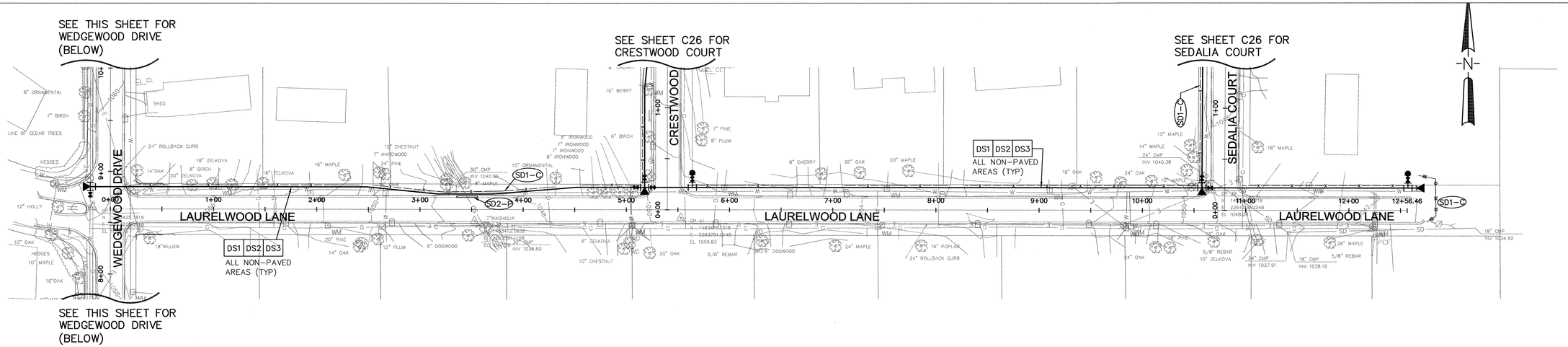

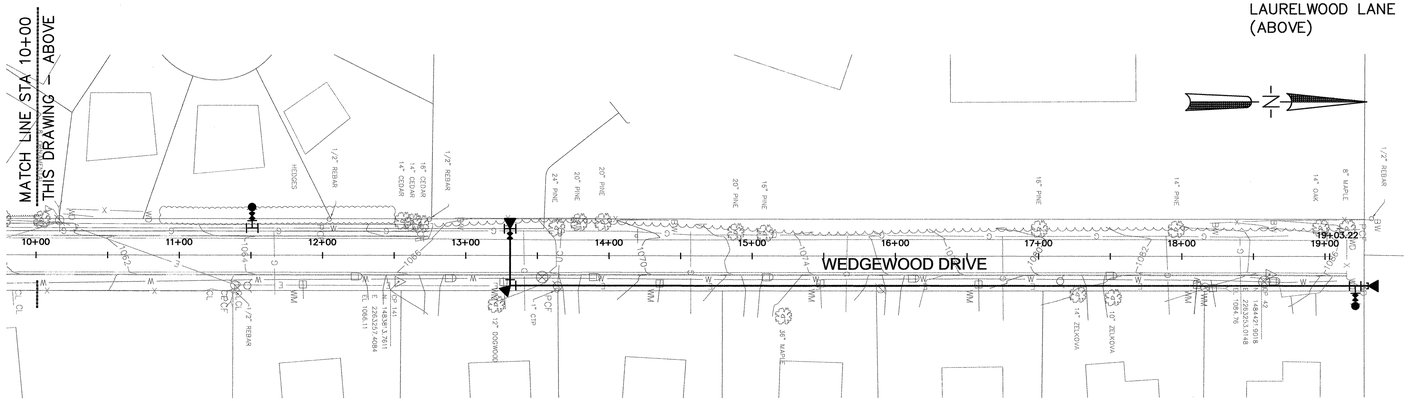

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404.730.7400

GEORGIA REGISTERED No. 024191 PROFESSIONAL ENGINEER PAMESH J. PATEL
OCTOBER 2007

50 0 50 100
SCALE IN FEET
1" = 50'

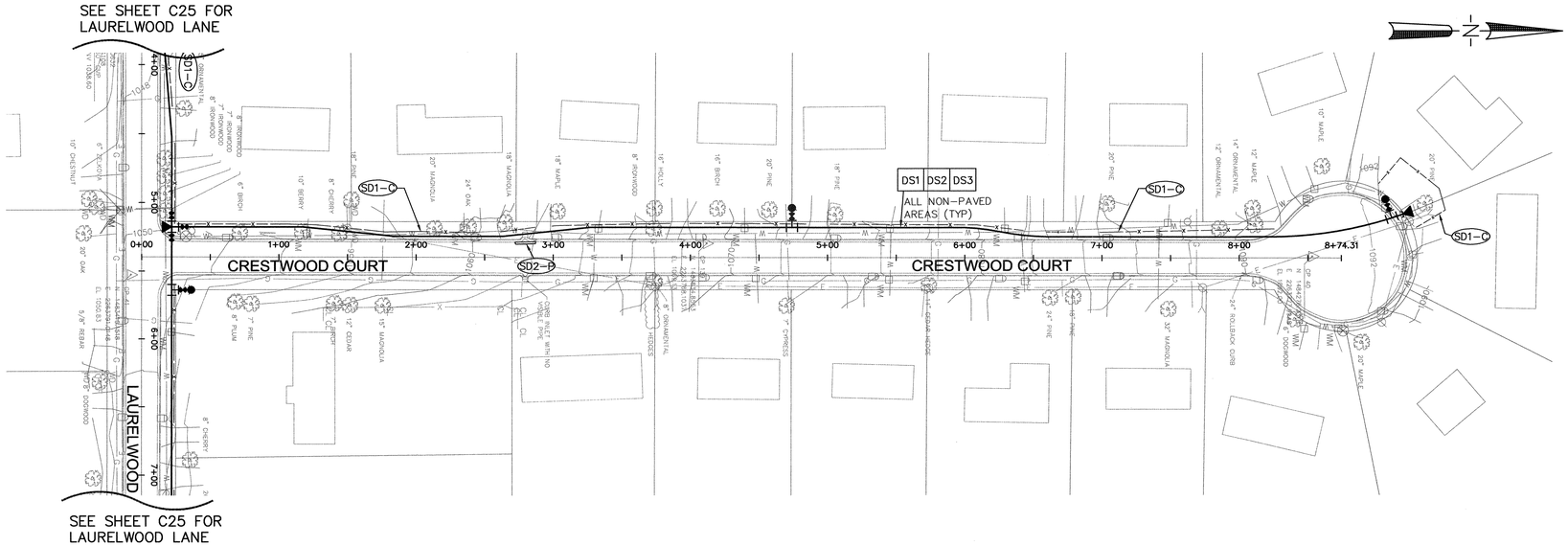
W039 - ALPHARETTA WATER MAIN REPLACEMENT

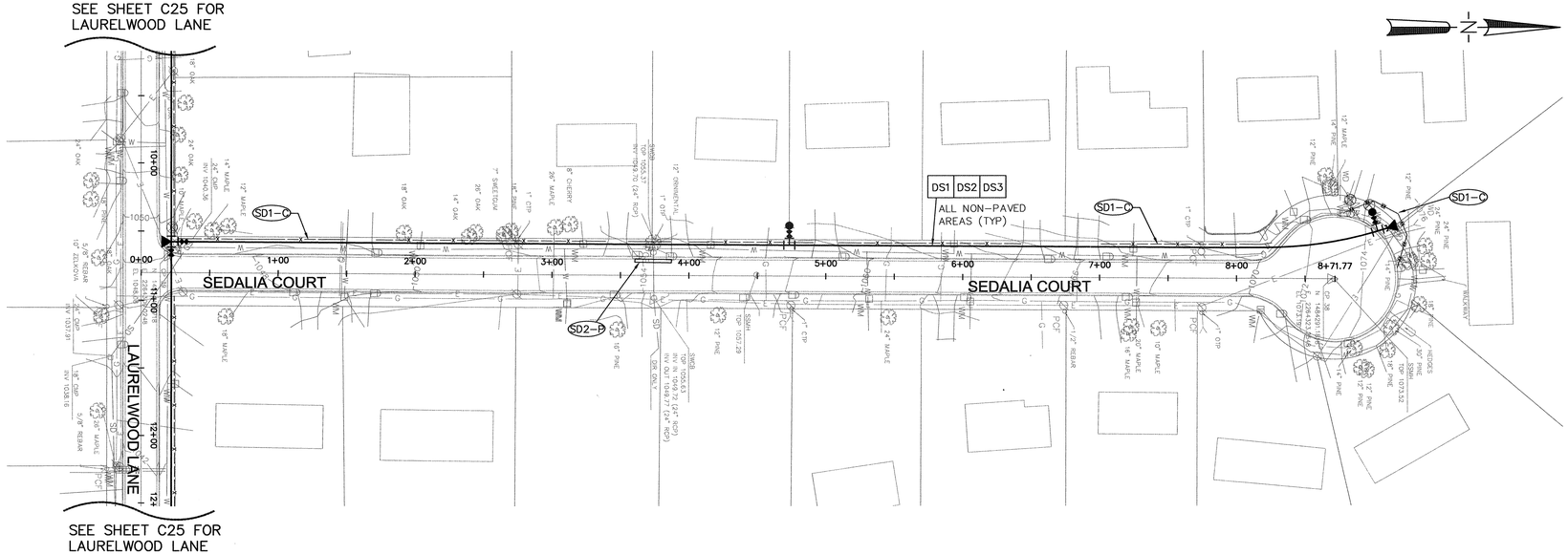
WEDGEWOOD DRIVE AND LAURELWOOD LANE EROSION AND SEDIMENT CONTROL

DRAWN: MW | CHECKED: TM | DATE: OCTOBER 2007
DESIGNED: PJP | PROJ. NO.: W039

C25

SHEET 25 OF 54





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GEORGIA REGISTERED PROFESSIONAL ENGINEER No. 024191 PARISH J. PARIKH
OCTOBER 2007

50 0 50 100
SCALE IN FEET
1" = 50'

W039 - ALPHARETTA WATER MAIN REPLACEMENT

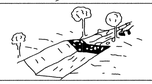
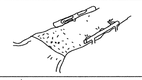
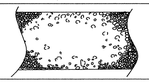
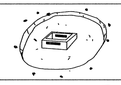
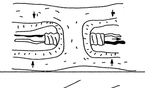
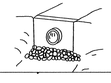
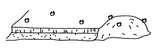
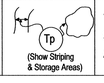
CRESTWOOD COURT AND SEDALIA COURT EROSION AND SEDIMENT CONTROL

DRAWN: MW	CHECKED: TM	DATE: OCTOBER 2007
DESIGNED: PJP	PROJ. NO.: W039	

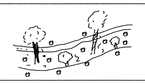
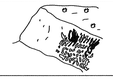
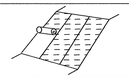
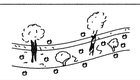
C26

SHEET 26 OF 54

STRUCTURAL PRACTICES

CODE	PRACTICE	DETAIL	MAP SYMBOL	DESCRIPTION
Cd	CHECKDAM			A SMALL TEMPORARY BARRIER OR DAM CONSTRUCTED ACROSS A SWALE, DRAINAGE DITCH OR AREA OF CONCENTRATED FLOW.
Ch	CHANNEL STABILIZATION			IMPROVING, CONSTRUCTING OR STABILIZING AN OPEN CHANNEL, EXISTING STREAM, OR DITCH.
Co	CONSTRUCTION EXIT			A CRUSHED STONE PAD LOCATED AT THE CONSTRUCTION SITE EXIT TO PROVIDE A PLACE FOR REMOVING MUD FROM TIRES THEREBY PROTECTING PUBLIC STREETS.
Cr	CONSTRUCTION ROAD STABILIZATION			A TRAVELWAY CONSTRUCTED AS PART OF A CONSTRUCTION PLAN INCLUDING ACCESS ROADS, SUBDIVISION ROADS, PARKING AREAS, AND OTHER ON-SITE VEHICLE TRANSPORTATION ROUTES.
Fr	FILTER RING			A TEMPORARY STONE BARRIER CONSTRUCTED AT STORM DRAIN INLETS AND POND OUTLETS.
Rd	ROCK FILTER DAM			A PERMANENT OR TEMPORARY STONE FILTER DAM INSTALLED ACROSS SMALL STREAMS OR DRAINAGEWAYS.
Rp	RIP RAP			LOOSE ROCK OR SIMILAR MATERIAL INSTALLED ON SLOPES FOR PROTECTION FROM EROSION CAUSED BY WATER TURBULENCE OR HIGH VELOCITIES
Sd1	SEDIMENT BARRIER			A BARRIER TO PREVENT SEDIMENT FROM LEAVING THE CONSTRUCTION SITE. IT MAY BE SANDBAGS, BALES OF STRAW OR HAY, BRUSH, LOGS OR POLES, GRAVEL, OR A SILT FENCE.
Sd2	INLET SEDIMENT TRAP			AN IMPOUNDING AREA CREATED BY EXCAVATING AROUND A STORM DRAIN DROP INLET. THE EXCAVATED AREA WILL BE FILLED AND STABILIZED ON COMPLETION OF CONSTRUCTION ACTIVITIES.
Sd3	TEMPORARY SEDIMENT BASIN			A BASIN CREATED BY EXCAVATION OR A DAM ACROSS A WATERWAY. THE SURFACE WATER RUNOFF IS TEMPORARILY STORED ALLOWING THE BULK OF THE SEDIMENT TO DROP OUT.
Sr	TEMPORARY STREAM CROSSING			A TEMPORARY BRIDGE OR CULVERT-TYPE STRUCTURE PROTECTING A STREAM OR WATERCOURSE FROM DAMAGE BY CROSSING CONSTRUCTION EQUIPMENT.
St	STORM DRAIN OUTLET PROTECTION			A PAVED OR SHORT SECTION OF RIPRAP CHANNEL AT THE OUTLET OF A STORM DRAIN SYSTEM PREVENTING EROSION FROM THE CONCENTRATED RUNOFF.
Tp	TOPSOILING			THE PRACTICE OF STRIPPING OFF THE MORE FERTILE SOIL, STORING IT, THEN SPREADING IT OVER THE DISTURBED AREA AFTER COMPLETION OF CONSTRUCTION ACTIVITIES.

VEGETATIVE MEASURES

Bf	BUFFER ZONE			A STRIP OF UNDISTURBED ORIGINAL VEGETATION, ENHANCED OR RESTORED EXISTING VEGETATION OR THE REESTABLISHMENT OF VEGETATION SURROUNDING AN AREA OF DISTURBANCE OR BORDERING STREAMS.
Ds1	DISTURBED AREA STABILIZATION (WITH MULCHING ONLY)		Ds1	ESTABLISHING TEMPORARY PROTECTION FOR DISTURBED AREAS WHERE SEEDINGS MAY NOT HAVE A SUITABLE GROWING SEASON TO PRODUCE AN EROSION RETARDING COVER.
Ds2	DISTURBED AREA STABILIZATION (WITH TEMPORARY SEEDING)		Ds2	ESTABLISHING A TEMPORARY VEGETATIVE COVER WITH FAST GROWING SEEDINGS ON DISTURBED AREAS.
Ds3	DISTURBED AREA STABILIZATION (WITH PERMANENT VEGETATION)		Ds3	ESTABLISHING A PERMANENT VEGETATIVE COVER SUCH AS TREES, SHRUBS, VINES, GRASSES, SOD, OR LEGUMES ON DISTURBED AREAS.
Ds4	DISTURBED AREA STABILIZATION (WITH SODDING)		Ds4	A PERMANENT VEGETATIVE COVER USING SODS ON HIGHLY ERODIBLE OR CRITICALLY ERODED LANDS.
Du	DUST CONTROL ON DISTURBED AREAS		Du	CONTROLLING SURFACE AND AIR MOVEMENT OF DUST ON CONSTRUCTION SITE, ROADWAYS AND SIMILAR SITES.
Mb	EROSION CONTROL MATTING AND BLANKETS		H Mb H	THE INSTALLATION OF A PROTECTIVE COVERING (BLANKET) OR SOIL STABILIZATION MAT ON A PREPARED PLANTING AREA OF A STEEP SLOPE, CHANNEL, OR SHORELINE.
Sb	STREAMBANK STABILIZATION (USING PERMANENT VEGETATION)		Sb	THE USE OF READILY AVAILABLE NATIVE PLANT MATERIALS TO MAINTAIN AND ENHANCE STREAMBANKS, OR TO PREVENT, OR RESTORE AND REPAIR SMALL STREAMBANK EROSION PROBLEMS.

SOURCE: GEORGIA SOIL AND WATER CONSERVATION COMMISSION

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GEORGIA REGISTERED No. 17005 PROFESSIONAL ENGINEER CHAMPAK C. SHAH

N.T.S.

W039 - ALPHARETTA WATER MAIN REPLACEMENT

GEORGIA UNIFORM CODING EROSION AND SEDIMENT CONTROL

CD-1

DRAWN: MJW	CHECKED: TM	DATE: OCTOBER 2007
DESIGNED: PJP	PROJ. NO.: W039	SHEET 27 OF 54

EROSION AND SEDIMENT CONTROL NOTES:

1. CONTRACTOR SHALL PREPARE A DETAILED WORK PLAN SHOWING THE SENSITIVE AREAS AND PROPOSED BMPS TO BE PROVIDED TO PREVENT EROSION AND SEDIMENT TRANSPORT.
2. SPECIAL ATTENTION IS TO BE PAID TO THE PIPES TO BE INSTALLED ON TOP OF CULVERTS AT CREEK CROSSINGS. CARE SHALL BE TAKEN TO AVOID ANY ACCIDENTAL SPILL OF EXCAVATED DIRT INTO THE CREEK.
3. WHEREVER POSSIBLE, FOR CREEK CROSSINGS, EXCAVATE THE TRENCH MANUALLY BY HAND TO MINIMIZE EROSION DUE TO HEAVY EQUIPMENT.
4. SCHEDULE THE INSTALLATION OF WATER LINES AT CREEK CROSSINGS TO AVOID RAINY DAYS.
5. TEMPORARY FILTER RING STRUCTURE IS TO BE INSTALLED AT THE INLET SIDE AND A CONCRETE CHECK DAM WITH HAY BALES SHALL BE INSTALLED AT THE DOWNSTREAM SIDE.
6. CARE SHALL BE TAKEN TO MAKE SURE THAT THE TURBIDITY IN THE WATER DOES NOT EXCEED 75 NTUS.
7. INSTALL ALL TEMPORARY EROSION AND SEDIMENT CONTROL DEVICES PRIOR TO ANY LAND DISTURBANCE ACTIVITY.
8. ADDITIONAL EROSION AND/OR SEDIMENT CONTROL MEASURES WILL BE REQUIRED WHERE DETERMINED NECESSARY BY ACTUAL SITE CONDITIONS AND/OR AS DIRECTED BY COUNTY OR STATE INSPECTOR.
9. THE LIMIT OF LAND CLEARING AND DISTURBANCE SHALL NOT EXCEED TEN FEET (10 FT.) WIDTH ALONG THE CENTER LINE OF PROPOSED WATER LINE.
10. ANY DISTURBED AREA REMAINING EXPOSED FOR A PERIOD GREATER THAN 14 DAYS SHALL BE STABLLIZED WITH MULCH OR TEMPORARY SEEDING.
11. IT IS THE CONTRACTOR'S RESPOSNSIBILITY TO ACCOMPLISH EROSION CONTROL FOR ALL DRAINAGE PATTERNS CREATED AT VARIOUS STAGES DURING CONSTRUCTION. ANY DIFFICULTY IN CONTROLLING EROSION AND SEDIMENT TRANSPORT DURING ANY PHASE OF CONSTRUCTION SHALL BE REPORTED TO THE ENGINEER OR COUNTY INSPECTOR.
12. CONTRACTOR SHALL MAINTAIN ALL EROSION CONTROL MEASURES UNTIL WATER LINES ARE INSTALLED, TESTED AND ACCEPTED AS WELL AS PERMANENT VEGETATION HAS BEEN SUFFICIENTLY ESTABLISHED.
13. IF SEASONAL LIMITATIONS DELAY PLANTING OF GRASS THEN STRAW MULCH STABILIZATION SHALL BE PLACED IN ACCORDANCE WITH FULTON COUNTY OR STATE OF GEORGIA STANDARDS.
14. ALL EROSION CONTROL MEASURES AND DEVICES SHALL CONFORM TO AND ALL WORK WILL BE PERFORMED IN ACCORDANCE WITH THE STANDARDS AND SPECIFICATIONS OF THE PUBLICATION ENTITLED "MANUAL FOR EROSION AND SEDIMENTATION CONTROL IN GEORGIA".
15. CONTRACTOR SHALL INSPECT EROSION CONTROL MEASURES AT THE END OF EACH WORKING DAY AND WITHIN 24 HOURS OF A RAIN STORM THAT IS 0.5 INCHES OR GREATER TO ENSURE THAT THEY ARE FUNCTIONING PROPERLY. CONTRACTOR SHALL REPAIR ANY DAMAGED DEVICES IMMEDIATELY.
16. IF FULL IMPLEMENTATION OF APPROVED PLAN DOES NOT PROVIDE FOR EFFECTIVE EROSION CONTROL, ADDITIONAL EROSION AND SEDIMENT CONTROL MEASURES SHALL BE IMPLEMENTED TO CONTROL THE SEDIMENT SOURCE.
17. CONTRACTOR SHALL REMOVE ACCUMULATED SILT, IF ANY, AT ONE-HALF HEIGHT OF SILT FENCE UTILIZED FOR EROSION CONTROL.
18. FAILURE TO INSTALL, OPERATE AND MAINTAIN ALL EROSION CONTROL MEASURES WILL RESULT IN ALL CONSTRUCTION BEING STOPPED ON THE JOB SITE UNTIL SUCH MEASURES ARE CORRECTED.
19. A COPY OF THE APPROVED LAND DISTURBANCE PLAN AND PERMIT SHALL BE PRESENT AT ALL THE TIMES. ONE COPY OF THE PERMIT SHALL BE POSTED ON TREE OR POLE AND BE CLEARLY VISIBLE TO THE GENERAL PUBLIC.
20. ALL EXISTING DROP INLETS AND CATCH BASINS IN THE CONSTRUCTIOIN AREA OR WHICH HAS A POTENTIAL FOR CAPTURING SEDIMENTS, SHALL BE PROTECTED WITH TEMPORARY SEDIMENT TRAP/CURB INLET PROTECTION (Sd2-P).
21. A 200 POUND FILTER FABRIC UNDERLAYMENT IS TO BE USED IN CONJUNCTION WITH ALL RIP RAP APPLICATIONS, INCLUDING ROCK FILTER DAMS, CHECK DAMS, FILTER RING, AND CONSTRUCTION EXIT.

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GEORGIA REGISTERED No. 11006 PROFESSIONAL ENGINEER CHAMPAK C. SHAH

N.T.S.

W039 - ALPHARETTA WATER MAIN REPLACEMENT

EROSION AND SEDIMENT CONTROL NOTES

CD-2

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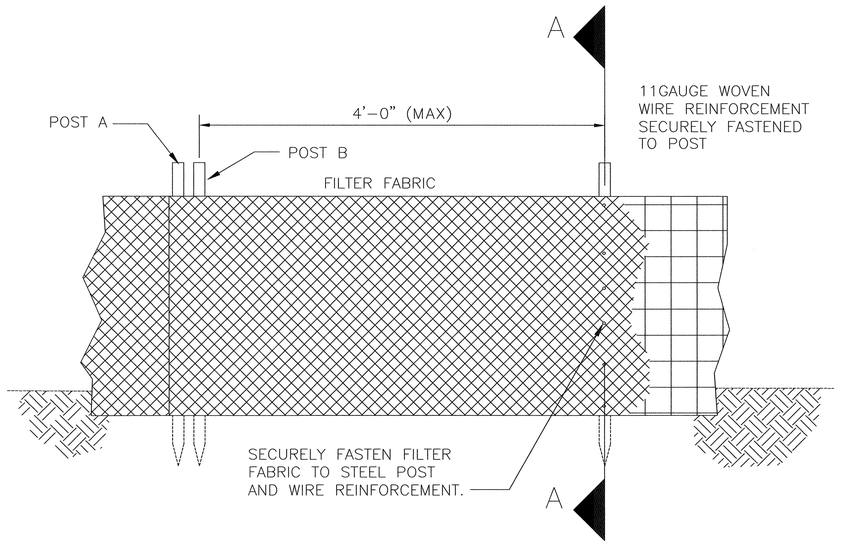
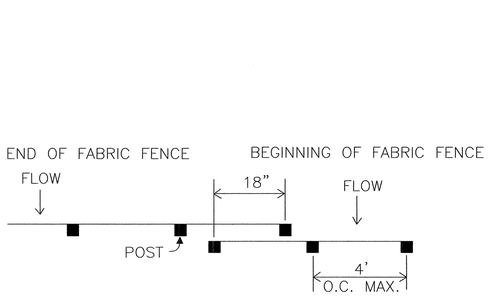
DESIGNED: PJP	PROJ. NO.: W039	SHEET 28 OF 54



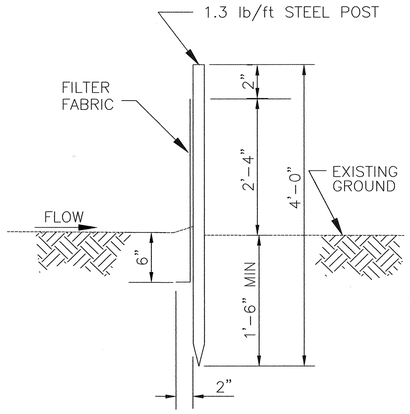
ELEVATION

NOT TO SCALE



TOP VIEW – (NOT TO SCALE)

OVERLAP AT FABRIC ENDS

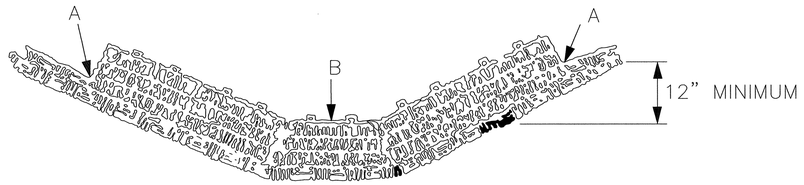


SECTION "A"

NOT TO SCALE

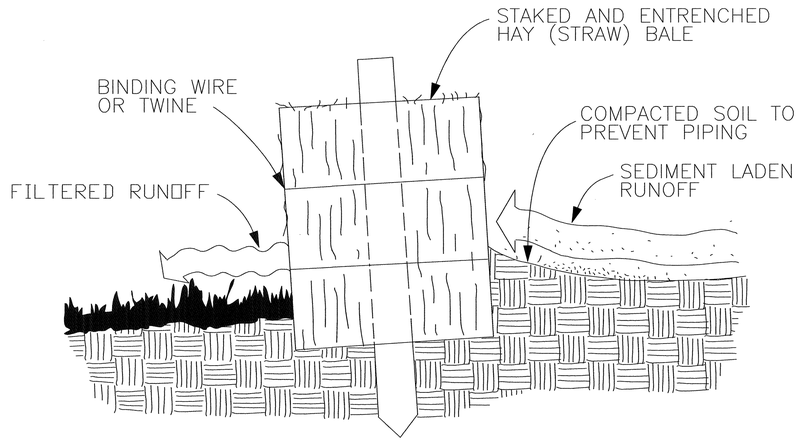
Sd1-C TYPE "C" SILT FENCE

SOURCE: FULTON COUNTY STANDARD DETAIL No. 404



POINTS A SHOULD BE HIGHER THAN POINT B

PROPER PLACEMENT OF HAY BALE BARRIER IN DRAINAGE WAY



NOTE: EMBED HAY BALES A MINIMUM OF 4 INCHES.

Cd-Hb HAY BALE BARRIER

NOT TO SCALE

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N.T.S.

W039 - ALPHARETTA WATER MAIN REPLACEMENT

SILT FENCE TYPE C
AND HAY BALE BARRIER
EROSION AND SEDIMENT CONTROL

DRAWN: MJW	CHECKED: TM	DATE: OCTOBER 2007
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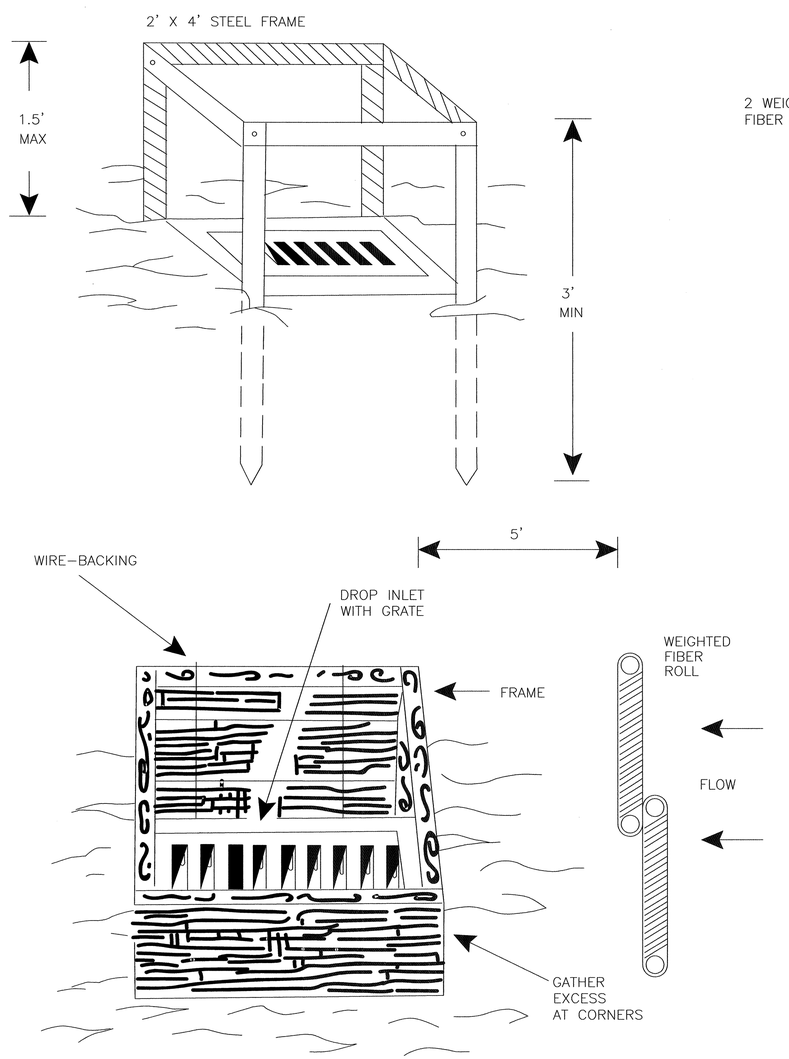
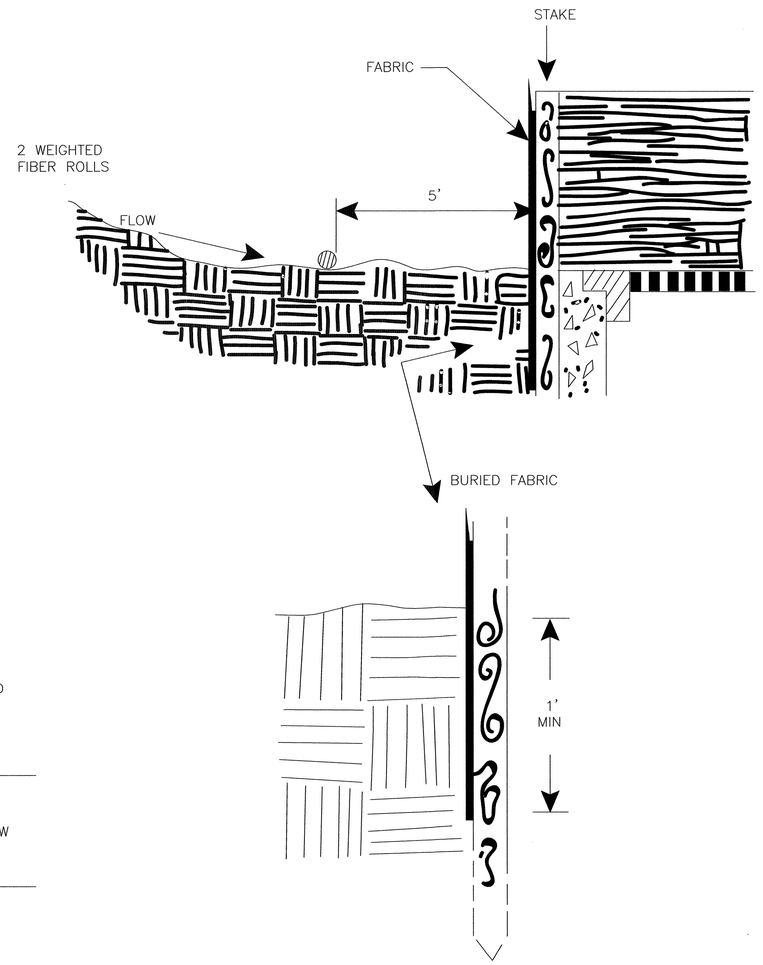
CD-3

SHEET 29 OF 54





Sd2-F

FABRIC AND SUPPORTING FRAME FOR INLET PROTECTION

SOURCE: GEORGIA SOIL AND WATER CONSERVATION COMMISSION

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GEORGIA REGISTERED No. 11061 PROFESSIONAL ENGINEER CHAMPAK C. SHAH

N.T.S.

W039 - ALPHARETTA WATER MAIN REPLACEMENT

FABRIC AND SUPPORTING FRAME FOR INLET PROTECTION EROSION AND SEDIMENT CONTROL

CD-4

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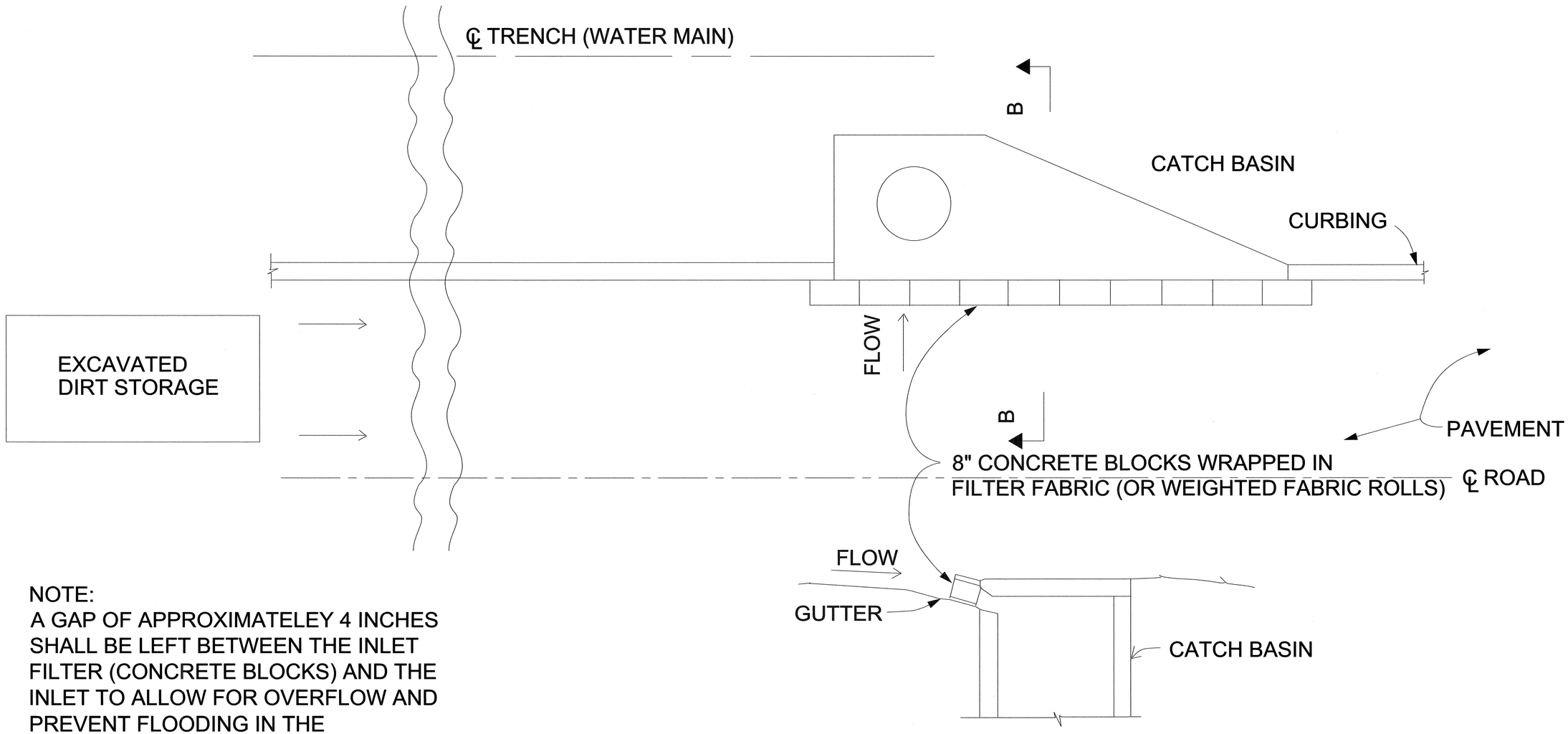

NOTE:
A GAP OF APPROXIMATELEY 4 INCHES SHALL BE LEFT BETWEEN THE INLET FILTER (CONCRETE BLOCKS) AND THE INLET TO ALLOW FOR OVERFLOW AND PREVENT FLOODING IN THE ROADWAY.

SECTION B-B

CURB INLET FILTER
"PIGS IN BLANKET"

Sd2-P

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GEORGIA REGISTERED No. 17006 PROFESSIONAL ENGINEER CHAMPAK C. SHAH

N.T.S.

W039 - ALPHARETTA WATER MAIN REPLACEMENT

CURB INLET FILTER
"PIGS IN BLANKET"
EROSION AND SEDIMENT CONTROL

DRAWN: MJW	CHECKED: TM	DATE: OCTOBER 2007
DESIGNED: PJP	PROJ. NO.: W039	

CD-5

SHEET 31 OF 54

DS3 PERMANENT GRASSING SPECIFICATIONS

MAR 1 TO JULY 31

COMMON BERMUDAGRASS (HULLED)	10 LBS./ACRE
COMMON BERMUDAGRASS (HULLED) AND WEEPING LOVEGRASS	6 LBS./ACRE 2 LBS./ACRE
COMMON BERMUDAGRASS (HULLED) AND CENTIPEDE	6 LBS./ACRE 10 LBS./ACRE

OCTOBER 1 TO MARCH 1

COMMON BERMUDAGRASS (UNHULLED) AND ANNUAL RYEGRASS	10 LBS./ACRE 10 LBS./ACRE
COMMON BERMUDAGRASS (UNHULLED) AND TALL FESCUE	10 LBS./ACRE 30 LBS./ACRE
COMMON BERMUDAGRASS (UNHULLED) AND RYE GRAIN OR WHEAT	10 LBS./ACRE 30 LBS./ACRE

FERTILIZER RATE

NITROGEN	5% – 10%	60 – 90 LBS./ACRE
PHOSPHOROUS	10% – 15%	120 – 180 LBS./ACRE
POTASSIUM	10% – 15%	120 – 180 LBS./ACRE
MULCH		2.5 TONS/ACRE
N TOP DRESS		50 – 100 LBS./ACRE
LIME		2 TONS/ACRE

NOTE

AUGUST AND SEPTEMBER ARE "HIGH FAILURE" PLANTING TIMES. IF POSSIBLE, AREAS SHOULD BE SODDED DURING THIS TIME OR JUST MULCHED AND PLANTED LATER.

JANUARY AND FEBRUARY ARE ALSO "HIGH FAILURE" MONTHS FOR PLANTING. TEMPORARY MULCH IS RECOMMENDED FOR THIS PERIOD WITH PLANTING TO COME LATER. TEMPORARY PLANTINGS MAY PROVIDE SOME COVER DURING THESE TIMES IF NO OTHER OPTIONS EXIST.

DS2 TEMPORARY SEEDING SPECIFICATIONS USED ALONE – LBS./ACRE

CONDITION 1 – FLAT TO MODERATE SLOPES 0% – 3%

GRASS	SPRING	SUMMER	FALL	WINTER
RYE GRASS			40	40
RYE GRAIN			150	150
WHEAT			150	150
WEEPING LOVEGRASS	4			
BROWNTOP MILLET	40	40		
FESCUE			50	

CONDITION 2 – MODERATE TO STEEP SLOPE 3% – 25%

GRASS	SPRING	SUMMER	FALL	WINTER
RYE GRASS			50	50
RYE GRAIN			175	175
WHEAT			175	175
LESPEDEZA ANNUAL	40			40
WEEPING LOVEGRASS	4			
BROWNTOP MILLET	50	50		
SUDAN GRASS	60			
FESCUE			50	

CONDITION 3 – CONCENTRATED WATER AREAS

GRASS	SPRING	SUMMER	FALL	WINTER
RYE GRASS			50	50
RYE GRAIN			175	175
WHEAT			175	175
LESPEDEZA ANNUAL	50			50
BROWNTOP MILLET	50	50		
SUDAN GRASS	60	60		
PEARL MILLET		50		
FESCUE			50	
WEEPING LOVE GRASS	5			

DS2 TEMPORARY SEEDING SPECIFICATIONS USED IN MIXTURES WITH PERMANENT GRASSES – LBS. PER ACRE

CONDITION 1 – FLAT TO MODERATE SLOPES 0% – 3%

GRASS	SPRING	SUMMER	FALL	WINTER
RYE GRASS			10	10
RYE GRAIN			30	30
WHEAT			30	30
WEEPING LOVEGRASS	2			
BROWNTOP MILLET	10	10		
FESCUE			30	

CONDITION 2 – MODERATE TO STEEP SLOPE 3% – 25%

GRASS	SPRING	SUMMER	FALL	WINTER
RYE GRASS			20	20
RYE GRAIN			40	40
WHEAT			40	40
LESPEDEZA ANNUAL	10			10
WEEPING LOVEGRASS	2			
BROWNTOP MILLET	10	10		
SUDAN GRASS	N/R			
FESCUE			40	

CONDITION 3 – CONCENTRATED WATER AREAS

GRASS	SPRING	SUMMER	FALL	WINTER
RYE GRASS			20	20
RYE GRAIN			40	40
WHEAT			40	40
LESPEDEZA ANNUAL	10			10
BROWNTOP MILLET	10	10		
SUDAN GRASS	N/R			
PEARL MILLET	N/R			
FESCUE			50	
WEEPING LOVE GRASS	3			

N/R – NOT RECOMMENDED FOR MIXTURES

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GEORGIA REGISTERED No. 17003 PROFESSIONAL ENGINEER CHAMPAK C. SHAH

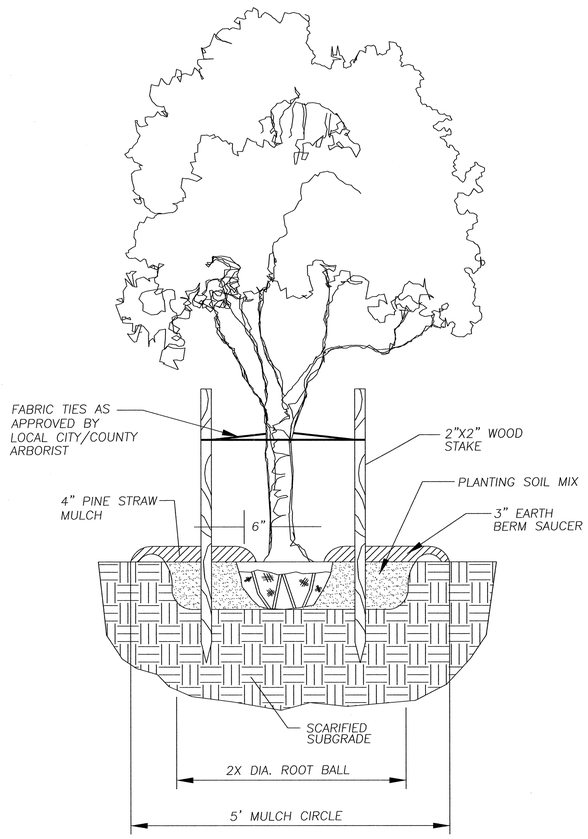
N.T.S.

W039 - ALPHARETTA WATER MAIN REPLACEMENT

TEMPORARY AND PERMANENT SEEDING EROSION AMD SEDIMENT CONTROL

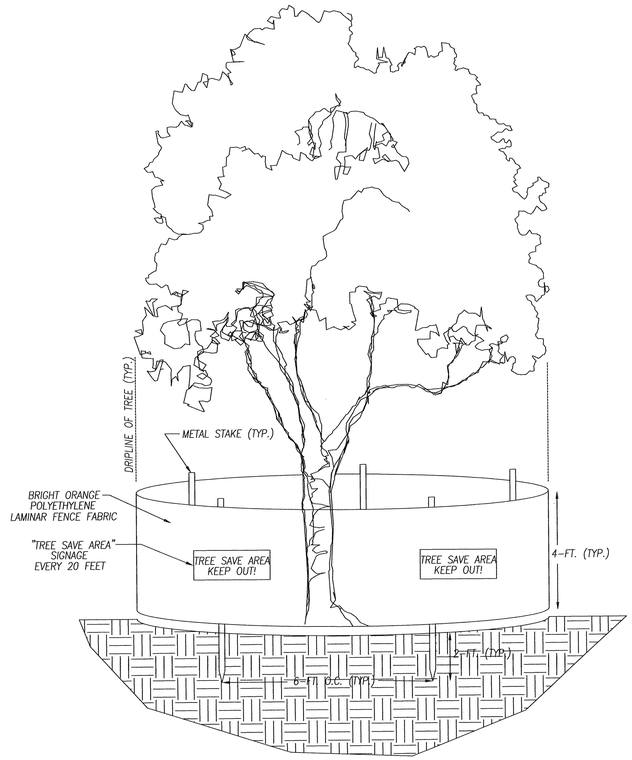
DRAWN: MJW	CHECKED: TM	DATE: OCTOBER 2007
DESIGNED: PJP	PROJ. NO.: W039	

CD-6



TREE PLANTING SECTION

NOT TO SCALE

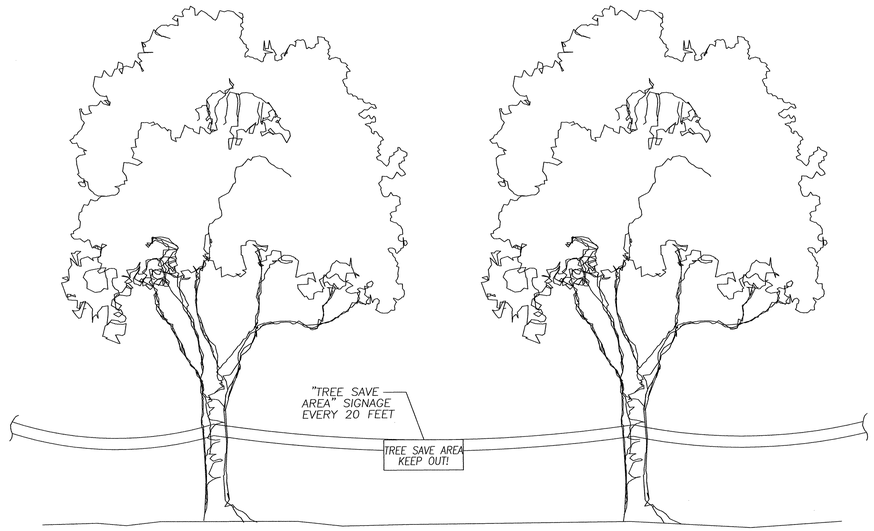


ACTIVE TREE-PROTECTION FENCING DETAIL

NOT TO SCALE

TREE PROTECTION AREA

MINIMUM 4" WIDE, HEAVY MILL, PLASTIC WITH DARK LETTERING ON BRIGHT BACKGROUND



PASSIVE TREE-PROTECTION W/ ROPE AND SIGNAGE DETAIL

NOT TO SCALE

NOTES:

1. *STAKES AND FABRIC GUYS NOT REQUIRED ON TREES 2" CALIPER AND UNDER*
2. *DO NOT DRIVE STAKE THROUGH ROOTBALL.*
3. *PLANT TREE AT GRADE. DO NOT MOUND*
4. *REMOVE UPPER HALF OF WIRE BASKET AND BURLAP FOR ALL B&B TREES*

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GEORGIA REGISTERED No. 11405 PROFESSIONAL ENGINEER CHAMPAK C. SHAH

N.T.S.

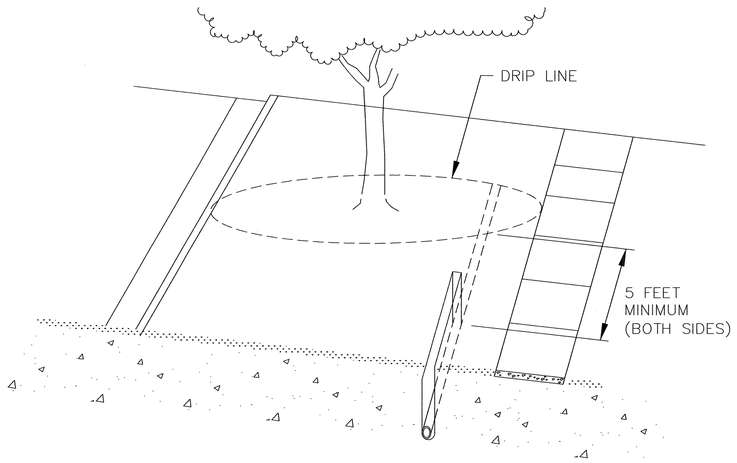
W039 - ALPHARETTA WATER MAIN REPLACEMENT

TREE PROTECTION

CD-7

DRAWN: MJW	CHECKED: TM	DATE: OCTOBER 2007
DESIGNED: PJP	PROJ. NO.: W039	SHEET 33 OF 54

WHERE TO START FREE BORING

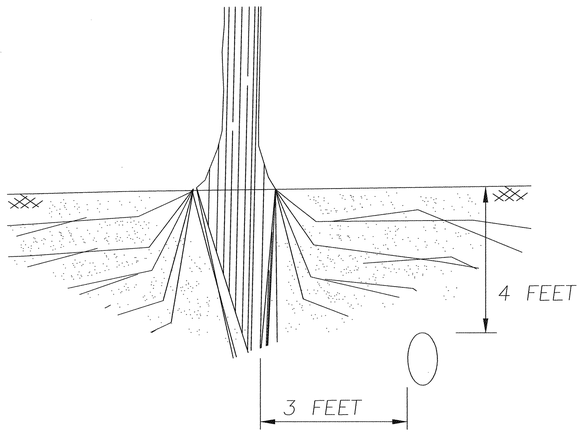


A. FOR TREES 6 INCHES IN DIAMETER OR SMALLER AT BREAST HEIGHT (DBH)
TRENCHING SHOULD COME NO CLOSER TO THE TREE THAN THE DRIP LINE. (MINIMUM 5 FT.)

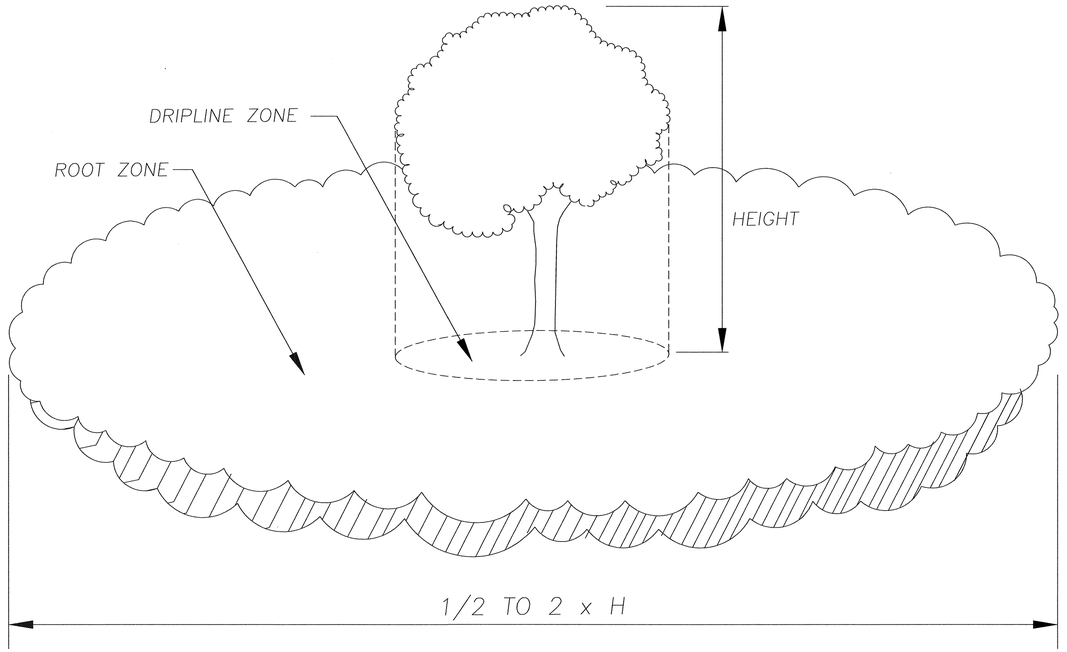
B. FOR TREES OVER 6 INCHES DBH

IF A TREE'S DIAMETER IS:	THE DISTANCE OF FREE BORING FROM BOTH SIDES OF THE TREE SHOULD BE AT LEAST:
6"–9"	5'
10"–14"	10'
15"–19"	12'
OVER 19"	15'

NOTE: THIS PROCEDURE IS FROM A RECOMMENDATION BY THE MUNICIPAL FORESTERS OF NORTHEAST ILLINOIS AND IS CURRENTLY A WIDELY ADOPTED TUNNELING STANDARD.

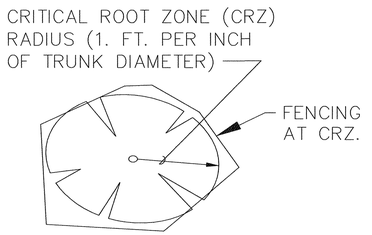


PROPOSED PIPE LOCATION

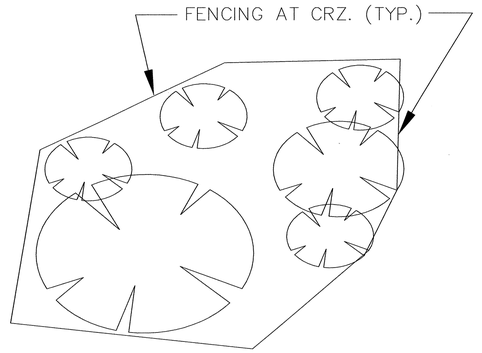


TUNNELING TO SAVE TREES

NOTE:
LIMITS OF MULCH AREAS AND DISTANCE FROM TRUNKS TO WORK/ PERMEABLE PAVING AREAS SHALL BE SUBJECT TO THE APPROVAL OF THE ARBORIST.



INDIVIDUAL TREE



GROUP OF TREES

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N.T.S.

W039 - ALPHARETTA WATER MAIN REPLACEMENT

TREE PROTECTION

CD-8

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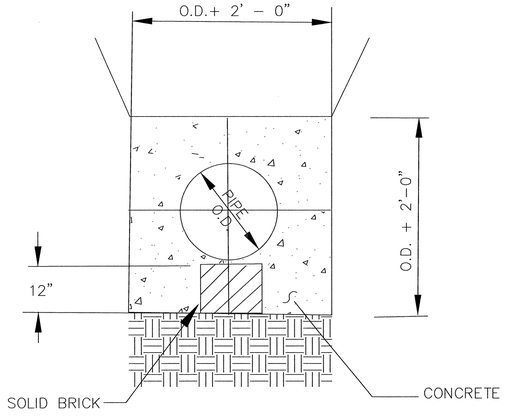
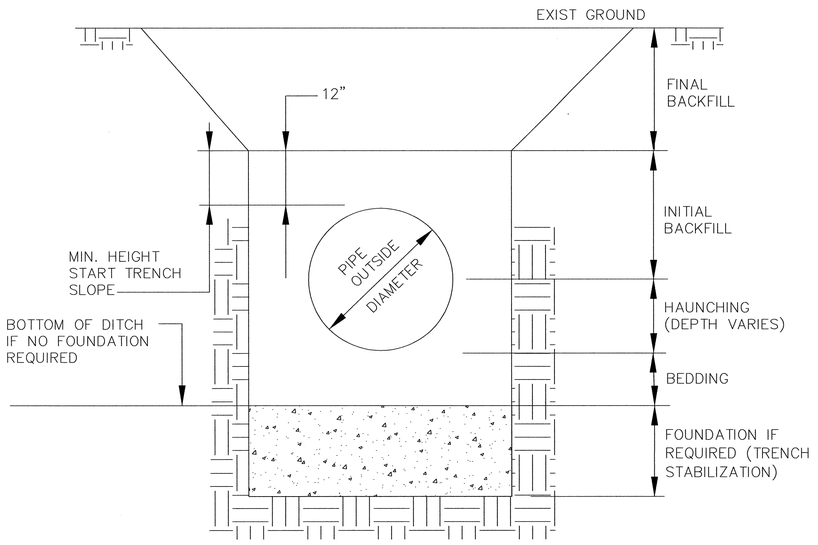
DESIGNED: PJP	PROJ. NO.: W039	SHEET 34 OF 54



CONCRETE ENCASEMENT

SOURCE: FULTON COUNTY STANDARD DETAIL NO. 110



NOTE: SEE DETAIL CD-11 FOR DIMENSIONS AND MATERIALS

TRENCH TERMINOLOGY

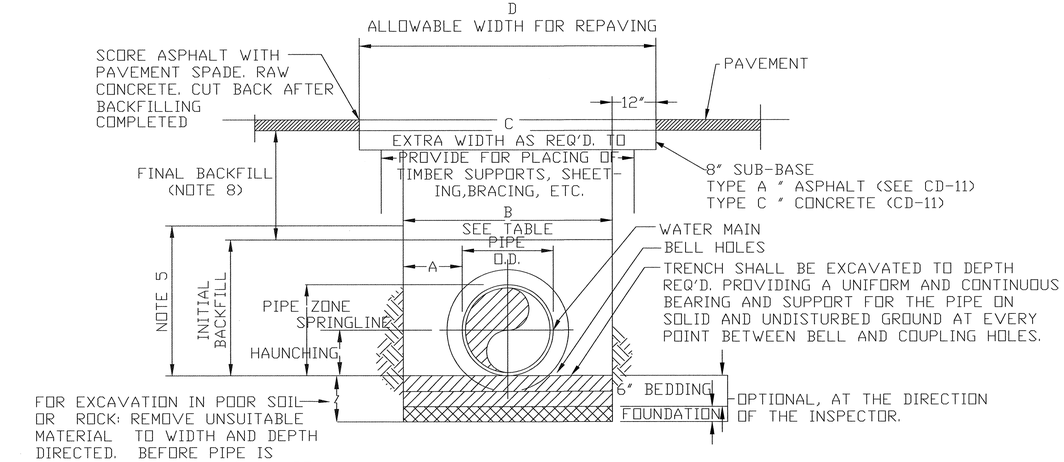
SOURCE: FULTON COUNTY STANDARD DETAIL NO. 108

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 6" 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 CONTAIN A SUFFICIENT AMOUNT OF MOISTURE FOR PROPER COMPACTION AND THESE MATERIALS SHALL BE COMPACTED AT NOT LESS THAN 95% OF THEIR OPTIMUM COMPACTION FOR ANY SPECIFIC SOIL CLASSIFICATION AS DETERMINED BY THE MODIFIED PROCTOR TEST ASTM. D698
3. COMPACTION TESTS: COMPACTION TESTS MAY BE REQUIRED IN EXISTING OR PROPOSED STREETS, SIDEWALKS, DRIVEWAYS AND OTHER EXISTING OR PROPOSED PAVED AREAS AT VARYING DEPTHS AND AT INTERVALS AS DETERMINED BY THE ENGINEER WITH A MINIMUM OF 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 BOULDERS OR LOOSE ROCKS PERMITTED IN THE BACKFILL AT THE BOTTOM OF PIPE TRENCH TO 2'-0" ABOVE PIPE.
5. ALL DESIGNS BASED ON FULLY COMPACTED BACKFILL AND UNIFORMLY SUPPORTED PIPE.

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	MJ	SJ	MJ	SJ		MJ	SJ	MJ	SJ
3/4"-2"	2	6	NA	8	NA	14	AS APPROVED	NA	3.00	NA	3.17
4"	9	12	25	23	27	23	AS APPROVED	4.08	3.92	4.25	4.06
6"	9	12	28	28	30	30	AS APPROVED	4.33	4.33	4.50	4.50
8"	9	12	32	30	34	32	AS APPROVED	4.67	4.50	4.63	4.67
10"	9	12	34	32	36	34	AS APPROVED	4.83	4.67	5.00	4.83
12"	9	12	36	34	38	36	AS APPROVED	5.00	4.83	5.17	5.00
14"	9	14	39	36	41	38	AS APPROVED	5.23	5.00	5.42	5.17
16"	9	14	42	38	44	40	AS APPROVED	5.50	5.17	5.57	5.33
20"	9	14	45	44	47	46	AS APPROVED	5.75	5.67	5.92	5.63
24"	9	14	50	48	52	50	AS APPROVED	6.17	6.00	6.33	6.17
30"	9	18	58	54	60	56	AS APPROVED	6.83	6.50	7.00	6.67
36"	9	18	64	61	66	63	AS APPROVED	7.33	7.08	7.50	7.25
42"	9	18	72	64	74	66	AS APPROVED	8.00	7.33	8.17	7.50
48"	9	18	78	73	80	76	AS APPROVED	8.50	8.08	9.34	8.25



ALLOWABLE TRENCH WIDTHS

SOURCE: FULTON COUNTY STANDARD DETAIL NO. 103

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GEORGIA REGISTERED No. 11009 PROFESSIONAL ENGINEER CHAMPAK C. SHAH

N.T.S.

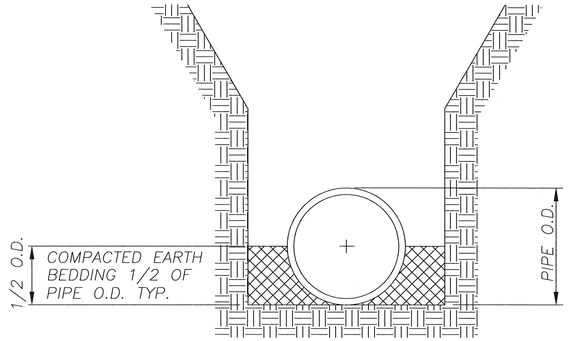
W039 - ALPHARETTA WATER MAIN REPLACEMENT

CONCRETE ENCASEMENT, TRENCH TERMINOLOGY AND ALLOWABLE TRENCH WIDTHS

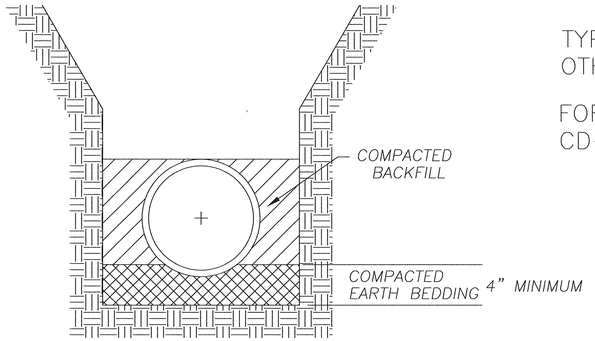
DRAWN: MJW | CHECKED: TM | DATE: OCTOBER 2007
DESIGNED: PJP | PROJ. NO.: W039

CD-9

SHEET 35 OF 54



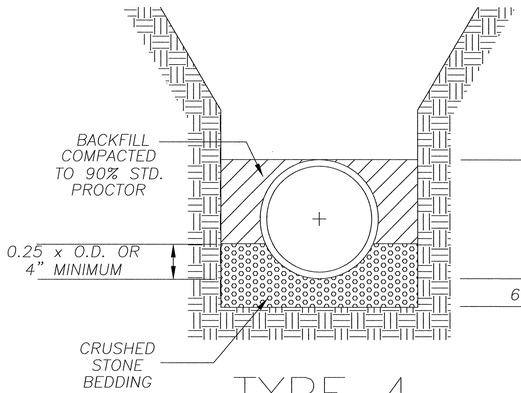
TYPE 2



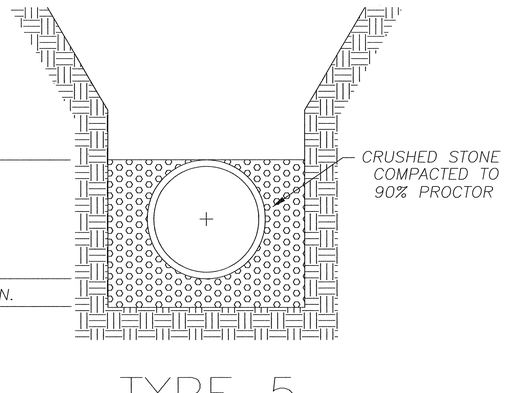
TYPE 3

TYPE 2 IS TO BE USED UNLESS NOTED OTHERWISE DIFFERENTLY ON PLANS.

FOR ALLOWABLE TRENCH WIDTH, SEE DWG. CD-9.



TYPE 4



TYPE 5

TYPICAL PIPE BEDDING DETAILS

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GEORGIA REGISTERED No. 17006 PROFESSIONAL ENGINEER CHAMPAK C. SHAH

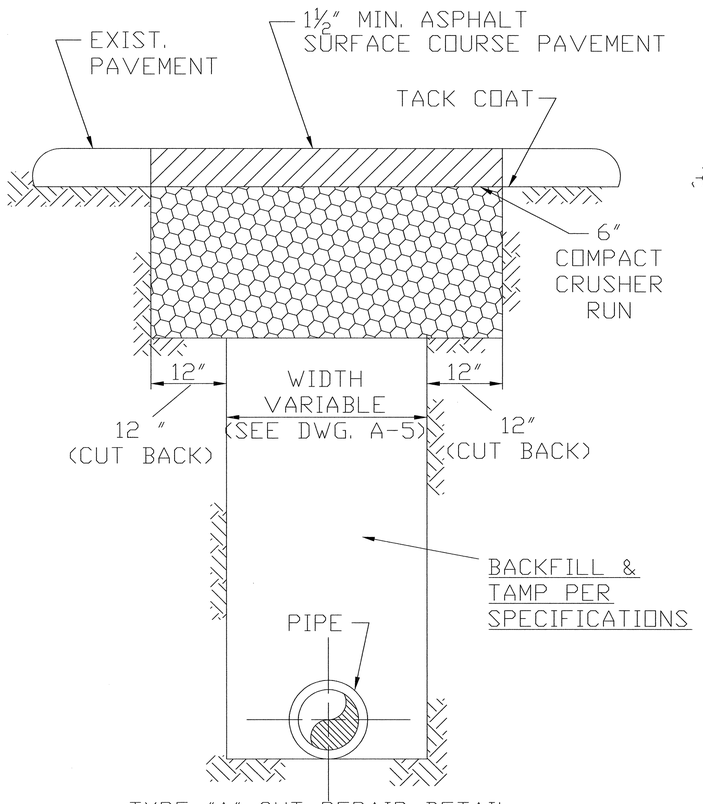
N.T.S.

W039 - ALPHARETTA WATER MAIN REPLACEMENT

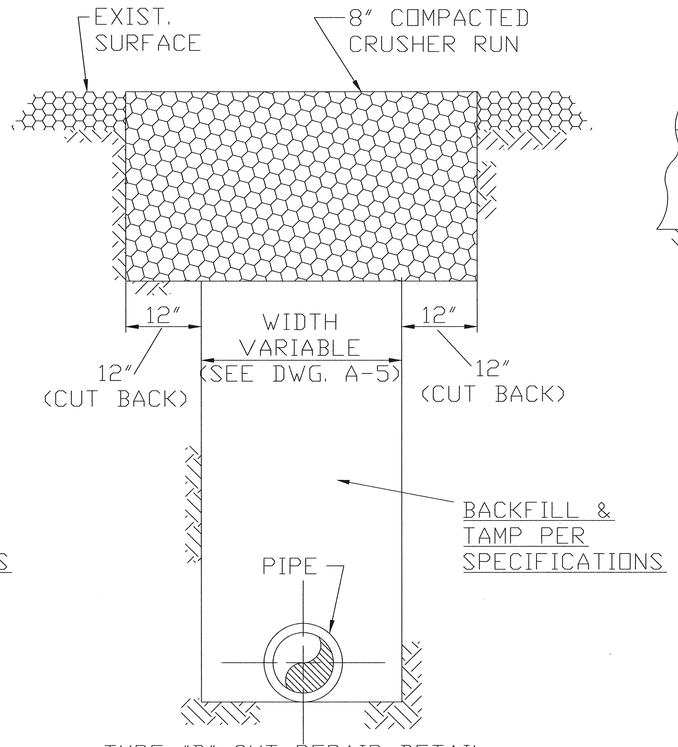
TYPICAL PIPE BEDDING DETAILS

CD-10

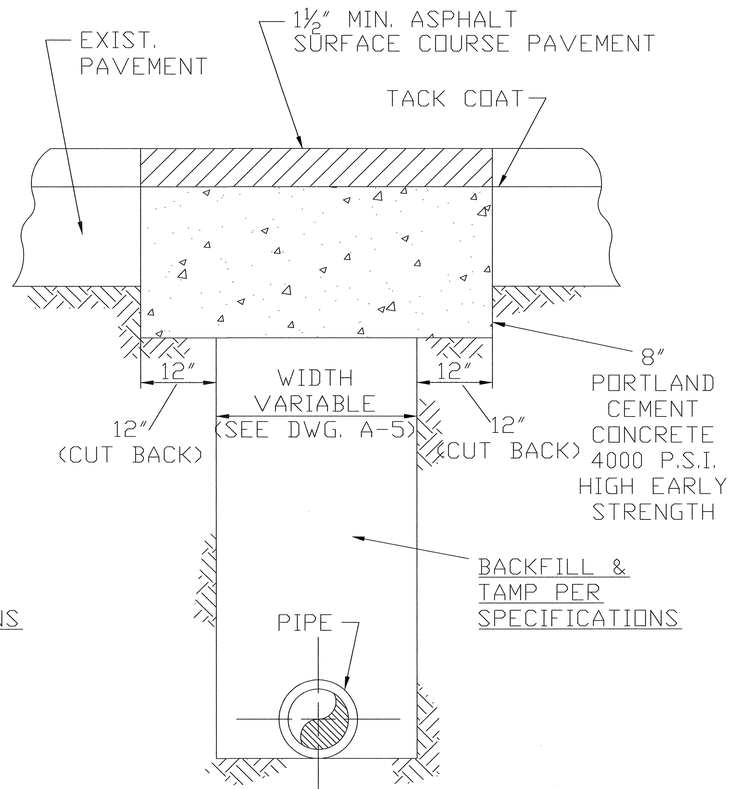
DRAWN: MJW	CHECKED: TM	DATE: OCTOBER 2007
DESIGNED: PJP	PROJ. NO.: W039	



TYPE "A" CUT REPAIR DETAIL
T & G OR ASPHALT RDS. (DRIVEWAYS, A-30)



TYPE "B" CUT REPAIR DETAIL
DIRT OR GRAVEL RDS. (DRIVEWAYS, A-30)



TYPE "C" CUT REPAIR DETAIL
GEORGIA D.O.T. AND FULTON CO.

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 CONTRACTOR'S PAVEMENT CUT REPAIRS RESIDES WITH THE AUTHORITY HAVING JURISDICTION. CONTRACTOR SHALL MEET ALL REQUIREMENTS OF SAID AUTHORITY.

SOURCE: FULTON COUNTY STANDARD DETAIL NO. 109

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GEORGIA REGISTERED No. 41004 PROFESSIONAL ENGINEER CHAMPAK C. SHAH

N.T.S.

W039 - ALPHARETTA WATER MAIN REPLACEMENT

PAVEMENT CUT REPAIRS TYPE A, B & C

CD-11

DRAWN: MJW	CHECKED: TM	DATE: OCTOBER 2007
DESIGNED: PJP	PROJ. NO.: W039	SHEET 37 OF 54