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CATCH BASIN & JUNCTION BOX STANDARD NOTES

1. Mortar Joints $1/2" \pm 1/8"$ thick. Concave tool all exposed mortar joints.
2. Class "A" concrete to be used. Chamfer all exposed corners 1".
3. The pouring of floor slab to be accomplished by forming.
4. All catch basins over 3'-6" in depth shall be provided with steps 1' on centers. Steps shall be in accordance with std. detail No. 615.01.
5. Concrete brick may be used in lieu of clay brick. Jumbo brick will be permitted.
6. Engineered pre-cast boxes are permitted with the City Engineer's approval.
7. For 8'-0" in height or less use 8" wall. Over 8'-0" in height use 12" wall to 6'-0" from top of wall, and 8" wall for the remaining 6'-0". Adjust quantities accordingly.
8. Leave weep holes as directed by the engineer.
9. Construct with pipe crowns matching.
10. All drawings not to scale.

MANHOLE STANDARD NOTES

1. Mortar Joints $1/2" \pm 1/8"$ thick. Concave tool all exposed mortar joints.
2. Class "A" concrete to be used. Chamfer all exposed corners 1".
3. Forms to be used for the construction of the base.
4. Where the manhole top is exposed to road traffic, the top of the manhole is to be flush with the ground. At other locations it should be a minimum of 9" above the ground.
4. Manholes over 3'-6" in depth shall be provided with steps 1' on centers. Steps shall be in accordance with Std. detail No. 615.01.
5. Over 36" pipe design requires City Engineer's approval.
6. For manholes over 12 ft. vertical wall depth, brick masonry wall thickness shall be 12"
7. For manholes with a vertical wall depth less than 12 ft., brick masonry wall thickness shall be 8".
8. All drawings not to scale.



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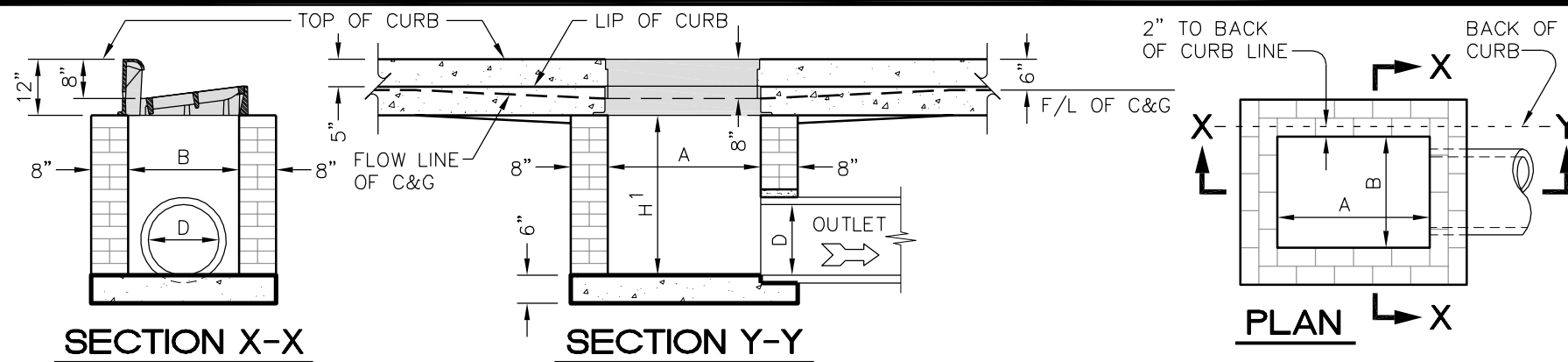
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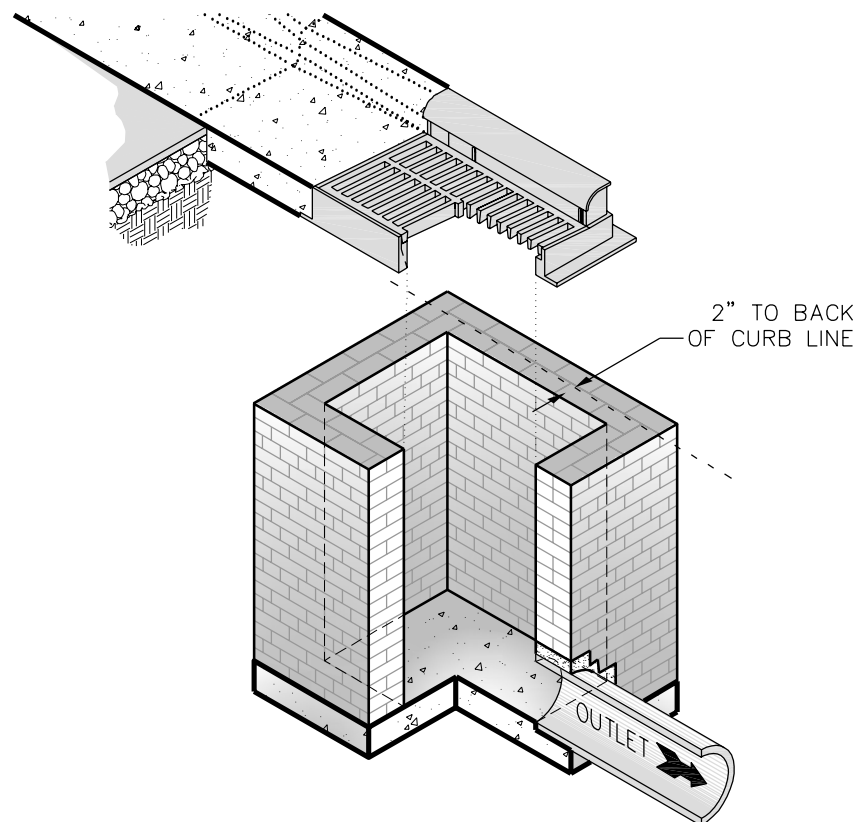
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STANDARD CATCH BASIN AND MANHOLE NOTES



WHERE UP TO 24"
PIPE IS USED



NOTES:

1. See sheet 4 of 4 for dimensions.
2. See Std. detail No. 610.01 for standard notes.



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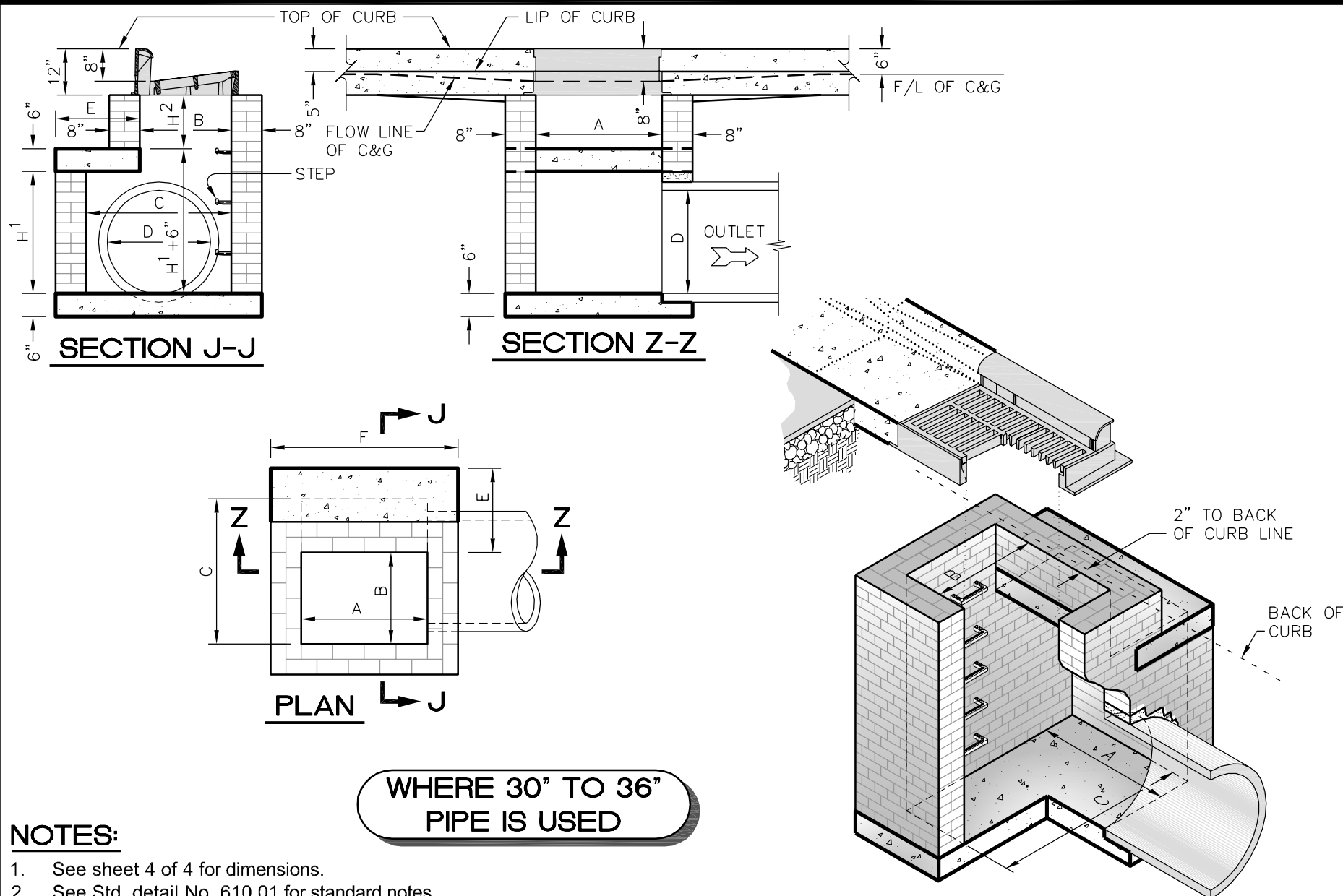
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No.	Date	Description
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STANDARD BRICK CATCH BASIN (15" THRU 54" PIPE)

**NOTES:**

1. See sheet 4 of 4 for dimensions.
2. See Std. detail No. 610.01 for standard notes.

WHERE 30" TO 36"
PIPE IS USED



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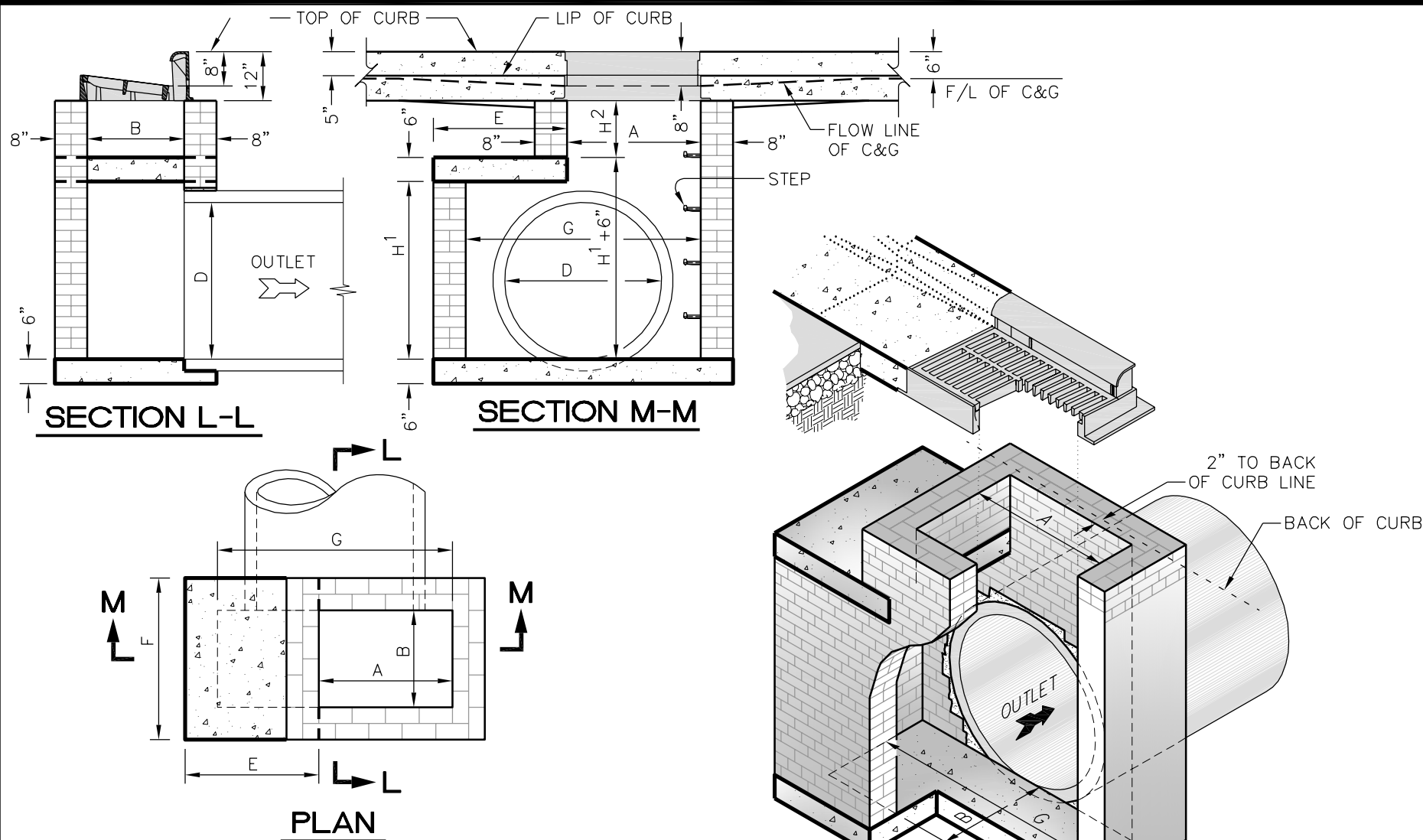
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STANDARD BRICK CATCH BASIN (15" THRU 54" PIPE)

**NOTES:**

1. See sheet 4 of 4 for dimensions.
2. See Std. detail No. 610.01 for standard notes.

**WHERE 42" TO 54"
PIPE IS USED**



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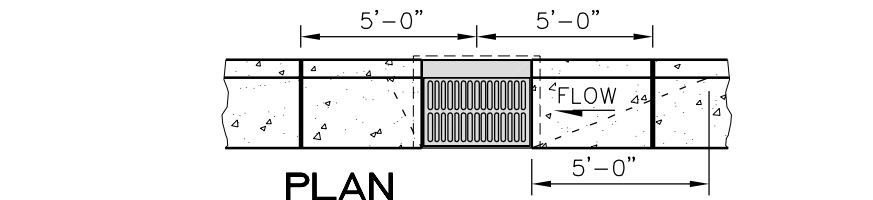
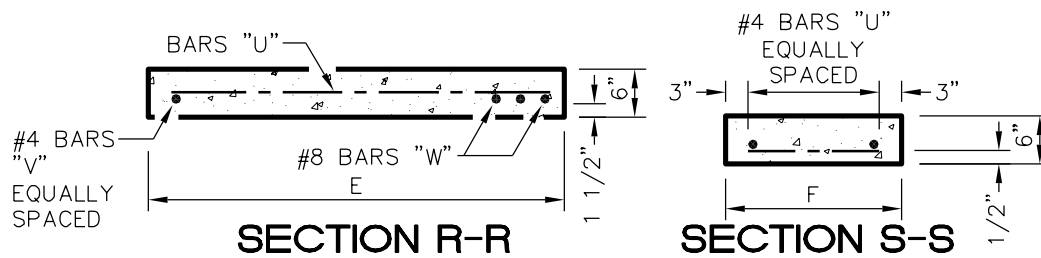
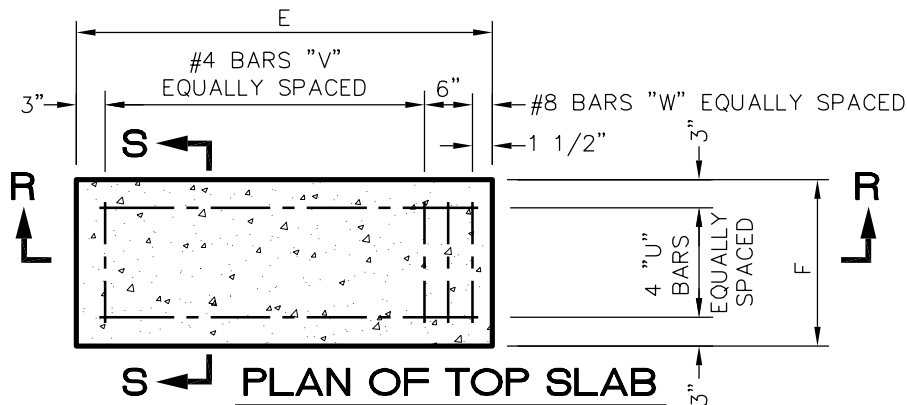
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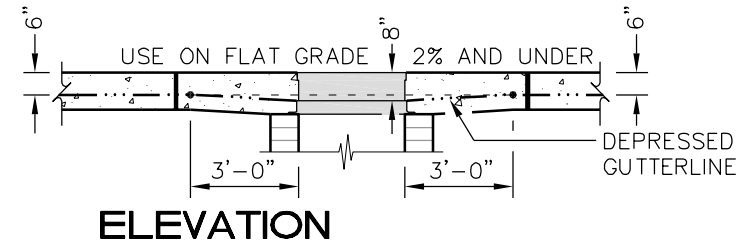
STANDARD BRICK CATCH BASIN (15" THRU 54" PIPE)

DIMENSIONS AND QUANTITIES FOR BRICK CATCH BASIN

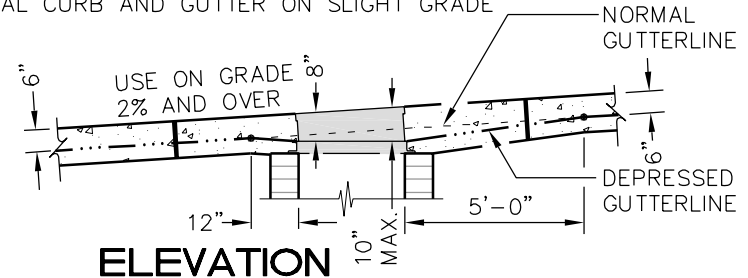
DIMENSIONS OF BOX & PIPE							COVER DIMENSIONS		REINFORCEMENT						CUBIC YARDS OF CONCRETE IN BOX			BRICK MASONRY		
PIPE	SPAN	WIDTH	WIDTH	SPAN	HEIGHT	HEIGHT			BARS-U		BARS-V		BARS-W					TOTAL	H ¹	
D	A	B	C	G	MIN. H ¹	MIN. H ²	E	F	Qty.	LGTH	Qty.	LGTH	Qty.	LGTH	LBS.	TOP SLAB	FLOOR	TOTAL	CU. YDS.	PER FT. OF HEIGHT
15"	3'-0"	2'-2"	-	-	2'-6"	-	-	-	-	-	-	-	-	-	-	-	0.281	0.281	0.802	0.321 ABOVE MIN. H ¹
18"	3'-0"	2'-2"	-	-	2'-10"	-	-	-	-	-	-	-	-	-	-	-	0.281	0.281	0.909	
24"	3'-0"	2'-2"	-	-	3'-4"	-	-	-	-	-	-	-	-	-	-	-	0.281	0.281	1.070	
30"	3'-0"	2'-2"	3'-4"	-	3'-2"	V A R I A B L E	1'-10"	4'-4"	4	1'-6"	3	4'-1"	3	4'-1"	45	0.147	0.374	0.521	1.306	0.321 ABOVE MIN. H ²
36"	3'-0"	2'-2"	3'-10"	-	3'-8"		2'-4"	4'-4"	4	2'-0"	4	4'-1"	3	4'-1"	49	0.187	0.415	0.602	1.586	
42"	3'-0"	2'-2"	-	4'-5"	4'-4"		2'-1"	3'-6"	4	1'-9"	3	3'-3"	3	3'-3"	38	0.135	0.373	0.508	1.811	
48"	3'-0"	2'-2"	-	5'-0"	4'-10"		2'-8"	3'-6"	4	2'-6"	4	3'-3"	3	3'-3"	40	0.173	0.410	0.583	2.146	
54"	3'-0"	2'-2"	-	5'-7"	5'-4"		3'-3"	3'-6"	4	3'-0"	6	3'-3"	3	3'-3"	48	0.211	0.448	0.659	2.510	



CURB & GUTTER W/ CATCH BASIN ON STEEP GRADE



NORMAL CURB AND GUTTER ON SLIGHT GRADE



NORMAL CURB AND GUTTER ON STEEP GRADE



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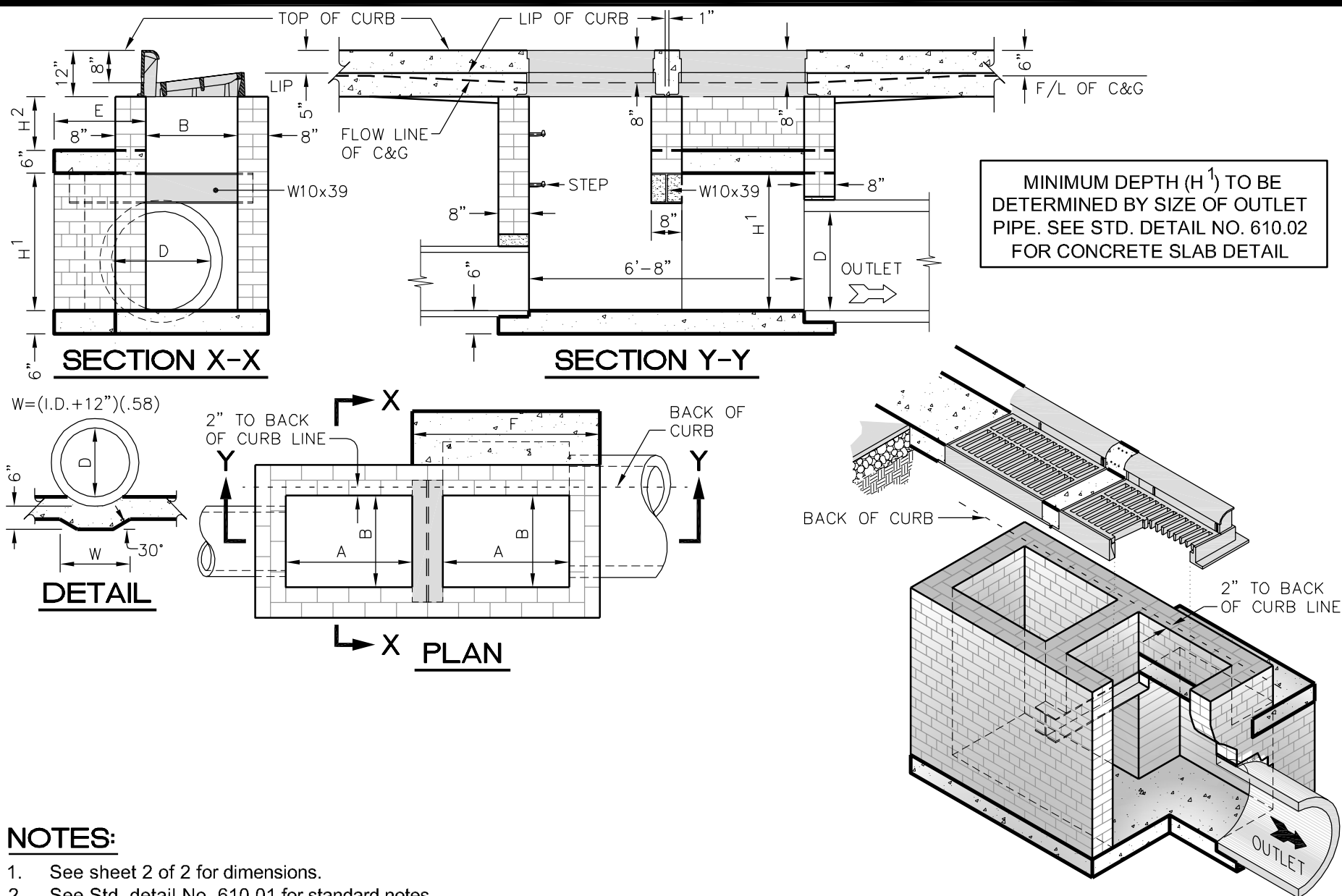
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STANDARD BRICK CATCH BASIN (15" THRU 54" PIPE)

**NOTES:**

1. See sheet 2 of 2 for dimensions.
2. See Std. detail No. 610.01 for standard notes.



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No.	Date	Description
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STANDARD BRICK DOUBLE CATCH BASIN (30" THRU 36" PIPE)

DIMENSIONS OF BOX AND PIPE

15" THRU 24" PIPE				
PIPE	SPAN	WIDTH	HEIGHT	W 10
D	A	B	MIN. H ¹	LENGTH
15"	3'-0"	2'-2"	2'-6"	2'-10"
18"	3'-0"	2'-2"	2'-10"	2'-10"
24"	3'-0"	2'-2"	3'-4"	2'-10"

DIMENSIONS OF BOX AND PIPE

30" THRU 36" PIPE															
DIMENSIONS OF BOX & PIPE							COVER DIMENSIONS		REINFORCEMENT						
PIPE	SPAN	WIDTH	WIDTH	HEIGHT	HEIGHT	W 10			BARS-U		BARS-V		BARS-W		TOTAL
D	A	B	C	MIN. H ¹	H ²	LENGTH	E	F	Qty.	LENGTH	Qty.	LENGTH	Qty.	LENGTH	LBS.
30"	3'-0"	2'-2"	3'-4"	3'-2"	VAR.	4'-0"	1'-10"	4'-4"	4	1'-6"	3	4'-1"	3	4'-1"	45
36"	3'-0"	2'-2"	3'-10"	3'-8"	VAR.	4'-6"	2'-4"	4'-4"	4	2'-0"	4	4'-1"	3	4'-1"	49



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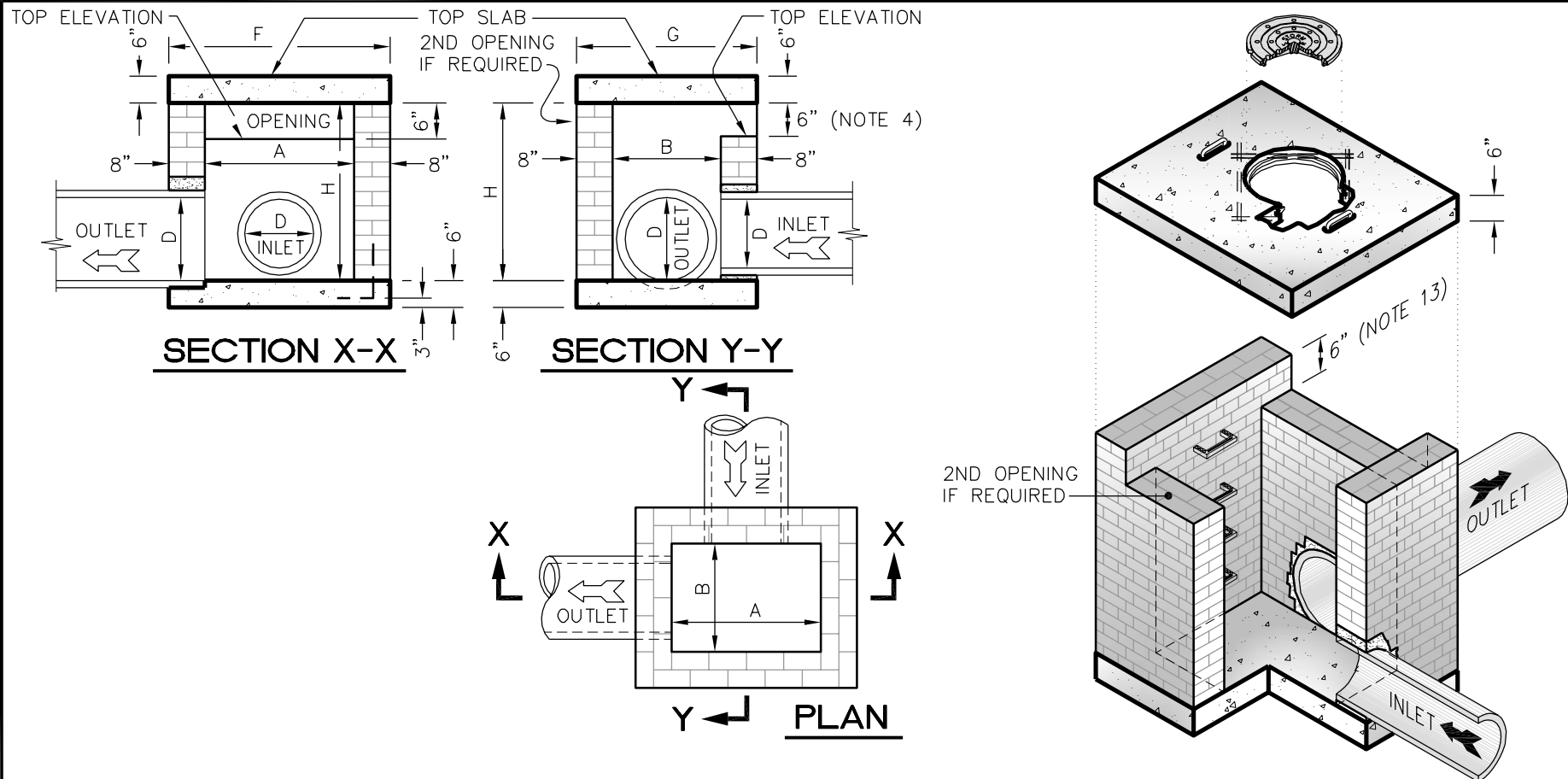
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STANDARD BRICK DOUBLE CATCH BASIN (30" THRU 36" PIPE)



NOTES:

1. Use #5 bar dowels at 12" centers.
2. Deduct for pipe(s) from total cu. yds. of brick masonry.
3. If reinforced concrete pipe is set in bottom slab of box, add to slab as shown on Std. detail No. 610.03.
4. Increase the size of the 6" opening to 8" max., as directed by the City Engineer by adding 2" to the wall height above the top elevation. Adjust quantities accordingly.
5. See sheet 2 of 2 for dimensions.
6. See Std. detail No. 610.01 for standard notes.



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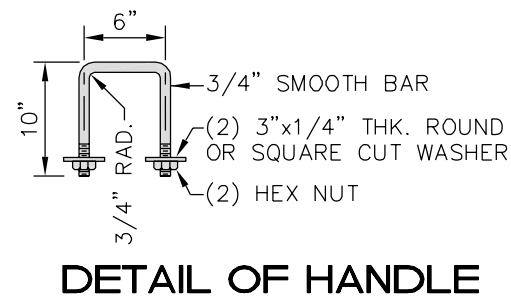
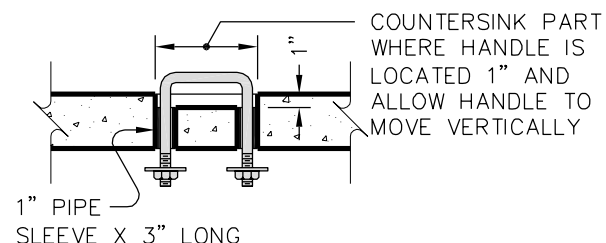
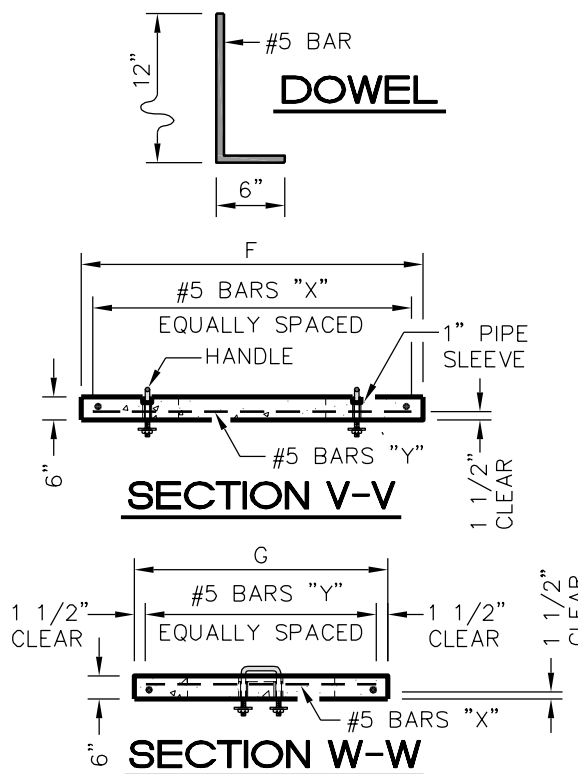
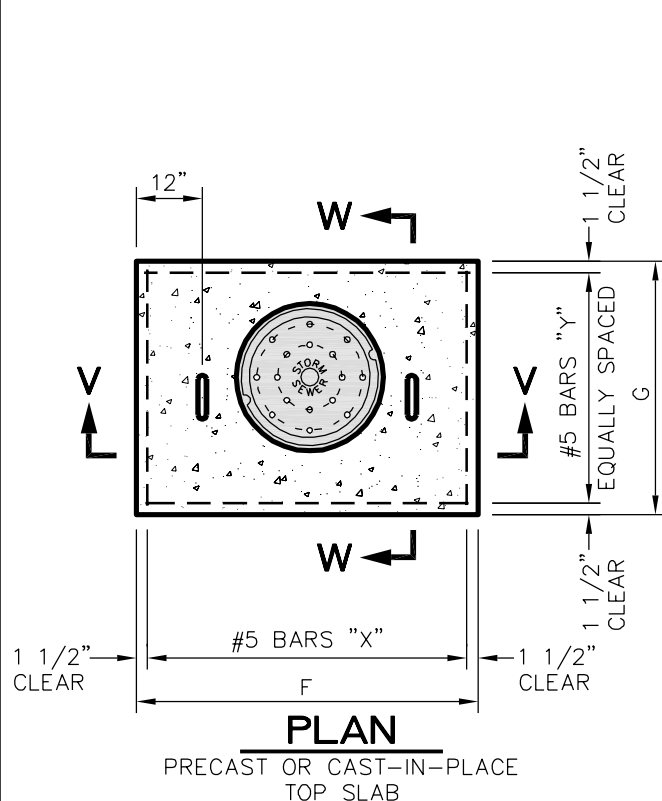
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BRICK OPEN THROAT CATCH BASIN (15" THRU 48" PIPE)

MIN. DIMENSIONS AND QUANTITIES FOR CATCH BASIN (BASED ON MIN. HEIGHT, H)

DIMENSIONS OF BOX & PIPE				REINFORCING					SLAB DIMENSIONS		CUBIC YARDS CONC. IN BOX			TOTAL BRICK MASONRY		DEDUCTION ONE PIPE		DED. ONE 6" THROAT OPENING
PIPE	SPAN	WIDTH	HEIGHT	BARS - X		BARS - Y		TOTAL	F	G	COVER	FLOOR	TOTAL	PER FT. HT.	MIN. H	C.S.	R.C.	CU. YDS
D	A	B	H	Qty.	LENGTH	Qty.	LENGTH	LBS										
15"	3'-6"	2'-3"	2'-1"	5	3'-4"	7	4'-7"	28	4'-10"	3'-7"	0.214	0.321	0.535	0.350	0.744	0.031	0.059	0.043
18"	4'-0"	2'-8"	2'-4"	6	3'-9"	8	5'-1"	36	5'-4"	4'-0"	0.263	0.395	0.658	0.395	0.938	0.044	0.081	0.049
24"	4'-0"	2'-8"	2'-10"	6	3'-9"	9	5'-1"	36	5'-4"	4'-0"	0.263	0.395	0.658	0.395	1.136	0.078	0.134	0.049
30"	4'-0"	3'-6"	3'-4"	6	4'-7"	10	5'-1"	44	5'-4"	4'-10"	0.318	0.477	0.795	0.436	1.472	0.122	0.199	0.049
36"	4'-6"	4'-0"	3'-10"	6	5'-1"	11	5'-7"	52	5'-10"	5'-4"	0.384	0.576	0.960	0.485	1.879	0.176	0.278	0.056
42"	5'-0"	4'-6"	4'-4"	6	5'-7"	13	6'-1"	65	6'-4"	5'-10"	0.456	0.684	1.140	0.535	2.340	0.240	0.371	0.062
48"	5'-0"	5'-0"	4'-10"	6	6'-1"	14	6'-1"	71	6'-4"	6'-4"	0.495	0.743	1.238	0.559	2.725	0.313	0.476	0.062



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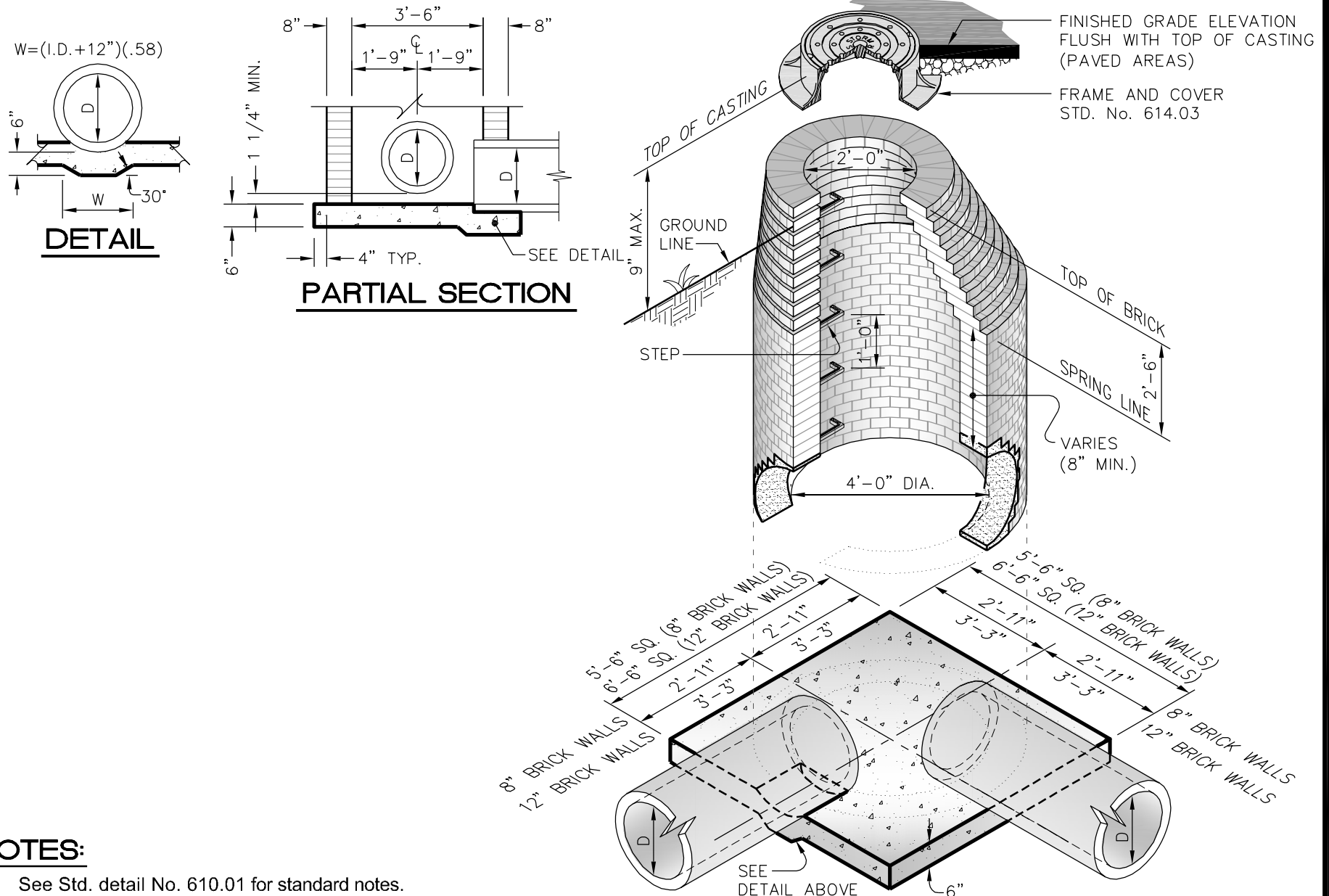
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BRICK OPEN THROAT CATCH BASIN (15" THRU 48" PIPE)

**NOTES:**

1. See Std. detail No. 610.01 for standard notes.



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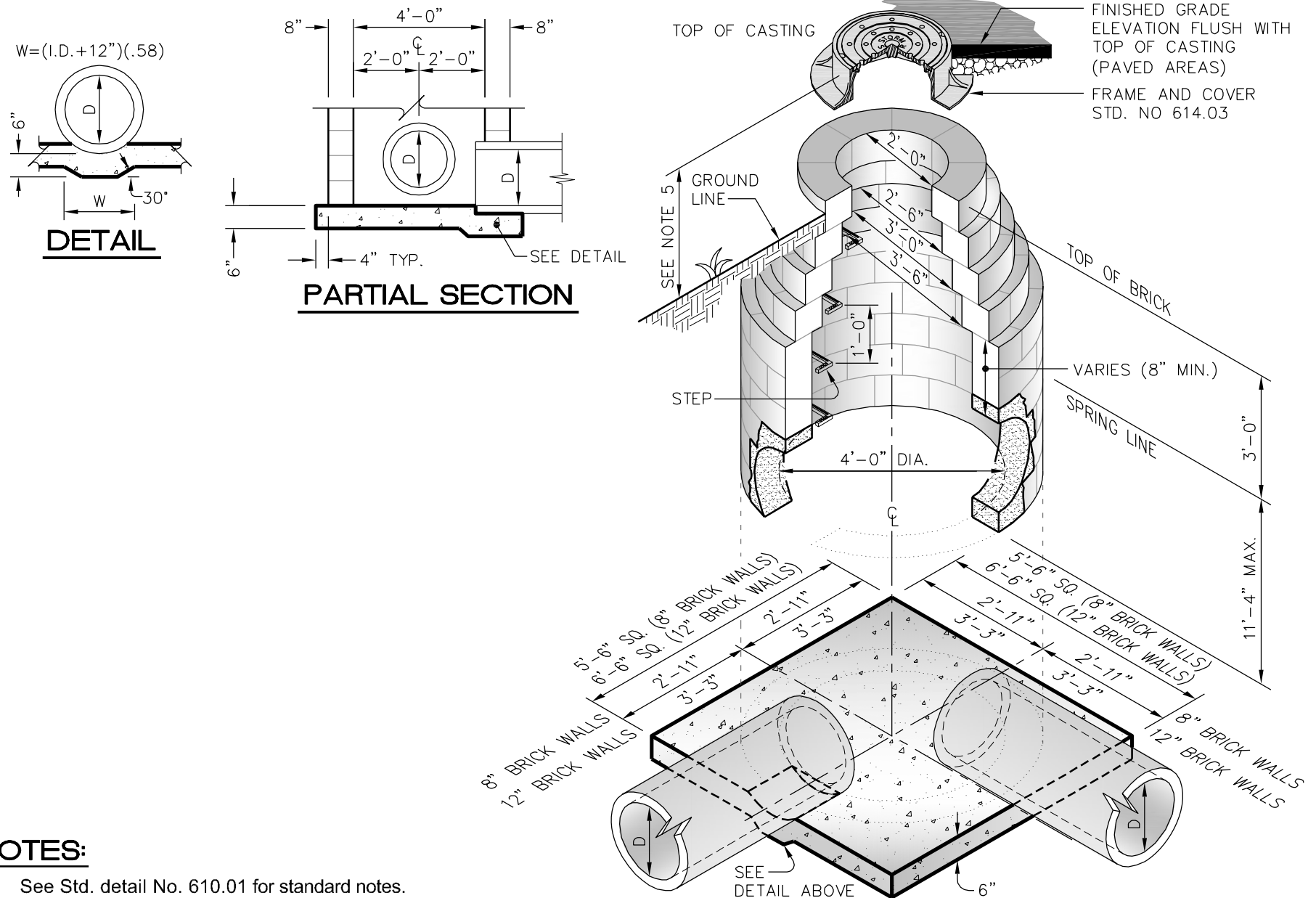
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STANDARD BRICK MANHOLE (15" THRU 36" PIPE)

**NOTES:**

1. See Std. detail No. 610.01 for standard notes.



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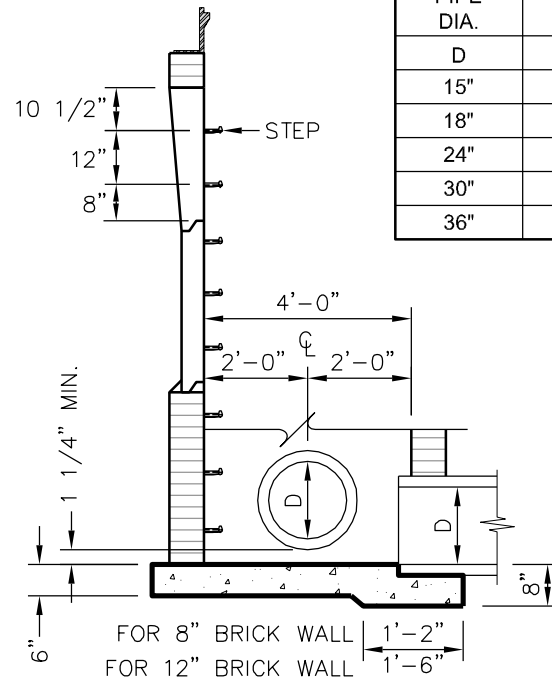
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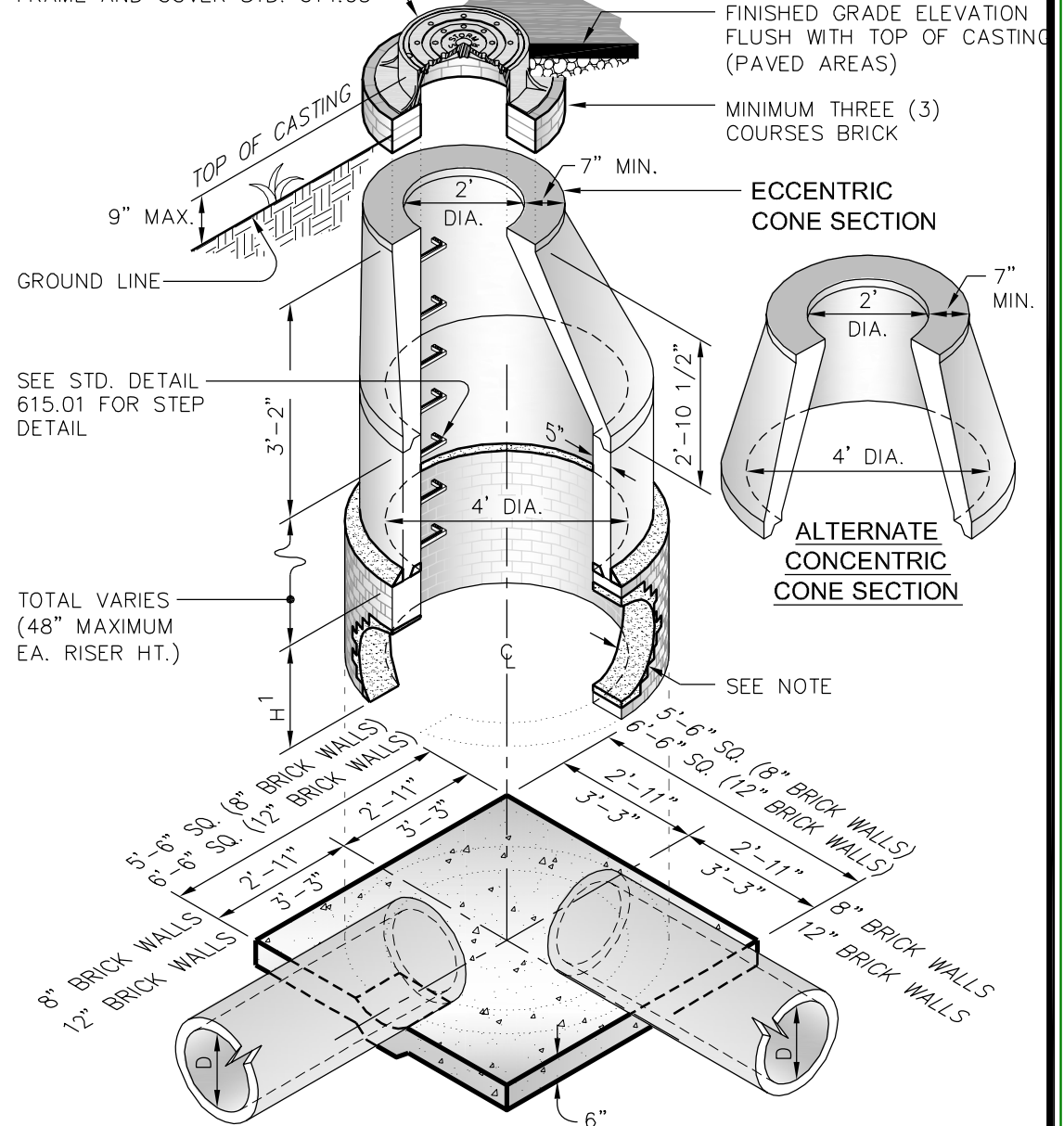
STANDARD BLOCK MANHOLE (15" THRU 36" PIPE)

DIMENSIONS

PIPE DIA.	BRICK HEIGHT
D	MIN. H ¹
15"	1'-8"
18"	1'-11"
24"	2'-6"
30"	3'-0"
36"	3'-7"

**PARTIAL SECTION**

FRAME AND COVER STD. 614.03

**NOTES:**

1. See Std. detail No. 610.01 for standard notes.



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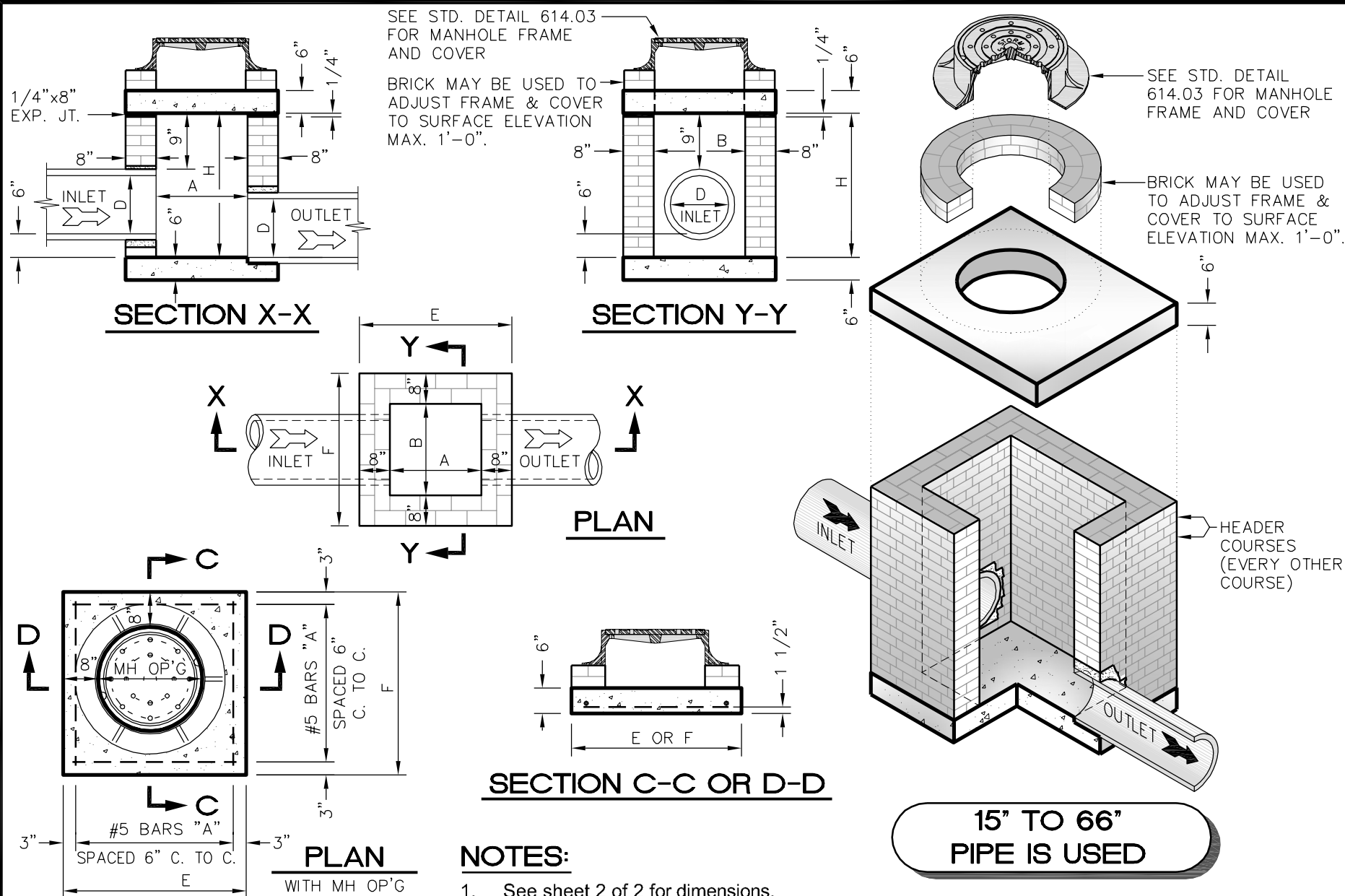
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STANDARD PRECAST MANHOLE (15" THRU 36" PIPE)



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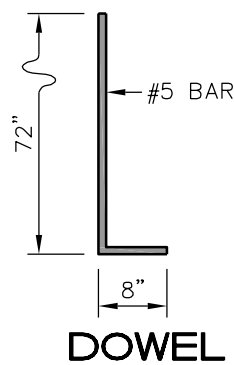
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BRICK JUNCTION BOX WITH MANHOLE

DIMENSIONS AND QUANTITIES FOR BRICK JUNCTION BOXES

DIMENSIONS OF BOX & PIPE				REINFORCEMENT BARS		COVER DIMENSIONS		CUBIC YARDS			DEDUCTIONS FOR ONE PIPE CU. YDS	
PIPE	SPAN	WIDTH	HEIGHT					CONC.	BRICK MASONRY			
D	A	B	H	Qty.	LENGTH	E	F	BASE & COVER CU. YD.	MIN. HEIGHT CU. YD.	WALL PER FT. HT. CU. YD.	C.S.	R.C.
15"	2'-0"	2'-0"	2'-6"	12	3'-1"	3'-4"	3'-4"	0.412	0.657	0.263	0.031	0.047
18"	2'-4"	2'-4"	2'-9"	14	3'-5"	3'-8"	3'-8"	0.498	0.814	0.296	0.044	0.065
24"	3'-0"	3'-0"	3'-3"	16	4'-1"	4'-4"	4'-4"	0.695	1.176	0.362	0.078	0.133
30"	3'-4"	3'-4"	3'-9"	16	4'-5"	4'-8"	4'-8"	0.807	1.481	0.395	0.122	0.170
36"	4'-0"	4'-0"	4'-3"	20	5'-1"	5'-4"	5'-4"	1.053	1.959	0.461	0.176	0.238
42"	4'-8"	4'-8"	4'-9"	22	5'-9"	6'-0"	6'-0"	1.333	2.503	0.527	0.240	0.323
48"	5'-0"	5'-0"	5'-3"	24	6'-1"	6'-4"	6'-4"	1.486	2.940	0.560	0.313	0.422
54"	5'-6"	5'-6"	5'-9"	26	6'-7"	6'-10"	6'-10"	1.729	3.502	0.609	0.396	0.535
60"	6'-0"	6'-0"	6'-3"	28	7'-1"	7'-4"	7'-4"	1.992	4.118	0.658	0.489	0.660
66"	6'-6"	6'-6"	6'-9"	30	7'-7"	7'-10"	7'-10"	2.273	4.778	0.708	0.591	0.798



NOTES:

1. Use #5 bar dowels at 12" centers
2. If reinforced concrete pipe is set in base slab of box, add to base as shown on std. detail 610.03.
3. Adjust the steel, concrete and brick masonry quantities to include the addition of the manhole (i.e. diagonal bars shortened around opening in top slab, additional variable height brick masonry, opening in top slab.)
4. Maximum depth of this structure from top to bottom slab to top elevation is 12'-0".
5. See Std. detail No. 610.01 for standard notes.



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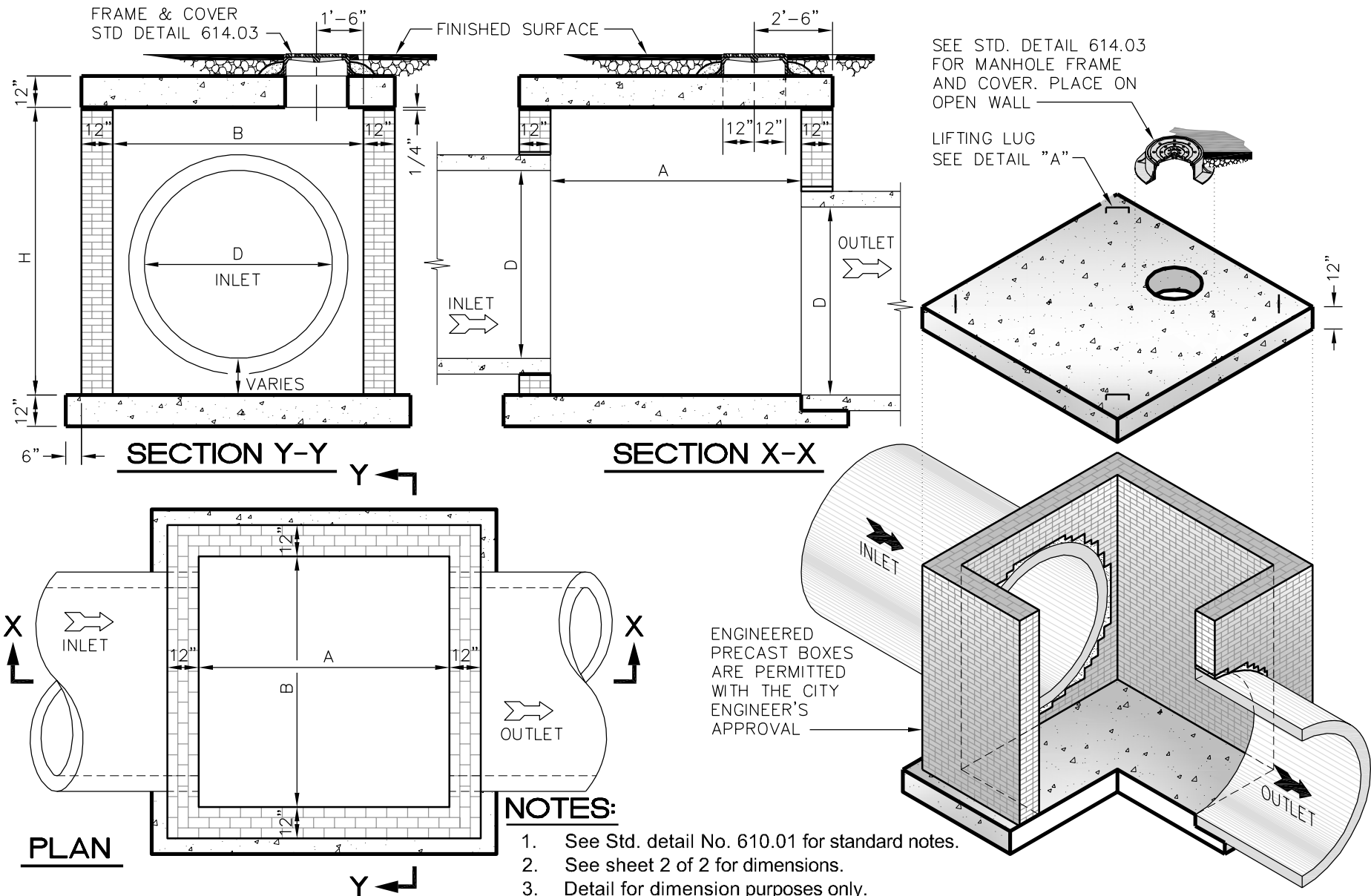
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BRICK JUNCTION BOX WITH MANHOLE



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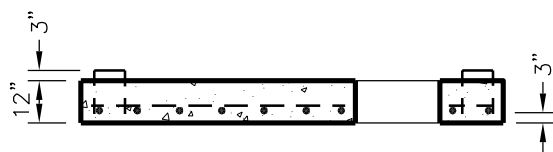
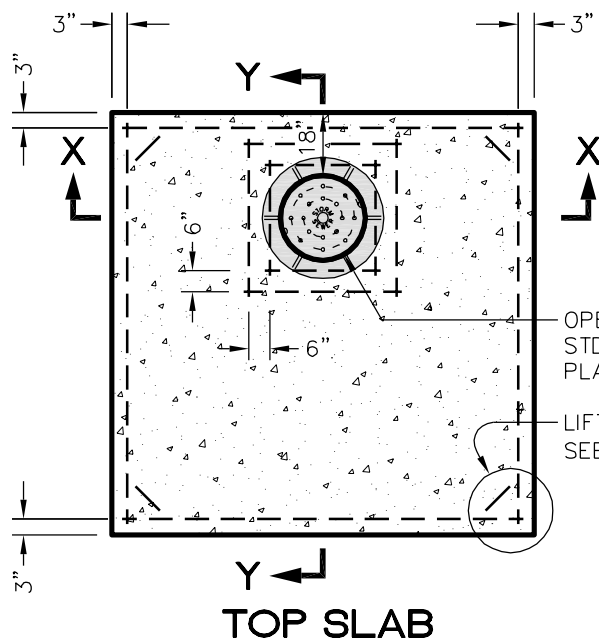
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STD. BRICK JUNCTION BOX (72" THRU 120" PIPE)

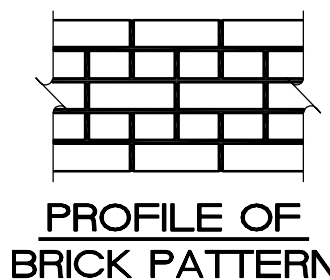
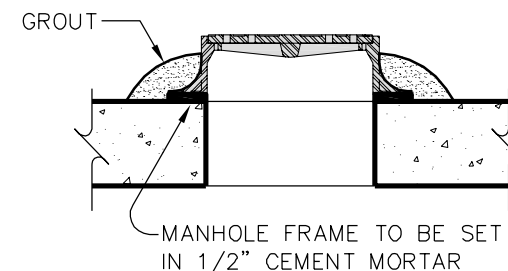
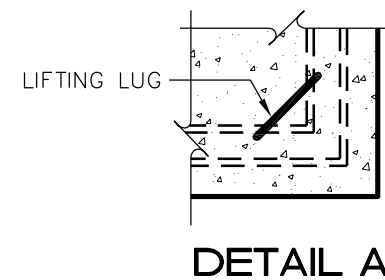
**SLAB SECTION X-X****TOP SLAB**

OPENING FOR MANHOLE
STD DETAIL 614.03.
PLACE ON OPEN WALL

LIFTING LUG
SEE DETAIL "A"

DIMENSIONS AND QUANTITIES FOR BRICK JUNCTION BOXES

DIMENSIONS OF BOX & PIPE			
PIPE D	SPAN A	WIDTH B	HEIGHT H
72"	7'-0"	7'-0"	MIN. 8'-0"
84"	8'-0"	8'-0"	
96"	9'-0"	9'-0"	
108"	10'-0"	10'-0"	MAX. 12'-0"
120"	11'-0"	11'-0"	

**PROFILE OF
BRICK PATTERN****DETAIL A**

NOTES:

- See Std. detail No. 610.01 for standard notes.
 - Detail for dimension purposes only.
- All boxes of this type to be designed by professional engineer.



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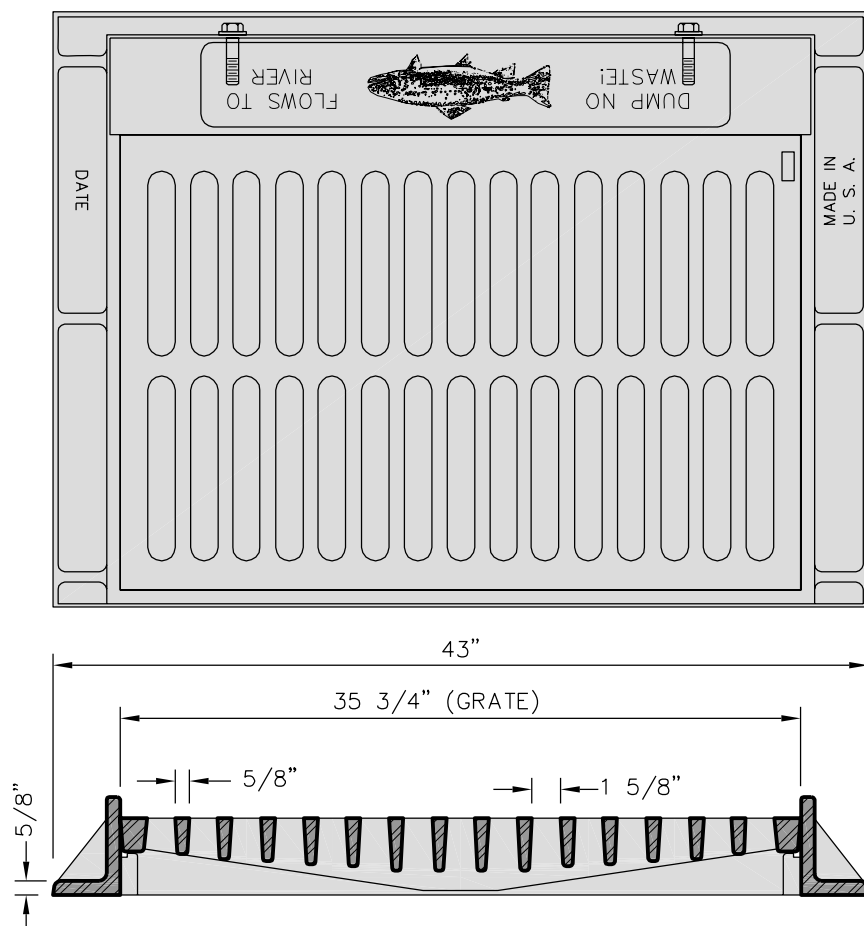
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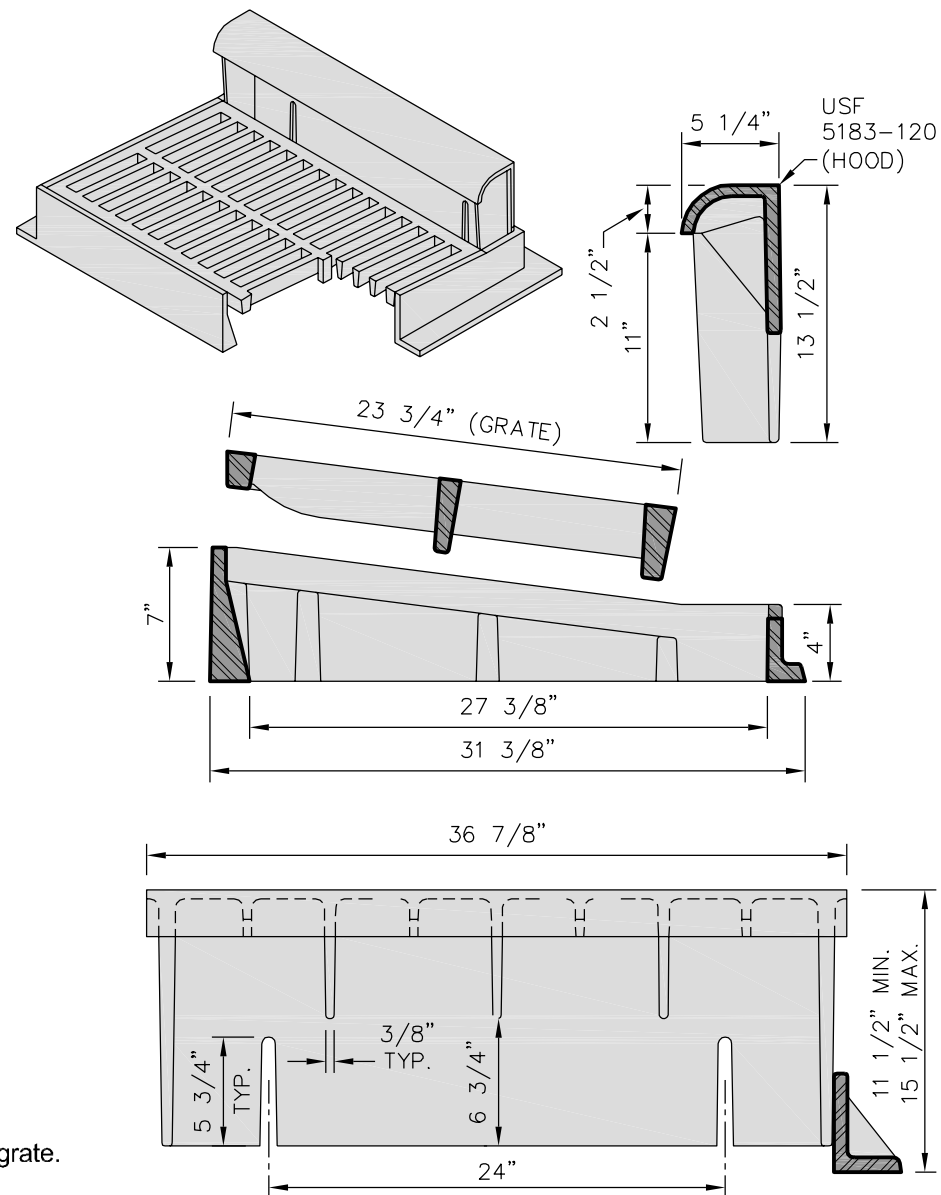
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1	9/16/11	APPROVAL
Scale: not to scale	Sheet #: 2 of 2	Detail # 613.02

STD. BRICK JUNCTION BOX (72" THRU 120" PIPE)



NOTES:

1. All hoods must be stamped "FLOWS TO RIVER"
2. All grates must be "MADE/MANUFACTURED IN USA" and indicated on grate.
3. All castings shall be coated with coal tar pitch varnish while hot.



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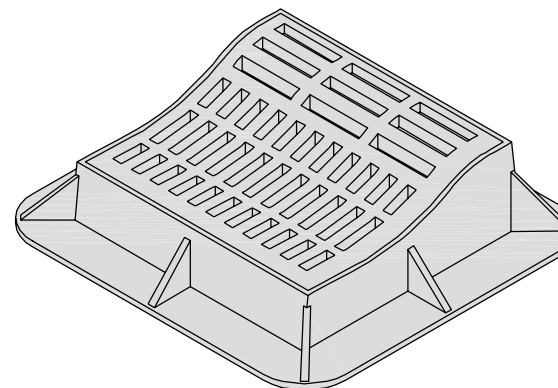
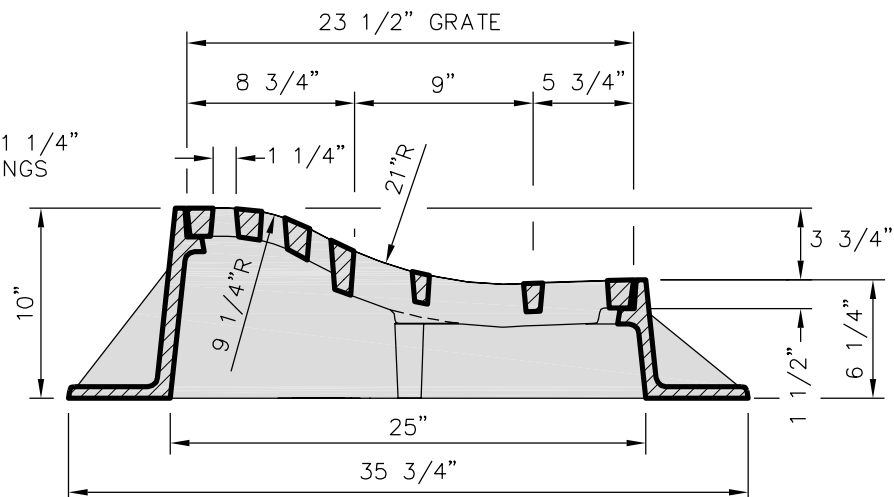
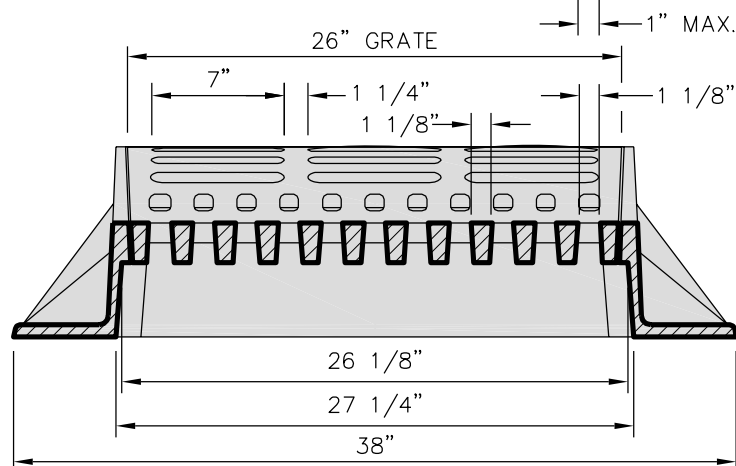
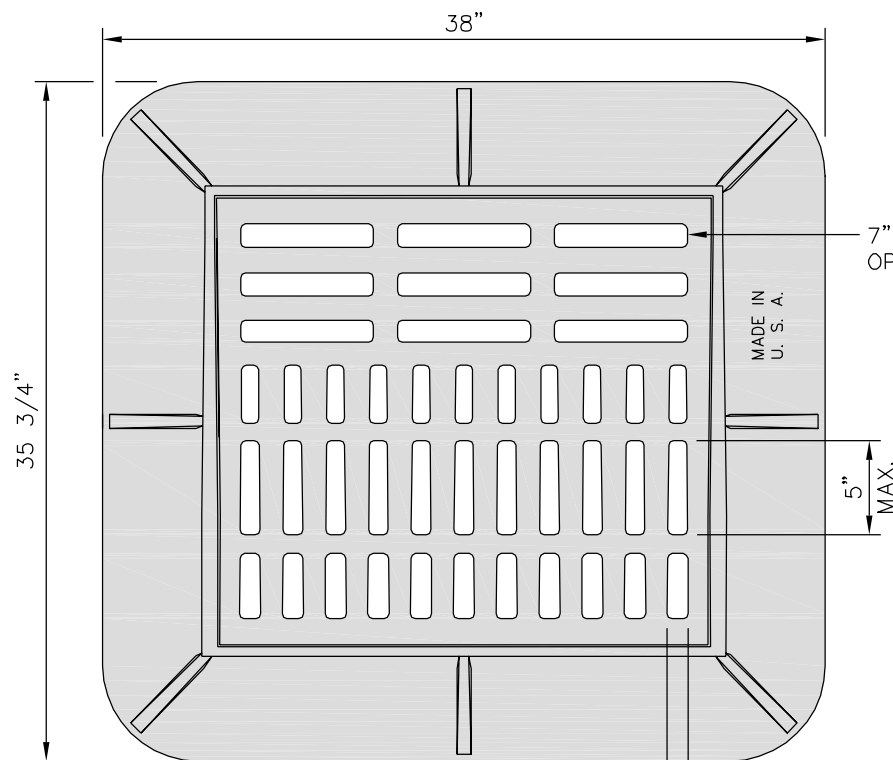
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STANDARD CATCH BASIN ASSEMBLY FRAME, HOOD & GRATE



NOTES:

1. Roll type catch basin will NOT be allowed to be placed in driveways.
2. Roll type catch basins must have a minimum of 2' separation from the closest edge of driveway.
3. Roll type catch basins shall meet the specifications of the attached detail or be an equal approved by the City Engineer. Grate openings must be perpendicular to the direction of travel for the lower portion of the grate.
4. All grates must be "MADE/MANUFACTURED IN USA" and indicated on grate.



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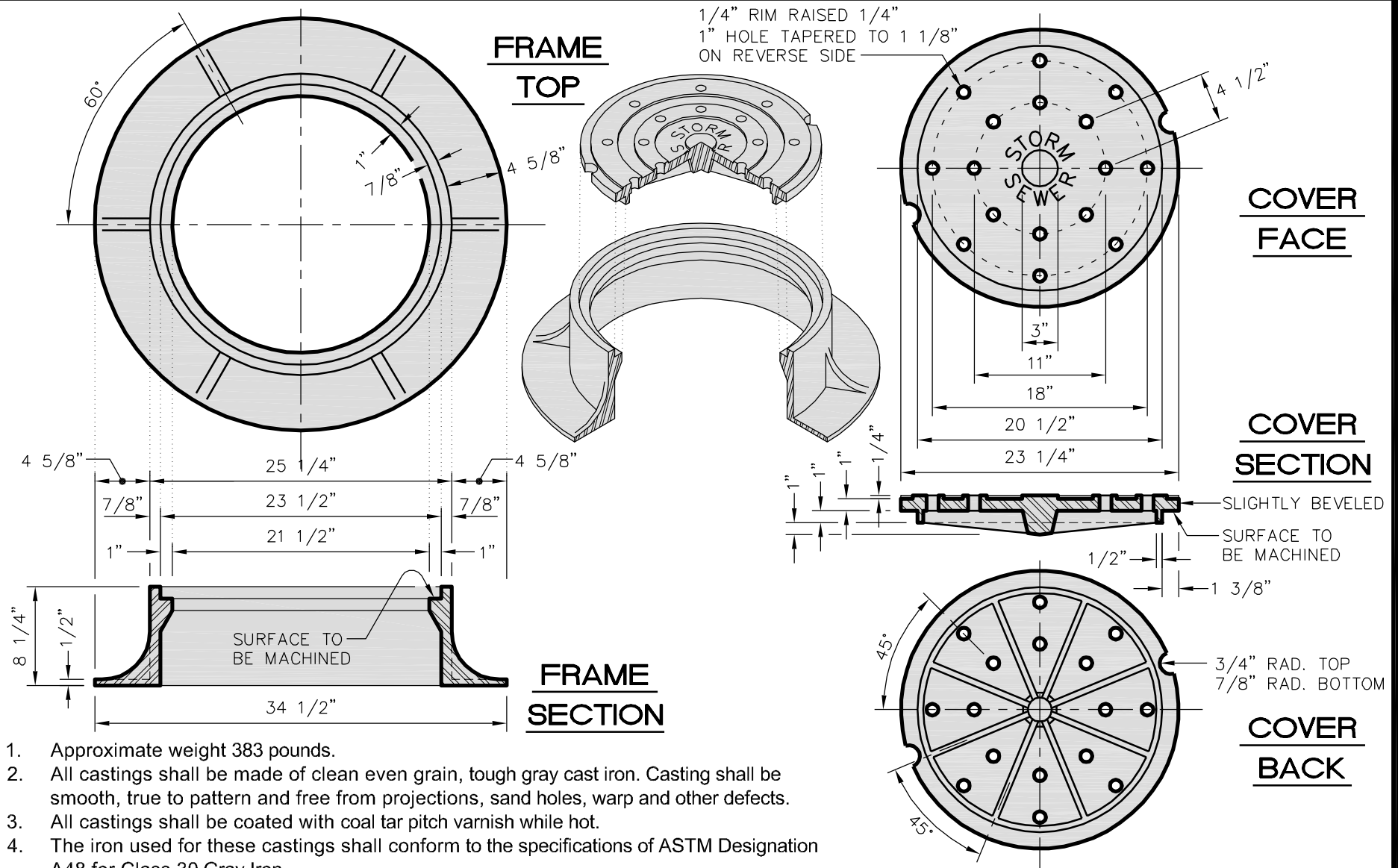
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ROLL TYPE CATCH BASIN ASSEMBLY FRAME & GRATE



1. Approximate weight 383 pounds.
2. All castings shall be made of clean even grain, tough gray cast iron. Casting shall be smooth, true to pattern and free from projections, sand holes, warp and other defects.
3. All castings shall be coated with coal tar pitch varnish while hot.
4. The iron used for these castings shall conform to the specifications of ASTM Designation A48 for Class 30 Gray Iron.
5. All castings used for storm drain structures shall have "STORM SEWER" cast on them.
6. All covers must be "MADE/MANUFACTURED IN USA" and indicated on cover.



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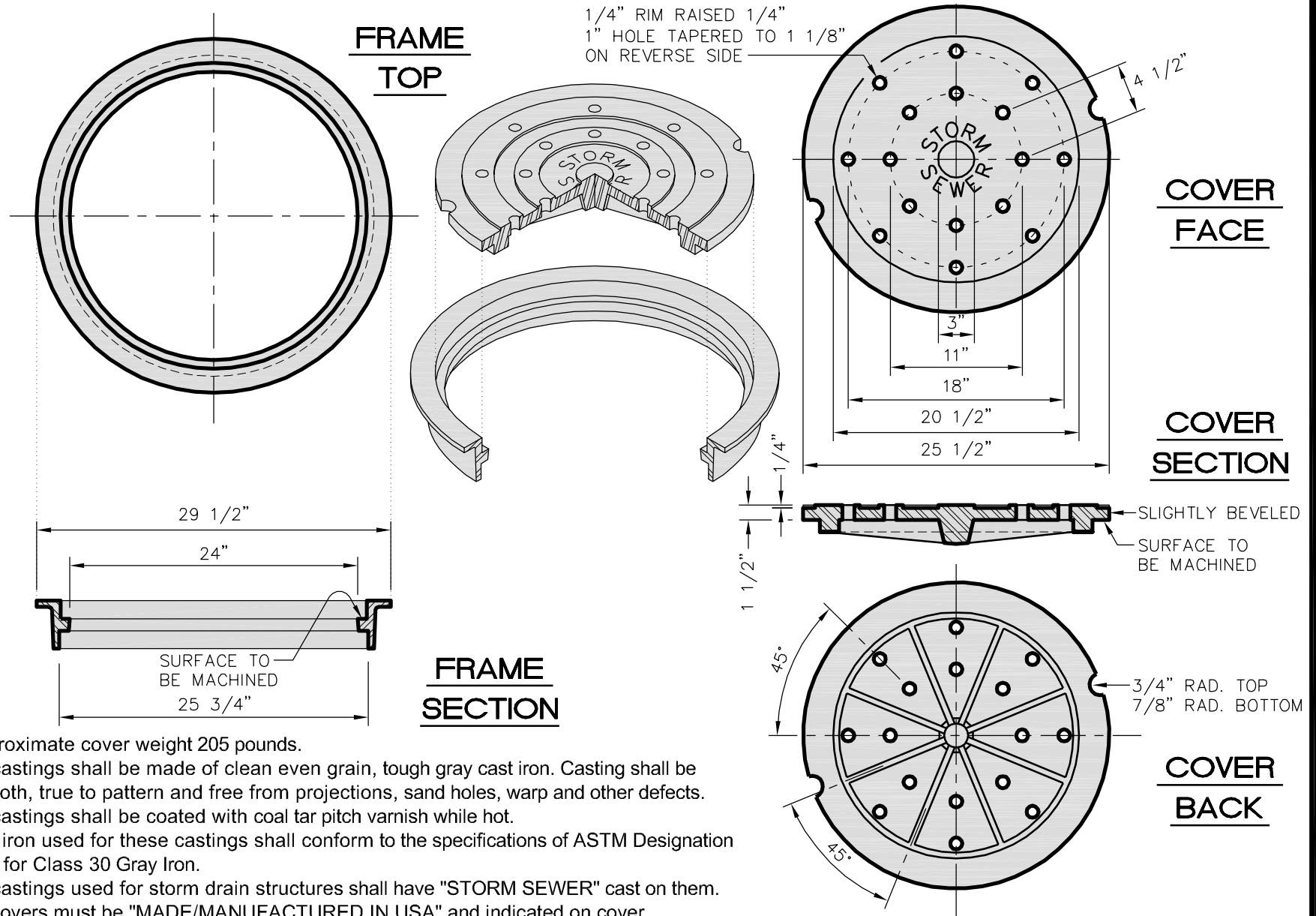
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STANDARD MANHOLE FRAME & COVER



1. Approximate cover weight 205 pounds.
2. All castings shall be made of clean even grain, tough gray cast iron. Casting shall be smooth, true to pattern and free from projections, sand holes, warp and other defects.
3. All castings shall be coated with coal tar pitch varnish while hot.
4. The iron used for these castings shall conform to the specifications of ASTM Designation A48 for Class 30 Gray Iron.
5. All castings used for storm drain structures shall have "STORM SEWER" cast on them.
6. All covers must be "MADE/MANUFACTURED IN USA" and indicated on cover.



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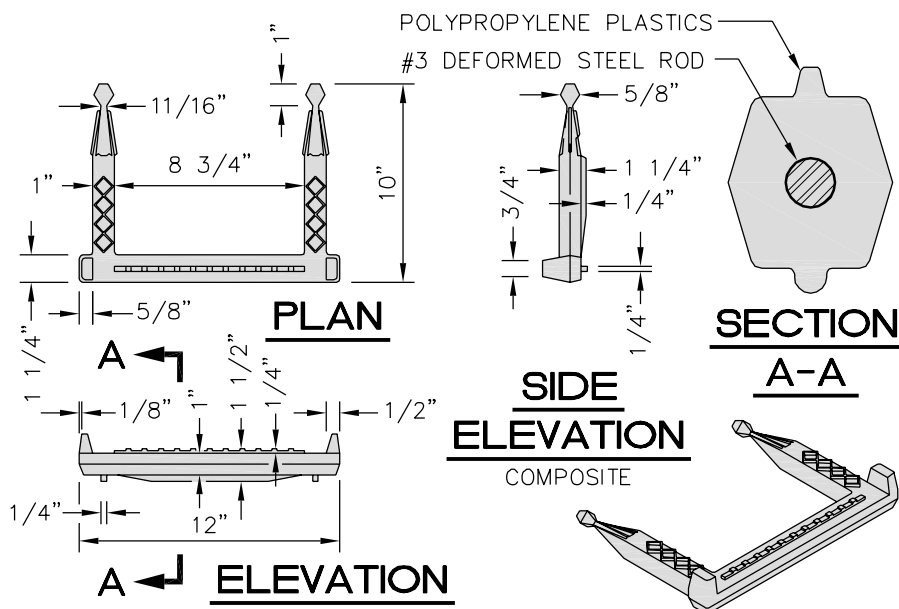
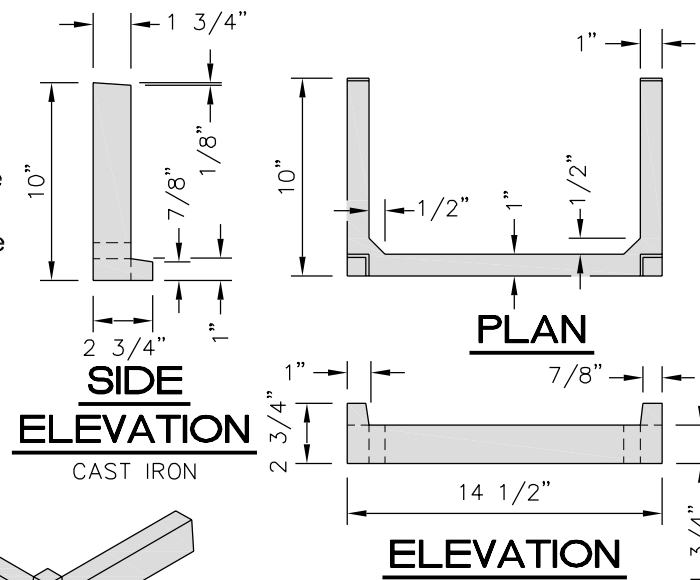
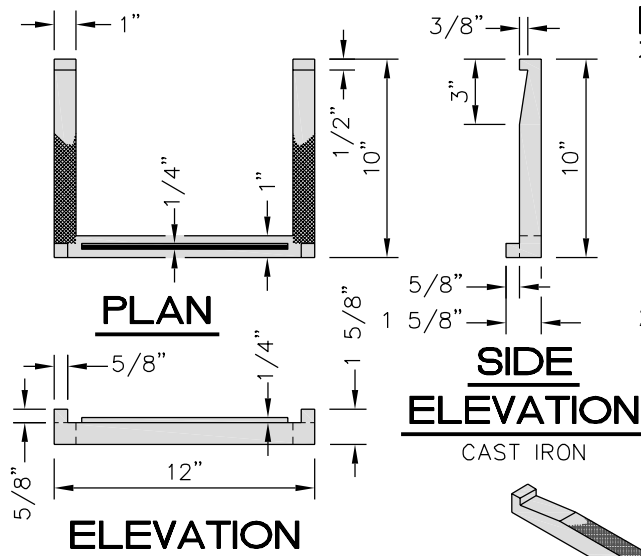
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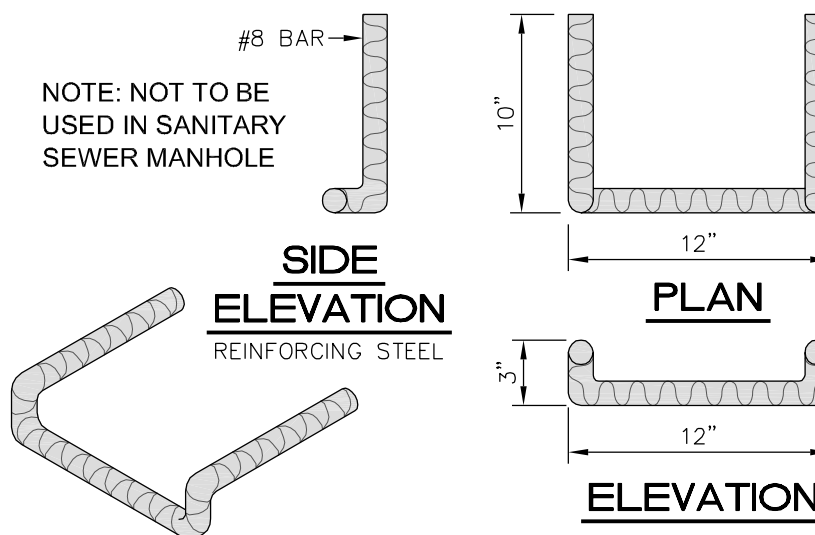
STANDARD MANHOLE FRAME & COVER

NOTES:

- Steps differing in dimensions, configuration, or materials from those shown may also be used provided the contractor has furnished the City with details of the proposed steps and has received written approval from the city for the use of such steps.
- All steps shall protrude from inside face of structural wall.



NOTE: NOT TO BE
USED IN SANITARY
SEWER MANHOLE



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STANDARD STEPS

