STRATFIELD DRIVE DRAINAGE IMPROVEMENTS-

PHASE 1

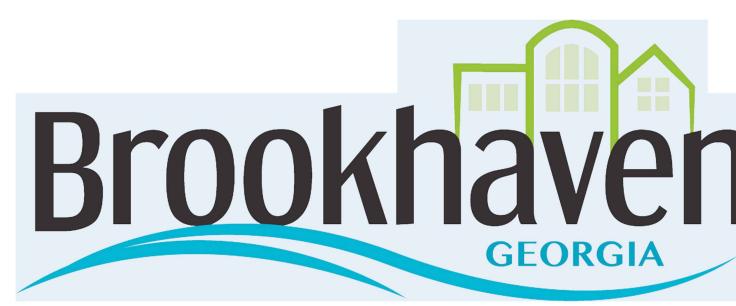
CITY OF BROOKHAVEN

ZONED R-75

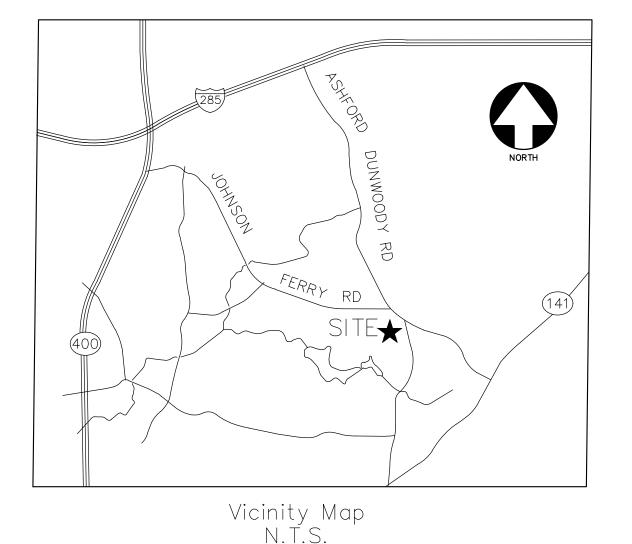
DEKALB COUNTY PARCELS: 18 301 07 010, 18 301 07 011, 18 301 07 012, 18 301 08 007, 18 301 08 008, 18 301 08 009, 18 301 08 010, 18 301 08 003, 18 301 06 025, 18 302 07 015, 18 301 06 024, 18 301 06 023, 18 302 08 025

Prepared for

CITY OF BROOKHAVEN



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C1.00	EXISTING CONDITIONS	
C1.20	STORM DEMOLITION PLAN	
C1.30	STORM DEMOLITION PLAN	
C2.00	STORM SEWER IMPROVEMENT PLAN	
C3.00	STORM SEWER IMPROVEMENT PROFILE	
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C7.40	LANDSCAPING PLAN	
C7.50	LANDSCAPING PLAN	
C760	LANDSCADING DETAILS	



TOTAL AREA = 0.98 AC NEW CONSTRUCTION DISTURBED AREA = 0.98 AC.

BOUNDARY, TOPOGRAPHIC & TREE SURVEY

OF BROOKHAVEN, AND CITY GIS SYSTEM.

START DATE MAY 2018 END DATE JULY 2018	-							OR PE											
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DESCRIPTION	1	2		3	4		5	6		7		3	9		10		11	T	12
PHASE I EROSION CONTROL INSTALLATION										\prod				П		П		\top	
SEVEN DAY EC INSPECTION & LETTER																			
SEDIMENT CONTROL-TREE PROTECTION			H																
CLEARING, GRUBBING, GRADING,		HI																	
TEMPORARY GRASSING		-	+																
MAINT. OF EROSION CONTROL DEVICES																			
FINAL PAVING																			
DISPOSITION OF SEDIMENT DEVICES																			
PIPE CONSTRUCTION			+																
CLEARING OF STORM DRAINS																			
FINAL LANDSCAPING																			
																		\perp	Ш
AC	,	$\bigvee $		Y		5(+	- - -										

OWNER/DEVELOPER/PRIMARY PERMITTEE:

4362 PEACHTREE ROAD BROOKHAVEN, GA 30319 CONTACT: GREGORY ANDERSON 404-637-0500

CITY OF BROOKHAVEN PUBLIC WORKS

ENGINEER/SURVEYOR: LOWE ENGINEERS

990 HAMMOND DR. ~ SUITE 900 ATLANTA, GEORGIA 30328 CONTACT: HELEN SIMPSON PHONE: (770) 857-8428

24 HOUR CONTACT: Brookhaven GREGORY ANDERSON CITY OF BROOKHAVEN 404-637-0500 GREGORY.ANDERSON@BROOKHAVENGA.GOV





IF YOU DIG GEORGIA.. CALL US FIRST! UTILITIES PROTECTION CENTER IT'S THE LAW Call before you dig

DESIGN PROFESSIONAL'S CERTIFICATIONS

DATE

CERTIFY THAT THE PERMITTEE'S EROSION, SEDIMENTATION, AND POLLUTION CONTROL PLAN PROVIDES FOR AN APPROPRIATE AND COMPREHENSIVE SYSTEM OF BEST MANAGEMENT PRACTICES REQUIRED BY THE GEORGIA WATER QUALITY CONTROL ACT AND THE DOCUMENT "MANUAL FOR EROSION AND SEDIMENT CONTROL IN GEORGIA" PUBLISHED BY THE STATE SOIL AND WATER CONSERVATION COMMISSION AS OF JANUARY 1 OF THE YEAR IN WHICH THE LAND-DISTURBING ACTIVITY WAS PERMITTED, PROVIDES FOR THE SAMPLING OF THE RECEIVING WATER(S) OR THE SAMPLING OF THE STORM WATER OUTFALLS AND THE DESIGNED SYSTEM OF BEST MANAGEMENT PRÀCTICES AND SAMPLING METHODS IS EXPECTED TO MEET THE REQUIREMENTS CONTAINED IN THE GENERAL NPDES PERMIT NUMBER GAR 100001 FOR STAND ALONE PROJECTS.

CERTIFY THAT THE PLAN PREPARER OR THE DESIGNEE THEREOF VISITED THE PROJECT SITE PRIOR TO THE CREATION OF THE PERMITTEE'S EROSION, SEDIMENTATION, AND POLLUTION CONTROL PLAN OR THAT SUCH A VISIT WAS NOT REQUIRED IN ACCORDANCE WITH RULES AND REGULATIONS ESTABLISHED BY THE BOARD AS SPECIFIED IN SECTION 12-7-9 OF THE OFFICIAL CODE OF GEORGIA.

CERTIFY UNDER THE PENALTY OF LAW THAT THIS DOCUMENT AND ALL ATTACHMENTS WERE PREPARED UNDER MY DIRECTION OR SUPERVISION IN ACCORDANCE WITH A SYTEM DESIGNED TO ASSURE THAT QUALIFIED PERSONNEL PROPERLY GATHER AND EVALUATE THE INFORMATION SUBMITTED. BASED ON MY INQUIRY OF THE PERSON OR PERSONS WHO MANAGE THE SYSTEM, OR THOSE PERSONS DIRECTLY RESPONSIBLE FOR GATHERING THE INFORMATION, THE INFORMATION SUBMITTED IS, TO THE BEST OF MY KNOWLEDGE AND BELIEF, TRUE, ACCURATE, AND COMPLETE. I AM AWARE THAT THERE ARE SIGNIFICANT PENALTIES FOR SUBMITTING FALSE INFORMATION, INCLUDING THE POSSIBILITY OF FINE AND IMPRISONMENT FOR KNOWING VIOLATIONS.

DESIGN PROFESSIONAL'S SIGNATURE

FLOOD MAP

FLOOD PLAIN STATEMENT:

INCORPORATED AREAS, COMMUNITY PANEL NO. 13089C0014J. PANELS BEAR AN EFFECTIVE

THIS SITE IS NOT LOCATED WITHIN A ZONE DEFINED BY FIRM COMMUNITY PANEL NUMBER

BY GRAPHIC PLOTTING ONLY, NO PORTION OF THIS SITE IS WITHIN THE LIMITS OF A 100

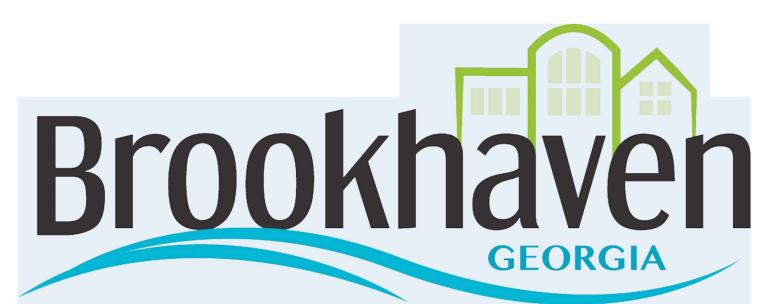
YEAR FLOOD HAZARD AREA AS PER F.I.R.M. DEKALB COUNTY, GEORGIA, AND

10389C0014J FOR UNINCORPORATED DEKALB COUNTY, GEORGIA.

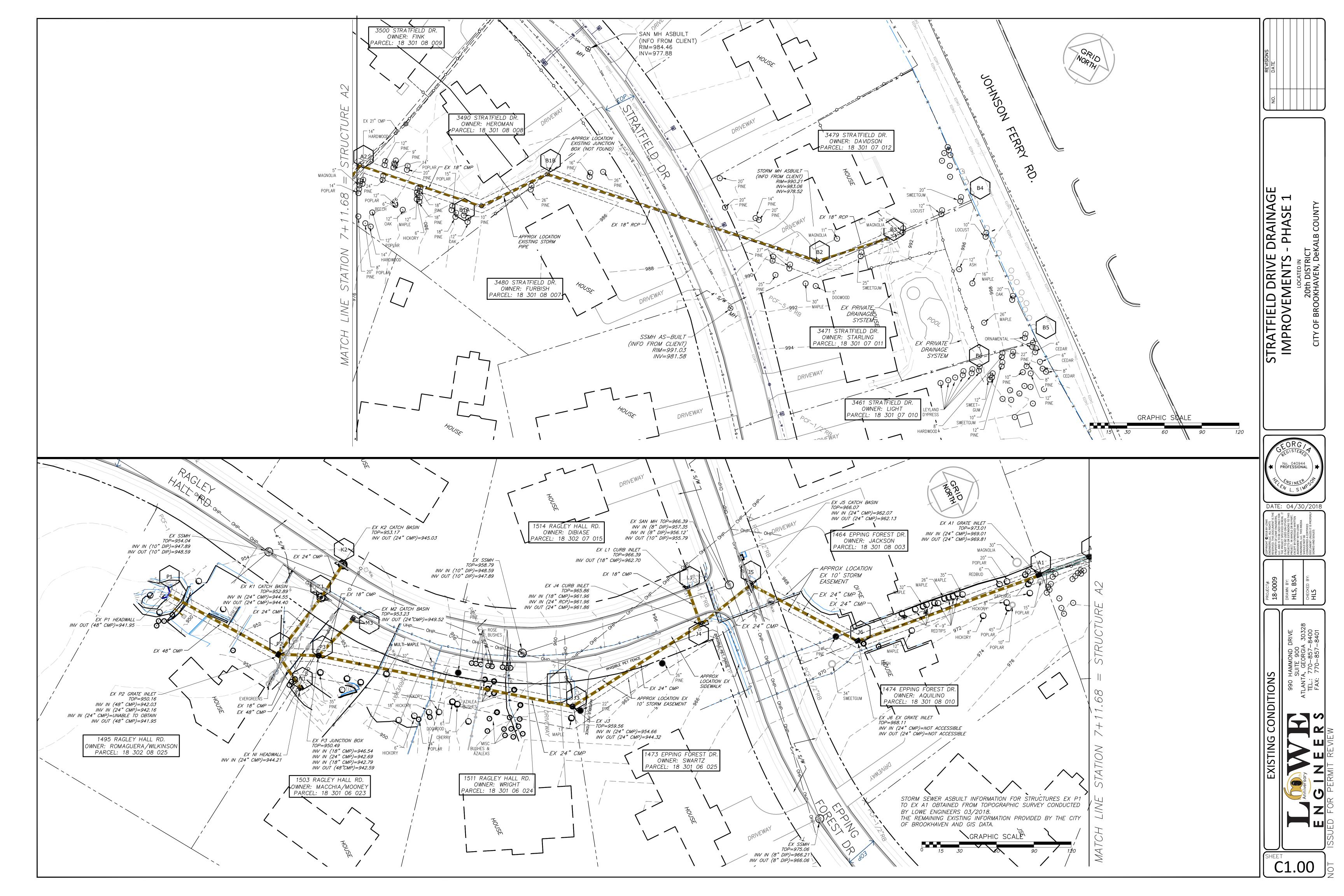
STORMWATER MANAGEMENT: STORMWATER MANAGEMENT IS ALREADY PROVIDED FOR THE NEIGHBORHOOD BY SILVER LAKE. THIS LDP IS A STORM SEWER INFRASTRUCTURE PLAN WITH NO ADDITIONAL IMPERVIOUS AREA PROPOSED. WATER QUALITY TREATMENT IS NOT REQUIRED FOR THIS LDP SINCE NO ADDITIONAL IMPERVIOUS AREA IS

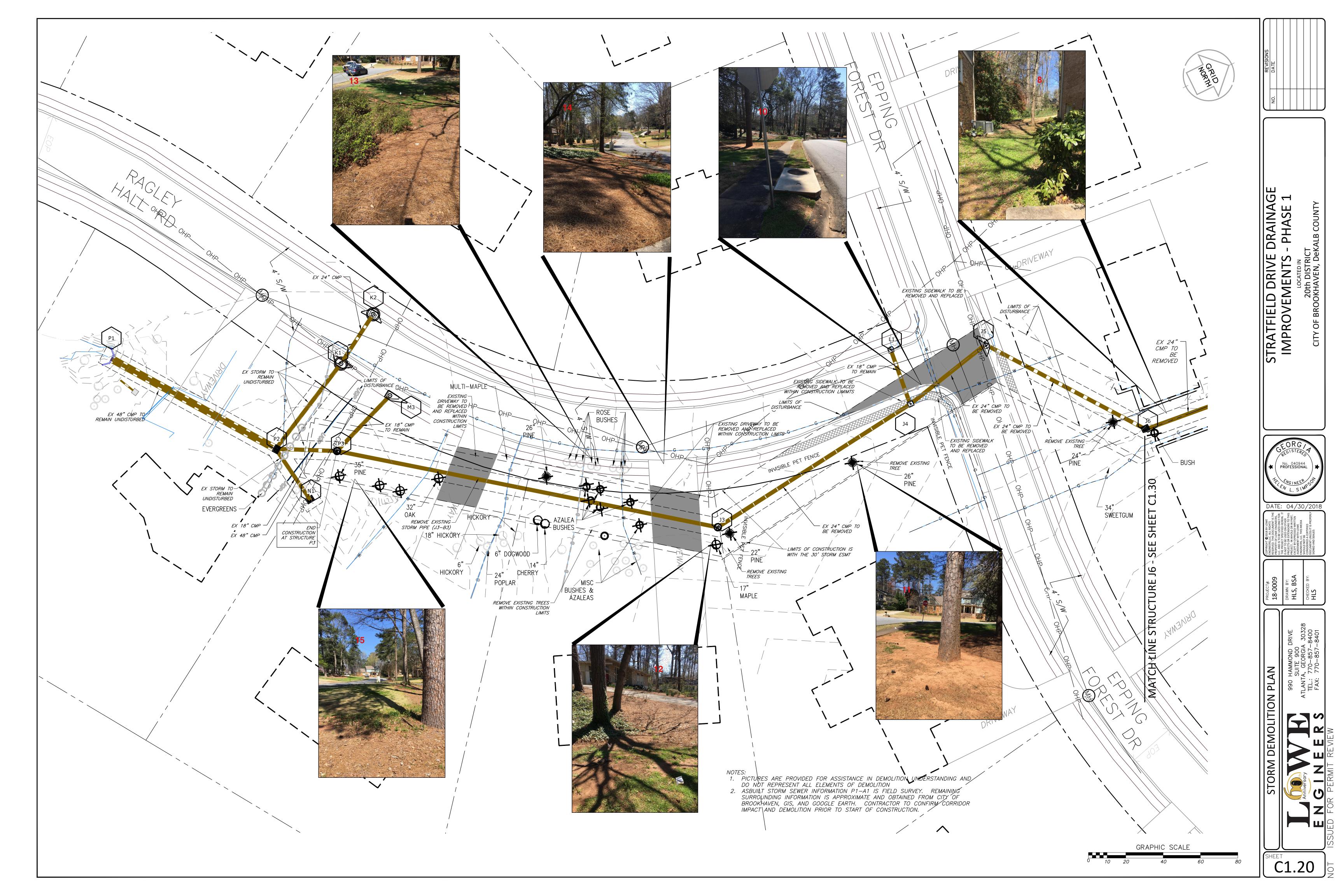
DATE OF 05/16/2013.

NO DISTURBANCE IS PROPOSED TO STATE WATERS. 2. NO STATE WATERS ARE ON OR WITHIN 200 FEET OF THE PROPERTY.

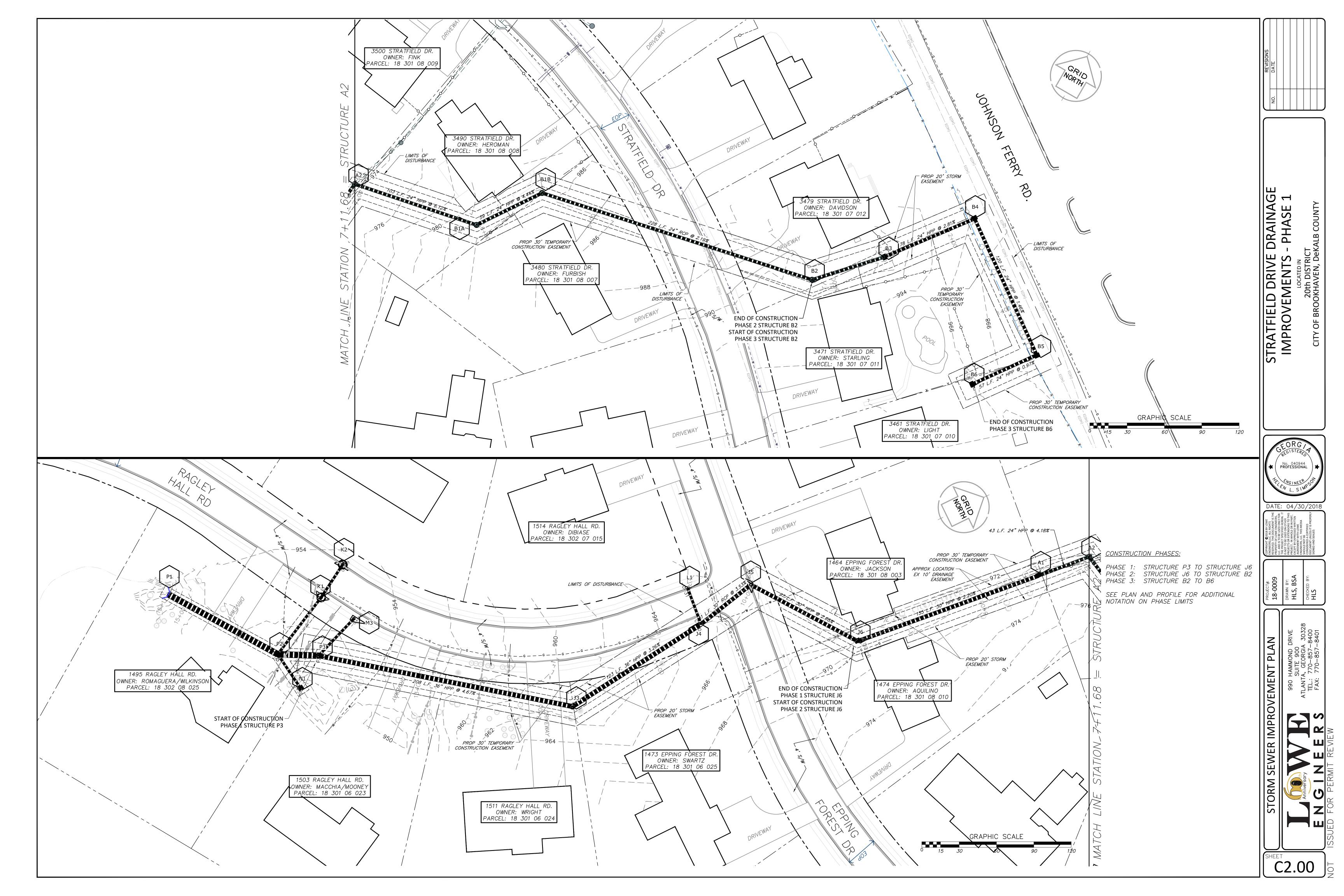


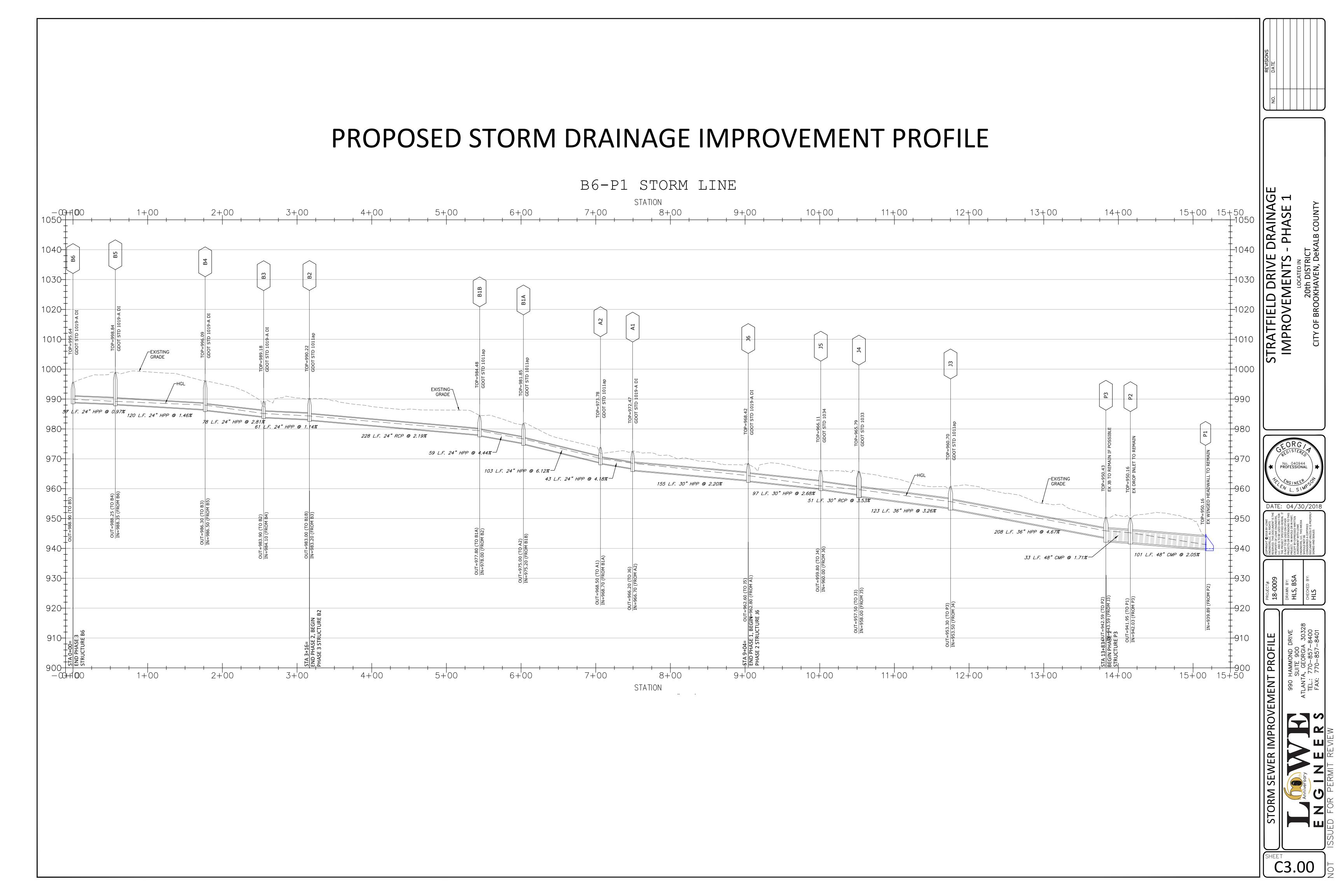
		INDEX								
Sheet #		Title								
C0.00	С	OVER SHEET								
C1.00	E:	XISTING CONDITIONS								
C1.20	S	TORM DEMOLITION PLAN								
C1.30	S	TORM DEMOLITION PLAN								
C2.00	S	TORM SEWER IMPROVEMENT PLAN								
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C5.00	El	ROSION CONTROL PLAN								
C6.00	El	ROSION CONTROL DETAILS								
C6.10	E	ROSION CONTROL DETAILS								
C6.20	E	ROSION CONTROL DETAILS								
C6.30	N	NPDES								
C6.40	N	NPDES								
C6.50	N	NPDES								
C6.60	N	PDES								
C7.00	S	TORM DETAILS								
C7.10	S	TORM DETAILS								
C7.20	Tf	RAFFIC DETAILS								
C7.30	TF	RAFFIC DETAILS								
C7.40		ANDSCAPING PLAN								
C7.50		ANDSCAPING PLAN								
C7.60		ANDSCAPING DETAILS								
C8.00	TF	RAFFIC CONTROL PLAN								
		REVISIONS								
REVISION	DATE	SHEET NUMBER(S)								
	I									











Stratfield Storm Drainage Improvements - PHASE 1 TABLE OF QUANTITIES

ITEM QUANTITY UNIT SAWCUT CONCRETE SIDEWALK DEMO & REPLACE CONCRETE SIDEWALK DEMO & REPLACE ROLL CURB & GUTTER DEMO & REPLACE GRANITE CURB & GUTTER DEMO & REPLACE GRANITE CURB & GUTTER DEMO & REPLACE CONCRETE DRIVEWAY DEMO & REPLACE CONCRETE DRIVEWAY SAWCUT CONCRETE DRIVEWAY DEMO & REPLACE ASPHALT PAVING DEMO & REPLACE ASPHALT PAVING DEMO STORM JUNCTION BOX DEMO STORM JUNCTION DROP INLET DEMO STORM JUNCTION DROP INLET DEMO STORM CURB INLET REMOVE TREES SEDIMENT TRAPS: SD2W SEDIMENT TRAPS: SD2P 6 EA SD1S SD2P 6 EA SD1S SD2S 1 EA SD2SS 1 EA SD2SS 1 EA SD2SS 1 EA SD2SS 1 EA SD2S SEEDING DS4 SEEDING DS4 SEEDING DS4 SEEDING DS4 SEEDING DS5 SEEDING DS6 G400 SF LIMITS OF DISTURBED AREA 30" RCP 30" HPP 331 LF EA STORM JUNCTION MANHOLE – GDOT STD 1011ap 1 EA STORM JUNCTION MANHOLE – GDOT STD 1019-A STORM STORM DEPLACEMENT LANDSCAPING REPLACEMENT 1 EA STORM DW CATCH BASIN – GDOT STD 1034D 1 EA STORM DW CATCH BASIN – GDOT STD 1034D 1 EA STORM DW CATCH BASIN – GDOT STD 1034D 1 EA STORM DW CATCH BASIN – GDOT STD 1034D 1 EA STORM DW CATCH BASIN – GDOT STD 1034D 1 EA LANDSCAPING REPLACEMENT 1 LS	TABLE OF QUANTITIES		
DEMO & REPLACE CONCRETE SIDEWALK 750 SF DEMO & REPLACE ROLL CURB & GUTTER 80 LF DEMO & REPLACE GRANITE CURB & GUTTER 40 LF DEMO & REPLACE CONCRETE DRIVEWAY 1200 SF SAWCUT CONCRETE DRIVEWAY 82 LF DEMO & REPLACE ASPHALT PAVING 1440 SF DEMO 24" CMP 480 LF DEMO STORM JUNCTION BOX 1 EA DEMO STORM JUNCTION DROP INLET 1 EA DEMO STORM JUNCTION DROP INLET 1 EA SEDIMENT TRAPS: 15 EA SEDIMENT TRAPS: 2 EA SD2W 2 EA SD2P 6 EA SD1S 2 EA SD2SS 1 EA SILT FENCE 3480 LF D52 SEEDING 3600 SF D54 SEEDING 6400 SF LIMITS OF DISTURBED AREA 14,370 SF 30" RCP 51 <t< th=""><th>ITEM</th><th>QUANTITY</th><th>UNIT</th></t<>	ITEM	QUANTITY	UNIT
DEMO & REPLACE ROLL CURB & GUTTER DEMO & REPLACE GRANITE CURB & GUTTER DEMO & REPLACE CONCRETE DRIVEWAY SAWCUT CONCRETE DRIVEWAY DEMO & REPLACE ASPHALT PAVING DEMO 24" CMP DEMO STORM JUNCTION BOX DEMO STORM JUNCTION DROP INLET DEMO STORM GURB INLET REMOVE TREES SEDIMENT TRAPS: SD2W SD2P SD2S SD1S SD2SS 1 EA SILT FENCE DS2 SEEDING DS2 SEEDING DS3 SEEDING DS4 SEEDING LIMITS OF DISTURBED AREA STORM JUNCTION MANHOLE – GDOT STD 1011ap STORM SW CATCH BASIN – GDOT STD 1019-A STORM DW CATCH BASIN – GDOT STD 1034D T EA TYPE B HANDICAP RAMP 1 EA	SAWCUT CONCRETE SIDEWALK	140	LF
DEMO & REPLACE GRANITE CURB & GUTTER 40 LF DEMO & REPLACE CONCRETE DRIVEWAY 1200 SF SAWCUT CONCRETE DRIVEWAY 82 LF DEMO & REPLACE ASPHALT PAVING 1440 SF DEMO 24" CMP 480 LF DEMO STORM JUNCTION BOX 1 EA DEMO STORM JUNCTION DROP INLET 1 EA DEMO STORM CURB INLET 1 EA REMOVE TREES 15 EA SEDIMENT TRAPS: 2 EA SD2W 2 EA SD1S 2 EA SD2SS 1 EA SILT FENCE 3480 LF DS2 SEEDING 3600 SF DS4 SEEDING 6400 SF LIMITS OF DISTURBED AREA 14,370 SF 30" RCP 51 LF 30" HPP 97 LF 36" HPP 331 LF STORM JUNCTION MANHOLE – GDOT STD 1011ap 1 EA STORM SW CATCH BASIN – GDOT STD 10	DEMO & REPLACE CONCRETE SIDEWALK	750	SF
DEMO & REPLACE CONCRETE DRIVEWAY 1200 SF SAWCUT CONCRETE DRIVEWAY 82 LF DEMO & REPLACE ASPHALT PAVING 1440 SF DEMO 24" CMP 480 LF DEMO 24" CMP 480 LF DEMO STORM JUNCTION BOX 1 EA DEMO STORM JUNCTION DROP INLET 1 EA DEMO STORM CURB INLET 1 EA REMOVE TREES 15 EA SEDIMENT TRAPS: 2 EA SD2W 2 EA SD2P 6 EA SD1S 2 EA SD2SS 1 EA SILT FENCE 3480 LF DS2 SEEDING 3600 SF DS4 SEEDING 6400 SF LIMITS OF DISTURBED AREA 14,370 SF 30" RCP 51 LF 30" HPP 97 LF 36" HPP 331 LF STORM JUNCTION MANHOLE – GDOT STD 1011ap 1 EA <td>DEMO & REPLACE ROLL CURB & GUTTER</td> <td>80</td> <td>LF</td>	DEMO & REPLACE ROLL CURB & GUTTER	80	LF
SAWCUT CONCRETE DRIVEWAY 82 LF DEMO & REPLACE ASPHALT PAVING 1440 SF DEMO 24" CMP 480 LF DEMO STORM JUNCTION BOX 1 EA DEMO STORM JUNCTION DROP INLET 1 EA DEMO STORM CURB INLET 1 EA REMOVE TREES 15 EA SEDIMENT TRAPS: 2 EA SD2W 2 EA SD1S 2 EA SD2SS 1 EA SILT FENCE 3480 LF DS2 SEEDING 3600 SF DS4 SEEDING 6400 SF LIMITS OF DISTURBED AREA 14,370 SF 30" RCP 51 LF 30" HPP 97 LF 36" HPP 331 LF EA STORM JUNCTION MANHOLE – GDOT STD 1011ap 1 EA STORM SW CATCH BASIN – GDOT STD 1033D 1 EA STORM DW CATCH BASIN – GDOT STD 1034D 1 EA STORM DW CAT	DEMO & REPLACE GRANITE CURB & GUTTER	40	LF
DEMO & REPLACE ASPHALT PAVING 1440 SF DEMO 24" CMP 480 LF DEMO STORM JUNCTION BOX 1 EA DEMO STORM JUNCTION DROP INLET 1 EA DEMO STORM CURB INLET 1 EA REMOVE TREES 15 EA SEDIMENT TRAPS: 3 EA SD2W 2 EA SD1S 2 EA SD2SS 1 EA SILT FENCE 3480 LF DS2 SEEDING 3600 SF DS4 SEEDING 6400 SF LIMITS OF DISTURBED AREA 14,370 SF 30" RCP 51 LF 30" HPP 97 LF 36" HPP 331 LF STORM JUNCTION MANHOLE – GDOT STD 1011ap 1 EA STORM JUNCTION DROP INLET – GDOT STD 1019-A 1 EA STORM SW CATCH BASIN – GDOT STD 1033D 1 EA STORM DW CATCH BASIN – GDOT STD 1034D 1 EA TYPE B HANDICA	DEMO & REPLACE CONCRETE DRIVEWAY	1200	SF
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DEMO STORM JUNCTION DROP INLET 1 EA DEMO STORM CURB INLET 1 EA REMOVE TREES 15 EA SEDIMENT TRAPS:			
DEMO STORM CURB INLET 1 EA REMOVE TREES 15 EA SEDIMENT TRAPS: SD2W 2 EA SD2P 6 EA SD1S 2 EA SD2SS 1 EA SILT FENCE 3480 LF DS2 SEEDING 3600 SF DS4 SEEDING 6400 SF LIMITS OF DISTURBED AREA 14,370 SF 30" RCP 51 LF 30" HPP 97 LF 36" HPP 331 LF STORM JUNCTION MANHOLE – GDOT STD 1011ap 1 EA STORM JUNCTION DROP INLET – GDOT STD 1019-A 1 EA STORM SW CATCH BASIN – GDOT STD 1033D 1 EA STORM DW CATCH BASIN – GDOT STD 1034D 1 EA TYPE B HANDICAP RAMP 1 EA	DEMO STORM JUNCTION BOX	1	EA
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SD2P 6 EA SD1S 2 EA SD2SS 1 EA SILT FENCE 3480 LF DS2 SEEDING 3600 SF DS4 SEEDING 6400 SF LIMITS OF DISTURBED AREA 14,370 SF 30" RCP 51 LF 30" HPP 97 LF 36" HPP 331 LF EA STORM JUNCTION MANHOLE – GDOT STD 1011ap 1 EA STORM JUNCTION DROP INLET – GDOT STD 1019-A 1 EA STORM SW CATCH BASIN – GDOT STD 1033D 1 EA STORM DW CATCH BASIN – GDOT STD 1034D 1 EA TYPE B HANDICAP RAMP 1 EA	SEDIMENT TRAPS:		
SD1S 2 EA SD2SS 1 EA SILT FENCE 3480 LF DS2 SEEDING 3600 SF DS4 SEEDING 6400 SF LIMITS OF DISTURBED AREA 14,370 SF 30" RCP 51 LF 30" HPP 97 LF 36" HPP 97 LF 36" HPP 331 LF EA STORM JUNCTION MANHOLE – GDOT STD 1011ap 1 EA STORM JUNCTION DROP INLET – GDOT STD 1019-A 1 EA STORM SW CATCH BASIN – GDOT STD 1033D 1 EA STORM DW CATCH BASIN – GDOT STD 1034D 1 EA TYPE B HANDICAP RAMP 1 EA	SD2W	2	EA
SD2SS 1 EA SILT FENCE 3480 LF DS2 SEEDING 3600 SF DS4 SEEDING 6400 SF LIMITS OF DISTURBED AREA 14,370 SF 30" RCP 51 LF 30" HPP 97 LF 36" HPP 331 LF EA STORM JUNCTION MANHOLE – GDOT STD 1011ap 1 EA STORM JUNCTION DROP INLET – GDOT STD 1019-A 1 EA STORM SW CATCH BASIN – GDOT STD 1033D 1 EA STORM DW CATCH BASIN – GDOT STD 1034D 1 EA TYPE B HANDICAP RAMP 1 EA	SD2P	6	EA
SILT FENCE 3480 LF DS2 SEEDING 3600 SF DS4 SEEDING 6400 SF LIMITS OF DISTURBED AREA 14,370 SF 30" RCP 51 LF 30" HPP 97 LF 36" HPP 331 LF EA STORM JUNCTION MANHOLE – GDOT STD 1011ap 1 EA STORM JUNCTION DROP INLET – GDOT STD 1019-A 1 EA STORM SW CATCH BASIN – GDOT STD 1033D 1 EA STORM DW CATCH BASIN – GDOT STD 1034D 1 EA TYPE B HANDICAP RAMP 1 EA	SD1S	2	EA
DS2 SEEDING 3600 SF DS4 SEEDING 6400 SF LIMITS OF DISTURBED AREA 14,370 SF 30" RCP 51 LF 30" HPP 97 LF 36" HPP 331 LF EA STORM JUNCTION MANHOLE – GDOT STD 1011ap 1 EA STORM JUNCTION DROP INLET – GDOT STD 1019-A 1 EA STORM SW CATCH BASIN – GDOT STD 1033D 1 EA STORM DW CATCH BASIN – GDOT STD 1034D 1 EA TYPE B HANDICAP RAMP 1 EA	SD2SS	1	EA
DS4 SEEDING 6400 SF LIMITS OF DISTURBED AREA 14,370 SF 30" RCP 51 LF 30" HPP 97 LF 36" HPP 331 LF EA STORM JUNCTION MANHOLE – GDOT STD 1011ap 1 EA STORM JUNCTION DROP INLET – GDOT STD 1019-A 1 EA STORM SW CATCH BASIN – GDOT STD 1033D 1 EA STORM DW CATCH BASIN – GDOT STD 1034D 1 EA TYPE B HANDICAP RAMP 1 EA	SILT FENCE	3480	LF
LIMITS OF DISTURBED AREA 14,370 SF 30" RCP 51 LF 30" HPP 97 LF 36" HPP 331 LF EA EA STORM JUNCTION MANHOLE – GDOT STD 1011ap 1 EA STORM JUNCTION DROP INLET – GDOT STD 1019-A 1 EA STORM SW CATCH BASIN – GDOT STD 1033D 1 EA STORM DW CATCH BASIN – GDOT STD 1034D 1 EA TYPE B HANDICAP RAMP 1 EA	DS2 SEEDING	3600	SF
30" RCP 51 LF 30" HPP 97 LF 36" HPP 331 LF EA EA STORM JUNCTION MANHOLE – GDOT STD 1011ap 1 EA STORM JUNCTION DROP INLET – GDOT STD 1019-A 1 EA STORM SW CATCH BASIN – GDOT STD 1033D 1 EA STORM DW CATCH BASIN – GDOT STD 1034D 1 EA TYPE B HANDICAP RAMP 1 EA	DS4 SEEDING	6400	SF
30" HPP 97 LF 36" HPP 331 LF EA EA STORM JUNCTION MANHOLE – GDOT STD 1011ap 1 EA STORM JUNCTION DROP INLET – GDOT STD 1019-A 1 EA STORM SW CATCH BASIN – GDOT STD 1033D 1 EA STORM DW CATCH BASIN – GDOT STD 1034D 1 EA TYPE B HANDICAP RAMP 1 EA	LIMITS OF DISTURBED AREA	14,370	SF
36" HPP 331 LF EA STORM JUNCTION MANHOLE – GDOT STD 1011ap 1 EA STORM JUNCTION DROP INLET – GDOT STD 1019-A 1 EA STORM SW CATCH BASIN – GDOT STD 1033D 1 EA STORM DW CATCH BASIN – GDOT STD 1034D 1 EA TYPE B HANDICAP RAMP 1 EA	30" RCP	51	LF
STORM JUNCTION MANHOLE – GDOT STD 1011ap 1 EA STORM JUNCTION DROP INLET – GDOT STD 1019-A 1 EA STORM SW CATCH BASIN – GDOT STD 1033D 1 EA STORM DW CATCH BASIN – GDOT STD 1034D 1 EA TYPE B HANDICAP RAMP 1 EA	30" HPP	97	LF
STORM JUNCTION MANHOLE – GDOT STD 1011ap1EASTORM JUNCTION DROP INLET – GDOT STD 1019-A1EASTORM SW CATCH BASIN – GDOT STD 1033D1EASTORM DW CATCH BASIN – GDOT STD 1034D1EATYPE B HANDICAP RAMP1EA	36" HPP	331	LF
STORM JUNCTION DROP INLET – GDOT STD 1019-A1EASTORM SW CATCH BASIN – GDOT STD 1033D1EASTORM DW CATCH BASIN – GDOT STD 1034D1EATYPE B HANDICAP RAMP1EA			EA
STORM SW CATCH BASIN – GDOT STD 1033D1EASTORM DW CATCH BASIN – GDOT STD 1034D1EATYPE B HANDICAP RAMP1EA	STORM JUNCTION MANHOLE – GDOT STD 1011ap	1	EA
STORM DW CATCH BASIN – GDOT STD 1034D 1 EA TYPE B HANDICAP RAMP 1 EA	STORM JUNCTION DROP INLET – GDOT STD 1019-A	1	EA
TYPE B HANDICAP RAMP 1 EA	STORM SW CATCH BASIN – GDOT STD 1033D	1	EA
The state of the s	STORM DW CATCH BASIN – GDOT STD 1034D	1	EA
LANDSCAPING REPLACEMENT 1 LS	TYPE B HANDICAP RAMP	1	EA
	LANDSCAPING REPLACEMENT	1	LS
TRAFFIC CONTROL SIGNS 1 LS	TRAFFIC CONTROL SIGNS	1	LS

Note: Quantities are based on design shown on Construction Drawings. Actual quantities may vary. Additional items may be necessary. Note: Clearing and Grubbing will include all requirements of the Landscape Plan. Table of Quantities Updated 01MAY18.

PROPOSING MUNICIPAL STORM SEWER INFRASTRUCTURE IMPROVEMENTS WITHIN THE CAMBRIDGE SUBDIVISION. THE EXISTING STORM SEWER WILL BE REMOVED AND REPLACED WITH A PIPE SYSTEM TO ADEQUATELY CARRY THE 25 YEAR STORM.

SITE AREA: 0.98 ACRES DISTURBED ACREAGE: 0.98 ACRES NO PROPOSED IMPERVIOUS AREA WITH THIS LDP

ZONING: R-75

FRONT SETBACK 30 FEET FOR LOCAL ROADWAY REAR SETBACK 40 FEET SIDE INTERIOR SETBACK 7.5 FEET SIDE CORNER SETBACK N/A MINIMUM HEATED FLOOR AREA 1,600 SF PARKING SPACE(S)/DWELLING UNIT 4 SPACES MINIMUM REQUIRED LOT AREA 10,000 SF MINIMUM REQUIRED LOT FRONTAGE 30 FEET FOR LOCAL ROADWAY MIN REQ'D LOT WIDTH AT BUILDING LINE 75 FEET 40 FEET MAXIMUM BUILDING HEIGHT MAXIMUM LOT COVERAGE 35%

EXISTING IMPERVIOUS SURFACE AREA: N/A WITH INFRASTRUCTURE PROJECT

NO PROPOSED RETAINING WALLS WITH THIS LDP. SEE ASBUILT SURVEY FOR EXISTING RETAINING WALL DETAILS

NO STATE WATERS ARE LOCATED ONSITE NOR WITHIN 200 FEET OF THE SITE.

A RIGHT OF WAY ENCROACHMENT PERMIT IS REQUIRED FOR ANY DISTURBANCE WITHIN THE RIGHT OF WAY

CALL BEFORE YOU DIG (800) 282-7411

TREE PRESERVATION & REPLACEMENT PLAN NOTES:

THE DENSITY REQUIREMENTS SHOWN ON THE TREE PRESERVATION AND/OR REPLACEMENT PLAN(S) MUST BE VERIFIED PRIOR TO THE ISSUANCE OF THE CERTIFICATE OF OCCUPANCY. CONTACT THE CITY OF BROOKHAVEN AT (404)637-0576 FOR A SITE INSPECTION.

REQUIRED TREE CANOPY COVER LOST OVER TIME DUE TO NATURAL CAUSES, DISEASE, OR PESTS SHALL BE REPLACED DURING THE FIRST PLANTING SEASON AFTER THE LOSS OCCURS WITH THE SAME MATURE CANOPY SIZE POTENTIAL 2.5 INCH CALIPER TREE.

TREE CANOPY COVER PRESERVED OR PLANTED TO MEET THE REQUIREMENTS OF TREE DENSITY SHALL BE CONSERVED ON THE SITE FOR THE FOLLOWING TIME PERIOD: A. COMMERCIAL PROPERTIES IN PERPETUITY

B. RESIDENTIAL PROPERTIES FOR 5 YEARS THEN SHALL COMPLY WITH SECTION 14-39 (E)(1)

ALL TREE PROTECTION DEVICES INCLUDING A 2" LAYER OF MULCH AND AN APPLICATION OF A MYCORRHIZAL PRODUCT ON ALL SAVED TREES MUST BE INSTALLED AND INSPECTED PRIOR TO START OF ANY LAND DISTURBING ACTIVITY AND SHALL BE MAINTAINED UNTIL FINAL LANDSCAPING IS INSTALLED AND CERTIFICATE OF OCCUPANCY IS ISSUED. CONTACT THE CITY OF BROOKHAVEN AT (404)637-0576 FOR AN INSPECTION.

THE SITE CONTRACTOR SHALL COORDINATE SERVICE ROUTING OF ALL GAS, TELEPHONE, AND ELECTRICAL LINES WITH THE APPROPRIATE UTILITY COMPANY. ALL CONSTRUCTION MUST COMPLY WITH EACH UTILITY'S STANDARDS AND SPECIFICATIONS AND NOT INTERFERE WITH TREE PLANTING SITES OR EXISTING TREES TO BE PRESERVED.

FOR ANY BOUNDARY TREE THAT HAS ITS CRITICAL ROOT ZONE IMPACTED AND/OR ENCROACHED INTO MORE THAN 20% WITHOUT A PREVIOUSLY APPROVED CERTIFIED ARBORIST PRESCRIPTION, THE PERMITTEE SHALL EITHER DEPOSIT INTO AN ESCROW ACCOUNT, OR CAUSE TO BE ISSUED IN FAVOR OF THE CITY OF BROOKHAVEN, AN IRREVOCABLE LETTER OR CREDIT, IN AN AMOUNT TOTALING THE ESTIMATED COST OF REMOVAL OF THE BOUNDARY TREE PLUS THE COST TO REPLACE THE BOUNDARY TREE WITH A MINIMUM 3 INCH CALIPER TREE.

TREES WHICH PLANTED SHALL BE MAINTAINED FOR TWO (2) GROWING SEASONS AFTER THE DATE OF FINAL INSPECTION. THE PROPERTY OWNER SHALL MAINTAIN REQUIRED TREE DENSITY. THE PERMITTEE WILL BE RESPONSIBLE FOR IDENTIFYING NEWLY PLANTED TREES TO THE HOMEBUYER AND TO INFORM THE HOMEBUYER AS TO THEIR PROPER MAINTENANCE. SHOULD ANY TREE BEGIN FAILURE WITHIN THE 2 YEAR PERIOD, A REPLANTING OF NEW REPLACEMENT REES SHALL BE COMPLETED. AN AGREEMENT BETWEEN THE PERMITTEE AND HOMEBUYER TO DETERMINE WHO WILL COVER REPLACEMENT COSTS AT TIME OF TREE DEATH TO BE SUBMITTED PRIOR TO CERTIFICATE OF OCCUPANCY. IF THERE IS NO HOMEBUYER AT THE TIME OF CERTIFICATE OF OCCUPANCY THE PERMITTEE IS RESPONSIBLE FOR TREE REPLACEMENT.

TREES AND SHRUBS SHOULD NOT BE DUG OR MOVED WITH A TREE SPADE DURING THE ACTIVE GROWING PERIOD (MID-MARCH TO EARLY-OCTOBER)

REPLACEMENT TREES

SYMBOL	QUANTITY	BOTANICAL NAME	COMMON NAME	HARDY ZONE	TEXTURE	FORM	HEIGHT	SPREAD	GROW RATE	CLASS
	6	Acer Rubrum or Acer Saccharum	RED MAPLE OR SUGAR MAPLE	ENTIRE STATE	MEDIUM	OVAL	40'-50'	25'-35'	MEDIUM	DECIDUOUS
	2	Cedrus deodara	DEODAR CEDAR	7, 8	MEDIUM	PYRAMIDAL	30'-50'	20'-30'	MEDIUM	EVERGREEN CONIFER
*	4	Cercis Canadensis L.	EASTERN REDBUD	ENTIRE STATE	MEDIUM	OVAL	20'-30'	18'-20'	MEDIUM	DECIDUOUS
	3	Cupressocyparis leylandii	LEYLAND CYPRESS	ENTIRE STATE	FINE	PYRAMIDAL	50'-60'	20'-30'	FAST	EVERGREEN
	7	liriodendron tulipfera	TULIP TREE OR YELLOW POPLAR	ENTIRE STATE	COARSE	PYRAMIDAL	80'-100'	30'-40'	FAST	DECIDUOUS
	3	Liquidambar styraciflua 'Rotundiloba'	SWEETGUM FRUITLESS	ENTIRE STATE	COARSE	OVAL	60'-80'	40'-50'	FAST	DECIDUOUS
	2	Magnolia grandiflora	MAGNOLIA	ENTIRE STATE	COARSE	HORIZONTAL BRANCHING PYRAMIDAL	60'-80'	40'-50'	SLOW TO MED	BROAD LEAF EVERGREEN
	3	OAK Quercus	OAK Quercus	ENTIRE STATE		ROUNDED				DECIDUOUS
**	14	Pinus taeda	LOBLOLLY PINE	ENTIRE STATE	MEDIUM	HORIZONTAL BRANCHING	60'-80'	20'-30'	FAST	EVERGREEN CONIFER
\bigcirc	2	Carya	HICKORY							
	7	Photinia x fraseri	REDTIP							
W ST ST	2	Robinia pseudoacacia	LOCUST							

Storm Sewer Tabulation

Statio	n	Len	Drng A	rea	Rnoff coeff	Area x	С	Тс		Rain (I)	Total flow	Cap full	Vel	Pipe		Invert Ele	ev	HGL Ele	v	Grnd / Ri	m Elev	Line ID
_ine	To Line		Incr	Total	00011	Incr	Total	Inlet	Syst	(.,				Size	Slope	Dn	Up	Dn	Up	Dn	Up	
	Line	(ft)	(ac)	(ac)	(C)			(min)	(min)	(in/hr)	(cfs)	(cfs)	(ft/s)	(in)	(%)	(ft)	(ft)	(ft)	(ft)	(ft)	(ft)	
1	End	100.500	0.05	23.19	0.60	0.03	13.02	5.0	19.9	5.4	69.73	121.5	9.18	48	2.05	939.89	941.95	942.06	944.47	0.00	950.16	P1-P2
2	1	32.800	0.05	17.64	0.60	0.03	9.29	5.0	19.7	5.4	49.92	110.9	6.80	48	1.71	942.03	942.59	944.47	944.71	950.16	950.49	P2-P3
3	2	207.800	0.27	17.34	0.65	0.18	9.04	5.0	19.2	5.4	49.14	85.19	10.50	36	4.67	943.59	953.30	945.23	955.58	950.49	959.96	P3-J3
4	3	122.500	1.10	17.07	0.65	0.72	8.86	5.0	18.9	5.5	48.54	120.5	8.88	36	3.27	953.50	957.50	955.58	959.77	959.96	965.28	J3-J4
5	4	51.000	4.40	15.07	0.50	2.20	7.61	10.0	18.8	5.5	41.77	77.05	10.26	30	3.53	958.00	959.80	959.77	961.96	965.28	966.07	J4-J5
6	5	97.000	1.40	10.67	0.38	0.53	5.41	5.0	18.5	5.5	29.88	67.14	7.42	30	2.68	960.00	962.60	961.96	964.46	966.07	968.11	J5-J6
7	6	154.700	0.00	9.27	0.00	0.00	4.87	0.0	18.0	5.6	27.25	60.80	7.58	30	2.20	962.80	966.20	964.46	967.98	968.11	973.01	J6-A1
8	7	43.000	0.00	9.27	0.00	0.00	4.87	0.0	17.9	5.6	27.30	46.28	11.00	24	4.19	966.70	968.50	967.98	970.31	973.01	974.00	A1-A2
9	8	103.000	0.00	4.43	0.00	0.00	2.20	0.0	17.5	5.7	12.44	55.94	5.26	24	6.12	968.70	975.00	970.31	976.27	974.00	980.66	A2-B1A
10	9	58.600	0.00	4.43	0.00	0.00	2.20	0.0	17.2	5.7	12.52	47.64	6.64	24	4.44	975.20	977.80	976.27	979.07	980.66	984.00	B1A-B1E
11	10	230.500	0.13	4.43	0.00	0.00	2.20	5.0	16.3	5.8	12.82	35.57	6.74	24	2.47	978.00	983.70	979.07	984.99	984.00	989.70	B1B-B2
12	11	63.700	0.52	4.30	0.00	0.00	2.20	5.0	16.0	5.9	12.91	23.71	6.33	24	1.10	983.80	984.50	984.99	985.79	989.70	989.50	B2-B3
13	12	78.300	0.25	3.78	0.00	0.00	2.20	5.0	15.7	5.9	13.01	30.24	6.35	24	1.79	984.60	986.00	985.79	987.30	989.50	996.50	B3-B4
14	13	120.200	0.25	3.53	0.00	0.00	2.20	5.0	15.2	6.0	13.18	29.54	6.77	24	1.71	986.20	988.25	987.30	989.56	996.50	997.00	B4-B5
15	14	56.600	3.28	3.28	0.67	2.20	2.20	15.0	15.0	6.0	13.26	22.30	6.39	24	0.97	988.35	988.90	989.56	990.21	997.00	994.00	B5-B6
16	8	46.500	0.00	4.84	0.00	0.00	2.68	0.0	5.9	8.1	21.65	14.69	9.00	21	0.86	970.89	971.29	972.64	973.51	974.00	974.89	A2-A3
17	16	120.600	1.23	4.84	0.61	0.75	2.68	5.0	5.7	8.2	21.84	39.00	9.21	21	6.06	971.29	978.60	973.75	980.24	974.89	983.55	A3-A4
18	17	31.700	2.96	3.61	0.55	1.63	1.93	5.0	5.6	8.2	15.76	16.37	8.92	18	2.43	978.60	979.37	980.24	980.95	983.55	983.81	A4-A5
19	18	51.900	0.65	0.65	0.46	0.30	0.30	5.0	5.0	8.4	2.51	11.75	1.42	18	1.25	979.37	980.02	982.16	982.19	983.81	983.12	A5-A6
20	4	29.300	0.90	0.90	0.60	0.54	0.54	5.0	5.0	8.4	4.53	8.88	4.83	18	2.05	960.90	961.50	961.66	962.32	965.28	965.00	L1-J4
21	1	26.000	0.25	0.50	0.90	0.23	0.45	5.0	5.5	8.2	3.69	39.23	2.58	24	8.62	942.16	944.40	944.47	945.07	950.16	952.89	P2-K1

22 | 21 | 32.500 | 0.25 | 0.25 | 0.90 | 0.23 | 0.23 | 5.0 | 5.0 | 8.4 | 1.89 | 7.54 | 3.47 | 18 | 1.48 | 944.55 | 945.03 | 945.07 | 945.55 | 952.89 | 953.17 | K1-K2

Number of lines: 24

NOTES:Intensity = 73.16 / (Inlet time + 13.10) ^ 0.75; Return period = Yrs. 25 ; c = cir e = ellip b = box

Storm Sewers v12.00

Run Date: 3/20/2018

Storm Sewer Tabulation

Stratfield Drive

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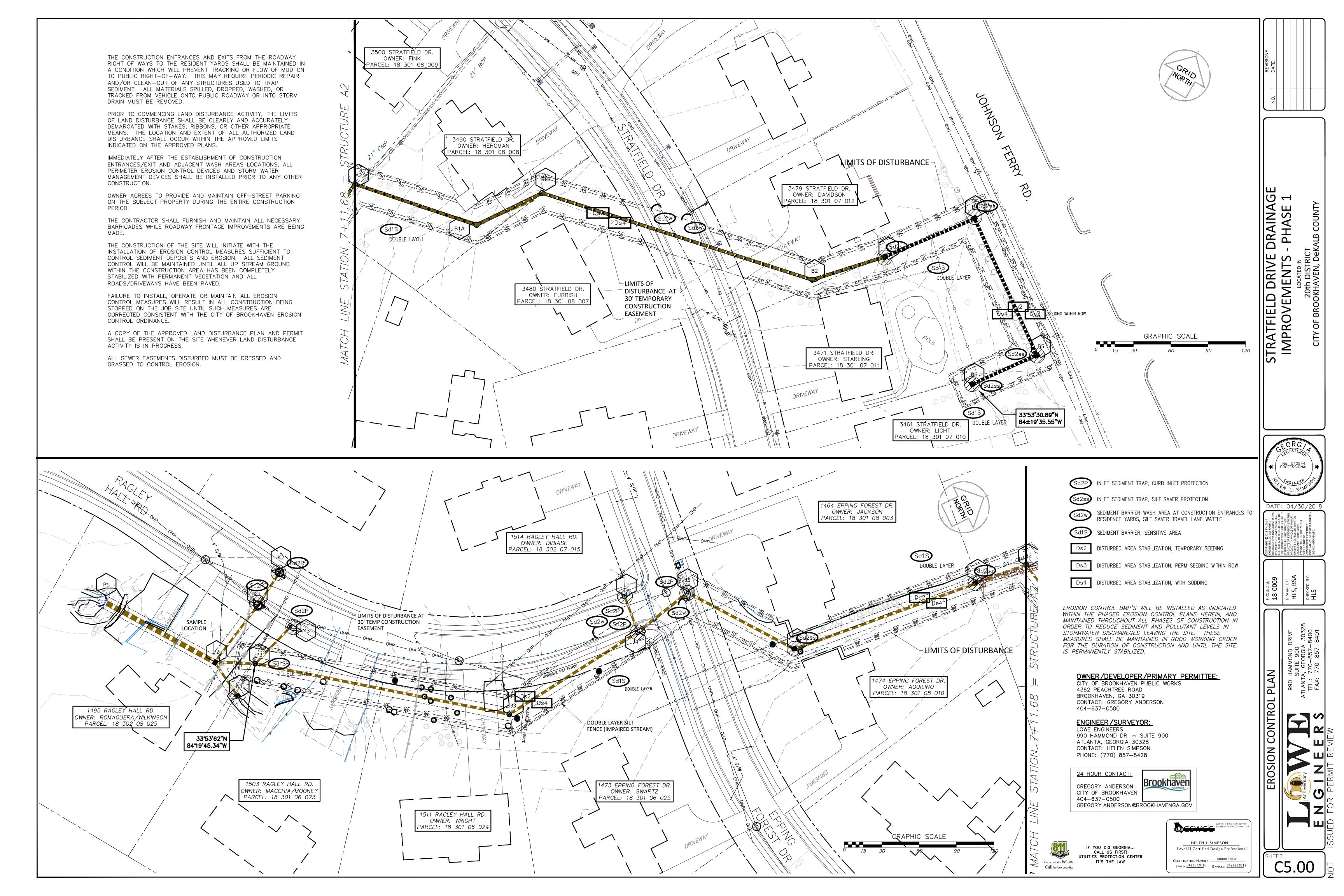
Station	1	Len	Drng A	rea	Rnoff	Area x	С	Тс		Rain	Total	Cap full	Vel	Pipe		Invert El	ev	HGL Ele	v	Grnd / Ri	m Elev	Line ID
.ine	То		Incr	Total	coeff	Incr	Total	Inlet	Syst	(I)	flow	Tuli		Size	Slope	Dn	Up	Dn	Up	Dn	Up	
	Line	(ft)	(ac)	(ac)	(C)			(min)	(min)	(in/hr)	(cfs)	(cfs)	(ft/s)	(in)	(%)	(ft)	(ft)	(ft)	(ft)	(ft)	(ft)	
23	2	40.000	0.25	0.25	0.90	0.23	0.23	5.0	5.0	8.4	1.89	55.23	1.95	24	17.08	942.69	949.52	944.71	950.00	950.49	953.23	M3-P3
24	1	30.000	5.00	5.00	0.65	3.25	3.25	15.0	15.0	6.0	19.60	34.94	6.78	24	6.83	942.16	944.21	944.47	945.80	950.16	0.00	N1-P2
trati	field D	rive						1	1	l		1	1	1	1	Numbe	r of lines: 3	24	1	Run Da	te: 3/20/2	1 018
	Field D		73 16 / (1	nlet time	+ 13 10) ^ 0 75·	Return	neriod =	Yrs 25	· c = cir	e = ellir	n h = ho	y			Numbe	r of lines: 2	24		Run Da	te: 3/20/2	018

NOTES:Intensity = 73.16 / (Inlet time + 13.10) ^ 0.75; Return period =Yrs. 25 ; c = cir e = ellip b = box

Storm Sewers v12.00

DRAINA(- PHASE

STRATFIELD DRIVE IMPROVEMENTS



DEFINITION

A temporary protective device formed at or around an inlet to a storm drain to trap sediment.



PURPOSE

· Prevent sediment from entering a storm drainage system prior to permanent stabilization of the disturbed area draining to the inlet.

INSTALLATION

- Install according to the approved plan.
- Do not install on paved surfaces where safety is a concern.
- Sediment traps must be self-draining unless otherwise protected.
- Install at or around all storm drain drop inlets that receive runoff from disturbed areas.
- Construct on natural ground surface, excavated surface, or on machine compacted fill.

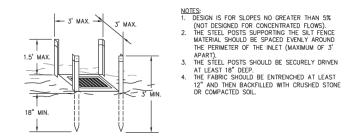
Excavated Sediment Traps

- An excavation created around the inlet to provide additional sediment storage.
- Provide a minimum depth of 1.5 ft for
- The side slopes shall not be steeper than 2:1.
- no greater than 1 acre.

Sd2

Filter Fabric with Supporting Frame Sd2-F

- Applicable where the inlet drains a relatively
- flat area (<5% slope). Use Type S steel posts.
- Space stakes evenly around perimeter at a
- maximum of 3 ft apart.
- Drive stakes into the ground ~18" deep. The fabric shall be 36" tall and entrenched at least 12" and backfill with crushed stone or
- compacted soil. Securely fasten the fabric and wire to the posts.



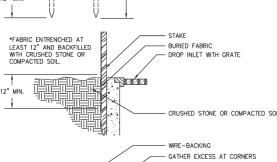


Figure 1. Filter Fabric with Supporting Frame

- FABRIC WITH WIRE-BACKING SUPPORT

Ds2

Block and Gravel Drop Inlet Protection Sd2-Bg

Installation Requirements (Sd2-F)

 Applicable where heavy flows are expected and a overflow capacity is necessary to prevent excessive ponding.

112

Sd2

- Excavate foundation at least 2" below the crest of the storm drain.
- On each side of the structure, place one block in the bottom row on its side to allow
- pool drainage. Place the bottom row of blocks against the
- edge of the storm drain. Add support by placing 2"x4" wood studs through block openings.
- Fit hardware cloth or wire mesh with 1/2" openings over all block openings to hold gravel in place.
- Place clean gravel 2" below the top of the block on a 2:1 or flatter slope and smooth it to an even grade.

BLOCK AND GRAVEL PERSPECTIVE

BLOCK AND GRAVEL SECTION

Figure 2. Block and Gravel Drop Inlet Protection

Installation Requirements (Sd2-Bg)

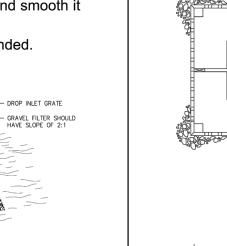
113

TEMPORARY
SEDIMENT POOL

- WIRE SCREEN

DROP INLET W/ GRATE

• GADOT #57 stone is recommended.



Baffle Box Sd2-B

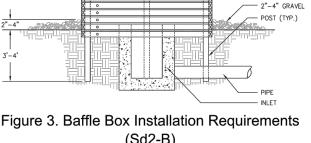
or velocity.

2" in diameter.

horizontally.

the inlet at a depth of 2-4".

entrench at a depth of 12".



Applicable for inlets receiving a higher volume

Construct 2"x4" boards spaced a maximum

of 1" apart OR of plywood with weep holes

Place weep holes ~6" on center vertically or

Place gravel outside of the box and around

Wrap entire box in Type C filter fabric and

— 2" WEEP HOLES

- INTERIOR BRACING

2X4 OR 4X4 POSTS

Gravel Drop Inlet Protection (Sd2-G)

- Applicable where heavy concentrated flows are expected.
- 3:1 or flatter slope toward the inlet. 114

Sd2

Sd2

- Leave a minimum 1 ft wide level stone area between the structure and the inlet to prevent
- gravel from entering the inlet. Place stone 3" in diameter or larger on the slope toward the inlet.
- Place 1/2" to 3/4" gravel on the slope away from the inlet at a minimum thickness of 1

Sod Inlet Protection

- Applicable only at the time of permanent seeding in order to protect the inlet from sediment and mulch material.
- Place the sod to form a turf mat covering the soil for a distance of 4 ft from each side of the inlet.
- Stagger sod strips so that adjacent ends are not aligned.

SOD STRIPS PROTECT INLET AREA FROM EROSION (SOURCE: VA SWCC)

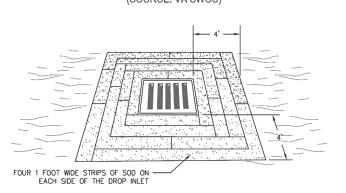


Figure 4. Sod Inlet Protection Installation Requirements (Sd2-S)

Curb Inlet Protection Sd2-P

- Applicable once pavement has been installed · The method of inlet protection shall be
- removed if a safety hazard is created.

115

Sd2

across catch basin inlet.

material.

Face openings in blocks outward.

hazardous ponding in the roadway.

Leave a gap of ~4" between the inlet filter

Another method uses gravel bags constructed

by wrapping GADOT #57 stone with filter

fabric, wire, plastic mesh, or equivalent

Figure 5. Curb Inlet Protection Installation

Requirements (Sd2-P)

116

Tr

and the inlet to allow for overflow and prevent

- For the "pigs-in-a-blanket" method, wrap 8" concrete blocks in filter fabric and span Inspect, clear, and/or repair trap at the end of
 - each working day. Do not remove inlet protection and wash sediment into the inlet.

Sd2

Remove sediment when accumulation has

MAINTENANCE

- reached <u>one-half</u> the height of the trap.
- · Remove sediment from curb inlet protection immediately.
- Remove all materials and any sediment once the contributing drainage area has been permanently stabilized.
- Appropriately stabilize all disturbed areas around the inlet.

REFERENCES

Ds4 Disturbed Area Stabilization (With Sodding)



117

- sediment storage.
- The drainage area entering the trap shall be

111



DISTURBED AREA STABILIZATION

(WITH TEMPORARY SEEDING)

DEFINITION

Ds2

The establishment of temporary vegetative cover with fast growing seedings for seasonal protection



- **PURPOSE** Reduce runoff and sediment damage of down
- stream resources Protect the soil surface from erosion
- Improve tilth, infiltration, and aeration as well as

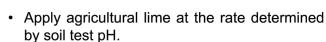
Improve wildlife habitat

Improve aesthetics

- organic matter for permanent plantings **INSTALLATION**
- Apply mulch or temporary grassing to all exposed areas within 14 days of disturbance.
- Applicable to rough graded areas that will be exposed for less than 6 months.
- Coordinate with permanent measures to ensure economical and effective stabilization.
- for companion crop plantings. • When the soil has been sealed by rainfall or consists of smooth cut slopes, scarify the soil

Take note of which species are not appropriate

in order to provide a place for the seed to lodge and germinate. 20



- Apply lime before land preparation and incorporate with a disk, ripper, or chisel.
- On steep slopes, apply fertilizer hydraulically. Select grass or grass-legume mixtures based on the area and season of the year.
- · Apply seed uniformly by hand, cyclone seeder, drill, culti-packer-seeder, or hydraulic seeder. • The appropriate depth of planting is 10x the
- seed diameter. Apply irrigation at a rate that will not cause runoff and erosion. Thoroughly wet the soil to insure germination of the seed.

MAINTENANCE

- Re-seed areas where an adequate stand of temporary vegetation fails to emerge.
- · If optimum conditions for temporary vegetation is lacking, mulch can be used a singular erosion control device.

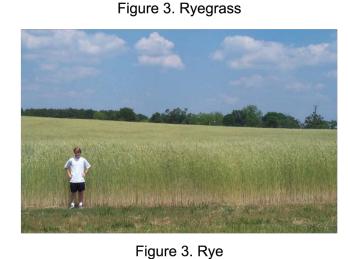
21

REFERENCES



Disturbed Area Stabilization (With Mulching Only)





22

Table 1. Some Temporary Plant Species, Seeding Rates and Planting Dates

Species	Rates Per	Rates per	Planti	Planting Dates by Region					
Species	1,000 sq. ft.	Acre	M-L	Р	С				
Barley Alone Barley in Mixtures	3.3 lbs. .6 lbs.	3 bu. .5 bu.	9/1-10/31	9/15-11/15	10/1-12/31				
Lespedeza, Annual Lespedeza in Mixtures	0.9 lbs. 0.2 lbs.	40 lbs. 10 lbs.	3/1-3/31	3/1-3/31	2/1-2/28				
Lovegrass, Weeping Lovegrass in Mixtures	0.1 lbs. .05 lbs.	4lbs. 2 lbs.	4/1-5/31	4/1-5/31	3/1-5/31				
Millet, Browntop Millet in Mixtures	.9 lbs. .2 lbs.	40 lbs. 10 lbs.	4/15-6/15	4/15-6/30	4/15- 6/30				
Millet, Pearl	1.1 lbs.	50 lbs.	5/15-7/15	5/1-7/31	4/15-8/15				
Oats Alone Oats in Mixtures	2.99 lbs. .7 lbs.	4 bu. 1 bu.	9/15 -11/15	9/15-11/15	9/15-11/15				

Table 1. Some Temporary Plant Species, Seeding Rates and Planting Dates (continued)

	Table 1. Some	Temporary Plant Spe	cies, Seeding Rates	s and Planting	Dates (contin	nued)
	Charina	Rates Per	Rates per	Plant	ing Dates by F	Region
	Species	1,000 sq. ft.	Acre	M-L	Р	С
	Rye (Grain) Alone Rye in Mixtures	3.9 lbs. .6 lbs.	3 bu. .5 bu.	8/15-10/31	9/15/-11/30	10/1-12/31
	Ryegrass	0.9 lbs.	40 lbs.	8/15-11/15	9/1-12/15	9/15-12/31
1	Sudangrass	1.4 lbs.	60 lbs.	5/1-7/31	5/1-7/31	4/1-7/31
	Triticale Alone Triticale in Mixtures	3.3 lbs. .6 lbs	3 bu. .5 bu.	NA	NA	10/15-11/30
	Wheat Alone Wheat in Mixtures	4.1 lbs. .7 lbs.	3 bu. .5 bu.	9/15 -11/30	10/1-12/15	10/15-12/31

- 1. Unusual site conditions may require heavier seeding rates. 2. Seeding dates may need to be altered to fit temperature variations and local conditions. 3. For Major Land Resource Areas (MLRAs), see page 60.
- 4. Seeding rates are based on pure live seed (PLS). 5. SITE LOCATED WITHIN THE PIEDMONT REGION; P

Types of Species	Planting Year	Fertilizer (N-P-K)	Rate (lbs./acre)	N Top Dressing Rate (lbs./acre)		
Cool season grasses	First	6-12-12	1500	50-100		
	Second	6-12-12	1000			
	Maintenance	10-10-10	400	30		
Cool seasn grasses & legumes	First	6-12-12	1500	0-50		
	Second	0-10-10	1000			
	Maintenance	0-10-10	400			
Temporary cover crops seeded alone	First	10-10-10	500	30		
Warm season grasses	First	6-12-12	1500	50-100		
	Second	6-12-12	800	50-100		
	Maintenance	10-10-10	400	30		

Table 2. Fertilizer Requirements for Temporary Vegetation







• Ensure the survival of desirable trees where they will be effective for erosion and sediment control, watershed protection, landscape beautification, dust and pollution control, noise

PURPOSE

benefits while the land is being converted. SPECIFICATIONS Contact the local government to obtain

reduction, shade and other environmental

information regarding tree ordinances BEFORE

Tree Protection Zones

ES&PC plans are designed.

(1) Measure the diameter of the tree trunk in inches 4.5 ft from the ground. This is the Diameter Breast Height (DBH).

(2) Multiply this value by 1.5. This result is the

radius of the root protection zone in ft Also considered the critical rooting distance. 154

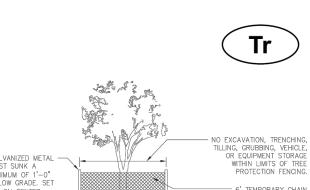


Figure 1. Chain Link Fence Installation

Tree protection zone fencing may be one of the

Tree Protection Zone Fencing

- following: For areas of large remnant forest to be protected, use 4 ft high orange plastic fabric fencing stapled in 3 locations to 2x4 treated wood stakes. Set stakes 6 ft on center. Do not use rebar as stakes.
- For single family homes use a treated wood fencing. It may have orange fabric attached
- chain link fencing attached to galvanized metal post.

• For all other developments use 6 ft high

*Please refer to the American National Standard(ANSI) or the International Society of Arborculture for more information regarding standards for adequate tree protection.

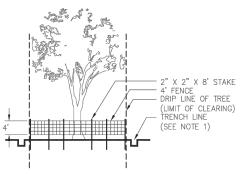


Figure 2. "Snow" Fence Installation 155





IF YOU DIG GEORGIA... CALL US FIRST! UTILITIES PROTECTION CENTER IT'S THE LAW

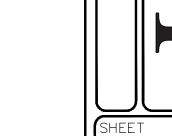
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(D) (-1

STRATFIELD DRIVE IMPROVEMENTS



DATE: 04/30/2018



C6.00

DEFINITION

The planting of perennial vegetation such as trees, shrubs, vines, grasses, or legumes on exposed areas for final permanent stabilization.



PURPOSE

- Protect the soil surface from erosion
- Reduce damage from sediment and runoff to down-stream areas
- Improve wildlife habitat and visual resources
- Improve aesthetics

INSTALLATION

- Use conventional planting methods where possible.
- Final Stabilization means that 100% of the soil surface is uniformly covered in permanent vegetation with a density of 70% or greater, or landscaped according to the plan (uniformly covered landscaping materials in planned lanscaped areas), or equivalent permanent stabilization measures.
- Select plants species based on site and soil conditions, planned use and maintenance of the area, time of year, method of planting, and the needs of the land user. (Refer to Table 1) 26

•	Apply agricultural lime at a rate of 1-2 tons
	acre unless soil tests indicate otherwise
	Please refer to Table 2 for initial fertilization
	nitrogen, topdressing, and maintenance fertilize
	requirements for each species.
•	Apply seed hydraulically. If using conventiona
	and the sale and a supplied to the sale and a sale and

- methods, use a culti-packer seeder, drill, rotary seeder, or by hand. • Cover the seed lightly with 1/8"-1/4" of soil for
- small seed and 1/2"-1" of soil for large seed when using a cultipacker. Check seed tags for % germination & % purity in order to calculate Pure Live Seed (PLS), which is the percentage of the seeds that are pure and
- will germinate. Mulch is required for all permanent vegetation applications. Please refer to **Ds1** for application
- rates and anchoring methods for different
- Irrigate when the soil is dry and at a rate that will not cause runoff.

KIND: TALL FES VARIETY: KEN	CUE TUCKY 31	LOT # 4-2	236
PURE SEED INC MATTER CROP SEED WEED SEED WEED SEED RESTRICTED NOXIOUS WEE 72 HAIRY CHESS/ 36 RED SC	ORRREL/ 36 DOCK	TEST DATE NET WT. 50 LBS. ORIGIN: MO AMS 719 36 BUCKHORN	85% 11/04
If the seed laws of several states arbitration, becaut upon the latiture of seed to which this noticement for P-Ti, TiMes, Sc, Tx, War, signed only Caroninasson endirector/secretary of agriculture, section of the crops, phints, or trees by the design complaint shall be r . A to the salier by certified or	ce is attached to produce as re [Ga.]d,Nd,& Sd) along with the seed commissioner, or chief as saled agency and the seedsma	presented. The consumer shall the a complain required filling lee (where applicable with the picultural office within such time as to permit in from whom the seed was purchased. A cop	urn :

Figure 1. Typical Tag on a Bag of Seed

PLS Example Tall Fescue

85% germination & 95% purity PLS = 0.85 germination x 0.95 purity

PLS = 80.75%

Seeding rate = 50 lbs. PLS/acre = 61.92 lbs/acre 80.75% PLS

27

Ds3

Ds3



Figure 2. Weeping Lovegrass



Figure 3. Sericea Lespedeza



Figure 4. Common Bermuda

MAINTENANCE

- · Re-seed areas where an adequate stand of vegetation fails to emerge or where a poor stand exists.
- · Maintain at least 6" of top growth under any use and management. Exclude traffic until the plants are well
- established. · Please refer to Table 2 for second year and
- maintenance fertilizer rates. Apply one ton of agricultural lime every 4-6
- years or as indicated by soil tests. Mow Bermudagrass, Bahiagrass, and Tall Fescue as desired.
- Mow Sericea Lespedeza only after frost to

REFERENCES

Ds2 Disturbed Area Stabilization (With Temporary Seeding)

Ss Slope Stabilization

ensure that the seeds are mature.

Ds1 Disturbed Area Stabilization (With Mulching Only) (With Mulching Only)

37

Table 1. Some Permanent Plant Species, Seeding Rates, and Planting Dates (continued)

	Table 1. Come	ila i lanting	Dates (continued)				
	Species	Rates per	Rates per		Planting Dates by Region		Remarks
	Species	Acre 1,000 s	1,000 sq. ft	sq. ft M- L	Р	С	Romano
3	Sunflower, Aztec Maximillian	10 lbs.	0.2 lb.	4/15-5/31	4/15-5/31	4/1-5/31	Mix with Weeping Lovegrass or other low growing grasses or legumes.

- 1. Rates are for broadcasted seed. If a seed drill is used, reduce the rates by one-half. 2. PLS is an abbreviation for Pure Live Seed. Refer to Glossary for an explanation of this term.
- 3. The resource areas are defined in the Glossary. See page 60 for Resource Area.
- 4. Seeding rates are based on pure live seeds (PLS).
- 5. SITE LOCATED WITHIN THE PIEDMONT REGION;

Ds3

	Table 1. Som	es, and Pl	anting Dates				
	Species	Rates per	Rates per	Pla	nting Dates Region	by	Remarks
	•	Acre	1,000 sq. ft	M- L	Р	С	
	Bahia, Pensacola Alone or with temporary cover With other perennials	60 lbs. 30 lbs.	1.4 lbs. 0.7 lb.		4/1 -5/31	3/1-5/31	Low growing; sod producing; will spread into Bermuda lawns.
28	Bahia, Wilmington Alone or with temporary cover With other perennials	60 lbs. 30 lbs.	1.4 lbs. 0.7 lb.	3/15-5/31	3/1-5/31		Same as above
	Bermuda, Common (Hulled seed) Alone With other perenials	10 lbs. 6 lbs.	0.2 lb. 0.1 lb.	-1-	4/1-5/31	3/15-5/31	Quick cover; low growing; sod forming; needs full sun.
	Bermuda, Common (Unhulled seed) With temporary cover With other perennials	10 lbs. 6 lbs.	0.2 lb. 0.1 lb		10/1-2/28	11/1-1/31	Plant with Winter annuals. Plant with Tall Fescue

Ds3

		Species	Rates per Rates per Acre 1,000 sq. ft		Planting Dates by Region			Remarks
		·	Acre	1,000 sq. it	M- L	Р	С	
	30	Lespedeza, Sericea Scarified	60 lbs.	1.4 lbs.	4/1-5/31	3/15-5/31	3/1-5/15	Widely adapted and low maintenance; takes 2-3 years to establish; inoculate seed with EL inoculant; mix with Weeping lovegrass, Common Bermuda, Bahia or Tall Fescue.
		Unscarified	75 lbs.	1.7 lbs.	9/1-2/28	9/1-2/28	9/1-2/28	Mix with Tall Fescue or winter annuals.
		Seed-bearing hay	3 tons	138 lbs.	10/1-2/28	10/1-1/31	10/15-1/15	Cut when seed is mature but before it shatters. Add Tall Fescue or winter annuals.

Table 1. Some Permanent Plant Species, Seeding Rates, and Planting Dates (continued)

Table 1. Some Permanent Plant Species, Seeding Rates, and Planting Dates (continued)

	Species	Rates per Rates per Acre 1,000 sq. ft		Pla	anting Dates Region	by	Remarks	
		Acre	1,000 sq. it	M- L	Р	С		
	Bermuda Springs Common lawn and forage	40 cu. ft.	0.9 cu.ft.				1 cu. ft. = 650 sprigs	
	hybrids	Sod plugs 3' x3'		4/15-6/15	4/1-6/15	4/1-5/31	1 bu. = 1.25 cu. ft. or 800 sprigs	
29	Centipede	Blcok Sod Only	Block Sod Only		11/1-5/31	11/1-5/31	Drought tolerant. Full sun or partial shade.	
	Crown Vetch With winter annuals or cool season grasses	15 lbs.	0.3 lb.	9/1-10/15	9/1-10/15		Mix with 30 lbs. Tall Fescue or 15 lbs. Rye; inoculate seed; plant only North of Atlanta.	
	Fescue, Tall Alone With other perennials	50 lbs. 30 lbs.	1.1 lbs. 0.7 lb.	3/1-4/15 or 8/15-10/15	9/1-10/15		Can be mixed with perennial Lespedezas or Crown Vetch; not for droughty soils or heavy use areas	
								Q

Table 1. Some Permaner	t Plant Species, Seeding Rates,	and Planting Dates (continued)
		, ,

_		Species	Rates per	Rates per	Planting Dates by Region		Remarks		
		Opedies	Acre	1,000 sq. ft	M- L	Р	С	Nomano	L
	32	Lovegrass, weeping Alone With other perennials	4 lbs. 2 lbs.	0.1 lb. 0.05 lb.	4/1-5/31	3/15-5/31	3/1-5/31	Quick cover; drought tolerant; grows well with Sericea Lespedeza on road-banks and other steep slopes; short lived.	
	2	Maidencane sprigs	2' x 3' s	spacing	2/1-3/31	2/1-3/31	2/1-3/31	For very wet sites such as river banks and shorelines. Dig sprigs locally.	
		Panicgrass, Altantic Coastal	20 lbs.	0.5 lb.		3/1-4/30	3/1-4/30	Grows well on coastal sand dunes; mix with Sericea Lespedeza but not on sand dune.	
		Red Canary Grass With other perennials	50 lbs. 30 lbs.	1.1 lbs. 0.7 lb.	8/15-10/15	9/1-10/15		Grows similar to Tall Fescue; for wet sites	

Ds4

Table 1 Some Permanent Plant Species Seeding Rates and Planting Dates (continued)

	Species	Rates per Rates per		PI	anting Dates Region	by	Remarks
31		Acre	1,000 sq. ft	M- L	Р	С	
	Lespedeza Ambro Virgata or Appalow Scarified Unscarified	60 lbs. 75 lbs.	1.4 lbs. 1.7 lbs.	4/1-5/31 9/1-2/28	3/15-5/31 9/1-2/28	3/1-5/15 9/1-2/28	Spreading growth with height of 18"-24"; good in urban areas; slow to develop good stands; mix with Weeping Lovegrass, Common Bermuda, Bahia Tall Fescue or winter annuals; do not mix with Sericea Lespededeza; inoculate seed with EL inoculant.
	Lespedeza, Shrub (Lespedeza Bicolor or Lespedeza Thumbergii) Plants	3' x 3' spacing		10/1-3/31	11/1-3/15	11/15-2/28	Plant in small clumps for wildlife food and cover.

Table 2. Fertilizer Requirements for Permanent Vegetation							
Types of Species	Planting Year	Fertilizer (N-P-K)	Rate (lbs./ acre)	N Top Dressing Rate (lbs./acre)			
Cool season grasses	First	6-12-12	1500	50-100			
	Second	6-12-12	1000				
	Maintenance	10-10-10	400	30			
Cool grasses and legumes	First	6-12-12	1500	0-50			
	Second	0-10-10	1000				
	Maintenance	0-10-10	400				
Warm season grasses	First	6-12-12	1500	50-100			
	Second	6-12-12	800	50-100			
	Maintenance	10-10-10	400	30			
Warm season grasses and legumes	First	6-12-12	1500	50			
	Second	0-10-10	1000				
	Maintenance	0-10-10	400				



Table 2. Fertilizer Requirements for Permanent Vegetation								
Types of Species	Planting Year	Fertilizer (N-P-K)	Rate (lbs./ acre)	N Top Dressing Rate (lbs./acre)				
Cool season grasses	First	6-12-12	1500	50-100				
	Second	6-12-12	1000					
	Maintenance	10-10-10	400	30				
Cool grasses and legumes	First	6-12-12	1500	0-50				
	Second	0-10-10	1000					
	Maintenance	0-10-10	400					
Warm season grasses	First	6-12-12	1500	50-100				
	Second	6-12-12	800	50-100				
	Maintenance	10-10-10	400	30				
Warm season grasses and legumes	First Second Maintenance	6-12-12 0-10-10 0-10-10	1500 1000 400	50 				

DISTURBED AREA STABILIZATION

(WITH SODDING)

DEFINITION

A permanent vegetative cover using sods on highly



PURPOSE

- Establish immediate ground cover
- Reduce runoff and erosion Improve aesthetics and land value
- Reduce dust and sediments
- Stabilize waterways and critical areas
- Filter sediments, nutrients and bugs Reduce downstream complaints
- Reduce likelihood of legal action
- Reduce likelihood of work stoppage due to legal action
- Increase "good neighbor" benefits

INSTALLATION

• Bring soil surface to final grade. Clear surface of trash, woody debris, stones and clods larger than 1". Apply sod to soil surfaces only and not frozen surfaces, or gravel type soils.

Ds4

- Topsoil properly applied will help guarantee a stand. Don't use topsoil recently treated with herbicides or soil sterilants.
- Mix fertilizer into soil surface. Fertilize based on soil tests or Table 1. For fall planting of warm season species, half the fertilizer should be applied at planting and the other half in the
- Agricultural lime should be applied based on soil tests or at a rate of 1-2 tons/acre.
- Lay sod with tight joints and in straight lines. Don't overlap joints. Stagger joints and do not stretch sod.

Table 1. Fertilizer Requirements for Soil Surface Application						
Fertilizer Type (lbs./acre)	Fertilizer Rate (lbs./sq.ft.)	Fertilizer Rate	Season			
10-10-10	1000	.025	Fall			
<u> </u>						

- On slopes steeper than 3:1, sod should be
- anchored with pins or other approved methods. Installed sod should be rolled or tamped to provide good contact between sod and soil.
- Irrigate sod and soil to a depth of 4" immediately after installation.
- wet or dry weather. Irrigation should be used to supplement rainfall for a minimum of 2-3 weeks.

Sod should not be cut or spread in extremely

- MATERIALS
- Sod selected should be certified. Sod grown
- in the general area of the project is desirable. Sod should be machine cut and contain 3/4" (+ or - 1/4") of soil, not including shoots or thatch.

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- Sod should be cut to the desired size within ±5%. Torn or uneven pads should be rejected. Sod should be cut and installed within 36 hours
- of digging. Avoid planting when subject to frost heave or hot weather, if irrigation is not available.
- The sod type should be shown on the plans or installed according to Table 2. See page 60 for your Resource Area.

Table 2. Sod Planting Requirements

		Grass	Varieties	Resource Area	Growing Season
		Bermudagrass	Common Tifway Tifgreen Tiflawn	M-L, P,C P,C P,C P,C	Warm weather
		Bahiagrass	Pensacola	P,C	Warm weather
		Centipede		P,C	Warm weather

Centipede		P,C	Warm weather
St. Augustine	Common Bitterblue Raleigh	O	Warm weather
Zoysia	Emerald Myer	P,C	Warm weather
Tall Fescue	Kentucky 31	M-L, P	Cool weather

MAINTENANCE

- Re-sod areas where an adequate stand of sod is not obtained.
- New sod should be mowed sparingly. Grass height should not be cut less than 2"-3" or as
- Apply one ton of agricultural lime as indicated by soil test or every 4-6 years.

40

Ds4

 Fertilize grasses in accordance with soil tests or Table 3.

Tabl	Table 3. Fertilizer Requirements for Sod								
Types of Species	Planting Year	Fertilizer (N-P-K)	Rate (lbs./acre)	Nitrogen Top Dressing Rate (lbs./acre)					
Cool	First	6-12-12	1500	50-100					
season	Second	6-12-12	1000						
grasses	Maintenance	10-10-10	400	30					
Warm	First	6-12-12	1500	50-100					
season	Second	6-12-12	800	50-100					
grassed	Maintenance	10-10-10	400	30					

REFERENCES

Ds1 Disturbed Area Stabilization (With Mulching Only)

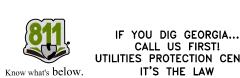
Ds2 Disturbed Area Stabilization (With Temporary Seeding)

Disturbed Area Stabilization (With Permanent Vegetation) Ss Slope Stabilization

41



CERTIFICATION NUMBER 0000077050



Call before you dig

ISSUED: <u>04/29/201</u>6 EXPIRES: <u>04/29/201</u>9 IF YOU DIG GEORGIA...

DRAINAGE - PHASE 1

STRATFIELD DRIVE IMPROVEMENTS

DATE: 04/30/2018



C6.10

SEDIMENT BARRIER

DEFINITION

A temporary structure made up of porous material typically supported by steel or wood posts. Types include silt fence, brush piles, mulch berms, compost filter socks or other filtering material.



PURPOSE

- Minimize and prevent sediment carried by sheet flow from leaving the site.
- Retain the sediment on the disturbed area.
- Filter sediment from runoff.

INSTALLATION

- Install according to the approved plan.
- Do not install across streams, ditches, waterways, or other concentrated flow areas.
- The type of sediment barrier depends on whether the area is sensitive or non-sensitive.
- For silt fence, Type C will be classified as sensitive and Type A & B will be classified as non-sensitive.
- Install along the contour.
- Along all state waters and other sensitive areas, 2 rows of Type S shall be used. The 2 rows shall be placed a minimum of 36" apart.



Overlap barriers 18" when using multiple types

- of sediment barriers in a single run on a site. When storing runoff behind the sediment barrier, the maximum continuous slope length behind the sediment barrier shall not exceed those found in Table 1.
- Provide a riprap spalsh pad or other protection device at any point where flow may overtop the sediment barrier.

Installation Methods

Static Slicing Method

- Using a machine, pull a narrow blade through the ground to create a 12" deep slit, and simultaneously insert the silt fence fabric into the slit behind the blade.
- Roll a tractor wheel along both sides of the slit in the ground 2-4 times to achieve compaction
- Drive posts 18" into ground and attach fabric.



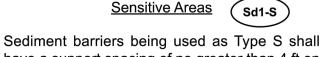
Figure 1. Static Slicing Machine

Trenching Method

- Dig a 2"-6" wide trench with a 6" excavation.
- Drive posts 18" into ground and attach fabric.
- The best trenching method typically requires triple the time and effort to achieve results comparable to the static slicing method.



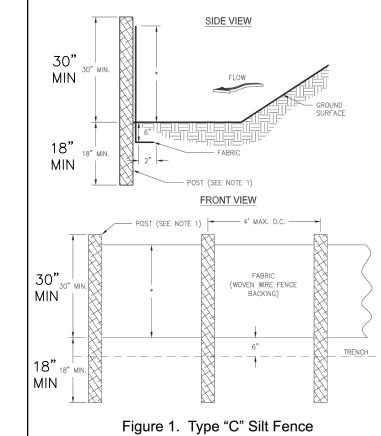




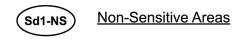
have a support spacing of no greater than 4 ft on center, with each being driven into the ground a minimum of 18".

Type C Silt Fence

- 36" wide with wire reinforcement or equivalent
- To be used where runoff velocities are particularly high or where slopes exceed a vertical height of 10 ft.



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Sediment barriers being used as Type NS shall have a support spacing of no greater than 6 ft on center, with each being driven into the ground a minimum of 18".

Type A Silt Fence

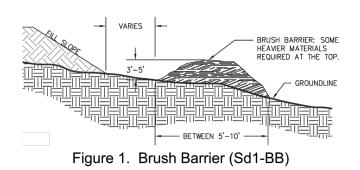
- 36" wide fabric
 - To be used where the life of the project is greater than or equal to 6 months.

Type B Silt Fence

- 22" wide fabric
- Limit to use on minor projects, such as residential home sites or small commercial developments where permanent stabilization will be achieved in less than 6 months.

BRUSH BARRIER SECTION

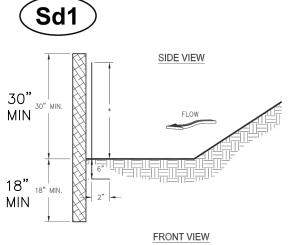
Same flow rate as Type A.

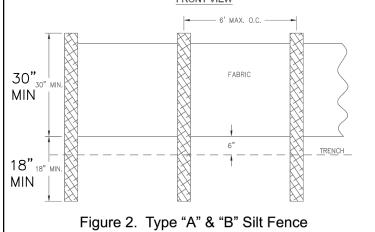


Brush Barrier (only during timber clearing) Intermingle brush so as not to form a solid

- Should be wind-rowed on the contour as
- nearly as possible.
- Minimum base width is 5 ft and should be no wider than 10 ft.
- The height should be between 3-5 ft.







AREA TO BE PROTECTED CONDITIONS AND AT LEAST 18" DIA (SEE EQUIVALENT LIST) COMPOST FILTER SOCK —

Figure 3. Compost Filter Sock - Type "B"

(2 O.C. FOR TYPE NS)

Sd1

Table 1. Criteria for Sediment Barrier Placement

Land Slope (%)	Maximum Slope Length Behind Fence (ft)			
<2	100			
2-5	75			
5-10	50			
10-20	25			
>20	15			

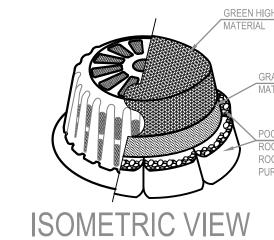
MAINTENANCE

- Remove the sediment once it has accumulated to <u>one-half</u> the original height of the barrier.
- Replace barrier whenever it has deteriorated to such an extent that the effectiveness of the product is reduced (~ 6 months) or the height of the product is not maintaining 80% of its properly installed height.
- Remove and dispose of all accumulated sediment at the barrier before it is removed.
- Leave in place until all disturbed areas are permanently stabilized.

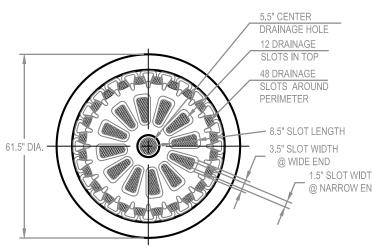
Table 2. Post Size

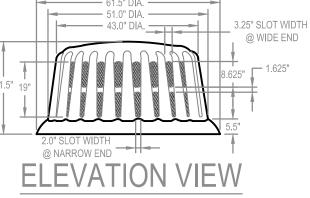
Type	Min. Length	Type of Post	Size of Post
NS	4'	Oak Steel Soft Wood	1.5"x1.5" 1.15lb/ft min 3" or 2"x4"
S	4'	Oak Steel	2"x2" 1.15lb/ft. min

Figure 1. Thomas Carpenter, CPESC, Carpenter Erosion Control.



SHOWN WITH ROADWAY PROJECTS FILTER HAT





- F<u>ILTER OPTIONS</u> FILTER HAT IS AVAILABLE IN THREE OPTIONS: 1) ALL HIGH-FLOW MATERIAL
- 2) ALL HIGH-EFFICIENCY MATERIAL 3) HIGH-FLOW MATERIAL ON TOP HALF OF HAT, HIGH-EFFICIENCY
- FOR ALL ROADWAY PROJECTS. IT IS THE PURCHASERS RESPONSIBILITY TO PURCHASE APPROPRIATE FILTER HAT. PURCHASER SHALL PROVIDE ROCK FOR FILTER POCKETS

FILTER HAT SLIDES DIRECTLY OVER FILTER FRAME. TO KEEP FILTER FRAME IN PLACE OVER STORM STRUCTURE. ROCK POCKETS ARE SEWN DIRECTLY INTO FILTER HAT MATERIAL. EVERY FILTER HAT

COMES IN ONE PIECE FOR EASY INSTALLATION.

<u>MAINTENANCE</u> ALL TEMPORARY EROSION, SEDIMENTATION, & POLLUTION CONTROL PRACTICES SHOULD BE INSPECTED DAILY. CONTRACTOR SHALL REMOVE SEDIMENT AND DISPOSE OF IN A PROPER MANNER. INSPECT R-100A DAILY FOR CUTS, ABRASIONS, AND PROPER INSTALLATION.

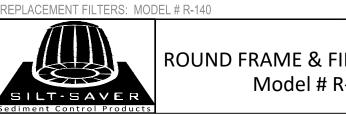
SPECIFICATIONS
FILTER FABRIC SILT-SAVER HAT SHALL BE BASED ON DESIGN

REPLACE OR REPOSITION AS NECESSARY.

	PROFESSIONAL S SP			HEAI	2.5' 2.0' 1.5' 1.0' 0.5' 0.0'
ŀ	FRAME &	1	ISCHARO FRAME	FILTER	/SIS

FRAME & FILTER DISCHARGE ANALYSIS								
HEAD (FT)	EQUATION USED	OPENING AREA (SF)	FRAME FLOW (CFS)	FILTER AREA (SF)	FILTERED FLOW (CFS			
0.5	0	2.1	7	6	2			
1.0	0	3.9	19	12	3			
1,5	0	7.0	41	18	5			
2.0	0	8.0	54	24	7			
2.5	0	9.2	70	30	9			
3.0	0	9.2	77		77			

- UE TO NARROW SLOT, A TRANSITION WILL OCCUR BETWEEN WEIR ND ORIFICE CONDITIONS. ORIFICE FLOW WILL PROVIDE A MORE INSERVATIVE ESTIMATE OF FLOW, THEREFORE THE LESSER OF TH PRIFICE AND WEIR FLOWS WILL BE USED FOR EACH STAGE
- FILTER MATERIAL ALLOWS 129 gpm/SF OR 0.29cfs/SF ORIFICE EQUATION (O) = $Q=0.6A(2gh)^0.5$ = FEET PERIMETER
- = HEAD IN FEET = CAPACITY IN cfs = FREE OPEN AREA OF FRAME = 32.2 FEET-PER-SECOND/SECON

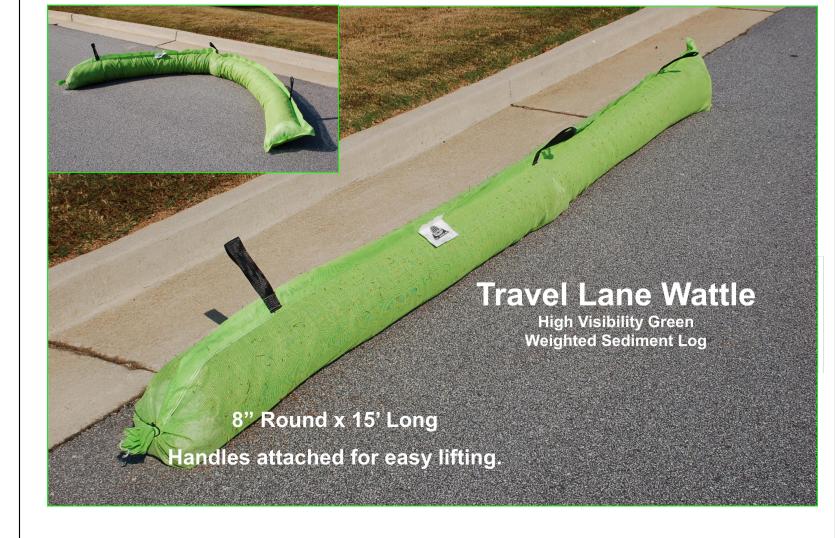


ROUND FRAME & FILTER ASSEMBLY Model # R-100A

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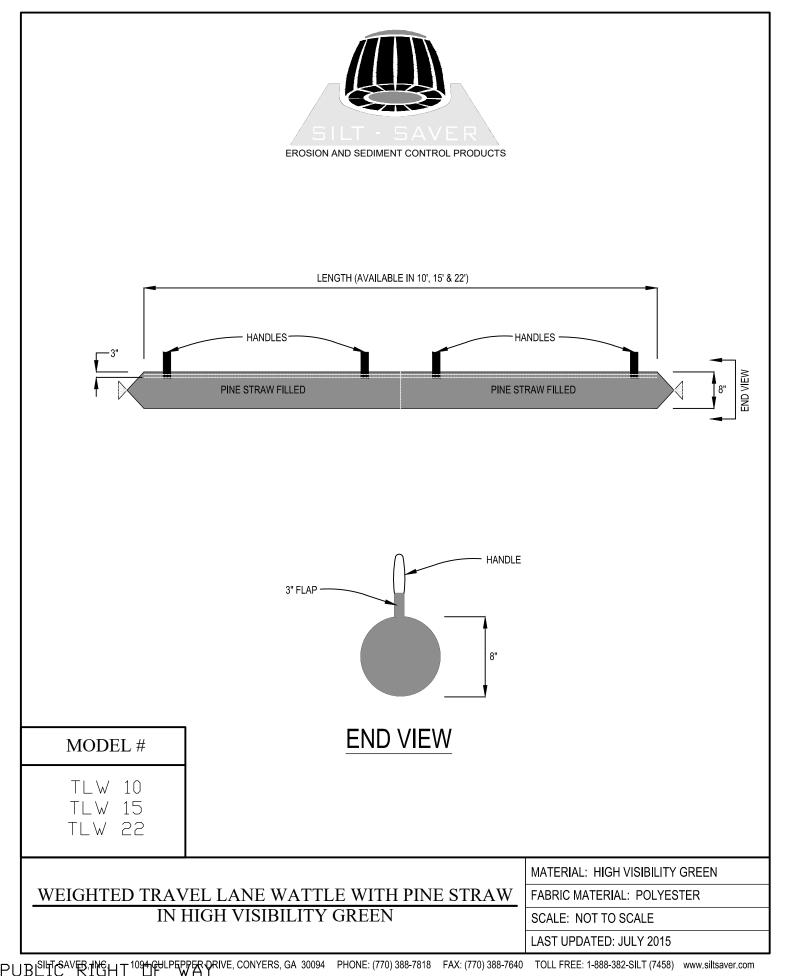


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DRAINAGE - PHASE 1 STRATFIELD DRIVE I



Authorization To Discharge Under The National Pollutant Discharge Elimination System Storm Water Discharges Associated With Construction Activity For Infrastructure Construction Projects

In compliance with the provisions of the Georgia Water Quality Control Act (Georgia Laws 1964, p. 416, as amended), hereinafter called the "State Act," the Federal Clean Water Act, as amended (33 U.S.C.1251 et seq.), hereinafter called the "Clean Water Act," and the Rules and Regulations promulgated pursuant to each of these Acts, new and existing storm water point sources within the State of Georgia that are required to have a permit, upon submittal of a Notice of Intent, are authorized to discharge storm water associated with construction activity to the waters of the State of Georgia in accordance with the limitations, monitoring requirements and other conditions set forth in Parts I through VI hereof.

This is a modification of the permit which became effective September 24, 2013.

This permit shall become effective on July 1, 2016.

This permit and the authorization to discharge shall expire at midnight, July 31, 2018.

Signed this 30th day of June 2016





Environmental Protection Division F. Retention of Records Part I. COVERAGE UNDER THIS PERMIT Part V. STANDARD PERMIT CONDITIONS A. Permit Area B. Definitions A. Duty to Comply... C. Eliqibility D. Authorization E. Continuing Obligations of Permittees D. Duty to Mitigate E. Duty to Provide Information F. Other Information Part II. NOTICE OF INTENT REQUIREMENTS G. Signatory Requirements... A. Deadlines for Notification H. Oil and Hazardous Substance Liability B. Notice of Intent Contents Property Rights ____ C. Notice of Intent Submittal J. Severability___ E. Renotification L. Proper Operation and Maintenance M. Inspection and Entry N. Permit Actions Part III. SPECIAL CONDITIONS, MANAGEMENT PRACTICES, PERMIT VIOLATIONS AND OTHER Part VI. TERMINATION OF COVERAGE A. Prohibition on Non-Storm Water Discharges B. Releases in Excess of Reportable Quantities A. Notice of Termination Eligibility C. Discharges into, or within One Mile Upstream of and within the Same Watershed as, B. Notice of Termination Contents Any Portion of a Biota Impaired Stream Segment... C. Notice of Termination Submittal... D. Management Practices and Permit Violations APPENDIX A. EPD District Offices... Part IV. EROSION, SEDIMENTATION AND POLLUTION CONTROL PLAN

State of Georgia Page 2 of 37 Department of Natural Resources B. Continuation of the Expired General Permit C. Need to Halt or Reduce Activity Not a Defense K. Other Applicable Environmental Regulations and Laws APPENDIX B. Nephelometric Turbidity Unit (NTU) Table

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Part I. COVERAGE UNDER THIS PERMIT

A. Permit Area.

This permit regulates point source discharges of storm water to the waters of the State of Georgia from construction activities, as defined in this permit.

B. Definitions. All terms used in this permit shall be interpreted in accordance with the definitions as set forth in the Georgia Water Quality Control Act (Act) and the Georgia Rules and Regulations for Water Quality Control Chapter 391-3-6 (Rules), unless otherwise defined in this permit:

1. "Best Management Practices" (BMPs) means schedules of activities, prohibitions of practices, maintenance procedures, and other management practices to prevent and minimize erosion and resultant sedimentation, which are consistent with, and no less stringent than, those practices contained in the "Manual for Erosion and Sediment Control in Georgia" (Manual) published by the State Soil and Water Conservation Commission as of January 1 of the year in which the land-disturbing activity was permitted to prevent or reduce the pollution of waters of Georgia. BMPs also include treatment requirements, operating procedures, and practices to control site runoff, spillage or leaks, sludge or waste disposal, or drainage from raw material storage

2. "Buffer" means the area of land immediately adjacent to the banks of State waters in its natural state of vegetation, which facilitates the protection of water quality and aquatic habitat.

3. "Certified Personnel" means a person who has successfully completed the appropriate certification course approved by the State Soil and Water Conservation Commission

4. "Commencement of Construction" means the initial disturbance of soils associated with clearing, grading, or

5. "Construction Activity" means the disturbance of soils associated with clearing, grading, excavating, filling of land, or other similar activities which may result in soil erosion. Construction activity does not include agricultural and silvicultural practices, but does include agricultural buildings.

6. "CPESC" means Certified Professional in Erosion and Sediment Control with current certification by EnviroCert International, Inc. (<u>www.EnviroCertIntl.org</u>).

7. "CWA" means Federal Clean Water Act (formerly referred to as the Federal Water Pollution Control Act or Federal Water Pollution Control Act Amendments of 1972).

8. "Design Professional" means a professional licensed by the State of Georgia in the field of: engineering architecture, landscape architecture, forestry, geology, or land surveying; or a person that is a Certified Professional in Erosion and Sediment Control (CPESC) with a current certification by EnviroCert International, Inc. Design Professionals shall practice in a manner that complies with applicable Georgia law governing

9. "Director" means the Director of the Environmental Protection Division or an authorized representative.

10. "Division" means the Environmental Protection Division of the Department of Natural Resources. 11. "Erosion" means the process by which land surface is worn away by the action of wind, water, ice or gravity.

12. "Erosion, Sedimentation and Pollution Control Plan" or "Plan" means a plan for the control of soil erosion,

sediment and pollution resulting from a construction activity.

13. "Filling" means the placement of any soil or solid material either organic or inorganic on a natural ground

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surface or an excavation. 14. "Final Stabilization" means that all soil disturbing activities at the site have been completed, and that for unpaved areas and areas not covered by permanent structures, 100% of the soil surface is uniformly covered in permanent vegetation with a density of 70% or greater, or landscaped according to the Plan (uniformly covered with landscaping materials in planned landscaped areas), or equivalent permanent stabilization measures as defined in the Manual (excluding a crop of annual vegetation and a seeding of target crop perennials appropriate for the region). For infrastructure construction projects on land used for agricultural or silvicultural purposes, final stabilization may be accomplished by stabilizing the disturbed land for its agricultural or silvicultural use.

15. "General Contractor" means the operator of the infrastructure construction or site.

16. "Impossible" means the monitoring location(s) are either physically or legally inaccessible, or access would

17. "Infrastructure Construction" or "Infrastructure Construction Project" means construction activities that are not part of a common development that include the construction, installation and maintenance of roadway and railway projects and conduits, pipes, pipelines, substations, cables, wires, trenches, vaults, manholes and similar or related structures for the conveyance of natural gas (or other types of gas), liquid petroleum products, electricity, telecommunications (telephone, data, television, etc.), water, storm water or sewage.

18. "Infrastructure Company" or "Infrastructure Contractor" means, for the purposes of this Permit, an entity or sub-contractor that is responsible, either directly or indirectly, for infrastructure construction or an infrastructure

19. "Local Issuing Authority" means the governing authority of any county or municipality which is certified pursuant to Official Code of Georgia Section 12-7-8(a).

20. "Mass Grading" means the movement of earth by mechanical means to alter the gross topographic features (elevations, slopes, etc.) to prepare a site for final grading and the construction of facilities (buildings, roads,

21. "Nephelometric Turbidity Unit (NTU)" means a numerical unit of measure based upon photometric analytical techniques for measuring the light scattered by fine particles of a substance in suspension.

22. "NOI" means Notice of Intent to be covered by this permit (see Part II).

23. "Normal Business Hours" means Monday thru Friday, 8:00 AM to 5:00 PM, excluding any non-working Saturday, non-working Sunday and non-working Federal holiday. 24. "NOT" means Notice of Termination (see Part VI).

25. "Operator" means the entity that has the primary day-to-day operational control of those activities at the construction site necessary to ensure compliance with Erosion, Sedimentation and Pollution Control Plan requirements and permit conditions.

26. "Other Water Bodies" means ponds, lakes, marshes and swamps which are waters of the State.

27. "Outfall" means the location where storm water, in a discernible, confined and discrete conveyance, leaves a facility or construction site or, if there is a receiving water on site, becomes a point source discharging into that

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28. "Owner" means the legal title holder to the real property on which is located the facility or site where construction activity takes place. For purposes of this permit, this definition does not include the legal title holder to property on which the only construction activity planned and being conducted is by a infrastructure company or infrastructure contractor and the legal title holder has no significant control over design and implementation of the construction activity.

29. "Permittee" means any entity that has submitted a Notice of Intent.

30. "Phase" or "Phased" means sub-parts or segments of infrastructure construction projects where the sub-part or segment is constructed and stabilized prior to completing the entire construction site.

31. "Point Source" means any discernible, confined, and discrete conveyance, including but not limited to, any pipe, ditch, channel, tunnel, conduit, well, discrete fissure or container from which pollutants are or may be discharged. This term also means sheetflow which is later conveyed via a point source to waters of the State. This term does not include return flows from irrigated agriculture or agricultural storm water runoff.

32. "Primary Permittee" means the Owner or the Operator or both of a tract of land for a construction project

33. "Proper design" and "properly designed" means designed in accordance with the design requirements and specifications contained in the "Manual for Erosion and Sediment Control in Georgia" (Manual) published by the State Soil and Water Conservation Commission as of January 1 of the year in which the land-disturbing activity was permitted and amendments to the Manual as approved by the State Soil and Water Conservation Commission up until the date of NOI submittal.

34. "Receiving Water(s)" means all perennial and intermittent waters of the State into which the runoff of storm water from a construction activity will actually discharge, either directly or indirectly.

35. "Roadway Project(s)" means traveled ways including but not limited to roads, sidewalks, multi-use paths and trails, and airport runways and taxiways. This term also includes the accessory components to a roadway project that are necessary for the structural integrity of the roadway and the applicable safety requirements. These accessory components include but are not limited to slopes, shoulders, storm water drainage ditches and structures, guardrails, lighting, signage, cameras and fences and exclude subsequent landscaping and

36. "Sediment" means solid material, both organic and inorganic, that is in suspension, is being transported, or has been moved from its site of origin by, wind, water, ice, or gravity as a product of erosion.

37. "Sedimentation" means the action or process of forming or depositing sediment.

39. "Site" or "Construction Site" means a facility of any type on which construction activities are occurring or are to

38. "Sheetflow" means runoff which flows over the ground surface as a thin, even layer, not concentrated in a

occur which may result in the discharge of pollutants from a point source into the waters of the State. 40. "Storm Water" means storm water runoff, snow melt runoff, and surface runoff and drainage.

41. "Structural Erosion and Sediment Control Practices" means measures for the stabilization of erosive or sediment producing areas by utilizing the mechanical properties of matter for the purpose of either changing the

surface of the land or storing, regulating or disposing of runoff to prevent excessive sediment loss. 42. "Sub-contractor" means an entity employed or retained by the permittee to conduct any type of construction

activity (as defined in this permit) at an infrastructure construction site. Sub-contractors must complete the

State of Georgia Department of Natural Resources

www.gaepd.org.

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Environmental Protection Division stream as indicated in the Rules and Regulations for Water Quality Control, Chapter 391-3-6 at

e. The name of the receiving water(s) located within one (1) linear mile upstream of and within the same watershed as, any portion of an Impaired Stream Segment identified as "not supporting" its designated use(s) shown on Georgia's most current "305(b)/303(d) List Documents (Final)" for the criteria violated, "Bio F" (Impaired Fish Community) and/or "Bio M" (Impaired Macroinvertebrate Community), within Category 4a, 4b or 5, and the potential cause is either "NP" (nonpoint source) or "UR" (urban runoff) at www.gaepd.org/Documents/305b.html:

f. An estimate of project start date and completion date, a schedule for the timing of the various construction activities, the number of acres of the site on which soil will be disturbed, and the surface water drainage area (if applicable). For projects that began on or before the effective date of this permit, the start date must be the actual start date of construction

g. The following certification shall be signed in accordance with Part V.G.1. of this permit:

"I certify that to the best of my knowledge and belief, that the Erosion, Sedimentation and Pollution Control Plan (Plan) was prepared by a design professional, as defined by this permit, that has completed the appropriate certification course approved by the Georgia Soil and Water Conservation Commission in accordance with the provisions of O.C.G.A. 12-7-19 and that I will adhere to the Plan and comply with all permit requirements.

h. The type of construction activity category (from those listed on the NOI) conducted at the site;

i. The location of the receiving water(s) or outfall(s) or a combination of receiving water(s) and outfall(s) to be sampled on a map or drawing of appropriate scale. When it is determined by the primary permittee that some or all of the outfall(s) will be sampled, the applicable nephelometric turbidity unit (NTU) selected from Appendix B (i.e., based upon the size of the construction site and the surface water drainage area) must be shown for each outfall to be sampled.

i. For infrastructure projects disturbing more than 50 acres, which began after the effective date of this permit, include a single copy of the Erosion, Sedimentation and Pollution Control Plan

k. NOIs may be submitted for separate phases of projects with a total planned disturbance greater than 5.0 acres, provided that each phase shall not be less than 1.0 acre. Phased NOIs shall include all documentation required by this permit for each phase, including fees; and

I. Any other information specified on the NOI in effect at the time of submittal.

C. Notice of Intent Submittal. NOIs are to be submitted by return receipt certified mail (or similar service) to both the appropriate EPD District Office according to the schedule in Appendix A of this permit and to the Local Issuing Authority in jurisdictions authorized to issue a Land Disturbance Activity permit for the permittee's construction site pursuant to O.C.G.A. 12-7-1, et seq. If an electronic submittal service is provided by EPD then the NOI may be submitted electronically; if required, a paper copy must also be submitted by return receipt certified mail or similar service. The permittee shall retain a copy of the proof of submittal at the construction site or the proof of submittal shall be readily available at a designated alternative location from commencement of construction until such time as a Notice of Termination (NOT) is submitted in accordance with Part VI.

D. Fees. Any applicable fees shall be submitted by the Primary Permittee in accordance with Rules and Regulations for Water Quality Control (Rules) promulgated by the Board of Natural Resources. By submitting an NOI for coverage under this permit the primary permittee agrees to pay any fees required, now or in the future, by such Rules authorized under O.C.G.A. Section 12-5-23(a)(5)(A), which allows the Board of Natural Resources to State of Georgia Department of Natural Resources **Environmental Protection Division**

either a primary, secondary or tertiary permittee.

A. Deadlines for Plan Preparation and Compliance

B. Signature and Plan Review

2. Site Description

C. Keeping Plans Current

Controls

4. Inspections...

Maintenance

6. Sampling Requirements.

7. Non-storm Water Discharges

D. Contents of Plan Checklist

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appropriate certification course approved by the Georgia Soil and Water Conservation Commission in accordance

with the provisions of O.C.G.A. 12-7-19. Sub-contractors are not permittees unless they meet the definition of

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43. "Surface Water Drainage Area" means the hydrologic area starting from the lowest downstream point where the storm water from the construction activity enters the receiving water(s) and following the receiving water(s) upstream to the highest elevation of land that divides the direction of water flow. This boundary will connect back with the storm water entrance point. Boundary lines follow the middle of the highest ground elevation or halfway between contour lines of equal elevation.

44. "Trout Streams" means waters of the State classified as either primary trout waters or secondary trout waters. as designated in the Rules and Regulations for Water Quality Control, Chapter 391-3-6 at www.gaepd.org.

45. "USGS Topographic Map" means a current quadrangle, 7½ minute series map prepared by the United States Department of the Interior, Geological Survey.

46. "Vegetative Erosion and Sediment Control Practices" means measures for the stabilization of erosive or sediment producing areas by covering the soil with: (1) permanent seeding, sprigging or planting, producing longterm vegetative cover; (2) temporary seeding, producing short-term vegetative cover; or (3) sodding, covering areas with a turf of perennial sod forming grass

47. "Waters Supporting Warm Water Fisheries" means all waters of the State that sustain, or have the potential to sustain, aquatic life but excluding trout streams. 48. "Waters of Georgia" or "Waters of the State" means any and all rivers, streams, creeks, branches, lakes,

reservoirs, ponds, drainage systems, springs, wells, wetlands, and all other bodies of surface or subsurface water, natural or artificial, lying within or forming a part of the boundaries of the State which are not entirely confined and retained completely upon the property of a single individual, partnership, or corporation.

C. Eligibility.

State of Georgia

Department of Natural Resources

Environmental Protection Division

AND OTHER LIMITATIONS

of storm water.

effective date of this permit and shall be paid in accordance with such Rules.

notification requirements of the new or different general permit.

release oils, curing compounds and other construction materials.

B. Releases in Excess of Reportable Quantities.

CFR 302 as soon as he/she has knowledge of the discharge.

Portion of a Biota Impaired Stream Segment.

A. Prohibition on Non-Storm Water Discharges.

1. Construction Activities. This permit authorizes, subject to the conditions of this permit:

a, all discharges of storm water associated with infrastructure construction projects that will result in contiguous land disturbances equal to or greater than one (1) acre occurring on or before, and continuing after, the effective date of this permit, (henceforth referred to as existing storm water discharges from construction activities) except for discharges identified under Part I.C.3. Contiguous means areas of land disturbances that are in actual contact to create a connected, uninterrupted area of land disturbance. However, for purposes of this permit, contiguous areas of land disturbances include those areas of land disturbances solely separated by drilling and boring activities, waters of the State and adjacent State-mandated buffers, roadways and/or railways. In addition, contiguous areas of land disturbances include all areas of land disturbances at a sole roadway intersection and/or junction

b. all discharges of storm water associated with infrastructure construction projects that will result in contiguous land disturbances equal to or greater than one (1) acre occurring after the effective date of this permit. (henceforth referred to as storm water discharges from construction activities), except for discharges identified under Part I.C.3. Contiguous means areas of land disturbances that are in actual contact to create a connected, uninterrupted area of land disturbance. However, for purposes of this permit, contiguous areas of land disturbances include those areas of land disturbances solely separated by drilling and boring activities, waters of the State and adjacent State-mandated buffers, roadways and/or railways. In addition, contiguous areas of land disturbances include all areas of land disturbances at a sole roadway intersection and/or junction;

establish a fee system. Fees may be assessed on land disturbing activity proposed to occur on or after the

E. Renotification. Upon issuance of a new or different general permit for some or all of the storm water

discharges covered by this permit, the permittee is required to notify the EPD of their intent to be covered by the

new or different general permit. The permittee must submit a new Notice of Intent in accordance with the

PART III. SPECIAL CONDITIONS, MANAGEMENT PRACTICES, PERMIT VIOLATIONS

1. Except as provided in Part I.C.2. and III.A.2., all discharges covered by this permit shall be composed entirely

2. The following non-storm water discharges may be authorized by this permit provided the non-storm water

component of the discharge is explicitly listed in the Erosion, Sedimentation and Pollution Control Plan and is in

compliance with Part IV.D.7.; discharges from fire fighting activities; fire hydrant flushing; potable water sources

including water line flushing; irrigation drainage; air conditioning condensate; springs; uncontaminated ground

4. This permit does not authorize the discharge of wastewater from washout and cleanout of stucco, paint, form

1. The discharge of hazardous substances or oil in the storm water discharge(s) from a site shall be prevented

This permit does not relieve the permittee of the reporting requirements of Georgia's Oil or Hazardous Material

Spills or Releases Act (O.C.G.A. §§12-14-2, et seq.), 40 CFR Part 117 and 40 CFR Part 302. Where a release

containing a hazardous substance in an amount equal to or in excess of a reporting quantity established under

either Georgia's Oil or Hazardous Material Spills or Releases Act (O.C.G.A. §\$12-14-2, et seq.), 40 CFR 117 or

241-4113 and the National Response Center (NRC) at (800) 424-8802 in accordance with the requirements of

This permit does not authorize the discharge of hazardous substances or oil resulting from an on-site spill.

40 CFR 302 occurs during a 24 hour period, the permittee is required to notify EPD at (404) 656-4863 or (800)

Georgia's Oil or Hazardous Material Spills or Releases Act (O.C.G.A. §§12-14-2, et seq.), 40 CFR 117 and 40

C. Discharges into, or within One Mile Upstream of and within the Same Watershed as, Any

Any permittee who intends to obtain coverage under this permit for storm water discharges associated with

construction activity into an Impaired Stream Segment, or within one (1) linear mile upstream of and within the

same watershed as, any portion of an Impaired Stream Segment identified as "not supporting" its designated

use(s), as shown on Georgia's most current "305(b)/303(d) List Documents (Final)" at the time of NOI submittal,

must satisfy the requirements of Part III.C. of this permit if the Impaired Stream Segment has been listed for

criteria violated, "Bio F" (Impaired Fish Community), and/or "Bio M" (Impaired Macroinvertebrate Community),

within Category 4a, 4b or 5, and the potential cause is either "NP" (nonpoint source) or "UR" (urban runoff).

Those discharges that are located within one (1) linear mile of an Impaired Stream Segment, but are not located

water; and foundation or footing drains where flows are not contaminated with process materials or pollutants.

3. This permit does not authorize the discharge of soaps or solvents used in vehicle and equipment washing.

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State of Georgia

website, <u>www.gaepd.org</u>.

as the Impaired Stream Segment:

Department of Natural Resources

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Permit No. GAR100002 c. coverage under this permit is not required for discharges of storm water associated with infrastructure construction projects that consist solely of routine maintenance for the original purpose of the facility that

is performed to maintain the original line and grade and the hydraulic capacity, as applicable. The permittee shall, as a minimum, implement and maintain best management practices, including sound conservation and engineering practices to prevent and minimize erosion and resultant sedimentation, which are consistent with, and no less stringent than, those practices contained in the "Manual for Erosion and Sediment Control in Georgia" (Manual) published by the State Soil and Water Conservation Commission as of January 1 of the year in which the land-disturbing activity is being conducted. In order to be eligible for this exemption the project must comply with the following conditions: (1) no mass grading shall occur on the project. (2) the project shall be stabilized by the end of each day with temporary or permanent stabilization measures, (3) the project shall have a duration of less than 120

calendar days, and (4) final stabilization must be implemented at the end of the maintenance project; and

d. coverage under this permit is not required for discharges of storm water associated with infrastructure road construction projects that consist solely of routine maintenance for the original purpose of the facility that is performed to maintain the original line and grade and vehicular capacity, as applicable. The permittee shall, as a minimum, implement and maintain best management practices, including sound conservation and engineering practices to prevent and minimize erosion and resultant sedimentation. which are consistent with, and no less stringent than, those practices contained in the "Manual for Erosion and Sediment Control in Georgia" (Manual) published by the State Soil and Water Conservation Commission as of January 1 of the year in which the land-disturbing activity is being conducted. In order to be eligible for this exemption the project must comply with the following conditions: (1) no mass grading shall occur on the project, (2) the project shall be stabilized by the end of each day with temporary or permanent stabilization measures, (3) the project shall have a duration of less than 120 calendar days, and (4) final stabilization must be implemented at the end of the maintenance project; and

e. coverage under this permit is not required for discharge of storm water associated with railroad construction projects and emergency re-construction conducted pursuant to the Federal Railway Safety Act, the Interstate Commerce Commission Termination Act and which consist solely of routine for the original purpose of the facility that is performed to maintain the original line and grade and the hydraulic capacity, as applicable. The construction activity should, at a minimum, implement and maintain best management practices, including sound conservation and engineering practices to prevent and minimize erosion and resultant sedimentation consistent with the requirements of the Federal Railway Safety Act and applicable requirements of the Clean Water Act.

2. Mixed Storm Water Discharges. This permit may only authorize a storm water discharge from a construction site or construction activities mixed with a storm water discharge from an industrial source or activity other than a. the industrial source or activity other than construction is located on the same site as the construction activity

b. the storm water discharges associated with industrial activity from the areas of the site where construction activities are occurring are in compliance with the terms of this permit; and

c. storm water discharges associated with industrial activity from the areas of the site where industrial activity other than construction are occurring are covered by a different NPDES general permit or individual permit authorizing such discharges and the discharges are in compliance with a different

3. Limitations on Coverage. The following storm water discharges from construction sites are not authorized by

within the watershed of any portion of that stream segment, are excluded from this requirement. Georgia's

305(b)/303(d) List Documents (Final)" can be viewed on the EPD website, www.gaepd.org/Documents/305b.html

1. If a Total Maximum Daily Load (TMDL) Implementation Plan for sediment has been finalized at least six (6)

months prior to the permittee's submittal of the NOI, the Erosion, Sedimentation and Pollution Control Plan (Plan)

must address any site-specific conditions or requirements included in the TMDL Implementation Plan that are

applicable to the permittee's discharge(s) to the Impaired Stream Segment within the timeframe specified in the

TMDL Implementation Plan. If the TMDL Implementation Plan establishes a specific numeric wasteload

allocation that applies to an permittee's discharge(s) to the Impaired Stream Segment, then the permittee must

incorporate that allocation into the Erosion, Sedimentation and Pollution Control Plan and implement all

necessary measures to meet that allocation. A list of TMDL Implementation Plans can be viewed on the EPD

2. In order to ensure that the permittee's discharge(s) do not cause or contribute to a violation of State water

quality standards, the Plan must include at least four (4) of the following best management practices (BMPs) for

those areas of the site which discharge into or within one (1) linear mile upstream and within the same watershed

a. During all construction activities as defined in this permit, double the width of the 25 foot undisturbed

vegetated buffer along all State waters requiring a buffer and the 50 foot undisturbed vegetated buffer

along all State waters classified as "trout streams" requiring a buffer. During construction activities

EPD will not grant variances to any such buffers that are increased in width pursuant to this section.

b. Increase all temporary sediment basins and retrofitted storm water management basins to provide

c. Use baffles in all temporary sediment basins and retrofitted storm water management basins to at

d. A large sign (minimum 4 feet x 8 feet) must be on the site on the actual start date of construction

e. Use anionic polyacrylamide (PAM) and/or mulch to stabilize all areas left disturbed for more than

f. Conduct turbidity sampling after every rain event of 0.5 inch or greater within any 24 hour period,

g. Comply with the applicable end-of-pipe turbidity effluent limit, without the "BMP defense" as provided

Reduce the total planned site disturbance to less than 50% impervious surfaces (excluding any

State-mandated buffer areas from such calculations). All calculations must be included on the Plan.

i. Limit the amount of disturbed area at any one time to no greater than 25 acres or 50% of the total

. Use "Dirt II" techniques available on the EPD website, www.gaepd.org (e.g., seep berms, sand filters,

anionic PAM) to model and manage all construction storm water runoff (including sheet flow). All

visible from a public roadway identifying the construction site, the permittee(s), and the contact

sediment storage of at least 3600 cubic feet (134 cubic yards) per acre drained.

least double the conventional flow path length to the outlet structure.

person(s) and telephone number(s) until a NOT has been submitted.

seven (7) calendar days in accordance with Part III.D.1. of this permit.

recognizing the exceptions specified in Part IV.D.6.d. of this permit.

planned site, whichever is less. All calculations must be included on the Plan

calculations must be included on the Plan.

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a. storm water discharges associated with an industrial activity that originate from the site after construction activities have been completed and the site has undergone final stabilization; b. discharges that are mixed with sources of non-storm water other than discharges which are identified

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in Part III.A.2. of this permit and which are in compliance with Part IV.D.7. (non-storm water discharges) c. storm water discharges associated with industrial activity that are subject to an existing NPDES individual or general permit. Such discharges may be authorized under this permit after an existing permit

expires provided the existing permit did not establish numeric limitations for such discharges; and d. storm water discharges from construction sites that the Director (EPD) has determined to be or may reasonably be expected to be contributing to a violation of a water quality standard.

4. Compliance with Water Quality Standards. No discharges authorized by this permit shall cause violations of Georgia's in-stream water quality standards as provided by the Rules and Regulations for Water Quality Control, Chapter 391-3-6-.03.

D. Authorization 1. Any person desiring coverage under this permit must submit a Notice of Intent (NOI) to the EPD and the NOI

EPD (or an exact photocopy thereof), in order for storm water discharges from construction sites to be authorized. 2. Unless notified by the Director to the contrary, a permittee who submits an NOI in accordance with the requirements of this permit is authorized to discharge storm water from construction sites under the terms and conditions of this permit fourteen (14) days after the date that the NOI is postmarked. The Director may deny coverage under this permit and require submittal of an application for an individual NPDES permit or alternative

must be received by the EPD in accordance with the requirements of Part II, using NOI forms provided by the

3. Where a new permittee is to begin work on-site after an NOI for the facility/construction site has been submitted, that new permittee must submit a new NOI in accordance with Part II.

general NPDES permit based on a review of the NOI or other information. Should the Director deny coverage

under this permit, coverage under this permit is authorized until the date specified in the notice of denial by the

E. Continuing Obligations of Permittees. Unless and until responsibility for a site covered under this permit is properly terminated according to the terms of the permit, the current permittee remains responsible for compliance with all applicable terms of the permit and for any violations of said terms.

Part II. NOTICE OF INTENT REQUIREMENTS

A. Deadlines for Notification.

Environmental Protection Division

1. Except as provided in Part II.A.2., II.A.3. and II.A.5., Owners or Operators or both who intend to obtain coverage under this general permit for storm water discharges from a construction site (where construction activities begin after issuance of this permit), shall submit a Notice of Intent (NOI) in accordance with the requirements of this Part at least fourteen (14) days prior to the commencement of construction activities.

2. For sites where construction activities, subject to this permit, are occurring on the effective date of this permit, the Owner or Operator or both shall submit a re-issuance NOI for an existing construction site in accordance with the requirements of this part no later than ninety (90) days after the effective date of this permit. Failure to comply with this requirement shall constitute a violation of the Georgia Water Quality Control Act for each day until the Owner or Operator or both submit an initial NOI for a new construction site in accordance with Part II.A.1., comply

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k. Add appropriate organic soil amendments (e.g., compost) and conduct pre- and post-construction soil sampling to a depth of 6 (six) inches to document improved levels of soil carbon after final stabilization of the construction site.

water (including sheet flow) may be discharged. Mulch filter berms cannot be placed in waterways or areas of concentrated flow. m. Apply the appropriate Georgia Department of Transportation approved erosion control matting or blankets or bonded fiber matrix to all slopes steeper than 3:1. All graphical illustrations must be

I. Use mulch filter berms, in addition to a silt fence, on the site perimeter wherever construction storm

n. Use appropriate erosion control matting or blankets instead of concrete in all construction storm water

ditches and storm drainages designed for a 25 year, 24 hour rainfall event. o. Use anionic PAM under a passive dosing method (e.g., flocculant blocks) within all construction storm water ditches and storm drainages that feed into temporary sediment basins and retrofitted

p. Install sod for a minimum 20 foot width (in lieu of seeding) after final grade has been achieved, along the site perimeter wherever construction storm water (including sheet flow) may be discharged.

q. Conduct soil tests to identify and to implement site-specific fertilizer needs

r. Certified personnel shall conduct inspections at least once every seven (7) calendar days and within 24 hours of the end of the storm that is 0.5 inches rainfall or greater in accordance with Part IV.D.4.a.(3).. (a) - (c) of this permit

s. Apply the appropriate compost blankets (minimum depth 1.5 inches) to protect soil surfaces until vegetation is established during the final stabilization phase of the construction activity.

t. Use alternative BMPs whose performance has been documented to be superior to conventional BMPs as certified by a Design Professional (unless disapproved by EPD or the State Soil and Water Conservation Commission).

u. Limit the total planned site disturbance to less than 15% impervious surfaces (excluding any Statemandated buffer areas from such calculations). All calculations must be included on the Plan.

D. Management Practices and Permit Violations.

1. Best management practices, as set forth in this permit, are required for all construction activities, and must be implemented in accordance with the design specifications contained in the "Manual for Erosion and Sediment Control in Georgia" (Manual) published by the State Soil and Water Conservation Commission as of January 1 of the year in which the land-disturbing activity was permitted to prevent or reduce the pollution of waters of Georgia. Proper design, installation, and maintenance of best management practices shall constitute a complete defense to any action by the Director or to any other allegation of noncompliance with Part III.D.3. and Part III.D.4.

2. Except as required to install the initial sediment storage requirements and perimeter control BMPs as described in Part IV.D.3., the initial sediment storage requirements and perimeter control BMPs must be installed and mplemented prior to conducting any other construction activities (e.g., clearing, grubbing and grading) within the construction site or when applicable, within phased sub-parts or segments of the construction site. Failure to comply shall constitute a violation of this permit for each day on which construction activities occur. The design professional who prepared the Plan must inspect the initial sediment storage requirements and perimeter control BMPs in accordance with Part IV.A.5. within seven (7) days after installation.

Environmental Protection Division with the special conditions in Part III., prepare and submit a new Erosion, Sedimentation and Pollution Control Plan in accordance with Part IV., and pay all applicable fees in accordance with Part II.D.

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3. A discharger is not precluded from submitting an NOI in accordance with the requirements of this part after the dates provided in Parts II.A.1. or II.A.2. of this permit. In such instances, EPD may bring an enforcement action for failure to submit an NOI in a timely manner or for any unauthorized discharges of storm water associated with construction activity that have occurred on or after the dates specified in Part II.A.1. and II.A.2.

4. Where an Owner or an Operator or both changes after an NOI has been filed, the subsequent Owner or Operator or both must file a change of information NOI in accordance with this Part by the earlier to occur of (a) seven (7) days before beginning work at the facility/construction site; or (b) thirty (30) days from acquiring legal title to the facility/construction site. In the event a lender or other secured creditor acquires legal title to the facility/construction site, such party must file a change of information NOI in accordance with this Part by the earlier to occur of (a) seven (7) days before beginning work at the facility/construction site; or (b) thirty (30) days from acquiring legal title to the facility/construction site. Stabilization and BMP installation and/or maintenance measures of a disturbed site, by the subsequent Owner or Operator, may occur in advance of filing a new NOI, without violation of this permit. Failure to comply with this requirement shall constitute a violation of the Georgia Water Quality Control Act for each day until the Owner or Operator or both submit an initial NOI for a new construction site in accordance with Part II.A.1., comply with the special conditions in Part III., prepare and submit a new Erosion, Sedimentation and Pollution Control Plan in accordance with Part IV., and pay all applicable fees in accordance with Part II.D.

5 For sites where construction activities will result in land disturbance equal to or greater than one (1) acre that are required as a result of storm- or emergency-related repair work, the Owner or Operator or both shall notify the appropriate EPD District Office within three (3) days of commencement of said construction activities. The Owner or Operator or both shall submit the NOI to the appropriate EPD District Office as soon as possible after the storm- or emergency-related event but no later than fourteen (14) days after the commencement of construction activities and shall submit the Plan in accordance with Part IV.A.6.

1. Primary Permittee. A single Notice of Intent for the primary permittee (i.e., one NOI signed by the Owner or the Operator or both) shall be signed in accordance with Part V.G.1. of this permit and shall include the following

a. The project construction site name, GPS locations (decimal degrees) of the beginning and end of the infrastructure project, construction site location, city (if applicable) and county of the construction site for which the notification is submitted. The construction site location information must be sufficient to accurately locate the construction site: b. The Owner's legal name, address, telephone number and email address; and if available, the

Operator's legal name, address, telephone number and email address; and if applicable, the Duly Authorized Representative's legal name and/or position name, telephone number and email address; c. The name, telephone number and email address of the individual to whom the permittee has assigned

sewer system (MS4), the name of the local government operating the municipal separate storm sewer

system and the name of the receiving water(s) which receives the discharge from the MS4, and the

permittee's determination of whether the receiving water(s) supports warm water fisheries or is a trout

the responsibility for the daily operational control (i.e., construction superintendent, etc.) of the d. The name of the initial receiving water(s) or if unnamed, the first named blue line stream indicated on the appropriate USGS Topographic map, and when the discharge is through a municipal separate storm

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permit for each day on which such failure occurs. BMP maintenance as a result of the permittee's routine

inspections shall not be considered a violation for the purposes of this paragraph. If during the course of the

permittee's routine inspection BMP failures are observed which have resulted in sediment deposition into waters

of the State, the permittee shall correct the BMP failures and shall submit a summary of the violations to EPD in

accordance with Part V.A.2. of this permit. 4. A discharge of storm water runoff from disturbed areas where best management practices have not been properly designed, installed, and maintained shall constitute a separate violation for each day on which such discharge results in the turbidity of receiving water(s) being increased by more than ten (10) nephelometric turbidity units for waters classified as trout streams or more than twenty-five (25) nephelometric turbidity units for waters supporting warm water fisheries, regardless of a permittee's certification under Part II.B.1.i.

5. When the permittee has elected to sample outfall(s), the discharge of storm water runoff from disturbed areas where best management practices have not been properly designed, installed, and maintained shall constitute a separate violation for each day on which such condition results in the turbidity of the discharge exceeding the value selected from Appendix B applicable to the construction site. As set forth therein, the nephelometric turbidity unit (NTU) value shall be selected from Appendix B based upon the size of the construction site, the surface water drainage area and whether the receiving water(s) supports warm water fisheries or is a trout stream as indicated in the Rules and Regulations for Water Quality Control, Chapter 391-3-6 at www.gaepd.org.

Part IV. EROSION, SEDIMENTATION AND POLLUTION CONTROL PLAN

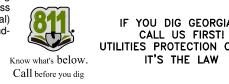
A site-specific Erosion, Sedimentation and Pollution Control Plan (Plan) shall be designed, installed and maintained for the entire construction activity covered by this permit. The Erosion, Sedimentation and Pollution Control Plan must be prepared by a design professional as defined by this permit. All persons involved in Plan preparation shall have completed the appropriate certification course, pursuant to O.C.G.A. 12-7-19 (b), approved by the State Soil and Water Conservation Commission. The design professional preparing the Plan must include and sign the following certification in the Plan:

"I certify that the permittee's Erosion, Sedimentation and Pollution Control Plan provides for an appropriate and comprehensive system of best management practices required by the Georgia Water Quality Control Act and the document "Manual for Erosion and Sediment Control in Georgia" (Manual) published by the State Soil and Water Conservation Commission as of January 1 of the year in which the land-disturbing activity was permitted, provides for the sampling of the receiving water(s) or the sampling of the storm water outfalls and that the designed system of best management practices and sampling methods is expected to meet the requirements contained in the General NPDES Permit No. GAF

The Plan shall include any additional certifications regarding the design professional's site visit in accordance with the Rules for Erosion and Sedimentation Control promulgated by the Board of Natural Resources; "I certify under penalty of law that this Plan was prepared after a site visit to the locations described

herein by myself or my authorized agent, under my supervision. The Plan shall include, as a minimum, best management practices, including sound conservation and engineering practices to prevent and minimize erosion and resultant sedimentation, which are consistent with, and no less stringent than, those practices contained in the "Manual for Erosion and Sediment Control in Georgia" (Manual) published by the State Soil and Water Conservation Commission as of January 1 of the year in which the landdisturbing activity was permitted and O.C.G.A. 12-7-6, as well as the following:

GEORGIA SOIL AND WATER HELEN L SIMPSON Level II Certified Design Profession CERTIFICATION NUMBER ____U ISSUED: <u>04/29/201</u>6 EXPIRES: <u>04/29/201</u>9



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DATE: 04/30/2018

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shoreline on Lake Oconee and Lake Sinclair. The buffer shall not apply to the following activities provided that adequate erosion control measures are incorporated into the project plans and specifications are implemented: public drinking water system reservoirs,

(3) stream crossings for water lines and sewer lines, provided that the stream crossings occur at an angle, as measured from the point of crossing, within 25 degrees of perpendicular to the stream and cause a width of disturbance of not more than 50 feet within the buffer, and native riparian vegetation is re-established in any bare or disturbed areas within the buffer

any ephemeral stream, or where bulkheads and seawalls must be constructed to prevent the erosion of the

(4) stream crossings for any utility lines of any electric membership corporation or municipal electrical system or any public utility under the regulatory jurisdiction of the Public Service Commission, any utility under the regulatory jurisdiction of the Federal Energy Regulatory Commission, any cable television system as defined in Code Section 36-18-1, or any agency or instrumentality of the United States engaged in the generation, transmission or distribution of power, provided that: (a) the stream crossings occur at an angle, as measured from the point of crossing, within 25 degrees of perpendicular to the stream and cause a width of disturbance of not more than 50 feet within the buffer, (b) native riparian vegetation is re-established in any bare or disturbed areas within the buffer and (c) the entity is not a secondary permittee for a project located within a common development or sale under this permit,,

(5) stream crossings for aerial utility lines, provided that: (a) the new utility line right-of-way width does not exceed 200 linear feet. (b) utility lines are routed and constructed so as to minimize the number of stream crossings and disturbances to the buffer, (c) only trees and tree debris are removed from within the buffer resulting in only minor soil erosion (i.e., disturbance to underlying vegetation is minimized), and (d) native riparian vegetation is re-established in any bare or disturbed areas within the buffer. The Plan shall include a description of the stream crossings with details of the buffer disturbance including area and length of buffer disturbance, estimated length of time of buffer disturbance, and justification;

(6) right-of-way posts, guy-wires, anchors, survey markers and the replacement or maintenance of existing utility structures within the current right-of-way undertaken or financed in whole or in part by the Department of Transportation, the Georgia Highway Authority or the State Road and Tollway Authority or undertaken by any county or municipality, provided that; (a) the area of land disturbance does not exceed 100 square feet per structure, (b) the area of buffer vegetation to be cut (not grubbed) does not exceed 1,000 square feet per structure, (c) native riparian vegetation is re-established in any bare or disturbed areas within the buffer and (d) the entity is not a secondary permittee for a project located within a common development or sale under

(7) right-of-way posts, guy-wires, anchors, survey markers and the replacement or maintenance of existing utility structures within the current right-of-way undertaken by any electric membership corporation of municipal electrical system or any public utility under the regulatory jurisdiction of the Public Service Commission, any utility under the regulatory jurisdiction of the Federal Energy Regulatory Commission, any cable television system as defined in Code Section 36-18-1, or any agency or instrumentality of the United States engaged in the generation, transmission or distribution of power, provided that: (a) the area of land disturbance does not exceed 100 square feet per structure, (b) the area of buffer vegetation to be cut (not grubbed) does not exceed 1,000 square feet per structure, (c) native riparian vegetation is re-established in any bare or disturbed areas within the buffer and (d) the entity is not a secondary permittee for a project located within a common development or sale under this permit.

(ii). No construction activities shall be conducted within a 50 foot buffer, as measured horizontally from the point where vegetation has been wrested by normal stream flow or wave action, along the banks of any State waters classified as 'trout streams' except when approval is granted by the Director for alternate buffer requirements in

the "Manual for Erosion and Sediment Control in Georgia" (Manual) published by the State Soil and Water

Conservation Commission as of January 1 of the year in which the land-disturbing activity was permitted, as well

1. Checklist. Each plan shall include a completed Erosion, Sedimentation and Pollution Control Plan Checklist

disturbing activity was permitted and amendments to the applicable Checklist as approved by the State Soil and

Water Conservation Commission up until the date of the NOI submittal. The applicable checklists are available

2. Site description. Each site-specific Plan shall provide a description of pollutant sources and other information

b. A detailed description and chart or timeline of the intended sequence of major activities which disturb

soils for major portions of the site (i.e., initial sediment storage requirements and perimeter BMPs

clearing and grubbing activities, excavation activities, grading activities, infrastructure activities,

c. Estimates of the total area of the site and the total area of the site that is expected to be disturbed by

d. An estimate of the runoff coefficient or peak discharge flow of the site prior to the construction activities

and after construction activities are completed and existing data describing the soil or the quality of any

e. A site-specific map or series of drawings indicating drainage patterns and approximate slopes

anticipated after major grading activities, areas of soil disturbance, an outline of areas which are not to be

areas where stabilization practices are expected to occur, surface waters (including wetlands), and

3. Controls. Each Plan shall include a description of appropriate controls and measures that will be implemented

at the construction site including: (1) initial sediment storage requirements and perimeter control BMPs, (2)

intermediate grading and drainage BMPs, and (3) final BMPs. For construction sites where there will be no mass

grading and the initial sediment storage requirements and perimeter control BMPs, intermediate grading and

drainage BMPs, and final BMPs are the same, the Plan may combine all of the BMPs into a single phase Plan

The Plan will include appropriate staging and access requirements for construction equipment. The Plan will clearly describe for each major activity identified in Part IV.D.2.b., appropriate control measures and the timing

during the construction process that the measures will be implemented. The primary permittee is encouraged to

utilize the document, Developing Your Stormwater Pollution Prevention Plan: A Guide for Construction Sites

EPA 833-R-060-04, May 2007 (www.epa.gov/npdes/pubs/sw swppp guide.pdf), when preparing the Plan. The

(1). Stabilization measures. A description of interim and permanent stabilization measures,

including site-specific scheduling of the implementation of the measures. Site plans should

ensure that existing vegetation is preserved and that disturbed portions of the site are stabilized

Stabilization measures may include: temporary seeding, permanent seeding, mulching

geotextiles, sod stabilization, vegetative buffer strips, protection of trees, preservation of mature

isturbed, the location of major structural and nonstructural controls identified in the Plan, the location of

established by the State Soil and Water Conservation Commission as of January 1 of the year in which the land

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(1) public drinking water system reservoirs,

accordance with the provisions of O.C.G.A. 12-7-6, or where a roadway drainage structure must be constructed; provided, however, that small springs and streams classified as 'trout streams' which discharge an average annual flow of 25 gallons per minute or less shall have a 25 foot buffer or they may be piped, at the discretion of the permittee, pursuant to the terms of a rule providing for a general variance promulgated by the Board of Natural Resources including notification of such to EPD and the Local Issuing Authority of the location and extent of the piping and prescribed methodology for minimizing the impact of such piping and for measuring the volume of water discharged by the stream. Any such pipe must stop short of the downstream permittee's property, and the permittee must comply with the buffer requirement for any adjacent trout streams. The buffer shall not apply to the following activities provided that adequate erosion control measures are incorporated into the project plans and specifications are implemented:

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(3) stream crossings for water lines and sewer lines, provided that the stream crossings occur at an angle, as measured from the point of crossing, within 25 degrees of perpendicular to the stream and cause a width of disturbance of not more than 50 feet within the buffer, and native riparian vegetation is re-established in any pare or disturbed areas within the buffer

(4) stream crossings for any utility lines of any electric membership corporation or municipal electrical system or any public utility under the regulatory jurisdiction of the Public Service Commission, any utility under the regulatory jurisdiction of the Federal Energy Regulatory Commission, any cable television system as defined in Code Section 36-18-1, or any agency or instrumentality of the United States engaged in the generation. transmission or distribution of power, provided that: (a) the stream crossings occur at an angle, as measured from the point of crossing, within 25 degrees of perpendicular to the stream and cause a width of disturbance of not more than 50 feet within the buffer, (b) native riparian vegetation is re-established in any bare or disturbed areas within the buffer and (c) the entity is not a secondary permittee for a project located within a

common development or sale under this permit, (5) stream crossings for aerial utility lines, provided that: (a) the new utility line right-of-way width does not exceed 200 linear feet. (b) utility lines are routed and constructed so as to minimize the number of stream crossings and disturbances to the buffer. (c) only trees and tree debris are removed from within the buffer resulting in only minor soil erosion (i.e., disturbance to underlying vegetation is minimized), and (d) I native riparian vegetation is re-established in any bare or disturbed areas within the buffer. The Plan shall include a description of the stream crossings with details of the buffer disturbance including area and length of buffer listurbance, estimated length of time of buffer disturbance, and justification; and

(6) right-of-way posts, guy-wires, anchors, survey markers and the replacement or maintenance of existing utility structures within the right-of-way undertaken or financed in whole or in part by the Department of Transportation, the Georgia Highway Authority or the State Road and Tollway Authority or undertaken by any county or municipality, provided that: (a) the area of land disturbance does not exceed 100 square feet per structure, (b) the area of buffer vegetation to be cut (not grubbed) does not exceed 1,000 square feet per structure, (c) native riparian vegetation is re-established in any bare or disturbed areas within the buffer and (d) the entity is not a secondary permittee for a project located within a common development or sale under

(7) right-of-way posts, guy-wires, anchors, survey markers and the replacement or maintenance of existing utility structures within the current right-of-way undertaken by any electric membership corporation or municipal electrical system or any public utility under the regulatory jurisdiction of the Public Service Commission, any utility under the regulatory jurisdiction of the Federal Energy Regulatory Commission, any cable television system as defined in Code Section 36-18-1, or any agency or instrumentality of the United States engaged in the generation, transmission or distribution of power, provided that: (a) the area of land disturbance does not exceed 100 square feet per structure, (b) the area of buffer vegetation to be cut (not grubbed) does not exceed 1,000 square feet per structure, (c) native riparian vegetation is re-established in any bare or disturbed areas within the buffer and (d) the entity is not a secondary permittee for a project located within a common development or sale under this permit.

(iii). Except as provided in Part IV(iv) below, no construction activities shall be conducted within a 25 foot buffer along coastal marshlands, as measured horizontally from the coastal marshland-upland interface, as determined in accordance with Part 4 of Article 4 of Chapter 5 of Title 12, the "Coastal Marshlands Protection Act of 1970,

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and the rules and regulations promulgated thereunder, except where the director determines to allow a variance that is at least as protective of natural resources and the environment in accordance with the provisions of D.C.G.A. 12-7-6, or where otherwise allowed by the director pursuant to Code Section 12-2-8, or where an alteration within the buffer area has been authorized pursuant to Code Section 12-5-286, or for maintenance of any currently serviceable structure, landscaping, or hardscaping, including bridges, roads, parking lots, golf courses, golf cart paths, retaining walls, bulkheads, and patios, provided that adequate erosion control measures are incorporated into the project plans and specifications and such measures are fully implemented, or where a drainage structure or roadway drainage structure is constructed or maintained, provided that adequate erosion control measures are incorporated into the project plans and specifications and such measures are fully implemented, or on the landward side of any currently serviceable shoreline stabilization structure, or for the maintenance of any manmade storm-water detention basin, golf course pond, or impoundment that is located entirely within the property of a single individual, partnership, or corporation, provided that adequate erosion control measures are incorporated into the project plans and specifications and such measures are fully implemented. The buffer shall not apply to the following activities provided that adequate erosion control measures are incorporated into the project plans and specifications and such measures are fully implemented:

(1) Public drinking water system reservoirs, (2) Crossings for utility lines that cause a width of disturbance of not more than 50 feet within the buffer (3) Any land-disturbing activity conducted pursuant to and in compliance with a valid and effective land-

disturbing permit issued subsequent to April 22, 2014, and prior to December 31, 2015. (4) Any lot for which the preliminary plat has been approved prior to December 31, 2015 if roadways, bridges, or water and sewer lines have been extended to such lot prior to the effective date of this Act and if the requirement to maintain a 25 foot buffer would consume at least 18 percent of the high ground of the platted lot otherwise available for development,

(6) Crossings for aerial utility lines, provided that: (a) the new utility line right-of-way width does not exceed 200 linear feet, (b) utility lines are routed and constructed so as to minimize the number of crossings and disturbances to the buffer, (c) only trees and tree debris are removed from within the buffer resulting in only minor soil erosion (i.e., disturbance to underlying vegetation is minimized), and (d) vegetation is reestablished in any bare or disturbed areas within the buffer. The Plan shall include a description of the crossings with details of the buffer disturbance including area and length of buffer disturbance, estimated length of time of buffer disturbance, and justification;

(7) Right-of-way posts, guy wires, anchors, survey markers and the replacement and maintenance of existing utility structures within the current right-of-way undertaken or financed in whole or in part by the Department of Transportation, the Georgia Highway Authority or the State Road and Tollway Authority or undertaken by any county or municipality, provided that: (a) the area of land disturbance does not exceed 100 square feet per structure, (b) the area of buffer vegetation to be cut (not grubbed) does not exceed 1,000 square feet per structure, (c) vegetation is re-established in any bare or disturbed areas within the buffer and (d) the entity is not a secondary permittee for a project located within a common development or sale under this permit:

(8) Right-of-way posts, guy wires, anchors, survey markers and the replacement and maintenance of existing utility structures within the current right-of-way by any electric membership corporation or municipal electrical system or any public utility under the regulator jurisdiction of the Public Service Commission, any utility under the regulatory jurisdiction of the Federal Energy Regulatory Commission, any cable television system as defined in Code Section 36-18-1, or any agency or instrumentality of the United States engaged in the generation, transmission or distribution of power, provided that (a) the area of land disturbance does not exceed 100 square feet per structure, (b) the area of buffer vegetation to be cut (not grubbed) does not exceed 1,000 square feet per structure, (c) vegetation is re-established in any bare or disturbed areas within the buffer and (d) the entity is not a secondary permittee for a project located within a common development or sale under this permit; and

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(iv). Except as provided above, for buffers required pursuant to Part IV.(i). and (ii) and (iii), no construction activities shall be conducted within a buffer and a buffer shall remain in its natural, undisturbed, state of vegetation until all land-disturbing activities on the construction site are completed. During coverage under this permit, a buffer cannot be thinned or trimmed of vegetation and a protective vegetative cover must remain to protect water quality and aquatic habitat and a natural canopy must be left in sufficient quantity to keep shade on

The Erosion, Sedimentation and Pollution Control Plan shall identify all potential sources of pollution which may reasonably be expected to affect the quality of storm water discharges from the construction site. In addition, the Plan shall describe and the applicable permittee shall ensure the implementation of practices which will be used to reduce the pollutants in storm water discharges associated with construction activity at the site and to assure compliance with the terms and conditions of this permit. The applicable permittee must implement and maintain the provisions of the Plan required under this part as a condition of this permit.

Except as provided in Part IV.A.2., a single Erosion, Sedimentation and Pollution Control Plan must be prepared

A. Deadlines for Plan Preparation and Compliance 1. Except as provided in Part IV.A.2.and Part IV.A.6., the Erosion, Sedimentation and Pollution Control Plan shall

be completed prior to submitting the NOI and prior to conducting any construction activity by any permitte 2. For construction activities that began on or before the effective date of this permit and were subject to the regulations under the previous permit, the permittee(s) shall continue to operate under the existing Plan.

by the primary permittee for the infrastructure construction project.

3. For construction activities that begin after the effective date of this permit, the primary permittee shall be required to prepare the Plan for that phase of the infrastructure development that corresponds with the NOI being submitted and the primary permittee(s) shall implement the Plan on or before the day construction activities begin 4. Additional Plan Submittals.

a. For all projects identified under Part I.C.1.b., in a jurisdiction where there is no certified Local Issuing Authority regulating that project, a single copy of the Plan must be submitted to the EPD Watershed Protection Branch and a second copy of the Plan must be submitted to the appropriate EPD District Office prior to or concurrent with the NOI submittal. The second copy of the Plan may be submitted to the appropriate EPD District Office as a Portable Document Format (PDF) file on CD-ROM or other storage device. The EPD Watershed Protection Branch will review Plans for deficiencies using the applicable Erosion, Sedimentation and Pollution Control Plan Checklist established by the State Soil and Water Conservation Commission as of January 1 of the year in which the land-disturbing activity was permitted

b. For sites that are equal to or greater than 50 acres of disturbed area, regardless of the existence of a certified Local Issuing Authority in the jurisdiction, one of the following submissions is also required

for all projects which begin after the effective date of this permit a single copy of the NOI and a single copy of the Plan shall be submitted to the appropriate EPD District Office. This copy of the Plan may be submitted to the appropriate EPD District Office as a Portable Document Format (PDF) file on CD-ROM or other storage device.

for all projects which began on or before the effective date of this permit single copy of the NOI and a single copy of the Plan, if amended, shall be submitted to the appropriate EPD District Office. This copy of the Plan may be submitted to the appropriate EPD District Office as a Portable Document Format (PDF) file on CD-ROM or other storage device.

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information NOI in accordance with Part II.

c. For all projects where the construction activity as indicated on the existing NOI has changed, the amended Plans must be submitted in accordance with Part IV.A.4.a. In addition, the permittee must file a change of

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5. For infrastructure projects that begin construction activity after the effective date of this permit, the primary permittee must retain the design professional who prepared the Erosion, Sedimentation and Pollution Control Plan, or an alternative design professional approved by EPD in writing, to inspect the installation of the initial sediment storage requirements and perimeter control BMPs within seven (7) days after installation. Alternatively, for linear infrastructure projects, the primary permittee must retain the design professional who prepared the Erosion, Sedimentation and Pollution Control Plan, or an alternative design professional approved by EPD in writing, to inspect (a) the installation of the sediment storage requirements and perimeter control BMPs for the "initial segment" of the linear infrastructure project and (b) all sediment basins within the entire linear infrastructure project within seven (7) days after installation. For the purposes of the specific requirements in Part IV.A.5., the disturbed acreage of the "initial segment" of a linear infrastructure project must be equal to or greater than 10% of the total estimated disturbed acreage for the linear infrastructure project but not less than one (1) acre. The design professional shall determine if these BMPs have been installed and are being maintained as designed. The design professional shall report the results of the inspection to the primary permittee within seven (7) days and the permittee must correct all deficiencies within two (2) business days of receipt of the inspection report from the design professional unless weather related site conditions are such that additional time is required.

6. For storm- or emergency-related repair work, the permittee shall implement appropriate BMPs and certified personnel (provided by the primary permittee) shall inspect at least once every seven (7) calendar days and within 24 hours of the end of a storm that is 0.5 inches rainfall or greater. If the storm- or emergency-related repair work will not be completed within sixty (60) days of commencement of construction activity, a single copy of the Plan shall be submitted to EPD and the permittee shall comply with all requirements of this permit on the sixty-first (61st) day.

B. Signature and Plan Review.

1. The Erosion, Sedimentation and Pollution Control Plan shall be signed in accordance with Part IV., and be retained on the site (or, if not possible, at a readily accessible location) which generates the storm water discharge in accordance with Part IV.F. of this permit.

2. The primary permittee shall make Plans available upon request to the EPD; to designated officials of the local government reviewing soil erosion and sedimentation control plans, grading plans, or storm water management plans; or in the case of a storm water discharge associated with construction activity which discharges through a municipal separate storm sewer system with an NPDES permit, to the local government operating the municipal separate storm sewer system.

3. EPD may notify the primary permittee at any time that the Plan does not meet one or more of the minimum requirements of this Part. Within seven (7) days of such notification (or as otherwise provided by EPD), the primary permittee shall make the required changes to the Plan and shall submit to EPD either the amended Plan or a written certification that the requested changes have been made.

C. Keeping Plans Current. The primary permittee(s) shall amend their Plan whenever there is a change in design, construction, operation, or maintenance, which has a significant effect on BMPs with a hydraulic component (i.e., those BMPs where the design is based upon rainfall intensity, duration and return frequency of storms) or if the Plan proves to be ineffective in eliminating or significantly minimizing pollutants from sources identified under Part IV.D.3. of this permit. Amendments to the Plan must be certified by a design professional as

D. Contents of Plan. The Erosion, Sedimentation and Pollution Control Plan shall include, as a minimum, best management practices, including sound conservation and engineering practices to prevent and minimize erosion and resultant sedimentation, which are consistent with, and no less stringent than, those practices contained in

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on the EPD website, www.gaepd.org.

a. A description of the nature of the construction activity;

locations where storm water is discharged to a surface water; and

f. Identify the receiving water(s) and areal extent of wetland acreage at the site;

description and implementation of controls shall address the following minimum components:

excavation, grading, or other activities:

discharge from the site;

as the following:

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> vegetation, and other appropriate measures. A record of the dates when major grading activities occur, when construction activities temporarily or permanently cease on a portion of the site, and when stabilization measures are initiated shall be included in the Plan. Except as provided in

ceased, but in no case more than 14 days after the construction activity in that portion of the site has temporarily or permanently ceased. (a). Where the initiation of stabilization measures by the 14th day after construction activity temporarily or permanently cease is precluded by snow cover or other adverse

paragraphs IV.D.3.(a).(1).(a). and (b). below, stabilization measures shall be initiated as soon as

practicable in portions of the site where construction activities have temporarily or permanently

(b). Where construction activity will resume on a portion of the site within 21 days from when activities ceased, (e.g., the total time period that construction activity is temporarily ceased is less than 21 days) then stabilization measures do not have to be initiated on that portion of site by the 14th day after construction activity temporarily ceased.

weather conditions, stabilization measures shall be initiated as soon as practicable.

(2). Structural practices. A description of structural practices to divert flows from exposed soils, store flows or otherwise limit runoff and the discharge of pollutants from exposed areas of the site to the degree attainable. Such practices may include silt fences, earth dikes, drainage swales, sediment traps, check dams, subsurface drains, pipe slope drains, level spreaders, storm drain inlet protection, rock outlet protection, reinforced soil retaining systems, gabions, and temporary or permanent sediment basins. Structural practices should be placed on upland soils to the degree attainable. The installation of these devices may be subject to Section 404 of the CWA.

(3). Sediment basins. For common drainage locations a temporary (or permanent) sediment

basin providing at least 1800 cubic feet (67 cubic yards) of storage per acre drained, or equivalent control measures, shall be provided until final stabilization of the site. The 1800 cubic feet (67 cubic yards) of storage area per acre drained does not apply to flows from off-site areas and flows from on-site areas that are either undisturbed or have undergone final stabilization where such flows are diverted around both the disturbed area and the sediment basin. For drainage locations where a temporary sediment basin providing at least 1800 cubic feet (67 cubic vards) of storage per acre drained, or equivalent controls is not attainable, sediment traps, silt fences, wood mulch berms or equivalent sediment controls are required for all side slope and down slope boundaries of the construction area. When the sediment fills to a volume at most of 22 cubic yards per acre for each acre of drainage area, the sediment shall be removed to restore the original design volume. This sediment must be properly disposed. Sediment basins may not be feasible at some construction projects. Careful consideration must be used to determine when a sediment basin cannot be used and/or when 67 cubic yards of storage per acre drained is not attainable and a written justification explaining the decision(s) must be included in the Plan. Perennial and intermittent waters of the State shall not be used for temporary or permanent sediment detention.

When discharging from sediment basins and impoundments, permittees are required to utilize outlet structures that withdraw water from the surface, unless infeasible. If outlet structures that withdraw water from the surface are not feasible, a written justification explaining this decision must be included in the Plan. Outlet structures that withdraw water from the surface are temporary BMPs and must be removed prior to submitting Notice of Termination. For construction activities where the NOI was submitted prior to January 1, 2014, this requirement of the permit is not applicable.

(4). Alternative BMPs. The use of alternative BMPs whose performance has been documented to be equivalent or superior to conventional BMPs as certified by a Design Professional may be allowed (unless disapproved by EPD or the State Soil and Water Conservation Commission).

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(5). High performance BMPs. The use of infiltration trenches, seep berms, sand filters, dry wells,

polyacrylamide, etc. for minimizing point source discharges except for large rainfall events is

b. Storm water management. A description of measures that will be installed during the construction process to control pollutants in storm water discharges that will occur after construction operations have been completed. Structural measures should be placed on upland soils to the degree attainable. The installation of these devices may be subject to Section 404 of the CWA. This permit only addresses the installation of storm water management measures, and not the ultimate operation and maintenance of such structures after the construction activities have been completed and the site has undergone final stabilization. Operators are only responsible for the installation and maintenance of storm water management measures prior to final stabilization of the site, and are not responsible for maintenance after storm water discharges associated with construction activity have been eliminated from the site.

(1). Such practices may include: storm water detention structures (including wet ponds); storm water retention structures; flow attenuation by use of open vegetated swales and natural depressions; infiltration of runoff on-site; and sequential systems (which combine several practices). The Plan shall include an explanation of the technical basis used to select the practices to control pollution where flows exceed pre-development levels.

(2). Velocity dissipation devices shall be placed at discharge locations and along the length of any outfall channel for the purpose of providing a non-erosive velocity flow from the structure to a water course so that the natural physical and biological characteristics and functions are maintained and protected (e.g., no significant changes in the hydrological regime of the receiving

(3). Installation and use of Green Infrastructure approaches and practices that mimic natural processes and direct storm water where it can be infiltrated, evapotranspirated or re-used with significant utilization of soils and vegetation rather than traditional hardscape collection conveyance and storage structures are encouraged to the maximum extent practicable. Green Infrastructure practices or approaches include permeable or porous paving, vegetated swales instead of curbs and gutters, green roofs, tree boxes, rain gardens, constructed wetlands infiltration planters, vegetated median strips, protection and enhancement of riparian buffers and floodplains, and the overall reduction in site disturbance and impervious area. Design information on Green Infrastructure practices and other ways to manage storm water can be found in the Georgia Stormwater Management Manual (www.georgiastormwater.com) and the Georgia Green Growth Guidelines (www.coastalgadnr.org/cm/green/guide). Additional information on Green Infrastructure can be found at water.epa.gov/infrastructure/greeninfrastructure/index.cfm.

c. Other controls.

(1). Waste disposal. Locate waste collection areas away from streets, gutters, watercourses and storm drains. Waste collection areas, such as dumpsters, are often best located near construction site entrances to minimize traffic on disturbed soils. The Plan should include secondary containment around liquid waste collection areas to further minimize the likelihood of contaminated discharges. Solid materials, including building materials, shall not be discharged to waters of the State, except as authorized by a Section 404 permit.

(2). Off-site vehicle tracking of dirt, soils, and sediments and the generation of dust shall be minimized or eliminated to the maximum extent practical. The Plan shall include the best management practice to be implemented at the site or construction activity.

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(3). Nothing in this permit relieves a permittee from any obligations to comply with all applicable State and/or local regulations of waste disposal, sanitary sewer, septic and petroleum storage

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(4). The Plan shall include best management practices for the remediation of all petroleum spills and leaks as appropriate. (5). The Plan shall include best management practices for concrete washdown of tools, concrete

mixer chutes, hoppers and the rear of vehicles. Washout of the drum at the construction site is prohibited. Additional information about best management practices for concrete washout is available at www.epa.gov/npdes/pubs/concretewashout.pdf.

(6) All permittees are required to minimize the discharge of pollutants from dewatering trenches and excavations. Discharges are prohibited unless managed by appropriate controls.

4. Inspections

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a. Permittee requirements.

(1). Each day when any type of construction activity has taken place at a primary permittee's site. certified personnel provided by the primary permittee shall inspect: (a) all areas at the primary permittee's site where petroleum products are stored, used, or handled for spills and leaks from vehicles and equipment and (b) all locations at the primary permittee's site where vehicles enter or exit the site for evidence of off-site sediment tracking. These inspections must be conducted until a Notice of Termination is submitted

(2). Measure rainfall once every 24 hours except any non-working Saturday, non-working Sunday and non-working Federal holiday until a Notice of Termination is submitted. Measurement of rainfall may be suspended if all areas of the site have undergone final stabilization or established a crop of annual vegetation and a seeding of target perennials appropriate for the region.

(3). Certified personnel (provided by the primary permittee) shall inspect the following at least once every fourteen (14) calendar days and within 24 hours of the end of a storm that is 0.5 inches rainfall or greater (unless such storm ends after 5:00 PM on any Friday or on any nonworking Saturday, non-working Sunday or any non-working Federal holiday in which case the inspection shall be completed by the end of the next business day and/or working day, whichever occurs first): (a) disturbed areas of the primary permittee's construction site; (b) areas used by the primary permittee for storage of materials that are exposed to precipitation; and (c) structural control measures. Erosion and sediment control measures identified in the Plan applicable to the primary permittee's site shall be observed to ensure that they are operating correctly. Where discharge locations or points are accessible, they shall be inspected to ascertain whether erosion control measures are effective in preventing significant impacts to receiving water(s). For areas of a site that have undergone final stabilization or established a crop of annual vegetation and a seeding of target perennials appropriate for the region, the permittee must comply with Part IV.D.4.a.(4). These inspections must be conducted until a Notice of Termination is submitted.

(4). Certified personnel (provided by the primary permittee) shall inspect at least once per month during the term of this permit (i.e., until a Notice of Termination is submitted to EPD) the areas of the site that have undergone final stabilization or established a crop of annual vegetation and a seeding of target perennials appropriate for the region. These areas shall be inspected for evidence of, or the potential for, pollutants entering the drainage system and the receiving water(s). Erosion and sediment control measures identified in the Plan shall be observed to ensure that they are operating correctly. Where discharge locations or points are accessible, they

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significant impacts to receiving water(s). (5). Based on the results of each inspection, the site description and the pollution prevention and control measures identified in the Erosion, Sedimentation and Pollution Control Plan, the Plan shall be revised as appropriate not later than seven (7) calendar days following each inspection Implementation of such changes shall be made as soon as practical but in no case later than seven (7) calendar days following each inspection

shall be inspected to ascertain whether erosion control measures are effective in preventing

(6). A report of each inspection that includes the name(s) of certified personnel making each inspection, the date(s) of each inspection, construction phase (i.e., initial, intermediate or final) major observations relating to the implementation of the Erosion, Sedimentation and Pollution Control Plan, and actions taken in accordance with Part IV.D.4.a.(5). of the permit shall be made and retained at the site or be readily available at a designated alternate location until the entire site or that portion of a construction project that has been phased has undergone final stabilization and a Notice of Termination is submitted to EPD. Such reports shall be readily available by end of the second business day and/or working day and shall identify all incidents of best management practices that have not been properly installed and/or maintained as described in the Plan. Where the report does not identify any incidents, the inspection report shall contain a statement that the best management practices are in compliance with the Erosion. Sedimentation and Pollution Control Plan. The report shall be signed in accordance with Part V.G.2. of this

5. Maintenance. The Plan shall include a description of procedures to ensure the timely maintenance of vegetation, erosion and sediment control measures and other protective measures identified in the site plan.

6. Sampling Requirements. This permit requires the monitoring of nephelometric turbidity in receiving water(s) or outfalls in accordance with this permit. The following procedures constitute EPD's guidelines for sampling

a. Sampling Requirements shall include the following:

(1) A USGS topographic map, a topographic map or a drawing (referred to as a topographic map) that is a scale equal to or more detailed than a 1:24000 map showing the location of the infrastructure construction; (a) the location of all perennial and intermittent streams and other water bodies as shown on a USGS topographic map, and all other perennial and intermitten streams and other water bodies located during mandatory field verification, into which the storm water is discharged and (b) the receiving water and/or outfall sampling locations for each representative stormwater outfall. When the permittee has chosen to use a USGS topographic map and the receiving water(s) is not shown on the USGS topographic map, the location of the receiving water(s) must be hand-drawn on the USGS topographic map from where the storm water(s) enters the receiving water(s) to the point where the receiving water(s) combines with the first blue line stream shown on the USGS topographic map;

(2). A written narrative of site specific analytical methods used to collect and analyze the samples including quality control/quality assurance procedures. This narrative must include precise sampling methodology for each sampling location;

(3). When the permittee has determined that some or all outfalls will be sampled, a rationale must be included on the Plan for the NTU limit(s) selected from Appendix B. This rationale must include the size of the construction site, the calculation of the size of the surface water drainage area, and the type of receiving water(s) (i.e., trout stream or supporting warm water fisheries);

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a. Erosion and sediment controls.

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(4). Any additional information EPD determines necessary to be part of the Plan. EPD will provide written notice to the permittee of the information necessary and the time line for submittal. b. Sample Type. All sampling shall be collected by "grab samples" and the analysis of these samples

must be conducted in accordance with methodology and test procedures established by 40 CFR Part 136

(unless other test procedures have been approved); the guidance document titled "NPDES Storm Water

Sampling Guidance Document, EPA 833-B-92-001" and guidance documents that may be prepared by

(1). Sample containers should be labeled prior to collecting the samples.

(2). Samples should be well mixed before transferring to a secondary container.

(3). Large mouth, well cleaned and rinsed glass or plastic jars should be used for collecting samples. The jars should be cleaned thoroughly to avoid contamination (4). Manual, automatic or rising stage sampling may be utilized. Samples required by this permit

samples from automatic samplers must be collected no later than the next business day after their accumulation, unless flow through automated analysis is utilized. If automatic sampling is utilized and the automatic sampler is not activated during the qualifying event, the permittee must utilize manual sampling or rising stage sampling during the next qualifying event. Dilution of samples is not required. Samples may be analyzed directly with a properly calibrated turbidimeter. Samples are not required to be cooled. (5). Sampling and analysis of the receiving water(s) or outfalls beyond the minimum frequency

should be analyzed immediately, but in no case later than 48 hours after collection. However,

stated in this permit must be reported to EPD as specified in Part IV.E. c. Sampling Points.

(1). For construction activities the primary permittee must sample all perennial and intermittent streams and other water bodies shown on the USGS topographic map and all other field verified perennial and intermittent streams and other water bodies, or all outfalls into such streams and other water bodies, or a combination thereof. However, provided for in and in accordance with Part IV.D.6.c.(2). of this permit, primary permittees on an infrastructure construction project may sample the representative perennial and intermittent streams, other water bodies or outfalls, or a combination thereof. Samples taken for the purpose of compliance with this permit shall be representative of the monitored activity and representative of the water quality of the receiving water(s) and/or the storm water outfalls using the following minimum guidelines:

(a). The upstream sample for each receiving water(s) must be taken immediately upstream of the confluence of the first storm water discharge from the permitted activity (i.e., the discharge farthest upstream at the site) but downstream of any other storm water discharges not associated with the permitted activity. Where appropriate, several upstream samples from across the receiving water(s) may need to be taken and the arithmetic average of the turbidity of these samples used for the upstream turbidity value.

(b). The downstream sample for each receiving water(s) must be taken downstream of the confluence of the last storm water discharge from the permitted activity (i.e., the discharge farthest downstream at the site) but upstream of any other storm water discharge not associated with the permitted activity. Where appropriate, several downstream samples from across the receiving water(s) may need to be taken and the arithmetic average of the turbidity of these samples used for the downstream turbidity

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(c). Ideally the samples should be taken from the horizontal and vertical center of the receiving water(s) or the storm water outfall channel(s)

(d). Care should be taken to avoid stirring the bottom sediments in the receiving water(s)

or in the outfall storm water channel. (e). The sampling container should be held so that the opening faces upstream.

(f). The samples should be kept free from floating debris.

(g). Permittees do not have to sample sheetflow that flows onto undisturbed natural areas or areas stabilized by the project. For purposes of this section, stabilized shall mean, for unpaved areas and areas not covered by permanent structures,, 100% of the soil surface is uniformly covered in permanent vegetation with a density of 70% or greater, or landscaped according to the Plan (uniformly covered with landscaping materials in planned landscaped areas), or equivalent permanent stabilization measures as defined in the Manual (excluding a crop of annual vegetation and a seeding of target crop perennials appropriate for the region). For infrastructure construction projects on land used for agricultural or silvicultural purposes, final stabilization may be accomplished by stabilizing the disturbed land for its agricultural or silvicultural use.

(h). All sampling pursuant to this permit must be done in such a way (including generally accepted sampling methods, locations, timing, and frequency) as to accurately reflect whether storm water runoff from the construction site is in compliance with the standard set forth in Parts III.D.3. or III.D.4., whichever is applicable.

(2). For infrastructure construction projects, the permittee is not required to sample a perennial or intermittent stream or other water bodies (or the associated outfall, if applicable) if the design professional preparing the Plan certifies that an increase in the turbidity of a specific identified receiving water to be sampled will be representative of the increase in the turbidity of a specific identified un-sampled receiving water. A written justification and detailed analysis shall be prepared by the design professional justifying such proposed sampling. A summary chart of the justification and analysis for the representative sampling must be included on the Plan. The justification and analysis shall include the location and description of the specified sampled and un-sampled receiving water and shall contain a detailed comparison and discussion of each such receiving water in the following areas:

(a). site land disturbances and characteristics;

(b). receiving water watershed sizes and characteristics; and

(c). site and watershed runoff characteristics utilizing the methods in Appendix A-1 (United States Department of Agriculture Soil Conservation Service's TR-55, Urban Hydrology for Small Watersheds) of the most recent version of the "Manual for Frosion and Sedimentation Control in Georgia" for the various precipitation events and any other such considerations necessary to show that the increase in the turbidity of a specific identified sampled receiving water will be representative of the increases in the turbidity of a specific identified un-sampled receiving waters.

(3). For infrastructure construction projects, when the permittee determines that some receiving water(s) will not be sampled due to representative sampling, the design professional making this determination and preparing the Plan must include and sign the following certification in the Plan:

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"I certify that the permittee's Erosion, Sedimentation and Pollution Control Plan provides for the monitoring of: (a) all perennial and intermittent streams and other water bodies shown on the USGS topographic map and all other field verified perennial and intermittent steams and other water bodies, or (b) where any such specific identified perennial or intermittent stream and other water body is not proposed to be sampled, I have determined in my professional judgment, utilizing the factors required in the General NPDES Permit No. GAR 100002, that the increase in the turbidity of each specific identified sampled receiving

water will be representative of the increase in the turbidity of a specific

dentified un-sampled receiving water."

(4). For infrastructure construction projects, if at any time during the life of the project a selected receiving water no longer represents another receiving water, then the permittee shall sample the latter receiving water until selection of an alternative representative receiving water.

(5). For infrastructure construction projects, if at any time during the life of the project a receiving water is determined not to be represented as certified in the Plan, the permittee shall sample that receiving water until a Notice of Termination is submitted or until the applicable phase is stabilized in accordance with this permit.

(6). For infrastructure construction projects, monitoring obligations shall cease for any phase of the project that has been stabilized in accordance with Part IV.D.6.c.(1).(g).

(1). The primary permittee must sample in accordance with the Plan at least once for each rainfall event described below. For a qualifying event, the permittee shall sample at the beginning of any storm water discharge to a monitored receiving water and/or from a monitored outfall location within forty-five (45) minutes or as soon as

(2). However, where manual and automatic sampling are impossible (as defined in this permit), or

are beyond the permittee's control, the permittee shall take samples as soon as possible, but in

no case more than twelve (12) hours after the beginning of the storm water discharge. (3). Sampling by the permittee shall occur for the following qualifying events:

(a). For each area of the site that discharges to a receiving water or from an outfall, the first rain event that reaches or exceeds 0.5 inch with a storm water discharge that occurs during normal business hours as defined in this permit. after all clearing and grubbing operations have been completed, but prior to completion of mass grading operations, in the drainage area of the location selected as the representative sampling location;

(b). In addition to (a) above, for each area of the site that discharges to a receiving water or from an outfall, the first rain event that reaches or exceeds 0.5 inch with a storm water discharge that occurs during normal business hours as defined in this permit either 90 days after the first sampling event or after all mass grading operations have been ompleted, but prior to submittal of a NOT, in the drainage area of the location selected as the representative sampling location, whichever comes first;

of the site that discharges to a receiving water or from an outfall are not properly designed, installed and maintained, corrective action shall be defined and implemented within two (2) business days, and turbidity samples shall be taken from discharges from that area of the site for each subsequent rain event that reaches or exceeds 0.5 inch

(c). At the time of sampling performed pursuant to (a) and (b) above. if BMPs in any area

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during normal business hours* until the selected turbidity standard is attained, or unti post-storm event inspections determine that BMPs are properly designed, installed and

(d). Where sampling pursuant to (a), (b) or (c) above is required but not possible (or not

required because there was no discharge), the permittee, in accordance with Part IV.D.4.a.(6), must include a written justification in the inspection report of why sampling was not performed. Providing this justification does not relieve the permittee of any subsequent sampling obligations under (a), (b) or (c) above; and (e).. Existing construction activities, i.e., those that are occurring on or before the

effective date of this permit, that have met the sampling required by (a) above shall

sample in accordance with (b). Those existing construction activities that have met the

sampling required by (b) above shall not be required to conduct additional sampling other

than as required by (c) above. *Note that the Permittee may choose to meet the requirements of (a) and (b) above by collecting turbidity samples from any rain event that reaches or exceeds 0.5 inch and allows for sampling at any time of the day or week.

7. Non-storm water discharges. Except for flows from fire fighting activities, sources of non-storm water listed in Part III.A.2. of this permit that are combined with storm water discharges associated with construction activity must be identified in the Plan. The Plan shall identify and ensure the implementation of appropriate pollution prevention measures for the non-storm water component(s) of the discharge.

1. The applicable permittees are required to submit the sampling results to the EPD at the address shown in Part II.C. by the fifteenth day of the month following the reporting period. Reporting periods are months during which samples are taken in accordance with this permit. Sampling results shall be in a clearly legible format. Upon written notification, EPD may require the applicable permittee to submit the sampling results on a more frequen basis. Sampling and analysis of any storm water discharge(s) or the receiving water(s) beyond the minimum frequency stated in this permit must be reported in a similar manner to the EPD. The sampling reports must be signed in accordance with Part V.G.2. Sampling reports must be submitted to EPD until such time as a NOT is submitted in accordance with Part VI.

2. All sampling reports shall include the following information:

a. The rainfall amount, date, exact place and time of sampling or measurements; The name(s) of the certified personnel who performed the sampling and measurements;

The date(s) analyses were performed; The time(s) analyses were initiated:

The name(s) of the certified personnel who performed the analyses: References and written procedures, when available, for the analytical techniques or methods used: g. The results of such analyses, including the bench sheets, instrument readouts, computer disks or

3.. All written correspondence required by this permit shall be submitted by return receipt certified mail (or similar

tapes, etc., used to determine these results; Results which exceed 1000 NTU shall be reported as "exceeds 1000 NTU;" and Certification statement that sampling was conducted as per the Plan.

service) to the appropriate District Office of the EPD according to the schedule in Appendix A of this permit. The permittee shall retain a copy of the proof of submittal at the construction site or the proof of submittal shall be readily available at a designated location from commencement of construction until such time as a NOT is submitted in accordance with Part VI. If an electronic submittal is provided by EPD then the written

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receipt certified mail or similar service.

III.D.2. of this permit; and

Permit No. GAR100002 correspondence may be submitted electronically; if required, a paper copy must also be submitted by return

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F. Retention of Records

1. The primary permittee shall retain the following records at the construction site or the records shall be readily available at a designated alternate location from commencement of construction until such time as a NOT is submitted in accordance with Part VI:

a. A copy of all Notices of Intent submitted to EPD; b. A copy of the Erosion, Sedimentation and Pollution Control Plan required by this permit; c. The design professional's report of the results of the inspection conducted in accordance with Part IV.A.5.

of this permit: d. A copy of all sampling information, results, and reports required by this permit; e. A copy of all inspection reports generated in accordance with Part IV.D.4.a. of this permit; . A copy of all violation summaries and violation summary reports generated in accordance with Part

g. Daily rainfall information collected in accordance with Part IV.D.4.a.(2). of this permit. 2. Copies of all Notices of Intent, Notices of Termination, inspection reports, sampling reports (including all

calibration and maintenance records and all original strip chart recordings for continuous monitoring instrumentation), or other reports requested by the EPD, Erosion, Sedimentation and Pollution Control Plans, records of all data used to complete the Notice of Intent to be covered by this permit and all other records required by this permit shall be retained by the permittee who either produced or used it for a period of at least three years from the date that the NOT is submitted in accordance with Part VI of this permit. These records must be maintained at the permittee's primary place of business or at a designated alternative location once the construction activity has ceased at the permitted site. This period may be extended by request of the EPD at any time upon written notification to the permittee.

Part V. STANDARD PERMIT CONDITIONS

A. Duty to Comply.

1. Each permittee must comply with all applicable conditions of this permit. Any permit noncompliance constitutes a violation of the Georgia Water Quality Control Act (O.C.G.A. §§12-5-20, et seq.) and is grounds for enforcement action; for permit termination; or for denial of a permit renewal application. Failure of a primary permittee to comply with any applicable term or condition of this permit shall not relieve any other primary permittee from compliance with their applicable terms and conditions of this permit

2. Each permittee must document in their records any and all known violations of this permit at his/her site within seven (7) days of his/her knowledge of the violation. A summary of these violations must be submitted to EPD by the permittee at the addresses shown in Part II.C. within fourteen (14) days of his/her discovery of the violation.

3 Penalties for violations of permit conditions. The Federal Clean Water Act and the Georgia Water Quality Control Act (O.C.G.A. §§12-5-20, et seg.) provide that any person who falsifies, tampers with, or knowingly renders inaccurate any monitoring device or method required to be maintained under this permit, makes any false statement, representation, or certification in any record or other document submitted or required to be maintained under this permit, including monitoring reports or reports of compliance or noncompliance shall, upon conviction be punished by a fine or by imprisonment, or by both. The Federal Clean Water Act and the Georgia Water Quality Control Act also provide procedures for imposing civil penalties which may be levied for violations of the Acts, any permit condition or limitation established pursuant to the Acts, or negligently or intentionally failing or refusing to comply with any final or emergency order of the Director.

GEORGIA SOIL AND WATER HELEN L SIMPSON Level II Certified Design Professiona CERTIFICATION NUMBER ______ ISSUED: <u>04/29/201</u>6 EXPIRES: <u>04/29/201</u>9



UTILITIES PROTECTION CENTER IT'S THE LAW

G E A

DRAINA - PHASE **8** Ш O

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DATE: 04/30/2018

IF YOU DIG GEORGIA.. CALL US FIRST!

C. Need to Halt or Reduce Activity Not a Defense. It shall not be a defense for the permittee in an enforcement action that it would have been necessary to halt or reduce the permitted activity in order to maintain compliance with the conditions of this permit.

D. Duty to Mitigate. The permittee shall take all reasonable steps to minimize or prevent any discharge in violation of this permit which has a reasonable likelihood of adversely affecting human health or the environment.

E. Duty to Provide Information. The permittee shall furnish to the Director; a State agency approving soil erosion and sedimentation control plans, grading plans, or storm water management plans; or in the case of a storm water discharge associated with construction activity which discharges through a municipal separate storm sewer system with an NPDES permit, to the local government operating the municipal separate storm sewer system, any information which is requested to determine compliance with this permit. In the case of information submitted to the EPD such information shall be considered public information and available under the Georgia

F. Other Information. When the permittee becomes aware that he/she failed to submit any relevant facts or submitted incorrect information in the Notice of Intent or in any other report required to be submitted to the EPD, the permittee shall promptly submit such facts or information.

G. Signatory Requirements. All Notices of Intent, Notice of Terminations, inspection reports, sampling reports, or other reports requested by the EPD shall be signed as follows:

1. All Notices of Intent and Notices of Termination shall be signed as follows:

a. For a corporation: by a responsible corporate officer. For the purpose of this permit, a responsible corporate officer means: (1) a president, secretary, treasurer, or vice-president of the corporation in charge of a principal business function, or any other person who performs similar policy- or decisionmaking functions for the corporation; or (2) the manager of one or more manufacturing, production or operating facilities provided the manager is authorized to make management decisions which govern the operation of the regulated facility including having the explicit or implicit duty of making major capital investment recommendations, and initiating and directing other comprehensive measures to assure long term environmental compliance with environmental laws and regulations; the manager can ensure the necessary systems are established or actions taken to gather complete and accurate information for permit application requirements; and where authority to sign documents has been assigned or delegated to the manager in accordance with corporate procedures;

b. For a partnership or sole proprietorship: by a general partner or the proprietor, respectively; or

c. For a municipality, State, Federal, or other public facility: by either a principal executive officer or ranking elected official; and

d. Changes to authorization. If an authorization under Part II.B. is no longer accurate, a change of information NOI satisfying the requirements of Part II.B. must be submitted to the EPD prior to or together with any inspection reports, sampling reports, or other reports requested by the EPD to be signed by a person described above or by a duly authorized representative of that person

2. All inspection reports, sampling reports, or other reports requested by the EPD shall be signed by a person described above or by a duly authorized representative of that person. A person is a duly authorized representative only if:

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4. The name of the receiving water(s), and when the discharge is through a municipal separate storm sewer system (MS4), the name of the local government operating the municipal separate storm sewer system and the name of the receiving water(s) which receives the discharge from the MS4;

5. Copies of all sampling reports and/or a written justification why sampling was not conducted. Copies of all sampling reports may be submitted as a Portable Document Format (PDF) file on CD-ROM or other storage

6. Copy of the permittee's most current Notice of Intent:

7. Any other information specified on the NOT in effect at the time of submittal; and 8. The following certification signed in accordance with Part V.G.1. (signatory requirements):

"I certify under penalty of law that either: (a) all storm water discharges associated with construction activity authorized by this permit have ceased, the site is in compliance with this permit and all temporary BMPs have been removed or; (b) I am no longer an Owner or Operator at the construction site and a

new Owner or Operator has assumed operational control of the permitted construction site where I previously had ownership or operational control; and that discharging pollutants in storm water associat with construction activity to waters of Georgia is unlawful under the Georgia Water Quality Control Act and the Clean Water Act where the discharge is not authorized by a NPDES permit. C. Notice of Termination Submittal. All Notices of Termination by this permit shall be submitted by return

receipt certified mail (or similar service) to the appropriate EPD District Office according to the schedule in Appendix A of this permit and to the Local Issuing Authority in jurisdictions authorized to issue a Land Disturbance Activity permit for the permittee's construction site pursuant to O.C.G.A. 12-7-1, et seq. If an electronic submittal service is provided by the EPD then the Notice of Termination may be submitted electronically; if required, a paper copy must also be submitted by return receipt certified mail or similar service.

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APPENDIX A

EPD DISTRICT OFFICES

All required correspondence, including but not limited to the Notice of Intents, Notice of Terminations, certifications, Erosion, Sedimentation and Pollution Control Plans and any other reports, shall be sent to the following District Offices of EPD.

A. For facilities/construction sites located in the following counties: Bibb, Bleckley, Chattahoochee, Crawford, Dooly, Harris, Houston, Jones, Lamar, Macon, Marion, Meriwether, Monroe, Muscogee, Peach, Pike, Pulaski, Schley, Talbot,

Information shall be submitted to:

West Central District Office Georgia Environmental Protection Division 2640 Shurling Drive Macon, GA 31211-3576 (478) 751-6612

B. For facilities/construction sites located in the following counties: Burke, Columbia, Emanuel, Glascock, Jefferson, Jenkins, Johnson, Laurens, McDuffie, Montgomery, Richmond, Screven, Treutlen, Warren, Washington, Wheeler,

Information shall be submitted to:

East Central District Office Georgia Environmental Protection Division Augusta, GA 30909-1821 (706) 667-4343

C. For facilities/construction sites located in the following counties: Baldwin, Banks, Barrow, Butts, Clarke, Elbert, Franklin, Greene, Hall, Hancock, Hart, Jackson, Jasper, Lincoln, Madison, Morgan, Newton, Oconee, Oglethorpe Putnam. Stephens, Taliaferro, Walton, Wilkes

Information shall be submitted to:

Northeast District Office Georgia Environmental Protection Division 745 Gaines School Road Athens. GA 30605-3129

D. For facilities/construction sites located in the following counties: Carroll, Clayton, Coweta, DeKalb, Douglas, Fayette, Fulton, Gwinnett, Heard, Henry, Rockdale, Spalding

Information shall be submitted to:

Mountain District - Atlanta Satellite Georgia Environmental Protection Division 4244 International Parkway, Suite 114 Atlanta, GA 30354-3906 (404) 362-2671

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a. The authorization is made in writing by a person(s) described above and submitted to the EPD;

b. The authorization specifies either an individual or a position having responsibility for specified operation(s) of the regulated facility or activity, such as the position of manager, Operator, superintendent, or position of equivalent responsibility or an individual or position having overall responsibility for environmental matters for the company. (A duly authorized representative may be either a named individual or any individual occupying a named position); and

c. Certification. Reports delineated in Part V.G.2. shall be signed by the permittee or duly authorized representative and shall make the following certification

"I certify under penalty of law that this report and all attachments were prepared under my direction or supervision in accordance with a system designed to assure that certified personnel properly gather and evaluate the information submitted. Based on my inquiry of the person or persons who manage the system, or those persons directly responsible for gathering the information, the information submitted is, to the best of my knowledge and belief, true, accurate, and complete. I am aware that there are significant penalties for submitting false information, including the possibility of fine and imprisonment

H. Oil and Hazardous Substance Liability. Nothing in this permit shall be construed to preclude the institution of any legal action or relieve the permittee from any responsibilities, liabilities, or penalties to which the permittee is or may be subject under the Georgia Hazardous Waste Management Act. O.C.G.A. § 12-8-60, et seg. or under Chapter 14 of Title 12 of the Official Code of Georgia Annotated; nor is the Operator relieved from any responsibilities, liabilities or penalties to which the permittee is or may be subject under Section 311 of the Clean Water Act or Section 106 of Comprehensive Environmental Response Compensation And Liability Act.

I. Property Rights. The issuance of this permit does not convey any property rights of any sort, nor any exclusive privileges, nor does it authorize any injury to private property nor any invasion of personal rights, nor any infringement of Federal, State or local laws or regulations.

J. Severability. The provisions of this permit are severable, and if any provision of this permit, or the application of any provision of this permit to any circumstance, is held invalid, the application of such provision to other circumstances, and the remainder of this permit shall not be affected thereby.

K. Other Applicable Environmental Regulations and Laws. Nothing in this permit shall be construed to preclude the institution of any legal action or relieve the permittee from any responsibilities, liabilities, or penalties established pursuant to any applicable State law or regulation under authority preserved by Section 510 of the Clean Water Act. Nothing in this permit, unless explicitly stated, exempts the permittee from compliance with other applicable local, state and federal ordinances, rules, regulations, and laws. Furthermore, it is not a defense to compliance with this permit that a local government authority has approved the permittee's Erosion. Sedimentation and Pollution Control Plan or failed to take enforcement action against the permittee for violations of the Erosion, Sedimentation and Pollution Control Plan, or other provisions of this permit.

No condition of this permit shall release the permittee from any responsibility or requirements under other environmental statutes or regulations.

L. Proper Operation and Maintenance. The permittee shall at all times properly operate and maintain all facilities and systems of treatment and control (and related appurtenances) which are installed or used by the permittee to achieve compliance with the conditions of this permit and with the required plans. Proper operation and maintenance also includes adequate laboratory controls and appropriate quality assurance procedures. Proper operation and maintenance requires the operation of backup or auxiliary facilities or similar systems, installed by a permittee only when necessary to achieve compliance with the conditions of the permit.

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E. For facilities/construction sites located in the following counties: Bartow, Catoosa, Chattooga, Cherokee, Cobb, Dade, Dawson, Fannin, Floyd, Forsyth, Gilmer, Gordon, Habersham, Haralson, Lumpkin, Murray, Paulding, Pickens, Polk, Rabun, Towns, Union, Walker, White, Whitfield

Information shall be submitted to:

Mountain District - Cartersville Office Georgia Environmental Protection Division Cartersville, GA 30120-1705 (770) 387-4900

F. For facilities/construction sites located in the following counties: Appling, Atkinson, Bacon, Brantley, Bryan, Bulloch, Camden, Candler, Charlton, Chatham, Clinch, Coffee, Effingham, Evans, Glynn, Jeff Davis, Liberty, Long, McIntosh, Pierce Tattnall Toombs Ware Wayne

Coastal District - Brunswick Office Georgia Environmental Protection Division 400 Commerce Center Drive Brunswick, GA 31523-8251 (912) 264-7284

G. For facilities/construction sites located in the following counties: Baker, Ben Hill, Berrien, Brooks, Calhoun, Clay Colquitt, Cook, Crisp, Decatur, Dodge, Dougherty, Early, Echols, Grady, Irwin, Lanier, Lee, Lowndes, Miller, Mitchell, Quitman, Randolph, Seminole, Stewart, Sumter, Telfair, Terrell, Thomas, Tift, Turner, Webster, Wilcox, Worth

Information shall be submitted to:

Georgia Environmental Protection Division 2024 Newton Road Albany, GA 31701-3576 (912) 430-4144

H. For facilities/construction sites required to submit Plans required under Part IV.A.4.a. of this Permit:

Southwest District Office

Information shall be submitted to:

Watershed Protection Branch Environmental Protection Divisio 2 Martin Luther King Jr. Drive Suite 1152 East Atlanta, Georgia 30334 404-463-1511

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APPENDIX B

Nephelometric Turbidity Unit (NTU) TABLES

Trout Streams

Surface Water Drainage Area, square miles

		0-4.99	5-9.99	10-24.99	25-49.99	50-99.99	100-249.99	250-499.99	500+
	1.00-10	25	50	75	150	300	500	500	500
Site Size, acres	10.01-25	25	25	50	75	150	200	500	500
	25.01-50	25	25	25	50	75	100	300	500
	50.01-100	20	25	25	35	59	75	150	300
	100.01+	20	20	25	25	25	50	60	100

Waters Supporting Warm Water Fisheries

Surface Water Drainage Area, square miles

		0-4.99	5-9.99	10-24.99	25-49.99	50-99.99	100-249.99	250-499.99	500+
	1.00-10	75	150	200	400	750	750	750	750
o:	10.01-25	50	100	100	200	300	500	750	750
Site Size, acres	25.01-50	50	50	100	100	200	300	750	750
	50.01-100	50	50	50	100	100	150	300	600
	100.01+	50	50	50	50	50	100	200	100

To use these tables, select the size (acres) of the construction site. Then, select the surface water drainage area (square miles). The NTU matrix value arrived at from the above tables is the one to use in Part III.D.4.

Example 1: For a site size of 12.5 acres and a "trout stream" drainage area of 37.5 square miles, the NTU value to use in Part III.D.4. is 75 NTU.

Example 2: For a site size of 51.7 acres and "waters supporting warm water fisheries" drainage area of 72 square miles, the NTU value to use in Part III.D.4. is 100 NTU.

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M. Inspection and Entry. The permittee shall allow the Director or an authorized representative of EPA or EPD or, in the case of a construction site which discharges through a municipal separate storm sewer system with an NPDES permit, an authorized representative of the municipal operator of the separate storm sewer system receiving the discharge, upon the presentation of credentials and other documents as may be required by

1. Enter upon the permittee's premises where a regulated facility or activity is located or conducted or where records must be kept under the conditions of this permit;

2. Have access to and copy at reasonable times, any records that must be kept under the conditions of this

3. Inspect at reasonable times any facilities or equipment (including monitoring and control equipment).

N. Permit Actions. This permit may be revoked and reissued, or terminated for cause including but not limited to changes in the law or regulations. The filing of a request by the permittee for termination of the permit, or a notification of planned changes or anticipated noncompliance, does not stay any permit condition.

Part VI. TERMINATION OF COVERAGE

A. Notice of Termination Eligibility. Notice of Termination signed in accordance with Part V.G.1. of this permit must be submitted:

1. For infrastructure construction projects, by the permittee where the entire project has undergone final stabilization, all storm water discharges associated with construction activity that are authorized by this permit have ceased, the site is in compliance with this permit and all temporary BMPs have been removed. The permittee may also submit a Notice of Termination for each phase of the infrastructure project, not to exceed four (4) phases, that have undergone final stabilization and all storm water discharges associated with construction activity for that phase authorized by this permit have ceased. Except for the final phase, the disturbed acreage for each phase must be equal to or greater than 25% of the total estimated disturbed acreage for the infrastructure project. For the final phase, the disturbed acreage for the final phase must be equal to or greater than 10% of the total estimated disturbed acreage for the infrastructure project. The Notice of Termination for each phase of the infrastructure project must include the GPS locations (decimal degrees) of the beginning and end of each phase and if applicable, a map identifying significant landmarks.

2. By the Owner or Operator or both when the Owner or Operator or both of the site changes. Where storm water discharges will continue after the identity of the Owner or Operator or both changes, the permittee must, prior to filing the Notice of Termination, notify any subsequent Owner or Operator or both of the permitted site as to the requirements of this permit.

B. Notice of Termination Contents:

1. The NPDES permit number for the storm water discharge associated with construction activity identified by the Notice of Termination (i.e., GAR100002 – Infrastructure);

2. The project construction site name, site location, GPS locations (decimal degrees) of the beginning and end of the infrastructure construction project or if applicable, of each phase in accordance with Part VI.A.1., construction site location and if applicable, a map identifying significant landmarks, city (if applicable) and county of the site for which the notification is submitted. This information must correspond to the similar information as provided on the NOI. The construction site location information must be sufficient to accurate locate the construction site:

3. The owner's legal name, address, telephone number and email address and the operator's legal name, address, telephone and email address;

4 1 of 2 ▶ x

Reach_ID R031300011203

Reach_Basi Chattahoochee

Reach_Coun DeKalb/ Fulton

Reach_WB_T Stream

Reach_WUC Fishing

Reach Data 1,10,4

Reach_Loca Headwaters to Peachtr Creek, Atlanta

Reach_Name Nancy Creek

PETROLEUM SPILL CLEANUP AND CONTROL PRACTICES:

 LOCAL, STATE AND MANUFACTURER'S RECOMMENDED METHODS FOR SPILL CLEANUP WILL BE CLEARLY POSTED AND PROCEDURES WILL BE MADE AVAILABLE TO SITE PERSONNEL. MATERIAL AND EQUIPMENT NECESSARY FOR SPILL CLEANUP WILL BE KEPT IN THE MATERIAL STORAGE AREAS. TYPICAL MATERIALS AND EQUIPMENT INCLUDES, BUT IS NOT LIMITED TO, BROOMS, DUSTPANS, MOPS, RAGS, GLOVES, GOGGLES, CAT LITTER, SAND, SAWDUST AND PROPERLY LABELED PLASTIC AND METAL WASTE CONTAINERS.

SPILL PREVENTION PRACTICES AND PROCEDURES WILL BE REVIEWED AFTER A SPILL AND ADJUSTED AS NECESSARY TO PREVENT FUTURE SPILLS

 ALL SPILLS WILL BE CLEANED UP IMMEDIATELY UPON DISCOVERY. ALL SPILLS WILL BE REPORTED AS REQUIRED BY LOCAL, STATE AND FEDERAL REGULATIONS. FOR SPILLS THAT IMPACT SURFACE WATER (LEAVE A SHEEN ON SURFACE WATER). THE NATIONAL RESPONSE CENTER (NRC) WILL BE CONTACTED WITHIN 24 HOURS AT 1-(800)-426-2675.

 FOR SPILLS GREATER THAN 25 GALLONS AND NO SURFACE WATER IMPACTS OCCUR. THE GEORGIA E.P.D. WILL BE CONTACTED WITHIN 24 HOURS. • FOR SPILLS LESS THAN 25 GALLONS AND NO SURFACE WATER IMPACTS OCCUR, THE SPILL WILL BE CLEANED UP AND LOCAL AGENCIES WILL BE CONTACTED AS REQUIRED.

THE CONTRACTOR SHALL NOTIFY THE LICENSED PROFESSIONAL WHO PREPARED THIS PLAN IF MORE THAN 1320 GALLONS OF PETROLEUM IS STORED ONSITE (THIS INCLUDES CAPACITIES OF EQUIPMENT) OR IF ANY ONE PIECE OF EQUIPMENT HAS A CAPACITY GREATER THAN 660 GALLONS. THE CONTRACTOR WILL NEED A SPILL PREVENTION CONTAINMENT AND COUNTERMEASURES PLAN PREPARED BY THAT LICENSED PROFESSIONAL.

PRODUCT SPECIFIC PRACTICES

PETROLEUM BASED PRODUCTS—CONTAINERS FOR PRODUCTS SUCH AS FUELS. LUBRICANTS. AND TARS WILL BE INSPECTED DAILY FOR LEAKS AND SPILLS. HIS INCLUDES ONSITE VEHICLES AND MACHINERY DAILY INSPECTIONS AND REGULAR PREVENTATIVE MAINTENANCE OF SUCH EQUIPMENT. EQUIPMENT MAINTENANCE AREAS WILL BE LOCATED AWAY FROM STATE WATERS, NATURAL DRAINS, AND STORM WATER DRAINAGE INLETS. IN ADDITION, TEMPORARY FUELING TANKS SHALL HAVE A SECONDARY CONTAINMENT LINER TO PREVENT/MINIMIZE SITE CONTAMINATION. DISCHARGE OF OILS, FUELS, AND LUBRICANTS IS PROHIBITED. PROPER DISPOSAL METHODS WILL INCLUDE COLLECTION IN A SUITABLE CONTAINER AND DISPOSAL AS REQUIRED BY LOCAL AND STATE REGULATIONS.

PAINTS/FINISHES/SOLVENTS-ALL PRODUCTS WILL BE STORED IN TIGHTLY SEALED ORIGINAL CONTAINERS WHEN NOT IN USE. EXCESS PRODUCT WILL NOT BE DISCHARGE TO THE STORM WATER COLLECTION SYSTEM. EXCESS PRODUCT, MATERIALS USED WITH THESE PRODUCTS, AND PRODUCT CONTAINERS WILL BE DISPOSED OF ACCORDING TO MANUFACTURER'S SPECIFICATIONS AND RECOMMENDATIONS.

CONCRETE TRUCK WASHING-NO CONCRETE TRUCKS WILL BE ALLOWED TO WASH OUT OR DISCHARGE SURPLUS CONCRETE OR DRUM WASH WATER ONSITE.

FERTILIZER/HERBICIDES-THESE PRODUCTS WILL BE APPLIED AT RATES THAT DO NOT EXCEED THE MANUFACTURER'S SPECIFICATIONS OR ABOVE THE GUIDELINES SET FORTH IN THE CROP ESTABLISHMENT OR IN THE GSWCC MANUAL FOR EROSION AND SEDIMENT CONTROL IN GEORGIA. ANY STORAGE OF THESE MATERIALS WILL BE UNDER ROOF IN SEALED CONTAINERS.

BUILDING MATERIALS—NO BUILDING OR CONSTRUCTION MATERIALS WILL BE BURIED OR DISPOSED OF ONSITE. ALL SUCH MATERIAL WILL BE DISPOSED OF IN PROPER WASTE DISPOSAL PROCEDURES.

I CERTIFY UNDER PENALTY OF LAW THAT THIS PLAN WAS PREPARED AFTER A SITE VISIT TO THE LOCATIONS DESCRIBED HEREIN BY MYSELF OR MY AUTHORIZED AGENT, UNDER MY SUPERVISION.

I CERTIFY THAT THE PERMITTEE'S EROSION, SEDIMENTATION AND POLLUTION CONTROL PLAN PROVIDES FOR AN APPROPRIATE AND COMPREHENSIVE SYSTEM OF BEST MANAGEMENT PRACTICES REQUIRED BY THE GEORGIA WATER CONTROL ACT AND THE DOCUMENT "MANUAL FOR EROSION AND SEDIMENT CONTROL IN GEORGIA' (MANUAL) PUBLISHED BY THE STATE SOIL AND WATER CONSERVATION COMMISSION AS OF JANUARY 1 OR THE YEAR IN WHICH THE LAND-DISTURBING ACTIVITY WAS PERMITTED, PROVIDES FOR THE SAMPLING OF THE RECEIVING WATER(S) OR THE SAMPLING OF THE STORM WATER OUTFALLS AND THAT THE DESIGNED SYSTEM OF BEST MANAGEMENT PRACTICES AND SAMPLING METHODS IS EXPECTED TO MEET THE REQUIREMENTS CONTAINED IN THE GENERAL NPDES PERMIT NO. GAR 100002.

I CERTIFY THAT THE PERMITTEE'S EROSION. SEDIMENTATION AND POLLUTION CONTROL PLAN PROVIDES FOR THE MONITORING OF: (A) ALL PERENNIAL AND INTERMITTENT STREAMS AND OTHER WATER BODIES SHOWN ON THE USGS TOPOGRAPHIC MAP AND ALL OTHER FIELD VERIFIED PERENNIAL AND INTERMITTENT STREAMS AND OTHER WATER BODIES, OR (B) WHERE ANY SUCH SPECIFIC IDENTIFIED PERENNIAL OR INTERMITTENT STREAM AND OTHER WATER BODY IS NOT PROPOSED TO BE SAMPLED, I HAVE DETERMINED IN MY PROFESSIONAL JUDGEMENT, UTILIZING THE FACTORS REQUIRED IN THE GENERAL NPDES PERMIT NO GAR 100002, THAT THE INCREASE IN THE TURBIDITY OF EACH SPECIFIC IDENTIFIED SAMPLED RECEIVING WATER WILL BE REPRESENTATIVE OF THE INCREASE IN THE TURBIDITY OF A SPECIFIC IDENTIFIED UN-SAMPLED RECEIVING WATER.

_4/30/18_____

DESIGN PROFESSIONAL SIGNATURE

FROSION CONTROL NOTES

DESCRIPTION: THE CITY OF BROOKHAVEN IS PROPOSING THIS CONSTRUCTION WHICH CONTAINS 0.98 ACRES OF DISTURBED AREA TO IMPROVE AN EXISTING INADEQUATE STORM SEWER SYSTEM. THE UPPER END OF THE SYSTEM WILL INTAKE OFFSITE STORM RUNOFF THAT IS CURRENTLY FLOODING RESIDENTIAL YARDS IN HEAVY STORMS. THE TWO MOST DOWNSTREAM PIPES AT THE OUTFALL, APPROXIMATELY 580 FEET UPSTREAM OF SILVER LAKE, WERE PART OF A PREVIOUS IMPROVEMENT PROJECT APPROXIMATELY 3 YEARS AGO AND WILL NOT REQUIRE ADDITIONAL IMPROVEMENTS. WETLANDS WERE NOT FOUND WITHIN THE PROPOSED CONSTRUCTION LIMITS.

OWNER/DEVELOPER: MULTIPLE HOMEOWNERS THROUGHOUT THE SUBDIVISION. THE CITY OF BROOKHAVEN HAS BEEN COORDINATING WITH THESE HOMEOWNERS.

NAME AND PHONE NUMBER OF THE 24-HOUR LOCAL CONTACT PERSON RESPONSIBLE FOR EROSION CONTROL EMERGENCIES IS: MR GREGORY ANDERSON 404-637-0528

TOTAL DISTURBED AREA: 0.98 ACRES. PROPOSED IMPERVIOUS AREA: 0.00 ACRES.

THE DESIGN PROFESSIONAL WHO PREPARED THE ES&PC PLAN IS TO INSPECT THE INSTALLATION OF THE INITIAL SEDIMENT STORAGE REQUIREMENTS, PERIMETER CONTROL BMP'S, AND SEDIMENT BASINS IN ACCORDANCE WITH PART IV.A.5 WITHIN 7 DAYS AFTER

NON-EXEMPT ACTIVITIES SHALL NOT BE CONDUCTED WITHIN THE 25 OR 50 FOOT UNDISTURBED STREAM BUFFERS AS MEASURED FROM THE POINT OF WRESTED VEGETATION OR WITHIN 25-FEET OF THE COASTAL MARSHLAND BUFFER AS MEASURED FOR THE JURISDICTIONAL DETERMINATION LINE WITHOUT FIRST ACQUIRING THE NECESSARY VARIANCES

AMENDMENTS/REVISIONS TO THE ES&PC PLAN WHICH HAVE A SIGNIFICANT EFFECT ON BMP'S WITH A HYDRAULIC COMPONENT MUST BE CERTIFIED BY THE DESIGN PROFESSIONAL.

THE ESCAPE OF SEDIMENT FROM THE SITE SHALL BE PREVENTED BY THE INSTALLATION OF EROSION AND SEDIMENT CONTROL MEASURES AND PRACTICES PRIOR TO LAND DISTURBING ACTIVITIES.

WASTE MATERIALS SHALL NOT BE DISCHARGED TO WATERS OF THE STATE, EXCEPT AS

EROSION CONTROL MEASURES WILL BE MAINTAINED AT ALL TIMES. IF FULL IMPLEMENTATION OF THE APPROVED PLAN DOES NOT PROVIDE FOR EFFECTIVE EROSION CONTROL, ADDITIONAL EROSION AND SEDIMENT CONTROL MEASURES SHALL BE IMPLEMENTED TO CONTROL OR TREAT THE SEDIMENT SOURCE.

AUTHORIZED BY A SECTION 404 PERMIT

ANY DISTURBED AREA LEFT EXPOSED FOR A PERIOD GREATER THAN 7 DAYS SHALL BE STABILIZED WITH MULCH OR TEMPORARY SEEDING.

MAINTENANCE OF ALL SOIL EROSION AND SEDIMENTATION CONTROL MEASURES AND PRACTICES, WHETHER TEMPORARY OR PERMANENT, SHALL BE AT ALL TIMES THE RESPONSIBILITY OF THE PROPERTY OWNER.

3. DISTURBED AREAS SHALL BE STABILIZED WITH TEMPORARY VEGETATION OR MULCH IF LAND-DISTURBING ACTIVITIES CEASE FOR MORE THAN 14 CALENDAR DAYS.

14. ALL FILL SLOPES SHALL HAVE SILT FENCE PLACED AT THE SLOPE'S TOE.

THE RECEIVING WATER(S) IS SILVER LAKE WHICH THEN OUTFALLS TO NANCY CREEK. NANCY CREEK IS DESIGNATED AS AN IMPAIRED STREAM AND WITHIN 1 MILE OF THE IMPROVEMENT PROJECT. NO IMPERVIOUS AREA IS PROPOSED WITH THIS LINEAR UTILITY

5. EROSION CONTROL MATTING SHALL BE INSTALLED ON ALL SLOPES STEEPER THAN 3:1.

NO WETLANDS HAVE BEEN IDENTIFIED WITHIN THE LIMITS OF DISTURBANCE OF THE PROJECT.

EROSION CONTROL NOTES

ALL TEMPORARY BMP'S WILL BE REMOVED UPON STABILIZATION OF THE DISTURBED AREA.

DESIGN PROFESSIONAL AND MUST BE APPROVED BY CHEROKEE COUNTY. 20. WASTE MATERIALS SHALL NOT BE DISCHARGED TO WATERS OF THE STATE

19. ANY CHANGES TO THE ES&PC PLAN WHICH HAVE SIGNIFICANT EFFECT ON THE

BMPS WITH A HYDRAULIC OR DESIGN COMPONENT MUST BE CERTIFIED BY THE

EXCEPT AS AUTHORIZED BY A SECTION 404 PERMIT.

21. THE ES&PC PLAN IS IN COMPLIANCE WITH WASTE DISPOSAL, SANITARY SEWER

22. SEE SHEET THIS SHEET FOR SPILL PREVENTION NOTES.

OR SEPTIC TANK REGULATIONS.

23. IF PRIMARY PERMITTEE CHANGES DURING THE COURSE OF A PROJECT, THE NEW PRIMARY PERMITTEE MUST SUBMIT COPIES OF THE NEW NOI TO THE COUNTY LAND DISTURBANCE INSPECTOR.

24. TWO COPIES OF THE NPDES NOTICE OF INTENT MUST BE PROVIDED TO THE LAND DISTURBANCE INSPECTOR PRIOR TO INITIATING CONSTRUCTION.

THE PROJECT SITE, PURSUANT TO UDC 3.1.1.F.2.D. 26. BEGINNING APRIL 1, 2007, AT LEAST ONE PERSON FROM EACH WORK CREW/COMPANY/ENTITY INVOLVED IN LAND DISTURBANCE ACTIVITY ON A PROJECT OR

25. FAILURE OF THE CONTRACTOR TO PERFORM THE PRESCRIBED EROSION CONTROL

PRACTICES SHALL RESULT IN THE IMMEDIATE ISSUANCE OF A STOP-WORK ORDER FOR

SITE MUST HAVE COMPLETED THE LEVEL 1A EROSION EDUCATION & TRAINING COURSE

27. THE APPLICABLE PORTION OF ES&PC PLAN IS TO BE PROVIDED TO EACH SECONDARY PERMITTEE PRIOR TO THE SECONDARY CONDUCTING ANY CONSTRUCTION ACTIVITY AND IN THE EVENT OF ANY CHANGE TO THE PLAN.

28. THE DESIGN PROFESSIONAL WHO PREPARED THE ES&PC PLAN IS TO INSPECT THE INSTALLATION OF BMPS WITHIN 7 DAYS AFTER THE CONSTRUCTION ACTIVITY BEGINS. PROOF OF SITE VISIT SHOULD BE KEPT ON SITE.

29. SEDIMENT STORAGE VOLUME MUST BE IN PLACE PRIOR TO AND DURING ALL LAND DISTURBING ACTIVITIES UNTIL FINAL STABILIZATION OF THE SITE HAS BEEN ACHIEVED.



AND BE CERTIFIED BY GSWCC.

IF YOU DIG GEORGIA.. CALL US FIRST! UTILITIES PROTECTION CENTER IT'S THE LAW



CERTIFICATION NUMBER ______0000077050 ISSUED: 04/29/2016 EXPIRES: 04/29/2019

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DATE: 04/30/2018

EROSION, SEDIMENTATION & POLLUTION CONTROL PLAN CHECKLIST INFRASTRUCTURE CONSTRUCTION PROJECTS	Plan as stated on page 15 of the permit. The following statement and the signature of the design professional must be shown on the ES&PC Plan or under ES&F	When the project requires an approved buffer variance from the GA EPD, an indication shall be shown on the ES&PC Plan. A description of the encroachment activity must be shown on the ES&PC Plan or under ES&PC notes.
SWCD:	notes. "I certify under penalty of law that this Plan was prepared after a site visit to the locations described herein by my or my authorized agent, under my supervision."	Than Tradesh push of the energed mineral address the energy mast be enount of the Estat of that of and of Estat of Notes.
Project Name: STRATFIELD DRIVE Address: City/County: CITY OF BROOKHAVEN Date on Plans: 03/19/2018	C6.50 Y 12 Design professional's certification statement and signature that the permittee's ES&PC Plan provides for an appropriate	hydraulic component must be certified by the design professional."* See part IV. C. on page 19 of the permit. This can be clarified in a narrative and shown under ES&PC notes. Revisions
Name&email of person filling out checklist: HELEN SIMPSON Plan Included	and comprehensive system of BMPs and sampling to meet permit requirements as stated on page 15 of the permit.* The following statement and the signature of the design professional must be shown on the ES&PC Plan or under ES&F	or amendments should be submitted to the Local Issuing Authority for review.
Page # Y/N 1 The emplicable Freeign Cadimentation and Ballytica Control Diag Checklist established by the Commission of January	notes. "I certify that the permittee's Erosion, Sedimentation and Pollution Control Plan provides for an appropriate and	C6.50 The State, except as authorized by a section 404 nermit "*
0.00 Y 1 The applicable Erosion, Sedimentation and Pollution Control Plan Checklist established by the Commission as of January of the year in which the land-disturbing activity was permitted.	comprehensive system of Best Management Practices required by the Georgia Water Quality Control Act and the docur "Manual for Erosion and Sediment Control in Georgia" (Manual) published by the State Soil and Water Conservation	The Plan must include a description of how waste materials, including waste building materials, construction and demolition debris, concrete washout, excavated sediment, etc., will be properly disposed of. Any disposal of solid waste to waters of
(The completed Checklist must be submitted with the ES&PC Plan or the Plan will not be reviewed) 2 Level II certification number issued by the Commission, signature and seal of the certified design professional.	Commission as of January 1 of the year in which the land-disturbing activity was permitted, provides for the sampling of receiving water(s) or the sampling of the storm water outfalls and that the designed system of Best Management Practic	the the State is prohibited unless authorized by a Section 404 permit.
(Signature, seal and Level II number must be on each sheet pertaining to ES&PC Plan or the Plan will not be reviewed)	and sampling methods is expected to meet the requirements contained in the General NPDES Permit No. GAR 100002.	Up 50 I v I 19 Clearly note statement that "The escape of sediment from the site shall be prevented by the installation of erosion and
The Level II certification must be issued to the Design Professional whose signature and seal are on the Plan. 3 The name and phone number of the 24-hour local contact responsible for erosion, sedimentation and pollution controls.	C6.50 Y 13 Design professional certification statement and signature that the permittee's ES&PC Plan provides for representative sampling as stated on page 26 of permit as applicable.*	Must be shown on ES&PC Plan or under ES&PC notes. C6.50 Y 20 Clearly note statement that "Erosion control measures will be maintained at all times. If full implementation of the approved
May be shown on ES&PC Plan sheets and/or ES&PC notes.	The following statement and the signature of the design professional must be shown on the ES&PC Plan or under ES&F notes. "I certify that the permittee's Erosion, Sedimentation and Pollution Control Plan provides for the monitoring of: (a)	plan does not provide for effective erosion control, additional erosion and sediment control measures shall be implemented
4 Provide the name, address and phone number of primary permittee.May be shown on cover sheet, ES&PC Plan or under ES&PC notes.	perennial and intermittent streams and other water bodies shown on the USGS topographic map and all other field verifications.	ed Must be shown on ES&PC Plan or under ES&PC notes.
O.00 Y 5 Note total and disturbed acreage of the project or phase under construction.	perennial and intermittent steams and other water bodies, or (b) where any such specific identified perennial or intermitted stream and other water body is not proposed to be sampled, I have determined in my professional judgment, utilizing the	C6.50 Y 21 Clearly note the statement "Any disturbed area left exposed for a period greater than 14 days shall be stabilized with mulch
Must be shown on ES&PC Plan or under ES&PC notes. 5.00 Y 6 Provide the GPS locations of the beginning and end of the Infrastructure project. Give the Latitude and Longitude in	factors required in the General NPDES Permit No. GAR 100002, that the increase in the turbidity of each specific identification sampled receiving water will be representative of the increase in the turbidity of a specific identified un-sampled receiving.	Must be about an ESSDC Blan or under ESSDC notes
decimal degrees.	water."	C6.50 22 Any construction activity which discharges storm water into an Impaired Stream Segment, or within 1 linear mile upstream
GPS locations of the begining and end of the infrastructure project must be shown on cover sheet and may also be shown on ES&PC Plan sheets and ES&PC notes. It must match the NOI.	C0.00 Y 14 Clearly note the statement that "The design professional who prepared the ES&PC Plan is to inspect the installation of the initial sediment storage requirements, perimeter control BMPs and sediment basins in accordance with part IV.A.5. with	Permit. Include the completed Appendix 1 listing all the BMPs that will be used for those areas of the site which discharge
7 Initial date of the Plan and the dates of any revisions made to the Plan including the entity who requested the revisions. The initial Plan date should be shown on all pages. With each resubmittal, the revision date, and the entity requesting	7 days after installation."* The Plan must include a statement indicating that the primary permittee must retain the design professional who prepare	to the Impaired Stream Segment.* If any storm water associated with construction activities discharges into an Impaired Stream Segment that has been listed
revisions should be shown on cover sheet and each sheet that has been revised.	the Plan, or an alternative professional approved by EPD in writing, to inspect the installation of the intial sediment storage	for the criteria violated, "Bio F" (Impaired Fish Community) and/or "Bio M" (Impaired Macroinvertebrate Community),
5.00 Y 8 Description of the nature of construction activity. Provide a description of the existing site and a description of the proposed project. These must be shown on ES&PC Plan	requirements and perimeter control BMPs within (7) days after installation. Alternatively, for linear infrastructure projects the primary permittee must retain the design professional who prepared the Plan, or alternative design professional	Plan must include at least four (4) of the BMPs listed in Part III.C.2. (a) - (t) of the Permit. The Impaired Stream Segment(s)
or under ES&PC notes.	approved by EPD in writing to inspect (a) the installation of sediment storage requirements and perimeter control BMPs the "initial segment" of the linear infrastructure project and (b) all sediment basins within the entire linear infrastructure p	can be valved an the CAED website
9 Provide vicinity map showing site's relation to surrounding areas. Include designation of specific phase, if necessary. Site location must be delineated showing surrounding area roads and highways. If the project is being done in phases,	within (7) days after the installation. For the purposes of the specific requirements in Part IV.A.5., the disturbed acerage the "initial segment" of a linear infrastructure project must be equal to or greater than 10% of the total estimated disturbed	of C6.50 23 If a TMDL Implementation Plan for sediment has been finalized for the Impaired Stream Segment (identified in item 22
each individual phase must be delineated and labeled. This information is important for Plan Reviewers if a site visit is . needed, or if the site needs to be located on another map.	acreage for the linear infrastructure project but not less than one(1) acre. The design professional shall determine if the	requirements included in the TMDL Implementation Plan.*
6.50 Y 10 Identify the project receiving waters and describe all sensitive adjacent areas including streams, lakes, residential areas,	BMPs have been installed and are being maintained as designed. The design professional shall report the results of the inspection to the primary permittee within (7) days and the permittee must correct all deficiencies within (2) business day	
wetlands, marshlands, etc. which may be affected. The name of the initial receiving water(s) or if unnamed the first named blue line stream indicated on the appropriate	of receipt of the inspection report from the design professional unless weather related site conditions are such that addit time is required.	C5.00 1 24 Billi o for dollated washed of the drifted with or tools, defined in the real of the verifices. Washed of the drifting
USGS Topographic map, and when the discharge is through a municipal separate storm sewer system (MS4), the name	C6.50 Y 15 Clearly note the statement that "Non-exempt activities shall not be conducted within the 25 or 50-foot undisturbed stream	at the construction site is prohibited.* When the project allows the concrete washdown of tools, concrete mixer chutes, hoppers and rear of the vehicles on the
of the local government operating the municipal separate storm sewer system and the name of the receiving water(s) which receives the discharge from the MS4, and the permittee's determination of whether the receiving water(s)	buffers as measured from the point of wrested vegetation or within 25-feet of the coastal marshland buffer as measured from the Jurisdictional Determination Line without first acquiring the necessary variances and permits."	project site, delineate the location of the area provided for washing and provide detail of BMPs that will be used. If the project does not allow the concrete washdown on the project site, note that on the Plan.
supports warm water fisheries or is a trout stream. Describe any neighboring area which could be affected by the post-developed runoff from the site.	See Part IV. EROSION, SEDIMENTATION AND POLLUTION CONTROL PLAN (I) and (II) on pages 15,16 & 17 of the permit and show under ES&PC notes.	C6.50 Y 25 Provide BMPs for the remediation of all petroleum spills and leaks.
6.50 Y 11 Design professional's certification statement and signature that the site was visited prior to development of the ES&PC	N/A 16 Provide a description of any buffer encroachments and indicate whether a buffer variance is required.	The Plan must provide BMPs and guidance for the prevention of spills and leaks of petroleum products from any areas where such products are stored or used as well as guidance for the proper remediation of any spills and leaks that do
is a scale equal to or more detailed than a 1:24000 map showing the locations of the site or the common development. The map must include (a) the location of all perennial and intermittent streams and other water bodies as shown on a USGS topographic map, and all other perennial and intermittent streams and other water bodies located during the mandatory field verification, into which the storm water is discharged and (b) the receiving water and/or outfall sampling locations. When the permittee has chosen to use a USGS topographic map and the receiving water(s) is not shown on the USGS topographic map, the location of the receiving water(s) must be hand-drawn on the USGS topographic map from where the storm water(s) enters the receiving water(s) to the point where the receiving water(s) combines with the first blue line stream shown on the USGS topographic map. 25.00 Y 35 A description of appropriate controls and measures that will be implemented at the construction site including: (1) initial sediment storage requirements and perimeter control BMPs, (2) intermediate grading and drainage BMPs, and (3) final	project site must be noted on the Plan. 41 Delineation of on-site wetlands and all State waters located on and within 200 feet of the project site. ALL STATE WATERS LOCATED ON AND WITHIN 200 FEET OF THE PROJECT SITE MUST BE DELINEATED ON ALL PHASES OF THE PLAN. When a project is located in a jurisdiction with a certified Local Issuing Authority and the LIA must make a determination of State waters that are not delineated on the plan, the Plan review could be delayed for beyond the full forty-five day review time allowed to the LIA, or the full thirty-five day review time allowed to the District if the District is reviewing the plan. For all projects in a jurisdiction where there is no certified Local Issuing Authority regulating that project, EPD is responsible for State waters determinations and there is no time limits for reviewing the Plan. ALL WETLANDS LOCATED WITHIN THE PROJECT SITE ONLY MUST BE DELINEATED. If the Local Issuing Authority requires an undisturbed buffer of wetlands, delineate required buffer.	48 Provide a minimum of 67 cubic yards of sediment storage per acre drained using a temporary sediment basin, retrofitted detention pond, and/or excavated inlet sediment traps for each common drainage location. Sediment storage volume must be in place prior to and during all land disturbance activities until final stabilization of the site has been achieved. A written justification explaining the decision to use equivalent controls when a sediment basin is not attainable must be included in the Plan for each common drainage location in which a sediment basin is not provided. A written justification as to why 67 cubic yards of storage is not attainable must also be given. Worksheets from the Manual must be included for structural BMPs and all calculations used by the design professional to obtain the required sediment storage when using equivalent controls. When discharging from sediment basins and impoundments, permittees are required to utilize outlet structures that withdraw water from the surface, unless infeasible. If outlet structures that withdraw water from the surface are not feasable, a written justification explaining this decision must be included in the plan.
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Initial phase of the Plan must include the required 67 cy per acre sediment storage, construction exit, tree-save fence if applicable and any other BMPs necessary to prevent sediment from leaving the site such as silt fence, inlet protection on existing storm drain structures, diversions, check dams, temporary ground cover, etc. Limits of disturbance for the initial phase are to be only	ALL STATE WATERS LOCATED ON AND WITHIN 200 FEET OF THE PROJECT SITE MUST BE DELINEATED ON ALL PHASES OF THE PLAN, When a project is located in a jurisdiction with a certified Local Issuing Authority and the LIA must make a determination of State waters that are not delineated on the plan, the Plan review could be delayed for beyond the full forty-five day review time allowed to the LIA, or the full thirty-five day review time allowed to the District is reviewing the plan. For all projects in a jurisdiction where there is no certified Local Issuing Authority regulating that project, EPD is responsible for State waters determinations and there is no time limits for reviewing the Plan. ALL WETLANDS LOCATED WITHIN THE PROJECT SITE ONLY MUST BE DELINEATED. If the Local Issuing Authority requires an undisturbed buffer of wetlands, delineate required buffer. C5.00 Y 42 Delineation and acreage of contributing drainage basins on the project site. All exsisting drainage basins on the project site and their acreage must be delineated on the existing conditions and/or on the initial phase of the plan. As the basins are altered or new ones created during intermediate and final phases, the new basins and their acreage must be delineated throughout each phase of the Plan. 43 Delineate on-site drainage and off-site watersheds using USGS 1":2000' topographical sheets. Hydrology study and drainage maps should be separate from the Plan. Maps should include each individual basin	retrofitted detention pond, and/or excavated inlet sediment traps for each common drainage location. Sediment storage volume must be in place prior to and during all land disturbance activities until final stabilization of the site has been achieved. A written justification explaining the decision to use equivalent controls when a sediment basin is not attainable must be included in the Plan for each common drainage location in which a sediment basin is not provided. A written justification as to why 67 cubic yards of storage is not attainable must also be given. Worksheets from the Manual must be included for structural BMPs and all calculations used by the design professional to obtain the required sediment storage when using equivalent controls. When discharging from sediment basins and impoundments, permittees are required to utilize outlet structures that withdraw water from the surface, unless infeasible. If outlet structures that withdraw water from the surface are not feasable, a written justification explaining this decision must be included in the plan. For each common drainage location, a temporary (or permanent) sediment basin (Sd3, Sd4, Rt, or excavated Sd2) providing at least 67 cubic yards of storage per acre drained, or equivalent control measures, shall be provided until final stabilization of the site. The 67cubic yards of storage per acre does not apply to flows from off-site areas and flows from on-site areas that are either undisturbed or have undergone final stabilization where such flows are diverted around both the disturbed area and the sediment basin. Sediment basins may not be appropriate for some common drainage locations and a written justification explaining the decision not to use sediment basins must be included in the Plan. Worksheets from the Manual must be completed and shown on the Plan or attached to the Plan for each temporary sediment basin designed for the
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When the permittee has chosen to use a USGS topographic map and the receiving water(s) is not shown on the USGS topographic map, the location of the receiving water(s) must be hand-drawn on the USGS topographic map from where the storm water(s) enters the receiving water(s) to the point where the receiving water(s) combines with the first blue line stream shown on the USGS topographic map. 25.00 Y 35 A description of appropriate controls and measures that will be implemented at the construction site including: (1) initial sediment storage requirements and perimeter control BMPs, (2) intermediate grading and drainage BMPs, and (3) final BMPs. For construction sites where there will be no mass grading and the initial perimeter control BMPs, intermediate grading and drainage BMPs, and final BMPs are the same, the plan may combine all of the BMPs into a single phase.* The Plan must be shown in a minimum of three phases with each phase shown on a separate sheet. Initial phase of the Plan must include the required 67 cy per acre sediment storage, construction exit, tree-save fence if applicable and any other BMPs necessary to prevent sediment from leaving the site such as silt fence, inlet protection on existing storm drain structures, diversions, check dams, temporary ground cover, etc. Limits of disturbance for the initial phase are to be only the areas needed to install initial BMPs. The intermediate phase should show rough grading and utility construction. BMPs should include initial inlet protection, additional silt fence as needed, any revised sediment storage needed as drainage	ALL STATE WATERS LOCATED ON AND WITHIN 200 FEET OF THE PROJECT SITE MUST BE DELINEATED ON ALL PHASES OF THE PLAN. 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As the basins are altered or new ones created during intermediate and final phases, the new basins and their acreage must be delineated throughout each phase of the Plan. C0.00 Y 43 Delineate on-site drainage and off-site watersheds using USGS 1":2000' topographical sheets. Hydrology study and drainage maps should be separate from the Plan. Maps should include each individual basin draining to, through and from the project site, with each one delineated, labeled and showing its total acreage. C5.00 Y 44 An estimate of the runoff coefficient or peak discharge flow of the site prior to and after construction activities are	retrofitted detention pond, and/or excavated inlet sediment traps for each common drainage location. Sediment storage volume must be in place prior to and during all land disturbance activities until final stabilization of the site has been achieved. 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For construction sites where there will be no mass grading and the initial perimeter control BMPs, intermediate grading and drainage BMPs, and final BMPs are the same, the plan may combine all of the BMPs into a single phase.* The Plan must be shown in a minimum of three phases with each phase shown on a separate sheet. Initial phase of the Plan must include the required 67 or per acre sediment storage, construction exit, tree-save fence if applicable and any other BMPs necessary to prevent sediment from leaving the sits such as stiff ence, intel protection on existing storm drain structures, diversions, check dams, temporary ground cover, etc. Limits of disturbance for the initial phase are to be only the areas needed to install initial BMPs. The intermediate phase brould show rough grading and utility construction. BMPs should include initial inter protection, additional sift fence a sended, any revised sediment storage needed as drainage basins are altered, outlet protection, additional sift fence a sended, any revised sediment storage needed a	41 Delineation of on-site wetlands and all State waters located on and within 200 feet of the project site. AL STATE WATERS LOCATED ON AND WITHIN 200 FEET OF THE PROJECT SITE MUST BE DELINEATED ON ALL PHASES OF THE PLAN, When a project is located in a jurisdiction with a certified Local saving Authority and the LIA must make a determination of State waters that are not delineated on the plan, the Plan review could be delayed for beyond the full forty-five day review time allowed to the District if the District is reviewing the plan. For all projects in a jurisdiction where there is no certified Local saving Authority regulating that project, EPD is responsible for State waters determinations and there is no time limits for reviewing the Pran. ALL WETLANDS LOCATED WITHIN THE PROJECT SITE ONLY MUST BE DELINEATED. If the Local Issuing Authority regulating that project, EPD is responsible for State waters determinations and there is no time limits place and state of the plan. As the beains are altered on rev ones created during intermediate and final phases, the new basins and their acreage must be delineated on the existing conditions and/or on the initial phase of the plan. As the beains are altered or new ones created during intermediate and final phases, the new basins and their acreage must be delineated and final phases, the new basins and their acreage must be delineated on the existing conditions and/or on the limited phase of the plan. As the beains are altered or new ones created during intermediate and final phases, the new basins and their acreage must be delineated throughout each phase of the Plan. CO.00 Y A3 Delineate on-site drainage and off-site watersheds using USCSS 11'-2000' topographical sheets. Hydrology study and from the project site, with each one delineated, labeled and showing its total acreage. Co.00 Y A6 An estimate of the runoff coefficient or peak discharge flow of the site. This can be in the form of a hydrologic study so long as that study is made a part of the Plan and accompa	retroffleted detention pond, and/or excavated inlet sediment traps for each common drainage location. Sediment storage volume must be in place prior to and during all land disturbance activities until final stabilization of the site has been achieved. A written justification explaining the decision to use equivalent controls when a sediment basin is not attainable must be included for structural BMPs and all calculations used by the design professional to obtain the required sediment storage when using equivalent controls. When discharging from sediment basins and impoundments, permittees are required to utilize outlet suctures that withdraw water from the surface, unless intessible. 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occur. This information can be in the form of a separate Spill Prevention/Spill Response document so long as that information accompanies the Plan.

C5.00 Y 26 Description of the measures that will be installed during the construction process to control pollutants in storm water that will occur after construction operations have been completed.* The Plan must contain a description of the measures that will be installed during the construction process to control pollutants in storm water that will occur after construction operations have been completed. These may include storm water detention

and retention structures, use of vegetated swales and natural depressions for flow attenuation or a combination of these practices (sequential systems). The Plan must also include a technical explanation of the basis used to select these practices where flows will exceed pre-development levels. The Plan must indicate that velocity dissipation devices will be placed at discharge locations and along the length of any outflow channel in order to provide a non-erosive flow so that the natural physical and biological characteristics and functions of the water course are maintained and protected. The installation of these devices may be subject to Section 404 of the Federal Clean Water Act. Note: The permittee is only responsible for the installation and maintenance of storm water management devices prior to

final stabilization of the site and not the operation and maintenance of such structures after construction activities have been

27 Description of the practices that will be used to reduce the pollutants in storm water discharges.* The Plan must identify all potential sources of storm water pollution expected to be present on the site and provide a

narrative explaining how the pollutants will be minimized in the storm water discharges. 28 Description and chart or timeline of the intended sequence of major activities which disturb soils for the major portions of the site (i.e., initial perimeter and sediment storage BMPs, clearing and grubbing activities, excavation activities, utility

activities, temporary and final stabilization). Activity schedule must be site specific. The narrative description and timeline for each phase of construction may be shown on ES&PC Plan sheet or under ES&PC notes.

29 Provide complete requirements of inspections and record keeping by the primary permittee.* The Plan must include all of the inspections and record keeping requirements of the primary permittee as stated in Part IV.D.4.a. on page 23 of the Permit. The complete inspection and record keeping requirements shall be shown on the Plan under ES&PS notes.

C6.50 Y 30 Provide complete requirements of sampling frequency and reporting of sampling results.* See page 26 Sampling Frequency and page 25 section E. Reporting in the permit. Complete sampling frequency and reporting requirements are to be shown on the Plan under ES&PC notes.

31 Provide complete details for retention of records as per Part IV.F. of the permit.* See page 28 section F. Retention of Records in the permit. Complete details of retention of records are to be shown on the

Plan under ES&PC notes. 32 Description of analytical methods to be used to collect and analyze the samples from each location.* This narrative must be shown on the Plan under ES&PC notes and shall include quality control/assurance procedures

and precise sampling methodology for each sampling location. 33 Appendix B rationale for NTU values at all outfall sampling points where applicable.* When the permittee has determined that some or all outfalls will be monitored, a rationale must be shown on the Plan under ES&PC notes which includes the NTU limit(s) selected from Appendix B. This rationale must include the size of the

construction site, the calculation of the size of the surface water drainage area, and the type of receiving water(s) (i.e., trout stream or supporting warm water fisheries). 34 Delineate all sampling locations, perennial and intermittent streams and other water bodies into which storm water is

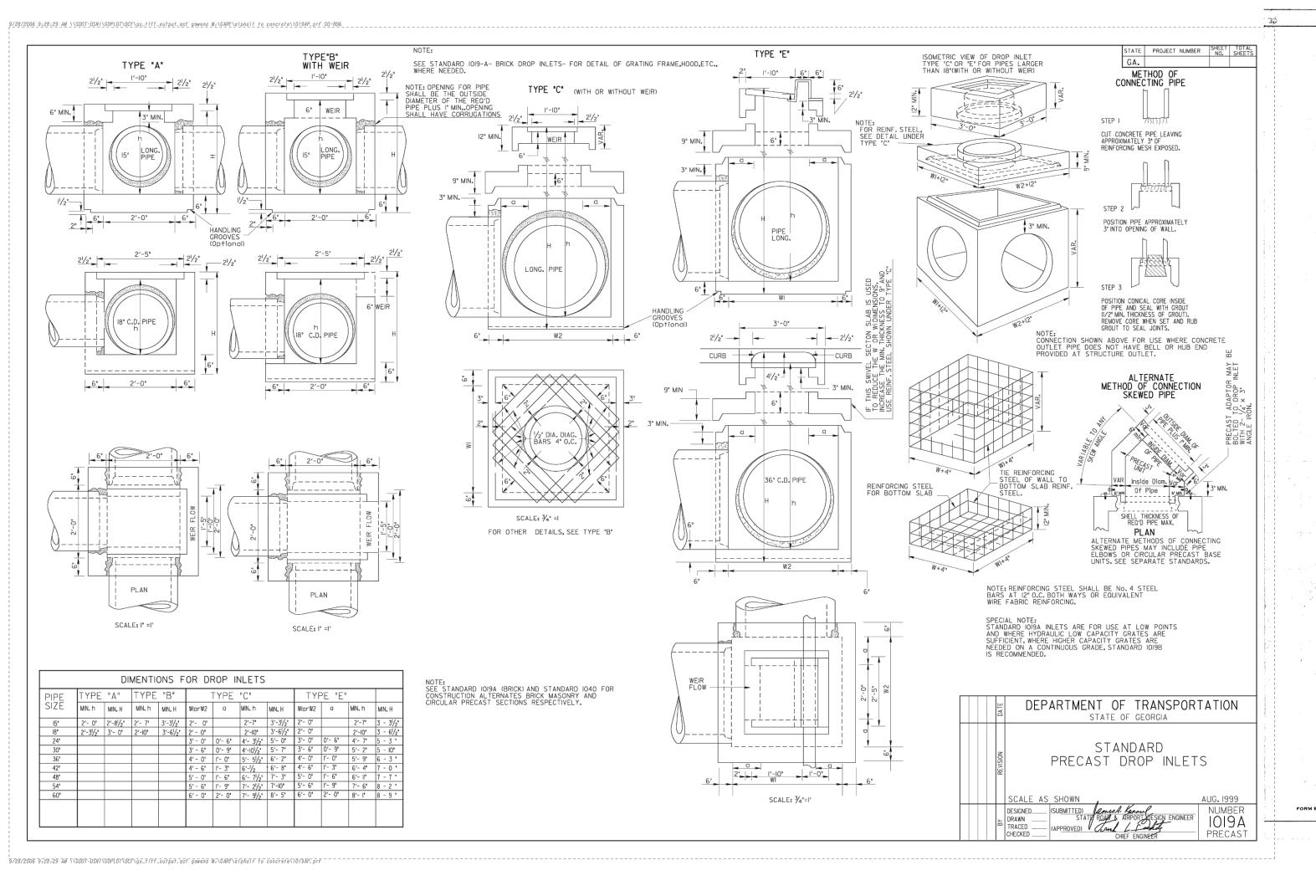
The Plan shall include a USGS topographic map, a topographic map or a drawing (referred to as a topographic map) that

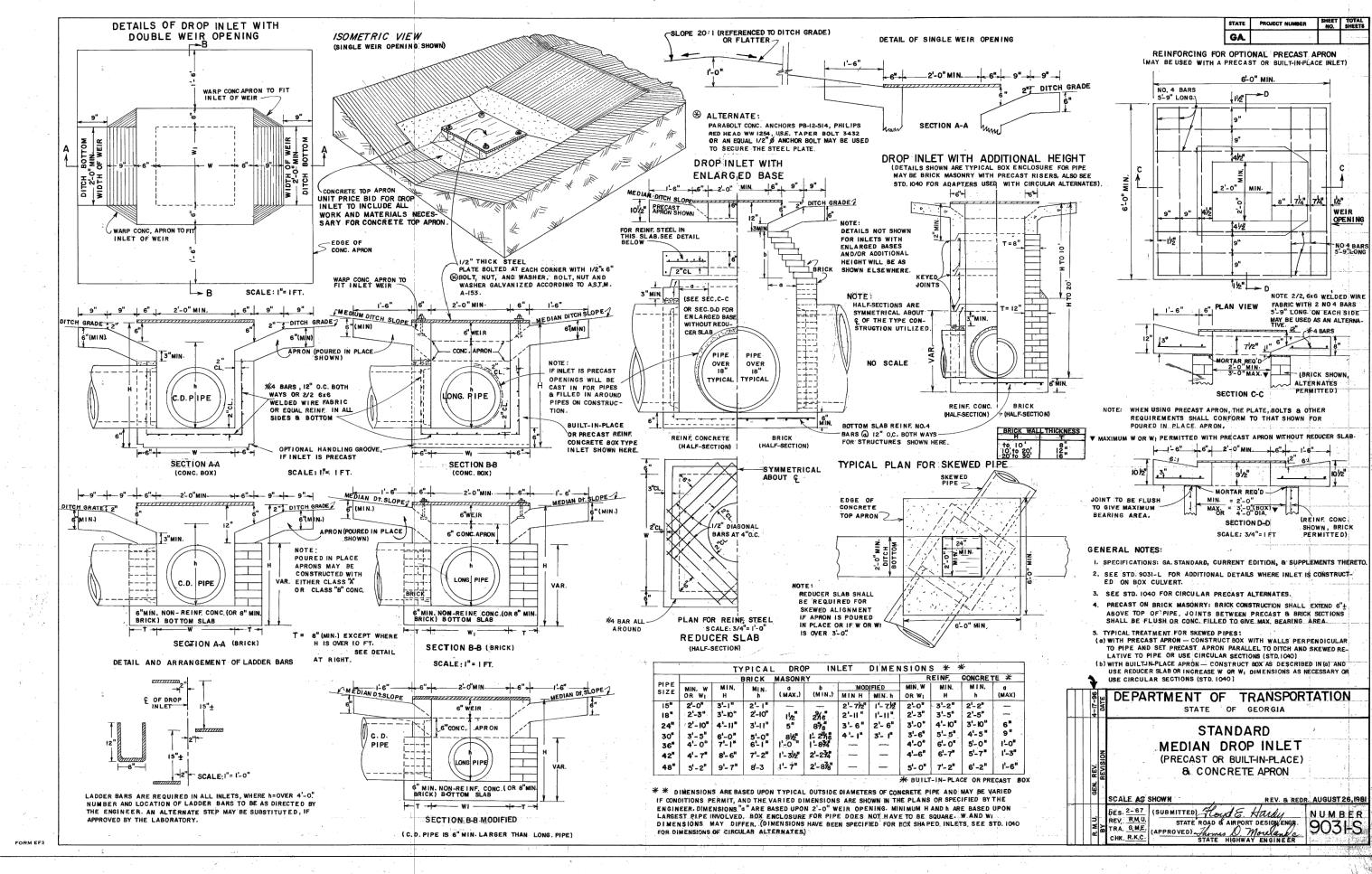


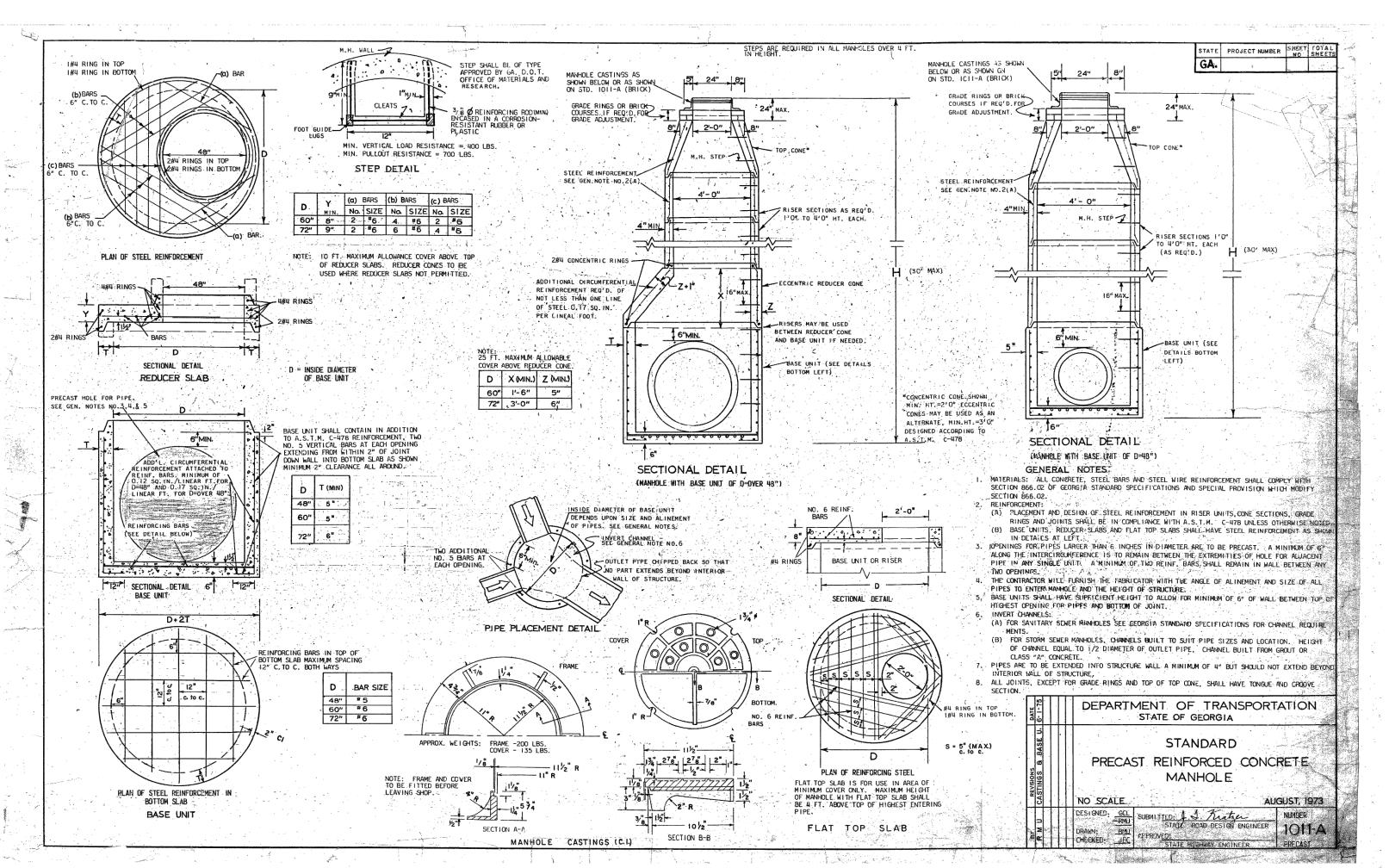
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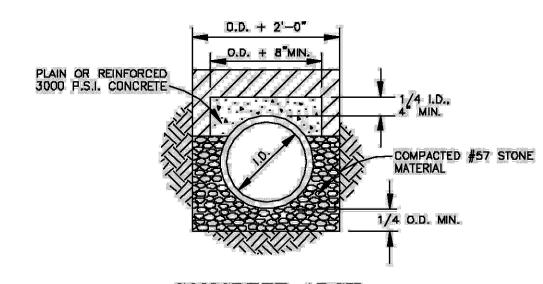
IF YOU DIG GEORGIA... CALL US FIRST! UTILITIES PROTECTION CENTER IT'S THE LAW

Know what's below. Call before you dig

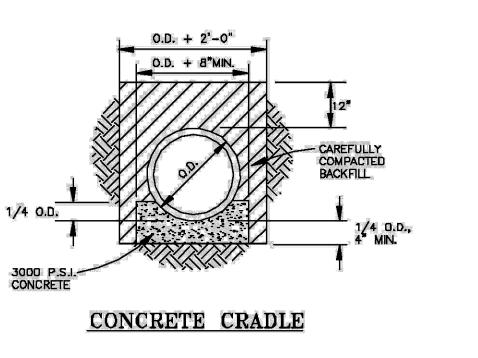












TRATFIELD DRIVE DRAINAGE IMPROVEMENTS - PHASE 1

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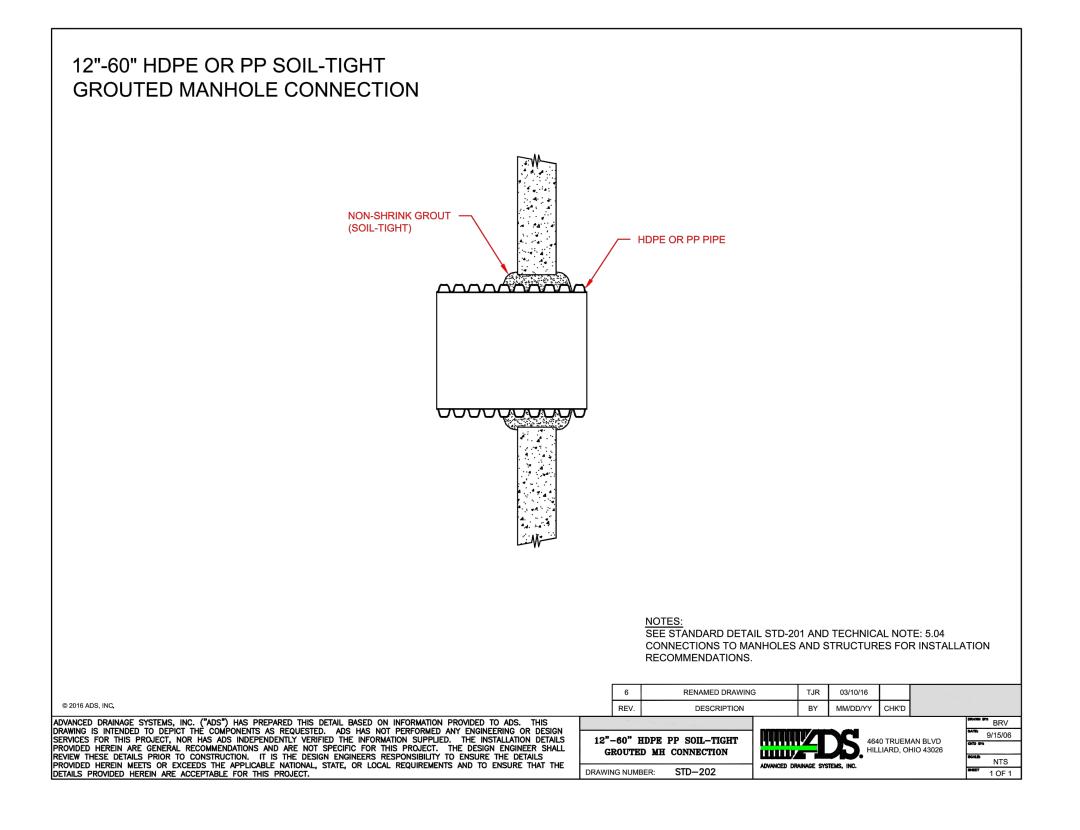
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ATLANTA, GEORGIA 30328
TEL.: 770-857-8400
FAX: 770-857-8401

STORM DETAILS

STORM DETAILS

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ADS. Inc. Drainage Handbook

Specifications ♦ 1-16

ADS HP STORM 12"- 60" PIPE SPECIFICATION

This specification describes 12- through 60-inch (300 to 1500 mm) ADS HP Storm pipe for use in gravity-flow storm drainage applications.

Pipe Requirements

ADS HP Storm pipe shall have a smooth interior and annular exterior corrugations. 12- through 60-inch (300 to 1500 mm) pipe shall meet ASTM F2881 or AASHTO M330

Manning's "n" value for use in design shall be 0.012

Joint Performance

Pipe shall be joined using a bell & spigot joint meeting the requirements of ASTM F2881 or AASHTO M330. The joint shall be watertight according to the requirements of ASTM D3212. Gaskets shall meet the requirements of ASTM F477. Gasket shall be installed by the pipe manufacturer and covered with a removable, protective wrap to ensure the gasket is free from debris. A joint lubricant available from the manufacturer shall be used on the gasket and bell during assembly. 12- through 60-inch (300 to 1500 mm) diameters shall have an exterior bell wrap installed by the manufacturer.

Fittings shall conform to ASTM F2881 or AASHTO M330. Bell and spigot connections shall utilize a welded or integral bell and valley or inline gaskets meeting the watertight joint performance requirements of ASTM

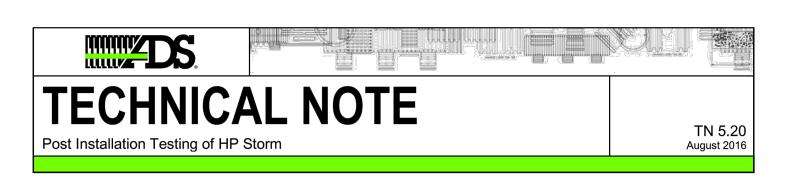
Field Pipe and Joint Performance To assure watertightness, field performance verification may be accomplished by testing in accordance with ASTM F1417 or ASTM F2487. Appropriate safety precautions must be used when field-testing any pipe material. Contact the manufacturer for recommended leakage rates.

Material Properties Polypropylene compound for pipe and fitting production shall be impact modified copolymer meeting the material requirements of ASTM F2881, Section 5 and AASHTO M330, Section 6.1.

Installation shall be in accordance with ASTM D2321 and ADS recommended installation guidelines, with the exception that minimum cover in traffic areas for 12- through 48-inch (300 to 1200 mm) diameters shall be one foot (0.3 m) and for 60-inch (1500 mm) diameter the minimum cover shall be 2 ft. (0.6 m) in single run applications. Backfill for minimum cover situations shall consist of Class 1 (compacted), Class 2 (minimum 90% SPD), or Class 3 (minimum 95%) material. Maximum fill heights depend on embedment material and compaction level; please refer to Technical Note 2.04. Contact your local ADS representative or visit our website at www.ads-pipe.com for a copy of the latest installation guidelines.

Pipe Dimensions Nominal Pipe I.D.	12	15	18	24	30	36	42	48	60
in (mm)	(300)	(375)	(450)	(600)	(750)	(900)	(1050)	(1200)	(1500)
Average Pipe I.D.	12.2	15.1	18.2	24.1	30.2	36.0	42.0	47.9	59.9
in (mm)	(310)	(384)	(462)	(612)	(767)	(914)	(1067)	(1217)	(1521)
Average Pipe O.D.	14.5	17.7	21.4	28.0	35.5	41.5	47.4	54.1	67.1
in (mm)	(368)	(450)	(544)	(711)	(902)	(1054)	(1204)	(1374)	(1704)
Minimum Pipe Stiffness *	75	60	56	50	46	40	35	35	30
@ 5% Deflection #/in./in. (kN/m ²)	(517)	(414)	(386)	(345)	(317)	(276)	(241)	(241)	(207)
Minimum pipe stiffness values listed; c	ontact a repr	esentative fo	r average val	ues.					

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Introduction

Storm sewer is often tested after or during installation to ensure a sound installation was accomplished. Types of post installation field testing include deflection testing and joint testing. Specific testing required for the project will be found in the project specifications. This technical note is not meant to supersede any project specification, but should be used in conjunction with the project specification and national testing standards as it relates specifically to HP Storm pipe.

Deflection Testing

An important feature of any flexible pipe is its ability to deflect, or oval, under load without structural distress. Deflection allows the load to be transferred from the pipe to the surrounding backfill. The result is flexible pipe can withstand very high loads as a relatively light structure. Flexible pipe – including HP Storm – must deflect in order to mobilize the strength of the surrounding backfill.

According to current thermoplastic design procedures, deflection is defined as a service limit. The designer, considering all site conditions, will set this service limit in order to perform a proper design evaluation. Deflection in excess of this service limit does not necessarily result in strength limits being exceeded, i.e. system failure. For more information on service and strength limit states, see the Structures section of the Drainage Handbook. HP Storm can be expected to perform satisfactorily in most applications with 5% or 7.5% deflection and so it is typical of designers to choose a service limit in this range.

When testing for allowable deflection limits, the minimum inside diameter should be used when establishing mandrel sizing. The minimum inside diameter accounts for the allowable manufacturing tolerances. Table 1 lists the inside diameters that result from 5% and 7.5% deflection from the minimum inside diameter. Values listed in Table 1 should be used for sizing mandrels for deflection testing. Mandrels may be obtained from a variety of commercial suppliers.

Table 1 HP Storm Recommended Mandrel Settings

Pipe Type	Pipe Diameter	Minimum Inside Diameter*	Inside Diameter with 5% Deflection	Inside Diameter with 7.5% Deflection
	12	11.88	11.29	10.99
	15	14.78	14.11	13.74
_	18	17.82	16.93	16.48
Val	24	23.76	22.57	21.98
Dual Wall	30	29.70	28.22	27.47
Ωű	36	35.64	33.86	32.97
_	42	41.58	39.50	38.46
	48	47.52	45.14	43.96
	60	59.40	56.43	54.95

It is important to understand that mandrel testing is a go/no-go test. If any line were to not pass a mandrel, it is important to ascertain the cause. Obstructions in the line, not associated with deflection, may influence the test. Visual inspection is recommended in the event of a no-go result.

review allowable minimum diameter

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Joint Testing

Joint testing is an important part of any gravity sewer system, both in testing for infiltration and exfiltration. Infiltration aids to estimate the amount of sewer water that will be conveyed to, and ultimately treated by, the waste water treatment plant. Exfiltration aids to estimate the loss of sewage water into the surrounding soil. The two primary ways of testing sewer pipe joints for infiltration and/or exfiltration is using air or water to create a constant pressure within the system.

Exfiltration Testing with Air

Air is a compressible gas and so it is extremely important one adheres to the appropriate safety regulations outlined in OSHA and project specifications. There are two primary national testing standards that may be applied to joint testing HP Storm: ASTM F1417 Standard Test Method for Installation Acceptance of Plastic Gravity Sewer Lines Using Low-Pressure Air, and ASTM F3058 Preliminary Field Testing of Thermoplastic Pipe Joints for Gravity Flow (Non-Pressure) Sewer Lines. When either standard is specified by the project plans, one should review the standards carefully and follow the testing procedure and safety precautions outlined. The below commentary on the ASTM testing procedures should be considered a summary and does not replace the testing procedures outlined in their respective specifications.

ASTM F1417 entails testing a run of pipe from one manhole to the next adjacent manhole. Inflatable plugs are positioned into the manholes and secured. Air is introduced into the pipe line and gradually builds pressure. Once the line has been pressurized and is stable at 4.0-psi, the pressure is decreased to 3.5-psi at which time the line must not lose more than 0.5- or 1.0-psi (whichever is specified by the design engineer) in the specified amount of time. Table 2 below summarizes the minimum time that must be reached for less than 0.5- or 1.0-psi of pressure drop, depending on the diameter and length of pipe being tested.

Time to Pressure Drop for HP Storm (per ASTM F1417)

Pipe	Pressure	Minimum Test Time	Length for Minimum	Longer	Time for Length Shown, (min:sec)							
Diameter	Drop (psi)	(min:sec)	Time, (ft)	Lengths, (sec)	100 ft	150 ft	200 ft	250 ft	300 ft	350 ft	400 ft	450 ft
12	0.5	5:40	199	1.709 L	5:40	5:40	5:42	7:08	8:33	9:58	11:24	12:50
12	1.0	11:20	199	3.418 L	11:20	11:20	11:24	14:15	17:05	19:56	22:47	25:38
15	0.5	7:05	159	2.671 L	7:05	7:05	8:54	11:08	13:21	15:35	17:48	20:02
15	1.0	14:10	159	5.342 L	14:10	14:10	17:48	22:15	26:42	31:09	35:36	40:04
18	0.5	8:30	133	3.846 L	8:30	9:37	12:49	16:01	19:14	22:26	25:38	28:51
10	1.0	17:00	133	7.692 L	17:00	19:13	25:38	32:03	38:27	44:52	51:16	57:41
24	0.5	11:20	99	6.837 L	11:24	17:57	22:48	28:30	34:11	39:53	45:35	51:17
24	1.0	22:40	99	13.764 L	22:47	34:11	43:34	56:58	68:22	79:46	91:10	102:33
30	0.5	14:10	80	10.683 L	17:48	26:43	35:37	44:31	53:25	62:19	71:13	80:07
30	1.0	28:20	00	21.366 L	35:37	53:25	71:13	89:02	106:50	124:38	142:26	160:15

Data taken from ASTM F 1417¹ and Uni-Bell, Uni-B-6-98³. It may not be necessary to hold the test for the entire time period listed above when it is evident that the rate of air loss is zero or less than the allowable pressure drop and authorized by the approving authority¹.

When the pipe is large enough to be physically accessed, it may be desirable to test individual joints for safety reasons. In these cases, one may consider joint testing in accordance with ASTM F3058, also known as a joint isolation test. ADS recommends a joint isolation test, in lieu of a full line test, for testing pipe diameters 36" and larger for safety reasons. This test is typically done with air, though water may also be used, and involves the use of special testing equipment. The equipment consists of two inflatable bladders, placed on each side of the joint, creating an open center cavity between them. The bladders are inflated and then the center cavity is pressurized to 3.5 psi. The joint passes the test if the pressure is held for 5 seconds without dropping more than 1.0-psi. For all practical purposes, this is a go/nogo test. Final acceptance of the pipeline per this testing method shall be at the discretion of the Design Engineer. One

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advantage of this type of test is the ability for the installer to quickly test the joint immediately after installation, allowing for any corrective measures to be taken early on in the project.

Infiltration/Exfiltration with Water

Testing gravity sewer joints via water infiltration or exfiltration is a common practice. For HP Storm, this testing should be conducted in accordance with ASTM F2487 Standard Practice for Infiltration and Exfiltration Acceptance Testing of Installed Corrugated High Density Polyethylene Pipelines. These standards entail first observing the ground water conditions and, if applicable, measuring the infiltration rate of the ground water through the joints. If ground water is not applicable, then the line is filled with water and the leakage is observed through exfiltration.

Manholes shall be tested separately and independently of the pipe line to the requirements established in the project specifications. When water level is measured in the manhole for the exfiltration test, the leakage associated with the manhole shall be subtracted from the overall leakage of the test section to establish a pass or fail grade for the pipe.

Allowable Leakage

The allowable leakage rate for HP Storm is 100 gallons/in-dia/mi-pipe/day for both infiltration and exfiltration when done in accordance with ASTM F2487.

Conclusion

ADS HP Storm is intended for gravity flow storm sewer applications and may be tested for deflection and joint tightness as discussed in this technical document. It is important to note that the testing procedures are no different than for other storm sewer products currently being used in the market. This document does not purport to address the safety concerns associated with testing HP Storm. Any questions associated with testing HP Storm can be directed to your local representative. References

- 1. ASTM F1417, Standard Test Method for Installation Acceptance of Plastic Gravity Sewer Lines Using Low-Pressure Air, ASTM, 2005
- 2. F3058, Preliminary Field Testing of Thermoplastic Pipe Joints for Gravity Flow (non-Pressure) Sewer Lines, ASTM, 2016. 3. Uni-B-6-98, Recommended Practice for Low-Pressure Air Testing of Installed Sewer Pipe, Uni-Bell PVC Pipe
- Association, 1998 4. ASTM F2487, Standard Practice for Infiltration and Exfiltration Acceptance Testing of Installed Corrugated High
- Density Polyethylene Pipelines, ASTM, 2006
- 5. ASTM F2881, Standard Specification for 12 to 60 in. (300 to 1500 mm) Polypropylene (PP) Dual Wall Pipe and Fittings for Non-Pressure Storm Sewer Applications, ASTM, 2011

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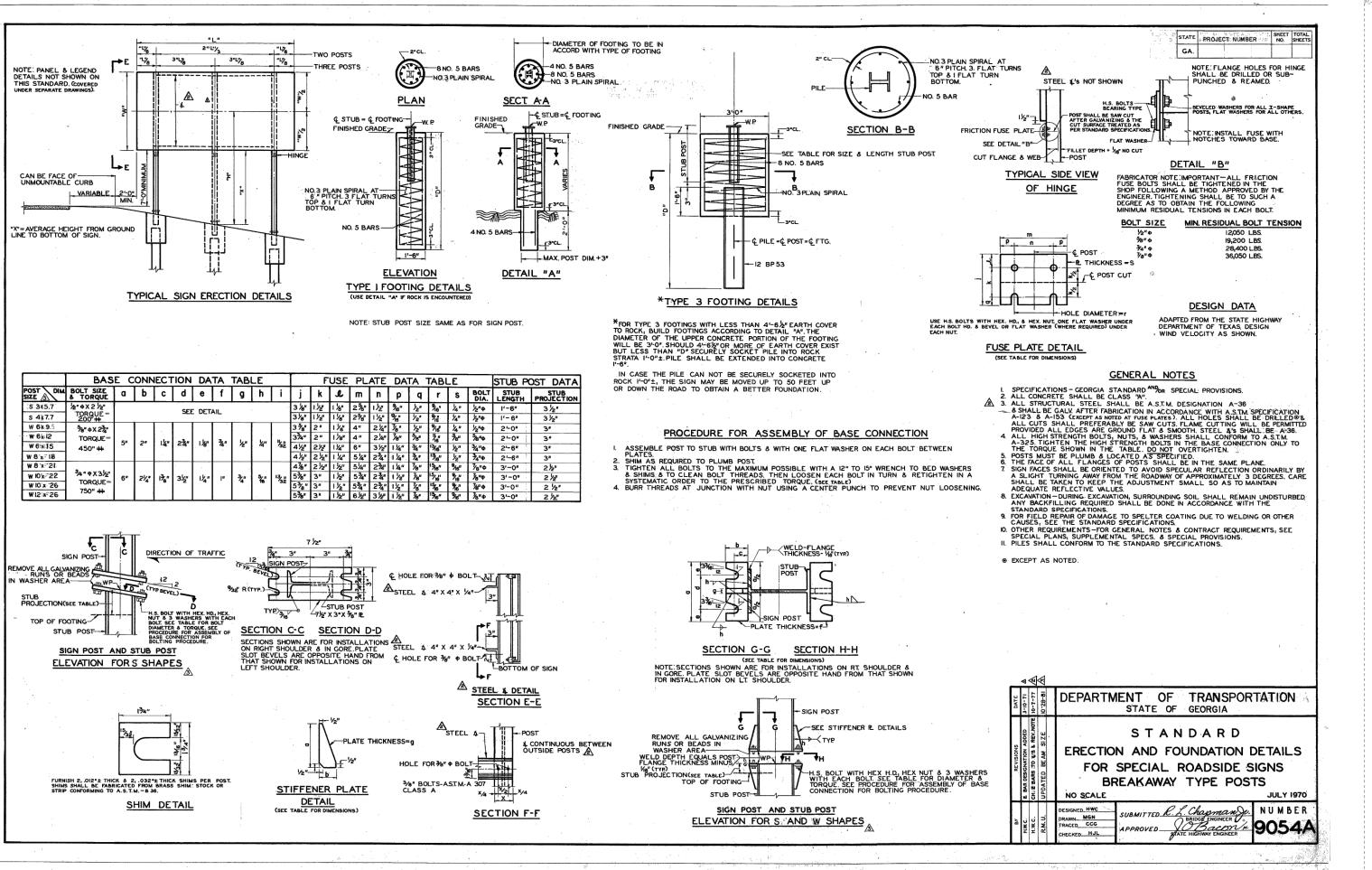
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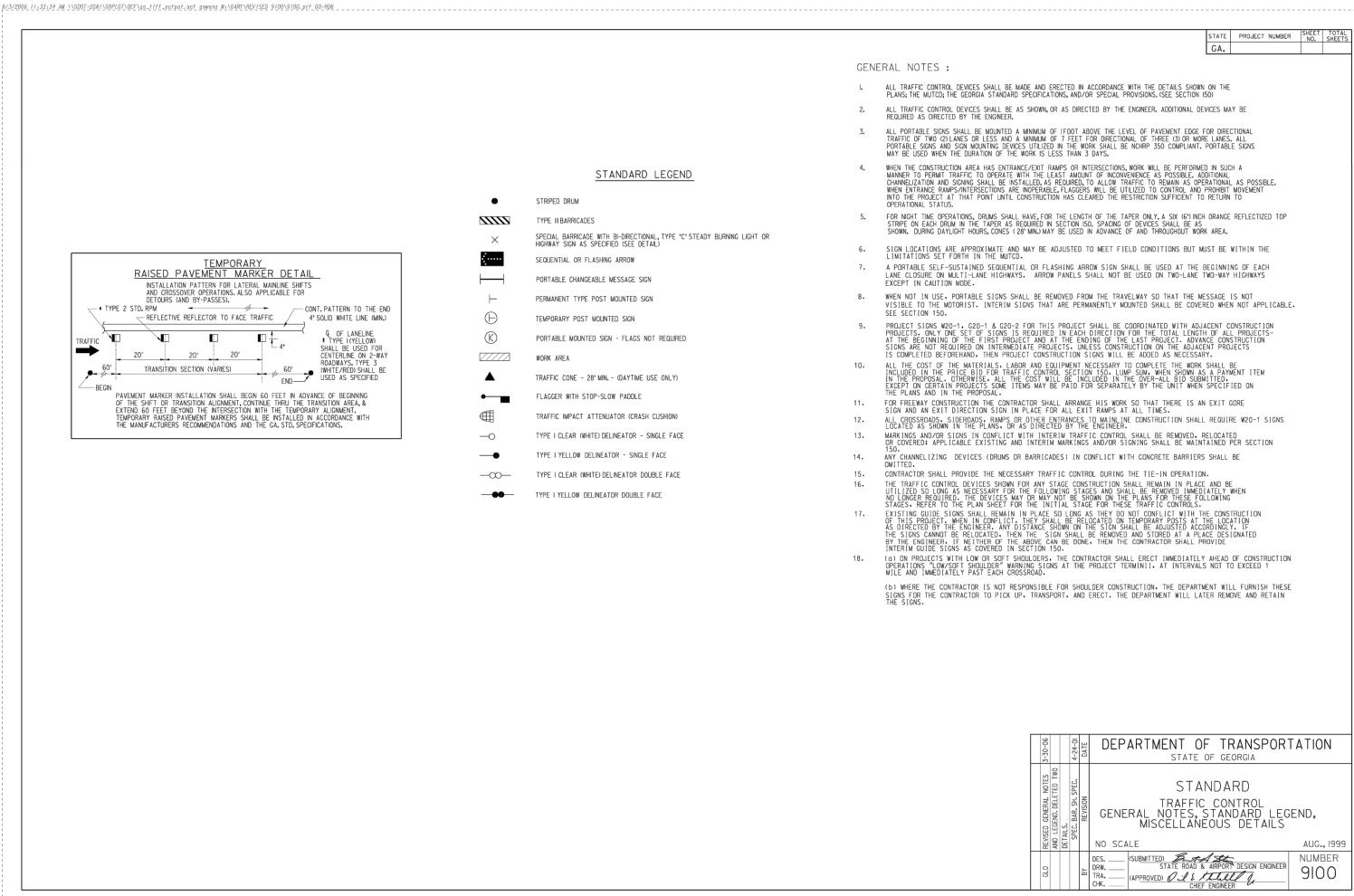
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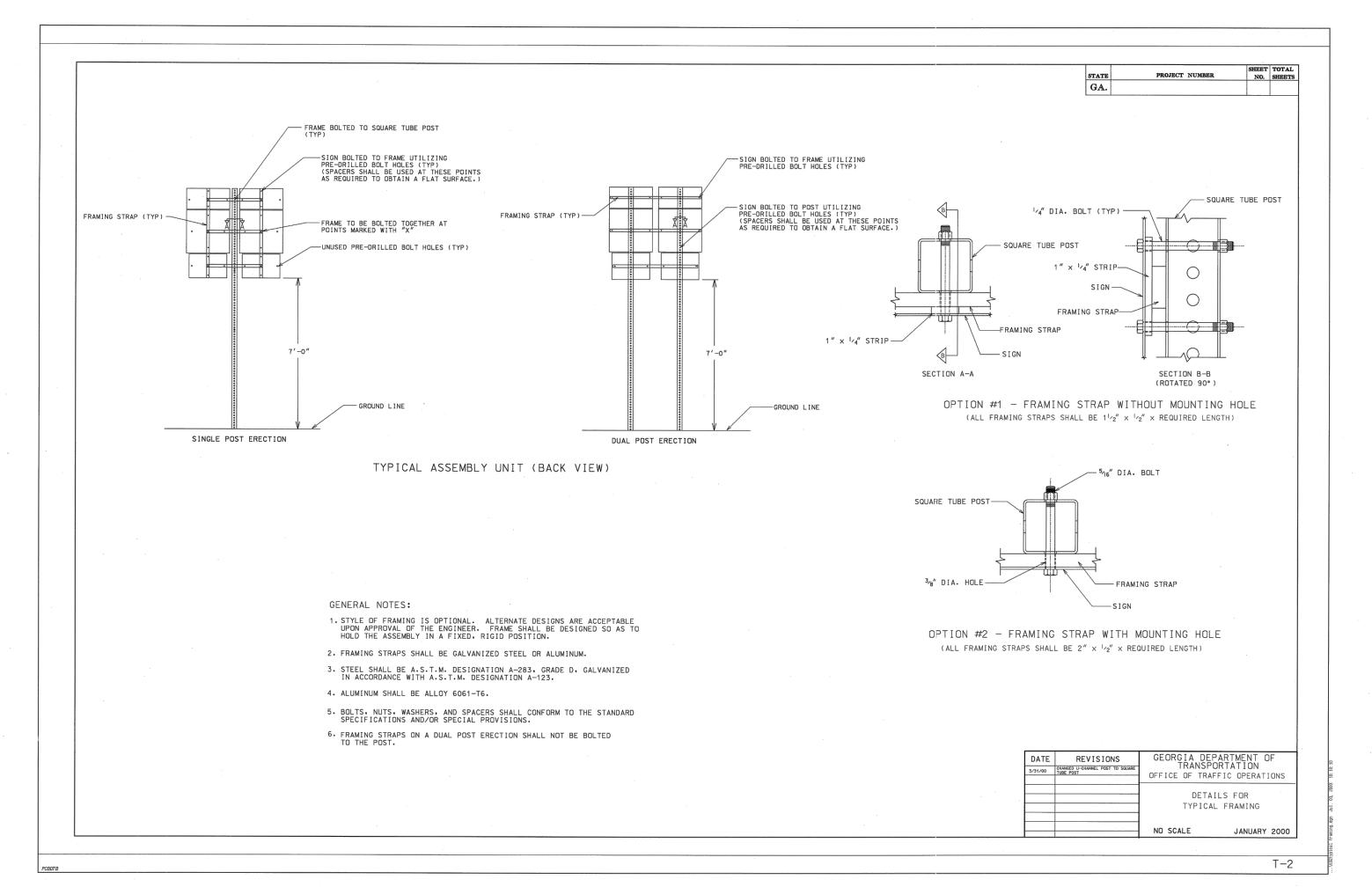
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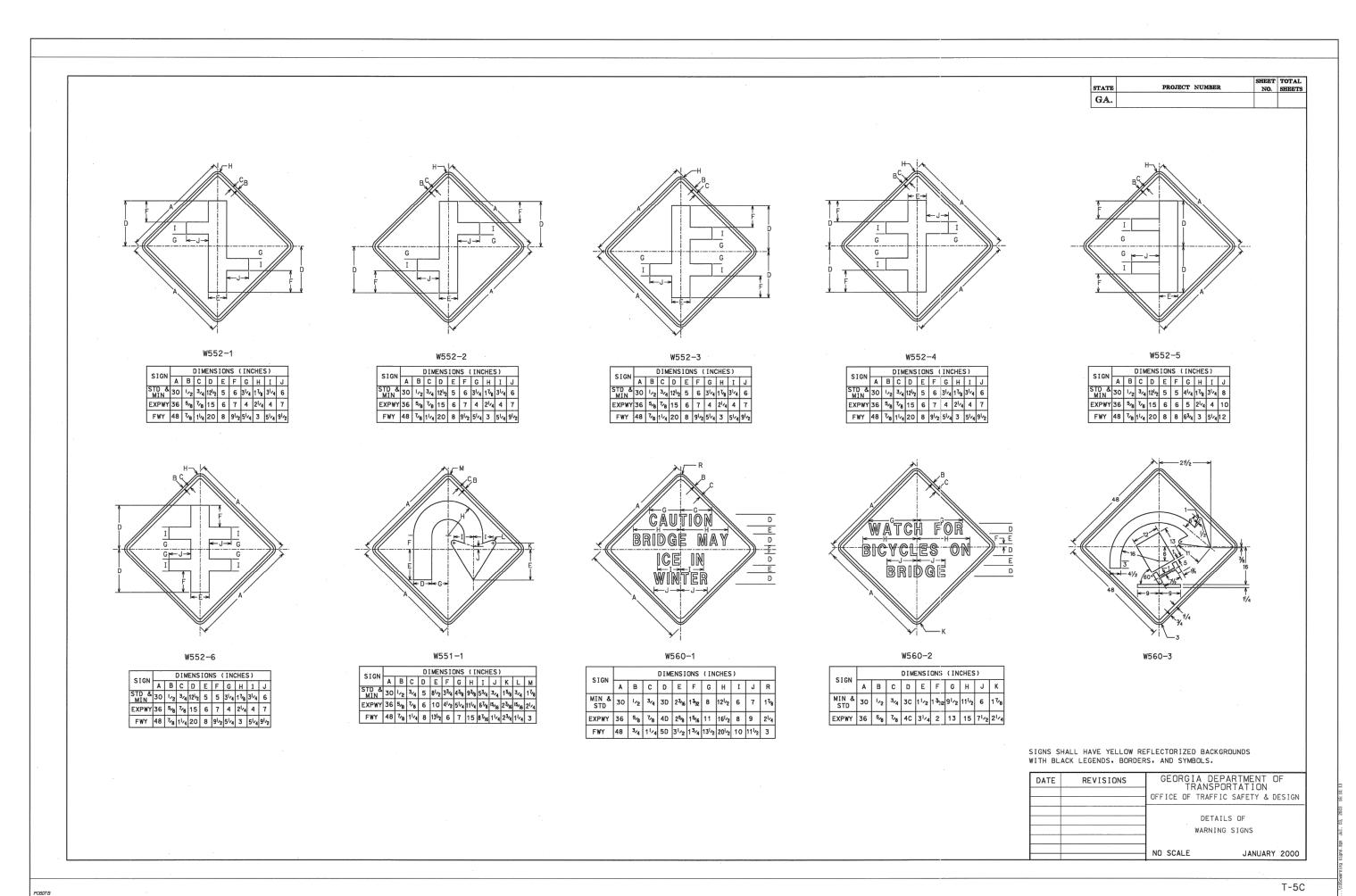
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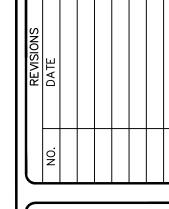




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AINAGE HASE 1

TRATFIELD DRIVE DRAINAGIMACIMAN - DECATED IN 20th DISTRICT

No. 040944
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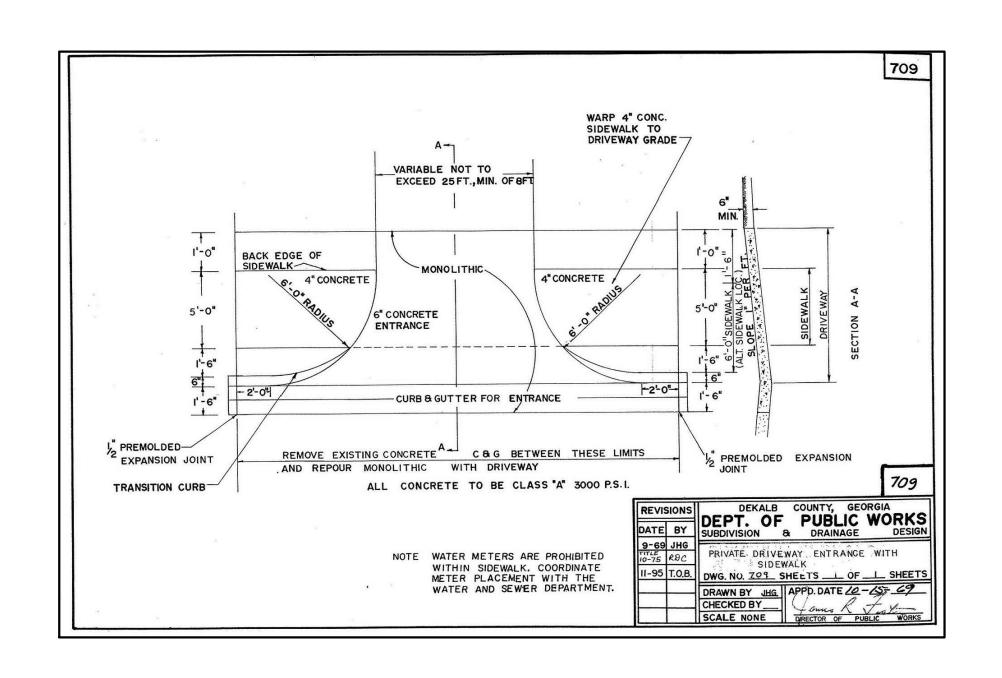
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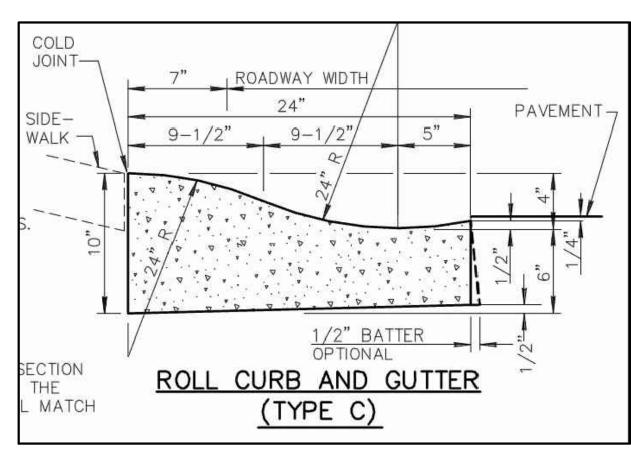
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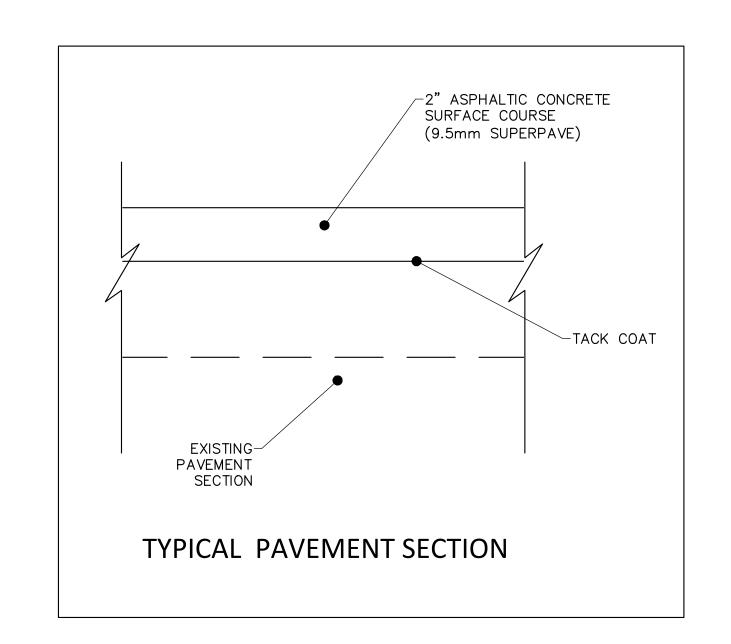
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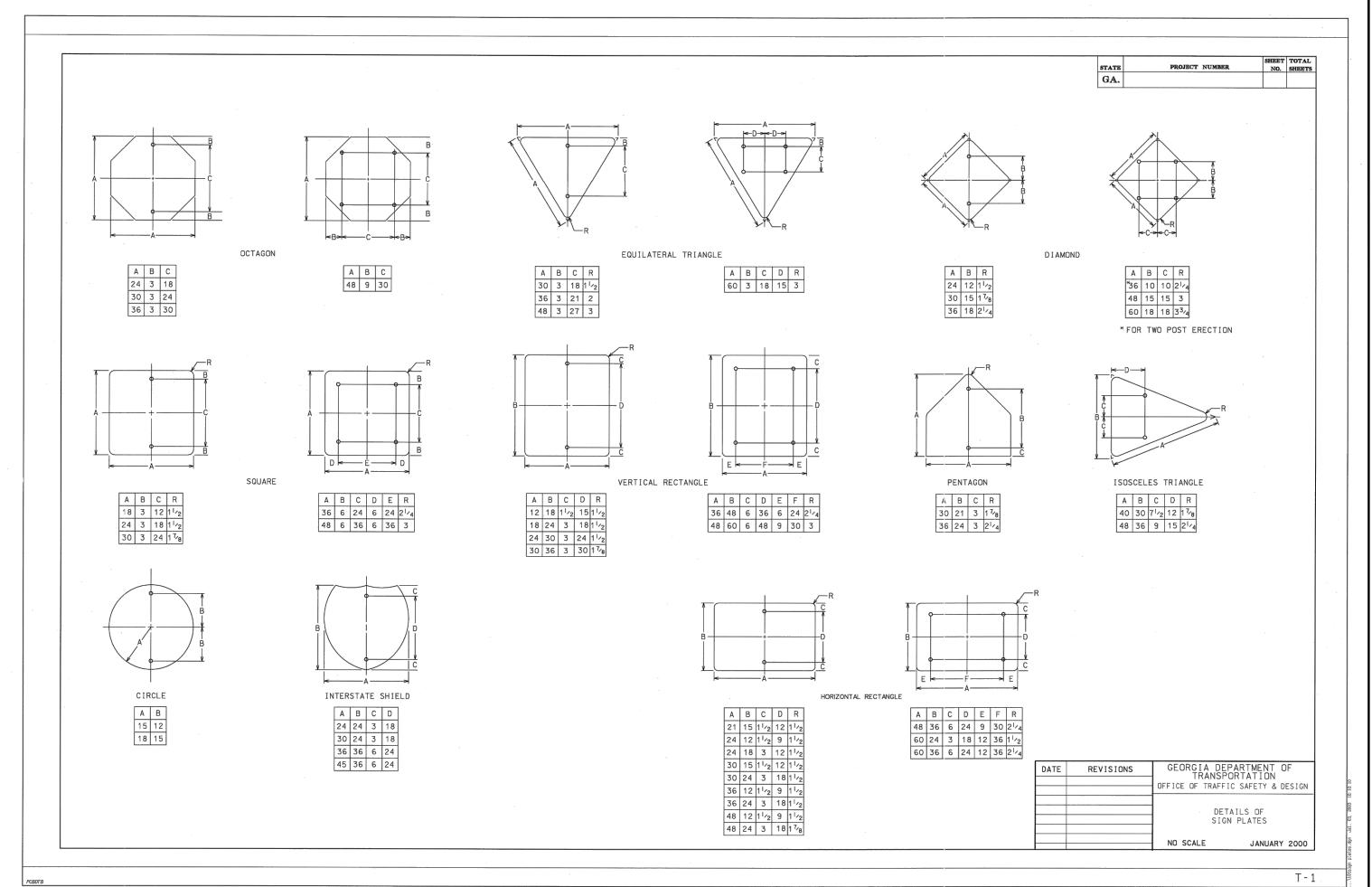
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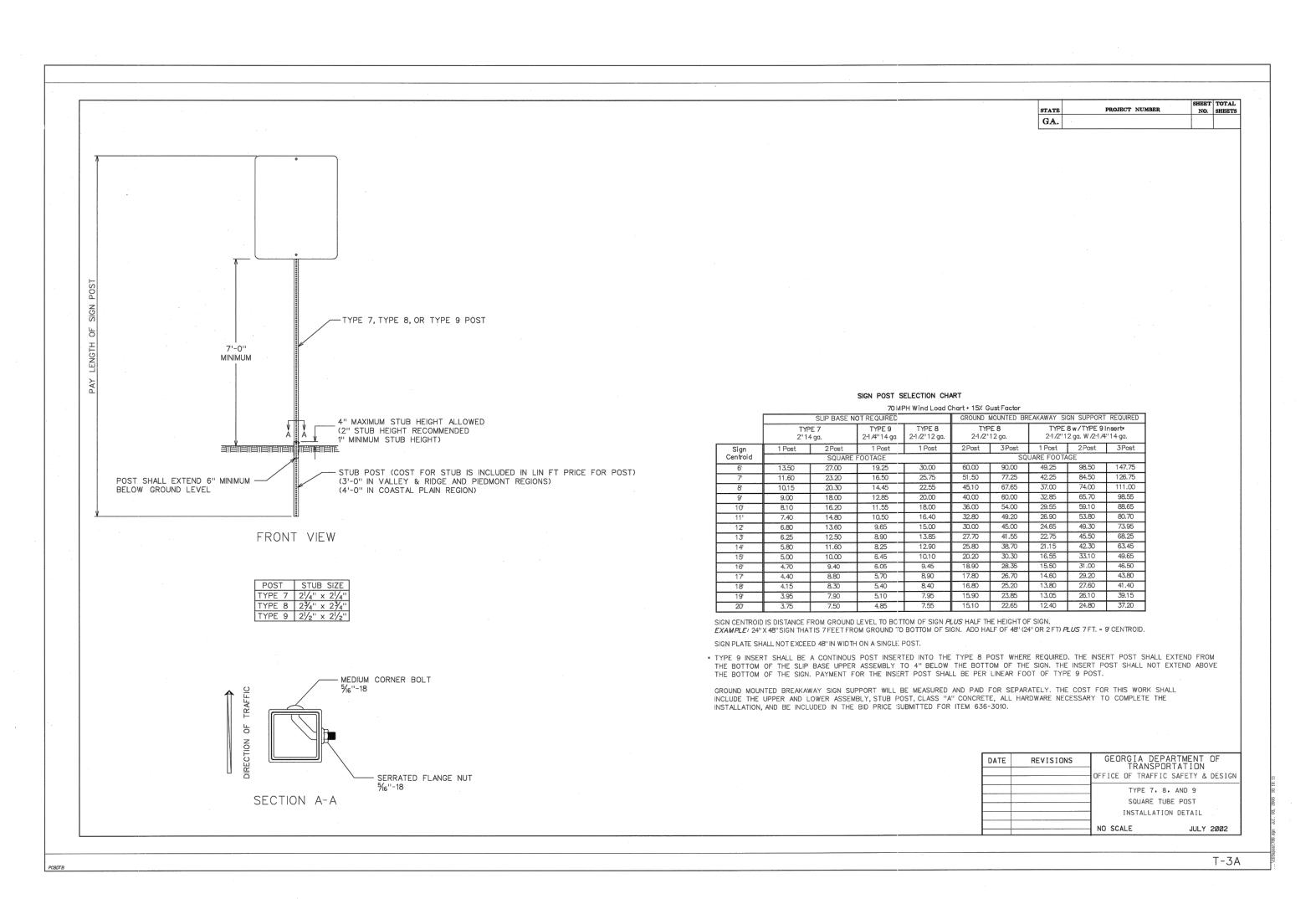


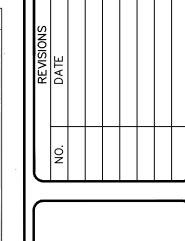


CURB SUBBASE TO EXTEND 1—FOOT PAST THE OUTSIDE EDGE OF THE CURB.









STRATFIELD DRIVE DRAINAGE IMPROVEMENTS - PHASE 1

PROFESSIONAL

THE ENGINEER COR

L. SIMPS

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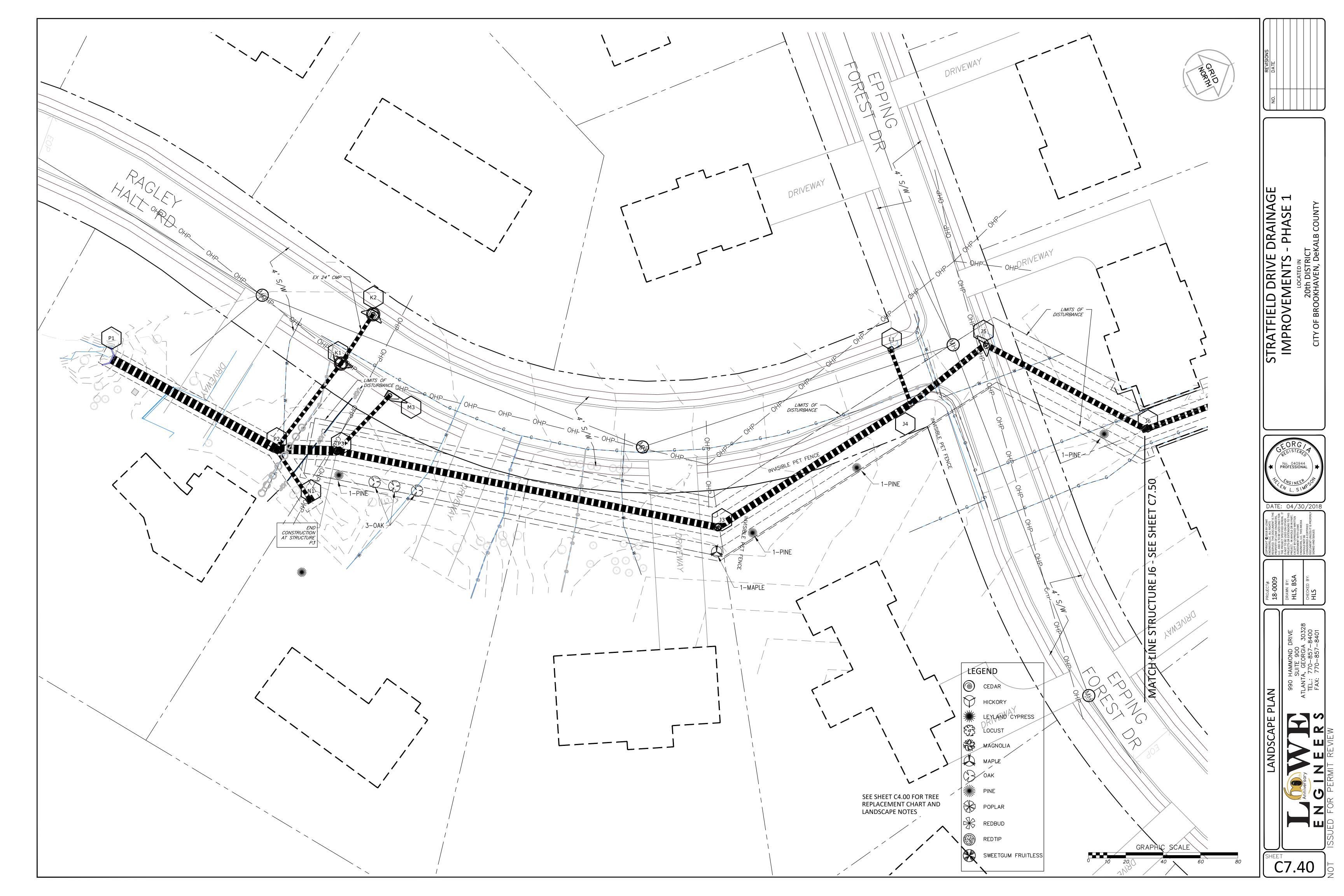
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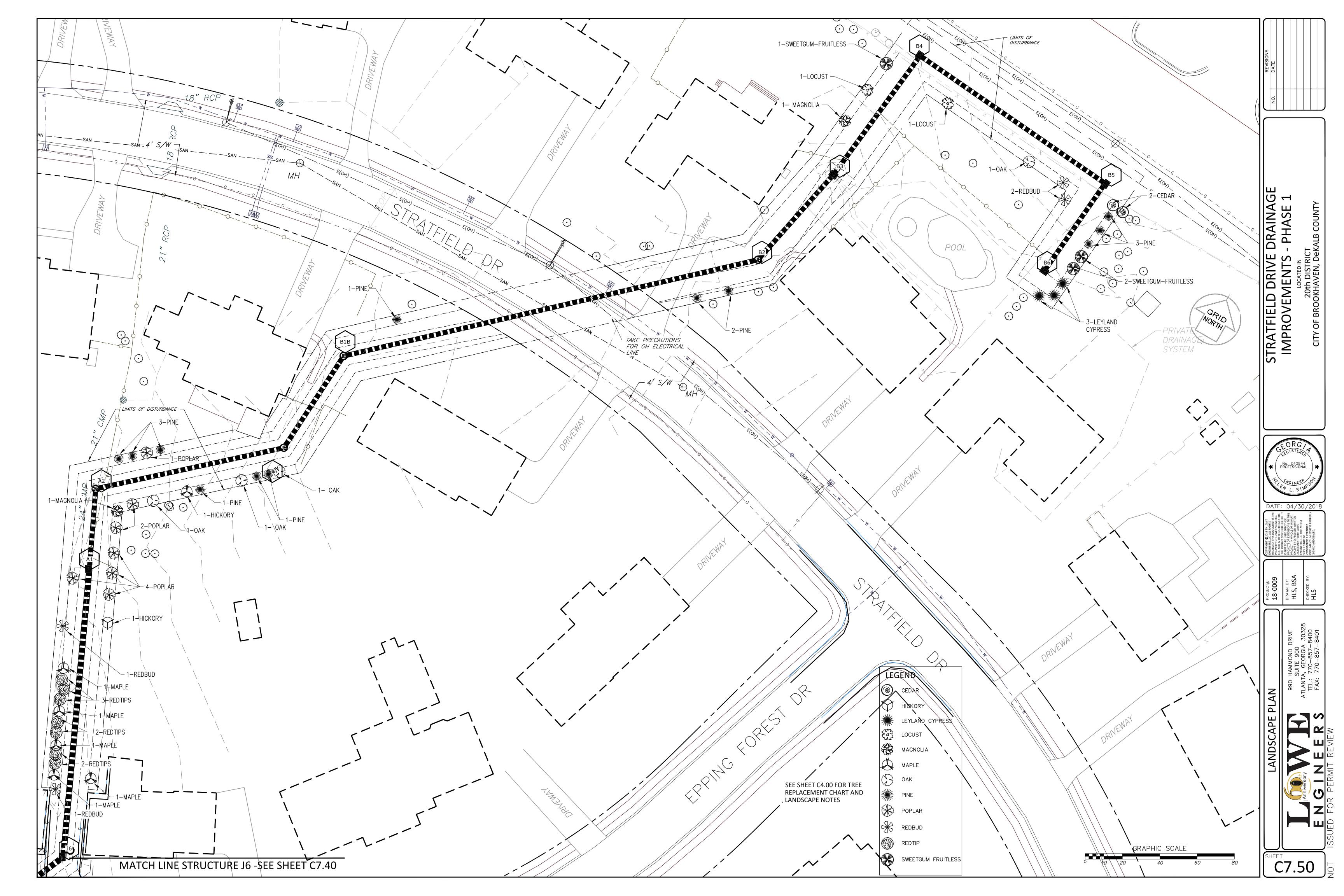
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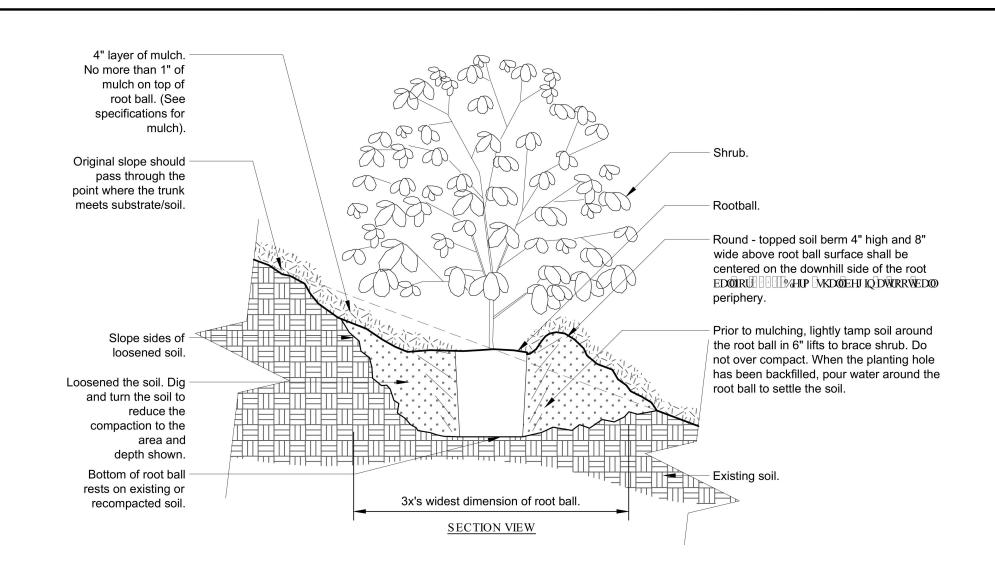
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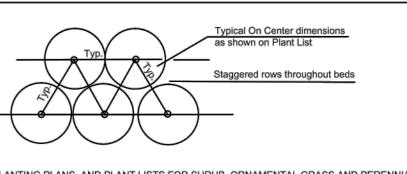






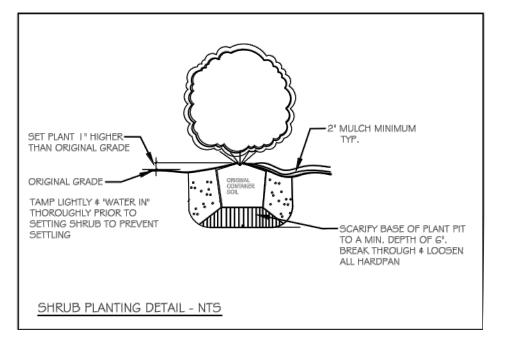
ANDSCAPE NOTES AND TREE PROTECTION NOTES

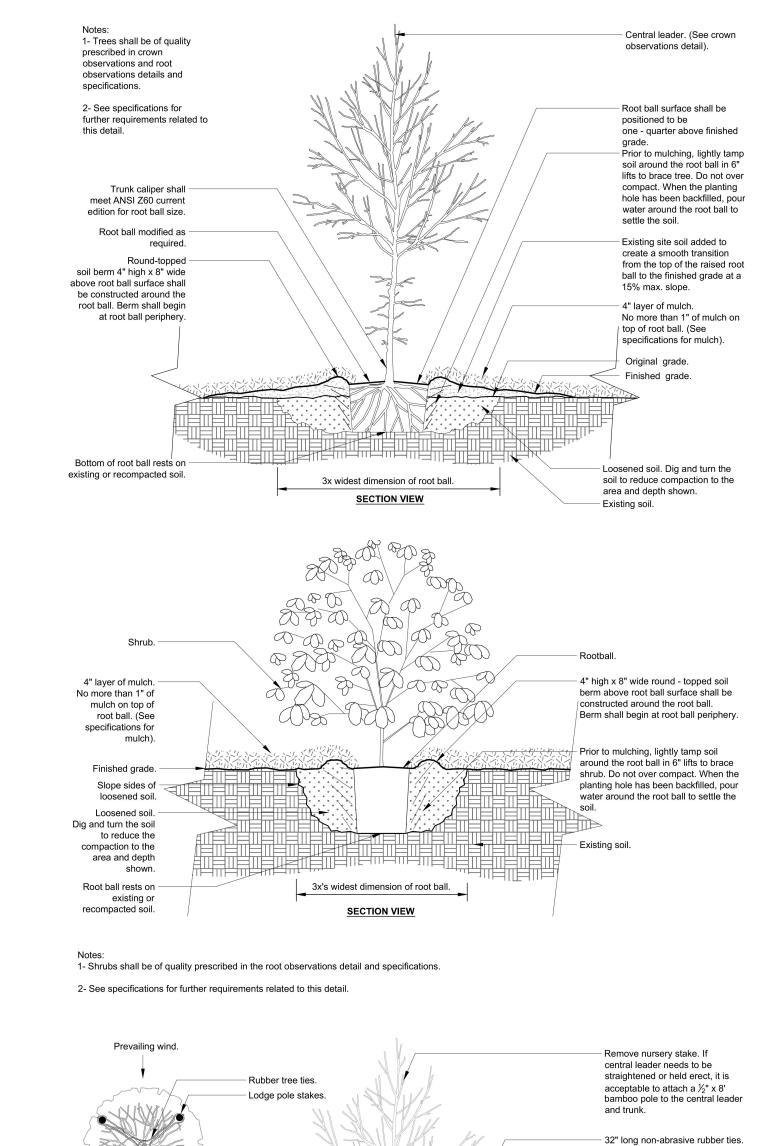
- 1. The site contractor shall contact the appropriate utility companies to have the locations of their underground utilities marked prior to beginning work. The contractor shall coordinate service routing of all gas, telephone, and electrical lines with the appropriate utility company. Caution shall be exercised to avoid interruption of services. The contractor is responsible for repair of all existing utilities damaged during construction. All construction must comply with each utility's standards and specifications and not interfere with tree planting sites or existing trees to be
- 2. Trees, shrubs, ground cover, sod, seed, ornamental grasses and any other planted materials: Maintenance shall begin immediately after each plant is planted and shall continue until all plants are accepted by the Owner. The quantities shown in the plant schedule are solely for information of the contractor. The contractor shall verify the quantities shown in the plant schedule with the quantities shown on the planting plan. All differences in the quantities shall be brought to the attention of the Landscape Architect for clarification.
- 3. Do not scale from the drawing.
- 4. Final locations of all plant material shall be subject to the approval of the Owner's representative. After flagging plant locations and prior to installation, the Contractor shall notify the Owner's representative for inspection. Site adjustment of planting design and relocation of plant materials installed prior to Owner's representatives approval shall be done without additional cost or penalty to Owner.
- 5. All plant materials shall conform with the latest edition of "American Standards for Nursery Stock" by the American Nursery and Landscape Association. All plant material shall meet or exceed the specifications of the Federal, state and county laws requiring inspection for disease and insect control. Botanical names shall take precedence over common names.
- 6. Label at least one plant of each species with a securely attached water-proof tag bearing legible designation of Botanical and Common name for inspection.
- 7. All planting pits shall be free of rocks, gravel and other debris. All planting pits shall be
- prepared in accordance with the planting details.
- 8. Plant quality: All plants shall be sound, free of disease or pests and shall have a healthy normal 9. No substitution of plant species or variety shall be made without prior written permission from
- the Landscape Architect.
- 10. Maintenance of plants shall include, but not necessarily be limited to, watering, spraying, mulching, pruning, mowing, fertilizing, etc. or other activities as directed by the Owner's
- II. Final acceptance shall be granted by the Owner's representative upon completion of the entire project. The Contractor shall promptly make all replacements before, during and at the end of the guarantee period as directed by the Owner's representative.
- 12. All plant material which dies, turns brown, or defoliates both prior to the final acceptance of the work and during the guarantee period shall be promptly removed from the site and replaced with material of the same species, variety, quantity, size and meeting all plant schedule
- 13. Burlap material on balled and burlapped plants shall be the type which will decay within two years (no synthetics, plastic, nylon, treated or other non-natural types will be allowed). After setting balled and burlapped plants in the planting pit, all binder twine shall be cut and the burlap removed from the top $\frac{1}{3}$ (one-third) of the rootball.
- 14. All shrub, groundcover, tree ring and perennial bed areas shall be top dressed with a minimum depth of 2-3" of compacted mulch. The mulch shall be free from mold, sticks, cones, weeds and other debris. Compaction of the mulch shall occur naturally over a two week period during which at least one significant rainfall has occurred. Additional mulch shall be placed in order to maintain the minimum depth until date of final acceptance.
- 15. Contractor shall spray trees and shrubs with anti-dessicant prior to transplanting and transporting if foliage is present. All plant material must be protected from wind by tarpaulin during shipment.
- 16. The Owner's representative reserves the right to reject at any time until the end of the guarantee period any and / or all plant material that does not meet the specifications as set forth here and in the plant schedule.
- 17. All plant materials shall be Grade A or better and planted as per the plant list, details and
- 18. All plant materials (including sod) shall be properly watered immediately after installation. Water shall be applied at a rate that will completely saturate the rootball/roots regardless of weather conditions. If the height of the rootball is 24", then the plant shall be watered to a depth of 24".
- 19. Contractor SHALL provide irrigation design and installation per agreement with Owner for all planted material.



SEE PLANTING PLANS AND PLANT LISTS FOR SHRUB, ORNAMENTAL GRASS AND PERENNIAL BED AREAS AND SPACINGS ROWS SHALL BE STRAIGHT, PARALLEL OR CURVED AS PER INTENT OF DESIGN PERENNIAL AND SHRUB BEDS TO BE DEEPLY SPADED TO A DEPTH OF AT LEAST 8 INCHES. AMEND CLAY SOILS WITH SAND OR ACCEPTED ORGANIC MATTER TO IMPROVE DRAINAGE. ACHIEVE A PH OF 6.0 TO 6.5. FERTILIZE AND/OR LIME AS DETERMINED BY SOIL TESTS PROVIDED BY CONTRACTOR.

SHRUB, ORNAMENTAL GRASS AND PERENNIAL SPACING





PLAN VIEW

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SECTION VIEW



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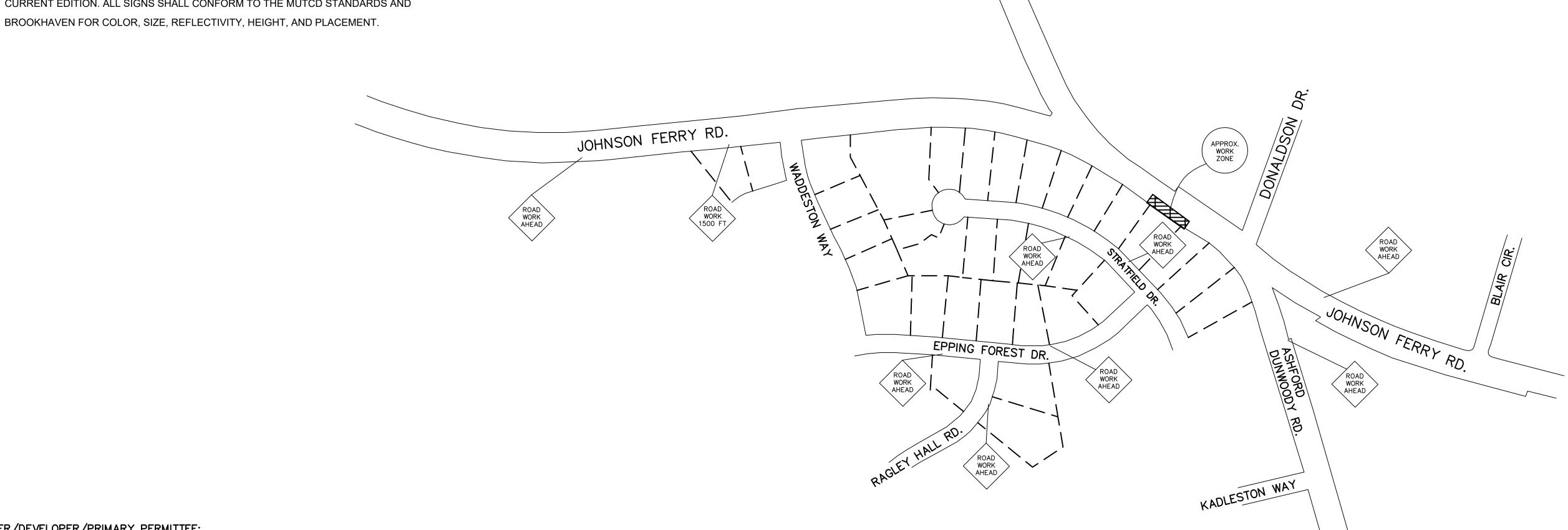
Three (3") two inch lodge pole

interfere with permanent branches

stakes. Install approximately 2' away from the edge of the root

ball. Stake location shall not

NECESSARY TO IMPROVE TRAFFIC CONDITIONS.



ROAD WORK AHEAD

ROAD WORK 1500 FT

6. ANY ASPECTS OF TRAFFIC CONTROL NOT INCLUDED IN GDOT STANDARDS AND DETAILS SHALL BE SHOWN AND PLACED IN ACCORDANCE WITH THE MUTCD, CURRENT EDITION. ALL SIGNS SHALL CONFORM TO THE MUTCD STANDARDS AND

OWNER/DEVELOPER/PRIMARY PERMITTEE: CITY OF BROOKHAVEN PUBLIC WORKS 4362 PEACHTREE ROAD BROOKHAVEN, GA 30319 CONTACT: GREGORY ANDERSON

Brookhaven

ENGINEER/SURVEYOR: LOWE ENGINEERS 990 HAMMOND DR. ~ SUITE 900 ATLANTA, GEORGIA 30328 CONTACT: HELEN SIMPSON PHONE: (770) 857-8428

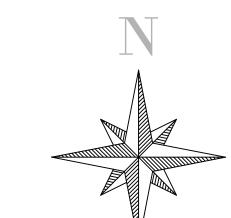
24 HOUR CONTACT:

404-637-0500

GREGORY ANDERSON CITY OF BROOKHAVEN 404-637-0500 GREGORY.ANDERSON@BROOKHAVENGA.GOV Know what's below.

Call before you dig

IF YOU DIG GEORGIA... CALL US FIRST! UTILITIES PROTECTION CENTER IT'S THE LAW





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