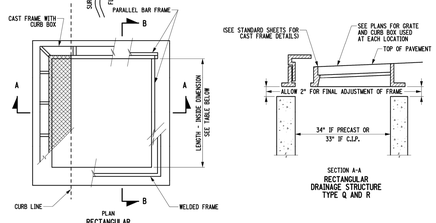
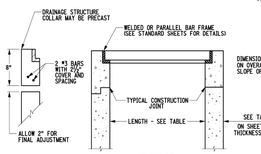
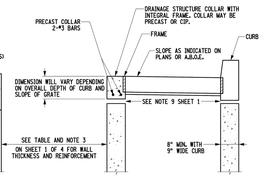


RECTANGULAR
DRAINAGE STRUCTURE
TYPE Q, R, S, T, AND U

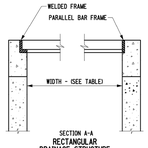




RECTANGULAR DRAINAGE STRUCTURE						
(TYPES Q THRU U)			INSIDE DIMENSIONS			
			PRECAST **		CAST IN PLACE	
ITEM	TYPE	FRAME	WIDTH	LENGTH	WIDTH	LENGTH
604.301172	Q	F2*	34	36	33	36½
604.301873	R	F3*	34	46	33	46½
604.301911	S	11	24	32	24	32½
604.301990	S	10PCB	24	32	24	32½
604.302016	T	16	26	42	26½	42½
604.302091	T	11PCB	26	42	26½	42½
604.302122	U	22	34	38	34	37½
604.302192	U	12PCB	34	38	34	37½

* SEE CONTRACT DOCUMENTS FOR GRATE AND CURB BOX TYPE

** PRECAST TYPES S,T, AND U REQUIRE THE FRAME TO BE CAST INTO A SEPARATE COLLAR. THE FRAME COLLAR SHALL HAVE INSIDE DIMENSIONS AS SHOWN FOR "CAST-IN-PLACE" IN THIS TABLE, OUTSIDE DIMENSIONS TO MATCH THE PRECAST RISER, AND BE 8" HIGH MIN.

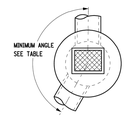


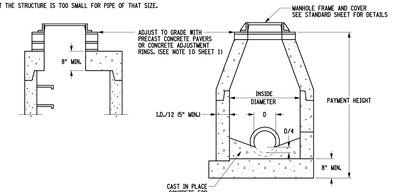
SELECTION TABLES FOR ALTERNATE ROUND DRAINAGE STRUCTURES						
CONCRETE OR POLYETHYLENE PIPES		STRUCTURE INTERNAL DIAMETER				
		48"	60"	72"	84"	96"
RCP H.E. RISE X SPAN	ROUND INTERNAL DIAMETER	MINIMUM ANGLE BETWEEN PIPE ENTRIES (NOTE 5)				
	12"		84	63	50	41	35
	15"		94	70	56	46	39
	18"		104	78	62	51	43
	21"		115	85	68	56	48
	24"		127	93	74	61	52
	27"		141	102	81	67	57
	30"		157	111	87	72	61
19" X 30"			157	112	88	73	62
	34"			121	95	78	66
22" X 34"				125	97	80	68
	36"			133	102	84	71
24" X 38"				140	106	87	74
27" X 42"				156	115	94	79
	42"			164	119	96	81
29" X 45"					130	104	87
	48"				140	110	92
32" X 49"					145	113	94
34" X 53"					166	123	101
	54"				175	126	104
	60"					147	117

SELECTION TABLES FOR ALTERNATE ROUND DRAINAGE STRUCTURES						
METAL PIPES		STRUCTURE INTERNAL DIAMETER				
		48"	60"	72"	84"	96"
CMP ARCH SPAN AND RISE	ROUND INTERNAL DIAMETER	MINIMUM ANGLE BETWEEN PIPE ENTRIES (NOTE 5)				
	12"		68	54	45	38	34
	15"		76	60	50	43	37
17" X 13"			82	64	53	45	40
	18"		85	67	55	47	41
			91	71	59	50	43
21" X 15"	21"		94	73	60	51	45
24" X 18"	24"		103	80	66	56	49
28" X 20"			116	89	73	62	54
	30"		124	94	76	65	56
35" X 24"			145	106	86	72	63
	36"		152	110	88	74	64
42" X 29"	42"			128	101	84	72
	48"			153	115	95	81
49" X 33"				158	117	96	82
	54"				132	106	90
57" X 38"					141	112	94
60" X 46"					150	117	98
	60"				154	119	100
64" X 43"						129	107
	66"					134	110
71" X 47"						151	120
	72"					155	122

NOTES:

1. THE DIAMETER OF THE ALTERNATE ROUND UNIT SHALL NOT BE LESS THAN THE LARGER DIMENSION OF THE SPECIFIED RECTANGULAR UNIT IT REPLACES. IT SHALL ALSO BE LARGE ENOUGH TO HAVE THE SPECIFIED GRATE FIT WITHIN THE INSIDE DIAMETER OF THE ROUND ALTERNATE.
2. THE ABOVE VALUES ARE BASED ON THE CENTERLINE OF ALL PIPES INTERSECTING AT THE CENTER OF THE ROUND ALTERNATE.
3. THE ANGLE BETWEEN ADJACENT PIPE ENTRIES SHALL NOT BE LESS THAN THE MINIMUM SHOWN IN THE TABLE ABOVE. WHEN THE ADJACENT PIPES HAVE DIFFERENT SIZES, THE MINIMUM ANGLE SHALL BE THE VALUE FOR THE LARGER OF THE TWO PIPES.
4. THE SUM OF THE MINIMUM ANGLES BETWEEN PIPES AT THE SAME LEVEL SHALL NOT BE MORE THAN 360 DEGREES. THEY SHALL BE REGARDED AS BEING AT THE SAME LEVEL IF THEIR RISES OVERLAP.
5. A BLANK (NO ENTRY) IN TABLE INDICATES THAT THE STRUCTURE IS TOO SMALL FOR PIPE OF THAT SIZE.





PRECAST ROUND MANHOLES			
ITEM	TYPE	CIRCUMFERENTIAL STEEL - SQUARE INCHES PER VERTICAL FOOT	INSIDE DIAMETER
604.4048	48	0,12	48
604.4060	60	0,15	60
604.4072	72	0,18	72
604.4084	84	0,21	84
604.4096	96	0,24	96

STATE OF NEW YORK
DEPARTMENT OF TRANSPORTATION

U.S. CUSTOMARY STANDARD SHEET

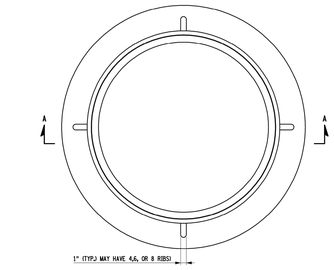
DRAINAGE STRUCTURE DETAILS
(SHEET 4 OF 4)

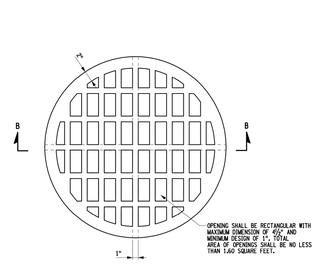
APPROVED SEPTEMBER 19, 2008	ISSUED UNDER EB 08-036
/S/ DANIEL D'ANGELO, P.E. DEPUTY CHIEF ENGINEER DESIGN	604-02

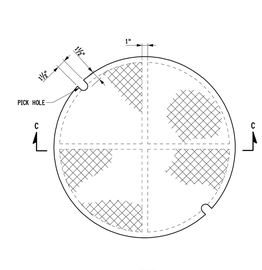
EFFECTIVE DATE: 01/08/09

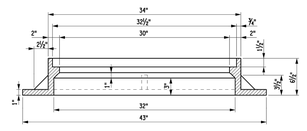
DRAINAGE STRUCTURE

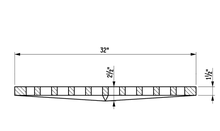
61

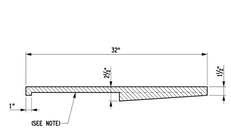












NOTE: MANHOLE COVERS MAY BE DESIGNED WITH OR WITHOUT RIBS AND SHALL RESIST THE 16 KIP(F) WHEEL LOAD OF AASHTO H20 LOADING

STATE OF NEW YORK
DEPARTMENT OF TRANSPORTATION

U.S. CUSTOMARY STANDARD SHEET

CAST MANHOLE
FRAMES, GRATES AND COVERS

APPROVED DECEMBER 19, 2008	ISSUED UNDER EB 08-049
/S/ DANIEL D'ANGELO, P.E. DEPUTY CHIEF ENGINEER DESIGN	655-03

EFFECTIVE DATE: 05/07/09

CAST MANHOLE FRAMES, GRATES AND COVERS

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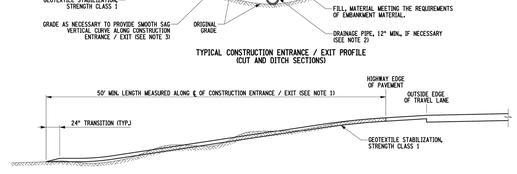
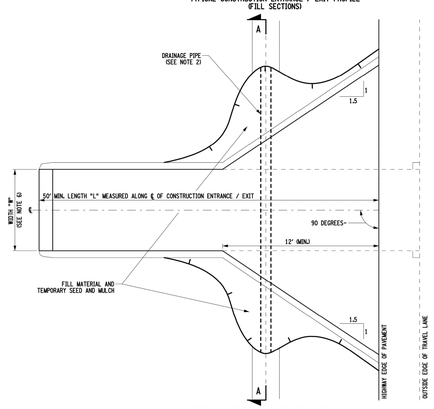


TYPICAL CONSTRUCTION ENTRANCE / EXIT PROFILE
(CUT AND DITCH SECTIONS)

TYPICAL CONSTRUCTION ENTRANCE / EXIT PROFILE
(FILL SECTIONS)



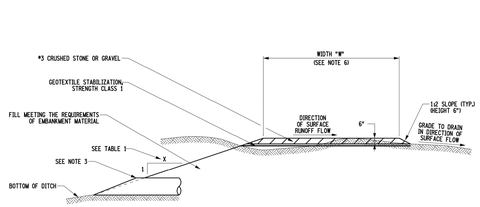
TYPICAL CONSTRUCTION ENTRANCE / EXIT PLAN
(CUT/DITCH AND FILL SECTIONS)

APPLICATION NOTES:

A. THE PURPOSE OF A STABILIZED CONSTRUCTION ENTRANCE/EXIT IS TO REDUCE OR ELIMINATETHE TRACKING OF SEDIMENT ONTO PUBLIC RIGHTS OF WAY OR STREETS.

GENERAL NOTES:

1. MODIFICATIONS MAY BE REQUIRED TO MATCH FIELD CONDITIONS.
2. PROPOSED DRAINAGE PIPES SHALL BE SIZED WITH SUFFICIENT CAPACITY TO CARRY DITCH FLOWS (12" MIN.). ALTERNATIVE WAYS OF TRANSPORTING DITCH DRAINAGE ACROSS CONSTRUCTION ENTRANCE / EXIT MAY BE PROPOSED BY THE CONTRACTOR FOR APPROVAL BYTHE ENGINEER.
3. DRAINAGE PIPES OVER 20" DIA. THAT ARE NOT BEHIND A ROADSIDE BARRIER SHALL INCLUDE SAFETY END SECTIONS OR GRATING TO ENSURE TRAVERSABILITY.
4. THE CONTRACTOR SHALL GRADE TO PREPARE AND SMOOTH ORIGINAL GROUND, PLACE GEOTEXTILE OVER THE ENTIRE AREA THEN PLACE 9" OF #3 CRUSHED STONE OR GRAVEL ENTRANCE MATERIAL UP TO THE EDGE OF PAVEMENT.
5. LAYOUT DRIVEWAY OPENING PER TAPER METHOD OF LAYOUT FOR A MINOR COMMERCIAL DRIVEWAY ON STANDARD SHEET 608-03.
6. DETERMINE DRIVEWAY WIDTH "W" FROM THE MINOR COMMERCIAL DRIVEWAY CLASSIFICATION OF TABLE 1 ON STANDARD SHEET 608-03.
7. INSPECT THE CONSTRUCTION ENTRANCE / EXIT AT LEAST WEEKLY FOR SEDIMENT ACCUMULATION WITHIN THE STONE SURFACE AND FOR GENERAL SURFACE CONDITION.
8. PERIODIC MAINTENANCE IS REQUIRED IF SEDIMENT IS TRACKED ONTO PAVEMENT AND COST OF MAINTENANCE WILL BE INCLUDED IN THE UNIT PRICE BID.



TYPICAL CONSTRUCTION ENTRANCE / EXIT SECTION A - A

TABLE 1	
X	HIGHWAY SPEED CONDITION
2	ALL SPEEDS - PROTECTED BY BARRIER
3	< 50 MPH
6	≥ 50 MPH

NEW YORK STATE OF OPPORTUNITY. Department of Transportation

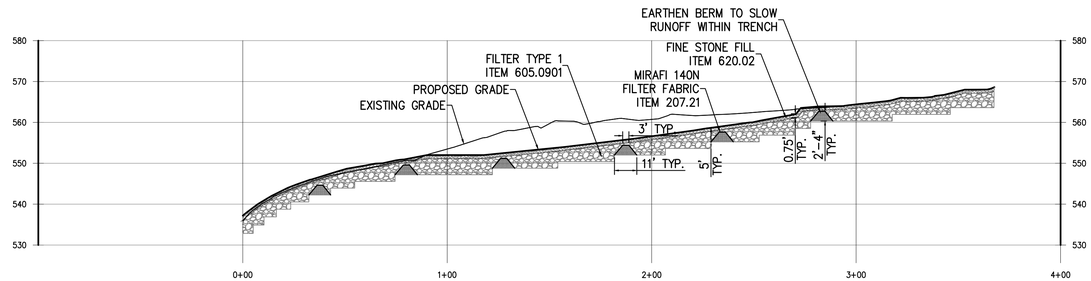
U.S. CUSTOMARY STANDARD SHEET

CONSTRUCTION
ENTRANCE / EXIT

APPROVED JANUARY 26, 2017	ISSUED UNDER EB 17-001
/S/ RICHARD WILDER, P.E. DEPUTY CHIEF ENGINEER DESIGN	209-05

CONSTRUCTION ENTRANCE / EXIT

63



INFILTRATION TRENCH 4B-1

NY 312 INFILTRATION TRENCH PROFILE

64

No.	Revision	Date
1.	REVISED PER NYSDOT COMMENTS	08/08/2022
2.	REVISED PER NYSDOT COMMENTS	09/02/2022
3.	REVISED PER NYSDOT COMMENTS	10/14/2022
4.	REVISED PER NYSDOT COMMENTS	12/09/2022

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JMC Planning, Engineering, Landscape Architecture & Land Surveying, PLLC
JMC Site Development Consultants, LLC
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120 BEDFORD ROAD • ARMONK, NY 10504
voice 914.273.5225 • fax 914.273.2102
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NYSDOT DETAILS

COMMERCIAL CAMPUS AT FIELDS CORNER
NY 312 & PUGSLEY ROAD
TOWN OF SOUTHEAST, NEW YORK

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Drawn:	KRM
Approved:	DL
Scale:	NOT TO SCALE
Date:	05/20/2022
Project No:	14012/21121
14012-DETAILS	HWY-15	-
Drawing No:	HP-41

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