

DRAWING NO.

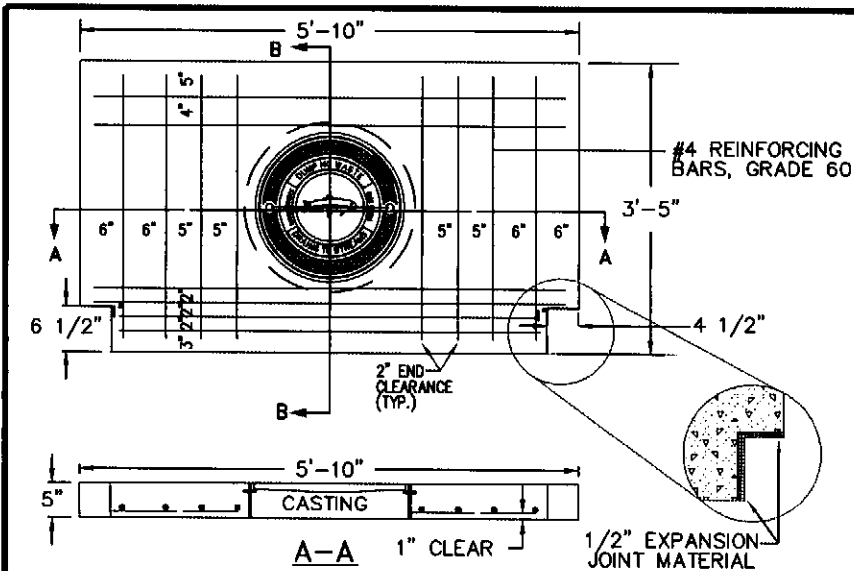
TITLE

401.00 (1 OF 2)	BRICK MASONRY CATCH BASIN, TYPE A
401.00 (2 OF 2)	BRICK MASONRY CATCH BASIN, TYPE A
402.00 (1 OF 2)	PRECAST CATCH BASIN, TYPE A
402.00 (2 OF 2)	PRECAST CATCH BASIN, TYPE A
403.00	FRAME AND COVER FOR CATCH BASIN TYPE A
407.00	BRICK YARD INLET 4' x 4', OUT - OUT
407.10	STANDARD 6' x 6' BRICK MASONRY YARD INLET
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415.00	STANDARD CONCRETE ENCASEMENT FOR MANHOLE AND VALVE CASTINGS IN PAVEMENT

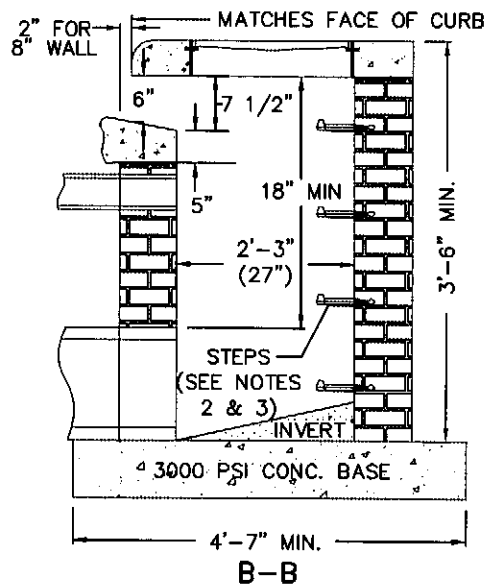
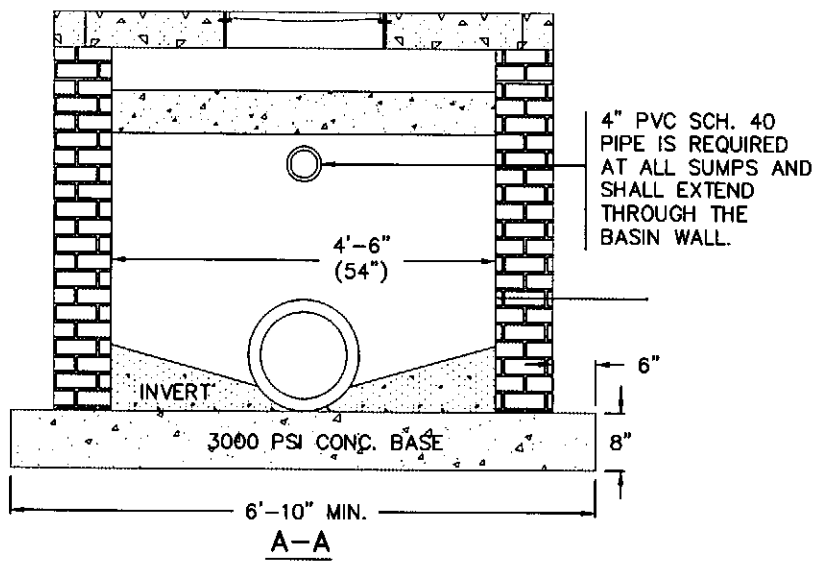
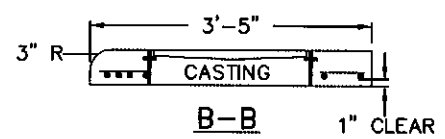
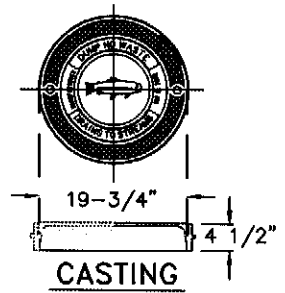


STANDARD DRAWING FOR  
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FOR STORM DRAINAGE DRAWING TITLES

400.00



TOP VIEW



NOTES:

- BRICK MASONRY SHALL BE JUMBO BRICK, CONCRETE BRICK, OR SOLID CONCRETE BLOCKS WHICH MEETS THE SPECIFICATIONS OF SECTION 1040 OF THE LATEST EDITION OF THE NCDOT STANDARD SPECIFICATIONS FOR ROADS AND STRUCTURES.
- FOR STRUCTURE HEIGHTS OVER 3'-6", INSTALL STEPS ON 12" CENTERS.
- GENERALLY, STEPS SHALL BE PLACED IN THE REAR WALL. IF THERE IS A CONFLICT WITH A PIPE ENTERING THE REAR WALL, THE STEPS SHALL BE MOVED TO A SIDE WALL, WITH A CORRESPONDING SHIFT OF THE TOP, CAST IRON FRAME & COVER. THE LOCATION OF THE SHIFTED STEPS AND FRAME & COVER SHALL BE APPROVED BY THE ENGINEER.
- CLASS A, 3000. PSI, CONCRETE SHALL BE USED THROUGHOUT.
- THE FRAME AND COVER SHALL BE CAST INTO THE PCC LID AND SHALL BE MANUFACTURED AS SPECIFIED IN JAMESTOWN STANDARD NO. 402.
- CATCH BASIN BRICK MINIMUM WALL THICKNESS:
 

HEIGHT OF STRUCTURE	WALL THICKNESS
0' TO 8'	8"
OVER 8' TO 16'	8"
OVER 16'	SPECIAL DESIGN

\* OVER 8'-0" IN HEIGHT, USE 12" WALL FROM THE BOTTOM OF THE WALL TO 6'-0" FROM THE TOP OF THE WALL. USE 8" WALL FOR THE REMAINING 6'-0".
- USE FORMS FOR CONSTRUCTION OF THE BOTTOM SLAB OR USE A PRECAST SLAB.

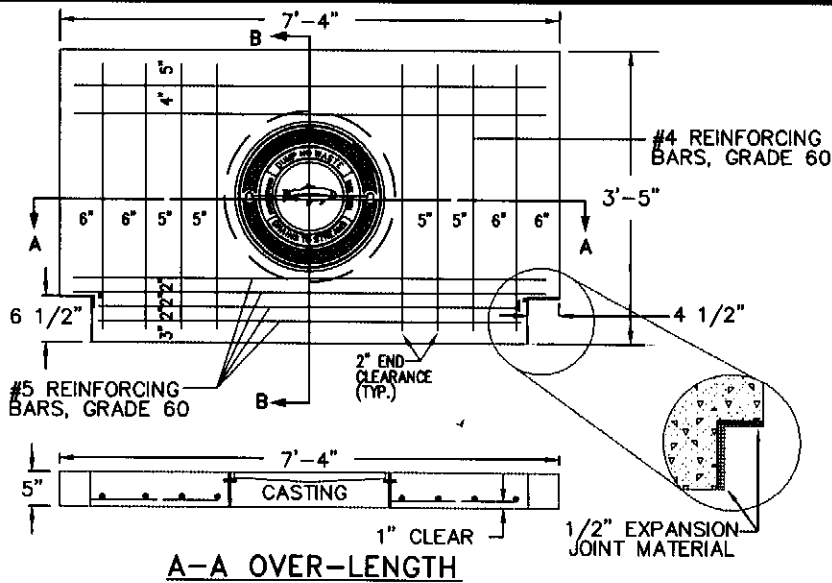
Settled 1752  
**JAMESTOWN**  
 NORTH CAROLINA

APPROVED MAY 19 2009

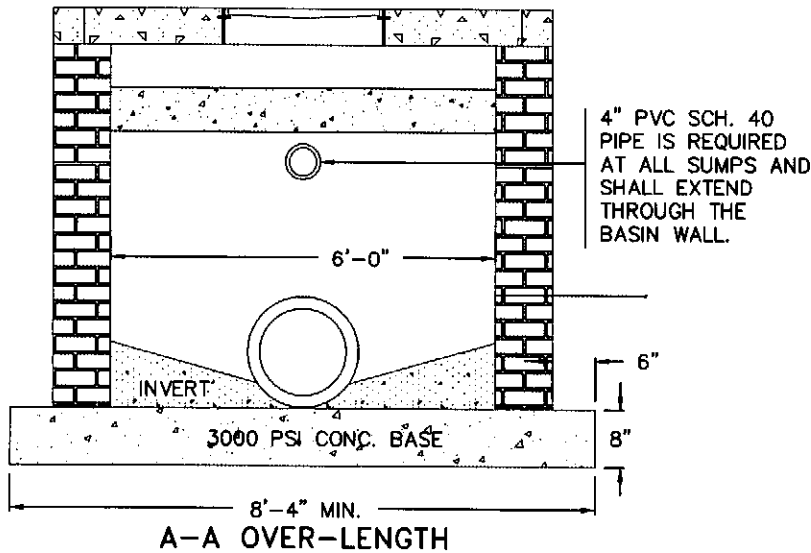
REVISIONS

STANDARD DRAWING FOR  
 BRICK MASONRY CATCH  
 BASIN, TYPE A

401.00
SHEET 1 OF 2



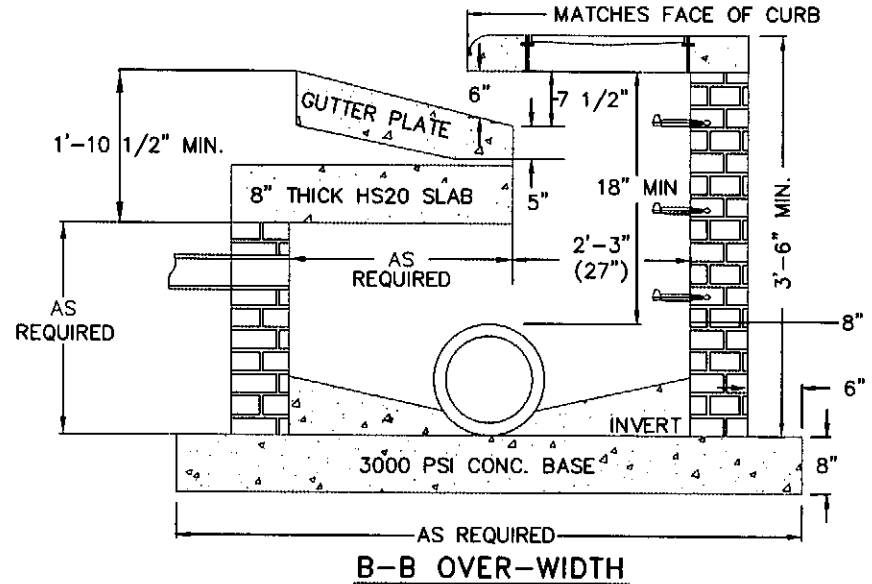
A-A OVER-LENGTH



A-A OVER-LENGTH

**NOTES:**

8. OVER-LENGTH, OVER-WIDTH, AND OVER-LENGTH/OVER-WIDTH CATCH BASINS, TYPE A SHALL BE SPECIFIED ON THE PLANS.
9. THE PRECAST CONCRETE INLET LID FOR THE OVER-LENGTH INLET SHALL HAVE FOUR #5 BARS IN THE STREET FACE.
10. IF POSSIBLE, THERE SHOULD BE A MINIMUM OF 6" LENGTH BETWEEN THE OUTSIDE EDGE OF A PIPE AND THE INSIDE EDGE OF THE INLET WALLS.
11. DRAWINGS NOT TO SCALE.

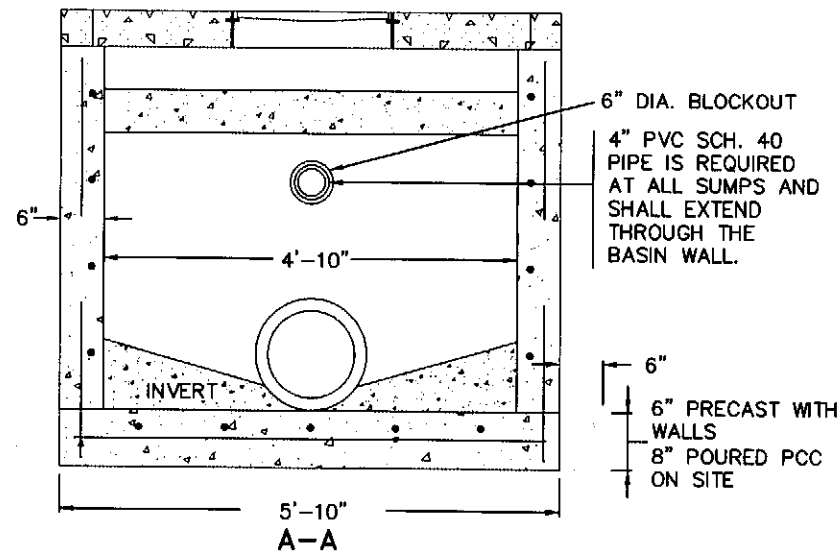
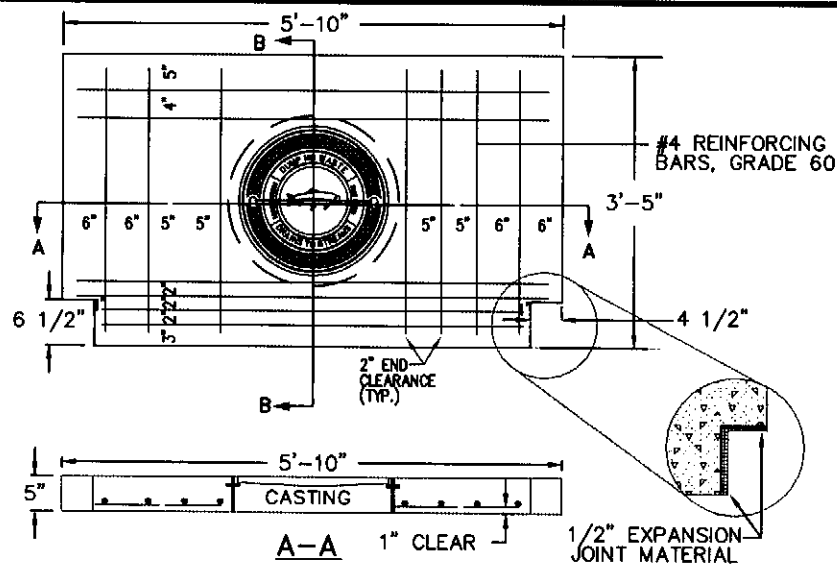


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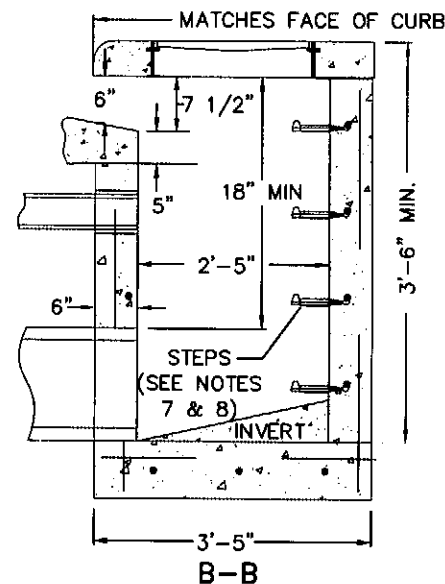
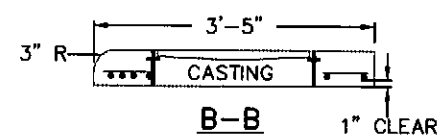
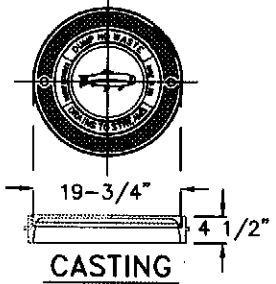
REVISIONS

STANDARD DRAWING FOR  
 BRICK MASONRY CATCH  
 BASIN, TYPE A

401.00  
 SHEET 2 OF 2



TOP VIEW



NOTES:

1. PRECAST DESIGN SPECIFICATIONS SHALL CONFORM TO THE LATEST ASTM C913 SPECIFICATIONS FOR "PRECAST CONCRETE WATER AND WASTEWATER STRUCTURES", NCDOT, AND TOWN OF JAMESTOWN SPECIFICATIONS.
2. PRECAST STRUCTURES SHALL BE DESIGNED FOR H-20-44 LOADING.
3. PRECAST STRUCTURE SHALL HAVE A MINIMUM CONCRETE COMPRESSIVE STRENGTH OF 4000 PSI. IF BOTTOM CONCRETE SLAB IS POURED, IT SHALL HAVE A MINIMUM CONCRETE COMPRESSIVE STRENGTH OF 3000 PSI AND SHALL BE POURED INTO FORMS.
4. STEEL REINFORCING DESIGN SHALL CONFORM TO THE REQUIREMENTS OF ASTM C890 SPECIFICATIONS FOR "STRUCTURAL DESIGN LOADING FOR WATER AND WASTEWATER STRUCTURES" AND SHALL UTILIZE GRADE 60 RE-BARS CONFORMING TO THE REQUIREMENTS OF ASTM A615 OR WWF CONFORMING TO THE REQUIREMENTS OF ASTM A185 OR BOTH.
5. ADDITIONAL STEEL REINFORCEMENT SHALL BE INSTALLED AT ALL OPENINGS.
6. THE FRAME AND COVER SHALL BE CAST INTO THE PCC LID AND SHALL BE MANUFACTURED AS SPECIFIED IN STANDARD DETAIL NO. 402.
7. FOR STRUCTURE HEIGHTS OVER 3'-6", INSTALL STEPS ON 12" CENTERS. ALL STEPS SHALL CONFORM TO TOWN STD. NO. 303, OR AN APPROVED EQUAL.
8. GENERALLY, STEPS SHALL BE PLACED IN THE REAR WALL. IF THERE IS A CONFLICT WITH A PIPE ENTERING THE REAR WALL, THE STEPS SHALL BE MOVED TO A SIDE WALL, WITH A CORRESPONDING SHIFT OF THE TOP, CAST IRON FRAME & COVER. THE LOCATION OF THE SHIFTED STEPS AND FRAME & COVER SHALL BE APPROVED BY THE ENGINEER.
9. SEAL JOINTS WITH FLEXIBLE BUTYL RUBBER BASE CONFORMING TO FEDERAL SPECIFICATIONS SS-S-21A, AASHTO M-198, TYPE B - BUTYL RUBBER.
10. PRECAST CATCH BASIN MINIMUM WALL THICKNESS (SOLID WALL AND BOTTOM SLAB):
 

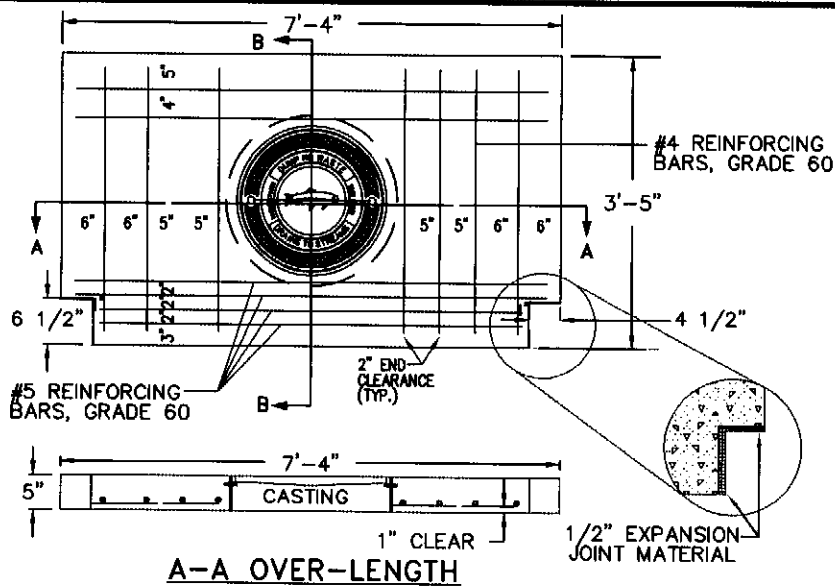
HEIGHT OF STRUCTURE	WALL THICKNESS
0' TO 10'	6"
10' TO 16'	8"
OVER 16'	SPECIAL DESIGN

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 NORTH CAROLINA  
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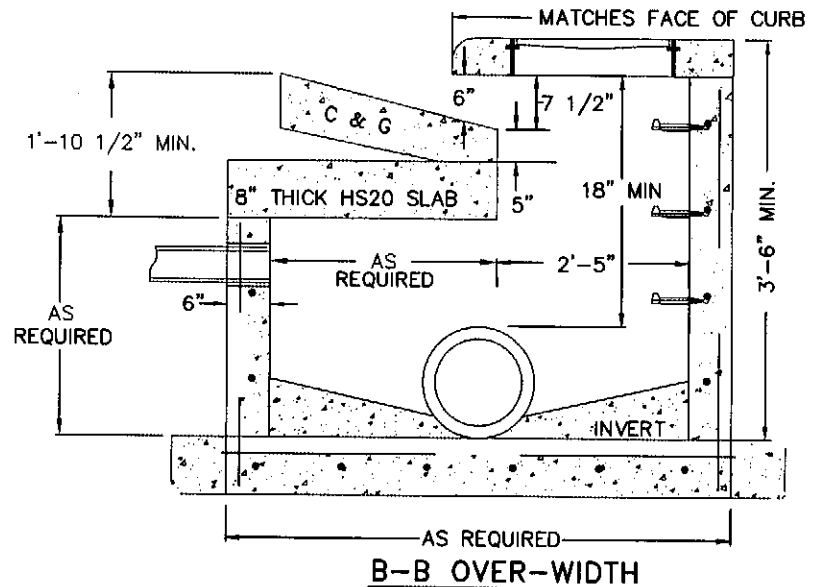
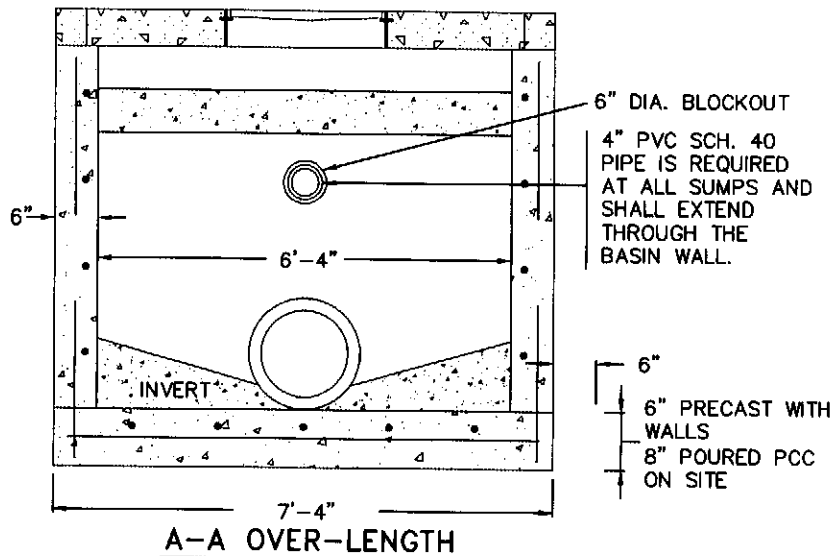
REVISIONS

STANDARD DRAWING FOR  
 PRECAST CATCH  
 BASIN, TYPE A

402.00
SHEET 1 OF 2



- NOTES:**
- OVER-LENGTH, OVER-WIDTH, AND OVER-LENGTH/OVER-WIDTH CATCH BASINS, TYPE A SHALL BE SPECIFIED ON THE PLANS.
  - THE PRECAST CONCRETE INLET LID FOR THE OVER-LENGTH INLET SHALL HAVE FOUR #5 BARS IN THE STREET FACE.
  - IF POSSIBLE, THERE SHOULD BE A MINIMUM OF 6" LENGTH BETWEEN THE OUTSIDE EDGE OF A PIPE AND THE INSIDE EDGE OF THE INLET WALLS.
  - DRAWINGS NOT TO SCALE.



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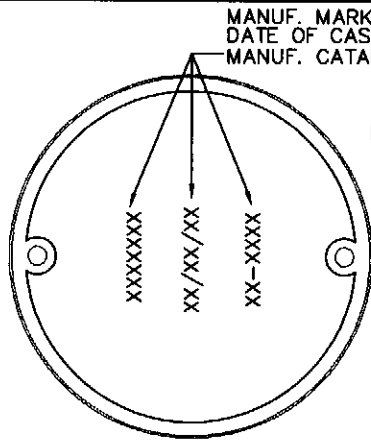
REVISIONS

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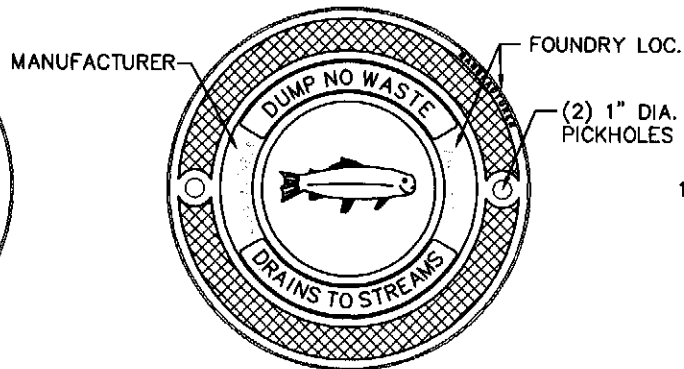
STANDARD DRAWING FOR  
 PRECAST CATCH  
 BASIN, TYPE A

402.00

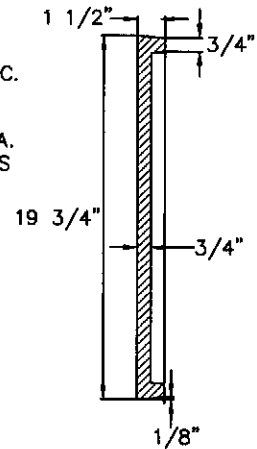
SHEET 2 OF 2



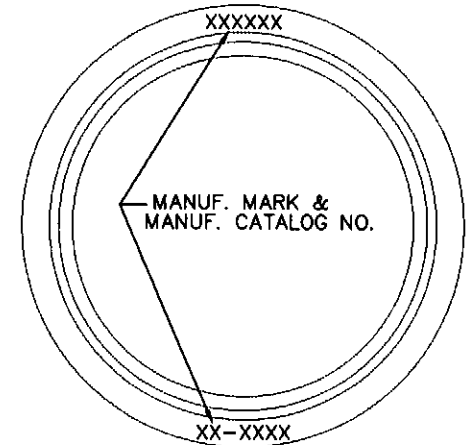
COVER BACK



PREFERRED COVER FACE



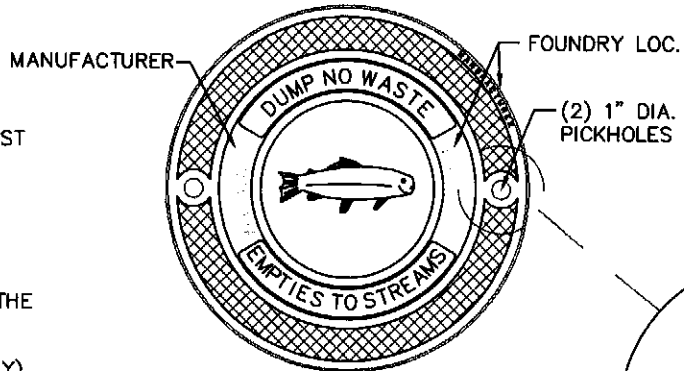
COVER SECTION



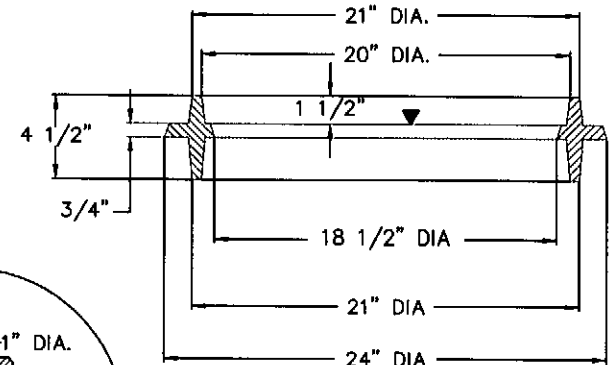
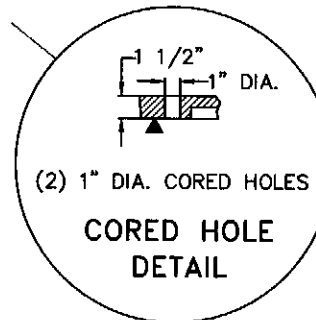
FRAME TOP VIEW

**NOTES:**

1. FRAME & COVER SHALL BE GRAY CAST IRON MEETING ASTM A48 CLASS 35B SPECIFICATIONS.
2. MINIMUM AVERAGE WEIGHT:  
COVER 76 LBS  
FRAME 61 LBS  
UNIT 137 LBS
3. FRAME AND COVER SHALL CONTAIN THE FOLLOWING INFORMATION:  
1. MANUFACTURER'S MARK  
2. LOCATION OF FOUNDRY (COUNTRY)  
3. MANUFACTURER'S CATALOG NO.  
(SEE COMPONENT DIAGRAMS FOR SPECIFICS)
4. APPROVED MANUFACTURERS:  
EAST JORDAN IRON WORKS, V-1887  
U.S. FOUNDRY, USF 1162 RING & LV COVER



OPTIONAL COVER FACE



FRAME SECTION

▼ = MACHINED SURFACE

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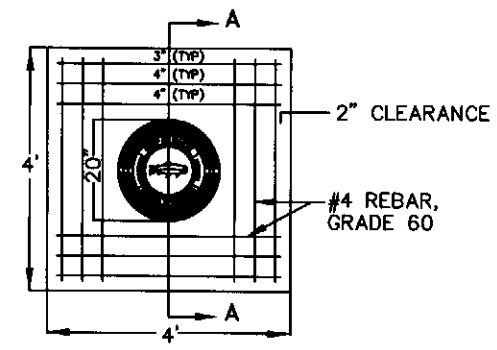
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REVISIONS

STANDARD DRAWING FOR  
FRAME AND COVER  
FOR CATCH BASIN TYPE A

403.00

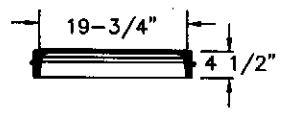
SHEET 1 OF 1



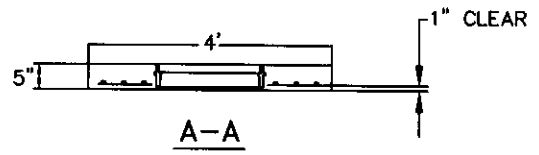
**REINFORCED TOP SLAB**



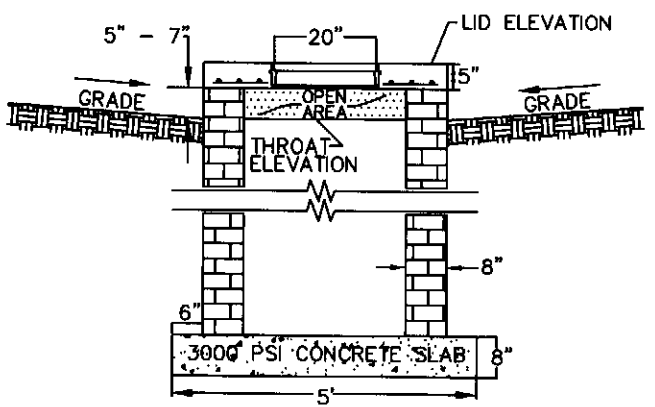
**TOP VIEW CASTING**



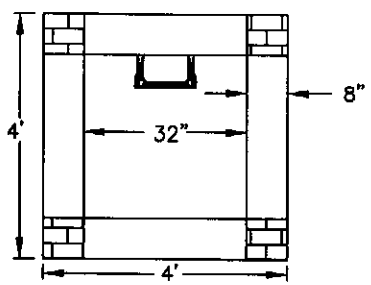
**B-B CASTING**



**A-A**



**SIDE VIEW**



**TOP VIEW**

**NOTES:**

1. BRICK MASONRY SHALL BE JUMBO BRICK, CONCRETE BRICK, OR SOLID CONCRETE BLOCKS WHICH MEETS THE SPECIFICATIONS OF SECTION 1040 OF THE LATEST EDITION OF THE NCDOT STANDARD SPECIFICATIONS FOR ROADS AND STRUCTURES.
2. FOR STRUCTURE HEIGHTS OVER 3'-6", INSTALL STEPS ON 12" CENTERS.
3. ALL STEPS SHALL CONFORM TO TOWN STD. NO. 303 OR AN APPROVED EQUAL.
4. CLASS A, 3000 PSI, CONCRETE SHALL BE USED THROUGHOUT.
5. THE FRAME AND COVER SHALL BE CAST INTO THE PCC LID AND SHALL BE MANUFACTURED AS SPECIFIED IN STANDARD DETAIL NO. 402.
6. YARD INLET BRICK MINIMUM WALL THICKNESS:
 

HEIGHT OF STRUCTURE	WALL THICKNESS
0' TO 8'	8"
OVER 8' TO 16'	*
OVER 16'	SPECIAL DESIGN
- \* OVER 8'-0" IN HEIGHT, USE 12" WALL FROM THE BOTTOM OF THE WALL TO 6'-0" FROM THE TOP OF THE WALL. USE 8" WALL FOR THE REMAINING 6'-0".
7. USE FORMS FOR CONSTRUCTION OF THE BOTTOM SLAB OR USE A PRECAST SLAB.

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 NORTH CAROLINA

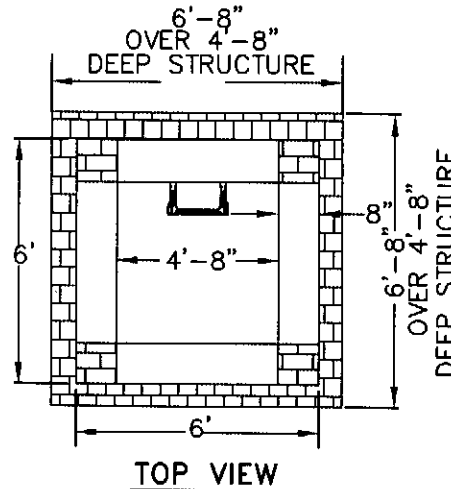
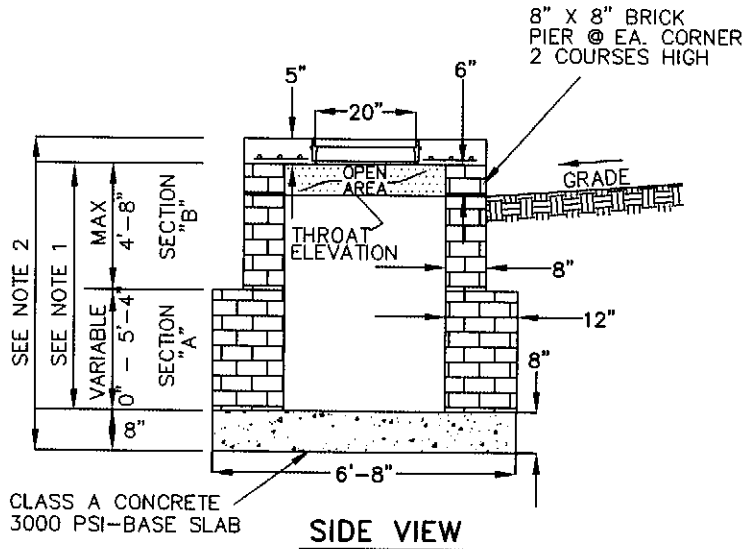
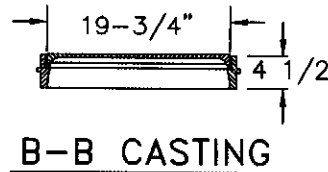
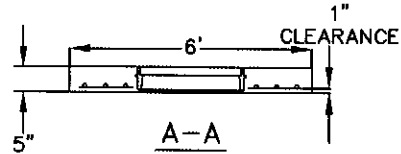
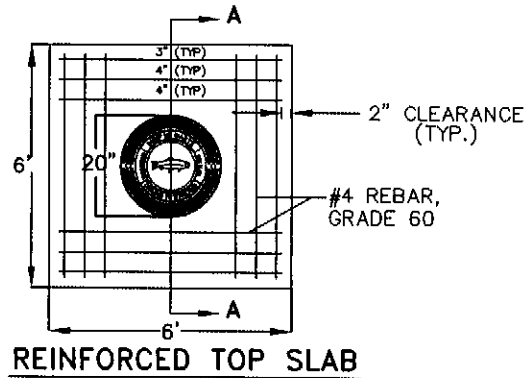
APPROVED: MAY 19, 2009

REVISIONS

STANDARD DRAWING FOR  
**BRICK YARD INLET**  
 4' X 4', OUT - OUT

**407.00**

SHEET 1 OF 1



1. FOR YARD INLETS OVER 4'-8" VERTICAL WALL DEPTH, THE BRICK MASONRY WALL THICKNESS WILL BE 12" BEGINNING AT 4-8" DEEP.

2. SECTION "B" OF THE PROPOSED WALL SHALL BE 8" THICK. SECTION "A" SHALL BE 12" THICK.

3. IF PROP. STRUCTURE EXCEEDS 12'-0" VERT. HEIGHT, A DESIGN WILL BE REQUIRED FOR APPROVAL.

4. BRICK MASONRY CAN BE COMMON CLAY BRICK, JUMBO BRICK, OR CONCRETE BRICK.

5. ALL MORTAR JOINTS ARE TO BE 1/2".

6. CONCRETE BOTTOMS, WALLS, & PIERS SHALL BE PAID AS MASONRY DRAINAGE STRUCTURE.

7. CONCRETE COVER TO BE PAID AS FURNISH & INSTALL 6' X 6' YARD INLET COVER.

8. YARD INLETS OVER 3'-6" IN DEPTH SHALL PROVIDE STEPS 16" ON CENTER. STEPS SHALL BE IN ACCORDANCE WITH STANDARD 303.00. STEPS WILL BE IN ALIGNMENT WITH THE LOCATION OF THE RING & COVER.

9. WHEN CONSTRUCTING THIS STRUCTURE OVER AN EXISTING PIPE LINE, SAW CUT & REMOVE A SECTION OF PIPE EQUAL TO THE INSIDE DIAMETER OF THE STRUCTURE. POUR A NEW BOTTOM AS SHOWN AND CONSTRUCT THE NEW STRUCTURE. NEW STRUCTURES ARE NOT TO BE BUILT ON TOP OF THE PIPE.

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REVISIONS

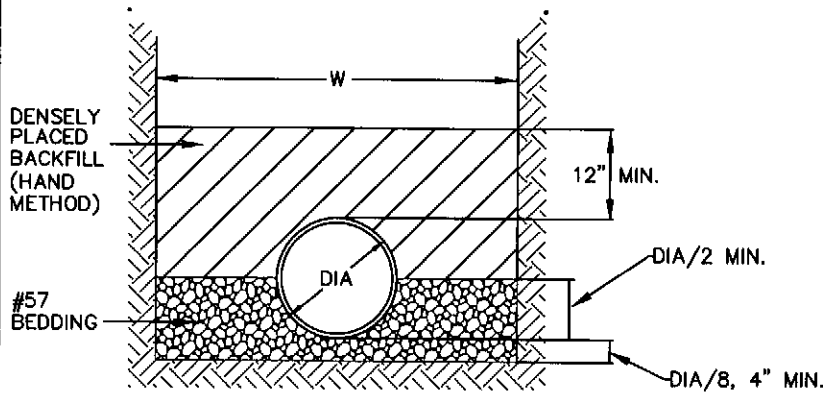
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STANDARD DRAWING FOR  
STANDARD 6' X 6' BRICK  
MASONRY YARD INLET

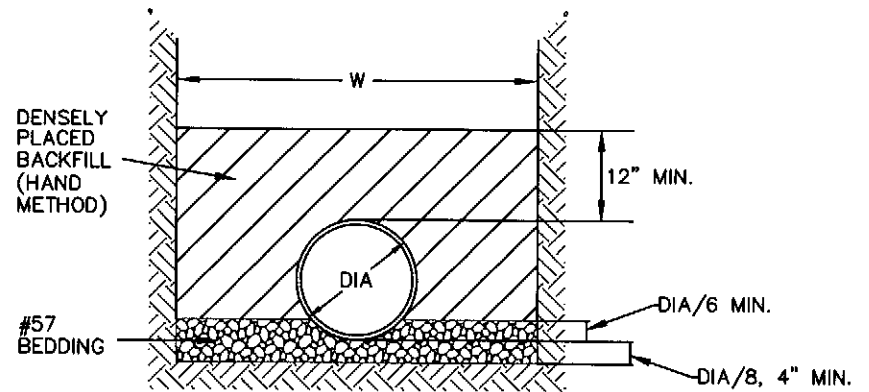
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SHEET 1 OF 1

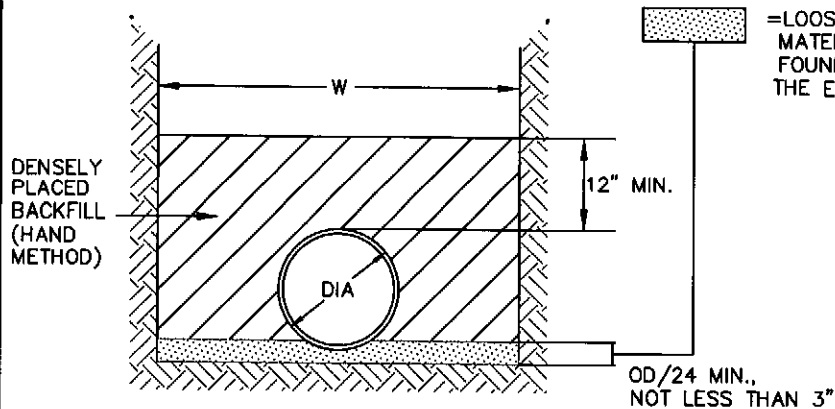




**GRANULAR FOUNDATION  
BEDDING CLASS B**



**GRANULAR FOUNDATION  
BEDDING CLASS C**



**CONTINUOUS BEARING SUPPORT  
MODIFIED BEDDING CLASS D**

=LOOSELY PLACED APPROVED SUITABLE LOCAL MATERIAL OR SELECT MATERIAL FOR FOUNDATION CONDITIONING AS DIRECTED BY THE ENGINEER. (STONE WILL NOT BE ALLOWED)

**TRENCH WIDTH**

MIN W = DIA + 16"  
MAX W = DIA + 4'

IF CONTRACTOR CHOOSES TO EXCAVATE PAST THE MAX W, THE CONTRACTOR WILL BE RESPONSIBLE FOR ALL COSTS IN THE EXCAVATION BEYOND THE MAX W LIMITS.

**BACKFILLING NOTES ACCORDING TO CURRENT EDITION OF NCDOT STANDARD SPECIFICATIONS FOR ROADS AND STRUCTURES:**

- A. EXCAVATION, TRENCHING, AND BACKFILLING SHALL BE DONE ACCORDING TO SECTION 300 AND ACCORDING TO NCDOT STD. NO. 300.01, METHOD OF PIPE INSTALLATION, METHOD A.
- B. BACKFILLING SHALL ALSO BE IN ACCORDANCE WITH ARTICLE 300-7 AND COMPACTED TO 95% OF THE AASHTO T99 NCDOT MODIFIED PROCTOR.
- C. THE LAST 8" OF BACKFILL BELOW THE FINISHED SURFACE OF THE SUBGRADE SHALL BE COMPACTED TO 100% OF THE AASHTO T99 NCDOT MODIFIED PROCTOR.

**TYPICAL INSTALLATION**

- A. UNLESS OTHERWISE SPECIFIED, A MODIFIED CLASS D FOUNDATION SHALL BE USED.
- B. UNLESS OTHERWISE SPECIFIED, METHOD A SHALL BE USED.

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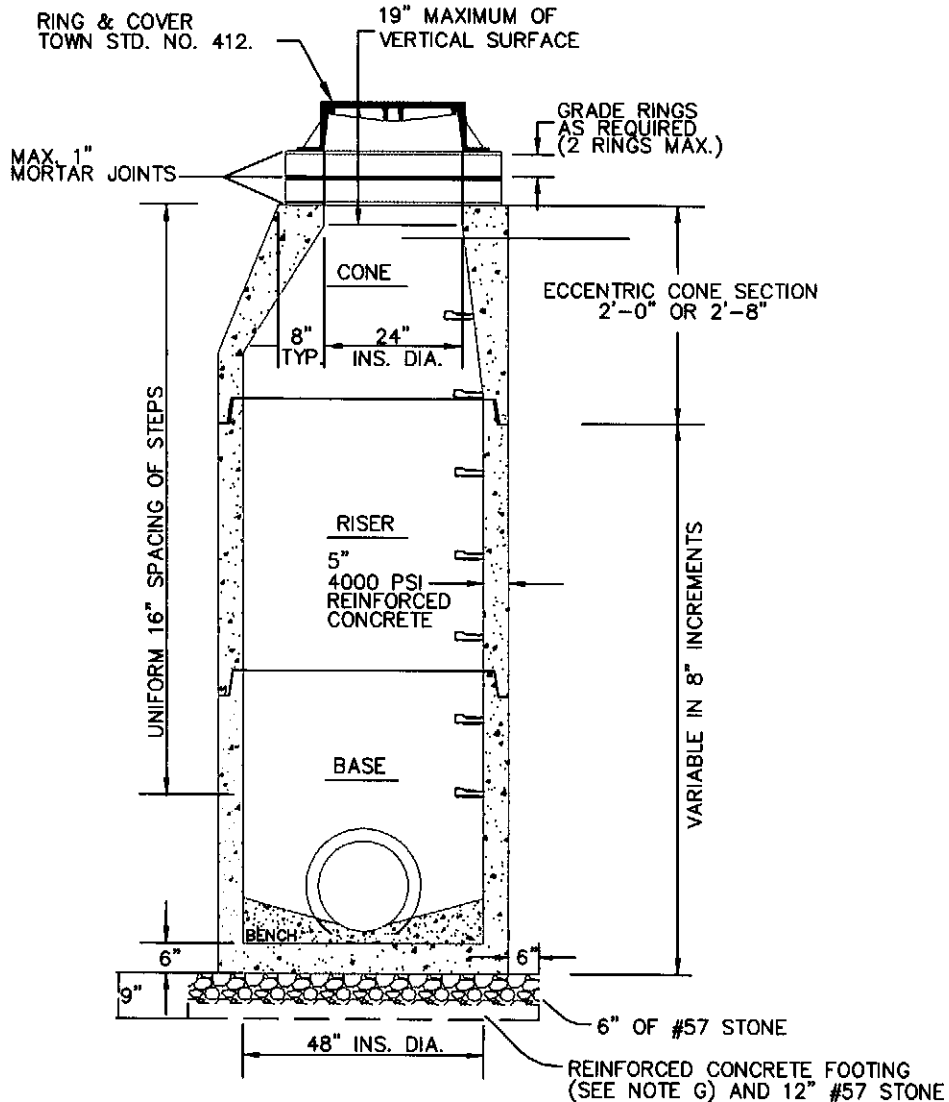
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REVISIONS

STANDARD DRAWING FOR  
**STORM SEWER INSTALLATION**

409.00

SHEET 1 OF 1



**NOTES:**

- A. ALL PRECAST SEWER MANHOLE SECTIONS SHALL MEET THE REQUIREMENTS OF ASTM C-478 AND AASHTO M199. THE PRECAST CONCRETE COMPRESSIVE STRENGTH SHALL BE A MINIMUM OF 4000 PSI.
- B. ALL MANHOLE STEPS SHALL CONFORM TO TOWN STD. NO. 303 OR AN APPROVED EQUAL. STEPS SHALL BE INSTALLED IN LINE WITH THE VERTICAL SIDE OF THE CONE.
- C. THE MANHOLE JOINTS SHALL BE SEALED BY A BUTYL RUBBER SEALANT. THE BUTYL RUBBER SEALANT SHALL BE 1" SQUARE AND SHALL CONFORM TO ASTM C-990 AND AASHTO M-198.
- D. THE LIFT INSERT AND HOLES SHALL BE ACCORDING TO TOWN STD. NO. 305. ALL LIFT HOLES SHALL BE COMPLETELY FILLED WITH NON-SHRINK GROUT AFTER MH INSTALLATION.
- E. ALL PIPE ENTRANCES AND CONNECTIONS SHALL CONFORM TO SECTION 840 OF THE CURRENT EDITION OF THE NCDOT STANDARD SPECIFICATIONS FOR ROADS & STRUCTURES.
- F. IF A FLAT-TOP SECTION IS NECESSARY, IT SHALL BE APPROVED BY THE ENGINEER AND SHALL BE DESIGNED FOR HS-20 LOADING.
- G. A REINFORCED CONCRETE FOOTING IS REQUIRED WHEN THE MANHOLE IS OVER 12' OR ON A POOR SOIL BASE. THE REINFORCED CONCRETE FOOTING MAY BE POURED OR PRECAST ACCORDING TO CURRENT NCDOT STD. NO 1525.01 SHEET 2 OF 2. THE CONTRACTOR HAS THE OPTION OF PROVIDING AN EXPANDED MANHOLE BASE SECTION AND SETTING THE BASE SECTION ON 12" MIN. #57 STONE WITH NO EXTRA COST TO THE TOWN.
- H. ALL PIPE OPENINGS SHALL BE CAST TO ELEVATIONS SPECIFIED ON CONTRACT PLANS OR TO MEET JOB REQUIREMENTS.

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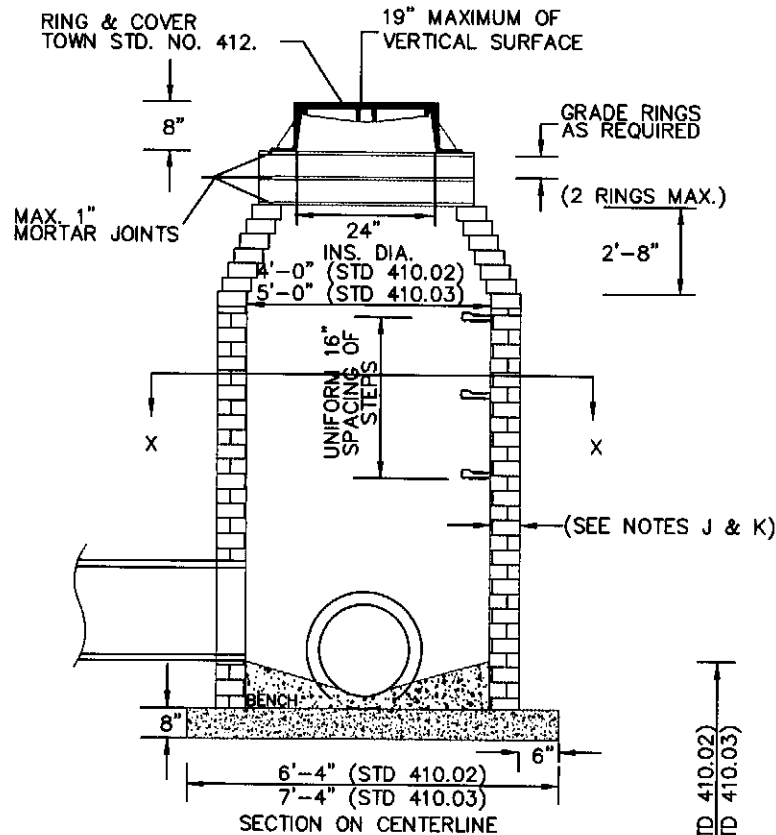
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REVISIONS

STANDARD DRAWING FOR  
**PRECAST STORM MANHOLE, 4' DIA.**  
 FOR STORM SEWER PIPE LESS THAN 21"

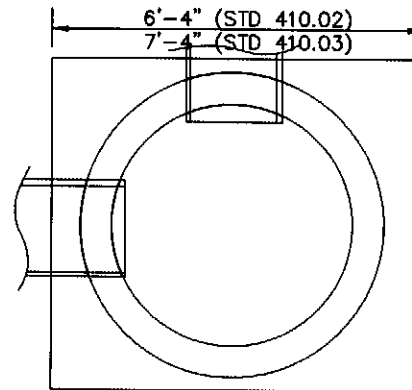
410.00

SHEET 1 OF 1



**NOTES:**

- A. STANDARD 410.02 MANHOLE IS FOR PIPE SIZES 12" THRU 30" DIAMETER.
- B. STANDARD 410.03 MANHOLE IS FOR PIPE SIZES 36" AND 42" DIAMETER.
- C. FOR PIPE SIZES 48" DIAMETER OR LARGER, BRICK OR PRECAST CONCRETE MANHOLES ARE TO BE OF ADEQUATE DIAMETER TO ACCEPT THE PIPE SIZES. CALL OUT THE DIAMETER ON THE PLAN & PROFILE DRAWINGS.
- D. WITHIN THE RIGHT-OF-WAY, BRICK CORBELLING OR PRECAST CONCRETE CONE SECTIONS ARE TO BE USED. FLAT TOP MANHOLES ARE NOT ALLOWED IN THE RIGHT-OF-WAY. OUTSIDE THE RIGHT-OF-WAY, FLAT TOPS ARE ALLOWED ONLY IF NECESSARY BECAUSE OF UNAVOIDABLE SHALLOW PIPE DEPTH.
- E. TOWN STANDARD 412.00 RING AND COVERS ARE REQUIRED ON ALL MANHOLES.
- F. ALL MORTOR JOINTS ARE TO BE 1/2"± TO 1/8"±.
- G. CONCRETE IS TO BE CLASS B, 2500 PSI FOR BASE.
- H. JUMBO BRICK WILL BE PERMITTED. CONCRETE BRICK OR 4" SOLID CONCRETE BLOCKS MAY BE USED IN LIEU OF CLAY BRICK.
- I. MANHOLES OVER 3'-6" IN DEPTH SHALL BE PROVIDED WITH STEPS 16" ON CENTERS.
- J. FOR MANHOLES WITH A VERTICAL WALL DEPTH LESS THAN 12'-0", BRICK MASONRY WALL THICKNESS SHALL BE 8".
- K. FOR MANHOLES OVER 12'-0" VERTICAL WALL DEPTH, BRICK MASONRY WALL THICKNESS SHALL BE 1'-0" BEGINNING AT 12'-0" DEPTH.
- L. WHEN CONSTRUCTING THIS STRUCTURE OVER AN EXISTING PIPE LINE, SAW CUT AND REMOVE A SECTION OF PIPE EQUAL TO THE INSIDE DIAMETER OF THE STRUCTURE. POUR A NEW BOTTOM AS SHOWN AND CONSTRUCT THE NEW STRUCTURE. NEW STRUCTURES ARE NOT TO BE BUILT ON TOP OF THE PIPE.
- M. SPECIAL SITUATIONS OTHER THAN DESCRIBED ON THIS DRAWING ARE TO BE APPROVED BY THE TOWN OF JAMESTOWN.



SECTION X-X

STANDARD DRAWING FOR  
STANDARD BRICK MASONRY  
STORM SEWER MANHOLE

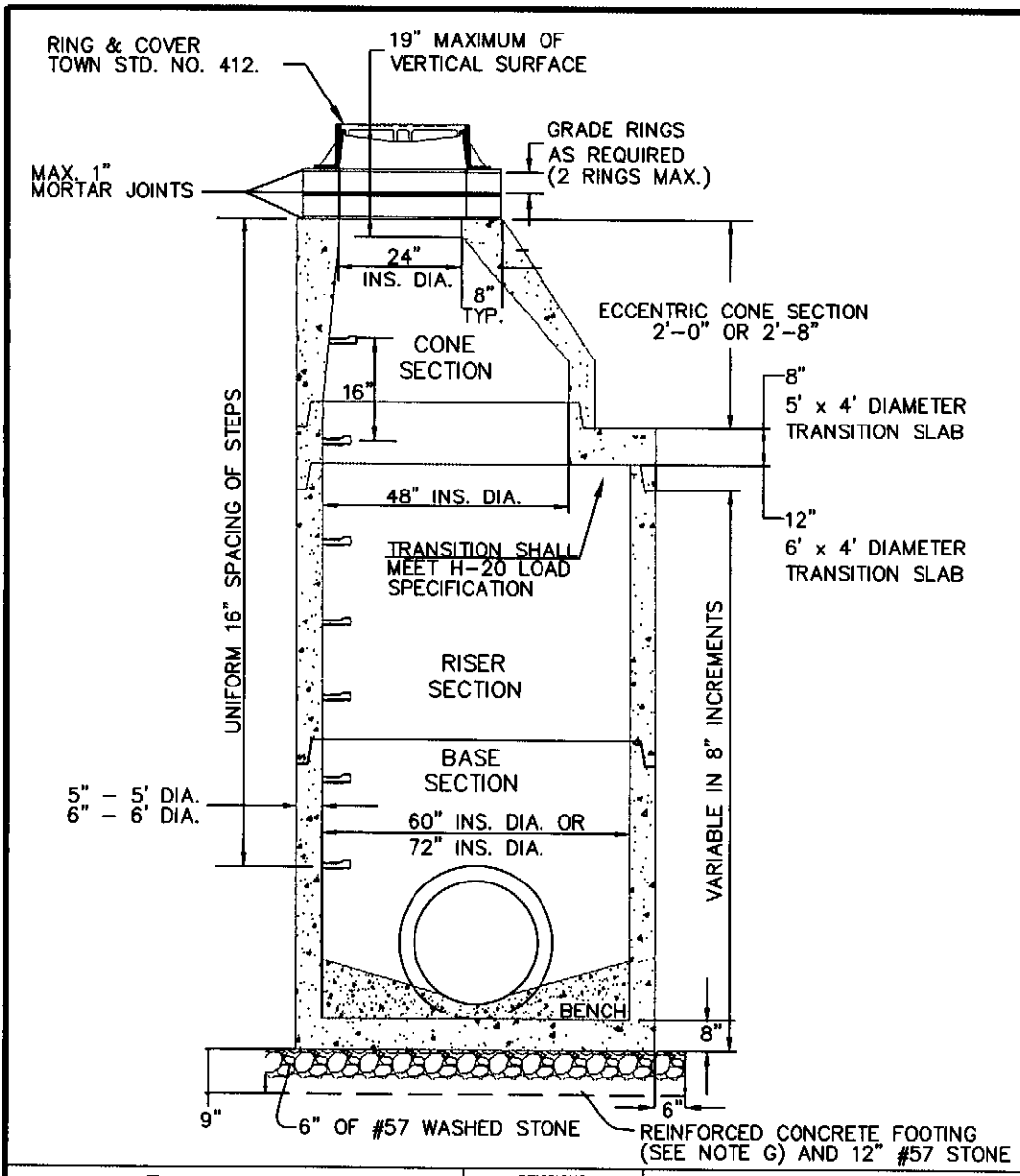
Settled 1759  
**JAMESTOWN**  
NORTH CAROLINA

APPROVED...MAY 19 2009

REVISIONS	

410.10

SHEET 1 OF 1



**TYPICAL MANHOLE DIMENSIONS:**  
 (UNLESS OTHERWISE NOTED ON PLANS)  
 8" TO 18" RCP PIPE - 4'-0"  
 21" TO 30" RCP PIPE - 5'-0"  
 36" TO 48" RCP PIPE - 6'-0"

- NOTES:**
- A. ALL PRECAST SEWER MANHOLE SECTIONS SHALL MEET THE REQUIREMENTS OF ASTM C-478 AND AASHTO M199. THE PRECAST CONCRETE COMPRESSIVE STRENGTH SHALL BE A MINIMUM OF 4000 PSI.
  - B. ALL MANHOLE STEPS SHALL CONFORM TO TOWN STD. NO. 303 OR AN APPROVED EQUAL. STEPS SHALL BE INSTALLED IN LINE WITH THE VERTICAL SIDE OF THE CONE.
  - C. THE MANHOLE JOINTS SHALL BE SEALED BY A BUTYL RUBBER SEALANT. THE BUTYL RUBBER SEALANT SHALL BE 1-1/4" SQUARE (5' DIA.) AND 1-1/2" SQUARE (6' DIA.) AND SHALL CONFORM TO ASTM C-990 AND AASHTO M-198.
  - D. THE LIFT INSERT AND HOLES SHALL BE ACCORDING TO TOWN STD. NO. 305. ALL LIFT HOLES SHALL BE COMPLETELY FILLED WITH NON-SHRINK GROUT AFTER MH INSTALLATION.
  - E. ALL PIPE ENTRANCES AND CONNECTIONS SHALL CONFORM TO SECTION 840 OF THE CURRENT EDITION OF THE NCDOT STANDARD SPECIFICATIONS FOR ROADS & STRUCTURES.
  - F. IF A FLAT-TOP SECTION IS NECESSARY, IT SHALL BE APPROVED BY THE ENGINEER AND SHALL BE DESIGNED FOR HS-20 LOADING.
  - G. A REINFORCED CONCRETE FOOTING IS REQUIRED WHEN THE MANHOLE IS OVER 12' OR ON A POOR SOIL BASE. THE REINFORCED CONCRETE FOOTING MAY BE POURED OR PRECAST ACCORDING TO CURRENT NCDOT STD. NO 1525.01 SHEET 2 OF 2. THE CONTRACTOR HAS THE OPTION OF PROVIDING AN EXPANDED MANHOLE BASE SECTION AND SETTING THE BASE SECTION ON 12" MIN. #57 STONE WITH NO EXTRA COST TO THE TOWN.
  - H. ALL PIPE OPENINGS SHALL BE CAST TO ELEVATIONS SPECIFIED ON CONTRACT PLANS OR TO MEET JOB REQUIREMENTS.

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 NORTH CAROLINA

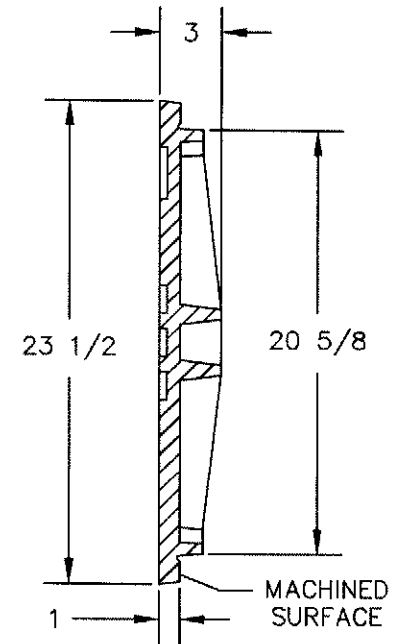
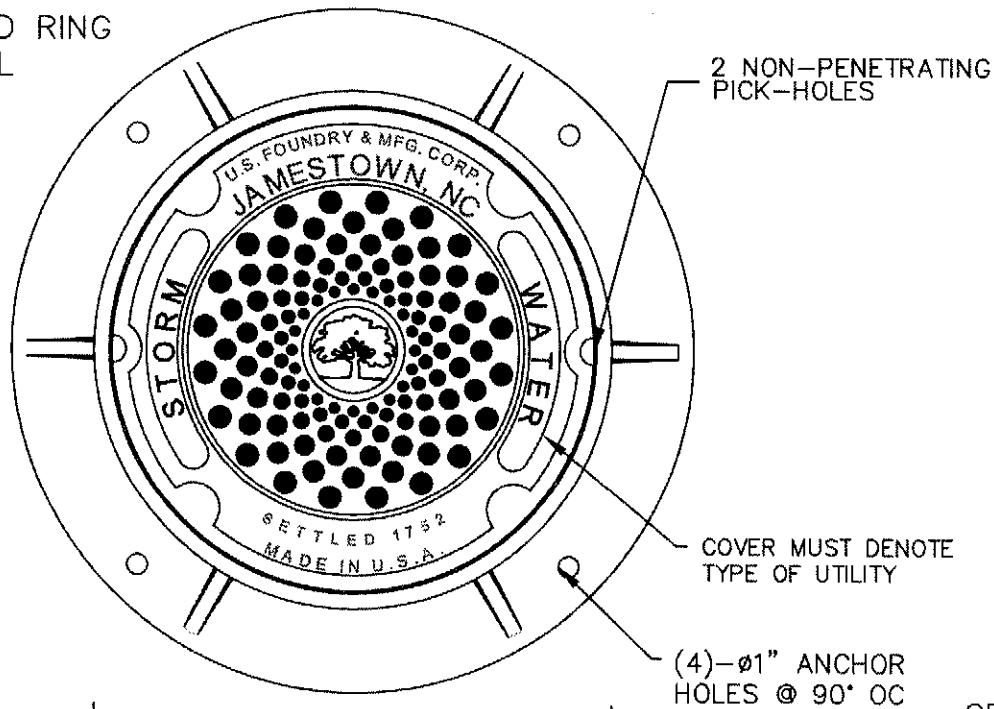
APPROVED MAY 19 2009

REVISIONS

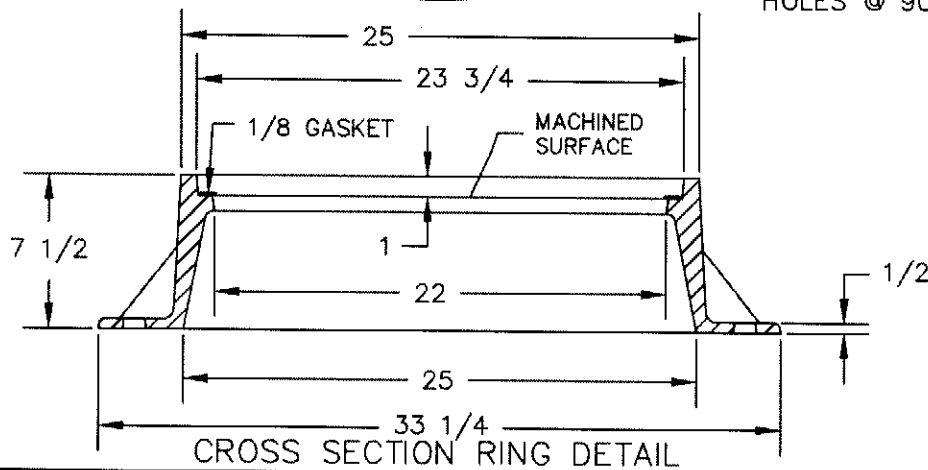
STANDARD DRAWING FOR  
**PRECAST STORM MANHOLE, 5' & 6' DIA.**  
 FOR STORM SEWER PIPE 21" TO 48"

411.00
SHEET 1 OF 1

COVER AND RING  
TOP DETAIL



CROSS SECTION COVER DETAIL



CROSS SECTION RING DETAIL

NOTES:

- A. MINIMUM AVERAGE WEIGHT:  
COVER 125 LBS.  
FRAME 190 LBS.  
UNIT 315 LBS.
- B. MANHOLE RING AND COVERS SHALL BE MADE OF GRAY CAST IRON AND SHALL CONFORM TO AASHTO M105 AND ASTM A48, CLASS 35B.
- C. RING & COVER SHALL HAVE MACHINED SEATS.
- D. APPROVED RING & COVERS  
1. US FOUNDRY & MFG. CORP. RING USF 669,  
"JAMESTOWN" COVER 8015297 (VENTED).

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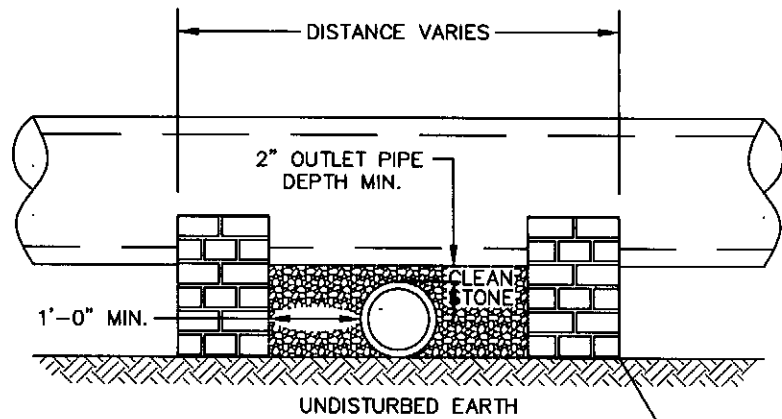
APPROVED... MAR 11 2010

REVISIONS

STANDARD DRAWING FOR  
**STORM MANHOLE RING AND COVER**  
FOR ROADWAY APPLICATIONS

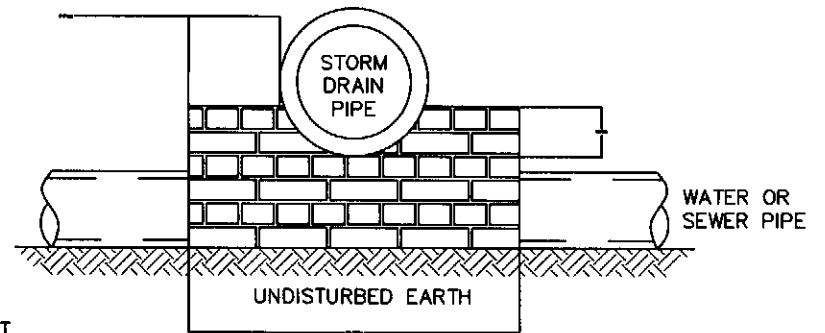
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SHEET 1 OF 1



FRONT VIEW

PIER SHALL AT LEAST  
EXTEND TO THE BOTTOM  
OF THE LOWER PIPE



SIDE VIEW

*Settled 1752*  
**JAMESTOWN**  
NORTH CAROLINA

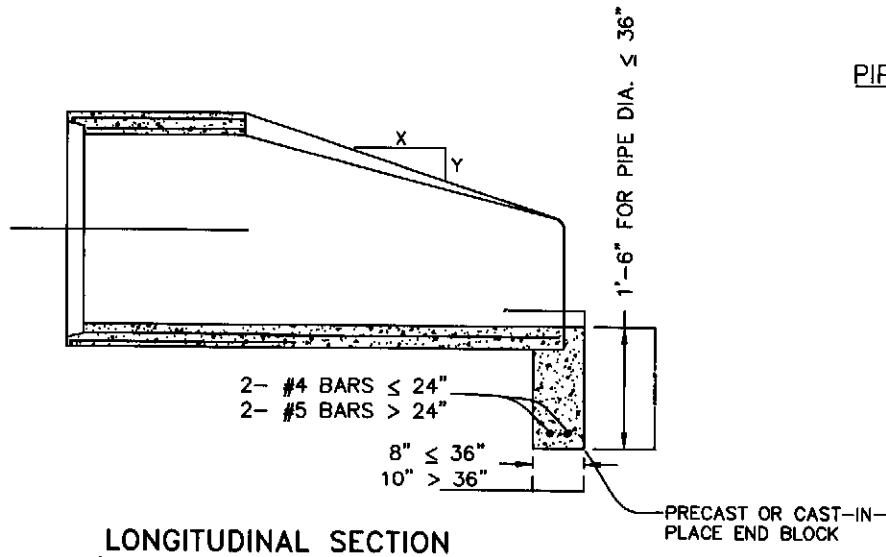
APPROVED... MAY 19, 2009 *GPS*

REVISIONS	

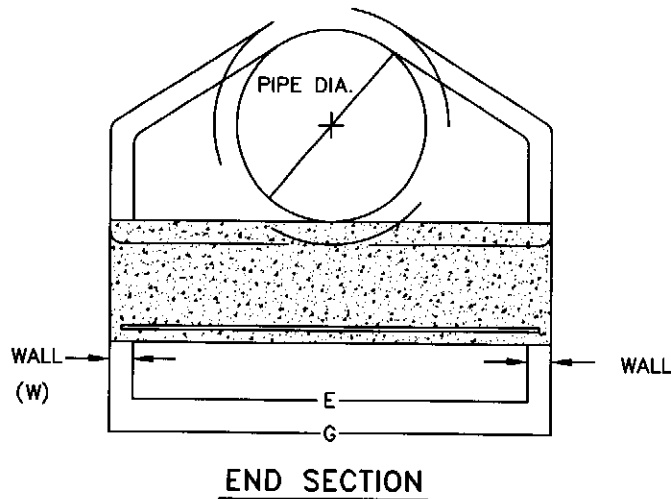
STANDARD DRAWING FOR  
BRICK PIER SUPPORT  
FOR STORM SEWER

413.00

SHEET 1 OF 1



PIPE DIA.	W	E	G
12"	1-7/8"	2'-0"	2'-3 3/4"
15"	1-7/8"	2'-6"	2'-3 3/4"
18"	2"	3'-0"	3'-4"
24"	2-1/2"	4'-0"	4'-5"
30"	2-3/4"	5'-0"	5'-5 1/2"
36"	3"	6'-0"	6'-6"
42"	3-1/2"	6'-6"	7'-1"
48"	4"	7'-0"	7'-8"
54"	4-1/2"	7'-6"	8'-3"



**NOTES:**

- A. END BLOCK SHALL BE PRECAST OR CAST-IN PLACE USING CLASS B CONCRETE, 2,500 PSI.
- B. THE PRECAST END BLOCK SHALL BE INSTALLED, OR THE HOLE FOR THE POURED END BLOCK SHALL BE EXCAVATED, PRIOR TO THE INSTALLATION OF THE FLARED END SECTION.
- C. THE END BLOCKS ARE MANDATORY FOR UPSTREAM F.E.S. AND REQUIRED, IF SPECIFIED IN THE PLANS, FOR DOWNSTREAM F.E.S. THE COST FOR THE END BLOCKS SHALL BE CONSIDERED INCIDENTAL TO THE COST OF THE F.E.S.

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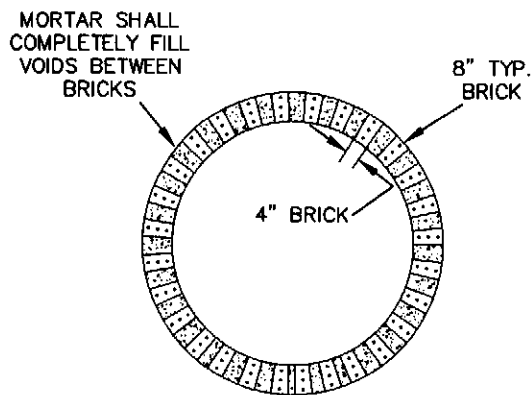
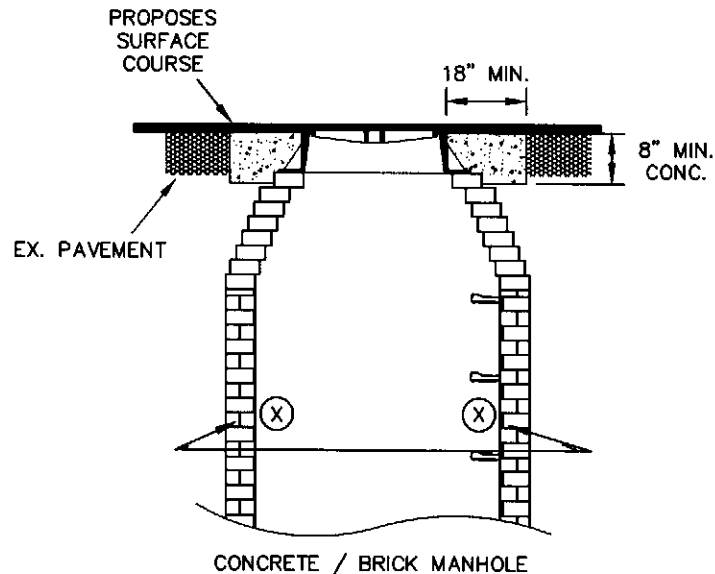
REVISIONS

NO.	DESCRIPTION

STANDARD DRAWING FOR  
**F.E.S. END BLOCK**  
 FOR 12" TO 54" F.E.S.

414.00

SHEET 1 OF 1



SECTION X-X

NOTES:

- A. BRICK AND CONCRETE MORTAR SHALL BE USED FOR ADJUSTMENT HEIGHT.
- B. MORTAR LAYER SHALL NOT EXCEED 3/4" IN HEIGHT AFTER RING AND COVER ARE PLACED.
- C. NO WOOD WEDGES OR BRICK BATTS WILL BE ALLOWED.
- D. JUMBO BRICK WILL BE PERMITTED. CONCRETE BRICK OR 4" SOLID CONCRETE BLOCKS MAY BE USED IN LIEU OF CLAY BRICK.

1040-8 MORTAR

-MORTAR USED IN ALL BRICK MASONRY AND BLOCK MASONRY SHALL BE PROPORTIONED AS SHOWN BELOW FOR EITHER MIX NO.1 OR NO.2.

ALL PROPORTIONS ARE BY VOLUME.

NO MORE WATER SHALL BE ADDED THAN IS NECESSARY TO MAKE A WORKABLE MIXTURE.

- NO. 1: 1 PART PORTLAND CEMENT  
1/4 PART HYDRATED LIME  
3 3/4 PARTS MORTAR SAND (MAX.)
- NO. 2: 1 PART PORTLAND CEMENT  
1 PART MASONRY CEMENT  
6 PARTS SAND (MIX.)

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**JAMESTOWN**  
NORTH CAROLINA

APPROVED: MAY 19, 2009

REVISIONS

STANDARD DRAWING FOR  
STANDARD CONCRETE ENCASEMENT FOR  
MANHOLE & VALVE CASTINGS IN PAVEMENT

415.00

SHEET 1 OF 1