

EXHIBITS

Fulton County Standard Details

INDEX

DWG NO. DESCRIPTION

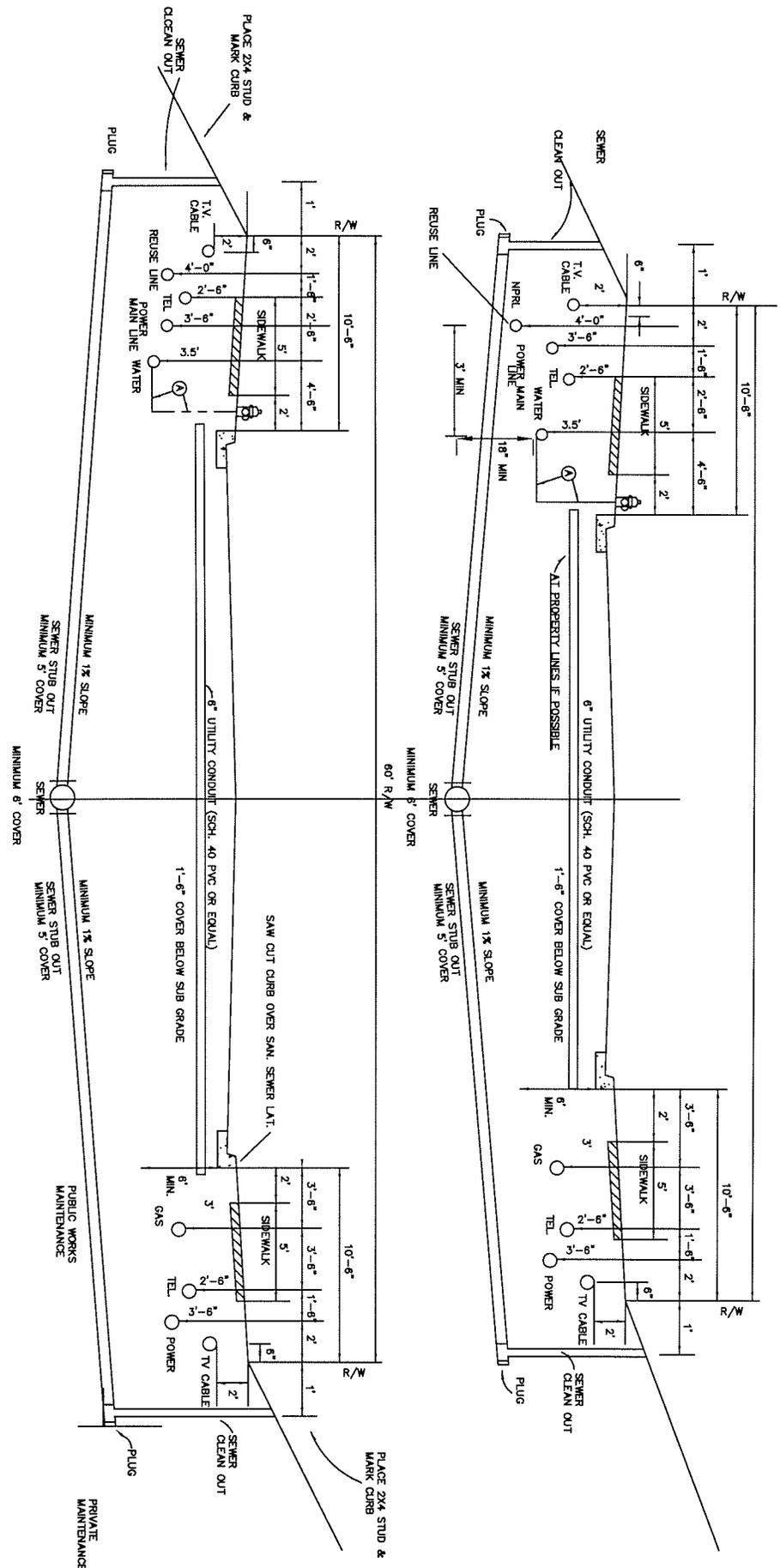
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GENERAL NOTES

 <p>FULTON COUNTY</p>	<p>DGS/DRN/CHKD: CMS APPROVED: REW DATE: 12-02-05</p>	<p>FULTON COUNTY PUBLIC WORKS 141 PRYOR ST. ATLANTA, GA. 30303 404-730-7400 FAX: 404-730-6325</p>
<p>FULTON COUNTY STANDARD DETAIL INDEX AND GENERAL NOTES</p>		<p>DRAWING NO. 100</p>

NORTH OR WEST SIDE

SOUTH OR EAST SIDE



FULTON COUNTY STANDARD DETAIL 101
 UTILITY LOCATION
 UNDERGROUND UTILITY WITH REUSE
 TYPICAL CROSS SECTION

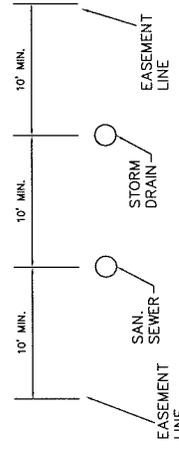
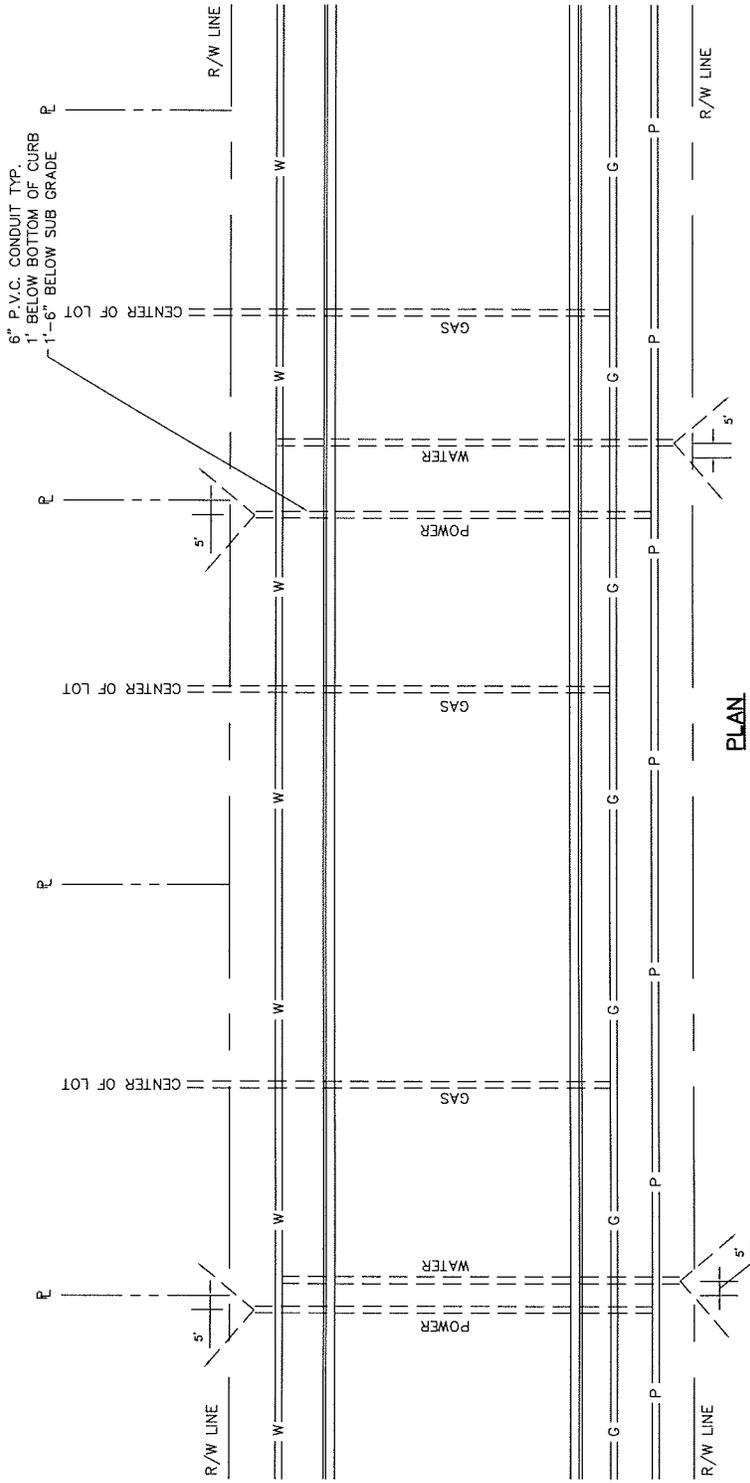
DATE	REVISIONS	DATE	REVISIONS

DGS/D/RN/CHKD. GMS
 APPROVED: REM
 DATE: 12-2-05



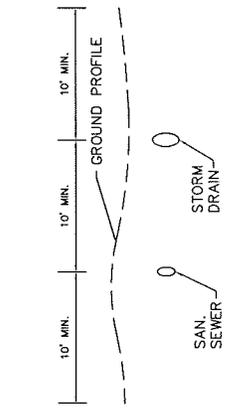
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DRAWING NO. 101



PROFILE
N.T.S.

TYPICAL COMBINATION SAN. SEWER
AND STORM DRAIN PERMANENT EASEMENT



PROFILE VIEW
N.T.S.

FULTON COUNTY STANDARD DETAIL 102
CONDUIT LOCATION FOR
UNDERGROUND UTILITIES
COMBINATION SEWER EASEMENT

DATE	REVISIONS	DATE	REVISIONS

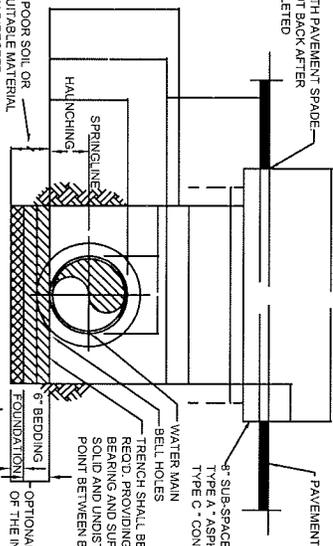
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DRAWING NO.
102

SCORE ASPHALT WITH PAVEMENT SPADE
RAW CONCRETE CUT BACK AFTER
BACKFILLING COMPLETED



ALLOWABLE TRENCH WIDTHS

PIPE SIZE (NOM)	A SIDE CLEARANCE INCH		B DITCH WIDTH INCH				C SHORING WIDTH (ADDITIONAL-INCH)	D CUT REPAIR WIDTH FEET			
	SOIL	ROCK	SOIL	ROCK	SOIL	ROCK		SOIL	ROCK	SOIL	ROCK
3/4"-2"	2	6	NA	8	NA	14	NA	3.00	NA	3.17	
4"	9	12	25	23	27	23	4.08	3.92	4.25	4.06	
6"	9	12	28	28	30	30	4.33	4.33	4.50	4.50	
8"	9	12	32	30	34	32	4.67	4.50	4.63	4.67	
10"	9	12	34	32	36	34	4.83	4.67	5.00	4.83	
12"	9	12	36	34	38	36	5.00	4.83	5.17	5.00	
14"	9	14	39	36	41	38	5.23	5.00	5.42	5.17	
16"	9	14	42	38	44	40	5.50	5.17	5.57	5.33	
20"	9	14	45	44	47	46	5.75	5.67	5.92	5.63	
24"	9	14	50	48	52	50	6.17	6.00	6.33	6.17	
30"	9	18	58	54	60	56	6.83	6.50	7.00	6.67	
36"	9	18	64	61	66	63	7.33	7.08	7.50	7.25	
42"	9	18	72	64	74	66	8.00	7.33	8.17	7.50	
48"	9	18	78	73	80	76	8.50	8.08	9.34	8.25	

FOR EXCAVATION IN POOR SOIL OR ROCK, REMOVAL OF EXISTING TRENCH TO WIDTH AND DEPTH DIRECTED BEFORE PIPE IS LAID. THE SUBGRADE SHALL BE BACKFILLED WITH AN APPROVED MATERIAL IN 3" LAYERS. EACH LAYER SHALL BE THOROUGHLY TAMPED TO 95% COMPACTION.

NOTES:

1. COMPACTION: BACKFILLS SHALL BE BUILT UP IN LAYERS AND EACH LAYER SHALL BE THOROUGHLY COMPACTED BEFORE BEGINNING ANOTHER LAYER. LAYERS SHALL BE NO MORE THAN 8" IN DEPTH. PUDDLING WILL NOT BE PERMITTED. NOR WILL FROZEN OR WET MATERIAL BE PLACED IN TRENCHES.
2. COMPACTION STANDARDS: ALL BACKFILL MATERIALS USED SHALL BE TESTED TO PROVE CAPABILITY TO MOISTURE FOR PROPER COMPACTION AND THESE MATERIALS SHALL BE COMPACTED AT NOT LESS THAN 95% OF THEIR OPTIMAL COMPACTION FOR ANY SPECIFIC SOIL CLASSIFICATION AS DETERMINED BY THE MODIFIED PROCTOR TEST A STM. D698
3. COMPACTION TESTS: COMPACTION TESTS MAY BE REQUIRED IN EXISTING OR PROPOSED STREETS, SIDEWALKS, DRIVES AND OTHER EXISTING OR PROPOSED PAVED AREAS AT VARYING DEPTHS AND FINISH ELEVATIONS. DETERMINED TEST REPAIRS SHALL BE PERFORMED ONE TEST PER JOB AND A MAXIMUM OF ONE REQUIRED TEST FOR EACH 400' OR LESS OF WATER MAIN CONSTRUCTION, UNLESS SOIL CONDITIONS OR CONSTRUCTION PRACTICES, IN THE OPINION OF THE ENGINEER, WARRANT THE NEED FOR ADDITIONAL TESTS.
4. NO BULDERS OR LOOSE ROCKS. PERMITTED IN THE BACKFILL AT THE BOTTOM OF PIPE TRENCH TO 2'-0" ABOVE PIPE.
5. ALL DESIGN BASED ON FULLY SUPPORTED PIPE.
6. COMPACTED BACKFILL AND UNIFORMITY.
7. FOR PAVEMENT CUT REPAIRS SEE DRAWING 109.

REVISIONS

DATE	REVISIONS

REVISIONS

DATE	REVISIONS

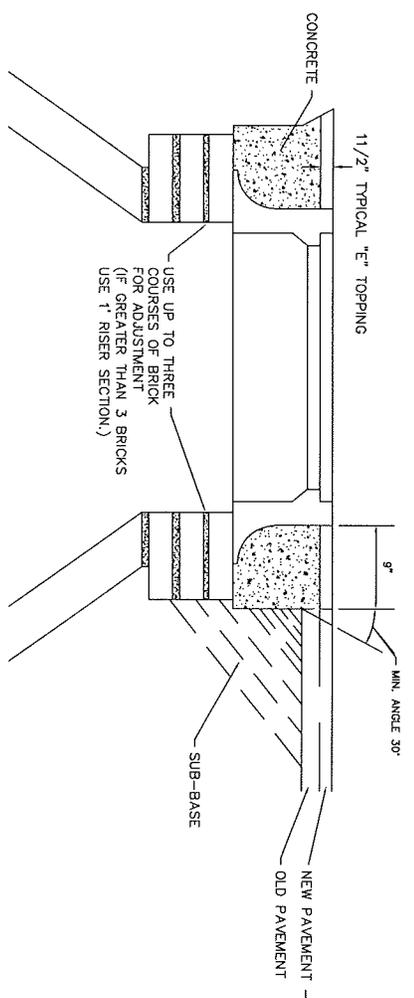
FULTON COUNTY STANDARD DETAIL 103
ALLOWABLE TRENCH WIDTHS

DES/DRN/CHKD: OMS
APPROVED: RSW
DATE: 12-2-05



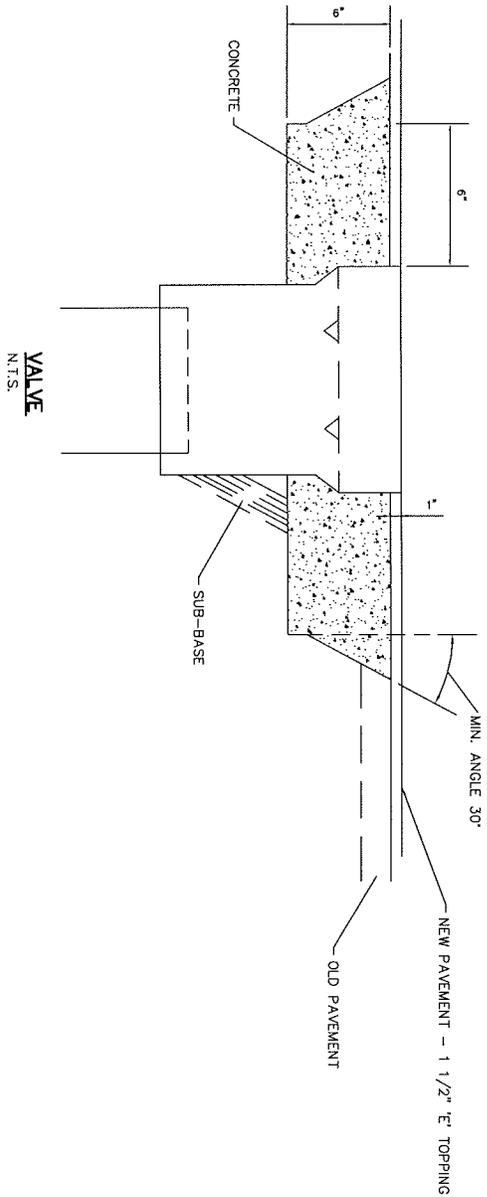
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DRAWING NO. 103



- NOTES:**
1. STRUCTURES SHALL NOT BE ADJUSTED FOR A PERIOD OF 24 HOURS AFTER RESURFACING IS COMPLETED IN THAT AREA.
 2. ASPHALT SHALL BE SAWCUT TO MAKE A SMOOTH, EVEN EDGE.
 3. STRUCTURE COVER SHALL BE ADJUSTED TO FIT FLUSH WITH STREET SURFACE.
 4. ALL CONCRETE SHALL HAVE A COMPRESSIVE STRENGTH OF 4000 PSI.
 5. CONCRETE WILL BE USED TO BACKFILL THE ENTIRE WORKING AREA.
 6. FINISHING CONCRETE SHALL BE DONE BY USE OF A TROWEL OR FLOAT.
 7. CLEAN ALL ASPHALT OFF SEWER MANHOLES AT TIME OF PAVING TO ALLOW ACCESS TO SYSTEM AT ALL TIMES.

MANHOLE
N.T.S.



FULTON COUNTY STANDARD DETAIL 105
STRUCTURE ADJUSTMENT

DATE	REVISIONS	DATE	REVISIONS

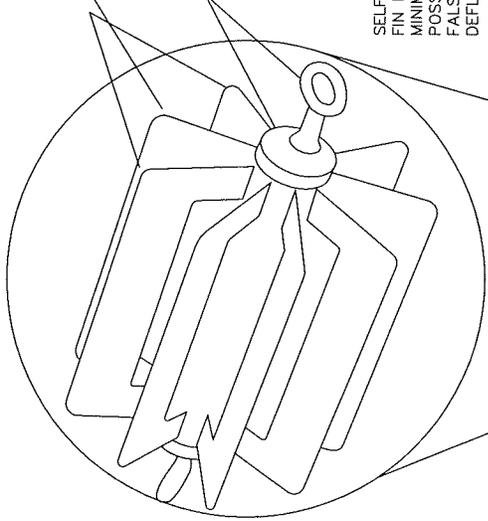
DGS/DRN/CHKD CMS
APPROVED: _____
DATE: 12-2-05



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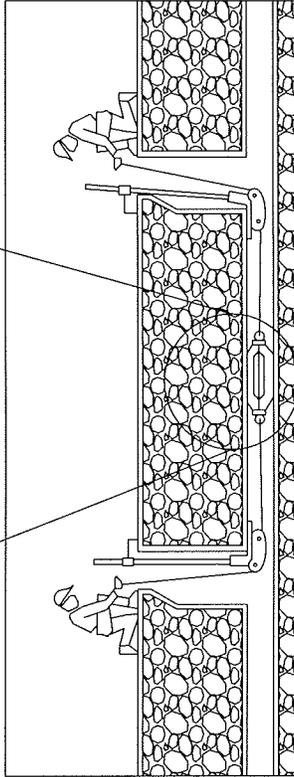
DRAWING NO. 105

INTERCHANGEABLE FIN SETS AVAILABLE FOR
4" THROUGH 48" PIPE



MANDREL ASSEMBLY
PULLING EYEBOLTS

SELF-CLEANING
FIN DESIGN
MINIMIZES THE
POSSIBILITY OF
FALSE PIPE
DEFLECTIONS.



THE DEFLECTION TEST GAUGE CAN BE PULLED EASILY THROUGH THE PIPELINE.

NOTES:

1. AFTER INSTALLATION A DEFLECTION TEST IS REQUIRED NO SOONER THAN 24 HOURS OF TRENCH BACKFILLING. INITIAL DEFLECTION SHALL BE LIMITED TO 3% OF THE UNDEFLECTED DIAMETER.
2. PIPE SHALL BE ASTM D-3034, SDR 35 IN 12.5 FOOT LAYING LENGTHS, WITH ELASTOMERIC SEALED JOINTS IN ACCORDANCE WITH ASTM D-5212.
3. MANDREL TO BE MADE FROM AIRCRAFT-QUALITY ALUMINUM OR APPROVED EQUAL.
4. EACH FIN SET IS TO BE STAMPED WITH THE PIPE DIAMETER AND PERCENT DEFLECTION.
5. MANDREL LENGTH TO BE 10 INCHES, MANDREL WEIGHT TO BE 4 LBS.
6. MANDREL TO BE PROVIDED BY CONTRACTOR IT MUST BE MEASURED AND APPROVED FIRST BY FULTON COUNTY INSPECTOR.
7. A SECOND DEFLECTION TEST MAY BE REQUIRED AT THE END OF THE MAINTENANCE PERIOD. THE FULTON COUNTY INSPECTOR MAY REQUIRE A 5% DEFLECTION TEST AT THIS TIME PRIOR TO THE RELEASE OF THE MAINTENANCE BONDS AND THE FINAL ACCEPTANCE OF THE IMPROVEMENTS INTO COUNTY MAINTENANCE.

BASE INSIDE DIAMETER AND 3%, 5%, 7.5% MANDREL DIMENSIONS

NORMAL SIZE INCHES	AVERAGE SIZE DIAMETER	BASE INSIDE DIAMETER		
		3% DEFLECTION	5% DEFLECTION	7.5% DEFLECTION
6	5.893	5.742	5.569	5.454
8	7.891	7.665	7.435	7.281
10	9.864	9.563	9.276	9.084
12	11.737	11.361	11.020	10.792
15	14.374	13.898	13.481	13.203

FULTON COUNTY STANDARD DETAIL 106
MANDREL DETAIL FOR
PVC PIPE INSTALLATION

DATE	REVISIONS	DATE	REVISIONS

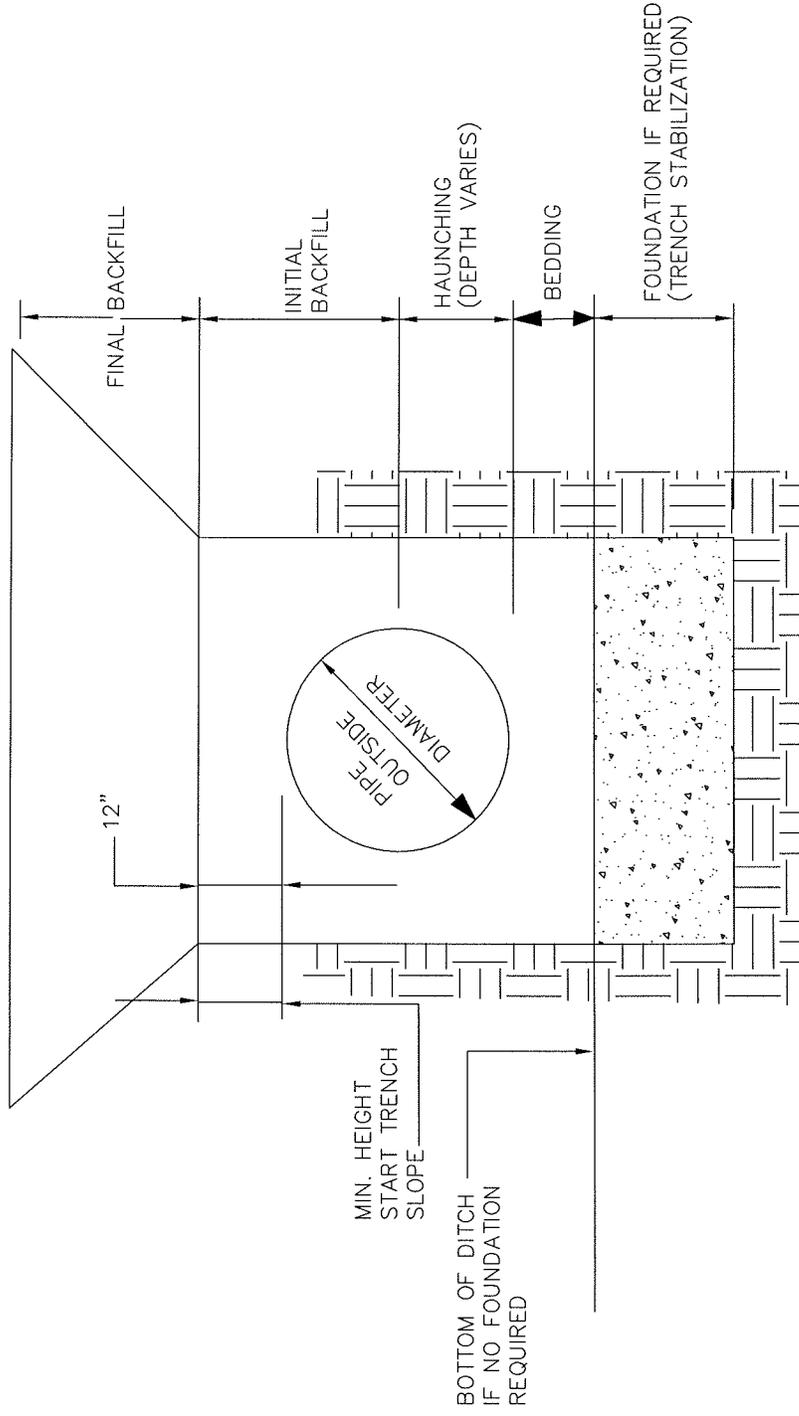
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APPROVED: REW
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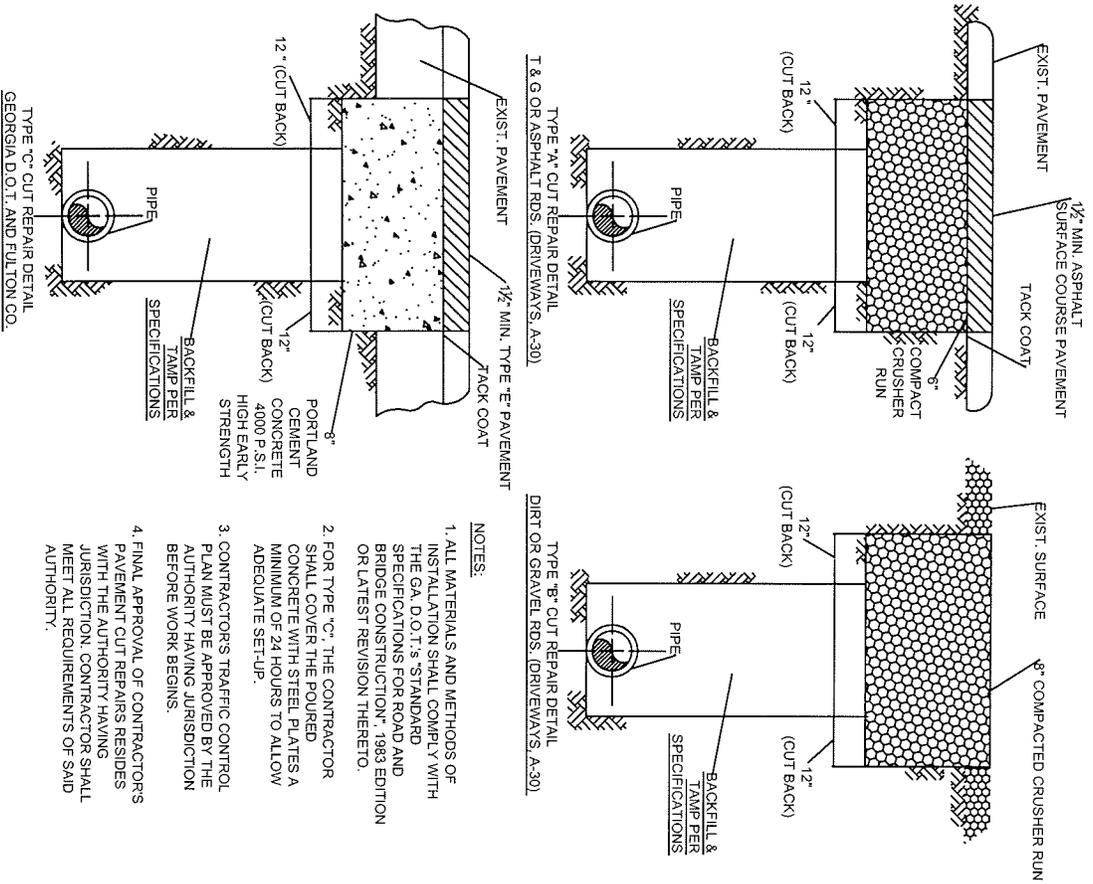
106



NOTE: SEE DETAIL # 103 AND #109 FOR DIMENSIONS AND MATERIALS

FULTON COUNTY STANDARD DETAIL 108 TRENCH TERMINOLOGY		 FULTON COUNTY		FULTON COUNTY PUBLIC WORKS 141 PRYOR ST. ATLANTA, GA. 30303 404-730-7400 FAX: 404-224-0488		DRAWING NO. 108	
DATE	REVISIONS	DATE	REVISIONS	DGS/DRN/GHKD: JM	APPROVED: REW	DATE: 12-2-05	

FULTON COUNTY STANDARD DETAIL 109
PAVEMENT CUT REPAIRS
TYPE A, B & C



- NOTES:**
1. ALL MATERIALS AND METHODS OF INSTALLATION SHALL COMPLY WITH THE GA. D.O.T.'S STANDARD SPECIFICATIONS FOR ROAD AND BRIDGE CONSTRUCTION, 1983 EDITION OR LATEST REVISION THERETO.
 2. FOR TYPE 'C', THE CONTRACTOR SHALL COVER THE POURED CONCRETE WITH STEEL PLATES A MINIMUM OF 24 HOURS TO ALLOW ADEQUATE SET-UP.
 3. CONTRACTOR'S TRAFFIC CONTROL PLAN MUST BE APPROVED BY THE AUTHORITY HAVING JURISDICTION BEFORE WORK BEGINS.
 4. FINAL APPROVAL OF CONTRACTORS PAVEMENT CUT REPAIRS RESIDES WITH THE AUTHORITY HAVING JURISDICTION. CONTRACTOR SHALL MEET ALL REQUIREMENTS OF SAID AUTHORITY.

DATE	REVISIONS	DATE	REVISIONS

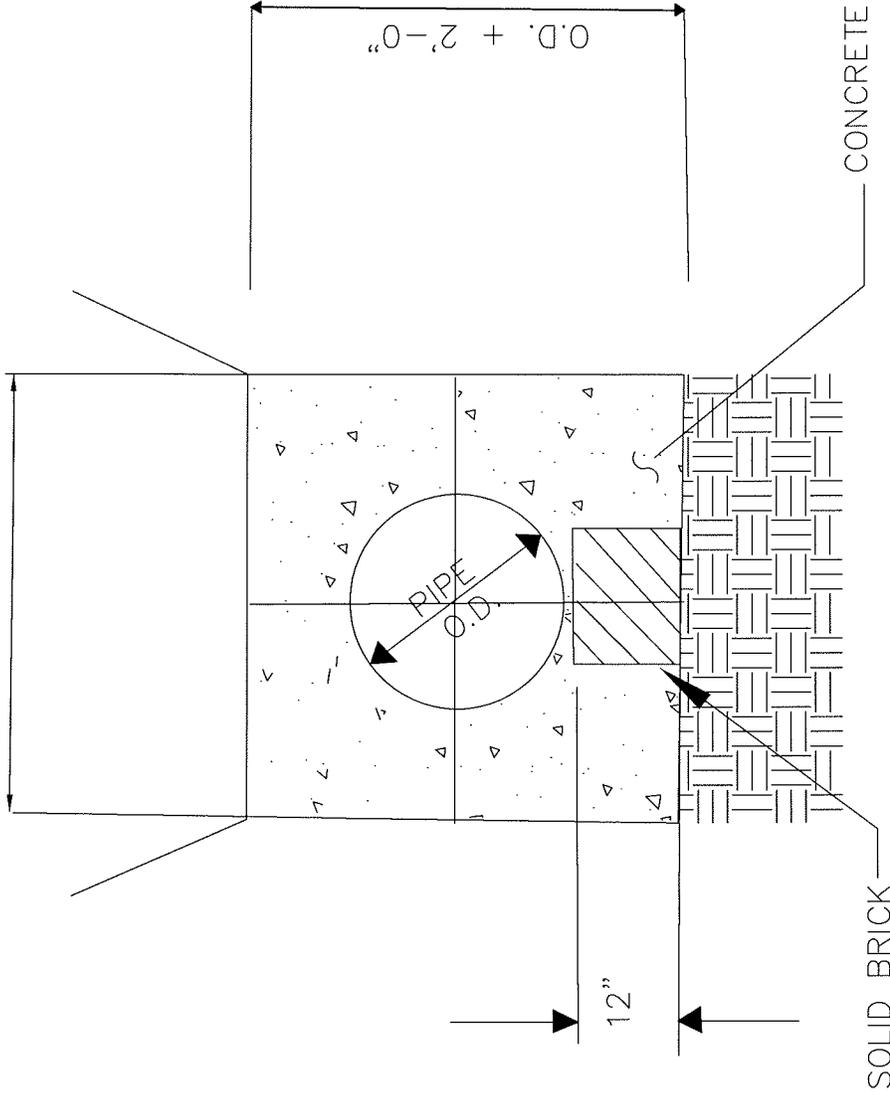
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DATE: 12-2-05



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DRAWING NO.
109

O.D. + 2' - 0"



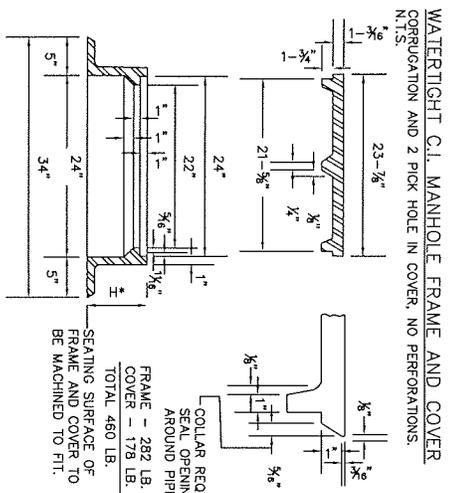
CONCRETE

SOLID BRICK

O.D. + 2'-0"

FULTON COUNTY STANDARD DETAIL 110 CONCRETE ENCASUREMENT		 FULTON COUNTY FULTON COUNTY PUBLIC WORKS 141 PRYOR ST. ATLANTA, GA. 30303 404-730-7400 FAX: 404-224-0498		DRAWING NO. 110
DATE	REVISIONS	DATE	REVISIONS	DGS/DRN/CHKD.: JM
				APPROVED: _____
				REW _____
				DATE: 12-2-05

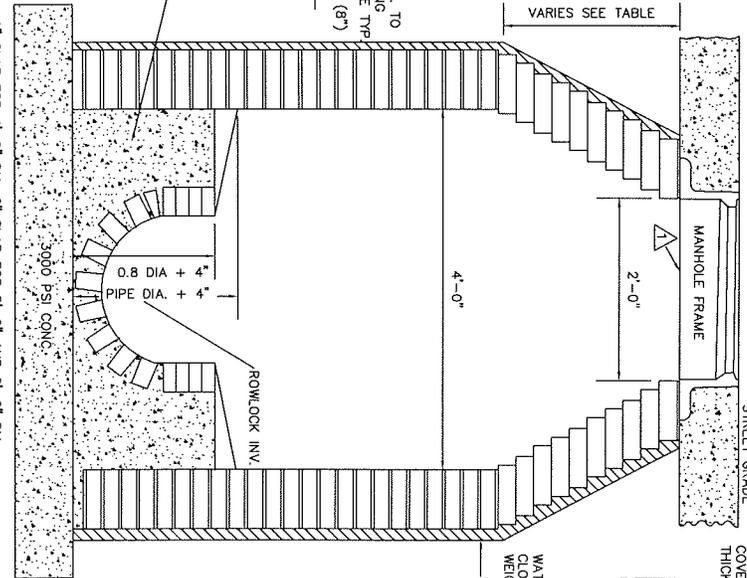
NOTE REQUIRED:
CONCRETE STRENGTH TEST MAY BE REQUIRED
FOR ALL Poured IN PLACE CONCRETE.



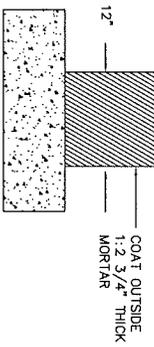
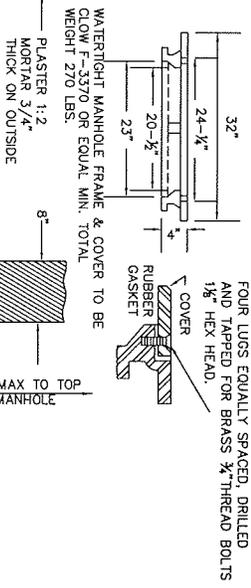
460# M.H. FRAME AND COVER
FOR USE IN STREETS AND ROADS
N.T.S.

NOTE:
BRICK MANHOLES SHOULD ONLY
BE USED IN SPECIAL
CIRCUMSTANCES
WHERE THE USE OF PRECAST
SECTIONS MAY BE AFFECTED BY
OBSTACLES.

ELEVATION AT & MANHOLE
SEAL M.H. RING TO STRUCTURE WITH TWO CONCENTRIC RINGS OF ASPHALTIC MASTIC.



NOTE:
ALL M.H. COVERS ON OUTFALL M.H.'S OUTSIDE OF ROADWAY R/W
TO BE CAST IN PLACE IN CONE SECTIONS OF MHS.
350# FRAMES & COVERS MAY BE USED OUTSIDE OF STREETS AND ROADS.
COVER TO BE SIMILAR TO 460# FRAME TO BE REDUCED IN HEIGHT AND
THICKNESS. MANHOLES OUTSIDE R/W SHALL BE 24" ABOVE GRADE.



NOTE:
FOR DEPTH OVER 20' INCREASE
WALL THICKNESS TO 16"

FULTON COUNTY STANDARD DETAIL 111
BRICK MANHOLE DETAIL AND
MANHOLE FRAME AND COVER

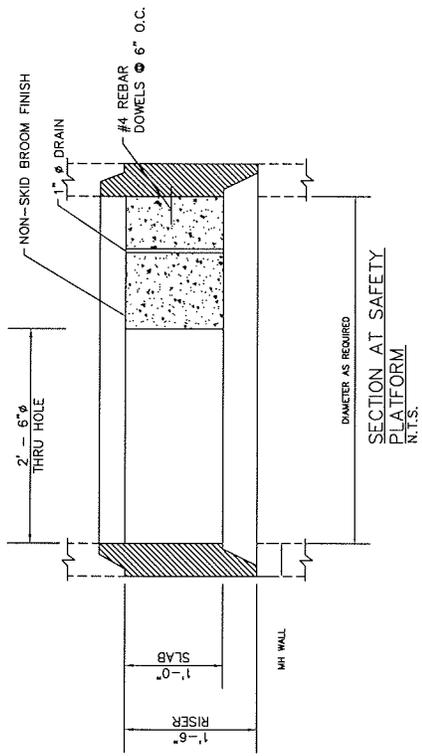
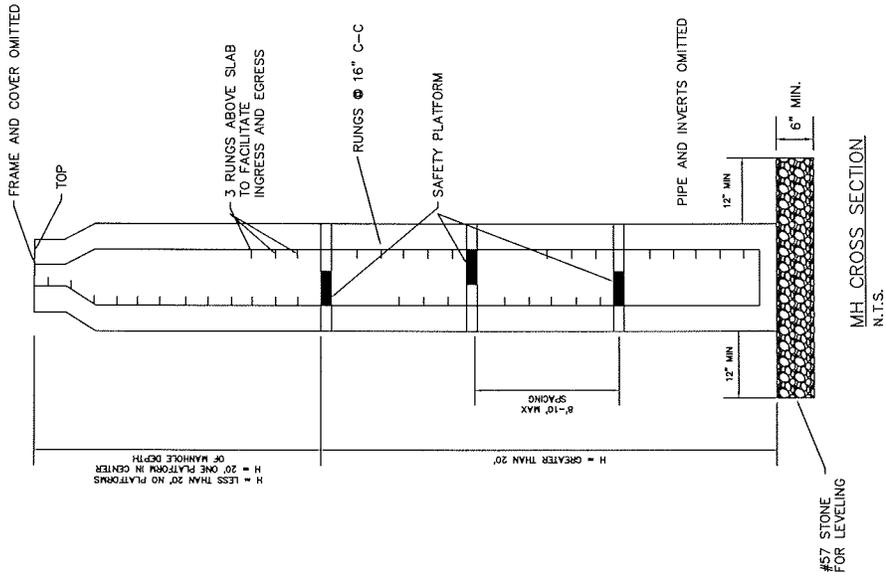
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DATE: 12-2-05



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DRAWING NO.
111



- NOTES:
1. A DEEP MANHOLE IS CONSIDERED TO BE GREATER THAN 24'.
 2. SAFETY PLATFORMS ARE REQUIRED ON ALL MANHOLES EQUAL TO OR GREATER THAN 20' IN DEPTH.
 3. SAFETY PLATFORMS ARE TO BE PLACED AT A MAX. DISTANCE OF 8'-10' APART.
 4. PLATFORMS ARE TO BE DESIGNED TO OBTAIN A STRENGTH OF 4000 PSI IN 28 DAYS.
 5. MANHOLE AND PLATFORM DESIGN SHALL CONFORM TO A.S.T.M. SPECS. C478 LATEST EDITION.
 6. REINFORCING STEEL SHALL BE 60,000 PSI YIELD STRENGTH (F_y).
 7. SAFETY PLATFORM SLABS ARE DESIGNED FOR A CONCENTRATED LOAD (P) AS FOLLOWS:
 P (LB.)
 12,000
 4
 8,000
 6
 MH DIAMETER (FT.)
 8. SAFETY PLATFORM IS TO BE PLACED BETWEEN RISERS.
 9. TWO PLATFORMS TO BE PLACED AT MIDDLE OF A MANHOLE OVER 20' IN DEPTH.
 10. SAFETY PLATFORM IS TO BE PRECAST CONCRETE OR APPROVED EQUAL.
 11. ALTERNATE OPENINGS IN SAFETY PLATFORMS AS INDIVIDUAL DESCENDS.
 12. MANHOLES IN EXCESS OF 24' IN DEPTH SHALL BE PRE-APPROVED BY PUBLIC WORKS AND HAVE SAFETY PLATFORMS WITH 8'-10' SPACING.

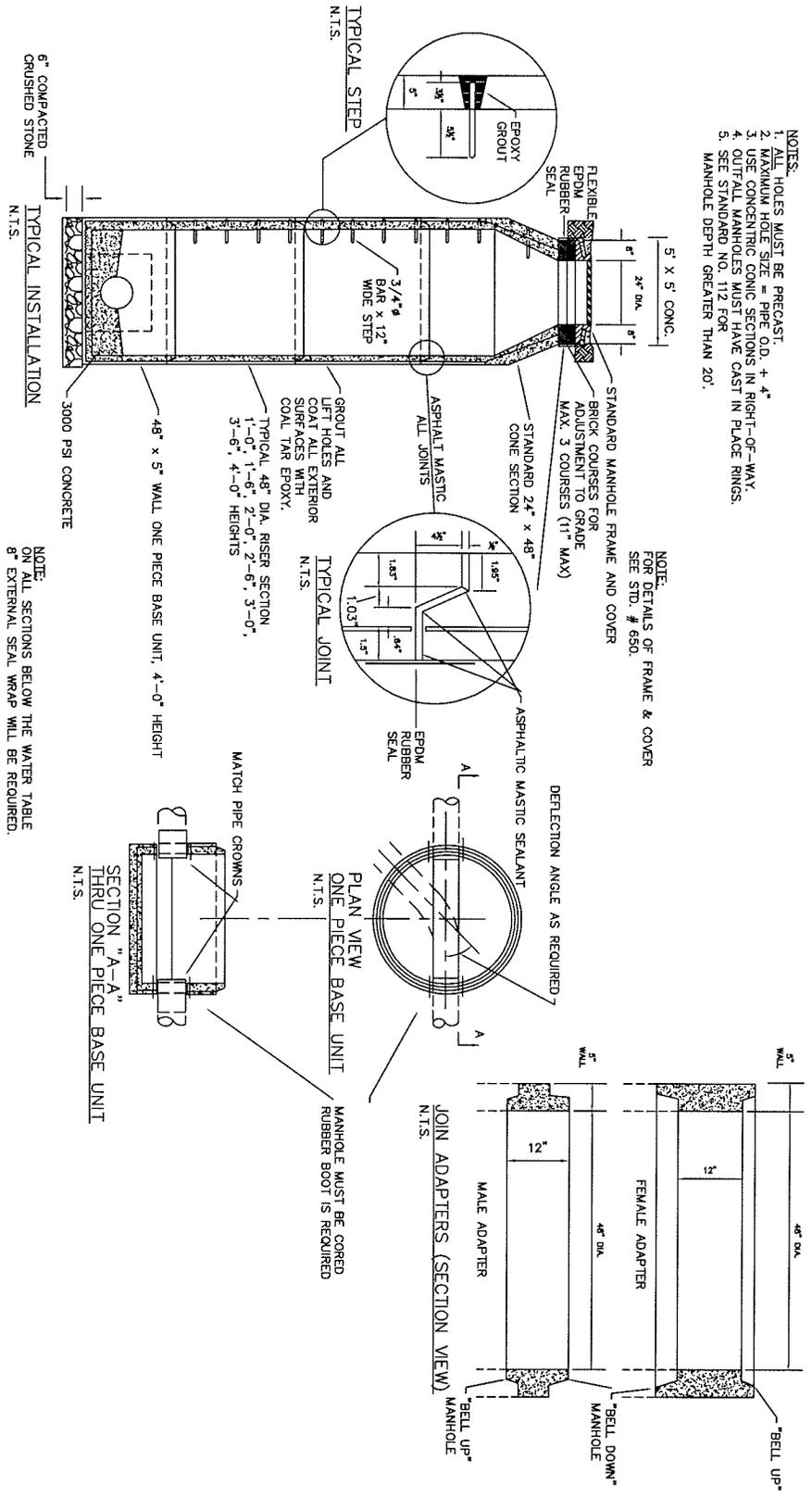
FULTON COUNTY STANDARD DETAIL 112
 SAFETY PLATFORM FOR DEEP
 PRECAST MANHOLES

DWG/DRN/CHKD: REB
 APPROVED: REW
 DATE: 12-2-05

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DRAWING NO. 112

- NOTES:**
1. ALL HOLES MUST BE PRECAST.
 2. MAXIMUM HOLE SIZE = PIPE O.D. + 4".
 3. USE CONCRETE CONIC SECTIONS IN RIGHT-OF-WAY.
 4. USE CONCRETE CONIC SECTIONS CAST IN PLACE RINGS.
 5. SEE STANDARD DRAWING 112 FOR MANHOLE DEPTH GREATER THAN 20'.



NOTE:
ON ALL SECTIONS BELOW THE WATER TABLE
8" EXTERNAL SEAL WRAP WILL BE REQUIRED.

FULTON COUNTY STANDARD DETAIL 113
MANHOLES
PRECAST DETAILS

DATE	REVISIONS	DATE	REVISIONS

DGS/DRN/CHKQ/REB
APPROVED: _____
DATE: 12-2-05



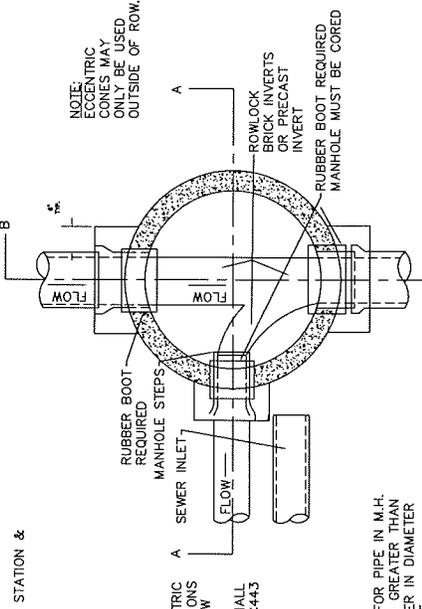
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DRAWING NO. 113

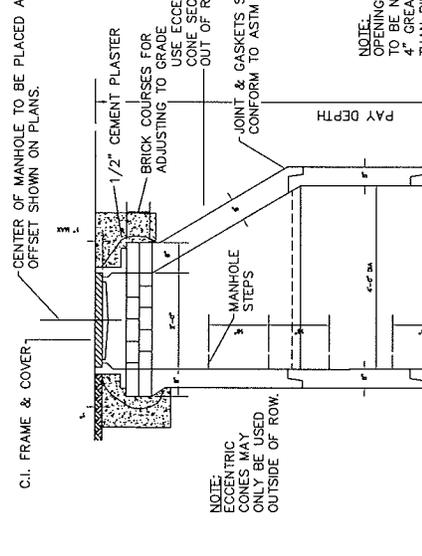
NOTE: SEWER STAFF IS OF THE VIEW THAT ECCENTRIC MANHOLES SHOULD NOT BE USED. DIFFICULTY WITH ACCESS.

NOTE: FOR OUTFALL LINES, MANHOLE TOP TO BE 18" TO 24" ABOVE SURROUNDING GROUND SURFACE.

ALL MANHOLES WITHIN TEN FEET OF PUBLIC RIGHT OF WAY SHALL BE TOPPED WITH A HEAVY DUTY TRAFFIC BEARING RING & COVER MOUNTED FLUSH TO EXISTING GRADE. LOADING SPECS. MAY BE REQUIRED FROM THE MANUFACTURER (RING & COVER).**



SECTION A-A
N.T.S.

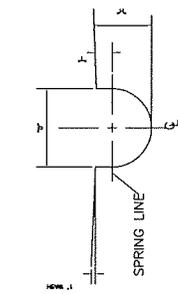


SECTIONAL PLAN
STANDARD PRECAST 4'-0" DIAMETER MANHOLE
N.T.S.

TABLE 1
N.T.S.

INSIDE DIA. PIPE	"H" VERTICAL TANGENT	"H" HEIGHT OF WATER TABLE
8"	2 1/2"	6 1/2"
10"	3 1/2"	9 1/2"
12"	4 1/2"	12"
15"	5 1/2"	14 1/2"
18"	6 1/2"	17"
21"	7 1/2"	19 1/2"
24"	8"	21 1/2"
27"	9"	24"
30"	10"	26 1/2"
33"	11"	29"

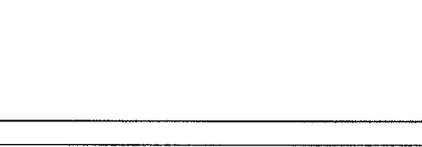
TABLE 1
N.T.S.



DETAIL "H"
NOTE: "H" & "T" DIMENSIONS APPLY ONLY AT THE UPSTREAM, INSIDE EDGE OF M.H.
N.T.S.

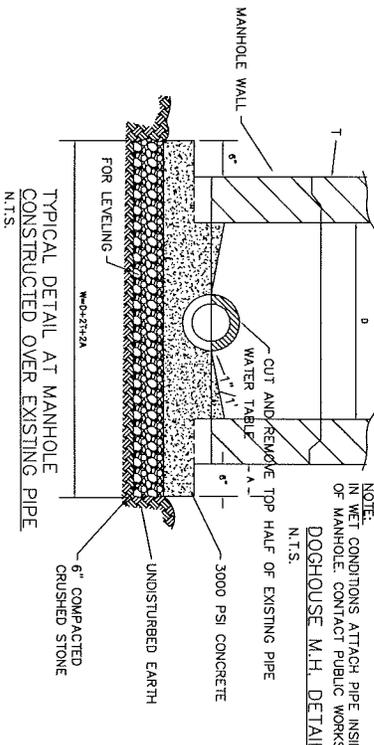
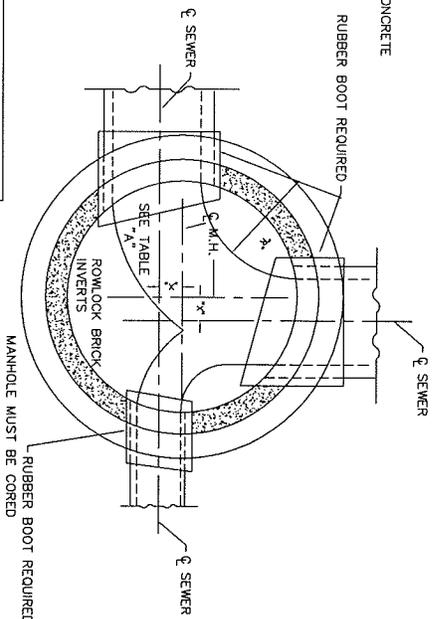
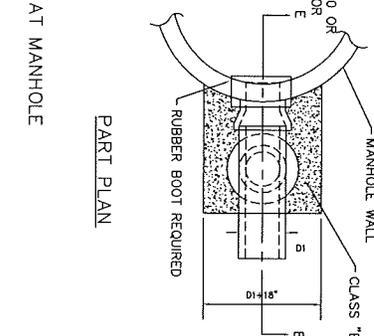
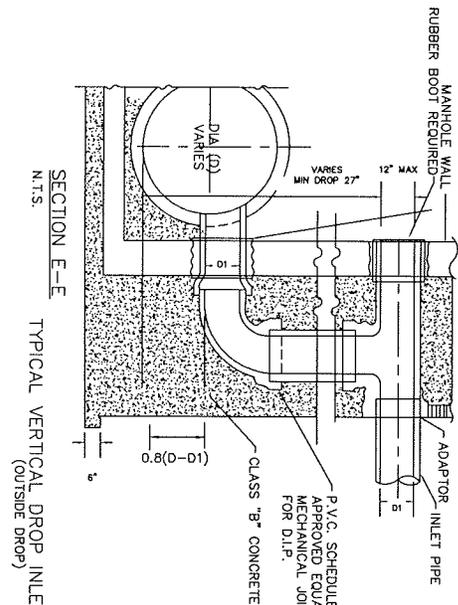
NOTE: ECCENTRIC CONES MAY ONLY BE USED OUTSIDE OF ROW.

NOTE: ECCENTRIC CONES MAY ONLY BE USED OUTSIDE OF ROW.



SECTION B-B
N.T.S.

FULTON COUNTY STANDARD DETAIL 115
STANDARD SEWER MANHOLES
PRECAST CONCRETE



NOTE: IN WET CONDITIONS ATTACH PIPE INSIDE OF MANHOLE. CONTACT PUBLIC WORKS. N.T.S.

DOGHOUSE M.H. DETAIL N.T.S.

TABLE "A"
STANDARD PRECAST MANHOLES
SCHEDULE OF GOVERNING DIMENSIONS

PIPE SIZE	ANGLE	M.H. DIAMETER	"R"	"X"
8" thru 12"	0° to 90°	4'	1'-0"	0'
15"	0° to 80°	4'	1'-3"	0'
15"	60° to 90°	4'	1'-3"	6"
18"	0° to 60°	4'	1'-6"	0'
18"	60° to 90°	4'	1'-4"	8"
21"	0° to 60°	4'	1'-9"	0'
21"	60° to 90°	5'	1'-9"	9"
24"	0° to 80°	4'	2'-0"	0'
24"	60° to 90°	5'	1'-6"	9"
27"	0° to 60°	5'	2'-3"	0'
27"	60° to 90°	6'	2'-0"	1'-0"
30"	0° to 60°	5'	2'-6"	0'
30"	60° to 90°	6'	1'-9"	8"
36"	0° to 90°	PRE-BED PIPE, M.H. BASE & ELBOW UNIT		

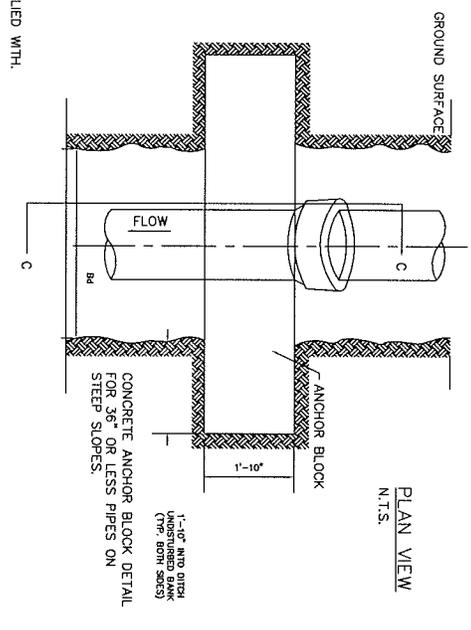
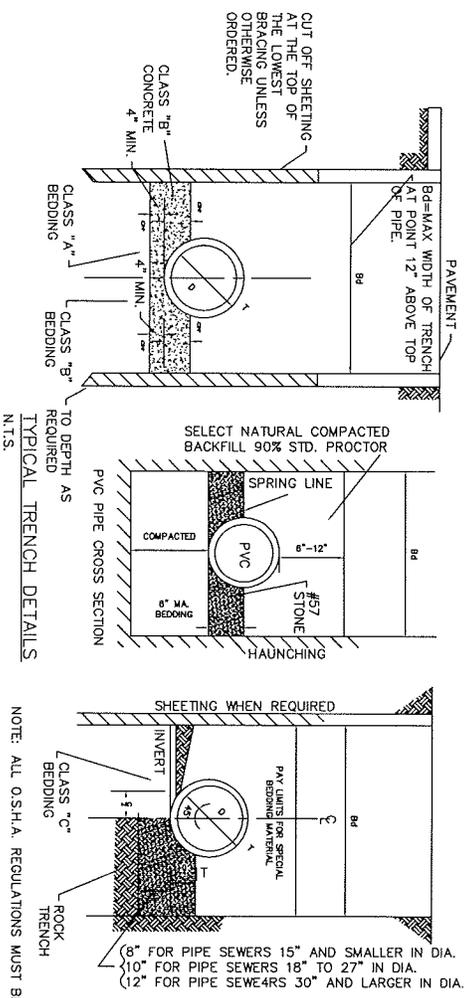
DATE	REVISIONS	DATE	REVISIONS

DES/DRN/CHKD/REB
APPROVED: _____
DATE: 12-2-05



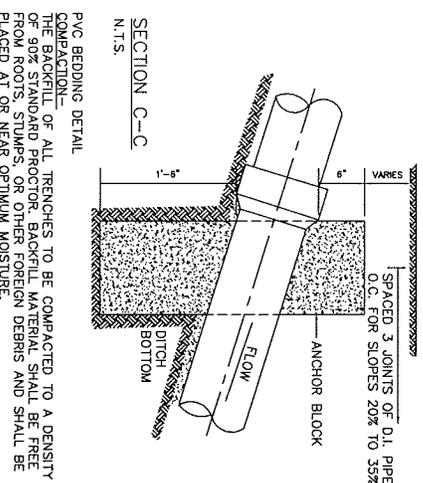
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DRAWING NO. 115



A.S.T.M. A746			A.S.T.M. C78-			A.S.T.M. C14-			A.S.T.M.-3034 SR 35			
DUCTILE IRON PIPE			REINFORCED CONCRETE PIPE			EX. STR. CONC. SEWER PIPE			P.V.C. PIPE			
D. IN	T. IN	BD FT	C FT	*GRADE	T. IN	BD FT	C FT	*GRADE	T. IN	BD FT	C FT	*GRADE
6	0.361	2	0.41	0.034	7/8	2.15	0.6	0.041	0.18	2.52	0.24	2.7
8	0.421	2.09	0.53	0.036	1	2.33	0.7	0.047	0.3	2.88	0.36	3.04
10	0.481	2.26	0.65	0.043	1-3/8	2.56	0.87	0.055	0.36	3.04	0.437	3.28
12	0.521	2.43	0.78	0.049	1-5/8	2.85	1.08	0.066	0.437	3.28	0.517	3.52
15					2	3.17	1.3	0.086				
18	0.73	2.96	1.15	0.072	2-1/4	3	1.5	0.073				
21					2-1/2	3.25	1.35	0.088				
24	0.85	3.48	1.52	0.18	1-3/4	3.54	1.55	0.109	2-5/8	3.77	1.72	4.0128
27					3	3.83	1.75	0.131				
30	0.99	4	1.88	0.149	3	4.08	1.95	0.153				
33					3-1/2	4.42	2.2	0.184				
36	1.19	4.5	2.27	0.198	3-3/4	4.75	2.4	0.215				
42	1.32	5	2.63	0.253	4	5.67	2.6	0.285				
48	1.44	5.5	3	0.314	4-1/2	6.25	3	0.36				
54					5	6.83	3.5	0.44				
60					5-1/2	7.42	3.75	0.52				
66					6	8	4.25	0.6				
72					6-1/2	8.58	4.65	0.68				
					7	9.17	5.07	0.86				

NOTE: PAYMENT QUANTITY IN CU YDS MIN/FT. OF TRENCH FOR CLASS "B" CONC. IN CASE OF CLASS "A" BEDDING & FOR CRUSHED STONE BEDDING MATERIAL IN CASE OF CLASS "B" BEDDING. ADJUST QUANTITY OF GRADE MATERIAL BASED ON BD WIDTH IF DEPTH OF GRADE EXCEEDS D/4.



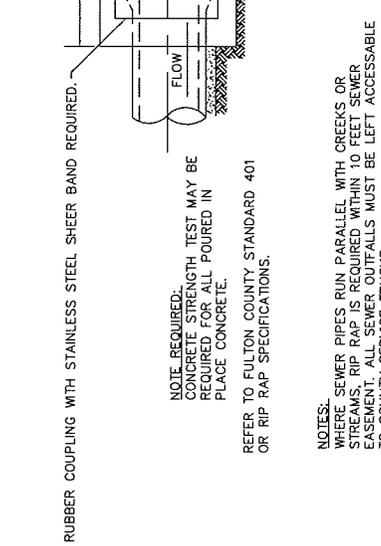
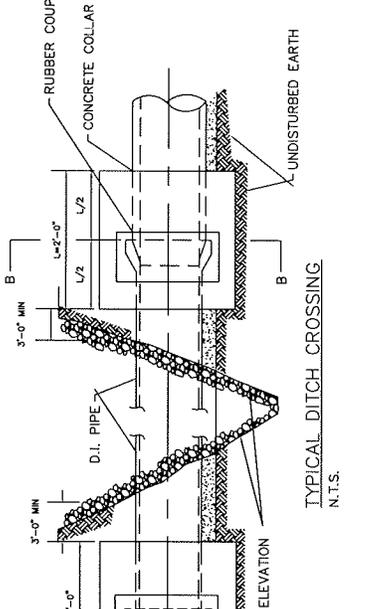
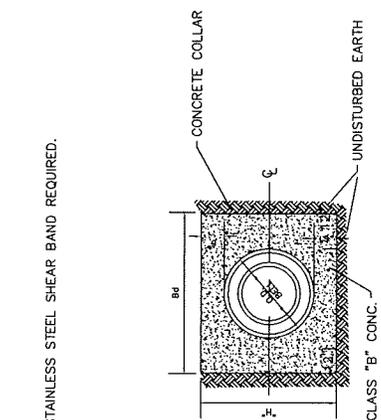
FULTON COUNTY STANDARD DETAIL 117
 PIPE SEWER DATA
 PVC PIPE INSTALLATION

DATE	REVISIONS	DATE	REVISIONS

DES/DRN/CHKD/REB
 APPROVED: _____
 DATE: 12-2-05

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DRAWING NO. 117



RUBBER COUPLING WITH STAINLESS STEEL SHEAR BAND REQUIRED.

NOTE REQUIRED: CONCRETE STRENGTH TEST MAY BE REQUIRED FOR ALL POURED IN PLACE CONCRETE.

REFER TO FULTON COUNTY STANDARD 401 OR RIP RAP SPECIFICATIONS.

NOTES:
WHERE SEWER PIPES RUN PARALLEL WITH CREEKS OR STREAMS, RIP RAP IS REQUIRED WITHIN TO FEET SEWER EASEMENT. SEWER OUTFALLS MUST BE LEFT ACCESSIBLE TO COUNTY SERVICE TRUCKS.
GATES (12 FEET) WILL BE REQUIRED ON FENCES ACROSS OUTFALLS HAVING A DIAMETER OF 12" OR LARGER.

STEEL PIPE COATED INSIDE AND COATED AND WRAPPED OUTSIDE MAY BE USED.

NOTE:
WHERE SERVICE LINE CROSSES STATE HWY. R/W, PIPE AND FITTINGS SHALL BE MECHANICAL JOINT D.I. PIPE, AS SPECIFIED UNDER ITEM NO. 7 D.I. PIPE AND TRENCH SHALL BE BACKFILLED WITH CRUSHED STONE.

SECTION B-B
N.T.S.

TYPICAL SERVICE CONNECTION
N.T.S.

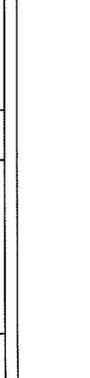
PLAN VIEW
N.T.S.

FULTON COUNTY STANDARD DETAIL 118
PIPE SEWER DATA

DATE	REVISIONS	DATE	REVISIONS

DGS/DRN/CHKD:REB
APPROVED: REW
DATE: 12-2-05

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DRAWING NO.
118

**MAXIMUM
PERMISSIBLE DEFLECTIONS**

SIZE (NOM)	PUSH-ON JOINT (18 FT. JOINTS)		MECHANICAL JOINT (18 FT. JOINTS)	
	DEGREE	MAX. OFFSET	DEGREE	MAX. OFFSET
3"	4.0	15"	4.5	17"
4"	4.0	15"	4.5	17"
6"	4.0	15"	4.5	17"
8"	4.0	15"	4.5	17"
10"	4.0	15"	4.5	17"
12"	4.0	15"	4.5	17"
14"	2.5	9.4"	3.0	11"
16"	2.0	7.5"	3.0	11"
20"	2.0	7.5"	2.0	7.5"
24"	2.0	7.5"	2.0	7.5"
30"	1.5	5.5"	2.0	7.5"
36"	1.5	5.5"	2.0	7.5"
42"	1.5	5.5"	1.5	5.5"
48"	1.5	5.5"	1.5	5.5"

NOTES:

1. WHEN A PIPE IS DEFLECTED, THE PIPE SHALL FIRST BE ASSEMBLED IN A STRAIGHT LINE, BOTH HORIZONTALLY AND VERTICALLY BEFORE THE DEFLECTION IS MADE.
2. FOR MECHANICAL JOINT PIPE, THE BOLTS SHALL BE PARTIALLY TIGHTENED BEFORE THE LENGTH OF PIPE IS DEFLECTED. ANY SUPPORTED PIPE, SHALL BE SO SUPPORTED THAT THERE IS ZERO DEFLECTION EXCEPT WHERE EITHER A HORIZONTAL OR VERTICAL CURVE ON A BRIDGE OR OTHER STRUCTURE IS INVOLVED.
3. THRUST RESTRAINTS MAY BE REQUIRED ON THE DEFLECTED JOINTS.

FULTON COUNTY STANDARD DETAIL 120 MAXIMUM PERMISSIBLE JOINT DEFLECTIONS	DATE: _____ REVISIONS: _____ DATE: _____ REVISIONS: _____ DATE: _____ REVISIONS: _____	DGS/DRN/CHKD: CMS APPROVED: _____ DATE: 12-2-05	 FULTON COUNTY FULTON COUNTY PUBLIC WORKS 141 PRYOR ST. ATLANTA, GA. 30303 404-730-7400 FAX: 404-224-0498	DRAWING NO. 120
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NOM. PIPE DIA.	BELL DEPTH	BOLTS				REC. TORQUE Ft.-Lbs.	JOINT ACCESSORY WEIGHT-Lbs.
		DIAMETER	LENGTH	NUMBER PER JOINT			
4	2 1/2"	3/4"	3 1/2"	4	75-90	10	
6	2 1/2"	3/4"	3 1/2"	6	75-90	16	
8	2 1/2"	3/4"	4"	6	75-90	25	
10	2 1/2"	3/4"	4"	8	75-90	30	
12	2 1/2"	3/4"	4"	8	75-90	40	
14	3 1/2"	3/4"	4 1/2"	10	75-90	45	
16	3 1/2"	3/4"	4 1/2"	12	75-90	55	
18	3 1/2"	3/4"	4 1/2"	12	75-90	65	
20	3 1/2"	3/4"	4 1/2"	14	75-90	85	
24	3 1/2"	3/4"	5"	16	75-90	105	
30	4"	1"	6"	20	100-120	220	
36	4"	1"	6"	24	100-120	285	
42	4"	1 1/4"	6"	28	120-150	400	
48	4"	1 1/4"	6"	32	120-150	475	

FULTON COUNTY STANDARD DETAIL 121
MECHANICAL JOINT BOLT USAGE CHART

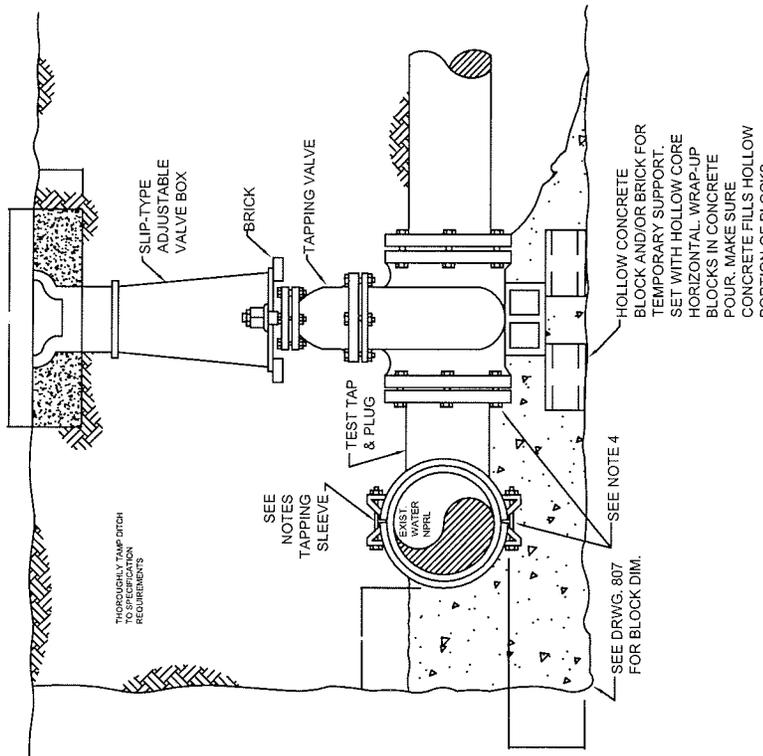
DATE	REVISIONS	DATE	REVISIONS

DGS/DRN/CHKD: CMS
APPROVED: _____
DATE: 12-2-05



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DRAWING NO.
121



NOTES:

1. TEMPORARILY SUPPORT TAPPING SADDLE AND VALVE AND APPLY STANDARD HYDROSTATIC TEST.
2. IF NO LEAKS, POUR INDICATED PERMANENT CONCRETE BLOCK AND SUPPORT PAD.
3. MAKE TAP, LINE EXTENSION AND BACKFILL.
4. COVER GLANDS AND BOLTS WITH HEAVY POLYETHYLENE SHEETING TO KEEP CONCRETE FROM BONDING. TYPICAL WHENEVER BOLTS OR GLANDS MAY BE "WRAPPED-UP" IN CONCRETE.
5. COAT TAPPING SLEEVE AND BOLTS WITH AN APPROVED BITUMASTIC COATING BEFORE POURING CONCRETE. TYPICAL FOR ALL STEEL INCLUDING RODS, COUPLINGS, STRAPS, AND OTHER BURIED STEEL. SEE NOTE 3, DRWG. 127 FOR COATING.

<p>FULTON COUNTY STANDARD DETAIL 122 TAPPING SLEEVE AND VALVE INSTALLATION DETAILS</p>	<p>DATE</p>	<p>REVISIONS</p>	<p>DATE</p>	<p>REVISIONS</p>	<p>DGS/DRN/DHKD: CMS APPROVED: _____ DATE: 12-2-05</p>	<p>FULTON COUNTY</p>	<p>FULTON COUNTY PUBLIC WORKS 141 PRYOR ST. ATLANTA, GA. 30303 404-730-7400 FAX: 404-224-0498</p>	<p>DRAWING NO. 122</p>
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MAXIMUM TAPPING SLEEVE LENGTH

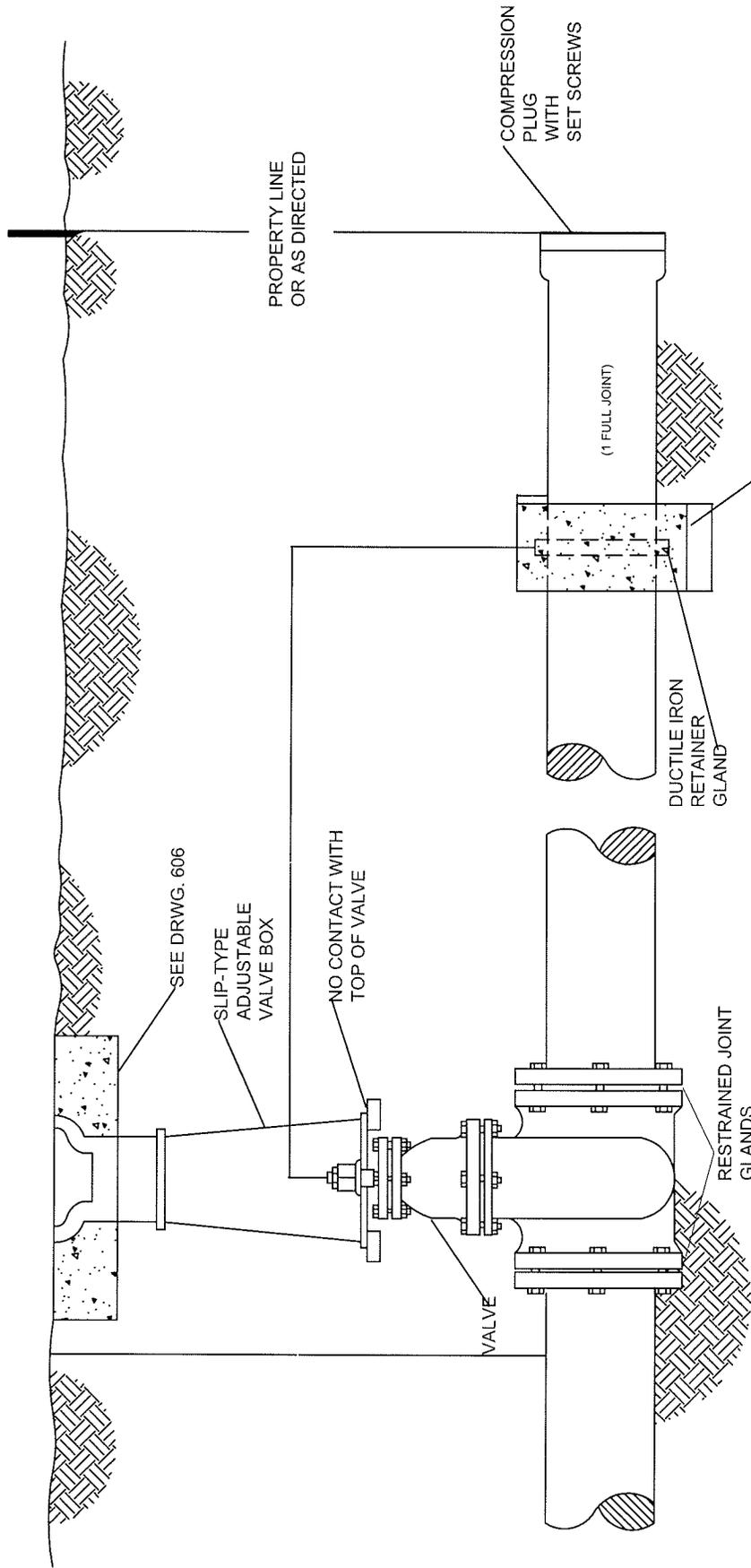
MAIN & TAP (IN. NOMINAL)	LENGTH (ALONG RUN)
6x6, 6x3, 6x4, 6x2	18"
8x2, 8x3, 8x4, 8x6	19"
8x8	21"
10x2, 10x3, 10x4, 10x6	19"
10x8, 10x10	23"
12x2, 12x3, 12x5, 12x6	19"
12x8	21"
12x10, 12x12	25"

NOTES:

1. ALL TAPPING SLEEVES AND VALVES SHALL BE HYDROSTATICALLY TESTED BEFORE TAP IS MADE. SEE DRWG. 123 FOR TYPICAL INSTALLATION AND NOTES.
2. WORKMEN INSTALLING TAPPING SLEEVE AND VALVE SHALL FOLLOW MANUFACTURER'S INSTALLATION PROCEDURES AND THE REQUIREMENTS OF FULTON COUNTY ENGINEER'S OFFICE.

FULTON COUNTY STANDARD DETAIL 123
TAPPING SLEEVE LENGTH

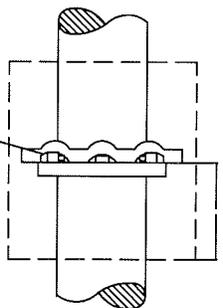
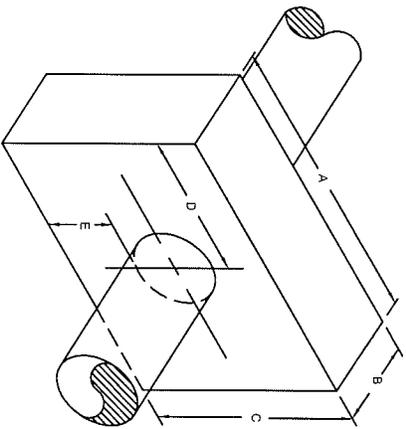
DATE	REVISIONS	DATE	REVISIONS	DGS /DRN/CHKD. QMS APPROVED: _____ DATE: 12-2-05	 FULTON COUNTY	DRAWING NO. 123
					FULTON COUNTY PUBLIC WORKS 141 PRYOR ST. ATLANTA, GA. 30303 404-730-7400 FAX: 404-224-0498	



NOTES:

1. STUB OUT MUST BE HYDROSTATICALLY TESTED WITH REST OF WATER MAIN.
2. IN LIEU OF SLIP-JOINT AND COMPRESSION PLUG, AN M.J. JOINT MAY BE USED WITH AN M.J. PLUG.

FULTON COUNTY STANDARD DETAIL 124 STUB OUT DETAIL				FULTON COUNTY PUBLIC WORKS 141 PRYOR ST. ATLANTA, GA. 30303 404-730-7400 FAX: 404-224-0488		DRAWING NO. 124	
DATE	REVISIONS	DATE	REVISIONS	DGS/DRN/CHKD: CMS	APPROVED: _____	DATE: 12-2-05	
					REW		



MINIMUM DIMENSIONS IN FEET FOR CONCRETE COLLAR ON DUCTILE IRON PIPE TO BE USED WITH EMBEDDED DUCTILE IRON RETAINER GLAND.

PIPE SIZE	A	B	C	D	E	VOLUME CU. YDS.	CONC. WT.	THRUST
4"	3'-6"	3'-0"	1'-5"	1'-6"	1'-0"	0.55	2230	3150
6"	4'-0"	3'-0"	2'-7"	2'-0"	1'-0"	1.15	4650	7070
8"	4'-6"	3'-0"	3'-0"	2'-3"	1'-3"	1.50	6075	12,570
10"	5'-2"	3'-0"	3'-2"	2'-7"	1'-3"	1.81	7330	19,635
12"	5'-9"	3'-0"	3'-8"	2'-10 1/2"	1'-8"	2.34	9475	28,775
14"	6'-6"	3'-0"	4'-0"	3'-3"	1'-9"	2.89	11,700	38,490
16"	6'-9"	3'-0"	4'-9"	3'-3"	2'-3"	3.56	14,410	50,270

NOTES:

1. ALL MAINS GREATER THAN 13" I.D. SHALL BE INDIVIDUALLY CALCULATED BY THE FULTON COUNTY ENGINEERING DEPARTMENT.
2. SOIL CONDITIONS SHALL BE VERIFIED BY THE ENGINEER BEFORE THRUST RESTRAINT DESIGN IS IMPLEMENTED.
3. PIPE MUST BE DUCTILE IRON.

DESIGN DATA:

1. DIMENSION OF THRUST RESTRAINT IN FEET BASED ON 2000 POUNDS PER SQUARE FOOT SOIL BEARING PRESSURE AND 230 PER SQUARE INCH TEST PRESSURE. ACTUAL INSIDE DIAMETER OF DUCTILE IRON PIPE, CLASS 31, USED AS STANDARD.
2. CONCRETE SHALL BE CLASS A, 3000 P.S.I.
3. UNDER ADVERSE CONTRUCTION CONDITIONS, CONCRETE SHALL BE "HIGH EARLY" TYPE.

FULTON COUNTY STANDARD DETAIL 125
THRUST RESTRAINT CONCRETE COLLAR

DATE	REVISIONS	DATE	REVISIONS

DGS/DRN/CHKD: GMS
APPROVED: REW
DATE: 12-2-05



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DRAWING NO. 125

TEES, PLUGS & VALVES	PIPE SIZE	ROD DIA.	NO. RODS	TOTAL THRUST (Lbs)
	6"	3/4"	2/3	5,655
	8"	3/4"	2/3	10,055
	10"	3/4"	3	15,710
	12"	3/4"	4	22,620
	14"	3/4"	6	30,800
	16"	3/4"	4	40,215
	20"	3/4"	6	62,835
	24"	3/4"	8	90,480
	30"	1"	6	141,375
	36"	1"	6	203,595
1 1/2" B	6"	3/4"	2	1,110
	8"	3/4"	2	1,970
	10"	3/4"	2	3,080
	12"	3/4"	2	4,435
	14"	3/4"	2	6,035
	16"	3/4"	2	7,885
	20"	3/4"	2	12,320
	24"	3/4"	2	17,740
	30"	1"	2	27,720
	36"	1"	2	39,910
2 1/2" B	6"	3/4"	2	2,210
	8"	3/4"	2	3,925
	10"	3/4"	2	6,130
	12"	3/4"	2	8,825
	14"	3/4"	2	12,015
	16"	3/4"	2	15,690
	20"	3/4"	2	24,515
	24"	3/4"	2	35,305
	30"	1"	2	55,160
	36"	1"	2	79,435
4 1/2" B	6"	3/4"	2/3	4,430
	8"	3/4"	2/3	7,700
	10"	3/4"	2	12,025
	12"	3/4"	4	17,312
	14"	3/4"	4	23,565
	16"	3/4"	4	30,780
	20"	3/4"	4	45,090
	24"	3/4"	6	69,250
	30"	1"	4	108,205
	36"	1"	6	155,610
9 0" B	6"	3/4"	2/3	8,000
	8"	3/4"	3	14,220
	10"	3/4"	4	22,214
	12"	3/4"	6	32,000
	14"	3/4"	6	43,540
	16"	3/4"	4	56,870
	20"	3/4"	6	83,860
	24"	3/4"	8	127,960
	30"	1"	6	199,930
	36"	1"	6	287,900

NOTES:

- ON PIPE SIZES 6"-14" ROD AND NUT WILL HAVE MIN. YIELD STRENGTH OF 50,000 PSI. ON PIPE SIZES 16"-24" ROD AND NUT WILL HAVE MIN. YIELD STRENGTH OF 100,000 PSI.
- RODS HAVE 6" OF THREAD ON EACH END.
- ALL METAL TO BE CLEANED AND COATED WITH AN APPROVED PROTECTIVE COATING FOLLOWING INSTALLATION AND PRIOR TO BACKFILLING. SEE NOTE 3, DRWG. 127.

FULTON COUNTY STANDARD DETAIL 126
THRUST RESTRAINTS: TIE ROD CHART

DATE	REVISIONS	DATE	REVISIONS

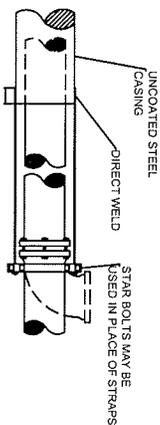
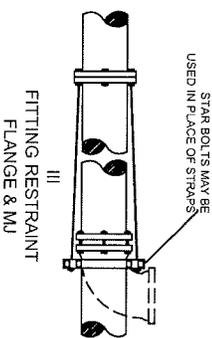
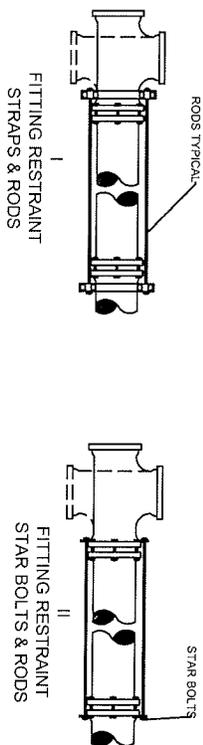
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DRAWING NO.

126



NOTES:

1. SEE DWG. 126 FOR NUMBER AND DIAMETER OF RODS REQUIRED.
2. NO FLANGES ARE TO BE BURIED.
3. AFTER INSTALLATION, TIE-RODS AND CLAMP ASSEMBLIES SHALL BE CLEANED AND THOROUGHLY COATED WITH ROYSTON LABORATORIES, INC. ROSKOTE PLASTIC NO. A 939 OR KOPPERS CO., INC. BITUMASTIC SUPERSERVICE BLACK OR APPROVED EQUIVALENT.
4. WHEN RESTRAINING FITTINGS TO STEEL CASING PIPE, THE TIE-RODS MUST BE DIRECT WELDED TO THE CASING - USE OF STAR BOLTS PROHIBITED. CASING MUST BE FULLY WELDED THROUGHOUT ITS LENGTH AND BE A MINIMUM OF 30' IN LENGTH. AREA TO BE WELDED MUST BE COMPLETELY BARE AND FREE OF ANY COATING MATERIAL.

FULTON COUNTY STANDARD DETAIL 127
THRUST RESTRAINTS: TIE-ROD INSTALLATION

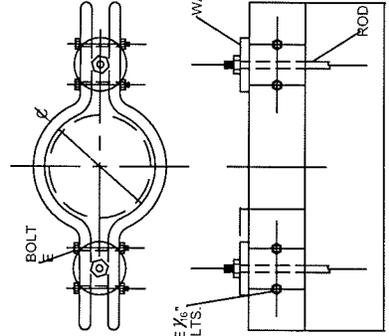
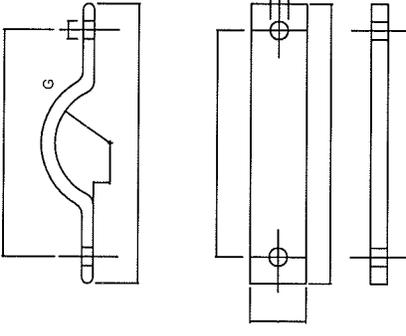
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APPROVED: REW
DATE: 12-2-05



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DRAWING NO.
127



BOLT HOLES SHALL BE $\frac{1}{16}$ " DIA. LARGER THAN BOLTS.

ABOVE ANCHOR STRAP DIMENSIONS (INCHES)

SIZE	B	G	H	L	R	S
4	10 1/8	5/8 X 2 1/2	13/16	12 1/2	2 1/2	3/4
6	12 7/8	5/8 X 2 1/2	13/16	14 1/2	3 9/16	3/4
8	14 3/8	5/8 X 2 1/2	13/16	16 3/4	4 1/2	3/4
10	16 11/16	5/8 X 2 1/2	1 1/16	19 1/16	5 3/4	3/4
12	19 3/16	5/8 X 3	1 1/16	22 5/16	6 3/4	7/8

STEEL SOCKET CLAMP DIMENSIONS (INCHES)

SIZE	A	B	C	D	E	T	ROD & C WASH SIZE
4	5	14 5/8	1/2	2	5/8 X 3 1/2	5/8	3/4
6	7 1/8	18 7/8	1/2	2	5/8 X 3 1/2	5/8	3/4
8	9 5/16	19 1/8	5/8	2 1/2	5/8 X 3 3/4	5/8	3/4
10	11 1/2	21 3/8	5/8	2 1/2	5/8 X 3 3/4	3/4	3/4
12	13 1/2	25 1/8	5/8	3	5/8 X 3 3/4	3/4	3/4
14	13 3/4	28 1/4	3/4	3	7/8 X 4 1/2	7/8	3/4
16	17 7/8	31 3/8	3/4	4	7/8 X 4 1/2	7/8	3/4
20	22 1/8	37 3/4	3/4	4 1/2	1 1/4 X 5	1 1/8	3/4
24	26 3/8	44 1/4	3/4	5	1 1/2 X 5 1/2	1 1/4	3/4

NOTES:

1. INSTALLATION OF, AND MATERIALS FOR RODS, CLAMPS, STRAPS, BOLTS AND WASHERS SHALL CONFORM TO THE NATIONAL FIRE CODES - NFPA NO. 24 LATEST REVISION.
2. YOKES AND ANCHOR STRAPS FOR FITTINGS LARGER THAN 12" SHALL BE DESIGNED AND APPROVED FOR SPECIFIC INSTALLATION.
3. RODS TO BE HIGH TENSILE, NOT ROLLED STEEL WITH TENSILE STRENGTH OF 110,000 P.S.I. AND A MIN. OF 95,000 YIELD STRENGTH. THREADS.
4. NUTS TO HAVE HEAVY DUTY SEMI-FINISH WITH NATIONAL COURSE THREADS.
5. AFTER INSTALLATION TIE RODS AND CLAMP ASSEMBLY SHALL BE THOROUGHLY COVERED WITH ROYSTON LABORATORIES, INC. ROSKOTE MASTIC ND A939 OR KOPPERS CO., INC. BITUMASTIC SUPERSERVICE BLACK OR APPROVED EQUIVALENT.

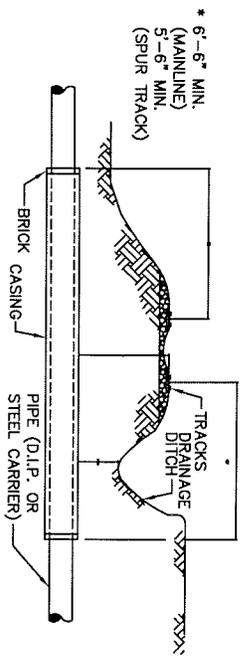
FULTON COUNTY STANDARD DETAIL 128
THRUST RESTRAINTS STRAP AND ROD DETAILS

DRAWING NO. 128
FULTON COUNTY PUBLIC WORKS
141 PRYOR ST. ATLANTA, GA. 30303
404-730-7400 FAX: 404-224-0488

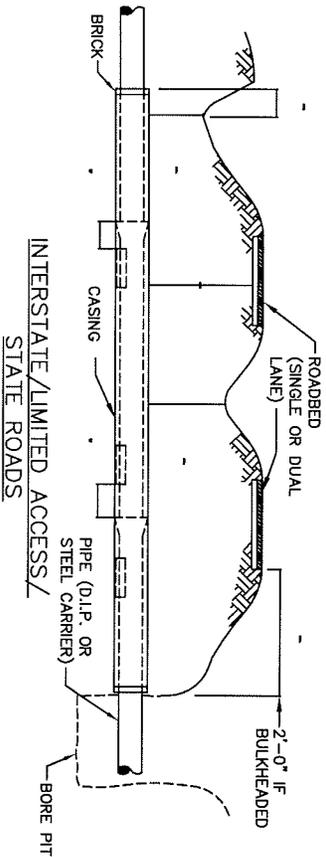


DCS/DRN/CHKD:CMS
APPROVED: REW
DATE: 12-2-05

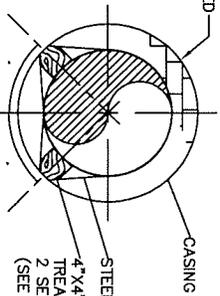
DATE	REVISIONS	DATE	REVISIONS



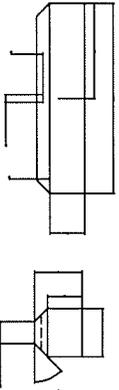
RAIL ROADS



**INTERSTATE/LIMITED ACCESS/
STATE ROADS**



**CASING-END VIEW
PIPE ACCESSIBLE**



WOOD SKID DETAIL

BORED CASINGS			
PIPE SIZE	PIPE O.D.	CASING SIZE	CASING I.D.
6"	6.90"	12"	11.376"
8"	9.05"	16"	14.314"
12"	13.20"	20"	17.938"
16"	17.40"	24"	21.564"
20"	21.60"	28"	27.0"
24"	25.80"	36"	35.0"

NOTE: IF CASING UNDER RAILROAD IS NOT COATED OR CATHODICALLY PROTECTED, INCREASE THICKNESS .062"

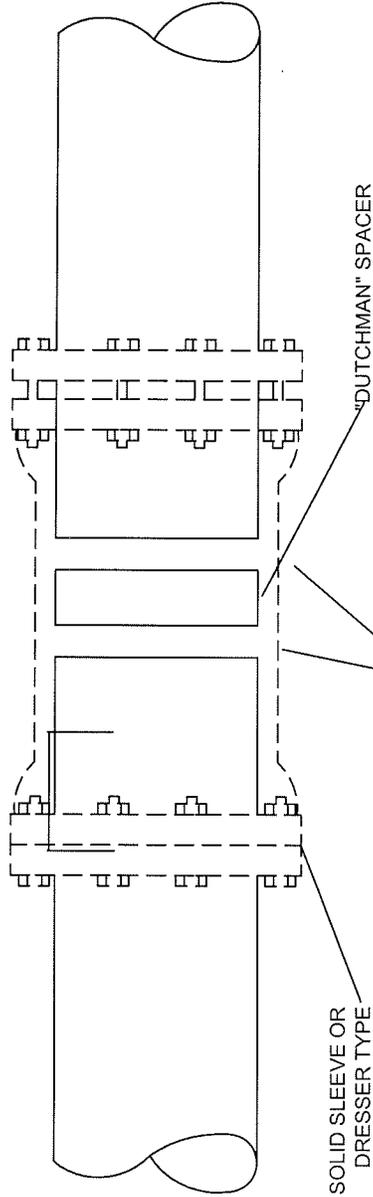
FULTON COUNTY STANDARD DETAIL 129
CASING/PIPE SUPPORT INSTALLATION

DATE	REVISIONS	DATE	REVISIONS	DGS/DRN/CHKD/CMS	APPROVED:	DATE:



FULTON COUNTY PUBLIC WORKS
141 PRYOR ST. ATLANTA, GA. 30303
404-730-7400 FAX: 404-224-0498

DRAWING NO. 129



(SPACES ARE FOR ILLUSTRATION PURPOSES ONLY)

NOTES:

1. IF "G" IS GREATER THAN $\frac{1}{2}$ " AT IT'S NARROWEST POINT, THEN A FULL CIRCLE SPACER OR "DUTCHMAN" MUST BE CUT AND PLACED IN THE GAP BEFORE THE SLEEVE IS USED TO CLOSE THE JOINT.
2. THE "DUTCHMAN" SPACER SHALL BE CUT TO A WIDTH NO LESS THAN $\frac{1}{4}$ " LESS THAN THE NARROWEST WIDTH OF "G".
3. EACH PIPE SPIGOT SHALL BE MARKED TO INDICATE THE POINT WHERE THE SLEEVE WILL BE PROPERLY CENTERED OVER THE POINT.
4. "FULL-CIRCLE" REPAIR CLAMPS ARE NOT APPROVED FOR JOINING PIPE. SUCH CLAMPS ARE SPECIFICALLY DESIGNED FOR REPAIRS ONLY.
5. IF "STEEL" SLEEVE IS USED, PROPERLY COAT BEFORE BACKFILLING.

FULTON COUNTY STANDARD DETAIL 130
PIPE JOINING: USE OF SOLID SLEEVE

DATE	REVISIONS	DATE	REVISIONS

DCS/DRN/CHKD: CMS
APPROVED: _____
DATE: 12-2-05

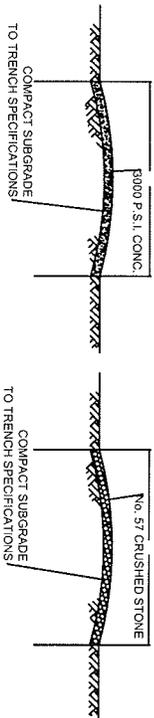
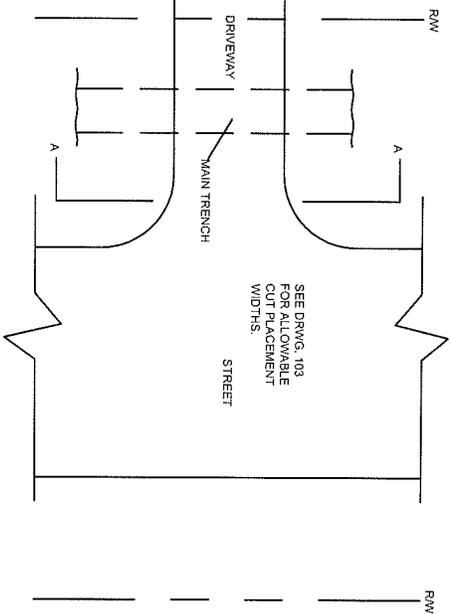


FULTON COUNTY

FULTON COUNTY PUBLIC WORKS
141 PRYOR ST. ATLANTA, GA. 30303
404-730-7400 FAX: 404-224-0498

DRAWING NO.

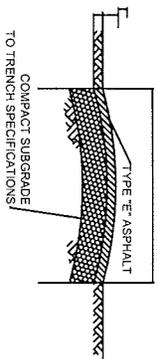
130



CONCRETE
"A" - "A"

-- FINISH SURFACE OF REPAIRED AREA TO MATCH EXISTING SURFACE. EDGES OF CUT TO BE SAWN. VERTICAL EXPANSION MATERIAL TO BE USED AS DIRECTED.

GRAVEL
"A" - "A"



ASPHALT
"A" - "A"

NOTE:
1. FINISHED GRADE TO BE FLUSH WITH THE EDGE OF THE DRIVE - TYPICAL ALL DRIVES.

(SEE DRWG. 110 FOR STREET CUT REPAIRS)

FULTON COUNTY STANDARD DETAIL 131
DRIVEWAY CUT REPAIRS CONCRETE, GRAVEL & ASPHALT

DATE	REVISIONS	DATE	REVISIONS

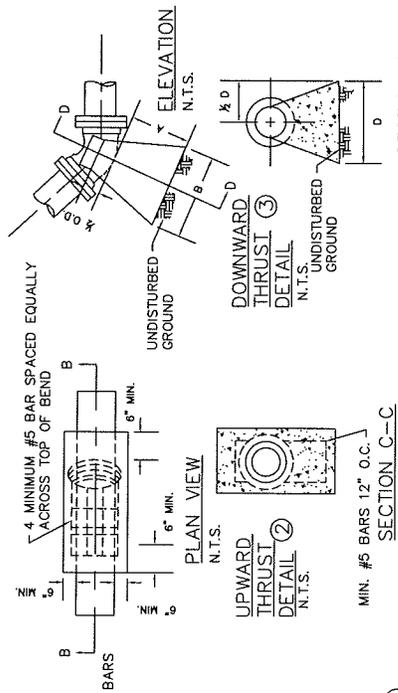
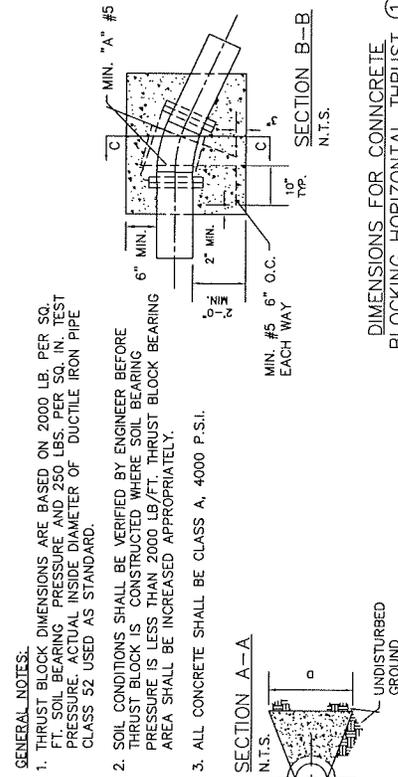
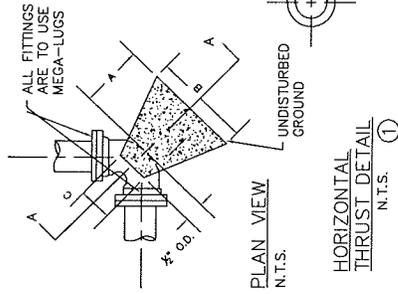
DES./DRN./CHKD. CMS
APPROVED: REW
DATE: 12-2-05



FULTON COUNTY PUBLIC WORKS
141 PRYOR ST. ATLANTA, GA. 30303
404-730-7400 FAX: 404-224-0498

DRAWING NO.
131

GENERAL NOTES:
 1. ALL FITTINGS ARE TO USE MEGA-LUGS
 2. THRUST BLOCK DIMENSIONS ARE BASED ON 2000 LB. PER SQ. FT. SOIL BEARING PRESSURE AND 250 LBS. PER SQ. IN. TEST PRESSURE. ACTUAL INSIDE DIAMETER OF DUCTILE IRON PIPE CLASS 52 USED AS STANDARD.
 3. SOIL CONDITIONS SHALL BE VERIFIED BY ENGINEER BEFORE THRUST BLOCK IS CONSTRUCTED WHERE SOIL BEARING PRESSURE IS LESS THAN 2000 LB/FT. THRUST BLOCK BEARING AREA SHALL BE INCREASED APPROPRIATELY.
 4. ALL CONCRETE SHALL BE CLASS A, 4000 P.S.I.



DIMENSIONS FOR CONCRETE BLOCKING FOR BENDS-DOWNWARD THRUST

BEND SIZE	A (FT)	B (FT)	C (IN)	D (FT)	VOLUME (CU. YD.)
6"	1.0	2.0	7"	1.0	0.04
8"	1.0	2.0	7"	1.0	0.05
11 1/2"	1.0	2.0	11"	2.0	0.1
12"	2.0	3.0	15"	2.0	0.3
16"	2.0	3.0	19"	3.0	0.5
20"	2.0	3.0	19"	3.0	0.5
6"	1.0	2.0	7"	1.0	0.05
8"	1.0	2.0	7"	1.0	0.11
12"	2.0	3.0	11"	2.0	0.3
16"	2.0	3.0	15"	2.0	0.6
20"	3.0	5.0	19"	3.0	1.0
6"	1.5	2.0	7"	1.5	0.05
8"	2.0	3.0	7"	2.0	0.1
12"	2.0	3.0	11"	2.0	0.3
16"	3.0	5.0	15"	3.0	0.6
20"	3.0	5.0	19"	3.0	1.0
6"	1.5	2.0	7"	1.5	0.11
8"	2.0	3.0	7"	2.0	0.3
12"	2.0	3.0	11"	2.0	0.7
16"	3.0	5.0	15"	4.0	1.4
20"	4.0	8.0	19"	5.0	2.8
6"	1.75	2.5	7"	2.0	0.2
8"	2.0	3.0	7"	2.0	0.4
12"	4.0	6.0	11"	3.0	2.1
16"	4.0	7.0	15"	4.0	3.1
20"	5.0	8.0	19"	5.0	5.3
6"	1.5	2.0	7"	2.0	0.2
8"	2.0	3.0	7"	2.0	0.4
12"	4.0	6.0	11"	3.0	2.1
16"	4.0	7.0	15"	4.0	3.1
20"	5.0	8.0	19"	5.0	5.3

DIMENSIONS FOR CONCRETE BLOCKING HORIZONTAL THRUST

BEND SIZE	A (FT)	B (FT)	C (IN)	D (FT)	VOLUME (CU. YD.)
6"	1.0	2.0	7"	1.0	0.04
8"	1.0	2.0	7"	1.0	0.05
11 1/2"	1.0	2.0	11"	2.0	0.1
12"	2.0	3.0	15"	2.0	0.3
16"	2.0	3.0	19"	3.0	0.6
20"	2.0	3.0	19"	3.0	0.6
6"	1.0	2.0	7"	1.0	0.05
8"	1.5	2.0	7"	1.5	0.11
12"	2.0	3.0	11"	2.0	0.3
16"	2.0	3.0	15"	2.0	0.7
20"	3.0	5.0	19"	4.0	1.4
6"	1.5	2.0	7"	1.5	0.11
8"	2.0	3.0	7"	2.0	0.3
12"	2.0	3.0	11"	2.0	0.7
16"	3.0	5.0	15"	3.0	1.4
20"	4.0	6.0	19"	5.0	2.6
6"	1.75	2.5	7"	2.0	0.2
8"	2.0	3.0	7"	2.0	0.4
12"	4.0	6.0	11"	3.0	2.1
16"	4.0	7.0	15"	4.0	3.1
20"	5.0	8.0	19"	5.0	5.3
6"	1.5	2.0	7"	1.75	0.13
8"	2.0	3.0	7"	2.0	0.3
12"	2.0	3.0	11"	2.0	0.8
16"	3.0	5.0	15"	3.0	1.5
20"	4.0	6.0	19"	4.0	2.6

CONCRETE REQUIRED TO RESIST UPWARD THRUST

BEND SIZE	UPWARD THRUST VOLUME (CU. YD.)	"A" NO. OF VERT. BARS REQ'D.
6"	0.3	2
8"	0.5	2
11 1/2"	1.4	2
12"	1.4	2
16"	2.4	3
20"	3.8	3
6"	0.7	2
8"	1.2	2
12"	2.7	3
16"	4.8	3
20"	7.4	3
6"	1.2	2
8"	2.2	2
12"	4.9	3
16"	8.9	3
20"	13.7	3
6"	1.8	2
8"	3.1	2
12"	7.0	3
16"	12.4	3
20"	19.4	4

FULTON COUNTY STANDARD BLOCKS FOR WATER

DATE: _____

REVISIONS: _____

DATE: _____

REVISIONS: _____

DATE: _____

REVISIONS: _____

DATE: 12-2-05

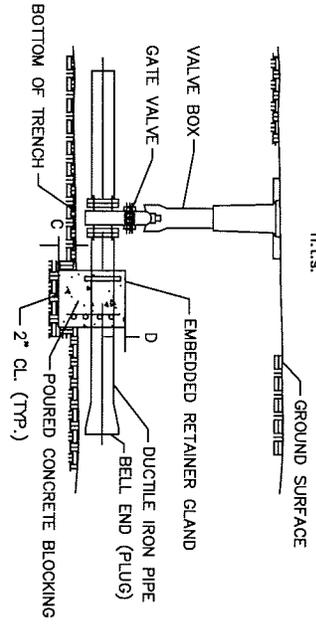
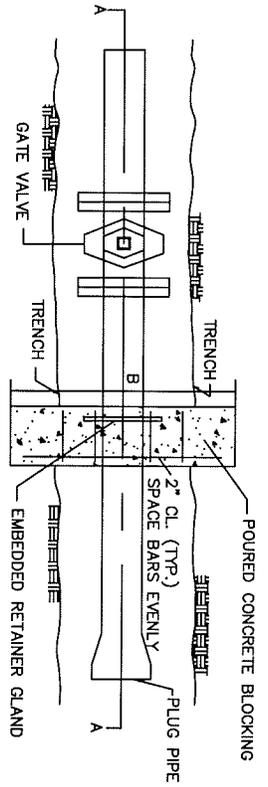
APPROVED: _____

DES/DRN/CHKD: REB

FULTON COUNTY

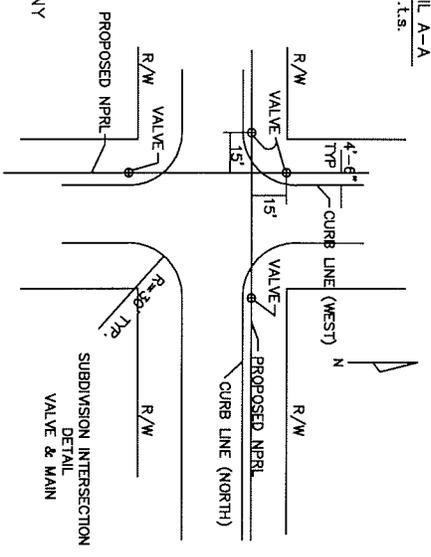
FULTON COUNTY PUBLIC WORKS
 141 PRYOR ST. ATLANTA, GA. 30303
 404-730-7400 FAX: 404-224-0498

DRAWING NO. 132



BLOCKING DETAILS

PIPE SIZE	A (IN.)	B (IN.)	C (IN.)	D (IN.)	REQD. STEEL (EACH WAY)
8"	10	32	12	8	4 - #4
10"	12	40	15	10	4 - #4
12"	14	54	24	12	4 - #4
18"	18	60	30	18	6 - #4



- NOTES:
- ANCHOR BLOCKING DETAIL TO BE USED AT THE END OF ANY COUNTY ROAD WHERE NPRL MAY BE EXTENDED AT A FUTURE DATE.
 - ALL CONCRETE TO BE 3000psi
 - ALL STEEL TO BE 60,000psi

FULTON COUNTY STANDARD DETAIL 133
 MAIN EXTENSION BLOCKING DETAILS
 SUBDIVISION INTERSECTION DETAIL VALVE MAIN

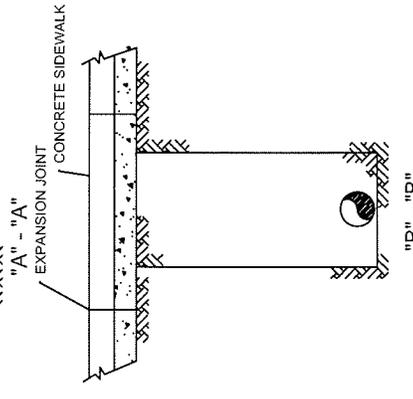
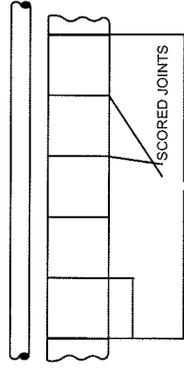
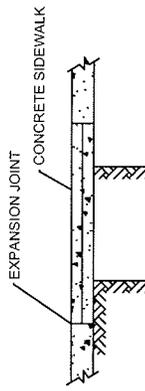
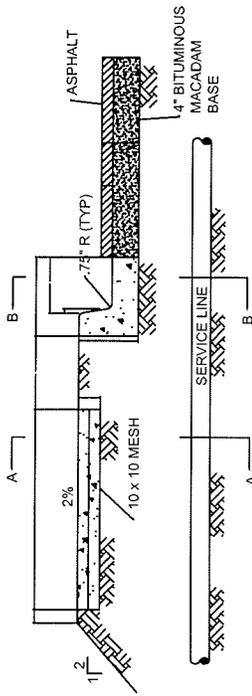
DATE	REVISIONS	DATE	REVISIONS

DGS/DRN/CHKD/REB
 APPROVED: REW
 DATE: 12-2-05



FULTON COUNTY PUBLIC WORKS
 141 PRYOR ST. ATLANTA, GA. 30303
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DRAWING NO.
 133



- NOTES:**
 1. DETAILS ARE TYPICAL.
 2. REPLACE SIDEWALKS, CURB AND GUTTER AND CURBING TO MATCH EXISTING MATERIALS AS DIRECTED.

FULTON COUNTY PUBLIC WORKS
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 404-730-7400 FAX: 404-224-0498



DGS/DRN/CHKD: CMS
 APPROVED: REW
 DATE: 12-2-05

DATE	REVISIONS	DATE	REVISIONS

FULTON COUNTY STANDARD DETAIL 134
 SIDEWALK, CURB AND GUTTER REPAIRS

DRAWING NO.
 134

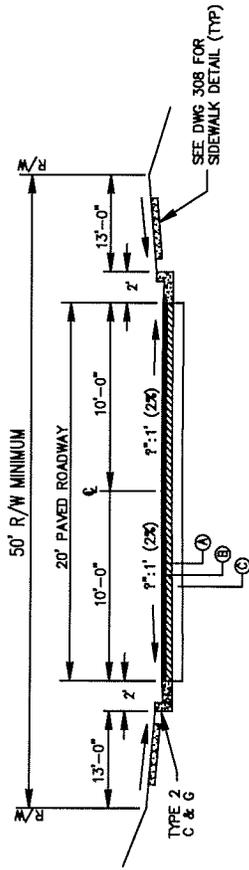
INDEX

GENERAL NOTES

DWG NO. DESCRIPTION

300	INDEX AND GENERAL NOTES
301	TYPICAL SECTIONS STREETS
302	TYPICAL SECTIONS STREETS
303	TYPICAL SECTION (CUL-DE-SAC)
304	DRIVEWAY DETAILS
305	DIVIDED ENTRANCE DETAILS
306	MISCELLANEOUS DETAILS
307	CURB AND GUTTER DETAILS
308	STANDARD SIDEWALK SECTION
309	TYPICAL SECTION TWO LANE DECELERATION LANE DETAILS
310	LEFT TURN LANE WITH WIDING ON BOTH SIDES
311	LEFT TURN LANE WITH WIDING ON ONE SIDE
312	HANDICAP RAMP DETAILS
313	MINI ROUNDABOUT
314	CHICANES
315	SPEED TABLE
316	INTERSECTION HUMP
317	ONE LANE CHOKER
318	ENTRANCE TREATMENT
319	CENTER ISLAND
320	BEAM TYPE GUARD RAIL
321	BEAM TYPE GUARD RAIL (CONT.)
322	RAILROADS GRADE CROSSING, SECTIONS, DETAILS
323	RAILROADS GRADE CROSSING, SECTIONS, DETAILS (CONT.)
324	SIGNS STREET NAME, DETAILS & LOCATION
325	PAVEMENT WIDE

FULTON COUNTY STANDARD DETAIL INDEX AND GENERAL NOTES	DATE: _____ REVISIONS: _____ DATE: _____	DGS/DRY/CHKD: CMS APPROVED: REW DATE: 12-02-05	 FULTON COUNTY	FULTON COUNTY PUBLIC WORKS 141 PRYOR ST. ATLANTA, GA. 30303 404-730-7400 FAX: 404-730-6325
			DRAWING NO. INDEX 300	

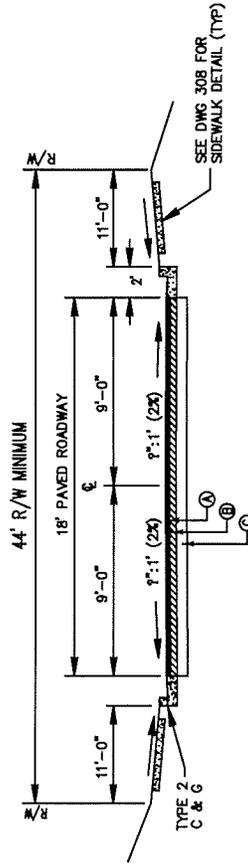


MAJOR SUBDIVISION STREET & ENTRANCE ROADS

SERVING 40 OR MORE HOUSING UNITS
N.T.S.

MAJOR SUB. DIV. STREETS & ENTRANCE ROADS

PAVEMENT MATERIAL SCHEDULE			
(A)	ASPH. CONC. 9.5 mm SUPERPAVE, 135 lb/yd	2	(1")
(B)	ASPH. CONC. 19 mm SUPERPAVE, 220 lb/yd	2	(2")
(C)	GRADED AGGREGATE BASE CRS, 8"		



MINOR SUBDIVISION STREET & SIDE ROADS

SERVING LESS THAN 40 HOUSING UNITS
N.T.S.

MINOR SUB. DIV. STREETS & SIDE ROADS

PAVEMENT MATERIAL SCHEDULE			
(A)	ASPH. CONC. 9.5 mm SUPERPAVE, 135 lb/yd	2	(1")
(B)	ASPH. CONC. 19 mm SUPERPAVE, 220 lb/yd	2	(2")
(C)	GRADED AGGREGATE BASE CRS, 6"		

FULTON COUNTY STANDARD DETAIL 302
TYPICAL SECTIONS
STREETS

DATE	REVISIONS	DATE	REVISIONS

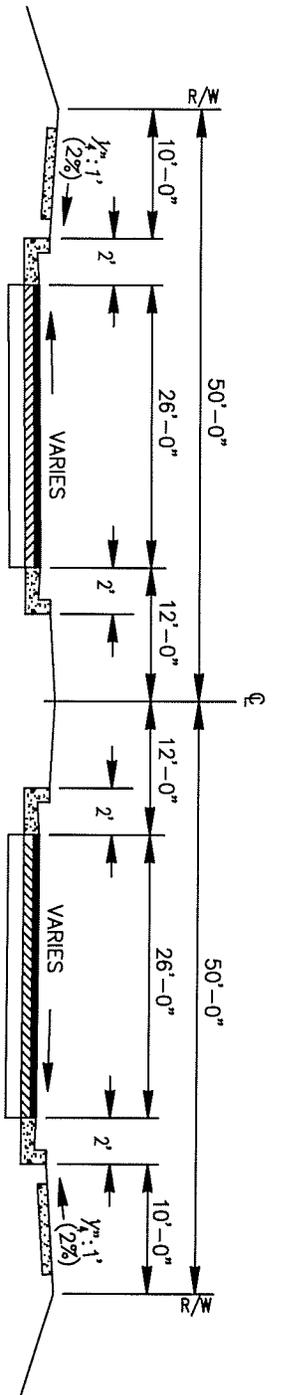
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APPROVED: LJM
DATE: 4-19-06



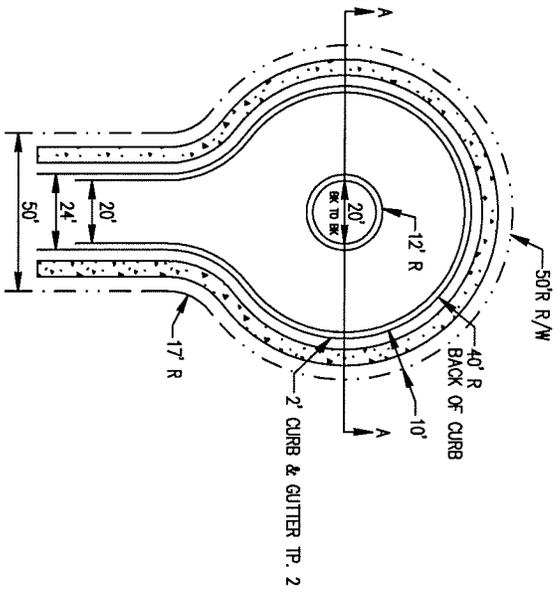
FULTON COUNTY

FULTON COUNTY PUBLIC WORKS
141 PRYOR ST. ATLANTA, GA. 30303 392
404-730-7400 FAX: 404-730-6325

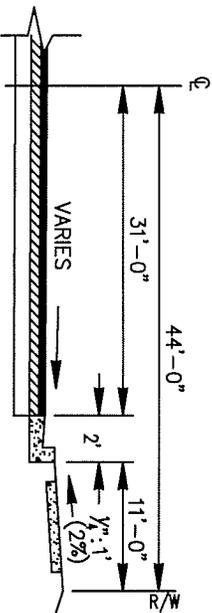
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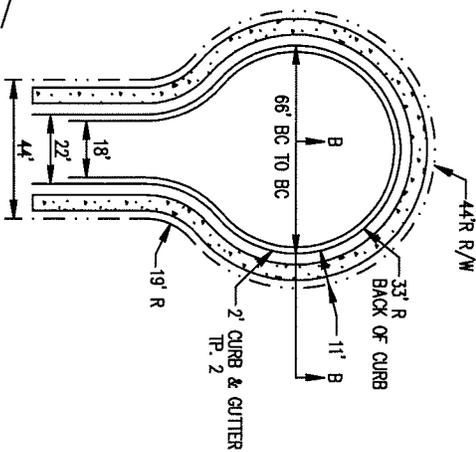
SECTION A-A



CUL-DE-SAC PLAN
MAJOR SUBDIVISION STREET
N.T.S.



SECTION B-B
(HALF SECTION)



CUL-DE-SAC PLAN
MINOR SUBDIVISION STREET
N.T.S.

FULTON COUNTY STANDARD DETAIL 303
TYPICAL SECTIONS
CUL-DE-SAC

DATE	REVISIONS	DATE	REVISIONS



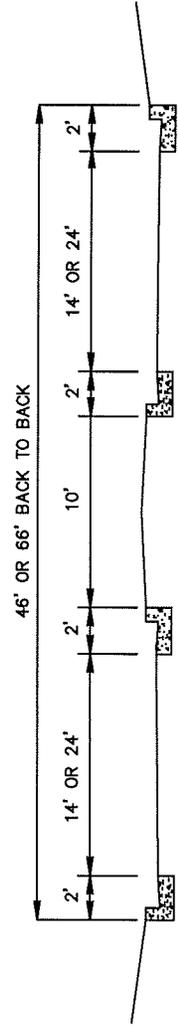
FULTON COUNTY PUBLIC WORKS
141 PRYOR ST. ATLANTA, GA. 30303 363
404-730-7400 FAX: 404-730-8325

DRIVEWAY/INTERSECTION USE	WIDTH IN FEET		MIN. RADIUS IN FEET
	MIN.	MAX.	
RESIDENTIAL DRIVEWAY (1-3 UNITS)	14	18	5' (RADIUS OR FLARE)
RESIDENTIAL STREET (TWO LANES)	20	25	
COMMERCIAL DRIVEWAY	24	30	30'
WHEN DESIGNED FOR TRUCKS	24	40	35'
TWO-LANE DIVIDED DRIVEWAY	SEE DETAIL 305		75'
FOUR-LANE DIVIDED DRIVE	SEE DETAIL 305		30'
			30'

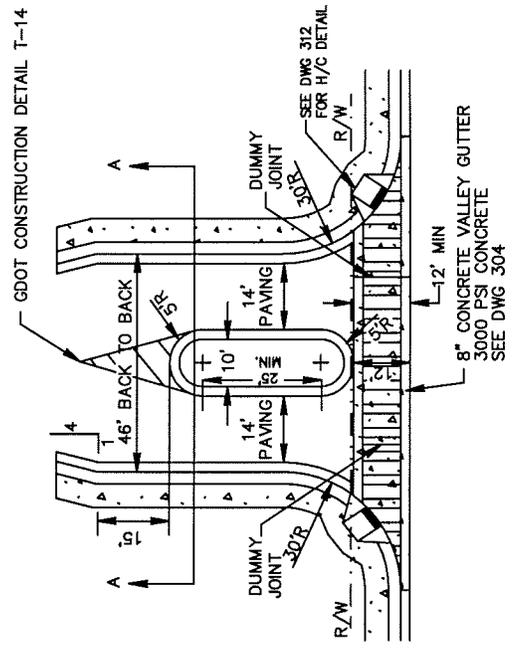
CONCRETE DRIVES:

RESIDENTIAL	COMMERCIAL
6" CONCRETE VALLEY GUTTER	8" CONCRETE VALLEY GUTTER
4" CONCRETE DRIVEWAY	8" CONCRETE DRIVEWAY

- NOTES:
- PUBLIC STREET INTERSECTIONS SHALL BE ASPHALT
 - ALL STRIPING MUST BE DONE IN THERMOPLASTIC PER GDOT SPECIFICATION SECTION 655

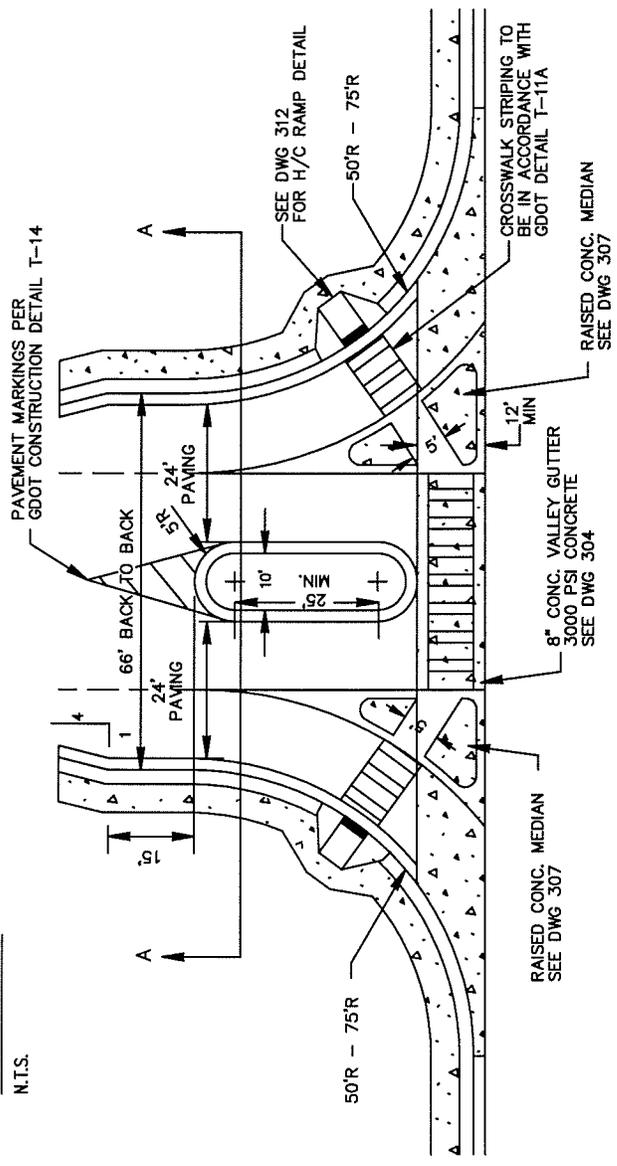


SECTION A-A
N.T.S.

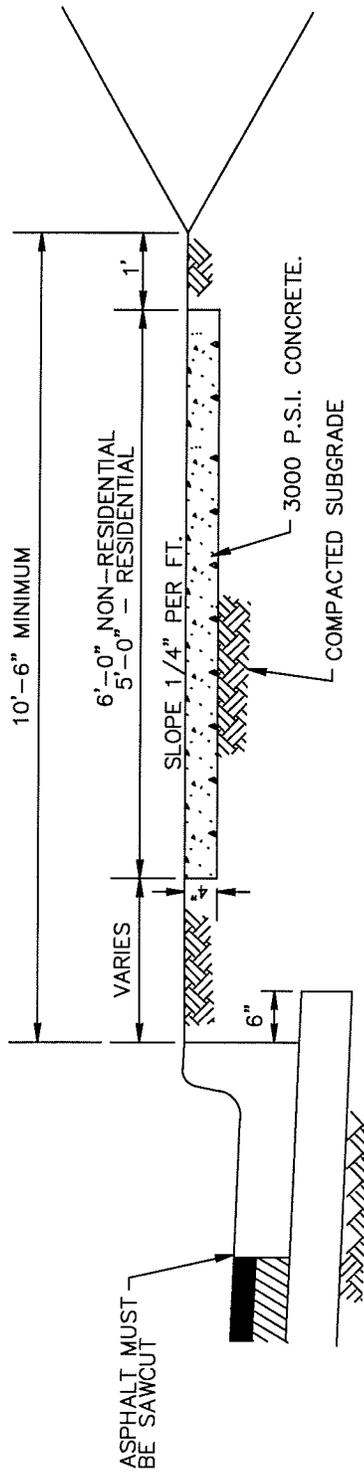


OPTIONAL DIVIDED ENTRANCE (PRIVATE OR COMMERCIAL)

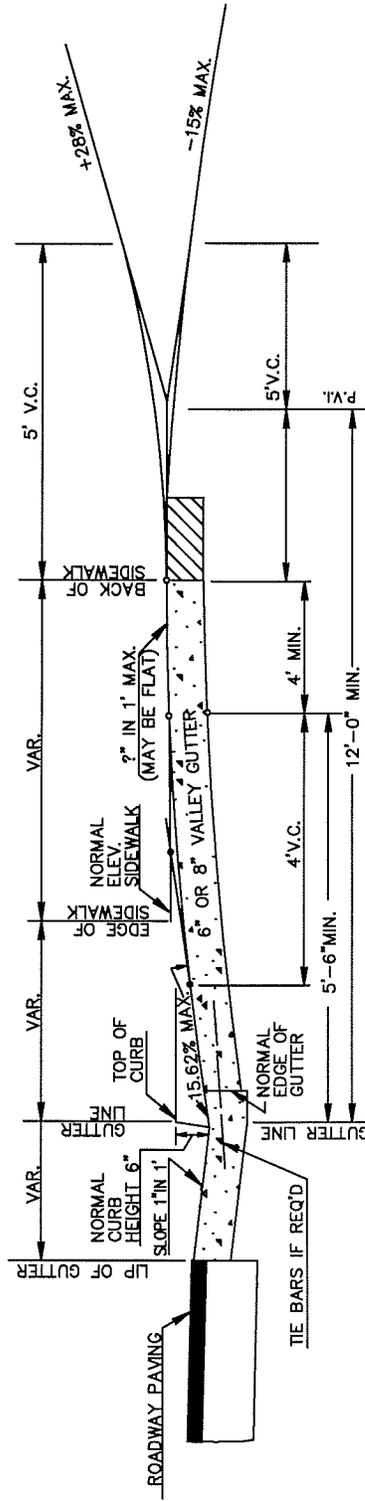
N.T.S.



<p>FULTON COUNTY STANDARD DETAIL 305 DIVIDED ENTRANCE DETAILS</p>	<table border="1"> <thead> <tr> <th>DATE</th> <th>REVISIONS</th> <th>DATE</th> <th>REVISIONS</th> </tr> </thead> <tbody> <tr><td> </td><td> </td><td> </td><td> </td></tr> </tbody> </table>	DATE	REVISIONS	DATE	REVISIONS																	<p>FULTON COUNTY</p>	<p>FULTON COUNTY PUBLIC WORKS 141 PRYOR ST. ATLANTA, GA. 30303 365 404-730-7400 FAX: 404-730-6326</p>
	DATE	REVISIONS	DATE	REVISIONS																			
<p>DESIGNER/CHKD: MAH APPROVED: LAM DATE: 4-19-05</p>																							



TYPICAL SECTION OF SIDEWALK
N.T.S.

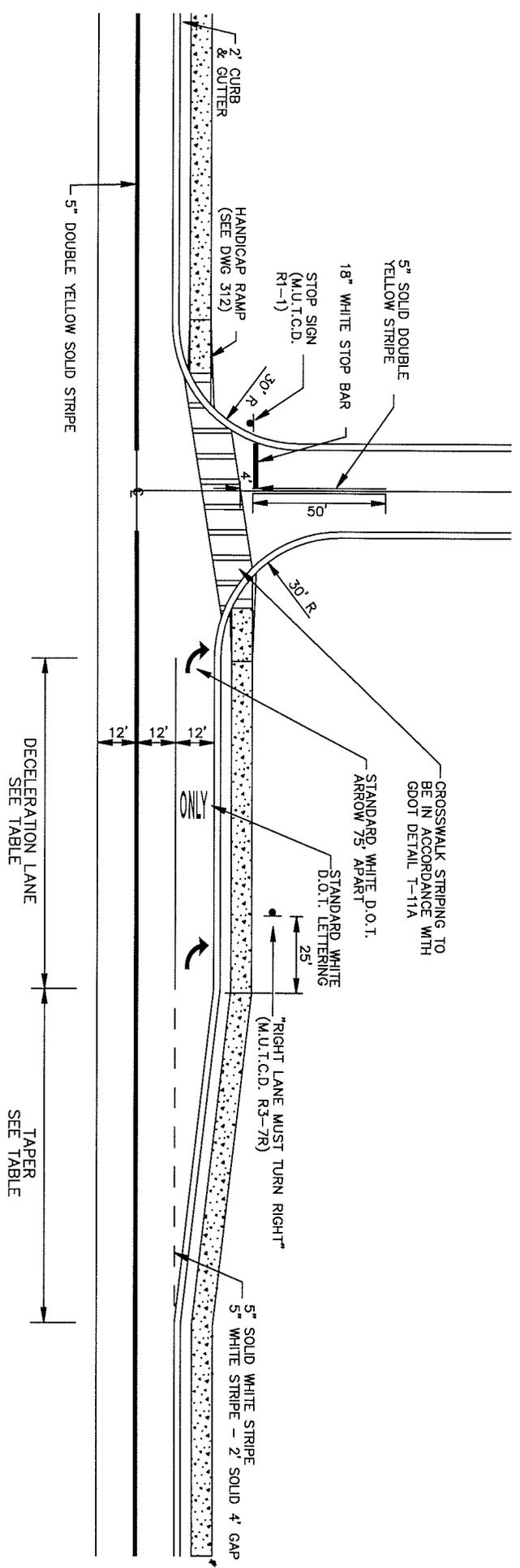


SECTION AT C OF DRIVEWAY

NOTES:

1. USE 3/8" X 4" EXPANSION JOINTS AT CHANGE OF DIRECTIONS, CURBS, RIGID STRUCTURES AND RIGID PAVEMENT. ON STRAIGHT RUNS PROVIDE EXPANSION JOINTS EVERY 24 FEET.
2. TOOL ALL EXPOSED EDGES AND JOINTS TO 1/4" RADIUS.
3. BROOM FINISH ACROSS DIRECTION OF TRAVEL.
4. PROVIDE 3/4" DEEP SAW CUT CONTRACTION JOINTS EVERY 5'-0".
5. ZONING OVERLAY REQUIREMENTS MAY SUPERCEDE STANDARD DETAIL.

<p>FULTON COUNTY STANDARD DETAIL 308 STANDARD SIDEWALK SECTION</p>		<p>DATE: _____ REVISIONS: _____</p>		<p>DATE: _____ REVISIONS: _____</p>		<p>DESIGNER/CHKD: KUH APPROVED: LAM DATE: 4-19-08</p>		<p>FULTON COUNTY PUBLIC WORKS 141 PRYOR ST. ATLANTA, GA. 30303 308 404-730-7400 FAX: 404-730-6325</p>		<p>DRAWING NO.</p>
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SPEED LIMIT MPH	DECELERATION LANE	TAPER
35	100	50
40	150	50
45	175	100
50	225	100
55	250	100

- NOTES:
1. ALL STRIPING MUST BE DONE IN THERMOPLASTIC PER GDOT SPECIFICATION SECTION 653
 2. CONTACT E&CD TRAFFIC INSPECTOR PRIOR TO ANY CONSTRUCTION AND 1 WEEK PRIOR TO STRIPING FOR INSPECTION OF LAYOUT..
 3. STRIPING LAYOUT IS SUBJECT TO FIELD MODIFICATION PER THE FIELD INSPECTION.

FULTON COUNTY STANDARD DETAIL 309
 TYPICAL SECTION TWO LANE ROAD
 DECELERATION LANE

DATE	REVISIONS	DATE	REVISIONS

DWG/DMN/CHKD: KAH
 APPROVED: LM
 DATE: 4-19-08

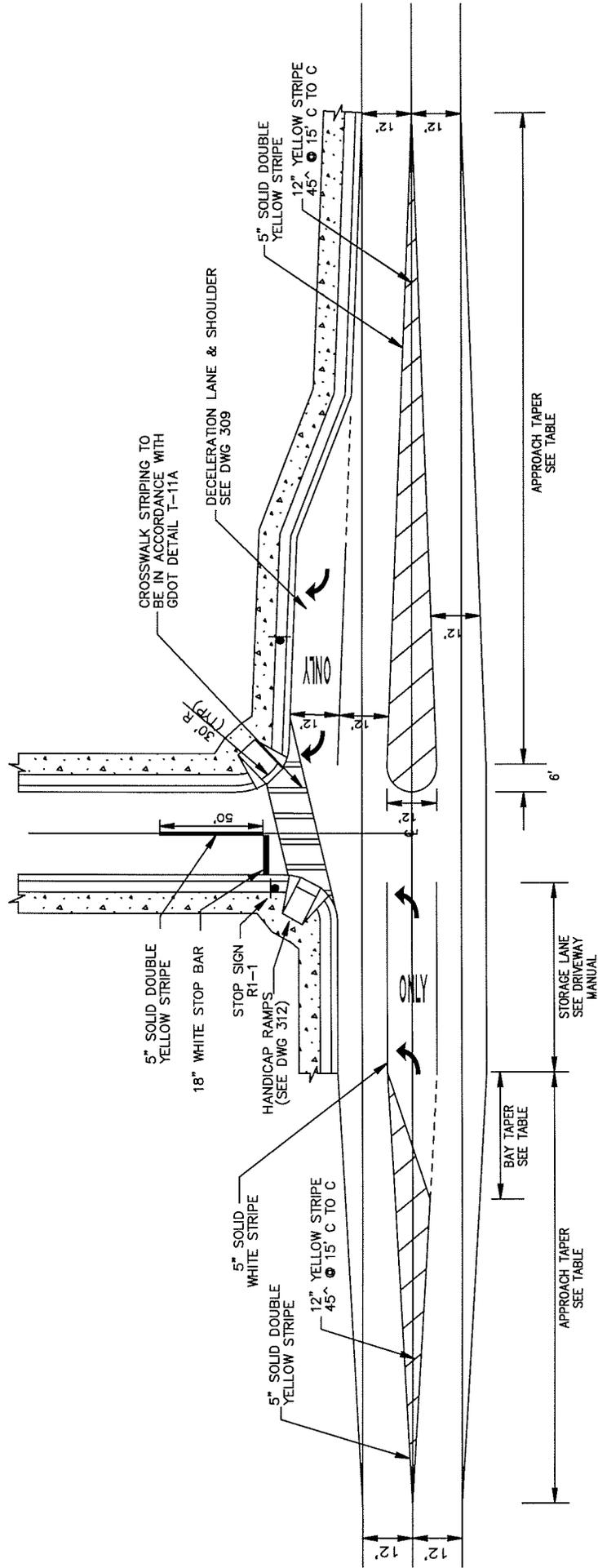


FULTON COUNTY PUBLIC WORKS
 141 PRYOR ST. ATLANTA, GA. 30303
 404-730-7400 FAX: 404-730-6325

POSTED SPEED LIMIT, MPH	APPROACH TAPER 6' SHIFT	BAY TAPER	STORAGE LANE
35	125	50	95-190
40	160	50	95-190
45	270	100	95-210
50	300	100	95-210
55	330	100	95-210

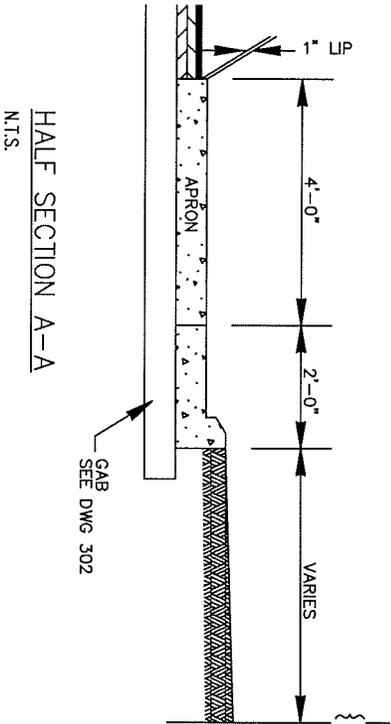
NOTES:

- LEFT STORAGE TURN LANE LENGTH TO BE IN ACCORDANCE WITH TABLE 14 OF THE FULTON COUNTY DRIVEWAY MANUAL.
- ALL STRIPING MUST BE DONE IN THERMOPLASTIC PER GDOT SPECIFICATION SECTION 653
- CONTACT E&CD TRAFFIC INSPECTOR PRIOR TO ANY CONSTRUCTION AND 1 WEEK PRIOR FOR INSPECTION OF LAYOUT.
- STRIPING LAYOUT IS SUBJECT TO FIELD MODIFICATION PER THE FIELD INSPECTION.

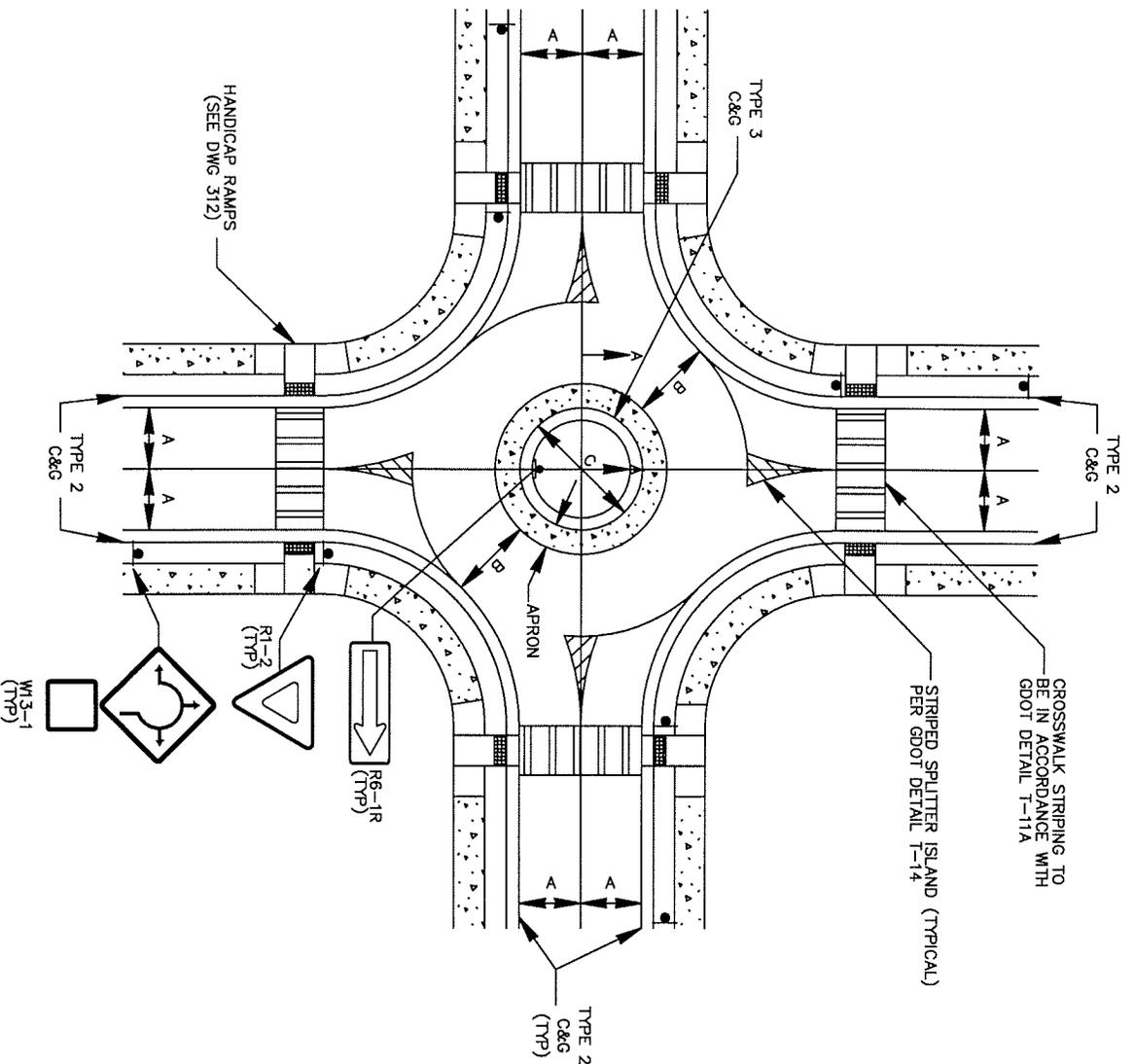


FULTON COUNTY STANDARD DETAIL 310 LEFT TURN LANE WITH WIDING ON BOTH SIDES		DATE: _____ REVISIONS: _____ DATE: _____ REVISIONS: _____		DGS/DRN/CHKD: KAH APPROVED: LM DATE: 4-19-05		FULTON COUNTY		FULTON COUNTY PUBLIC WORKS 141 PRYOR ST. ATLANTA, GA. 30303 404-730-7400 FAX: 404-730-6325		DRAWING NO. 310
--	--	--	--	--	--	---------------	--	--	--	--------------------

A	18' ROAD WIDTH	20' ROAD WIDTH	25' EXIST. ROAD WIDTH
B	9'	10'	12.5'
C	12.15'	12.56'	14.10'
	26' D	28' D	32' D



- NOTES:
1. APRON TO BE 4 FOOT WIDE, 6" THICK 3000 PSI CONCRETE PAVEMENT.
 2. ALL STRIPING MUST BE DONE IN THERMOPLASTIC PER GDOT SPECIFICATION SECTION 653.
 3. CONTACT E&CD TRAFFIC INSPECTOR PRIOR TO ANY CONSTRUCTION AND 1 WEEK PRIOR TO STRIPING FOR INSPECTION OF LAYOUT.
 4. STRIPING LAYOUT IS SUBJECT TO FIELD MODIFICATION PER THE FIELD INSPECTION.



FULTON COUNTY STANDARD DETAIL 313
MINI ROUNDABOUT

DATE	REVISIONS	DATE	REVISIONS

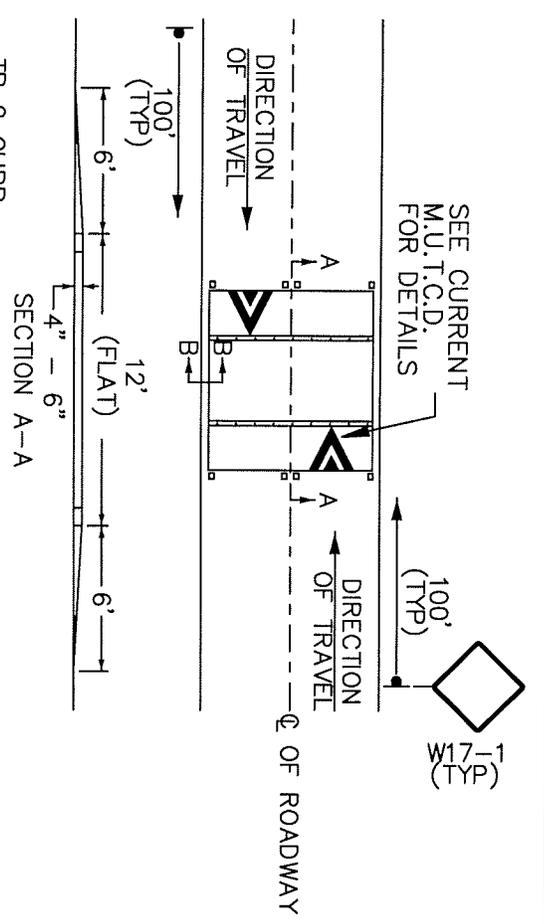
DES/DRW/CHKD/KAH
APPROVED: LM
DATE: 4-19-05



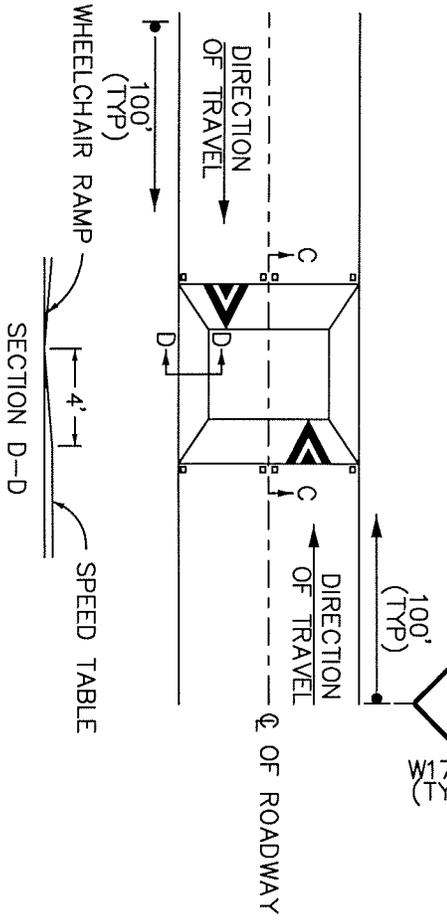
FULTON COUNTY PUBLIC WORKS
141 PRYOR ST. ATLANTA, GA. 30303
404-730-7400 FAX: 404-730-6325

DRAWING NO.

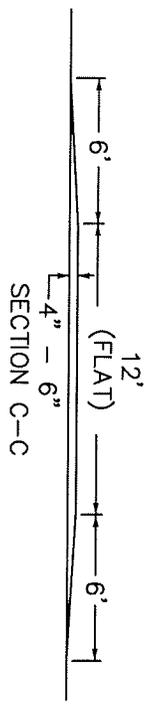
313



TYPE 1 SPEED TABLE DETAIL



TYPE 2 SPEED TABLE DETAIL



NOTES:

1. USE TYPE 2 SPEED TABLES IN CONJUNCTION WITH CROSSWALKS, ONLY.
2. SPEED TABLES MAY BE CONSTRUCTED USING ASPHALT OR CONCRETE, PER FULTON COUNTY TRAFFIC ENGINEER.
- A. CONCRETE CONSTRUCTION:
 1. CONSTRUCT SPEED TABLES USING 3000 PSI HIGH/EARLY CONCRETE REINFORCED WITH #3 BARS AT 12" C TO C, BOTH WAYS, OR 6 X 6-W2.9 X W2.9 WELDED WIRE FABRIC, OR 4 X 4-W2.0 X W2.0 WELDED WIRE FABRIC.
 2. CONCRETE WILL BE COLORED AND TOP STAMPED WITH TEXTURE PER FULTON COUNTY TRAFFIC ENGINEER
- B. ASPHALT CONSTRUCTION:
 1. CONSTRUCT SPEED TABLES USING ASPHALTIC CONCRETE 12.5 MM SUPERPAVE IN ACCORDANCE WITH SECTION 402 OF THE GEORGIA DOT STANDARD SPECIFICATIONS, CURRENT EDITION.
 2. APPLY TACK COAT AT A RATE OF 0.04 TO 0.06 GALLONS PER SQUARE YARD IN ACCORDANCE WITH SECTION 413 OF THE GEORGIA DOT STANDARD SPECIFICATIONS, CURRENT EDITION, OR AS DIRECTED BY ENGINEER.
 3. APPLY PAVEMENT MARKINGS USING WHITE THERMOPLASTIC 0.090 INCHES IN THICKNESS IN ACCORDANCE WITH SECTION 653 OF THE GEORGIA DOT STANDARD SPECIFICATIONS, CURRENT EDITION.
- A. APPLY RAISED PAVEMENT MARKERS, TP 11 (YELLOW/YELLOW) (CENTERLINE) AND TP 13 (CLEAR/RED) (EDGE OF PAVEMENT), USING HEATED BITUMINOUS ADHESIVE IN ACCORDANCE WITH SECTION 868 OF THE OF THE GEORGIA DOT SPECIAL SHELF PROVISION SPECIFICATIONS, CURRENT EDITION.

FULTON COUNTY STANDARD DETAIL 315
SPEED TABLE

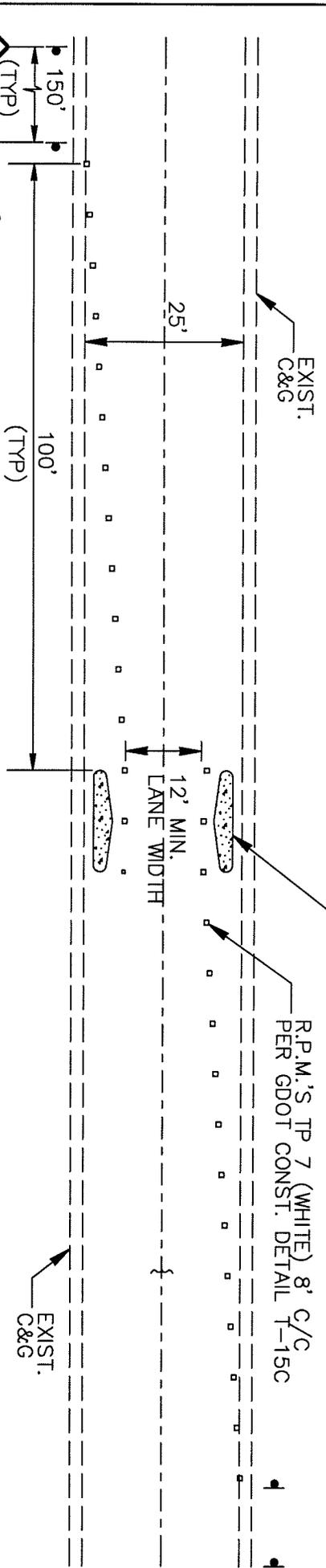
DATE	REVISIONS	DATE	REVISIONS

DES/DRW/CHKD/KAM
APPROVED: LJM
DATE: 4-19-05



FULTON COUNTY PUBLIC WORKS
141 PRYOR ST. ATLANTA, GA. 30303 315
404-730-7400 FAX: 404-730-8328

DRAWING NO.

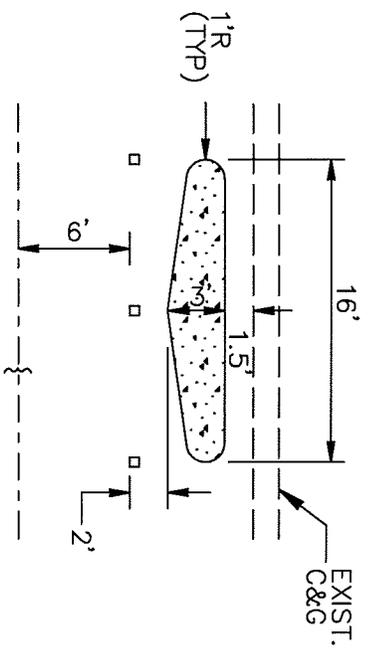


6" RAISED CONC. MEDIAN (ISLAND) WITH TP 3 CURB FACE (TYP) SEE DETAIL BELOW

R.P.M.'S TP 7 (WHITE) 8' C/C PER GDOT CONST. DETAIL T-15C

PLAN N.T.S.

- W5-1 (TYP)
- R1-2A (TYP)
- R1-2 (TYP)



NOTE: SEE DWG 307 FOR CONCRETE MEDIAN CONSTRUCTION DETAIL.

CONC. ISLAND DETAIL N.T.S.

FULTON COUNTY STANDARD DETAIL 317
ONE LANE CHOKER

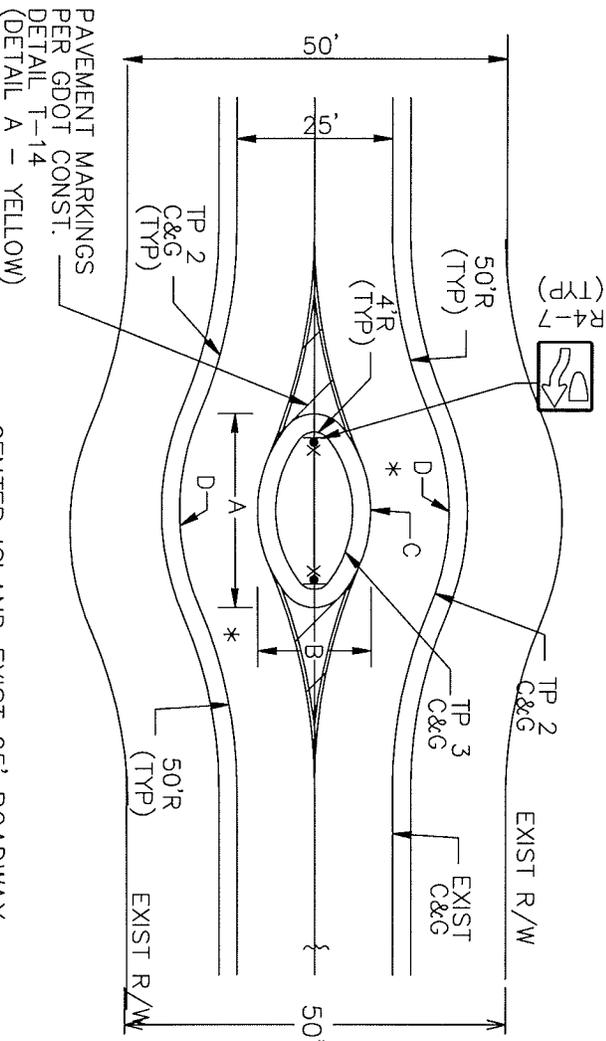
DATE	REVISIONS	DATE	REVISIONS

DESIGNED BY: C/K/O: KAH
APPROVED: LM
DATE: 4-19-05

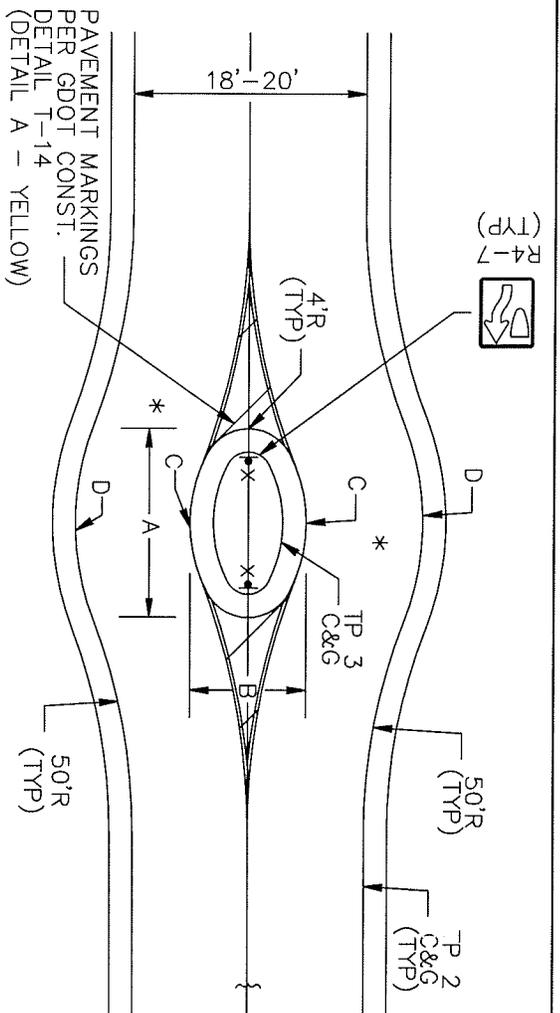


FULTON COUNTY PUBLIC WORKS
141 PRYOR ST. ATLANTA, GA. 30303 317
404-730-7400 FAX: 404-730-8325

DRAWING NO.



CENTER ISLAND EXIST 25' ROADWAY
WITHOUT SIDEWALK
N.T.S.



CENTER ISLAND 18-20' ROADWAY
N.T.S.

A	13'7"	16'3"	21'4"	25' EXIST.
B	9'	10'	12'6"	
C	12'R	13'R	15'R	
D	21'R	23'R	27'6"R	

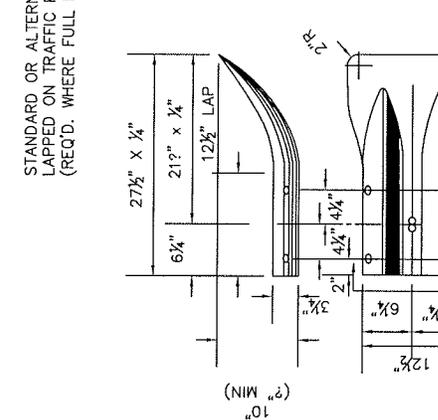
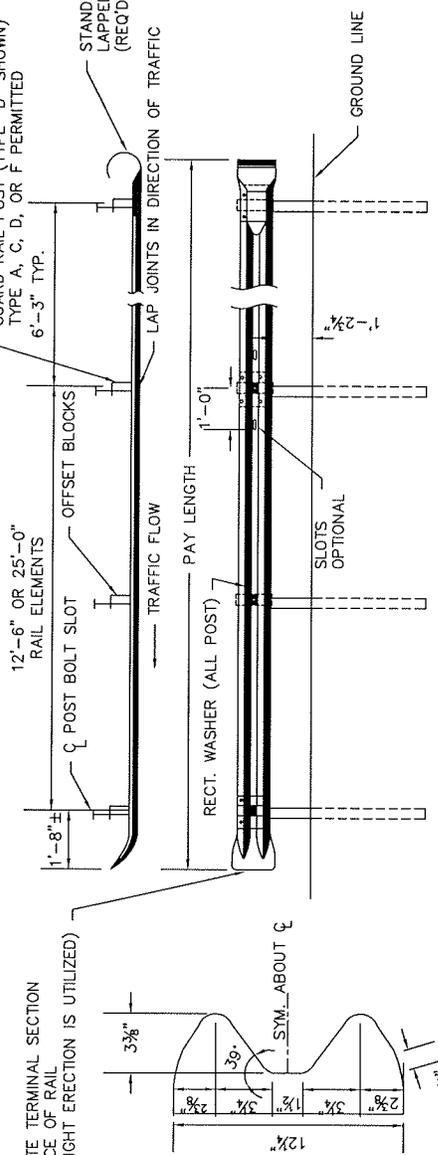
NOTES:

1. ALL STRIPING MUST BE DONE IN THERMOPLASTIC PER GDOT SPECIFICATION SECTION 653.
2. 20' LANE WIDTH REQUIRED BY FIRE DEPARTMENT *

FULTON COUNTY STANDARD DETAIL 319
CENTER ISLAND

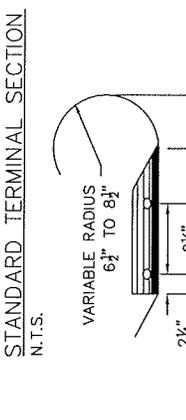
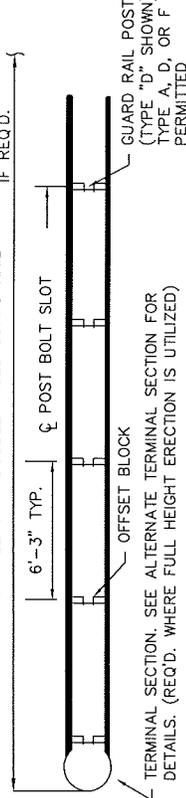
DATE	REVISIONS	DATE	REVISIONS	DWG./DRN./CHKD./CNS	APPROVED:	DATE:	FULTON COUNTY	FULTON COUNTY PUBLIC WORKS	319
					NH	6-2-08		141 PRYOR ST. ATLANTA, GA. 30303	
								404-730-7400 FAX: 404-730-6325	

PRAMING INC.



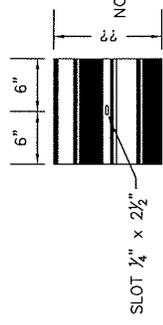
SECTION THRU RAIL ELEMENT
N.T.S.

STANDARD TERMINAL SECTION
N.T.S.



ALTERNATE TERMINAL SECTION
N.T.S.

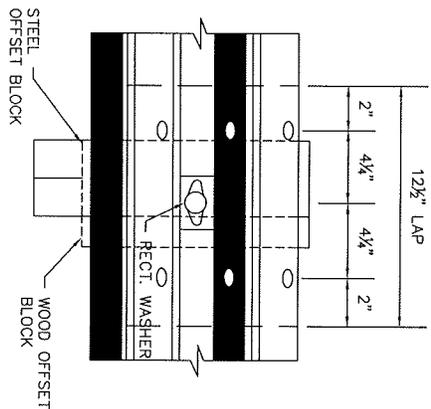
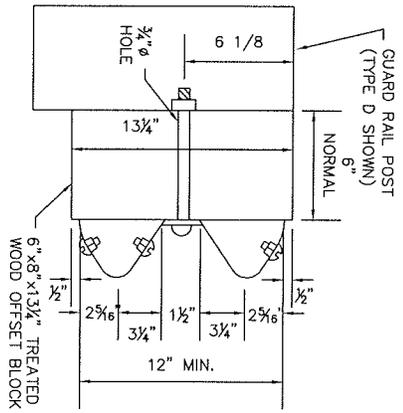
DOUBLE FACED GUARD RAIL
N.T.S.



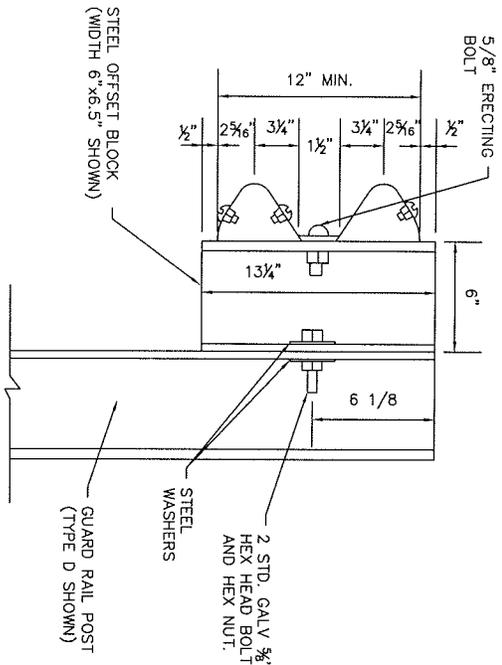
BACK-UP PLATE
N.T.S.
(REQ'D. WITH STREET OFFSET BLOCKS WHERE RAIL SPICE DOES NOT OCCUR. LOCATED BACK OF RAIL.)

- GENERAL NOTES:
1. GUARD RAIL, ITS FITTINGS, PARTS, ETC. ARE TO BE IN ACCORDANCE WITH STATE HIGHWAY DEPARTMENT OF GEORGIA STANDARD SPECIFICATIONS AND/OR SPECIAL PROVISIONS.
 2. FOR DETAILS OF POSTS & OFFSET BLOCKS SEE GA. STANDARD 4011.
 3. FOR DETAILS OF GUARD RAIL ANCHORAGES SEE GEORGIA STANDARD 4012.
 4. FOR LOCATION OF GUARD RAIL SEE APPLICABLE LOCATION STANDARDS.
 5. ON PROJECTS WHERE GUARD RAIL CONNECTIONS AT BRIDGE END HAVE BEEN PLACED ON PREVIOUS CONTRACTS THE END PANEL MAY BE SHORTENED BY CUTTING OR SHEARING TO FIT EXISTING STRUCTURE.
 6. WHEN GUARD RAIL IS REQUIRED ON CURVES WITH RADII LESS THAN 150' PRECURVED RAIL WILL BE REQUIRED.
 7. UNIT PRICE FOR GUARD RAIL TO INCLUDE OFFSET BLOCKS, POST, BACK-UP PLATES WHERE REQ'D, BOLTS, NUTS, WASHERS, TERMINAL SECTIONS, ADDITIONAL POST WHERE REQUIRED AND REMOVAL AND REPLACEMENT OF PORTIONS OF MEDIAN PAVING, SPILLWAYS OR CATCH BASINS WHERE NECESSARY.
 8. ALL DIMENSIONS ARE SUBJECT TO MANUFACTURING TOLERANCES.
 9. STANDARD NET LENGTH OF RAIL ELEMENTS MAY BE EITHER 12'-6" OR 25'-0". THESE LENGTHS SHALL BE ARRANGED TO PROVIDE AS NEARLY AS POSSIBLE THE OVERALL LENGTH ORDERED BY THE ENGINEER FOR ANY ONE LOCATION.

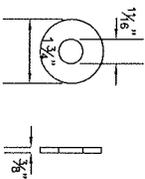
BY: _____				DATE: _____				REVISION: _____				DATE: _____				DATE: _____				DATE: _____							
SCALE				N.T.S.				DSG/DRN/CHKD: _____				APPROVED: _____				DATE: 2/19/04				DWG. NO. 320				SHEET: _____			
FULTON COUNTY STANDARD 320																											
BEAM TYPE GUARD RAIL																											
FULTON COUNTY PUBLIC WORKS 141 PRYOR ST. ATLANTA, GA. 30303 404-730-7400 FAX: 730-6325																											



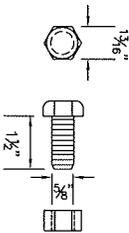
GUARD RAIL SPLICE AT POST
N.T.S.



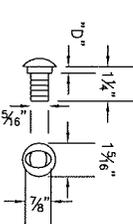
STEEL WASHER (GALV.)
N.T.S.
(REQ'D. UNDER ALL HEX BOLT HEADS AND UNDER ALL HEX NUTS)



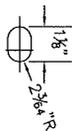
5/8" Ø HEX BOLT AND HEX NUT
N.T.S.
(TO BE USED ONLY FOR ATTACHING STEEL OFFSET BLOCK TO STEEL POST)



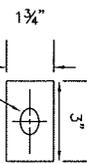
SPLICE BOLT (6 REQ'D PER SPLICE)
N.T.S.



SPLICE BOLT SLOT
N.T.S.



RECESS NUT
N.T.S.
NOTE: WASHER REQ'D AT ALL POSTS.
RECTANGULAR WASHER (GALV) (8 GAUGE)
N.T.S.

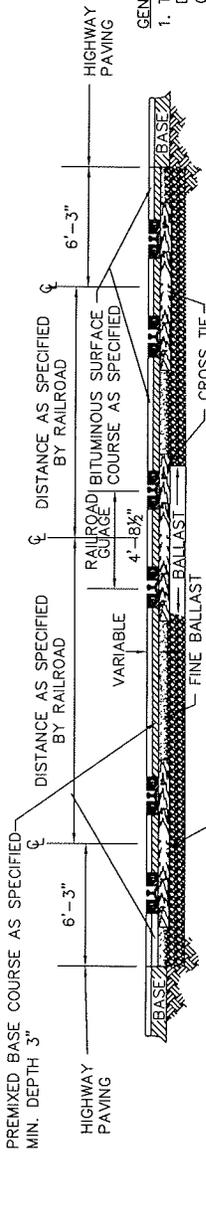


FULTON COUNTY STANDARD 321
BEAM TYPE GUARD RAIL (CONT.)

BY	REVISION	DATE	BY	REVISION	DATE	SCALE	DWG./DRN/CHKD:	CJP	APPROVED:	SLS	DATE:	1-19-03	FULTON COUNTY PUBLIC WORKS	141 PRYOR ST. ATLANTA, GA. 30303	404-730-7400 FAX: 730-6325	DWG. NO.	321	SHEET:
						N.T.S.												

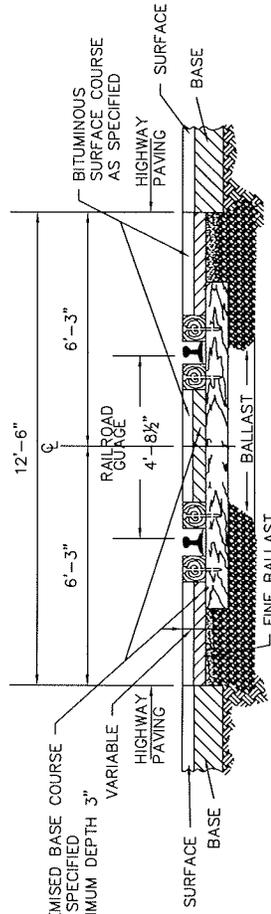


SHEET: _____
OF: _____



DETAIL OF CONSTRUCTION FOR MULTIPLE TRACKS

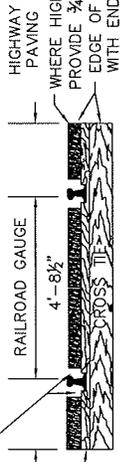
N.T.S.



DETAIL OF CONSTRUCTION FOR SINGLE TRACK

N.T.S.

IF REQUIRED, FILLERS FOR FLANGWAY AND OUTSIDE OF RAIL TO BE FURNISHED AND PLACED BY RAILROAD IN ACCORDANCE WITH RAILROAD SPECIFICATIONS



WOODEN SHIMS, IF REQUIRED, TO BE AS SPECIFIED BY RAILROAD AND FURNISHED BY CONTRACTOR, MINIMUM THICKNESS TO SHIM 1 3/4"

COMMERCIAL PRECAST REINFORCED CONCRETE SLABS

N.T.S.

NOTE: DIMENSIONS OF PRECAST REINFORCED CONCRETE CLABS WILL VARY WITH DIFFERENT DESIGN. THE TYPE 2 SECTION ABOVE IS TYPICAL OF ONE TYPE OF COMMERCIAL PRECAST SECTION AND IS TO BE USED FOR INFORMATION ONLY

GENERAL NOTES

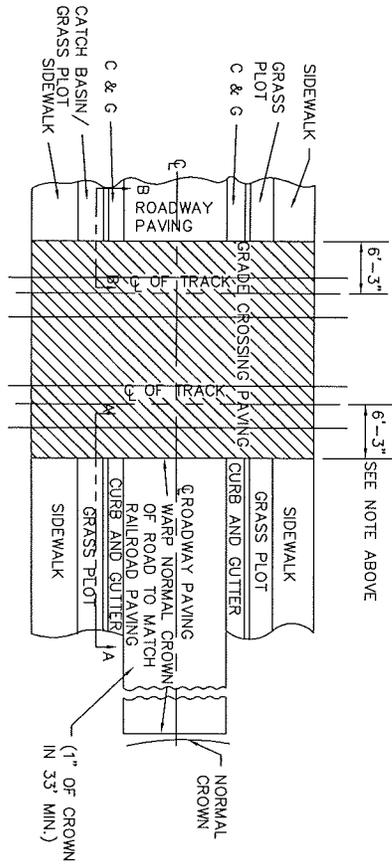
1. THE RAILROAD IS TO BE NOTIFIED BEFORE ANY WORK IS DONE BY HIGHWAY MAINTENANCE FORCES OR HIGHWAY CONTRACTORS BETWEEN THE RAILS AND WITHIN 8' OF THE CENTERLINE OF TRACK ON TANGENTS AND 10' OF CENTERLINE OF TRACK ON CURVES. RAILROAD REPRESENTATIVE IS TO BE PRESENT TO SUPERVISE THE WORK BEING DONE AND TO PROTECT THE FORCES WORKING FROM RAILWAY TRAFFIC.
2. BALLAST, TIES, RUNNING RAILS, GUARD TIMBERS AND FILLERS (IF REQUIRED) FOR FLANGWAY AND OUTSIDE OF RAIL ARE TO BE FURNISHED AND PLACED BY RAILROAD WITH COSTS, ELIGIBLE FOR REIMBURSEMENT, BEING BILLED TO THE STATE UNDER FORCE ACCOUNT AGREEMENTS.
3. THE HIGHWAY CONTRACTOR TO FURNISH ALL WORK AND MATERIALS NECESSARY FOR CONSTRUCTING THE SURFACE COURSE AND BASE COURSE OF THE CROSSING. THE COST OF FLAGGING SERVICE REQUIRED BY THE RAILROADS FOR ANY CONSTRUCTION ACTIVITY AT GRADE CROSSINGS SHALL BE AT A COST TO THE CONTRACTOR. THIS COST SHALL BE BORNE BY THE CONTRACTOR, WHETHER THE FLAGGING SERVICE IS PERFORMED BY THE CONTRACTOR'S PERSONNEL OR, IF REQUIRED BY THE RAILROADS, TO BE DONE BY THE RAILROAD PERSONNEL.
4. BASIS OF PAYMENT:
 - A. BITUMINOUS SURFACE COURSE AS SPECIFIED.
 - B. PREMIXED BASE COURSE AS SPECIFIED
 - C. PRECAST REINFORCED CONCRETE SLABS - PER SQ. YD.

GENERAL SPECIFICATIONS FOR COMMERCIAL PRECAST REINFORCED CONCRETE SLAB FOR RAILWAY CROSSING:

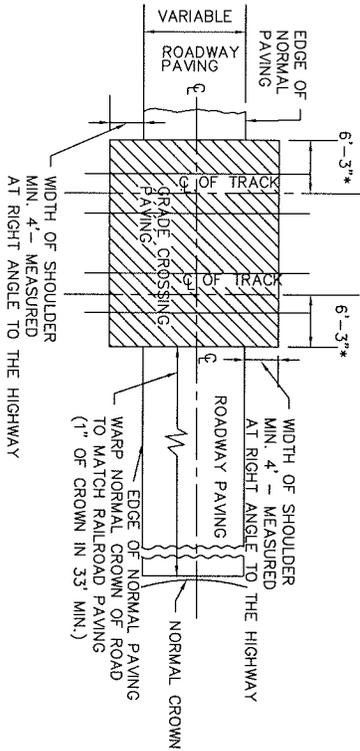
1. THE PLACING OF PRECAST REINFORCED CONCRETE SLABS WILL BE PERMITTED WHEN APPROVED BY THE RAILROAD AND THE STATE HIGHWAY ENGINEER.
2. SLABS TO BE OF THE TYPE THAT CAN BE ANCHORED TO TIES AND REMOVED.
3. IF SLABS ARE OVER MULTIPLE TRACKS, THE INTERTRACK SLABS ARE TO BE PLACED ON LEVEL COMPACTED EARTH.
4. THE DEPTH OF THE SLABS SHALL BE SUCH THAT THE TOP SURFACE OF THE CROSSING WILL BE IN THE SAME PLANE AS THE TOP OF THE RAIL SHIMS WILL BE USED IF REQUIRED.
5. ALL EXPOSED EDGES OF SLABS SHALL BE ARMORED.
6. PROTECTION OF THE END SLABS AGAINST DRAGGING BRAKE RIGGING WILL BE PROVIDED.
7. IN GENERAL, THE DESIGN OF SLABS WILL BE IN ACCORDANCE WITH (AREA) AMERICAN RAILWAY ENGINEERING ASSOCIATION SPECIFICATIONS.
8. THE TYPE OF COMMERCIAL PRECAST CONCRETE SLABS SELECTED BY THE CONTRACTOR MUST BE APPROVED BY THE ENGINEER.

FULTON COUNTY STANDARD 322		BY	REVISION	DATE	DATE	SCALE	DSG/DRN/CHKD: CJP	DWG. NO.	SHEET:
RAILROADS						N.T.S.	APPROVED: BEW	322	OF:
GRADE CROSSING, SECTIONS, DETAILS							DATE: 2/19/04	FULTON COUNTY PUBLIC WORKS	
								141 PRYOR ST. ATLANTA, GA. 30303	
								404-730-7400 FAX: 730-6325	

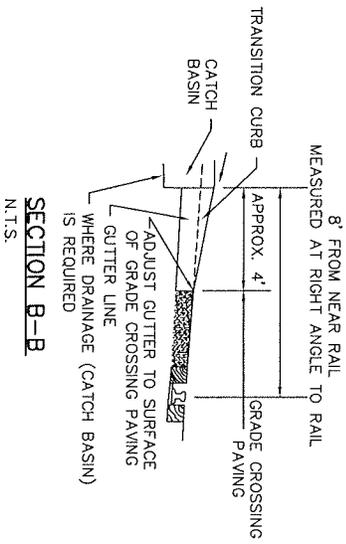
NOTE:
 END HIGHWAY PAVING ADJACENT TO THE CROSSING AT THE CROSS TIES INSTEAD OF
 6'-3" FROM ζ OF TRACK, IF PRECAST REINFORCED CONCRETE SLABS ARE USED.



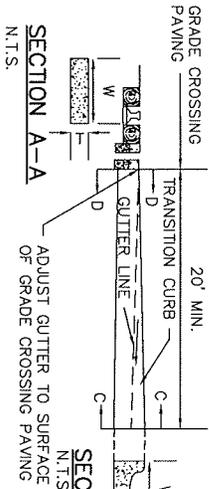
PLAN VIEW
 N.T.S.



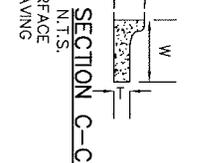
PLAN VIEW
 N.T.S.



SECTION B-B
 N.T.S.



SECTION A-A
 N.T.S.



SECTION C-C
 N.T.S.

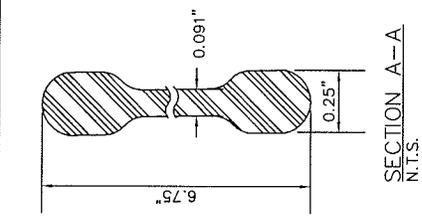
NOTE:
 THE SECTION "A-A" AND "B-B" ARE TYPICAL OF ONE
 CONDITION AND ARE TO BE USED FOR INFORMATION ONLY. THE
 TRANSITION FOR THE CURB AND GUTTER SECTION TO THE
 GRADE CROSSING PAVING IS TO BE ADJUSTED AS DIRECTED BY
 THE ENGINEER.

FULTON COUNTY STANDARD 323
 RAILROADS
 GRADE CROSSING, SECTIONS, DETAILS (CONT.)

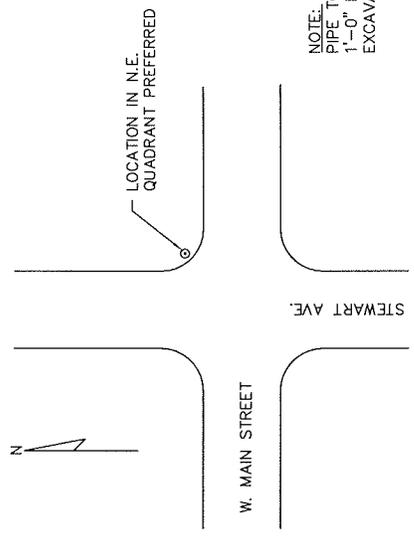
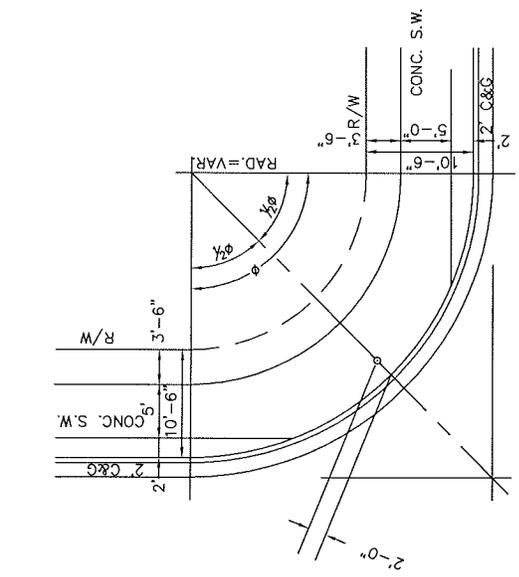
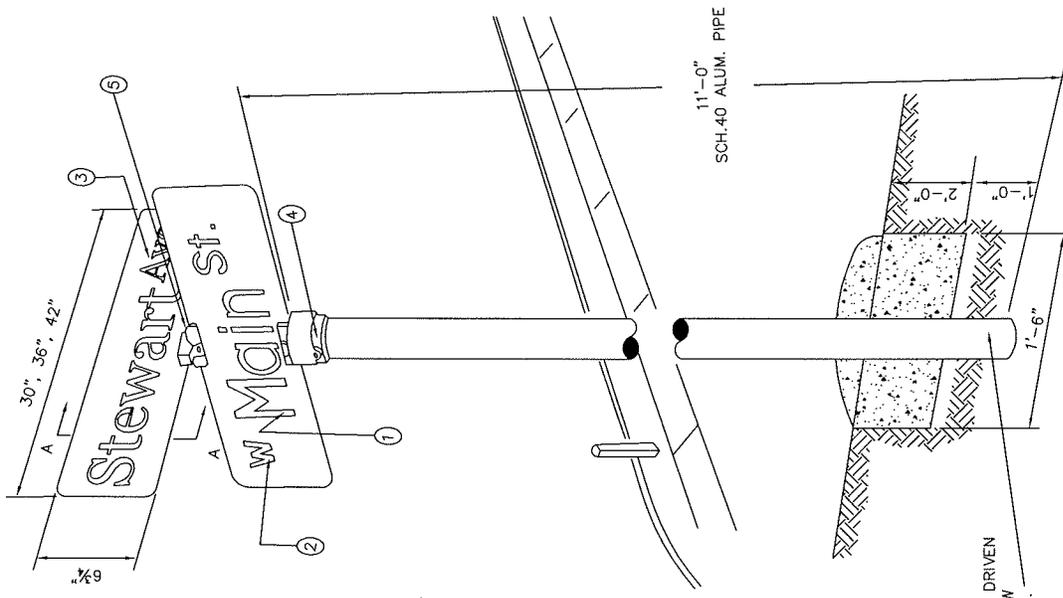
BY	REVISION	DATE	BY	REVISION	DATE	SCALE	DWG./DRN/CHKD.	CJP	APPROVED:	SIS	FULTON COUNTY PUBLIC WORKS	DWG. NO.	SHEET
						N.T.S.					141 PRYOR ST. ATLANTA, GA. 30303	323	
									DATE: 1-19-03		404-730-7400 FAX: 730-6325		



SHEET: _____
 OF: _____



- ④ & ⑤ VULCAN SIGN CO. VSS-1 OR EQUAL
- ③ SUFFIX 2" U.C.; 1 1/2" L.C.
- ② PREFIX 2" U.C., 1 1/2" L.C.
- ① PRIMARY 4" U.C., 3" L.C., 6 3/4" WIDTH.



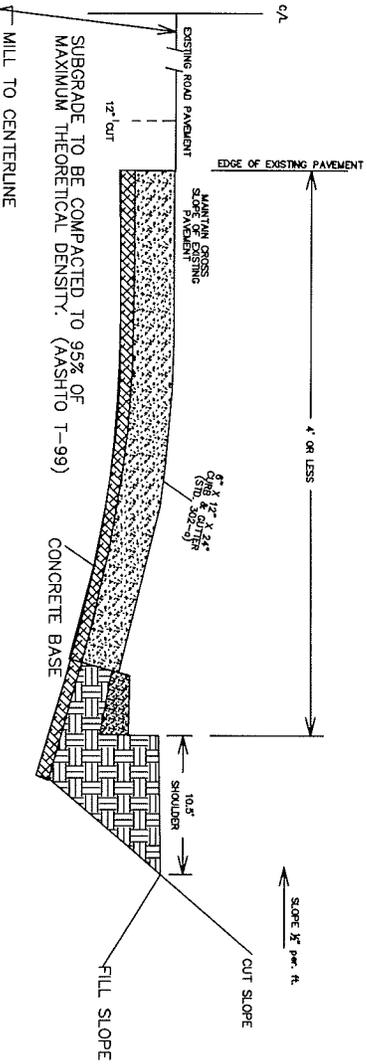
FULTON COUNTY STANDARD 324				FULTON COUNTY PUBLIC WORKS		DWG. NO. 324		SHEET: _____	
SIGNS				141 PRYOR ST. ATLANTA, GA. 30303				OF: _____	
STREET NAME,				404-730-7400 FAX: 730-6325					
DETAILS & LOCATION				DSG/DRN/CHKD: CJP		SCALE N.T.S.			
				APPROVED: SLS					
				DATE: 1-19-03					
BY	REVISION	DATE	BY	REVISION	DATE				

*** ON EXISTING PAVEMENTS WHERE LANE WIDENING IS REQUIRED, SAW CUT THE FIRST 12 INCHES OF PAVEMENT AND ESTABLISH REQUIRED SUB-GRADE MATERIAL AND THICKNESS.

* NEW PAVEMENT IS REQUIRED ACROSS THE ENTIRE LENGTH AND WIDTH OF ALL PROPERTY FRONTAGE AND INSTALLED AS PER F.C. INSPECTORS INSTRUCTIONS.

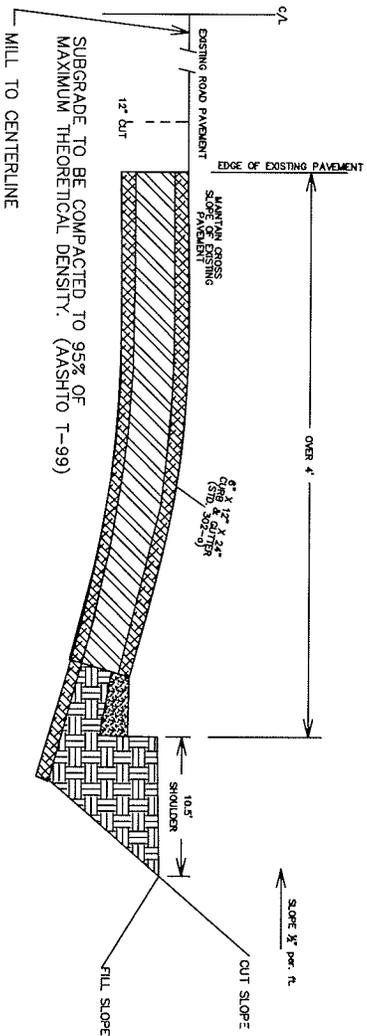
PAVEMENT COMPOSITION

- 1 1/2" TYPE "E" OR "F" WEARING COURSE
- 5" CLASS A CONCRETE BASE (LOCAL STREETS AND MINOR COLLECTORS) OR
- 2" CLASS A CONCRETE BASE (MAJOR COLLECTORS AND ARTERIALS)



WILL TO CENTERLINE

SUBGRADE TO BE COMPACTED TO 95% OF MAXIMUM THEORETICAL DENSITY. (AASHTO T-99)



WILL TO CENTERLINE

SUBGRADE TO BE COMPACTED TO 95% OF MAXIMUM THEORETICAL DENSITY. (AASHTO T-99)

PAVEMENT COMPOSITION

- 1 1/2" "E" TOPPING
- TACK COAT CRS - 2H OR AC-30 REQ.
- 2" PLANT MIX "B" BINDER MODIFIED PRIME RC-70
- "B" GRADED AGGREGATE BASE (CRUSHER RUN)

FULTON COUNTY STANDARD DETAIL 325
PAVEMENT WIDENING

DATE	REVISIONS	DATE	REVISIONS

DGS /DRN /CHKD :GMS
APPROVED: LJM
DATE: 4-18-05



FULTON COUNTY PUBLIC WORKS
141 PRYOR ST. ATLANTA, GA. 30303
404-730-7400 FAX: 404-730-6325

DRAWING NO.

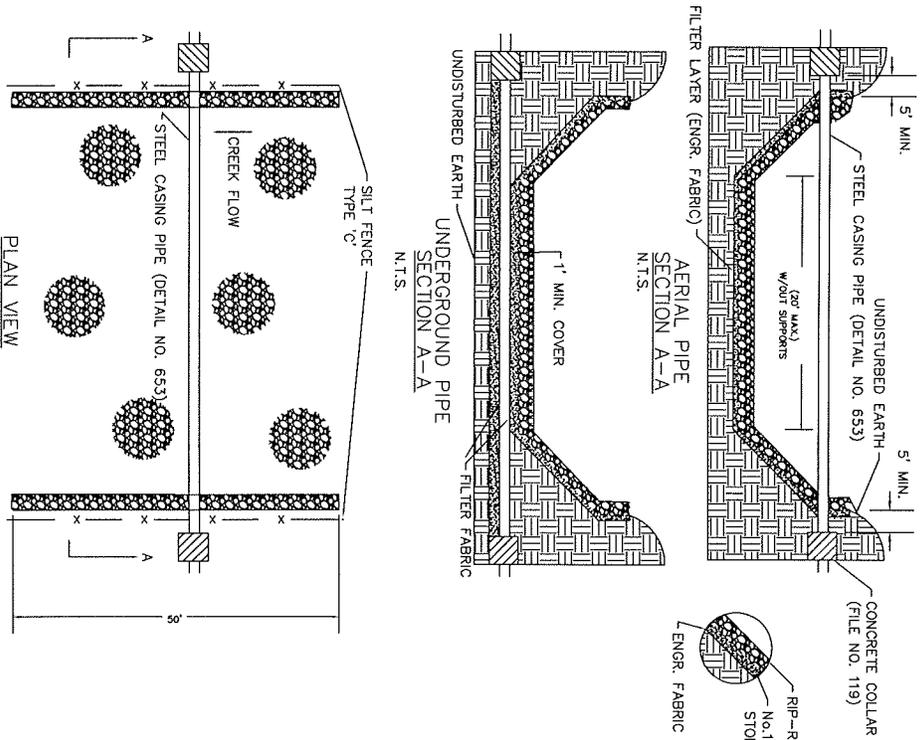
325

INDEX

DWG NO.	DESCRIPTION
400	INDEX AND GENERAL NOTES
401	SANITARY SEWER TYPICAL RIP-RAP CHANNEL PIPE CROSSING
402	CONSTRUCTION EXIT-TEMPORARY
403	CONCRETE PIER AND FOOTING DETAIL
404	TEMPORARY SILT FENCE
405	DETAIL OF SOD DITCH
406	CONCRETE PIER AND FOOTING DETAIL
407	EROSION CONTROL-CHECK DAMS

GENERAL NOTES

FULTON COUNTY STANDARD DETAIL INDEX AND GENERAL NOTES	DATE _____ REVISIONS _____	DATE _____ REVISIONS _____	DCS/DRN/CHKD: CMS APPROVED: _____ DATE: 12-02-05	 FULTON COUNTY FULTON COUNTY PUBLIC WORKS 141 PRYOR ST. ATLANTA, GA. 30303 404-730-7400 FAX: 404-730-6325	DRAWING NO. INDEX 400
	FULTON COUNTY PUBLIC WORKS 141 PRYOR ST. ATLANTA, GA. 30303 404-730-7400 FAX: 404-730-6325				



NOTE REQUIRED—
CONCRETE STRENGTH TEST MAY BE REQUIRED
FOR ALL Poured IN PLACE CONCRETE.

FLOW VELOCITY (FT./SEC.)	N.S.A. #1	SIZE INCHES (SQ. OPENING) MAX.	SIZE INCHES (SQ. OPENING) AVG.	SIZE INCHES (SQ. OPENING) MIN.	PARTICLE WEIGHT (LBS.)#2
2.5	R-1	1 1/2	3/4	NO.8	---
4.5	R-2	3	1 1/2	1	---
6.5	R-3	6	3	2	20
9.0	R-4	12	6	3	60
11.5	R-5	18	9	5	150
13.0	R-6	24	12	7	300
14.5	R-7	30	15	12	700
---	R-8	48	24	15	1500

*1. NATIONAL STONE ASSOCIATION.

*2. AT LEAST 50% OF ALL INDIVIDUAL STONE PARTICLES MUST WEIGH AT LEAST THE LISTED AMOUNT.

GRADED RIP-RAP STONE

D.O.T. #NO.1	SIZE INCHES (SQ. OPENING) MAX.	SIZE INCHES (SQ. OPENING) AVG.	SIZE INCHES (SQ. OPENING) MIN.	COMMON USES
TYPE 3	12	9	5	CREEK BANKS, PIPE OUTLETS, LAKES, SHORELINES & RIVERS
TYPE 1	24	12	7	

*1. GEORGIA DEPARTMENT OF TRANSPORTATION.

GRADED RIP-RAP STONE

TYPE 3: FOR GENERAL USE NORMAL DRAINAGE CONDITIONS. THE LARGEST PIECES OF MATERIAL SHALL HAVE A MAXIMUM APPROXIMATE VOLUME OF ONE CUBIC FOOT. AT LEAST 35% OF THE MASS SHALL BE COMPRISED OF PIECES WHICH WEIGH 15 POUNDS OR MORE.

TYPE 1: FOR SEVERE DRAINAGE CONDITIONS OR MODERATE WAVE ACTION. THE LARGEST PIECES OF MATERIAL SHALL HAVE A MAXIMUM OF TWO CUBIC FEET. AT LEAST 35% OF THE MASS SHALL BE COMPRISED OF PIECES WHICH WEIGH 125 POUNDS OR MORE.

- NOTES:
- MINIMUM STONE SIZE SHALL BE 125 LBS.
 - STONE SIZE SHALL BE PROVIDED BY DESIGN WORKS ENGINEER.
 - ALL EROSION CONTROL DEVICES MUST BE IN PLACE PRIOR TO ANY GRADING OR CLEARING.
 - FULTON COUNTY STANDARDS.
 - RIM OF MANHOLE SHALL BE 2' ABOVE GRADE IF IN A FLOOD ZONE. RIM SHALL BE ABOVE 25 YEAR STORM ELEVATION.
 - SEE MANUAL FOR EROSION & SEDIMENT CONTROL IN GEORGIA FOR MORE INFORMATION.

FULTON COUNTY STANDARD DETAIL 401
SANITARY SEWER TYPICAL RIP-RAP
CHANNEL PIPE CROSSING

DATE	REVISIONS	DATE	REVISIONS

DSS/DNRV/CHKQ/REB
APPROVED: REW
DATE: 12-2-05

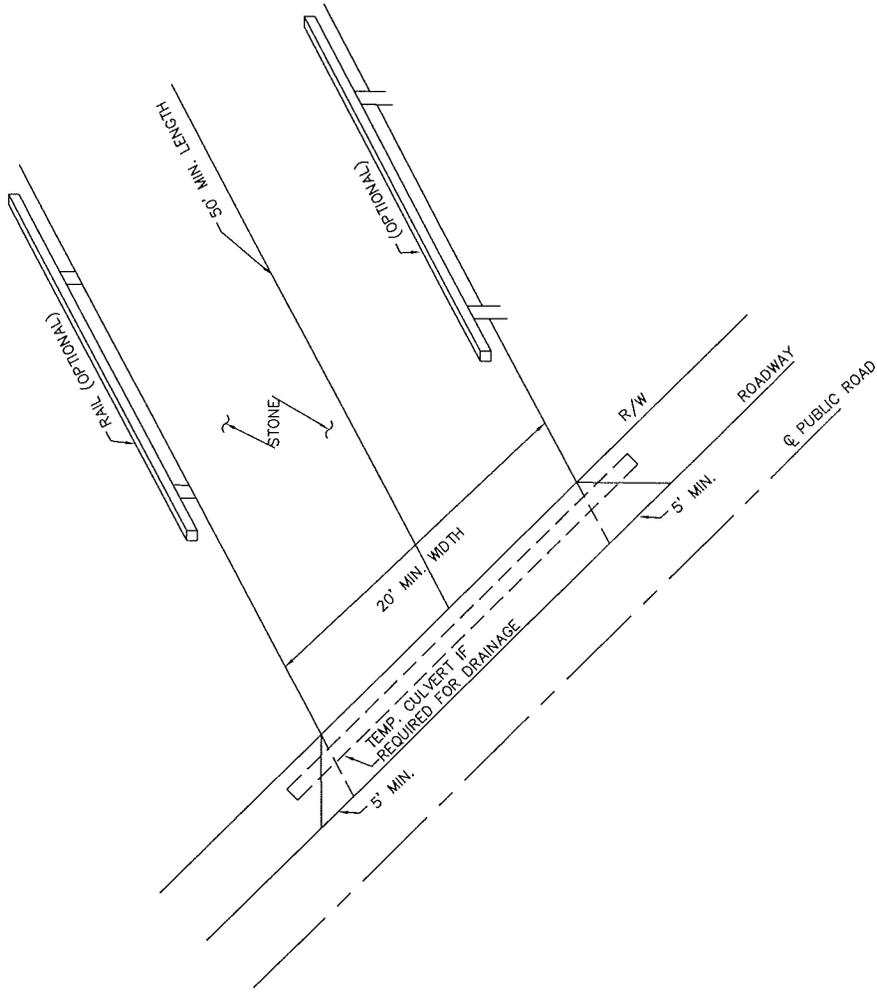


FULTON COUNTY PUBLIC WORKS
141 PRYOR ST. ATLANTA, GA. 30303
404-730-7400 FAX: 404-224-0498

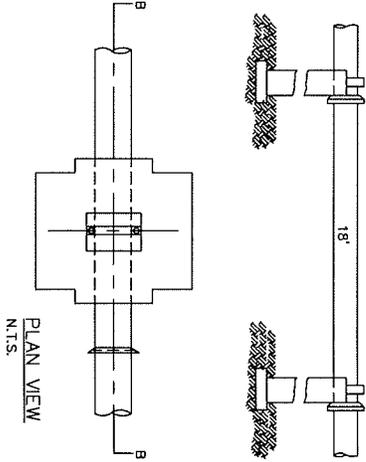
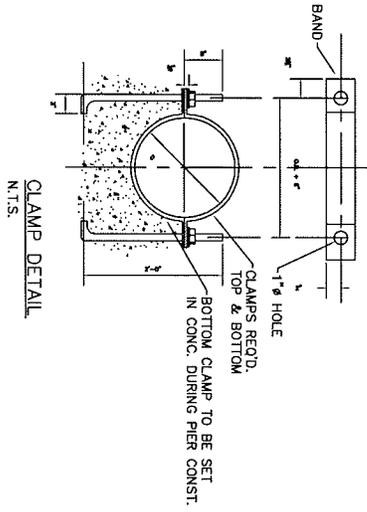
DRAWING NO.
401

NOTES:

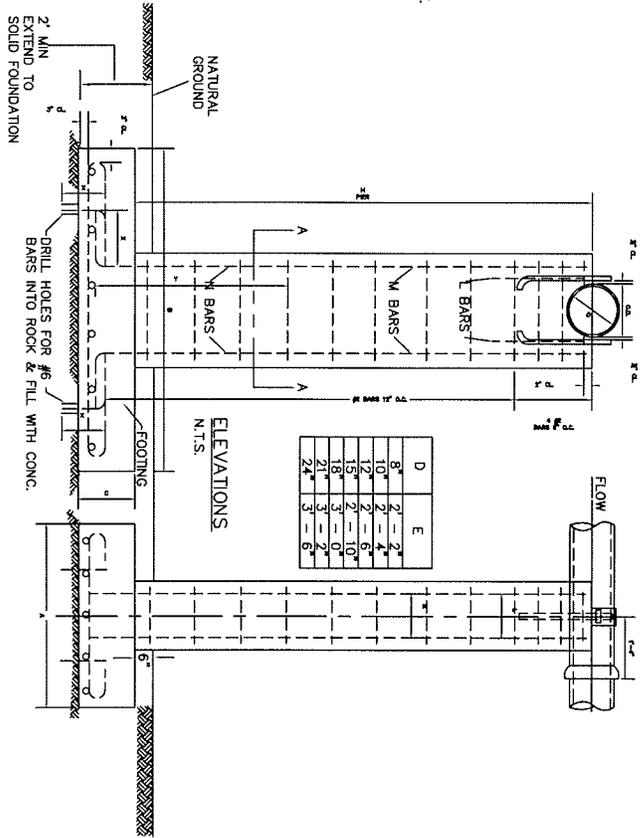
1. STONE SIZE ASTM D448 SIZE NO. 1, (1.5" - 3.5" DIA.)
2. PAD THICKNESS 6" MIN.
3. MIN. SIZE: 20"x50."
4. IF NECESSARY, INCLUDE WASHING
5. MAY REQUIRE PERIODIC TOP DRESSING WITH 2" STONE.
6. MAINTAIN IN A CONDITION WHICH WILL PREVENT TRACKING OR FLOW OF MUD ONTO PUBLIC ROADS.
7. PLACE STONE OVER FABRIC MATERIAL.
8. USE RAIL WHEN THERE IS A POSSIBILITY OF HAZZARD DUE TO SLOPE.
9. SEE ADDITIONAL EROSION CONTROL MEASURES IN THE EROSION CONTROL AND SEDIMENTATION ORDINANCE MANUAL AND THE GA. STATE EROSION CONTROL MANUAL.



FULTON COUNTY STANDARD DETAIL 402 CONSTRUCTION EXIT - TEMPORARY		DATE		REVISIONS	DATE	REVISIONS	DGS/DRN/CHKD: REB	DRAWING NO.
							APPROVED: REW	402
							DATE: 12-2-05	FULTON COUNTY PUBLIC WORKS 141 PRYOR ST. ATLANTA, GA. 30303 404-730-7400 FAX: 404-224-0498
								
								FULTON COUNTY



1. PIER LOCATION DETERMINED BY ENGR.
2. CONCRETE TO BE 3,000 P.S.I.
3. UNDER UNSTABLE CONDITIONS, ENG. PLANS FOR PIER DESIGN, MUST BE SUBMITTED TO & APPROVED BY THE PUBLIC WORKS DEPT.
4. PIERS AT EVERY BELL.
5. ENGR. TO SUBMIT DESIGN FOR
6. STEEL REINFORCEMENT TO BE STA 1 DESIGNATION A-18 UNLESS OTHERWISE SPECIFIED BENDS IN BARS TO CONFORM TO A.C.I. STANDARD.



SECTION A-A
N.T.S.

FULTON COUNTY STANDARD DETAIL 403
CONCRETE PIER AND FOOTING DETAIL

DATE	REVISIONS

DATE	REVISIONS

DWG./DRN./CHKD./REB
APPROVED: _____
DATE: 12-2-05



FULTON COUNTY PUBLIC WORKS
141 PRYOR ST. ATLANTA, GA. 30303
404-730-7400 FAX: 404-224-0498

DRAWING NO.

403

TEMPORARY SILT FENCE

1. TYPE A. DESCRIPTION: WATER PERMEABLE FILTER FENCE MATERIAL COMPOSED OF STRONG ROT PROOF SYNTHETIC FIBERS FORMED INTO A MATRIX OF WOVEN OR NONWOVEN FABRIC. EITHER TYPE OF FABRIC SHALL BE FREE OF ANY TREATMENT OR COATING WHICH MIGHT SIGNIFICANTLY ALTER ITS PHYSICAL PROPERTIES AFTER INSTALLATION. THE FABRIC SHALL CONTAIN STABILIZER AND/OR INHIBITORS TO MAKE THE FILAMENTS RESISTANT TO DEGRADATION RESULTING FROM EXPOSURE TO SUNLIGHT OR HEAT. THE FABRIC SHALL BE A PERVIOUS SHEET OF SYNTHETIC FIBERS ORIENTED INTO A NETWORK SO THAT THE FIBERS RETAIN THEIR RELATIVE POSITION WITH RESPECT TO EACH OTHER. EDGES OF THE FABRIC SHALL BE FINISHED TO PREVENT THE OUTER YARN FROM PULLING AWAY FROM THE MATERIAL. THE FABRIC SHALL BE FREE OF DEFECTS OR FLAWS WHICH SIGNIFICANTLY AFFECT THE PHYSICAL AND/OR FILTERING PROPERTIES. THE FABRIC SHALL HAVE A MINIMUM WIDTH OF THIRTY SIX (36) INCHES. SHEETS OF FABRIC MAY BE PERMITTED DUE TO THE PRESENCE OF THE SEAM. THE FABRIC MAY BE MANUFACTURED WITH POCKETS FOR POSTS, HEMS WITH CORD OR WITH POSTS PREATTACHED USING STAPLES OR BUTTON HEAD NAILS.
2. TYPE B. DESCRIPTION: TYPE B FILTER FABRIC SHALL MEET THE SAME STANDARDS AS TYPE A. FILTER FABRIC SHALL BE A MINIMUM OF 22" WIDE.

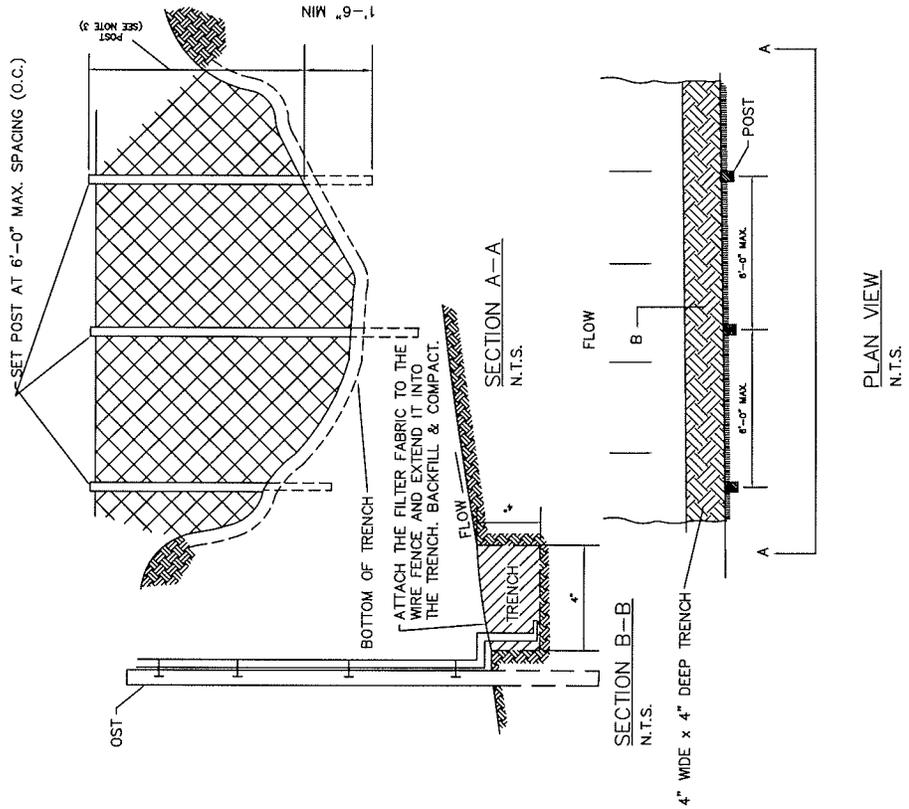
3. MATERIALS

- A. POSTS
 1. HARDWOOD: 1.5"x1.5"x48" MINIMUM FOR TYPE A FABRIC. FOR TYPE B FABRIC, 1"x1"x36" MINIMUM.
 2. SOFTWOOD: 3" DIAMETER MINIMUM OR NOM. 2"x4" AND STRAIGHT ENOUGH TO PROVIDE A FENCE WITHOUT NOTICEABLE MISALIGNMENT FOR TYPE A FABRIC. FOR TYPE B FABRIC, AT LEAST 2" IN DIAMETER OR NOM. 2"x2".
 3. STEEL: POSTS SHALL BE ROUND, U.T. OR C SHAPED WITH A MINIMUM WEIGHT OF 1.3 POUNDS PER FOOT AND HAVE PROJECTIONS FOR FASTENING THE WIRE TO THE FENCE FOR TYPE A FABRIC. FOR TYPE B FABRIC, POSTS SHALL HAVE A MINIMUM WEIGHT OF 0.75 POUNDS PER FOOT AND ROUND POSTS SHALL BE A MINIMUM OF 1" IN DIAMETER.
- B. SPACING: SIX (6) FOOT CENTERS MAXIMUM.
- C. FABRIC: GEORGIA DOT QUALIFIED PRODUCTS LIST #36 ONLY.
- D. FASTENERS: WIRE STAPLES WILL BE NO. 17 GAGE MINIMUM AND SHALL HAVE A CROWN AT LEAST 3/4 INCH WIDE AND LEGS AT LEAST 1/2 INCH LONG. STAPLES SHALL BE EVENLY SPACED WITH AT LEAST 5 PER POST. NAILS SHALL BE 14 GAGE MINIMUM ONE INCH LONG WITH 3/4 INCH BUTTON HEADS. NAILS SHALL BE EVENLY SPACED WITH AT LEAST 4 PER POST.

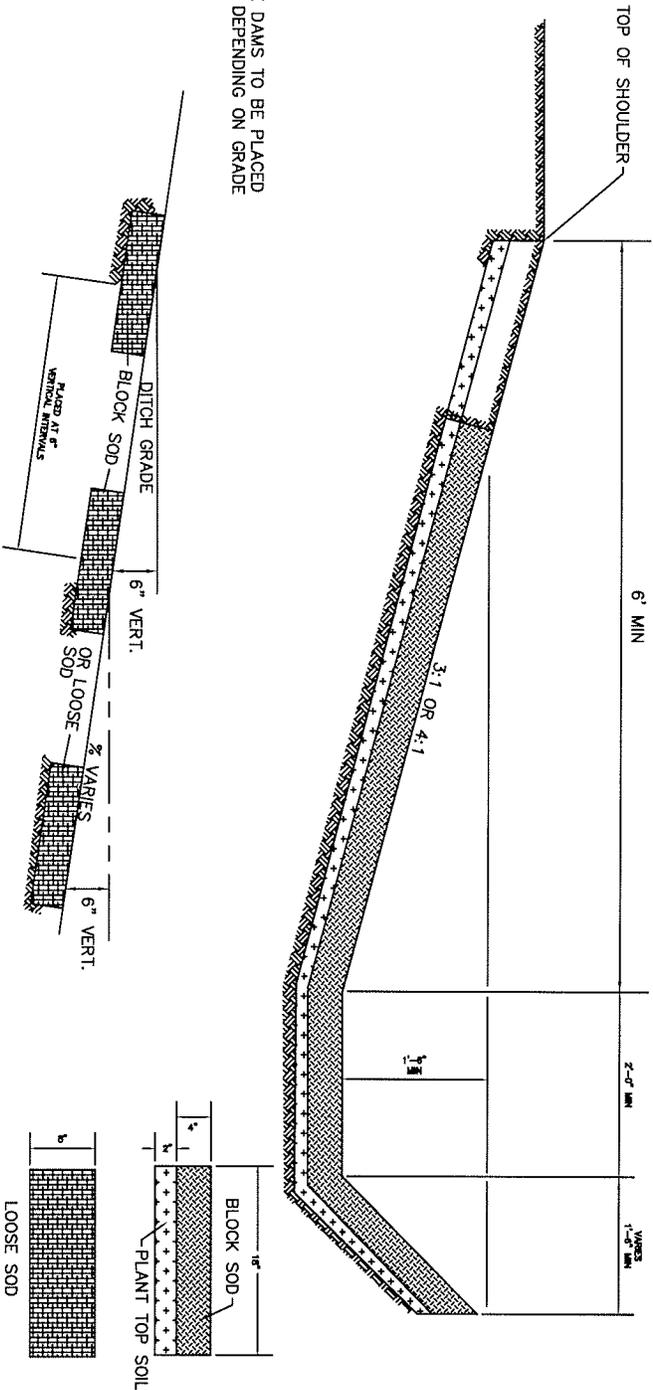
4. INSTALLATION: TEMPORARY SILT FENCE INSTALLATION SHALL CONFORM TO THE STANDARDS SET FORTH IN THE MANUAL FOR EROSION AND SEDIMENT CONTROL IN GEORGIA.

5. MAINTENANCE: THE DEVELOPER/CONTRACTOR SHALL MAINTAIN THE SILT FENCE UNTIL THE LDA IS COMPLETE AND FINAL STABILIZATION IS ACHIEVED. FILTER FABRIC SHALL BE REMOVED AND REPLACED WHENEVER IT HAS DEGRADED OR BEEN OTHERWISE DAMAGED TO SUCH EXTENT THAT IT REDUCES THE EFFECTIVENESS OF THE SILT FENCE. INSTALLATION OF FABRIC FENCE MATERIAL IN AREAS OF CONCENTRATED FLOW IS NOT RECOMMENDED UNLESS PROPER PROVISIONS ARE MADE TO SUPPLEMENT OR OTHERWISE STRENGTHEN THE FENCE TO WITHSTAND INCREASED DRAINAGE WATER VELOCITIES.

NOTE:
VENDOR MUST SUPPLY LETTER OF WARRENTY FOR AFOREMENTIONED SPECIFICATIONS. IN ADDITION, THIS LETTER SHOULD STATE THAT THE FABRIC IS ON THE GEORGIA QPL #36.



FULTON COUNTY STANDARD DETAIL 404 TEMPORARY SILT FENCE		 FULTON COUNTY		FULTON COUNTY PUBLIC WORKS 141 PRYOR ST. ATLANTA, GA. 30303 404-730-7400 FAX: 404-224-0488		DRAWING NO. 404	
DATE	REVISIONS	DATE	REVISIONS	DES/DRN/CHKD: REB	APPROVED: REW	DATE: 12-2-05	



NOTE:
 RIP RAP CHECK DAMS TO BE PLACED
 AS NECESSARY DEPENDING ON GRADE
 OF DITCH.

NOTE:
 SOD DITCH CHECKS MAY BE OF LOOSE SOD OR BLOCK SOD.
 SOD DITCH CHECKS TO BE PLACED AT 6" VERTICAL INTERVALS.
 THIS STANDARD TO BE USED WHERE EROSION IN ROADSIDE DITCHES
 IS EXCESSIVE DUE TO TYPE OF SOIL OR GRADE.

FULTON COUNTY STANDARD DETAIL 405
 DETAIL OF SOD DITCH

DATE	REVISIONS	DATE	REVISIONS

DWG/DRW/CHKD: REB
 APPROVED: REB
 DATE: 12-2-05



FULTON COUNTY PUBLIC WORKS
 141 PRYOR ST. ATLANTA, GA. 30303
 404-730-7400 FAX: 404-224-0498

DRAWING NO.

405

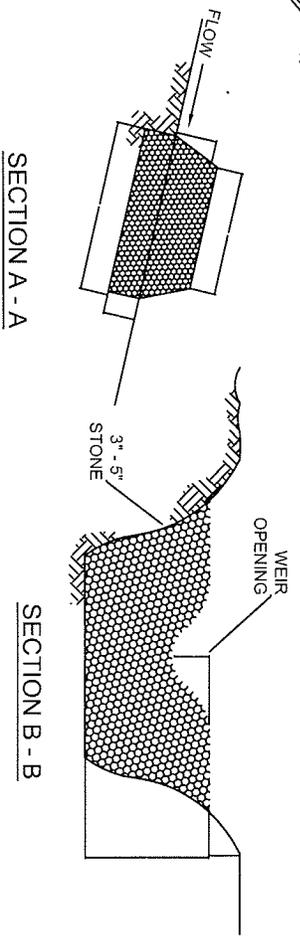
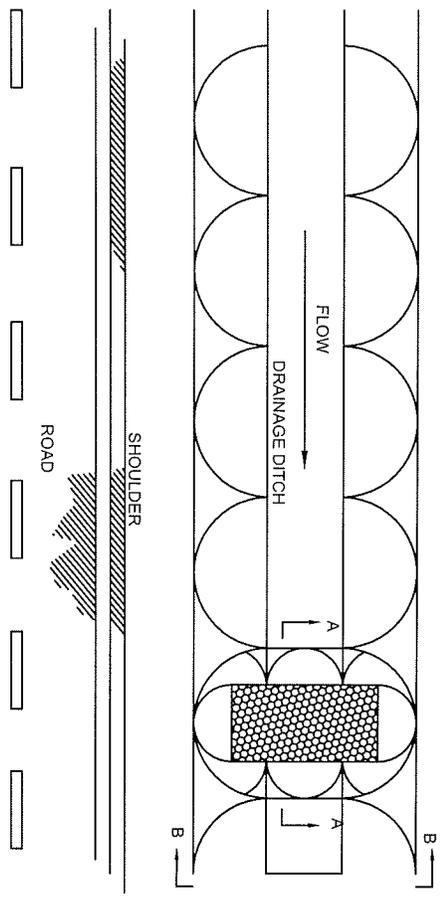
STANDARD REINFORCED PIER

PIER	FOOTING DIMENSIONS AND REINFORCEMENT										PIER REINFORCEMENT									
	FOOTING			NO. OF #5 BARS EA. DIRECTION							BARS M			BARS N						
	A	B	C	8" & 10"D.	12" & 14"D.	16" & 18"D.	20" & 24"D.	NO.	SIZE	LENGTH	NO.	SIZE	LENGTH	X	Y					
0'-4"	3'-0"	6'-0"	1'-3"	5	5	5	5	5	NONE	4'-10"	6	#6	H + 2' -0"	1'-9"	H + 10"					
5'	3'-2"	6'-2"	1'-3"	5	5	5	5	5	NONE		6	#6	H + 2' -0"	1'-9"	H + 10"					
6'	3'-4"	6'-4"	1'-3"	5	5	5	5	5	#6	4'-10"	4	#6	5'-4"	1'-9"	4'-2"					
7'	3'-6"	6'-6"	1'-3"	5	5	5	5	5	#6	5'-10"	4	#6	5'-4"	1'-9"	4'-2"					
8'	3'-8"	6'-8"	1'-3"	5	5	5	5	6	#6	7'-10"	4	#6	5'-4"	1'-9"	4'-2"					
9'	3'-10"	6'-10"	1'-3"	5	5	6	7	7	#6	8'-10"	4	#6	5'-4"	1'-9"	4'-2"					
10'	4'-0"	7'-0"	1'-3"	5	5	6	7	7	#6	9'-10"	4	#6	5'-4"	1'-9"	4'-2"					
11'	4'-2"	7'-2"	1'-3"	5	5	7	8	8	#6	10'-10"	4	#6	5'-4"	1'-9"	4'-2"					
12'	4'-4"	7'-4"	1'-3"	5	5	7	8	8	#6	11'-10"	4	#6	5'-4"	1'-9"	4'-2"					
13'	4'-6"	7'-6"	1'-6"	5	5	6	7	8	#6	12'-10"	4	#6	5'-7"	1'-9"	4'-5"					
14'	4'-8"	7'-8"	1'-6"	6	6	8	9	9	#6	13'-10"	4	#6	5'-7"	1'-9"	4'-5"					
15'	4'-10"	7'-10"	1'-6"	6	6	8	9	9	#6	14'-10"	4	#6	5'-7"	1'-9"	4'-5"					
16'	5'-0"	8'-0"	1'-6"	6	6	8	9	9	#6	15'-10"	4	#6	5'-7"	1'-9"	4'-5"					
17'	5'-2"	8'-2"	1'-6"	6	6	7	9	10	#6	16'-10"	4	#6	5'-7"	1'-9"	4'-5"					
18'	5'-4"	8'-4"	1'-6"	7	8	9	10	10	#6	17'-10"	4	#6	5'-7"	1'-9"	4'-5"					
19'	5'-6"	8'-6"	1'-6"	7	8	10	11	11	#6	18'-10"	4	#6	5'-7"	1'-9"	4'-5"					
20'	5'-8"	8'-8"	1'-6"	7	9	10	12	12	#6	19'-10"	4	#6	5'-7"	1'-9"	4'-5"					
21'	5'-10"	8'-10"	1'-6"	8	9	11	12	12	#6	19'-10"	4	#6	6'-0"	1'-9"	4'-9"					
22'	6'-0"	9'-0"	1'-6"	9	10	12	13	13	#6	19'-10"	4	#6	7'-0"	1'-9"	5'-9"					
23'	6'-2"	9'-2"	1'-6"	9	10	12	13	13	#6	19'-10"	4	#6	8'-0"	1'-9"	6'-9"					
24'	6'-4"	9'-4"	1'-6"	10	11	13	15	15	#6	19'-10"	4	#6	9'-0"	1'-9"	7'-9"					
25'	6'-6"	9'-6"	1'-6"	10	11	14	16	16	#6	19'-10"	4	#6	11'-0"	1'-9"	9'-3"					
26'	6'-8"	9'-8"	1'-6"	11	12	15	16	16	#6	19'-10"	4	#6	12'-0"	1'-9"	10'-3"					
27'	6'-10"	9'-10"	1'-6"	12	13	16	17	17	#6	19'-10"	4	#6	13'-0"	1'-9"	11'-3"					
28'	7'-0"	10'-0"	1'-6"	12	13	16	18	18	#6	19'-10"	4	#6	14'-0"	1'-9"	12'-3"					

BARS L	H	NO.-SIZE-LENGTH
	0'-4"	NONE
	4'-28"	2
		#6
		2'-6"

FULTON COUNTY STANDARD DETAIL 406 CONCRETE PIER AND FOOTING DETAIL	DATE: _____ REVISIONS: _____ DATE: _____	 FULTON COUNTY	DGS/DRN/CHKD: REB APPROVED: REW DATE: 12-2-05	FULTON COUNTY PUBLIC WORKS 141 PRYOR ST. ATLANTA, GA. 30303 404-730-7400 FAX: 404-224-0498	DRAWING NO. 406

FULTON COUNTY STANDARD DETAIL 407
 EROSION CONTROL
 CHECK DAMS



NOTES:
 1. USE AND LOCATION OF CHECK DAMS SHALL
 BE AS DIRECTED BY INSPECTOR.

DATE	REVISIONS	DATE	REVISIONS

DGS/DRN/CHKD: CMS
 APPROVED: _____
 DATE: 12-2-05



FULTON COUNTY PUBLIC WORKS
 141 PRYOR ST. ATLANTA, GA. 30303
 404-730-7400 FAX: 404-224-0498

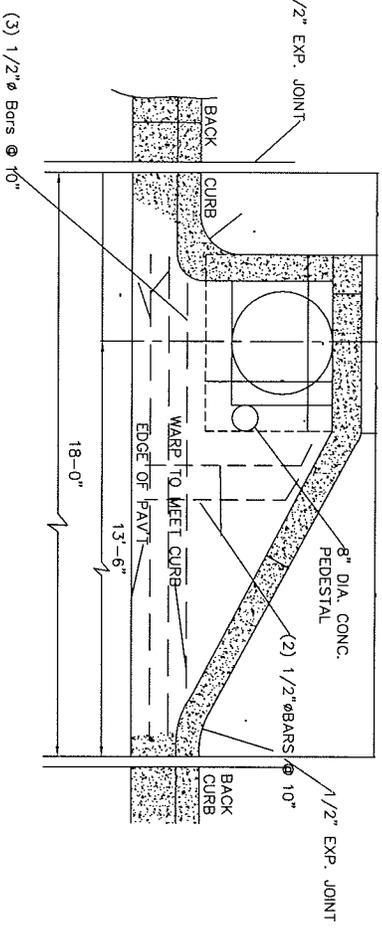
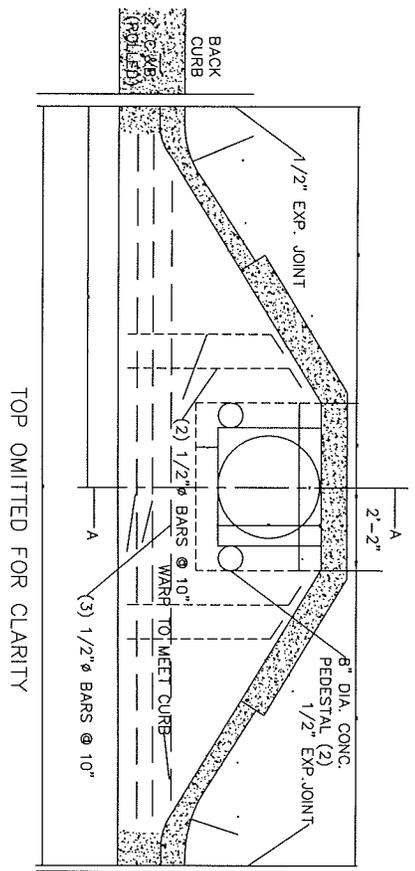
DRAWING NO.
 407

INDEX

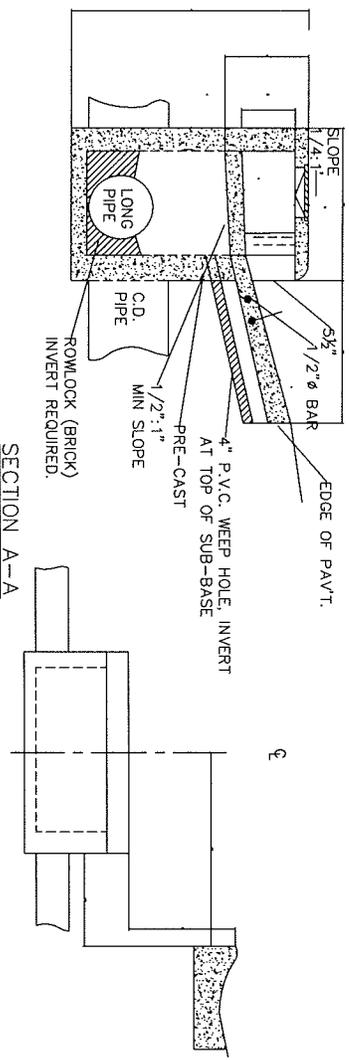
GENERAL NOTES

DWG NO.	DESCRIPTION
500	INDEX AND GENERAL NOTES
501	CATCH BASIN ONE FOOT OFFSET, SINGLEWING (FACE OF CURB)
502	CATCH BASIN DOUBLING ONE FOOT OFFSET (FACE OF CURB)
503	STANDARD CATCH BASINS WITH ROLLED CURB & GUTTER 10" OFFSET (BOC)
504	SINGLE WING ON LINE CATCH BASIN (BRICK)
505	CATCH BASIN DOUBLING ONLINE
506	CATCH BASIN TOPS
507	STANDARD PRECAST ROUND CATCH BASINS
508	LOCATION OF ROUND CATCH BASIN
509	DROP INLETS, BRICK & CATCH BASIN EXTENSION
510	DROP INLETS, CONCRETE, DETAILS FOR PAVED SECTIONS ONLY
511	DROP INLET'S DIMENSION
512	DROP INLETS WEIR TYPE
513	DROP INLETS, BRICK & CATCH BASIN EXTENSION
514	PRECAST CONCRETE HEADWALL SYSTEM
515	INLET HEADWALL-OUTLET HEADWALL-INLET HEADWALL WITH TAPERED PIPE
516	ENERGY DISSIPATOR ALTERNATE
517	CONCRETE PIER & FOOTING DETAIL
518	CONCRETE PIER AND FOOTING DETAIL
519	STRUCTURAL PLATE PIPE-ARCH CULVERT
520	STANDARD PIPE CULVERTS
521	PIPE CULVERTS (TABLES)
522	PIPE CULVERTS (TABLES CONT.)
523	PERFORATED UNDERDRAIN
524	PIPE GAUGE AND CLASS (CONCRETE & CORRUGATED STEEL PIPE)
525	EARTHILL DAM FOR DETENTION PONDS
526	FENCE DETAIL FOR DETENTION PONDS (ATL. TO CHAIN LINK)
527	FENCE DETAIL FOR DETENTION PONDS

FULTON COUNTY STANDARD DETAIL INDEX AND GENERAL NOTES	REVISIONS <table border="1" style="width: 100%; border-collapse: collapse;"> <tr><th>NO.</th><th>DATE</th><th>DESCRIPTION</th></tr> <tr><td> </td><td> </td><td> </td></tr> </table>	NO.	DATE	DESCRIPTION																															DCS/DRN/CHKD: CMS APPROVED: _____ DATE: 12-02-05	 FULTON COUNTY FULTON COUNTY PUBLIC WORKS 141 PRYOR ST. ATLANTA, GA. 30303 404-730-7400 FAX: 404-730-6325	DRAWING NO. 500
NO.	DATE	DESCRIPTION																																			



TOP OMITTED FOR CLARITY



PIPE SIZE	H
18	4'-10"
24	5'-6"
30	6'-2"

NOTES:
 TOLERANCES -
 1) OPENING FOR CATCH BASIN - 5 1/2" - 7" MAX.
 2) TOTAL DIMENSIONS FOR TOPS ± 2" (LENGTH) ± 2" (WIDTH)
 ROWLOCK BRICK INVERTS ONLY
 COLLAR WALLS - FULL 360° - REQUIRED AT ALL JUNCTURES OF STORM PIPE TO BOXES.
 IF THE DESIGN OF CATCH BASIN DOES NOT MEET THE REQUIREMENTS - YOU MAY NOT USE PRE-CAST STRUCTURES AND THE CATCH BASIN MUST BE BUILT OUT OF BRICK.

FULTON COUNTY STANDARD DETAIL 503
 FOR PRIVATE DEVELOPMENT ONLY
 STANDARD CATCH BASINS WITH ROLLED
 CURB & GUTTER 10" OFFSET
 (BACK OF CURB)

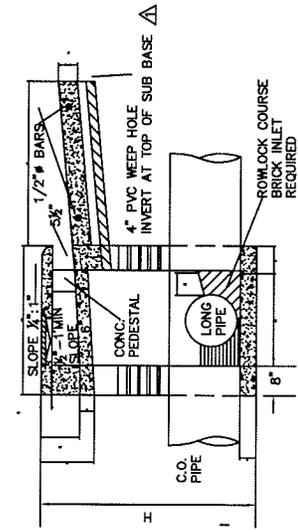
DATE	REVISIONS	DATE	REVISIONS

DGS/DRN/CHKD/CMS
 APPROVED: REW
 DATE: 12-2-05

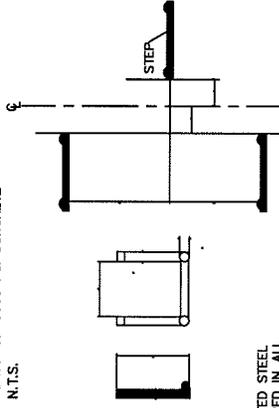


FULTON COUNTY PUBLIC WORKS
 141 PRYOR ST. ATLANTA, GA. 30303
 404-730-7400 FAX: 404-224-0978

DRAWING NO
 503

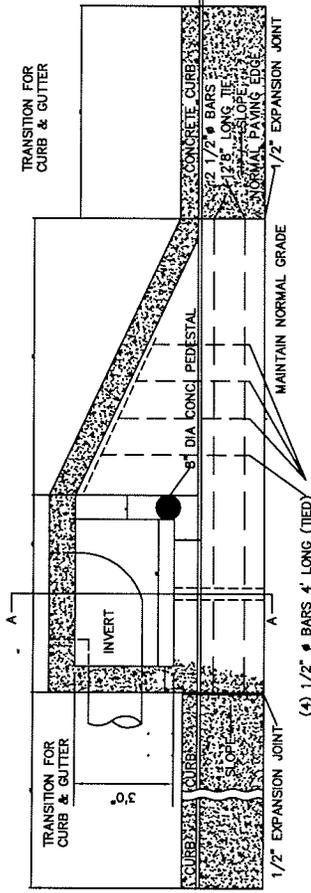


SECTION A-A
CLASS "A" 3000 PSI CONCRETE
N.T.S.

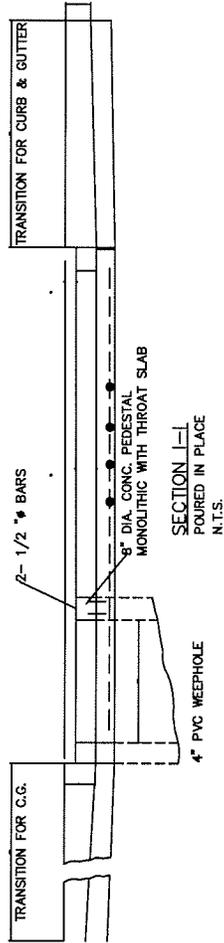


ARRANGEMENT OF STEPS

NOTE:
PLASTIC COATED STEEL
STEPS REQUIRED IN ALL
CATCH BASINS
FOR ADDITIONAL
DETAILS SEE
STANDARD #104



TOP OMITTED FOR CLARITY



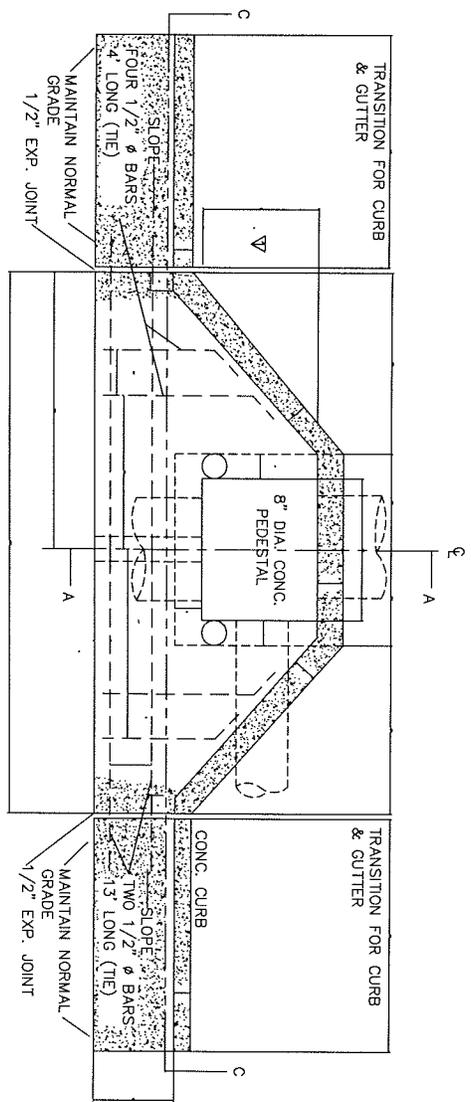
SECTION I-I
POURED IN PLACE
N.T.S.

NOTE:
FOR ALL CATCH BASINS 1/2" EXPANSION JOINT
MATERIAL SHALL BE PLACED AROUND THE
CATCH BASIN WHERE SIDEWALK OR MEDIAN
PAVEMENT IS PLACED ADJACENT TO THE
CATCH BASIN

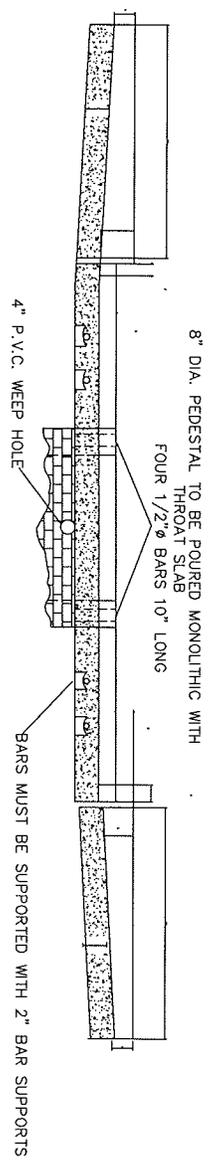
INSIDE DIAMETER OF PIPE IN INCHES	MINIMUM H
18"	4'-10"
24"	5'-6"
30"	6'-2"

△ D.O.T. STANDARD #1033D IS ALLOWABLE ALTERNATIVE

	FULTON COUNTY	DGS/DRN/CHKD: CMS APPROVED: _____ DATE: 12-2-05
FULTON COUNTY STANDARD DETAIL 504 SINGLE WING ON LINE CATCH BASIN (BRICK)		FULTON COUNTY PUBLIC WORKS 141 PRYOR ST. ATLANTA, GA. 30303 404-730-7400 FAX: 404-224-0978
DRAWING NO. 504		



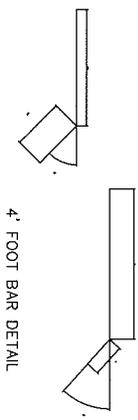
TOP OMITTED FOR CLARITY



SECTION C-C
(CAST IN PLACE)

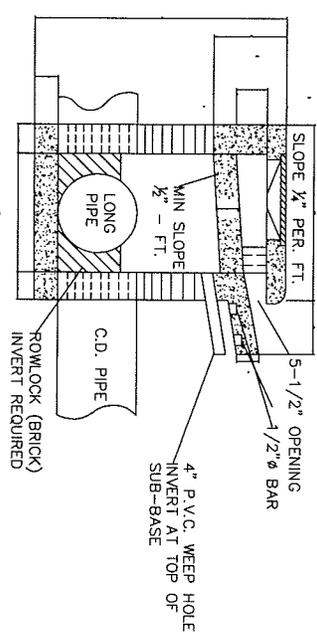
NOTE:
FOR ALL CATCH BASINS, 1/2" EXPANSION JOINT MATERIAL SHALL BE PLACED AROUND THE CATCH BASIN, WHERE SIDEWALK OR MEDIAN PAVEMENT IS PLACED ADJACENT TO THE CATCH BASIN

NOTE:
OPENING AT CATCH BASIN SHALL BE BETWEEN 5 1/2" AND 7" N.T.S.



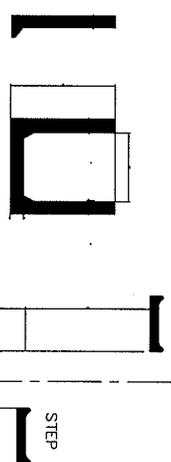
4' FOOT BAR DETAIL

INSIDE DIAMETER OF PIPE IN INCHES	MINIMUM H
18	4'-10"
24	5'-6"
30	6'-2"



SECTION A-A

NOTE:
ALL Poured-IN-PLACE CONC. TO BE CLASS "A" 3000 P.S.I. N.T.S.



NOTE:
PLASTIC COATED STEEL STEPS ARE REQUIRED IN ALL C.B. FOR ADDITIONAL DETAILS SEE STANDARD # 104

G.D.O.T. STANDARD #1034D IS ALLOWABLE ALTERNATIVE

ARRANGEMENT OF STEPS

FULTON COUNTY STANDARD DETAIL 505
CATCH BASIN DOUBLEMENT
ONLINE

DATE	REVISIONS	DATE	REVISIONS

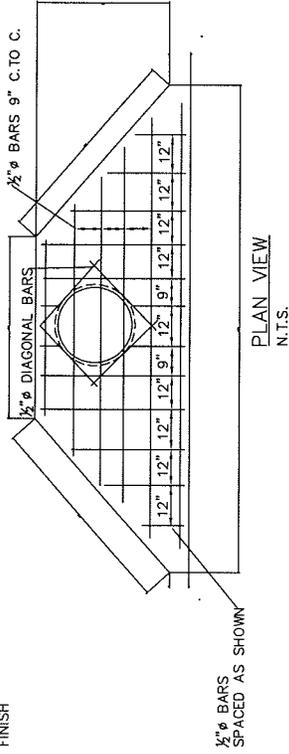
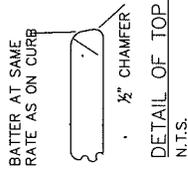
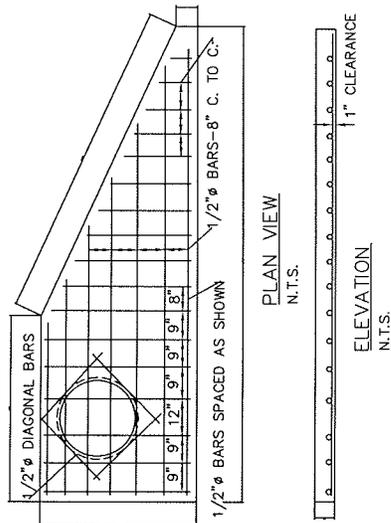
DSS/DRN/CHKD OMS
APPROVED: _____
DATE: 12-2-05



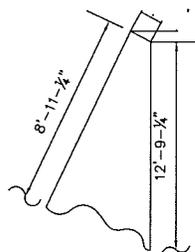
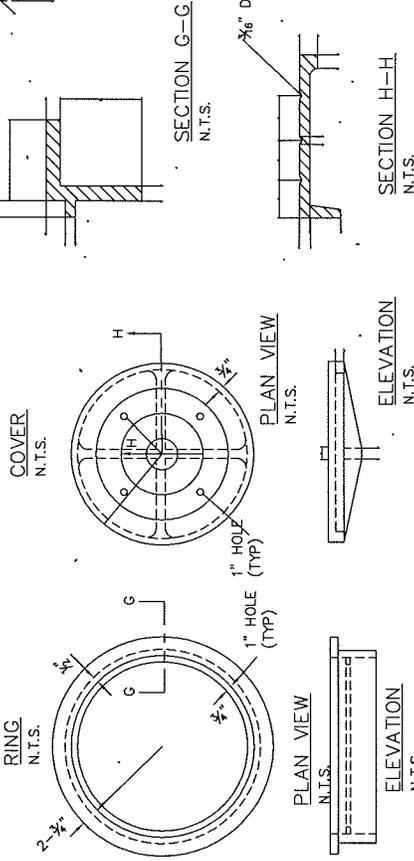
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404-730-7400 FAX: 404-224-0978

DRAWING NO. 505

TOP SLAB TO HAVE WOOD FLOAT FINISH



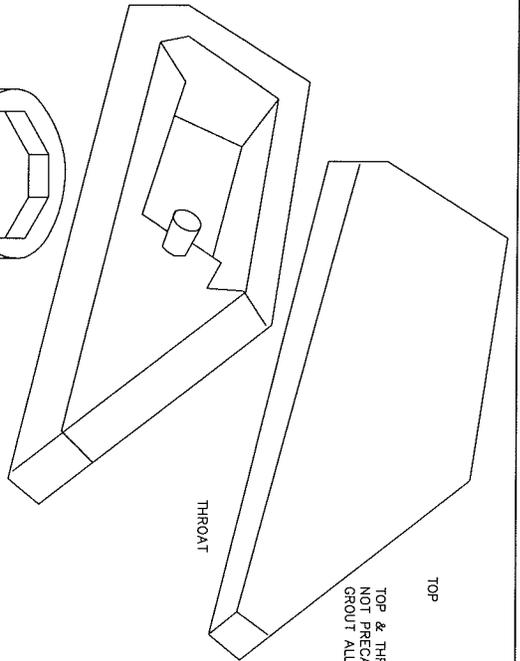
USE FOR OFFSET CATCH BASIN



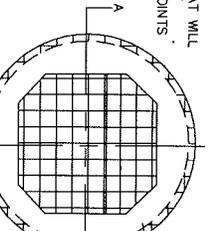
APPROXIMATE WEIGHTS—
CAST IRON RING 78 LBS.
CAST IRON COVER 63 LBS.

△ G.D.O.T. STANDARD #1033D IS ALLOWABLE ALTERNATIVE
G.D.O.T. STANDARD #1034D IS ALLOWABLE ALTERNATIVE.

DATE		REVISIONS	DATE	REVISIONS	DGS/DRN/CHKD./CMS	DRAWING NO.
					APPROVED: _____	506
					REW _____	
					DATE: 12-2-05	
FULTON COUNTY STANDARD DETAIL 506 CATCH BASIN TOPS					 <p>FULTON COUNTY</p> <p>FULTON COUNTY PUBLIC WORKS 141 PRYOR ST. ATLANTA, GA. 30303 404-730-7400 FAX: 404-224-0498</p>	



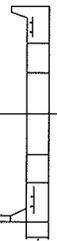
TOP & THROAT WILL NOT PRECAST. GROUT ALL JOINTS.



REINFORCING TO BE 2/2" 6X8 WELDED I.O. GAUGE W/ 4-5 BARS DIAGONAL 4'-8" DIA

SEE #627

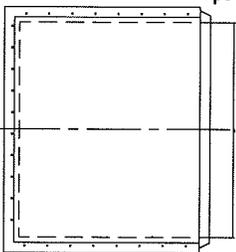
ROUND TO SQUARE ADAPTER
N.T.S.



SECTION A-A
N.T.S.

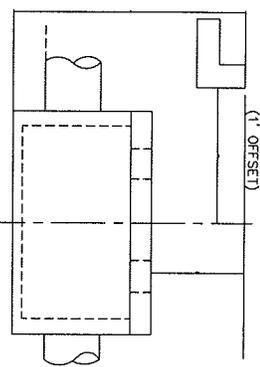


REINFORCING 2/2" 6X8 WELDED WIRE FABRIC
RISER
N.T.S.

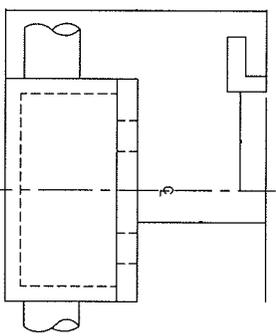


REINFORCING TO BE 3/3" 6X8 WELDED WIRE FABRIC

NOTE:
STEPS TO BE INSTALLED ON 15" VERTICAL SPACING. SEE PRECAST MANHOLE STANDARD FOR SPECIFICATIONS.



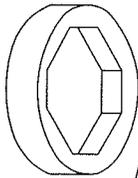
(1' OFFSET)



(ONLINE)

CENTERLINE OF CATCH BASINS

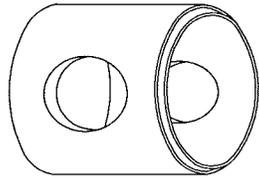
SQUARE TO ROUND ADAPTER



RISER SECTION (if req'd) AVAILABLE IN HEIGHTS:
1'-0", 1'-6", 2'-0", 2'-6", 3'-0", 3'-6", 4'-0"

NOTE:
FOR ROLLED CURB & GUTTER, SEE STD. NO. 600 - B FOR BOX LOCATION.

MONOLITHIC BASE HOLES MUST BE PRECAST



NOTE:
ALL CONCRETE SHALL BE 4000 PSI

NOTE:
CATCH BASIN SHALL BE INSTALLED WITH PIPE OPENING AS SPECIFIED.

BASE HEIGHT	METAL PIPE	CONG. PIPE	RI. (MIN.)
4' DIA - 2'-6"	18"	12"	5' - 0"
3' - 0"	24"	18"	5' - 6"
3' - 6"	30"	24"	6' - 0"
4' - 0"	30"	30"	6' - 6"

*OTHERWISE BOX MUST BE BUILT OUT OF BRICK

FULTON COUNTY STANDARD DETAIL 507
STANDARD PRECAST
ROUND CATCH BASIN

DATE	REVISIONS	DATE	REVISIONS

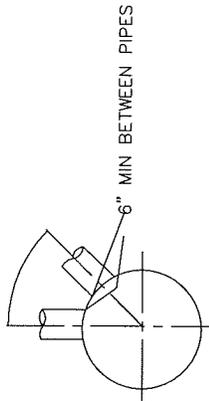
DGS/DRN/CHMD/CMS
APPROVED: _____
DATE: 12-2-05



FULTON COUNTY PUBLIC WORKS
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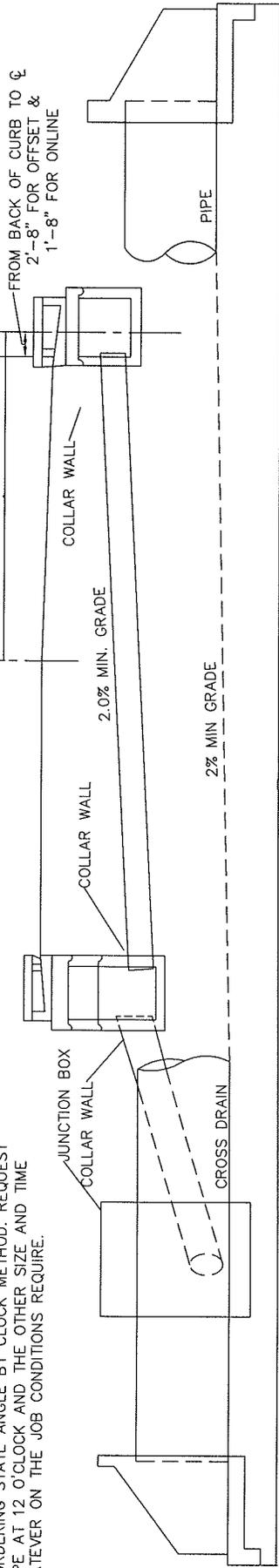
DRAWING NO. 507

MIN ANGLE BETWEEN PIPES	
PIPE SIZE	CLOCK ANGLE "A" METHOD
18"	60°
24"	75°

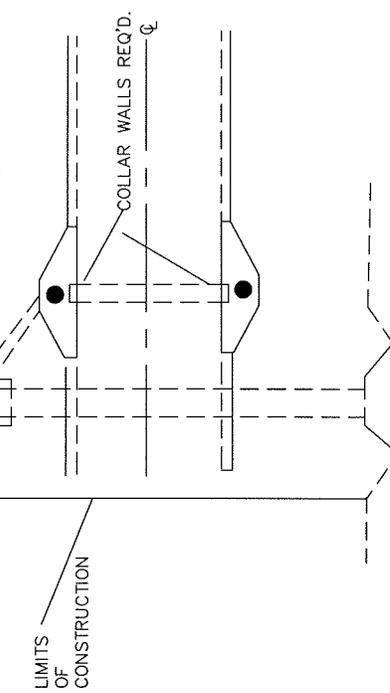


THE ABOVE TABLE IS BASED ON TWO PIPES OF EQUAL SIZE. WHEN ORDERING STATE ANGLE BY CLOCK METHOD. REQUEST ONE PIPE AT 12 O'CLOCK AND THE OTHER SIZE AND TIME AT WHATEVER ON THE JOB CONDITIONS REQUIRE.

LOCATION OF CATCH BASIN BOX FROM STREET ϕ		
STREET WIDTH (BK. TO BK.)	ONLINE "D"	OFFSET "D"
24'	13'-8"	14'-8"
29'	16'-2"	17'-2"
39'	21'-2"	22'-2"
44'	23'-8"	24'-8"
52'	27'-8"	28'-8"

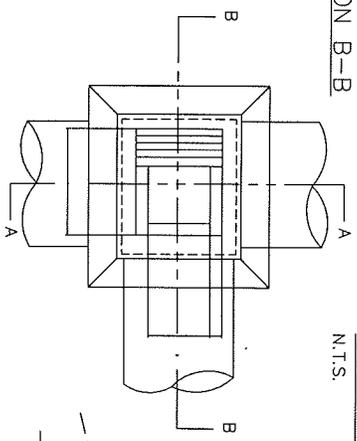
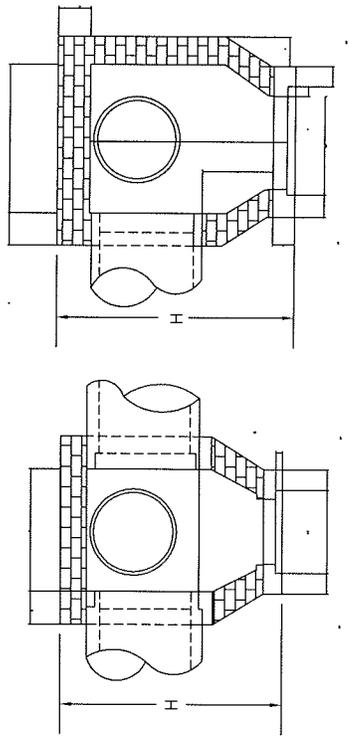


*ALL STORM PIPE WITHIN THE RIGHT OF WAY MUST BE CONCRETE. COLLAR WALLS REQUIRED.

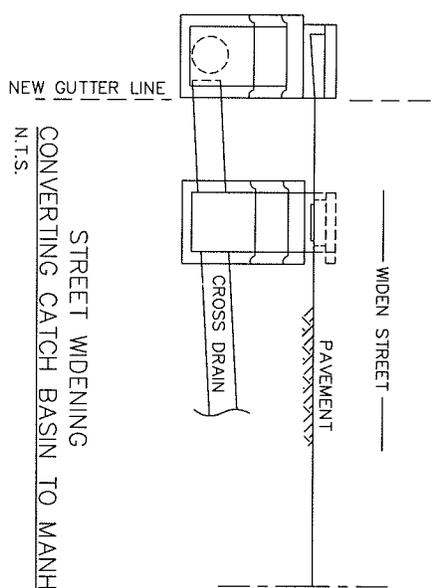
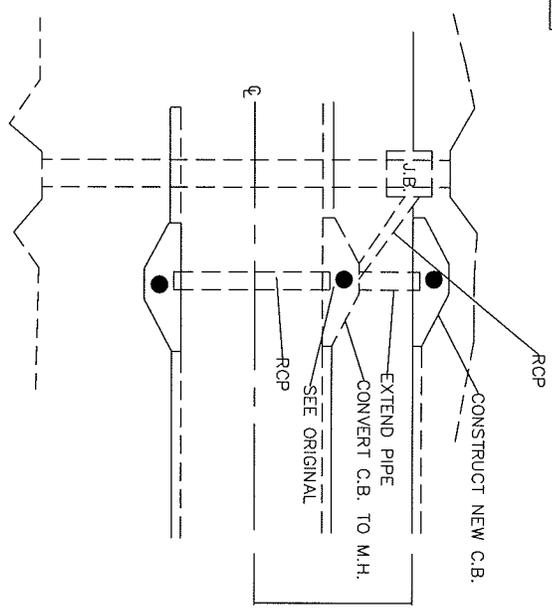


PIPE SHALL BE OF SUFFICIENT LENGTH FOR OUTSIDE DIAMETER TO REACH INTERIOR WALLS OF BOTH CATCH BASINS. UPON INSTALLATION, EXCESS PIPE SHALL BE REMOVED FLUSH TO INTERIOR WALL OF CATCH BASIN.
SEE G.D.O.T. STANDARD NO. 1033 D, E, F, OR 1034 D & E FOR PRECAST SQUARE CATCH BASIN

FULTON COUNTY STANDARD DETAIL 508 LOCATION OF ROUND CATCH BASIN		 FULTON COUNTY		FULTON COUNTY PUBLIC WORKS 141 PRYOR ST. ATLANTA, GA. 30303 404-730-7400 FAX: 404-224-0498		DRAWING NO. 508	
DATE	REVISIONS	DATE	REVISIONS	DGS/DRN/CHKD: CMS	APPROVED: REW	DATE: 12-2-05	



ALL PIPES WITHIN R/W SHALL BE RCP.
THIS INCLUDES PIPE PARALLEL TO ROAD.
SEE STANDARD # 511
FOR DIMENSION TABLE



NOTE:
REMOVE EXIST. TOP & THROAT OF CATCH BASIN
ADD BRICK COURSES FOR GRADE ADJUSTMENT
COMPLETE BY ADDING STANDARD MANHOLE
FRAME & COVER (#460 LBS. AND SET IN 8"
MIN. REINFORCED CONC. SLAB)

FULTON COUNTY STANDARD DETAIL 509
DROP INLETS, BRICK
&
CATCH BASIN EXTENSION

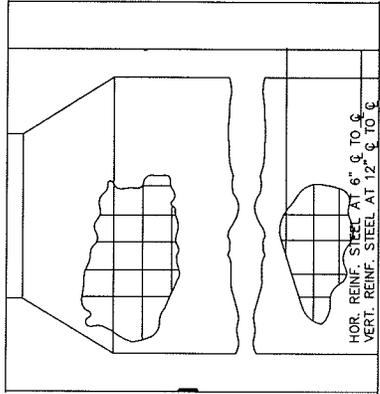
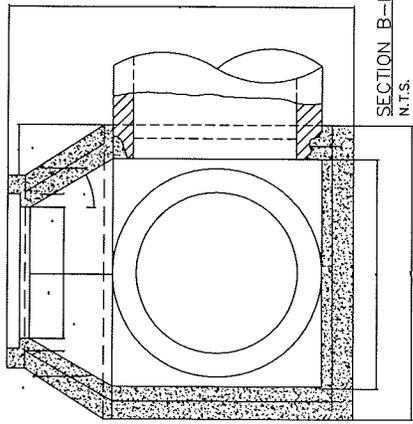
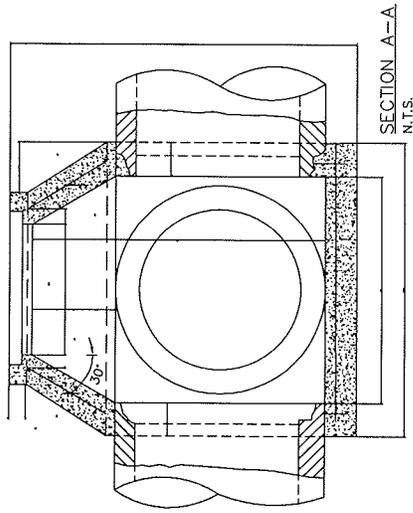
DATE	REVISIONS	DATE	REVISIONS

DGS/DRN/CHK/OMS
APPROVED: REW
DATE: 12-2-05

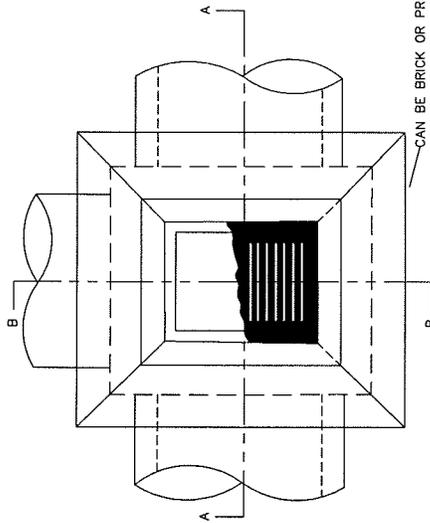


FULTON COUNTY PUBLIC WORKS
141 PRYOR ST. ATLANTA, GA. 30303
404-730-7400 FAX: 404-224-0498

DRAWING NO.
509



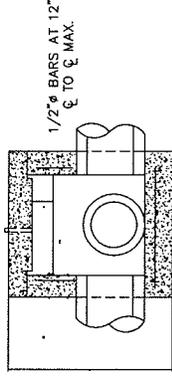
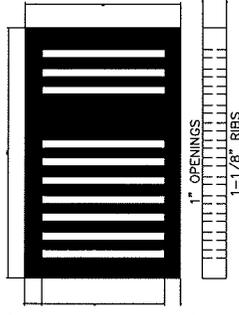
IN ALL DROP INLETS 1/2" ϕ BAR REINFORCING STEEL TO BE PLACED NOT MORE THAN 12" ϕ TO ϕ AND COVERED NOT LESS THAN 2".



TYPE A

DETAIL OF CAST IRON GRATING

N.T.S. APPROX. WT. 200 LB.



TYPE B

SEE SHEET NO. 511 FOR DIMENSIONS

FULTON COUNTY STANDARD DETAIL 510
DROP INLETS, CONCRETE,
DETAILS FOR PAVED SECTIONS ONLY

DATE	REVISIONS	DATE	REVISIONS

DCS/DRN/CHKD:CMS
APPROVED: REW
DATE: 12-2-05



FULTON COUNTY PUBLIC WORKS
141 PRYOR ST. ATLANTA, GA. 30303
404-730-7400 FAX: 404-224-0488

DRAWING NO.

510

D	W1	MIN.-W2	W3	a	b	MIN-H	NORMAL W OR W1	MIN-h	MIN-h
15"	2'-2"	2'-11"	2'-9"	0'-4 1/2"	0'-8"	3'-9 1/2"	2'-0"	2'-7 1/2"	3'-7 1/2"
18"	2'-2"	3'-2 1/2"	2'-9"	0'-4 1/2"	0'-8"	4'-1"	2'-0"	2'-10"	3'-10"
24"	2'-8"	3'-3"	3'-3"	0'-7 1/2"	1'-1 1/4"	4'-9"	3'-0"	3'-8"	4'-8"
30"	3'-7 1/4"	4'-0"	3'-10"	1'-0"	1'-9"	5'-10"	3'-6 1/2"	4'-2 1/2"	5'-10"
36"	4'-2"	6-0 1/2"	4'-9"	1'-4 1/2"	2'-2 1/4"	6'-11"	4'-2"	4'-10"	5'-10"
42"	4'-5"	7'-1 3/4"	5'-0"	1'-6"	2'-7 1/4"	8'-0 1/4"	4'-8 1/2"	5'-4 1/2"	6'-11 1/2"
48"	5'-0"	8'-2 3/4"	5'-7"	1'-9 1/2"	3'-1 1/4"	9'-1 1/4"	5'-3 1/2"	5'-11 1/2"	6'-11 1/2"
54"	5'-7"	9'-4"	6'-2"	2'-1"	3'-7 1/2"	10'-2 1/2"	5'-10"	6'-6"	7'-7'-6"
60"	6'-2"	10'-5"	6'-9"	2'-4 1/2"	4'-1 1/2"	11'-3 1/4"	6'-4 1/2"	7'-0 1/2"	3'-0 1/2"
60"	6'-9"	11'-6"	7'-4"	2'-8"	4'-7 1/2"	12'-4 1/2"	6'-11"	7'-7"	8'-7"
72"	7'-4"	12'-7"	7'-11"	2'-11 1/2"	5'-2"	13'-5 1/2"	7'-5 1/2"	8'-1 1/2"	9'-1 1/2"

TYPE B

BRICK D.I.

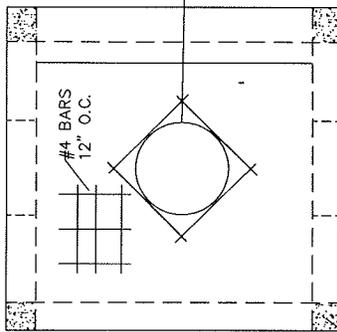
D	W1	MIN.-W2	W3	a	b	MIN-H	NORMAL W OR W1	MIN-h	MIN-h
15"	2'-0"	2'-6 1/2"	2'-7"	0'-3 1/2"	0'-6"	3'-3"	2'-0"	2'-7 1/2"	3'-9 1/2"
18"	2'-0"	2'-9 1/2"	2'-7"	0'-3 1/2"	0'-6"	3'-6"	2'-3"	2'-10"	4'-0"
24"	2'-8"	4'-1 1/2"	3'-3"	0'-7 1/2"	1'-1"	4'-9"	3'-0"	3'-8"	4'-10"
30"	3'-4"	5'-1 1/2"	3'-11"	0'-11 1/2"	1'-8"	5'-10"	3'-6 1/2"	4'-2 1/2"	5'-4 1/2"
36"	3'-10"	6-1 1/2"	4'-5"	1'-2 1/2"	2-1 1/4"	6'-10"	4'-2"	4'-10"	6'-0"
42"	4'-5"	7'-2 1/2"	5'-0"	1'-6"	2'-7 1/2"	7'-11"	4'-8 1/2"	5'-4 1/2"	6'-6 1/2"
48"	5'-0"	8'-3 1/2"	5'-7"	1'-9 1/2"	3'-1 1/4"	9'-0"	5'-3 1/2"	5'-11 1/2"	7'-1 1/2"
54"	5'-7"	9'-4 1/2"	6'-2"	2'-1"	3'-7 1/4"	10'-1"	5'-10"	6'-6"	7'-8"
60"	6'-2"	10'-5 1/2"	6'-9"	2'-4 1/2"	4'-1 1/2"	11'-2"	6'-4 1/2"	7'-0 1/2"	8'-2 1/2"
60"	6'-9"	11'-6 1/2"	7'-4"	2'-8"	4'-7 1/2"	12'-3"	6'-11"	7'-7"	8'-9"
72"	7'-4"	12'-7 1/2"	7'-11"	2'-11 1/2"	5'-1 1/4"	13'-4"	7'-5 1/2"	8'-1 1/2"	9'-3"

TYPE B

CONCRETE D.I.

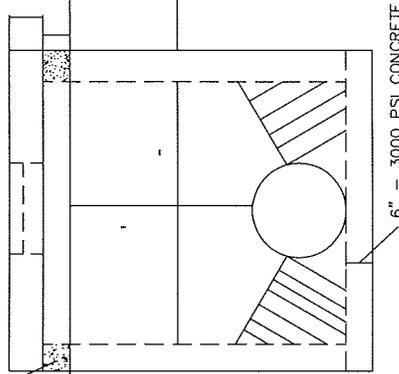
FULTON COUNTY STANDARD DETAIL 511
DROP INLETS DIMENSION

DATE	REVISIONS	DATE	REVISIONS	DWG./DRN./CHKD./CNS	APPROVED:	DATE	FULTON COUNTY	FULTON COUNTY PUBLIC WORKS	DRAWING NO.
					REW <td>12-2-05 <td></td> <td>141 PRYOR ST. ATLANTA, GA. 30303</td> <td>511</td> </td>	12-2-05 <td></td> <td>141 PRYOR ST. ATLANTA, GA. 30303</td> <td>511</td>		141 PRYOR ST. ATLANTA, GA. 30303	511
								404-730-7400 FAX: 404-224-0498	



TOP VIEW
N.T.S.

CONCRETE PILLARS
DOWELLED AND POURED
IN PLACE



FRONT VIEW
N.T.S.

NOTE:
BRICK OR MASONRY INVERT REQUIRED (ROWLOCK).

OPENINGS OPTIONAL
ON 1 TO 4 SIDES

STANDARD CATCH BASIN CASTING
SEE STANDARD NO. 112 FOR DETAILS

CONCRETE PILLARS
DOWELLED AND POURED INTO PLACE

GUTTER LINE

8" BRICK OR 6" REINFORCED CONCRETE

GROUND LINE

NOTE:
FOR DETAILS ON ROUND TO SQUARE ADAPTER,
SEE FILE NO. 507

ALT. FRONT VIEW
FOR ROUND PRECAST BOX
N.T.S.

DRAWING NO.

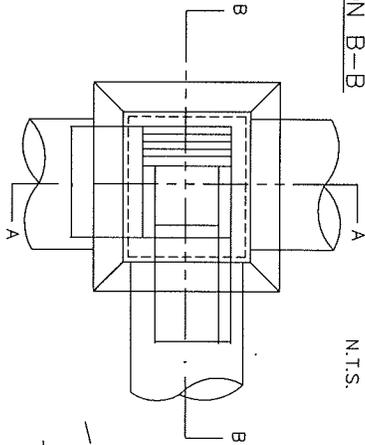
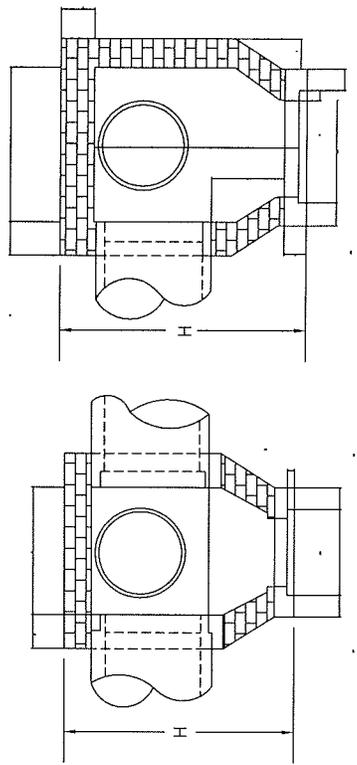
FULTON COUNTY PUBLIC WORKS
141 PRYOR ST. ATLANTA, GA. 30303
404-730-7400 FAX: 404-224-0498



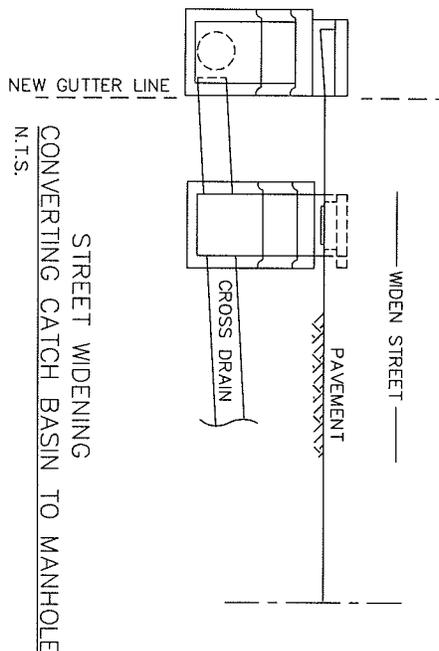
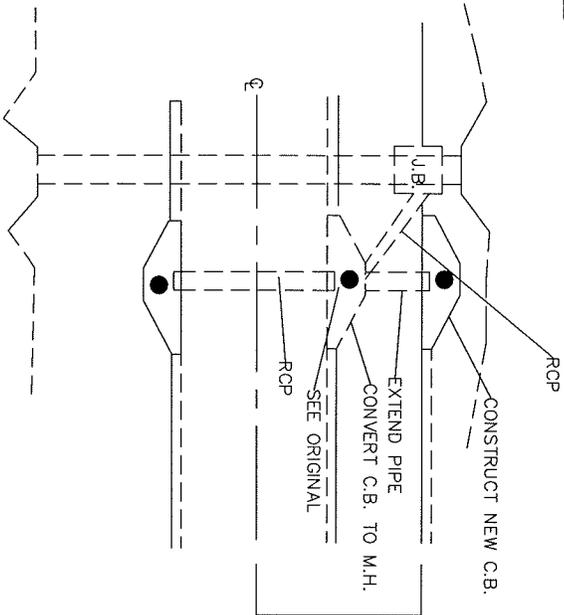
DCS/DRN/CHKD: CMS
APPROVED: REW
DATE: 12-2-05

DATE	REVISIONS	DATE	REVISIONS

FULTON COUNTY STANDARD DETAIL 512
DROP INLETS
WEIR TYPE



ALL PIPES WITHIN R/W SHALL BE RCP.
THIS INCLUDES PIPE PARALLEL TO ROAD.
SEE STANDARD NO. 511
FOR DIMENSION TABLE



NOTE:
REMOVE EXIST. TOP & THROAT OF CATCH BASIN
ADD BRICK COURSES FOR GRADE ADJUSTMENT
COMPLETE BY ADDING STANDARD MANHOLE
FRAME & COVER (#460 LBS. AND SET IN 8"
MIN. REINFORCED CONC. SLAB)

FULTON COUNTY STANDARD DETAIL 513
DROP INLETS, BRICK
&
CATCH BASIN EXTENSION

DATE	REVISIONS	DATE	REVISIONS

DGS/DRN/CHKD: GMS
APPROVED: _____
DATE: 12-2-05

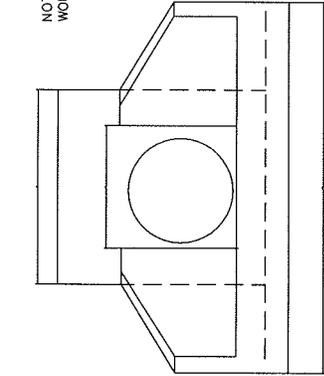
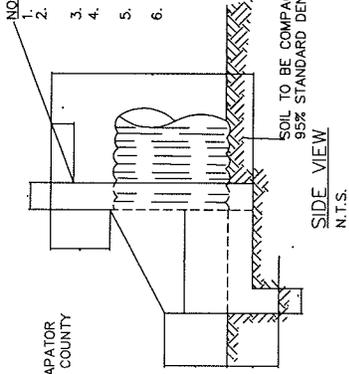


FULTON COUNTY PUBLIC WORKS
141 PRYOR ST. ATLANTA, GA. 30303
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DRAWING NO.
513

- NOTES:
1. ALL CONC. SHALL BE 4000 P.S.I. REINFORCEMENT STEEL SHALL BE #4 @ INTERMEDIATE GRADE.
 2. CHAMFER ALL EXPOSED EDGES 3/4"
 3. ENERGY DISSIPATOR REQ. ON PIPES OVER 30" DIA. IF EXIT VELOCITY > 6 F.P.S.
 4. RIP RAP TO BE PLACED AT OUTLET. LENGTH TO BE 6xD.
 5. FOR PIPES LARGER THAN 54" USE FULTON CO. STD. #515 OR G.D.O.T. STD. #1125.

NOTE: AN ALTERNATE DESIGN FOR THE ENERGY DISSIPATOR WOULD BE ACCEPTABLE ONCE APPROVED BY FULTON COUNTY



VELOCITY	STONE SIZE	FILTER MATERIAL
< 6 FT/SEC.	10 - 50 LBS.	1.5'
6 TO 8 FT/SEC.	20 - 100 LBS.	3"
8 TO 10 FT/SEC.	25 - 250 LBS.	4.5"

STONE OF DURABLE MATERIAL WEIGHING 150 LBS/FT³

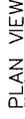
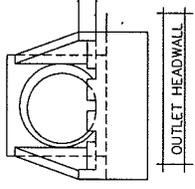
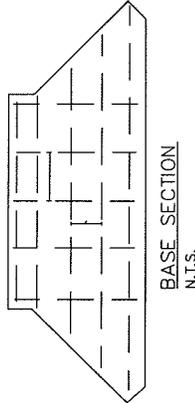
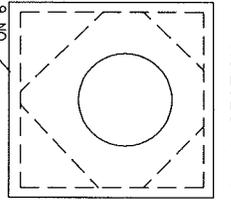
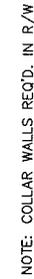
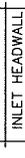


TABLE 1
HEADWALL DIMENSION FOR METAL PIPE*

INSIDE DIA. OF PIPE	W1	W2	H1	H2	D	E	WT.	SQ. FT. IN BASE AREA
18"	3' - 2"	4' - 3"	1' - 3"	3' - 2"	1' - 3"	1' - 9"	1,550	7.34
21", 24"	3' - 8"	5' - 3"	1' - 9"	3' - 8"	1' - 6"	2' - 7"	2,100	9.9
30"	4' - 2"	6' - 5"	2' - 0"	4' - 2"	1' - 10"	2' - 9"	2,850	13.5
36"	4' - 8"	7' - 7"	2' - 4"	4' - 8"	2' - 2"	3' - 3"	3,700	17.65
42", 48"	5' - 8"	10' - 1"	3' - 3"	5' - 8"	2' - 11"	4' - 3"	5,600	28.6
54"	6' - 8"	11' - 11"		6' - 8"	3' - 4"	5' - 3"	7,500	35.6



FULTON COUNTY STANDARD DETAIL 514
PRECAST CONCRETE HEADWALL SYSTEM

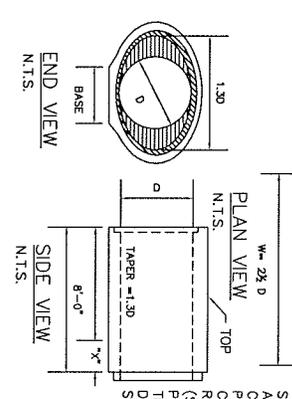
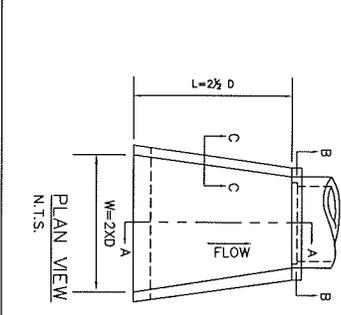
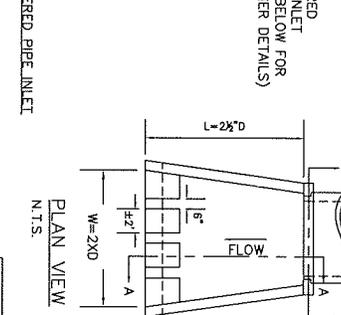
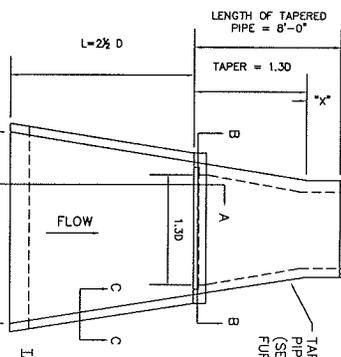
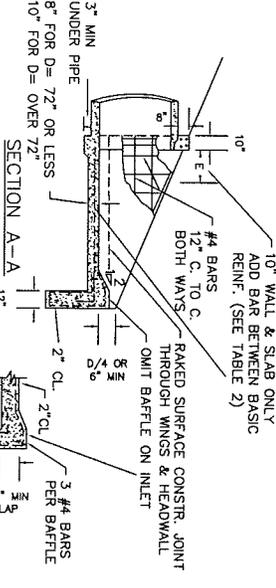
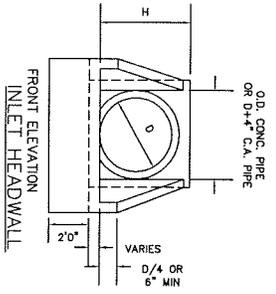
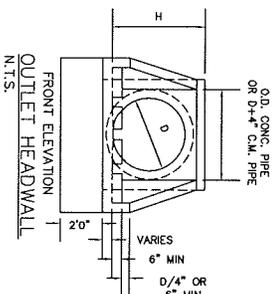
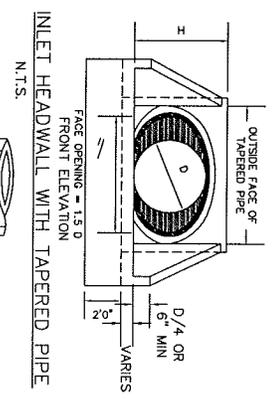
DATE: _____ REVISIONS: _____ DATE: _____ REVISIONS: _____

DGS/DRN/CHKD: CMS
APPROVED: _____
DATE: 12-2-05

FULTON COUNTY

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DRAWING NO. 514



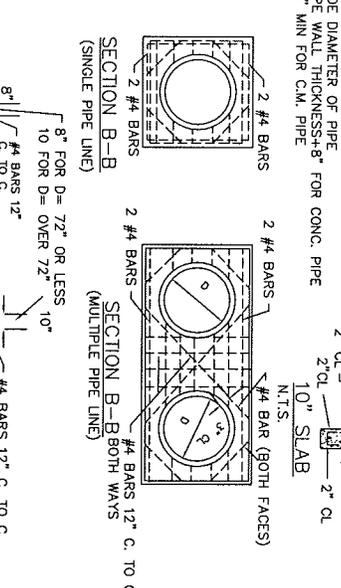
CONCRETE, TAPERED PIPE STRUCTURAL REQUIREMENTS WILL BE ACCORDING TO ASTM C307 FOR CLASS HE-1 HORIZONTAL ELLIPTICAL PIPE.
 CORRUGATED METAL MATERIAL REQUIREMENTS TO MEET SEC. 844 (STEEL PIPE) OR SEC. 840 (ALUMINUM PIPE). C.M. PIPE WILL CONFORM TO THE SAME INTERNAL LINES AND DIMENSIONS SHOWN. DETAILS ARE SHOWN FOR CONCRETE.

TABLE 3 - TAPERED PIPE DIMENSIONS

D	1.5D	MIN. THICKNESS (INS.)		
		"X"	COR. STEEL	COR. ALUM.
24"	3.00	3.00	.064	.060
30"	3.75	4.25	.064	.073
36"	4.50	3.50	.109	.133
42"	5.25	2.75	.109	.133
48"	6.00	2.00	.138	.164
54"	6.75	1.25	.169	.064
60"	7.50	0.50	.075	

① DENOTES 2 2/3" x 1/2"
 ② DENOTES 3" x 1" OR 123mm x 23mm CORRUGATION

NOTE:
 1. ALTERNATE DESIGN FOR PIPES LARGER THAN 54" USE G.D.O.T. STANDARD #1125.
 2. RIBBLE MASONRY CONSTRUCTION NOT ALLOWED ON PIPES OVER 54".
 3. AN ALTERNATE DESIGN FOR THE ENERGY DISSIPATOR WOULD BE ACCEPTED ONCE APPROVED BY FULTON COUNTY. SEE STANDARD #516



FULTON COUNTY STANDARD DETAIL 515
 INLET HEADWALL - OUTLET
 HEADWALL - INLET HEADWALL
 WITH TAPERED PIPE FOR PIPES 60" - 96" DIA.

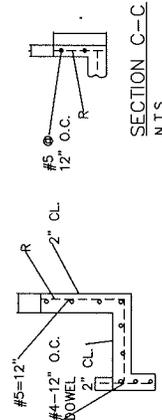
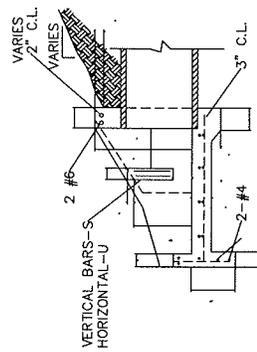
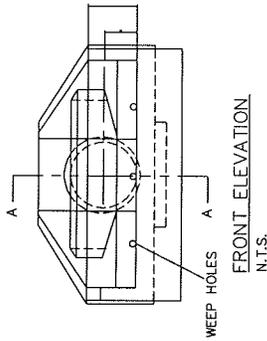
DATE	REVISIONS	DATE	REVISIONS

DES./DYN./CHKD./CNS
 APPROVED: **REW**
 DATE: 12-2-05



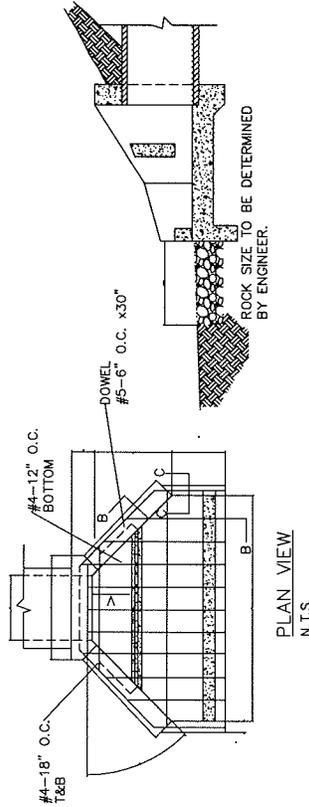
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DRAWING NO. 515



D	E	F	G	H	J	K	L	N	V	T	R	S	U
18"	3'-0"	7'-6"	3'-0"	3'-0"	2'-0"	8"	8"	8"	2'-0"	6"	# 5 -12" O.C.	# 4-12" O.C.	# 4 -8" O.C.
21"	3'-4"	7'-9"	3'-3"	3'-3"					2'-0"				
24"	3'-8"	8'-0"	3'-6"	3'-6"					2'-0"				
27"	3'-11"	8'-3"	4'-0"	4'-0"					2'-0"				
30"	4'-2"	8'-6"	4'-0"	4'-0"	2'-1"			10"	2'-0"				
36"	4'-8"	10'-0"	3'-6"	4'-6"	2'-3"		10"		2'-3"	2'-6"			
42"	5'-3"	11'-6"	4'-0"	5'-0"	2'-9"				2'-4"	3'-0"			
48"	5'-10"	13'-0"	4'-6"	5'-6"	3'-0"			12"	2'-6"	3'-6"		# 5 -12" O.C.	
54"	6'-5"	14'-6"	5'-0"	6'-0"	3'-6"		9"	12"	2'-8"	5'-0"	# 6-8" O.C.		
60"	7'-0"	16'-0"	5'-6"	6'-6"	4'-3"				2'-11"				
66"	7'-7"	17'-6"	6'-0"	7'-0"	4'-6"			14"	3'-0"				
72"	8'-2"	19'-0"	6'-6"	7'-0"	5'-8"				3'-2"	5'-6"			

- NOTES:
 1. HEADWALL PARALLEL TO CENTER LINE OF HIGHWAY WITHIN RIGHT OF WAY SHALL BE FLARED-END (SEE G.D.O.T. STD #1120).
 2. CONCRETE SHALL BE 3,000 PSI 28 DAYS STR.
 3. WEEP HOLES SHALL BE 3" DIA. AT F/4 O.C.
 4. RANDOM RUBBLE 3" TO 12" IN DIA.



FULTON COUNTY STANDARD DETAIL 516
 ENERGY DISSIPATOR
 ALTERNATE

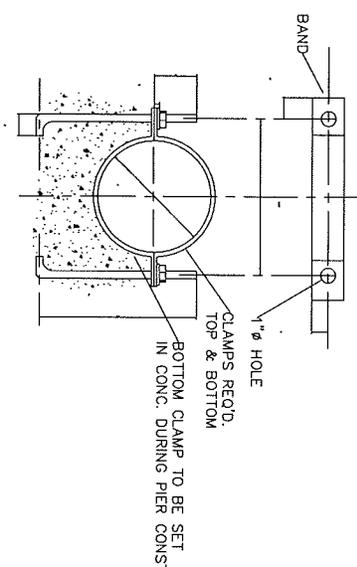
DATE: _____ REVISIONS: _____ DATE: _____ REVISIONS: _____

DCS/DRN/CHKD/CMS
 APPROVED: _____
 DATE: 12-2-05

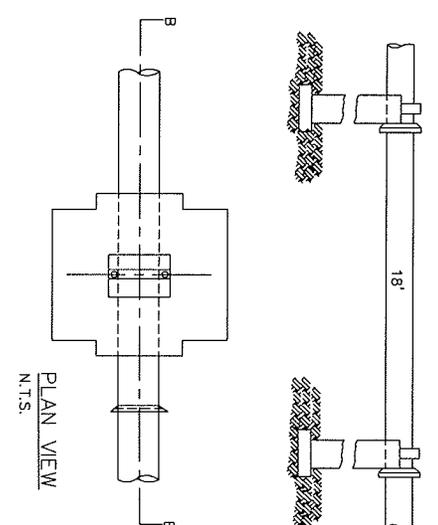
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DRAWING NO. 516

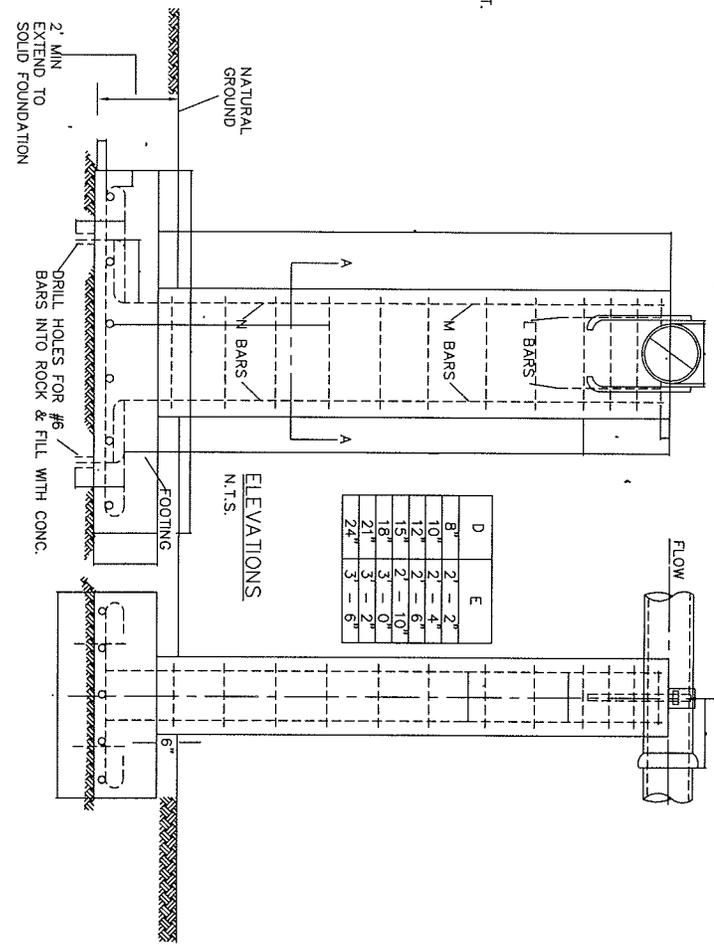


CLAMP DETAIL
N.T.S.



PLAN VIEW
N.T.S.

1. PIER LOCATION DETERMINED BY ENGR.
2. CONCRETE TO BE 3,000 P.S.I.
3. UNDER UNSTABLE CONDITIONS, ENG. PLANS FOR PIER DESIGN MUST BE SUBMITTED TO & APPROVED BY THE PUBLIC WORKS DEPT.
4. PIERS AT EVERY BELL.
5. ENGR. TO SUBMIT DESIGN FOR
6. STEEL REINFORCEMENT TO BE A.S.T.M. DESIGNATION A-15 - 54T UNLESS OTHERWISE SPECIFIED. BENDS IN BARS TO CONFORM TO A.C.I. STANDARD.



SECTION A-A
N.T.S.

D	E
8"	2' - 2"
10"	2' - 4"
12"	2' - 6"
14"	2' - 10"
16"	3' - 0"
21"	3' - 2"
24"	3' - 6"

FULTON COUNTY STANDARD DETAIL 517
CONCRETE PIER
&
FOOTING DETAIL

DATE	REVISIONS	DATE	REVISIONS

DGS/DRN/GHK:CMS
APPROVED: REW
DATE: 12-2-05



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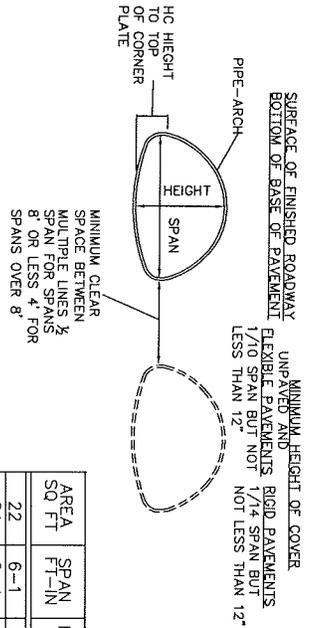
DRAWING NO.
517

STANDARD REINFORCED PIER

PIER	FOOTING DIMENSIONS AND REINFORCEMENT										PIER REINFORCEMENT									
	FOOTING			NO. OF #5 BARS EA. DIRECTION							BARS M			BARS N						
	A	B	C	8" & 10"D.	12" & 14"D.	16" & 18"D.	20" & 24"D.	5	5	5	NO.	SIZE	LENGTH	NO.	SIZE	LENGTH	X	Y		
0'-4"	3'-0"	6'-0"	1'-3"	5	5	5	5	5	5	6	NONE	H + 2' - 0"	6	#6	H + 2' - 0"	1'-9"	H + 10"			
5'	3'-2"	6'-2"	1'-3"	5	5	5	5	5	5	6	NONE	H + 2' - 0"	6	#6	H + 2' - 0"	1'-9"	H + 10"			
6'	3'-4"	6'-4"	1'-3"	5	5	5	5	5	5	4	#6	4'-10"	6	#6	5'-4"	1'-9"	4'-2"			
7'	3'-6"	6'-6"	1'-3"	5	5	5	5	5	6	4	#6	5'-10"	6	#6	5'-4"	1'-9"	4'-2"			
8'	3'-8"	6'-8"	1'-3"	5	5	5	5	5	6	4	#6	7'-10"	6	#6	5'-4"	1'-9"	4'-2"			
9'	3'-10"	6'-10"	1'-3"	5	5	5	5	6	7	4	#6	8'-10"	6	#6	5'-4"	1'-9"	4'-2"			
10'	4'-0"	7'-0"	1'-3"	5	5	5	5	6	7	4	#6	9'-10"	6	#6	5'-4"	1'-9"	4'-2"			
11'	4'-2"	7'-2"	1'-3"	5	5	5	5	7	8	4	#6	10'-10"	6	#6	5'-4"	1'-9"	4'-2"			
12'	4'-4"	7'-4"	1'-3"	5	5	5	5	7	8	4	#6	11'-10"	6	#6	5'-4"	1'-9"	4'-2"			
13'	4'-6"	7'-6"	1'-6"	5	6	6	6	7	8	4	#6	12'-10"	6	#6	5'-7"	1'-9"	4'-5"			
14'	4'-8"	7'-8"	1'-6"	6	6	6	6	8	9	4	#6	13'-10"	6	#6	5'-7"	1'-9"	4'-5"			
15'	4'-10"	7'-10"	1'-6"	6	6	6	6	8	9	4	#6	14'-10"	6	#6	5'-7"	1'-9"	4'-5"			
16'	5'-0"	8'-0"	1'-6"	6	6	6	6	8	9	4	#6	15'-10"	6	#6	5'-7"	1'-9"	4'-5"			
17'	5'-2"	8'-2"	1'-6"	6	7	7	7	9	10	4	#6	16'-10"	6	#6	5'-7"	1'-9"	4'-5"			
18'	5'-4"	8'-4"	1'-6"	7	8	8	8	9	10	4	#6	17'-10"	6	#6	5'-7"	1'-9"	4'-5"			
19'	5'-6"	8'-6"	1'-6"	7	8	8	8	10	11	4	#6	18'-10"	6	#6	5'-7"	1'-9"	4'-5"			
20'	5'-8"	8'-8"	1'-6"	7	9	9	9	10	12	4	#6	19'-10"	6	#6	5'-7"	1'-9"	4'-5"			
21'	5'-10"	8'-10"	1'-6"	8	9	9	9	11	12	4	#6	19'-10"	6	#6	6'-0"	1'-9"	4'-9"			
22'	6'-0"	9'-0"	1'-6"	8	10	10	10	12	13	4	#6	19'-10"	6	#6	7'-0"	1'-9"	5'-9"			
23'	6'-2"	9'-2"	1'-6"	9	10	10	10	12	13	4	#6	19'-10"	6	#6	8'-0"	1'-9"	6'-9"			
24'	6'-4"	9'-4"	1'-6"	10	11	11	11	13	15	4	#6	19'-10"	6	#6	9'-0"	1'-9"	7'-9"			
25'	6'-6"	9'-6"	1'-6"	10	11	11	11	14	16	4	#6	19'-10"	6	#6	11'-0"	1'-9"	9'-3"			
26'	6'-8"	9'-8"	1'-6"	11	12	12	12	15	16	4	#6	19'-10"	6	#6	12'-0"	1'-9"	10'-3"			
27'	6'-10"	9'-10"	1'-6"	12	13	13	13	16	17	4	#6	19'-10"	6	#6	13'-0"	1'-9"	11'-3"			
28'	7'-0"	10'-0"	1'-6"	12	13	13	13	16	18	4	#6	19'-10"	6	#6	14'-0"	1'-9"	12'-3"			

BARS L		H		NO.-SIZE-LENGTH	
		0'-4"	NONE		
		4'-28"	2	#6	2'-6"

FULTON COUNTY STANDARD DETAIL 518 CONCRETE PIER & FOOTING DETAIL	DATE: _____ REVISIONS: _____ DATE: _____	DGS/DRN/CHKD: CMS APPROVED: _____ DATE: 12-2-05	 FULTON COUNTY	FULTON COUNTY PUBLIC WORKS 141 PRYOR ST. ATLANTA, GA. 30303 404-730-7400 FAX: 404-224-0488	DRAWING NO. 518
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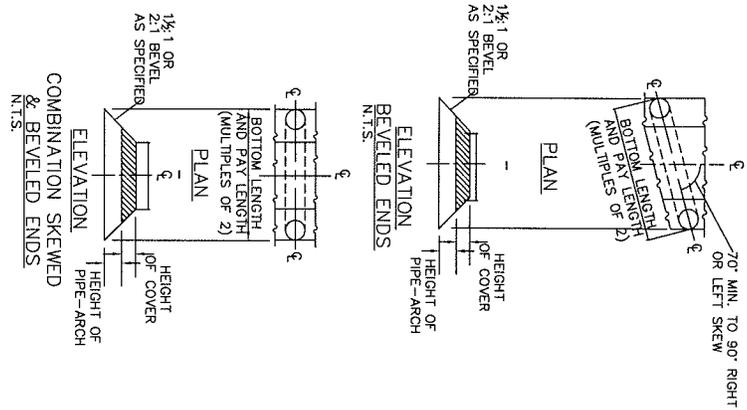


- NOTES:
 1. SPECIFICATIONS - GEORGIA STANDARD
 2. DESIGN DATA - H-20 LIVE LOAD
 3. GAGES SHOWN ARE MINIMAL STRUCTURAL REQUIREMENTS FOR USE WITH ADEQUATE BACKFILL.
 4. FOR END FINISH, SHAPE OR CONDITION OTHER THAN SHOWN, SEE SPECIAL DESIGN.

AREA SQ FT	SPAN FT-IN	HEIGHT FT-IN	FT-IN	* DIA INCHES	HEIGHT OF COVER (FEET)														
					1	2	3	4	5-7	8	9	10	11	12	13	14	15		
22	6-1	4-7	2-4	66"	12	12	12	12	12	12	12	12	12	12	12	12	12	12	12
24	6-4	4-9	2-1	69"	12	12	12	12	12	12	12	12	12	12	12	12	12	12	12
26	6-9	4-11	2-5	72"	10	12	12	12	12	12	12	12	12	12	12	12	12	12	10
28	7-0	5-1	2-4	75"	10	12	12	12	12	12	12	12	12	12	12	12	12	12	10
31	7-3	5-3	2-1	78"	10	10	12	12	12	12	12	12	12	12	12	12	12	10	10
33	7-6	5-5	2-4	81"	10	10	12	12	12	12	12	12	12	12	12	12	12	10	10
35	7-11	5-7	2-2	84"	10	10	10	12	12	12	12	12	12	12	12	12	12	10	10
38	8-2	5-9	2-0	87"	10	10	10	12	12	12	12	12	12	12	12	12	12	10	10
40	8-7	5-11	2-4	90"	10	10	10	10	12	12	12	12	12	12	12	12	12	10	10
43	8-10	6-1	2-2	93"	10	10	10	10	10	10	10	10	10	10	10	10	10	10	8
46	9-4	6-3	2-5	96"	8	10	10	10	10	10	10	10	10	10	10	10	10	8	8
49	9-6	6-5	2-4	99"	8	10	10	10	10	10	10	10	10	10	10	10	10	8	8
52	9-9	6-7	2-2	102"	8	8	10	10	10	10	10	10	10	10	10	10	10	8	7
55	10-3	6-9	2-5	105"	8	8	10	10	10	10	10	10	10	10	10	10	10	8	7
58	10-8	6-11	2-10	108"	8	8	8	10	10	10	10	10	10	10	10	10	10	8	7
61	10-11	7-1	2-7	111"	8	8	8	10	10	10	10	10	10	10	10	10	10	8	5
64	11-5	7-3	2-10	114"	7	8	8	8	10	10	10	10	10	10	10	10	10	7	5
67	11-7	7-5	2-8	117"	7	8	8	8	10	10	10	10	10	10	10	10	10	7	5
71	11-10	7-7	2-6	120"	7	7	8	8	8	8	8	8	8	8	8	8	8	7	5
74	12-4	7-9	2-10	125"	7	7	8	8	8	8	8	8	8	8	8	8	8	7	5
78	12-6	7-11	2-8	126"	7	7	8	8	8	8	8	8	8	8	8	8	8	7	5
81	12-8	8-1	2-6	129"	7	7	8	8	8	8	8	8	8	8	8	8	8	7	5
85	12-10	8-5	2-4	132"	5	7	8	8	8	8	8	8	8	8	8	8	8	7	5
89	13-5	8-5	2-7	135"	5	5	7	8	8	8	8	8	8	8	8	8	8	7	5
93	13-11	8-7	2-11	138"	5	5	7	8	8	8	8	8	8	8	8	8	8	7	5
97	14-1	8-9	2-10	141"	5	5	7	8	8	8	8	8	8	8	8	8	8	7	5
101	14-3	8-11	2-7	144"	5	5	7	8	8	8	8	8	8	8	8	8	8	7	5
105	14-10	9-1	2-11	147"	3	5	5	7	7	7	7	7	7	7	7	7	7	7	5
109	15-4	9-3	3-2	150"	3	3	5	5	5	5	5	5	5	5	5	5	5	5	3
113	15-6	9-5	3-0	153"	3	3	3	5	5	5	5	5	5	5	5	5	5	5	3
118	15-8	9-7	2-10	156"	3	3	3	5	5	5	5	5	5	5	5	5	5	5	3
122	15-10	9-10	2-8	159"	1	3	3	5	5	5	5	5	5	5	5	5	5	5	3
126	16-5	9-11	3-0	162"	1	3	3	3	5	5	5	5	5	5	5	5	5	5	3
131	16-7	10-1	2-10	165"	1	3	3	3	5	5	5	5	5	5	5	5	5	5	3
26	5-8	6-6	1-3	78"	12	12	12	12	12	12	12	12	12	12	12	12	12	12	12
32	5-10	7-8	1-3	87"	12	12	12	12	12	12	12	12	12	12	12	12	12	12	12

END FINISH

70" MIN. TO 90" RIGHT OR LEFT SKEW



FULTON COUNTY STANDARD DETAIL 519

STRUCTURAL PLATE
 PIPE-ARCH CULVERT

DATE	REVISIONS	DATE	REVISIONS

DGS/DRN/CHKD/CMS
 APPROVED: REW
 DATE: 12-2-05

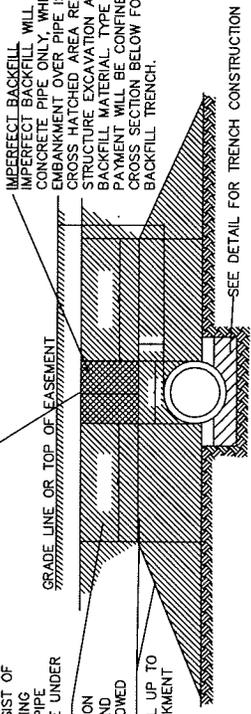


FULTON COUNTY PUBLIC WORKS
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 404-730-7400 FAX: 404-224-0498

DRAWING NO. 519

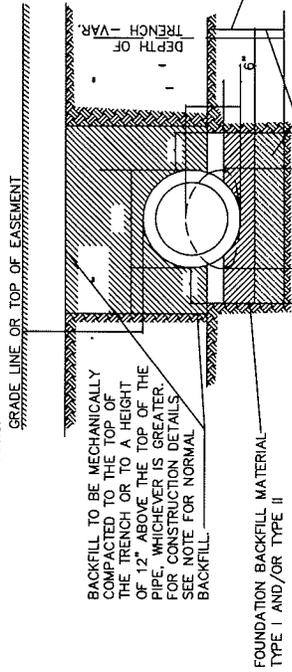
EMBANKMENT TO BE PLACED TO THIS ELEVATION BEFORE TRENCH FOR IMPERFECT BACKFILL IS EXCAVATED.

NORMAL BACKFILL
 BACKFILL, AS SHOWN BY THE BROKEN LINE SECTIONS, SHALL CONSIST OF PLACING COMPACTABLE SOIL IN 6" (LOOSE) LAYERS AND COMPACTING EACH LAYER TO 100% MAXIMUM DENSITY ON BOTH SIDES OF THE PIPE FOR ITS FULL LENGTH. MEASUREMENT AND PAYMENT WILL BE MADE UNDER ROADWAY EXCAVATION ITEMS FOR FORMATION OF EMBANKMENT.
 NORMAL EMBANKMENT SHALL BE PLACED A MINIMUM OF 12" WIDE ON EACH SIDE OF THE PIPE AND A MINIMUM OF 12" OVER THE PIPE AND COMPACTED TO THE REQUIRED DENSITY BEFORE EQUIPMENT IS ALLOWED TO CROSS.
 AFTER BACKFILL HAS BEEN COMPACTED, THE BALANCE OF THE FILL UP TO GRADE LINE SHALL BE CONSTRUCTED IN ACCORDANCE WITH EMBANKMENT SPECIFICATIONS.



LONGITUDINAL SECTION OF IMPERFECT BACKFILL AND BACKFILL METHODS
 N.T.S.

DETAIL OF TRENCH CONSTRUCTION
 N.T.S.



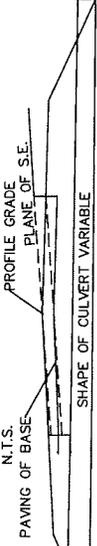
BACKFILL TO BE MECHANICALLY COMPACTED TO THE TOP OF THE TRENCH OR TO A HEIGHT OF 12" ABOVE THE TOP OF THE PIPE, WHICHEVER IS GREATER. SEE NOTE FOR NORMAL BACKFILL.

FOUNDATION BACKFILL MATERIAL TYPE I AND/OR TYPE II

FOR EXCAVATION FOR PIPE-ARCH CULVERTS SUBSTITUTE OPEN AND RISE FOR OUTSIDE DIAMETER OF PIPE IN HORIZONTAL AND VERTICAL DIMENSIONS SPECIFIED IN DETAIL

NOTE: WHERE AN INCOMPRESSIBLE FOUNDATION EXISTS, EXCAVATE AN ADDITIONAL 6". WHERE AN UNSTABLE FOUNDATION IS ENCOUNTERED, EXCAVATE AN ADDITIONAL DEPTH AS DIRECTED BY THE ENGINEER.

DETAIL SHOWING MINIMUM COVER FOR PIPE CULVERTS
 N.T.S.

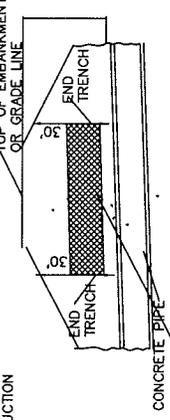


MIN. DEPTH OF TRENCH 6" +0.30(O.D.)

PROFILE GRADE PLANE OF S.E.

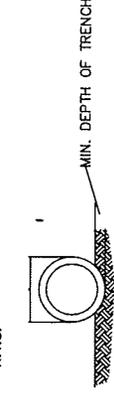
SHAPE OF CULVERT VARIABLE

CROSS SECTION OF IMPERFECT TRENCH BACKFILL
 N.T.S.



NOTE: CROSS HATCHED AREA REPRESENTS CONSTRUCTION LIMITS OF MEASUREMENT FOR STRUCTURE EXCAVATION AND IMPERFECT TRENCH BACKFILL MATERIAL, TYPE IV SEE LONGITUDINAL SECTION ABOVE.

DETAIL OF TRENCH CONSTRUCTION FOR SIDE DRAIN AND MEDIAN DRAIN PIPE
 N.T.S.

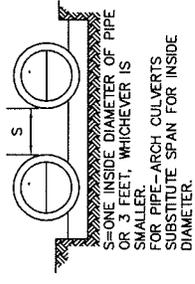


NOTE: THE PIPE SHALL BE BEDDED TO TIME AND GRADE IN A FIRM FOUNDATION SHAPED TO FIT THE LOWER PART OF THE PIPE EXTERIOR, WHERE ROCK, EXISTS, EXCAVATE AND BACKFILL WITH COMPRESSIBLE MATERIAL (UNCLASSIFIED EXCAVATION) A MINIMUM OF 6" BELOW THE PIPE.

SPECIAL NOTE:
 AAASHTO M294 (HDPE) PIPE IS ALLOWABLE IF GDOT SECTION 550 GUIDELINES ARE FOLLOWED, APPROVED ON GDOT QPL 51;
 PE PIPE IS ALLOWABLE FOR THE FOLLOWING CONDITIONS:
 A. PE PIPE MAY BE USED AS AN ALTERNATE TO LONGITUDINAL PIPE UNDER ALLOWABLE FILL SHOWN, FOR NON-TRAFFIC BEARING AND LOCAL ROAD BEARING APPLICATIONS.
 B. PE PIPE MAY BE USED AS AN ALTERNATE TO PERFORATED UNDERDRAIN PIPE.
 C. PE PIPE IS ALLOWABLE IN ALL SIDE DRAIN AND SLOPE DRAIN APPLICATIONS.

SEE THE TABLES ON STANDARDS # 521 AND 522.

SPACING FOR MULTIPLE PIPE CULVERTS
 N.T.S.



S=ONE INSIDE DIAMETER OF PIPE OR 3 FEET, WHICHEVER IS SMALLER FOR PIPE-ARCH CULVERTS SUBSTITUTE SPAN FOR INSIDE DIAMETER.

FULTON COUNTY STANDARD DETAIL 520 STANDARD PIPE CULVERTS			FULTON COUNTY PUBLIC WORKS 141 PRYOR ST. ATLANTA, GA. 30303 404-730-7400 FAX: 404-224-0488		DRAWING NO. 520
	DATE _____	REVISIONS _____	DATE _____	REVISIONS _____	DGS/DRN/CHKD: CMS APPROVED: _____ DATE: 12-2-05

TABLE SHOWING GAUGES OF CORRUGATED STEEL AND THICKNESS IN INCHES OF CORRUGATED ALUMINUM PIPE ARCH FOR VARIOUS HEIGHT OF FILL ABOVE THE TOP OF THE PIPE-ARCH

* D/A. IN INCHES	SPAN IN INCHES	RISE IN INCHES	HEIGHT OF FILL IN FEET					TYPE OF PIPE
			1-2	3-10	11-15	16-20	21-25	
15	18	11	1/16	1/16	1/16	1/16	1/16	Steel
			0.06	0.06	0.06	0.06	0.06	Alum
18	22	13	1/16	1/16	1/16	1/16	1/16	Steel
			0.06	0.06	0.06	0.06	0.073	Alum
21	25	16	1/16	1/16	1/16	1/16	1/16	Steel
			0.06	0.06	0.06	0.06	NP	Alum
24	29	18	1/14	1/14	1/14	1/14	1/14	Steel
			0.073	0.075	0.075	0.105	NP	Alum
30	36	22	1/14	1/14	1/14	1/14	1/14	Steel
			0.073	0.075	0.075	0.105	NP	Alum
34	43	27	1/12	1/12	1/12	1/12	1/12	Steel
			0.105	0.105	0.105	0.135	NP	Alum
42	50	31	1/12	1/12	1/12	1/10	1/10	Steel
			0.105	0.105	0.105	NP	NP	Alum
48	56	34	1/10	1/12	1/10	1/10	1/10	Steel
			0.135	0.105	0.135	NP	NP	Alum
54	65	40	1/10	1/12	1/10	8	8	Steel
			0.135	0.105	0.135	NP	NP	Alum
60	72	44	8	10	8	NP	NP	Steel

* DIAMETER OF PIPE OF EQUAL PERIPHERY.
FOR SIZES LARGER THAN SHOWN ABOVE, USE STRUCTURAL PLATE
PIPE-ARCH, GA. STD. 2011A (SEE TABLE NO.2 FOR CIRCULAR PIPE)

HEIGHT OF FILL (H) IN FEET **	CLASS OF PIPE	TYPE OF BACKFILL
1 to 15	III	NORMAL
15 to 20	IV	NORMAL
20 to 30	V	NORMAL
30 to 50	V	IMPERFECT
50 to 70	V	IMPERFECT

FULTON COUNTY STANDARD DETAIL 521
PIPE CULVERTS (TABLES)

DATE	REVISIONS	DATE	REVISIONS

DGS/DRN/3HK/OMS
APPROVED: REW
DATE: 12-2-05

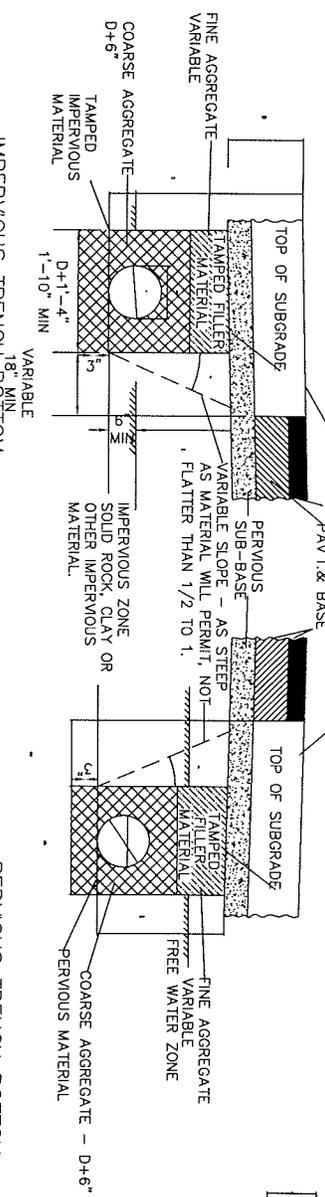


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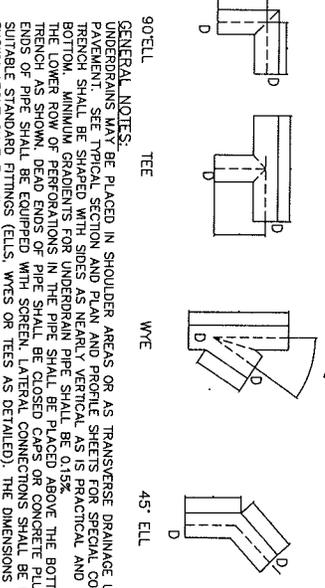
DRAWING NO.

521

PERFORATED UNDERDRAIN
N.T.S.



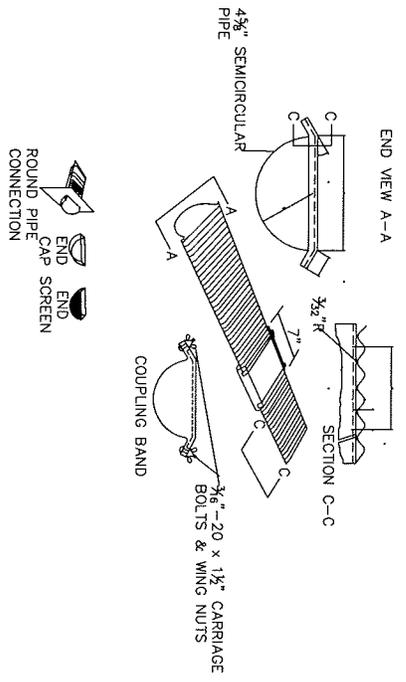
PERVIOUS TRENCH BOTTOM
(TO LOWER WATER TABLE)



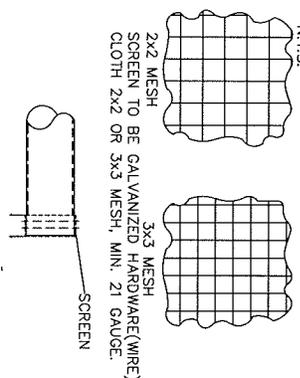
NOTE:
PERFORATED UNDERDRAIN PIPE WILL BE INSTALLED COMPLETE PRIOR TO PLACING PERVIOUS SUB-BASE MATERIAL.

NOTE:
FABRIC MATERIAL REQUIRED WHEN USING PERFORATED UNDERDRAIN.

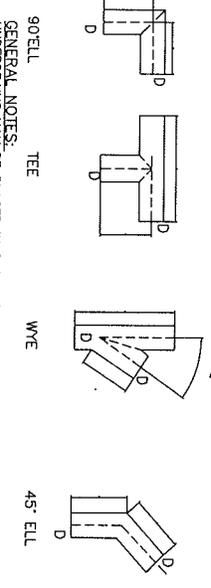
SEMICIRCULAR UNDERDRAIN PIPE



SCREEN FOR UNDERDRAIN
N.T.S.

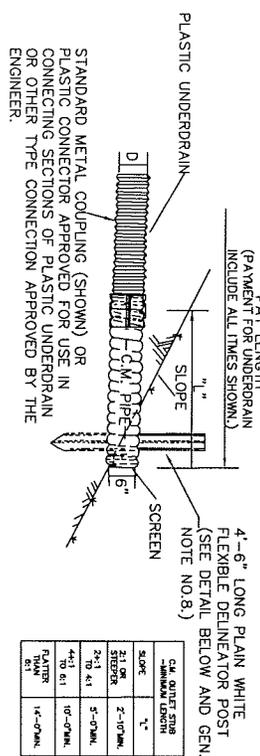


SCREEN TO BE PLACED OVER THE END OF PIPE AS SHOWN AND SECURED FIRMLY IN PLACE BY WRAPPING GALVANIZED WIRE AROUND PIPE AND SCREEN. OTHER METHODS FOR SECURING SCREEN FIRMLY OVER END OF PIPE MAY BE USED IF APPROVED BY THE ENGINEER.



GENERAL NOTES:
UNDERDRAINS MAY BE PLACED IN SHOULDER AREAS OR AS TRANSVERSE DRAINAGE UNDER PAVEMENT. SEE TYPICAL SECTION AND PROFILE SHEETS FOR SPECIAL CONDITIONS. TRENCH SHALL BE SHAPED WITH SIDES AS NEARLY VERTICAL AS IS PRACTICAL AND WITH A FLAT BOTTOM. MINIMUM GRADIENTS FOR UNDERDRAIN PIPE SHALL BE 0.15%. THE LOWER ROW OF PERFORATIONS IN THE PIPE SHALL BE PLACED ABOVE THE BOTTOM OF THE TRENCH AS SHOWN. DEAD ENDS OF PIPE SHALL BE CLOSED CAPS OR CONCRETE PLUGS. OUT-FALL ENDS OF PIPE SHALL BE EQUIPPED WITH SCREEN. LATERAL CONNECTIONS SHALL BE MADE WITH SHOULDER BROAD FITTINGS (ELLS, WYES OR TEES AS DETAILLED). THE DIMENSIONS (A THRU G) SHALL BE AS SHOWN. ALL CONNECTIONS SHALL BE MADE WITH THE SAME SIZES OF MATERIAL. UNDERDRAIN SHALL BE IN AGREEMENT WITH THE MANUFACTURER'S SPECIFICATIONS. EACH OUTLET END OF THE DRAINAGE SYSTEM SHALL BE MARKED WITH A 5'x4'x4" PRESBYTERIANE TREATED WOOD POST PLACED 3" IN THE GROUND IN A VERTICAL POSITION AT THE EXTREME OUTLET END AND ADJACENT TO THE SIDE OF THE PIPE.

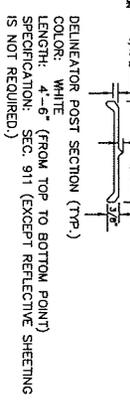
OUTLET DETAIL FOR PLASTIC UNDERDRAIN
(REQUIRED AT ALL OUTLETS WHERE PERFORATED PLASTIC UNDERDRAIN IS TERMINATED ON SLOPES).



CL. OUTLET STUB	SLOPE	MINIMUM LENGTH
1/2" DIA.	1"	2'-0" MIN.
3/4" DIA.	2"	3'-0" MIN.
1" DIA.	3"	4'-0" MIN.
1 1/4" DIA.	4"	5'-0" MIN.
1 3/4" DIA.	5"	6'-0" MIN.
2" DIA.	6"	7'-0" MIN.
2 1/2" DIA.	8"	9'-0" MIN.
3" DIA.	10"	11'-0" MIN.
3 1/2" DIA.	12"	13'-0" MIN.
4" DIA.	14"	15'-0" MIN.

NOTE: "L" = MINIMUM LENGTH OF CORRUGATED METAL PIPE SECTION. THE C.M. OUTLET STUB SECTION MAY BE PERFORMED OR MAY BE NON-PERFORATED.

NOTE: ALTERNATE FLEXIBLE DELINEATORS PERMITTED IF APPROVED BY THE D.O.T. LABORATORY.



FULTON COUNTY STANDARD DETAIL 523
PERFORATED UNDERDRAIN

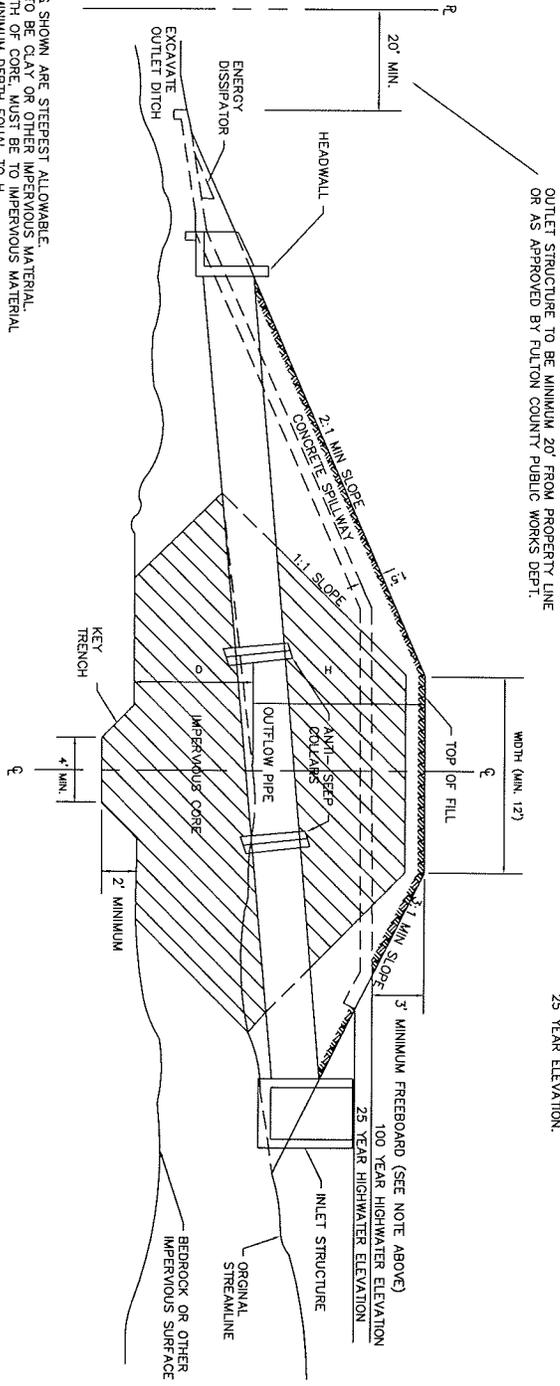
DATE	REVISIONS	DATE	REVISIONS

DSS /DRY/CHKD. OMS
APPROVED: REW
DATE: 12-2-05



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DRAWING NO. 523



NOTES:
 IT IS PREFERABLE TO HAVE A FREEBOARD OF 2 FEET MINIMUM. FOR SMALL DETENTION FACILITIES, AN ABSOLUTE MINIMUM FREEBOARD OF 1 FOOT SHALL BE PROVIDED. FOR DETENTION FACILITIES 12 FEET OR MORE IN LENGTH, A SMALL DETENTION FACILITY US 3 FEET OR LESS TO THE 25 YEAR ELEVATION.

ROCKES SHOWN ARE STEEPEST ALLOWABLE. CORE TO BE CLAY OR OTHER IMPERVIOUS MATERIAL. D. DEPTH OF CORE, MUST BE TO IMPERVIOUS MATERIAL OR A MINIMUM DEPTH EQUAL TO H. CORE TO BE PLACED IN 6" LAYERS & COMPACTED TO 95% STANDARD PROCTOR. WIDTH = (H/5) + 12.

EMERGENCY SPILLWAYS ARE TO BE CUT IN NATURAL GROUND WHERE APPLICABLE.

ANTI SEEP COLLARS REQ'D.

ALTERNATE DESIGNS MAY BE APPROVED OR WILL BE CONSIDERED BY FULTON COUNTY PUBLIC WORKS.

PROVIDE CONCRETE OR ALUMINUM FOR OUTFLOW PIPE AND OUTLET STRUCTURE MATERIAL

FULTON COUNTY STANDARD DETAIL 525
 EARTHFILL DAM
 FOR
 DETENTION PONDS

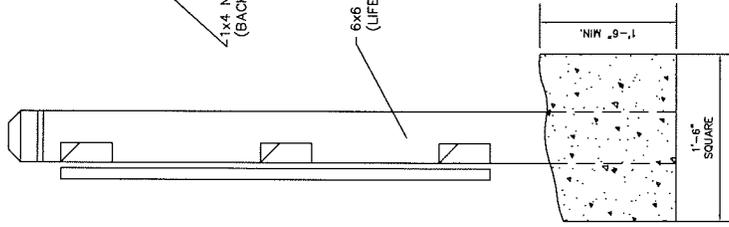
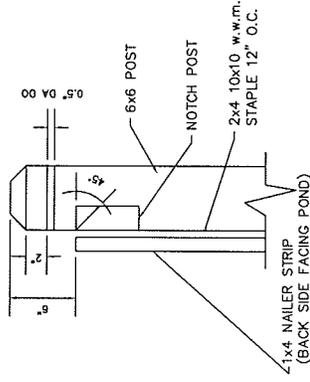
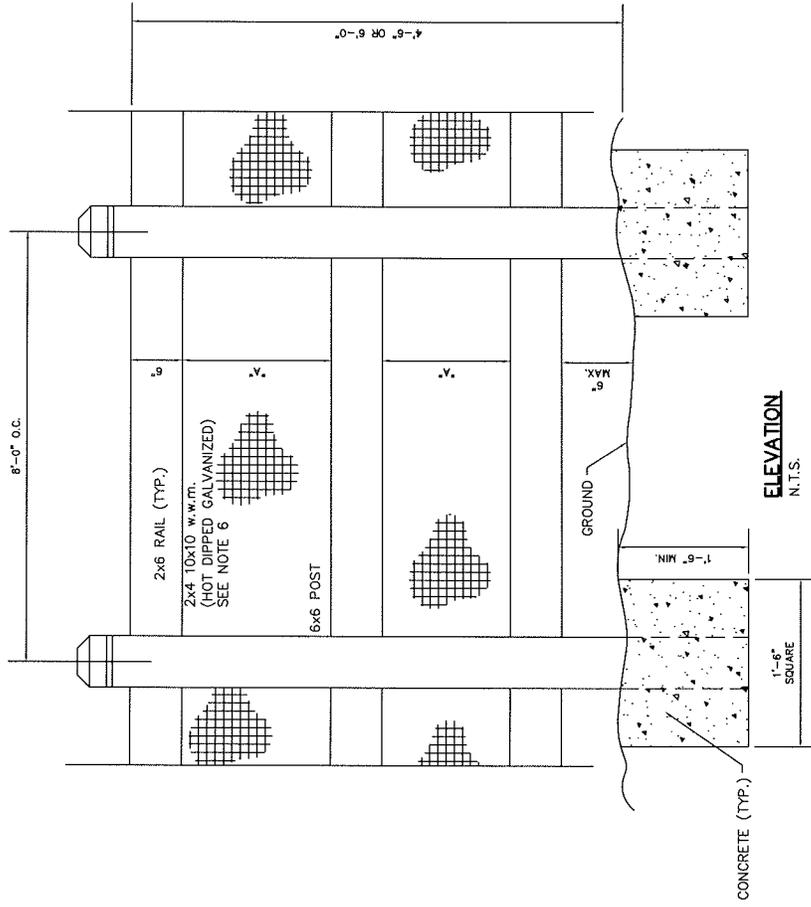
DATE	REVISIONS	DATE	REVISIONS

DSS/DRN/CHKD/CMS
 APPROVED: _____
 DATE: 12-2-05



FULTON COUNTY PUBLIC WORKS
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DRAWING NO. 525



- NOTES:
1. ALL FASTENERS TO BE HOT-DIPPED GALVANIZED.
 2. 2x4 10x10 w.w.m. TO BE HOT-DIPPED GALVANIZED.
 3. CONCRETE SHALL BE 2500 P.S.I.
 4. A 4'-6" JIG FENCE CAN BE ERRECTED WHEN THE POND IS 3'-0" OR LESS TO THE 25 YEAR STORM ELEVATION.
 5. A FENCE IS ALWAYS REQUIRED.
 6. OTHER WIRE GAUGES CAN BE ACCEPTED AS REQUIRED BY ENGINEER.
 7. FENCE TO BE PLACED OUTSIDE OF ACCESS.
 8. ACCESS ROAD TO BE 10' INSIDE OF FENCE.

DRAWING NO.
526

FULTON COUNTY PUBLIC WORKS
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DGS/DRN/CHKD: CMS
APPROVED: REW
DATE: 12-2-05

DATE	REVISIONS	DATE	REVISIONS

FULTON COUNTY STANDARD DETAIL 526
FENCE DETAIL FOR
DETENTION PONDS
(ATL TO CHAIN LINK)

FULTON COUNTY STANDARD DETAIL 527
 FENCE DETAIL FOR
 DETENTION PONDS

DATE	REVISIONS

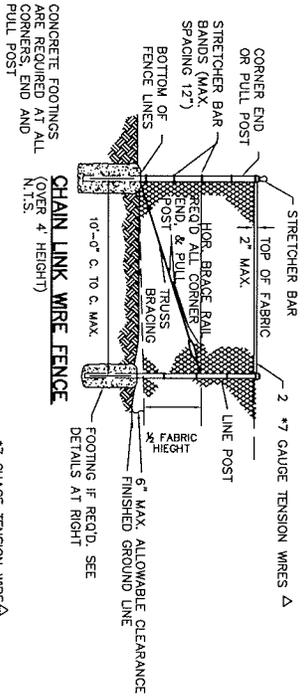
DATE	REVISIONS

DGS/DRN/CHKD/CMS
 APPROVED: _____
 DATE: 12-2-05

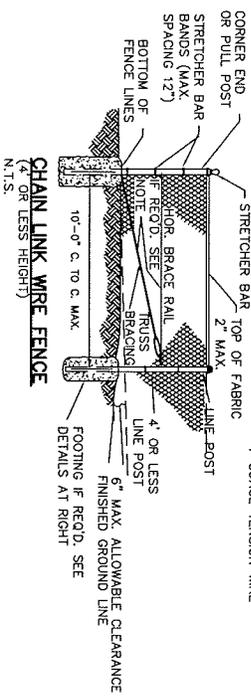


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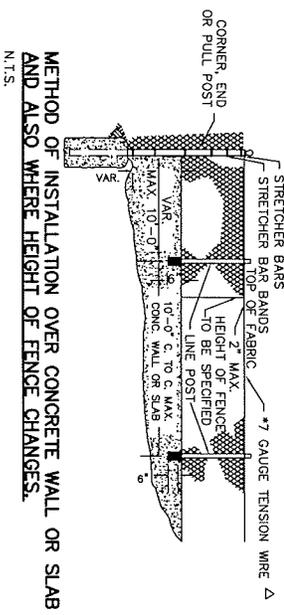
DRAWING NO. 527



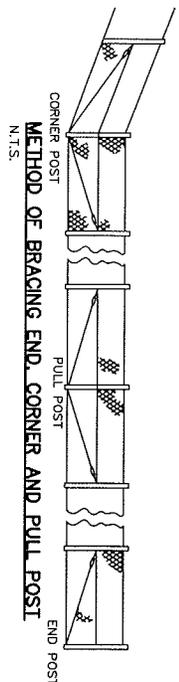
CHAIN LINK WIRE FENCE
 CONCRETE FOOTINGS ARE REQUIRED AT ALL CORNERS, END AND PULL POST



CHAIN LINK WIRE FENCE
 (4\"/>



METHOD OF INSTALLATION OVER CONCRETE WALL OR SLAB AND ALSO WHERE HEIGHT OF FENCE CHANGES.
 N.T.S.



METHOD OF BRACING END, CORNER AND PULL POST
 N.T.S.

NOTES:
 FABRIC SHALL BE FASTENED TO LINE POST AT INTERVALS NOT GREATER THAN 14\"/>

Δ HOG RINGS AT 24\"/>

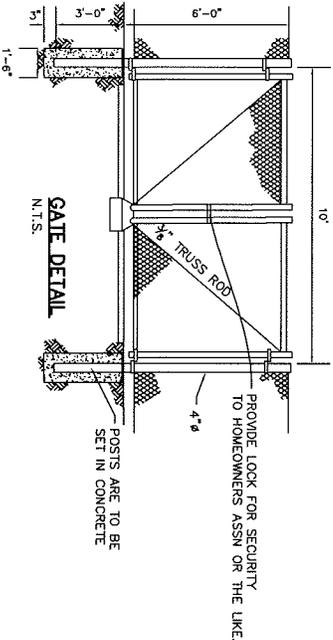
WHERE A PROPERTY OWNER'S CHAIN LINK WIRE FENCE HAS TO BE REPLACED BY THE DEPARTMENT AS PART OF THE CONSTRUCTION PROJECT, AND THE EXISTING FENCE HAD A TOP RAIL, THEN THE NEW REPLACEMENT FENCE SHALL HAVE A SIMILAR TYPE RAIL

Δ HOG RINGS SHALL BE INSTALLED TO THE SPACE BE REQUIRED AT ALL CORNER, END AND PULL POSTS EXCEPT WHERE A CONTINUOUS TOP RAIL IS SPECIFIED (SEE NOTE ABOVE) WITH A FENCE 4 FT. OR LESS IN HEIGHT.

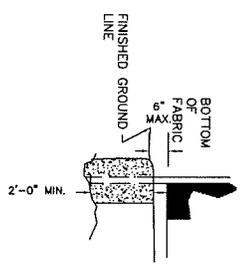
Δ ALTERNATE: TYPE 'C' OR 'D' POSTS OR 2 1/2\"/>

APPROVED BY THE D.O.T LABORATORY MAY BE DRIVEN TO A MINIMUM DEPTH OF THREE (3) FEET INSTEAD OF CONCRETE FOOTING SHOWN PROVIDING SOIL IS EITHER CLASS I, II, III, OR V SOIL. CONCRETE FOOTING REQUIRED FOR LINE POSTS INSTALLED IN MARSHY OR SWAMPY AREAS (CLASS IV SOILS).

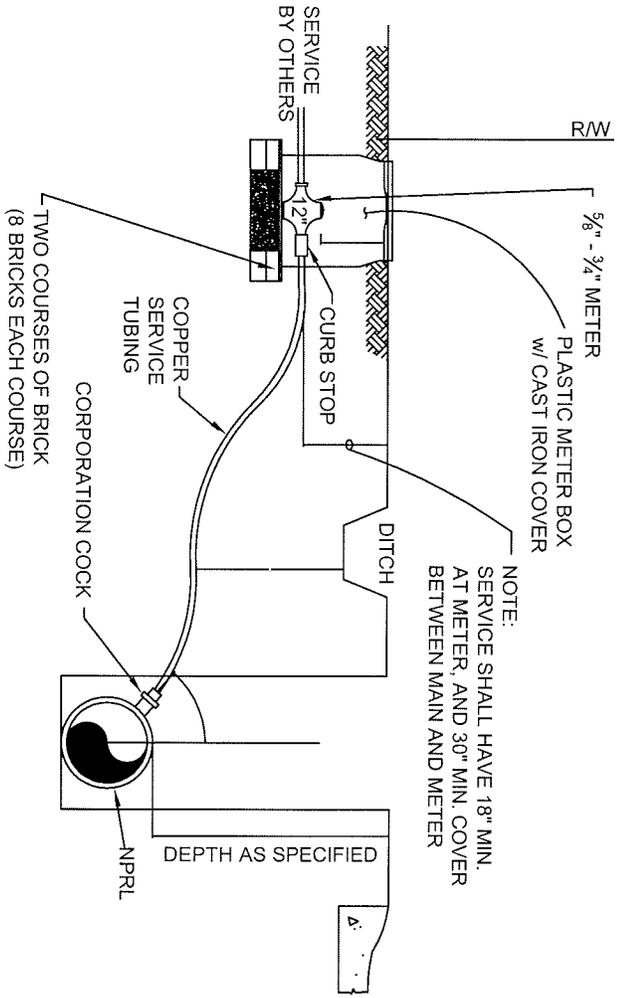
ALL CORNER, END AND PULL POSTS SHALL HAVE CONCRETE FOOTINGS AS SHOWN.



GATE DETAIL
 N.T.S.



FINISHED GROUND
 BOTTOM OF FABRIC I



- NOTES:**
1. SERVICE LINE SHALL BE 3/4" DIAMETER FROM MAIN TO METER
 2. USE ALL FLARE JOINTS
 3. INSTALLATION SHALL ALLOW ADEQUATE ROOM TO REMOVE AND/OR REPAIR METER.
 4. METER BOX SHALL BE APPROXIMATELY 12" x 18".

FULTON COUNTY STANDARD DETAIL 601
 WATER METER INSTALLATION

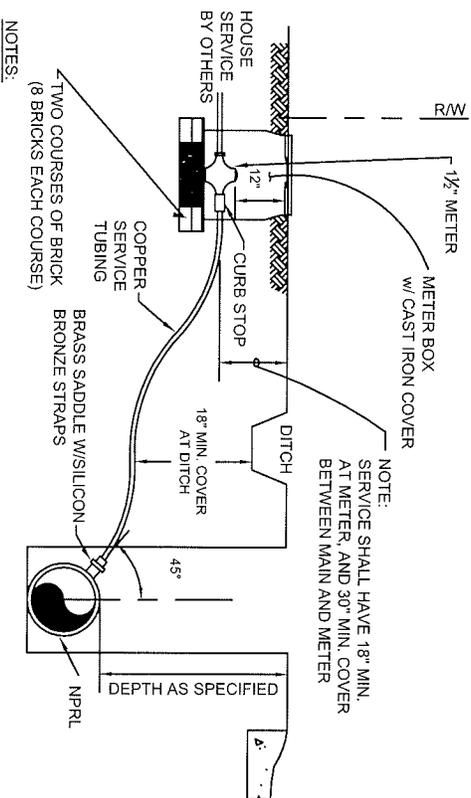
DATE	REVISIONS	DATE	REVISIONS

DES./DRN./CHKD: CMS
 APPROVED: ML
 DATE: 12-2-05

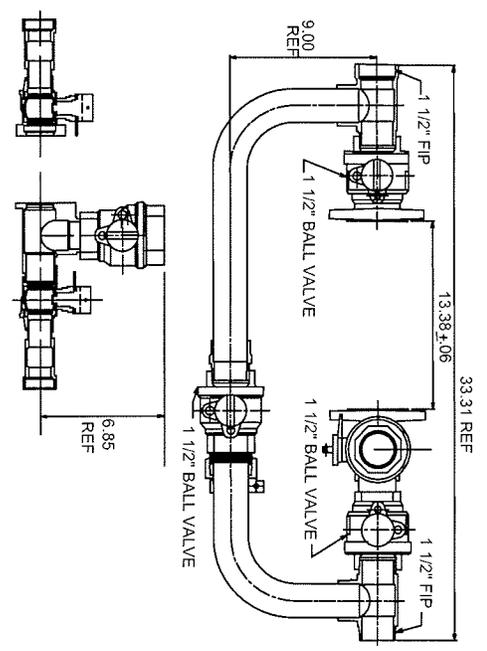


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DRAWING NO.
 601



- NOTES:
1. SERVICE LINE SHALL BE 1 1/2" FROM THE MAIN TO THE METER.
 2. USE ALL COMPRESSION GRIP JOINT.
 3. INSTALLATION SHALL ALLOW ADEQUATE ROOM TO REMOVE AND/OR REPAIR METER.
 4. METER BOX SHALL BE APPROXIMATELY 24" x 36".



FULTON COUNTY STANDARD DETAIL 603
1 1/2" METER INSTALLATION

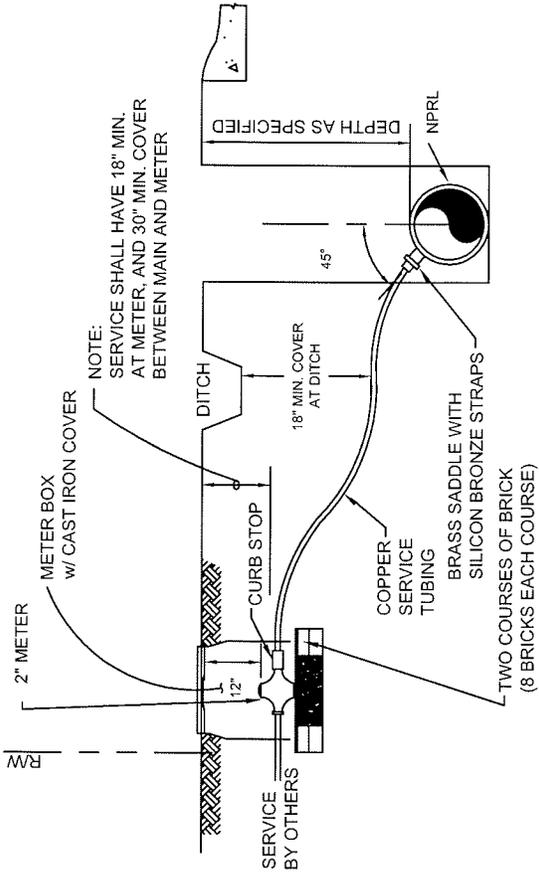
DATE	REVISIONS	DATE	REVISIONS

DES/DRN/CHKD: CMS
APPROVED: ML
DATE: 12-2-05

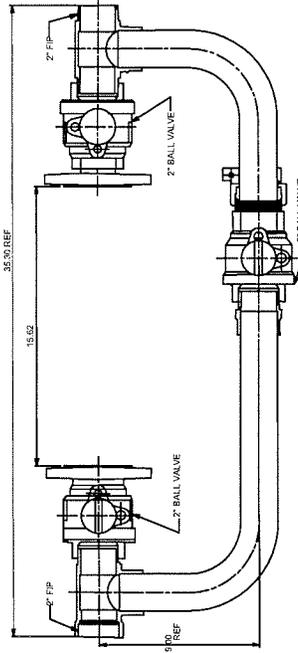


FULTON COUNTY PUBLIC WORKS
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DRAWING NO. 603



- NOTES:**
1. SERVICE LINE SHALL BE 2" DIAMETER FROM THE MAIN TO THE METER
 2. USE ALL COMPRESSION GRIP JOINTS.
 3. INSTALLATION SHALL ALLOW ADEQUATE ROOM TO REMOVE AND/OR REPAIR METER.
 4. METER BOX SHALL BE APPROXIMATELY 24" x 36".



FULTON COUNTY STANDARD DETAIL 604
2" METER INSTALLATION

DATE	REVISIONS	DATE	REVISIONS

DCS/DRN/CHKD: CMS
APPROVED: ML
DATE: 12-2-05

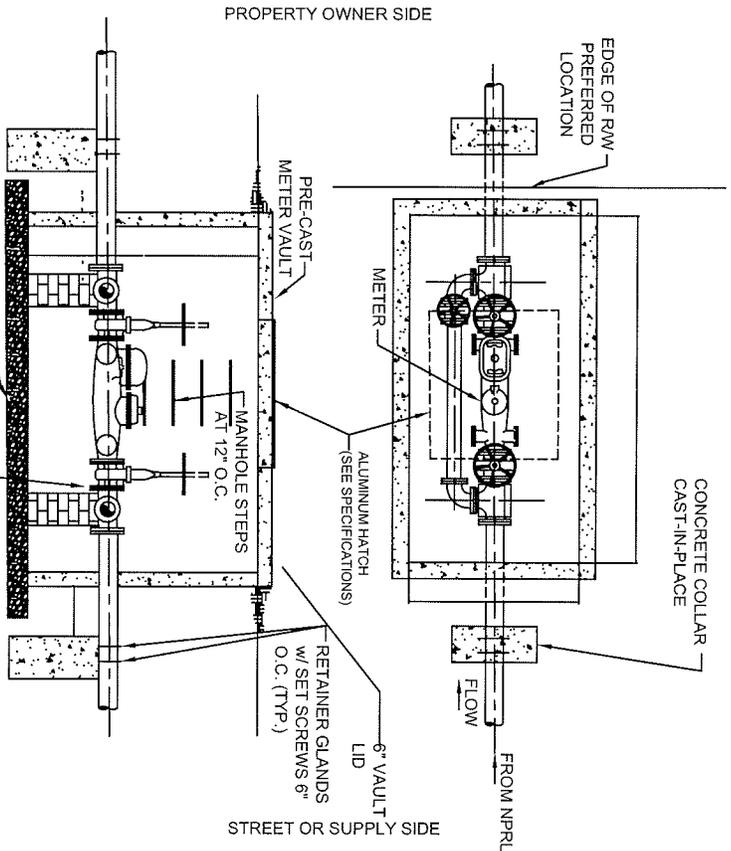


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DRAWING NO.

604

FULTON COUNTY STANDARD DETAIL 605
LARGE METERS AND VAULT



- NOTES: 8" GRAVEL (#57 STONE)
1. BOXES EXCEEDING 5' IN DEPTH MUST BE APPROVED BY FULTON COUNTY.
 2. WHEN METER BOX CANNOT BE LOCATED ENTIRELY ON RW, A PERMANENT EASEMENT SHALL BE OBTAINED TO PREVENT FENCES OR OTHER OBSTRUCTIONS FROM BEING ERECTED AROUND THE METER BOX.
 3. COVER OPENING & STEPS TO BE PLACED NEAREST THE METER.
 4. THE METER MUST BE INSTALLED WITH AT LEAST 8 DIAMETERS OF STRAIGHT PIPE SAME SIZE AS METER ON THE INLET SIDE TO PERMIT ON-SITE MAINTENANCE AND CALIBRATION. A STRAINER MAY BE PROVIDED IN LIEU OF THE STRAIGHT PIPE IN ACCORDANCE WITH THE METER MANUFACTURER'S RECOMMENDATIONS. AN INLET AND OUTLET GATE VALVE WITH B-PASS LINE ARE REQUIRED (SEE ILLUSTRATION).
 5. THESE BOXES ARE NOT TO BE INSTALLED IN TRAFFIC AREAS WITHOUT PRIOR PERMISSION FROM FULTON COUNTY.
 6. ALL VALVES AND FITTINGS INSIDE THE VAULT SHALL BE FLANGED.
 7. ALL FITTINGS OUTSIDE THE VAULT SHALL BE PUSH-IN JOINT WITH AMERICAN FAST-GRIP GASKETS OR APPROVED EQUAL.
 8. ALL METERS SHALL COME EQUIPPED WITH A TOUCHREAD OR TOUCHLESS SENSOR COMPATIBLE WITH FULTON COUNTY'S METER READING EQUIPMENT.
 9. THIS DETAIL ALSO AUTHORIZED FOR INSTALLATION OF 3" AND LARGER RE-USE METERS.
 10. HATCH SHALL BE 4" X 6" DOUBLE LEAF FLUSH MOUNT, 1/4" DIAMOND PLATE ALUMINUM DOORS LOCKABLE WITH A 5/8" ROD. HATCH SHALL BE BILCO # PDOM-3 OR PRE-APPROVED EQUAL FOR 6" & 8" METERS. HATCH SHALL BE 36" X 36" SINGLE LEAF FLUSH MOUNT 1/4" DIAMOND PLATE ALUMINUM DOOR LOCKABLE WITH 5/8" ROD. HATCH SHALL BE B LCO#PDM-5 OR PRE-APPROVED EQUAL FOR 3" & 4" METERS.

PROVIDE DUCTILE IRON FLANGED ADAPTER BETWEEN METER ASSEMBLY AND GATE VALVE.

METER SIZE	VAULT L	VAULT W	VAULT D	HATCH SIZE
3"	9'	5'	6'	36" X 36"
4"	9'	5'	6'	36" X 36"
6"	12'	6'	6'	4' X 6'
8"	12'	6'	6'	4' X 6'

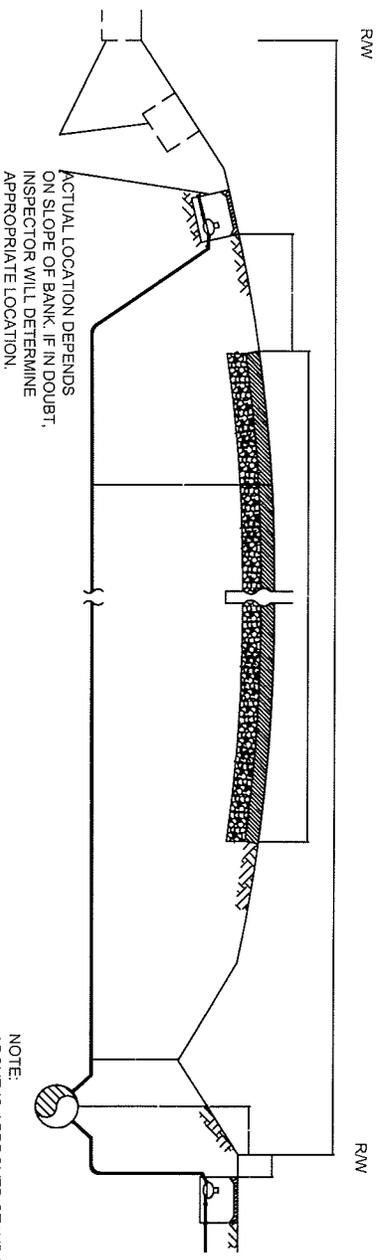
DATE	REVISIONS	DATE	REVISIONS

DES/DRN/CHKD: OMS
APPROVED: ML
DATE: 12-2-05



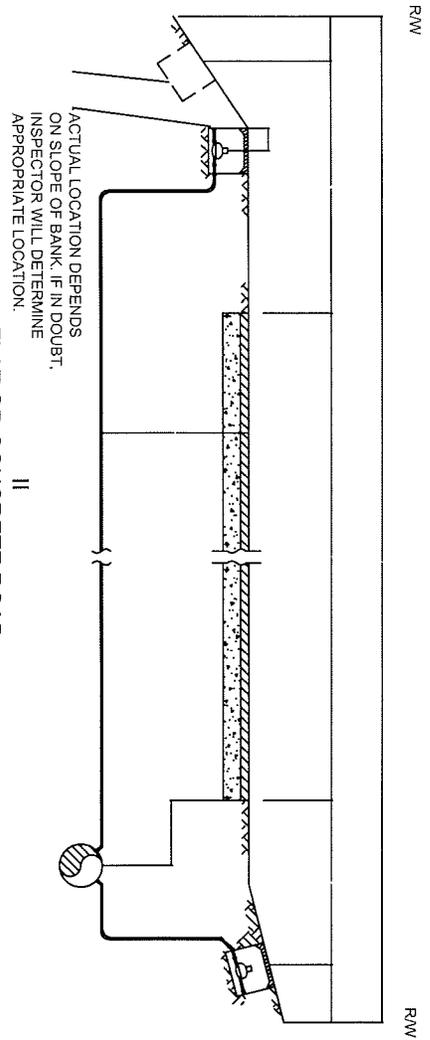
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404-730-7400 FAX: 404-224-0498

DRAWING NO. 605



**CROWNED ROAD
DITCH & EMBANKMENT**

NOTE:
ABOVE IS APPROVED STANDARD
METER LOCATION WHERE THE
METER MAY BE LOCATED OUTSIDE
OF THE RW WITHOUT PRIOR
ENGINEERING APPROVAL.



**FLAT OR CONCRETE ROAD
SLIGHT DITCH & EMBANKMENT**

FULTON COUNTY STANDARD DETAIL 607
METER LOCATIONS: 1/2"-2"

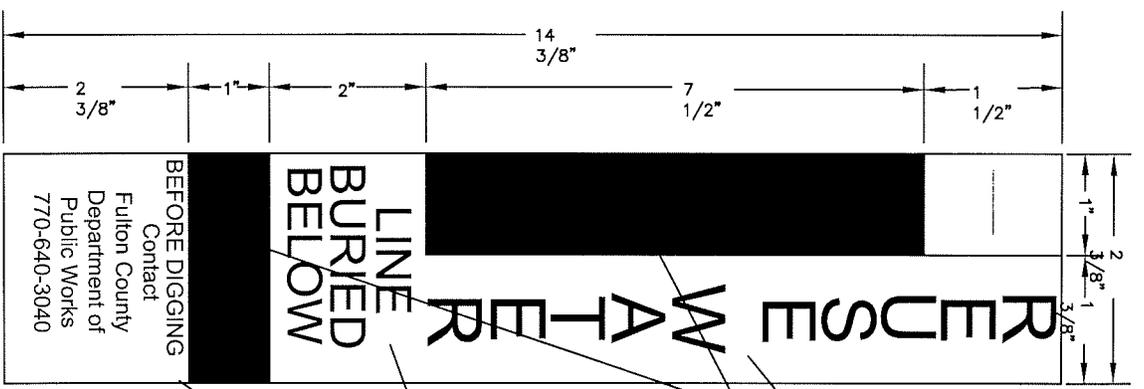
DATE	REVISIONS	DATE	REVISIONS

DGS /DNR/3HHD/CMS
APPROVED: ML
DATE: 12-2-05



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404-730-7400 FAX: 404-224-0498

DRAWING NO.
607



NOTES

1. LABELS TO BE PROVIDED BY FULTON COUNTY INSPECTOR AND PROJECT MANAGER
 2. LABELS TO BE PLACED ON BOTH SIDES OF WHITE DRIVABLE MARKERS - CARSONITE #CIB-380
 3. MARKERS TO BE INSTALLED WITH EACH VALVE OR AS DIRECTED BY FULTON COUNTY
 4. LINE MARKERS TO BE INSTALLED AS DIRECTED BY FULTON COUNTY
- BLACK LETTERING ON PURPLE BACKGROUND (Color to be approved by Fulton County)
- WHITE LETTERING ON WHITE BACKGROUND

Substitute "VALVE" for valve marker labels

BLACK LETTERING ON WHITE BACKGROUND

BEFORE DIGGING
Contact
Fulton County
Department of
Public Works
770-640-3040

FULTON COUNTY STANDARD DETAIL 609
LINE/VALVE MARKER LABEL

DATE	REVISIONS	DATE	REVISIONS

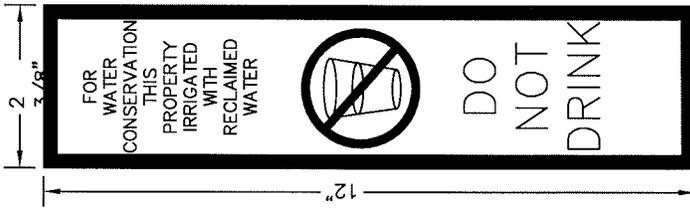
DGS/DRN/CHKD: OMS
APPROVED: ML
DATE: 12-2-05



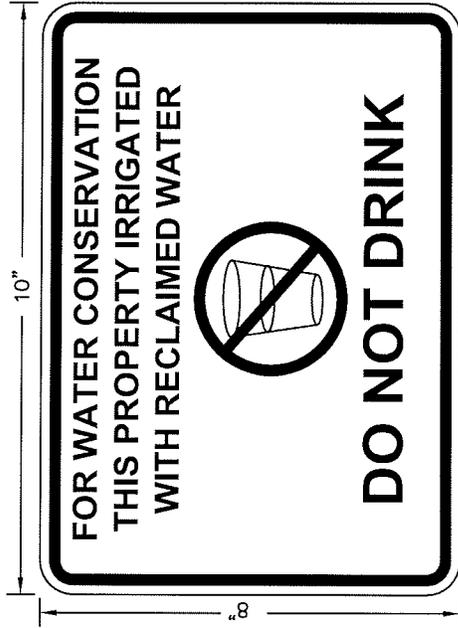
FULTON COUNTY PUBLIC WORKS
141 PRYOR ST. ATLANTA, GA. 30303
404-730-7400 FAX: 404-224-0498

DRAWING NO.

609



LABEL SIGNS
N.T.S.



STEEL OR PLASTIC

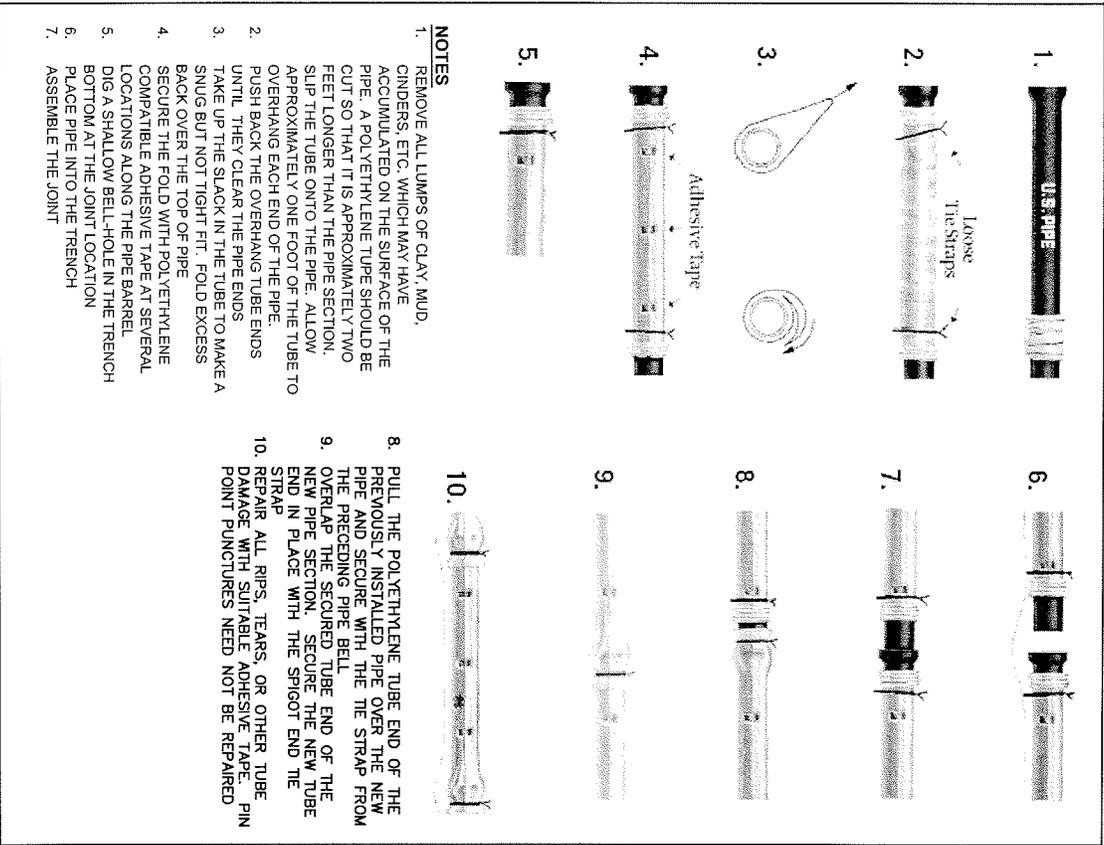
SIGNS
N.T.S.

NOTES

1. SIGNS ARE TO BE PLACED AT EACH USER OF RECLAIMED WATER NEAR THE RECLAIMED METER
2. ALL SIGNS ARE WHITE WITH PURPLE LETTERING (COLOR TO BE APPROVED BY FULTON COUNTY)
3. STEEL OR PLASTIC SIGNS MAY BE AFFIXED TO OTHER POSTS OR STRUCTURES THAN THOSE PROVIDED BY FULTON COUNTY
4. LABEL SIGNS MUST BE AFFIXED TO WHITE DRIVABLE MARKER #CIB-380 (MANUFACTURED BY CARSONITE INTERNATIONAL) AND PROTRUDE ABOVE FINISHED GRADE NO MORE THAN 36" AND NO LESS THAN 18"

FULTON COUNTY STANDARD DETAIL 610 CUSTOMER SIGNS	 FULTON COUNTY	DCS/DRN/CHKD: CMS APPROVED: ML DATE: 12-2-05	DRAWING NO.
			FULTON COUNTY PUBLIC WORKS 141 PRYOR ST. ATLANTA, GA. 30303 404-730-7400 FAX: 404-224-0488

FULTON COUNTY STANDARD DETAIL 611
 POLYETHYLENE ENCASEMENT INSTALLATION



- NOTES**
1. REMOVE ALL LUMPS OF CLAY, MUD, CINDERS, ETC. WHICH MAY HAVE ACCUMULATED ON THE SURFACE OF THE PIPE. A POLYETHYLENE TUBE SHOULD BE CUT SO THAT IT IS APPROXIMATELY TWO FEET LONGER THAN THE PIPE SECTION. SLIP THE TUBE ONTO THE PIPE. ALLOW APPROXIMATELY ONE FOOT OF THE TUBE TO OVERHANG EACH END OF THE PIPE.
 2. PUSH BACK THE OVERHANG TUBE ENDS UNTIL THEY CLEAR THE PIPE ENDS.
 3. TAKE UP THE SLACK IN THE TUBE TO MAKE A SNUG BUT NOT TIGHT FIT. FOLD EXCESS BACK OVER THE TOP OF PIPE.
 4. SECURE THE FOLD WITH POLYETHYLENE COMPATIBLE ADHESIVE TAPE AT SEVERAL LOCATIONS ALONG THE PIPE BARREL.
 5. DIG A SHALLOW BELL-HOLE IN THE TRENCH BOTTOM AT THE JOINT LOCATION.
 6. PLACE PIPE INTO THE TRENCH.
 7. ASSEMBLE THE JOINT.
 8. PULL THE POLYETHYLENE TUBE END OF THE PREVIOUSLY INSTALLED PIPE OVER THE NEW PIPE AND SECURE WITH THE TIE STRAP FROM THE PRECEDING PIPE BELL.
 9. OVERLAP THE SECURED TUBE END OF THE NEW PIPE SECTION. SECURE THE NEW TUBE END IN PLACE WITH THE SPIGOT END TIE STRAP.
 10. REPAIR ALL RIPS, TEARS, OR OTHER TUBE DAMAGE WITH SUITABLE ADHESIVE TAPE. PIN POINT PUNCTURES NEED NOT BE REPAIRED.

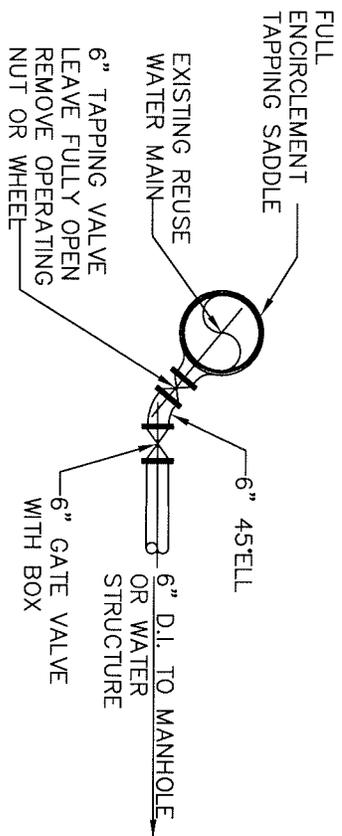
DATE	REVISIONS	DATE	REVISIONS

DGS/DRN/CHKD/CMS
 APPROVED: ML
 DATE: 12-2-05

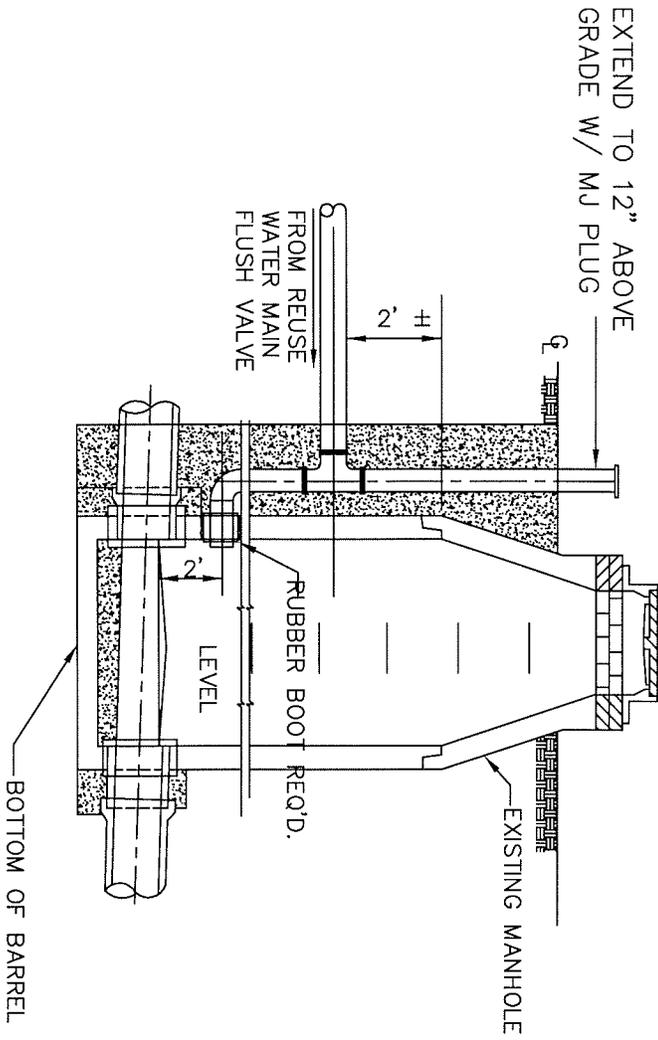


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DRAWING NO.
 611



REUSE TAP AND VALVE DETAIL



BOTTOM OF BARREL

FULTON COUNTY STANDARD DETAIL 613
 IN LINE FLUSH POINT DETAIL

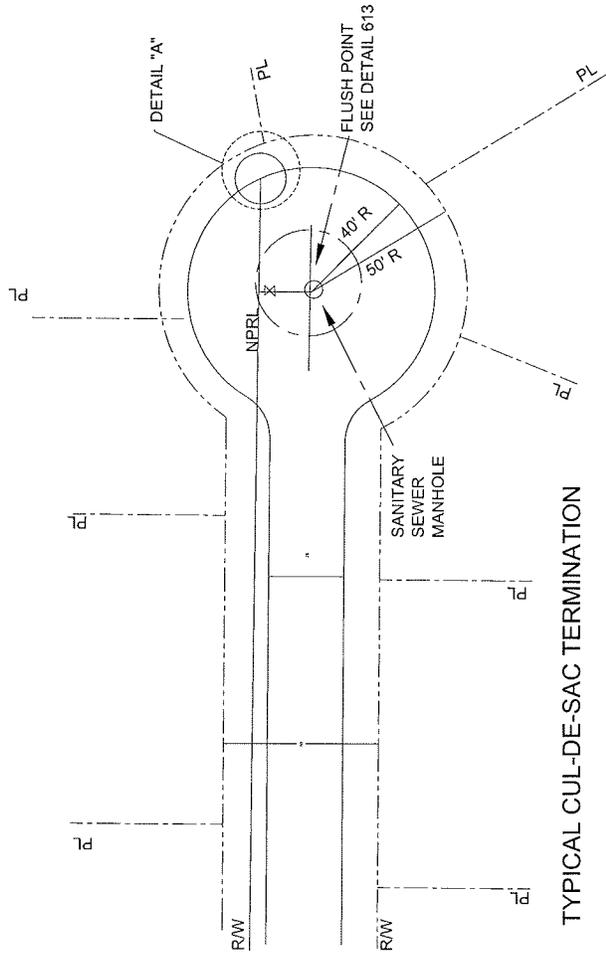
DATE	REVISIONS	DATE	REVISIONS

DES./DRN./CHKD./CNS
 APPROVED: ML
 DATE: 12-2-05

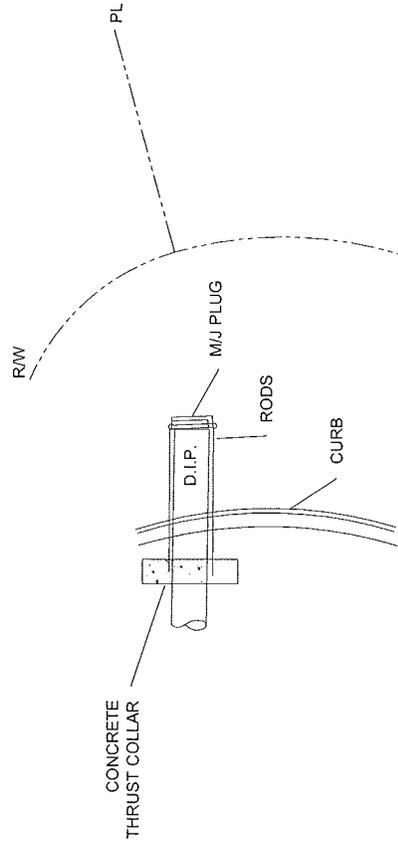


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DRAWING NO.
 613

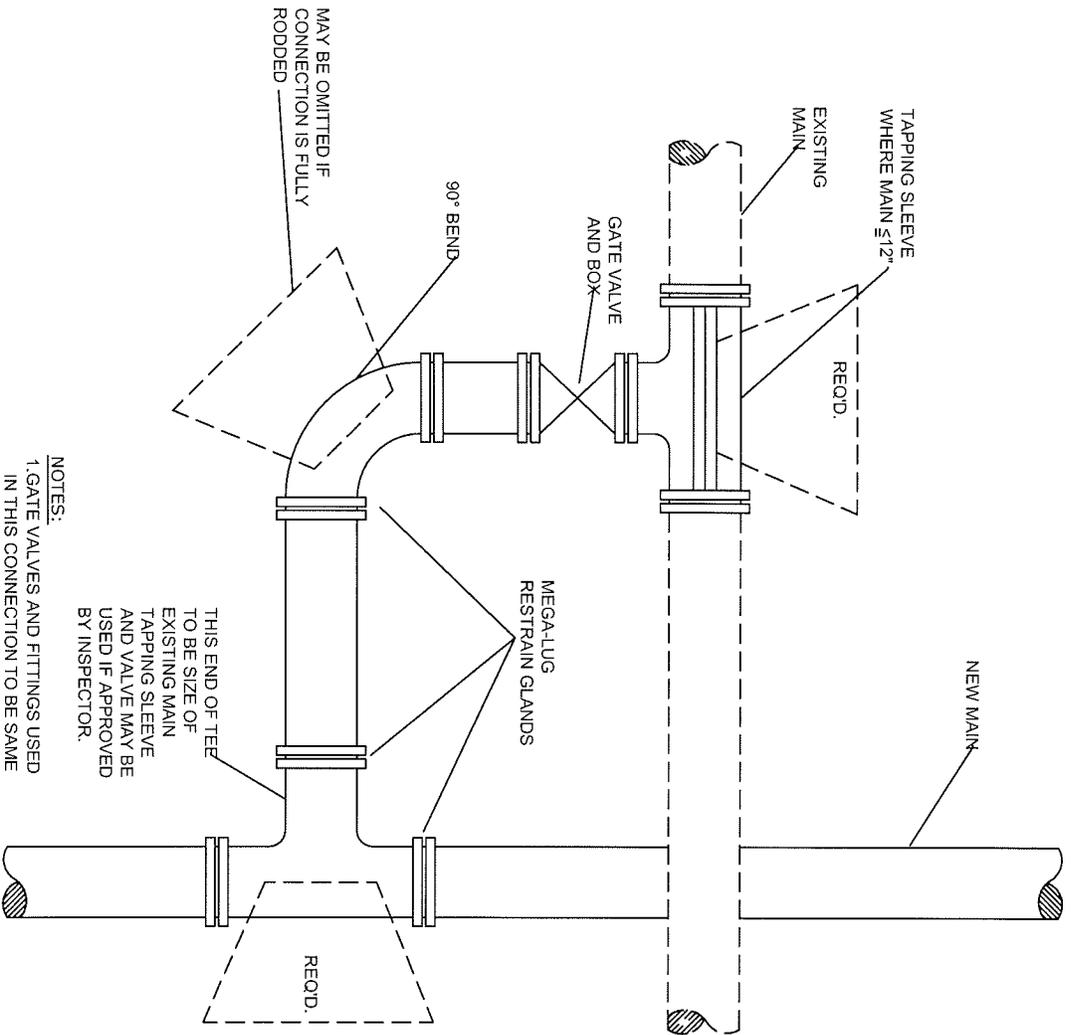


TYPICAL CUL-DE-SAC TERMINATION



DETAIL "A"
NOT TO SCALE

DRAWING NO. 614	 FULTON COUNTY	DGS/DRN/CHKD: CMS APPROVED: REW DATE: 12-02-05	FULTON COUNTY PUBLIC WORKS 141 PRYOR ST. ATLANTA, GA. 30303 404-730-7400 FAX: 404-730-6325
DATE REVISIONS DATE REVISIONS DATE REVISIONS	DATE REVISIONS DATE REVISIONS DATE REVISIONS	FULTON COUNTY STANDARD DETAIL 614 NPRL TERMINATION CUL-DE-SAC	FULTON COUNTY PUBLIC WORKS 141 PRYOR ST. ATLANTA, GA. 30303 404-730-7400 FAX: 404-730-6325



NOTES:
 1. GATE VALVES AND FITTINGS USED
 IN THIS CONNECTION TO BE SAME
 SIZE AS EXISTING MAIN WHERE
 EXISTING MAIN IS 12" OR SMALLER.

MAY BE OMITTED IF
 CONNECTION IS FULLY
 RODED

FULTON COUNTY STANDARD DETAIL 615
 ROUND CONNECTION DETAIL

DATE	REVISIONS	DATE	REVISIONS

DGS/DRN/GHKJ: CMS
 APPROVED: ML
 DATE: 12-2-05



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DRAWING NO.
 615

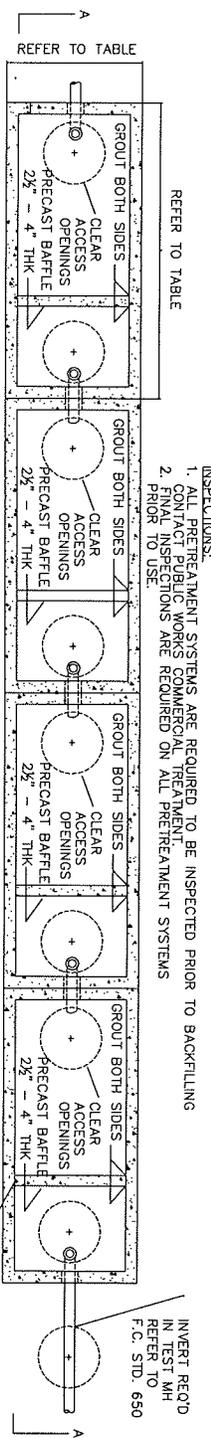
INDEX

DWG NO. DESCRIPTION

700	INDEX AND GENERAL NOTES
701	GREASE/SOLIDS/OIL INTERCEPTOR 4 TANKS IN SERIES
702	SINGLE TANKS
703	TRASH COMPACTOR AND DUMPSTER PAD DETAILS
704	SANITARY SEWER EASEMENT
705	STRUCTURAL PLATE PIPE CULVERT
706	DETAIL OF OPTIONAL STEEL PIER
707	SERVICE CONNECTION ON NEW SEWERS
708	SERVICE CONNECTION ON EXISTING SEWERS
709	SERVICE CONNECTION CLEANOUT
710	WATERSTOP COLLAR
711	SEWER LATERAL INSTALLATION DETAILS FOR CURBED STREETS

GENERAL NOTES

FULTON COUNTY STANDARD DETAIL INDEX AND GENERAL NOTES	DATE: _____	REVISIONS: _____	DATE: _____	REVISIONS: _____	DGS/DRN/CHKD: CMS APPROVED: _____ DATE: 12-02-05	 FULTON COUNTY	FULTON COUNTY PUBLIC WORKS 141 PRYOR ST. ATLANTA, GA. 30303 404-730-7400 FAX: 404-730-6325	DRAWING NO. 700



INSPECTIONS:
 1. PRETREATMENT SYSTEMS ARE REQUIRED TO BE INSPECTED PRIOR TO BACKFILLING
 2. FINAL INSPECTIONS ARE REQUIRED ON ALL PRETREATMENT SYSTEMS
 PRIOR TO USE.

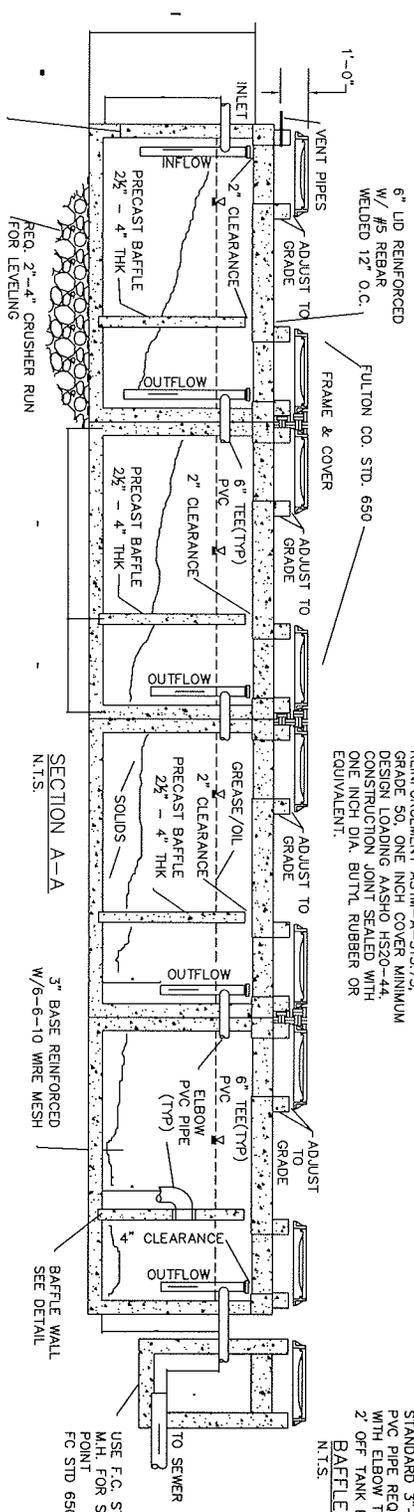
PLAN VIEW
 N.T.S.

*SPECIFICATIONS
 CONCRETE MINIMUM STRENGTH 4000
 PSI AT 28 DAYS STEEL
 REINFORCEMENT ASTM-A-515/575
 GRADE 50, ONE INCH COVER MINIMUM
 DOWEL BARS SHALL BE SEIZED TO
 CONSTRUCTION AND SEALED WITH
 ONE INCH DIA. BUTYL RUBBER OR
 EQUIVALENT.

INVERT RECD
 IN TEST MH
 REFER TO
 F.C. STD. 650

BAFFLE STANDS 50" IN HEIGHT
 AND IS 2 1/2" IN THICKNESS
 REINFORCED W/ 6-6-10 WIRE
 MESH

PIPE DIAMETER MAY VARY
 STANDARD 3"-5"
 PVC PIPE RECD ON WALL
 WITH ELBOW TURNED DOWN MAX.
 2" OFF TANK BOTTOM
 BAFFLE WALL
 N.T.S.



SECTION A-A
 N.T.S.

USE F.C. STD 650
 MH FOR SAMPLING
 POINT
 FC STD 650

*OUTSIDE DIMENSIONS				INLET TEE HGT.		OUTLET TEE HGT.	
GALLON CAPACITY	(L) LENGTH	(W) WIDTH	(H) HEIGHT	*VARIES BASED ON TANK SIZE		*VARIES BASED ON TANK SIZE	
3000	15'-7"	9'-7"	8'-6.5"	5'-2"		5'-0"	
1500	11'-0"	6'-0"	4'-7"	3'-10"		4'-0"	
1000	8'-6"	5'-3"	4'-6"	3'-10"		4'-0"	

*DIMENSIONS OF PREFAB CONCRETE TANKS MAY VARY BASED ON MANUFACTURER. HOWEVER THE GALLON CAPACITY MUST BE EQUIVALENT TO THE TANK SIZE SPECIFIED FOR INSTALLATION.

- NOTES:
1. ANY ALTERNATIVE PRETREATMENT SYSTEMS SHALL BE APPROVED BY WATER AND POLLUTION CONTROL SECTION PRIOR TO INSTALLATION.
 2. USE CONCRETE PREFAB TANKS.
 3. NO INTERCEPTOR SHALL BE LESS THAN 1,000 GALLONS WHERE SEATING IS LESS THAN 50 AND NO SINGLE CHAMBER INTERCEPTOR SHALL BE GREATER THAN 3000 GALLONS.
 4. FOR RESTAURANTS USE MINIMUM ONE 1515 GALLON TANK PER 100 SEATS.
 5. MULTI-CHAMBERED TANKS SHALL BE CONNECTED BY 8" ABS OR PVC PIPE. MIN. 6" PVC ACCEPTED.
 6. SAMPLING MANHOLE SHALL BE INSTALLED UNLESS EXCLUDED BY W&PC.
 7. ALL MANHOLES MUST ADJUST TO GRADE.
 8. DISTANCE BETWEEN MULTIPLE TANKS NO GREATER THAN 12".
 9. TEST MANHOLE NO GREATER THAN 6 FEET AFTER PRETREATMENT SYSTEM.
 10. MULTIPLE TANKS MUST BE PLACED IN TANDEM (SINGLE LINE).

FULTON COUNTY STANDARD DETAIL 701
 GREASE/SOLIDS/OIL INTERCEPTOR
 4 TANKS IN SERIES

DATE	REVISIONS	DATE	REVISIONS

DGS/D/RN/CHKO:JM
 APPROVED: REW
 DATE: 12-2-05

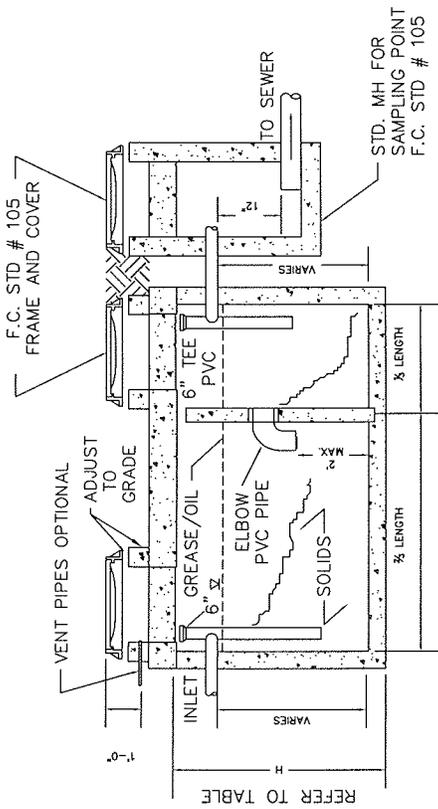
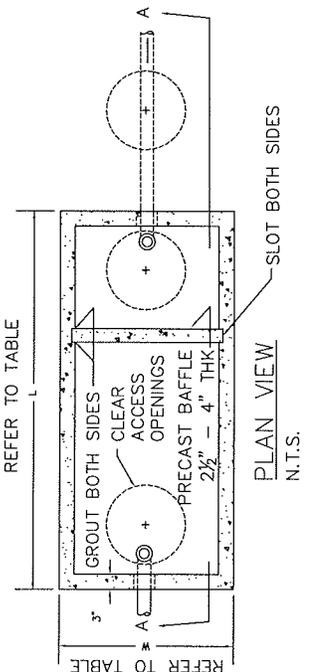
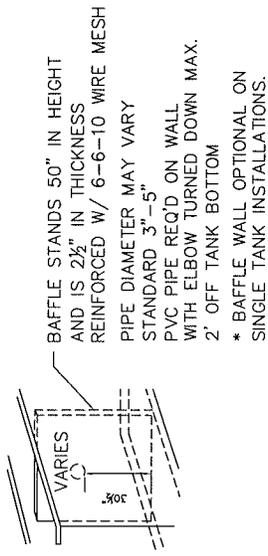


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DRAWING NO.
 701

GALLON CAPACITY	*OUTSIDE DIMENSIONS			INLET TEE HGT.	OUTLET TEE HGT.
	LENGTH	WIDTH	HEIGHT		
3000	15'-7"	9'-7"	8'-6.5"	*VARIES BASED ON TANK SIZE	5'-0"
1500	11'-0"	6'-0"	4'-7"		4'-0"
1000	8'-6"	5'-3"	4'-6"		4'-0"
750	7'-0"	4'-8"	4'-6"		4'-0"

*DIMENSIONS OF PREFAB CONCRETE TANKS MAY VARY BASED ON MANUFACTURER. HOWEVER THE GALLON CAPACITY MUST BE EQUIVALENT TO THE TANK SIZE SPECIFIED FOR INSTALLATION.



FULTON COUNTY STANDARD DETAIL 702
SINGLE TANK

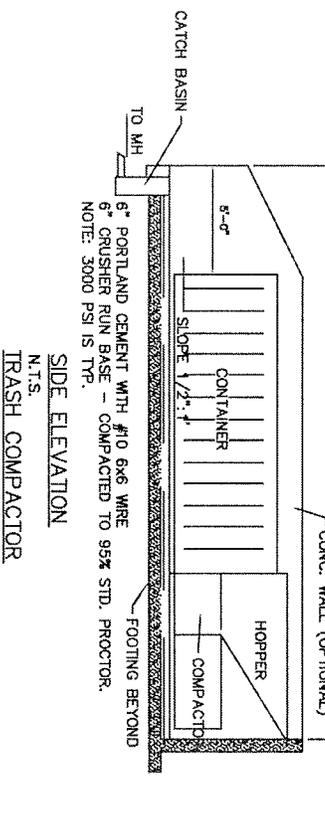
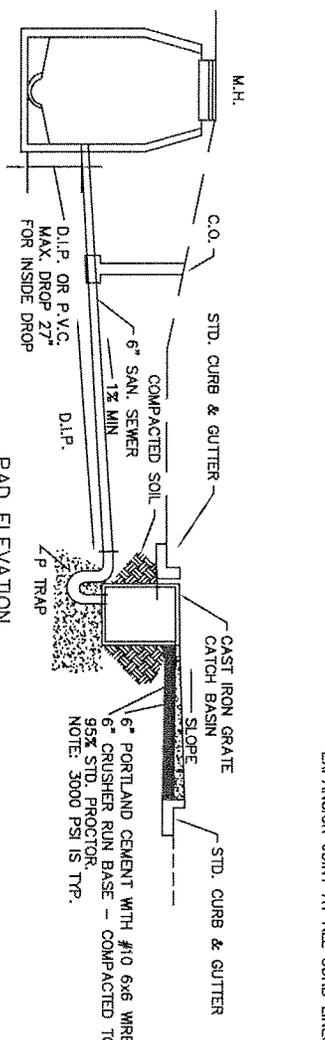
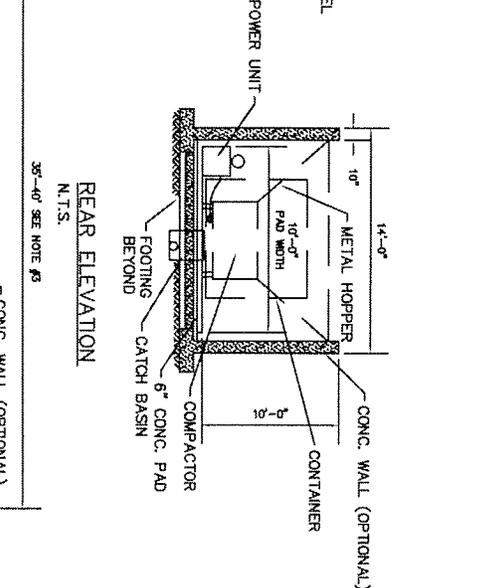
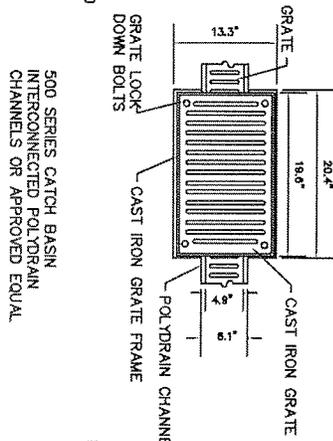
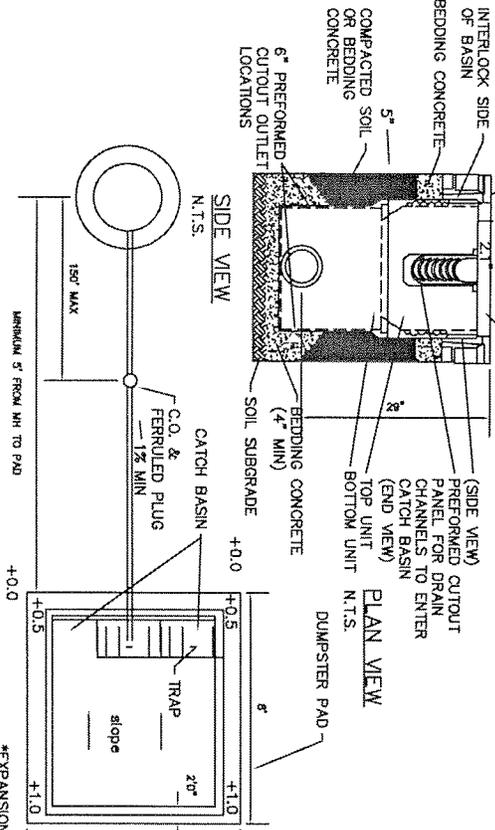
DGS/DRN/CHKD. JM
APPROVED: REW
DATE: 12-2-05

FULTON COUNTY

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DRAWING NO. 702

NOTE: CHANNELS MAY ALSO ENTER CATCH BASIN ON SIDES THROUGH PREFORMED KNOCKOUT PANELS.
CAST IRON GRATE FRAME



- NOTES:
1. WATER BIBB REQUIRED WITHIN 50' OF PAD FOR CLEANSING.
 2. APPROVAL FROM HEALTH DEPT. REQUIRED.
 3. COMPACTOR PAD TO BE 10'-0" WIDE AND A LENGTH OF 5'-0" GREATER THAN THE COMBINED LENGTH OF THE COMPACTOR AND CONTAINER.
 4. RUBBER BOOT REQUIRED FOR P.V.C. PIPE. (MANHOLE CONNECTOR) WATER BIBB TO HAVE BACK FLOW PREVENTER.
 5. DO NOT CONNECT DRAIN TO GREASE TRAP. SURFACE WATER RUNOFF MUST BE SLOPED AWAY FROM PAD.
 6. DO NOT ALLOW STORM WATER RUNOFF ON PAD.
 7. 4 FOOT CHAIN LINK FENCE WITH 3'-4 FOOT ACCESS GATE IS REQUIRED AROUND ALL COMPACTORS AND HOPPERS.

FULTON COUNTY STANDARD DETAIL 703
TRASH COMPACTOR
AND
DUMPSTER PAD DETAILS

DATE	REVISIONS	DATE	REVISIONS

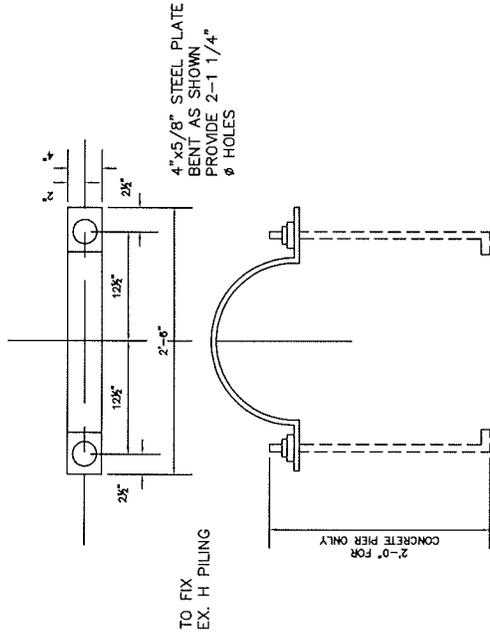
DGS/DEN/CHKD:JM
APPROVED: REW
DATE: 12-2-05



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DRAWING NO. 703

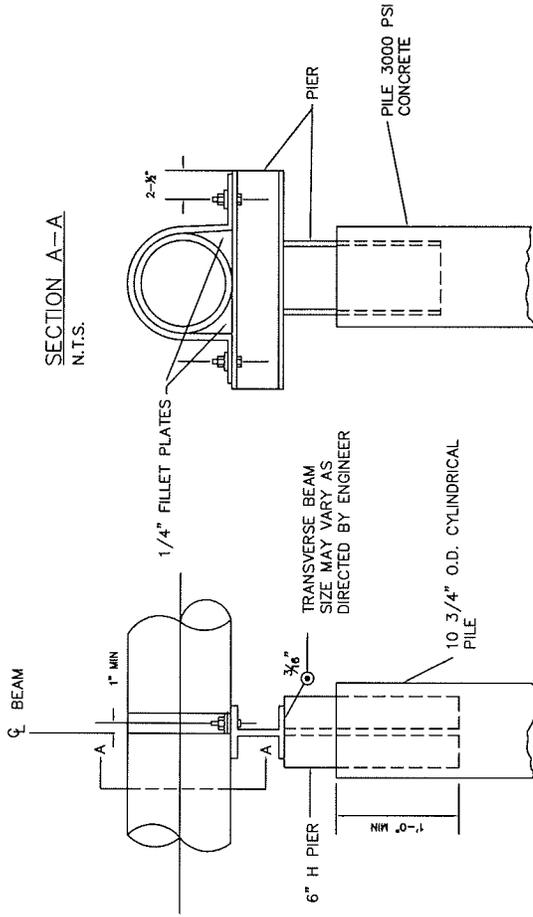
DETAIL OF CLAMP
N.T.S.



2-1" ϕ STAINLESS STEEL ANCHOR BOLTS
WITH A.S.A. HEX
NUT AND WASHERS

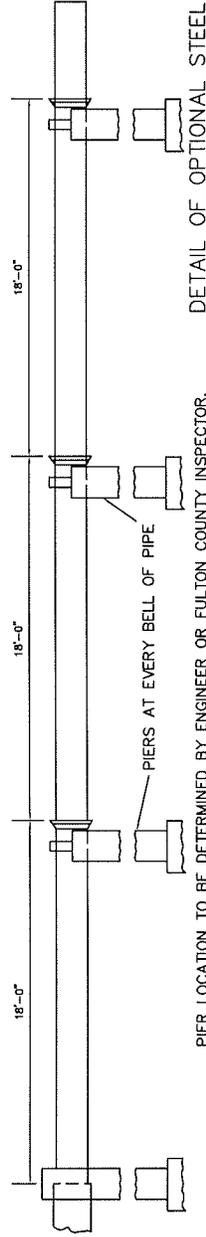
NOTE:
ENGINEER TO SUBMIT DESIGN.

SECTION A-A
N.T.S.



NOTE:
PILE TO BE DRIVEN TO REFUSAL OR 10 TON
BEARING MIN., THEN FILLED WITH 3000 P.S.I. CONCRETE.
TRANSVERSE BEAM TO BE WELDED TO PIER BEFORE SETTING CONCRETE.

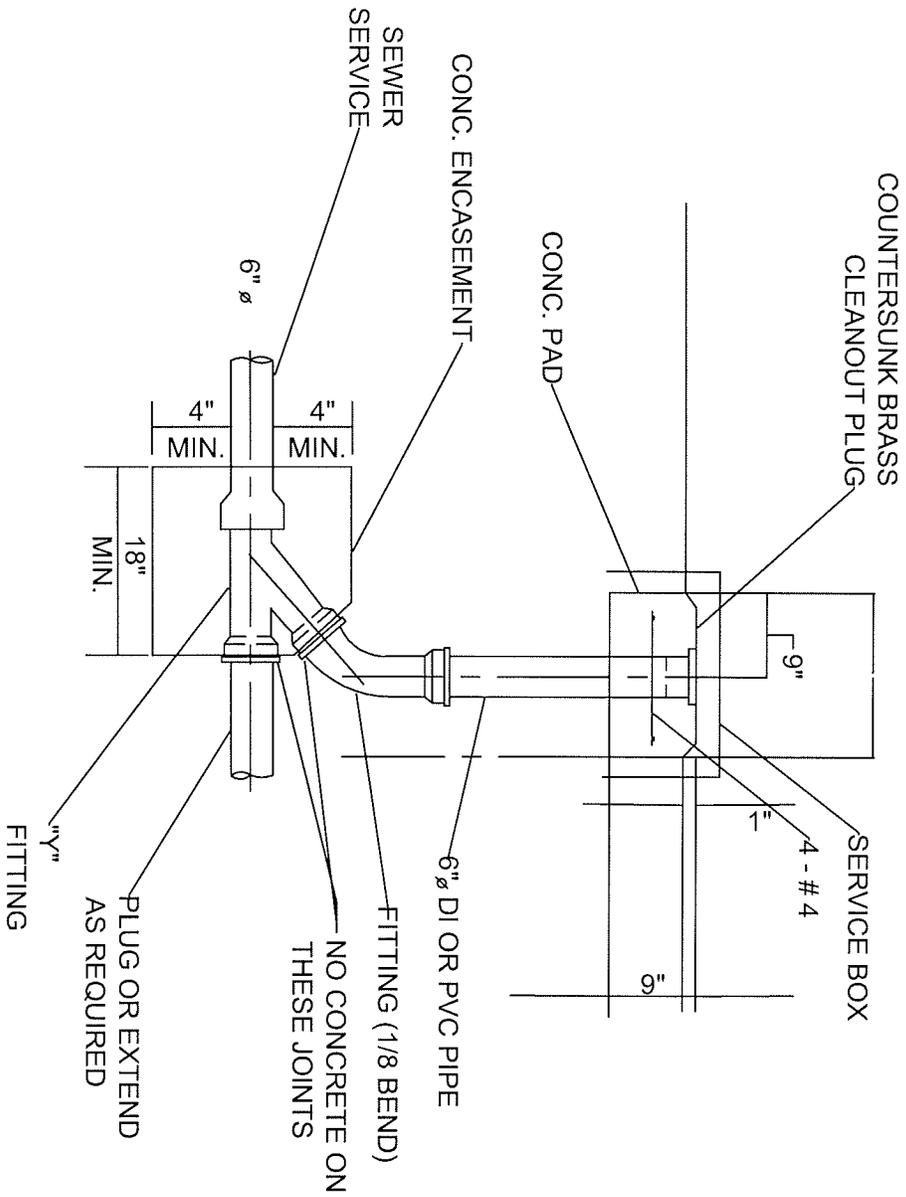
DETAIL OF OPTIONAL STEEL PIER
N.T.S.



PIER LOCATION TO BE DETERMINED BY ENGINEER OR FULTON COUNTY INSPECTOR.

FULTON COUNTY STANDARD DETAIL 706 DETAIL OF OPTIONAL STEEL PIER	DATE _____ REVISIONS _____		DCS/DRN/CHKD:JM APPROVED: REW DATE: 12-2-05		FULTON COUNTY 	FULTON COUNTY PUBLIC WORKS 141 PRYOR ST. ATLANTA, GA. 30303 404-730-7400 FAX: 404-224-0498	DRAWING NO. 706

NOTES:
 1. TOP OF SERVICE BOX SHALL BE FLUSH WITH FINAL SURFACE IN SIDEWALKS AND PAVED AREAS.



FULTON COUNTY STANDARD DETAIL 709
 SERVICE CONNECTION CLEANOUT

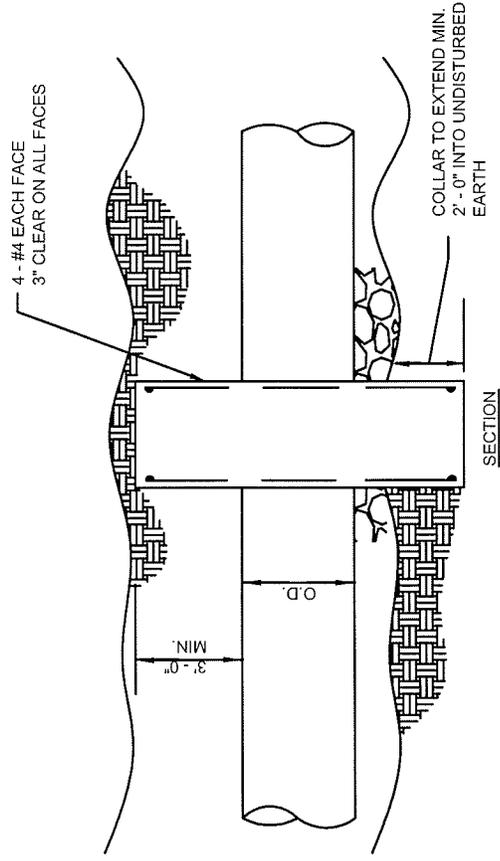
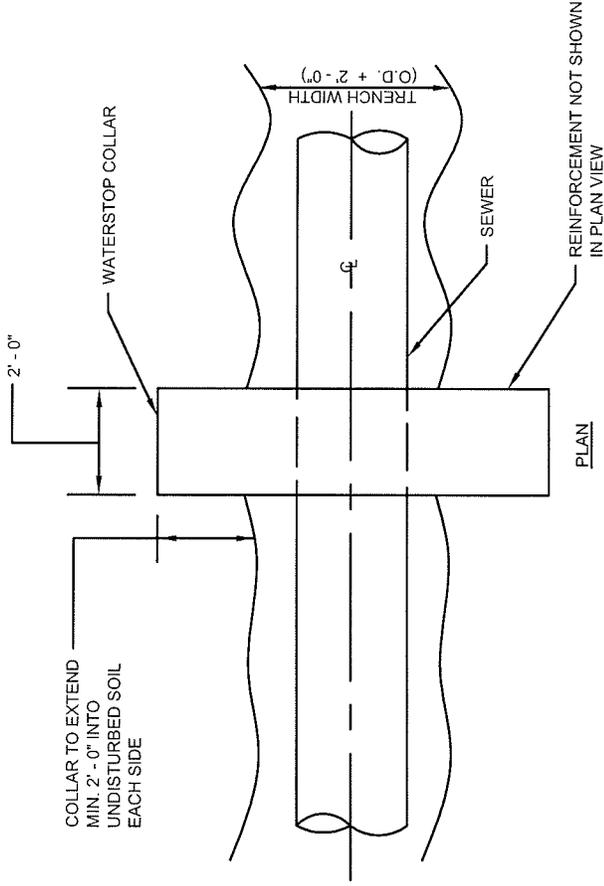
DATE	REVISIONS	DATE	REVISIONS

DGS/DRN/CHKD: OMS
 APPROVED: _____
 DATE: 12-2-05



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DRAWING NO.
 709



DRAWING NO.
710

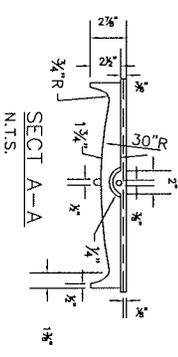
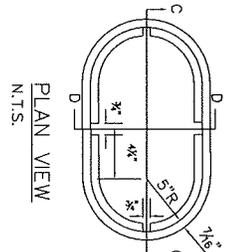
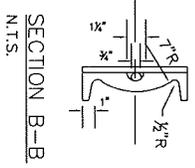
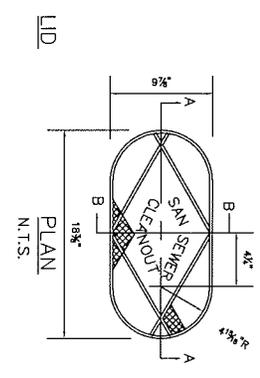
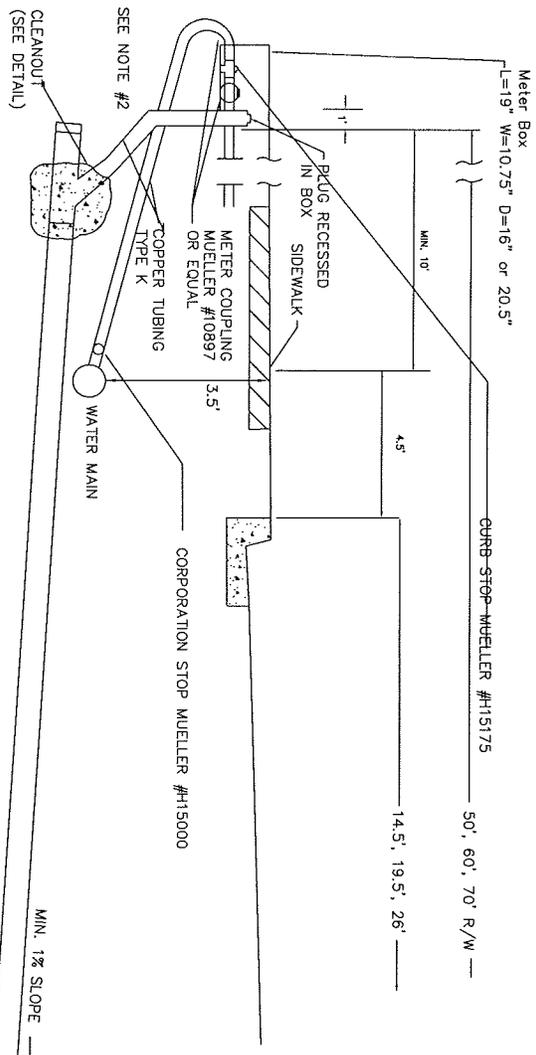
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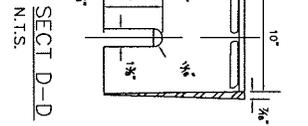
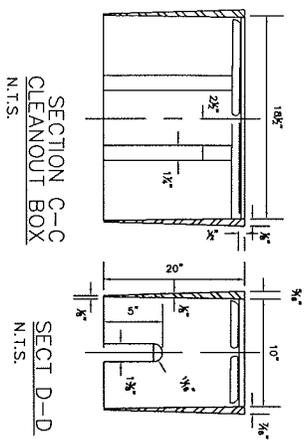
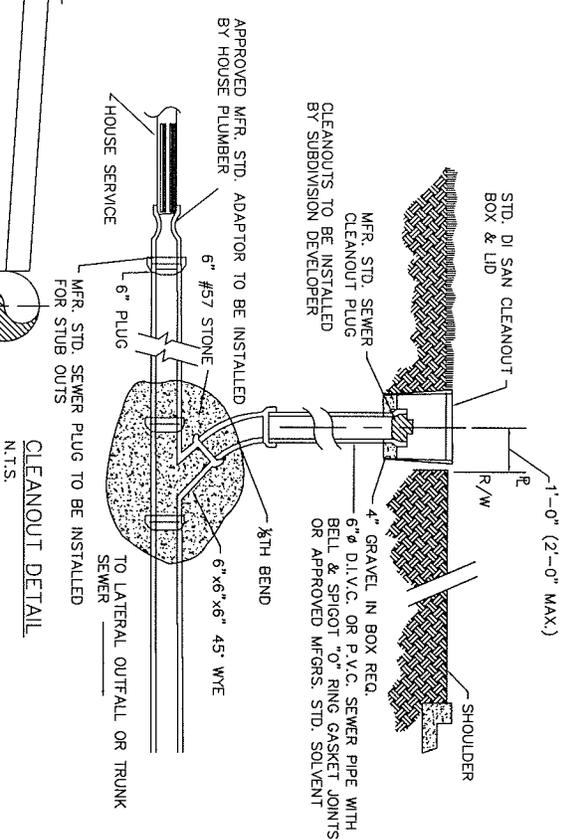
DCS/DRN/GRHD:JM
APPROVED: REW
DATE: 12-2-05

DATE	REVISIONS	DATE	REVISIONS

FULTON COUNTY STANDARD DETAIL 710
WATERSTOP COLLAR



NOTES
 1. CAST IRON SHALL CONFORM TO A.S.T.M. SPEC A48 LATEST REV. FOR CLASS 20 GREY IRON CASTINGS.
 2. IF THE RISER IS GREATER THAN 6'-0" THE JOINT WILL BE ENCASED IN 6" OF 1:1.3:5 CONCRETE.



FULTON COUNTY STANDARD DETAIL 711
 SEWER LATERAL INSTALLATION
 DETAILS FOR CURBED STREETS

DATE	REVISIONS	DATE	REVISIONS

DGS/DRN/CHKD:REB
 APPROVED: REW
 DATE: 12-2-05

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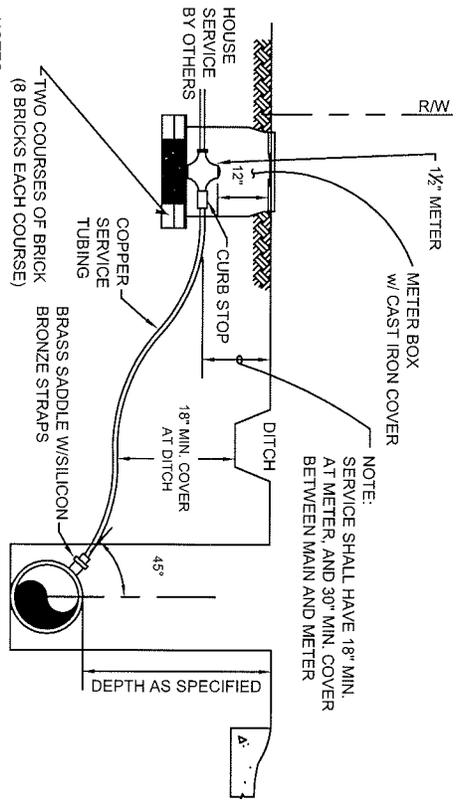
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INDEX

GENERAL NOTES

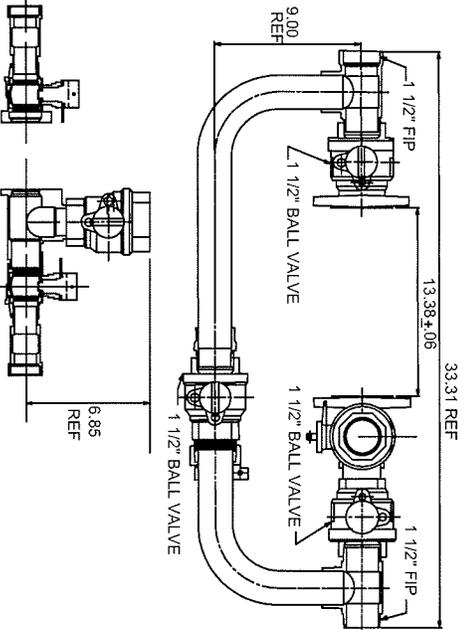
DWG NO.	DESCRIPTION
800	INDEX AND GENERAL NOTES
801	5/8" METER INSTALLATION
802	1" METER INSTALLATION
803	1 1/2" METER INSTALLATION
804	2" METER INSTALLATION
805	LARGE METERS AND VAULT
806	3/4" - 1" METER SETTING SHORT AND LONG SIDES
807	REDUCED PRESSURE PRINCIPLE BACKFLOW-PREVENTION ASSEMBLY
808	REDUCED PRESSURE PRINCIPLE BACKFLOW-PREVENTION ASSEMBLY
809	DOUBLE CHECK VALVE ASSEMBLY
810	DOUBLE CHECK VALVE ASSEMBLY
811	PRESSURE VACUUM BREAKER ASSEMBLY
812	ATMOSPHERIC VACUUM BREAKER ASSEMBLY
813	WATER METER INSTALLATION & 3/4" COPPER SERVICE WATER VALVE MARKERS
814	HYDRANT LOCATION DETAIL FOR CURB & GUTTER STREETS
815	FIRE HYDRANT STREET UNCURBED
816	FIRE HYDRANT INSTALLATION DETAILS
817	A & V RELEASE VALVE ASSEMBLY 1" OR 2"
818	TYPICAL ANCHORS
819	UNDERGROUND VALVE BOX
820	WATER MAIN TERMINATION
821	WATER VALVE MARKER
822	FIRE LINE VAULT-TYPE I
823	RESTRAINED JOINT PIPE STANDARD LENGTHS
824	WATER SVS. TOWNHOME/APT./CONDOMINIUM PRIVATE DEVELOPMENT
825	FM ASSEMBLY

FULTON COUNTY STANDARD DETAIL INDEX AND GENERAL NOTES	REVISIONS DATE	REVISIONS DATE	REVISIONS DATE	DCS/DRN/CHKD: CMS APPROVED: REW DATE: 12-02-05	 FULTON COUNTY	FULTON COUNTY PUBLIC WORKS 141 PRYOR ST. ATLANTA, GA. 30303 404-730-7400 FAX: 404-730-6325	DRAWING NO. INDEX 800
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NOTES:

1. SERVICE LINE SHALL BE 1/2" FROM THE MAIN TO THE METER.
2. USE ALL COMPRESSION GRIP JOINT.
3. INSTALLATION SHALL ALLOW ADEQUATE ROOM TO REMOVE AND/OR REPAIR METER.
4. METER BOX SHALL BE APPROXIMATELY 24" x 36".



FULTON COUNTY STANDARD DETAIL 803
1/2" METER INSTALLATION

DATE	REVISIONS	DATE	REVISIONS

DCS/DRN/CHKD: CMS
APPROVED: REM
DATE: 12-2-05

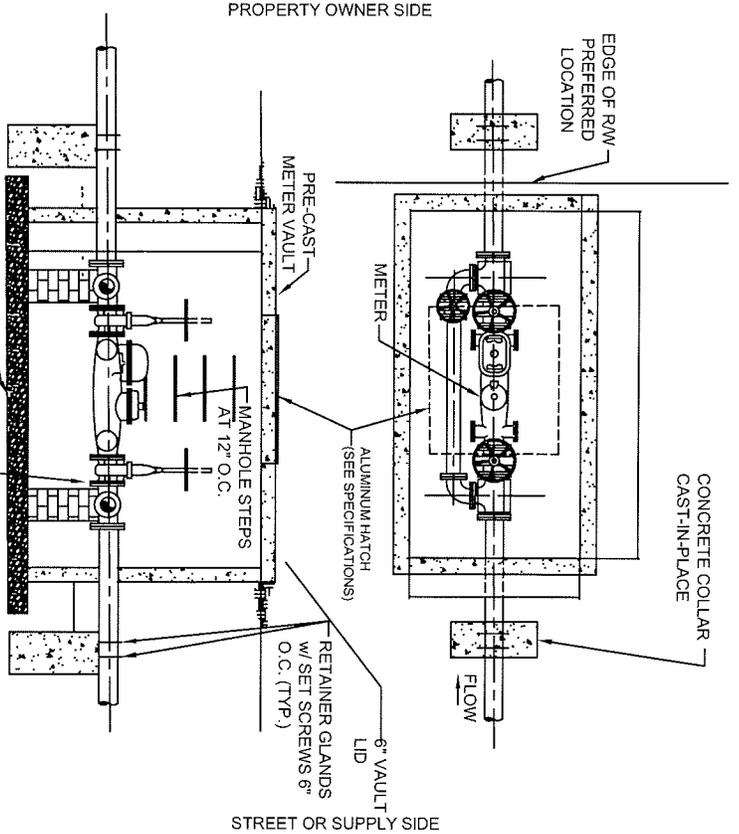


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DRAWING NO.

803

FULTON COUNTY STANDARD DETAIL 805
LARGE METERS AND VAULT



- NOTES:
1. BOXES EXCEEDING 5' IN DEPTH MUST BE APPROVED BY FULTON COUNTY.
 2. WHEN METER BOX CANNOT BE LOCATED ENTIRELY ON R.W. A PERMANENT EASEMENT SHALL BE OBTAINED TO PREVENT FENCES OR OTHER OBSTRUCTIONS FROM BEING ERRECTED AROUND THE METER BOX.
 3. COVER OPENING & STEPS TO BE PLACED NEAREST THE METER REGISTER.
 4. THE METER MUST BE INSTALLED WITH AT LEAST 8 DIAMETERS OF STRAIGHT PIPE SAME SIZE AS METER ON THE INLET SIDE TO PERMIT ON-SITE MAINTENANCE AND CALIBRATION. A STRAINER MAY BE PROVIDED IN LIEU OF THE STRAIGHT PIPE IN ACCORDANCE WITH THE METER MANUFACTURER'S RECOMMENDATIONS. AN INLET AND OUTLET GATE VALVE WITH BYPASS LINE ARE REQUIRED (SEE ILLUSTRATION).
 5. THESE BOXES ARE NOT TO BE INSTALLED IN TRAFFIC AREAS WITHOUT PRIOR PERMISSION FROM FULTON COUNTY.
 6. ALL VALVES AND FITTINGS INSIDE THE VAULT SHALL BE FLANGED.
 7. ALL FITTINGS OUTSIDE THE VAULT SHALL BE PUSH-ON JOINT WITH AMERICAN FAST-GRIP GASKETS OR APPROVED EQUAL.
 8. ALL METERS SHALL COME EQUIPPED WITH A TOUCHREAD OR TOUCHLESS SENSOR COMPATIBLE WITH FULTON COUNTY'S METER READING EQUIPMENT.
 9. THIS DETAIL ALSO AUTHORIZED FOR INSTALLATION OF 3' AND LARGER RE-USE METERS.
 10. HATCH SHALL BE 4' X 6'. DOUBLE LEAF FLUSH MOUNT 1/4" DIAMOND PLATE ALUMINUM DOORS LOCKABLE WITH A 5/8" ROD. HATCH SHALL BE BILCO # PDM-3 OR PRE-APPROVED EQUAL FOR 6' & 8' METERS. HATCH SHALL BE 3/8' X 3/8' SINGLE LEAF FLUSH MOUNT 1/4" DIAMOND PLATE ALUMINUM DOOR LOCKABLE WITH 5/8" ROD. HATCH SHALL BE BILCOFORM-15 OR PRE-APPROVED EQUAL FOR 3' & 4' METERS.

PROVIDE DUCTILE IRON FLANGED ADAPTER BETWEEN METER ASSEMBLY AND GATE VALVE.

METER SIZE	VAULT L	VAULT W	VAULT ID	HATCH SIZE
3"	9'	5'	6'	36" X 36"
4"	9'	5'	6'	36" X 36"
6"	12'	6'	6'	4' X 6'
8"	12'	6'	6'	4' X 6'

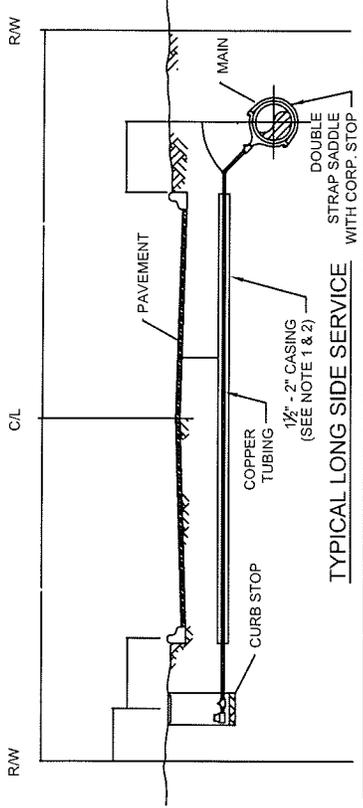
DATE	REVISIONS	DATE	REVISIONS

DWG./R/N/CHKD./CNS
APPROVED: R/W
DATE: 12-2-05

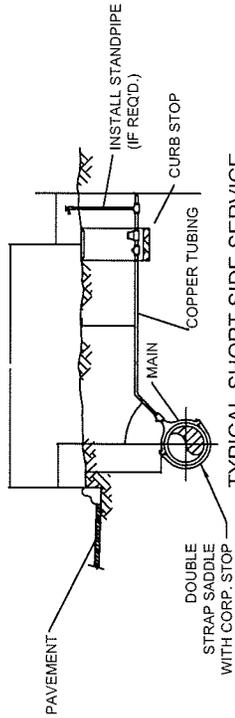


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DRAWING NO. 805



TYPICAL LONG SIDE SERVICE

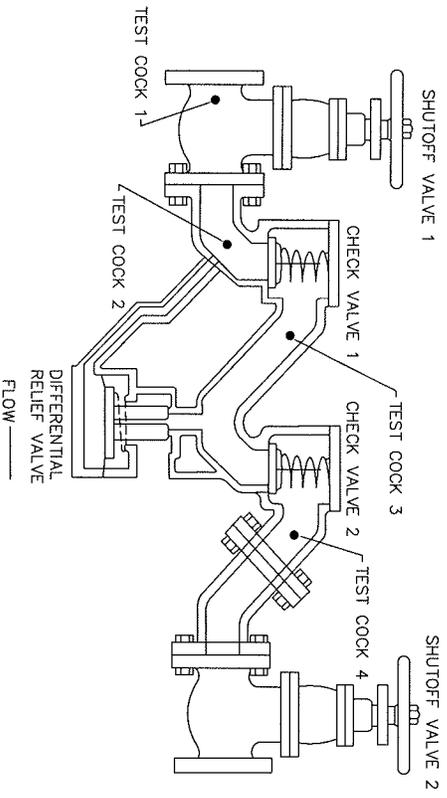


TYPICAL SHORT SIDE SERVICE

NOTES

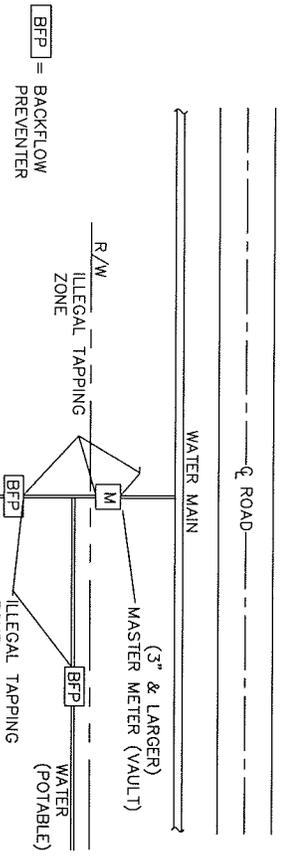
1. IN THE EVENT CASING IS NOT PRESENT ON LONG SIDE LOT, BORING SHALL BE PERMITTED. WHEN CASING DOES EXIST - 1" OR 1/2" PIPE SHALL BE INSERTED THROUGH CASING TO COMPLETE THE INSTALLATION FROM THE MAIN TO THE METER.
2. APPROVAL MUST BE OBTAINED BY FULTON COUNTY DEPARTMENT OF PUBLIC WORKS TRANSPORTATION DIVISION. PRIOR TO ROAD CUT, THE PUBLIC WORKS WATER SERVICES DIVISION DOES NOT HAVE THE AUTHORITY TO APPROVE ROAD CUTS. NO ROAD CUT SHALL BE PERMITTED UNTIL 3 ATTEMPTS HAVE BEEN MADE AT BORING OR LOCATING CASING.
3. 24" COVER (MIN.) FROM SURFACE TO TOP OF SERVICE PIPE APPLIES TO COUNTY MAINTAINED ROADS FOR STATE ROADS SAID MINIMUM CLEARANCE SHALL BE 48".
4. ALL CUTS IN PAVEMENT SHALL BE REPAIRED IN ACCORDANCE WITH EITHER GA. D.O.T. OR FULTON CO. STANDARDS. CONTRACTOR SHALL BE RESPONSIBLE FOR PROPER DITCH COMPACTION, CUT BACK OF DITCH SIDES AND PAVING OF THE REQUIRED CONCRETE SUB-BASE AND PLATING THE DITCH TO ALLOW TRAFFIC FLOW WHILE CONCRETE IS SETTING UP. STEEL TRAFFIC PLATES WILL COVER POURED CONCRETE FOR A MINIMUM OF 24 HOURS.
5. METERS ARE TO BE SET DIRECTLY OPPOSITE TAP ON MAIN. THE METER SHALL NOT BE OFFSET Laterally FROM TAP ON WATER MAIN.

FULTON COUNTY STANDARD DETAIL 806 3/4" - 1" METER SETTING SHORT AND LONG SIDES	DATE		REVISIONS	DATE	REVISIONS	DCS/DRN/CHKD: CMS	DRAWING NO. 806
						APPROVED: ML	
						DATE: 12-2-05	 FULTON COUNTY FULTON COUNTY PUBLIC WORKS 141 PRYOR ST. ATLANTA, GA. 30303 404-730-7400 FAX: 404-224-0498



NOTE:
 THE AIR-GAP OR MECHANICAL BACKFLOW PREVENTION ASSEMBLY SHALL BE INSTALLED SUBJECT TO THE APPROVAL OF FULTON COUNTY PUBLIC WORKS. ANY DEVIATION FROM THE METHODS DESCRIBED ABOVE MUST RECEIVE APPROVAL PRIOR TO INSTALLATION. ALL MECHANICAL BACKFLOW PREVENTION ASSEMBLIES APPROVED BY FULTON COUNTY PUBLIC WORKS FOR INSTALLATION AT THE SERVICE CONNECTION MUST BE APPROVED BY THE FOUNDATION FOR CROSS-CONNECTION CONTROL AND HYDRAULIC RESEARCH, UNIVERSITY OF SOUTHERN CALIFORNIA. THESE ASSEMBLIES ARE ONLY APPROVED FOR THE HORIZONTAL ORIENTATIONS. CHOICE OF THE TYPE OF BACKFLOW PREVENTION ASSEMBLY, I.E. REDUCED PRESSURE PRINCIPLE OR DOUBLE CHECK VALVE ASSEMBLY, WILL BE BASED ON THE DEGREE OF HAZARD AS EVALUATED BY FULTON COUNTY PUBLIC WORKS.

FOR FURTHER INFORMATION REFER TO THE FULTON COUNTY MANUAL ON CROSS CONNECTIONS.



[BFP] = BACKFLOW PREVENTER

NOTE:
 IN SOME CASES A SINGLE VAULT WILL BE ALLOWED FOR THE METER AND THE BACKFLOW PREVENTER.

FULTON COUNTY STANDARD DETAIL 807
 REDUCED PRESSURE PRINCIPLE
 BACKFLOW-PREVENTION ASSEMBLY

DATE	REVISIONS	DATE	REVISIONS

DGS/DRN/CHKD/REB
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 DATE: 12-2-05



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DRAWING NO.

807

DOUBLE CHECK VALVE ASSEMBLY (DCVA)

DESCRIPTION

THIS ASSEMBLY CONSISTS OF TWO INTERNALLY LOADED CHECK VALVES, EITHER SPRING-LOADED OR INTERNALLY WEIGHTED, INSTALLED AS A UNIT BETWEEN TWO TIGHTLY CLOSING RESILIENT-SEATED SHUTOFF VALVES AS AN ASSEMBLY, AND FITTINGS WITH PROPERLY LOCATED RESILIENT-SEATED TEST COCKS AS SHOWN.

APPLICATION

THE DCVA IS EFFECTIVE AGAINST BACKFLOW CAUSED BY BACKPRESSURE AND BACKSIPHONAGE AND IS USED TO PROTECT THE WATER SYSTEM FROM POLLUTANTS THAT WOULD NOT CONSTITUTE AN ACTUAL HEALTH HAZARD, BUT THAT MIGHT BE OBJECTIONABLE TO THE WATER SUPPLY SYSTEM.

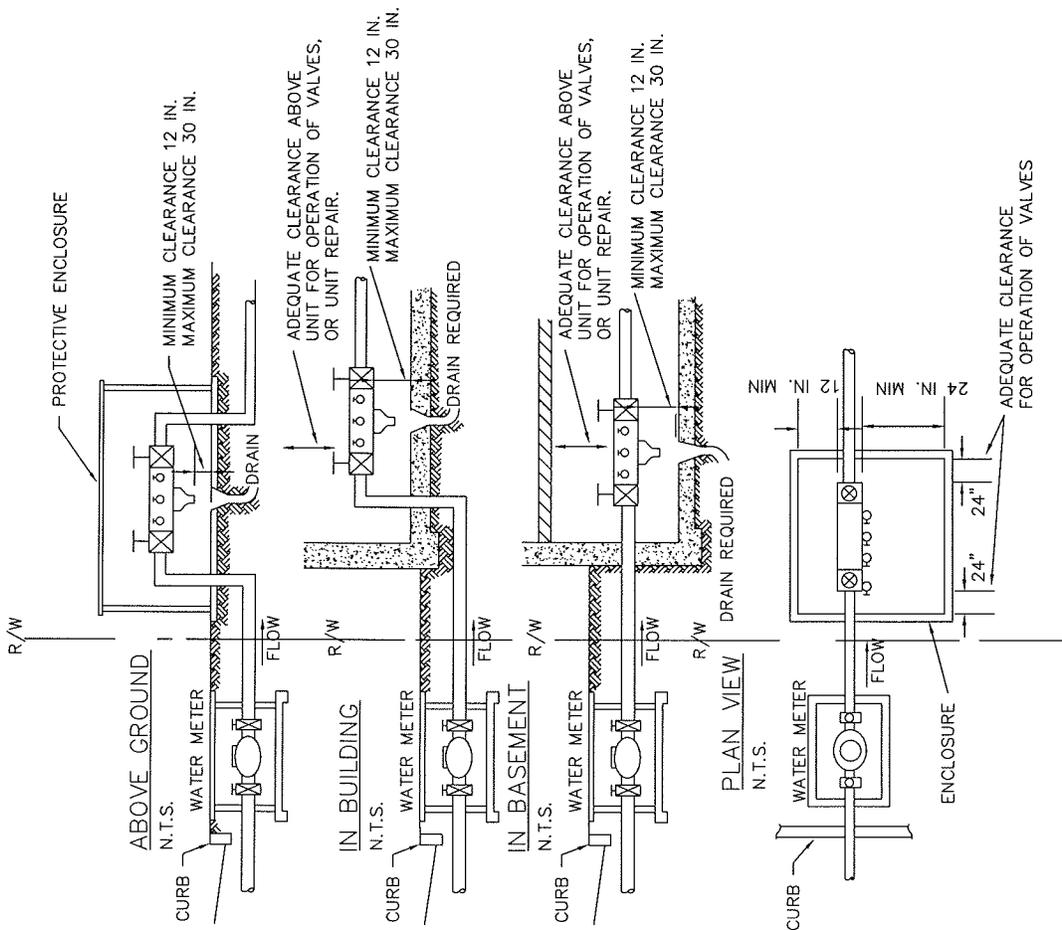
INSTALLATION

THE DCVA SHOULD BE INSTALLED WITH ADEQUATE SPACE TO FACILITATE MAINTENANCE AND TESTING AND SHOULD HAVE FREE ACCESS WITHOUT THE USE OF PLATFORMS, LADDERS, OR LIFTS.

A DCVA SHOULD NOT BE INSTALLED BELOW GROUND LEVEL UNLESS PROVIDED WITH ADEQUATE DRAINAGE TO MAINTAIN A DRY LOCATION. WHERE AN ASSEMBLY MUST BE INSTALLED IN A LOCATION THAT IS SUSCEPTIBLE TO FLOODING, SUCH AS A BASEMENT, THE TEST COCKS SHALL BE PLUGGED.

ALL DCVAS SHALL BE INSTALLED IN A HORIZONTAL POSITION UNLESS OTHERWISE RECOMMENDED BY THE MANUFACTURER AND/OR FULTON COUNTY PUBLIC WORKS.

A DCVA MUST BE PROTECTED FROM FREEZING TEMPERATURES. FOR TEMPERATURES OF 100 DEGREES FAHRENHEIT (43 DEGREES CELSIUS) OR ABOVE, CONSULT MANUFACTURER'S LITERATURE FOR RECOMMENDATIONS.



TYPICAL INSTALLATIONS WITH MINIMUM CLEARANCES
DOUBLE CHECK VALVE ASSEMBLIES

DATE	REVISIONS	DATE	REVISIONS

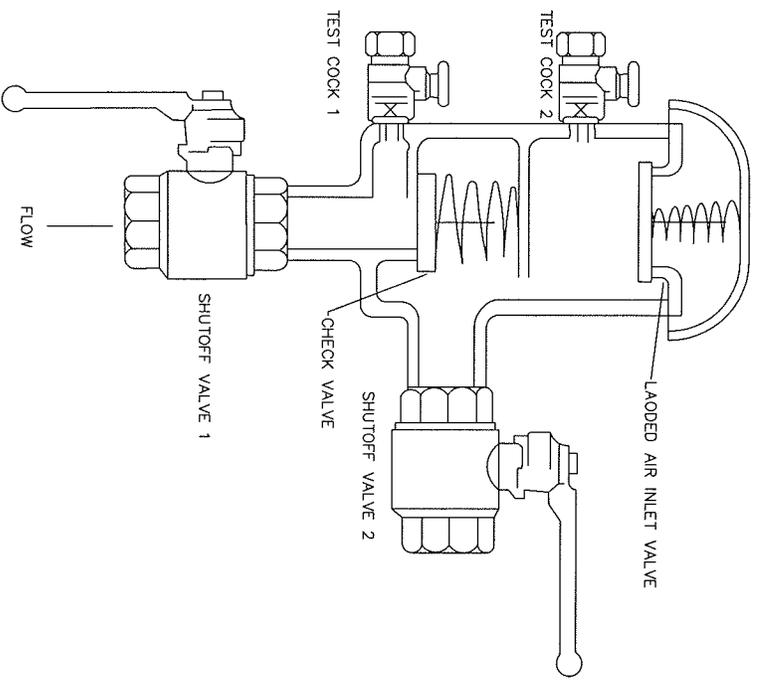
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APPROVED: REW
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FULTON COUNTY STANDARD DETAIL 810
DOUBLE CHECK VALVE ASSEMBLY

DRAWING NO.
810



NOTE:
 THE AIR-GAP OR MECHANICAL BACKFLOW PREVENTION ASSEMBLY SHALL BE INSTALLED SUBJECT TO THE APPROVAL OF FULTON COUNTY PUBLIC WORKS. ANY DEVIATION FROM THE METHODS DESCRIBED ABOVE MUST RECEIVE APPROVAL PRIOR TO INSTALLATION. ALL MECHANICAL BACKFLOW PREVENTION ASSEMBLES APPROVED BY FULTON COUNTY PUBLIC WORKS FOR INSTALLATION AT THE SERVICE CONNECTION MUST BE APPROVED BY THE FOUNDATION FOR CROSS-CONNECTION CONTROL AND HYDRAULIC RESEARCH, UNIVERSITY OF SOUTHERN CALIFORNIA. THESE ASSEMBLES ARE ONLY APPROVED FOR THE HORIZONTAL ORIENTATIONS. CHOICE OF THE TYPE OF BACKFLOW PREVENTION ASSEMBLY, I.E. REDUCED PRESSURE PRINCIPLE OR DOUBLE CHECK VALVE ASSEMBLY, WILL BE BASED ON THE DEGREE OF HAZARD AS EVALUATED BY FULTON COUNTY PUBLIC WORKS.

FOR FURTHER INFORMATION REFER TO THE FULTON COUNTY BACKFLOW PREVENTION PROGRAM.

FULTON COUNTY STANDARD DETAIL 811
 PRESSURE VACUUM BREAKER ASSEMBLY

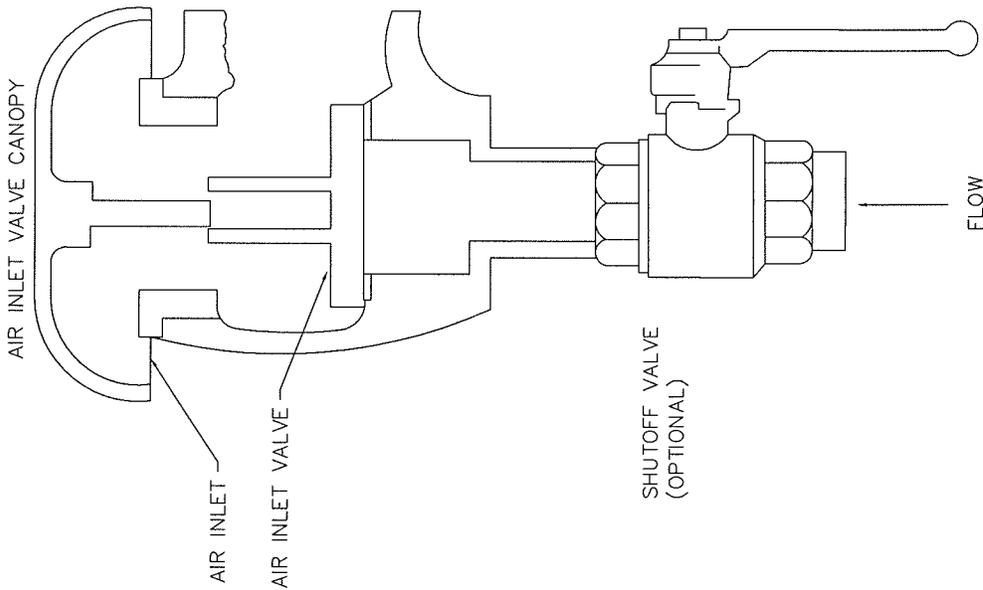
DATE	REVISIONS	DATE	REVISIONS

DGS/DRN/CHKD/REB
 APPROVED: _____
 DATE: 12-2-05



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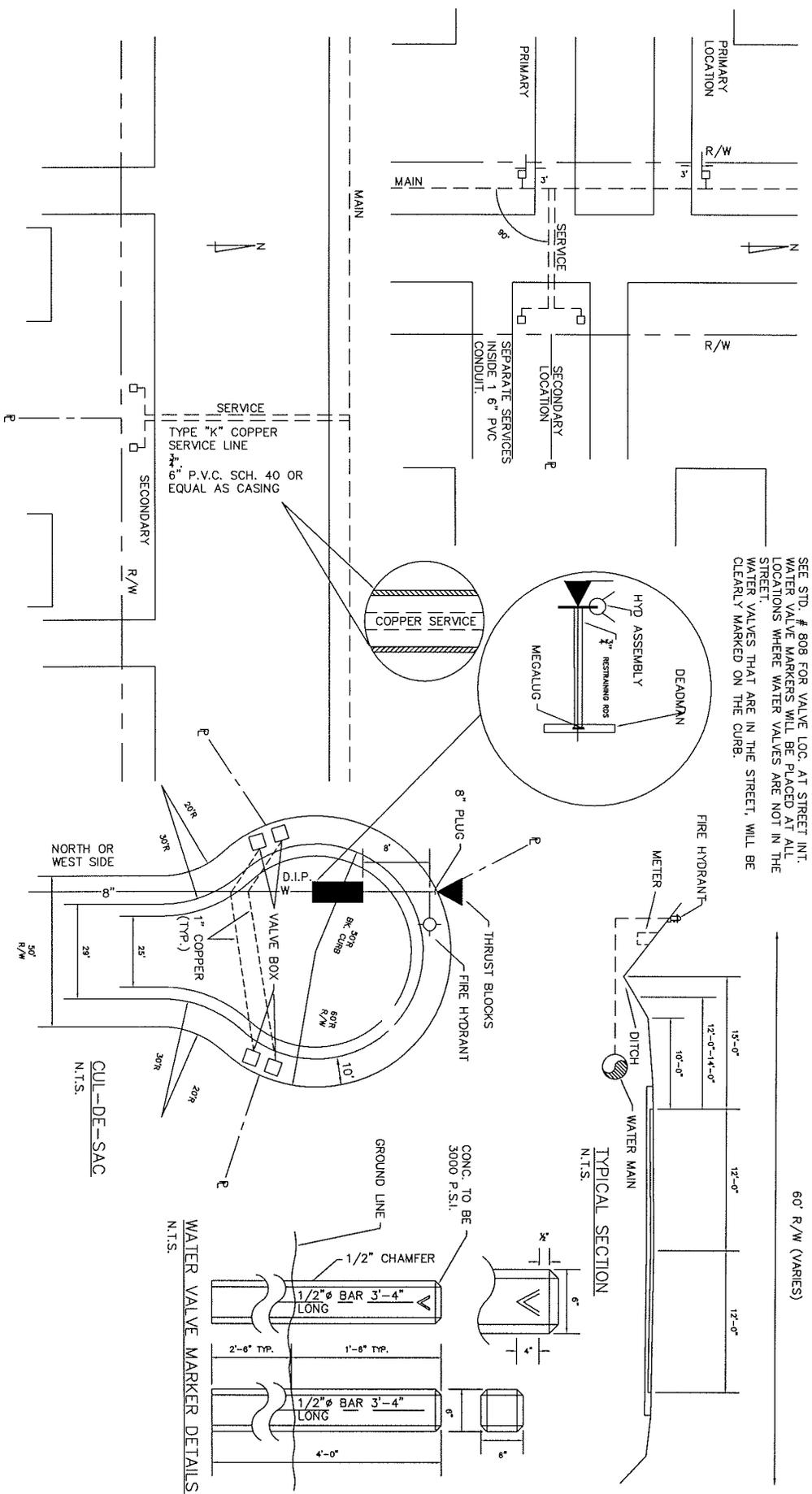
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NOTE:
 THE AIR-GAP OR MECHANICAL BACKFLOW PREVENTION ASSEMBLY SHALL BE INSTALLED SUBJECT TO THE APPROVAL OF FULTON COUNTY PUBLIC WORKS. ANY DEVIATION FROM THE METHODS DESCRIBED ABOVE MUST RECEIVE APPROVAL PRIOR TO INSTALLATION. ALL MECHANICAL BACKFLOW PREVENTION ASSEMBLIES APPROVED BY FULTON COUNTY PUBLIC WORKS FOR INSTALLATION AT THE SERVICE CONNECTION MUST BE APPROVED BY THE FOUNDATION FOR CROSS-CONNECTION CONTROL AND HYDRAULIC RESEARCH, UNIVERSITY OF SOUTHERN CALIFORNIA. THESE ASSEMBLIES ARE ONLY APPROVED FOR THE HORIZONTAL ORIENTATIONS. CHOICE OF THE TYPE OF BACKFLOW PREVENTION ASSEMBLY, I.E. REDUCED PRESSURE PRINCIPLE OR DOUBLE CHECK VALVE ASSEMBLY, WILL BE BASED ON THE DEGREE OF HAZARD AS EVALUATED BY FULTON COUNTY PUBLIC WORKS.

FOR FURTHER INFORMATION REFER TO THE FULTON COUNTY BACKFLOW PREVENTION PROGRAM.

FULTON COUNTY STANDARD DETAIL 812 ATMOSPHERIC VACUUM BREAKER ASSEMBLY	REVISIONS <table border="1" style="width: 100%; border-collapse: collapse;"> <thead> <tr> <th style="width: 10%;">DATE</th> <th style="width: 10%;">REVISIONS</th> <th style="width: 10%;">DATE</th> <th style="width: 10%;">REVISIONS</th> </tr> </thead> <tbody> <tr><td> </td><td> </td><td> </td><td> </td></tr> </tbody> </table>	DATE	REVISIONS	DATE	REVISIONS																																									DGS/DRN/CHKD: REB APPROVED: REW DATE: 12-2-05	 FULTON COUNTY	FULTON COUNTY PUBLIC WORKS 141 PRYOR ST. ATLANTA, GA. 30303 404-730-7400 FAX: 404-224-0498	DRAWING NO. 812
DATE	REVISIONS	DATE	REVISIONS																																														



FULTON COUNTY STANDARD DETAIL 813
 WATER METER INSTALLATION & 3/4" COPPER SERVICE
 WATER VALVE MARKERS

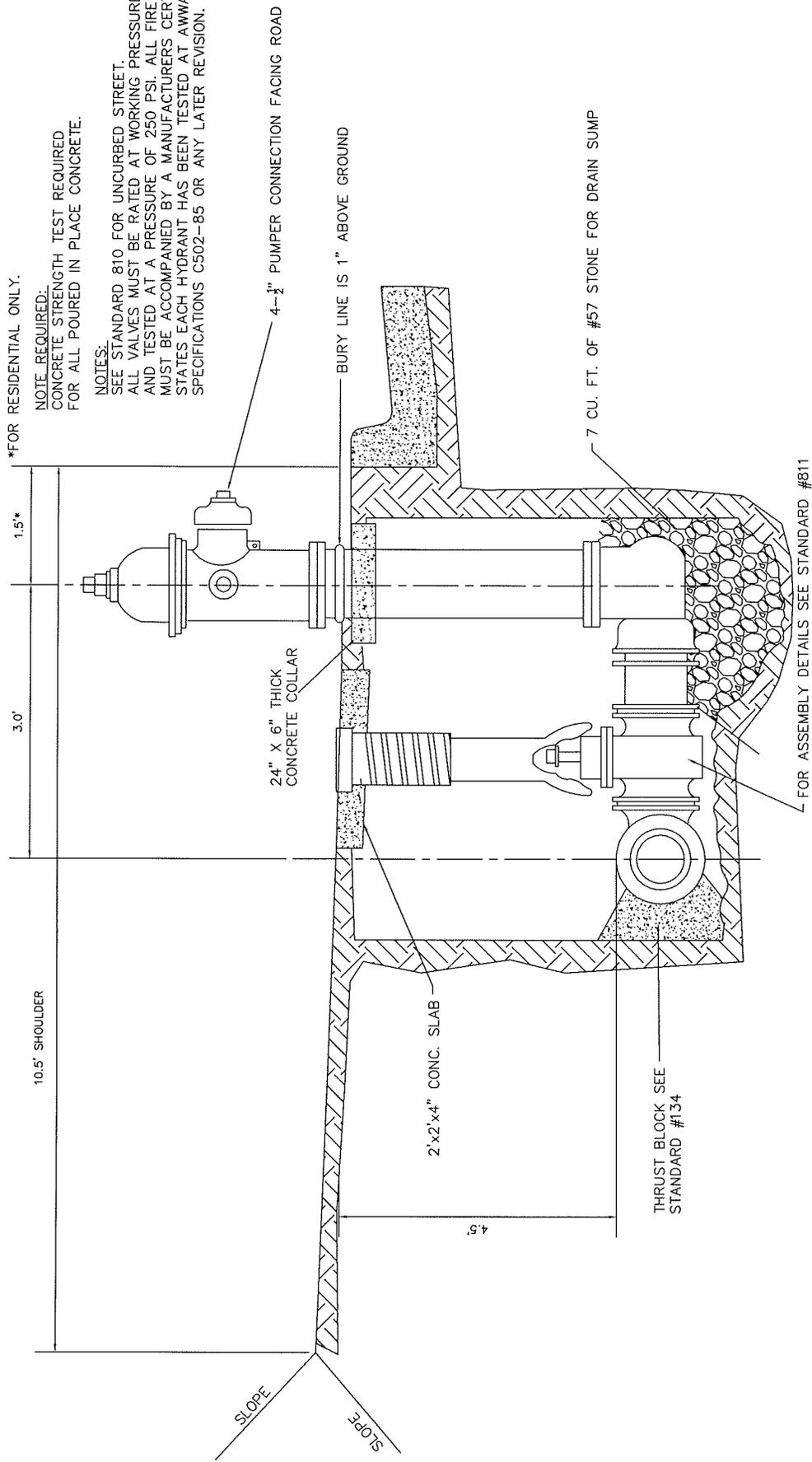
DATE	REVISIONS	DATE	REVISIONS

DGS /DRN/CHKD, REB
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 DATE: 12-2-05



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DRAWING NO. 813



*FOR RESIDENTIAL ONLY.
 NOTE REQUIRED:
 CONCRETE STRENGTH TEST REQUIRED
 FOR ALL POURED IN PLACE CONCRETE.

NOTES:
 SEE STANDARD 810 FOR UNCURED STREET.
 ALL VALVES MUST BE RATED AT WORKING PRESSURE OF 200 PSI
 AND TESTED AT A PRESSURE OF 250 PSI. ALL FIRE HYDRANTS
 MUST BE ACCOMPANIED BY A MANUFACTURERS CERTIFICATE THAT
 STATES EACH HYDRANT HAS BEEN TESTED AT AWWA
 SPECIFICATIONS C502-85 OR ANY LATER REVISION.

4- $\frac{1}{2}$ " PUMPER CONNECTION FACING ROAD

BURY LINE IS 1" ABOVE GROUND

24" X 6" THICK
 CONCRETE COLLAR

7 CU. FT. OF #57 STONE FOR DRAIN SUMP

FOR ASSEMBLY DETAILS SEE STANDARD #811

2'x2'x4" CONC. SLAB

THRUST BLOCK SEE
 STANDARD #134

1.5'

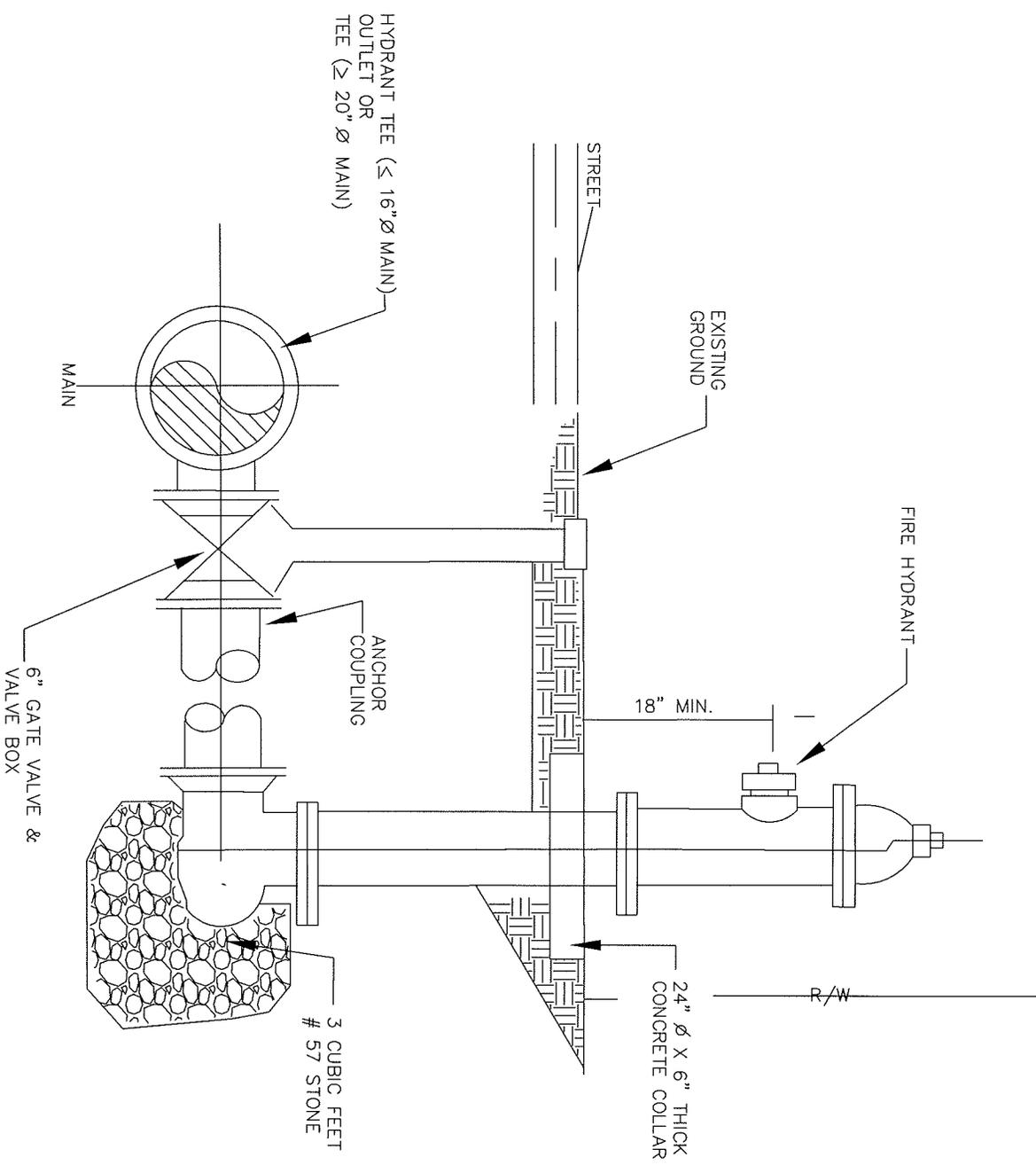
3.0'

10.5' SHOULDER

SLOPE

SLOPE

FULTON COUNTY STANDARD DETAIL 814 HYDRANT LOCATION DETAIL FOR CURB & GUTTER STREETS				FULTON COUNTY PUBLIC WORKS 141 PRYOR ST. ATLANTA, GA. 30303 404-730-7400 FAX: 404-224-0498		DRAWING NO. 814	
DATE	REVISIONS	DATE	REVISIONS	DCS/DRN/OHKD: REB	APPROVED: REW	DATE: 12-2-05	



FULTON COUNTY STANDARD DETAIL 815
FIRE HYDRANT STREET UNCURBED

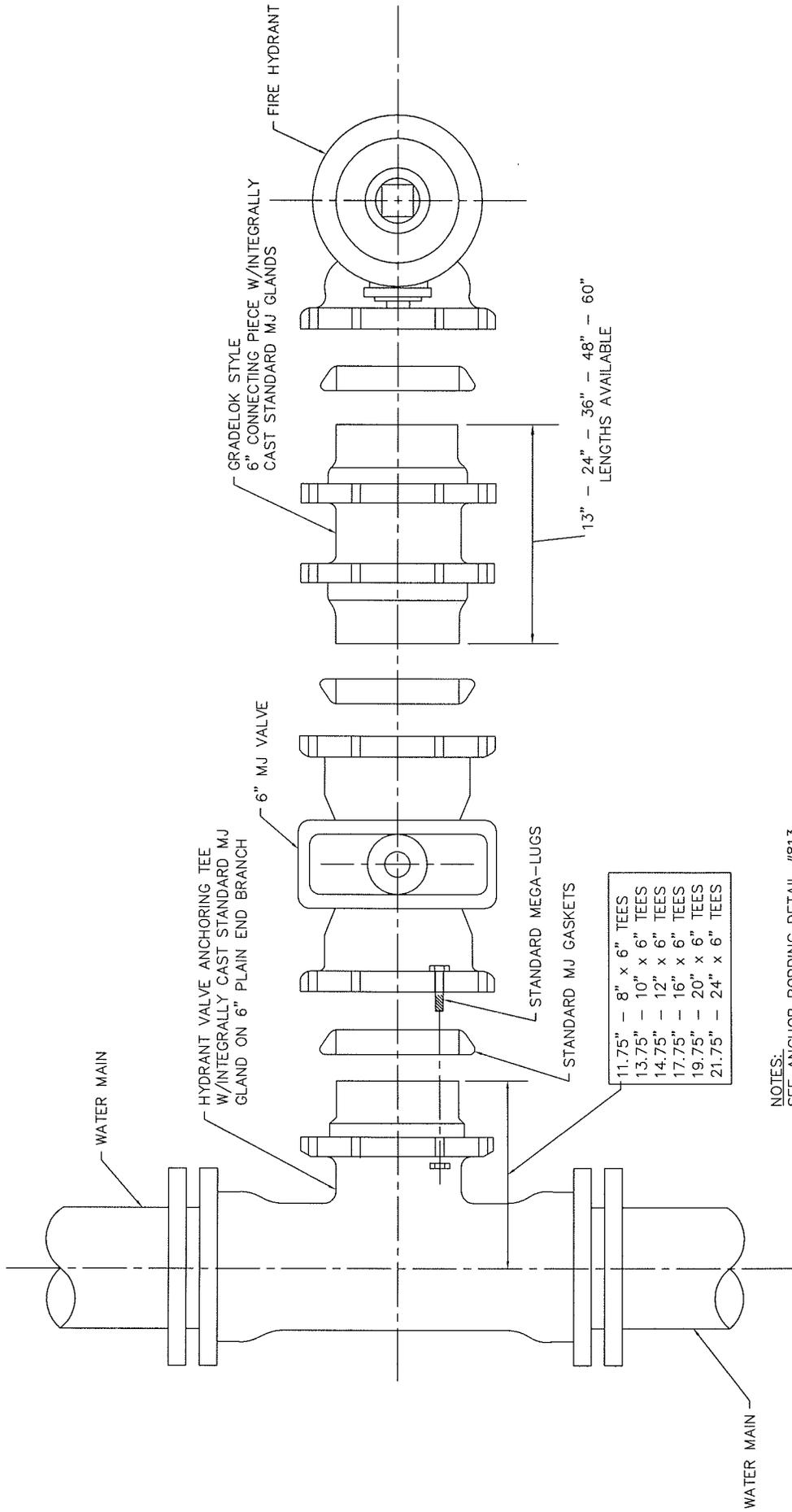
DATE	REVISIONS	DATE	REVISIONS

DSS/DRN/CHKD/REB
APPROVED: _____
DATE: 12-2-05



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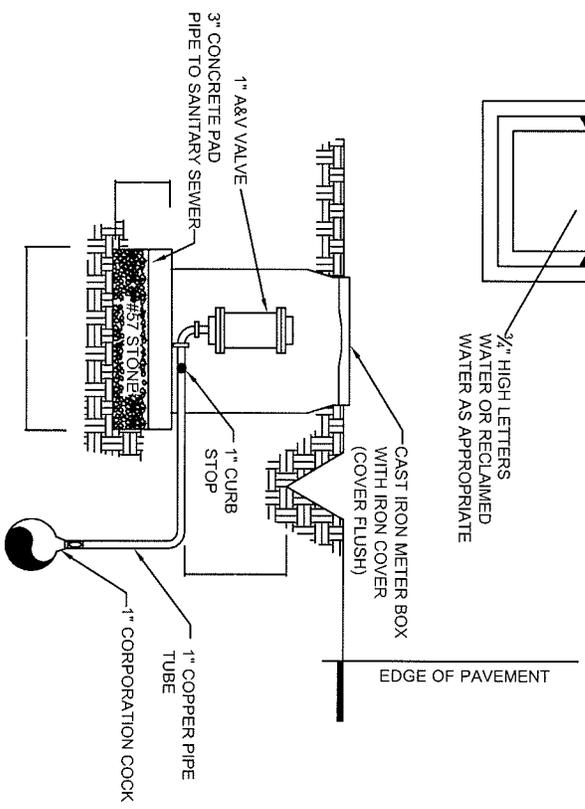
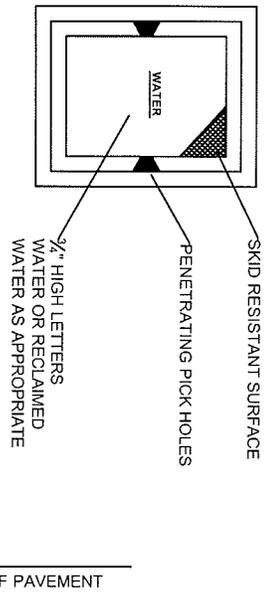


- 11.75" - 8" x 6" TEES
- 13.75" - 10" x 6" TEES
- 14.75" - 12" x 6" TEES
- 17.75" - 16" x 6" TEES
- 19.75" - 20" x 6" TEES
- 21.75" - 24" x 6" TEES

NOTES:
 SEE ANCHOR RODDING DETAIL #813.
 GRADE-LOCS CAN BE USED TO ADJUST
 HYDRANTS TO PROPER BURY DEPTH.

13" - 24" - 36" - 48" - 60"
 LENGTHS AVAILABLE

FULTON COUNTY STANDARD DETAIL 816 FIRE HYDRANT INSTALLATION DETAILS	DATE REVISIONS DATE REVISIONS	DGS/DRN/CHKD: REB APPROVED: REW DATE: 12-2-05	 FULTON COUNTY	FULTON COUNTY PUBLIC WORKS 141 PRYOR ST. ATLANTA, GA. 30303 404-730-7400 FAX: 404-224-0498	DRAWING NO. 816
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- NOTES:
1. VALVE MARKER REQUIRED.
 2. A&V VALVE AND COPPER SHALL BE SIZED IN ACCORDANCE WITH VALVE MANUFACTURERS RECOMMENDATIONS.
 3. METER BOX SHALL BE CDR 10 X 15HC OR APPROVED EQUAL.
 4. A & V VALVE SHALL BE VENT-O-MAT SERIES RBX OR EQUAL.

FULTON COUNTY STANDARD DETAIL 817
 A & V RELEASE VALVE ASSEMBLY
 1" OR 2"

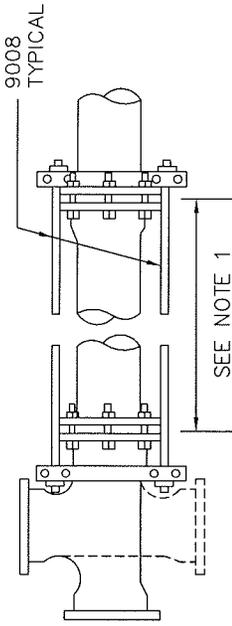
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DGS /DRN/CHKD GMS
 APPROVED: REW
 DATE: 12-2-05

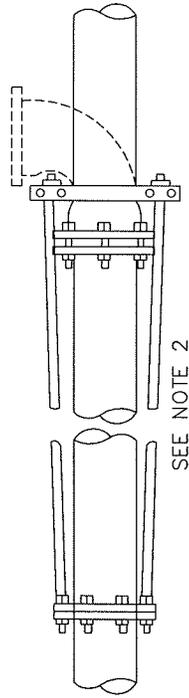


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DRAWING NO.
 817



TEE ANCHOR
N.T.S.



PIPE OR BEND ANCHOR TO FLANGE SPIGOT
N.T.S.

NOTES:

1. IN THE ASSEMBLIES OF RODS AND CLAMPS SHOWN, RODS RUN FROM A LUG ON THE FITTING (OR A CLAMP BEHIND THE HUB OF A BELL) TO A CLAMP AGAINST THE FACE OF A BELL. NOTE THAT THIS ARRANGEMENT ANCHORS ONLY ONE JOINT. THE STABILITY OF THE JOINT WHERE THE CLAMP IS AGAINST THE FACE OF THE BELL DEPENDS ON HAVING SOIL ABOVE A RELATIVELY LONG PIECE OF PIPE ON BOTH SIDES OF THE JOINT. CONSEQUENTLY, IF THE DISTANCE BETWEEN THE FIRST AND SECOND JOINT IS LESS THAN 12 FEET, THE SECOND JOINT SHOWN SHALL BE ANCHORED BY A CLAMP BEHIND THE HUB OF THE BELL AND RODS TO A CLAMP AT THE FACE OF THE NEXT BELL.
2. IN THE ASSEMBLIES SHOWN FOR RODS TO FLANGED FITTINGS, NOTE THAT THE FLANGED FITTING IS NOT TO BE BURIED IN SOIL.
3. AFTER INSTALLATION TIE RODS AND CLAMP ASSEMBLY SHALL BE THOROUGHLY COVERED WITH ROYSTON LABORATORIES INC. ROSKOTE MASTIC NO. A-938 OR KOPPERS CO INC. BITUMASTIC SUPERSERVICE BLACK OR APPROVED EQUIVALENT.
4. RODS TO BE HIGH TENSILE, HOT ROLLED STEEL WITH TENSILE STRENGTH OF 150,000 P.S.I. AND A MINIMUM YIELD STRENGTH OF 130,000 P.S.I.

FULTON COUNTY STANDARD DETAIL 818
TYPICAL ANCHORS

DATE	REVISIONS	DATE	REVISIONS

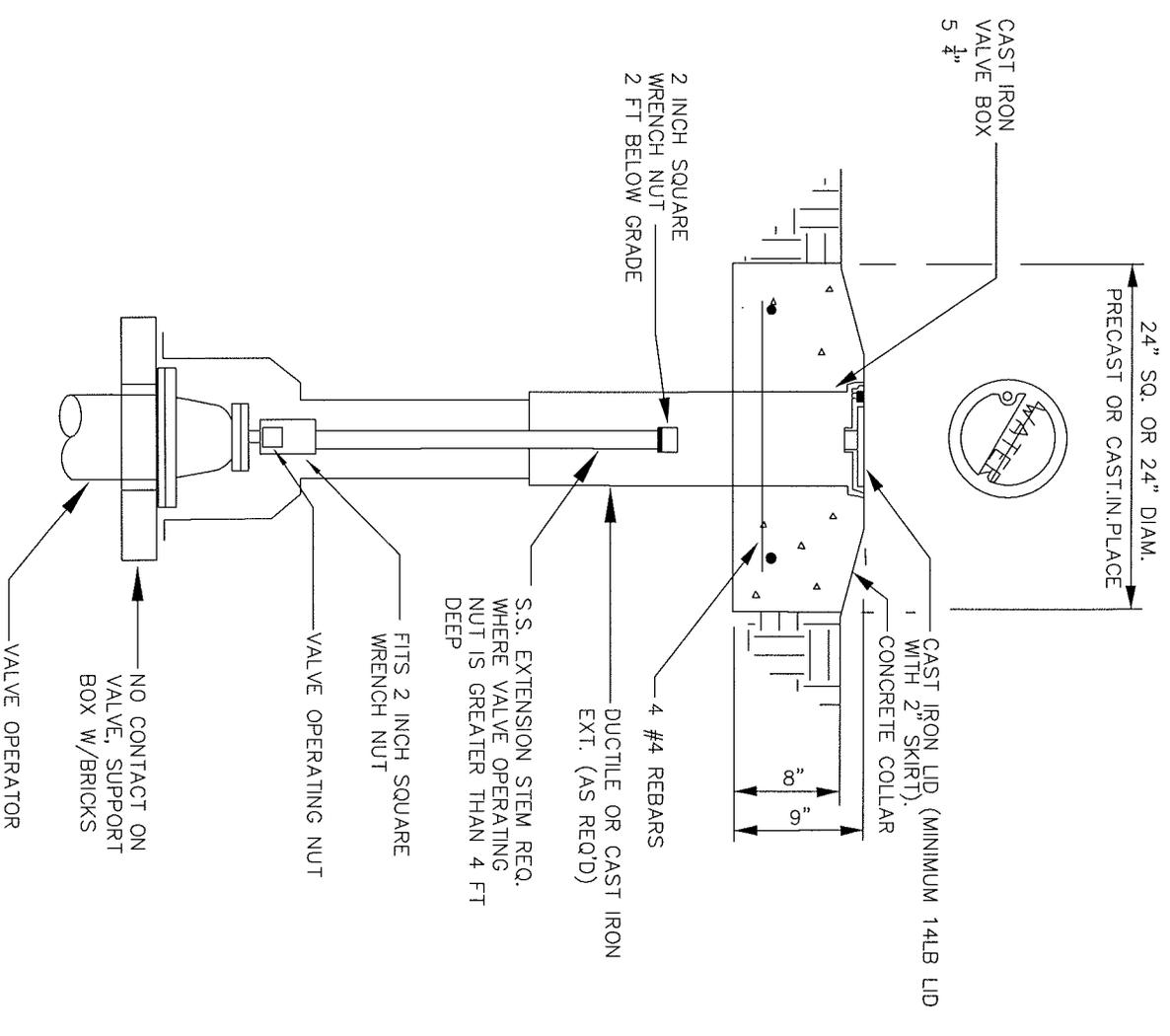
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APPROVED: REW
DATE: 12-2-05



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DRAWING NO.

818



FULTON COUNTY STANDARD DETAIL 819
UNDERGROUND VALVE BOX

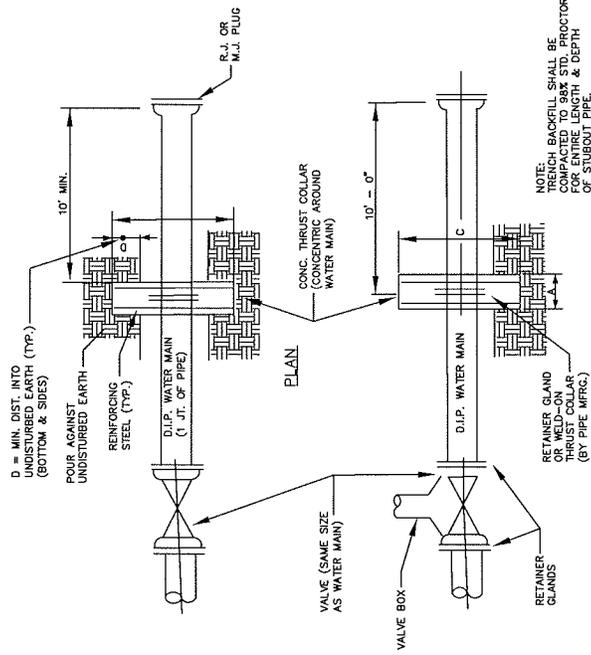
DATE	REVISIONS	DATE	REVISIONS

DGS /DRW/CHKD. REB
APPROVED: REW
DATE: 12-2-05



FULTON COUNTY PUBLIC WORKS
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DRAWING NO.
819



SECTION

MAIN DIA	CONCRETE COLLAR DIM.			REINFORCING STEEL
	A	B	C	
24"	1'-10"	9'-3"	9'-3"	2'-9"
18"	1'-3"	6'-6"	6'-6"	#8 @ 12" O.C. E.W.E.F.
10" OR 12"	1'-2"	5'-3"	5'-3"	#7 @ 12" O.C. E.W.E.F.
6" OR 8"	1'-0"	4'-0"	4'-0"	#6 @ 12" O.C. E.W.E.F.

TEST PRESSURE: 250 P.S.I.
 SOIL BEARING PRESSURE: 2500 P.S.F.
 NOTE: TERMINATION DETAIL FOR LARGER DIAMETER PIPE SHALL BE DETERMINED FOR EACH PROJECT.

DRAWING NO.

820

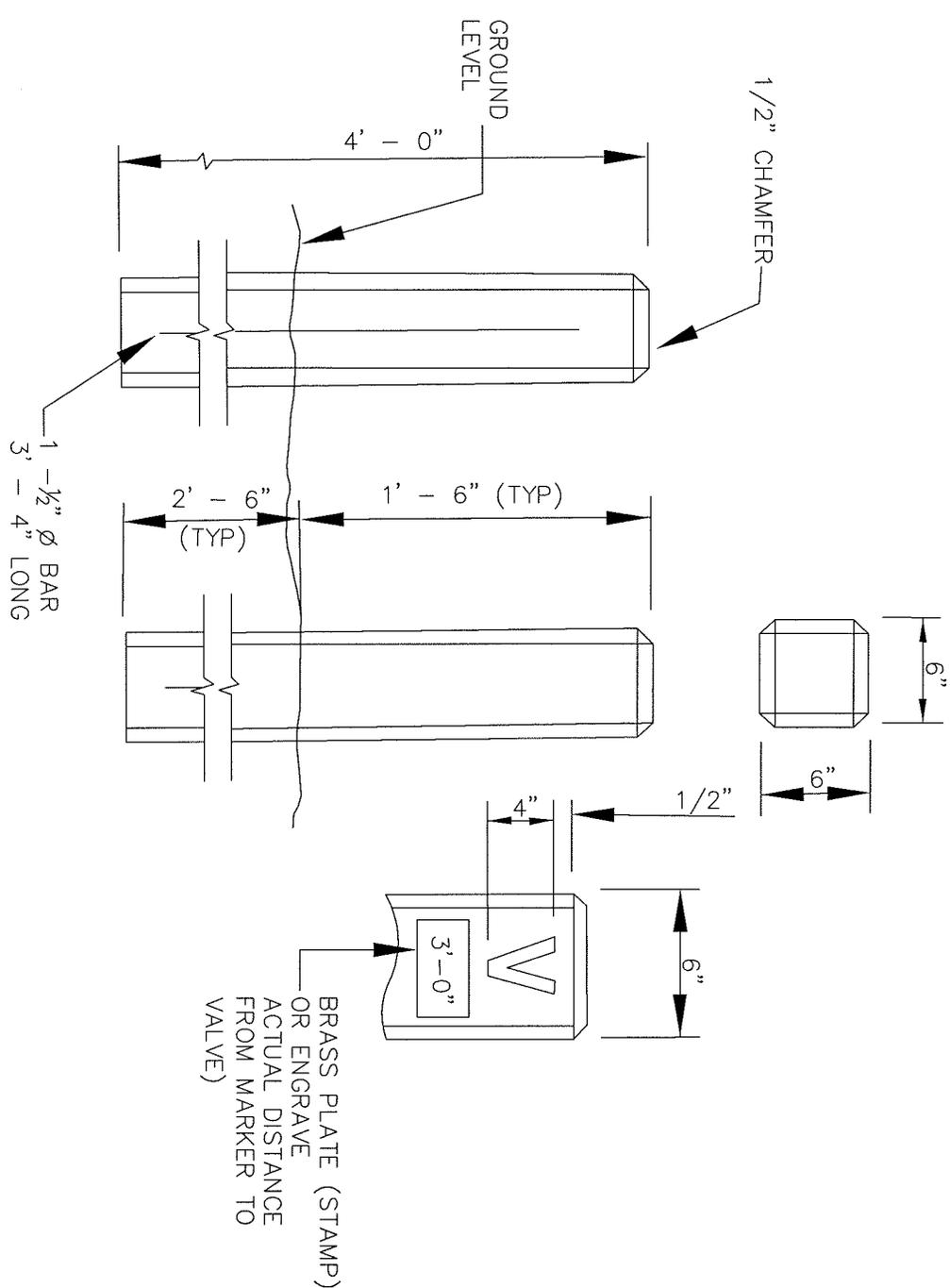
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DATE	REVISIONS	DATE	REVISIONS

FULTON COUNTY STANDARD DETAIL 820
 WATER MAIN TERMINATION



FULTON COUNTY STANDARD DETAIL 821
WATER VALVE MARKER

DATE	REVISIONS	DATE	REVISIONS

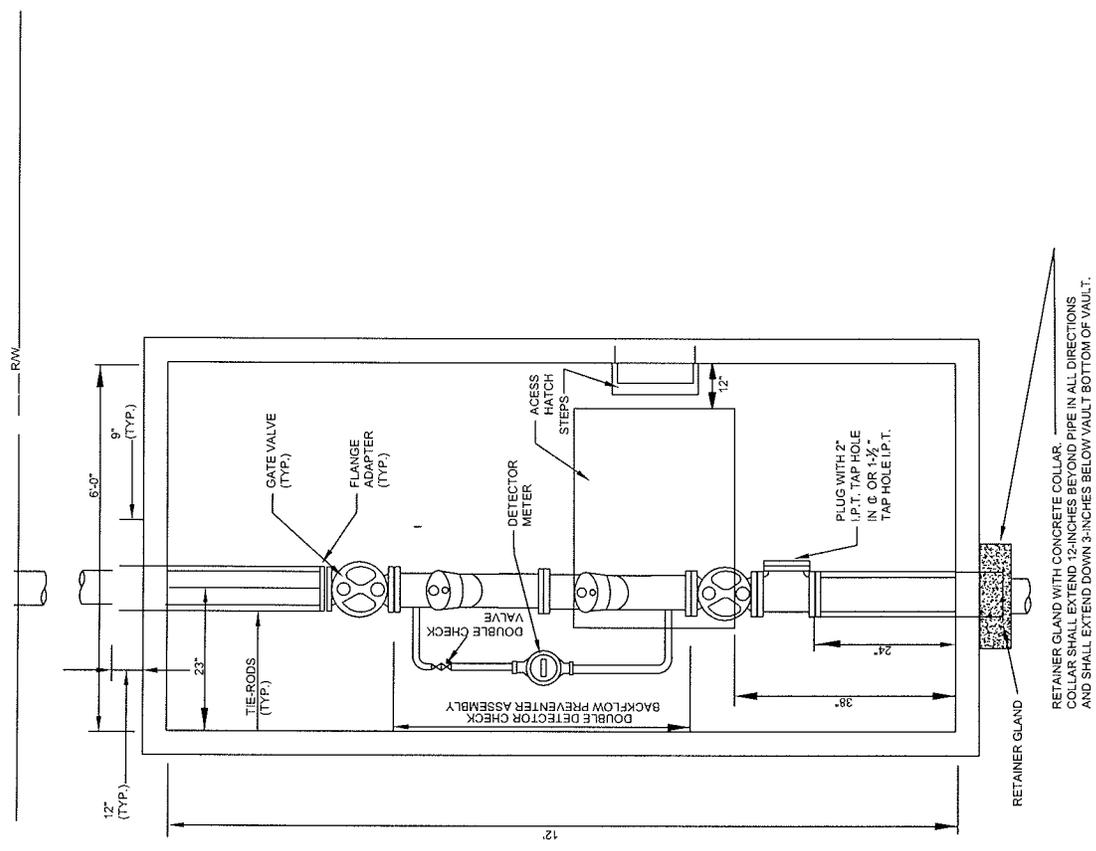
DGS/DRN/CHKD/REB
APPROVED: _____
DATE: 12-2-05



FULTON COUNTY PUBLIC WORKS
141 PRYOR ST. ATLANTA, GA. 30303
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DRAWING NO. 821

1. TYPE I VAULT SHALL BE USED FOR 3,4,6 OR 8-INCH DOUBLE DETECTOR CHECK BACKFLOW PREVENTER FOR USE WITH 1, 1-1/2 AND 2-INCH METER.
2. SEE SPECIFICATION SECTION 02665 FOR MATERIAL SPECIFICATIONS. ALL MATERIAL TO BE FURNISHED BY CONTRACTOR.
3. ALL FITTING SHALL BE DUCTILE IRON WITH FLANGED JOINTS. GATE VALVES SHALL BE OUTSIDE STEM AND YOKE (OSY) WITH HANDWHEEL.
4. VAULT SHALL BE PRECAST CONCRETE. MIN. INSIDE HEIGHT SHALL BE 6 FEET. LOAD BEARING VAULT SHALL BE DESIGNED BY PROPERTY OWNER'S ENGINEER, AND SUBMITTED TO COUNTY FOR APPROVAL.
5. ACCESS HATCH/FLOOR DOOR SHALL BE MIN. 36" X 36".
6. VAULT FLOOR SHALL BE # 57 CRUSHED STONE. MIN. 6-INCHES THICK.
7. PROVIDE CONCRETE PIER UNDER BFP 12" X 12" X 18" HIGH.
8. PROVIDE RETAINER GLAND ON PIPE BEYOND VAULT WALLS. PROVIDE TWO TIE RODS FROM FIRST INTERIOR FLANGE TO RETAINER GLANDS, WITH DOUBLE NUTS AND WASHERS. ENCASE RETAINER GLANDS IN CONCRETE. ALSO, PROVIDE TIE RODS FROM RETAINER GLAND TO TAPPING VALVE OR CASING UNDER ROAD, WHICH-EVER IS CLOSER. RODS SHALL BE PROVIDED WITH BITUMASTIC COATING.
9. VAULT WALL OPENINGS SHALL BE SEALED WITH NON-SHRINK GROUT. ENSURE 1-INCH CLEARANCE BETWEEN TOP OF PIPE AND PRECAST WALL.
10. MANHOLE STEPS SHALL BE DOWELLED INTO VAULT WALL AND CENTERED ON ACCESS HATCH.



<p>FULTON COUNTY STANDARD DETAIL 822 FIRE LINE VAULT-TYPE I</p>	<p>DATE</p>	<p>REVISIONS</p>	<p>DATE</p>	<p>REVISIONS</p>	<p>DCS/DRN/CHKD: REB APPROVED: REW DATE: 12-2-05</p>	<p>FULTON COUNTY</p>	<p>FULTON COUNTY PUBLIC WORKS 141 PRYOR ST. ATLANTA, GA. 30303 404-730-7400 FAX: 404-224-0498</p>	<p>DRAWING NO. 822</p>
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ASSUMPTIONS FOR STANDARD LENGTHS

PIPE: DUCTILE IRON, AWWA C-151
SOIL: GC & SC, CLAYEY GRAVELS, CLAYEY SANDS, GRAVEL-SAND-CLAY MIXTURES, SAND-CLAY MIXTURES.
AVERAGE DEPTH OF BURY: 4 FT
TRENCH TYPE: 4
TEST PRESSURE: 250 PSI
SAFETY FACTOR: 1.5:1 (BASED ON TEST PRESSURE)

NOTES:

1. A FULL LENGTH OF PIPE ATTACHED TO EACH SIDE RUN OR BRANCH OUTLET SHALL BE INSTALLED, NO CUT OR PIECE OF PIPE SHALL BE USED.
2. WHERE FILL DIRT HAS BEEN ADDED TO SHOULDER, DEADMAN WILL BE INSTALLED 10 FT. FROM ANY BRANCH OUTLET OR END PIPE.
3. ALL JOINTS THAT FALL WITHIN THESE STANDARD LENGTH SHOULD BE RESTRAINED. (ON EACH SIDE OF BENDS ON THE BRANCH OUTLET OF TEES, AND BEFORE DEAD-ENDS).
4. STANDARD LENGTHS SHALL BE MODIFIED IF ACTUAL CONDITIONS DO NOT MEET MINIMUM REQUIREMENTS IN ASSUMPTIONS FOR STANDARD LENGTHS.

RECOMMENDED RESTRAINED LENGTHS OF DUCTILE IRON PIPE

NOM. PIPE SIZE (IN)	90 DEG. BEND	45 DEG. BEND	22.5 DEG. BEND	11.25 DEG. BEND	SIZE ON SIZE TEE*	VALVE/DEAD-END
6	19 FT	8 FT	4 FT	2 FT	3 FT	35 FT
8	25 FT	11 FT	5 FT	3 FT	13 FT	46 FT
10	30 FT	13 FT	6 FT	3 FT	23 FT	56 FT
12	36 FT	15 FT	7 FT	4 FT	34 FT	67 FT
14	41 FT	17 FT	8 FT	4 FT	43 FT	77 FT
16	46 FT	19 FT	9 FT	5 FT	53 FT	87 FT
18	51 FT	21 FT	10 FT	5 FT	63 FT	96 FT
20	56 FT	23 FT	11 FT	6 FT	72 FT	106 FT
24	65 FT	27 FT	13 FT	7 FT	91 FT	126 FT

*RECOMMENDED RESTRAINED LENGTHS FOR TEES ARE FOR THE BRANCH OUTLET AND ASSUME A MINIMUM 10 FT. SECTION OF PIPE ATTACHED TO EACH SIDE OF THE RUN. RESTRAINT DEVICES SHOULD ALSO BE INSTALLED ON BOTH RUN JOINTS OF THE TEE ITSELF.

FULTON COUNTY STANDARD DETAIL 823
RESTRAINED JOINT PIPE STANDARD
LENGTHS

DATE	REVISIONS	DATE	REVISIONS

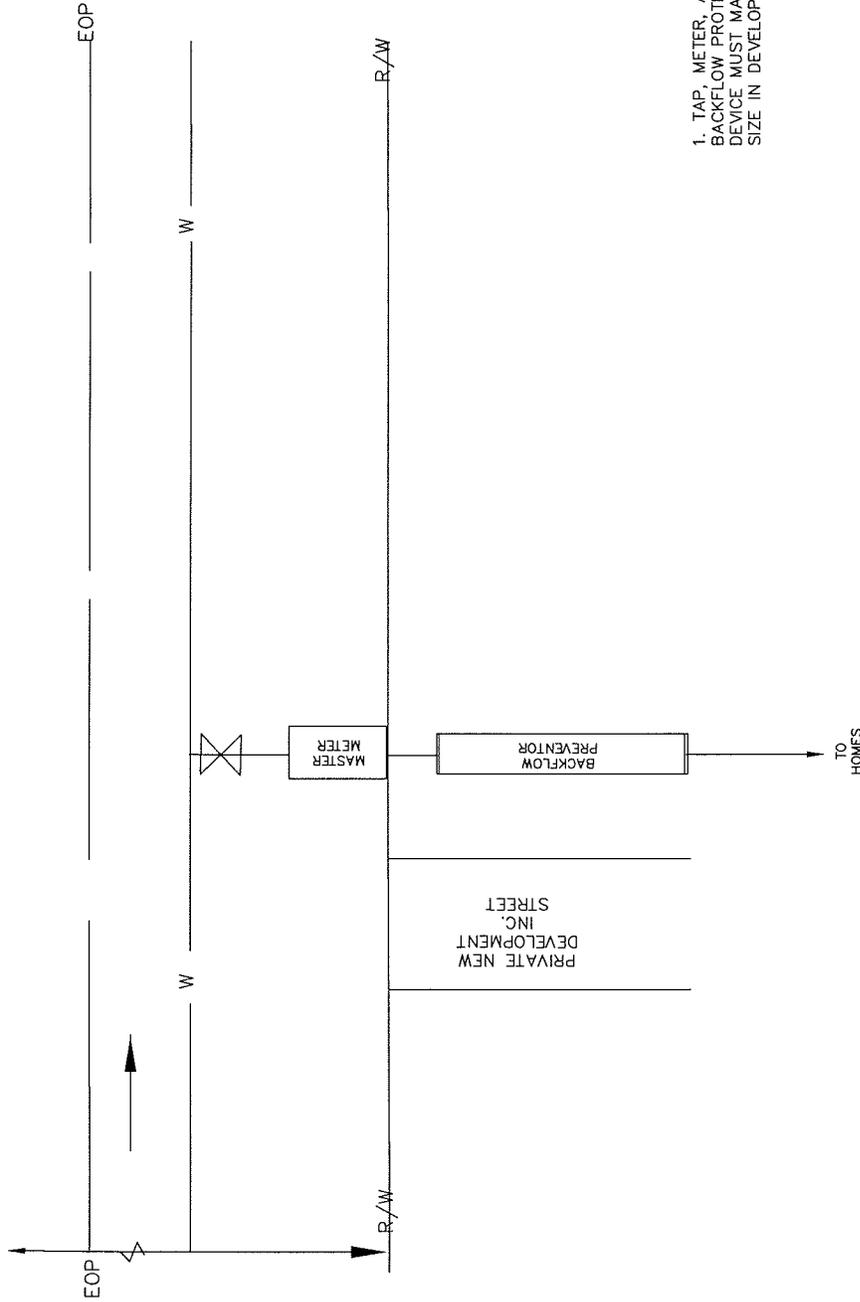
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DATE: 12-2-05



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DRAWING NO.

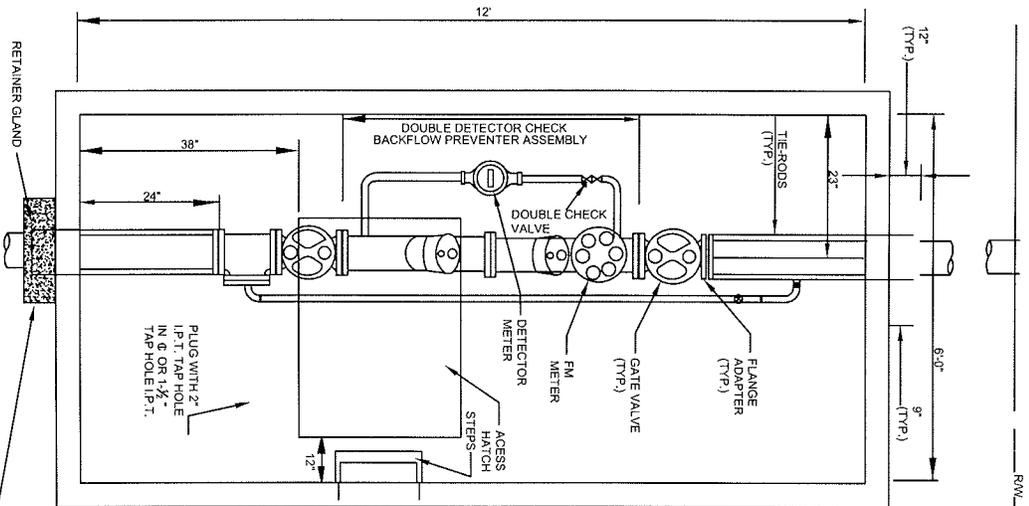
823



1. TAP, METER, AND
BACKFLOW PROTECTION
DEVICE MUST MATCH MAIN
SIZE IN DEVELOPMENT.

N.T.S.

FULTON COUNTY STANDARD DETAIL 824 WATER SERVICES TOWNHOME/APT./CONDOMINIUM PRIVATE DEVELOPMENT		DATE: _____ REVISIONS: _____ DATE: _____ REVISIONS: _____		DGS/DRN/CHKD: CMS APPROVED: _____ DATE: 12-2-05		 FULTON COUNTY FULTON COUNTY PUBLIC WORKS 141 PRYOR ST. ATLANTA, GA. 30303 404-730-7400 FAX: 404-224-0498		DRAWING NO. 824
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RETAINER GLAND WITH CONCRETE COLLAR. COLLARS SHALL EXTEND 12 INCHES BEYOND PIPE IN ALL DIRECTIONS AND SHALL EXTEND DOWN 2 INCHES BELOW VAULT BOTTOM OF VAULT.

1. TYPE I VAULT SHALL BE USED FOR 3,4,6 OR 8-INCH FM METER.
2. SEE SPECIFICATION SECTION 02665 FOR MATERIAL SPECIFICATIONS. ALL MATERIAL TO BE FURNISHED BY CONTRACTOR.
3. ALL FITTINGS SHALL BE DUCTILE IRON WITH FLANGED JOINTS. GATE VALVES SHALL BE WITH HANDWHEELS.
4. VAULT SHALL BE PRECAST CONCRETE. MIN. INSIDE HEIGHT SHALL BE 6 FEET. LOAD BEARING VAULT SHALL BE DESIGNED BY PROPERTY OWNERS ENGINEER, AND SUBMITTED TO COUNTY FOR APPROVAL.
5. ACCESS HATCH/FLOOR DOOR SHALL BE MIN. 36"X36" (BILCO MODEL PCM-5) FOR 3 & 4-INCH METERS OR 54"X54" (BILCO MODEL PDCM-3) FOR 6 & 8-INCH METERS.
6. VAULT FLOOR SHALL BE # 57 CRUSHED STONE, MIN. 6-INCHES THICK.
7. PROVIDE RETAINER GLAND ON PIPE BEYOND VAULT WALLS. PROVIDE TWO TIE RODS FROM FIRST INTERIOR FLANGE TO RETAINER GLANDS, WITH DOUBLE NUTS AND WASHERS. ENCASE RETAINER GLANDS IN CONCRETE. ALSO, PROVIDE TIE RODS FROM RETAINER GLAND TO TAPPING VALVE OR CASING UNDER ROAD, WHICH-EVER IS CLOSER. RODS SHALL BE PROVIDED WITH BITUMASTIC COATING.
8. VAULT WALL OPENINGS SHALL BE SEALED WITH NON-SHRINK GROUT. ENSURE 1-INCH CLEARANCE BETWEEN TOP OF PIPE AND PRECAST WALL.
9. MANHOLE STEPS SHALL BE DOWELLED INTO VAULT WALL AND CENTERED ON ACCESS HATCH.

FM METER		
METER SIZE	6" & 8"	3" & 4"
VAULT INTERIOR DIMENSION	12' X 6'	9' X 5'

FULTON COUNTY STANDARD DETAIL 825
FM ASSEMBLY

DATE	REVISIONS	DATE	REVISIONS

DGS/DRN/CHK: CUS
APPROVED: REW
DATE: 3-7-08



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DRAWING NO. 825