

- B** BUSINESS DISTRICT
- CI** COMMERCIAL INDUSTRIAL DISTRICT
- R6** RESIDENCE 6 DISTRICT
- R7.5** RESIDENCE 7.5 DISTRICT
- R8** RESIDENCE 8 DISTRICT
- R10** RESIDENCE 10 DISTRICT

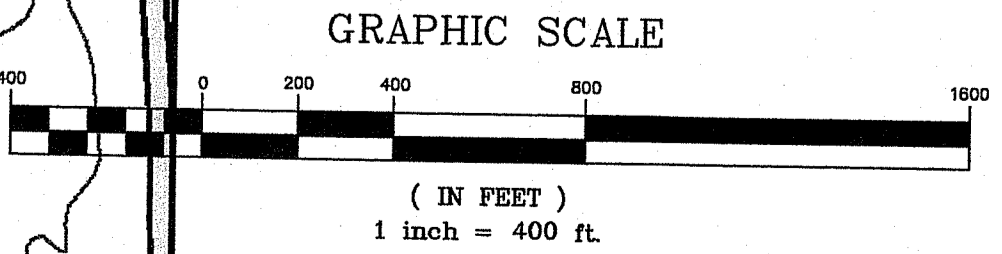
4619

4618

DEPARTMENT OF ENVIRONMENTAL MANAGEMENT
 OFFICE OF WATER RESOURCES
 FRESHWATER WETLANDS PROGRAM
 APPROVED WITH CONDITIONS
 AS SPECIFIED IN THE LETTER OF APPROVAL
 DATED APR 09 2021 FILE # 21-0025
 NO CHANGES ALLOWED WITHOUT PRIOR APPROVAL
 APPROVED PLANS MUST BE AT CONSTRUCTION SITE

Nancy L. Freeman

Environmental Management
 JAN 25 2021
 Office of Water Resources



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

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STEVEN M. CABRAL
 No. 4847
 REGISTERED PROFESSIONAL ENGINEER

KEY PLAN

PROJECT TITLE:

BROTHERS FARM
 PLAT MAP 13, LOTS 53 and 765
 and PLAT MAP 14, LOT 1
 ZONING DISTRICT R8
 RESIDENTIAL DISTRICT
 NARRAGANSETT AVENUE
 WEST WARWICK, RI

PREPARED FOR:



LEGACY CONSTRUCTION
 782 Main Street
 East Greenwich, RI 02818
 (401) 709-4236

DRAWING TITLE:

VICINITY MAP

DATE: DECEMBER 2020 SCALE: 1" = 400'

DWG. NAME:

REVISIONS

NUMBER	REMARKS	DATE

DRAWING NUMBER

C2

SHEET: 3 OF 17

ABUTTERS WITHIN 200'

MAP 13 LOT 48
ALISON L. STETKIEWICZ AND TARA SZYMANSKI
44 NARRAGANSETT AVENUE
WEST WARWICK, RI 02893

MAP 13 LOT 54
LORI CRUDDEN
3 TIFFANY AVENUE
WEST WARWICK, RI 02893

MAP 13 LOT 56
JAIME RITCHOTTE AND ALLISON MOOREHEAD
2 TIFFANY AVENUE
WEST WARWICK, RI 02893

MAP 13 LOT 57
ISAGANI AND RHONA J. MULLET
10 TIFFANY AVENUE
WEST WARWICK, RI 02893

MAP 13 LOT 59
MICHAEL J. CAMARA AND TRACY L. SMEALS
7 TIFFANY AVENUE
WEST WARWICK, RI 02893

MAP 13 LOT 67
JOSEPH T. CHRISTMAN AND XIOMARA TEJEDA
20 TIFFANY AVENUE
WEST WARWICK, RI 02893

MAP 13 LOT 68
STEVEN J. HUNT AND CAROLYN BOISCLAIR
11 TIFFANY AVENUE
WEST WARWICK, RI 02893

MAP 13 LOT 74
STEVEN J. HUNT AND CAROLYN BOISCLAIR
11 TIFFANY AVENUE
WEST WARWICK, RI 02893

MAP 13 LOT 75
STEVEN J. HUNT
11 TIFFANY AVENUE
WEST WARWICK, RI 02893

MAP 13 LOT 565
DENNIS D. AND CAROL AMARAL
48 CROMPTON AVENUE
WEST WARWICK, RI 02893

MAP 13 LOT 574
WILLIAM R. AND YOLANDA FITTS
36 CROMPTON AVENUE
WEST WARWICK, RI 02893

MAP 13 LOT 575
NICHOLAS J. COLOMBO
46 AUDREY DRIVE
WEST WARWICK, RI 02893

MAP 13 LOT 576
CHARLES J. AND THERESE Y. ZWOLENSKI
65 HAMILTON STREET
WEST WARWICK, RI 02893

MAP 13 LOT 577
CHARLES J. AND THERESE Y. ZWOLENSKI
65 HAMILTON STREET
WEST WARWICK, RI 02893

MAP 13 LOT 581
MARC R. AND ARLETTE M. DURAND
45 CROMPTON AVENUE
WEST WARWICK, RI 02893

MAP 13 LOT 582
MARION J. FATH
52 NARRAGANSETT AVENUE
WEST WARWICK, RI 02893

MAP 13 LOT 648
ROBERT A. ZWOLENSKI
34 BOUCHER STREET
WEST WARWICK, RI 02893

MAP 13 LOT 650
JOSHUA DOWNEY
51 BUCKLEY AVENUE
WEST WARWICK, RI 02893

MAP 13 LOT 716
WILLIAM J. NOVI
55 NARRAGANSETT AVENUE
WEST WARWICK, RI 02893

MAP 13 LOT 738
DAVID A. AND ELLEN G. STETKIEWICZ
1 CROMPTON AVENUE
WEST WARWICK, RI 02893

MAP 13 LOT 754
NICHOLAS J. COLOMBO
46 AUDREY DRIVE
WEST WARWICK, RI 02893

MAP 13 LOT 763
ANNA REBELO
8 CROMPTON AVENUE
WEST WARWICK, RI 02893

MAP 13 LOT 764
JEFFREY BYRD
4 CROMPTON AVENUE
WEST WARWICK, RI 02893

MAP 14 LOT 2
THERESE Y. ZWOLENSKI
65 HAMILTON STREET
WEST WARWICK, RI 02893

MAP 14 LOT 3
STEVEN HUNT
11 TIFFANY AVENUE
WEST WARWICK, RI 02893

MAP 14 LOT 4
CHRISTOPHER AND REBECCA MULVANEY
22 TIFFANY AVENUE
WEST WARWICK, RI 02893

MAP 14 LOT 5
TSVP 1996-1 LLC
1313 DOLLY MADDISON BOULEVARD
SUITE LL-130
MCLEAN, VA 22101

MAP 14 LOT 6
STEVEN HUNT AND CAROLYN BOISCLAIR
11 TIFFANY AVENUE
WEST WARWICK, RI 02893

MAP 14 LOT 8
STEVEN HUNT AND CAROLYN BOISCLAIR
11 TIFFANY AVENUE
WEST WARWICK, RI 02893

MAP 14 LOT 10
TSVP 1996-1 LLC
1313 DOLLY MADDISON BOULEVARD
SUITE LL-130
MCLEAN, VA 22101

MAP 14 LOT 13
ESTATE OF PHYLLIS KRAWCZUK
C/O ERIC D. BARR
464 PAVILION AVENUE
WARWICK, RI 02888

MAP 14 LOT 14
ESTATE OF PHYLLIS KRAWCZUK
C/O ERIC D. BARR
464 PAVILION AVENUE
WARWICK, RI 02888

MAP 14 LOT 15
TSVP 1996-1 LLC
1313 DOLLY MADDISON BOULEVARD
SUITE LL-130
MCLEAN, VA 22101

MAP 14 LOT 18
TSVP 1996-1 LLC
1313 DOLLY MADDISON BOULEVARD
SUITE LL-130
MCLEAN, VA 22101

MAP 14 LOT 19
ESTATE OF PHYLLIS KRAWCZUK
C/O ERIC D. BARR
464 PAVILION AVENUE
WARWICK, RI 02888

MAP 14 LOT 20
ESTATE OF PHYLLIS KRAWCZUK
C/O ERIC D. BARR
464 PAVILION AVENUE
WARWICK, RI 02888

MAP 14 LOT 25
STEVEN HUNT AND CAROLYN BOISCLAIR
11 TIFFANY AVENUE
WEST WARWICK, RI 02893

MAP 14 LOT 1043
WILLIAM ZWOLENSKI
91 COWESETT AVENUE
WEST WARWICK, RI 02893

MAP 14 LOT 1054
CHARLES J. AND THERESE Y. ZWOLENSKI
65 HAMILTON STREET
WEST WARWICK, RI 02893

MAP 14 LOT 1055
TOWN OF WEST WARWICK
1170 MAIN STREET
WEST WARWICK, RI 02893

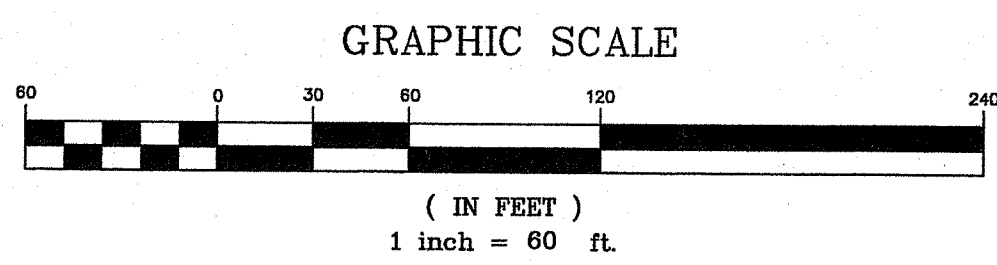
MAP 27 LOT 2
TSVP 1996-1 LLC
1313 DOLLY MADDISON BOULEVARD
SUITE LL-130
MCLEAN, VA 22101

MAP 27 LOT 361
THERESE Y. ZWOLENSKI
65 HAMILTON STREET
WEST WARWICK, RI 02893

MAP 28 LOT 502
ROBERT J. AND PATRICIA A. WITHERSPOON
121 TAMPA STREET
WEST WARWICK, RI 02893

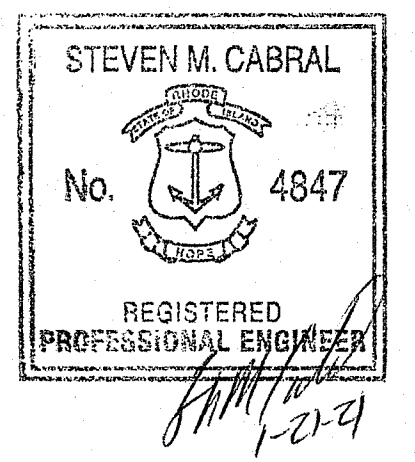


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Dorey L. Freeman



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Email: cel@crossmaneng.com

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KEY PLAN

PROJECT TITLE:
**BROTHERS FARM
PLAT MAP 13, LOTS 53 and 765
and PLAT MAP 14, LOT 1
ZONING DISTRICT R8
RESIDENTIAL DISTRICT
NARRAGANSETT AVENUE
WEST WARWICK, RI**

PREPARED FOR:
LEGACY CONSTRUCTION
782 Main Street
East Greenwich, RI 02818
(401) 709-4236

DRAWING TITLE:
200' RADIUS MAP

DATE: DECEMBER 2020 SCALE: 1"=60'

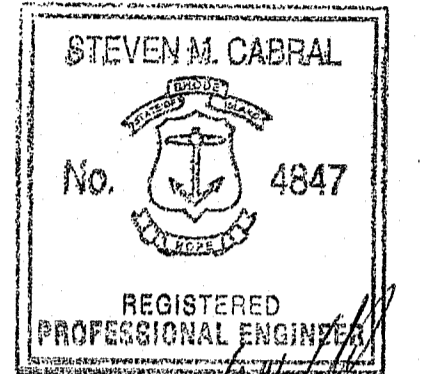
DWG. NAME: 2343-C03-RADIUS.dwg

REVISIONS

NUMBER	REMARKS	DATE

DRAWING NUMBER
C3
SHEET: 4 OF 17

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 RESIDENTIAL DISTRICT
 NARRAGANSETT AVENUE
 WEST WARWICK, RI

PREPARED FOR:



LEGACY CONSTRUCTION
 782 Main Street
 East Greenwich, RI 02818
 (401) 709-4236

DRAWING TITLE:

SITE LAYOUT PLAN

DATE: DECEMBER 2020
 SCALE: 1"=40'

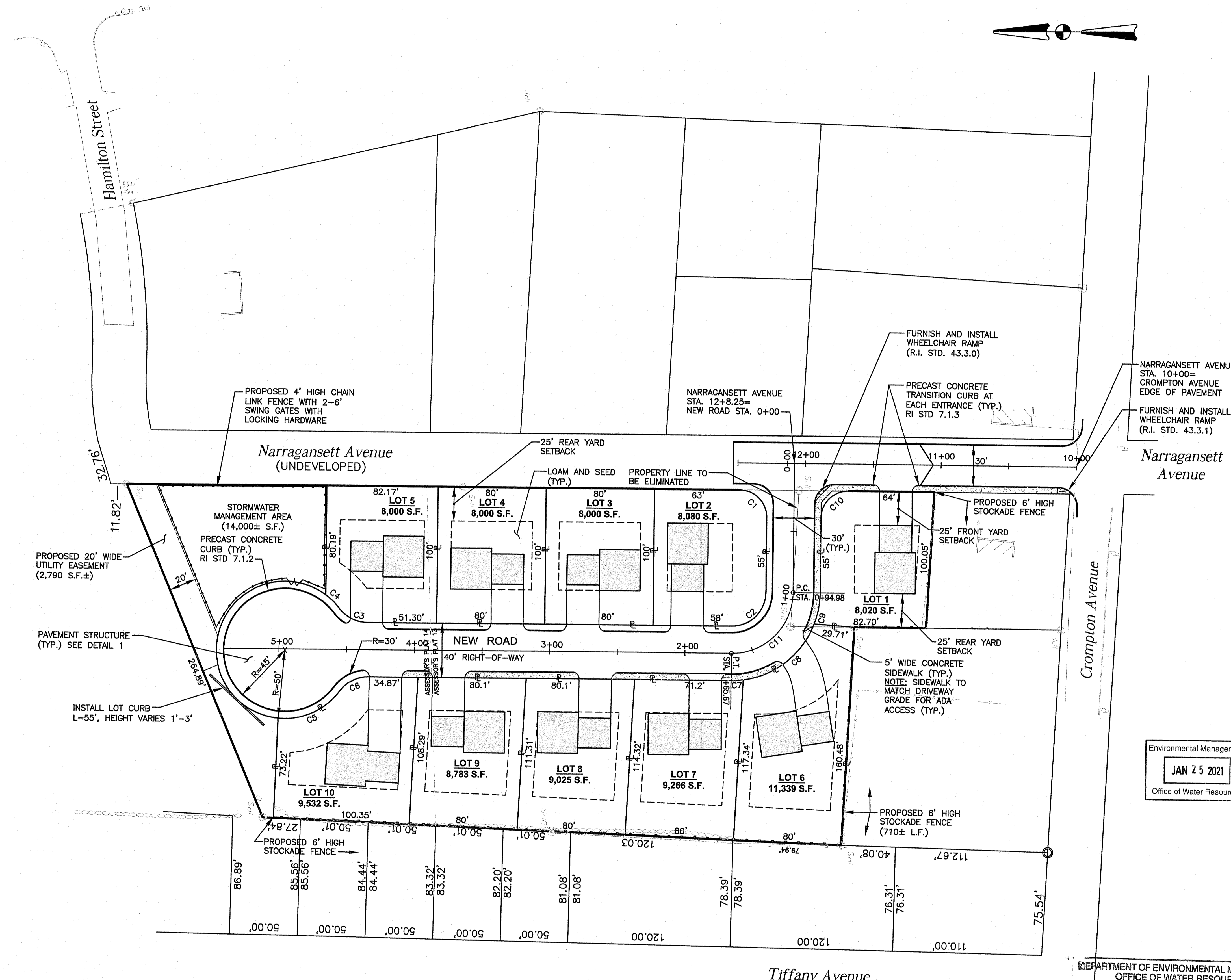
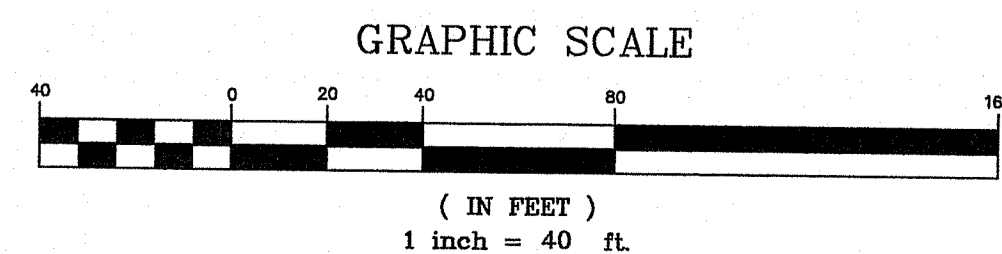
DWG. NAME: 2343-C05-SITE.dwg

REVISIONS

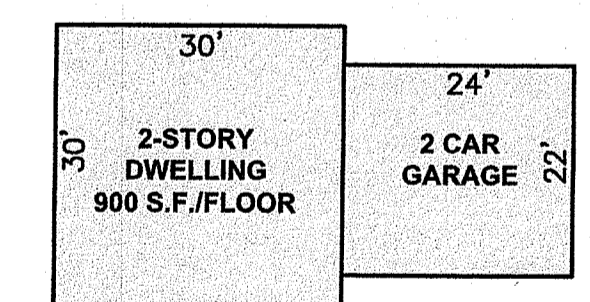
REVISION NUMBER	REMARKS	DATE
1		
2		
3		
4		
5		
6		
7		
8		
9		
10		

DEPARTMENT OF ENVIRONMENTAL MANAGEMENT
 OFFICE OF WATER RESOURCES
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Anna L. Freeman



- NOTES**
1. THE PROPOSED IMPROVEMENTS INCLUDE PAVING NARRAGANSETT AVENUE FOR 250 LINEAR FEET (30' WIDE).
 2. THE PROPOSED NEW ROAD WILL BE 541.16 LINEAR FEET TO THE END OF THE CUL-DE-SAC (30' WIDE).
 3. THE PROPOSED NEW ROAD AND STORMWATER MANAGEMENT AREA WILL BE MAINTAINED BY THE TOWN.
 4. THE PROPOSED ROADWAY SLOPES, WIDTH AND PAVEMENT STRUCTURE MEET THE TOWN OF WEST WARWICK SUBDIVISION STANDARDS.
 5. IF APPLICABLE, MODIFICATIONS TO THE PROPOSED DWELLING AND GARAGE SIZE SHALL BE REFERENCED DURING THE BUILDING PERMIT SUBMISSION.
 6. REPAIR STONE WALLS DAMAGED DURING CONSTRUCTION.



TYPICAL PROPOSED DWELLING

ZONING DISTRICT
 R-8 (RESIDENCE 8)
 (1-FAMILY PERMITTED)

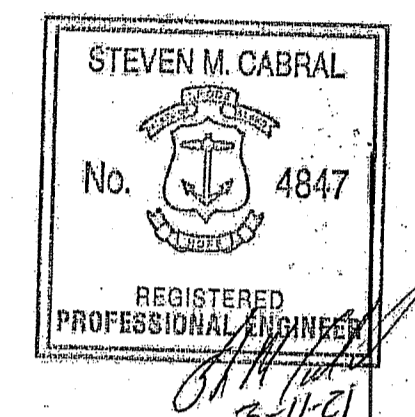
REQUIREMENT	LOT NO.									
	1	2	3	4	5	6	7	8	9	10
MIN. AREA 8,000 S.F.	8,020	8,080	8,000	8,000	8,000	11,339	9,266	9,025	8,783	9,532
MIN. WIDTH 80 FT.	81	83	80	80	82	80	80	80	80	100
MIN. DEPTH 100 FT.	100	100	100	100	100	124	115	113	109	100
MIN. FRONTAGE 70 FT.	98	97	80	80	89	70	80	80	80	113
FRONT SETBACK 25 FT.	25	25	25	25	25	25	25	25	25	25
INTERIOR SIDE 10 FT.	10	10	10	10	10	10	12	10	12	10
CORNER SIDE 25 FT.	25+	25+	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
REAR YARD 25 FT.	25	25	25+	25+	25+	25+	25+	25+	25+	25+
MAX. STORIES 2	2	2	2	2	2	2	2	2	2	2
MAX. HEIGHT 25 FT.	25	25	25	25	25	25	25	25	25	25
MAX. COVERAGE 25%	<25%	<25%	<25%	<25%	<25%	<25%	<25%	<25%	<25%	<25%

CURVE TABLE		
CURVE	LENGTH	RADIUS
C1	31.42	20.00
C2	39.27	25.00
C3	23.33	27.00
C4	14.64	50.50
C5	52.50	50.50
C6	25.76	27.00
C7	8.91	65.00
C8	70.00	65.00
C9	23.19	65.00
C10	31.42	20.00
C11	70.68	45.00



CROSSMAN ENGINEERING
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KEY PLAN

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 PLAT MAP 13, LOTS 53 and 765
 and PLAT MAP 14, LOT 1
 ZONING DISTRICT R8
 RESIDENTIAL DISTRICT
 NARRAGANSETT AVENUE
 WEST WARWICK, RI

PREPARED FOR:

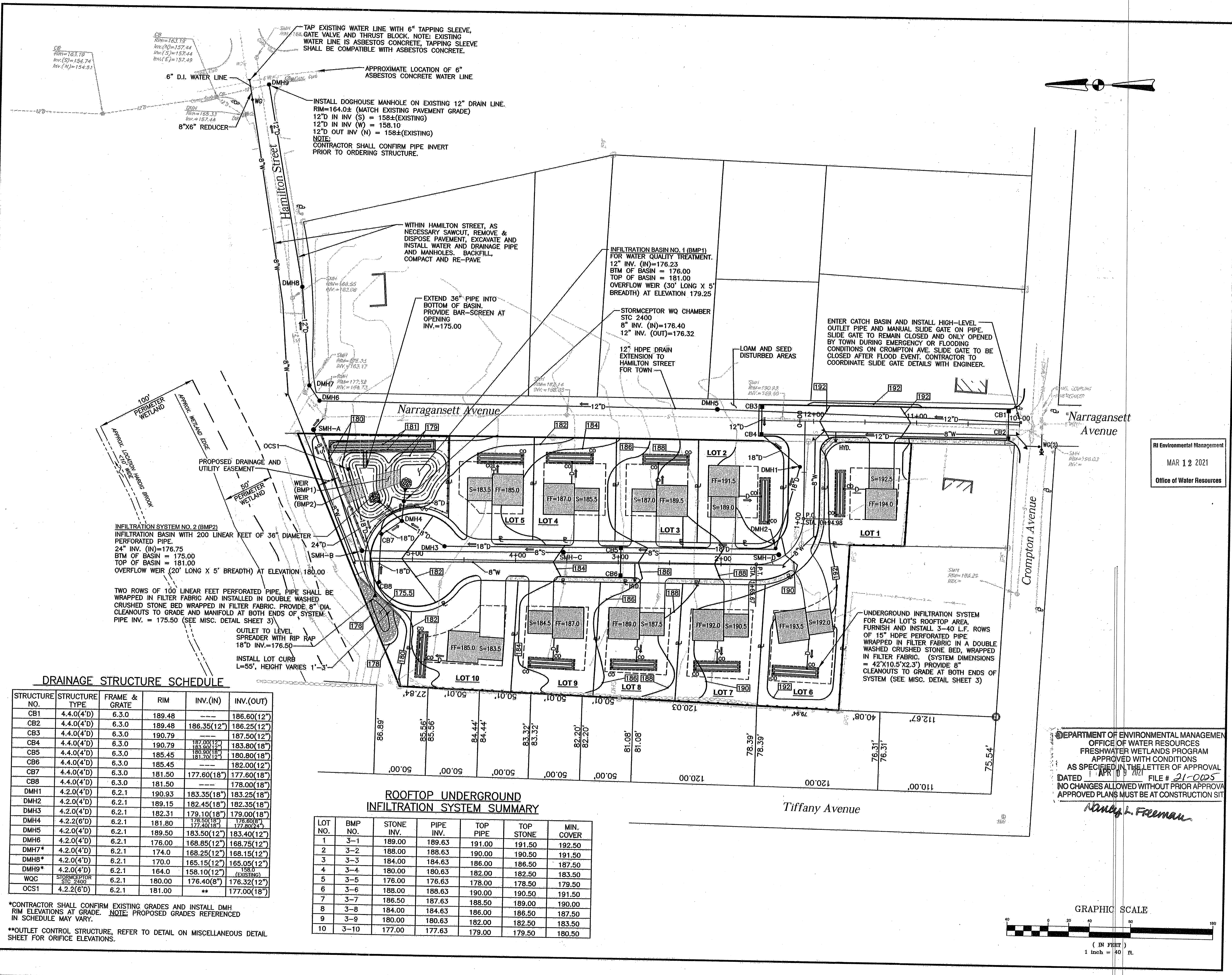
LEGACY CONSTRUCTION
 782 Main Street
 East Greenwich, RI 02818
 (401) 709-4236

DRAWING TITLE:
GRADING and DRAINAGE PLAN

DATE: DECEMBER 2020 SCALE: 1"=40'
 DWG. NAME: 2343-C06-GRADE.dwg

REVISIONS	NUMBER	REMARKS	DATE
1	1	RIDEM COMMENTS	3/9/21

DRAWING NUMBER:
C6
 SHEET: 7 OF 17



DRAINAGE STRUCTURE SCHEDULE

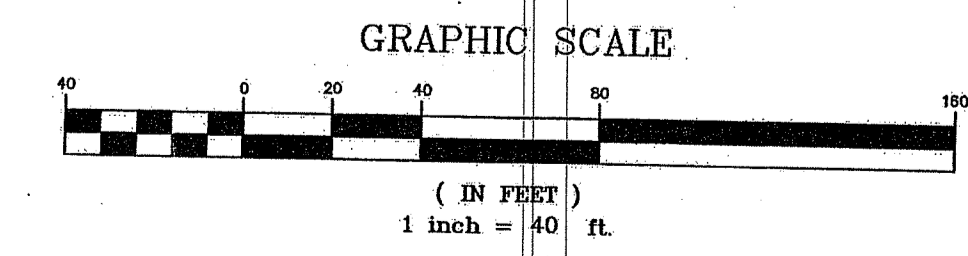
STRUCTURE NO.	STRUCTURE TYPE	FRAME & GRATE	RIM	INV.(IN)	INV.(OUT)
CB1	4.4.0(4'D)	6.3.0	189.48	---	186.60(12")
CB2	4.4.0(4'D)	6.3.0	189.48	186.35(12")	186.25(12")
CB3	4.4.0(4'D)	6.3.0	190.79	---	187.50(12")
CB4	4.4.0(4'D)	6.3.0	190.79	187.00(12")	183.80(18")
CB5	4.4.0(4'D)	6.3.0	185.45	185.45	180.80(18")
CB6	4.4.0(4'D)	6.3.0	185.45	---	182.00(12")
CB7	4.4.0(4'D)	6.3.0	181.50	177.60(18")	177.60(18")
CB8	4.4.0(4'D)	6.3.0	181.50	---	178.00(18")
DMH1	4.2.0(4'D)	6.2.1	190.93	183.35(18")	183.25(18")
DMH2	4.2.0(4'D)	6.2.1	189.15	182.45(18")	182.35(18")
DMH3	4.2.0(4'D)	6.2.1	182.31	179.10(18")	179.00(18")
DMH4	4.2.0(6'D)	6.2.1	181.80	179.50(18")	178.80(18")
DMH5	4.2.0(4'D)	6.2.1	189.50	183.50(12")	183.40(12")
DMH6	4.2.0(4'D)	6.2.1	176.00	168.85(12")	168.75(12")
DMH7*	4.2.0(4'D)	6.2.1	174.0	168.25(12")	168.15(12")
DMH8*	4.2.0(4'D)	6.2.1	170.0	165.15(12")	165.05(12")
DMH9*	4.2.0(4'D)	6.2.1	164.0	158.10(12")	158.00(12")
WQC	STORMCEPTOR STC 2400	6.2.1	180.00	176.40(8")	176.32(12")
OCS1	4.2.2(6'D)	**	181.00	**	177.00(18")

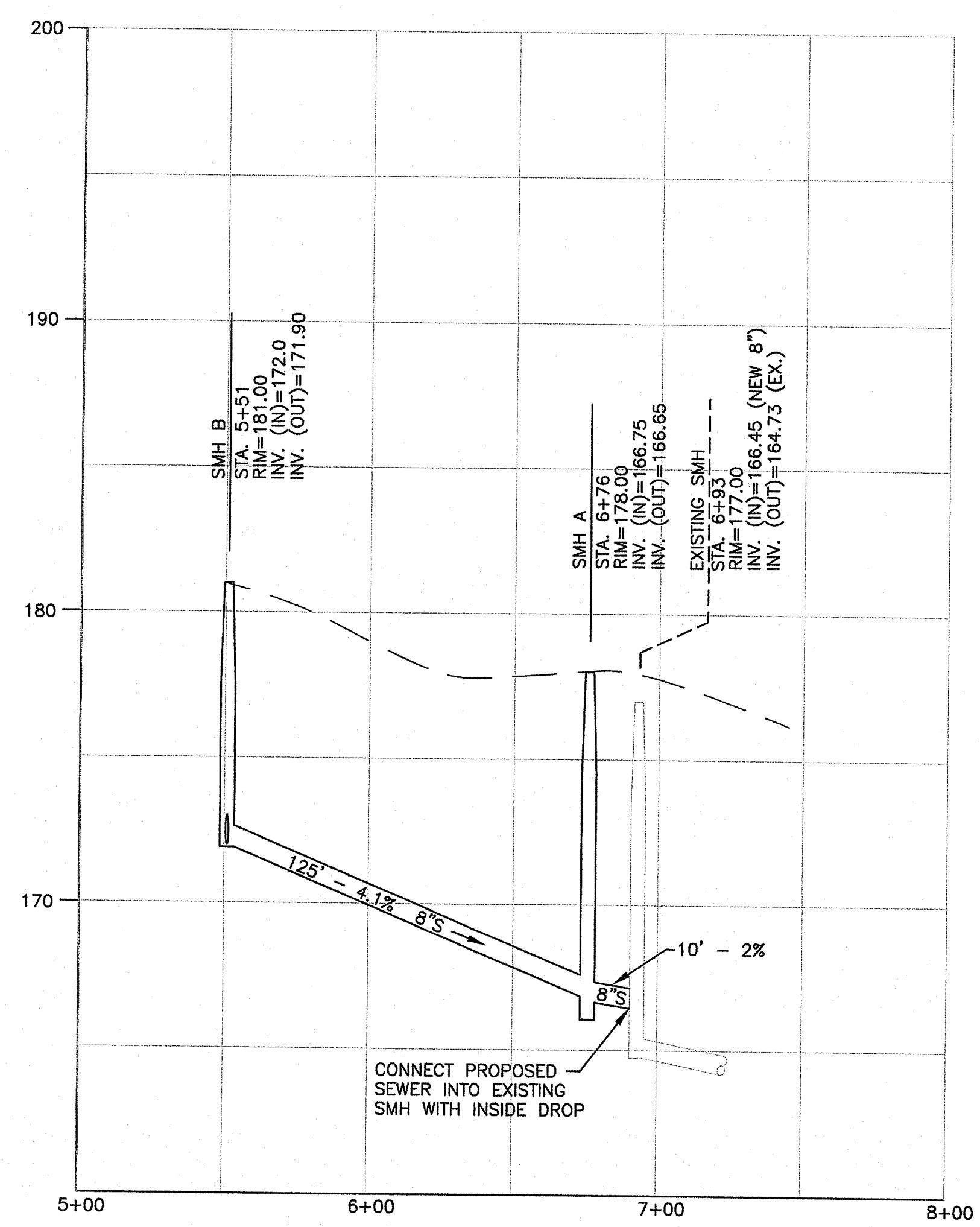
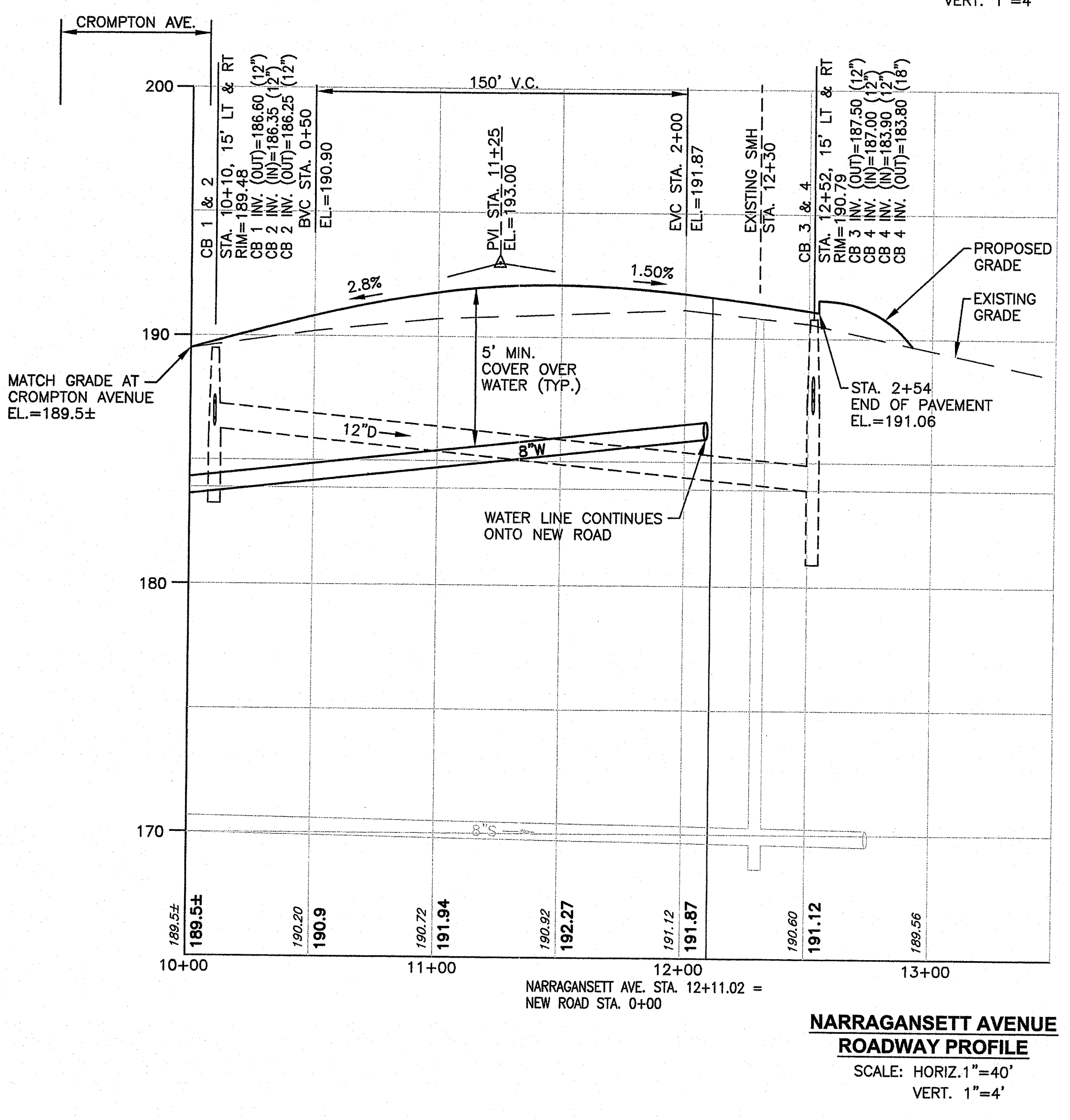
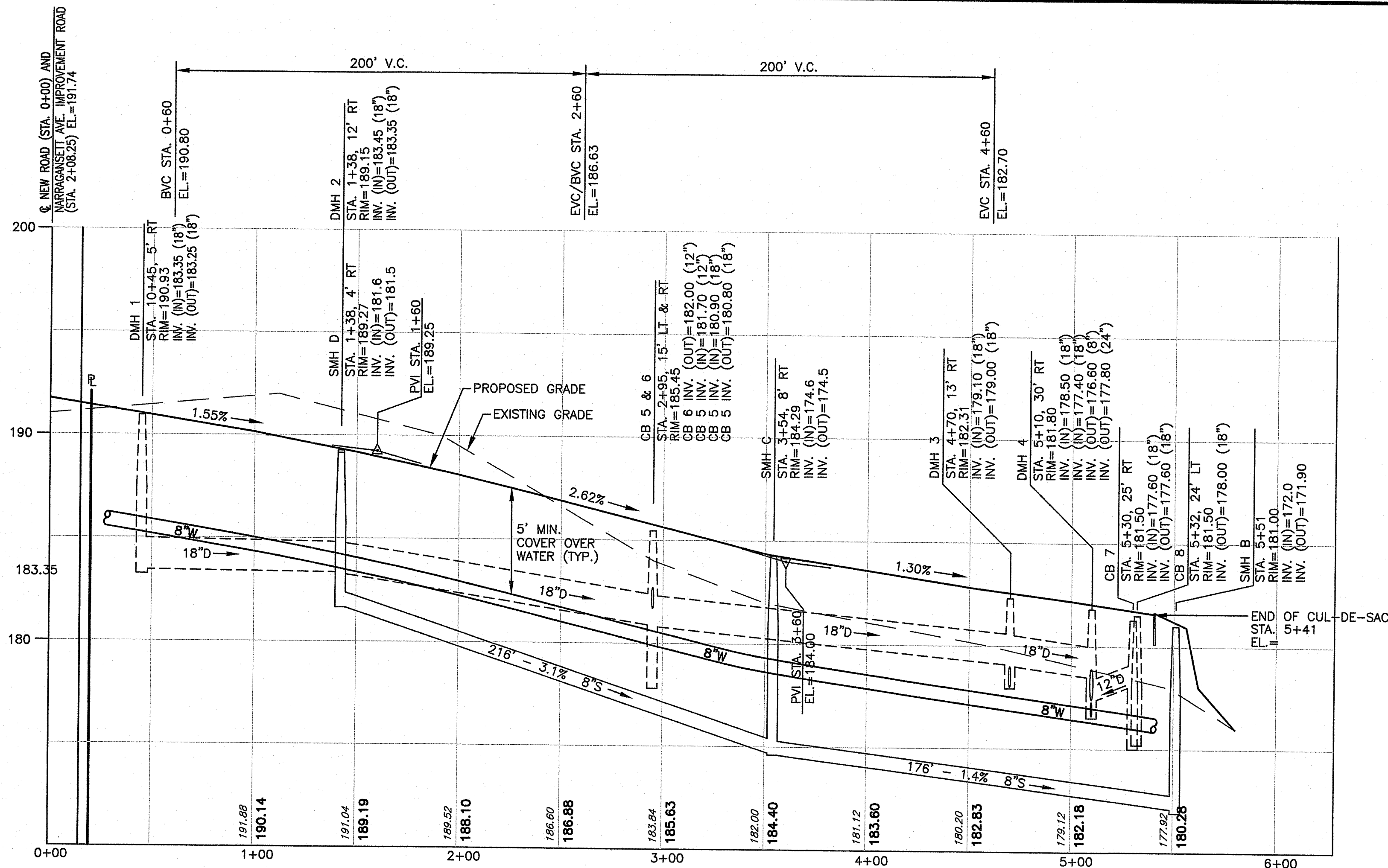
*CONTRACTOR SHALL CONFIRM EXISTING GRADES AND INSTALL DMH RIM ELEVATIONS AT GRADE. NOTE: PROPOSED GRADES REFERENCED IN SCHEDULE MAY VARY.
 **OUTLET CONTROL STRUCTURE, REFER TO DETAIL ON MISCELLANEOUS DETAIL SHEET FOR ORIFICE ELEVATIONS.

ROOFTOP UNDERGROUND INFILTRATION SYSTEM SUMMARY

LOT NO.	BMP NO.	STONE INV.	PIPE INV.	TOP PIPE	TOP STONE	MIN. COVER
1	3-1	189.00	189.63	191.00	191.50	192.50
2	3-2	188.00	188.63	190.00	190.50	191.50
3	3-3	184.00	184.63	186.00	186.50	187.50
4	3-4	180.00	180.63	182.00	182.50	183.50
5	3-5	176.00	176.63	178.00	178.50	179.50
6	3-6	188.00	188.63	190.00	190.50	191.50
7	3-7	186.50	187.63	188.50	189.00	190.00
8	3-8	184.00	184.63	186.00	186.50	187.50
9	3-9	180.00	180.63	182.00	182.50	183.50
10	3-10	177.00	177.63	179.00	179.50	180.50

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Nancy L. Freeman





Environmental Management
 JAN 25 2021
 Office of Water Resources

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Emily L. Freeman

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STEVEN M. CABRAL
 No. 4847
 REGISTERED PROFESSIONAL ENGINEER
SM Cabral

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 WEST WARWICK, RI

PREPARED FOR:

LEGACY CONSTRUCTION
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 East Greenwich, RI 02818
 (401) 709-4236

DRAWING TITLE:
ROADWAY PROFILES

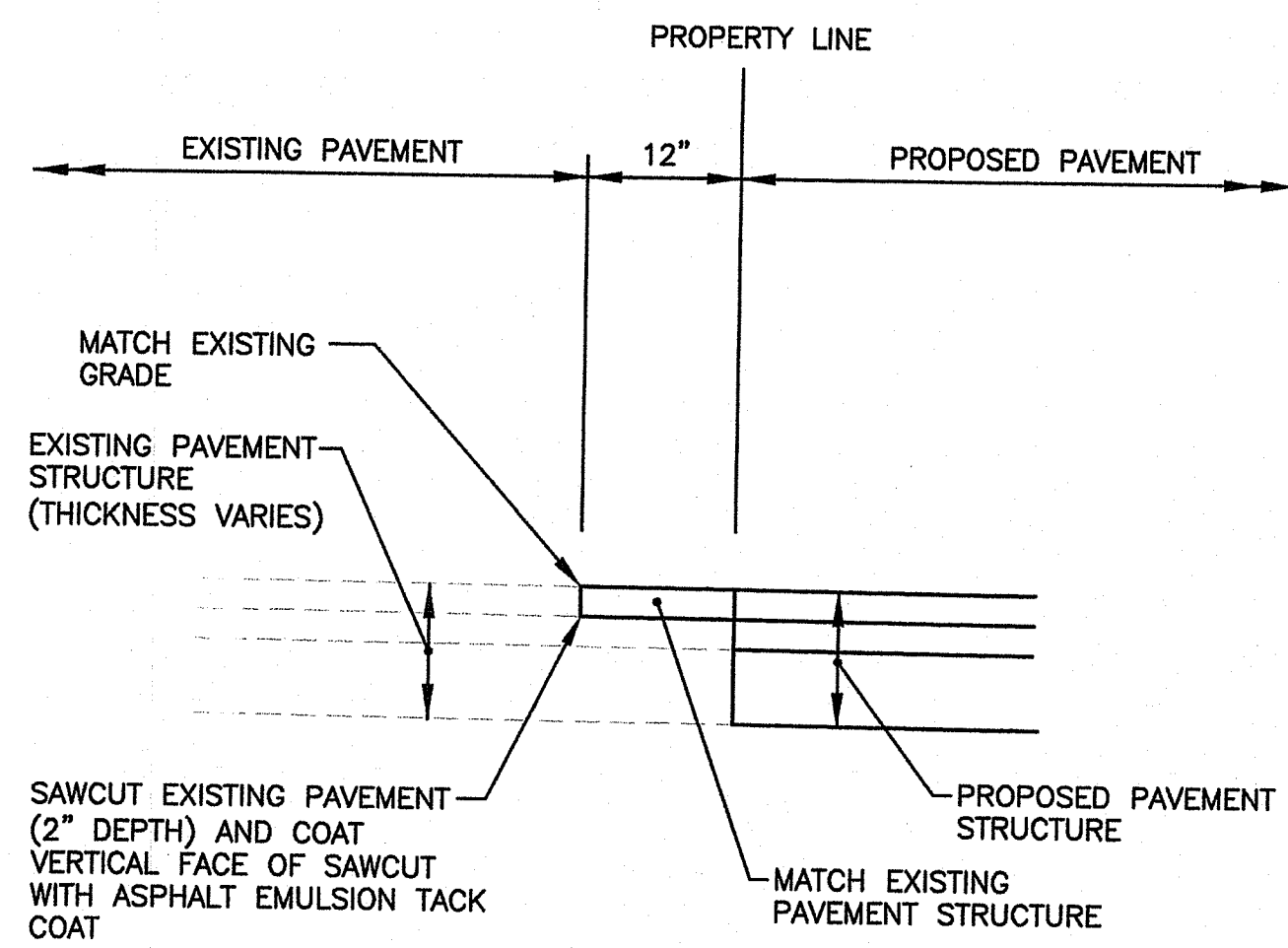
DATE: DECEMBER 2020 SCALE: 1"=40'

DWG. NAME:

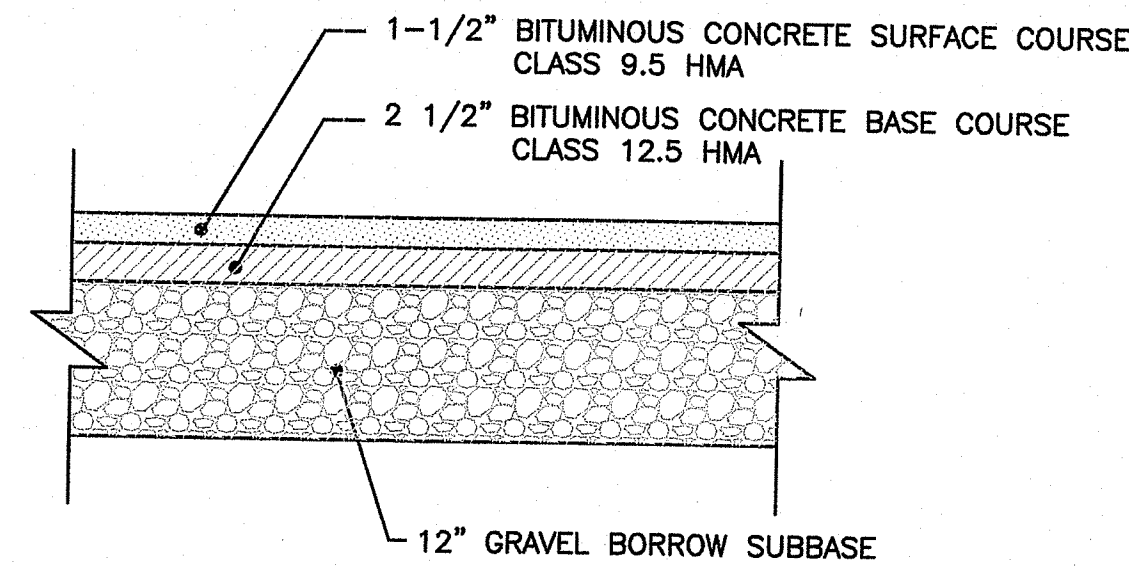
REVISIONS

NUMBER	REMARKS	DATE
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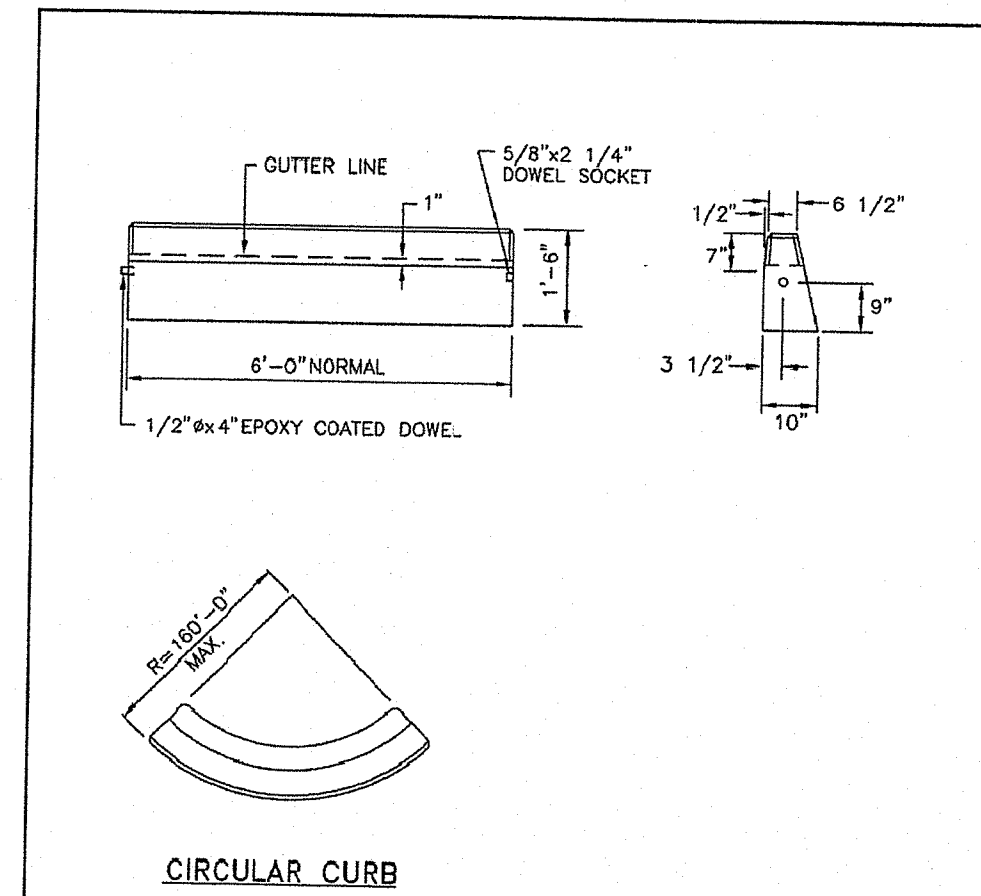
DRAWING NUMBER
C8
 SHEET: 9 OF 17



PROPOSED PAVEMENT MATCH AT EXISTING PAVEMENT
NOT TO SCALE

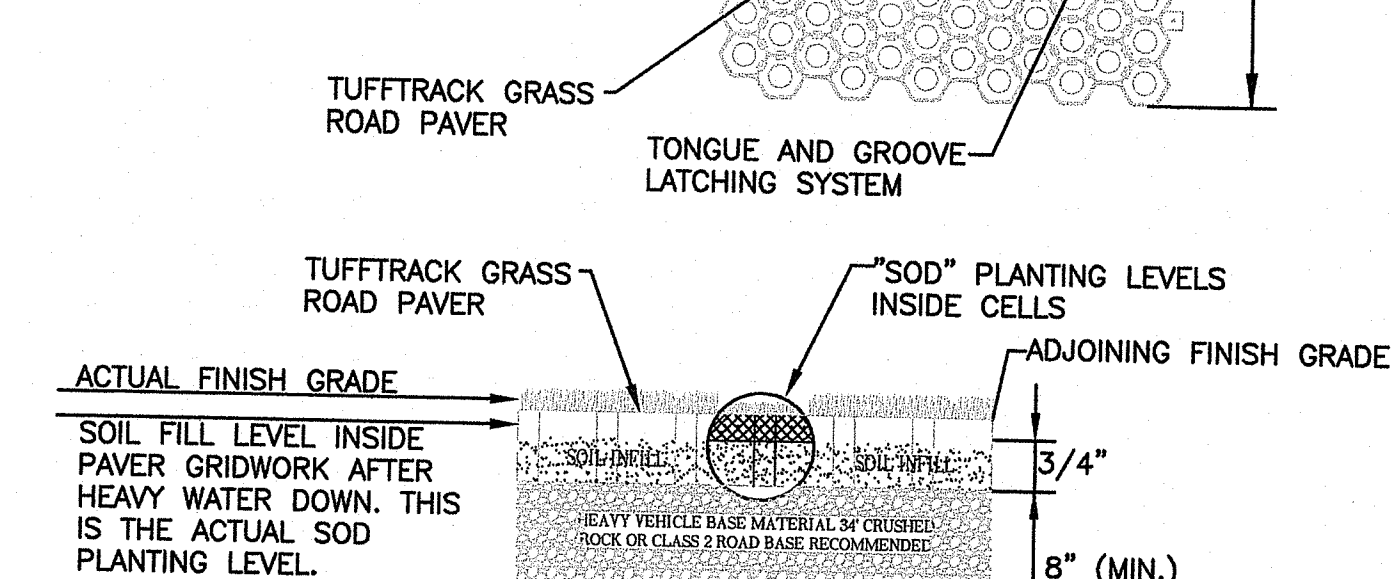
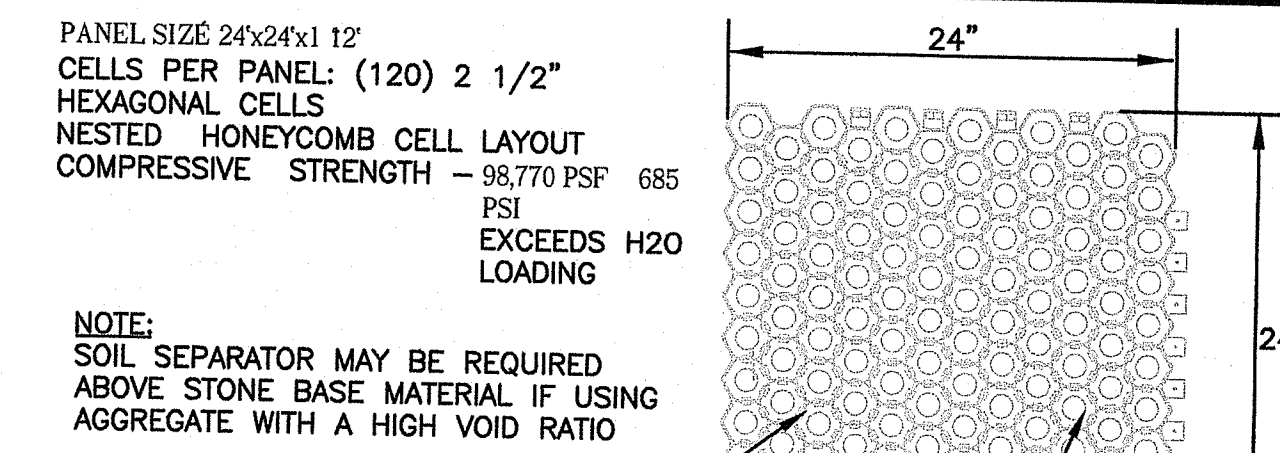


TYPICAL PAVEMENT STRUCTURE DETAIL
NOT TO SCALE



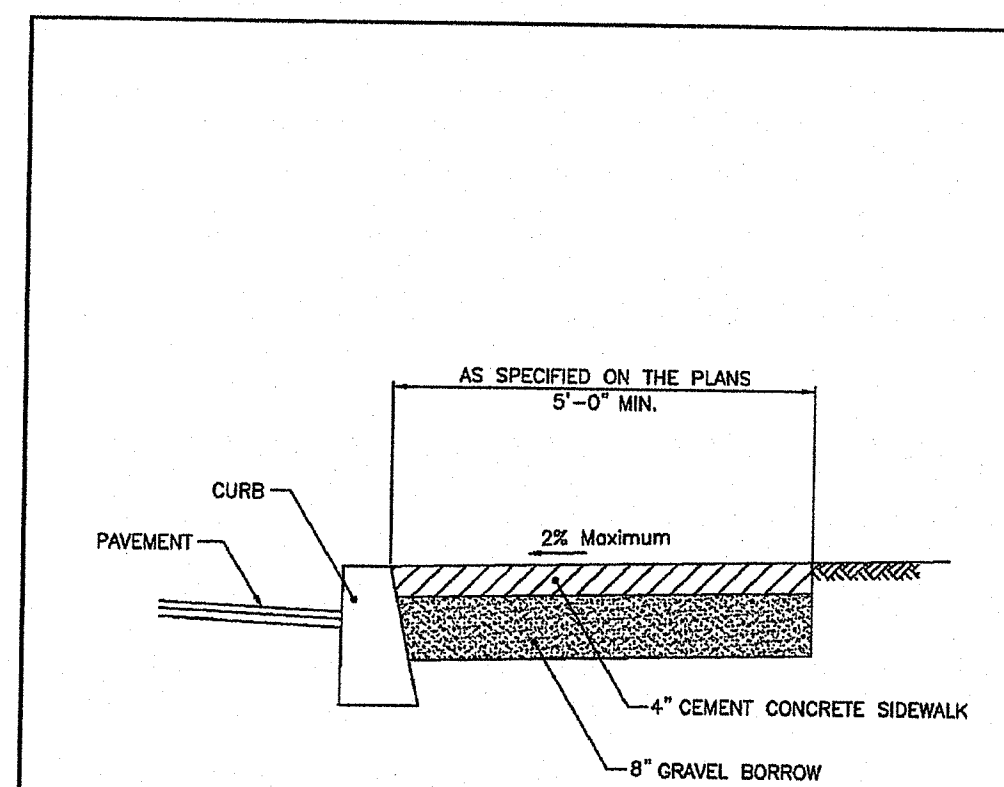
- NOTES:**
1. SHALL BE IN ACCORDANCE WITH SECTION 906 OF THE R.I. STANDARD SPECIFICATIONS.
 2. MINIMUM LENGTH OF STRAIGHT OR CIRCULAR FILLER PIECES TO BE 3'-0\".
 3. EXPOSED SURFACES TO HAVE A SPONGE FLOAT FINISH.
 4. CIRCULAR CURB IS REQUIRED ON CURVES WITH RADIUS OF 160'-0\" OR LESS. STRAIGHT CURB TO BE USED ON CURVES OF MORE THAN 160'-0\" RADIUS.
 5. EXPOSED EDGES TO HAVE A 3/4\" CHAMFER.

RHODE ISLAND DEPARTMENT OF TRANSPORTATION
PRECAST CONCRETE CURB
R.I. STANDARD 7.1.0



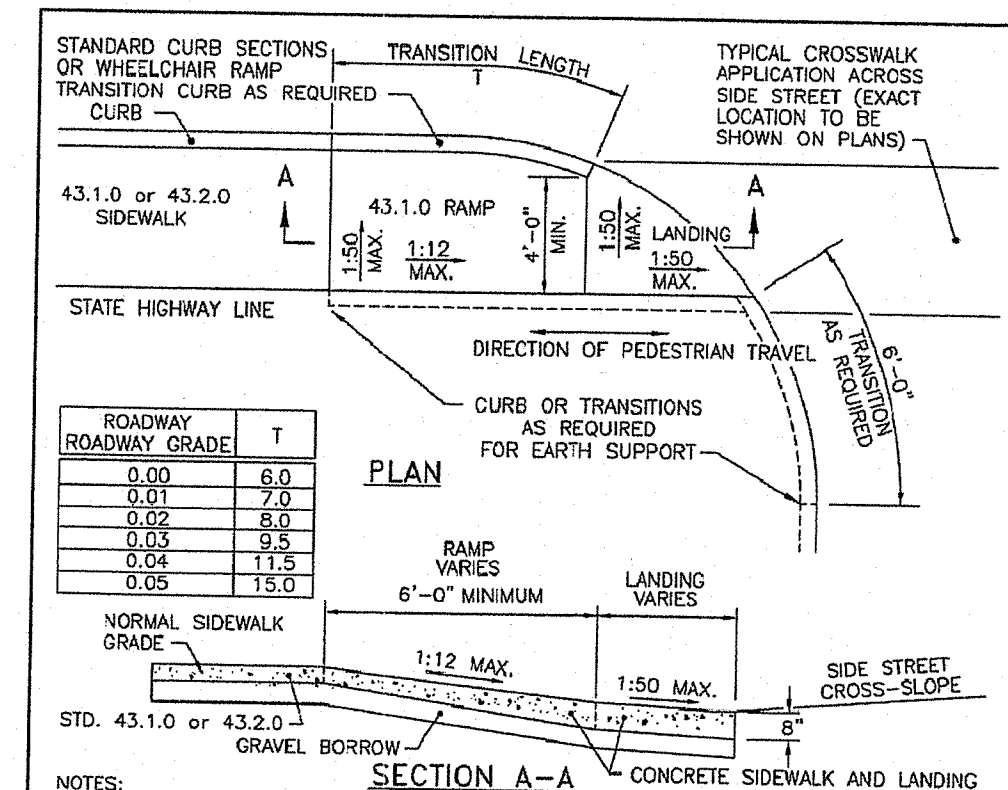
NOTE:
EXISTING SOILS SHOULD BE EVALUATED TO ENSURE PROPER STRUCTURAL AND PERMEABILITY PROPERTIES.

TYPICAL TUFFTRACK PAVER DETAIL (MAINTENANCE ACCESS TO INFILTRATION BASINS)
NOT TO SCALE



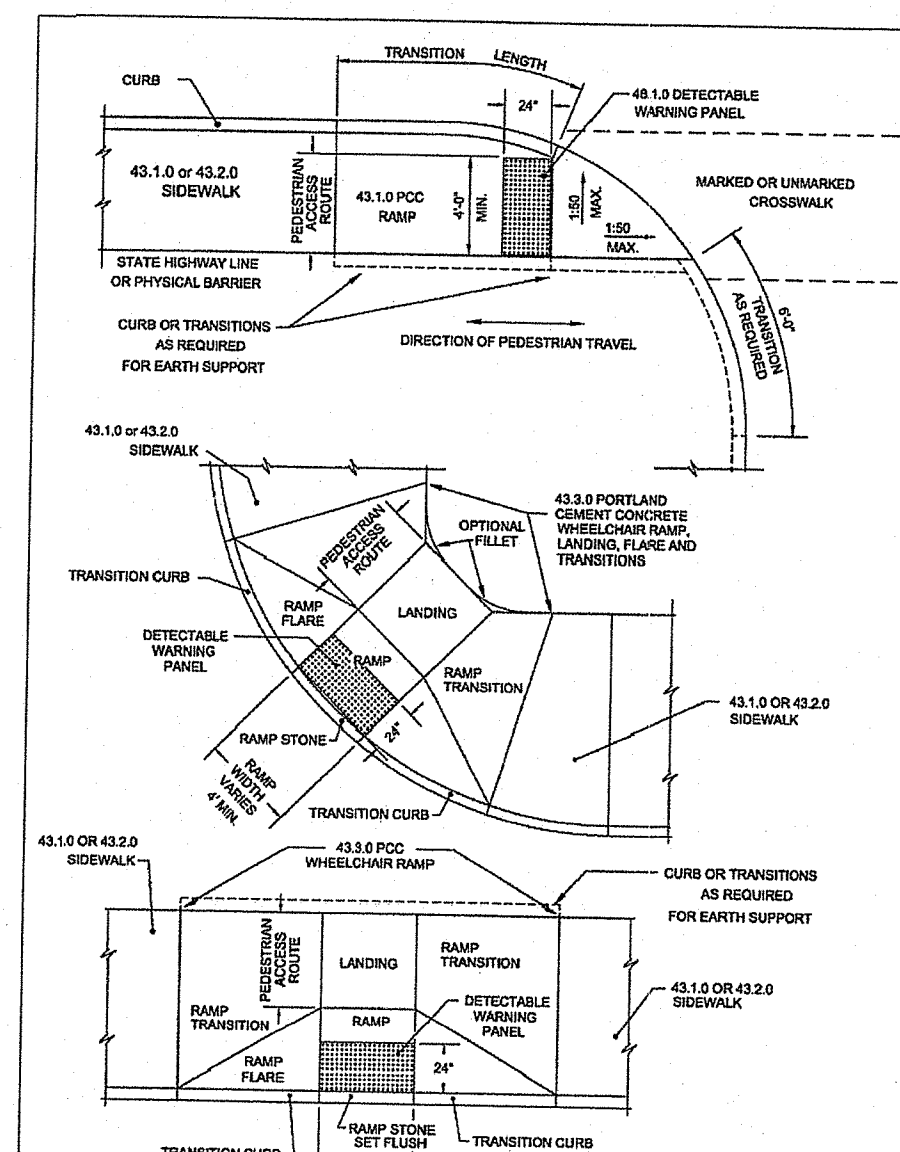
- NOTES:**
1. SHALL BE IN ACCORDANCE WITH SECTION 905 OF THE R.I. STANDARD SPECIFICATIONS.
 2. FOR CURB SETTING DETAIL REFERENCE STD. 7.6.0.

RHODE ISLAND DEPARTMENT OF TRANSPORTATION
CEMENT CONCRETE SIDEWALK
R.I. STANDARD 4.3.1.0

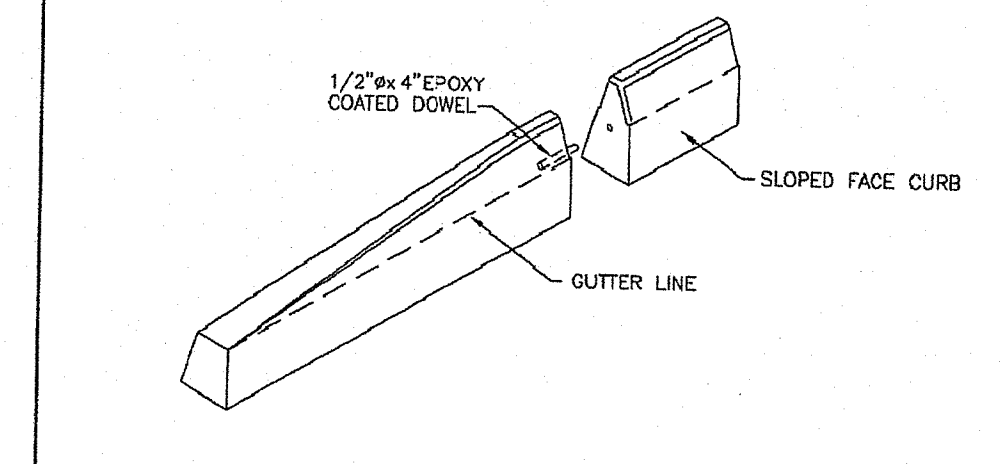
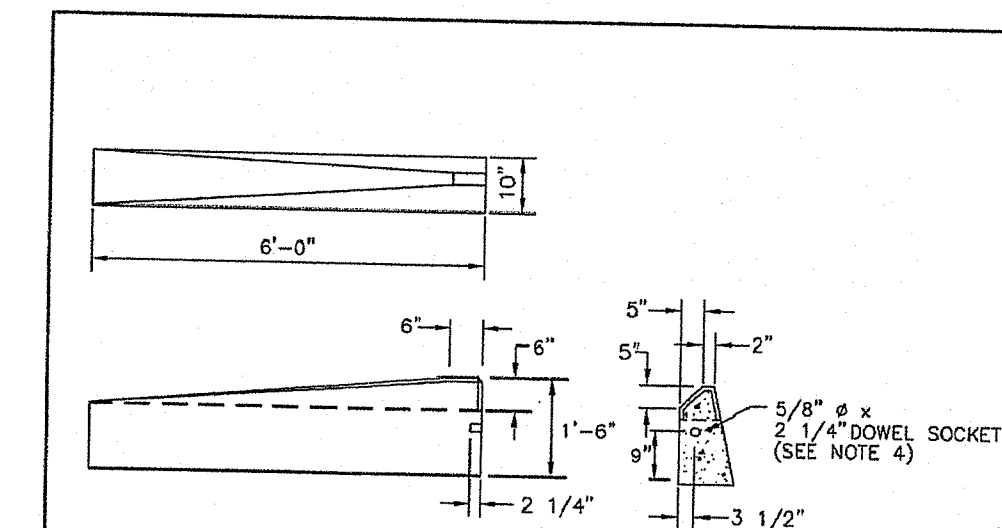


- NOTES:**
1. SHALL BE IN ACCORDANCE WITH SECTION 905 OF THE R.I. STANDARD SPECIFICATIONS.
 2. THIS DETAIL IS TO BE USED ONLY WHEN STATE RIGHT-OF-WAY IS LIMITED TO BACK OF SIDEWALK, AND SIDEWALK IS NARROW WITH NO PEDESTRIAN TRAFFIC FROM SIDE STREET. IF POSSIBLE, THE OBSTRUCTION SHOULD BE PLACED SUCH THAT IT FALLS OUTSIDE OF THE RAMP.
 3. WHEN ANY OBSTRUCTION LOCATED IN THE SIDEWALK FALLS WITHIN A CROSSWALK AREA, THE OBSTRUCTION SHOULD BE PLACED SUCH THAT IT FALLS OUTSIDE OF THE RAMP.
 4. AT NO TIME IS ANY PART OF THE WHEELCHAIR RAMP TO BE LOCATED OUTSIDE OF THE CROSSWALK, AND IT IS TO BE CENTERED WHENEVER POSSIBLE.
 5. DRAINAGE FACILITIES ARE TO BE LOCATED UP-GRADE OF ALL WHEELCHAIR RAMPS.
 6. LOCATION OF WHEELCHAIR RAMPS IS AS SHOWN ON CONTRACT DRAWINGS.
 7. ALL REQUIRED CUTTING OF CURB PIECES TO BE PAID FOR UNDER COST OF CURB.
 8. WHERE THE ROAD PROFILE EXCEEDS THE TRANSITION LENGTH (T) SHALL BE EIGHTEEN FEET (18'-0\").
 9. THE ENTRANCE OF THE WHEELCHAIR RAMP SHALL BE FLUSH WITH THE ROADWAY LENGTHS PREFERRED).
 10. MINIMUM LENGTH OF STRAIGHT OR CIRCULAR FILLER PIECES TO BE 3'-0\" (GREATER LENGTHS PREFERRED).
 11. AN UNOBSTRUCTED PATH OF TRAVEL WITH A MINIMUM WIDTH OF 4'-0\" SHALL BE MAINTAINED.

RHODE ISLAND DEPARTMENT OF TRANSPORTATION
WHEELCHAIR RAMP FOR LIMITED RIGHT-OF-WAY AREAS
R.I. STANDARD 4.3.3.1

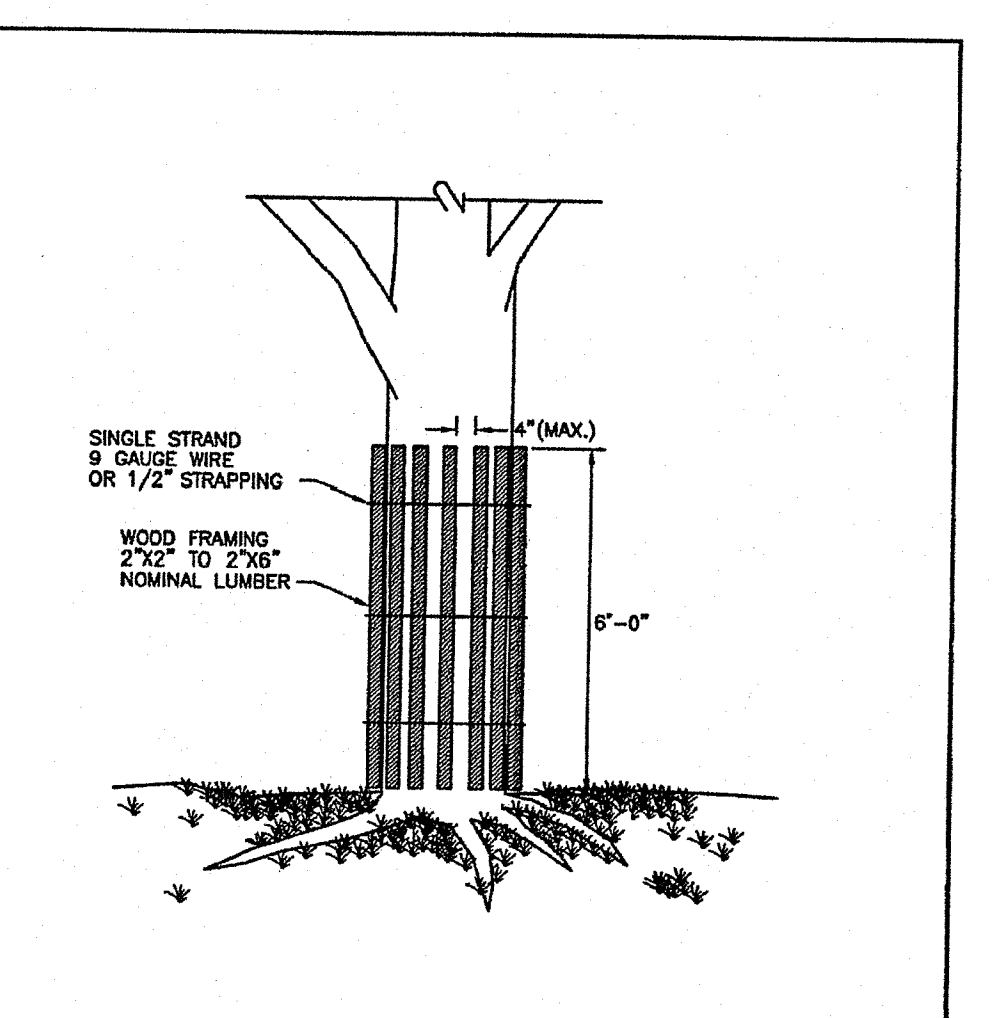


RHODE ISLAND DEPARTMENT OF TRANSPORTATION
DETECTABLE WARNING PANEL PLACEMENT
R.I. STANDARD 4.3.1.0



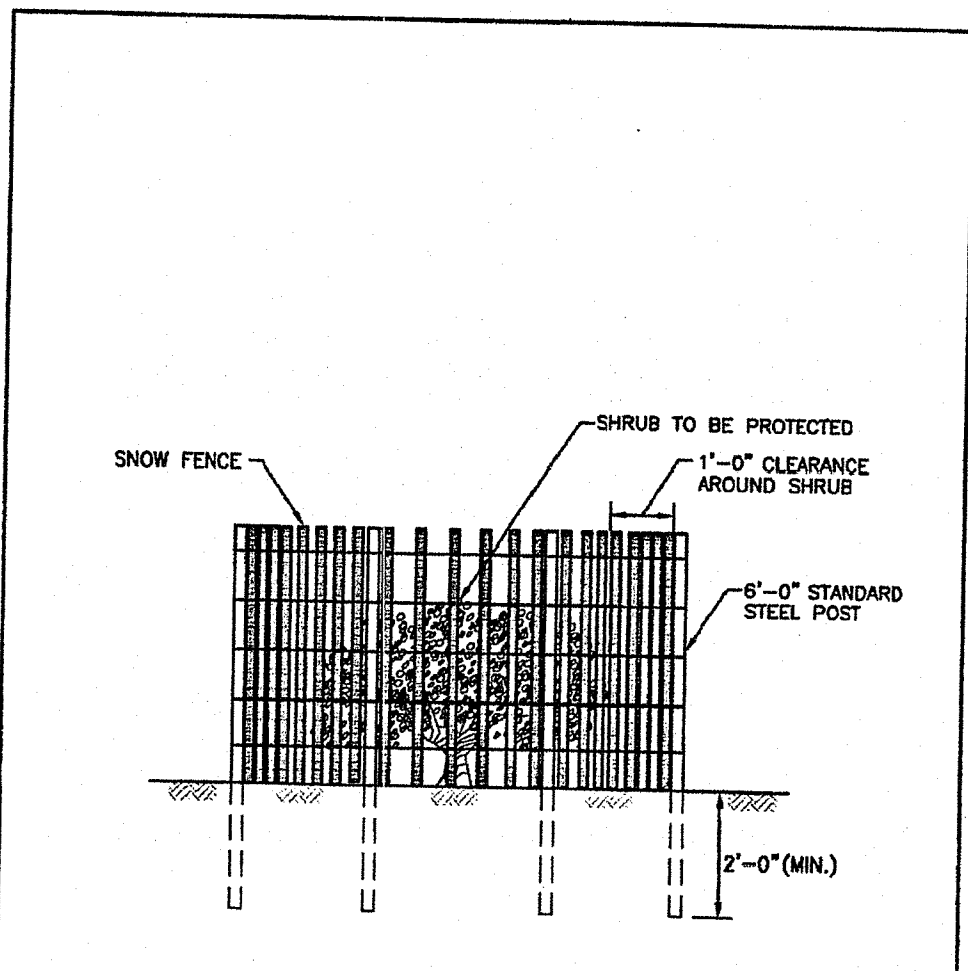
- NOTES:**
1. SHALL BE IN ACCORDANCE WITH SECTION 906 OF THE R.I. STANDARD SPECIFICATIONS.
 2. EXPOSED SURFACES TO HAVE A SPONGE FLOAT FINISH.
 3. EXPOSED EDGES TO HAVE A 3/4\" CHAMFER.
 4. DRAWING SHOWS TRANSITION CURB FOR ONE DIRECTION. FOR OTHER DIRECTION USE OPPOSITE HAND AND INCLUDE A 1/2\" x 4\" EPOXY COATED DOWEL.

RHODE ISLAND DEPARTMENT OF TRANSPORTATION
PRECAST CONCRETE SLOPED FACE TRANSITION CURB
R.I. STANDARD 7.2.1



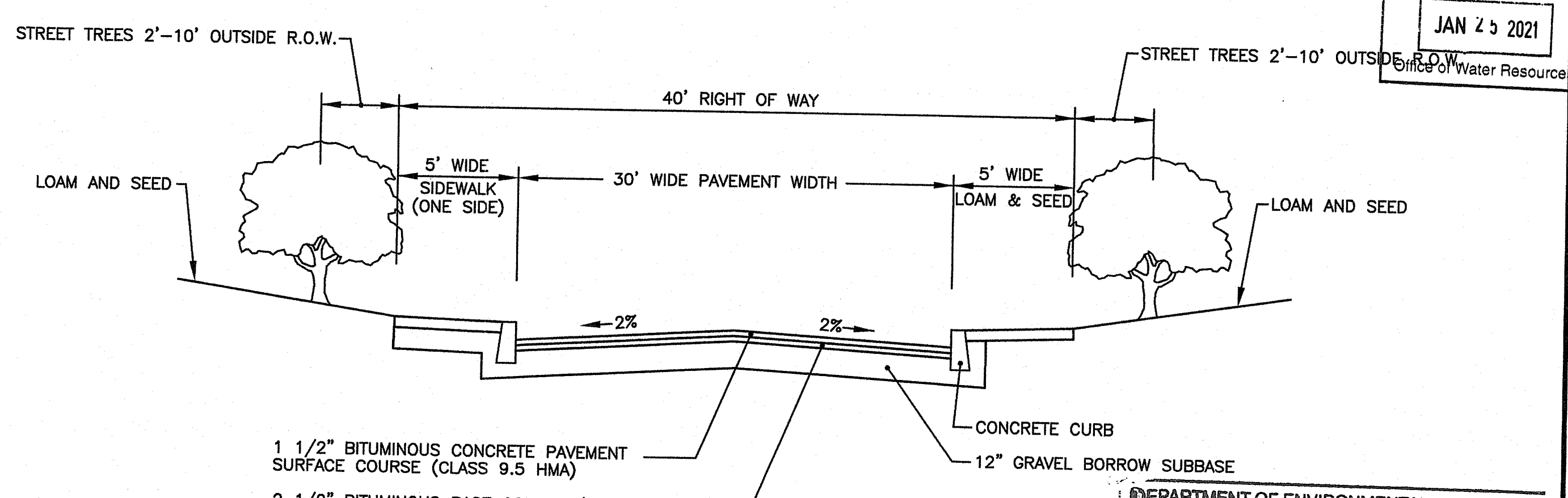
NOTE:
SHALL BE IN ACCORDANCE WITH SECTION L.11 OF THE STANDARD SPECIFICATIONS.

RHODE ISLAND DEPARTMENT OF TRANSPORTATION
TREE PROTECTION DEVICE
R.I. STANDARD 51.1.0



NOTE:
SHALL BE IN ACCORDANCE WITH SECTION L.11 OF THE R.I. STANDARD SPECIFICATIONS.

RHODE ISLAND DEPARTMENT OF TRANSPORTATION
SHRUB PROTECTION DEVICE
R.I. STANDARD 51.2.0



TYPICAL ROADWAY SECTION
NOT TO SCALE

1 1/2\" BITUMINOUS CONCRETE PAVEMENT SURFACE COURSE (CLASS 9.5 HMA)
2 1/2\" BITUMINOUS BASE COURSE (CLASS 12.5 HMA)
CONCRETE CURB
12\" GRAVEL BORROW SUBBASE

DEPARTMENT OF ENVIRONMENTAL MANAGEMENT
OFFICE OF WATER RESOURCES
FRESHWATER WETLANDS PROGRAM
APPROVED WITH CONDITIONS
AS SPECIFIED IN THE LETTER OF APPROVAL
DATED FILE # 210005
NO CHANGES ALLOWED WITHOUT PRIOR APPROVAL
APPROVED PLANS MUST BE AT CONSTRUCTION SITE
Nancy L. Freeman

CROSSMAN ENGINEERING
Rhode Island
151 Centerville Road
Warwick, RI 02886
Phone: (401) 738-5660
Email: cel@crossmaneng.com

Massachusetts
103 Commonweath Avenue
North Attleboro, MA 02763
Phone: (508) 695-1700

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

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STEVEN M. CABRAL
No. 4847
REGISTERED PROFESSIONAL ENGINEER
8/11/17-21/17

KEY PLAN

PROJECT TITLE:
BROTHERS FARM
PLAT MAP 13, LOTS 53 AND 765
and PLAT MAP 14, LOT 1
ZONING DISTRICT R8
RESIDENTIAL DISTRICT
NARRAGANSETT AVENUE
WEST WARWICK, RI

PREPARED FOR:
LEGACY CONSTRUCTION
782 Main Street
East Greenwich, RI 02818
(401) 709-4236

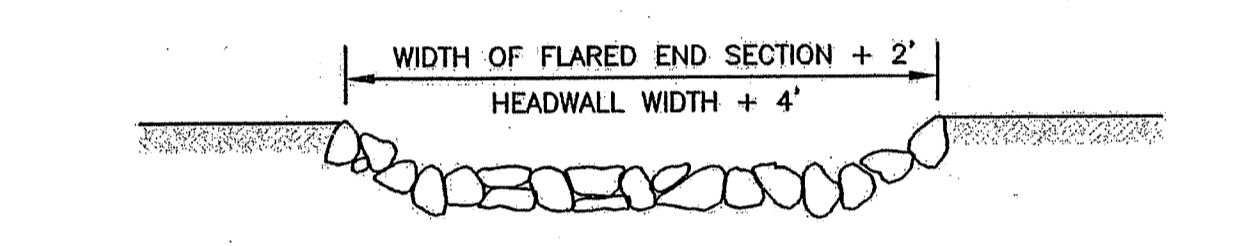
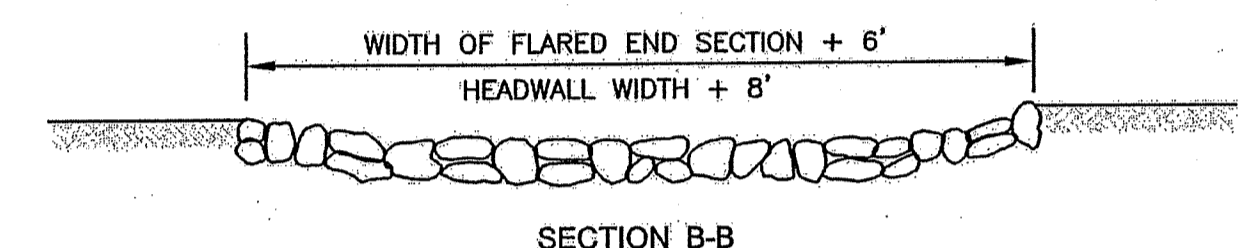
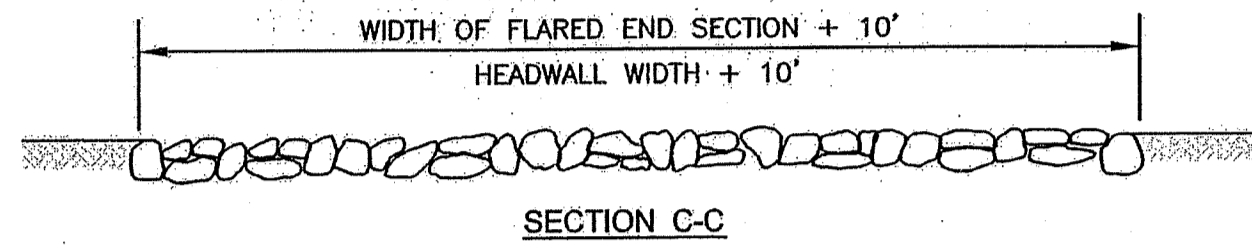
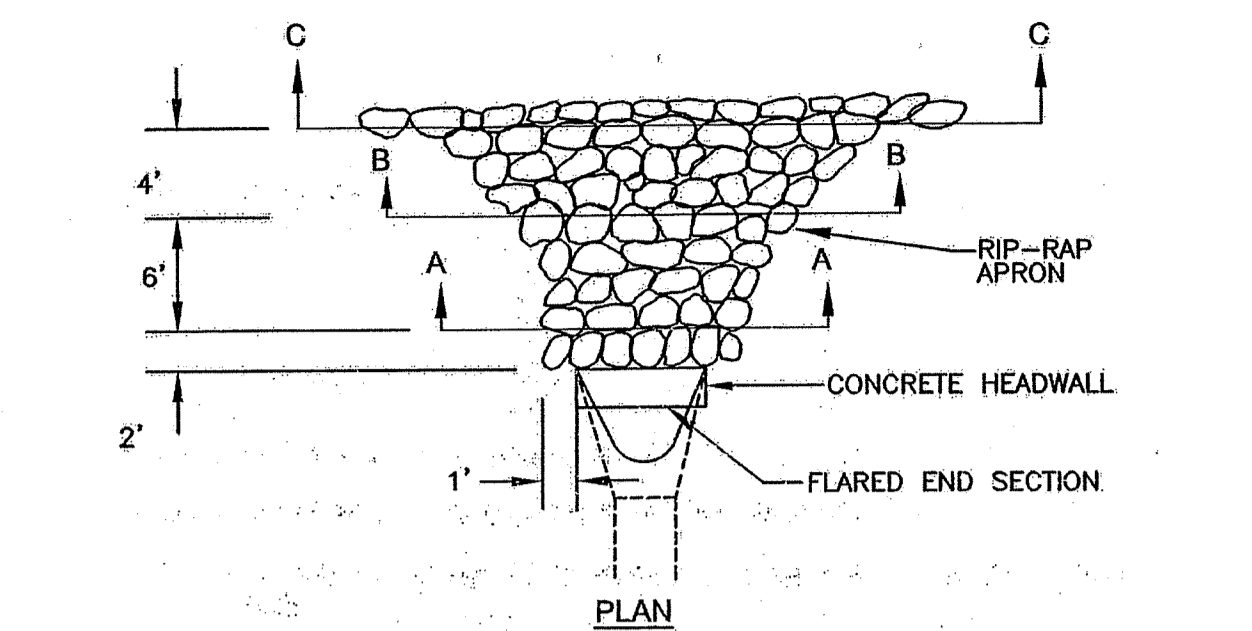
DRAWING TITLE:
MISCELLANEOUS DETAILS
PLAN No. 1

DATE: DECEMBER 2020
SCALE: AS NOTED
DWG. NAME: 2343-C10-DET01.dwg

REVISIONS

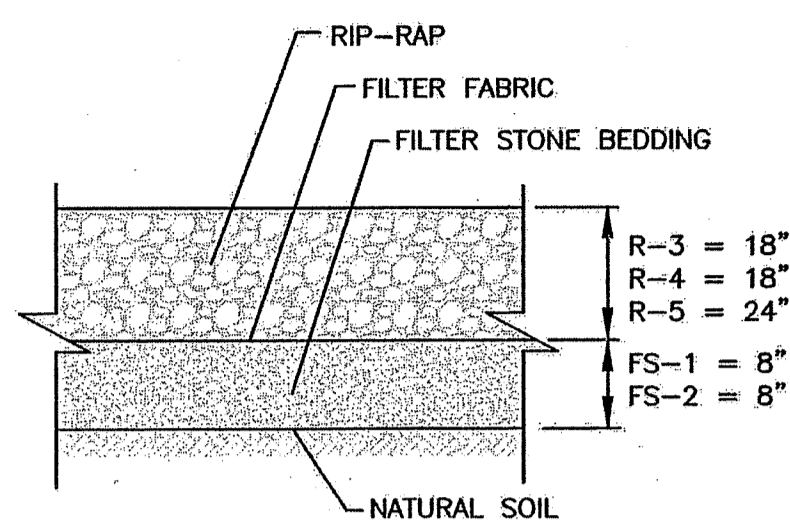
NUMBER	REMARKS	DATE

DRAWING NUMBER
C10
SHEET 11 OF 17

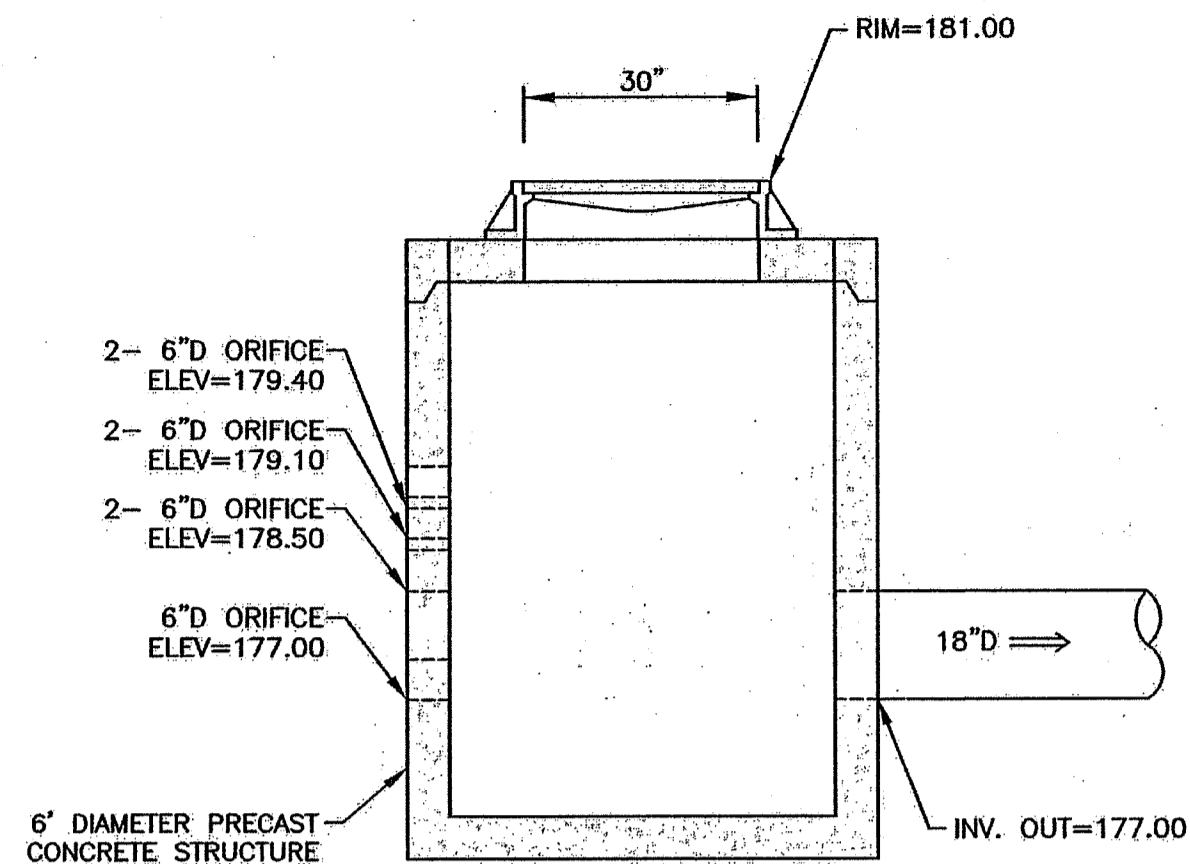


- NOTES:**
- UNLESS OTHERWISE SPECIFIED, DUMPED RIP-RAP SHALL BE USED.
 - DIMENSIONS MAY BE MODIFIED BY ENGINEER TO MEET FIELD CONDITIONS.
 - SEE "TYPICAL SECTION RIP RAP OUTLET PROTECTION" DETAIL FOR CONSTRUCTION MATERIAL SPECIFICATIONS.

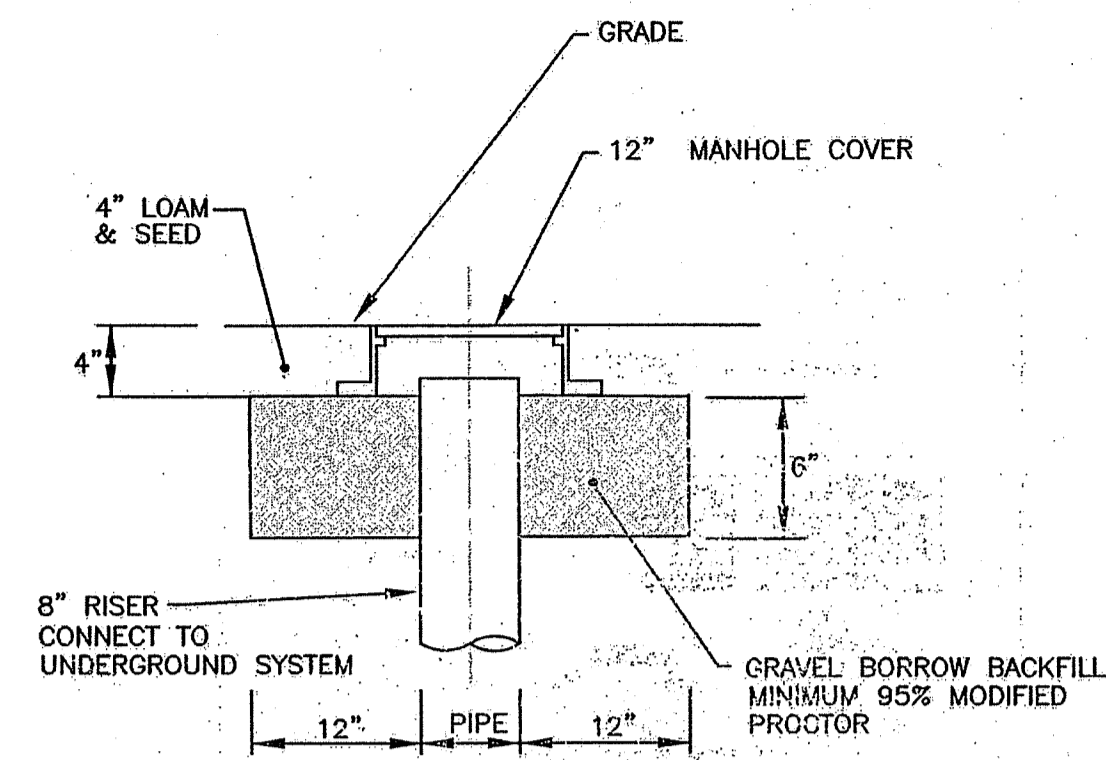
TYPICAL LAYOUT OF RIP RAP OUTLET PROTECTION AT FLARED END SECTIONS and CONCRETE HEADWALLS
NOT TO SCALE



TYPICAL RIP-RAP OUTLET PROTECTION DETAIL
NOT TO SCALE

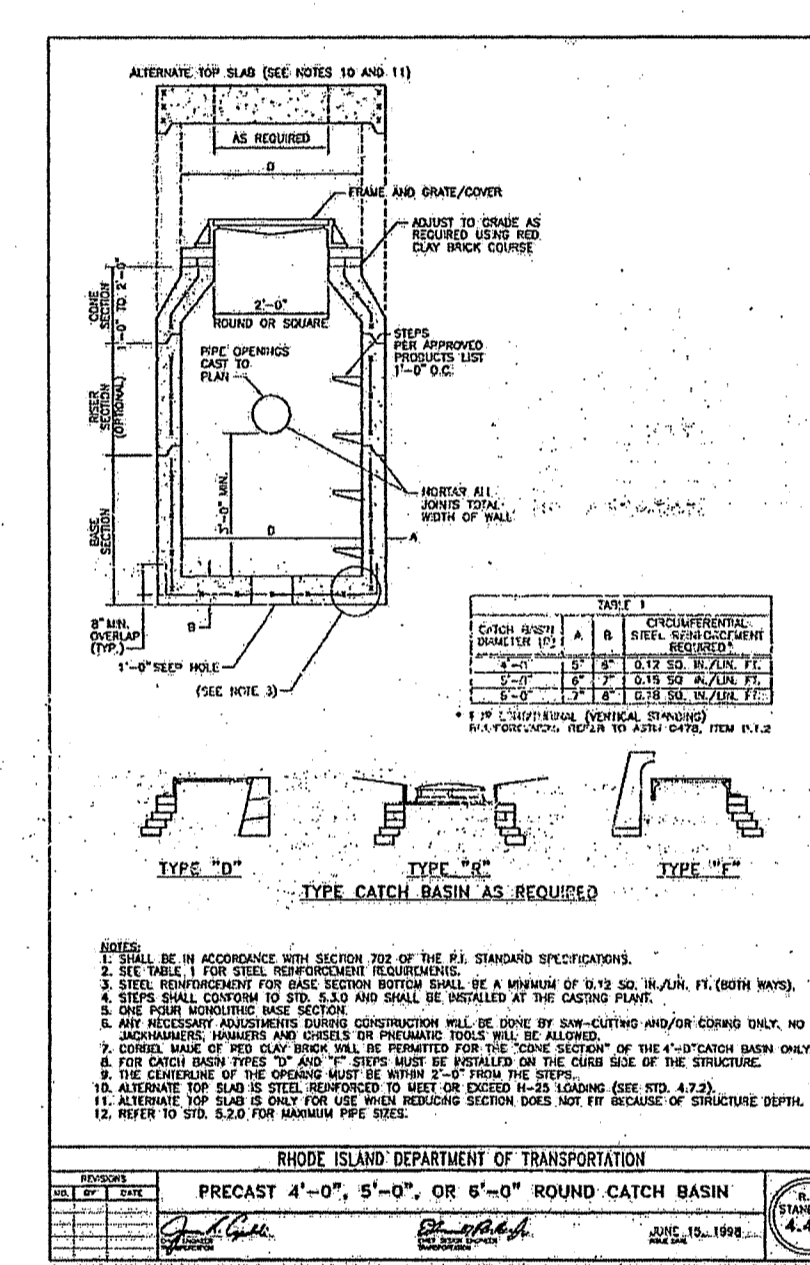
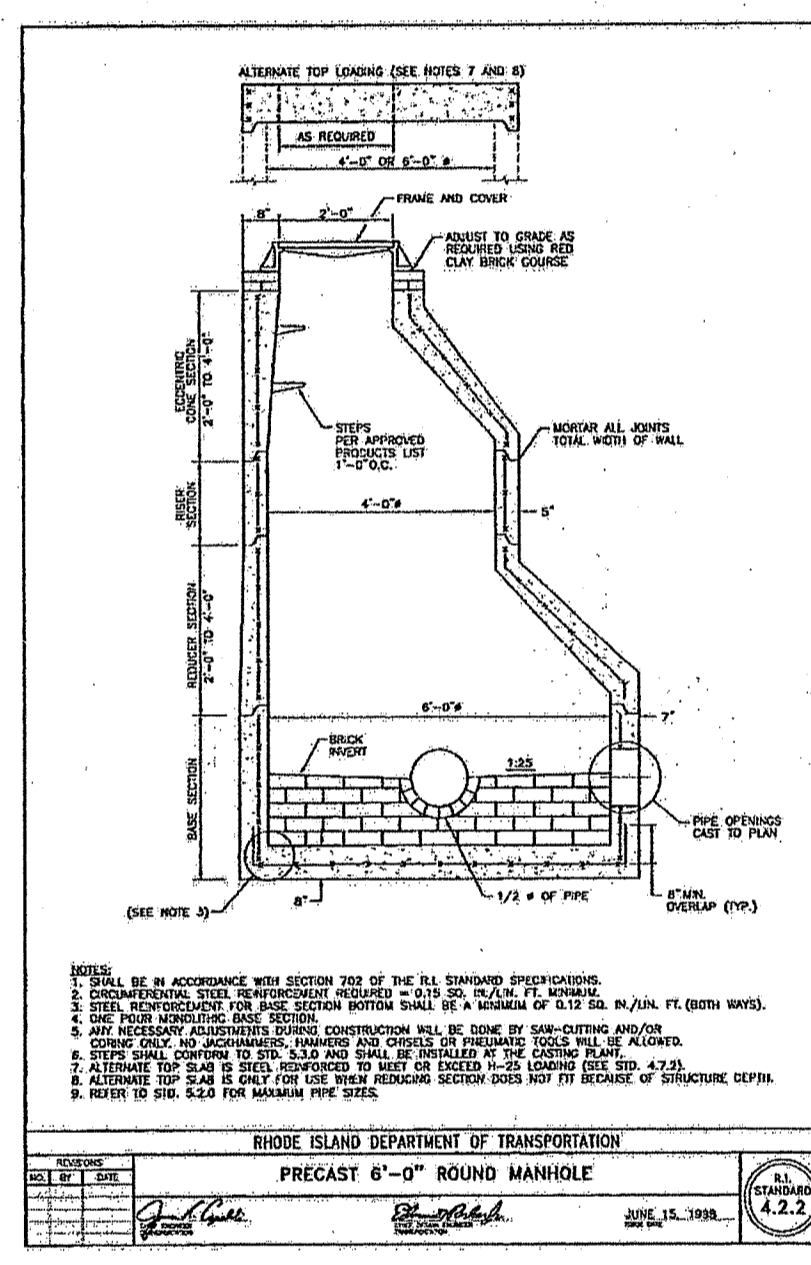
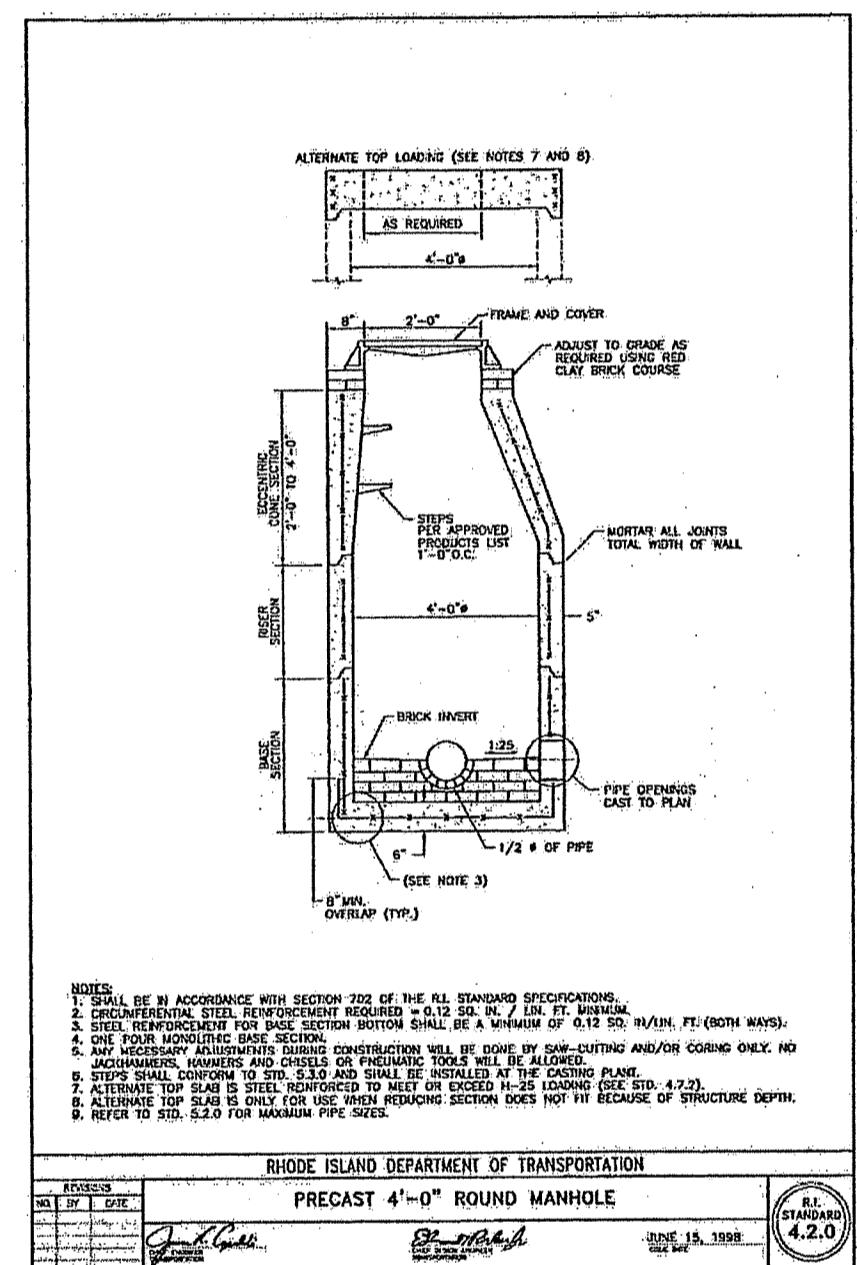


OUTLET STRUCTURE NO. (OCS-1) DETAIL
NOT TO SCALE

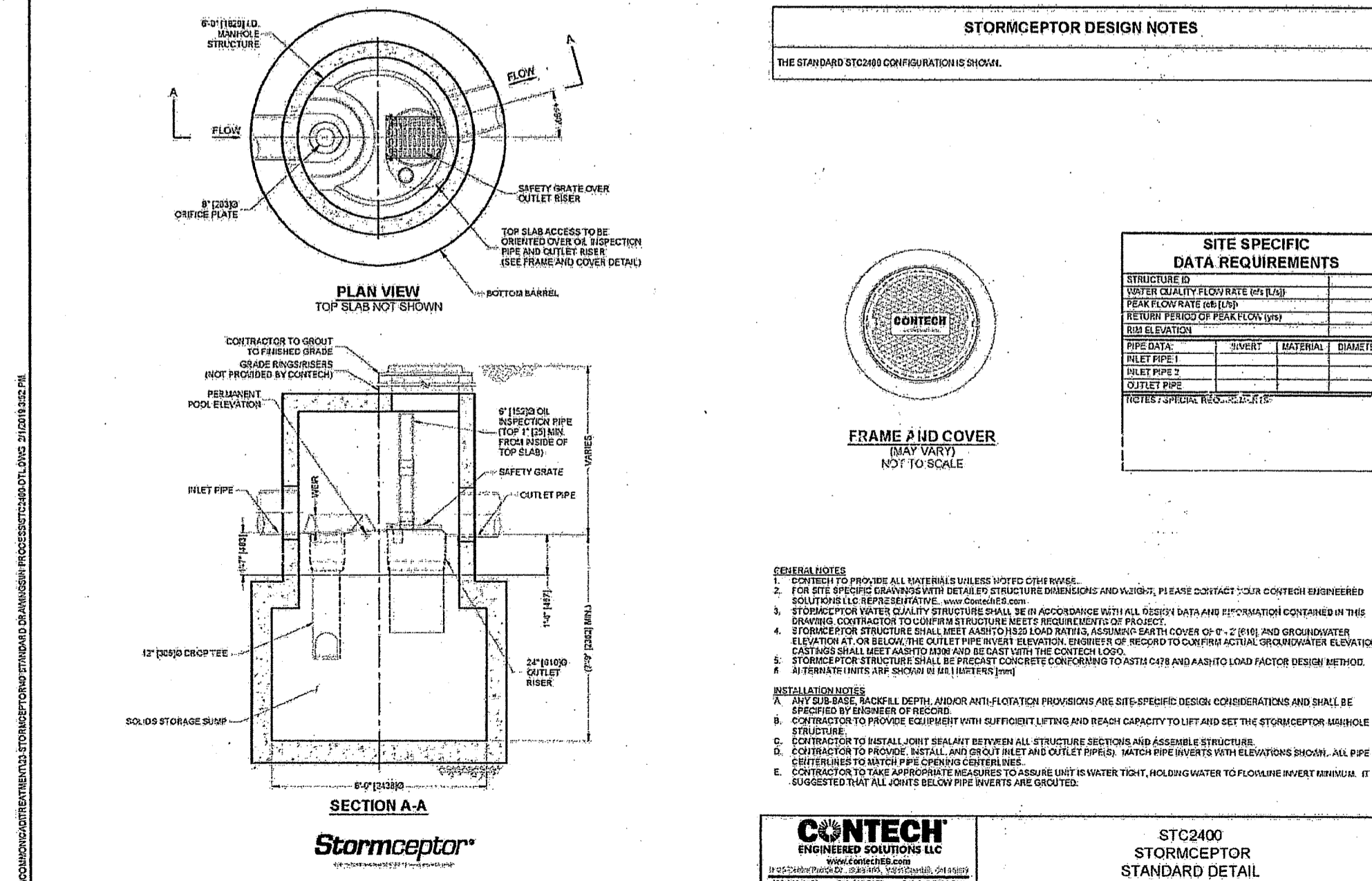
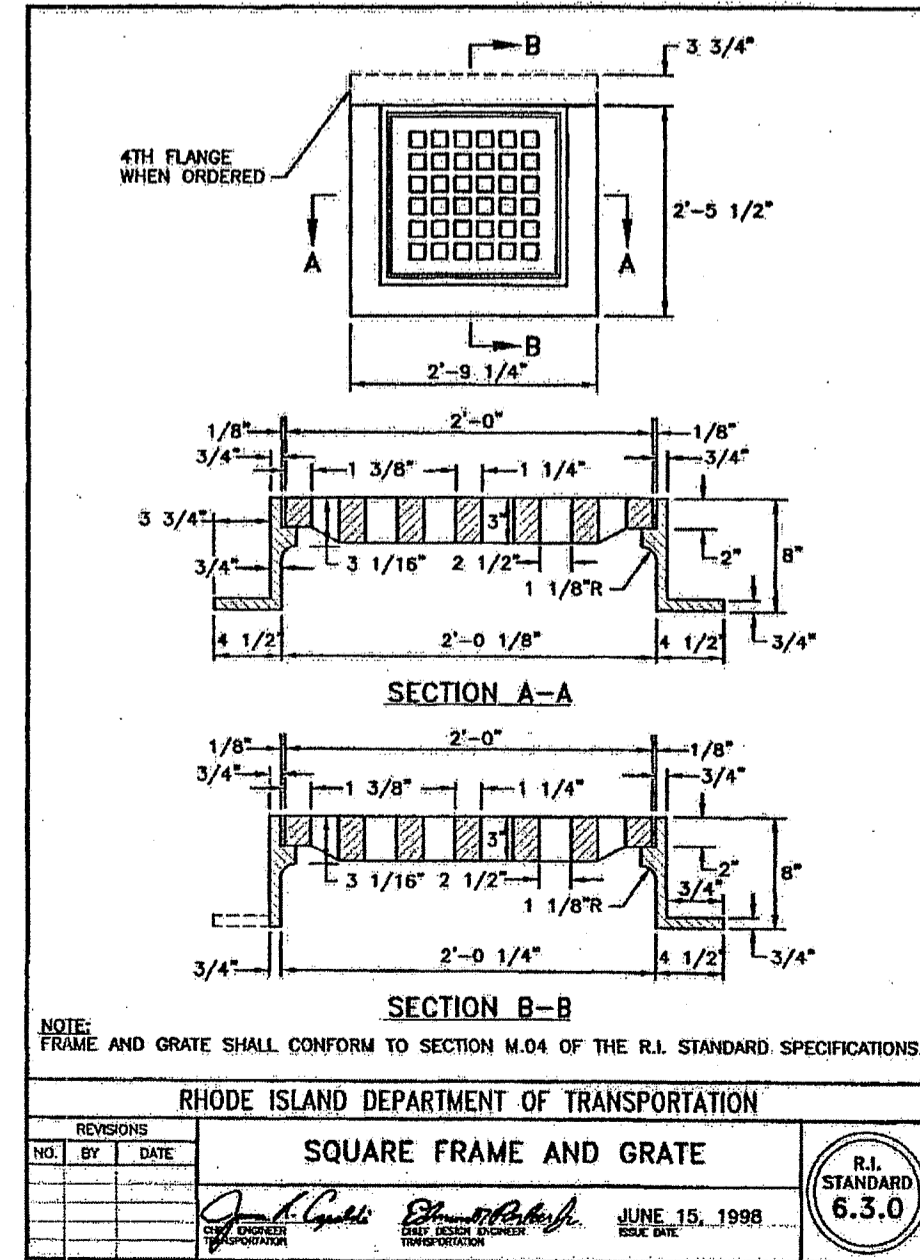
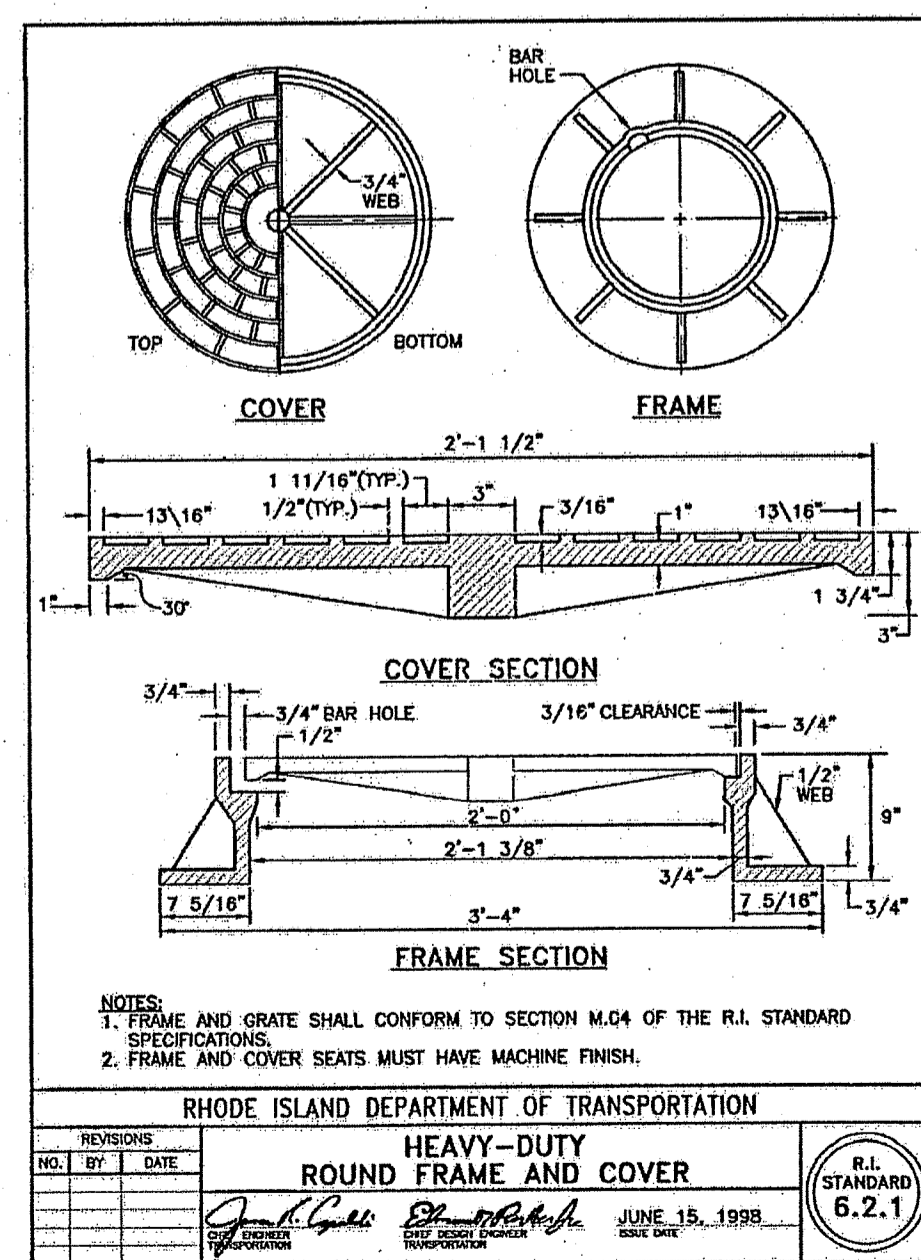


NOTE: PROVIDE TWO CLEAN-OUTS TO GRADE FOR THE UNDERGROUND INFILTRATION SYSTEMS ON EACH LOT. INSTALL CLEAN-OUTS ON EACH END OF SYSTEM. COORDINATE WITH ENGINEER.

INFILTRATION SYSTEM CLEAN-OUT DETAIL
NOT TO SCALE

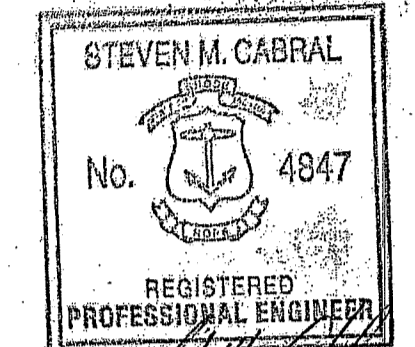


RI Environmental Management
MAR 12 2021
Office of Water Resources



CROSSMAN ENGINEERING
Rhode Island
151 Centerville Road
Warwick, RI 02886
Phone: (401) 738-8660
Email: cel@grossmaneng.com

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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 APR 03 2021
FILE # 21-0025
NO CHANGES ALLOWED WITHOUT PRIOR APPROVAL
APPROVED PLANS MUST BE AT CONSTRUCTION SITE

PROJECT TITLE:
BROTHERS FARM
PLAT MAP 13, LOTS 53 and 75
and PLAT MAP 14, LOT 1
ZONING DISTRICT R8
RESIDENTIAL DISTRICT
NARRAGANSETT AVENUE
WEST WARWICK, RI

PREPARED FOR:
LEGACY CONSTRUCTION
782 Main Street
East Greenwich, RI 02818
(401) 709-4236

DRAWING TITLE:
**MISCELLANEOUS DETAILS
PLAN No. 2**

DATE: DECEMBER 2020
SCALE: NO SCALE

REV. NO. 1
DATE: JUNE 15, 1998

NO.	BY	DATE	REVISIONS
1	JGC	JUN 15 1998	ISSUE FOR CONSTRUCTION

DRAWING NUMBER:
C11
SHEET: 12 OF 17

INFILTRATION BASIN SUMMARY

BMP NO.	TOP OF BERM	BOTTOM OF BASIN	OVERFLOW WEIR CREST ELEVATION	GROUNDWATER ELEVATION	SEPARATION TO GROUNDWATER
1	181.00	176.00	179.25	172.00	4.00
2	181.00	175.00	180.00	172.00	3.00

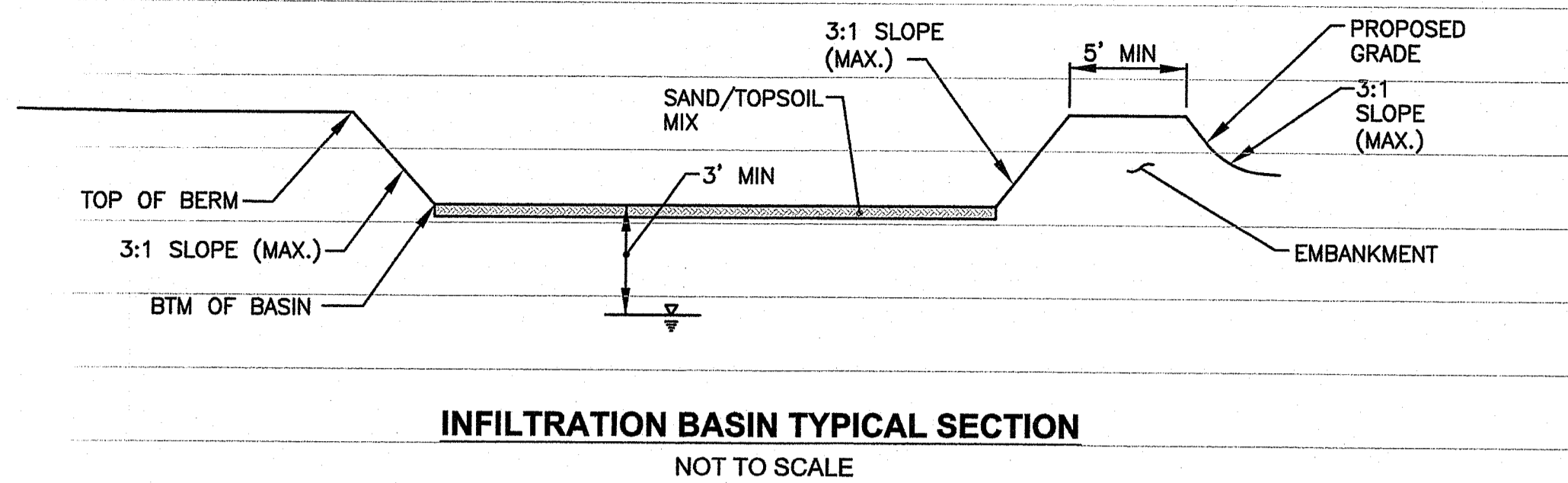
INFILTRATION BASIN SEED MIX (SEED MIX NO. 2)

APPLICATION RATE = 15-25 LBS. / ACRE
(SEASONALLY FLOODED MIX)
(BASIN BOTTOM AREA)

- 20% FOX SEDGE, PA ECOTYPE (CAREX VULPINOIDEA, PA ECOTYPE)
- 16% VIRGINIA WILD RYE, PA ECOTYPE (ELYMUS VIRGINICUS, PA ECOTYPE)
- 15% RIVERBANK WILD RYE, PA ECOTYPE (ELYMUS RIPARIUS, PA ECOTYPE)
- 15% JAPANESE MILLET (ECHINOCHLOA CRUSGALLI VAR. FRUMENTACEA)
- 15% DEER TONGUE, 'TIOGA' (PANICUM CLANDESTINUM (DICHANTHELIUM C.), 'TIOGA')
- 9% BLUNT BROOM SEDGE, PA ECOTYPE (CAREX SCOPARIA, PA ECOTYPE)
- 5% SWITCHGRASS, 'CAVE-IN-ROCK' (PANICUM VIRGATUM, 'CAVE-IN-ROCK')
- 2% GREEN BULRUSH, PA ECOTYPE (SCIRPUS ATROVIRENS, PA ECOTYPE)
- 2% AWL SEDGE, PA ECOTYPE (CAREX STIPATA, PA ECOTYPE)
- 1% AUTUMN BENTGRASS, APB (AGROSTIS PERENNANS, APB)

TOPSOIL MIX FOR BASINS

PLANTING SOIL SHALL MEET THE BELOW COMPOSITION;
SAND: 85-88%
SOIL FINES: 8-12% (NO MORE THAN 2% CLAY)
ORGANIC MATTER: 3-5%



INFILTRATION BASIN TYPICAL SECTION
NOT TO SCALE

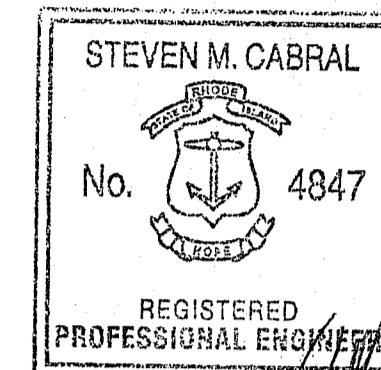
NOTE:
A AND B SOIL HORIZONS TO BE REMOVED AND REPLACED WITH SAND. EXCAVATION TO BE WITNESSED BY ENGINEER.

EMBANKMENT NOTES:

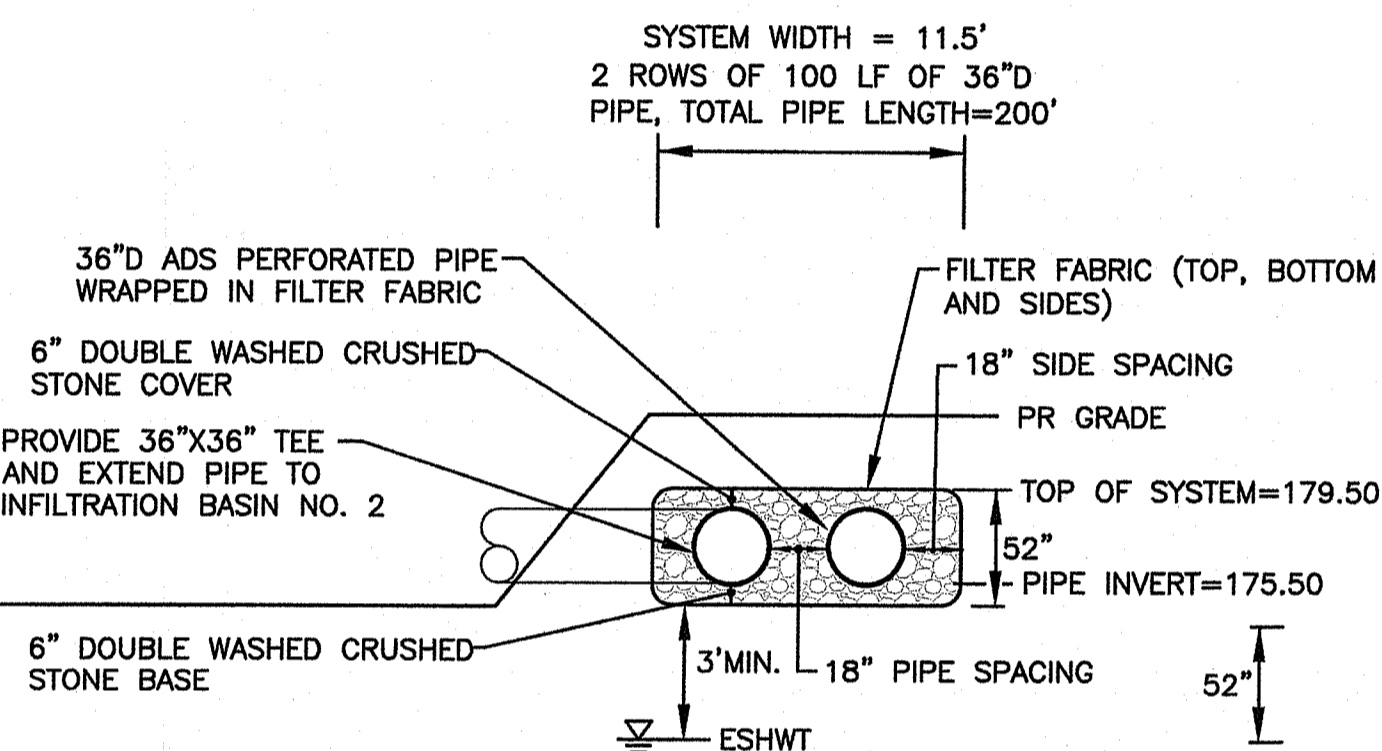
1. THE INFILTRATION BASIN EMBANKMENTS ARE TO BE CONSTRUCTED WITH APPROVED COMMON BORROW. NO SOIL/ROCK GREATER THAN 2" SHALL BE UTILIZED. COMMON BORROW SHALL MEET OR EXCEED AN IN-PLACE DENSITY OF 100 LB./CU. ALL MATERIAL SHALL BE PLACED IN 8 TO 12 INCH LIFTS AND COMPACTED TO 95% MAXIMUM DENSITY. FILL MATERIAL WILL NOT CONTAIN FROZEN MATERIALS OR BE PLACED ON FROZEN SURFACES. COMMON BORROW SHALL MEET SPECIFICATION SECTION 202.20 IN THE RHODE ISLAND STANDARD SPECIFICATIONS FOR ROAD AND BRIDGE CONSTRUCTION, 2013 EDITION.
2. UPON COMPLETION OF CLEARING AND GRUBBING OPERATIONS, THE EMBANKMENT AREAS ARE TO BE EXCAVATED, IF ANY ORGANIC OR UNSUITABLE MATERIAL IS ENCOUNTERED, THE CONTRACTOR SHALL CONTACT THE ENGINEER FOR REVIEW OF EXCAVATION AREA. THE DEPTH OF EXCAVATION WILL BE DETERMINED BY THE ENGINEER BASED UPON THE LOCAL CONDITIONS. NO FILL MATERIAL SHALL BE PLACED UNTIL THE FOUNDATION PREPARATION HAS BEEN COMPLETED. ALL WATER SHALL BE REMOVED FROM THE FOUNDATION PRIOR TO PLACING THE EMBANKMENT.
3. THE FILL MATERIAL MUST BE SPREAD IN UNIFORM LAYERS AND FALL WITHIN THE SPECIFIED OPTIMUM WATER CONTENT RANGE IN ORDER TO ACHIEVE THE REQUIRED COMPACTION. EACH LAYER IS TO BE COMPACTED PRIOR TO LAYING AN ADDITIONAL LAYER. THE CONTRACTOR SHALL SUBMIT TO THE ENGINEER HIS SELECTED METHOD OF COMPACTION, COMPACTION EQUIPMENT AND THE SEQUENCE OF OPERATION SHOULD BE IN THE RANGE BETWEEN ONE PERCENTAGE POINT BELOW AND TWO PERCENTAGE POINTS ABOVE STANDARD AASHTO OPTIMUM WATER CONTENT. THE MATERIAL SHALL BE PROCESSED TO A UNIFORM WATER CONTENT BY ADDING WATER TO THE MATERIAL IN ADVANCE OF THE FILL PLACEMENT.
4. BACKFILL MATERIAL AROUND STRUCTURES AND PIPE IS TO BE PLACED TO PREVENT THE MOVEMENT OF WATER. THE OPTIMUM WATER CONTENT MUST BE MAINTAINED IN THE SAME RANGE AS IN THE EMBANKMENT. THE BACKFILL MUST BE PLACED IN LAYERS LESS THAN 4 INCHES IN THICKNESS AND DISTRIBUTED UNIFORMLY AROUND THE STRUCTURE/PIPE. ALL COMPACTION WILL BE TO 95% MAXIMUM DENSITY AND MAY REQUIRE HAND TAMPERS OR SMALL POWER EQUIPMENT.
5. EMBANKMENT DAMAGE COMMONLY RESULTS FROM IMPROPER CONSTRUCTION OF CONDUIT AND STRUCTURAL BACKFILL WITHIN THE EMBANKMENT BECAUSE SEEPAGE WILL OCCUR WITH IMPROPER BACKFILL AND COMPACTION. THEREFORE, STRUCTURES AND PIPES ARE TO BE CONSTRUCTED AS THE EMBANKMENT CONSTRUCTION RISES TO THE RESPECTIVE PIPE OR STRUCTURE. THIS WILL PREVENT THE DISTURBANCE OF CONSTRUCTED EMBANKMENT MATERIAL. PIPES FROM THE OUTLET STRUCTURE TO THE OUTFALL SHALL HAVE AN ANTI-SEEP COLLAR.

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

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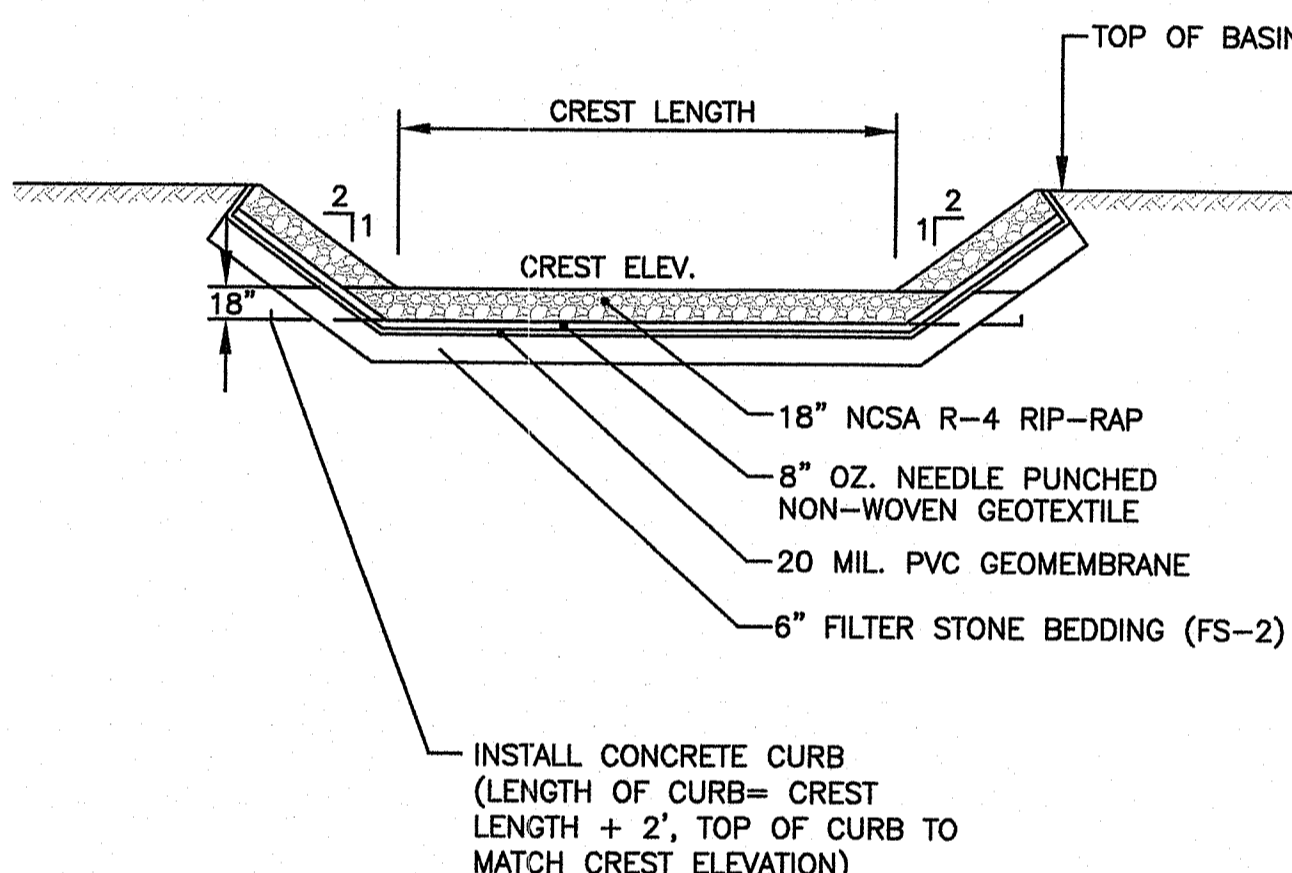
KEY PLAN



UNDERGROUND INFILTRATION SYSTEM (CONNECTED TO BMP 2) SECTION
NOT TO SCALE

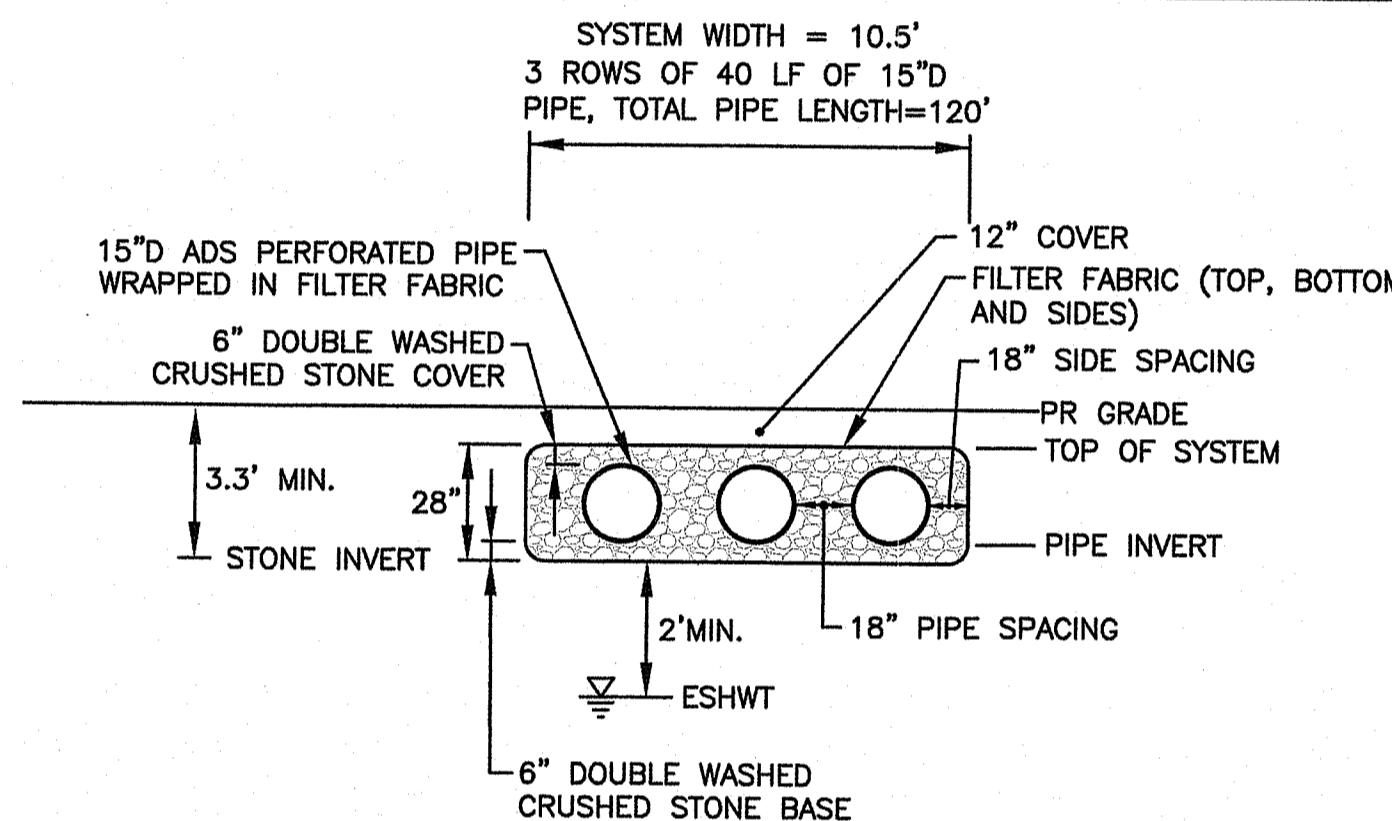
NOTE: UNDERGROUND INFILTRATION SYSTEM CONNECTED TO INFILTRATION BASIN NO. 2 SHALL HAVE TWO ROWS OF 100 LINEAR FEET PERFORATED PIPE, PIPE SHALL BE WRAPPED IN FILTER FABRIC AND INSTALLED IN DOUBLE WASHED CRUSHED STONE BED WRAPPED IN FILTER FABRIC, PROVIDE 8" DIA. CLEANOUTS TO GRADE AND MANIFOLD AT BOTH ENDS OF SYSTEM. PROVIDE 18" WIDE SIDE STONE, END STONE, AND ROW SPACING WITH 6", SYSTEM DIMENSIONS = 103' X 11.50' X 4.3'.

NOTE:
A AND B SOIL HORIZONS TO BE REMOVED AND REPLACED WITH SAND. EXCAVATION TO BE WITNESSED BY ENGINEER.



TYPICAL BASIN OVERFLOW WEIR DETAIL
NOT TO SCALE

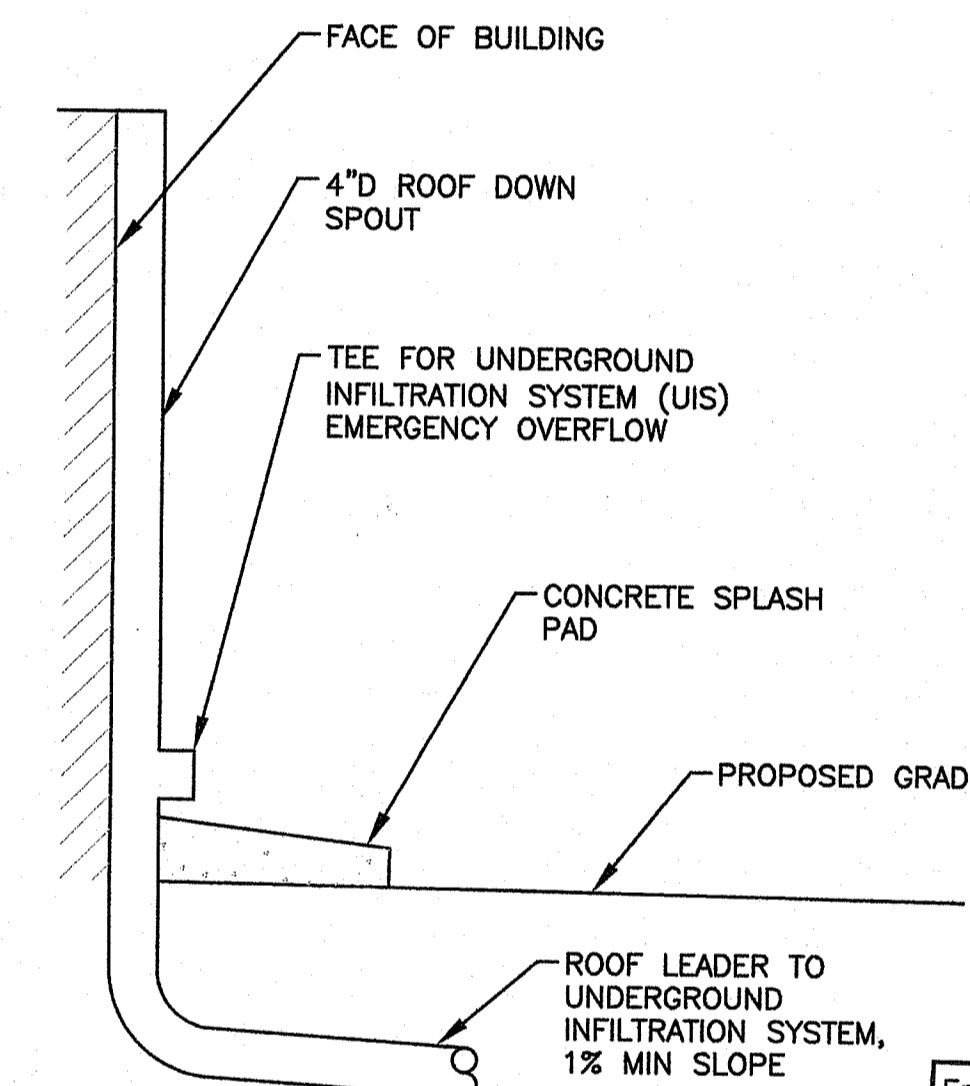
NOTE:
RIP RAP SHALL CONTINUE ON INSIDE AND OUTSIDE OF BASIN SLOPE AT OVERFLOW WEIR LOCATION.



TYPICAL ROOFTOP UNDERGROUND INFILTRATION SYSTEM SECTION (FOR ROOFTOP AREA)
NOT TO SCALE

NOTE: UNDERGROUND INFILTRATION SYSTEM FOR EACH LOT'S ROOFTOP AREA. FURNISH AND INSTALL 3-40 L.F. ROWS OF 15" HDPE PERFORATED PIPE WRAPPED IN FILTER FABRIC IN A DOUBLE WASHED CRUSHED STONE BED, WRAPPED IN FILTER FABRIC. (SYSTEM DIMENSIONS = 42'X10.5'X2.3') PROVIDE 8" DIA. CLEANOUTS TO GRADE AT BOTH ENDS OF SYSTEM. PROVIDE 18" WIDE SIDE STONE, 18" PIPE SPACING, 12" WIDE END STONE, AND 6" STONE BASE AND STONE COVER FOR SYSTEM. REFER TO GRADING AND DRAINAGE PLAN FOR PROPOSED SYSTEM INVERTS.

NOTE:
A AND B SOIL HORIZONS TO BE REMOVED AND REPLACED WITH SAND. EXCAVATION TO BE WITNESSED BY ENGINEER.



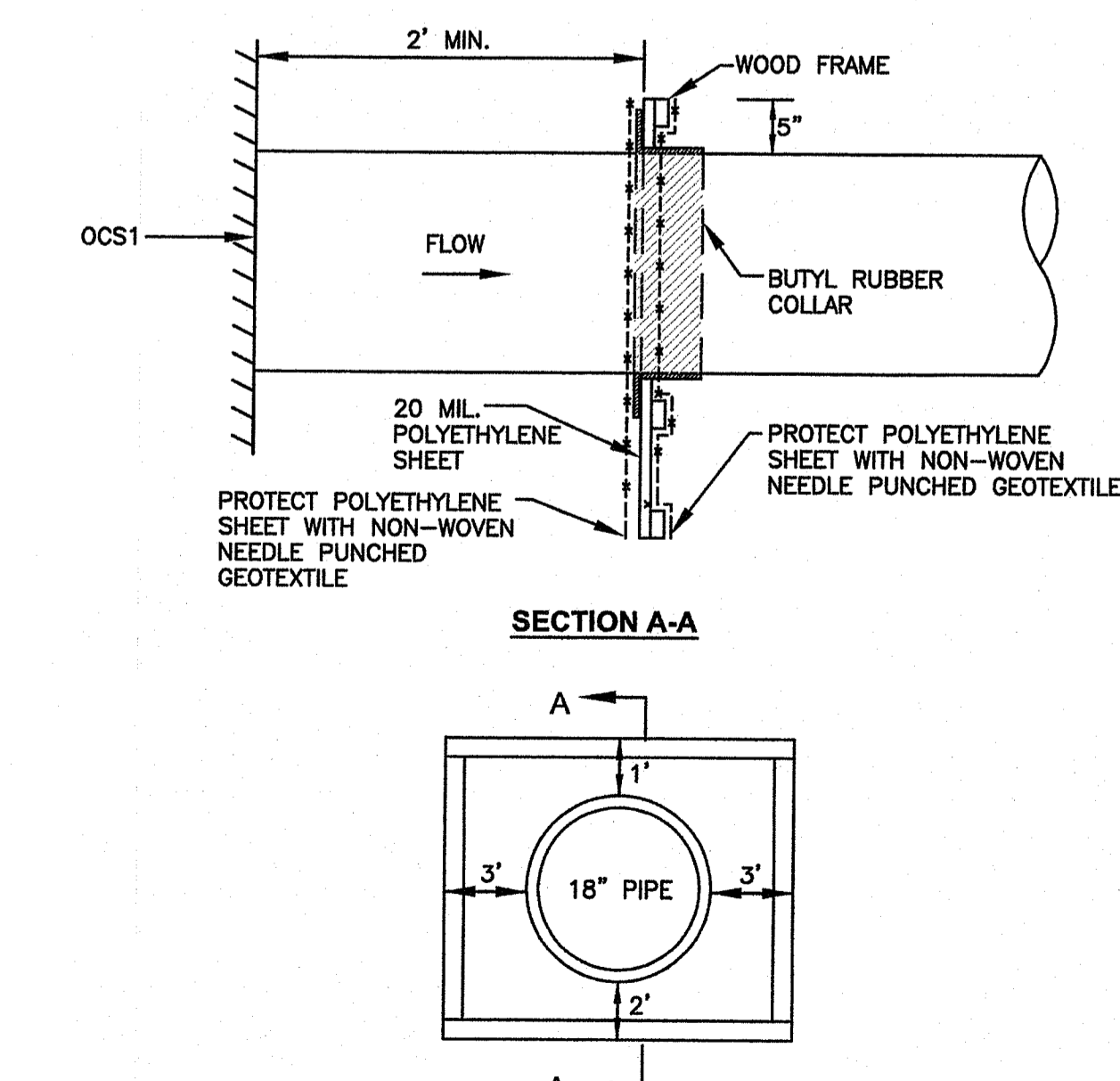
ROOF DOWN SPOUT DETAIL
NOT TO SCALE

DEPARTMENT OF ENVIRONMENTAL MANAGEMENT
OFFICE OF WATER RESOURCES
FRESHWATER WETLANDS PROGRAM
APPROVED WITH CONDITIONS
AS SPECIFIED IN THE LETTER OF APPROVAL
DATED 11/11/2020 FILE # 21-0025
NO CHANGES ALLOWED WITHOUT PRIOR APPROVAL
APPROVED PLANS MUST BE AT CONSTRUCTION SITE
Matthew L. Freeman

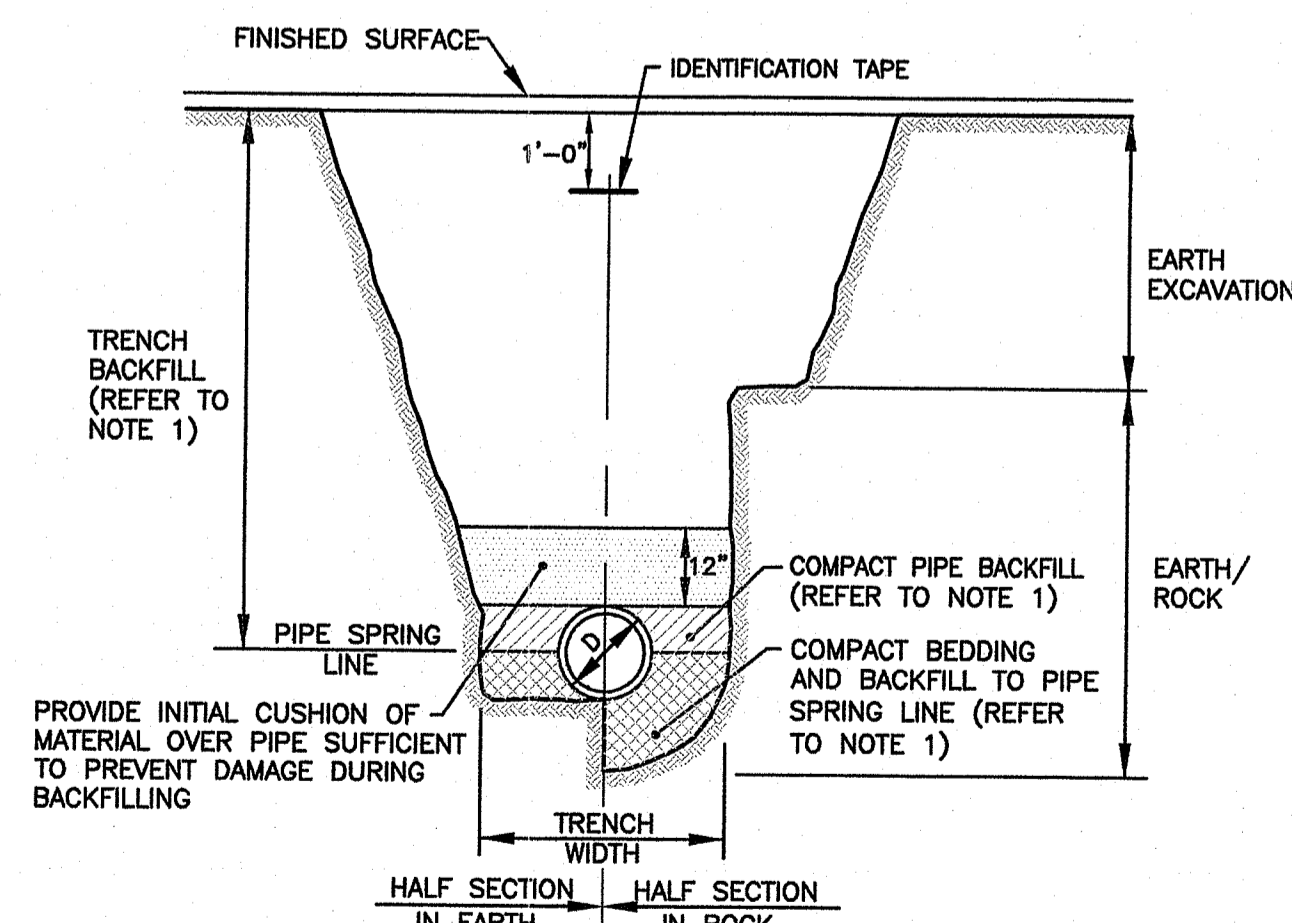
BROTHERS FARM
PLAT MAP 13, LOTS 53 and 765
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ZONING DISTRICT R8
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WEST WARWICK, RI

PREPARED FOR:
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782 Main Street
East Greenwich, RI 02818
(401) 709-4236

Environmental Management
JAN 25 2021
Office of Water Resources



ANTI-SEEP COLLAR DETAIL
NOT TO SCALE

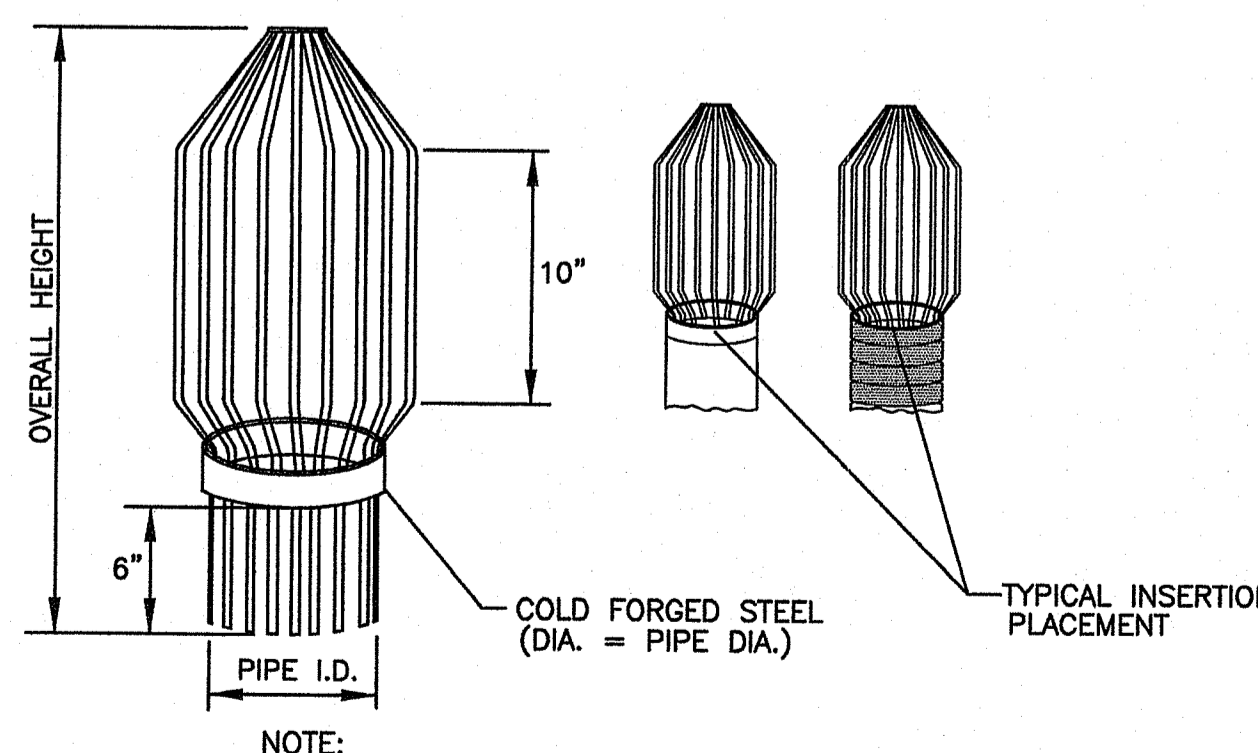


TRENCH DETAIL
NOT TO SCALE

NOTES:

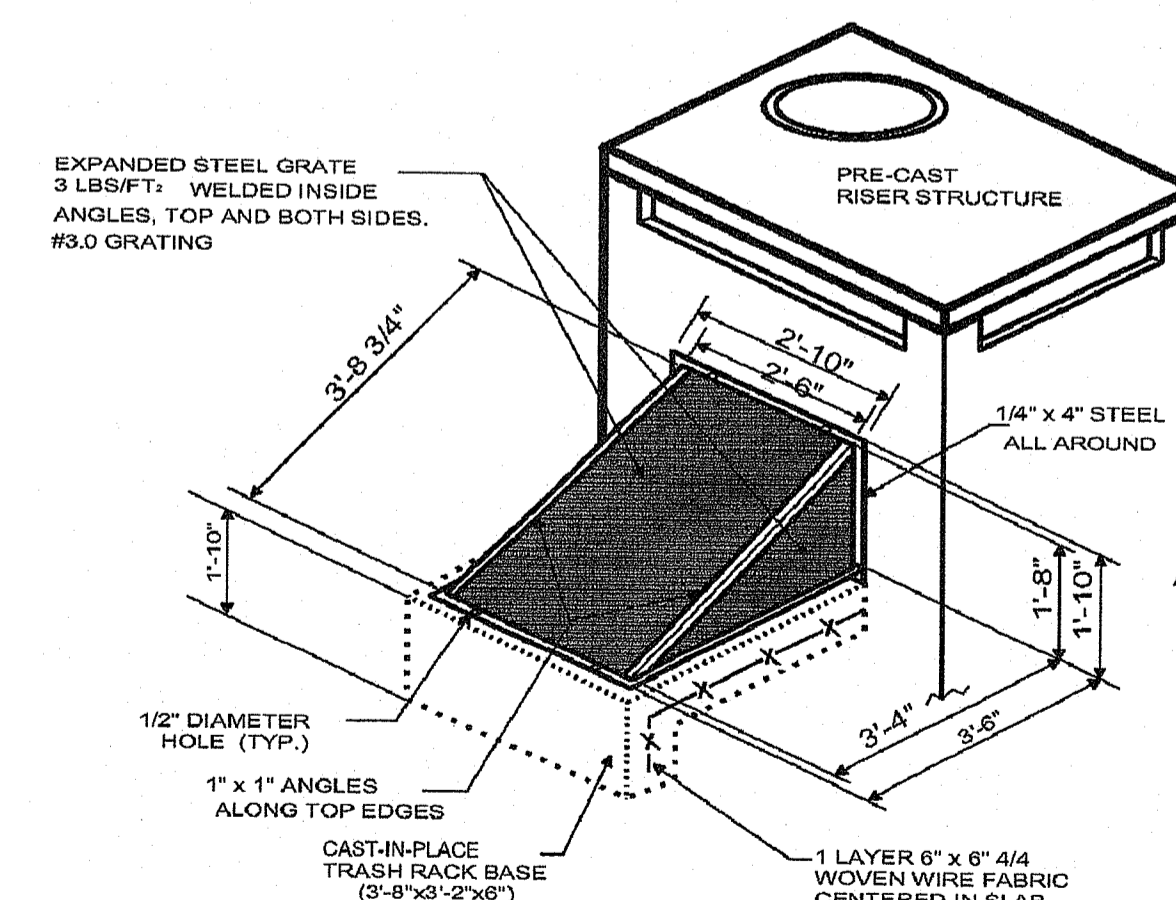
1. PIPE BEDDING AND BACKFILL TO SPRING LINE SHALL CONSIST OF CRUSHED STONE-3/4" MINUS. PIPE BACKFILL SHALL CONSIST OF CRUSHED STONE (WRAPPED IN FILTER FABRIC) OR GRAVEL (3" MINUS WITH SIEVE ANALYSIS APPROVED BY ENGINEER), OR OTHER APPROVED MATERIAL. TRENCH BACKFILL SHALL CONSIST OF SUITABLE EXCAVATED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

PIPE DIA.	BAR DIA.	BAR SPACING	OVERALL O.D.	OVERALL HEIGHT
8"	1/4"	1 1/8"	9 1/2"	19 1/8"
12"	1/4"	1 1/8"	13 1/2"	21 1/8"
15"	5/16"	1 1/2"	16 1/2"	22 1/8"
18"	5/16"	1 1/2"	19 1/2"	23 1/2"
24"	5/16"	2"	25 1/2"	26 1/2"
36"	5/16"	2"	37 1/2"	33 1/8"



TYPICAL TRASH RACK DETAIL FOR PIPES
NOT TO SCALE

NOTE:
1. THE TRASH RACK IS TO BE CONSTRUCTED OF 1/4" DIAMETER STEEL BASE, ACRYLIC COATED AGRI-DRAIN OR EQUAL.



TYPICAL TRASH RACK DETAIL FOR ORIFICES
NOT TO SCALE

NOTES:

1. BRACING TO BE ADJUSTED TO CREATE FLUSH SEAL AGAINST CIRCULAR RISER STRUCTURES.
2. DIMENSIONS SHALL BE ADJUSTED TO FIT ORIFICE CONFIGURATIONS.

MISCELLANEOUS DETAILS PLAN No. 3

DATE: DECEMBER 2020 SCALE: NO SCALE

DWG. NAME: 2343-C12-DET03.dwg

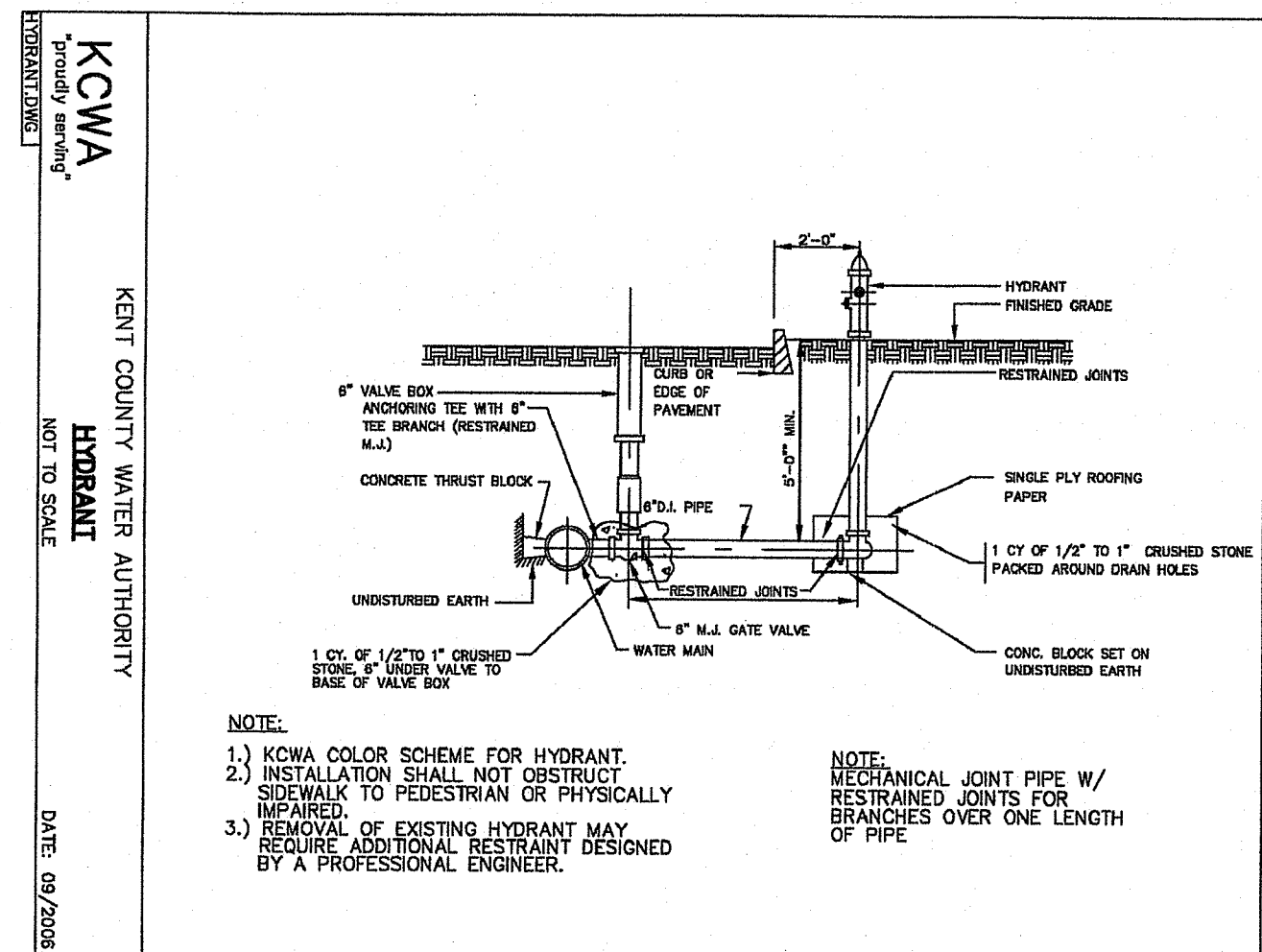
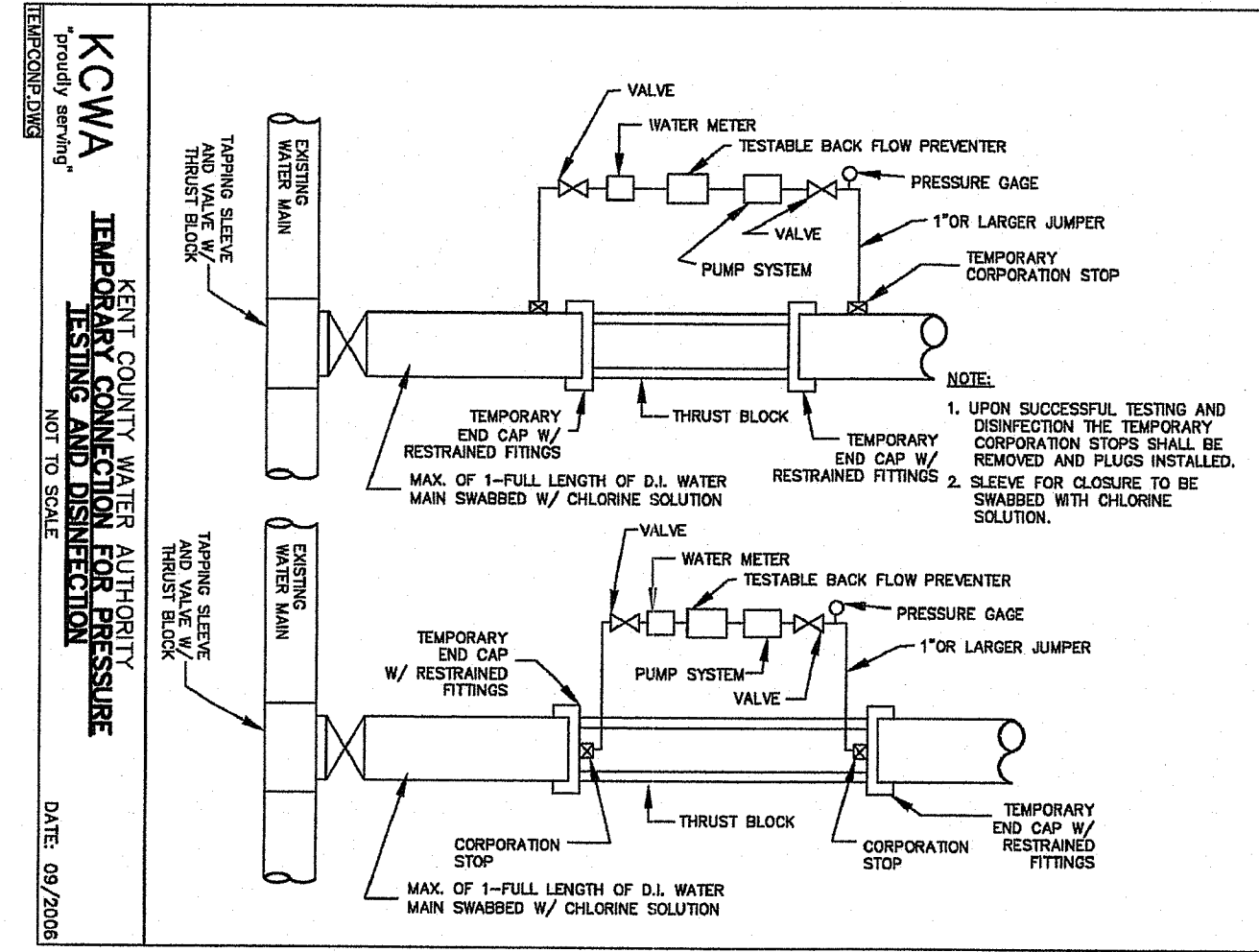
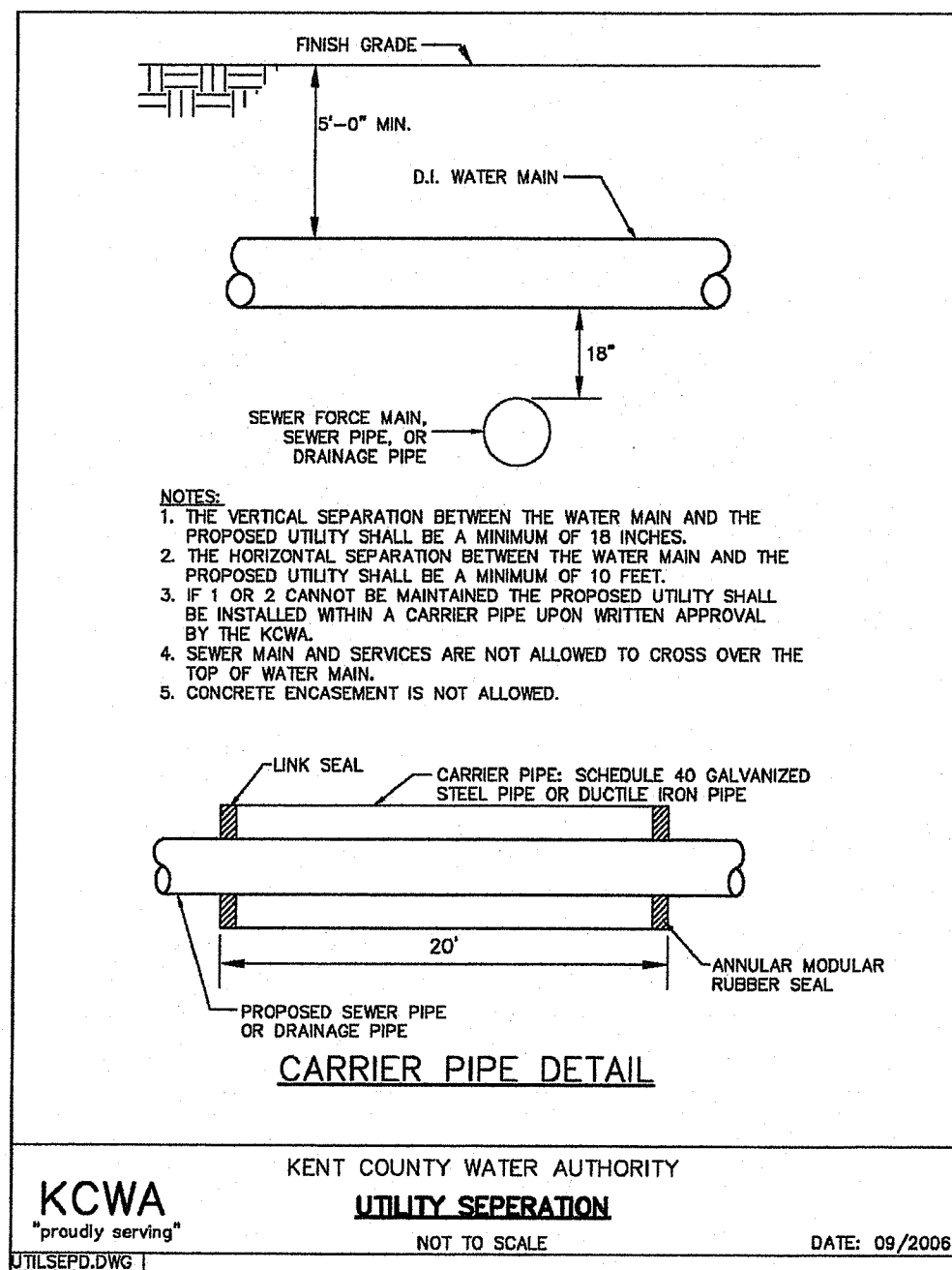
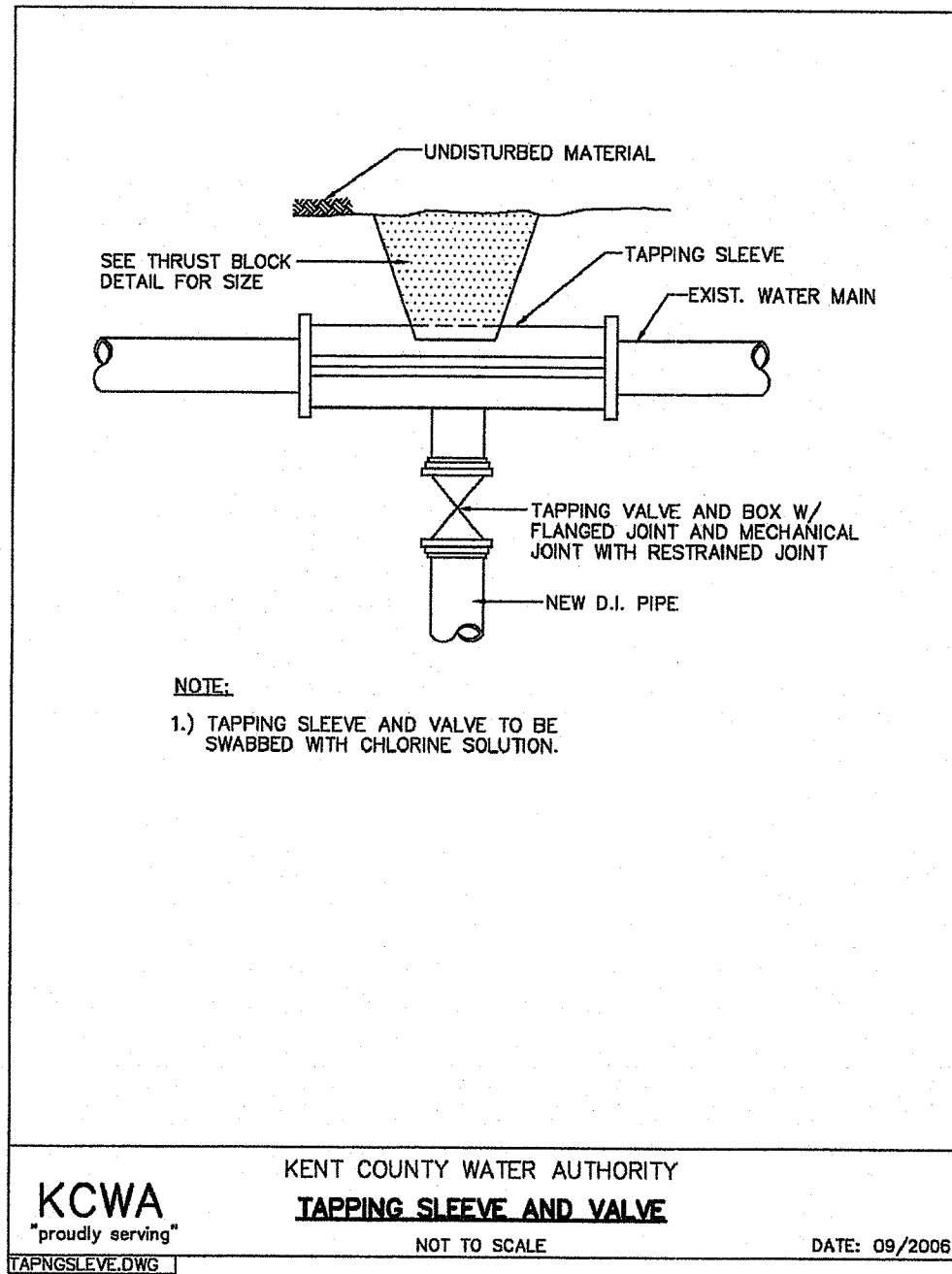
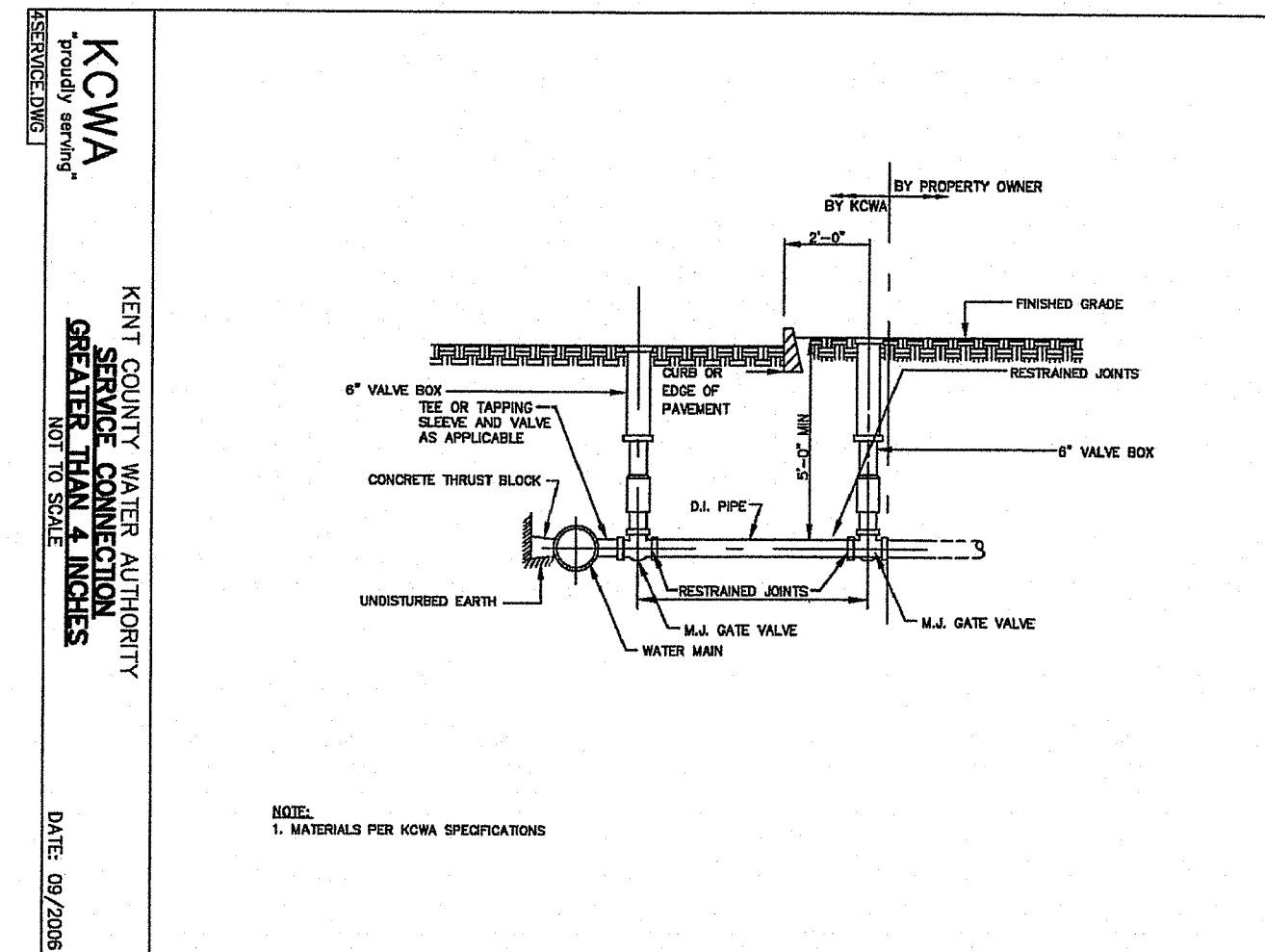
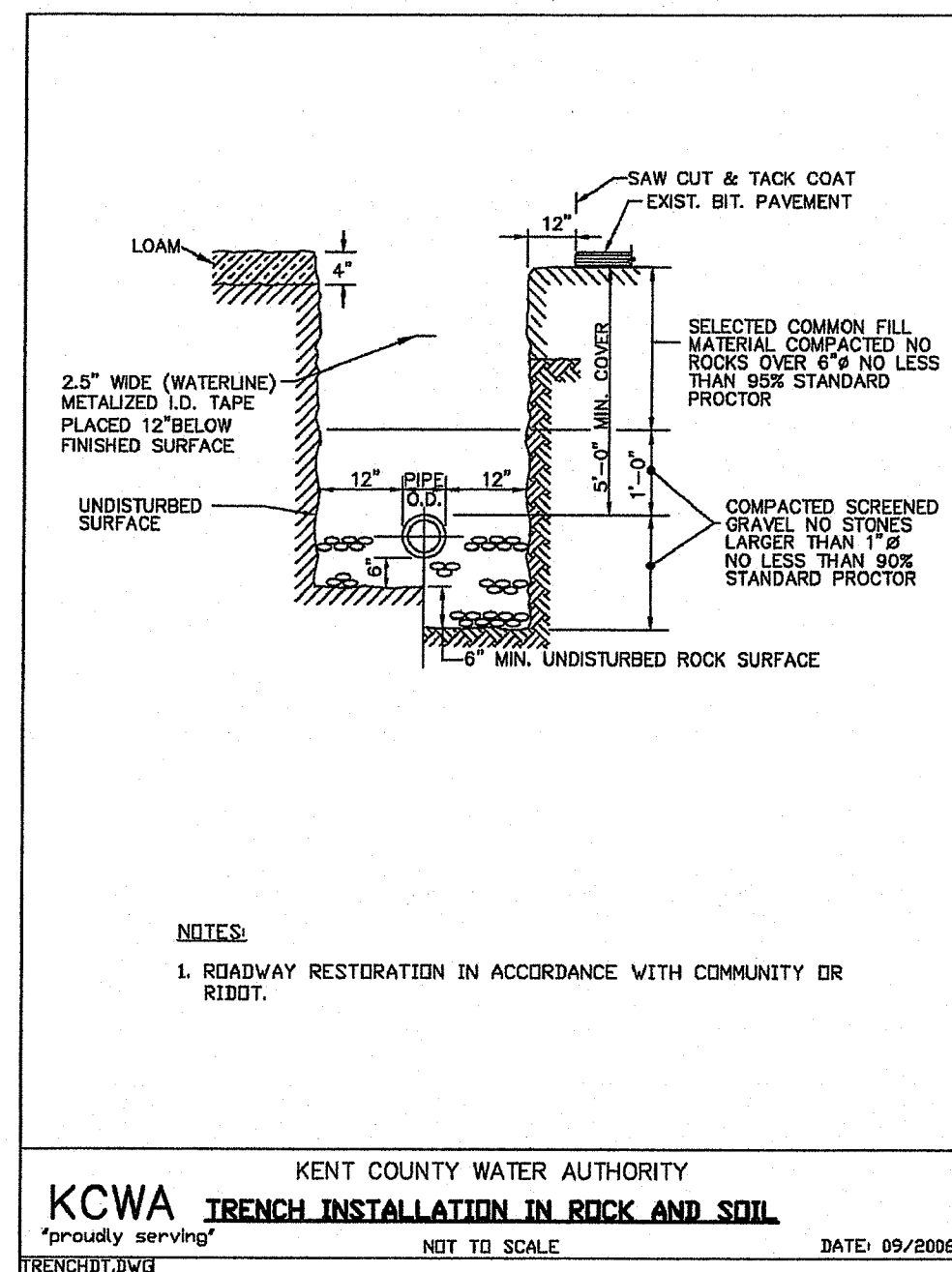
REVISIONS

NUMBER	REMARKS	DATE

DRAWING NUMBER

C12

SHEET: 13 OF: 17

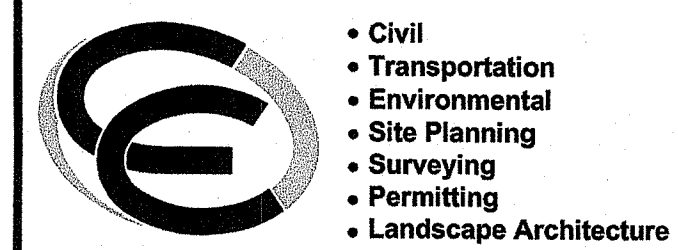


WATER SERVICE NOTE

ANY CONFLICT ENCOUNTERED DURING CONSTRUCTION WITH THE PROPOSED WATER SYSTEM MUST BE BROUGHT TO THE ATTENTION OF THE ENGINEER AND KENT COUNTY WATER AUTHORITY PRIOR CONTINUATION OF CONSTRUCTION.

WATER NOTES

1. ALL INSTALLATION, JOINTS, CONSTRUCTION METHODS AND MATERIALS SHALL CONFORM TO THE CURRENT RULES AND REGULATIONS OF THE KENT COUNTY WATER AUTHORITY, ANSI/AWWA C600 STANDARDS, THE DUCTILE IRON PIPE RESEARCH ASSOCIATIONS INSTALLATION MANUAL AND GOVERNMENTAL REQUIREMENTS.
2. ALL FITTINGS SHALL BE DUCTILE IRON MECHANICAL JOINT CLASS 350 CEMENT MORTAR LINED COMPACT STYLE (BY AMERICAN MANUFACTURER ONLY). FITTINGS SHALL MEET THE REQUIREMENTS OF ANSI/AWWA C153/A21.53. MECHANICAL JOINTS SHALL MEET THE REQUIREMENTS OF ANSI/AWWA C111/A21.11.
3. WATER PIPE SHALL BE DOUBLE CEMENT MORTAR LINED DUCTILE IRON PIPE CLASS 52 (AMERICAN MANUFACTURER ONLY) AND SHALL MEET THE REQUIREMENTS OF ANSI/AWWA C151/A21.51.
4. CONSTRUCTION SHALL INCLUDE ALL PIPE, JOINTS, BENDS, TEES, FITTINGS, THRUST BLOCKS, GATE VALVES, GATE BOXES, SERVICE CONNECTIONS AND ALL MISCELLANEOUS ITEMS REQUIRED TO CONSTRUCT THE PROPOSED SYSTEM.
5. CONCRETE THRUST, ANCHOR, OR BEARING BLOCKS SHALL BE INSTALLED IN LOCATIONS INDICATED AND AT ALL BENDS, FITTINGS, PLUGS, ETC. WHEN A THRUST BLOCK CANNOT BE PLACED AGAINST UNDISTURBED EARTH, A MECHANICAL RESTRAINED JOINT PIPE MAY BE UTILIZED.
6. PRESSURE AND LEAKAGE TESTS AND DISINFECTING PIPES SHALL BE PERFORMED BY THE CONTRACTOR IN CONFORMANCE TO KENT COUNTY WATER AUTHORITY REQUIREMENTS, AMERICAN WATER WORKS ASSOCIATION (AWWA) RECOMMENDATIONS, AND GOVERNMENTAL AGENCIES HAVING JURISDICTION. THE CONTRACTOR MUST FOLLOW THE REQUIREMENTS SET FORTH IN SECTIONS 3.22 AND 3.23 OF THE RULES AND REGULATIONS OF THE KENT COUNTY WATER AUTHORITY.
7. ALL GATE VALVES, FITTINGS, PIPE, JOINTS, ETC. SHALL BE DESIGNED FOR 1.5 TIMES WORKING PRESSURE BUT NOT LESS THAN 250 PSI.
8. WATER PIPE SHALL BE LOCATED AT A DEPTH OF COVER EQUAL TO 5' MINIMUM. A MINIMUM OF 10-FEET HORIZONTAL OR 18-INCH VERTICAL SEPARATION SHALL BE MAINTAINED IN THE PLACEMENT OF WATER MAINS, SERVICES, OR APPURTENANCES WITHIN THE VICINITY OF SEWER FACILITIES, OR VICE VERSA. WHERE THE ABOVE SEPARATION DISTANCES CANNOT BE ACHIEVED, THE SANITARY SEWER PIPE SHALL BE ENCASED WITH A DUCTILE IRON CARRIER PIPE FOR A DISTANCE EQUAL TO 10-FEET ON EITHER SIDE OF THE AREA OF CONCERN. CONCRETE ENCASEMENT IS NOT ALLOWED. UTILITY SEPARATION SHALL CONFORM TO THE RULES AND REGULATIONS OF THE KENT COUNTY WATER AUTHORITY.
9. ALL SYSTEM COMPONENTS AND CONSTRUCTION METHODS, SUCH AS GATE VALVE, PIPE, THRUST BLOCKS, FITTINGS, CASTINGS, ETC. SHALL BE SUBMITTED TO THE KENT COUNTY WATER AUTHORITY AND ENGINEER FOR APPROVAL PRIOR TO PURCHASE AND INSTALLATION. THIS SUBMISSION SHALL INCLUDE MANUFACTURER'S LITERATURE, SHOP DRAWINGS, PROPOSED CONSTRUCTION METHODS, ETC.
10. WATER LINE TRENCH TO BE AWWA TYPE 5. COMPACTION MUST BE ACCOMPLISHED IN 6" LIFTS. A METALIZED DETECTABLE IDENTIFICATION TAPE 2.5" IN WIDTH, BLUE IN COLOR AND PRINTED WITH "CAUTION WATERLINE BURIED BELOW" SHALL BE UTILIZED OVER ALL MAINS. TAPE SHALL BE SET AT APPROXIMATELY 1'-0" BELOW FINISHED GRADE.
11. GATE VALVES TO BE MUELLER IRON BODY BRONZE MOUNTED DOUBLE DISC PARALLEL SEAT TYPE OR AMERICAN DARLING RESILIENT VALVE SEAT MODEL CRS-80.
12. THE FINAL LOCATIONS FOR ALL INTERIOR PIPING, BACK FLOW PREVENTORS AND VALVES SHALL BE VERIFIED WITH THE ARCHITECT.
13. CONTRACTOR SHALL COORDINATE WATER METER AND BACKFLOW ASSEMBLIES WITH THE KENT COUNTY WATER AUTHORITY. WATER METER AND BACKFLOW ASSEMBLIES MUST BE APPROVED FOR USE BY THE KENT COUNTY WATER AUTHORITY PRIOR TO ORDERING.
14. AS-BUILT DRAWINGS MUST BE FURNISHED BY THE CONTRACTOR TO, AND APPROVED BY, KENT COUNTY WATER AUTHORITY PRIOR TO WATER SERVICE ACTIVATION.
15. THE CONTRACTOR MUST INSTALL TEMPORARY BLOW-OFFS AT ALL DEAD-ENDS. THE BLOW-OFFS ARE TO BE USED FOR FLUSHING AND SAMPLES.
16. ALL VALVES MUST OPEN LEFT.
17. WATER UTILIZED FOR DISINFECTION, PRESSURE TESTING AND FLUSHING WHICH IS OBTAINED DIRECTLY FROM THE KENT COUNTY WATER AUTHORITY SYSTEM, MUST FLOW THROUGH AN ISOLATED CONNECTION TO THE KENT COUNTY WATER AUTHORITY SYSTEM VIA AN APPROVED METER, TESTABLE BACK FLOW PREVENTION DEVICE AND JUMPER LINE. REFER TO THE CURRENT RULES AND REGULATIONS OF THE KENT COUNTY WATER AUTHORITY.
18. THE CONTRACTOR SHALL FURNISH AND INSTALL SUITABLE TEMPORARY TESTING PLUGS, CAPS, PUMPS, PIPE CONNECTIONS, AND OTHER APPURTENANCES, AS NECESSARY, TO OBTAIN SAMPLES.



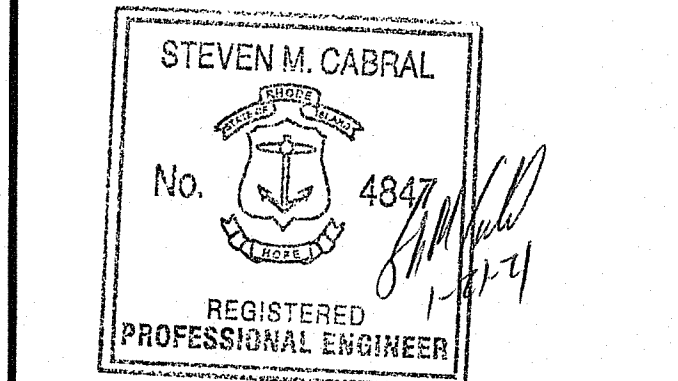
CROSSMAN ENGINEERING

Rhode Island
 151 Centerville Road
 Warwick, RI 02886
 Phone: (401) 738-6660

Massachusetts
 103 Commonwealth Avenue
 North Attleboro, MA 02763
 Phone: (508) 695-1700

Email: ce@crossmaneng.com

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KEY PLAN

DEPARTMENT OF ENVIRONMENTAL MANAGEMENT
 OFFICE OF WATER RESOURCES
 FRESHWATER WETLANDS PROGRAM
 APPROVED WITH CONDITIONS
 AS SPECIFIED IN THE LETTER OF APPROVAL
 DATED APR 09 2021 FILE # 21-0025
 NO CHANGES ALLOWED WITHOUT PRIOR APPROVAL
 APPROVED PLANS MUST BE AT CONSTRUCTION SITE
Nancy L. Freeman

PROJECT TITLE:

BROTHERS FARM
 PLAT MAP 13, LOTS 53 and 765
 and PLAT MAP 14, LOT 1
 ZONING DISTRICT R8
 RESIDENTIAL DISTRICT
 NARRAGANSETT AVENUE
 WEST WARWICK, RI

PREPARED FOR:

LEGACY CONSTRUCTION
 782 Main Street
 East Greenwich, RI 02818
 (401) 709-4236

DRAWING TITLE:

**MISCELLANEOUS DETAILS
 PLAN No. 4**

DATE: DECEMBER 2020 SCALE: NO SCALE

DWG. NAME:

REVISIONS

NUMBER	REMARKS	DATE

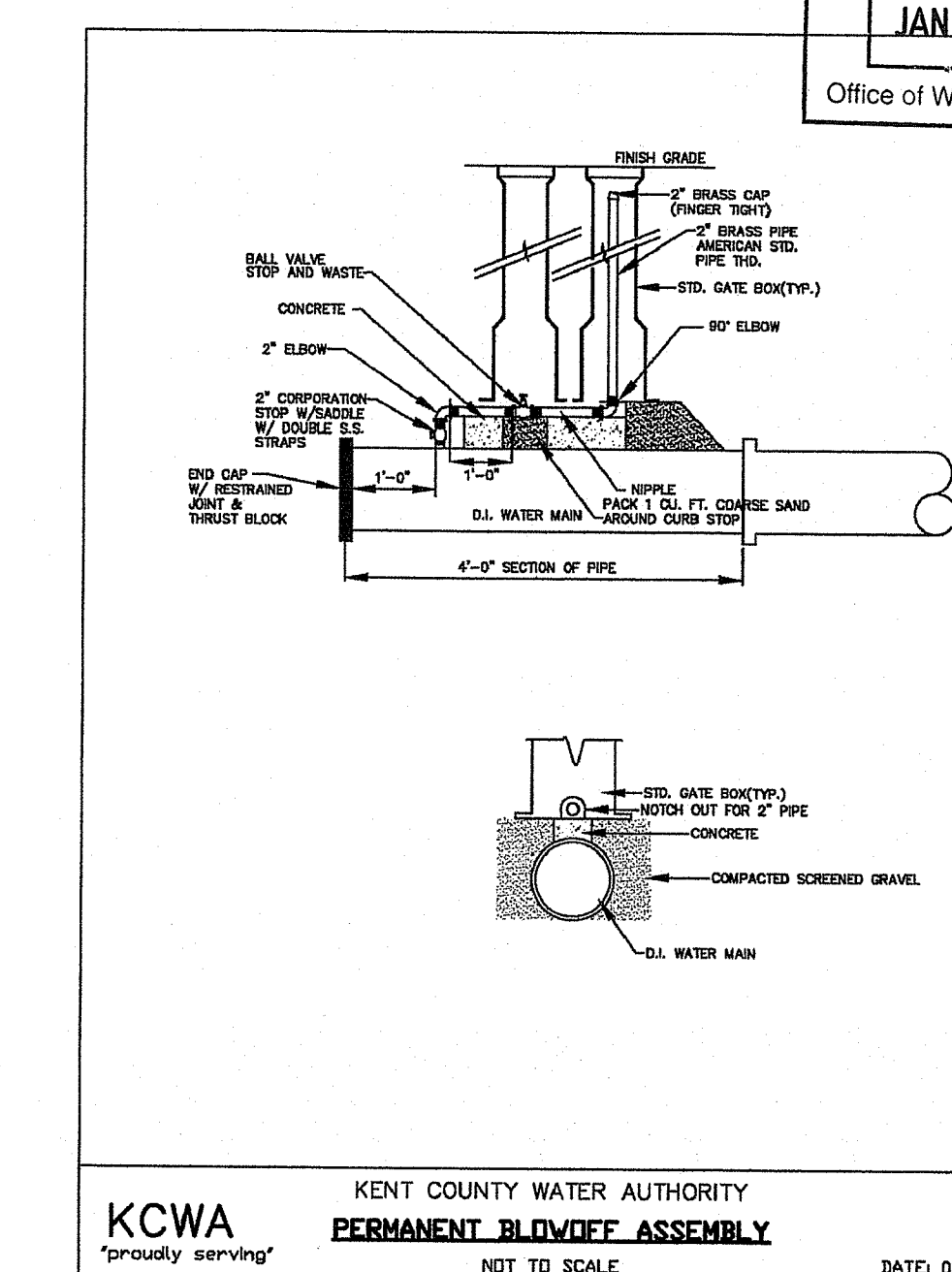
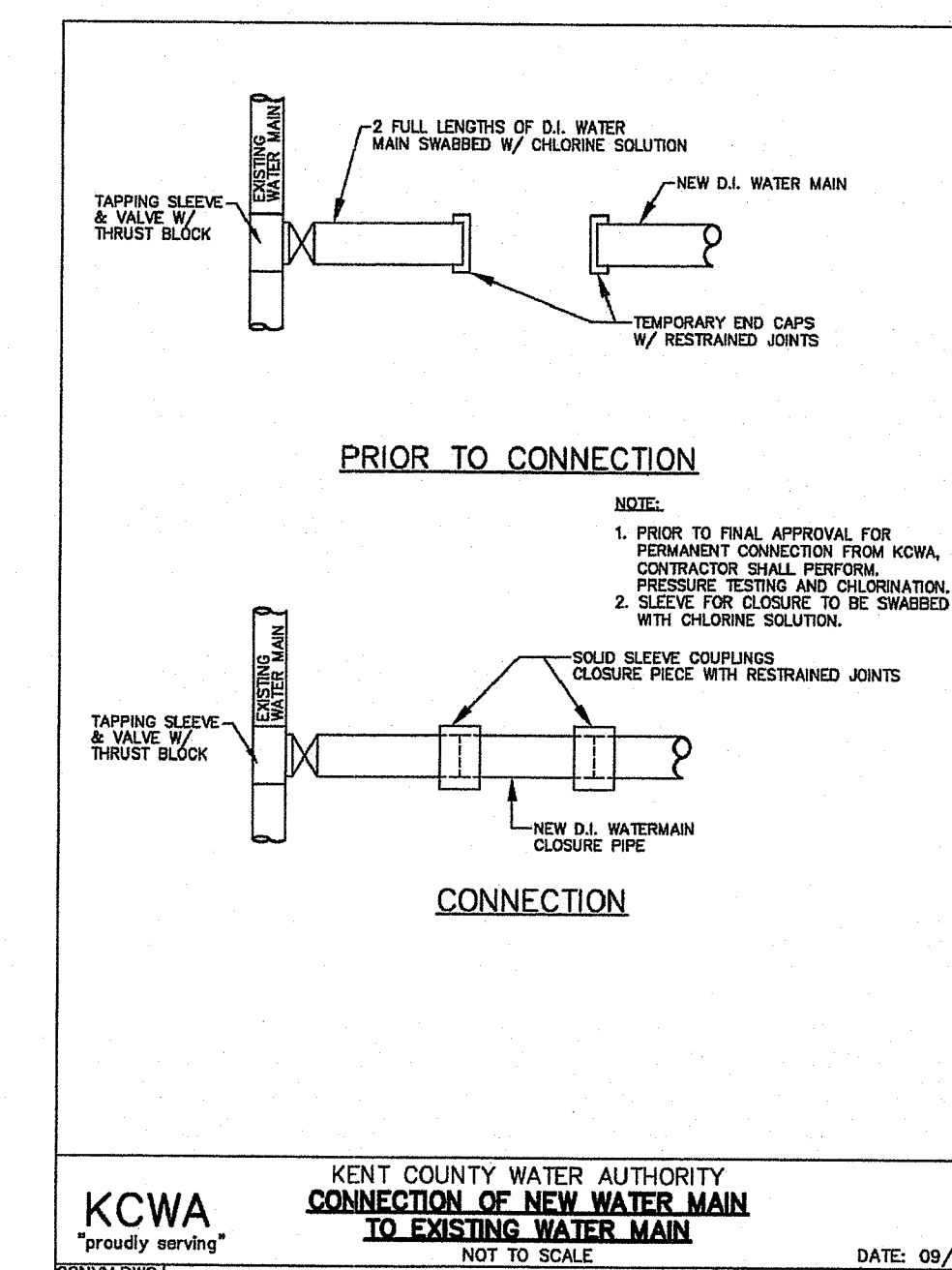
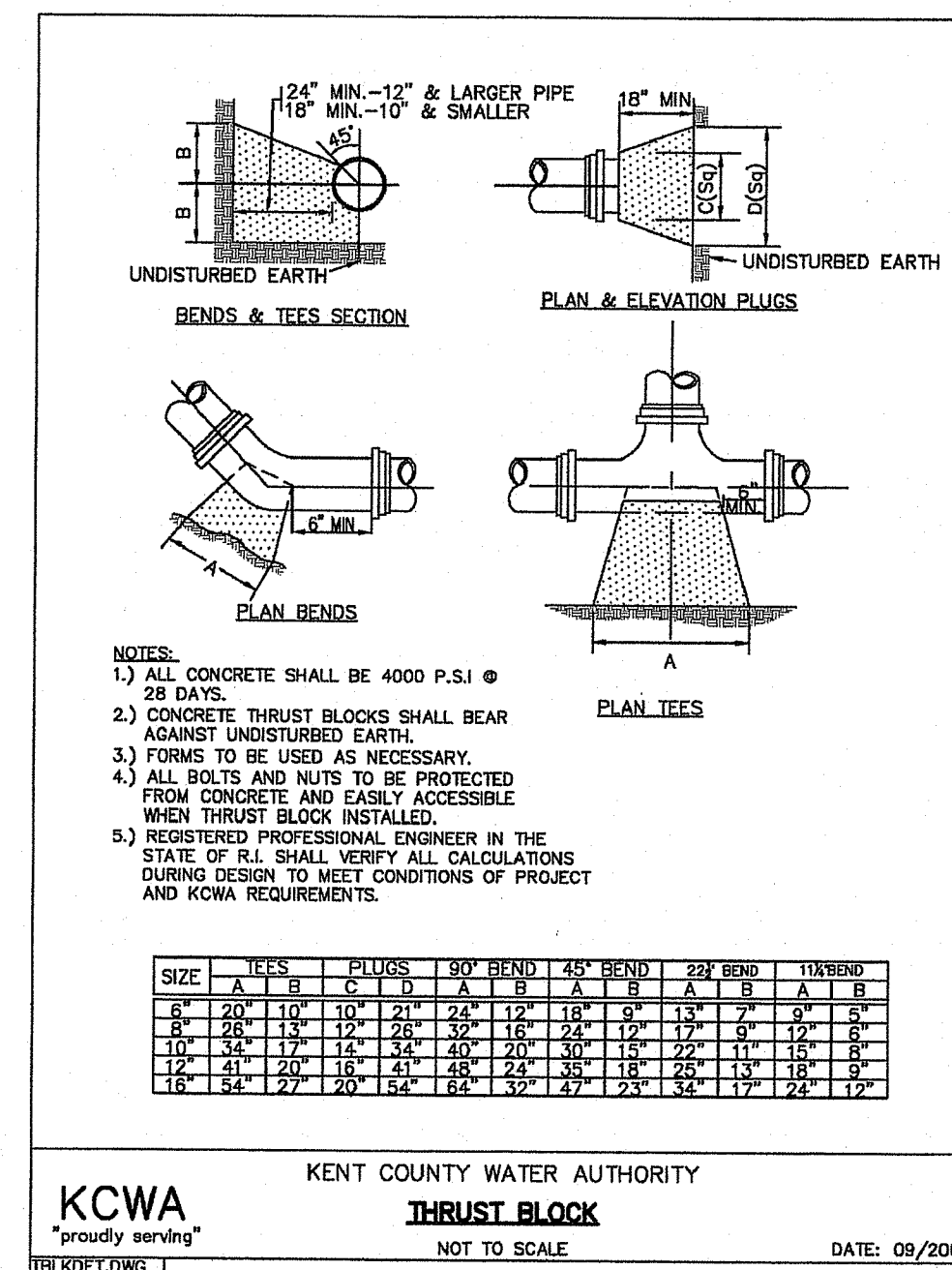
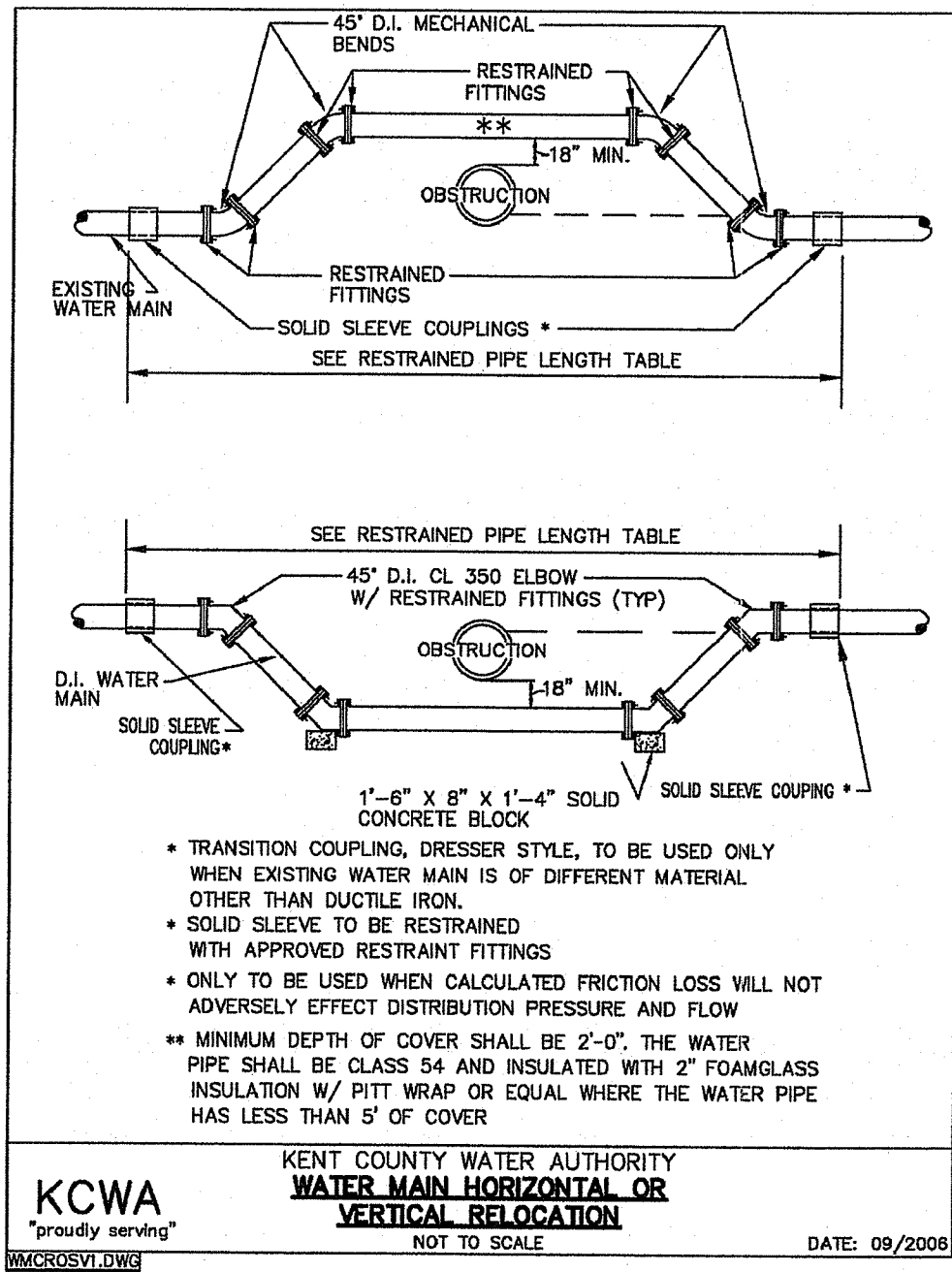
DRAWING NUMBER

C13
 SHEET: 14 OF 17

KENT COUNTY WATER AUTHORITY
RESTRAINED PIPE LENGTHS
"proudly serving"
 NOT TO SCALE DATE: 09/2006

FITTING	RESTRAINED LENGTH
12" PLUG	84"
12" TEE	44"
12" 90°	56"
12" 45°	44"
12" 22 1/2°	22"
12" 11 1/4°	22"
8" PLUG	56"
8" TEE	44"
8" 90°	44"
8" 45°	22"
8" 22 1/2°	22"
8" 11 1/4°	22"
6" x 6"	44"
6" PLUG	44"
6" TEE	22"
6" 90°	22"
6" 45°	22"
6" 22 1/2°	22"
6" 11 1/4°	22"

NOTE:
 1. ALL JOINTS INCLUDING PIPE COUPLERS, VALVE JOINTS AND FITTING JOINTS SHALL BE DISINFECTED WITH 1% CHLORINE SOLUTION. MECHANICAL RESTRAINTS WILL BE IN ACCORDANCE WITH THE ABOVE TABLE.
 2. THE TABLE SHOWS LENGTHS OF PIPES WHICH MUST BE RESTRAINED ON BOTH SIDES OF THE FITTING.
 3. ALL DEAD END PIPE SHALL BE PROPERLY RESTRAINED PRIOR TO PRESSURE TESTING.
 4. REGISTERED PROFESSIONAL ENGINEER IN THE STATE OF RI SHALL VERIFY ALL RESTRAINT CALCULATIONS AT ALL STAGES DURING DESIGN, MEETING ALL REQUIREMENTS OF THE KCWA.



Environmental Management
 JAN 25 2021
 Office of Water Resources

GENERAL SEWER NOTES

- INSTALLATION OF THE SEWERAGE FACILITIES SHALL BE IN ACCORDANCE WITH THE WEST WARWICK SEWER COMMISSION SPECIFICATIONS AND REQUIREMENTS.
- PRIOR TO RECEIVING AUTHORIZATION TO CONSTRUCT, ALL MATERIALS SHALL MEET THE STANDARDS AND RECEIVE THE WRITTEN APPROVAL, BASED ON MANUFACTURER'S DRAWINGS AND OTHER DATA, OF THE WEST WARWICK SEWER COMMISSION.
- ALL SEWERAGE FACILITIES SHALL MEET TESTING AND CLEANING REQUIREMENTS PRIOR TO ACCEPTANCE.
- THE CONTRACTOR IS RESPONSIBLE TO COORDINATE AS-BUILT LOCATIONS PRIOR TO PIPE BACKFILL. AS-BUILT DRAWINGS SHALL BE FURNISHED AS A CONDITION FOR ACCEPTANCE OF THE NEW SEWERAGE FACILITIES. PLANS SHALL INCLUDE LOCATION OF WYES.
- NO FLOW WILL BE ACCEPTED UNTIL ALL ABOVE STEPS ARE COMPLETED AND COMPLETION CERTIFICATE IS ISSUED.
- AFTER THE CONTRACTOR HAS "STAKED OUT" THE FACILITIES TO BE CONSTRUCTED AND HAS THE APPROVED MATERIALS ON THE JOB, THE WEST WARWICK SEWER COMMISSION SHALL BE NOTIFIED IN ADVANCE OF CONSTRUCTION IN ORDER FOR THEM TO ARRANGE FOR THEIR INSPECTOR. THE NOTIFICATION MUST MEET THE WEST WARWICK SEWER COMMISSION REQUIREMENTS.
- ALL CONSTRUCTION SHALL BE IN ACCORDANCE WITH THE APPROVED PLANS AND MATERIALS, STANDARDS AND SPECIAL DETAILS, AND STANDARD SPECIFICATIONS, ANY WORK NOT MEETING THE APPROVED STANDARDS SHALL BE IMMEDIATELY REMOVED AND REPLACED AT THE CONTRACTOR'S EXPENSE.
- THE CONTRACTOR SHALL CONFINE HIS OPERATIONS AND ACTIVITIES FOR CONSTRUCTION WITHIN THE LIMITS OF WORK AS SHOWN ON THE DRAWINGS.
- ALL AREAS DISTURBED BY THE CONTRACTOR SHALL BE RESTORED TO THEIR ORIGINAL CONDITION AT NO EXTRA COST TO THE OWNER. ALL GRASSED AREAS DISTURBED BY THE CONTRACTOR'S OPERATIONS SHALL BE LOAMED AND SEEDDED.
- LOCATION AND DEPTHS OF EXISTING UTILITIES ARE APPROXIMATE AND HAVE BEEN PLOTTED FROM THE BEST AVAILABLE INFORMATION. THE CONTRACTOR SHALL VERIFY LOCATIONS OF ALL EXISTING UTILITIES AND NOTIFY THE APPROPRIATE UTILITY AUTHORITIES INCLUDING "DIG-SAFE" PRIOR TO STARTING WORK. ANY DAMAGE TO UTILITIES CAUSED BY THE CONTRACTOR'S OPERATIONS SHALL BE THE RESPONSIBILITY OF THE CONTRACTOR AND THE COST OF REPAIRS SHALL BE BORNE BY THE CONTRACTOR AT NO ADDITIONAL COST TO THE OWNER.

11. RELATION TO WATER LINES:

A. HORIZONTAL SEPARATION: WHENEVER POSSIBLE, SEWERS SHOULD BE LAID AT A MINIMUM OF 10 FEET (3.0 m), HORIZONTALLY, FROM ANY EXISTING OR PROPOSED WATER LINE. SHOULD LOCAL CONDITIONS PREVENT A LATERAL SEPARATION OF 10 FEET, A SEWER MAY BE LAID CLOSER THAN 10 FEET TO A WATER LINE IF:

- IT IS LAID IN A SEPARATE TRENCH, OR IF
- IT IS LAID IN THE SAME TRENCH WITH THE WATER LINE LOCATED AT ONE SIDE ON A BENCH OF UNDISTURBED EARTH, AND IF

3. IN EITHER CASE THE ELEVATION OF THE TOP (CROWN) OF THE SEWER IS AT LEAST 18 INCHES (46 cm) BELOW THE BOTTOM (INVERT) OF THE WATER LINE.

B. VERTICAL SEPARATION: WHENEVER A SEWER MUST CROSS UNDER WATER LINES, THE SEWER SHALL BE LAID AT SUCH AN ELEVATION THAT THE TOP OF THE SEWER IS AT LEAST 18 INCHES (46 cm) BELOW THE BOTTOM OF THE WATER LINE. WHEN THE ELEVATION OF THE SEWER CANNOT BE VARIED TO MEET THE ABOVE REQUIREMENTS, THE WATER LINE SHALL BE RELOCATED TO PROVIDE THIS SEPARATION OR RECONSTRUCTED WITH MECHANICAL-JOINT PIPE FOR A DISTANCE OF 10 FEET (3.0 m) ON EACH SIDE OF THE SEWER. ONE FULL LENGTH OF WATER LINE SHOULD BE CENTERED OVER THE SEWER SO THAT BOTH JOINTS WILL BE AS FAR FROM THE SEWER AS POSSIBLE.

C. WHEN IT IS IMPOSSIBLE TO OBTAIN HORIZONTAL AND/OR VERTICAL SEPARATION AS STIPULATED ABOVE, BOTH THE WATER LINE AND SEWER SHALL BE CONSTRUCTED OF MECHANICAL-JOINT CEMENT LINED DUCTILE IRON PIPE OR OTHER EQUIVALENT BASED ON WATER TIGHTNESS AND STRUCTURAL SOUNDNESS. BOTH PIPES SHALL BE PRESSURE TESTED BY AN APPROVED METHOD TO ASSURE WATER TIGHTNESS.

- CONTRACTOR SHALL BE RESPONSIBLE FOR ANY DEWATERING REQUIRED IN THE SEWER INSTALLATION.
- THE PROPOSED GRAVITY SANITARY SEWER PIPE SHALL BE SDR 35, UNLESS OTHERWISE SHOWN ON PLANS. PIPE SIZE TO MATCH UTILITY PLAN.
- THE CONTRACTOR IS RESPONSIBLE TO VERIFY THE LOCATION AND ELEVATION OF EXISTING SEWER LINE PRIOR TO INSTALLATION. PRIOR TO CONSTRUCTION, THE CONTRACTOR SHALL DIG TEST HOLES AND COORDINATE ALL INFORMATION WITH THE ENGINEER.
- THE PENETRATIONS ON THE OIL/WATER SEPARATOR SHALL USE KOR-N-SEAL EPDM RUBBER BOOTS WITH STAINLESS STEEL BANDS AND CLAMPS (OR EQUAL).
- PRIOR TO BACKFILL, THE CONTRACTOR SHALL CONTACT THE WARWICK SEWER AUTHORITY AND THE WEST WARWICK SEWER COMMISSION TO COORDINATE INSPECTIONS.
- ALL MANHOLES SHALL BE WATER TIGHT AND WATER TIGHT TESTING AND/OR CERTIFICATIONS SHALL BE PROVIDED TO THE WEST WARWICK SEWER COMMISSION, AND ENGINEER.

SEWER TRENCH NOTES

- MINIMUM WIDTH (W) OF TRENCH IS EQUAL TO THE INSIDE DIAMETER OF THE PIPE PLUS 12" EACH SIDE.
- SOIL UNDER CRUSHED STONE FOUNDATION SHALL BE UNDISTURBED AND COMPACTED MATERIAL WITH SEVERAL PASSES OF A VIBRATORY PLATE COMPACTOR TO ATTAIN 95% MAX. DENSITY (MOD. METHOD).
- CRUSHED STONE FOUNDATION 3/4" MAXIMUM SIZE, SHALL BE PLACED 6" UNDER THE PIPE AND UP TO THE PIPE LAD THEREON, CRUSHED STONE PULLED AGAINST THE PIPE SIDES TO FIRMLY HOLD THE PIPE IN PLACE.
- CRUSHED STONE HAUNCHING 3/4" MAXIMUM SIZE SHALL BE BROUGHT LEVEL TO THE TOP OF THE PIPE AND OUT TO THE TRENCH WALL AT THIS ELEVATION FOR ALL PIPE.
- PIPE SHALL BE SDR 35 PVC OR APPROVED EQUAL.

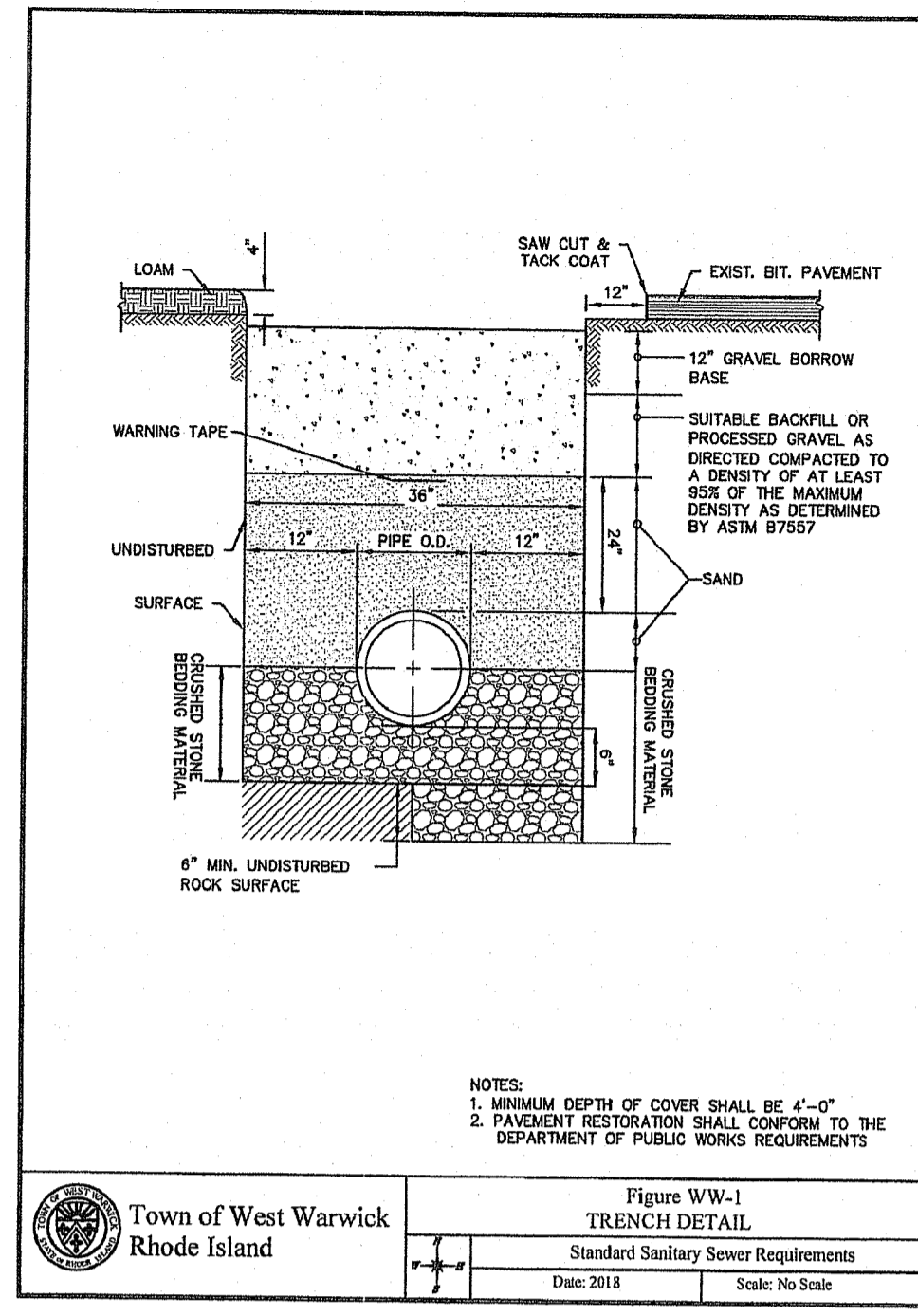


Figure WW-1
TRENCH DETAIL
Standard Sanitary Sewer Requirements
Date: 2018
Scale: No Scale

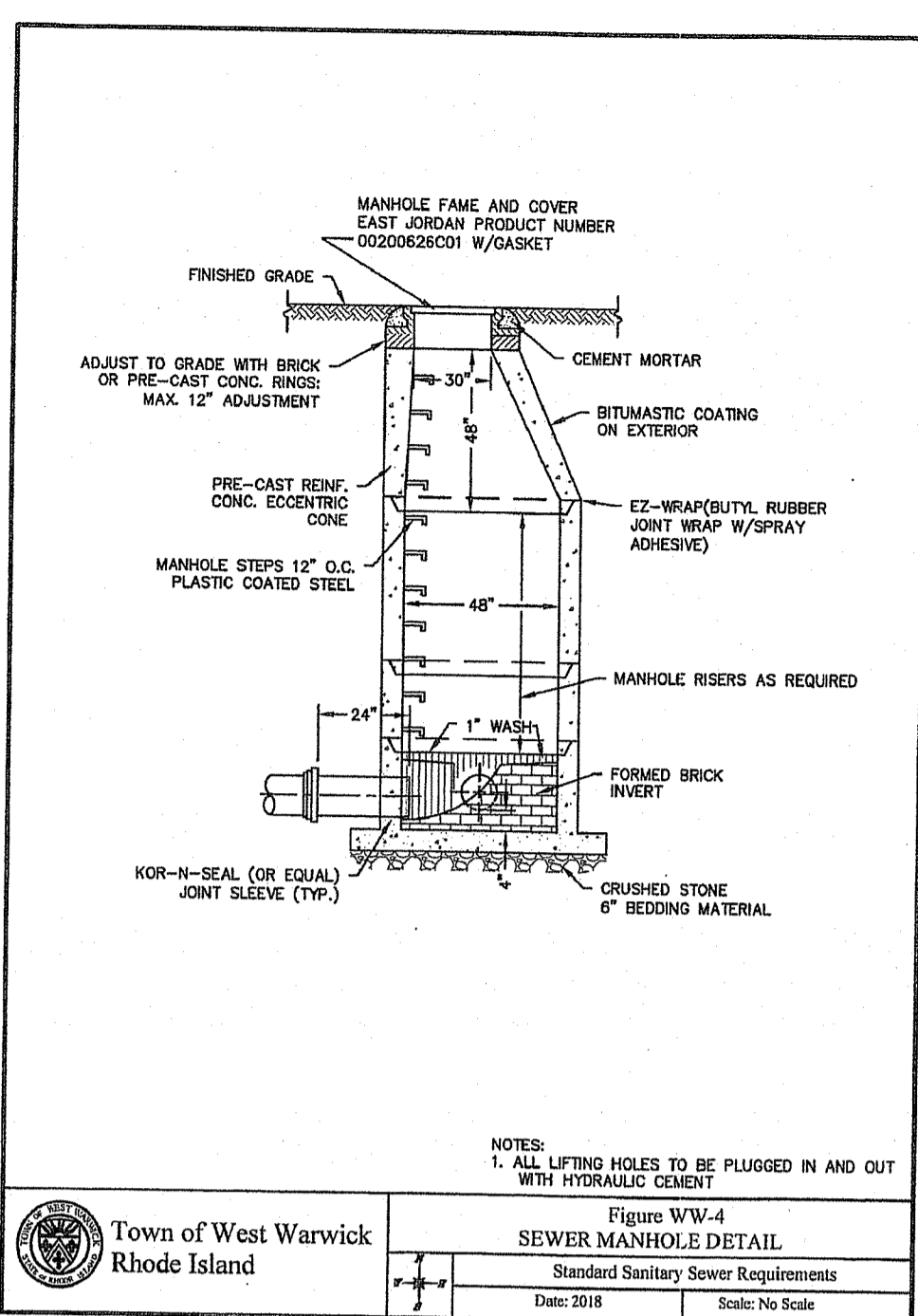


Figure WW-4
SEWER MANHOLE DETAIL
Standard Sanitary Sewer Requirements
Date: 2018
Scale: No Scale

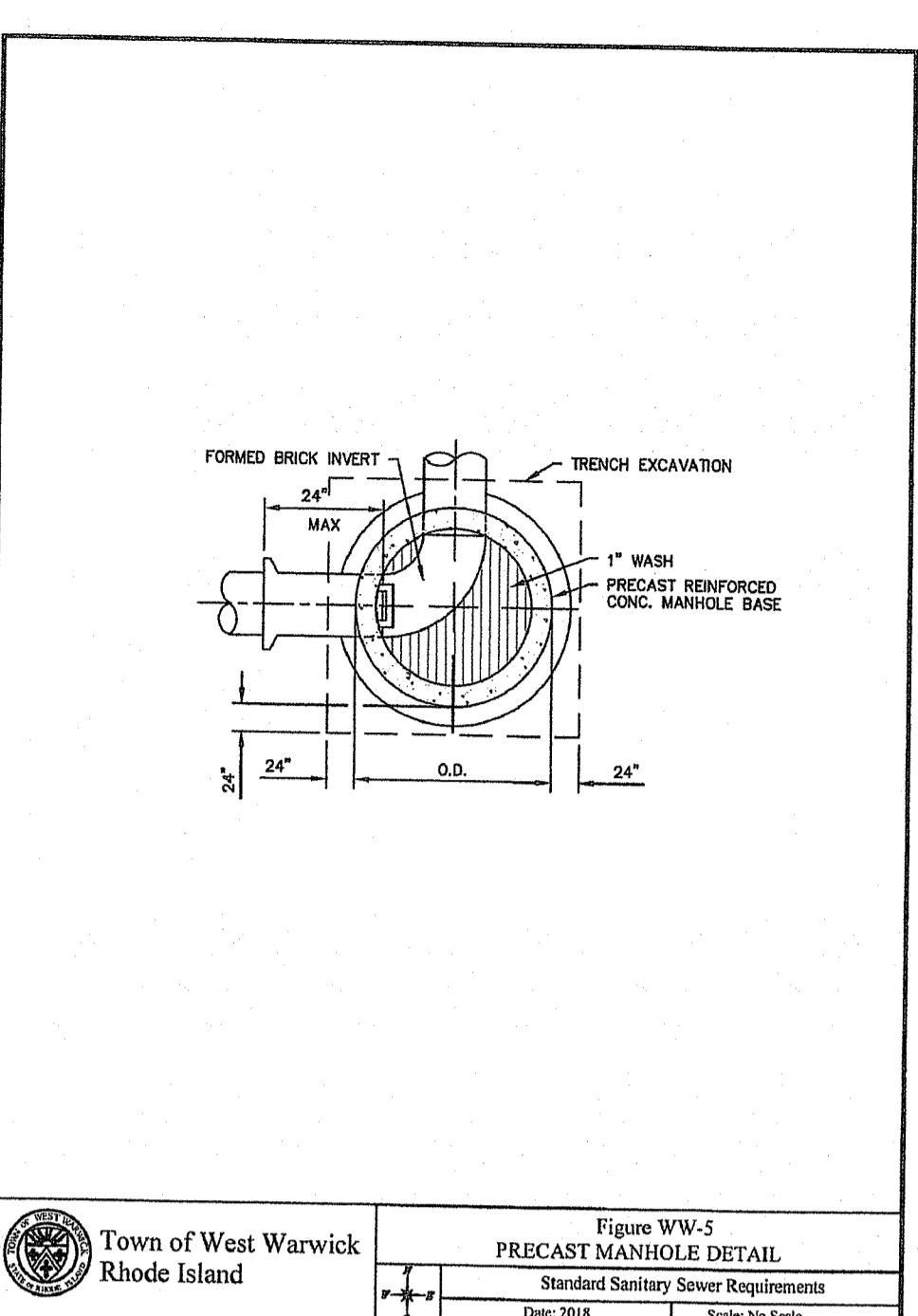


Figure WW-5
PRECAST MANHOLE DETAIL
Standard Sanitary Sewer Requirements
Date: 2018
Scale: No Scale

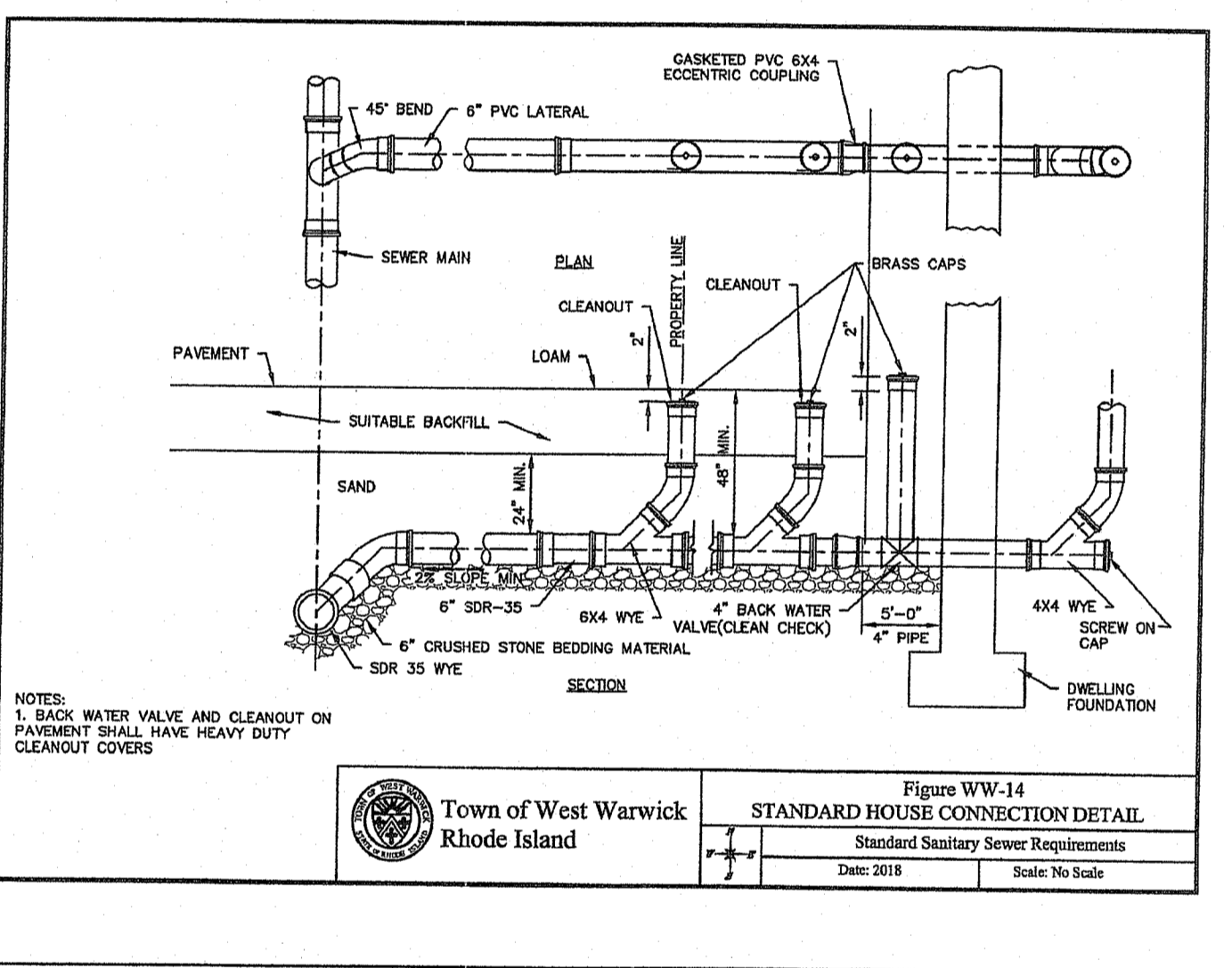
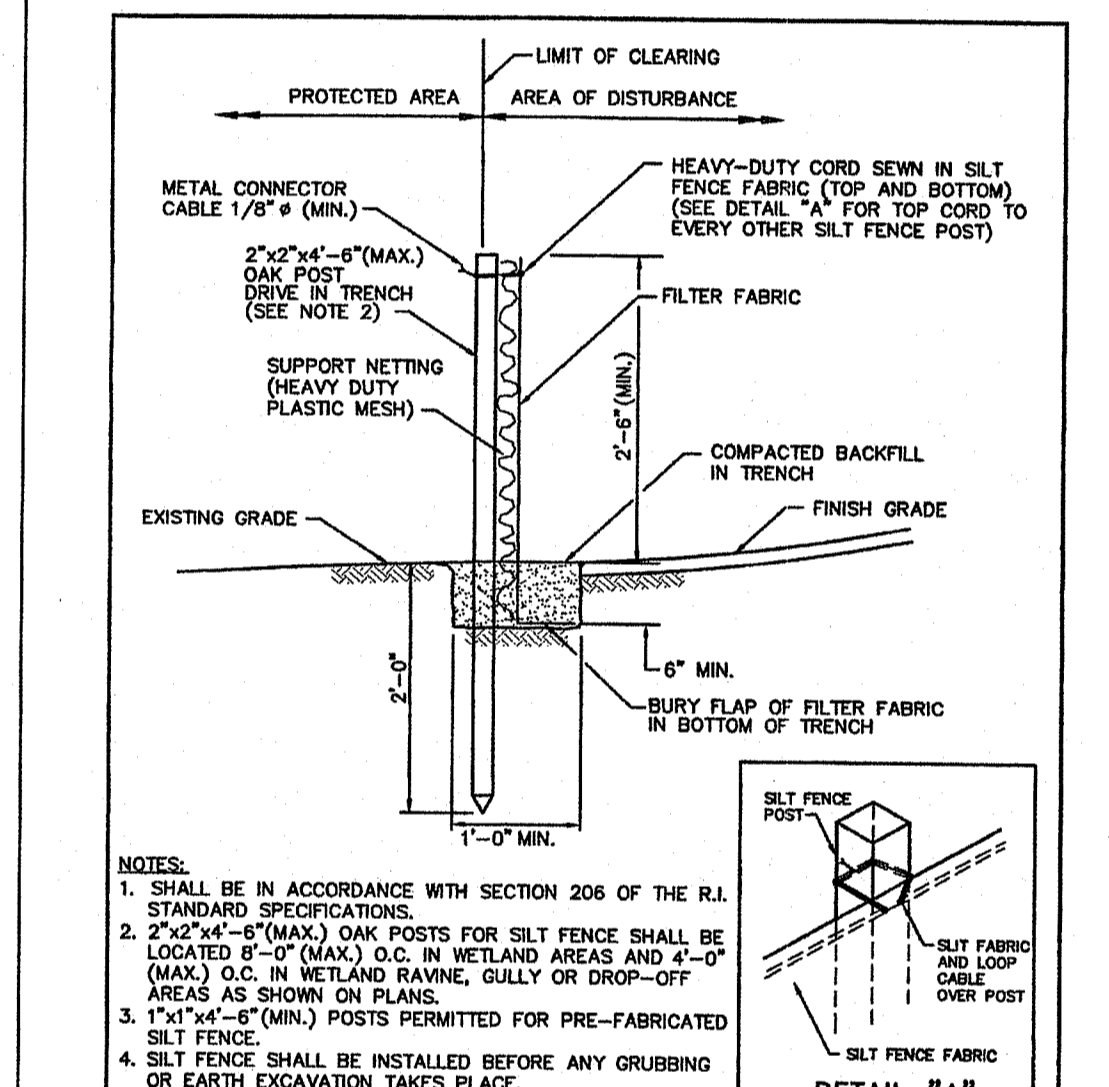


Figure WW-14
STANDARD HOUSE CONNECTION DETAIL
Standard Sanitary Sewer Requirements
Date: 2018
Scale: No Scale



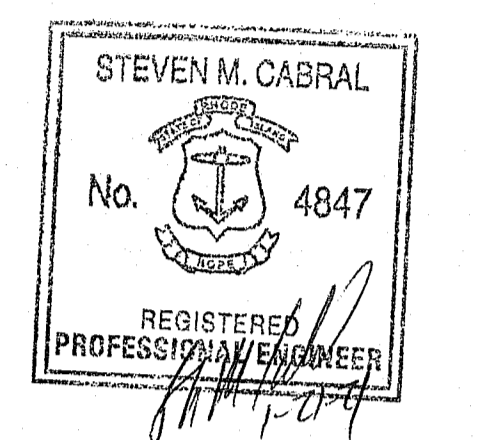
RHODE ISLAND DEPARTMENT OF TRANSPORTATION
SILT FENCE DETAIL
JUNE 15, 1998
I.B. STANDARD 9.2.0

Environmental Management
JAN 25 2021
Office of Water Resources

DEPARTMENT OF ENVIRONMENTAL MANAGEMENT
OFFICE OF WATER RESOURCES
FRESHWATER WETLANDS PROGRAM
APPROVED WITH CONDITIONS
AS SPECIFIED IN THE LETTER OF APPROVAL
DATED 1/13/2021 FILE # 21-0025
NO CHANGES ALLOWED WITHOUT PRIOR APPROVAL
APPROVED PLANS MUST BE AT CONSTRUCTION STAGE
Nancy L. Freeman

CROSSMAN ENGINEERING
Rhode Island
151 Centerville Road
Warwick, RI 02886
Phone: (401) 738-8660
Email: ce@crossmaneng.com
Massachusetts
103 Commonwealth Avenue
North Attleboro, MA 02763
Phone: (508) 695-1700

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KEY PLAN

PROJECT TITLE:

BROTHERS FARM
PLAT MAP 13, LOTS 53 and 765
and PLAT MAP 14, LOT 1
ZONING DISTRICT R8
RESIDENTIAL DISTRICT
NARRAGANSETT AVENUE
WEST WARWICK, RI

PREPARED FOR:



LEGACY CONSTRUCTION
782 Main Street
East Greenwich, RI 02818
(401) 709-4236

DRAWING TITLE:

**MISCELLANEOUS DETAILS
PLAN No. 5**

DATE: DECEMBER 2020 SCALE: NO SCALE

DWG. NAME:

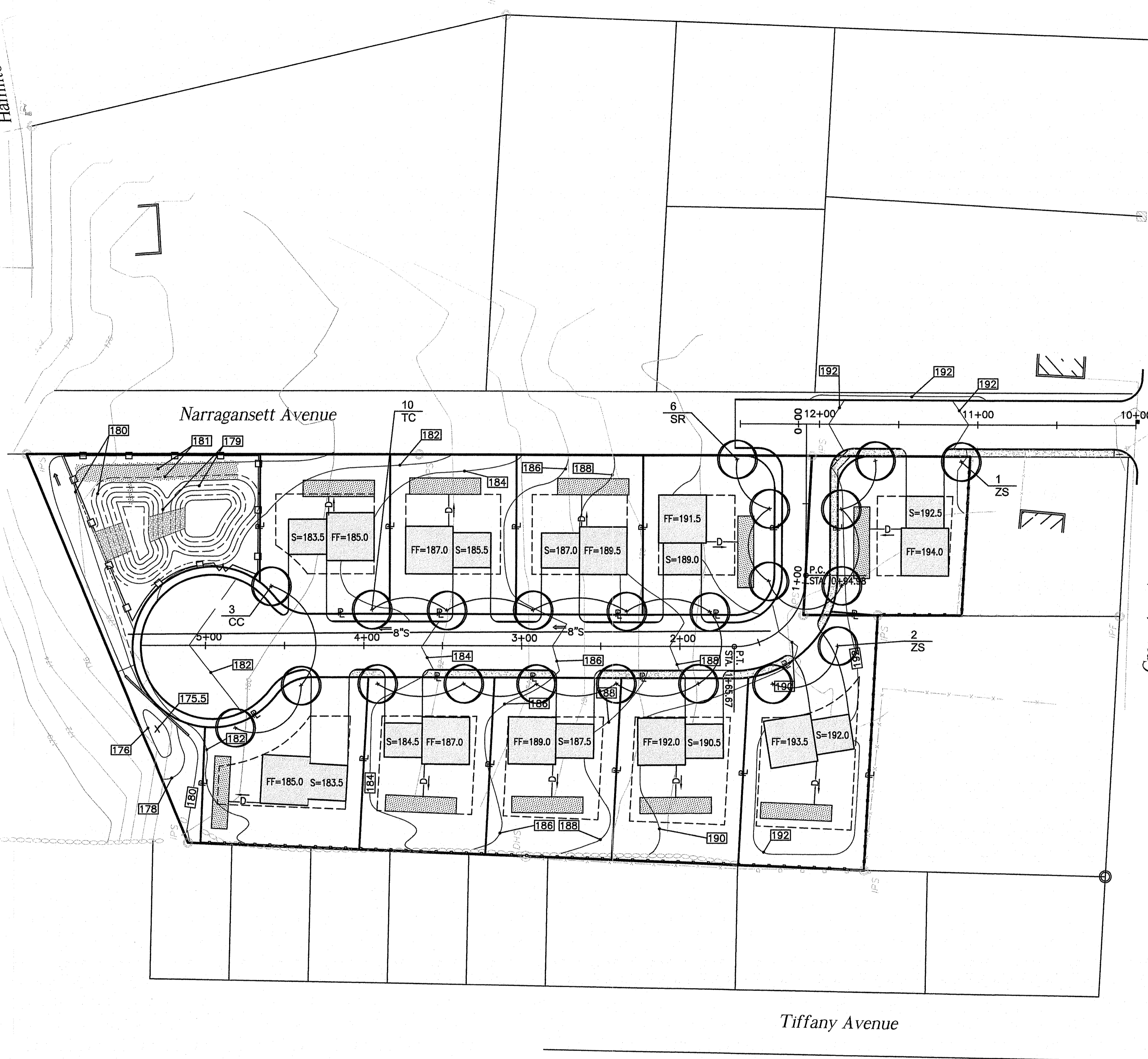
REVISIONS	NUMBER	REMARKS	DATE
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DRAWING NUMBER

C14

SHEET: 15 OF 17

Hamilton Street



LANDSCAPE CONSTRUCTION NOTES

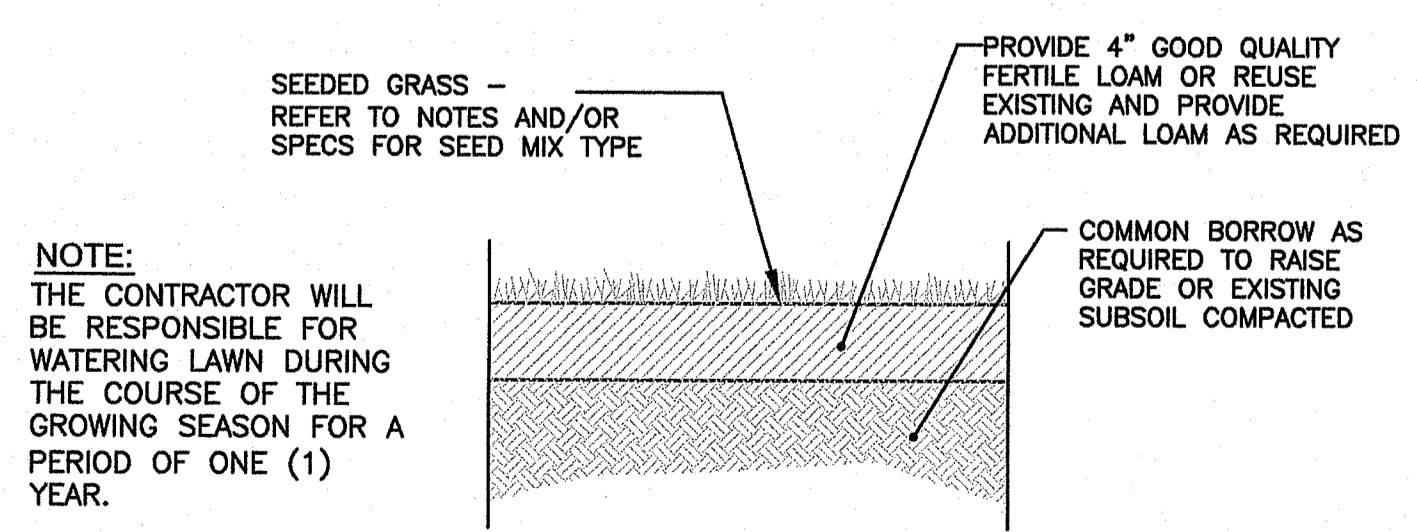
- FURNISH AND INSTALL ALL PLANTS SHOWN ON THE DRAWINGS SPECIFIED HEREIN, AND IN THE QUANTITIES LISTED ON THE PLANT LIST. NO SUBSTITUTIONS WILL BE PERMITTED, UNLESS APPROVED BY THE LANDSCAPE ARCHITECT.
- LOAM TO BE SCREENED, GOOD QUALITY, FERTILE, FREE OF WEEDS, STICKS, STONES OVER 3/4", AND ROOTS. SPREAD TO A MINIMUM OF 4" OVER ALL PLANTED AREAS.
- NURSERY STOCK SHALL MEET THE STANDARDS OF THE AMERICAN NURSERY AND LANDSCAPE ASSOCIATION AS TO GRADING AND QUALITY. CALIPER MEASUREMENTS FOR ALL NEW PLANT STOCK TO BE TAKEN SIX (6) INCHES ABOVE GRADE FOR TREES UNDER FOUR (4) INCHES AND TWELVE (12) INCHES ABOVE GRADE FOR TREES OVER FOUR (4) INCHES. ALL TREES SHALL BE A MINIMUM OF SEVEN (7) FEET ABOVE FINISHED GRADE WHEN TREES ARE LOCATED WITHIN VEHICULAR AND PEDESTRIAN TRAVEL WAYS.
- ONLY NURSERY-GROWN PLANTS, GROWN IN ACCORDANCE WITH ACCEPTED HORTICULTURAL PRACTICES, AND GROWN UNDER CLIMATIC CONDITIONS SIMILAR TO THOSE IN THE LOCALITY OF THE PROJECT FOR AT LEAST TWO (2) YEARS, SHALL BE ACCEPTED.
- SET PLANTS PLUMB AND AT A LEVEL THAT AFTER SETTLEMENT THEY BEAR THE SAME RELATION TO THE SURROUNDING GROUND AS THEY BORE TO THE GROUND FROM WHICH THEY WERE DUG. SETTLE BACKFILL MATERIAL FOR PLANTS, THOROUGHLY AND PROPERLY BY FIRING OR TAMPING. FORM SAUCERS, CAPABLE OF HOLDING WATER ABOUT INDIVIDUAL PLANTS, BY PLACING RIDGES OF PLANTING SOIL AROUND EACH.
- STAKE ALL TREES OVER 5 FEET AS SHOWN ON PLANS. REMOVE STAKES AT THE END OF THE GUARANTEE PERIOD.
- WATERING: WATER ALL PLANTS WITHIN 48 HOURS AFTER PLANTING. IF CONDITIONS WARRANT, AND AS MANY TIMES THEREAFTER TO SUSTAIN HEALTHY CONDITIONS UNTIL LANDSCAPE INSTALLATION IS COMPLETED. SATURATE THE SOIL AROUND EACH PLANT THOROUGHLY AT EACH WATERING.
- PRUNING: PRUNE PLANTS, AS DIRECTED BY OWNER, AT THE PROJECT SITE BEFORE OR IMMEDIATELY AFTER PLANTING IN ACCORDANCE WITH THE BEST HORTICULTURAL PRACTICE. CUT BROKEN, DEAD OR INJURED BRANCHES IMMEDIATELY ABOVE THE STEM COLLAR ON THE TRUNK OR LIMB. PRUNE ALL BROKEN ROOTS ON THE PLANT SIDE OF THE BREAK. PAINT CUTS OVER 3/4" IN DIAMETER WITH TREE WOUND PAINT. PRUNING SHALL NOT DEFORM OR OTHERWISE DESTROY THE TYPICAL SHAPE OR SYMMETRY OF THE PLANT, AND SHALL NOT REDUCE THE HEIGHT BY MORE THAN ONE-THIRD. DO NOT CUT BACK THE LEADER OF THE PLANT UNLESS DIRECTED BY THE LANDSCAPE ARCHITECT.
- FERTILIZING: FERTILIZE SHRUB BEDS WITH 10-6-4 FERTILIZER BROADCAST AT A RATE OF THREE POUNDS PER 100 SQUARE FEET OF SURFACE AREA BROADCAST. APPLY THE FERTILIZER UNIFORMLY TO THE SURFACE BEDS AND WORK INTO THE UPPER TWO INCHES OF SOIL. FERTILIZE INDIVIDUAL TREES AT A RATE OF ONE AGRIFORM PELLET PER INCH OF TRUNK DIAMETER (FOLLOW MANUFACTURER'S WRITTEN INSTRUCTIONS). APPLY A SECOND APPLICATION OF FERTILIZER TO ALL PLANT ITEMS AT THE SAME SPECIFIED RATES OVER THE MULCH AT THE END OF AN EIGHT WEEK PERIOD.
- LIMING: ADD POWDERED LIME EVERY SIX MONTHS - OR SLOW RELEASE GRANULAR LIME-AS PER MANUFACTURER'S INSTRUCTION.
- MULCHING: WITHIN A 72 HOUR PERIOD AFTER PLANTING, COVER ALL PLANTED AREAS WITH 3" DARK HEMLOCK MULCH. NO RED OR DYED MULCH IS TO BE USED. MULCH SHOULD BE PULLED ONE INCH AWAY FROM PLANT TRUNK OR STEM, AND NOT ALLOWED TO REST DIRECTLY AGAINST THE TRUNK OR STEM.
- GUARANTEE: ALL PLANTS FURNISHED BY THE CONTRACTOR SHALL BE GUARANTEED FOR A PERIOD OF ONE (1) YEAR AFTER PRELIMINARY INSPECTION AND SHALL BE ALIVE AND IN SATISFACTORY GROWTH AT THE END OF THE GUARANTEE PERIOD. ALL DEAD OR DYING PLANT MATERIAL SHALL BE REPLACED AT ONCE BY THE CONTRACTOR, FREE OF CHARGE.

SEEDING NOTES

- LOAM SHALL BE SPREAD TO A MINIMUM DEPTH OF 4" OVER ALL AREAS DESIGNATED ON PLANS.
- SHAPE AND SMOOTH THE SURFACE TO THE LINES AND GRADES AS SHOWN ON PLANS.
- FERTILIZE WITH 10-10-10 OR EQUIVALENT ANALYSIS. AT LEAST 40% OF THE FERTILIZER NITROGEN SHALL BE IN A SLOW RELEASE FORM. INCORPORATE THE FERTILIZER INTO THE TOP 3 TO 4 INCHES OF THE PLANTING SOIL. APPLY AT THE RATE OF 8 POUNDS PER 1,000 SQUARE FEET AT SEEDING.
- LIME: SPREAD EVENLY AND WORK INTO THE SOIL DURING PREPARATION OF SEED BED AT THE RATE OF ONE TON PER ACRE. INCORPORATE INTO THE SOIL BY DICING OR OTHER APPROVED METHOD. DISTRIBUTE LIME UNIFORMLY AND WORK INTO TOP 4 INCHES OF TOP SOIL (MINIMUM) AND UNIFORMLY BLEND BY DICING OR ROTOTILLING.
- APPLICATION OF SEED:
 - RATE OF APPLICATION OF SEED SHALL BE 8 POUNDS PER 1,000 SQUARE FEET OR AS INDICATED ON PLANS.
 - SEEDING SHALL BE DONE IN ACCORDANCE WITH THE MANUFACTURER'S SPECIFICATIONS AND INSTRUCTIONS, AND ONLY DURING THE FOLLOWING DATES:
 SPRING SEEDING: MARCH 15 TO MAY 31
 FALL SEEDING: AUGUST 15 TO OCTOBER 15
 - THE CONTRACTOR SHALL KEEP ALL SEEDED AREAS WATERED AND IN GOOD CONDITION, RESEEDING IF AND WHEN NECESSARY FOR AN 8 WEEK PERIOD OR UNTIL A GOOD, HEALTHY, UNIFORM GROWTH IS ESTABLISHED OVER THE ENTIRE AREA. THE CONTRACTOR SHALL ALSO MAINTAIN THESE AREAS IN AN APPROVED CONDITION UNTIL PROVISIONAL ACCEPTANCE.
 - DURING THIS PERIOD, WATER TURF AS NECESSARY TO MAINTAIN AN ADEQUATE SUPPLY OF MOISTURE WITHIN THE ROOT ZONE. AN ADEQUATE SUPPLY OF MOISTURE IS EQUIVALENT OF ONE INCH OF ABSORBED WATER PER WEEK THAT IS DELIVERED AT WEEKLY INTERVALS IN THE FORM OF NATURAL RAIN OR IS AUGMENTED AS REQUIRED BY PERIODIC WATERING.
 - OVERSEED WHEN NECESSARY TO PROMOTE GRASS GROWTH.
 - REPLANT AREAS VOID OF TURF ONE SQUARE FOOT OR LARGER.
- SEED:
 - SEED ALL AREAS DESIGNATED ON PLAN AS WELL AS ALL DISTURBED EXISTING AREAS WITH THE FOLLOWING SEED MIX:

PLANT SCHEDULE

Key	QTY	Botanical Name Common Name	Size	Remarks
CC	3	<i>Cercis canadensis</i> Eastern Redbud	2-2 1/2" cal.	B&B
SR	6	<i>Syringa reticulata</i> 'Ivory Silk' Ivory Silk Japanese Tree Lilac	2-2 1/2" cal.	B&B
TC	10	<i>Tilia cordata</i> 'Greenspire' Greenspire Linden	2-2 1/2" cal.	B&B
ZS	3	<i>Zelkova serrata</i> 'Green Vase' Green Vase Japanese Elm	2-2 1/2" cal.	B&B



SEED MIX No. 1
(MOWED/LAWN AREAS)

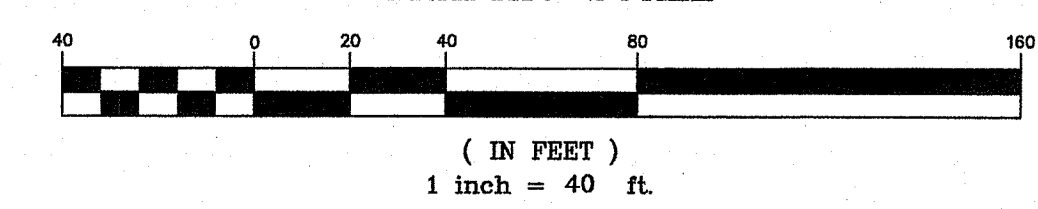
TYPE	% BY WEIGHT
NASSAU KENT BLUE	60
JAMESTOWN CHEWINGS FESCUE	20
PALMER PERENNIAL RYE GRASS	20

APPLICATION RATE = 200 lbs. / ACRE

SEED MIX No. 3
(INFILTRATION BASIN AREAS)
REFER TO INFILTRATION BASIN DETAIL FOR SEED MIX

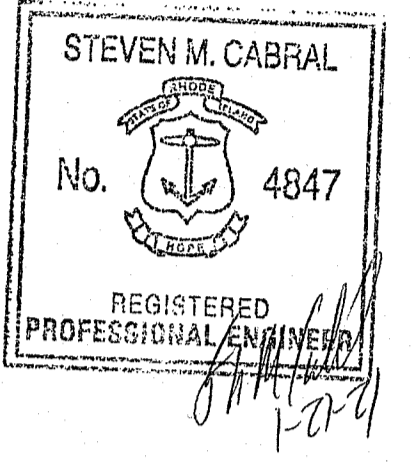
LOAM-SEED DETAIL
NOT TO SCALE

GRAPHIC SCALE



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

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KEY PLAN

DEPARTMENT OF ENVIRONMENTAL MANAGEMENT
OFFICE OF WATER RESOURCES
FRESHWATER WETLANDS PROGRAM
APPROVED WITH CONDITIONS
AS SPECIFIED IN THE LETTER OF APPROVAL
DATED APR 09 2021 FILE # 21-0025
NO CHANGES ALLOWED WITHOUT PRIOR APPROVAL
APPROVED PLANS MUST BE AT CONSTRUCTION SITE

Adrian J. Freeman

PROJECT TITLE:

BROTHERS FARM
PLAT MAP 13, LOTS 53 and 765
and PLAT MAP 14, LOT 1
ZONING DISTRICT R8
RESIDENTIAL DISTRICT
NARRAGANSETT AVENUE
WEST WARWICK, RI

PREPARED FOR:



782 Main Street
East Greenwich, RI 02818
(401) 709-4236

DRAWING TITLE:

LANDSCAPE PLAN

DATE: DECEMBER 2020 SCALE: 1"=40'

DWG. NAME: 2343-L1-LAND.dwg

REVISIONS

NUMBER	REMARKS	DATE

DRAWING NUMBER

L1

SHEET: 17 OF 17