HYDROLOGY AND STORMWATER MANAGEMENT REPORT

FOR

4860 ADAMS ROAD

CITY OF DUNWOODY
DEKALB COUNTY, GEORGIA
LAND LOTS 353 & 360
18TH DISTRICT

CITY OF DUNWOODY PROJECT # : 2016-_____.
ACR PROJECT NO.: 16-029E

AUGUST 29, 2016

OWNER: DUKE LAND GROUP
4828 ASHFORD DUNWOODY ROAD
SUITE 300
DUNWOODY, GEORGIA 30338
(678) 580-6889

ENGINEER: ACR ENGINEERING, INC.
600 PINNACLE COURT
SUITE 685
NORCROSS, GEORGIA 30071
(678) 291-0000

9/1/16

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INTRODUCTION

This study has been prepared to assess the existing drainage patterns and potential impacts of a proposed 3 lot single family subdivision on a 2.4-acre site located on Adams Road in the City of Dunwoody, DeKalb County, Georgia.

EXISTING CONDITIONS

The existing site is partially wooded, and contains an existing house with associated outbuildings, drives, parking areas and other ancillary structures. The site consists of two drainage basins, designated in this report as basins #1 and #2.

PROPOSED CONDITIONS

The proposed site will be a single family subdivision consisting of 3 lots having a minimum lot size of 18,000 square feet, with a density of 1.23 lots per acre.

Water quality treatment for the proposed right-of-way area will be provided in an underground perforated CMP water quality facility, which will function as an off-line infiltration trench. The required water quality volume for the right-of-way area will be diverted to this infiltration system for treatment.

Water quality treatment for the proposed lot impervious areas will be provided through the use of an individual infiltration trench on each lot; or other means meeting City of Dunwoody standards. Individual site plan approval by the City of Dunwoody will be required at the time of building permit issuance for each lot to verify that the proposed water quality treatment is in accordance with City of Dunwoody standards, this report, and the Georgia Stormwater Management Manual.

Runoff from most of the onsite areas will drain to a stormwater detention facility in basin #1, which will provide stormwater detention such that the proposed peak runoff at the downstream property line will not exceed the existing peak runoff during the 1, 2, 5, 10, 25, 50 or 100 year (design frequency) storms. Because the 1-year peak runoff rate is less than 2.0 c.f.s., channel protection will not be required per the requirements in section 1.3.2.2 of the Georgia Stormwater Management Manual (GSWMM).

A portion of the runoff from basin #2, which currently drains directly to offsite properties, will be diverted to the proposed stormwater detention facilities in basin #1 so that no increase in the proposed peak runoff from basin #2 to the offsite property will occur.

HYDROLOGY

All drainage analyses for basin #1 were performed using the PondPack computer program, which is based on the SCS TR-55 Method of design. The SCS Type II rainfall distribution was used to develop the hydrographs. The hydrology computations can be found in the "Pre & Post Developed Hydrology" section of this report. The drainage analyses for basin #2 (proposed area = 0.3 acres) were performed using the Rational Method.

PROCEDURE

Existing Conditions Analysis:

1. Existing onsite and offsite drainage areas were delineated as shown on the attached Pre-Developed Drainage Basin Map.
2. Existing time of concentration (Tc) was estimated based on procedures outlined in the Georgia Stormwater Management Manual.
3. Existing runoff curve number (CN) and runoff coefficient (c) values were estimated based on values in the Georgia Stormwater Management Manual.
4. Existing peak flows at each downstream property line were computed for each of the design frequency storms as shown in the summary tables below.

BASIN #1 EXISTING CONDITIONS

STORM FREQUENCY	24-HOUR RAINFALL	EXIST. BASIN #1
		A = 6.1 ac.
		CN = 65
		Tc = 10 min.
		"Q"
1-year	3.36 inches	5.0 cfs
2-year	3.84 inches	8.5 cfs
5-year	4.80 inches	12.5 cfs
10-year	5.52 inches	16.7 cfs
25-year	6.48 inches	22.7 cfs
50-year	7.20 inches	27.4 cfs
100-year	7.68 inches	32.2 cfs

PEAK RUNOFF RATES FROM BASIN #2

STORM FREQUENCY	RAINFALL INTENSITY 5 Min.T.O.C. (In./Hr.)	EXISTING AREA	PROPOSED AREA
		A= 0.6 ac.	A= 0.3 ac.
		c = 0.15	c = 0.30
		"Q" (cfs)	"Q" (cfs)
1-year	5.40	0.5 cfs	0.5 cfs
2-year	5.76	0.5 cfs	0.5 cfs
5-year	6.63	0.6 cfs	0.6 cfs
10-year	7.30	0.7 cfs	0.7 cfs
25-year	8.28	0.7 cfs	0.7 cfs
50-year	9.08	0.8 cfs	0.8 cfs
100-year	9.87	0.9 cfs	0.9 cfs

Proposed Conditions Analysis:

1. Onsite and offsite drainage areas were delineated for the proposed detention pond inflow and bypass areas; and for proposed basins #2 as shown on the attached Post-Developed Drainage Basin Map.
2. Times of concentration (Tc) were determined for each proposed drainage area based on procedures outlined in the Georgia Stormwater Management Manual.
3. Proposed runoff "CN" and "c" values for each drainage area were determined.
4. Inflow hydrographs for the detention pond were developed, and then routed through the pond. The pond outflow hydrographs were combined with the detention bypass area hydrographs to determine the proposed peak rates of runoff at leaving the site from basin #1 for the design frequency storms, as shown in the following table:

BASIN #1 PROPOSED CONDITIONS SUMMARY TABLE

STORM FREQUENCY	**24-HOUR RAINFALL**	**DETENTION POND OUTFLOW** "Q"	**DETENTION BYPASS** "Q"	**BASIN #1 PEAK RUNOFF** "Q"
1-year	3.36 inches	1.8 cfs	0.1 cfs	1.9 cfs
2-year	3.84 inches	3.2 cfs	0.3 cfs	3.2 cfs
5-year	4.80 inches	5.5 cfs	0.4 cfs	5.7 cfs
10-year	5.52 inches	8.3 cfs	0.6 cfs	8.5 cfs
25-year	6.48 inches	15.3 cfs	0.9 cfs	15.6 cfs
50-year	7.20 inches	22.6 cfs	1.1 cfs	23.3 cfs
100-year	7.68 inches	29.3 cfs	1.4 cfs	30.2 cfs

5. The proposed peak runoff rates from basins #1 and #2 were compared to the existing peak runoff rates to verify that no increase in peak runoff rates will occur as a result of this development, as shown in the following tables:

BASIN #1 PEAK RATES OF RUNOFF

	Existing	Proposed
Storm Frequency	**Q (cfs)**	**Q (cfs)**
1-yr	5.0 cfs	1.9 cfs
2-yr	8.5 cfs	3.2 cfs
5-yr	12.5 cfs	5.7 cfs
10-yr	16.7 cfs	8.5 cfs
25-yr	22.7 cfs	15.6 cfs
50-yr	27.4 cfs	23.3 cfs
100-yr	32.2 cfs	30.2 cfs

BASIN #2 PEAK RATES OF RUNOFF

	Existing	Proposed
Storm Frequency	**Q (cfs)**	**Q (cfs)**
1-yr	0.5 cfs	**0.5 cfs**
2-yr	0.5 cfs	**0.5 cfs**
5-yr	0.6 cfs	**0.6 cfs**
10-yr	0.7 cfs	**0.7 cfs**
25-yr	0.7 cfs	**0.7 cfs**
50-yr	0.8 cfs	**0.8 cfs**
100-yr	0.9 cfs	**0.9 cfs**

WATER QUALITY – BEST MANAGEMENT PRACTICES

Water quality treatment for the proposed lot impervious areas will be provided through the use of an individual infiltration trench on each lot; or other means meeting City of Dunwoody standards. Individual site plan approval by the City of Dunwoody will be required at the time of building permit issuance for each lot to verify that the proposed water quality treatment is in accordance with City of Dunwoody standards, this report, and the Georgia Stormwater Management Manual.

Water quality treatment for the proposed right-of-way area will be provided in an underground perforated CMP water quality facility, which will function as an off-line infiltration trench. The required water quality volume for the right-of-way area will be diverted to this infiltration system for treatment using a diversion structure as shown below:

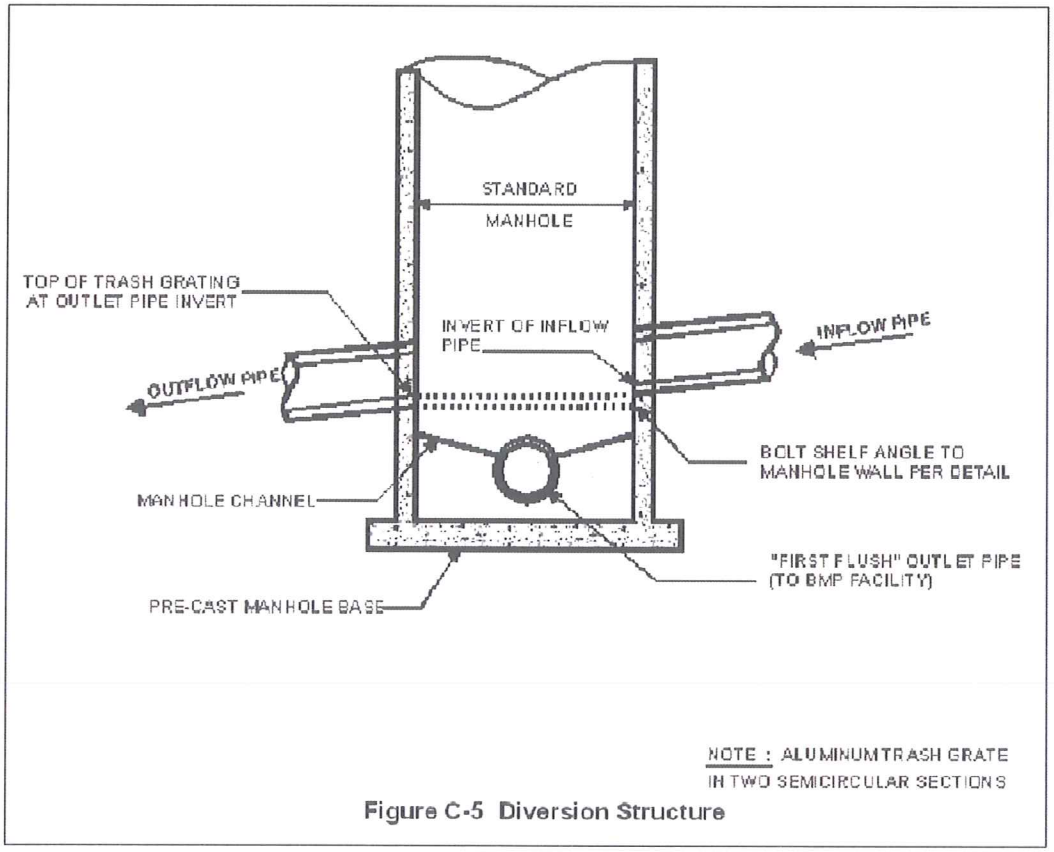
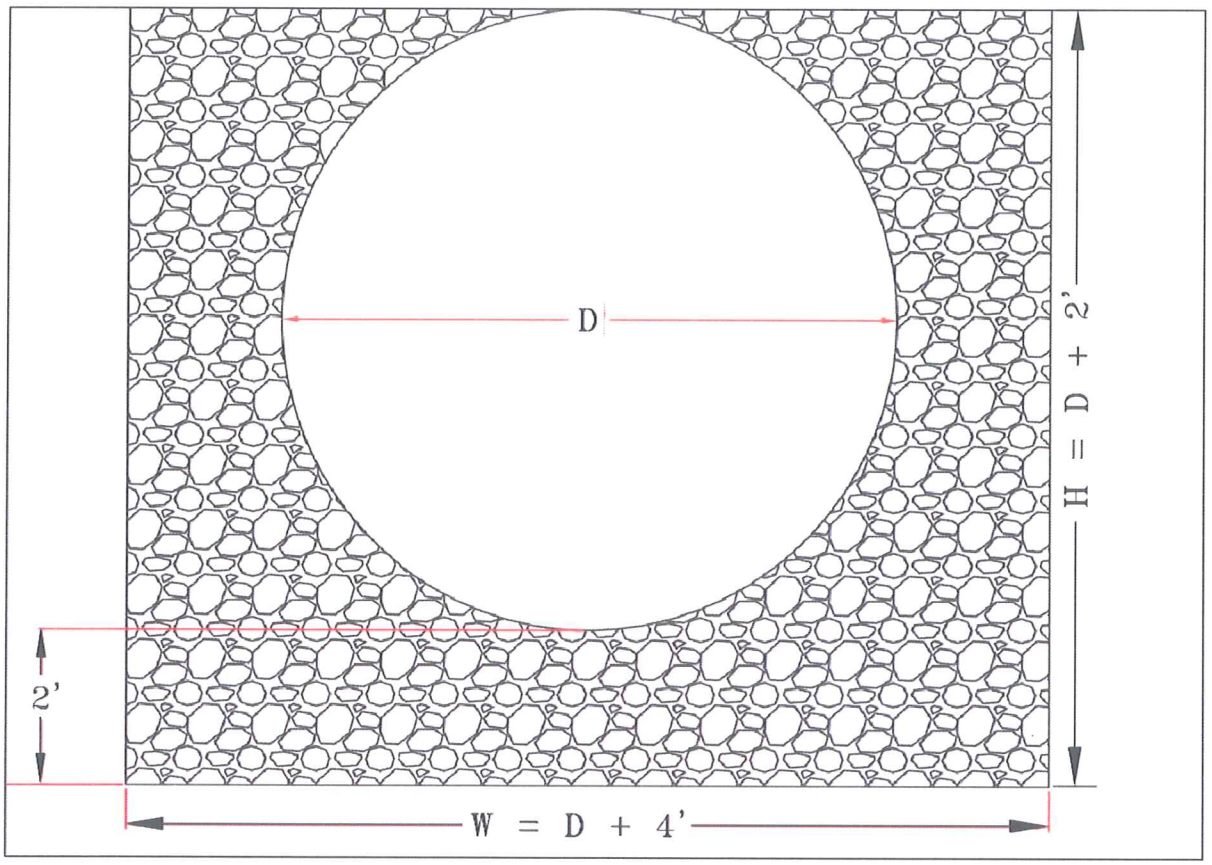


Figure C-5 Diversion Structure

The infiltration systems consist of a single run of 48" diameter ACCMP, perforated with 30 – 3/8" holes per square foot, and will have #57 stone bedding and backfill with a 40% void ratio as shown below:



Cross-Section of Infiltration System

The infiltration system will consist of 65 linear feet of 48" diameter, 16 gage perforated ACCMP.

The required water quality volume for the right-of-way area was computed using procedures in the Georgia Stormwater Management Manual (GSWMM):

$$WQ_v = \frac{1.2R_vA}{12} \qquad R_v = 0.05 + 0.009I$$

A = 0.6 acres
Impervious Area: **I = 67%**
R_v = 0.65; **WQ_v = 1,700 c.f.**

The water quality volume provided by the infiltration system was determined:

a) Cross-sectional Area of 48" pipe: $A_{pipe} = 12.6$ s.f.
b) Area of Rock: $A_{rock} = 40\% \times [(W \times H) - A_{pipe}] = 14.2$ s.f.
c) Length: $L = 65$ l.f.
d) Volume Provided: $WQ_v = L \times (A_{pipe} + A_{rock}) =$ **1,740 c.f.** > 1,700 c.f.

The peak rate of discharge for the water quality design storm (Q_{wq}) from the right-of-way area was determined for use in sizing the structure to divert the water quality volume to the infiltration system:

a) $CN = 1000/[10 + 5P + 10Q_{wv} - 10(Q_{wv}^2 + 1.25Q_{wv}P)^{1/2}]$
   $CN = 96$
b) Use $T_c = 5$ minutes
c) Ia = 0.083 from Table 2.1.5-3 in the GSWMM
   Ia/P = 0.069
   Unit peak discharge: $q_u = 1000$ cfs/mi^2/in from Figure 2.1.5-6
d) $Q_{wq} = q_u * A * Q_{wv}$ **Qwq = 0.73 cfs**

JB J-1A is designed as a diversion structure to divert the peak discharge for the water quality design storm to the infiltration system. It will have a 30" RCP inflow pipe with an invert elevation of 985.20; a 30" RCP outflow pipe with an invert elevation of 985.2; and an 8" diameter PVC "first flush" outlet pipe to the infiltration system with an invert elevation of 984.7.

CONCLUSION

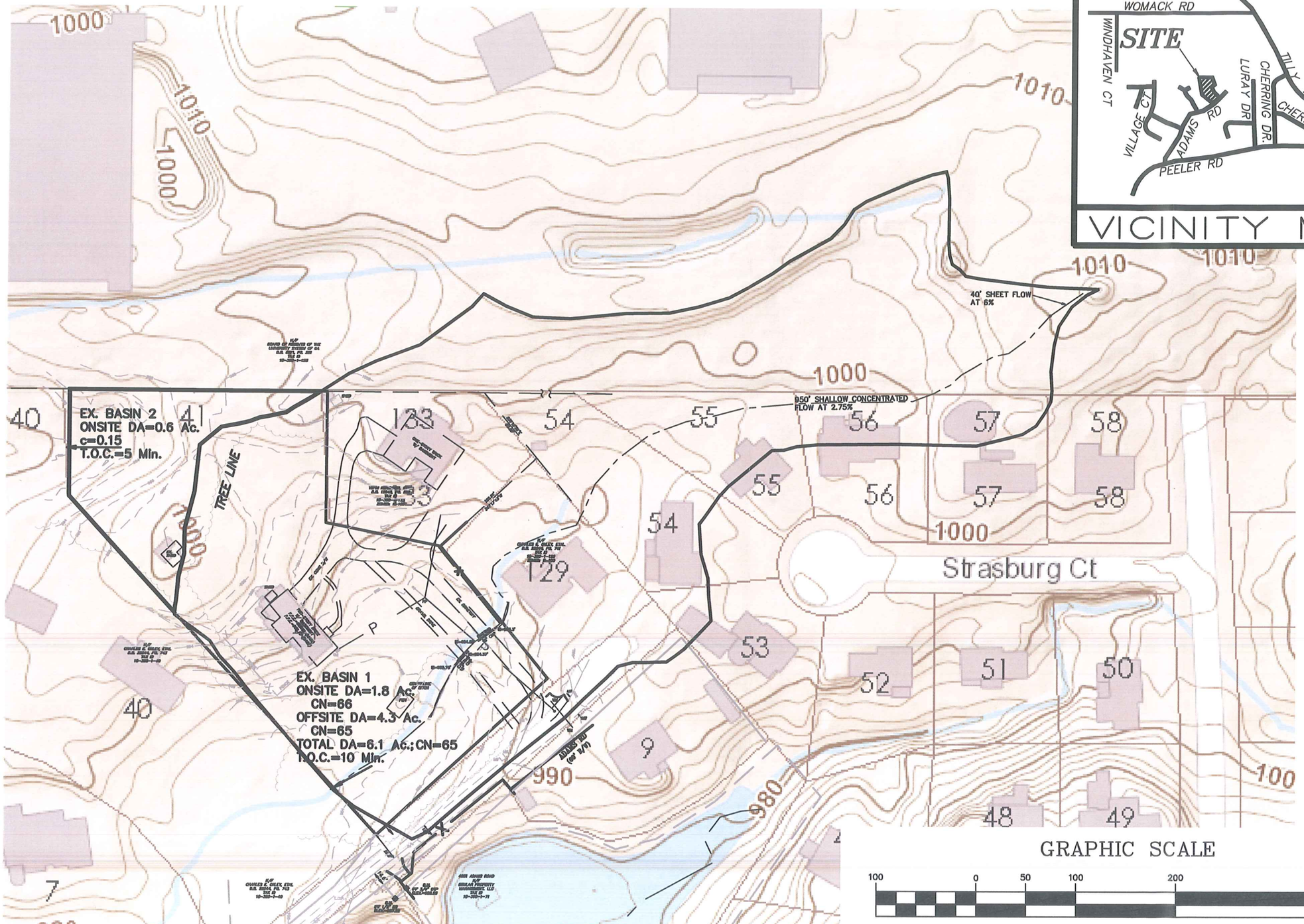
Water quality treatment for the proposed right-of-way area will be provided in an underground perforated CMP water quality facility, which will function as an off-line infiltration trench. The required water quality volume for the right-of-way area will be diverted to this infiltration system for treatment.

Water quality treatment for the proposed lot impervious areas will be provided through the use of an individual infiltration trench on each lot; or other means meeting City of Dunwoody standards. Individual site plan approval by the City of Dunwoody will be required at the time of building permit issuance for each lot to verify that the proposed water quality treatment is in accordance with City of Dunwoody standards, this report, and the Georgia Stormwater Management Manual.

Runoff from most of the onsite areas will drain to a stormwater detention facility in basin #1, which will provide stormwater detention such that the proposed peak runoff at the downstream property line will not exceed the existing peak runoff during the 1, 2, 5, 10, 25, 50 or 100 year (design frequency) storms. Because the 1-year peak runoff rate is less than 2.0 c.f.s., channel protection will not be required per the requirements in section 1.3.2.2 of the Georgia Stormwater Management Manual (GSWMM).

A portion of the runoff from basin #2, which currently drains directly to offsite properties, will be diverted to the proposed stormwater detention facilities in basin #1 so that no increase in the proposed peak runoff from basin #2 to the offsite property will occur.

This project will be in compliance with City of Dunwoody regulations regarding stormwater and water quality.



VICINITY MAP

GRAPHIC SCALE

100 0 50 100 200 400

(IN FEET)
1 inch = 100 ft.

ACR Engineering, inc.
ATLANTA COMMERCIAL & RESIDENTIAL ENGINEERING
600 PINNACLE COURT
SUITE 685
NORCROSS, GA 30071
TEL: (678) 291-0000
FAX: (678) 291-6887

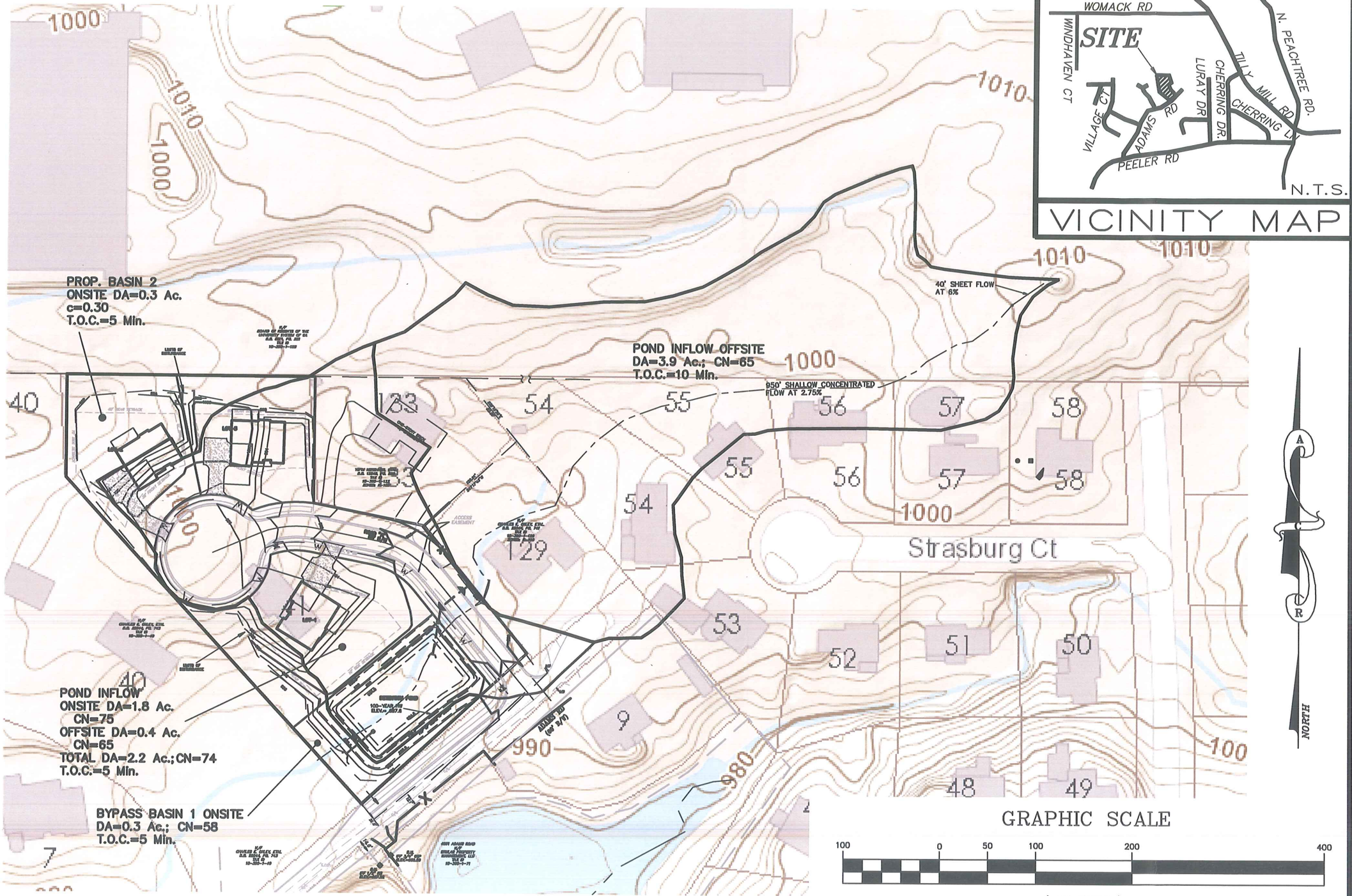
PRE-DEVELOPED DRAINAGE BASIN MAP FOR 4860 ADAMS ROAD CITY OF DUNWOODY DEKALB COUNTY, GEORGIA

ISSUE	DESCRIPTION	DATE	BY	APPR.

DATE: AUGUST 29, 2016
SCALE: HORIZ. 1"=100' VERT. N/A
LAND LOT(S): 353 & 360
DISTRICT: 18TH
SECTION: 2ND
COUNTY: DEKALB STATE: GEORGIA
DESIGNED: IP DRAWN: IP
CHECKED: AH APPROVED: MM

SHEET 1 OF 2

SHEET 1 OF 2
DWG. 16029e.dwg
ISSUE NO.
PROJECT NO.
FILE NO.



VICINITY MAP

GRAPHIC SCALE

100 0 50 100 200 400

(IN FEET)
1 inch = 100 ft.

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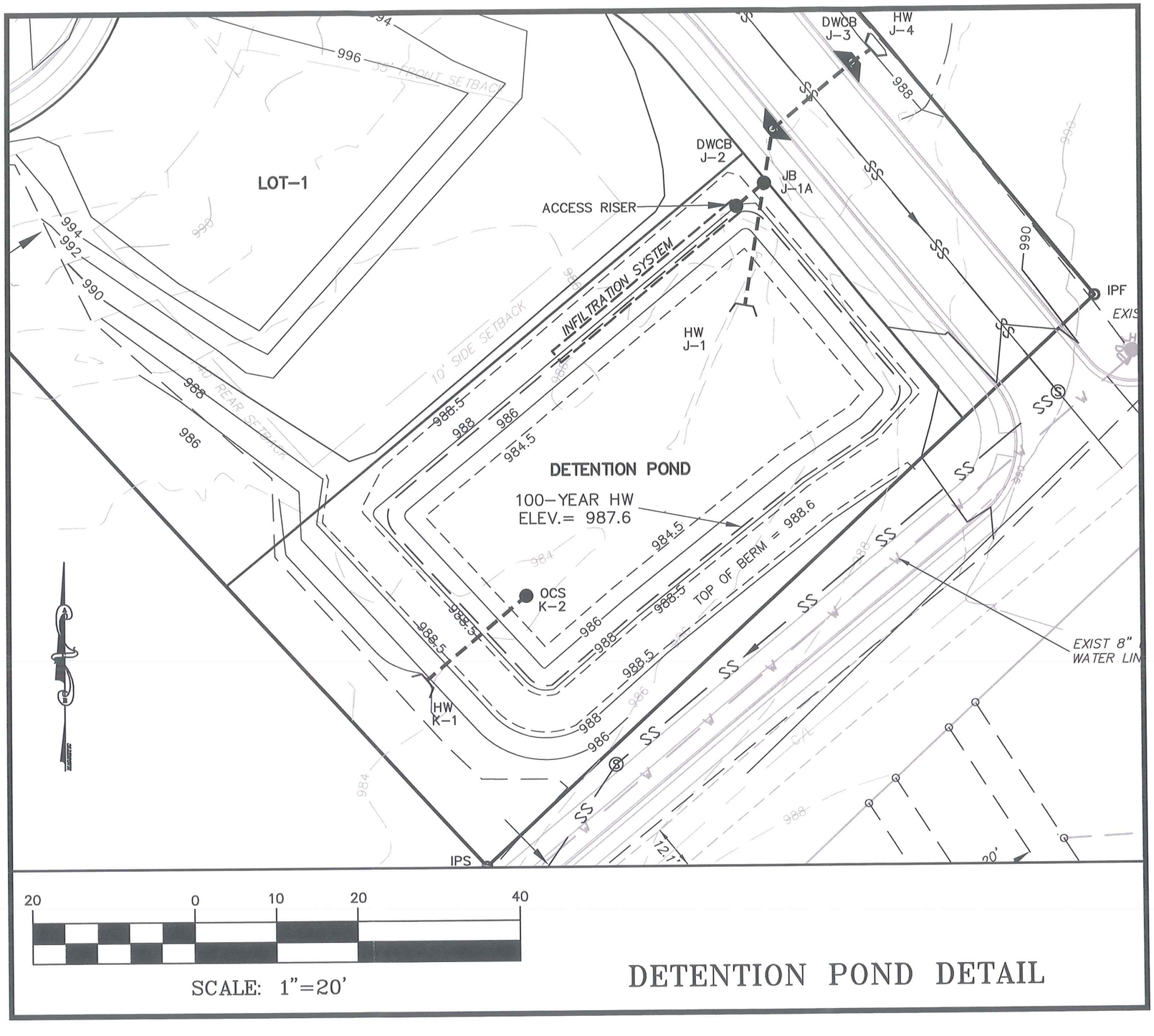
POST-DEVELOPED DRAINAGE BASIN MAP
FOR
4860 ADAMS ROAD
CITY OF DUNWOODY
DEKALB COUNTY, GEORGIA

ISSUE			
DESCRIPTION	DATE	BY	APPR.

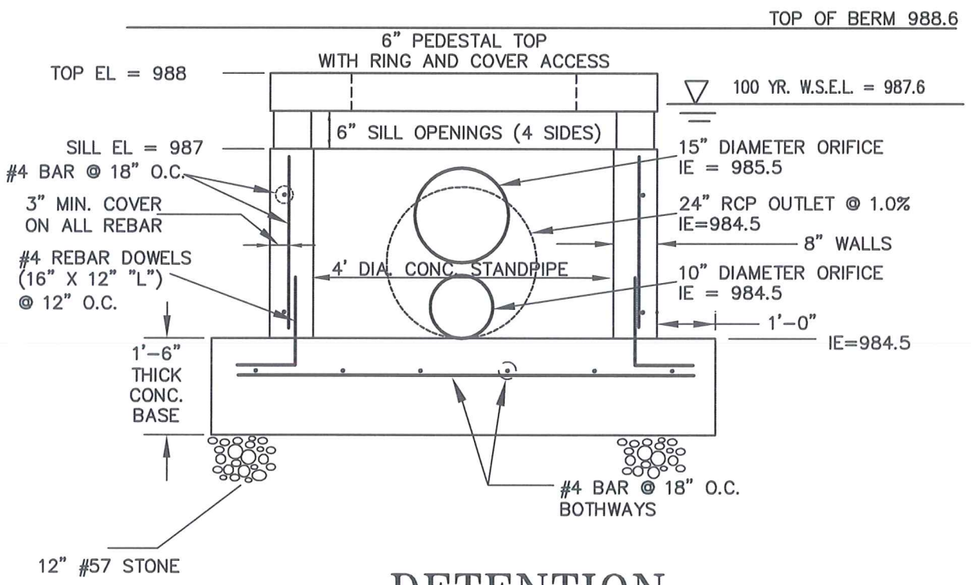
DATE: AUGUST 29, 2016
SCALE: HORIZ. 1"=100' VERT. N/A
LAND LOT(S): 353 & 360
DISTRICT: 18TH
SECTION: 2ND
COUNTY: DEKALB STATE: GEORGIA
DESIGNED: IP DRAWN: IP
CHECKED: AH APPROVED: MM

SHEET 2 OF 2
SHEET 2 OF 2 DWG. 16028E.dwg
ISSUE NO.
PROJECT NO.
FILE NO.

PRE & POST DEVELOPED HYDROLOGY



DETENTION POND DETAIL



DETENTION
OUTLET CONTROL STRUCTURE
DETAIL

N.T.S.

OUTLET CONTROL STRUCTURE BUOYANCY CALCULATIONS

DISPLACED VOLUME:

RISER: d = 5.33'; A = 22.3 s.f.
H = 988.0 – 984.5 = 3.5'
V = 78.1 c.f.

BASE: d = 7.33'; A = 42.2 s.f.
H = 1.5'
V = 63.3 c.f.

TOTAL DISPLACED VOLUME = 141.4 C.F.

@ 62.2 #/C.F., WEIGHT = 8,800 #

WEIGHT OF STRUCTURE:

RISER: A = pi (5.33/2^2 –4/2^2) = 9.7 s.f.
H = 3.5'
V = 13.2 c.f.

BASE: d = 7.33'; A = 42.2 s.f.
H = 1.5'
V = 63.3 c.f.

TOTAL STRUCTURE VOLUME = 76.5 C.F.

@ 150 #/C.F., WEIGHT = 11,500 # > 8,800 #

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Table of Contents (continued)

S/N:
PondPack Ver: Compute Time: Date:

MASTER DESIGN STORM SUMMARY

Network Storm Collection: Dekalb

Return Event	Total Depth in	Rainfall Type	RNF ID
1	3.3600	Synthetic Curve	TypeII 24hr
2	4.0800	Synthetic Curve	TypeII 24hr
5	4.8000	Synthetic Curve	TypeII 24hr
10	5.5200	Synthetic Curve	TypeII 24hr
25	6.4800	Synthetic Curve	TypeII 24hr
50	7.2000	Synthetic Curve	TypeII 24hr
100	7.9200	Synthetic Curve	TypeII 24hr

MASTER NETWORK SUMMARY
SCS Unit Hydrograph Method

(*Node=Outfall; +Node=Diversion;)
(Trun= HYG Truncation: Blank=None; L=Left; R=Rt; LR=Left&Rt)

Node ID	Type	Return Event	HYG Vol cu.ft	Trun	Qpeak min	Qpeak cfs	Max WSEL ft	Max Pond Storage cu.ft
EX-BASIN 1	AREA	1	15050		720.00	4.98		
EX-BASIN 1	AREA	2	23805		720.00	8.52		
EX-BASIN 1	AREA	5	33695		720.00	12.47		
EX-BASIN 1	AREA	10	44472		720.00	16.71		
EX-BASIN 1	AREA	25	59913		720.00	22.72		
EX-BASIN 1	AREA	50	72130		720.00	27.41		
EX-BASIN 1	AREA	100	84786		720.00	32.22		
*EX-BASIN 1	JCT	1	15050		720.00	4.98		
*EX-BASIN 1	JCT	2	23805		720.00	8.52		
*EX-BASIN 1	JCT	5	33695		720.00	12.47		
*EX-BASIN 1	JCT	10	44472		720.00	16.71		
*EX-BASIN 1	JCT	25	59913		720.00	22.72		
*EX-BASIN 1	JCT	50	72130		720.00	27.41		
*EX-BASIN 1	JCT	100	84786		720.00	32.22		

S/N:
PondPack Ver: Compute Time: Date:

MASTER NETWORK SUMMARY
SCS Unit Hydrograph Method

(*Node=Outfall; +Node=Diversion;)
(Trun= HYG Truncation: Blank=None; L=Left; R=Rt; LR=Left&Rt)

Node ID	Type	Return Event	HYG Vol cu.ft	Trun	Qpeak min	Qpeak cfs	Max WSEL ft	Max Pond Storage cu.ft
PND 1 IN OFFSITE AREA		1	9622		720.00	3.18		
PND 1 IN OFFSITE AREA		2	15219		720.00	5.45		
PND 1 IN OFFSITE AREA		5	21543		720.00	7.97		
PND 1 IN OFFSITE AREA		10	28433		720.00	10.68		
PND 1 IN OFFSITE AREA		25	38305		720.00	14.52		
PND 1 IN OFFSITE AREA		50	46116		720.00	17.52		
PND 1 IN OFFSITE AREA		100	54208		720.00	20.60		
POND 1	IN POND	1	18758		720.00	6.68		
POND 1	IN POND	2	28436		720.00	10.46		
POND 1	IN POND	5	39155		720.00	14.57		
POND 1	IN POND	10	50675		717.00	19.11		
POND 1	IN POND	25	66991		717.00	25.48		
POND 1	IN POND	50	79789		717.00	30.43		
POND 1	IN POND	100	92969		717.00	35.49		
POND 1	OUT POND	1	18703		732.00	1.84	985.41	5549
POND 1	OUT POND	2	28380		732.00	3.17	985.90	8916
POND 1	OUT POND	5	39099		729.00	5.54	986.36	12319
POND 1	OUT POND	10	50619		726.00	8.31	986.78	15631
POND 1	OUT POND	25	66935		726.00	15.30	987.26	19622
POND 1	OUT POND	50	79733		723.00	22.55	987.45	21334
POND 1	OUT POND	100	92913		723.00	29.34	987.61	22711
POND 1 BP	AREA	1	435		720.00	.14		
POND 1 BP	AREA	2	763		720.00	.28		
POND 1 BP	AREA	5	1154		717.00	.44		
POND 1 BP	AREA	10	1595		717.00	.63		
POND 1 BP	AREA	25	2246		717.00	.92		
POND 1 BP	AREA	50	2772		717.00	1.14		
POND 1 BP	AREA	100	3325		717.00	1.38		

S/N:
PondPack Ver: Compute Time: Date:

MASTER NETWORK SUMMARY
SCS Unit Hydrograph Method

(*Node=Outfall; +Node=Diversion;)
(Trun= HYG Truncation: Blank=None; L=Left; R=Rt; LR=Left&Rt)

Node ID	Type	Return Event	HYG Vol cu.ft	Trun	Qpeak min	Qpeak cfs	Max WSEL ft	Max Pond Storage cu.ft
POND 1 INFLOW	AREA	1	9136		717.00	3.75		
POND 1 INFLOW	AREA	2	13216		717.00	5.48		
POND 1 INFLOW	AREA	5	17612		717.00	7.31		
POND 1 INFLOW	AREA	10	22242		714.00	9.21		
POND 1 INFLOW	AREA	25	28686		714.00	11.94		
POND 1 INFLOW	AREA	50	33673		714.00	14.03		
POND 1 INFLOW	AREA	100	38761		714.00	16.15		
*PROP-BASIN 1	JCT	1	19137		732.00	1.87		
*PROP-BASIN 1	JCT	2	29143		729.00	3.23		
*PROP-BASIN 1	JCT	5	40253		729.00	5.65		
*PROP-BASIN 1	JCT	10	52214		726.00	8.52		
*PROP-BASIN 1	JCT	25	69180		726.00	15.59		
*PROP-BASIN 1	JCT	50	82504		723.00	23.30		
*PROP-BASIN 1	JCT	100	96238		723.00	30.23		

S/N:
PondPack Ver: Compute Time: Date:

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TIME OF CONCENTRATION CALCULATOR

Segment #1: Tc: TR-55 Sheet

Mannings n	.2000	
Hydraulic Length	40.00	ft
2yr, 24hr P	4.0800	in
Slope	.050000	ft/ft

Avg.Velocity .18 ft/sec

Segment #1 Time: 3.64 min

Segment #2: Tc: TR-55 Shallow

Hydraulic Length	950.00	ft
Slope	.027500	ft/ft
Unpaved		

Avg.Velocity 2.68 ft/sec

Segment #2 Time: 5.92 min

Total Tc: 9.56 min

S/N:
PondPack Ver: Compute Time: Date:

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Tc Equations used...

==== SCS TR-55 Sheet Flow ==========

Tc = (.007 * ((n * Lf)**0.8)) / ((P**.5) * (Sf**.4))

Where: Tc = Time of concentration, hrs
n = Mannings n
Lf = Flow length, ft
P = 2yr, 24hr Rain depth, inches
Sf = Slope, %

==== SCS TR-55 Shallow Concentrated Flow ==========

Unpaved surface:
V = 16.1345 * (Sf**0.5)

Paved surface:
V = 20.3282 * (Sf**0.5)

Tc = (Lf / V) / (3600sec/hr)

Where: V = Velocity, ft/sec
Sf = Slope, ft/ft
Tc = Time of concentration, hrs
Lf = Flow length, ft

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::
TIME OF CONCENTRATION CALCULATOR
::

Segment #1: Tc: TR-55 Sheet

Mannings n	.2000	
Hydraulic Length	40.00	ft
2yr, 24hr P	4.0800	in
Slope	.050000	ft/ft
Avg.Velocity	.18	ft/sec

Segment #1 Time: 3.64 min

Segment #2: Tc: TR-55 Shallow

Hydraulic Length	950.00	ft
Slope	.027500	ft/ft
Unpaved		
Avg.Velocity	2.68	ft/sec

Segment #2 Time: 5.92 min

==========
Total Tc: 9.56 min
==========

S/N:
PondPack Ver: Compute Time: Date:

Tc Equations used...

==== SCS TR-55 Sheet Flow ==========

Tc = (.007 * ((n * Lf)**0.8)) / ((P**.5) * (Sf**.4))

Where: Tc = Time of concentration, hrs
n = Mannings n
Lf = Flow length, ft
P = 2yr, 24hr Rain depth, inches
Sf = Slope, %

==== SCS TR-55 Shallow Concentrated Flow ==========

Unpaved surface:
V = 16.1345 * (Sf**0.5)

Paved surface:
V = 20.3282 * (Sf**0.5)

Tc = (Lf / V) / (3600sec/hr)

Where: V = Velocity, ft/sec
Sf = Slope, ft/ft
Tc = Time of concentration, hrs
Lf = Flow length, ft

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TIME OF CONCENTRATION CALCULATOR

Segment #1: Tc: User Defined

Segment #1 Time: 5.00 min

Total Tc: 5.00 min

S/N:
PondPack Ver: Compute Time: Date:

File.... T:\APROJENG\16029E\Hydro\16-029E.PPW

Tc Equations used...

==== User Defined ====

Tc = Value entered by user

Where: Tc = Time of concentration

S/N:
PondPack Ver: Compute Time: Date:

File.... T:\APROJENG\16029E\Hydro\16-029E.PPW

::
TIME OF CONCENTRATION CALCULATOR
::

Segment #1: Tc: User Defined

Segment #1 Time: 5.00 min

Total Tc: 5.00 min

S/N:
PondPack Ver: Compute Time: Date:

File.... T:\APROJENG\16029E\Hydro\16-029E.PPW

Tc Equations used...

==== User Defined ====

Tc = Value entered by user

Where: Tc = Time of concentration

S/N:
PondPack Ver: Compute Time: Date:

Type.... Runoff CN-Area Page 3.01
Name.... EX-BASIN 1

File.... T:\APROJENG\16029E\Hydro\16-029E.PPW

RUNOFF CURVE NUMBER DATA

Soil/Surface Description	CN	Area acres	Impervious Adjustment %C	%UC	Adjusted CN
Onsite Impervious	98	.250			98.00
Onsite Grass Area	65	.950			65.00
Onsite Wooded area	55	.600			55.00
Offsite	65	4.300			65.00
COMPOSITE AREA & WEIGHTED CN --->		6.100			65.37 (65)

S/N:
PondPack Ver: Compute Time: Date:

File.... T:\APROJENG\16029E\Hydro\16-029E.PPW

RUNOFF CURVE NUMBER DATA

Soil/Surface Description	CN	Area acres	Impervious Adjustment %C	%UC	Adjusted CN
Offsite	65	3.900			65.00
COMPOSITE AREA & WEIGHTED CN --->		3.900			65.00 (65)

S/N:
PondPack Ver: Compute Time: Date:

File.... T:\APROJENG\16029E\Hydro\16-029E.PPW

RUNOFF CURVE NUMBER DATA

Soil/Surface Description	CN	Area acres	Impervious Adjustment %C	%UC	Adjusted CN
Onsite Pervious	61	.150			61.00
Onsite Undisturbed	55	.150			55.00
COMPOSITE AREA & WEIGHTED CN --->		.300			58.00 (58)

S/N:
PondPack Ver: Compute Time: Date:

Type.... Runoff CN-Area
Name.... POND 1 INFLOW

File.... T:\APROJENG\16029E\Hydro\16-029E.PPW

RUNOFF CURVE NUMBER DATA

Soil/Surface Description	CN	Area acres	Impervious Adjustment %C	%UC	Adjusted CN
Onsite Impervious - Lots	98	.300			98.00
Onsite Pervious - Lots	61	.900			61.00
Onsite Impervious - R/W	98	.400			98.00
Onsite Pervious - R/W	61	.200			61.00
Offsite	65	.400			65.00
COMPOSITE AREA & WEIGHTED CN --->		2.200			73.50 (74)

S/N:
PondPack Ver: Compute Time: Date:

SUMMARY FOR HYDROGRAPH ADDITION
at Node: PROP-BASIN 1

HYG Directory: T:\APROJENG\16029E\Hydro\

Upstream Link ID	Upstream Node ID	HYG file	HYG ID	HYG tag
ONSITE BP 1	POND 1 BP		POND 1 BP	1
ROUTE 1	POND 1	IN	ROUTE 1	1

INFLOWS TO: PROP-BASIN 1

HYG file	HYG ID	HYG tag	Volume cu.ft	Peak Time min	Peak Flow cfs
	POND 1 BP	1	435	720.00	.14
	ROUTE 1	1	18702	732.00	1.84

TOTAL FLOW INTO: PROP-BASIN 1

HYG file	HYG ID	HYG tag	Volume cu.ft	Peak Time min	Peak Flow cfs
	PROP-BASIN 1	1	19137	732.00	1.87

S/N:
PondPack Ver: Compute Time: Date:

SUMMARY FOR HYDROGRAPH ADDITION
at Node: PROP-BASIN 1

HYG Directory: T:\APROJENG\16029E\Hydro\

Upstream Link ID	Upstream Node ID	HYG file	HYG ID	HYG tag
ONSITE BP 1	POND 1 BP		POND 1 BP	2
ROUTE 1	POND 1	IN	ROUTE 1	2

INFLOWS TO: PROP-BASIN 1

HYG file	HYG ID	HYG tag	Volume cu.ft	Peak Time min	Peak Flow cfs
	POND 1 BP	2	763	720.00	.28
	ROUTE 1	2	28380	732.00	3.17

TOTAL FLOW INTO: PROP-BASIN 1

HYG file	HYG ID	HYG tag	Volume cu.ft	Peak Time min	Peak Flow cfs
	PROP-BASIN 1	2	29143	729.00	3.23

S/N:
PondPack Ver: Compute Time: Date:

SUMMARY FOR HYDROGRAPH ADDITION
at Node: PROP-BASIN 1

HYG Directory: T:\APROJENG\16029E\Hydro\

Upstream Link ID	Upstream Node ID	HYG file	HYG ID	HYG tag
ONSITE BP 1	POND 1 BP		POND 1 BP	5
ROUTE 1	POND 1	IN	ROUTE 1	5

INFLOWS TO: PROP-BASIN 1

HYG file	HYG ID	HYG tag	Volume cu.ft	Peak Time min	Peak Flow cfs
	POND 1 BP	5	1154	717.00	.44
	ROUTE 1	5	39098	729.00	5.54

TOTAL FLOW INTO: PROP-BASIN 1

HYG file	HYG ID	HYG tag	Volume cu.ft	Peak Time min	Peak Flow cfs
	PROP-BASIN 1	5	40253	729.00	5.65

S/N:
PondPack Ver: Compute Time: Date:

SUMMARY FOR HYDROGRAPH ADDITION
at Node: PROP-BASIN 1

HYG Directory: T:\APROJENG\16029E\Hydro\

Upstream Link ID	Upstream Node ID	HYG file	HYG ID	HYG tag
ONSITE BP 1	POND 1 BP		POND 1 BP	10
ROUTE 1	POND 1	IN	ROUTE 1	10

INFLOWS TO: PROP-BASIN 1

HYG file	HYG ID	HYG tag	Volume cu.ft	Peak Time min	Peak Flow cfs
	POND 1 BP	10	1595	717.00	.63
	ROUTE 1	10	50619	726.00	8.31

TOTAL FLOW INTO: PROP-BASIN 1

HYG file	HYG ID	HYG tag	Volume cu.ft	Peak Time min	Peak Flow cfs
	PROP-BASIN 1	10	52214	726.00	8.52

S/N:
PondPack Ver: Compute Time: Date:

SUMMARY FOR HYDROGRAPH ADDITION
at Node: PROP-BASIN 1

HYG Directory: T:\APROJENG\16029E\Hydro\

Upstream Link ID	Upstream Node ID	HYG file	HYG ID	HYG tag
ONSITE BP 1	POND 1 BP		POND 1 BP	25
ROUTE 1	POND 1	IN	ROUTE 1	25

INFLOWS TO: PROP-BASIN 1

HYG file	HYG ID	HYG tag	Volume cu.ft	Peak Time min	Peak Flow cfs
	POND 1 BP	25	2246	717.00	.92
	ROUTE 1	25	66935	726.00	15.30

TOTAL FLOW INTO: PROP-BASIN 1

HYG file	HYG ID	HYG tag	Volume cu.ft	Peak Time min	Peak Flow cfs
	PROP-BASIN 1	25	69180	726.00	15.59

S/N:
PondPack Ver: Compute Time: Date:

SUMMARY FOR HYDROGRAPH ADDITION
at Node: PROP-BASIN 1

HYG Directory: T:\APROJENG\16029E\Hydro\

Upstream Link ID	Upstream Node ID	HYG file	HYG ID	HYG tag
ONSITE BP 1	POND 1 BP		POND 1 BP	50
ROUTE 1	POND 1	IN	ROUTE 1	50

INFLOWS TO: PROP-BASIN 1

HYG file	HYG ID	HYG tag	Volume cu.ft	Peak Time min	Peak Flow cfs
	POND 1 BP	50	2772	717.00	1.14
	ROUTE 1	50	79732	723.00	22.55

TOTAL FLOW INTO: PROP-BASIN 1

HYG file	HYG ID	HYG tag	Volume cu.ft	Peak Time min	Peak Flow cfs
	PROP-BASIN 1	50	82504	723.00	23.30

S/N:
PondPack Ver: Compute Time: Date:

SUMMARY FOR HYDROGRAPH ADDITION
at Node: PROP-BASIN 1

HYG Directory: T:\APROJENG\16029E\Hydro\

Upstream Link ID	Upstream Node ID	HYG file	HYG ID	HYG tag
ONSITE BP 1	POND 1 BP		POND 1 BP	100
ROUTE 1	POND 1	IN	ROUTE 1	100

INFLOWS TO: PROP-BASIN 1

HYG file	HYG ID	HYG tag	Volume cu.ft	Peak Time min	Peak Flow cfs
	POND 1 BP	100	3325	717.00	1.38
	ROUTE 1	100	92913	723.00	29.34

TOTAL FLOW INTO: PROP-BASIN 1

HYG file	HYG ID	HYG tag	Volume cu.ft	Peak Time min	Peak Flow cfs
	PROP-BASIN 1	100	96238	723.00	30.23

S/N:
PondPack Ver: Compute Time: Date:

File.... T:\APROJENG\16029E\Hydro\16-029E.PPW

Elevation (ft)	Planimeter (sq.in)	Area (sq.ft)	A1+A2+sqr(A1*A2) (sq.ft)	Volume (cu.ft)	Volume Sum (cu.ft)
984.50	-----	5670	0	0	0
986.00	-----	7230	19303	9651	9651
988.00	-----	9550	25089	16726	26378
988.50	-----	11070	30902	5150	31528

POND VOLUME EQUATIONS

* Incremental volume computed by the Conic Method for Reservoir Volumes.

Volume = (1/3) * (EL2-EL1) * (Area1 + Area2 + sq.rt.(Area1*Area2))

where: EL1, EL2 = Lower and upper elevations of the increment
Area1,Area2 = Areas computed for EL1, EL2, respectively
Volume = Incremental volume between EL1 and EL2

S/N:
PondPack Ver: Compute Time: Date:

File.... T:\APROJENG\16029E\Hydro\16-029E.PPW

REQUESTED POND WS ELEVATIONS:

Min. Elev.= 984.50 ft
Increment = .10 ft
Max. Elev.= 988.50 ft

****
OUTLET CONNECTIVITY
****

---> Forward Flow Only (UpStream to DnStream)
<--- Reverse Flow Only (DnStream to UpStream)
<---> Forward and Reverse Both Allowed

Structure	No.		Outfall	E1, ft	E2, ft
Orifice-Circular	O1	--->	TW	984.500	988.500
Orifice-Circular	O2	--->	TW	985.500	988.500
Weir-Rectangular	W1	--->	TW	987.000	988.500

TW SETUP, DS Channel

S/N:
PondPack Ver: Compute Time: Date:

OUTLET STRUCTURE INPUT DATA

Structure ID = O1
Structure Type = Orifice-Circular

# of Openings = 1
Invert Elev. = 984.50 ft
Diameter = 10.00 in
Orifice Coeff. = .600

Structure ID = O2
Structure Type = Orifice-Circular

# of Openings = 1
Invert Elev. = 985.50 ft
Diameter = 15.00 in
Orifice Coeff. = .600

Structure ID = W1
Structure Type = Weir-Rectangular

# of Openings = 1
Crest Elev. = 987.00 ft
Weir Length = 12.60 ft
Weir Coeff. = 3.000000

Weir TW effects (Use adjustment equation)

Structure ID = TW
Structure Type = TW SETUP, DS Channel

FREE OUTFALL CONDITIONS SPECIFIED

CONVERGENCE TOLERANCES...
Maximum Iterations= 40
Min. TW tolerance = .01 ft
Max. TW tolerance = .01 ft
Min. HW tolerance = .01 ft
Max. HW tolerance = .01 ft
Min. Q tolerance = .00 cfs
Max. Q tolerance = .00 cfs

Name.... POND 1
File.... T:\APROJENG\16029E\Hydro\16-029E.PPW

LEVEL POOL ROUTING DATA

HYG Dir = T:\APROJENG\16029E\Hydro\
Inflow HYG file = NONE STORED - POND 1 IN 1
Outflow HYG file = NONE STORED - POND 1 OUT 1

Pond Node Data = POND 1
Pond Volume Data = POND 1
Pond Outlet Data = OCS 1

No Infiltration

INITIAL CONDITIONS

Starting WS Elev = 984.50 ft
Starting Volume = 0 cu.ft
Starting Outflow = .00 cfs
Starting Infiltr. = .00 cfs
Starting Total Qout= .00 cfs
Time Increment = 3.00 min

Elevation ft	Outflow cfs	Storage cu.ft	Area sq.ft	Infilt. cfs	Q Total cfs	2S/t + O cfs
984.50	.00	0	5670	.00	.00	.00
984.60	.03	572	5768	.00	.03	6.38
984.70	.12	1154	5867	.00	.12	12.94
984.80	.26	1745	5967	.00	.26	19.65
984.90	.45	2347	6068	.00	.45	26.53
985.00	.68	2959	6169	.00	.68	33.55
985.10	.94	3581	6271	.00	.94	40.73
985.20	1.22	4213	6374	.00	1.22	48.04
985.30	1.53	4856	6478	.00	1.53	55.48
985.40	1.83	5509	6583	.00	1.83	63.04
985.50	2.00	6172	6689	.00	2.00	70.59
985.60	2.21	6847	6795	.00	2.21	78.28
985.70	2.47	7532	6903	.00	2.47	86.16
985.80	2.80	8227	7011	.00	2.80	94.21
985.90	3.18	8934	7120	.00	3.18	102.44
986.00	3.61	9651	7230	.00	3.61	110.85
986.10	4.10	10380	7338	.00	4.10	119.42
986.20	4.62	11119	7448	.00	4.62	128.16
986.30	5.19	11869	7557	.00	5.19	137.06
986.40	5.79	12631	7668	.00	5.79	146.13

S/N:
PondPack Ver: Compute Time: Date:

LEVEL POOL ROUTING DATA

HYG Dir = T:\APROJENG\16029E\Hydro\
Inflow HYG file = NONE STORED - POND 1 IN 1
Outflow HYG file = NONE STORED - POND 1 OUT 1

Pond Node Data = POND 1
Pond Volume Data = POND 1
Pond Outlet Data = OCS 1

No Infiltration

INITIAL CONDITIONS

Starting WS Elev	=	984.50 ft
Starting Volume	=	0 cu.ft
Starting Outflow	=	.00 cfs
Starting Infiltr.	=	.00 cfs
Starting Total Qout	=	.00 cfs
Time Increment	=	3.00 min

Elevation ft	Outflow cfs	Storage cu.ft	Area sq.ft	Infilt. cfs	Q Total cfs	2S/t + O cfs
986.50	6.41	13403	7780	.00	6.41	155.33
986.60	7.06	14186	7892	.00	7.06	164.69
986.70	7.73	14981	8005	.00	7.73	174.19
986.80	8.46	15788	8119	.00	8.46	183.87
986.90	8.90	16605	8234	.00	8.90	193.40
987.00	9.31	17434	8350	.00	9.31	203.03
987.10	10.91	18275	8466	.00	10.91	213.96
987.20	13.47	19128	8583	.00	13.47	226.00
987.30	16.67	19992	8701	.00	16.67	238.80
987.40	20.37	20868	8820	.00	20.37	252.24
987.50	24.51	21756	8940	.00	24.51	266.24
987.60	29.04	22656	9060	.00	29.04	280.77
987.70	33.93	23568	9181	.00	33.93	295.80
987.80	39.15	24492	9303	.00	39.15	311.28
987.90	44.68	25429	9426	.00	44.68	327.22
988.00	50.50	26378	9550	.00	50.50	343.58
988.10	56.59	27347	9845	.00	56.59	360.45
988.20	62.96	28347	10145	.00	62.96	377.92
988.30	69.57	29376	10449	.00	69.57	395.97
988.40	76.43	30437	10757	.00	76.43	414.61

S/N:
PondPack Ver: Compute Time: Date:

Name.... POND 1
File.... T:\APROJENG\16029E\Hydro\16-029E.PPW

LEVEL POOL ROUTING DATA

HYG Dir = T:\APROJENG\16029E\Hydro\
Inflow HYG file = NONE STORED - POND 1 IN 1
Outflow HYG file = NONE STORED - POND 1 OUT 1

Pond Node Data = POND 1
Pond Volume Data = POND 1
Pond Outlet Data = OCS 1

No Infiltration

INITIAL CONDITIONS

Starting WS Elev = 984.50 ft
Starting Volume = 0 cu.ft
Starting Outflow = .00 cfs
Starting Infiltr. = .00 cfs
Starting Total Qout= .00 cfs
Time Increment = 3.00 min

Elevation ft	Outflow cfs	Storage cu.ft	Area sq.ft	Infilt. cfs	Q Total cfs	2S/t + O cfs
988.50	83.51	31528	11070	.00	83.51	433.83

S/N:
PondPack Ver: Compute Time: Date:

LEVEL POOL ROUTING SUMMARY

HYG Dir = T:\APROJENG\16029E\Hydro\
Inflow HYG file = NONE STORED - POND 1 IN 1
Outflow HYG file = NONE STORED - POND 1 OUT 1

Pond Node Data = POND 1
Pond Volume Data = POND 1
Pond Outlet Data = OCS 1

No Infiltration

INITIAL CONDITIONS

Starting WS Elev	=	984.50 ft
Starting Volume	=	0 cu.ft
Starting Outflow	=	.00 cfs
Starting Infiltr.	=	.00 cfs
Starting Total Qout	=	.00 cfs
Time Increment	=	3.00 min

INFLOW/OUTFLOW HYDROGRAPH SUMMARY

Peak Inflow	=	6.68 cfs	at	720.00 min
Peak Outflow	=	1.84 cfs	at	732.00 min
Peak Elevation	=	985.41 ft		
Peak Storage	=	5549 cu.ft		

MASS BALANCE (cu.ft)

+ Initial Vol	=	0
+ HYG Vol IN	=	18758
- Infiltration	=	0
- HYG Vol OUT	=	18703
- Retained Vol	=	55
Unrouted Vol	= -	cu.ft (.002% of Inflow Volume)

S/N:
PondPack Ver: Compute Time: Date:

Type.... Pond Routing Summary
Name.... POND 1 OUT Tag: 2
File.... T:\APROJENG\16029E\Hydro\16-029E.PPW
Storm... TypeII 24hr Tag: 2

LEVEL POOL ROUTING SUMMARY

HYG Dir = T:\APROJENG\16029E\Hydro\
Inflow HYG file = NONE STORED - POND 1 IN 2
Outflow HYG file = NONE STORED - POND 1 OUT 2

Pond Node Data = POND 1
Pond Volume Data = POND 1
Pond Outlet Data = OCS 1

No Infiltration

INITIAL CONDITIONS

Starting WS Elev	=	984.50 ft
Starting Volume	=	0 cu.ft
Starting Outflow	=	.00 cfs
Starting Infiltr.	=	.00 cfs
Starting Total Qout	=	.00 cfs
Time Increment	=	3.00 min

INFLOW/OUTFLOW HYDROGRAPH SUMMARY

Peak Inflow	=	10.46 cfs	at	720.00 min
Peak Outflow	=	3.17 cfs	at	732.00 min
Peak Elevation	=	985.90 ft		
Peak Storage	=	8916 cu.ft		

MASS BALANCE (cu.ft)

+ Initial Vol	=	0
+ HYG Vol IN	=	28436
- Infiltration	=	0
- HYG Vol OUT	=	28380
- Retained Vol	=	55
Unrouted Vol	= -	cu.ft (.001% of Inflow Volume)

S/N:
PondPack Ver: Compute Time: Date:

```
Type.... Pond Routing Summary
Name.... POND 1       OUT   Tag:      5
File.... T:\APROJENG\16029E\Hydro\16-029E.PPW
Storm... TypeII  24hr   Tag:      5

                    LEVEL POOL ROUTING SUMMARY

 HYG Dir          = T:\APROJENG\16029E\Hydro\
 Inflow  HYG file = NONE STORED - POND 1       IN  5
 Outflow HYG file = NONE STORED - POND 1       OUT 5

 Pond Node   Data = POND 1
 Pond Volume Data = POND 1
 Pond Outlet Data = OCS 1

 No Infiltration

 INITIAL CONDITIONS
 ----------------------------------
 Starting WS Elev   =   984.50 ft
 Starting Volume    =        0 cu.ft
 Starting Outflow   =      .00 cfs
 Starting Infiltr.  =      .00 cfs
 Starting Total Qout=      .00 cfs
 Time Increment     =     3.00 min


 INFLOW/OUTFLOW HYDROGRAPH SUMMARY
 ==================================================
 Peak Inflow       =     14.57 cfs    at    720.00 min
 Peak Outflow      =      5.54 cfs    at    729.00 min
 --------------------------------------------------
 Peak Elevation    =    986.36 ft
 Peak Storage =          12319 cu.ft
 ==================================================


 MASS BALANCE (cu.ft)
 --------------------------
+ Initial Vol  =           0
+ HYG Vol IN   =       39155
- Infiltration =           0
- HYG Vol OUT  =       39099
- Retained Vol =          55
                ----------
 Unrouted Vol = -           cu.ft  (.001% of Inflow Volume)
```

S/N:
PondPack Ver: Compute Time: Date:

Type.... Pond Routing Summary
Name.... POND 1 OUT Tag: 10
File.... T:\APROJENG\16029E\Hydro\16-029E.PPW
Storm... TypeII 24hr Tag: 10
Event: 10 yr

LEVEL POOL ROUTING SUMMARY

HYG Dir = T:\APROJENG\16029E\Hydro\
Inflow HYG file = NONE STORED - POND 1 IN 10
Outflow HYG file = NONE STORED - POND 1 OUT 10

Pond Node Data = POND 1
Pond Volume Data = POND 1
Pond Outlet Data = OCS 1

No Infiltration

INITIAL CONDITIONS

Starting WS Elev	=	984.50 ft
Starting Volume	=	0 cu.ft
Starting Outflow	=	.00 cfs
Starting Infiltr.	=	.00 cfs
Starting Total Qout	=	.00 cfs
Time Increment	=	3.00 min

INFLOW/OUTFLOW HYDROGRAPH SUMMARY

Peak Inflow	=	19.11 cfs	at	717.00 min
Peak Outflow	=	8.31 cfs	at	726.00 min
Peak Elevation	=	986.78 ft		
Peak Storage	=	15631 cu.ft		

MASS BALANCE (cu.ft)

+ Initial Vol	=	0
+ HYG Vol IN	=	50675
- Infiltration	=	0
- HYG Vol OUT	=	50619
- Retained Vol	=	55
Unrouted Vol	= -	cu.ft (.001% of Inflow Volume)

S/N:
PondPack Ver: Compute Time: Date:

Type.... Pond Routing Summary
Name.... POND 1 OUT Tag: 25
File.... T:\APROJENG\16029E\Hydro\16-029E.PPW
Storm... TypeII 24hr Tag: 25

LEVEL POOL ROUTING SUMMARY

HYG Dir = T:\APROJENG\16029E\Hydro\
Inflow HYG file = NONE STORED - POND 1 IN 25
Outflow HYG file = NONE STORED - POND 1 OUT 25

Pond Node Data = POND 1
Pond Volume Data = POND 1
Pond Outlet Data = OCS 1

No Infiltration

INITIAL CONDITIONS

Starting WS Elev	=	984.50 ft
Starting Volume	=	0 cu.ft
Starting Outflow	=	.00 cfs
Starting Infiltr.	=	.00 cfs
Starting Total Qout	=	.00 cfs
Time Increment	=	3.00 min

INFLOW/OUTFLOW HYDROGRAPH SUMMARY

Peak Inflow	=	25.48 cfs	at	717.00 min
Peak Outflow	=	15.30 cfs	at	726.00 min
Peak Elevation	=	987.26 ft		
Peak Storage	=	19622 cu.ft		

MASS BALANCE (cu.ft)

+ Initial Vol	=	0
+ HYG Vol IN	=	66991
- Infiltration	=	0
- HYG Vol OUT	=	66935
- Retained Vol	=	55
Unrouted Vol	= -	cu.ft (.001% of Inflow Volume)

S/N:
PondPack Ver: Compute Time: Date:

Type.... Pond Routing Summary
Name.... POND 1 OUT Tag: 50
File.... T:\APROJENG\16029E\Hydro\16-029E.PPW
Storm... TypeII 24hr Tag: 50

LEVEL POOL ROUTING SUMMARY

HYG Dir = T:\APROJENG\16029E\Hydro\
Inflow HYG file = NONE STORED - POND 1 IN 50
Outflow HYG file = NONE STORED - POND 1 OUT 50

Pond Node Data = POND 1
Pond Volume Data = POND 1
Pond Outlet Data = OCS 1

No Infiltration

INITIAL CONDITIONS

Starting WS Elev	=	984.50 ft
Starting Volume	=	0 cu.ft
Starting Outflow	=	.00 cfs
Starting Infiltr.	=	.00 cfs
Starting Total Qout	=	.00 cfs
Time Increment	=	3.00 min

INFLOW/OUTFLOW HYDROGRAPH SUMMARY

Peak Inflow	=	30.43 cfs	at	717.00 min
Peak Outflow	=	22.55 cfs	at	723.00 min
Peak Elevation	=	987.45 ft		
Peak Storage	=	21334 cu.ft		

MASS BALANCE (cu.ft)

+ Initial Vol	=	0
+ HYG Vol IN	=	79789
- Infiltration	=	0
- HYG Vol OUT	=	79733
- Retained Vol	=	55
Unrouted Vol	=	-1 cu.ft (.001% of Inflow Volume)

S/N:
PondPack Ver: Compute Time: Date:

Type.... Pond Routing Summary
Name.... POND 1 OUT Tag: 100
File.... T:\APROJENG\16029E\Hydro\16-029E.PPW
Storm... TypeII 24hr Tag: 100

LEVEL POOL ROUTING SUMMARY

HYG Dir = T:\APROJENG\16029E\Hydro\
Inflow HYG file = NONE STORED - POND 1 IN 100
Outflow HYG file = NONE STORED - POND 1 OUT 100

Pond Node Data = POND 1
Pond Volume Data = POND 1
Pond Outlet Data = OCS 1

No Infiltration

INITIAL CONDITIONS

Starting WS Elev	=	984.50 ft
Starting Volume	=	0 cu.ft
Starting Outflow	=	.00 cfs
Starting Infiltr.	=	.00 cfs
Starting Total Qout	=	.00 cfs
Time Increment	=	3.00 min

INFLOW/OUTFLOW HYDROGRAPH SUMMARY

Peak Inflow	=	35.49 cfs	at	717.00 min
Peak Outflow	=	29.34 cfs	at	723.00 min
Peak Elevation	=	987.61 ft		
Peak Storage	=	22711 cu.ft		

MASS BALANCE (cu.ft)

+ Initial Vol	=	0
+ HYG Vol IN	=	92969
- Infiltration	=	0
- HYG Vol OUT	=	92913
- Retained Vol	=	55
Unrouted Vol	=	-1 cu.ft (.001% of Inflow Volume)

S/N:
PondPack Ver: Compute Time: Date: