



4651 WOODSTOCK ROAD, SUITE 208-106 • ROSWELL, GEORGIA 30075
JOHN LOYD 770.868.7591

6.30.2017

Mr. Eric Randall
City of Smyrna
2190 Atlanta Road
Smyrna, GA 30080

RE: **Belmont Hills Pod B**
Impervious Area

Dear Mr. Randall:

The purpose of this letter is to summarize the proposed impervious cover included in the zoning plan for Belmont Hills Pod B with respect to the record hydrology and water quality studies. The impervious cover on the most recent zoning plan submitted, dated June 29, 2017, is shown to be 107,733 sq. ft. (73.2% of the site area).

The water quality requirements for Belmont Hills Pod B are outlined in a Water Quality Report prepared by LAI Engineering, dated September 18, 2014. Per this report water quality for Pod B is provided in Water Quality Pond 'A' located north of the subject site. Design calculations were based on an impervious coverage of 90% for Pod B. Supporting excerpts from this report are enclosed with this letter.

The most current Hydrology Study of record was prepared by Planners & Engineers Collaborative, Inc., dated January 8, 2013 and revised April 25, 2013. The post developed conditions included within this report assume an impervious coverage of 90% for Pod B. Supporting excerpts from this report are enclosed with this letter.

As detailed above, the proposed impervious coverage shown on the most recent zoning plan submitted is well within the assumed design parameters for both water quality and detention. Please let me know if you have any questions.

Sincerely,

A handwritten signature in blue ink, appearing to read 'M. Shelfer', is written over a light blue horizontal line.

Mark D. Shelfer, P.E.

Encl.

WATER QUALITY REPORT

BELMONT HILLS RETAIL PODS A AND B

WINDY HILL ROAD AT ATLANTA ROAD
COBB COUNTY
SMYRNA, GEORGIA

PREPARED BY:



LAI ENGINEERING

1800 Parkway Place, Suite 720
Marietta, Ga 30067
Phone: (770) 423-0807

PREPARED FOR:

HALPERN ENTERPRISES

Steve West
5269 Buford Highway
Atlanta, GA 30340
Phone: (770) 451-0318



September 18, 2014
LAI Engineering Project No. 14058

WATER QUALITY REPORT

September 18, 2014

Location

Belmont Hills Retail

Pods A and B

Windy Hill Road at Atlanta Road
COBB COUNTY
SMYRNA, GEORGIA

Project Description

The project site for the Belmont Hills Redevelopment is located in Smyrna, Georgia on the southwest side of the intersection of Windy Hill Road and Atlanta Road. This report addresses a portion of the site, **Pods A and B**, which are a total of property area of 11.44 acres. The current site condition is a demolished, cleared, and pad graded former shopping center. This project is part of the master development of Belmont Hills. The initial project was a proposed mixed-use development, with a total area of 47.76 acres, consisting of six (6) separate parcels. One of the parcels, Parcel F, has been sold to the Cobb County School system and has since been developed. There are three parcels that are currently being developed; Parcels C and D with DW Homes, for a proposed single family development, and Parcel F with Wood Partners for a proposed apartment complex development. Parcels A and B, which are the parcels analyzed in this report, are proposed retail sites and are currently in the design phase.

During the current design and construction phase of Pods A and B, proposed construction will be to pad grade both parcels, construct roadways for Belmont Place and Belmont Boulevard, and install infrastructure as needed. A sediment basin will be installed along with mass grading of the site. The temporary sediment basin has been designed to meet all state regulations. The temporary sediment basin will discharge into the existing stormwater system and eventually into the proposed stormwater system after the stormwater infrastructure is constructed.

The site has a master detention pond located within Pod F. Flows from Pods A and B flow to the master detention pond via a stormwater pipe system. Discharge from the master detention pond leaves through a headwall located at the northwest side of the site, and discharges to an unnamed tributary of Theatre Branch, which eventually flows to the Chattahoochee River.

This Water Quality report will address the water quality concerns for only Parcels A and B. The "Water Quality" volumes, as required by the *Georgia Stormwater Management Manual*, will be treated with a stormwater pond. Detention and channel protection for these Pods will be treated by the master detention pond located on Pod F, and permitted by the City of Smyrna.

Methodology

The purpose of the following study is to evaluate the future water quality concerns of Parcels A and B of the Belmont Hills Redevelopment. Water Quality for this site will be handled by a stormwater wet pond and a proprietary structural unit, a Hydro International Downstream Defender, and neither will be utilized to control runoff.

The site's stormwater runoff has been calculated for the proposed basins. This calculation will insure that the proposed rate of runoff will be able pass safely from the proposed Water Quality pond and structural unit to the proposed master detention pond.

The SCS Method was used to analyze the proposed conditions. CN-values for the proposed basins were taken from the *Georgia Stormwater Management Manual*, see Section 7 for calculations. Since part of the project, Pod B and a portion of Pod A, is still in the conceptual phase, we have assumed an impervious area of 90% of the site that drains to the pond or structural unit. We have also assumed a Time of Concentration of 5 minutes. Intelisolve's Hydraflow Hydrographs 2009, a computer software program, was used to generate and route hydrographs for this study.

Proposed Conditions

Pod A will consist of retail buildings with three distinct areas of the Pod designated for future retail. Pod B is not currently under contract and there are not any current conceptual plans. The original PUD had a concept plan showing an "active adult" apartment complex. There will also be infrastructure (parking lot, storm lines, sewer lines, dry utilities, etc.) constructed as needed. Part of this development is a proposed roadway to be built between Parcel A and Parcel B. This road is to be dedicated to the City of Smyrna so it has been omitted from any water quality calculations. The water quality pond and structural unit has been designed for the project's total build out so that no modifications will be needed to the proposed pond for the future phases. All undeveloped areas of Pods A and B were designed for a future build out of 90% impervious areas.

A water quality pond and a proprietary structural unit will provide the necessary water quality volumes as required by the *Georgia Stormwater Management Manual*. The site will be comprised of three basins Proposed Basins 1-3. Proposed basin "1" will drain to the proposed water quality pond, Pond A, eventually draining to the master detention pond located on Parcel F. Proposed basin "2" will drain to the proposed water quality structural unit, eventually draining to the master detention pond located on Parcel F. Proposed basin "3" cannot drain to either water quality facility due to its location. Runoff from Basin 3 drains to the stormwater system running along Windy Hill and Atlanta Road.

Proposed Basin "1" to Pond "A" consists of 8.07 acres and makes up the majority of the proposed site. The basin drains to the north and west and is collected via inlets and piped into a wet pond, Pond "A", where its runoff will be treated before it is released into a storm system where it flows through the Wood Partners site to a master detention pond, where it will be detained before being released. Flow from Parcel B will flow into Pond "A" by being piped underneath the proposed roadway that will run between Parcels A and B. (See Water Quality Map)

Proposed Basin "2" to the water quality structural unit consists of 3.62 acres and makes up approximately half of Pod A. The basin drains to the west and is collected via inlets and piped into a proprietary structural unit, Hydro international Downstream Defender, where its runoff will be treated before it is released into a storm system where it flows through the Wood Partners site to a detention pond, where it will be detained before being released.

Proposed Basin "3" consists of 0.33 acres and is located on the northern and eastern sides of Pod A on the other side of proposed buildings running along Windy Hill and Atlanta Roads. The

basin drains to the Right of Way and is collected via inlets and piped down Atlanta Road and Windy Hill Road. Due to the location of the buildings proximity to the right of way, runoff from this basin cannot flow to either water quality facility.

Due to stormwater runoff quality concerns, the areas that bypass the detention ponds have been kept to a minimum. These areas will consist of graded slopes on the edges of the property and areas in front of buildings that sit along the Right of Way of Windy Hill Road and Atlanta Road. Refer to the Water Quality Map and Section 7 of this report for delineations of basins and curve number calculations. See Section 3 for post-developed storm hydrographs.

Storm Water Quality

The purpose of this section is to present a method for conformance with current City of Smyrna Water Quality Regulations for the proposed development. The water quality facilities described herein will conform to Chapter 3 and Appendix D of the Georgia Storm Water Management Manual (GSMM).

In order to analyze the TSS loading for individual sites, the City uses the Storm Water Quality Site Development Review Tool, provided by the Georgia Stormwater Management Manual, which provides the means to which the designer can objectionably analyze their site and provide the necessary BMP's.

Stormwater quality for the site will be handled through a stormwater wet pond and a proprietary structural unit, per the Georgia Storm Water Management Manual (GSMM). The "on site" area used to calculate the water quality is 10.34 acres. Due to the Site Development Review Tool not being able to be modified, we are showing the structural unit as an underground sand filter within the review tool.

See Section 6 for water quality calculations.

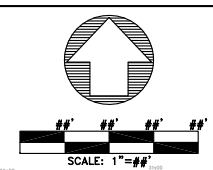
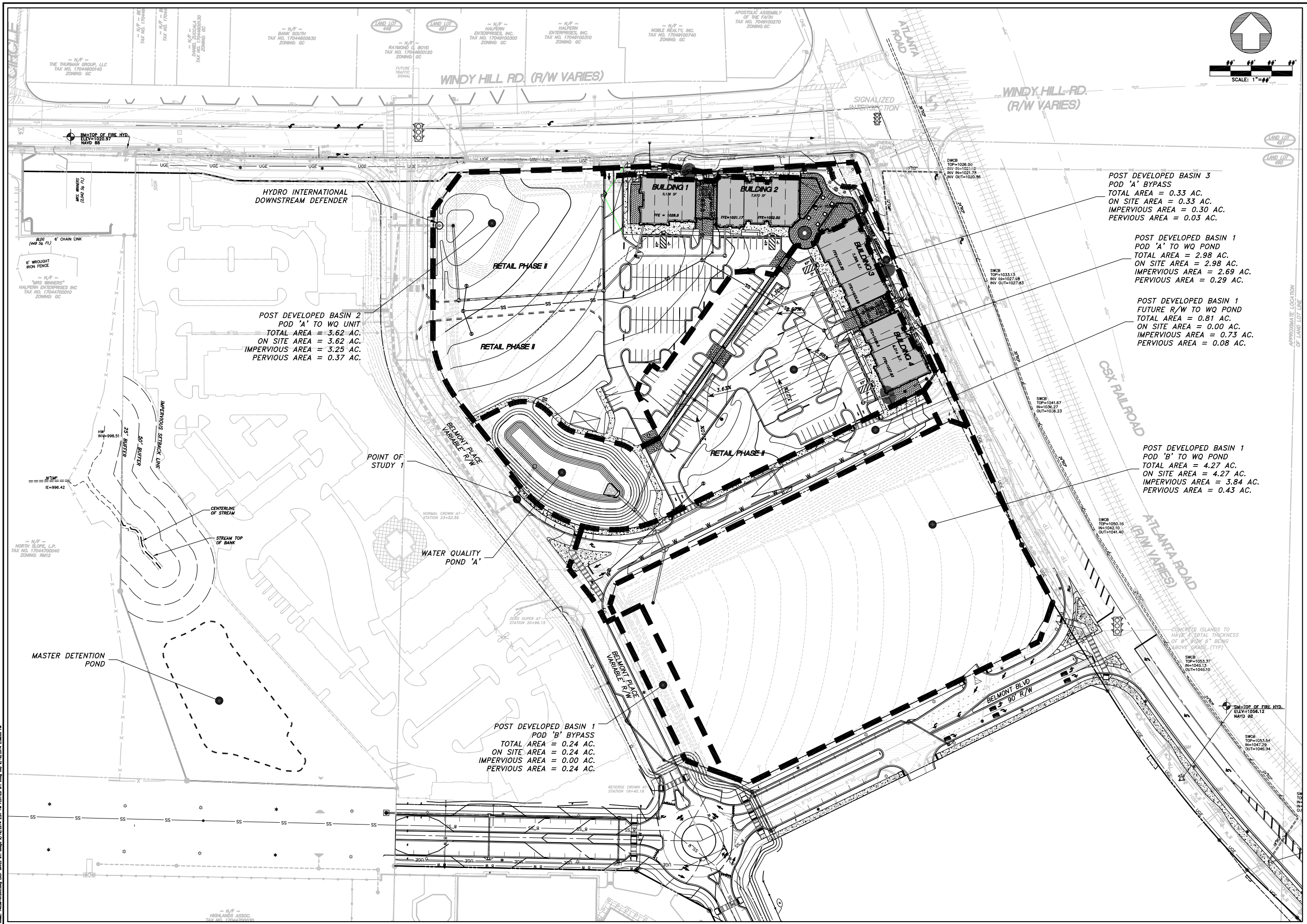
Drainage Strategy

The stormwater runoff from the proposed site will be directed into two different water quality facilities, a wet pond and a proprietary structural unit. The combined facilities will provide the necessary water quality volumes as required by the City of Smyrna and the Georgia Stormwater Manual. See Section 6 for Water Quality Calculations.

Proposed Basin 1 will be routed to detention pond "A". The pond will feature a permanent pool that will hold the water quality volume. An outlet control structure will be used to control the flow out of the detention pond. A 42" RCP will then carry the runoff to a storm system where it will flow through POD F and discharge into a proposed detention pond.

Proposed Basin 2 will be routed to a Hydro International Downstream Defender unit. The unit will treat the required water quality volume. A 30" RCP will then carry the runoff to a storm system where it will flow through Pod F and discharge into a proposed detention pond.

Stormwater and detention and channel protection will be provided within the master detention pond located on Pod F and approved by the City of Smyrna.



POST DEVELOPED BASIN 3
 POD 'A' BYPASS
 TOTAL AREA = 0.33 AC.
 ON SITE AREA = 0.33 AC.
 IMPERVIOUS AREA = 0.30 AC.
 PERVIOUS AREA = 0.03 AC.

POST DEVELOPED BASIN 1
 POD 'A' TO WQ POND
 TOTAL AREA = 2.98 AC.
 ON SITE AREA = 2.98 AC.
 IMPERVIOUS AREA = 2.69 AC.
 PERVIOUS AREA = 0.29 AC.

POST DEVELOPED BASIN 1
 FUTURE R/W TO WQ POND
 TOTAL AREA = 0.81 AC.
 ON SITE AREA = 0.00 AC.
 IMPERVIOUS AREA = 0.73 AC.
 PERVIOUS AREA = 0.08 AC.

POST DEVELOPED BASIN 1
 POD 'B' TO WQ POND
 TOTAL AREA = 4.27 AC.
 ON SITE AREA = 4.27 AC.
 IMPERVIOUS AREA = 3.84 AC.
 PERVIOUS AREA = 0.43 AC.

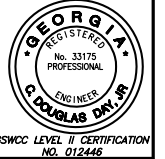
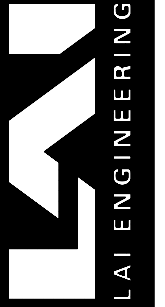
POST DEVELOPED BASIN 2
 POD 'A' TO WQ UNIT
 TOTAL AREA = 3.62 AC.
 ON SITE AREA = 3.62 AC.
 IMPERVIOUS AREA = 3.25 AC.
 PERVIOUS AREA = 0.37 AC.

POST DEVELOPED BASIN 1
 POD 'B' BYPASS
 TOTAL AREA = 0.24 AC.
 ON SITE AREA = 0.24 AC.
 IMPERVIOUS AREA = 0.00 AC.
 PERVIOUS AREA = 0.24 AC.

REVISIONS

BELMONT HILLS RETAIL POD 'A'
 WINDY HILL AND ATLANTA ROAD
 PREPARED FOR
 HALPERN ENTERPRISES

PARKWAY CENTER
 1800 PARKWAY PLACE
 SUITE 720
 MARIETTA, GA 30067
 PHONE: 770-423-0807
 FAX: 770-423-1262
 WWW.LAIENGINEERING.COM



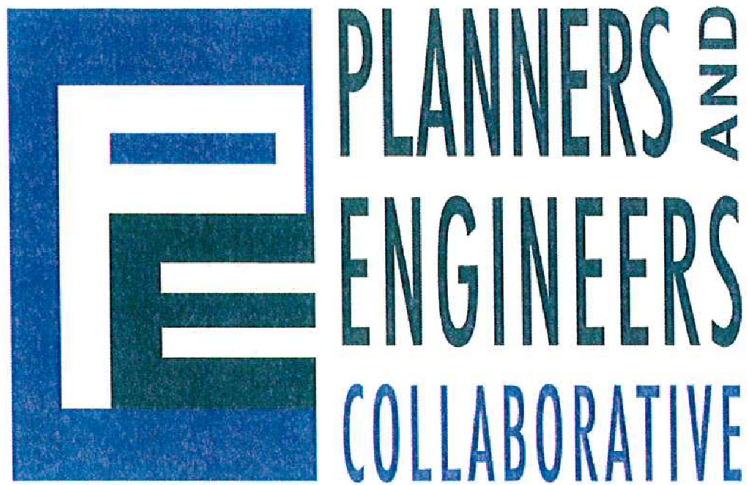
GSWQ LEVEL II CERTIFICATION
 NO. 012448
 JOB NO: 14058
 DWG NAME: 14058-HYDRO

WATER QUALITY
 DRAINAGE MAP

SHEET:
 1 of 1

DATE: 08/18/2014
 Copyright © 2014

NOT-ISSUED-FOR-CONSTRUCTION



"WE PROVIDE SOLUTIONS"

HYDROLOGY STUDY

OF

Belmont Hills – Multifamily District

City of Smyrna, Cobb County, Georgia

**Approximate 10.70 Acres
City of Smyrna
Cobb County, Georgia
LL 489, 490, 17th District**

**Prepared For
Wood Partners
3715 Northside Parkway, NW
Suite 4-600
Atlanta, Georgia 30067**

**Prepared By
Planners and Engineers Collaborative, Inc.
350 Research Court
Norcross, Georgia 30092
Tel: 770-451-2741
Fax: 770-451-3915**

**Dated: January 8, 2013 By: NS
Revised: March 4, 2013 By: NS
Revised: April 25, 2013 By: NS
PEC Project Number: 08063.010**

CURVE NUMBER (CN) CALCULATIONS

HYDROLOGIC SOIL GROUP B

POST DEVELOPED CONDITIONS

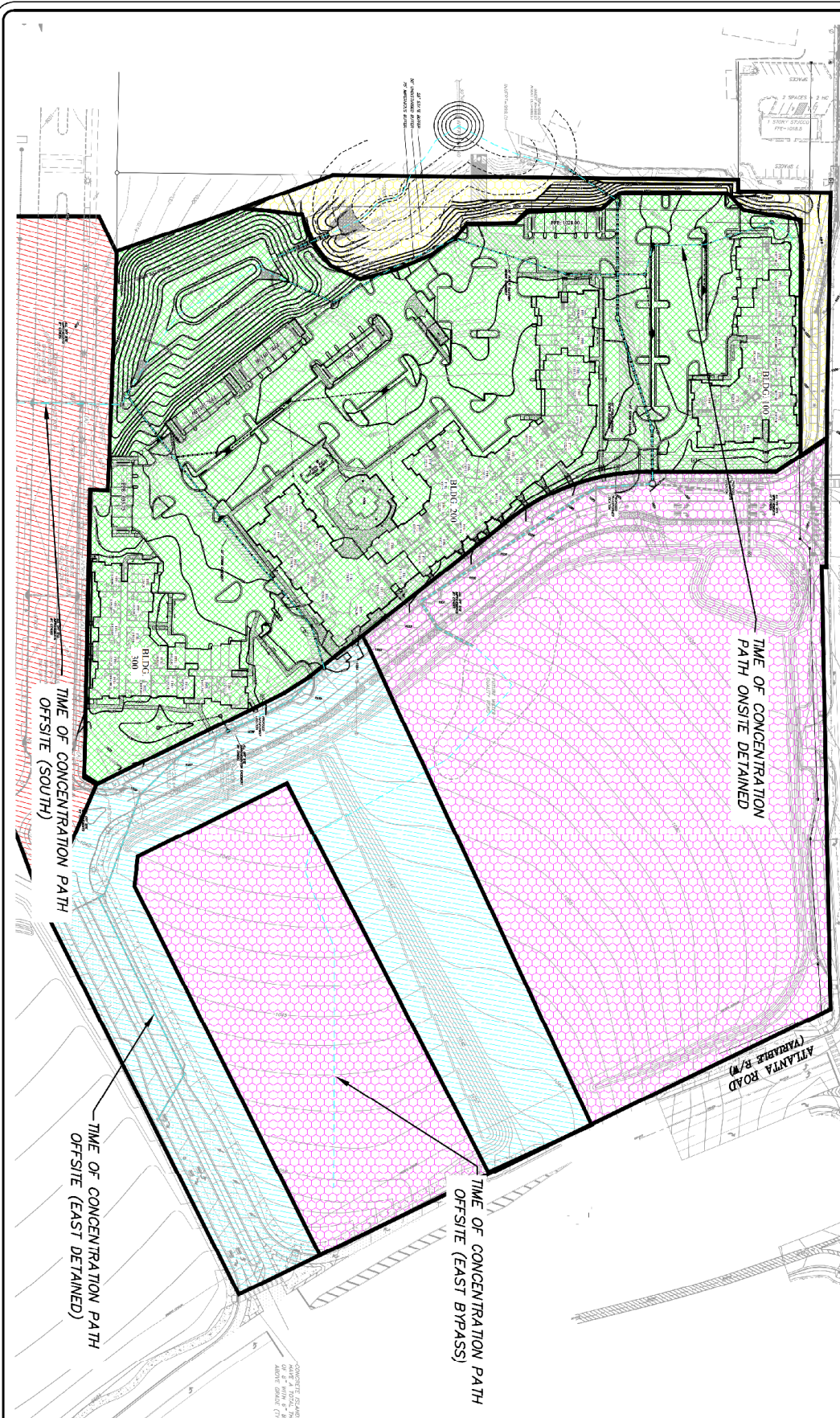
	sq ft.		CN	Acres
ONSITE DETAINED	416869.2	DESCRIPTION	86	9.570
Impervious	277041.6	Asphalt/Concrete ▼	98	6.360
Pervious	139827.6	Landscaped Area ▼	61	3.210
Undisturbed	0	Forest: Good Cover ▼	55	0.000

	sq ft.		CN	Acres
OFFSITE DETAINED (EAST)	220849.2	DESCRIPTION	95	5.070
Impervious	205167.6	Asphalt/Concrete ▼	98	4.710
Pervious	15681.6	Landscaped Area ▼	61	0.360
Undisturbed	0	Right-of-way	85	0.000

	sq ft.		CN	Acres
ONSITE UNDETAINED (BYPASS)	49222.8	DESCRIPTION	59	1.130
Impervious	0	Asphalt/Concrete ▼	98	0.000
Pervious	32670	Landscaped Area ▼	61	0.750
Undisturbed	16552.8	Forest: Good Cover ▼	55	0.380

	sq ft.		CN	Acres
OFFSITE UNDETAINED (BYPASS)	472626	DESCRIPTION	94	10.850
Impervious	425581.2	Asphalt/Concrete ▼	98	9.770
Pervious	47044.8	Landscaped Area ▼	61	1.080
Undisturbed	0	Forest: Good Cover ▼	55	0.000

	sq ft.		CN	Acres
OFFSITE DETAINED (SOUTH)	113256	DESCRIPTION	85	2.600
Impervious	113256	Offsite Area	85	2.600



POST DEVELOPED

	DESIGN AREA (DETAINED)	AREA = 865
	DESIGN AREA (LEAKS) - (DETAINED)	AREA = 103,006
	DESIGN AREA (LEAKS) - (DETAINED)	AREA = 520
	DESIGN AREA (LEAKS) - (DETAINED)	AREA = 143,006
	DESIGN AREA (LEAKS) - (DETAINED)	AREA = 103,006
	DESIGN AREA (LEAKS) - (DETAINED)	AREA = 103,006
	DESIGN AREA (LEAKS) - (DETAINED)	AREA = 103,006
	DESIGN AREA (LEAKS) - (DETAINED)	AREA = 103,006
	DESIGN AREA (LEAKS) - (DETAINED)	AREA = 103,006
	DESIGN AREA (LEAKS) - (DETAINED)	AREA = 103,006

TIME OF CONCENTRATION CALCS

NO.	DATE	BY	DESCRIPTION
1	1-25-13	JEK	ADDITIONAL COMMENTS
2	3-10-14	JEK	REVISIONS

POST DEVELOPED DRAINAGE MAP

SCALE: 1" = 40'

DATE: March 10, 2014

PROJECT: 08063301

THIS SCALE IS ONLY VALID FOR COMPUTER GENERATED MAPS AND SHALL BE USED FOR CONSTRUCTION ONLY.

REVISIONS:

NO.	DATE	BY	DESCRIPTION
1	1-25-13	JEK	ADDITIONAL COMMENTS
2	3-10-14	JEK	REVISIONS

GEORGIA PROFESSIONAL ENGINEER

SEAL

B

Belmont Hills - Multi-Family District

A Master Planned Multi-Family Development

WOOD PARTNERS

5715 NORTHSIDE PARKWAY
N.W. SUITE 4-801
ATLANTA, GEORGIA 30327
PHONE: (404) 965-9948

"WE PROVIDE SOLUTIONS"

PLANNERS AND ENGINEERS COLLABORATIVE

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