

NOTES:

1. CLAY WALL EXTENDS A MINIMUM OF 1'-0" INTO UNDISTURBED SOIL ON EACH SIDE AND ON BOTTOM OF TRENCH.
2. CLAY MATERIAL TO BE CLASSIFIED AS SC, CL OR ML-CL.
3. 3000 PSI CONCRETE MAY BE USED INSTEAD OF CLAY MATERIAL, IF APPROVED BY BOXELDER SANITATION DISTRICT ENGINEER.

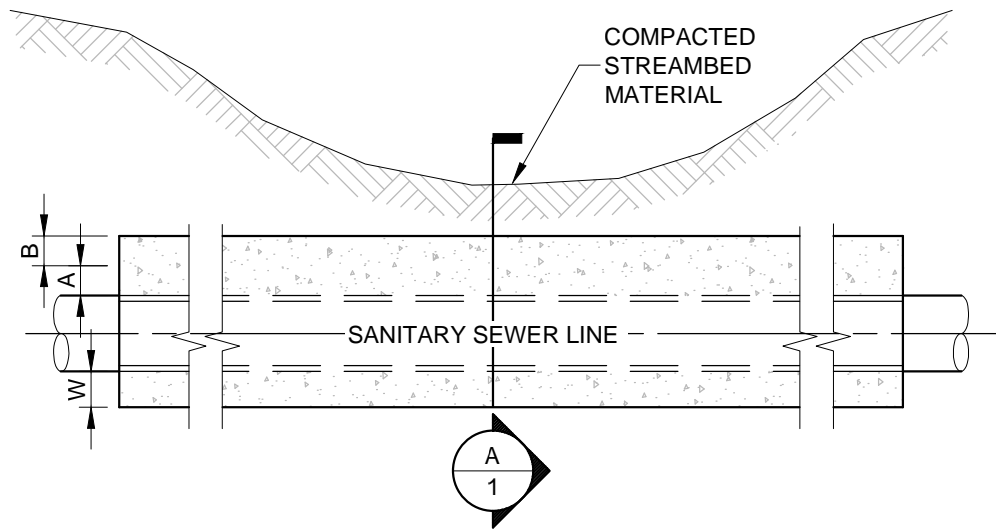
FILE NAME: P:\2014\01\AMUN0026\10 - Boxelder - On Call Consulting\Drawings\Details\CLAY CUT-OFF WALL DETAIL.dwg

PREPARED BY: RRL
APPROVED BY: BZ
ORIGINATION DATE: 10/24/2014
REVISION DATE:

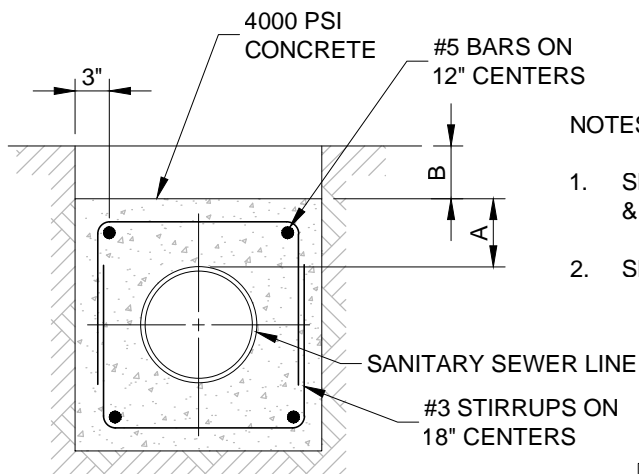
CLAY CUT-OFF WALL DETAIL



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SECTION VIEW



SECTION

NOTES:

1. SEE PLAN & PROFILE FOR CASING LENGTH & DEPTH.
2. SEE DRAWING FOR DIA. AND SLOPE.

PIPE SIZE	W	A	B
8"	4"	4"	4"
10"	4"	4"	4"
12"	4"	4"	4"

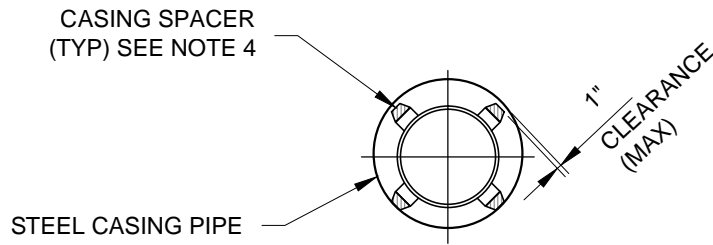
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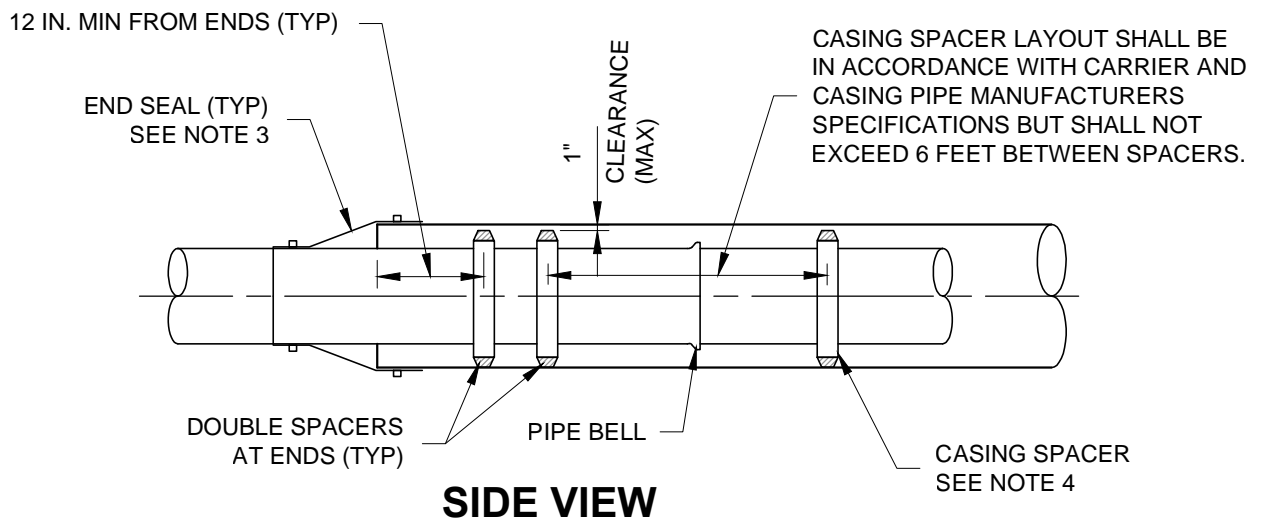
**CONCRETE ENCASEMENT
 DETAIL**



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SECTION VIEW



SIDE VIEW

NOTES:

1. MINIMUM YIELD STRENGTH OF CASING PIPE = 35000 PSI
2. BORED OR JACKED INSTALLATIONS SHALL HAVE A BORED HOLE DIAMETER ESSENTIALLY THE SAME AS THE OUTSIDE DIAMETER OF THE CASING PIPE. IF VOIDS SHOULD DEVELOP OR IF THE BORED HOLE DIAMETER IS GREATER THAN THE OUTSIDE DIAMETER OF THE PIPE BY MORE THAN 1 IN. REMEDIAL MEASURES AS APPROVED BY THE OWNER SHALL BE TAKEN.
3. CASING END SEALS TO BE MINIMUM 1/8 IN. THICK NEOPRENE RUBBER WITH 1/2 IN. WIDE 304 STAINLESS STEEL BANDING (TYP).
4. SPACERS TO BE OF COATED STEEL DESIGNED TO SUPPORT CARRIER PIPE. RUNNERS TO BE A MINIMUM OF 2 IN. WIDE BY 11 IN. LONG AND CONSTRUCTED OF GLASS REINFORCED PLASTIC.

FILE NAME: P:\2014\01\AMUN0026\10 - Boxelder - On Call Consulting\Drawings\Crossing and Casing Detail.dwg

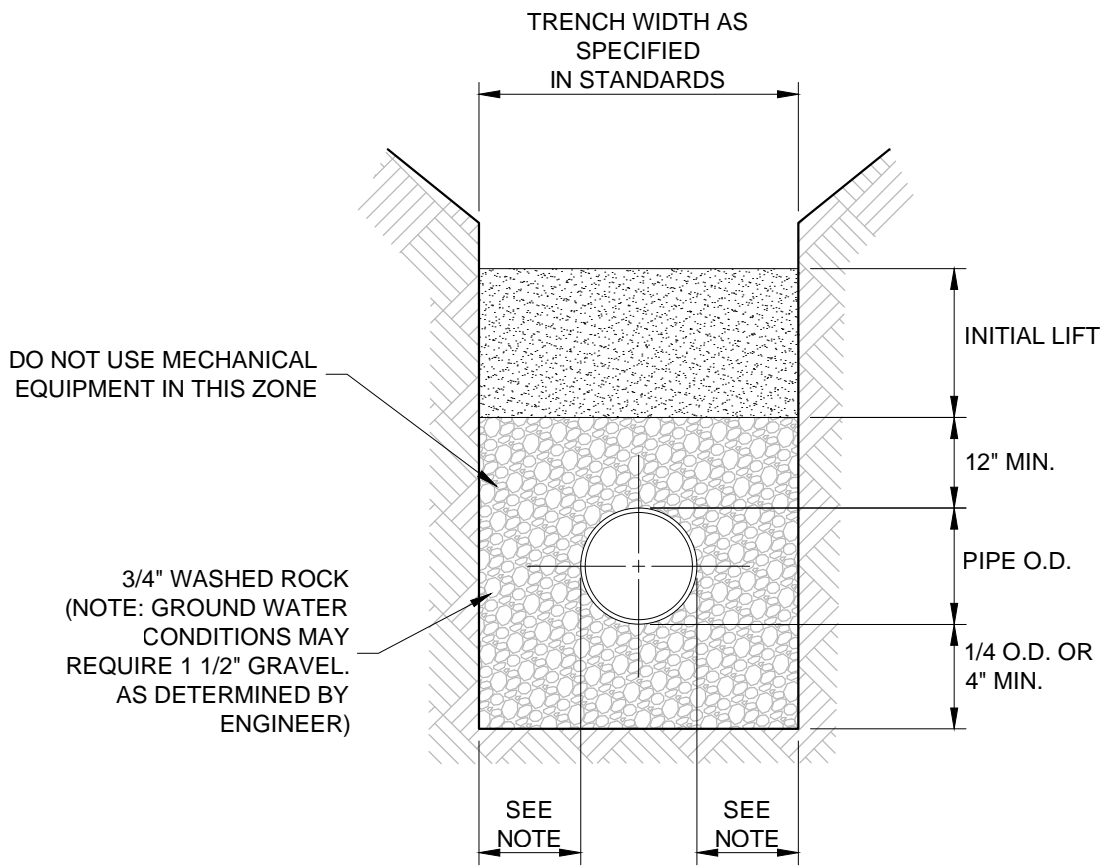
PREPARED BY: RRL
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CROSSING AND CASING DETAIL



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FILE NAME: P:\2014\01-HUN0026\10 - Boxelder - On Call Consulting\DWG\Details\trench bedding detail.dwg



NOTE:

MINIMUM CLEARANCE ON EACH SIDE OF PIPE AS FOLLOWS:

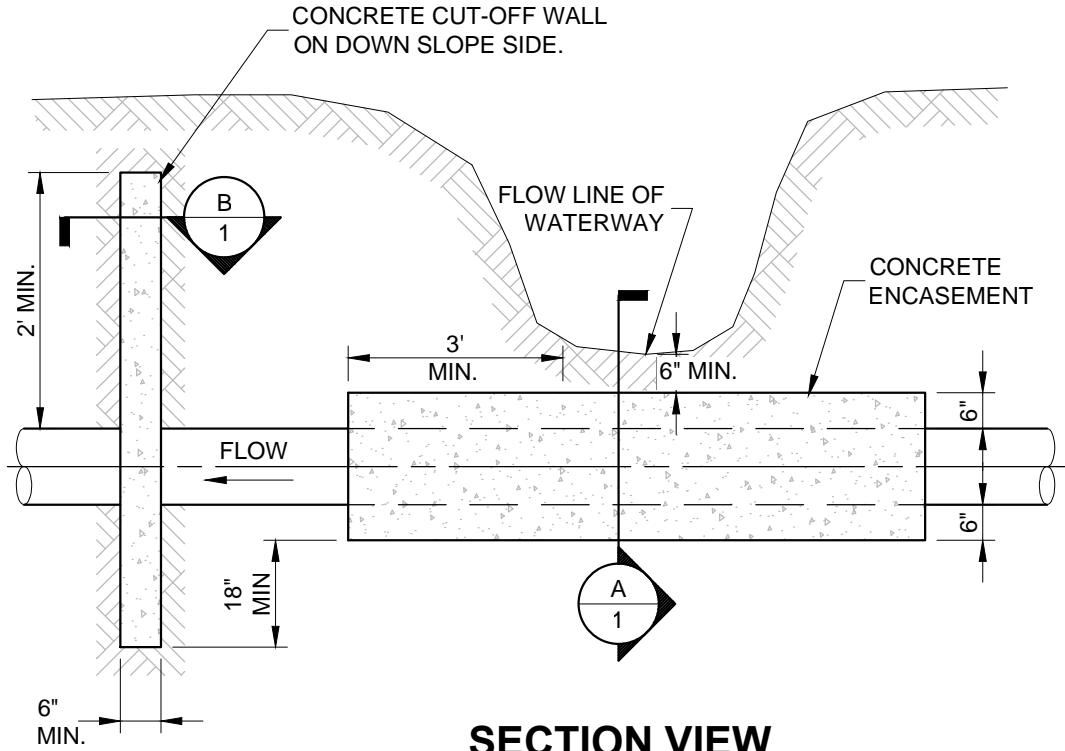
PIPE DIA.	CLEARANCE
8" TO 12"	6"
14" TO 30"	8"
LARGER THAN 30"	12"

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 APPROVED BY: BZ
 ORINATION DATE: 10/24/2014
 REVISION DATE:

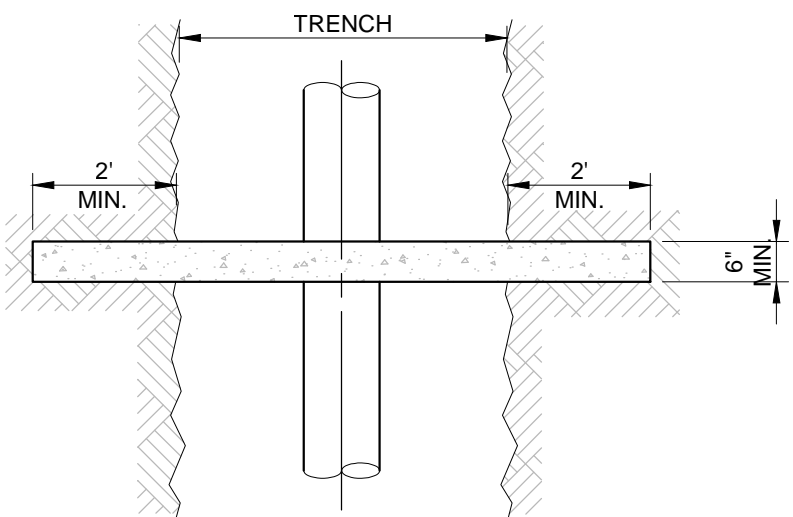
TRENCH BEDDING DETAIL



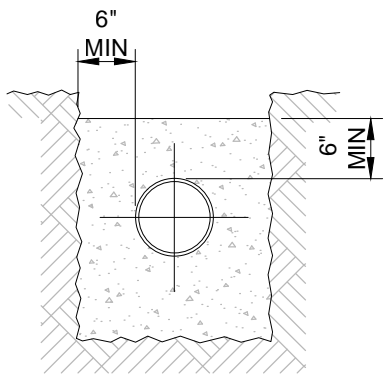
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SECTION VIEW



SECTION B



SECTION A

NOTE: THIS IS A CONCEPTUAL DRAWING ONLY. ALL CUT-OFF WALLS SHALL BE DESIGNED BY THE DESIGN ENGINEER FOR THE SPECIFIC INSTALLATION.

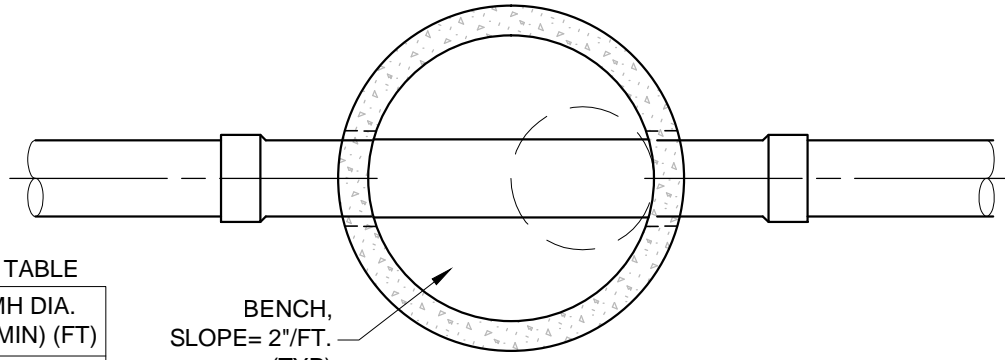
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PREPARED BY: RRL
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ORIGINATION DATE: 10/24/2014
REVISION DATE:

DITCH CROSSING DETAIL



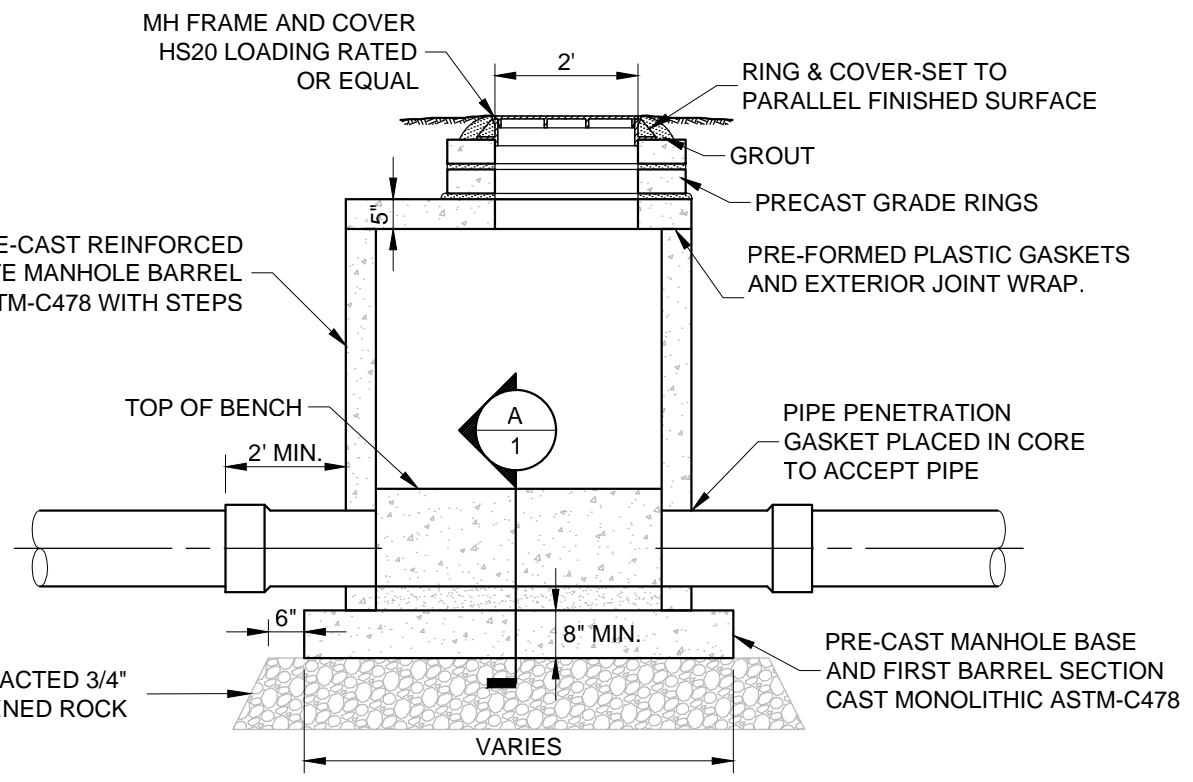
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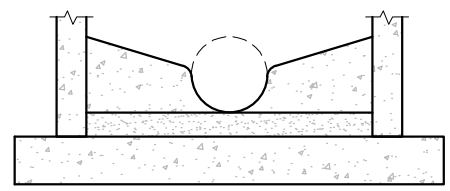
MANHOLE SIZE TABLE

PIPE SIZE (IN)	MH DIA. (MIN) (FT)
15 OR LESS	48
18 TO 30	60
OVER 30	72

PLAN



SECTION VIEW



SECTION A-1

GENERAL NOTES:

1. ALL CONCRETE WORK SHALL COMPLY WITH LATEST ACI-318 SPECIFICATIONS.
2. SLOPE THROUGH MANHOLE SHALL HAVE A MINIMUM OF 0.2FT DROP FROM ENTRANCE THROUGH EXIT.
3. JOINT SEALANT SHALL BE TWO (2) ROWS OF PRE-FORMED PLASTIC ROPES ON INNER AND OUTER RINGS AND ONE (1) EXTERNAL RUBBER SLEEVE.
4. HAND SHAPE FLOW CHANNEL AS NECESSARY AROUND PIPE TO PROVIDE DRAINAGE WITH NO STANDING WATER (SEE SECTION A).
5. FOR DEEP MANHOLES SEE SPECIFICATIONS.

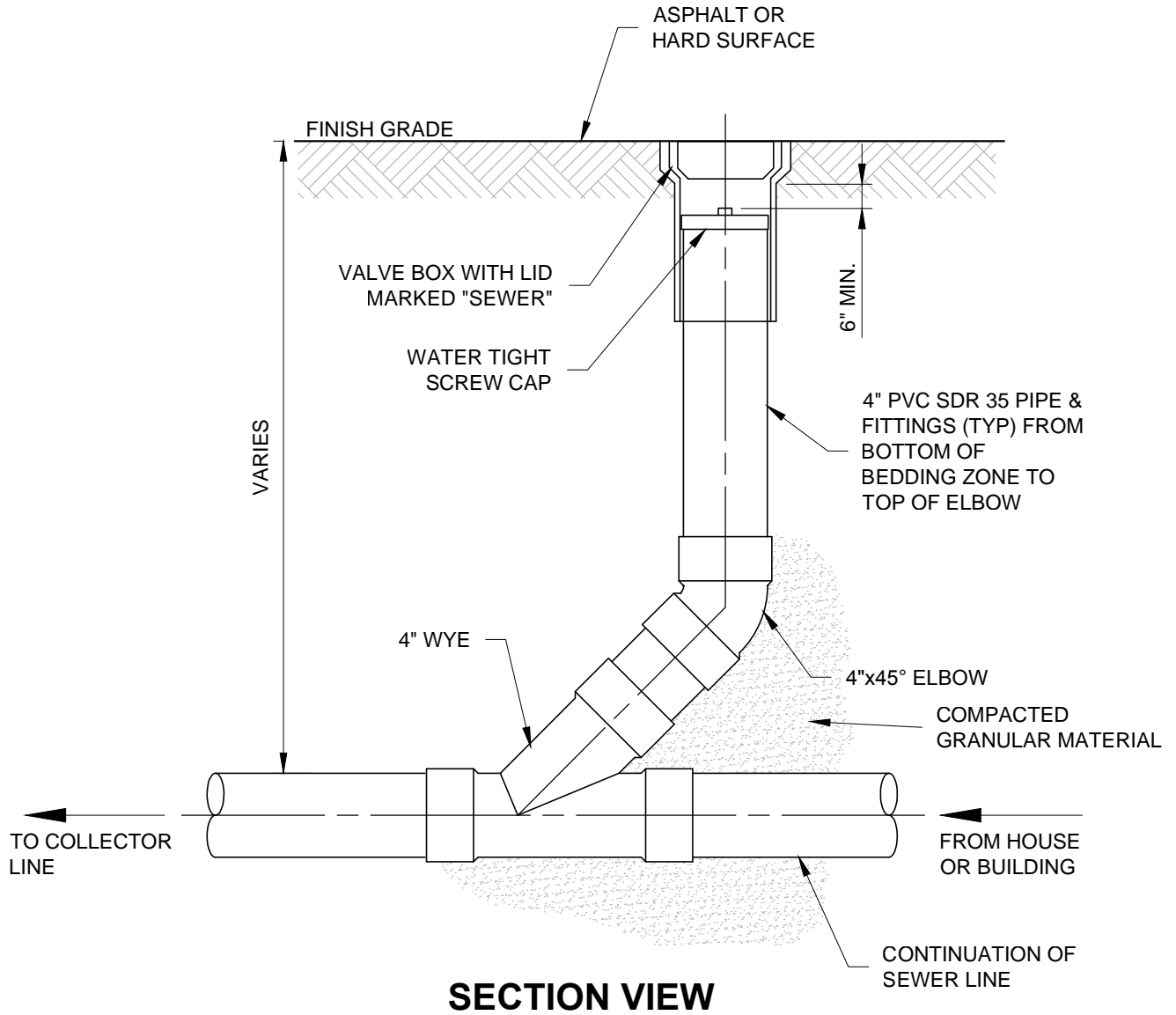
FILE NAME: P:\2014\01\HUN0026\10 - Boxelder - On Call Consulting\Drawings\Details\FLAT TOP MANHOLE.dwg

PREPARED BY:	RRL
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ORIGINATION DATE:	10/24/2014
REVISION DATE:	01/05/2017

FLAT TOP MANHOLE



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SECTION VIEW

SERVICE CLEAN-OUT REQUIREMENTS

1. SEWER SERVICE CLEAN-OUTS SHALL BE INSTALLED AS NEAR AS PRACTICAL TO CONNECTION WITH THE BUILDING, AND AT A MAXIMUM SPACING OF 100'. NO SINGLE BEND GREATER THAN 45° SHALL BE ALLOWED.
2. CLEAN-OUTS SHALL MEET ALL REQUIREMENTS OF THE UNIFORM PLUMBING CODE.

FILE NAME: P:\2014\014MUN0026\10 - Boxelder - On Call Consulting\Drawings\Details\SERVICE_CLEAN-OUT_DETAIL.dwg

PREPARED BY:	RRL
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ORIGINATION DATE:	10/24/2014
REVISION DATE:	

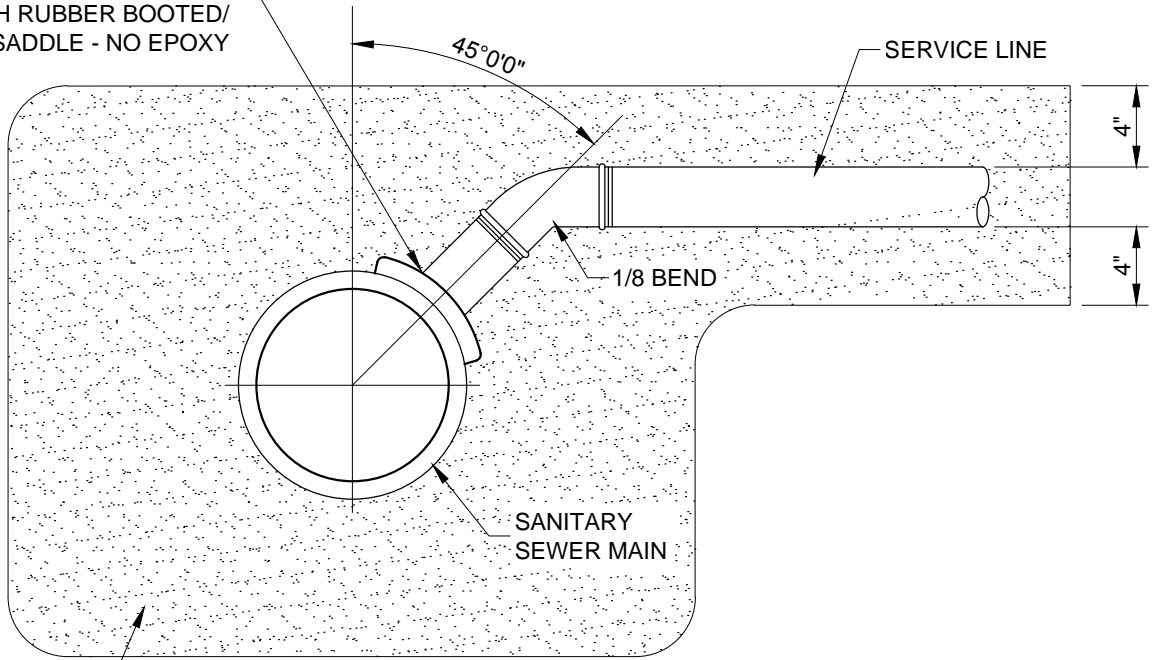
SERVICE CLEAN-OUT DETAIL



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FILE NAME: P:\2014\01\AMUN0026:10 - Boxelder - On Call Consulting\Drawings\Details\Service Connection Using A Tapping Saddle.dwg

DOUBLE BANDED STAINLESS
STEEL SADDLE BY PLASTIC
TRENDS WITH RUBBER BOOTED/
GASKETED SADDLE - NO EPOXY



SQUEEGEE BEDDING
(CDOT #8)

NOTES:

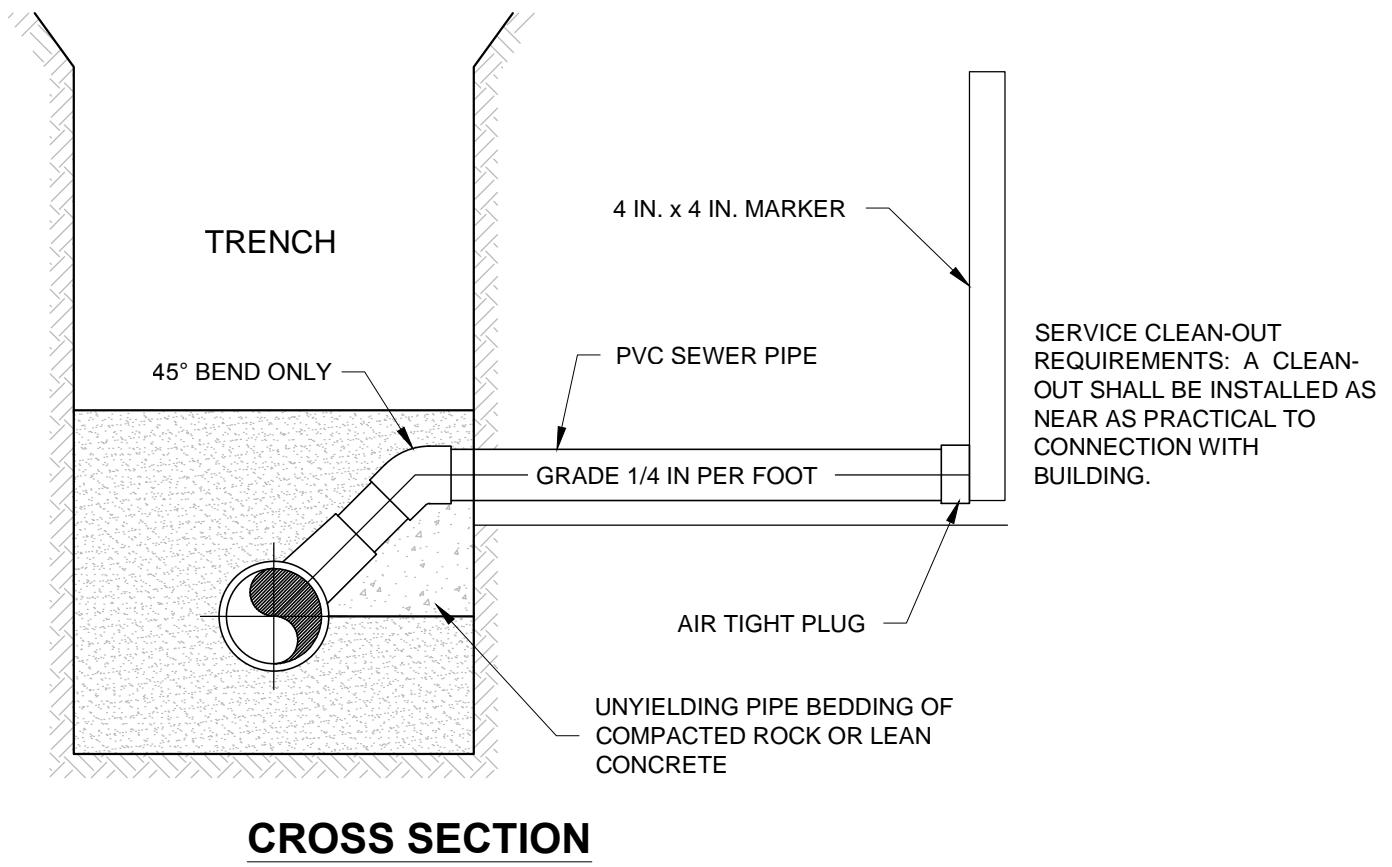
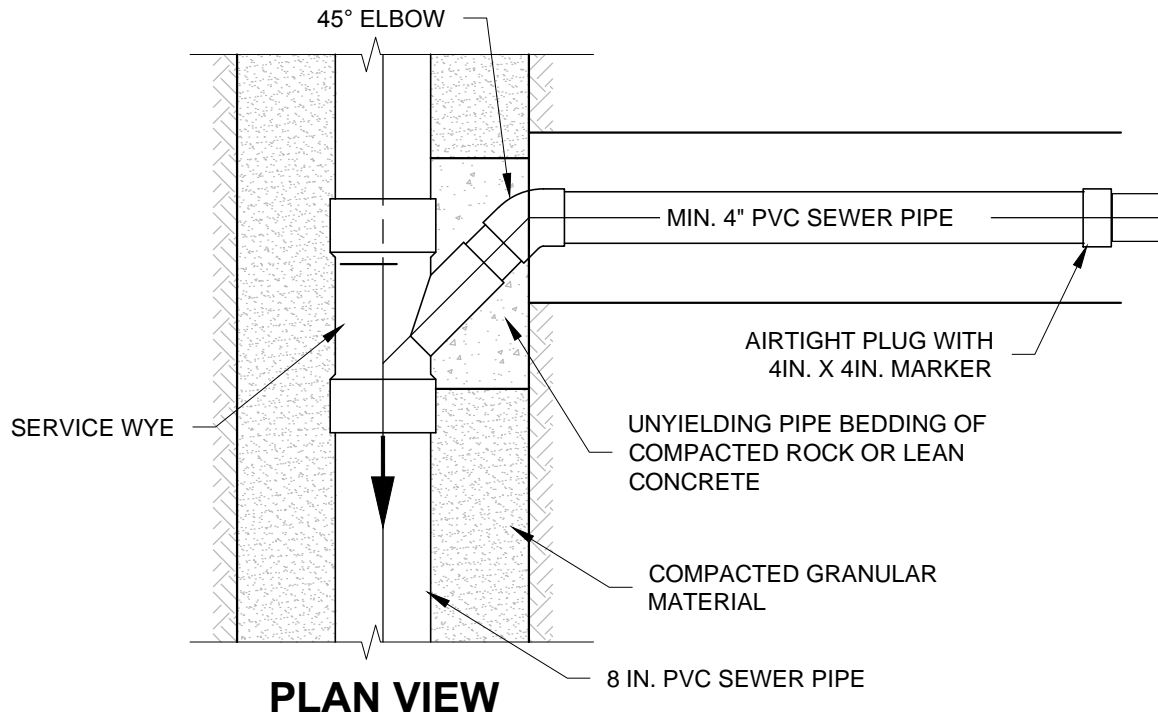
1. APPROVED TAPPING SADDLE TO BE USED FOR NEW SERVICES TO EXISTING MAINS SHALL BE TEES. PIPE PENETRATIONS SHALL BE MECHANICALLY DRILLED.
2. TAPHOLE MUST BE ABOVE THE SPRINGLINE.
3. 4" SEWER SERVICES SHALL HAVE A MINIMUM SLOPE OF 2.0%.
4. 6" SEWER SERVICES SHALL HAVE A MINIMUM SLOPE OF 1.0%.
5. SERVICES SHALL NOT BE CLOSER THAN 5 FEET FROM EACH OTHER ON THE MAIN.

PREPARED BY: RRL
APPROVED BY: BZ
ORIGINATION DATE: 10/24/2014
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SERVICE CONNECTION USING A TAPPING SADDLE



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NOTE: WYE CONNECTION NOT ALLOWED ON VCP.

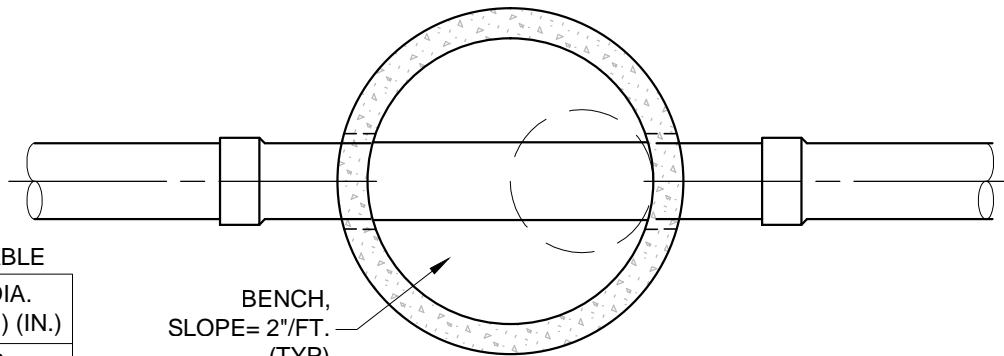
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SERVICE WYE DETAIL



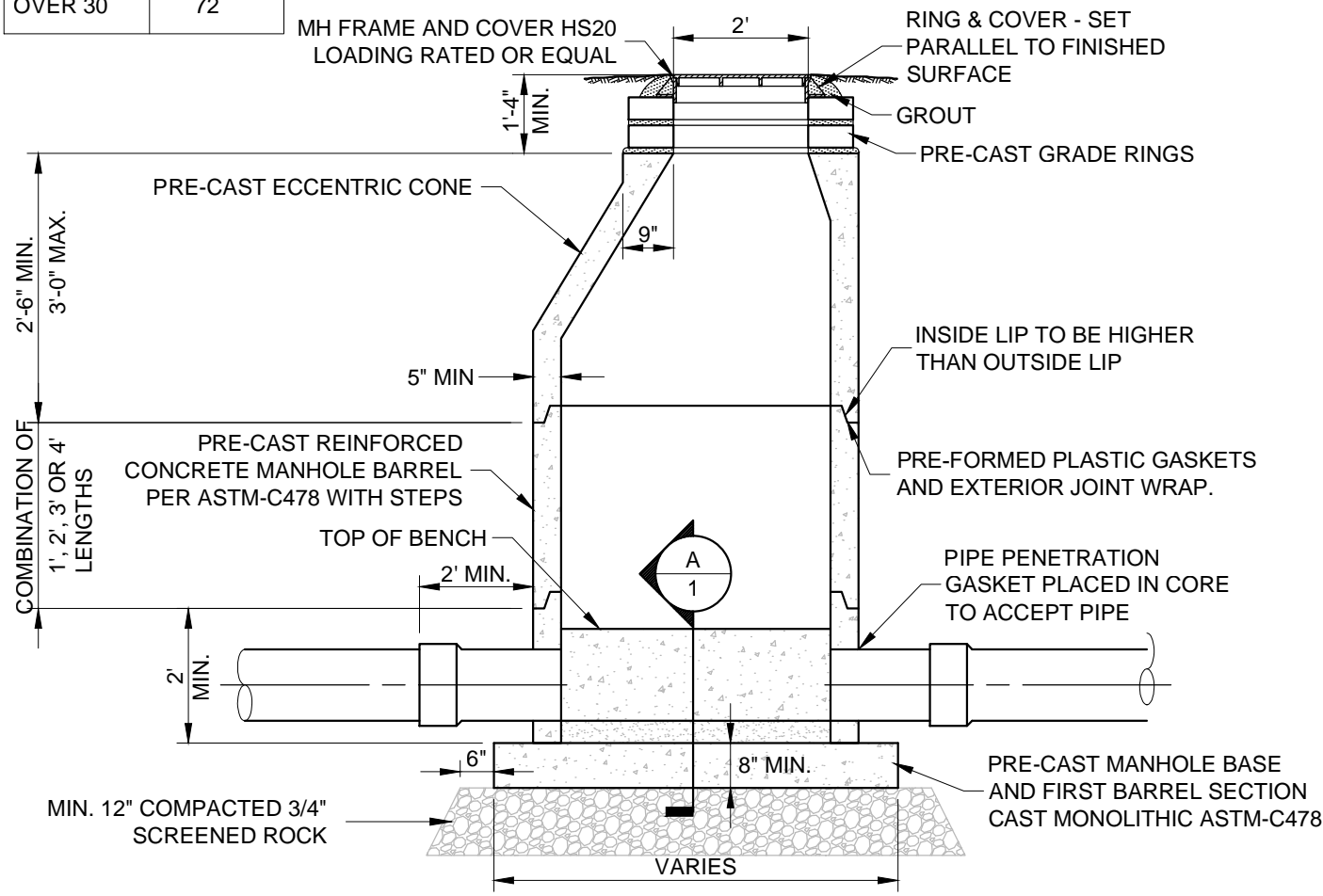
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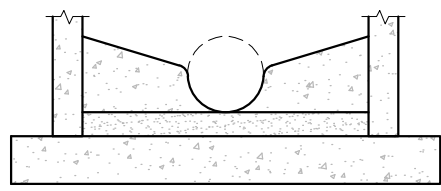
PLAN

MANHOLE SIZE TABLE

PIPE SIZE (IN.)	MH DIA. (MIN.) (IN.)
15 OR LESS	48
18 TO 30	60
OVER 30	72



SECTION VIEW



SECTION



GENERAL NOTES:

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2. SLOPE THROUGH MANHOLE SHALL HAVE A MINIMUM OF 0.2FT DROP FROM ENTRANCE THROUGH EXIT.
3. JOINT SEALANT SHALL BE TWO (2) ROWS OF PRE-FORMED PLASTIC ROPES ON INNER AND OUTER RINGS AND ONE (1) EXTERNAL RUBBER SLEEVE.
4. HAND SHAPE FLOW CHANNEL AS NECESSARY AROUND PIPE TO PROVIDE DRAINAGE WITH NO STANDING WATER (SEE SECTION A).
5. FOR DEEP MANHOLES SEE SPECIFICATIONS.

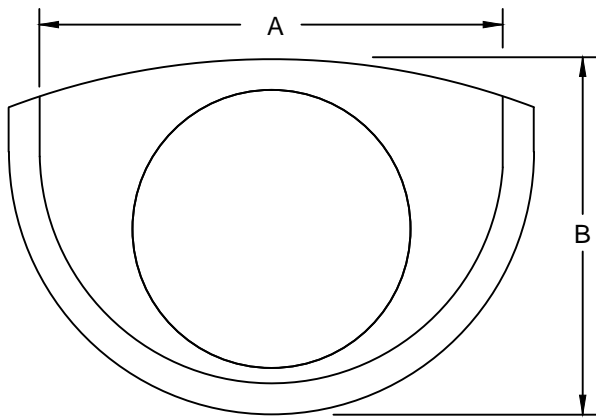
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REVISION DATE:	01/05/2017

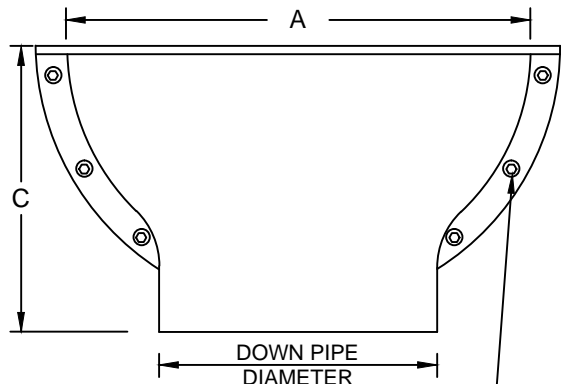
STANDARD MANHOLE



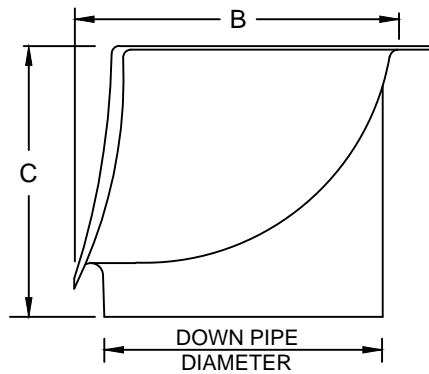
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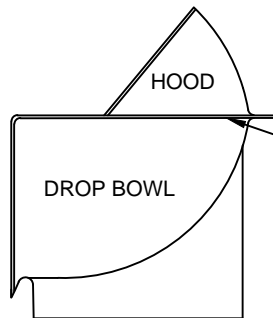
DROP BOWL TOP VIEW



DROP BOWL FRONT VIEW



DROP BOWL SIDE VIEW



OPTIONAL FORCE LINE HOOD

AVAILABLE FOR ALL SIZE DROP BOWLS

DROP BOWL MOUNTS TO WALL WITH RELINER STAINLESS STEEL ANCHOR BOLT ASSEMBLIES

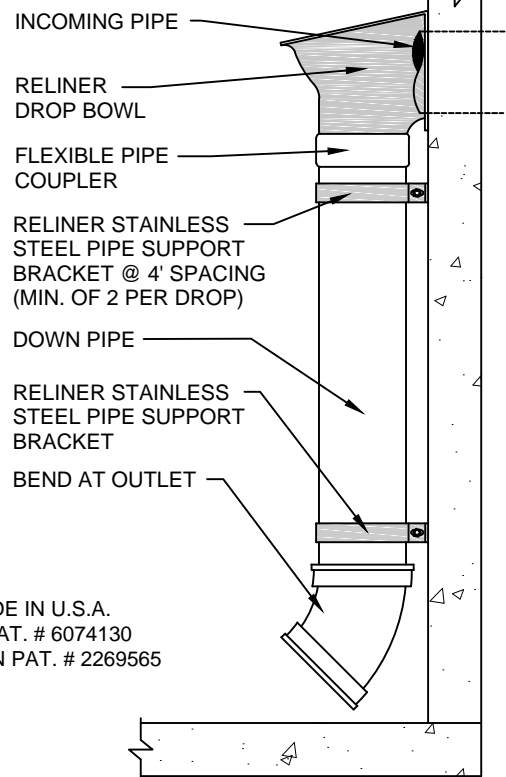
HOOD BOLTS TO DROP BOWL WITH INCLUDED STAINLESS STEEL BOLTS

DROP BOWL SELECTION CHART

DOWN PIPE DIAMETER	MANHOLE DIAMETER					
	FLAT WALL	4' DIA	5' DIA	6' DIA	7-8' DIA	9-12' DIA
4"	A4FDB	A4DB	A4DB	A4R96	A4R96	A4R96
6"	A6FDB	A6DB	A6DB	A6R96	A6R96	A6R96
8"	B8FDB	B8DB	B8DB	B8DBR84	B8DBR84	B8R144
10"	B10FDB	B10DB	B10DB	B10R96	B10R96	B10R144
12"	24/12FDB	24/12R60	24/12R60	24/12R60	24/12R96	24/12R144
15"	24/15FDB	24/15R60	24/15R60	24/15R60	24/15R96	24/15R144
18"	30/18FDB		30/18R60	30/18R60	30/18R96	30/18R144
21"	36/21FDB		36/21R60			36/21R144
24"	48/24FDB			48/24R72	48/24R96	48/24R144

DROP BOWL DIMENSIONS

SERIES	DOWN PIPE DIAMETER				ANCHOR BOLT QUANTITY & TYPE
	WIDTH "A"	DEPTH "B"	HEIGHT "C"		
A4	4"	12"	9.5"	8.9"	4 - 1" TAMP-IN
A6	6"	12"	11.1"	8.8"	4 - 1" TAMP-IN
B8	8"	18"	13.0"	11.5"	4 - 1" TAMP-IN
B10	10"	18"	13.5"	11.5"	4 - 1" TAMP-IN
24/12	12"	24"	16.5"	15.0"	6 - 1" TAMP-IN
24/15	15"	24"	19.3"	15.8"	6 - 1" TAMP-IN
30/18	18"	30"	23.5"	18.5"	6 - 1" TAMP-IN
36/21	21"	36"	31.6"	23.0"	8 - 3" WEDGE
48/24	24"	48"	30.5"	30.0"	10 - 3" WEDGE



TYPICAL INSTALLATION

MADE IN U.S.A.
U.S. PAT. # 6074130
CANADIAN PAT. # 2269565

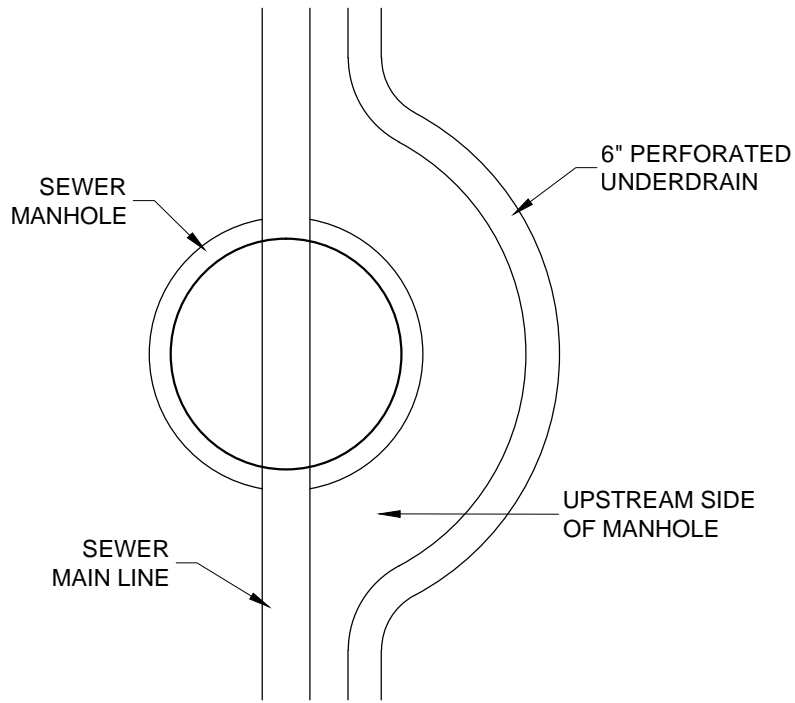
INSIDE DROP MANHOLE DETAIL

ORIGINATION DATE: 10/24/2014

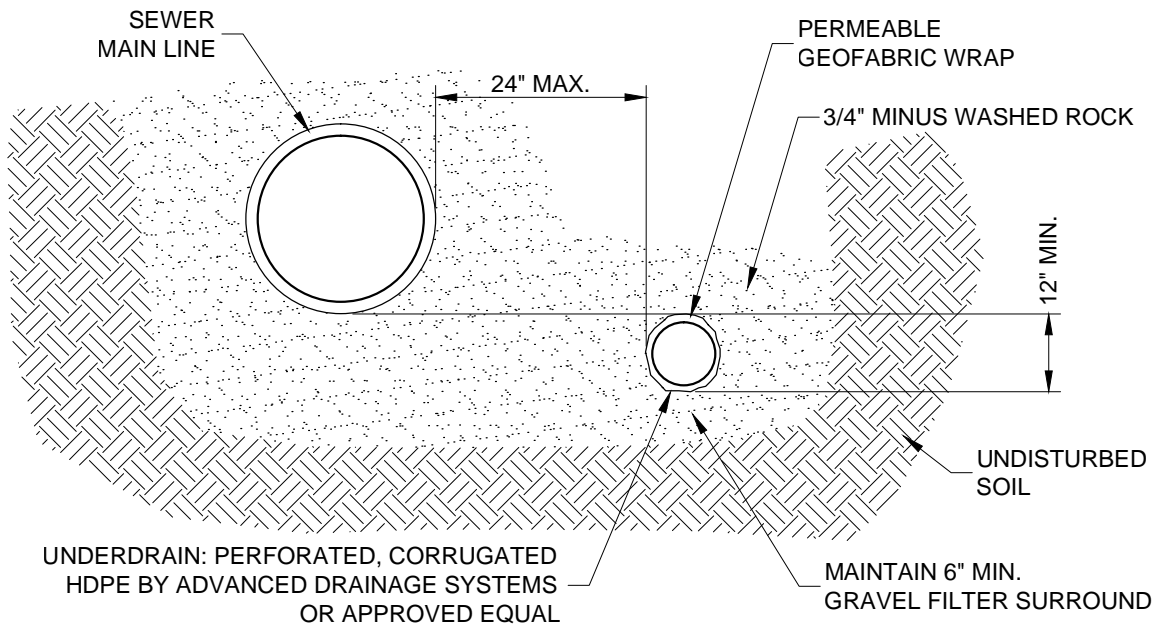
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PLAN VIEW



SECTION VIEW

NOTES:

1. UNDERDRAIN INVERT TO BE LOWER THAN SEWER INVERT AT ALL PLACES.
2. MAINTAIN POSITIVE SLOPE OF UNDERDRAIN TO DAYLIGHT.
3. MAINTAIN 6" MINIMUM OF SQUEEGEE AROUND UNDERDRAIN.
4. SEE TYPICAL TRENCH DETAIL.
5. BSD SHALL NOT ASSUME OWNERSHIP OF UNDERDRAINS AND WILL NOT BE RESPONSIBLE FOR MAINTENANCE OF SAME.

FILE NAME: P:\2014\01-HUN0026\10 - Boxelder - On Call Consulting\Drawings\Details\UNDERDRAIN DETAIL.dwg

PREPARED BY: RRL
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ORIGINATION DATE: 10/24/2014
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UNDERDRAIN DETAIL



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