IS STANDING IN A PIPE MORE THAN 3 DAYS AFTER A STORM EVENT, SYSTEM FAILURE HAS OCCURRED AND WILL REQUIRE REPAIR OR REPLACEMENT OF DRYWELL BY THE HOMEOWNER.



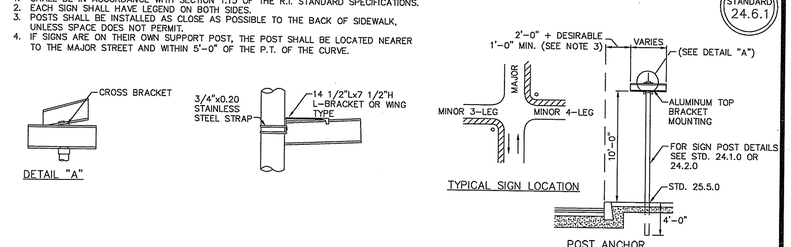
DRYWELL DETAIL (PROFILE)
NOT TO SCALE



DRYWELL DETAIL (PLAN)
1"=3'

NOTES:
1. SHALL BE IN ACCORDANCE WITH SECTION T.15 OF THE R.I. STANDARD SPECIFICATIONS.
2. EACH SIGN SHALL HAVE LEGEND ON BOTH SIDES.
3. POSTS SHALL BE INSTALLED AS CLOSE AS POSSIBLE TO THE BACK OF SIDEWALK, UNLESS SPACE DOES NOT PERMIT.
4. 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.

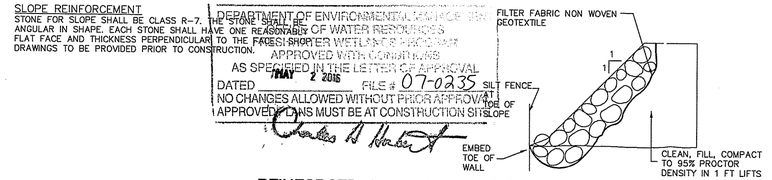
R.I. STANDARD 24.6.1



STREET SIGN MOUNTING DETAIL
NOT TO SCALE

SLOPE REINFORCEMENT
STONE FOR SLOPE SHALL BE CLASS R-7. THE STONE SHALL BE ANGULAR IN SHAPE, EACH STONE SHALL HAVE ONE REASONABLY FLAT FACE AND THICKNESS PERPENDICULAR TO THE FACE SHALL DRAWINGS TO BE PROVIDED PRIOR TO CONSTRUCTION.

DEPARTMENT OF ENVIRONMENTAL MANAGEMENT
OFFICE OF WATER RESOURCES
FRESHWATER WETLANDS PROGRAM
APPROVED WITH CONDITIONS
AS SPECIFIED IN THE LETTER OF APPROVAL
DATED MAY 2 2016 FILE # 07-0235
NO CHANGES ALLOWED WITHOUT PRIOR APPROVAL
APPROVED PLANS MUST BE AT CONSTRUCTION SITE



REINFORCED 1:1 SLOPE DETAIL
NOT TO SCALE

PLANNING BOARD APPROVED - WEST WARWICK, RI

CHAIRMAN:_____

DATE:_____

Final Submission APR 2 3 2016

DAVID A. RUSSO
No. 14355
5-18-16
REGISTERED PROFESSIONAL ENGINEER
CIVIL

NO.	DATE	DESCRIPTION	BY
10		FINAL SUBMISSION	
9	3-03-08	TRC / FIRE CHIEF COMMENTS	J.M.D.
8	2-01-08	PRELIMINARY SUBMISSION	J.M.D.
7	12-26-07	KCWA RE-SUBMISSION	J.M.D.
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5	11-26-07	SEWER REVISIONS	J.M.D.
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1	6-26-07	UTILITY SUBMISSION	J.M.D.
0	5-22-07	RIDEM WETLANDS SUBMISSION	D.A.R.

DETAIL SHEET

Orchard - Phase 1

ASSESSOR'S PLAT 1 LOTS 85, 145 & 529
NORTH PLEASANT STREET, WEST WARWICK, RHODE ISLAND

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
David Fromm
PO BOX 76
BROOKFIELD, MA 01506

APRIL, 2007
DWN. BY: D.A.R.

SHEET 15 OF 19

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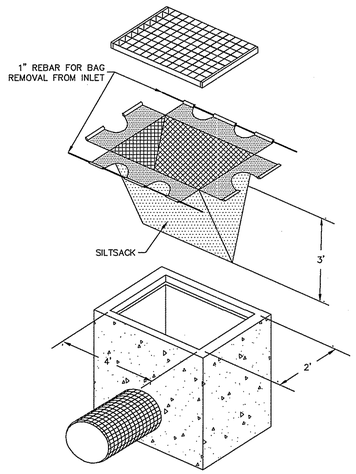
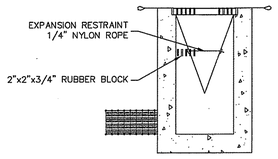
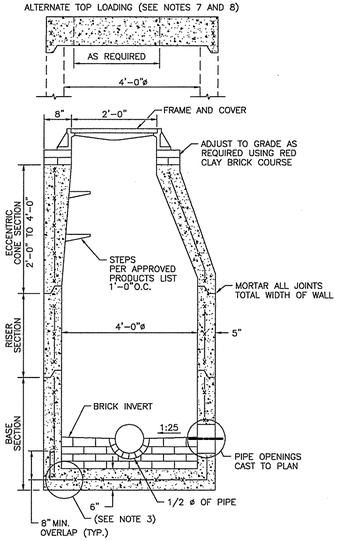


NOTE:
REGULAR FLOW=40 GAL./MIN/SF
HIGH FLOW=200 GAL./MIN/SF

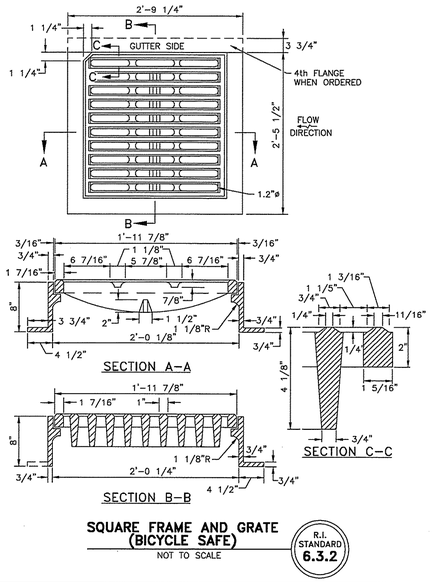


Silt Sack Detail
NOT TO SCALE

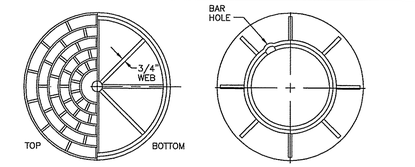


NOTES:
1. SHALL BE IN ACCORDANCE WITH SECTION 702 OF THE R.I. STANDARD SPECIFICATIONS.
2. CIRCUMFERENTIAL STEEL REINFORCEMENT REQUIRED = 0.12 SQ. IN. / LIN. FT. MINIMUM.
3. STEEL REINFORCEMENT FOR BASE SECTION BOTTOM SHALL BE A MINIMUM OF 0.12 SQ. IN/LIN. FT. (BOTH WAYS).
4. ONE POUR MONOLITHIC BASE 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.

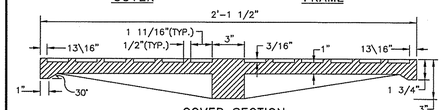
PRECAST 4'-0" ROUND MANHOLE
NOT TO SCALE
R.I. STANDARD 4.2.0



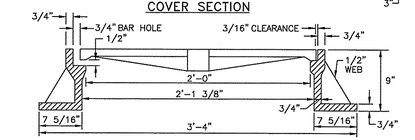
SQUARE FRAME AND GRATE (BICYCLE SAFE)
NOT TO SCALE
R.I. STANDARD 6.3.2



COVER



COVER SECTION

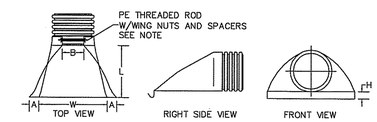


FRAME SECTION

NOTES:
1. FRAME AND GRATE SHALL CONFORM TO SECTION M.04 OF THE R.I. STANDARD SPECIFICATIONS.
2. FRAME AND COVER SEATS MUST HAVE MACHINE FINISH.

HEAVY-DUTY ROUND FRAME AND COVER
NOT TO SCALE
R.I. STANDARD 6.2.1

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 ASSEMBLE.

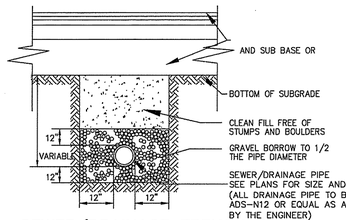


PART #	PIPE SIZE	A	B (MAX)	H	L	W
1210NP	12 in (300 mm)	6.50 in (165 mm)	10.00 in (254 mm)	6.50 in (165 mm)	25.00 in (635 mm)	29.00 in (737 mm)
1510NP	15 in (375 mm)	6.50 in (165 mm)	10.00 in (254 mm)	6.50 in (165 mm)	25.00 in (635 mm)	29.00 in (737 mm)
1810NP	18 in (450 mm)	7.50 in (191 mm)	15.00 in (381 mm)	6.50 in (165 mm)	32.00 in (813 mm)	35.00 in (889 mm)
2410NP	24 in (600 mm)	7.50 in (191 mm)	18.00 in (457 mm)	6.50 in (165 mm)	36.00 in (914 mm)	45.00 in (1143 mm)
3015NP	30 in (750 mm)	7.50 in (191 mm)	12.00 in (305 mm)	6.60 in (218 mm)	58.00 in (1473 mm)	63.00 in (1600 mm)
3615NP	36 in (900 mm)	7.50 in (191 mm)	25.00 in (635 mm)	8.60 in (218 mm)	58.00 in (1473 mm)	63.00 in (1600 mm)

HDPE FLARED END SECTION
NOT TO SCALE

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

SILT FENCE DETAIL
NOT TO SCALE
R.I. STANDARD 9.2.0



SEWER/DRAINAGE TRENCH DETAIL
NOT TO SCALE

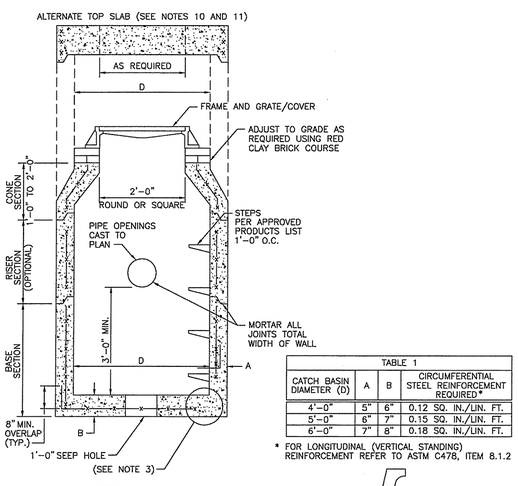


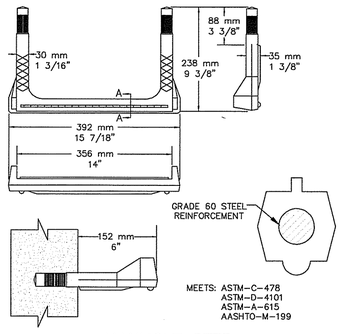
TABLE 1			
CATCH BASIN DIAMETER (D)	A	B	CIRCUMFERENTIAL STEEL REINFORCEMENT REQUIRED*
4'-0"	5"	6"	0.12 SQ. IN./LIN. FT.
5'-0"	6"	7"	0.15 SQ. IN./LIN. FT.
6'-0"	7"	8"	0.18 SQ. IN./LIN. FT.

* FOR LONGITUDINAL (VERTICAL STANDING) REINFORCEMENT REFER TO ASTM C478, ITEM 8.1.2

TYPE CATCH BASIN AS REQUIRED

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 POUR 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.

PRECAST 4'-0", 5'-0", OR 6'-0" ROUND CATCH BASIN
NOT TO SCALE
R.I. STANDARD 4.4.0



MANHOLE STEP
NOT TO SCALE

DEPARTMENT OF ENVIRONMENTAL MANAGEMENT
OFFICE OF WATER RESOURCES
FRESHWATER WETLANDS SECTION
APPROVED WITH CONDITIONS
AS SPECIFIED IN THE LETTER OF APPROVAL
DATED MAY 2 2016
07-0235
NO CHANGES ALLOWED WITHOUT PRIOR APPROVAL
APPROVED PLANS MUST BE AT CONSTRUCTION SITE

PLANNING BOARD APPROVED - WEST WARWICK, RI
CHAIRMAN:
DATE:

MAR 23 2016

Final Submission

DAVID A. RUSSO
No. 14345
REGISTERED PROFESSIONAL ENGINEER
CIVIL

NO.	DATE	DESCRIPTION	BY
10		FINAL SUBMISSION	
9	3-03-08	TRC / FIRE CHIEF COMMENTS	J.M.D.
8	2-01-08	PRELIMINARY SUBMISSION	J.M.D.
7	12-26-07	KCWA RE-SUBMISSION	J.M.D.
6	11-30-07	KCWA RE-SUBMISSION	J.M.D.
5	11-28-07	SEWER REVISIONS	J.M.D.
4	11-15-07	UTILITY REVISIONS	J.M.D.
3	11-13-07	RIDEM WETLAND COMMENTS	J.M.D.
2	8-09-07	UTILITY SUBMISSION	J.M.D.
1	6-26-07	UTILITY SUBMISSION	J.M.D.
0	5-22-07	RIDEM WETLANDS SUBMISSION	D.A.R.

APRIL, 2007
DWN. BY: D.A.R.

DETAIL SHEET

Orchard - Phase 1

ASSESSOR'S PLAT 1 LOTS 85, 145 & 529
NORTH PLEASANT STREET, WEST WARWICK, RHODE ISLAND

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

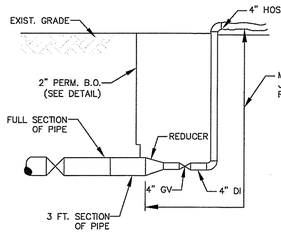
PREPARED FOR
David Fromm
PO BOX 76
BROOKFIELD, MA 01506

SHEET 16 OF 19

DEA Job No. 0351-003 Copyright 2016 by DiPrete Engineering Associates, Inc.

\\destorage\demain\projects\0351-003 hunters reserve\autocad drawings\0351-003 detail sheets.dwg Plottext 3/22/2016

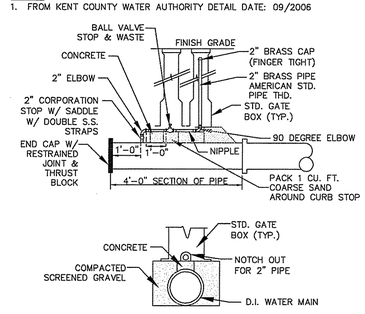
NOTES:
1. AFTER THE COMPLETION OF THE FINAL FLUSHING THE CONTRACTOR SHALL REMOVE THE TEMPORARY CONNECTION AND INSTALL A CAP WITH MEGALUGS AND A THRUST BLOCK.
2. FROM KENT COUNTY WATER AUTHORITY DETAIL DATE: 09/2006



KCWA TEMPORARY FLUSHING CONNECTION ON DEAD END WATER MAIN

NOT TO SCALE

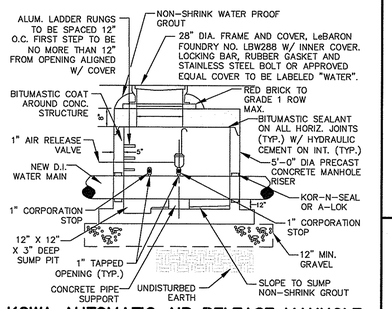
NOTE:
1. FROM KENT COUNTY WATER AUTHORITY DETAIL DATE: 09/2006



KCWA PERMANENT BLOWOFF ASSEMBLY

NOT TO SCALE

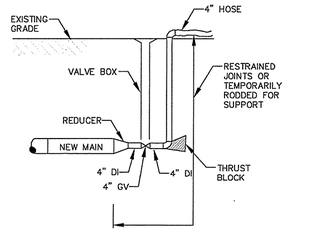
NOTE:
1. FROM KENT COUNTY WATER AUTHORITY DETAIL DATE: 09/2006



KCWA AUTOMATIC AIR RELEASE MANHOLE

NOT TO SCALE

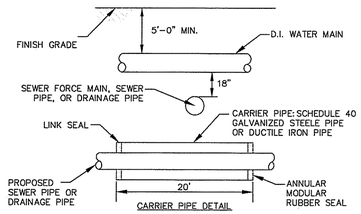
NOTES:
1. AFTER THE COMPLETION OF THE FINAL FLUSHING THE CONTRACTOR SHALL REMOVE THE TEMPORARY FLUSHING CONNECTION AND CONNECT THE NEW WATER TO THE EXISTING WATER MAIN ALL PIPING AND FITTING SHALL BE DISINFECTED TO THE SATISFACTION OF THE KCWA.
2. FROM KENT COUNTY WATER AUTHORITY DETAIL DATE: 09/2006



KCWA TEMPORARY FLUSHING CONNECTION

NOT TO SCALE

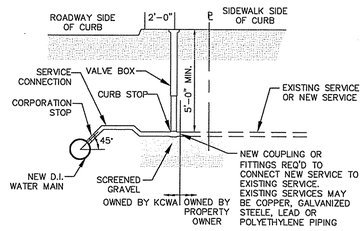
NOTES:
THE VERTICAL SEPARATION BETWEEN THE WATER MAIN AND THE PROPOSED UTILITY SHALL BE A MINIMUM OF 18 INCHES.
THE HORIZONTAL SEPARATION BETWEEN THE WATER MAIN AND THE PROPOSED UTILITY SHALL BE A MINIMUM OF 10 FEET.
IF 1 OR 2 CAN NOT BE MAINTAINED THE PROPOSED UTILITY SHALL BE INSTALLED WITHIN A CARRIER PIPE UPON WRITTEN APPROVAL BY THE KCWA.
SEWER MAIN AND SERVICES ARE NOT ALLOWED TO CROSS OVER THE TOP OF THE WATER MAIN.
CONCRETE ENCASEMENT IS NOT ALLOWED.
FROM THE KENT COUNTY WATER AUTHORITY DATE: 09/2006



KCWA UTILITY SEPARATION

NOT TO SCALE

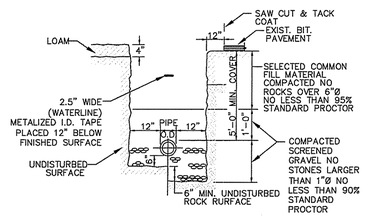
NOTES:
1. SERVICE MATERIALS PER KCWA SPECIFICATION UNLESS CITY OR TOWN CODES REQUIRE SPECIFIC MATERIALS THAT HAVE BEEN APPROVED BY KCWA
2. SERVICE LINE FROM CURB BOX TO BUILDING SHALL BE INSPECTED, TESTED AND APPROVED BY THE LOCAL PLUMBING INSPECTOR.
3. FROM KENT COUNTY WATER AUTHORITY DETAIL DATE: 09/2006



KCWA SERVICE CONNECTION

NOT TO SCALE

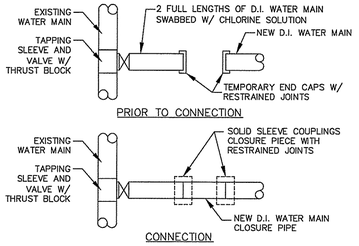
NOTE:
1. ROADWAY RESTORATION IN ACCORDANCE WITH COMMUNITY OR RIDOT.
2. FROM KENT COUNTY WATER AUTHORITY DETAIL DATE: 9/2006



KCWA TRENCH INSTALLATION IN ROCK AND SOIL

NOT TO SCALE

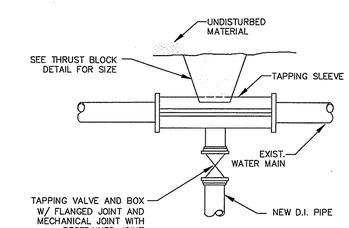
NOTES:
1. PRIOR TO FINAL APPROVAL FOR PERMANENT CONNECTION FROM KCWA, CONTRACTOR SHALL PERFORM PRESSURE TESTING AND CHLORINATION.
2. SLEVE FOR CLOSURE TO BE SWABBED WITH CHLORINE SOLUTION
3. FROM KENT COUNTY WATER AUTHORITY DETAIL DATE: 09/2006



KCWA CONNECTION OF NEW WATER MAIN TO EXISTING WATER MAIN

NOT TO SCALE

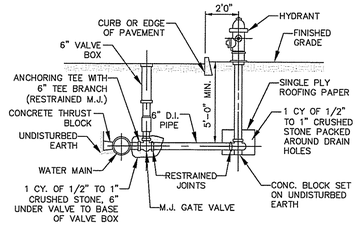
NOTES:
1. TAPPING SLEEVE AND VALVE TO BE SWABBED WITH CHLORINE SOLUTION.
2. FROM KENT COUNTY WATER AUTHORITY DETAIL DATE: 09/2006



KCWA TAPPING SLEEVE AND VALVE

NOT TO SCALE

NOTES:
1. KCWA COLOR SCHEME FOR HYDRANT.
2. INSTALLATION SHALL NOT OBSTRUCT SIDEWALK TO PEDESTRIAN OR PHYSICALLY IMPAIRED.
3. REMOVAL OF EXISTING HYDRANT MAY REQUIRE ADDITIONAL RESTRAINT DESIGNED BY A PROFESSIONAL ENGINEER.
4. MECHANICAL JOINT PIPE W/ RESTRAINED JOINTS FOR BRANCHES OVER ONE LENGTH OF PIPE.
5. FROM KENT COUNTY WATER AUTHORITY DETAIL DATE: 09/2006

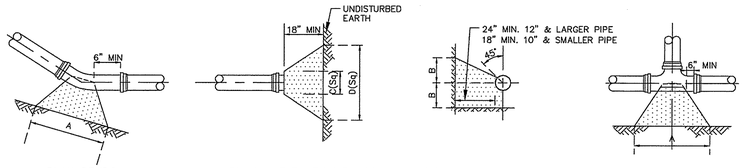


KCWA HYDRANT ASSEMBLY

NOT TO SCALE

NOTES:
1. ALL CONCRETE SHALL BE 4000 P.S.I. @ 28 DAYS
2. CONCRETE THRUST BLOCKS SHALL BEAR AGAINST UNDISTURBED EARTH.
3. FORMS TO BE USED AS NECESSARY.
4. ALL BOLTS AND NUTS TO BE PROTECTED FROM CONCRETE AND EASILY ACCESSIBLE WHEN THRUST BLOCK INSTALLED.
5. REGISTERED PROFESSIONAL ENGINEER IN THE STATE OF R.I. SHALL VERIFY ALL CALCULATIONS DURING DESIGN TO MEET CONDITIONS OF PROJECT AND KCWA REQUIREMENTS.
6. FROM THE KENT COUNTY WATER AUTHORITY DATE: 09/2006

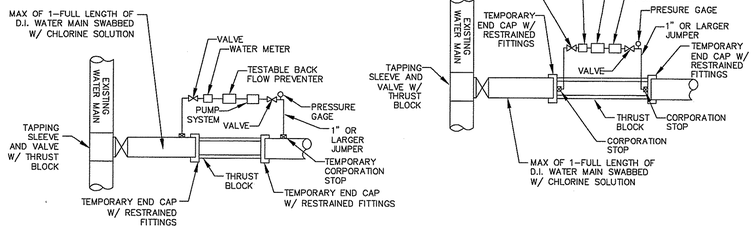
SIZE	TEES		PLUGS		90° BEND		45° BEND		22.5° BEND		11.25° BEND	
	A	B	C	D	A	B	A	B	A	B	A	B
6"	20"	10"	10"	21"	24"	12"	18"	9"	13"	7"	9"	5"
8"	26"	13"	12"	26"	32"	16"	24"	12"	17"	9"	12"	6"
10"	34"	17"	14"	34"	40"	20"	30"	15"	22"	11"	15"	8"
12"	41"	20"	16"	41"	48"	24"	35"	18"	25"	13"	18"	9"
16"	54"	27"	20"	54"	64"	32"	47"	23"	34"	17"	24"	12"



KCWA THRUST BLOCK

NOT TO SCALE

NOTES:
1. UPON SUCCESSFUL TESTING AND DISINFECTION THE TEMPORARY CORPORATION STOPS SHALL BE REMOVED AND PLUGS INSTALLED.
2. SLEEVE FOR CLOSURE TO BE SWABBED WITH CHLORINE SOLUTION
3. FROM KENT COUNTY WATER AUTHORITY DETAIL DATE: 09/2006



KCWA TEMPORARY CONNECTION FOR PRESSURE TESTING AND DISINFECTION

NOT TO SCALE

LEAKAGE AND PRESSURE TESTING FOR WATERMAINS

1. GENERAL
1.1. HYDROSTATIC AND LEAKAGE TESTS SHALL BE PERFORMED ON ALL COMPLETED SECTIONS OF NEWLY INSTALLED SEWER FORCE MAIN AND WATERMAIN PIPELINE IN ACCORDANCE WITH AWWA C600, THE KENT COUNTY WATER AUTHORITY, AND AS SPECIFIED BELOW.
1.2. THE CONTRACTOR IS RESPONSIBLE FOR FURNISHING ALL LABOR, TOOLS AND EQUIPMENT NECESSARY FOR TESTING. CONTRACTOR TO NOTIFY KENT COUNTY WATER AUTHORITY 48 HOURS IN ADVANCE OF TEST DATE.

2. TESTING PROCEDURES
2.1. ALL AIR SHALL BE EXPELLED AT THE HIGH POINTS AND THE PIPELINE SLOWLY FILLED WITH POTABLE WATER, AND MUST SIT FOR 24 HOURS BEFORE CONDUCTING TEST.
2.2. THE INTERNAL PRESSURE SHALL BE BUILT UP TO 150 PSI AND MAINTAINED FOR A PERIOD OF NOT LESS THAN ONE (1) HOUR.
2.3. 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.
2.4. 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:
2.4.A. WATERMAINS – DISINFECTION STEP
2.4.B. SEWER FORCE MAIN – READY FOR USE
2.5. COMPLIANCE WITH STATE PLUMBING CODE IN REFERENCE TO RESIDENTIAL BACK FLOW PREVENTION MUST BE VERIFIED BY PLUMBER INSPECTOR, PRIOR TO METER INSTALLATION.

CHLORINATION/DISINFECTION* POLICY

1. ALL NEW OR REPAIRED POTABLE WATER SYSTEM DISTRIBUTION MAINS, SERVICE PIPE AND THE NECESSARY CONNECTING PIPES, FITTINGS, CONTROL VALVES, AND ALL APPURTENANCES IN OR ADJACENT TO ANY RESIDENCE, BUILDING OR PREMISES SHALL BE PURGED OF DELETERIOUS MATTER AND SHALL BE DISINFECTED PRIOR TO UTILIZATION OR PERMANENT CONNECTION TO THE KENT COUNTY WATER AUTHORITY (KCWA) SYSTEM. THAT PORTION OF THE CUSTOMER'S SERVICE PIPE AFTER THE CURB STOP SHALL BE DISINFECTED UNDER THE SUPERVISION OF THE LOCAL PLUMBING OFFICIAL. THE OWNER MUST PROVIDE WRITTEN LABORATORY CERTIFIED DOCUMENTATION OF THE DISINFECTION RESULTS TO THE KCWA BEFORE MAKING ANY PERMANENT CONNECTION TO THE KCWA SYSTEM OR BEFORE REACTIVATION OF ANY EXISTING WATER SERVICE CAN BE AUTHORIZED. PLEASE REFER TO APPENDICES FOR PROGRAM REQUIREMENTS OF THE CUSTOMER WATER SERVICE DISINFECTION POLICY.
2. THE PROPOSER OR THE CONTRACTOR FOR THE PROPOSER, IN ACCORDANCE WITH CHAPTER 5, DISTRIBUTION SYSTEM CHLORINATION, AMERICAN WATER WORKS ASSOCIATION MANUAL #20, SHALL PERFORM CHLORINATION. TABLET CHLORINATION SHALL NOT BE ALLOWED.
3. THE OWNER OR CUSTOMER IS RESPONSIBLE FOR ALL COSTS ASSOCIATED WITH THE DISINFECTION PROCESS OR PROCEDURE.
4. THE DISINFECTION MUST RESULT IN ELIMINATION FROM THE VARIOUS PARTS OF THE NEW PIPE LINE ANY EVIDENCE OF THE EXISTENCE, THEREIN, OF BACTERIA INDICATIVE OF ANY CONTAMINATION, AS DETERMINED BY TEST OF THE BACTERIAL CONTENT OF SAMPLES OF WATER TAKEN FROM THE NEW WATER MAIN. THE DISINFECTION MAY BE ACCOMPLISHED BY INTRODUCING INTO ALL THE VARIOUS PARTS OF THE NEW WATER MAINS, A LIQUID SOLUTION CONTAINING 1% AVAILABLE CHLORINE IN SUCH VOLUME THAT THE RATE OF DOSAGE TO THE WATER MAINS SHALL BE AT LEAST 50 PARTS PER MILLION OF AVAILABLE CHLORINE. TABLET CHLORINATION IS NOT ALLOWED. THE CONTACT PERIOD FOR THIS DISINFECTION SHALL BE AT LEAST 24 HOURS, AND A LONGER PERIOD WILL BE REQUIRED IF TESTS OF RESIDUAL CHLORINE SHOW IT TO BE NECESSARY FOR PROPER DISINFECTION.
5. THE NEW WATER SYSTEM SHALL BE FLUSHED OUT AFTER DISINFECTION AND REFILLED WITH FRESH WATER. ALL CHLORINATED WATER USED IN THE DISINFECTION PROCESS SHALL BE DE-CHLORINATED PRIOR TO DISCHARGE TO THE SURROUNDING AREA.
6. WATER MUST SIT IN THE MAIN FOR AT LEAST 24 HOURS PRIOR TO TAKING A TEST SAMPLE. WATER UTILIZED FOR THIS PURPOSE, FLUSHING OR PRESSURE TESTING, WHICH IS OBTAINED DIRECTLY FROM THE KCWA SYSTEM, MUST FLOW THROUGH AN ISOLATED CONNECTION TO THE KCWA SYSTEM VIA AN APPROVED METER, TESTABLE BACKFLOW PREVENTION DEVICE AND JUMPER LINE. THE CONTRACTOR SHALL MAKE ALL NECESSARY ARRANGEMENTS FOR SECURING THE WATER FOR TEST PURPOSES AND SHALL BEAR THE EXPENSE OF THESE ARRANGEMENTS. THE INSTALLER SHALL FURNISH AND INSTALL SUITABLE TEMPORARY TESTING PLUGS, CAPS, PUMPS, PIPE CONNECTIONS AND OTHER APPURTENANCES, AS NECESSARY, TO OBTAIN SAMPLES AT POINTS NO FURTHER THAN 1,000 FEET APART.
7. AFTER FINAL FLUSHING AND BEFORE THE NEW WATER MAIN IS CONNECTED TO THE DISTRIBUTION SYSTEM, TWO CONSECUTIVE SETS OF ACCEPTABLE SAMPLES FOR COLIFORM BACTERIA HETEROTROPHIC PLATE COUNT (HPC), TAKEN 24 HOURS APART, SHALL BE COLLECTED FROM THE TERMINATION OF THE NEW MAIN. AT LEAST ONE SAMPLE SHALL BE COLLECTED EVERY 1000 FT. OF NEW MAIN, PLUS ONE SET OF TWO SAMPLES FROM THE END OF THE LINE. AT LEAST ONE SET OF TWO SAMPLES SHALL BE TAKEN FROM EACH BRANCH. SAMPLES SHALL BE COLLECTED BY KCWA EMPLOYEES, GIVEN A TWO-DAY NOTICE AND TESTED BY A LABORATORY APPROVED BY KCWA. A FEE SHALL BE IMPOSED FOR THE SAMPLING TESTING FOR EACH TEST. THE FEE SHALL BE AT THE CURRENT RATE SCHEDULE IN EFFECT AT THE TIME OF TESTING. PAYMENT SHALL BE PRIOR TO SAMPLE COLLECTION BY THE KCWA. THE WATER SAMPLE TEST RESULTS MUST INDICATE THAT THE WATER QUALITY IN THE NEW MAIN IS CONSISTENT IN QUALITY WITH KCWA SYSTEM WATER.

* TAKEN FROM SECTION 3.23 OF THE "RULES AND REGULATIONS OF THE KENT COUNTY WATER AUTHORITY" DATED SEPTEMBER 20, 2006.

WATER INSTALLATION NOTES

INSTALLATION OF WATER MAIN AND SERVICE SHALL CONFORM TO THE "RULES AND REGULATIONS OF THE KENT COUNTY WATER AUTHORITY" SEPTEMBER 20, 2006, OR LATEST EDITION, AND IN ACCORDANCE WITH THE DUCTILE IRON PIPE RESEARCH ASSOCIATION INSTALLATION MANUAL AND ANSI/AWWA C600.

DISTRIBUTION PIPING SHALL BE CL 52 DUCTILE IRON, DOUBLE CEMENT LINED, WITH PUSH ON JOINTS. PIPE SHALL MEET ANSI/AWWA C151 A21.51. JOINTS SHALL MEET ANSI/AWWA C11/A21.11.

FITTINGS SHALL BE DUCTILE IRON MECHANICAL JOINT CL350 CEMENT MORTAR LINED AND MEET ANSI/AWWA/C153/A21.53. MECHANICAL JOINTS SHALL MEET ANSI/AWWA/C111/A21.11 AMERICAN MANUFACTURER ONLY.

VALVES SHALL BE MECHANICAL JOINT, DOUBLE DISC PARALLEL SEAT OR RESILIENT SEAT GATE STYLES AS FOLLOWS
A. MUELLER CORPORATION DOUBLE DISC PARALLEL SEAT.
B. AMERICAN DARLING VALVE RESILIENT SEAT MODEL CRS-80.

PRESSURE TEST OF THE WATER SYSTEM SHALL BE 1.5 TIMES THE MAXIMUM WORKING PRESSURE OR 150 PSI. NOTIFY KENT COUNTY WATER AUTHORITY 2 DAYS PRIOR TO TEST AS APPLICABLE.

NOTIFY THE KENT COUNTY AUTHORITY 5 DAYS PRIOR TO CONSTRUCTION COMMENCEMENT.

7. CHLORINATION OF SYSTEM AND SAMPLING SHALL CONFORM TO SEC. 3.5 OF REQUIREMENTS FOR SERVICE AND MAIN INSTALLATION.

8. NOTIFY ENGINEER PRIOR TO COVERING OF WATER SERVICE TO SURVEY AS-BUILT LOCATION AND TO COMPLETE REQUIRED AS-BUILT PLAN. ENGINEER WILL NOT ACCEPT FIELD MEASUREMENTS FROM THE CONTRACTOR.

9. WATER SERVICE INSTALLATIONS GREATER THAN 200' MUST HAVE A METER PIT.

10. A METER PIT IS PROPOSED FOR THIS SITE AND IS LOCATED AT THE ENTRANCE.

11. TEMPORARY FLUSHING CONNECTIONS AND BLOW-OFFS SHALL BE SIZED TO PROVIDE 2.5-FEET PER SECOND FLOW PER AWWA STANDARD 651

12. CONTRACTOR RESPONSIBLE TO COORDINATE WITH PLUMBING OFFICIAL FOR DISINFECTION OF SERVICE PIPE EXTENDING FROM CURB BOX TO HOME PER STATE PLUMBING CODE AND KENT COUNTY WATER AUTHORITY REGULATIONS. WATER SERVICE CANNOT BE ACTIVATED WITHOUT COPY OF LAB RESULTS AND PLUMBING INSPECTOR'S VERIFICATION.

13. ALL INSTALLATION SHALL CONFORM TO RULES AND REGULATIONS OF THE KENT COUNTY WATER AUTHORITY–SEPTEMBER 20, 2006 OR LATEST EDITION.

14. PRESSURE–REDUCING VALVES ARE REQUIRED AT ALL BUILDINGS PER RI BUILDING CODE.

SEWER LINE/WATER MAIN SEPARATION POLICY

KENT COUNTY WATER AUTHORITY RULES AND REGULATIONS 3.21.18
WATER MAINS SHALL BE LAID WITH A MINIMUM OF TEN-FOOT HORIZONTAL CLEARANCE FROM ANY EXISTING SEWER FACILITIES. THE DISTANCE SHALL BE MEASURED EDGE TO EDGE. WATER MAINS CROSSING UNDER SEWERS SHALL BE FORBIDDEN. WATER MAINS CROSSING OVER SEWERS SHALL BE LAID TO PROVIDE A MINIMUM, VERTICAL SEPARATION OF EIGHTEEN-INCHES BETWEEN THE INVERT OF THE WATER MAIN AND THE CROWN OF THE SEWER. RE-ALIGNMENT OF AN EXISTING WATER MAIN OR RELOCATION OF THE SEWER MAY BE NECESSARY TO ACHIEVE THIS VERTICAL SEPARATION. THE GENERAL MANAGER/CHIEF ENGINEER MUST APPROVE ANY DEVIATION FROM THESE REQUIREMENTS. CONCRETE ENCASEMENT SHALL NOT BE ALLOWED IN THE DESIGN FOR SEWER AND WATER CROSSINGS.

KENT COUNTY WATER AUTHORITY RULES AND REGULATIONS 3.14.6
A MINIMUM OF TEN-FEET HORIZONTAL AND EIGHTEEN-INCH VERTICAL SEPARATION SHALL BE MAINTAINED IN THE PLACEMENT OF WATER MAINS, SERVICES OR APPURTENANCES WITHIN THE VICINITY OF SEWER FACILITIES OR VICE VERSA. IN CASES WHERE IT IS NOT POSSIBLE TO MAINTAIN A 10-FOOT, HORIZONTAL SEPARATION OR IN THE CASE OF CROSSING THE EIGHTEEN-INCH, VERTICAL SEPARATION, A DEVIATION FROM THIS RESTRICTION MAY BE ALLOWED ON A CASE BY CASE BASIS WITH PRIOR APPROVAL FROM THE GENERAL MANAGER/CHIEF ENGINEER AS TO THE PROPOSED MATERIALS AND INTERVENTIONS TO BE TAKEN TO PROTECT THE WATER SYSTEM FROM THE POSSIBILITY OF CONTAMINATION.

SITE SPECIFIC WATER NOTES:

1. AS PER SECTION 2.5.5.2 OF THE KCWA RULES AND REGULATIONS, PRIVATE HYDRANTS SHALL BE INCLUDED IN THE DEED RESTRICTIONS FOR THE PROPERTY. THE DEED RESTRICTION SHALL INCLUDE PERPETUAL MAINTENANCE OF THE HYDRANTS BY THE PROPERTY OWNERS. THE RESTRICTIONS WILL ALSO SPECIFY THAT, NO WATER SHALL BE DRAWN FROM THE FIRE SERVICE HYDRANT FOR ANY PURPOSE WHAT SO EVER EXCEPT TO EXTINGUISH A FIRE. ALL PRIVATE HYDRANTS SHALL BE PLACED BEHIND A METER AND AN APPROVED STYLE BACKFLOW DEVICE.
2. HOT BOX CONFIGURATION TO INCLUDE BYPASS PIPING WITH EITHER NON RISING STEM (NRS) VALVE ON INTERNAL VALVE ARRANGEMENT OR LOCKABLE POST INDICATOR VALVE EXTERIOR TO THE VAULT. REFERENCE SECTION 2.5.4.6 OF THE KCWA REGULATIONS. ALL VALVES SHALL MEET REQUIREMENTS OF THE KENT COUNTY WATER AUTHORITY.

DEPARTMENT OF ENVIRONMENTAL MANAGEMENT
OFFICE OF WATER RESOURCES
FRESHWATER WETLANDS PROGRAM
APPROVED WITH CONDITIONS
AS SPECIFIED IN THE LETTER OF APPROVAL
DATED MAY 12 2016 FILE # 07-0235
NO CHANGES ALLOWED WITHOUT PRIOR APPROVAL
APPROVED PLANS MUST BE AT CONSTRUCTION SITE

PLANNING BOARD APPROVED - WEST WARWICK, RI
CHAIRMAN:_____
DATE:_____

MAY 23 2016

Final Submission

DAVID A. RUSSO
No. 14345
REGISTERED PROFESSIONAL ENGINEER
CIVIL

NO.	DATE	DESCRIPTION	BY
10		FINAL SUBMISSION	
9	3-03-08	TRC / FIRE CHIEF COMMENTS	J.M.D.
8	2-01-08	PRELIMINARY SUBMISSION	J.M.D.
7	12-26-07	KCWA RE-SUBMISSION	J.M.D.
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5	11-26-07	SEWER REVISIONS	J.M.D.
4	11-19-07	UTILITY REVISIONS	J.M.D.
3	11-13-07	RIDEM WETLAND COMMENTS	J.M.D.
2	8-09-07	UTILITY SUBMISSION	J.M.D.
1	6-26-07	UTILITY SUBMISSION	J.M.D.
0	5-22-07	RIDEM WETLANDS SUBMISSION	D.A.R.

DETAIL SHEET

Orchard - Phase 1

ASSESSOR'S PLAT 1 LOTS 85, 145 & 529
NORTH PLEASANT STREET, WEST WARWICK, RHODE ISLAND

PREPARED BY
DiPrete Engineering Associates, Inc.
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BROOKFIELD, MA 01506

APRIL, 2007
DWN. BY: D.A.R.

SHEET 17 OF 19

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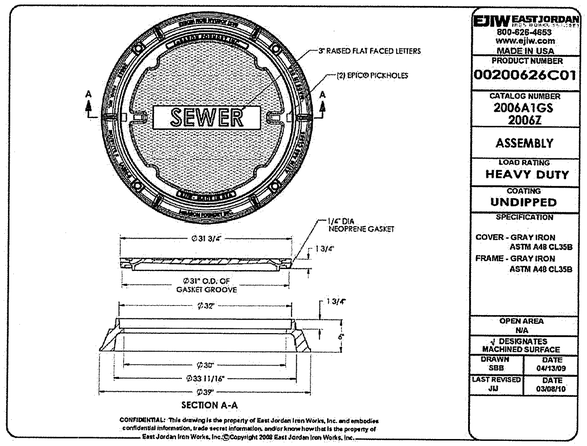

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MADE IN USA

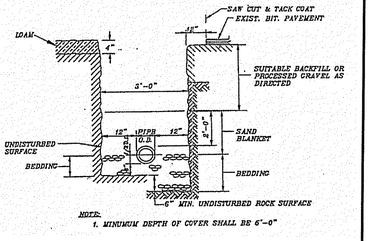
PRODUCT NUMBER	00200626C01
CATALOG NUMBER	2006A1GS 2006Z
	ASSEMBLY
LOAD RATING	HEAVY DUTY
COATING	UNDIPPED
SPECIFICATION	COVER - GRAY IRON ASTM A48 CL35B FRAME - GRAY IRON ASTM A48 CL35B
	OPEN AREA N/A
	√ DESIGNATES MACHINED SURFACE
DRAWN SBB	DATE 04/13/09
LAST REVISED JJJ	DATE 03/08/10

SEWER MANHOLE FRAME AND COVER DETAIL

NOT TO SCALE

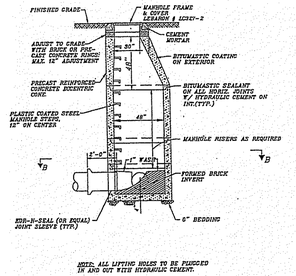
Town West Warwick, Rhode Island — Figure WW-9 SANITARY MANHOLE FRAME & COVER — Standard Sanitary Sewer Requirements — Date: 2009 — Scale: No Scale

Town West Warwick, Rhode Island — Figure WW-8 BOLTED & GASKETED FRAME & COVER — Standard Sanitary Sewer Requirements — Date: 2009 — Scale: No Scale



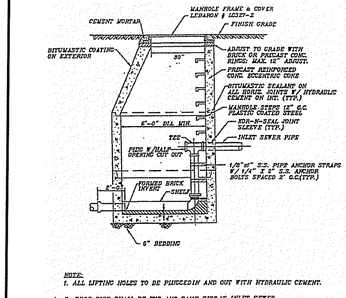
TRENCH DETAIL (GRAVITY SEWER)

NOT TO SCALE



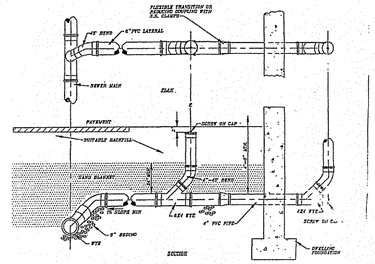
SANITARY MANHOLE

NOT TO SCALE



INSIDE DROP SANITARY MANHOLE (GRAVITY SEWER)

NOT TO SCALE



HOUSE CONNECTION DETAIL (GRAVITY SEWER)

NOT TO SCALE

GENERAL SEWER NOTES

1. INSTALLATION OF THE SEWERAGE FACILITIES SHALL BE IN ACCORDANCE WITH THE TOWN OF WEST WARWICK WASTE WATER DIVISION "STANDARD SANITARY SEWER REQUIREMENTS" IN EFFECT ON THE DATE PART I OF THE SEWER PERMIT AGREEMENT IS EXECUTED.
2. 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.
3. ALL SEWERAGE FACILITIES SHALL BE MEET TESTING AND CLEANING REQUIREMENTS PRIOR TO ACCEPTANCE.
4. AS-BUILT DRAWING SHALL BE FURNISHED AS A CONDITION FOR ACCEPTANCE OF THE NEW SEWERAGE FACILITIES.
5. NO FLOW WILL BE ACCEPTED UNTIL ALL ABOVE STEPS ARE COMPLETED AND COMPLETION CERTIFICATE IS ISSUED.
6. 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.
7. 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.
8. THE CONTRACTOR SHALL BE CONFINE HIS OPERATIONS AND ACTIVATES FOR CONSTRICTION PURPOSES WITHIN THE STREET LINES, EASEMENTS AND/OR RIGHT-OF-WAY AS SHOWN ON THE DRAWINGS.
9. 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.
10. 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 STARING 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.
11. VERTICAL SEPARATION OF SEWER AND WATER MAINS SHALL BE 1.5 CLEAR OR AS OTHERWISE APPROVED IN WRITING BY LOCAL WATER DEPARTMENT HAVING JURISDICTION.
12. APPROVAL OF THE ROAD OPENING SHALL BE OBTAINED BY CONTRACTOR PRIOR TO CONSTRUCTION FROM THE TOWN OF WEST WARWICK DIRECTOR OF PUBLIC WORKS.

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 A WATERMAIN, PROVIDED THAT:

1. THE SEWER AND WATER MAIN ARE LAID IN SEPARATE TRENCHES, OR
2. THE SEWER AND WATER MAIN MAY BE INSTALLED IN THE SAME TRENCH WITH THE WATERMAIN PLACED ON A BENCH OF UNDISTURBED EARTH, AND
3. 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:

4. 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:

A. 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

B. ANY OTHER METHODS, IF SUPPORTED BY DATA FROM THE DESIGN ENGINEER, WHICH ENSURE ADEQUATE WATER TIGHTNESS AND ARE SATISFACTORY TO THE DIVISION.

DEPARTMENT OF ENVIRONMENTAL MANAGEMENT
OFFICE OF WATER RESOURCES
FRESHWATER WETLANDS PROGRAM
APPROVED WITH CONDITIONS
AS SPECIFIED IN THE LETTER OF APPROVAL
DATED MAY 2 2016 FILE # 07-0235
NO CHANGES ALLOWED WITHOUT PRIOR APPROVAL
APPROVED PLANS MUST BE AT CONSTRUCTION SITE
Charles A. Horbert

LEAKAGE AND PRESSURE TESTING FOR SEWER FORCE MAINS AND WATERMAINS

1. 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 C600, KCWA, THE TOWN OF WEST WARWICK, AND AS SPECIFIED BELOW.

THE CONTRACTOR IS RESPONSIBLE FOR FURNISHING ALL LABOR, TOOLS AND EQUIPMENT NECESSARY FOR TESTING.

2. 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.

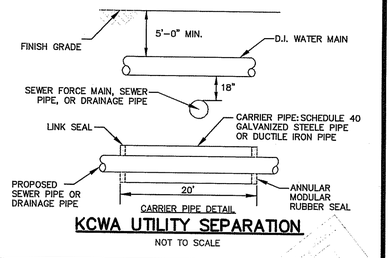
ALL LEAKS IN THE PIPELINE SHALL BE STOPPED; CRACKED OR DEFECTIVE PIPE, FITTINGS OR ACCESSORIES SHALL BE REMOVED AND REPLACED WITH NEW BY THE CONTRACTOR.

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. WATERMAINS - 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.

NOTES:
THE VERTICAL SEPARATION BETWEEN THE WATER MAIN AND THE PROPOSED UTILITY SHALL BE A MINIMUM OF 18 INCHES.
THE HORIZONTAL SEPARATION BETWEEN THE WATER MAIN AND THE PROPOSED UTILITY SHALL BE A MINIMUM OF 10 FEET.
IF 1 OR 2 CAN NOT BE MAINTAINED THE PROPOSED UTILITY SHALL BE INSTALLED WITHIN A CARRIER PIPE UPON WRITTEN APPROVAL BY THE KCWA.
SEWER MAIN AND SERVICES ARE NOT ALLOWED TO CROSS OVER THE TOP OF THE WATER MAIN.
CONCRETE ENCASEMENT IS NOT ALLOWED.
FROM THE KENT COUNTY WATER AUTHORITY DATE: 09/2006



KCWA UTILITY SEPARATION

NOT TO SCALE

PLANNING BOARD APPROVED - WEST WARWICK, RI

CHAIRMAN: _____

DATE: _____

RECEIVED MAR 23 2016

Final Submission

DAVID A. RUSSO
No. 14,705
REGISTERED PROFESSIONAL ENGINEER CIVIL

NO.	DATE	DESCRIPTION	BY
10		FINAL SUBMISSION	
9	3-03-08	TRC / FIRE CHIEF COMMENTS	J.M.D.
8	2-01-08	PRELIMINARY SUBMISSION	J.M.D.
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0	5-22-07	RIDEM WETLANDS SUBMISSION	D.A.R.

DETAIL SHEET

Orchard - Phase 1

ASSESSOR'S PLAT 1 LOTS 85, 145 & 529
NORTH PLEASANT STREET, WEST WARWICK, RHODE ISLAND

PREPARED BY
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BROOKFIELD, MA 01506

APRIL, 2007
DWN. BY: D.A.R.

SHEET 18 OF 19

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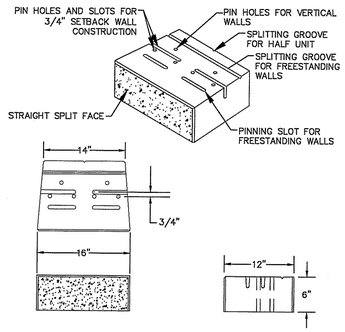
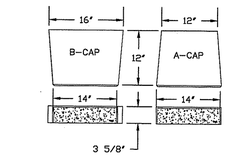


VERSA-LOK BLOCK DETAIL

NOT TO SCALE



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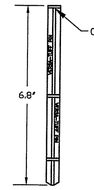
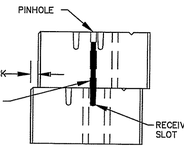


VERSA-TUFF PIN



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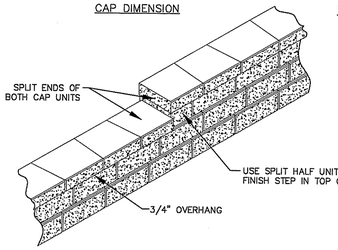
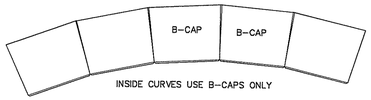
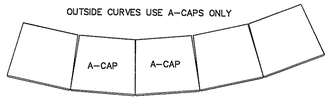




INSIDE CURVES USE B-CAPS ONLY

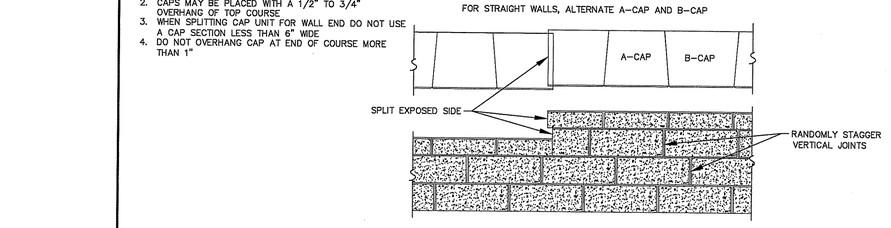


OUTSIDE CURVES USE A-CAPS ONLY

GENERAL NOTES FOR CAPPING:

1. CAPS SHALL BE ADHERED TO WALL USING VERSA-LOK CONCRETE ADHESIVE
2. CAPS MAY BE PLACED WITH A 1/2" TO 3/4" OVERHANG OF TOP COURSE
3. WHEN SPLITTING CAP UNIT FOR WALL END DO NOT USE A CAP SECTION LESS THAN 6" WIDE
4. DO NOT OVERHANG CAP AT END OF COURSE MORE THAN 1"

FOR STRAIGHT WALLS, ALTERNATE A-CAP AND B-CAP



VERSA-LOK CAPPING & PINNING DETAIL

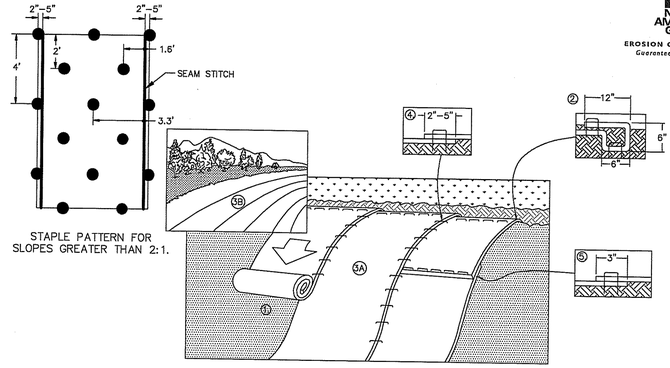
NOT TO SCALE

NOTES:

1. PREPARE SOIL BEFORE INSTALLING BLANKETS, INCLUDING ANY NECESSARY APPLICATION OF LIME, FERTILIZER, AND SEED. NOTE: WHEN USING CELL-O-SEED DO NOT SEED PREPARED AREA. CELL-O-SEED MUST BE INSTALLED WITH PAPER SIDE DOWN.
2. BEGIN AT THE TOP OF THE SLOPE BY ANCHORING THE BLANKET IN A 6" (15cm) DEEP X 6" (15cm) WIDE TRENCH WITH APPROXIMATELY 12" (30cm) OF BLANKET EXTENDED BEYOND THE UP-SLOPE PORTION OF THE TRENCH. ANCHOR THE BLANKET WITH A ROW OF STAPLES/STAKES APPROXIMATELY 12" (30cm) APART IN THE BOTTOM OF THE TRENCH. BACKFILL AND COMPACT THE TRENCH AFTER STAPLING. APPLY SEED TO COMPACTED SOIL AND FOLD REMAINING 12" (30cm) PORTION OF BLANKET BACK OVER SEED AND COMPACTED SOIL. SECURE BLANKET OVER COMPACTED SOIL WITH A ROW OF STAPLES/STAKES SPACED APPROXIMATELY 12" (30cm) APART ACROSS THE WIDTH OF THE BLANKET.
3. ROLL THE BLANKETS (A.) DOWN OR (B.) HORIZONTALLY ACROSS THE SLOPE. BLANKETS WILL UNROLL WITH APPROPRIATE SIDE AGAINST THE SOIL SURFACE. ALL BLANKETS MUST BE SECURELY FASTENED TO SOIL SURFACE BY PLACING STAPLES/STAKES IN APPROPRIATE LOCATIONS AS SHOWN IN THE STAPLE PATTERN GUIDE. WHEN USING OPTIONAL DOT SYSTEM , STAPLES/STAKES SHOULD BE PLACED THROUGH EACH OF THE COLORED DOTS CORRESPONDING TO THE APPROPRIATE STAPLE PATTERN.
4. THE EDGES OF PARALLEL BLANKETS MUST BE STAPLED WITH APPROXIMATELY 2"-5" (5cm-12.5cm) OVERLAP DEPENDING ON BLANKET TYPE. TO ENSURE PROPER SEAM ALIGNMENT, PLACE THE EDGE OF THE OVERLAPPING BLANKET (BLANKET BEING INSTALLED ON TOP) EVEN WITH THE COLORED SEAM STITCH ON THE PREVIOUSLY INSTALLED BLANKET.
5. CONSECUTIVE BLANKETS SPLICED DOWN THE SLOPE MUST BE PLACED END OVER END (SHINGLE STYLE) WITH AN APPROXIMATE 3" (7.5cm) OVERLAP. STAPLE THROUGH OVERLAPPED AREA, APPROXIMATELY 12" (30cm) APART ACROSS ENTIRE BLANKET WIDTH.

*IN LOOSE SOIL CONDITIONS, THE USE OF STAPLE OR STAKE LENGTHS GREATER THAN 6" (15cm) MAY BE NECESSARY TO PROPERLY SECURE THE BLANKETS.

NORTH AMERICAN GREEN®
EROSION CONTROL Products Guaranteed SOLUTIONS



STAPLE PATTERN FOR SLOPES GREATER THAN 2:1.

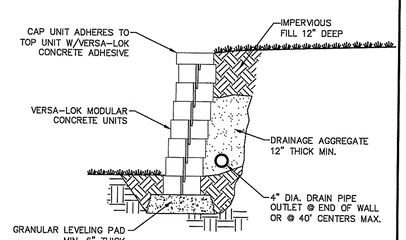
REINFORCED SLOPE INSTALLATION
(NORTH AMERICAN GREEN C-350 OR ENGINEER APPROVED EQUAL)

NOT TO SCALE

RETAINING WALL INSTILLATION NOTES:

1. STRIP VEGETATION AND ORGANIC SOIL FROM WALL AND GEOSYNTHETIC ALIGNMENT.
2. BENCH CUT ALL EXCAVATED SLOPES.
3. DO NOT EXCAVATE BEYOND EXCAVATION LINES SHOWN ON PLAN UNLESS DIRECTED BY SITE SOILS ENGINEER TO REMOVE UNSUITABLE SOIL.
4. CONTRACTOR SHALL ENSURE TEMPORARY EXCAVATIONS ARE STABLE AND PROVIDE EXCAVATION SUPPORT IF NEEDED.
5. SITE SOILS ENGINEER SHALL VERIFY FOUNDATION SOILS AS BEING COMPETENT PER THE DESIGN PARAMETERS.
6. LEVELING PAD SHALL CONSIST OF WELL GRADED ROAD BASE AGGREGATE, 3/4" CRUSHED, ANGULAR GRAVEL WITH SOME FINES
7. CONTRACTOR MAY OPT FOR A LEAN CONCRETE LEVELING PAD. PAD SHALL BE UNREINFORCED LEAN CONCRETE, 200-300 PSI, 3" THICK MAXIMUM.
8. DRAINAGE AGGREGATE SHALL CONSIST OF CLEAN ANGULAR GRAVEL, 3/4" DIAMETER WITH LESS THAN 5% FINES.
9. DRAINAGE PIPE SHALL BE PERFORATED OR SLOTTED PVC OR CORRUGATED HDPE PIPE.
10. REINFORCED BACKFILL SHALL BE FREE OF DEBRIS, ORGANIC SOIL, AND EXPANSIVE SOILS.
11. FOR UNITS TO BE EMBEDDED, COMPACT FILL IN FRONT OF UNITS AT THE SAME TIME FILL BEHIND UNITS IS COMPACTED.
12. COMPACTION SHALL BE TO 95% OF MAXIMUM STANDARD PROCTOR DENSITY. (ASTM D-698)
13. COMPACTION TESTS SHALL BE TAKEN AS THE WALL IS INSTALLED. THE MINIMUM NUMBER OF TESTS SHALL BE DETERMINED BY THE SITE SOILS ENGINEER.
14. COMPACTION WITHIN 3FT. OF WALL SHALL BE LIMITED TO HAND OPERATED EQUIPMENT.
15. CONTRACTOR SHALL SLOPE SITE GRADES TO DIRECT SURFACE RUNOFF AWAY FROM WALL AT END OF EACH DAY TO AVOID WATER DAMAGING THE WALL WHILE UNDER CONSTRUCTION.
16. ANY SURFACE DRAINAGE FEATURES, FINISH GRADING, PAVEMENT, OR TURF SHALL BE INSTALLED IMMEDIATELY AFTER WALL IS COMPLETED.
17. FOLLOW APPLICABLE PROVISIONS OF THE WALL UNIT AND GEOSYNTHETIC MANUFACTURER'S INSTALLATION INSTRUCTIONS AND WRITTEN SPECIFICATIONS.
18. IF SITE AND SOIL CONDITIONS, WALL GEOMETRY, OR WALL LOADINGS ARE DIFFERENT THAN IN THE DRAWINGS AND THE DESIGN PARAMETERS, THE CONTRACTOR MUST CONTACT DESIGN ENGINEER PRIOR TO PROCEEDING WITH THE CONSTRUCTION OF THE WALL.
19. UNREINFORCED HEIGHT TO 4' ONLY.
20. CONSTRUCTION TO PROVIDE SHOP DRAWING TO ENGINEERING FOR APPROVAL PRIOR TO CONSTRUCTION.

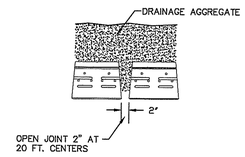
NOTES:
FINAL SHOP DRAWINGS TO BE PROVIDED TO ENGINEER FOR APPROVAL WALLS OVER 4' REQUIRE ADDITIONAL DESIGN BY OTHERS.



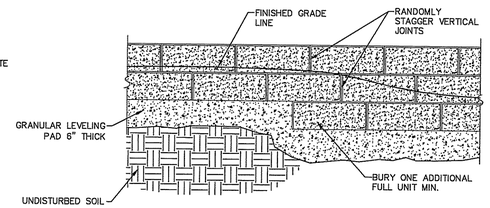
TYPICAL SECTION-UNREINFORCED RETAINING WALL

STEPPING NOTES:

- LIMIT CHANGES IN BASE ELEVATION TO 6" PER STEP TO AVOID DIFFERENTIAL SETTLEMENT.
- STEP OFTEN ENOUGH TO MAINTAIN MINIMUM REQUIRED EMBEDMENT



DRAIN DETAIL



STEPPING BASE DETAIL

MODULAR BLOCK DETAIL - VERSA-LOK (OR APPROVED EQUAL) UNREINFORCED RETAINING WALL UP TO 4'

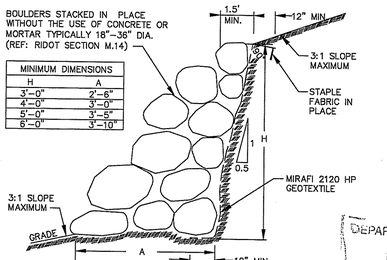
NOT TO SCALE

NOTES:

1. MAXIMUM HEIGHT OF BOULDER RETAINING WALL IS 6 FEET.
2. FOOTING TO BE COMPACTED TO 95% AND SLOPED TOWARDS EMBANKMENT OR LAID LEVEL

BOULDERS STACKED IN PLACE WITHOUT THE USE OF CONCRETE OR MORTAR TYPICALLY 18"-36" DIA. (REF: RIDOT SECTION M.14)

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



BOULDER RETAINING WALL (3' TO 6')

NOT TO SCALE

SITE SPECIFIC NOTES:

1. ALL RETAINING WALLS AND STEEP SLOPES ARE SHOWN SCHEMATICALLY ONLY AND DIPRETE ENGINEERING ASSOCIATES, INC. IS NOT PROVIDING THE DESIGN OF THESE ITEMS. THE ACTUAL WALLS AND SLOPES ARE TO BE BUILT UNDER THE DIRECTION OF A GEOTECHNICAL ENGINEER AND CERTIFIED TO THE OWNER PRIOR TO THE COMPLETION OF THE PROJECT. SHOP DRAWINGS TO BE SUBMITTED PRIOR TO CONSTRUCTION.
2. ALL CUT AND FILL AREAS ARE TO BE DONE UNDER THE DIRECTION OF A GEOTECHNICAL ENGINEER WITH TESTING AND CERTIFICATION TO BE PROVIDED TO THE OWNER AT THE COMPLETION OF THE PROJECT. DIPRETE ENGINEERING ASSOCIATES, INC. HAS NOT PROVIDED THE FILL SPECIFICATION, GEOTECHNICAL ENGINEERING, STRUCTURAL ENGINEERING SERVICES, OR SUPERVISION AS PART OF THESE DRAWINGS.
3. ADDITIONAL SUBDRAINS MAY BE REQUIRED IN THE AREAS OF THE CUT SLOPES TO CONTROL GROUNDWATER.
4. PROPOSED RETAINING WALLS MAY BE SUBSTITUTED BY THE CONTRACTOR UPON PERMISSION FROM DIPRETE ENGINEERING ASSOCIATES.

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

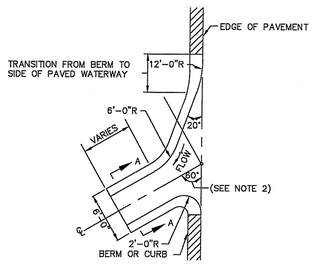
MAR 23 2016

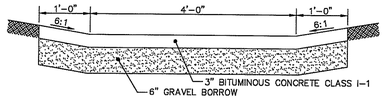
PLANNING BOARD APPROVED - WEST WARWICK, RI

CHAIRMAN: _____
DATE: _____

Final Submission

R.I. STANDARD 8.4.0





SECTION A-A

1. SHALL BE IN ACCORDANCE WITH SECTION 711 OF THE R.I. STANDARD SPECIFICATIONS.
2. WHEN PAVED WATERWAY IS USED AT A LOW POINT THIS ANGLE SHALL BE 90°.

PAVED WATERWAY

NOT TO SCALE

DAVID A. RUSSO
No. 13365
REGISTERED PROFESSIONAL ENGINEER
CIVIL

NO.	DATE	DESCRIPTION	BY
10		FINAL SUBMISSION	
9	3-03-08	TRC / FIRE CHIEF COMMENTS	J.M.D.
8	2-01-08	PRELIMINARY SUBMISSION	J.M.D.
7	12-26-07	KCWA RE-SUBMISSION	J.M.D.
6	11-30-07	KCWA RE-SUBMISSION	J.M.D.
5	11-26-07	SEWER REVISIONS	J.M.D.
4	11-13-07	UTILITY REVISIONS	J.M.D.
3	11-13-07	RIDEM WETLAND COMMENTS	J.M.D.
2	8-09-07	UTILITY SUBMISSION	J.M.D.
1	8-02-07	UTILITY SUBMISSION	J.M.D.
0	5-21-07	RIDEM WETLANDS SUBMISSION	D.A.R.

DETAIL SHEET

Orchard - Phase 1

ASSESSOR'S PLAT 1 LOTS 85, 145 & 529
NORTH PLEASANT STREET, WEST WARWICK, RHODE ISLAND

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
David Fromm
PO BOX 76
BROOKFIELD, MA 01506

APRIL, 2007
DWN. BY: D.A.R.

SHEET 19 OF 19

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\\Restorage\domain\projects\0351-003 hunters reserve\autocad drawings\0351-003 detail sheets.dwg Plotted: 3/22/2016

Preliminary Determination Submission

Hunters Reserve

North Pleasant Street
West Warwick, Rhode Island
Assessor's Plat 1, Lots 85, 145 & 529

DEPARTMENT OF ENVIRONMENTAL MANAGEMENT
OFFICE OF WATER RESOURCES
FRESHWATER WETLANDS PROGRAM
APPROVED WITH CONDITIONS
AS SPECIFIED IN THE LETTER OF APPROVAL
DATED DEC 26 2007 FILE # 07-0235
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Charles A. Horbert

Sheet Index

1. Cover Sheet
2. Aerial 1/2 Mile Radius
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12. Plan and Profile
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14. Plan and Profile
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16. Plan and Profile
17. Plan and Profile
18. Detail Sheet
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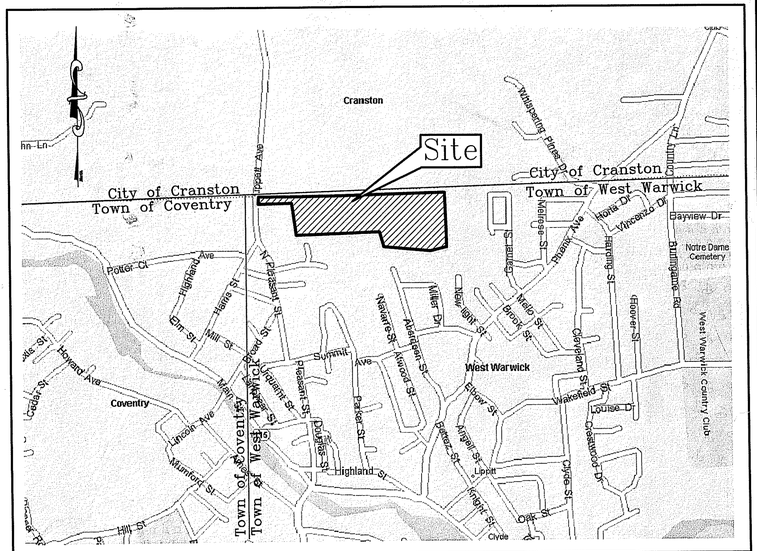
20. Detail Sheet
21. Detail Sheet
22. Detail Sheet
23. Detail Sheet
24. Detail Sheet



LOCATION MAP

NOV 13 2007

CHRISTOPHER A. DUHAMEL
No. 1844
PROFESSIONAL LAND SURVEYOR

CHRISTOPHER A. DUHAMEL
No. 5013
REGISTERED PROFESSIONAL ENGINEER

NO.	DATE	DESCRIPTION	BY
3	11-13-07	RIDEM WETLAND COMMENTS	JMD
2	9-28-07	UTILITY SUBMISSION	JMD
1	6-25-07	UTILITY SUBMISSION	JMD
0	5-22-07	RIDEM WETLANDS SUBMISSION	DAR

COVER SHEET

Hunters Reserve
ASSESSOR'S PLAT 1 LOTS 85, 145 & 529
NORTH PLEASANT STREET, WEST WARWICK, RHODE ISLAND

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

PREPARED FOR
Bradford Sternbach, LLC.
1936 PHENIX AVENUE
CRANSTON, R.I. 02921
(401) 573-6525

APRIL, 2007
DWN. BY: D.A.R.

SHEET 1 OF 24

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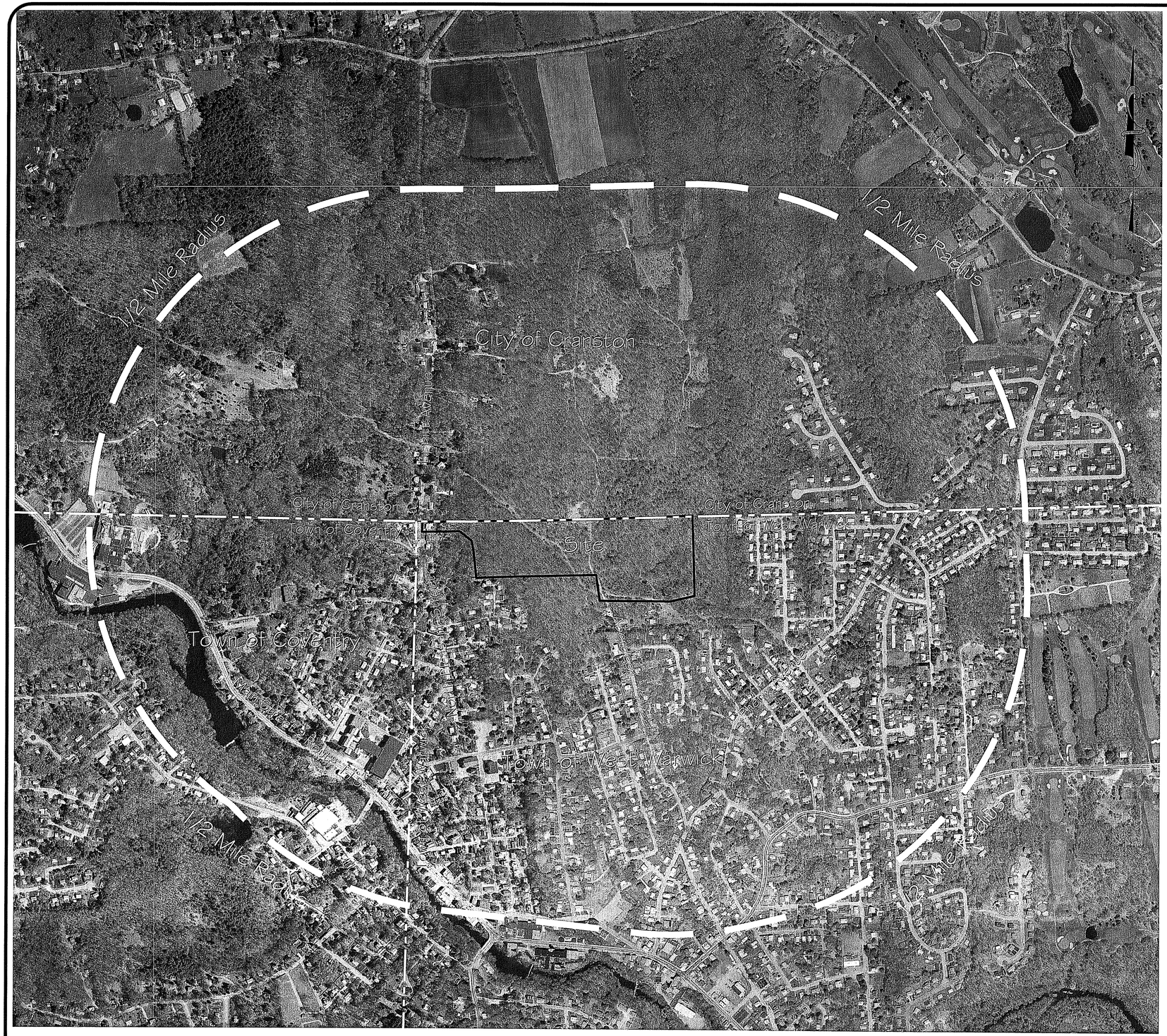


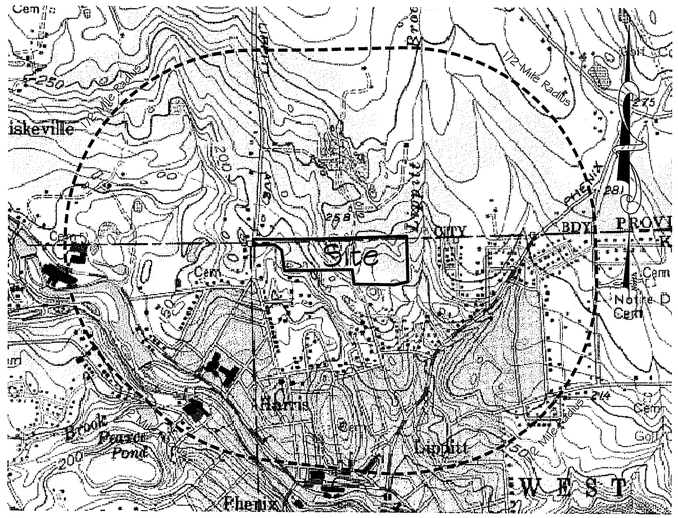
Aerial Photographic Map

Scale: 1"=400'

PHOTO OBTAINED FROM THE RI-GIS DIGITAL ORTHOPHOTO QUAD LIBRARY RHODE ISLAND GEOGRAPHIC INFORMATION SYSTEM (RIGIS) AND MASSACHUSETTS INSTITUTE OF TECHNOLOGY (MIT), COLOR AERIAL PHOTO DATED 2004.

SCALE: 1"=400'

0 200' 400' 800'



USGS TOPOGRAPHIC MAP Scale: 1"=1000'

LEGEND

- EXISTING TREELINE
- ABUTTING PROPERTY LINE
- SOIL DIVISION LINE
- PROPERTY LINE WITH HATCH
- EXISTING BUILDING
- 50' FOOT PERIMETER WETLAND LINE
- 100' FOOT PERIMETER RIVERBANK WETLAND
- EXISTING STONEWALL
- SLOPES OF 20% OR GREATER
- UTILITY POLE & UTILITY POLE WITH LIGHT
- TWO FOOT CONTOUR
- TEN FOOT CONTOUR
- EXISTING STREAM
- FLAGGED WETLAND LINE
- DIRT WALKWAY
- PROPOSED HOUSE
- EXISTING WATER LINE
- TOWN LINE
- EXISTING EASEMENT
- FLAGGED WETLAND LINE
- EXISTING ROCKOUT CROP
- PROPOSED WATER SERVICE
- PROPOSED SEWER SERVICE
- EXISTING SEWER LINE WITH MANHOLE
- SILT FENCE OR HAY BALES AT LIMIT OF DISTURBANCE
- LIMIT OF DISTURBANCE LINE
- PROPOSED DRAINAGE
- PROPOSED CATCHBASIN
- PROPOSED DOUBLE CATCHBASIN
- PROPOSED MANHOLE
- PROPOSED FLARED END
- PROPOSED RIP RAP APRON
- PROPOSED DRYWELL SYSTEM
- PROPOSED PAVED DRIVEWAY
- TEST HOLE
- PROPOSED CONTOURS
- STONEWALL PROPOSED

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AERIAL 1/2 MILE RADIUS

Hunters Reserve

ASSESSOR'S PLAT 1 LOTS 85, 145 & 529
NORTH PLEASANT STREET, WEST WARWICK, RHODE ISLAND

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(401) 573-6525

APRIL, 2007
DWN. BY: D.A.R.

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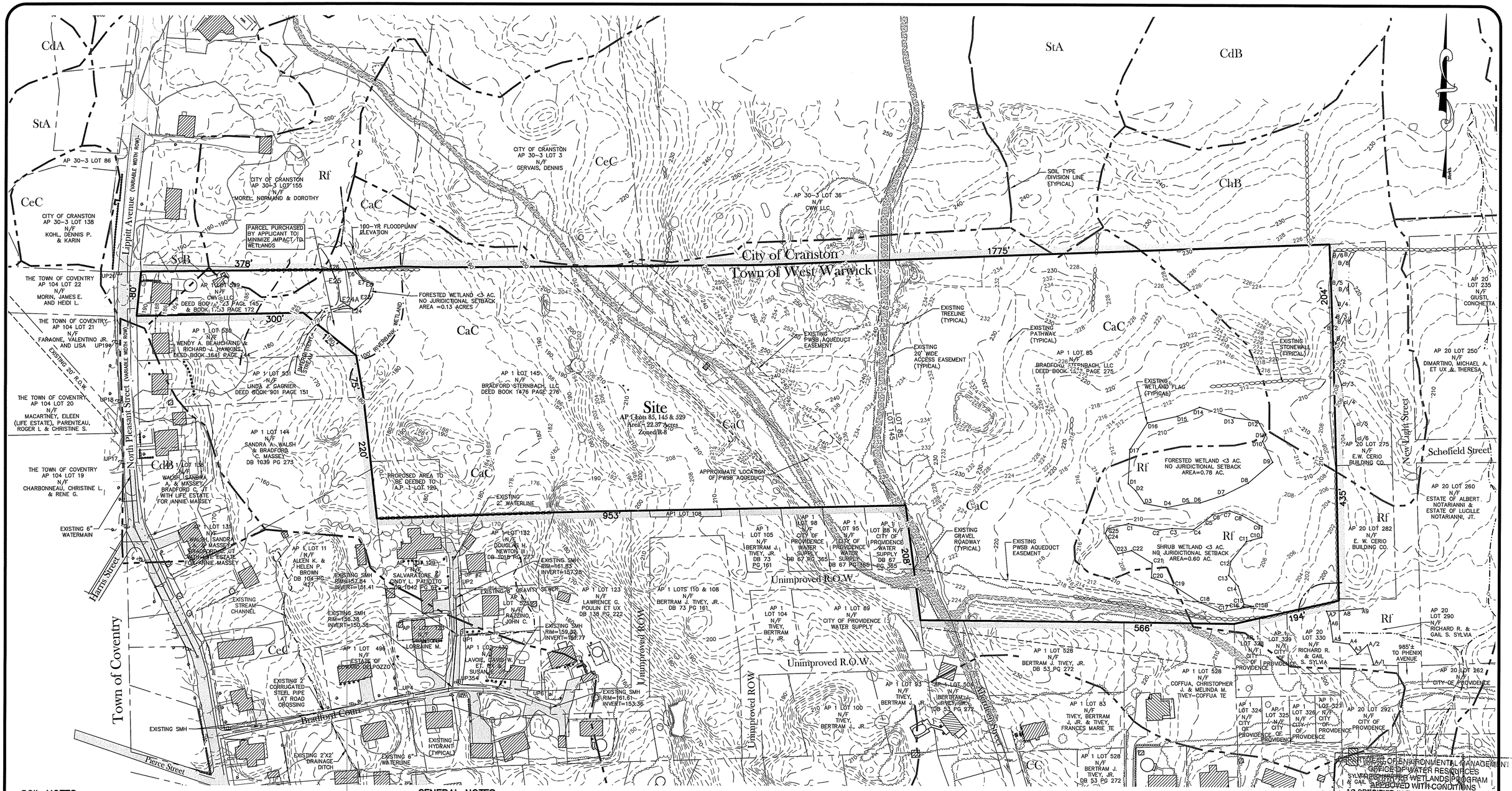

SOIL NOTES

CaC – CANTON–CHARLTON–ROCK OUTCROP COMPLEX, 3 TO 15 PERCENT SLOPES – THIS COMPLEX CONSISTS OF GENTLY SLOPING TO SLOPING, 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. THE COMPLEX IS SUITABLE FOR COMMUNITY DEVELOPMENT.

ChB – CANTON AND CHARLTON VERY STONY FINE SANDY LOAMS, 3 TO 8 PERCENT SLOPES – THESE GENTLY SLOPING, WELL DRAINED SOILS ARE ON SIDE SLOPES AND CRESTS 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 BUT THE STONY SURFACE IS A LIMITATION.

Rf – RIDGEBURY, WHITMAN, AND LEICESTER EXTREMELY STONY FINE SANDY LOAMS – THESE NEARLY LEVEL, POORLY DRAINED AND VERY POORLY DRAINED SOILS ARE ALONG DRAINAGE WAYS 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.

SvB – SUTTON EXTREMELY STONY FINE SANDY LOAM. THIS NEARLY LEVEL TO GENTLY SLOPING MODERATELY WELL DRAINED SOIL IS ON THE LOWER SIDE SLOPES OF GLACIAL UPLAND HILLS AND IN LOW AREAS THAT BORDER UP LANDS. THE PERMEABILITY OF THIS SOIL IS MODERATE OR MODERATELY RAPID.

GENERAL NOTES

1. SITE IS LOCATED ON ASSESSOR'S PLAT 1 LOTS 85, 145 & 529 IN THE TOWN OF WEST WARWICK. THE SITE IS ZONED R–8. APPROXIMATE AREA OF THE SITE IS 22.37± AC.
2. THE OWNERS OF THE SITE ARE:
   A.P. 1 LOT 85 (DB 1106/ PG 169–170)
   BRADFORD STERNBACH, LLC.
   1936 PHENIX AVENUE
   CRANSTON, RHODE ISLAND. 02921
   A.P. 1 LOT 145 (DB 1106 / PG 171–172)
   BRADFORD STERNBACH, LLC.
   1936 PHENIX AVENUE
   CRANSTON, RHODE ISLAND. 02921
   A.P. 1 LOT 529 (DB 1084/ PG 218)
   CWW, LLC
   69 NORTH PLEASANT STREET
   WEST WARWICK, RI. 02893
3. TOPOGRAPHY SURVEYED BY AEROTECH INTERNATIONAL CORP., 365 SMITH STREET, SUITE ONE, PROVIDENCE, RI. 02908–3759. MAPPING MEETS OR EXCEEDS NATIONAL MAP ACCURACY STANDARDS. VERTICAL DATUM IS NGVD–29 (MSL). DATE OF PHOTOGRAPHY – APRIL 5, 1999.
4. WETLANDS ON SITE HAVE BEEN DELINEATED BY NATURAL RESOURCE SERVICES, INC.. P.O. BOX 311, HARRISVILLE, RI 02830 AND HAVE BEEN LOCATED ONSITE BY DIPRETE ENGINEERING ASSOCIATES, INC.. THE WETLAND EDGE HAS BEEN VERIFIED BY RIDEM FRESHWATER WETLANDS UNDER APPLICATION NO. 05–0388 DATED OCTOBER 13, 2005.
5. SOIL MAPPING OBTAINED FROM THE "SOIL SURVEY OF RHODE ISLAND" PREPARED BY U.S. DEPARTMENT OF AGRICULTURE SOIL CONSERVATION SERVICE.
6. THE SITE LIES WITHIN A ZONE C – "AREAS OF MINIMAL FLOODING". REFERENCE FEMA FLOOD INSURANCE RATE MAP 440007 0001 B REVISED APRIL 15, 1986. THE LATEST RIDEM FWW REGULATIONS RECOGNIZE THAT ALL STREAM/INTERMITTENT STREAMS/RIVERS DO HAVE A 100–YEAR FLOOD PLAIN.
7. THE AREA IS CURRENTLY SERVICED BY ABOVE GROUND UTILITIES, AND MUNICIPAL WATER AND SEWER.
8. THE PLAN ITSELF CONFORMS ONLY TO A CLASS III STANDARD AS ADOPTED BY RHODE ISLAND BOARD OF REGISTRATION FOR PROFESSIONAL LAND SURVEYORS. THIS PLAN IS NOT TO BE CONSTRUED AS A CLASS I BOUNDARY PLAN AND IS NOT SUITABLE FOR RECORDING AS A CLASS I STANDARD.
9. THE 100 YEAR FLOOD PLAIN LINE AND ELEVATION SHOWN FOR THE INTERMITTENT STREAM FLOWING ON THE SUBJECT PROJECT SITE IS BASED ON CALCULATIONS INCLUDED IN THE DRAINAGE REPORT ENTITLED "SOIL EROSION & SEDIMENT CONTROL AND STORMWATER MANAGEMENT REPORT PREPARED FOR BRADFORD STERNBACH, LLC. IN WEST WARWICK, RHODE ISLAND" DATED MAY, 2007."
10. RIDEM WETLANDS APPLICATION NUMBERS PRELIMINARY DETERMINATION 07–0235. EDGE VERIFICATION 05–0388

CERTIFICATION:

THIS SURVEY AND PLAN CONFORM TO A CLASS III STANDARD AS ADOPTED BY THE RHODE ISLAND BOARD OF REGISTRATION FOR PROFESSIONAL LAND SURVEYORS. SEE NOTE 8.

BY: _____
Registered Professional Land Surveyor

SCALE: 1"=80'
0 40' 80' 160'

CHRISTOPHER A. DUHAMEL
No. 1844
PROFESSIONAL LAND SURVEYOR

NO.	DATE	DESCRIPTION	BY
3	11-13-07	RIDEM WETLAND COMMENTS	J.M.D.
2	8-09-07	UTILITY SUBMISSION	J.M.D.
1	6-26-07	UTILITY SUBMISSION	J.M.D.
0	5-22-07	RIDEM WETLANDS SUBMISSION	D.A.R.

EXISTING CONDITIONS

Hunters Reserve

ASSESSOR'S PLAT 1 LOTS 85, 145 & 529
NORTH PLEASANT STREET, WEST WARWICK, RHODE ISLAND

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
Bradford Sternbach, LLC.
1936 PHENIX AVENUE
CRANSTON, R.I. 02921
(401) 573–6525

APRIL, 2007
DWN. BY: D.A.R.

SHEET 3 OF 24

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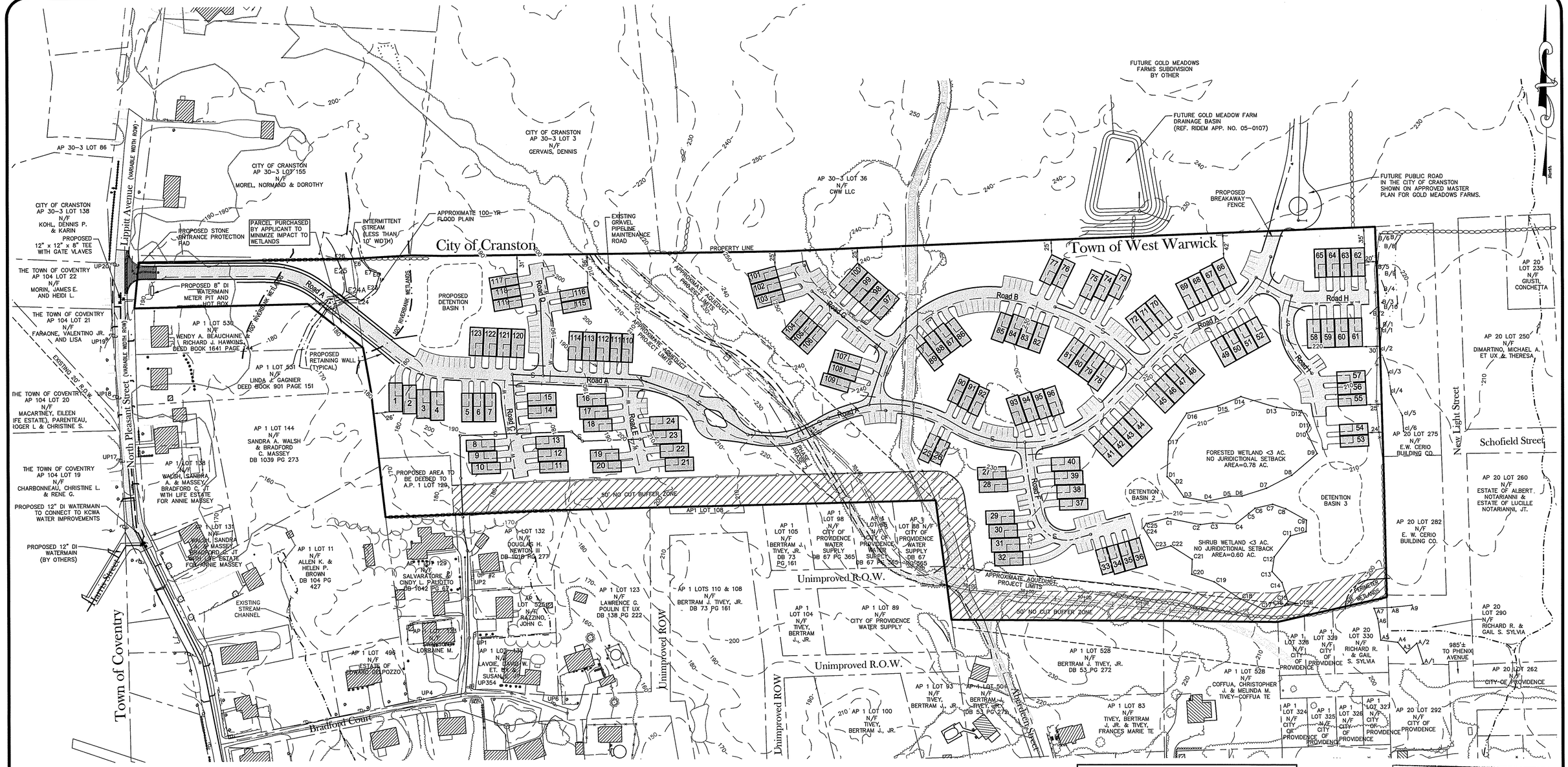
STATE OF RHODE ISLAND
DEPARTMENT OF ENVIRONMENTAL MANAGEMENT
OFFICE OF WATER RESOURCES
FRESHWATER WETLANDS PROGRAM
APPROVED WITH CONDITIONS
AS SPECIFIED IN THE LETTER OF APPROVAL
DATED DEC 26 2007 FILE # 07-0235
NO CHANGES ALLOWED WITHOUT PRIOR APPROVAL
APPROVED PLANS MUST BE AT CONSTRUCTION SITE

NOV 13 2007

I:\Engineers2\transfers\0351-003 Hunters Reserve D:\dwg\0351-003 Preliminary _LAB SEWER DESIGN.dwg, 3 Ex, 11/13/2007 11:03:42 AM



GENERAL NOTES

1. THE PROPOSED CONDOMINIUM DEVELOPMENT IS TO BE SERVICED BY A PRIVATE ROADWAY AND DRAINAGE TO BE MAINTAINED BY A CONDOMINIUM ASSOCIATION (C.A.)
2. THE PROPOSED CONDOMINIUMS ARE TO BE SERVICED BY PUBLIC SEWERS THAT WILL CONNECT TO THE WEST WARWICK REGIONAL WASTEWATER TREATMENT FACILITY. THERE ARE BOTH GRAVITY AND LOW-PRESSURE SEWERS PROPOSED ON SITE.
3. THE PROPOSED CONDOMINIUMS WILL BE SERVICED BY PUBLIC WATER UNDER JURISDICTION OF THE KENT COUNTY WATER AUTHORITY.
4. THE DRAINAGE SYSTEM IS DESIGNED TO MEET THE TOWN OF WEST WARWICK LAND DEVELOPMENT REGULATIONS WITH THE USE OF CATCH BASINS, CULVERTS AND DRAINAGE DETENTION BASINS. THE DRAINAGE BASINS ARE SIZED TO CONTROL THE DISCHARGE OF STORMWATER TO LEVELS WHICH PRESENTLY EXIST FOR THE 2 -100 FREQUENCY YEAR STORM EVENTS. THE STORMWATER MANAGEMENT MEETS THE BEST MANAGEMENT PRACTICES OF RIDEM.
5. WETLANDS ON SITE HAVE BEEN DELINEATED BY NATURAL RESOURCE SERVICES, INC. P.O. BOX 311, HARRISVILLE, RI 02830 AND HAVE BEEN LOCATED ONSITE BY DIPRETE ENGINEERING ASSOCIATES, INC.. THE WETLAND EDGE HAS BEEN VERIFIED BY RIDEM FRESHWATER WETLANDS UNDER APPLICATION NO. 05-0388 DATED OCTOBER 13, 2005.
6. THE SITE IS PROPOSED IN TWO PHASES.
   PHASE 1 LOTS 1-24 & 110-123.
   PHASE 2 LOTS 25-109
7. THE CONTRACTOR IS RESPONSIBLE FOR DETERMINING FINISH GRADING AND DRAINAGE AROUND THE BUILDINGS TO ENSURE SURFACE WATER AND/OR GROUND WATER ARE DIRECTED AWAY FROM THE STRUCTURE. THIS PLAN SHOWS GENERAL GRADING ONLY AND ADDITIONAL DETAIL IS LIKELY TO BE REQUIRED AROUND THE BUILDING.
8. THE CONTRACTOR SHALL COORDINATE WITH ALL OF THE APPROPRIATE UTILITY COMPANIES FOR AGREEMENTS TO SERVICE THE PROPOSED BUILDING. THIS SHALL BE DONE PRIOR TO CONSTRUCTION. NO REPRESENTATIONS ARE MADE BY DEA THAT UTILITY SERVICE IS AVAILABLE.
9. ALL EXISTING UTILITIES SHOWN ARE FROM VISIBLE INFORMATION, DRAWINGS BY OTHERS, OR INFORMATION PROVIDED TO DEA AND ARE SUBJECT TO CHANGE. NO ONE SHOULD RELY ON THE UTILITY LOCATIONS SHOWN FOR CONSTRUCTION AND DIG SAFE SHOULD BE NOTIFIED PRIOR TO ANY WORK.
10. BASED ON THE 100-YEAR FLOOD PLAIN ANALYSIS CONDUCTED FOR THE INTERMITTENT STREAM ON THE SUBJECT PROJECT SITE, IT HAS BEEN DETERMINED THAT ALL CONSTRUCTION FOR THE PROPOSED SITE DEVELOPMENT IS ABOVE AND BEYOND THE STREAM'S 100-YEAR FLOOD PLAIN LINE AND ELEVATION, AND THE STREAM'S 100 YEARS FLOOD PLAIN IS NOT ADVERSELY IMPACTED BY THE PROPOSED DEVELOPMENT SHOWN ON THESE PLANS.

DEVELOPMENT DATA:

AREA OF SITE:	22.37 ACRES
NUMBER OF UNITS:	123 UNITS
BUILDING LOT COVERAGE:	3.13 ACRES
LENGTH OF PRIVATE DRIVES:	4,280± LINEAR FEET
AREA OF OPEN SPACE:	14.20 ACRES
PERCENT OF GREEN SPACE:	65%

PARKING SUMMARY:

TOTAL PARKING SPACES	370 SPACES
GARAGE SPACE	123 SPACES
FRONT OF GARAGE	123 SPACES
ADDITIONAL SPACES	124 SPACES
SPACES PER UNIT	3 SPACES PER UNIT

GENERAL CONSTRUCTION NOTES

1. THE CONTRACTOR IS TO NOTIFY DIG SAFE PRIOR TO THE START OF CONSTRUCTION.
2. THE CONTRACTOR IS TO SUBMIT A CONSTRUCTION TRAFFIC SAFETY PLAN TO THE DIRECTOR OF PUBLIC SAFETY PRIOR TO THE START OF CONSTRUCTION. APPROVAL OF SUCH PLAN IS REQUIRED.
3. NO STOCKPILING OF MATERIAL IS TO BE ALLOWED WITHIN A PUBLIC R.O.W. NO OPEN TRENCHES ARE TO BE LEFT OVERNIGHT.
4. ALL LOAM IN DISTURBED AREAS TO BE STOCKPILED FOR FUTURE USE. CUT & FILL CALCULATIONS TO BE VERIFIED BY THE CONTRACTOR.
5. CONTRACTOR TO OBTAIN ALL FEDERAL, STATE, AND MUNICIPAL APPROVALS PRIOR TO THE START OF CONSTRUCTION.
6. THE CONTRACTOR IS TO NOTIFY THE DIRECTOR OF PUBLIC WORKS, THE TOWN ENGINEER, AND R.I. DEPT. OF ENVIROMENTAL MANAGEMENT AT LEAST 48 HOURS PRIOR TO THE START OF CONSTRUCTION.
7. ALL WORK PERFORMED HEREIN SHALL BE GOVERNED BY THE RHODE ISLAND STANDARD SPECIFICATION FOR ROAD AND BRIDGE CONSTRUCTION AND TOWN OF WEST WARWICK STANDARD SPECIFICATIONS AND DETAILS.
8. ALL EXCESS SOIL, STUMPS, TREES, ROCKS, BOULDERS, AND OTHER REFUSE, SHALL BE DISCARDED OFF SITE IN AN ACCEPTABLE MANNER AT AN APPROVED LOCATION.
9. THE SITE IS TO BE SERVICED BY PUBLIC WATER & PUBLIC SEWER.
10. THE UNITS DEPICTED ON THE SITE PLAN ARE FOR PLANNING PURPOSES ONLY. UNITS MAY BE INTERCHANGED AS MARKET CONDITIONS WARRANT.
11. UNDERGROUND UTILITIES ARE PROPOSED THROUGHOUT THE SITE.
12. ROADWAYS ARE PROPOSED WITH TWO 11' TRAVEL LANES AND CAPE COD BERM ON BOTH SIDES UNLESS NOTED OTHERWISE.
13. INSPECTIONS FOR ALL DRAINAGE, WATER, & SEWER COMPONENTS OF THE DEVELOPMENT AND ROADWAY SHALL BE CONDUCTED BY A PROFESSIONAL ENGINEER. FOLLOWING CONSTRUCTION, A PROFESSIONAL ENGINEER SHALL PROVIDE REPORTS THAT DRAINAGE AND ROADWAY COMPONENTS HAVE BEEN CONSTRUCTED IN CONFORMANCE WITH THE PROJECT SPECIFICATIONS. SUCH REPORTS SHALL BE SUBMITTED TO THE TOWN'S DEPARTMENT OF PUBLIC WORKS.
14. INSPECTIONS FOR ELECTRIC, CABLE, AND TELEPHONE UTILITIES SHALL BE COMPLETED BY THE RESPECTIVE UTILITY COMPANIES.
15. COMPACTION AND EXCAVATION EFFORTS BY THE CONTRACTOR SHALL BE MONITORED UNDER THE DIRECTION OF A PROFESSIONAL ENGINEER. THE ENGINEER SHALL CONDUCT FIELD OR LABORATORY TESTING AS NECESSARY TO DETERMINE CONFORMANCE TO SPECIFICATIONS. THESE REPORTS SHALL BE SUBMITTED TO THE TOWN'S DEPARTMENT OF PUBLIC WORKS.
16. BEFORE CONSTRUCTION, AN EXCAVATION PERMIT SHALL BE OBTAINED FOR ALL WORK IN THE TOWN RIGHT OF WAY.

CERTIFICATIONS:

1. THIS PLAN AND ALL IMPROVEMENTS CONFORM TO ALL STANDARDS OF THE STATE OF RHODE ISLAND AND PROVIDENCE PLANTATIONS, BOARDS OF REGISTRATION FOR PROFESSIONAL ENGINEERS AND LAND SURVEYORS.
2. THIS PLAN IS SUBSTANTALLY CORRECT IN ACCORDANCE WITH A CLASS IV STANDARD AS ADOPTED BY THE RHODE ISLAND BOARD OF REGISTRATION FOR PROFESSIONAL LAND SURVEYORS. IT IS NOT TO BE CONSTRUED AS AN ACCURATE BOUNDARY SURVEY AND MAY BE SUBJECT TO SUCH CHANGES AS AN ACCURATE BOUNDARY SURVEY MAY DISCLOSE.

DEPARTMENT OF ENVIRONMENTAL MANAGEMENT
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APPROVED PLANS MUST BE AT CONSTRUCTION SITE
NOV 13 2007

CHRISTOPHER A. DUHAMEL
No. 5013
REGISTERED PROFESSIONAL ENGINEER

NO.	DATE	DESCRIPTION	BY
3	11-13-07	RIDEM WETLAND COMMENTS	JMD
2	8-09-07	UTILITY SUBMISSION	JMD
1	6-26-07	UTILITY SUBMISSION	JMD
0	5-22-07	RIDEM WETLANDS SUBMISSION	DAR

OVERALL PLAN

Hunters Reserve

ASSESSOR'S PLAT 1 LOTS 85, 145 & 529
NORTH PLEASANT STREET, WEST WARWICK, RHODE ISLAND

PREPARED BY
DiPrete Engineering Associates, Inc.
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PREPARED FOR
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1936 PHENIX AVENUE
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(401) 573-6525

APRIL, 2007
DWN. BY: D.A.R.

SHEET 4 OF 24

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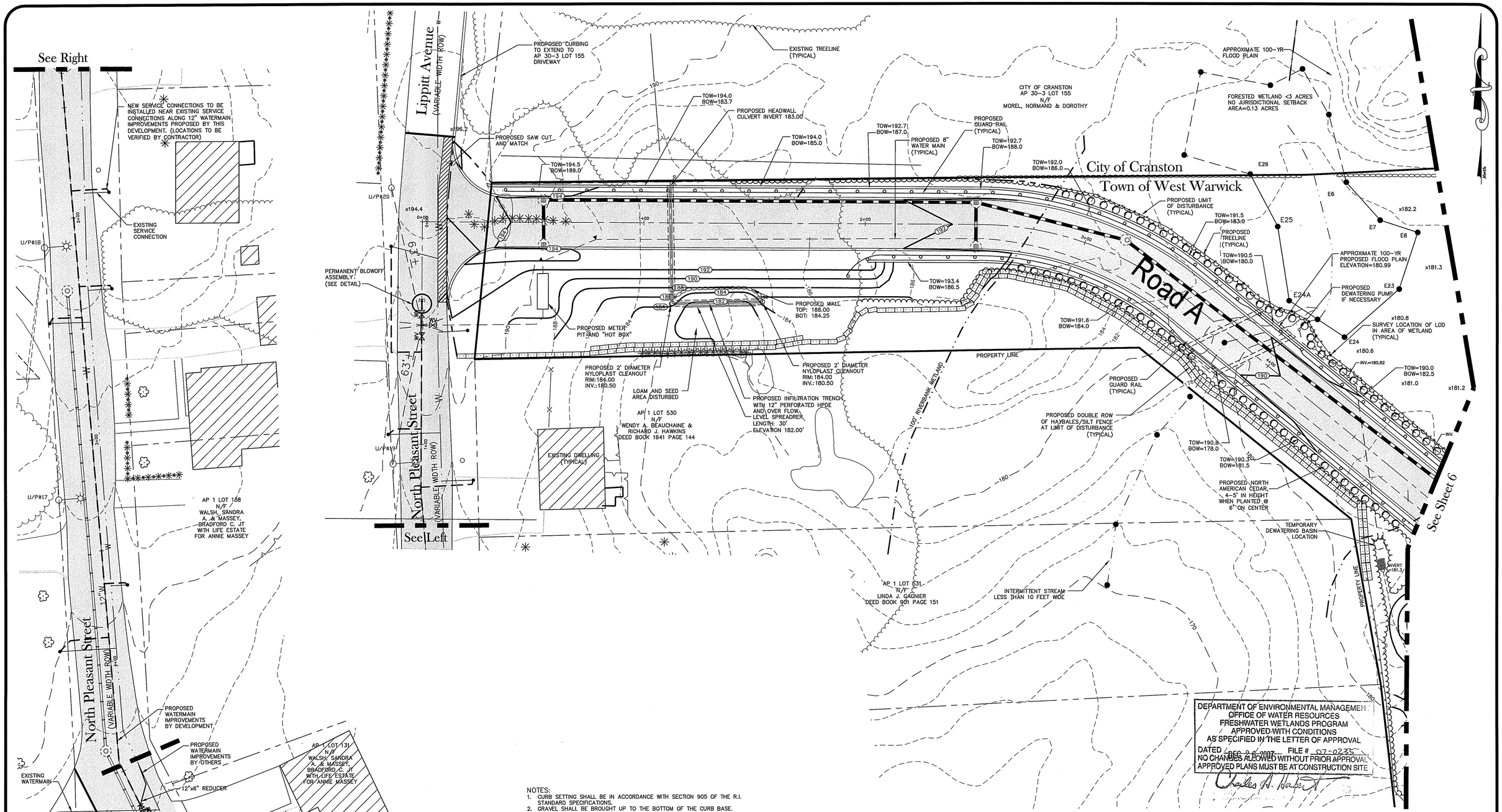
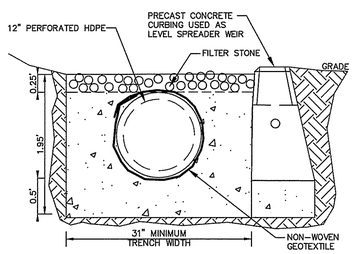


NOTES:
1. CURB SETTING SHALL BE IN ACCORDANCE WITH SECTION 905 OF THE R.I. STANDARD SPECIFICATIONS.
2. GRAVEL SHALL BE BROUGHT UP TO THE BOTTOM OF THE CURB BASE.



INFILTRATION TRENCH
NOT TO SCALE

GENERAL NOTES

1. ALL EXISTING UTILITIES SHOWN ARE FROM VISIBLE INFORMATION, DRAWINGS BY OTHERS, OR INFORMATION PROVIDED TO DEA AND ARE SUBJECT TO CHANGE. NO ONE SHOULD RELY ON THE UTILITY LOCATIONS SHOWN FOR CONSTRUCTION AND DIG SAFE SHOULD BE NOTIFIED PRIOR TO ANY WORK.

SCALE: 1"=20'
0 10' 20' 40'

CHRISTOPHER A. DUHAMEL
No. 5013
REGISTERED PROFESSIONAL ENGINEER

NO.	DATE	DESCRIPTION	BY
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2	8-29-07	UTILITY SUBMISSION	JMD
1	6-26-07	UTILITY SUBMISSION	JMD
0	5-22-07	RIDEM WETLANDS SUBMISSION	DAR

GRADING PLAN

Hunters Reserve

ASSESSOR'S PLAT 1 LOTS 85, 145 & 529
NORTH PLEASANT STREET, WEST WARWICK, RHODE ISLAND

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APRIL, 2007
DWN. BY: D.A.R.

SHEET 5 OF 24

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City of Cranston

Town of West Warwick

See Sheet 5

See Sheet 7

Road A

Road C

Road D

Road E

PROPERTY LINE

EXISTING STONEWALL

BENCHMARK SET IN 24" JREE ELEVATION=187.58

PROPOSED 10' X 6' CLASS R-5 RIP RAP LEVEL SPREADER

PROPOSED 17' X 11' CLASS R-4 RIP RAP APRON

PROPOSED 11' X 7' CLASS R-2 RIP RAP APRON

FES. 183.82

PROPOSED 2:1 SLOPE WITH NORTH AMERICAN GREEN C-350 REINFORCEMENT

PROPOSED RETAINING WALL TOW=207.5 BOW=206.5

APPROXIMATE 100-YR FLOOD PLAIN DEPTH OF 1.28'

FORESTED WETLAND <3 AC. NO JURIDICTIONAL SETBACK AREA=0.13 AC.

100' RIVERBANK WETLAND

PROPOSED DOUBLE ROW OF HAYBALES/SILT FENCE AT LIMIT OF DISTURBANCE (TYPICAL)

PROPOSED EMERGENCY SPILLWAY ELEVATION=187.00

DETENTION BASIN #1
BOTTOM = 184.00
SUB DRAIN=181.50
SEDIMENT FOREBAY=183.50

SEDIMENT FOREBAY ELEVATION=183.50

PROPOSED CHAINLINK FENCE

PROPOSED GUARD RAIL (TYPICAL)

PROPOSED 14' X 9' CLASS R-3 RIP RAP APRON

TEMPORARY DEWATERING BASIN LOCATION

PROPOSED 18' X 12' CLASS R-4 RIP RAP APRON

PROPOSED 1:1 SLOPE (SEE DETAIL)

PROPOSED SILT FENCE AT LIMIT OF DISTURBANCE (TYPICAL)

PROPOSED TREELINE (TYPICAL)

PROPOSED AREA TO BE DEEDED TO A.P. 1 LOT 129

PROPOSED LIMIT OF DISTURBANCE

PROPOSED RETAINING WALL WITH FENCE TOW=184.0 BOW=183.4

PROPOSED GUARDRAIL

PROPOSED WATER VALVE (TYPICAL)

PROPOSED 8" PVC SEWER (TYPICAL)

PROPOSED DOMESTIC WATER SERVICE (TYPICAL)

PROPOSED SEWER LATERAL (TYPICAL)

PROPOSED 8" PVC SEWER (TYPICAL)

PROPOSED 8" WATER MAIN (TYPICAL)

PROPOSED 1:1 SLOPE (SEE DETAIL)

EXISTING TREELINE (TYPICAL)

APPROXIMATE LOCATION OF PWSB AQUEDUCT

APPROXIMATE LOCATION OF PWSB AQUEDUCT EASEMENT

APPROXIMATE LOCATION OF PWSB AQUEDUCT PROJECT LIMITS

50' NO CUT BUFFER ZONE

1	117	T.F.=194.0 SLAB=186.5 GARAGE =193.5
2	118	T.F.=194.0 SLAB=186.5 GARAGE =193.5
3	119	T.F.=194.0 SLAB=186.5 GARAGE =193.5
4	116	T.F.=196.0 SLAB=188.5 GARAGE =194.5
5	115	T.F.=196.5 SLAB=189.0 GARAGE =195.0
6	123	T.F.=193.0 SLAB=185.5 GARAGE =192.5
7	122	T.F.=193.0 SLAB=185.5 GARAGE =192.5
8	121	T.F.=194.0 SLAB=186.5 GARAGE =193.5
9	120	T.F.=194.0 SLAB=186.5 GARAGE =193.5
10	114	T.F.=200.5 SLAB=193.0 GARAGE =199.0
11	113	T.F.=202.5 SLAB=195.0 GARAGE =201.0
12	112	T.F.=204.5 SLAB=197.0 GARAGE =203.0
13	111	T.F.=206.5 SLAB=199.0 GARAGE =205.0
14	110	T.F.=208.5 SLAB=201.0 GARAGE =207.0
15	1	T.F.=189.5 W.O.=182.0 GARAGE =189.0
16	2	T.F.=189.5 W.O.=182.0 GARAGE =189.0
17	3	T.F.=190.5 W.O.=183.0 GARAGE =190.0
18	4	T.F.=190.5 W.O.=183.0 GARAGE =190.0
19	5	T.F.=192.0 W.O.=184.5 GARAGE =191.5
20	6	T.F.=192.0 W.O.=184.5 GARAGE =191.5
21	7	T.F.=192.0 W.O.=184.5 GARAGE =191.5
22	8	T.F.=191.0 SLAB=183.5 GARAGE =190.5
23	9	T.F.=191.0 SLAB=183.5 GARAGE =190.5
24	10	T.F.=191.0 SLAB=183.5 GARAGE =190.5
25	15	T.F.=193.0 SLAB.=185.5 GARAGE =192.5
26	14	T.F.=191.5 SLAB.=184.0 GARAGE =191.0
27	13	T.F.=192.5 SLAB.=185.0 GARAGE =192.0
28	12	T.F.=192.5 SLAB.=185.0 GARAGE =192.0
29	11	T.F.=192.0 SLAB.=184.5 GARAGE =191.5
30	16	T.F.=206.5 SLAB=199.0 GARAGE =206.5
31	17	T.F.=206.0 SLAB=198.5 GARAGE =206.0
32	18	T.F.=205.5 SLAB=198.0 GARAGE =205.5
33	19	T.F.=204.0 SLAB.=196.5 GARAGE =203.50
34	20	T.F.=204.0 SLAB.=196.5 GARAGE =203.50
35	24	T.F.=207.0 SLAB.=199.5 GARAGE =205.50
36	23	T.F.=206.5 SLAB.=198.0 GARAGE =205.00
37	22	GARAGE =204.50

SCALE: 1"=20'

0 10' 20' 40'

DEPARTMENT OF ENVIRONMENTAL MANAGEMENT
OFFICE OF WATER RESOURCES
FRESHWATER WETLANDS PROGRAM
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NOV 13 2007

CHRISTOPHER A. DUHAMEL
No. 5013
REGISTERED PROFESSIONAL ENGINEER

NO.	DATE	DESCRIPTION	BY
3	11-13-07	RIDEM WETLAND COMMENTS	J.M.D.
2	8-29-07	UTILITY SUBMISSION	J.M.D.
1	6-26-07	UTILITY SUBMISSION	J.M.D.
0	5-22-07	RIDEM WETLANDS SUBMISSION	D.A.R.

GRADING PLAN

Hunters Reserve

ASSESSOR'S PLAT 1 LOTS 85, 145 & 529
NORTH PLEASANT STREET, WEST WARWICK, RHODE ISLAND

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APRIL, 2007
DWN. BY: D.A.R.

SHEET 6 OF 24

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City of Cranston

Town of West Warwick

See Sheet 6

See Sheet 8

Road A

Road E

Road G

PROPERTY LINE

APPROXIMATE LOCATION OF PWSB AQUEDUCT EASEMENT

APPROXIMATE LOCATION OF PWSB AQUEDUCT PROJECT LIMITS

EXISTING DIRT PATHWAY (TYPICAL)

EXISTING GRAVEL PATHWAY

PROPOSED 1:1 SLOPE (SEE DETAIL)

PROPOSED SILT FENCE AT LIMIT OF DISTURBANCE

PROPOSED TREELINE (TYPICAL)

PROPOSED TEMPORARY END CAP IN SMH FOR TIE IN OF PHASE II SEWER

PROPOSED TEMPORARY BLOW-OFF ASSEMBLY FOR PHASE II WATER

PROPOSED WATER MANHOLE WITH AIR RELEASE

PROPOSED GRAVITY SEWER SERVICE (TYPICAL)

PROPOSED DOMESTIC WATER SERVICE (TYPICAL)

PROPOSED 8" PVC SEWER (TYPICAL)

PROPOSED HYDRANT LOCATION (TYPICAL)

PROPOSED SEWER LATERAL (TYPICAL)

PROPOSED 1.5" PVC SEWER FORCE MAIN (TYPICAL)

PROPOSED WATER VALVE (TYPICAL)

PROPOSED 8" WATER MAIN (TYPICAL)

PROPOSED RETAINING WALL WITH FENCE TOW=196.0 BOW=194.0

PROPOSED CHAIN LINK FENCE

50' NO CUT BUFFER ZONE

TOW=195.0 BOW=190.6

TOW=195.8 BOW=192.8

	T.F.	SLAB	GARAGE
116	196.0	188.5	
115	196.5	199.0	
114	200.5	193.0	199.0
113	202.5	195.0	201.0
112	204.5	197.0	203.0
111	206.5	199.0	205.0
110	208.5	201.0	207.0
16	206.5	199.0	206.5
17	206.0	198.5	206.0
18	205.5	198.0	205.5
19	204.0	196.5	203.50
20	204.0	196.5	203.50
24	207.0	198.5	205.50
23	206.5	198.0	205.00
22	206.0	198.5	204.50
21	206.0	198.5	204.00
101	251.0	243.5	250.5
102	251.0	243.5	250.5
103	250.5	243.0	250.0
104	247.0	238.5	246.5
105	247.0	238.5	245.5
106	246.5	238.5	244.5
107	247.0	238.5	239.5
108	247.0	239.5	239.5
109	247.0	239.5	239.5
100	245.5	238.0	245.0
99	245.5	238.0	244.5
98	245.5	238.0	244.5
97	245.0	237.5	245.5

DEPARTMENT OF ENVIRONMENTAL MANAGEMENT
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SCALE: 1"=20'

0 10' 20' 40'

Preliminary Submission

CHRISTOPHER A. DUHAMEL
No. 5013
REGISTERED PROFESSIONAL ENGINEER

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GRADING PLAN

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Hunters Reserve

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SHEET 7 OF 24

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See Sheet 9

See Sheet 7

See Sheet 9

PROPOSED E-ONE LOW PRESSURE SEWER PUMP (TYPICAL)

PROPOSED 1.5" PVC SEWER FORCE MAIN (TYPICAL)

PROPOSED SEWER LATERAL (TYPICAL)

PROPOSED DOMESTIC WATER SERVICE (TYPICAL)

PROPOSED HYDRANT LOCATION (TYPICAL)

PROPOSED WATER VALVE (TYPICAL)

PROPOSED 8" WATER MAIN (TYPICAL)

10' MINIMUM FOR CONSTRUCTABILITY

APPROXIMATE LOCATION OF PWSB AQUEDUCT PROJECT LIMITS

50' NO CUT BUFFER ZONE

PROPERTY LINE

PROPOSED SILT FENCE AT LIMIT OF DISTURBANCE

PROPOSED CHAIN LINK FENCE LOCATED 1' OFF PSWB EASEMENT.

PROPOSED TREELINE (TYPICAL)

50' NO CUT BUFFER

PROPOSED SEWER LATERAL (TYPICAL)

Road F

FORESTED WETLAND <3 AC. NO JURIDICTIONAL SETBACK AREA=0.78 AC.

PROPOSED 2:1 SLOPE WITH NORTH AMERICAN GREEN C-350 REINFORCEMENT

PROPOSED EMERGENCY SPILLWAY ELEVATION=215.00

PROPOSED DOUBLE ROW OF HAYBALES/SILT FENCE AT LIMIT OF DISTURBANCE (TYPICAL)

DETENTION BASIN #2
BOTTOM = 213.50
SEDIMENT FOREBAY=213.00

PROPOSED 12' X 8' CLASS R-5 RIP RAP APRON

PROPOSED 10' X 6' CLASS R-3 RIP RAP LEVEL SPREADER

PROPOSED 12' X 8' CLASS R-3 RIP RAP APRON

SHRUB WETLAND <3 AC.
NO JURIDICTIONAL SETBACK
AREA=0.60 AC.

90	T.F.=237.5 SLAB=228.5	GARAGE =236.5	
91	T.F.=236.0 SLAB=226.5	GARAGE =235.5	
92	T.F.=234.5 SLAB=226.5	GARAGE =234.5	
93	T.F.=231.5 SLAB=224.0	GARAGE =231.0	
94	T.F.=231.0 SLAB=223.5	GARAGE =230.5	
95	T.F.=230.0 SLAB=222.5	GARAGE =229.5	
96	T.F.=229.0 SLAB=221.5	GARAGE =226.5	
25	T.F.=237.5 W.O.=230.0	GARAGE =237.0	
26	T.F.=237.5 W.O.=230.0	GARAGE =237.0	
27	T.F.=228.0 SLAB=220.5	GARAGE =227.5	
28	T.F.=227.0 SLAB.=219.5	GARAGE =226.5	
29	T.F.=223.0 SLAB.=215.5	GARAGE =222.5	
30	T.F.=222.0 SLAB.=214.5	GARAGE =221.5	
31	T.F.=221.5 SLAB.=214.0	GARAGE =221.0	
32	T.F.=221.5 SLAB.=214.0	GARAGE =221.0	
40	T.F.=229.5 SLAB=222.0	GARAGE =229.0	
39	T.F.=227.5 SLAB=220.0	GARAGE =227.0	
38	T.F.=226.0 SLAB=218.5	GARAGE =225.5	
37	T.F.=224.5 SLAB=217.0	GARAGE =224.0	
60	T.F.=226.0 SLAB=218.5		
79	T.F.=225.0 SLAB=218.5		
78	T.F.=224.0 SLAB=216.5	GARAGE =225.5	
48	T.F.=221.5 W.O.=214.0	GARAGE =221.0	
47	T.F.=221.5 W.O.=214.0	GARAGE =221.5	
46	T.F.=220.0 W.O.=214.5	GARAGE =221.5	
45	T.F.=220.5 W.O.=215.0	GARAGE =222.0	
44	T.F.=225.0 W.O.=217.5	GARAGE =224.5	
43	T.F.=225.5 W.O.=218.0	GARAGE =225.0	
42	T.F.=226.0 W.O.=218.5	GARAGE =225.5	
41	T.F.=227.0 W.O.=219.5	GARAGE =226.5	
33	T.F.=217.5 SLAB=210.0	GARAGE =218.0	
34	T.F.=217.5 SLAB=210.0	GARAGE =217.0	
35	T.F.=217.0 SLAB=209.5	GARAGE =216.5	
36	T.F.=215.5 SLAB=209.0	GARAGE =216.0	

DEPARTMENT OF ENVIRONMENTAL MANAGEMENT
OFFICE OF WATER RESOURCES
FRESHWATER WETLANDS PROGRAM
APPROVED WITH CONDITIONS
AS SPECIFIED IN THE LETTER OF APPROVAL
DATED DEC 26 2007 FILE # 07-0235
NO CHANGES ALLOWED WITHOUT PRIOR APPROVAL
APPROVED PLANS MUST BE AT CONSTRUCTION SITE

Charles A. Horbert

NOV 13 2007

SCALE: 1"=20'
0 10' 20' 40'

CHRISTOPHER A. DUHAMEL
No. 5013
REGISTERED PROFESSIONAL ENGINEER

NO.	DATE	DESCRIPTION	BY
3	11-13-07	RIDEM WETLAND COMMENTS	J.M.D.
2	6-29-07	UTILITY SUBMISSION	J.M.D.
1	6-26-07	UTILITY SUBMISSION	J.M.D.
0	5-24-07	RIDEM WETLANDS SUBMISSION	D.A.R.

GRADING PLAN

Hunters Reserve

ASSESSOR'S PLAT 1 LOTS 85, 145 & 529
NORTH PLEASANT STREET, WEST WARWICK, RHODE ISLAND

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
Bradford Sternbach, LLC.
1936 PHENIX AVENUE
CRANSTON, R.I. 02921
(401) 573-6525

APRIL, 2007
DWN. BY: D.A.R.

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City of Cranston
Town of West Warwick

PROPERTY LINE

PROPOSED TREELINE (TYPICAL)

EXISTING DIRT PATH

Road A

Road B

PROPOSED 8" WATER MAIN (TYPICAL)

PROPOSED 8" PVC SEWER (TYPICAL)

EXISTING ACCESS EASEMENT

EXISTING GRAVEL PATHWAY

PROPOSED 1.5" PVC SEWER FORCE MAIN (TYPICAL)

PROPOSED SEWER LATERAL (TYPICAL)

APPROXIMATE LOCATION OF PWSB AQUEDUCT EASEMENT

PROPOSED GATE

50' NO CUT BUFFER ZONE

PROPOSED CHAIN LINK FENCE

PROPOSED SILT FENCE AT LIMIT OF DISTURBANCE

10' MINIMUM FOR CONSTRUCTABILITY

PROPOSED E-ONE LOW PRESSURE SEWER PUMP (TYPICAL)

PROPOSED DOMESTIC WATER SERVICE (TYPICAL)

PROPOSED HYDRANT LOCATION (TYPICAL)

PROPOSED WATER VALVE (TYPICAL)

PROPOSED DOUBLE ROW OF HAYBALES/SILT FENCE AT LIMIT OF DISTURBANCE (TYPICAL)

FORESTED WETLAND <3 AC.
NO JURIDICTIONAL SETBACK
AREA=0.78 AC.

See Sheet 8

See Sheet 10

See Sheet 8

SCALE: 1"=20'
0 10' 20' 40'

DEPARTMENT OF ENVIRONMENTAL MANAGEMENT
OFFICE OF WATER RESOURCES
FRESHWATER WETLANDS PROGRAM
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CHRISTOPHER A. DUHAMEL
No. 5013
REGISTERED PROFESSIONAL ENGINEER

NO.	DATE	DESCRIPTION	BY
3	11-13-07	RIDEM WETLAND COMMENTS	JMD
2	8-03-07	UTILITY SUBMISSION	JMD
1	6-28-07	UTILITY SUBMISSION	JMD
0	5-22-07	RIDEM WETLANDS SUBMISSION	DAR

GRADING PLAN

Hunters Reserve

ASSESSOR'S PLAT 1 LOTS 85, 145 & 529
NORTH PLEASANT STREET, WEST WARWICK, RHODE ISLAND

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PREPARED FOR
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1936 PHENIX AVENUE
CRANSTON, R.I. 02921
(401) 573-6525

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DWN. BY: D.A.R.

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CONSTRUCTION BY OTHERS

PROPOSED EMERGENCY GATE

PROPOSED SMH RIM=229.75 INV.(8")=221.25

EXISTING STONEWALL (TYPICAL)

City of Cranston

Town of West Warwick

PROPERTY LINE

PROPOSED E-ONE LOW PRESSURE SEWER PUMP (TYPICAL)

PROPOSED HIGH POINT AIR-RELEASE & BLOW OFF ASSEMBLY (TYPICAL)

PROPOSED 8" WATER MAIN (TYPICAL)

PROPOSED SEWER LATERAL (TYPICAL)

PROPOSED WATER VALVE (TYPICAL)

PROPOSED 4" PVC SEWER FORCE MAIN (TYPICAL)

PROPOSED HYDRANT LOCATION (TYPICAL)

PROPOSED TREELINE (TYPICAL)

PROPOSED END CAP AND THRUST BLOCK (TYPICAL)

FORESTED WETLAND <3 AC.
NO JURIDICTIONAL SETBACK
AREA=0.78 AC.

Road A

Road H

Road I

	T.F.	SLAB	GARAGE
65	227.0	219.5	226.5
64	227.0	219.5	226.5
63	226.5	219.0	226.0
62	226.0	218.5	225.5
67	223.0	215.5	222.5
66	224.0	216.5	223.5
58	222.0	214.5	221.5
49	222.5	218.0	222.0
50	222.5	218.0	222.0
51	223.0	215.5	222.0
52	224.0	216.5	223.5
58	226.5	219.0	226.0
59	226.5	219.0	226.0
60	226.5	219.0	226.0
61	226.0	218.5	225.5
57	217.0	209.5	216.5
56	216.5	209.0	216.0
55	216.0	208.5	215.5
54	215.0	207.5	214.5
53	214.0	206.5	213.5

TOW=222.0 BOW=221.0

PROPOSED DOUBLE ROW OF HAYBALES/SILT FENCE AT LIMIT OF DISTURBANCE (TYPICAL)

PROPOSED DOMESTIC WATER SERVICE (TYPICAL)

TOW=225.0 BOW=218.0

TOW=225.0 BOW=217.5

TOW=225.0 BOW=217.5

TOW=220.0 BOW=213.0

B/6 B/5 B/4 B/3 B/2 B/1 cl/1 cl/2

See Sheet 9

See Right Inset

See Left Inset

FORESTED WETLAND <3 AC.
NO JURIDICTIONAL SETBACK
AREA=0.78 AC.

PROPOSED 24' X 16' CLASS R-5 RIP RAP APRON

DETENTION BASIN #3
BOTTOM = 204.00
SUB DRAIN=201.5
SEDIMENT FOREBAY=203.50

PROPOSED TREELINE (TYPICAL)

PROPOSED 2:1 SLOPE WITH NORTH AMERICAN GREEN C-350 REINFORCEMENT

AP 20 LOT 282
N/F
E. W. CERIO
BUILDING CO.

EXISTING STONEWALL (TYPICAL)

SHRUB WETLAND <3 AC.
NO JURIDICTIONAL SETBACK
AREA=0.60 AC.

PROPOSED 4" PERFORATED HDPE SUBDRAIN

PROPOSED TREELINE (TYPICAL)

PROPOSED 15' X 9' CLASS R-5 RIP RAP APRON

PROPOSED 10' X 6' CLASS R-4 RIP RAP LEVEL SPREADER

PROPOSED EMERGENCY SPILLWAY ELEVATION=207.00

50' NO CUT BUFFER LINE

50' WETLAND BUFFER

PROPOSED DOUBLE ROW OF HAYBALES/SILT FENCE AT LIMIT OF DISTURBANCE (TYPICAL)

PROPERTY LINE

RIDEM
OFFICE OF ENVIRONMENTAL MANAGEMENT
OFFICE OF WATER RESOURCES
FRESHWATER WETLANDS PROGRAM
APPROVED WITH CONDITIONS
AS SPECIFIED IN THE LETTER OF APPROVAL
DATED DEC 20 2007 FILE # 07-0235
NO CHANGES ALLOWED WITHOUT PRIOR APPROVAL
APPROVED PLANS MUST BE AT CONSTRUCTION SITE

NOV 13 2007

SCALE: 1"=20'
0 10' 20' 40'

CHRISTOPHER A. DUHAMEL
No. 5013
REGISTERED PROFESSIONAL ENGINEER

NO.	DATE	DESCRIPTION	BY
3	11-13-07	RIDEM WETLAND COMMENTS	J.M.D.
2	8-28-07	UTILITY SUBMISSION	J.M.D.
1	6-26-07	UTILITY SUBMISSION	J.M.D.
0	5-22-07	RIDEM WETLANDS SUBMISSION	D.A.R.

GRADING PLAN

Hunters Reserve

ASSESSOR'S PLAT 1 LOTS 85, 145 & 529
NORTH PLEASANT STREET, WEST WARWICK, RHODE ISLAND

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
Bradford Sternbach, LLC.
1936 PHENIX AVENUE
CRANSTON, R.I. 02921
(401) 573-6525

APRIL, 2007
DWN. BY: D.A.R.

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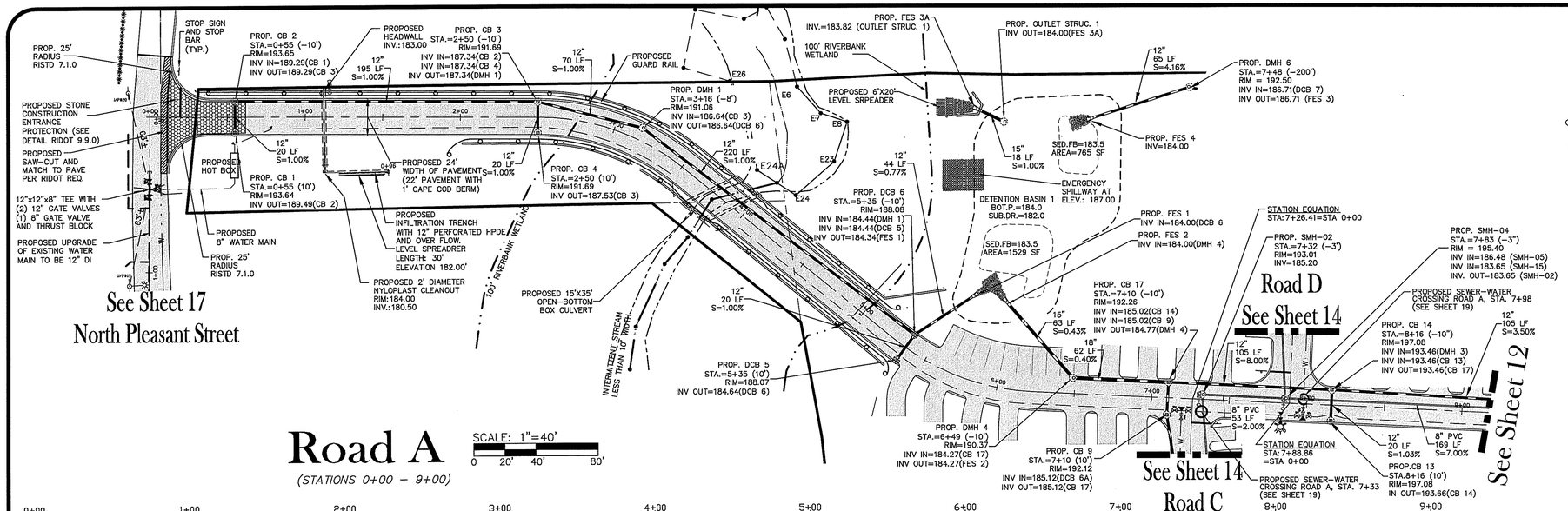

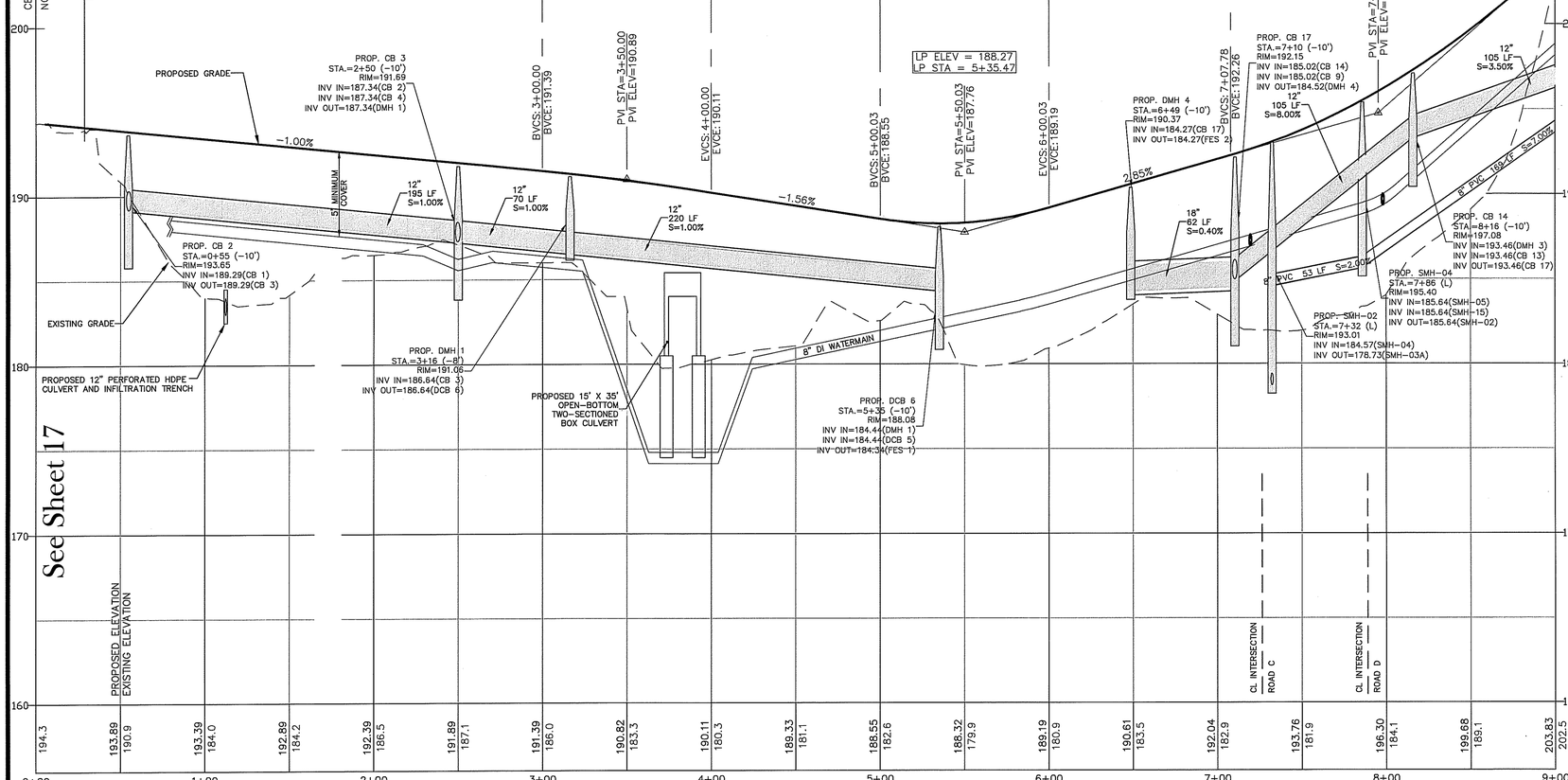

DEPARTMENT OF ENVIRONMENTAL MANAGEMENT
OFFICE OF WATER RESOURCES
FRESHWATER WETLANDS PROGRAM
APPROVED WITH CONDITIONS
AS SPECIFIED IN THE LETTER OF APPROVAL
DATED DEC 6 2007 FILE # 07-0235
NO CHANGES ALLOWED WITHOUT PRIOR APPROVAL
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Charles A. Horbert

Pipe Centerline

NOTE: ANY CATCH BASINS ALONG STEEP ROADS (6% OR GREATER SHALL BE CONSTRUCTED WITH HIGH CAPACTIY CATCH BASINS.

NOV 13 2007

CHRISTOPHER A. DUHAMEL
No. 5013
REGISTERED PROFESSIONAL ENGINEER

NO.	DATE	DESCRIPTION	BY
3	11-13-07	RIDEM WETLAND COMMENTS	JMD
2	8-03-07	UTILITY SUBMISSION	JMD
1	6-26-07	UTILITY SUBMISSION	JMD
0	5-23-07	RIDEM WETLANDS SUBMISSION	DAR

PLAN & PROFILE (STA: 0+00–9+00)

Hunters Reserve

ASSESSOR'S PLAT 1 LOTS 85, 145 & 529
NORTH PLEASANT STREET, WEST WARWICK, RHODE ISLAND

PREPARED BY
DiPrete Engineering Associates, Inc.
ENGINEERING, SURVEYING AND PLANNING CONSULTANTS
TWO STAFFORD COURT
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(401) 573-6525

APRIL, 2007
DWN. BY: D.A.R.

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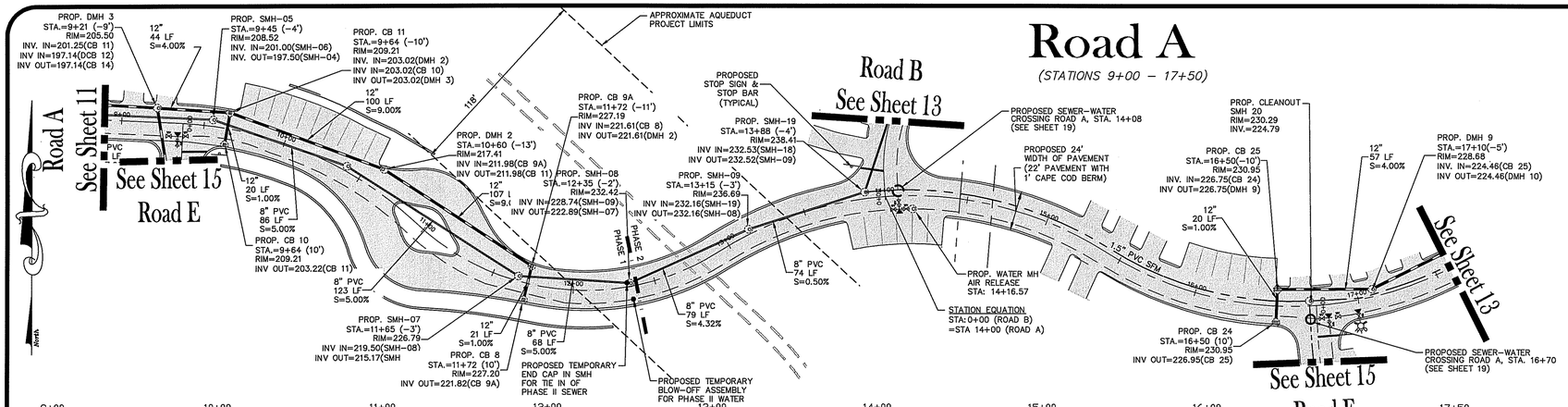
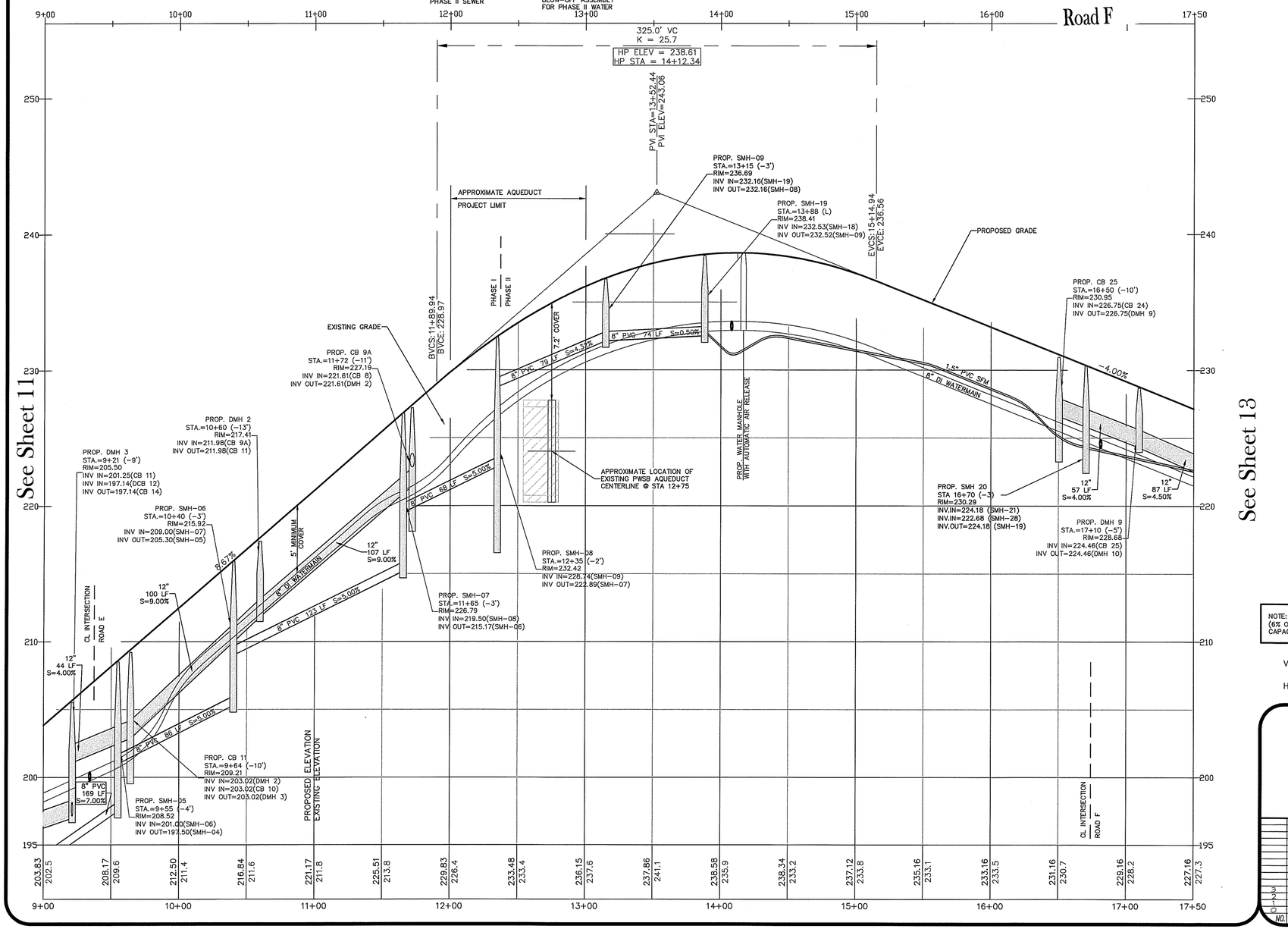
Road A

(STATIONS 9+00 – 17+50)





DEPARTMENT OF ENVIRONMENTAL MANAGEMENT
OFFICE OF WATER RESOURCES
FRESHWATER WETLANDS PROGRAM
APPROVED WITH CONDITIONS
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DATED DEC 26 2007 FILE # 07-0235
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Charles A. Horbert

NOTE: ANY CATCH BASINS ALONG STEEP ROADS (6% OR GREATER SHALL BE CONSTRUCTED WITH HIGH CAPACITY CATCH BASINS.

VERT: 0 2' 4' 8'
HORIZ: 0 20' 40' 80'

NOV 13 2007

CHRISTOPHER A. DUHAMEL
No. 5013
REGISTERED PROFESSIONAL ENGINEER

NO.	DATE	DESCRIPTION	BY
3	11-13-07	RIDEM WETLAND COMMENTS	JMD
2	8-28-07	UTILITY SUBMISSION	JMD
1	6-26-07	UTILITY SUBMISSION	JMD
0	5-22-07	RIDEM WETLANDS SUBMISSION	DAR

PLAN & PROFILE (STA: 9+00–17+50)

Hunters Reserve

ASSESSOR'S PLAT 1 LOTS 85, 145 & 529
NORTH PLEASANT STREET, WEST WARWICK, RHODE ISLAND

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DiPrete Engineering Associates, Inc.
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PREPARED FOR
Bradford Sternbach, LLC.
1936 PHENIX AVENUE
CRANSTON, R.I. 02921
(401) 573–6525

APRIL, 2007
DWN. BY: D.A.R.

SHEET 12 OF 24

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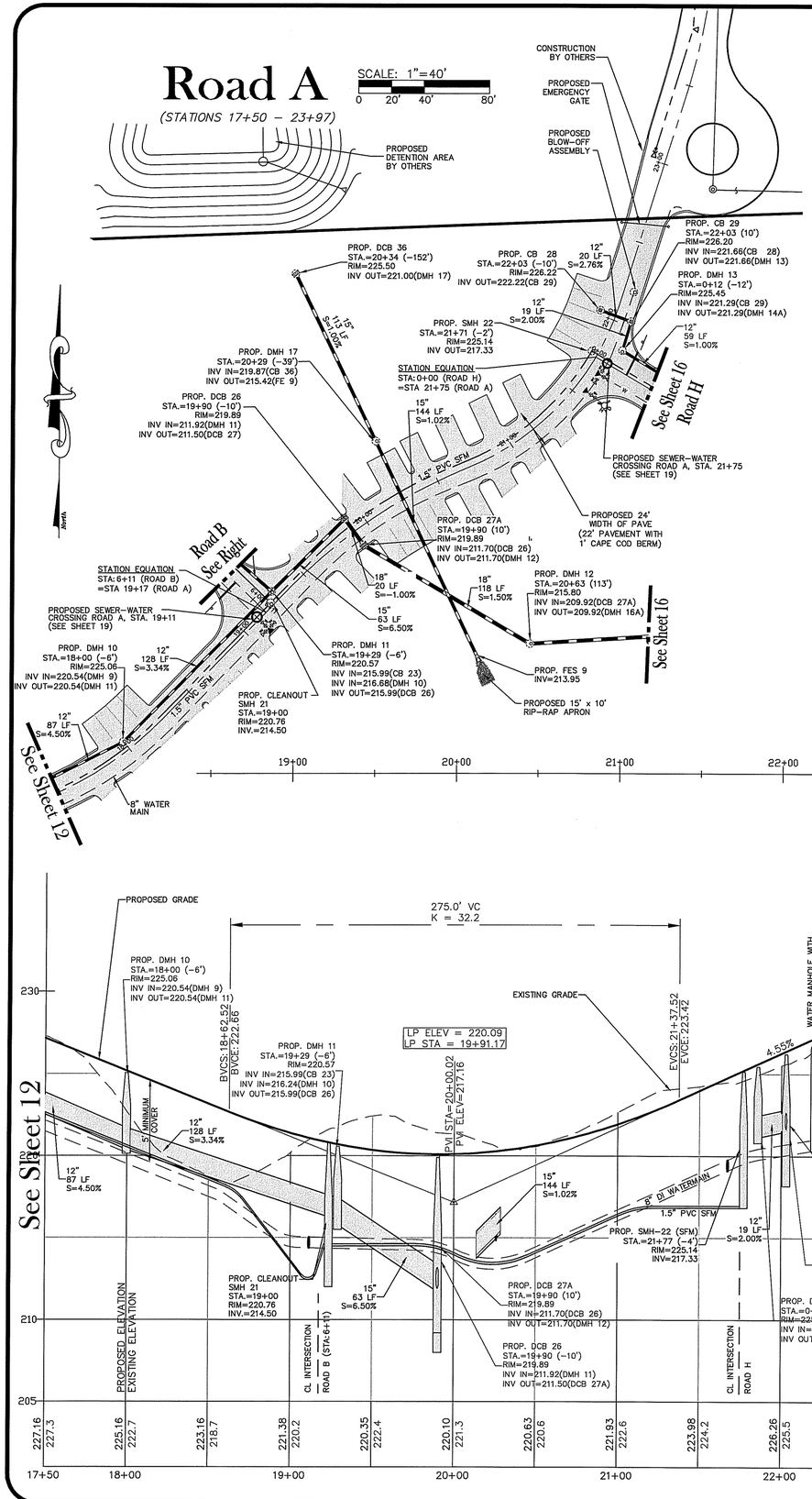
Road A

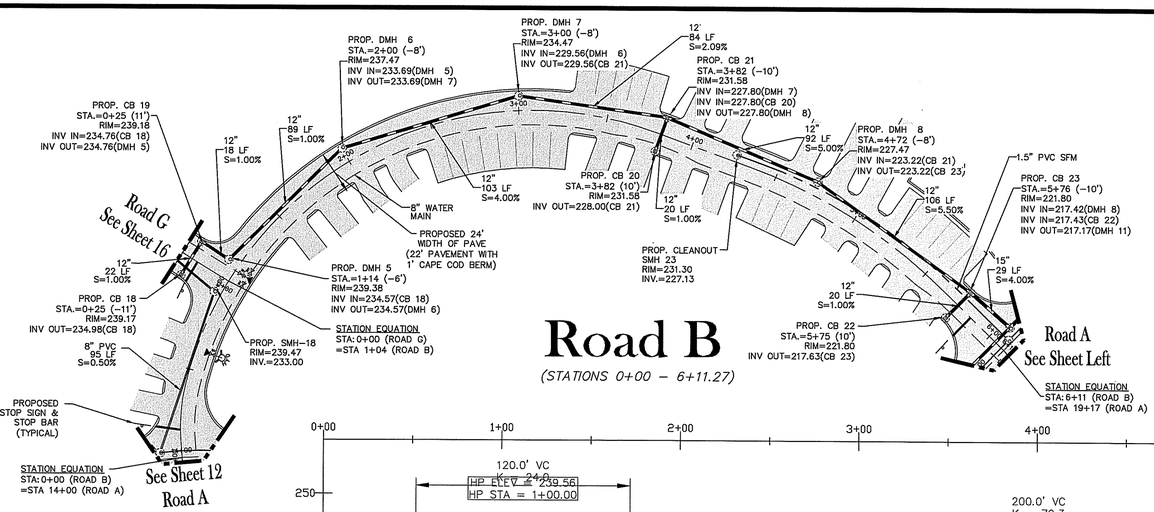
(STATIONS 17+50 – 23+97)

SCALE: 1"=40'
0 20' 40' 80'



Road B

(STATIONS 0+00 – 6+11.27)



DEPARTMENT OF ENVIRONMENTAL MANAGEMENT
OFFICE OF WATER RESOURCES
FRESHWATER WETLANDS PROGRAM
APPROVED WITH CONDITIONS
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NOV 13 2007

NOTE: ANY CATCH BASINS ALONG STEEP ROADS (6% OR GREATER SHALL BE CONSTRUCTED WITH HIGH CAPACITY CATCH BASINS.

VERT: 0 2' 4' 8'
HORIZ: 0 20' 40' 80'

CHRISTOPHER A. DUHAMEL
No. 5013
REGISTERED PROFESSIONAL ENGINEER

NO.	DATE	DESCRIPTION	BY
3	11-13-07	RIDEM WETLAND COMMENTS	J.M.D.
2	8-09-07	UTILITY SUBMISSION	J.M.D.
1	6-26-07	UTILITY SUBMISSION	J.M.D.
0	5-22-07	RIDEM WETLANDS SUBMISSION	D.A.R.

PLAN & PROFILE (ROAD A STA: 17+50 – 23+97) (ROAD B STA: 0+00 – 06+11)

Hunters Reserve

ASSESSOR'S PLAT 1 LOTS 85, 145 & 529
NORTH PLEASANT STREET, WEST WARWICK, RHODE ISLAND

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
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1936 PHENIX AVENUE
CRANSTON, R.I. 02921
(401) 573-6525

APRIL, 2007
DWN. BY: D.A.R.

SHEET 13 OF 24

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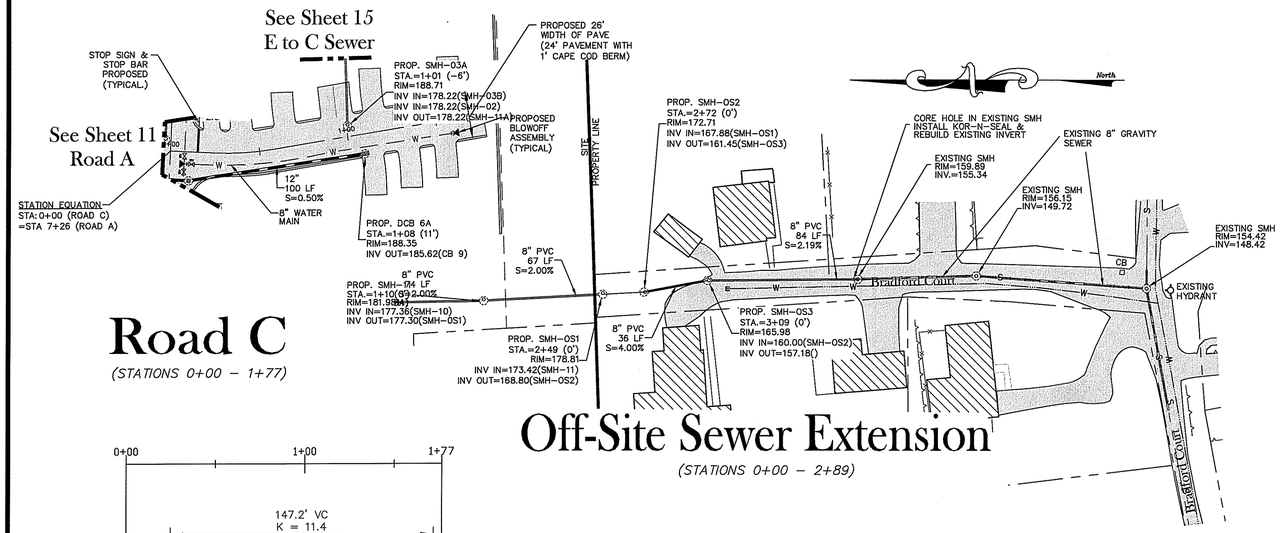
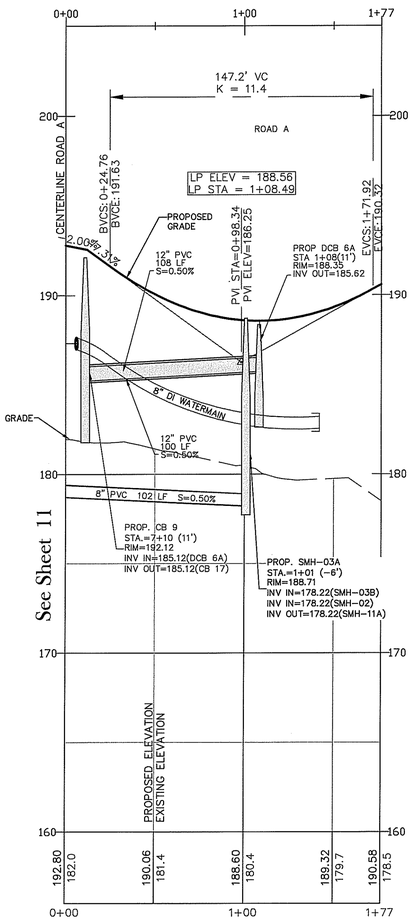
Road C

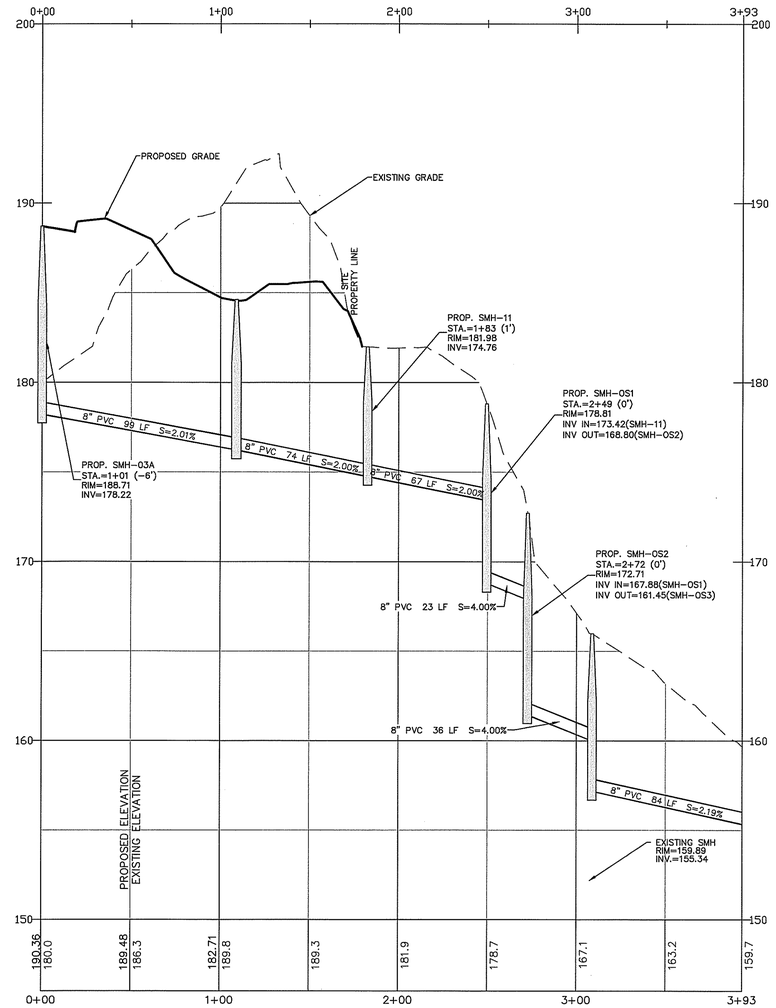
(STATIONS 0+00 – 1+77)



Off-Site Sewer Extension

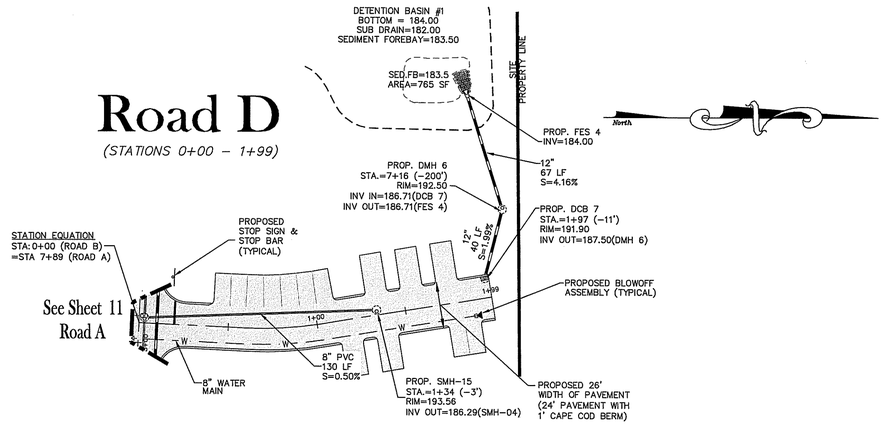
(STATIONS 0+00 – 2+89)

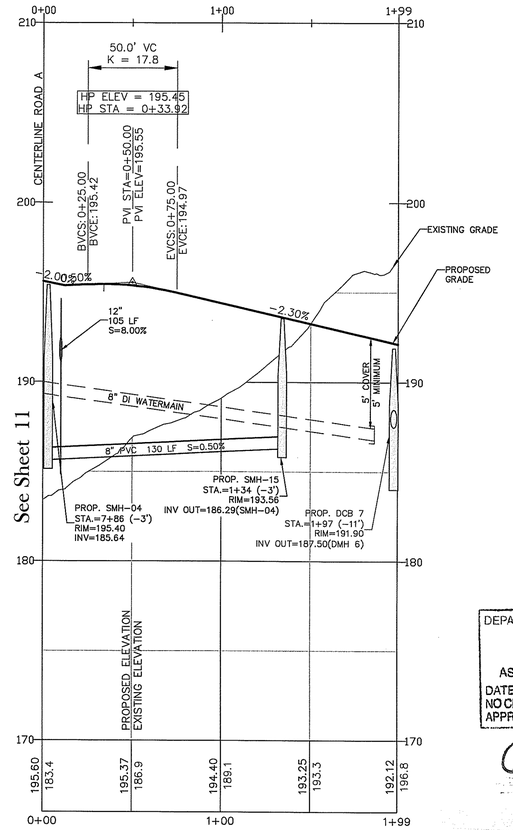




Road D

(STATIONS 0+00 – 1+99)





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OFFICE OF WATER RESOURCES
FRESHWATER WETLANDS PROGRAM
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Charles A. Horbert

NOV 13 2007

VERT: 0 2' 4' 8'
HORIZ: 0 20' 40' 80'

NO.	DATE	DESCRIPTION	BY
3	11-13-07	RIDEM WETLAND COMMENTS	JMD
2	8-02-07	UTILITY SUBMISSION	JMD
1	6-26-07	UTILITY SUBMISSION	JMD
0	5-22-07	RIDEM WETLANDS SUBMISSION	DAR

CHRISTOPHER A. DUHAMEL
No. 5013
REGISTERED PROFESSIONAL ENGINEER

PLAN & PROFILE (ROAD C STA: 0+00 – 1+17 / ROAD D STA: 0+00 – 1+99)

Hunters Reserve

ASSESSOR'S PLAT 1 LOTS 85, 145 & 529
NORTH PLEASANT STREET, WEST WARWICK, RHODE ISLAND

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
Bradford Sternbach, LLC.
1936 PHENIX AVENUE
CRANSTON, R.I. 02921
(401) 573-6525

APRIL, 2007
DWN. BY: D.A.R.

SHEET 14 OF 24

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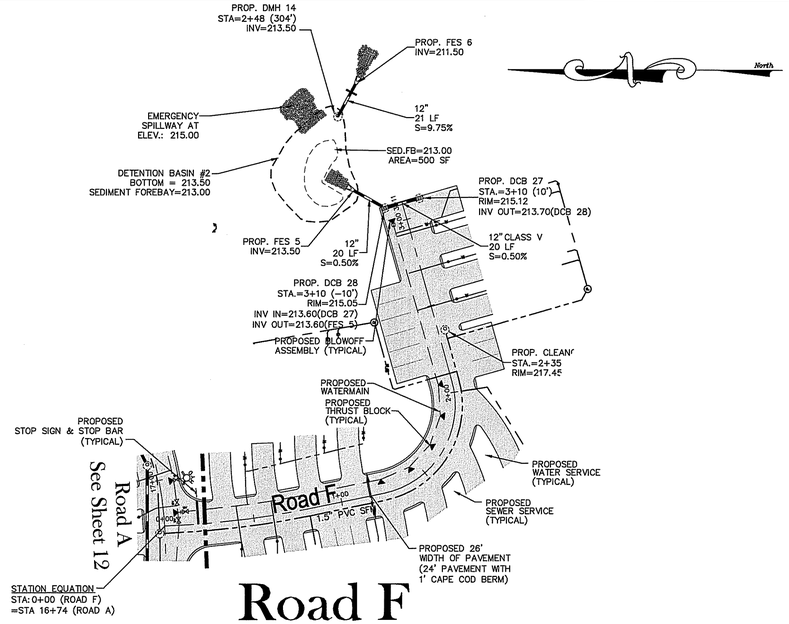

Road F

(STATION 0+00 – END)

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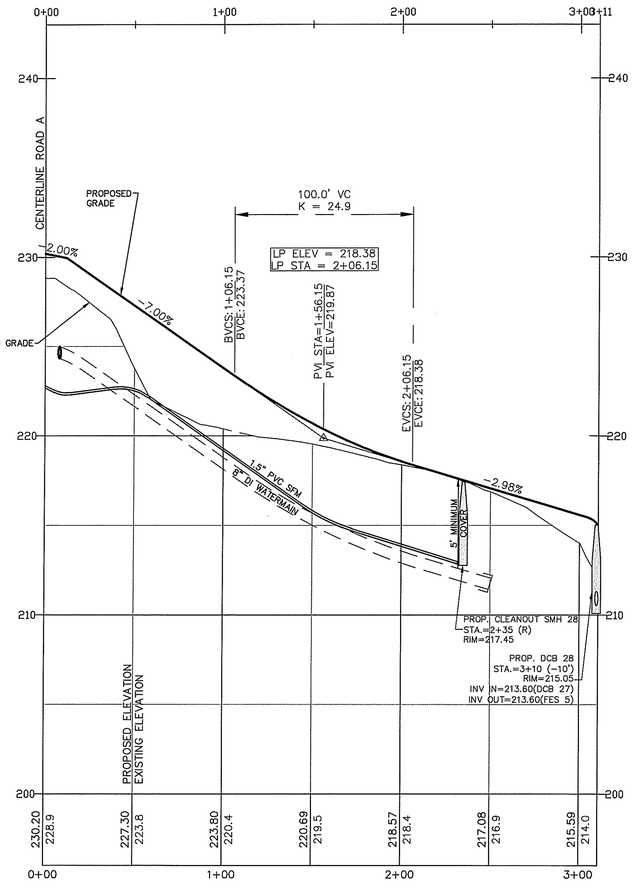
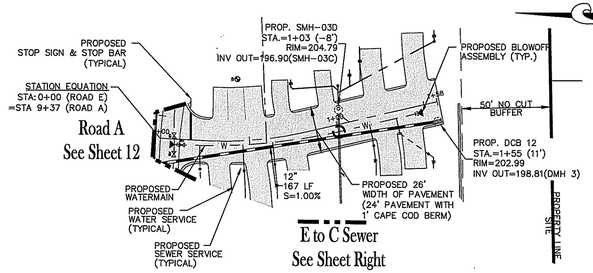
VERT. 0 2' 4' 8'





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(STATION 0+00 – END)

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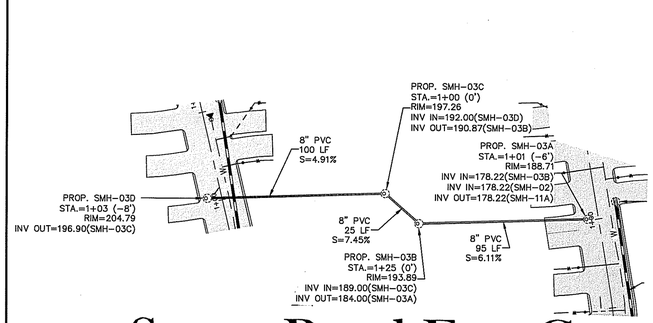

Sewer Road E to C

(STATION 0+00 – 2+18)

HORIZ. 0 20' 40' 80'
VERT. 0 2' 4' 8'

NOV 13 2007

CHRISTOPHER A. DUHAMEL
No. 5013
REGISTERED PROFESSIONAL ENGINEER

NO.	DATE	DESCRIPTION	BY
3	11-19-07	RIDEM WETLAND COMMENTS	J.M.D.
2	8-28-07	UTILITY SUBMISSION	J.M.D.
1	6-26-07	UTILITY SUBMISSION	J.M.D.
0	5-22-07	RIDEM WETLANDS SUBMISSION	D.A.R.

PLAN & PROFILE (ROAD E STA: 0+00 – 1+58 / ROAD F STA: 0+00 – 3+00)

Hunters Reserve

ASSESSOR'S PLAT 1 LOTS 85, 145 & 529
NORTH PLEASANT STREET, WEST WARWICK, RHODE ISLAND

PREPARED BY
DiPrete Engineering Associates, Inc.
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APRIL, 2007
DWN. BY: D.A.R.

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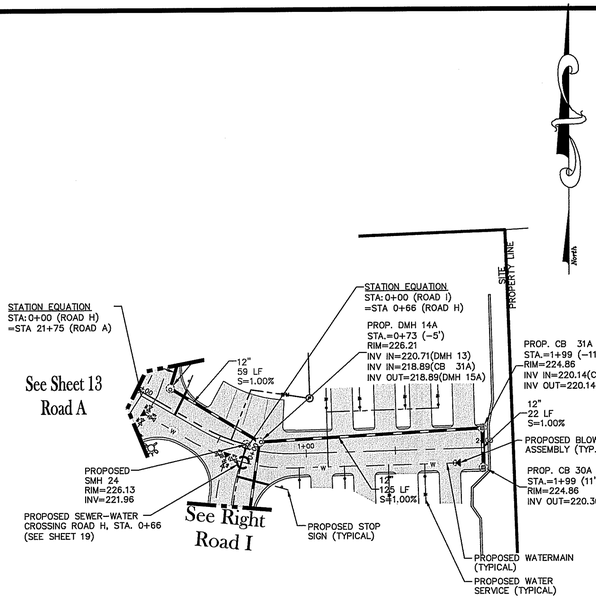

Road H

(STATIONS 0+00 – END)

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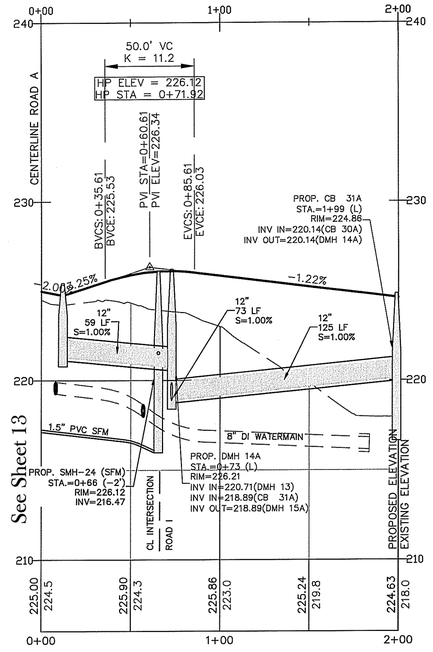

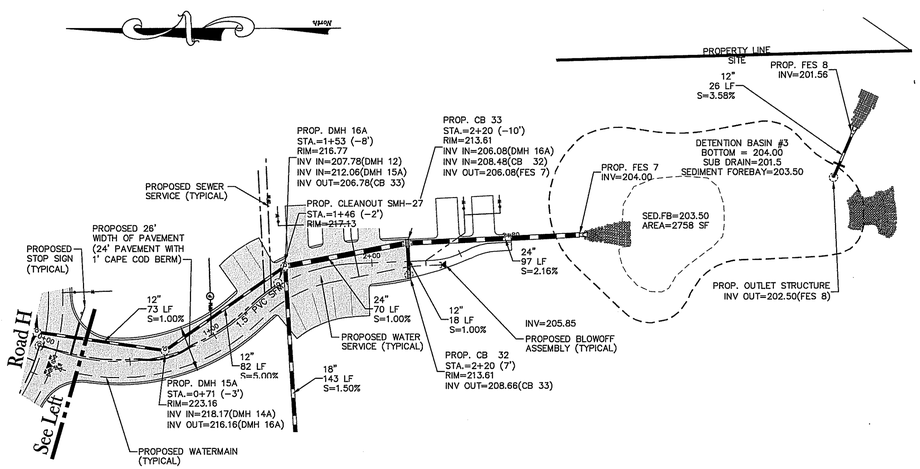

Road I

(STATIONS 0+00 – END)

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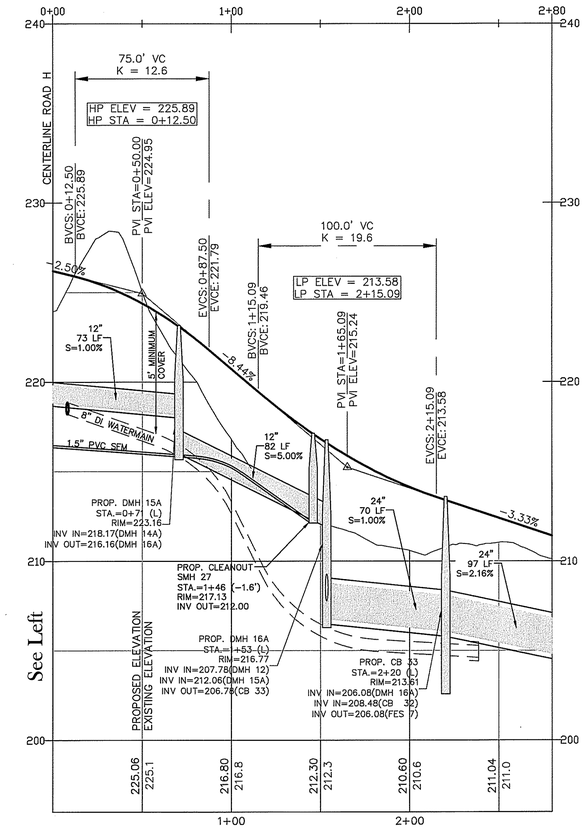
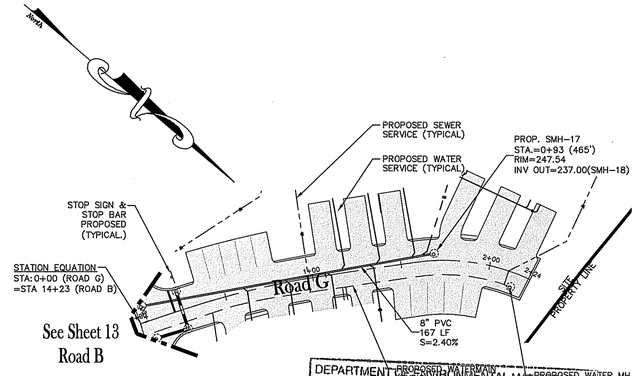
HORIZ: 0 20' 40' 80'





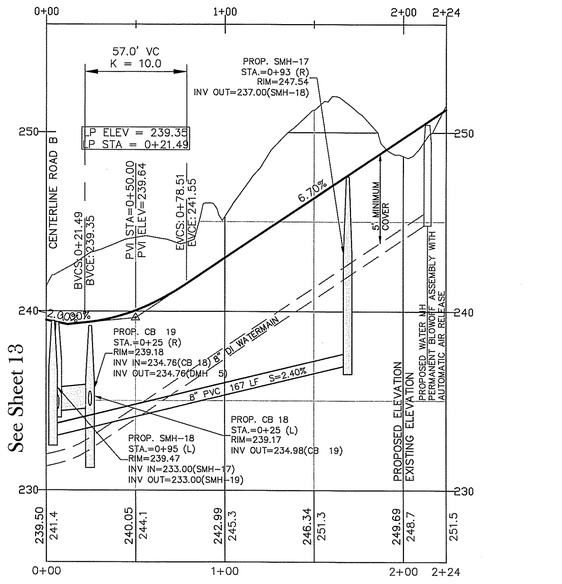
DEPARTMENT OF ENVIRONMENTAL MANAGEMENT
OFFICE OF WATER RESOURCES
FRESHWATER WETLANDS PROGRAM
APPROVED WITH CONDITIONS
AS SPECIFIED IN THE LETTER OF APPROVAL
DATED DEC 26 2007 FILE # 07-0235
NO CHANGES ALLOWED WITHOUT PRIOR APPROVAL
APPROVED PLANS MUST BE AT CONSTRUCTION SITE

Road G

(STATION 0+00 – END)

HORIZ: 0 20' 40' 80'

VERT: 0 2' 4' 8'



NOV 13 2007

CHRISTOPHER A. DUHAMEL
No. 5013
REGISTERED PROFESSIONAL ENGINEER

NO.	DATE	DESCRIPTION	BY
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2	9-28-07	UTILITY SUBMISSION	J.M.D.
1	6-28-07	UTILITY SUBMISSION	J.M.D.
0	5-22-07	RIDEM WETLANDS SUBMISSION	D.A.R.

PLAN & PROFILE

Hunters Reserve

ASSESSOR'S PLAT 1 LOTS 85, 145 & 529
NORTH PLEASANT STREET, WEST WARWICK, RHODE ISLAND

PREPARED BY
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CRANSTON, R.I. 02920
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PREPARED FOR
Bradford Sternbach, LLC.
1936 PHENIX AVENUE
CRANSTON, R.I. 02921
(401) 573-6525

APRIL, 2007
DWN. BY: D.A.R.

SHEET 16 OF 24

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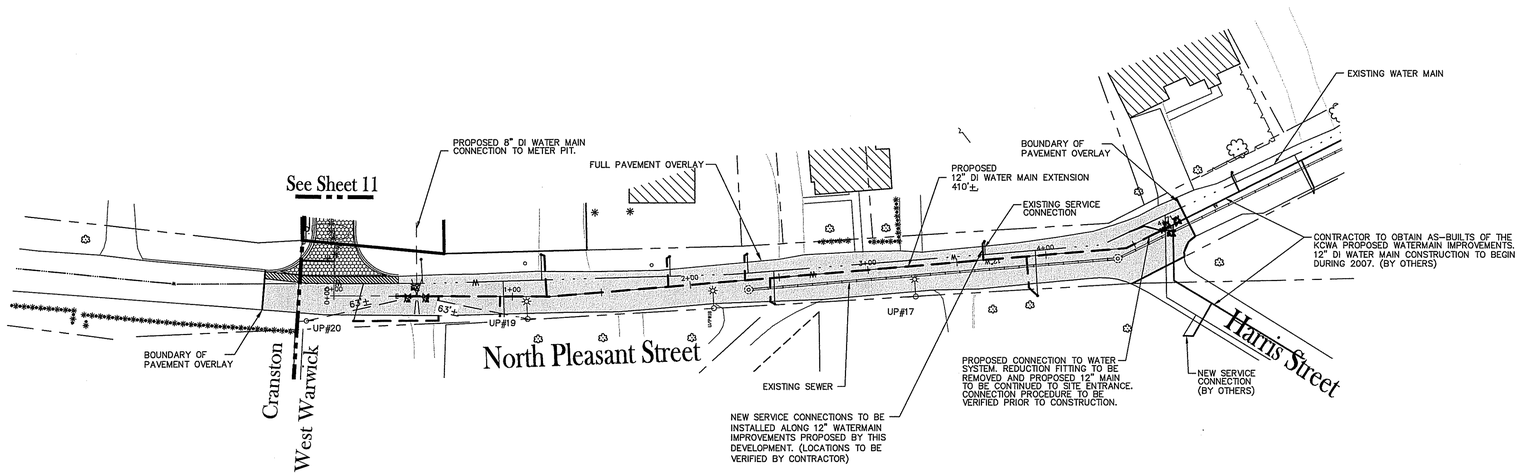

North Pleasant Street

(STATIONS 0+00 – END)

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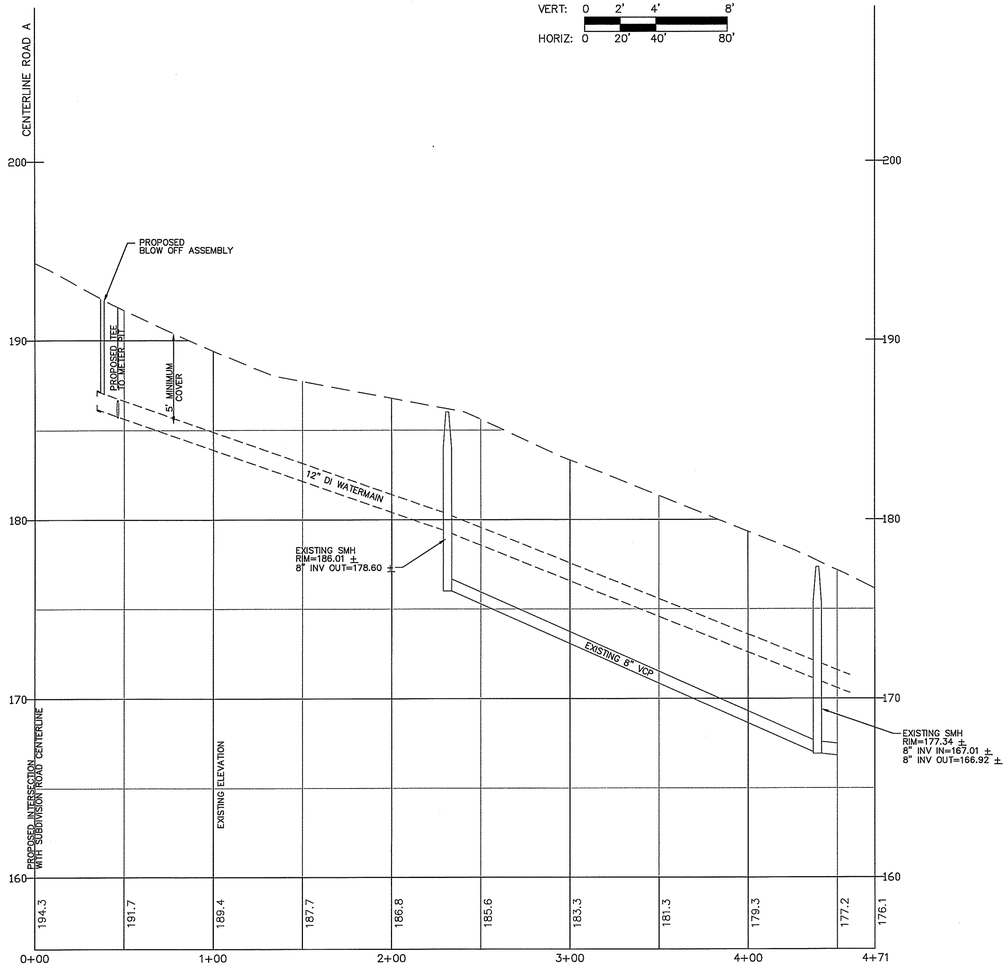

DEPARTMENT OF E[illegible] MANAGEMENT
OFFICE OF WATER RESOURCES
FRESHW[illegible]ER WETLANDS PROGRAM
APPROVED WITH CONDITIONS
AS SPECIFIED IN THE LETTER OF APPROVAL
DATED DEC 06 2007 FILE # 07-0235
NO CHANGES ALLOWED WITHOUT PRIOR APPROVAL
APPROVED PLANS MUST BE AT CONSTRUCTION SITE

Charles A. Horbert

GENERAL NOTES

1. ALL EXISTING UTILITIES SHOWN ARE FROM VISIBLE INFORMATION, DRAWINGS BY OTHERS, OR INFORMATION PROVIDED TO DEA AND ARE SUBJECT TO CHANGE. NO ONE SHOULD RELY ON THE UTILITY LOCATIONS SHOWN FOR CONSTRUCTION AND DIG SAFE SHOULD BE NOTIFIED PRIOR TO ANY WORK.

NOV 13 2007

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PLAN & PROFILE

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APRIL, 2007
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SHEET 17 OF 24

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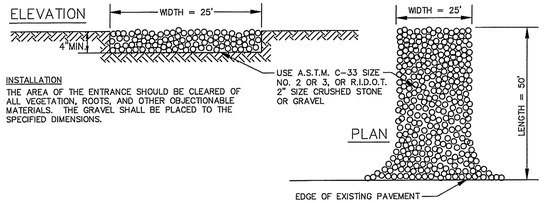
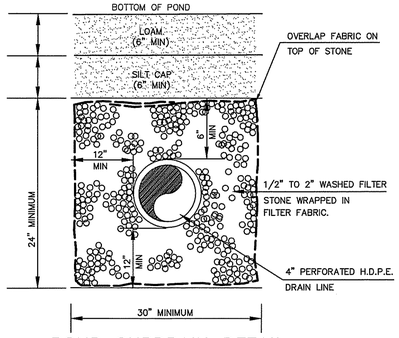


INSTALLATION
THE AREA OF THE ENTRANCE SHOULD BE CLEARED OF ALL VEGETATION, ROOTS, AND OTHER OBJECTIONABLE MATERIALS. THE GRAVEL SHALL BE PLACED TO THE SPECIFIED DIMENSIONS.

MAINTENANCE
THE ENTRANCE SHALL BE MAINTAINED TO A CONDITION WHICH WILL PREVENT TRACKING OR FLOWING OF SEDIMENTS ONTO PUBLIC RIGHT- OF-WAYS. THIS WILL REQUIRE PERIODIC TOP DRESSING WITH ADDITIONAL STONE, OR ADDITIONAL LENGTH, AS CONDITIONS DEMAND, AND REPAIR, AND/OR CLEANOUT OF ANY MEASURES USED TO TRAP SEDIMENT. ALL SEDIMENT SPILLED, DROPPED, WASHED OR TRACKED ONTO PUBLIC RIGHT-OF-WAYS MUST BE REMOVED IMMEDIATELY.

CONSTRUCTION ENTRANCE PROTECTION STONE STABILIZATION PAD

NOT TO SCALE

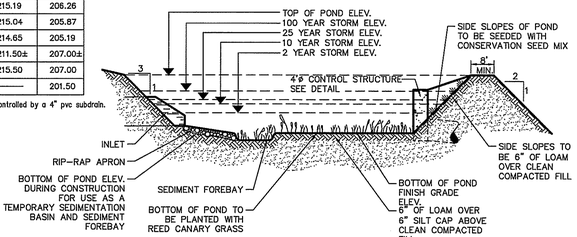


POND SUBDRAIN DETAIL

NOT TO SCALE

Description	BASIN 1	BASIN 2	POND 3
Top of Pond Elevation	188.00	216.50	208.00
Bottom of Pond	184.00	213.50	204.00
Bottom of Pond Elevation for Temp. Sedimentation Basin	183.00	212.50	203.00
Sediment Forebay	183.50	213.00	203.50
100 Year Storm Elevation	186.94	215.44	206.97
25 Year Storm Elevation	186.40	215.19	206.26
10 Year Storm Elevation	186.00	215.04	205.87
2 Year Storm Elevation	185.22	214.65	205.19
Seasonal High Groundwater Table Elevation*	183.00±	211.50±	207.00±
Emergency Overflow Weir Elevation	187.00	215.50	207.00
PVC Subdrain Elevation	181.50	———	201.50

* Seasonal high groundwater table for ponds will be controlled by a 4" pvc subdrain.



DETENTION BASIN & WATER QUALITY BASIN TYPICAL CROSS SECTION

NOT TO SCALE

SEQUENCE OF CONSTRUCTION AND STAGING OF LAND DISTURBING ACTIVITIES

1. SURVEY AND STAKE CENTERLINE OF THE PROPOSED ROAD, THE DRAINAGE STRUCTURES AND PIPES, THE DETENTION PONDS, AND THE LIMIT OF SEDIMENTATION BARRIERS.
2. 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.
3. BEGIN ROAD AND DRAINAGE WORK (CLEARING AND GRUBBING, EXCAVATING AND GRADING, ETC.). TOPSOIL TO BE STRIPPED AND STOCKPILED IN APPROVED AREAS. THE STOCKPILES ARE TO BE PROTECTED BY A ROW OF SEDIMENTATION BARRIERS AND COVERED, OR TEMPORARILY SEEDED. DIVERT ALL THE RUNOFF FROM DISTURBED AREAS TO THE PROPOSED BASINS.
4. BEGIN CULVERT CROSSING WORK: UTILIZE THE EXISTING GRAVEL ROAD TO ALLOW EQUIPMENT TO ACCESS UPLAND SIDE OF PROJECT. INSTALL DEWATERING PUMP UPSTREAM, ALSO INSTALL LOG AND HAY CHECK DAM. REMOVE TREES AND BRUSH WITHIN LIMIT OF CULVERT CROSSING. INSTALL 8" WATER MAIN. EXCAVATE FOR CULVERT FOOTINGS. POUR CULVERT FOOTINGS. BACKFILL THE FOOTING EXCAVATION WITH EXCEPTION TO THE BEARING KEYWAY; PERFORM WETLAND REPLICATION WORK UNDER AND AROUND THE CULVERT STRUCTURE, INSTALL REINFORCED CONCRETE RETAINING WALLS AND BACKFILL AROUND CULVERT STRUCTURE. CULVERT CROSSING IS TO BE PERFORMED DURING DRY SEASON WHEN THE STREAMS ARE DRY.
5. INSTALL UTILITIES AND DRAINAGE PIPES. IMMEDIATELY PLACE THE EROSION CONTROLS AT THE DISCHARGE POINTS AND SEED THE BASIN AND DISTURBED AREAS.
6. BEGIN ROAD PAVING, LAYOUT OF CONDOMINIUMS AND GRADING.
7. BEGIN LANDSCAPING WHILE CONDOMINIUMS ARE UNDER CONSTRUCTION.
8. FINISH HOMES AND ROAD CONSTRUCTION.
9. FINISH LANDSCAPING AND PERMANENT STABILIZATION.
10. REPAIR DRAINAGE OUTLETS AS REQUIRED. THE TREE LIMBS, LEAVES, BOULDERS, ETC. SHALL BE REMOVED FROM THE BOTTOM OF BMPS BEFORE ACCEPTANCE BY THE CONDOMINIUM ASSOCIATION (C.A.)
11. REMOVE ALL TEMPORARY SOIL EROSION AND SEDIMENTATION CONTROL MEASURES FOLLOWING VEGETATIVE ESTABLISHMENT OF ALL DISTURBED AREAS.
12. CONSTRUCTION TO COMMENCE LATE 2007 OR UPON RECEIPT OF ALL NECESSARY APPROVALS.
13. PRIOR TO COMMENCING CONDOMINIUM UNIT CONSTRUCTION, THE PROPOSED LIMITS OF CLEARING SHALL BE SURVEYED AND FLAGGED TO LIMIT TREE CLEARING.

STRUCTURAL MEASURES

1. RUNOFF WATER QUALITY IS IMPROVED UTILIZING EXTENDED DETENTION BASINS AND OVERSIZED CATCH BASINS ACTING AS OIL/WATER SEPARATORS. DISCHARGE INLETS/OUTLETS ARE PROTECTED WITH RIP RAP APRONS AND/OR LEVEL SPREADERS.
2. A PERMANENT COVER SHALL BE ESTABLISHED IN THE BASINS IMMEDIATELY AFTER GRADING. THE SEEDING SHALL EXTEND TO AT LEAST THE DESIGN TOP WIDTH OF THE BMP'S AND INCLUDE ANY OTHER AREAS DISTURBED BY CONSTRUCTION ACTIVITIES. ACTIVITIES SHALL BE CONFINED TO WITHIN THE LIMIT OF WORK AS SHOWN ON THE PLANS.
3. VIGOROUS VEGETATION SHALL BE MAINTAINED. BARE OR ERODED AREAS SHALL BE IMMEDIATELY REPAIRED AND RESEEDED BY THE CONTRACTOR.
4. HE CONTRACTOR IS RESPONSIBLE FOR MAINTENANCE AND INSPECTION OF THE BASINS DURING AND UP TO A YEAR AFTER COMPLETION OF CONSTRUCTION. THE CONDOMINIUM ASSOCIATION (C.A) IS RESPONSIBLE THEREAFTER. ANY UNDEVELOPED VEGETATIVE COVER IN THE BASINS SHALL BE THE RESPONSIBILITY OF THE CONTRACTOR. THE CONTRACTOR SHALL RESEED ANY UNSTABILIZED AREAS AFTER A FULL GROWING SEASON AT NO ADDITIONAL EXPENSE TO THE OWNER.
5. THE GRASS IN THE BASINS SHALL BE ALLOWED TO GROW BETWEEN 2 TO 10 INCHES.
6. THE DETENTION BASINS SHALL BE BUILT TO CONTROL RUNOFF FOR 2 THROUGH 100 YEAR STORM FREQUENCIES.
7. SIDE SLOPES OF THE BASINS SHALL BE SEEDED. THE SIDE SLOPES SHALL BE 3:1 MAXIMUM, UNLESS NOTED OTHERWISE.
8. ALL EMBANKMENTS OF THE BASINS SHALL BE THOROUGHLY COMPACTED UPON PLACEMENT IN STRICT CONFORMANCE WITH R.I. STANDARD SPECIFICATION SECTION 202.
9. THE CONTRACTOR SHALL BE RESPONSIBLE FOR MAINTAINING THE SEDIMENTATION BASIN DURING CONSTRUCTION AND THE DETENTION BASINS UP TO THE ACCEPTANCE BY THE C.A.. THE ASSOCIATION SHALL BE RESPONSIBLE THEREAFTER FOR MAINTAINING THE BASINS. THE C.A. SHALL INSPECT THE BASINS SEMIANNUALLY AND AFTER MAJOR STORMS.
10. A GRADUATED GAGE IS TO BE SET WITHIN THE BASINS TO MONITOR ACCUMULATED SEDIMENTS.
11. RIP RAP APRONS SHALL BE INSTALLED AT THE OUTLETS OF ALL CULVERTS. THE EMERGENCY SPILLWAY SHALL BE PROTECTED BY RIP RAP DOWNSTREAM AND UPSTREAM.
12. RIP RAP PADS SHALL BE INSPECTED SEMIANNUALLY AND AFTER MAJOR STORMS. IF REPAIRS ARE NEEDED, THEY SHALL BE ACCOMPLISHED IMMEDIATELY.
13. THE CONSTRUCTION SUPERINTENDENT SHALL HAVE THE OVERALL RESPONSIBILITY FOR STRUCTURAL MEASURE IMPLEMENTATION AND FOR SEEING THAT APPROPRIATE WORKERS ARE AWARE OF THE PROVISIONS OF THE PLAN.
14. REFERENCE THE 'RHODE ISLAND SOIL EROSION AND SEDIMENT CONTROL HANDBOOK' PREPARED BY USDA SOIL CONSERVATION SERVICE 1989, AS A GUIDE.

ESTABLISHMENT OF VEGETATIVE COVER

1. SLOPES SHALL NOT BE LEFT UNATTENDED OR EXPOSED FOR EXCESSIVE PERIODS OF TIME SUCH AS THE INACTIVE WINTER SEASON. THE CONTRACTOR SHOULD 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.
2. ALL DISTURBED SLOPES EITHER NEWLY CREATED OR CURRENTLY EXPOSED SHALL BE SEEDED OR PROTECTED.
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 RHODE ISLAND'S STANDARD SPECIFICATION, M20.
4. THE SEEDING DESIGN MIX SHALL BE COMPRISED OF THE FOLLOWING:

TYPE	LBS/AC
CREEPING RED FESCUE	75
KENTUCKY BLUE GRASS	15
COLONIAL BENT GRASS	5
PERENNIAL RYE GRASS	5

EARLY SPRING OR LATE SUMMER SEEDING IS RECOMMENDED. SEED AS REQUIRED BY SOIL TESTING TO COMPLIMENT OR UPGRADE EXISTING CONDITIONS. THE SEED MIX SHALL BE INOCULATED WITHIN 24 HOURS AND BEFORE MIXING AND PLANTING, WITH APPROPRIATE INOCULUMS FOR EACH VARIETY.

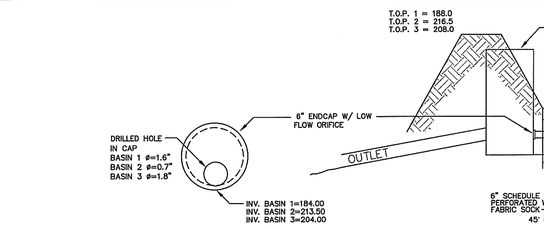
5. TEMPORARY TREATMENTS SHALL CONSIST OF HAY, STRAW, OR FIBER MULCH OR PROTECTIVE COVERS SUCH AS A MAT OR FIBER LINING. TEMPORARY HAY MULCH TO BE TACKED IN PLACE WITH NYLON MESH NETTING. SIDE SLOPES OF BASINS SHALL BE TREATED WITH NORTH AMERICAN GREEN EROSION CONTROL BLANKETS SUCH AS S150 OR APPROVED 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. ALL HAY BALES OR TEMPORARY PROTECTION SHALL REMAIN IN PLACE UNTIL AN ACCEPTABLE STAND OF GRASS OR APPROVED GROUND COVER IS ESTABLISHED.
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.
8. STOCKPILES OF TOPSOIL SHALL NOT BE LOCATED NEAR WATERWAYS. THEY SHALL HAVE SIDE SLOPES NO GREATER THAN 2:1 AND SHALL BE TEMPORARILY SEEDED AND/OR STABILIZED.
9. ALL AREAS PROPOSED TO BE VEGETATED THAT ARE DISTURBED BY CONSTRUCTION SHALL BE STABILIZED WITH PERMANENT SEEDING IMMEDIATELY FOLLOWING FINISH GRADING. PERMANENTLY SEEDED AREAS SHALL BE PROTECTED DURING ESTABLISHMENT WITH MULCH. ALL SEEDED AREAS SHALL BE CHECKED REGULARLY TO SEE THAT A GOOD STAND IS MAINTAINED. VIGOROUS VEGETATION SHALL BE MAINTAINED. BARE OR ERODED AREAS SHALL BE IMMEDIATELY REPAIRED AND RESEEDED BY THE CONTRACTOR. ACTIVITIES SHALL BE CONFINED TO WITHIN THE LIMIT OF WORK AS SHOWN ON THE PLANS.
10. MAXIMUM PERMANENT GRADED SLOPE WITHIN THE SITE IS TO BE 2:1 UNLESS NOTED OTHERWISE.
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. 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 OWNER.
12. REFERENCE THE "RHODE ISLAND SOIL EROSION AND SEDIMENTATION CONTROL HANDBOOK" PREPARED BY THE USDA SOIL CONSERVATION SERVICE 1989 AS A GUIDE.

NON STRUCTURAL MEASURES

1. CONSTRUCTION TRAFFIC SHALL BE LIMITED TO THE ACCESS ROAD, UTILITY/DRAINAGE EASEMENTS AND AREAS TO BE GRADED.
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.
3. THE CONTRACTOR SHALL MAINTAIN THE ENTRANCE. 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 ONTO THE PUBLIC RIGHT OF WAY MUST BE REMOVED IMMEDIATELY BY THE CONTRACTOR.
4. 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.
5. HAY BALES OR SILT FENCE SHALL BE INSTALLED DOWNSTREAM OUTSIDE THE LIMITS OF ANY PROPOSED CONSTRUCTION AS SHOWN ON THE SITE PLANS AND PRIOR TO THE COMMENCEMENT OF THE PROPOSED ALTERATION.
6. HAYBALES SHALL BE MAINTAINED BY THE CONTRACTOR. INSPECTION SHALL BE MADE AFTER EACH STORM EVENT AND REPAIRED OR REPLACED AS WARRANTED. THE CONTRACTOR SHALL CLEAN THE ACCUMULATED SEDIMENT IF HALF OF THE ORIGINAL HEIGHTS OF THE BALES BECOME FILLED IN WITH SEDIMENT.
7. 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.
8. 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.
9. REFERENCE THE "RHODE ISLAND SOIL EROSION AND SEDIMENT CONTROL HANDBOOK" PREPARED BY THE USDA SOIL CONSERVATION SERVICE 1989, AS A GUIDE.

MAINTENANCE: SHORT TERM/LONG TERM

1. ALL DISTURBED SLOPES EITHER NEWLY CREATED OR CURRENTLY EXPOSED SHALL BE SEEDED, PROTECTED, AND MAINTAINED BY THE CONTRACTOR FOLLOWING FINAL GRADING AND CONSTRUCTION. THE CONTRACTOR SHALL CHECK REGULARLY ALL SEEDED AREAS TO SEE THAT A GOOD STAND IS MAINTAINED.
2. 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.
3. ALL HAY BALES, TEMPORARY TREATMENTS (HAY, STRAW, ETC.), AND TEMPORARY PROTECTION SHALL BE MAINTAINED BY THE CONTRACTOR THROUGHOUT CONSTRUCTION AND SHALL REMAIN IN PLACE UNTIL AN ACCEPTABLE STAND OF GRASS OR APPROVED GROUND COVER IS ESTABLISHED.
4. 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. HAYBALES OR SILT FENCE SHALL BE STAKED AROUND THE STOCKPILES.
5. THE CONTRACTOR SHALL CHECK THE HAYBALES OR SILT FENCE ON A WEEKLY BASIS AND AFTER EACH STORM FOR UNDERMINING OR DETERIORATION. THE CONTRACTOR SHALL REPAIR OR REPLACE THE HAYBALES AS NECESSARY. THE CONTRACTOR SHALL CLEAN THE ACCUMULATED SEDIMENT IF HALF OF THE ORIGINAL HEIGHT OF THE HAYBALES BECOMES FILLED IN WITH SEDIMENTS.
6. 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 ONTO THE PUBLIC RIGHT OF WAY MUST BE REMOVED IMMEDIATELY BY THE CONTRACTOR.
7. THE CONTRACTOR IS RESPONSIBLE FOR MAINTENANCE AND INSPECTION OF THE BASINS DURING AND UP TO ACCEPTANCE OF CONSTRUCTION BY THE TOWN. MAINTENANCE SHALL INCLUDE RESEEDING ANY UNDEVELOPED AREAS AFTER A FULL GROWING SEASON AT NO ADDITIONAL EXPENSE, REMOVING ACCUMULATED SILT WHEN SEDIMENTS IN THE BASINS EXCEED 4", AND MAINTAINING THE GRASS TO A GROWING HEIGHT BETWEEN 2"-10".
8. THE CONTRACTOR SHALL INSPECT RIP RAP PADS AFTER EACH STORM AND REPAIR AS NECESSARY.
9. THE CONSTRUCTION SUPERINTENDENT SHALL HAVE OVERALL RESPONSIBILITY FOR THE MAINTENANCE PROGRAM INCLUDING MAINTENANCE OF THE HAYBALES, TOPSOILS, AND DRAINAGE COMPONENTS DURING THE CONSTRUCTION PHASE. THE SUPERINTENDENT SHALL SEE THAT THE APPROPRIATE WORKERS ARE AWARE OF THE PROVISIONS OF THE PLAN. THE ACCUMULATED SEDIMENTS IN THE CATCH BASINS SHALL BE REMOVED AND DRAINAGE PIPES FLUSHED BY THE CONTRACTOR AT THE END OF CONSTRUCTION.
10. THE CONDOMINIUM ASSOCIATION (C.A.) IS RESPONSIBLE FOR THE LONG TERM MAINTENANCE OF THE DETENTION BASINS, RIP RAP PADS, DRAINAGE STRUCTURES, AND PIPING.
11. ALL DRAINAGE SYSTEM COMPONENTS INCLUDING THE CATCH BASINS, DRAINAGE MANHOLES, AND PIPING WITHIN THE RIGHT OF WAY SHALL REMAIN THE RESPONSIBILITY OF THE C.A. THE DRAINAGE SYSTEM COMPONENTS SHALL BE CHECKED SEMI-ANNUALLY AND ACCUMULATED SEDIMENTS SHALL BE REMOVED WHEN THEY EXCEED 3" DEPTH OR EVERY 10 YEARS, WHICHEVER COMES FIRST. CATCH BASIN SUMPS SHALL BE CHECKED ANNUALLY AND SEDIMENTS SHALL BE REMOVED IF THEY EXCEED 6" DEPTH OR EVERY 10 YEARS, WHICHEVER COMES FIRST.
12. THE CONDOMINIUM ASSOCIATION SHALL CHECK THE RIP-RAP PADS AND EMERGENCY OUTLETS AFTER MAJOR STORMS AND ON A SEMI ANNUAL BASIS. REPAIRS SHALL BE PERFORMED BY THE C.A. IMMEDIATELY AS CONDITIONS WARRANT.
13. THE C.A. SHALL MAINTAIN THE DETENTION BASINS. THE C.A. SHALL MAINTAIN A GOOD VEGETATIVE COVER (GRASS BETWEEN 2"-10" OR VEGETATION AS SPECIFIED). BOTTOM OF DETENTION BASINS SHALL BE INSPECTED BY THE C.A. ON A BIANNUAL BASIS AND ACCUMULATED SEDIMENTS SHALL BE REMOVED WHEN THEY REACH A 4" DEPTH OR EVERY 10 YEARS IN THE DETENTION BASINS.
14. CONSTRUCTION OF DETENTION BASINS SHALL BE SUPERVISED BY A PROFESSIONAL ENGINEER. A REPORT AND PLAN OF AS-BUILT CONSTRUCTION SHALL BE MADE AVAILABLE TO THE TOWN ENGINEER.



CAP DETAIL

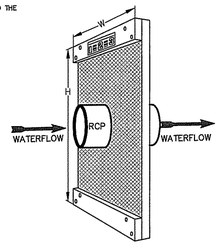
NOT TO SCALE

WATER QUALITY OUTLET

NOT TO SCALE

INSTALLATION NOTES:
1. UNROLL THE ANTI-SEEP AND ATTACH THE BOARDS TO THE EDGES TO FORM A SQUARE. (USE THE BOARDS AND NAILS PROVIDED.)(4'X4' & LARGER)
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.

Location	W	H	Quantity
BASIN 1 OUTLET	5.25	5.25	1
BASIN 2 OUTLET	5	5	1
BASIN 3 OUTLET	6	6	1



NOTE:
AGRI DRAIN CORP. OR EQUAL

ANTI-SEEP COLLAR

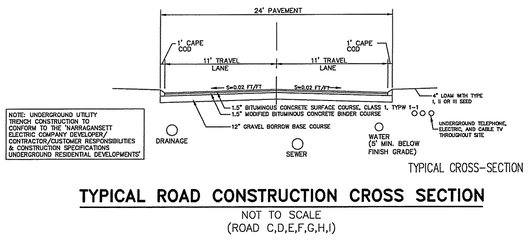
NOT TO SCALE

NOTES:
1. FOLLOWING PLACEMENT OF FILTER FABRIC AND RIP RAP, VOIDS SHALL BE FILLED WITH LOAM AND SEEDED ALONG WITH DETENTION BASIN.
2. CONTRACTOR TO VERIFY ELEVATIONS ALONG TOP OF CURB AFTER SPILLWAY AREA IS COMPACTED TO 95% PROCTOR.

LOCATION	TOP ELEVATION	WEIR INVERT	WEIR DEPTH
BASIN 1	188.00	187.00	1.0'
BASIN 2	216.50	215.50	1.0'
BASIN 3	208.00	207.00	1.0'

EMERGENCY SPILLWAY DETAIL

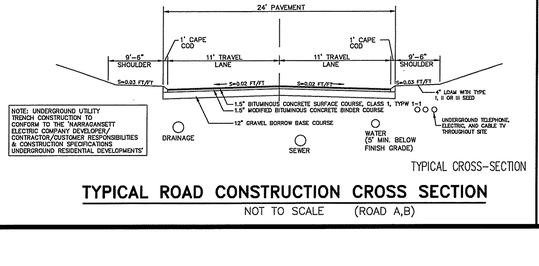
NOT TO SCALE



TYPICAL CROSS-SECTION

TYPICAL ROAD CONSTRUCTION CROSS SECTION

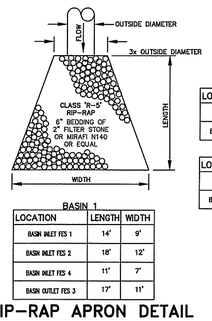
NOT TO SCALE
(ROAD C,D,E,F,G,H,I)



TYPICAL CROSS-SECTION

TYPICAL ROAD CONSTRUCTION CROSS SECTION

NOT TO SCALE (ROAD A,B)



BASIN 1

LOCATION	LENGTH	WIDTH
BASIN INLET FES 1	14'	9'
BASIN INLET FES 2	18'	12'
BASIN INLET FES 4	11'	7'
BASIN OUTLET FES 3	17'	11'

POND 2

LOCATION	LENGTH	WIDTH
BASIN INLET FES 5	12'	8'
BASIN OUTLET FES 6	12'	8'

POND 3

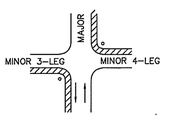
LOCATION	LENGTH	WIDTH
BASIN INLET FES 7	24'	16'
BASIN OUTLET FES 8	15'	9'

RIP-RAP APRON DETAIL

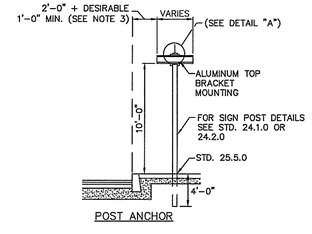
NOT TO SCALE

NOTES:
1. SHALL BE IN ACCORDANCE WITH SECTION T.15 OF THE R.I. STANDARD SPECIFICATIONS.
2. EACH SIGN SHALL HAVE LEGEND ON BOTH SIDES.
3. POSTS SHALL BE INSTALLED AS CLOSE AS POSSIBLE TO THE BACK OF SIDEWALK, UNLESS SPACE DOES NOT PERMIT.
4. 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.

R.I. STANDARD 24.6.1



TYPICAL SIGN LOCATION



STREET SIGN MOUNTING DETAIL

NOT TO SCALE

R.I. STANDARD 27.1.0

SIGN NUMBER	R1-1
LEGEND	STOP
COLOR	BACKGROUND: RED
SIGN SIZE	
DIMENSION	

DEPARTMENT OF ENVIRONMENTAL MANAGEMENT
OFFICE OF THE WATER RESOURCES
DIVISION OF PLANNING & DEVELOPMENT
FLOODPLAIN MANAGEMENT PROGRAM
APPROVED WITH CONDITIONS
AS SPECIFIED IN THE LETTER OF APPROVAL
DATED DEC 26 2007 FILE # 07-0235
NO CHANGES ALLOWED WITHOUT PRIOR APPROVAL
APPROVED PLANS MUST BE AT CONSTRUCTION SITE
Charles A. Horbert
NOV 13 2007

REGULATORY SIGNS

NOT TO SCALE

CHRISTOPHER A. DUHAMEL
No. 5013
REGISTERED PROFESSIONAL ENGINEER

NO.	DATE	DESCRIPTION	BY
3	11-13-07	RIDEM WETLAND COMMENTS	J.M.D.
2	8-29-07	UTILITY SUBMISSION	J.M.D.
1	6-26-07	UTILITY SUBMISSION	J.M.D.
0	5-22-07	RIDEM WETLANDS SUBMISSION	D.A.R.

DETAIL SHEET

Hunters Reserve

ASSESSOR'S PLAT 1 LOTS 85, 145 & 529
NORTH PLEASANT STREET, WEST WARWICK, RHODE ISLAND

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

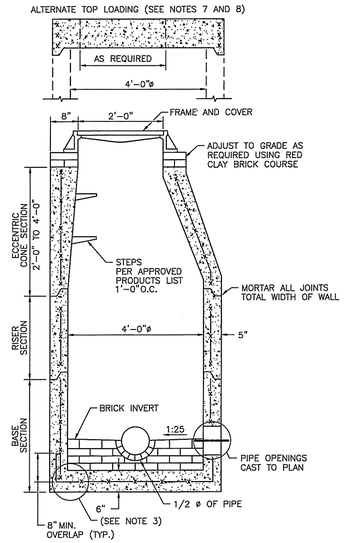
PREPARED FOR
Bradford Sternbach, LLC.
1936 PHENIX AVENUE
CRANSTON, R.I. 02921
(401) 573-6525

APRIL, 2007
DWN. BY: D.A.R.

SHEET 18 OF 24

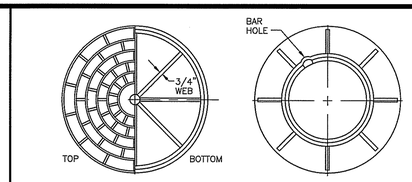
DEA Job No. 0351-003 Copyright 2006 by DiPrete Engineering Associates, Inc.

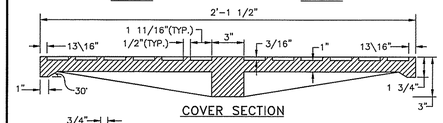
M:\Engineers2\transfers\0351-003 Hunters Reserve D\dwg\0351-003 Preliminary_LAB SEWER DESIGN.dwg, 18 D (Pond), 11/13/2007 11:43:51 AM



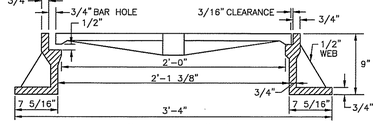
NOTES:
1. SHALL BE IN ACCORDANCE WITH SECTION 702 OF THE R.I. STANDARD SPECIFICATIONS.
2. CIRCUMFERENTIAL STEEL REINFORCEMENT REQUIRED = 0.12 SQ. IN. / LIN. FT. MINIMUM.
3. STEEL REINFORCEMENT FOR BASE SECTION BOTTOM SHALL BE A MINIMUM OF 0.12 SQ. IN/LIN. FT. (BOTH WAYS).
4. ONE POUR MONOLITHIC BASE 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
R.I. STANDARD 4.2.0





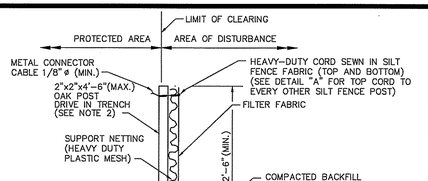
COVER SECTION



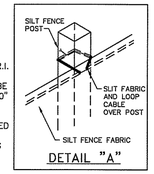
FRAME SECTION

NOTES:
1. FRAME AND GRATE SHALL CONFORM TO SECTION M.04 OF THE R.I. STANDARD SPECIFICATIONS.
2. FRAME AND COVER SEATS MUST HAVE MACHINE FINISH.

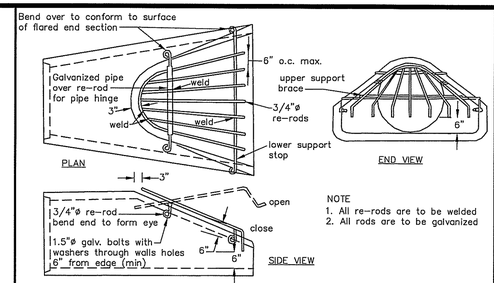
HEAVY-DUTY ROUND FRAME AND COVER
NOT TO SCALE
R.I. STANDARD 6.2.1



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

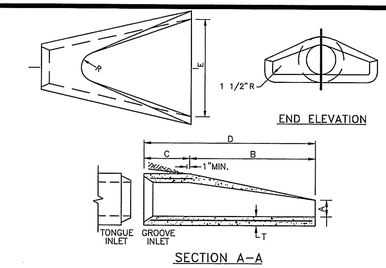


SILT FENCE DETAIL
NOT TO SCALE
R.I. STANDARD 9.2.0



NOTE
1. All re-rods are to be welded
2. All rods are to be galvanized

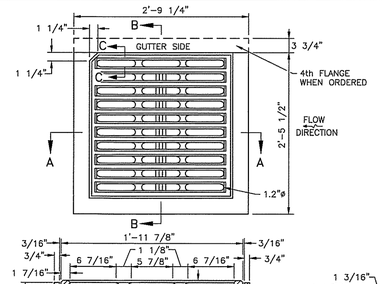
GRATING FOR FLARED END
NOT TO SCALE



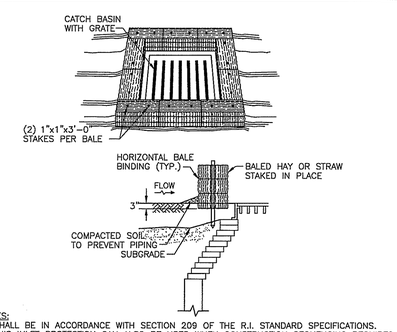
DIMENSIONS								REINFORCEMENT
DIA.	A	B	C	D	E	R	T	ONE LAYER REINFORCEMENT IN CENTER OF WALL MIN. AREA OF EACH WAY (SQ. IN./FT.)
1'-0"	4"	2'-0"	1'-0 7/8"	0'-0 7/8"	2'-0"	9"	2"	0.048
1'-3"	6"	2'-3"	3'-10"	6'-1"	2'-6"	11"	2 1/4"	0.054
1'-6"	9"	2'-3"	3'-10"	6'-1"	3'-0"	12"	2 1/2"	0.060
2'-0"	9 1/2"	3'-1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

NOTE:
SHALL BE IN ACCORDANCE WITH SECTION 701 OF THE R.I. STANDARD SPECIFICATIONS.

PRECAST CONCRETE FLARED END SECTION
NOT TO SCALE
R.I. STANDARD 2.3.0

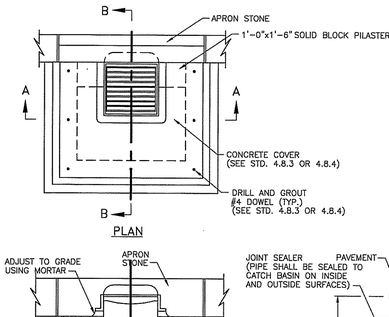


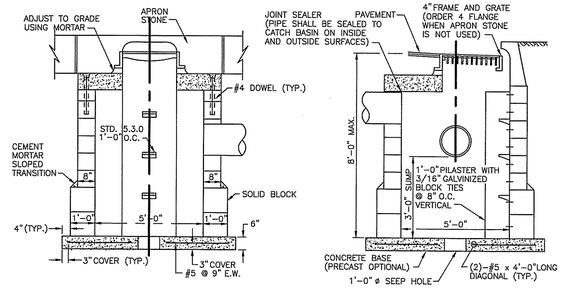
SQUARE FRAME AND GRATE (BICYCLE SAFE)
NOT TO SCALE
R.I. STANDARD 6.3.2



NOTES:
1. SHALL BE IN ACCORDANCE WITH SECTION 209 OF THE R.I. STANDARD SPECIFICATIONS.
2. THIS INLET PROTECTION CAN ALSO BE USED WHEN CONSTRUCTION SEQUENCING REQUIRES A CATCH BASIN TO BE EXPOSED TO SEDIMENT FROM THE SUBGRADE. THIS WILL BE ACHIEVED BY INSTALLING THE BALED HAY AS SHOWN ON THIS DETAIL INTO THE SUBGRADE.
3. THE PERIMETER CONFIGURATION OF THE BALED HAY WILL VARY DEPENDING ON THE PARTICULAR TYPE OF CATCH BASIN INLET BEING CONSTRUCTED. THE ENGINEER WILL PROVIDE SPECIFIC DIRECTION IN SUCH CASES.

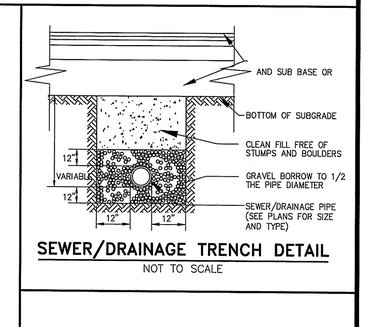
BALED HAY CATCH BASIN INLET PROTECTION
NOT TO SCALE
R.I. STANDARD 9.8.0





NOTES:
1. SHALL BE IN ACCORDANCE WITH SECTION 702 OF THE R.I. STANDARD SPECIFICATIONS.
2. 1/2" CEMENT MORTAR PLASTER COAT REQUIRED ON ALL INSIDE AND OUTSIDE SURFACES.
3. ADJUST DOWEL LOCATION BASED ON PIPE CONFIGURATION, AS REQUIRED.
4. USE 8" WALLS UP TO 6'-0" DEPTH, USE 1'-0" WALLS UP TO 8'-0" DEPTH.

SOLID BLOCK SHALLOW 5'-0" OR 6'-0" SQUARE CATCH BASIN (PIPE COVER 1'-6" TO 3'-0")
NOT TO SCALE
R.I. STANDARD 3.5.1



SEWER/DRAINAGE TRENCH DETAIL
NOT TO SCALE

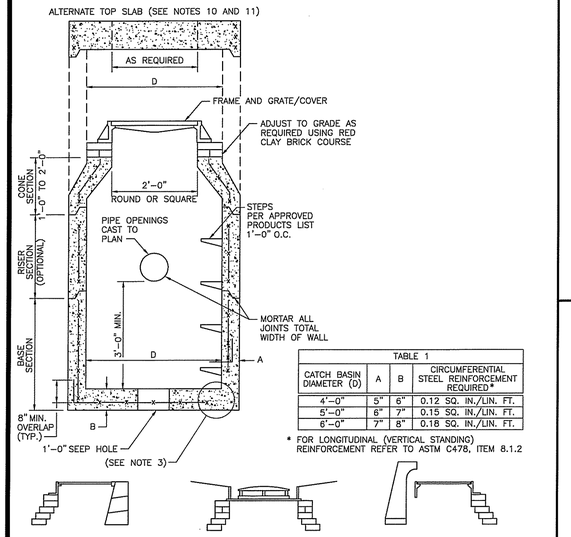


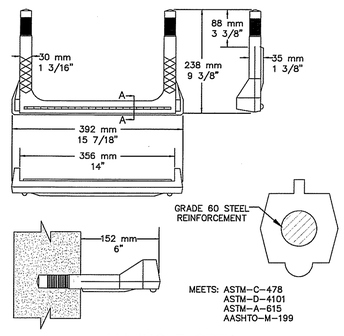
TABLE 1			
CATCH BASIN DIAMETER (D)	A	B	CIRCUMFERENTIAL STEEL REINFORCEMENT REQUIRED*
4'-0"	5"	6"	0.12 SQ. IN./LIN. FT.
5'-0"	6"	7"	0.15 SQ. IN./LIN. FT.
6'-0"	7"	8"	0.18 SQ. IN./LIN. FT.

* FOR LONGITUDINAL (VERTICAL STANDING) REINFORCEMENT REFER TO ASTM C478, ITEM 8.1.2

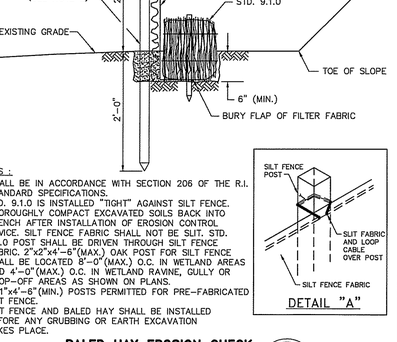
TYPE CATCH BASIN AS REQUIRED

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 POUR 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.

PRECAST 4'-0", 5'-0", OR 6'-0" ROUND CATCH BASIN
NOT TO SCALE
R.I. STANDARD 4.4.0



MANHOLE STEP
NOT TO SCALE



NOTES :
1. SHALL BE IN ACCORDANCE WITH SECTION 206 OF THE R.I. STANDARD SPECIFICATIONS.
2. STD. 9.1.0 IS INSTALLED "TIGHT" AGAINST SILT FENCE. THOROUGHLY COMPACT EXCAVATED SOILS BACK INTO TRENCH AFTER INSTALLATION OF EROSION CONTROL DEVICE. SILT FENCE FABRIC SHALL NOT BE SLIT. STD. 9.1.0 POST SHALL BE DRIVEN THROUGH SILT FENCE FABRIC. 2"x2"x4'-6"(MAX.) OAK POST FOR SILT FENCE SHALL BE LOCATED 8'-0"(MAX.) O.C. IN WETLAND AREAS AND 4'-0"(MAX.) O.C. IN WETLAND RAVINE, GULLY OR DROP-OFF AREAS AS SHOWN ON PLANS.
3. 1"x1"x4'-6"(MIN.) POSTS PERMITTED FOR PRE-FABRICATED SILT FENCE.
4. SILT FENCE AND BALED HAY SHALL BE INSTALLED BEFORE ANY GRUBBING OR EARTH EXCAVATION TAKES PLACE.

BALED HAY EROSION CHECK AND SILT FENCE COMBINED
NOT TO SCALE
R.I. STANDARD 9.3.0

DEPARTMENT OF ENVIRONMENTAL MANAGEMENT
OFFICE OF WATER RESOURCES
FRESHWATER WETLANDS PROGRAM
APPROVED WITH CONDITIONS
AS SPECIFIED IN THE LETTER OF APPROVAL
DATED DEC 26 2007 FILE # 07-0235
NO CHANGES ALLOWED WITHOUT PRIOR APPROVAL
APPROVED PLANS MUST BE AT CONSTRUCTION SITE

Charles A. Horbert

NOV 13 2007

NO.	DATE	DESCRIPTION	BY
3	11-13-07	RIDEM WETLAND COMMENTS	JMD
2	8-28-07	UTILITY SUBMISSION	JMD
1	6-25-07	UTILITY SUBMISSION	JMD
0	5-22-07	RIDEM WETLANDS SUBMISSION	DAR

CHRISTOPHER A. DUHAMEL
No. 5013
REGISTERED PROFESSIONAL ENGINEER

DETAIL SHEET

Hunters Reserve

ASSESSOR'S PLAT 1 LOTS 85, 145 & 529
NORTH PLEASANT STREET, WEST WARWICK, RHODE ISLAND

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

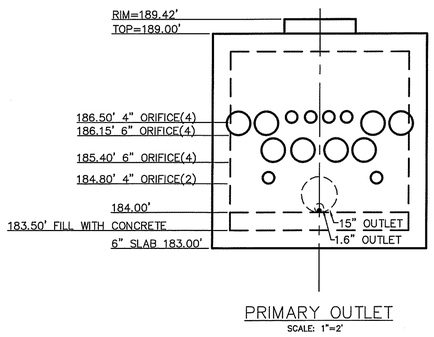
PREPARED FOR
Bradford Sternbach, LLC.
1936 PHENIX AVENUE
CRANSTON, R.I. 02921
(401) 573-6525

APRIL, 2007
DWN. BY: D.A.R.

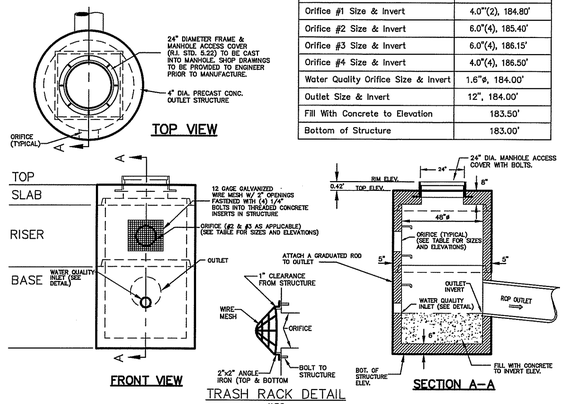
SHEET 19 OF 24

DEA Job No. 0351-003 Copyright 2006 by DiPrete Engineering Associates, Inc.

H:\Engineers2\transfers\0351-003 Hunters Reserve D\dwg\0351-003 Preliminary_LAB SEWER DESIGN.dwg, 19 D (Drainage), 11/13/2007 11:14:35 AM

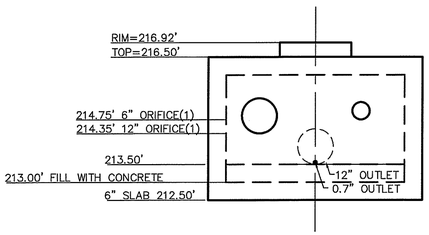


PRIMARY OUTLET
SCALE: 1"=2'

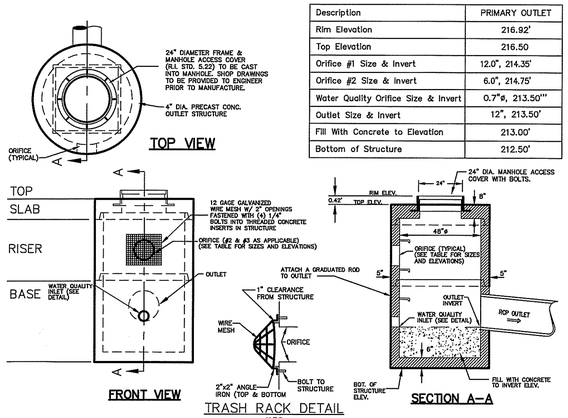


Description	
Rim Elevation	189.42'
Top Elevation	189.00'
Orifice #1 Size & Invert	4.0"(2), 184.80'
Orifice #2 Size & Invert	6.0"(4), 185.40'
Orifice #3 Size & Invert	6.0"(4), 186.15'
Orifice #4 Size & Invert	4.0"(4), 186.50'
Water Quality Orifice Size & Invert	1.6"ø, 184.00'
Outlet Size & Invert	12", 184.00'
Fill With Concrete to Elevation	183.50'
Bottom of Structure	183.00'

BASIN 1
4' DIAMETER OUTLET STRUCTURE

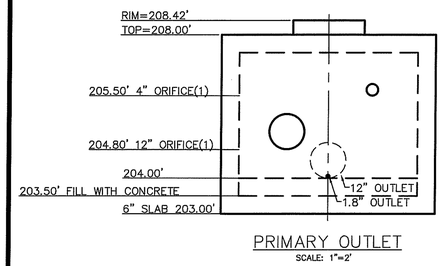


PRIMARY OUTLET
SCALE: 1"=2'

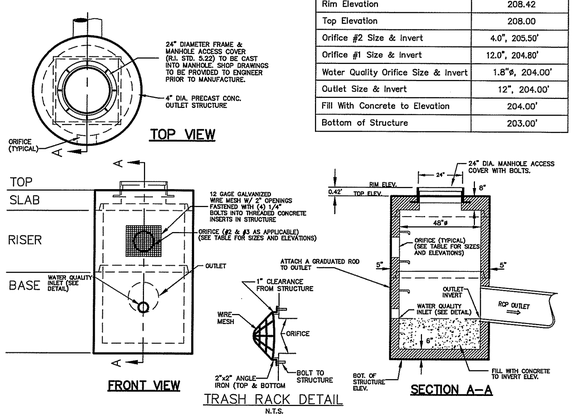


Description	PRIMARY OUTLET
Rim Elevation	216.92'
Top Elevation	216.50
Orifice #1 Size & Invert	12.0", 214.35'
Orifice #2 Size & Invert	6.0", 214.75'
Water Quality Orifice Size & Invert	0.7"ø, 213.50'''
Outlet Size & Invert	12", 213.50'
Fill With Concrete to Elevation	213.00'
Bottom of Structure	212.50'

BASIN 2
4' DIAMETER OUTLET STRUCTURE



PRIMARY OUTLET
SCALE: 1"=2'

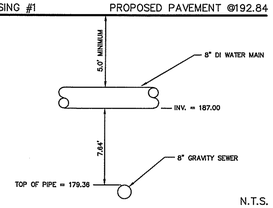


Description	PRIMARY OUTLET
Rim Elevation	208.42
Top Elevation	208.00
Orifice #2 Size & Invert	4.0", 205.50'
Orifice #1 Size & Invert	12.0", 204.80'
Water Quality Orifice Size & Invert	1.8"ø, 204.00'
Outlet Size & Invert	12", 204.00'
Fill With Concrete to Elevation	204.00'
Bottom of Structure	203.00'

BASIN 3
4' DIAMETER OUTLET STRUCTURE

REFERENCE SHEET # 11 PLAN AND PROFILE — STATION ROAD A 7+33

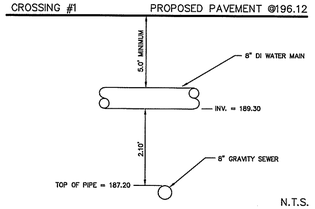
CROSSING #1 — PROPOSED PAVEMENT @192.84



N.T.S.

REFERENCE SHEET # 11 PLAN AND PROFILE — STATION ROAD A 7+98

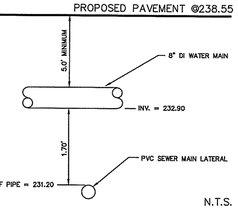
CROSSING #1 — PROPOSED PAVEMENT @196.12



N.T.S.

REFERENCE SHEET # 12 PLAN AND PROFILE — STATION ROAD A 14+08

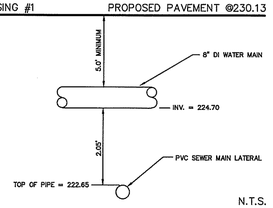
CROSSING #1 — PROPOSED PAVEMENT @238.55



N.T.S.

REFERENCE SHEET # 12 PLAN AND PROFILE — STATION ROAD A 16+70

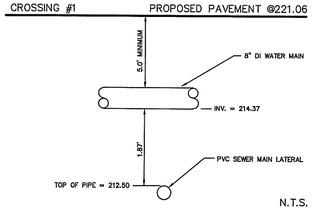
CROSSING #1 — PROPOSED PAVEMENT @230.13



N.T.S.

REFERENCE SHEET # 13 PLAN AND PROFILE — STATION ROAD A 19+11

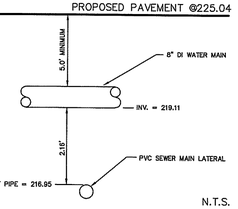
CROSSING #1 — PROPOSED PAVEMENT @221.06



N.T.S.

REFERENCE SHEET # 13 PLAN AND PROFILE — STATION ROAD A 21+75

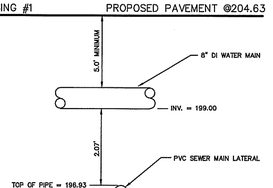
CROSSING #1 — PROPOSED PAVEMENT @225.04



N.T.S.

REFERENCE SHEET # 15 PLAN AND PROFILE — STATION ROAD E 1+03

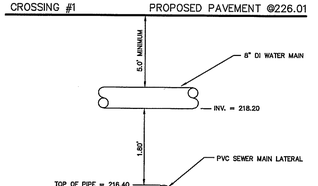
CROSSING #1 — PROPOSED PAVEMENT @204.63



N.T.S.

REFERENCE SHEET # 16 PLAN AND PROFILE — STATION ROAD H 0+66

CROSSING #1 — PROPOSED PAVEMENT @226.01



N.T.S.

DEPARTMENT OF ENVIRONMENTAL MANAGEMENT
OFFICE OF WATER RESOURCES
FRESHWATER WETLANDS PROGRAM
APPROVED WITH CONDITIONS
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Charles A. Horbert

NOV 13 2007

CHRISTOPHER A. DUHAMEL
No. 5013
REGISTERED PROFESSIONAL ENGINEER

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1	6-28-07	UTILITY SUBMISSION	J.M.D.
0	5-22-07	RIDEM WETLANDS SUBMISSION	D.A.R.

DETAIL SHEET

Hunters Reserve

ASSESSOR'S PLAT 1 LOTS 85, 145 & 529
NORTH PLEASANT STREET, WEST WARWICK, RHODE ISLAND

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

PREPARED FOR
Bradford Sternbach, LLC.
1936 PHENIX AVENUE
CRANSTON, R.I. 02921
(401) 573-6525

APRIL, 2007
DWN. BY: D.A.R.

SHEET 20 OF 24

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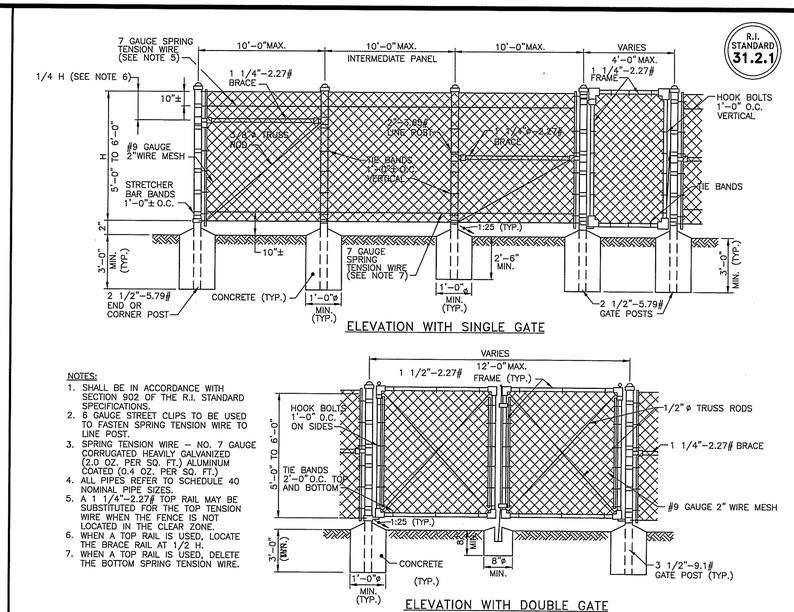
Lot #'s	Elevation				Separation Distance (ft.)
	Prop. Ground	Top of Drywell Facility	Bottom of Drywell Facility (w/ 24" stone)	Seasonal High GWT	
1-4	188.00	187.50	184.00	182.00	2.0
5-7	189.00	188.50	185.00	183.00	2.0
8-10	188.50	188.00	184.50	182.50	2.0
11-13 & 19-20	193.00	192.00	188.50	185.00	3.5
14-18	193.50	192.50	189.00	185.00	4.0
21-24	206.50	205.50	202.00	197.50	4.5
25-28	229.00	228.50	225.00	223.00	2.0
29-32	223.00	222.50	219.00	217.00	2.0
33-36	220.00	219.50	216.00	214.00	2.0
37-40	222.00	221.00	217.50	211.00	6.5
41-44	220.00	219.00	215.50	209.00	6.5
45-48	218.00	217.50	214.00	212.00	2.0
49-52	224.50	224.00	220.50	218.50	2.0
53-57	215.00	212.50	209.00	206.00	3.0
58-61	217.00	216.50	213.00	211.00	2.0
62-65	226.00	225.50	222.00	220.00	2.0
66-69	228.00	227.50	224.00	222.00	2.0
70-75	222.00	221.50	218.00	216.00	2.0
76-77	232.50	232.00	228.50	226.50	2.0
78-81	227.00	226.50	223.00	221.00	2.0
82-85	230.50	230.00	226.50	224.50	2.0
86-89	236.00	235.50	232.00	229.00	3.0
90-92	236.50	236.00	232.50	230.00	2.5
93-96	230.00	229.50	226.00	224.00	2.0
97-100	242.00	241.50	238.00	236.00	2.0
101-103	246.00	244.00	240.50	236.50	4.0
104-106	247.00	245.50	242.00	240.00	2.0
107-109	245.00	244.50	241.00	239.00	2.0
110-116	195.50	195.00	191.50	189.50	2.0
117-119	192.50	192.00	188.50	186.50	2.0
120-123	190.00	189.00	185.50	183.50	2.0

NOTES:

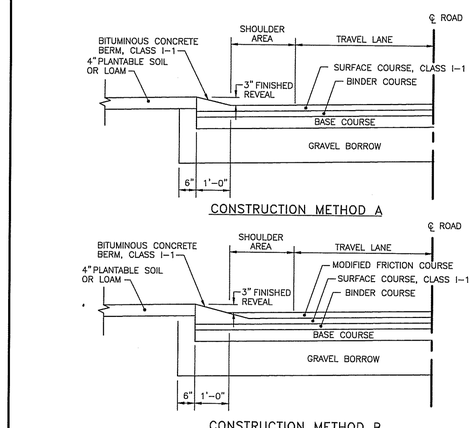
1. DRYWELLS REQUIRED FOR ALL UNITS.
2. NO STONE BETWEEN CONSECUTIVE DRYWELLS.

*SCHEDULE OF INSPECTION FOR OBSERVATION WELL:
MONITORING WATER LEVELS WITHIN THE PIPE AT VARIOUS TIME INTERVALS AFTER A RAINFALL EVENT WILL INDICATE THE INFILTRATION ABILITY AND PERFORMANCE OF THE SYSTEM. IF WATER IS STANDING IN A PIPE MORE THAN 3 DAYS AFTER A STORM EVENT, SYSTEM FAILURE HAS OCCURED AND WILL REQUIRE REPAIR OR REPLACEMENT OF DRYWELL BY THE HOMEOWNER.



CHAIN LINK FENCE DETAIL 5'–6' INTERMEDIATE POST

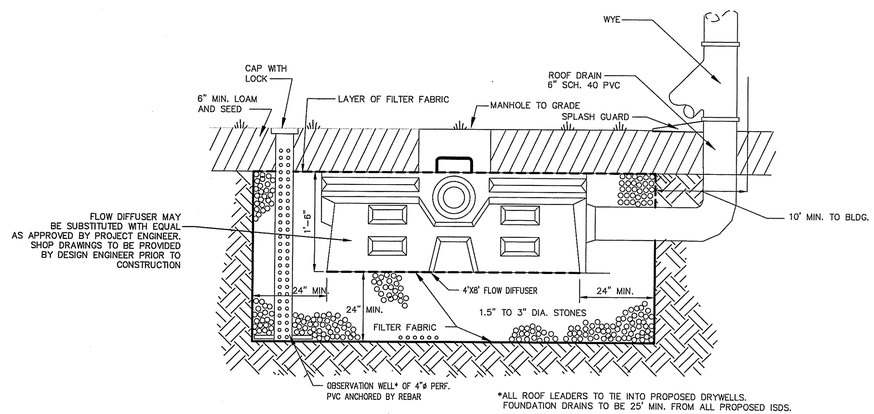
NOT TO SCALE



NOTES:
1. SHALL BE IN ACCORDANCE WITH SECTION 905 OF THE R.I. STANDARD SPECIFICATIONS.
2. BITUMINOUS BERM CAN BE PLACED AT THE SAME TIME THAT THE SURFACE COURSE LAYER IS PLACED ON THE PROJECT ROADWAY, OR IT CAN BE INSTALLED IN A SEPARATE OPERATION.

BITUMINOUS BERM R.I. STANDARD 7.5.1

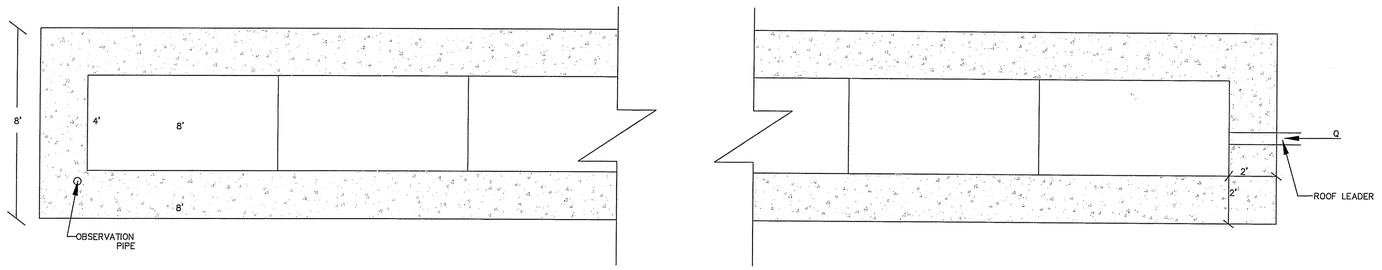
NOT TO SCALE



UNDERGROUND DETENTION STORAGE DETAIL

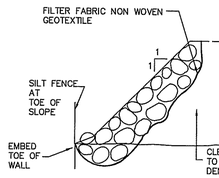
N.T.S.

ALL FLOW DIFFUSORS TO HAVE MINIMUM OF 2.0' STONE ON ALL SIDES, AND 2.0' STONE BELOW. SEE GRADING SHEETS FOR SPECIFIC CONFIGURATION.



DRYWELL DETAIL (PLAN)

1"=3'



SLOPE REINFORCEMENT
STONE FOR SLOPE SHALL BE CLASS R-7. THE STONE SHALL BE ANGULAR IN SHAPE. EACH STONE SHALL HAVE ONE REASONABLY FLAT FACE AND THICKNESS PERPENDICULAR TO THE FACE. SHOP DRAWINGS TO BE PROVIDED PRIOR TO CONSTRUCTION.

REINFORCED 1:1 SLOPE DETAIL N.T.S.

DEPARTMENT OF ENVIRONMENTAL MANAGEMENT
OFFICE OF WATER RESOURCES
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APRIL, 2007
DWN. BY: D.A.R.

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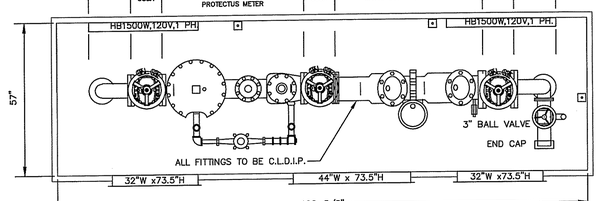
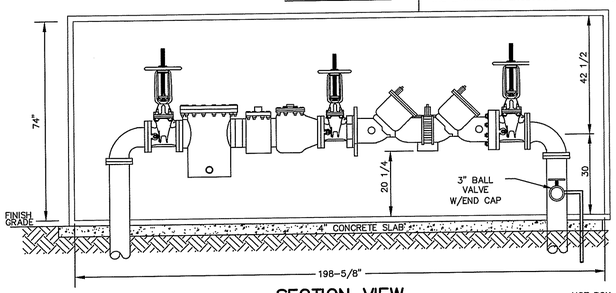
NOTES:
ENCLOSURE TO BE HOT BOX OR EQUAL AS APPROVED BY ENGINEER.
HOT BOX SPECIFICATIONS
1. INSIDE DIMENSION ARE 198–5/8"L X 57"W X 74"H. THE ENCLOSURE SHALL BE CONSTRUCTED OF 18 GA. ALUMINUM, IN FOUR SECTIONS. ONE 44"W X 72.5"H AND TWO 32"W X 72.5"H ACCESS OPENINGS ON THE ENCLOSURE'S FRONT SECTIONS SHALL ASSURE EASIER TESTING AND MAINTENANCE. EACH OPENING HAS A REMOVABLE PANEL WITH A FOUR–PRONGED LOCKING SYSTEM AND AN EXTERNAL HANDLE THAT ACCOMMODATES A PADLOCK. THIS DETERS UNAUTHORIZED ENTRY, TAMPERING, THEFT, AND VANDALISM. NO EXTERIOR HARDWARE IS USED WITH THE EXCEPTION OF THE DOOR AND LIFTING HANDLES ANCHORING IS INTERNAL AND THE ANCHOR KIT IS PROVIDED WITH THE ENCLOSURE.
2. TWO 1500W, 120V, SINGLE–PHASE HEATERS SHALL BE MOUNTED TO THE ENCLOSURE'S INTERIOR WALLS. EACH HEATER IS ETL CERTIFIED TO UL AND CSA STANDARDS. EACH HAS A SIX– FOUR CORD AND PLUG FOR EASY CONNECTION. THE THERMOSTAT IS PRE–SET TO MAINTAIN 40°F WITHIN THE ENCLOSURE WHILE THE EXTERNAL TEMPERATURE MAY GO AS LOW AS –30°F. CONTRACTORS OTHER THAN HOT BOX R ARE RESPONSIBLE FOR THE INSTALLATION OF THE ELECTRICAL SERVICES AND G.F.I. PROTECTED RECEPTICALS.



PLAN VIEW

HOT BOX...
THE ENGINEERED ENCLOSURE (OR EQUAL)



SECTION VIEW

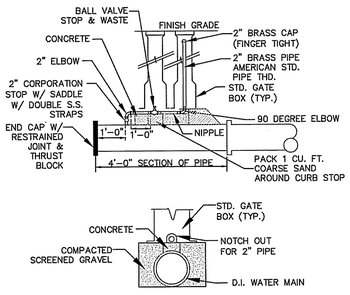
KCWA HOT BOX DETAIL

NOT TO SCALE

LOCAL HOT BOX DISTRIBUTOR
RED HED SUPPLY
38 ALBION ROAD
LINCOLN ,RI 02865
PHONE: (401) 333–1317
FAX: (401) 333–9035

HOT BOX
250 LANE AVE N.
JACKSONVILLE, FLORIDA 32254
(800) 736–0238
FAX (904) 783–6965
HTTP: //WWW.HOT–BOX.COM

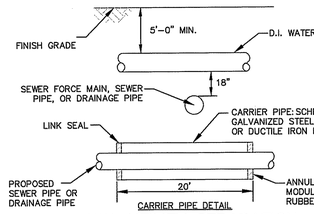
NOTE:
1. FROM KENT COUNTY WATER AUTHORITY DETAIL DATE: 09/2006



KCWA PERMANENT BLOWOFF ASSEMBLY

NOT TO SCALE

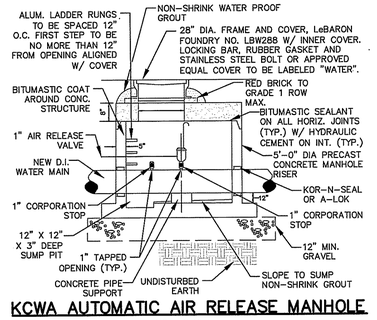
NOTES:
1. THE VERTICAL SEPERATION BETWEEN THE WATER MAIN AND THE PROPOSED UTILITY SHALL BE A MINIMUM OF 18 INCHES.
2. THE HORIZONTAL SEPERATION BETWEEN THE WATER MAIN AND THE PROPOSED UTILITY SHALL BE A MINIMUM OF 10 FEET.
3. IF 1 OR 2 CAN NOT BE MAINTAINED THE PROPOSED UTILITY SHALL BE INSTALLED WITHIN A CARRIER PIPE UPON WRITTEN APPROVAL BY THE KCWA.
4. SEWER MAIN AND SERVICES ARE NOT ALLOWED TO CROSS OVER THE TOP OF THE WATER MAIN.
5. CONCRETE ENCASEMENT IS NOT ALLOWED.
6. FROM THE KENT COUNTY WATER AUTHORITY DATE: 09/2006



KCWA UTILITY SEPARATION

NOT TO SCALE

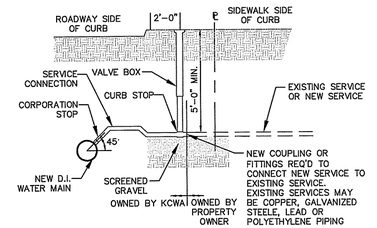
NOTE:
1. FROM KENT COUNTY WATER AUTHORITY DETAIL DATE: 09/2006



KCWA AUTOMATIC AIR RELEASE MANHOLE

NOT TO SCALE

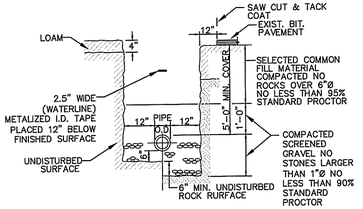
NOTES:
1. SERVICE MATERIALS PER KCWA SPECIFICATION UNLESS CITY OR TOWN CODES REQUIRE SPECIFIC MATERIALS THAT HAVE BEEN APPROVED BY KCWA.
2. SERVICE LINE FROM CURB BOX TO BUILDING SHALL BE INSPECTED, TESTED AND APPROVED BY THE LOCAL PLUMBING INSPECTOR.
3. FROM KENT COUNTY WATER AUTHORITY DETAIL DATE: 09/2006



KCWA SERVICE CONNECTION

NOT TO SCALE

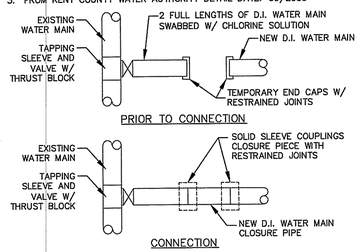
NOTE:
1. ROADWAY RESTORATION IN ACCORDANCE WITH COMMUNITY OR RIDOT.
2. FROM KENT COUNTY WATER AUTHORITY DETAIL DATE: 9/2006



KCWA TRENCH INSTALLATION IN ROCK AND SOIL

NOT TO SCALE

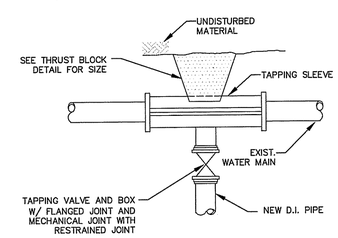
NOTES:
1. PRIOR TO FINAL APPROVAL FOR PERMANENT CONNECTION FROM KCWA, CONTRACTOR SHALL PERFORM PRESSURE TESTING AND CHLORINATION.
2. SLEVE FOR CLOSURE TO BE SWABBED WITH CHLORINE SOLUTION
3. FROM KENT COUNTY WATER AUTHORITY DETAIL DATE: 09/2006



KCWA CONNECTION OF NEW WATER MAIN TO EXISTING WATER MAIN

NOT TO SCALE

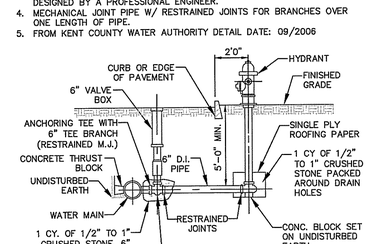
NOTES:
1. TAPPING SLEEVE AND VALVE TO BE SWABBED WITH CHLORINE SOLUTION.
2. FROM KENT COUNTY WATER AUTHORITY DETAIL DATE: 09/2006



KCWA TAPPING SLEEVE AND VALVE

NOT TO SCALE

NOTES:
1. KCWA COLOR SCHEME FOR HYDRANT.
2. INSTALLATION SHALL NOT OBSTRUCT SIDEWALK TO PEDESTRIAN OR PHYSICALLY IMPAIRED.
3. REMOVAL OF EXISTING HYDRANT MAY REQUIRE ADDITIONAL RESTRAINT DESIGNED BY A PROFESSIONAL ENGINEER.
4. MECHANICAL JOINT PIPE W/ RESTRAINED JOINTS FOR BRANCHES OVER ONE LENGTH OF PIPE.
5. FROM KENT COUNTY WATER AUTHORITY DETAIL DATE: 09/2006

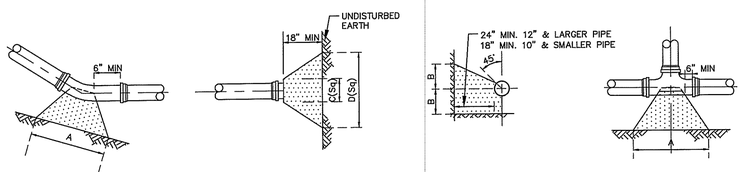


KCWA HYDRANT

NOT TO SCALE

NOTES:
1. ALL CONCRETE SHALL BE 4000 P.S.I. @ 28 DAYS
2. CONCRETE THRUST BLOCKS SHALL BEAR AGAINST UNDISTURBED EARTH.
3. FORMS TO BE USED AS NECESSARY.
4. ALL BOLTS AND NUTS TO BE PROTECTED FROM CONCRETE AND EASILY ACCESSIBLE WHEN THRUST BLOCK INSTALLED.
5. REGISTERED PROFESSIONAL ENGINEER IN THE STATE OF R.I. SHALL VERIFY ALL CALCULATIONS DURING DESIGN TO MEET CONDITIONS OF PROJECT AND KCWA REQUIREMENTS.
6. FROM THE KENT COUNTY WATER AUTHORITY DATE: 09/2006

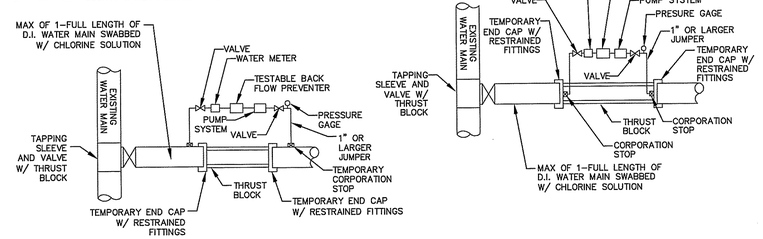
SIZE	TEES		PLUGS		90° BEND		45° BEND		22.5° BEND		11.25° BEND	
	A	B	C	D	A	B	A	B	A	B	A	B
6"	20"	10"	10"	21"	24"	12"	18"	9"	13"	7"	9"	5"
8"	26"	13"	12"	26"	32"	16"	24"	12"	17"	9"	12"	6"
10"	34"	17"	14"	34"	40"	20"	30"	15"	22"	11"	15"	8"
12"	41"	20"	16"	41"	48"	24"	35"	18"	25"	13"	18"	9"
16"	54"	27"	20"	54"	64"	32"	47"	23"	34"	17"	24"	12"



KCWA THRUST BLOCK

NOT TO SCALE

NOTES:
1. UPON SUCCESSFUL TESTING AND DISINFECTION THE TEMPORARY CORPORATION STOPS SHALL BE REMOVED AND PLUGS INSTALLED.
2. SLEEVE FOR CLOSURE TO BE SWABBED WITH CHLORINE SOLUTION
3. FROM KENT COUNTY WATER AUTHORITY DETAIL DATE: 09/2006



KCWA TEMPORARY CONNECTION FOR PRESSURE TESTING AND DISINFECTION

NOT TO SCALE

LEAKAGE AND PRESSURE TESTING FOR WATERMAINS

1. GENERAL
1.1. HYDROSTATIC AND LEAKAGE TESTS SHALL BE PERFORMED ON ALL COMPLETED SECTIONS OF NEWLY INSTALLED SEWER FORCE MAIN AND WATERMAIN PIPELINE IN ACCORDANCE WITH AWWA C600, THE KENT COUNTY WATER AUTHORITY, AND AS SPECIFIED BELOW.
1.2. THE CONTRACTOR IS RESPONSIBLE FOR FURNISHING ALL LABOR, TOOLS AND EQUIPMENT NECESSARY FOR TESTING. CONTRACTOR TO NOTIFY KENT COUNTY WATER AUTHORITY 48 HOURS IN ADVANCE OF TEST DATE.

2. TESTING PROCEDURES
2.1. ALL AIR SHALL BE EXPELLED AT THE HIGH POINTS AND THE PIPELINE SLOWLY FILLED WITH POTABLE WATER, AND MUST SIT FOR 24 HOURS BEFORE CONDUCTING TEST.
2.2. THE INTERNAL PRESSURE SHALL BE BUILT UP TO 150 PSI AND MAINTAINED FOR A PERIOD OF NOT LESS THAN ONE (1) HOUR.
2.3. 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.
2.4. 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:
2.4.A. WATERMAINS – DISINFECTION STEP
2.4.B. SEWER FORCE MAIN – READY FOR USE
2.5. COMPLIANCE WITH STATE PLUMBING CODE IN REFERENCE TO RESIDENTIAL BACK FLOW PREVENTION. MUST BE VERIFIED BY PLUMBER INSPECTOR, PRIOR TO METER INSTALLATION.

CHLORINATION/DISINFECTION* POLICY

1. ALL NEW OR REPAIRED POTABLE WATER SYSTEM DISTRIBUTION MAINS, SERVICE PIPE AND THE NECESSARY CONNECTING PIPES, FITTINGS, CONTROL VALVES, AND ALL APPURTENANCES IN OR ADJACENT TO ANY RESIDENCE, BUILDING OR PREMISES SHALL BE PURGED OF DELETERIOUS MATTER AND SHALL BE DISINFECTED PRIOR TO UTILIZATION OR PERMANENT CONNECTION TO THE KENT COUNTY WATER AUTHORITY (KCWA) SYSTEM. THAT PORTION OF THE CUSTOMER'S SERVICE PIPE AFTER THE CURB STOP SHALL BE DISINFECTED UNDER THE SUPERVISION OF THE LOCAL PLUMBING OFFICIAL. THE OWNER MUST PROVIDE WRITTEN LABORATORY CERTIFIED DOCUMENTATION OF THE DISINFECTION RESULTS TO THE KCWA BEFORE MAKING ANY PERMANENT CONNECTION TO THE KCWA SYSTEM OR BEFORE REACTIVATION OF ANY EXISTING WATER SERVICE CAN BE AUTHORIZED. PLEASE REFER TO APPENDICES FOR PROGRAM REQUIREMENTS OF THE CUSTOMER WATER SERVICE DISINFECTION POLICY.
2. THE PROPOSER OR THE CONTRACTOR FOR THE PROPOSER, IN ACCORDANCE WITH CHAPTER 5, DISTRIBUTION SYSTEM CHLORINATION, AMERICAN WATER WORKS ASSOCIATION MANUAL #20, SHALL PERFORM CHLORINATION. TABLET CHLORINATION SHALL NOT BE ALLOWED.
3. THE OWNER OR CUSTOMER IS RESPONSIBLE FOR ALL COSTS ASSOCIATED WITH THE DISINFECTION PROCESS OR PROCEDURE.
4. THE DISINFECTION MUST RESULT IN ELIMINATION FROM THE VARIOUS PARTS OF THE NEW PIPE LINE ANY EVIDENCE OF THE PRESENCE, THEREIN, OF BACTERIA INDICATIVE OF ANY CONTAMINATION, AS DETERMINED BY TEST OF THE BACTERIAL CONTENT OF SAMPLES OF WATER TAKEN FROM THE NEW WATER MAIN. THE DISINFECTION MAY BE ACCOMPLISHED BY INTRODUCING INTO ALL THE VARIOUS PARTS OF THE NEW WATER MAINS, A LIQUID SOLUTION CONTAINING 1% AVAILABLE CHLORINE IN SUCH VOLUME THAT THE RATE OF DOSAGE TO THE WATER MAINS SHALL BE AT LEAST 50 PARTS PER MILLION OF AVAILABLE CHLORINE. TABLET CHLORINATION IS NOT ALLOWED. THE CONTACT PERIOD FOR THIS DISINFECTION SHALL BE AT LEAST 24 HOURS, AND A LONGER PERIOD WILL BE REQUIRED IF TESTS OF RESIDUAL CHLORINE SHOW IT TO BE NECESSARY FOR PROPER DISINFECTION.
5. THE NEW WATER SYSTEM SHALL BE FLUSHED OUT AFTER DISINFECTION AND REFILLED WITH FRESH WATER. ALL CHLORINATED WATER USED IN THE DISINFECTION PROCESS SHALL BE DE–CHLORINATED PRIOR TO DISCHARGE TO THE SURROUNDING AREA.
6. WATER MUST SIT IN THE MAIN FOR AT LEAST 24 HOURS PRIOR TO TAKING A TEST SAMPLE. WATER UTILIZED FOR THIS PURPOSE, FLUSHING OR PRESSURE TESTING, WHICH IS OBTAINED DIRECTLY FROM THE KCWA SYSTEM, MUST FLOW THROUGH AN ISOLATED CONNECTION TO THE KCWA SYSTEM VIA AN APPROVED METER, TESTABLE BACKFLOW PREVENTION DEVICE AND JUMPER LINE. THE CONTRACTOR SHALL MAKE ALL NECESSARY ARRANGEMENTS FOR SECURING THE WATER FOR TEST PURPOSES AND SHALL BEAR THE EXPENSE OF THESE ARRANGEMENTS. THE INSTALLER SHALL FURNISH AND INSTALL SUITABLE TEMPORARY TESTING PLUGS, CAPS, PUMPS, PIPE CONNECTIONS AND OTHER APPURTENANCES, AS NECESSARY, TO OBTAIN SAMPLES AT POINTS NO FURTHER THAN 1,000 FEET APART.
7. AFTER FINAL FLUSHING AND BEFORE THE NEW WATER MAIN IS CONNECTED TO THE DISTRIBUTION SYSTEM, TWO CONSECUTIVE SETS OF ACCEPTABLE SAMPLES FOR COLIFORM BACTERIA HETEROTROPHIC PLATE COUNT (HPC), TAKEN 24 HOURS APART, SHALL BE COLLECTED FROM THE TERMINATION OF THE NEW MAIN. AT LEAST ONE SAMPLE SHALL BE COLLECTED EVERY 1000 FT. OF NEW MAIN, PLUS ONE SET OF TWO SAMPLES FROM THE END OF THE LINE. AT LEAST ONE SET OF TWO SAMPLES SHALL BE TAKEN FROM EACH BRANCH. SAMPLES SHALL BE COLLECTED BY KCWA EMPLOYEES, GIVEN A TWO–DAY NOTICE AND TESTED BY A LABORATORY APPROVED BY KCWA. A FEE SHALL BE IMPOSED FOR THE SAMPLING TESTING FOR EACH TEST. THE FEE SHALL BE AT THE CURRENT RATE SCHEDULE IN EFFECT AT THE TIME OF TESTING. PAYMENT SHALL BE PRIOR TO SAMPLE COLLECTION BY THE KCWA. THE WATER SAMPLE TEST RESULTS MUST INDICATE THAT THE WATER QUALITY IN THE NEW MAIN IS CONSISTENT IN QUALITY WITH KCWA SYSTEM WATER.

* TAKEN FROM SECTION 3.23 OF THE "RULES AND REGULATIONS OF THE KENT COUNTY WATER AUTHORITY" DATED SEPTEMBER 20, 2006.

WATER INSTALLATION NOTES

INSTALLATION OF WATER MAIN AND SERVICE SHALL CONFORM TO THE "RULES AND REGULATIONS OF THE KENT COUNTY WATER AUTHORITY" SEPTEMBER 20, 2006, OR LATEST EDITION, AND IN ACCORDANCE WITH THE DUCTILE IRON PIPE RESEARCH ASSOCIATION INSTALLATION MANUAL AND ANSI/AWWA C600.

DISTRIBUTION PIPING SHALL BE CL 52 DUCTILE IRON, DOUBLE CEMENT LINED, WITH PUSH ON JOINTS. PIPE SHALL MEET ANSI/AWWA C151 A21.51. JOINTS SHALL MEET ANSI/AWWA C11/A21.11.

FITTINGS SHALL BE DUCTILE IRON MECHANICAL JOINT CL350 CEMENT MORTAR LINED AND MEET ANSI/AWWA/C153/A21.53. MECHANICAL JOINTS SHALL MEET ANSI/AWWA/C111/A21.11 AMERICAN MANUFACTURER ONLY.

VALVES SHALL BE MECHANICAL JOINT, DOUBLE DISC PARALLEL SEAT OR RESILIENT SEAT GATE STYLES AS FOLLOWS
A. MUELLER CORPORATION DOUBLE DISC PARALLEL SEAT.
B. AMERICAN DARLING VALVE RESILIENT SEAT MODEL CRS–80.

PRESSURE TEST OF THE WATER SYSTEM SHALL BE 1.5 TIMES THE MAXIMUM WORKING PRESSURE OR 150 PSI. NOTIFY KENT COUNTY WATER AUTHORITY 2 DAYS PRIOR TO TEST AS APPLICABLE.

NOTIFY THE KENT COUNTY AUTHORITY 5 DAYS PRIOR TO CONSTRUCTION COMMENCEMENT.

7. CHLORINATION OF SYSTEM AND SAMPLING SHALL CONFORM TO SEC. 3.5 OF REQUIREMENTS FOR SERVICE AND MAIN INSTALLATION.

8. NOTIFY ENGINEER PRIOR TO COVERING OF WATER SERVICE TO SURVEY AS–BUILT LOCATION AND TO COMPLETE REQUIRED AS–BUILT PLAN. ENGINEER WILL NOT ACCEPT FIELD MEASUREMENTS FROM THE CONTRACTOR.

9. WATER SERVICE INSTALLATIONS GREATER THAN 200' MUST HAVE A METER PIT.

10. A METER PIT IS PROPOSED FOR THIS SITE AND IS LOCATED AT THE ENTRANCE.

11. TEMPORARY FLUSHING CONNECTIONS AND BLOW–OFFS SHALL BE SIZED TO PROVIDE 2.5–FEET PER SECOND FLOW PER AWWA STANDARD 651

12. CONTRACTOR RESPONSIBLE TO COORDINATE WITH PLUMBING OFFICIAL FOR DISINFECTION OF SERVICE PIPE EXTENDING FROM CURB BOX TO HOME PER STATE PLUMBING CODE AND KENT COUNTY WATER AUTHORITY REGULATIONS. WATER SERVICE CANNOT BE ACTIVATED WITHOUT COPY OF LAB RESULTS AND PLUMBING INSPECTOR'S VERIFICATION.

13. ALL INSTALLATION SHALL CONFORM TO RULES AND REGULATIONS OF THE KENT COUNTY WATER AUTHORITY–SEPTEMBER 20, 2006 OR LATEST EDITION.

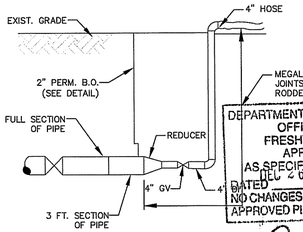
14. PRESSURE–REDUCING VALVES ARE REQUIRED AT ALL BUILDINGS PER RI BUILDING CODE.

SEWER LINE/WATER MAIN SEPARATION POLICY

KENT COUNTY WATER AUTHORITY RULES AND REGULATIONS 3.21.18
WATER MAINS SHALL BE LAID WITH A MINIMUM OF TEN–FOOT HORIZONTAL CLEARANCE FROM ANY EXISTING SEWER FACILITIES. THE DISTANCE SHALL BE MEASURED EDGE TO EDGE. WATER MAINS CROSSING UNDER SEWERS SHALL BE FORBIDDEN. WATER MAINS CROSSING OVER SEWERS SHALL BE LAID TO PROVIDE A MINIMUM, VERTICAL SEPARATION OF EIGHTEEN–INCHES BETWEEN THE INVERT OF THE WATER MAIN AND THE CROWN OF THE SEWER. RE–ALIGNMENT OF AN EXISTING WATER MAIN OR RELOCATION OF THE SEWER MAY BE NECESSARY TO ACHIEVE THIS VERTICAL SEPARATION. THE GENERAL MANAGER/CHIEF ENGINEER MUST APPROVE ANY DEVIATION FROM THESE REQUIREMENTS. CONCRETE ENCASEMENT SHALL NOT BE ALLOWED IN THE DESIGN FOR SEWER AND WATER CROSSINGS.

KENT COUNTY WATER AUTHORITY RULES AND REGULATIONS 3.14.6
A MINIMUM OF TEN–FEET HORIZONTAL AND EIGHTEEN–INCH VERTICAL SEPARATION SHALL BE MAINTAINED IN THE PLACEMENT OF WATER MAINS, SERVICES OR APPURTENANCES WITHIN THE VICINITY OF SEWER FACILITIES OR VICE VERSA. IN CASES WHERE IT IS NOT POSSIBLE TO MAINTAIN A 10–FOOT, HORIZONTAL SEPARATION OR IN THE CASE OF CROSSING THE EIGHTEEN–INCH, VERTICAL SEPARATION, A DEVIATION FROM THIS RESTRICTION MAY BE ALLOWED ON A CASE BY CASE BASIS WITH PRIOR APPROVAL FROM THE GENERAL MANAGER/CHIEF ENGINEER AS TO THE PROPOSED MATERIALS AND INTERVENTIONS TO BE TAKEN TO PROTECT THE WATER SYSTEM FROM THE POSSIBILITY OF CONTAMINATION.

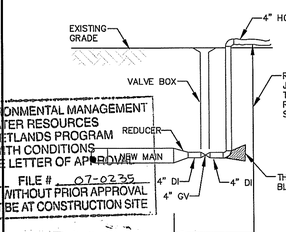
NOTES:
1. AFTER THE COMPLETION OF THE FINAL FLUSHING THE CONTRACTOR SHALL REMOVE THE TEMPORARY CONNECTION AND INSTALL A CAP WITH MEGALUGS AND A THRUST BLOCK.
2. FROM KENT COUNTY WATER AUTHORITY DETAIL DATE: 09/2006



KCWA TEMPORARY FLUSHING CONNECTION ON DEAD END WATER MAIN

NOT TO SCALE

NOTES:
1. AFTER THE COMPLETION OF THE FINAL FLUSHING THE CONTRACTOR SHALL REMOVE THE TEMPORARY FLUSHING CONNECTION AND CONNECT THE NEW WATER TO THE EXISTING WATER MAIN ALL PIPING AND FITTING SHALL BE DISINFECTED TO THE SATISFACTION OF THE KCWA.
2. FROM KENT COUNTY WATER AUTHORITY DETAIL DATE: 09/2006



KCWA TEMPORARY FLUSHING CONNECTION

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 DEC 06 2007
FILE # 07-0235
NO CHANGES ALLOWED WITHOUT PRIOR APPROVAL
APPROVED PLANS MUST BE AT CONSTRUCTION SITE

NOV 13 2007

CHRISTOPHER A. DUHAMEL
No. 5013
REGISTERED PROFESSIONAL ENGINEER

NO.	DATE	DESCRIPTION	BY
3	11-13-07	REDEM WETLAND COMMENTS	J.M.D.
2	8-29-07	UTILITY SUBMISSION	J.M.D.
1	6-26-07	UTILITY SUBMISSION	J.M.D.
0	5-22-07	RIDEM WETLANDS SUBMISSION	D.A.R.

APRIL, 2007
DWN. BY: D.A.R.

DETAIL SHEET

Hunters Reserve

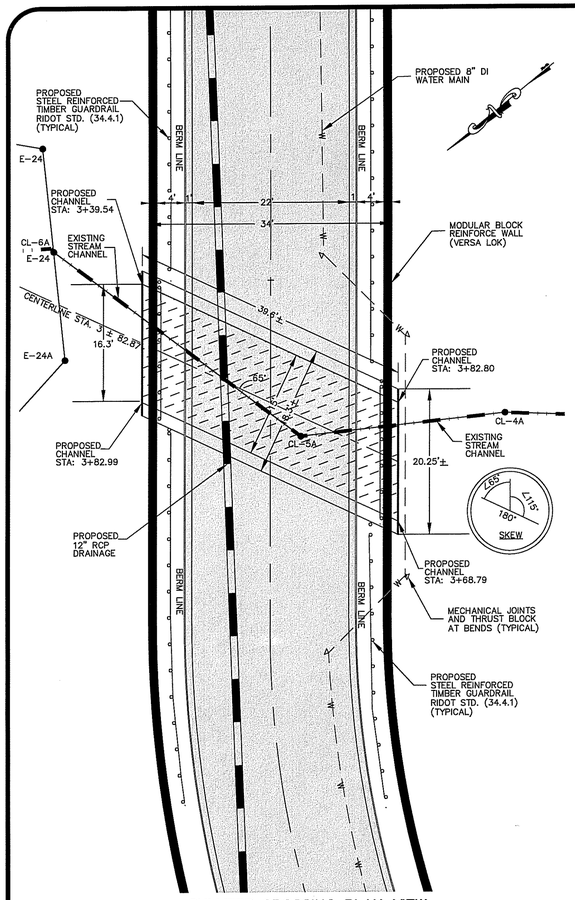
ASSESSOR'S PLAT 1 LOTS 85, 145 & 529
NORTH PLEASANT STREET, WEST WARWICK, RHODE ISLAND

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
Bradford Sternbach, LLC.
1936 PHENIX AVENUE
CRANSTON, R.I. 02921
(401) 573–6525

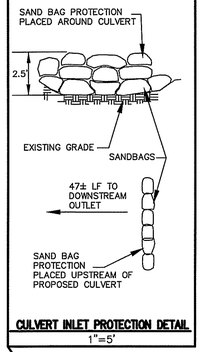
SHEET 22 OF 24

DEA Job No. 0351–003 Copyright 2006 by DiPrete Engineering Associates, Inc.

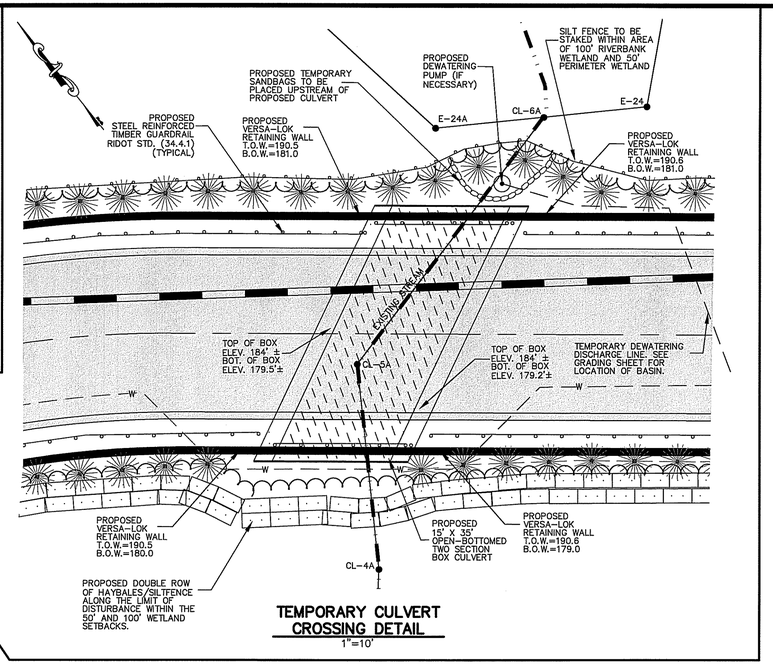
K:\Engineers2\transfers\0351-003 Hunters Reserve D\dwg\0351-003 Preliminary_LAB SEWER DESIGN.dwg, 22D (KCWA), 11/9/2007 11:14:50 AM



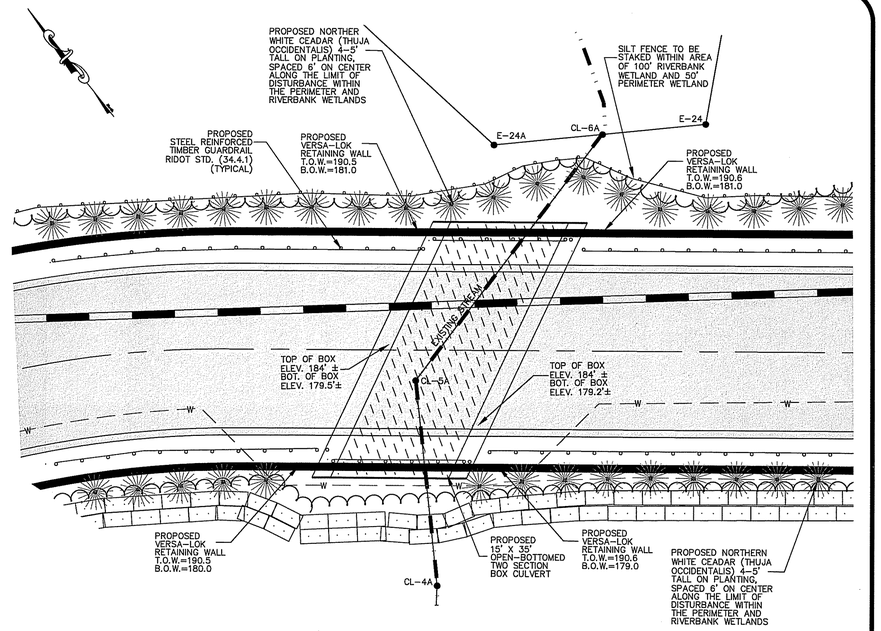
CULVERT CROSSING PLAN VIEW
1"=10'



CULVERT INLET PROTECTION DETAIL
1"=5'



TEMPORARY CULVERT CROSSING DETAIL
1"=10'

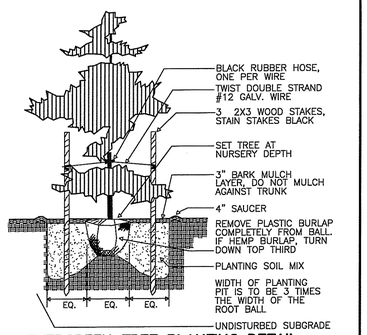


CULVERT CROSSING DETAIL & PLANTING DETAIL
1"=10'

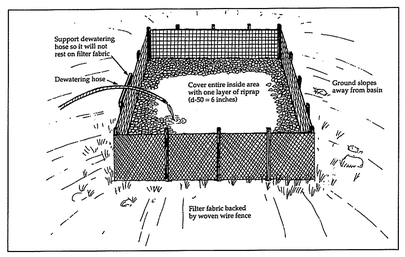
DEPARTMENT OF ENVIRONMENTAL MANAGEMENT
OFFICE OF WATER RESOURCES
FRESHWATER WETLANDS PROGRAM
APPROVED WITH CONDITIONS
AS SPECIFIED IN THE LETTER OF APPROVAL
DATED DEC 26 2007 FILE # 07-0235
NO CHANGES ALLOWED WITHOUT PRIOR APPROVAL.
APPROVED PLANS MUST BE AT CONSTRUCTION SITE
Charles A. Horbert

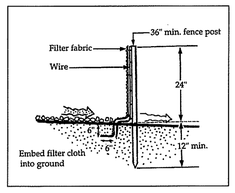
SEQUENCE OF CULVERT CONSTRUCTION

1. SURVEY AND STAKE CENTERLINE OF THE PROPOSED ROADWAY AND CULVERT CROSSING. THE DRAINAGE STRUCTURES AND PIPES, AND THE LIMIT OF DISTURBANCE.
2. 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.
3. CULVERT CROSSING WORK TO BE PERFORMED DURING THE DRY SEASON WHEN THE CHANNEL IS EMPTY AND DRY.
4. BEGIN CULVERT CROSSING WORK: UTILIZE THE EXISTING TRAILS TO ALLOW EQUIPMENT TO ACCESS UPLAND SIDE OF PROJECT. INSTALL DEWATERING PUMP UPSTREAM (IF NECESSARY). REMOVE TREES AND BRUSH WITHIN LIMIT OF CULVERT CROSSING. INSTALL 8" WATERMAIN. EXCAVATE FOR CULVERT FOOTINGS AND POUR CULVERT FOOTINGS. BACKFILL FOOTING EXCAVATION WITH EXCEPTION TO BEARING KEYWAY. PERFORM WETLAND REPLICATION WORK UNDER AND AROUND CULVERT STRUCTURE. INSTALL REINFORCED CONCRETE RETAINING WALLS. BACKFILL AROUND CULVERT STRUCTURE.
5. BEGIN ROAD, AND DRAINAGE WORK (CLEARING AND GRUBBING, EXCAVATING AND GRADING, ETC.). TOPSOIL TO BE STRIPPED AND STOCKPILED IN APPROVED AREAS. THE STOCKPILES ARE TO BE PROTECTED BY A ROW OF SEDIMENTATION BARRIER AND COVERED OR TEMPORARILY SEEDED. DIVERT ALL THE RUNOFF FROM DISTURBED AREAS TO THE PROPOSED BASINS.
6. INSTALL UTILITIES, AND DRAINAGE PIPES. IMMEDIATELY PLACE THE RIP RAP AND EROSION CONTROLS AT THE DISCHARGE POINTS AND SEED THE BASINS AND DISTURBED AREAS.
7. CLEAN CULVERT SPAN AS REQUIRED. THE TREE LIMBS, LEAVES, BOULDERS, ETC. SHALL BE REMOVED FROM THE BOTTOM OF THE CHANNEL BEFORE THE APPLICATION OF TOPSOIL. PLACE TOPSOIL IN BOTTOM OF CHANNEL AND BRING TO PERMANENT BOTTOM ELEVATION.
8. REMOVE ALL TEMPORARY SOIL EROSION AND SEDIMENTATION CONTROL MEASURES FOLLOWING VEGETATIVE ESTABLISHMENT OF ALL DISTURBED AREAS.
9. CONSTRUCTION TO COMMENCE DURING 2007, SUBJECT TO NECESSARY APPROVALS.
10. ALL WORK ON THE CULVERT CROSSING IS TO TAKE PLACE DURING PERIODS OF LOW FLOW DURING DRY SEASON.
11. CONTRACTOR TO PROVIDE SHOP DRAWING OF GEOTECHNICAL ENGINEERING ANALYSIS FOR RETAINING WALL PRIOR TO CONSTRUCTION.



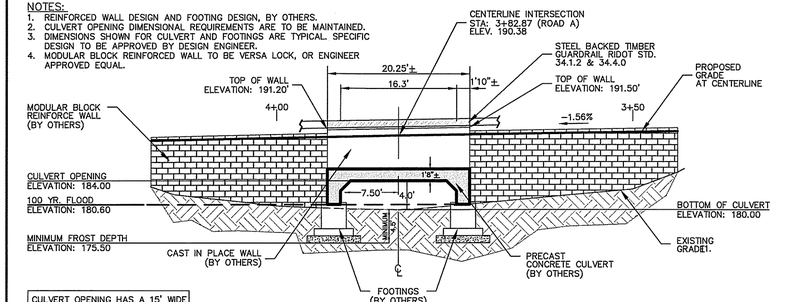
EVERGREEN TREE PLANTING DETAIL
NOT TO SCALE





SEDIMENT SCREEN DETAIL
NOT TO SCALE

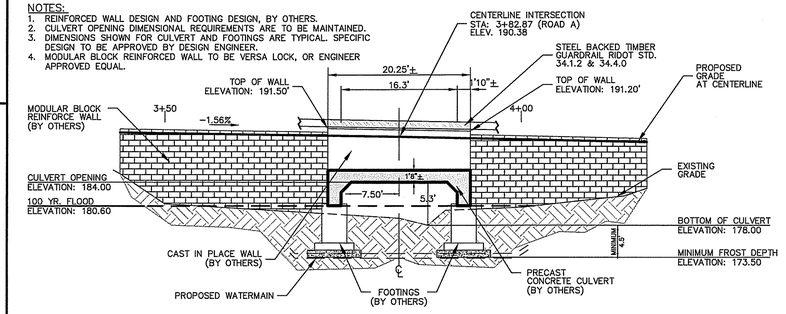
NOTES:
1. REINFORCED WALL DESIGN AND FOOTING DESIGN, BY OTHERS.
2. CULVERT OPENING DIMENSIONAL REQUIREMENTS ARE TO BE MAINTAINED.
3. DIMENSIONS SHOWN FOR CULVERT AND FOOTINGS ARE TYPICAL. SPECIFIC DESIGN TO BE APPROVED BY DESIGN ENGINEER.
4. MODULAR BLOCK REINFORCED WALL TO BE VERSA LOCK, OR ENGINEER APPROVED EQUAL.



CULVERT OPENING HAS A 15' WIDE PERPENDICULAR DIMENSION, VIEW SHOWN IS SKEWED.

CULVERT CROSSING DETAIL – NORTH ELEVATION
1"=10' (LOOKING SOUTH)

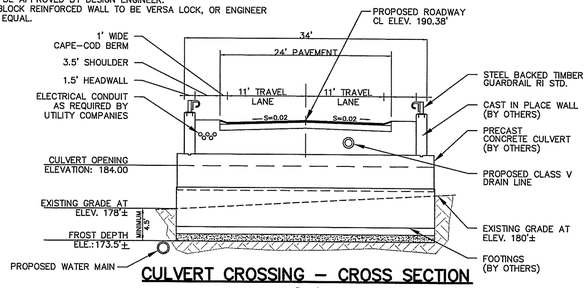
NOTES:
1. REINFORCED WALL DESIGN AND FOOTING DESIGN, BY OTHERS.
2. CULVERT OPENING DIMENSIONAL REQUIREMENTS ARE TO BE MAINTAINED.
3. DIMENSIONS SHOWN FOR CULVERT AND FOOTINGS ARE TYPICAL. SPECIFIC DESIGN TO BE APPROVED BY DESIGN ENGINEER.
4. MODULAR BLOCK REINFORCED WALL TO BE VERSA LOCK, OR ENGINEER APPROVED EQUAL.



CULVERT OPENING HAS A 15' WIDE PERPENDICULAR DIMENSION, VIEW SHOWN IS SKEWED.

CULVERT CROSSING DETAIL – SOUTH ELEVATION
1"=10' (LOOKING NORTH)

NOTES:
1. DIMENSIONS SHOWN ARE PERPENDICULAR TO THE CENTERLINE OF THE PROPOSED ROAD.
2. REINFORCED WALL DESIGN AND FOOTING DESIGN, BY OTHERS.
3. CULVERT OPENING DIMENSIONAL REQUIREMENTS ARE TO BE MAINTAINED.
4. DIMENSIONS SHOWN FOR CULVERT AND FOOTINGS ARE TYPICAL. SPECIFIC DESIGN TO BE APPROVED BY DESIGN ENGINEER.
5. MODULAR BLOCK REINFORCED WALL TO BE VERSA LOCK, OR ENGINEER APPROVED EQUAL.



CULVERT CROSSING – CROSS SECTION
1"=10' (LOOKING WEST)

RECEIVED
NOV 13 2007

CHRISTOPHER A. DUHAMEL
No. 5013
REGISTERED PROFESSIONAL ENGINEER

3	11-13-07	RIDEM WETLAND COMMENTS	J.M.D.
2	8-22-07	UTILITY SUBMISSION	J.M.D.
1	7-13-07	UTILITY SUBMISSION	J.M.D.
0	5-22-07	RIDEM WETLANDS SUBMISSION	D.A.R.
	DATE	DESCRIPTION	BY

DETAIL SHEET

Hunters Reserve

ASSESSOR'S PLAT 1 LOTS 85, 145 & 529
NORTH PLEASANT STREET, WEST WARWICK, RHODE ISLAND

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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1936 PHENIX AVENUE
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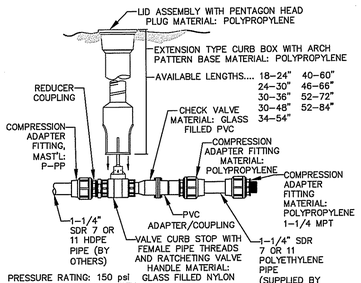
APRIL, 2007
DWN. BY: D.A.R.

DEA Job No. 0351-003 Copyright 2006 by DiPrete Engineering Associates, Inc.

H:\Engineers2\transfer\0351-003 Hunters Reserve D\Archive\0351-003 Preliminary DAR R5-Wetland revision modified).dwg, 22 D Crossing (Updated), 11/13/2007 12:07:32 PM

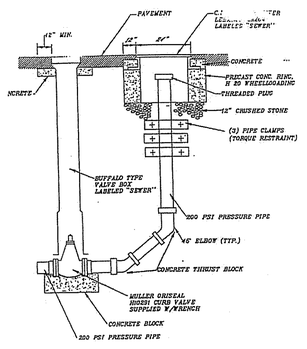
NOTE:
1. 1-1/4" SDR-7 OR 11 HDPE ARCH PATTERN.



PRESSURE RATING: 150 psi ASSEMBLY TO BE USED WITH 1-1/4" SDR 7 OR 11 PIPE ONLY

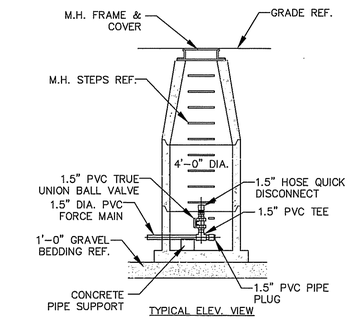
SEWER-PLASTIC LATERAL ASSEMBLY

NOT TO SCALE



FLUSHING CONNECTION (LOW PRESSURE SEWER)

NOT TO SCALE



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

NOT TO SCALE

GENERAL SEWER NOTES

1. INSTALLATION OF THE SEWERAGE FACILITIES SHALL BE IN ACCORDANCE WITH THE TOWN OF WEST WARWICK WASTE WATER DIVISION "STANDARD SANITARY SEWER REQUIREMENTS" IN EFFECT ON THE DATE PART I OF THE SEWER PERMIT AGREEMENT IS EXECUTED.
2. 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.
3. ALL SEWERAGE FACILITIES SHALL BE MEET TESTING AND CLEANING REQUIREMENTS PRIOR TO ACCEPTANCE.
4. AS-BUILT DRAWING SHALL BE FURNISHED AS A CONDITION FOR ACCEPTANCE OF THE NEW SEWERAGE FACILITIES.
5. NO FLOW WILL BE ACCEPTED UNTIL ALL ABOVE STEPS ARE COMPLETED AND COMPLETION CERTIFICATE IS ISSUED.
6. 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.
7. 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.
8. THE CONTRACTOR SHALL BE CONFINE HIS OPERATIONS AND ACTIVATES FOR CONSTRICTION PURPOSES WITHIN THE STREET LINES, EASEMENTS AND/OR RIGHT-OF-WAY AS SHOWN ON THE DRAWINGS.
9. 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.
10. 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 STARING 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.
11. VERTICAL SEPARATION OF SEWER AND WATER MAINS SHALL BE 1.5 CLEAR OR AS OTHERWISE APPROVED IN WRITING BY LOCAL WATER DEPARTMENT HAVING JURISDICTION.
12. APPROVAL OF THE ROAD OPENING SHALL BE OBTAINED BY CONTRACTOR PRIOR TO CONSTRUCTION FROM THE TOWN OF WEST WARWICK DIRECTOR OF PUBLIC WORKS.

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 A WATERMAIN, PROVIDED THAT:

1. THE SEWER AND WATER MAIN ARE LAID IN SEPARATE TRENCHES, OR
2. THE SEWER AND WATER MAIN MAY BE INSTALLED IN THE SAME TRENCH WITH THE WATERMAIN PLACED ON A BENCH OF UNDISTURBED EARTH, AND
3. 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:

4. 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.

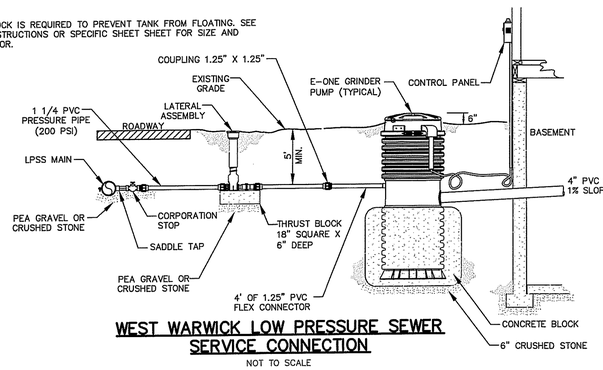
B. SEWERS CROSSING WATER MAINS

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:

A. 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
B. ANY OTHER METHODS, IF SUPPORTED BY DATA FROM THE DESIGN ENGINEER, WHICH ENSURE ADEQUATE WATER TIGHTNESS AND ARE SATISFACTORY TO THE DIVISION.

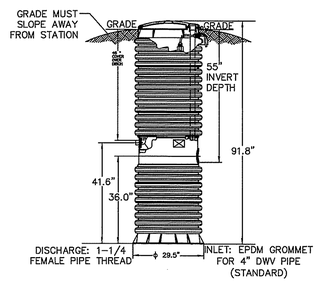
NOTE:
1. A CONCRETE BLOCK IS REQUIRED TO PREVENT TANK FROM FLOATING. SEE INSTALLATION INSTRUCTIONS OR SPECIFIC SHEET SHEET FOR SIZE AND WEIGHT OF ANCHOR.



WEST WARWICK LOW PRESSURE SEWER SERVICE CONNECTION

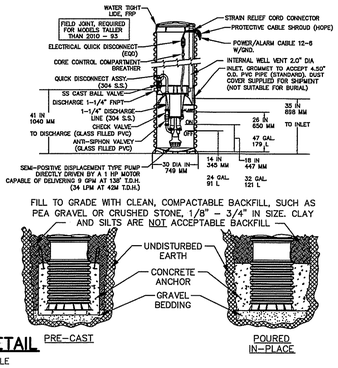
NOT TO SCALE

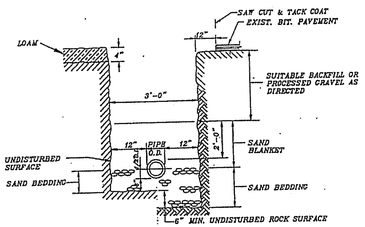
NOTE:
1. DETAIL SHOWN IS FOR A GP 2010 UNIT.
2. A CONCRETE BLOCK IS REQUIRED TO PREVENT TANK FROM FLOATING. SEE INSTALLATION INSTRUCTIONS OR SPECIFIC SHEET SHEET FOR SIZE AND WEIGHT OF ANCHOR.
3. SEE INSTALLATION INSTRUCTIONS FOR FURTHER DETAILS



E-ONE DETAIL

NOT TO SCALE

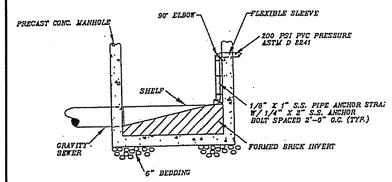




NOTE:
1. MINIMUM DEPTH OF COVER SHALL BE 6'-0"

TRENCH DETAIL (LOW PRESSURE SEWER)

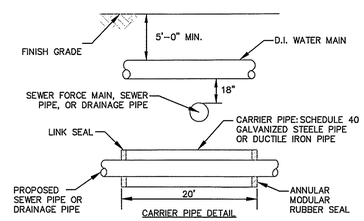
NOT TO SCALE



MANHOLE CONNECTION (LOW PRESSURE SEWER)

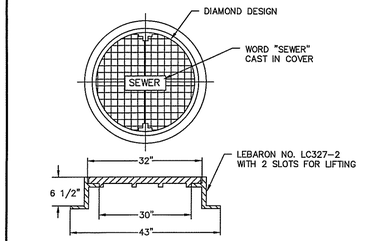
NOT TO SCALE

NOTES:
1. THE VERTICAL SEPERATION BETWEEN THE WATER MAIN AND THE PROPOSED UTILITY SHALL BE A MINIMUM OF 18 INCHES.
2. THE HORIZONTAL SEPERATION BETWEEN THE WATER MAIN AND THE PROPOSED UTILITY SHALL BE A MINIMUM OF 10 FEET.
3. IF 1 OR 2 CAN NOT BE MAINTAINED THE PROPOSED UTILITY SHALL BE INSTALLED WITHIN A CARRIER PIPE UPON WRITTEN APPROVAL BY THE KCWA.
4. SEWER MAIN AND SERVICES ARE NOT ALLOWED TO CROSS OVER THE TOP OF THE WATER MAIN.
5. CONCRETE ENCASEMENT IS NOT ALLOWED.
6. FROM THE KENT COUNTY WATER AUTHORITY DATE: 09/2006



KCWA UTILITY SEPARATION

NOT TO SCALE



SEWER MANHOLE FRAME AND COVER DETAIL

NOT TO SCALE

LEAKAGE AND PRESSURE TESTING FOR SEWER FORCE MAINS AND WATERMAINS

1. 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 C600, UNITED WATER, THE TOWN OF WEST WARWICK, AND AS SPECIFIED BELOW.

   THE CONTRACTOR IS RESPONSIBLE FOR FURNISHING ALL LABOR, TOOLS AND EQUIPMENT NECESSARY FOR TESTING.

2. 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.

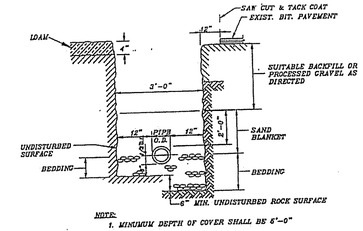
   ALL LEAKS IN THE PIPELINE SHALL BE STOPPED; CRACKED OR DEFECTIVE PIPE, FITTINGS OR ACCESSORIES SHALL BE REMOVED AND REPLACED WITH NEW BY THE CONTRACTOR.

   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. WATERMAINS - 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.

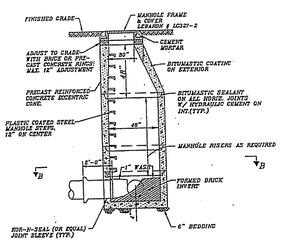
DEPARTMENT OF ENVIRONMENTAL MANAGEMENT
OFFICE OF WATER RESOURCES
FRESHWATER WETLANDS PROGRAM
APPROVED WITH CONDITIONS
AS SPECIFIED IN THE LETTER OF APPROVAL
DATED DEC 26 2007 FILE # 07-0235
NO CHANGES ALLOWED WITHOUT PRIOR APPROVAL
APPROVED PLANS MUST BE AT CONSTRUCTION SITE
Charles A. Horbert



NOTE:
1. MINIMUM DEPTH OF COVER SHALL BE 6'-0"

TRENCH DETAIL (GRAVITY SEWER)

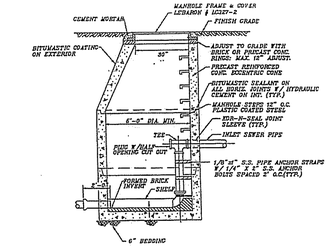
NOT TO SCALE



NOTE: ALL LIFTING HOLES TO BE PLUGGED IN AND OUT WITH HYDRAULIC CEMENT.

SANITARY MANHOLE

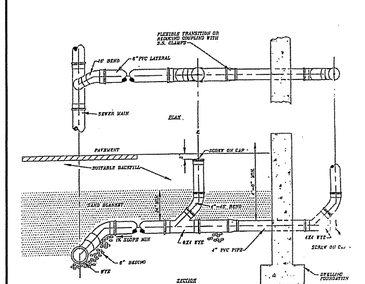
NOT TO SCALE



NOTE:
1. ALL LIFTING HOLES TO BE PLUGGEDIN AND OUT WITH HYDRAULIC CEMENT.
2. DROP PIPE SHALL BE PVC AND SAME SIZE AS INLET SEWER.

INSIDE DROP SANITARY MANHOLE (GRAVITY SEWER)

NOT TO SCALE



HOUSE CONNECTION DETAIL (GRAVITY SEWER)

NOT TO SCALE

NOV 13 2007

CHRISTOPHER A. DUHAMEL
No. 5013
REGISTERED PROFESSIONAL ENGINEER

NO.	DATE	DESCRIPTION	BY
3	11-13-07	RIDEM WETLAND COMMENTS	JMD
2	8-29-07	UTILITY SUBMISSION	JMD
1	6-26-07	UTILITY SUBMISSION	JMD
0	5-22-07	RIDEM WETLANDS SUBMISSION	D.A.R.

APRIL, 2007
DWN. BY: D.A.R.

DETAIL SHEET

Hunters Reserve

ASSESSOR'S PLAT 1 LOTS 85, 145 & 529
NORTH PLEASANT STREET, WEST WARWICK, RHODE ISLAND

PREPARED BY
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ENGINEERING, SURVEYING AND PLANNING CONSULTANTS
TWO STAFFORD COURT
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M:\Engineers2\transfers\0351-003 Hunters Reserve Dwg\0351-003 Preliminary_LAB SEWER DESIGN.dwg, 24 D (Sewer), 11/13/2007 11:15:27 AM