

STILLHOUSE COVE STORMWATER BMP PROJECT

NARRAGANSETT BOULEVARD · CRANSTON · RHODE ISLAND
PERMITTING SET
APRIL 2017

PREPARED FOR
CITY OF CRANSTON
869 PARK AVENUE
CRANSTON, RI 02910



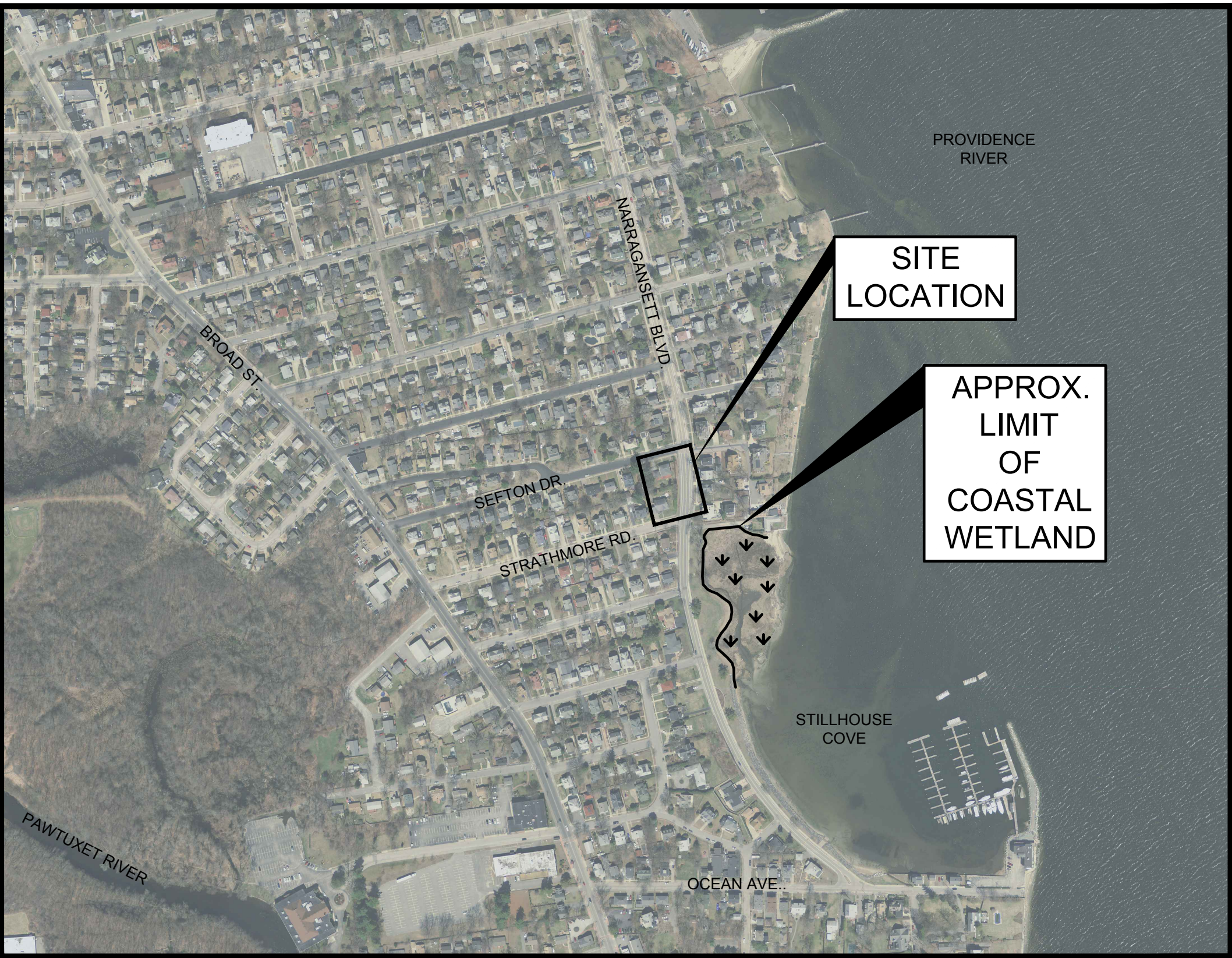
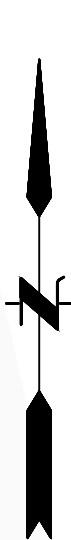
PREPARED BY
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PROJECT TEAM

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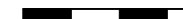
LOCATION MAP
SCALE: 1" = 400'

<u>ABBREVIATIONS</u>		
GENERAL		
APPROXIMATE	PCC	PRE CAST
BITUMINOUS PAVEMENT		CONCRETE CURB
BOTTOM OF WALL	PROP	PROPOSED
CONCRETE CURB	REM	REMOVE
CAPE CODE BERM	R&D	REMOVE AND DISPOSE
ELEVATION	R&R	REMOVE AND RESET
EXISTING	R&S	REMOVE AND STACK
GRANITE CURB	TOS	TOP OF SLOPE
MAXIMUM	TW	TOP OF WALL
MINIMUM	TYP	TYPICAL
NOT TO SCALE	VGC	VERTICAL GRANITE CURB

UTILITY			
CB	CATCH BASIN	INV	INVERT ELEVATION
CMP	CORRUGATED METAL PIPE	PVC	POLYVINYL CHLORIDE PIPE
CPP	CORRUGATED POLYETHYLENE PIPE	RCP	REINFORCED CONCRETE PIPE
DB	DOUBLE CATCH BASIN		
DI	DUCTILE IRON PIPE	RD	ROOF DRAIN
F&G	FRAME AND GRATE	SMH	SEWER MANHOLE
F&C	FRAME AND COVER	TSV	TAPPING SLEEVE, VALVE AND BOX
HDPE	HIGH DENSITY POLYETHYLENE PIPE	UP	UTILITY POLE
HYD	HYDRANT		

SEAL	SEAL
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	HORZ.:
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GRAPHIC SCALE	



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CITY OF CRANSTON



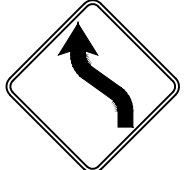

GENERAL NOTES & LEGEND

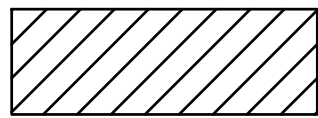
STILLHOUSE COVE STORMWATER BMP PROJECT


CRANSTON RHODE ISLAND


PROJ. No.: 20140594.A20
DATE: APRIL 2017
CN-001


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LEGEND					
ID	NUMBER	DESCRIPTION	ID	NUMBER	DESCRIPTION
<div>A</div>	W20-1		<div>E</div>	R9-11R	<div>SIDEWALK CLOSED AHEAD → CROSS HERE</div>
	R4-11			R9-11L	<div>SIDEWALK CLOSED AHEAD ← CROSS HERE</div>
	W1-4L		<div>G</div>	R9-9	<div>SIDEWALK CLOSED</div>
	W1-4R		<div>H</div>	G20-2	<div>END ROAD WORK</div>
<div>D</div>			<div>J</div>	R8-3	<div>NO PARKING</div>

 WORK AREA

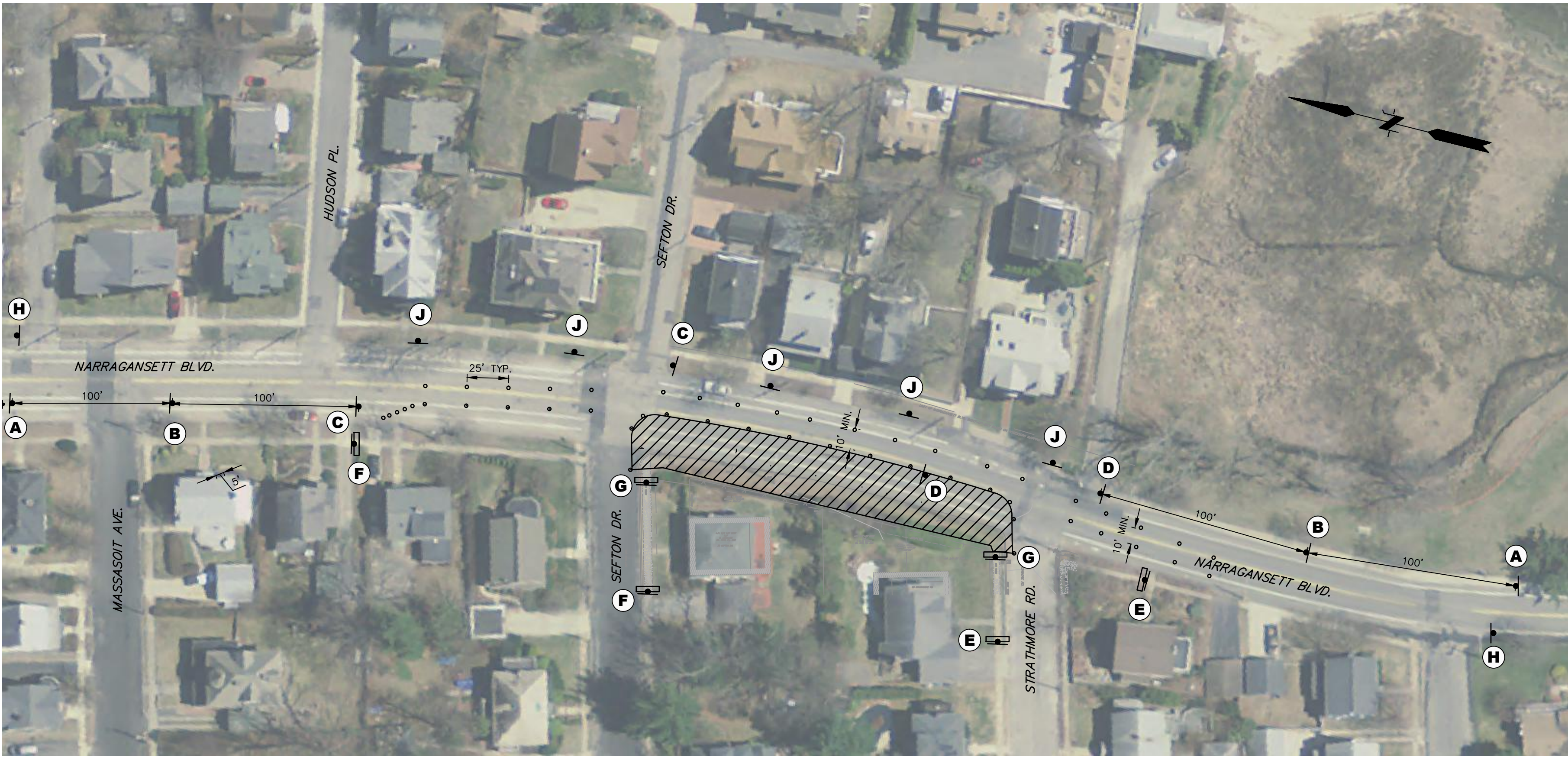
 SIGN

 TRAFFIC BARREL

 TYPE III BARRICADE

TRAFFIC MANAGEMENT NOTES:

- ALL TEMPORARY TRAFFIC CONTROL WORK SHALL CONFORM TO THE LATEST EDITION OF THE "MANUAL ON UNIFORM TRAFFIC CONTROL DEVICES" (MUTCD) AND ALL REVISIONS IN ADDITION TO THE RIDOT STANDARD SPECIFICATIONS FOR ROAD AND BRIDGE CONSTRUCTION (2010 EDITION) INCLUDING ALL REVISIONS AND RHODE ISLAND STANDARD DETAILS AS INDICATED.
- ALL SIGN LEGENDS, BORDERS AND MOUNTING SHALL BE IN ACCORDANCE WITH THE MUTCD.
- TEMPORARY CONSTRUCTION SIGNING AND ALL OTHER TRAFFIC CONTROL DEVICES SHALL BE IN PLACE PRIOR TO THE START OF ANY WORK.
- TEMPORARY CONSTRUCTION SIGNING, BARRICADES AND ALL OTHER NECESSARY WORK ZONE TRAFFIC CONTROL DEVICES SHALL BE REMOVED FROM THE HIGHWAY OR COVERED WHEN THEY ARE NOT REQUIRED FOR CONTROL OF TRAFFIC.
- SIGNS AND SIGN SUPPORTS LOCATED ON OR NEAR THE TRAVELED WAY, AND REFLECTORIZED PLASTIC DRUMS WITH LIGHTING DEVICES MOUNTED ON THEM, MUST PASS THE CRITERIA SET FORTH IN NCHRP REPORT 350, "RECOMMENDED PROCEDURES FOR THE SAFETY PERFORMANCE EVALUATION OF HIGHWAY FEATURES."
- CONTRACTORS SHALL NOTIFY EACH ADJUTTER AT LEAST 72 HOURS IN ADVANCE OF THE START OF ANY WORK THAT WILL REQUIRE THE TEMPORARY CLOSURE OF ACCESS, SUCH AS CONDUIT INSTALLATION, EXISTING PAVEMENT EXCAVATION, TEMPORARY DRIVEWAY PAVEMENT PLACEMENT AND SIMILAR OPERATIONS.
- THE ADVISORY SPEED LIMIT, IF REQUIRED, SHALL BE DETERMINED BY THE ENGINEER.
- DISTANCES ARE A GUIDE AND MAY BE ADJUSTED IN THE FIELD BY THE ENGINEER.
- ALL SIGNS SHALL BE MOUNTED ON THEIR OWN STANDARD SIGN SUPPORTS.



ADVANCE NOTICE TRAFFIC MANAGEMENT DETAIL
(TO BE INSTALLED AT START OF CONSTRUCTION)

SCALE: 1"=50'

No.	DATE	DESCRIPTION	DESIGNER	REVIEWER

SEAL

SEAL

SCALE:
HORZ.: 1"= 10'
VERT.:
DATUM:
HORZ.: NONE
VERT.: NAVD88
10 5 0 10
GRAPHIC SCALE



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CITY OF CRANSTON

TRAFFIC MANAGEMENT PLAN

STILLHOUSE COVE STORMWATER BMP PROJECT

CRANSTON

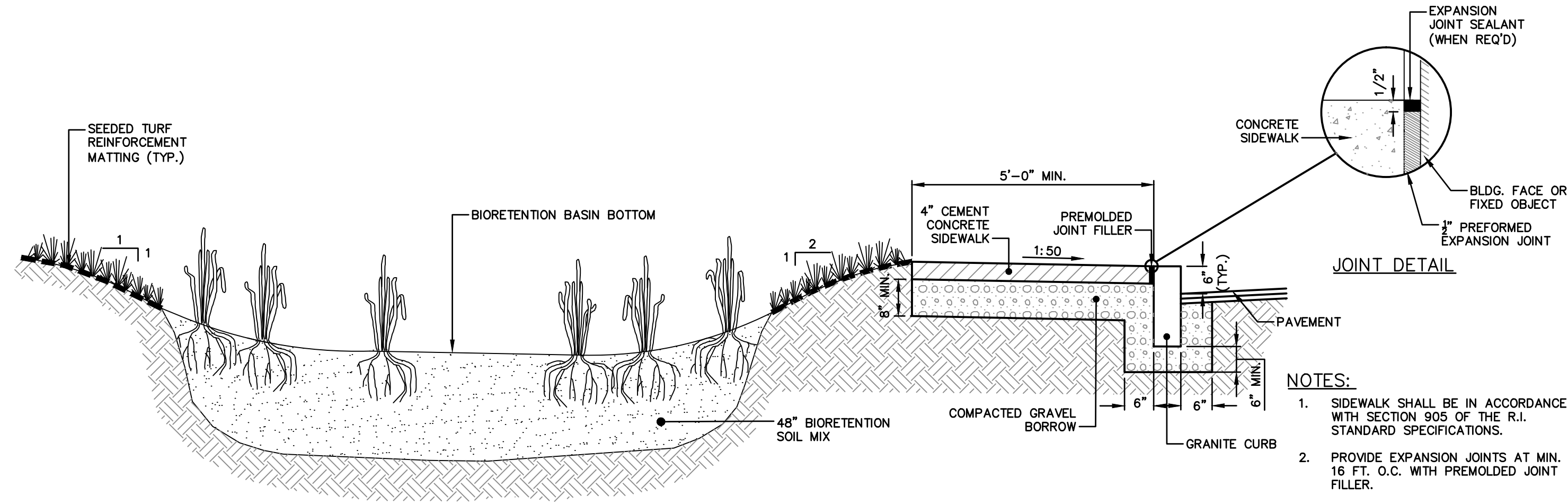
RHODE ISLAND

PROJ. No.: 20140594 A20

DATE: APRIL 2017

CS-105

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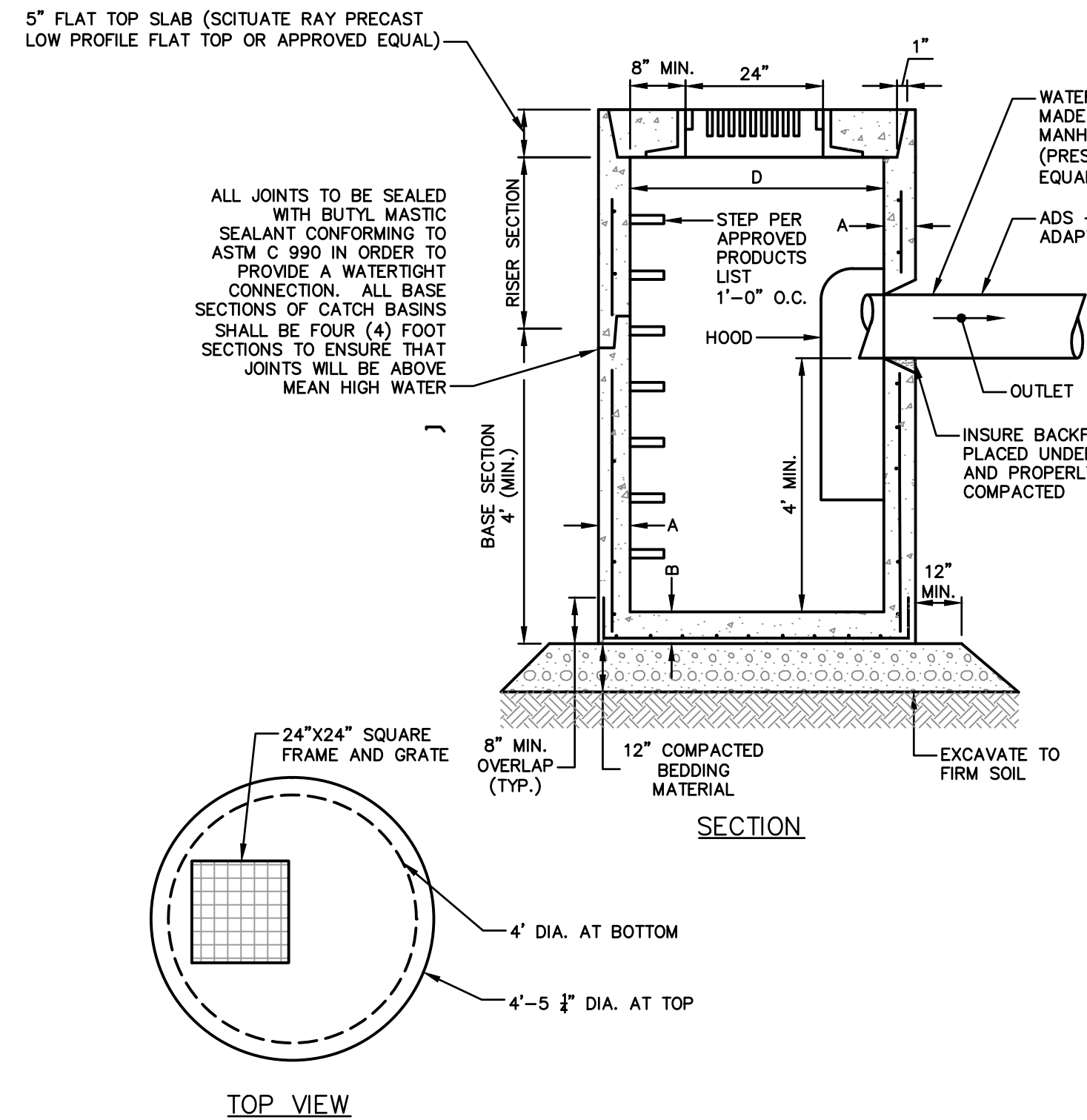


TYPICAL BIORETENTION BASIN AND SIDEWALK SECTION

NOT TO SCALE

NOTES:

1. SIDEWALK SHALL BE IN ACCORDANCE WITH SECTION 905 OF THE R.I. STANDARD SPECIFICATIONS.
2. PROVIDE EXPANSION JOINTS AT MIN. 16 FT. O.C. WITH PREMOLDED JOINT FILLER.
3. PROVIDE TOOLED DUMMY JOINTS AT 4' O.C.
4. PROVIDE BROOM FINISH IN DIRECTION PERPENDICULAR TO CURB.



4' DIA. HOODED DEEP-SUMP
PRECAST CATCH BASIN

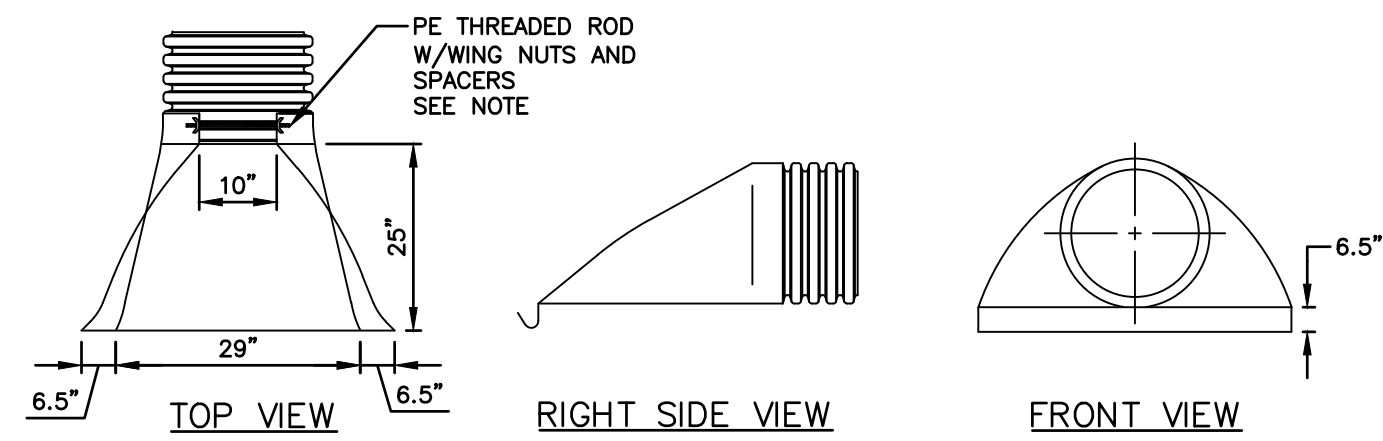
NOT TO SCALE

GENERAL NOTES:

1. FRAME & GRATE TO BE EJ 0MA552000025, OR APPROVED EQUAL.
2. SHALL BE IN ACCORDANCE WITH SECTION 702 OF THE R.I. STANDARD SPECIFICATIONS.
3. SEE TABLE 1 FOR STEEL REINFORCEMENT REQUIREMENTS.
4. STEEL REINFORCEMENT FOR BASE SECTION BOTTOM SHALL BE A MINIMUM OF 0.12 SQ.IN./LIN.FT. (BOTH WAYS) FOR 4' DIA. BASINS, 0.15 SQ.IN./LIN.FT. (BOTH WAYS) FOR 5' DIA. BASINS, AND 0.18 SQ.IN./LIN.FT. (BOTH WAYS) FOR 6' DIA. BASINS.
5. CONCRETE SHALL BE COMPRESSIVE STRENGTH 4000 PSI TYPE II CEMENT.
6. CATCH BASIN DESIGN SHALL CONFORM TO ASTM C-478 FOR "PRECAST REINFORCED CONCRETE MANHOLE SECTIONS."
7. PROVIDE "V" KNOCKOUTS FOR PIPES WITH 2" MAX. CLEARANCE TO OUTSIDE OF PIPE. MORTAR ALL PIPE CONNECTIONS.
8. ONE POUR MONOLITHIC BASE SECTION. 9. STEPS SHALL CONFORM TO R.I. STD. 5.3.0 AND SHALL BE INSTALLED AT CASTING PLANT.
9. HOOD SHALL BE KLEANSTREAM ELIMINATOR™ OR APPROVED EQUAL

TABLE 1				
CATCH BASIN DIAMETER (D)	A	B	CIRCUMFERENTIAL STEEL REINFORCEMENT REQUIRED*	
4'-0"	5"	6"	.12 SQ.IN. / LIN.FT.	
5'-0"	6"	7"	.15 SQ.IN. / LIN.FT.	
6'-0"	7"	8"	.18 SQ.IN. / LIN.FT.	

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

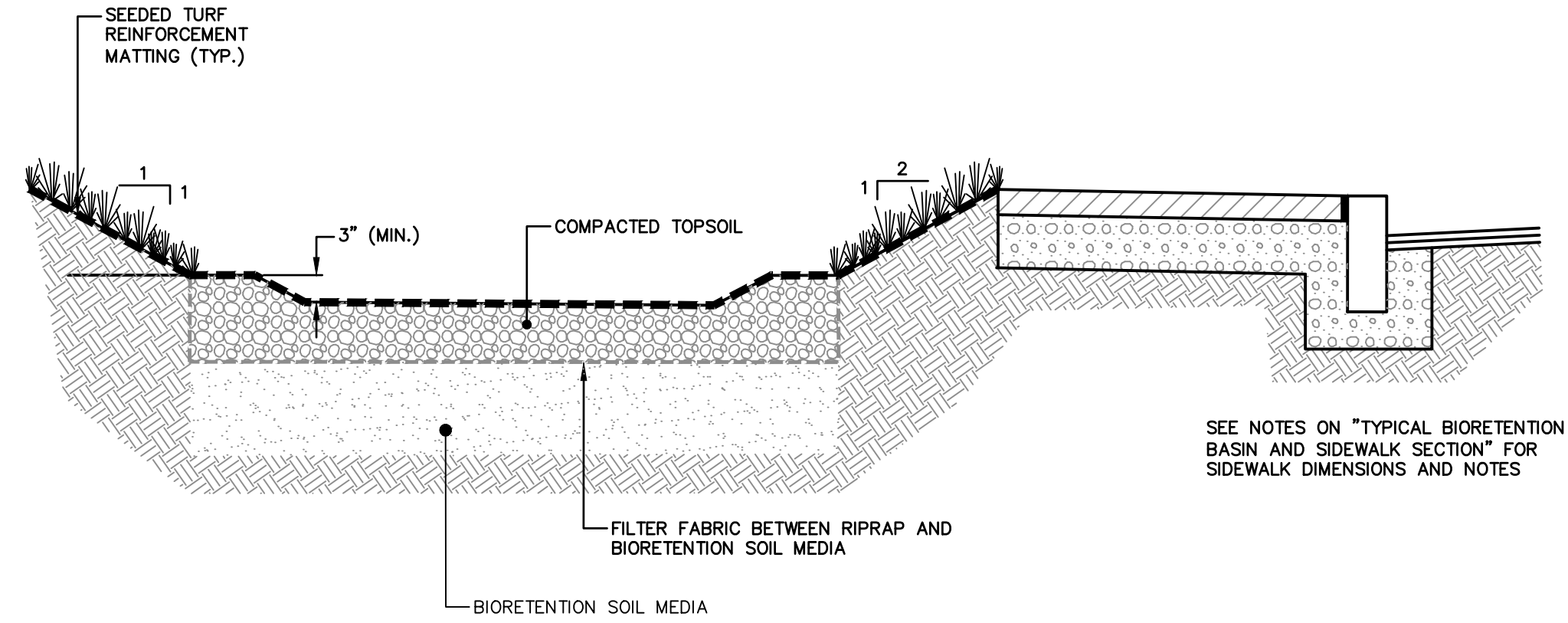


NOTES:

SHALL BE MANUFACTURED WITH POLYETHYLENE RESINS AS DESCRIBED AND DEFINED IN ASTM D3350. WHEN PROVIDED, THE METAL THREADED FASTENING ROD SHALL BE STAINLESS STEEL

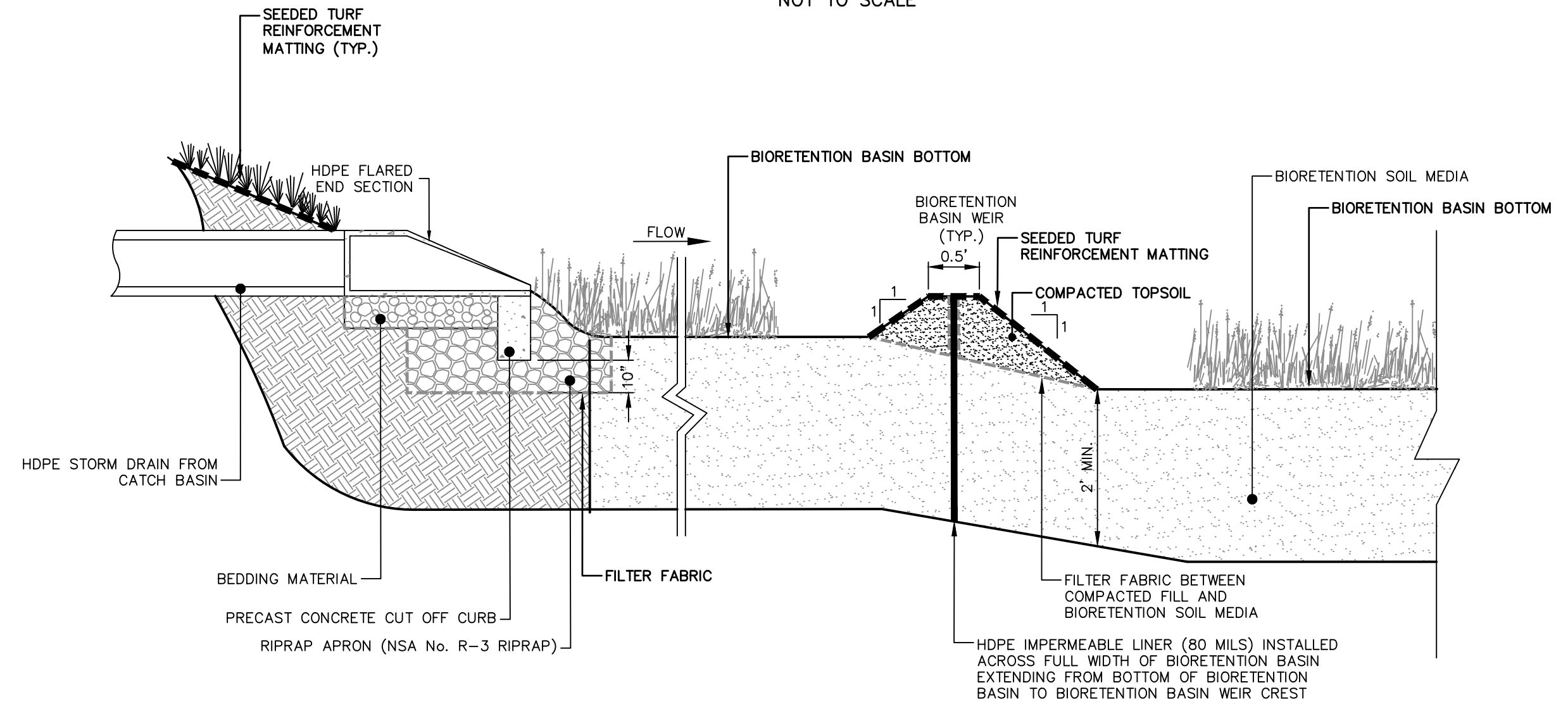
HDPE FLARED END SECTION

NOT TO SCALE



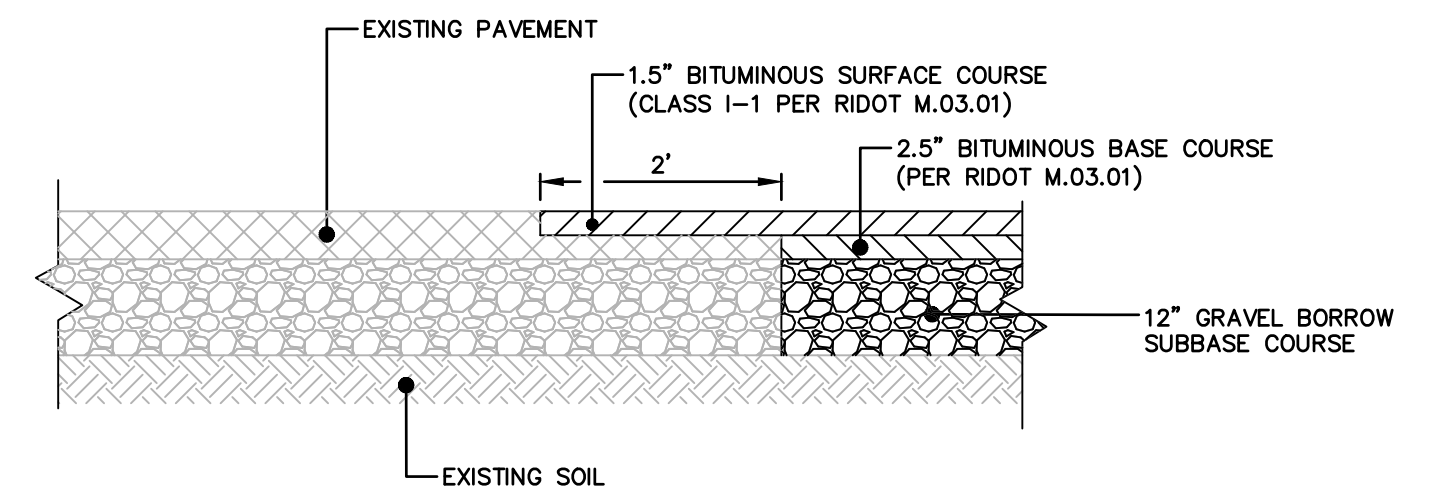
TYPICAL BIORETENTION BASIN WEIR AND SIDEWALK SECTION

NOT TO SCALE



BIORETENTION BASIN INLET PROFILE AND TYPICAL BIORETENTION BASIN WEIR PROFILE

NOT TO SCALE



SAWCUT AND MATCH PAVEMENT

NOT TO SCALE

No.	DATE	DESCRIPTION	DESIGNER	REVIEWER
1.				

SEAL

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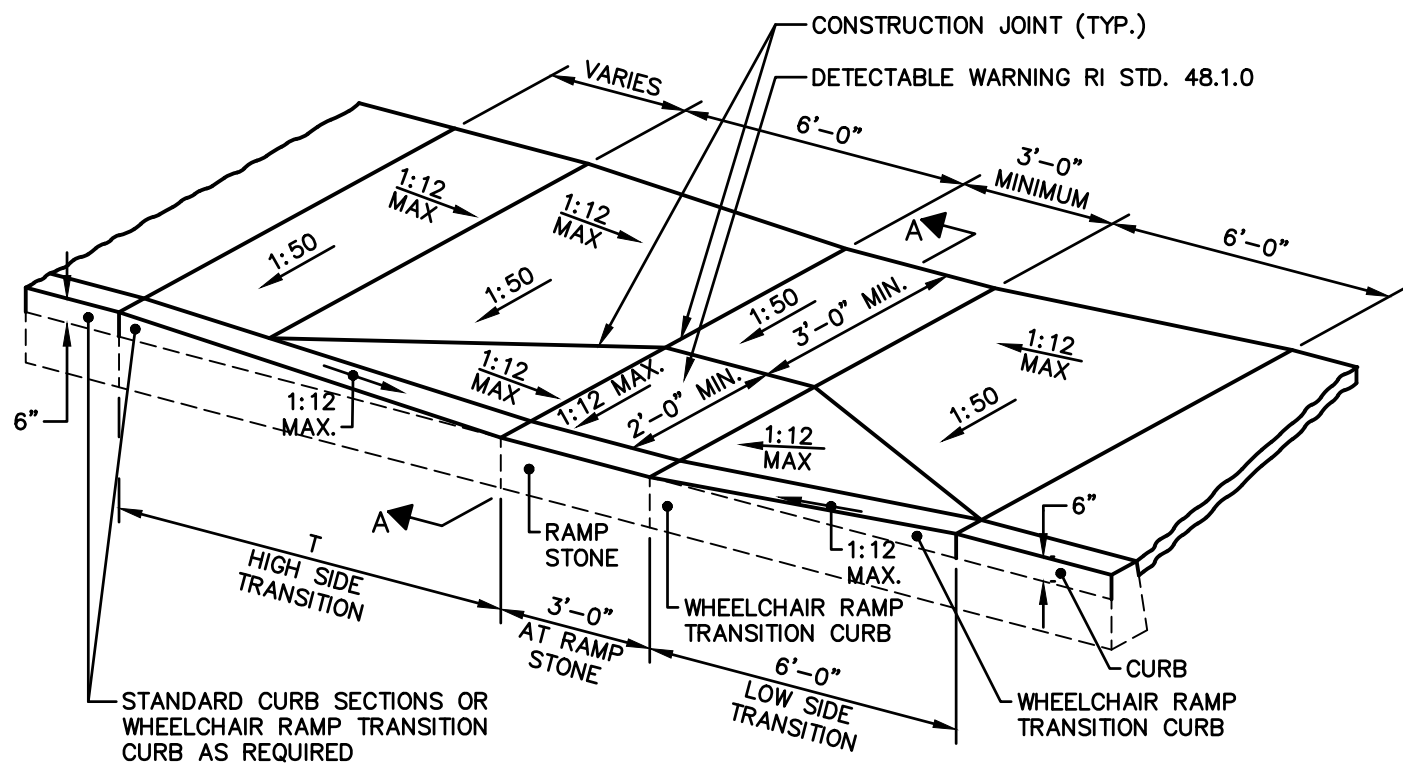
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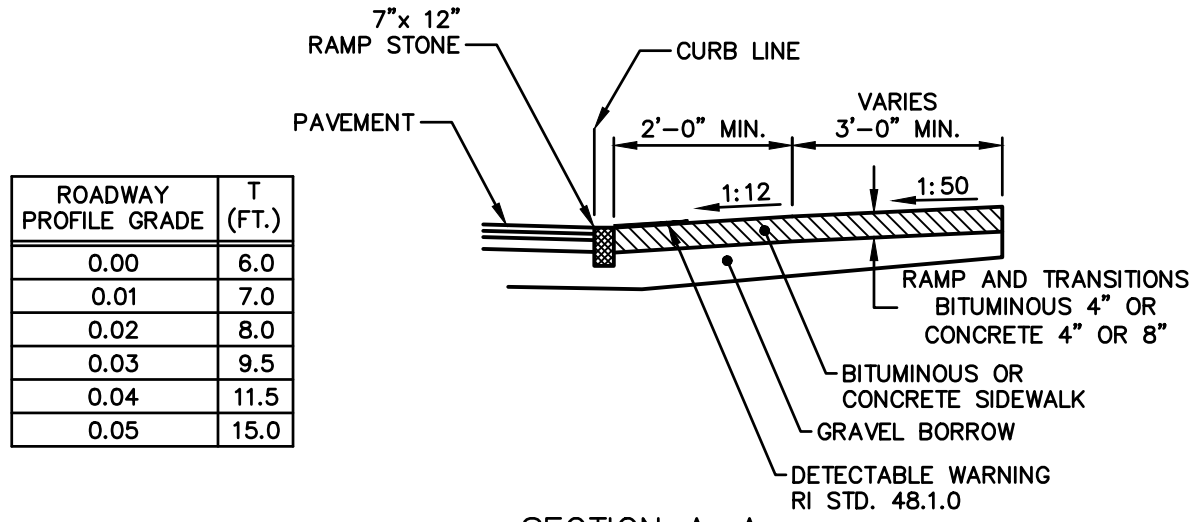
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CITY OF CRANSTON
CONSTRUCTION DETAILS
STILLHOUSE COVE STORMWATER BMP PROJECT
CRANSTON
RHODE ISLAND

PROJ. No.: 20140594 A20
DATE: APRIL 2017
CD-501



ISOMETRIC VIEW

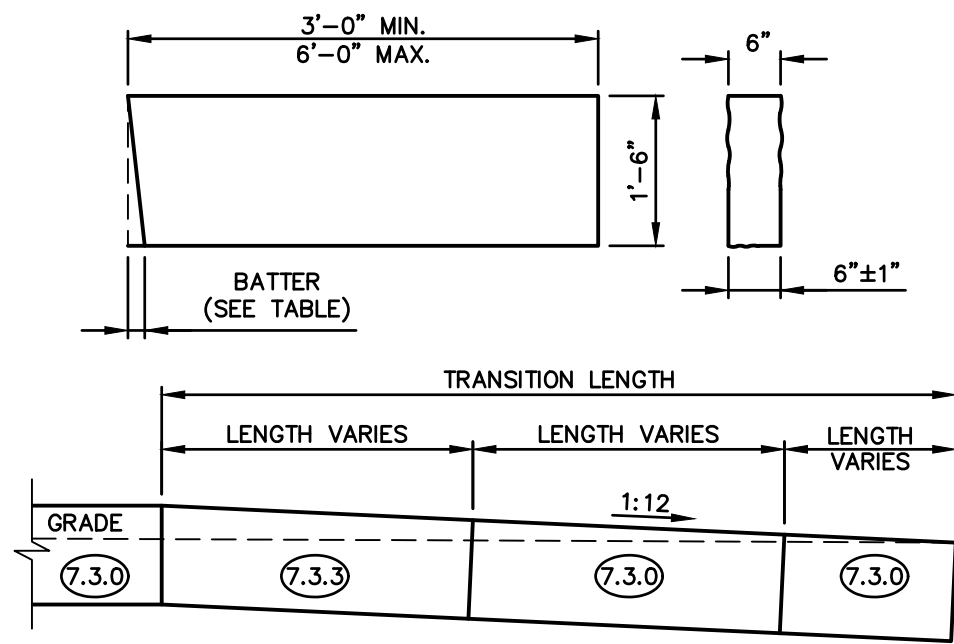


SECTION A-A

NOTE:

- SHALL BE IN ACCORDANCE WITH SECTION 905 OF THE R.I. STANDARD SPECIFICATIONS.
- WHEN ANY OBSTRUCTION LOCATED IN THE SIDEWALK FALLS WITHIN A CROSSWALK AREA, THE WHEELCHAIR RAMP WILL BE PLACED SUCH THAT THE OBSTRUCTION FALLS OUTSIDE OF THE RAMP.
- 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.
- DRAINAGE FACILITIES ARE TO BE LOCATED UP-GRADE OF ALL WHEELCHAIR RAMPS.
- LOCATION OF WHEELCHAIR RAMPS IS AS SHOWN ON CONTRACT DRAWINGS.
- IN NO INSTANCE SHALL THE SIDEWALK CROSS SLOPE EXCEED 1:50 EXCEPT WITHIN THE RAMP AREA.
- AN UNOBSTRUCTED PATH OF TRAVEL WITH A MINIMUM WIDTH OF 3'-0" SHALL BE MAINTAINED.
- THE WHEELCHAIR RAMP SLOPE AND SIDE SLOPES (TRANSITIONS), MUST NOT EXCEED 1:12. HOWEVER, THESE SLOPES MAY BE FLATTER THAN 1:12 WHEN WARRANTED BY SURROUNDING CONDITIONS.
- WHERE THE ROAD PROFILE EXCEEDS 5% THE HIGH SIDE TRANSITION LENGTH (T) SHALL BE EIGHTEEN FEET (18'-0").
- IN NO CASE, WHERE A STOP LINE IS WARRANTED, SHALL A RAMP BE PLACED BEHIND THE STOP LINE.
- THE ENTRANCE OF THE WHEELCHAIR RAMP SHALL BE FLUSH WITH THE ROADWAY.
- THE WHEELCHAIR RAMP SHALL BE CENTERED RADIALLY, OPPOSITE THE RADIUS POINT WHEN POSSIBLE.
- MINIMUM LENGTH OF STRAIGHT OR CIRCULAR FILLER PIECES TO BE 3'-0" (GREATER LENGTH PREFERRED).
- ALL REQUIRED CUTTING OF CURB PIECES TO BE PAID FOR UNDER COST OF CURB.
- DETECTABLE WARNINGS TO BE PAID FOR UNDER SECTION 942 OF THE RI STANDARD SPECIFICATIONS.
- 8" CONCRETE DEPTH FOR RADIUS WHEELCHAIR RAMPS ONLY. USE 4" DEPTH FOR TANGENT (MID-BLOCK) LOCATIONS.

WHEELCHAIR RAMP-TYPE I
(R.I. STD. 43.3.0)
NOT TO SCALE

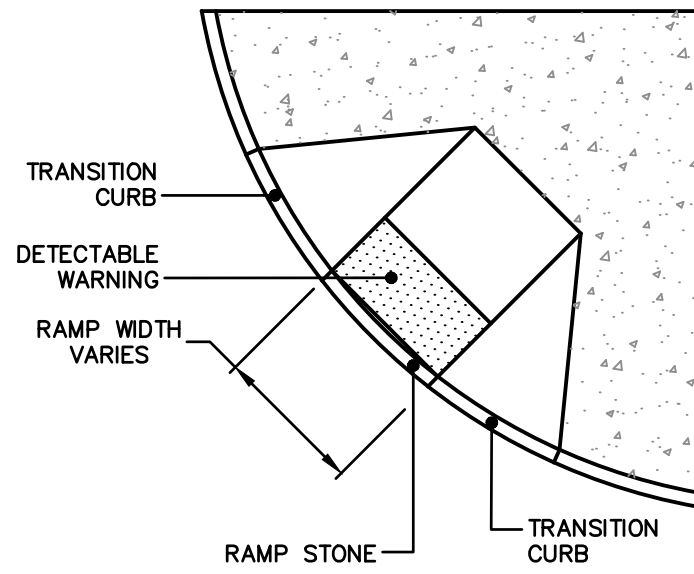


NOTE:

- SHALL BE IN ACCORDANCE WITH SECTION 905 OF THE R.I. STANDARD SPECIFICATIONS.
- THE CONTRACTOR MAY CUT EXISTING CURB SECTIONS AS REQUIRED TO MEET THIS DETAIL AND THE R.I. STANDARD SPECIFICATIONS, WHERE OLD CURDING IS BEING REUSED.
- MINIMUM LENGTH OF STRAIGHT OR CIRCULAR CURB FILLER PIECES TO BE 3'-0" (GREATER LENGTHS PREFERRED).
- TOP SURFACE TO BE DRESSED BY SAW. REMAINDER TO BE QUARRY SPLT.

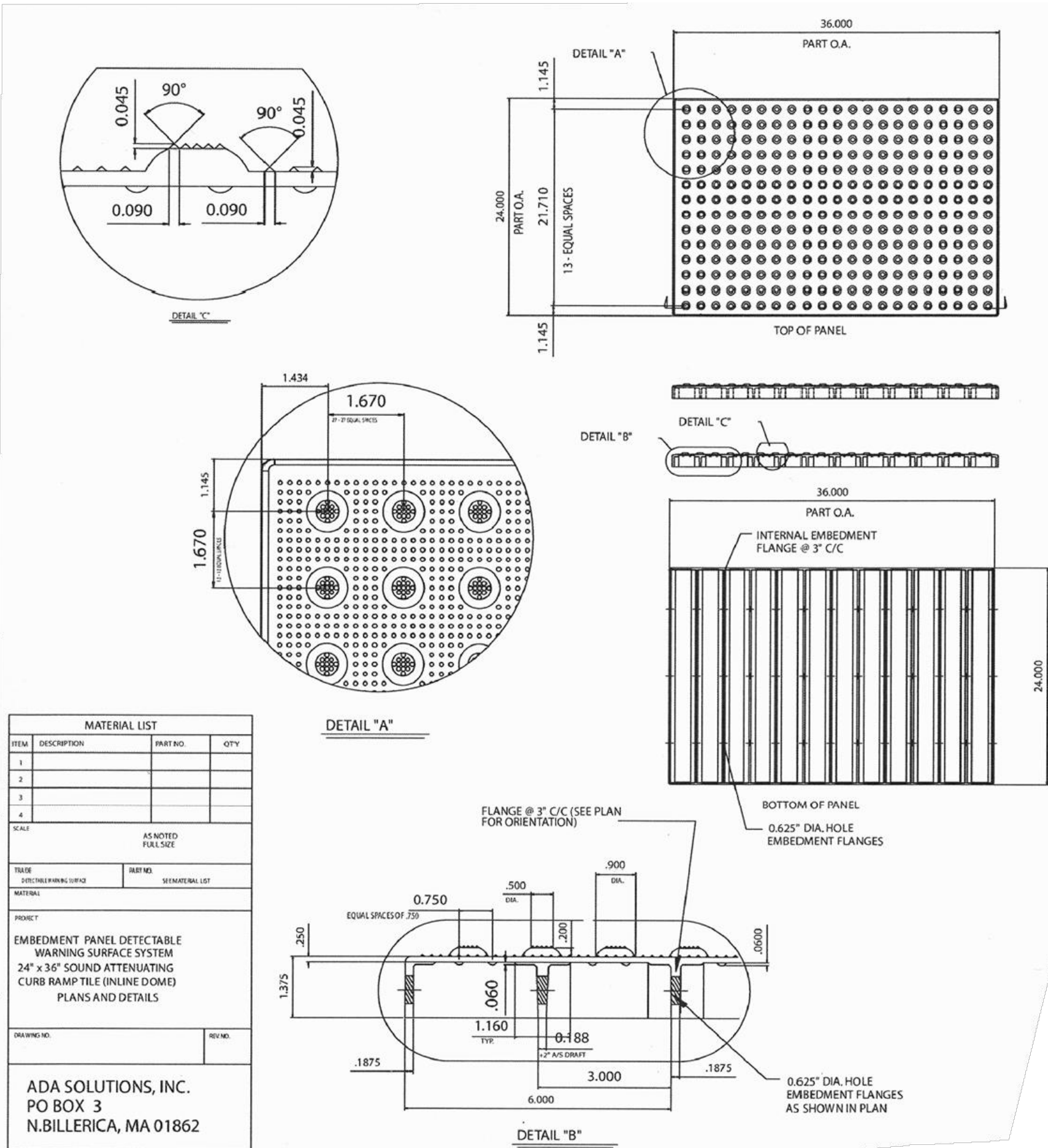
TRANSITION LENGTH (FT.)	BATTER (IN.)
6.0	1.5
7.0	1.3
8.0	1.2
9.5	1.0
11.5	0.8
15.0	0.6
18.0	0.5

GRANITE WHEELCHAIR RAMP
TRANSITION CURB
(R.I. STD. 7.3.3)
NOT TO SCALE

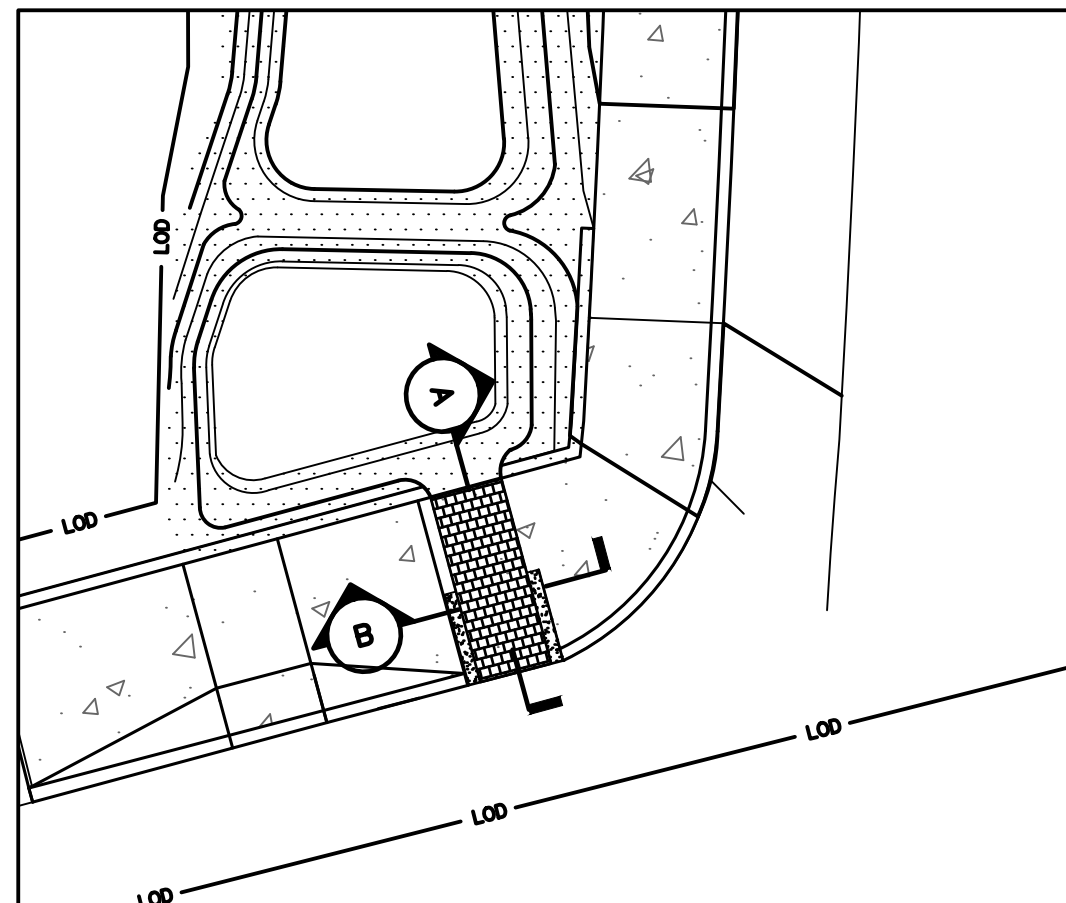


NOTE:
DETECTABLE WARNING SYSTEM SHALL BE IN ACCORDANCE WITH SECTION 942 OF THE RI STANDARD SPECIFICATIONS.

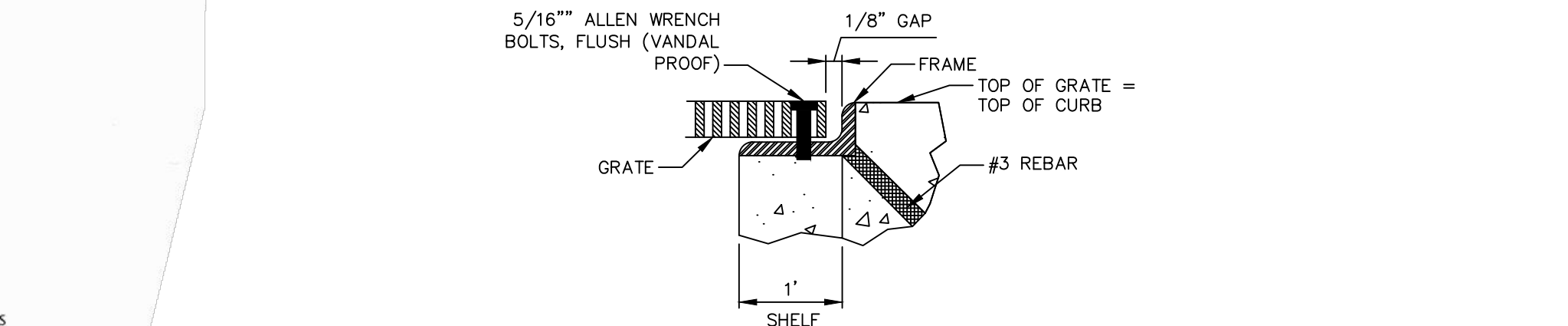
DETECTABLE WARNING SYSTEM
(R.I. STD. 48.1.0)
NOT TO SCALE



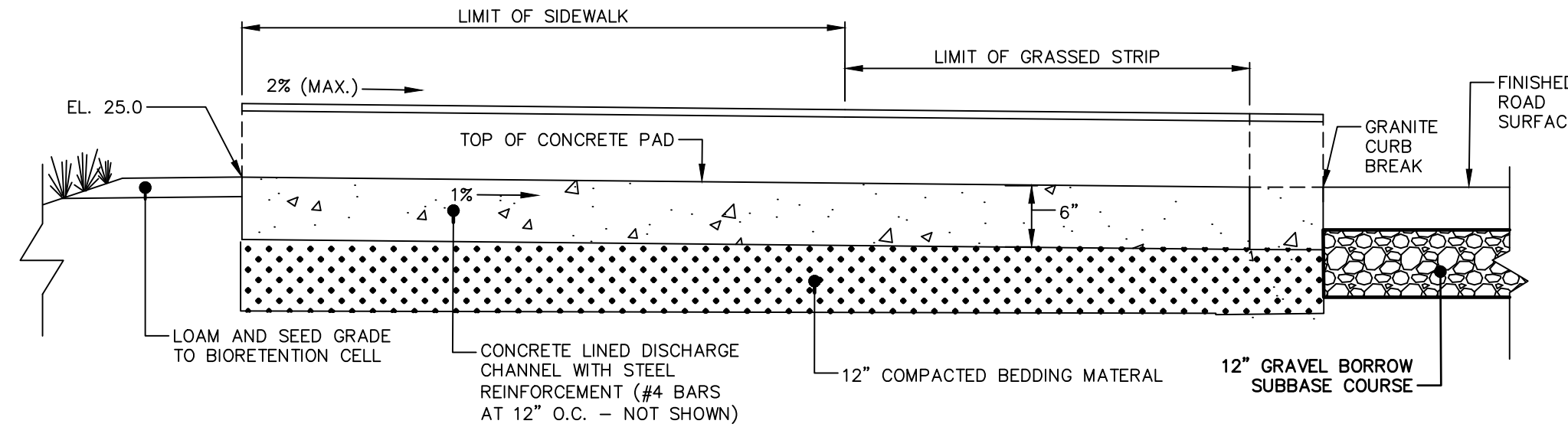
DETECTABLE WARNING SYSTEM
NOT TO SCALE



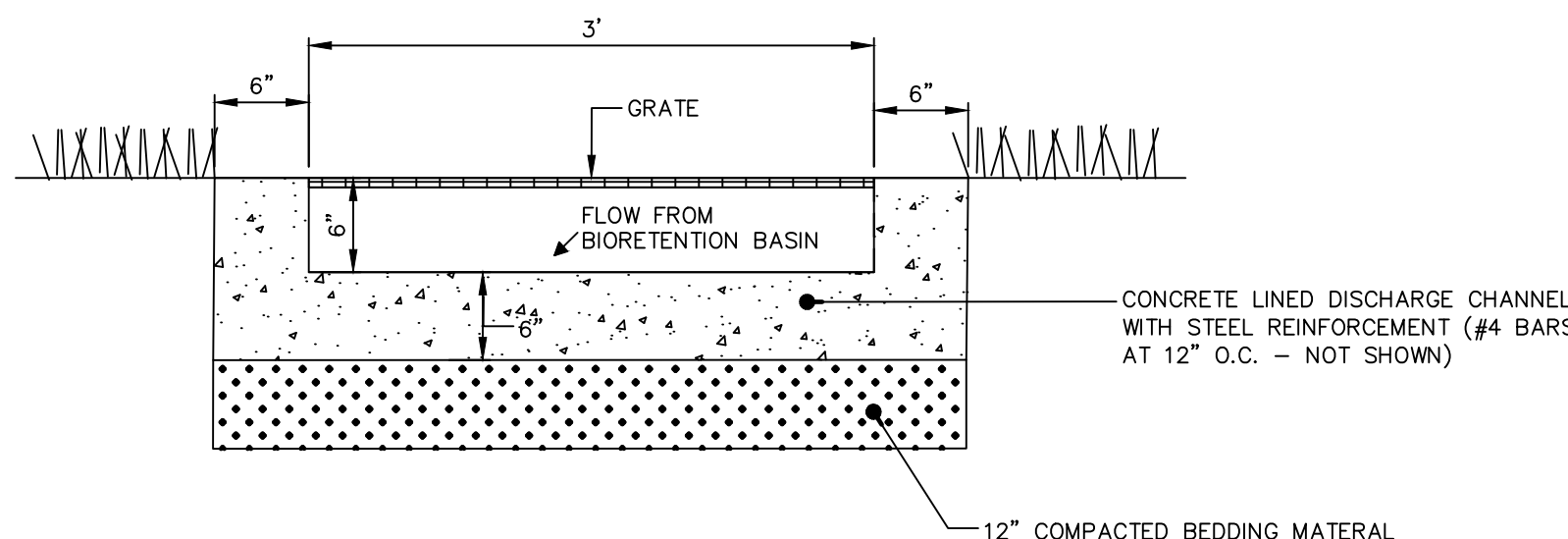
PLAN VIEW



GRATE SETTING



SECTION A



SECTION B

GRATED CONCRETE BASIN OUTLET
NOT TO SCALE

No.	DATE	DESCRIPTION	DESIGNER	REVIEWER
1.				

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SEAL

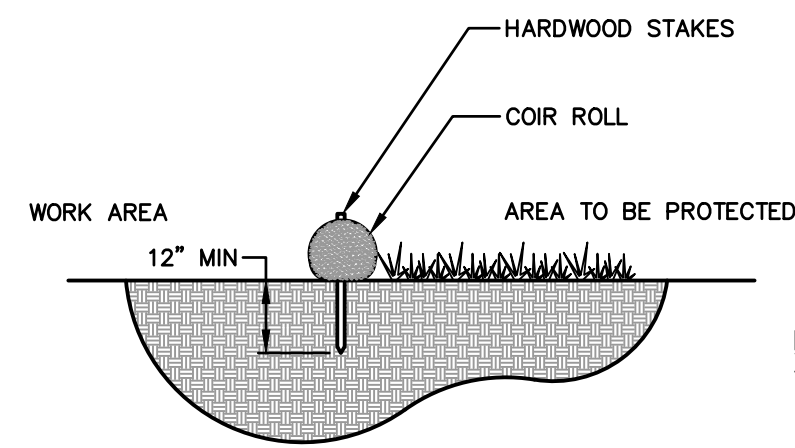
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DATUM:
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GRAPHIC SCALE

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CRANSTON RHODE ISLAND

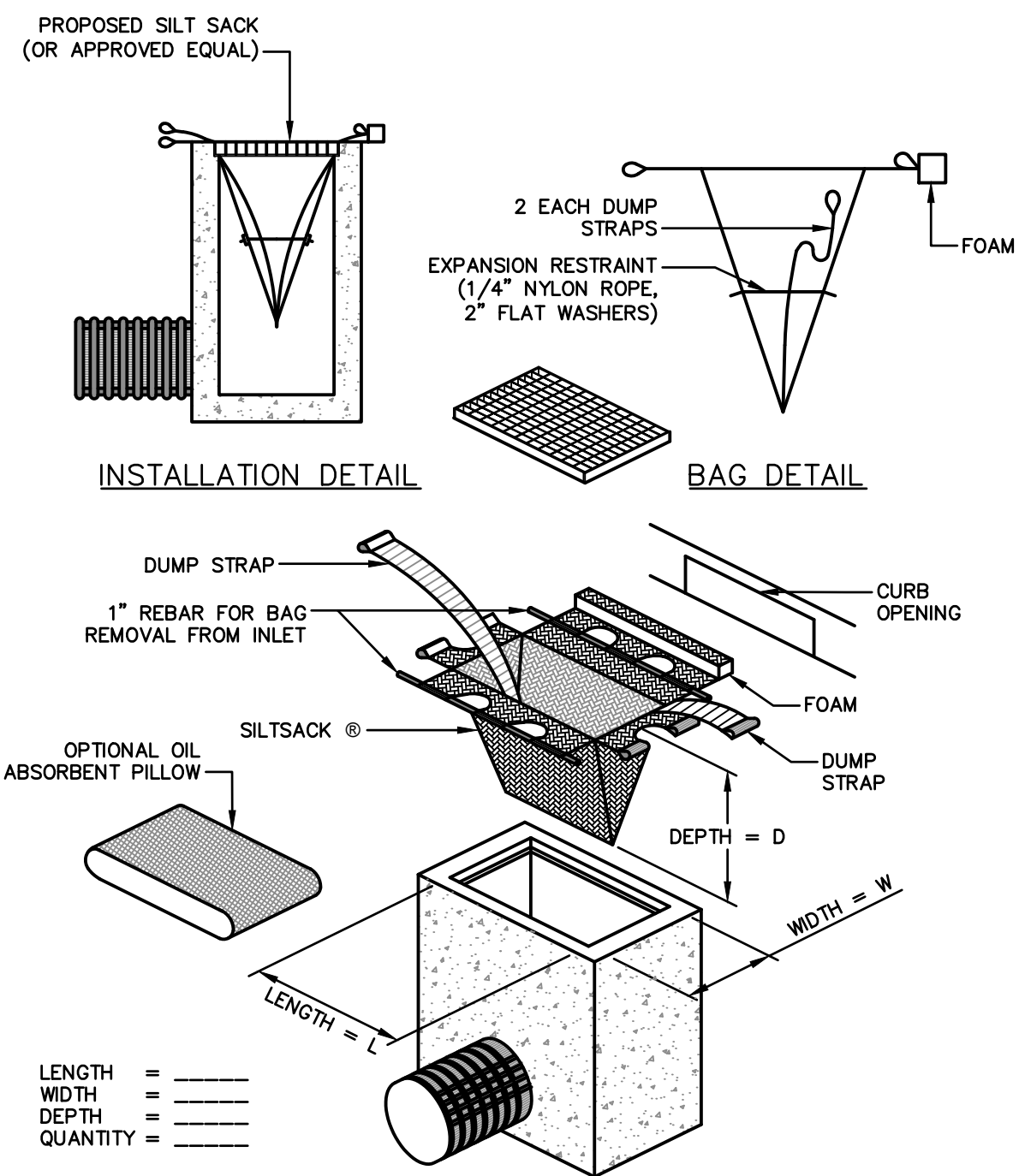
PROJ. No.: 20140594 A20
DATE: APRIL 2017
CD-502



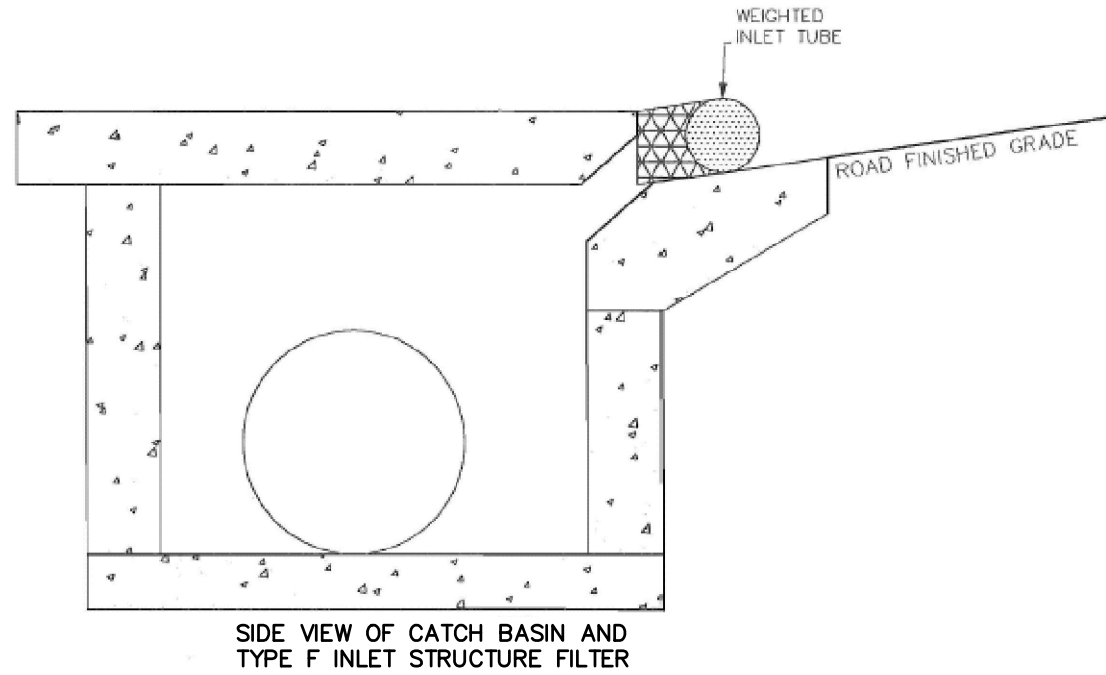
SECTION

COIR ROLL
NOT TO SCALE

- NOTES:
1. ALL MATERIAL TO MEET MANUFACTURER'S SPECIFICATIONS.

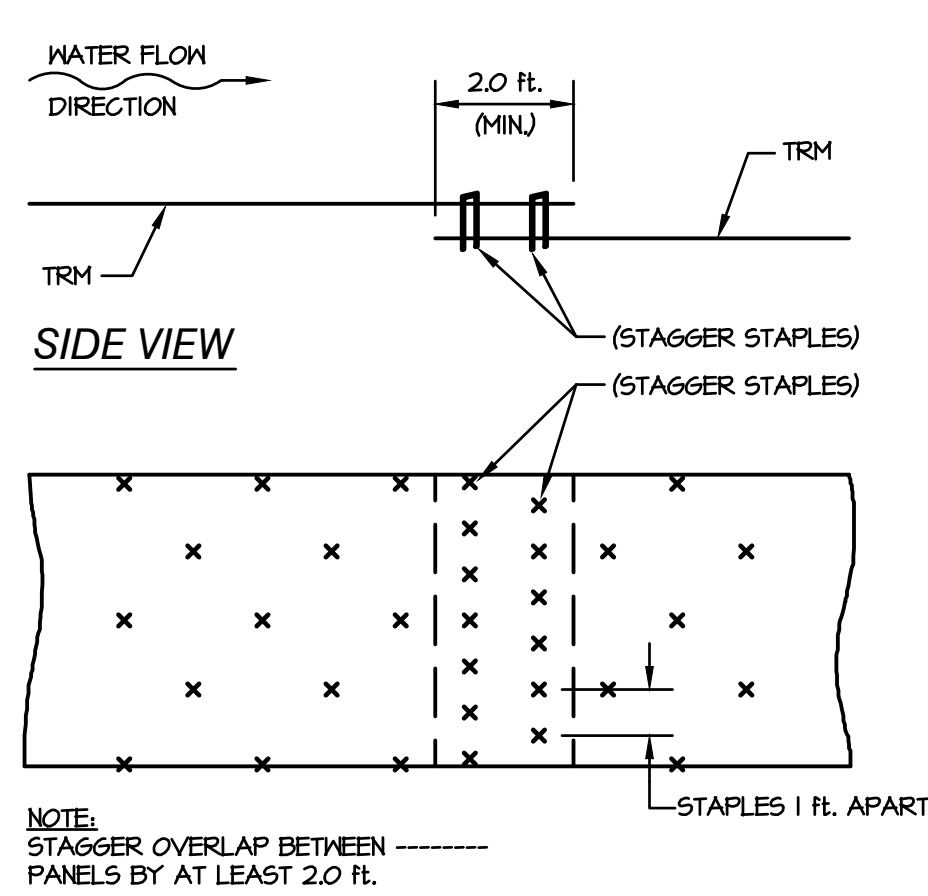
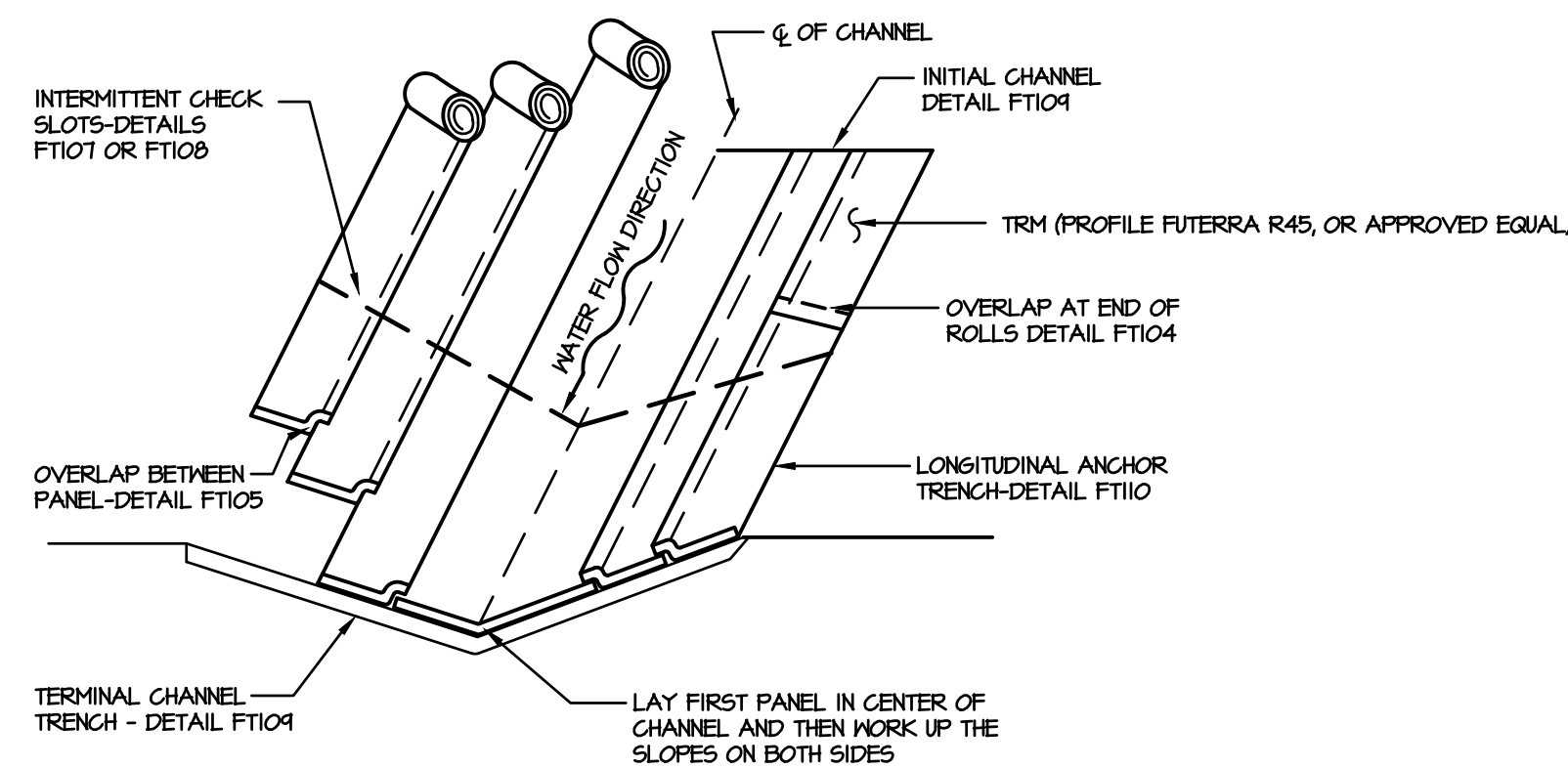


CATCH BASIN INLET PROTECTION
NOT TO SCALE



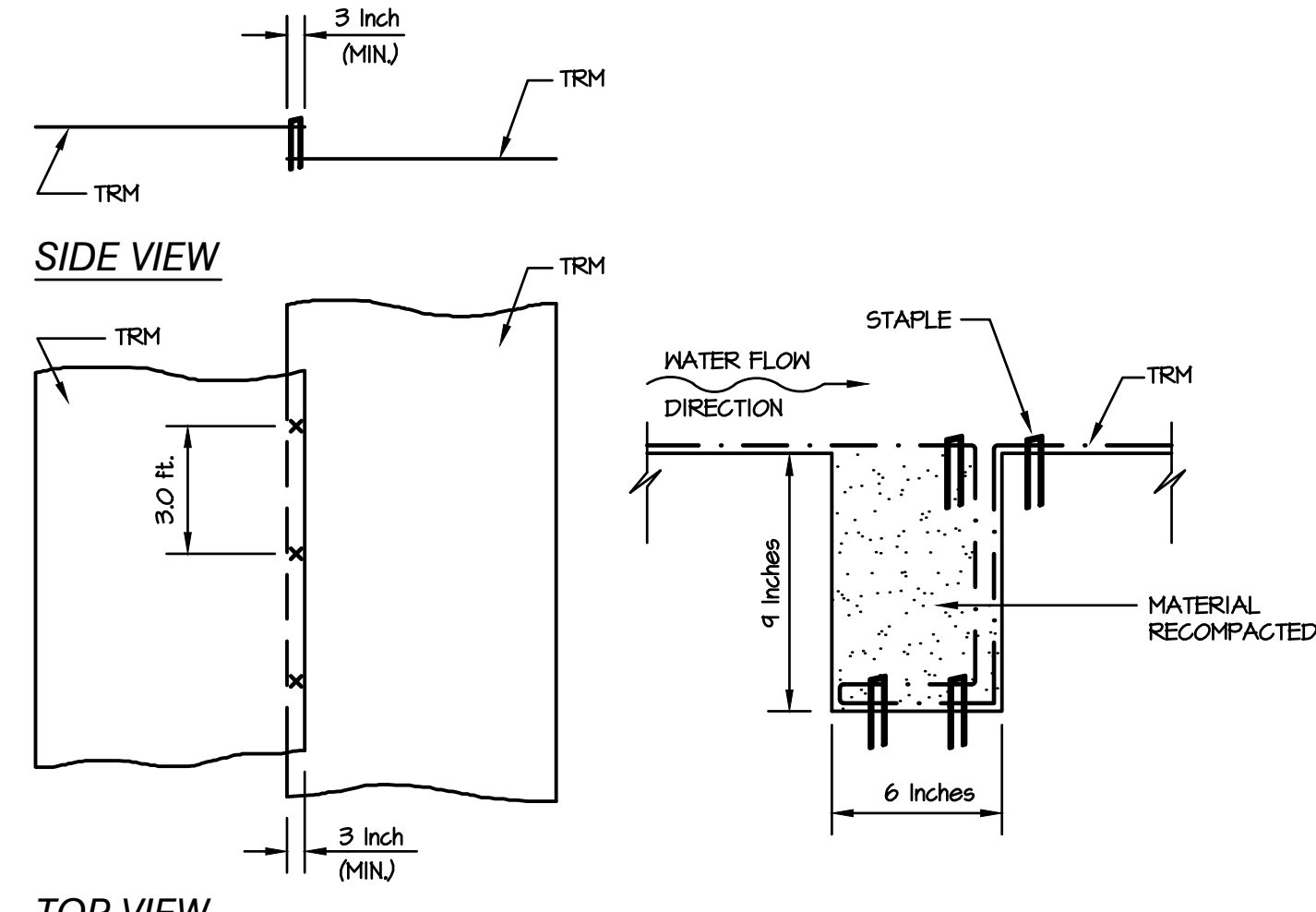
- NOTES:
1. INSTALL WEIGHTED INLET TUBES LYING FLAT ON THE GROUND WITH NO GAPS BETWEEN THE UNDERLYING SURFACE AND THE TUBE.
 2. DO NOT COMPLETELY BLOCK INLETS WITH INLET TUBES. INSTALL WEIGHTED INLET TUBES IN SUCH A MANNER THAT ALL OVERFLOW CAN ENTER THE INLET UNOBSTRUCTED. TO AVOID POSSIBLE FLOODING, 2 OR 3 CONCRETE CINDER BLOCKS MAY BE PLACED BETWEEN THE WEIGHTED INLET TUBE AND THE INLET.
 3. FOR WEEP HOLE APPLICATIONS, BOTH WEIGHTED AND NON-WEIGHTED INLET TUBES ARE APPLICABLE.
 4. ALL WEIGHTED TYPE F INLET STRUCTURE FILTERS ARE APPLICABLE AS TYPE E INLET STRUCTURE FILTERS.
 5. REPLACE INLET TUBES DURING INSTALLATION AS DIRECTED BY THE ENGINEER INSPECTOR, OR MANUFACTURER'S REPRESENTATIVE AT THE CONTRACTOR'S EXPENSE.
 6. ALL INLET FILTERS SHALL BE INSPECTED EVERY 7 CALENDAR DAYS.

WEIGHTED INLET TUBES
NOT TO SCALE



TOP VIEW

OVERLAPS AT END OF ROLL

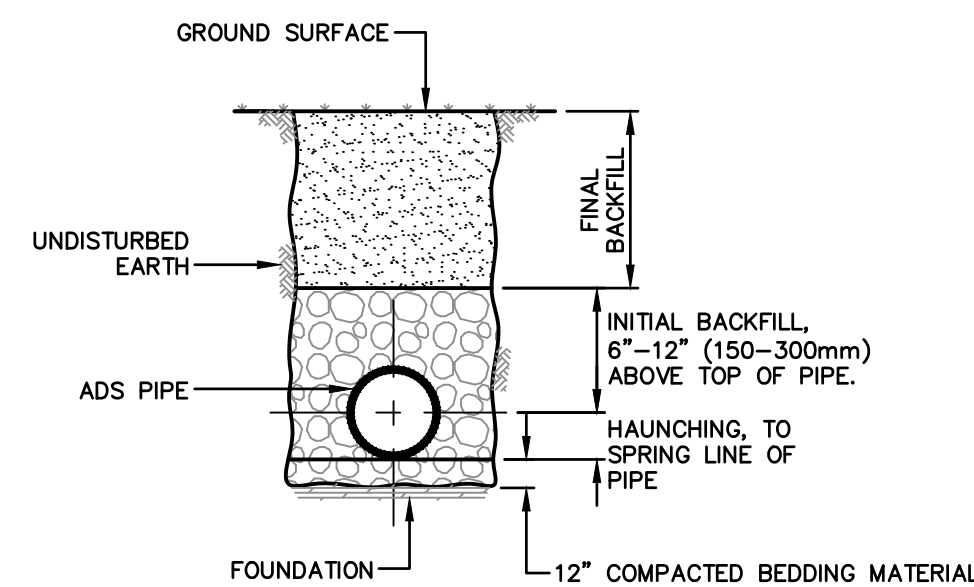


TOP VIEW

OVERLAPS BETWEEN PANELS

KEY IN

SEEDED TURF REINFORCEMENT MATTING
NOT TO SCALE



- NOTES:
1. FOUNDATION: WHERE THE TRENCH BOTTOM IS UNSTABLE, THE CONTRACTOR SHALL EXCAVATE TO A DEPTH REQUIRED BY THE ENGINEER AND REPLACE WITH A FOUNDATION OF CLASS I OR II MATERIAL AS DEFINED IN ASTM D2321, "STANDARD PRACTICE FOR INSTALLATION OF THERMOPLASTIC PIPE FOR SEWERS AND OTHER GRAVITY-FLOW APPLICATIONS," LATEST EDITION; AS AN ALTERNATIVE AND AT THE DISCRETION OF THE ENGINEER, THE TRENCH BOTTOM MAY BE STABILIZED USING A WOVEN GEOTEXTILE FABRIC.
 2. BEDDING: SUITABLE MATERIAL SHALL BE CLASS I, II, OR III AND INSTALLED AS REQUIRED IN ASTM D2321, LATEST EDITION. UNLESS OTHERWISE SPECIFIED BY THE ENGINEER, MINIMUM BEDDING THICKNESS SHALL BE 4" (100MM) FOR 4"-24" (100-600MM) AND 42"-48" (1050-1200MM) CORRUGATED POLYETHYLENE PIPE (CPEP); 6" (150MM) FOR 30"-36" (750-900MM) CPEP.
 3. HAUNCHING AND INITIAL BACKFILL: SUITABLE MATERIAL SHALL BE CLASS I, II, OR III AND INSTALLED AS REQUIRED IN ASTM D2321, LATEST EDITION.
 4. UNLESS OTHERWISE SPECIFIED BY THE ENGINEER, MINIMUM TRENCH WIDTHS SHALL BE AS FOLLOWS:

NOMINAL Ø	MIN. RECOMMENDED TRENCH WIDTH,
in (mm)	in (mm)
4 (100)	21 (530)
6 (150)	23 (580)
8 (200)	25 (630)
10 (250)	28 (710)
12 (300)	31 (790)
15 (375)	34 (860)
18 (450)	39 (990)
24 (600)	48 (1220)
30 (750)	66 (1680)
36 (900)	78 (1980)
42 (1050)	83 (2110)
48 (1200)	89 (2280)
60 (1500)	102 (2590)

TYPICAL HDPE STORM
DRAIN TRENCH
NOT TO SCALE

No.	DATE	DESCRIPTION	DESIGNER	REVIEWER
1.				

SEAL

SEAL

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SCALE:
HORIZ.: NOT TO SCALE
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