

APPENDIX C

STANDARD STORMWATER CONSTRUCTION DETAILS

Town of Zionsville, Indiana



Town of Zionsville
1100 WEST OAK STREET
ZIONSVILLE, INDIANA 46077

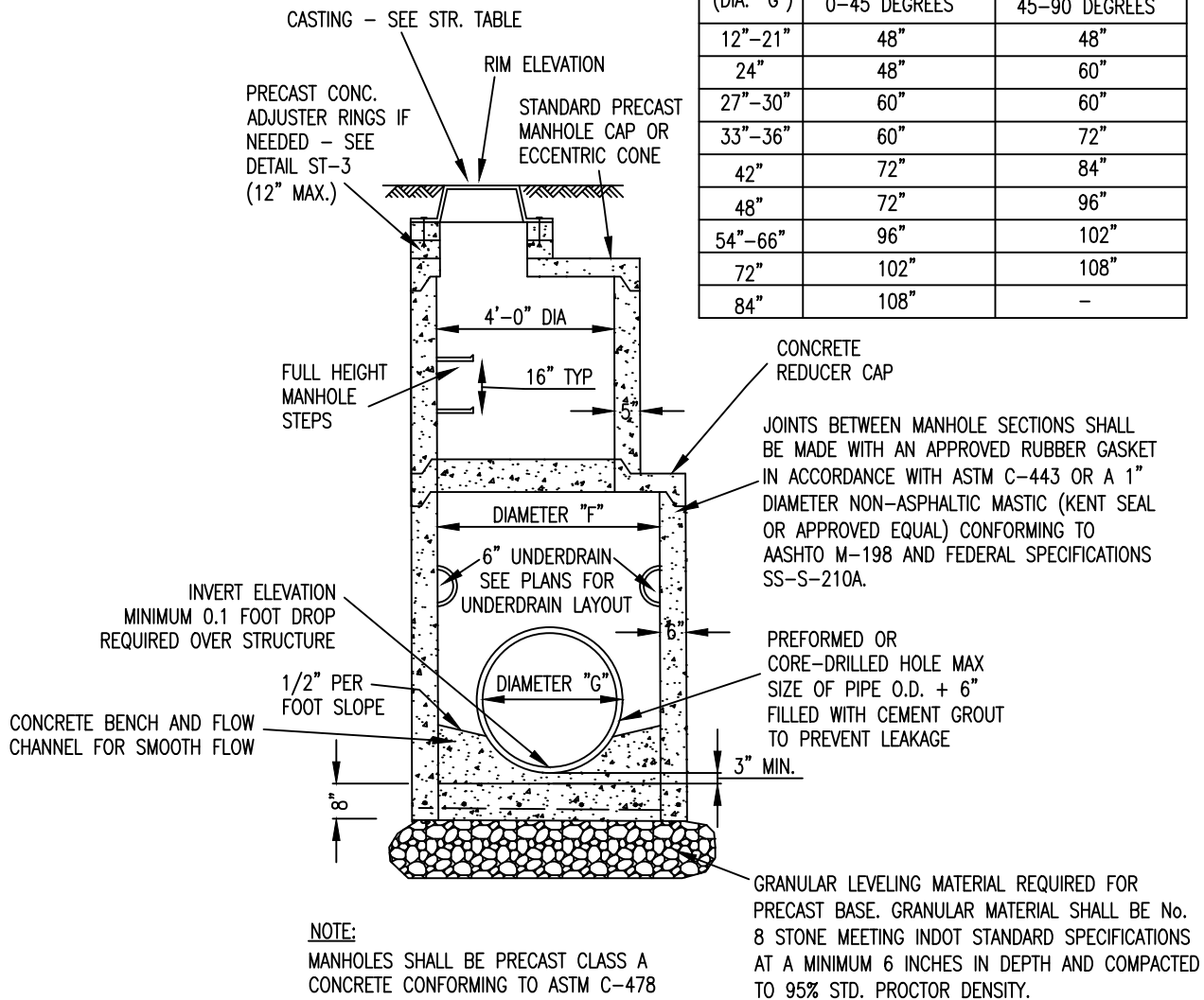
July 2024

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PIPE SIZE (DIA. "G")	MANHOLE (DIA. "F") PIPES ENTERING/ LEAVING AT 0-45 DEGREES	MANHOLE (DIA. "F") PIPES ENTERING/ LEAVING AT 45-90 DEGREES
12"-21"	48"	48"
24"	48"	60"
27"-30"	60"	60"
33"-36"	60"	72"
42"	72"	84"
48"	72"	96"
54"-66"	96"	102"
72"	102"	108"
84"	108"	-



NOTE: ALL STRUCTURE JOINTS SHALL BE SLICKED WITH NON-SHRINK GROUT.

NOT TO SCALE



STANDARD PRECAST MANHOLE

STANDARD CONSTRUCTION DETAILS TOWN OF ZIONSVILLE

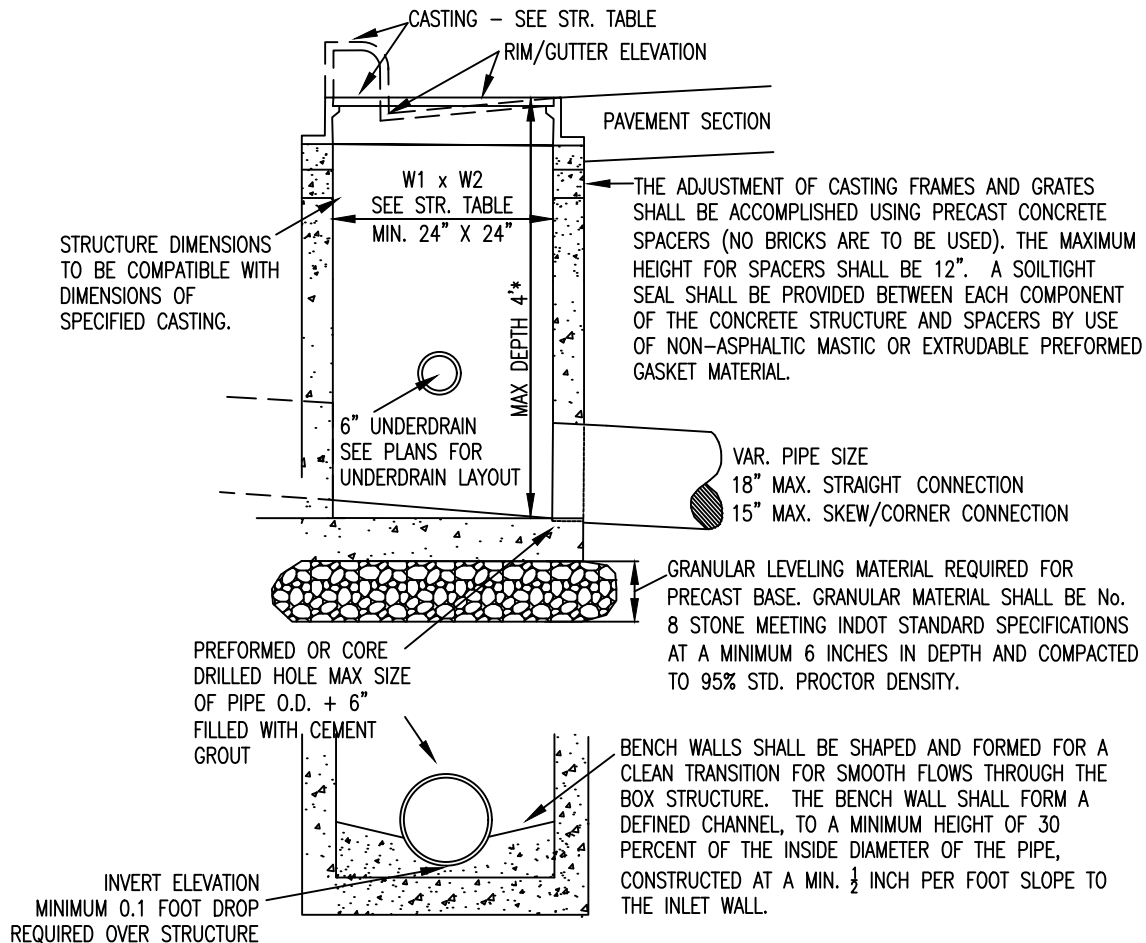
DRAWN: AMF
DATE: JULY 2024

DETAIL NO.

ST-1

GENERAL NOTES:

STORM BOX STRUCTURES SHALL BE PRECAST CONCRETE CLASS A WITH A 4000 PSI, 28 DAY COMPRESSIVE STRENGTH. THE STRUCTURE DESIGN SHALL BE IN FULL ACCORDANCE WITH ASTM C890



NOT TO SCALE

NOTES:

1. ALL STRUCTURE JOINTS SHALL BE SLICKED WITH NON-SHRINK GROUT.
2. INLET STRUCTURES WITH MULTIPLE CASTINGS SHALL HAVE A CONCRETE TOP SLAB THAT SUPPORTS EACH CASTING ON ALL SIDES.

*INLET STRUCTURES DEEPER THAN 4' MAY BE ALLOWED ON A CASE-BY-CASE BASIS. ALL STRUCTURES DEEPER THAN 4' SHALL HAVE STEPS AND BE LARGE ENOUGH FOR FULL MAN ENTRY.



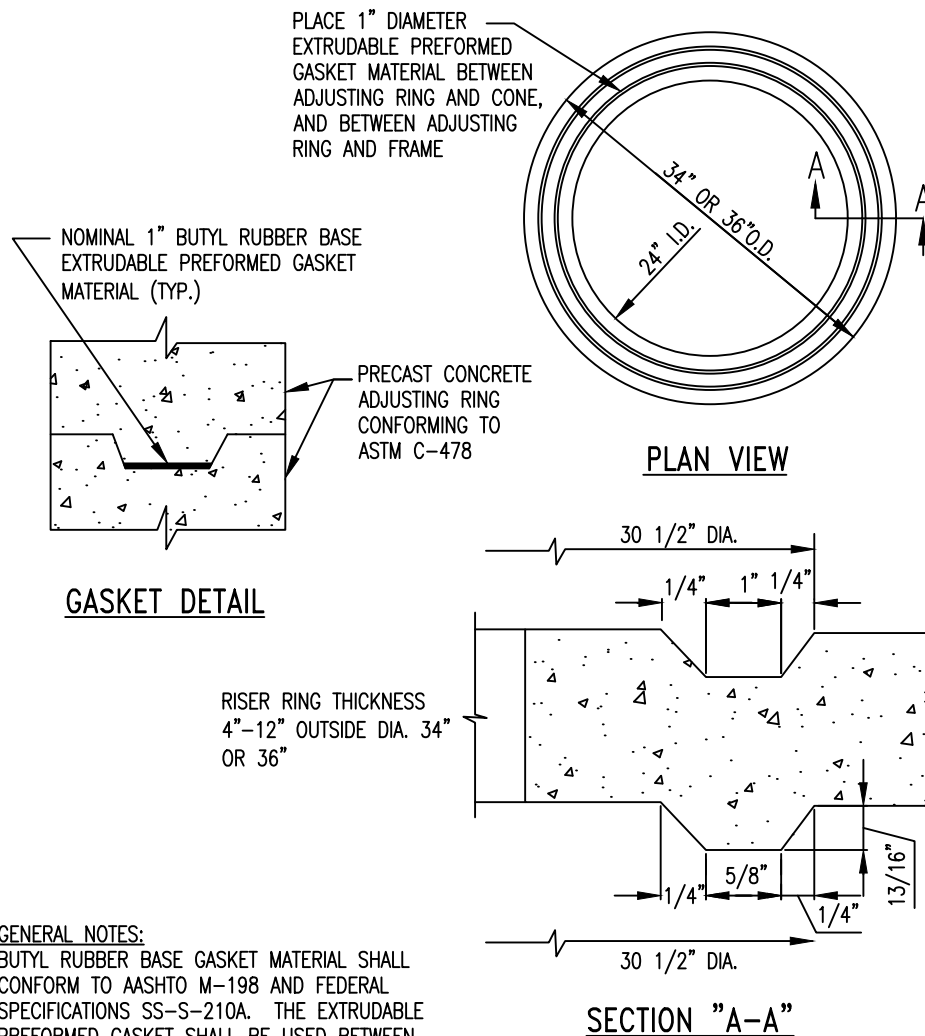
STORM BOX STRUCTURE

STANDARD CONSTRUCTION DETAILS TOWN OF ZIONSVILLE

DRAWN: AMF
DATE: JULY 2024

DETAIL NO.

ST-2



GENERAL NOTES:

BUTYL RUBBER BASE GASKET MATERIAL SHALL CONFORM TO AASHTO M-198 AND FEDERAL SPECIFICATIONS SS-S-210A. THE EXTRUDABLE PREFORMED GASKET SHALL BE USED BETWEEN THE ADJUSTING RING AND CONE, AND BETWEEN THE ADJUSTING RING AND CASTING. THE GASKET MATERIAL SHALL BE AS MANUFACTURED BY HAMILTON KENT-SEAL OR APPROVED EQUAL

FOR RECTANGULAR/BOX STRUCTURES:

PRECAST CONCRETE SPACERS OF A MINIMAL NOMINAL THICKNESS OF 4 INCHES. THE MAXIMUM SPACER HEIGHT ALLOWED SHALL BE 12". A SOILTIGHT SEAL SHALL BE PROVIDED BETWEEN EACH COMPONENT OF THE CONCRETE STRUCTURE AND SPACERS BY USE OF NON-ASPHALTIC MASTIC OR EXTRUDABLE PREFORMED GASKET MATERIAL.

NOT TO SCALE

NOTE: ALL JOINTS SHALL BE SLICKED WITH NON-SHRINK GROUT.



SPACER RINGS/RISER RINGS

STANDARD CONSTRUCTION DETAILS TOWN OF ZIONSVILLE

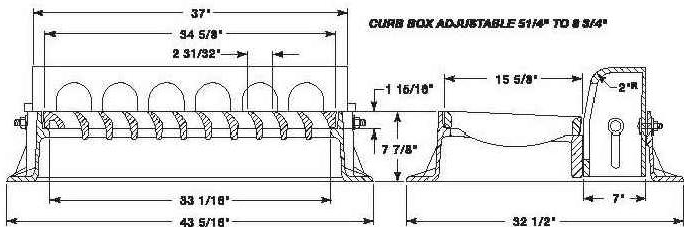
DRAWN: AMF
DATE: JULY 2024

DETAIL NO.

ST-3

R-3287-10V
Combination Inlet Frame, Grate, Curb Box

Heavy Duty



CATALOG NUMBER	GRATE TYPE	SQ. FT. OPEN	WEIR PERIMETER LINEAL FEET
R-3287-10V	V	2.1	5.5

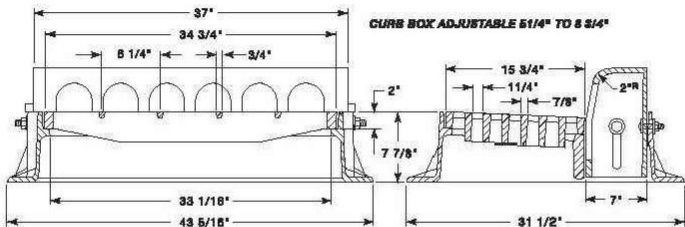
Available with 3" radius curb box.

MANUFACTURER	CATALOG NO.
NEENAH	R-3287, 10V
EAST JORDAN	7505M3

NOT TO SCALE

R-3287-SB10
Combination Inlet Frame, Grate, Curb Box

Heavy Duty



CATALOG NUMBER	GRATE TYPE	SQ. FT. OPEN	WEIR PERIMETER LINEAL FEET
R-3287-SB10	S	1.5	5.5

MANUFACTURER	CATALOG NO.
NEENAH	R-3287, SB10
EAST JORDAN	7505

NOT TO SCALE



STRAIGHT CURB INLET CASTING TYPE 1

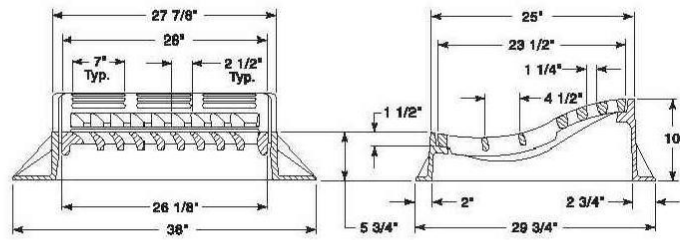
STANDARD CONSTRUCTION DETAILS
TOWN OF ZIONSVILLE

DRAWN: AMF
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DETAIL NO.
ST-4

R-3501-TR Inlet for Roll Type Curb

Heavy Duty



CATALOG NUMBER	GRATE TYPE	SQ. FT. OPEN	WEIR PERIMETER LINEAL FEET
R-3501-TR	L	1.4	4.6
R-3501-TL	L	1.4	4.6

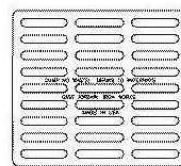
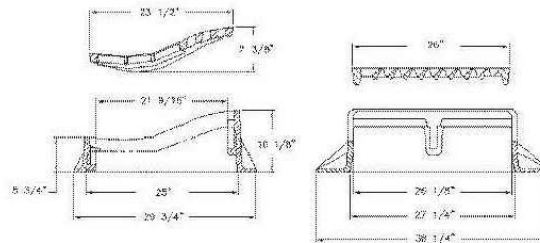
Illustrating R-3501-TR (flow right). If flow left required, order R-3501-TL.

7495 CATCH BASIN CURB INLET

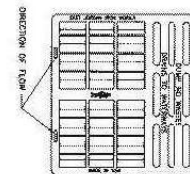


Heavy duty
With TYPE M1 right hand grate
(M2 left hand)
Approximate 250 sq. in. open area
"DUMP NO WASTE!" lettering and fish image

Options:
Safety bar — 5235
Round flange frame



TYPE M3 Grate
"DUMP NO WASTE!" lettering
Approx. 227 sq. in. open area



TYPE M4 Bidirectional Grate
"DUMP NO WASTE!" lettering
and fish image
Approx. 185 sq. in. open area

MANUFACTURER	CATALOG NO.
NEENAH	R-3501-TR/TL
EAST JORDAN	7495

NOT TO SCALE



ROLLED CURB INLET CASTING TYPE 3

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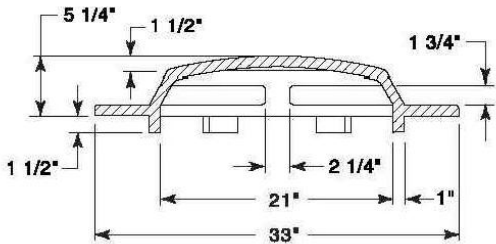
DRAWN: AMF
DATE: JULY 2024

DETAIL NO.
ST-5

R-4342
Ditch Grate, Stool Type

Light Duty

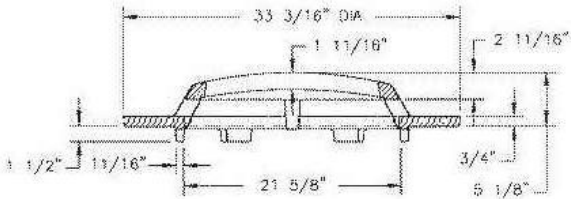
CATALOG NUMBER	GRATE TYPE	SQ. FT. OPEN	WEIR PERIMETER LINEAL FEET
R-4342	Beehive	2.0	6.0



6489 BEEHIVE DITCH GRATE



Heavy duty
Approximate 220 sq. in.
open area
"DUMP NO WASTE!"
lettering



MANUFACTURER	CATALOG NO.
NEENAH	R-4342
EAST JORDAN	6489

NOT TO SCALE



DRAIN GRATE INLET CASTING TYPE 4

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DETAIL NO.
ST-6

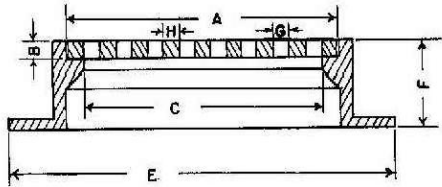
R-3405 Series

Catalog No.	Dimensions in inches						
	A	B	C	E	F	G	H
R-3405	23 5/8 x 23 5/8	1 1/2	22 x 22	32 3/4 x 32 3/4	6	2 1/8 x 2 1/8	1

Gutter Inlet Frame, Grate

Heavy Duty

CATALOG NUMBER	GRATE TYPE	SQ. FT. OPEN	WEIR PERIMETER LINEAL FEET
R-3405	H	1.5	7.8

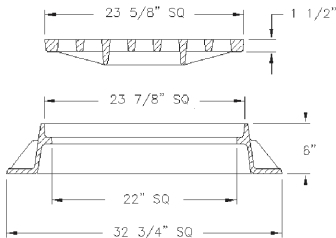


Illustrating R-3405

5250 CATCH BASIN INLET

Heavy duty
"DUMP NO WASTE!" lettering and fish image
Approximate 220 sq. in. open area
Stackable frame

- Options
8" height frame — 5235
4" height frame — V-5622
ADA grate — V-5622-80
Solid cover — V-6622



MANUFACTURER	CATALOG NO.
NEENAH	R-3405
EAST JORDAN	5250

NOT TO SCALE



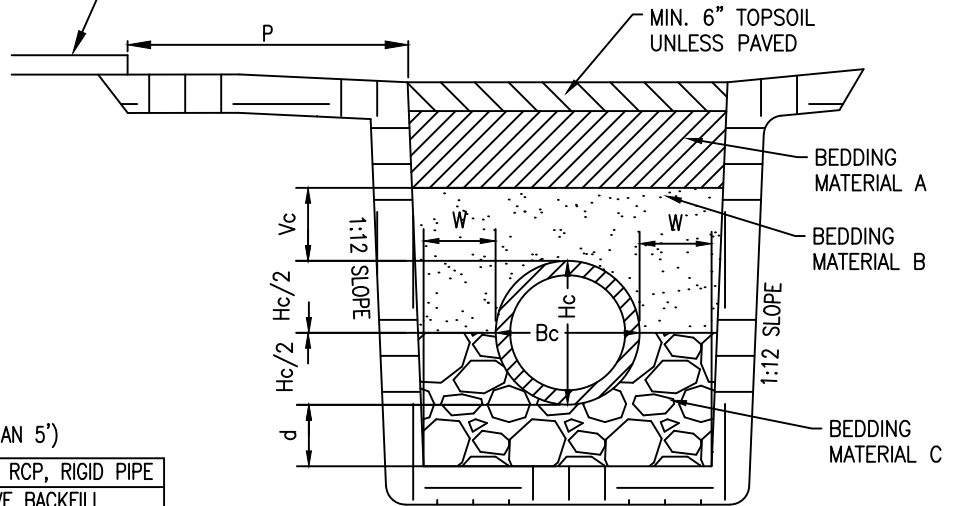
FLAT INLET CASTING TYPE 5

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DRAWN: AMF
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DETAIL NO.
ST-7

EDGE OF PAVEMENT, CURB,
GUTTER OR SIMILAR STRUCTURE



BEDDING MATERIAL DESIGNATION (P GREATER THAN 5')

	PVC, HDPE, PP, PLASTIC PIPE	CMP, RCP, RIGID PIPE
MATERIAL A	NATIVE BACKFILL	NATIVE BACKFILL
MATERIAL B	#8 WASHED STONE	B-BORROW
MATERIAL C	#8 WASHED STONE	#8 WASHED STONE

BEDDING MATERIAL DESIGNATION (P LESS THAN 5', BUT GREATER THAN 0')

	PVC, HDPE, PP, PLASTIC PIPE	CMP, RCP, RIGID PIPE
MATERIAL A	#8 WASHED STONE OR B-BORROW	#8 WASHED STONE OR B-BORROW
MATERIAL B	#8 WASHED STONE	#8 WASHED STONE OR B-BORROW
MATERIAL C	#8 WASHED STONE	#8 WASHED STONE

BEDDING MATERIAL DESIGNATION (PIPE UNDER PAVEMENT OR DRIVEWAY)

	PVC, HDPE, PP, PLASTIC PIPE	CMP, RCP, RIGID PIPE
MATERIAL A	#8 WASHED STONE OR B-BORROW	#8 WASHED STONE OR B-BORROW
MATERIAL B	#8 WASHED STONE	#8 WASHED STONE
MATERIAL C	#8 WASHED STONE	#8 WASHED STONE

LEGEND

P = DISTANCE FROM EDGE OF PAVEMENT
Hc = OUTSIDE DIAMETER OR RISE
Bc = OUTSIDE DIAMETER
d = DEPTH OF BEDDING MATERIAL BELOW PIPE
= 8" MIN. FOR FILL HEIGHT UP TO 16'
= 12" MIN. FOR FILL HEIGHT OF 16' OR MORE
Vc = 12" FOR Bc UP TO 18"
= 18" FOR Bc > 18"
W = 0.3 Bc OR 9", WHICHEVER IS GREATER

NOTES:

1. PIPE WITHIN RIGHT-OF-WAY OR TO BE PUBLICLY MAINTAINED TO BE RCP OR DOUBLE WALL POLYPROPYLENE UNLESS OTHERWISE APPROVED BY TOWN.
2. B-BORROW TO BE COMPACTED TO 95% MAX DRY DENSITY PER STANDARD PROCTOR TEST.
3. ALL BEDDING SHALL BE INSTALLED IN 6" TO 12" BALANCED LIFTS.
4. FOR BACKFILL PURPOSES, PAVED SHOULDERS, CURBS, GUTTERS, AND SIDEWALKS ARE CONSIDERED PAVEMENT.
5. FLOWABLE BACKFILL SHALL BE APPROVED BY THE TOWN ON A CASE-BY-CASE BASIS.
6. HDPE PIPE TO BE MANDREL TESTED TO 7.5%.

NOT TO SCALE



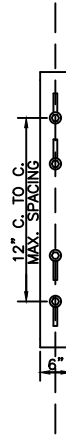
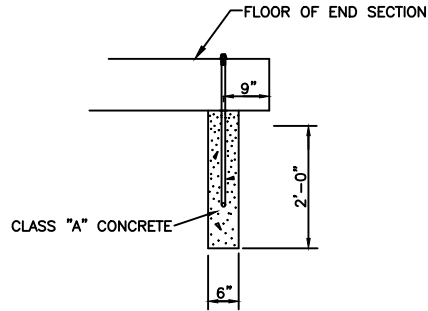
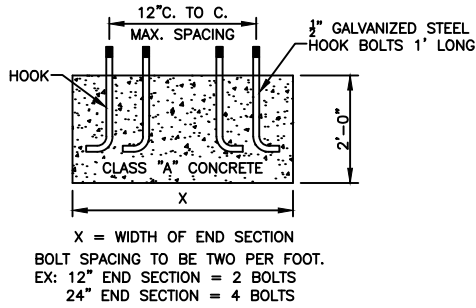
BEDDING AND BACKFILL SECTION

**STANDARD CONSTRUCTION DETAILS
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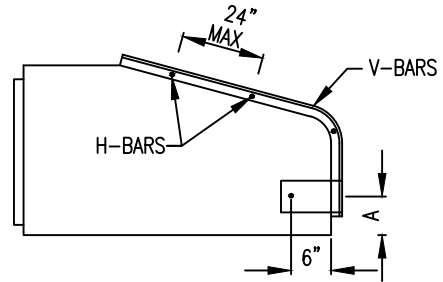
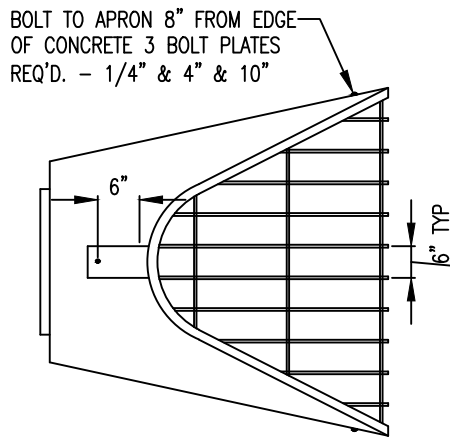
DRAWN: AMF
DATE: JULY 2024

DETAIL NO.

ST-8



END SECTION ANCHOR – TO BE PROVIDED ON ALL END SECTIONS



- NOTES:
1. BARS & PLATES ARE HOT-ROLLED STEEL.
 2. BARS, PLATES, & PIPE ARE FINISHED WITH 2 COATS OF ALUMINUM PAINT.
 3. BOLTS ARE GALVANIZED.

TRASH/DEBRIS GUARD DETAIL – TO BE PROVIDED ON ALL END SECTIONS

NOT TO SCALE



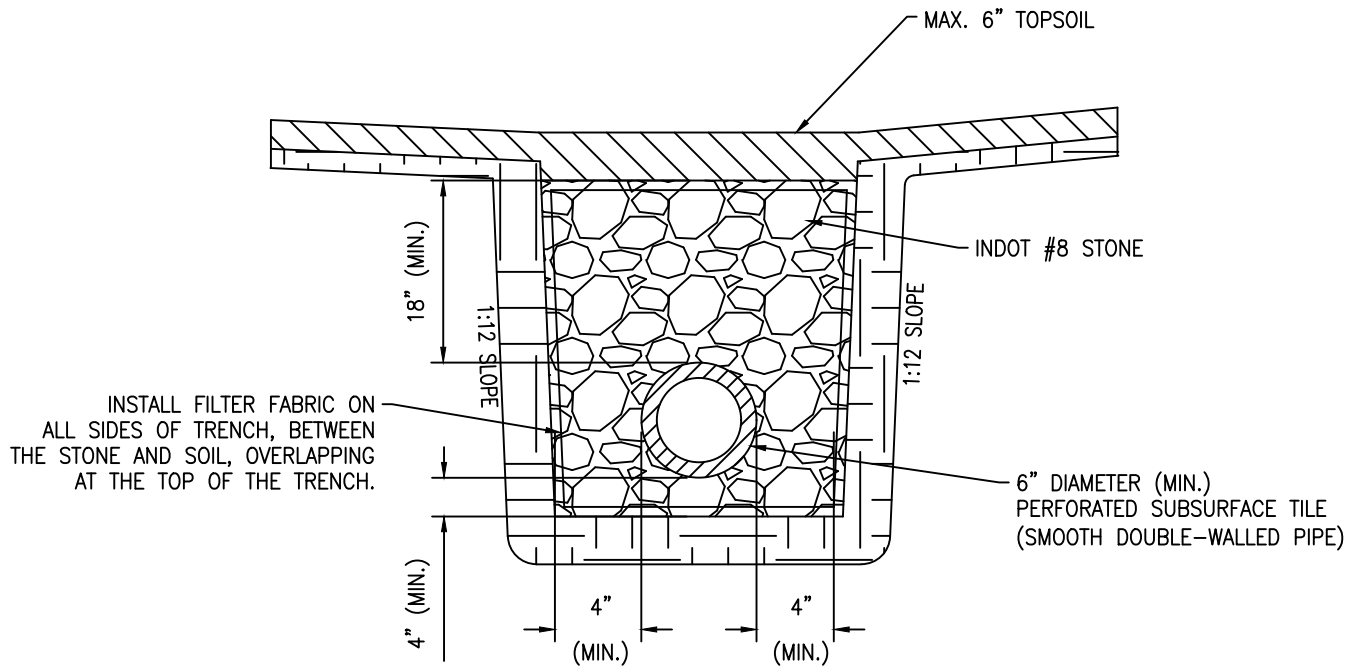
PRECAST CONCRETE END SECTION

STANDARD CONSTRUCTION DETAILS TOWN OF ZIONSVILLE

DRAWN: AMF
DATE: JULY 2024

DETAIL NO.

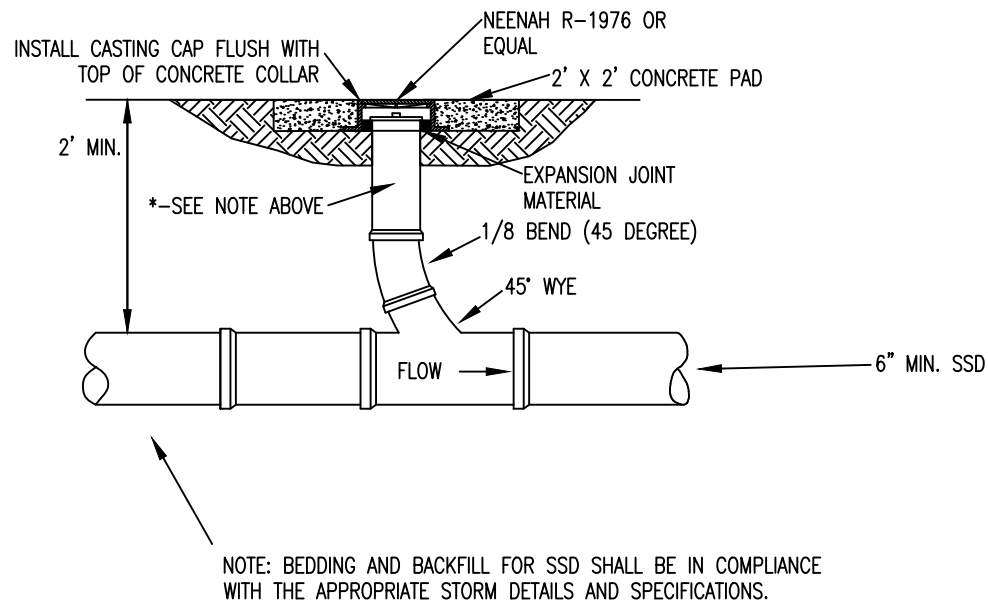
ST-9



NOT TO SCALE

* NOTE:

- FOR SSD LATERALS, THE CLEANOUT PIPE AND FITTING MATERIAL SHALL BE HDPE N-12, WITH A MINIMUM PIPE SIZE OF 4 INCHES.



NOT TO SCALE



SUBSURFACE DRAIN CLEANOUT

STANDARD CONSTRUCTION DETAILS
TOWN OF ZIONSVILLE

DRAWN: AMF
DATE: JULY 2024

DETAIL NO.

ST-11