

CONSTRUCTION PLANS FOR STRATFIELD DRIVE DRAINAGE IMPROVEMENTS- PHASE 1 CITY OF BROOKHAVEN

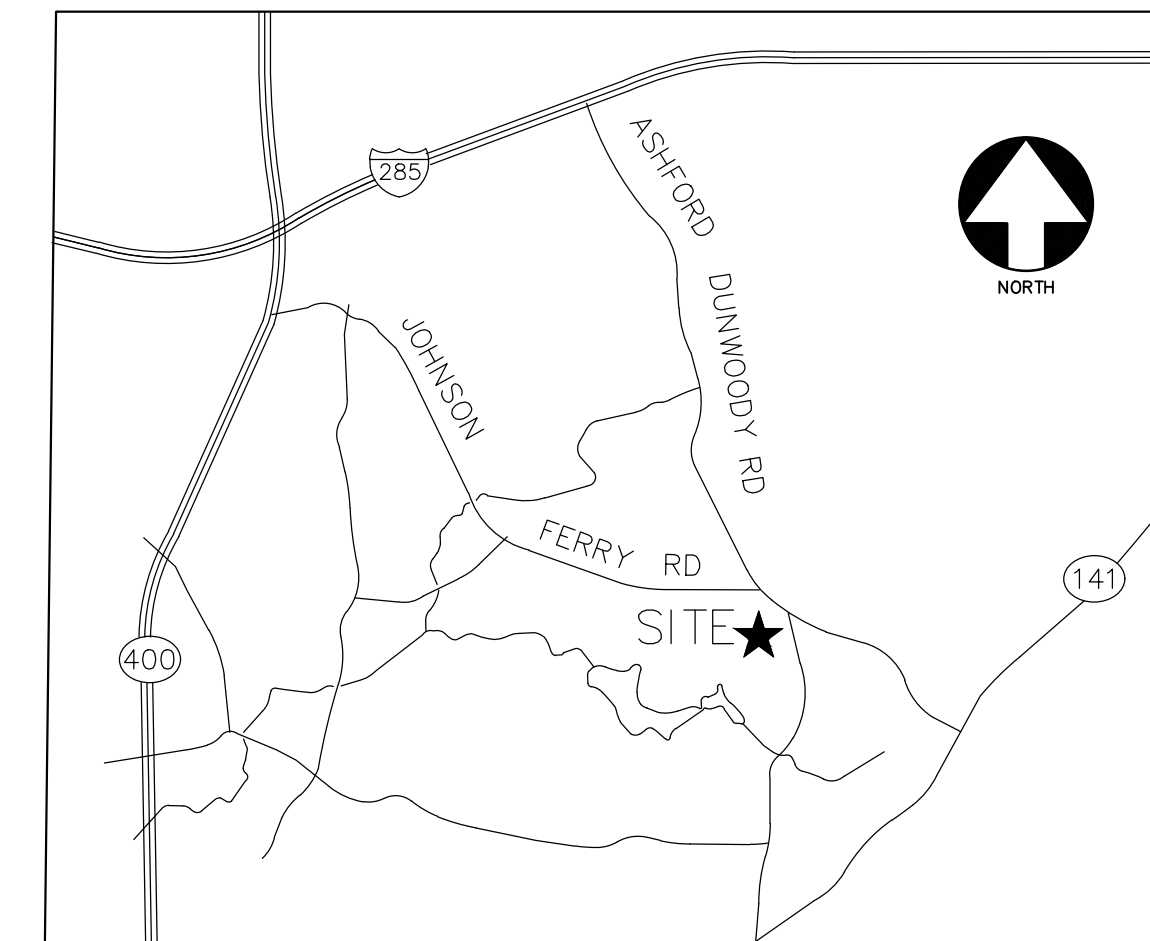
Map Unit Legend

Map Unit Symbol	Map Unit Name	Acres in AOI	Percent of AOI
Ca	Carteays silt loam, frequently flooded	1.2	0.6%
CuC	Cucl-Urban land complex, 2 to 10 percent slopes	71.0	34.9%
P1E	Pacotet sandy loam, 15 to 30 percent slopes	11.8	5.8%
P1C	Pacotet-Urban land complex, 10 to 25 percent slopes	89.8	44.1%
Ud	Urban land	10.2	5.0%
W	Water	19.5	9.6%
Totals for Area of Interest		203.6	100.0%



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



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

BOUNDARY, TOPOGRAPHIC & TREE SURVEY REFERENCE:

PORTIONS (PIPE CORRIDOR P1-A1) OF THE BOUNDARY, TOPOGRAPHIC AND TREE INFORMATION DEPICTED ON THIS LDP WERE TAKEN FROM A BOUNDARY & TOPOGRAPHIC SURVEY BY LOWE ENGINEERS DATED JANUARY 23, 2018. REMAINING SURVEY AND PLAT INFORMATION WAS OBTAINED FROM THE CITY OF BROOKHAVEN, AND CITY GIS SYSTEM.

DESCRIPTION	MONTH											
	1	2	3	4	5	6	7	8	9	10	11	12
PHASE I EROSION CONTROL INSTALLATION	█											
SEVEN DAY EC INSPECTION & LETTER												
SEDIMENT CONTROL-TREE PROTECTION												
CLEARING, GRUBBING, GRADING,												
TEMPORARY GRASSING												
MAINT. OF EROSION CONTROL DEVICES												
FINAL PAVING												
DISPOSITION OF SEDIMENT DEVICES												
PIPE CONSTRUCTION												
CLEARING OF STORM DRAINS												
FINAL LANDSCAPING												

ACTIVITY SCHEDULE

OWNER/DEVELOPER/PRIMARY PERMITTEE:
CITY OF BROOKHAVEN PUBLIC WORKS
4362 PEACHTREE ROAD
BROOKHAVEN, GA 30319
CONTACT: GREGORY ANDERSON
404-637-0500

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

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

GSWCC GEORGIA SOIL AND WATER CONSERVATION COMMISSION
HELEN L SIMPSON
Level II Certified Design Professional
CERTIFICATION NUMBER 0000077050
ISSUED: 04/29/2016 EXPIRES: 04/29/2019



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

DESIGN PROFESSIONAL'S CERTIFICATIONS

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" 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 PRACTICES AND SAMPLING METHODS IS EXPECTED TO MEET THE REQUIREMENTS CONTAINED IN THE GENERAL NPDES PERMIT NUMBER GAR 100001 FOR STAND ALONE PROJECTS.

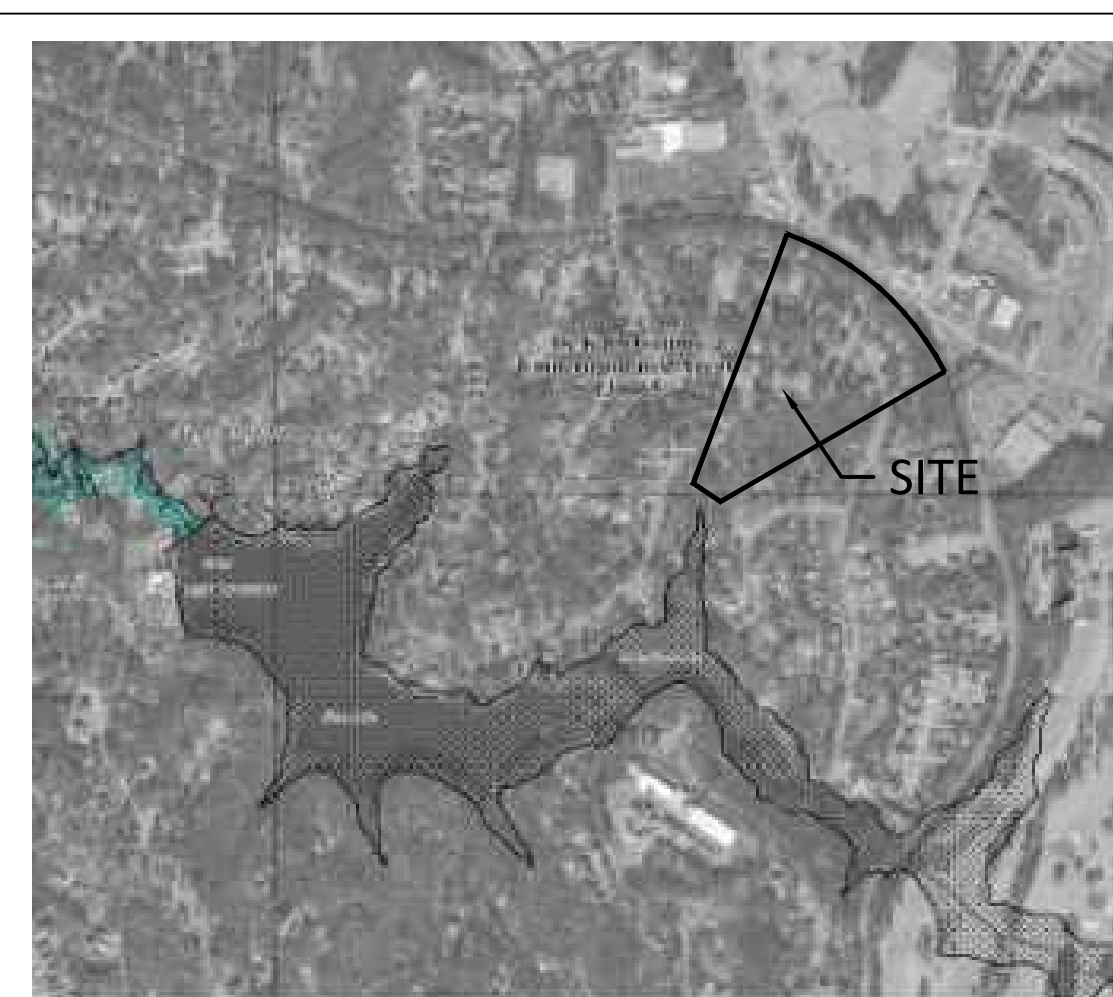
I CERTIFY THAT THE PLAN PREPARER OR THE DESIGNEE THEREOF VISITED THE PROJECT SITE PRIOR TO THE CREATION OF THE PERMITTEE'S EROSION, SEDIMENTATION, AND POLLUTION CONTROL PLAN OR THAT SUCH A VISIT WAS NOT REQUIRED IN ACCORDANCE WITH RULES AND REGULATIONS ESTABLISHED BY THE BOARD AS SPECIFIED IN SECTION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

I CERTIFY UNDER THE PENALTY OF LAW THAT THIS DOCUMENT AND ALL ATTACHMENTS WERE PREPARED UNDER MY DIRECTION OR SUPERVISION IN ACCORDANCE WITH A SYSTEM 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.

DATE _____ DESIGN PROFESSIONAL'S SIGNATURE _____

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Sheet #	Title
C0.00	COVER SHEET
C1.00	EXISTING CONDITIONS
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C2.00	STORM SEWER IMPROVEMENT PLAN
C3.00	STORM SEWER IMPROVEMENT PROFILE
C4.00	STORM SEWER TABS, QUANTITIES
C5.00	EROSION CONTROL PLAN
C6.00	EROSION CONTROL DETAILS
C6.10	EROSION CONTROL DETAILS
C6.20	EROSION CONTROL DETAILS
C6.30	NPDES
C6.40	NPDES
C6.50	NPDES
C6.60	NPDES
C7.00	STORM DETAILS
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C7.20	TRAFFIC DETAILS
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C7.50	LANDSCAPING PLAN
C7.60	LANDSCAPING DETAILS
C8.00	TRAFFIC CONTROL PLAN

REVISIONS		
REVISION	DATE	SHEET NUMBER(S)



FLOOD PLAIN STATEMENT:

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 INCORPORATED AREAS, COMMUNITY PANEL NO. 13089C00143. PANELS BEAR AN EFFECTIVE DATE OF 05/16/2013.

THIS SITE IS NOT LOCATED WITHIN A ZONE DEFINED BY FIRM COMMUNITY PANEL NUMBER 10389C0014J FOR UNINCORPORATED DEKALB COUNTY, GEORGIA.

FLOOD MAP
N.T.S.

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 PROPOSED.

STATE WATERS NOTES:

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

NO.	REVISIONS	DATE

STRATFIELD DRIVE DRAINAGE IMPROVEMENTS - PHASE 1
LOCATED IN 20th DISTRICT
CITY OF BROOKHAVEN, DEKALB COUNTY



DATE: 04/30/2018

PROJECT # 18-0009
DESIGNED BY: HLS, BSA
CHECKED BY: HLS

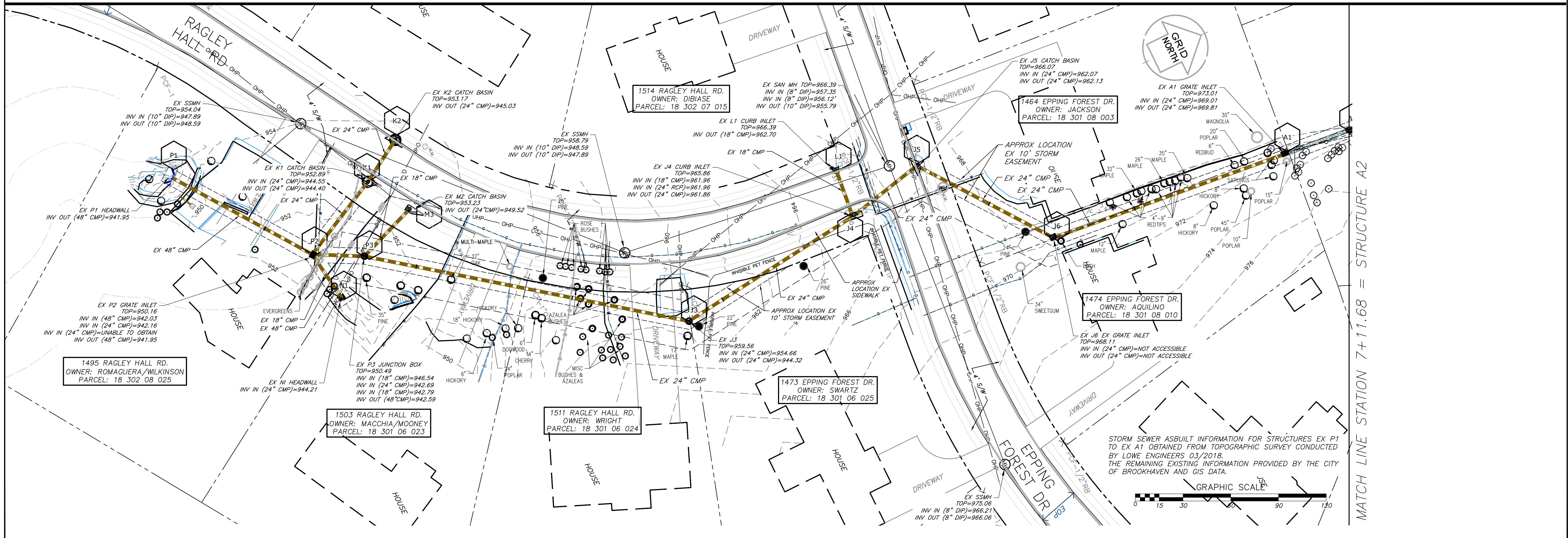
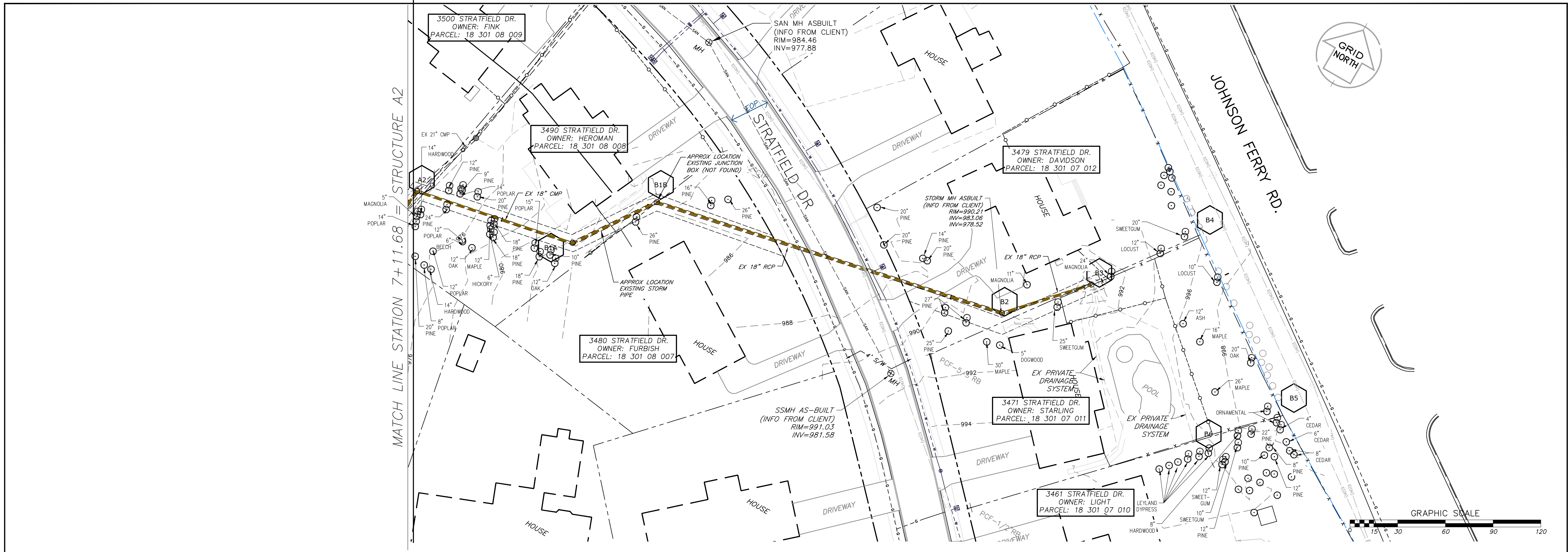
PROJECT # 18-0009
DESIGNED BY: HLS, BSA
CHECKED BY: HLS

990 HAMMOND DRIVE
SUITE 900
ATLANTA, GEORGIA 30328
TEL: 770-857-8400
FAX: 770-857-8401



COVER SHEET
SHEET
C0.00

NOT ISSUED FOR PERMIT REVIEW



NO.	REVISIONS	DATE

STRATFIELD DRIVE DRAINAGE IMPROVEMENTS - PHASE 1
 LOCATED IN 20th DISTRICT
 CITY OF BROOKHAVEN, DEKALB COUNTY



DATE: 04/30/2018
THIS DRAWING IS THE PROPERTY OF LOWE ENGINEERS AND IS NOT TO BE REPRODUCED OR TRANSMITTED IN ANY FORM OR BY ANY MEANS, ELECTRONIC OR MECHANICAL, WITHOUT THE WRITTEN PERMISSION OF LOWE ENGINEERS. THE USER OF THIS DRAWING AGREES TO HOLD LOWE ENGINEERS HARMLESS FROM AND AGAINST ALL LIABILITY, INCLUDING REASONABLE ATTORNEY'S FEES, IN CONNECTION WITH THE USE OF THIS DRAWING.

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 CHECKED BY: HLS

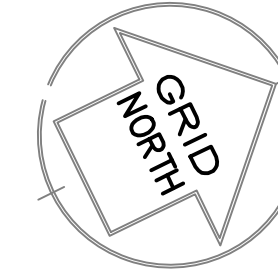
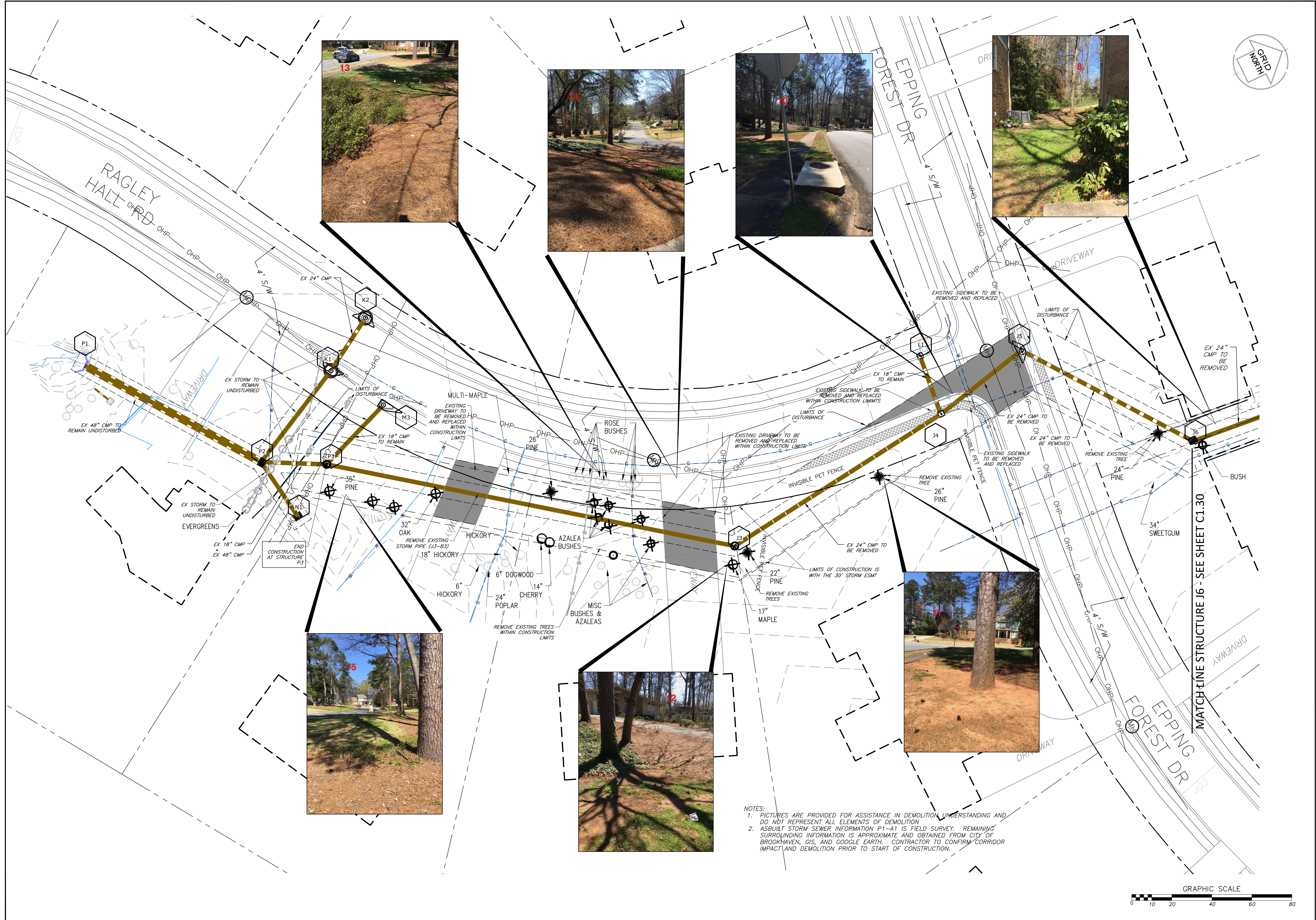
EXISTING CONDITIONS

LOWE ENGINEERS
 990 HAMMOND DRIVE
 SUITE 900
 ATLANTA, GEORGIA 30328
 TEL: 770-857-8400
 FAX: 770-857-8401

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SHEET **C1.00**

STORM SEWER AS-BUILT INFORMATION FOR STRUCTURES EX P1 TO EX A1 OBTAINED FROM TOPOGRAPHIC SURVEY CONDUCTED BY LOWE ENGINEERS 03/2018. THE REMAINING EXISTING INFORMATION PROVIDED BY THE CITY OF BROOKHAVEN AND GIS DATA.



REVISIONS	DATE
NO.	

STRATFIELD DRIVE DRAINAGE IMPROVEMENTS - PHASE 1
 LOCATED IN 20th DISTRICT
 CITY OF BROOKHAVEN, DEKALB COUNTY



DATE: 04/30/2018

PROJECT NO: 18-0009
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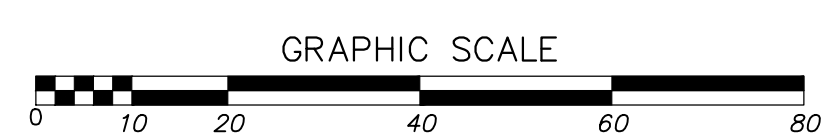
STORM DEMOLITION PLAN

990 HAMMOND DRIVE
 ATLANTA, GEORGIA 30328
 TEL: 770-857-8400
 FAX: 770-857-8401

LOWE ENGINEERS
 SHEET C1.20

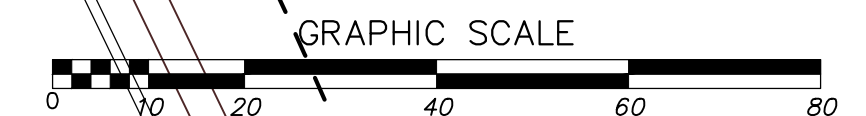
NOT ISSUED FOR PERMIT REVIEW

- NOTES:
1. PICTURES ARE PROVIDED FOR ASSISTANCE IN DEMOLITION UNDERSTANDING AND DO NOT REPRESENT ALL ELEMENTS OF DEMOLITION.
 2. ASSAULT STORM SEWER INFORMATION P1-A1 IS FIELD SURVEY. REMAINING SURROUNDING INFORMATION IS APPROXIMATE AND OBTAINED FROM CITY OF BROOKHAVEN, GIS, AND GOOGLE EARTH. CONTRACTOR TO CONFIRM CORRIDOR IMPACT AND DEMOLITION PRIOR TO START OF CONSTRUCTION.





MATCH LINE STRUCTURE J6 - SEE SHEET C1.20



NO.	REVISIONS
	DATE

STRATFIELD DRIVE DRAINAGE IMPROVEMENTS - PHASE 1
 LOCATED IN 20th DISTRICT
 CITY OF BROOKHAVEN, DEKALB COUNTY



DATE: 04/30/2018

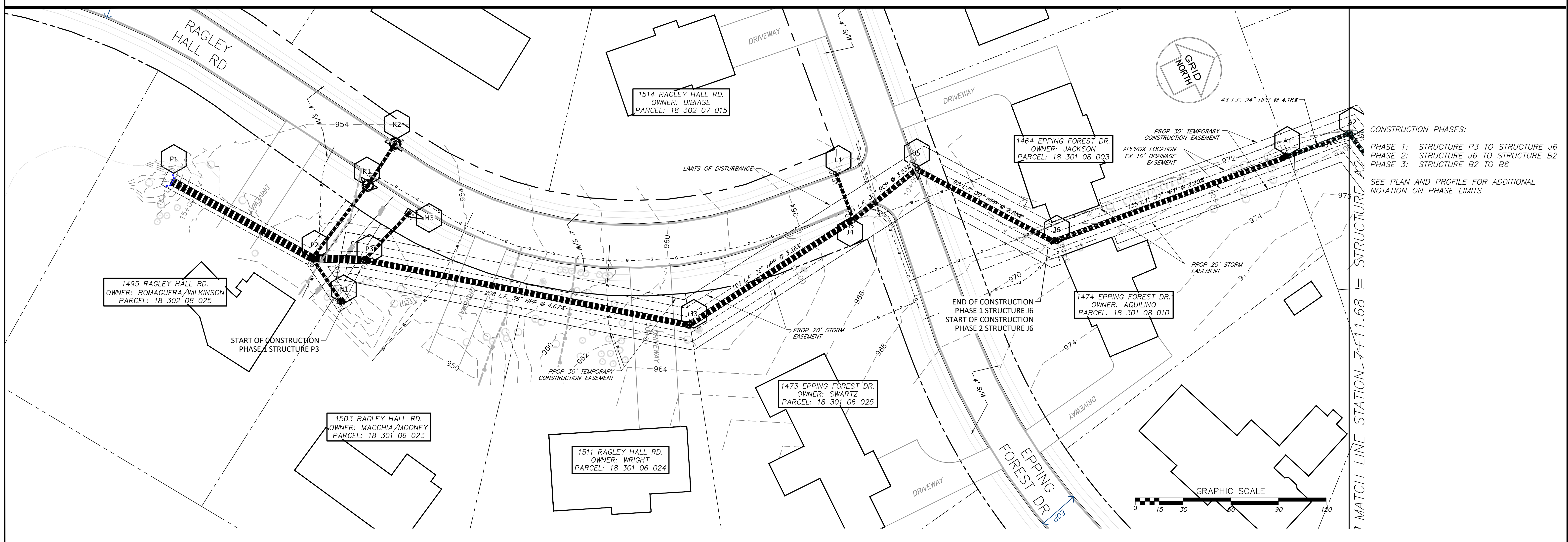
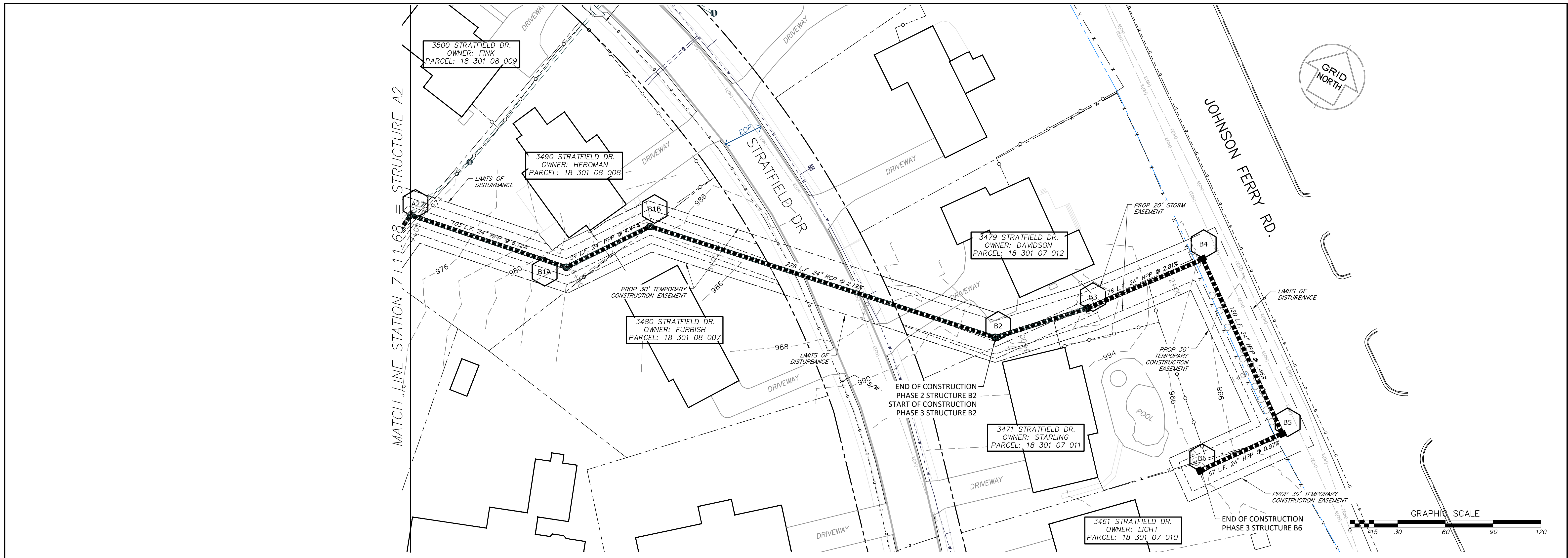
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DRAWN BY:	HLS, BSA
CHECKED BY:	HLS

LOWE ENGINEERS
 990 HAMMOND DRIVE
 SUITE 900
 ATLANTA, GEORGIA 30328
 TEL: 770-857-8400
 FAX: 770-857-8401

STORM DEMOLITION PLAN
 SHEET C1.30

ISSUED FOR PERMIT REVIEW



CONSTRUCTION PHASES:
 PHASE 1: STRUCTURE P3 TO STRUCTURE J6
 PHASE 2: STRUCTURE J6 TO STRUCTURE B2
 PHASE 3: STRUCTURE B2 TO B6

SEE PLAN AND PROFILE FOR ADDITIONAL NOTATION ON PHASE LIMITS

NO.	REVISIONS	DATE

STRATFIELD DRIVE DRAINAGE IMPROVEMENTS - PHASE 1
 LOCATED IN 20th DISTRICT
 CITY OF BROOKHAVEN, DEKALB COUNTY



DATE: 04/30/2018

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PROJECT NO: 18-0009
 DRAWN BY: HLS, BSA
 CHECKED BY: HLS

STORM SEWER IMPROVEMENT PLAN

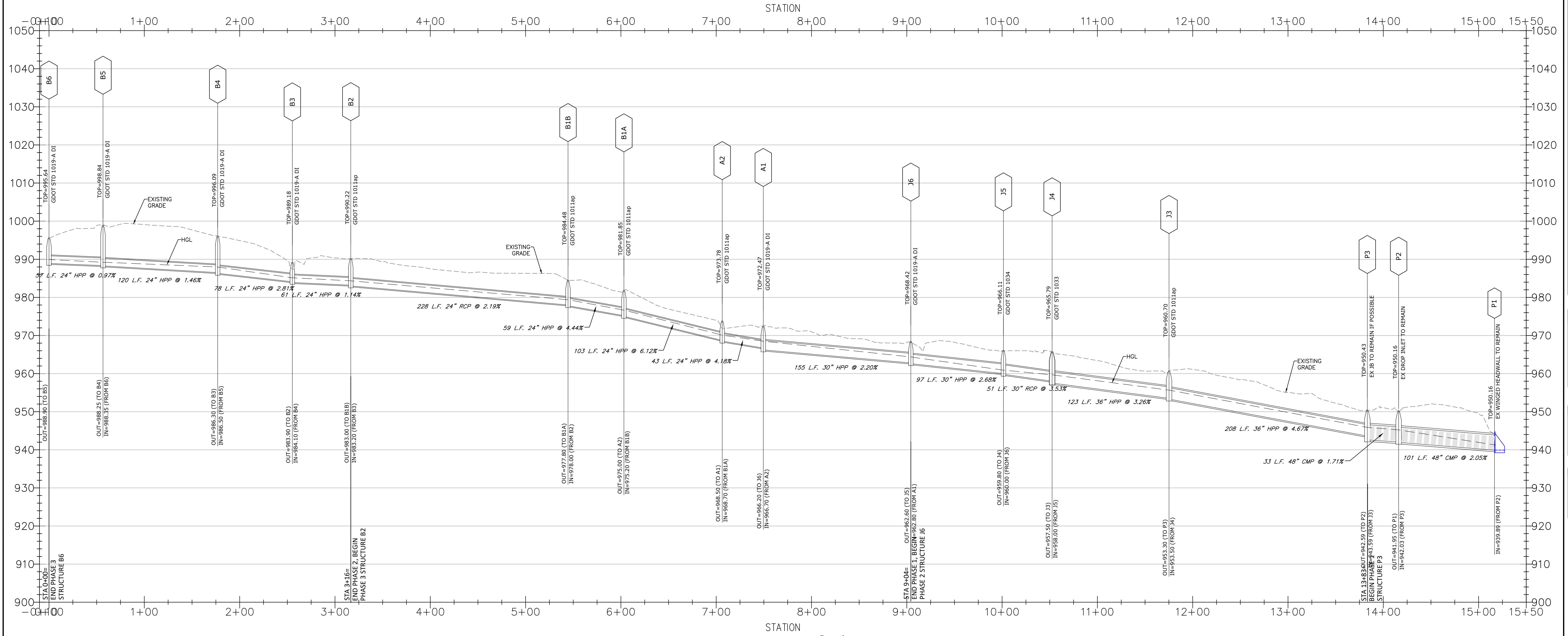
LOWE ENGINEERS
 90 HAMMOND DRIVE
 SUITE 900
 ATLANTA, GEORGIA 30328
 TEL: 770-857-8400
 FAX: 770-857-8401

ISSUED FOR PERMIT REVIEW

SHEET **C2.00**

PROPOSED STORM DRAINAGE IMPROVEMENT PROFILE

B6-P1 STORM LINE



NO.	REVISIONS	DATE

STRATFIELD DRIVE DRAINAGE IMPROVEMENTS - PHASE 1
 LOCATED IN
 20th DISTRICT
 CITY OF BROOKHAVEN, DeKALB COUNTY



DATE: 04/30/2018

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PROJECT # 18-0009	DRAWN BY HLS, BSA
CHECKED BY HLS	

STORM SEWER IMPROVEMENT PROFILE

990 HAMMOND DRIVE
 ATLANTA, GEORGIA 30328
 TEL: 770-857-8400
 FAX: 770-857-8401

LOWE ENGINEERS
 Anniversary

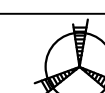







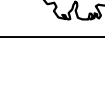

Stratfield Storm Drainage Improvements – PHASE 1

TABLE OF QUANTITIES

ITEM	QUANTITY	UNIT
SAWCUT CONCRETE SIDEWALK	140	LF
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 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
		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
LANDSCAPING REPLACEMENT	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.

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 tulipifera	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
	2	Carya	HICKORY							
	7	Photinia x fraseri	REDTIP							
	2	Robinia pseudoacacia	LOCUST							

NOTES:
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
MAXIMUM BUILDING HEIGHT 40 FEET
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)

Storm Sewer Tabulation

Station	Len	Drng Area	Rnoff	Area x C	Tc	Rain	Total	Cap	Vel	Pipe	Invert Elev	HGL Elev	Grnd / Rim Elev	Line ID								
Line	To Line	Incr (ft)	Total (ac)	Coeff (C)	Incr	Total	Inlet (min)	Syst (min)	(in/hr)	(cfs)	(cfs)	(ft/s)	(in)	(%)	Dn (ft)	Up (ft)	Dn (ft)	Up (ft)	Dn (ft)	Up (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	0.04	5.0	19.2	5.4	49.14	85.19	10.60	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	2.28	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	2.60	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	980.86	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	980.86	984.00	B1A-B1B
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	973.51	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	980.90	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

Stratfield Drive Number of lines: 24 Run Date: 3/20/2018

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

Storm Sewer Tabulation

Station	Len	Drng Area	Rnoff	Area x C	Tc	Rain	Total	Cap	Vel	Pipe	Invert Elev	HGL Elev	Grnd / Rim Elev	Line ID									
Line	To Line	Incr (ft)	Total (ac)	Coeff (C)	Incr	Total	Inlet (min)	Syst (min)	(in/hr)	(cfs)	(cfs)	(ft/s)	(in)	(%)	Dn (ft)	Up (ft)	Dn (ft)	Up (ft)	Dn (ft)	Up (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	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

Stratfield Drive Number of lines: 24 Run Date: 3/20/2018

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

NO.	REVISIONS	DATE

STRATFIELD DRIVE DRAINAGE IMPROVEMENTS - PHASE 1
LOCATED IN 20th DISTRICT
CITY OF BROOKHAVEN, DeKALB COUNTY



DATE: 04/30/2018

PROJECT: 18-0009
DESIGNED BY: HLS, BSA
CHECKED BY: HLS

PROJECT: 18-0009
DESIGNED BY: HLS, BSA
CHECKED BY: HLS

STORM SEWER TABS, QUANTITIES

990 HAMMOND DRIVE
SUITE 900
ATLANTA, GEORGIA 30328
TEL: 770-857-8400
FAX: 770-857-8401

60 YEARS ANNIVERSARY
LOWE ENGINEERS

SHEET 4.00

NOT ISSUED FOR PERMIT REVIEW

THE CONSTRUCTION ENTRANCES AND EXITS FROM THE ROADWAY RIGHT OF WAYS TO THE RESIDENT YARDS SHALL BE MAINTAINED IN A CONDITION WHICH WILL PREVENT TRACKING OR FLOW OF MUD ON TO PUBLIC RIGHT-OF-WAY. THIS MAY REQUIRE PERIODIC REPAIR AND/OR CLEAN-OUT OF ANY STRUCTURES USED TO TRAP SEDIMENT. ALL MATERIALS SPILLED, DROPPED, WASHED, OR TRACKED FROM VEHICLE ONTO PUBLIC ROADWAY OR INTO STORM DRAIN MUST BE REMOVED.

PRIOR TO COMMENCING LAND DISTURBANCE ACTIVITY, THE LIMITS OF LAND DISTURBANCE SHALL BE CLEARLY AND ACCURATELY DEMARCATED WITH STAKES, RIBBONS, OR OTHER APPROPRIATE MEANS. THE LOCATION AND EXTENT OF ALL AUTHORIZED LAND DISTURBANCE SHALL OCCUR WITHIN THE APPROVED LIMITS INDICATED ON THE APPROVED PLANS.

IMMEDIATELY AFTER THE ESTABLISHMENT OF CONSTRUCTION ENTRANCES/EXIT AND ADJACENT WASH AREAS LOCATIONS, ALL PERIMETER EROSION CONTROL DEVICES AND STORM WATER MANAGEMENT DEVICES SHALL BE INSTALLED PRIOR TO ANY OTHER CONSTRUCTION.

OWNER AGREES TO PROVIDE AND MAINTAIN OFF-STREET PARKING ON THE SUBJECT PROPERTY DURING THE ENTIRE CONSTRUCTION PERIOD.

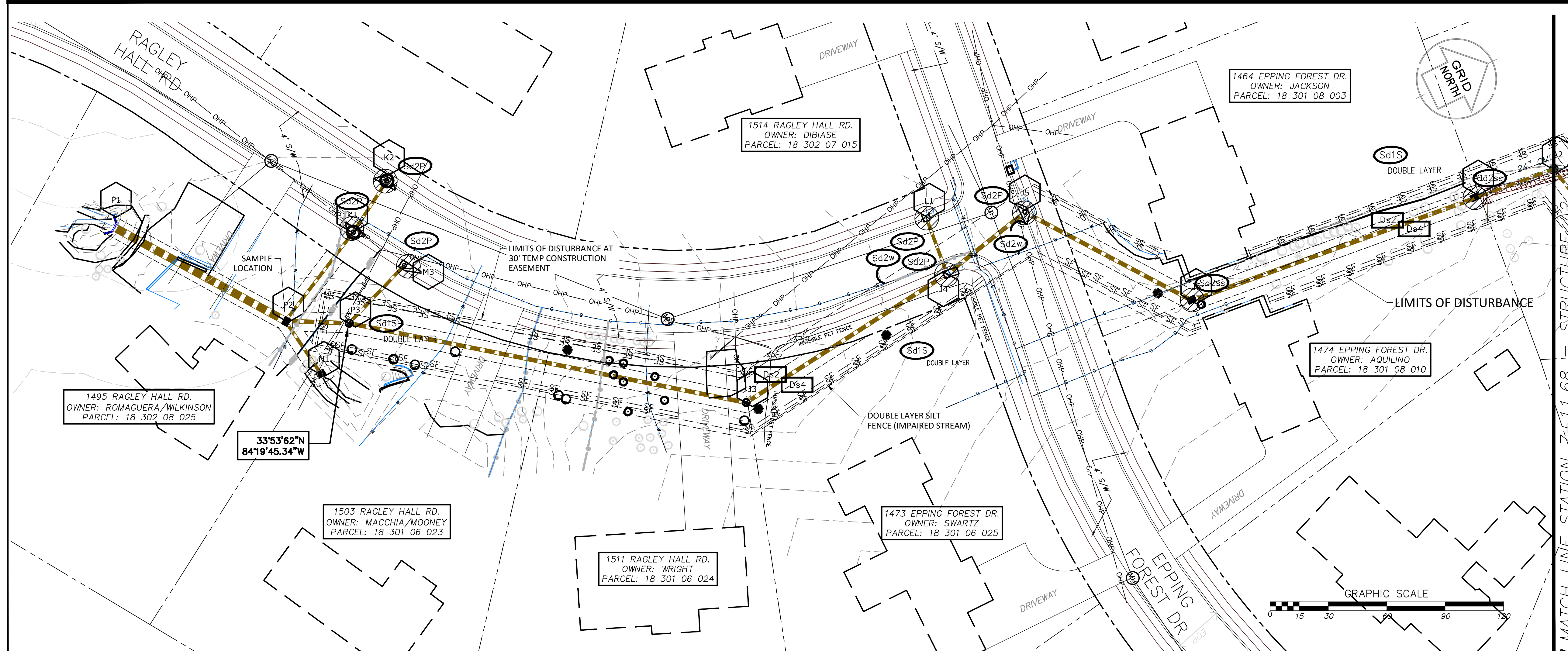
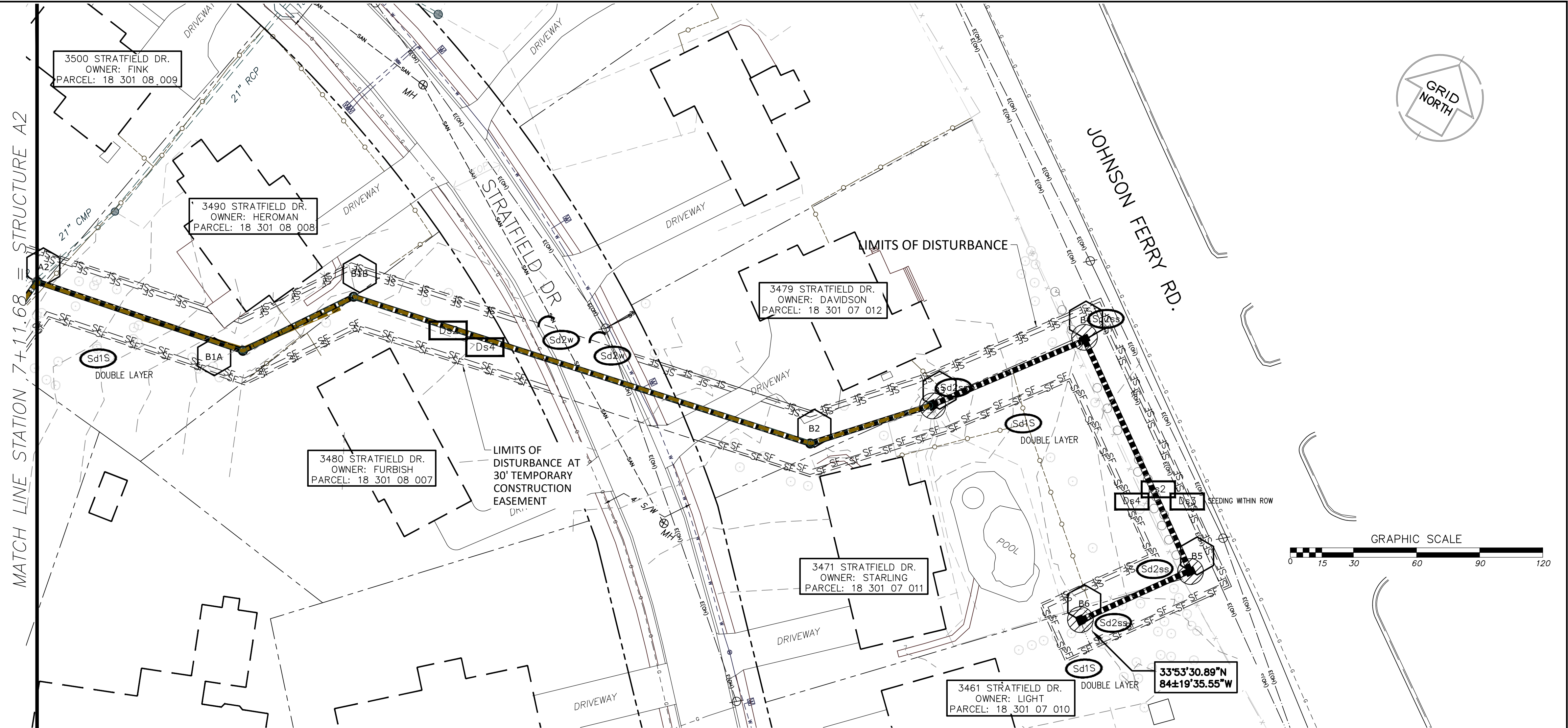
THE CONTRACTOR SHALL FURNISH AND MAINTAIN ALL NECESSARY BARRICADES WHILE ROADWAY FRONTAGE IMPROVEMENTS ARE BEING MADE.

THE CONSTRUCTION OF THE SITE WILL INITIATE WITH THE INSTALLATION OF EROSION CONTROL MEASURES SUFFICIENT TO CONTROL SEDIMENT DEPOSITS AND EROSION. ALL SEDIMENT CONTROL WILL BE MAINTAINED UNTIL ALL UP STREAM GROUND WITHIN THE CONSTRUCTION AREA HAS BEEN COMPLETELY STABILIZED WITH PERMANENT VEGETATION AND ALL ROADS/DRIVEWAYS HAVE BEEN PAVED.

FAILURE TO INSTALL, OPERATE OR MAINTAIN ALL EROSION CONTROL MEASURES WILL RESULT IN ALL CONSTRUCTION BEING STOPPED ON THE JOB SITE UNTIL SUCH MEASURES ARE CORRECTED CONSISTENT WITH THE CITY OF BROOKHAVEN EROSION CONTROL ORDINANCE.

A COPY OF THE APPROVED LAND DISTURBANCE PLAN AND PERMIT SHALL BE PRESENT ON THE SITE WHENEVER LAND DISTURBANCE ACTIVITY IS IN PROGRESS.

ALL SEWER EASEMENTS DISTURBED MUST BE DRESSED AND GRASSED TO CONTROL EROSION.



- Sd2P** INLET SEDIMENT TRAP, CURB INLET PROTECTION
- Sd2Ss** INLET SEDIMENT TRAP, SILT SAVER PROTECTION
- Sd2W** SEDIMENT BARRIER WASH AREA AT CONSTRUCTION ENTRANCES TO RESIDENCE YARDS, SILT SAVER TRAVEL LANE WATTLE
- Sd1S** SEDIMENT BARRIER, SENSITIVE AREA
- Ds2** DISTURBED AREA STABILIZATION, TEMPORARY SEEDING
- Ds3** DISTURBED AREA STABILIZATION, PERM SEEDING WITHIN ROW
- Ds4** DISTURBED AREA STABILIZATION, WITH SODDING

EROSION CONTROL BMP'S WILL BE INSTALLED AS INDICATED WITHIN THE PHASED EROSION CONTROL PLANS HEREIN, AND MAINTAINED THROUGHOUT ALL PHASES OF CONSTRUCTION IN ORDER TO REDUCE SEDIMENT AND POLLUTANT LEVELS IN STORMWATER DISCHARGES LEAVING THE SITE. THESE MEASURES SHALL BE MAINTAINED IN GOOD WORKING ORDER FOR THE DURATION OF CONSTRUCTION AND UNTIL THE SITE IS PERMANENTLY STABILIZED.

OWNER/DEVELOPER/PRIMARY PERMITEE:
 CITY OF BROOKHAVEN PUBLIC WORKS
 4362 PEACHTREE ROAD
 BROOKHAVEN, GA 30319
 CONTACT: GREGORY ANDERSON
 404-637-0500

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

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

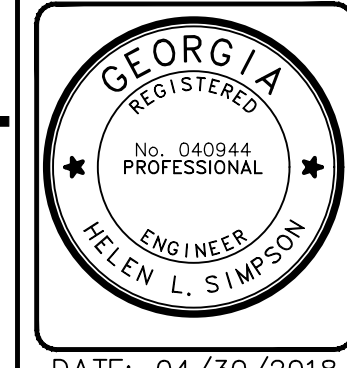


IF YOU DIG GEORGIA...
 CALL US FIRST!
 UTILITIES PROTECTION CENTER
 IT'S THE LAW

HELEN L. SIMPSON
 Level II Certified Design Professional
 Georgia Soil and Water Conservation Commission
 CLC# 000077850
 Issued: 04/29/2016 Expires: 04/29/2019

NO.	REVISIONS	DATE

STRATFIELD DRIVE DRAINAGE IMPROVEMENTS - PHASE 1
 LOCATED IN 20th DISTRICT
 CITY OF BROOKHAVEN, DeKALB COUNTY



DATE: 04/30/2018

PROJECT NO: 18-0009
 DRAWN BY: HLS, BSA
 CHECKED BY: HLS

EROSION CONTROL PLAN

990 HAMMOND DRIVE
 SUITE 900
 ATLANTA, GEORGIA 30328
 TEL: 770-857-8400
 FAX: 770-857-8401



SHEET **C5.00**

NOT ISSUED FOR PERMIT REVIEW

Sd2 **INLET SEDIMENT TRAP**

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 sediment storage.
The side slopes shall not be steeper than 2:1.
The drainage area entering the trap shall be no greater than 1 acre.

Sd2 **Filter Fabric with Supporting Frame**

- 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 backfilled with crushed stone or compacted soil.
- Securely fasten the fabric and wire to the posts.

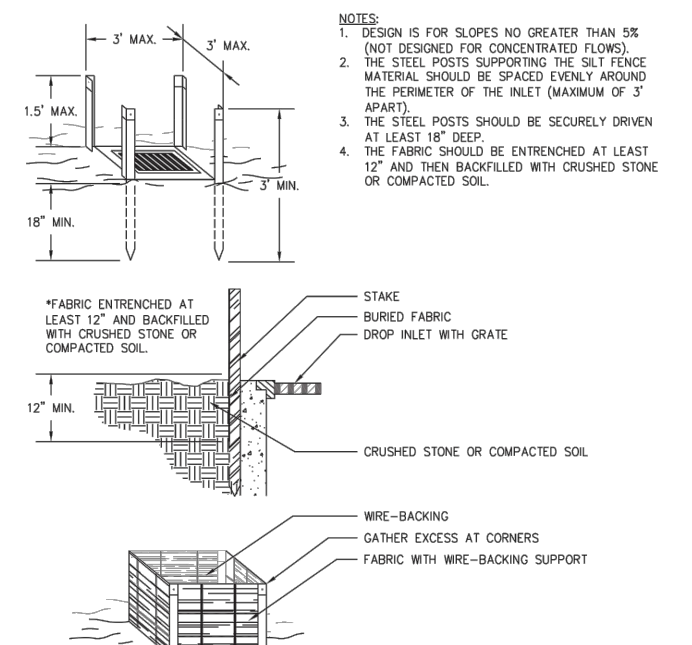


Figure 1. Filter Fabric with Supporting Frame Installation Requirements (Sd2-F)

Sd2-Bg **Block and Gravel Drop Inlet Protection**

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

Sd2 **Baffle Box**

- 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.
- GADOT #57 stone is recommended.

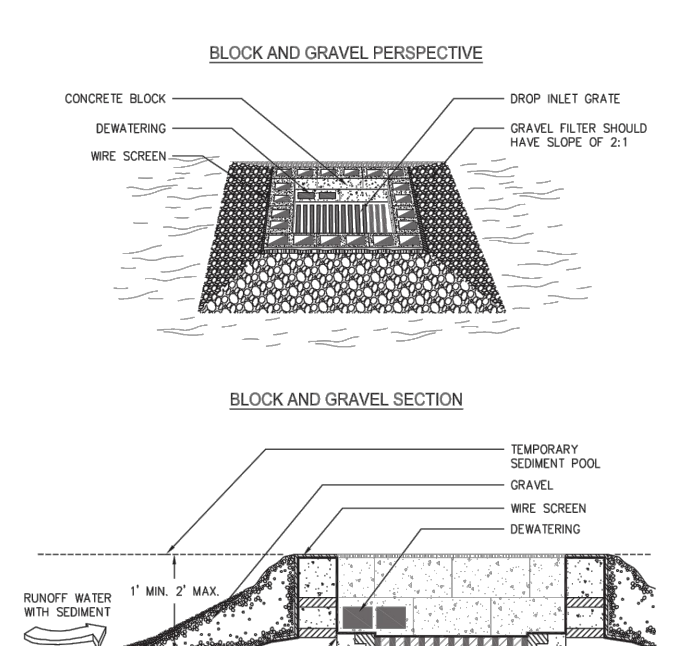


Figure 2. Block and Gravel Drop Inlet Protection Installation Requirements (Sd2-Bg)

Sd2 **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.

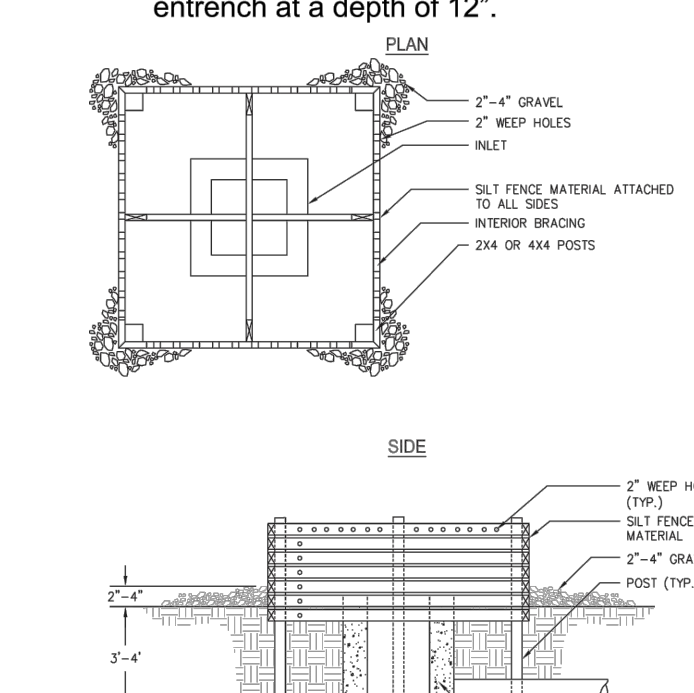


Figure 3. Sod Inlet Protection Installation Requirements (Sd2-S)

Sd2 **Curb Inlet Protection**

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

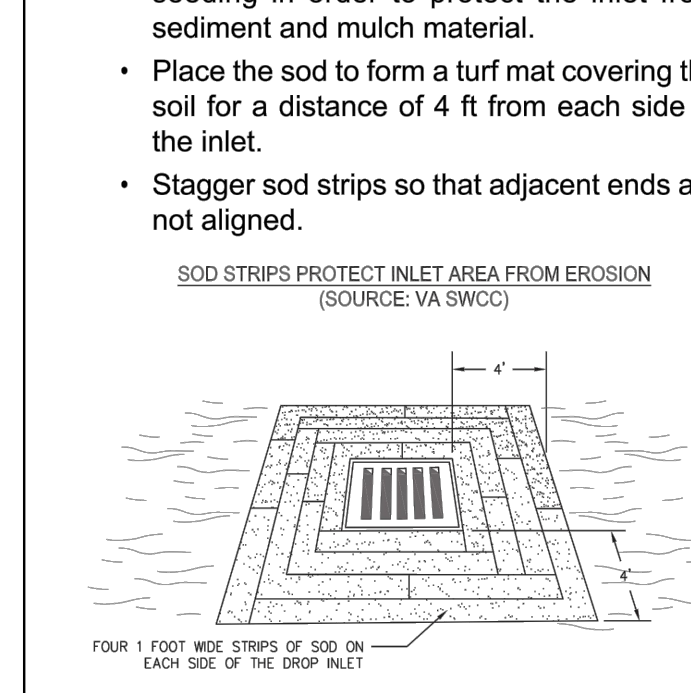


Figure 4. Curb Inlet Protection Installation Requirements (Sd2-P)

Sd2 **Curb Inlet Protection**

- For the "pigs-in-a-blanket" method, wrap 8" concrete blocks in filter fabric and span across catch basin inlet.
- Face openings in blocks outward.
- Leave a gap of ~4" between the inlet filter and the inlet to allow for overflow and prevent hazardous ponding in the roadway.
- Another method uses gravel bags constructed by wrapping GADOT #57 stone with filter fabric, wire, plastic mesh, or equivalent material.

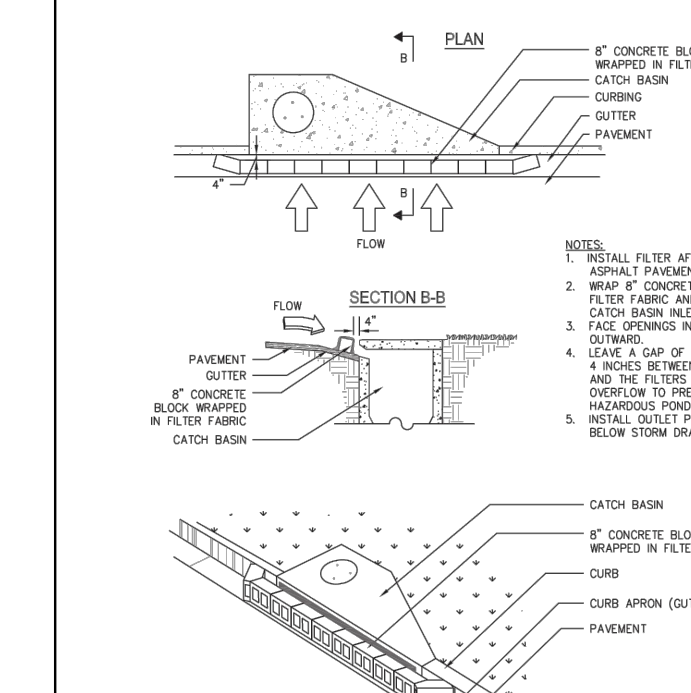


Figure 5. Curb Inlet Protection Installation Requirements (Sd2-P)

Sd2 **MAINTENANCE**

- Inspect, clear, and/or repair trap at the end of each working day.
- Do not remove inlet protection and wash sediment into the inlet.
- Remove sediment when accumulation has reached one-half 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)
- Sd1** Sediment Barrier

Ds2 **DISTURBED AREA STABILIZATION (WITH TEMPORARY SEEDING)**

DEFINITION
The establishment of temporary vegetative cover with fast growing seedings for seasonal protection on disturbed or denuded areas.



PURPOSE
Reduce runoff and sediment damage of down stream resources. Protect the soil surface from erosion. Improve wildlife habitat. Improve aesthetics. Improve till, infiltration, and aeration as well as 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. Take note of which species are not appropriate for companion crop plantings. When the soil has been sealed by rainfall or consists of smooth cut slopes, scarify the soil in order to provide a place for the seed to lodge and germinate.

Ds2 **MAINTENANCE**

- Apply agricultural lime at the rate determined by soil test pH.
- 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.

REFERENCES

- Ds1** Disturbed Area Stabilization (With Mulching Only)
- Tac** Tackifiers

Ds2 **Block and Gravel Drop Inlet Protection**



Figure 2. Browntop Millet



Figure 3. Ryegrass

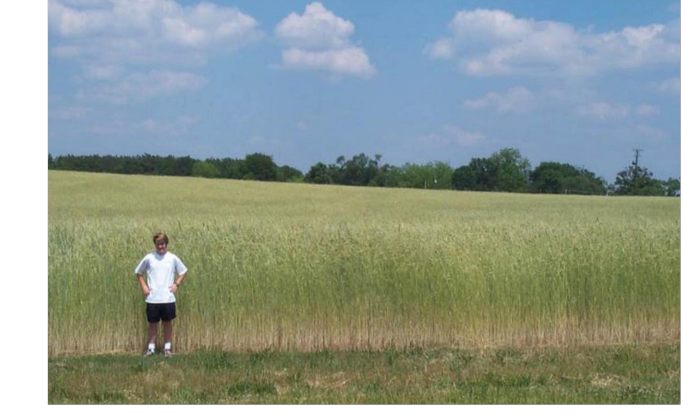


Figure 3. Rye

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

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

Ds2

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

Species	Rates Per 1,000 sq. ft.	Rates per Acre	Planting Dates by Region		
			M-L	P	C
Rye (Grain) Alone	3.9 lbs.	3 bu.	8/15-10/31	9/15-11/30	10/1-12/31
Rye in Mixtures	.6 lbs.	.5 bu.			
Ryegrass	0.9 lbs.	40 lbs.	8/15-11/15	9/1-12/15	9/15-12/31
Sudangrass	1.4 lbs.	60 lbs.	5/1-7/31	5/1-7/31	4/1-7/31
Triticale Alone	3.3 lbs.	3 bu.	NA	NA	10/15-11/30
Triticale in Mixtures	.6 lbs.	.5 bu.			
Wheat Alone	4.1 lbs.	3 bu.	9/15 -11/30	10/1-12/15	10/15-12/31
Wheat in Mixtures	.7 lbs.	.5 bu.			

Ds2

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

Table 2. Fertilizer Requirements for Temporary 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 season 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

Ds2

Tr **TREE PROTECTION**

DEFINITION
The protection of desirable trees from injury during construction activity.



PURPOSE
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 reduction, shade and other environmental benefits while the land is being converted.

- SPECIFICATIONS**
Contact the local government to obtain information regarding tree ordinances BEFORE ES&PC plans are designed.

Tree Protection Zones

- Measure the diameter of the tree trunk in inches 4.5 ft from the ground. This is the Diameter Breast Height (DBH).
- Multiply this value by 1.5. This result is the radius of the root protection zone in ft. Also considered the critical rooting distance.

Tr **SNOW FENCE INSTALLATION**

DEFINITION
A protective fence around a tree trunk to prevent injury from excavation, trenching, utility, grading, vehicle, or equipment storage within the tree protection zone.

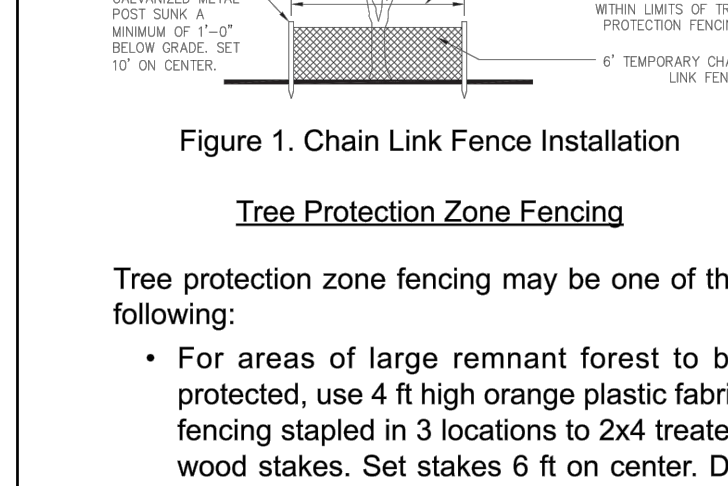


Figure 1. Chain Link Fence Installation

Tree Protection Zone Fencing

Tree protection zone fencing may be one of the 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 to it.
- For all other developments use 6 ft high chain link fencing attached to galvanized metal post.

"Snow" Fence Installation

- Measure the diameter of the tree trunk in inches 4.5 ft from the ground. This is the Diameter Breast Height (DBH).
- Multiply this value by 1.5. This result is the radius of the root protection zone in ft. Also considered the critical rooting distance.

Professional seal for Helen L. Simpson, Level II Certified Design Professional.

811 logo and text: IF YOU DIG GEORGIA... CALL US FIRST! UTILITIES PROTECTION CENTER IT'S THE LAW.

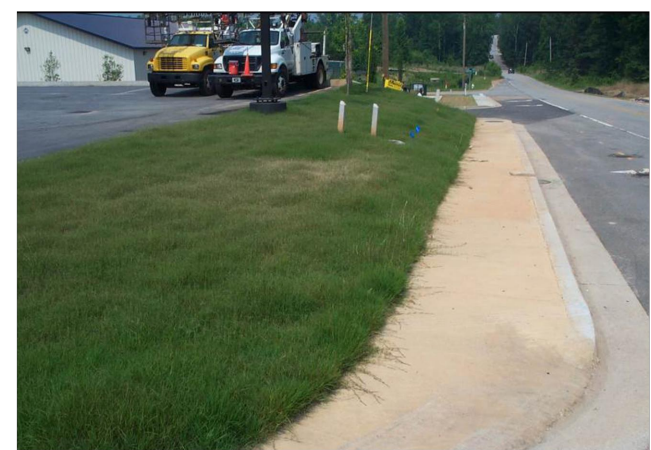
Vertical strip containing project details, revision table, engineer seal for Helen L. Simpson, and company logo for L&W ENGINEERS.

Ds3

DISTURBED AREA STABILIZATION (WITH PERMANENT SEEDING)

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 landscaped 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

Ds3

- 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 fertilizer requirements for each species.
- Apply seed hydraulically. If using conventional 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 materials.
- Irrigate when the soil is dry and at a rate that will not cause runoff.

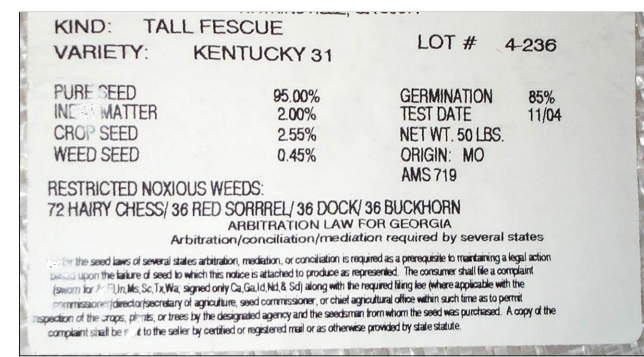


Figure 1. Typical Tag on a Bag of Seed

PLS Example

Tall Fescue
85% germination & 95% purity
PLS = 0.85 germination x 0.95 purity
PLS = 80.75%

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

27

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

Species	Rates per Acre	Rates per 1,000 sq. ft.	Planting Dates by Region			Remarks
			M-L	P	C	
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.
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 perennials	10 lbs. 6 lbs.	0.2 lb. 0.1 lb.	---	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

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

Species	Rates per Acre	Rates per 1,000 sq. ft.	Planting Dates by Region			Remarks
			M-L	P	C	
Lespedeza, Sericea						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.
Scarified	60 lbs.	1.4 lbs.	4/1-5/31	3/15-5/31	3/1-5/15	
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.

Ds3

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

Species	Rates per Acre	Rates per 1,000 sq. ft.	Planting Dates by Region			Remarks
			M-L	P	C	
Lespedeza Ambro Virgata or Appalwo						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 Lespedeza; inoculate seed with EL inoculant.
Scarified	60 lbs.	1.4 lbs.	4/1-5/31	3/15-5/31	3/1-5/15	
Unscarified	75 lbs.	1.7 lbs.	9/1-2/28	9/1-2/28	9/1-2/28	
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.

Ds3

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	---

Ds3

Ds3



Figure 2. Weeping Lovegrass



Figure 3. Sericea Lespedeza

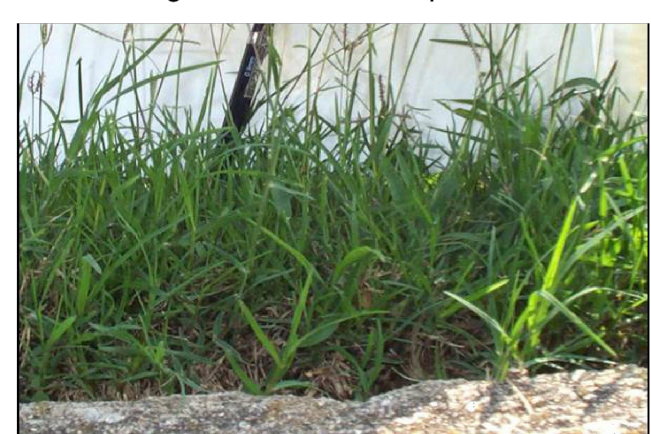


Figure 4. Common Bermuda

36

Ds3

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 ensure that the seeds are mature.

REFERENCES

- Ds1 Disturbed Area Stabilization (With Mulching Only)
- Ds2 Disturbed Area Stabilization (With Temporary Seeding)
- Ss Slope Stabilization

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Ds3

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

Species	Rates per Acre	Rates per 1,000 sq. ft.	Planting Dates by Region			Remarks
			M-L	P	C	
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.
Maidencane sprigs	2' x 3' 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, Atlantic 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

Ds3

Ds3

Ds4

DISTURBED AREA STABILIZATION (WITH SODDING)

DEFINITION

A permanent vegetative cover using sods on highly erodible or critically eroded lands.



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.

38

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 spring.
- 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.

Fertilizer Type (lbs./acre)	Fertilizer Rate (lbs./sq.ft.)	Fertilizer Rate	Season
10-10-10	1000	.025	Fall

- 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.
- Sod should not be cut or spread in extremely wet or dry weather.
- Irrigation should be used to supplement rainfall for a minimum of 2-3 weeks.

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.

39

Ds4

- 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.

Grass	Varieties	Resource Area	Growing Season
Bermudagrass	Common Tifway Tifgreen Tiflawn	M-L, P,C P,C P,C	Warm weather
Bahiagrass	Pensacola	P,C	Warm weather
Centipede	---	P,C	Warm weather
St. Augustine	Common Bitterblue Raleigh	C	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 specified.
- 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.

Types of Species	Planting Year	Fertilizer (N-P-K)	Rate (lbs./acre)	Nitrogen 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
Warm season grasses	First	6-12-12	1500	50-100
	Second	6-12-12	800	50-100
	Maintenance	10-10-10	400	30

REFERENCES

- Ds1 Disturbed Area Stabilization (With Mulching Only)
- Ds2 Disturbed Area Stabilization (With Temporary Seeding)
- Ds3 Disturbed Area Stabilization (With Permanent Vegetation)
- Ss Slope Stabilization

41

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

Species	Rates per Acre	Rates per 1,000 sq. ft.	Planting Dates by Region			Remarks
			M-L	P	C	
Sunflower, Aztec Maximilian	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.

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

Ds3

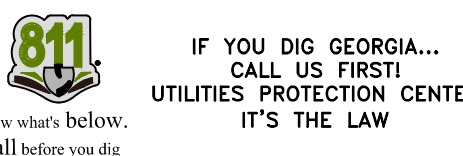
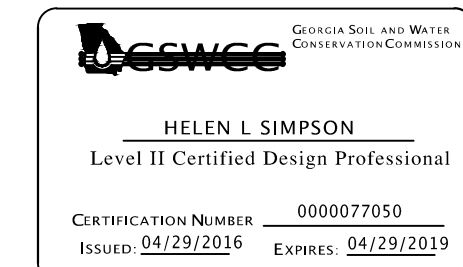
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DATE: 04/30/2018

PROJECT # 16-0009
DRAWN BY: HLS, BSA
CHECKED BY: HLS

990 HAMMOND DRIVE
ATLANTA, GEORGIA 30328
TEL: 770-857-8400
FAX: 770-857-8401



Sd1 **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.

105

Sd1

- 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 splash 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.

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Sd1 **Sensitive Areas** **Sd1-S**

Sediment barriers being used as Type S shall 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 backing
- To be used where runoff velocities are particularly high or where slopes exceed a vertical height of 10 ft.

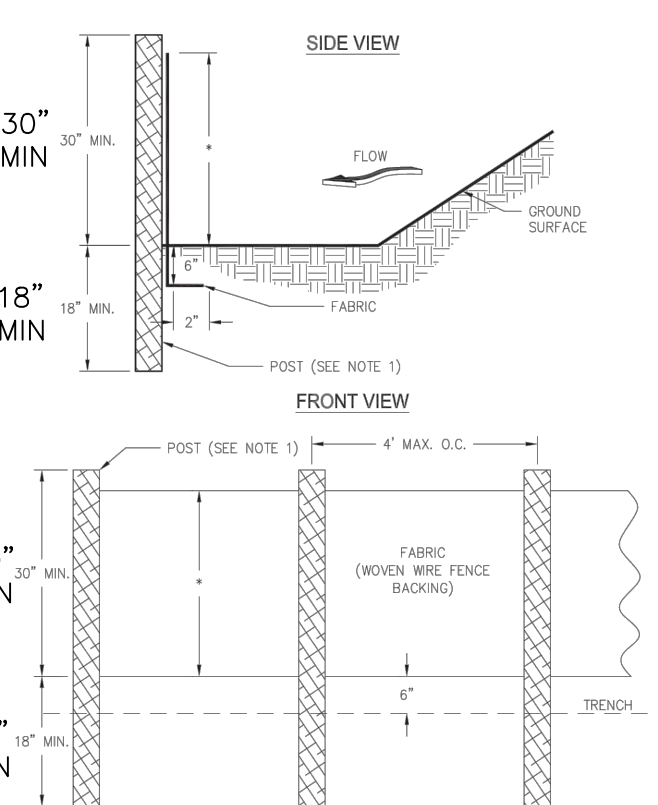


Figure 1. Type "C" Silt Fence

107

Sd1-NS **Non-Sensitive Areas**

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.
- Same flow rate as Type A.

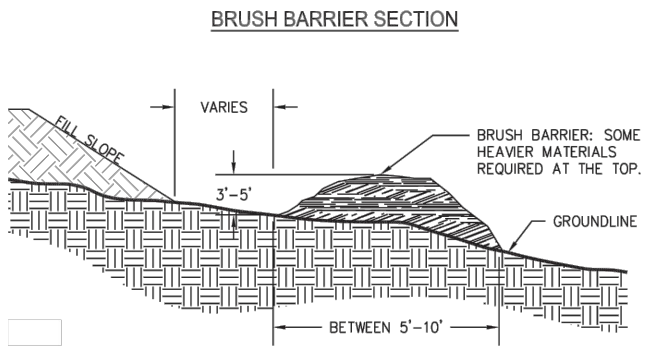


Figure 1. Brush Barrier (Sd1-BB)

Brush Barrier (only during timber clearing)

- Intermingle brush so as not to form a solid dam.
- Should be wind-rows 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.

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Sd1

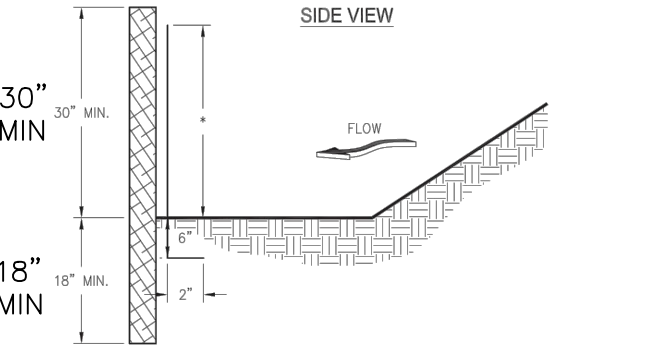


Figure 2. Type "A" & "B" Silt Fence

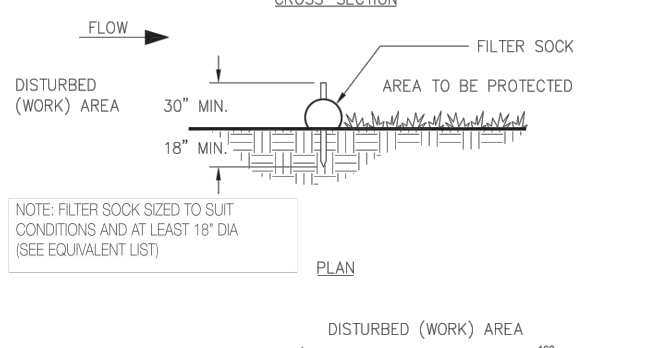


Figure 3. Compost Filter Sock - Type "B"

109

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 one-half 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.

110

ISOMETRIC VIEW
SHOWN WITH ROADWAY PROJECTS FILTER HAT

PLAN VIEW

ELEVATION VIEW

FRAME & FILTER DISCHARGE ANALYSIS

HEAD (FT)	EQUATION USED	OPENING AREA (SF)	FRAME AREA (SF)	FILTER AREA (SF)	FILTERED FLOW (CFS)
0.5	O	2.1	7	6	2
1.0	O	3.9	19	12	3
1.5	O	7.0	41	18	5
2.0	O	8.0	58	24	7
2.5	O	9.2	70	30	9
3.0	O	9.2	77	—	77

REPLACEMENT FILTERS: MODEL # R-140

ROUND FRAME & FILTER ASSEMBLY
Model # R-100A

FRAME MATERIAL: BLACK 0.25" HMWPE
FILTER FABRIC MATERIAL: REFER TO SPEC
SCALE: NOT TO SCALE
LAST UPDATED: APRIL 2010

Silt-Saver, Inc. 1094 CULPEPPER DRIVE, CONYERS, GA 30094 PHONE: (770) 388-7818 FAX: (770) 388-7640 TOLL FREE: 1-888-382-SILT (7458) www.siltsaver.com

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TO BE USED AS A SEDIMENT BARRIER FOR WASH AREAS AT CONSTRUCTION ENTRANCE/EXIT POINTS FROM RESIDENCE YARDS TO PUBLIC RIGHT OF WAY

MODEL #
TLW 10
TLW 15
TLW 22

WEIGHTED TRAVEL LANE WATTLE WITH PINE STRAW IN HIGH VISIBILITY GREEN

MATERIAL: HIGH VISIBILITY GREEN
FABRIC MATERIAL: POLYESTER
SCALE: NOT TO SCALE
LAST UPDATED: JULY 2015

Silt-Saver, Inc. 1094 CULPEPPER DRIVE, CONYERS, GA 30094 PHONE: (770) 388-7818 FAX: (770) 388-7640 TOLL FREE: 1-888-382-SILT (7458) www.siltsaver.com

NO.	REVISIONS	DATE

STRATFIELD DRIVE DRAINAGE IMPROVEMENTS - PHASE 1
LOCATED IN 20th DISTRICT
CITY OF BROOKHAVEN, DeKALB COUNTY



DATE: 04/30/2018
PROJECT # 18-0009
DRAWN BY: HLS, BSA
CHECKED BY: HLS

EROSION CONTROL DETAILS

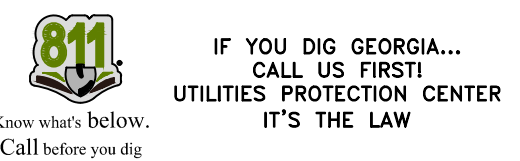
990 HAMMOND DRIVE
SUITE 900
ATLANTA, GEORGIA 30328
TEL: 770-857-8400
FAX: 770-857-8401

LOWE ENGINEERS
ANNIVERSARY

ISSUED FOR PERMIT REVIEW

SHEET **C6.20**

Geosource
HELEN L. SIMPSON
Level II Certified Design Professional
CERTIFICATION NUMBER: 0000077050
ISSUED: 04/29/2016 EXPIRES: 04/29/2019



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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.


Director,
Environmental Protection Division

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 other a contractor or 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 "Phase" 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 Sources" means any discrete, 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 sheetrock which is later conveyed via a point source to waters of the State. This term does not include runoff 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 subject to this permit.

33. "Properly designed" 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, drainage structures, storm water drainage ditches and structures, guardrails, lighting, signage, cameras and fences and exclude subsequent landscaping and beautification projects.

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.

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

39. "Site" or "Construction Site" means a facility of any type on which construction activities are occurring or are to 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 Plan" 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, retaining 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 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 permitted unless they meet the definition of either a primary permittee or a tertiary permittee.

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 drainage 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. "Tribut 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.gasped.org.

45. "USGS Topographic Map" means a current quadrangle, 7 1/2 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 long-term vegetative cover; (2) temporary seeding, producing short-term vegetative cover; or (3) sodding, covering areas with a turf 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.

49. "Watershed" means the land area that drains water to a common outlet, such as a stream, river, lake, or ocean.

50. "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, drainage structures, storm water drainage ditches and structures, guardrails, lighting, signage, cameras and fences and exclude subsequent landscaping and beautification projects.

51. "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.

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 permitted unless they meet the definition of either a primary permittee or a tertiary permittee.

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 drainage 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.

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51. "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.

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

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

54. "Site" or "Construction Site" means a facility of any type on which construction activities are occurring or are to occur which may result in the discharge of pollutants from a point source into the waters of the State.

55. "Storm Water" means storm water runoff, snow melt runoff, and surface runoff and drainage.

56. "Structural Erosion and Sediment Control Plan" 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, retaining or disposing of runoff to prevent excessive sediment loss.

57. "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 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.

58. "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 drainage 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.

59. "Tribut 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.gasped.org.

60. "USGS Topographic Map" means a current quadrangle, 7 1/2 minute series map prepared by the United States Department of the Interior, Geological Survey.

61. "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 long-term vegetative cover; (2) temporary seeding, producing short-term vegetative cover; or (3) sodding, covering areas with a turf perennial sod forming grass.

62. "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.

63. "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.

64. "Watershed" means the land area that drains water to a common outlet, such as a stream, river, lake, or ocean.

65. "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, drainage structures, storm water drainage ditches and structures, guardrails, lighting, signage, cameras and fences and exclude subsequent landscaping and beautification projects.

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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 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 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 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 construction where:

a. the industrial source or activity other than construction is located on the same site as the construction activity and is an integral part of 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 NPDES permit.

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

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

m. Use mulch filter berms, in addition to a silt fence, on the site perimeter wherever construction storm water (including sheet flow) may be discharged. Mulch filter berms cannot be placed in waterways or areas of concentrated flow.

n. 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 included on the Plan.

o. 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.

p. 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 management basins.

q. 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.

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

s. 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.(3), (a) - (c) of this permit.

t. 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.

u. 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).

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

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

x. Limit the amount of disturbed area at any one time to no greater than 25 acres or 50% of the total planned site, whichever is less. All calculations must be included on the Plan.

y. Use "Dir II" techniques available on the EPD website, www.gasped.org (e.g., seed berms, sand filters, anionic PAM) to model and manage all construction storm water runoff (including sheet flow). All calculations must be included on the Plan.

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 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 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 excavating activities or other construction activities.

5. "Construction Activity" means the disturbance of soils associated with clearing, grading, excavating, filling of land, or other similar activity on land or in water. 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. (www.EnviroCertInt.org).

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 professional licensure.

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.

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 in Part III.A.2. of this permit and which are in compliance with Part IV.D.7. (non-storm water discharges) of this permit;

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 numerical limitations for such discharges; and

d. storm water discharges from construction sites that the Director (EPD) has determined to be or may be reasonably expected to contribute 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 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 must be received by the EPD in accordance with the requirements of Part II. Using NOI forms provided by the 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 from the date that the NOI is postmarked to the Director. The Director may deny coverage under this permit and require submittal of an application for an individual NPDES permit or alternative 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 Director.

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.

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.**
1. As 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 Part II.C prior to 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, a copy

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 in Part III.A.2. of this permit and which are in compliance with Part IV.D.7. (non-storm water discharges) of this permit;

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 numerical limitations for such discharges; and

d. storm water discharges from construction sites that the Director (EPD) has determined to be or may be reasonably expected to contribute 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 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 must be received by the EPD in accordance with the requirements of Part II. Using NOI forms provided by the 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 from the date that the NOI is postmarked to the Director. The Director may deny coverage under this permit and require submittal of an application for an individual NPDES permit or alternative 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 Director.

(l) Except as provided in Part IV (iv) below, no construction activities shall be conducted within a 25 foot buffer along the banks of all State waters, as measured horizontally from the point where vegetation has been wrested by normal stream flow or wave action, except where the Director has determined to allow a variance that is at least as protective of natural resources as the protection provided by O.C.G.A. 12-7-6...

- (1) public drinking water system reservoirs, (2) fences, (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...

The "Manual for Erosion and Sediment Control in Storm" (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 as the following:

1. Checklist. Each plan shall include a completed 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 and amendments to the applicable Checklist as approved by the State Soil and Water Conservation Commission up until the date of the NOI submital. The applicable checklists are available on the EPD website, www.epd.gov.

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

- a. A description of the nature of the construction activity; b. A detailed description and chart or timeline of the interrelated sequence of major activities which disturb soils for major portions of the site; c. Estimates of the total area of the site and the total area of the site that is expected to be disturbed by excavation, grading, or other activities; 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 discharge from the site;

- a. Erosion and sediment controls. (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, soil stabilization, protective buffer strips, protection of trees, preservation of mature trees.

(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 the EPD.

- (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 should be analyzed immediately, but in no case later than 48 hours after collection. However, samples from automatic samplers must be collected no later than the next business day after their accumulation, unless flow through automated analyzers is utilized. If automated 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 below the minimum frequency stated in this permit. Refer permittee to EPD as specified in Part IV.E.

- (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 that the primary permittee complies with Part IV.D.6.c.(2) of this permit, primary permittees on an infrastructure construction project may sample the receiving water(s) in the following manner: (a) the primary permittee may utilize a combination of the samplers 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 downstream of the confluence of the receiving water(s) from the permitted discharge (i.e., the discharge farthest upstream at the site) but downstream 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 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 value.

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 O.C.G.A. 12-7-6, or where otherwise allowed by the director pursuant to Code Section 12-8-8, or where an alteration within the buffer area has been authorized pursuant to Code Section 12-8-8(b), or for maintenance of any currently existing encroaching, or hardening, including bridges, roads, parking lots, golf courses, golf cart paths, retaining walls, bulkheads, and piers, 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;

- (1) public drinking water system reservoirs, (2) fences, (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... (19) 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 or the Georgia Highway Authority or the Georgia 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 this permit;...

vegetation, and other appropriate measures. A record of the dates when major grading activities occur, when construction activities temporarily cease, and when stabilization measures are initiated shall be included in the Plan. Except as provided in paragraphs IV.D.3.a.(1)(a), (b), and (c), below, stabilization measures shall be initiated as soon as practicable in portions of the site where grading or other construction activities are occurring, but in no case more than 14 days after the construction activity in that portion of the site has temporarily or permanently ceased.

(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,

(a). Where the initiation of stabilization measures by the 14th day after construction activity temporarily or permanently ceases is precluded by snow cover or other adverse 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, slopes or otherwise limit runoff and the discharge of pollutants from exposed areas of the site to the degree attainable. Such practices may include sill fences, earth dikes, drainage swales, sediment traps, check dams, subsurface drains, pipe slope drains, level spreaders, storm drain 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 front yard areas of residential lots that are either undisturbed or have undergone final stabilization or those areas 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 yards) of storage per acre drained, or equivalent control measures, are required, all fences, wood much berms or equivalent sediment controls are required for all side slope and down slope boundaries of the construction area. When the area of disturbed area is greater than 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 must not be feasible some construction projects, such as those for the installation of a sewer line, in which a sediment basin cannot be used and/or where 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 retention waters.

When dewatering 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 submitted prior to submitting Notice of Termination. For construction activities where the NOI was received 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).

(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 the EPD.

- (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 should be analyzed immediately, but in no case later than 48 hours after collection. However, samples from automatic samplers must be collected no later than the next business day after their accumulation, unless flow through automated analyzers is utilized. If automated 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 below the minimum frequency stated in this permit. Refer permittee to EPD as specified in Part IV.E.

- (1) For construction activities the primary permittee must sample all perennial and intermittent streams and 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(s) will be sampled with the permitted activity. Sampling shall be conducted at a designated 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 shall be provided to the permittee. 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 Watershed Manual, and the National Sanitation Foundation's Urban Storm Drainage Manual 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.

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 O.C.G.A. 12-7-6, or where otherwise allowed by the director pursuant to Code Section 12-8-8, or where an alteration within the buffer area has been authorized pursuant to Code Section 12-8-8(b), or for maintenance of any currently existing encroaching, or hardening, including bridges, roads, parking lots, golf courses, golf cart paths, retaining walls, bulkheads, and piers, 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;

- (1) public drinking water system reservoirs, (2) fences, (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... (19) 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 or the Georgia Highway Authority or the Georgia 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 this permit;...

vegetation, and other appropriate measures. A record of the dates when major grading activities occur, when construction activities temporarily cease, and when stabilization measures are initiated shall be included in the Plan. Except as provided in paragraphs IV.D.3.a.(1)(a), (b), and (c), below, stabilization measures shall be initiated as soon as practicable in portions of the site where grading or other construction activities are occurring, but in no case more than 14 days after the construction activity in that portion of the site has temporarily or permanently ceased.

(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,

(a). Where the initiation of stabilization measures by the 14th day after construction activity temporarily or permanently ceases is precluded by snow cover or other adverse 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, slopes or otherwise limit runoff and the discharge of pollutants from exposed areas of the site to the degree attainable. Such practices may include sill fences, earth dikes, drainage swales, sediment traps, check dams, subsurface drains, pipe slope drains, level spreaders, storm drain 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 front yard areas of residential lots that are either undisturbed or have undergone final stabilization or those areas 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 yards) of storage per acre drained, or equivalent control measures, are required, all fences, wood much berms or equivalent sediment controls are required for all side slope and down slope boundaries of the construction area. When the area of disturbed area is greater than 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 must not be feasible some construction projects, such as those for the installation of a sewer line, in which a sediment basin cannot be used and/or where 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 retention waters.

When dewatering 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 submitted prior to submitting Notice of Termination. For construction activities where the NOI was received 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).

(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 the EPD.

- (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 should be analyzed immediately, but in no case later than 48 hours after collection. However, samples from automatic samplers must be collected no later than the next business day after their accumulation, unless flow through automated analyzers is utilized. If automated 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 below the minimum frequency stated in this permit. Refer permittee to EPD as specified in Part IV.E.

- (1) For construction activities the primary permittee must sample all perennial and intermittent streams and 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(s) will be sampled with the permitted activity. Sampling shall be conducted at a designated 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 shall be provided to the permittee. 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 Watershed Manual, and the National Sanitation Foundation's Urban Storm Drainage Manual 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.

(iv). Except as provided above, for buffers required pursuant to Part IV (i) and (ii), no construction activities shall be conducted within the buffer area, but 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 stream bed or marsh.

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 potential for 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 by the primary permittee for the infrastructure construction project.

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 permittee. 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. 3. For construction activities that begin after the effective date of this permit, the primary permittee shall be required to prepare a copy of the phase of the infrastructure development that corresponds to 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.

For all projects identified under Part I.C.1.b, in a jurisdiction where there is no certified Local Issuing Authority regulating the 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:

- (i) 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. (ii) 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.

(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 systems.

- (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 trucks, hoppers and the rear of vehicles. Washdown of the drum of the concrete site is prohibited. Additional information about best management practices for concrete washout is available at www.epa.gov/npdes/pubs/concretestwashout.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.

- a. Permittee requirements. (1). Each day when any type of construction activity has taken place at a primary permittee's site, the primary permittee shall be responsible for the inspection and recording of each construction activity. (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 shall be made at 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 storms end after 5:00 PM on any Friday or on any non-working day of a 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, equipment, and other storage devices, 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.4.4. 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 erosion control measures, or other material or equipment not permitted under 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 shall be inspected to ascertain whether erosion control measures are effective in preventing significant impacts to receiving water(s).

- (1). Waste disposal. Locate waste collection areas away from streets, watercourses and storm drains. Waste collection areas, such as dumpsters, are often best located behind receiving water(s) entrances to minimize traffic on disturbed soils. The Plan should include secondary containment areas for liquid waste collection areas to further minimize the likelihood of contaminated discharge. 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.

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

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

- 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 remain in accordance with (b). Those existing construction activities that have met the sampling required by (a) 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 II.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.

E. Reporting.

- 1. The applicable permittees are required to submit the sampling results to the EPD at the address shown in Part I.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 frequent 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; b. The name(s) of the certified personnel who performed the sampling and measurements; c. The date(s) analyses were performed; d. The results of analyses in written form, including all raw data, computer disks or spreadsheets; e. The name(s) of the certified personnel who performed the analyses; f. References and written procedures, when available, for the analytical techniques or methods used; g. A copy of all inspection reports generated in accordance with Part IV.D.2 of this permit; h. Results which exceeded 1000 NTU shall be reported as "exceeds 1000 NTU"; and i. Certification of the responsible location, whichever comes first. 3. All written correspondence required by this permit shall be submitted by return certified mail (or similar 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 retained by a business day, 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. 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. In addition, the permittee must file a change of information NOI in accordance with Part IV.C.4. 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 the installation of the initial sediment storage requirements and perimeter control BMPs 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 there has been any change to the plan or if the plan 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 24-hour 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 four (4) 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 into 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 must make the necessary corrections 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 storm water discharge associated with construction activity which discharge into storm(s) 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 provided in this permit.

D. Contents of Plan. The Erosion, Sedimentation and Pollution Control Plan shall include, as a minimum, best management practices for erosion control, sediment control, 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 following sections of this permit: (a) Erosion 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, unless the nature of a construction project shall be made as practical but in no case later than seven (7) calendar days following each inspection.

(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, unless the nature of a construction project shall be made as practical but in no case later than seven (7) calendar days following each inspection. (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.(6), of the permit, shall be made and retained at the site or be readily available at a designated alternate location until the entire written narrative 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 erosion and sediment control measures that are not being 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 IV.G.2 of this permit.

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 turbidity:

- 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 1:24,000 map showing the location of the

B. Continuation of the Expired General Permit. This permit expires on the date shown on the cover page of this permit. However, an expired general permit continues in force and effect until a new general permit is issued, final and effective.

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 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 Open Records Act.

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:

- All Notices of Intent and Notices of Termination shall be signed as follows:
 - 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 decision-making 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;
 - For a partnership or sole proprietorship: by a general partner or the proprietor, respectively; or
 - For a municipality, State, Federal, or other public facility; by either a principal executive officer or ranking elected official; and
 - 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, or other reports requested by the EPD to be signed by a person described above or by a duly authorized representative of that person.
- 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:

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 for knowing violations."

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. § 12-8-80, et seq. 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.

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 device;

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 associated 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.

E. For facilities/construction sites located in the following counties: Bartow, Cataosa, Chattahoochee, 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
 P.O. Box 3250
 Cartersville, GA 30120-1705
 (770) 987-4900

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

Information shall be submitted to: Coastal District - Brunswick Office
 Georgia Environmental Protection Division
 600 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, Oztman, Randolph, Seminole, Stewart, Sumter, Tallah, Terrell, Thomas, Tift, Turner, Webster, Wilcox, Worth

Information shall be submitted to: Southwest District Office
 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:

Information shall be submitted to: Watershed Protection Branch
 Environmental Protection Division
 2 Martin Luther King Jr. Drive
 Suite 1152 East
 Atlanta, Georgia 30334
 404-463-1511

APPENDIX A
EPD DISTRICT OFFICES

All required correspondence, including but not limited to the Notice of Intent, 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, Mettewher, Monroe, Muscogee, Peach, Pike, Pulaski, Schley, Talbot, Taylor, Troup, Twiggs, Upson

Information shall be submitted to: West Central District Office
 Georgia Environmental Protection Division
 2640 Sharning Drive
 Macon, GA 31211-3576
 (478) 751-6812

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, Wilkinson

Information shall be submitted to: East Central District Office
 Georgia Environmental Protection Division
 3525 Walton Way Extension
 Augusta, GA 30909-1821
 (706) 667-4343

C. For facilities/construction sites located in the following counties: Baldwin, Banks, Barrow, Bibb, 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
 (706) 969-6376

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

APPENDIX B
Nephelometric Turbidity Unit (NTU) TABLES

		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+
Trout Streams	Site Size, acres	1.00-10	25	50	75	150	300	500	500
		10.01-25	25	25	50	75	150	200	500
		25.01-50	25	25	25	50	75	100	300
		50.01-100	20	25	25	35	59	75	150
		100.01+	20	25	25	25	25	50	60

		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+
Waters Supporting Warm Water Fisheries	Site Size, acres	1.00-10	75	150	200	400	750	750	750
		10.01-25	50	100	100	200	300	500	750
		25.01-50	50	50	100	100	200	300	750
		50.01-100	50	50	50	100	100	150	300
		100.01+	50	50	50	50	50	100	200

To use these tables, select the site (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.

M. Inspection and Entry. The permittee shall allow the Director or an authorized representative of EPA or EPA 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 law, to:

- 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;
- Have access to and copy at reasonable times, any records that must be kept under the conditions of this permit; and
- Inspect at reasonable times any facilities or equipment (including monitoring and control equipment).

N. Permit Actions. This permit may be revoked and reassess, 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:

- 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.

- 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:

- The NPDES permit number for the storm water discharge associated with construction activity identified by the Notice of Termination (i.e., GAR100002 – Infrastructure);
- The project construction site name, site location, GPS locations (decimal degrees) of the beginning and end of the infrastructure construction project or site 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 accurately locate the construction site;
- The owner's legal name, address, telephone number and email address and the operator's legal name, address, telephone and email address;

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. THIS 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 LNER 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 URIM 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 PERMITEE'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 PERMITEE'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 DATE DESIGN PROFESSIONAL SIGNATURE

EROSION 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 500 FEET UPSTREAM OF SILVER LAKE WETLANDS 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 INSTALLATION.
- 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 AND PERMITS.
- 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.
- WASTE MATERIALS SHALL NOT BE DISCHARGED TO WATERS OF THE STATE, EXCEPT AS AUTHORIZED BY A SECTION 404 PERMIT
- 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.
- 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.
- ANY DISTURBED AREA LEFT EXPOSED FOR A PERIOD GREATER THAN 7 DAYS SHALL BE STABILIZED WITH MULCH OR TEMPORARY SEEDING.
- ALL FILL SLOPES SHALL HAVE SILT FENCE PLACED AT THE SLOPE'S TOE.
- EROSION CONTROL MATTING SHALL BE INSTALLED ON ALL SLOPES STEEPER THAN 3:1.
- 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 PLAN.
- NO WETLANDS HAVE BEEN IDENTIFIED WITHIN THE LIMITS OF DISTURBANCE OF THE PROJECT.
- ALL TEMPORARY BMP'S WILL BE REMOVED UPON STABILIZATION OF THE DISTURBED AREA.
- ANY CHANGES TO THE ES&PC PLAN WHICH HAVE SIGNIFICANT EFFECT ON THE BMP'S WITH A HYDRAULIC OR DESIGN COMPONENT MUST BE CERTIFIED BY THE DESIGN PROFESSIONAL AND MUST BE APPROVED BY CHEROKEE COUNTY.
- WASTE MATERIALS SHALL NOT BE DISCHARGED TO WATERS OF THE STATE EXCEPT AS AUTHORIZED BY A SECTION 404 PERMIT.
- THE ES&PC PLAN IS IN COMPLIANCE WITH WASTE DISPOSAL, SANITARY SEWER OR SEPTIC TANK REGULATIONS.
- SEE SHEET THIS SHEET FOR SPILL PREVENTION NOTES.
- IF PRIMARY PERMITEE CHANGES DURING THE COURSE OF A PROJECT, THE NEW PRIMARY PERMITEE MUST SUBMIT COPIES OF THE NEW NOI TO THE COUNTY LAND DISTURBANCE INSPECTOR.
- TWO COPIES OF THE NPDES NOTICE OF INTENT MUST BE PROVIDED TO THE LAND DISTURBANCE INSPECTOR PRIOR TO INITIATING CONSTRUCTION.
- FAILURE OF THE CONTRACTOR TO PERFORM THE PRESCRIBED EROSION CONTROL PRACTICES SHALL RESULT IN THE IMMEDIATE ISSUANCE OF A STOP-WORK ORDER FOR THE PROJECT SITE, PURSUANT TO UDC 3.11.F.2.D.
- BEGINNING APRIL 1, 2007, AT LEAST ONE PERSON FROM EACH WORK CREW/COMPANY/ENTITY INVOLVED IN LAND DISTURBANCE ACTIVITY ON A PROJECT OR SITE MUST HAVE COMPLETED THE LEVEL 1A EROSION EDUCATION & TRAINING COURSE AND BE CERTIFIED BY GSWCC.
- THE APPLICABLE PORTION OF ES&PC PLAN IS TO BE PROVIDED TO EACH SECONDARY PERMITEE PRIOR TO THE SECONDARY CONDUCTING ANY CONSTRUCTION ACTIVITY AND IN THE EVENT OF ANY CHANGE TO THE PLAN.
- THE DESIGN PROFESSIONAL WHO PREPARED THE ES&PC PLAN IS TO INSPECT THE INSTALLATION OF BMP'S WITHIN 7 DAYS AFTER THE CONSTRUCTION ACTIVITY BEGINS. PROOF OF SITE VISIT SHOULD BE KEPT ON SITE.
- SEDIMENT STORAGE VOLUME MUST BE IN PLACE PRIOR TO AND DURING ALL LAND DISTURBING ACTIVITIES UNTIL FINAL STABILIZATION OF THE SITE HAS BEEN ACHIEVED.

811 Know what's below. Call before you dig.

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

HELEN L SIMPSON
 Level II Certified Design Professional

CERTIFICATION NUMBER: 0000077050
 Issued: 04/29/2016 Expires: 04/29/2019

REVISIONS DATE

NO.

STRATFIELD DRIVE DRAINAGE IMPROVEMENTS - PHASE 1

LOCATED IN 20th DISTRICT CITY OF BROOKHAVEN, DeKALB COUNTY

GEORGIA REGISTERED ENGINEER HELEN L. SIMPSON

DATE: 04/30/2018

PROJECT# 18-0009

DRAWN BY: HLS, BSA

CHECKED BY: HLS

990 HAMMOND DRIVE SUITE 900 ATLANTA, GEORGIA 30328

TEL: 770-857-8400 FAX: 770-857-8401

NPDES ENGINEERS

ISSUED FOR PERMIT REVIEW

SHEET C6.50

STANDARD PRECAST DROP INLETS

DEPARTMENT OF TRANSPORTATION
STATE OF GEORGIA

SCALE AS SHOWN

DESIGNED BY: *[Signature]* ENGINEER
CHECKED BY: *[Signature]* ENGINEER

AUG. 1979
NUMBER 1019A
PRECAST

TYPE 'A'
NOTE: OPENING FOR PIPE SHALL BE THE OUTSIDE DIAMETER OF THE PIPE. PIPE FLANGES OR HANDLING GROOVES SHALL BE MAINTAINED.

TYPE 'B' WITH WEIR

TYPE 'C' (WITH OR WITHOUT WEIR)

TYPE 'E'

METHOD OF CONNECTING PIPE

METHOD OF CONNECTION SKEWED PIPE

ALTERNATE CONNECTION SKEWED PIPE

REINFORCING STEEL FOR BOTTOM SLAB

DETAILS OF DROP INLET WITH DOUBLE WEIR OPENING

ISOMETRIC VIEW (DOUBLE WEIR OPENING SHOWN)

DETAIL OF SINGLE WEIR OPENING

DROP INLET WITH ENLARGED BASE

DROP INLET WITH ADDITIONAL HEIGHT

REINFORCING FOR OPTIONAL PRECAST APRON

GENERAL NOTES:

- SPECIFICATIONS FOR STANDARD, CURRENT EDITION, IS SUPPLEMENTS THERETO.
- SEE STD. 100-L FOR ADDITIONAL DETAILS WHERE INLET IS CONSTRUCTED ON BOX CULVERT.
- SEE STD. 100-D FOR CIRCULAR PRECAST ALTERNATES.
- PRECAST OR BRICK MASONRY BACK CONSTRUCTION SHALL EXTEND 6" ABOVE TOP OF PIPE. JOINTS BETWEEN PRECAST & BRICK SECTIONS SHALL BE FLUSH ON CONC. FILL TO FORM BEARING AREA.
- TYPICAL TREATMENT FOR SKEWED PIPE: (a) WITH PRECAST APRON - CONSTRUCT SIDE WITH WALLS PARALLEL TO PIPE AND SET PRECAST APRON PARALLEL TO TOP AND BUILT RELATIVE TO PIPE OR USE CIRCULAR SECTION (STD. 100). (b) WITH BUILT-IN-PLACE APRON - CONSTRUCT APRON AS DESCRIBED AND USE REDUCER BASE IN INCREASE IN W OR W, DIMENSIONS AS NECESSARY OR USE CIRCULAR SECTION (STD. 100).

PIPE SIZE	TYPE 'A'		TYPE 'B'		TYPE 'C'		TYPE 'E'	
	MIN.	MAX.	MIN.	MAX.	MIN.	MAX.	MIN.	MAX.
18"	2'-0"	2'-6"	2'-0"	2'-6"	2'-0"	2'-0"	2'-0"	2'-0"
24"	2'-0"	2'-6"	2'-0"	2'-6"	2'-0"	2'-0"	2'-0"	2'-0"
30"	2'-0"	2'-6"	2'-0"	2'-6"	2'-0"	2'-0"	2'-0"	2'-0"
36"	2'-0"	2'-6"	2'-0"	2'-6"	2'-0"	2'-0"	2'-0"	2'-0"
42"	2'-0"	2'-6"	2'-0"	2'-6"	2'-0"	2'-0"	2'-0"	2'-0"
48"	2'-0"	2'-6"	2'-0"	2'-6"	2'-0"	2'-0"	2'-0"	2'-0"

STANDARD PRECAST REINFORCED CONCRETE MANHOLE

DEPARTMENT OF TRANSPORTATION
STATE OF GEORGIA

SCALE AS SHOWN

DESIGNED BY: *[Signature]* ENGINEER
CHECKED BY: *[Signature]* ENGINEER

AUGUST 1973
NUMBER 1011A
PRECAST

DETAILS OF DROP INLET WITH DOUBLE WEIR OPENING

ISOMETRIC VIEW (DOUBLE WEIR OPENING SHOWN)

DETAIL OF SINGLE WEIR OPENING

DROP INLET WITH ENLARGED BASE

DROP INLET WITH ADDITIONAL HEIGHT

REINFORCING FOR OPTIONAL PRECAST APRON

GENERAL NOTES:

- MATERIALS: ALL CONCRETE, STEEL BARS AND STEEL WIRE REINFORCEMENT SHALL COMPLY WITH SECTION 666.02 OF GEORGIA STANDARD SPECIFICATIONS AND SPECIAL PROVISION WITHIN HURDIT SECTION 666.02.
- REINFORCEMENT: (a) PLACEMENT AND DESIGN OF STEEL REINFORCEMENT IN RISER UNITS, CONE SECTIONS, GRADE RINGS AND JOINTS SHALL BE IN COMPLIANCE WITH A.S.T.M. C-476 UNLESS OTHERWISE SPECIFIED. (b) BASE UNITS, REDUCER SLABS AND FLAT TOP SLABS SHALL HAVE STEEL REINFORCEMENT AS SHOWN IN DETAILS AT LEFT.
- OPENINGS FOR PIPES UNDER 18" IN DIAMETER ARE TO BE PRECAST. A MINIMUM OF 6" ALONG THE INTERFERENCE IS TO REMAIN BETWEEN THE EXTREMITIES OF HOLE FOR ALTERNATE PIPE IN ANY CONCRETE UNIT. A MINIMUM OF 12" TO REMAIN SHALL REMAIN IN WALL BETWEEN TWO OPENINGS.
- THE REDUCER SHALL BE BUILT BY THE CONTRACTOR WITH THE ANGLE OF ALIGNMENT AND SIZE OF ALL PIPES TO ENTER MANHOLE AND THE HEIGHT OF STRUCTURE.
- BASE UNITS SHALL HAVE SUFFICIENT HEIGHT TO ALLOW FOR MINIMUM OF 6" OF WALL BETWEEN TOP OF HIGHEST OPENING FOR PIPES AND BOTTOM OF JOINT.
- INVERT CHANNELS: (a) FOR SANITARY SINKER RAINLINES SEE GEORGIA STANDARD SPECIFICATIONS FOR CHANNEL REQUIREMENTS. (b) FOR STORM SINKER MANHOLES, CHANNELS BUILT TO SUIT PIPE SIZE AND LOCATION. HEIGHT OF CHANNEL EQUAL TO 1/2 DIAMETER OF OUTLET PIPE. CHANNEL BUILT FROM GROUT OR CLAY OR CONCRETE.
- PIPES ARE TO BE EXTENDED INTO STRUCTURE WALL A MINIMUM OF 4" BUT SHOULD NOT EXTEND BEYOND INTERIOR WALL OF STRUCTURE.
- ALL JOINTS, EXCEPT FOR GRADE RINGS AND TOP OF TOP CONE, SHALL HAVE TORQUE ROD GROOVE SECTION.

PIPE SIZE	TRICK MASONRY		REINFORCED CONCRETE	
	MIN.	MAX.	MIN.	MAX.
18"	2'-0"	2'-6"	2'-0"	2'-6"
24"	2'-0"	2'-6"	2'-0"	2'-6"
30"	2'-0"	2'-6"	2'-0"	2'-6"
36"	2'-0"	2'-6"	2'-0"	2'-6"
42"	2'-0"	2'-6"	2'-0"	2'-6"
48"	2'-0"	2'-6"	2'-0"	2'-6"

STANDARD PRECAST REINFORCED CONCRETE MANHOLE

DEPARTMENT OF TRANSPORTATION
STATE OF GEORGIA

SCALE AS SHOWN

DESIGNED BY: *[Signature]* ENGINEER
CHECKED BY: *[Signature]* ENGINEER

AUGUST 1973
NUMBER 1011A
PRECAST

STEP DETAIL

SECTIONAL DETAIL (MANHOLE WITH BASE UNIT OF D-OVER 48")

GENERAL NOTES:

- MATERIALS: ALL CONCRETE, STEEL BARS AND STEEL WIRE REINFORCEMENT SHALL COMPLY WITH SECTION 666.02 OF GEORGIA STANDARD SPECIFICATIONS AND SPECIAL PROVISION WITHIN HURDIT SECTION 666.02.
- REINFORCEMENT: (a) PLACEMENT AND DESIGN OF STEEL REINFORCEMENT IN RISER UNITS, CONE SECTIONS, GRADE RINGS AND JOINTS SHALL BE IN COMPLIANCE WITH A.S.T.M. C-476 UNLESS OTHERWISE SPECIFIED. (b) BASE UNITS, REDUCER SLABS AND FLAT TOP SLABS SHALL HAVE STEEL REINFORCEMENT AS SHOWN IN DETAILS AT LEFT.
- OPENINGS FOR PIPES UNDER 18" IN DIAMETER ARE TO BE PRECAST. A MINIMUM OF 6" ALONG THE INTERFERENCE IS TO REMAIN BETWEEN THE EXTREMITIES OF HOLE FOR ALTERNATE PIPE IN ANY CONCRETE UNIT. A MINIMUM OF 12" TO REMAIN SHALL REMAIN IN WALL BETWEEN TWO OPENINGS.
- THE REDUCER SHALL BE BUILT BY THE CONTRACTOR WITH THE ANGLE OF ALIGNMENT AND SIZE OF ALL PIPES TO ENTER MANHOLE AND THE HEIGHT OF STRUCTURE.
- BASE UNITS SHALL HAVE SUFFICIENT HEIGHT TO ALLOW FOR MINIMUM OF 6" OF WALL BETWEEN TOP OF HIGHEST OPENING FOR PIPES AND BOTTOM OF JOINT.
- INVERT CHANNELS: (a) FOR SANITARY SINKER RAINLINES SEE GEORGIA STANDARD SPECIFICATIONS FOR CHANNEL REQUIREMENTS. (b) FOR STORM SINKER MANHOLES, CHANNELS BUILT TO SUIT PIPE SIZE AND LOCATION. HEIGHT OF CHANNEL EQUAL TO 1/2 DIAMETER OF OUTLET PIPE. CHANNEL BUILT FROM GROUT OR CLAY OR CONCRETE.
- PIPES ARE TO BE EXTENDED INTO STRUCTURE WALL A MINIMUM OF 4" BUT SHOULD NOT EXTEND BEYOND INTERIOR WALL OF STRUCTURE.
- ALL JOINTS, EXCEPT FOR GRADE RINGS AND TOP OF TOP CONE, SHALL HAVE TORQUE ROD GROOVE SECTION.

PIPE SIZE	TYPE 'A'		TYPE 'B'		TYPE 'C'		TYPE 'E'	
	MIN.	MAX.	MIN.	MAX.	MIN.	MAX.	MIN.	MAX.
18"	2'-0"	2'-6"	2'-0"	2'-6"	2'-0"	2'-0"	2'-0"	2'-0"
24"	2'-0"	2'-6"	2'-0"	2'-6"	2'-0"	2'-0"	2'-0"	2'-0"
30"	2'-0"	2'-6"	2'-0"	2'-6"	2'-0"	2'-0"	2'-0"	2'-0"
36"	2'-0"	2'-6"	2'-0"	2'-6"	2'-0"	2'-0"	2'-0"	2'-0"
42"	2'-0"	2'-6"	2'-0"	2'-6"	2'-0"	2'-0"	2'-0"	2'-0"
48"	2'-0"	2'-6"	2'-0"	2'-6"	2'-0"	2'-0"	2'-0"	2'-0"

STORM DETAILS

DEPARTMENT OF TRANSPORTATION
STATE OF GEORGIA

SCALE AS SHOWN

DESIGNED BY: *[Signature]* ENGINEER
CHECKED BY: *[Signature]* ENGINEER

AUGUST 1973
NUMBER 1011A
PRECAST

CONCRETE ARCH

CONCRETE CRADLE

GENERAL NOTES:

- CONCRETE ARCH: (a) CONSTRUCTION SHALL BE IN COMPLIANCE WITH SECTION 666.02 OF GEORGIA STANDARD SPECIFICATIONS AND SPECIAL PROVISION WITHIN HURDIT SECTION 666.02. (b) ARCH SHALL BE BUILT WITH 3000 P.S.I. CONCRETE. (c) ARCH SHALL BE BUILT WITH 1/4" LD. MIN. REINFORCEMENT. (d) ARCH SHALL BE BUILT WITH 1/4" O.D. MIN. REINFORCEMENT.
- CONCRETE CRADLE: (a) CONSTRUCTION SHALL BE IN COMPLIANCE WITH SECTION 666.02 OF GEORGIA STANDARD SPECIFICATIONS AND SPECIAL PROVISION WITHIN HURDIT SECTION 666.02. (b) CRADLE SHALL BE BUILT WITH 3000 P.S.I. CONCRETE. (c) CRADLE SHALL BE BUILT WITH 1/4" LD. MIN. REINFORCEMENT. (d) CRADLE SHALL BE BUILT WITH 1/4" O.D. MIN. REINFORCEMENT.

REVISIONS
DATE

NO.

STRATFIELD DRIVE DRAINAGE
IMPROVEMENTS - PHASE 1
LOCATED IN
20th DISTRICT
CITY OF BROOKHAVEN, DEKALB COUNTY

GEORGIA REGISTERED
ENGINEER
HELEN L. SIMPSON

DATE: 04/30/2018

PROJECT NO: 18-0009
DRAWN BY: HLS, BSA
CHECKED BY: HLS

STORM DETAILS

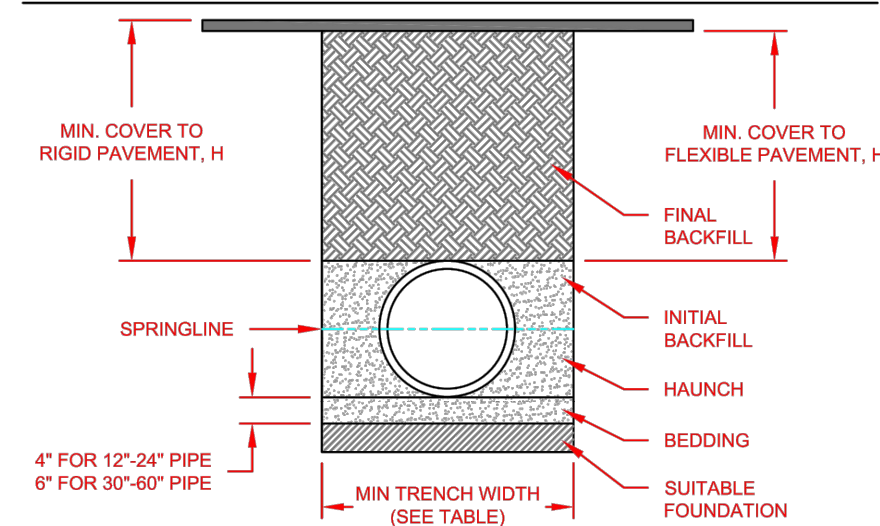
990 HAMMOND DRIVE
SUITE 900
ATLANTA, GEORGIA 30328
TEL: 770-857-8400
FAX: 770-857-8401

LOWE
ENGINEERS

ISSUED FOR PERMIT REVIEW

SHEET
C7.00

HP STORM TRENCH INSTALLATION DETAIL



NOTES:

- ALL PIPE SYSTEMS SHALL BE INSTALLED IN ACCORDANCE WITH ASTM D2321, "STANDARD PRACTICE FOR UNDERGROUND INSTALLATION OF THERMOPLASTIC PIPE FOR SEWERS AND OTHER GRAVITY FLOW APPLICATIONS". LATEST ADDITION, WITH THE EXCEPTION THAT THE INITIAL BACKFILL MAY EXTEND TO THE CROWN OF THE PIPE. SOIL CLASSIFICATIONS ARE PER THE LATEST VERSION OF ASTM D2321. CLASS IV MATERIALS (MH, CH) AS DEFINED IN PREVIOUS VERSIONS OF ASTM D2321 ARE NOT APPROPRIATE BACKFILL MATERIALS.
- MEASURES SHOULD BE TAKEN TO PREVENT MIGRATION OF NATIVE FINES INTO BACKFILL MATERIAL WHEN REQUIRED.
- FOUNDATION: WHERE THE TRENCH BOTTOM IS UNSTABLE, THE CONTRACTOR SHALL EXCAVATE TO A DEPTH REQUIRED BY THE ENGINEER AND REPLACE WITH SUITABLE MATERIAL AS SPECIFIED BY THE ENGINEER. AS AN ALTERNATIVE AND AT THE DISCRETION OF THE DESIGN ENGINEER, THE TRENCH BOTTOM MAY BE STABILIZED USING A GEOTEXTILE MATERIAL.
- BEDDING: SUITABLE MATERIAL SHALL BE CLASS I, II, III, OR IV. THE CONTRACTOR SHALL PROVIDE DOCUMENTATION FOR MATERIAL SPECIFICATION TO ENGINEER. COMPACTION SHALL BE SPECIFIED BY THE ENGINEER IN ACCORDANCE WITH TABLE 3 FOR THE APPLICABLE FILL HEIGHTS LISTED. UNLESS OTHERWISE NOTED BY THE ENGINEER, MINIMUM BEDDING THICKNESS SHALL BE 4" (100mm) FOR 12"-24" (300mm-600mm) DIAMETER PIPE, 6" (150mm) FOR 30"-40" (750mm-1000mm) DIAMETER PIPE. THE MIDDLE 10% BENEATH THE PIPE INVERT SHALL BE LOOSELY PLACED. PLEASE NOTE, CLASS IV MATERIAL HAS LIMITED APPLICATION AND CAN BE DIFFICULT TO PLACE AND COMPACT; USE ONLY WITH THE APPROVAL OF A SOIL EXPERT.
- INITIAL BACKFILL: SUITABLE MATERIAL SHALL BE CLASS I, II, III, OR IV IN THE PIPE ZONE EXTENDING TO THE CROWN OF THE PIPE. THE CONTRACTOR SHALL PROVIDE DOCUMENTATION FOR MATERIAL SPECIFICATION TO ENGINEER. MATERIAL SHALL BE INSTALLED AS REQUIRED IN ASTM D2321, LATEST EDITION. COMPACTION SHALL BE SPECIFIED BY THE ENGINEER IN ACCORDANCE WITH TABLE 3 FOR THE APPLICABLE FILL HEIGHTS LISTED. PLEASE NOTE, CLASS IV MATERIAL HAS LIMITED APPLICATION AND CAN BE DIFFICULT TO PLACE AND COMPACT; USE ONLY WITH THE APPROVAL OF A SOIL EXPERT.
- MINIMUM COVER: MINIMUM COVER, H, IN NON-TRAFFIC APPLICATIONS (GRASS OR LANDSCAPE AREAS) IS 12" (300mm) FROM THE TOP OF PIPE TO GROUND SURFACE. ADDITIONAL COVER MAY BE REQUIRED TO PREVENT FLOTATION. FOR TRAFFIC APPLICATIONS, CLASS I OR II MATERIAL, COMPACTED TO 90% SPD AND CLASS III COMPACTED TO 95% SPD IS REQUIRED. FOR TRAFFIC APPLICATIONS, MINIMUM COVER, H, IS 12" (300mm) UP TO 48" (1200mm) DIAMETER PIPE AND 24" (600mm) OF COVER FOR 60" (1500mm) DIAMETER PIPE, MEASURED FROM TOP OF PIPE TO BOTTOM OF FLEXIBLE PAVEMENT OR TO TOP OF RIGID PAVEMENT.
- FOR ADDITIONAL INFORMATION SEE TECHNICAL NOTE 2.04.

TABLE 1. RECOMMENDED MINIMUM TRENCH WIDTHS

PIPE DIAM. (300mm)	MIN. TRENCH WIDTH (762mm)
12"	36"
15"	34"
18"	36"
24"	38"
30"	42"
36"	44"
42"	46"
48"	48"
60"	50"
72"	52"
84"	54"
96"	56"
108"	58"
120"	60"
132"	62"
144"	64"
156"	66"
168"	68"
180"	70"
192"	72"
204"	74"
216"	76"
228"	78"
240"	80"
252"	82"
264"	84"
276"	86"
288"	88"
300"	90"

TABLE 2. MINIMUM RECOMMENDED COVER BASED ON SURFACE LIVE LOADING CONDITION

PIPE DIAM.	SURFACE LIVE LOADING CONDITION	
	H-25	HEAVY CONSTRUCTION (75T AXLE LOAD) *
12" - 48"	12"	48"
300mm - 1200mm	305mm	1219mm
60"	24"	1524mm
(1500mm)	(610mm)	

TABLE 3. MAXIMUM COVER FOR ADS HP STORM PIPE

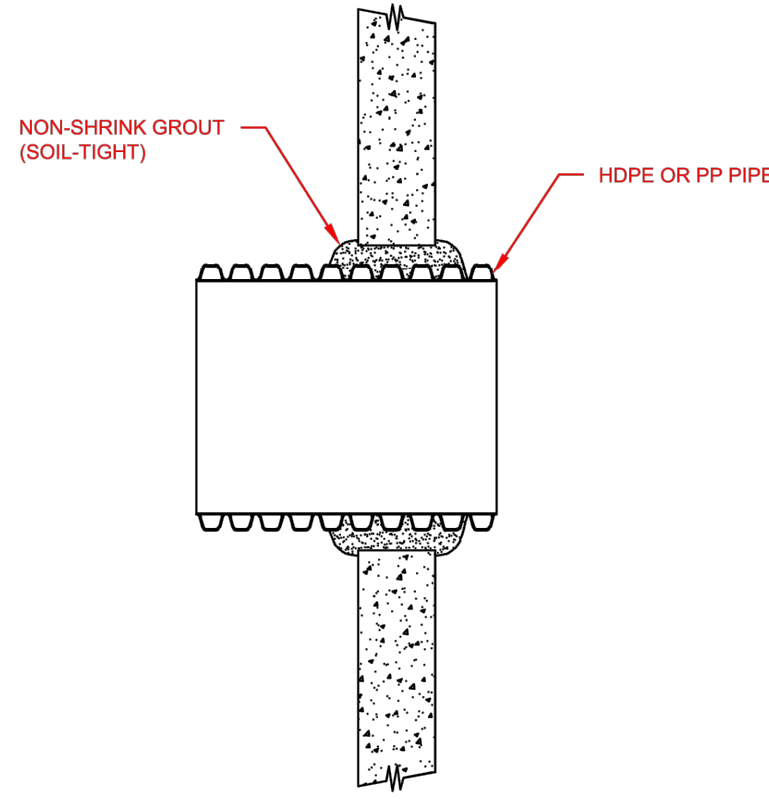
PIPE DIA	CLASS I	CLASS II	CLASS III	CLASS IV	
				90%	95%
12"	4.1	2.8	2.1	1.8	2.0
(300mm)	(12.8m)	(8.5m)	(6.4m)	(4.9m)	(4.9m)
15"	4.2	2.9	2.1	1.8	2.1
(375mm)	(12.8m)	(8.8m)	(6.4m)	(4.9m)	(4.9m)
18"	4.4	3.0	2.1	1.8	2.2
(450mm)	(13.4m)	(9.1m)	(6.4m)	(4.9m)	(5.2m)
24"	3.7	2.6	1.8	1.4	1.4
(600mm)	(11.3m)	(7.9m)	(5.5m)	(4.3m)	(4.3m)
30"	3.9	2.7	1.9	1.4	1.5
(750mm)	(11.9m)	(8.2m)	(5.8m)	(4.3m)	(4.6m)
36"	2.8	2.0	1.4	1.0	1.1
(900mm)	(8.5m)	(6.1m)	(4.3m)	(3.0m)	(3.0m)
42"	3.0	2.1	1.4	1.0	1.1
(1050mm)	(9.1m)	(6.4m)	(4.3m)	(3.0m)	(3.0m)
48"	2.9	2.0	1.4	9	10
(1200mm)	(8.8m)	(6.1m)	(4.3m)	(2.7m)	(3.0m)
60"	2.9	2.0	1.4	9	10
(1500mm)	(8.8m)	(6.1m)	(4.3m)	(2.7m)	(3.0m)

FILL HEIGHT TABLE GENERATED USING AASHTO SECTION 12. LOAD RESISTANCE FACTOR DESIGN (LRFD) PROCEDURE WITH THE FOLLOWING ASSUMPTIONS:
 NO HYDROSTATIC PRESSURE
 UNIT WEIGHT OF SOIL (γ_s) = 120 PCF
 © 2018 ADS, INC.

REV.	DESCRIPTION	RWD	BY	DATE	CHKD
6	REV. MAXIMUM COVER HEIGHTS		MMDDVY	01/11/17	

ADVANCED DRAINAGE SYSTEMS, INC. (ADS) HAS PREPARED THIS DETAIL BASED ON INFORMATION PROVIDED TO ADS. THIS DRAWING IS INTENDED TO DEPICT THE COMPONENTS AS REQUESTED. ADS HAS NOT PERFORMED ANY ENGINEERING OR DESIGN SERVICES FOR THIS PROJECT. NOR HAS ADS INDEPENDENTLY VERIFIED THE INFORMATION SUPPLIED. THE INSTALLATION DETAILS PROVIDED HEREIN ARE GENERAL RECOMMENDATIONS AND ARE NOT SPECIFIC FOR THIS PROJECT. THE DESIGN ENGINEER SHALL REVIEW THESE DETAILS PRIOR TO CONSTRUCTION. IF IS THE DESIGN ENGINEER'S RESPONSIBILITY TO ENSURE THE DETAILS PROVIDED HEREIN MEET OR EXCEEDS THE APPLICABLE NATIONAL, STATE, OR LOCAL REQUIREMENTS AND TO ENSURE THAT THE DETAILS PROVIDED HEREIN ARE ACCEPTABLE FOR THIS PROJECT.

12"-60" HDPE OR PP SOIL-TIGHT GROUDED MANHOLE CONNECTION



NOTES:
 SEE STANDARD DETAIL STD-201 AND TECHNICAL NOTE 5.04
 CONNECTIONS TO MANHOLES AND STRUCTURES FOR INSTALLATION RECOMMENDATIONS.

6	RENAMED DRAWING	TJR	03/10/16		
5	REV. DESCRIPTION	BY	MMDDVY	CHND	

12"-60" HDPE OR PP SOIL-TIGHT GROUDED MH CONNECTION
 DRAWING NUMBER: STD-202

ADS HP STORM 12"- 60" PIPE SPECIFICATION

Scope

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

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 D3212.

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

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. (in (mm))	12 (300)	15 (375)	18 (450)	24 (600)	30 (750)	36 (900)	42 (1050)	48 (1200)	60 (1500)
Average Pipe I.D. (in (mm))	12.2 (310)	15.1 (384)	18.2 (462)	24.1 (612)	30.2 (767)	36.3 (914)	42.3 (1067)	47.9 (1217)	59.9 (1521)
Average Pipe O.D. (in (mm))	14.5 (368)	17.7 (450)	21.4 (544)	28.0 (711)	35.5 (892)	41.5 (1054)	47.4 (1204)	54.1 (1374)	67.1 (1703)
Minimum Pipe Stiffness* (@ 5% Deflection #in./in. (kN/m ²))	75 (517)	60 (414)	56 (386)	50 (345)	46 (317)	40 (276)	35 (241)	35 (241)	30 (207)

*Minimum pipe stiffness values listed; contact a representative for average values.

ADS TECHNICAL NOTE
 Post Installation Testing of HP Storm
 TN 5.20
 August 2016

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
Dual Wall	12	11.88	11.29	10.99
	15	14.78	14.11	13.74
	18	17.82	16.93	16.48
	24	23.76	22.57	21.98
	30	29.70	28.22	27.47
	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

* Value is the larger of ASTM F2881 and AASHTO M330. If designing to a specific standard, please review allowable minimum diameter.

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.

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.

**Table 2
 Time to Pressure Drop for HP Storm (per ASTM F1417)**

Pipe Diameter	Pressure Drop (psi)	Minimum Test Time (min:sec)	Length for Minimum Time (ft)	Time for Longer Lengths (sec)	Time for Length Shown, (min: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
	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
	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
	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
	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
	1.0	28:20	80	21,366 L	35:37	53:25	71:13	89:02	106:50	124:38	142:26	160:15

Data taken from ASTM F 1417 and Uni-Bell, Uni-B-6-98. 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 authority.

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/no-go test. Final acceptance of the pipeline per this testing method shall be at the discretion of the Design Engineer. One

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NO.	DATE	REVISIONS

STRATFIELD DRIVE DRAINAGE IMPROVEMENTS - PHASE 1
 LOCATED IN 20TH DISTRICT
 CITY OF BROOKHAVEN, DeKALB COUNTY

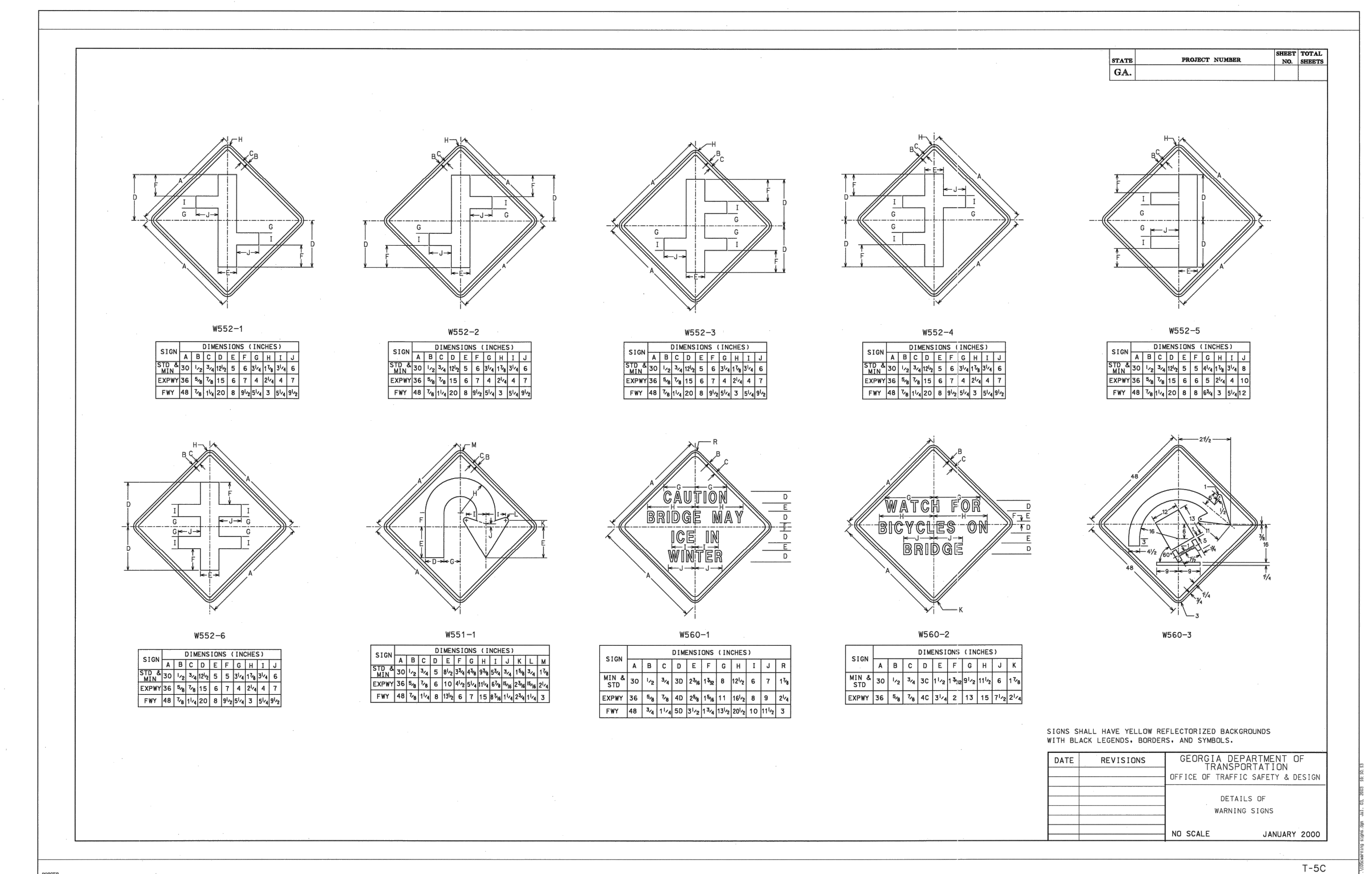
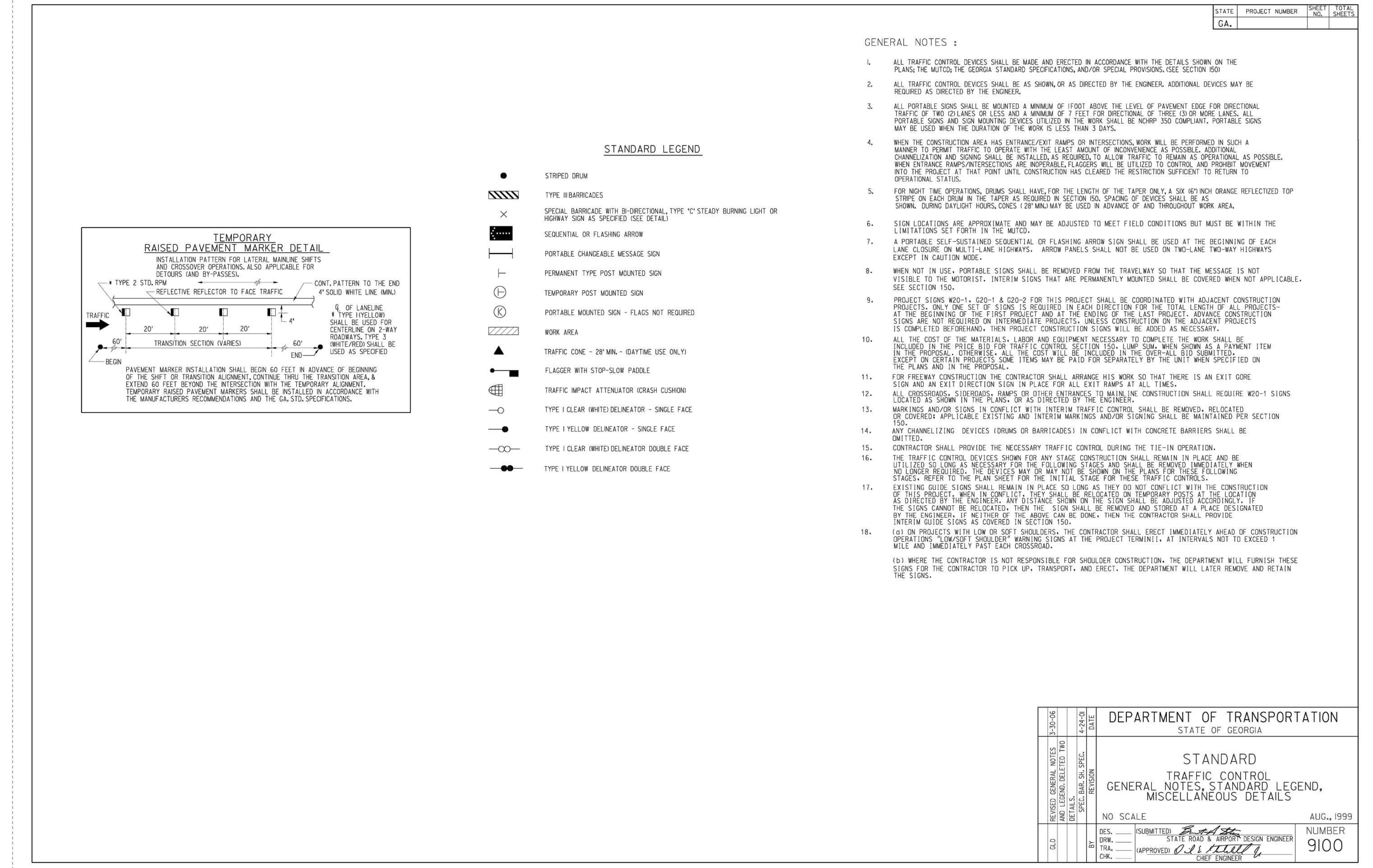
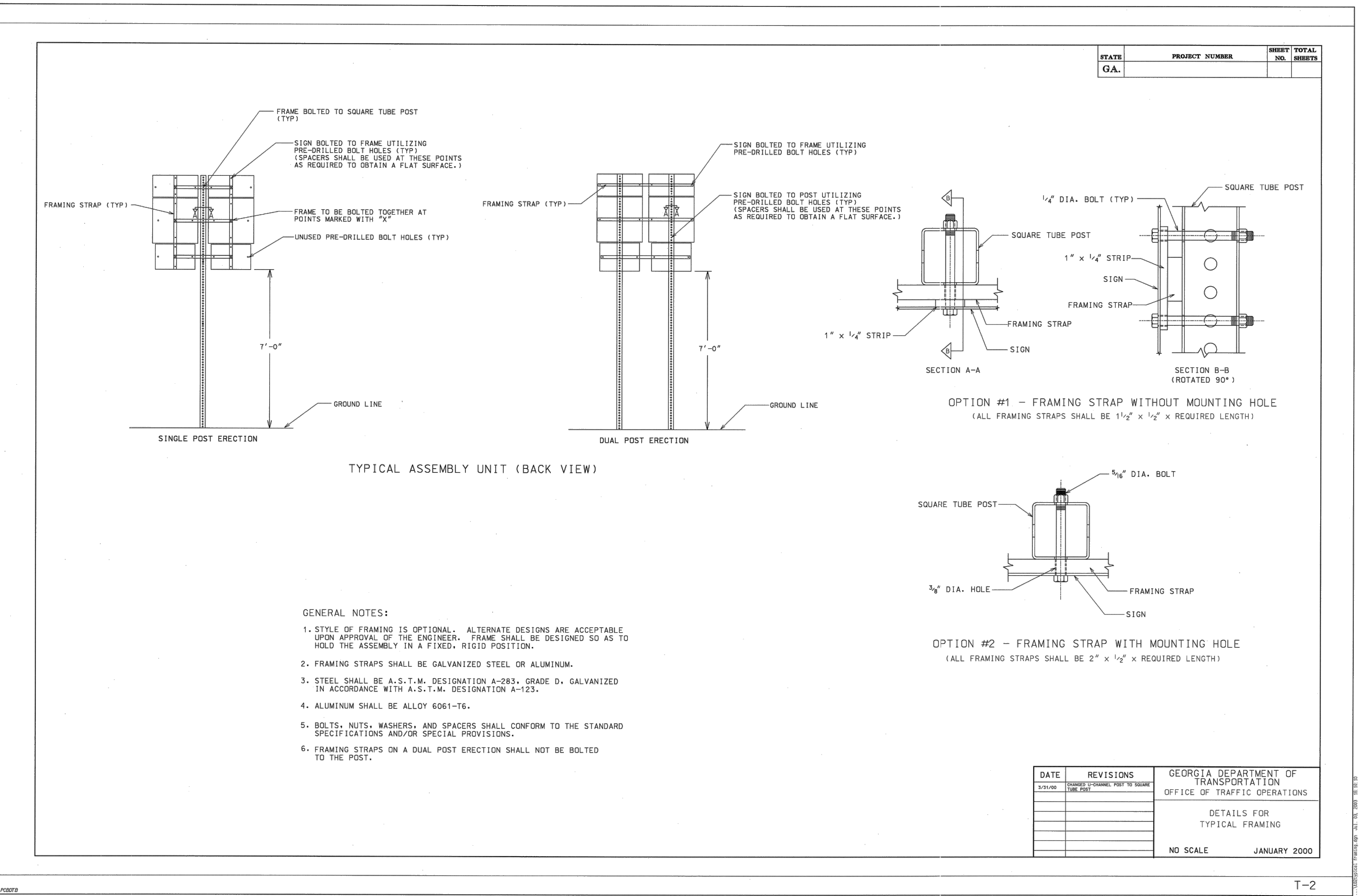
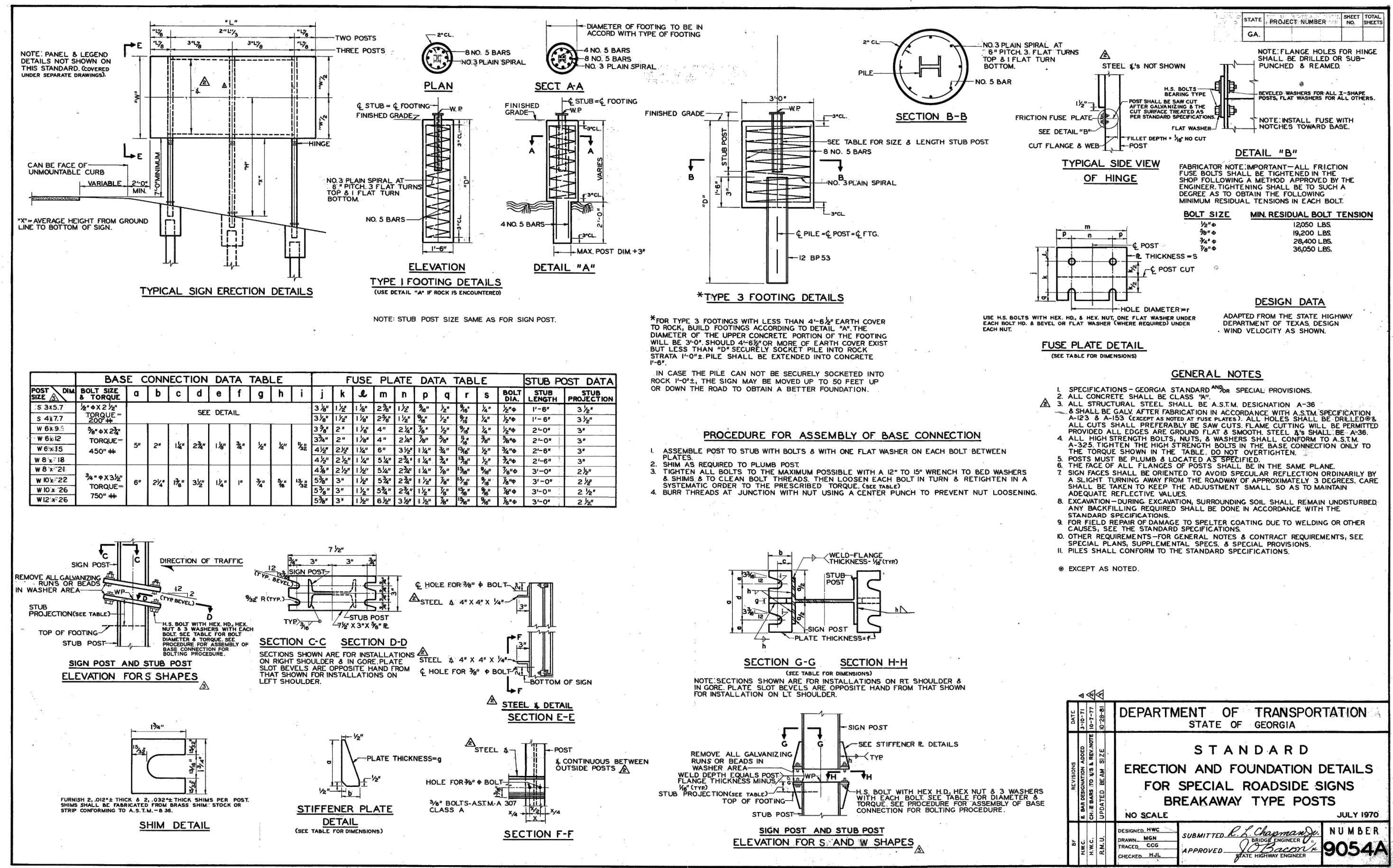
GEORGIA REGISTERED ENGINEER
 HELEN L. SIMPSON

DATE: 04/30/2018

PROJECT#: 18-0009
 DRAWN BY: HLS, BSA
 CHECKED BY: HLS

LOWE ENGINEERS
 990 HAMMOND DRIVE
 SUITE 900
 ATLANTA, GEORGIA 30328
 TEL: 770-857-8400
 FAX: 770-857-8401

STORM DETAILS
 SHEET C7.10
 NOT ISSUED FOR PERMIT REVIEW



REVISIONS: NO. DATE

STRATFIELD DRIVE DRAINAGE IMPROVEMENTS - PHASE 1
LOCATED IN 20th DISTRICT
CITY OF BROOKHAVEN, DEKALB COUNTY

GEORGIA REGISTERED ENGINEER
HELEN L. SIMPSON

DATE: 04/30/2018

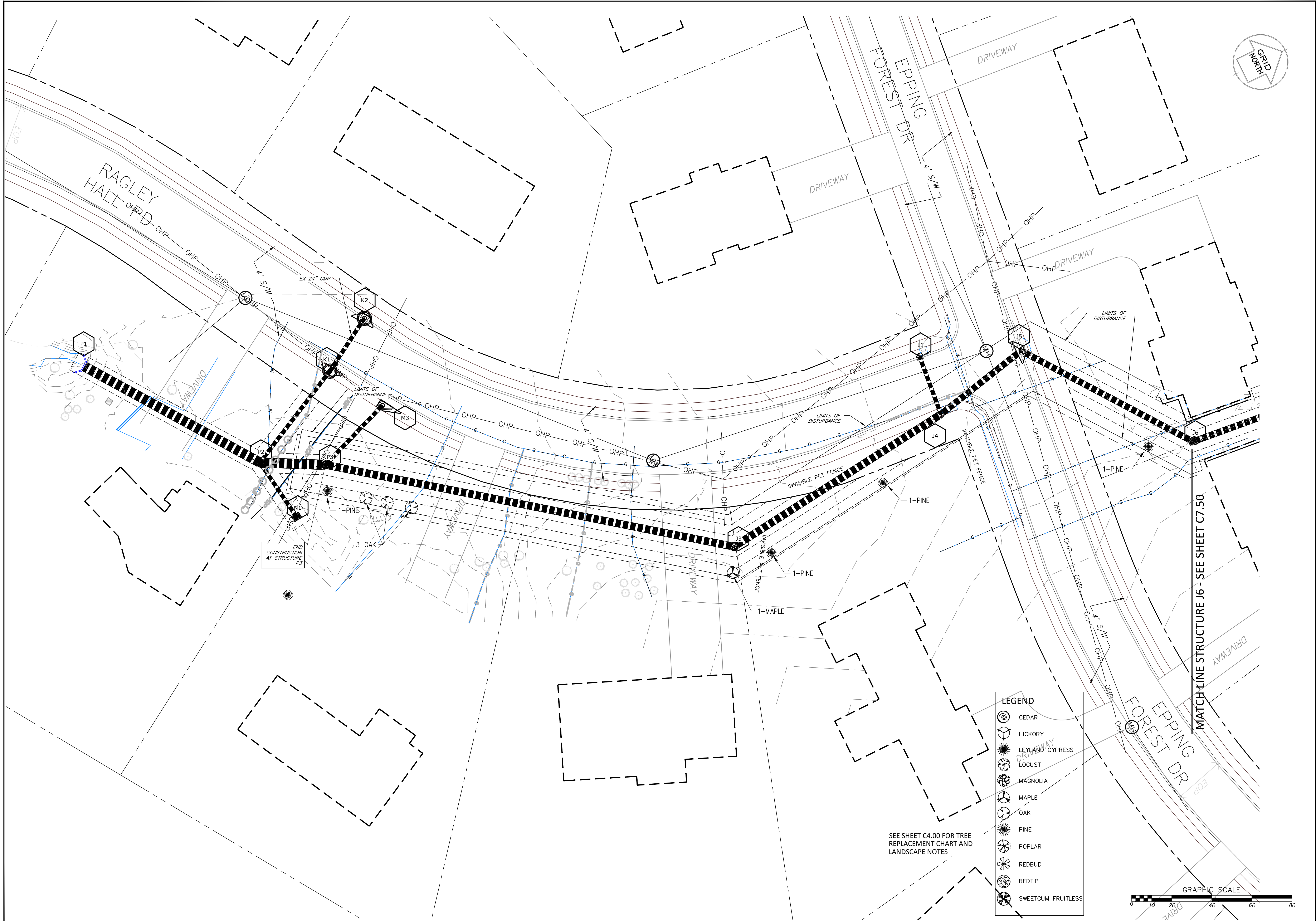
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990 HAMMOND DRIVE
SUITE 900
ATLANTA, GEORGIA 30328
TEL: 770-857-8400
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LOWE ENGINEERS

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SHEET C7.20



NO.	REVISIONS
	DATE

STRATFIELD DRIVE DRAINAGE IMPROVEMENTS - PHASE 1
 LOCATED IN 20th DISTRICT
 CITY OF BROOKHAVEN, DEKALB COUNTY



DATE: 04/30/2018
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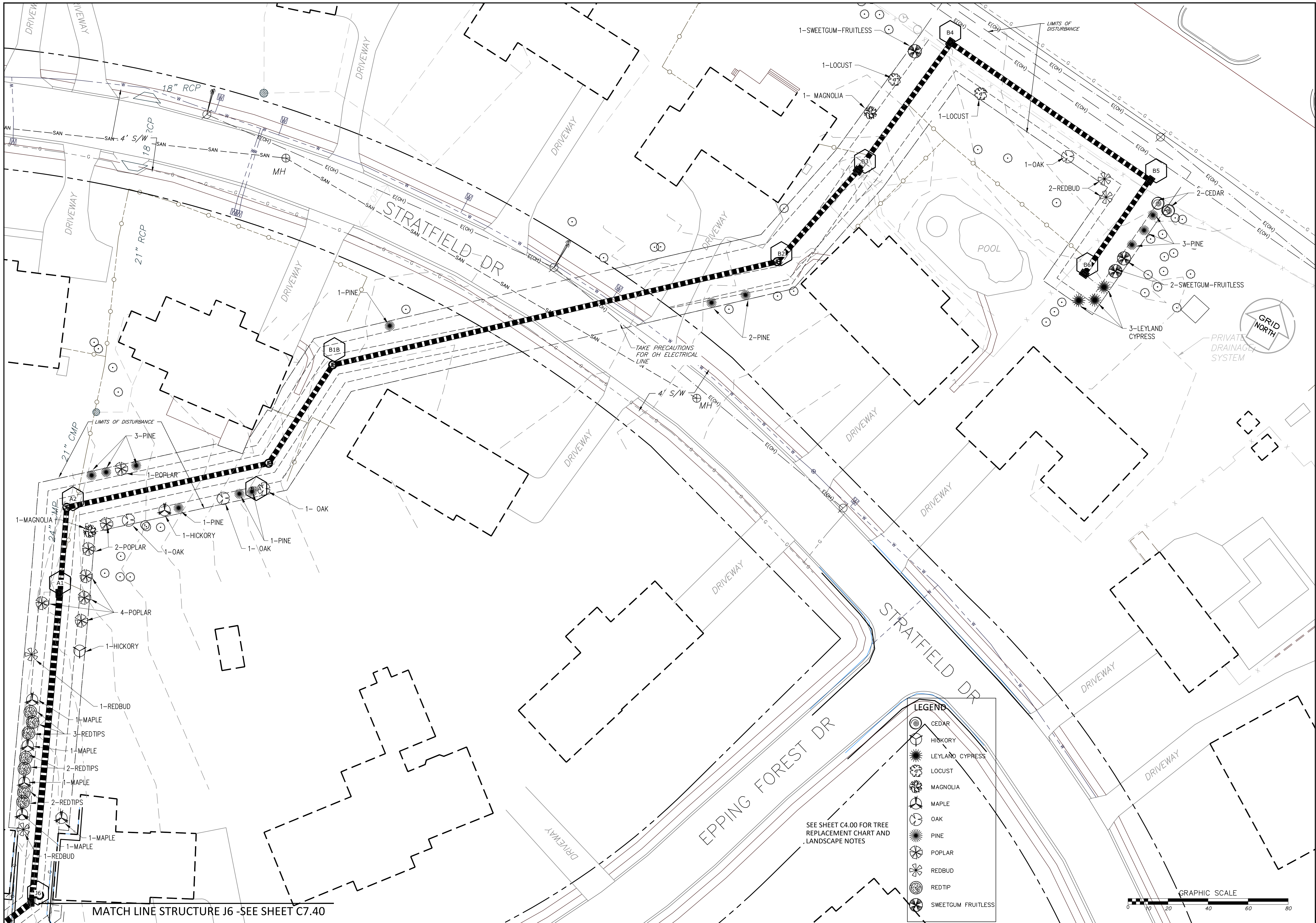
LANDSCAPE PLAN

60th Anniversary
ENGINEERS

990 HAMMOND DRIVE
 SUITE 900
 ATLANTA, GEORGIA 30328
 TEL: 770-857-8400
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SHEET **C7.40**

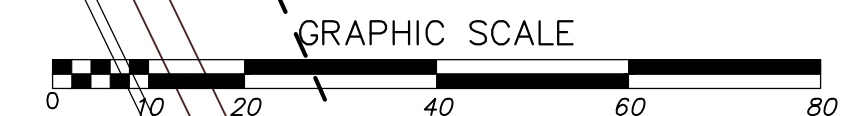


MATCH LINE STRUCTURE J6 - SEE SHEET C7.40

TAKE PRECAUTIONS FOR OH ELECTRICAL LINE

- LEGEND**
- ⊙ CEDAR
 - ⊙ HICKORY
 - ⊙ LEYLAND CYPRESS
 - ⊙ LOCUST
 - ⊙ MAGNOLIA
 - ⊙ MAPLE
 - ⊙ OAK
 - ⊙ PINE
 - ⊙ POPLAR
 - ⊙ REDBUD
 - ⊙ REDTIP
 - ⊙ SWEETGUM FRUITLESS

SEE SHEET C4.00 FOR TREE REPLACEMENT CHART AND LANDSCAPE NOTES



NO.	REVISIONS	DATE

STRATFIELD DRIVE DRAINAGE IMPROVEMENTS - PHASE 1
 LOCATED IN 20th DISTRICT
 CITY OF BROOKHAVEN, DEKALB COUNTY



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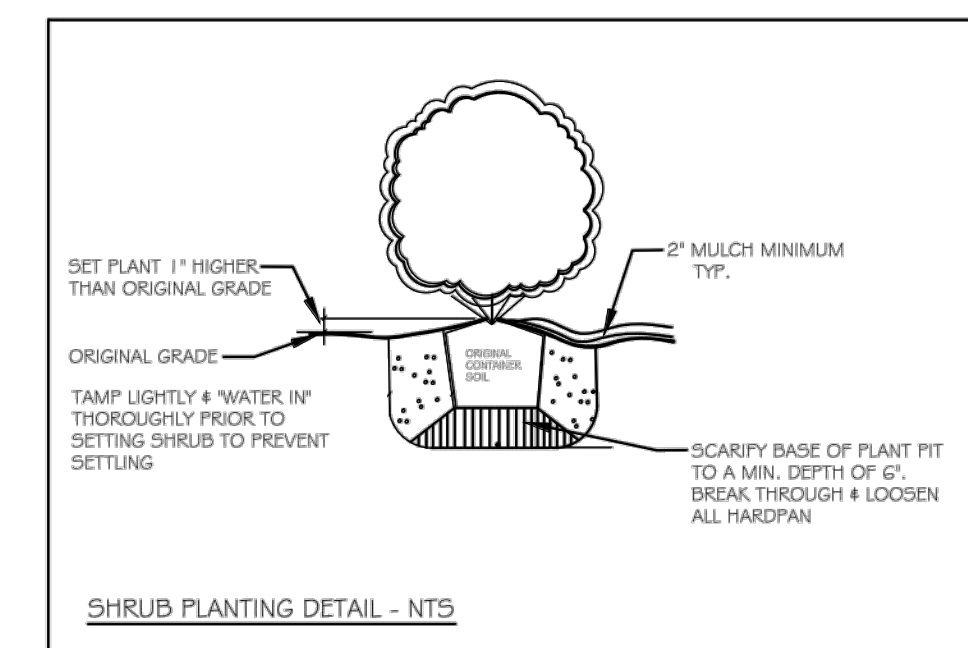
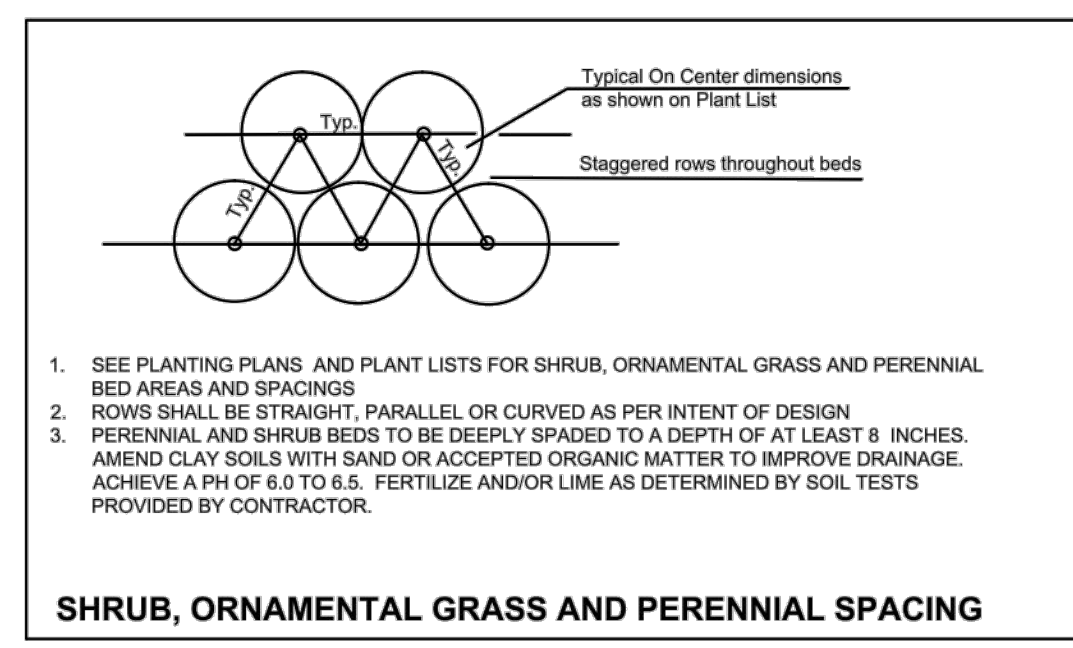
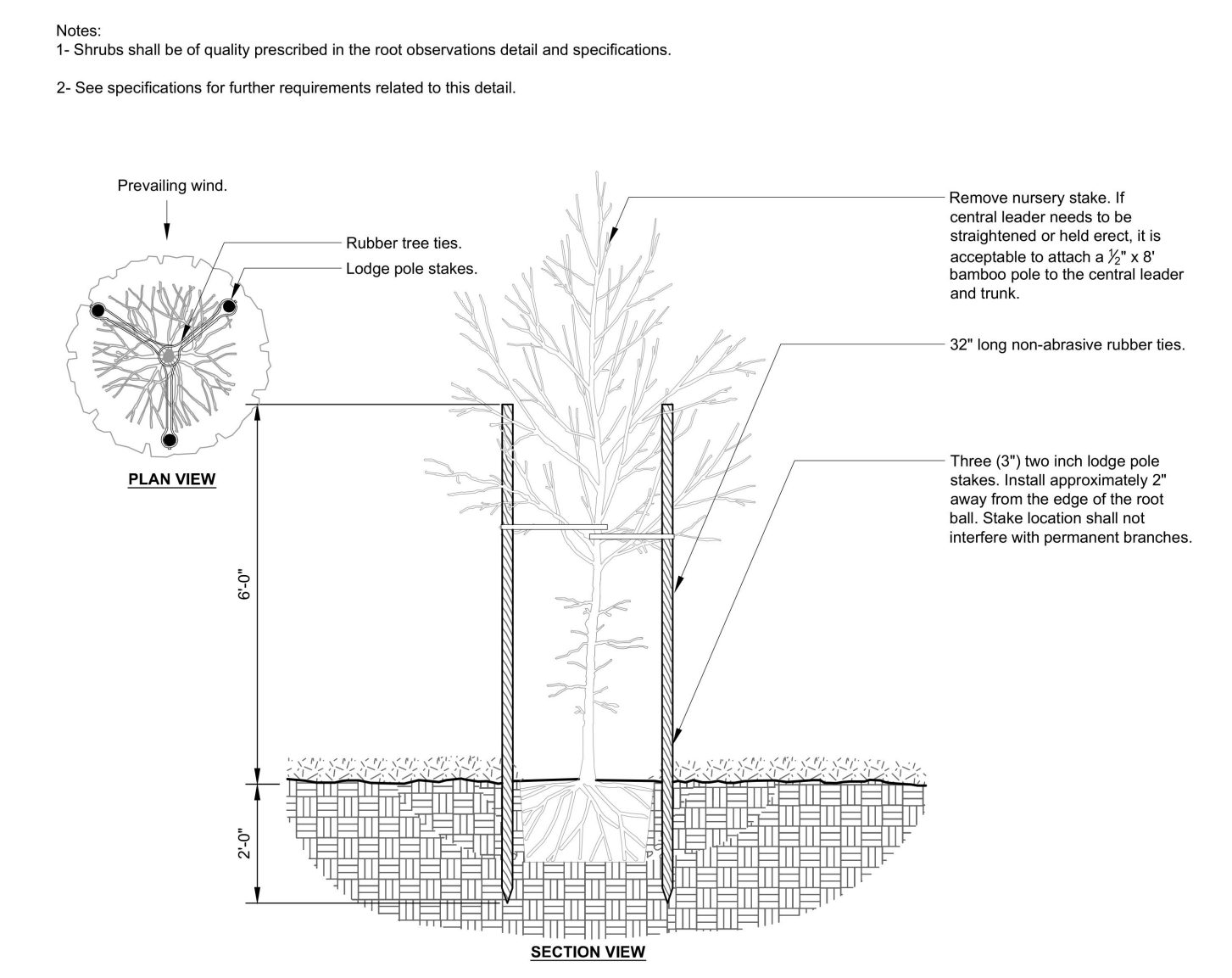
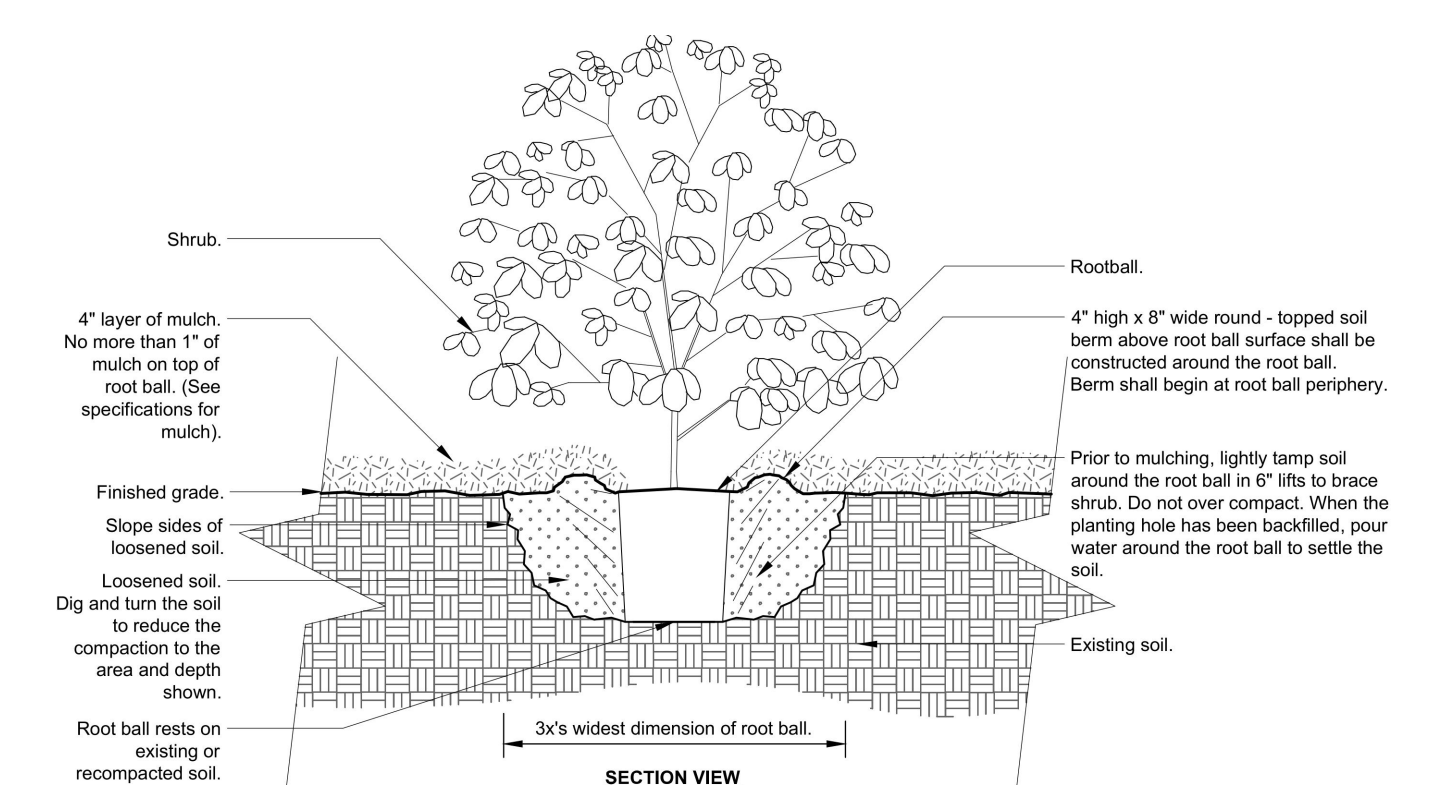
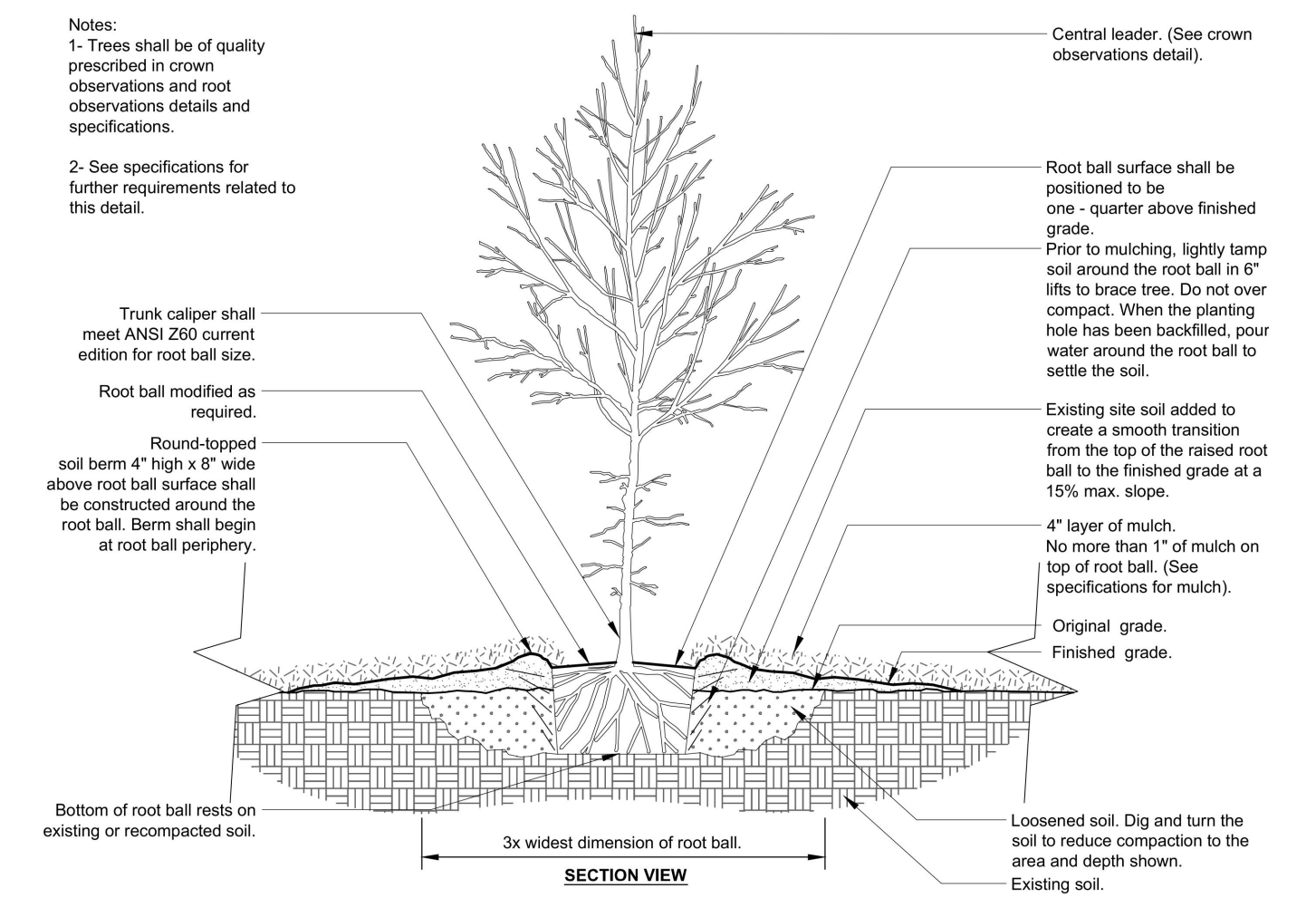
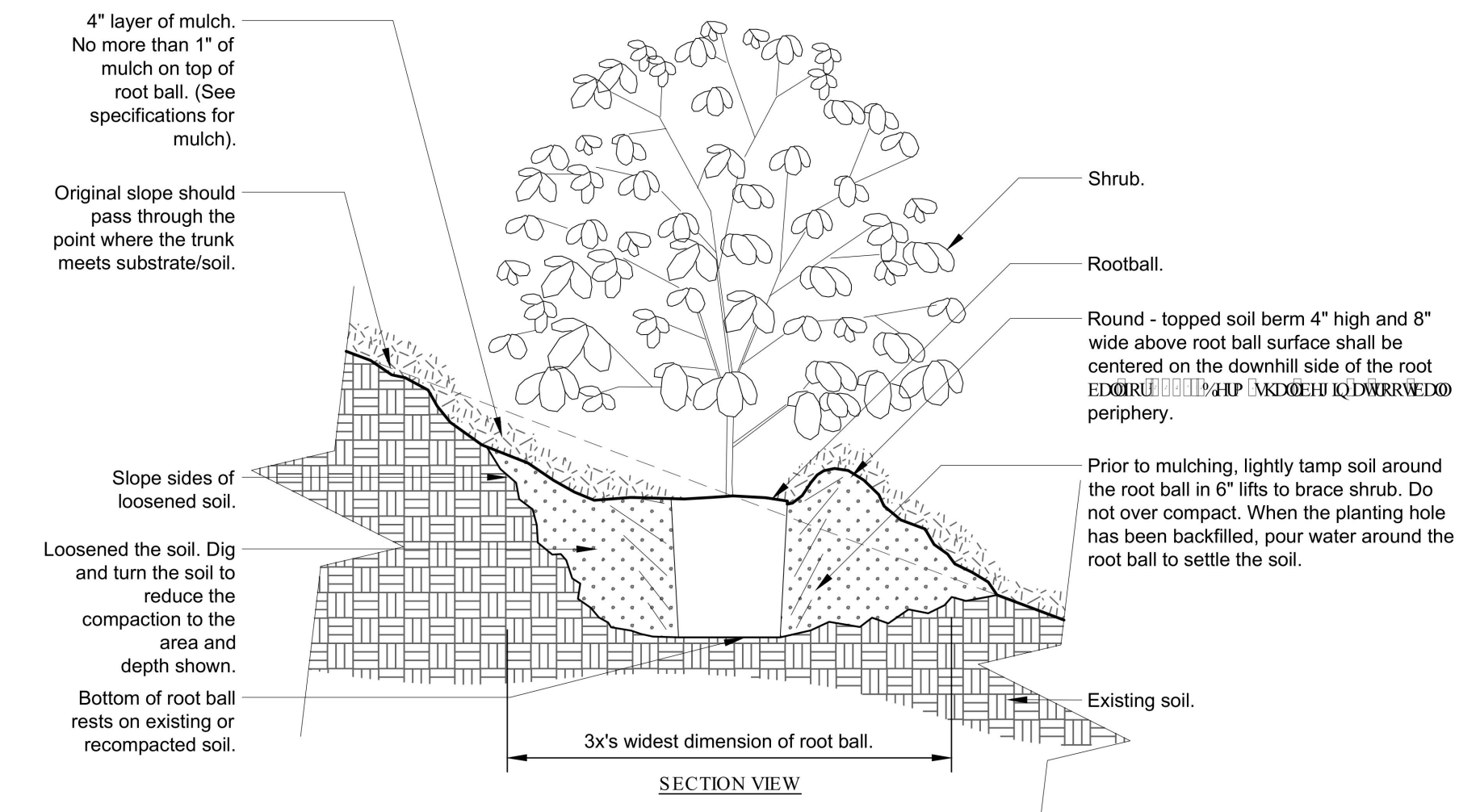
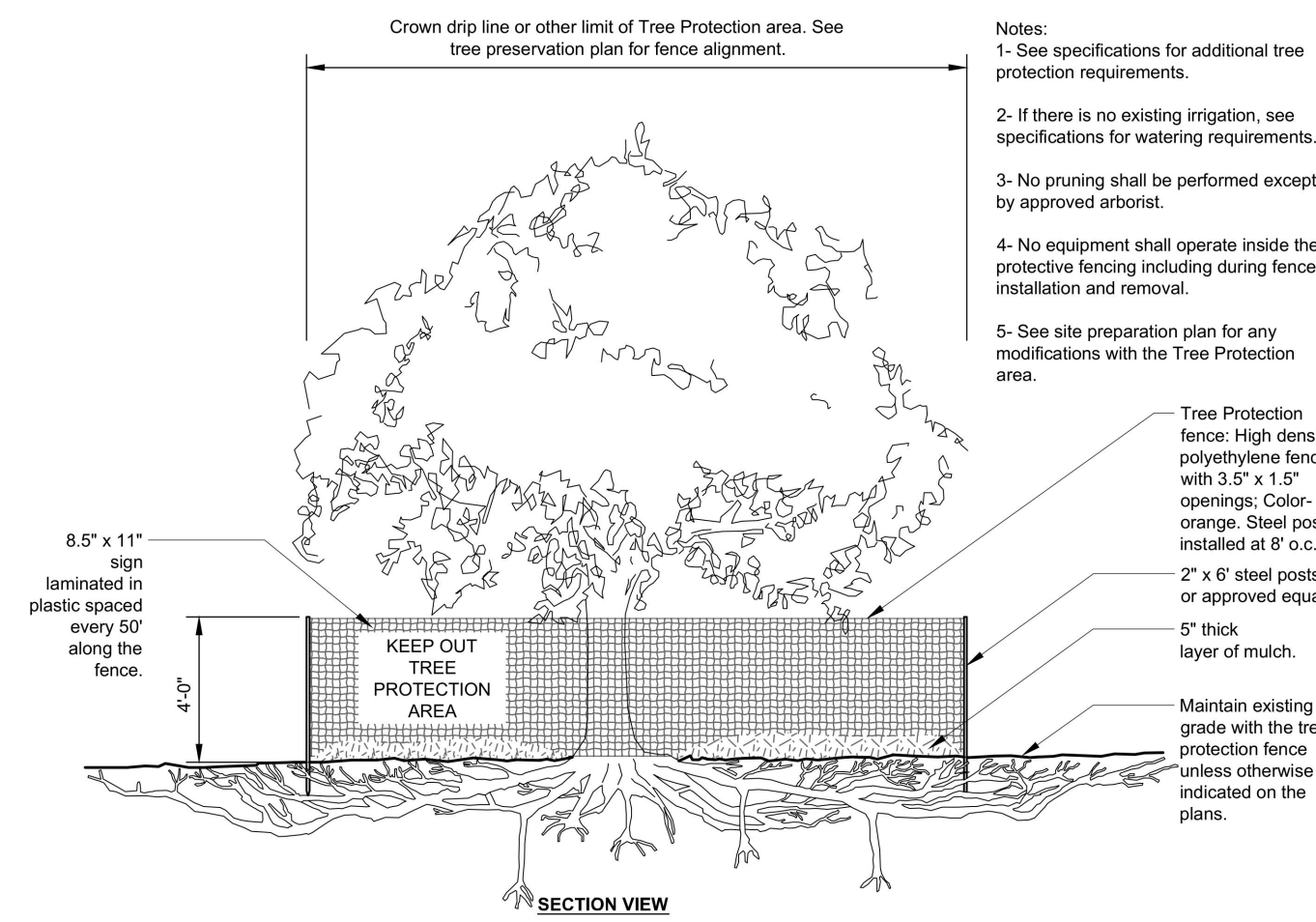
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LANDSCAPE PLAN
LOWE ENGINEERS
 990 HAMMOND DRIVE
 SUITE 900
 ATLANTA, GEORGIA 30328
 TEL: 770-857-8400
 FAX: 770-857-8401

SHEET **C7.50**

NOT ISSUED FOR PERMIT REVIEW



LANDSCAPE 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 preserved.
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 root system.
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 representative.
11. 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 specifications.
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 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-desiccant 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 comments/notes.
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.

NO.	REVISIONS	DATE

STRATFIELD DRIVE DRAINAGE IMPROVEMENTS - PHASE 1

LOCATED IN 20th DISTRICT CITY OF BROOKHAVEN, DeKALB COUNTY



DATE: 04/30/2018

PROJECT#: 18-0009

DRAWN BY: HLS, BSA

CHECKED BY: HLS

990 HAMMOND DRIVE SUITE 900 ATLANTA, GEORGIA 30328 TEL: 770-857-8400 FAX: 770-857-8401

LANDSCAPING DETAILS

L6W ENGINEERS

ISSUED FOR PERMIT REVIEW

NOTES:

1. THE MAJORITY OF THE EXISTING CONDITIONS SHOWN OUTSIDE OF THE WORK ZONE ARE BASED ON DEKALB COUNTY GIS, SUPPLIED BY THE CITY IN JULY 2015.
2. OVERALL LAYOUT OF SIGNAGE IS BASED ON GDOT STANDARD 9107. GENERAL NOTES, LEGEND, AND MISCELLANEOUS DETAILS ABOUT THE CONFIGURATION OF TRAFFIC CONTROL DEVICES FOR A LANE BLOCKAGE ARE PROVIDED IN GDOT STANDARD 9100.
3. SIGNS SHALL BE INSTALLED ON BREAKAWAY SIGN SUPPORTS IN ACCORDANCE WITH GDOT DETAIL T-3B. SIGN POST INSTALLATION SHALL BE IN ACCORDANCE WITH GDOT DETAIL T-3A. SEE DRAWING GABRKS146 FOR GDOT DETAILS T-3A AND T-3B. SIGN PLATES SHALL BE IN ACCORDANCE WITH GDOT DETAIL T-1 (SEE DRAWING GABRKS145).
4. IF DURING THE COURSE OF CONSTRUCTION IT IS DETERMINED THAT ANY ASPECT OF THIS TEMPORARY TRAFFIC CONTROL PLAN PROVES TO BE INADEQUATE DUE TO TRAFFIC CONDITIONS, THE CONTRACTOR SHALL NOTIFY THE CITY AND ENGINEER IMMEDIATELY.
5. THE CITY MAY AT THEIR DISCRETION REQUIRE INSTALLATION OF ADDITIONAL TRAFFIC CONTROL DEVICES IF IT IS DETERMINED THAT ADDITIONAL DEVICES ARE NECESSARY TO IMPROVE TRAFFIC CONDITIONS.
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 BROOKHAVEN FOR COLOR, SIZE, REFLECTIVITY, HEIGHT, AND PLACEMENT.

OWNER/DEVELOPER/PRIMARY PERMITTEE:
 CITY OF BROOKHAVEN PUBLIC WORKS
 4362 PEACHTREE ROAD
 BROOKHAVEN, GA 30319
 CONTACT: GREGORY ANDERSON
 404-637-0500

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

24 HOUR CONTACT:

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



NO.	REVISIONS	DATE

STRATFIELD DRIVE DRAINAGE IMPROVEMENTS - PHASE 1
 LOCATED IN 20th DISTRICT
 CITY OF BROOKHAVEN, DEKALB COUNTY



DATE: 04/30/2018

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 CHECKED BY: HLS

990 HAMMOND DRIVE
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TRAFFIC CONTROL PLAN
 SHEET
C8.00

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