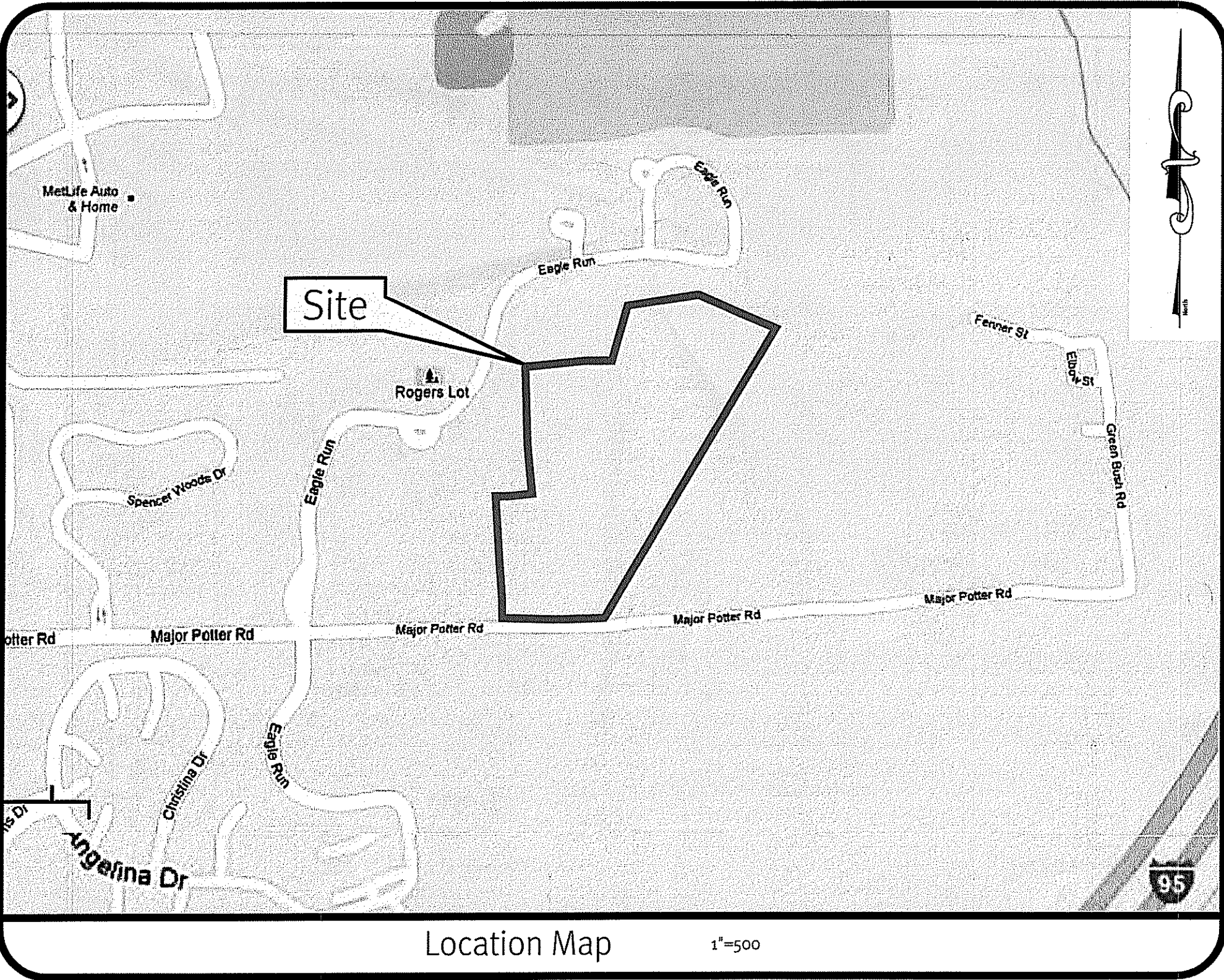


RIDEM Re-Submission

Stonebridge Crossing

Major Potter Road
Warwick, Rhode Island 02818

Assessor's Plat 228 - Lots 97 and 98



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- Co.0 Cover Sheet
- Co.1 Aerial Half Mile Radius
- C1.0 Existing Conditions Plan
- C1.1 Erosion Control Plan
- C2.0 Overall Plan
- C3.0 Grading Plan-1
- C3.1 Grading Plan-2
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- C4.1 Plan & Profile - Road B Sta 0+00 - 8+50
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- C5.0 Offsite Utility Plan
- C6.0 Detail Sheet - Drainage Basins A & B
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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 NOV 4 2016 FILE # 16-0155
NO CHANGES ALLOWED WITHOUT PRIOR APPROVAL
APPROVED PLANS MUST BE AT CONSTRUCTION SITE

Cover Sheet
Stonebridge Crossing

Assessor's Plat 228 - Lots 97 & 98
Warwick, Rhode Island 02818
Applicant
M&M Land Company
c/o Mr. Kevin Murphy, 370 Shawomet Avenue, Warwick RI 02889

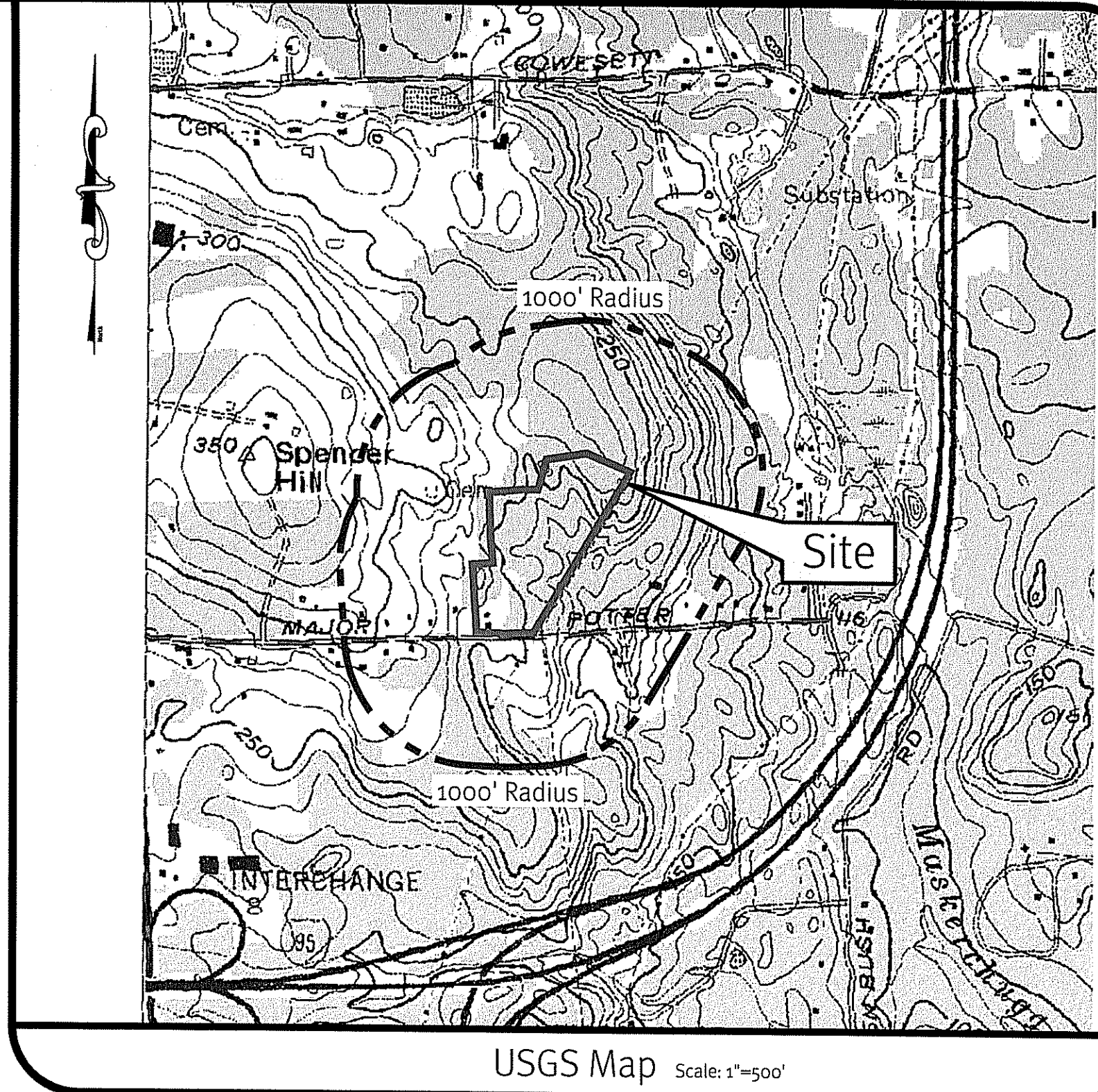
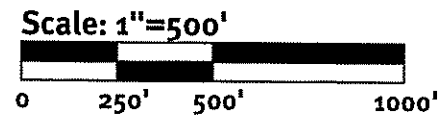
DAVID A. RUSSO
No. 1335
REGISTERED
PROFESSIONAL ENGINEER
CIVIL
Environmental Management
SEP 20 2016
Office of Water Resources

No.	Date	Description	Design By: D.A.R.
3	09-19-2016	RIDEM Re-Submission	
2	09-19-2016	Warwick Sewer Authority Submission	
1	08-12-2016	Warwick Sewer Authority Submission	
0	08-12-2016	RIDEM Submission	

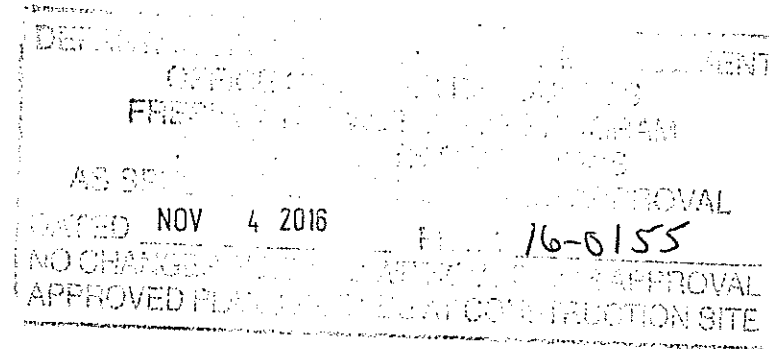
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Photo obtained from the RI-GIS.



USGS Map Scale: 1"=500'



**Aerial Half Mile Radius
Stonebridge Crossing**

Assessor's Plat 228 - Lots 97 & 98
Warwick, Rhode Island 02818

M&M Land Company
c/o Mr. Kevin Murphy, 370 Shawmut Avenue, Warwick RI 02889

DEMAN PROJECTS
FREEDOM ENGINEERING
AS SEEN
DATED NOV 4 2016
NO CHANGES
APPROVED FOR CONSTRUCTION SITE

Environmental Management
SEP 20 2016
Office of Water Resources

No.	Date	Description	By:
3	09-19-2016	REDAI By: Submission	I.A.R.
2	09-14-2016	Warwick Sewer Authority Submission	I.A.R.
1	09-14-2016	RI D.A.R. Submission	I.A.R.

Drawn By: D.A.R. Design By: D.A.R.

DAVID A. RUSSO
No. 1335
REGISTERED
PROFESSIONAL ENGINEER
CIVIL

DiPrete Engineering

Two Stafford Court Cranston, RI 02920
Tel 401-943-1000 fax 401-464-6006 www.DiPrete-Eng.com

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Kindly be advised that this Permit is not equivalent to a verification of the type or extent of freshwater wetlands on site.



General Notes:

1. THE SITE IS LOCATED ON AP 228 LOT 97 & 98 AND IS APPROXIMATELY 20.65 ACRES. THE OWNER OF RECORD IS KEVIN MURPHY FOR LOT 97 PER DEED BOOK 8361 PAGE 305. THE OWNER OF RECORD IS M & M LAND COMPANY LLC FOR LOT 98 PER DEED BOOK 8195 PAGE 185.
2. THE PARCEL IS ZONED RESIDENTIAL A-40
3. THIS SITE IS LOCATED IN FEMA FLOOD ZONE X. REFERENCE FEMA FLOOD INSURANCE RATE MAP 44003C01366, MAP REVISED DECEMBER 3, 2010.
4. THERE WERE NO CEMETERIES, GRAVE SITES AND OR BURIAL GROUNDS OBSERVED ONSITE
5. THE CONTOUR INTERVAL IS 2 FEET & TOPOGRAPHY, DATUM NAVD 88, IS TAKEN FROM THE TOWN OF WARWICK GIS DATA BASE
6. THE SITE IS NOT WITHIN A NATURAL RESOURCE AREA (RIDEM)
7. THE SITE IS NOT WITHIN A GROUNDWATER PROTECTION OVERLAY DISTRICT (TOWN)
8. SURROUNDING AREAS SERVICED BY PRIVATE WELLS, SEPTIC & ABOVE GROUND UTILITIES
9. THE BOUNDARY LINE AS SHOWN ON THIS PLAN DEPICTS A CLASS I SURVEY AS PERFORMED BY DIPRETE ENGINEERING ASSOCIATES INC. THE PLAN ITSELF CONFORMS ONLY TO A CLASS IV STANDARD AS ADOPTED BY RHODE ISLAND BOARD OF REGISTRATION FOR PROFESSIONAL LAND SURVEYORS.

Soil Information:

(REFERENCE: SOIL SURVEY OF RHODE ISLAND, U.S.D.A. SOIL CONSERVATION SERVICE)

SOIL NAME	DESCRIPTION
BmB	BRIDGEHAMPTON SILT LOAM, TILL SUBSTRATUM, 3 TO 8 PERCENT SLOPES
BoC	BRIDGEHAMPTON-CHARLTON COMPLEX, EXTREMELY STONY, 3 TO 15 PERCENT SLOPES
CaD	CANTON-CHARLTON-ROCK OUTCROP COMPLEX, 15 TO 35 PERCENT SLOPES
CeC	CANTON AND CHARLTON FINE SANDY LOAMS, VERY ROCKY, 3 TO 15 PERCENT SLOPES
Rf	RIDGEBURY, WHITMAN, AND LEICESTER EXTREMELY STONY FINE SANDY LOAMS
WbB	WAPPING SILT LOAM, 3 TO 8 PERCENT SLOPES

Existing Conditions Legend

NOT ALL ITEMS SHOWN WILL APPEAR ON THE SURVEY

	BUILDING		NAIL FOUND/SET
	ASPHALT		DRILL HOLE FOUND/SET
	ASSESSOR'S PLAT		IRON ROD/PIPE FOUND/SET
	NOW OR FORMERLY DEED		BOUND FOUND/SET
	MEASURED		SIGN
	CALCULATED		BOLLARD
	CHORD ANGLE		SOIL EVALUATION
	HANDICAPPED		CATCH BASIN
	PROPERTY LINE		DOUBLE CATCH BASIN
	ASSESSORS LINE		DRAINAGE MANHOLE
	TREELINE		FLARED END SECTION
	GUARDRAIL		GUY POLE
	FENCE		ELECTRIC MANHOLE/HANDHOLE
	RETAINING WALL		UTILITY/POWER POLE
	STONE WALL		LIGHTPOST
	MINOR CONTOUR LINE		SEWER/SEPTIC MANHOLE
	MAJOR CONTOUR LINE		SEWER VALVE
	WATER LINE		CLEANOUT
	SEWER LINE		HYDRANT
	SEWER FORCE MAIN		IRRIGATION VALVE
	GAS LINE		WATER VALVE
	ELECTRIC LINE		WELL
	OVERHEAD WIRES		MONITORING WELL
	DRAINAGE LINE		UNKNOWN MANHOLE
	SOIL LINE AND DESIGNATION		GAS VALVE
	WETLAND EDGE		BENCHMARK
	WETLAND HATCH		BUSH
	STREAM CENTERLINE		TREE
	ASSF		ROCK / BOULDER
	50' PERIMETER WETLAND		
	100' RIVERBANK WETLAND		
	WETLAND FLAG		

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Existing Conditions Plan
Stonebridge Crossing

Applicant
M&M Land Company
Assessor's Plat 228 - Lots 97 & 98
Warwick, Rhode Island 02886
C/O Mr. Kevin Murphy, 370 Shawomet Avenue, Warwick, RI 02889

DAVID A. RUSSO
No. 14355
REGISTERED PROFESSIONAL ENGINEER
CIVIL
Environmental Management
SEP 20 2016
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Two Stafford Court Cranston, RI 02920
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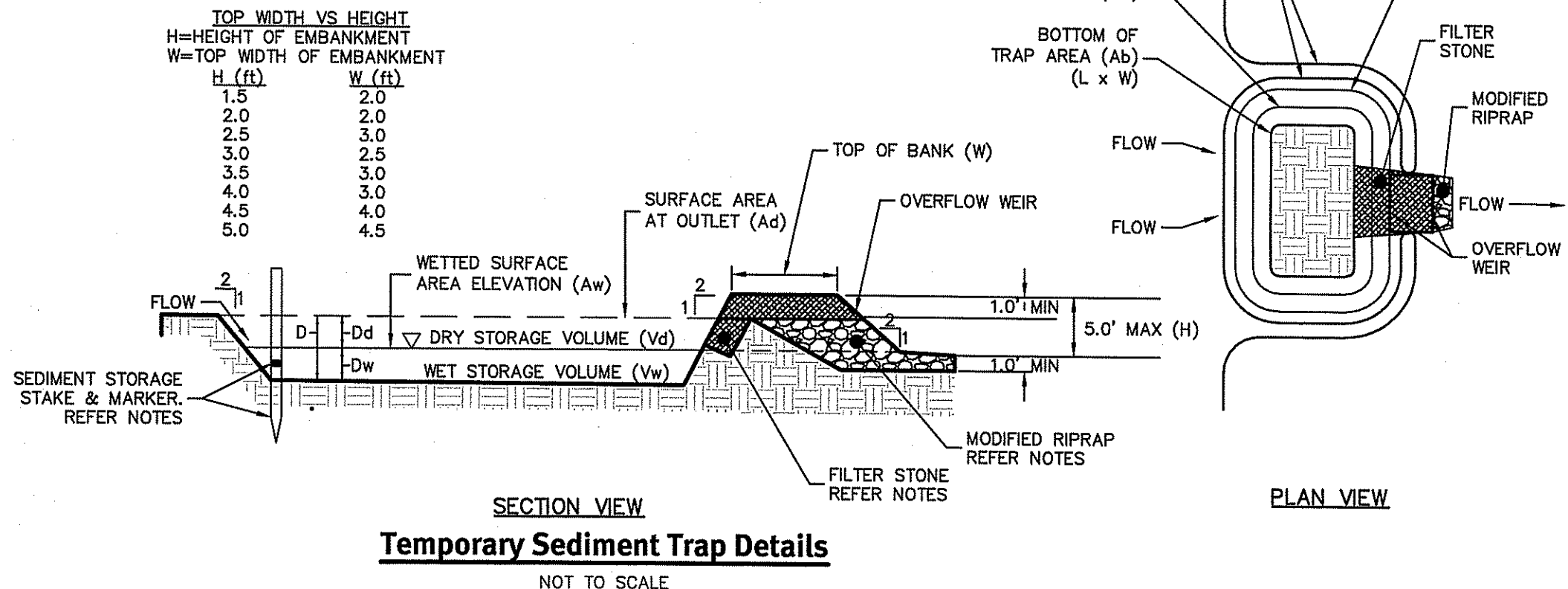
Soil Erosion Control Legend:

- DIVERSION RUNOFF CONVEYANCE MEASURE
- TRIBUTARY DRAINAGE AREA
- ROADWAY & DRAINAGE NETWORK CONSTRUCTION AREA
- TEMPORARY SEDIMENT TRAP
- SILT FENCE OR APPROVED EQUAL EROSION CONTROL MEASURE
- FUTURE LIMIT OF WORK & EROSION CONTROL FOR INDIVIDUAL LOT BUILD OUT
- FUTURE HOME

Construction Phasing

- Phase IA** - INSTALL EROSION CONTROL SILT FENCE & STONE CONSTRUCTION ENTRANCE.
- Phase IB** - INSTALL LOW POINT BYPASS BASINS & DRAINAGE OUTLET PIPES TO DIVERT OFFSITE AREA.
- Phase IC** - INSTALL TEMPORARY SEDIMENTATION TRAP.
- Phase ID** - CONSTRUCT PROPOSED DIVERSIONS
- Phase IIA** - CLEAR AND GRUB ROADWAY AREAS. CONSTRUCT PROPOSED ROADWAY & INSTALL UTILITIES WITH ROADWAYS. INSTALL DRAINAGE NETWORK WORKING FROM THE DOWN GRADIENT BASINS UP TO THE START OF NETWORK.
- Phase IIB** - STABILIZE ALL DISTURBED AREAS, DE-CONSTRUCT DIVERSIONS AND TEMPORARY SEDIMENTATION TRAPS.
- Phase III** - CONSTRUCT INDIVIDUAL LOTS. INSTALL EROSION & SEDIMENT CONTROLS AT ALL DOWN GRADIENT LIMITS OF WORK.

SEDIMENT TRAP DIMENSIONS	TRAP A	TRAP B
TRIBUTARY DRAINAGE AREA	3.80 ac	2.64 ac
WET STORAGE DEPTH (Dw)	2.00 ft	2.00 ft
DRY STORAGE DEPTH (Dd)	3.00 ft	2.00 ft
TOTAL DEPTH (D)	5.00 ft	4.00 ft
BOTTOM OF TRAP AREA (Ab)	1,740 sq.ft	1,666 sq.ft
WETTED SURFACE AREA (Aw)	2,508 sq.ft	2,394 sq.ft
SURFACE AREA AT OUTLET (Ad)	3,900 sq.ft	3,250 sq.ft



GENERAL NOTES:

- ALL EROSION CONTROL, DIVERSIONS, TEMPORARY SEDIMENTATION TRAP, ETC. SHALL BE INSTALLED PER THE RHODE ISLAND SOIL EROSION AND SEDIMENTATION CONTROL LATEST EDITION.
- SILT FENCE OR AN APPROVED EROSION EROSION CONTROL AND DIVERSIONS SHALL BE USED TO CONTROL RUNOFF DURING CONSTRUCTION OF THE PROPOSED ROADWAY. AFTER INITIAL ROADWAY GRADING IS COMPLETE AND THE PERMANENT DRAINAGE INFRASTRUCTURE HAS BEEN CONSTRUCTED THE DRAINAGE NETWORK SHALL BE BROUGHT ONLINE AND THE DIVERSIONS SHALL BE DECONSTRUCTED.
- VEHICLE MAINTENANCE AND WASHING SHALL OCCUR OFF-SITE.
- ONCE THE SEDIMENTATION TRAP IS NO LONGER REQUIRED AND ALL TRIBUTARY AREAS HAVE BEEN STABILIZED, THE AREA SHALL BE BROUGHT TO FINAL DESIGN GRADES.
- INLET PROTECTION SHALL BE INSTALLED ON ALL CATCH BASINS ONCE CONSTRUCTED.
- CONCRETE WASHOUT AREAS TO BE LOCATED AT EACH INDIVIDUAL LOT.
- SEE SECTION 1.2 OF THE SESC FOR SEQUENCE OF CONSTRUCTION ACTIVITY.
- SEE SECTION 2.2 OF THE SESC FOR PROJECT PHASING.
- CONTRACTOR MAY MODIFY SEQUENCE OF CONSTRUCTION WITH APPROVAL FROM DESIGN ENGINEER.
- INFILTRATION BASINS & SAND FILTER AREAS SHALL BE STAKED OFF, DEMARCATED AND PROTECTED FROM CONSTRUCTION TRAFFIC DURING ALL CONSTRUCTION PHASES.

SEDIMENT TRAP NOTES:

- THE TEMPORARY SEDIMENT TRAP SHALL MEET ALL REQUIREMENTS FOR TEMPORARY SEDIMENT TRAPS OUTLINED IN THE RHODE ISLAND SOIL EROSION AND SEDIMENTATION CONTROL HANDBOOK (LATEST REVISION) SECTION SIX: SEDIMENT CONTROL MEASURES
- THE TEMPORARY SEDIMENT TRAP SHALL HAVE AN INITIAL STORAGE VOLUME OF 134 CUBIC YARDS PER ACRE OF DRAINAGE AREA.
- ALL OUT AND FILL SLOPES SHALL BE 2:1 OR FLATTER EXCEPT FOR THE EXCAVATED WET STORAGE AREA WHERE SLOPES SHALL NOT EXCEED 1.5:1.
- THE OUTLET SHALL BE LOCATED AT THE MOST DISTANT HYDRAULIC POINT FROM THE INLET.
- THE OUTLET CONSISTS OF A PERVIOUS STONE DIKE WITH A CORE OF MODIFIED RIPRAP AND FACED ON THE UPSTREAM SIDE WITH STONE.
- TEMPORARY SEDIMENT TRAPS MUST OUTLET ONTO STABILIZED GROUND.
- MAXIMUM HEIGHT OF A TEMPORARY SEDIMENT TRAP EMBANKMENT IS LIMITED TO 5 FEET.
- SIDE SLOPES OF THE EMBANKMENT SHALL BE 2:1 OR FLATTER.
- MODIFIED RIPRAP: SHALL MEET THE REQUIREMENTS OF RIOT STANDARD SPECIFICATIONS FOR ROAD AND BRIDGE CONSTRUCTION SUBSECTION M.10.03.2.
- FILTER STONE: SHALL MEET THE REQUIREMENTS OF RIOT STANDARD SPECIFICATIONS FOR ROAD AND BRIDGE CONSTRUCTION SUBSECTION M.01.03 TABLE 1, COLUMN V FILTER STONE.

INSPECTION, MAINTENANCE, AND REMOVAL REQUIREMENTS:

- INSTALL "SEDIMENT STORAGE" STAKE WITH A MARKER AT ONE HALF OF THE WET STORAGE VOLUME.
- INSPECT THE TEMPORARY SEDIMENT TRAP AT LEAST ONCE A WEEK AND WITHIN 24 HOURS OF THE END OF A STORM WITH A RAINFALL AMOUNT OF 0.25 INCH OR GREATER.
- CHECK THE OUTLET TO ENSURE THAT IT IS STRUCTURALLY SOUND AND HAS NOT BEEN DAMAGED BY EROSION OR CONSTRUCTION EQUIPMENT.
- CHECK FOR SEDIMENT ACCUMULATION AND FILTRATION PERFORMANCE.
- WHEN SEDIMENTS HAVE ACCUMULATED TO ONE HALF THE MINIMUM REQUIRED VOLUME OF THE WET STORAGE, DEWATER THE TRAP AS NEEDED, REMOVE SEDIMENTS AND RESTORE THE TRAP TO ITS ORIGINAL DIMENSIONS.
- DISPOSE OF THE SEDIMENT REMOVED FROM THE BASIN IN A SUITABLE AREA.
- THE TEMPORARY SEDIMENT TRAP MAY BE REMOVED AFTER THE CONTRIBUTING DRAINAGE AREA IS STABILIZED.

INSTALLATION NOTES:

- CLEAR, GRUB AND STRIP ANY VEGETATION AND ROOT MAT FROM ANY PROPOSED EMBANKMENT AND OUTLET AREA.
- REMOVE STONES AND ROCKS WHOSE DIAMETER IS GREATER THAN THREE (3) INCHES AND OTHER DEBRIS.
- EXCAVATE WET STORAGE AND CONSTRUCT THE EMBANKMENT AND/OR OUTLET AS NEEDED TO ATTAIN THE NECESSARY STORAGE REQUIREMENTS.
- USE ONLY FILL MATERIAL FOR THE EMBANKMENT THAT IS FREE FROM EXCESSIVE ORGANICS, DEBRIS, LARGE ROCKS (OVER SIX (6) INCHES) OR OTHER UNSUITABLE MATERIALS. COMPACT THE EMBANKMENT IN 9-INCH LAYERS BY TRAVERSING WITH EQUIPMENT WHILE IT IS BEING CONSTRUCTED
- STABILIZE THE EARTHEN EMBANKMENT USING ANY OF THE FOLLOWING MEASURES, SEEDING FOR TEMPORARY VEGETATION COVER; SEEDING FOR PERMANENT VEGETATIVE COVER; OR SLOPE PROTECTION, IMMEDIATELY AFTER INSTALLATION

DEPARTMENT OF ENVIRONMENTAL MANAGEMENT
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Erosion Control Plan
Stonebridge Crossing

Assessor's Plat 228 - Lots 97 & 98
Warwick, Rhode Island 02818
Applicant
M&M Land Company
c/o Mr. Kevin Murphy, 370 Shawomet Avenue, Warwick RI 02889

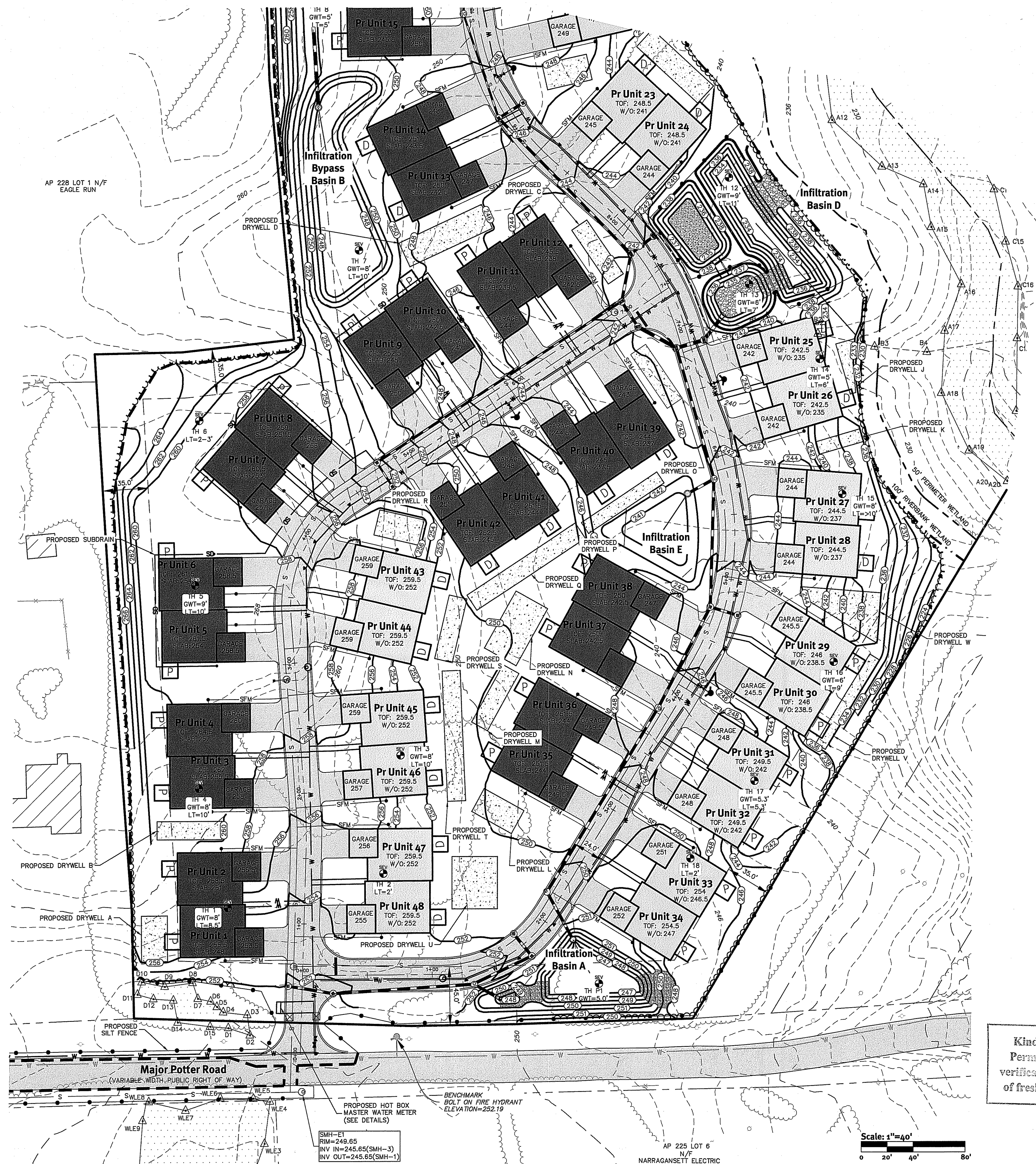
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SHEET 4 OF 18

DiPrete Engineering
Two Stafford Court Cranston, RI 02920
Tel 401-943-1000 Fax 401-464-6006 www.DiPrete-Eng.com

DAVID A. RUSSO
No. 01385
REGISTERED PROFESSIONAL ENGINEER
CIVIL
Environmental Management
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Grading and Utility Notes:

- THE CONTRACTOR IS RESPONSIBLE FOR ALL SOIL EROSION AND SEDIMENT CONTROL ON-SITE. THE CONTRACTOR IS TO NOTIFY THE DESIGN ENGINEER, THE DIRECTOR OF PUBLIC WORKS, THE TOWN ENGINEER, AND RI DEPT. OF ENVIRONMENTAL MANAGEMENT AT LEAST 48 HOURS PRIOR TO THE START OF CONSTRUCTION. THE CONTRACTOR IS TO NOTIFY DIG SAFE 72 HOURS PRIOR TO THE START OF CONSTRUCTION.
- CONTRACTOR TO OBTAIN ALL FEDERAL, STATE, AND MUNICIPAL APPROVALS PRIOR TO THE START OF CONSTRUCTION.
- CONSTRUCTION TO COMMENCE 2016 OR UPON RECEIPT OF ALL NECESSARY APPROVALS.
- ALL WORK PERFORMED HEREIN SHALL BE GOVERNED BY THE RHODE ISLAND STANDARD SPECIFICATION FOR ROAD AND BRIDGE CONSTRUCTION AND WARWICK STANDARD SPECIFICATIONS AND DETAILS.
- SEQUENCE OF CONSTRUCTION PROVIDED MAY BE MODIFIED AS FIELD CONDITIONS WARRANT WITH PRIOR APPROVAL FROM THE OWNER OR OWNER'S REPRESENTATIVE.
- THE CONTRACTOR SHALL COORDINATE WITH ALL OF THE APPROPRIATE UTILITY COMPANIES FOR AGREEMENTS TO SERVICE THE PROPOSED HOMES. THIS SHALL BE DONE PRIOR TO CONSTRUCTION. NO REPRESENTATIONS ARE MADE BY DIPRETE ENGINEERING THAT UTILITY SERVICE IS AVAILABLE.
- THE CONTRACTOR IS RESPONSIBLE FOR DETERMINING FINISH GRADING AND DRAINAGE AROUND THE HOMES TO ENSURE SURFACE WATER AND/OR GROUND WATER ARE DIRECTED AWAY FROM THE STRUCTURE.
- ALL PROPOSED UNDERGROUND UTILITIES SERVING THE SITE AND BUILDINGS TO BE COORDINATED WITH APPLICANT, ARCHITECT, AND ENGINEER PRIOR TO INSTALLATION.
- ALL TRAFFIC CONTROL SHALL CONFORM TO THE MANUAL FOR UNIFORM TRAFFIC CONTROL DEVICES LATEST EDITION INCLUDING ALL REVISIONS.
- NO STOCKPILING OF MATERIAL TO BE LOCATED IN THE RIGHT OF WAY AND NO OPEN TRENCHES ARE TO BE LEFT OVERNIGHT.
- ALL LOAM IN DISTURBED AREAS TO BE STOCKPILED FOR FUTURE USE.
- ALL EXCESS SOIL, TREES, ROCKS, BOULDERS, AND OTHER REFUSE, SHALL BE DISCARDED OFF SITE IN AN ACCEPTABLE MANNER AT AN APPROVED LOCATION. STUMPS SHALL BE GROUND ON-SITE OR REMOVED.
- NO STUMP DUMPS ARE PROPOSED ON-SITE.
- HOMEOWNERS ASSOCIATION IS RESPONSIBLE FOR THE MAINTENANCE OF ALL WALLS AND LANDSCAPE FEATURES, AND THE MAINTENANCE OF ALL DRAINAGE FACILITIES AND INFRASTRUCTURE WITHIN THE PUBLIC RIGHT OF WAY.
- ALL HOMES SHALL HAVE A GUTTER SYSTEM ENDING WITH DOWNSPOUTS. DOWNSPOUTS SHALL INCLUDE PROVISION FOR INDUCING SHEET FLOW. DOWNSPOUTS SHALL BE DIRECTED AT PROPOSED DRYWELLS, ROADWAYS, OR EXISTING WOODED AREAS AS SHOWN ON THE PLAN.
- ALL DRIVEWAYS SHOULD BE GRADED TOWARD THE PROPOSED ROADWAY.

Abbreviations:

EXISTING	EX
PROPOSED	PR
TOP OF FLOOR	TOF
WALK-OUT	W/O
ASSESSOR'S PLAT	AP
NOW OR FORMERLY	N/F

Proposed Conditions Legend:

NOT ALL ITEMS SHOWN WILL APPEAR ON THE PLANS

PR FOOT CONTOUR	
PR TOP/BOTTOM OF POND	
PR SPOT ELEVATION	
EASEMENT	
PR PROPERTY LINE	
CONCRETE (PAD, SIDEWALK)	
CONSTRUCTION ENTRANCE	
RIP-RAP	
POND/RAIN GARDEN OUTLINE	
LIMIT OF WORK	
STAKED SILT FENCE	
BUILDING FOOTPRINT	
BUILDING FOOTPRINT WITH WALK-OUT BASEMENT	
SAW CUT/MATCH AREA	
CONCRETE CURB	
ASPHALT PAVEMENT	
WATER LINE	
SEWER LINE	
SEWER FORCE MAIN	
DRAIN LINE	
MANHOLE	
CATCH BASIN	
FLARED END	
THRUST BLOCK	
DRYWELL	
DECK	
PATIO	
TREELINE	

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Grading Plan-1
Stonebridge Crossing

Assessor's Plat 238 - Lots 97 & 98
Warwick, Rhode Island 02881

M&M Land Company

Applicant
c/o Mr. Kevin Murphy, 270 Shawmut Avenue, Warwick, RI 02889

DAVID A. RUSSO
No. 1335
REGISTERED PROFESSIONAL ENGINEER
CIVIL

Environmental Management
SEP 20 2016
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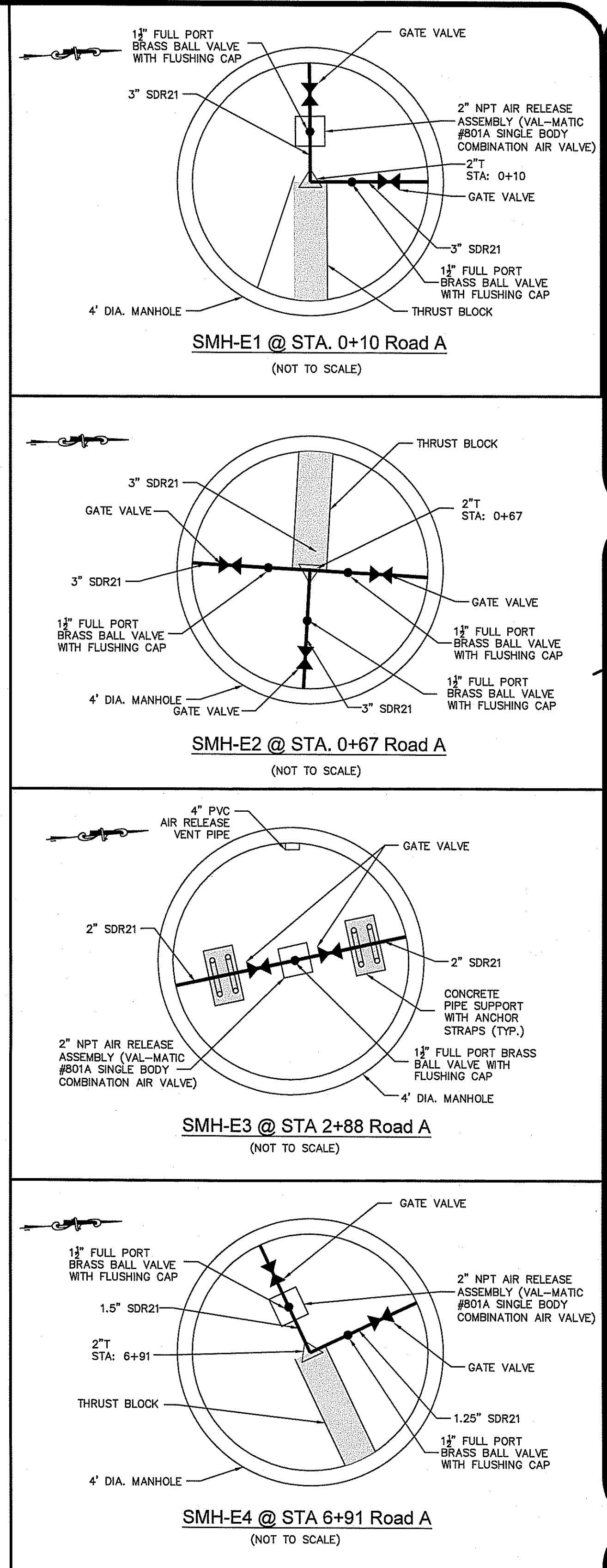
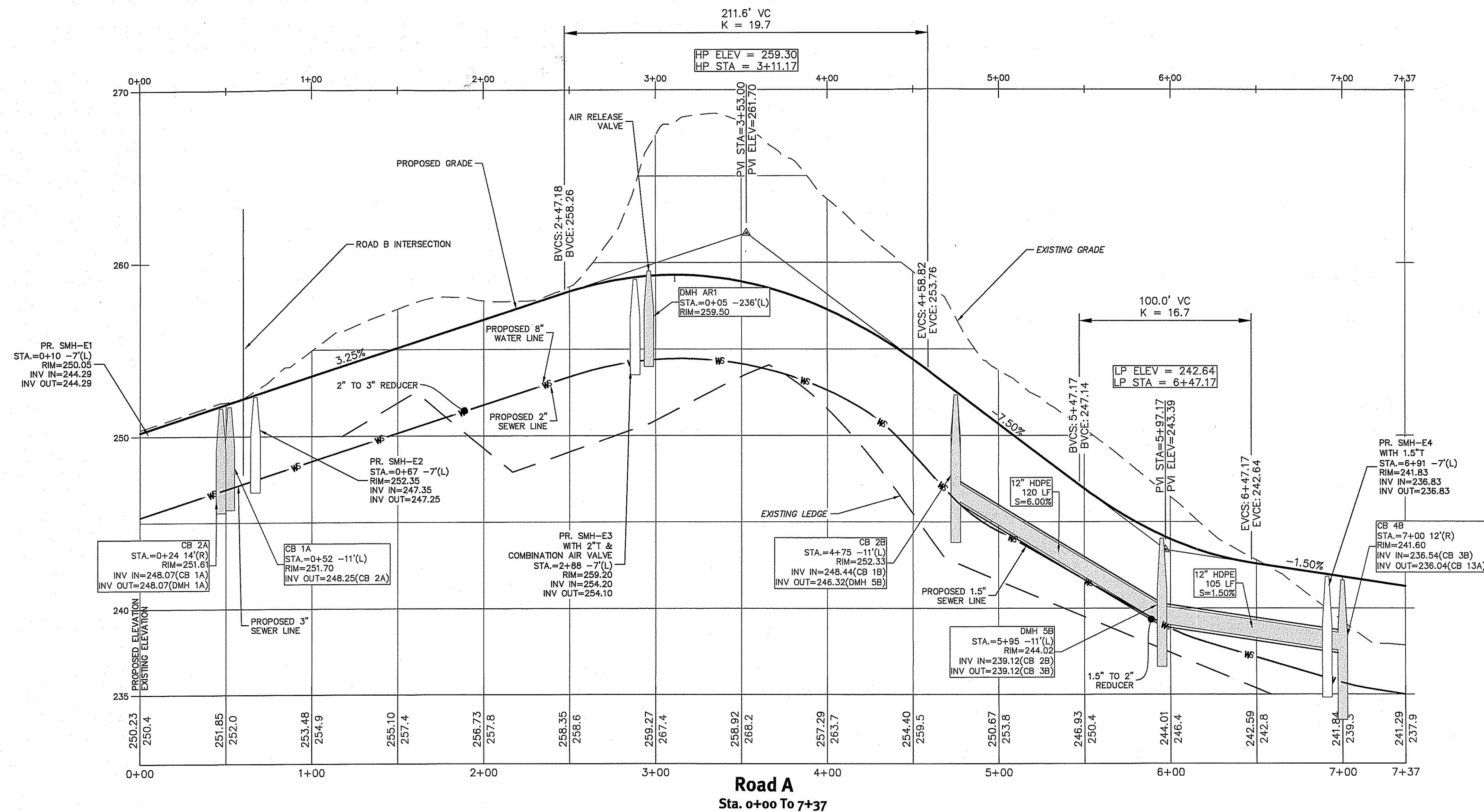
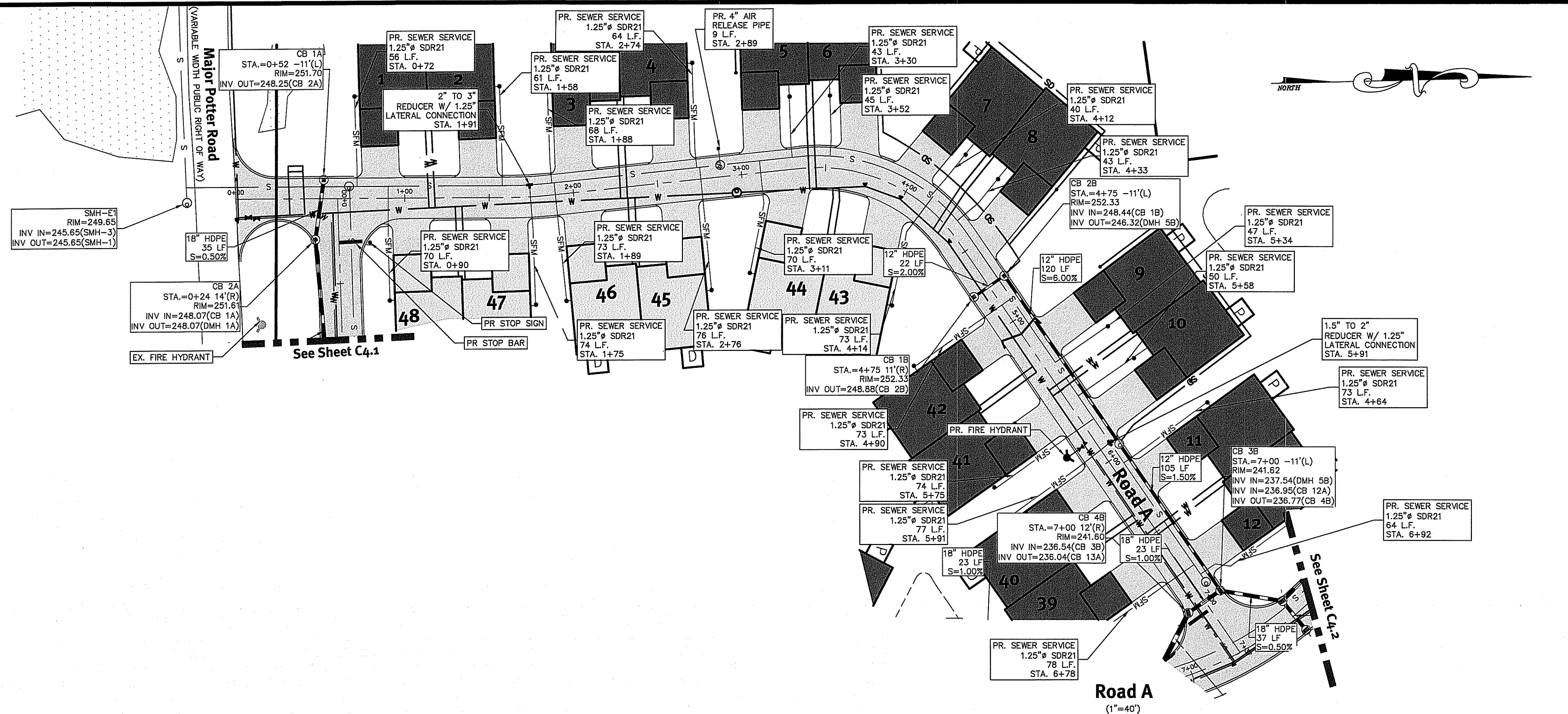
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Vertical: 0 2' 4' 8'
Horizontal: 0 20' 40' 80'

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Two Stafford Court Cranston, RI 02920
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DAVID A. RUSSO

No. 14355

REGISTERED PROFESSIONAL ENGINEER
CIVIL

Environmental Management

SEP 20 2016

Office of Water Resources

No.	Date	By	Description
1	09-20-2016	W. Russo	Initial Design
2	09-24-2016	W. Russo	Revised for Public Comments
3	09-26-2016	W. Russo	Revised for Public Comments
4	09-26-2016	W. Russo	Revised for Public Comments
5	09-26-2016	W. Russo	Revised for Public Comments

P&P Road A - Sta. 0+00 - 7+37

Stonebridge Crossing

Assessor's Plot 28, Lot 8, 98

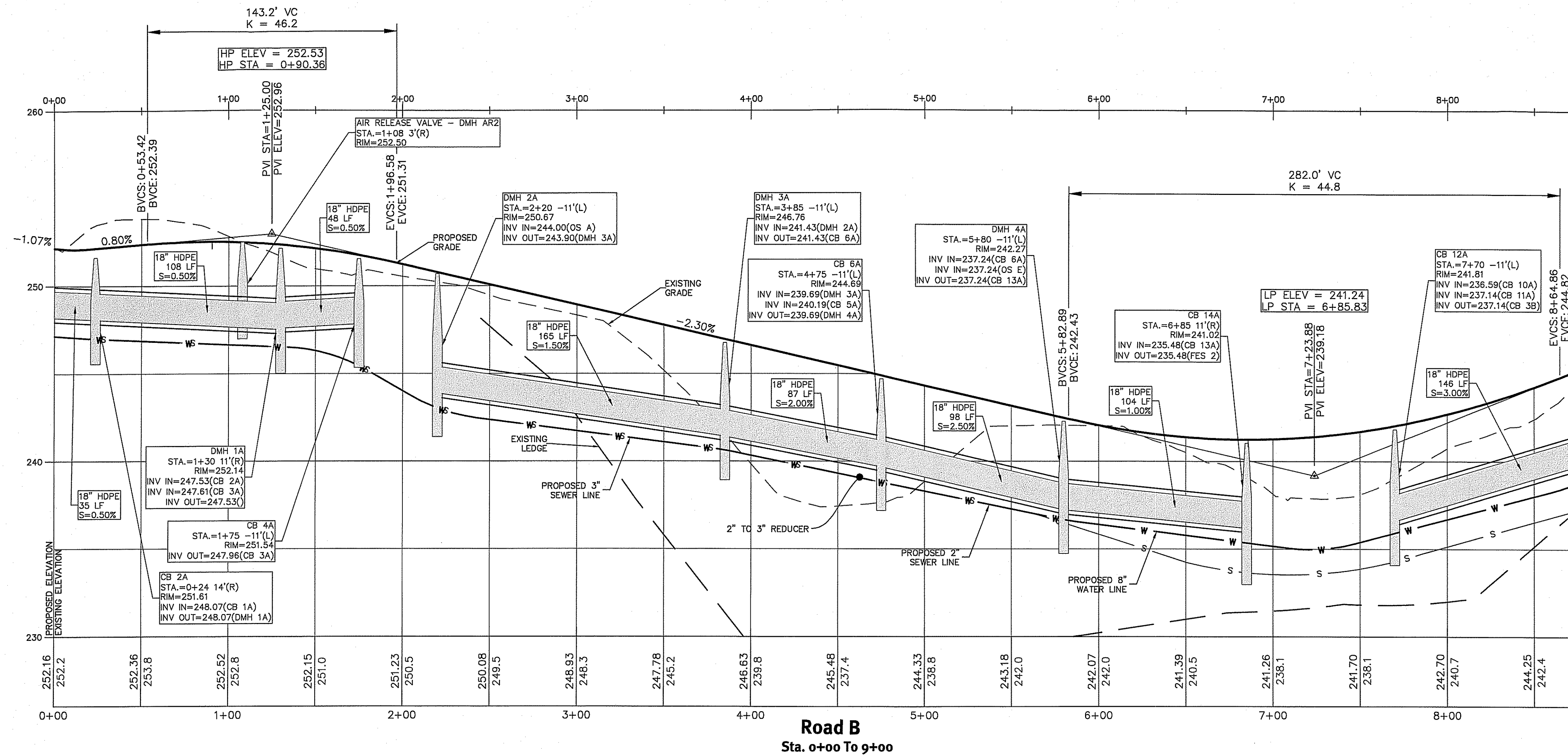
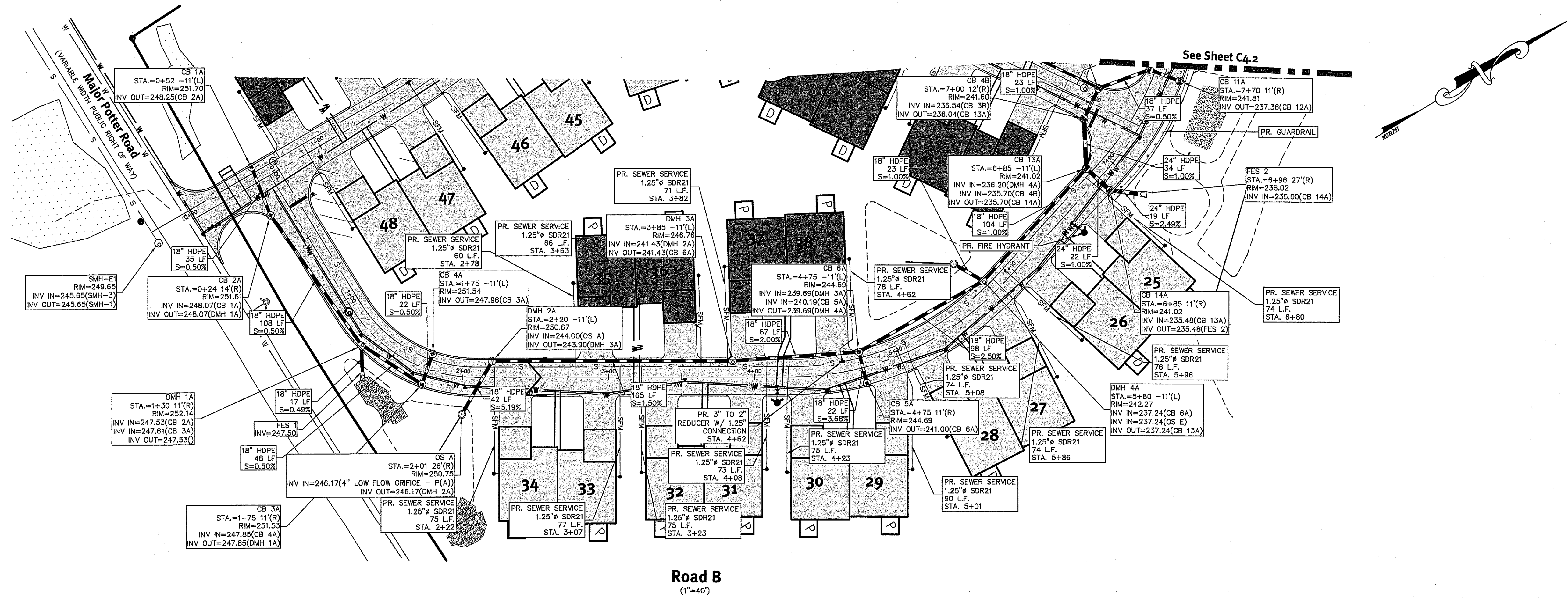
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M&M Land Company

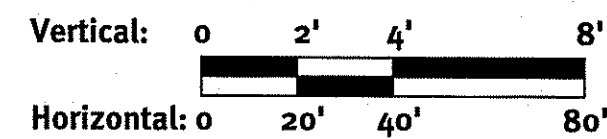
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P&P Road B - Sta.0+00 - 8+50
Stonebridge Crossing

Assessor: Plot 28 - Lots 97 & 98
Warwick, Rhode Island 02885
M&M Land Company
c/o Mr. Kevin Murphy, 370 Shawomet Avenue, Warwick RI 02889

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tel 401-943-1000 fax 401-464-6006 www.DiPrete-Eng.com

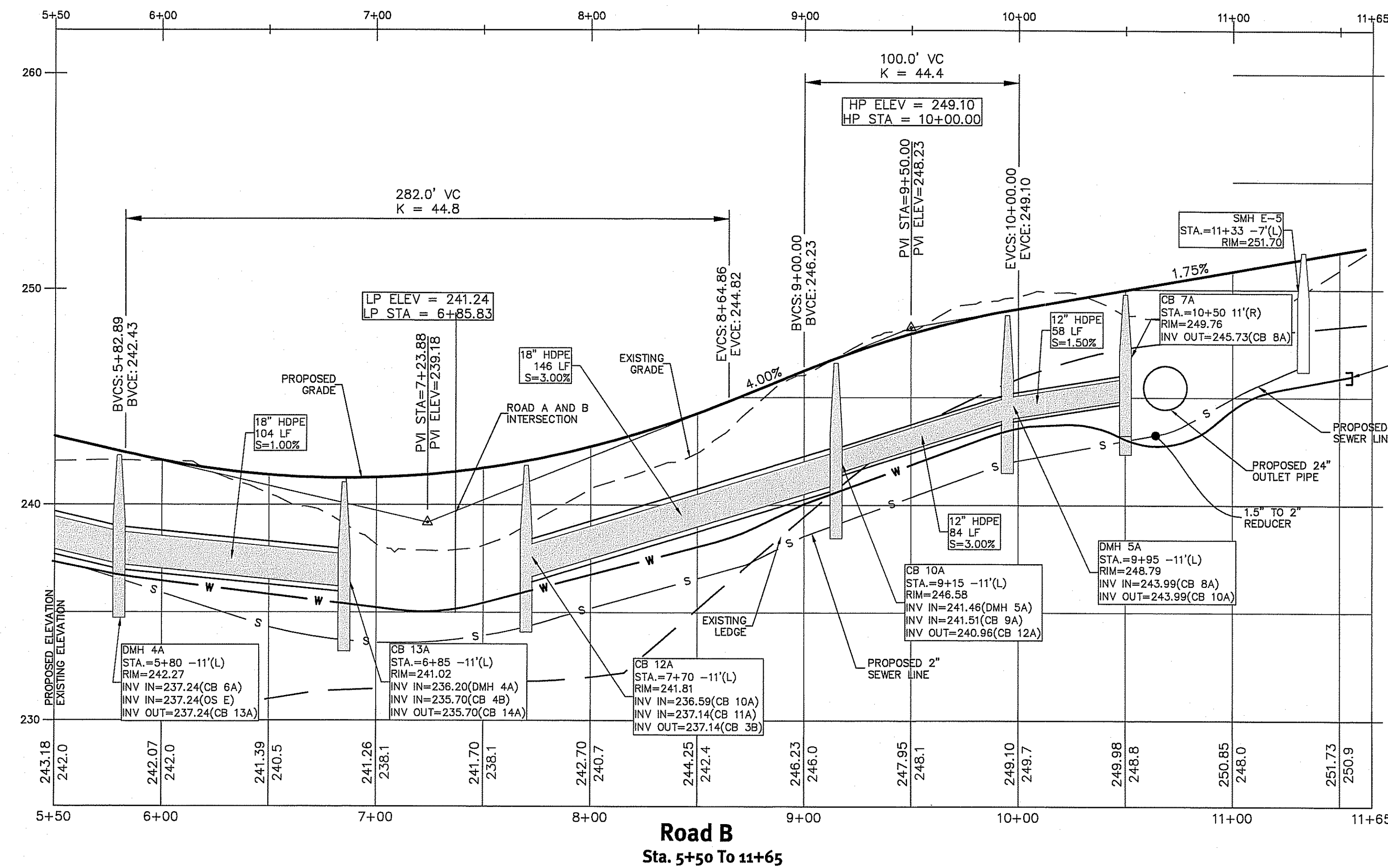
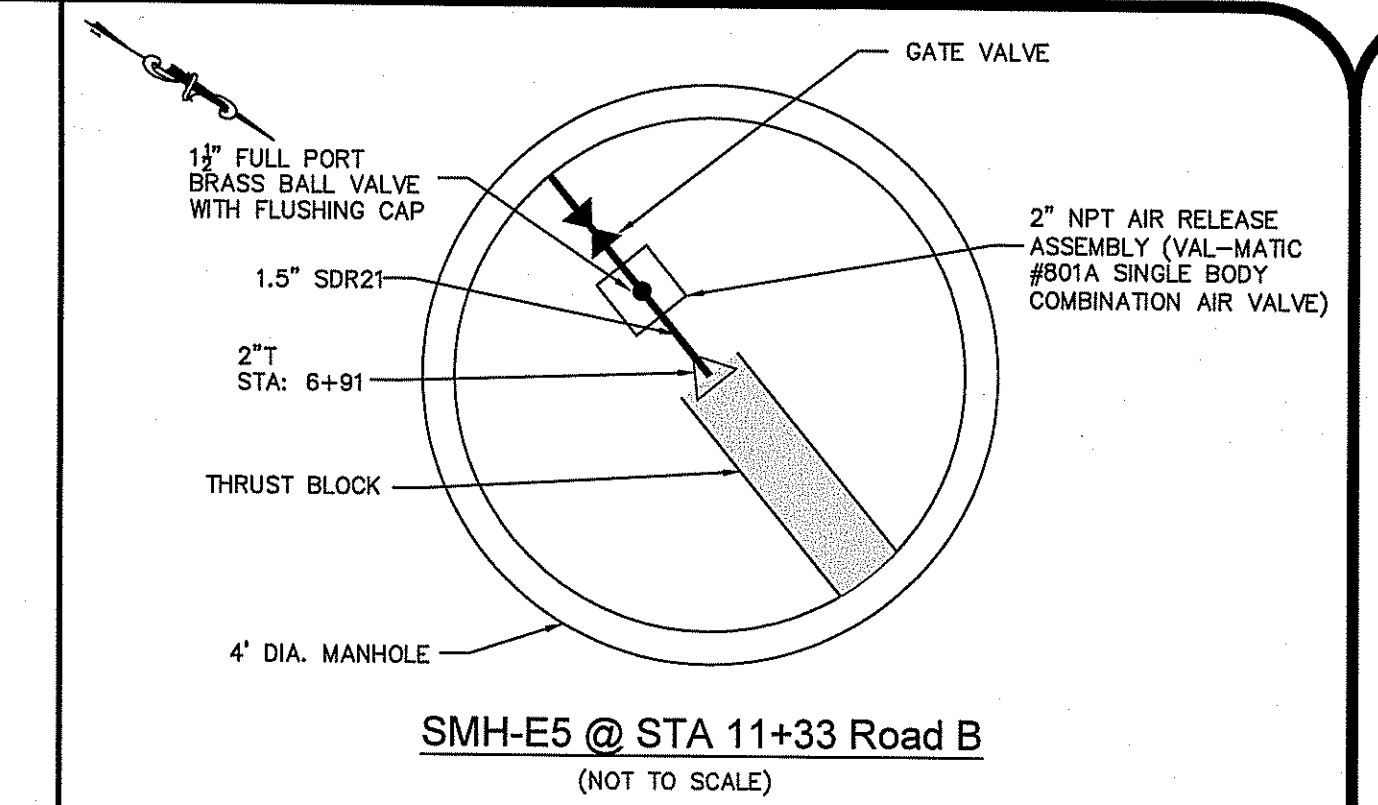
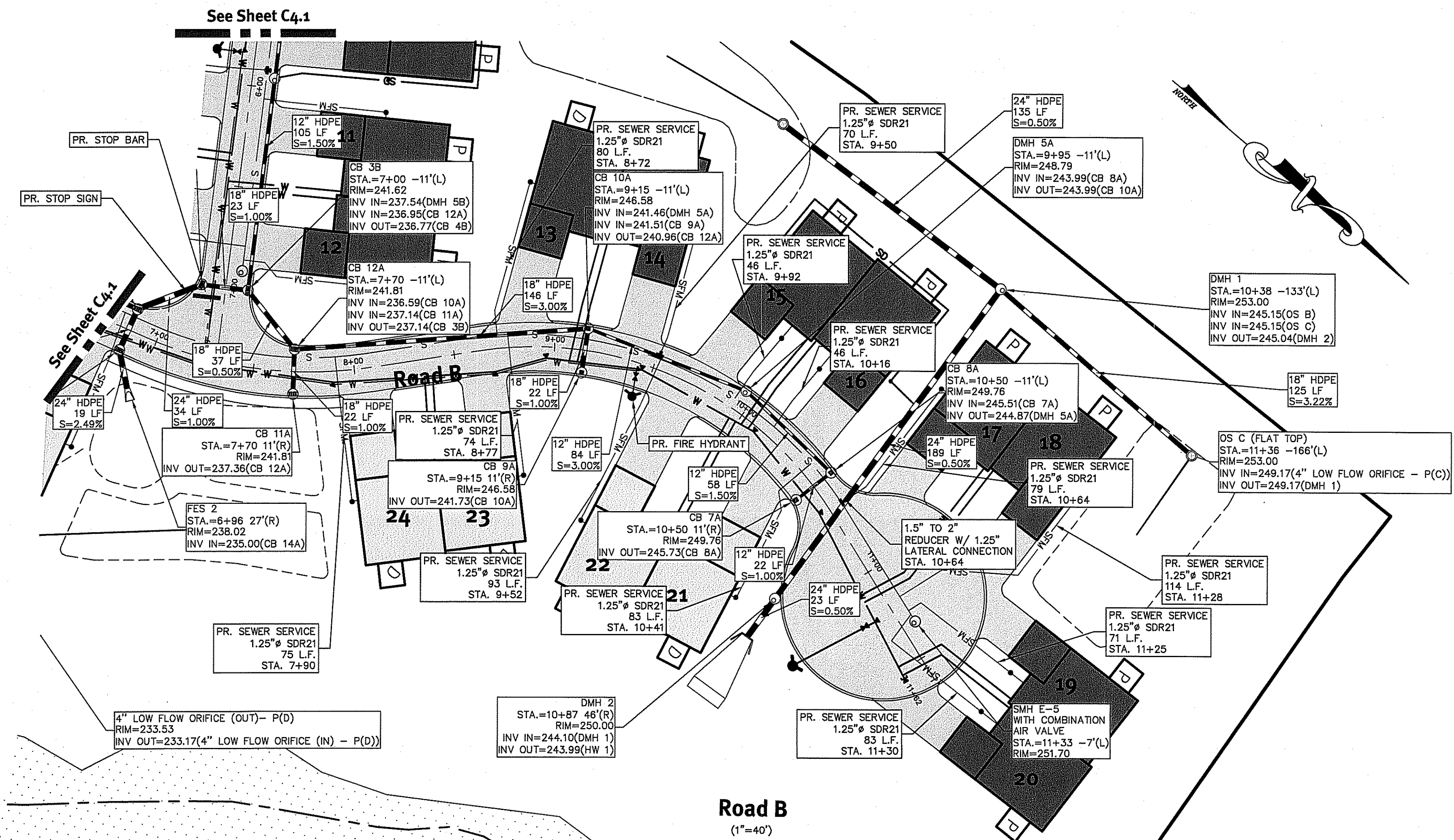
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DAVID A. RUSSO
No. 1335
REGISTERED PROFESSIONAL ENGINEER
CIVIL

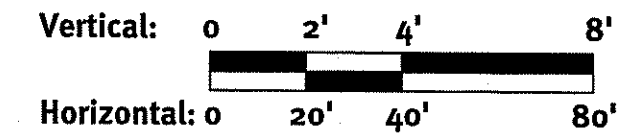
Environmental Management
SEP 20 2016
Office of Water Resources

No.	Date	Description	Design By: D.A.R.
1	09-29-2016	W&M No. Submission	J.A.R.
2	09-29-2016	Reviewed for Public Comment	J.A.R.
3	09-29-2016	Reviewed for Public Comment	J.A.R.
4	09-29-2016	Reviewed for Public Comment	J.A.R.
5	09-29-2016	Reviewed for Public Comment	J.A.R.

z:\demain\projects\1521-005 major potter road\autocad drawings\1521-005-dm.dwg Plotfile: 9/19/2016



DEPARTMENT OF ENVIRONMENTAL MANAGEMENT
OFFICE OF WATER RESOURCES
FRESHWATER WETLANDS PROGRAM
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DATED NOV 4 2016 FILE # 16-0155
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Two Stafford Court Cranston, RI 02920
tel: 401-943-1000 fax: 401-464-6000 www.DiPrete-Eng.com

DAVID A. RUSSO
No. 4355
REGISTERED PROFESSIONAL ENGINEER
CIVIL

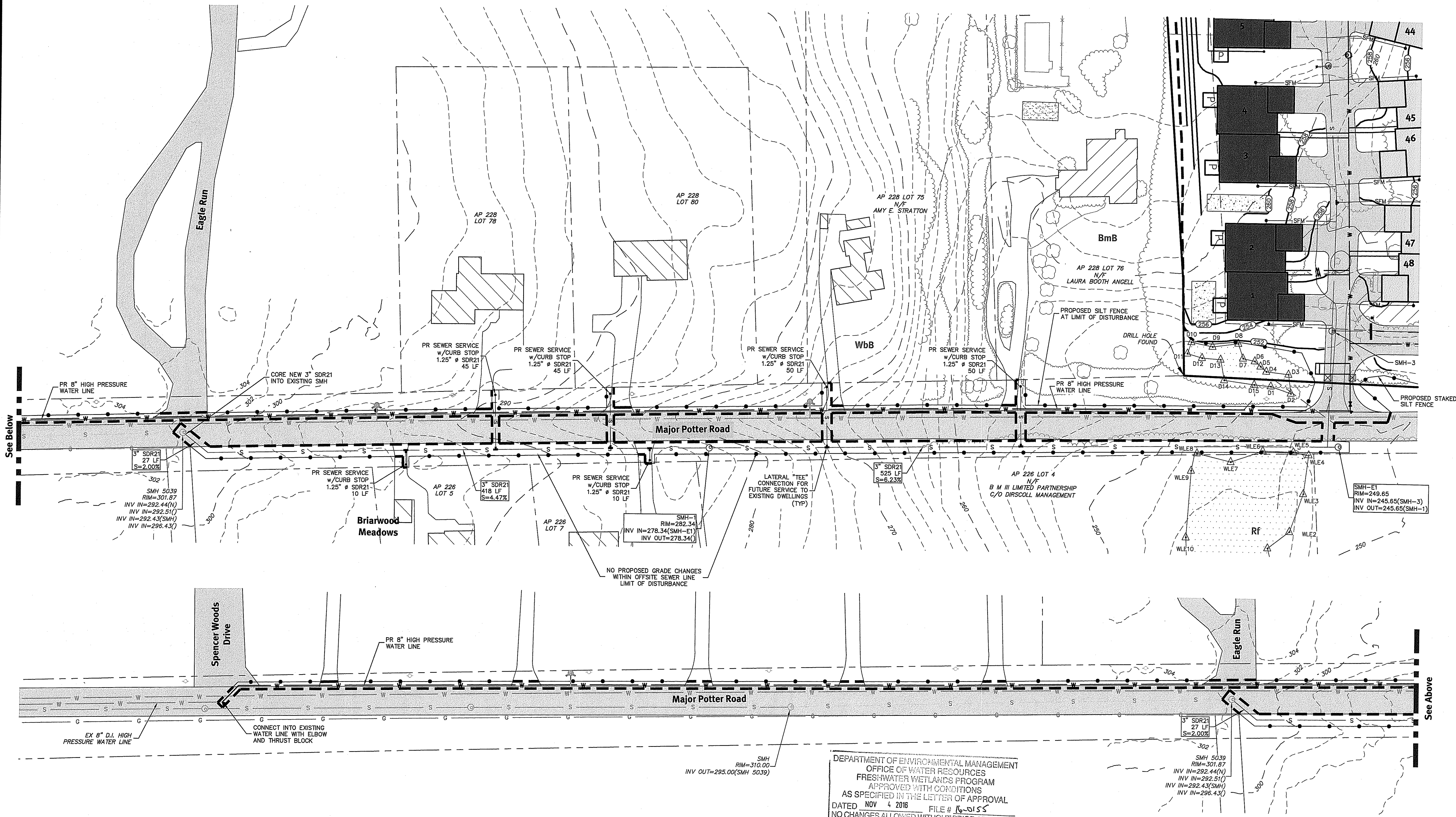
Environmental Management
SEP 20 2016
Office of Water Resources

No.	Date	Description	Design By: D.A.R.
1	09-09-2016	REVISION: Submission	By: D.A.R.
2	09-20-2016	Warwick Sewer Authority Submission	By: D.A.R.
3	09-20-2016	Warwick Sewer Authority Comments	By: D.A.R.
4	09-20-2016	REVISION: Submission	By: D.A.R.

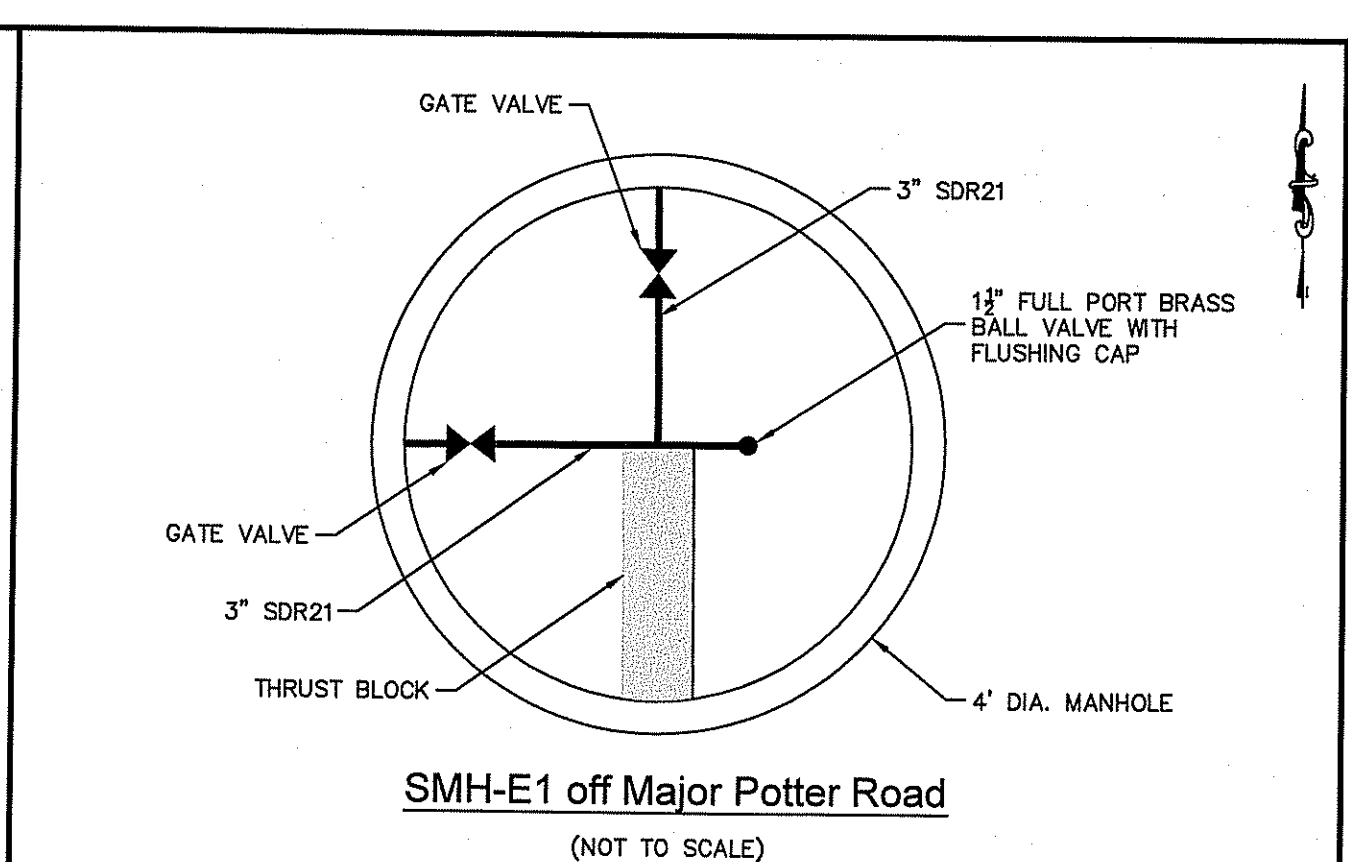
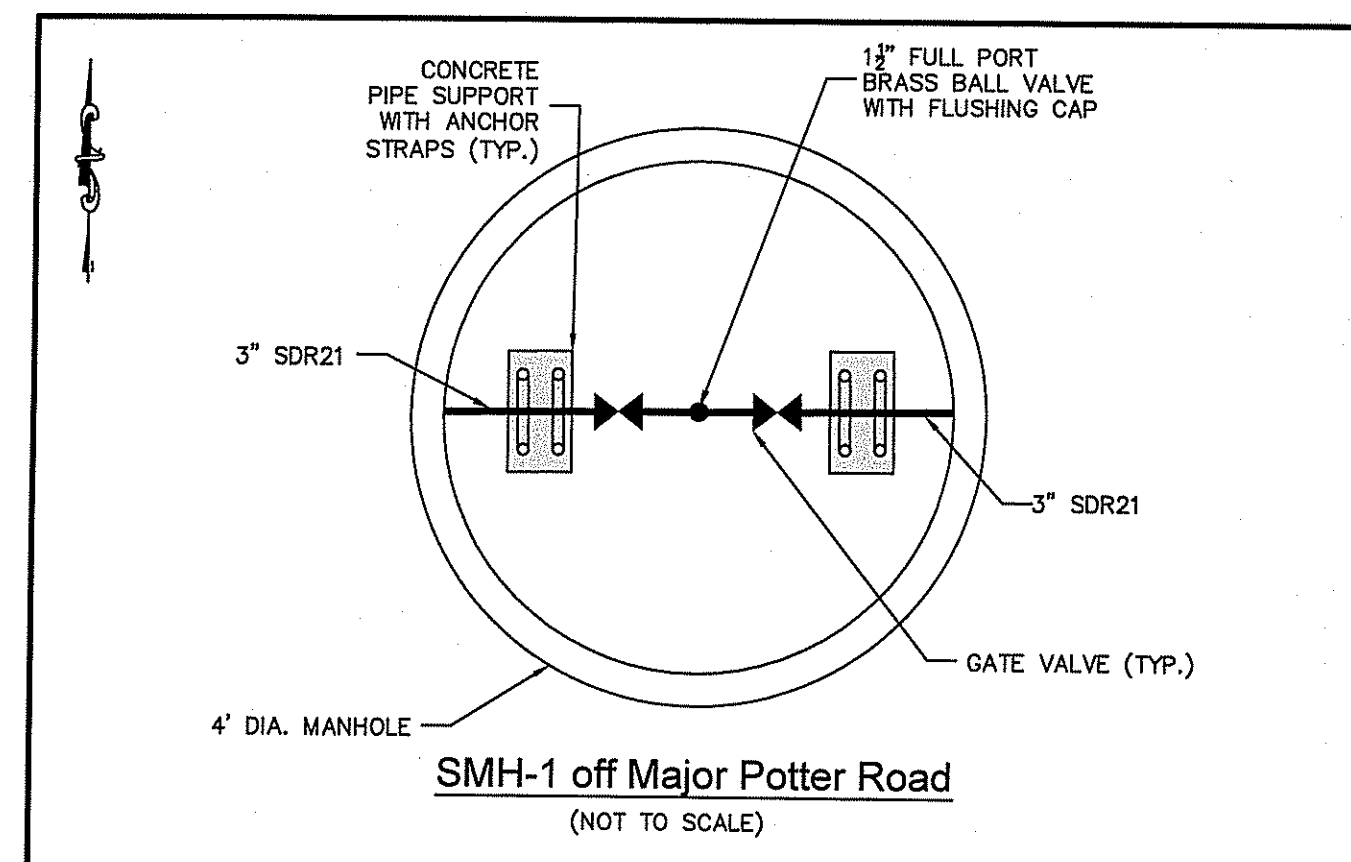
P&P Road B - Sta. 5+50 - 11+65
Stonebridge Crossing
Assessor's Plat 228 - Lots 97 & 98
Warwick, Rhode Island 02881

M&M Land Company
c/o Mr. Kevin Murphy, 370 Shawomet Avenue, Warwick RI 02889

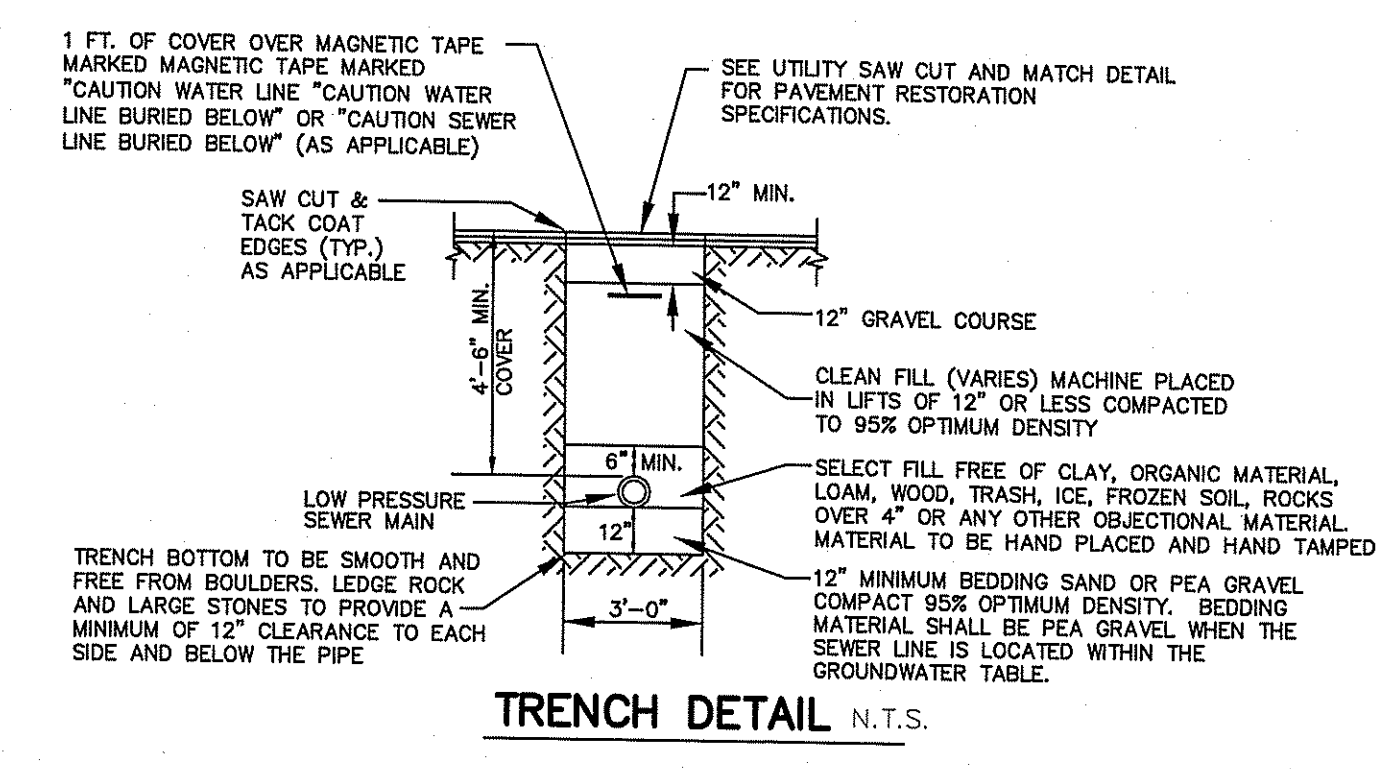
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SHEET 10 OF 18



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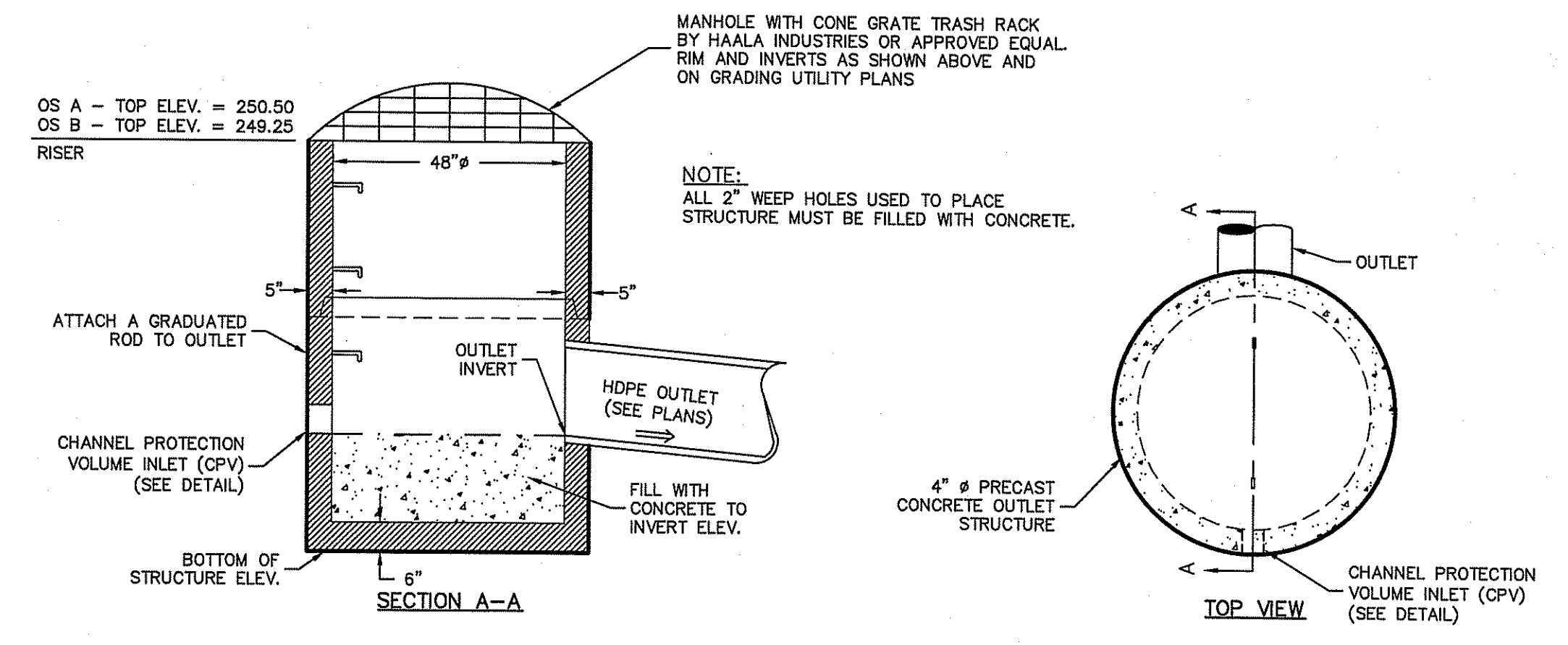
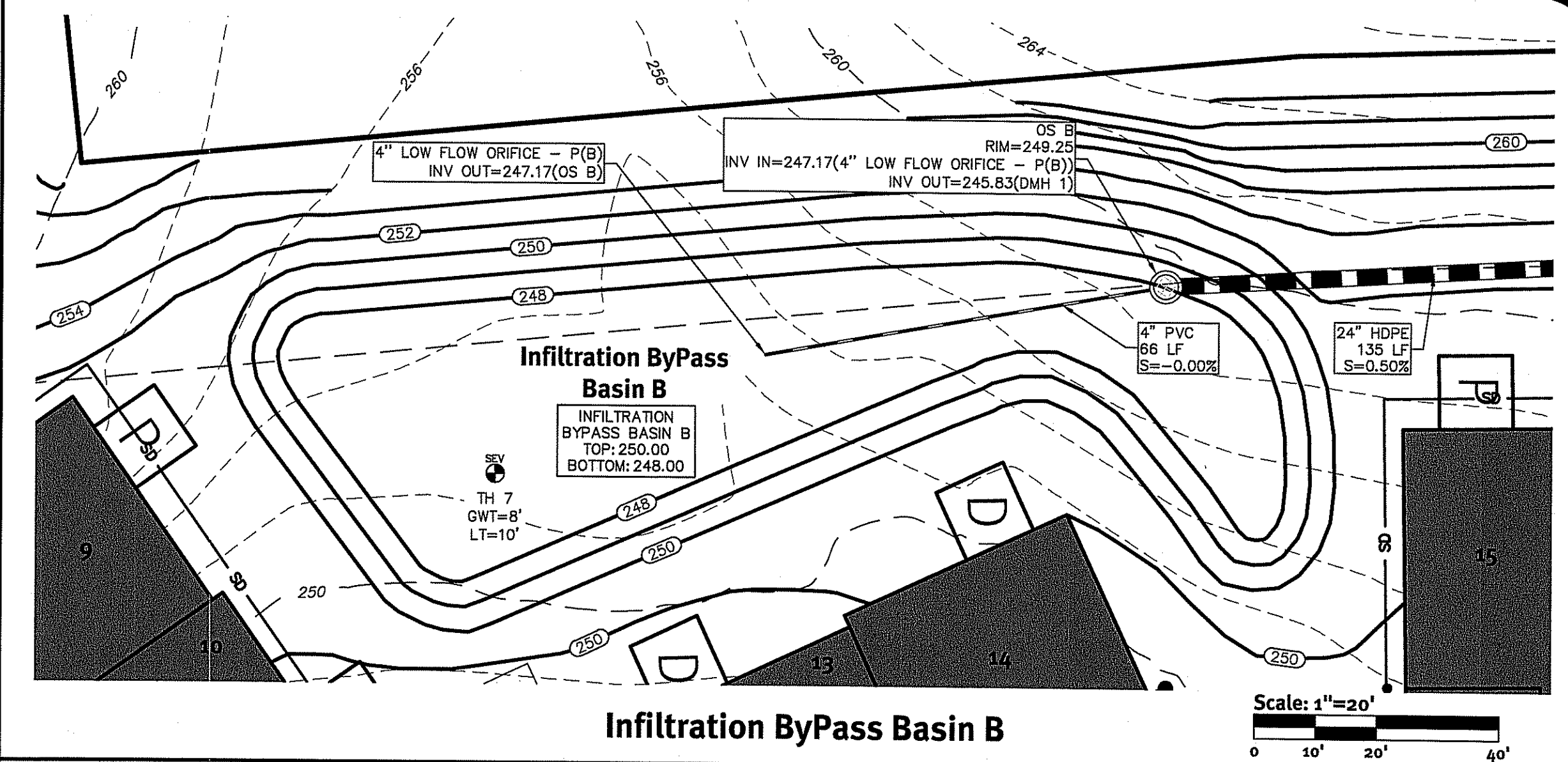
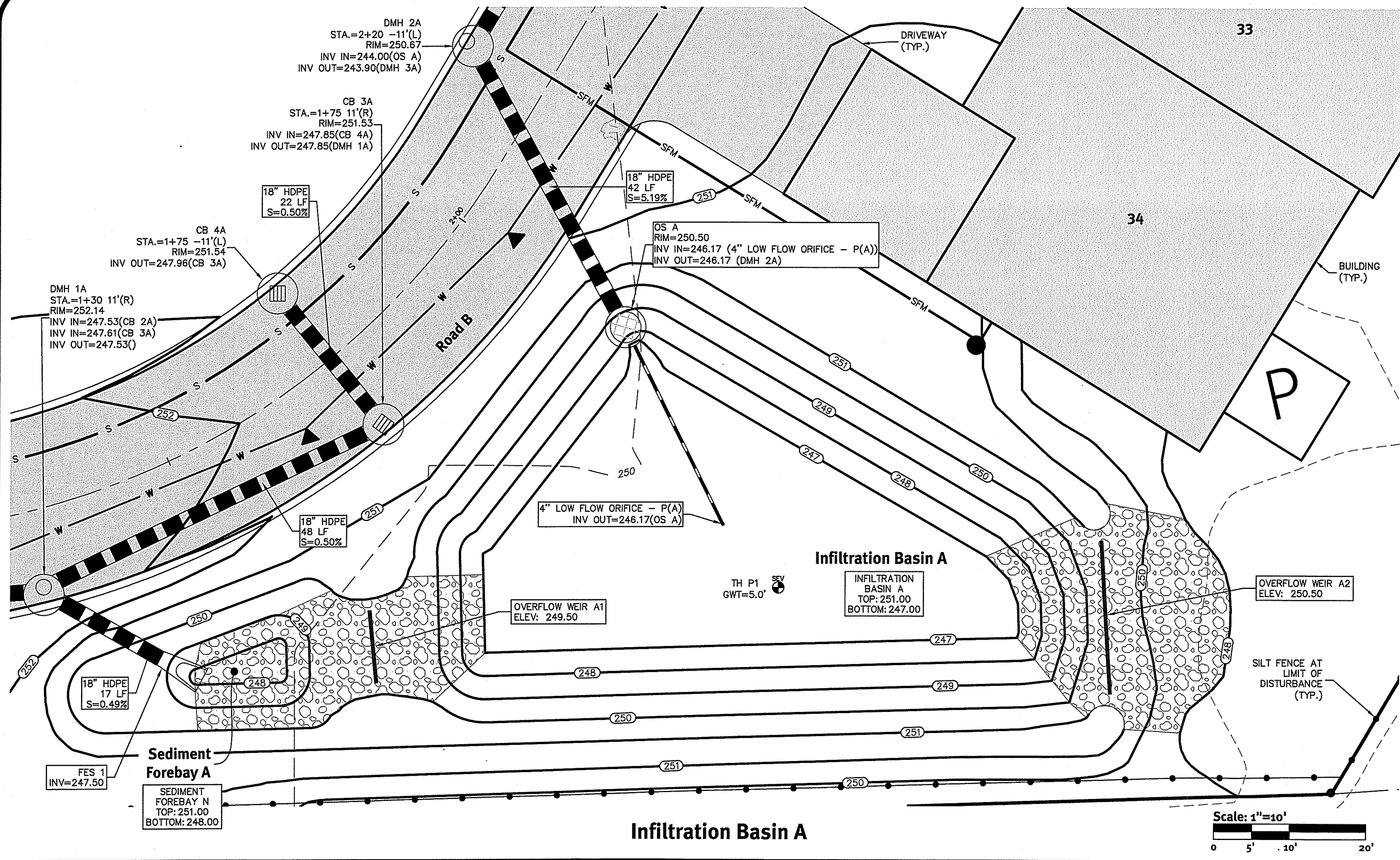


Kindly be advised that this
Permit is not equivalent to a
verification of the type or extent
of freshwater wetlands on site.



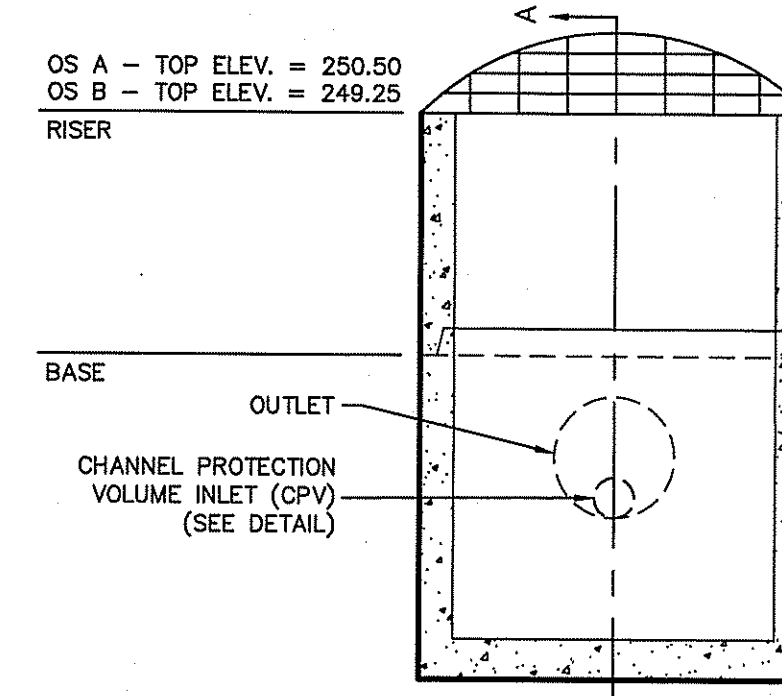
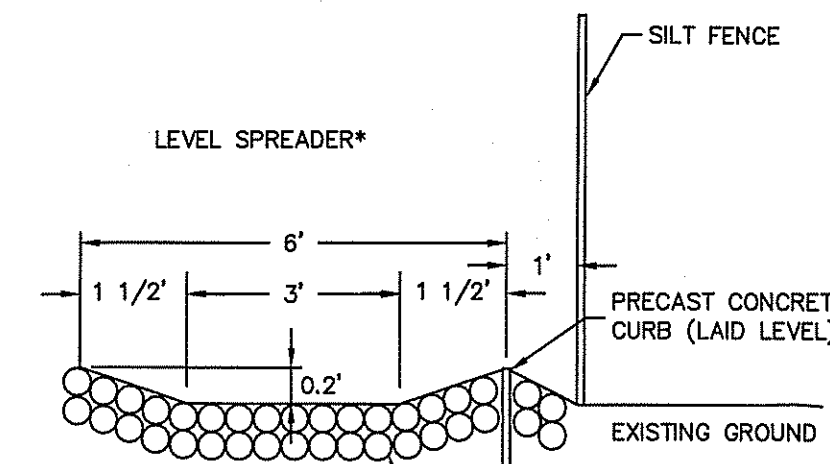
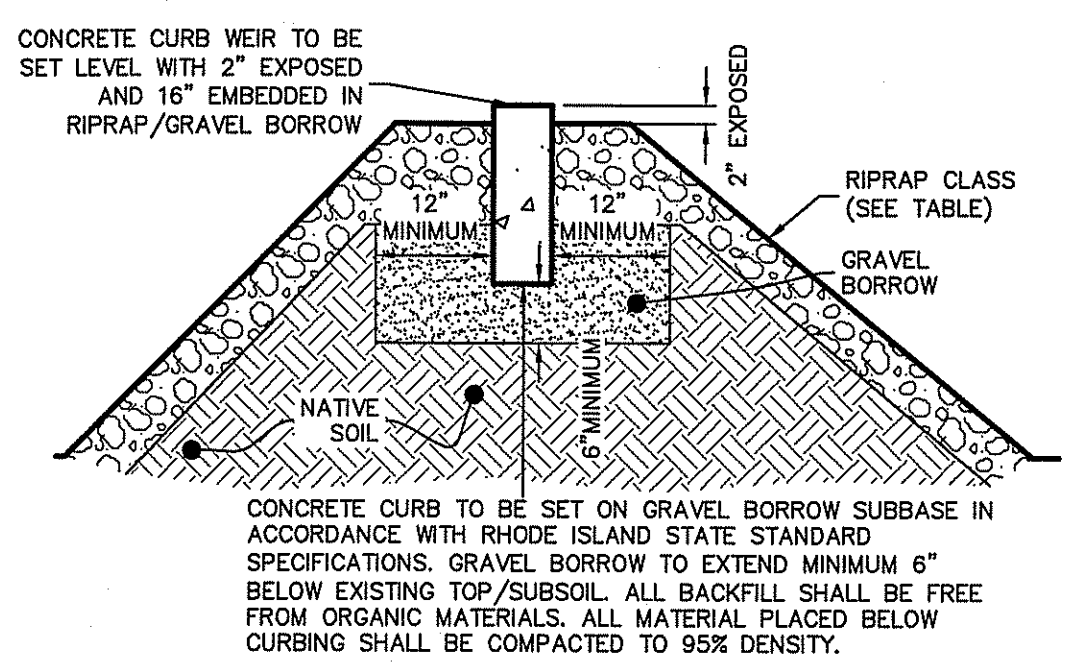
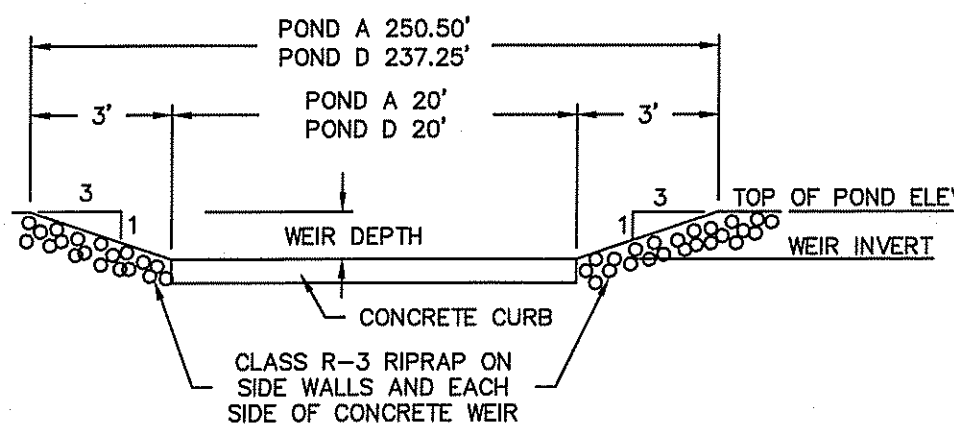
Scale: 1"=40'

No.	Date	Description	Design By: D.A.R.
1	09-19-2016	RIBA By-Submission	
2	09-14-2016	Warwick Sewer Authority Submission	
3	08-12-2016	RIBA By-Submission	
4	08-12-2016	RIBA By-Submission	



LOCATION	TOP OF POND ELEV.	WEIR INVERT	WEIR DEPTH
BASIN A	251.00	250.50	0.50
BASIN D	238.00	237.25	0.75

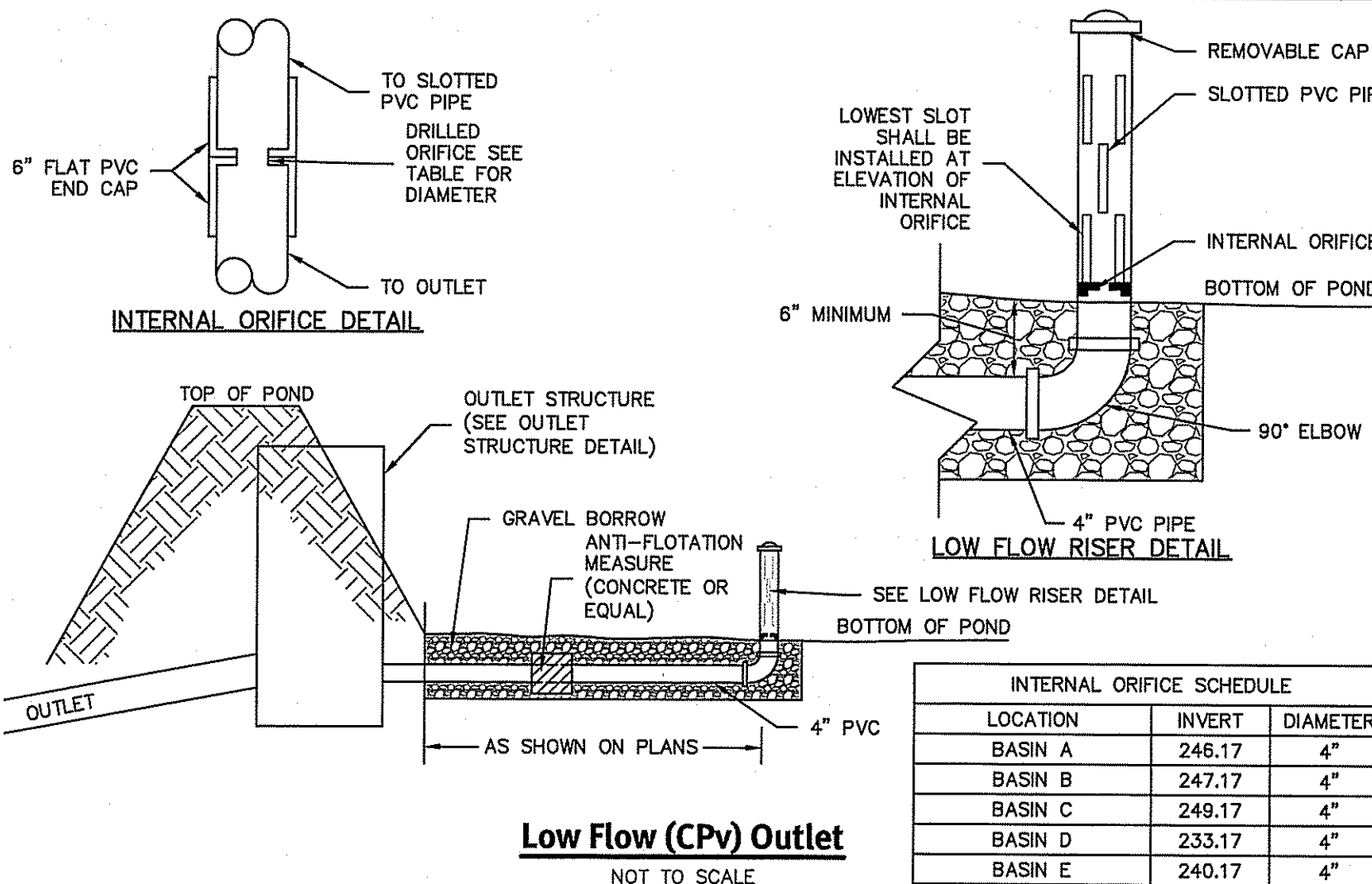
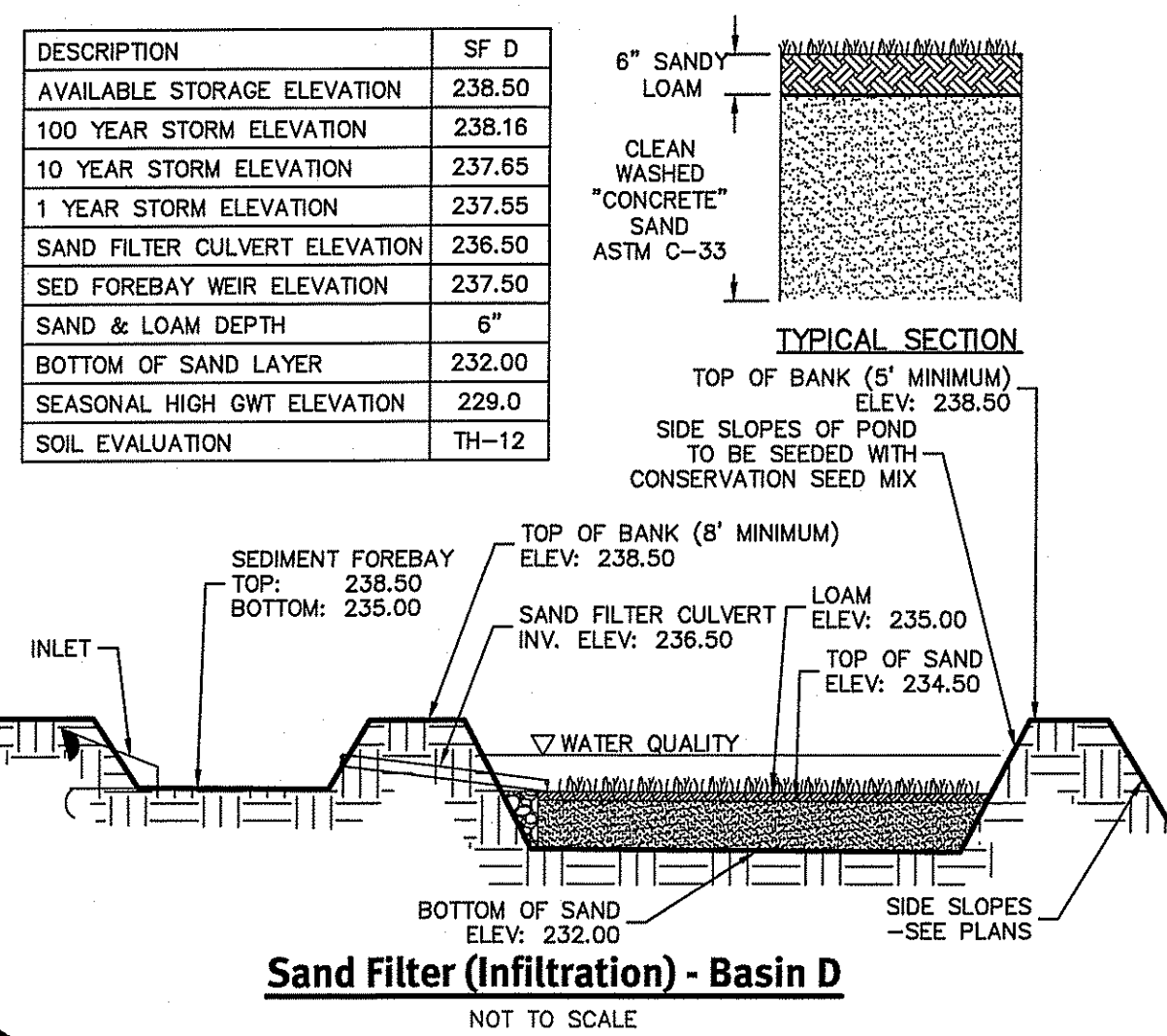
LOCATION	TOP OF POND ELEV.	WEIR INVERT	WEIR DEPTH	RIPRAP CLASS
SED A	251.00	249.50	1.50	R-3
BASIN A	251.00	250.50	0.50	R-3
SED D	238.00	237.50	0.50	R-3
BASIN D	238.00	237.25	0.75	R-3



HDPE Flared End Section

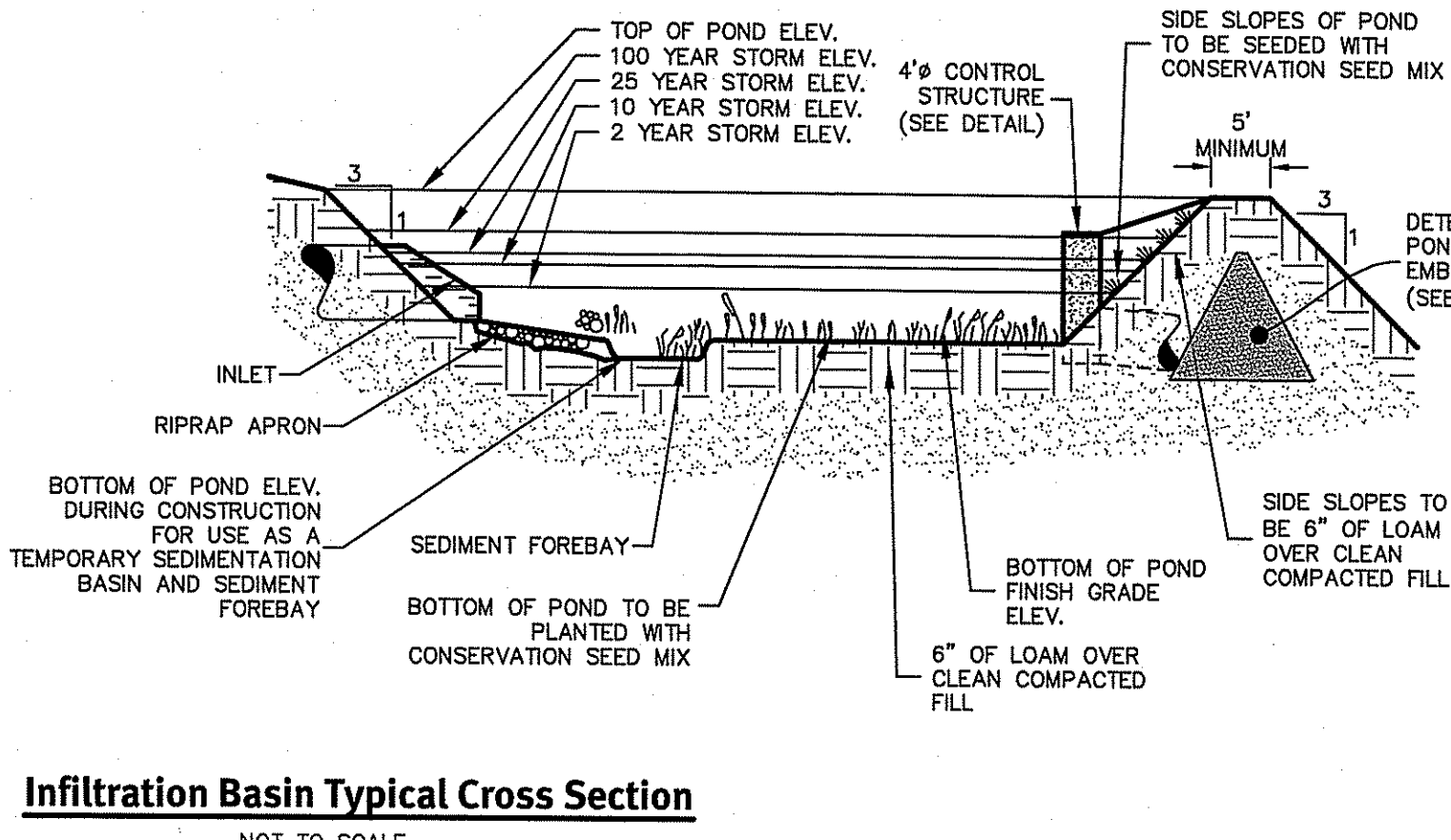
Scale: 1"=10'

PART #	PIPE SIZE	A	B (MAX)	H	L	W
1210NP	12 IN (300 MM)	6.50 IN (165 MM)	10 IN (254 MM)	6.50 IN (165 MM)	25 IN (635 MM)	29 IN (737 MM)
1510NP	15 IN (375 MM)	6.50 IN (165 MM)	10 IN (254 MM)	6.50 IN (165 MM)	25 IN (635 MM)	29 IN (737 MM)
1810 NP	18 IN (450 MM)	7.50 IN (191 MM)	15 IN (381 MM)	6.50 IN (165 MM)	32 IN (813 MM)	35 IN (889 MM)
2410NP	24 IN (600 MM)	7.50 IN (191 MM)	18 IN (457 MM)	6.50 IN (165 MM)	36 IN (914 MM)	45 IN (1143 MM)
3015NP	30 IN (750 MM)	7.50 IN (191 MM)	12 IN (305 MM)	8.60 IN (218 MM)	58 IN (1473 MM)	63 IN (1600 MM)
3615NP	36 IN (900 MM)	7.50 IN (191 MM)	25 IN (635 MM)	8.60 IN (218 MM)	58 IN (1473 MM)	63 IN (1600 MM)

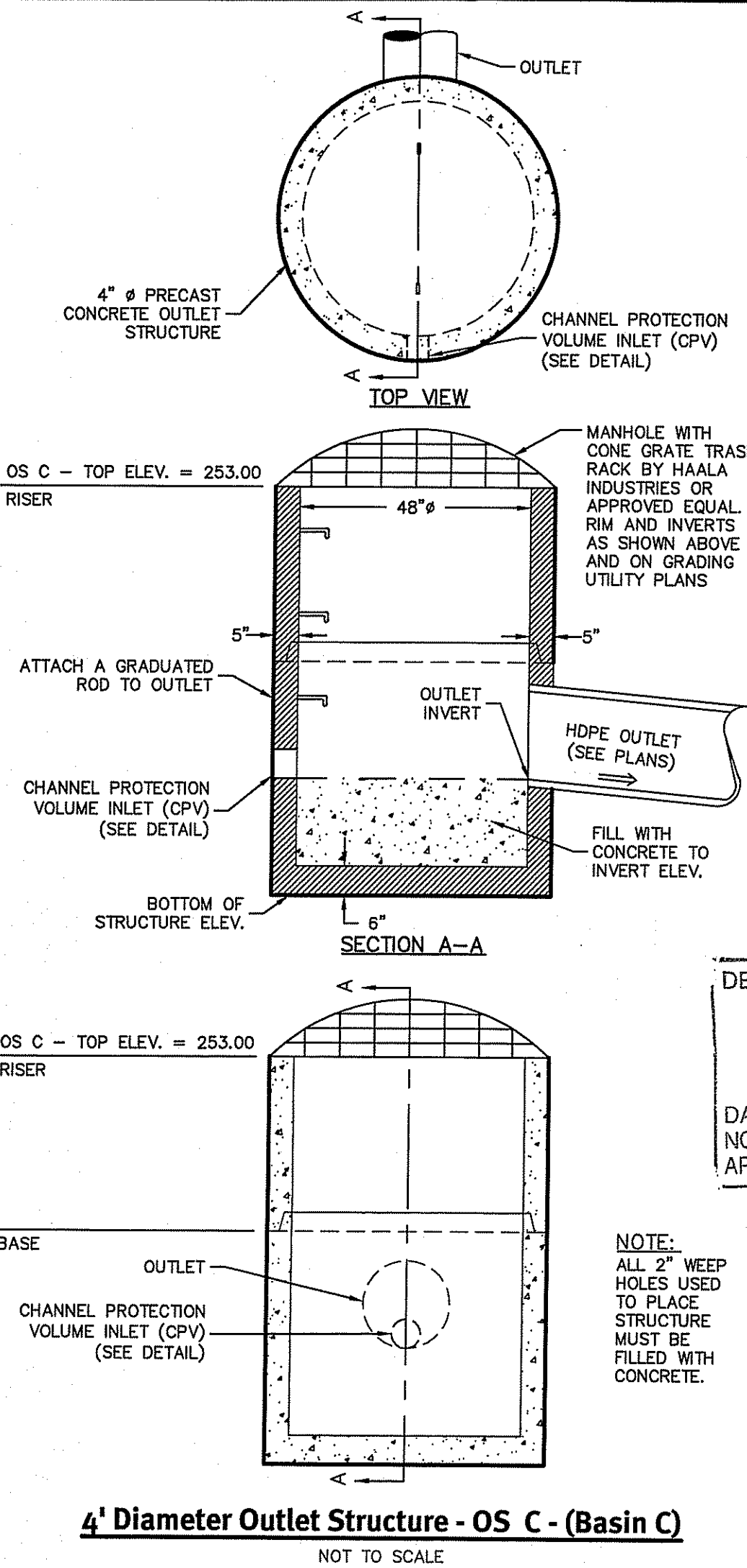
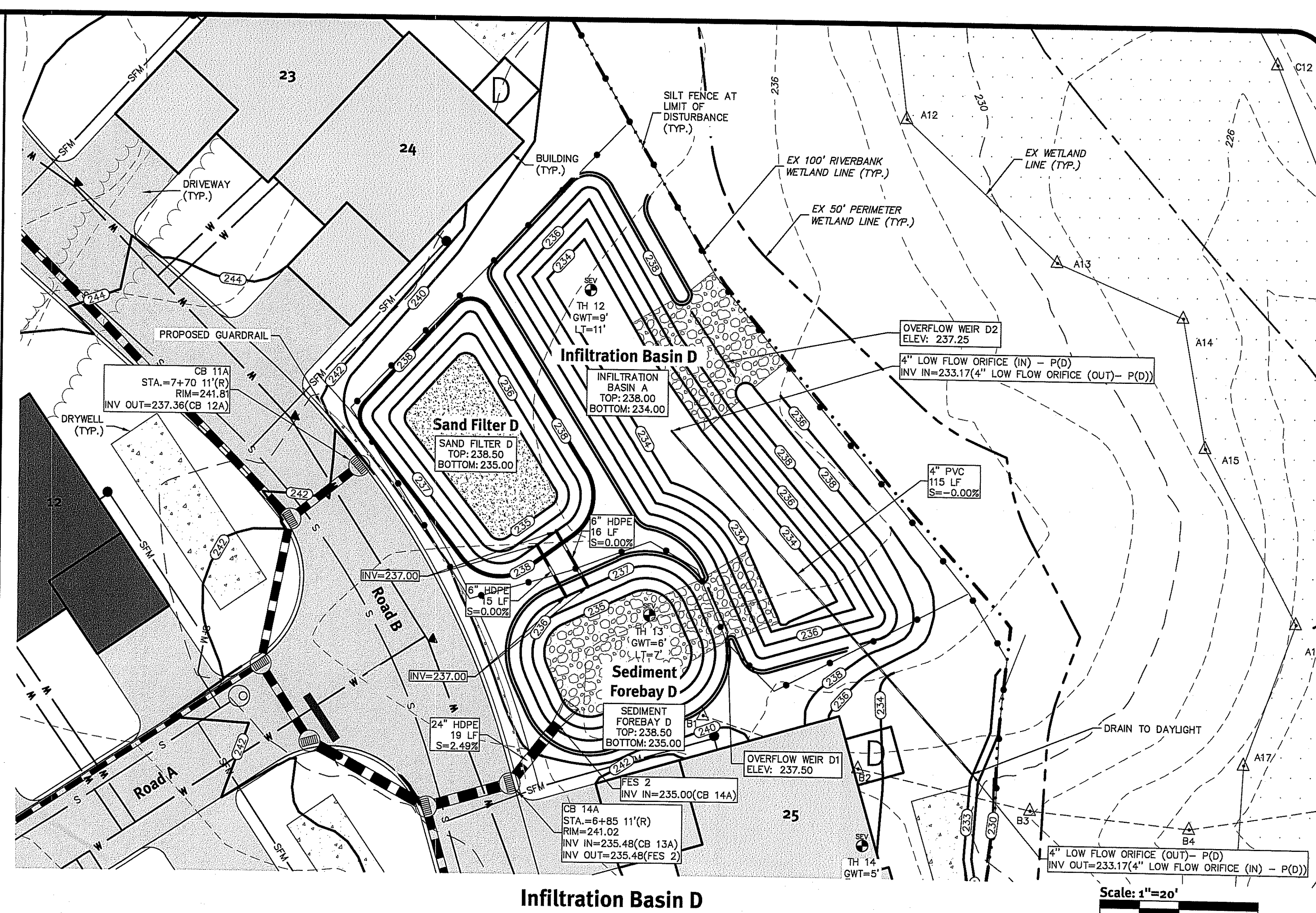
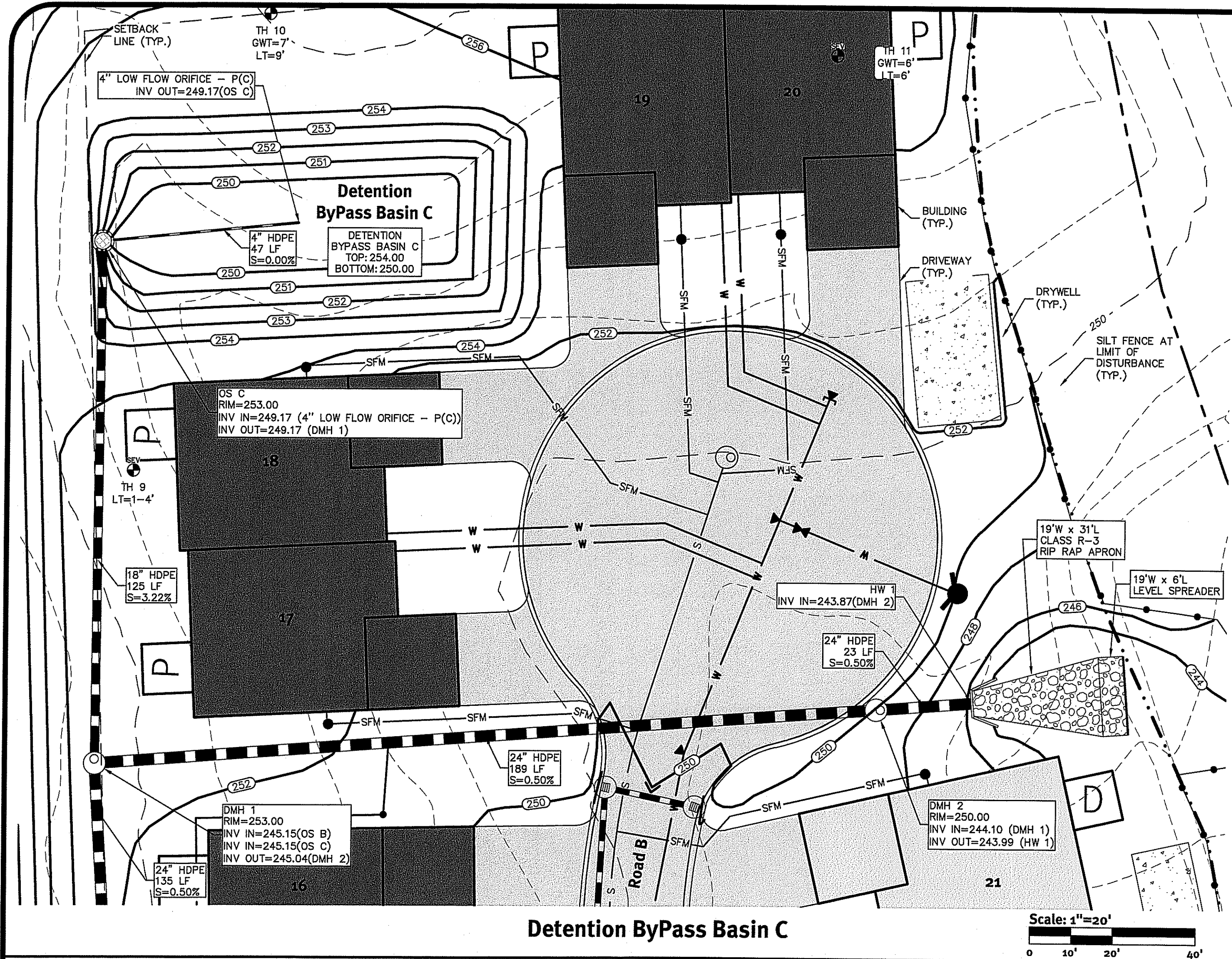


DESCRIPTION	BASIN A	BASIN B	BASIN D	BASIN E
TOP OF POND ELEVATION	251.00	250.00	238.00	242.50
BOTTOM OF POND	247.00	248.00	234.00	241.00
100 YEAR STORM ELEVATION	250.60	249.88	237.79	241.62
25 YEAR STORM ELEVATION	249.72	249.62	237.62	241.47
10 YEAR STORM ELEVATION	248.74	249.44	237.48	241.15
2 YEAR STORM ELEVATION	247.65	248.57	236.53	241.00
SEASONAL HIGH GWT ELEVATION	244.00	245.00	229.00	234.00
SOIL EVALUATION	TH-P1	TH-7	TH-12	TH-15
BOTTOM OF POND ELEVATION FOR SEDIMENT FOREBAY	247.50	-	235.00	-

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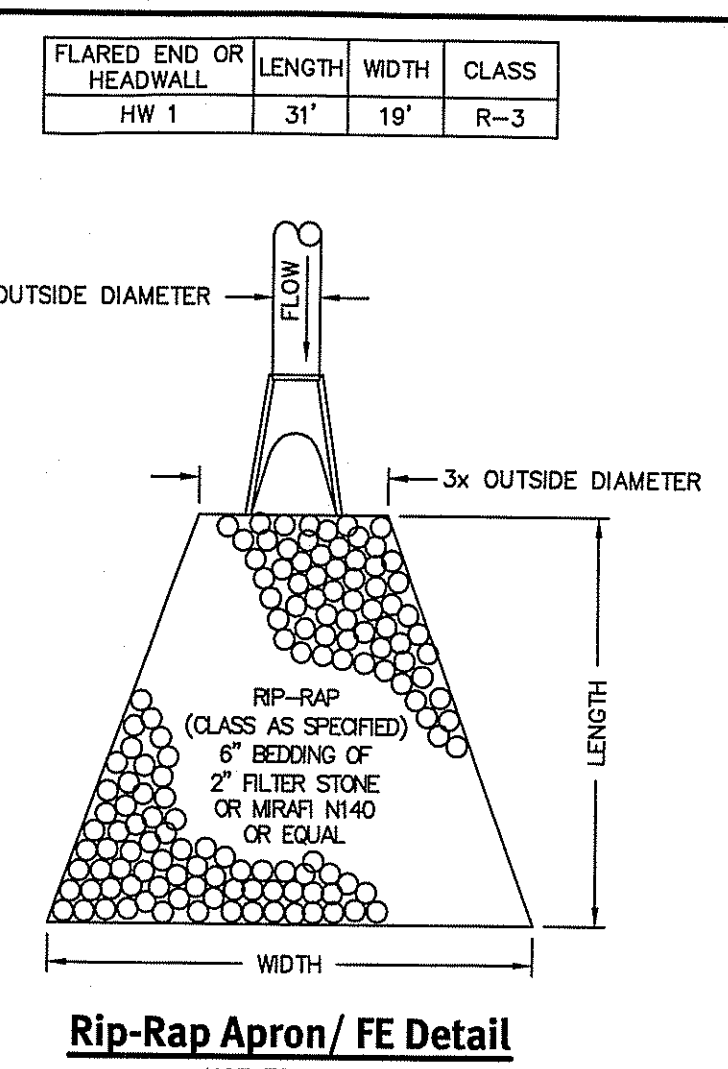
Detail - Drainage Basins A & B
Stonebridge Crossing
Assessor's Plat 228 - Lots 97 & 98
Warwick, Rhode Island 02881
M&M Land Company
c/o Mr. Kevin Murphy, 370 Shawomet Avenue, Warwick RI 02889
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Kindly be advised that this Permit is not equivalent to a verification of the type or extent of freshwater wetlands on site.

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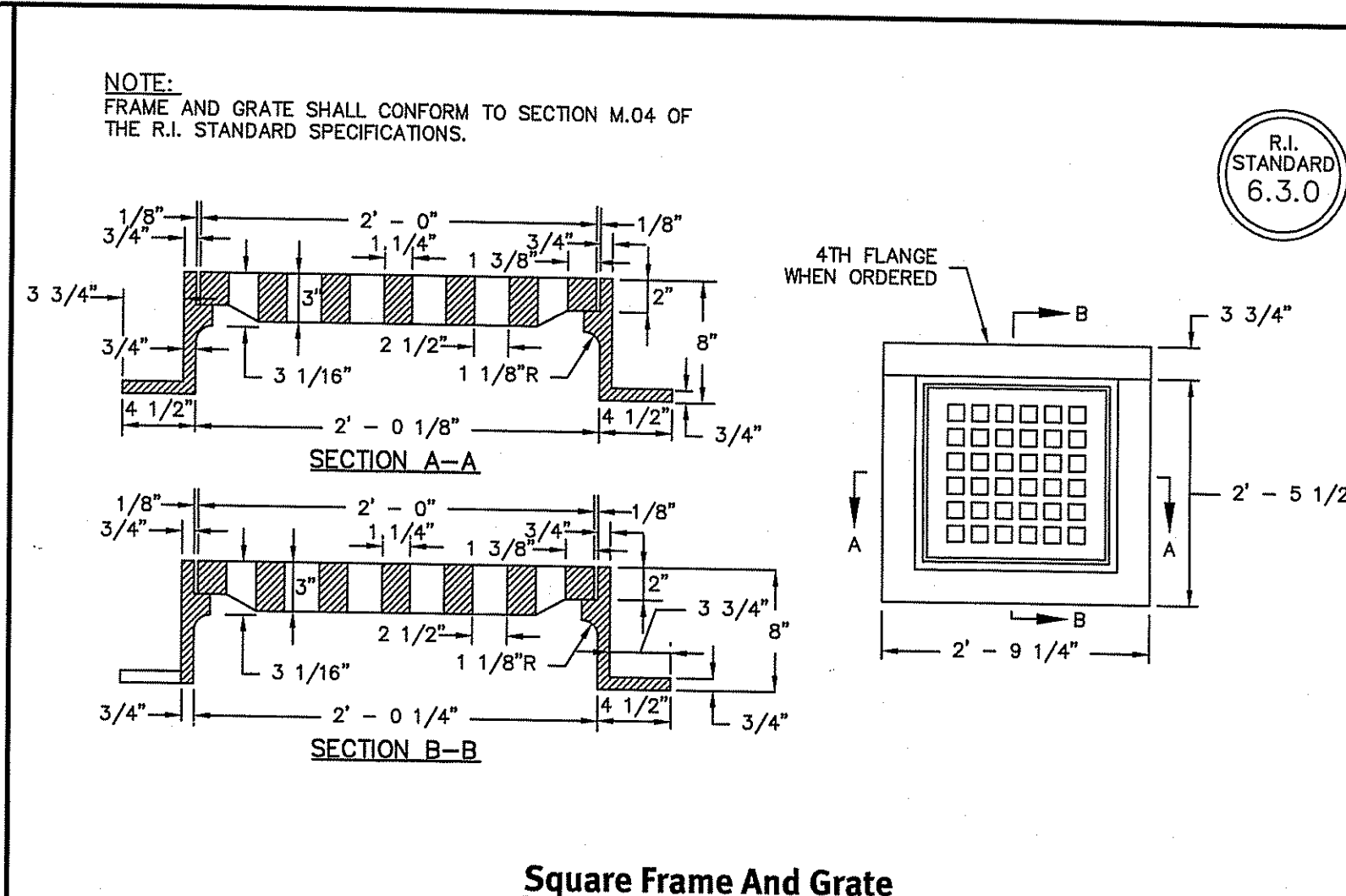
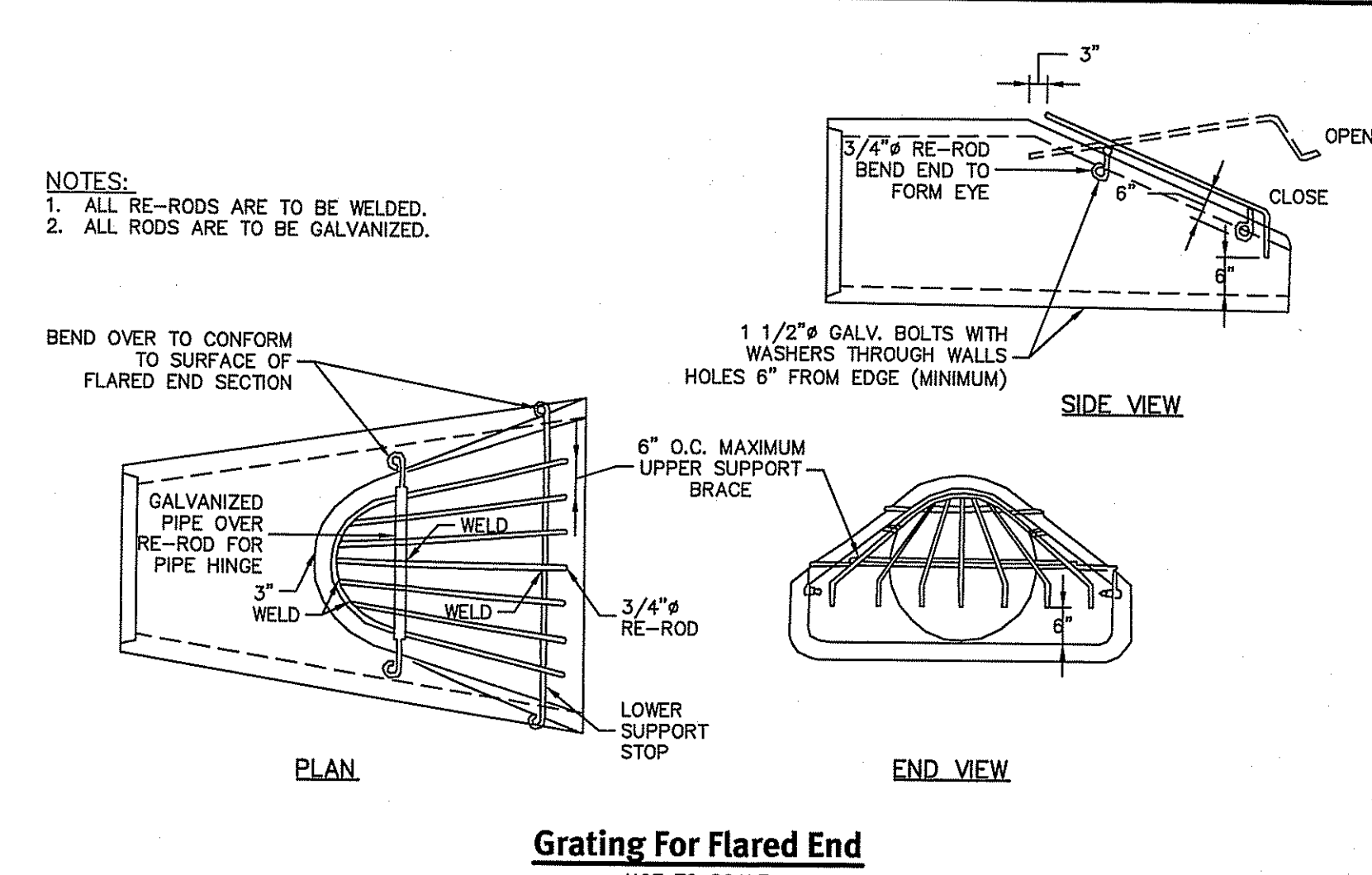
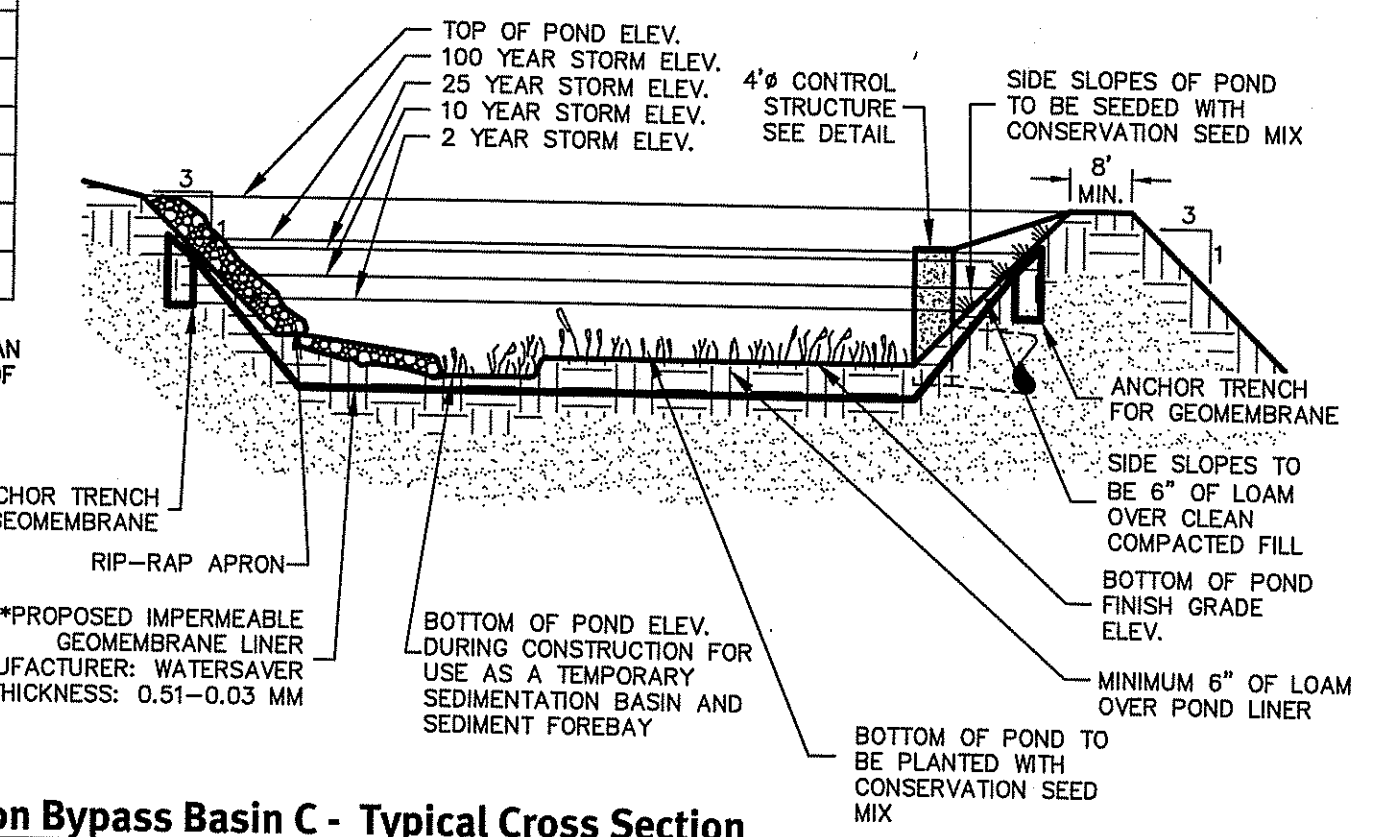
NOTE:
ALL 2" WEEP HOLES USED TO PLACE STRUCTURE MUST BE FILLED WITH CONCRETE.



DESCRIPTION	BASIN C
TOP OF POND ELEVATION	254.00
BOTTOM OF POND	250.00
100 YEAR STORM ELEVATION	253.15
25 YEAR STORM ELEVATION	252.08
10 YEAR STORM ELEVATION	251.10
2 YEAR STORM ELEVATION	250.14
SEASONAL HIGH GWT ELEVATION	250.00
SOIL EVALUATION	TH-10

*SEPARATION FROM GWT PROVIDED BY LINER. THE GEOMEMBRANE LINER MUST BE BURIED AN ADDITIONAL ONE FOOT BELOW THE BOTTOM OF THE POND FOR EVERY 1 FOOT THAT THE BOTTOM OF POND CUTS INTO THE SEASONAL HIGH GROUNDWATER TABLE

*NO ANTI-SEEP OR EARTHEN EMBANKMENT DETAIL PROVIDED. ALL DRAINAGE PIPES MUST BE INSTALLED THROUGH LINER WITH WATER SAVER FITTINGS



Detail - Drainage Basins C & D
Stonebridge Crossing

Assessor's Plat 228 - Lots 97 & 98
Warwick, Rhode Island 02886

Applicant
M&M Land Company

C/O Mr. Kevin Murphy, 370 Shawmut Avenue, Warwick, RI 02889

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SHEET 13

OF 18

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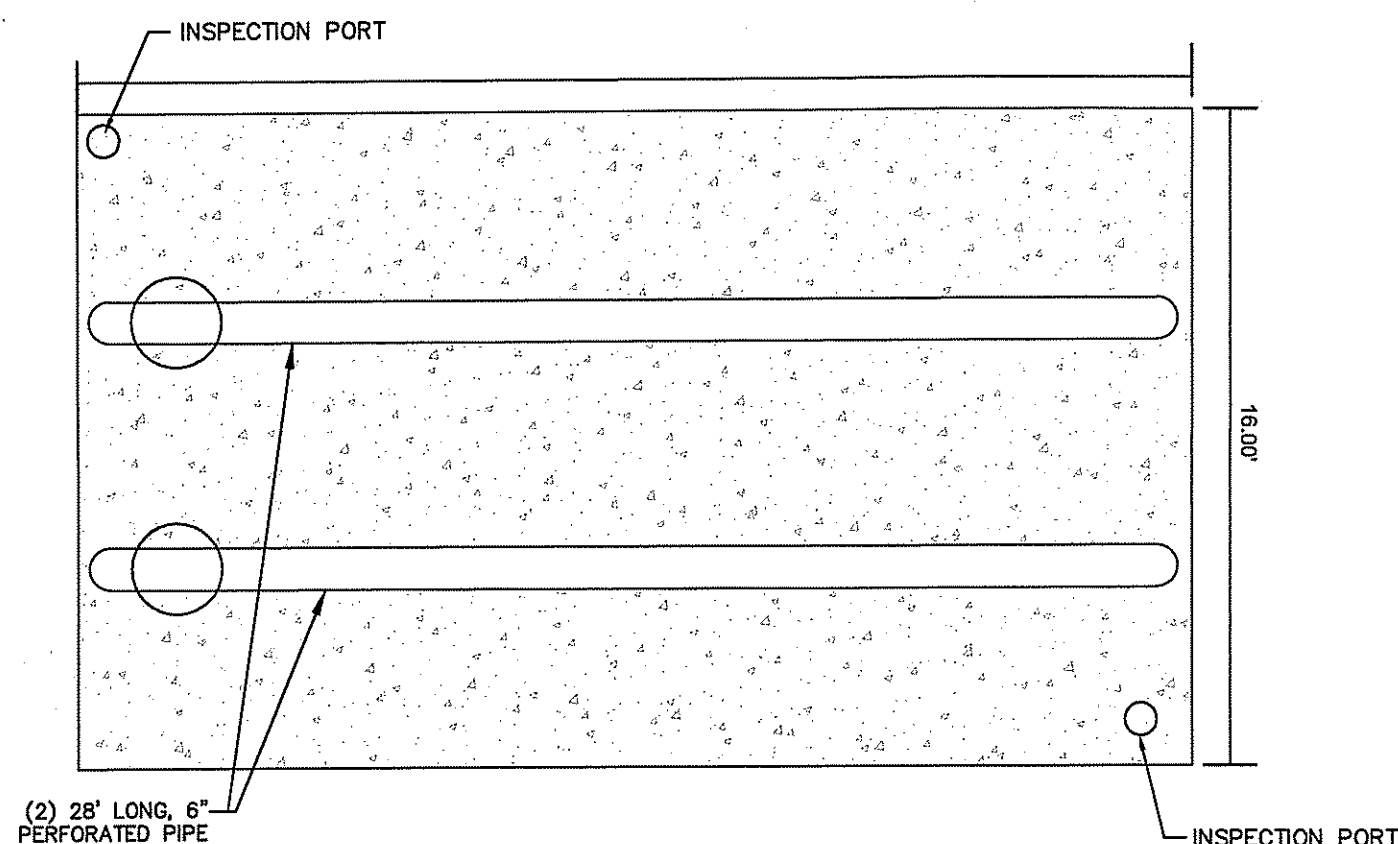
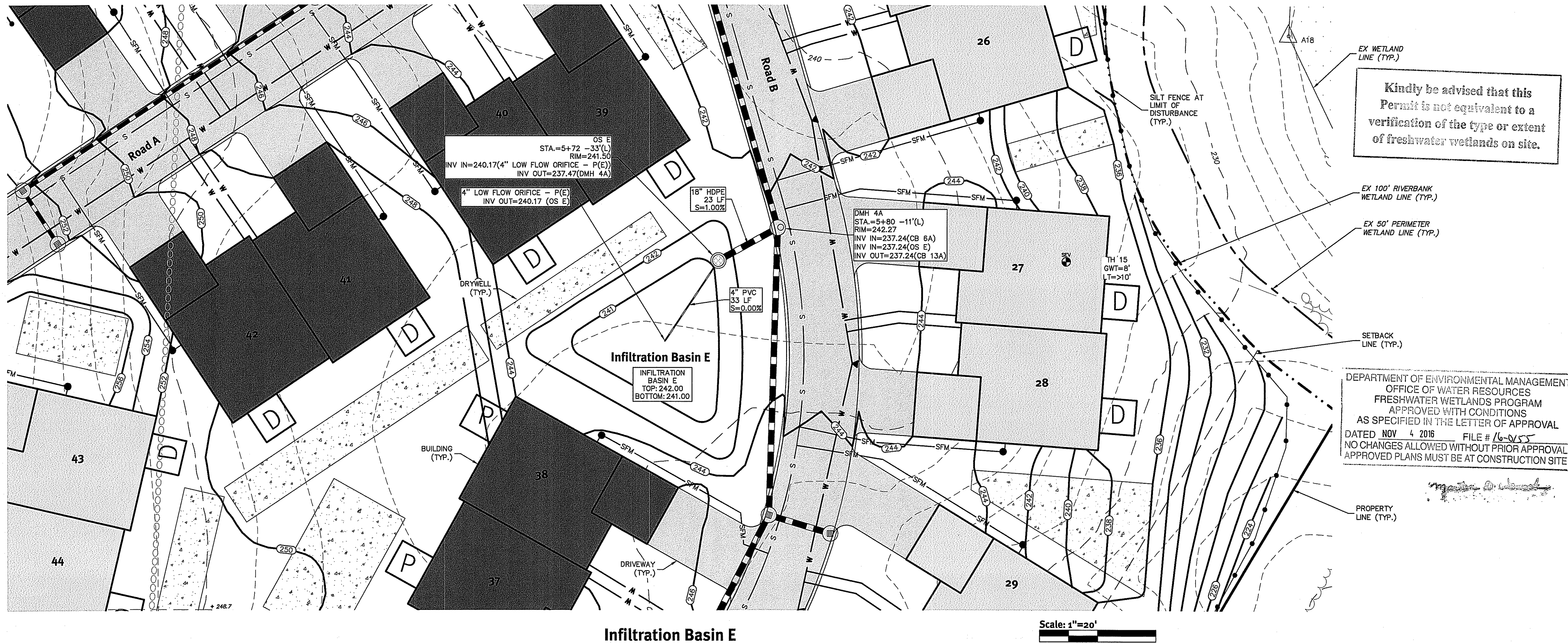
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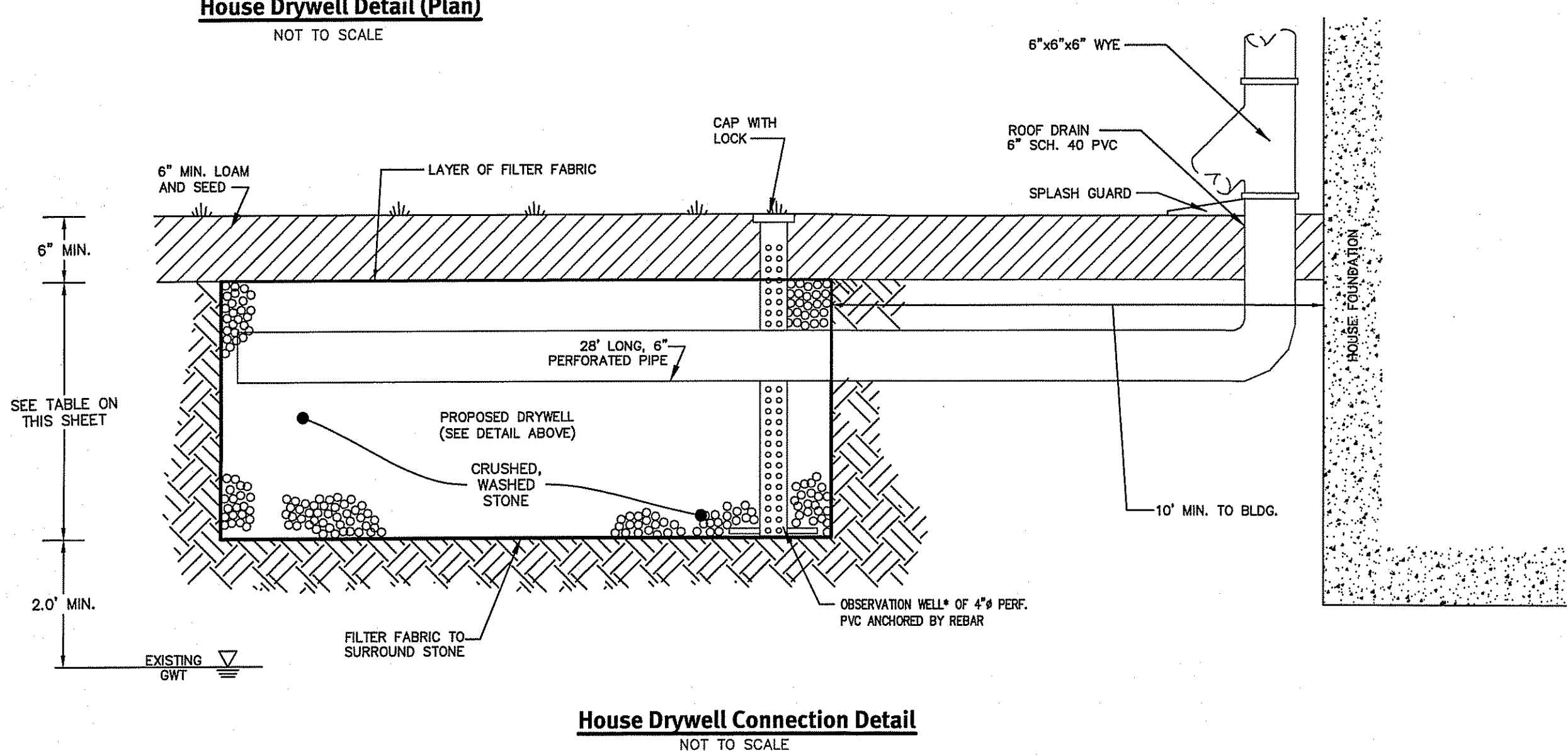
DAVID A. RUSSO
No. 14305
REGISTERED PROFESSIONAL ENGINEER
CIVIL

Environmental Management
SEP 20 2016
Office of Water Resources

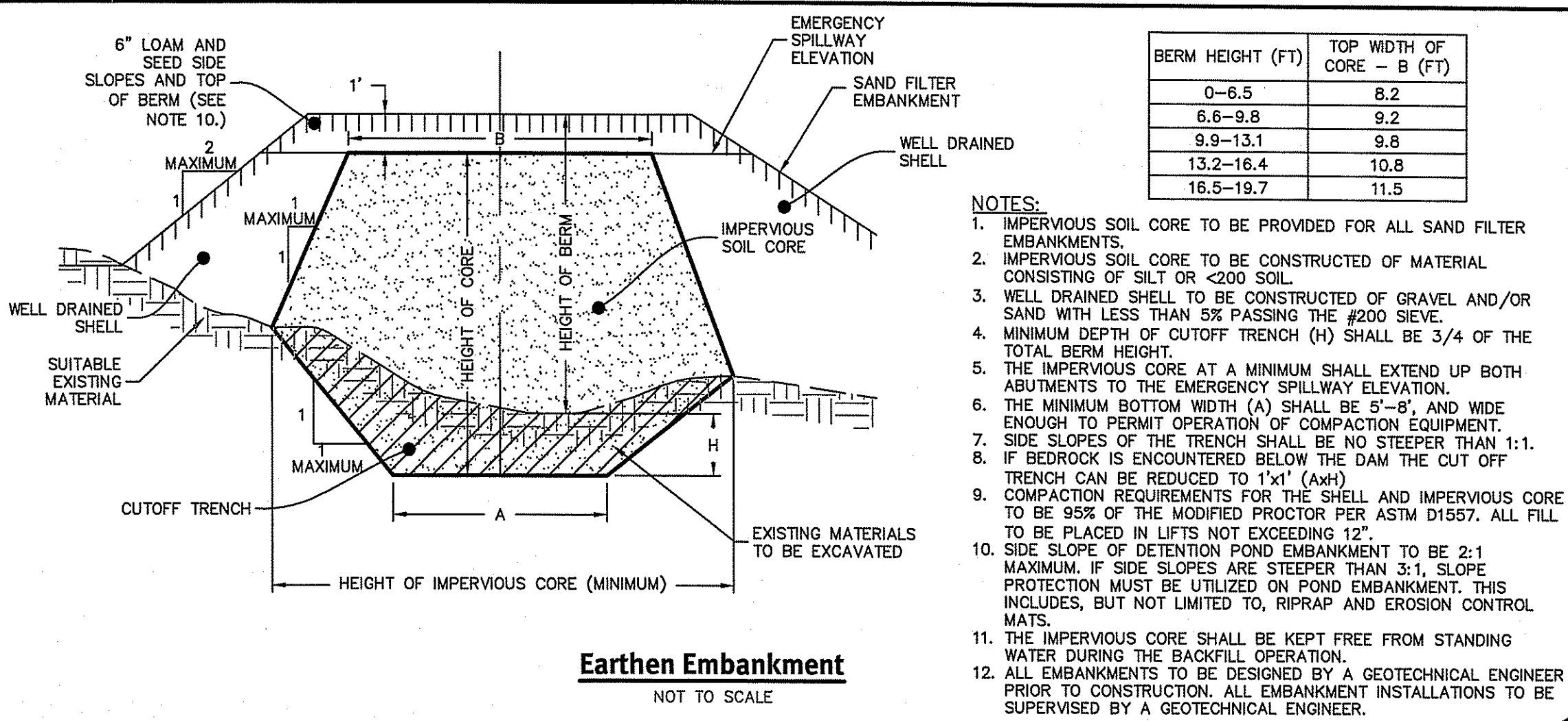
No.	Date	Description	Design By: D.A.R.
1	09-29-2016	RIP-RAP APRON	
2	09-29-2016	MANHOLE WITH CONE GRADE TRASH RACK BY HAALA INDUSTRIES OR APPROVED EQUAL RIM AND INVERTS AS SHOWN ABOVE AND ON GRADING UTILITY PLANS	
3	09-29-2016	ATTACH A GRADUATED ROD TO OUTLET	
4	09-29-2016	CHANNEL PROTECTION VOLUME INLET (CPV) (SEE DETAIL)	
5	09-29-2016	FILL WITH CONCRETE TO INVERT ELEV.	
6	09-29-2016	MANHOLE WITH CONE GRADE TRASH RACK BY HAALA INDUSTRIES OR APPROVED EQUAL RIM AND INVERTS AS SHOWN ABOVE AND ON GRADING UTILITY PLANS	
7	09-29-2016	ATTACH A GRADUATED ROD TO OUTLET	
8	09-29-2016	CHANNEL PROTECTION VOLUME INLET (CPV) (SEE DETAIL)	
9	09-29-2016	FILL WITH CONCRETE TO INVERT ELEV.	
10	09-29-2016	MANHOLE WITH CONE GRADE TRASH RACK BY HAALA INDUSTRIES OR APPROVED EQUAL RIM AND INVERTS AS SHOWN ABOVE AND ON GRADING UTILITY PLANS	
11	09-29-2016	ATTACH A GRADUATED ROD TO OUTLET	
12	09-29-2016	CHANNEL PROTECTION VOLUME INLET (CPV) (SEE DETAIL)	
13	09-29-2016	FILL WITH CONCRETE TO INVERT ELEV.	
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15	09-29-2016	ATTACH A GRADUATED ROD TO OUTLET	
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94	09-29-2016	MANHOLE WITH CONE GRADE TRASH RACK BY HAALA INDUSTRIES OR APPROVED EQUAL RIM AND INVERTS AS SHOWN ABOVE AND ON GRADING UTILITY PLANS	
95	09-29-2016	ATTACH A GRADUATED ROD TO OUTLET	
96	09-29-2016	CHANNEL PROTECTION VOLUME INLET (CPV) (SEE DETAIL)	
97	09-29-2016	FILL WITH CONCRETE TO INVERT ELEV.	
98	09-29-2016	MANHOLE WITH CONE GRADE TRASH RACK BY HAALA INDUSTRIES OR APPROVED EQUAL RIM AND INVERTS AS SHOWN ABOVE AND ON GRADING UTILITY PLANS	
99	09-29-2016	ATTACH A GRADUATED ROD TO OUTLET	
100	09-29-2016	CHANNEL PROTECTION VOLUME INLET (CPV) (SEE DETAIL)	



- CONSTRUCTION, MAINTENANCE, & INSPECTION NOTES:
1. ROOF LEADERS ARE TO BE TIED INTO PROPOSED DRYWELLS.
 2. DRYWELL AREA TO BE STAKED, MARKED, AND REMAIN UNDISTURBED PRIOR TO CONSTRUCTION. THERE IS TO BE NO CONSTRUCTION TRAFFIC ON DESIGNATED AREA PRIOR TO CONSTRUCTION.
 3. PLACE FILTER FABRIC ALONG THE BOTTOM AND SIDES OF TRENCH AND FILL WITH CRUSHED, WASHED STONE.
 4. OVERLAP FILTER FABRIC ON THE TOP OF THE FILTER STONE. BACK FILL WITH CLEAN FILL TO FINISH GRADE.
 5. (*) MONITORING WATER LEVELS WITHIN THE INSPECTION PORT AT VARIOUS TIME INTERVALS AFTER A RAINFALL EVENT WILL INDICATE THE EFFECTIVENESS OF THE SYSTEM. IF WATER IS STANDING IN DRYWELL SYSTEM 72 HOURS AFTER A STORM EVENT, SYSTEM FAILURE HAS OCCURRED AND WILL REQUIRE FLUSHING MAINTENANCE, REPAIR OR REPLACEMENT OF THE SYSTEM. THE OWNER WILL MAINTAIN THE DRAINAGE COMPONENTS.



1521-005 - MAJOR POTTER ROAD									
Drywell Name	UNIT	APPROXIMATE EXISTING GRADE	REFERENCE SOIL EVALUATION TESTHOLE	TESTHOLE GROUNDWATER DEPTH (FT)	MINIMUM DRYWELL BOTTOM ELEVATION (FT)	DRYWELL HEIGHT (FT)	DRYWELL LOCATION	MINIMUM DRYWELL FINISH GRADE	APPROXIMATE MINIMUM PROPOSED GRADE
A	1	258.00	TH-1	8.00	252.00	3.00	BACK	256.00	256.00
B	2	262.00	TH-2	8.00	256.00	3.00	SIDE	260.00	260.00
C	12	241.00	TH-7	8.00	235.00	3.00	SIDE	239.00	241.80
D	13-14	248.00	TH-7	8.00	242.00	3.00	SIDE	246.00	246.00
E	19	260.00	TH-11	6.00	256.00	3.00	BACK	260.00	260.00
F	20	252.00	TH-11	6.00	248.00	3.00	BACK	252.00	252.00
G	21	244.00	TH-11-12	8.00	238.00	3.00	FRONT	242.00	242.00
H	22	245.00	TH-8-11-12	7.00	240.00	3.00	SIDE	244.00	245.00
I	23-24	241.00	TH-11-12	8.00	235.00	4.00	BACK	240.00	241.00
J	25	232.00	TH-14	5.00	229.00	3.00	BACK	233.00	233.00
K	26	237.00	TH-14-15	7.00	232.00	3.00	SIDE	236.00	236.00
L	35	251.00	TH-3	8.00	245.00	3.00	SIDE	249.00	249.50
M	36	251.00	TH-3	8.00	245.00	3.00	BACK	249.00	250.00
N	37-38	247.00	TH-3	8.00	241.00	3.00	BACK	245.00	246.00
O	39	242.00	TH-7-14	6.00	238.00	3.00	SIDE	242.00	242.00
P	40	243.00	TH-14-15	7.00	238.00	3.00	BACK	242.00	242.00
Q	41-42	249.00	TH-3	8.00	242.00	3.00	BACK	247.00	247.00
R	43	258.00	TH-3	8.00	252.00	3.00	SIDE	256.00	256.00
S	44	252.00	TH-3	8.00	246.00	3.00	BACK	250.00	250.00
T	45-46	252.50	TH-3	8.00	246.50	3.00	BACK	250.50	250.50
U	47-48	252.00	TH-3	8.00	246.00	3.00	BACK	250.00	250.50
V	33-34	248.00	TH-18	2.00	248.00	3.00	BACK	252.00	252.00
W	31-32	244.00	TH-17	5.30	240.70	3.00	BACK	244.70	245.00
X	29-30	234.00	TH-16	6.00	230.00	3.00	BACK	234.00	234.00
Y	27-28	236.00	TH-15-16	7.00	231.00	3.00	SIDE	235.00	236.00



Detail - Drainage Basin E

Stonebridge Crossing

Assessor's Plat 228 - Lots 97 & 98

Warwick, Rhode Island 02818

Applicant

M&M Land Company

c/o Mr. Kevin Murphy, 370 Shawmut Avenue, Warwick RI 02889

C6.2

SHEET 14 OF 18

DAVID A. RUSSO

No. 1355

REGISTERED PROFESSIONAL ENGINEER CIVIL

Environmental Management

SEP 29 2016

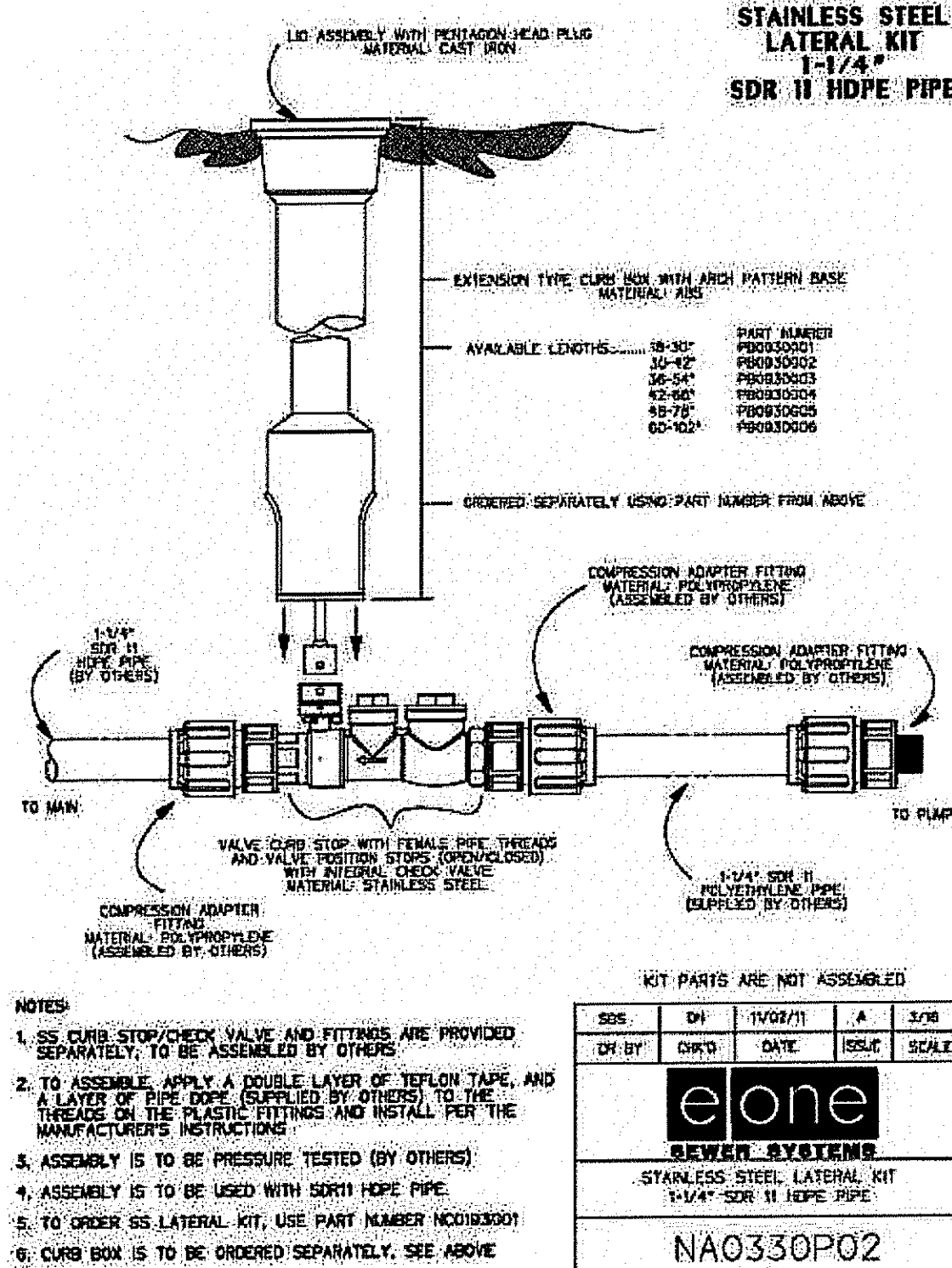
Office of Water Resources

DiPrete Engineering

Two Stafford Court Cranston, RI 02920

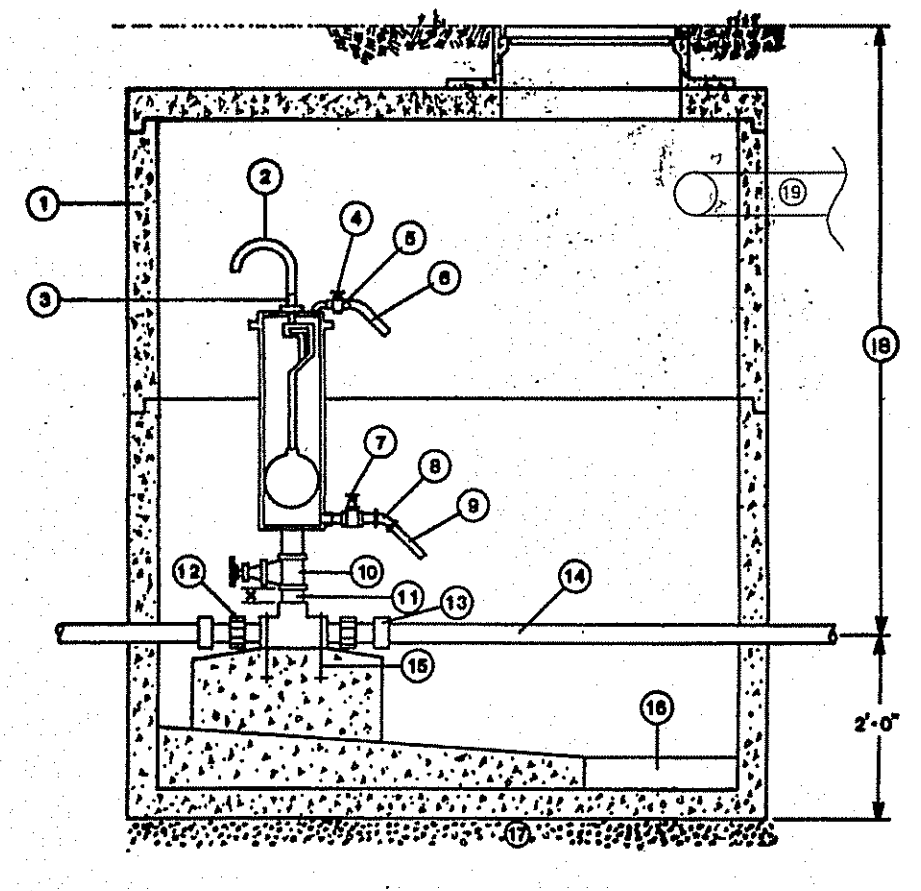
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SEWER FORCE MAIN CONNECTION

N.T.S.

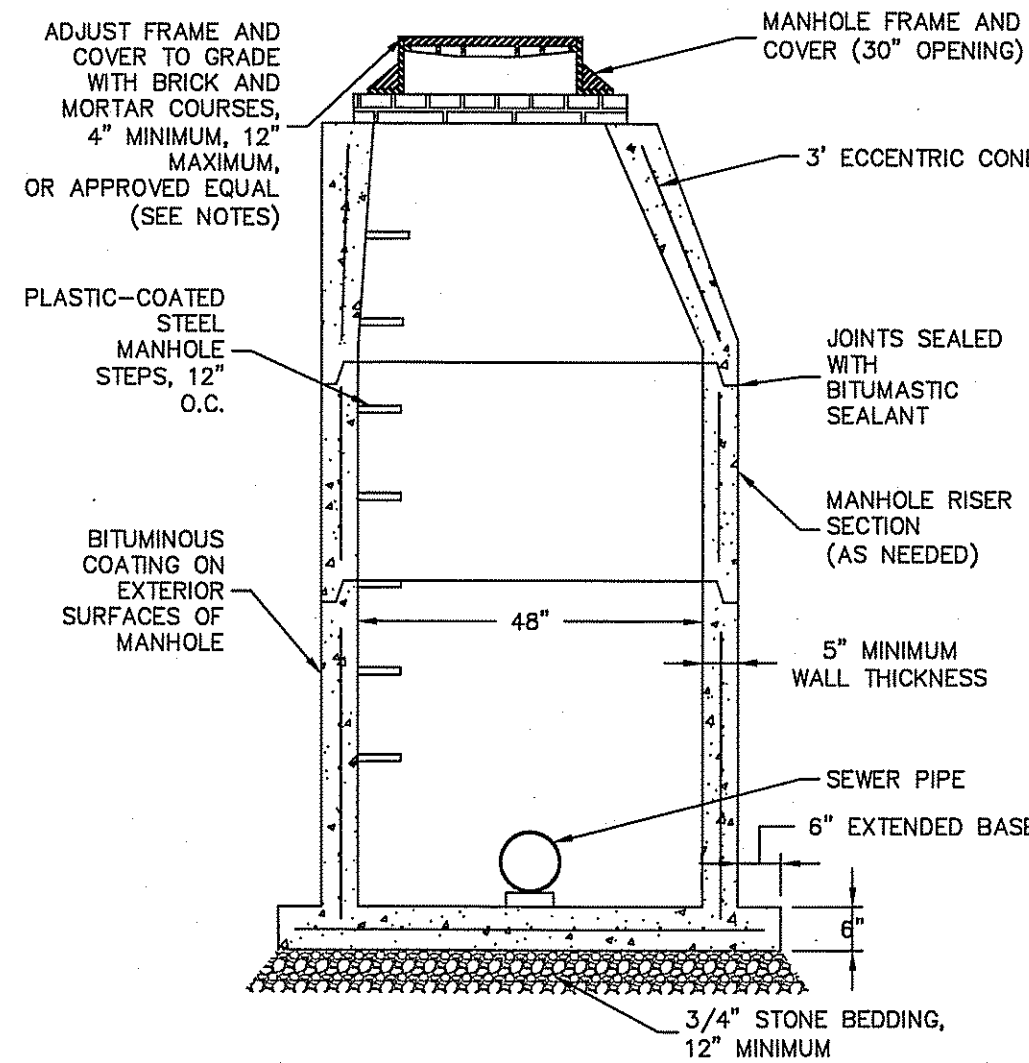


1. MANHOLE - typical 4'-0" @ precast.
2. AIR RELEASE - with copper vent.
3. BRASS COUPLING - copper to L.P.T.
4. VALVE - 1/2" shut off.
5. COUPLING - quick disconnect.
6. HOSE - back flushing.
7. VALVE - 1" shut off.
8. 40' FITTING.
9. 1" 12' 6" long.
10. VALVE - shut off.
11. NIPPLE - 2" minimum clearance (x).
12. UNION.
13. ADAPTER - PVC to brass.
14. PVC PRESSURE SEWER LINE.
15. SERVICE CLAMP OR TEE - with threaded branch.
16. RIMP RAIN.
17. BEDDING MATERIAL - 12" minimum, crushed stone.
18. BURIAL - protect from flooding.
19. 4" DIA. AIR RELEASE VENT PIPE.

AUTOMATIC AIR-RELEASE VALVE DETAIL

NOT TO SCALE

- NOTES:
1. MANHOLES SHALL MEET STANDARDS OUTLINED IN THE CITY OF CRANSTON'S ANNEX A - DESIGN OF SEWER
 2. MANHOLE SHALL BE MANUFACTURED IN ACCORDANCE WITH ASTM-C478.
 3. MANHOLES SHALL BE VACUUM TESTED PRIOR TO ACCEPTANCE, IN ACCORDANCE WITH THE SEWER AUTHORITY SANITARY RULES AND REGULATIONS. UNDER NO CIRCUMSTANCES WILL EXFILTRATION TESTING BE ACCEPTED.
 4. BOLTED AND GASKETED COVERS SHALL BE USED ON MANHOLES IN OFF-ROAD AREAS. COVERS SHALL MEET CITY OF CRANSTON STANDARDS.
 5. TAPPING OF MANHOLES MUST BE AUTHORIZED AND INSPECTED BY THE SEWER AUTHORITY. THE ONLY APPROVED METHOD FOR TAPPING MANHOLES SHALL BE BY CORE-DRILLING THE MANHOLE AND INSTALLING A "KOR-N-SEAL" BOOT.
 6. PRECAST CONCRETE GRADE RINGS, HDPE GRADE RINGS, OR OTHER RIM ADJUSTMENT PRODUCTS MAY BE USED IN LIEU OF BRICK AND MORTAR WITH THE PERMISSION OF THE SEWER AUTHORITY.



NOT TO SCALE

Sewer Design Notes:

1. PROPOSED E-ONE PIPES TO BE A MINIMUM 3" SDR-21 HDPE PIPE. PROPOSED SEWER FORCE MAIN IS TO BE BETWEEN A 1.5"-3" SDR-21 HDPE PIPE. IN LOCATION OF THE DIRECTIONAL DRILLING, THE 3" SEWER FORCE MAIN SHALL BE SLEEVED IN A 6" CONDUIT PIPE.
2. PROPERTY BOUNDARY LINE TAKEN FROM SURVEY PERFORMED BY DIPRETE ENGINEERING.
3. THE TOWN OF WEST WARWICK SEWER AUTHORITY REQUIRES INSPECTION AND APPROVAL OF THE INSTALLATION OF THE SEWER FORCE MAIN SYSTEM CONSTRUCTION. THE CONTRACTOR SHALL PROVIDE A 48 HOUR NOTIFICATION TO THE TOWN TO SCHEDULE INSPECTIONS.
4. THE CONTRACTOR IS TO SUBMIT "AS-BUILT" RECORD MEASUREMENTS & PHOTOGRAPHS WEEKLY DURING CONSTRUCTION TO THE DESIGN ENGINEER. AS-BUILT INFORMATION PERTAINING TO THE HORIZONTAL DIRECTIONAL DRILLING, REAMER AND THE INSTALLED PIPE LOCATION SHALL BE PROVIDED BY THE HORIZONTAL DIRECTIONAL DRILLING CONTRACTOR. THE SEWER FORCE MAIN SYSTEM AND ALL COMPONENTS SHALL BE CERTIFIED AS TO THEIR LOCATION AND "AS-BUILT" BY A PROFESSIONAL LAND SURVEYOR.
5. THE CONTRACTOR IS TO PROVIDE CERTIFIED TESTING (PRESSURE OR VACUUM) OF ALL PIPING, MANHOLES, AND TANKS ASSOCIATED WITH THE SEWER FORCE MAIN. THIS TESTING IS TO BE WITNESSED BY THE TOWN OF WEST WARWICK SEWER AUTHORITY FOR APPROVAL.
6. THE CONTRACTOR IS TO NOTIFY DIG SAFE PRIOR TO THE START OF CONSTRUCTION. ALL EXISTING UTILITIES SHOWN ARE SCHEMATIC IN NATURE. ANY PERSON/CONTRACTOR WORKING IN THE VICINITY OF THE SUBSURFACE UTILITIES DEPICTED ON THIS PLAN IS RESPONSIBLE FOR INDEPENDENTLY VERIFYING THE SUBSURFACE CONDITIONS PRIOR TO EXCAVATION, AND SHOULD NOT RELY ON THIS PLAN ALONE.
7. THE CONTRACTOR SHALL VERIFY THE LOCATION OF ALL EXISTING UTILITIES, BOTH UNDERGROUND AND OVERHEAD, BEFORE ANY WORK BEGINS IN ACCORDANCE WITH THE "DIG SAFE PROGRAM LAW" ENACTED BY THE RI LEGISLATURE AND BY CONTACTING THE INDIVIDUAL UTILITY COMPANIES. EXCAVATION SHALL BE IN ACCORDANCE WITH ALL STATUTES, ORDINANCES, RULES AND REGULATIONS OF THE STATE OR FEDERAL AGENCIES THAT MAY BE APPLICABLE. ANY DAMAGE TO EXISTING UTILITIES SHALL BE THE CONTRACTOR'S RESPONSIBILITY TO REPAIR.
8. CONTRACTOR TO NOTIFY DESIGN ENGINEER WITH ANY DISCREPANCIES WITHIN 30 DAYS OF AUTHORIZATION TO PROCEED WITH CONSTRUCTION.
9. THE CONTRACTOR SHALL OBTAIN ALL NECESSARY LOCAL PERMITS PRIOR TO CONSTRUCTION.
10. ANY DAMAGE TO PRIVATE PROPERTY CAUSED BY THE CONTRACTOR SHALL BE REPAIRED BY THE CONTRACTOR AT NO ADDITIONAL COST TO THE OWNER.
11. CONTRACTOR TO COMPLY WITH ALL APPLICABLE EROSION CONTROL REQUIREMENTS IN ACCORDANCE WITH LOCAL AND STATE REGULATIONS.
12. UNLESS SPECIFIED OTHERWISE ALL MATERIALS SHALL MEET THE RHODE ISLAND DEPARTMENT OF TRANSPORTATION STANDARD SPECIFICATIONS.
13. UNLESS SPECIFIED OTHERWISE A CLEAN OUT OR SWEEPING BEND SHALL BE INSTALLED AT ALL JUNCTIONS OF 2 OR MORE SEWERS AND AT ALL CHANGES IN DIRECTION OR GRAD OF THE GRAVITY SEWERS.
14. CONTRACTOR TO VERIFY BUILDING SEWER INVERTS AND NOTIFY DESIGN ENGINEER OF ANY DISCREPANCIES.

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 WATER MAIN. THE DISTANCE SHALL BE MEASURED OUTSIDE EDGE-TO-OUTSIDE 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, KENT COUNTY WATER AUTHORITY 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 WATER MAIN, 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 WATER MAIN 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 WATER MAIN.
- IN SITUATIONS WHERE IT IS IMPOSSIBLE TO OBTAIN PROPER HORIZONTAL AND VERTICAL SEPARATION AS STIPULATED ABOVE, THE FOLLOWING PROTECTION SHALL BE PROVIDED:
4. ENCASEMENT OF THE SEWER PIPE IN A CARRIER PIPE FOR AT LEAST 10 FEET EITHER SIDE OF THE AREA NOT COMPLYING WITH THE MINIMUM HORIZONTAL AND VERTICAL SEPARATION, OR
 5. 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 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:

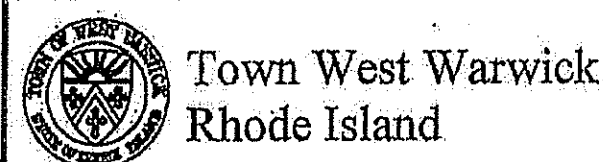
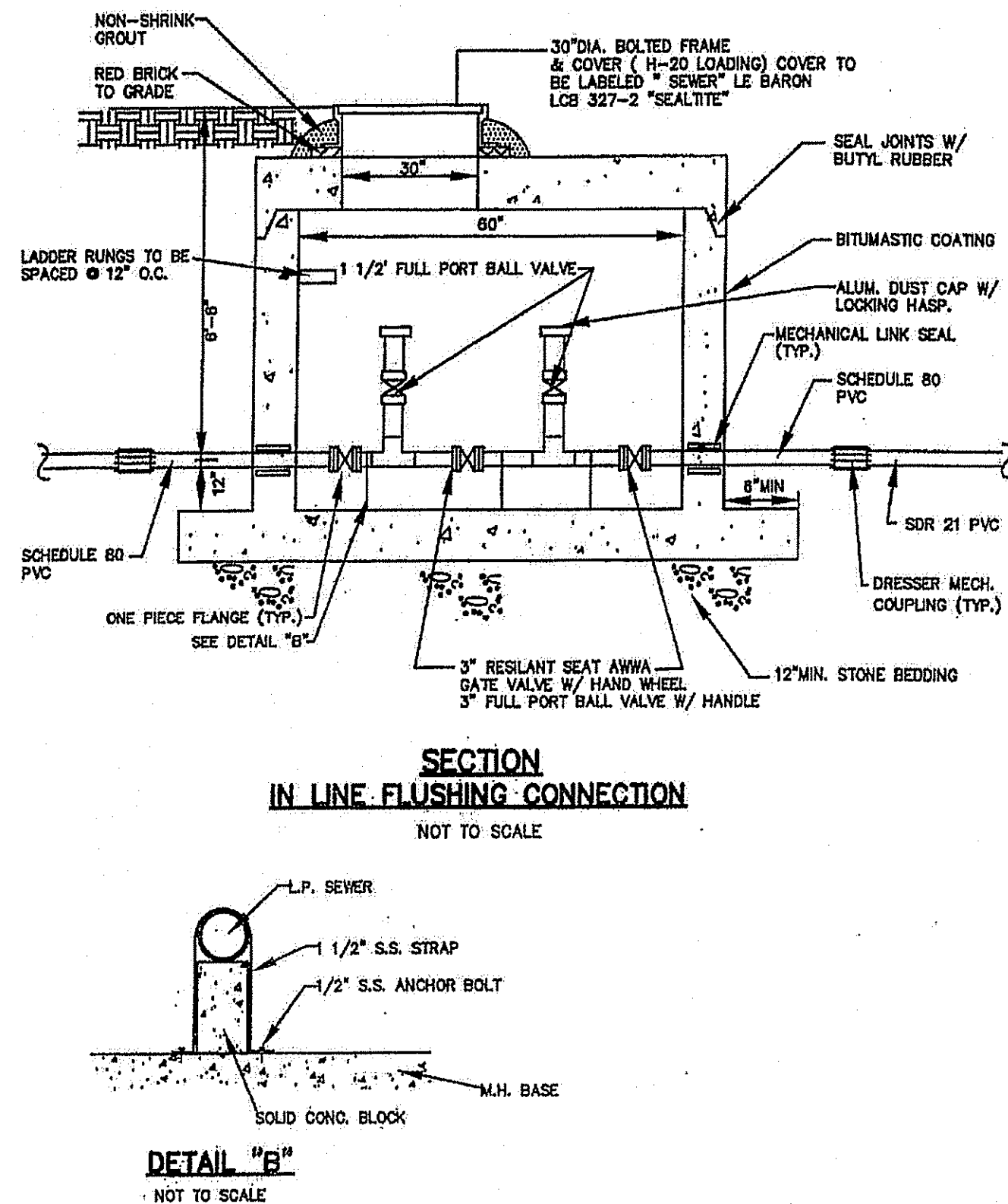
- A. THE SEWER SHALL BE DESIGNED AND CONSTRUCTED EQUAL TO WATER MAIN PIPE (CEMENT-LINED DUCTILE IRON PIPE, PVC OR OTHER AWWA APPROVED MATERIAL FOR POTABLE WATER CONVEYANCE) FOR A DISTANCE OF 12 FEET ON EACH SIDE OF THE CROSSING, MEASURED PERPENDICULAR TO THE WATER MAIN AND PRESSURE TESTED IN ACCORDANCE WITH AWWA SPECIFICATIONS, OR

GENERAL NOTE:

1. CONTRACTOR IS TO ENSURE THAT ALL COVERS, OPENINGS, HATCHES, ETC. AND ALL PENETRATIONS INTO THE SEWER MANHOLES AND PUMP STATION WETWELL ARE TO BE WATERTIGHT TO PREVENT STORMWATER FROM ENTERING INTO THE SEWER SYSTEM.

LOW PRESSURE SEWER TESTING

- A. TESTING OF PRESSURE LINE:
 1. UPON COMPLETION OF INSTALLATION OF FORCE MAIN, THE LINE SHALL BE TESTED FOR LEAKS. THE CONTRACTOR SHALL MAKE ALL NECESSARY ARRANGEMENTS FOR OBTAINING POTABLE WATER, FURNISH ALL PUMPS, PIPING, HOSE, INSTALLING CORPORATION STOPS IF NECESSARY, ETC., AND REMOVE SAME CORPORATION STOPS WHEN WORK IS COMPLETED.
 2. AIR SHALL BE EXPELLED BY FILLING THE MAIN SLOWLY AND PERMITTING AIR TO ESCAPE AT HIGH POINTS. AIR BLEEDER SHALL BE INSTALLED IN LOCATION DIRECTED BY THE WEST WARWICK SEWER AUTHORITY.
 3. PRESSURE SHALL BE APPLIED AND MAINTAINED AT THE LOW END OF FORCE MAIN BY MEANS OF PRESSURE PUMP AND BYPASS ON WHICH A WATER METER AND PRESSURE GAUGE ARE MOUNTED. OBSERVATIONS SHALL BE MADE AND METERED WATER READINGS TAKE AT VARYING PRESSURES UP TO 110 PSI. PRESSURE SHALL BE MAINTAINED FOR A PERIOD OF TWO (2) HOURS.
 4. ANY DEFECTIVE JOINTS SHALL BE IMMEDIATELY REPAIRED, AND ANY CRACKED OR OTHERWISE DEFECTIVE PIPE SHALL BE REPLACED BY THE CONTRACTOR AND THE TEST REPEATED. AS SOON AS SATISFACTORY "TEST FOR STRENGTH" HAS BEEN OBTAINED, THE BY-PASS WITH WATER METER AND PRESSURE GAUGE SHALL BE LEFT IN SERVICE, AND THE SECTION SHALL REMAIN UNDER A PRESSURE OF NOT LESS THAN 100 POUNDS PER SQUARE INCH UNTIL THE LEAKAGE IN THE ENTIRE SECTION DOES NOT EXCEED FIFTY (50) GALLONS PER DAY PER MILE OF PIPE PER INCH OF NOMINAL PIPE DIAMETER. IN NO CASE SHALL LEAKAGE TESTS BE FOR LESS THAN 4 HOURS.
 5. IN THE EVENT THE LEAKAGE EXCEEDS THE ABOVE STATED MAXIMUM ALLOWABLE, THE CONTRACTOR SHALL TAKE SUCH STEPS AS ARE REQUIRED AND NECESSARY OR AS ARE DIRECTED BY THE WEST WARWICK SEWER AUTHORITY TO REDUCE LEAKAGE TO BELOW THE ALLOWABLE MAXIMUM AMOUNT AND SHALL REPLACE ANY AND ALL DEFECTIVE PIPING, AND THE TEST SHALL BE REPEATED UNTIL THE LEAKAGE REQUIREMENTS ARE COMPLIED WITH AT NO ADDITIONAL COMPENSATION TO THE CONTRACTOR.
- B. TESTING OF MANHOLES:
 1. TEST SHALL BE MADE AND OBSERVED BY THE WEST WARWICK SEWER AUTHORITY ON EACH MANHOLE.
 2. INSTALL VACUUM TESTER AND INFLATE COMPRESSION BAND TO EFFECT A SEAL BETWEEN THE VACUUM BASE AND THE MANHOLE. CONNECT VACUUM PUMP TO THE OUTLET PART WITH THE VALVE OPEN, DRAW A VACUUM OF 10 INCHES OF MERCURY (HG), AND CLOSE THE VALVE. THE MANHOLE SHALL PASS THE TEST IF THE VACUUM REMAINS AT 10 INCHES OF HG OR DROPS TO 9 INCHES OF HG AT A TIME GREATER THAN 60 SECONDS FOR A 48 INCH DIAMETER MANHOLE, THE TIME GREATER THAN 70 SECONDS FOR 60 INCH DIAMETER MANHOLE, AND TIME GREATER THAN 80 SECONDS FOR 72 INCH DIAMETER MANHOLE. IF THE MANHOLE FAILS THE INITIAL TEST, THE CONTRACTOR SHALL MAKE PROPER REPAIRS OR REPLACE THE MANHOLE AND RETEST AT NO ADDITIONAL COMPENSATION.

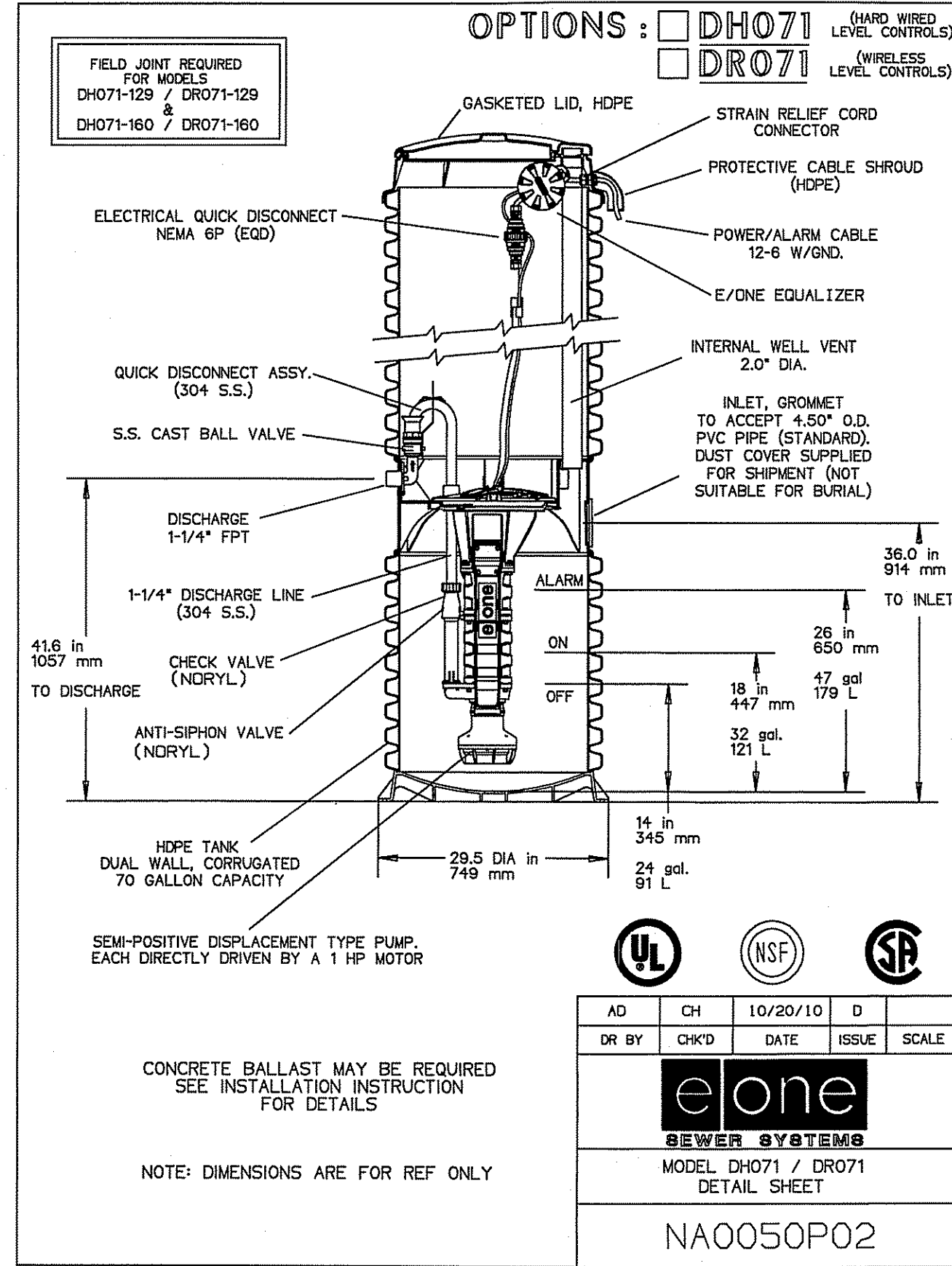


Town West Warwick
Rhode Island

Figure WW-17
LOW PRESSURE IN-LINE STRAIGHT
THROUGH FLUSHING CONNECTION

Standard Sanitary Sewer Requirements

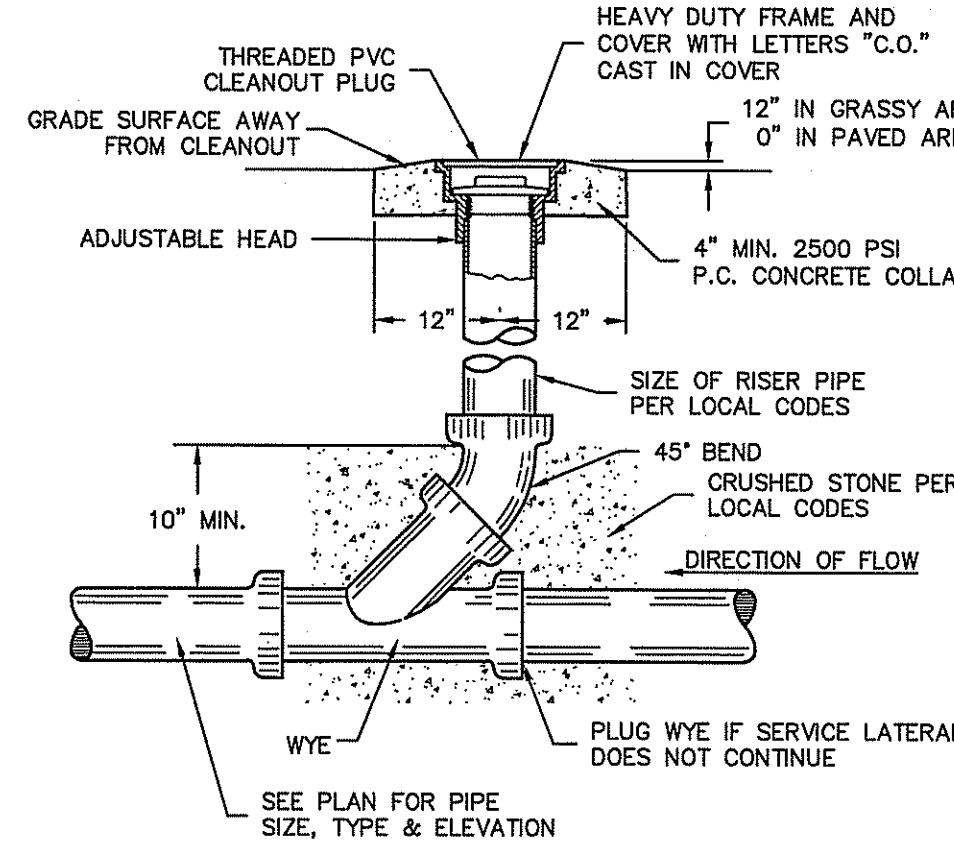
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*NOTE E-ONE PUMP BASIN TO INCLUDE A 1" FLUSH VALVE PER CITY OF CRANSTON REQUIREMENTS

DH071 ENVIRONMENTAL ONE PUMP

N.T.S.



DEPARTMENT OF ENVIRONMENTAL MANAGEMENT
OFFICE OF WATER RESOURCES
FRESHWATER WETLANDS PROGRAM
APPROVED WITH CONDITIONS
AS SPECIFIED IN THE LETTER OF APPROVAL
DATED NOV 4 2016 FILE # 16-0155
NO CHANGES ALLOWED WITHOUT PRIOR APPROVAL
APPROVED PLANS MUST BE AT CONSTRUCTION SITE

Detail Sheet-Sewer
Stonebridge Crossing

Assessor's Plat 228 - Lots 97 & 98
Warwick, Rhode Island 02886

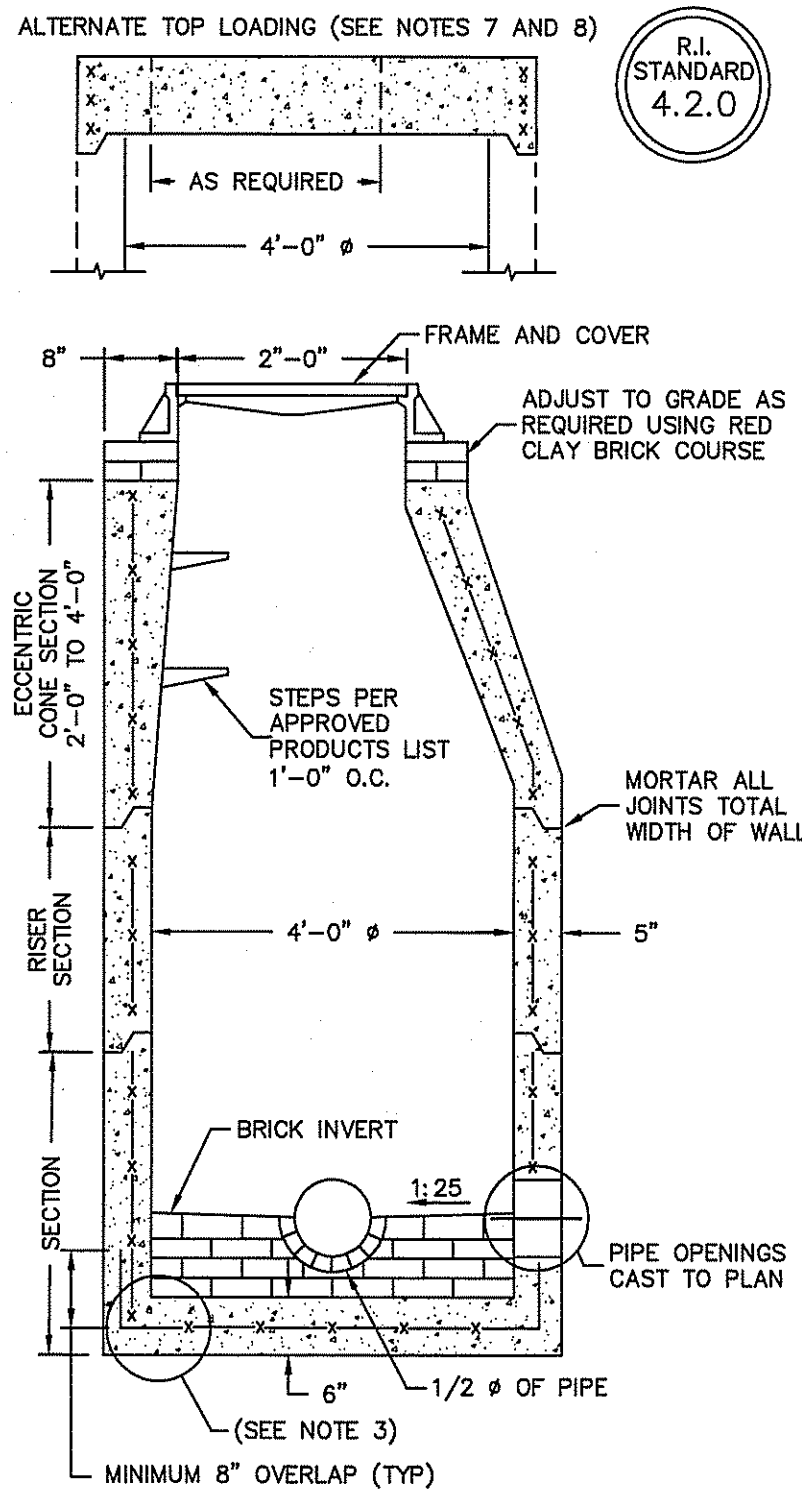
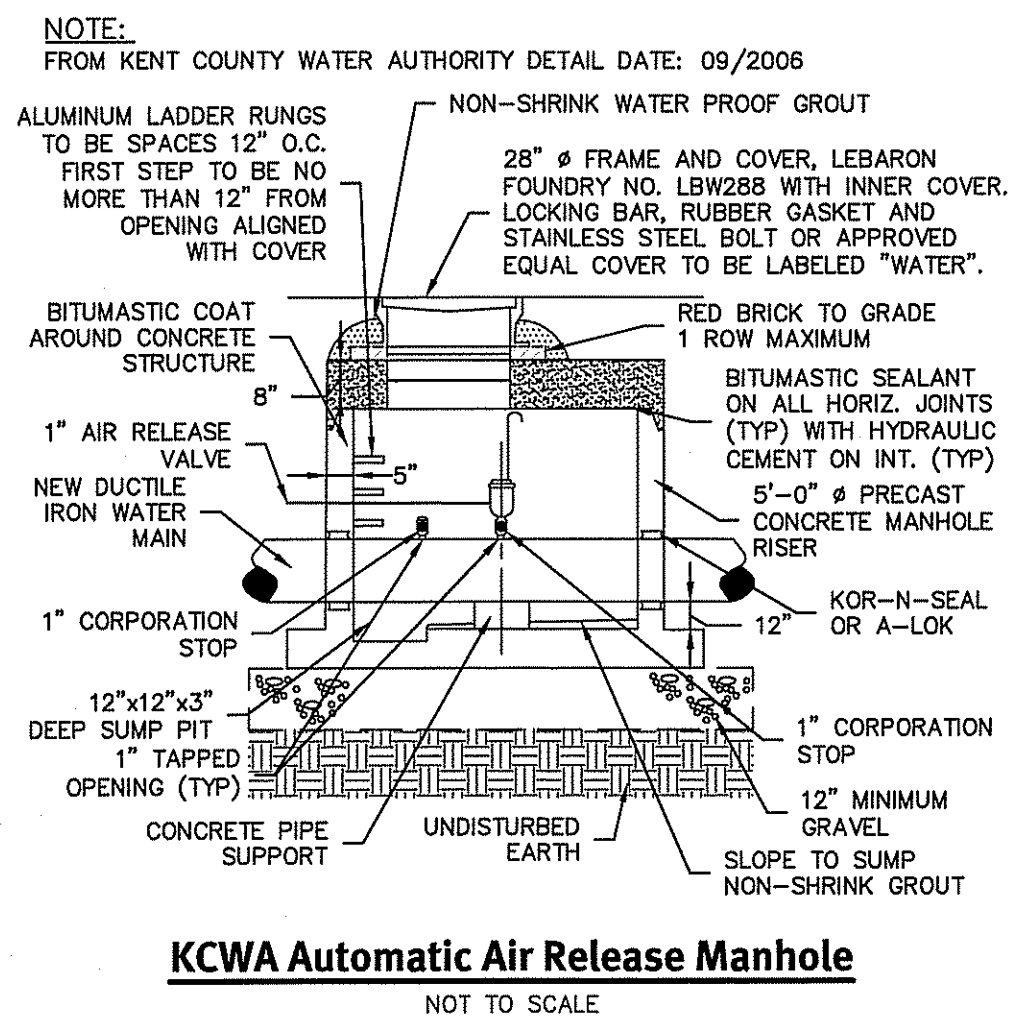
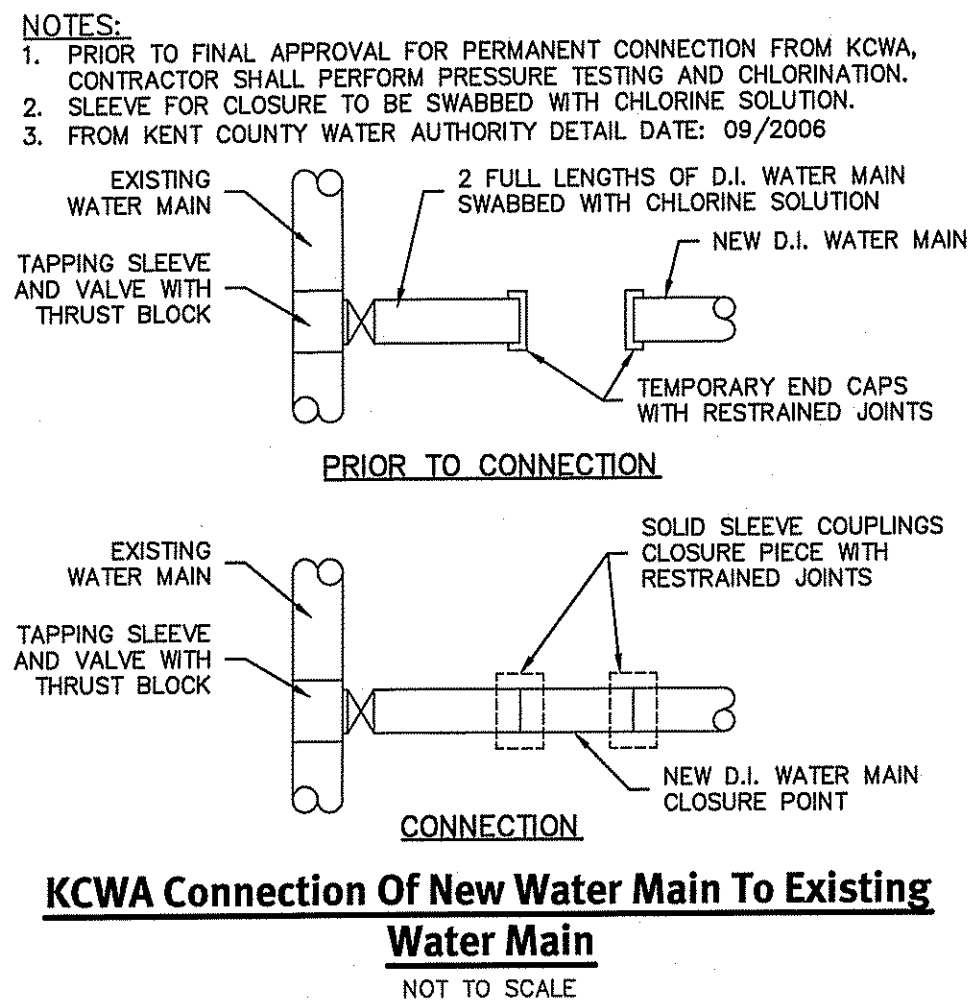
M&M Land Company

c/o Mr. Kevin Murphy, 370 Shawmut Avenue, Warwick, RI 02889

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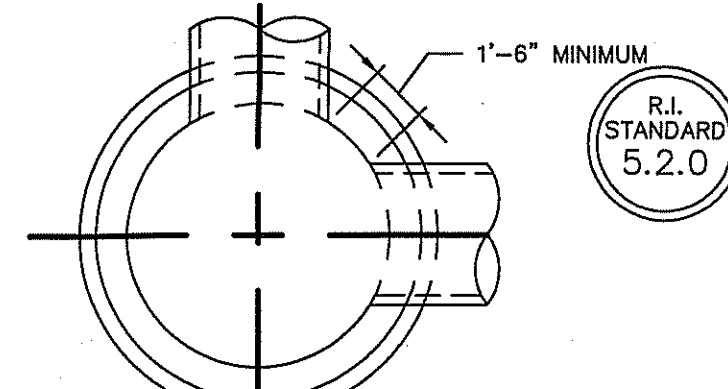
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SHEET 15 OF 18



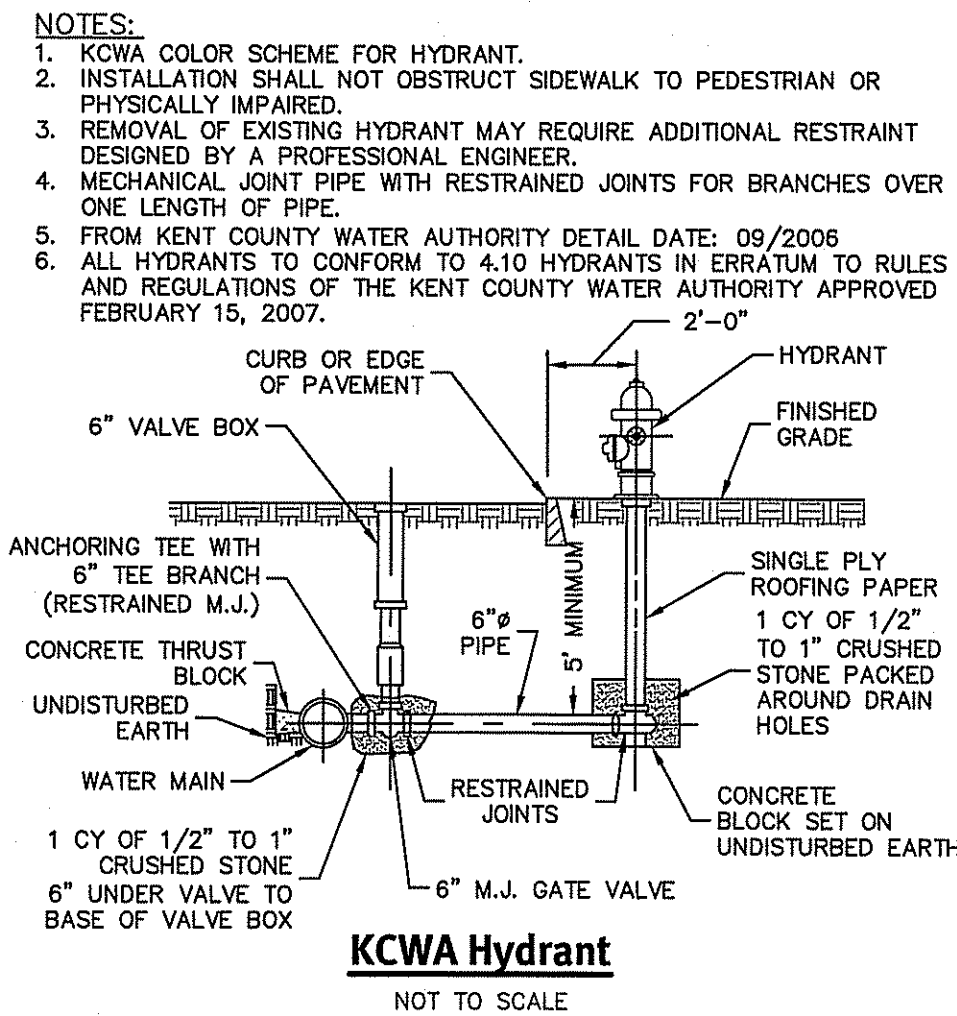
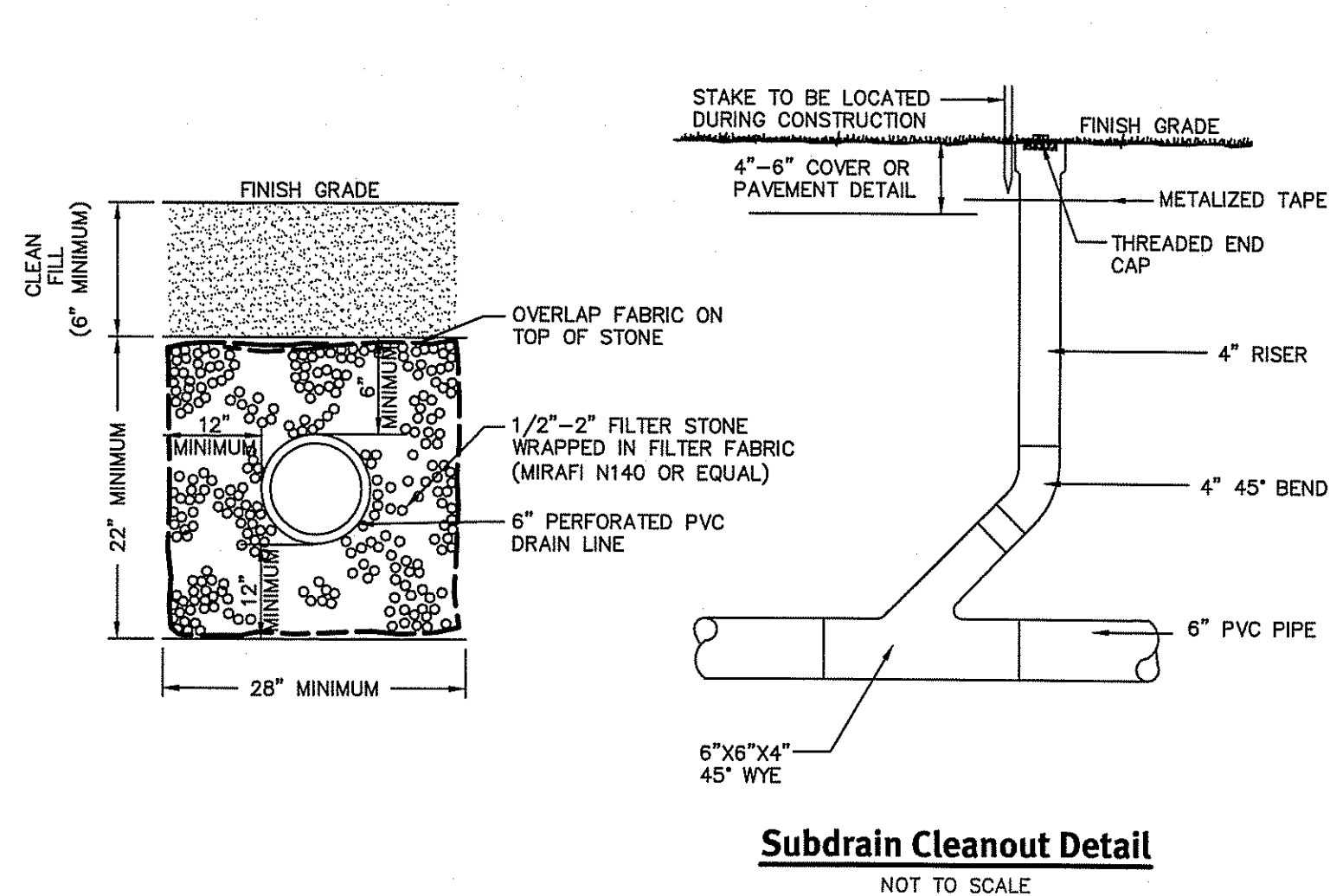
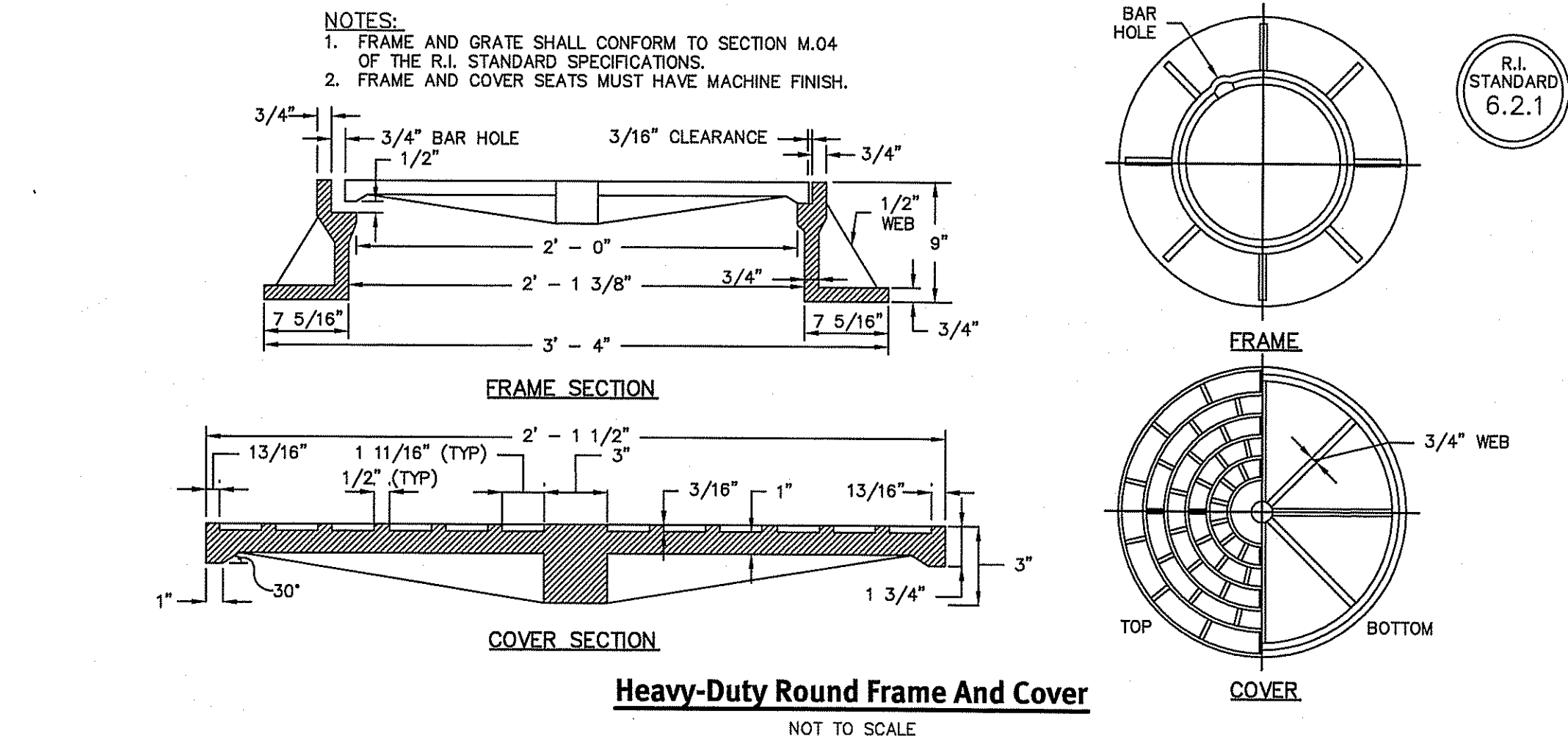
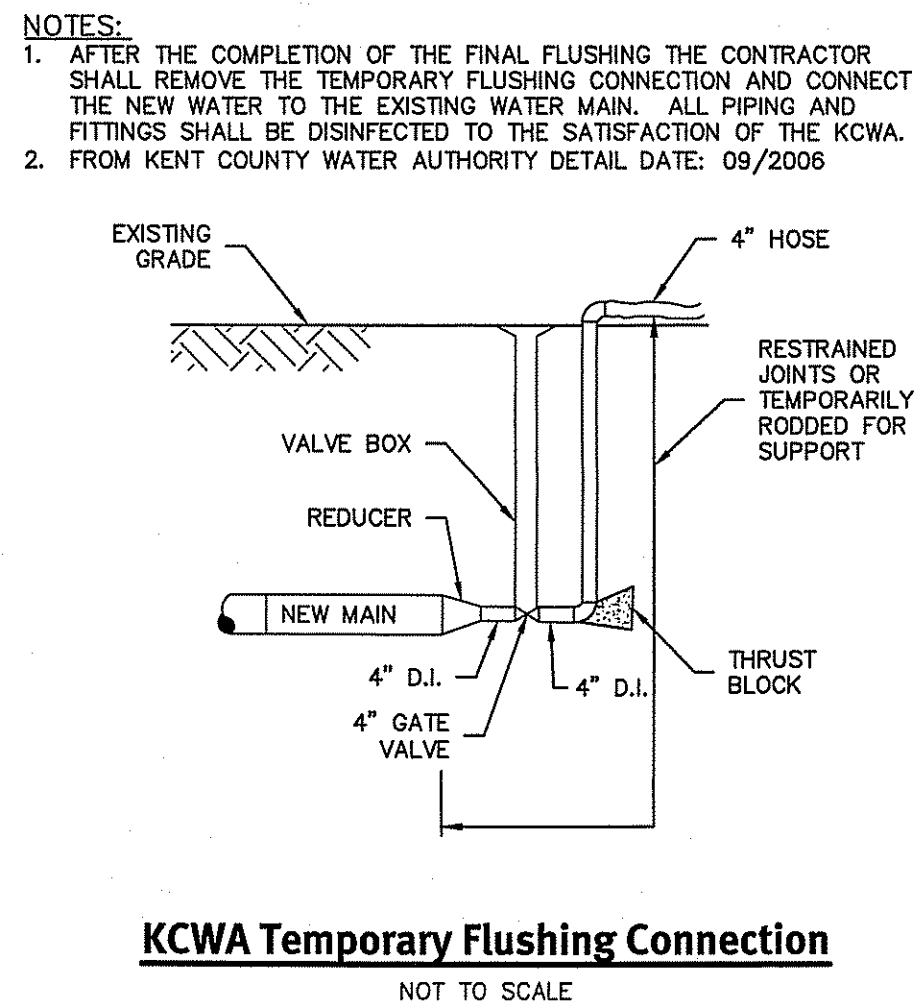
- NOTES:**
1. SHALL BE IN ACCORDANCE WITH SECTION 702 OF THE R.I. STANDARD SPECIFICATIONS.
2. CIRCUMFERENTIAL STEEL REINFORCEMENT REQUIRED = 0.12 SQUARE INCH/LIN. FOOT MINIMUM.
3. STEEL REINFORCEMENT FOR BASE SECTION BOTTOM SHALL BE A MINIMUM OF 0.12 SQUARE INCH/LIN. FOOT (BOTH WAYS).
4. ONE FOUR MONOLITHIC BASE SECTION.
5. ANY NECESSARY ADJUSTMENTS DURING CONSTRUCTION WILL BE DONE BY SAWCUTTING 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



4' MANHOLE OR CATCH BASIN	5' MANHOLE OR CATCH BASIN	6' MANHOLE OR CATCH BASIN
33 1/2" O.D. 27" R.C. PIPE	44" O.D. 36" R.C. PIPE	51" O.D. 42" R.C. PIPE
MAXIMUM PIPE O.D. STRAIGHT THROUGH TO 45° DEFLECTION	23" O.D. 18" R.C. PIPE	33 1/2" O.D. 27" R.C. PIPE
MAXIMUM PIPE O.D. 90° DEFLECTION	33 1/2" O.D. 27" R.C. PIPE	37" O.D. 30" R.C. PIPE

- NOTES:**
1. SHALL BE IN ACCORDANCE WITH SECTION 702 OF THE R.I. STANDARD SPECIFICATIONS.
2. THE MINIMUM DISTANCE BETWEEN PIPES ENTERING MANHOLES AND CATCH BASINS MUST BE 1'-6". THE SIZE OF THE CATCH BASIN WILL BE DETERMINED BY THE PIPE SIZE AND ENTRY ANGLE. (SEE TABLE ABOVE.)
- Round Manholes And Catch Basins Maximum Pipe Size**
Standard
NOT TO SCALE



DEPARTMENT OF ENVIRONMENTAL MANAGEMENT
OFFICE OF WATER RESOURCES
FRESHWATER WETLANDS PROGRAM
APPROVED WITH CONDITIONS
AS SPECIFIED IN THE LETTER OF APPROVAL
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tel 401-943-1000 fax 401-943-6006 www.DiPrete-Eng.com

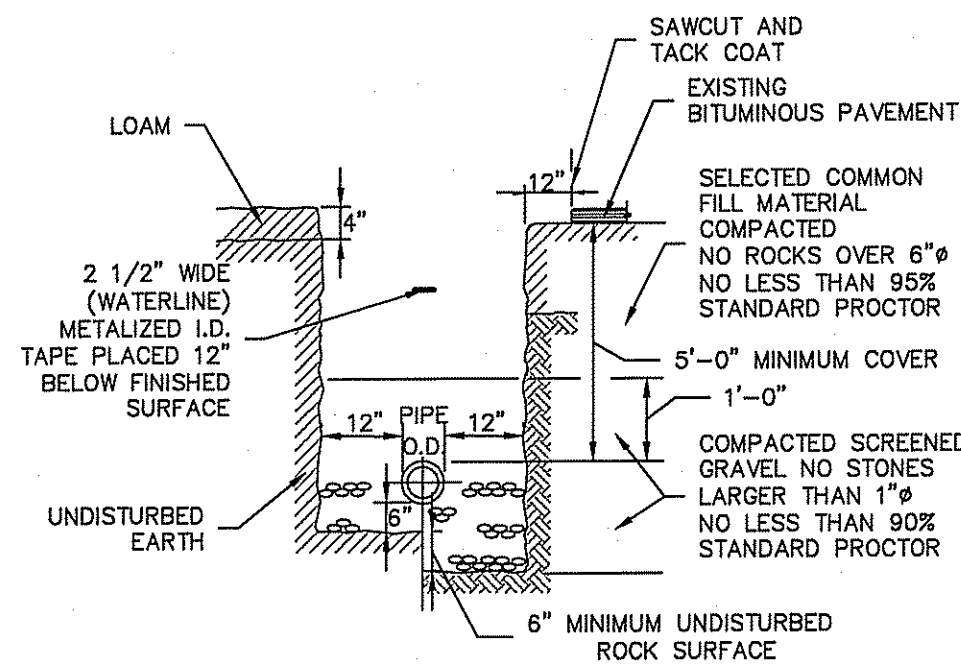
Engineers • Planners • Surveyors

DAVID A. RUSSO
No. 1335
REGISTERED PROFESSIONAL ENGINEER
CIVIL
Environmental Management
SEP 20 2016
Office of Water Resources

No.	Date	Description	Design By: D.A.R.
1	09-12-2016	R.I. Submittal	
2	09-14-2016	Warwick Sewer Authority Submittal	
3	09-16-2016	Warwick Sewer Authority Comments	
4	09-16-2016	R.I. Submittal	
5	09-16-2016	R.I. Submittal	
6	09-16-2016	R.I. Submittal	
7	09-16-2016	R.I. Submittal	
8	09-16-2016	R.I. Submittal	
9	09-16-2016	R.I. Submittal	
10	09-16-2016	R.I. Submittal	
11	09-16-2016	R.I. Submittal	
12	09-16-2016	R.I. Submittal	
13	09-16-2016	R.I. Submittal	
14	09-16-2016	R.I. Submittal	
15	09-16-2016	R.I. Submittal	
16	09-16-2016	R.I. Submittal	
17	09-16-2016	R.I. Submittal	
18	09-16-2016	R.I. Submittal	
19	09-16-2016	R.I. Submittal	
20	09-16-2016	R.I. Submittal	

Detail Sheet - Water-1
Stonebridge Crossing
Assessor's Plat 228 - Lots 97 & 98
Warwick, Rhode Island 02888
Applicant: **M&M Land Company**
c/o Mr. Kevin Murphy, 370 Shawmut Avenue, Warwick, RI 02889
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C6.4
SHEET 16 OF 18

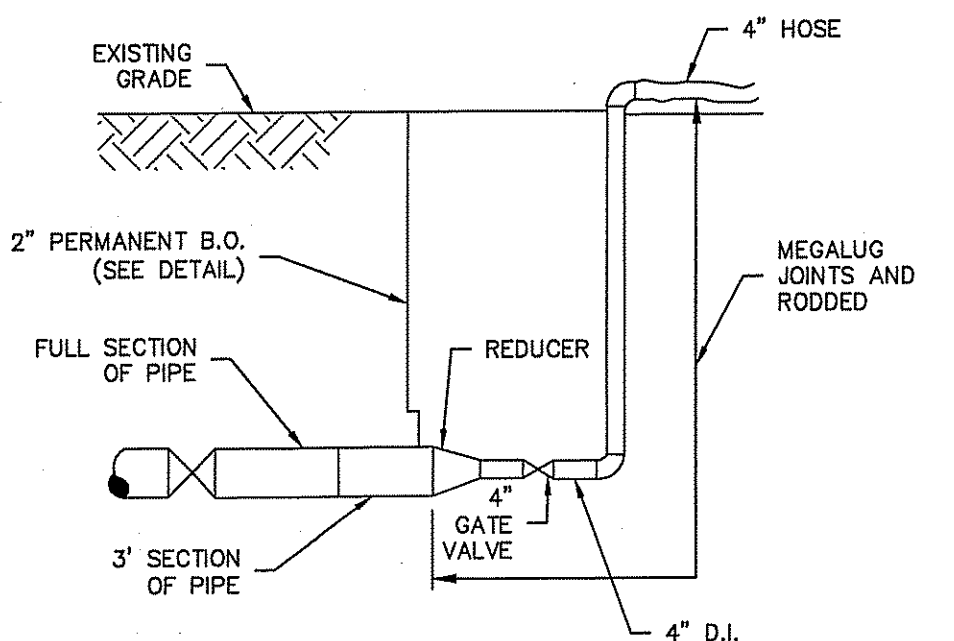


KCWA Trench Installation in Rock & Soil

NOT TO SCALE

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

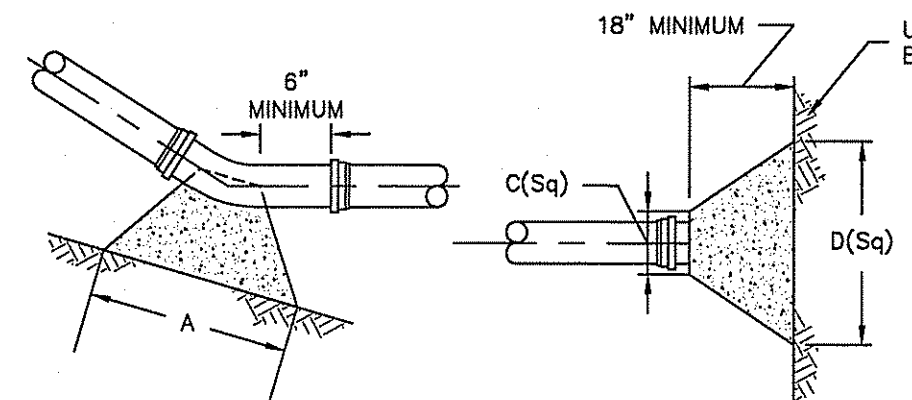


KCWA Temporary Flushing Connection On Dead End Water Main

NOT TO SCALE

NOTES:

1. ALL CONCRETE SHALL BE 4,000 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 RHODE ISLAND SHALL VERIFY CALCULATIONS DURING DESIGN TO MEET CONDITIONS OF PROJECT AND KCWA REQUIREMENTS
6. FROM THE KENT COUNTY WATER AUTHORITY DETAIL DATE: 09/2006



PLAN BENDS

PLAN & ELEVATION PLUGS

BENDS & TEES SECTIONS

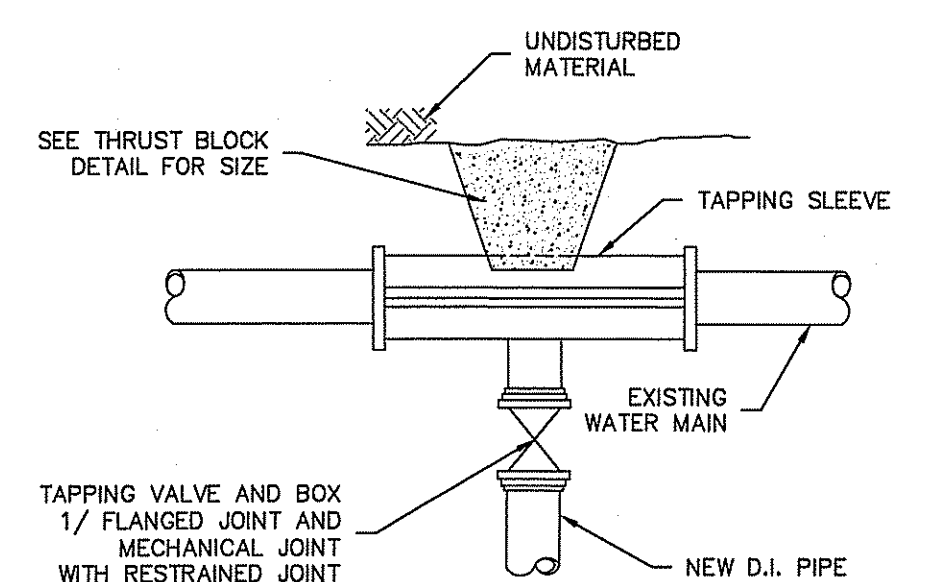
PLAN TEES

KCWA Thrust Block

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
3. SEE ERRATUM TO RULES AND REGULATIONS OF THE KENT COUNTY WATER AUTHORITY 4.9.1.3 TAPPING SLEEVE AND VALVE APPROVED FEBRUARY 15, 2007.

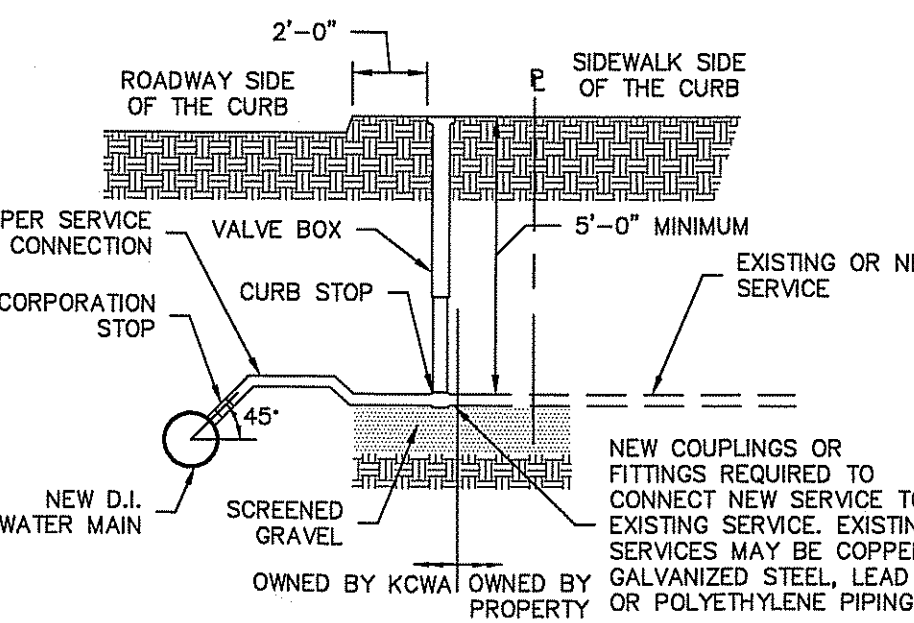


KCWA Tapping Sleeve & Valve

NOT TO SCALE

NOTES:

1. SERVICE MATERIALS PER KCWA SPECIFICATIONS 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

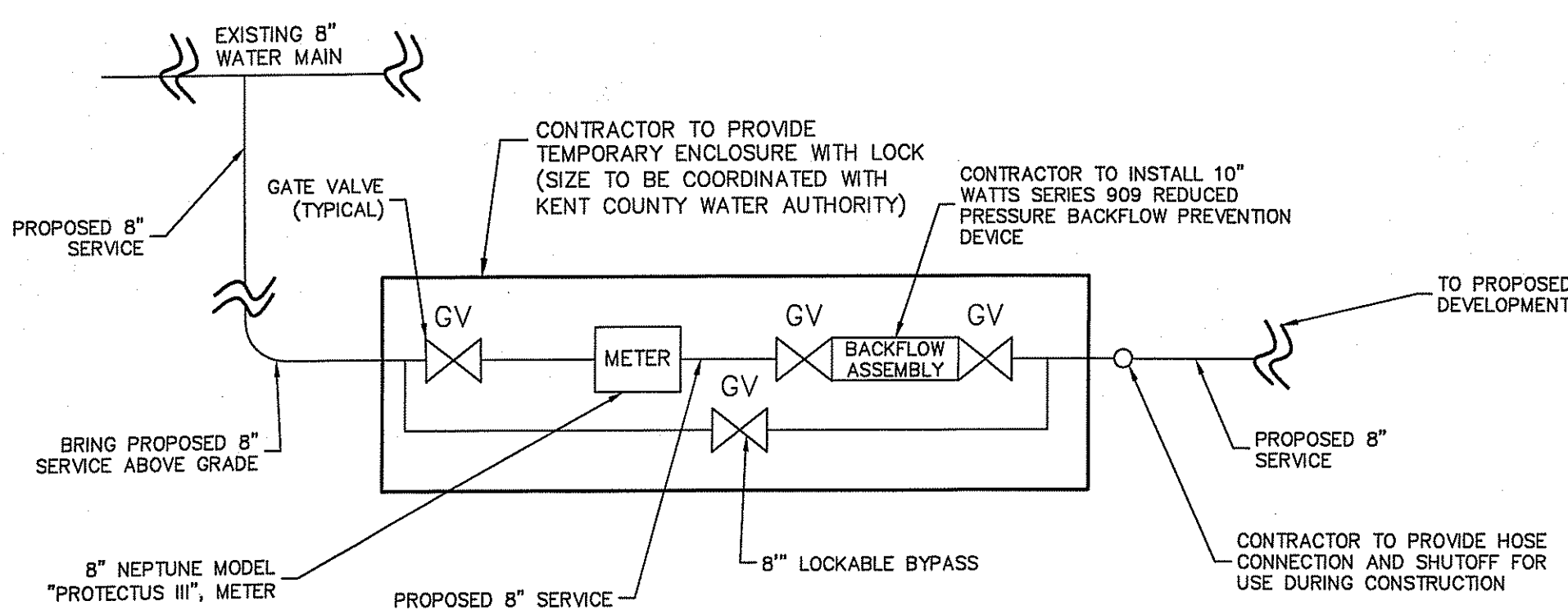


KCWA Service Connection

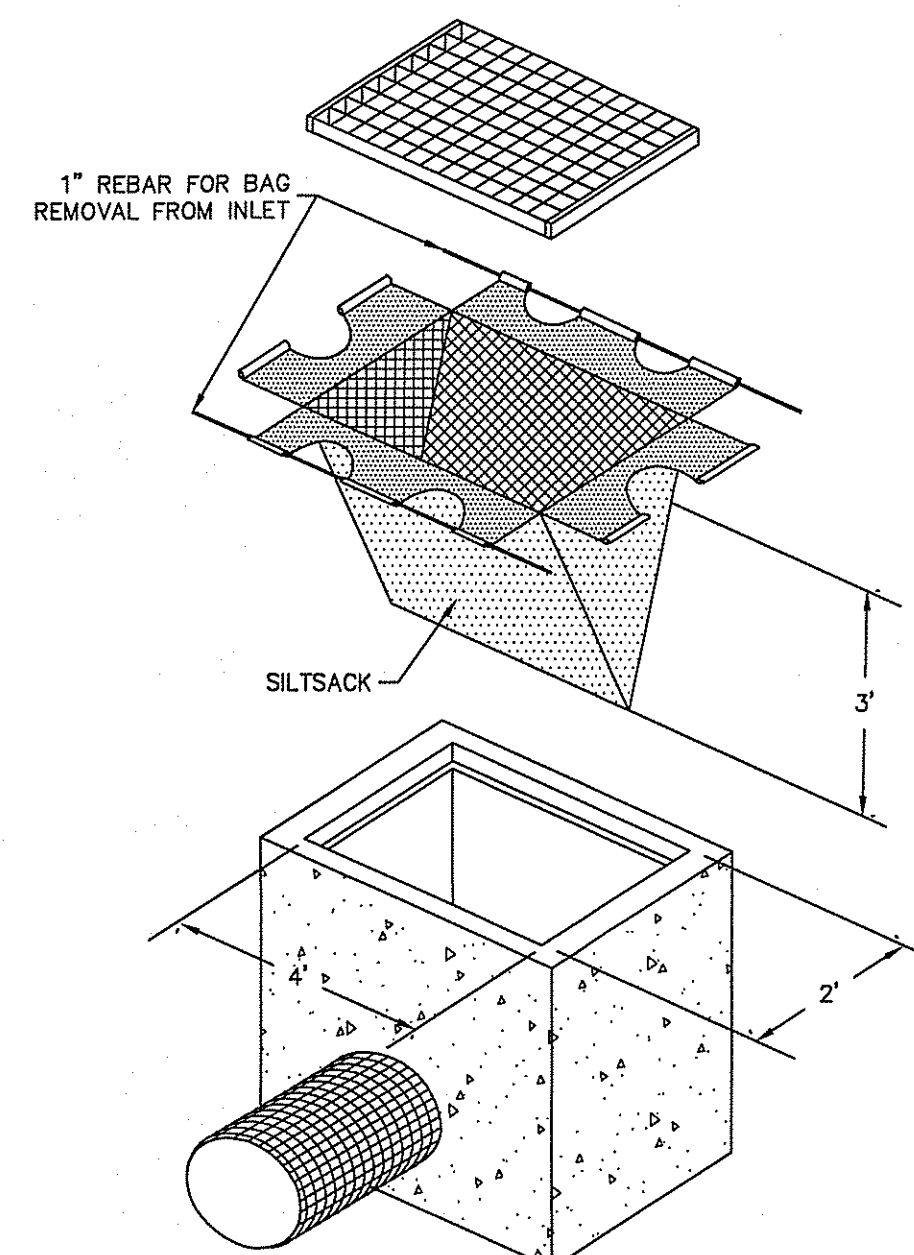
NOT TO SCALE

NOTES:

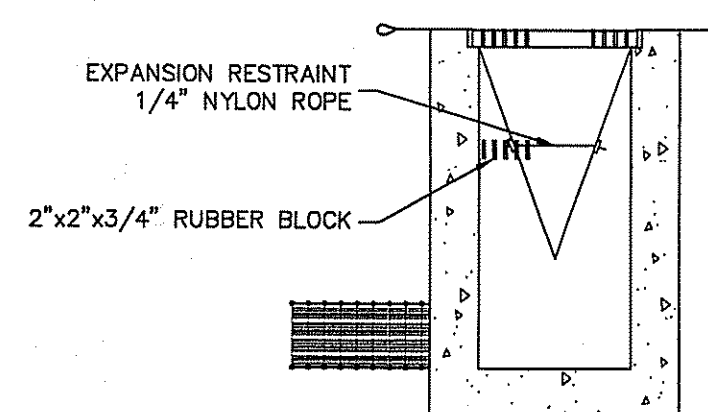
1. SERVICE MUST CONFORM TO KENT COUNTY WATER AUTHORITY RULES AND REGULATIONS.
2. METER MODEL TO BE 8" NEPTUNE PROTECTUS III METER



SCHEMATIC HOT BOX WATER SERVICE



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



Silt Sack Detail

NOT TO SCALE

Customer Water Service Disinfection Policy

1. THE OWNER, PLUMBER AND/OR PLUMBING OFFICIAL SHALL COORDINATE ACTIVITIES BY CONTACTING THE KENT COUNTY WATER AUTHORITY FIVE WORKING DAYS PRIOR TO CONDUCTING THE DISINFECTION PROCESS TO:
 - OBTAIN AUTHORIZATION TO TEMPORARILY CONNECT TO THE PUBLIC WATER SYSTEM IF AN ALTERNATIVE SUPPLY IS NOT USED.
 - ARRANGE FOR A REPRESENTATIVE OF THE AUTHORITY TO EXAMINE THE ISOLATED CONNECTION TO THE PUBLIC WATER SYSTEM.
 - OBTAIN A READING FROM THE TEMPORARY METER (IF USED).
 - COORDINATE ACTIVATION OF THE WATER CONNECTION TO COMPLETE THE DISINFECTION AND SAMPLE RETRIEVAL PROCESS.
2. THE SERVICE PIPE SHALL BE FLUSHED WITH CLEAN POTABLE WATER SUPPLIED BY THE CONTRACTOR OR FROM AN ISOLATED CONNECTION TO THE KENT COUNTY WATER AUTHORITY SYSTEM UNTIL ALL DELETERIOUS MATERIAL IS REMOVED. IF THE CONTRACTOR CHOOSES TO USE THE PUBLIC WATER SYSTEM, THE CONTRACTOR SHALL BE RESPONSIBLE TO PROVIDE A SUITABLE, ISOLATED CONNECTION TO THE AUTHORITY'S SYSTEM FROM THE NEW SERVICE PIPE.
3. FILL THE SERVICE PIPING THEREOF WITH A CHLORINE SOLUTION CONTAINING AT LEAST 50 PARTS PER MILLION CHLORINE. ONCE THE CHLORINE CONCENTRATION IN THE EFFLUENT DISCHARGE REVEALS THE PROPER CONCENTRATION, THE SYSTEM SHALL BE VALVED OFF AND ALLOWED TO STAND FOR THE REQUIRED TIME.
4. FOLLOWING THE REQUIRED STANDING TIME, THE SERVICE PIPE SHALL BE FLUSHED WITH CLEAN POTABLE WATER UNTIL THE CHLORINE IS PURGED FROM THE SERVICE PIPING. TWO SETS OF SAMPLES OF ACCEPTABLE SAMPLES, TAKEN AT A MINIMUM OF 24 HOURS APART SHALL BE ANALYZED. THE CUSTOMER SHALL ELIOT THE SERVICES OF A LABORATORY CERTIFIED BY THE RHODE ISLAND DEPARTMENT OF HEALTH TO ANALYZE THE WATER SAMPLES USING MEMBRANE FILTER TECHNIQUE 5022/2251/2007 FOR COMPLIANCE WITH RHODE ISLAND DEPARTMENT OF HEALTH COLIFORM REGULATIONS, AND STANDARD HETEROTROPHIC PLATE COUNT TEST. THIS REQUIRES TWO (2) SAMPLE BOTTLES PER SET OF SAMPLES, ONE FOR THE COLIFORM TEST AND ONE OF THE HETEROTROPHIC PLATE COUNT. THE RI DEPARTMENT OF HEALTH HAS A LISTING OF CERTIFIED LABORATORIES. THE SAMPLE RETRIEVAL SHALL BE CONDUCTED UNDER THE PURVIEW OF THE LOCAL PLUMBING OFFICIAL PER THE REQUIREMENTS CONTAINED IN THE RHODE ISLAND STATE PLUMBING CODE.
5. THE DISINFECTION PROCESS SHALL BE REPEATED UNTIL THE RESULTS OF THE BACTERIOLOGICAL TESTING CONFIRM COMPLIANCE WITH THE RHODE ISLAND DEPARTMENT OF HEALTH DRINKING WATER QUALITY STANDARDS AND HETEROTROPHIC PLATE COUNT CONSISTENT WITH KENT COUNTY WATER AUTHORITY QUALITY.
6. THE WATER SERVICE APPLICANT MUST PROVIDE THE AUTHORITY WITH COPIES OF THE SATISFACTORY LABORATORY TEST RESULTS AND INSPECTION VERIFICATION LETTER (PER SECTION 107 OF PLUMBING CODE) FROM THE LOCAL PLUMBING OFFICIAL BEFORE PERMISSION WILL GRANTED TO COMPLETE THE PERMANENT CONNECTION TO THE PUBLIC WATER SYSTEM.
7. ALL CONNECTION MATERIALS SHALL BE KEPT FREE OF ANY POTENTIAL CONTAMINATION AND BE SWABBED WITH CHLORINE SOLUTION PRIOR TO CONNECTION TO THE NEWLY DISINFECTED SERVICE.

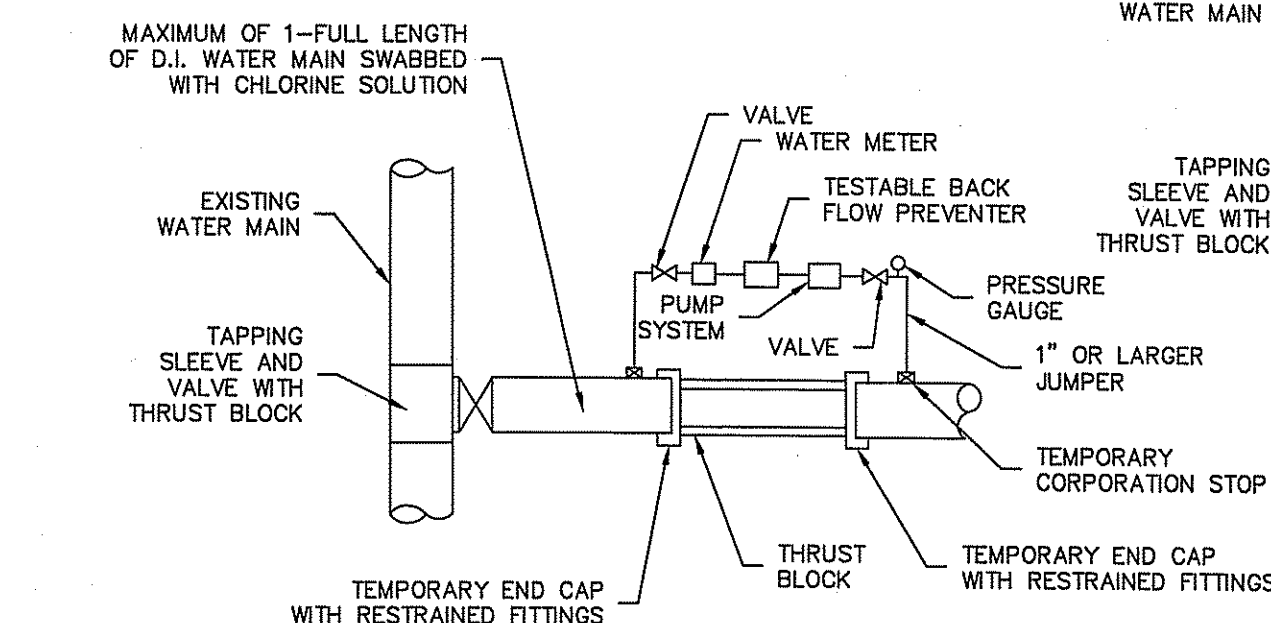
Leakage Pressure Testing for Watermains:

1. **GENERAL**
 - 1.1. HYDROSTATIC AND LEAKAGE TESTS SHALL BE PERFORMED ON ALL COMPLETED SECTIONS OF NEWLY INSTALLED WATERMAIN PIPELINE IN ACCORDANCE WITH AWWA C600, THE KENT COUNTY WATER AUTHORITY, AND AS SPECIFIED BELOW. 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.
 - 1.2. 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. WATERMANS - DISINFECTION
 - 2.5. COMPLIANCE WITH STATE PLUMBING CODE IN REFERENCE TO RESIDENTIAL BACK FLOW PREVENTION. MUST BE VERIFIED BY PLUMBER INSPECTOR, PRIOR TO METER INSTALLATION.
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. WATERMANS - DISINFECTION
 - 2.5. COMPLIANCE WITH STATE PLUMBING CODE IN REFERENCE TO RESIDENTIAL BACK FLOW PREVENTION. MUST BE VERIFIED BY PLUMBER INSPECTOR, PRIOR TO METER INSTALLATION.

DEPARTMENT OF ENVIRONMENTAL MANAGEMENT
OFFICE OF WATER RESOURCES
FRESHWATER WETLANDS PROGRAM
APPROVED WITH CONDITIONS
AS SPECIFIED IN THE LETTER OF APPROVAL
DATED NOV 4 2016 FILE # 16-0155
NO CHANGES ALLOWED WITHOUT PRIOR APPROVAL
APPROVED PLANS MUST BE AT CONSTRUCTION SITE

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 DETAILS DATE: 09/2006



KCWA Temporary Connection For Pressure Testing & Disinfection

NOT TO SCALE

KCWA Water Installation Notes

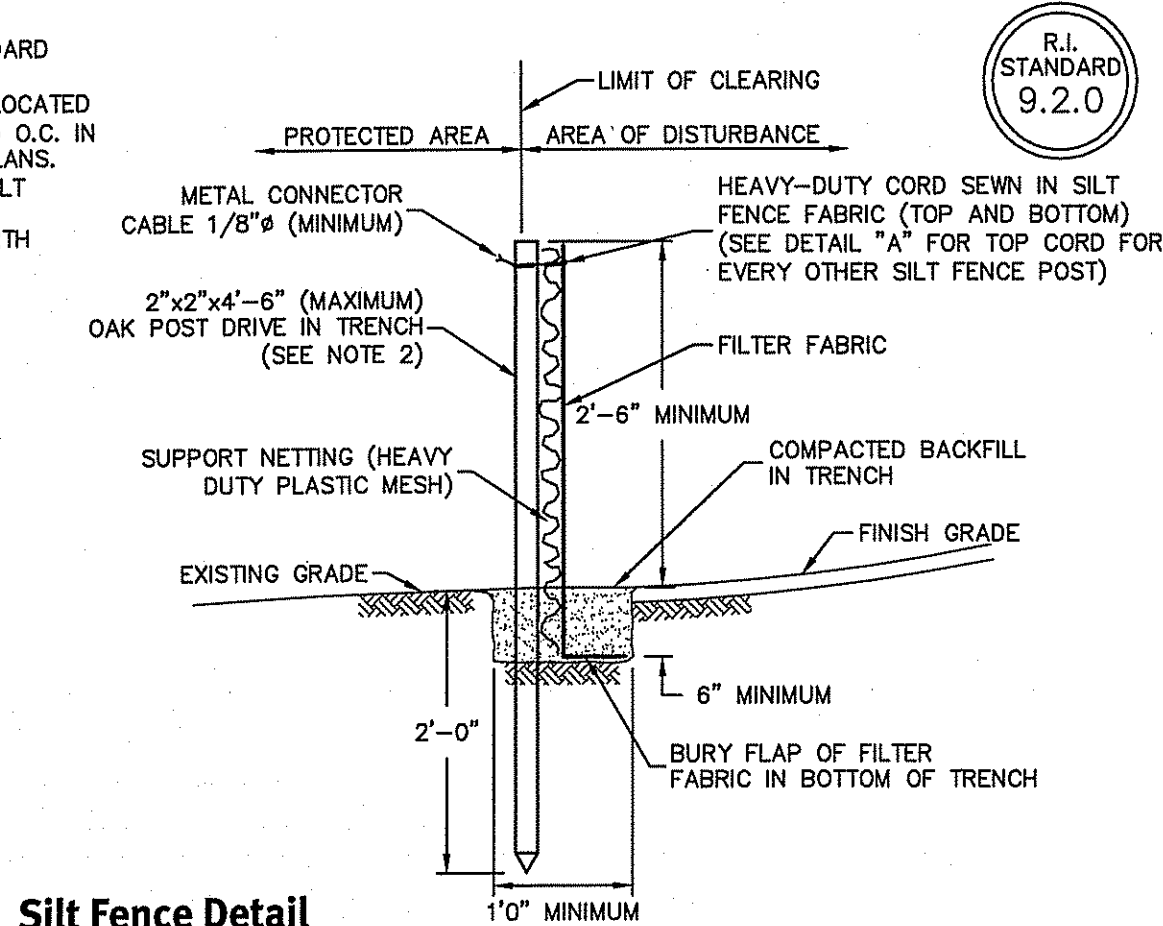
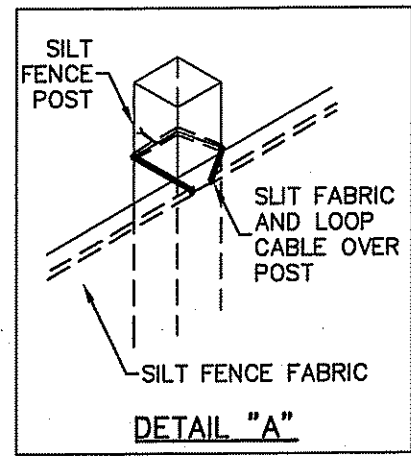
1. INSTALLATION OF WATER MAIN AND SERVICE SHALL CONFORM TO THE "RULES AND REGULATIONS OF THE KENT COUNTY WATER AUTHORITY" SEPTEMBER 20, 2006, OR LATEST EDITION, AND IN ACCORDANCE WITH THE DUCTILE IRON PIPE RESEARCH ASSOCIATION INSTALLATION MANUAL AND ANSI/AWWA C600.
2. DISTRIBUTION PIPING SHALL BE CL 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.
3. 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.
4. 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.
5. 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.
6. 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. TEMPORARY FLUSHING CONNECTIONS AND BLOW-OFFS SHALL BE SIZED TO PROVIDE 2.5- FEET PER SECOND FLOW PER AWWA STANDARD 651
11. 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.
12. PRESSURE-REDUCING VALVES ARE REQUIRED AT ALL BUILDINGS PER RI BUILDING CODE.

Chlorination/ Disinfection:

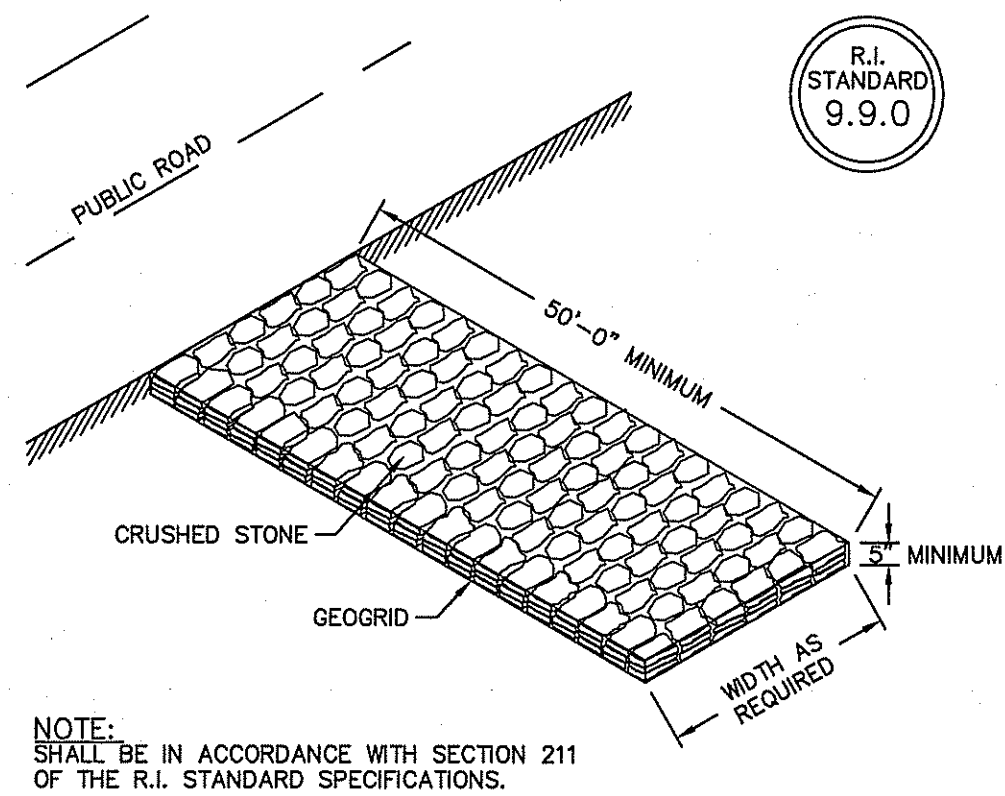
1. ALL NEW OR REPAIRED POTABLE WATER SYSTEM DISTRIBUTION MAINS, SERVICE PIPE AND THE NECESSARY CONNECTING PIPES, FITTINGS, CONTROL VALVES, AND APPURTENANCES IN OR ADJACENT TO ANY RESIDENCE, BUILDING OR PREMISES SHALL BE PURGED OF DELETERIOUS MATTER AND SHALL BE DISINFECTED PRIOR TO UTILIZATION OR PERMANENT 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 CONTRACTOR MUST PROVIDE WRITTEN LABORATORY CERTIFIED DOCUMENTATION OF THE DISINFECTION RESULTS TO THE KCWA, BEFORE MAKING ANY PERMANENT CONNECTION TO THE KWA 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 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 IMPROVED FOR THE SAMPLING 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.

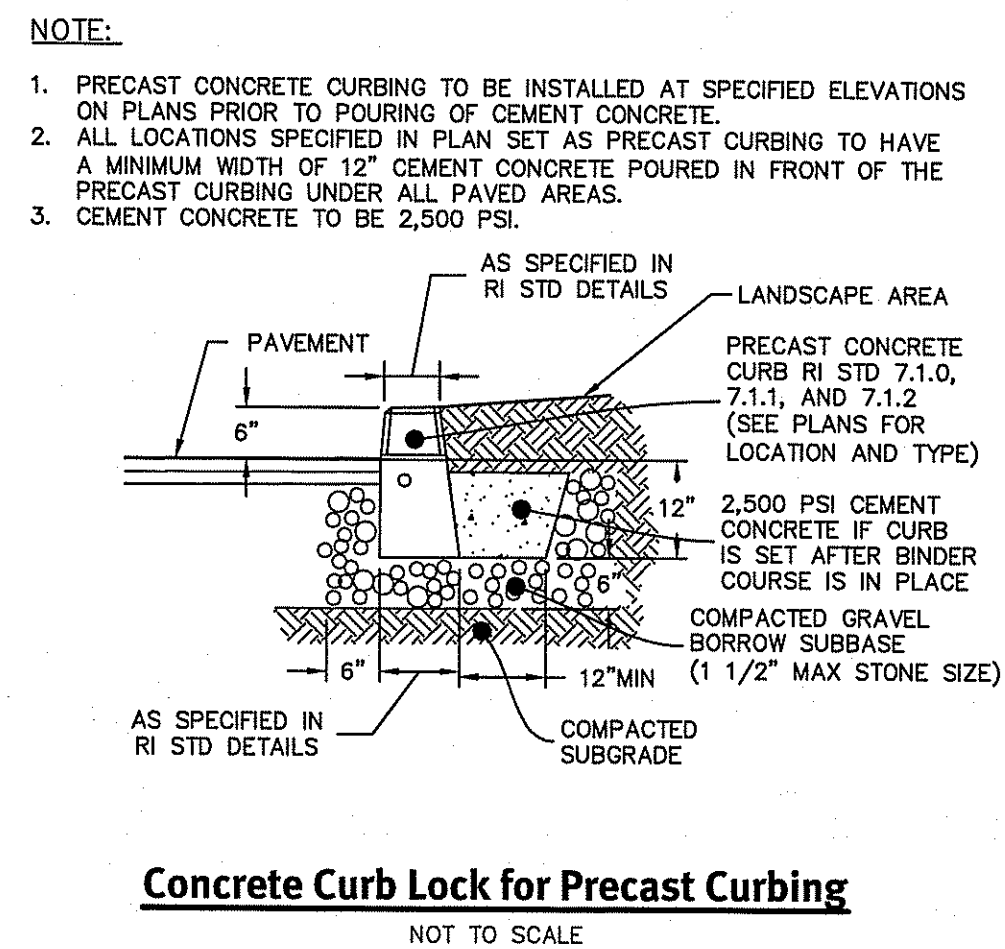
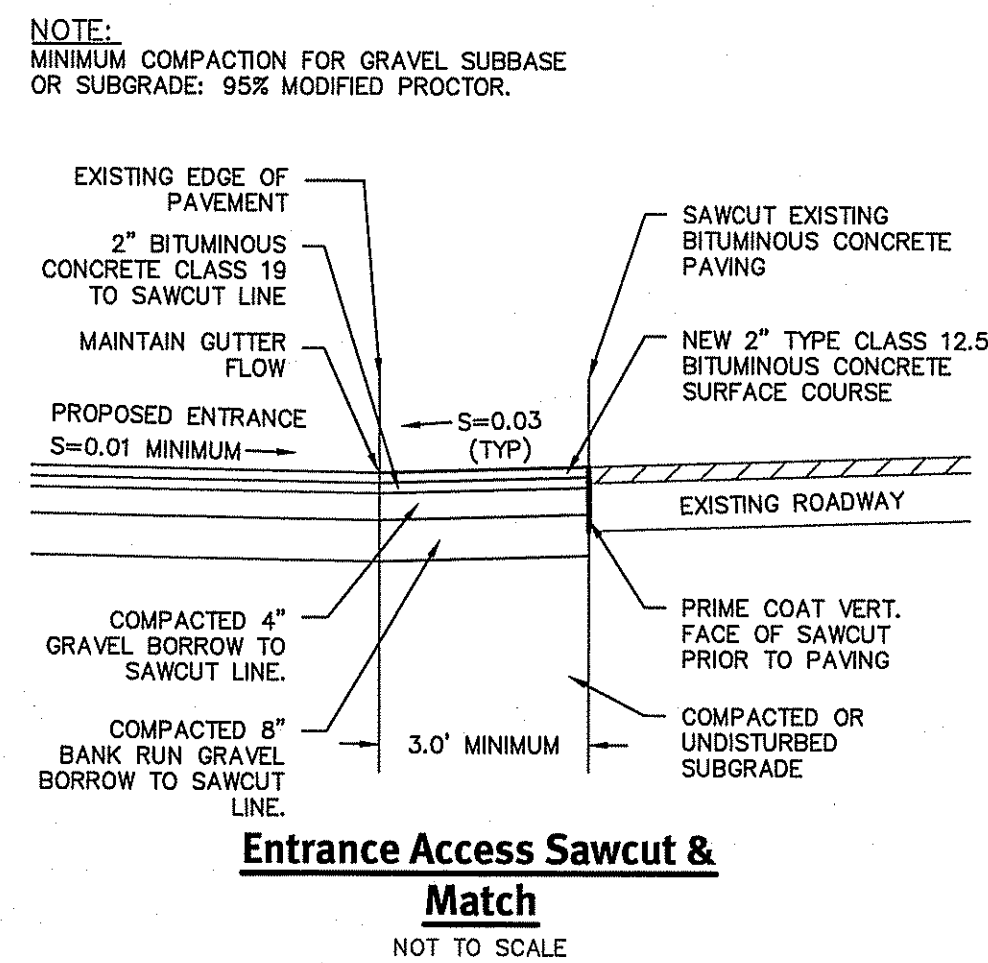
- NOTES:
1. SHALL BE IN ACCORDANCE WITH SECTION 208 OF THE R.I. STANDARD SPECIFICATIONS.
 2. 2"x2"x4"-6" (MAXIMUM) OAK POSTS FOR SILT FENCE SHALL BE LOCATED 8'-0" (MAXIMUM) O.C. IN WETLAND AREAS AND 4'-0" (MAXIMUM) O.C. IN WETLAND RAVINE, GULLY OR DROP-OFF AREAS AS SHOWN ON PLANS.
 3. 1"x1"x4"-6" (MINIMUM) POSTS PERMITTED FOR PRE-FABRICATED SILT FENCE.
 4. SILT FENCE SHALL BE INSTALLED BEFORE ANY GRUBBING OR EARTH EXCAVATION TAKES PLACE.



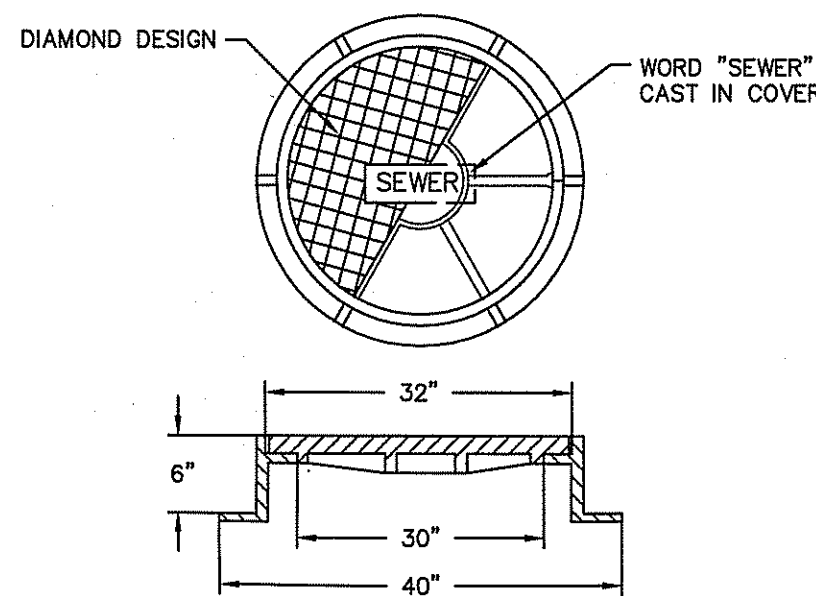
Silt Fence Detail
NOT TO SCALE



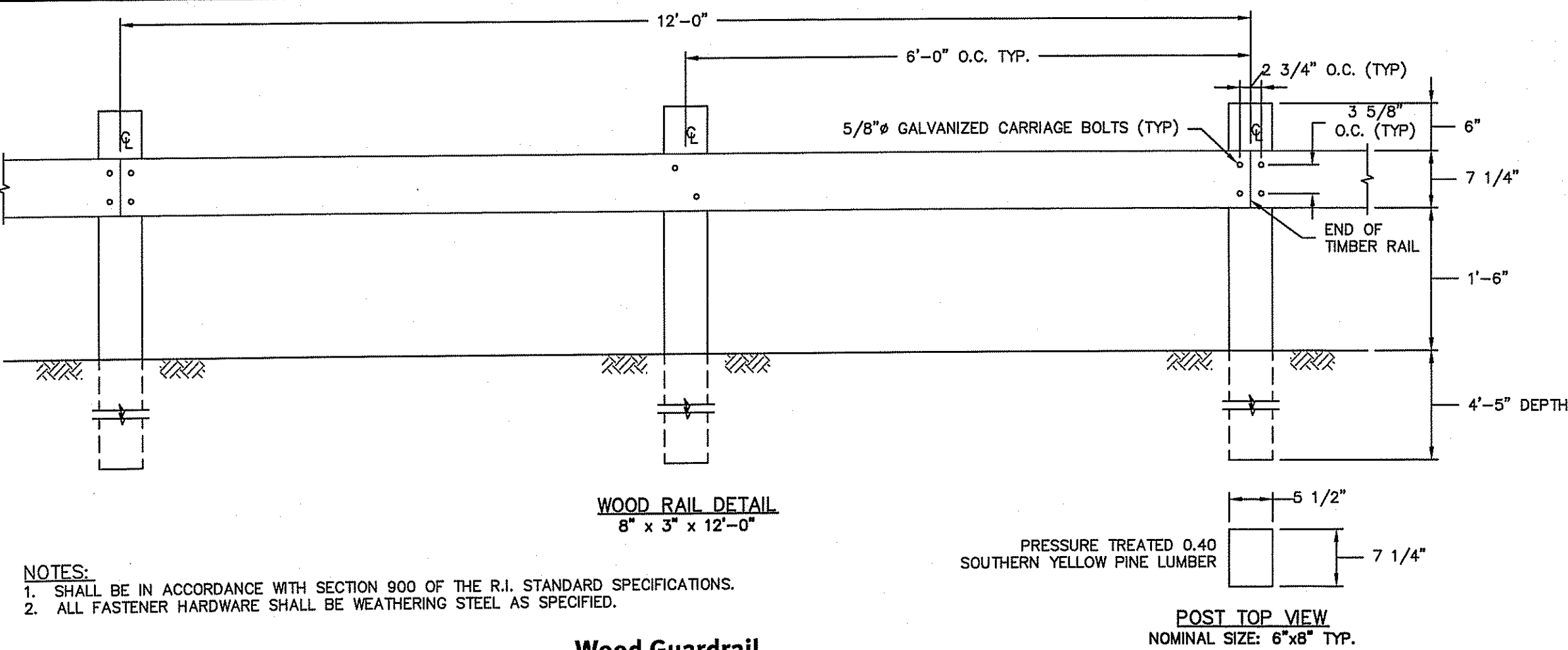
Construction Access
NOT TO SCALE



- NOTE:
1. SEWER MANHOLE FRAME AND COVER SHALL BE LEBARON MODEL LC326-2 OR APPROVED EQUAL.

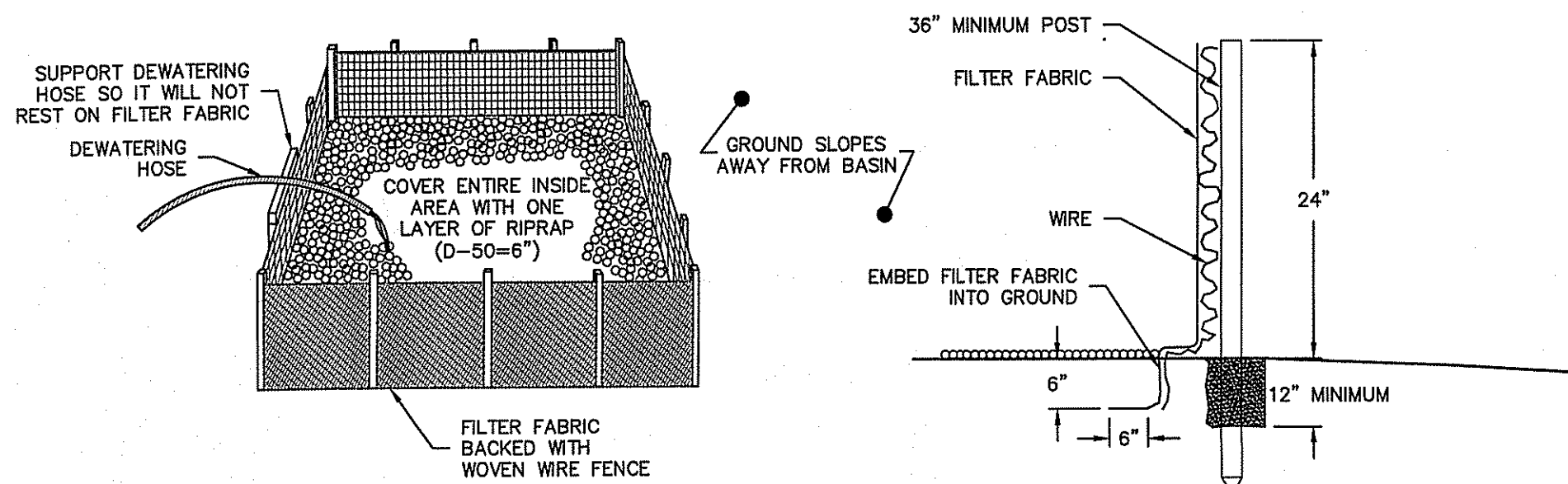


Water-Tight Sewer Manhole Frame & Cover Detail
NOT TO SCALE



Wood Guardrail
NOT TO SCALE

- NOTES:
1. THE BASIN STORAGE VOLUME SHOULD NOT BE LESS THAN 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. REMOVED SEDIMENT WHEN ACCUMULATION REACHES 1/2 THE ORIGINAL HEIGHT OF THE FILTER FABRIC.
 5. THE CONTRACTOR IS RESPONSIBLE FOR MAINTAINING THE STRUCTURE IN PROPER WORKING CONDITIONS AS LONG AS IT IS IN PLACE.
 6. FILTER FABRIC BASINS AND ACCUMULATED SEDIMENT MUST BE REMOVED WHEN THE BASIN'S 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

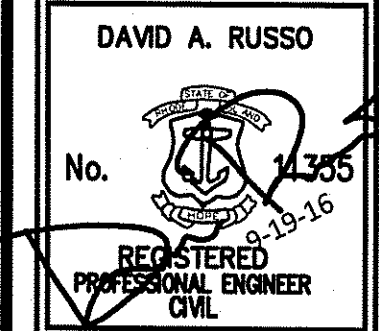
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Detail Sheet - Misc.
Stonebridge Crossing
Assessor's Plat 228 - Lots 97 & 98
Warwick, Rhode Island 02818
Applicant
M&M Land Company
c/o Mr. Kevin Murphy, 370 Shawmut Avenue, Warwick RI 02889

C6.6
SHEET 18 OF 18

DiPrete Engineering
Two Stafford Court Cranston, RI 02920
tel 401-943-1000 fax 401-464-6006 www.DiPrete-Eng.com

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Environmental Management
SEP 20 2016
Office of Water Resources

No.	Date	Description	By:	Design By: D.A.R.
3	09-02-2016	ROSA R. Submission	J.A.R.	
2	09-02-2016	Warwick Sewer Authority Submission	J.A.R.	
1	09-02-2016	Comments	J.A.R.	
0	09-02-2016	ROSA Submission	J.A.R.	