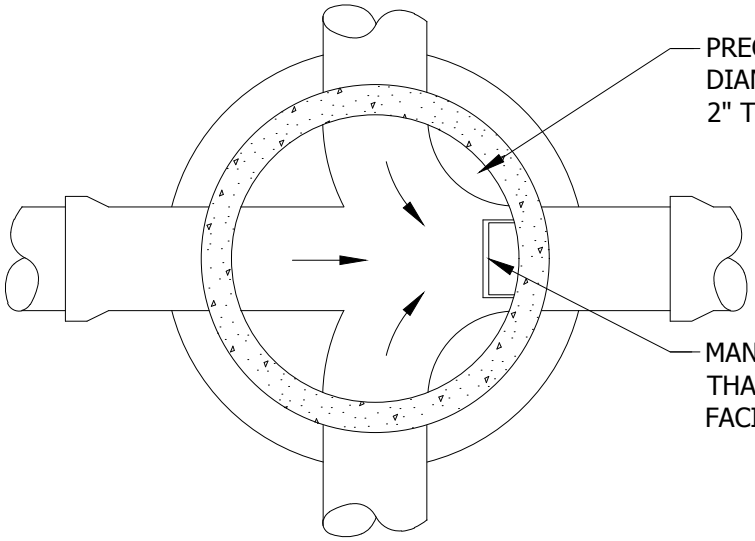


PRECAST INVERT SHOULD BE 1/2 DIAMETER OF PIPE AND BENCHES SLOPED 2" TOWARD INVERT.

MANHOLE STEPS SHALL BE PLACED SO THAT OFFSET HOLE IN TOP SLAB IS FACING DOWNSTREAM.

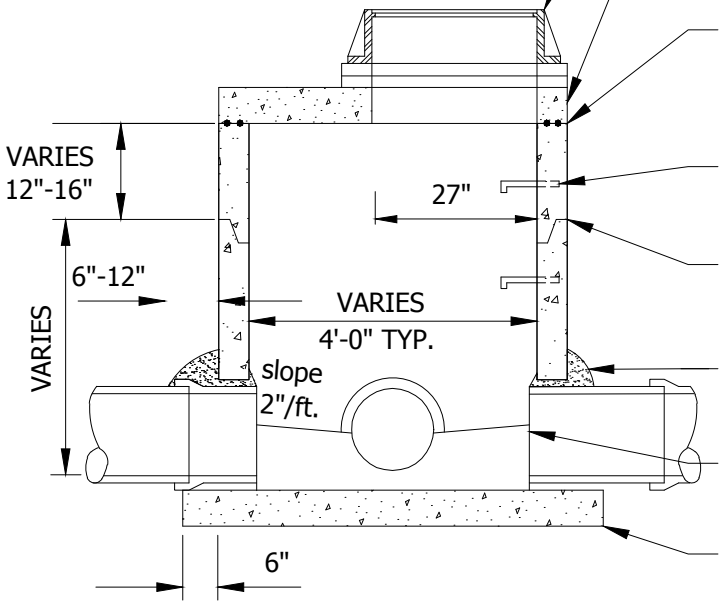
PLAN

CASTING AND ADJUSTMENT RINGS AS SPECIFIED.

PRECAST REINFORCED CONCRETE MANHOLE AND SLAB SHALL CONFORM TO ASTM C478 AND C497

NO BLOCK STRUCTURES OR PRECAST INVERTS ARE ALLOWED.

TOP OF BARREL SECTION BELOW TOP SLAB TO HAVE FLAT TOP EDGE SEALED WITH 2 BEADS OF RAMNEK OR EQUAL.



MANHOLE STEPS, NEENAH R1981J OR EQUAL, 16" ON CENTER.

ALL JOINTS IN MANHOLE SHALL CONFORM TO ASTM 443

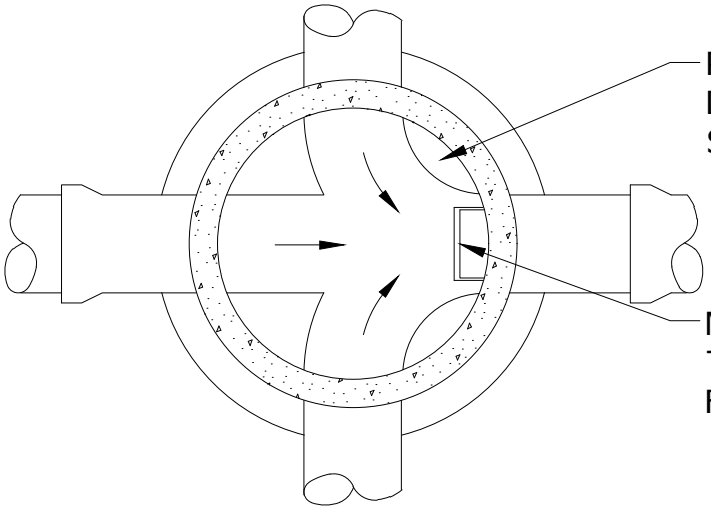
DOGHOUSES MUST BE GROUTED BOTH INSIDE AND OUTSIDE.

PIPE SHALL BE CUT 2" INSIDE OF FACE OF WALL AT MID-POINT OF PIPE.

BASE SLAB SHALL CONFORM TO ASTM C478 AND C497

SECTION

CHISAGO CITY Gateway to the Lakes	STANDARD DETAILS STORM SEWER JUNCTION MANHOLE W/ REINFORCED TOP SLAB	Revised 1/2019	Standard Plate No. STO-1

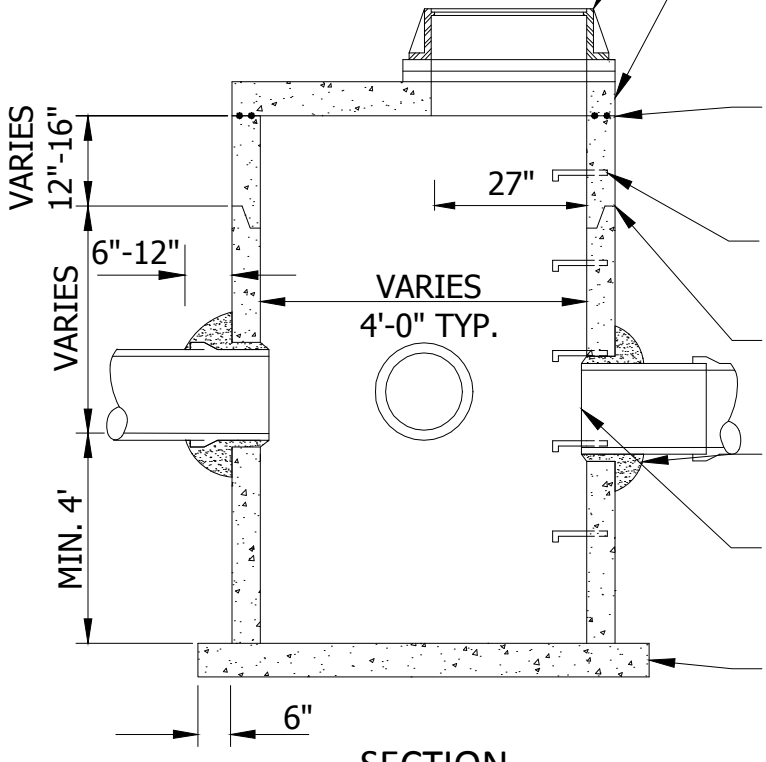


PRECAST INVERT SHOULD BE 1/2 DIAMETER OF PIPE AND BENCHES SLOPED 2" TOWARD INVERT.

MANHOLE STEPS SHALL BE PLACED SO THAT OFFSET HOLE IN TOP SLAB IS FACING DOWNSTREAM.

PLAN

NO BLOCK STRUCTURES OR PRECAST INVERTS ARE ALLOWED.



CASTING AND ADJUSTMENT RINGS AS SPECIFIED.

PRECAST REINFORCED CONCRETE MANHOLE AND SLAB SHALL CONFORM TO ASTM C478 AND C497

TOP OF BARREL SECTION BELOW TOP SLAB TO HAVE FLAT TOP EDGE SEALED WITH 2 BEADS OF RAMNEK OR EQUAL.

MANHOLE STEPS, NEENAH R1981J OR EQUAL, 16" ON CENTER.

ALL JOINTS IN MANHOLE SHALL CONFORM TO ASTM 443

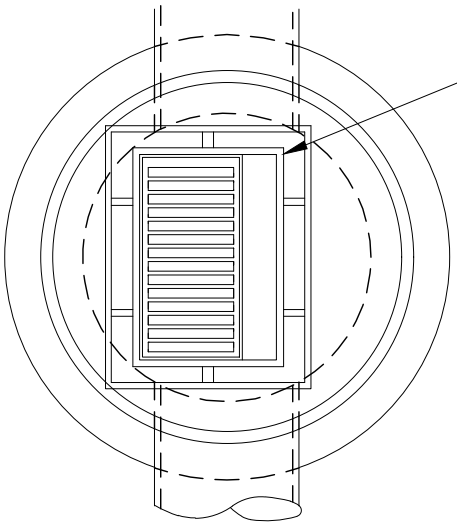
DOGHOUSES MUST BE GROUTED BOTH INSIDE AND OUTSIDE.

PIPE SHALL BE CUT 2" INSIDE OF FACE OF WALL AT MID-POINT OF PIPE.

BASE SLAB SHALL CONFORM TO ASTM C478 AND C497

SECTION

CHISAGO CITY Gateway to the Lakes	STANDARD DETAILS STORM SEWER JUNCTION MANHOLE W/ REINFORCED TOP SLAB AND SUMP	Revised 1/2019	Standard Plate No. STO-2



PLAN

24"X36" SLAB OPENING FOR NEENAH R3067V OR ESS. BROS. 330 HIGH CAPACITY OR EQUAL. INSTALL R3501-TB FOR DRIVEWAYS AND R3290-A FOR VALLEY GUTTERS. (VANE GRATE SHOWN)

DIMENSION FROM BACK OF CURB TO CENTER OF PIPE.
4' DIA. MH - 9" IN FROM BACK OF CURB
5' DIA. MH - 3" IN FROM BACK OF CURB
6' DIA. MH - 3" BEHIND BACK OF CURB
7' DIA. MH - 9" BEHIND BACK OF CURB
8' DIA. MH - 15" BEHIND BACK OF CURB

CASTING AND ADJUSTMENT RINGS AS SPECIFIED.

PRECAST REINFORCED CONCRETE MANHOLE AND SLAB SHALL CONFORM TO ASTM C478 AND C497

TOP OF BARREL SECTION BELOW TOP SLAB TO HAVE FLAT TOP EDGE SEALED WITH 2 BEADS OF RAMNEK OR EQUAL.

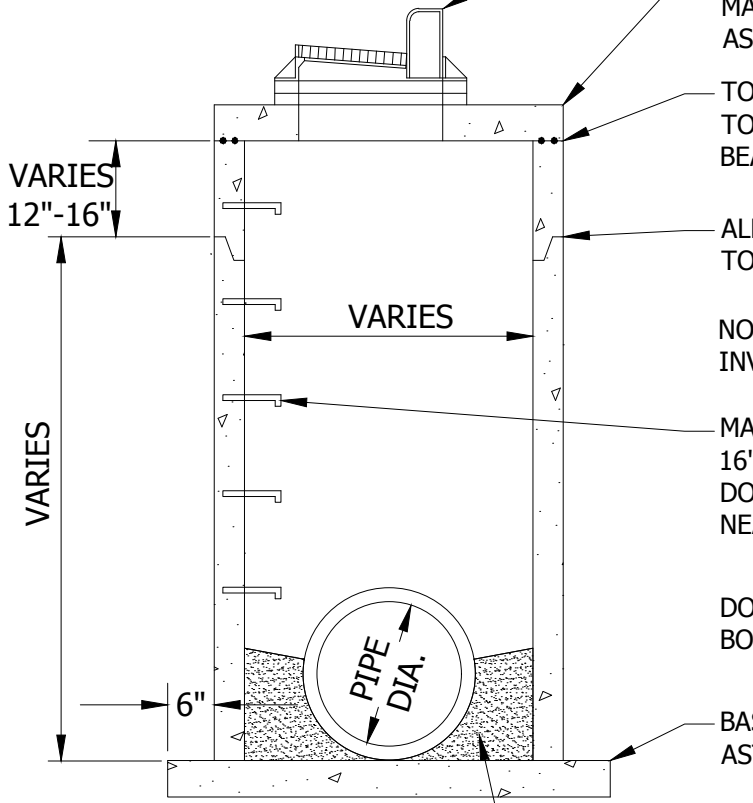
ALL JOINTS IN MANHOLE CONFORM TO ASTM 443.

NO BLOCK STRUCTURES OR PRECAST INVERTS ARE ALLOWED.

MANHOLE STEPS, NEENAH R1981J OR EQUAL, 16" ON CENTER. PLACED BELOW THE DOWNSTREAM CORNER OF THE OPENING NEAREST THE STREET.

DOGHOUSES MUST BE GROUTED BOTH INSIDE AND OUTSIDE.

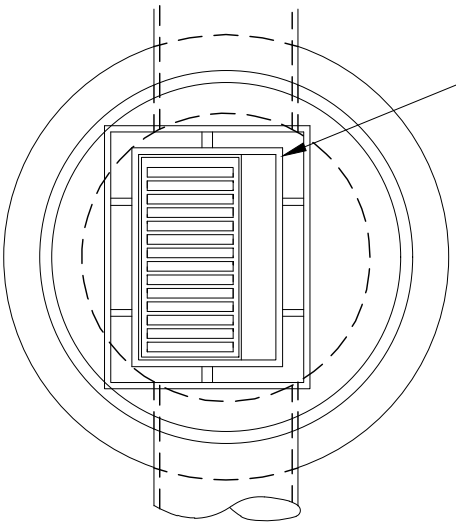
BASE SLAB SHALL CONFORM TO ASTM C478 AND C497



SECTION

GROUT BOTTOM

CHISAGO CITY Gateway to the Lakes	STANDARD DETAILS TYPE II CATCH BASIN MANHOLE	Revised 1/2019	Standard Plate No. STO-3

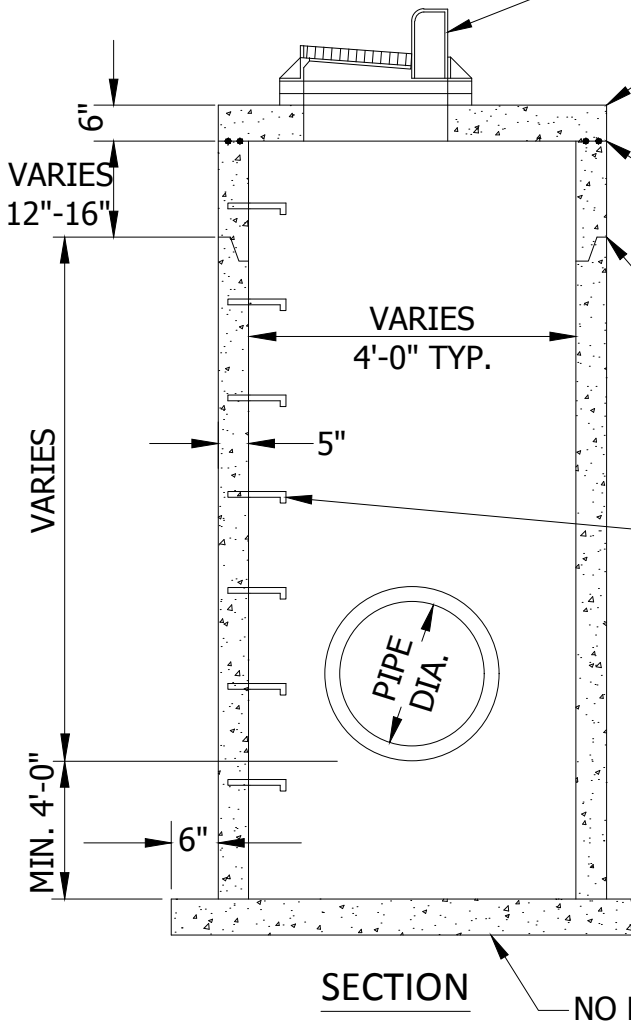


PLAN

24"X36" SLAB OPENING FOR CASTING AS SPECIFIED.

DIMENSION FROM BACK OF CURB TO CENTER OF PIPE.
4' DIA. MH - 9" IN FROM BACK OF CURB
5' DIA. MH - 3" IN FROM BACK OF CURB
6' DIA. MH - 3" BEHIND BACK OF CURB
7' DIA. MH - 9" BEHIND BACK OF CURB
8' DIA. MH - 15" BEHIND BACK OF CURB

CASTING AND ADJUSTMENT RINGS AS SPECIFIED.



PRECAST REINFORCED CONCRETE MANHOLE AND SLAB SHALL CONFORM TO ASTM C478 AND C497

TOP OF BARREL SECTION BELOW TOP SLAB TO HAVE FLAT TOP EDGE SEALED WITH 2 BEADS OF RAMNEK OR EQUAL.

ALL JOINTS IN MANHOLE SHALL CONFORM TO ASTM 443.

NO BLOCK STRUCTURES OR PRECAST INVERTS ARE ALLOWED.

MANHOLE STEPS, NEENAH R1981J OR EQUAL, 16" ON CENTER.

DOGHOUSES MUST BE GROUTED BOTH INSIDE AND OUTSIDE.

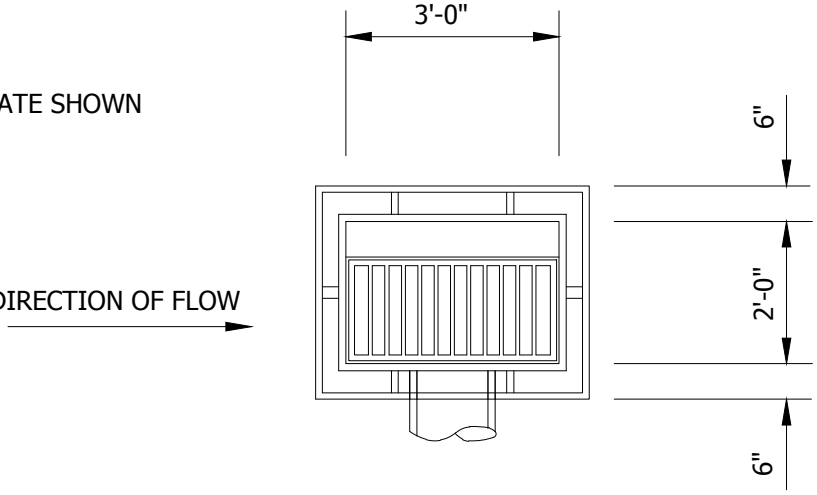
BASE SLAB SHALL CONFORM TO ASTM C478 AND C497

SECTION

NO DRAIN HOLES

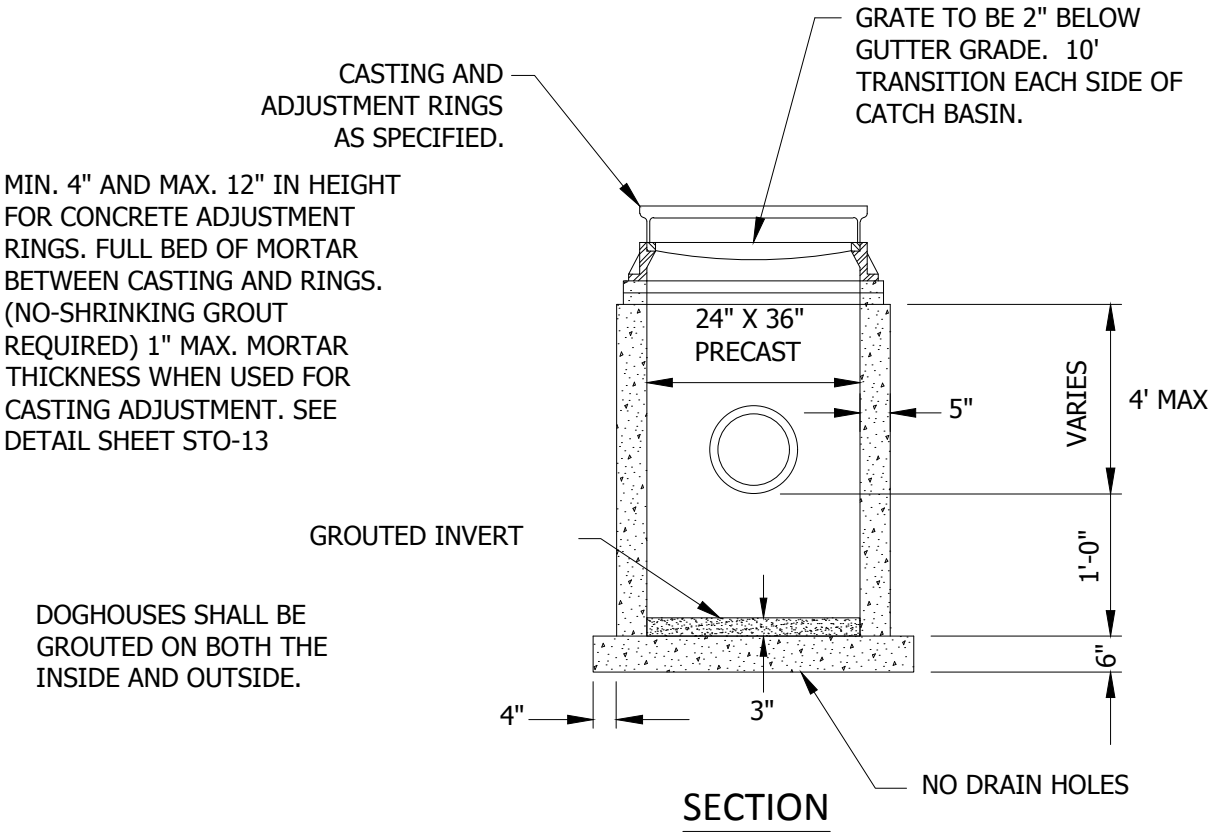
CHISAGO CITY Gateway to the Lakes	STANDARD DETAILS CATCH BASIN MANHOLE WITH SUMP	Revised 1/2019	Standard Plate No. STO-4

NOTE:
VANE GRATE SHOWN



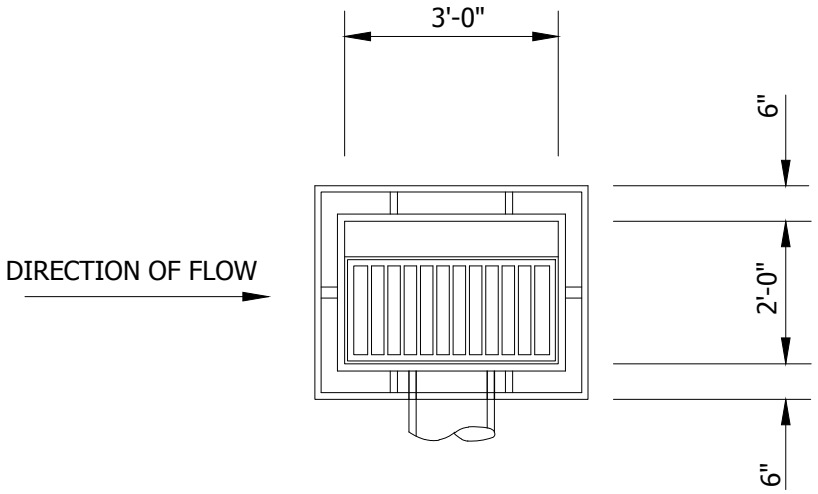
PLAN

NO BLOCK STRUCTURES ARE ALLOWED.

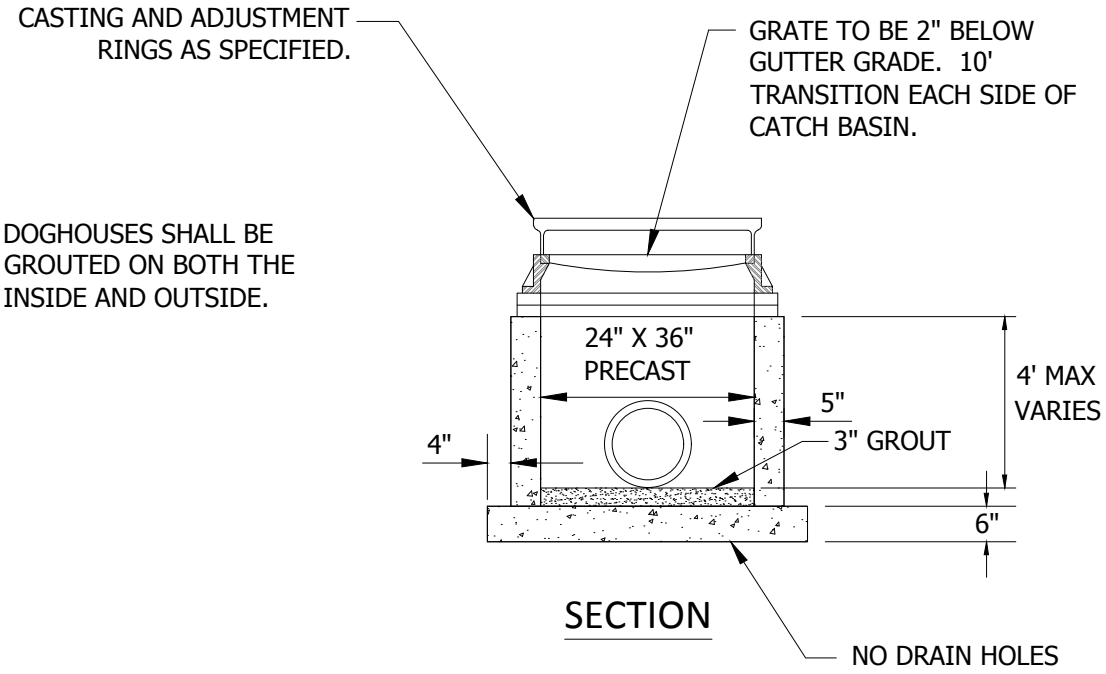


SECTION

CHISAGO CITY Gateway to the Lakes	STANDARD DETAILS CATCH BASIN WITH SUMP	Revised 1/2019	Standard Plate No. STO-5



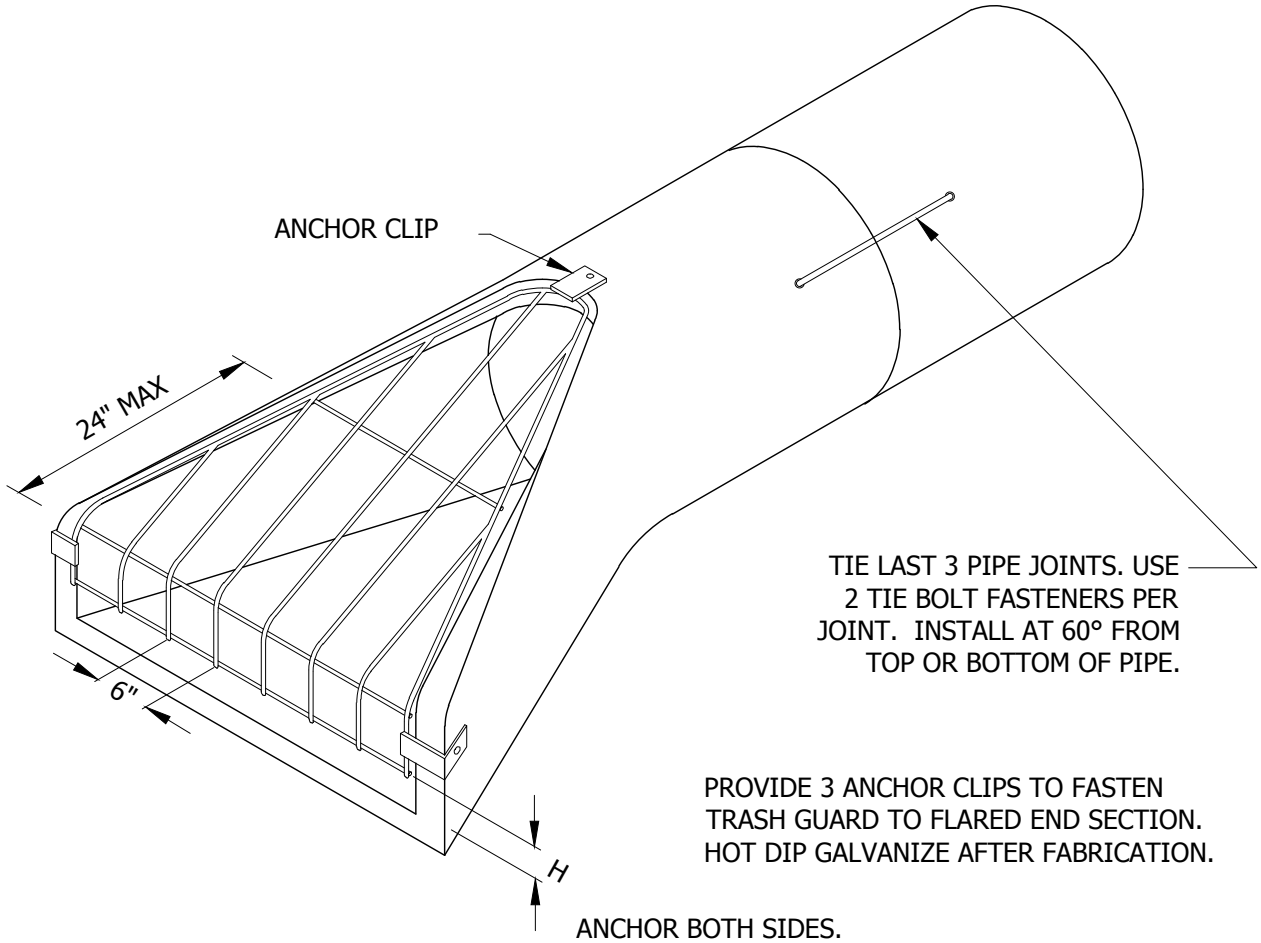
PLAN



SECTION

CHISAGO CITY Gateway to the Lakes	STANDARD DETAILS 2'x3' CATCH BASIN WITHOUT SUMP	Revised 1/2019	Standard Plate No. STO-6

SEE CITY PLATE NO. STO-8 FOR RIPRAP PLACEMENT.



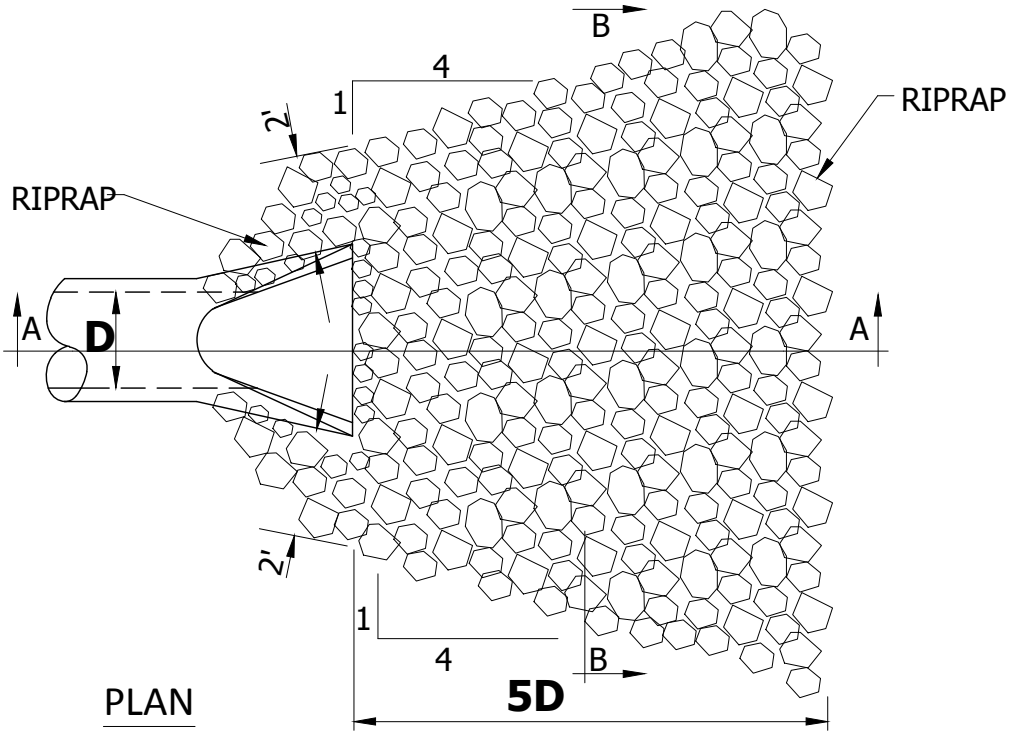
ISOMETRIC

*TRASH GUARD SIZING

PIPE SIZE	BARS	`H'	BOLTS
24"- 42"	1"ϕ	6"	3/4"
48"-72"	1 1/4"ϕ	12"	1"

*PROVIDE TRASH GUARDS ON FLARED ENDS 24" AND GREATER

CHISAGO CITY Gateway to the Lakes	STANDARD DETAILS FLARED END SECTION	Revised 1/2019	Standard Plate No. STO-7

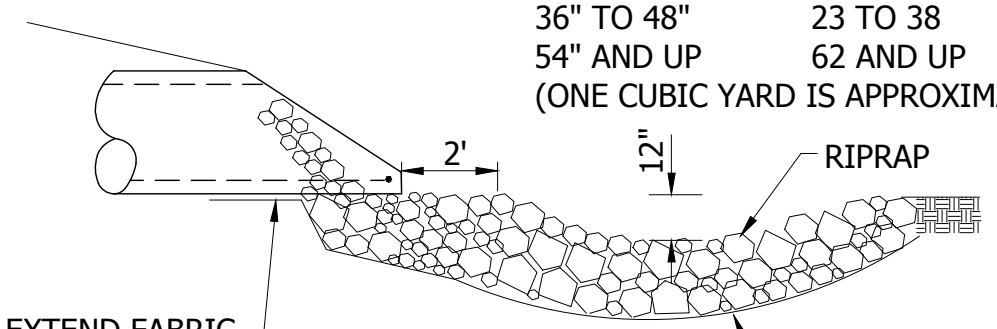


PLAN

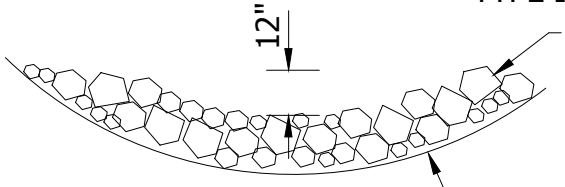
RIPRAP REQUIREMENTS

D	CY	CLASS
12" TO 24"	8 TO 12	CL.3
27" TO 33"	14 TO 20	CL.3
36" TO 48"	23 TO 38	CL.3
54" AND UP	62 AND UP	CL.4

(ONE CUBIC YARD IS APPROXIMATELY 2,800 LBS.)

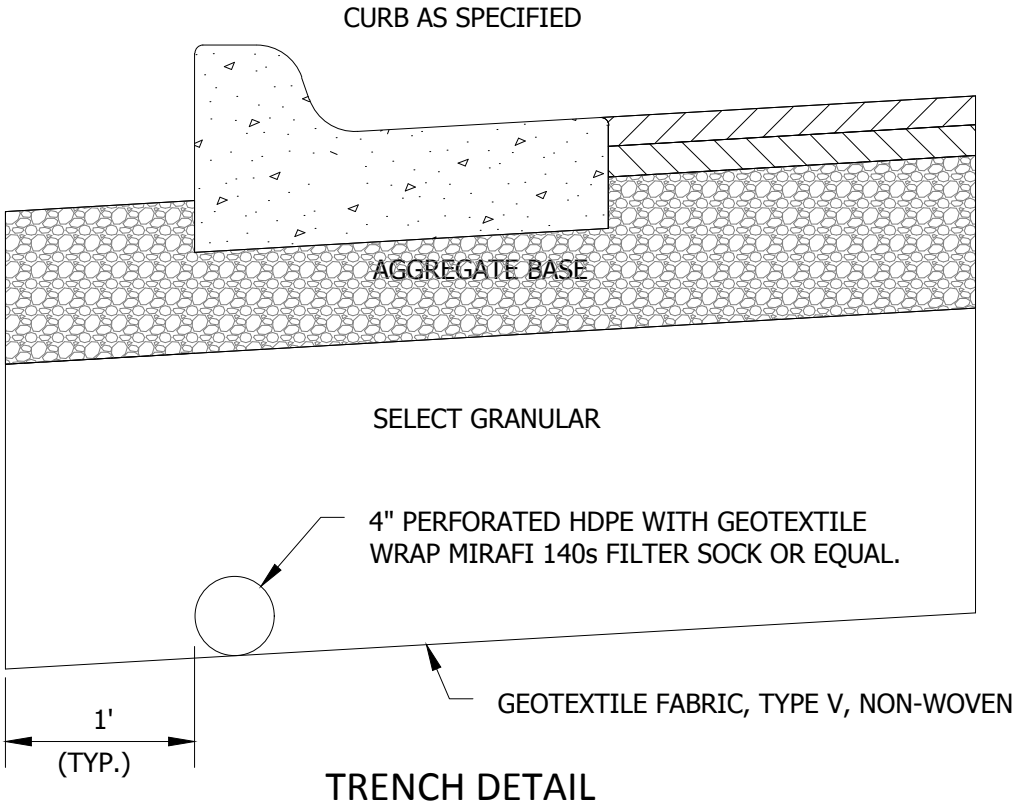


SECTION A-A

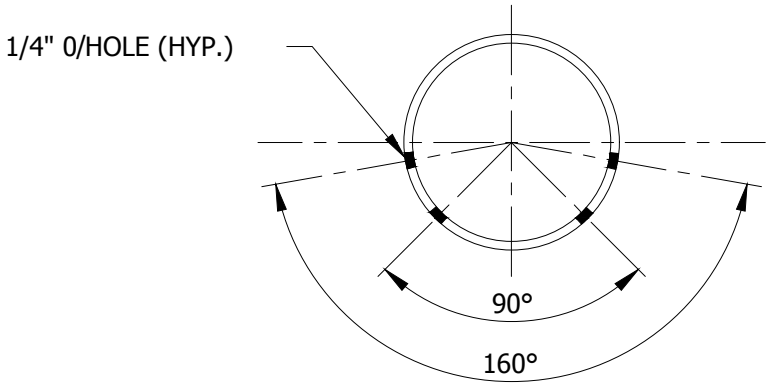


SECTION B-B

CHISAGO CITY Gateway to the Lakes	STANDARD DETAILS RIP RAP AT OUTLETS	Revised 1/2019	Standard Plate No. STO-8



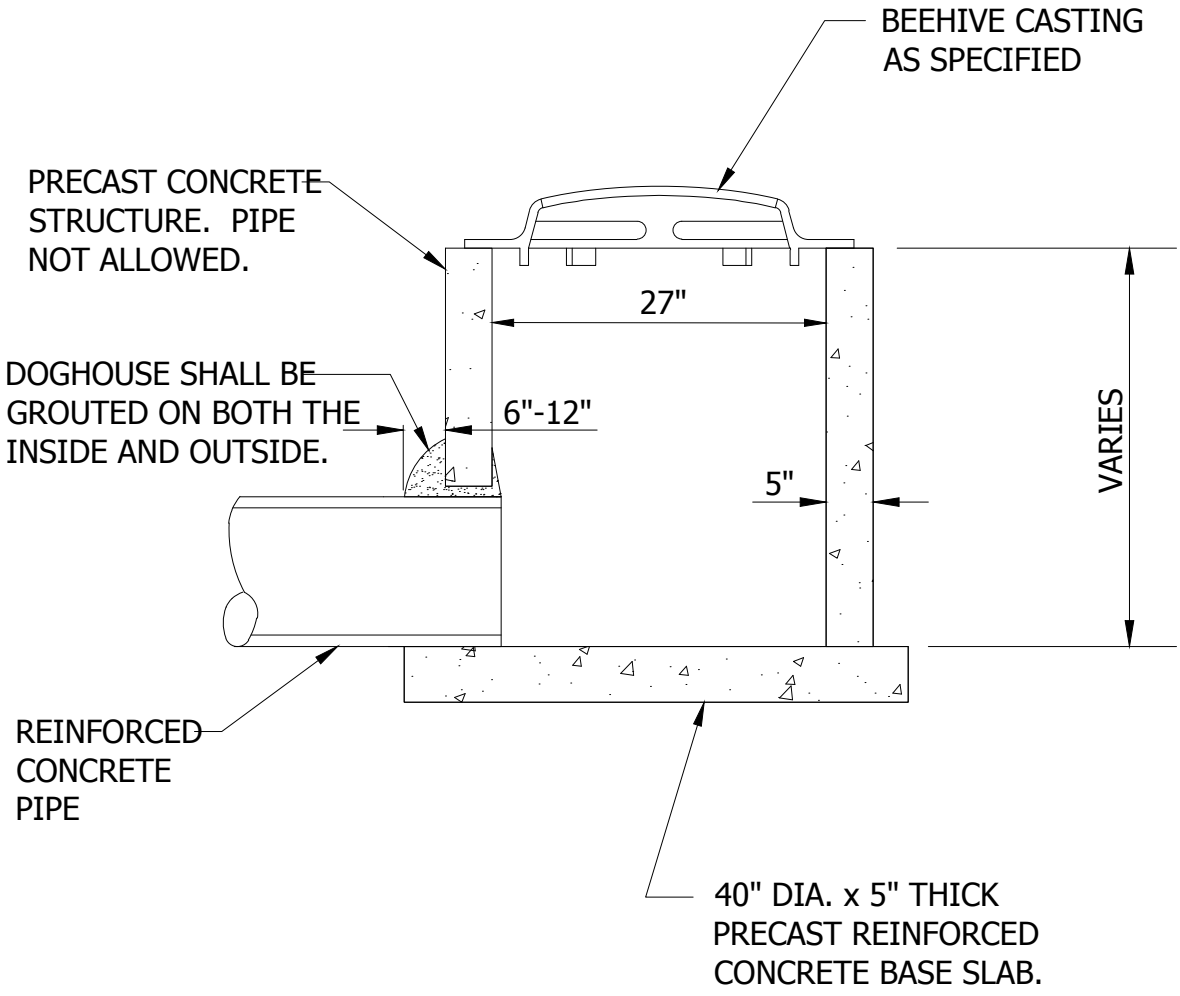
TRENCH DETAIL



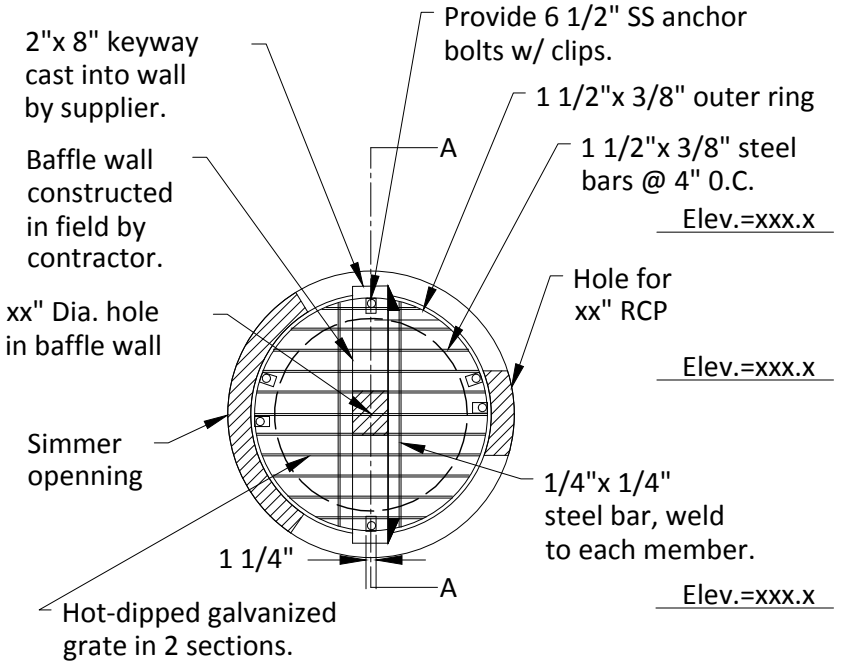
4" PERFORATED HDPE WITH GEOTEXTILE
WRAP MIRAFI 140s FILTER SOCK OR EQUAL.

PIPE DETAIL

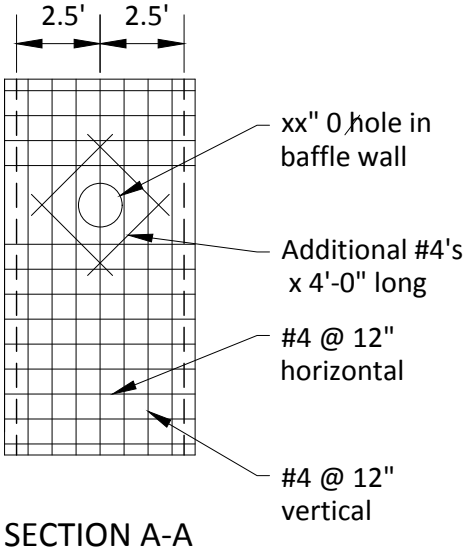
CHISAGO CITY Gateway to the Lakes	STANDARD DETAILS 4" HDPE PERFORATED DRAINTILE WITH FILTER ROCK	Revised 1/2019	Standard Plate No. STO-9



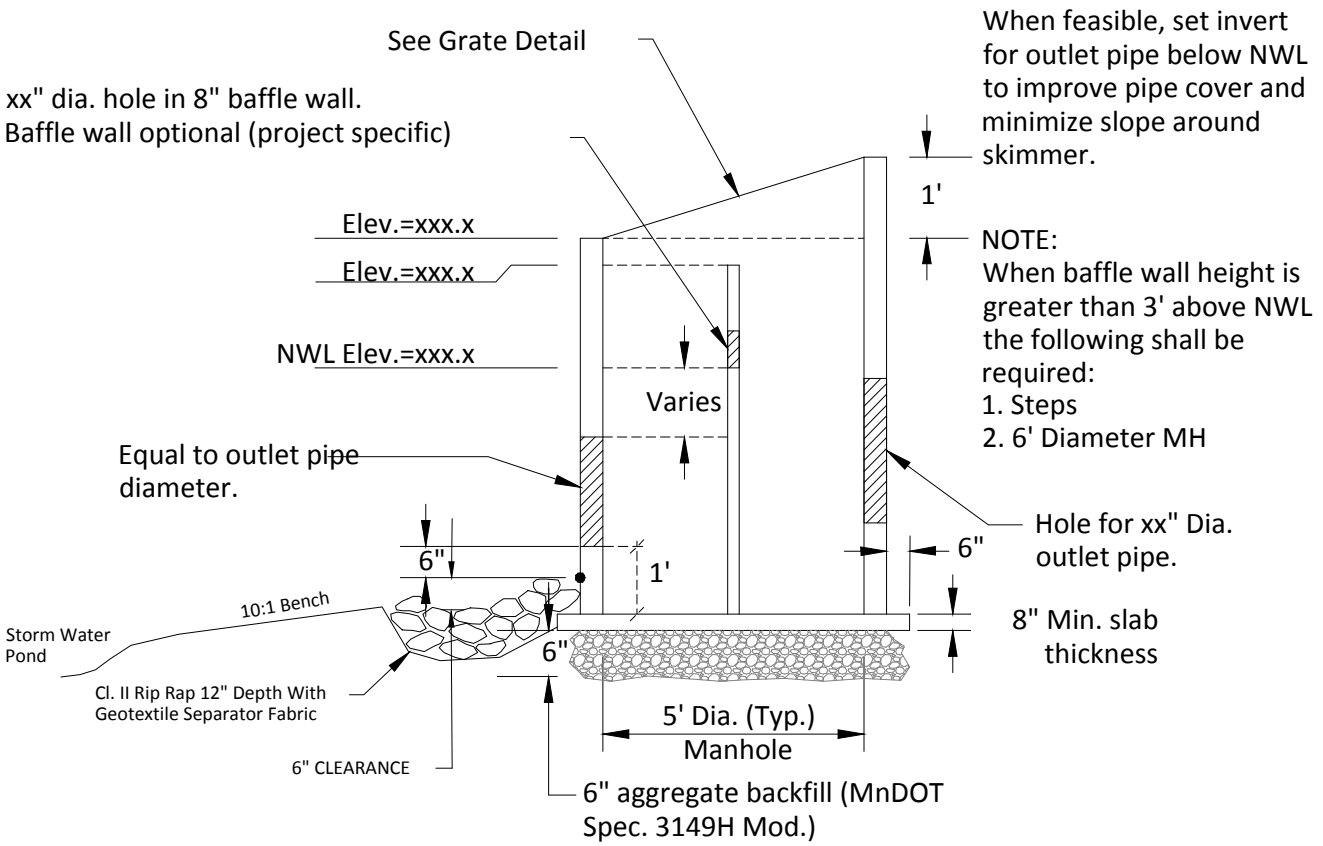
CHISAGO CITY Gateway to the Lakes	STANDARD DETAILS PRECAST 27" SHALLOW DEPTH BEEHIVE	Revised 1/2019	Standard Plate No. STO-10



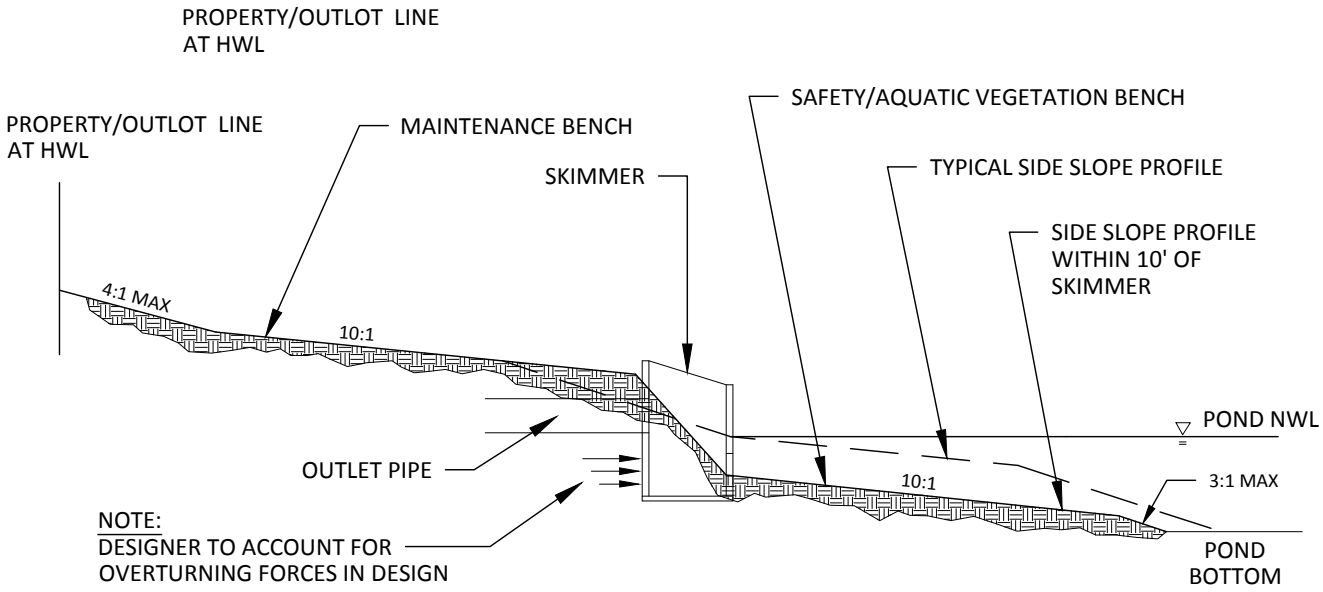
SKIMMER GRATE



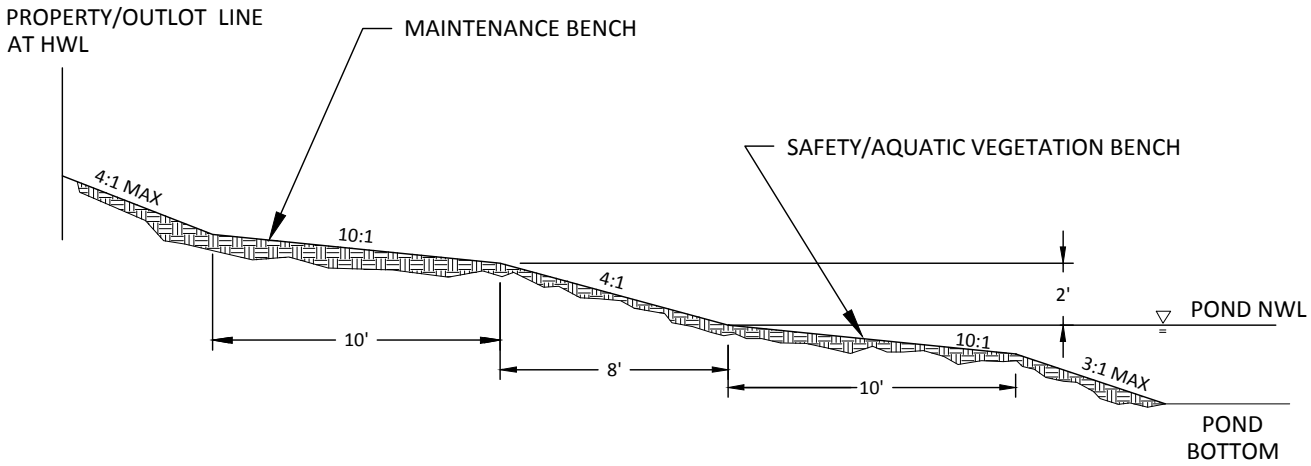
SECTION A-A
CONCRETE BAFFLE WALL



CHISAGO CITY Gateway to the Lakes	STANDARD DETAILS POND OUTLET SKIMMER STRUCTURE	Revised 1/2019	Standard Plate No. STO-11

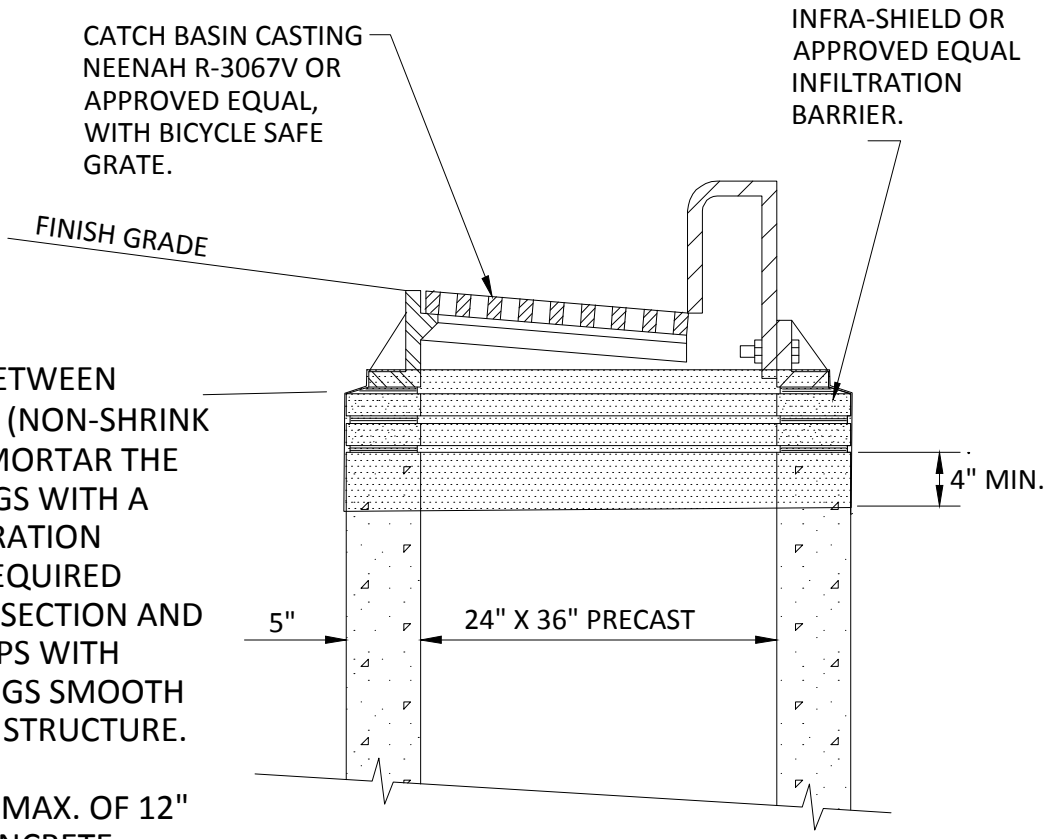


TYPICAL BENCH DETAIL
WITHIN 10' OF SKIMMER OUTLET



TYPICAL BENCH DETAIL

CHISAGO CITY Gateway to the Lakes	STANDARD DETAILS TYPICAL BENCH DETAIL	Revised 1/2019	Standard Plate No. STO-12



FULL MORTAR BED BETWEEN CASTING AND RINGS. (NON-SHRINK GROUT REQ.) THEN MORTAR THE OUTSIDE OF THE RINGS WITH A INFRA-SHIELD INFILTRATION BARRIER. MORTAR REQUIRED BETWEEN MANHOLE SECTION AND 1ST RING - FILL IN GAPS WITH MORTAR. GROUT RINGS SMOOTH ON THE INTERIOR OF STRUCTURE.

MIN. 4" HEIGHT AND MAX. OF 12" IN HEIGHT FOR 2" CONCRETE ADJUSTMENT RINGS.
1" MAX. MORTAR THICKNESS WHEN USED FOR CASTING ADJUSTMENT.

NOTES:

1. THE CATCH BASIN CASTING SHALL LINE UP WITH THE CONCRETE STRUCTURE SO IT CAN BE PROPERLY MAINTAINED.
2. NO SHIMS TO BE USED OTHER THAT MORTAR OR BRICK WHEN ADJUSTING RINGS OR CASTINGS.
3. PLACE NO. 4 REBAR (TO EXTEND 10' BEYOND EACH SIDE OF THE CASTING) EMBEDDED IN CONCRETE COLLAR AND CURB.

	STANDARD DETAILS CATCH BASIN ADJUSTMENT CONCRETE ENCASEMENT	Revised 1/2019	Standard Plate No. STO-13