City of Dunwoody Georgia
Community Development

4800 Ashford Dunwoody Road
Dunwoody, GA 30346
Phone: (678) 382-6800
dunwoodyga.gov

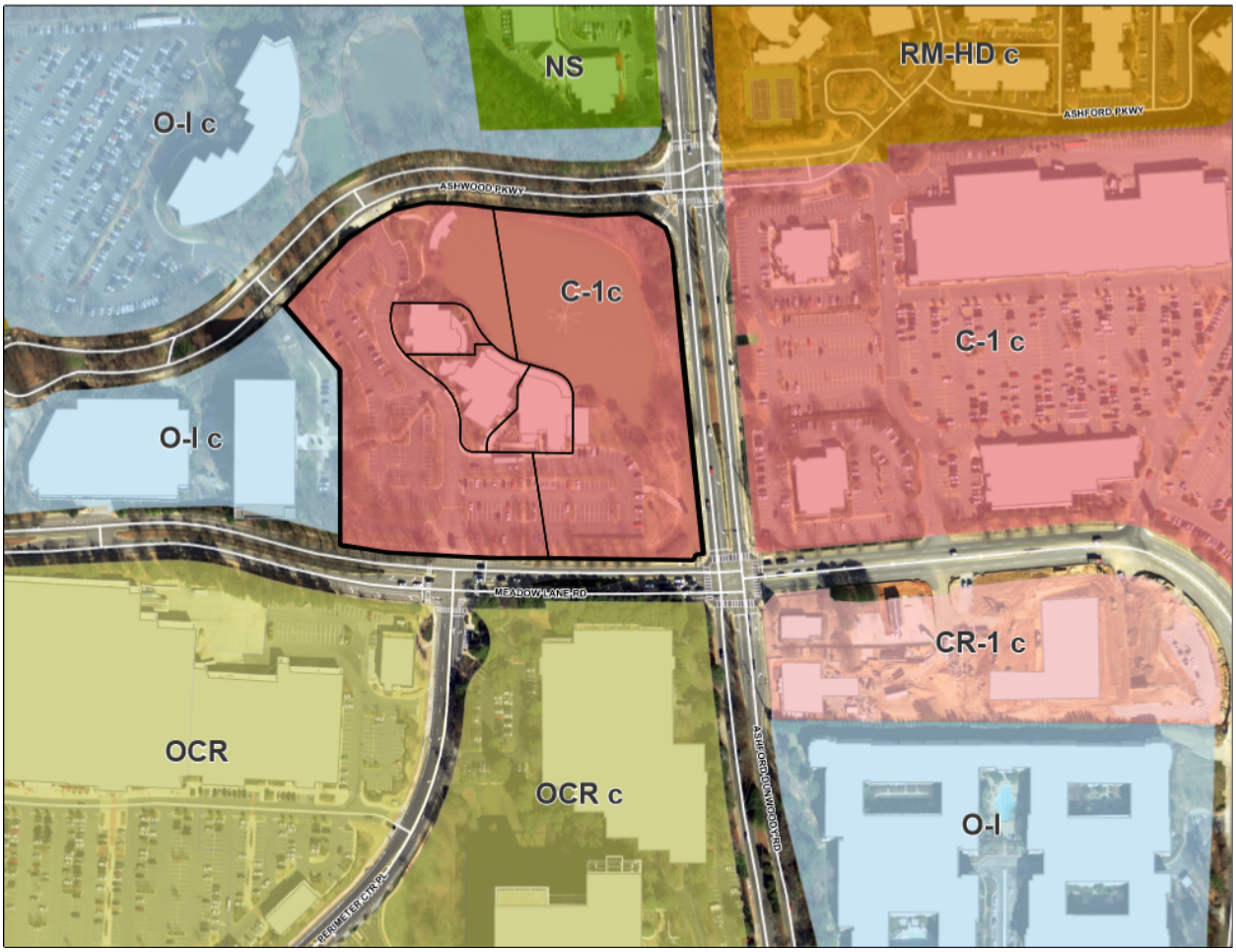
MEMORANDUM

To: City Council

From: John Olson, AICP

Date: June 10, 2019

Subject: Laurel David, attorney for the owner, on behalf of Branch Ashwood Associates, L.P., owner of 1250 Meadow Lane Road, and 500, 600, and 700 Ashwood Parkway, Dunwoody, Georgia seeks a major modification to conditions of zoning. The tax parcel numbers for the site are 18-350-02-001, 18-350-02-003, 18-349-01-037, and 18-349-01-046.



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BACKGROUND

The subject property consists of 10.1 acres of land known as the Ashwood Restaurant Park, which is located in the northwest corner of Ashford Dunwoody Road and Meadow Lane Road. The site contains surface parking, a large stormwater detention pond, and three restaurant buildings that were constructed in the late 1990s. While the developed portions of the site are relatively flat, there is difficult topography found along the Ashford Dunwoody street frontage, and rear portions of the site.

SITE PLAN ANALYSIS

The proposed development will be replacing the existing restaurant park which contains 25,375 square feet of restaurant space. Review of the submitted site plan indicates that the development will consist of a 25,440 square foot anchor supermarket, an 8-pump (16 fueling positions) gas station/convenience store, a 2,800 square foot bank, and 35,400 square feet of restaurant and retail space. The site is conditioned to a site specific plan from 1996 that restricts the use to four (4) restaurants (CZ96-035). Through the application of a modification to conditions (Section 27-361), Branch is requesting that the conditioned 1996 site plan be replaced entirely with the new plan.

The development will make use of the existing full-access driveways on Ashwood Parkway and Meadow Lane Road that currently serve the office building, located at 900 Ashwood Parkway, and the existing restaurant park. In addition, the project will improve and add streetscape elements to its entire length of both Meadow Lane Road and Ashford Dunwoody Road, including a portion of the new commuter trail, and construction of a new street connection from Meadow Lane to Ashford Parkway. The submitted landscape plan indicates that the existing street trees along Meadow Lane Road and Ashford Parkway will be saved and designed into the new sidewalk improvement. Additionally, the applicant has noted that nearly an acre (7.7%) of the property will be provided as patios, terraces, outdoor seating, and other publicly accessible amenity areas. Part of the open space will include a Gateway Plaza feature, located at the corner of Ashford Parkway and Meadow Lane. Branch also intends to fill the water body/detention system in the middle of the site and has received Environmental Protection Division's (EPD) approval for that work. There is a 1.12 acre parcel slated for future development found along the north side of site, fronting Ashwood Parkway that is not part of this request. The applicant has acknowledged that they envision the parcel being developed as a future hotel, but have stated that the application for its use will be filed at another time.

Concurrent with this application, Branch will also request the following variances to Section 27-73 of the Zoning Ordinance:

1.) To reduce the front setback requirement of fifty (50) feet to a minimum of zero (0) feet from the Property's boundary lines adjacent to Ashford Dunwoody Road, Meadow Lane Road and Ashwood Parkway;
2.) To reduce the interior side setback of twenty (20) feet to a minimum of zero (0) feet; to reduce the rear setback from thirty (30) feet to a minimum of zero (0) feet;
3.) To increase the impervious lot coverage from 80% to a maximum of 86%; and
4.) To encroach in the city's 75-foot stream buffer.

These variance are requested in part to bring the buildings closer to the streets to activate the pedestrian streetscape and hide surface parking.

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PARKING ANALYSIS

Under the zoning requirements for the City of Dunwoody, the site is subject to a minimum parking standard of 3.3 per 1,000 square feet of bank, 4 per 1,000 square feet of grocery/retail, 6.7 spaces per 1,000 square feet of restaurant, 3 per service bay or stall of gasoline sales, and 4 per 1,000 square feet of food and beverage sales.

PARKING SUMMARY

ANCHOR PARKING REQ'D (4.0 / 1000 SF)	102	SPACES
RETAIL PARKING REQ'D (4.0 / 1000 SF)	62	SPACES
RESTAURANT PARKING REQ'D (6.67 / 1000 SF)	134	SPACES
C-STORE PARKING REQ'D (4.0 / 1000 SF + 3 PER SERVICE BAY)	34	SPACES
BANK PARKING REQ'D (3.3 / 1000 SF)	10	SPACES
TOTAL PARKING REQUIRED	342	SPACES
TOTAL PARKING PROVIDED	360	SPACES
TOTAL PARKING RATIO PROVIDED	5.21	/1000

Based on the submitted site plan, the fully built site would contain a total of 69,051 square feet of retail area and 360 spaces, which is approximately 10% more parking than required by zoning.

SURROUNDING LAND ANALYSIS

Direction	Zoning	Use	Current Land Use
N	O-I and N-S	Shopping Center and Office Building	Commercial/Office
S	OCR	Shopping Center and Office Building	Commercial/Office
E	C-1	Restaurants and Shopping Center	Commercial
W	O-I	Office Building	Office

ZONING ANALYSIS FOR SPECIAL LAND USE PERMIT REQUESTS

Through the process of a Major Modification, the applicant has requested a change of conditions to the original conditions approved in 1996 under case CZ 96 035. Chapter 27, Section 27-359 identifies the following criteria to be applied by the department of planning, the planning commission, and the city council in evaluating applications for major zoning amendments. No application for an amendment shall be granted by the city council unless satisfactory provisions and arrangements have been made concerning each of the following factors, all of which are applicable to each application:

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1. Whether the proposed use is consistent with the policies of the comprehensive plan;

   The future land use map identified in the"2015-2035 Comprehensive Plan" (Plan) identifies the future land use of subject property as a Perimeter Center ("PC") District. According the Plan, the PC districts are intended to be developed into livable centers that are to include a mix of housing, first-class office, and retail in an environment that includes pedestrian and bicycle-oriented amenities. However, the applicant intends to maintain the area as a Commercial ("C-1") district, and has requested amendments to conditions of the original 1996 site plan to allow a retail shopping center, bank, and gas station/convenience store. As zoned, a C-1 district is not consistent with the future land use plan, which calls for PC-1, PC-2, PC-3 and PC-4 zoning districts (see "FIGURE 16: Future Land Uses Table"). More specifically, according to the PC districts regulating map found in Section 27-104-1, the subject site is best suited for a PC-2 District, which is intended to be made up of "employment uses, residential buildings, and limited shop front retail, and services." It shall be noted that while gasoline sales are allowed within the C-1 district, they are not allowed within the PC-2 zoning category. Finally, when evaluating the mix of uses, the project does not include a residential living component; therefore, the site does not create conditions of a true "live work" environment, which is emphasized within the PC Districts.

   Still, the project maintains some consistency with the Comprehensive Plan in that it incorporates restaurants, retail, and service uses within walking distance of nearby off-site office and residential. Equally as important, the project is consistent with the Perimeter Center Overlay in that it creates new pedestrian and bicycle-oriented amenities along four street frontages, including the development of approximately 700 feet of commuter trail along Ashford Dunwoody Road, and the development of a new street that provides connectivity between the Meadow Lane Road and Ashford Lane Road, which provides support for approval.

2. Whether the zoning proposal will permit a use that is suitable in view of the use and development of adjacent and nearby properties;

   The proposed development, which includes an anchor grocery store, restaurants, retail, and gas station/convenience store, remains compatible with the adjoining mix of office, retail, restaurants, and shopping centers nearby.

3. Whether the property to be affected by the zoning proposal has a reasonable economic use as currently zoned;

   The site has some reasonable economic use as zoned to allow up to four restaurants. From a utilization standpoint, however, the site remains underdeveloped as it contains only three (3) restaurants, totaling 25,375 square feet, a 248 space surface parking lot, and a storm water detention area, totaling approximately 107,000 square feet, all of which is found on approximately 10 acres. Therefore, it would appear that the site does not serve its highest and best economic use as currently zoned.

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4. Whether the zoning proposal will adversely affect the existing use or usability of adjacent or nearby property;

   The proposed development will not create any adverse impacts on adjoining land uses as adjacent and nearby properties include a similar mix of uses that have similar operational characteristics.

5. Whether the proposed use will create adverse impacts upon any adjoining land use by reason of noise, smoke, odor, dust or vibration generated by the proposed use;

   The proposed uses will not create adverse impacts upon any adjoining land use by reason of noise, smoke, odor, dust or vibration.

6. Whether there are other existing or changing conditions affecting the use and development of the property that provide supporting grounds for either approval or disapproval of the zoning proposal;

   The project supports the Perimeter Center Overlays goal of improving bicycle and pedestrian modes of travel and transportation connectivity, specifically through the construction of a new street connection, commuter trail, and streetscapes. Nonetheless, the project does fall short of the Perimeter Centers vision to create a live-work environment, as it does not include a residential component. In addition, the gasoline sales would not appear to be consistent with the emerging pedestrian and bicycle amenities as noted above.

7. Whether the zoning proposal will adversely affect historic buildings, sites, districts, or archaeological resources; and

   The area on the site in which the applicant proposes to develop consists of surface parking and three restaurant buildings, all of which have no historic significance. As such, the proposed development will not have an impact on any historic buildings, sites, districts, or archaeological resources.

8. Whether the zoning proposal will result in a use that will or could cause an excessive or burdensome use of existing streets, transportation facilities, utilities, or schools.

   The addition of approximately 69,000 square feet of retail and restaurant facilities is anticipated to result in additional traffic to the area. To help mitigate the impacts, the city's traffic engineer offered the following comments:

   1. ***In accordance with the recommendation of the traffic study a westbound left turn lane should be added on Ashwood Parkway at the easternmost driveway entrance to the development.***
   2. ***Based on projected queue length, an eastbound left turn lane is needed at Ashwood Parkway and Ashford Dunwoody Road with a flashing yellow arrow protected-permissive phase.***
   3. ***A southbound right turn lane should be added at the intersection of Perimeter Center Place and Meadow Lane Road.***
   4. ***Existing traffic volumes exceed the minimum volume for requiring a right turn lane per GDOT's driveway manual. The traffic projections for the new development will increase that volume by a relatively small amount***

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(3 to 7%) in the peak hour. The proposed extension of Perimeter Center Place on the west side of the development will likely divert some of the southbound right turns at Meadow Lane to the Ashwood Parkway intersection. This is not accounted for in the traffic study. In light of the relatively small volume increase and the desire to create a more pedestrian friendly and lower speed environment on Ashford Dunwoody Road, Public Works is not requiring a southbound right turn lane on Ashford Dunwoody Road for this development.

5. ***The eastbound left turn at Meadow Lane Road and Ashford Dunwoody Road does not have enough capacity for current traffic volumes. The additional volume projected to be generated by the development does not significantly impact the existing deficiency and the city has a project programmed to extend the turn lanes.***
6. ***The existing northbound left turning volume from Ashford Dunwoody Road to Meadow Lane Road sometimes exceeds the capacity of the turn lane during peak travel periods which results in vehicles backing up from the turn lane into the northbound through lane. The additional traffic volume generated by the redevelopment is expected to cause this backup to occur more frequently during peak travel periods. A second left turn lane or extension of the existing turn lane is recommended to increase the capacity of the turn lane.***

To improve traffic flow, Branch has designed the site to include a new road connection between Meadow Lane Road and Ashford Dunwoody Road and has agreed to build a 10-foot wide commuter trail fronting Ashford Dunwoody Road. In regards to school impacts, this project does not include a residential component, so it will not have any impact on area capacity.

SUMMARY OF PLANNING COMMISSION

Planning Commission held a public hearing regarding the case on April 9, 2019. During the hearings, neighbors of development spoke with concerns about the removal of the stormwater detention pond and noise associated with late night deliveries. Also, Commissioner O'Brien recommended that the applicant reduce impervious surface by incorporating impervious pavers and the applicant stated they would explore that as an option. Following discussions, Commissioner Price motioned to approve the case incorporating staff conditions with the following recommended changes:

1. In regards to the pedestrian connection running from Ashford Dunwoody Road to the grocery store, Condition 3 shall be modified from a 16-foot wide pedestrian path, including a 6-foot sidewalk and two 5-foot strips to a 12-foot wide pedestrian path, including a 6-foot sidewalk and two 3-foot strips. As well, the direct path of the connection can be relocated to accommodate necessary handicapped parking.
2. There shall be no minimum parking requirement for the undeveloped northern parcel of the property (whereby under such condition the developer can chose to have no parking);
3. The new road connection shall have 9-foot travel lanes; and
4. The City and Applicant shall come to an agreement regarding limitations to delivery hours to mitigate public nuisance from noise.

The motion passed unanimously 6-0.

STAFF RECOMMENDATION

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Based on the written findings above, staff recommends the request for a major modification to conditions be **approved** subject to the following conditions:

EXHIBIT A: Schematic Site Plan SP35, completed by Philips Partnership, dated May 29, 2019
EXHIBIT B: Streetscaping Sections, completed by Phillips Partnership, dated December 4, 2018 and Streetscape Section for Ashford Dunwoody Road dated January 14, 2019
EXHIBIT C: Rendering of Archway Sign and Grocer Free-standing Letters Sign, dated April 25, 2019
EXHIBIT D: Conceptual Gateway Plaza Plan, completed by AJC Design Group, dated April 24, 2019
EXHIBIT E: Left Turn Lane Concept, completed by A&R Engineering, dated April 17, 2019
EXHIBIT F: Meadow Lane Intersection, completed by Philips Partnership, dated May 13, 2019

1. The owner shall develop the site in general conformity with "Exhibit A" with minor changes allowed as defined by Section 27-337(b) or necessary changes to meet conditions of zoning or land development requirements made necessary by actual field conditions at the time of development;
2. The owner shall construct the streetscaping and commuter trail in general conformity with "Exhibit B". Any minor variations to the streetscapes made necessary by actual field conditions at the time of development shall be subject to approval by the Public Works and Community Development Department. If the width of the commuter trail is reduced by Public Works the location of the footprints of the buildings shall remain in the same vertical and horizontal location as shown on the Schematic Site Plan;
3. The owner shall construct a 12-foot wide pedestrian connection, including a 6-foot pedestrian sidewalk and two 3-foot wide landscape strips that connect from Ashford Dunwoody Road, between buildings C and D, to Building A as illustrated on Exhibit A. The landscape strips shall include overstory trees planted on each side at no more than 50 and no less than 25 feet;
4. The proposed bank shall be limited to the southwest quadrant of the site, as shown on Exhibit A; no banks or free-standing financial services are otherwise allowed on the site;
5. Buildings shall be designed with 360 degree architecture with the exception of the rear of Building A and the anchor grocer, which shall be subject to reasonable landscape screening as approved by the City Arborist;
6. Major façade materials shall include brick, stone, hard coat stucco and glass, with other high quality materials approved by the Community Development Director during the permit review process;
7. Synthetic stucco (EIFS) material shall be limited to accenting material; masonry brick or stone veneer materials are allowed; stamped brick and stone EIFS or imitation masonry veneer materials shall be prohibited;
8. All loading facilities and trash/recycling enclosure(s) must be screened from view of public rights-of-way by landscaping and a solid brick wall or opaque fence at least six feet in height or the height of the dumpster. The approach to the loading facilities and trash/recycling enclosures for the anchor grocer and Building A does not need to be screened from view of Ashwood Parkway;
9. All mechanical equipment (e.g., air conditioning, heating, cooling, ventilation, exhaust and similar equipment) shall be roof mounted and screened in all directions by walls or parapets or will be enclosed in opaque structures to hide the mechanical equipment from view from public right-of-way within 200 feet;
10. All utilities servicing the site shall be underground with the exception of required above-ground elements, such as transformers and cable boxes;

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11. Any stormwater detention facility will be underground;
12. Within sixty days after the issuance of certificates of occupancy, the Owner will convey to the City right-of-way to incorporate the sidewalk and bicycle improvements, located along Ashford Dunwoody Road. The City will maintain the sidewalk and bicycle improvements. Such conveyance shall be via right of way deed. The exact legal description of the property to be conveyed shall be prepared by the Owner and agreed to by the City;
13. Within sixty days after the issuance of certificates of occupancy, the Owner will convey a permanent public access easement to the City for the new roadway and sidewalks to be constructed on the west side of the site. Owner may convey the new roadway and sidewalks via right of way deed at a future date at which point the City shall accept such conveyance. The exact legal description of the property to be conveyed shall be prepared by the Owner and agreed to by the City;
14. The development is entitled to a total of four monument signs, one on each road frontage. The allowed square footage of 144 square feet for the monument sign for Ashford Dunwoody Road may be divided into two structures as follows: 1) an archway connecting Building B and Building C in general conformity with the renderings in Exhibit C and; 2) freestanding letters indicating the name of the anchor grocer mounted on top of the Plaza wall up to a total maximum height of 5 feet in general conformity with the rendering in Exhibit D. In addition, the Archway sign may include a 42 square foot wayfinding sign labeled as "Sign A" as shown in Exhibit C. ;
15. The commuter trail, streetscaping, and new road connection, shall be developed concurrently with the grocery store and retail/restaurant buildings C and D, fronting Ashford Dunwoody Road;
16. The ground story restaurant/retail uses of buildings shall be built within three feet of vertical elevation of the adjacent commuter trail and have entrances that face Ashford Dunwoody Road as follows: buildings containing one tenant shall have a minimum of one entrance; buildings containing two or more tenants shall have a minimum of two entrances;
17. The Gateway Plaza, located on the corner of Meadow Lane Road and Ashford Dunwoody Road will be in general conformity with the Conceptual Gateway Plaza Plan attached as Exhibit C. Within sixty days after the issuance of certificates of occupancy, the Plaza area general public access will be granted to the Plaza through a public access easement to the benefit of the City;
18. The owner shall be responsible for the maintenance of the Plaza;
19. There shall be no minimum parking requirement for the undeveloped northern parcel of the property;
20. In accordance with the recommendation of the traffic study, a westbound left turn lane shall be added on Ashwood Parkway at the easternmost driveway entrance to the development in general conformity with Exhibit E;
21. Based on projected queue length, an eastbound left turn lane shall be installed at Ashwood Parkway and Ashford Dunwoody Road using existing signal phasing and in general conformity with Exhibit E. Applicant will not be responsible for any signal work;
22. A southbound right turn lane shall be added at the intersection of Perimeter Center Place and Meadow Lane Road using existing signal phasing and in general conformity with Exhibit F. Applicant will not be responsible for any signal work;
23. The owner will contribute up to one-third of the funds needed to extend the northbound left turn lane from Ashford Dunwoody Road on to Meadow Lane Road. In no event shall the total of such contribution exceed $33,000; and
24. The future development area labeled "OP-1" on Exhibit A shall be grassed until future development occurs. In addition, a temporary pocket park will be provided as labeled on Exhibit A that may be removed when future development occurs.

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Attachments

- EXHIBIT A: Schematic Site Plan SP35, completed by Philips Partnership, dated May 29, 2019
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- EXHIBIT E: Left Turn Lane Concept, completed by A&R Engineering, dated April 17, 2019
- EXHIBIT F: Meadow Lane Intersection, completed by Philips Partnership, dated May 13, 2019
- Major Amendment Ordinance
- MA 19-01 Application
- Landscape Plan updated May 28, 2019
- Illustrative Conceptual Plan in color – updated May 29, 2019
- Renderings
- Proposed Building Elevations
- Dunwoody Comp Plan Excerpt
- 1996 conditionally approved site plan
- 1996 conditions of zoning
- Traffic Study
- State Stream Buffer Variance

STATE OF GEORGIA
CITY OF DUNWOODY **ORDINANCE 2019-__-__**

AN ORDINANCE TO AMEND THE ZONING CONDITIONS OF LAND LOTS 352, and 349, District 18 IN CONSIDERATION OF ZONING CASE MA-19-01 (1250 MEADOW LANE ROAD, AND 500, 600, AND 700 ASHFORD).

WHEREAS: Branch Ashwood Associates, L.P., owner of 1250 Meadow Lane Road, and 500, 600, and 700 Ashwood Parkway, Dunwoody, Georgia seeks a major modification to conditions of zoning; AND

WHEREAS: The properties, consisting of tax parcel numbers 18-350-02-001, 18-350-02-003, 18-349-01-037, and 18-349-01-046, contains 10.1 acres land located in the northwest corner of Ashford Dunwoody Road and Meadows Lane; and

WHEREAS: The Properties, collectively known as Ashwood Restaurant Park are currently improved with 25,375 square feet of restaurant space; and

WHEREAS: The site is currently conditioned to a site-specific plan from 1996 that restricts the use to four (4) restaurants (CZ96-035). Through the application of a modification to conditions (Section 27-361), Branch Ashwood Associates, L.P. is requesting that the conditioned 1996 site plan be replaced entirely with the new plan; and

WHEREAS: The applicant has proposed replacing the current restaurant park with a development which will consist of a 25,440 square foot anchor supermarket, an 8-pump (16 fueling positions) gas station/convenience store, a 2,800 square foot bank, and 35,400 square feet of restaurant and retail space; and

WHEREAS: The applicant has also concurrently requested a variances related to 1) reduction in the front setback requirements, 2) a reduction in the interior side setback requirements, 3) an increase in the impervious lot coverage, and 4) and authorization for encroachment within in the city's 75-foot stream buffer; and

WHEREAS: Notice to the public regarding said rezoning and modification to conditions of zoning has been duly published in The Dunwoody Crier, the Official News Organ of the City of Dunwoody; and

WHEREAS: A public hearing was held by the Mayor and City Council of the City of Dunwoody as required by the Zoning Procedures Act; and

WHEREAS: The Mayor and City Council find that the proposed use aligns with the Georgetown Character Area of the Dunwoody Comprehensive Plan, which calls for, among others, creative building and site design that encourages bikeable and walkable development which furthers the transportation goals of modality (other than by automobile) and connectivity of the Georgetown neighborhood; and

WHEREAS: Notice to the public regarding said rezoning and modification to conditions of zoning has been duly published in The Champion, the Official News Organ of the City of Dunwoody; and

STATE OF GEORGIA
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WHEREAS: A public hearing was held by the Mayor and City Council of the City of Dunwoody as required by the Zoning Procedures Act.

NOW THEREFORE, The Mayor and City Council of the City of Dunwoody hereby **ORDAIN AND APPROVE** the modification of zoning conditions on tax parcel numbers 18-350-02-001, 18-350-02-003, 18-349-01-037, and 18-349-01-046 as follows:

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1. The owner shall develop the site in general conformity with "Exhibit A" with minor changes allowed as defined by Section 27-337(b) or necessary changes to meet conditions of zoning or land development requirements made necessary by actual field conditions at the time of development;
2. The owner shall construct the streetscaping and commuter trail in general conformity with "Exhibit B". Any minor variations to the streetscapes made necessary by actual field conditions at the time of development shall be subject to approval by the Public Works and Community Development Department. If the width of the commuter trail is reduced by Public Works the location of the footprints of the buildings shall remain in the same vertical and horizontal location as shown on the Schematic Site Plan;
3. The owner shall construct a 12-foot wide pedestrian connection, including a 6-foot pedestrian sidewalk and two 3-foot wide landscape strips that connect from Ashford Dunwoody Road, between buildings C and D, to Building A as illustrated on Exhibit A. The landscape strips shall include overstory trees planted on each side at no more than 50 and no less than 25 feet;
4. The proposed bank shall be limited to the southwest quadrant of the site, as shown on Exhibit A; no banks or free-standing financial services are otherwise allowed on the site;
5. Buildings shall be designed with 360 degree architecture with the exception of the rear of Building A and the anchor grocer, which shall be subject to reasonable landscape screening as approved by the City Arborist;
6. Major façade materials shall include brick, stone, hard coat stucco and glass, with other high quality materials approved by the Community Development Director during the permit review process;
7. Synthetic stucco (EIFS) material shall be limited to accenting material; masonry brick or stone veneer materials are allowed; stamped brick and stone EIFS or imitation masonry veneer materials shall be prohibited;
8. All loading facilities and trash/recycling enclosure(s) must be screened from view of public rights-of-way by landscaping and a solid brick wall or opaque fence at least six feet in height or the height of the dumpster. The approach to the loading facilities and trash/recycling enclosures for the anchor grocer and Building A does not need to be screened from view of Ashwood Parkway;
9. All mechanical equipment (e.g., air conditioning, heating, cooling, ventilation, exhaust and similar equipment) shall be roof mounted and screened in all directions by walls or parapets or will be enclosed in opaque structures to hide the mechanical equipment from

view from public right-of-way within 200 feet;

10. All utilities servicing the site shall be underground with the exception of required above-ground elements, such as transformers and cable boxes;
11. Any stormwater detention facility will be underground;
12. Within sixty days after the issuance of certificates of occupancy, the Owner will convey to the City right-of-way to incorporate the sidewalk and bicycle improvements, located along Ashford Dunwoody Road. The City will maintain the sidewalk and bicycle improvements. Such conveyance shall be via right of way deed. The exact legal description of the property to be conveyed shall be prepared by the Owner and agreed to by the City;
13. Within sixty days after the issuance of certificates of occupancy, the Owner will convey a permanent public access easement to the City for the new roadway and sidewalks to be constructed on the west side of the site. Owner may convey the new roadway and sidewalks via right of way deed at a future date at which point the City shall accept such conveyance. The exact legal description of the property to be conveyed shall be prepared by the Owner and agreed to by the City;
14. The development is entitled to a total of four monument signs, one on each road frontage. The allowed square footage of 144 square feet for the monument sign for Ashford Dunwoody Road may be divided into two structures as follows: 1) an archway connecting Building B and Building C in general conformity with the renderings in Exhibit C and; 2) freestanding letters indicating the name of the anchor grocer mounted on top of the Plaza wall up to a total maximum height of 5 feet in general conformity with the rendering in Exhibit D. In addition, the Archway sign may include a 42 square foot wayfinding sign labeled as "Sign A" as shown in Exhibit C. ;
15. The commuter trail, streetscaping, and new road connection, shall be developed concurrently with the grocery store and retail/restaurant buildings C and D, fronting Ashford Dunwoody Road;
16. The ground story restaurant/retail uses of buildings shall be built within three feet of vertical elevation of the adjacent commuter trail and have entrances that face Ashford Dunwoody Road as follows: buildings containing one tenant shall have a minimum of one entrance; buildings containing two or more tenants shall have a minimum of two entrances;
17. The Gateway Plaza, located on the corner of Meadow Lane Road and Ashford Dunwoody Road will be in general conformity with the Conceptual Gateway Plaza Plan attached as Exhibit C. Within sixty days after the issuance of certificates of occupancy, the Plaza area general public access will be granted to the Plaza through a public access easement to the benefit of the City;
18. The owner shall be responsible for the maintenance of the Plaza;
19. There shall be no minimum parking requirement for the undeveloped northern parcel of the property;
20. In accordance with the recommendation of the traffic study, a westbound left turn lane shall be added on Ashwood Parkway at the easternmost driveway entrance to the development in general conformity with Exhibit E;
21. Based on projected queue length, an eastbound left turn lane shall be installed at Ashwood Parkway and Ashford Dunwoody Road using existing signal phasing and in general conformity with Exhibit E. Applicant will not be responsible for any signal work;
22. A southbound right turn lane shall be added at the intersection of Perimeter Center Place and Meadow Lane Road using existing signal phasing and in general conformity with Exhibit F. Applicant will not be responsible for any signal work;
23. The owner will contribute up to one-third of the funds needed to extend the northbound left turn lane from Ashford Dunwoody Road on to Meadow Lane Road. In no event shall the total of such contribution exceed $33,000; and
24. The future development area labeled "OP-1" on Exhibit A shall be grassed until future development occurs. In addition, a temporary pocket park will be provided as labeled on

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CITY OF DUNWOODY **ORDINANCE 2019-__-__**

Exhibit A that may be removed when future development occurs.

SO ORDAINED AND EFFECTIVE, this the ___ day of _____, 2019.

Approved by:

_____
Denis L. Shortal, Mayor

Approved as to Form and Content

_____
City Attorney's Office

Attest:

_____
Sharon Lowery, City Clerk

SEAL

BUILDING SUMMARY

ANCHOR (GROCER)	25,440	SF
RETAIL	15,400	SF
RESTAURANT	20,000	SF
CONVENIENCE STORE	5,411	SF
BANK	2,800	SF
TOTAL RETAIL AREA	69,051	SF

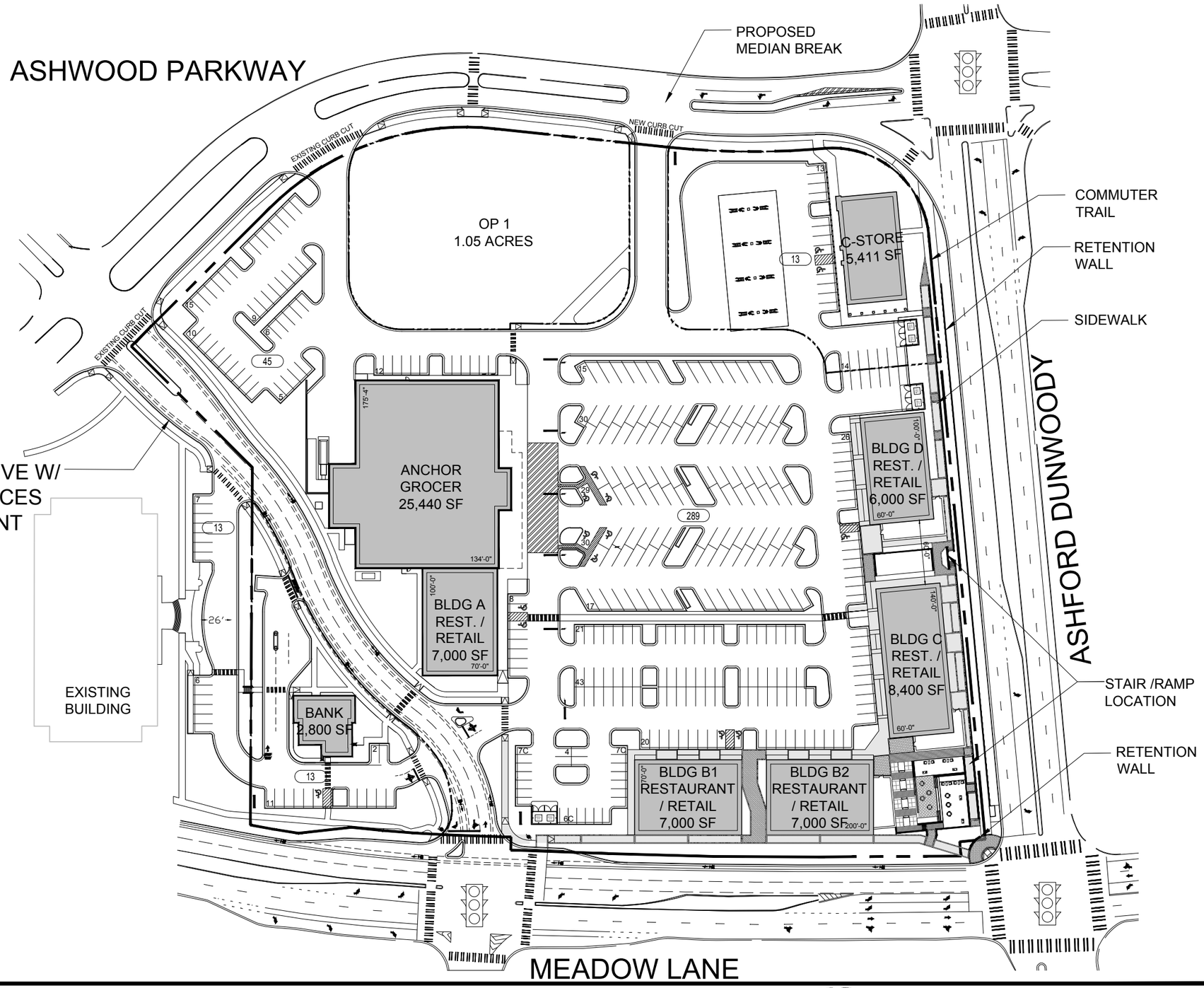
PARKING SUMMARY

ANCHOR PARKING REQ'D (4.0 / 1000 SF)	102	SPACES
RETAIL PARKING REQ'D (4.0 / 1000 SF)	62	SPACES
RESTAURANT PARKING REQ'D (6.67 / 1000 SF)	134	SPACES
C-STORE PARKING REQ'D (4.0 / 1000 SF + 3 PER SERVICE BAY)	34	SPACES
BANK PARKING REQ'D (3.3 / 1000 SF)	10	SPACES
TOTAL PARKING REQUIRED	342	SPACES
TOTAL PARKING PROVIDED	360	SPACES
TOTAL PARKING RATIO PROVIDED	5.21	/1000

SITE DATA

TOTAL SITE ACREAGE	+/- 10.06 AC.
SITE ACREAGE (MINUS PRIVATE DRIVE AND PERIMETER STREETSCAPE IMPROVEMENTS)	+/- 8.98 AC.
TOTAL IMPERVIOUS ACREAGE*	+/- 7.54 AC.
	83.9%
IMPERVIOUS SIDEWALK/PATIOS/AMENITY AREAS*	+/- 0.69 AC.
	7.7%

* PERCENTAGES BASED OFF OF SITE ACREAGE MINUS PRIVATE DRIVE AND PERIMETER STREETSCAPE IMPROVEMENTS



1 / SP-35 SITE PLAN
SCALE: 1" = 100'

N

0' 50' 100' 200'

BRANCH PROPERTIES, LLC

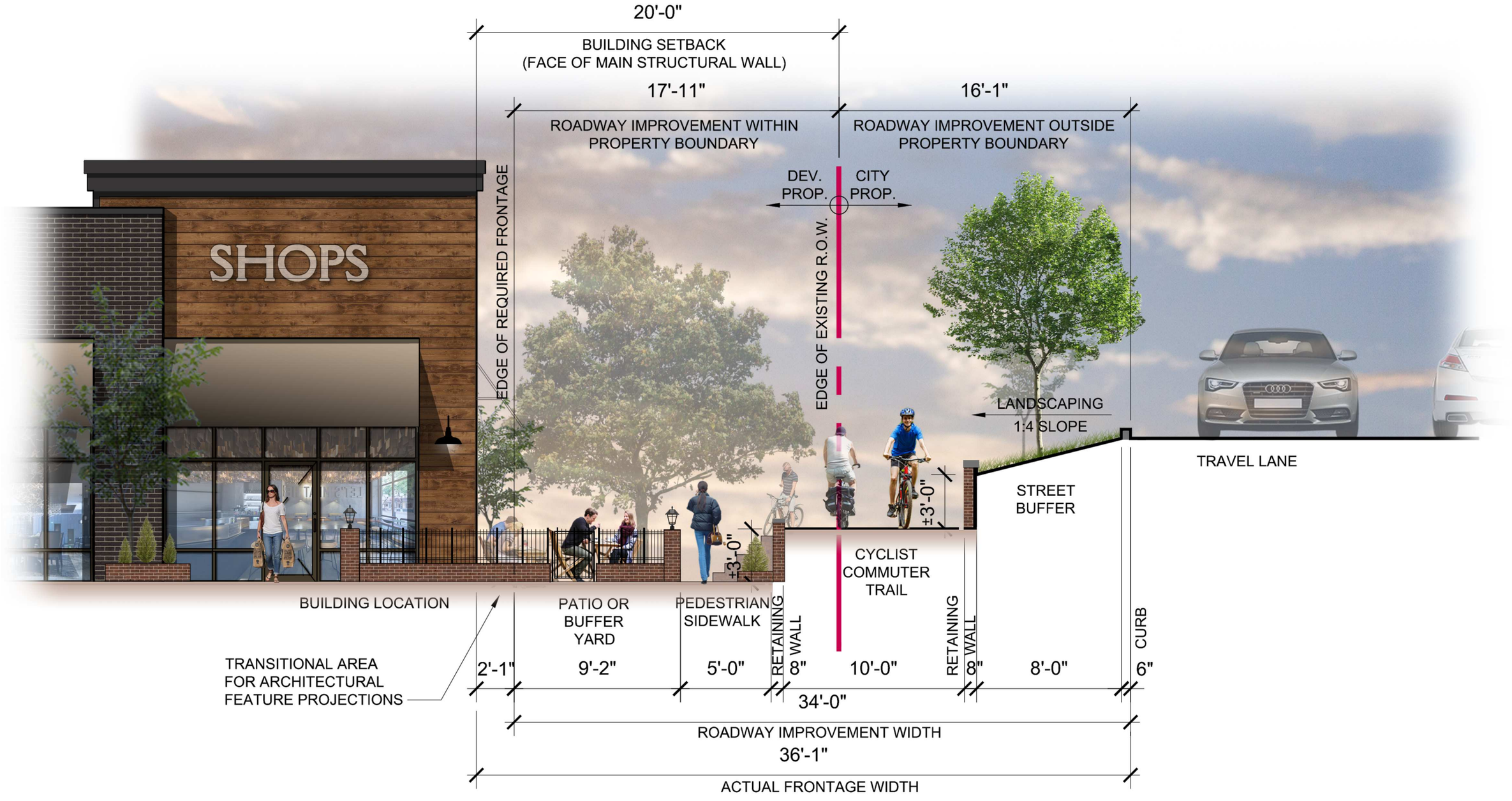
PERIMETER MARKETPLACE
ASHFORD DUNWOODY ROAD
DUNWOODY, GA

JOB NUMBER: 1617702 | DATE: 2019-05-29 | BY: WHH / KMC

DRAWING: SCHEMATIC SITE PLAN

(SP-35)

PHILLIPS
ARCHITECTURE ▪ CONSULTANTS
5901 PEACHTREE DUNWOODY RD. ▪ SUITE A450 ▪ ATLANTA, GA 30328 ▪ 770.394.1616



BRANCH PROPERTIES, LLC

ASHFORD DUNWOODY ROAD

DUNWOODY, GEORGIA
01-14-2019

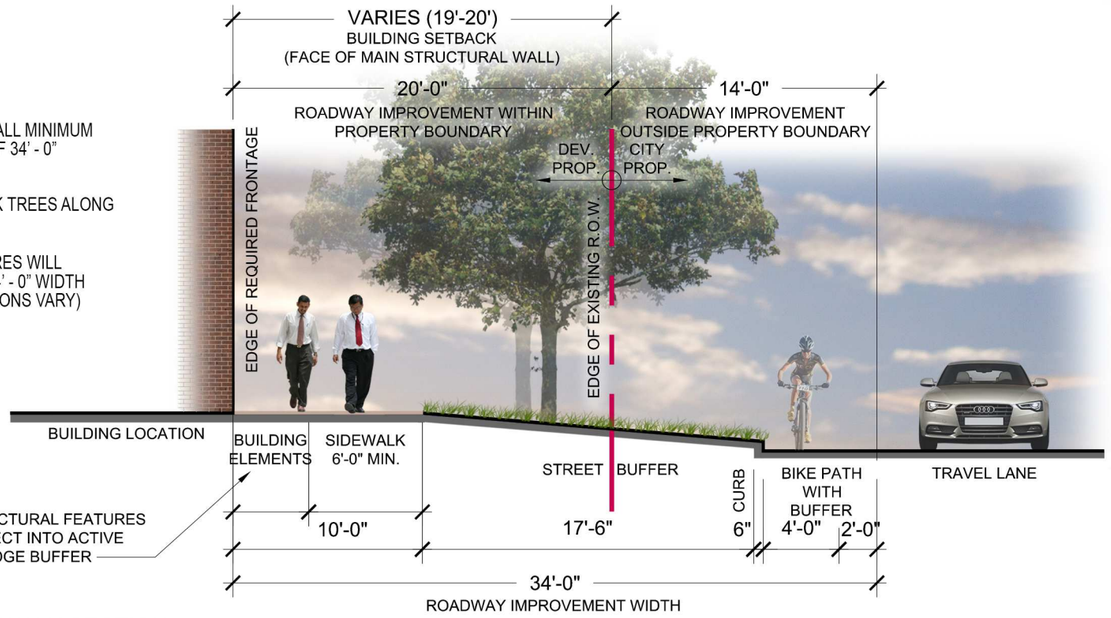
PHILLIPS
architecture · consultants

MAJOR PARKWAY FRONTAGE (EXISTING)

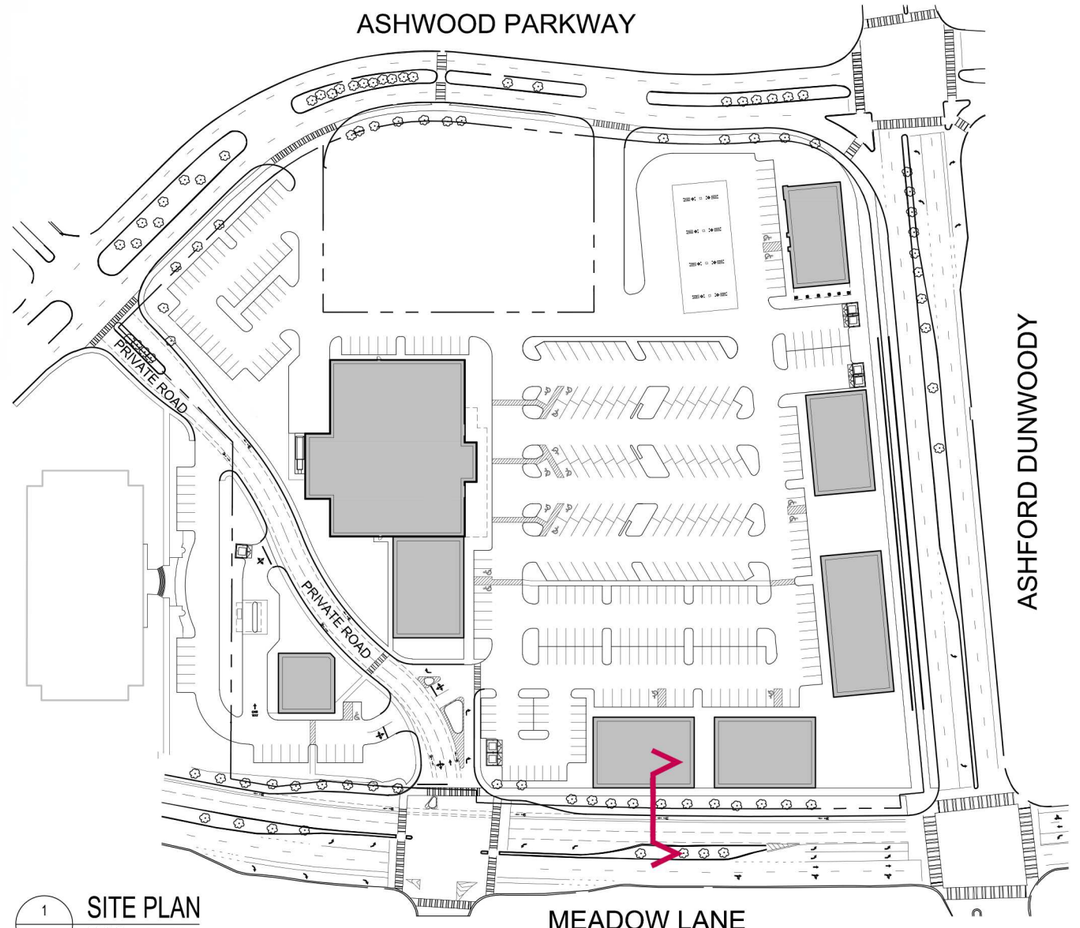
* COMPLIANT WITH OVERALL MINIMUM IMPROVEMENT WIDTH OF 34' - 0" (PER EXHIBIT A)

*PRESERVES MATURE OAK TREES ALONG MEADOW LANE

*ARCHITECTURAL FEATURES WILL ENCROACH INTO 34' - 0" WIDTH REQUIREMENT (DIMENSIONS VARY)



2 / - SIDEWALK SECTION
SCALE: 1/8" = 1'

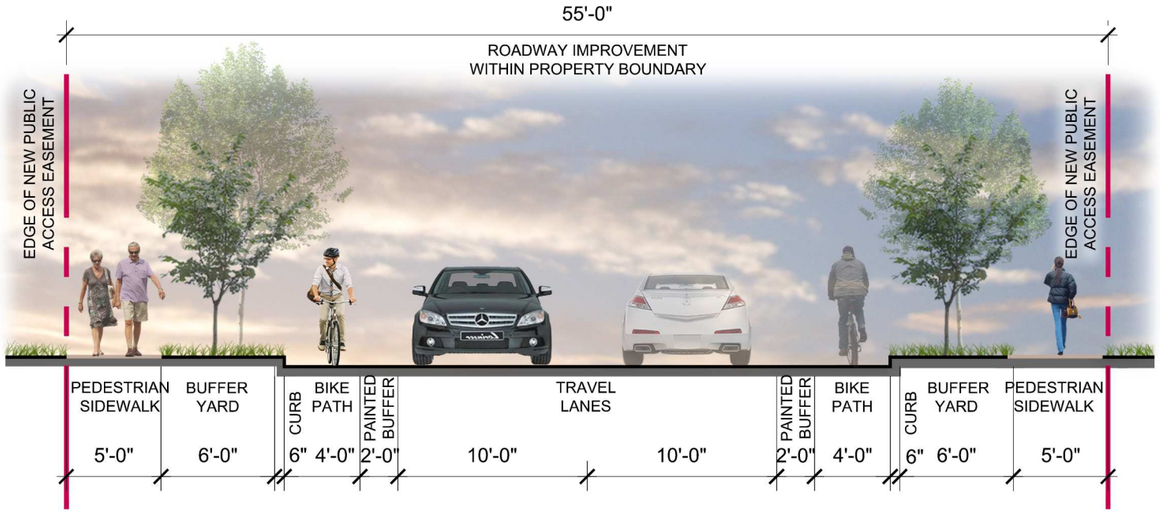


1 / SP-25 SITE PLAN
SCALE: 1" = 150'

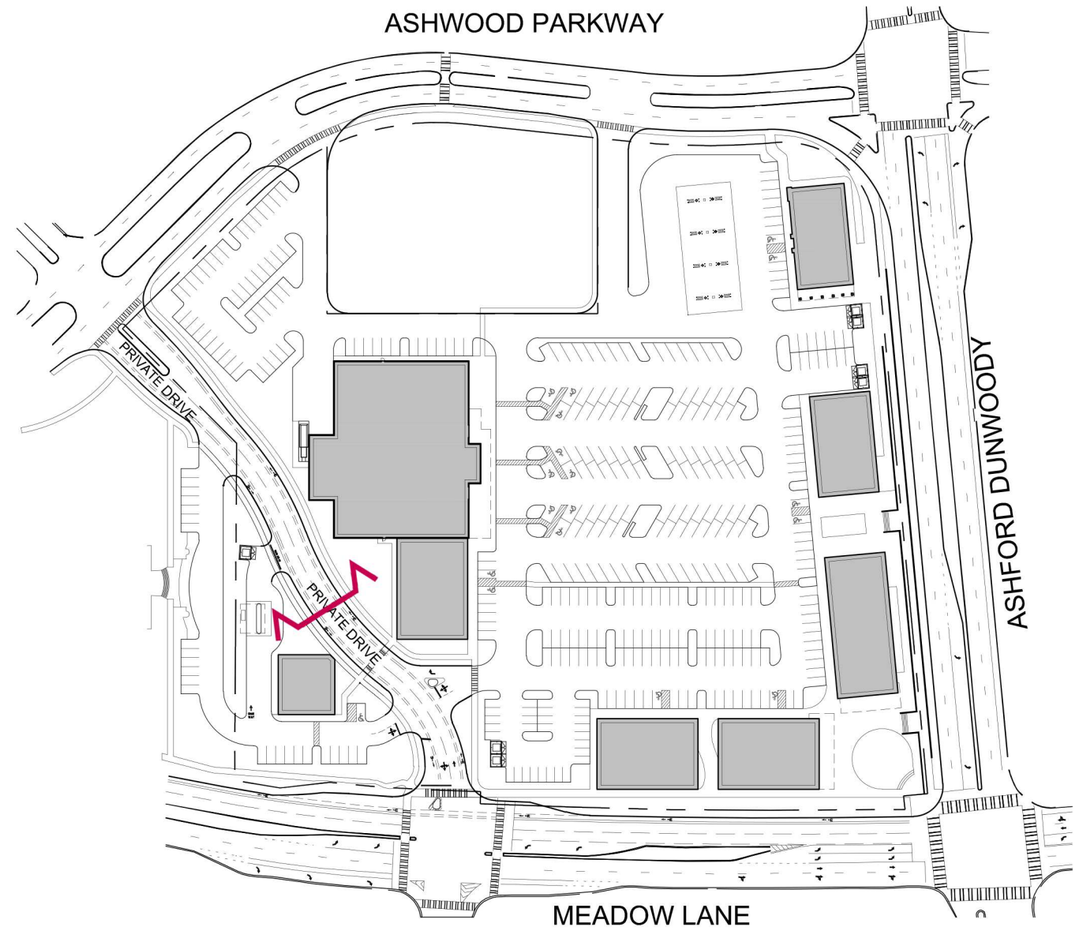
CLIENT	PROJECT	JOB NUMBER	BY
BRANCH PROPERTIES, LLC	**ASHFORD DUNWOODY RD** **ATLANTA, GA**	1617702	AB/KMC
		DATE 2018-12-04	DRAWING ROADWAY IMPROVEMENT STUDY MEADOW LANE

PHILLIPS
THE PALISADES
5901 PEACHTREE DUNWOODY ROAD,
BUILDING A, SUITE 450 ATLANTA, GA 30328
Phone 770.394.1616 Fax 770.394.1314

PRIVATE DRIVE FRONTAGE (NEW)



2 - SIDEWALK SECTION
SCALE: 1/8" = 1'



1 SP-27 SITE PLAN
SCALE: 1" = 150'

CLIENT
BRANCH PROPERTIES, LLC

PROJECT
ASHFORD DUNWOODY RD
ATLANTA, GA

JOB NUMBER
1617702

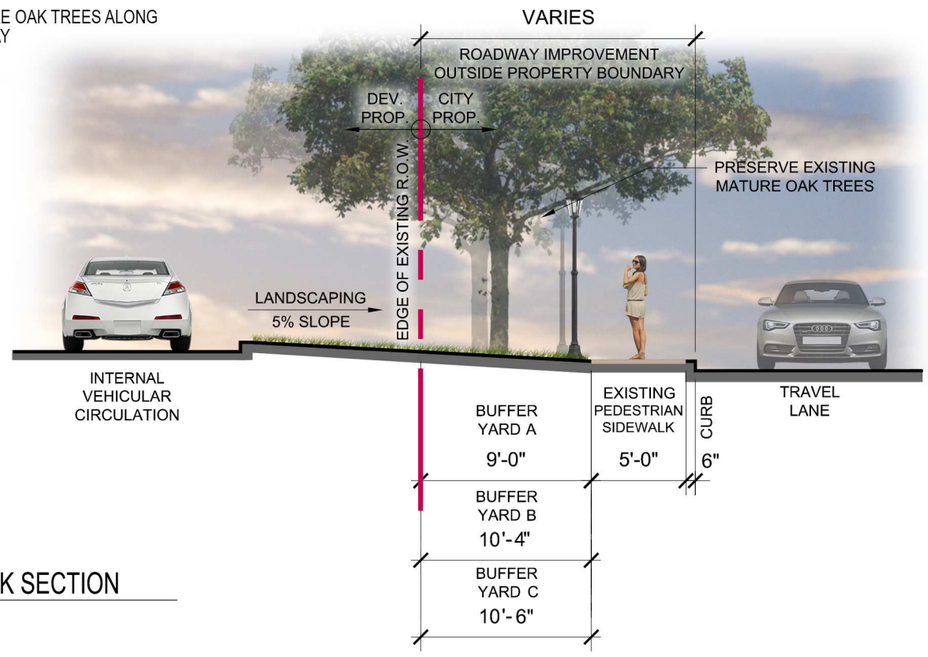
BY
WHH/AB/KMC

DATE
2018-12-13

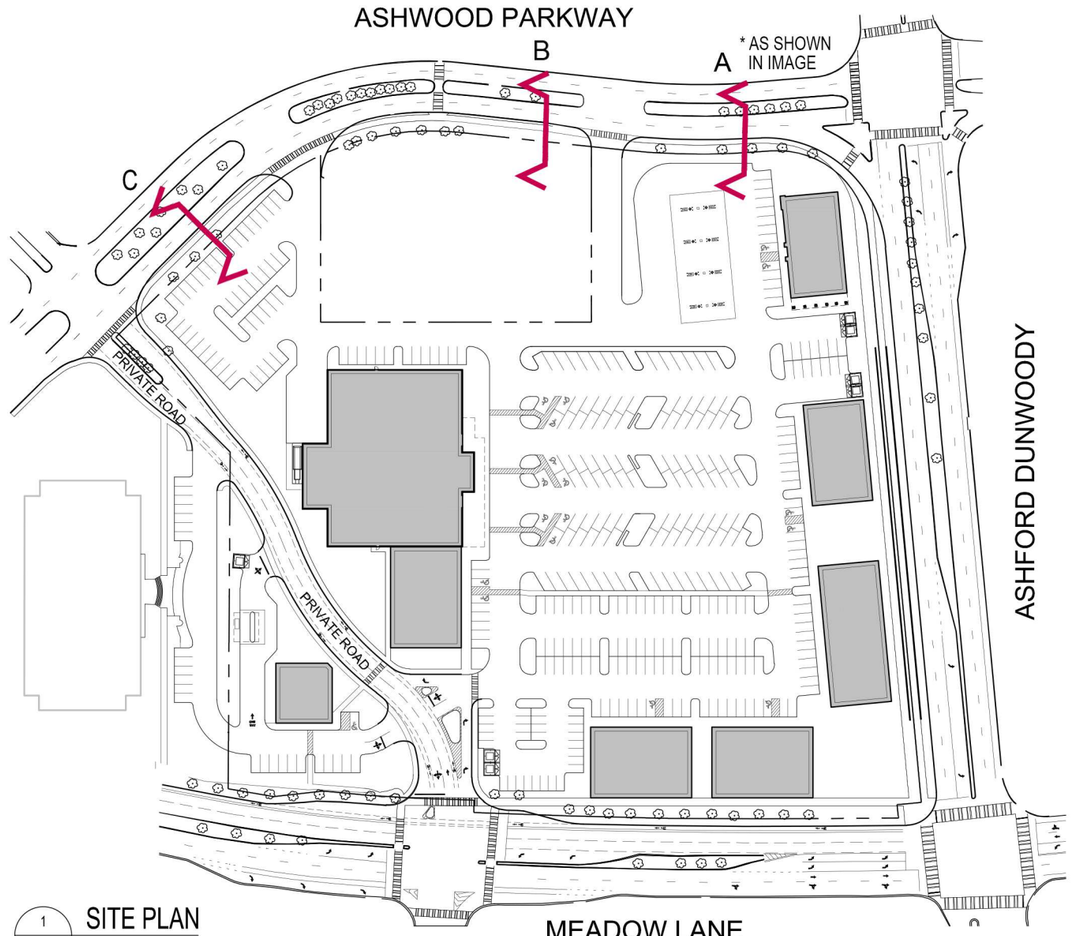
DRAWING
ROADWAY IMPROVEMENT STUDY
PRIVATE DRIVE W/ PUBLIC ACCESS EASEMENT

PHILLIPS
THE PALISADES
5901 PEACHTREE DUNWOODY ROAD,
BUILDING A, SUITE 450 ATLANTA, GA 30328
Phone 770.394.1616 Fax 770.394.1314

SECONDARY STREET FRONTAGE (EXISTING)



2 / - SIDEWALK SECTION
SCALE: 1/8" = 1'



1 / SP-25 SITE PLAN
SCALE: 1" = 150'

CLIENT
BRANCH PROPERTIES, LLC

PROJECT
ASHFORD DUNWOODY RD
ATLANTA, GA

JOB NUMBER
1617702

BY
AB/KMC

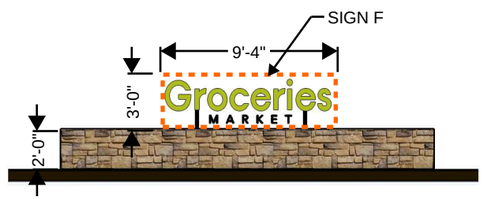
DATE
2018-12-04

DRAWING
ROADWAY IMPROVEMENT STUDY
ASHWOOD PARKWAY

PHILLIPS
THE PALISADES
5901 PEACHTREE DUNWOODY ROAD,
BUILDING A, SUITE 450 ATLANTA, GA 30328
Phone 770.394.1616 Fax 770.394.1314

GROCERY SIGNAGE AREA DATA	
SIGN B	6 SF
SIGN C	33 SF
SIGN D	7 SF
SIGN F	27 SF
TOTAL AREA	73 SF

SIGNAGE AREA DATA	
SIGN A	42 SF
SIGN E	(4x12 SF) 48 SF
TOTAL AREA	90 SF



NOTE: BUILDING DESIGN SUBJECT TO CHANGE AND IS SHOWN FOR TWO-DIMENSIONAL REFERENCE ONLY.

BRANCH PROPERTIES, LLC

PERIMETER MARKETPLACE
ASHFORD DUNWOODY ROAD
DUNWOODY, GA

JOB NUMBER: 1617702 | DATE 04/25/19 | BY: WHH/KMC

DRAWING: SIGNAGE EXHIBIT

PHILLIPS
ARCHITECTURE ▪ CONSULTANTS
5901 PEACHTREE DUNWOODY RD. ▪ SUITE A450 ▪ ATLANTA, GA 30328 ▪ 770.394.1616

BRANCH PROPERTIES, LLC

PERIMETER MARKETPLACE
ASHFORD DUNWOODY ROAD
DUNWOODY, GA

JOB NUMBER: 1617702 | DATE: 04/25/19 | BY: APJ/KMC

DRAWING: PERIMETER MARKETPLACE - VIEW #1

PHILLIPS
ARCHITECTURE • CONSULTANTS
5901 PEACHTREE DUNWOODY RD. • SUITE A450 • ATLANTA, GA 30328 • 770.394.1616

BRANCH PROPERTIES, LLC

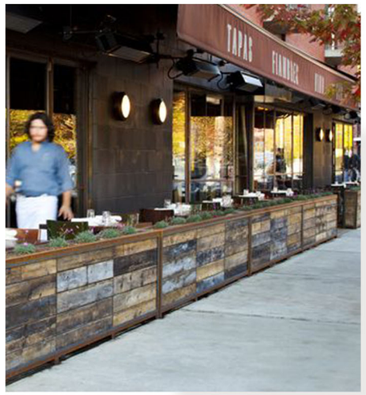
PERIMETER MARKETPLACE
ASHFORD DUNWOODY ROAD
DUNWOODY, GA

JOB NUMBER: 1617702 | DATE: 04/25/19 | BY: APJ/KMC

DRAWING: PERIMETER MARKETPLACE - VIEW #2

PHILLIPS
ARCHITECTURE ▪ CONSULTANTS
5901 PEACHTREE DUNWOODY RD. ▪ SUITE A450 ▪ ATLANTA, GA 30328 ▪ 770.394.1616

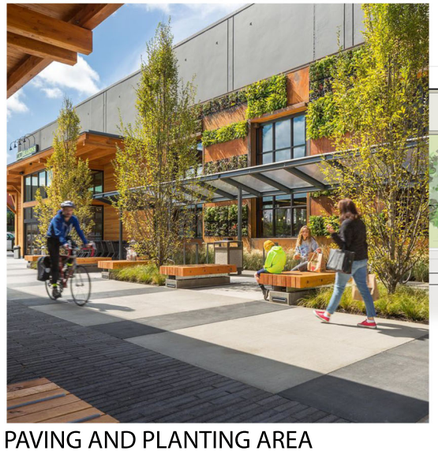
SEATING AREAS



OUTDOOR DINING AREAS

GATHERING SPACE WITHIN CONNECTIVITY

SEATWALLS

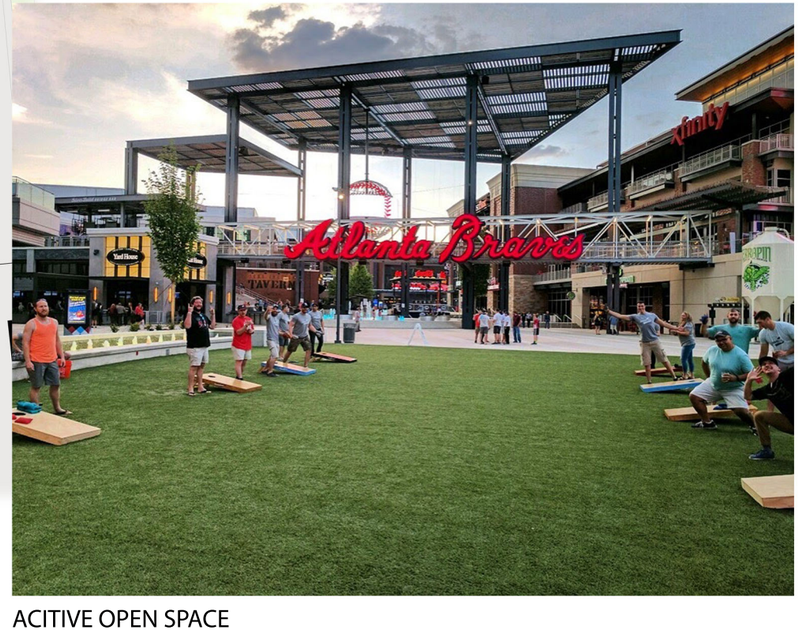


PAVING AND PLANTING AREA

CYCLIST COMMUTER TRAIL

SYNTHETIC TURF

SEATING STEPS



ACITIVE OPEN SPACE

PERIMETER MARKETPLACE

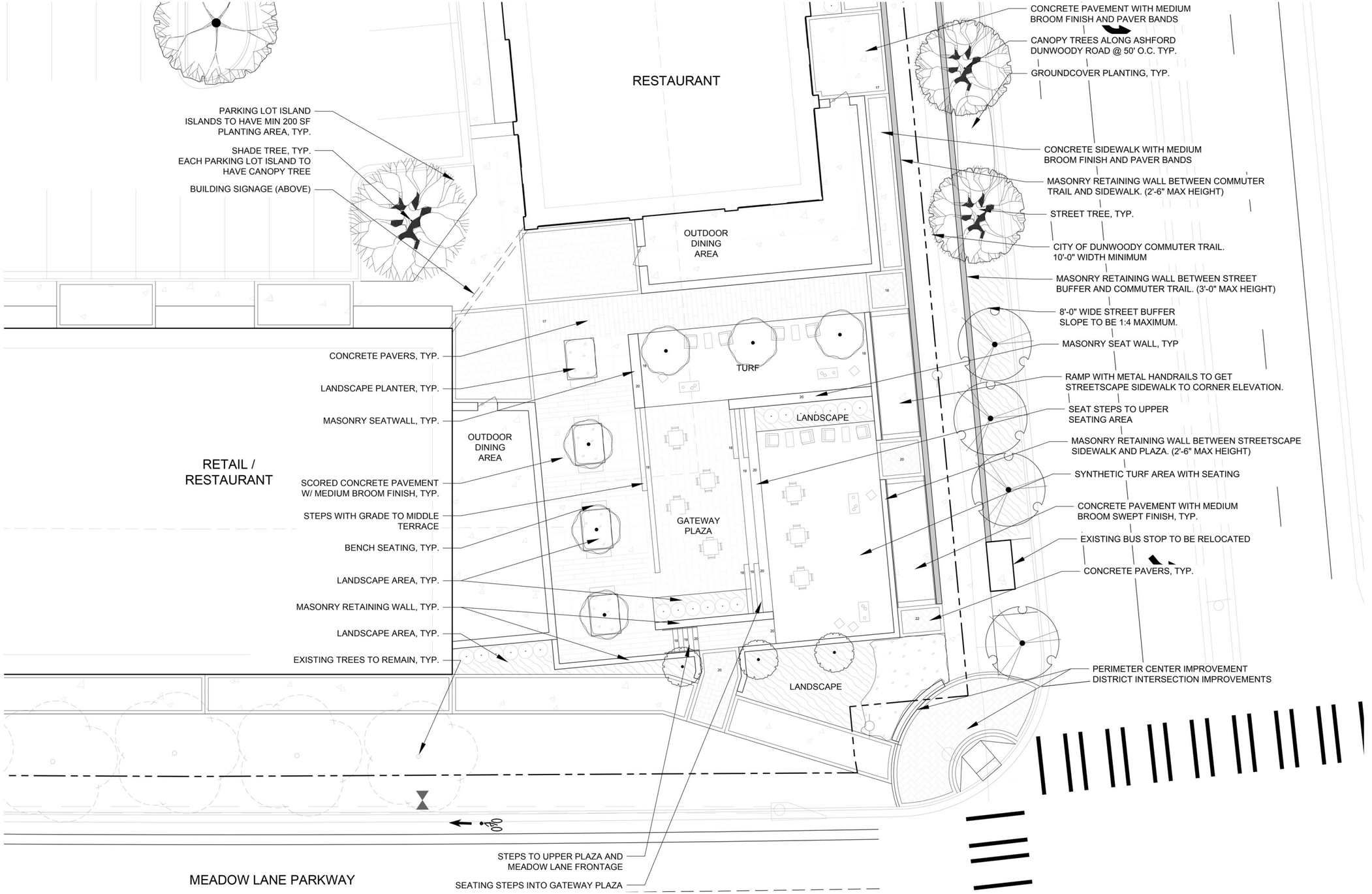
DUNWOODY, GEORGIA

CONCEPTUAL GATEWAY PLAZA

24 APRIL, 2019

BRANCH PROPERTIES, LLC
Capital. Expertise. Execution.

AJC DESIGN GROUP
770.330.0814
1991 WOODLAND WAY
DUNWOODY, GA 30338



PERIMETER MARKETPLACE

DUNWOODY, GEORGIA

CONCEPTUAL GATEWAY PLAZA PLAN

24 APRIL, 2019

BRANCH PROPERTIES, LLC
Capital. Expertise. Execution.

AJC DESIGN GROUP
770.330.0814
1991 WOODLAND WAY
DUNWOODY, GA 30338

ASHWOOD PARKWAY
25 MPH

APPROXIMATE PROPOSED MEDIAN BREAK

24" CURB AND GUTTER

B YELLOW HATCH

75.0'
11.0'
11.0'
15.4'
19.8'
50.0'
1.0'
11.0'
75.0'
13.9'
50.0'
24" CURB AND GUTTER

NEW CURB CUT

50' B.S.L.

13

14

15

30

C-STORE
5,411 SF

ASHFORD DUNWOODY ROAD
45 MPH

100'

GRAPHIC SCALE
(IN FEET)
1 inch = 20 ft.
20 0 10 20 40 80

NORTH

A&R ENGINEERING, INC
2160 Kingston Court, Suite O
Marietta, GA 30067
Tel: (770) 690-9255
www.areng.com
arengineering@areng.com

SEAL

REVISIONS

No.	DATE	DESCRIPTION
1		
2		
3		
4		
5		
6		
7		
8		
9		
10		
11		
12		

NOT RELEASED FOR CONSTRUCTION

PREPARED FOR
Branch Ashwood Associates, LP
3340 Peachtree Road, NE
Suite 600
Atlanta, GA 30326
404-832-8931

Left Turn Lane Concept

Ashwood Restaurant Park
Left Turn Lane Conept
Ashwood Parkway and Ashford Dunwoody Road

24 HOUR CONTACT
####
####

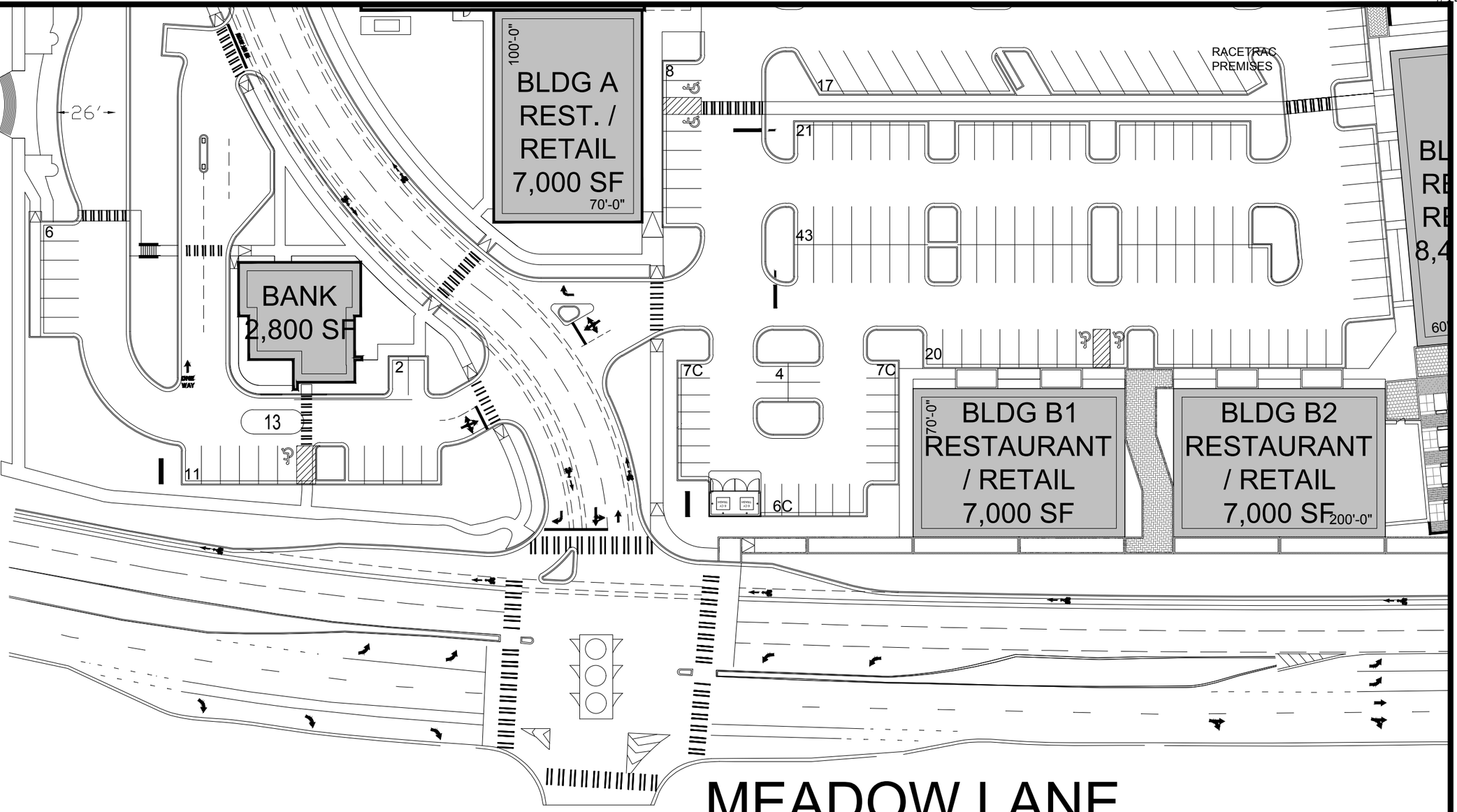
LL	DIST	PARCEL ID #
#####	#	#########

DWN BY	CKD BY	DATE
WMH	CAO	04-17-2019

A&R PROJECT #
18-189

SHEET IDENTIFICATION
CT- 1101

EXISTING BUILDING



1 / SP-34 SITE PLAN

SCALE: 1" = 50'

N

0' 25' 50' 100'

BRANCH PROPERTIES, LLC

PERIMETER MARKETPLACE
ASHFORD DUNWOODY ROAD
DUNWOODY, GA

JOB NUMBER: 1617702 | DATE: 2019-05-13 | BY: KMC

DRAWING: SCHEMATIC SITE PLAN
INTERSECTION RECONFIGURATION
(BASE OF SP-34)

PHILLIPS
ARCHITECTURE ▪ CONSULTANTS

5901 PEACHTREE DUNWOODY RD. ▪ SUITE A450 ▪ ATLANTA, GA 30328 ▪ 770.394.1616

ORIGINAL

AMENDMENT APPLICATION

y of Dunwoody Georgia

Community Development
4800 Ashford Dunwoody Road | Dunwoody, GA 30338
Phone: (678) 382-6800 | Fax: (770) 396-4828

*** Applicant Information:**

Company Name: Branch Ashwood Associates, L.P.
Contact Name: c/o Laurel David, The Galloway Law Group, LLC,
Address: 3500 Lenox Road NE, Suite 760, Atlanta, 30326
Phone: 404-965-3680 Fax: _____ Email: laurel@glawgp.com
Pre-application conference date (required): August 9, October 2, and November 26, 2018

*** Owner Information:** ☒ Check here if same as applicant

Owner's Name: _____
Owner's Address: _____
Phone: _____ Fax: _____ Email: _____

*** Property Information:**

Property Address: various - see list attached Parcel ID: _____
Current Zoning Classification: C-1c
Requested Zoning Classification: C-1c with a modification of conditions

*** Applicant Affidavit:**

I hereby certify that to the best of my knowledge, this amendment application form is correct and complete. If additional materials are determined to be necessary, I understand that I am responsible for filing additional materials as specified by the City of Dunwoody Zoning Ordinance. I certify that I, the applicant (if different), am authorized to act on the owner's behalf, pursuant to this application and associated actions.

Applicant's Name: Richard Ross, Authorized Signatory
Applicant's Signature: _____ Date: 3/4/19

*** Notary:**

Sworn to and subscribed before me this 4th Day of March, 2019
Notary Public: Michelle P. Nunnally
Signature: _____
My Commission Expires: October 24, 2021

MICHELLE P NUNNALLY NOTARY PUBLIC DOUGLAS COUNTY, GEORGIA MY COMMISSION EXPIRES OCTOBER 24, 2021

"Ashwood Parkway"

PROPERTY DESCRIPTIONS

Overall Property

All that tract or parcel of land lying and being in Land Lots 349 & 350, 18th District, DeKalb County, Georgia and being more particularly described as follows:

Beginning at the east end of a cornered intersection of the Westerly Right-of-Way Line of Ashford Dunwoody Road, (apparent 107' width), and the Northerly Right-of-Way Line of Meadow Lane Road (apparent variable width); thence, leaving said Point of Beginning and running with the said cornered intersection between the said roads

1. South 84° 39' 44" West, 24.00 feet; thence,
2. South 05° 20' 16" East, 10.00 feet; thence,
3. South 10° 06' 16" East, 3.47 feet to the said line of Meadow Lane Road; thence, running with the said line of Meadow Lane Road
4. South 89° 40' 43" West, 133.62 feet; thence,
5. 196.33 feet along the arc of a curve deflecting to the right, having a radius of 4634.13 feet and a chord bearing and distance of North 89° 06' 28" West, 196.31 feet; thence,
6. North 87° 53' 39" West, 90.57 feet; thence,
7. North 00° 20' 08" East, 12.01 feet to a nail found; thence,
8. North 87° 53' 39" West, 51.89 feet; thence,
9. 97.53 feet along the arc of a curve deflecting to the right, having a radius of 1275.56 feet and a chord bearing and distance of North 85° 42' 13" West, 97.51 feet; thence,
10. South 83° 34' 25" West, 49.63 feet; thence,
11. 45.62 feet along the arc of a curve deflecting to the right, having a radius of 1287.56 feet and a chord bearing and distance of North 80° 20' 41" West, 45.62 feet to a capped ½" rebar found; thence, leaving the said line of Meadow Lane Road
12. North 00° 20' 08" East, 333.47 feet; thence,
13. North 44° 53' 53" West, 160.13 feet to the South line of Ashford Parkway (apparent variable width); thence, running with the said line of Ashford Parkway
14. North 45° 06' 07" East, 182.92 feet; thence,
15. 229.49 feet along the arc of a curve deflecting to the right, having a radius of 257.82 feet and a chord bearing and distance of North 70° 36' 07" East, 221.99 feet; thence,

16. South 83° 53' 53" East, 163.98 feet; thence,

17. 135.02 feet along the arc of a curve deflecting to the left, having a radius of 726.08 feet and a chord bearing and distance of South 89° 13' 32" East, 134.83 feet to a capped ½" rebar found; thence,

18. North 85° 26' 50" East, 10.95 feet to a curved intersection of the said Ashford Parkway and the said Ashford Dunwoody Road; thence, running along the said curved intersection

19. 140.18 feet along the arc of a curve deflecting to the right, having a radius of 90.03 feet and a chord bearing and distance of South 49° 56' 44" East, 126.44 feet to the said West line of Ashford Dunwoody Parkway; thence, running with the said West line of Ashford Dunwoody Parkway

20. South 05° 20' 16" East, 565.79 feet to the Point of Beginning, containing 438,099 square feet or 10.0574 acres of land, more or less.

Property is subject to all easements and rights of way recorded and unrecorded.

"Ashwood Parkway"

PROPERTY DESCRIPTIONS

Overall Property

All that tract or parcel of land lying and being in Land Lots 349 & 350, 18th District, DeKalb County, Georgia and being more particularly described as follows:

Beginning at the east end of a cornered intersection of the Westerly Right-of-Way Line of Ashford Dunwoody Road, (apparent 107' width), and the Northerly Right-of-Way Line of Meadow Lane Road (apparent variable width); thence, leaving said Point of Beginning and running with the said cornered intersection between the said roads

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2. South 05° 20' 16" East, 10.00 feet; thence,
3. South 10° 06' 16" East, 3.47 feet to the said line of Meadow Lane Road; thence, running with the said line of Meadow Lane Road
4. South 89° 40' 43" West, 133.62 feet; thence,
5. 196.33 feet along the arc of a curve deflecting to the right, having a radius of 4634.13 feet and a chord bearing and distance of North 89° 06' 28" West, 196.31 feet; thence,
6. North 87° 53' 39" West, 90.57 feet; thence,
7. North 00° 20' 08" East, 12.01 feet to a nail found; thence,
8. North 87° 53' 39" West, 51.89 feet; thence,
9. 97.53 feet along the arc of a curve deflecting to the right, having a radius of 1275.56 feet and a chord bearing and distance of North 85° 42' 13" West, 97.51 feet; thence,
10. South 83° 34' 25" West, 49.63 feet; thence,
11. 45.62 feet along the arc of a curve deflecting to the right, having a radius of 1287.56 feet and a chord bearing and distance of North 80° 20' 41" West, 45.62 feet to a capped ½" rebar found; thence, leaving the said line of Meadow Lane Road
12. North 00° 20' 08" East, 333.47 feet; thence,
13. North 44° 53' 53" West, 160.13 feet to the South line of Ashford Parkway (apparent variable width); thence, running with the said line of Ashford Parkway
14. North 45° 06' 07" East, 182.92 feet; thence,
15. 229.49 feet along the arc of a curve deflecting to the right, having a radius of 257.82 feet and a chord bearing and distance of North 70° 36' 07" East, 221.99 feet; thence,

16. South 83° 53' 53" East, 163.98 feet; thence,

17. 135.02 feet along the arc of a curve deflecting to the left, having a radius of 726.08 feet and a chord bearing and distance of South 89° 13' 32" East, 134.83 feet to a capped ½" rebar found; thence,

18. North 85° 26' 50" East, 10.95 feet to a curved intersection of the said Ashford Parkway and the said Ashford Dunwoody Road; thence, running along the said curved intersection

19. 140.18 feet along the arc of a curve deflecting to the right, having a radius of 90.03 feet and a chord bearing and distance of South 49° 56' 44" East, 126.44 feet to the said West line of Ashford Dunwoody Parkway; thence, running with the said West line of Ashford Dunwoody Parkway

20. South 05° 20' 16" East, 565.79 feet to the Point of Beginning, containing 438,099 square feet or 10.0574 acres of land, more or less.

Property is subject to all easements and rights of way recorded and unrecorded.

LETTER OF INTENT
APPLICATION FOR
MODIFICATION OF ZONING CONDITIONS
CITY OF DUNWOODY, GEORGIA

The Owner and Applicant, Branch Ashwood Associates, L.P. ("Branch"), requests a Modification of Zoning Conditions for approximately 10.1 acres of land located at 4720 Ashford Dunwoody Road, 1250 Meadow Lane Road, and 500, 600, and 700 Ashwood Parkway, Dunwoody, Georgia (Parcel Identification Numbers 18 350 02 001 & -003, 18 349 01 037, -046, & -048) (the "Property"). The Property was zoned C-1 with conditions in 1996 as part of a master plan that includes adjacent properties. The existing zoning limits the development of the Property to four (4) restaurants and a water body/stormwater detention area. Branch is requesting the C-1 conditions be replaced entirely by this application.

Branch proposes to redevelop and revitalize the Property with additional retail, commercial and restaurant uses, introduce patio seating, pedestrian walkways and gathering areas, improve and add streetscape elements to its entire length of both Meadow Lane and Ashford Dunwoody Road, including a portion of the new Perimeter Commuter Trail, and construct a new drive to be open for use by the general public to connect Meadow Lane and Ashford Parkway. Ashwood Parkway will remain in its current condition to minimize disturbance to the existing mature trees in the right-of-way. Branch has had several meetings with the City of Dunwoody Public Works and Community Development Directors and it is our understanding that the streetscapes and the new road cross section depicted in the attached exhibits has been agreed to by all parties.

Concurrent with this application, Branch will also request a variance from Section 27-73 of the Zoning Ordinance of the City of Dunwoody to reduce the front setback requirement of fifty (50) feet to a minimum of zero (0) feet from the Property's boundary lines adjacent to Ashford Dunwoody Road, Meadow Lane Road and Ashwood Parkway; to reduce the interior side setback of twenty (20) feet to a minimum of zero (0) feet; to reduce the rear setback from thirty (30) feet to a minimum of zero (0) feet; and to increase the impervious lot coverage from 80% to a maximum of 86%. Branch also intends to fill the water body/detention system in the middle of the site and has received Environmental Protection Division's (EPD) approval for that work.

Note that Branch is losing a considerable amount of developable land by making it available for general public use. Branch proposes to construct a new drive that will connect Meadow Lane Road and Ashwood Parkway as well as provide public easements to augment existing right-of-way and construct extensive streetscape improvements along the entire Property frontages on both Ashford Dunwoody Road and Meadow Lane Road. A more detailed description of the improvements is as follows:

- Branch will provide an additional 20 feet of streetscape width to the existing 16 feet wide streetscape on Ashford Dunwoody Road. Branch will construct landscaping and patio seating areas, a new sidewalk, a new bicycle commuter trail, and will move the existing curb and gutter system to create a new landscape buffer between the new proposed streetscape and the Ashford Dunwoody Road travel lanes (see Streetscape Exhibits attached as Exhibit A).
- Branch will also provide an additional 19 to 20 feet of width to the existing 14-foot wide streetscape on Meadow Lane Road. The curb on Meadow Lane Road will be relocated, and the existing sidewalk will be removed and replaced with a new bicycle lane and a 2-foot striped buffer between the bicycle lane and the automobile travel lane. The landscape buffer and the existing trees will remain in place and a sidewalk will be constructed between the buildings and the trees. This configuration will minimize disturbance to the existing trees in the right-of-way.
- Finally, a new private drive will be constructed to connect Meadow Lane Road and Ashwood Parkway that will be complete with sidewalks and bicycle lanes on both sides of the drive. An easement will be provided to the City to ensure that the drive will open to the general public.

The total area that will be converted from developable land to the new drive and streetscape improvements is approximately 1.5 acres, and the cost of constructing the improvements is approximately $5 million dollars. This includes the filling of the water body/detention system to bring the buildings closer to the pedestrian and bicycle access points on both Ashford Dunwoody Road and Meadow Lane Road. In addition to the streetscape improvements, nearly an acre (approximately 9.2%) of the Property will be provided as patios, terraces, outdoor seating, and other publicly accessible amenity areas.

The zoning modifications would allow Branch to bring the buildings towards the street to activate the pedestrian streetscape, create attractive landscaping and outdoor dining and

seating areas and to screen parking from view from the public right-of-way. The buildings' massing will feel comfortable to both the pedestrian and vehicle traveling public. Branch will also provide additional landscaping in front of the buildings to further improve the public realm.

The Applicant responds to the following criteria for the granting of zoning modifications:

a. Whether the zoning proposal is in conformity with the policy and intent of the comprehensive plan;

The requested zoning modification is consistent with the spirit and text of the City's 2015-2035 Comprehensive Plan, which assigns the Property to the Perimeter Center Character Area (Comprehensive Plan at Page 15) and the Perimeter Center Future Land Use classification (Comprehensive Plan at Page 31). Like other properties within these categories, the proposed development will contain thriving businesses that will provide jobs and tax revenue to the City. The proposed use is appropriate in relation to both the size of the Property and to the size, scale and massing of adjacent and nearby lots in the area, which contain approved commercial, retail, multi-family and other residential uses.

b. Whether the zoning proposal will permit a use that is suitable in view of the use and development of adjacent and nearby properties;

Granting the zoning modification requested by Branch will permit a use that is suitable in view of the uses and development of adjacent and nearby properties. Support of the zoning modification request will allow Branch to construct buildings closer to the streetscape and improve the public realm. The proposed development will contain thriving businesses that will complement existing nearby commercial uses, be beneficial to the economy of the surrounding area, provide dining and retail options to nearby and adjacent office buildings, and provide employment opportunities.

c. Whether the property to be affected by the zoning proposal has a reasonable economic use as currently zoned;

The existing zoning of the Property only allows for four restaurants and stormwater detention. The existing buildings are in need of repair and the water body/stormwater detention is in need of water quality upgrades consistent with current code requirements. This severely limits the economic value of the Property. In addition, the Property is an unusual shape with multiple road frontages. The total combined frontage of the Property along three different public roads is approximately 2,143 feet, every foot of which requires a front yard setback that is 50

feet deep. In addition, Branch is being required to install road improvements on approximately 1.5 acres of the Property, thereby losing the value of that land as developable property. A further complication is that the topography on the Property varies from the intersection of Ashwood Parkway and Ashford Dunwoody Road south to the intersection of Meadow Lane Road and Ashford Dunwoody Road. In other words, if the Property grade is balanced near one intersection, it will increase the imbalance of the grade at the other intersection. To account for this condition, Branch has designed a project that adjusts and minimizes these imbalances, and the requested zoning modifications will allow Branch to bring the proposed buildings towards the street, activating the pedestrian streetscape and screening the parking facilities from view from the public right-of-way. The zoning modifications are necessary, as the unusual size and configuration of the Property relative to the street make the development of the Property for an economically viable commercial use otherwise difficult, if not impossible.

d. Whether the zoning proposal will adversely affect the existing use or usability of adjacent or nearby property;

The proposed use is appropriate in relation to the uses and usability of adjacent and nearby lots in the area. The proposed development will contain thriving businesses that will complement existing nearby commercial retail, multi-family and other residential uses, be beneficial to the economy of the surrounding area, provide dining and retail options to nearby and adjacent office buildings, and provide employment opportunities..

e. Whether there are other existing or changing conditions affecting the use and development of the property that provide supporting grounds for either approval or disapproval of the zoning proposal;

Since its inception, the City has developed zoning districts and overlays that encourage the construction and location of buildings closer to the street, activating and improving streetscapes and screening parking from view of the traveling public. The City's intent through these provisions is to ameliorate the lasting effects that outdated notions of large front yard setbacks have had on the City's streetscapes. The City's regulations also emphasize attention to the public realm, such as outdoor dining, streetscape improvements, and pedestrian plaza areas, such as those found in Branch's proposed development.

f. Whether the zoning proposal will adversely affect historic buildings, sites, districts, or archaeological resources; and

The Applicant is not aware of any historic buildings, sites, districts, or archaeological resources on the site.

g. Whether the zoning proposal will result in a use that will or could cause an excessive or burdensome use of existing streets, transportation facilities, utilities, or schools.

The design of the redevelopment of the Property emphasizes pedestrian and cycling access. The construction of the private drive should ameliorate traffic congestion at the intersection of Meadow Lane and Ashford Dunwoody and improve traffic flow during peak hours. Much of the daytime traffic is expected to come from nearby and adjacent office uses, which should reduce car traffic. In fact, the grocer is a special prototype that will be new to the Atlanta area that will have groceries, but will also have a large selection of "grab and go" offerings for lunch and dinner. Regardless, Branch has engaged a traffic engineer to review the traffic effects of the proposal. Branch has also begun coordinating sewer access with DeKalb County and is confident that sewer accommodations will be finalized by the time the building requires a Certificate of Occupancy. Beyond sewers, adequate public services, facilities and utilities exist to serve the Property.

Because this zoning modification request is consistent with the foregoing standards established at Section 27-335 of the Zoning Ordinance, Branch respectfully asks that the Mayor and City Council of the City of Dunwoody grant this zoning modification as requested.

THE GALLOWAY LAW GROUP

By: Laurel David

Laurel A. David
Jordan Edwards
Attorneys for Applicant

3500 Lenox Road NE, Suite 760
Atlanta, Georgia 30326
(404) 965-3680

Campaign Disclosure Statement

City of Dunwoody Georgia

Community Development
4800 Ashford Dunwoody Road | Dunwoody, GA 30338
Phone: (678) 382-6800 | Fax: (770) 396-4828

Have you, within the two years immediately preceding the filing of this application, made campaign contributions aggregating $250.00 or more to a member of the City of Dunwoody City Council or a member of the City of Dunwoody Planning Commission? ☐ YES ☑ NO

✱ **Applicant / Owner:** Branch Ashwood Associates, L.P.

Signature: Laurel David Date: 3/4/19

Address: Laurel David, The Galloway Law Group, LLC, 3500 Lenox Rd., Suite 760, Atlanta 30326

If the answer above is yes, please complete the following section:

Date	Government Official	Official Position	Description	Amount

Additional Property Owner(s) Notarized Certification

City of Dunwoody Georgia
Community Development
4800 Ashford Dunwoody Road | Dunwoody, GA 30338
Phone: (678) 382-6800 | Fax: (770) 396-4828

I hereby certify that to the best of my knowledge, this amendment form is correct and complete. If additional materials are determined to be necessary, I understand that I am responsible for filing additional materials as specified by the City of Dunwoody Zoning Ordinance. I certify that the applicant(s) (if different) are authorized to act on my behalf, pursuant to this application and associated actions.

*** Property Owner (If Applicable):**

Owner Name: Branch Ashwood Associates, L.P.
Signature: _____ Date: 3/4/19
Address: c/o Laurel David, The Galloway Law Group, LLC, 3500 Lenox Rd., Suite 760, Atlanta 30326
Phone: 404-965-3680 Fax: _____ Email: laurel@glawgp.com
Sworn to and subscribed before me this 4th Day of March, 20 19
Notary Public: Michelle P. Nunnally

MICHELLE P. NUNNALLY NOTARY PUBLIC DOUGLAS COUNTY, GEORGIA MY COMMISSION EXPIRES OCTOBER 24, 2021

*** Property Owner (If Applicable):**

Owner Name: _____
Signature: _____ Date: _____
Address: _____
Phone: _____ Fax: _____ Email: _____
Sworn to and subscribed before me this _____ Day of _____, 20____
Notary Public:

*** Property Owner (If Applicable):**

Owner Name: _____
Signature: _____ Date: _____
Address: _____
Phone: _____ Fax: _____ Email: _____
Sworn to and subscribed before me this _____ Day of _____, 20____
Notary Public:

Council, from page 1

munity, Beverly Armento, told council during public comment that there were multiple reasons why council members should object to encroaching the stream buffer and bypassing the rules.

One reason was legal, Armento said.

"The Brook Run Park deed stipulates not only that the park maintain 70 percent urban green space, but also 50 feet of undisturbed stream buffer," Armento said. "It also states that the park is subject to all applicable zoning, land use and development restrictions and requirements. The city agreed to these and other stipulations when we obtained the park from DeKalb County."

Another Lakeview Oaks resident said that before Dunwoody became a city, residents didn't need flood insurance, but it's necessary now. Adelina Alberghini also said the plans for Brook Run Park were cookie cutter and told council members that the people who designed the plans have no vested interest in the city.

"It's a resume builder," Alberghini said.

Lakeview Oaks residents had support from other meeting attendees who were not happy with Brook Run Park plans including Harriet White, a landscape designer.

White told council members that she has worked in the Lakeview Oaks community and that the city's plans to build Astro-Turf fields at the back of Brook Run Park will cause water to run off the fields very fast no matter how well the city plans for drainage.

White also objected to the city's plan for the park and the impact on the city. She called the plan hideous and said that it's not going to enhance Dunwoody at all.

"I really like Brook Run Park and I don't want you to cut the trees down," White said. "The more you touch Brook Run, the more ripple affects you have for damage throughout the city."

Rob Weir, a Dunwoody North resident, also expressed concerns about Brook Run improvements and said he could sympathize with Lakeview Oaks residents. Weir said that water in his backyard increased when a lot of trees were removed at Tilly Mill and North Peachtree.

Several council members said that the ordinance change was a change in process and not for plans at Brook Run Park, but some still shown concern for the Lakeview Oaks community.

Councilor Lynn Deutsch asked Parks Director Brent Walker if he could have foreseen this issue so that it could have been considered when council members were approving the park plans.

Councilor John Heneghan asked Walker if there was a way to build the project without disturbing the stream buffer. Walk replied that the fields could be redesigned, but he wouldn't recommend it because the city would lose programmability on the fields if the footprint is minimized.

"I wouldn't recommend it based on a small impact area that we're encroaching," Walker said.

Heneghan also asked about a planned parking lot close to one of the streams and Walker said that the plan was to also encroach on a stream in that area.

"To be a fair neighbor, should we not be overengineering these plans to ensure there is no 200-year flood," Heneghan said. "I want Lakeview Oaks residents to know that we're looking out for their protection."

Mayor Denis Shortal asked Walker how many trees the city would be saving and/or losing with the Brook Run projects. Walker said he didn't have that number, but that he could eventually get it.

THE CITY OF DUNWOODY, GEORGIA
NOTICE OF PUBLIC HEARING

The City of Dunwoody Mayor and City Council will meet on Monday, March 25, 2019 at 6:00 p.m. in the Council Chambers of Dunwoody City Hall, which is located at 4800 Ashford Dunwoody Road, Dunwoody, GA 30338, for the purpose of due process of the following:

MC 19-01: Aaron St. Pierre of Lose Design, on behalf of the City of Dunwoody, owners of 4770 N Peachtree Road ("Brook Run Park") request a variance from Chapter 16, Sec. 16-78 to encroach the City's 75-foot stream buffer for construction and grading related to two new soccer fields. The Tax Parcel ID is 18 354 001 005.

Should you have any questions, comments, or would like to view the application and supporting materials, please contact the City of Dunwoody Community Development Department at 678-382-6800. Staff is available to answer questions, discuss the decision-making process, and receive comments and concerns.

THE CITY OF DUNWOODY, GEORGIA
NOTICE OF PLANNING COMMISSION MEETING

The City of Dunwoody Planning Commission will meet on Tuesday, March 12, 2019 at 6:00 p.m. in the Council Chambers of Dunwoody City Hall, which is located at 4800 Ashford Dunwoody Road, Dunwoody, Georgia 30338, for the purpose of due process of the following:

J. Ethan Underwood, attorney for the owner, on behalf of RRR 2018, LLC, owner of 5318 and 5328 Roberts Drive, Dunwoody, GA, 30338, seeks the following:

RZ19-01: To rezone the property from its current R-100 (Single-dwelling Residential) District zoning classification to an R-50 (Single-dwelling Residential) District.

Review and consideration of text amendment regarding the zoning code (Chapter 27).

Should you have any questions, comments, or would like to view the application and supporting materials, please contact the City of Dunwoody Community Development Department at 678-382-6800. Members of the public are encouraged to call or schedule a meeting with staff in advance of the Public Hearing if they have questions or are unfamiliar with the process. Staff is available to answer questions, discuss the decision-making process, and receive comments and concerns.

OBITUARY

Joyce Rita Sipple Jones, of Dunwoody, passed away peacefully on Feb. 9, 2019.

Joyce was born Oct. 29, 1930, in Hammond, Ind., and was the daughter of Patrick and Sarah Sipple. She was preceded in death by her husband of 50 plus years, Wayne L. Jones.

She is survived by her two sons, Michael Jones (Jeannine) of Dunwoody and Darren Jones of Atlanta; four grandchildren and numerous nieces and nephews.

Joyce was a graduate of Indiana University and a lifelong teacher.

Funeral services will be held at All Saints Catholic Church, 2443 Mt Vernon Road, Dunwoody, on Friday, Feb. 22 at 10:30 a.m. In lieu of flowers, memorials can be made to the Atlanta Humane Society, 981 Howell Mill Road NW, Atlanta, 30318.

Public Notice

Atlanta is coming together to support Atlanta Boxer Rescue. Atlanta Boxer Rescue is organizing a Wiggle Butt Strut and 5K on Saturday March 2, 2019. The rescue works with shelters all throughout the Greater Atlanta area to find good homes for dogs in need. This is a family and pet friendly event. The Wiggle Butt Strut will be taking place at Brook Run Park located at 4770 N Peachtree Road starting at 10:00 with check in for people and pets opening at 8:00. Please join us for a PAWS-atively enjoyable event! Pre-Register at boxerfunrun.com

Information Meeting – Modification of Zoning Conditions

A meeting open to the public will be held to discuss a proposed modification of zoning conditions for 4720 Ashford Dunwoody Road, 1250 Meadow Lane Road, and 500, 600, and 700 Ashford Parkway. This meeting will be held at 6:30 P.M. on March 4, 2019, at Eclipse de Luna, 4505 Ashford Dunwoody Road, Dunwoody, GA 30346. Please feel free to attend for more information.

EXHIBIT B – CERTIFICATES OF MAILING

THE
GALLOWAY
LAW GROUP

3500 Lenox Road, N.E., Suite 760
Atlanta, Georgia 30326
O 404-965-3680

INFORMATION MEETING CONCERNING PROPERTY LOCATED AT

4720 ASHFORD DUNWOODY ROAD, DUNWOODY, GEORGIA

We are notifying all neighboring owners of residentially zoned property of an informational meeting open to the public to discuss a modification of the zoning conditions associated with property at 4720 Ashford Dunwoody Rd., 1250 Meadow Lane and 500, 600 and 700 Ashford Parkway. The meeting will take place on Monday, March 4, 2019, from 6:30 P.M. to 7:30 P.M. and will be held in the private dining room in the Eclipse di Luna restaurant at 4505 Ashford Dunwoody Rd NE, Atlanta, GA 30346 (in the back of the Park Place retail center). Please feel free to attend this meeting should you have any questions. If you are unable to attend but would like to obtain information, please contact The Galloway Law Group at (404) 965-3680.

Sincerely,

THE GALLOWAY LAW GROUP, LLC

255073

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1.	RATNA SHRI KANTHI BUDHA RADHA 4664 MAGNOLIA COMMONS DUNWOODY GA 30338			Handling Charge - if Registered and over $50,000 in value				Adult Signature Required	Adult Signature Restricted Delivery	Restricted Delivery	Return Receipt	Signature Confirmation	Signature Confirmation Restricted Delivery	Special Handling
2.	YETURU SINDHU 4666 MAGNOLIA COMMONS DUNWOODY GA 30338													
3.	LEE EUNIM 4668 MAGNOLIA COMMONS DUNWOODY GA 30338													
4.	MANYAM NAGAVARDHAN 4670 MAGNOLIA COMMONS DUNWOODY GA 30338													
5.	SOLAN RAHUL 4672 MAGNOLIA COMMONS DUNWOODY GA 30338													
6.	CHARLES BRIDGET L 4674 MAGNOLIA COMMONS DUNWOODY GA 30338													
7.	ARNOLD BRANDON 4676 MAGNOLIA COMMONS DUNWOODY GA 30338													
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1.	ANTONELLI BRIAN 4658 MAGNOLIA COMMONS DUNWOODY GA 30338		Handling Charge - if Registered and over $50,000 in value				Adult Signature Required	Adult Signature Restricted Delivery	Restricted Delivery	Return Receipt	Signature Confirmation	Signature Confirmation Restricted Delivery	Special Handling
2.	YAO QIMIN 4656 MAGNOLIA COMMONS DUNWOODY GA 30338												
3.	KIANIAN BEHROUZ 4654 MAGNOLIA COMMONS DUNWOODY GA 30338												
4.	BOWLING REBECCA K 4652 MAGNOLIA COMMONS DUNWOODY GA 30338												
5.	HEINTZ EDWARD C JR 4650 MAGNOLIA COMMONS DUNWOODY GA 30338												
6.	VORREY NAGESHWARRAO 4648 MAGNOLIA COMMONS DUNWOODY GA 30338												
7.	PIERCE BRIAN C 4646 MAGNOLIA COMMONS DUNWOODY GA 30338												
8.	BYRUM JOHN 4684 DOGWOOD ALLEY DUNWOODY GA 30338												

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	WEISSMAN LEE 4686 DOGWOOD ALLEY DUNWOODY GA 30338												
1.	OSOBA OLUGBEMIGA 4688 DOGWOOD ALLEY DUNWOODY GA 30338												
2.	WEBER RUSSELL W 4690 DOGWOOD ALLEY DUNWOODY GA 30338												
3.	SHAAR GARY B 4692 DOGWOOD ALLEY DUNWOODY GA 30338												
4.	HAH JAY 4694 DOGWOOD ALLEY DUNWOODY GA 30338												
5.	MCCORMICK REBECCA A 4696 DOGWOOD ALLEY DUNWOODY GA 30338												
6.	KOTA VENKAT ROHIT 4698 DOGWOOD ALLEY DUNWOODY GA 30338												
7.	GORDON ROBERT W 4702 DOGWOOD ALLEY DUNWOODY GA 30338												
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1.	GHADIRIAN ALI 4706 DOGWOOD ALLEY DUNWOODY GA 30338
2.	ZANDIEH ABDOL R 4708 DOGWOOD ALLEY DUNWOODY GA 30338
3.	CHAN MICHELLE WEI CHENG 4710 DOGWOOD ALLEY DUNWOODY GA 30338
4.	BONILLA MARISOL 4712 DOGWOOD ALLEY DUNWOODY GA 30338
5.	SEARS DONALD L 4714 DOGWOOD ALLEY DUNWOODY GA 30338
6.	TRAN VANESSA P 4699 DOGWOOD ALLEY DUNWOODY GA 30338
7.	BELL COREY 4697 DOGWOOD ALLEY DUNWOODY GA 30338
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1.	MCCUTCHEN THOMAS W 4691 DOGWOOD ALLEY DUNWOODY GA 30338
2.	KAUFMAN TOMMY A 4689 DOGWOOD ALLEY DUNWOODY GA 30338
3.	ADRIAN RICARDO 4687 DOGWOOD ALLEY DUNWOODY GA 30338
4.	RAI PARITOSH 4685 DOGWOOD ALLEY DUNWOODY GA 30338
5.	SAMUEL ESSON JONAH JR 4722 CYPRESS COMMONS DUNWOODY GA 30338
6.	MOHR ALESSANDRA 4724 CYPRESS COMMONS DUNWOODY GA 30338
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VORREY NAGESHWARRAO
4695 DOGWOOD ALLEY
DUNWOODY GA 30338

SMITH LEZLY S
4693 DOGWOOD ALLEY
DUNWOODY GA 30338

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2.	ZHOU QIAN 4728 CYPRESS COMMONS DUNWOODY GA 30338												
3.	JARVIS TODD E 4730 CYPRESS COMMONS DUNWOODY GA 30338												
4.	RAR HOME INVESTMENTS LLC 4732 CYPRESS COMMONS DUNWOODY GA 30338												
5.	RIPLEY LISA M 4736 CYPRESS COMMONS DUNWOODY GA 30338												
6.	PATEL MARMIK VIJAYKUMAR 4738 CYPRESS COMMONS DUNWOODY GA 30338												
7.	SYLLA ABDOUL K 4723 CYPRESS COMMONS DUNWOODY GA 30338												
8.	LEE BONG KUN 4725 CYPRESS COMMONS DUNWOODY GA 30338												

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	FENG YUN 4727 CYPRESS COMMONS DUNWOODY GA 30338
1.	PEREZ LILIANA IVONHE 4729 CYPRESS COMMONS DUNWOODY GA 30338
2.	DINICOLA JODY N 4731 CYPRESS COMMONS DUNWOODY GA 30338
3.	EPPS BARRY L 4733 CYPRESS COMMONS DUNWOODY GA 30338
4.	NICHOLAS DENNIS JAMES II 4748 CYPRESS COMMONS DUNWOODY GA 30338
5.	KOROLKOV LEONID 4746 CYPRESS COMMONS DUNWOODY GA 30338
6.	GARAGESHWARA JEETH 4744 CYPRESS COMMONS DUNWOODY GA 30338
7.	KANG SOHI 4742 CYPRESS COMMONS DUNWOODY GA 30338
8.	

Postage	(Extra Service) Fee	Handling Charge	Actual Value if Registered	Insured Value	Due Sender if COD	ASR Fee	ASRD Fee	RD Fee	RR Fee	SC Fee	SCRD Fee	SH Fee
		Handling Charge - if Registered and over $50,000 in value				Adult Signature Required	Adult Signature Restricted Delivery	Restricted Delivery	Return Receipt	Signature Confirmation	Signature Confirmation Restricted Delivery	Special Handling

Total Number of Pieces Listed by Sender	Total Number of Pieces Received at Post Office	Postmaster, Per *(Name of receiving employee)*
8	8	

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Atlanta, Georgia 30326

Check type of mail or service

- ☐ Adult Signature Required
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- ☐ Certified Mail Restricted Delivery
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- ☐ Priority Mail Express
- ☐ Registered Mail
- ☐ Return Receipt for Merchandise
- ☐ Signature Confirmation

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ATLANTA, GA
30326
FEB 12, 19
AMOUNT
$3.28
R2304M110574-11

USPS Tracking/Article Number		Service) Fee	Charge	if Registered	Value	Sender if COD	Fee	Fee	Fee	Fee	SC Fee	SCRD Fee	SH Fee
	☐ PAUCKE JENNIFER ☐ 4740 CYPRESS COMMONS DUNWOODY GA 30338												
1.	PATEL MARMIK VIJAYKUMAR 4738 CYPRESS COMMONS DUNWOODY GA 30338		Handling Charge - if Registered and over $50,000 in value				Adult Signature Required	Adult Signature Restricted Delivery	Restricted Delivery	Return Receipt	Signature Confirmation	Signature Confirmation Restricted Delivery	Special Handling
2.	JONES JOE R 4751 LAUREL WALK DUNWOODY GA 30338												
3.	JOHNSON CARTER 4755 LAUREL WALK DUNWOODY GA 30338												
4.	LTD STRATEGIES LLC 4759 LAUREL WALK DUNWOODY GA 30338												
5.	MAYBIN ALANTE 4763 LAUREL WALK DUNWOODY GA 30338												
6.	HANDA KAPIL 4767 LAUREL WALK DUNWOODY GA 30338												
7.	ROG JAKE 4771 LAUREL WALK DUNWOODY GA 30338												
8.													

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8	8	

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- ☐ Signature Confirmation

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UNITED STATES POSTAL SERVICE®

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ATLANTA, GA
30326
FEB 12, 19
AMOUNT
$3.28
R2304M110574-11

USPS Tracking/Article Number		Postage	Service) Fee	Charge	if Registered	Value	Sender if COD	Fee	Fee	Fee	Fee	Fee	CRD Fee	SH Fee
	☐ ☐ MARION JOHN S 1152 HOLLEY AVENUE DUNWOODY GA 30338													
1.	☐ LUCAS ROBERTA 1148 HOLLEY AVENUE DUNWOODY GA 30338													
2.	☐ LAWRENCE KEITH D 1144 HOLLEY AVENUE DUNWOODY GA 30338													
3.	☐ MACK FAMILY TRUST 1140 HOLLEY AVENUE DUNWOODY GA 30338													
4.	☐ BOWMAN JANICE L 1136 HOLLEY AVENUE DUNWOODY GA 30338													
5.	☐ CAUSEY EAMON G 1132 HOLLEY AVENUE DUNWOODY GA 30338													
6.	☐ HOLSCHUH KIMBERLY A 1128 HOLLEY AVENUE DUNWOODY GA 30338													
7.	☐ BLOCK ROBERT M JR 1124 HOLLEY AVENUE DUNWOODY GA 30338													
8.	☐													

Handling Charge - if Registered and over $50,000 in value

Adult Signature Required

Adult Signature Restricted Delivery

Restricted Delivery

Return Receipt

Signature Confirmation

Signature Confirmation Restricted Delivery

Special Handling

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- ☐ Signature Confirmatic

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30326
FEB 12, 19
AMOUNT
$3.28
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ATLANTA GA
FEB 12 2019

USPS Tracking/Article Number	
	☐ ☐ BOYAJIAN MICHAEL 1159 HOLLEY AVENUE DUNWOODY GA 30338
1.	CHEN ZHUOWEN 1155 HOLLEY AVENUE DUNWOODY GA 30338
2.	HENRY ROBERT W 1151 HOLLEY AVENUE DUNWOODY GA 30338
3.	FOSS DAVID R 1147 HOLLEY AVENUE DUNWOODY GA 30338
4.	WINTER JOSEPH III 1143 HOLLEY AVENUE DUNWOODY GA 30338
5.	NJU ZEH B 1139 HOLLEY AVENUE DUNWOODY GA 30338
6.	YASMIN K KARIM REVOCABLE TRUST 1135 HOLLEY AVENUE DUNWOODY GA 30338
7.	NIEDERKOHR NATHAN D 1131 HOLLEY AVENUE DUNWOODY GA 30338
8.	

Service) Fee	Charge	if Registered	Value	Due Sender if COD	ASR Fee	ASRD Fee	RD Fee	RR Fee	SC Fee	SCRD Fee	SH Fee
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ATLANTA, GA
30326
FEB 12, 19
AMOUNT
$3.28
R2304M110574-11

ATLANTA GA
FEB 12 2019

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1.	BEITH ROBERT R 1127 HOLLEY AVENUE DUNWOODY GA 30338													
2.	BASSETT SHARON N 1123 HOLLEY AVENUE DUNWOODY GA 30338													
3.	WOODRUFF ALEXANDRIA L 1119 HOLLEY AVENUE DUNWOODY GA 30338													
4.	SCHWARZ THOMAS A 1160 HOLLEY AVENUE DUNWOODY GA 30338													
5.	SCHMITT CHARLES D 1164 HOLLEY AVENUE DUNWOODY GA 30338													
6.	AFROMSKY KERRI M 1168 HOLLEY AVENUE DUNWOODY GA 30338													
7.	LUGO VINA EDUARDO A 1172 HOLLEY AVENUE DUNWOODY GA 30338													
8.	NEVEL KEITH A. 1176 HOLLEY AVENUE DUNWOODY GA 30338													

Handling Charge - if Registered and over $50,000 in value

Adult Signature Required

Adult Signature Restricted Delivery

Restricted Delivery

Return Receipt

Signature Confirmation

Signature Confirmation Restricted Delivery

Special Handling

Total Number of Pieces Listed by Sender	Total Number of Pieces Received at Post Office	Postmaster, Per *(Name of receiving employee)*
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PS Form **3877**, January 2017 *(Page 1 of 2)*
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- ☐ Signature Confirmation

U.S. POSTAGE PAID
ATLANTA, GA
30326
FEB 12, 19
AMOUNT
$2.46
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USPS Tracking/Article Number		Fee	Handling Charge - if Registered and over $50,000 in value			COD	Adult Signature Required	Adult Signature Restricted Delivery	Restricted Delivery	Return Receipt	Signature Confirmation	Signature Confirmation Restricted Delivery	Special Handling
	☐ ☐ STOLOVITZKY JOSE PABLO 1180 HOLLEY AVENUE DUNWOODY GA 30338												
1.	☐ JEWELL DAVID T 1184 HOLLEY AVENUE DUNWOODY GA 30338												
2.	☐ ZHAO PING 1188 HOLLEY AVENUE DUNWOODY GA 30338												
3.	☐ PARK JUNG HA 1192 HOLLEY AVENUE DUNWOODY GA 30338												
4.	☐ ALBANY ROAD ASHWOOD LLC 10 HIGH STREET FLOOR 7 BOSTON MA 2110												
5.	☐ POST CROSSING LLC 6815 POPLAR AVE STE 500 GERMANTOWN TN 38138												
6.	☐												
7.	☐												
8.	☐												

Total Number of Pieces Listed by Sender: 8

Total Number of Pieces Received at Post Office: 8

Postmaster, Per *(Name of receiving employee)*

PS Form **3877**, January 2017 *(Page 1 of 2)*
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PROPERTY LIST

APPLICATION FOR ZONING MODIFICATION

CITY OF DUNWOODY, GEORGIA

The Property that is the subject of Application for Zoning Modification submitted by Branch Ashwood Associates, L.P., consists of the following properties:

Tax Parcel: 18 350 02 001
Site Address: *4720 ASHFORD DUNWOODY RD*

Tax Parcel: 18 350 02 003
Site Address: *700 ASHWOOD PKWY*

Tax Parcel: 18 349 01 048
Site Address: *600 ASHWOOD PKWY*

Tax Parcel: 18 349 01 046
Site Address: *500 ASHWOOD PKWY*

Tax Parcel: 18 349 01 037
Site Address: *1250 MEADOW LANE RD*

The combined area of these five (5) lots is approximately 10.0574 acres.

ORIGINAL

PUBLIC PARTICIPATION REPORT
APPLICATION FOR REZONING
CITY OF DUNWOODY, GEORGIA

Branch Ashwood Associates, L.P. ("Branch") has submitted a Modification of Zoning Conditions for approximately 10.1 acres of land located at 4720 Ashford Dunwoody Road. 1250 Meadow Lane Road, and 500, 600 and 700 Ashwood Parkway. In accordance with Section 27.306 of the Dunwoody Zoning Ordinance, Branch hosted a Public Information Meeting on Monday, March 4, 2019 at 6:30 P.M., at Eclipse Di Luna, a restaurant located at 4505 Ashford Dunwoody Road. Branch advertised this meeting by submitting a classified ad to The Dunwoody Crier, which appeared in the Dunwoody Crier on February 20, 2019. See **Exhibit A, Dunwoody Crier Newspaper Ad**. Branch also mailed a letter to all owners of property within 1,000 feet of the zoning parcels. See **Exhibit B, Certificates of Mailing**. The people who attended the meeting were asked to provide their names and email addresses on sign-in sheets that Branch distributed. See **Exhibit C, Public Information Meeting Sign-In Sheets**.

The majority of the questions and comments raised during the meeting concerned the overall development and future streetscape improvements. During the meeting, Branch responded to attendees' questions or remarks, as summarized below:

1. The numerous streetscape improvements proposed in conjunction with the redevelopment were explained and discussed in detail. The planned private/public drive connection between Meadow Lane and Ashwood Parkway will alleviate traffic back-ups at the intersection of Meadow Lane and Ashford Dunwoody. The attendees expressed support of the improvements and the emphasis on walkability of the proposed development and the addition of new and improved sidewalks and other pedestrian walkways.
2. The stormwater detention pond is unsightly and attendees supported its removal. Both federal and EPD approvals to fill in the pond have been obtained.
3. The proposed gas station use was supported. Many expressed their frustration with the difficulties accessing other gas stations in the area. The design presented with eight pumps and a convenience store next to the Ashford Dunwoody right of way was preferred. There were no objections to it being open 24/7. The restaurant operators that are currently interested in leasing tenant space will be new to the Dunwoody market and

will provide more variety in dining options. P.F. Chang's currently plans to relocate in one of the new buildings. The proposed grocery is a new protoype that would be one of the first in the State of Georgia. It will provide pre-prepared meals for lunch and dinner, organic foods, fruits and vegetables, as well as household and food items typically found in grocery stores.

4. There will be enough parking in the proposed development. Branch has decades of experience developing and managing retail centers and through this experience knows how much parking is required for a development of this type. For this reason the center currently has about 10% more spaces than is required by code.
5. The "outparcel" will developed at some point in the future when the use is known. There are several hotel operators that are interested in the site. If Branch pursues a hotel option, applications will be filed to modify the zoning to allow a hotel.
6. A question was raised about the possibility of rooftop terraces for the restaurants. Unfortunately this is not an option as it creates the need for additional parking that can't be accommodated on site.

This Public Participation Report summarizes the items discussed at the Public Information Meeting on March 4, 2019. The attendees of the meeting were very supportive of the new development and expressed their belief that it will be beneficial for the Dunwoody community.

Sincerely,

THE GALLOWAY LAW GROUP, LLC

Laurel A. David
Jordan Edwards
Attorneys for the Owner/ Applicant
Branch Ashwood Associates, LLC

3500 Lenox Road NE, Suite 760
Atlanta, Georgia 30326
(404) 965-3680

EXHIBIT C – PUBLIC INFORMATION MEETING SIGN-IN SHEETS

COMMUNITY MEETING SIGN-IN SHEET

Name	Address	E-Mail / Phone
Shaun Bassett	1123 Holly Ave	SNBmini@att.net
Regina Mack	1140 Holly Ave	Mrsregina mack@me.com
Russ Weber	4690 DOGWOOD ALY	RUSSELL WEBER@YAHOO.COM
Laurie Weber	4690 Dogwood Aly, Dunwoody	Laurie.Weber@am.crh.com
DEX MACK	1140 Holly Ave	DEXMAC1@MAC.COM
RON CRUMP	2658 COLEMAN CT	RON.C@THECONTINEOGROUP.COM
ROB FRENCH	5901 PEACHTREE DUNWOODY	RFRENCH@PHILLIPSPARK.COM,
JACK HAYLETT	3340 PEACHTREE SUITE 2775	JHaylett@BRANCHPROP.COM
NICK PELESCA	"	NPelesca@BRANCHPROP.COM
Albert Israel	"	aisrael@branchprop.com
John Priedeman		

COMMUNITY MEETING SIGN-IN SHEET

CONSTITUTIONAL OBJECTIONS
APPLICATION FOR ZONING MODIFICATION
CITY OF DUNWOODY, GEORGIA

Georgia Law and the procedures of the City of Dunwoody require us to raise Federal and State Constitutional objections during the Zoning Modification application process. While the Owner/Applicant anticipates a smooth application process, failure to raise constitutional objections at this stage may mean that the Owner/Applicant will be barred from raising important legal claims later in the process. Accordingly, we are required to raise the following constitutional objections at this time:

The portions of the Zoning Ordinance of the City of Dunwoody, Georgia, as applied to the Property, that would result in a denial of the Zoning Modification as requested by the Owner/Applicant, are, or would be, unconstitutional in that they would destroy the Owner/Applicant's property rights without first paying fair, adequate and just compensation for such rights, in violation of Article I, Section I, Paragraph I of the Constitution of the State of Georgia of 1983, Article I, Section III, Paragraph I of the Constitution of the State of Georgia of 1983 and the Due Process Clause of the Fourteenth Amendment to the Constitution of the United States.

Any application of the Code of the City of Dunwoody or the Dunwoody Zoning Ordinance to the Property which restricts its use to any use in a manner other than that requested by the Owner/Applicant is unconstitutional, illegal and null and void because such an application constitutes a taking of the Owner/Applicant's property in violation of the Just Compensation Clause of the Fifth Amendment to the Constitution of the United States, Article I, Section I, Paragraph I, and Article I, Section III, Paragraph I, of the Constitution of the State of Georgia of 1983 and the Equal Protection and Due Process Clauses of the Fourteenth Amendment to the Constitution of the United States because such an application denies the Owner/Applicant an economically viable use of its land while not substantially advancing legitimate state interests.

A denial of this Application would also constitute an arbitrary and capricious act by the Mayor and City Council of the City of Dunwoody without any rational basis therefore, thereby constituting an abuse of discretion in violation of Article I, Section I, Paragraph I of the Constitution of the State of Georgia of 1983, Article I, Section III, Paragraph I of the Constitution of the State of Georgia of 1983 and the Due Process Clause of the Fourteenth Amendment to the Constitution of the United States.

A refusal to approve the Zoning Modification as requested by the Owner/Applicant would be unconstitutional and discriminate in an arbitrary, capricious and unreasonable manner between the Owner/Applicant and owners of similarly situated property in violation of Article I, Section I, Paragraph II of the Constitution of the State of Georgia of 1983 and the Equal Protection Clause of the Fourteenth Amendment to the Constitution of the United States. Any approval of the Zoning Modification subject to conditions that are different from the conditions requested by the Owner/Applicant, to the extent such different conditions would have the effect of further restricting the Owner/Applicant's utilization of the Property, would also constitute an

arbitrary, capricious and discriminatory act and would likewise violate each of the provisions of the State and Federal Constitutions set forth herein above.

In addition, this constitutes formal written notice to the City of Dunwoody, pursuant to O.C.G.A. § 36-33-5, that the Owner/Applicant plans to seek to recover all damages that it sustains or suffers as a result of the denial of this Application and/or the unconstitutional zoning of the Property by the City of Dunwoody. Such damages may include, but are not necessarily limited to, damages related to the diminution in the value of the Property, attorneys' fees and expenses of litigation.

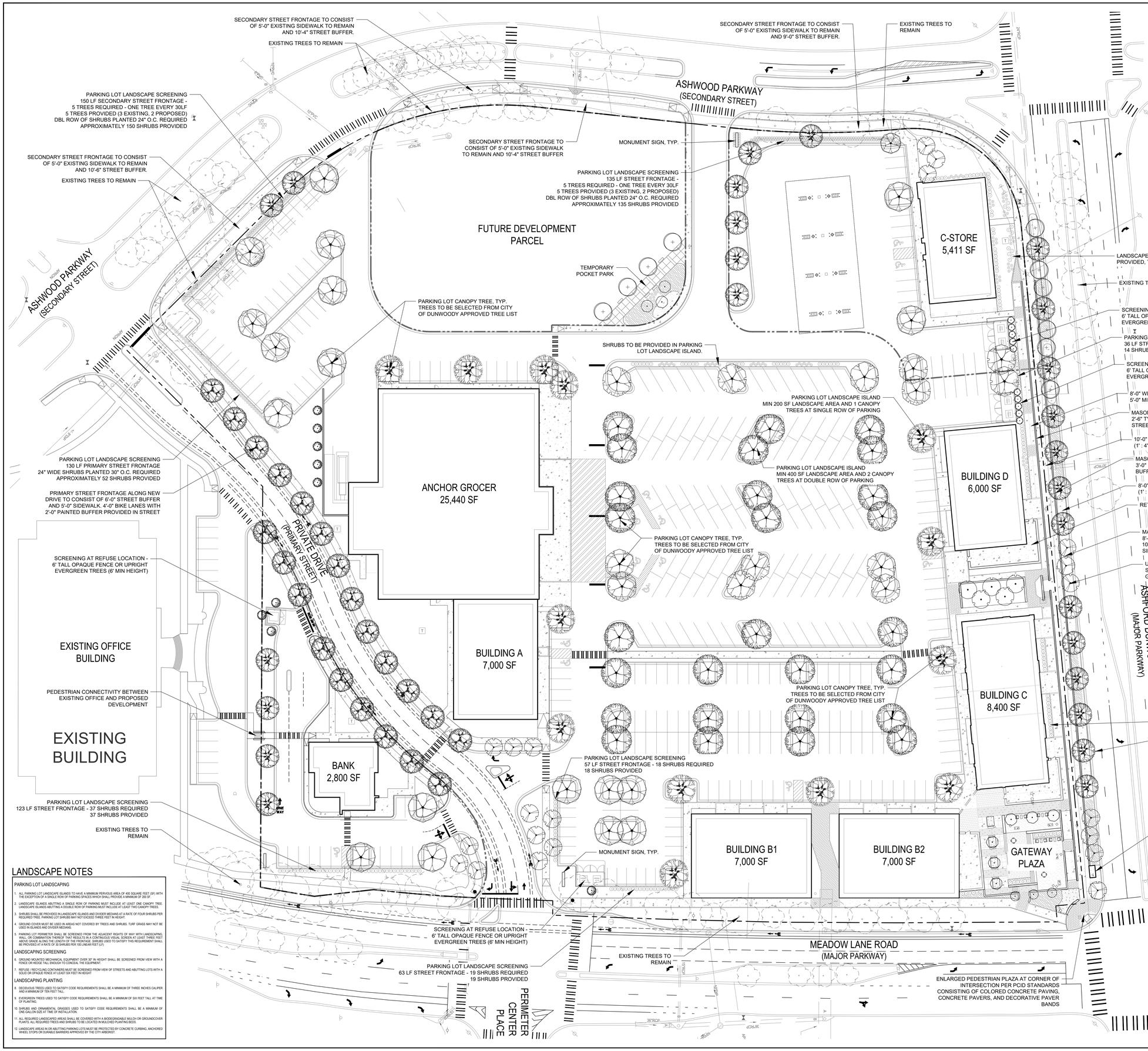
Accordingly, the Owner/Applicant respectfully asks that the Zoning Modification be approved as requested by the Owner/Applicant.

THE GALLOWAY LAW GROUP, LLC

By: Laurel David

Laurel David
Jordan Edwards
Attorneys for the Owner/Applicant

3500 Lenox Road NE, Suite 760
Atlanta, Georgia 30326
(404) 965-3680 Telephone
(404) 965-3670 Facsimile



LANDSCAPE LEGEND

- EXISTING TREE TO REMAIN
- CANOPY TREES — PARKING LOT AND STREET TREES — EXAMPLE: OAK, MAPLE, ELM, BALD CYPRESS
- UNDERSTORY CANOPY TREES — UNDERSTORY STREET TREES — EXAMPLE: FRINGE TREE, HORNBEAM, REDBUD, SERVICEBERRY, DOGWOOD
- ORNAMENTAL TREES — UNDERSTORY / FLOWERING ORNAMENTAL TREES — EXAMPLE: CHERRY, CRAPE MYRTLE, CRAB APPLE JAPANESE MAGNOLIA, KOUSA DOGWOOD
- EVERGREEN TREES — EVERGREEN / SCREENING TREES — EXAMPLE: AMERICAN HOLLY, MAGNOLIA, RED CEDAR, PINE, CYPRESS
- SHRUBS / GROUNDCOVER

LANDSCAPE PLANS ARE PRELIMINARY AND SUBJECT TO CHANGE AS THE PROJECT PROGRESSES. PLANT MATERIALS SHOWN FOR CONCEPT AND GENERAL COMPLIANCE WITH ZONING. TREE SPECIES AND LOCATIONS ARE SUBJECT TO REVISION WITH SIMILAR MATERIALS FROM THE CITY OF DUNWOODY GENERAL TREE LIST (SEC. 16-116) EX. CANOPY TREES FOR CANOPY TREE.

LANDSCAPE NOTES

PARKING LOT LANDSCAPING

1. ALL PARKING LOT LANDSCAPE ISLANDS TO HAVE A MINIMUM PERVIOUS AREA OF 400 SQUARE FEET (SF) WITH THE EXCEPTION OF A SINGLE ROW OF PARKING SPACES WHICH SHALL PROVIDE A MINIMUM OF 200 SF.
2. LANDSCAPE ISLANDS ABUTTING A SINGLE ROW OF PARKING MUST INCLUDE AT LEAST ONE CANOPY TREE. LANDSCAPE ISLANDS ABUTTING A DOUBLE ROW OF PARKING MUST INCLUDE AT LEAST TWO CANOPY TREES.
3. SHRUBS SHALL BE PROVIDED IN LANDSCAPE ISLANDS AND DIVIDER MEDIANS AT A RATE OF FOUR SHRUBS PER REQUIRED TREE. PARKING LOT SHRUBS MAY NOT EXCEED THREE FEET IN HEIGHT.
4. GROUND COVER MUST BE USED IN AREAS NOT COVERED BY TREES AND SHRUBS. TURF GRASS MAY NOT BE USED IN ISLANDS AND DIVIDER MEDIANS.
5. PARKING LOT PERIMETER SHALL BE SCREENED FROM THE ADJACENT RIGHTS OF WAY WITH LANDSCAPING, WALL, OR COMBINATION THEREOF THAT RESULTS IN A CONTINUOUS VISUAL SCREEN AT LEAST THREE FEET ABOVE GRADE ALONG THE LENGTH OF THE FRONTAGE. SHRUBS USED TO SATISFY THIS REQUIREMENT SHALL BE PROVIDED AT A RATE OF 30 SHRUBS PER 100 LINEAR FEET (LF).

LANDSCAPING SCREENING

6. GROUND MOUNTED MECHANICAL EQUIPMENT OVER 30" IN HEIGHT SHALL BE SCREENED FROM VIEW WITH A FENCE OR HEDGE TALL ENOUGH TO CONCEAL THE EQUIPMENT.
7. REFUSE / RECYCLING CONTAINERS MUST BE SCREENED FROM VIEW OF STREETS AND ABUTTING LOTS WITH A SOLID OR OPAQUE FENCE AT LEAST SIX FEET IN HEIGHT.

LANDSCAPING PLANTING

8. DECIDUOUS TREES USED TO SATISFY CODE REQUIREMENTS SHALL BE A MINIMUM OF THREE INCHES CALIPER AND A MINIMUM OF TEN FEET TALL.
9. EVERGREEN TREES USED TO SATISFY CODE REQUIREMENTS SHALL BE A MINIMUM OF SIX FEET TALL AT TIME OF PLANTING.
10. SHRUBS AND ORNAMENTAL GRASSES USED TO SATISFY CODE REQUIREMENTS SHALL BE A MINIMUM OF ONE-GALLON SIZE AT TIME OF INSTALLATION.
11. ALL REQUIRED LANDSCAPED AREAS SHALL BE COVERED WITH A BIODEGRADABLE MULCH OR GROUNDCOVER PLANTS. ALL REQUIRED TREES AND SHRUBS TO BE LOCATED IN MULCHED PLANTING BEDS.
12. LANDSCAPE AREAS IN OR ABUTTING PARKING LOTS MUST BE PROTECTED BY CONCRETE CURBING, ANCHORED WHEEL STOPS OR DURABLE BARRIERS APPROVED BY THE CITY ARBORIST.

LANDSCAPE NOTE

LANDSCAPE PLAN PREPARED TO DENOTE PRELIMINARY DESIGN INTENT. PLANT SELECTION, MATERIALS, QUANTITY AND LAYOUT SUBJECT TO REVISIONS. ALL SUBSTITUTIONS MUST BE APPROVED BY OWNER AND LANDSCAPE ARCHITECT PRIOR TO INSTALLATION.

AJC DESIGN GROUP
770.330.0814
1991 WOODLAND WAY
DUNWOODY, GA 30338

STAMP

OWNER

BRANCH PROPERTIES, LLC
3340 PEACHTREE ROAD, SUITE 840
ATLANTA, GA 30326
(404) 812-8900

PROJECT

ASHWOOD CENTER
CITY OF DUNWOODY, GA

500 ASHWOOD PARKWAY
DUNWOODY, GEORGIA 30338

REVISION SCHEDULE

NO.	DATE:	REVISION DESCRIPTION

ISSUE SCHEDULE

NO.	DATE:	ISSUE DESCRIPTION

SHEET NAME: ZONING LANDSCAPE SITE PLAN

PROJECT NUMBER: 1900201

DATE: 05/28/2019

SHEET NO: L1.1

PERIMETER MARKETPLACE

DUNWOODY, GEORGIA
05-29-2019

BRANCH PROPERTIES, LLC

PHILLIPS
architecture · consultants

BRANCH PROPERTIES, LLC

PERIMETER MARKETPLACE

CONCEPT RENDERING
DUNWOODY, GEORGIA
03-01-2019

PHILLIPS
architecture · consultants

BRANCH
PROPERTIES, LLC

ASHFORD DUNWOODY ROAD

CONCEPT RENDERING
DUNWOODY, GEORGIA
10-15-2018

PHILLIPS
architecture · consultants

1 - FRONT ELEVATION
SCALE: 1/16" = 1'-0"

2 - SIDE ELEVATION
SCALE: 1/16" = 1'-0"

3 - OVERALL ELEVATION
SCALE: 1/32" = 1'-0"

BRANCH PROPERTIES, LLC

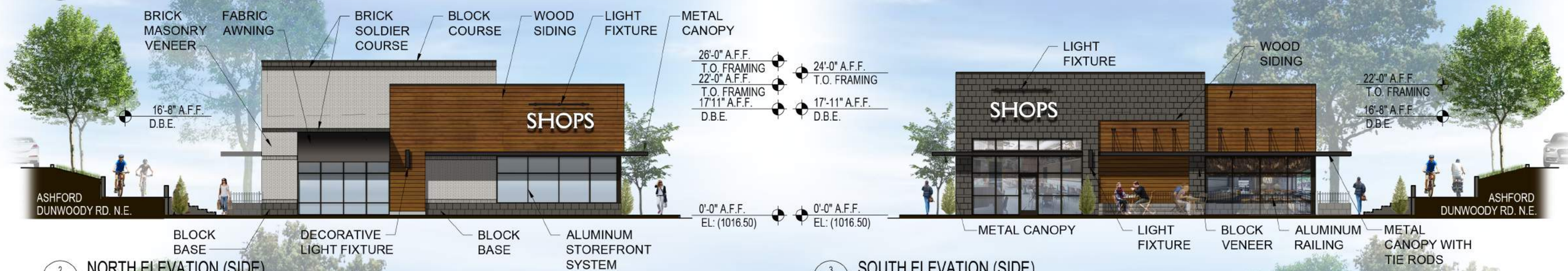
ASHFORD DUNWOODY ROAD
DUNWOODY, GA

JOB NUMBER: 1617702 | DATE: 03/01/2019 | BY: WHH / JMK / RF

DRAWING: BLDG 'A' AND ORGANIC GROCER
SCHEMATIC COLORED ELEVATIONS

PHILLIPS
ARCHITECTURE ▪ CONSULTANTS
5901 PEACHTREE DUNWOODY RD. ▪ SUITE A450 ▪ ATLANTA, GA 30328 ▪ 770.394.1616

1 LOD-4.1 **WEST ELEVATION (FRONT)**
SCALE: 1/16" = 1'-0"



2 LOD-4.1 **NORTH ELEVATION (SIDE)**
SCALE: 1/16" = 1'-0"

3 LOD-4.1 **SOUTH ELEVATION (SIDE)**
SCALE: 1/16" = 1'-0"

4 LOD-4.1 **EAST ELEVATION (REAR)**
SCALE: 1/16" = 1'-0"

PERIMETER MARKETPLACE

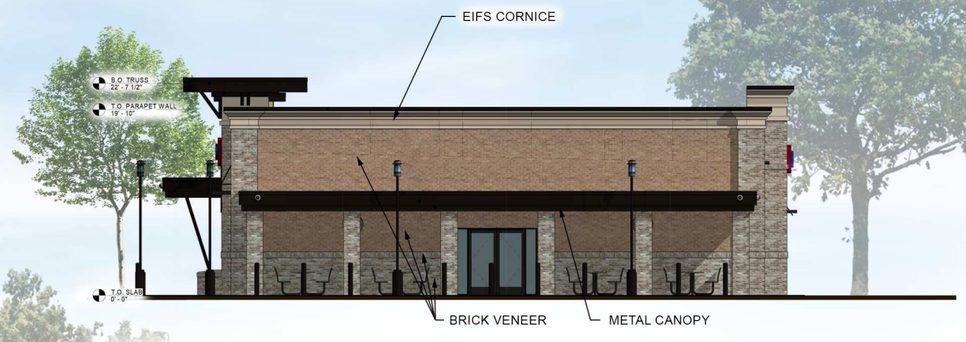
DUNWOODY, GEORGIA
03-01-2019

BRANCH PROPERTIES, LLC

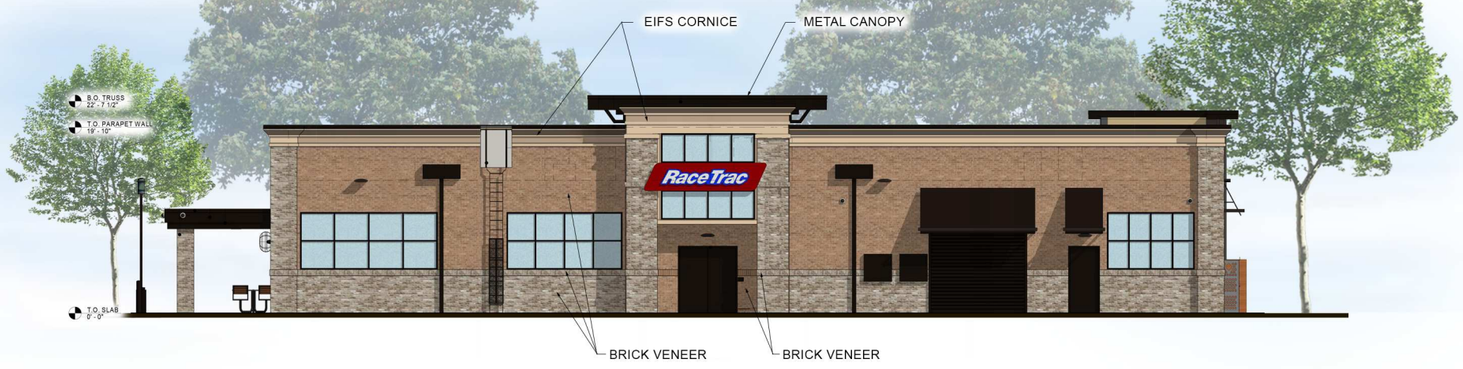
PHILLIPS architecture · consultants

1 WEST ELEVATION (FRONT)
SCALE: 1/16" = 1'-0"

2 NORTH ELEVATION (SIDE)
SCALE: 1/16" = 1'-0"



3 SOUTH ELEVATION (SIDE)
SCALE: 1/16" = 1'-0"



4 EAST ELEVATION (REAR)
SCALE: 1/16" = 1'-0"

BRANCH PROPERTIES, LLC

PERIMETER MARKETPLACE

DUNWOODY, GEORGIA
03-26-2019

RaceTrac

PERIMETER CENTER

Vision/Intent

Perimeter Center will be a visitor friendly "livable" regional center with first-class office, retail, entertainment, hotels, and high-end restaurants in a pedestrian and bicycle-oriented environment. The area will serve as a regional example of high quality design standards. The City of Dunwoody works in partnership with the Perimeter Community Improvement Districts (PCIDs) and adjacent communities to implement and compliment the framework plan and projects identified in the Perimeter Center Livable Centers Initiative study (LCI) and its current and future updates.

In the future, the area should add public gathering space and pocket parks, venues for live music and entertainment and continue to create transportation alternatives, mitigate congestion, and reduce remaining excessive surface parking. The area creates the conditions of possible true "live-work" environment. All future development continues to emphasize high quality design standards and building materials and incorporates the current national best practices on energy efficiency, where possible.

The City of Dunwoody recognizes the value of creating mixed-use, transit-oriented development within walking distance of public transit stations. However, the City has concerns about the impact of such development on the City's infrastructure and schools.

Future Development

The Perimeter Center Character Area will be divided into four subareas (PC-1, PC-2, PC-3, and PC-4) which match the draft proposed overlay district outline that the City is reviewing as part of the Perimeter Center Zoning Code. This area was the subject of a previous LCI Study. The cities of Dunwoody, Sandy Springs, and Brookhaven work in partnership with the Perimeter Community Improvement Districts (PCIDs) to implement and complement the framework plan and projects identified in the Perimeter Center Livable Centers Initiative study (LCI) and its current and future updates.

For specific recommendations on height, density and use refer to the provisions of the Perimeter Center Overlay District and Zoning, available from the Dunwoody Community Development Department.

FIGURE 13: Perimeter Center Character Area Map

PC-1: Intended to apply to the central core area of Perimeter Center, including the area directly surrounding the Dunwoody MARTA train station. This district allows for the highest intensity of buildings, a high level of employment uses, and active ground story uses and design that support pedestrian mobility.

PC-2: Made up primarily of employment uses and limited shop front retail, residential, and services.

PC-3: A smaller scale, less intensive commercial district, permitting both shop front and office buildings.

PC-4: Made up primarily of residential uses at a scale that provides a transition between the intensity of Perimeter Center and the surrounding single-family residential neighborhoods.

Action Items

▲ Perimeter Mall

▲ Housing in Perimeter Center

- New development will include amenities and provide public functional green space.
- New development will be mindful of school capacity issues and applicants will work with Board of Education and City for better resolution of school issues.
- Reduce surface parking and promote livable centers in the immediate areas surrounding MARTA station.
- Encourage hotel and convention development near MARTA in order to foster commerce along the mass transportation route.
- Achieve a lifelong-community for residents who can age in place with safe access to medical, recreational and other necessary services.
- Create bicycle, pedestrian and non-auto related transportation options to connect with the rest of the City of Dunwoody.

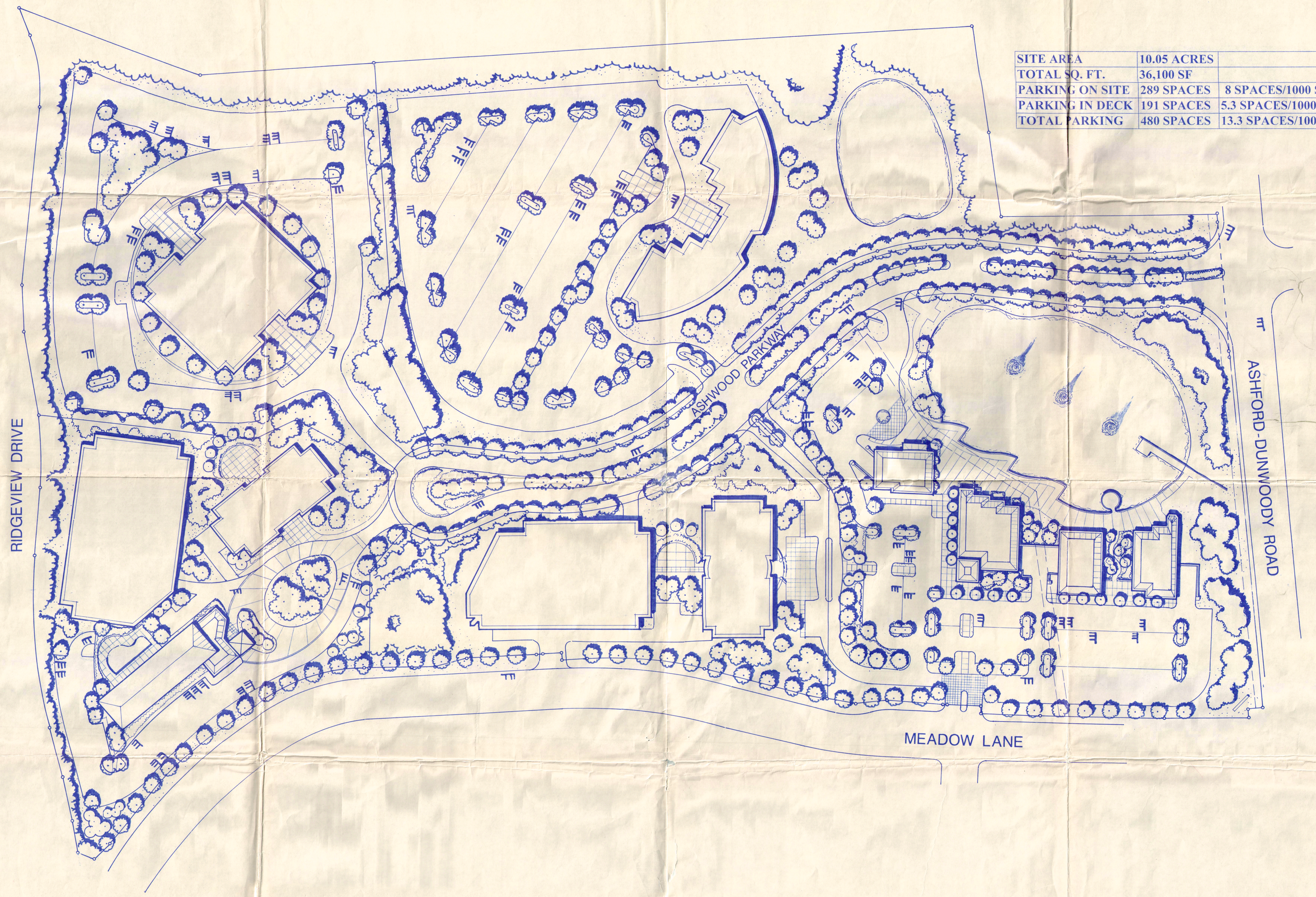
COMMUNITY IMPROVEMENT DISTRICT (CID)

A Community Improvement District (CID) is an authorized self-taxing district dedicated to Infrastructure improvements within its boundaries. The PCIDs are governed by two boards – one each for Fulton and DeKalb. The PCIDs spent or leveraged public funds to invest $55 million in Dunwoody alone; over $7 million from ARC's LCI program was directed to the PCIDs. This makes it one of the most, if not the most, successful CIDs in the region. The PCIDs' mission focuses exclusively on transportation improvements:

To work continuously to develop efficient transportation services, with an emphasis on access, mobility, diversification and modernization.

- The 2012 PCID Commuter Trail System Master Plan proposed a network of commuter trails connecting to the MARTA station.
- The 2012 PCID Perimeter Circulator Implementation report recommended circulator transit to provide first/ last mile connectivity for commuters and reduction in CID area congestion.
- The PCIDs have proposed Perimeter Park at the Dunwoody MARTA Station.
- Work with the Perimeter Transportation Management Association (TMA) to actively reduce automobile dependency and emerge as a leader in alternative transportation for the region.
- Work to strengthen Board of Education relationship for creative solutions to school capacity.
- Work with the PCIDs' boards to implement vision.
- Coordinate with the City of Sandy Springs for LCI Updates and implementation.
- Coordinate with the Atlanta Regional Commission (ARC) for implementation of future LCI study updates.
- Coordinate with MARTA regarding Bus Rapid Transit (BRT) (or other regional service) and urban design surrounding all transit stations.
- Look for ways to encourage live entertainment for the benefit of visitors and residents.

SITE AREA	10.05 ACRES	
TOTAL SQ. FT.	36,100 SF	
PARKING ON SITE	289 SPACES	8 SPACES/1000 SF
PARKING IN DECK	191 SPACES	5.3 SPACES/1000 SF
TOTAL PARKING	480 SPACES	13.3 SPACES/1000 SF



ARES REALTY CAPITAL, INCORPORATED

NORTH

ASHWOOD

ATLANTA, GEORGIA

0 30' 60' 120' 300'

HUGHES GOOD O'LEARY & RYAN

NOVEMBER 16, 1995

11REV. 3/89

DEKALB COUNTY
BOARD OF COMMISSIONERS

ZONING - AGENDA/MINUTES

ITEM NO. 1.

109

PREL.	___
ACTION	___
PUB.HRG.	X

MEETING DATE March 27, 1996

RESOLUTION	___
ORDINANCE	X
PROCLAMATION	___

SUBJECT: Rezoning Application - ARES, Inc.

COMMISSION DISTRICTS: 1 & 6

DEPARTMENT: Planning

PUBLIC HEARING: X Yes ___ No

ATTACHMENT: X Yes ___ No 35PP

INFORMATION CONTACT: Ray White or Charles Coleman
PHONE NUMBER: 371-2155 CC

PURPOSE:

CZ-96035 - To consider the application of ARES, Inc., to rezone property located at the northwest and southwest intersection of Ashford Dunwoody Road and Ashwood Parkway from OI (conditional) to OI (conditional) and C-1 (conditional). The property also has frontage on Meadow Lane Road, Ridgeview Drive, and contains 33.94 acres. The application is conditioned on a site plan and list of conditions.

SUBJECT PROPERTY:

18-349-1-(33-39); 18-350-2-1; 18-350-2-1; 18-350-4-2; (0000, 900, 1100, and 1200 Ashwood Parkway, 4985 Ridgeview; 0000 Ashford Dunwoody Road).

RECOMMENDATION(S):

PLANNING DEPARTMENT: Approval as conditioned. This request for OI and C-1 as conditioned by attached material is consistent with recommendations of the Comprehensive Plan and compatible with area development. The subject property was zoned OI on November 25, 1980, with a number of conditions relating to density, number of buildings, road improvements, access, etc. During the past fifteen years there have been 6 alterations of conditions approved on the property or portions of the property. The current application does not substantially change the allowances already granted for this planned office/commercial center. Basically, the application would modify the following:

1. Change the site plan.
2. Move the hotel site from the east side of the development to the west side and increase the number of hotel rooms from 250 (approved) to as many as 300.
3. Increase the number of buildings from six to nine.
4. Change the office floor area from 308,026 GSF to 265,000 GSF plus 36,100 GSF in as many as four restaurants.
5. Allow 40% of the restaurant parking to be valet parking in office parking area.

Staff supports the change because it will create very little impact on other properties in this area and it is in line with the conditions which are currently applied to the subject property.

#53

PLANNING COMMISSION: Denial of C-1 and approval of OI.
COMMUNITY COUNCIL: Approval.
NOTE: The recommendation of the Planning Commission actually recommends denial of the entire application. Sections 27-587 and 605 of the Zoning Ordinance establish the criteria for restaurants when accessory to primary uses in the OI district, otherwise, restaurants are not permitted in OI (See analysis).

110 FOR USE BY COMMISSION OFFICE/CLERK ONLY

ACTION:

MOTION was made by Commissioner Boyer, seconded by Commissioner Walldorff, and passed 7-0-0-0, to approve the rezoning application of ARES, Inc.

ADOPTED: MAR 27 1996 (DATE)

CERTIFIED: MAR 27 1996 (DATE)

PRESIDING OFFICER
DEKALB COUNTY BOARD OF COMMISSIONERS

CLERK,
DEKALB COUNTY BOARD OF COMMISSIONERS

MINUTES:

Ms. Kathryn M. Zickert, 125 Clairemont Avenue, Decatur, Georgia, 30030, spoke for the application.

No one spoke in opposition.

ATTACHMENT/\

	FOR	AGAINST	ABSTENTION	ABSENT
DISTRICT 1 - ELAINE BOYER	✓			#53
DISTRICT 2 - GALE WALLDORFF	✓			
DISTRICT 3 - JACQUELINE SCOTT	✓			
DISTRICT 4 - KEN DAVIS	✓			
DISTRICT 5 - WILLIAM C. "BILL" BROWN	✓			
DISTRICT 6 - JUDY YATES	✓			
DISTRICT 7 - PORTER SANFORD, III	✓			

HUDDLESTON & MEDORI
ATTORNEYS AT LAW

H. MARTIN HUDDLESTON
EUGENE A. MEDORI, JR.

OF COUNSEL
KATHRYN M. ZICKERT, P.C.
ROBERT G. MORTON

TWO DECATUR TOWNCENTER
125 CLAIREMONT AVENUE
SUITE 420
DECATUR, GEORGIA 30030

TELEPHONE (404) 377-3441
FACSIMILE (404) 377-3533

March 19, 1996

VIA TELEFACSIMILE
WITH ORIGINAL TO FOLLOW

Mr. Charles Coleman
Assistant Director of Planning
1300 Commerce Drive
Decatur, Georgia 30030

Re: Ares Rezoning Application CZ-96035

Dear Mr. Coleman:

Please accept this letter as a formal amendment to the above-referenced application. Specifically, I would ask that you substitute the following conditions for those originally submitted with the application:

1. The Subject Property will be developed substantially in accordance with the Conceptual Site Plan dated November 16, 1995 and on file with the Planning Department. However, this Plan is provided only as a general guide to intentions for development. In the event of a conflict between the Site Plan and these provisions, the latter shall control. Regardless of the number of buildings the density of the C-1 retail component shall not exceed 28,900 square feet of total net useable floor area and no more than 300 total hotel rooms on the O-I component.

2. Walking paths will be constructed along Meadow Lane from Ashford Dunwoody Road to the rear of the Subject Property. Walking paths also shall be constructed around the lake and to connect the office and hotel components with the retail component. Crosswalks will be painted as necessary to facilitate such pedestrian access.

3. Dumpsters for the project shall be fenced and/or landscaped.

4. Landscaping shall be provided substantially as provided on the Site Plan dated November 16, 1995 on file in the Planning Department. The obligation

Approved Conditions #53

ODLESTON & MEDORI
ATTORNEYS AT LAW

to provide landscaping shall include the obligation to maintain and replace same as necessary, and developer shall inspect and clean all buffer and park areas at least quarterly.

5. The present detention pond on the Subject Property will be preserved as a water feature incorporated into the retail component of this project.

6. Parking for the retail component shall be provided on the C-1 acreage at the rate of 10 spaces per 1000 square feet of net useable floor space (289 spaces at maximum density).

7. No additional curb cuts will be sought or provided onto Ashford Dunwoody Road.

8. Architectural design for the retail buildings and signage on the subject property shall be of consistent and complimentary design. The front and side building facades shall be predominantly of red brick, stucco, stone, glass and clapboard and classic in design. Any roof-mounted equipment for the operation of the buildings will be screened.

9. Parking lot lights shall be of controlled footprint, no more than 35' in height, and set to minimize light spillage.

10. Signage will be compatible with building architecture. Freestanding signs will be of a monument design consistent with building architecture. No more than one freestanding sign will be placed on Ashford Dunwoody Road, and no more than one on Meadow Lane or Ashwood Parkway for the retail component. No sign, sign structure or advertising device shall be located closer than 17 feet to the edge of a public road surface; however, no sign, sign structure or advertising device shall be permitted in the public right-of-way. Tenants may not erect roof or freestanding signs. Facade signage shall be limited to channel lit lettering and one sign will be permitted per business

Approved Conditions #53

HUDDLESTON & MEDORI
ATTORNEYS AT LAW

establishment. Temporary signs, regardless of their purpose, should not be posted for more than the number of days allowed by the ordinances of DeKalb County. Lighting shall be used to enhance architectural and landscape treatment so as to minimize impact of signage. Channel it signage also may be used on center identification monuments. The following signs may not be used:

1. Neon.
2. Flashing.
3. Rotating.
4. Florescent.
5. Sound-emitting.
6. Permanent window signs except for signs such as "open" or "closed", not greater in size than 1 foct by 3 feet.
7. Permanent banners.

Although I continue to maintain that use of the O-I parking deck here does not violate any cross-district parking regulations of the County, in any event this amendment avoids the issue in its entirety. Given the reduction in density we now are able to provide adequate spaces "on site" without the inherent need to eliminate the water feature.

Nonetheless, and in case any confusion remains in this regard, my client also must take the position that any restriction imposed upon this project under the guise of a cross-district parking restriction would be unconstitutional in violation of the due process guarantees of the Georgia Constitution, Article I, Sections I and III and Paragraphs I and III of the Georgia Constitution and the Fifth and Fourteenth Amendment of the United States Constitution. I make this statement due to the inconsistent and at best vague regulation of cross district parking contained within the Zoning Ordinance.

Approved Conditions #53

HUDDLESTON & MEDORI
ATTORNEYS AT LAW

As always, thank you for your assistance.

Sincerely,

Kathryn Zickert

Kathryn M. Zickert, P.C.

KMZ/hs

cc: Mr. David Dwyer
Mr. Russ Posey
Ms. Char Fortune
Commissioner Elaine Boyer
Jonathan Weintraub, Esquire
Mr. Bob Lundsten

#53

Approved Conditions

TRAFFIC IMPACT STUDY
FOR
ASHWOOD RESTAURANT PARK

DUNWOODY, GEORGIA

Prepared for:

Branch Ashwood Associates, LP
3340 Peachtree Road, Suite 600
Atlanta, Georgia 30326

Prepared By:

A&R Engineering Inc.
2160 Kingston Court, Suite O
Marietta, GA 30067
Tel: (770) 690-9255 Fax: (770) 690-9210
www.areng.com

April 16, 2019
A & R Project # 18-189

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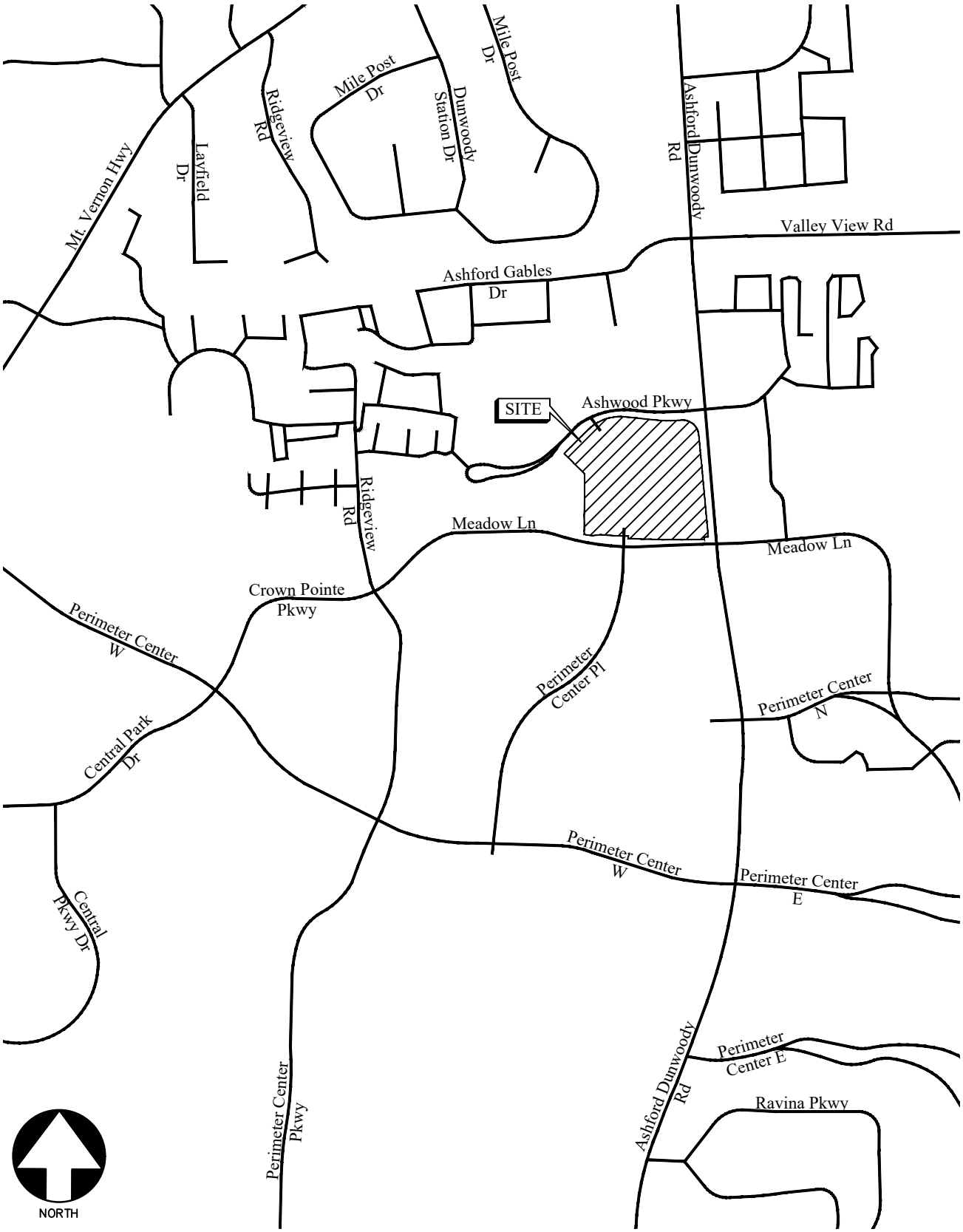
1.0 INTRODUCTION

The purpose of this study is to determine the traffic impact that will result from the proposed Ashwood Restaurant park located in the northwest corner of Ashford Dunwoody Road and Meadow Lane in Dunwoody, Georgia. The traffic analysis evaluates the current operations compared to the future conditions with the traffic generated by the development. The proposed development will consist of a 25,440 square foot supermarket, 35,400 square feet of retail/restaurant space, a 2,800 square foot bank, and an 8-pump (16 fueling positions) gas station/convenience market.

The development will make use of the existing full-access driveways on Ashwood Parkway and Meadow Lane that currently serve the 900 Ashwood building and existing restaurant developments. A new full-access driveway is proposed on Ashwood Parkway west of Ashford Dunwoody Road. In addition to the existing site access points, this study includes the evaluation of traffic operations at the intersections of:

1. Ashford Dunwoody Road at Meadow Lane
2. Ashford Dunwoody Road at Ashwood Parkway/Ashford Parkway
3. Ashwood Parkway at Existing Development Driveway
4. Meadow Lane at Perimeter Center Place

Recommendations to improve traffic operations have been identified and are discussed in detail in the following sections of the report. The location of the development and the surrounding roadway network is shown in Figure 1.



LOCATION MAP FIGURE 1

A&R Engineering Inc.

2.0 EXISTING FACILITIES / CONDITIONS

The following is a brief description of each of the roadway facilities located in proximity to the site:

2.1 Ashford Dunwoody Road

Ashford Dunwoody Road is a north-south, four-lane, median-divided roadway with a posted speed limit of 45 mph in the vicinity of the development. GDOT traffic counts (Station IDs 0893587 & 0893586) indicate that the daily traffic volume on Ashford Dunwoody Road in 2016 was 24,900 vehicles per day north of Ashwood Parkway and 49,400 vehicles per day north of Hammond Drive.

2.2 Meadow Lane

Meadow Lane is an east-west, four-lane, median-divided roadway with a posted speed limit of 25 mph west of Ashford Dunwoody Road in the vicinity of the development.

2.3 Perimeter Center Place

Perimeter Center Place is a north-south, four-lane, undivided roadway with a posted speed limit of 25 mph in the vicinity of the development.

2.4 Ashwood Parkway

Ashwood Parkway is an east-west, two-lane, divided roadway with a posted speed limit of 25 mph in the vicinity of the development.

2.5 Ashford Parkway

Ashford Parkway is a divided multi-lane roadway that serves the Post Crossing apartment community with no posted speed limit.

3.0 STUDY METHODOLOGY

In this study, the methodology used for evaluating traffic operations at each of the subject intersections is based on the criteria set forth in the Transportation Research Board's Highway Capacity Manual, 2010 edition (HCM 2010). Synchro software, which utilizes the HCM methodology, was used for the analysis. The following is a description of the methodology employed for the analysis of unsignalized and signalized intersections.

3.1 Unsignalized Intersections

For unsignalized intersections at which the side street or minor street is controlled by a stop sign, the criteria for evaluating traffic operations are the level-of-service (LOS) for the turning movements at the intersection and the level-of-service for the overall intersection. Level-of-service is based on the average controlled delay incurred at the intersection. Controlled delay for unsignalized intersections includes initial deceleration delay, queue move-up time, stopped delay, and final acceleration delay. Several factors affect the controlled delay for unsignalized intersections, such as the availability and distribution of gaps in the conflicting traffic stream, critical gaps, and follow-up time for a vehicle in the queue.

Level-of-service is assigned a letter designation from "A" through "F". Level-of-service "A" indicates excellent operations with little delay to motorists, while level-of-service "F" exists when there are insufficient gaps of acceptable size to allow vehicles on the side street to cross safely, resulting in extremely long total delays and long queues. The level-of-service criteria for two-way stop-controlled and all-way stop-controlled (unsignalized) intersections are given in Table 1.

TABLE 1 – LEVEL-OF-SERVICE CRITERIA FOR UNSIGNALIZED INTERSECTIONS

Level-of-service	Average Delay (sec)
A	≤ 10
B	> 10 and ≤ 15
C	> 15 and ≤ 25
D	> 25 and ≤ 35
E	> 35 and ≤ 50
F	> 50

Source: Highway Capacity Manual

3.2 Signalized Intersections

For signalized intersections, it is necessary to evaluate both capacity and level-of-service in order to evaluate the overall operation of the intersection. The capacity analysis of an intersection is performed by comparing the volume of traffic using the various lane groups at the intersection to the capacity of those lane groups. This results in a volume/capacity (v/c) ratio for each lane group. A v/c ratio greater than 1.0 indicates that the volume of traffic has exceeded the capacity available, resulting in a temporary excess of demand. Although the capacity of the entire intersection is not defined, a composite v/c ratio for the sum of the critical lane groups within the intersection is computed. This composite v/c ratio is an indication of the overall intersection sufficiency.

Level-of-service for a signalized intersection is defined in terms of average controlled delay per vehicle, which is composed of initial deceleration delay, queue move-up time, stopped delay, and final acceleration delay. The level-of-service criteria for signalized intersections, based on average controlled delay, are shown in Table 2. Level-of-service "A" indicates operations with very low controlled delay, while level-of-service "F" describes operations with extremely high average controlled delay. Level-of-service "E" is typically considered to be the limit of acceptable delay, and level-of-service "F" is considered unacceptable by most drivers.

TABLE 2 – LEVEL-OF-SERVICE CRITERIA FOR SIGNALIZED INTERSECTIONS

Level-of-service	Average Control Delay (sec)
A	≤ 10
B	> 10 and ≤ 20
C	> 20 and ≤ 35
D	> 35 and ≤ 55
E	> 55 and ≤ 80
F	> 80

Source: Highway Capacity Manual

4.0 EXISTING TRAFFIC ANALYSIS

Existing traffic counts and intersection geometric data were obtained at the following study intersections:

1. Ashford Dunwoody Road at Meadow Lane
2. Ashford Dunwoody Road at Ashwood Parkway/Ashford Parkway
3. Ashwood Parkway at Existing Development Driveway
4. Meadow Lane at Perimeter Center Place

Turning movement counts were collected on Wednesday, January 9, 2019. All turning movement counts were recorded during the AM and PM peak hours between 7:00 a.m. to 9:00 a.m. and 4:00 p.m. to 6:00 p.m., respectively. The four consecutive 15-minute interval volumes that summed to produce the highest volume at the intersections were then determined. These volumes make up the peak hour traffic volumes for the intersections counted and are shown in Figure 2.

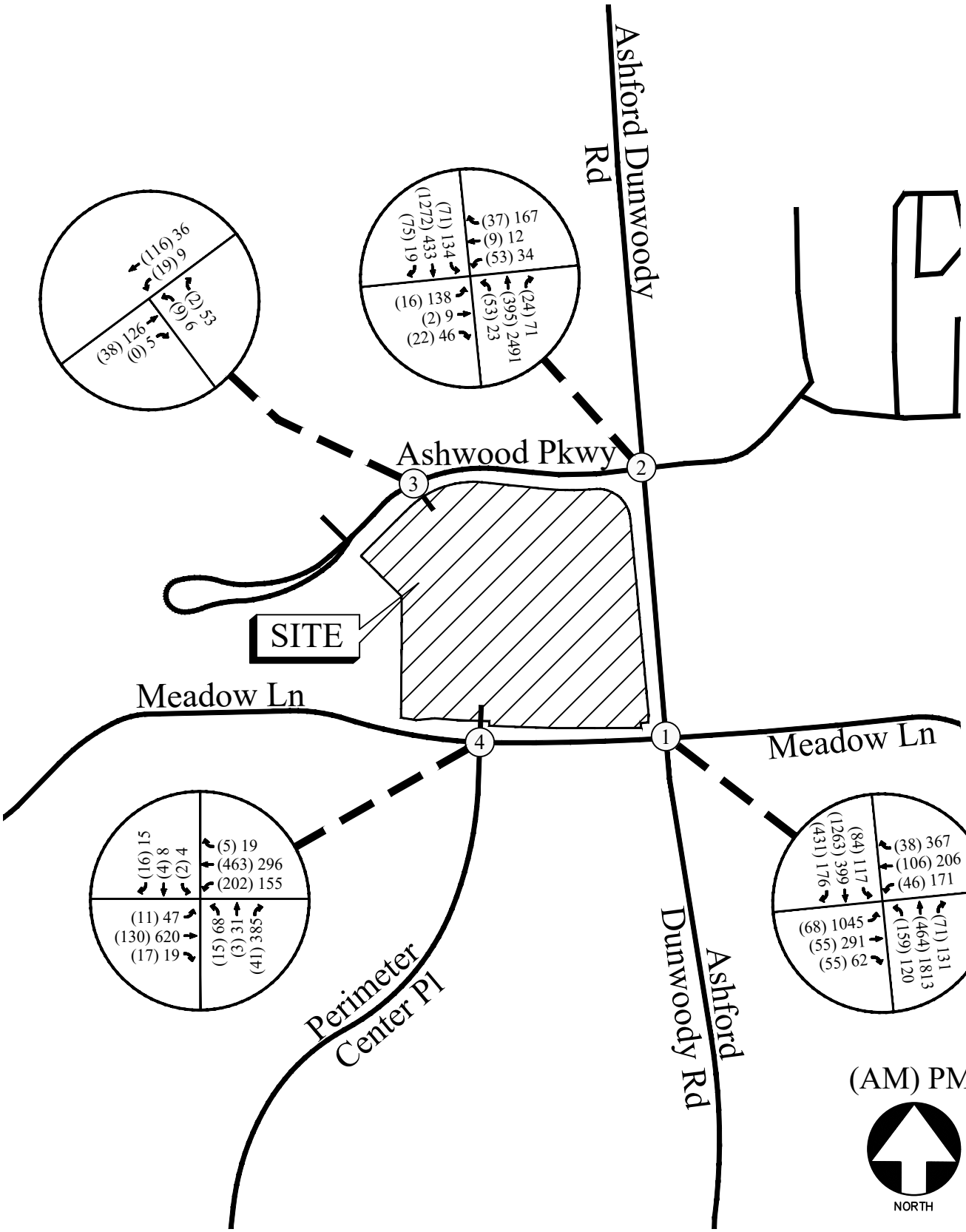
4.1 Existing Traffic Operations

Existing traffic operations were analyzed at the study intersections in accordance with the HCM methodology and the results of the analysis are shown below in Table 3. The existing traffic control and lane geometry for the intersections is shown in Figure 3.

TABLE 3 – EXISTING INTERSECTION OPERATIONS

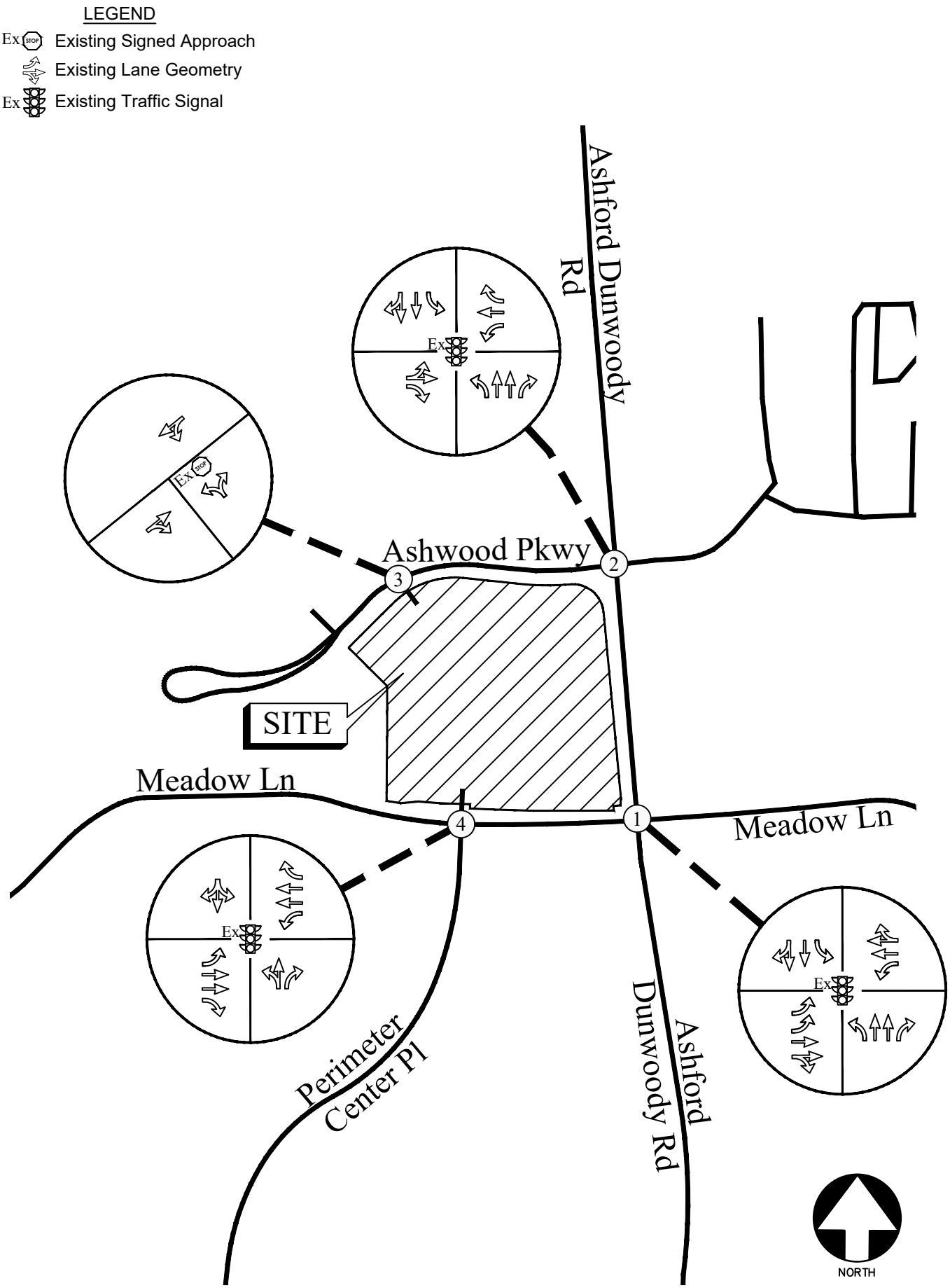
	Intersection	Traffic Control	AM Peak Hour LOS (Delay)	PM Peak Hour LOS (Delay)
1	**Ashford Dunwoody @ Meadow Ln**	Signalized	**B (14.5)**	**F (236.1)**
	-Eastbound Approach		E (77.2)	F (389.3)
	-Westbound Approach		E (72.8)	F (106.4)
	-Northbound Approach		A (8.0)	F (238.2)
	-Southbound Approach		A (4.6)	E (60.3)
2	**Ashford Dunwoody @ Ashwood Pkwy**	Signalized	**B (13.6)**	**E (56.3)**
	-Eastbound Approach		E (71.3)	F (83.3)
	-Westbound Approach		E (63.6)	E (65.5)
	-Northbound Approach		B (12.0)	D (49.0)
	-Southbound Approach		A (9.9)	E (77.5)
3	**Ashwood Pkwy @ Private Drwy**	Signalized		
	-Westbound Left		A (7.3)	A (7.5)
	-Northbound Approach		A (9.6)	A (9.4)
4	**Meadow Ln @ Perimeter Center Pl**	Signalized	**A (4.4)**	**A (9.5)**
	-Eastbound Approach		A (3.3)	A (5.8)
	-Westbound Approach		A (1.5)	A (2.7)
	-Northbound Approach		E (56.9)	E (56.6)
	-Southbound Approach		E (57.7)	D (51.5)

The results of the existing conditions analysis indicate that the two signalized intersections on Ashford Dunwoody Road are currently operating below an acceptable level-of-service during the PM peak hour. These areas are addressed in the Future Traffic Analysis section of this report.



EXISTING WEEKDAY PEAK HOUR VOLUMES FIGURE 2

A&R Engineering Inc.



EXISTING TRAFFIC CONTROL AND LANE GEOMETRY FIGURE 3

A&R Engineering Inc.

5.0 PROPOSED DEVELOPMENT

The proposed site will be located in the northwest corner of Ashford Dunwoody Road and Meadow Lane in Dunwoody, Georgia. The development will consist of a 25,440 square foot supermarket, 35,400 square feet of retail/restaurant space, a 2,800 square foot bank, and an 8-pump (16 fueling positions) gas station/convenience market. A site plan is shown in Figure 4.

The development proposes access at the following locations:

- Site Driveway 1: New full-access driveway on Ashwood Parkway (Intersection 6)
- Site Driveway 2: Existing full-access driveway on Ashwood Parkway (Intersection 3)
- Site Driveway 3: "Private Road" full-access point, aligned with 1200 Ashwood development (Intersection 5)
- Site Driveway 4: "Private Road" full-access point, aligned with Perimeter Center Place (Intersection 4)

5.1 Trip Generation

Trip generation estimates for the project were based on the rates and equations published in the 10th edition of the Institute of Transportation Engineers (ITE) Trip Generation report. This reference contains traffic volume count data collected at similar facilities nationwide. The trip generation was based on the following ITE Land Use: *820 – Shopping Center*, *850 – Supermarket*, *912 – Drive-In Bank*, and *960 – Super Convenience Market/Gas Station*. Due to the nature of the development, pass-by reductions have been applied per ITE standards. The calculated total trip generation for the proposed development is shown in Table 4.

TABLE 4 – TRIP GENERATION

Land Use	Size	AM Peak Hour			PM Peak Hour			24-Hour
		Enter	Exit	Total	Enter	Exit	Total	Two-way
Shopping Center	35,400 sf	21	12	33	65	70	135	1,336
Pass-by reductions (0%) 34%		*0*	*0*	*0*	*-22*	*-24*	*-46*	*-454*
Supermarket	25,440 sf	58	39	97	143	138	281	3,016
Pass-by reductions (0%) 36%		*0*	*0*	*0*	*-51*	*-50*	*-101*	*-1,010*
Drive-In Bank	2,800 sf	15	12	27	29	28	57	232
Pass-by reductions (29%) 35%		*-4*	*-3*	*-7*	*-10*	*-10*	*-20*	*-81*
Super Convenience Market/Gas Station	16 pumps	225	224	449	184	183	367	3,688
Pass-by reductions (62%) 56%		*-140*	*-139*	*-279*	*-103*	*-102*	*-205*	*-2,050*
Total Site Trips (without reductions)		319	287	606	421	419	840	8,272
New External Trips (with reductions)		**175**	**145**	**320**	**235**	**233**	**468**	**4,677**

The proposed development will be replacing the existing restaurant park which consists of a total of 25,375 square feet of restaurant space. None of the restaurants are open for breakfast; therefore, for the purpose of trip generation estimates, the following ITE Land Use was used: *931 – Quality Restaurant*. The trip generation for the existing restaurant park was subtracted from the total site-generated traffic for the development to account for any decreases in traffic after the existing restaurants are closed. The

total new trips added to the road network after removal of the existing restaurants are shown below in Table 5.

TABLE 5 – TOTAL NEW TRAFFIC ADDED TO ROAD NETWORK

Totals	AM Peak Hour			PM Peak Hour			24-Hour
	Enter	Exit	Total	Enter	Exit	Total	Two-way
Total New External Trips (from Table 4)	175	145	320	235	233	468	4,677
Removed Restaurant Park Traffic	-9	-10	-19	-74	-36	-110	-1,247
Total New Traffic Added to Road Network	**+166**	**+135**	**+301**	**+161**	**+197**	**+358**	**+3,430**

5.2 Trip Distribution

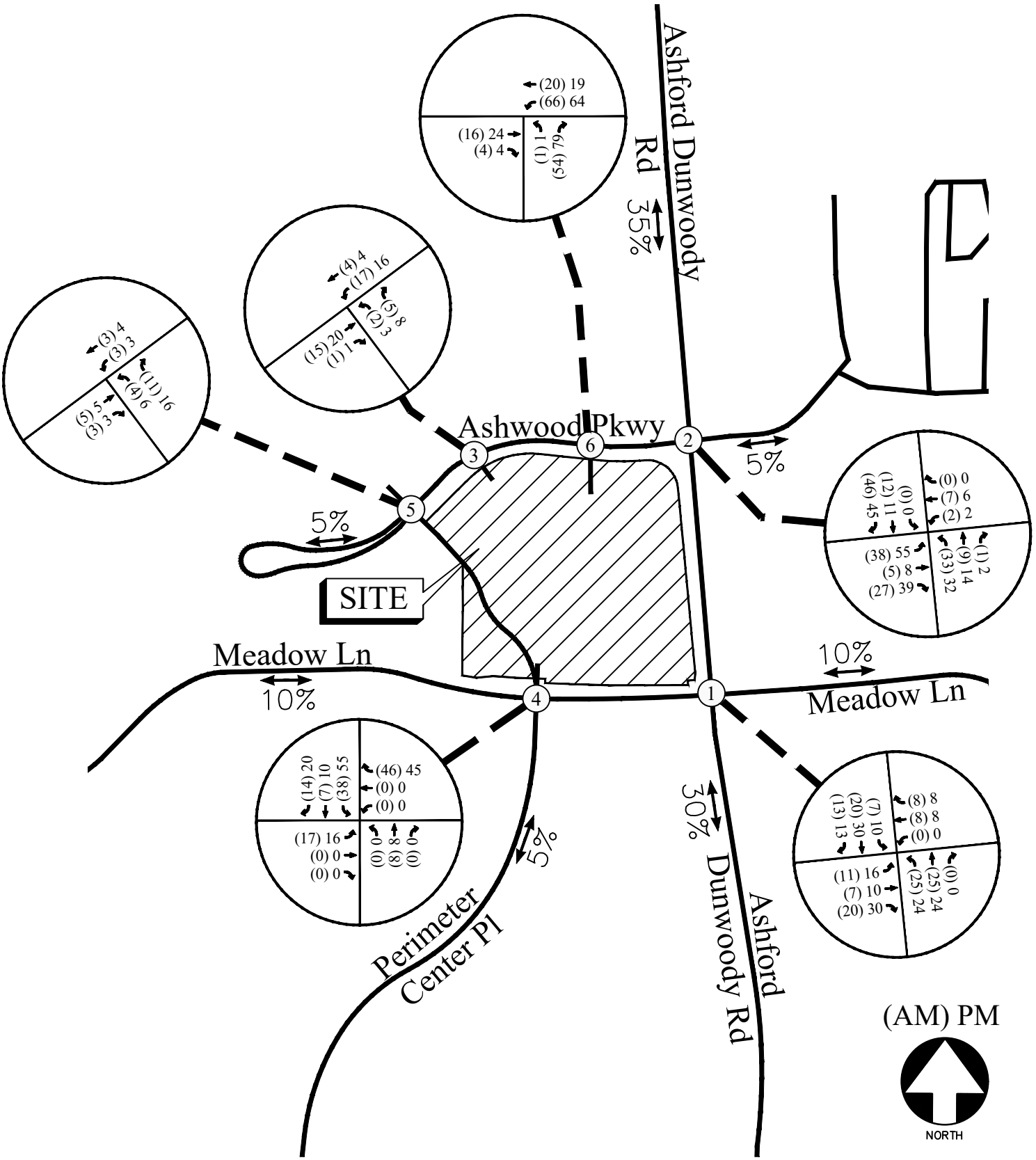
The trip distribution describes how traffic arrives and departs from the site. An overall trip distribution was developed for the site based on a review of the existing travel patterns in the area and the locations of major roadways and highways that will serve the development. The new peak hour traffic volumes added to the road network, shown in Table 5, were assigned to the study area intersections based on this distribution. The outer-leg distribution and AM and PM peak hour new traffic generated by the site is shown in Figure 5.

PERIMETER MARKETPLACE

DUNWOODY, GEORGIA
04-09-2019

BRANCH PROPERTIES, LLC

PHILLIPS architecture · consultants



OUTER LEG TRIP DISTRIBUTION AND SITE-GENERATED PEAK HOUR VOLUMES

FIGURE 5

A&R Engineering Inc.

6.0 FUTURE TRAFFIC ANALYSIS (2021)

The future traffic operations are analyzed for the "No-Build" and "Build" conditions. This provides a basis of reference for determining both the contribution of the site to overall traffic conditions and the additional improvements needed to provide sufficient site access and capacity for passing traffic.

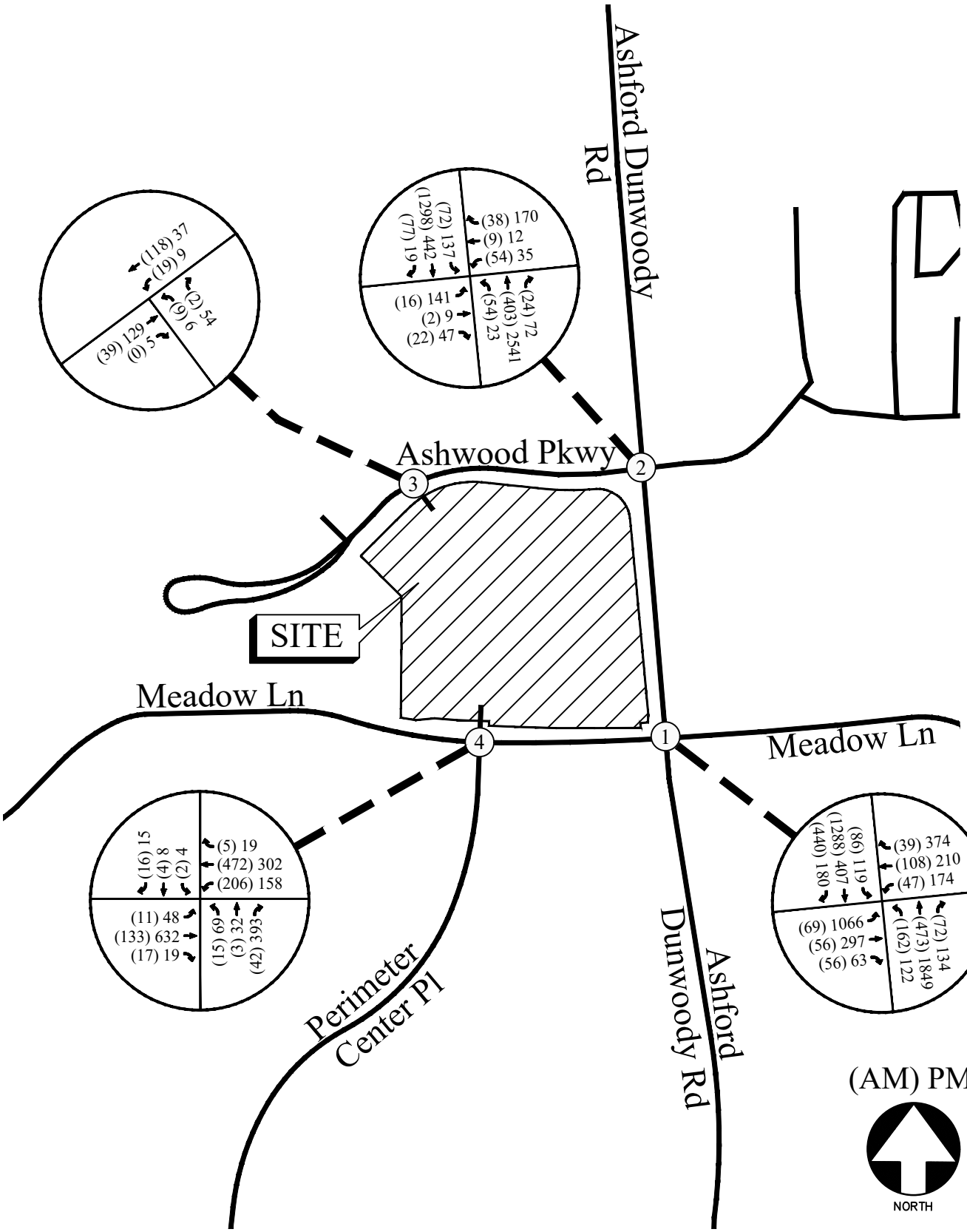
Improvements that are identified as "System Improvements" are recommended to address deficiencies in the roadway network and can be considered as benefitting traffic that may or may not include site-generated traffic and are recommended for the municipality to use in future planning efforts. "Site Mitigation Improvements" are recommended as directly benefitting proposed site-generated traffic.

6.1 Future "No-Build" Conditions

The "No-Build" (or background) conditions provide an assessment of how traffic will operate in the study horizon year without the study site being developed as proposed, with projected increases in through traffic volumes due to normal annual growth. The Future "No-Build" volumes consist of the existing traffic volumes (Figure 2) plus increases for annual growth of through traffic.

6.1.1 Annual Traffic Growth

In order to evaluate future traffic operations in this area, a projection of normal traffic growth was applied to the existing volumes. The Georgia Department of Transportation recorded average daily traffic volumes at several locations in the vicinity of the site. Reviewing the growth over the last several years revealed growth of approximately 1% in the area. This growth factor was applied to the existing traffic volumes between collector and arterial roadways in order to estimate the future year traffic volumes prior to the addition of site-generated traffic. The resulting Future "No-Build" volumes on the roadway are shown in Figure 6.



FUTURE (NO-BUILD) PEAK HOUR VOLUMES FIGURE 6

A&R Engineering Inc.

6.1.2 Future "No-Build" Traffic Operations

The future "No-Build" traffic operations were analyzed using the volumes in Figure 6, and the results are shown in Table 6 below. The results of the analysis, including the recommended system improvements, are discussed in detail in Section 6.1.3.

TABLE 6 – FUTURE "NO-BUILD" INTERSECTION OPERATIONS

	Intersection	No-Build Conditions: LOS (Delay)			
		NO IMPROVEMENTS		WITH IMPROVEMENTS	
		AM Peak	PM Peak	AM Peak	PM Peak
1	**Ashford Dunwoody @ Meadow Ln**	**B (14.9)**	**F (243.7)**	**B (15.1)**	**E (73.8)**
	-Eastbound Approach	E (77.4)	F (402.7)	E (75.1)	F (110.5)
	-Westbound Approach	E (72.7)	F (110.3)	E (68.1)	E (78.7)
	-Northbound Approach	A (8.3)	F (241.0)	A (9.3)	E (57.7)
	-Southbound Approach	A (5.1)	E (73.6)	A (6.5)	D (41.8)
2	**Ashford Dunwoody @ Ashwood Pkwy**	**B (13.8)**	**E (55.5)**	**B (15.0)**	**B (16.7)**
	-Eastbound Approach	E (71.3)	F (83.5)	E (71.3)	F (83.5)
	-Westbound Approach	E (63.7)	E (65.1)	E (63.7)	E (65.1)
	-Northbound Approach	B (12.1)	E (61.5)	B (17.4)	A (6.7)
	-Southbound Approach	B (10.1)	B (19.3)	B (10.1)	C (25.4)
3	**Ashwood Pkwy @ Private Drwy**				
	-Westbound Left	A (7.3)	A (7.5)	A (7.3)	A (7.5)
	-Northbound Approach	A (9.6)	A (9.4)	A (9.6)	A (9.4)
4	**Meadow Ln @ Perimeter Center Pl**	**A (4.3)**	**A (9.6)**	**A (4.3)**	**A (9.6)**
	-Eastbound Approach	A (3.3)	A (5.8)	A (3.3)	A (5.8)
	-Westbound Approach	A (1.5)	A (2.8)	A (1.5)	A (2.8)
	-Northbound Approach	E (56.9)	E (56.5)	E (56.9)	E (56.5)
	-Southbound Approach	E (57.7)	D (51.4)	E (57.7)	D (51.4)

6.1.3 Recommendations for System Improvements

One or more of the study intersections are found to have delays that will (or currently) exceed the local level-of-service threshold ("D" or better) without any added traffic from the proposed development. These intersections have been identified below along with potential system improvements for the local municipality to consider in their future planning efforts.

Ashford Dunwoody Road at Meadow Lane

This intersection is currently operating below the acceptable level-of-service "D" during the PM peak hour. Recommendations for system improvements to the intersection have been made and are outlined below.

- Create a third through lane on Ashford Dunwoody Road using the existing dedicated right turn lanes beginning at Perimeter Center E and ending at Mt. Vernon Road.
- Reconfigure the eastbound approach to operate with three dedicated left turn lanes and a shared through/right turn lane.
- Reconfigure the westbound approach to operate with a dedicated left turn lane, a dedicated through lane, and a dedicated right turn lane.

It should be noted that although operations would improve with the above improvements, they will be challenging to implement due to the limited availability of right-of-way and presence of large transmission lines along Ashford Dunwoody Road that would need to be relocated.

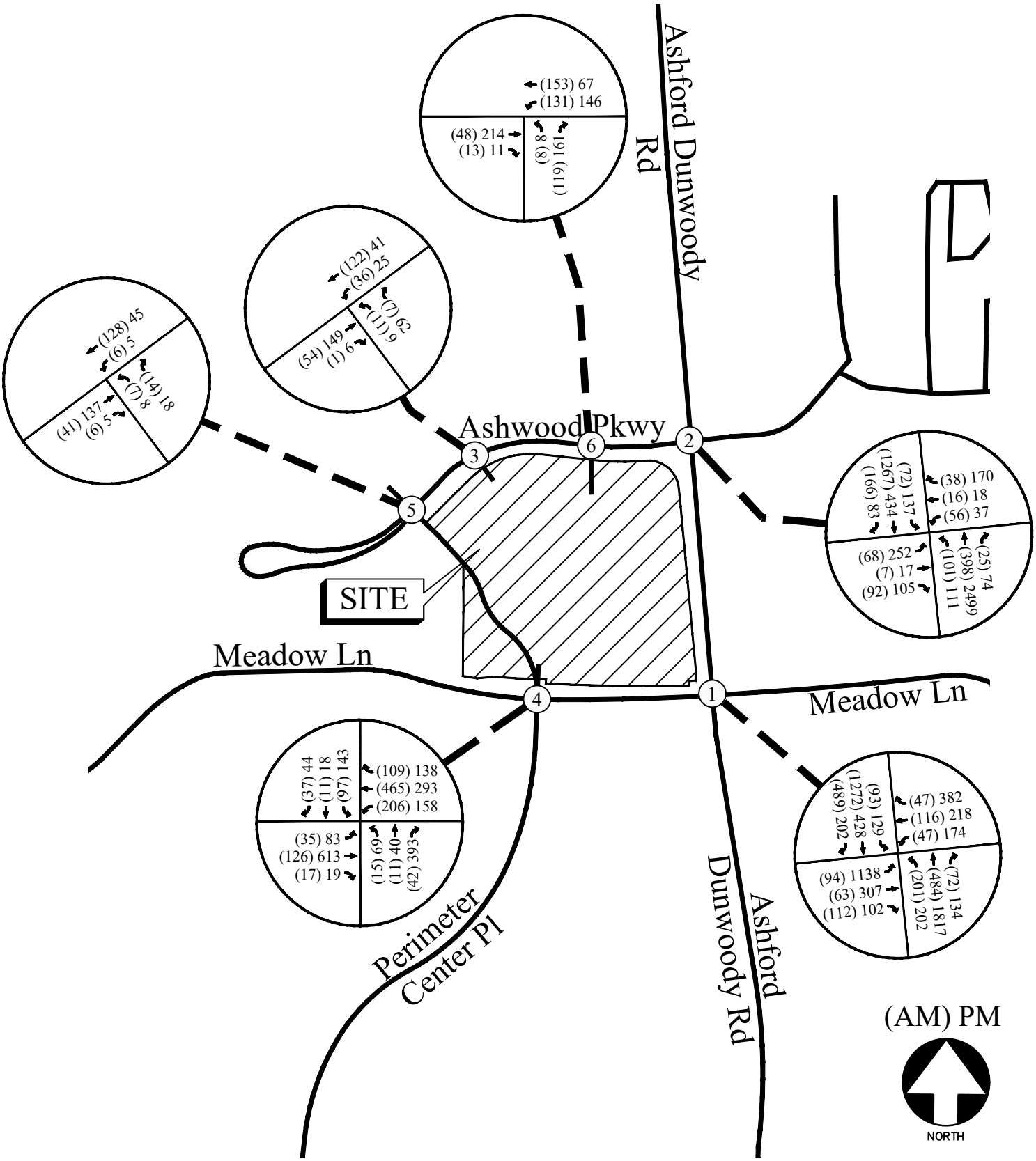
6.2 Future "Build" Conditions

The "Build" or post-development conditions include the estimated background traffic from the "No-Build" conditions plus the added traffic from the proposed development. The "Build" conditions are evaluated to determine effectiveness of the recommended system and site mitigation improvements. The additional traffic volumes from the site (Figure 5) were added to base traffic volumes (Figure 6) to calculate the future traffic volumes after the construction of the development. These total future traffic volumes are shown in Figure 7.

6.2.1 Site Access Configuration

The following access configuration was utilized when modeling the proposed site driveway intersections:

- Site Driveway 1: New full-access driveway on Ashwood Parkway
    - A median break on Ashwood Parkway is proposed for this driveway and will consist of one entering lane and one exiting lane.
    - The intersection is planned to be unsignalized with a STOP sign on the northbound (driveway) approach.
    - Based on GDOT standards, a westbound left turn lane is warranted on Ashwood Parkway for entering traffic. (See Appendix)
    - Based on GDOT standards, an eastbound right turn lane is not warranted on Ashwood Parkway for entering traffic. (See Appendix)
- Site Driveway 2: Existing full-access driveway on Ashwood Parkway
    - This driveway currently serves as the access to the existing restaurant park and will continue to operate with one entering lane and one exiting lane.
    - The intersection will continue to be unsignalized with no recommended change to the existing lane geometry.
- Site Driveway 3: "Private Road" full-access point, aligned with 1200 Ashwood development
    - This driveway currently serves as the access to the existing restaurant park/900 Ashwood development and will continue to operate with one entering lane and one exiting lane.
    - The intersection will continue to be unsignalized with no recommended change to the existing lane geometry.
- Site Driveway 4: "Private Road" full-access point, aligned with Perimeter Center Place
    - This driveway currently serves as the access to the existing restaurant park/900 Ashwood and will continue to operate with one entering lane and one exiting lane.
    - The intersection will continue to be signalized with no recommended change to the existing signal phasing or lane geometry.



FUTURE (BUILD) PEAK HOUR VOLUMES FIGURE 7

A&R Engineering Inc.

6.2.2 Future "Build" Traffic Operations

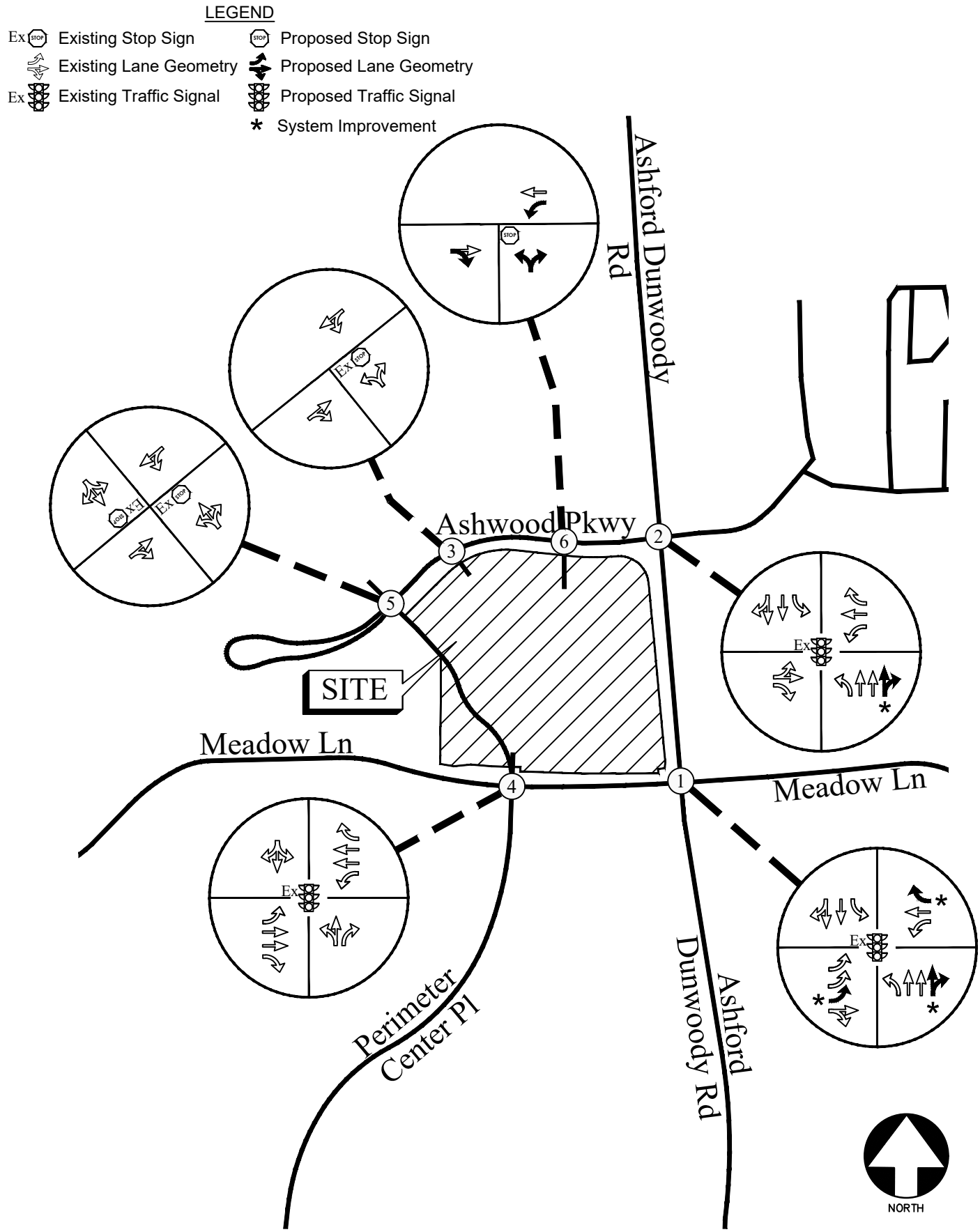
The "Build" conditions are evaluated to determine effectiveness of the recommended system and site mitigation improvements. Recommendations on traffic control and lane geometry are shown graphically in Figure 8. The results of the analysis, including the recommended site improvements, are discussed in detail in Section 6.2.3.

TABLE 7 – FUTURE "BUILD" INTERSECTION OPERATIONS

	Intersection	Build Conditions: LOS (Delay)			
		NO IMPROVEMENTS		WITH IMPROVEMENTS	
		AM Peak	PM Peak	AM Peak	PM Peak
1	**Ashford Dunwoody @ Meadow Ln**	**C (20.9)**	**F (224.3)**	**C (23.1)**	**E (73.4)**
	-Eastbound Approach	F (93.4)	F (382.2)	E (75.0)	F (121.4)
	-Westbound Approach	E (65.1)	F (102.7)	E (60.1)	F (90.2)
	-Northbound Approach	B (13.1)	F (208.7)	B (15.6)	D (48.5)
	-Southbound Approach	A (8.5)	E (71.0)	B (15.0)	C (33.4)
2	**Ashford Dunwoody @ Ashwood Pkwy**	**B (18.2)**	**F (89.0)**	**B (19.3)**	**B (18.0)**
	-Eastbound Approach	E (71.5)	F (147.4)	E (71.5)	F (147.4)
	-Westbound Approach	E (58.3)	E (57.4)	E (58.3)	E (57.4)
	-Northbound Approach	B (14.4)	F (91.4)	B (19.5)	A (0.8)
	-Southbound Approach	B (13.8)	E (66.4)	B (13.8)	C (20.3)
3	**Ashwood Pkwy @ Private Drwy**				
	-Westbound Left	A (7.4)	A (7.6)	A (7.4)	A (7.6)
	-Northbound Approach	A (9.7)	A (9.8)	A (9.7)	A (9.8)
4	**Meadow Ln @ Perimeter Center Pl**	**B (11.6)**	**B (16.1)**	**B (11.6)**	**B (16.2)**
	-Eastbound Approach	A (6.4)	B (10.3)	A (6.4)	B (10.3)
	-Westbound Approach	A (3.6)	A (5.5)	A (3.6)	A (5.5)
	-Northbound Approach	D (47.6)	D (45.2)	D (47.6)	D (45.2)
	-Southbound Approach	D (54.9)	D (51.7)	D (54.9)	D (51.7)
5	**Ashwood Pkwy @ Private Road**				
	-Westbound Left	A (7.3)	A (7.5)	A (7.3)	A (7.5)
	-Northbound Approach	A (9.0)	A (9.4)	A (9.0)	A (9.4)
6	**Ashwood Pkwy @ Site Drwy 1**				
	-Westbound Left	A (7.6)	A (8.1)	A (7.6)	A (8.1)
	-Northbound Approach	A (9.5)	B (11.2)	A (9.5)	B (11.2)

6.2.3 Recommendations for Site Mitigation Improvements

Improvements that are identified as mitigation improvements address deficiencies that are caused by site traffic and can be identified as related to the proposed development. Because operations would not be impacted beyond the projected "No-Build" conditions, site mitigation improvements have not been identified outside of the recommended configuration for the site access points.



FUTURE TRAFFIC CONTROL AND LANE GEOMETRY FIGURE 8

A&R Engineering Inc.

7.0 CONCLUSIONS AND RECOMMENDATIONS

Traffic impacts were evaluated for the added traffic from the proposed Ashwood Restaurant park located in the northwest corner of Ashford Dunwoody Road and Meadow Lane in Dunwoody, Georgia. will consist of a 25,440 square foot supermarket, 35,400 square feet of retail/restaurant space, a 2,800 square foot bank, and an 8-pump (16 fueling positions) gas station/convenience market.

The development proposes access at the following locations:

- Site Driveway 1: New full-access driveway on Ashwood Parkway
- Site Driveway 2: Existing full-access driveway on Ashwood Parkway
- Site Driveway 3: "Private Road" full-access point, aligned with 1200 Ashwood development
- Site Driveway 4: "Private Road" full-access point, aligned with Perimeter Center Place

Existing and future operations after completion of the project were analyzed at the intersections of:

1. Ashford Dunwoody Road at Meadow Lane
2. Ashford Dunwoody Road at Ashwood Parkway/Ashford Parkway
3. Ashwood Parkway at Existing Development Driveway
4. Meadow Lane at Perimeter Center Place

The analysis included the evaluation of Future operations for the "No-Build" and "Build" conditions, both of which account for increases in annual growth of through traffic. The results of the analysis are listed below:

7.1 System Improvements for "No-Build" Conditions

One or more of the study intersections are found to have delays that will (or currently) exceed the local level-of-service threshold ("D" or better) without any added traffic from the proposed development. These intersections have been identified below along with potential system improvements for the local municipality to consider in their future planning efforts.

Ashford Dunwoody Road at Meadow Lane

This intersection is currently operating below the acceptable level-of-service "D" during the PM peak hour. Recommendations for system improvements to the intersection have been made and are outlined below.

- Create a third through lane on Ashford Dunwoody Road using the existing dedicated right turn lanes beginning at Perimeter Center E and ending at Mt. Vernon Road.
- Reconfigure the eastbound approach to operate with three dedicated left turn lanes and a shared through/right turn lane.
- Reconfigure the westbound approach to operate with a dedicated left turn lane, a dedicated through lane, and a dedicated right turn lane.

It should be noted that although operations would improve with the above improvements, they will be challenging to implement due to the limited availability of right-of-way and presence of large transmission lines along Ashford Dunwoody Road that would need to be relocated.

7.2 Site Access Configuration

The following access configuration was utilized when modeling the proposed site driveway intersections:

- Site Driveway 1: New full-access driveway on Ashwood Parkway
    - A median break on Ashwood Parkway is proposed for this driveway and will consist of one entering lane and one exiting lane.
    - The intersection is planned to be unsignalized with a STOP sign on the northbound (driveway) approach.
    - Based on GDOT standards, a westbound left turn lane is warranted on Ashwood Parkway for entering traffic. (See Appendix)
    - Based on GDOT standards, an eastbound right turn lane is not warranted on Ashwood Parkway for entering traffic. (See Appendix)
- Site Driveway 2: Existing full-access driveway on Ashwood Parkway
    - This driveway currently serves as the access to the existing restaurant park and will continue to operate with one entering lane and one exiting lane.
    - The intersection will continue to be unsignalized with no recommended change to the existing lane geometry.
- Site Driveway 3: "Private Road" full-access point, aligned with 1200 Ashwood development
    - This driveway currently serves as the access to the existing restaurant park/900 Ashwood development and will continue to operate with one entering lane and one exiting lane.
    - The intersection will continue to be unsignalized with no recommended change to the existing lane geometry.
- Site Driveway 4: "Private Road" full-access point, aligned with Perimeter Center Place
    - This driveway currently serves as the access to the existing restaurant park/900 Ashwood and will continue to operate with one entering lane and one exiting lane.
    - The intersection will continue to be signalized with no recommended change to the existing signal phasing or lane geometry.

7.3 Site Mitigation Improvements for "Build" Conditions

Improvements that are identified as mitigation improvements address deficiencies that are caused by site traffic and can be identified as related to the proposed development. Because operations would not be impacted beyond the projected "No-Build" conditions, site mitigation improvements have not been identified outside of the recommended configuration for the site access points.

Appendix

EXISTING INTERSECTION TRAFFIC COUNTS

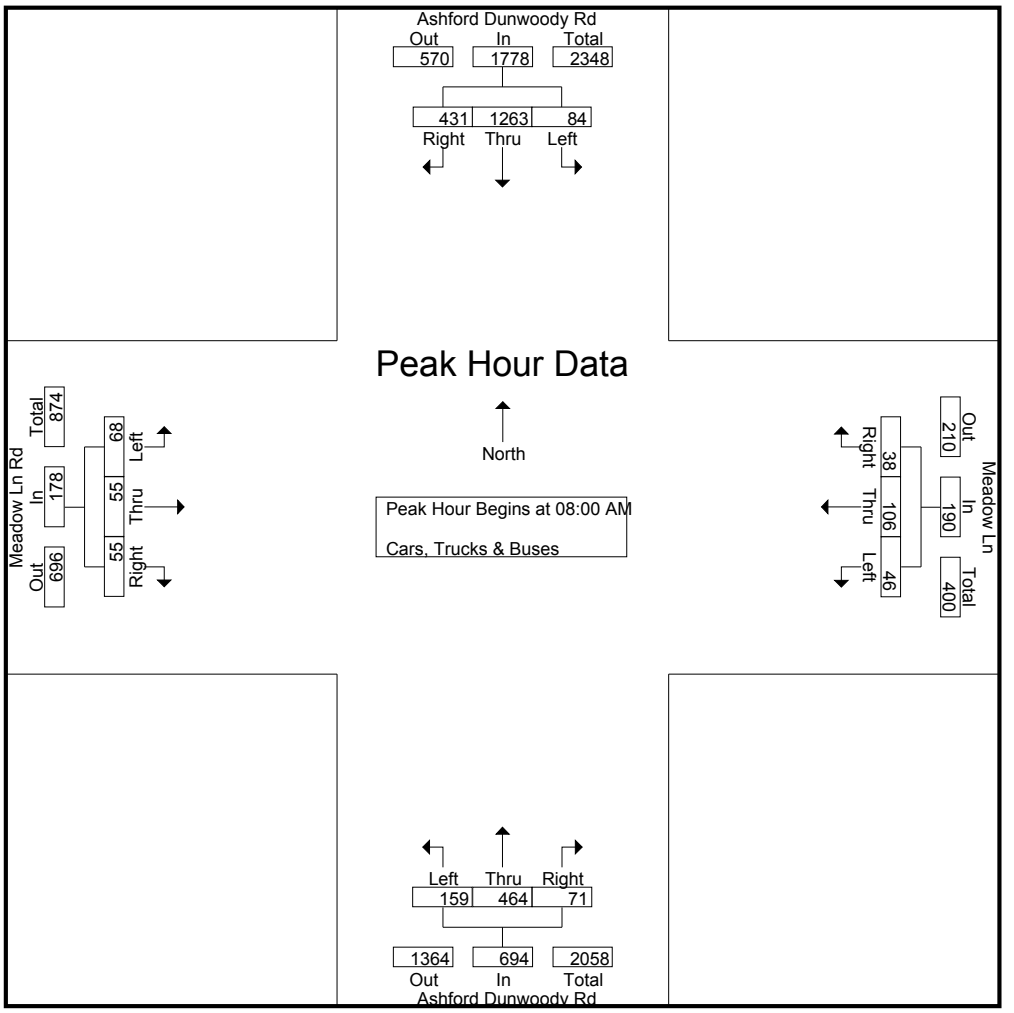
A&R Engineering, Inc.

2160 Kingston Court, Suite O
Marietta, GA 30067

TMC DATA
Ashford Dunwoody Rd @
Meadow Ln Rd
7-9 am | 4-6 pm

File Name : 20190006
Site Code : 20190006
Start Date : 1/9/2019
Page No : 2

	Ashford Dunwoody Rd Northbound				Ashford Dunwoody Rd Southbound				Meadow Ln Rd Eastbound				Meadow Ln Westbound				
Start Time	Left	Thru	Right	App. Total	Left	Thru	Right	App. Total	Left	Thru	Right	App. Total	Left	Thru	Right	App. Total	Int. Total
Peak Hour Analysis From 07:00 AM to 11:45 AM - Peak 1 of 1																	
Peak Hour for Entire Intersection Begins at 08:00 AM																	
08:00 AM	44	121	20	185	22	268	106	396	17	15	**21**	**53**	**16**	23	**11**	50	684
08:15 AM	31	102	**29**	162	12	261	104	377	13	**18**	5	36	11	32	9	52	627
08:30 AM	**48**	**129**	12	**189**	15	**399**	**112**	**526**	14	7	17	38	9	**33**	11	**53**	**806**
08:45 AM	36	112	10	158	**35**	335	109	479	**24**	15	12	51	10	18	7	35	723
Total Volume	159	464	71	694	84	1263	431	1778	68	55	55	178	46	106	38	190	2840
% App. Total	22.9	66.9	10.2		4.7	71	24.2		38.2	30.9	30.9		24.2	55.8	20		
PHF	.828	.899	.612	.918	.600	.791	.962	.845	.708	.764	.655	.840	.719	.803	.864	.896	.881



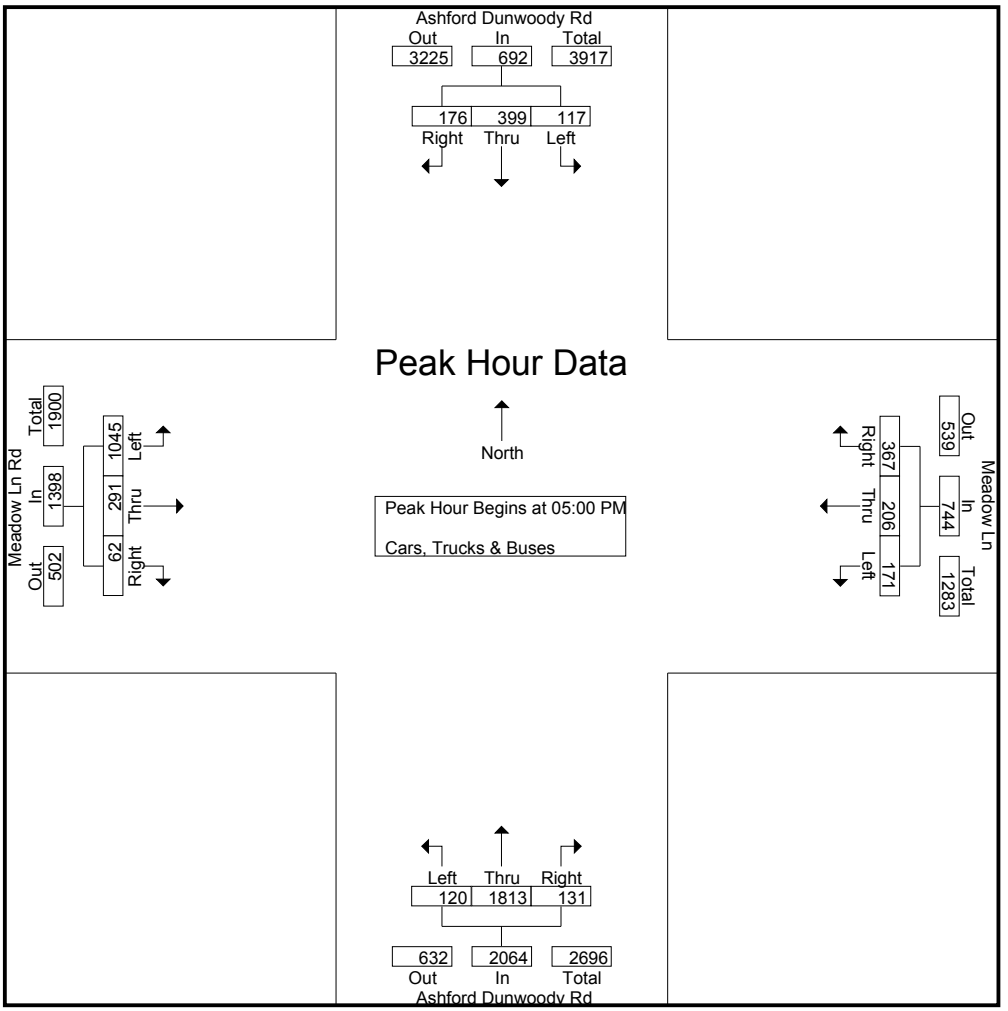
A&R Engineering, Inc.

2160 Kingston Court, Suite O
Marietta, GA 30067

TMC DATA
Ashford Dunwoody Rd @
Meadow Ln Rd
7-9 am | 4-6 pm

File Name : 20190006
Site Code : 20190006
Start Date : 1/9/2019
Page No : 3

	Ashford Dunwoody Rd Northbound				Ashford Dunwoody Rd Southbound				Meadow Ln Rd Eastbound				Meadow Ln Westbound				
Start Time	Left	Thru	Right	App. Total	Left	Thru	Right	App. Total	Left	Thru	Right	App. Total	Left	Thru	Right	App. Total	Int. Total
Peak Hour Analysis From 12:00 PM to 05:45 PM - Peak 1 of 1																	
Peak Hour for Entire Intersection Begins at 05:00 PM																	
05:00 PM	26	444	28	498	26	92	27	145	235	52	12	299	37	57	98	192	1134
05:15 PM	18	448	24	490	12	87	49	148	282	48	**20**	350	34	42	82	158	1146
05:30 PM	30	428	31	489	28	**110**	44	182	244	81	12	337	45	45	82	172	1180
05:45 PM	**46**	**493**	**48**	**587**	**51**	110	**56**	**217**	**284**	**110**	18	**412**	**55**	**62**	**105**	**222**	**1438**
Total Volume	120	1813	131	2064	117	399	176	692	1045	291	62	1398	171	206	367	744	4898
% App. Total	5.8	87.8	6.3		16.9	57.7	25.4		74.7	20.8	4.4		23	27.7	49.3		
PHF	.652	.919	.682	.879	.574	.907	.786	.797	.920	.661	.775	.848	.777	.831	.874	.838	.852



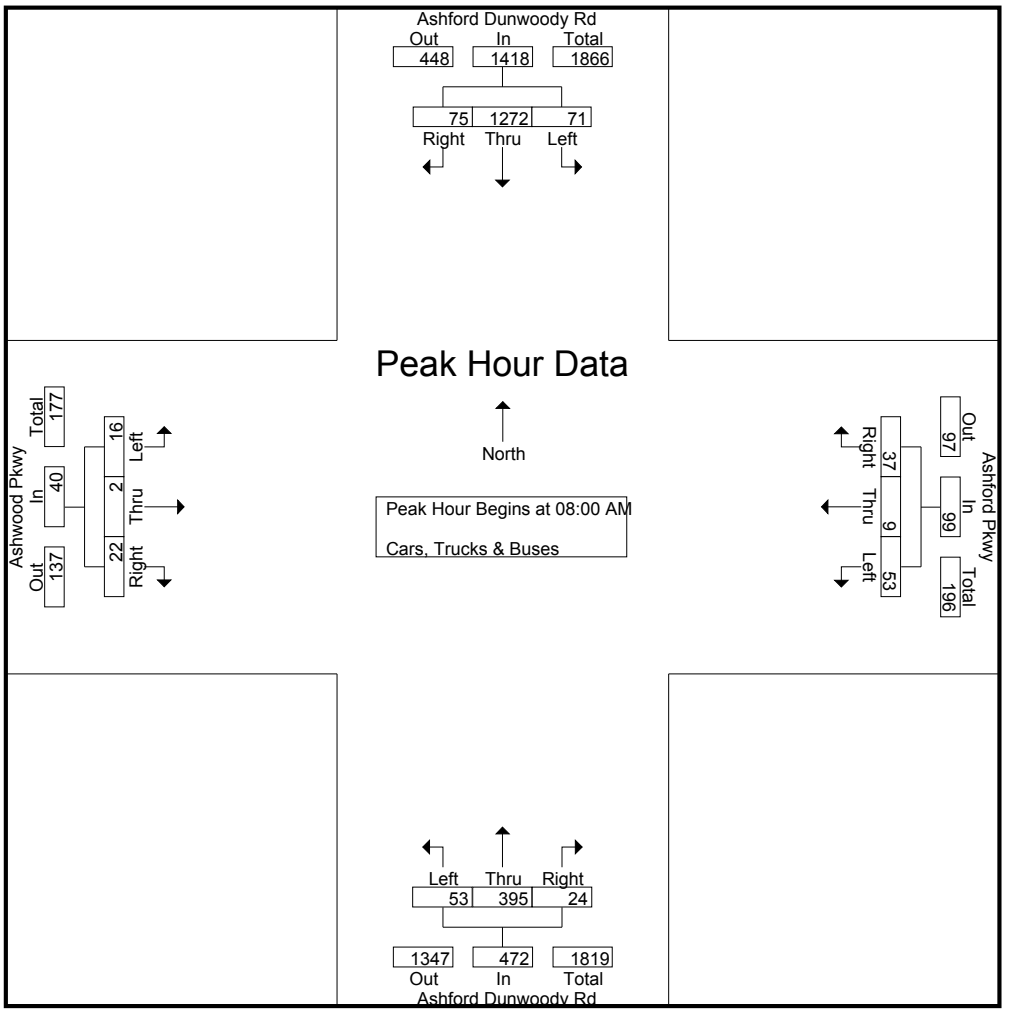
A&R Engineering, Inc.

2160 Kingston Court, Suite O
Marietta, GA 30067

TMC DATA
Ashford Dunwoody Rd @
Ashwood Pkwy / Ashford Pkwy
7-9 am | 4-6 pm

File Name : 20190007
Site Code : 20190007
Start Date : 1/9/2019
Page No : 2

	Ashford Dunwoody Rd Northbound				Ashford Dunwoody Rd Southbound				Ashwood Pkwy Eastbound				Ashford Pkwy Westbound				
Start Time	Left	Thru	Right	App. Total	Left	Thru	Right	App. Total	Left	Thru	Right	App. Total	Left	Thru	Right	App. Total	Int. Total
Peak Hour Analysis From 07:00 AM to 11:45 AM - Peak 1 of 1																	
Peak Hour for Entire Intersection Begins at 08:00 AM																	
08:00 AM	16	**110**	6	**132**	**21**	315	20	356	4	**1**	5	10	12	1	9	22	520
08:15 AM	9	97	5	111	13	315	13	341	2	0	**7**	9	10	**3**	7	20	481
08:30 AM	11	83	6	100	17	300	17	334	**8**	1	7	**16**	**19**	3	**11**	**33**	483
08:45 AM	**17**	105	**7**	129	20	**342**	**25**	**387**	2	0	3	5	12	2	10	24	**545**
Total Volume	53	395	24	472	71	1272	75	1418	16	2	22	40	53	9	37	99	2029
% App. Total	11.2	83.7	5.1		5	89.7	5.3		40	5	55		53.5	9.1	37.4		
PHF	.779	.898	.857	.894	.845	.930	.750	.916	.500	.500	.786	.625	.697	.750	.841	.750	.931



A&R Engineering, Inc.
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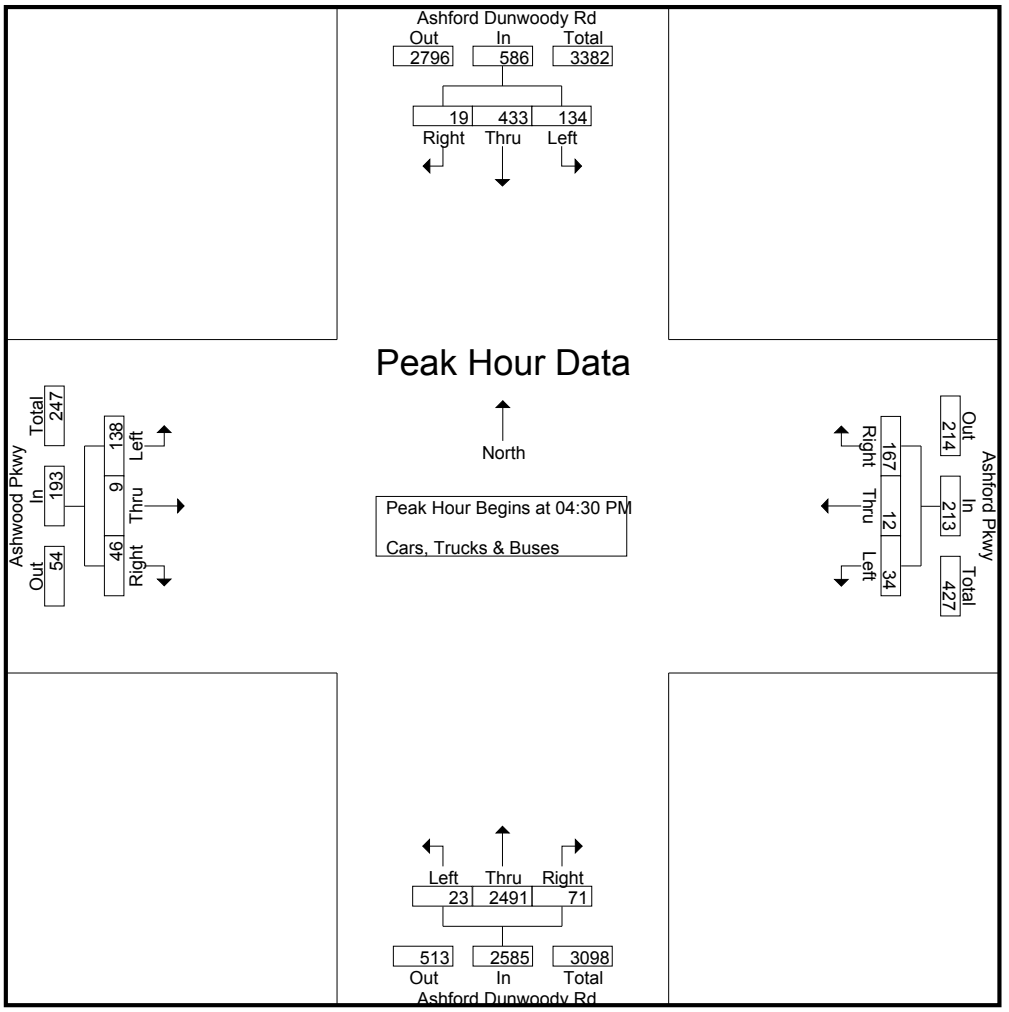
Marietta, GA 30067

TMC DATA
Ashford Dunwoody Rd @
Ashwood Pkwy / Ashford Pkwy
7-9 am | 4-6 pm

File Name : 20190007
Site Code : 20190007
Start Date : 1/9/2019
Page No : 3

	Ashford Dunwoody Rd Northbound				Ashford Dunwoody Rd Southbound				Ashwood Pkwy Eastbound				Ashford Pkwy Westbound				
Start Time	Left	Thru	Right	App. Total	Left	Thru	Right	App. Total	Left	Thru	Right	App. Total	Left	Thru	Right	App. Total	Int. Total
Peak Hour Analysis From 12:00 PM to 05:45 PM - Peak 1 of 1																	
Peak Hour for Entire Intersection Begins at 04:30 PM																	
04:30 PM	2	**675**	**22**	**699**	37	90	6	133	35	**3**	12	50	**10**	**8**	36	54	**936**
04:45 PM	8	627	17	652	27	**117**	4	148	20	3	5	28	10	2	47	**59**	887
05:00 PM	**9**	587	18	614	25	116	2	143	**45**	1	**15**	**61**	9	1	**49**	59	877
05:15 PM	4	602	14	620	**45**	110	**7**	**162**	38	2	14	54	5	1	35	41	877
Total Volume	23	2491	71	2585	134	433	19	586	138	9	46	193	34	12	167	213	3577
% App. Total	0.9	96.4	2.7		22.9	73.9	3.2		71.5	4.7	23.8		16	5.6	78.4		
PHF	.639	.923	.807	.925	.744	.925	.679	.904	.767	.750	.767	.791	.850	.375	.852	.903	.955

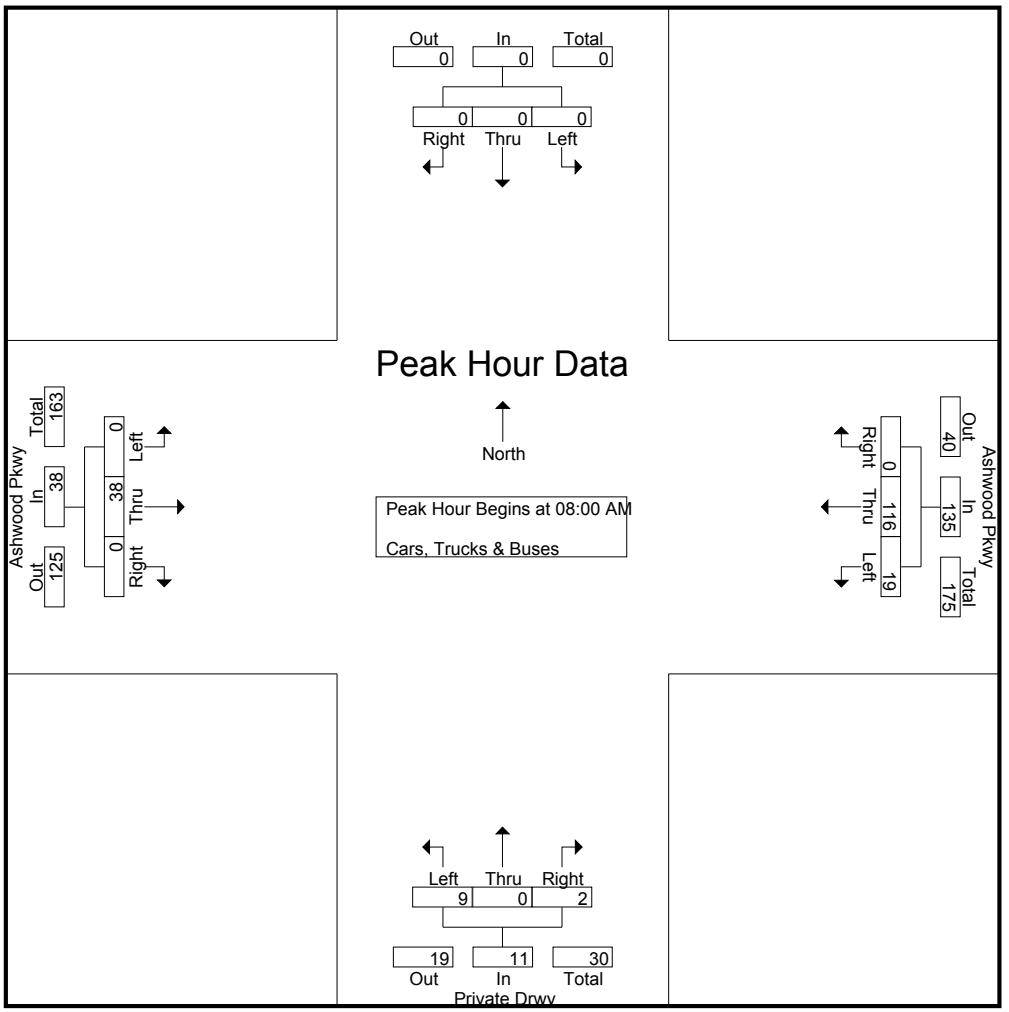


A&R Engineering, Inc.
2160 Kingston Court, Suite O
Marietta, GA 30067

TMC Data
Ashwood Pkwy @ Private Drwy
7-9 am | 4-6 pm

File Name : 20190009
Site Code : 20190009
Start Date : 1/9/2019
Page No : 2

	Private Drwy Northbound				Southbound				Ashwood Pkwy Eastbound				Ashwood Pkwy Westbound				
Start Time	Left	Thru	Right	App. Total	Left	Thru	Right	App. Total	Left	Thru	Right	App. Total	Left	Thru	Right	App. Total	Int. Total
Peak Hour Analysis From 07:00 AM to 11:45 AM - Peak 1 of 1																	
Peak Hour for Entire Intersection Begins at 08:00 AM																	
08:00 AM	3	0	**1**	4	0	0	0	0	0	10	0	10	**5**	32	0	37	51
08:15 AM	1	0	1	2	0	0	0	0	0	9	0	9	5	21	0	26	37
08:30 AM	0	0	0	0	0	0	0	0	0	**14**	0	**14**	4	25	0	29	43
08:45 AM	**5**	0	0	**5**	0	0	0	0	0	5	0	5	5	**38**	0	**43**	**53**
Total Volume	9	0	2	11	0	0	0	0	0	38	0	38	19	116	0	135	184
% App. Total	81.8	0	18.2		0	0	0		0	100	0		14.1	85.9	0		
PHF	.450	.000	.500	.550	.000	.000	.000	.000	.000	.679	.000	.679	.950	.763	.000	.785	.868



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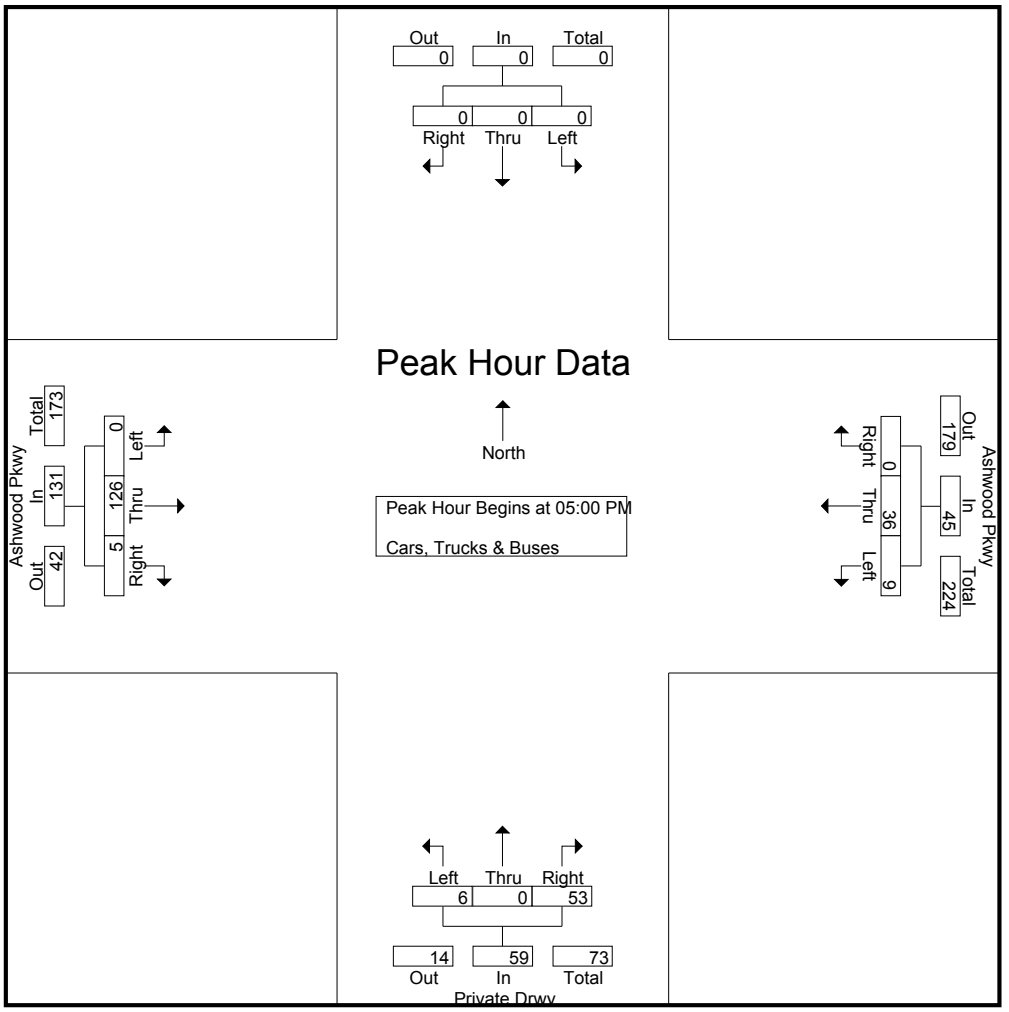
2160 Kingston Court, Suite O
Marietta, GA 30067

TMC Data
Ashwood Pkwy @ Private Drwy
7-9 am | 4-6 pm

File Name : 20190009
Site Code : 20190009
Start Date : 1/9/2019
Page No : 3

	Private Drwy Northbound				Southbound				Ashwood Pkwy Eastbound				Ashwood Pkwy Westbound				
Start Time	Left	Thru	Right	App. Total	Left	Thru	Right	App. Total	Left	Thru	Right	App. Total	Left	Thru	Right	App. Total	Int. Total
Peak Hour Analysis From 12:00 PM to 05:45 PM - Peak 1 of 1																	
Peak Hour for Entire Intersection Begins at 05:00 PM																	
05:00 PM	2	0	12	14	0	0	0	0	0	**42**	1	**43**	3	8	0	11	**68**
05:15 PM	1	0	**15**	16	0	0	0	0	0	34	1	35	**4**	7	0	11	62
05:30 PM	0	0	12	12	0	0	0	0	0	26	1	27	1	5	0	6	45
05:45 PM	**3**	0	14	**17**	0	0	0	0	0	24	**2**	26	1	**16**	0	**17**	60
Total Volume	6	0	53	59	0	0	0	0	0	126	5	131	9	36	0	45	235
% App. Total	10.2	0	89.8		0	0	0		0	96.2	3.8		20	80	0		
PHF	.500	.000	.883	.868	.000	.000	.000	.000	.000	.750	.625	.762	.563	.563	.000	.662	.864

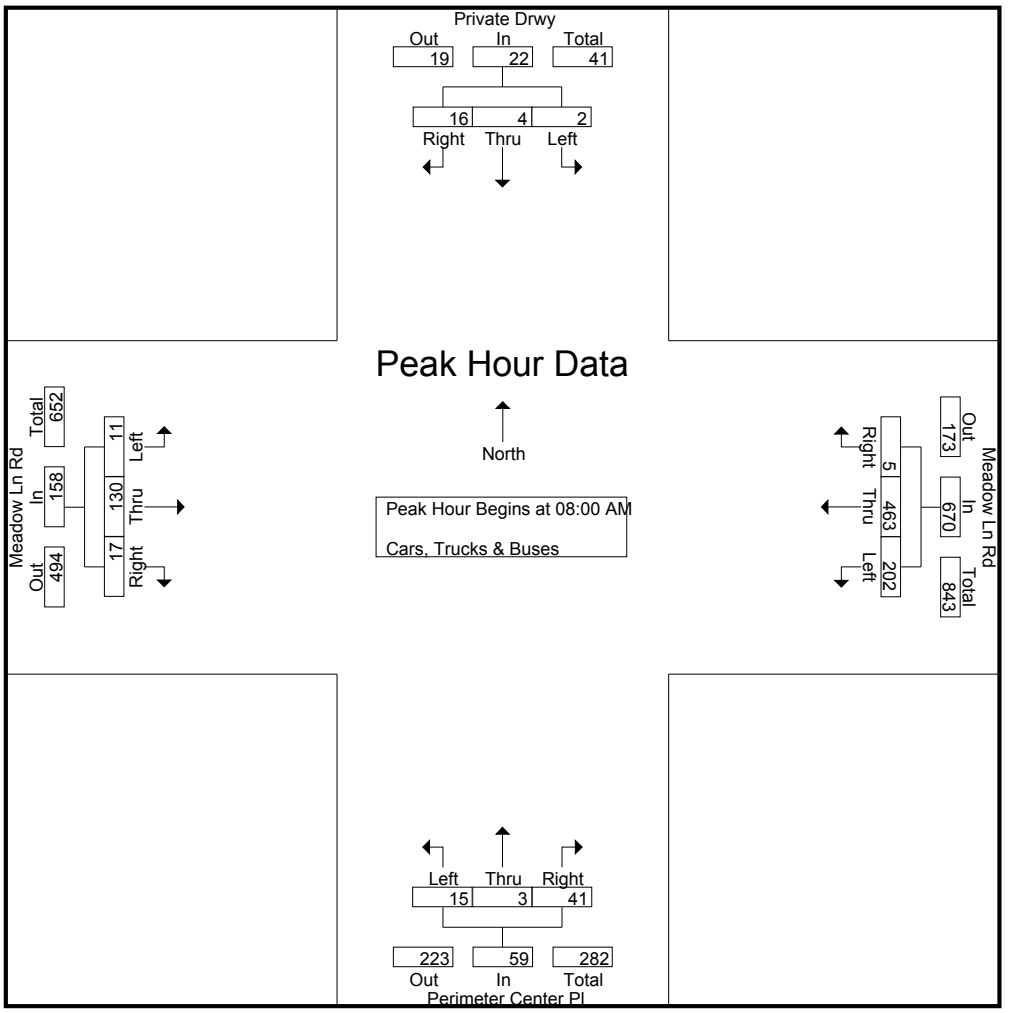


A&R Engineering, Inc.
2160 Kingston Court, Suite O
Marietta, GA 30067

TMC DATA
Meadow Ln Rd @
Perimeter Center Pl
7-9 am | 4-6 pm

File Name : 20190008
Site Code : 20190008
Start Date : 1/9/2019
Page No : 2

	Perimeter Center Pl Northbound				Private Drwy Southbound				Meadow Ln Rd Eastbound				Meadow Ln Rd Westbound				
Start Time	Left	Thru	Right	App. Total	Left	Thru	Right	App. Total	Left	Thru	Right	App. Total	Left	Thru	Right	App. Total	Int. Total
Peak Hour Analysis From 07:00 AM to 11:45 AM - Peak 1 of 1																	
Peak Hour for Entire Intersection Begins at 08:00 AM																	
08:00 AM	3	1	9	13	**1**	**1**	4	**6**	3	**42**	4	**49**	48	**118**	1	167	**235**
08:15 AM	**5**	0	**13**	**18**	0	1	**5**	6	2	22	4	28	**59**	117	1	**177**	229
08:30 AM	4	0	7	11	0	1	3	4	1	27	**6**	34	53	112	1	166	215
08:45 AM	3	**2**	12	17	1	1	4	6	**5**	39	3	47	42	116	**2**	160	230
Total Volume	15	3	41	59	2	4	16	22	11	130	17	158	202	463	5	670	909
% App. Total	25.4	5.1	69.5		9.1	18.2	72.7		7	82.3	10.8		30.1	69.1	0.7		
PHF	.750	.375	.788	.819	.500	1.00	.800	.917	.550	.774	.708	.806	.856	.981	.625	.946	.967



A&R Engineering, Inc.

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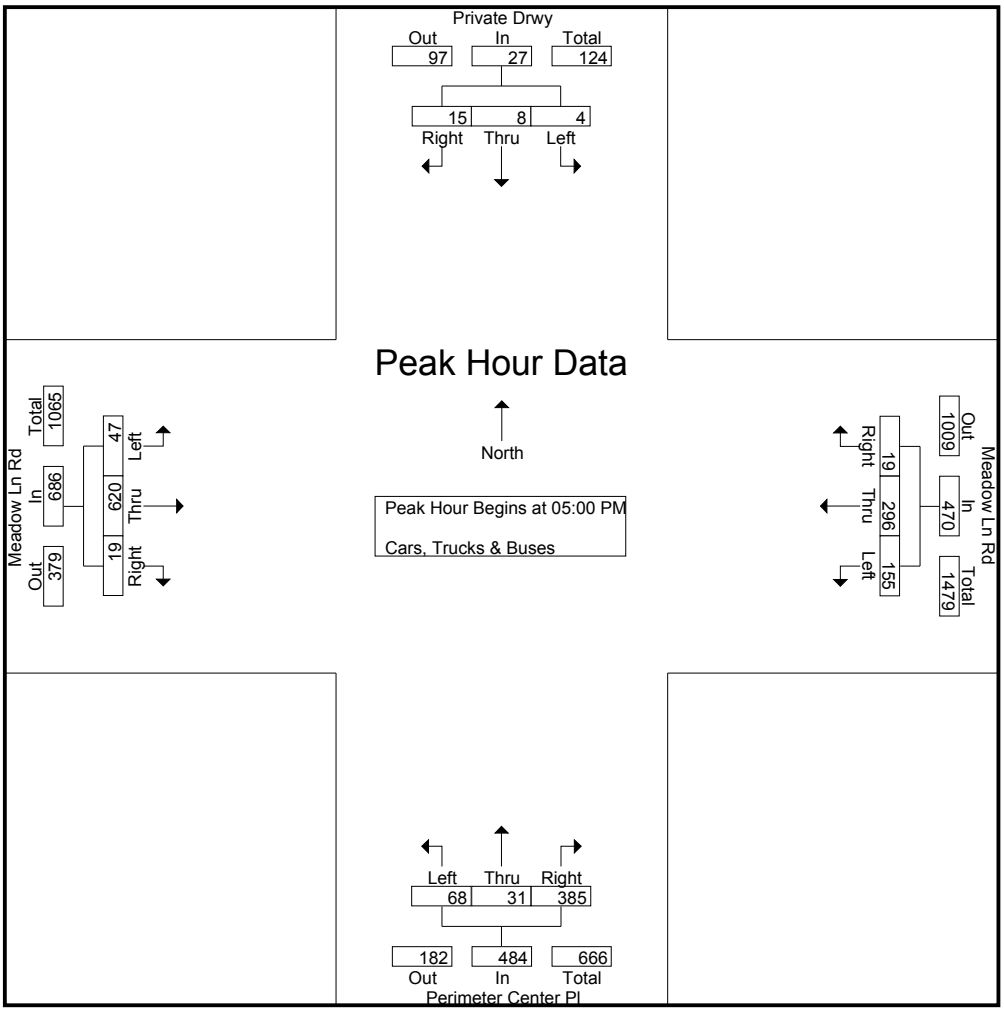
Marietta, GA 30067

TMC DATA
Meadow Ln Rd @
Perimeter Center Pl
7-9 am | 4-6 pm

File Name : 20190008
Site Code : 20190008
Start Date : 1/9/2019
Page No : 3

	Perimeter Center Pl Northbound				Private Drwy Southbound				Meadow Ln Rd Eastbound				Meadow Ln Rd Westbound				
Start Time	Left	Thru	Right	App. Total	Left	Thru	Right	App. Total	Left	Thru	Right	App. Total	Left	Thru	Right	App. Total	Int. Total
Peak Hour Analysis From 12:00 PM to 05:45 PM - Peak 1 of 1																	
Peak Hour for Entire Intersection Begins at 05:00 PM																	
05:00 PM	12	3	83	98	1	**3**	2	6	11	138	4	153	**45**	59	4	108	365
05:15 PM	14	8	**120**	**142**	1	3	0	4	10	**180**	3	**193**	34	60	1	95	434
05:30 PM	20	8	77	105	0	1	5	6	**16**	169	4	189	45	**89**	5	**139**	**439**
05:45 PM	**22**	**12**	105	139	**2**	1	**8**	**11**	10	133	**8**	151	31	88	**9**	128	429
Total Volume	68	31	385	484	4	8	15	27	47	620	19	686	155	296	19	470	1667
% App. Total	14	6.4	79.5		14.8	29.6	55.6		6.9	90.4	2.8		33	63	4		
PHF	.773	.646	.802	.852	.500	.667	.469	.614	.734	.861	.594	.889	.861	.831	.528	.845	.949



EXISTING INTERSECTION ANALYSIS

Timings
1: Ashford Dunwoody Rd & Meadow Lane/Asbury Square

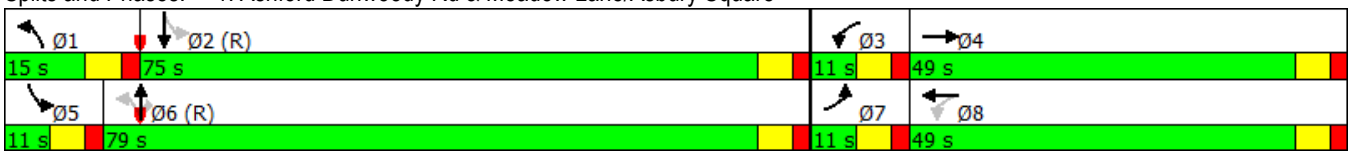
2019 Existing AM Peak
01/30/2019

Lane Group	EBL	EBT	WBL	WBT	NBL	NBT	NBR	SBL	SBT
Lane Configurations									
Traffic Volume (vph)	68	55	46	106	159	464	71	84	1263
Future Volume (vph)	68	55	46	106	159	464	71	84	1263
Turn Type	Prot	NA	pm+pt	NA	pm+pt	NA	Perm	pm+pt	NA
Protected Phases	7	4	3	8	1	6		5	2
Permitted Phases			8		6		6	2	
Detector Phase	7	4	3	8	1	6	6	5	2
Switch Phase									
Minimum Initial (s)	5.0	6.0	5.0	6.0	5.0	15.0	15.0	5.0	15.0
Minimum Split (s)	11.0	48.0	11.0	49.0	11.0	47.0	47.0	11.0	43.0
Total Split (s)	11.0	49.0	11.0	49.0	15.0	79.0	79.0	11.0	75.0
Total Split (%)	7.3%	32.7%	7.3%	32.7%	10.0%	52.7%	52.7%	7.3%	50.0%
Yellow Time (s)	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0
All-Red Time (s)	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0
Lost Time Adjust (s)	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Lost Time (s)	6.0	6.0	6.0	6.0	6.0	6.0	6.0	6.0	6.0
Lead/Lag	Lead	Lag	Lead	Lag	Lead	Lag	Lag	Lead	Lag
Lead-Lag Optimize?									
Recall Mode	None	None	None	None	None	C-Min	C-Min	None	C-Min

Intersection Summary

Cycle Length: 150
Actuated Cycle Length: 150
Offset: 138 (92%), Referenced to phase 2:SBTL and 6:NBTL, Start of Green
Natural Cycle: 150
Control Type: Actuated-Coordinated

Splits and Phases: 1: Ashford Dunwoody Rd & Meadow Lane/Asbury Square



HCM 2010 Signalized Intersection Summary
1: Ashford Dunwoody Rd & Meadow Lane/Asbury Square

2019 Existing AM Peak
01/30/2019

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	68	55	55	46	106	38	159	464	71	84	1263	431
Future Volume (veh/h)	68	55	55	46	106	38	159	464	71	84	1263	431
Number	7	4	14	3	8	18	1	6	16	5	2	12
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Adj Sat Flow, veh/h/ln	1863	1863	1900	1863	1863	1900	1863	1863	1863	1863	1863	1900
Adj Flow Rate, veh/h	77	62	62	52	120	43	181	527	81	95	1435	490
Adj No. of Lanes	2	2	0	1	2	0	1	2	1	1	2	0
Peak Hour Factor	0.88	0.88	0.88	0.88	0.88	0.88	0.88	0.88	0.88	0.88	0.88	0.88
Percent Heavy Veh, %	2	2	2	2	2	2	2	2	2	2	2	2
Cap, veh/h	115	120	107	144	175	60	286	2500	1118	636	1829	592
Arrive On Green	0.03	0.07	0.07	0.03	0.07	0.07	0.04	0.71	0.71	0.07	1.00	1.00
Sat Flow, veh/h	3442	1778	1576	1774	2586	890	1774	3539	1583	1774	2631	852
Grp Volume(v), veh/h	77	62	62	52	81	82	181	527	81	95	940	985
Grp Sat Flow(s),veh/h/ln	1721	1770	1585	1774	1770	1706	1774	1770	1583	1774	1770	1712
Q Serve(g_s), s	3.3	5.1	5.7	4.1	6.7	7.1	4.4	7.7	2.4	2.4	0.0	0.0
Cycle Q Clear(g_c), s	3.3	5.1	5.7	4.1	6.7	7.1	4.4	7.7	2.4	2.4	0.0	0.0
Prop In Lane	1.00		0.99	1.00		0.52	1.00		1.00	1.00		0.50
Lane Grp Cap(c), veh/h	115	120	107	144	120	115	286	2500	1118	636	1230	1191
V/C Ratio(X)	0.67	0.52	0.58	0.36	0.67	0.71	0.63	0.21	0.07	0.15	0.76	0.83
Avail Cap(c_a), veh/h	115	507	454	144	507	489	315	2500	1118	637	1230	1191
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	2.00	2.00	2.00
Upstream Filter(I)	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	0.80	0.80	0.80
Uniform Delay (d), s/veh	71.7	67.6	67.9	62.6	68.3	68.5	5.7	7.6	6.8	5.8	0.0	0.0
Incr Delay (d2), s/veh	14.1	3.4	4.9	1.5	6.4	8.0	3.5	0.2	0.1	0.1	3.7	5.4
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(95%),veh/ln	3.3	4.6	4.8	3.7	6.3	6.5	4.3	6.8	1.9	2.0	2.3	3.2
LnGrp Delay(d),s/veh	85.8	71.0	72.8	64.1	74.7	76.5	9.2	7.8	6.9	5.9	3.7	5.4
LnGrp LOS	F	E	E	E	E	E	A	A	A	A	A	A
Approach Vol, veh/h		201			215			789			2020	
Approach Delay, s/veh		77.2			72.8			8.0			4.6	
Approach LOS		E			E			A			A	

Timer	1	2	3	4	5	6	7	8
Assigned Phs	1	2	3	4	5	6	7	8
Phs Duration (G+Y+Rc), s	12.6	110.3	11.0	16.1	10.9	111.9	11.0	16.1
Change Period (Y+Rc), s	6.0	6.0	6.0	6.0	6.0	6.0	6.0	6.0
Max Green Setting (Gmax), s	9.0	69.0	5.0	43.0	5.0	73.0	5.0	43.0
Max Q Clear Time (g_c+I1), s	6.4	2.0	6.1	7.7	4.4	9.7	5.3	9.1
Green Ext Time (p_c), s	0.1	66.7	0.0	1.0	0.0	63.1	0.0	1.0

Intersection Summary	
HCM 2010 Ctrl Delay	14.5
HCM 2010 LOS	B

Timings 2019 Existing AM Peak

2: Ashford Dunwoody Rd/Ashford Dunwood Rd & Ashwood Pkwy/Ashford Pkwy

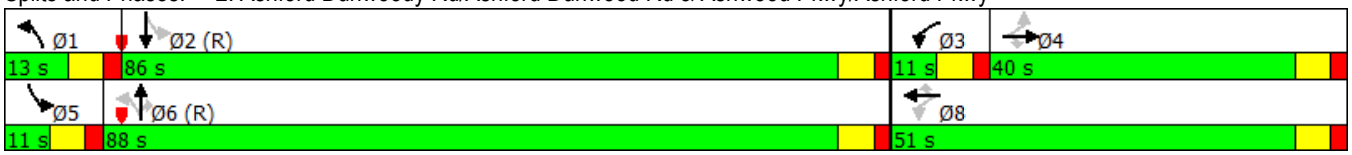
01/30/2019

Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT
Lane Configurations											
Traffic Volume (vph)	16	2	22	53	9	37	53	395	24	71	1272
Future Volume (vph)	16	2	22	53	9	37	53	395	24	71	1272
Turn Type	Perm	NA	Perm	pm+pt	NA	Perm	pm+pt	NA	Perm	pm+pt	NA
Protected Phases		4		3	8		1	6		5	2
Permitted Phases	4		4	8		8	6		6	2	
Detector Phase	4	4	4	3	8	8	1	6	6	5	2
Switch Phase											
Minimum Initial (s)	6.0	6.0	6.0	5.0	6.0	6.0	5.0	15.0	15.0	5.0	15.0
Minimum Split (s)	40.0	40.0	40.0	11.0	42.0	42.0	11.0	42.0	42.0	11.0	37.0
Total Split (s)	40.0	40.0	40.0	11.0	51.0	51.0	13.0	88.0	88.0	11.0	86.0
Total Split (%)	26.7%	26.7%	26.7%	7.3%	34.0%	34.0%	8.7%	58.7%	58.7%	7.3%	57.3%
Yellow Time (s)	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0
All-Red Time (s)	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0
Lost Time Adjust (s)		0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Lost Time (s)		6.0	6.0	6.0	6.0	6.0	6.0	6.0	6.0	6.0	6.0
Lead/Lag	Lag	Lag	Lag	Lead			Lead	Lag	Lag	Lead	Lag
Lead-Lag Optimize?											
Recall Mode	None	None	None	None	None	None	None	C-Min	C-Min	None	C-Min

Intersection Summary

Cycle Length: 150
Actuated Cycle Length: 150
Offset: 0 (0%), Referenced to phase 2:SBTL and 6:NBTL, Start of Green
Natural Cycle: 115
Control Type: Actuated-Coordinated

Splits and Phases: 2: Ashford Dunwoody Rd/Ashford Dunwood Rd & Ashwood Pkwy/Ashford Pkwy



HCM 2010 Signalized Intersection Summary 2019 Existing AM Peak
2: Ashford Dunwoody Rd/Ashford Dunwood Rd & Ashwood Pkwy/Ashford Pkwy 01/30/2019

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	16	2	22	53	9	37	53	395	24	71	1272	75
Future Volume (veh/h)	16	2	22	53	9	37	53	395	24	71	1272	75
Number	7	4	14	3	8	18	1	6	16	5	2	12
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Adj Sat Flow, veh/h/ln	1900	1863	1863	1863	1863	1863	1863	1863	1863	1863	1863	1900
Adj Flow Rate, veh/h	17	2	0	57	10	40	57	425	0	76	1368	81
Adj No. of Lanes	0	1	1	1	1	1	1	2	1	1	2	0
Peak Hour Factor	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93
Percent Heavy Veh, %	2	2	2	2	2	2	2	2	2	2	2	2
Cap, veh/h	90	8	60	189	207	176	307	2608	1167	748	2509	148
Arrive On Green	0.04	0.04	0.00	0.03	0.11	0.11	0.02	0.49	0.00	0.03	0.74	0.74
Sat Flow, veh/h	1192	218	1583	1774	1863	1583	1774	3539	1583	1774	3396	201
Grp Volume(v), veh/h	19	0	0	57	10	40	57	425	0	76	711	738
Grp Sat Flow(s),veh/h/ln	1409	0	1583	1774	1863	1583	1774	1770	1583	1774	1770	1827
Q Serve(g_s), s	1.7	0.0	0.0	4.6	0.7	3.5	1.2	9.9	0.0	1.6	26.3	26.5
Cycle Q Clear(g_c), s	1.9	0.0	0.0	4.6	0.7	3.5	1.2	9.9	0.0	1.6	26.3	26.5
Prop In Lane	0.89		1.00	1.00		1.00	1.00		1.00	1.00		0.11
Lane Grp Cap(c), veh/h	99	0	60	189	207	176	307	2608	1167	748	1307	1350
V/C Ratio(X)	0.19	0.00	0.00	0.30	0.05	0.23	0.19	0.16	0.00	0.10	0.54	0.55
Avail Cap(c_a), veh/h	361	0	359	189	559	475	336	2608	1167	750	1307	1350
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	0.67	0.67	0.67	1.00	1.00	1.00
Upstream Filter(I)	1.00	0.00	0.00	1.00	1.00	1.00	0.97	0.97	0.00	1.00	1.00	1.00
Uniform Delay (d), s/veh	70.3	0.0	0.0	65.0	59.6	60.8	7.0	12.5	0.0	4.5	8.6	8.6
Incr Delay (d2), s/veh	0.9	0.0	0.0	0.9	0.1	0.6	0.3	0.1	0.0	0.1	1.6	1.6
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(95%),veh/ln	1.4	0.0	0.0	4.1	0.7	2.8	1.0	8.5	0.0	1.4	19.2	20.0
LnGrp Delay(d),s/veh	71.3	0.0	0.0	65.9	59.7	61.4	7.3	12.6	0.0	4.6	10.2	10.2
LnGrp LOS	E			E	E	E	A	B		A	B	B
Approach Vol, veh/h		19			107			482			1525	
Approach Delay, s/veh		71.3			63.6			12.0			9.9	
Approach LOS		E			E			B			A	

Timer	1	2	3	4	5	6	7	8
Assigned Phs	1	2	3	4	5	6		8
Phs Duration (G+Y+Rc), s	10.5	116.8	11.0	11.7	10.8	116.5		22.7
Change Period (Y+Rc), s	6.0	6.0	6.0	6.0	6.0	6.0		6.0
Max Green Setting (Gmax), s	7.0	80.0	5.0	34.0	5.0	82.0		45.0
Max Q Clear Time (g_c+I1), s	3.2	28.5	6.6	3.9	3.6	11.9		5.5
Green Ext Time (p_c), s	0.0	49.7	0.0	0.2	0.0	67.0		0.2

Intersection Summary	
HCM 2010 Ctrl Delay	13.6
HCM 2010 LOS	B

Intersection	
Int Delay, s/veh	1.3

Movement	EBT	EBR	WBL	WBT	NBL	NBR
Lane Configurations						
Traffic Vol, veh/h	38	0	19	116	9	2
Future Vol, veh/h	38	0	19	116	9	2
Conflicting Peds, #/hr	0	0	0	0	0	0
Sign Control	Free	Free	Free	Free	Stop	Stop
RT Channelized	-	None	-	None	-	None
Storage Length	-	-	-	-	0	-
Veh in Median Storage, #	0	-	-	0	0	-
Grade, %	0	-	-	0	0	-
Peak Hour Factor	87	87	87	87	87	87
Heavy Vehicles, %	2	2	2	2	2	2
Mvmt Flow	44	0	22	133	10	2

Major/Minor	Major1		Major2		Minor1	
Conflicting Flow All	0	0	44	0	221	44
Stage 1	-	-	-	-	44	-
Stage 2	-	-	-	-	177	-
Critical Hdwy	-	-	4.12	-	6.42	6.22
Critical Hdwy Stg 1	-	-	-	-	5.42	-
Critical Hdwy Stg 2	-	-	-	-	5.42	-
Follow-up Hdwy	-	-	2.218	-	3.518	3.318
Pot Cap-1 Maneuver	-	-	1564	-	767	1026
Stage 1	-	-	-	-	978	-
Stage 2	-	-	-	-	854	-
Platoon blocked, %	-	-		-		
Mov Cap-1 Maneuver	-	-	1564	-	755	1026
Mov Cap-2 Maneuver	-	-	-	-	755	-
Stage 1	-	-	-	-	978	-
Stage 2	-	-	-	-	841	-

Approach	EB	WB	NB
HCM Control Delay, s	0	1	9.6
HCM LOS			A

Minor Lane/Major Mvmt	NBLn1	EBT	EBR	WBL	WBT
Capacity (veh/h)	793	-	-	1564	-
HCM Lane V/C Ratio	0.016	-	-	0.014	-
HCM Control Delay (s)	9.6	-	-	7.3	0
HCM Lane LOS	A	-	-	A	A
HCM 95th %tile Q(veh)	0	-	-	0	-

Timings
4: Perimeter Center Pl & Meadow Lane

2019 Existing AM Peak
01/30/2019

Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT
Lane Configurations											
Traffic Volume (vph)	11	130	17	202	463	5	15	3	41	2	4
Future Volume (vph)	11	130	17	202	463	5	15	3	41	2	4
Turn Type	Perm	NA	Perm	pm+pt	NA	Perm	Perm	NA	pm+ov	Perm	NA
Protected Phases		2		1	6			8	1		4
Permitted Phases	2		2	6		6	8		8	4	
Detector Phase	2	2	2	1	6	6	8	8	1	4	4
Switch Phase											
Minimum Initial (s)	15.0	15.0	15.0	5.0	15.0	15.0	6.0	6.0	5.0	6.0	6.0
Minimum Split (s)	73.0	73.0	73.0	11.0	24.0	24.0	50.0	50.0	11.0	49.0	49.0
Total Split (s)	61.0	61.0	61.0	15.0	76.0	76.0	44.0	44.0	15.0	44.0	44.0
Total Split (%)	50.8%	50.8%	50.8%	12.5%	63.3%	63.3%	36.7%	36.7%	12.5%	36.7%	36.7%
Yellow Time (s)	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0
All-Red Time (s)	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0
Lost Time Adjust (s)	0.0	0.0	0.0	0.0	0.0	0.0		0.0	0.0		0.0
Total Lost Time (s)	6.0	6.0	6.0	6.0	6.0	6.0		6.0	6.0		6.0
Lead/Lag	Lag	Lag	Lag	Lead					Lead		
Lead-Lag Optimize?											
Recall Mode	C-Min	C-Min	C-Min	None	C-Min	C-Min	None	None	None	None	None

Intersection Summary

Cycle Length: 120
Actuated Cycle Length: 120
Offset: 0 (0%), Referenced to phase 2:EBTL and 6:WBTL, Start of Green
Natural Cycle: 135
Control Type: Actuated-Coordinated

Splits and Phases: 4: Perimeter Center Pl & Meadow Lane

HCM 2010 Signalized Intersection Summary
4: Perimeter Center Pl & Meadow Lane

2019 Existing AM Peak
01/30/2019

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	11	130	17	202	463	5	15	3	41	2	4	16
Future Volume (veh/h)	11	130	17	202	463	5	15	3	41	2	4	16
Number	5	2	12	1	6	16	3	8	18	7	4	14
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Adj Sat Flow, veh/h/ln	1863	1863	1863	1863	1863	1863	1900	1863	1863	1900	1863	1900
Adj Flow Rate, veh/h	11	134	18	208	477	5	15	3	0	2	4	16
Adj No. of Lanes	1	2	1	1	2	1	0	1	1	0	1	0
Peak Hour Factor	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97
Percent Heavy Veh, %	2	2	2	2	2	2	2	2	2	2	2	2
Cap, veh/h	762	2731	1222	1072	3055	1367	98	15	124	36	13	44
Arrive On Green	0.77	0.77	0.77	0.04	0.86	0.86	0.04	0.04	0.00	0.04	0.04	0.04
Sat Flow, veh/h	909	3539	1583	1774	3539	1583	1175	400	1583	87	356	1182
Grp Volume(v), veh/h	11	134	18	208	477	5	18	0	0	22	0	0
Grp Sat Flow(s),veh/h/ln	909	1770	1583	1774	1770	1583	1575	0	1583	1626	0	0
Q Serve(g_s), s	0.3	1.1	0.3	2.7	2.6	0.1	0.0	0.0	0.0	0.0	0.0	0.0
Cycle Q Clear(g_c), s	0.3	1.1	0.3	2.7	2.6	0.1	1.2	0.0	0.0	1.6	0.0	0.0
Prop In Lane	1.00		1.00	1.00		1.00	0.83		1.00	0.09		0.73
Lane Grp Cap(c), veh/h	762	2731	1222	1072	3055	1367	113	0	124	93	0	0
V/C Ratio(X)	0.01	0.05	0.01	0.19	0.16	0.00	0.16	0.00	0.00	0.24	0.00	0.00
Avail Cap(c_a), veh/h	762	2731	1222	1131	3055	1367	518	0	567	543	0	0
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	1.00	1.00	0.29	0.29	0.29	1.00	0.00	0.00	1.00	0.00	0.00
Uniform Delay (d), s/veh	3.2	3.3	3.2	2.0	1.3	1.1	56.2	0.0	0.0	56.4	0.0	0.0
Incr Delay (d2), s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.7	0.0	0.0	1.3	0.0	0.0
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(95%),veh/ln	0.2	1.0	0.3	2.3	2.2	0.0	1.1	0.0	0.0	1.3	0.0	0.0
LnGrp Delay(d),s/veh	3.2	3.3	3.2	2.0	1.3	1.1	56.9	0.0	0.0	57.7	0.0	0.0
LnGrp LOS	A	A	A	A	A	A	E			E		
Approach Vol, veh/h		163			690			18			22	
Approach Delay, s/veh		3.3			1.5			56.9			57.7	
Approach LOS		A			A			E			E	

Timer	1	2	3	4	5	6	7	8
Assigned Phs	1	2		4		6		8
Phs Duration (G+Y+Rc), s	11.0	98.6		10.4		109.6		10.4
Change Period (Y+Rc), s	6.0	6.0		6.0		6.0		6.0
Max Green Setting (Gmax), s	9.0	55.0		38.0		70.0		38.0
Max Q Clear Time (g_c+I1), s	4.7	3.1		3.6		4.6		3.2
Green Ext Time (p_c), s	0.3	20.9		0.1		22.8		0.1

Intersection Summary	
HCM 2010 Ctrl Delay	4.4
HCM 2010 LOS	A

Notes

User approved pedestrian interval to be less than phase max green.

Timings
1: Ashford Dunwoody Rd & Meadow Lane/Asbury Square

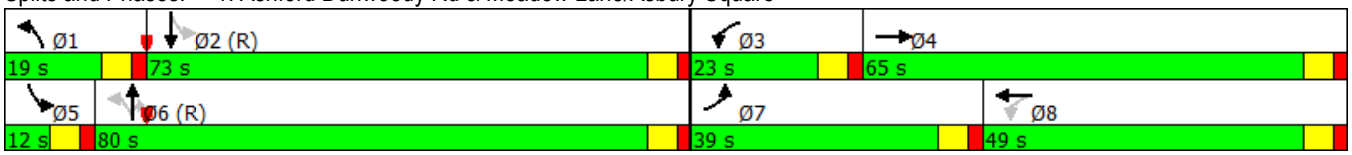
2019 Existing PM Peak
01/30/2019

Lane Group	EBL	EBT	WBL	WBT	NBL	NBT	NBR	SBL	SBT
Lane Configurations									
Traffic Volume (vph)	1045	291	171	206	120	1813	131	117	399
Future Volume (vph)	1045	291	171	206	120	1813	131	117	399
Turn Type	Prot	NA	pm+pt	NA	pm+pt	NA	Perm	pm+pt	NA
Protected Phases	7	4	3	8	1	6		5	2
Permitted Phases			8		6		6	2	
Detector Phase	7	4	3	8	1	6	6	5	2
Switch Phase									
Minimum Initial (s)	5.0	6.0	5.0	6.0	5.0	15.0	15.0	5.0	15.0
Minimum Split (s)	11.0	48.0	11.0	49.0	11.0	47.0	47.0	11.0	43.0
Total Split (s)	39.0	65.0	23.0	49.0	19.0	80.0	80.0	12.0	73.0
Total Split (%)	21.7%	36.1%	12.8%	27.2%	10.6%	44.4%	44.4%	6.7%	40.6%
Yellow Time (s)	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0
All-Red Time (s)	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0
Lost Time Adjust (s)	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Lost Time (s)	6.0	6.0	6.0	6.0	6.0	6.0	6.0	6.0	6.0
Lead/Lag	Lead	Lag	Lead	Lag	Lead	Lag	Lag	Lead	Lag
Lead-Lag Optimize?									
Recall Mode	None	None	None	None	None	C-Min	C-Min	None	C-Min

Intersection Summary

Cycle Length: 180
Actuated Cycle Length: 180
Offset: 170 (94%), Referenced to phase 2:SBTL and 6:NBTL, Start of Green
Natural Cycle: 150
Control Type: Actuated-Coordinated

Splits and Phases: 1: Ashford Dunwoody Rd & Meadow Lane/Asbury Square



HCM 2010 Signalized Intersection Summary
1: Ashford Dunwoody Rd & Meadow Lane/Asbury Square

2019 Existing PM Peak
01/30/2019

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	1045	291	62	171	206	367	120	1813	131	117	399	176
Future Volume (veh/h)	1045	291	62	171	206	367	120	1813	131	117	399	176
Number	7	4	14	3	8	18	1	6	16	5	2	12
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Adj Sat Flow, veh/h/ln	1863	1863	1900	1863	1863	1900	1863	1863	1863	1863	1863	1900
Adj Flow Rate, veh/h	1229	342	73	201	242	432	141	2133	154	138	469	207
Adj No. of Lanes	2	2	0	1	2	0	1	2	1	1	2	0
Peak Hour Factor	0.85	0.85	0.85	0.85	0.85	0.85	0.85	0.85	0.85	0.85	0.85	0.85
Percent Heavy Veh, %	2	2	2	2	2	2	2	2	2	2	2	2
Cap, veh/h	631	954	201	437	423	378	381	1455	651	99	923	405
Arrive On Green	0.18	0.33	0.33	0.09	0.24	0.24	0.06	0.41	0.41	0.07	0.77	0.77
Sat Flow, veh/h	3442	2910	614	1774	1770	1583	1774	3539	1583	1774	2396	1050
Grp Volume(v), veh/h	1229	206	209	201	242	432	141	2133	154	138	345	331
Grp Sat Flow(s),veh/h/ln	1721	1770	1754	1774	1770	1583	1774	1770	1583	1774	1770	1677
Q Serve(g_s), s	33.0	16.0	16.3	15.3	21.7	43.0	8.6	74.0	11.4	6.0	13.2	13.4
Cycle Q Clear(g_c), s	33.0	16.0	16.3	15.3	21.7	43.0	8.6	74.0	11.4	6.0	13.2	13.4
Prop In Lane	1.00		0.35	1.00		1.00	1.00		1.00	1.00		0.63
Lane Grp Cap(c), veh/h	631	580	575	437	423	378	381	1455	651	99	682	646
V/C Ratio(X)	1.95	0.36	0.36	0.46	0.57	1.14	0.37	1.47	0.24	1.39	0.51	0.51
Avail Cap(c_a), veh/h	631	580	575	437	423	378	404	1455	651	99	682	646
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	2.00	2.00	2.00
Upstream Filter(I)	0.86	0.86	0.86	1.00	1.00	1.00	1.00	1.00	1.00	0.99	0.99	0.99
Uniform Delay (d), s/veh	73.5	46.0	46.2	45.1	60.4	68.5	30.5	53.0	34.6	46.2	14.2	14.2
Incr Delay (d2), s/veh	431.5	0.3	0.3	0.8	1.9	90.9	0.6	213.5	0.9	226.1	2.6	2.8
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(95%),veh/ln	96.3	12.1	12.3	12.1	16.2	51.0	7.6	142.8	8.9	14.8	11.1	10.7
LnGrp Delay(d),s/veh	505.0	46.4	46.5	45.9	62.3	159.4	31.1	266.5	35.4	272.3	16.9	17.1
LnGrp LOS	F	D	D	D	E	F	C	F	D	F	B	B
Approach Vol, veh/h		1644			875			2428			814	
Approach Delay, s/veh		389.3			106.4			238.2			60.3	
Approach LOS		F			F			F			E	

Timer	1	2	3	4	5	6	7	8
Assigned Phs	1	2	3	4	5	6	7	8
Phs Duration (G+Y+Rc), s	16.7	75.3	23.0	65.0	12.0	80.0	39.0	49.0
Change Period (Y+Rc), s	6.0	6.0	6.0	6.0	6.0	6.0	6.0	6.0
Max Green Setting (Gmax), s	13.0	67.0	17.0	59.0	6.0	74.0	33.0	43.0
Max Q Clear Time (g_c+I1), s	10.6	15.4	17.3	18.3	8.0	76.0	35.0	45.0
Green Ext Time (p_c), s	0.1	51.4	0.0	4.9	0.0	0.0	0.0	0.0

Intersection Summary	
HCM 2010 Ctrl Delay	236.1
HCM 2010 LOS	F

Timings 2019 Existing PM Peak

2: Ashford Dunwoody Rd/Ashford Dunwood Rd & Ashwood Pkwy/Ashford Pkwy

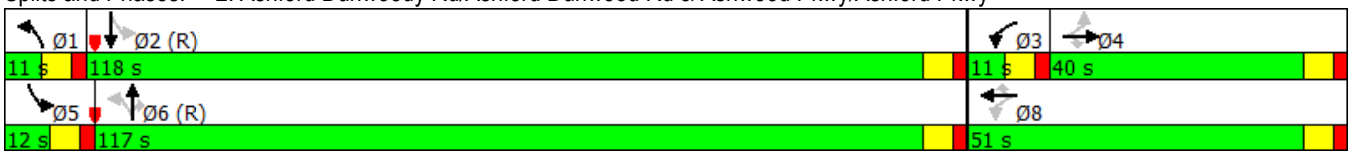
01/30/2019

Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT
Lane Configurations											
Traffic Volume (vph)	138	9	46	34	12	167	23	2491	71	134	433
Future Volume (vph)	138	9	46	34	12	167	23	2491	71	134	433
Turn Type	Perm	NA	Perm	pm+pt	NA	Perm	pm+pt	NA	Perm	pm+pt	NA
Protected Phases		4		3	8		1	6		5	2
Permitted Phases	4		4	8		8	6		6	2	
Detector Phase	4	4	4	3	8	8	1	6	6	5	2
Switch Phase											
Minimum Initial (s)	6.0	6.0	6.0	5.0	6.0	6.0	5.0	15.0	15.0	5.0	15.0
Minimum Split (s)	40.0	40.0	40.0	11.0	42.0	42.0	11.0	42.0	42.0	11.0	37.0
Total Split (s)	40.0	40.0	40.0	11.0	51.0	51.0	11.0	117.0	117.0	12.0	118.0
Total Split (%)	22.2%	22.2%	22.2%	6.1%	28.3%	28.3%	6.1%	65.0%	65.0%	6.7%	65.6%
Yellow Time (s)	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0
All-Red Time (s)	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0
Lost Time Adjust (s)		0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Lost Time (s)		6.0	6.0	6.0	6.0	6.0	6.0	6.0	6.0	6.0	6.0
Lead/Lag	Lag	Lag	Lag	Lead			Lead	Lag	Lag	Lead	Lag
Lead-Lag Optimize?											
Recall Mode	None	None	None	None	None	None	None	C-Min	C-Min	None	C-Min

Intersection Summary

Cycle Length: 180
Actuated Cycle Length: 180
Offset: 0 (0%), Referenced to phase 2:SBTL and 6:NBTL, Start of Green
Natural Cycle: 145
Control Type: Actuated-Coordinated

Splits and Phases: 2: Ashford Dunwoody Rd/Ashford Dunwood Rd & Ashwood Pkwy/Ashford Pkwy



HCM 2010 Signalized Intersection Summary 2019 Existing PM Peak
2: Ashford Dunwoody Rd/Ashford Dunwood Rd & Ashwood Pkwy/Ashford Pkwy 01/30/2019

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	138	9	46	34	12	167	23	2491	71	134	433	19
Future Volume (veh/h)	138	9	46	34	12	167	23	2491	71	134	433	19
Number	7	4	14	3	8	18	1	6	16	5	2	12
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Adj Sat Flow, veh/h/ln	1900	1863	1863	1863	1863	1863	1863	1863	1863	1863	1863	1900
Adj Flow Rate, veh/h	145	9	0	36	13	176	24	2622	0	141	456	20
Adj No. of Lanes	0	1	1	1	1	1	1	2	1	1	2	0
Peak Hour Factor	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95
Percent Heavy Veh, %	2	2	2	2	2	2	2	2	2	2	2	2
Cap, veh/h	201	10	224	343	369	314	654	2366	1058	99	2357	103
Arrive On Green	0.14	0.14	0.00	0.02	0.20	0.20	0.04	1.00	0.00	0.03	0.68	0.68
Sat Flow, veh/h	1144	71	1583	1774	1863	1583	1774	3539	1583	1774	3454	151
Grp Volume(v), veh/h	154	0	0	36	13	176	24	2622	0	141	233	243
Grp Sat Flow(s),veh/h/ln	1215	0	1583	1774	1863	1583	1774	1770	1583	1774	1770	1836
Q Serve(g_s), s	22.4	0.0	0.0	3.1	1.0	18.0	0.8	120.3	0.0	6.0	8.7	8.7
Cycle Q Clear(g_c), s	22.4	0.0	0.0	3.1	1.0	18.0	0.8	120.3	0.0	6.0	8.7	8.7
Prop In Lane	0.94		1.00	1.00		1.00	1.00		1.00	1.00		0.08
Lane Grp Cap(c), veh/h	211	0	224	343	369	314	654	2366	1058	99	1208	1253
V/C Ratio(X)	0.73	0.00	0.00	0.10	0.04	0.56	0.04	1.11	0.00	1.42	0.19	0.19
Avail Cap(c_a), veh/h	268	0	299	351	466	396	669	2366	1058	99	1208	1253
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	2.00	2.00	2.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	0.00	0.00	1.00	1.00	1.00	0.09	0.09	0.00	1.00	1.00	1.00
Uniform Delay (d), s/veh	76.0	0.0	0.0	62.4	58.3	65.1	8.8	0.0	0.0	64.1	10.5	10.5
Incr Delay (d2), s/veh	7.3	0.0	0.0	0.1	0.0	1.6	0.0	49.4	0.0	238.7	0.4	0.3
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(95%),veh/ln	12.6	0.0	0.0	2.7	0.9	12.7	0.7	29.2	0.0	20.7	7.7	8.0
LnGrp Delay(d),s/veh	83.3	0.0	0.0	62.5	58.3	66.7	8.8	49.4	0.0	302.8	10.8	10.8
LnGrp LOS	F			E	E	E	A	F		F	B	B
Approach Vol, veh/h		154			225			2646			617	
Approach Delay, s/veh		83.3			65.5			49.0			77.5	
Approach LOS		F			E			D			E	

Timer	1	2	3	4	5	6	7	8
Assigned Phs	1	2	3	4	5	6		8
Phs Duration (G+Y+Rc), s	9.5	128.8	10.2	31.4	12.0	126.3		41.7
Change Period (Y+Rc), s	6.0	6.0	6.0	6.0	6.0	6.0		6.0
Max Green Setting (Gmax), s	5.0	112.0	5.0	34.0	6.0	111.0		45.0
Max Q Clear Time (g_c+I1), s	2.8	10.7	5.1	24.4	8.0	122.3		20.0
Green Ext Time (p_c), s	0.0	100.8	0.0	1.0	0.0	0.0		1.5

Intersection Summary	
HCM 2010 Ctrl Delay	56.3
HCM 2010 LOS	E

Intersection	
Int Delay, s/veh	2.6

Movement	EBT	EBR	WBL	WBT	NBL	NBR
Lane Configurations						
Traffic Vol, veh/h	126	5	9	36	6	53
Future Vol, veh/h	126	5	9	36	6	53
Conflicting Peds, #/hr	0	0	0	0	0	0
Sign Control	Free	Free	Free	Free	Stop	Stop
RT Channelized	-	None	-	None	-	None
Storage Length	-	-	-	-	0	-
Veh in Median Storage, #	0	-	-	0	0	-
Grade, %	0	-	-	0	0	-
Peak Hour Factor	86	86	86	86	86	86
Heavy Vehicles, %	2	2	2	2	2	2
Mvmt Flow	147	6	10	42	7	62

Major/Minor	Major1		Major2		Minor1	
Conflicting Flow All	0	0	153	0	212	150
Stage 1	-	-	-	-	150	-
Stage 2	-	-	-	-	62	-
Critical Hdwy	-	-	4.12	-	6.42	6.22
Critical Hdwy Stg 1	-	-	-	-	5.42	-
Critical Hdwy Stg 2	-	-	-	-	5.42	-
Follow-up Hdwy	-	-	2.218	-	3.518	3.318
Pot Cap-1 Maneuver	-	-	1428	-	776	896
Stage 1	-	-	-	-	878	-
Stage 2	-	-	-	-	961	-
Platoon blocked, %	-	-		-		
Mov Cap-1 Maneuver	-	-	1428	-	771	896
Mov Cap-2 Maneuver	-	-	-	-	771	-
Stage 1	-	-	-	-	878	-
Stage 2	-	-	-	-	954	-

Approach	EB	WB	NB
HCM Control Delay, s	0	1.5	9.4
HCM LOS			A

Minor Lane/Major Mvmt	NBLn1	EBT	EBR	WBL	WBT
Capacity (veh/h)	881	-	-	1428	-
HCM Lane V/C Ratio	0.078	-	-	0.007	-
HCM Control Delay (s)	9.4	-	-	7.5	0
HCM Lane LOS	A	-	-	A	A
HCM 95th %tile Q(veh)	0.3	-	-	0	-

Timings
4: Perimeter Center Pl & Meadow Lane

2019 Existing PM Peak
01/30/2019

Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT
Lane Configurations											
Traffic Volume (vph)	47	620	19	155	296	19	68	31	385	4	8
Future Volume (vph)	47	620	19	155	296	19	68	31	385	4	8
Turn Type	Perm	NA	Perm	pm+pt	NA	Perm	Perm	NA	pm+ov	Perm	NA
Protected Phases		2		1	6			8	1		4
Permitted Phases	2		2	6		6	8		8	4	
Detector Phase	2	2	2	1	6	6	8	8	1	4	4
Switch Phase											
Minimum Initial (s)	15.0	15.0	15.0	5.0	15.0	15.0	6.0	6.0	5.0	6.0	6.0
Minimum Split (s)	73.0	73.0	73.0	15.0	24.0	24.0	50.0	50.0	15.0	49.0	49.0
Total Split (s)	63.0	63.0	63.0	15.0	78.0	78.0	42.0	42.0	15.0	42.0	42.0
Total Split (%)	52.5%	52.5%	52.5%	12.5%	65.0%	65.0%	35.0%	35.0%	12.5%	35.0%	35.0%
Yellow Time (s)	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0
All-Red Time (s)	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0
Lost Time Adjust (s)	0.0	0.0	0.0	0.0	0.0	0.0		0.0	0.0		0.0
Total Lost Time (s)	6.0	6.0	6.0	6.0	6.0	6.0		6.0	6.0		6.0
Lead/Lag	Lag	Lag	Lag	Lead					Lead		
Lead-Lag Optimize?											
Recall Mode	C-Min	C-Min	C-Min	None	C-Min	C-Min	None	None	None	None	None

Intersection Summary

Cycle Length: 120
Actuated Cycle Length: 120
Offset: 0 (0%), Referenced to phase 2:EBTL and 6:WBTL, Start of Green
Natural Cycle: 140
Control Type: Actuated-Coordinated

Splits and Phases: 4: Perimeter Center Pl & Meadow Lane

HCM 2010 Signalized Intersection Summary
4: Perimeter Center Pl & Meadow Lane

2019 Existing PM Peak
01/30/2019

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	47	620	19	155	296	19	68	31	385	4	8	15
Future Volume (veh/h)	47	620	19	155	296	19	68	31	385	4	8	15
Number	5	2	12	1	6	16	3	8	18	7	4	14
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Adj Sat Flow, veh/h/ln	1863	1863	1863	1863	1863	1863	1900	1863	1863	1900	1863	1900
Adj Flow Rate, veh/h	49	653	20	163	312	20	72	33	0	4	8	16
Adj No. of Lanes	1	2	1	1	2	1	0	1	1	0	1	0
Peak Hour Factor	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95
Percent Heavy Veh, %	2	2	2	2	2	2	2	2	2	2	2	2
Cap, veh/h	816	2562	1146	638	2886	1291	141	41	200	43	53	82
Arrive On Green	0.72	0.72	0.72	0.04	0.82	0.82	0.08	0.08	0.00	0.08	0.08	0.08
Sat Flow, veh/h	1044	3539	1583	1774	3539	1583	1068	490	1583	101	629	974
Grp Volume(v), veh/h	49	653	20	163	312	20	105	0	0	28	0	0
Grp Sat Flow(s),veh/h/ln	1044	1770	1583	1774	1770	1583	1558	0	1583	1704	0	0
Q Serve(g_s), s	1.6	7.5	0.4	2.6	2.1	0.3	6.0	0.0	0.0	0.0	0.0	0.0
Cycle Q Clear(g_c), s	1.6	7.5	0.4	2.6	2.1	0.3	7.9	0.0	0.0	1.8	0.0	0.0
Prop In Lane	1.00		1.00	1.00		1.00	0.69		1.00	0.14		0.57
Lane Grp Cap(c), veh/h	816	2562	1146	638	2886	1291	182	0	200	178	0	0
V/C Ratio(X)	0.06	0.25	0.02	0.26	0.11	0.02	0.58	0.00	0.00	0.16	0.00	0.00
Avail Cap(c_a), veh/h	816	2562	1146	697	2886	1291	506	0	541	527	0	0
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	1.00	1.00	0.41	0.41	0.41	1.00	0.00	0.00	1.00	0.00	0.00
Uniform Delay (d), s/veh	4.8	5.6	4.6	3.6	2.2	2.1	53.8	0.0	0.0	51.1	0.0	0.0
Incr Delay (d2), s/veh	0.1	0.2	0.0	0.1	0.0	0.0	2.9	0.0	0.0	0.4	0.0	0.0
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(95%),veh/ln	0.9	6.7	0.3	2.3	1.9	0.2	6.4	0.0	0.0	1.6	0.0	0.0
LnGrp Delay(d),s/veh	4.9	5.8	4.7	3.7	2.3	2.1	56.6	0.0	0.0	51.5	0.0	0.0
LnGrp LOS	A	A	A	A	A	A	E			D		
Approach Vol, veh/h		722			495			105			28	
Approach Delay, s/veh		5.8			2.7			56.6			51.5	
Approach LOS		A			A			E			D	

Timer	1	2	3	4	5	6	7	8
Assigned Phs	1	2		4		6		8
Phs Duration (G+Y+Rc), s	11.0	92.9		16.1		103.9		16.1
Change Period (Y+Rc), s	6.0	6.0		6.0		6.0		6.0
Max Green Setting (Gmax), s	9.0	57.0		36.0		72.0		36.0
Max Q Clear Time (g_c+I1), s	4.6	9.5		3.8		4.1		9.9
Green Ext Time (p_c), s	0.2	32.5		0.4		41.2		0.4

Intersection Summary	
HCM 2010 Ctrl Delay	9.5
HCM 2010 LOS	A

Notes

User approved pedestrian interval to be less than phase max green.

GDOT Left Turn Lane Analysis

LEFT TURN LANE ANALYSIS
per GDOT standards

The following left turn lane analysis was used to determine the need for a dedicated turn lane at the proposed site driveway locations on Ashwood Pkwy. GDOT standards require the installation of a left turn lane when traffic entering the development meets or exceeds the values shown in the following table.

GDOT Requirements For Left Turn Lanes					
Site Driveway	Left Turn Traffic (% Total Entering)	Left Turn Volume (veh/day)	Roadway Speed / # Lanes	GDOT Threshold (veh/day)	Requirement
Ashwood Pkwy @ Site Drwy 1	40%	1,663	25 mph / 2-Lane	300	100' storage 50' taper
Ashwood Pkwy @ Site Drwy 2	10%	203	25 mph / 2-Lane	300	Not Required
Ashwood Pkwy @ Private Rd	2%	42	25 mph / 2-Lane	300	Not Required

Findings

Based on the number of projected daily left turns, Site Driveway 1 on Ashwood Parkway will meet the GDOT requirements for construction of a left turn lane.

GDOT RIGHT TURN LANE ANALYSIS

RIGHT TURN LANE ANALYSIS
per GDOT standards

The following right turn lane analysis was used to determine the need for a dedicated deceleration lane at the proposed site driveway locations on Ashwood Parkway. GDOT standards require the installation of a deceleration lane when traffic entering the development meets or exceeds the values shown in the following table.

GDOT Requirements For Deceleration Lanes					
Site Driveway	Right Turn Traffic (% Total Entering)	Right Turn Volume (veh/day)	Roadway Speed / # Lanes	GDOT Threshold (veh/day)	Requirement
Ashwood Pkwy @ Site Drwy 1	2.5%	52	25 mph / 2-Lane	200	Not Required
Ashwood Pkwy @ Site Drwy 2	0.5%	10	25 mph / 2-Lane	200	Not Required
Ashwood Pkwy @ Private Rd	2%	42	25 mph / 2-Lane	200	Not Required

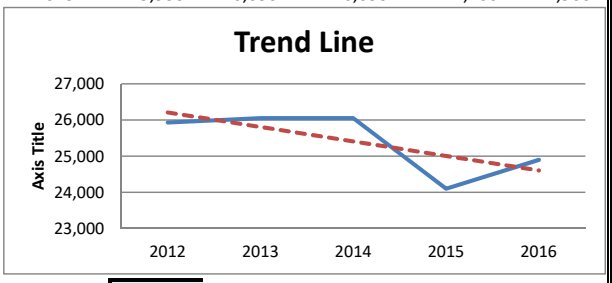
Findings

Based on the number of projected daily right turns, none of the driveways on Ashwood Parkway will require a dedicated right turn lane.

LINEAR REGRESSION OF DAILY TRAFFIC

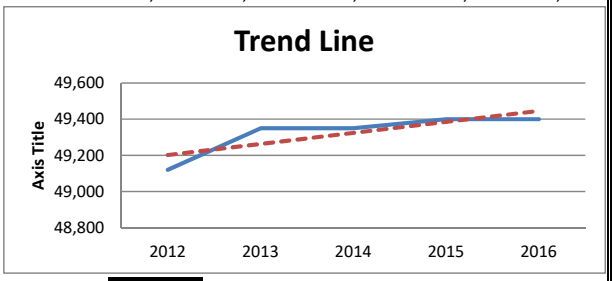
Location	Growth Rate	R Squared	Station ID	Route	2012	2013	2014	2015	2016
Ashford Dunwoody (North)	-1.6%	0.52	0893587	176431	25,930	26,050	26,050	24,100	24,900
Ashford Dunwoody (South)	0.1%	0.68	0893586	176431	49,120	49,350	49,350	49,400	49,400
Perimeter Center (W)	0.1%	0.50	0894069	603631	28,370	28,500	28,500	28,500	28,500
Hammond Drive (West)	-0.1%	0.02	0897170	486131	16,590	16,960	16,960	16,300	16,800
Weighted Average	**-0.3%**	0.25	Sum of Count Stations =		120,010	120,860	120,860	118,300	119,600

Location	Traffic Counter	RCLINK	2012	2013	2014	2015	2016
Ashford Dunwoody (North)	0893587	176431	25,930	26,050	26,050	24,100	24,900



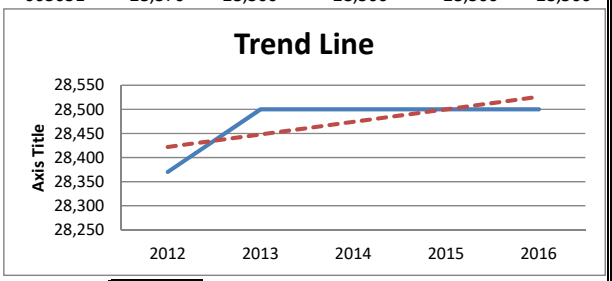
Growth Rate	-1.6%	Intercept	833,020	Slope	-401.00
Trend Line	26,208	25,807	25,406	25,005	24,604

Location	Traffic Counter	RCLINK	2012	2013	2014	2015	2016
Ashford Dunwoody (South)	0893586	176431	49,120	49,350	49,350	49,400	49,400



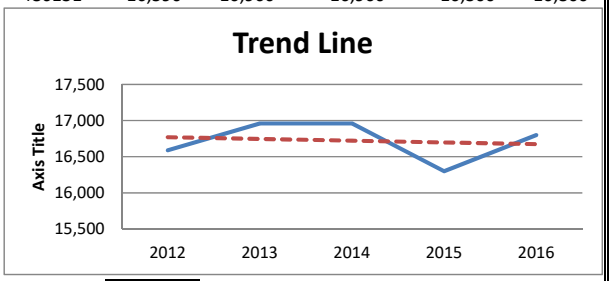
Growth Rate	0.1%	Intercept	-73,530	Slope	61.00
Trend Line	49,202	49,263	49,324	49,385	49,446

Location	Traffic Counter	RCLINK	2012	2013	2014	2015	2016
Perimeter Center (W)	0894069	603631	28,370	28,500	28,500	28,500	28,500



Growth Rate	0.1%	Intercept	-23,890	Slope	26.00
Trend Line	28,422	28,448	28,474	28,500	28,526

Location	Traffic Counter	RCLINK	2012	2013	2014	2015	2016
Hammond Drive (West)	0897170	486131	16,590	16,960	16,960	16,300	16,800



Growth Rate	-0.1%	Intercept	65,058	Slope	-24.00
Trend Line	16,770	16,746	16,722	16,698	16,674

FUTURE "NO-BUILD" INTERSECTION ANALYSIS

Timings
1: Ashford Dunwoody Rd & Meadow Lane/Asbury Square

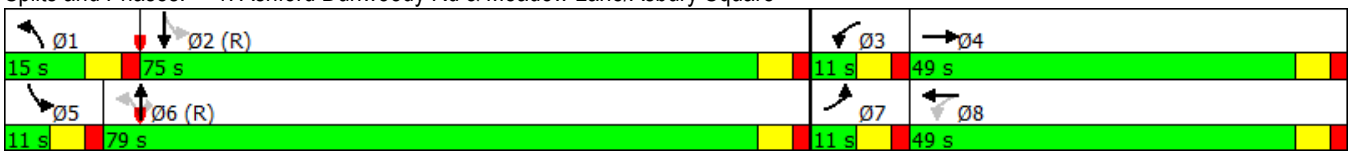
2021 No-Build AM Peak
01/30/2019

Lane Group	EBL	EBT	WBL	WBT	NBL	NBT	NBR	SBL	SBT
Lane Configurations									
Traffic Volume (vph)	69	56	47	108	162	473	72	86	1288
Future Volume (vph)	69	56	47	108	162	473	72	86	1288
Turn Type	Prot	NA	pm+pt	NA	pm+pt	NA	Perm	pm+pt	NA
Protected Phases	7	4	3	8	1	6		5	2
Permitted Phases			8		6		6	2	
Detector Phase	7	4	3	8	1	6	6	5	2
Switch Phase									
Minimum Initial (s)	5.0	6.0	5.0	6.0	5.0	15.0	15.0	5.0	15.0
Minimum Split (s)	11.0	48.0	11.0	49.0	11.0	47.0	47.0	11.0	43.0
Total Split (s)	11.0	49.0	11.0	49.0	15.0	79.0	79.0	11.0	75.0
Total Split (%)	7.3%	32.7%	7.3%	32.7%	10.0%	52.7%	52.7%	7.3%	50.0%
Yellow Time (s)	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0
All-Red Time (s)	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0
Lost Time Adjust (s)	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Lost Time (s)	6.0	6.0	6.0	6.0	6.0	6.0	6.0	6.0	6.0
Lead/Lag	Lead	Lag	Lead	Lag	Lead	Lag	Lag	Lead	Lag
Lead-Lag Optimize?									
Recall Mode	None	None	None	None	None	C-Min	C-Min	None	C-Min

Intersection Summary

Cycle Length: 150
Actuated Cycle Length: 150
Offset: 138 (92%), Referenced to phase 2:SBTL and 6:NBTL, Start of Green
Natural Cycle: 150
Control Type: Actuated-Coordinated

Splits and Phases: 1: Ashford Dunwoody Rd & Meadow Lane/Asbury Square



HCM 2010 Signalized Intersection Summary
1: Ashford Dunwoody Rd & Meadow Lane/Asbury Square

2021 No-Build AM Peak
01/30/2019

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	69	56	56	47	108	39	162	473	72	86	1288	440
Future Volume (veh/h)	69	56	56	47	108	39	162	473	72	86	1288	440
Number	7	4	14	3	8	18	1	6	16	5	2	12
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Adj Sat Flow, veh/h/ln	1863	1863	1900	1863	1863	1900	1863	1863	1863	1863	1863	1900
Adj Flow Rate, veh/h	78	64	64	53	123	44	184	538	82	98	1464	500
Adj No. of Lanes	2	2	0	1	2	0	1	2	1	1	2	0
Peak Hour Factor	0.88	0.88	0.88	0.88	0.88	0.88	0.88	0.88	0.88	0.88	0.88	0.88
Percent Heavy Veh, %	2	2	2	2	2	2	2	2	2	2	2	2
Cap, veh/h	115	123	109	144	178	61	281	2495	1116	628	1824	589
Arrive On Green	0.03	0.07	0.07	0.03	0.07	0.07	0.04	0.70	0.70	0.07	1.00	1.00
Sat Flow, veh/h	3442	1777	1577	1774	2587	889	1774	3539	1583	1774	2632	850
Grp Volume(v), veh/h	78	64	64	53	83	84	184	538	82	98	957	1007
Grp Sat Flow(s),veh/h/ln	1721	1770	1584	1774	1770	1706	1774	1770	1583	1774	1770	1713
Q Serve(g_s), s	3.4	5.2	5.9	4.1	6.8	7.3	4.6	7.9	2.4	2.5	0.0	0.0
Cycle Q Clear(g_c), s	3.4	5.2	5.9	4.1	6.8	7.3	4.6	7.9	2.4	2.5	0.0	0.0
Prop In Lane	1.00		1.00	1.00		0.52	1.00		1.00	1.00		0.50
Lane Grp Cap(c), veh/h	115	122	109	144	122	118	281	2495	1116	628	1227	1187
V/C Ratio(X)	0.68	0.52	0.59	0.37	0.68	0.72	0.65	0.22	0.07	0.16	0.78	0.85
Avail Cap(c_a), veh/h	115	507	454	144	507	489	308	2495	1116	629	1227	1187
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	2.00	2.00	2.00
Upstream Filter(I)	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	0.79	0.79	0.79
Uniform Delay (d), s/veh	71.7	67.4	67.8	62.4	68.2	68.4	5.8	7.7	6.9	5.9	0.0	0.0
Incr Delay (d2), s/veh	15.0	3.4	4.9	1.6	6.4	7.9	4.3	0.2	0.1	0.1	3.9	6.1
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(95%),veh/ln	3.3	4.8	4.9	3.8	6.4	6.6	4.5	7.1	2.0	2.1	2.4	3.6
LnGrp Delay(d),s/veh	86.7	70.9	72.7	64.0	74.6	76.3	10.1	7.9	7.0	6.0	3.9	6.1
LnGrp LOS	F	E	E	E	E	E	B	A	A	A	A	A
Approach Vol, veh/h		206			220			804			2062	
Approach Delay, s/veh		77.4			72.7			8.3			5.1	
Approach LOS		E			E			A			A	

Timer	1	2	3	4	5	6	7	8
Assigned Phs	1	2	3	4	5	6	7	8
Phs Duration (G+Y+Rc), s	12.7	110.0	11.0	16.3	10.9	111.7	11.0	16.3
Change Period (Y+Rc), s	6.0	6.0	6.0	6.0	6.0	6.0	6.0	6.0
Max Green Setting (Gmax), s	9.0	69.0	5.0	43.0	5.0	73.0	5.0	43.0
Max Q Clear Time (g_c+I1), s	6.6	2.0	6.1	7.9	4.5	9.9	5.4	9.3
Green Ext Time (p_c), s	0.1	66.8	0.0	1.1	0.0	62.9	0.0	1.1

Intersection Summary	
HCM 2010 Ctrl Delay	14.9
HCM 2010 LOS	B

Timings 2021 No-Build AM Peak

2: Ashford Dunwoody Rd/Ashford Dunwood Rd & Ashwood Pkwy/Ashford Pkwy

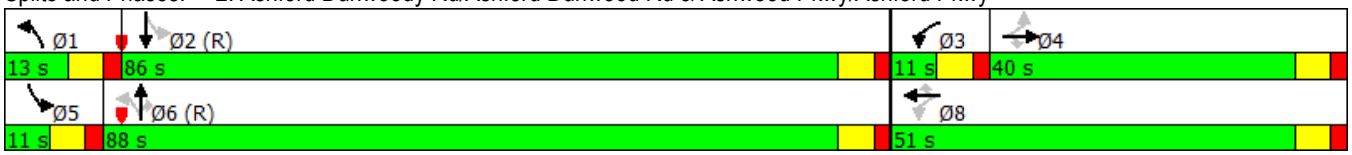
01/30/2019

Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT
Lane Configurations											
Traffic Volume (vph)	16	2	22	54	9	38	54	403	24	72	1298
Future Volume (vph)	16	2	22	54	9	38	54	403	24	72	1298
Turn Type	Perm	NA	Perm	pm+pt	NA	Perm	pm+pt	NA	Perm	pm+pt	NA
Protected Phases		4		3	8		1	6		5	2
Permitted Phases	4		4	8		8	6		6	2	
Detector Phase	4	4	4	3	8	8	1	6	6	5	2
Switch Phase											
Minimum Initial (s)	6.0	6.0	6.0	5.0	6.0	6.0	5.0	15.0	15.0	5.0	15.0
Minimum Split (s)	40.0	40.0	40.0	11.0	42.0	42.0	11.0	42.0	42.0	11.0	37.0
Total Split (s)	40.0	40.0	40.0	11.0	51.0	51.0	13.0	88.0	88.0	11.0	86.0
Total Split (%)	26.7%	26.7%	26.7%	7.3%	34.0%	34.0%	8.7%	58.7%	58.7%	7.3%	57.3%
Yellow Time (s)	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0
All-Red Time (s)	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0
Lost Time Adjust (s)		0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Lost Time (s)		6.0	6.0	6.0	6.0	6.0	6.0	6.0	6.0	6.0	6.0
Lead/Lag	Lag	Lag	Lag	Lead			Lead	Lag	Lag	Lead	Lag
Lead-Lag Optimize?											
Recall Mode	None	None	None	None	None	None	None	C-Min	C-Min	None	C-Min

Intersection Summary

Cycle Length: 150
Actuated Cycle Length: 150
Offset: 0 (0%), Referenced to phase 2:SBTL and 6:NBTL, Start of Green
Natural Cycle: 115
Control Type: Actuated-Coordinated

Splits and Phases: 2: Ashford Dunwoody Rd/Ashford Dunwood Rd & Ashwood Pkwy/Ashford Pkwy



HCM 2010 Signalized Intersection Summary — 2021 No-Build AM Peak
2: Ashford Dunwoody Rd/Ashford Dunwood Rd & Ashwood Pkwy/Ashford Pkwy — 01/30/2019

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	16	2	22	54	9	38	54	403	24	72	1298	77
Future Volume (veh/h)	16	2	22	54	9	38	54	403	24	72	1298	77
Number	7	4	14	3	8	18	1	6	16	5	2	12
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Adj Sat Flow, veh/h/ln	1900	1863	1863	1863	1863	1863	1863	1863	1863	1863	1863	1900
Adj Flow Rate, veh/h	17	2	0	58	10	41	58	433	0	77	1396	83
Adj No. of Lanes	0	1	1	1	1	1	1	2	1	1	2	0
Peak Hour Factor	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93
Percent Heavy Veh, %	2	2	2	2	2	2	2	2	2	2	2	2
Cap, veh/h	91	8	60	189	207	176	299	2608	1167	742	2507	149
Arrive On Green	0.04	0.04	0.00	0.03	0.11	0.11	0.02	0.49	0.00	0.03	0.74	0.74
Sat Flow, veh/h	1191	217	1583	1774	1863	1583	1774	3539	1583	1774	3395	201
Grp Volume(v), veh/h	19	0	0	58	10	41	58	433	0	77	726	753
Grp Sat Flow(s),veh/h/ln	1408	0	1583	1774	1863	1583	1774	1770	1583	1774	1770	1827
Q Serve(g_s), s	1.7	0.0	0.0	4.6	0.7	3.5	1.2	10.1	0.0	1.6	27.3	27.5
Cycle Q Clear(g_c), s	1.9	0.0	0.0	4.6	0.7	3.5	1.2	10.1	0.0	1.6	27.3	27.5
Prop In Lane	0.89		1.00	1.00		1.00	1.00		1.00	1.00		0.11
Lane Grp Cap(c), veh/h	99	0	60	189	207	176	299	2608	1167	742	1307	1349
V/C Ratio(X)	0.19	0.00	0.00	0.31	0.05	0.23	0.19	0.17	0.00	0.10	0.56	0.56
Avail Cap(c_a), veh/h	361	0	359	189	559	475	328	2608	1167	744	1307	1349
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	0.67	0.67	0.67	1.00	1.00	1.00
Upstream Filter(I)	1.00	0.00	0.00	1.00	1.00	1.00	0.96	0.96	0.00	1.00	1.00	1.00
Uniform Delay (d), s/veh	70.3	0.0	0.0	65.0	59.6	60.8	7.2	12.6	0.0	4.6	8.7	8.7
Incr Delay (d2), s/veh	0.9	0.0	0.0	0.9	0.1	0.7	0.3	0.1	0.0	0.1	1.7	1.7
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(95%),veh/ln	1.4	0.0	0.0	4.2	0.7	2.9	1.1	8.6	0.0	1.4	19.8	20.7
LnGrp Delay(d),s/veh	71.3	0.0	0.0	65.9	59.7	61.5	7.5	12.7	0.0	4.6	10.4	10.4
LnGrp LOS	E			E	E	E	A	B		A	B	B
Approach Vol, veh/h		19			109			491			1556	
Approach Delay, s/veh		71.3			63.7			12.1			10.1	
Approach LOS		E			E			B			B	

Timer	1	2	3	4	5	6	7	8
Assigned Phs	1	2	3	4	5	6		8
Phs Duration (G+Y+Rc), s	10.6	116.8	11.0	11.7	10.8	116.5		22.7
Change Period (Y+Rc), s	6.0	6.0	6.0	6.0	6.0	6.0		6.0
Max Green Setting (Gmax), s	7.0	80.0	5.0	34.0	5.0	82.0		45.0
Max Q Clear Time (g_c+I1), s	3.2	29.5	6.6	3.9	3.6	12.1		5.5
Green Ext Time (p_c), s	0.0	49.0	0.0	0.2	0.0	67.2		0.2

Intersection Summary	
HCM 2010 Ctrl Delay	13.8
HCM 2010 LOS	B

Intersection	
Int Delay, s/veh	1.3

Movement	EBT	EBR	WBL	WBT	NBL	NBR
Lane Configurations						
Traffic Vol, veh/h	39	0	19	118	9	2
Future Vol, veh/h	39	0	19	118	9	2
Conflicting Peds, #/hr	0	0	0	0	0	0
Sign Control	Free	Free	Free	Free	Stop	Stop
RT Channelized	-	None	-	None	-	None
Storage Length	-	-	-	-	0	-
Veh in Median Storage, #	0	-	-	0	0	-
Grade, %	0	-	-	0	0	-
Peak Hour Factor	87	87	87	87	87	87
Heavy Vehicles, %	2	2	2	2	2	2
Mvmt Flow	45	0	22	136	10	2

Major/Minor	Major1		Major2		Minor1	
Conflicting Flow All	0	0	45	0	225	45
Stage 1	-	-	-	-	45	-
Stage 2	-	-	-	-	180	-
Critical Hdwy	-	-	4.12	-	6.42	6.22
Critical Hdwy Stg 1	-	-	-	-	5.42	-
Critical Hdwy Stg 2	-	-	-	-	5.42	-
Follow-up Hdwy	-	-	2.218	-	3.518	3.318
Pot Cap-1 Maneuver	-	-	1563	-	763	1025
Stage 1	-	-	-	-	977	-
Stage 2	-	-	-	-	851	-
Platoon blocked, %	-	-		-		
Mov Cap-1 Maneuver	-	-	1563	-	752	1025
Mov Cap-2 Maneuver	-	-	-	-	752	-
Stage 1	-	-	-	-	977	-
Stage 2	-	-	-	-	838	-

Approach	EB	WB	NB
HCM Control Delay, s	0	1	9.6
HCM LOS			A

Minor Lane/Major Mvmt	NBLn1	EBT	EBR	WBL	WBT
Capacity (veh/h)	790	-	-	1563	-
HCM Lane V/C Ratio	0.016	-	-	0.014	-
HCM Control Delay (s)	9.6	-	-	7.3	0
HCM Lane LOS	A	-	-	A	A
HCM 95th %tile Q(veh)	0	-	-	0	-

Timings
4: Perimeter Center Pl & Meadow Lane

2021 No-Build AM Peak
01/30/2019

Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT
Lane Configurations											
Traffic Volume (vph)	11	133	17	206	472	5	15	3	42	2	4
Future Volume (vph)	11	133	17	206	472	5	15	3	42	2	4
Turn Type	Perm	NA	Perm	pm+pt	NA	Perm	Perm	NA	pm+ov	Perm	NA
Protected Phases		2		1	6			8	1		4
Permitted Phases	2		2	6		6	8		8	4	
Detector Phase	2	2	2	1	6	6	8	8	1	4	4
Switch Phase											
Minimum Initial (s)	15.0	15.0	15.0	5.0	15.0	15.0	6.0	6.0	5.0	6.0	6.0
Minimum Split (s)	73.0	73.0	73.0	11.0	24.0	24.0	50.0	50.0	11.0	49.0	49.0
Total Split (s)	61.0	61.0	61.0	15.0	76.0	76.0	44.0	44.0	15.0	44.0	44.0
Total Split (%)	50.8%	50.8%	50.8%	12.5%	63.3%	63.3%	36.7%	36.7%	12.5%	36.7%	36.7%
Yellow Time (s)	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0
All-Red Time (s)	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0
Lost Time Adjust (s)	0.0	0.0	0.0	0.0	0.0	0.0		0.0	0.0		0.0
Total Lost Time (s)	6.0	6.0	6.0	6.0	6.0	6.0		6.0	6.0		6.0
Lead/Lag	Lag	Lag	Lag	Lead					Lead		
Lead-Lag Optimize?											
Recall Mode	C-Min	C-Min	C-Min	None	C-Min	C-Min	None	None	None	None	None

Intersection Summary

Cycle Length: 120
Actuated Cycle Length: 120
Offset: 0 (0%), Referenced to phase 2:EBTL and 6:WBTL, Start of Green
Natural Cycle: 135
Control Type: Actuated-Coordinated

Splits and Phases: 4: Perimeter Center Pl & Meadow Lane

HCM 2010 Signalized Intersection Summary
4: Perimeter Center Pl & Meadow Lane

2021 No-Build AM Peak
01/30/2019

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	11	133	17	206	472	5	15	3	42	2	4	16
Future Volume (veh/h)	11	133	17	206	472	5	15	3	42	2	4	16
Number	5	2	12	1	6	16	3	8	18	7	4	14
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Adj Sat Flow, veh/h/ln	1863	1863	1863	1863	1863	1863	1900	1863	1863	1900	1863	1900
Adj Flow Rate, veh/h	11	137	18	212	487	5	15	3	0	2	4	16
Adj No. of Lanes	1	2	1	1	2	1	0	1	1	0	1	0
Peak Hour Factor	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97
Percent Heavy Veh, %	2	2	2	2	2	2	2	2	2	2	2	2
Cap, veh/h	755	2729	1221	1069	3055	1367	98	15	125	36	13	44
Arrive On Green	0.77	0.77	0.77	0.04	0.86	0.86	0.04	0.04	0.00	0.04	0.04	0.04
Sat Flow, veh/h	901	3539	1583	1774	3539	1583	1175	400	1583	87	356	1182
Grp Volume(v), veh/h	11	137	18	212	487	5	18	0	0	22	0	0
Grp Sat Flow(s),veh/h/ln	901	1770	1583	1774	1770	1583	1575	0	1583	1626	0	0
Q Serve(g_s), s	0.3	1.1	0.3	2.8	2.6	0.1	0.0	0.0	0.0	0.0	0.0	0.0
Cycle Q Clear(g_c), s	0.3	1.1	0.3	2.8	2.6	0.1	1.2	0.0	0.0	1.6	0.0	0.0
Prop In Lane	1.00		1.00	1.00		1.00	0.83		1.00	0.09		0.73
Lane Grp Cap(c), veh/h	755	2729	1221	1069	3055	1367	113	0	125	93	0	0
V/C Ratio(X)	0.01	0.05	0.01	0.20	0.16	0.00	0.16	0.00	0.00	0.24	0.00	0.00
Avail Cap(c_a), veh/h	755	2729	1221	1128	3055	1367	518	0	568	543	0	0
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	1.00	1.00	0.22	0.22	0.22	1.00	0.00	0.00	1.00	0.00	0.00
Uniform Delay (d), s/veh	3.2	3.3	3.2	2.0	1.3	1.1	56.2	0.0	0.0	56.4	0.0	0.0
Incr Delay (d2), s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.7	0.0	0.0	1.3	0.0	0.0
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(95%),veh/ln	0.2	1.0	0.3	2.2	2.1	0.0	1.1	0.0	0.0	1.3	0.0	0.0
LnGrp Delay(d),s/veh	3.2	3.3	3.2	2.0	1.3	1.1	56.9	0.0	0.0	57.7	0.0	0.0
LnGrp LOS	A	A	A	A	A	A	E			E		
Approach Vol, veh/h		166			704			18			22	
Approach Delay, s/veh		3.3			1.5			56.9			57.7	
Approach LOS		A			A			E			E	

Timer	1	2	3	4	5	6	7	8
Assigned Phs	1	2		4		6		8
Phs Duration (G+Y+Rc), s	11.0	98.5		10.4		109.6		10.4
Change Period (Y+Rc), s	6.0	6.0		6.0		6.0		6.0
Max Green Setting (Gmax), s	9.0	55.0		38.0		70.0		38.0
Max Q Clear Time (g_c+I1), s	4.8	3.1		3.6		4.6		3.2
Green Ext Time (p_c), s	0.3	21.4		0.1		23.4		0.1

Intersection Summary	
HCM 2010 Ctrl Delay	4.3
HCM 2010 LOS	A

Notes

User approved pedestrian interval to be less than phase max green.

Timings
1: Ashford Dunwoody Rd & Meadow Lane/Asbury Square

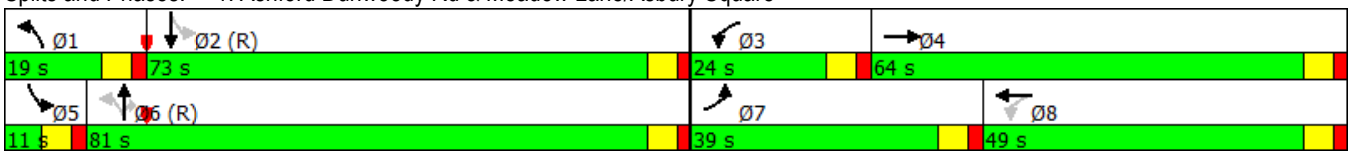
2021 No-Build PM Peak
01/30/2019

Lane Group	EBL	EBT	WBL	WBT	NBL	NBT	NBR	SBL	SBT
Lane Configurations									
Traffic Volume (vph)	1066	297	174	210	122	1849	134	119	407
Future Volume (vph)	1066	297	174	210	122	1849	134	119	407
Turn Type	Prot	NA	pm+pt	NA	pm+pt	NA	Perm	pm+pt	NA
Protected Phases	7	4	3	8	1	6		5	2
Permitted Phases			8		6		6	2	
Detector Phase	7	4	3	8	1	6	6	5	2
Switch Phase									
Minimum Initial (s)	5.0	6.0	5.0	6.0	5.0	15.0	15.0	5.0	15.0
Minimum Split (s)	11.0	48.0	11.0	49.0	11.0	47.0	47.0	11.0	43.0
Total Split (s)	39.0	64.0	24.0	49.0	19.0	81.0	81.0	11.0	73.0
Total Split (%)	21.7%	35.6%	13.3%	27.2%	10.6%	45.0%	45.0%	6.1%	40.6%
Yellow Time (s)	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0
All-Red Time (s)	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0
Lost Time Adjust (s)	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Lost Time (s)	6.0	6.0	6.0	6.0	6.0	6.0	6.0	6.0	6.0
Lead/Lag	Lead	Lag	Lead	Lag	Lead	Lag	Lag	Lead	Lag
Lead-Lag Optimize?									
Recall Mode	None	None	None	None	None	C-Min	C-Min	None	C-Min

Intersection Summary

Cycle Length: 180
Actuated Cycle Length: 180
Offset: 170 (94%), Referenced to phase 2:SBTL and 6:NBTL, Start of Green
Natural Cycle: 150
Control Type: Actuated-Coordinated

Splits and Phases: 1: Ashford Dunwoody Rd & Meadow Lane/Asbury Square



HCM 2010 Signalized Intersection Summary
1: Ashford Dunwoody Rd & Meadow Lane/Asbury Square

2021 No-Build PM Peak
01/30/2019

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	1066	297	63	174	210	374	122	1849	134	119	407	180
Future Volume (veh/h)	1066	297	63	174	210	374	122	1849	134	119	407	180
Number	7	4	14	3	8	18	1	6	16	5	2	12
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Adj Sat Flow, veh/h/ln	1863	1863	1900	1863	1863	1900	1863	1863	1863	1863	1863	1900
Adj Flow Rate, veh/h	1254	349	74	205	247	440	144	2175	158	140	479	212
Adj No. of Lanes	2	2	0	1	2	0	1	2	1	1	2	0
Peak Hour Factor	0.85	0.85	0.85	0.85	0.85	0.85	0.85	0.85	0.85	0.85	0.85	0.85
Percent Heavy Veh, %	2	2	2	2	2	2	2	2	2	2	2	2
Cap, veh/h	631	945	198	436	423	378	376	1475	660	89	921	405
Arrive On Green	0.18	0.32	0.32	0.10	0.24	0.24	0.06	0.42	0.42	0.06	0.77	0.77
Sat Flow, veh/h	3442	2914	611	1774	1770	1583	1774	3539	1583	1774	2394	1053
Grp Volume(v), veh/h	1254	210	213	205	247	440	144	2175	158	140	353	338
Grp Sat Flow(s),veh/h/ln	1721	1770	1755	1774	1770	1583	1774	1770	1583	1774	1770	1677
Q Serve(g_s), s	33.0	16.4	16.8	15.6	22.2	43.0	8.7	75.0	11.6	5.0	13.8	14.0
Cycle Q Clear(g_c), s	33.0	16.4	16.8	15.6	22.2	43.0	8.7	75.0	11.6	5.0	13.8	14.0
Prop In Lane	1.00		0.35	1.00		1.00	1.00		1.00	1.00		0.63
Lane Grp Cap(c), veh/h	631	574	569	436	423	378	376	1475	660	89	681	645
V/C Ratio(X)	1.99	0.37	0.37	0.47	0.58	1.16	0.38	1.47	0.24	1.57	0.52	0.52
Avail Cap(c_a), veh/h	631	574	569	439	423	378	398	1475	660	89	681	645
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	2.00	2.00	2.00
Upstream Filter(I)	0.85	0.85	0.85	1.00	1.00	1.00	1.00	1.00	1.00	0.99	0.99	0.99
Uniform Delay (d), s/veh	73.5	46.6	46.8	44.8	60.6	68.5	30.0	52.5	34.0	49.9	14.4	14.4
Incr Delay (d2), s/veh	449.2	0.3	0.3	0.8	2.1	98.7	0.6	217.4	0.9	302.1	2.8	3.0
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(95%),veh/ln	99.1	12.4	12.5	12.2	16.6	52.5	7.7	146.2	9.0	17.1	11.3	11.2
LnGrp Delay(d),s/veh	522.7	47.0	47.1	45.6	62.7	167.2	30.7	269.9	34.9	352.0	17.1	17.4
LnGrp LOS	F	D	D	D	E	F	C	F	C	F	B	B
Approach Vol, veh/h		1677			892			2477			831	
Approach Delay, s/veh		402.7			110.3			241.0			73.6	
Approach LOS		F			F			F			E	

Timer	1	2	3	4	5	6	7	8
Assigned Phs	1	2	3	4	5	6	7	8
Phs Duration (G+Y+Rc), s	16.8	75.2	23.6	64.4	11.0	81.0	39.0	49.0
Change Period (Y+Rc), s	6.0	6.0	6.0	6.0	6.0	6.0	6.0	6.0
Max Green Setting (Gmax), s	13.0	67.0	18.0	58.0	5.0	75.0	33.0	43.0
Max Q Clear Time (g_c+I1), s	10.7	16.0	17.6	18.8	7.0	77.0	35.0	45.0
Green Ext Time (p_c), s	0.1	50.9	0.0	5.0	0.0	0.0	0.0	0.0

Intersection Summary	
HCM 2010 Ctrl Delay	243.7
HCM 2010 LOS	F

Timings 2021 No-Build PM Peak

2: Ashford Dunwoody Rd/Ashford Dunwood Rd & Ashwood Pkwy/Ashford Pkwy

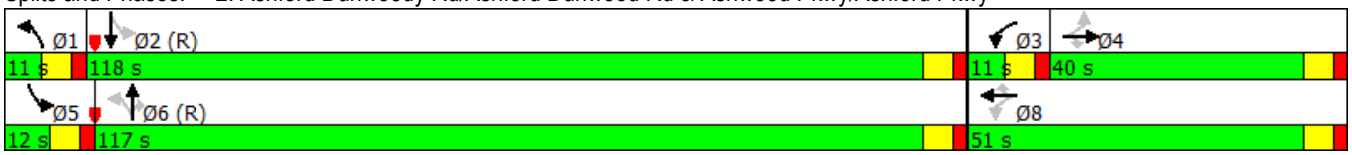
01/30/2019

Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT
Lane Configurations											
Traffic Volume (vph)	141	9	47	35	12	170	23	2541	72	137	442
Future Volume (vph)	141	9	47	35	12	170	23	2541	72	137	442
Turn Type	Perm	NA	Perm	pm+pt	NA	Perm	pm+pt	NA	Perm	pm+pt	NA
Protected Phases		4		3	8		1	6		5	2
Permitted Phases	4		4	8		8	6		6	2	
Detector Phase	4	4	4	3	8	8	1	6	6	5	2
Switch Phase											
Minimum Initial (s)	6.0	6.0	6.0	5.0	6.0	6.0	5.0	15.0	15.0	5.0	15.0
Minimum Split (s)	40.0	40.0	40.0	11.0	42.0	42.0	11.0	42.0	42.0	11.0	37.0
Total Split (s)	40.0	40.0	40.0	11.0	51.0	51.0	11.0	117.0	117.0	12.0	118.0
Total Split (%)	22.2%	22.2%	22.2%	6.1%	28.3%	28.3%	6.1%	65.0%	65.0%	6.7%	65.6%
Yellow Time (s)	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0
All-Red Time (s)	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0
Lost Time Adjust (s)		0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Lost Time (s)		6.0	6.0	6.0	6.0	6.0	6.0	6.0	6.0	6.0	6.0
Lead/Lag	Lag	Lag	Lag	Lead			Lead	Lag	Lag	Lead	Lag
Lead-Lag Optimize?											
Recall Mode	None	None	None	None	None	None	None	C-Min	C-Min	None	C-Min

Intersection Summary

Cycle Length: 180
Actuated Cycle Length: 180
Offset: 0 (0%), Referenced to phase 2:SBTL and 6:NBTL, Start of Green
Natural Cycle: 145
Control Type: Actuated-Coordinated

Splits and Phases: 2: Ashford Dunwoody Rd/Ashford Dunwood Rd & Ashwood Pkwy/Ashford Pkwy



HCM 2010 Signalized Intersection Summary — 2021 No-Build PM Peak
2: Ashford Dunwoody Rd/Ashford Dunwood Rd & Ashwood Pkwy/Ashford Pkwy — 01/30/2019

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	141	9	47	35	12	170	23	2541	72	137	442	19
Future Volume (veh/h)	141	9	47	35	12	170	23	2541	72	137	442	19
Number	7	4	14	3	8	18	1	6	16	5	2	12
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Adj Sat Flow, veh/h/ln	1900	1863	1863	1863	1863	1863	1863	1863	1863	1863	1863	1900
Adj Flow Rate, veh/h	148	9	0	37	13	179	24	2675	0	144	465	20
Adj No. of Lanes	0	1	1	1	1	1	1	2	1	1	2	0
Peak Hour Factor	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95
Percent Heavy Veh, %	2	2	2	2	2	2	2	2	2	2	2	2
Cap, veh/h	203	10	228	349	375	319	645	2354	1053	172	2348	101
Arrive On Green	0.14	0.14	0.00	0.02	0.20	0.20	0.04	1.00	0.00	0.03	0.68	0.68
Sat Flow, veh/h	1142	69	1583	1774	1863	1583	1774	3539	1583	1774	3458	148
Grp Volume(v), veh/h	157	0	0	37	13	179	24	2675	0	144	238	247
Grp Sat Flow(s),veh/h/ln	1211	0	1583	1774	1863	1583	1774	1770	1583	1774	1770	1837
Q Serve(g_s), s	22.9	0.0	0.0	3.1	1.0	18.3	0.8	0.0	0.0	4.8	9.0	9.0
Cycle Q Clear(g_c), s	22.9	0.0	0.0	3.1	1.0	18.3	0.8	0.0	0.0	4.8	9.0	9.0
Prop In Lane	0.94		1.00	1.00		1.00	1.00		1.00	1.00		0.08
Lane Grp Cap(c), veh/h	213	0	228	349	375	319	645	2354	1053	172	1202	1247
V/C Ratio(X)	0.74	0.00	0.00	0.11	0.03	0.56	0.04	1.14	0.00	0.84	0.20	0.20
Avail Cap(c_a), veh/h	268	0	299	356	466	396	660	2354	1053	172	1202	1247
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	2.00	2.00	2.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	0.00	0.00	1.00	1.00	1.00	0.09	0.09	0.00	1.00	1.00	1.00
Uniform Delay (d), s/veh	75.7	0.0	0.0	61.9	57.8	64.7	9.0	0.0	0.0	18.4	10.7	10.7
Incr Delay (d2), s/veh	7.7	0.0	0.0	0.1	0.0	1.5	0.0	61.9	0.0	28.7	0.4	0.4
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(95%),veh/ln	12.8	0.0	0.0	2.8	0.9	12.9	0.7	36.1	0.0	10.0	7.9	8.2
LnGrp Delay(d),s/veh	83.5	0.0	0.0	62.0	57.8	66.2	9.0	61.9	0.0	47.1	11.1	11.1
LnGrp LOS	F			E	E	E	A	F		D	B	B
Approach Vol, veh/h		157			229			2699			629	
Approach Delay, s/veh		83.5			65.1			61.5			19.3	
Approach LOS		F			E			E			B	

Timer	1	2	3	4	5	6	7	8
Assigned Phs	1	2	3	4	5	6		8
Phs Duration (G+Y+Rc), s	9.5	128.2	10.3	31.9	12.0	125.7		42.3
Change Period (Y+Rc), s	6.0	6.0	6.0	6.0	6.0	6.0		6.0
Max Green Setting (Gmax), s	5.0	112.0	5.0	34.0	6.0	111.0		45.0
Max Q Clear Time (g_c+I1), s	2.8	11.0	5.1	24.9	6.8	2.0		20.3
Green Ext Time (p_c), s	0.0	100.5	0.0	1.0	0.0	108.5		1.5

Intersection Summary	
HCM 2010 Ctrl Delay	55.5
HCM 2010 LOS	E

Intersection	
Int Delay, s/veh	2.6

Movement	EBT	EBR	WBL	WBT	NBL	NBR
Lane Configurations						
Traffic Vol, veh/h	129	5	9	37	6	54
Future Vol, veh/h	129	5	9	37	6	54
Conflicting Peds, #/hr	0	0	0	0	0	0
Sign Control	Free	Free	Free	Free	Stop	Stop
RT Channelized	-	None	-	None	-	None
Storage Length	-	-	-	-	0	-
Veh in Median Storage, #	0	-	-	0	0	-
Grade, %	0	-	-	0	0	-
Peak Hour Factor	86	86	86	86	86	86
Heavy Vehicles, %	2	2	2	2	2	2
Mvmt Flow	150	6	10	43	7	63

Major/Minor	Major1		Major2		Minor1	
Conflicting Flow All	0	0	156	0	216	153
Stage 1	-	-	-	-	153	-
Stage 2	-	-	-	-	63	-
Critical Hdwy	-	-	4.12	-	6.42	6.22
Critical Hdwy Stg 1	-	-	-	-	5.42	-
Critical Hdwy Stg 2	-	-	-	-	5.42	-
Follow-up Hdwy	-	-	2.218	-	3.518	3.318
Pot Cap-1 Maneuver	-	-	1424	-	772	893
Stage 1	-	-	-	-	875	-
Stage 2	-	-	-	-	960	-
Platoon blocked, %	-	-		-		
Mov Cap-1 Maneuver	-	-	1424	-	767	893
Mov Cap-2 Maneuver	-	-	-	-	767	-
Stage 1	-	-	-	-	875	-
Stage 2	-	-	-	-	953	-

Approach	EB	WB	NB
HCM Control Delay, s	0	1.5	9.4
HCM LOS			A

Minor Lane/Major Mvmt	NBLn1	EBT	EBR	WBL	WBT
Capacity (veh/h)	879	-	-	1424	-
HCM Lane V/C Ratio	0.079	-	-	0.007	-
HCM Control Delay (s)	9.4	-	-	7.5	0
HCM Lane LOS	A	-	-	A	A
HCM 95th %tile Q(veh)	0.3	-	-	0	-

Timings
4: Perimeter Center Pl & Meadow Lane

2021 No-Build PM Peak
01/30/2019

Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT
Lane Configurations											
Traffic Volume (vph)	48	632	19	158	302	19	69	32	393	4	8
Future Volume (vph)	48	632	19	158	302	19	69	32	393	4	8
Turn Type	Perm	NA	Perm	pm+pt	NA	Perm	Perm	NA	pm+ov	Perm	NA
Protected Phases		2		1	6			8	1		4
Permitted Phases	2		2	6		6	8		8	4	
Detector Phase	2	2	2	1	6	6	8	8	1	4	4
Switch Phase											
Minimum Initial (s)	15.0	15.0	15.0	5.0	15.0	15.0	6.0	6.0	5.0	6.0	6.0
Minimum Split (s)	73.0	73.0	73.0	15.0	24.0	24.0	50.0	50.0	15.0	49.0	49.0
Total Split (s)	63.0	63.0	63.0	15.0	78.0	78.0	42.0	42.0	15.0	42.0	42.0
Total Split (%)	52.5%	52.5%	52.5%	12.5%	65.0%	65.0%	35.0%	35.0%	12.5%	35.0%	35.0%
Yellow Time (s)	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0
All-Red Time (s)	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0
Lost Time Adjust (s)	0.0	0.0	0.0	0.0	0.0	0.0		0.0	0.0		0.0
Total Lost Time (s)	6.0	6.0	6.0	6.0	6.0	6.0		6.0	6.0		6.0
Lead/Lag	Lag	Lag	Lag	Lead					Lead		
Lead-Lag Optimize?											
Recall Mode	C-Min	C-Min	C-Min	None	C-Min	C-Min	None	None	None	None	None

Intersection Summary

Cycle Length: 120
Actuated Cycle Length: 120
Offset: 0 (0%), Referenced to phase 2:EBTL and 6:WBTL, Start of Green
Natural Cycle: 140
Control Type: Actuated-Coordinated

Splits and Phases: 4: Perimeter Center Pl & Meadow Lane

HCM 2010 Signalized Intersection Summary
4: Perimeter Center Pl & Meadow Lane

2021 No-Build PM Peak
01/30/2019

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	48	632	19	158	302	19	69	32	393	4	8	15
Future Volume (veh/h)	48	632	19	158	302	19	69	32	393	4	8	15
Number	5	2	12	1	6	16	3	8	18	7	4	14
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Adj Sat Flow, veh/h/ln	1863	1863	1863	1863	1863	1863	1900	1863	1863	1900	1863	1900
Adj Flow Rate, veh/h	51	665	20	166	318	20	73	34	0	4	8	16
Adj No. of Lanes	1	2	1	1	2	1	0	1	1	0	1	0
Peak Hour Factor	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95
Percent Heavy Veh, %	2	2	2	2	2	2	2	2	2	2	2	2
Cap, veh/h	810	2558	1144	630	2881	1289	142	43	202	43	54	84
Arrive On Green	0.72	0.72	0.72	0.04	0.81	0.81	0.09	0.09	0.00	0.09	0.09	0.09
Sat Flow, veh/h	1038	3539	1583	1774	3539	1583	1063	495	1583	101	630	974
Grp Volume(v), veh/h	51	665	20	166	318	20	107	0	0	28	0	0
Grp Sat Flow(s),veh/h/ln	1038	1770	1583	1774	1770	1583	1558	0	1583	1704	0	0
Q Serve(g_s), s	1.7	7.7	0.4	2.7	2.2	0.3	6.2	0.0	0.0	0.0	0.0	0.0
Cycle Q Clear(g_c), s	1.7	7.7	0.4	2.7	2.2	0.3	8.0	0.0	0.0	1.8	0.0	0.0
Prop In Lane	1.00		1.00	1.00		1.00	0.68		1.00	0.14		0.57
Lane Grp Cap(c), veh/h	810	2558	1144	630	2881	1289	184	0	202	181	0	0
V/C Ratio(X)	0.06	0.26	0.02	0.26	0.11	0.02	0.58	0.00	0.00	0.15	0.00	0.00
Avail Cap(c_a), veh/h	810	2558	1144	689	2881	1289	507	0	541	527	0	0
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	1.00	1.00	0.38	0.38	0.38	1.00	0.00	0.00	1.00	0.00	0.00
Uniform Delay (d), s/veh	4.9	5.7	4.7	3.7	2.3	2.1	53.7	0.0	0.0	51.0	0.0	0.0
Incr Delay (d2), s/veh	0.1	0.2	0.0	0.1	0.0	0.0	2.9	0.0	0.0	0.4	0.0	0.0
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(95%),veh/ln	0.9	6.8	0.3	2.4	1.9	0.2	6.5	0.0	0.0	1.6	0.0	0.0
LnGrp Delay(d),s/veh	5.0	5.9	4.7	3.8	2.3	2.1	56.5	0.0	0.0	51.4	0.0	0.0
LnGrp LOS	A	A	A	A	A	A	E			D		
Approach Vol, veh/h		736			504			107			28	
Approach Delay, s/veh		5.8			2.8			56.5			51.4	
Approach LOS		A			A			E			D	

Timer	1	2	3	4	5	6	7	8
Assigned Phs	1	2		4		6		8
Phs Duration (G+Y+Rc), s	11.0	92.7		16.3		103.7		16.3
Change Period (Y+Rc), s	6.0	6.0		6.0		6.0		6.0
Max Green Setting (Gmax), s	9.0	57.0		36.0		72.0		36.0
Max Q Clear Time (g_c+I1), s	4.7	9.7		3.8		4.2		10.0
Green Ext Time (p_c), s	0.2	33.0		0.4		42.0		0.4

Intersection Summary	
HCM 2010 Ctrl Delay	9.6
HCM 2010 LOS	A

Notes

User approved pedestrian interval to be less than phase max green.

FUTURE "NO-BUILD" IMPROVED INTERSECTION ANALYSIS

Timings
1: Ashford Dunwoody Rd & Meadow Lane/Asbury Square

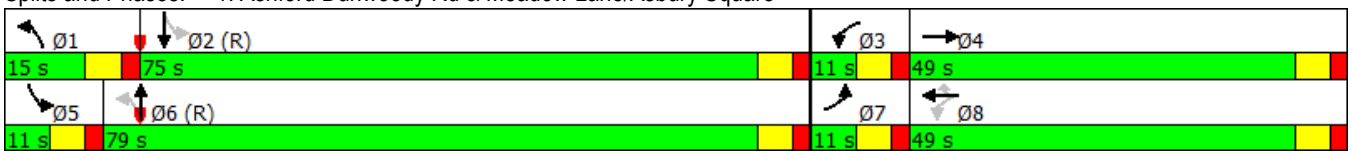
2021 No-Build AM Peak - Improved
01/30/2019

Lane Group	EBL	EBT	WBL	WBT	WBR	NBL	NBT	SBL	SBT
Lane Configurations									
Traffic Volume (vph)	69	56	47	108	39	162	473	86	1288
Future Volume (vph)	69	56	47	108	39	162	473	86	1288
Turn Type	Prot	NA	pm+pt	NA	Perm	pm+pt	NA	pm+pt	NA
Protected Phases	7	4	3	8		1	6	5	2
Permitted Phases			8		8	6		2	
Detector Phase	7	4	3	8	8	1	6	5	2
Switch Phase									
Minimum Initial (s)	5.0	6.0	5.0	6.0	6.0	5.0	15.0	5.0	15.0
Minimum Split (s)	11.0	48.0	11.0	49.0	49.0	11.0	47.0	11.0	43.0
Total Split (s)	11.0	49.0	11.0	49.0	49.0	15.0	79.0	11.0	75.0
Total Split (%)	7.3%	32.7%	7.3%	32.7%	32.7%	10.0%	52.7%	7.3%	50.0%
Yellow Time (s)	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0
All-Red Time (s)	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0
Lost Time Adjust (s)	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Lost Time (s)	6.0	6.0	6.0	6.0	6.0	6.0	6.0	6.0	6.0
Lead/Lag	Lead	Lag	Lead	Lag	Lag	Lead	Lag	Lead	Lag
Lead-Lag Optimize?									
Recall Mode	None	None	None	None	None	None	C-Min	None	C-Min

Intersection Summary

Cycle Length: 150
Actuated Cycle Length: 150
Offset: 138 (92%), Referenced to phase 2:SBTL and 6:NBTL, Start of Green
Natural Cycle: 150
Control Type: Actuated-Coordinated

Splits and Phases: 1: Ashford Dunwoody Rd & Meadow Lane/Asbury Square



HCM 2010 Signalized Intersection Summary — 2021 No-Build AM Peak - Improved
1: Ashford Dunwoody Rd & Meadow Lane/Asbury Square — 01/30/2019

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	69	56	56	47	108	39	162	473	72	86	1288	440
Future Volume (veh/h)	69	56	56	47	108	39	162	473	72	86	1288	440
Number	7	4	14	3	8	18	1	6	16	5	2	12
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Adj Sat Flow, veh/h/ln	1863	1863	1900	1863	1863	1863	1863	1863	1900	1863	1863	1900
Adj Flow Rate, veh/h	78	64	64	53	123	0	184	538	0	98	1464	500
Adj No. of Lanes	3	1	0	1	1	1	1	3	0	1	2	0
Peak Hour Factor	0.88	0.88	0.88	0.88	0.88	0.88	0.88	0.88	0.88	0.88	0.88	0.88
Percent Heavy Veh, %	2	2	2	2	2	2	2	2	2	2	2	2
Cap, veh/h	160	79	79	131	175	149	280	3465	0	662	1755	567
Arrive On Green	0.03	0.09	0.09	0.03	0.09	0.00	0.05	0.68	0.00	0.07	1.00	1.00
Sat Flow, veh/h	5003	856	856	1774	1863	1583	1774	5253	0	1774	2632	850
Grp Volume(v), veh/h	78	0	128	53	123	0	184	538	0	98	957	1007
Grp Sat Flow(s),veh/h/ln	1668	0	1712	1774	1863	1583	1774	1695	0	1774	1770	1713
Q Serve(g_s), s	2.3	0.0	11.0	4.0	9.6	0.0	5.0	5.7	0.0	2.7	0.0	0.0
Cycle Q Clear(g_c), s	2.3	0.0	11.0	4.0	9.6	0.0	5.0	5.7	0.0	2.7	0.0	0.0
Prop In Lane	1.00		0.50	1.00		1.00	1.00		0.00	1.00		0.50
Lane Grp Cap(c), veh/h	160	0	159	131	175	149	280	3465	0	662	1180	1142
V/C Ratio(X)	0.49	0.00	0.81	0.40	0.70	0.00	0.66	0.16	0.00	0.15	0.81	0.88
Avail Cap(c_a), veh/h	167	0	491	131	534	454	303	3465	0	663	1180	1142
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	2.00	2.00	2.00
Upstream Filter(I)	1.00	0.00	1.00	1.00	1.00	0.00	1.00	1.00	0.00	0.79	0.79	0.79
Uniform Delay (d), s/veh	71.4	0.0	66.7	59.5	65.9	0.0	6.8	8.5	0.0	7.0	0.0	0.0
Incr Delay (d2), s/veh	2.3	0.0	9.3	2.0	5.1	0.0	4.6	0.1	0.0	0.1	4.9	8.1
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(95%),veh/ln	2.0	0.0	9.5	3.7	8.9	0.0	4.9	4.8	0.0	2.3	2.9	4.6
LnGrp Delay(d),s/veh	73.7	0.0	76.0	61.5	71.0	0.0	11.5	8.6	0.0	7.1	4.9	8.1
LnGrp LOS	E		E	E	E		B	A		A	A	A
Approach Vol, veh/h		206			176			722			2062	
Approach Delay, s/veh		75.1			68.1			9.3			6.5	
Approach LOS		E			E			A			A	

Timer	1	2	3	4	5	6	7	8
Assigned Phs	1	2	3	4	5	6	7	8
Phs Duration (G+Y+Rc), s	13.1	106.0	11.0	19.9	10.9	108.2	10.8	20.1
Change Period (Y+Rc), s	6.0	6.0	6.0	6.0	6.0	6.0	6.0	6.0
Max Green Setting (Gmax), s	9.0	69.0	5.0	43.0	5.0	73.0	5.0	43.0
Max Q Clear Time (g_c+I1), s	7.0	2.0	6.0	13.0	4.7	7.7	4.3	11.6
Green Ext Time (p_c), s	0.1	66.8	0.0	0.9	0.0	65.1	0.0	0.9

Intersection Summary	
HCM 2010 Ctrl Delay	15.1
HCM 2010 LOS	B

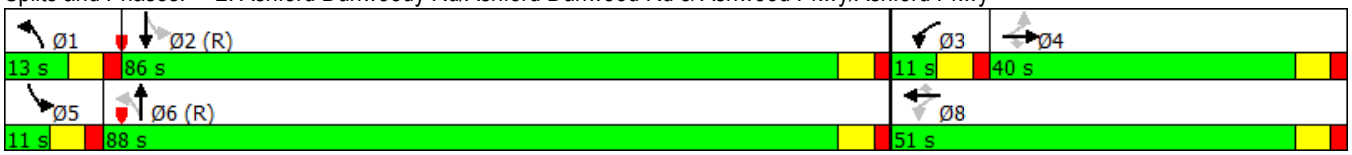
Timings 2021 No-Build AM Peak - Improved
2: Ashford Dunwoody Rd/Ashford Dunwood Rd & Ashwood Pkwy/Ashford Pkwy 01/30/2019

Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	SBL	SBT
Lane Configurations										
Traffic Volume (vph)	16	2	22	54	9	38	54	403	72	1298
Future Volume (vph)	16	2	22	54	9	38	54	403	72	1298
Turn Type	Perm	NA	Perm	pm+pt	NA	Perm	pm+pt	NA	pm+pt	NA
Protected Phases		4		3	8		1	6	5	2
Permitted Phases	4		4	8		8	6		2	
Detector Phase	4	4	4	3	8	8	1	6	5	2
Switch Phase										
Minimum Initial (s)	6.0	6.0	6.0	5.0	6.0	6.0	5.0	15.0	5.0	15.0
Minimum Split (s)	40.0	40.0	40.0	11.0	42.0	42.0	11.0	42.0	11.0	37.0
Total Split (s)	40.0	40.0	40.0	11.0	51.0	51.0	13.0	88.0	11.0	86.0
Total Split (%)	26.7%	26.7%	26.7%	7.3%	34.0%	34.0%	8.7%	58.7%	7.3%	57.3%
Yellow Time (s)	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0
All-Red Time (s)	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0
Lost Time Adjust (s)		0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Lost Time (s)		6.0	6.0	6.0	6.0	6.0	6.0	6.0	6.0	6.0
Lead/Lag	Lag	Lag	Lag	Lead			Lead	Lag	Lead	Lag
Lead-Lag Optimize?										
Recall Mode	None	None	None	None	None	None	None	C-Min	None	C-Min

Intersection Summary

Cycle Length: 150
Actuated Cycle Length: 150
Offset: 0 (0%), Referenced to phase 2:SBTL and 6:NBTL, Start of Green
Natural Cycle: 115
Control Type: Actuated-Coordinated

Splits and Phases: 2: Ashford Dunwoody Rd/Ashford Dunwood Rd & Ashwood Pkwy/Ashford Pkwy



HCM 2010 Signalized Intersection Summary — 2021 No-Build AM Peak - Improved
2: Ashford Dunwoody Rd/Ashford Dunwood Rd & Ashwood Pkwy/Ashford Pkwy — 01/30/2019

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	16	2	22	54	9	38	54	403	24	72	1298	77
Future Volume (veh/h)	16	2	22	54	9	38	54	403	24	72	1298	77
Number	7	4	14	3	8	18	1	6	16	5	2	12
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Adj Sat Flow, veh/h/ln	1900	1863	1863	1863	1863	1863	1863	1863	1900	1863	1863	1900
Adj Flow Rate, veh/h	17	2	0	58	10	41	58	433	0	77	1396	83
Adj No. of Lanes	0	1	1	1	1	1	1	3	0	1	2	0
Peak Hour Factor	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93
Percent Heavy Veh, %	2	2	2	2	2	2	2	2	2	2	2	2
Cap, veh/h	91	8	60	189	207	176	299	3747	0	743	2507	149
Arrive On Green	0.04	0.04	0.00	0.03	0.11	0.11	0.01	0.24	0.00	0.03	0.74	0.74
Sat Flow, veh/h	1191	217	1583	1774	1863	1583	1774	5253	0	1774	3395	201
Grp Volume(v), veh/h	19	0	0	58	10	41	58	433	0	77	726	753
Grp Sat Flow(s),veh/h/ln	1408	0	1583	1774	1863	1583	1774	1695	0	1774	1770	1827
Q Serve(g_s), s	1.7	0.0	0.0	4.6	0.7	3.5	1.2	9.9	0.0	1.6	27.3	27.5
Cycle Q Clear(g_c), s	1.9	0.0	0.0	4.6	0.7	3.5	1.2	9.9	0.0	1.6	27.3	27.5
Prop In Lane	0.89		1.00	1.00		1.00	1.00		0.00	1.00		0.11
Lane Grp Cap(c), veh/h	99	0	60	189	207	176	299	3747	0	743	1307	1349
V/C Ratio(X)	0.19	0.00	0.00	0.31	0.05	0.23	0.19	0.12	0.00	0.10	0.56	0.56
Avail Cap(c_a), veh/h	361	0	359	189	559	475	328	3747	0	745	1307	1349
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	0.33	0.33	0.33	1.00	1.00	1.00
Upstream Filter(I)	1.00	0.00	0.00	1.00	1.00	1.00	0.98	0.98	0.00	1.00	1.00	1.00
Uniform Delay (d), s/veh	70.3	0.0	0.0	65.0	59.6	60.8	7.3	18.7	0.0	4.5	8.7	8.7
Incr Delay (d2), s/veh	0.9	0.0	0.0	0.9	0.1	0.7	0.3	0.1	0.0	0.1	1.7	1.7
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(95%),veh/ln	1.4	0.0	0.0	4.2	0.7	2.9	1.1	8.2	0.0	1.4	19.8	20.7
LnGrp Delay(d),s/veh	71.3	0.0	0.0	65.9	59.7	61.5	7.6	18.8	0.0	4.6	10.4	10.4
LnGrp LOS	E			E	E	E	A	B		A	B	B
Approach Vol, veh/h		19			109			491			1556	
Approach Delay, s/veh		71.3			63.7			17.4			10.1	
Approach LOS		E			E			B			B	

Timer	1	2	3	4	5	6	7	8
Assigned Phs	1	2	3	4	5	6		8
Phs Duration (G+Y+Rc), s	10.6	116.8	11.0	11.7	10.8	116.5		22.7
Change Period (Y+Rc), s	6.0	6.0	6.0	6.0	6.0	6.0		6.0
Max Green Setting (Gmax), s	7.0	80.0	5.0	34.0	5.0	82.0		45.0
Max Q Clear Time (g_c+I1), s	3.2	29.5	6.6	3.9	3.6	11.9		5.5
Green Ext Time (p_c), s	0.0	49.0	0.0	0.2	0.0	67.3		0.2

Intersection Summary	
HCM 2010 Ctrl Delay	15.0
HCM 2010 LOS	B

Intersection	
Int Delay, s/veh	1.3

Movement	EBT	EBR	WBL	WBT	NBL	NBR
Lane Configurations						
Traffic Vol, veh/h	39	0	19	118	9	2
Future Vol, veh/h	39	0	19	118	9	2
Conflicting Peds, #/hr	0	0	0	0	0	0
Sign Control	Free	Free	Free	Free	Stop	Stop
RT Channelized	-	None	-	None	-	None
Storage Length	-	-	-	-	0	-
Veh in Median Storage, #	0	-	-	0	0	-
Grade, %	0	-	-	0	0	-
Peak Hour Factor	87	87	87	87	87	87
Heavy Vehicles, %	2	2	2	2	2	2
Mvmt Flow	45	0	22	136	10	2

Major/Minor	Major1		Major2		Minor1	
Conflicting Flow All	0	0	45	0	225	45
Stage 1	-	-	-	-	45	-
Stage 2	-	-	-	-	180	-
Critical Hdwy	-	-	4.12	-	6.42	6.22
Critical Hdwy Stg 1	-	-	-	-	5.42	-
Critical Hdwy Stg 2	-	-	-	-	5.42	-
Follow-up Hdwy	-	-	2.218	-	3.518	3.318
Pot Cap-1 Maneuver	-	-	1563	-	763	1025
Stage 1	-	-	-	-	977	-
Stage 2	-	-	-	-	851	-
Platoon blocked, %	-	-		-		
Mov Cap-1 Maneuver	-	-	1563	-	752	1025
Mov Cap-2 Maneuver	-	-	-	-	752	-
Stage 1	-	-	-	-	977	-
Stage 2	-	-	-	-	838	-

Approach	EB	WB	NB
HCM Control Delay, s	0	1	9.6
HCM LOS			A

Minor Lane/Major Mvmt	NBLn1	EBT	EBR	WBL	WBT
Capacity (veh/h)	790	-	-	1563	-
HCM Lane V/C Ratio	0.016	-	-	0.014	-
HCM Control Delay (s)	9.6	-	-	7.3	0
HCM Lane LOS	A	-	-	A	A
HCM 95th %tile Q(veh)	0	-	-	0	-

Timings
4: Perimeter Center Pl & Meadow Lane

2021 No-Build AM Peak - Improved
01/30/2019

Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT
Lane Configurations											
Traffic Volume (vph)	11	133	17	206	472	5	15	3	42	2	4
Future Volume (vph)	11	133	17	206	472	5	15	3	42	2	4
Turn Type	Perm	NA	Perm	pm+pt	NA	Perm	Perm	NA	pm+ov	Perm	NA
Protected Phases		2		1	6			8	1		4
Permitted Phases	2		2	6		6	8		8	4	
Detector Phase	2	2	2	1	6	6	8	8	1	4	4
Switch Phase											
Minimum Initial (s)	15.0	15.0	15.0	5.0	15.0	15.0	6.0	6.0	5.0	6.0	6.0
Minimum Split (s)	73.0	73.0	73.0	11.0	24.0	24.0	50.0	50.0	11.0	49.0	49.0
Total Split (s)	61.0	61.0	61.0	15.0	76.0	76.0	44.0	44.0	15.0	44.0	44.0
Total Split (%)	50.8%	50.8%	50.8%	12.5%	63.3%	63.3%	36.7%	36.7%	12.5%	36.7%	36.7%
Yellow Time (s)	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0
All-Red Time (s)	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0
Lost Time Adjust (s)	0.0	0.0	0.0	0.0	0.0	0.0		0.0	0.0		0.0
Total Lost Time (s)	6.0	6.0	6.0	6.0	6.0	6.0		6.0	6.0		6.0
Lead/Lag	Lag	Lag	Lag	Lead					Lead		
Lead-Lag Optimize?											
Recall Mode	C-Min	C-Min	C-Min	None	C-Min	C-Min	None	None	None	None	None

Intersection Summary

Cycle Length: 120
Actuated Cycle Length: 120
Offset: 0 (0%), Referenced to phase 2:EBTL and 6:WBTL, Start of Green
Natural Cycle: 135
Control Type: Actuated-Coordinated

Splits and Phases: 4: Perimeter Center Pl & Meadow Lane

HCM 2010 Signalized Intersection Summary
4: Perimeter Center Pl & Meadow Lane

2021 No-Build AM Peak - Improved
01/30/2019

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	11	133	17	206	472	5	15	3	42	2	4	16
Future Volume (veh/h)	11	133	17	206	472	5	15	3	42	2	4	16
Number	5	2	12	1	6	16	3	8	18	7	4	14
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Adj Sat Flow, veh/h/ln	1863	1863	1863	1863	1863	1863	1900	1863	1863	1900	1863	1900
Adj Flow Rate, veh/h	11	137	18	212	487	5	15	3	0	2	4	16
Adj No. of Lanes	1	2	1	1	2	1	0	1	1	0	1	0
Peak Hour Factor	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97
Percent Heavy Veh, %	2	2	2	2	2	2	2	2	2	2	2	2
Cap, veh/h	755	2729	1221	1069	3055	1367	98	15	125	36	13	44
Arrive On Green	0.77	0.77	0.77	0.04	0.86	0.86	0.04	0.04	0.00	0.04	0.04	0.04
Sat Flow, veh/h	901	3539	1583	1774	3539	1583	1175	400	1583	87	356	1182
Grp Volume(v), veh/h	11	137	18	212	487	5	18	0	0	22	0	0
Grp Sat Flow(s),veh/h/ln	901	1770	1583	1774	1770	1583	1575	0	1583	1626	0	0
Q Serve(g_s), s	0.3	1.1	0.3	2.8	2.6	0.1	0.0	0.0	0.0	0.0	0.0	0.0
Cycle Q Clear(g_c), s	0.3	1.1	0.3	2.8	2.6	0.1	1.2	0.0	0.0	1.6	0.0	0.0
Prop In Lane	1.00		1.00	1.00		1.00	0.83		1.00	0.09		0.73
Lane Grp Cap(c), veh/h	755	2729	1221	1069	3055	1367	113	0	125	93	0	0
V/C Ratio(X)	0.01	0.05	0.01	0.20	0.16	0.00	0.16	0.00	0.00	0.24	0.00	0.00
Avail Cap(c_a), veh/h	755	2729	1221	1128	3055	1367	518	0	568	543	0	0
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	1.00	1.00	0.09	0.09	0.09	1.00	0.00	0.00	1.00	0.00	0.00
Uniform Delay (d), s/veh	3.2	3.3	3.2	2.0	1.3	1.1	56.2	0.0	0.0	56.4	0.0	0.0
Incr Delay (d2), s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.7	0.0	0.0	1.3	0.0	0.0
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(95%),veh/ln	0.2	1.0	0.3	1.9	1.8	0.0	1.1	0.0	0.0	1.3	0.0	0.0
LnGrp Delay(d),s/veh	3.2	3.3	3.2	2.0	1.3	1.1	56.9	0.0	0.0	57.7	0.0	0.0
LnGrp LOS	A	A	A	A	A	A	E			E		
Approach Vol, veh/h		166			704			18			22	
Approach Delay, s/veh		3.3			1.5			56.9			57.7	
Approach LOS		A			A			E			E	

Timer	1	2	3	4	5	6	7	8
Assigned Phs	1	2		4		6		8
Phs Duration (G+Y+Rc), s	11.0	98.5		10.4		109.6		10.4
Change Period (Y+Rc), s	6.0	6.0		6.0		6.0		6.0
Max Green Setting (Gmax), s	9.0	55.0		38.0		70.0		38.0
Max Q Clear Time (g_c+I1), s	4.8	3.1		3.6		4.6		3.2
Green Ext Time (p_c), s	0.3	21.4		0.1		23.4		0.1

Intersection Summary	
HCM 2010 Ctrl Delay	4.3
HCM 2010 LOS	A

Notes

User approved pedestrian interval to be less than phase max green.

Timings
1: Ashford Dunwoody Rd & Meadow Lane/Asbury Square

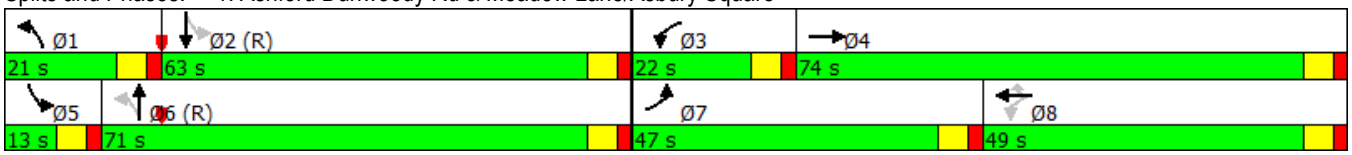
2021 No-Build PM Peak - Improved
01/30/2019

Lane Group	EBL	EBT	WBL	WBT	WBR	NBL	NBT	SBL	SBT
Lane Configurations									
Traffic Volume (vph)	1066	297	174	210	374	122	1849	119	407
Future Volume (vph)	1066	297	174	210	374	122	1849	119	407
Turn Type	Prot	NA	pm+pt	NA	Perm	pm+pt	NA	pm+pt	NA
Protected Phases	7	4	3	8		1	6	5	2
Permitted Phases			8		8	6		2	
Detector Phase	7	4	3	8	8	1	6	5	2
Switch Phase									
Minimum Initial (s)	5.0	6.0	5.0	6.0	6.0	5.0	15.0	5.0	15.0
Minimum Split (s)	11.0	48.0	11.0	49.0	49.0	11.0	47.0	11.0	43.0
Total Split (s)	47.0	74.0	22.0	49.0	49.0	21.0	71.0	13.0	63.0
Total Split (%)	26.1%	41.1%	12.2%	27.2%	27.2%	11.7%	39.4%	7.2%	35.0%
Yellow Time (s)	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0
All-Red Time (s)	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0
Lost Time Adjust (s)	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Lost Time (s)	6.0	6.0	6.0	6.0	6.0	6.0	6.0	6.0	6.0
Lead/Lag	Lead	Lag	Lead	Lag	Lag	Lead	Lag	Lead	Lag
Lead-Lag Optimize?									
Recall Mode	None	None	None	None	None	None	C-Min	None	C-Min

Intersection Summary

Cycle Length: 180
Actuated Cycle Length: 180
Offset: 170 (94%), Referenced to phase 2:SBTL and 6:NBTL, Start of Green
Natural Cycle: 150
Control Type: Actuated-Coordinated

Splits and Phases: 1: Ashford Dunwoody Rd & Meadow Lane/Asbury Square



HCM 2010 Signalized Intersection Summary — 2021 No-Build PM Peak - Improved
1: Ashford Dunwoody Rd & Meadow Lane/Asbury Square — 01/30/2019

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	1066	297	63	174	210	374	122	1849	134	119	407	180
Future Volume (veh/h)	1066	297	63	174	210	374	122	1849	134	119	407	180
Number	7	4	14	3	8	18	1	6	16	5	2	12
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Adj Sat Flow, veh/h/ln	1863	1863	1900	1863	1863	1863	1863	1863	1900	1863	1863	1900
Adj Flow Rate, veh/h	1254	349	74	205	247	0	144	2175	0	140	479	212
Adj No. of Lanes	3	1	0	1	1	1	1	3	0	1	2	0
Peak Hour Factor	0.85	0.85	0.85	0.85	0.85	0.85	0.85	0.85	0.85	0.85	0.85	0.85
Percent Heavy Veh, %	2	2	2	2	2	2	2	2	2	2	2	2
Cap, veh/h	1140	437	93	271	287	244	425	2268	0	115	1023	450
Arrive On Green	0.23	0.29	0.29	0.09	0.15	0.00	0.06	0.45	0.00	0.08	0.85	0.85
Sat Flow, veh/h	5003	1491	316	1774	1863	1583	1774	5253	0	1774	2394	1053
Grp Volume(v), veh/h	1254	0	423	205	247	0	144	2175	0	140	353	338
Grp Sat Flow(s),veh/h/ln	1668	0	1807	1774	1863	1583	1774	1695	0	1774	1770	1677
Q Serve(g_s), s	41.0	0.0	38.9	16.0	23.3	0.0	8.2	74.5	0.0	7.0	8.7	8.8
Cycle Q Clear(g_c), s	41.0	0.0	38.9	16.0	23.3	0.0	8.2	74.5	0.0	7.0	8.7	8.8
Prop In Lane	1.00		0.17	1.00		1.00	1.00		0.00	1.00		0.63
Lane Grp Cap(c), veh/h	1140	0	529	271	287	244	425	2268	0	115	756	717
V/C Ratio(X)	1.10	0.00	0.80	0.76	0.86	0.00	0.34	0.96	0.00	1.22	0.47	0.47
Avail Cap(c_a), veh/h	1140	0	683	271	445	378	471	2268	0	115	756	717
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	2.00	2.00	2.00
Upstream Filter(I)	0.85	0.00	0.85	1.00	1.00	0.00	1.00	1.00	0.00	0.99	0.99	0.99
Uniform Delay (d), s/veh	69.5	0.0	58.7	60.4	74.3	0.0	26.3	48.3	0.0	43.2	8.1	8.1
Incr Delay (d2), s/veh	56.9	0.0	4.4	11.4	10.1	0.0	0.5	11.5	0.0	154.2	2.0	2.2
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(95%),veh/ln	44.8	0.0	26.8	5.1	18.7	0.0	7.2	47.3	0.0	19.1	8.0	7.8
LnGrp Delay(d),s/veh	126.4	0.0	63.2	71.9	84.4	0.0	26.7	59.7	0.0	197.3	10.2	10.3
LnGrp LOS	F		E	E	F		C	E		F	B	B
Approach Vol, veh/h		1677			452			2319			831	
Approach Delay, s/veh		110.5			78.7			57.7			41.8	
Approach LOS		F			E			E			D	

Timer	1	2	3	4	5	6	7	8
Assigned Phs	1	2	3	4	5	6	7	8
Phs Duration (G+Y+Rc), s	16.3	82.9	22.0	58.7	13.0	86.3	47.0	33.7
Change Period (Y+Rc), s	6.0	6.0	6.0	6.0	6.0	6.0	6.0	6.0
Max Green Setting (Gmax), s	15.0	57.0	16.0	68.0	7.0	65.0	41.0	43.0
Max Q Clear Time (g_c+I1), s	10.2	10.8	18.0	40.9	9.0	76.5	43.0	25.3
Green Ext Time (p_c), s	0.2	46.1	0.0	2.6	0.0	0.0	0.0	2.5

Intersection Summary	
HCM 2010 Ctrl Delay	73.8
HCM 2010 LOS	E

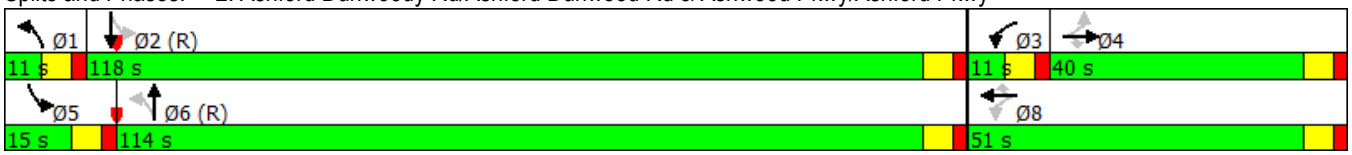
Timings 2021 No-Build PM Peak - Improved
2: Ashford Dunwoody Rd/Ashford Dunwood Rd & Ashwood Pkwy/Ashford Pkwy 01/30/2019

Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	SBL	SBT
Lane Configurations										
Traffic Volume (vph)	141	9	47	35	12	170	23	2541	137	442
Future Volume (vph)	141	9	47	35	12	170	23	2541	137	442
Turn Type	Perm	NA	Perm	pm+pt	NA	Perm	pm+pt	NA	pm+pt	NA
Protected Phases		4		3	8		1	6	5	2
Permitted Phases	4		4	8		8	6		2	
Detector Phase	4	4	4	3	8	8	1	6	5	2
Switch Phase										
Minimum Initial (s)	6.0	6.0	6.0	5.0	6.0	6.0	5.0	15.0	5.0	15.0
Minimum Split (s)	40.0	40.0	40.0	11.0	42.0	42.0	11.0	42.0	11.0	37.0
Total Split (s)	40.0	40.0	40.0	11.0	51.0	51.0	11.0	114.0	15.0	118.0
Total Split (%)	22.2%	22.2%	22.2%	6.1%	28.3%	28.3%	6.1%	63.3%	8.3%	65.6%
Yellow Time (s)	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0
All-Red Time (s)	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0
Lost Time Adjust (s)		0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Lost Time (s)		6.0	6.0	6.0	6.0	6.0	6.0	6.0	6.0	6.0
Lead/Lag	Lag	Lag	Lag	Lead			Lead	Lag	Lead	Lag
Lead-Lag Optimize?										
Recall Mode	None	None	None	None	None	None	None	C-Min	None	C-Min

Intersection Summary

Cycle Length: 180
Actuated Cycle Length: 180
Offset: 0 (0%), Referenced to phase 2:SBTL and 6:NBTL, Start of Green
Natural Cycle: 145
Control Type: Actuated-Coordinated

Splits and Phases: 2: Ashford Dunwoody Rd/Ashford Dunwood Rd & Ashwood Pkwy/Ashford Pkwy



HCM 2010 Signalized Intersection Summary — 2021 No-Build PM Peak - Improved
2: Ashford Dunwoody Rd/Ashford Dunwood Rd & Ashwood Pkwy/Ashford Pkwy — 01/30/2019

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	141	9	47	35	12	170	23	2541	72	137	442	19
Future Volume (veh/h)	141	9	47	35	12	170	23	2541	72	137	442	19
Number	7	4	14	3	8	18	1	6	16	5	2	12
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Adj Sat Flow, veh/h/ln	1900	1863	1863	1863	1863	1863	1863	1863	1900	1863	1863	1900
Adj Flow Rate, veh/h	148	9	0	37	13	179	24	2675	0	144	465	20
Adj No. of Lanes	0	1	1	1	1	1	1	3	0	1	2	0
Peak Hour Factor	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95
Percent Heavy Veh, %	2	2	2	2	2	2	2	2	2	2	2	2
Cap, veh/h	203	10	228	349	375	319	645	3337	0	163	2348	101
Arrive On Green	0.14	0.14	0.00	0.02	0.20	0.20	0.03	0.87	0.00	0.04	0.68	0.68
Sat Flow, veh/h	1142	69	1583	1774	1863	1583	1774	5253	0	1774	3458	148
Grp Volume(v), veh/h	157	0	0	37	13	179	24	2675	0	144	238	247
Grp Sat Flow(s),veh/h/ln	1211	0	1583	1774	1863	1583	1774	1695	0	1774	1770	1837
Q Serve(g_s), s	22.9	0.0	0.0	3.1	1.0	18.3	0.8	40.1	0.0	5.6	9.0	9.0
Cycle Q Clear(g_c), s	22.9	0.0	0.0	3.1	1.0	18.3	0.8	40.1	0.0	5.6	9.0	9.0
Prop In Lane	0.94		1.00	1.00		1.00	1.00		0.00	1.00		0.08
Lane Grp Cap(c), veh/h	213	0	228	349	375	319	645	3337	0	163	1202	1247
V/C Ratio(X)	0.74	0.00	0.00	0.11	0.03	0.56	0.04	0.80	0.00	0.89	0.20	0.20
Avail Cap(c_a), veh/h	268	0	299	356	466	396	660	3337	0	176	1202	1247
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.33	1.33	1.33	1.00	1.00	1.00
Upstream Filter(I)	1.00	0.00	0.00	1.00	1.00	1.00	0.09	0.09	0.00	1.00	1.00	1.00
Uniform Delay (d), s/veh	75.7	0.0	0.0	61.9	57.8	64.7	9.6	6.5	0.0	37.7	10.7	10.7
Incr Delay (d2), s/veh	7.7	0.0	0.0	0.1	0.0	1.5	0.0	0.2	0.0	36.0	0.4	0.4
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(95%),veh/ln	12.8	0.0	0.0	2.8	0.9	12.9	0.7	20.0	0.0	13.5	7.9	8.2
LnGrp Delay(d),s/veh	83.5	0.0	0.0	62.0	57.8	66.2	9.6	6.7	0.0	73.8	11.1	11.1
LnGrp LOS	F			E	E	E	A	A		E	B	B
Approach Vol, veh/h		157			229			2699			629	
Approach Delay, s/veh		83.5			65.1			6.7			25.4	
Approach LOS		F			E			A			C	

Timer	1	2	3	4	5	6	7	8
Assigned Phs	1	2	3	4	5	6		8
Phs Duration (G+Y+Rc), s	9.5	128.2	10.3	31.9	13.6	124.1		42.3
Change Period (Y+Rc), s	6.0	6.0	6.0	6.0	6.0	6.0		6.0
Max Green Setting (Gmax), s	5.0	112.0	5.0	34.0	9.0	108.0		45.0
Max Q Clear Time (g_c+I1), s	2.8	11.0	5.1	24.9	7.6	42.1		20.3
Green Ext Time (p_c), s	0.0	100.5	0.0	1.0	0.1	65.7		1.5

Intersection Summary	
HCM 2010 Ctrl Delay	16.7
HCM 2010 LOS	B

Intersection	
Int Delay, s/veh	2.6

Movement	EBT	EBR	WBL	WBT	NBL	NBR
Lane Configurations						
Traffic Vol, veh/h	129	5	9	37	6	54
Future Vol, veh/h	129	5	9	37	6	54
Conflicting Peds, #/hr	0	0	0	0	0	0
Sign Control	Free	Free	Free	Free	Stop	Stop
RT Channelized	-	None	-	None	-	None
Storage Length	-	-	-	-	0	-
Veh in Median Storage, #	0	-	-	0	0	-
Grade, %	0	-	-	0	0	-
Peak Hour Factor	86	86	86	86	86	86
Heavy Vehicles, %	2	2	2	2	2	2
Mvmt Flow	150	6	10	43	7	63

Major/Minor	Major1		Major2		Minor1	
Conflicting Flow All	0	0	156	0	216	153
Stage 1	-	-	-	-	153	-
Stage 2	-	-	-	-	63	-
Critical Hdwy	-	-	4.12	-	6.42	6.22
Critical Hdwy Stg 1	-	-	-	-	5.42	-
Critical Hdwy Stg 2	-	-	-	-	5.42	-
Follow-up Hdwy	-	-	2.218	-	3.518	3.318
Pot Cap-1 Maneuver	-	-	1424	-	772	893
Stage 1	-	-	-	-	875	-
Stage 2	-	-	-	-	960	-
Platoon blocked, %	-	-		-		
Mov Cap-1 Maneuver	-	-	1424	-	767	893
Mov Cap-2 Maneuver	-	-	-	-	767	-
Stage 1	-	-	-	-	875	-
Stage 2	-	-	-	-	953	-

Approach	EB	WB	NB
HCM Control Delay, s	0	1.5	9.4
HCM LOS			A

Minor Lane/Major Mvmt	NBLn1	EBT	EBR	WBL	WBT
Capacity (veh/h)	879	-	-	1424	-
HCM Lane V/C Ratio	0.079	-	-	0.007	-
HCM Control Delay (s)	9.4	-	-	7.5	0
HCM Lane LOS	A	-	-	A	A
HCM 95th %tile Q(veh)	0.3	-	-	0	-

Timings
4: Perimeter Center Pl & Meadow Lane

2021 No-Build PM Peak - Improved
01/30/2019

Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT
Lane Configurations											
Traffic Volume (vph)	48	632	19	158	302	19	69	32	393	4	8
Future Volume (vph)	48	632	19	158	302	19	69	32	393	4	8
Turn Type	Perm	NA	Perm	pm+pt	NA	Perm	Perm	NA	pm+ov	Perm	NA
Protected Phases		2		1	6			8	1		4
Permitted Phases	2		2	6		6	8		8	4	
Detector Phase	2	2	2	1	6	6	8	8	1	4	4
Switch Phase											
Minimum Initial (s)	15.0	15.0	15.0	5.0	15.0	15.0	6.0	6.0	5.0	6.0	6.0
Minimum Split (s)	73.0	73.0	73.0	15.0	24.0	24.0	50.0	50.0	15.0	49.0	49.0
Total Split (s)	63.0	63.0	63.0	15.0	78.0	78.0	42.0	42.0	15.0	42.0	42.0
Total Split (%)	52.5%	52.5%	52.5%	12.5%	65.0%	65.0%	35.0%	35.0%	12.5%	35.0%	35.0%
Yellow Time (s)	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0
All-Red Time (s)	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0
Lost Time Adjust (s)	0.0	0.0	0.0	0.0	0.0	0.0		0.0	0.0		0.0
Total Lost Time (s)	6.0	6.0	6.0	6.0	6.0	6.0		6.0	6.0		6.0
Lead/Lag	Lag	Lag	Lag	Lead					Lead		
Lead-Lag Optimize?											
Recall Mode	C-Min	C-Min	C-Min	None	C-Min	C-Min	None	None	None	None	None

Intersection Summary

Cycle Length: 120
Actuated Cycle Length: 120
Offset: 0 (0%), Referenced to phase 2:EBTL and 6:WBTL, Start of Green
Natural Cycle: 140
Control Type: Actuated-Coordinated

Splits and Phases: 4: Perimeter Center Pl & Meadow Lane

HCM 2010 Signalized Intersection Summary
4: Perimeter Center Pl & Meadow Lane

2021 No-Build PM Peak - Improved
01/30/2019

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	48	632	19	158	302	19	69	32	393	4	8	15
Future Volume (veh/h)	48	632	19	158	302	19	69	32	393	4	8	15
Number	5	2	12	1	6	16	3	8	18	7	4	14
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Adj Sat Flow, veh/h/ln	1863	1863	1863	1863	1863	1863	1900	1863	1863	1900	1863	1900
Adj Flow Rate, veh/h	51	665	20	166	318	20	73	34	0	4	8	16
Adj No. of Lanes	1	2	1	1	2	1	0	1	1	0	1	0
Peak Hour Factor	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95
Percent Heavy Veh, %	2	2	2	2	2	2	2	2	2	2	2	2
Cap, veh/h	810	2558	1144	630	2881	1289	142	43	202	43	54	84
Arrive On Green	0.72	0.72	0.72	0.04	0.81	0.81	0.09	0.09	0.00	0.09	0.09	0.09
Sat Flow, veh/h	1038	3539	1583	1774	3539	1583	1063	495	1583	101	630	974
Grp Volume(v), veh/h	51	665	20	166	318	20	107	0	0	28	0	0
Grp Sat Flow(s),veh/h/ln	1038	1770	1583	1774	1770	1583	1558	0	1583	1704	0	0
Q Serve(g_s), s	1.7	7.7	0.4	2.7	2.2	0.3	6.2	0.0	0.0	0.0	0.0	0.0
Cycle Q Clear(g_c), s	1.7	7.7	0.4	2.7	2.2	0.3	8.0	0.0	0.0	1.8	0.0	0.0
Prop In Lane	1.00		1.00	1.00		1.00	0.68		1.00	0.14		0.57
Lane Grp Cap(c), veh/h	810	2558	1144	630	2881	1289	184	0	202	181	0	0
V/C Ratio(X)	0.06	0.26	0.02	0.26	0.11	0.02	0.58	0.00	0.00	0.15	0.00	0.00
Avail Cap(c_a), veh/h	810	2558	1144	689	2881	1289	507	0	541	527	0	0
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	1.00	1.00	0.75	0.75	0.75	1.00	0.00	0.00	1.00	0.00	0.00
Uniform Delay (d), s/veh	4.9	5.7	4.7	3.7	2.3	2.1	53.7	0.0	0.0	51.0	0.0	0.0
Incr Delay (d2), s/veh	0.1	0.2	0.0	0.2	0.1	0.0	2.9	0.0	0.0	0.4	0.0	0.0
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(95%),veh/ln	0.9	6.8	0.3	2.4	1.9	0.2	6.5	0.0	0.0	1.6	0.0	0.0
LnGrp Delay(d),s/veh	5.0	5.9	4.7	3.8	2.3	2.1	56.5	0.0	0.0	51.4	0.0	0.0
LnGrp LOS	A	A	A	A	A	A	E			D		
Approach Vol, veh/h		736			504			107			28	
Approach Delay, s/veh		5.8			2.8			56.5			51.4	
Approach LOS		A			A			E			D	

Timer	1	2	3	4	5	6	7	8
Assigned Phs	1	2		4		6		8
Phs Duration (G+Y+Rc), s	11.0	92.7		16.3		103.7		16.3
Change Period (Y+Rc), s	6.0	6.0		6.0		6.0		6.0
Max Green Setting (Gmax), s	9.0	57.0		36.0		72.0		36.0
Max Q Clear Time (g_c+I1), s	4.7	9.7		3.8		4.2		10.0
Green Ext Time (p_c), s	0.2	33.0		0.4		42.0		0.4

Intersection Summary	
HCM 2010 Ctrl Delay	9.6
HCM 2010 LOS	A

Notes

User approved pedestrian interval to be less than phase max green.

FUTURE "BUILD" INTERSECTION ANALYSIS

Timings
1: Ashford Dunwoody Rd & Meadow Lane/Asbury Square

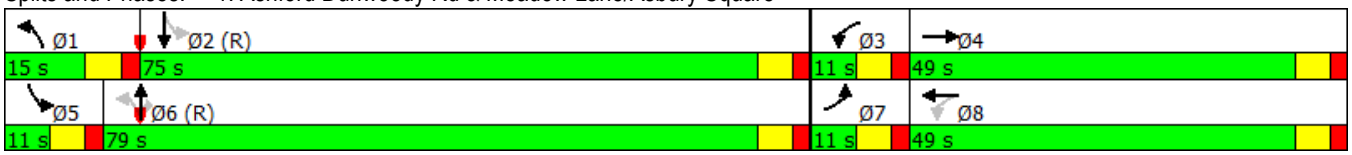
2021 Build AM Peak
04/16/2019

Lane Group	EBL	EBT	WBL	WBT	NBL	NBT	NBR	SBL	SBT
Lane Configurations									
Traffic Volume (vph)	94	63	47	116	201	484	72	93	1272
Future Volume (vph)	94	63	47	116	201	484	72	93	1272
Turn Type	Prot	NA	pm+pt	NA	pm+pt	NA	Perm	pm+pt	NA
Protected Phases	7	4	3	8	1	6		5	2
Permitted Phases			8		6		6	2	
Detector Phase	7	4	3	8	1	6	6	5	2
Switch Phase									
Minimum Initial (s)	5.0	6.0	5.0	6.0	5.0	15.0	15.0	5.0	15.0
Minimum Split (s)	11.0	48.0	11.0	49.0	11.0	47.0	47.0	11.0	43.0
Total Split (s)	11.0	49.0	11.0	49.0	15.0	79.0	79.0	11.0	75.0
Total Split (%)	7.3%	32.7%	7.3%	32.7%	10.0%	52.7%	52.7%	7.3%	50.0%
Yellow Time (s)	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0
All-Red Time (s)	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0
Lost Time Adjust (s)	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Lost Time (s)	6.0	6.0	6.0	6.0	6.0	6.0	6.0	6.0	6.0
Lead/Lag	Lead	Lag	Lead	Lag	Lead	Lag	Lag	Lead	Lag
Lead-Lag Optimize?									
Recall Mode	None	None	None	None	None	C-Min	C-Min	None	C-Min

Intersection Summary

Cycle Length: 150
Actuated Cycle Length: 150
Offset: 138 (92%), Referenced to phase 2:SBTL and 6:NBTL, Start of Green
Natural Cycle: 150
Control Type: Actuated-Coordinated

Splits and Phases: 1: Ashford Dunwoody Rd & Meadow Lane/Asbury Square



HCM 2010 Signalized Intersection Summary
1: Ashford Dunwoody Rd & Meadow Lane/Asbury Square

2021 Build AM Peak
04/16/2019

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	94	63	112	47	116	47	201	484	72	93	1272	489
Future Volume (veh/h)	94	63	112	47	116	47	201	484	72	93	1272	489
Number	7	4	14	3	8	18	1	6	16	5	2	12
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Adj Sat Flow, veh/h/ln	1863	1863	1900	1863	1863	1900	1863	1863	1863	1863	1863	1900
Adj Flow Rate, veh/h	107	72	127	53	132	53	228	550	82	106	1445	556
Adj No. of Lanes	2	2	0	1	2	0	1	2	1	1	2	0
Peak Hour Factor	0.88	0.88	0.88	0.88	0.88	0.88	0.88	0.88	0.88	0.88	0.88	0.88
Percent Heavy Veh, %	2	2	2	2	2	2	2	2	2	2	2	2
Cap, veh/h	115	179	160	134	253	97	288	2378	1064	591	1652	597
Arrive On Green	0.03	0.10	0.10	0.03	0.10	0.10	0.06	0.67	0.67	0.07	1.00	1.00
Sat Flow, veh/h	3442	1770	1583	1774	2501	962	1774	3539	1583	1774	2549	921
Grp Volume(v), veh/h	107	72	127	53	92	93	228	550	82	106	975	1026
Grp Sat Flow(s),veh/h/ln	1721	1770	1583	1774	1770	1693	1774	1770	1583	1774	1770	1700
Q Serve(g_s), s	4.7	5.7	11.8	4.0	7.4	7.9	6.5	9.1	2.7	3.1	0.0	0.0
Cycle Q Clear(g_c), s	4.7	5.7	11.8	4.0	7.4	7.9	6.5	9.1	2.7	3.1	0.0	0.0
Prop In Lane	1.00		1.00	1.00		0.57	1.00		1.00	1.00		0.54
Lane Grp Cap(c), veh/h	115	179	160	134	179	172	288	2378	1064	591	1147	1102
V/C Ratio(X)	0.93	0.40	0.79	0.40	0.51	0.54	0.79	0.23	0.08	0.18	0.85	0.93
Avail Cap(c_a), veh/h	115	507	454	134	507	485	293	2378	1064	591	1147	1102
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	2.00	2.00	2.00
Upstream Filter(I)	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	0.69	0.69	0.69
Uniform Delay (d), s/veh	72.3	63.1	65.9	58.4	63.9	64.1	9.4	9.6	8.5	7.9	0.0	0.0
Incr Delay (d2), s/veh	63.1	1.4	8.4	1.9	2.2	2.7	13.5	0.2	0.1	0.1	5.7	11.2
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(95%),veh/ln	5.8	5.2	9.4	3.6	6.7	6.9	10.5	8.0	2.2	2.6	3.2	6.0
LnGrp Delay(d),s/veh	135.4	64.6	74.3	60.3	66.1	66.8	22.9	9.8	8.6	8.0	5.7	11.2
LnGrp LOS	F	E	E	E	E	E	C	A	A	A	A	B
Approach Vol, veh/h		306			238			860			2107	
Approach Delay, s/veh		93.4			65.1			13.1			8.5	
Approach LOS		F			E			B			A	

Timer	1	2	3	4	5	6	7	8
Assigned Phs	1	2	3	4	5	6	7	8
Phs Duration (G+Y+Rc), s	14.6	103.2	11.0	21.2	11.0	106.8	11.0	21.2
Change Period (Y+Rc), s	6.0	6.0	6.0	6.0	6.0	6.0	6.0	6.0
Max Green Setting (Gmax), s	9.0	69.0	5.0	43.0	5.0	73.0	5.0	43.0
Max Q Clear Time (g_c+I1), s	8.5	2.0	6.0	13.8	5.1	11.1	6.7	9.9
Green Ext Time (p_c), s	0.0	66.8	0.0	1.4	0.0	61.8	0.0	1.5

Intersection Summary	
HCM 2010 Ctrl Delay	20.9
HCM 2010 LOS	C

Timings 2021 Build AM Peak

2: Ashford Dunwoody Rd/Ashford Dunwood Rd & Ashwood Pkwy/Ashford Pkwy

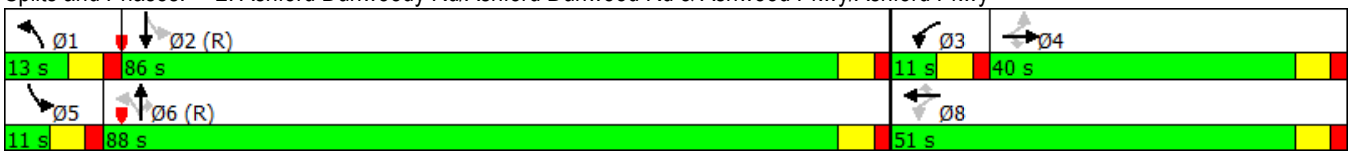
04/16/2019

Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT
Lane Configurations											
Traffic Volume (vph)	68	7	92	56	16	38	101	398	25	72	1267
Future Volume (vph)	68	7	92	56	16	38	101	398	25	72	1267
Turn Type	Perm	NA	Perm	pm+pt	NA	Perm	pm+pt	NA	Perm	pm+pt	NA
Protected Phases		4		3	8		1	6		5	2
Permitted Phases	4		4	8		8	6		6	2	
Detector Phase	4	4	4	3	8	8	1	6	6	5	2
Switch Phase											
Minimum Initial (s)	6.0	6.0	6.0	5.0	6.0	6.0	5.0	15.0	15.0	5.0	15.0
Minimum Split (s)	40.0	40.0	40.0	11.0	42.0	42.0	11.0	42.0	42.0	11.0	37.0
Total Split (s)	40.0	40.0	40.0	11.0	51.0	51.0	13.0	88.0	88.0	11.0	86.0
Total Split (%)	26.7%	26.7%	26.7%	7.3%	34.0%	34.0%	8.7%	58.7%	58.7%	7.3%	57.3%
Yellow Time (s)	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0
All-Red Time (s)	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0
Lost Time Adjust (s)		0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Lost Time (s)		6.0	6.0	6.0	6.0	6.0	6.0	6.0	6.0	6.0	6.0
Lead/Lag	Lag	Lag	Lag	Lead			Lead	Lag	Lag	Lead	Lag
Lead-Lag Optimize?											
Recall Mode	None	None	None	None	None	None	None	C-Min	C-Min	None	C-Min

Intersection Summary

Cycle Length: 150
Actuated Cycle Length: 150
Offset: 0 (0%), Referenced to phase 2:SBTL and 6:NBTL, Start of Green
Natural Cycle: 125
Control Type: Actuated-Coordinated

Splits and Phases: 2: Ashford Dunwoody Rd/Ashford Dunwood Rd & Ashwood Pkwy/Ashford Pkwy



HCM 2010 Signalized Intersection Summary — 2021 Build AM Peak
2: Ashford Dunwoody Rd/Ashford Dunwood Rd & Ashwood Pkwy/Ashford Pkwy — 04/16/2019

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	68	7	92	56	16	38	101	398	25	72	1267	166
Future Volume (veh/h)	68	7	92	56	16	38	101	398	25	72	1267	166
Number	7	4	14	3	8	18	1	6	16	5	2	12
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Adj Sat Flow, veh/h/ln	1900	1863	1863	1863	1863	1863	1863	1863	1863	1863	1863	1900
Adj Flow Rate, veh/h	73	8	0	60	17	41	109	428	0	77	1362	178
Adj No. of Lanes	0	1	1	1	1	1	1	2	1	1	2	0
Peak Hour Factor	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93
Percent Heavy Veh, %	2	2	2	2	2	2	2	2	2	2	2	2
Cap, veh/h	138	10	117	249	274	233	263	2480	1109	708	2205	286
Arrive On Green	0.07	0.07	0.00	0.03	0.15	0.15	0.02	0.47	0.00	0.03	0.70	0.70
Sat Flow, veh/h	1242	136	1583	1774	1863	1583	1774	3539	1583	1774	3151	409
Grp Volume(v), veh/h	81	0	0	60	17	41	109	428	0	77	760	780
Grp Sat Flow(s),veh/h/ln	1378	0	1583	1774	1863	1583	1774	1770	1583	1774	1770	1791
Q Serve(g_s), s	8.7	0.0	0.0	4.6	1.2	3.4	2.6	10.5	0.0	1.8	33.9	34.7
Cycle Q Clear(g_c), s	8.7	0.0	0.0	4.6	1.2	3.4	2.6	10.5	0.0	1.8	33.9	34.7
Prop In Lane	0.90		1.00	1.00		1.00	1.00		1.00	1.00		0.23
Lane Grp Cap(c), veh/h	148	0	117	249	274	233	263	2480	1109	708	1238	1253
V/C Ratio(X)	0.55	0.00	0.00	0.24	0.06	0.18	0.41	0.17	0.00	0.11	0.61	0.62
Avail Cap(c_a), veh/h	358	0	359	249	559	475	288	2480	1109	710	1238	1253
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	0.67	0.67	0.67	1.00	1.00	1.00
Upstream Filter(I)	1.00	0.00	0.00	1.00	1.00	1.00	0.94	0.94	0.00	1.00	1.00	1.00
Uniform Delay (d), s/veh	68.3	0.0	0.0	60.0	55.0	56.0	11.8	14.7	0.0	6.0	11.9	12.0
Incr Delay (d2), s/veh	3.2	0.0	0.0	0.5	0.1	0.4	1.0	0.1	0.0	0.1	2.3	2.3
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(95%),veh/ln	6.2	0.0	0.0	4.1	1.1	2.7	2.9	8.8	0.0	1.6	24.1	24.9
LnGrp Delay(d),s/veh	71.5	0.0	0.0	60.5	55.1	56.3	12.8	14.8	0.0	6.1	14.1	14.3
LnGrp LOS	E			E	E	E	B	B		A	B	B
Approach Vol, veh/h		81			118			537			1617	
Approach Delay, s/veh		71.5			58.3			14.4			13.8	
Approach LOS		E			E			B			B	

Timer	1	2	3	4	5	6	7	8
Assigned Phs	1	2	3	4	5	6		8
Phs Duration (G+Y+Rc), s	10.9	111.0	11.0	17.1	10.8	111.1		28.1
Change Period (Y+Rc), s	6.0	6.0	6.0	6.0	6.0	6.0		6.0
Max Green Setting (Gmax), s	7.0	80.0	5.0	34.0	5.0	82.0		45.0
Max Q Clear Time (g_c+I1), s	4.6	36.7	6.6	10.7	3.8	12.5		5.4
Green Ext Time (p_c), s	0.1	42.4	0.0	0.5	0.0	67.4		0.5

Intersection Summary	
HCM 2010 Ctrl Delay	18.2
HCM 2010 LOS	B

Intersection	
Int Delay, s/veh	1.9

Movement	EBT	EBR	WBL	WBT	NBL	NBR
Lane Configurations						
Traffic Vol, veh/h	54	1	36	122	11	7
Future Vol, veh/h	54	1	36	122	11	7
Conflicting Peds, #/hr	0	0	0	0	0	0
Sign Control	Free	Free	Free	Free	Stop	Stop
RT Channelized	-	None	-	None	-	None
Storage Length	-	-	-	-	0	-
Veh in Median Storage, #	0	-	-	0	0	-
Grade, %	0	-	-	0	0	-
Peak Hour Factor	87	87	87	87	87	87
Heavy Vehicles, %	2	2	2	2	2	2
Mvmt Flow	62	1	41	140	13	8

Major/Minor	Major1		Major2		Minor1	
Conflicting Flow All	0	0	63	0	285	63
Stage 1	-	-	-	-	63	-
Stage 2	-	-	-	-	222	-
Critical Hdwy	-	-	4.12	-	6.42	6.22
Critical Hdwy Stg 1	-	-	-	-	5.42	-
Critical Hdwy Stg 2	-	-	-	-	5.42	-
Follow-up Hdwy	-	-	2.218	-	3.518	3.318
Pot Cap-1 Maneuver	-	-	1540	-	705	1002
Stage 1	-	-	-	-	960	-
Stage 2	-	-	-	-	815	-
Platoon blocked, %	-	-		-		
Mov Cap-1 Maneuver	-	-	1540	-	685	1002
Mov Cap-2 Maneuver	-	-	-	-	685	-
Stage 1	-	-	-	-	960	-
Stage 2	-	-	-	-	791	-

Approach	EB	WB	NB
HCM Control Delay, s	0	1.7	9.7
HCM LOS			A

Minor Lane/Major Mvmt	NBLn1	EBT	EBR	WBL	WBT
Capacity (veh/h)	781	-	-	1540	-
HCM Lane V/C Ratio	0.026	-	-	0.027	-
HCM Control Delay (s)	9.7	-	-	7.4	0
HCM Lane LOS	A	-	-	A	A
HCM 95th %tile Q(veh)	0.1	-	-	0.1	-

Timings
4: Perimeter Center Pl & Meadow Lane

2021 Build AM Peak
04/16/2019

Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT
Lane Configurations											
Traffic Volume (vph)	35	126	17	206	465	109	15	11	42	97	11
Future Volume (vph)	35	126	17	206	465	109	15	11	42	97	11
Turn Type	Perm	NA	Perm	pm+pt	NA	Perm	Perm	NA	pm+ov	Perm	NA
Protected Phases		2		1	6			8	1		4
Permitted Phases	2		2	6		6	8		8	4	
Detector Phase	2	2	2	1	6	6	8	8	1	4	4
Switch Phase											
Minimum Initial (s)	15.0	15.0	15.0	5.0	15.0	15.0	6.0	6.0	5.0	6.0	6.0
Minimum Split (s)	73.0	73.0	73.0	11.0	24.0	24.0	50.0	50.0	11.0	49.0	49.0
Total Split (s)	61.0	61.0	61.0	15.0	76.0	76.0	44.0	44.0	15.0	44.0	44.0
Total Split (%)	50.8%	50.8%	50.8%	12.5%	63.3%	63.3%	36.7%	36.7%	12.5%	36.7%	36.7%
Yellow Time (s)	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0
All-Red Time (s)	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0
Lost Time Adjust (s)	0.0	0.0	0.0	0.0	0.0	0.0		0.0	0.0		0.0
Total Lost Time (s)	6.0	6.0	6.0	6.0	6.0	6.0		6.0	6.0		6.0
Lead/Lag	Lag	Lag	Lag	Lead					Lead		
Lead-Lag Optimize?											
Recall Mode	C-Min	C-Min	C-Min	None	C-Min	C-Min	None	None	None	None	None

Intersection Summary

Cycle Length: 120
Actuated Cycle Length: 120
Offset: 0 (0%), Referenced to phase 2:EBTL and 6:WBTL, Start of Green
Natural Cycle: 135
Control Type: Actuated-Coordinated

Splits and Phases: 4: Perimeter Center Pl & Meadow Lane

HCM 2010 Signalized Intersection Summary
4: Perimeter Center Pl & Meadow Lane

2021 Build AM Peak
04/16/2019

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	35	126	17	206	465	109	15	11	42	97	11	37
Future Volume (veh/h)	35	126	17	206	465	109	15	11	42	97	11	37
Number	5	2	12	1	6	16	3	8	18	7	4	14
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Adj Sat Flow, veh/h/ln	1863	1863	1863	1863	1863	1863	1900	1863	1863	1900	1863	1900
Adj Flow Rate, veh/h	36	130	18	212	479	112	15	11	0	100	11	38
Adj No. of Lanes	1	2	1	1	2	1	0	1	1	0	1	0
Peak Hour Factor	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97
Percent Heavy Veh, %	2	2	2	2	2	2	2	2	2	2	2	2
Cap, veh/h	619	2406	1077	977	2769	1239	139	90	269	166	16	45
Arrive On Green	0.68	0.68	0.68	0.05	0.78	0.78	0.12	0.12	0.00	0.12	0.12	0.12
Sat Flow, veh/h	822	3539	1583	1774	3539	1583	777	763	1583	988	133	384
Grp Volume(v), veh/h	36	130	18	212	479	112	26	0	0	149	0	0
Grp Sat Flow(s),veh/h/ln	822	1770	1583	1774	1770	1583	1540	0	1583	1504	0	0
Q Serve(g_s), s	1.8	1.5	0.4	4.1	4.1	2.0	0.0	0.0	0.0	10.1	0.0	0.0
Cycle Q Clear(g_c), s	1.8	1.5	0.4	4.1	4.1	2.0	1.5	0.0	0.0	11.6	0.0	0.0
Prop In Lane	1.00		1.00	1.00		1.00	0.58		1.00	0.67		0.26
Lane Grp Cap(c), veh/h	619	2406	1077	977	2769	1239	229	0	269	227	0	0
V/C Ratio(X)	0.06	0.05	0.02	0.22	0.17	0.09	0.11	0.00	0.00	0.66	0.00	0.00
Avail Cap(c_a), veh/h	619	2406	1077	1017	2769	1239	533	0	584	519	0	0
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	1.00	1.00	0.09	0.09	0.09	1.00	0.00	0.00	1.00	0.00	0.00
Uniform Delay (d), s/veh	6.4	6.4	6.2	4.4	3.3	3.1	47.4	0.0	0.0	51.7	0.0	0.0
Incr Delay (d2), s/veh	0.2	0.0	0.0	0.0	0.0	0.0	0.2	0.0	0.0	3.2	0.0	0.0
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(95%),veh/ln	0.8	1.3	0.4	2.6	2.7	1.3	1.4	0.0	0.0	8.7	0.0	0.0
LnGrp Delay(d),s/veh	6.6	6.4	6.2	4.4	3.3	3.1	47.6	0.0	0.0	54.9	0.0	0.0
LnGrp LOS	A	A	A	A	A	A	D			D		
Approach Vol, veh/h		184			803			26			149	
Approach Delay, s/veh		6.4			3.6			47.6			54.9	
Approach LOS		A			A			D			D	

Timer	1	2	3	4	5	6	7	8
Assigned Phs	1	2		4		6		8
Phs Duration (G+Y+Rc), s	12.3	87.6		20.1		99.9		20.1
Change Period (Y+Rc), s	6.0	6.0		6.0		6.0		6.0
Max Green Setting (Gmax), s	9.0	55.0		38.0		70.0		38.0
Max Q Clear Time (g_c+I1), s	6.1	3.8		13.6		6.1		3.5
Green Ext Time (p_c), s	0.2	22.7		0.6		24.8		0.6

Intersection Summary	
HCM 2010 Ctrl Delay	11.6
HCM 2010 LOS	B

Notes

User approved pedestrian interval to be less than phase max green.

Intersection	
Int Delay, s/veh	1.1

Movement	EBT	EBR	WBL	WBT	NBL	NBR
Lane Configurations						
Traffic Vol, veh/h	41	6	6	128	7	14
Future Vol, veh/h	41	6	6	128	7	14
Conflicting Peds, #/hr	0	0	0	0	0	0
Sign Control	Free	Free	Free	Free	Stop	Stop
RT Channelized	-	None	-	None	-	None
Storage Length	-	-	-	-	0	-
Veh in Median Storage, #	0	-	-	0	0	-
Grade, %	0	-	-	0	0	-
Peak Hour Factor	92	92	92	92	92	92
Heavy Vehicles, %	2	2	2	2	2	2
Mvmt Flow	45	7	7	139	8	15

Major/Minor	Major1		Major2		Minor1	
Conflicting Flow All	0	0	52	0	202	49
Stage 1	-	-	-	-	49	-
Stage 2	-	-	-	-	153	-
Critical Hdwy	-	-	4.12	-	6.42	6.22
Critical Hdwy Stg 1	-	-	-	-	5.42	-
Critical Hdwy Stg 2	-	-	-	-	5.42	-
Follow-up Hdwy	-	-	2.218	-	3.518	3.318
Pot Cap-1 Maneuver	-	-	1554	-	787	1020
Stage 1	-	-	-	-	973	-
Stage 2	-	-	-	-	875	-
Platoon blocked, %	-	-		-		
Mov Cap-1 Maneuver	-	-	1554	-	783	1020
Mov Cap-2 Maneuver	-	-	-	-	783	-
Stage 1	-	-	-	-	973	-
Stage 2	-	-	-	-	871	-

Approach	EB	WB	NB
HCM Control Delay, s	0	0.3	9
HCM LOS			A

Minor Lane/Major Mvmt	NBLn1	EBT	EBR	WBL	WBT
Capacity (veh/h)	927	-	-	1554	-
HCM Lane V/C Ratio	0.025	-	-	0.004	-
HCM Control Delay (s)	9	-	-	7.3	0
HCM Lane LOS	A	-	-	A	A
HCM 95th %tile Q(veh)	0.1	-	-	0	-

Intersection	
Int Delay, s/veh	4.7

Movement	EBT	EBR	WBL	WBT	NBL	NBR
Lane Configurations						
Traffic Vol, veh/h	48	13	131	153	8	119
Future Vol, veh/h	48	13	131	153	8	119
Conflicting Peds, #/hr	0	0	0	0	0	0
Sign Control	Free	Free	Free	Free	Stop	Stop
RT Channelized	-	None	-	None	-	None
Storage Length	-	-	0	-	0	-
Veh in Median Storage, #	0	-	-	0	0	-
Grade, %	0	-	-	0	0	-
Peak Hour Factor	92	92	92	92	92	92
Heavy Vehicles, %	2	2	2	2	2	2
Mvmt Flow	52	14	142	166	9	129

Major/Minor	Major1		Major2		Minor1	
Conflicting Flow All	0	0	66	0	509	59
Stage 1	-	-	-	-	59	-
Stage 2	-	-	-	-	450	-
Critical Hdwy	-	-	4.12	-	6.42	6.22
Critical Hdwy Stg 1	-	-	-	-	5.42	-
Critical Hdwy Stg 2	-	-	-	-	5.42	-
Follow-up Hdwy	-	-	2.218	-	3.518	3.318
Pot Cap-1 Maneuver	-	-	1536	-	524	1007
Stage 1	-	-	-	-	964	-
Stage 2	-	-	-	-	642	-
Platoon blocked, %	-	-		-		
Mov Cap-1 Maneuver	-	-	1536	-	476	1007
Mov Cap-2 Maneuver	-	-	-	-	476	-
Stage 1	-	-	-	-	964	-
Stage 2	-	-	-	-	583	-

Approach	EB	WB	NB
HCM Control Delay, s	0	3.5	9.5
HCM LOS			A

Minor Lane/Major Mvmt	NBLn1	EBT	EBR	WBL	WBT
Capacity (veh/h)	941	-	-	1536	-
HCM Lane V/C Ratio	0.147	-	-	0.093	-
HCM Control Delay (s)	9.5	-	-	7.6	-
HCM Lane LOS	A	-	-	A	-
HCM 95th %tile Q(veh)	0.5	-	-	0.3	-

Timings
1: Ashford Dunwoody Rd & Meadow Lane/Asbury Square

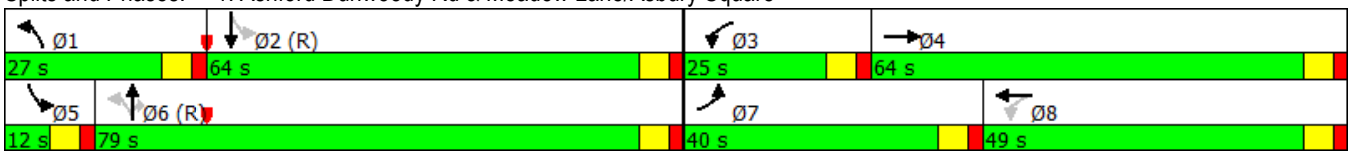
2021 Build PM Peak
04/16/2019

Lane Group	EBL	EBT	WBL	WBT	NBL	NBT	NBR	SBL	SBT
Lane Configurations									
Traffic Volume (vph)	1138	307	174	218	202	1817	134	129	428
Future Volume (vph)	1138	307	174	218	202	1817	134	129	428
Turn Type	Prot	NA	pm+pt	NA	pm+pt	NA	Perm	pm+pt	NA
Protected Phases	7	4	3	8	1	6		5	2
Permitted Phases			8		6		6	2	
Detector Phase	7	4	3	8	1	6	6	5	2
Switch Phase									
Minimum Initial (s)	5.0	6.0	5.0	6.0	5.0	15.0	15.0	5.0	15.0
Minimum Split (s)	11.0	48.0	11.0	49.0	11.0	47.0	47.0	11.0	43.0
Total Split (s)	40.0	64.0	25.0	49.0	27.0	79.0	79.0	12.0	64.0
Total Split (%)	22.2%	35.6%	13.9%	27.2%	15.0%	43.9%	43.9%	6.7%	35.6%
Yellow Time (s)	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0
All-Red Time (s)	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0
Lost Time Adjust (s)	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Lost Time (s)	6.0	6.0	6.0	6.0	6.0	6.0	6.0	6.0	6.0
Lead/Lag	Lead	Lag	Lead	Lag	Lead	Lag	Lag	Lead	Lag
Lead-Lag Optimize?									
Recall Mode	None	None	None	None	None	C-Min	C-Min	None	C-Min

Intersection Summary

Cycle Length: 180
Actuated Cycle Length: 180
Offset: 170 (94%), Referenced to phase 2:SBTL and 6:NBTL, Start of Green
Natural Cycle: 150
Control Type: Actuated-Coordinated

Splits and Phases: 1: Ashford Dunwoody Rd & Meadow Lane/Asbury Square



HCM 2010 Signalized Intersection Summary
1: Ashford Dunwoody Rd & Meadow Lane/Asbury Square

2021 Build PM Peak
04/16/2019

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	1138	307	102	174	218	382	202	1817	134	129	428	202
Future Volume (veh/h)	1138	307	102	174	218	382	202	1817	134	129	428	202
Number	7	4	14	3	8	18	1	6	16	5	2	12
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Adj Sat Flow, veh/h/ln	1863	1863	1900	1863	1863	1900	1863	1863	1863	1863	1863	1900
Adj Flow Rate, veh/h	1264	341	113	193	242	424	224	2019	149	143	476	224
Adj No. of Lanes	2	2	0	1	2	0	1	2	1	1	2	0
Peak Hour Factor	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90
Percent Heavy Veh, %	2	2	2	2	2	2	2	2	2	2	2	2
Cap, veh/h	650	878	286	423	423	378	382	1435	642	99	812	380
Arrive On Green	0.19	0.33	0.33	0.09	0.24	0.24	0.09	0.41	0.41	0.07	0.69	0.69
Sat Flow, veh/h	3442	2625	856	1774	1770	1583	1774	3539	1583	1774	2343	1096
Grp Volume(v), veh/h	1264	228	226	193	242	424	224	2019	149	143	359	341
Grp Sat Flow(s),veh/h/ln	1721	1770	1712	1774	1770	1583	1774	1770	1583	1774	1770	1669
Q Serve(g_s), s	34.0	17.7	18.2	14.7	21.7	43.0	14.3	73.0	11.1	6.0	18.8	19.1
Cycle Q Clear(g_c), s	34.0	17.7	18.2	14.7	21.7	43.0	14.3	73.0	11.1	6.0	18.8	19.1
Prop In Lane	1.00		0.50	1.00		1.00	1.00		1.00	1.00		0.66
Lane Grp Cap(c), veh/h	650	592	572	423	423	378	382	1435	642	99	613	579
V/C Ratio(X)	1.94	0.39	0.39	0.46	0.57	1.12	0.59	1.41	0.23	1.44	0.58	0.59
Avail Cap(c_a), veh/h	650	592	572	445	423	378	426	1435	642	99	613	579
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	2.00	2.00	2.00
Upstream Filter(I)	0.88	0.88	0.88	1.00	1.00	1.00	1.00	1.00	1.00	0.97	0.97	0.97
Uniform Delay (d), s/veh	73.0	45.8	45.9	45.0	60.4	68.5	32.9	53.5	35.1	50.1	20.9	21.0
Incr Delay (d2), s/veh	429.9	0.4	0.4	0.8	1.9	83.3	1.7	187.2	0.8	245.7	3.9	4.2
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(95%),veh/ln	99.0	13.3	13.2	11.6	16.2	49.6	11.5	131.4	8.7	15.8	14.6	14.3
LnGrp Delay(d),s/veh	502.9	46.1	46.3	45.8	62.3	151.8	34.6	240.7	36.0	295.8	24.9	25.2
LnGrp LOS	F	D	D	D	E	F	C	F	D	F	C	C
Approach Vol, veh/h		1718			859			2392			843	
Approach Delay, s/veh		382.2			102.7			208.7			71.0	
Approach LOS		F			F			F			E	

Timer	1	2	3	4	5	6	7	8
Assigned Phs	1	2	3	4	5	6	7	8
Phs Duration (G+Y+Rc), s	22.6	68.4	22.8	66.2	12.0	79.0	40.0	49.0
Change Period (Y+Rc), s	6.0	6.0	6.0	6.0	6.0	6.0	6.0	6.0
Max Green Setting (Gmax), s	21.0	58.0	19.0	58.0	6.0	73.0	34.0	43.0
Max Q Clear Time (g_c+I1), s	16.3	21.1	16.7	20.2	8.0	75.0	36.0	45.0
Green Ext Time (p_c), s	0.3	36.9	0.1	5.0	0.0	0.0	0.0	0.0

Intersection Summary	
HCM 2010 Ctrl Delay	224.3
HCM 2010 LOS	F

Timings 2021 Build PM Peak

2: Ashford Dunwoody Rd/Ashford Dunwood Rd & Ashwood Pkwy/Ashford Pkwy

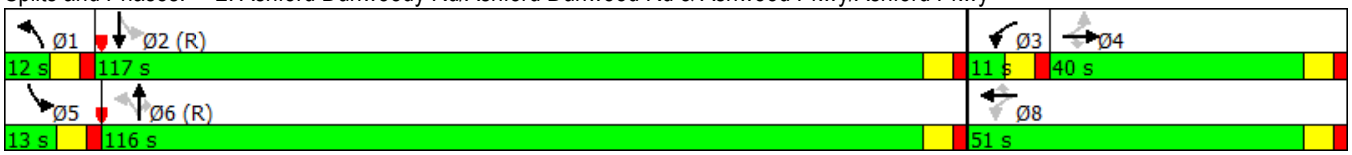
04/16/2019

Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT
Lane Configurations											
Traffic Volume (vph)	252	17	105	37	18	170	111	2499	74	137	434
Future Volume (vph)	252	17	105	37	18	170	111	2499	74	137	434
Turn Type	Perm	NA	Perm	pm+pt	NA	Perm	pm+pt	NA	Perm	pm+pt	NA
Protected Phases		4		3	8		1	6		5	2
Permitted Phases	4		4	8		8	6		6	2	
Detector Phase	4	4	4	3	8	8	1	6	6	5	2
Switch Phase											
Minimum Initial (s)	6.0	6.0	6.0	5.0	6.0	6.0	5.0	15.0	15.0	5.0	15.0
Minimum Split (s)	40.0	40.0	40.0	11.0	42.0	42.0	11.0	42.0	42.0	11.0	37.0
Total Split (s)	40.0	40.0	40.0	11.0	51.0	51.0	12.0	116.0	116.0	13.0	117.0
Total Split (%)	22.2%	22.2%	22.2%	6.1%	28.3%	28.3%	6.7%	64.4%	64.4%	7.2%	65.0%
Yellow Time (s)	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0
All-Red Time (s)	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0
Lost Time Adjust (s)		0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Lost Time (s)		6.0	6.0	6.0	6.0	6.0	6.0	6.0	6.0	6.0	6.0
Lead/Lag	Lag	Lag	Lag	Lead			Lead	Lag	Lag	Lead	Lag
Lead-Lag Optimize?											
Recall Mode	None	None	None	None	None	None	None	C-Min	C-Min	None	C-Min

Intersection Summary

Cycle Length: 180
Actuated Cycle Length: 180
Offset: 0 (0%), Referenced to phase 2:SBTL and 6:NBTL, Start of Green
Natural Cycle: 145
Control Type: Actuated-Coordinated

Splits and Phases: 2: Ashford Dunwoody Rd/Ashford Dunwood Rd & Ashwood Pkwy/Ashford Pkwy



HCM 2010 Signalized Intersection Summary 2021 Build PM Peak
2: Ashford Dunwoody Rd/Ashford Dunwood Rd & Ashwood Pkwy/Ashford Pkwy 04/16/2019

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	252	17	105	37	18	170	111	2499	74	137	434	83
Future Volume (veh/h)	252	17	105	37	18	170	111	2499	74	137	434	83
Number	7	4	14	3	8	18	1	6	16	5	2	12
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Adj Sat Flow, veh/h/ln	1900	1863	1863	1863	1863	1863	1863	1863	1863	1863	1863	1900
Adj Flow Rate, veh/h	265	18	0	39	19	179	117	2631	0	144	457	87
Adj No. of Lanes	0	1	1	1	1	1	1	2	1	1	2	0
Peak Hour Factor	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95
Percent Heavy Veh, %	2	2	2	2	2	2	2	2	2	2	2	2
Cap, veh/h	252	15	299	432	460	391	572	2175	973	109	1842	348
Arrive On Green	0.19	0.19	0.00	0.02	0.25	0.25	0.07	1.00	0.00	0.04	0.62	0.62
Sat Flow, veh/h	1131	77	1583	1774	1863	1583	1774	3539	1583	1774	2971	562
Grp Volume(v), veh/h	283	0	0	39	19	179	117	2631	0	144	271	273
Grp Sat Flow(s),veh/h/ln	1208	0	1583	1774	1863	1583	1774	1770	1583	1774	1770	1764
Q Serve(g_s), s	34.0	0.0	0.0	3.1	1.4	17.3	4.7	110.6	0.0	7.0	12.4	12.5
Cycle Q Clear(g_c), s	34.0	0.0	0.0	3.1	1.4	17.3	4.7	110.6	0.0	7.0	12.4	12.5
Prop In Lane	0.94		1.00	1.00		1.00	1.00		1.00	1.00		0.32
Lane Grp Cap(c), veh/h	267	0	299	432	460	391	572	2175	973	109	1097	1093
V/C Ratio(X)	1.06	0.00	0.00	0.09	0.04	0.46	0.20	1.21	0.00	1.32	0.25	0.25
Avail Cap(c_a), veh/h	267	0	299	438	466	396	572	2175	973	109	1097	1093
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	2.00	2.00	2.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	0.00	0.00	1.00	1.00	1.00	0.09	0.09	0.00	1.00	1.00	1.00
Uniform Delay (d), s/veh	75.5	0.0	0.0	55.3	51.6	57.6	12.0	0.0	0.0	62.3	15.3	15.4
Incr Delay (d2), s/veh	71.9	0.0	0.0	0.1	0.0	0.8	0.0	94.9	0.0	194.9	0.5	0.5
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(95%),veh/ln	33.5	0.0	0.0	2.8	1.3	12.2	3.0	50.5	0.0	20.4	10.3	10.3
LnGrp Delay(d),s/veh	147.4	0.0	0.0	55.4	51.6	58.4	12.0	94.9	0.0	257.2	15.9	15.9
LnGrp LOS	F			E	D	E	B	F		F	B	B
Approach Vol, veh/h		283			237			2748			688	
Approach Delay, s/veh		147.4			57.4			91.4			66.4	
Approach LOS		F			E			F			E	

Timer	1	2	3	4	5	6	7	8
Assigned Phs	1	2	3	4	5	6		8
Phs Duration (G+Y+Rc), s	12.0	117.6	10.4	40.0	13.0	116.6		50.4
Change Period (Y+Rc), s	6.0	6.0	6.0	6.0	6.0	6.0		6.0
Max Green Setting (Gmax), s	6.0	111.0	5.0	34.0	7.0	110.0		45.0
Max Q Clear Time (g_c+I1), s	6.7	14.5	5.1	36.0	9.0	112.6		19.3
Green Ext Time (p_c), s	0.0	96.1	0.0	0.0	0.0	0.0		2.2

Intersection Summary	
HCM 2010 Ctrl Delay	89.0
HCM 2010 LOS	F

Intersection	
Int Delay, s/veh	3

Movement	EBT	EBR	WBL	WBT	NBL	NBR
Lane Configurations						
Traffic Vol, veh/h	149	6	25	41	9	62
Future Vol, veh/h	149	6	25	41	9	62
Conflicting Peds, #/hr	0	0	0	0	0	0
Sign Control	Free	Free	Free	Free	Stop	Stop
RT Channelized	-	None	-	None	-	None
Storage Length	-	-	-	-	0	-
Veh in Median Storage, #	0	-	-	0	0	-
Grade, %	0	-	-	0	0	-
Peak Hour Factor	86	86	86	86	86	86
Heavy Vehicles, %	2	2	2	2	2	2
Mvmt Flow	173	7	29	48	10	72

Major/Minor	Major1		Major2		Minor1	
Conflicting Flow All	0	0	180	0	283	177
Stage 1	-	-	-	-	177	-
Stage 2	-	-	-	-	106	-
Critical Hdwy	-	-	4.12	-	6.42	6.22
Critical Hdwy Stg 1	-	-	-	-	5.42	-
Critical Hdwy Stg 2	-	-	-	-	5.42	-
Follow-up Hdwy	-	-	2.218	-	3.518	3.318
Pot Cap-1 Maneuver	-	-	1396	-	707	866
Stage 1	-	-	-	-	854	-
Stage 2	-	-	-	-	918	-
Platoon blocked, %	-	-		-		
Mov Cap-1 Maneuver	-	-	1396	-	692	866
Mov Cap-2 Maneuver	-	-	-	-	692	-
Stage 1	-	-	-	-	854	-
Stage 2	-	-	-	-	899	-

Approach	EB	WB	NB
HCM Control Delay, s	0	2.9	9.8
HCM LOS			A

Minor Lane/Major Mvmt	NBLn1	EBT	EBR	WBL	WBT
Capacity (veh/h)	839	-	-	1396	-
HCM Lane V/C Ratio	0.098	-	-	0.021	-
HCM Control Delay (s)	9.8	-	-	7.6	0
HCM Lane LOS	A	-	-	A	A
HCM 95th %tile Q(veh)	0.3	-	-	0.1	-

Timings
4: Perimeter Center Pl & Meadow Lane

2021 Build PM Peak
04/16/2019

Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT
Lane Configurations											
Traffic Volume (vph)	83	613	19	158	293	138	69	40	393	143	18
Future Volume (vph)	83	613	19	158	293	138	69	40	393	143	18
Turn Type	Perm	NA	Perm	pm+pt	NA	Perm	Perm	NA	pm+ov	Perm	NA
Protected Phases		2		1	6			8	1		4
Permitted Phases	2		2	6		6	8		8	4	
Detector Phase	2	2	2	1	6	6	8	8	1	4	4
Switch Phase											
Minimum Initial (s)	15.0	15.0	15.0	5.0	15.0	15.0	6.0	6.0	5.0	6.0	6.0
Minimum Split (s)	73.0	73.0	73.0	15.0	24.0	24.0	50.0	50.0	15.0	49.0	49.0
Total Split (s)	63.0	63.0	63.0	15.0	78.0	78.0	42.0	42.0	15.0	42.0	42.0
Total Split (%)	52.5%	52.5%	52.5%	12.5%	65.0%	65.0%	35.0%	35.0%	12.5%	35.0%	35.0%
Yellow Time (s)	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0
All-Red Time (s)	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0
Lost Time Adjust (s)	0.0	0.0	0.0	0.0	0.0	0.0		0.0	0.0		0.0
Total Lost Time (s)	6.0	6.0	6.0	6.0	6.0	6.0		6.0	6.0		6.0
Lead/Lag	Lag	Lag	Lag	Lead					Lead		
Lead-Lag Optimize?											
Recall Mode	C-Min	C-Min	C-Min	None	C-Min	C-Min	None	None	None	None	None

Intersection Summary

Cycle Length: 120
Actuated Cycle Length: 120
Offset: 0 (0%), Referenced to phase 2:EBTL and 6:WBTL, Start of Green
Natural Cycle: 140
Control Type: Actuated-Coordinated

Splits and Phases: 4: Perimeter Center Pl & Meadow Lane

HCM 2010 Signalized Intersection Summary
4: Perimeter Center Pl & Meadow Lane

2021 Build PM Peak
04/16/2019

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	83	613	19	158	293	138	69	40	393	143	18	44
Future Volume (veh/h)	83	613	19	158	293	138	69	40	393	143	18	44
Number	5	2	12	1	6	16	3	8	18	7	4	14
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Adj Sat Flow, veh/h/ln	1863	1863	1863	1863	1863	1863	1900	1863	1863	1900	1863	1900
Adj Flow Rate, veh/h	87	645	20	166	308	145	73	42	0	151	19	46
Adj No. of Lanes	1	2	1	1	2	1	0	1	1	0	1	0
Peak Hour Factor	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95
Percent Heavy Veh, %	2	2	2	2	2	2	2	2	2	2	2	2
Cap, veh/h	647	2226	996	567	2577	1153	200	105	350	224	22	53
Arrive On Green	0.63	0.63	0.63	0.05	0.73	0.73	0.17	0.17	0.00	0.17	0.17	0.17
Sat Flow, veh/h	934	3539	1583	1774	3539	1583	881	611	1583	1007	127	307
Grp Volume(v), veh/h	87	645	20	166	308	145	115	0	0	216	0	0
Grp Sat Flow(s),veh/h/ln	934	1770	1583	1774	1770	1583	1492	0	1583	1440	0	0
Q Serve(g_s), s	4.6	9.9	0.6	3.8	3.1	3.3	0.0	0.0	0.0	9.4	0.0	0.0
Cycle Q Clear(g_c), s	4.6	9.9	0.6	3.8	3.1	3.3	8.1	0.0	0.0	17.5	0.0	0.0
Prop In Lane	1.00		1.00	1.00		1.00	0.63		1.00	0.70		0.21
Lane Grp Cap(c), veh/h	647	2226	996	567	2577	1153	305	0	350	298	0	0
V/C Ratio(X)	0.13	0.29	0.02	0.29	0.12	0.13	0.38	0.00	0.00	0.72	0.00	0.00
Avail Cap(c_a), veh/h	647	2226	996	612	2577	1153	496	0	553	483	0	0
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	1.00	1.00	0.37	0.37	0.37	1.00	0.00	0.00	1.00	0.00	0.00
Uniform Delay (d), s/veh	9.1	10.1	8.4	6.9	4.9	4.9	44.4	0.0	0.0	48.4	0.0	0.0
Incr Delay (d2), s/veh	0.4	0.3	0.0	0.1	0.0	0.1	0.8	0.0	0.0	3.3	0.0	0.0
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(95%),veh/ln	2.3	8.6	0.5	3.2	2.7	2.6	6.3	0.0	0.0	11.6	0.0	0.0
LnGrp Delay(d),s/veh	9.5	10.4	8.4	7.0	4.9	5.0	45.2	0.0	0.0	51.7	0.0	0.0
LnGrp LOS	A	B	A	A	A	A	D			D		
Approach Vol, veh/h		752			619			115			216	
Approach Delay, s/veh		10.3			5.5			45.2			51.7	
Approach LOS		B			A			D			D	

Timer	1	2	3	4	5	6	7	8
Assigned Phs	1	2		4		6		8
Phs Duration (G+Y+Rc), s	11.9	81.5		26.6		93.4		26.6
Change Period (Y+Rc), s	6.0	6.0		6.0		6.0		6.0
Max Green Setting (Gmax), s	9.0	57.0		36.0		72.0		36.0
Max Q Clear Time (g_c+I1), s	5.8	11.9		19.5		5.3		10.1
Green Ext Time (p_c), s	0.2	32.9		1.1		43.3		1.2

Intersection Summary	
HCM 2010 Ctrl Delay	16.1
HCM 2010 LOS	B

Notes

User approved pedestrian interval to be less than phase max green.

Intersection	
Int Delay, s/veh	1.3

Movement	EBT	EBR	WBL	WBT	NBL	NBR
Lane Configurations						
Traffic Vol, veh/h	137	5	5	45	8	18
Future Vol, veh/h	137	5	5	45	8	18
Conflicting Peds, #/hr	0	0	0	0	0	0
Sign Control	Free	Free	Free	Free	Stop	Stop
RT Channelized	-	None	-	None	-	None
Storage Length	-	-	-	-	0	-
Veh in Median Storage, #	0	-	-	0	0	-
Grade, %	0	-	-	0	0	-
Peak Hour Factor	92	92	92	92	92	92
Heavy Vehicles, %	2	2	2	2	2	2
Mvmt Flow	149	5	5	49	9	20

Major/Minor	Major1		Major2		Minor1	
Conflicting Flow All	0	0	154	0	211	152
Stage 1	-	-	-	-	152	-
Stage 2	-	-	-	-	59	-
Critical Hdwy	-	-	4.12	-	6.42	6.22
Critical Hdwy Stg 1	-	-	-	-	5.42	-
Critical Hdwy Stg 2	-	-	-	-	5.42	-
Follow-up Hdwy	-	-	2.218	-	3.518	3.318
Pot Cap-1 Maneuver	-	-	1426	-	777	894
Stage 1	-	-	-	-	876	-
Stage 2	-	-	-	-	964	-
Platoon blocked, %	-	-		-		
Mov Cap-1 Maneuver	-	-	1426	-	774	894
Mov Cap-2 Maneuver	-	-	-	-	774	-
Stage 1	-	-	-	-	876	-
Stage 2	-	-	-	-	960	-

Approach	EB	WB	NB
HCM Control Delay, s	0	0.8	9.4
HCM LOS			A

Minor Lane/Major Mvmt	NBLn1	EBT	EBR	WBL	WBT
Capacity (veh/h)	853	-	-	1426	-
HCM Lane V/C Ratio	0.033	-	-	0.004	-
HCM Control Delay (s)	9.4	-	-	7.5	0
HCM Lane LOS	A	-	-	A	A
HCM 95th %tile Q(veh)	0.1	-	-	0	-

Intersection	
Int Delay, s/veh	5.1

Movement	EBT	EBR	WBL	WBT	NBL	NBR
Lane Configurations						
Traffic Vol, veh/h	214	11	146	67	8	161
Future Vol, veh/h	214	11	146	67	8	161
Conflicting Peds, #/hr	0	0	0	0	0	0
Sign Control	Free	Free	Free	Free	Stop	Stop
RT Channelized	-	None	-	None	-	None
Storage Length	-	-	0	-	0	-
Veh in Median Storage, #	0	-	-	0	0	-
Grade, %	0	-	-	0	0	-
Peak Hour Factor	92	92	92	92	92	92
Heavy Vehicles, %	2	2	2	2	2	2
Mvmt Flow	233	12	159	73	9	175

Major/Minor	Major1		Major2		Minor1	
Conflicting Flow All	0	0	245	0	630	239
Stage 1	-	-	-	-	239	-
Stage 2	-	-	-	-	391	-
Critical Hdwy	-	-	4.12	-	6.42	6.22
Critical Hdwy Stg 1	-	-	-	-	5.42	-
Critical Hdwy Stg 2	-	-	-	-	5.42	-
Follow-up Hdwy	-	-	2.218	-	3.518	3.318
Pot Cap-1 Maneuver	-	-	1321	-	446	800
Stage 1	-	-	-	-	801	-
Stage 2	-	-	-	-	683	-
Platoon blocked, %	-	-		-		
Mov Cap-1 Maneuver	-	-	1321	-	392	800
Mov Cap-2 Maneuver	-	-	-	-	392	-
Stage 1	-	-	-	-	801	-
Stage 2	-	-	-	-	601	-

Approach	EB	WB	NB
HCM Control Delay, s	0	5.6	11.2
HCM LOS			B

Minor Lane/Major Mvmt	NBLn1	EBT	EBR	WBL	WBT
Capacity (veh/h)	762	-	-	1321	-
HCM Lane V/C Ratio	0.241	-	-	0.12	-
HCM Control Delay (s)	11.2	-	-	8.1	-
HCM Lane LOS	B	-	-	A	-
HCM 95th %tile Q(veh)	0.9	-	-	0.4	-

FUTURE "BUILD" IMPROVED INTERSECTION ANALYSIS

Timings
1: Ashford Dunwoody Rd & Meadow Lane/Asbury Square

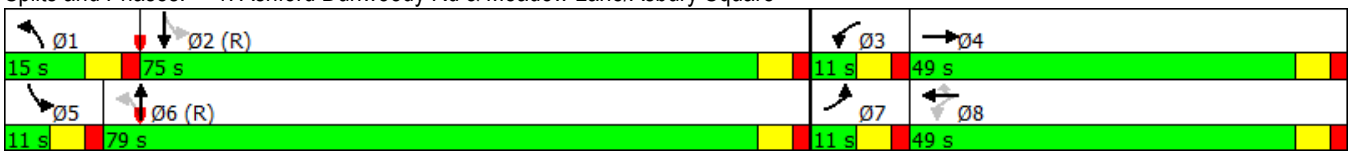
2021 Build AM Peak - Improved
04/16/2019

Lane Group	EBL	EBT	WBL	WBT	WBR	NBL	NBT	SBL	SBT
Lane Configurations									
Traffic Volume (vph)	94	63	47	116	47	201	484	93	1272
Future Volume (vph)	94	63	47	116	47	201	484	93	1272
Turn Type	Prot	NA	pm+pt	NA	Perm	pm+pt	NA	pm+pt	NA
Protected Phases	7	4	3	8		1	6	5	2
Permitted Phases			8		8	6		2	
Detector Phase	7	4	3	8	8	1	6	5	2
Switch Phase									
Minimum Initial (s)	5.0	6.0	5.0	6.0	6.0	5.0	15.0	5.0	15.0
Minimum Split (s)	11.0	48.0	11.0	49.0	49.0	11.0	47.0	11.0	43.0
Total Split (s)	11.0	49.0	11.0	49.0	49.0	15.0	79.0	11.0	75.0
Total Split (%)	7.3%	32.7%	7.3%	32.7%	32.7%	10.0%	52.7%	7.3%	50.0%
Yellow Time (s)	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0
All-Red Time (s)	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0
Lost Time Adjust (s)	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Lost Time (s)	6.0	6.0	6.0	6.0	6.0	6.0	6.0	6.0	6.0
Lead/Lag	Lead	Lag	Lead	Lag	Lag	Lead	Lag	Lead	Lag
Lead-Lag Optimize?									
Recall Mode	None	None	None	None	None	None	C-Min	None	C-Min

Intersection Summary

Cycle Length: 150
Actuated Cycle Length: 150
Offset: 138 (92%), Referenced to phase 2:SBTL and 6:NBTL, Start of Green
Natural Cycle: 150
Control Type: Actuated-Coordinated

Splits and Phases: 1: Ashford Dunwoody Rd & Meadow Lane/Asbury Square



HCM 2010 Signalized Intersection Summary
1: Ashford Dunwoody Rd & Meadow Lane/Asbury Square

2021 Build AM Peak - Improved
04/16/2019

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	94	63	112	47	116	47	201	484	72	93	1272	489
Future Volume (veh/h)	94	63	112	47	116	47	201	484	72	93	1272	489
Number	7	4	14	3	8	18	1	6	16	5	2	12
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Adj Sat Flow, veh/h/ln	1863	1863	1900	1863	1863	1863	1863	1863	1900	1863	1863	1900
Adj Flow Rate, veh/h	107	72	127	53	132	0	228	550	0	106	1445	556
Adj No. of Lanes	3	1	0	1	1	1	1	3	0	1	2	0
Peak Hour Factor	0.88	0.88	0.88	0.88	0.88	0.88	0.88	0.88	0.88	0.88	0.88	0.88
Percent Heavy Veh, %	2	2	2	2	2	2	2	2	2	2	2	2
Cap, veh/h	167	83	147	132	256	218	285	3232	0	612	1552	561
Arrive On Green	0.03	0.14	0.14	0.03	0.14	0.00	0.06	0.64	0.00	0.07	1.00	1.00
Sat Flow, veh/h	5003	606	1068	1774	1863	1583	1774	5253	0	1774	2549	921
Grp Volume(v), veh/h	107	0	199	53	132	0	228	550	0	106	975	1026
Grp Sat Flow(s),veh/h/ln	1668	0	1674	1774	1863	1583	1774	1695	0	1774	1770	1700
Q Serve(g_s), s	3.2	0.0	17.4	3.8	9.9	0.0	7.3	6.6	0.0	3.5	0.0	0.0
Cycle Q Clear(g_c), s	3.2	0.0	17.4	3.8	9.9	0.0	7.3	6.6	0.0	3.5	0.0	0.0
Prop In Lane	1.00		0.64	1.00		1.00	1.00		0.00	1.00		0.54
Lane Grp Cap(c), veh/h	167	0	230	132	256	218	285	3232	0	612	1078	1035
V/C Ratio(X)	0.64	0.00	0.86	0.40	0.51	0.00	0.80	0.17	0.00	0.17	0.90	0.99
Avail Cap(c_a), veh/h	167	0	480	132	534	454	285	3232	0	612	1078	1035
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	2.00	2.00	2.00
Upstream Filter(I)	1.00	0.00	1.00	1.00	1.00	0.00	1.00	1.00	0.00	0.69	0.69	0.69
Uniform Delay (d), s/veh	71.6	0.0	63.3	54.2	60.0	0.0	11.1	11.2	0.0	9.9	0.0	0.0
Incr Delay (d2), s/veh	8.1	0.0	9.3	2.0	1.6	0.0	14.9	0.1	0.0	0.1	9.1	21.2
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(95%),veh/ln	2.9	0.0	13.5	3.5	9.0	0.0	10.1	5.7	0.0	3.1	4.9	9.5
LnGrp Delay(d),s/veh	79.7	0.0	72.6	56.1	61.6	0.0	26.0	11.3	0.0	10.0	9.1	21.2
LnGrp LOS	E		E	E	E		C	B		A	A	C
Approach Vol, veh/h		306			185			778			2107	
Approach Delay, s/veh		75.0			60.1			15.6			15.0	
Approach LOS		E			E			B			B	

Timer	1	2	3	4	5	6	7	8
Assigned Phs	1	2	3	4	5	6	7	8
Phs Duration (G+Y+Rc), s	15.0	97.3	11.0	26.7	11.0	101.3	11.0	26.7
Change Period (Y+Rc), s	6.0	6.0	6.0	6.0	6.0	6.0	6.0	6.0
Max Green Setting (Gmax), s	9.0	69.0	5.0	43.0	5.0	73.0	5.0	43.0
Max Q Clear Time (g_c+I1), s	9.3	2.0	5.8	19.4	5.5	8.6	5.2	11.9
Green Ext Time (p_c), s	0.0	66.8	0.0	1.2	0.0	64.2	0.0	1.3

Intersection Summary	
HCM 2010 Ctrl Delay	23.1
HCM 2010 LOS	C

Notes

User approved pedestrian interval to be less than phase max green.

Timings 2021 Build AM Peak - Improved

2: Ashford Dunwoody Rd/Ashford Dunwood Rd & Ashwood Pkwy/Ashford Pkwy

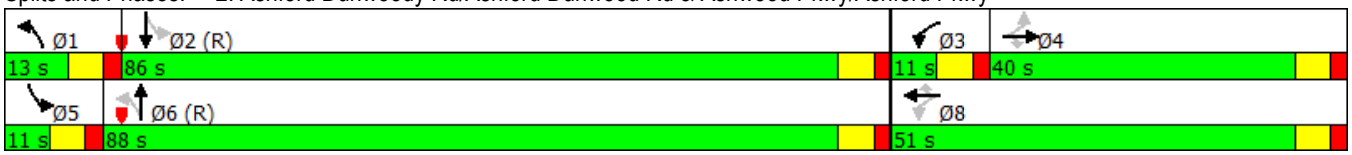
04/16/2019

Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	SBL	SBT
Lane Configurations										
Traffic Volume (vph)	68	7	92	56	16	38	101	398	72	1267
Future Volume (vph)	68	7	92	56	16	38	101	398	72	1267
Turn Type	Perm	NA	Perm	pm+pt	NA	Perm	pm+pt	NA	pm+pt	NA
Protected Phases		4		3	8		1	6	5	2
Permitted Phases	4		4	8		8	6		2	
Detector Phase	4	4	4	3	8	8	1	6	5	2
Switch Phase										
Minimum Initial (s)	6.0	6.0	6.0	5.0	6.0	6.0	5.0	15.0	5.0	15.0
Minimum Split (s)	40.0	40.0	40.0	11.0	42.0	42.0	11.0	42.0	11.0	37.0
Total Split (s)	40.0	40.0	40.0	11.0	51.0	51.0	13.0	88.0	11.0	86.0
Total Split (%)	26.7%	26.7%	26.7%	7.3%	34.0%	34.0%	8.7%	58.7%	7.3%	57.3%
Yellow Time (s)	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0
All-Red Time (s)	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0
Lost Time Adjust (s)		0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Lost Time (s)		6.0	6.0	6.0	6.0	6.0	6.0	6.0	6.0	6.0
Lead/Lag	Lag	Lag	Lag	Lead			Lead	Lag	Lead	Lag
Lead-Lag Optimize?										
Recall Mode	None	None	None	None	None	None	None	C-Min	None	C-Min

Intersection Summary

Cycle Length: 150
Actuated Cycle Length: 150
Offset: 0 (0%), Referenced to phase 2:SBTL and 6:NBTL, Start of Green
Natural Cycle: 125
Control Type: Actuated-Coordinated

Splits and Phases: 2: Ashford Dunwoody Rd/Ashford Dunwood Rd & Ashwood Pkwy/Ashford Pkwy



HCM 2010 Signalized Intersection Summary — 2021 Build AM Peak - Improved
2: Ashford Dunwoody Rd/Ashford Dunwood Rd & Ashwood Pkwy/Ashford Pkwy — 04/16/2019

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	68	7	92	56	16	38	101	398	25	72	1267	166
Future Volume (veh/h)	68	7	92	56	16	38	101	398	25	72	1267	166
Number	7	4	14	3	8	18	1	6	16	5	2	12
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Adj Sat Flow, veh/h/ln	1900	1863	1863	1863	1863	1863	1863	1863	1900	1863	1863	1900
Adj Flow Rate, veh/h	73	8	0	60	17	41	109	428	0	77	1362	178
Adj No. of Lanes	0	1	1	1	1	1	1	3	0	1	2	0
Peak Hour Factor	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93
Percent Heavy Veh, %	2	2	2	2	2	2	2	2	2	2	2	2
Cap, veh/h	138	10	117	249	274	233	263	3563	0	711	2205	286
Arrive On Green	0.07	0.07	0.00	0.03	0.15	0.15	0.01	0.23	0.00	0.03	0.70	0.70
Sat Flow, veh/h	1242	136	1583	1774	1863	1583	1774	5253	0	1774	3151	409
Grp Volume(v), veh/h	81	0	0	60	17	41	109	428	0	77	760	780
Grp Sat Flow(s),veh/h/ln	1378	0	1583	1774	1863	1583	1774	1695	0	1774	1770	1791
Q Serve(g_s), s	8.7	0.0	0.0	4.6	1.2	3.4	2.6	10.0	0.0	1.8	33.9	34.7
Cycle Q Clear(g_c), s	8.7	0.0	0.0	4.6	1.2	3.4	2.6	10.0	0.0	1.8	33.9	34.7
Prop In Lane	0.90		1.00	1.00		1.00	1.00		0.00	1.00		0.23
Lane Grp Cap(c), veh/h	148	0	117	249	274	233	263	3563	0	711	1238	1253
V/C Ratio(X)	0.55	0.00	0.00	0.24	0.06	0.18	0.41	0.12	0.00	0.11	0.61	0.62
Avail Cap(c_a), veh/h	358	0	359	249	559	475	288	3563	0	713	1238	1253
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	0.33	0.33	0.33	1.00	1.00	1.00
Upstream Filter(I)	1.00	0.00	0.00	1.00	1.00	1.00	0.97	0.97	0.00	1.00	1.00	1.00
Uniform Delay (d), s/veh	68.3	0.0	0.0	60.0	55.0	56.0	12.0	21.1	0.0	6.0	11.9	12.0
Incr Delay (d2), s/veh	3.2	0.0	0.0	0.5	0.1	0.4	1.0	0.1	0.0	0.1	2.3	2.3
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(95%),veh/ln	6.2	0.0	0.0	4.1	1.1	2.7	3.0	8.2	0.0	1.6	24.1	24.9
LnGrp Delay(d),s/veh	71.5	0.0	0.0	60.5	55.1	56.3	13.0	21.2	0.0	6.1	14.1	14.3
LnGrp LOS	E			E	E	E	B	C		A	B	B
Approach Vol, veh/h		81			118			537			1617	
Approach Delay, s/veh		71.5			58.3			19.5			13.8	
Approach LOS		E			E			B			B	

Timer	1	2	3	4	5	6	7	8
Assigned Phs	1	2	3	4	5	6		8
Phs Duration (G+Y+Rc), s	10.9	111.0	11.0	17.1	10.8	111.1		28.1
Change Period (Y+Rc), s	6.0	6.0	6.0	6.0	6.0	6.0		6.0
Max Green Setting (Gmax), s	7.0	80.0	5.0	34.0	5.0	82.0		45.0
Max Q Clear Time (g_c+I1), s	4.6	36.7	6.6	10.7	3.8	12.0		5.4
Green Ext Time (p_c), s	0.1	42.4	0.0	0.5	0.0	67.8		0.5

Intersection Summary	
HCM 2010 Ctrl Delay	19.3
HCM 2010 LOS	B

Intersection	
Int Delay, s/veh	1.9

Movement	EBT	EBR	WBL	WBT	NBL	NBR
Lane Configurations						
Traffic Vol, veh/h	54	1	36	122	11	7
Future Vol, veh/h	54	1	36	122	11	7
Conflicting Peds, #/hr	0	0	0	0	0	0
Sign Control	Free	Free	Free	Free	Stop	Stop
RT Channelized	-	None	-	None	-	None
Storage Length	-	-	-	-	0	-
Veh in Median Storage, #	0	-	-	0	0	-
Grade, %	0	-	-	0	0	-
Peak Hour Factor	87	87	87	87	87	87
Heavy Vehicles, %	2	2	2	2	2	2
Mvmt Flow	62	1	41	140	13	8

Major/Minor	Major1		Major2		Minor1	
Conflicting Flow All	0	0	63	0	285	63
Stage 1	-	-	-	-	63	-
Stage 2	-	-	-	-	222	-
Critical Hdwy	-	-	4.12	-	6.42	6.22
Critical Hdwy Stg 1	-	-	-	-	5.42	-
Critical Hdwy Stg 2	-	-	-	-	5.42	-
Follow-up Hdwy	-	-	2.218	-	3.518	3.318
Pot Cap-1 Maneuver	-	-	1540	-	705	1002
Stage 1	-	-	-	-	960	-
Stage 2	-	-	-	-	815	-
Platoon blocked, %	-	-		-		
Mov Cap-1 Maneuver	-	-	1540	-	685	1002
Mov Cap-2 Maneuver	-	-	-	-	685	-
Stage 1	-	-	-	-	960	-
Stage 2	-	-	-	-	791	-

Approach	EB	WB	NB
HCM Control Delay, s	0	1.7	9.7
HCM LOS			A

Minor Lane/Major Mvmt	NBLn1	EBT	EBR	WBL	WBT
Capacity (veh/h)	781	-	-	1540	-
HCM Lane V/C Ratio	0.026	-	-	0.027	-
HCM Control Delay (s)	9.7	-	-	7.4	0
HCM Lane LOS	A	-	-	A	A
HCM 95th %tile Q(veh)	0.1	-	-	0.1	-

Timings
4: Perimeter Center Pl & Meadow Lane

2021 Build AM Peak - Improved
04/16/2019

Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT
Lane Configurations											
Traffic Volume (vph)	35	126	17	206	465	109	15	11	42	97	11
Future Volume (vph)	35	126	17	206	465	109	15	11	42	97	11
Turn Type	Perm	NA	Perm	pm+pt	NA	Perm	Perm	NA	pm+ov	Perm	NA
Protected Phases		2		1	6			8	1		4
Permitted Phases	2		2	6		6	8		8	4	
Detector Phase	2	2	2	1	6	6	8	8	1	4	4
Switch Phase											
Minimum Initial (s)	15.0	15.0	15.0	5.0	15.0	15.0	6.0	6.0	5.0	6.0	6.0
Minimum Split (s)	73.0	73.0	73.0	11.0	24.0	24.0	50.0	50.0	11.0	49.0	49.0
Total Split (s)	61.0	61.0	61.0	15.0	76.0	76.0	44.0	44.0	15.0	44.0	44.0
Total Split (%)	50.8%	50.8%	50.8%	12.5%	63.3%	63.3%	36.7%	36.7%	12.5%	36.7%	36.7%
Yellow Time (s)	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0
All-Red Time (s)	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0
Lost Time Adjust (s)	0.0	0.0	0.0	0.0	0.0	0.0		0.0	0.0		0.0
Total Lost Time (s)	6.0	6.0	6.0	6.0	6.0	6.0		6.0	6.0		6.0
Lead/Lag	Lag	Lag	Lag	Lead					Lead		
Lead-Lag Optimize?											
Recall Mode	C-Min	C-Min	C-Min	None	C-Min	C-Min	None	None	None	None	None

Intersection Summary

Cycle Length: 120
Actuated Cycle Length: 120
Offset: 0 (0%), Referenced to phase 2:EBTL and 6:WBTL, Start of Green
Natural Cycle: 135
Control Type: Actuated-Coordinated

Splits and Phases: 4: Perimeter Center Pl & Meadow Lane

HCM 2010 Signalized Intersection Summary
4: Perimeter Center Pl & Meadow Lane

2021 Build AM Peak - Improved
04/16/2019

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	35	126	17	206	465	109	15	11	42	97	11	37
Future Volume (veh/h)	35	126	17	206	465	109	15	11	42	97	11	37
Number	5	2	12	1	6	16	3	8	18	7	4	14
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Adj Sat Flow, veh/h/ln	1863	1863	1863	1863	1863	1863	1900	1863	1863	1900	1863	1900
Adj Flow Rate, veh/h	36	130	18	212	479	112	15	11	0	100	11	38
Adj No. of Lanes	1	2	1	1	2	1	0	1	1	0	1	0
Peak Hour Factor	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97
Percent Heavy Veh, %	2	2	2	2	2	2	2	2	2	2	2	2
Cap, veh/h	619	2406	1077	977	2769	1239	139	90	269	166	16	45
Arrive On Green	0.68	0.68	0.68	0.05	0.78	0.78	0.12	0.12	0.00	0.12	0.12	0.12
Sat Flow, veh/h	822	3539	1583	1774	3539	1583	777	763	1583	988	133	384
Grp Volume(v), veh/h	36	130	18	212	479	112	26	0	0	149	0	0
Grp Sat Flow(s),veh/h/ln	822	1770	1583	1774	1770	1583	1540	0	1583	1504	0	0
Q Serve(g_s), s	1.8	1.5	0.4	4.1	4.1	2.0	0.0	0.0	0.0	10.1	0.0	0.0
Cycle Q Clear(g_c), s	1.8	1.5	0.4	4.1	4.1	2.0	1.5	0.0	0.0	11.6	0.0	0.0
Prop In Lane	1.00		1.00	1.00		1.00	0.58		1.00	0.67		0.26
Lane Grp Cap(c), veh/h	619	2406	1077	977	2769	1239	229	0	269	227	0	0
V/C Ratio(X)	0.06	0.05	0.02	0.22	0.17	0.09	0.11	0.00	0.00	0.66	0.00	0.00
Avail Cap(c_a), veh/h	619	2406	1077	1017	2769	1239	533	0	584	519	0	0
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	1.00	1.00	0.09	0.09	0.09	1.00	0.00	0.00	1.00	0.00	0.00
Uniform Delay (d), s/veh	6.4	6.4	6.2	4.4	3.3	3.1	47.4	0.0	0.0	51.7	0.0	0.0
Incr Delay (d2), s/veh	0.2	0.0	0.0	0.0	0.0	0.0	0.2	0.0	0.0	3.2	0.0	0.0
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(95%),veh/ln	0.8	1.3	0.4	2.6	2.7	1.3	1.4	0.0	0.0	8.7	0.0	0.0
LnGrp Delay(d),s/veh	6.6	6.4	6.2	4.4	3.3	3.1	47.6	0.0	0.0	54.9	0.0	0.0
LnGrp LOS	A	A	A	A	A	A	D			D		
Approach Vol, veh/h		184			803			26			149	
Approach Delay, s/veh		6.4			3.6			47.6			54.9	
Approach LOS		A			A			D			D	

Timer	1	2	3	4	5	6	7	8
Assigned Phs	1	2		4		6		8
Phs Duration (G+Y+Rc), s	12.3	87.6		20.1		99.9		20.1
Change Period (Y+Rc), s	6.0	6.0		6.0		6.0		6.0
Max Green Setting (Gmax), s	9.0	55.0		38.0		70.0		38.0
Max Q Clear Time (g_c+I1), s	6.1	3.8		13.6		6.1		3.5
Green Ext Time (p_c), s	0.2	22.7		0.6		24.8		0.6

Intersection Summary	
HCM 2010 Ctrl Delay	11.6
HCM 2010 LOS	B

Notes
User approved pedestrian interval to be less than phase max green.

Intersection	
Int Delay, s/veh	1.1

Movement	EBT	EBR	WBL	WBT	NBL	NBR
Lane Configurations						
Traffic Vol, veh/h	41	6	6	128	7	14
Future Vol, veh/h	41	6	6	128	7	14
Conflicting Peds, #/hr	0	0	0	0	0	0
Sign Control	Free	Free	Free	Free	Stop	Stop
RT Channelized	-	None	-	None	-	None
Storage Length	-	-	-	-	0	-
Veh in Median Storage, #	0	-	-	0	0	-
Grade, %	0	-	-	0	0	-
Peak Hour Factor	92	92	92	92	92	92
Heavy Vehicles, %	2	2	2	2	2	2
Mvmt Flow	45	7	7	139	8	15

Major/Minor	Major1		Major2		Minor1	
Conflicting Flow All	0	0	52	0	202	49
Stage 1	-	-	-	-	49	-
Stage 2	-	-	-	-	153	-
Critical Hdwy	-	-	4.12	-	6.42	6.22
Critical Hdwy Stg 1	-	-	-	-	5.42	-
Critical Hdwy Stg 2	-	-	-	-	5.42	-
Follow-up Hdwy	-	-	2.218	-	3.518	3.318
Pot Cap-1 Maneuver	-	-	1554	-	787	1020
Stage 1	-	-	-	-	973	-
Stage 2	-	-	-	-	875	-
Platoon blocked, %	-	-		-		
Mov Cap-1 Maneuver	-	-	1554	-	783	1020
Mov Cap-2 Maneuver	-	-	-	-	783	-
Stage 1	-	-	-	-	973	-
Stage 2	-	-	-	-	871	-

Approach	EB	WB	NB
HCM Control Delay, s	0	0.3	9
HCM LOS			A

Minor Lane/Major Mvmt	NBLn1	EBT	EBR	WBL	WBT
Capacity (veh/h)	927	-	-	1554	-
HCM Lane V/C Ratio	0.025	-	-	0.004	-
HCM Control Delay (s)	9	-	-	7.3	0
HCM Lane LOS	A	-	-	A	A
HCM 95th %tile Q(veh)	0.1	-	-	0	-

Intersection	
Int Delay, s/veh	4.7

Movement	EBT	EBR	WBL	WBT	NBL	NBR
Lane Configurations						
Traffic Vol, veh/h	48	13	131	153	8	119
Future Vol, veh/h	48	13	131	153	8	119
Conflicting Peds, #/hr	0	0	0	0	0	0
Sign Control	Free	Free	Free	Free	Stop	Stop
RT Channelized	-	None	-	None	-	None
Storage Length	-	-	0	-	0	-
Veh in Median Storage, #	0	-	-	0	0	-
Grade, %	0	-	-	0	0	-
Peak Hour Factor	92	92	92	92	92	92
Heavy Vehicles, %	2	2	2	2	2	2
Mvmt Flow	52	14	142	166	9	129

Major/Minor	Major1		Major2		Minor1	
Conflicting Flow All	0	0	66	0	509	59
Stage 1	-	-	-	-	59	-
Stage 2	-	-	-	-	450	-
Critical Hdwy	-	-	4.12	-	6.42	6.22
Critical Hdwy Stg 1	-	-	-	-	5.42	-
Critical Hdwy Stg 2	-	-	-	-	5.42	-
Follow-up Hdwy	-	-	2.218	-	3.518	3.318
Pot Cap-1 Maneuver	-	-	1536	-	524	1007
Stage 1	-	-	-	-	964	-
Stage 2	-	-	-	-	642	-
Platoon blocked, %	-	-		-		
Mov Cap-1 Maneuver	-	-	1536	-	476	1007
Mov Cap-2 Maneuver	-	-	-	-	476	-
Stage 1	-	-	-	-	964	-
Stage 2	-	-	-	-	583	-

Approach	EB	WB	NB
HCM Control Delay, s	0	3.5	9.5
HCM LOS			A

Minor Lane/Major Mvmt	NBLn1	EBT	EBR	WBL	WBT
Capacity (veh/h)	941	-	-	1536	-
HCM Lane V/C Ratio	0.147	-	-	0.093	-
HCM Control Delay (s)	9.5	-	-	7.6	-
HCM Lane LOS	A	-	-	A	-
HCM 95th %tile Q(veh)	0.5	-	-	0.3	-

Timings
1: Ashford Dunwoody Rd & Meadow Lane/Asbury Square

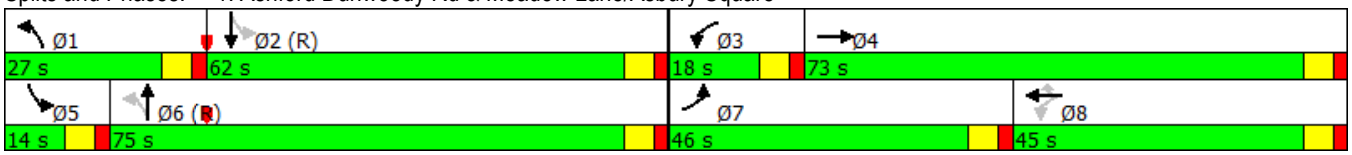
2021 Build PM Peak - Improved
04/16/2019

Lane Group	EBL	EBT	WBL	WBT	WBR	NBL	NBT	SBL	SBT
Lane Configurations									
Traffic Volume (vph)	1138	307	174	218	382	202	1817	129	428
Future Volume (vph)	1138	307	174	218	382	202	1817	129	428
Turn Type	Prot	NA	pm+pt	NA	Perm	pm+pt	NA	pm+pt	NA
Protected Phases	7	4	3	8		1	6	5	2
Permitted Phases			8		8	6		2	
Detector Phase	7	4	3	8	8	1	6	5	2
Switch Phase									
Minimum Initial (s)	5.0	6.0	5.0	6.0	6.0	5.0	15.0	5.0	15.0
Minimum Split (s)	11.0	48.0	11.0	49.0	49.0	11.0	47.0	11.0	43.0
Total Split (s)	46.0	73.0	18.0	45.0	45.0	27.0	75.0	14.0	62.0
Total Split (%)	25.6%	40.6%	10.0%	25.0%	25.0%	15.0%	41.7%	7.8%	34.4%
Yellow Time (s)	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0
All-Red Time (s)	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0
Lost Time Adjust (s)	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Lost Time (s)	6.0	6.0	6.0	6.0	6.0	6.0	6.0	6.0	6.0
Lead/Lag	Lead	Lag	Lead	Lag	Lag	Lead	Lag	Lead	Lag
Lead-Lag Optimize?									
Recall Mode	None	None	None	None	None	None	C-Min	None	C-Min

Intersection Summary

Cycle Length: 180
Actuated Cycle Length: 180
Offset: 170 (94%), Referenced to phase 2:SBTL and 6:NBTL, Start of Green
Natural Cycle: 150
Control Type: Actuated-Coordinated

Splits and Phases: 1: Ashford Dunwoody Rd & Meadow Lane/Asbury Square



HCM 2010 Signalized Intersection Summary
1: Ashford Dunwoody Rd & Meadow Lane/Asbury Square

2021 Build PM Peak - Improved
04/16/2019

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	1138	307	102	174	218	382	202	1817	134	129	428	202
Future Volume (veh/h)	1138	307	102	174	218	382	202	1817	134	129	428	202
Number	7	4	14	3	8	18	1	6	16	5	2	12
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Adj Sat Flow, veh/h/ln	1863	1863	1900	1863	1863	1863	1863	1863	1900	1863	1863	1900
Adj Flow Rate, veh/h	1264	341	113	193	242	0	224	2019	0	143	476	224
Adj No. of Lanes	3	1	0	1	1	1	1	3	0	1	2	0
Peak Hour Factor	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90
Percent Heavy Veh, %	2	2	2	2	2	2	2	2	2	2	2	2
Cap, veh/h	1112	411	136	224	282	240	447	2282	0	137	957	448
Arrive On Green	0.22	0.31	0.31	0.07	0.15	0.00	0.08	0.45	0.00	0.09	0.82	0.82
Sat Flow, veh/h	5003	1340	444	1774	1863	1583	1774	5253	0	1774	2343	1096
Grp Volume(v), veh/h	1264	0	454	193	242	0	224	2019	0	143	359	341
Grp Sat Flow(s),veh/h/ln	1668	0	1784	1774	1863	1583	1774	1695	0	1774	1770	1669
Q Serve(g_s), s	40.0	0.0	42.6	12.0	22.8	0.0	12.9	65.3	0.0	8.0	11.2	11.4
Cycle Q Clear(g_c), s	40.0	0.0	42.6	12.0	22.8	0.0	12.9	65.3	0.0	8.0	11.2	11.4
Prop In Lane	1.00		0.25	1.00		1.00	1.00		0.00	1.00		0.66
Lane Grp Cap(c), veh/h	1112	0	548	224	282	240	447	2282	0	137	723	682
V/C Ratio(X)	1.14	0.00	0.83	0.86	0.86	0.00	0.50	0.88	0.00	1.04	0.50	0.50
Avail Cap(c_a), veh/h	1112	0	664	224	404	343	503	2282	0	137	723	682
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	2.00	2.00	2.00
Upstream Filter(I)	0.88	0.00	0.88	1.00	1.00	0.00	1.00	1.00	0.00	0.97	0.97	0.97
Uniform Delay (d), s/veh	70.0	0.0	58.0	67.5	74.5	0.0	26.0	45.4	0.0	43.8	10.8	10.8
Incr Delay (d2), s/veh	71.8	0.0	6.5	27.3	12.1	0.0	0.9	5.5	0.0	88.1	2.4	2.5
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.3	0.0	0.0
%ile BackOfQ(95%),veh/ln	46.5	0.0	29.3	9.2	18.6	0.0	10.5	41.1	0.0	11.2	9.8	9.4
LnGrp Delay(d),s/veh	141.8	0.0	64.5	94.8	86.6	0.0	26.9	50.9	0.0	132.2	13.1	13.3
LnGrp LOS	F		E	F	F		C	D		F	B	B
Approach Vol, veh/h		1718			435			2243			843	
Approach Delay, s/veh		121.4			90.2			48.5			33.4	
Approach LOS		F			F			D			C	

Timer	1	2	3	4	5	6	7	8
Assigned Phs	1	2	3	4	5	6	7	8
Phs Duration (G+Y+Rc), s	21.3	79.5	18.0	61.2	14.0	86.8	46.0	33.2
Change Period (Y+Rc), s	6.0	6.0	6.0	6.0	6.0	6.0	6.0	6.0
Max Green Setting (Gmax), s	21.0	56.0	12.0	67.0	8.0	69.0	40.0	39.0
Max Q Clear Time (g_c+I1), s	14.9	13.4	14.0	44.6	10.0	67.3	42.0	24.8
Green Ext Time (p_c), s	0.4	42.5	0.0	2.7	0.0	1.7	0.0	2.4

Intersection Summary	
HCM 2010 Ctrl Delay	73.4
HCM 2010 LOS	E

Notes

User approved pedestrian interval to be less than phase max green.

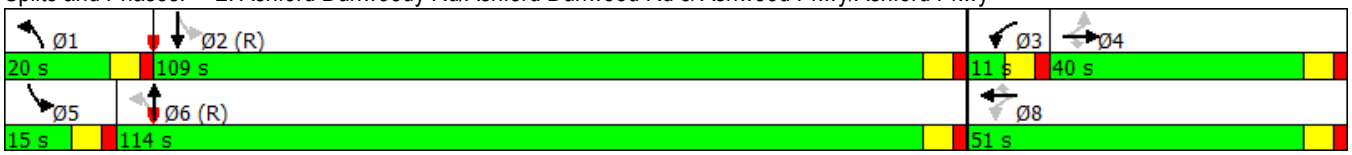
Timings 2021 Build PM Peak - Improved
2: Ashford Dunwoody Rd/Ashford Dunwood Rd & Ashwood Pkwy/Ashford Pkwy 04/16/2019

Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	SBL	SBT
Lane Configurations										
Traffic Volume (vph)	252	17	105	37	18	170	111	2499	137	434
Future Volume (vph)	252	17	105	37	18	170	111	2499	137	434
Turn Type	Perm	NA	Perm	pm+pt	NA	Perm	pm+pt	NA	pm+pt	NA
Protected Phases		4		3	8		1	6	5	2
Permitted Phases	4		4	8		8	6		2	
Detector Phase	4	4	4	3	8	8	1	6	5	2
Switch Phase										
Minimum Initial (s)	6.0	6.0	6.0	5.0	6.0	6.0	5.0	15.0	5.0	15.0
Minimum Split (s)	40.0	40.0	40.0	11.0	42.0	42.0	11.0	42.0	11.0	37.0
Total Split (s)	40.0	40.0	40.0	11.0	51.0	51.0	20.0	114.0	15.0	109.0
Total Split (%)	22.2%	22.2%	22.2%	6.1%	28.3%	28.3%	11.1%	63.3%	8.3%	60.6%
Yellow Time (s)	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0
All-Red Time (s)	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0
Lost Time Adjust (s)		0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Lost Time (s)		6.0	6.0	6.0	6.0	6.0	6.0	6.0	6.0	6.0
Lead/Lag	Lag	Lag	Lag	Lead			Lead	Lag	Lead	Lag
Lead-Lag Optimize?										
Recall Mode	None	None	None	None	None	None	None	C-Min	None	C-Min

Intersection Summary

Cycle Length: 180
Actuated Cycle Length: 180
Offset: 0 (0%), Referenced to phase 2:SBTL and 6:NBTL, Start of Green
Natural Cycle: 145
Control Type: Actuated-Coordinated

Splits and Phases: 2: Ashford Dunwoody Rd/Ashford Dunwood Rd & Ashwood Pkwy/Ashford Pkwy



HCM 2010 Signalized Intersection Summary — 2021 Build PM Peak - Improved
2: Ashford Dunwoody Rd/Ashford Dunwood Rd & Ashwood Pkwy/Ashford Pkwy — 04/16/2019

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	252	17	105	37	18	170	111	2499	74	137	434	83
Future Volume (veh/h)	252	17	105	37	18	170	111	2499	74	137	434	83
Number	7	4	14	3	8	18	1	6	16	5	2	12
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Adj Sat Flow, veh/h/ln	1900	1863	1863	1863	1863	1863	1863	1863	1900	1863	1863	1900
Adj Flow Rate, veh/h	265	18	0	39	19	179	117	2631	0	144	457	87
Adj No. of Lanes	0	1	1	1	1	1	1	3	0	1	2	0
Peak Hour Factor	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95
Percent Heavy Veh, %	2	2	2	2	2	2	2	2	2	2	2	2
Cap, veh/h	252	15	299	432	460	391	575	3109	0	185	1829	346
Arrive On Green	0.19	0.19	0.00	0.02	0.25	0.25	0.08	1.00	0.00	0.04	0.62	0.62
Sat Flow, veh/h	1131	77	1583	1774	1863	1583	1774	5253	0	1774	2971	562
Grp Volume(v), veh/h	283	0	0	39	19	179	117	2631	0	144	271	273
Grp Sat Flow(s),veh/h/ln	1208	0	1583	1774	1863	1583	1774	1695	0	1774	1770	1764
Q Serve(g_s), s	34.0	0.0	0.0	3.1	1.4	17.3	4.6	0.0	0.0	5.5	12.5	12.7
Cycle Q Clear(g_c), s	34.0	0.0	0.0	3.1	1.4	17.3	4.6	0.0	0.0	5.5	12.5	12.7
Prop In Lane	0.94		1.00	1.00		1.00	1.00		0.00	1.00		0.32
Lane Grp Cap(c), veh/h	267	0	299	432	460	391	575	3109	0	185	1090	1086
V/C Ratio(X)	1.06	0.00	0.00	0.09	0.04	0.46	0.20	0.85	0.00	0.78	0.25	0.25
Avail Cap(c_a), veh/h	267	0	299	438	466	396	646	3109	0	199	1090	1086
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	2.00	2.00	2.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	0.00	0.00	1.00	1.00	1.00	0.09	0.09	0.00	1.00	1.00	1.00
Uniform Delay (d), s/veh	75.5	0.0	0.0	55.3	51.6	57.6	11.9	0.0	0.0	18.6	15.7	15.7
Incr Delay (d2), s/veh	71.9	0.0	0.0	0.1	0.0	0.8	0.0	0.3	0.0	16.8	0.5	0.6
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(95%),veh/ln	33.5	0.0	0.0	2.8	1.3	12.2	2.9	0.1	0.0	8.8	10.4	10.4
LnGrp Delay(d),s/veh	147.4	0.0	0.0	55.4	51.6	58.4	11.9	0.3	0.0	35.4	16.2	16.3
LnGrp LOS	F			E	D	E	B	A		D	B	B
Approach Vol, veh/h		283			237			2748			688	
Approach Delay, s/veh		147.4			57.4			0.8			20.3	
Approach LOS		F			E			A			C	

Timer	1	2	3	4	5	6	7	8
Assigned Phs	1	2	3	4	5	6		8
Phs Duration (G+Y+Rc), s	12.8	116.8	10.4	40.0	13.6	116.0		50.4
Change Period (Y+Rc), s	6.0	6.0	6.0	6.0	6.0	6.0		6.0
Max Green Setting (Gmax), s	14.0	103.0	5.0	34.0	9.0	108.0		45.0
Max Q Clear Time (g_c+I1), s	6.6	14.7	5.1	36.0	7.5	2.0		19.3
Green Ext Time (p_c), s	0.2	88.0	0.0	0.0	0.1	105.5		2.2

Intersection Summary	
HCM 2010 Ctrl Delay	18.0
HCM 2010 LOS	B

Intersection	
Int Delay, s/veh	3

Movement	EBT	EBR	WBL	WBT	NBL	NBR
Lane Configurations						
Traffic Vol, veh/h	149	6	25	41	9	62
Future Vol, veh/h	149	6	25	41	9	62
Conflicting Peds, #/hr	0	0	0	0	0	0
Sign Control	Free	Free	Free	Free	Stop	Stop
RT Channelized	-	None	-	None	-	None
Storage Length	-	-	-	-	0	-
Veh in Median Storage, #	0	-	-	0	0	-
Grade, %	0	-	-	0	0	-
Peak Hour Factor	86	86	86	86	86	86
Heavy Vehicles, %	2	2	2	2	2	2
Mvmt Flow	173	7	29	48	10	72

Major/Minor	Major1		Major2		Minor1	
Conflicting Flow All	0	0	180	0	283	177
Stage 1	-	-	-	-	177	-
Stage 2	-	-	-	-	106	-
Critical Hdwy	-	-	4.12	-	6.42	6.22
Critical Hdwy Stg 1	-	-	-	-	5.42	-
Critical Hdwy Stg 2	-	-	-	-	5.42	-
Follow-up Hdwy	-	-	2.218	-	3.518	3.318
Pot Cap-1 Maneuver	-	-	1396	-	707	866
Stage 1	-	-	-	-	854	-
Stage 2	-	-	-	-	918	-
Platoon blocked, %	-	-		-		
Mov Cap-1 Maneuver	-	-	1396	-	692	866
Mov Cap-2 Maneuver	-	-	-	-	692	-
Stage 1	-	-	-	-	854	-
Stage 2	-	-	-	-	899	-

Approach	EB	WB	NB
HCM Control Delay, s	0	2.9	9.8
HCM LOS			A

Minor Lane/Major Mvmt	NBLn1	EBT	EBR	WBL	WBT
Capacity (veh/h)	839	-	-	1396	-
HCM Lane V/C Ratio	0.098	-	-	0.021	-
HCM Control Delay (s)	9.8	-	-	7.6	0
HCM Lane LOS	A	-	-	A	A
HCM 95th %tile Q(veh)	0.3	-	-	0.1	-

Timings
4: Perimeter Center Pl & Meadow Lane

2021 Build PM Peak - Improved
04/16/2019

Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT
Lane Configurations											
Traffic Volume (vph)	83	613	19	158	293	138	69	40	393	143	18
Future Volume (vph)	83	613	19	158	293	138	69	40	393	143	18
Turn Type	Perm	NA	Perm	pm+pt	NA	Perm	Perm	NA	pm+ov	Perm	NA
Protected Phases		2		1	6			8	1		4
Permitted Phases	2		2	6		6	8		8	4	
Detector Phase	2	2	2	1	6	6	8	8	1	4	4
Switch Phase											
Minimum Initial (s)	15.0	15.0	15.0	5.0	15.0	15.0	6.0	6.0	5.0	6.0	6.0
Minimum Split (s)	73.0	73.0	73.0	15.0	24.0	24.0	50.0	50.0	15.0	49.0	49.0
Total Split (s)	63.0	63.0	63.0	15.0	78.0	78.0	42.0	42.0	15.0	42.0	42.0
Total Split (%)	52.5%	52.5%	52.5%	12.5%	65.0%	65.0%	35.0%	35.0%	12.5%	35.0%	35.0%
Yellow Time (s)	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0
All-Red Time (s)	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0
Lost Time Adjust (s)	0.0	0.0	0.0	0.0	0.0	0.0		0.0	0.0		0.0
Total Lost Time (s)	6.0	6.0	6.0	6.0	6.0	6.0		6.0	6.0		6.0
Lead/Lag	Lag	Lag	Lag	Lead					Lead		
Lead-Lag Optimize?											
Recall Mode	C-Min	C-Min	C-Min	None	C-Min	C-Min	None	None	None	None	None

Intersection Summary

Cycle Length: 120
Actuated Cycle Length: 120
Offset: 0 (0%), Referenced to phase 2:EBTL and 6:WBTL, Start of Green
Natural Cycle: 140
Control Type: Actuated-Coordinated

Splits and Phases: 4: Perimeter Center Pl & Meadow Lane

HCM 2010 Signalized Intersection Summary
4: Perimeter Center Pl & Meadow Lane

2021 Build PM Peak - Improved
04/16/2019

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	83	613	19	158	293	138	69	40	393	143	18	44
Future Volume (veh/h)	83	613	19	158	293	138	69	40	393	143	18	44
Number	5	2	12	1	6	16	3	8	18	7	4	14
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Adj Sat Flow, veh/h/ln	1863	1863	1863	1863	1863	1863	1900	1863	1863	1900	1863	1900
Adj Flow Rate, veh/h	87	645	20	166	308	145	73	42	0	151	19	46
Adj No. of Lanes	1	2	1	1	2	1	0	1	1	0	1	0
Peak Hour Factor	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95
Percent Heavy Veh, %	2	2	2	2	2	2	2	2	2	2	2	2
Cap, veh/h	647	2226	996	567	2577	1153	200	105	350	224	22	53
Arrive On Green	0.63	0.63	0.63	0.05	0.73	0.73	0.17	0.17	0.00	0.17	0.17	0.17
Sat Flow, veh/h	934	3539	1583	1774	3539	1583	881	611	1583	1007	127	307
Grp Volume(v), veh/h	87	645	20	166	308	145	115	0	0	216	0	0
Grp Sat Flow(s),veh/h/ln	934	1770	1583	1774	1770	1583	1492	0	1583	1440	0	0
Q Serve(g_s), s	4.6	9.9	0.6	3.8	3.1	3.3	0.0	0.0	0.0	9.4	0.0	0.0
Cycle Q Clear(g_c), s	4.6	9.9	0.6	3.8	3.1	3.3	8.1	0.0	0.0	17.5	0.0	0.0
Prop In Lane	1.00		1.00	1.00		1.00	0.63		1.00	0.70		0.21
Lane Grp Cap(c), veh/h	647	2226	996	567	2577	1153	305	0	350	298	0	0
V/C Ratio(X)	0.13	0.29	0.02	0.29	0.12	0.13	0.38	0.00	0.00	0.72	0.00	0.00
Avail Cap(c_a), veh/h	647	2226	996	612	2577	1153	496	0	553	483	0	0
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	1.00	1.00	0.63	0.63	0.63	1.00	0.00	0.00	1.00	0.00	0.00
Uniform Delay (d), s/veh	9.1	10.1	8.4	6.9	4.9	4.9	44.4	0.0	0.0	48.4	0.0	0.0
Incr Delay (d2), s/veh	0.4	0.3	0.0	0.2	0.1	0.1	0.8	0.0	0.0	3.3	0.0	0.0
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(95%),veh/ln	2.3	8.6	0.5	3.3	2.7	2.6	6.3	0.0	0.0	11.6	0.0	0.0
LnGrp Delay(d),s/veh	9.5	10.4	8.4	7.1	4.9	5.0	45.2	0.0	0.0	51.7	0.0	0.0
LnGrp LOS	A	B	A	A	A	A	D			D		
Approach Vol, veh/h		752			619			115			216	
Approach Delay, s/veh		10.3			5.5			45.2			51.7	
Approach LOS		B			A			D			D	

Timer	1	2	3	4	5	6	7	8
Assigned Phs	1	2		4		6		8
Phs Duration (G+Y+Rc), s	11.9	81.5		26.6		93.4		26.6
Change Period (Y+Rc), s	6.0	6.0		6.0		6.0		6.0
Max Green Setting (Gmax), s	9.0	57.0		36.0		72.0		36.0
Max Q Clear Time (g_c+I1), s	5.8	11.9		19.5		5.3		10.1
Green Ext Time (p_c), s	0.2	32.9		1.1		43.3		1.2

Intersection Summary	
HCM 2010 Ctrl Delay	16.2
HCM 2010 LOS	B

Notes

User approved pedestrian interval to be less than phase max green.

Intersection	
Int Delay, s/veh	1.3

Movement	EBT	EBR	WBL	WBT	NBL	NBR
Lane Configurations						
Traffic Vol, veh/h	137	5	5	45	8	18
Future Vol, veh/h	137	5	5	45	8	18
Conflicting Peds, #/hr	0	0	0	0	0	0
Sign Control	Free	Free	Free	Free	Stop	Stop
RT Channelized	-	None	-	None	-	None
Storage Length	-	-	-	-	0	-
Veh in Median Storage, #	0	-	-	0	0	-
Grade, %	0	-	-	0	0	-
Peak Hour Factor	92	92	92	92	92	92
Heavy Vehicles, %	2	2	2	2	2	2
Mvmt Flow	149	5	5	49	9	20

Major/Minor	Major1		Major2		Minor1	
Conflicting Flow All	0	0	154	0	211	152
Stage 1	-	-	-	-	152	-
Stage 2	-	-	-	-	59	-
Critical Hdwy	-	-	4.12	-	6.42	6.22
Critical Hdwy Stg 1	-	-	-	-	5.42	-
Critical Hdwy Stg 2	-	-	-	-	5.42	-
Follow-up Hdwy	-	-	2.218	-	3.518	3.318
Pot Cap-1 Maneuver	-	-	1426	-	777	894
Stage 1	-	-	-	-	876	-
Stage 2	-	-	-	-	964	-
Platoon blocked, %	-	-		-		
Mov Cap-1 Maneuver	-	-	1426	-	774	894
Mov Cap-2 Maneuver	-	-	-	-	774	-
Stage 1	-	-	-	-	876	-
Stage 2	-	-	-	-	960	-

Approach	EB	WB	NB
HCM Control Delay, s	0	0.8	9.4
HCM LOS			A

Minor Lane/Major Mvmt	NBLn1	EBT	EBR	WBL	WBT
Capacity (veh/h)	853	-	-	1426	-
HCM Lane V/C Ratio	0.033	-	-	0.004	-
HCM Control Delay (s)	9.4	-	-	7.5	0
HCM Lane LOS	A	-	-	A	A
HCM 95th %tile Q(veh)	0.1	-	-	0	-

Intersection	
Int Delay, s/veh	5.1

Movement	EBT	EBR	WBL	WBT	NBL	NBR
Lane Configurations						
Traffic Vol, veh/h	214	11	146	67	8	161
Future Vol, veh/h	214	11	146	67	8	161
Conflicting Peds, #/hr	0	0	0	0	0	0
Sign Control	Free	Free	Free	Free	Stop	Stop
RT Channelized	-	None	-	None	-	None
Storage Length	-	-	0	-	0	-
Veh in Median Storage, #	0	-	-	0	0	-
Grade, %	0	-	-	0	0	-
Peak Hour Factor	92	92	92	92	92	92
Heavy Vehicles, %	2	2	2	2	2	2
Mvmt Flow	233	12	159	73	9	175

Major/Minor	Major1		Major2		Minor1	
Conflicting Flow All	0	0	245	0	630	239
Stage 1	-	-	-	-	239	-
Stage 2	-	-	-	-	391	-
Critical Hdwy	-	-	4.12	-	6.42	6.22
Critical Hdwy Stg 1	-	-	-	-	5.42	-
Critical Hdwy Stg 2	-	-	-	-	5.42	-
Follow-up Hdwy	-	-	2.218	-	3.518	3.318
Pot Cap-1 Maneuver	-	-	1321	-	446	800
Stage 1	-	-	-	-	801	-
Stage 2	-	-	-	-	683	-
Platoon blocked, %	-	-		-		
Mov Cap-1 Maneuver	-	-	1321	-	392	800
Mov Cap-2 Maneuver	-	-	-	-	392	-
Stage 1	-	-	-	-	801	-
Stage 2	-	-	-	-	601	-

Approach	EB	WB	NB
HCM Control Delay, s	0	5.6	11.2
HCM LOS			B

Minor Lane/Major Mvmt	NBLn1	EBT	EBR	WBL	WBT
Capacity (veh/h)	762	-	-	1321	-
HCM Lane V/C Ratio	0.241	-	-	0.12	-
HCM Control Delay (s)	11.2	-	-	8.1	-
HCM Lane LOS	B	-	-	A	-
HCM 95th %tile Q(veh)	0.9	-	-	0.4	-

TRAFFIC VOLUME WORKSHEETS

18-189 Ashwood Restaurant Park, Ashford Dunwoody, Georgia

Traffic Volumes

A&R Engineering
April 2019

1. Ashford Dunwoody @ Meadow Ln

A.M. Peak Hour

	Ashford Dunwoody Road **Northbound**				Ashford Dunwoody Road **Southbound**				Meadow Lane **Eastbound**				Meadow Lane **Westbound**			
Condition	L	T	R	Tot	L	T	R	Tot	L	T	R	Tot	L	T	R	Tot
Existing 2018 Volumes:	159	464	71	694	84	1263	431	1778	68	55	55	178	46	106	38	190
Growth Factor (%):	1	1	1		1	1	1		1	1	1		1	1	1	
No-Build 2020 Volumes:	162	473	72	707	86	1288	440	1814	69	56	56	181	47	108	39	194
Total New Trips:	25	25	0	50	7	20	13	40	11	7	20	38	0	8	8	16
Pass-by Trips:	14	-14	0	0	0	-36	36	0	14	0	36	50	0	0	0	0
Future 2020 Traffic Volumes:	201	484	72	757	93	1272	489	1854	94	63	112	269	47	116	47	210

P.M. Peak Hour

	Ashford Dunwoody Road **Northbound**				Ashford Dunwoody Road **Southbound**				Meadow Lane **Eastbound**				Meadow Lane **Westbound**			
Condition	L	T	R	Tot	L	T	R	Tot	L	T	R	Tot	L	T	R	Tot
Existing 2018 Volumes:	120	1813	131	2064	117	399	176	692	1045	291	62	1398	171	206	367	744
Growth Factor (%):	1	1	1		1	1	1		1	1	1		1	1	1	
No-Build 2020 Volumes:	122	1849	134	2105	119	407	180	706	1066	297	63	1426	174	210	374	758
Total New Trips:	24	24	0	48	10	30	13	53	16	10	30	56	0	8	8	16
Pass-by Trips:	56	-56	0	0	0	-9	9	0	56	0	9	65	0	0	0	0
Future 2020 Traffic Volumes:	202	1817	134	2153	129	428	202	759	1138	307	102	1547	174	218	382	774

18-189 Ashwood Restaurant Park, Ashford Dunwoody, Georgia

Traffic Volumes

A&R Engineering
April 2019

2. Ashford Dunwoody @ Ashwood

A.M. Peak Hour

	Ashford Dunwoody Road **Northbound**				Ashford Dunwoody Road **Southbound**				Ashwood Parkway **Eastbound**				Ashford Parkway **Westbound**			
Condition	L	T	R	Tot	L	T	R	Tot	L	T	R	Tot	L	T	R	Tot
Existing 2018 Volumes:	53	395	24	472	71	1272	75	1418	16	2	22	40	53	9	37	99
Growth Factor (%):	1	1	1		1	1	1		1	1	1		1	1	1	
No-Build 2020 Volumes:	54	403	24	481	72	1298	77	1447	16	2	22	40	54	9	38	101
Total New Trips:	33	9	1	43	0	12	46	58	38	5	27	70	2	7	0	9
Pass-by Trips:	14	-14	0	0	0	-43	43	0	14	0	43	57	0	0	0	0
Future 2020 Traffic Volumes:	101	398	25	524	72	1267	166	1505	68	7	92	167	56	16	38	110

P.M. Peak Hour

	Ashford Dunwoody Road **Northbound**				Ashford Dunwoody Road **Southbound**				Ashwood Parkway **Eastbound**				Ashford Parkway **Westbound**			
Condition	L	T	R	Tot	L	T	R	Tot	L	T	R	Tot	L	T	R	Tot
Existing 2018 Volumes:	23	2491	71	2585	134	433	19	586	138	9	46	193	34	12	167	213
Growth Factor (%):	1	1	1		1	1	1		1	1	1		1	1	1	
No-Build 2020 Volumes:	23	2541	72	2636	137	442	19	598	141	9	47	197	35	12	170	217
Total New Trips:	32	14	2	48	0	11	45	56	55	8	39	102	2	6	0	8
Pass-by Trips:	56	-56	0	0	0	-19	19	0	56	0	19	75	0	0	0	0
Future 2020 Traffic Volumes:	111	2499	74	2684	137	434	83	654	252	17	105	374	37	18	170	225

18-189 Ashwood Restaurant Park, Ashford Dunwoody, Georgia

Traffic Volumes

A&R Engineering
April 2019

3. Ashwood @ Site Drwy 2

A.M. Peak Hour

	Site Driveway 2 Northbound					- Southbound					Ashwood Parkway Eastbound					Ashwood Parkway Westbound			
Condition	L	T	R	Tot		L	T	R	Tot		L	T	R	Tot		L	T	R	Tot
Existing 2018 Volumes:	9	0	2	11		0	0	0	0		0	38	0	38		19	116	0	135
Growth Factor (%):	1	1	1			1	1	1			1	1	1			1	1	1	
No-Build 2020 Volumes:	9	0	2	11		0	0	0	0		0	39	0	39		19	118	0	137
Total New Trips:	2	0	5	7		0	0	0	0		0	15	1	16		17	4	0	21
Pass-by Trips:	0	0	0	0		0	0	0	0		0	0	0	0		0	0	0	0
Future 2020 Traffic Volumes:	11	0	7	18		0	0	0	0		0	54	1	55		36	122	0	158

P.M. Peak Hour

	Site Driveway 2 Northbound					- Southbound					Ashwood Parkway Eastbound					Ashwood Parkway Westbound			
Condition	L	T	R	Tot		L	T	R	Tot		L	T	R	Tot		L	T	R	Tot
Existing 2018 Volumes:	6	0	53	59		0	0	0	0		0	126	5	131		9	36	0	45
Growth Factor (%):	1	1	1			1	1	1			1	1	1			1	1	1	
No-Build 2020 Volumes:	6	0	54	60		0	0	0	0		0	129	5	134		9	37	0	46
Total New Trips:	3	0	8	11		0	0	0	0		0	20	1	21		16	4	0	20
Pass-by Trips:	0	0	0	0		0	0	0	0		0	0	0	0		0	0	0	0
Future 2020 Traffic Volumes:	9	0	62	71		0	0	0	0		0	149	6	155		25	41	0	66

18-189 Ashwood Restaurant Park, Ashford Dunwoody, Georgia

Traffic Volumes

A&R Engineering
April 2019

4. Meadow Ln @ Private Rd

A.M. Peak Hour

	Perimeter Center Place **Northbound**					Private Road **Southbound**					Meadow Lane **Eastbound**					Meadow Lane **Westbound**			
Condition	L	T	R	Tot		L	T	R	Tot		L	T	R	Tot		L	T	R	Tot
Existing 2018 Volumes:	15	3	41	59		2	4	16	22		11	130	17	158		202	463	5	670
Growth Factor (%):	1	1	1			1	1	1			1	1	1			1	1	1	
No-Build 2020 Volumes:	15	3	42	60		2	4	16	22		11	133	17	161		206	472	5	683
Total New Trips:	0	8	0	8		38	7	14	59		17	0	0	17		0	0	46	46
Pass-by Trips:	0	0	0	0		57	0	7	64		7	-7	0	0		0	-7	58	51
Future 2020 Traffic Volumes:	15	11	42	68		97	11	37	145		35	126	17	178		206	465	109	780

P.M. Peak Hour

	Perimeter Center Place **Northbound**					Private Road **Southbound**					Meadow Lane **Eastbound**					Meadow Lane **Westbound**			
Condition	L	T	R	Tot		L	T	R	Tot		L	T	R	Tot		L	T	R	Tot
Existing 2018 Volumes:	68	31	385	484		4	8	15	27		47	620	19	686		155	296	19	470
Growth Factor (%):	1	1	1			1	1	1			1	1	1			1	1	1	
No-Build 2020 Volumes:	69	32	393	494		4	8	15	27		48	632	19	699		158	302	19	479
Total New Trips:	0	8	0	8		55	10	20	85		16	0	0	16		0	0	45	45
Pass-by Trips:	0	0	0	0		84	0	9	93		19	-19	0	0		0	-9	74	65
Future 2020 Traffic Volumes:	69	40	393	502		143	18	44	205		83	613	19	715		158	293	138	589

18-189 Ashwood Restaurant Park, Ashford Dunwoody, Georgia

Traffic Volumes

A&R Engineering
April 2019

5. Ashwood @ Private Rd

A.M. Peak Hour

	Private Road Northbound					Private Driveway Southbound					Ashwood Parkway Eastbound					Ashwood Parkway Westbound			
Condition	L	T	R	Tot		L	T	R	Tot		L	T	R	Tot		L	T	R	Tot
Existing 2018 Volumes:	0	0	0	0		0	0	0	0		0	38	0	38		0	125	0	125
Growth Factor (%):	1	1	1			1	1	1			1	1	1			1	1	1	
No-Build 2020 Volumes:	0	0	0	0		0	0	0	0		0	39	0	39		0	128	0	128
Total New Trips:	4	0	11	15		0	0	0	0		0	5	3	8		3	3	0	6
Pass-by Trips:	3	0	3	6		0	0	0	0		0	-3	3	0		3	-3	0	0
Future 2020 Traffic Volumes:	7	0	14	21		0	0	0	0		0	41	6	47		6	128	0	134

P.M. Peak Hour

	Private Road Northbound					Private Driveway Southbound					Ashwood Parkway Eastbound					Ashwood Parkway Westbound			
Condition	L	T	R	Tot		L	T	R	Tot		L	T	R	Tot		L	T	R	Tot
Existing 2018 Volumes:	0	0	0	0		0	0	0	0		0	131	0	131		0	42	0	42
Growth Factor (%):	1	1	1			1	1	1			1	1	1			1	1	1	
No-Build 2020 Volumes:	0	0	0	0		0	0	0	0		0	134	0	134		0	43	0	43
Total New Trips:	6	0	16	22		0	0	0	0		0	5	3	8		3	4	0	7
Pass-by Trips:	2	0	2	4		0	0	0	0		0	-2	2	0		2	-2	0	0
Future 2020 Traffic Volumes:	8	0	18	26		0	0	0	0		0	137	5	142		5	45	0	50

18-189 Ashwood Restaurant Park, Ashford Dunwoody, Georgia

Traffic Volumes

A&R Engineering
April 2019

6. Ashwood @ Site Drwy 1

A.M. Peak Hour

Condition	Site Driveway 1 Northbound					- Southbound					Ashwood Parkway Eastbound					Ashwood Parkway Westbound			
	L	T	R	Tot		L	T	R	Tot		L	T	R	Tot		L	T	R	Tot
Existing 2018 Volumes:	0	0	0	0		0	0	0	0		0	40	0	40		0	137	0	137
Growth Factor (%):	1	1	1			1	1	1			1	1	1			1	1	1	
No-Build 2020 Volumes:	0	0	0	0		0	0	0	0		0	41	0	41		0	140	0	140
Total New Trips:	1	0	54	55		0	0	0	0		0	16	4	20		66	20	0	86
Pass-by Trips:	7	0	65	72		0	0	0	0		0	-9	9	0		65	-7	0	58
Future 2020 Traffic Volumes:	8	0	119	127		0	0	0	0		0	48	13	61		131	153	0	284

P.M. Peak Hour

Condition	Site Driveway 1 Northbound					- Southbound					Ashwood Parkway Eastbound					Ashwood Parkway Westbound			
	L	T	R	Tot		L	T	R	Tot		L	T	R	Tot		L	T	R	Tot
Existing 2018 Volumes:	0	0	0	0		0	0	0	0		0	193	0	193		0	54	0	54
Growth Factor (%):	1	1	1			1	1	1			1	1	1			1	1	1	
No-Build 2020 Volumes:	0	0	0	0		0	0	0	0		0	197	0	197		0	55	0	55
Total New Trips:	1	0	79	80		0	0	0	0		0	24	4	28		64	19	0	83
Pass-by Trips:	7	0	82	89		0	0	0	0		0	-7	7	0		82	-7	0	75
Future 2020 Traffic Volumes:	8	0	161	169		0	0	0	0		0	214	11	225		146	67	0	213

corblu
ECOLOGY GROUP

Mr. Michael Berry
Watershed Protection Branch
Environmental Protection Division
Georgia Department of Natural Resources
2 Martin Luther King Drive SW, Suite 1462
Atlanta, Georgia 30334

October 17, 2018

Subject: **Stream Buffer Variance Request – Criteria k (1)**
Branch Ashwood - Dunwoody
Dunwoody, Georgia
Project No. 02-051818

VIA Email

Dear Mr. Berry:

On behalf of the applicant, Branch Ashwood Associates, LLC, Corblu Ecology Group, LLC (Corblu) is pleased to submit this stream buffer variance request for major impacts to the 25-foot vegetated buffer on waters of the State of Georgia. Please find attached a completed Application for a 25-Foot Vegetative Buffer Encroachment and the necessary supporting documentation.

Corblu respectfully requests a stream buffer variance for the proposed buffer encroachments for the proposed commercial re-development located at 500 Ashwood Parkway in Dunwoody, Georgia, pursuant to Georgia Department of Natural Resources, Environmental Protection Division, Erosion and Sedimentation Control Rules: 391-3-7.05(2)(k)(1). Should you have any questions regarding this submittal or this project, please contact the undersigned at (770) 591-9990. Thank you for your prompt attention in this matter.

Sincerely,

CORBLU ECOLOGY GROUP, LLC

Törren Hoyord, CE, WPIT
Project Scientist

Richard W. Whiteside, PhD, CWB, CSE
President

Enclosure: Application for a 25-foot Vegetative Buffer Encroachment

c: Mr. Jack Haylett, Branch Ashwood Associates, LLC – via email

APPLICATION for a 25-foot VEGETATIVE BUFFER ENCROACHMENT

Rule 391-3-7.05(2)(k)(1)

for

Branch Ashwood - Dunwoody

Prepared for:

Branch Ashwood Associates, LLC

Prepared by:

corblu
ECOLOGY GROUP

Corblu Project No. 02-051818

October 17, 2018

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FIGURES

1. Site Location Map
2. Site Water and Buffer Map
3. Site Soil Map

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APPENDICES

A. Stream Buffer Variance Application Form
B. USACE Concurrence Letter Package
C. Stream Buffer Variance Exhibit
D. Awareness Letter from the City of Dunwoody
E. Site Plan, Erosion and Sedimentation Control Plan, and Stormwater Management Plan
F. Stormwater Exhibit
G. TSS Review Tool and Removal Confirmation

1.0 INTRODUCTION

Corblu Ecology Group, LLC (Corblu) and Contineo Group are assisting Branch Ashwood Associates, LLC (applicant) in a commercial re-development located at 500 Ashwood Parkway in Dunwoody, Georgia (33.9327, -84.33965; Figure 1). The proposed buffer encroachment is required to re-develop an existing commercial development which will disturb a total of 26,587 square feet (sq. ft.) of protected buffer impacts located within the 25-foot protected buffer associated with an existing, man-made stormwater pond. Please note, the total disturbed acreage (11.67 acres) is larger than the total site acreage (10.06 acres) due to the adjustment/replacement of the street sidewalks and curb along Ashford Dunwoody Road, Meadow Lane Road, and Ashwood Parkway, located adjacent to project site boundaries. Additionally, a portion of the neighboring property to the west is being modified to upgrade their entrance drive and parking spaces.

This buffer variance request is pursuant to Georgia Department of Natural Resources (GDNR), Environmental Protection Division (EPD) Rule 391-3-7 for land disturbing activity that is not subject to U.S. Army Corps of Engineers' (USACE) regulatory authority under Section 404 of the federal Water Pollution Control Act Amendment of 1972, 33 U.S.C. Section 1344, but is subject to the regulatory authority of the EPD and their Local Issuing Authority (LIA), the City of Dunwoody [Section 391-3-7.05(2)(k)(1)]. This Rule also requires mitigation in accordance with current EPD "Stream Buffer Variance Mitigation Guidance" document.

This submittal identifies the Permanent Buffer Impact Checklist items as specified in the EPD 25-foot Buffer Encroachment Application Form (Appendix A) and our response to each of the applicable checklist items (Section 2.0). Also, the appropriate figures and other required supporting documentation are provided as indicated within the text of this submittal.

2.0 BUFFER IMPACT CHECKLIST

2.1 Narrative description of the project, with details of the buffer disturbance, including estimated length of time for the disturbance and justification for why the disturbance is necessary.

The project site is located at 500 Ashwood Parkway in Dunwoody, Georgia (Figure 1). The waterbody of concern, an unnamed,man-made stormwater pond (Pond 1), was originally constructed between 1978 and 1988 as determined from historical aerial photography. It is understood that when constructed, Pond 1 and a second stormwater pond, located off-site directly north of Pond 1, were built in series, where the northern pond discharges (via existing culvert) into Pond 1. It is understood that the subject ponds were built "on-line" however, the U.S Geological Survey 7.5

minute map (Chamblee quad) does not indicate the presence of a stream. Currently Pond 1 receives stormwater runoff from multiple sources from the surrounding and existing development, to include rooftops, parking lots and roadway system. Discharged stormwater from the Pond 1 remains piped/culverted for over 1.5 miles until it "daylights" at Lake Hearn Drive, south of I-285, and eventually enters Nancy Creek.

Pond 1 has been confirmed to be a component of the City of Dunwoody's Municipal Separate Storm Sewer (MS4) inventory and is included in their annual MS4 reports to EPD under the NPDES regulatory requirements. Additionally, the USACE has confirmed neither Pond 1 nor the off-site pond is regulated by the USACE and impacts to the pond will not be required to obtain a Department of the Army permit for the proposed project (Appendix B).

The proposed buffer encroachment is required to disturb stormwater pond buffers to accommodate the proposed commercial re-development. The re-development will require unavoidable disturbance to 26,587 sq. ft. of stormwater pond buffer (Appendix C).

2.2 Calculation of total area and length of buffer disturbance.

As discussed above (Section 1.0), major stream buffer impacts to 26,587 sq. ft. (996 LF of pond shoreline) are proposed for the commercial re-development (Appendix C).

2.3 Letter from the Local Issuing Authority (LIA), when applicable, stating that the LIA has visited the site and determined the presence of State waters that require a buffer and that a stream buffer variance is required as per the local erosion and sedimentation control ordinance.

See Appendix D for letter from LIA.

2.4 For projects within the buffer of or upstream and within one linear mile of impaired stream segments on Georgia's "305(b)/303(d) List Documents (Final)," documentation that the project will have no adverse impacts relative to the pollutants of concern and if applicable, documentation that the project will be in compliance with the TMDL Implementation Plan(s).

This project is not located adjacent to a State 303(d) listed stream, but does eventually drain to Nancy Creek more than one linear mile south of the project site. Nancy Creek is listed as "non-supporting" designated use by EPD under Section 303(d) of the Federal Water Pollution Control Act Amendment of 1972 [3 U.S.C. Section 1313(d)] due to fecal coliform and fish community impairments potentially from urban runoff. The Total Maximum Daily Load (TMDL) for Nancy Creek was completed for fecal coliform in 2003 and for fish community impairments in 2008. The project will tie into an existing

sanitary sewer system; therefore, the project will not contribute to additional fecal coliform levels in the watershed.

2.5 For all minor buffer impacts, a Re-Vegetation Plan with a descriptive narrative as described in the EPD guidance document, *Streambank and Shoreline Stabilization*, and/or a plan for permanent vegetation as per the *Manual for Erosion and Sedimentation Control in Georgia*.

Not applicable; impacts for the proposed buffer encroachments are considered major buffer impacts.

2.6 For all major buffer impacts, a Buffer Mitigation Plan with a descriptive narrative addressing impacts to critical buffer functions based on an evaluation of existing buffer conditions and predicted post buffer conditions pursuant to DNR Rule 391-3-7.05(7).

(a) The variance shall be the minimum reduction in buffer width necessary to provide relief. Streams shall not be piped if a buffer width reduction is sufficient to provide relief.

The proposed commercial development has been designed to occupy the minimum space necessary to meet the project's need, objectives, and purpose. To offset potential impacts to water quality features associated with the proposed unavoidable buffer impacts, the applicant proposes to purchase 3,058 stream credits within the same watershed (8-digit HUC) as the project (i.e. Upper Chattahoochee River Basin). The proposed erosion and sedimentation control plan and stormwater management plan have been designed accordance with the City of Dunwoody's stormwater management ordinances and EPD's Georgia Stormwater Management Manual (GSMM) requirements (Appendices E and F). Further, the proposed stormwater control plan has been developed in accordance with the EPD's total suspended solids (TSS) reduction and the pollutant of concern reduction requirements for stream buffer variances (Appendix G). Please note, the TSS reduction was calculated with the Review Tool using the site acreage of 10.05 and not the total disturbed acreage of 11.67 because the sidewalks and adjacent entrance drive and parking lot, which account for the additional 1.62 acres, are outside of the project site.

(b) Disturbance of existing buffer vegetation shall be minimized.

The proposed project will encroach on 996 linear feet of pond shoreline and 26,587 sq. ft. of associated buffer (non-exempt) (Figure 2). Portions of Pond 1 shoreline do not exhibit a "point of wrested vegetation" due to shoreline retaining walls; therefore, no protected buffer is located within these areas nor included in this application.

(c) Mitigation is required for all major buffer impacts and shall offset the buffer encroachment and any loss of buffer functions. Where lost functions cannot be replaced, mitigation shall provide other buffer functions that are beneficial. Buffer functions include, but are not limited to:

Temperature Control (shading)

Stormwater is currently managed by an existing detention pond, Pond 1, which also serves to collect stormwater in the vicinity around the site. In the proposed project plans, stormwater will be collected with a system of grate inlets and catch basins, and routed through underground pipes to a new underground detention system. This underground system will provide stream channel protection and overbank flood protection through the use of an outlet control structure. After passing through the outlet control structure, on-site stormwater will be sent through a proprietary water quality device (i.e., Hydro International First Defense®) to achieve the required TSS reduction on-site (Appendices F and G). All off-site runoff that enters the site will be channeled through a proposed culvert system which will keep the off-site stormwater separate from the on-site detention system, while ensuring this off-site flow is delivered downstream at an equivalent velocity and flow rate (Appendix E and F). This stormwater management will prevent the direct discharge of stormwater with elevated temperatures into receiving waters off-site.

Streambank Stabilization

As proposed, 996 LF of pond shoreline or 26,587 sq. ft. of protected pond buffer will be disturbed. The stormwater management system will meet the minimum State-required 80% TSS reduction requirement, and provide downstream channel and bank protection and peak discharge attenuation as required by EPD/the City of Dunwoody to protect downstream streambanks (Appendix G).

Removal of Nutrients, Heavy Metals, Pesticides, and Other Pollutants

The proposed stormwater management system will meet the State-required 80% total suspended solids (TSS) reduction to receiving waters. These controls will prevent the discharge of suspended solids and attached oil and grease typically associated with this type of commercial development (i.e., vehicle parking areas and rooftops) to downstream waters, including Nancy Creek and the Chattahoochee River.

The majority of oil and grease (i.e., the pollutant of concern) generated on the project site via parking areas and internal access roads will be removed through the TSS reduction requirement, as

hydrocarbon constituents will adhere to these captured sediments. Therefore, the proposed stormwater management system will exceed the EPD requirement of 60% removal of the pollutants of concern; oil and grease (i.e., hydrocarbons), as discussed in more detail below. The site will not generate nutrients, heavy metals, or pesticides.

Water Quality Protection

The project is not expected to generate or contribute phosphorus, nitrogen or fecal coliform to State waters since the proposed site development is served by public sanitary wastewater and stormwater controls. Oil and grease however, can result from parking lot and roadway run-off; therefore, oil and grease are considered the pollutants of concern associated with the proposed project.

There are no known sources of oil and grease removal efficiencies, due to an apparent industry-wide lack of study. Most authorities associate oil and grease removal with removal of TSS, because "Over 50% and as much as 90% of oil and grease in stormwater runoff is attached to solids, including sediment, trash, and debris[1]."

Stormwater Treatment Practices 2nd Edition states "In nearly every case, hydrocarbon removal was within 15% of observed sediment removal[2]." Therefore, based on these sources and the proposed stormwater management system which has a 80% TSS reduction, over 60% removal of the pollutant of concern, oil and grease (i.e., hydrocarbons), will be removed from stormwater runoff, exceeding EPD requirements.

Further, the proposed buffer mitigation credit purchase, in conjunction with the proposed stormwater management plan for the site, will offset impacts to critical buffer functions and result in maintaining the water quality onsite and within the Upper Chattahoochee watershed.

Aquatic Habitat and Food Chain

The existing aquatic habitat and food chain resources on-site are minimal due to the surrounding existing commercial/urban development and associated stormwater pond. The proposed stormwater and water quality management plan is designed to provide stormwater control and the removal of pollutants and sediments from run-off in accordance with GSMM requirements and the TMDL Implementation Plan to protect and maintain downstream fish communities of Nancy Creek and the

[1] Roger B. James, "Measurement and BMP Removal of Suspended Material in Stormwater Runoff," http://www.stormwaterauthority.org/assets/30measurement.pdf.
[2] National Pollutant Removal Performance Database for Stormwater Treatment Practices, 2nd Ed, by R. Winer, March 2000.

Chattahoochee River. Therefore, water quality controls from the proposed project serve to prevent the degradation of the downstream aquatic habitats or the aquatic food chain. Aquatic habitat and food chain ecology have been improved at the in-basin mitigation bank where buffer credits will be purchased.

Terrestrial Habitat, Food Chain and Migration Corridor

The project area is located within a highly developed urban area, adjacent to roads, and within a developed commercial area with three restaurants and a parking lot. Due to the project's location, it is expected the proposed development will have minimal impact on the terrestrial wildlife habitat, food chain, and travel corridors in the urban areas of the City of Dunwoody, where such habitats are significantly limited.

Mitigation Bank Credit Purchase

As per the DNR, Buffer Mitigation Guidance, the proposed project will require 3,058 stream buffer mitigation credits to compensate for the 996 LF (26,587 sq. ft.) of permanent impacts. All mitigation credits will be purchased from an approved mitigation bank within the same watershed as the project site. Please see mitigation calculations below:

$$26{,}587\ ft^2\ of\ impact\ \times 0.046\ credits\ per\ ft^2 \times 2.5\ factor\ for\ off\text{-}site = 3{,}057.51\ stream\ credits$$

$$3{,}057.51\ stream\ credits \times 1.0\ in\text{-}basin\ multiplier = 3{,}057.51\ stream\ credits$$

$$= \mathbf{3{,}058\ stream\ credits}$$

2.7 For variance requests under DNR Rules 391-3-7.05(2)(h), (i), (j) and (k), the application must include documentation that the project will mitigate buffer disturbances based on the EPD guidance document, *Stream Buffer Mitigation Guidance*, addressing post-development total suspended solids (TSS), stormwater runoff reduction, water quality protection and aquatic/buffer habitat protection.

Please see the attached TSS sheets in Appendix G, and Section 2.6 and Terrestrial Habitat, Food Chain, and Migration Corridor discussion provided above.

2.8 For variance requests under DNR Rules 391-3-7.05(2)(i) and (j), the application must include the following:

(a) Documentation that post-development stormwater management systems conform to the minimum standards for water quality, channel protection, overbank flood protection and extreme flood protection as established in the Georgia Stormwater Management Manual or the equivalent and if applicable, the Coastal Stormwater Supplement to the Georgia Stormwater Management Manual.

(b) Documentation that existing water quality will be maintained or improved based on predicted pollutant loadings under pre- and post-development conditions as estimated by models accepted by EPD.

(c) For projects within the buffer of or upstream and within ten linear miles of impaired stream segments on Georgia's "305(b)/303(d) List Documents (Final)," documentation that the project will have no adverse impacts relative to the pollutants of concern as estimated by models accepted by EPD and if applicable, documentation that the project will be in compliance with the TMDL Implementation Plan(s).

Not applicable; project seeks authorization under DNR Rule 391-3-7.05(2)(k)(1).

2.9 For variance requests under DNR Rule 391-3-7.05(2)(h), a copy of the permit application and supporting documentation as submitted to the USACE under Section 404 of the federal Water Pollution Control Act Amendment of 1972, 33 U.S.C. Section 1344.

Not applicable; project seeks authorization under DNR Rule 391-3-7.05(2)(k)(1).

2.10 For variance requests under DNR Rule 391-3-7.05(2)(k)(1), the application must include documentation from the USACE verifying the water bodies identified in the application are non-jurisdictional Waters of the U.S. under Section 404 of the Clean Water Act.

Please refer to Appendix B for documentation from the USACE verifying the subject pond is a non-jurisdictional Water of the U.S.

2.11 Narrative description of the shape, size, topography, slope, soils, vegetation and other physical characteristics of the property.

The project site is located on the Chamblee, Georgia U.S. Geologic Survey (USGS) 7.5-minute topographic quadrangle maps (Figure 1). A site visit was conducted on the approximately 10-acre project site by Corblu on September 25, 2018 to review the proposed development plans by Branch Ashwood Associates, LLC. A total of 996 linear feet (LF) of pond shoreline and 26,587 sq. ft. of associated protected buffers (Appendix E) was confirmed. The City of Dunwoody has provided verification of state waters requiring a buffer (Appendix D).

The project site is located in a developed urban/residential area and three restaurants and a large parking lot are located within the project boundary. Approximately 431 linear feet of pond shoreline and associated buffer is comprised of a pre-existing retaining wall which do not support a protected buffer nor included in this application (Figure 2). The existing component of the stream buffer is primarily comprised of limited planted landscape hardwood trees and early/mid successional species such as Chinese privet (*Ligustrum sinense*) and dogfennel (*Eupatorium capillifolium*), and planted crepe myrtle (*Lagerstroemia indica*).

Soils on and nearby the project site are mapped by the U.S. Department of Agriculture, Natural Resource Conservation Service (NRCS) as Altavista fine sandy loam (AkB), Appling sandy loam (AmB and AmC), Cecil sandy loam (CeB and CeD), Urban land (Ub), and Wedowee sandy loam (WeE). AkB is listed as a hydric soil by the NRCS for DeKalb County, Georgia (Figure 3).

2.12 Any other reasonable information related to the project that may be deemed necessary to effectively evaluate the variance request.

The applicant will provide additional information as requested by EPD.

2.13 Site map that includes locations of all State waters, wetlands, floodplain boundaries and other natural features, as determined by a field survey.

Appendices C and E include all natural features as determined by field survey.

2.14 Erosion, Sedimentation and Pollution Control Plan with a dated and numbered detailed Site Plan delineating the locations of all structures, impervious surfaces, and the boundaries of the area of soil disturbance, both inside and outside of the buffer. Submit only the cover sheet and the sheets of the Erosion, Sedimentation and Pollution Control Plan that pertain to the buffer impacts.

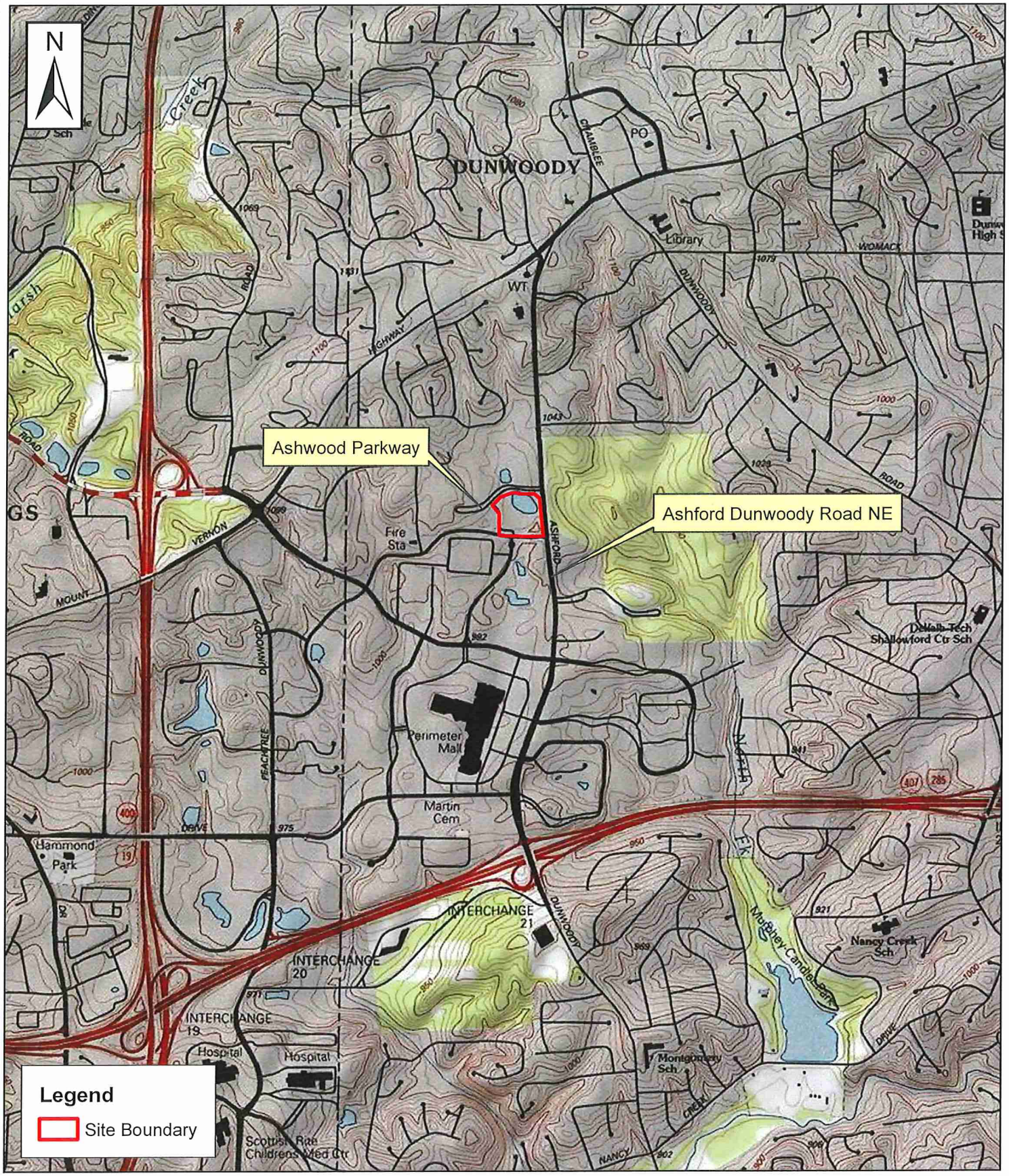
Appendix E includes the proposed erosion and sedimentation control plan.

2.15 Stormwater Control Plan once site stabilization is achieved, when required by a local stormwater ordinance.

The proposed stormwater control plan has been designed in consultation with and direction from of the City of Dunwoody local stormwater management ordinance and EPD's GSMM requirements. Further, the proposed stormwater management plan has been developed in accordance with the EPD's TSS reduction and the pollutants of concern (i.e., oil and grease) reduction requirements for stream buffer variances. The site's stormwater management plan will provide an 80% TSS reduction (Appendices E, F, and G). Also, more than 60% of the oil and grease (i.e., the pollutant of concern) generated on the project site via parking areas and roads will be removed through the TSS reduction, as hydrocarbon constituents will adhere to these captured sediments as described in Section 2.6. The proposed project is not expected to contribute to fecal coliform contamination (i.e., connection to public sanitary sewer) or PCBs to Nancy Creek and the Chattahoochee River as the stormwater management system meets GSMM requirements.

3.0 CONCLUSION

Branch Ashwood Associates, LLC proposes to re-develop a commercial center and associated stormwater pond for a commercial center on the 10.06-acre project site to serve the growing City of Dunwoody and surrounding areas in a highly urbanized area. As mentioned above, the stormwater management plan (80% TSS reduction) along with the purchase of buffer credits (i.e., stream credits) from an USACE approved mitigation bank will offset the loss of water quality functions associated with the pond buffer encroachments.

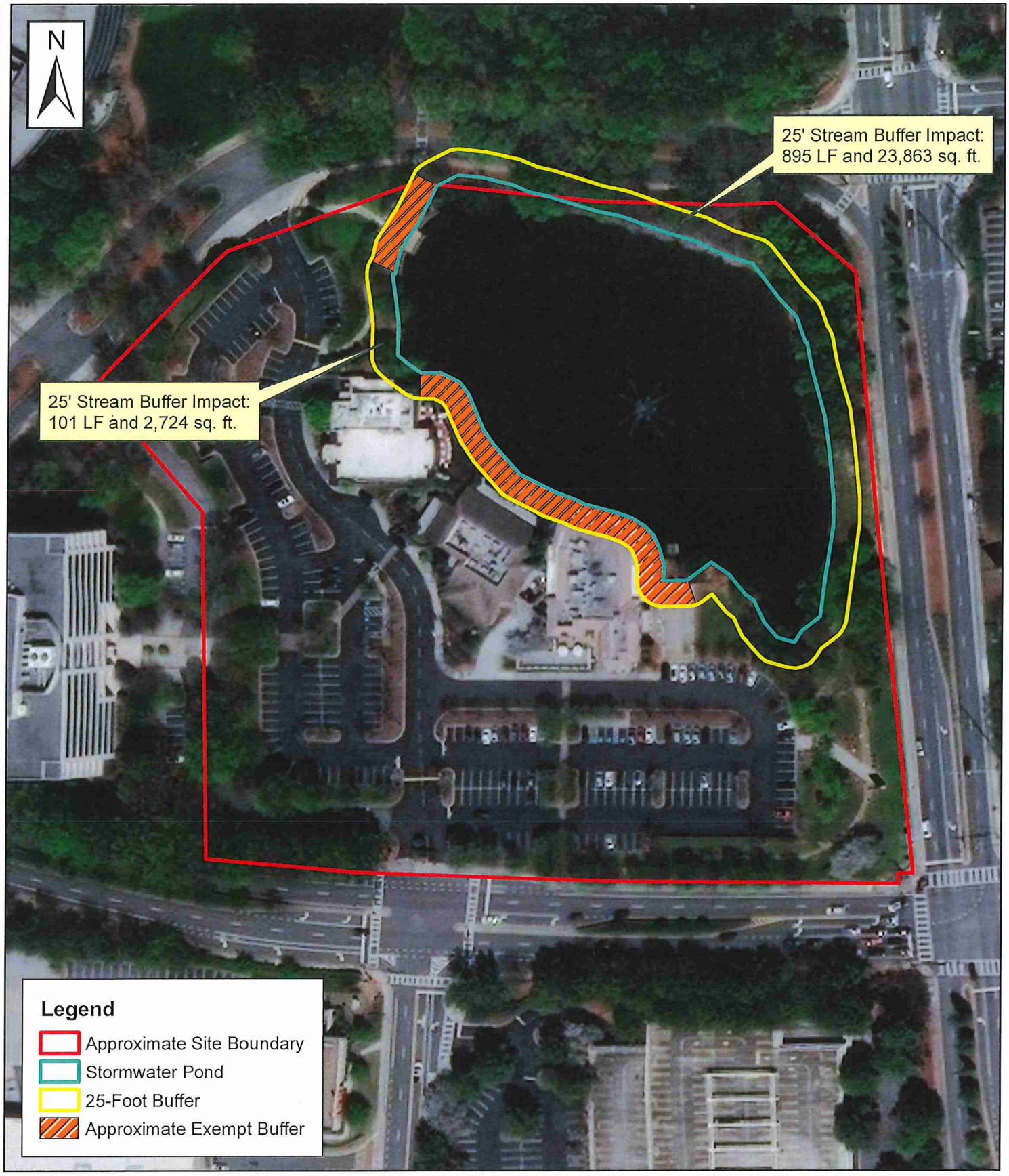


Base Map Source: USGS 7.5-Minute Topographic Quadrangles
Chamblee, Georgia

1:24,000

0 1,000 2,000 4,000 Feet

Branch Ashwood Associates, LLC **Branch Ashwood - Dunwoody Site** **Dunwoody, Georgia**	corblu ECOLOGY GROUP	**Figure 1** **Site Location Map** **Project No. 02-051818**



Base Map Source: ESRI, Aerial Imagery

1:1,500

0 65 130 260 Feet

Branch Ashwood Associates, LLC

Branch Ashwood - Dunwoody Site

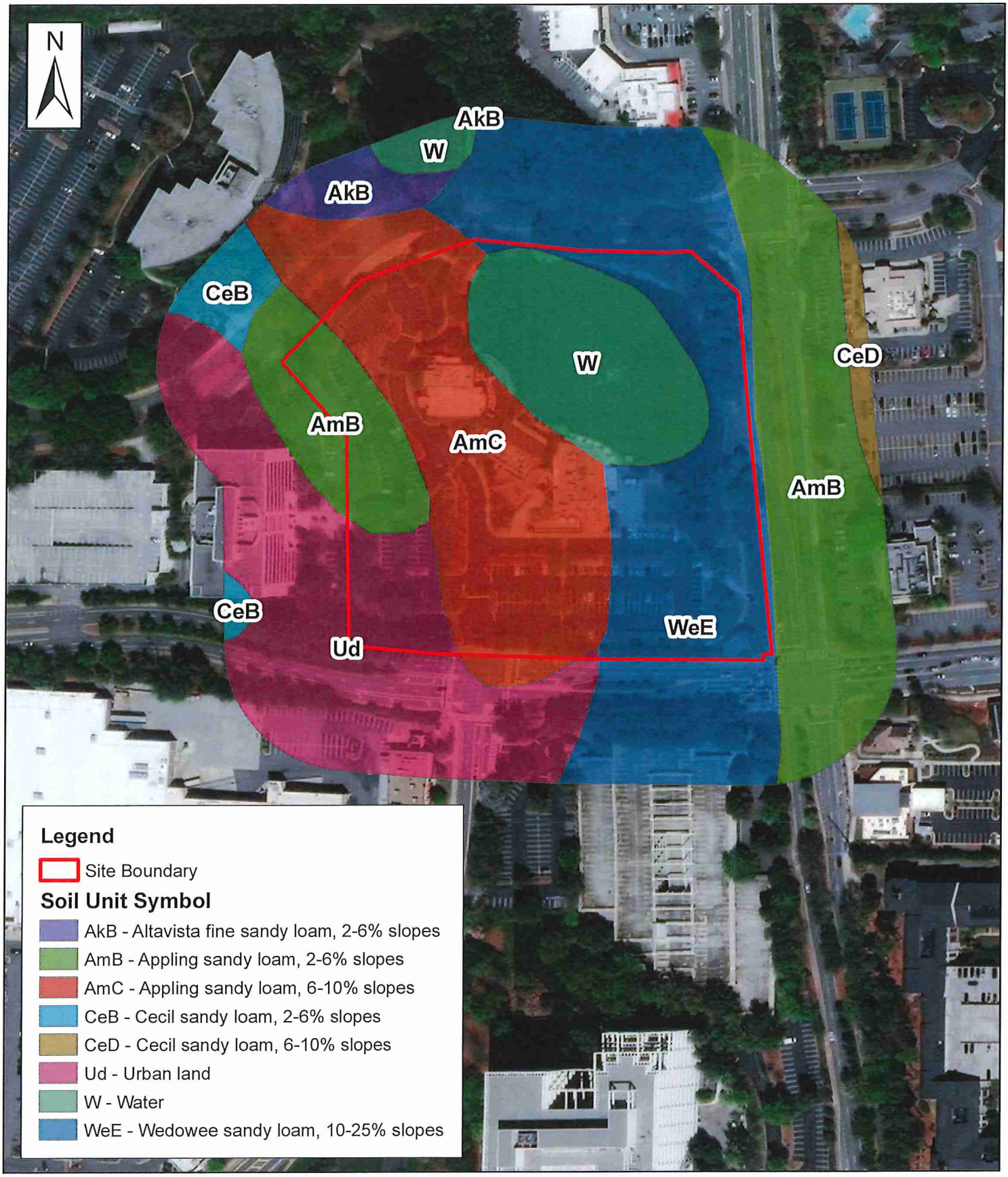
Dunwoody, Georgia

corblu ECOLOGY GROUP

Figure 2

Site Water and Buffer Map

Project No. 02-051818



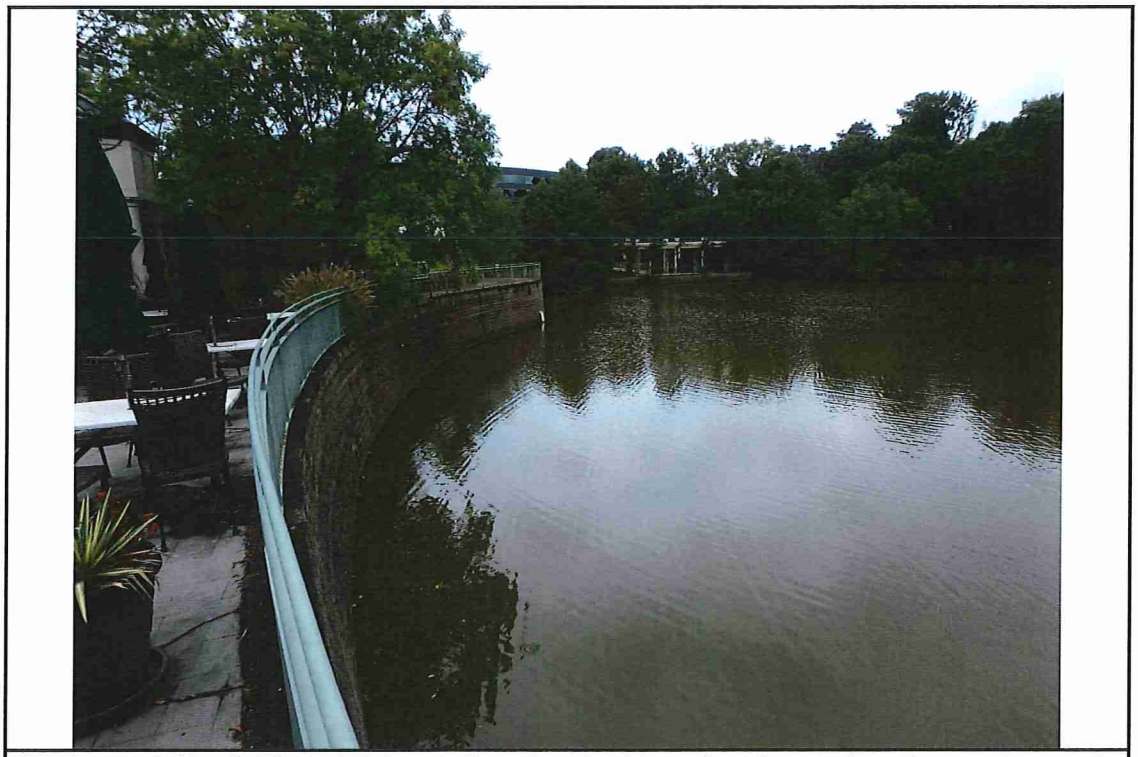
Base Map Source: NRCS, Soil Survey of DeKalb County, Georgia 1982

1:2,500

0 105 210 420 Feet

Branch Ashwood Associates, LLC **Branch Ashwood - Dunwoody Site** **Dunwoody, Georgia**	corblu ECOLOGY GROUP	**Figure 3** **Site Soils Map** **Project No. 02-051818**

Photograph No. 1: The stormwater pond located within the project boundaries, facing northeast



Photograph No. 2: The retaining wall and pedestrian plaza located on the western and northwestern boundaries of the pond, facing northwest

Photograph No. 3: Typical vegetation found within the pond's buffer, facing southeast.

Photograph No. 4: Typical land use of the rest of the project site, facing southwest.

APPENDIX A

Stream Buffer Variance Application Form

GEORGIA DEPARTMENT OF NATURAL RESOURCES
ENVIRONMENTAL PROTECTION DIVISION

REVISED MAY 2016

APPLICATION FOR A 25-FOOT VEGETATIVE BUFFER ENCROACHMENT ON DESIGNATED WARM WATERS OF THE STATE

(Required prior to conducting land disturbing activities within the State-mandated 25-foot buffer in accordance with the Erosion and Sedimentation Act of 1975, as amended, O.C.G.A. 12-7-6(b)(15))

Property Owner's Name *(Person)*: Mr. Jack Haylett

Company Name *(if applicable)*: Branch Ashwood Associates, LLC

Current Mailing Address: 3340 Peachtree Road NE, Suite 600, Atlanta, GA 30326

Telephone: 404-832-8931 E-Mail: jhaylett@branchprop.com

Contact Person's Name and Address: Törren Hoyord, 3225 S. Cherokee Lane, Bldg. 800 Woodstock, GA 30188

Contact Person's Telephone: 770-591-9990 E-Mail: thoyord@corblu.com

Contact Person's Company Name *(if applicable)*: Corblu Ecology Group, LLC

Project Name: Branch Ashwood-Dunwoody site

Total Project Disturbed Acreage: 11.67 acres (0.61 acres within the 25' buffer)

Type of Project: Commerical Development Re-Design

Buffer Variance Criteria *(391-3-7.05(2)(a) – (k))*: (k)(1)

Location of Buffer Impacts:

Town *(list only if the buffer impacts are located within jurisdictional boundaries of the municipality)*: Atlanta
County *(list only if the buffer impacts are located within jurisdictional boundaries of the county)*: Fulton

GPS Coordinates *(decimal degrees)*: Latitude: 33.9327 Longitude: -84.3395

Watershed Name and 8-digit HUC *(Hydrologic Unit Code)*: Upper Chattahoochee (03130001)

Detailed Directions to Project *(attach location map and USGS quad sheet)*: The proposed project is located southwest of the intersection of Ashwood Parkway and Ashford Dunwoody Road NE, at 500 Ashwood Parkway in Dunwoody, Georgia. Please see Figure 1.

Name of State water(s) Impacted: unnamed stormwater pond that flows into Nancy Creek
(if unnamed, indicate the first named waterbody that this State water flows into)

Total Area of Buffer Disturbance *(square feet)*: 26,587

Total Length of Buffer Disturbance *(linear feet)*: 996

Signature: _____ **Date:** October 17, 2018

1) **Pursuant to DNR Rule 391-3-7.05, buffer variance applications will be reviewed by the Director only where the applicant provides reasonable evidence that impacts to the buffer have been avoided or minimized to the fullest extent practicable and only for the following criteria:**

(a) The project involves the construction or repair of an existing infrastructure project or a structure that, by its nature, must be located within the buffer. Such structures include, but are not limited to dams, public water supply intake structures, detention/retention ponds, waste water discharges, docks including access ways, boat launches including access ways, and stabilization of areas of public access to water; or

(b) The project will result in the restoration or enhancement to improve water quality and/or aquatic habitat quality; or

(c) Buffer intrusion is necessary to provide reasonable access to a property or properties; or

(d) The intrusion is for water and sewer lines that cannot reasonably be placed outside the buffer, and stream crossings and vegetative disturbance are minimized; or

(e) Crossing for utility lines, including but not limited to gas, liquid, power, telephone, and other pipelines, provided that the number of crossings and the amount of vegetative disturbance are minimized; or

(f) Recreational foot trails and viewing areas, providing that impacts to the buffer are minimal; or

(g) The project involves construction of one (1) single family home for residential use by the owner of the subject property and, at the time of adoption of this rule, there is no opportunity to develop the home under any reasonable design configuration unless a buffer variance is granted. Variances will be considered for such single family homes only if construction is initiated or local government approval is obtained prior to January 10, 2005; or

(h) For non-trout waters, the proposed land disturbing activity within the buffer will require a permit from the United States Army Corps of Engineers under Section 404 of the federal Water Pollution Control Act Amendment of 1972, 33 U.S.C. Section 1344, and the Corps of Engineers has approved a mitigation plan to be implemented as a condition of such a permit; or

(i) For non-trout waters, a plan is provided for buffer intrusion that shows that, even with the proposed land disturbing activity within the buffer, the completed project will result in maintained or improved water quality downstream of the project; or

(j) For non-trout waters, the project with a proposed land disturbing activity within the buffer is located in, or upstream and within ten linear miles of, a stream segment listed as impaired under Section 303(d) of the federal Water Pollution Control Act Amendment of 1972, 33 U.S.C. Section 1313(d) and a plan is provided that shows that the completed project will result in maintained or improved water quality in such listed stream segment and that the project has no adverse impact relative to the pollutants of concern in such stream segment; or

(k) The proposed land disturbing activity within the buffer is not eligible for a permit from the United States Army Corps of Engineers under Section 404 of the federal Water Pollution Control Act Amendment of 1972, 33 U.S.C. Section 1344, but includes required mitigation in accordance with the current EPD *Buffer Mitigation Guidance* document, and involves:

(1) piping, filling or re-routing of non-trout waters that are not jurisdictional Waters of the U.S.; or

(2) stream buffer impacts due to new infrastructure projects adjacent to State waters (jurisdictional and non-jurisdictional Waters of the U.S.). This criterion shall not apply to maintenance and/or modification to existing infrastructure, which are covered under 391-3-7.05(2)(a).

NOTE: Projects that include "streambank or shoreline stabilization" (e.g., criterion (a)) or "streambank restoration" (e.g., criterion (b)) should adhere to the most current guidance documents: *Streambank and Shoreline Stabilization Guidance*, *Guidelines for Streambank Restoration* and *Streambank and Shoreline Stabilization – Techniques to Control Erosion and Protect Property*.

Projects reviewed under criteria (h), (i), (j) or (k) should adhere to the most current EPD guidance document, *Buffer Mitigation Guidance*, when applicable. All guidance documents are available on the EPD website, www.epd.georgia.gov.

2) **Mail completed buffer variance application to:** Erosion and Sedimentation Control Unit
Georgia Environmental Protection Division
2 Martin Luther King Jr Drive SW, Suite 1462
Atlanta, GA 30334

NOTE: APPLICATIONS MUST BE ON THE MOST CURRENT FORMS PROVIDED BY EPD.

3) **Address all items on the attached Buffer Impact Checklist and submit the completed checklist and other pertinent information with the buffer variance application to EPD.**

NOTE: INCOMPLETE APPLICATIONS WILL BE RETURNED TO THE APPLICANT.

4) **Within 60 days of receipt of a complete buffer variance application, EPD will either provide written comments to the applicant or propose to issue a buffer variance. EPD may request additional information related to the project necessary to effectively evaluate the buffer variance application. When EPD proposes to issue a buffer variance, the application process will continue in the following order:**

(a) EPD will issue a public notice.

(b) The public notice shall describe the proposed buffer encroachment, the location of the project, where the public can review site plans, and where comments should be sent.

(c) The public shall have 30 days to comment on the proposed buffer variance.

(d) Public notices are posted on EPD's website at https://epd.georgia.gov/public-advisories-requests-state-waters-buffer-variance.

BUFFER IMPACT CHECKLIST

Pursuant to DNR Rule 391-3-7.05, all buffer variance applications must include the following information. All narrative descriptions, calculations and documentation must be provided on the Buffer Impact Checklist form below or in a separate report. All plans, letters from Local Issuing Authorities, copies of USACE permit applications, mitigation calculations for the appropriate criteria and permit approvals and site maps should be submitted as attachments:

Y / N / NA

Y	(1)	Narrative description of the project, with details of the buffer disturbance, including estimated length of time for the disturbance and justification for why the disturbance is necessary.
Y	(2)	Delineate the total area (square feet) and length (linear feet) for each criterion and Calculate the totals for all buffer disturbances.
Y	(3)	Letter from the Local Issuing Authority (LIA), when applicable, stating that the LIA has visited the site and determined the presence of State waters that have a point of wrested vegetation that require a buffer and that a buffer variance is required as per the local erosion and sedimentation control ordinance.
Y	(4)	For projects within the buffer of or upstream and within one **linear** mile of impaired stream segments on Georgia's "305(b)/303(d) List Documents (Final)," documentation that the project will have no adverse impacts relative to the pollutants of concern and if applicable, documentation that the project will be in compliance with the TMDL Implementation Plan(s).
NA	(5)	For all **minor buffer impacts*** (as defined in DNR Rules 391-3-7.01), a **Re-Vegetation Plan** with a descriptive narrative as described in the EPD guidance document, *Streambank and Shoreline Stabilization*, and/or a plan for permanent vegetation as per the *Manual for Erosion and Sedimentation Control in Georgia*.
Y	(6)	For all **major buffer impacts*** (as defined in DNR Rules 391-3-7.01), a **Buffer Mitigation Plan** with a descriptive narrative addressing impacts to critical buffer functions based on an evaluation of existing buffer conditions and predicted post buffer conditions pursuant to DNR Rule 391-3-7.05(7).
Y	(7)	For variance requests under DNR Rules 391-3-7.05(2)(h),(i), (j) and (k), the application must include documentation that the project will mitigate buffer disturbances based on the EPD guidance document, *Buffer Mitigation Guidance*, addressing post-development total suspended solids (TSS), stormwater runoff reduction, water quality protection and aquatic/buffer habitat protection.
NA	(8)	For variance requests under DNR Rules 391-3-7.05(2)(i) and (j), the application must include the following: (a) Documentation that post-development stormwater management systems conform to the minimum standards for water quality, channel protection, overbank flood protection and extreme flood protection as established in the *Georgia Stormwater Management Manual* or the equivalent and if applicable, the *Coastal Stormwater Supplement to the Georgia Stormwater Management Manual*. (b) Documentation that existing water quality will be maintained or improved based on predicted pollutant loadings under pre- and post-development conditions as estimated by models accepted by EPD. (c) For projects within the buffer of or upstream and within ten **linear** miles of impaired stream segments on Georgia's "305(b)/303(d) List Documents (Final)," documentation that the project will have no adverse impacts relative to the pollutants of concern as estimated by models accepted by EPD and if applicable, documentation that the project will be in compliance with the TMDL Implementation Plan(s).

BUFFER IMPACT CHECKLIST

Pursuant to DNR Rule 391-3-7.05, all buffer variance applications must include the following information. All narrative descriptions, calculations and documentation must be provided on the Buffer Impact Checklist form below or in a separate report. All plans, letters from Local Issuing Authorities, copies of USACE permit applications, mitigation calculations for the appropriate criteria and permit approvals and supporting documentation, and site maps should be submitted as attachments:

Y / N / NA

NA	(9)	For variance requests under DNR Rule 391-3-7.05(2)(h), a copy of the permit application and mitigation calculations as submitted to the United States Army Corps of Engineers (USACE) under Section 404 of the federal Water Pollution Control Act Amendment of 1972, 33 U.S.C. Section 1344.
Y	(10)	For variance requests under DNR Rule 391-3-7.05(2)(k)(1), the application must include documentation from the USACE verifying the water bodies identified in the application are **non-jurisdictional** Waters of the U.S. under Section 404 of the Clean Water Act.
Y	(11)	Narrative description of the shape, size, topography, slope, soils, vegetation and other physical characteristics of the property.
Y	(12)	Any other reasonable information related to the project that may be deemed necessary to effectively evaluate the variance request.
Y	(13)	**Site Map** that includes locations of all State waters, wetlands, floodplain boundaries and other natural features, as determined by a field survey.
Y	(14)	**Erosion, Sedimentation and Pollution Control Plan** with a dated and numbered detailed **Site Plan** delineating the locations of all structures, impervious surfaces, and the boundaries of the area of soil disturbance, both inside and outside of the buffer. Submit only the cover sheet and the sheets of the Erosion, Sedimentation and Pollution Control Plan that pertain to the buffer impacts. ***NOTE: THE EXACT AREA OF THE BUFFER TO BE IMPACTED MUST BE ACCURATELY AND CLEARLY INDICATED ON THE PLANS.***
NA	(15)	**Stormwater Control Plan** once site stabilization is achieved, when required by a local stormwater ordinance.

NOTES:

Minor Buffer Impact, as defined in DNR Rules 391-3-7.01, means an impact that upon completion yields no additional above ground, man-made materials or structures within the buffer, and maintains the original grade, and results in less than 5,000 square feet of buffer impacts per stream crossing and/or less than 5,000 square feet of buffer impacts per individual area of encroachment for each project.

Major Buffer Impact, as defined in DNR Rules 391-3-7.01, means any impact that does not meet the definition of **Minor Buffer Impact**.

APPENDIX B

USACE Concurrence Letter Package

DEPARTMENT OF THE ARMY
SAVANNAH DISTRICT, CORPS OF ENGINEERS
1590 ADAMSON PARKWAY, SUITE 200
MORROW, GEORGIA 30260

JUN 0 0 2018

RECEIVED
JUN 11 2018
BY:_____

Regulatory Branch
SAS-2018-00410

Corblu Ecology Group
Rick Whiteside
3225 South Cherokee Lane, Building 800
Woodstock, GA 30188

Dear Mr. Whiteside:

I refer to the request for information that you recently submitted requesting to establish the regulatory authority over two storm water basins in DeKalb County, Georgia. The project is located at 500 Ashwood Parkway in Dunwoody, DeKalb County, Georgia (latitude 33.9333, longitude -84.3389). This project has been assigned number SAS-2018-00410; please refer to this number in all communication concerning this matter.

Based on a meeting that took place on May 23, 2018 and our review of the information you provided, dated May 29, 2018, we have determined that the two storm water basins are not regulated by the Corps. Therefore, you and/or your client are not required to obtain a Department of the Army permit for the proposed activity.

You are cautioned that the subject property may be regulated by other agencies under other sections of the Clean Water Act or other regulations. You are encouraged to reach out to state and local agencies to determine if the proposed activity requires a permit.

A copy of this letter is being provided to the following parties: Branch Ashwood Associates, LLC, Attention: Jack Haylett, 3340 Peachtree Road NE, Suite 600, Atlanta, Georgia 30326; and The Contineo Group, Attention: Ron Crump, 572 Oakdale Road, Atlanta, Georgia 30307.

Thank you in advance for completing our on-line Customer Survey Form located at http://corpsmapu.usace.army.mil/cm_apex/f?p=regulatory_survey. We value your comments and appreciate your taking the time to complete a survey each time you have interaction with our office.

If you have any questions, please call Jade Bilyeu, Regulatory Specialist, at (678) 422-6572 or jade.r.bilyeu@usace.army.mil.

Sincerely,

Kevin D. Thames
Chief, Project Management
Piedmont Section

corblu
ECOLOGY GROUP

May 29, 2018

Mr. Kevin Thames
U.S. Army Corps of Engineers, Savannah District
Regulatory Division, Piedmont Branch
1590 Adamson Parkway, Suite 200
Morrow, Georgia 30260-1763

Subject: **Section 404 - Jurisdictional Waters *vs* Section 402 – NPDES Waters**
Branch Ashwood Associates, LLC – Dunwoody Property
Dunwoody, Georgia
Corblu Project No. 02-051818

Dear Mr. Thames:

On behalf of our client, Branch Ashwood Associates, LLC and as requested by you, Corblu Ecology Group, LLC (Corblu) is providing information requested in our meeting of May 23, 2018 with you and other U. S. Army Corps of Engineers' (USACE) representatives regarding the Clean Water Act (CWA) classification status of the stormwater ponds (2) located at 500 Ashwood Parkway in Dunwoody, Georgia (Appendix A; 2018 aerial photographs). The purpose of the meeting was to establish the regulatory authority over the above referenced stormwater ponds, either: 1) CWA Section 402, National Pollutant Discharge Elimination System (NPDES) waters, regulated by the Georgia Environmental Protection Division (EPD) and the City of Dunwoody [i.e., Local Issuing Authority (LIA)]; or 2) CWA Section 404, jurisdictional waters (i.e., waters of the U.S.) regulated by the USACE.

Background

As presented in our meeting, the referenced stormwater ponds were constructed between 1978 and 1988 as determined from historical aerial photography (Appendix B and C, respectively). It is understood that when constructed, the subject stormwater ponds were built in series, where the northern pond discharges (via existing culvert) into southern pond (Appendix D). It is understood that the subject ponds were built "on-line" however, the U.S Geological Survey 7.5 minute map (Chamblee quad) does not indicate the presence of a stream (Appendix E). Currently the ponds received stormwater runoff from multiple sources from the surrounding and

770-591-9990
3225 South Cherokee Lane, Bldg. 800, Woodstock, GA 30188
corblu.com

existing development, to include rooftops, parking lots and roadway system (Appendix D). Discharged stormwater from the lower pond (i.e., southern pond) remains piped/culverted for over 1.5+ miles until it "daylights" at Lake Hearn Drive, south of I-285, and eventually enters Nancy Creek near the Marist School's athletic fields.

The subject ponds have been confirmed to be a component of the City of Dunwoody's Municipal Separate Storm Sewer (MS4) inventory and is included in their annual MS4 reports to EPD under the NPDES regulatory requirements (Appendix F).

Confirmation Request

Based on the information presented and our discussions during our meeting of May 23, 2018 and the information presented in this letter, Corblu on behalf of Branch Ashwood Associates, LLC respectively request the USACE's written confirmation that the subject ponds are not subject to USACE regulatory authority under CWA Section 404, but are CWA Section 402 waters subject to the regulatory authority of EPD and their LIA, the City of Dunwoody.

If you have any questions regarding this request, please contact me at (770) 591-9990.

Sincerely,

CORBLU ECOLOGY GROUP, LLC

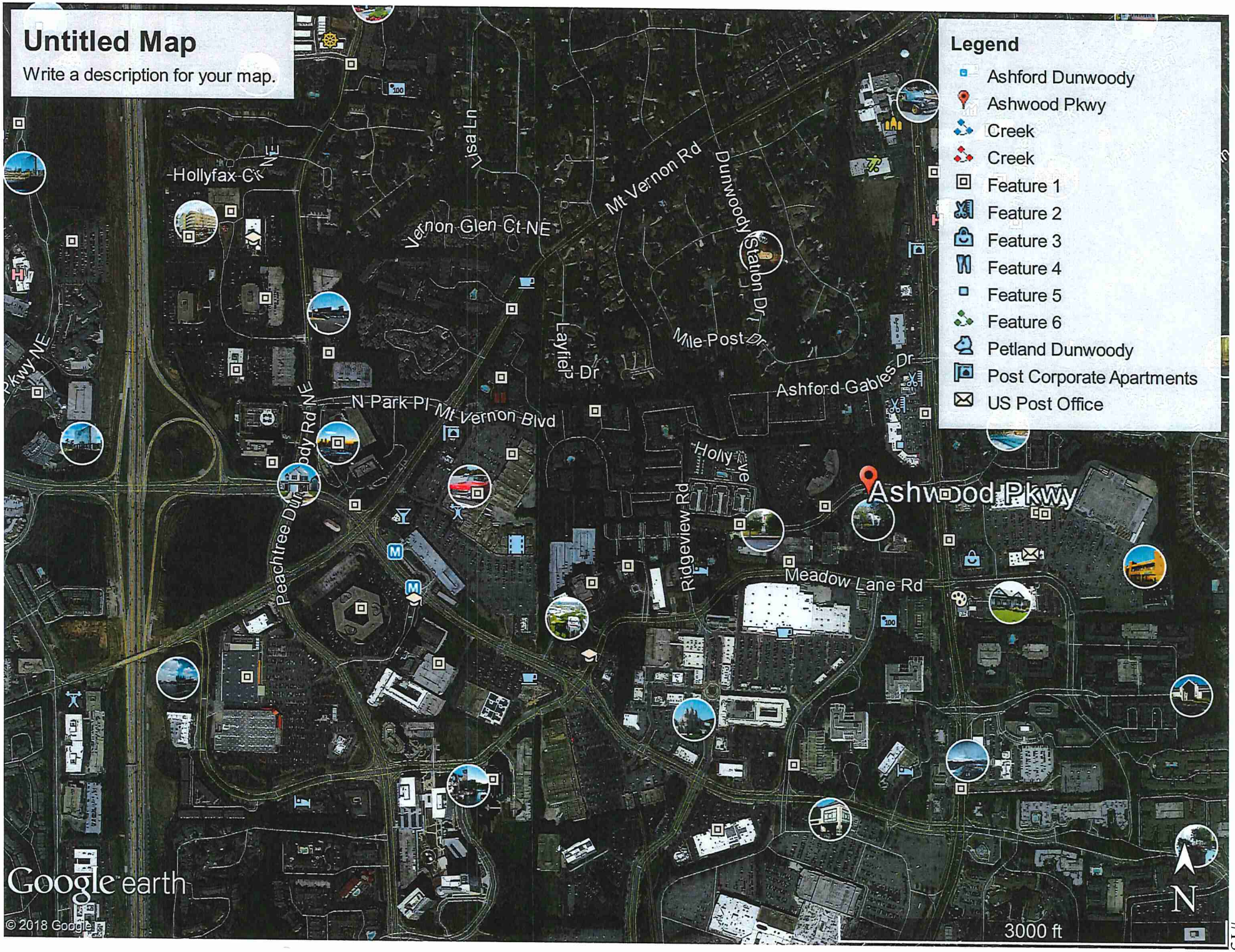
Richard W. Whiteside, PhD, CWB, CSE
President

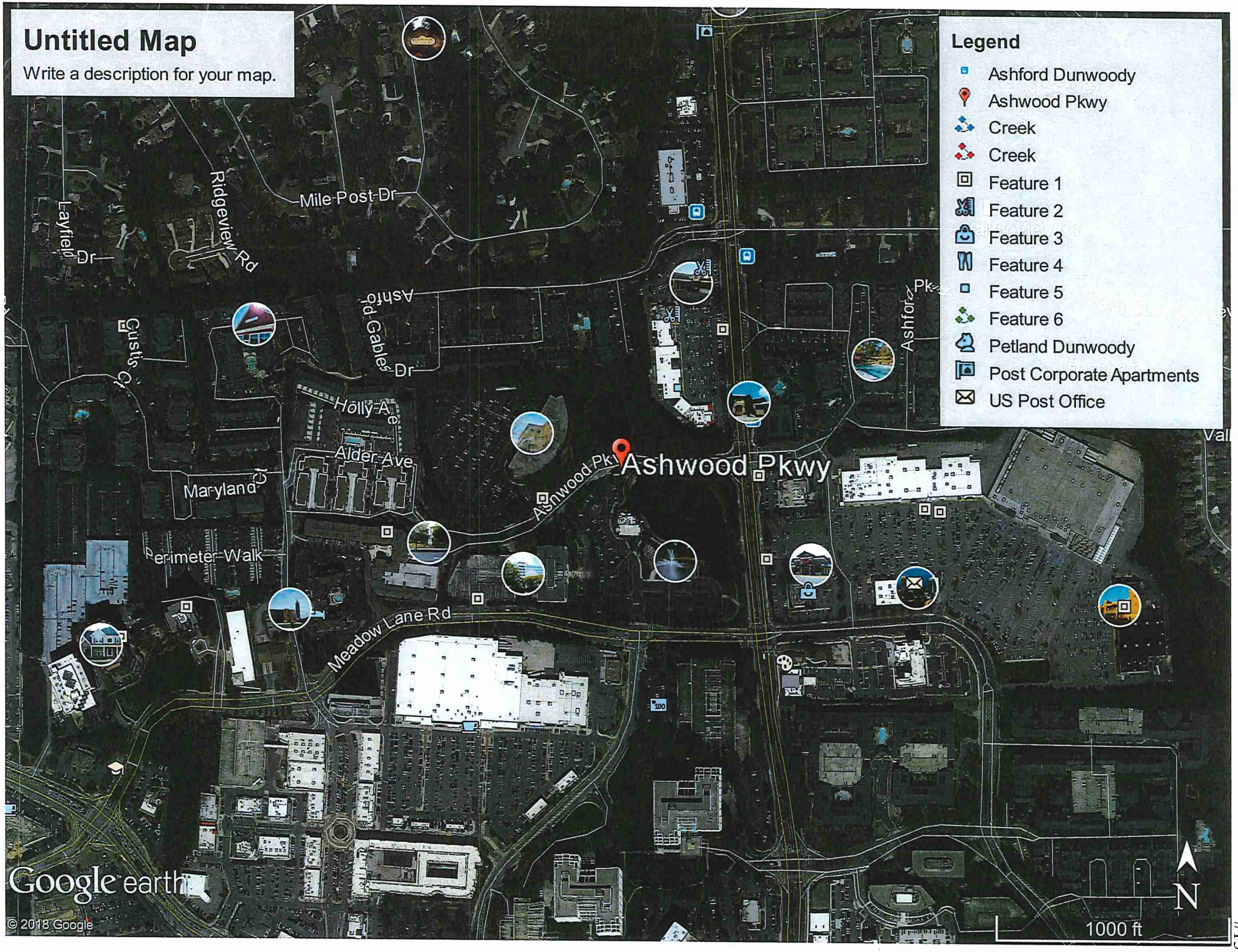
Attachments: Appendix A: 2018 Aerial Photographs
Appendix B: 1978 Aerial Photograph
Appendix C: 1988 Aerial Photograph
Appendix D: Local Stormwater Piping
Appendix E: Chamblee 7.5. Minute USGS Quad
Appendix F: Email from City of Dunwoody confirming MS4 Inventory

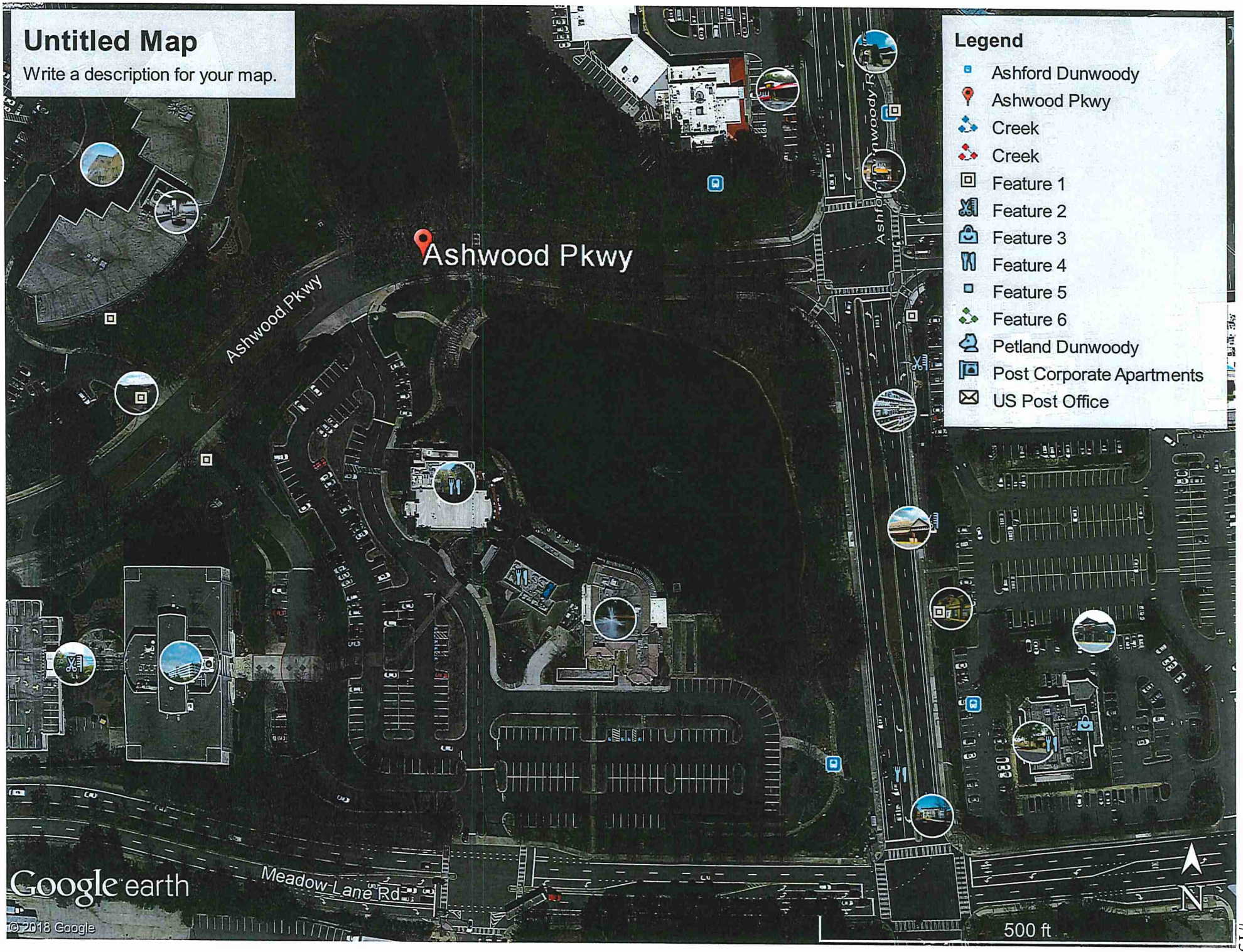
c: Mr. Jack Haylet, Branch Ashwood Associates, LLC
Mr. Ron Crump, Contineo Group

APPENDIX A

2018 Aerial Photographs


Untitled Map
Write a description for your map.
Legend
Ashford Dunwoody
Ashwood Pkwy
Creek
Creek
Feature 1
Feature 2
Feature 3
Feature 4
Feature 5
Feature 6
Petland Dunwoody
Post Corporate Apartments
US Post Office
Hollyfax Ct NE
Lisa Ln
Mt Vernon Rd
Dunwoody Station Dr
Vernon Glen Ct NE
Layfield Dr
Mile Post Dr
Ashford Gables Dr
N Park Pl
Mt Vernon Blvd
Holly Ave
Ashwood Pkwy
Ridgeview Rd
Meadow Lane Rd
Google earth
© 2018 Google
3000 ft
N


Untitled Map
Write a description for your map.
Legend
Ashford Dunwoody
Ashwood Pkwy
Creek
Creek
Feature 1
Feature 2
Feature 3
Feature 4
Feature 5
Feature 6
Petland Dunwoody
Post Corporate Apartments
US Post Office
Mile Post Dr
Ridgeview Rd
Layfield Dr
Gustis Ct
Ashford Gables Dr
Holly Ave
Alder Ave
Maryland Ct
Perimeter Walk
Ashwood Pkwy
Ashwood Pkwy
Meadow Lane Rd
Google earth
© 2018 Google
N
1000 ft


Untitled Map
Write a description for your map.
Ashwood Pkwy
Ashwood Pkwy
Ashwood Pkwy
Meadow Lane Rd
Legend
Ashford Dunwoody
Ashwood Pkwy
Creek
Creek
Feature 1
Feature 2
Feature 3
Feature 4
Feature 5
Feature 6
Petland Dunwoody
Post Corporate Apartments
US Post Office
Google earth
© 2018 Google
500 ft
N

APPENDIX B

1978 Aerial Photograph

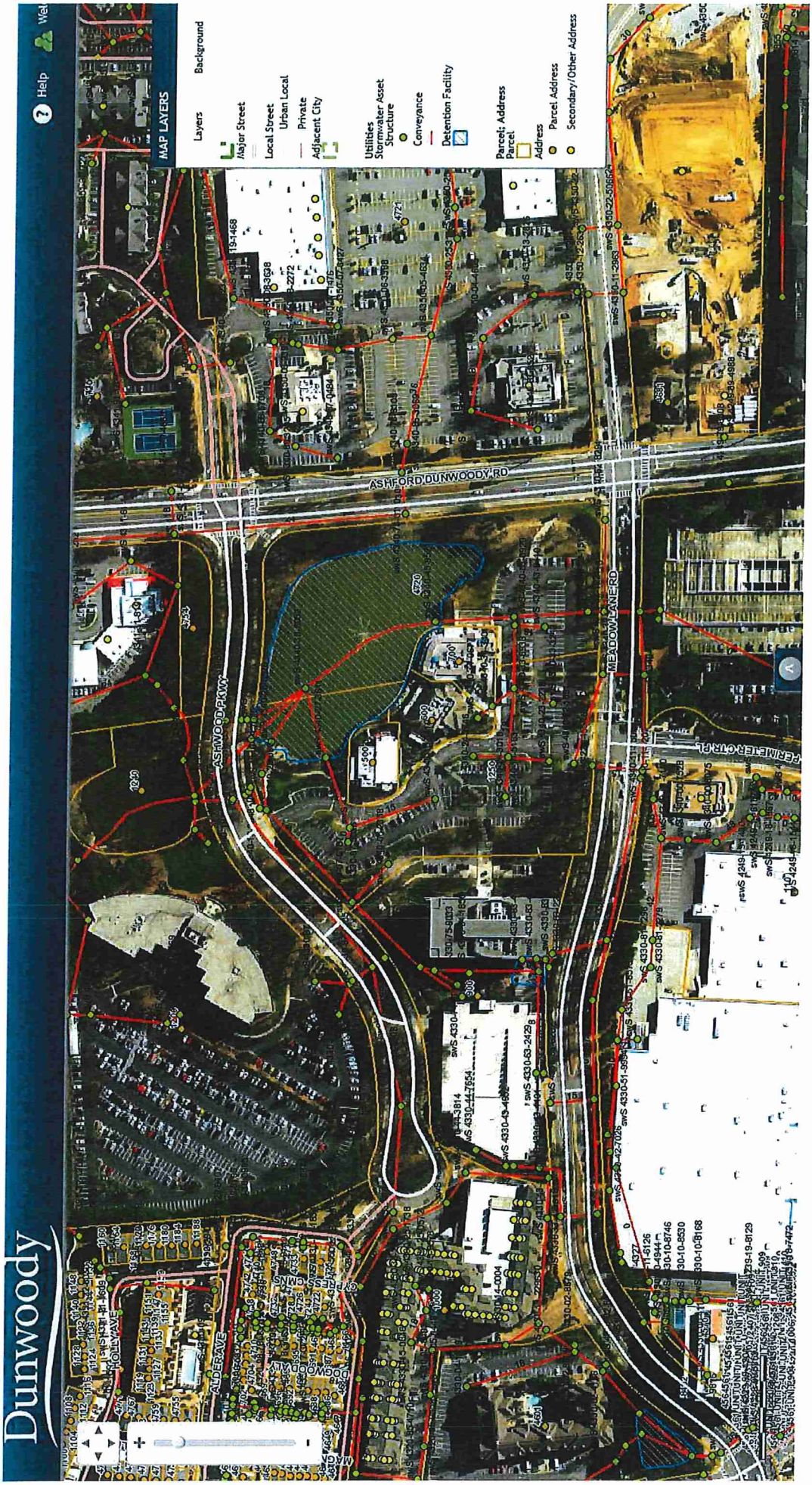
1978

APPENDIX C

1988 Aerial Photograph

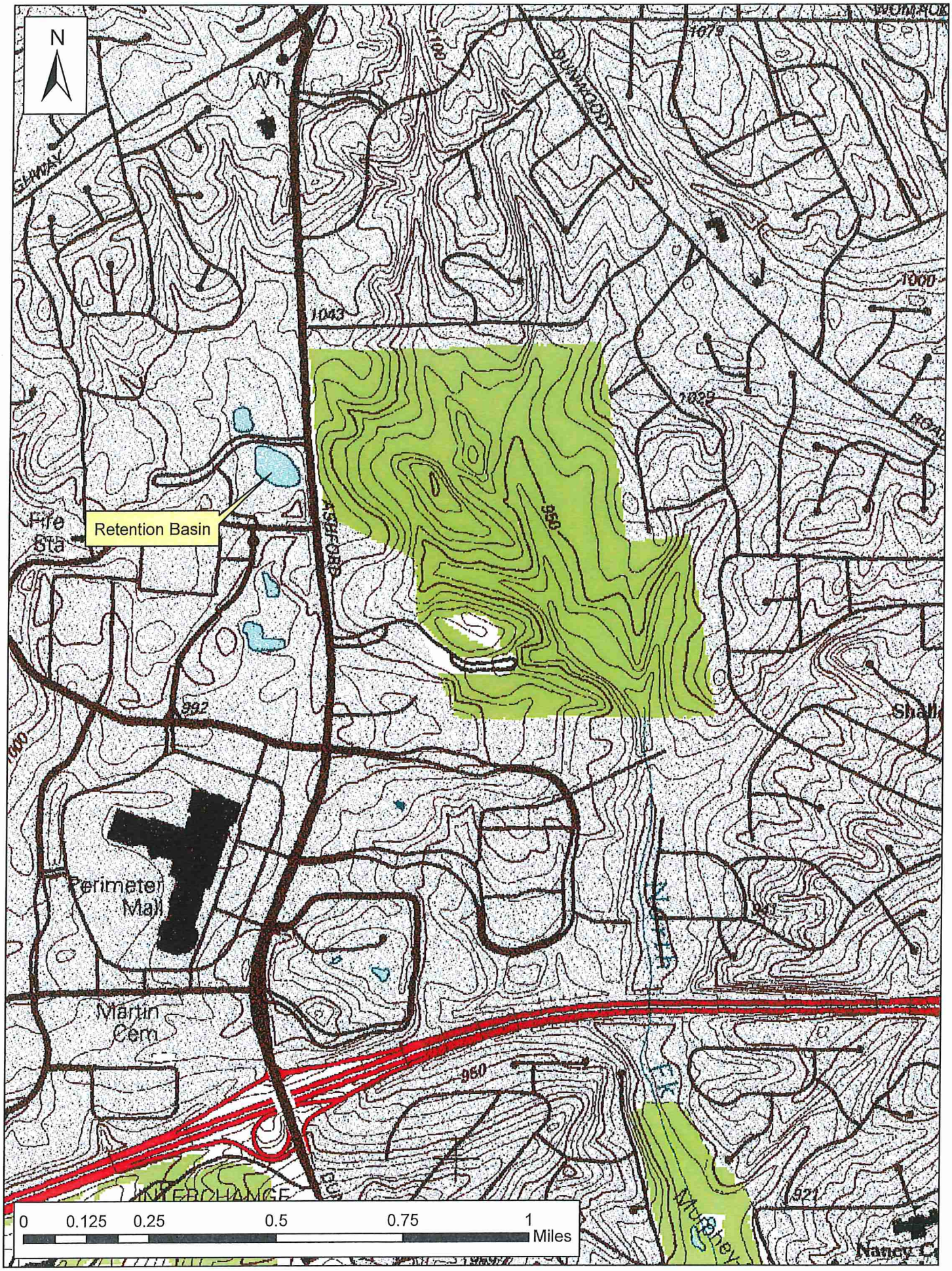
APPENDIX D

Local Stormwater Piping


Dunwoody
Help
MAP LAYERS
Layers
Background
Major Street
Local Street
Urban Local
Private
Adjacent City
Utilities
Stormwater Asset
Structure
Conveyance
Detention Facility
Parcel: Address
Parcel
Address
Parcel Address
Secondary/Other Address
ASHFORD DUNWOODY RD
ASHWOOD PKWY
MEADOW LANE RD
PERIMETER CTR PL
ALDER AVE
HOLLY AVE

APPENDIX E

Chamblee 7.5. Minute USGS Quad


N
Retention Basin
Fire Sta
Perimeter Mall
Martin Cem
INTERCHANGE
0
0.125
0.25
0.5
0.75
1
Miles

APPENDIX F

Email from City of Dunwoody

Confirming MS4 Inventory

Rick Whiteside

From: Ron Crump <ronc@thecontineogroup.com>
Sent: Wednesday, May 23, 2018 9:18 AM
To: Rick Whiteside; Jack Haylett
Subject: Fwd: 500 Ashwood Pkwy - stormwater pond

From: Jeff Mueller <Jeff.Mueller@dunwoodyga.gov>
Date: May 21, 2018 at 9:34:18 AM EDT
To: Ron Crump <ronc@thecontineogroup.com>
Subject: RE: 500 Ashwood Pkwy - stormwater pond

Ron,

The following statement(s) is what I can confirm:

1. The pond located on the property owned by Branch Ashwood Associates, LLC, is an in line pond on the existing blue line stream;
2. This pond is part of the city's inventory when preparing annual MS4 reports.

City of Dunwoody Georgia

Jeffrey W. Mueller, P.E.
City Engineer

From: Ron Crump [mailto:ronc@thecontineogroup.com]
Sent: Friday, May 18, 2018 1:16 PM
To: Jeff Mueller
Cc: Rick Whiteside; Jack Haylett
Subject: 500 Ashwood Pkwy - stormwater pond

Jeff,
Thank you for all your assistance to date. As per our phone discussions; if you can please confirm that based on the storm pipe and drainage maps, the City of Dunwoody does agree that the pond located on our property serves as a regional stormwater pond shown to be an in-line pond on the existing blue-line; and is part of the City's Municipal Separate Storm Sewer System (MS4) as regulated under the National Pollutant Discharge Elimination System (NPDES) administered by USEPA and Georgia EPD.
Thank you,
Ron

Ron Crump | **Manager** | **PE, PMP, LEED AP, CPESC, CPSWQ**

Contineo Group

RonC@TCG.Engineer | **Cell: 404.556.7721**
Main: 678.601.6046 ext. 2
www.tcg.engineer

Corporate Location: 3081 Holcomb Bridge Road | Suite A2 - 2nd Floor
Norcross | Georgia | 30071

APPENDIX C

Stream Buffer Variance Exhibit

SITE DATA

PERTY ACREAGE	±10.06 ACRES
OF WRESTED TO BE IMPACTED BY ELOPMENT	996 L.F.
REAM BUFFER TO BE Y FUTURE DEVELOPMENT	26,587 S.F. ±0.61 ACRES

GEORGIA REGISTERED No. 030600 PROFESSIONAL ENGINEER AARON T. CRUMP
10/09/18

CONTINEO GROUP
755 COMMERCE DRIVE
SUITE 800
DECATUR, GA 30030
678.601.6046
www.tcg.engineer

BRANCH PROPERTIES, LLC
3340 PEACHTREE STREET NE, SUITE 600
ATLANTA, GA 30326
(404) 832 - 8800

BRANCH PROPERTIES, LLC
ASHWOOD CENTER

ISSUED FOR: PRICING PLANS
JURISDICTION: CITY OF DUNWOODY
LOCATION: 500 ASHWOOD PARKWAY
ATLANTA, GA 30338

#	DATE	REVISIONS

DRAWN:	CHECK:
KH	RTC
JOB NO:	DATE:
18-108	10/09/18

STREAM BUFFER VARIANCE EXHIBIT

SHEET 01

C:\PROJECTS\2018\18-108 - BRANCH - ASHWOOD RESTAURANT\DWG\CONTINEO-MASTER\CONTINEO-MASTER_XR-ISSUED.DWG

APPENDIX D

Awareness Letter from the City of Dunwoody

City of Dunwoody Georgia

4800 Ashford Dunwoody Road
Dunwoody, Georgia 30338
dunwoodyga.gov | 678.382.6700

September 26, 2018

Michael Berry
Georgia Environmental Protection Division
Erosion & Sediment Control Unit
2 Martin Luther King Drive, SW, Suite 1462
Atlanta, GA 30334

Re: Letter of Awareness / State Water Determination
Branch Ashwood-Dunwoody, 500 Ashwood Parkway
City of Dunwoody, DeKalb County, Georgia

Dear Mr. Berry:

Please be advised that the City of Dunwoody is aware that a state water exists and requires a buffer at properties located at 500 Ashwood Parkway in Dunwoody, Georgia. The proposed Branch Ashwood-Dunwoody project is the construction of a commercial development located on an approximately 10-acre project site. The City of Dunwoody is aware that Corblu Ecology Group, LLC, intends to file an application for a buffer variance on behalf of Branch Ashwood Associates, LLC. Based on such, we are requiring the applicant to seek variance approval from your unit.

If you require additional information, please contact me directly.

Sincerely,

CITY OF DUNWOODY COMMUNITY DEVELOPMENT DEPARTMENT
Jeffrey W. Mueller, P.E., City Engineer

Cc: File

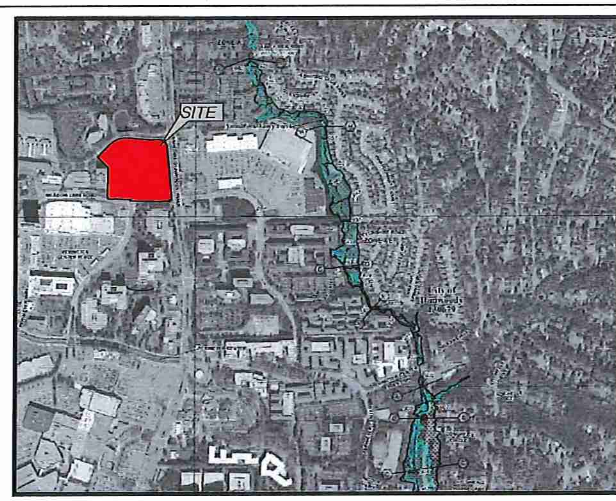
APPENDIX E

Site Plan, Erosion and Sedimentation Control Plan, and Stormwater Management Plan

ASHWOOD CENTER

500 ASHWOOD PKWY
ATLANTA, GEORGIA

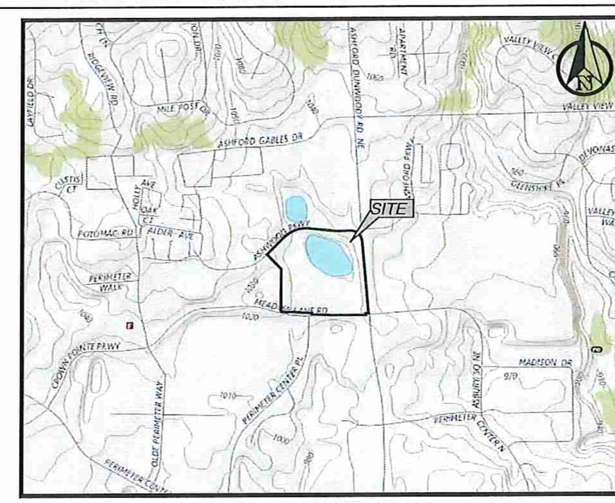
PRIMARY PARCEL ID:18 349 01 046



FEMA MAP

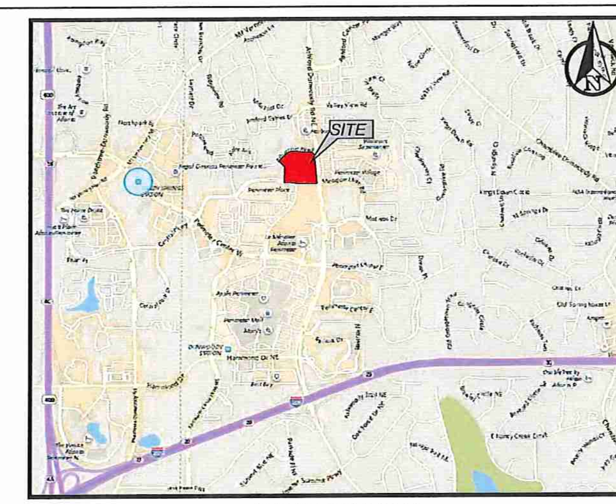
N.T.S.

THE PROPERTY SHOWN HEREIN LIES WITHIN FLOOD HAZARD ZONE 'X' AS SHOWN ON THE FEDERAL EMERGENCY MANAGEMENT AGENCY MAP FOR FLOOD BOUNDARY AND FLOODWAY FOR FULTON COUNTY, GEORGIA.



USGS QUAD MAP

N.T.S.



VICINITY MAP

N.T.S.

AERIAL IMAGE

N.T.S.

SHEET INDEX

GPS LOCATION (DECIMAL DEGREES)

LATITUDE: 33.9327°
LONGITUDE: -84.3395°

PROJECT DEVELOPER

BRANCH PROPERTIES, LLC
3340 PEACHTREE STREET NE, SUITE 600
ATLANTA, GA 30326
CONTACT: JACK HAYLETT
PHONE: (404) 832-8900
EMAIL: JHAYLETT@BRANCHPROP.COM

PROJECT CIVIL ENGINEER

CONTINEO GROUP
755 COMMERCE DRIVE, SUITE 800
DECATUR, GA 30030
CONTACT: RON CRUMP
PHONE: (404) 566-7721
EMAIL: RONC@THECONTINEOGROUP.COM

SUBMITTAL

INITIAL PRICING/EROSION CONTROL: 2018-09-18

GEORGIA REGISTERED PROFESSIONAL ENGINEER No. 030800 RON T. CRUMP
09/18/18

CONTINEO GROUP
755 COMMERCE DRIVE
SUITE 800
DECATUR, GA 30030
678.601.6046
www.tcg.engineer

BRANCH PROPERTIES, LLC
3340 PEACHTREE STREET NE, SUITE 600
ATLANTA, GA 30326
(404) 832 - 8900

BRANCH PROPERTIES, LLC
ASHWOOD CENTER

ISSUED FOR: PRICING PLANS
JURISDICTION: CITY OF DUNWOODY
LOCATION: 500 ASHWOOD PARKWAY ATLANTA, GA 30338

#	DATE	REVISIONS

DRAWN:	CHECK:
KH	RTC
JOB NO:	DATE:
18-108	09/18/18

COVER

SHEET C100

GENERAL NOTES:

CONTRACTOR'S RESPONSIBILITY TO INCLUDE, BUT NOT LIMITED TO:

1. CAUSE THE WORK TO BE COMPLETED PER FEDERAL, STATE AND LOCAL CODES DURING ALL PHASES OF THE PROJECT.
2. VERIFY THE EXISTING CONDITIONS ON WHICH THE PROJECT DESIGNS (ALL PHASES) ARE BASED AND BECOME FAMILIAR WITH ALL NECESSARY INFORMATION, WHETHER ON THE SUBJECT TRACT OR ADJACENT PROPERTIES. IF UNKNOWN CONDITIONS ARE DISCOVERED WHICH JEOPARDIZES THE SCOPE AND DELIVERY OF THE PROJECT, THE CONTRACTOR IS TO PROVIDE IMMEDIATE WRITTEN NOTIFICATION TO THE ENGINEER.
3. COORDINATE WITH UTILITY PROVIDERS TO CONFIRM THE LOCATION OF EXISTING AND PROPOSED SERVICES WILL BE ADEQUATE FOR THE DEVELOPMENT. THE ENGINEER DOES NOT ACCEPT RESPONSIBILITY FOR THE ACCURACY OF THE EXISTING UTILITY LOCATIONS AND PROPOSED LOCATIONS ARE APPROXIMATE IN NATURE.
4. CONSTRUCTION LIMITS SHALL BE PROPERLY MARKED AND BARRIERS CREATED AS NECESSARY TO PROTECT CONSTRUCTION PERSONNEL AS WELL AS THE PUBLIC, OSHA AND ALL OTHER GOVERNING STANDARDS.
5. PROVISION OF ALL NECESSARY WORK IN ORDER TO CAUSE THE PROJECT TO BE COMPLETED WHETHER OR NOT THE WORK IS SPECIFICALLY DESCRIBED WITHIN THE PROJECT DESIGNS OR REQUIRED BY REGULATION IN THE COURSE OF WORK.
6. EROSION CONTROL MEASURES SHALL BE MAINTAINED AT ALL TIMES DURING ALL PHASES OF THE PROJECT.
7. DEMOLITION RESPONSIBILITIES:
   A. CONSTRUCTION DEBRIS AND REFUSE RESULTING FROM DEMOLITION SHALL BE REMOVED FROM THE CONSTRUCTION LOCATION UNDER MEANS THAT ADHERE TO FEDERAL, STATE AND LOCAL REGULATIONS. UNDER NO CIRCUMSTANCES SHALL REFUSE MANAGEMENT COMPROMISE THE DELIVERY SCHEDULE OR QUALITY OF THE PROJECT.
   B. FEDERAL, STATE AND LOCAL REGULATIONS SHALL BE ADHERED TO AT ALL TIMES DURING DEMOLITION.
   C. PRIOR TO DEMOLITION COMMENCEMENT, CONTACT LOCAL "CALL DIG" SERVICES.
   D. PROPER SHORING AND BRACING SYSTEMS SHALL BE UTILIZED FOR ALL EXACTIONS AT ALL TIMES. COMPLETELY FILL ALL EXCAVATIONS AT THE END OF EACH DAY.
   E. BURNING OF MATERIALS IS PROHIBITED EXCEPT BY PROPER PERMIT FROM GOVERNING AGENCY.
   F. EXISTING AND REMAINING FACILITIES, WHETHER ON THE PROPERTY OR ON ADJACENT PROPERTIES, SHALL BE MAINTAINED IN THEIR ORIGINAL CONDITIONS. IF DISTURBED, THESE STRUCTURES SHALL BE RESTORED TO THEIR ORIGINAL CONDITION.
   G. EROSION CONTROL MEASURES DURING DEMOLITION PHASE SHALL BE MAINTAINED AT ALL TIMES DURING ALL PHASES OF THE PROJECT, PER FEDERAL, STATE AND LOCAL CODES. NO EARTHMOVING OR DISTURBANCE SHALL BE CAUSED TO HAPPEN UNTIL ALL APPROPRIATE MEASURES HAVE BEEN PUT INTO PLACE.

SITE NOTES:

1. COMPLETION OF ALL WORK SHALL BE IN ACCORDANCE THESE PLANS, SPECIFICATIONS, AS WELL AS, WITH FEDERAL, STATE AND LOCAL REGULATIONS. DEVIATION FROM THESE MAY CAUSE THE PROJECT TO BE UNACCEPTABLE.
2. PROJECT TO BE DELIVERED IN ACCORDANCE WITH AMERICANS WITH DISABILITY ACT (ADA) PER FEDERAL, STATE AND LOCAL CODES.
3. PROJECT TO BE DELIVERED IN ACCORDANCE WITH THE UNIFORM TRAFFIC CONTROL MANUAL (MUTCD), ASHTO, AS WELL AS STATE AND LOCAL REGULATIONS.
4. ARCHITECTURAL PLANS ARE TO GOVERN IN THE AREA WITHIN 5' OF THE BUILDING ENVELOPE. THIS IS TO INCLUDE, BUT NOT LIMITED, TO STEPS, STOOPS, SIDEWALKS, RAMPS, HANDRAILS, ETC. SITE CONTRACTOR IS RESPONSIBLE FOR ALL WORK OUTSIDE OF THIS ENVELOPE.
5. THE FACE OF CURB AND OUTSIDE FACE OF BUILDING SHALL BE THE DIMENSIONAL REFERENCE FOR ALL SITE MEASUREMENTS AND RADII, UNLESS OTHERWISE NOTED. ALL RADII SHALL BE ASSUMED TO BE 5' WHERE NO DIMENSION IS GIVEN.
6. EXISTING AND REMAINING FACILITIES, WHETHER ON THE PROPERTY OR ON ADJACENT PROPERTIES, SHALL BE MAINTAINED IN THEIR ORIGINAL CONDITIONS. IF DISTURBED, THESE STRUCTURES SHALL BE RESTORED TO THEIR ORIGINAL CONDITION.
7. CONTRACTOR IS RESPONSIBLE TO PROVIDING ALL AS-BUILTS AND OTHER CERTIFICATIONS IN ORDER TO CAUSE THE ACCEPTANCE OF THE PROJECT BY THE CLIENT AND RELEASE OF A CERTIFICATE OF OCCUPANCY.
8. CONTRACTOR TO VERIFY THE EXISTING CONDITIONS ON WHICH THE PROJECT DESIGNS (ALL PHASES) ARE BASED AND BECOME FAMILIAR WITH ALL NECESSARY INFORMATION, WHETHER ON THE SUBJECT TRACT OR ADJACENT PROPERTIES. IF UNKNOWN CONDITIONS ARE DISCOVERED WHICH JEOPARDIZES THE SCOPE AND DELIVERY OF THE PROJECT, THE CONTRACTOR IS TO PROVIDE IMMEDIATE WRITTEN NOTIFICATION TO THE ENGINEER.
9. ALL EASEMENTS REQUIRED TO COMPLETE THE WORK, BUT NOT PROVIDED BY THE CLIENT, ARE THE RESPONSIBILITY OF THE CONTRACTOR.
10. CURB AND GUTTER SHALL BE 24" IN SIZE UNLESS SPECIFIED OTHERWISE.
11. THE CONTRACTOR SHALL DELIVER THE CURB AND GUTTER AT A 28-DAY COMPRESSIVE STRENGTH OF 3,000 PSI.
12. THE CONTRACTOR SHALL DELIVER THE ANY REQUIRED PAINTING AND STRIPING WITH A MINIMUM OF TWO COATS OF PAINT PER PROJECT SPECIFICATIONS.

DEMO NOTES:

1. ALL MATERIALS FROM DEMOLITION SHALL BE REMOVED FROM THE SITE BY THE GENERAL CONTRACTOR OR SUBCONTRACTOR UNLESS APPROVED FOR REUSE ON SITE BY THE STRUCTURAL, GEOTECHNICAL ENGINEERS AND GOVERNING AGENCIES.
2. REMOVAL OF THE EXISTING STRUCTURES SHALL BE AS REQUIRED FOR THE PROJECT. THE MATERIALS REMOVED FROM THE SITE SHALL BE DISPOSED OF IN A PROPER AND LEGAL MANNER PER FEDERAL, STATE, AND OR LOCAL LAWS AND ORDINANCES.
3. IF ANY HAZARDOUS MATERIALS ARE ENCOUNTERED, THE OWNER SHALL BE NOTIFIED. THOSE MATERIALS SHALL BE REMOVED AND DISPOSED OF IN A MANNER AS APPROVED BY ALL GOVERNING AGENCIES AND IN A LANDFILL OR DISPOSAL FACILITY LICENSED TO ACCEPT HAZARDOUS MATERIAL.
4. PREDEMOLITION PHOTOGRAPHS SHALL BE TAKEN BY THE CONTRACTOR FOR OWNER, SHOWING EXISTING CONDITIONS OF THE SITE AND ADJOINING BUILDINGS TO REMAIN. PHOTOS SHALL INCLUDE DAMAGE TO FINISH SURFACES THAT MIGHT BE MISCONSTRUED AS DAMAGE CAUSED BY DEMOLITION OPERATIONS.
5. EXISTING STRUCTURES TO REMAIN SHALL BE PROTECTED FROM DAMAGE BY THE CONTRACTOR. ANY DAMAGE INCURRED DURING THE CONSTRUCTION SHALL BE RESTORED, RECONSTRUCTED OR REPLACED TO AT LEAST THEIR ORIGINAL CONDITION OR AS REQUIRED OR DICTATED BY FEDERAL, STATE, COUNTY, CITY OR LOCAL GOVERNING AGENCIES.
6. IT IS THE RESPONSIBILITY OF CONTRACTOR TO INSPECT EACH DAY AND REMOVE ALL MUD, DIRT, GRAVEL AND LOOSE MATERIALS DUMPED FROM THIS SITE ONTO OTHER PROPERTIES. THE CONTRACTOR MUST CLEAN OR PICK UP DAILY IF NECESSARY. THE CONTRACTOR SHALL TRY TO REDUCE AIRBORNE DUST THROUGH OUT THE ENTIRE JOB. THIS MAY BE DONE BY WATERING DOWN AREAS AFFECTED BY THIS WORK.
7. THE CONTRACTOR SHALL MAINTAIN EROSION CONTROL DEVICES AS REQUIRED DURING DEMOLITION.
8. IT IS THE CONTRACTOR'S RESPONSIBILITY TO NOTIFY THE OWNER AND ALL UTILITY COMPANIES AND DEPARTMENTS 72 HOURS, OR AS REQUIRED, BEFORE DEMOLITION IS TO START, TO VERIFY ANY UTILITIES THAT MAY BE PRESENT ON SITE. ALL VERIFICATIONS, LOCATIONS, SIZE AND DEPTHS SHALL BE MADE BY THE APPROPRIATE UTILITY COMPANIES OR DEPARTMENTS. WHEN EXCAVATING AROUND OR OVER UTILITIES, THE CONTRACTOR MUST NOTIFY THE UTILITY COMPANY SO A REPRESENTATIVE OF THE UTILITY MAY BE PRESENT DURING THE EXCAVATION TO INSTRUCT AND OBSERVE DURING THE PROCESS. VERIFY THAT UTILITIES HAVE BEEN DISCONNECTED AND CAPPED BEFORE STARTING DEMOLITION OPERATIONS. NO TRENCHES SHALL BE LEFT OPEN OVERNIGHT.
9. IT IS THE RESPONSIBILITY OF THE CONTRACTOR TO OBTAIN AND PAY ALL FEDERAL, STATE, COUNTY, CITY AND LOCAL PERMITS FOR ANY AND ALL WORK REQUIRED UNLESS OTHERWISE NOTED.
10. CONTRACTOR SHALL MAKE AN EFFORT TO SALVAGE ANY VEGETATION OR OTHER LANDSCAPING MATERIALS WHEN AND WHERE POSSIBLE. NOTIFY LANDSCAPE ARCHITECT AND OWNER OF RELOCATION AREA TO PREVENT ANY FUTURE ISSUES.
11. ALL ASPHALT AND CONCRETE CUTS SHALL BE SMOOTH, CLEAN AND IN STRAIGHT LINES. CONTRACTOR IS RESPONSIBLE FOR ANY DAMAGE MADE TO CONCRETE THAT IS TO REMAIN AS PART OF THE NEW DEVELOPMENT.

STORMWATER POLLUTION PREVENTION PLAN (SWPPP)

1. STABILIZATION MEASURES SHALL BE INITIATED AS SOON AS PRACTICABLE IN PORTIONS OF THE THE SITE WHERE CONSTRUCTION ACTIVITIES HAVE TEMPORARILY OF PERMANENTLY CEASED, BUT IN NO CASE MORE THAN 14 DAYS AFTER WORK HAS CEASED, UNLESS ACTIVITY IN THAT PORTION OF THE SITE WILL RESUME WITHIN 21 DAYS
2. ALL SEDIMENT AND EROSION CONTROL DEVICES SHALL BE INSPECTED EVERY 7 DAYS OR EVERY 14 CALENDER DAYS AND WITHIN 14 HOURS OF THE END OF A STORM EVENT OF ½ INCH OR GREATER. DAMAGES OR INEFFECTIVE DEVICES SHALL BE REPAIRED OR REPLACED, AS NECESSARY.
3. PROVIDE SILT FENCE AND/OR OTHER CONTROL DEVICES, AS MAY BE REQUIRED, TO CONTROL SOIL EROSION DURING UTILITY CONSTRUCTION. ALL DISTURBED AREAS SHALL BE CLEANED, GRADED, AND STABILIZED WITH GRASSING IMMEDIATELY AFTER UTILITY INSTALLATION.
4. ALL EROSION CONTROL DEVICES SHALL BE PROPERLY MAINTAINED DURING ALL PHASES OF CONSTRUCTION UNTIL THE COMPLETION OF ALL CONSTRUCTION ACTIVITIES AND ALL DISTURBED AREAS HAVE BEEN STABILIZED. ADDITIONAL CONTROL DEVICES MAY BE REQUIRED DURING CONSTRUCTION IN ORDER TO CONTROL EROSION AND/OR OFFSITE SEDIMENTATION. ALL TEMPORARY CONTROL DEVICES SHALL BE REMOVED ONCE CONSTRUCTION IS COMPLETE AND THE SITE IS STABILIZED.
5. THE CONTRACTOR MUST TAKE NECESSARY ACTION TO MINIMIZE THE TRACKING OF MUD ONTO THE PAVED ROADWAY CONSTRUCTION AREAS. THE CONTRACTOR SHALL DAILY REMOVE MUD/SOIL FROM THE PAVEMENT AS MAY BE REQUIRED.
6. RESIDENTIAL SUBDIVISIONS REQUIRE EROSION CONTROL FEATURES FOR INFRASTRUCTURE AS WELL AS FOR THE INDIVIDUAL LOT CONSTRUCTION. INDIVIDUAL PROPERTY OWNERS SHALL FOLLOW THESE PLANS DURING CONSTRUCTION OR PROVIDE AN INDIVIDUAL PLAN IN ACCORDANCE WITH SC R.72-300 ET. SEQ. AND SCR 1000000.
7. TEMPORARY DIVERSION BERMS AND/OR DITCHES WILL BE PROVIDED AS NEEDED DURING CONSTRUCTION TO PROTECT WORK AREAS FROM UPSLOPE RUNOFF AND/OR TO DIVERT SEDIMENT LADEN WATER TO APPROPRIATE TRAPS OR STABLE OUTLETS.

GRADING NOTES:

1. PRIOR TO WORK COMMENCEMENT, CONTRACTOR IS TO CONTACT LOCAL "CALL DIG" SERVICES FOR LOCATION OF ALL UNDERGROUND UTILITIES. CONTRACTOR SHALL COORDINATE WITH ALL UTILITIES PRIOR TO COMMENCEMENT OF WORK, WHICH INCLUDES, BUT NOT LIMITED TO, RELOCATION OF UTILITIES ALONG ROADWAYS AND OFFSITE IMPROVEMENTS IN ORDER TO DELIVER THE PROJECT.
2. REFER TO THE GEOTECHNICAL REPORT FOR INFORMATION ON EXISTING SOIL CONDITIONS.
3. CONTRACTOR IS TO REMOVE ALL MATERIALS DEEMED UNSUITABLE BY THE OWNER AND/OR ENGINEER.
4. POSITIVE DRAINAGE AWAY FROM ALL BUILDINGS SHALL BE MAINTAINED AT ALL TIMES.
5. CONTRACTOR SHALL VALIDATE AND ACCEPT TOPOGRAPHIC INFORMATION PROVIDED PRIOR TO COMMENCEMENT OF WORK. ANY DEVIATIONS SHALL BE SUBMITTED TO THE ENGINEER AND OWNER.
6. CONTRACTOR TO PROVIDE CLEAN PAVEMENT AND CURB EDGES, VIA SAW CUTTING OR OTHER METHODS, IF WORK IS WITHIN EXISTING PAVEMENT AREAS.
7. REFER TO ARCHITECTURAL PLANS AND SPECIFICATIONS FOR ALL STRUCTURAL FOUNDATIONS, SLABS AND EARTHEN BUILDING PADS.
8. EXISTING AND REMAINING FACILITIES, WHETHER ON THE PROPERTY OR ON ADJACENT PROPERTIES, SHALL BE MAINTAINED IN THEIR ORIGINAL CONDITIONS. IF DISTURBED, THESE STRUCTURES SHALL BE RESTORED TO THEIR ORIGINAL CONDITION.
9. ALL DISTURBED AREAS WITHOUT PERMANENT HARD SURFACES SHALL BE TREATED WITH PERMANENT STABILIZATION PER THE APPROPRIATE STATE OR LOCAL EROSION CONTROL AND DEVELOPMENT STANDARDS.
10. CONTRACTOR SHALL DELIVER THE EARTHWORK FOR THE PROJECT ON AN UNCLASSIFIED BASIS.
11. IN THE ABSENCE OF OTHER DIRECTION FROM SOURCES SUCH AS GEOTECHNICAL REPORTS, THE PLACEMENT OF FILL MATERIAL SHALL BE PER THE FOLLOWING:
    - CLEAN, GRANULAR MATERIAL AND SHALL BE VERIFIED BY THE CONTRACTOR FOR SUITABILITY BY PERFORMING A GRADATION TEST.
    - PLACED IN LIFT THICKNESS NOT TO EXCEED EIGHT INCH
    - POSSESS MOISTURE WITHIN 3% OF OPTIMUM
    - COMPACTED TO 95% MINIMUM DENSITY OF THE MAXIMUM DRY DENSITY UTILIZING THE MODIFIED PROCTOR METHOD (ASTM D-1557)
12. ALL STORM WATER SYSTEMS ARE TO BE DELIVERED TO THE OWNER CLEAN AND FREE OF DEBRIS.
13. PRIOR TO COMMENCEMENT OF CONSTRUCTION THE CONTRACTOR IS TO NOTIFY THE ENGINEER OF ANY POTENTIAL CONFLICTS BETWEEN EXISTING AND PROPOSED GRAVITY UTILITIES.
14. ANY RETAINING WALLS DEPICTED WITHIN THESE PLANS ARE TO BE DESIGNED UNDER THE DIRECTION OF THE CONTRACTOR AND ARE SHOWN FOR COORDINATION PURPOSES ONLY. THE CIVIL ENGINEER ACCEPTS NO RESPONSIBILITY FOR THESE WALL.
15. ALL PIPES SYSTEMS ARE MEASURED BETWEEN THE CENTERS OF MANHOLES.

UTILITY NOTES:

1. PRIOR TO WORK COMMENCEMENT, CONTRACTOR IS TO CONTACT LOCAL "CALL DIG" SERVICES FOR LOCATION OF ALL UNDERGROUND UTILITIES. CONTRACTOR SHALL COORDINATE WITH ALL UTILITIES PRIOR TO COMMENCEMENT OF WORK, WHICH INCLUDES, BUT NOT LIMITED TO, RELOCATION OF UTILITIES ALONG ROADWAYS AND OFFSITE IMPROVEMENTS IN ORDER TO DELIVER THE PROJECT.
2. ALL UTILITY WORK SHALL BE IN ACCORDANCE WITH GOVERNING LOCAL STANDARDS, LATEST EDITION.
3. CONTRACTOR SHALL UTILIZE SCHEDULE 40 PVC OR DUCTILE IRON PIPE FOR ALL SEWER SYSTEMS.
4. CONTRACTOR SHALL BE RESPONSIBLE FOR RECORDING ANY FINAL AS-BUILTS AND EASEMENT PLATS.
5. CONTRACTOR TO DELIVER ALL WATER AND SEWER SYSTEMS WITH A MINIMUM OF 10' HORIZONTAL AND 2' VERTICAL SEPARATIONS.
6. BUILDING CONTRACTOR IS RESPONSIBLE FOR PROVIDING ALL ELECTRICAL SERVICES TO THE BUILDING, WHICH INCLUDE, BUT NOT LIMITED TO, TRANSFORMERS, TRANSFORMER PADS, METERS, ETC...
7. CONTRACTOR SHALL COMPARE ALL CIVIL AND BUILDING PLAN SETS PRIOR TO CONSTRUCTION. THE ENGINEER AND ARCHITECT SHALL BE NOTIFIED OF ANY UTILITY DISCREPANCIES.

DEKALB COUNTY FIRE NOTES:

1. (GROUND & FLOOR SURFACES) ALONG ACCESSIBLE ROUTES AND WALKS, RAMPS STAIRS, AND CURB RAMPS, SHALL BE STABLE, FIRM & SLIP-RESISTANT.
2. CURB RAMPS SHALL COMPLY WITH 2013 ADA SECTION 406 AND BE COORDINATED BETWEEN THE PROPOSED SIDEWALKS AND EXISTING.
3. WHERE REQUIRED BY THE FIRE CODE OFFICIAL, FIRE APPARATUS ACCESS ROADS SHALL BE MARKED WITH PERMANENT "NO PARKING-FIRE LANE" SIGNS COMPLYING WITH FIGURE D103.6. SIGNS SHALL HAVE A MINIMUM DIMENSION OF 12 INCHES (305 MM) WIDE BY 18 INCHES (457 MM) HIGH AND HAVE RED LETTERS ON A WHITE REFLECTIVE BACKGROUND. SIGNS SHALL BE POSTED ON ONE OR BOTH SIDES OF THE FIRE APPARATUS ROAD AS REQUIRED BY SECTION D103.6.1 OR D103.6.2.
4. PHYSICAL PROTECTION. WHERE FIRE HYDRANTS ARE SUBJECT TO IMPACT BY A MOTOR VEHICLE, GUARD POST OR OTHER APPROVED MEANS SHALL COMPLY WHT SECTION 312 VEHICLE IMPACT PROTECTION.
5. APPROVED SIGNS OR OTHER APROVED NOTICES SHALL BE PROVIDED FOR FIRE APPARATUS ACCESS ROADS TO IDENTIFY SUCH ROADS OR PROHIBIT THE OBSTRUCTION THEREOF. SIGNS OR NOTICES SHALL BE MAINTAINED IN A CLEAN AND LEGIBLE CONDITION AT ALL TIMES AND BE REPLACED OR REPAIRED WHEN NECESSARY TO PROVIDE ADEQUATE VISIBILITY.
6. DURING CONSTRUCTION AND FOR PERMANENT ACCESS, FIRE APPARATUS ACCESS ROADS SHALL BE DESIGNED, CONSTRUCTED, AND MAINTAINED OF AN ALL-WEATHER SURFACE CAPABLE OF SUPPORTING THE IMPOSED LOAD OF FIRE APPARATUS WEIGHING AT LEAST 75,000 POUNDS.

DEKALB COUNTY BACKFLOW PREVENTION NOTES

1. ALL REQUIRED BACKFLOW PREVENTION DEVICES MUST BE INSTALLED PER DCDWM STANDARDS AS CLOSE AS PRACTICAL TO THE PROPERTY LINE, OUTSIDE OF PUBLIC R.O.W., OUTSIDE OF DEKALB COUNTY WATER LINES EASEMENTS, WATER METER EASEMENTS, WATER METER EASEMENTS AND ANY OTHER DEKALB COUNTY & UTILITY COMPANIES EASEMENTS.
2. INSTALLATION OF BACKFLOW PREVENTION DEVICES INSIDE OF THE BUILDING IS NOT ALLOWED WITHOUT PRIOR APPROVAL FROM BACKFLOW PREVENTION DIVISION OF DCDWM.
3. CALL (404)-687-4075 BACKFLOW PREVENTION INSPECTION DEPARTMENT PRIOR TO INSTALLING ANY BACKFLOW PREVENTION DEVICE.

DEKALB COUNTY WATER + SEWER NOTES

1. ALL DESIGN AND CONSTRUCTION FOR WATER, SEWER, FIRE LINES, LIFT STATIONS, & BACK-FLOW PREVENTION SHALL COMPLY WITH DEKALB COUNTY DEPARTMENT OF WATERSHED MANAGEMENT DESIGN STANDARDS 2009 EDITION, VERSION 1.0. ACTUAL FIELD CONDITIONS MAY DICTATE MORE STRINGENT REQUIREMENTS IF DEEMED NECESSARY BY THE CONSTRUCTION INSPECTOR.
2. DEVELOPER SHALL PROVIDE RECORD DRAWINGS, "AS BUILT PLANS", AND "FINAL PLATS" (IF APPLICABLE) IN HARD COPY AND ELECTRONIC FORMAT, AS WELL AS RECORD ALL EASEMENTS THAT WILL BE DEDICATED TO DEKALB COUNTY IN THE COURTHOUSE PRIOR TO APPROVAL OF AS-BUILT PLANS.
3. F.O.G. COMPLIANCE (GREASE TRAP) REVIEW AND APPROVAL REQUIRED. 150 OR CALL (404) 687-7150 OR (404) 678-7157.
4. FIELD CHANGES DURING CONSTRUCTION MUST BE SUBMITTED FOR REVIEW AND APPROVAL BY THE COUNTY WATER AND SEWER ENGINEER BEFORE CHANGES ARE IMPLEMENTED.
5. CONTRACTOR MUST JET CLEAN T.V. SANITARY SEWER LINES AFTER CONNECTIONS ARE MADE TO THE EXISTING TIE-IN POINTS. TRACER WIRE TO BE INSTALLED FOR PVC PIPES.
6. CONTRACTOR MUST NOTIFY THE WATER & SEWER CONSTRUCTION INSPECTOR AT LEAST 72 HOURS PRIOR TO COMMENCING CONSTRUCTION ACTIVITIES. 18 (WEST) & 6 M. MCGUIRE 770-274-9024
7. THRUST BLOCKS ARE REQUIRED WHEREVER PIPE CHANGES DIRECTION (TEES, BENDS, ETC.)
8. POTABLE WATER MAINS SHALL MAINTAIN A TEN (10') FOOT HORIZONTAL AND EIGHTEEN (18") INCH VERTICAL CLEARANCE FROM NON-POTABLE PIPELINES.
9. GRAVITY SEWER LINE MATERIAL SHALL BE PVC (SDR35) DIP (CLASS 350).
10. PROVIDE EASEMENT PLAT AND DEED FOR REVIEW FOR ALL SANITARY SEWER AND WATER EASEMENTS. (AFTER CONSTRUCTION AND WITH AS-BUILTS).
11. WATER & SEWER ACCESS FEES NEED TO BE PAID UNDER THE FOLLOWING CIRCUMSTANCES: NEW CONSTRUCTION, REDEVELOPMENT, ADDITIONS, CHANGE OF USE, ETC. THESE FEES ARE TO BE PAID AT 330 W. PONCE DE LEON AVE, 2ND FLOOR. FAILURE TO SETTLE THESE FEES WILL RESULT IN DELAYS FOR OBTAINING WATER AND SEWER PLAN APPROVAL, AS WELL AS CERTIFICATE OF OCCUPANCY/COMPLETION. CALL 404-371-4918 FOR FEE CALCULATIONS FOR ANY QUESTIONS.
12. FIRE LINES, F.O.G., BACK-FLOW PREVENTION, AND LIFT STATIONS REQUIRE A SEPARATE REVIEW.
13. TO PURCHASE A COPY OF THE DESIGN STANDARDS, PLEASE CALL (770) 414-2383 OR (770) 621-7272.

SITE PLAN INFORMATION, NOTES & ASSUMPTIONS:

- GEOTECH DATA WILL BE REQUIRED TO FINALIZE PAVEMENT SPECIFICATIONS.
- ALL HARDSCAPE, BENCHES, BIKE RACKS AS REQUIRED PER CITY OF DUNWOODY PCID ARE TO BE PROVIDED. SEE LANDSCAPE ARCHITECT PLANS FOR DETAILS AND SPECS.
- CONTRACTOR SHALL BE RESPONSIBLE FOR ALL AS-BUILT SURVEYS THAT WILL BE REQUIRED TO BE SUBMITTED AT TIME OF C.O.
- CONTRACTOR RESPONSIBLE FOR OBTAINING COMPLETE COPIES OF GEOTECH AND ENVIRONMENTAL REPORTS AVAILABLE.
- ALL PUBLIC ACCESS INCLUDING PARKING AND SIDEWALKS TO BE ADA COMPLIANT.
- SIGN PACKAGE TO BE ANTICIPATED AS PART OF SCOPE FOR DEVELOPMENT MARQUEE SIGNAGE.
- TRAFFIC CONTROL DURING CONSTRUCTION WILL BE REQUIRED. ALL MEASURES TO BE PER GDOT STANDARDS.
- ALL ROADWAY PARKING STALL STRIPING TO BE STANDARD WHITE PAINT STRIPE.
- ALL SIDEWALKS TO BE CONSTRUCTED PER LANDSCAPE ARCHITECT'S HARDSCAPE DETAILS.
- CONTRACTOR WILL BE REQUIRED TO PROVIDE GARBAGE RECEPTACLES AND COMPACTORS.
- ALL CURB & GUTTER PROPOSED (ON-SITE AND OFF-SITE) SHALL BE 24" CURB & GUTTER.
- EXISTING ON-SITE SEWER, STORM, POWER, AND INGRESS/EGRESS EASEMENTS ON SITE REQUIRE ABANDONMENT PRIOR TO CONSTRUCTION.

DEMOLITION PLAN INFORMATION, NOTES & ASSUMPTIONS:

- ALL UTILITIES TO BE DEMO'D MUST BE FULLY REMOVED FROM THE SITE, THEY MAY NOT BE ABANDONED IN PLACE IN ANY WAY.
- BUILDING MAY REQUIRE ENVIRONMENTAL CLEAN-UP PER ENVIRONMENTAL REPORTS.
- CONTRACTOR WILL BE RESPONSIBLE FOR ALL TREE REMOVAL.

SITE LEGEND

- PROPERTY LINE
- EASEMENT LINE
- SETBACK LINE
- 24" CURB AND GUTTER
- FENCE
- CONCRETE
- HEAVY DUTY ASPHALT PAVEMENT
- HANDICAP ACCESSIBLE AREA
- INGRESS & EGRESS EASEMENT
- HANDICAP ACCESSIBLE STALL
- HANDICAP PARKING SIGN
- PARKING SPACE COUNT

GRADING LEGEND

- PROPERTY LINE
- EASEMENT LINE
- SETBACK LINE
- LIMITS OF CONSTRUCTION
- 24" CURB AND GUTTER
- PROPOSED FENCE
- EXISTING CONTOUR
- PROPOSED CONTOUR
- STORM PIPE
- CONCRETE
- HEAVY DUTY ASPHALT PAVEMENT
- GRAVEL

UTILITY LEGEND

- PROPERTY LINE
- EASEMENT LINE
- SETBACK LINE
- LIMITS OF CONSTRUCTION
- 24" CURB AND GUTTER
- PROPOSED FENCE
- UNDERGROUND ELECTRICAL
- UNDERGROUND GAS
- WATER
- SANITARY SEWER
- CONCRETE
- PAVEMENT
- GRAVEL

UTILITY PLAN INFORMATION, NOTES & ASSUMPTIONS:

- SIZE AND MATERIAL OF EXISTING WATER MAIN ALONG ASHFORD DUNWOODY ROAD AND MEADOW LANE ROAD NOT PROVIDED ON SURVEY. PROPOSED WATER MAIN TRAVERSING THROUGH THE SITE SHALL BE OF AN EQUIVALENT SIZE AND MATERIAL AS THE EXISTING WATER MAIN.
- EXACT LOCATION OF EXISTING ELECTRICAL, TELECOM, AND GAS CONNECTIONS REQUIRES VERIFICATION.
- EXACT LOCATION OF EXISTING WATER MAIN ON THE SOUTH SIDE OF MEADOW LANE ROAD REQUIRES VERIFICATION FOR TIE-IN TO WATER LOOP ON-SITE.
- ALL ELECTRICAL ROUTING (MARKED -UGE-) REPRESENTS (3) 4" PVC CONDUITS, UNLESS NOTED OTHERWISE.
- ALL TELECOM ROUTING (MARKED -UGT-) REPRESENTS (2) 4" PVC CONDUITS, UNLESS NOTED OTHERWISE.
- ELECTRICAL LINES ARE ASSUMED TO HAVE 3' OF COVER.
- CONTRACTOR IS TO REMOVE AND REPLACE THE EXISTING STREET LIGHTING PER NEW STREETSCAPE REQUIREMENTS. EXISTING ELECTRICAL ROUTING SYSTEMS INSTALLED UNDERGROUND SERVICING EXISTING LIGHTING IS TO BE REUSED.
- ALL DOMESTIC WATER SERVICE LINES TO HAVE WATER METER AND BACKFLOW PREVENTER AT EDGE OF PUBLIC RIGHT-OF-WAY WHENEVER POSSIBLE.
- GAS LINES DESIGNED TO BE 2" IN SIZE.
- ALL UTILITY BUILDING CONNECTIONS ARE STILL APPROXIMATE IN NATURE.
- CONTRACTOR RESPONSIBLE FOR ALL 4" PVC CONDUITS FOR SECONDARY RUNS FROM TRANSFORMER TO POWER DISCONNECT TROUGHS ON BUILDINGS, AND 4" PVC TELECOM CONDUITS.
- ALL LIGHTING TO BE PROVIDED BY CONTRACTOR IN FULL.
- ALL FDC CONNECTIONS ASSUMED TO BE MOUNTED ON BUILDING EXTERIORS AND WILL BE REQUIRED TO HAVE A HYDRANT WITHIN 150 FEET.
- DUMPSTER DRAINS TO BE PROVIDED AND CONNECT TO NEAREST SANITARY SEWER STRUCTURE.

GEORGIA UNIFORM CODING SYSTEM
FOR SOIL EROSION AND SEDIMENT CONTROL PRACTICES
GEORGIA SOIL AND WATER CONSERVATION COMMISSION

STRUCTURAL PRACTICES

CODE	PRACTICE	DETAIL	MAP SYMBOL	DESCRIPTION
Cd	CHECKDAM			A small temporary barrier or dam constructed across a swale, drainage ditch or area of concentrated flow.
Ch	CHANNEL STABILIZATION			Improving, constructing or stabilizing an open channel, existing stream, or ditch.
Co	CONSTRUCTION EXIT			A crushed stone pad located at the construction site exit to provide a place for removing mud from tires thereby protecting public streets.
Cr	CONSTRUCTION ROAD STABILIZATION			A travelway constructed as part of a construction plan including access roads, subdivision roads, parking areas and other on-site vehicle transportation routes.
Dc	STREAM DIVERSION CHANNEL			A temporary channel constructed to convey flow around a construction site while a permanent structure is being constructed.
Di	DIVERSION			An earth channel or dike located above, below or across a slope to divert runoff. This may be a temporary or permanent structure.
Dn1	TEMPORARY DOWNDRAIN STRUCTURE			A flexible conduit of heavy-duty fabric or other material designed to safely conduct surface runoff down a slope. This is temporary and inexpensive.
Dn2	PERMANENT DOWNDRAIN STRUCTURE			A paved chute, pipe, sectional conduit or similar material designed to safely conduct surface runoff down a slope.
Fr	FILTER RING			A temporary stone barrier constructed at storm drain inlets and pond outlets.
Ga	GABION			Rock filter baskets which are hand-placed into position forming soil stabilizing structures.
Gr	GRADE STABILIZATION STRUCTURE			Permanent structures installed to protect channels or waterways where otherwise the slope would be sufficient for the running water to form gullies.
Lv	LEVEL SPREADER			A structure to convert concentrated flow of water into less erosive sheet flow. This should be constructed only on undisturbed soils.
Rd	ROCK FILTER DAM			A permanent or temporary stone filter dam installed across small streams or drainageways.
Re	RETAINING WALL			A wall installed to stabilize cut and fill slopes where maximum permissible slopes are not obtainable. Each situation will require special design.
Rt	RETRO FITTING			A device or structure placed in front of a permanent stormwater detention pond outlet structure to serve as a temporary sediment filter.
Sd1	SEDIMENT BARRIER			A barrier to prevent sediment from leaving the construction site. It may be sandbags, bales of straw or hay, brush, logs and poles, gravel, or a silt fence.
Sd2	INLET SEDIMENT TRAP			An impounding area created by excavating around a storm drain drop inlet. The excavated area will be filled and stabilized on completion of construction activities.
Sd3	TEMPORARY SEDIMENT BASIN			A basin created by excavation or a dam across a waterway. The surface water runoff is temporarily stored allowing the bulk of the sediment to drop out.
Sd4	TEMPORARY SEDIMENT TRAP			A small temporary pond that drains a disturbed area so that sediment can settle out. The principle feature distinguishing a temporary sediment trap from a temporary sediment basin is the lack of a pipe or riser.
Sk	FLOATING SURFACE SKIMMER			A buoyant device that releases/drains water from the surface of sediment ponds, traps, or basins at a controlled rate of flow.
Spb	SEEP BERM			Linear control device constructed as a diversion perpendicular to the direction of runoff to enhance dissipation and infiltration, while creating multiple sedimentation chambers with the employment of intermediate dikes.

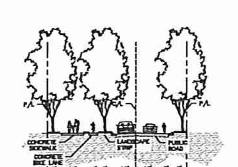
STRUCTURAL PRACTICES

CODE	PRACTICE	DETAIL	MAP SYMBOL	DESCRIPTION
Sr	TEMPORARY STREAM CROSSING			A temporary bridge or culvert-type structure protecting a stream or watercourse from damage by crossing construction equipment.
St	STORMDRAIN OUTLET PROTECTION			A paved or short section of riprap channel at the outlet of a storm drain system preventing erosion from the concentrated runoff.
Su	SURFACE ROUGHENING			A rough soil surface with horizontal depressions on a contour or slopes left in a roughened condition after grading.
Tc	TURBIDITY CURTAIN			A floating or staked barrier installed within the water (it may also be referred to as a floating boom, silt barrier, or silt curtain).
Tp	TOPSOILING			The practice of stripping off the more fertile soil, storing it, then spreading it over the disturbed area after completion of construction activities.
Tr	TREE PROTECTION			To protect desirable trees from injury during construction activity.
Wt	VEGETATED WATERWAY OR STORMWATER CONVEYANCE CHANNEL			Paved or vegetative water outlets for diversions, terraces, berms, dikes or similar structures.

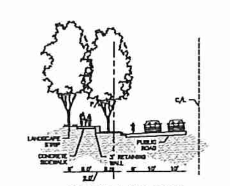
VEGETATIVE PRACTICES

CODE	PRACTICE	DETAIL	MAP SYMBOL	DESCRIPTION
Bf	BUFFER ZONE			Strip of undisturbed original vegetation, enhanced or restored existing vegetation or the reestablishment of vegetation surrounding an area of disturbance or bordering streams.
Cs	COASTAL DUNE STABILIZATION (WITH VEGETATION)		Cs	Planting vegetation on dunes that are denuded, artificially constructed, or re-nourished.
Ds1	DISTURBED AREA STABILIZATION (WITH MULCHING ONLY)		Ds1	Establishing temporary protection for disturbed areas where seedings may not have a suitable growing season to produce an erosion retarding cover.
Ds2	DISTURBED AREA STABILIZATION (WITH TEMP SEEDING)		Ds2	Establishing a temporary vegetative cover with fast growing seedings on disturbed areas.
Ds3	DISTURBED AREA STABILIZATION (WITH PERM SEEDING)		Ds3	Establishing a permanent vegetative cover such as trees, shrubs, vines, grasses, or legumes on disturbed areas.
Ds4	DISTURBED AREA STABILIZATION (SODDING)		Ds4	A permanent vegetative cover using sods on highly erodable or critically eroded lands.
Du	DUST CONTROL ON DISTURBED AREAS		Du	Controlling surface and air movement of dust on construction site, roadways and similar sites.
Fl-Co	FLOCCULANTS AND COAGULANTS		Fl-Co	Substance formulated to assist in the solids/liquid separation of suspended particles in solution.
Sb	STREAMBANK STABILIZATION (USING PERM VEGETATION)		Sb	The use of readily available native plant materials to maintain and enhance streambanks, or to prevent, or restore and repair small streambank erosion problems.
Ss	SLOPE STABILIZATION		Ss	A protective covering used to prevent erosion and establish temporary or permanent vegetation on steep slopes, shore lines, or channels.
Tac	TACKIFIERS AND BINDERS		Tac	Substance used to anchor straw or hay mulch by causing the organic material to bind together.

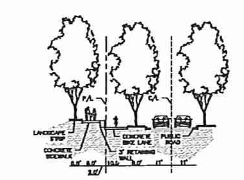
GaSWCC (Amended - 2013)



UNNAMED ROAD CROSS SECTION



MEADOW LANE ROAD CROSS SECTION



ASHFORD DUNWOODY ROAD CROSS SECTION

STREET SECTION NOTES:

- ALL SIDEWALKS CROSSING ROADWAY TO HAVE CROSS WALK STRIPING.
- ALL RETAINING WALLS TO BE POURED-IN-PLACE WITH TEXTURED CONCRETE.
- ALL RETAINING WALLS TO HAVE HANDRAILS ALONG ROADWAY FRONTAGES.

GEORGIA REGISTERED No. 030800 PROFESSIONAL ENGINEER AARON T. CRUMP
GSWCC LEVEL II CERTIFICATION NO. 14184 EXPIRES 7/21/2021
09/18/18

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BRANCH PROPERTIES, LLC
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ATLANTA, GA 30326
(404) 832 - 8900

BRANCH PROPERTIES, LLC
ASHWOOD CENTER

ISSUED FOR: PRICING PLANS
JURISDICTION: CITY OF DUNWOODY
LOCATION: 500 ASHWOOD PARKWAY ATLANTA, GA 30338

#	DATE	REVISIONS

DRAWN:	CHECK:
KH	RTC
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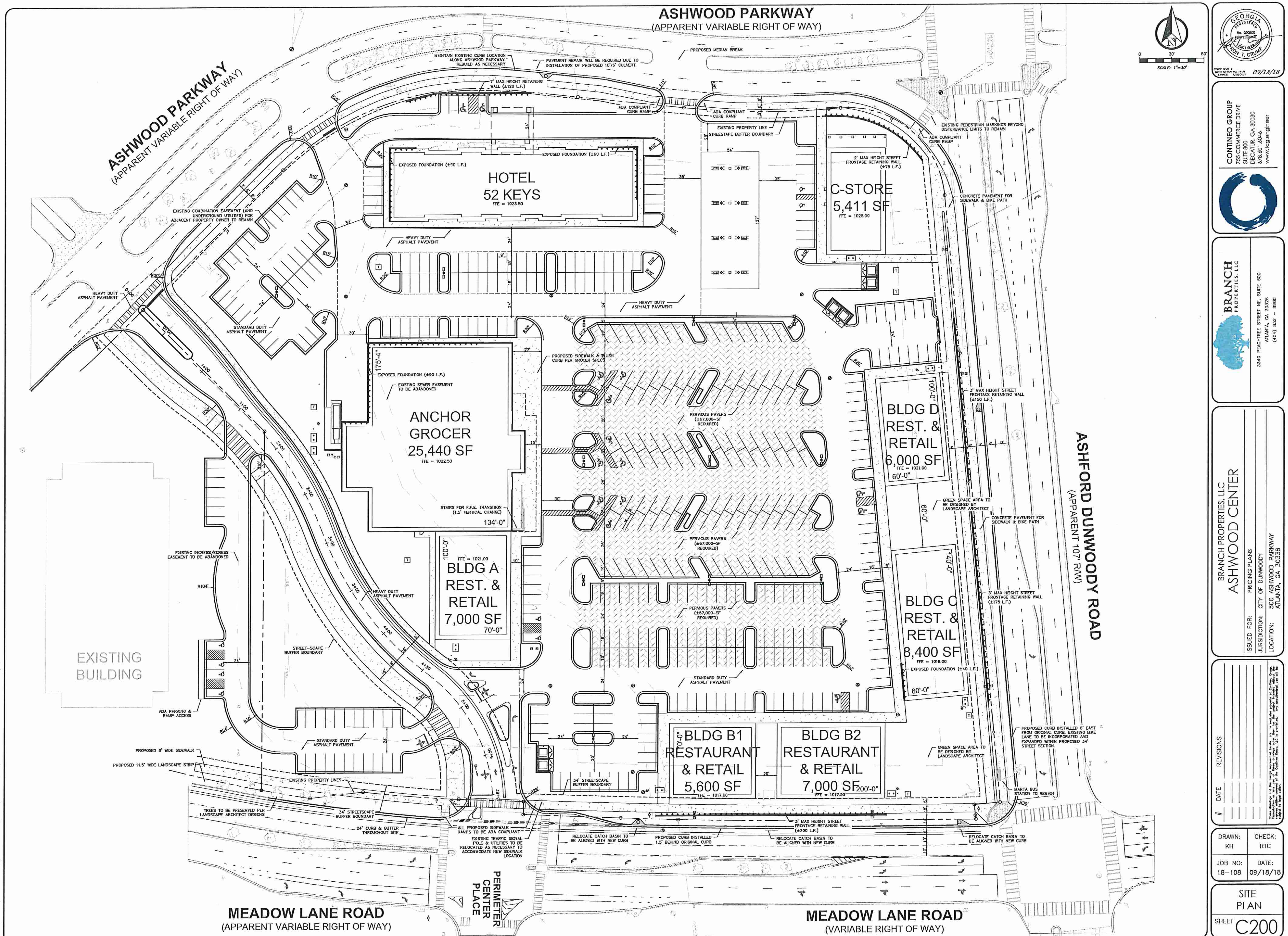
18-108	09/18/18

NOTES & ASSUMPTIONS
SHEET C101


ASHWOOD PARKWAY
(APPARENT VARIABLE RIGHT OF WAY)
ASHWOOD PARKWAY
(APPARENT VARIABLE RIGHT OF WAY)
HOTEL
52 KEYS
FFE = 1023.50
C-STORE
5,411 SF
FFE = 1023.00
ANCHOR
GROCER
25,440 SF
FFE = 1022.50
BLDG A
REST. & RETAIL
7,000 SF
FFE = 1021.00
BLDG D
REST. & RETAIL
6,000 SF
FFE = 1021.00
BLDG C
REST. & RETAIL
8,400 SF
FFE = 1019.00
BLDG B1
RESTAURANT
& RETAIL
5,600 SF
FFE = 1017.00
BLDG B2
RESTAURANT
& RETAIL
7,000 SF
FFE = 1017.50
EXISTING BUILDING
ASHFORD DUNWOODY ROAD
(APPARENT 107' R/W)
MEADOW LANE ROAD
(APPARENT VARIABLE RIGHT OF WAY)
PERIMETER CENTER PLACE
MEADOW LANE ROAD
(VARIABLE RIGHT OF WAY)
PROPOSED MEDIAN BREAK
PERVIOUS PAVERS
HEAVY DUTY ASPHALT PAVEMENT
STANDARD DUTY ASPHALT PAVEMENT
SCALE: 1"=30'
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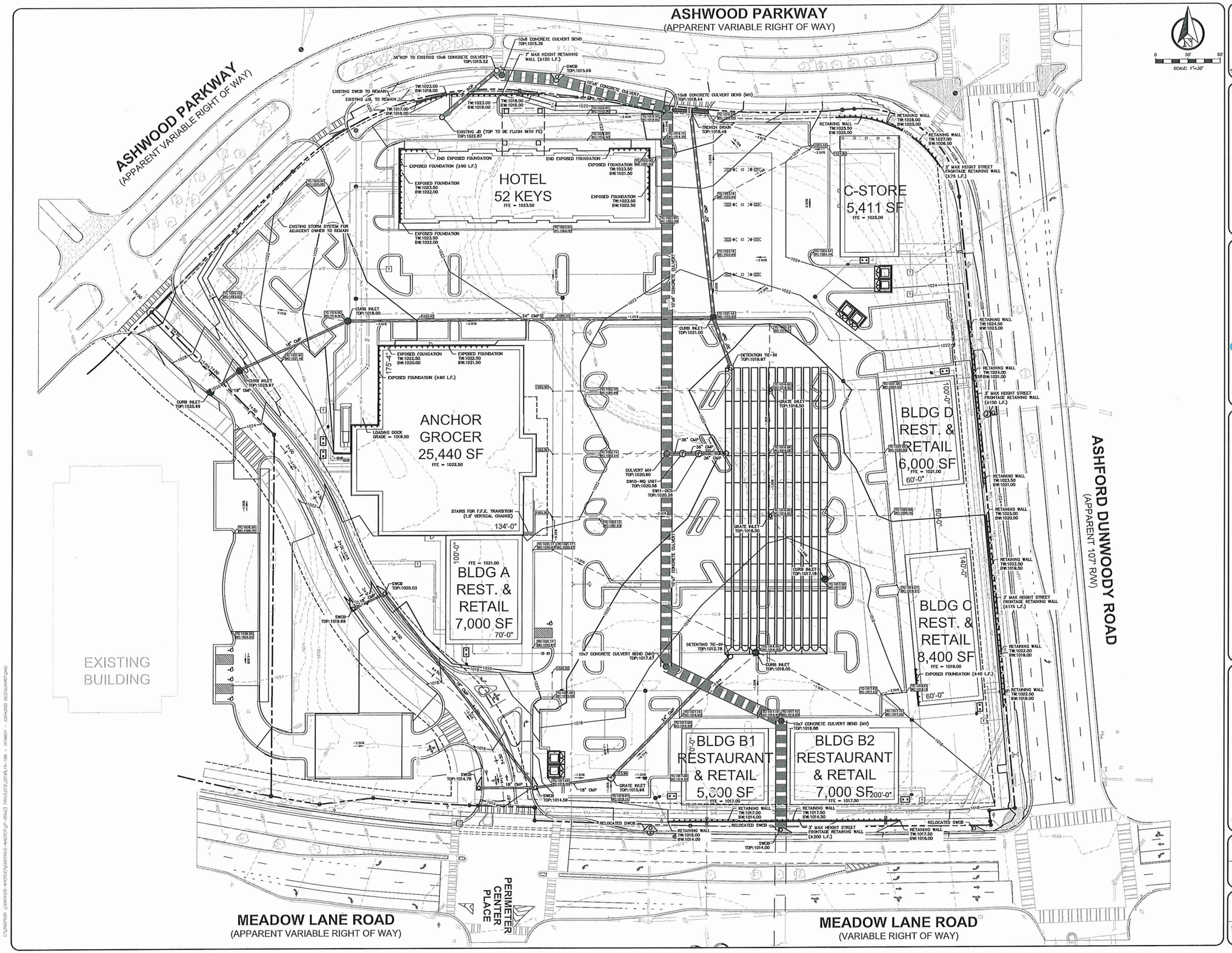
SITE PLAN
SHEET C200



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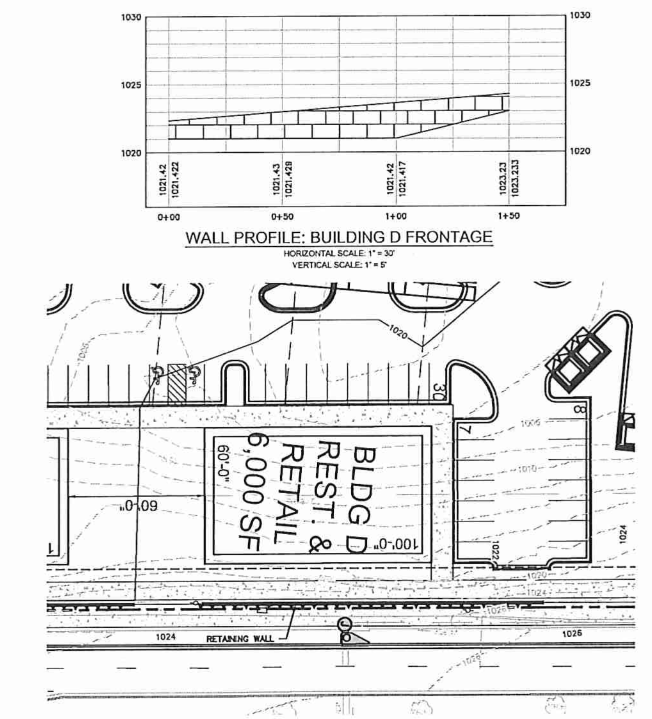
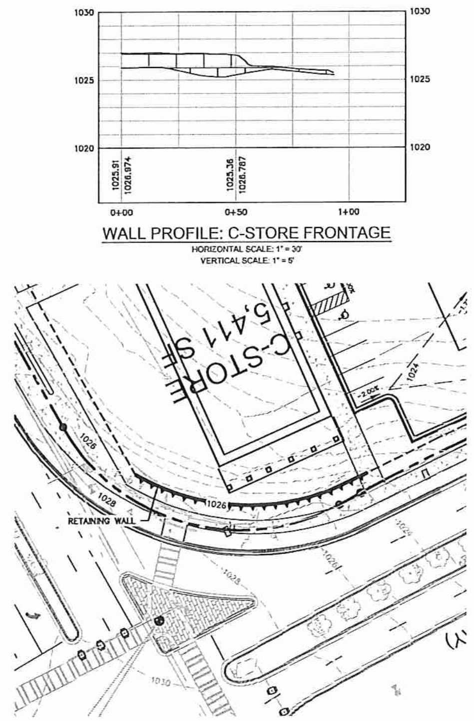
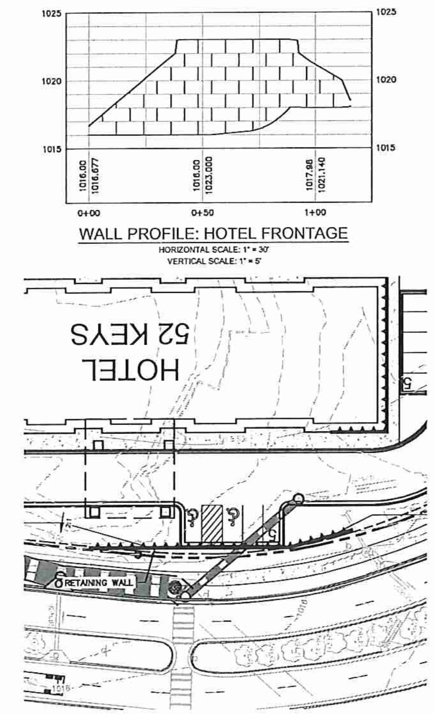
GRADING PLAN
SHEET C300



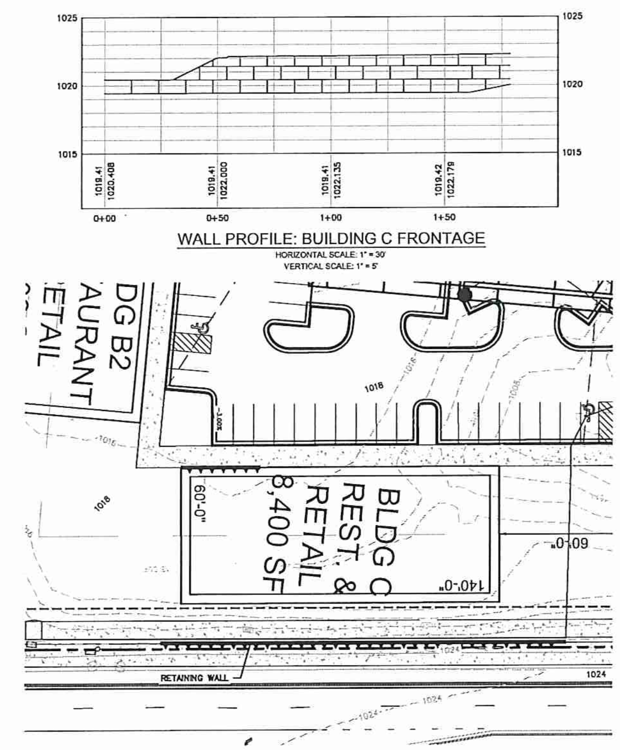
WALL PROFILE: BUILDING D FRONTAGE
HORIZONTAL SCALE: 1" = 30'
VERTICAL SCALE: 1" = 5'



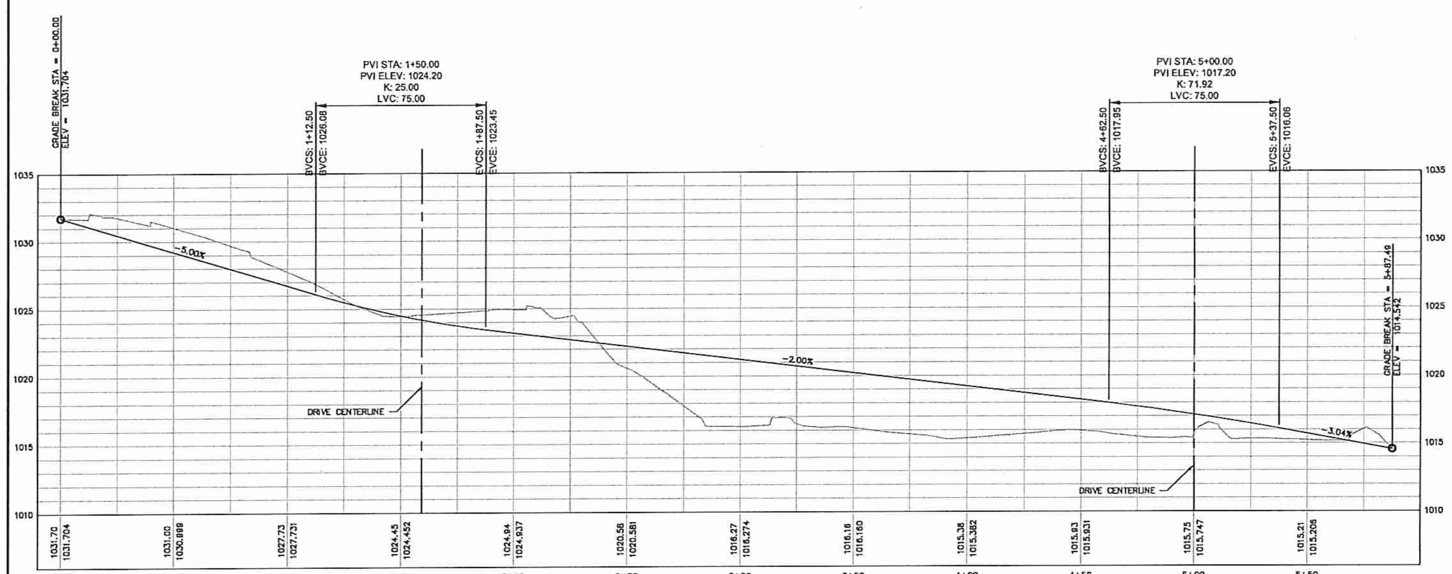
WALL PROFILE: C-STORE FRONTAGE
HORIZONTAL SCALE: 1" = 30'
VERTICAL SCALE: 1" = 5'



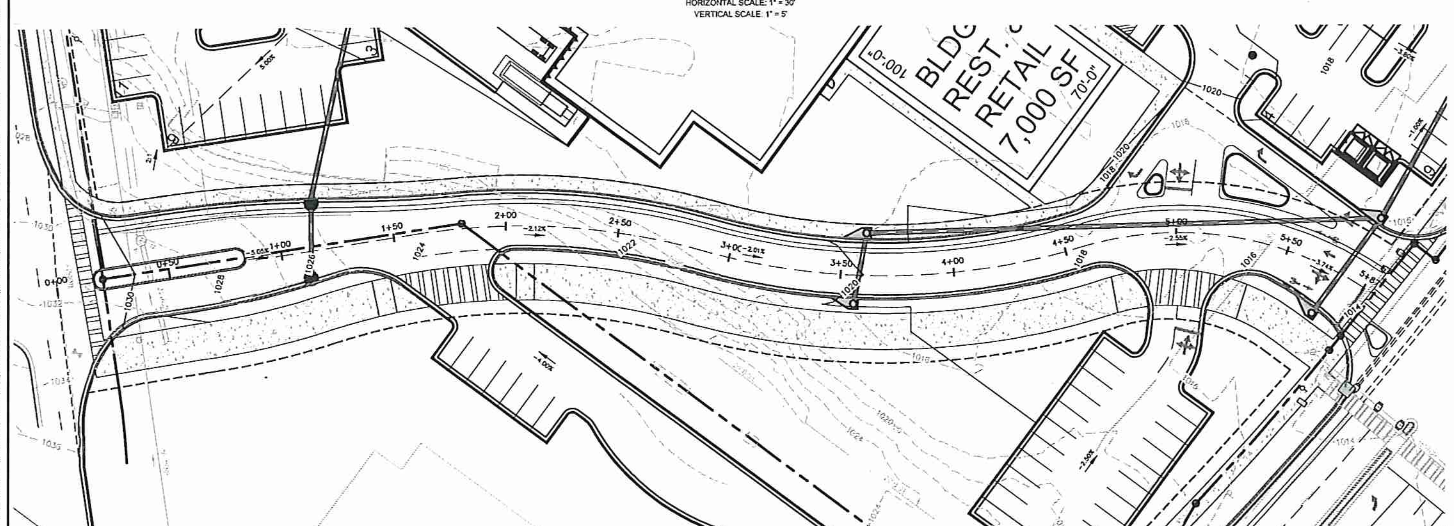
WALL PROFILE: HOTEL FRONTAGE
HORIZONTAL SCALE: 1" = 30'
VERTICAL SCALE: 1" = 5'

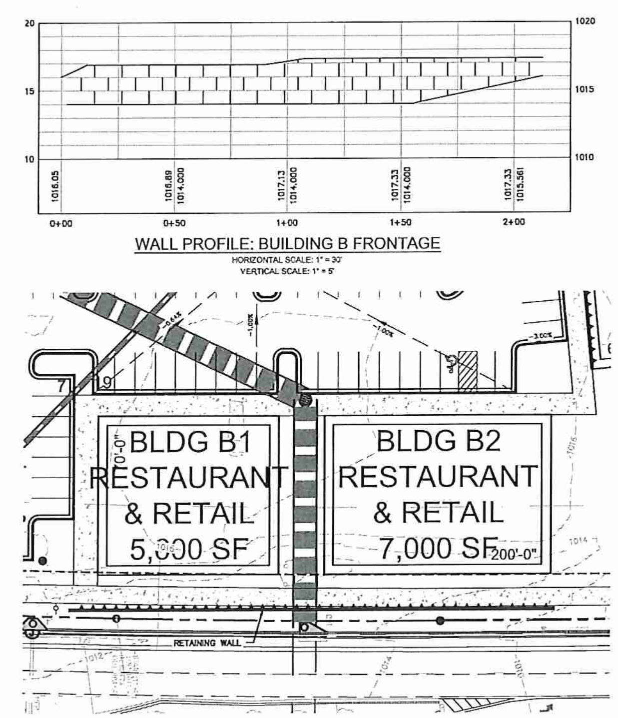


WALL PROFILE: BUILDING C FRONTAGE
HORIZONTAL SCALE: 1" = 30'
VERTICAL SCALE: 1" = 5'



ROAD PROFILE: MEADOW LANE RD TO ASHWOOD PKWY
HORIZONTAL SCALE: 1" = 30'
VERTICAL SCALE: 1" = 5'





WALL PROFILE: BUILDING B FRONTAGE
HORIZONTAL SCALE: 1" = 30'
VERTICAL SCALE: 1" = 5'

RETAINING WALL NOTE:

- ALL RETAINING WALLS A RE TO HAVE GDOT HANDRAILS RUNNING THE ENTIRE LENGTH OF THE TOP-OF-WALL.

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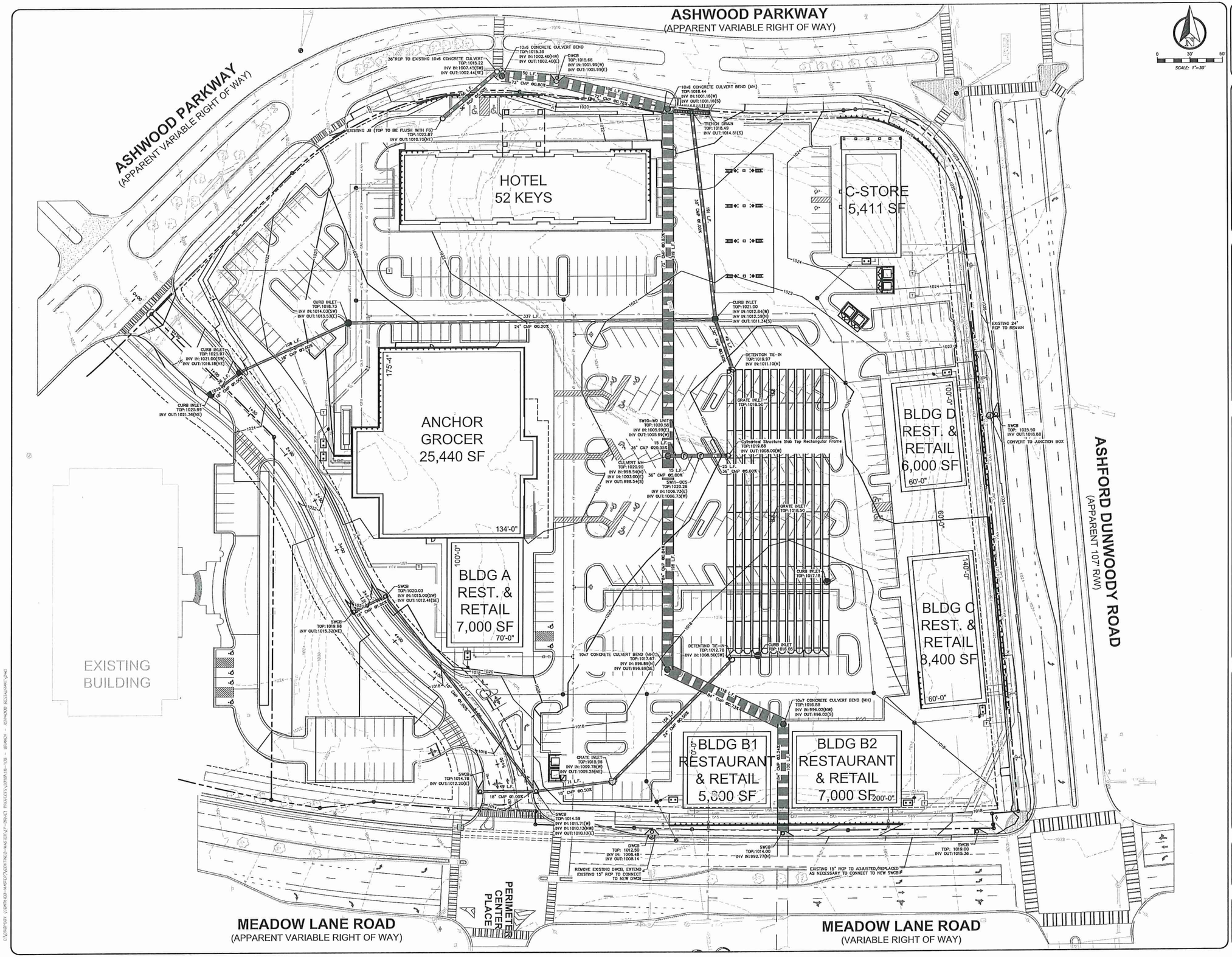
ROAD PROFILE & WALL PROFILES

SHEET C301



GEORGIA REGISTERED
No. 033809
PROFESSIONAL ENGINEER
AARON T. CRUMP
09/18/18

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BRANCH PROPERTIES, LLC
ASHWOOD CENTER

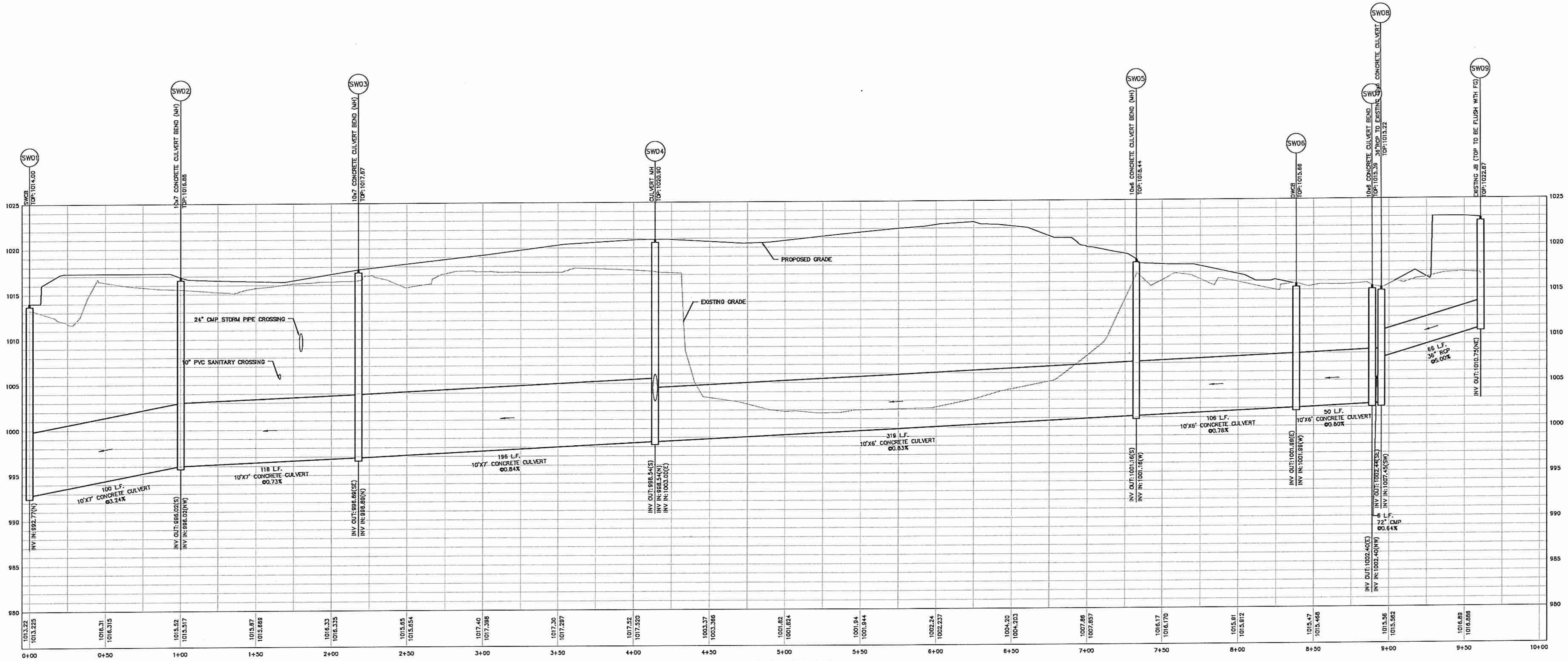
ISSUED FOR: PRICING PLANS
JURISDICTION: CITY OF DUNWOODY
LOCATION: 500 ASHWOOD PARKWAY
ATLANTA, GA 30338

#	DATE	REVISIONS

DRAWN:	CHECK:
KH	RTC
JOB NO:	DATE:
18-108	09/18/18

DRAINAGE PLAN

SHEET C400



STORM PROFILE: S01-S09

HORIZONTAL SCALE: 1" = 30'

VERTICAL SCALE: 1" = 5'

GEORGIA REGISTERED PROFESSIONAL ENGINEER – RON T. CRUMP – 09/18/18

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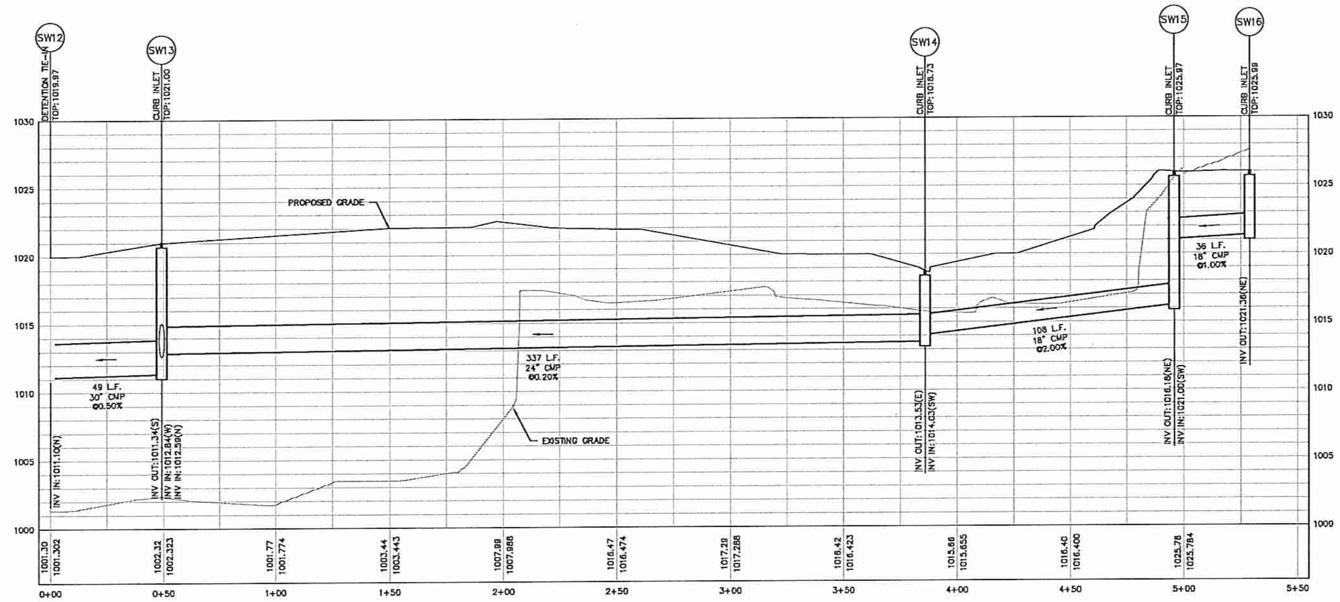
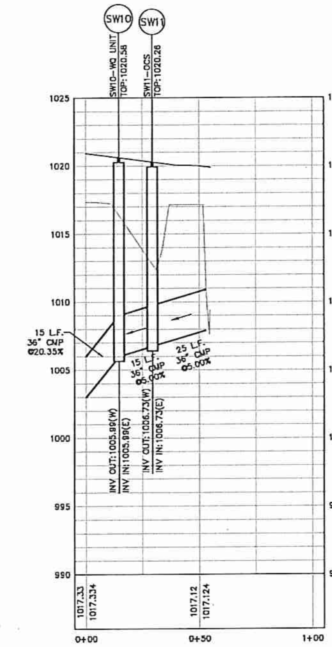
STORM PROFILES

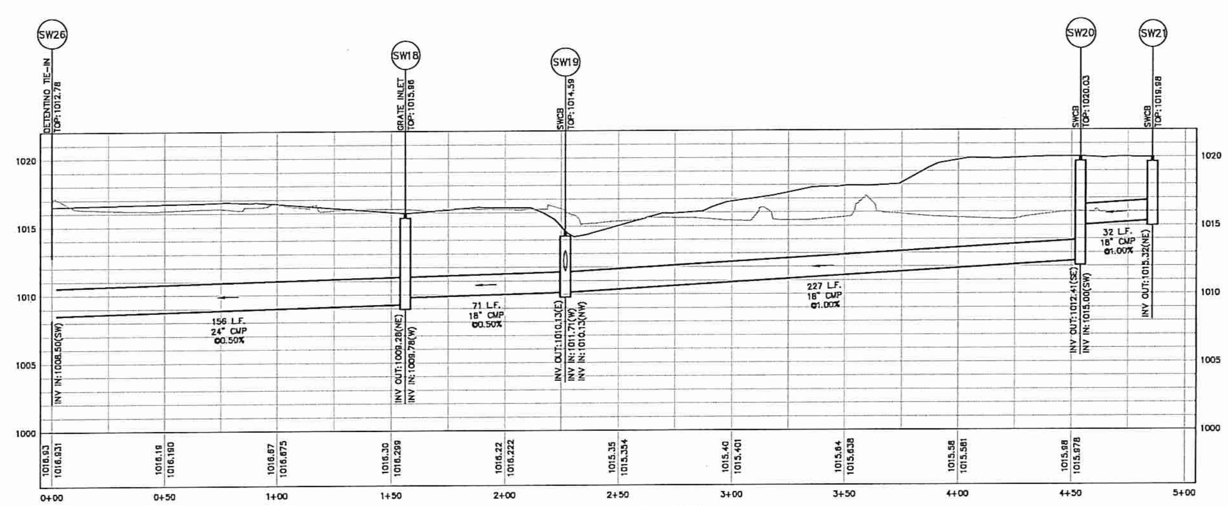
SHEET C401



STORM PROFILE: S12-S16
HORIZONTAL SCALE: 1" = 30'
VERTICAL SCALE: 1" = 5'



STORM PROFILE: S10-S11
HORIZONTAL SCALE: 1" = 30'
VERTICAL SCALE: 1" = 5'



STORM PROFILE: S26-S21
HORIZONTAL SCALE: 1" = 30'
VERTICAL SCALE: 1" = 5'

LineNo.	LineID	LineSize	LineLength	LineSlope	LineType	CapacityFull	TotalRunoff (25-yr)	TotalRunoff (100-yr	VelAve (25-yr)	VelAve (100-yr)	TotalArea	DnStrmLine No.	InvertDn	CoverDn	HGLDn (25-yr)	HGLDn (100-yr)	EGLDn (25-yr)	EGLDn (100-yr)
		(in)	(ft)	(%)		(cfs)	(cfs)	(cfs)	(ft/s)	(ft/s)	(ac)		(ft)	(ft)	(ft)	(ft)	(ft)	(ft)
1	SW13-SW12	30	49.39	0.99	Cir	44.26	27.17	35.52	7.19	8.82	3.92	Outfall	1012.1	5.37	1013.92	1013.92	1014.75	1015.01
2	SW14-SW13	24	337	1	Cir	24.5	14.9	19.32	5.72	6.7	2.04	1	1012.59	6.42	1014.37	1014.61	1015	1015.2
3	SW15-SW14	18	107.539	4.69	Cir	24.63	1.84	2.34	2.27	2.53	0.23	2	1015.96	2.5	1017.35	1017.54	1017.54	1017.57
4	SW16-SW15	18	35.548	1.01	Cir	11.45	1.26	1.59	2.74	2.93	0.15	3	1021	3.47	1021.51	1021.58	1021.66	1021.75
5	SW23-SW13	18	191.374	1	Cir	11.39	8.54	10.81	5.41	6.12	1.02	1	1012.59	6.92	1014.37	1014.61	1014.73	1015.19
6	SW18-SW26	24	156.193	1	Cir	24.49	10.85	14.33	5.14	6.22	1.68	Outfall	1009.44	1.34	1010.83	1010.83	1011.32	1011.45
7	SW19-SW18	18	70.625	1.01	Cir	11.41	8.14	10.75	5.65	6.59	1.25	6	1011	3.46	1012.18	1012.36	1012.71	1013.08
8	SW20-SW19	18	227.153	1.45	Cir	13.69	1.84	2.36	2.39	2.62	0.24	7	1011.71	1.38	1012.82	1012.97	1013	1013.18
9	SW21-SW20	18	31.729	1.01	Cir	11.42	0.59	0.74	1.81	1.93	0.07	8	1015	3.53	1015.51	1015.58	1015.61	1015.69
10	SW22-SW19	18	48.794	1	Cir	11.4	6.28	7.95	4.86	5.4	0.75	7	1011.71	1.38	1012.82	1012.97	1013.24	1013.49
11	SW10-SW04	36	14.701	20.34	Cir	325.84	83.89	106.21	11.87	15.03	10.05		1003	14.9	1119.73	1230.49	1121.93	1234.01
12	SW11-SW10	36	14.839	4.99	Cir	161.34	84	106.32	11.88	15.04	10.05	11	1005.99	11.59	1120.26	1231.34	1122.46	1234.86
13	UG-SW11	36	25.33	5.01	Cir	161.78	84.18	106.5	11.91	15.07	10.05	12	1006.73	10.53	1120.79	1232.19	1123	1235.72

LineNo.	LineID	LineSize	LineLength	LineSlope	InletID	NorthingY	EastingX	DrainageArea	RunoffCoeff	IncrQ (25-yr)	IncrQ (100-yr)	Grnd/RimElev Up	InvertUp	CoverUp	HGLUp (25-yr)	HGLUp (100-yr)	EGLUp (25-yr)	EGLUp (100-yr)
		(in)	(ft)	(%)		(ft)	(ft)	(ac)	(C)	(cfs)	(cfs)	(ft)	(ft)	(ft)	(ft)	(ft)	(ft)	(ft)
1	SW13-SW12	30	49.39	0.99	SW13	1430701.41	2244449.05	0.86	0.95	7.2	9.11	1021.01	1012.59	5.92	1014.37	1014.61	1015.19	1015.7
2	SW14-SW13	24	337	1	SW14	1430700.36	2244112.05	1.81	0.95	15.16	19.18	1019.96	1015.96	2	1017.35	1017.54	1017.99	1018.36
3	SW15-SW14	18	107.539	4.69	SW15	1430656.54	2244013.85	0.08	0.95	0.67	0.85	1025.97	1021	3.47	1021.51	1021.58	1021.7	1021.79
4	SW16-SW15	18	35.548	1.01	SW16	1430635.38	2243985.28	0.15	0.95	1.26	1.59	1026	1021.36	3.14	1021.78	1021.83	1021.93	1022.01
5	SW23-SW13	18	191.374	1	SW23	1430891.39	2244426	1.02	0.95	8.54	10.81	1018.49	1014.51	2.48	1015.64	1016.34	1016.2	1016.92
6	SW18-SW26	24	156.193	1	SW18	1430277.41	2244356.05	0.43	0.95	3.6	4.56	1015.96	1011	2.96	1012.18	1012.36	1012.67	1012.98
7	SW19-SW18	18	70.625	1.01	SW19	1430268.56	2244285.98	0.26	0.95	2.18	2.76	1014.59	1011.71	1.38	1012.82	1012.97	1013.35	1013.69
8	SW20-SW19	18	227.153	1.45	SW20	1430447.81	2244146.45	0.17	0.95	1.42	1.8	1020.03	1015	3.53	1015.51	1015.58	1015.7	1015.8
9	SW21-SW20	18	31.729	1.01	SW21	1430434.04	2244117.87	0.07	0.95	0.59	0.74	1019.98	1015.32	3.16	1015.6	1015.64	1015.7	1015.75
10	SW22-SW19	18	48.794	1	SW22	1430268.17	2244237.19	0.75	0.95	6.28	7.95	1014.78	1012.2	1.08	1013.17	1013.29	1013.59	1013.81
11	SW10-SW04	36	14.701	20.34	SW10	1430575.91	2244421	0	0.95	0	0	1020.58	1005.99	11.59	1119.93	1230.81	1122.12	1234.32
12	SW11-SW10	36	14.839	4.99	SW11	1430575.91	2244435.84	0	0.95	0	0	1020.26	1006.73	10.53	1120.46	1231.66	1122.66	1235.18
13	UG-SW11	36	25.33	5.01	UG	1430575.91	2244461.17	10.05	0.95	84.18	106.5	1009.58	1008	8.884	1121.14	1232.74	1123.34	1236.27

STORM PIPE CHART

GEORGIA REGISTERED No. 030800 PROFESSIONAL ENGINEER AARON T. CRUMP

09/18/18

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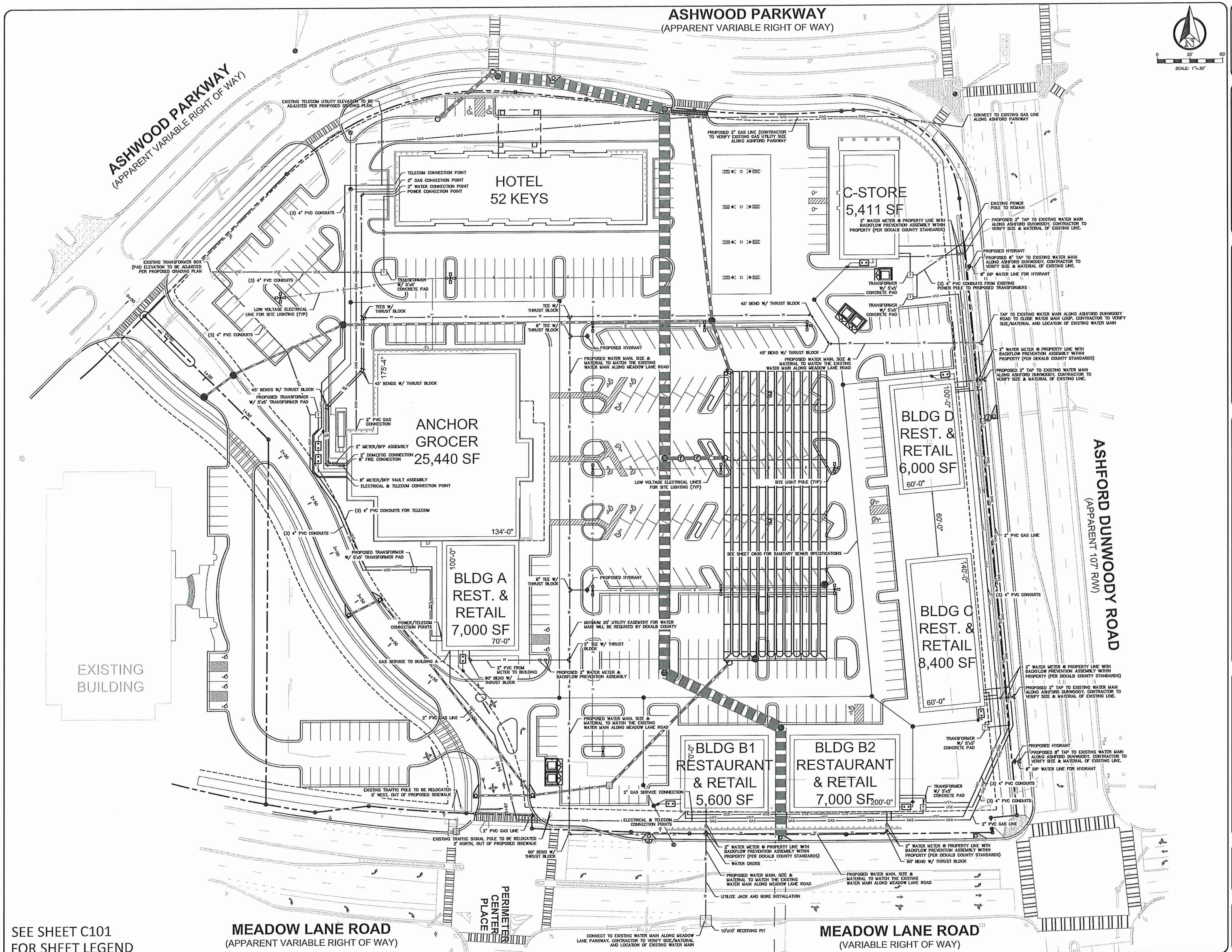
#	DATE	REVISIONS

DRAWN: KH
CHECK: RTC
JOB NO: 18-108
DATE: 09/18/18

STORM PROFILE/PIPE CHART

SHEET C402



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DATE	REVISIONS

DRAWN:	CHECK:
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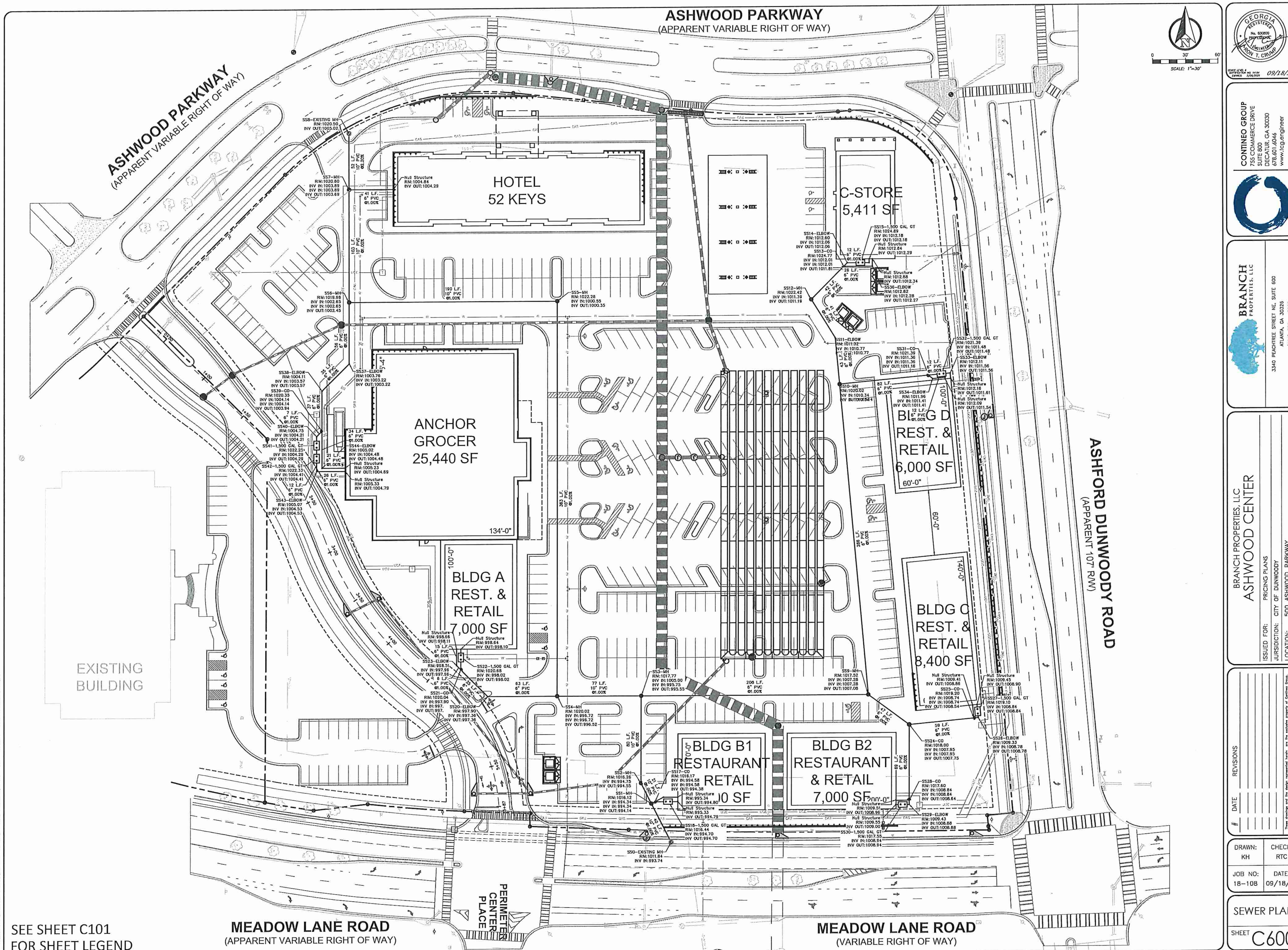
JOB NO: 18-108	DATE: 09/18/18

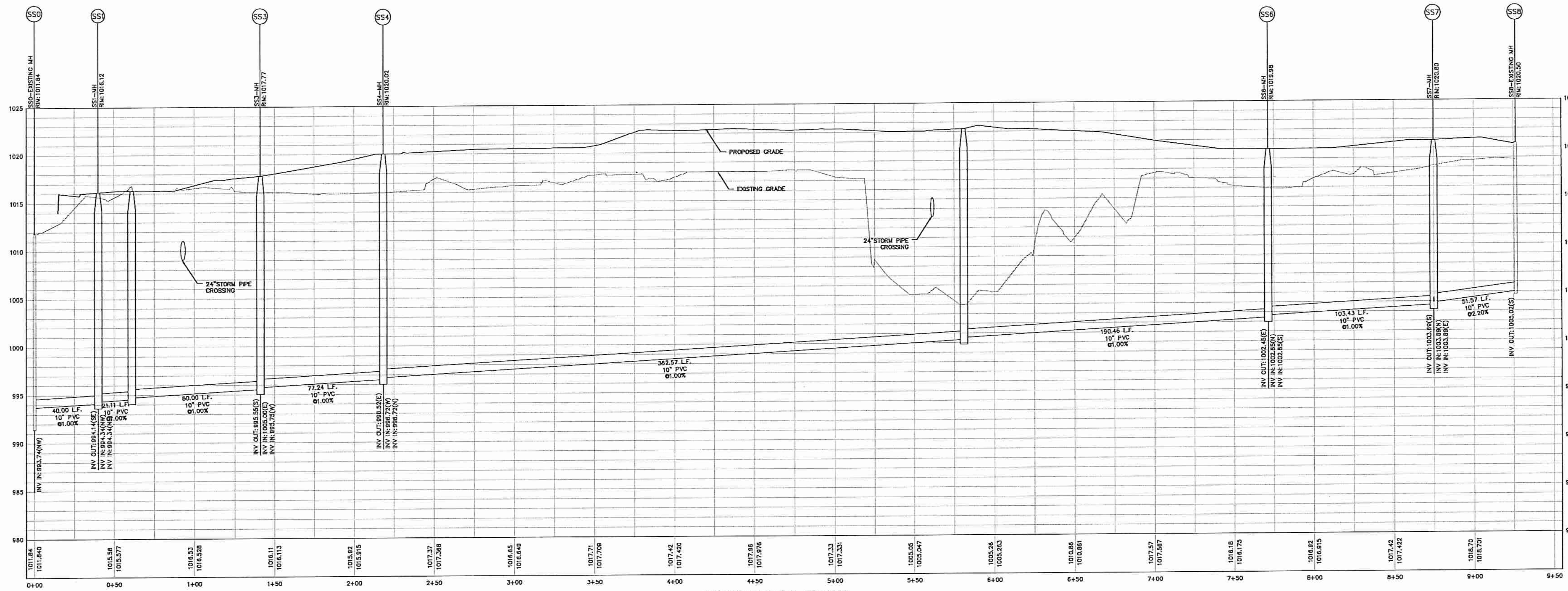
UTILITY PLAN

SHEET C500

#13..

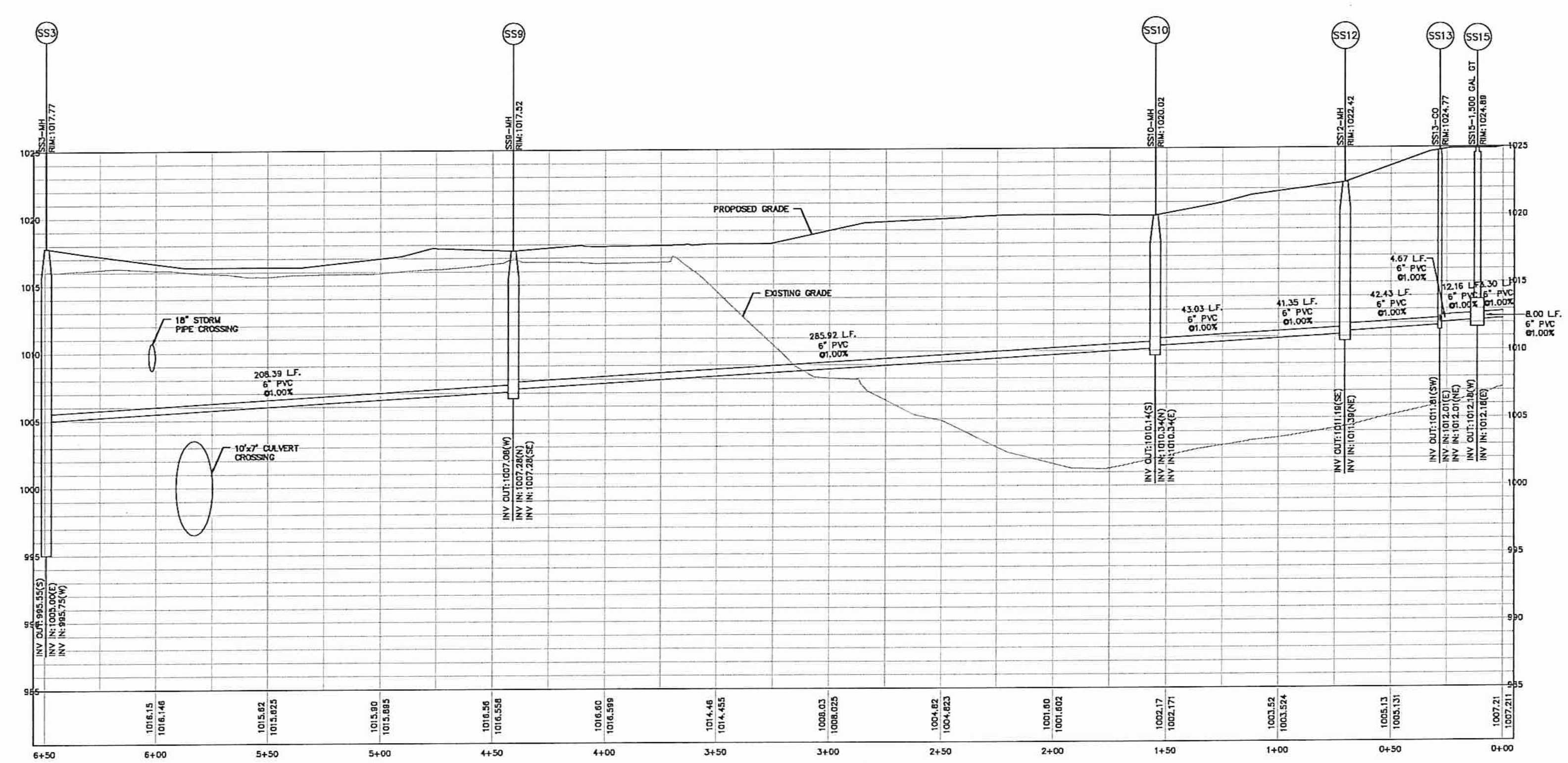


Packet page:...



SEWER PROFILE: SS0-SS8

HORIZONTAL SCALE: 1" = 30'
VERTICAL SCALE: 1" = 5'



SEWER PROFILE: SS3-SS15

HORIZONTAL SCALE: 1" = 30'
VERTICAL SCALE: 1" = 5'

09/18/18

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JOB NO: 18-108	DATE: 09/18/18

SEWER PROFILES

SHEET C601

ITEM#01

EROSION, SEDIMENTATION & POLLUTION CONTROL PLAN CHECKLIST
STAND ALONE CONSTRUCTION PROJECTS

SWCD: DISTRICT TBD

Project Name: ASHWOOD CENTER Address: 500 ASHFORD PARKWAY, ATLANTA GA
City/County: DUNWOODY/DEKALB COUNTY Date on Plans: SEPTEMBER 17, 2018
Name & email of person filling out checklist: CONTINEO GROUP (KENH@TCG.ENGINEER)

TO BE SHOWN ON ES&PC PLAN

Plan Page #	Included Y/N	Item
C700	Y	1 The applicable Erosion, Sedimentation and Pollution Control Plan Checklist established by the Commission as of January 1 of the year in which the land-disturbing activity was permitted. (The completed Checklist must be submitted with the ES&PC Plan or the Plan will not be reviewed)
C700	Y	2 Level II certification number issued by the Commission, signature and seal of the certified design professional. (Signature, seal and Level II number must be on each sheet pertaining to ES&PC plan or the Plan will not be reviewed)
C700	Y	3 Limit of disturbance shall be no greater than 50 acres at any one time without prior written authorization from the EPD District Office. If EPD approves the request to disturb 50 acres or more at any one time, the plan must include at least 4 of the BMPs listed in Appendix 1 of this checklist.* (A copy of the written approval by EPD must be attached to the plan for the plan to be reviewed.)
C700	Y	4 The name and phone number of the 24-hour local contact responsible for erosion, sedimentation and pollution c
C700	Y	5 Provide the name, address and phone number of primary permittee.
C700	Y	6 Note total and disturbed acreage of the project or phase under construction.
C700	Y	7 Provide the GPS location of the construction exit for the site. Give the Latitude and Longitude in decimal degrees
C700	Y	8 Initial date of the Plan and the dates of any revisions made to the Plan including the entity who requested the rev
C700	Y	9 Description of the nature of construction activity.
C01	Y	10 Provide vicinity map showing site's relation to surrounding areas. Include designation of specific phase, if neces
C700	Y	11 Identify the project receiving waters and describe all sensitive adjacent areas including streams, lakes, residential areas, wetlands, marshlands, etc. which may be affected.
C700	Y	12 Design professional's certification statement and signature that the site was visited prior to development of the ES&PC Plan as stated on page 15 of the permit.
C700	Y	13 Design professional's certification statement and signature that the permittee's ES&PC Plan provides for an appropriate and comprehensive system of BMPs and sampling to meet permit requirements as stated on page 1
C700	Y	14 Clearly note the statement that "The design professional who prepared the ES&PC Plan is to inspect the installation of the initial sediment storage requirements and perimeter control BMPs within 7 days after installation
C700	Y	15 Clearly note the statement that "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 from the Jurisdictional Determination Line without first acquiring the necessary variances and permits."
C700	Y	16 Provide a description of any buffer encroachments and indicate whether a buffer variance is required.
C700	Y	17 Clearly note the statement that "Amendments/revisions to the ES&PC Plan which have a significant effect on BMPs with a hydraulic component must be certified by the design professional."
C700	Y	18 Clearly note the statement that "Waste materials shall not be discharged to waters of the State, except as authorized by a section 404 permit."
C700	Y	19 Clearly note statement that "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."
C700	Y	20 Clearly note statement that "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."
C700	Y	21 Clearly note the statement "Any disturbed area left exposed for a period greater than 14 days shall be stabilized with mulch or temporary seeding."
C700	Y	22 Any construction activity which discharges storm water into an Impaired Stream Segment, or within 1 linear mile upstream of and within the same watershed as, any portion of an Biota Impaired Stream Segment must comply with Part III. C. of the Permit. Include the completed Appendix 1 listing all the BMPs that will be used for those areas of the site which discharge to the Impaired Stream Segment.*
C700	Y	23 If a TMDL Implementation Plan for sediment has been finalized for the Impaired Stream Segment (identified in item 22 above) at least six months prior to submittal of NOI, the ES&PC Plan must address any site-specific conditions or requirements included in the TMDL Implementation Plan.*
C700	Y	24 BMPs for concrete washdown of tools, concrete mixer chutes, hoppers and the rear of the vehicles. Washout of the drum at the construction site is prohibited.*
C700	Y	25 Provide BMPs for the remediation of all petroleum spills and leaks.
C700	Y	26 Description of the measures that will be installed during the construction process to control pollutants in storm water that will occur after construction operations have been completed.*
C700	Y	27 Description of the practices that will be used to reduce the pollutants in storm water discharges.*
C700	Y	28 Description and chart or timeline of the intended sequence of major activities which disturb soils for the major portions of the site (i.e., initial perimeter and sediment storage BMPs, clearing and grubbing activities, excavation activities, utility activities, temporary and final stabilization).
C700	Y	29 Provide complete requirements of inspections and record keeping by the primary permittee.*
C700	Y	30 Provide complete requirements of sampling frequency and reporting of sampling results.*
C700	Y	31 Provide complete details for retention of records as per Part IV.F. of the permit.*
C700	Y	32 Description of analytical methods to be used to collect and analyze the samples from each location.*
C700	Y	33 Appendix B rationale for NTU values at all outfall sampling points where applicable.*
C700	Y	34 Delineate all sampling locations, perennial and intermittent streams and other water bodies into which storm water is discharged.*
C700	Y	35 A description of appropriate controls and measures that will be implemented at the construction site including: (1) initial sediment storage requirements and perimeter control BMPs, (2) intermediate grading and drainage BMPs, and (3) final BMPs. For construction sites where there will be no mass grading and the initial perimeter control BMPs, intermediate grading and drainage BMPs, and final BMPs are the same, the plan may combine all of the BMPs into a single phase.*
E+S	Y	36 Graphic scale and North arrow.
E+S	Y	37 Existing and proposed contour lines with contour lines drawn at an interval in accordance with the following:
C700	N	38 Use of alternative BMPs whose performance has been documented to be equivalent to or superior to conventional BMPs as certified by a Design Professional (unless disapproved by EPD or the Georgia Soil and Water Conservation Commission). Please refer to the Alternative BMP Guidance Document found at www.gaswcc.org
C700	Y	39 Use of alternative BMP for application to the Equivalent BMP List. Please refer to Appendix A-2 of the Manual for Erosion & Sediment Control in Georgia 2016 Edition.*
C700	Y	40 Delineation of the applicable 25-foot or 50-foot undisturbed buffers adjacent to state waters and any additional buffers required by the Local Issuing Authority. Clearly note and delineate all areas of impact.
C700	Y	41 Delineation of on-site wetlands and all state waters located on and within 200 feet of the project site.
C700	Y	42 Delineation and acreage of contributing drainage basins on the project site.
C700	Y	43 Provide hydrology study and maps of drainage basins for both the pre- and post-developed conditions.*
C700	Y	44 An estimate of the runoff coefficient or peak discharge flow of the site prior to and after construction activities are completed.
C700	Y	45 Storm drain pipe and weir velocities with appropriate outlet protection to accommodate discharges without erosion. Identify/Delineate all storm water discharge points.
E+S	Y	46 Soil series for the project site and their delineation.
E+S	Y	47 The limits of disturbance for each phase of construction.
E+S / MAINLY EXCAVATED INLET SEDIMENT TRAPS	Y	48 Provide a minimum of 67 cubic yards of sediment storage per acre drained using a temporary sediment basin, retrofitted detention pond, and/or excavated inlet sediment traps for each common drainage location. Sediment storage volume must be in place prior to and during all land disturbance activities until final stabilization of the site has been achieved. A written justification explaining the decision to use equivalent controls when a sediment basin is not attainable must be included in the plan for each common drainage location in which a sediment basin is not provided. A written justification as to why 67 cubic yards of storage is not attainable must also be given. Worksheets from the Manual included for structural BMPs and all calculations used by the storage design professional to obtain the required sediment when using equivalent controls. When discharging from sediment basins and impoundments, permittees are required to utilize outlet structures that withdraw water from the surface, unless infeasible. If outlet structures that withdraw water from the surface are not feasible, a written justification explaining this decision must be included in the plan.
E+S	Y	49 Location of Best Management Practices that are consistent with and no less stringent than the Manual for Erosion and Sediment Control in Georgia. Use uniform coding symbols from the Manual, Chapter 6, with legend.
E+S	Y	50 Provide detailed drawings for all structural practices. Specifications must, at a minimum, meet the guidelines set forth in the Manual for Erosion and Sediment Control in Georgia.
E+S	Y	51 Provide vegetative plan, noting all temporary and permanent vegetative practices. Include species, planting dates and seeding, fertilizer, lime and mulching rates. Vegetative plan shall be site specific for appropriate time of the year that seeding will take place and for the appropriate geographic region of Georgia.

Map Scale	Ground Slope	Contour Intervals, ft
1 inch = 100ft or larger scale	Flat 0 - 2%	0.5 or 1
	Rolling 2 - 8%	1 or 2
	Steep 8% +	2.5 or 10

*If using this checklist for a project that is less than 1 acre and not part of a common development but within 200 ft of a perennial stream the * checklist items would be N/A. **Effective January 1, 2018**

ITEM#02

RON T. CRUMP
GSWCC LEVEL II CERTIFICATION NO. 14184
EXPIRES: 7/28/2021

09/17/2018
DATE

ITEM#03 LIMIT OF DISTURBANCE SHALL BE NO GREATER THAN 50-ACRES AT ANY ONE TIME WITHOUT PRIOR WRITTEN AUTHORIZATION FROM THE EPD DISTRICT OFFICE. PROPOSED DISTURBED AREA IS LESS THAN 50-ACRES.

ITEM#04 24-HOUR EMERGENCY CONTACT:

AND

ITEM#05 OWNER / PRIMARY PERMITTEE

BRANCH PROPERTIES, LLC
3340 PEACHTREE STREET NE
SUITE 600
ATLANTA, GA 30326
CONTACT:
PHONE: (404) 832-8900

ITEM#07 GPS LOCATION

(DECIMAL DEGREES)

LATITUDE: N33.9327
LONGITUDE: W84.3395

ITEM#06 PROPERTY AREA DATA

TOTAL SITE ACREAGE: ±10.05 ACRES
DISTURBED ACREAGE: ±11.67 ACRES

ITEM#08 INITIAL PLAN SUBMISSION DATE:

SUBMISSION 01: SEPTEMBER 17, 2018

ITEM#09 DESCRIPTION OF CONSTRUCTION

CONSTRUCTION INVOLVES DEMOLITION OF THREE EXISTING RESTAURANTS AND ALL ASSOCIATED UTILITIES, PAVEMENT, AND LANDSCAPING. AN EXISTING ON-SITE POND WILL BE REMOVED, AND ALL OFF-SITE STORM WATER WILL BE RE-ROUTED THROUGH A PROPOSED 10x7 CULVERT TRAVERSING THROUGH THE PROPOSED SITE. NEW BUILDINGS, PAVEMENT, UTILITIES, STORM WATER MANAGEMENT, AND PARKING FACILITIES WILL BE CONSTRUCTED.

ITEM#11 RECEIVING WATERS

STORMWATER IS CURRENTLY MANAGED BY AN EXISTING DETENTION POND, WHICH ALSO SERVES TO COLLECT STORMWATER IN THE VICINITY AROUND THE SITE. FROM THE SITE, STORM WATER ENTERS A 10x7 CULVERT, LEADING TO STORMWATER PIPE TO THE SOUTH. THIS STORMWATER PIPE APPEARS TO THEN FLOW TOWARDS IN A SOUTHERLY DIRECTION FOR MORE THAN A MILE BEFORE DEPOSITING TO NANCY CREEK.

ENGINEER'S CERTIFICATION

ITEM#12 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.

RON T. CRUMP
GSWCC LEVEL II CERTIFICATION NO. 14184
EXPIRES: 7/28/2021

ITEM#13 I CERTIFY THAT THE PERMITTEE'S EROSION, SEDIMENTATION AND POLLUTION CONTROL PLAN PROVIDES FOR AN APPROPRIATE AND COMPREHENSIVE SYSTEM OF BEST MANAGEMENT PRACTICES REQUIRED BY THE GEORGIA WATER QUALITY CONTROL ACT AND THE DOCUMENT "MANUAL FOR EROSION AND SEDIMENT CONTROL IN GEORGIA" (MANUAL) PUBLISHED BY THE STATE SOIL AND WATER CONSERVATION COMMISSION AS OF JANUARY 1 OF THE YEAR IN WHICH THE LAND-DISTURBING ACTIVITY WAS PERMITTED, PROVIDES FOR THE SAMPLING OF THE RECEIVING WATER(S) OR THE SAMPLING OF THE STORM WATER OUTFALLS AND THAT THE DESIGNED SYSTEM OF BEST MANAGEMENT PRACTICES AND SAMPLING METHODS IS EXPECTED TO MEET THE REQUIREMENTS CONTAINED IN THE GENERAL NPDES PERMIT NO. GAR100001.

RON T. CRUMP
GSWCC LEVEL II CERTIFICATION NO. 14184
EXPIRES: 7/28/2021

ITEM#14 GA SEVEN-DAY INSPECTION

THE DESIGN PROFESSIONAL WHO PREPARED THE ES&PC PLAN IS TO INSPECT THE INSTALLATION OF THE INITIAL SEDIMENT STORAGE REQUIREMENTS AND PERIMETER CONTROL BMP'S WITHIN 7-DAYS AFTER INSTALLATION.

CONTRACTOR IS RESPONSIBLE TO ENSURE OWNER HAS RETAINED THE DESIGN PROFESSIONAL AND THE DESIGN PROFESSIONAL IS NOTIFIED AND RELEASED TO PROVIDE THE 7-DAY INSPECTION, OR CONTRACTOR SHALL ASSUME ALL LIABILITY OF INSPECTION REQUIREMENTS.

UPON INSPECTION THE INDIVIDUAL PERFORMING THE 7-DAY INSPECTION IS TO SIGN THE MASTER COPY OF THE NOTES ON-SITE, AND PROVIDE A COPY FOR EVERYONE'S FILES:

PROJECT NAME: ____________
PROJECT LOCATION: ____________
CONTINEO PROJECT NUMBER: ____________
DATE OF INSPECTION: ____________
I CERTIFY THE SITE WAS IN COMPLIANCE WITH THE ES&PC PLAN ON THE DATE OF INSPECTION.
INSPECTOR'S NAME (PRINTED): ____________
INSPECTOR'S GSWCC LEVEL II CERTIFICATION NUMBER: ____________
INSPECTOR'S SIGNATURE: ____________

NOTE: IF DISCREPANCIES ARE FOUND, THEY MUST BE ADDRESSED IMMEDIATELY AND A RE-INSPECTION SCHEDULED. WORK SHALL NOT PROCEED ON THE SITE UNTIL THE DESIGN PROFESSIONAL CERTIFICATION IS OBTAINED. THE DESIGN PROFESSIONAL SHALL NOT SIGN OFF ABOVE UNTIL THERE ARE NO DISCREPANCIES FOUND.

ITEM#15 NON-EXEMPT ACTIVITIES SHALL NOT BE CONDUCTED WITHIN ANY 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 FROM THE JURISDICTIONAL DETERMINATION LINE WITHOUT FIRST ACQUIRING THE NECESSARY VARIANCES AND PERMITS.

ITEM#16 NO BUFFER ENCROACHMENTS ARE PROPOSED AS A PART OF THIS DEVELOPMENT.

ITEM#17 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.

ITEM#18 WASTE MATERIALS SHALL NOT BE DISCHARGED TO WATERS OF THE STATE, EXCEPT AS AUTHORIZED BY A SECTION 404 PERMIT.

ITEM#19 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.

ITEM#20 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.

ITEM#21 ANY DISTURBED AREA LEFT EXPOSED FOR A PERIOD GREATER THAN 14 DAYS SHALL BE STABILIZED WITH MULCH OR TEMPORARY SEEDING.

IF A SECONDARY PERMITTEE SHOULD BE UTILIZED, THE APPLICABLE PORTION OF THE PRIMARY PERMITTEE'S ES&PC PLAN IS TO BE PROVIDED TO EACH SECONDARY PERMITTEE PRIOR TO THE SECONDARY CONDUCTING ANY CONSTRUCTION ACTIVITY, AND EACH SECONDARY SHALL SIGN THE PLAN OR PORTION OF THE PLAN APPLICABLE TO THEIR SITE. LIST THE NAMES AND ADDRESSES OF ALL SECONDARY PERMITTEES.

ITEM#22 THIS SITE DOES NOT FALL WITHIN 1 MILE UPSTREAM OF AN IMPAIRED STREAM SEGMENT, AS LISTED ON THE 305(b)/303(d) LIST AS 'SUPPORTING'.

ITEM#23 THERE IS NO TMDL IMPLEMENTATION PLAN ASSOCIATED WITH THIS PROJECT'S DISCHARGE.

ITEM#24 CONCRETE WASH DOWN IS ON SITE. SEE DETAIL ON SHEET C08. WASH DOWN OF DRUMS MUST BE PERFORMED OFF SITE.

ITEM#31 RETENTION OF RECORDS SHALL BE PER PART IV, F OF THE GENERAL PERMIT.

ITEM#32 METHODS FOR SAMPLING SHALL BE PER PART IV, D, 6 OF THE GENERAL PERMIT REQUIREMENTS.

ITEM#34 SAMPLE LOCATION: SAMPLES ARE TO BE TAKEN AT ALL OUTFALLS OF PROPOSED STORMWATER PIPING.

ITEM#25 SPILL PREVENTION CONTROL COUNTER MEASURES AND SPILL REPORTING PLAN (HAZARDOUS MATERIAL MANAGEMENT PLAN)

1. LOCAL, STATE, AND MANUFACTURER'S RECOMMENDED METHODS FOR SPILL CLEANUP WILL BE CLEARLY POSTED AND PROCEDURES WILL BE MADE AVAILABLE TO SITE PERSONNEL. MATERIALS AND EQUIPMENT NECESSARY FOR SPILL CLEANUP WILL BE KEPT IN THE MATERIAL STORAGE AREAS.
2. THE CONTRACTOR SHALL NOTIFY THE LICENSED PROFESSIONAL WHO PREPARED THIS PLAN IF MORE THAN 1320 GALLONS OF PETROLEUM IS STORED ON-SITE (THIS INCLUDES CAPACITIES OF EQUIPMENT) OR IF ANY ONE PIECE OF EQUIPMENT HAS A CAPACITY GREATER THAN 660 GALLONS. IN SUCH EVENT, THE CONTRACTOR WILL REQUIRE A SPILL PREVENTION CONTAINMENT AND COUNTERMEASURES PLAN.
3. ANY HAZARDOUS OR POTENTIALLY HAZARDOUS MATERIAL THAT IS BROUGHT ONTO THE CONSTRUCTION SITE WILL BE HANDLED PROPERLY IN ORDER TO REDUCE THE POTENTIAL FOR STORM WATER POLLUTION. ALL MATERIALS USED ON THIS SITE WILL BE PROPERLY STORED, HANDLED, DISPENSED AND DISPOSED OF FOLLOWING ALL APPLICABLE LABEL DIRECTIONS. MATERIAL SAFETY DATA SHEETS (MSDS) INFORMATION WILL BE KEPT ON SITE FOR ANY AND ALL APPLICABLE MATERIALS.
4. IN THE EVENT OF AN ACCIDENTAL SPILL, IMMEDIATE ACTION WILL BE UNDERTAKEN BY THE GENERAL CONTRACTOR TO CONTAIN AND REMOVE THE SPILLED MATERIAL. ALL HAZARDOUS MATERIALS WILL BE DISPOSED OF BY THE CONTRACTOR IN THE MANNER SPECIFIED BY FEDERAL, STATE AND LOCAL REGULATIONS AND BY THE MANUFACTURER OF SUCH PRODUCTS. AS SOON AS POSSIBLE, THE SPILL WILL BE REPORTED TO THE APPROPRIATE AGENCIES. AS REQUIRED UNDER THE PROVISIONS OF THE CLEAN WATER ACT, ANY SPILL OR DISCHARGE ENTERING WATERS OF THE UNITED STATES WILL BE PROPERLY REPORTED. THE GENERAL CONTRACTOR WILL PREPARE A WRITTEN RECORD OF ANY SPILL OF PETROLEUM PRODUCTS OR HAZARDOUS MATERIALS IN EXCESS OF 1 GALLON OR REPORTABLE QUANTITIES, WHICH EVER IS LESS, AND WILL PROVIDE NOTICE TO OWNER WITHIN 24-HOURS OF THE OCCURRENCE OF THE SPILL.
5. ANY SPILLS OF HAZARDOUS MATERIALS IN QUANTITIES IN EXCESS OF REPORTABLE QUANTITIES AS DEFINED BY THE EPA OR THE STATE AGENCY REGULATIONS, SHALL BE IMMEDIATELY REPORTED TO THE EPA NATIONAL RESPONSE CENTER (1-800-424-8802) AND STATE OF GEORGIA DEPARTMENT OF NATURAL RESOURCES ENVIRONMENTAL PROTECTION DIVISION AT (404) 656-4863 (INSIDE THE ATLANTA AREA) OR (800) 241-4113 (ALL OTHER AREAS IN THE STATE). THE REPORTABLE QUANTITY FOR PETROLEUM PRODUCTS AS DEFINED IN THE OFFICIAL CODE OF GEORGIA ANNOTATED (OCGA) 12-14-1(8) IS ANY DISCHARGE OF OIL INTO WATERS OF THE STATE WHICH WILL CAUSE A SIGNIFICANT FILM OR SHEET UPON OR DISCOLORATION OF THE SURFACE OF SUCH WATERS OR ADJOINING SHORELINES OR CAUSE A SLUDGE OR EMULSION TO BE DEPOSITED BENEATH THE SURFACE OF SUCH WATERS OR UPON ADJOINING SHORELINES. ADDITIONALLY, ANY LAND BASE PETROLEUM SPILL OR RELEASE IN EXCESS OF 25 GALLONS SHALL BE REPORTED IN ACCORDANCE WITH REQUIREMENTS OF THIS SECTION. ALL PETROLEUM SPILLS SHALL BE IMMEDIATELY REPORTED TO THE STATE OF GEORGIA DEPARTMENT OF NATURAL RESOURCES AT (404) 656-4300 (INSIDE THE ATLANTA AREA) OR (800) 241-4113 (ALL OTHER AREAS IN THE STATE). THE REPORTABLE QUANTITY FOR HAZARDOUS MATERIALS OTHER THAN PETROLEUM PRODUCTS IS LISTED IN CFR TITLE 40 PART 117 (TABLE 117.3) AND CFR TITLE PART 302 (TABLE 302.4). DETAILED INFORMATION PERTAINING TO FEDERAL GOVERNMENT (CFR) REQUIREMENTS FOR HAZARDOUS MATERIALS REPORTABLE QUANTITIES AND HAZARDOUS MATERIALS DISCHARGE REPORTING REQUIREMENTS CAN BE FOUND ON THE INTERNET AT www.gpoaccess.gov/ecfr. DETAILED INFORMATION PERTAINING TO STATE GOVERNMENT REQUIREMENTS FOR HAZARDOUS MATERIALS REPORTABLE QUANTITIES AND HAZARDOUS MATERIALS DISCHARGE REPORTING REQUIREMENTS CAN BE FOUND ON THE INTERNET AT www.legis.state.ga.us.
6. IN ORDER TO MINIMIZE THE POTENTIAL FOR A SPILL OF PETROLEUM PRODUCT OR HAZARDOUS MATERIALS TO COME IN CONTACT WITH STORM WATER, THE FOLLOWING STEPS WILL BE IMPLEMENTED:
   A. ALL MATERIALS WITH HAZARDOUS PROPERTIES (SUCH AS PESTICIDES, PETROLEUM PRODUCTS, FERTILIZERS, DETERGENTS, CONSTRUCTION CHEMICALS, ACIDS, PAINTS, PAINT SOLVENTS, ADDITIVES FOR SOIL STABILIZATION, CONCRETE, CURING COMPOUNDS AND ADDITIVES, ETC.) WILL BE STORED IN A SECURE LOCATION, UNDER COVER, WHEN NOT IN USE.
   B. THE MINIMUM PRACTICAL QUANTITY OF ALL SUCH MATERIALS WILL BE KEPT ON THE JOB SITE AND SCHEDULED FOR DELIVERY AS CLOSE TO TIME OF USE AS PRACTICAL.
   C. A SPILL CONTROL AND CONTAINMENT KIT (CONTAINING FOR EXAMPLE, ABSORBENT MATERIAL SUCH AS KITTY LITTER OR SAWDUST, ACID NEUTRALIZING AGENT, BROOMS, DUST PANS, MOPS, RAGS, GLOVES, GOGGLES, PLASTIC AND METAL TRASH CONTAINERS, ETC.) WILL BE PROVIDED AT THE STORAGE SITE.
   D. ALL OF THE PRODUCT IN A CONTAINER WILL BE USED BEFORE THE CONTAINER IS DISPOSED OF. ALL SUCH CONTAINERS WILL BE TRIPLE RINSED, WITH WATER PRIOR TO DISPOSAL. THE RINSE WATER USED IN THESE CONTAINERS WILL BE DISPOSED OF IN A MANNER IN COMPLIANCE WITH STATE AND FEDERAL REGULATIONS AND WILL NOT BE ALLOWED TO MIX WITH STORM WATER DISCHARGES.
   E. ALL PRODUCTS WILL BE STORED IN AND USED FROM THE ORIGINAL CONTAINER WITH THE ORIGINAL PRODUCT LABEL.
   F. ALL PRODUCTS WILL BE USED IN STRICT COMPLIANCE WITH INSTRUCTIONS ON THE PRODUCT LABEL.
   G. THE DISPOSAL OF EXCESS OR USED PRODUCTS WILL BE IN COMPLIANCE WITH INSTRUCTIONS ON THE PRODUCT'S LABEL.

ITEM#26 POST CONSTRUCTION BMPs

1. MAINTAIN LANDSCAPE AREAS.
2. PROVIDE PETROLEUM SPILL CLEAN-UP KIT ON SITE AT ALL TIMES.
3. KEEP REFUSE COLLECTED WITHIN THE APPROPRIATE CONTAINERS.
4. MAINTAIN STORMWATER COLLECTION SYSTEMS ON PROPERTY ANNUALLY BY CLEANING OUT DEBRIS, SEDIMENT, AND GRIME.
5. MAINTAIN STORMWATER DRAINAGE SYSTEMS PER MANUFACTURER REQUIREMENTS.

ITEM#27 DESCRIPTION OF BMPs TO REDUCE POLLUTANTS IN STORMWATER DISCHARGES

PRODUCT SPECIFIC PRACTICES

1. 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 LINER TO PREVENT/MINIMIZE SITE CONTAMINATION. DISCHARGE OF OILS, FUELS, AND LUBRICANTS SHALL BE PROHIBITED. PROPER DISPOSAL METHODS WILL INCLUDE COLLECTION IN A SUITABLE CONTAINER AND DISPOSAL AS REQUIRED BY LOCAL AND STATE REGULATIONS.
2. PAINTS/FINISHES/SOLVENTS – ALL PRODUCTS WILL BE STORED IN TIGHTLY SEALED ORIGINAL CONTAINERS WHEN NOT IN USE. EXCESS PRODUCT WILL NOT BE DISCHARGED TO THE STORM WATER COLLECTION SYSTEM. EXCESS PRODUCT, MATERIALS USED WITH THESE PRODUCTS, AND PRODUCT CONTAINERS WILL BE DISPOSED OF ACCORDING TO THE MANUFACTURER'S SPECIFICATIONS AND RECOMMENDATIONS.
3. CONCRETE TRUCK WASHING – CONCRETE TRUCKS WILL BE ALLOWED TO WASH OUT OR DISCHARGE SURPLUS CONCRETE OR DRUM WASH WATER ONSITE.
4. 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.
5. 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.

ITEM#28

ENGINEER'S ANTICIPATED ACTIVITY SCHEDULE

	ACTIVITY	MO.1	MO.2	MO.3	MO.4	MO.5	MO.6
1	INSTALL SEDIMENT CONTROL DEVICES						
2	DEMOLITION, CLEARING AND GRADING						
3	DEMOLITION, CLEARING AND GRADING						
4	STORM DRAIN INSTALLATION						
5	SANITARY SEWER INSTALLATION						
6	GRASS (TEMP.)						
7	GRASS (PERM.)						
8	UTILITY INSTALLATION						
9	MAINTAIN EROSION CONTROL						
10	BLDG. CONST. AND PAVING						
11	FINAL LANDSCAPING						
12	CLEAN UP						
13	SOLID WASTE DISPOSAL						

NOTE: EROSION CONTROL MEASURES ARE TO BE MAINTAINED UNTIL FINAL SITE STABILIZATION HAS BEEN ESTABLISHED. CONTRACTOR IS RESPONSIBLE TO ADJUST AND/OR UPDATE THEIR OWN CONSTRUCTION SCHEDULE. CONSTRUCTION IS ESTIMATED TO COMMENCE DURING THE MONTH OF: MAY, 2019.

ITEM#29 INSPECTION AND RECORD KEEPING SHALL BE PER PART IV, D, 4 OF THE GENERAL PERMIT.

ITEM#30 SAMPLING FREQUENCY AND REPORTING SHALL BE PER PART IV, D, 6 OF THE GENERAL PERMIT.

ITEM#33 APPENDIX B RATIONALE FOR NPDES SAMPLING N.T.U. VALUES

NOTE: UTILIZE APPENDIX B TABLE FOR DISCHARGE SAMPLING LOCATED AT THE OUTFALL OF THE SITE, OR UTILIZE A STANDARD NEPHELOMETRIC TURBIDITY UNIT (N.T.U.) VALUE OF 25 FOR SAMPLING WITHIN A WARM WATER RECEIVING WATERS STREAM, OR A N.T.U. VALUE OF 10 FOR SAMPLING WITH A TROUT STREAM RECEIVING WATERS.

SIZE OF SITE: 11.67 ACRES
SURFACE WATER DRAINAGE AREA: 0 TO 4.99 SQUARE MILES
TYPE OF RECEIVING WATERS: WARM WATER
NTU VALUE: 50

WARM WATER (SUPPORTING WARM WATER FISHERIES)

SURFACE WATER DRAINAGE AREA, SQUARE MILES

SITE SIZE, ACRES	0-4.99	5-9.99	10-24.99	25-49.99	50-99.99	100-249.99	250-499.99	500+
1.00-10	75	150	200	400	750	750	750	750
10.01-25	(50)	100	100	200	300	500	750	750
25.01-50	50	50	100	100	200	300	750	750
50.01-100	50	50	50	100	100	150	300	600
100.01 +	50	50	50	50	50	100	200	100

ITEM#35 CONSTRUCTION SEQUENCE

PHASE 1

1. PICK-UP LAND DISTURBANCE PERMIT, FILE A N.O.I. (NOTICE OF INTENT) WITH THE E.P.D. (ENVIRONMENTAL PROTECTION DEPARTMENT), AND PROVIDE THE APPROPRIATE PAPERWORK AND COPIES TO THE LOCAL JURISDICTION ISSUING AUTHORITY. CONTRACTOR IS RESPONSIBLE TO SUPPLY, AND PAY THE APPLICABLE FEES TO THE LOCAL ISSUING AUTHORITIES. A COPY OF THE SIGNED PAPERWORK, ALONG WITH A COPY OF THE PERMIT FROM THE JURISDICTION, MUST BE PROVIDED TO THE OWNER/DEVELOPER AND THE CIVIL ENGINEER, AS WELL AS KEPT ON SITE AT ALL TIMES.
2. IF FOUND TO BE NEEDED BY THE LOCAL JURISDICTION, CALL FOR THE ON SITE PRE CONSTRUCTION MEETING OR S.W.P.P.P. (STORM WATER POLLUTION PROTECTION PLAN) PRE CONSTRUCTION MEETING. ATTENDEES SHALL INCLUDE CONTRACTORS, SUBCONTRACTORS, ENGINEERS, E.P.D., CITY / COUNTY OFFICIALS AND OR ANY OTHER PERSONNEL WHOM MAY INSPECT OR REVIEW THE STORM WATER MANAGEMENT ON THIS PROJECT. GOALS AND EXPECTATIONS SHALL BE REVIEWED IN DETAIL.
3. ANY NON DISTURBANCE OR RESTRICTED AREA BUFFERS SHALL BE LOCATED AND FLAGGED TO ENSURE COMPLIANCE.
4. TREE SAVE FENCE SHALL BE INSTALLED IF NEEDED.
5. THE STABILIZED CONSTRUCTION EXIT / ENTRANCE SHALL BE INSTALLED PRIOR TO ANY OTHER CONSTRUCTION ACTIVITY OCCURRING ON SITE. ANY REQUIRED TRAFFIC BARRIERS SHALL ALSO BE INSTALLED AT THIS TIME.
6. SILT FENCE AND/OR ORANGE SAFETY / CONSTRUCTION FENCE INSTALLATION SHALL BE COMPLETED. NOTE: THE CONTRACTOR IS ONLY ALLOWED TO CLEAR PORTIONS NECESSARY FOR B.M.P. (BEST MANAGEMENT PRACTICES) INSTALLATION. THE CONTRACTOR IS TO ENSURE THERE ARE NO ADVERSE IMPACTS TO ANY ON SITE STREAMS OR WETLANDS, IF APPLICABLE.
7. THE PREPARATION OF ANY TEMPORARY PARKING AND STORAGE AREA SHALL COMMENCE IF NEEDED. INCLUDING BUT NOT LIMITED TO SITE TRAILER, PARKING AREA, LAY DOWN, PORTABLE TOILETS, CONCRETE MIXER WASH OUT IF PERMITTED, MASON'S AREA, FUEL AND MATERIAL STORAGE CONTAINERS, SOLID WASTE CONTAINERS, SOIL STOCKPILE AREA ETC. THESE ITEMS ARE TO BE DENOTED ON THE EROSION CONTROL SITE MAPS BY THE CONTRACTOR IMMEDIATELY AND SHALL BE REVISED WITH ANY CHANGES IN LOCATIONS AS THEY OCCUR THROUGHOUT THE CONSTRUCTION PROCESS
8. THE TEMPORARY SEDIMENT STORAGE/WHEEL WASH AREA SHALL BE INSTALLED AS DELINEATED ON THE PLANS. CLEARING AND GRUBBING SHALL BE LIMITED TO ONLY WHAT IS REQUIRED FOR THE INSTALLATION PROCEDURE.
9. CONTACT THE JURISDICTIONAL AUTHORITY TO DETERMINE IF A PRE-CONSTRUCTION MEETING IS NEEDED. IF SO, THE GENERAL CONTRACTOR SHALL SCHEDULE AND CONDUCT THE STORM WATER PRE-CONSTRUCTION MEETING WITH THE ENGINEER AND ALL GROUND DISTURBING CONTRACTORS BEFORE PROCEEDING WITH CONSTRUCTION.
10. THE CONTRACTOR SHALL BEGIN CLEARING AND GRUBBING OF VEGETATION AS NEEDED. REMOVAL OF TOPSOIL FOR LATER USE MAY BE PERFORMED.
11. IMMEDIATELY UPON COMPLETING THE INSTALLATION OF ALL INITIAL PERIMETER EROSION CONTROL MEASURES AND THE CONSTRUCTION ACTIVITIES COMMENCE, THE GENERAL CONTRACTOR MUST CONTACT THE CIVIL ENGINEER CONSULTANT TO INSPECT THE INSTALLATION OF THE B.M.P.'S. IT IS LEGALLY REQUIRED PER THE GENERAL PERMIT THAT THE CIVIL ENGINEER PERFORM A SITE INSPECTION OF THE B.M.P. INSTALLATION WITHIN 7-DAYS AFTER CONSTRUCTION COMMENCEMENT. CIVIL ENGINEER WILL NOT BE LIABLE TO FOLLOW UP WITH CONTRACTOR, IT IS SOLELY CONTRACTOR'S RESPONSIBILITY TO COORDINATE WITH CIVIL ENGINEER FOR OBTAINING THE REQUIRED 7-DAY INSPECTION.

PHASE 2

12. GRADE SITE AS BEST NEEDED FOR INSTALLATION OF ALL UTILITIES, PAVING, BUILDING SLAB, AND RETAINING WALL(S) IF APPLICABLE.
13. AS EACH LIFT IN ELEVATION IS COMPLETED CARE SHALL BE TAKEN AS TO ENSURE THAT STABILIZATION AND EROSION PREVENTION HAS OCCURRED, ESPECIALLY AT THE END OF EACH WORK DAY.
14. AS THE SITE IS BROUGHT UP TO SUB GRADE, THE STORM DRAINAGE SYSTEM IS TO BE CONSTRUCTED. UTILIZE APPROPRIATE INLET PROTECTION DEVICES TO MINIMIZE SEDIMENT INTRUSION INTO THE STORM DRAINAGE SYSTEM.
15. THE GENERAL CONTRACTOR SHALL CONTACT THE CIVIL ENGINEERING CONSULTANT TO PERFORM SITE REVIEW AND SURVEY VERIFICATION, IF NEEDED. THE CONTRACTOR AND GEOTECHNICAL MATERIALS TESTING CONSULTANT ARE TO CERTIFY PLAN COMPLIANCE TO THE OWNER/DEVELOPER AT THE COMPLETION OF THE GRADING.
16. BUILDING PAD PREPARATION AND STABILIZATION SHALL OCCUR AS SOON AS POSSIBLE, THE CONTRACTOR SHALL NOTE THE DATE OF COMPLETION ON THE EROSION PLANS. CONTRACTOR MUST BE AWARE OF ANY GEOTECHNICAL REQUIREMENTS ASSOCIATED WITH FINAL COMPACTION OR FOUNDATION PREPARATION REQUIREMENTS.

PHASE 3

17. PAVEMENT INSTALLATION SHALL OCCUR, APPROPRIATE INLET PROTECTION DEVICES AS WORK PROGRESSES SHALL BE INSTALLED.
18. FINAL FINE GRADING, PERMANENT SEEDING AND PLANTING SHALL BE COMPLETED.
19. THE CONTRACTOR SHALL REMOVE AND CLEAN ANY SEDIMENT FROM THE STORM WATER CONVEYANCE SYSTEM AS WELL AS THE DETENTION STRUCTURES, DRAINAGE SYSTEMS, AND/OR PONDS.
20. THE CONTRACTOR SHALL CONTACT THE JURISDICTIONAL INSPECTOR AND CIVIL ENGINEERING CONSULTANT FOR THE OWNER/DEVELOPER WHEN SITE IS FULLY STABILIZED FOR INSPECTION.
21. ALL TEMPORARY EROSION AND SEDIMENTATION CONTROL DEVICES (BMP'S) SHALL BE REMOVED ONCE STABILIZATION, JURISDICTIONAL AND C.E.C. APPROVAL HAS BEEN ACHIEVED. ANY AREAS DISRUPTED BY THIS REMOVAL SHALL BE STABILIZED.
22. DAILY INSPECTION REPORTS SHALL CONTINUE UNTIL THE DEVELOPER HAS AGREED THAT THE SITE IS FULLY STABILIZED AND THE PERMIT MAY BE TERMINATED.
23. THE CONTRACTOR SHALL FILE THE N.O.T. (NOTICE OF TERMINATION) WITH THE GEORGIA E.P.D. FOR THE SITE CONSTRUCTION ACTIVITY. A COPY OF THE SIGNED N.O.T. BEING FILED MUST BE PROVIDED TO THE DEVELOPER, THE JURISDICTION, AND THE CIVIL ENGINEERING CONSULTANT.

ITEM#38 NO ALTERNATIVE BMPs ARE PROPOSED. ALTERNATES ARE ALLOWED WHOSE PERFORMANCE HAS BEEN DOCUMENTED TO BE EQUIVALENT TO OR SUPERIOR TO CONVENTIONAL BMPs, AS CERTIFIED BY A DESIGN PROFESSIONAL.

ITEM#39 NO ALTERNATIVE BMPs ARE PROPOSED FOR APPLICATION TO THE EQUIVALENT BMP LIST.

ITEM#40 WHILE THE PROPOSED PROJECT INVOLVES THE ADJUSTMENT OF STATE WATERS ON SITE, NO ADDITIONAL BUFFER ENCROACHMENTS ARE PROPOSED.

ITEM#41 THERE ARE NO IDENTIFIED WETLANDS ON OR WITHIN 200 FEET OF THE PROJECT SITE. THERE ARE STATE WATERS ON THE PROJECT SITE. THE SITE DOES NOT LIE WITHIN A 100-YR FLOODZONE BASED ON FEMA MAPS.

ITEM#42 SEE THE PHASED EROSION CONTROL PLANS FOR DELINEATION OF ANTICIPATED DRAINAGE BASINS

ITEM#44 PRE DEVELOPED CN = 55
POST DEVELOPED CN = 91

ITEM#45 THERE ARE CURRENTLY NO OUTLET PIPES PROPOSED THAT WOULD PRODUCE VELOCITIES THAT MIGHT CAUSE EROSION, PRIMARILY SINCE ALL PIPES ON SITE CONNECT TO OTHER EXISTING PRE-CAST STRUCTURES.

ITEM#46 THE SOIL SERIES VARY ACROSS THE SITE. SEE ES + PC PLANS FOR DELINEATION AND LABELS.

ITEM#47 SEE ES + PC PLANS FOR DELINEATION AND LABEL OF EXACT LIMITS OF DISTURBANCE.

ITEM#49 LOCATION OF BMP THAT ARE CONSISTENT WITH AND NO LESS STRINGENT THAN THE MANUAL FOR EROSION AND SEDIMENT CONTROL IN GEORGIA.

ITEM#50 ALL STRUCTURAL PRACTICES SHALL BE INSTALLED AS SET FORTH IN THE MANUAL FOR EROSION AND SEDIMENT CONTROL IN GEORGIA, UNLESS NOTED OTHERWISE.

ITEM#51 CONTRACTOR SHALL USE APPROPRIATE PLANTING MATERIALS FOR THE DATES OF CONSTRUCTION AS SET FORTH IN THE PLANTING SCHEDULES DEFINED BY THE PLANTING DETAILS.

THE TRACKING OF SOIL AND RAISING DUST SHALL BE CONTROLLED BY THE CONTRACTOR BY USE OF THE BMP'S SHOWN (Du, Co) AND ANY ADDITIONAL STABILIZATION METHODS ACCEPTED BY AND ADDRESSED BY THE LATEST MANUAL FOR EROSION AND SEDIMENT CONTROL IN GEORGIA.

THE (ES&PC) PLAN IS IN COMPLIANCE WITH WASTE DISPOSAL, SANITARY SEWER, OR SEPTIC TANK REGULATIONS. ALL SUCH REGULATIONS MUST BE ADHERED TO DURING AND AFTER CONSTRUCTION.

LAND DISTURBANCE PERMIT DISCLAIMER: THE APPROVAL OF THESE PLANS AND THE ISSUANCE OF THIS LAND DISTURBANCE PERMIT DOES NOT IN ANY SUGGEST THAT ALL OTHER REQUIREMENTS FOR THE LEGAL OR APPROPRIATE OPERATIONS FOR THIS ACTIVITY, WHICH MAY REQUIRE ADDITIONAL PERMITTING HAVE BEEN MET. THE ONUS IS ON THE OWNER/DEVELOPER/CONTRACTOR TO DISCOVER WHAT ADDITIONAL PERMITTING OR APPROVALS MAY BE NECESSARY TO OPERATE FROM THIS POINT IN AN APPROPRIATE AND LEGAL MANNER. PLAN APPROVAL OR PERMIT ISSUANCE DOES NOT ABSOLVE THE APPLICANT FROM COMPLYING WITH ALL APPLICABLE LAWS, POLICIES, STANDARDS OR OTHER PERMITS WHICH MAY BE REQUIRED FOR THIS PROJECT.

ALL CONSTRUCTION MUST CONFORM TO LOCAL, STATE, AND FEDERAL STANDARDS AND SPECIFICATIONS, WHETHER OR NOT REVIEW COMMENTS WERE MADE.

GEORGIA 811 Utilities Protection Center, Inc.
Know what's below. Call before you dig.

GEORGIA REGISTERED No. 030600 PROFESSIONAL ENGINEER ARON T. CRUMP
GSWCC LEVEL II CERTIFICATION NO. 14184 EXPIRES 7/28/2021
09/18/18

CONTINEO GROUP
755 COMMERCE DRIVE
SUITE 800
DECATUR, GA 30030
678.601.6046
www.tcg.engineer

BRANCH PROPERTIES, LLC
3340 PEACHTREE STREET NE, SUITE 600
ATLANTA, GA 30326
(404) 832 - 8900

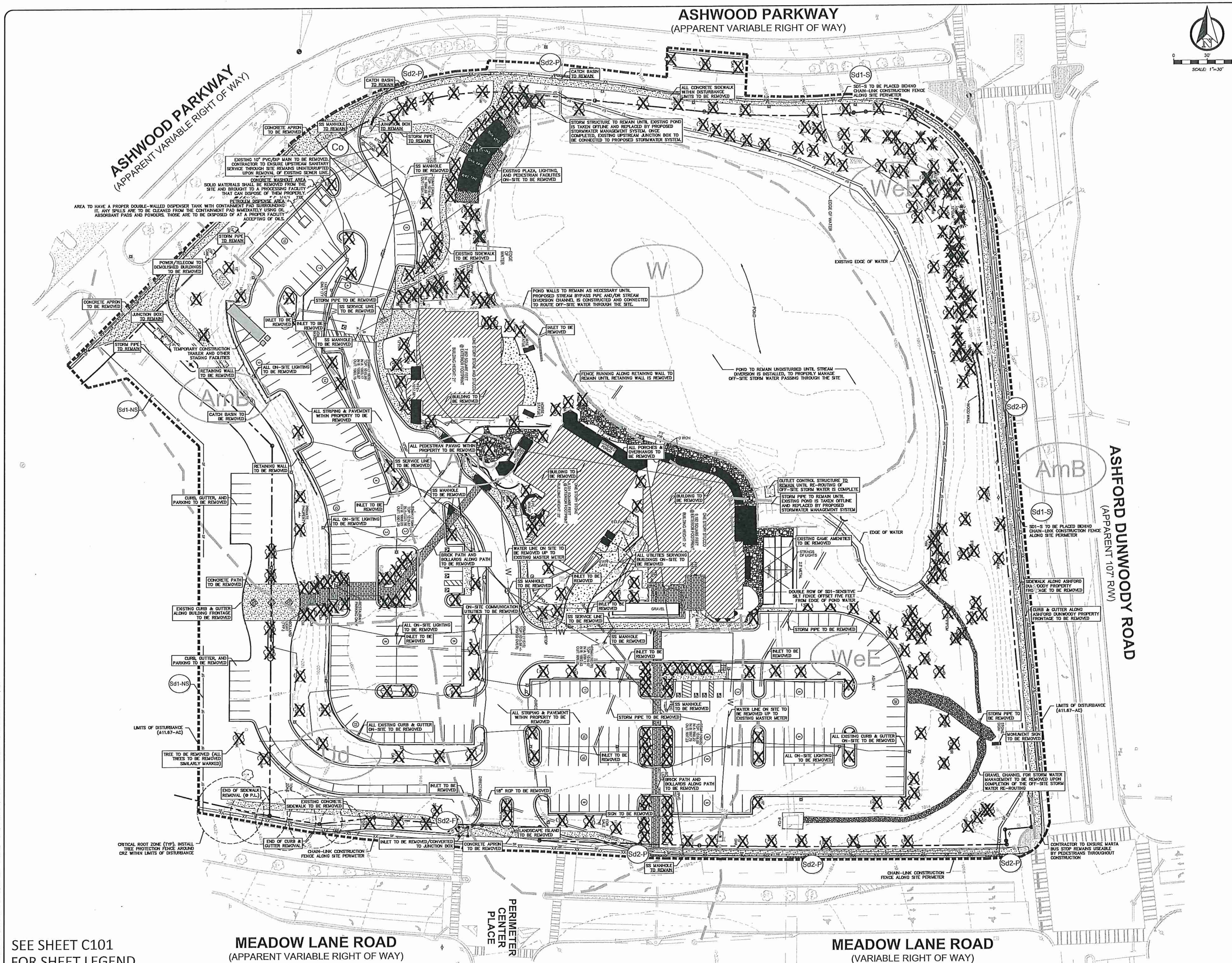
BRANCH PROPERTIES, LLC
ASHWOOD CENTER

ISSUED FOR: PRICING PLANS
JURISDICTION: CITY OF DUNWOODY
LOCATION: 500 ASHWOOD PARKWAY ATLANTA, GA 30338

#	DATE	REVISIONS

DRAWN:	CHECK:
KH	RTC
JOB NO: 18-108	DATE: 09/18/18

STORM WATER POLLUTION PREVENTION PLAN
SHEET C700



SEE SHEET C101
FOR SHEET LEGEND

GEORGIA REGISTERED PROFESSIONAL ENGINEER No. 032800 RON T. CRUMP
09/18/18

CONTINEO GROUP
755 COMMERCE DRIVE
SUITE 800
DECATUR, GA 30030
678.601.4046
www.tcg.engineer

BRANCH PROPERTIES, LLC
3340 PEACHTREE STREET NE, SUITE 600
ATLANTA, GA 30326
(404) 832 - 8900

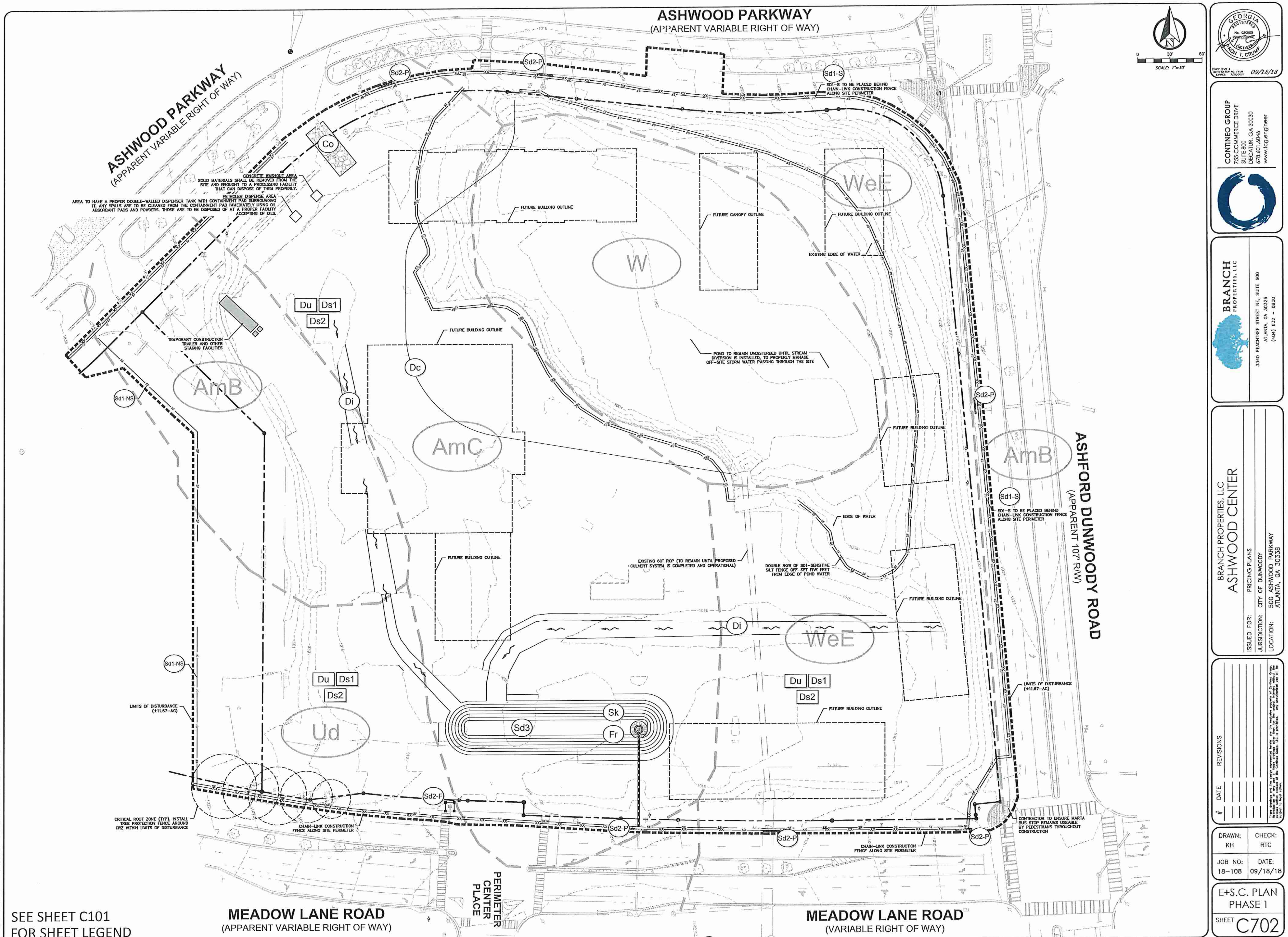
BRANCH PROPERTIES, LLC
ASHWOOD CENTER

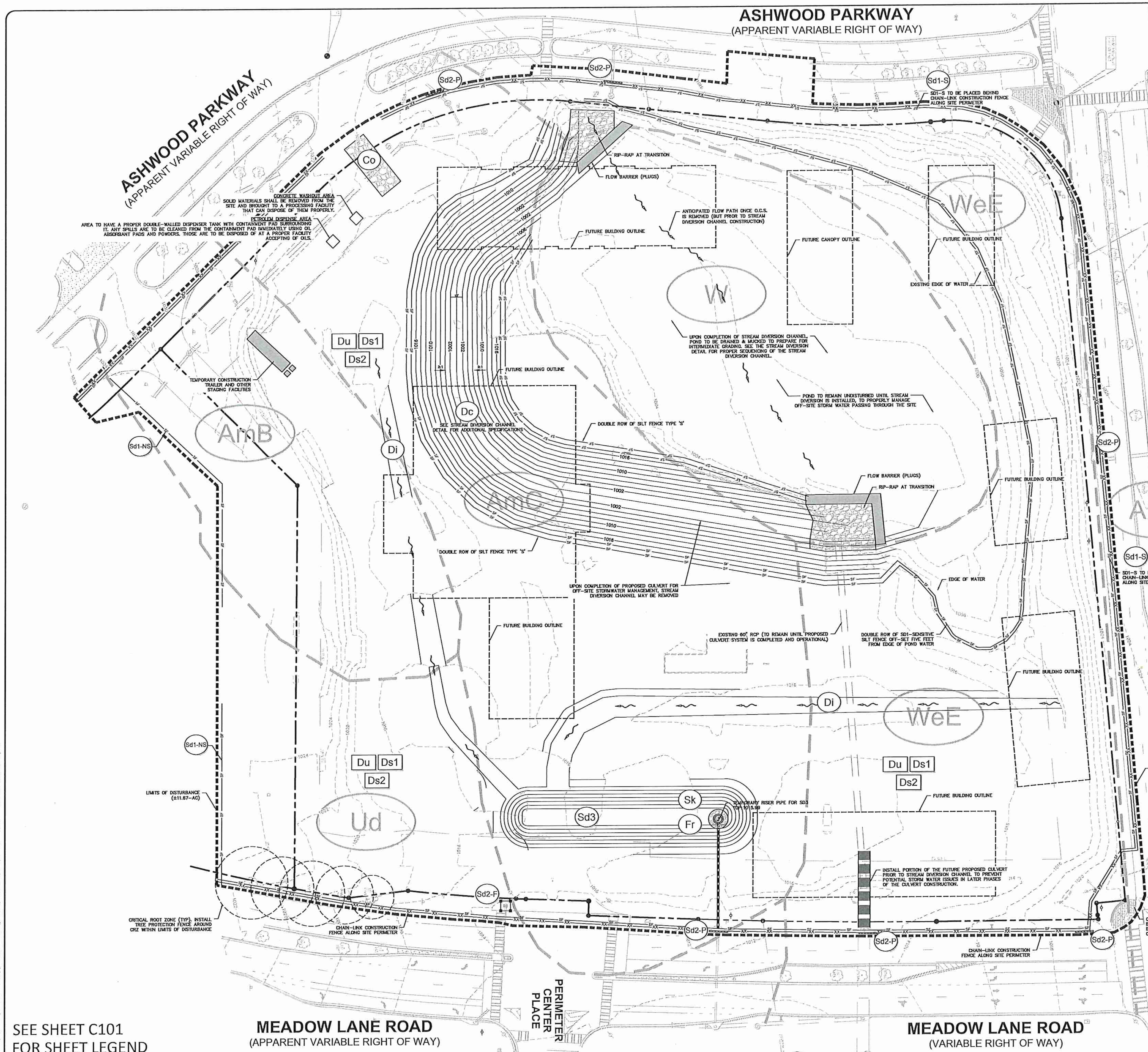
ISSUED FOR: PRICING PLANS
JURISDICTION: CITY OF DUNWOODY
LOCATION: 500 ASHWOOD PARKWAY ATLANTA, GA 30338

DATE	REVISIONS

DRAWN:	CHECK:
KH	RTC
JOB NO:	DATE:
18-108	09/18/18

DEMOLITION PLAN
SHEET C701


ASHWOOD PARKWAY
(APPARENT VARIABLE RIGHT OF WAY)
ASHWOOD PARKWAY
(APPARENT VARIABLE RIGHT OF WAY)
ASHFORD DUNWOODY ROAD
(APPARENT 107' R/W)
MEADOW LANE ROAD
(APPARENT VARIABLE RIGHT OF WAY)
MEADOW LANE ROAD
(VARIABLE RIGHT OF WAY)
PERIMETER CENTER PLACE
SCALE: 1"=30'
CONCRETE WASHOUT AREA
SOLID MATERIALS SHALL BE REMOVED FROM THE SITE AND BROUGHT TO A PROCESSING FACILITY THAT CAN DISPOSE OF THEM PROPERLY.
PETROLEUM DISPENSE AREA
AREA TO HAVE A PROPER DOUBLE-WALLED DISPENSER TANK WITH CONTAINMENT PAD SURROUNDING IT. ANY SPILLS ARE TO BE CLEANED FROM THE CONTAINMENT PAD IMMEDIATELY USING OIL ABSORBANT PADS AND POWDERS. THOSE ARE TO BE DISPOSED OF AT A PROPER FACILITY ACCEPTING OF OILS.
TEMPORARY CONSTRUCTION TRAILER AND OTHER STAGING FACILITIES
FUTURE BUILDING OUTLINE
FUTURE CANOPY OUTLINE
EXISTING EDGE OF WATER
EDGE OF WATER
POND TO REMAIN UNDISTURBED UNTIL STREAM DIVERSION IS INSTALLED, TO PROPERLY MANAGE OFF-SITE STORM WATER PASSING THROUGH THE SITE
EXISTING 60" RCP (TO REMAIN UNTIL PROPOSED CULVERT SYSTEM IS COMPLETED AND OPERATIONAL)
DOUBLE ROW OF SD1-SENSITIVE SILT FENCE OFF-SET FIVE FEET FROM EDGE OF POND WATER
SD1-S TO BE PLACED BEHIND CHAIN-LINK CONSTRUCTION FENCE ALONG SITE PERIMETER
LIMITS OF DISTURBANCE (±11.67-AC)
CRITICAL ROOT ZONE (TYP). INSTALL TREE PROTECTION FENCE AROUND CRZ WITHIN LIMITS OF DISTURBANCE
CHAIN-LINK CONSTRUCTION FENCE ALONG SITE PERIMETER
CONTRACTOR TO ENSURE MARTA BUS STOP REMAINS USEABLE BY PEDESTRIANS THROUGHOUT CONSTRUCTION
Co
Dc
Di
Du
Ds1
Ds2
Sd1-S
Sd1-NS
Sd2-P
Sd2-F
Sd3
Sk
Fr
W
WeE
AmB
AmC
Ud
SEE SHEET C101
FOR SHEET LEGEND
09/18/18
CONTINEO GROUP
755 COMMERCE DRIVE
SUITE 800
DECATUR, GA 30030
678.401.6046
www.tcg.engineer
BRANCH PROPERTIES, LLC
3340 PEACHTREE STREET NE, SUITE 600
ATLANTA, GA 30326
(404) 832 - 8900
BRANCH PROPERTIES, LLC
ASHWOOD CENTER
ISSUED FOR: PRICING PLANS
JURISDICTION: CITY OF DUNWOODY
LOCATION: 500 ASHWOOD PARKWAY ATLANTA, GA 30338
DATE REVISIONS
DRAWN: KH
CHECK: RTC
JOB NO: 18-108
DATE: 09/18/18
E+S.C. PLAN
PHASE 1
SHEET C702



ANTICIPATED POND/CULVERT STORMWATER MANAGEMENT STEPS:

1. AFTER SITE DEMOLITION AND PHASE 1 SITE STABILIZATION PRACTICES ARE INSTALLED, INSTALL 10'x7' CULVERT AT THE DOWNSTREAM PORTION OF FUTURE CULVERT AS INDICATED ON THE 'POND DIVERSION PHASE'. REMOVE O.C.S. WITHIN POND TO BEGIN DRAINING POND. ENSURE SEDIMENT AND ANY OTHER OBJECTS DO NOT FLOW DOWNSTREAM THROUGH THE FORMER O.C.S. LOCATION.
2. CONSTRUCT THE STREAM DIVERSION CHANNEL AS INDICATED ON THE POND DIVERSION PHASE, PER SPECIFICATIONS FROM THE LATEST EDITION OF THE GEORGIA EROSION & SEDIMENT CONTROL MANUAL.
3. ONCE STREAM DIVERSION CHANNEL IS IN OPERATION, COMPLETE DRAINAGE OF THE EXISTING POND.
4. CONSTRUCT THE REMAINDER OF THE PROPOSED CULVERT SYSTEM TO THE NORTH AND TO THE SOUTH OF THE DIVERSION CHANNEL, AS SEEN ON THE 'CULVERT CONSTRUCTION PHASE'.
5. COMPLETE CONSTRUCTION OF THE CULVERT TO MANAGE THE OFF-SITE STORM WATER.
6. PROCEED TO PHASE 2, THE 'INTERMEDIATE' PHASE OF CONSTRUCTION.

SEE SHEET C101 FOR SHEET LEGEND

GEORGIA REGISTERED No. 030600 PROFESSIONAL ENGINEER ARON T. CRUMP
09/18/18

CONTINEO GROUP
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BRANCH PROPERTIES, LLC
3340 PEACHTREE STREET NE, SUITE 600
ATLANTA, GA 30326
(404) 832 - 8800

BRANCH PROPERTIES, LLC
ASHWOOD CENTER

ISSUED FOR:	PRICING PLANS
JURISDICTION:	CITY OF DUNWOODY
LOCATION:	500 ASHWOOD PARKWAY ATLANTA, GA 30338

#	DATE	REVISIONS

DRAWN:	CHECK:
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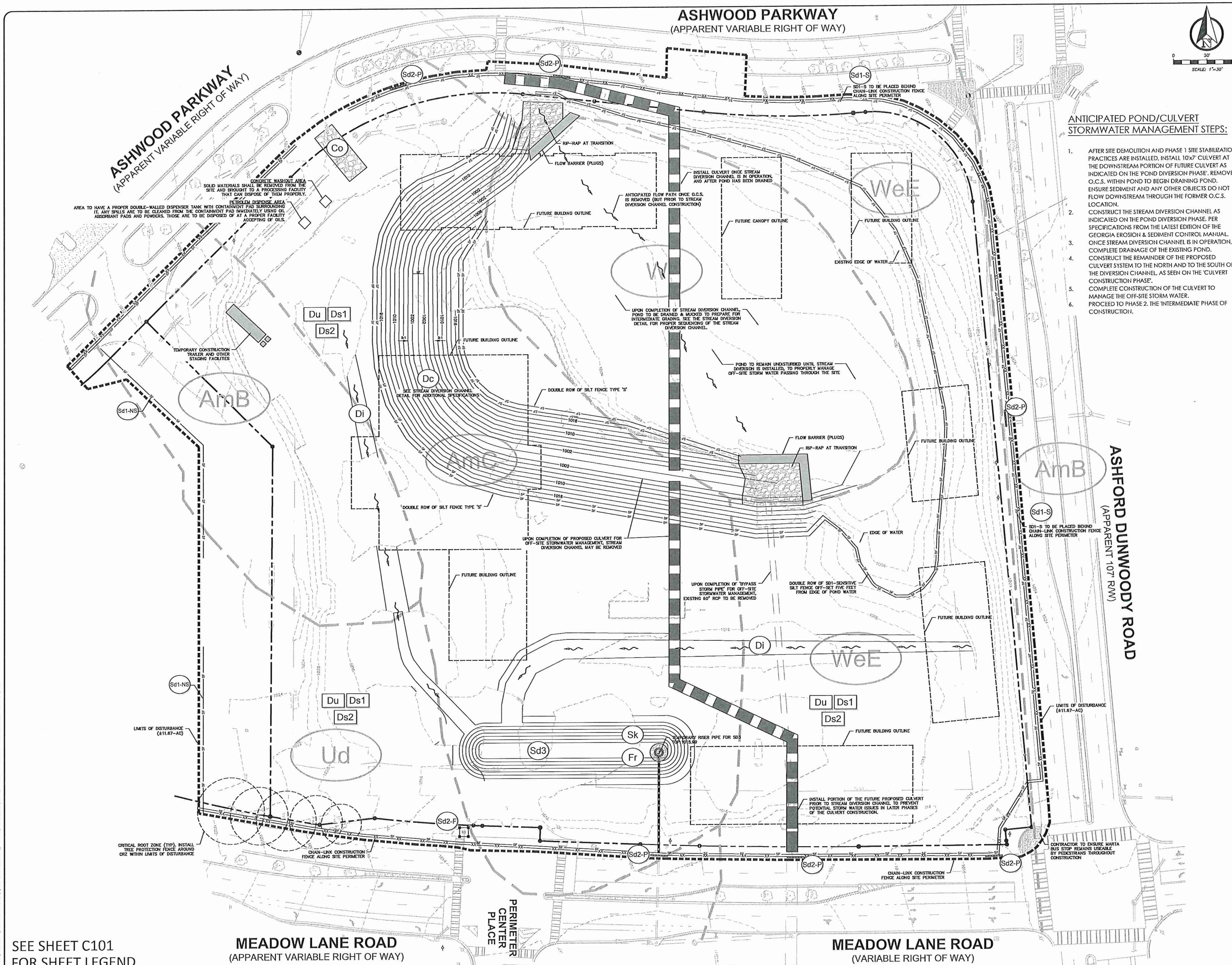
JOB NO:	DATE:
18-108	09/18/18

POND DIVERSION PHASE

SHEET C703



ANTICIPATED POND/CULVERT STORMWATER MANAGEMENT STEPS:

1. AFTER SITE DEMOLITION AND PHASE 1 SITE STABILIZATION PRACTICES ARE INSTALLED, INSTALL 10'x7' CULVERT AT THE DOWNSTREAM PORTION OF FUTURE CULVERT AS INDICATED ON THE 'POND DIVERSION PHASE'. REMOVE O.C.S. WITHIN POND TO BEGIN DRAINING POND. ENSURE SEDIMENT AND ANY OTHER OBJECTS DO NOT FLOW DOWNSTREAM THROUGH THE FORMER O.C.S. LOCATION.
2. CONSTRUCT THE STREAM DIVERSION CHANNEL AS INDICATED ON THE POND DIVERSION PHASE. PER SPECIFICATIONS FROM THE LATEST EDITION OF THE GEORGIA EROSION & SEDIMENT CONTROL MANUAL.
3. ONCE STREAM DIVERSION CHANNEL IS IN OPERATION, COMPLETE DRAINAGE OF THE EXISTING POND.
4. CONSTRUCT THE REMAINDER OF THE PROPOSED CULVERT SYSTEM TO THE NORTH AND TO THE SOUTH OF THE DIVERSION CHANNEL, AS SEEN ON THE 'CULVERT CONSTRUCTION PHASE'.
5. COMPLETE CONSTRUCTION OF THE CULVERT TO MANAGE THE OFF-SITE STORM WATER.
6. PROCEED TO PHASE 2, THE 'INTERMEDIATE' PHASE OF CONSTRUCTION.

SEE SHEET C101 FOR SHEET LEGEND

GEORGIA REGISTERED No. 030600 PROFESSIONAL ENGINEER ARON T. CRUMP 09/18/18

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(404) 832 - 8800

BRANCH PROPERTIES, LLC
ASHWOOD CENTER

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JURISDICTION: CITY OF DUNWOODY
LOCATION: 500 ASHWOOD PARKWAY ATLANTA, GA 30338

#	DATE	REVISIONS

DRAWN:	CHECK:
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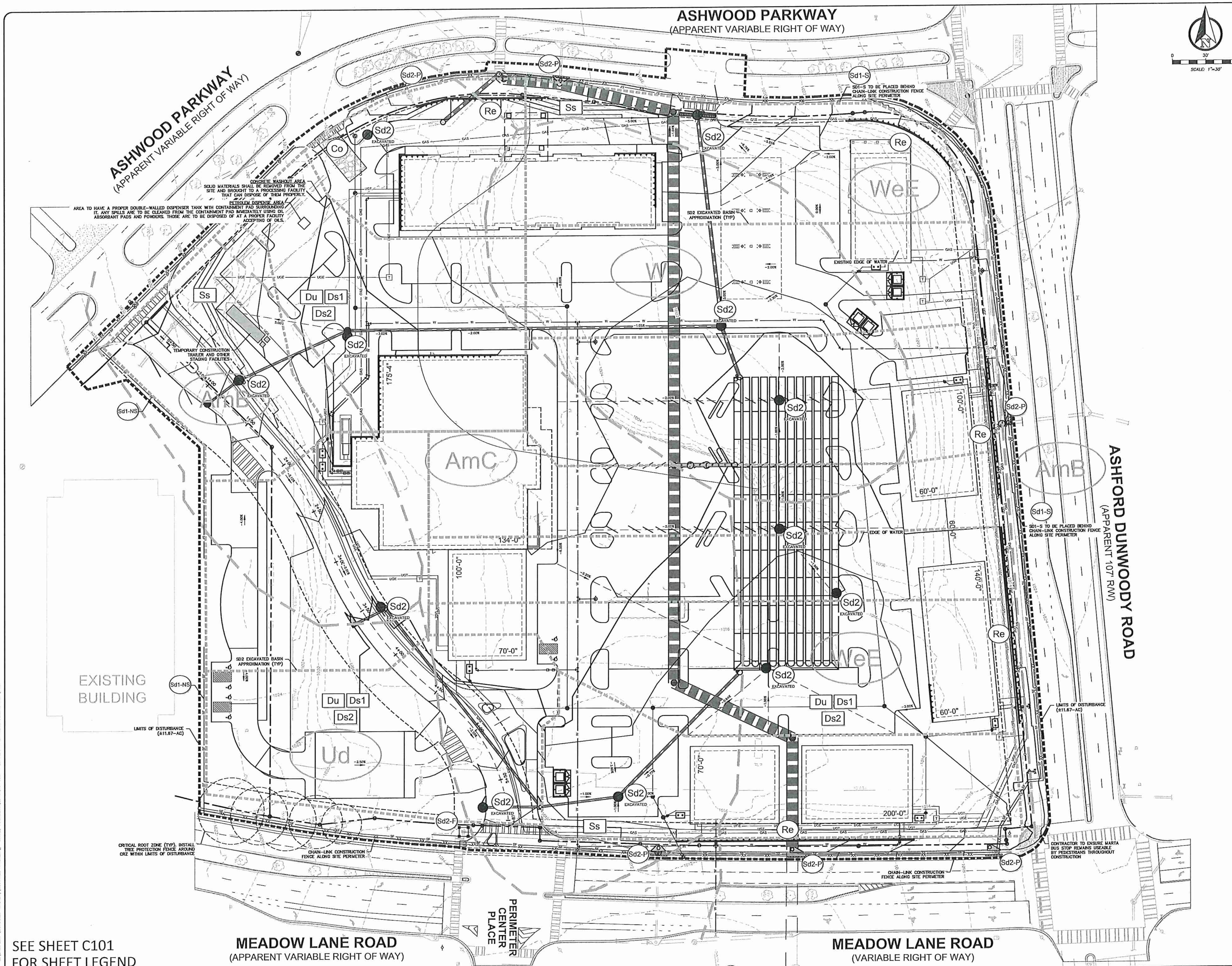
18-108	09/18/18

CULVERT CONSTRUCTION PHASE

SHEET C704



SEE SHEET C101
FOR SHEET LEGEND

GEORGIA REGISTERED PROFESSIONAL ENGINEER No. 030800 — RON T. CRUMP — 09/18/18

CONTINEO GROUP
755 COMMERCE DRIVE
SUITE 800
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BRANCH PROPERTIES, LLC
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ATLANTA, GA 30326
(404) 832 - 8900

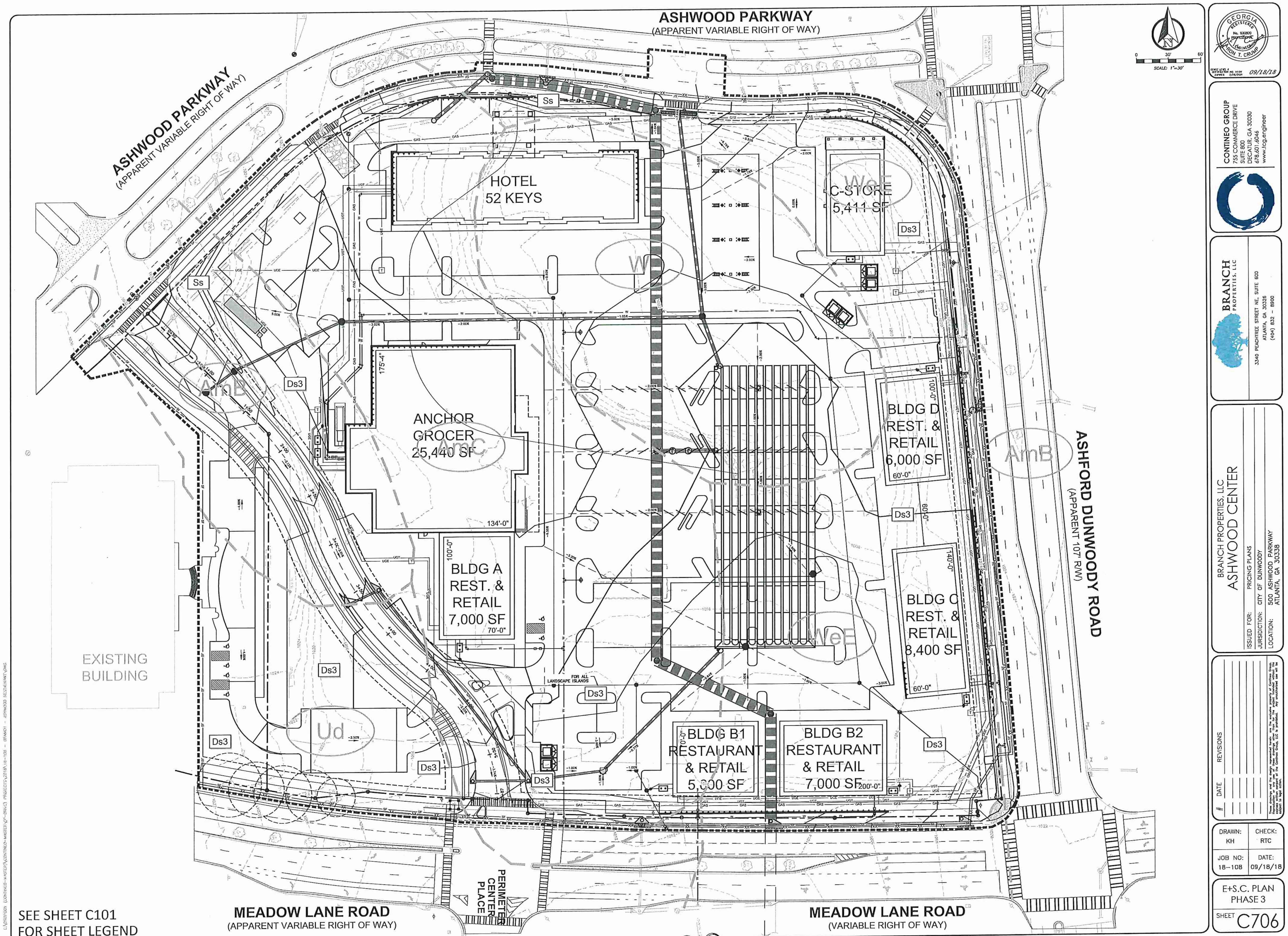
BRANCH PROPERTIES, LLC
ASHWOOD CENTER

ISSUED FOR: PRICING PLANS
JURSIDICTION: CITY OF DUNWOODY
LOCATION: 500 ASHWOOD PARKWAY ATLANTA, GA 30338

#	DATE	REVISIONS

DRAWN:	CHECK:
KH	RTC
JOB NO: 18-108	DATE: 09/18/18

E+S.C. PLAN
PHASE 2
SHEET C705


ASHWOOD PARKWAY
(APPARENT VARIABLE RIGHT OF WAY)
ASHWOOD PARKWAY
(APPARENT VARIABLE RIGHT OF WAY)
HOTEL
52 KEYS
C-STORE
5,411 SF
ANCHOR
GROCER
25,440 SF
BLDG D
REST. &
RETAIL
6,000 SF
BLDG A
REST. &
RETAIL
7,000 SF
BLDG C
REST. &
RETAIL
8,400 SF
BLDG B1
RESTAURANT
& RETAIL
5,000 SF
BLDG B2
RESTAURANT
& RETAIL
7,000 SF
EXISTING
BUILDING
ASHFORD DUNWOODY ROAD
(APPARENT 107' R/W)
MEADOW LANE ROAD
(APPARENT VARIABLE RIGHT OF WAY)
MEADOW LANE ROAD
(VARIABLE RIGHT OF WAY)
PERIMETER CENTER PLACE
SEE SHEET C101
FOR SHEET LEGEND
FOR ALL LANDSCAPE ISLANDS
CONTINEO GROUP
755 COMMERCE DRIVE
SUITE 800
DECATUR, GA 30030
678.601.6046
www.tcg.engineer
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REVISIONS
DATE
DRAWN: KH
CHECK: RTC
JOB NO: 18-108
DATE: 09/18/18
E+S.C. PLAN
PHASE 3
SHEET C706
09/18/18
SCALE: 1"=30'

GAR100001 - STAND ALONE PROJECT - PRIMARY PERMITTEE

GENERAL NPDES
PERMIT NO. GAR100001

GEORGIA
DEPARTMENT OF NATURAL RESOURCES
ENVIRONMENTAL PROTECTION DIVISION

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

In compliance with the provisions of the Georgia Water Quality Control Act (Georgia Laws 1964, p.416, as amended), hereinafter called the "State Act," the Federal Clean Water Act, as amended (33 U.S.C. 1251 et seq.), hereinafter called the "Clean Water Act," and the Rules and Regulations promulgated pursuant to each of these Acts, new and existing stormwater 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 stormwater 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 permit shall become effective on August 1, 2018.

This permit and the authorization to discharge shall expire at midnight, July 31, 2023.

Signed this 16th day of May, 2018.

Richard E. Dunn, Director
Environmental Protection Division

State of Georgia
Department of Natural Resources
Environmental Protection Division
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Permit No. GAR100001

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Department of Natural Resources
Environmental Protection Division
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Part I. COVERAGE UNDER THIS PERMIT

A. Permit Area.

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

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

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

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

3. "Certified Personnel" means a person who has successfully completed the appropriate certification course approved by the Georgia 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. "Common Development" means a contiguous area where multiple, separate, and distinct construction activities will be taking place at different times on different schedules under one plan of development.

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

7. "CPESC" means Certified Professional in Erosion and Sediment Control with current certification by EnviroCert International, Inc.

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

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State of Georgia
Department of Natural Resources
Environmental Protection Division
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certification by EnviroCert International, Inc. Design Professionals shall practice in a manner that complies with applicable Georgia law governing professional licensure.

9. "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).

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

11. "Division" means the Environmental Protection Division of the Department of Natural Resources.

12. "Erosion" means the process by which land surface is worn away by the action of wind, water, ice or gravity.

13. "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.

14. "Filling" means the placement of any soil or solid material either organic or inorganic on a natural ground surface or an excavation.

15. "Final Stabilization" means that all soil disturbing activities at the site have been completed, and that for unpaved areas and areas not covered by permanent structures and areas located outside the waste disposal limits of a landfill cell that has been certified by EPD for waste disposal, 100% of the soil surface is uniformly covered in permanent vegetation with a density of 70% or greater, or landscaped according to the Plan (uniformly covered with landscaping materials in planned landscaped areas), or equivalent permanent stabilization measures as defined in the Manual (excluding a crop of annual vegetation and a seeding of target crop perennials appropriate for the region).

16. "General Contractor" means the operator of the stand alone construction or site.

17. "Impossible" means the monitoring location(s) are either physically or legally inaccessible, or access would cause danger to life or limb.

18. "Infeasible" means not technologically possible, or not economically practicable and achievable in light of best industry practices.

19. "Landfill" means an area of land or an excavation in which waste materials are placed for permanent disposal, and which is not a land application unit, surface impoundment, injection well or waste pile as defined by Georgia NPDES General Permit GAR050000, and which area of land or excavation must be certified by EPD before it can begin waste disposal operations.

20. "Landfill Cell(s)" means a defined area within a landfill where waste materials are permanently disposed and that must be certified by EPD for use before such cell(s) can begin

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State of Georgia
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receiving waste materials after which those activities associated with waste receipt and disposal in the landfill cell(s) shall not be considered construction activity as defined by this permit.

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

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

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

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

25. "Normal Business Hours" means Monday thru Friday, 8:00 AM to 5:00 PM, excluding any non-working Saturday, non-working Sunday and non-working Federal holiday.

26. "NOT" means Notice of Termination (see Part VI).

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

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

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

30. "Owner" means the legal title holder to the real property on which is located the facility or site where construction activity takes place.

31. "Permittee" means any entity that has submitted a Notice of Intent and obtained permit coverage.

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

33. "Point Source" means any discernible, confined, and discrete conveyance, including but not limited to, any pipe, ditch, channel, tunnel, conduit, well, discrete fissure or container from which pollutants are or may be discharged. This term also means sheet flow which is later

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Department of Natural Resources
Environmental Protection Division
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conveyed via a point source to waters of the State. This term does not include return flows from irrigated agriculture or agricultural stormwater runoff.

34. "Primary Permittee" means the Owner or the Operator or both of a tract of land for a construction site subject to this permit.

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

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

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

38. "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.

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

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

41. "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.

42. "Stand Alone Construction" or "Stand Alone Construction Project" means construction activities that are not part of a common development where the primary permittee chooses not to use secondary permittees.

43. "Stormwater" means stormwater runoff, snow melt runoff, and surface runoff and drainage.

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

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purpose of either changing the surface of the land or storing, regulating or disposing of runoff to prevent excessive sediment loss.

45. "Sub-contractor" means an entity employed or retained by the permittee to conduct any type of construction activity (as defined in this permit) at a stand alone 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 permittees unless they meet the definition of either a primary, secondary or tertiary permittee.

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

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

48. "Utility Company or Utility Contractor" means, for purposes of this Permit, an entity or sub-contractor that is responsible, either directly or indirectly, for the construction, installation, and maintenance of conduits, pipes, pipelines, cables, wires, trenches, vaults, manholes, and similar structures or devices for the conveyance of natural gas (or other types of gas), liquid petroleum products, electricity, telecommunications (telephone, data, television, etc.), water, stormwater or sewage.

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

50. "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 of perennial sod forming grass.

51. "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.

52. "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.

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C. Eligibility.

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

a. all discharges of stormwater associated with stand alone construction projects that will result in land disturbance equal to or greater than one (1) acre occurring on or before, and continuing after, the effective date of this permit, thenceforth referred to as existing stormwater discharges from construction activities) except for discharges identified under Part I.C.3.;

b. all discharges of stormwater associated with stand alone construction projects that will result in land disturbance equal to or greater than one (1) acre occurring after the effective date of this permit, thenceforth referred to as stormwater discharges from construction activities); and

c. coverage under this permit is not required for discharges of stormwater associated with minor land disturbing activities (such as home gardens and individual home landscaping, repairs, maintenance work, fences and other related activities which result in minor soil erosion) conducted outside of the 25 foot buffer along the banks of all State waters requiring a buffer and outside of the 50 foot buffer along the banks of all State waters classified as 'trout streams' requiring a buffer on individual residential lots sold to homeowners where all planned construction activities on that lot have been completed and have undergone final stabilization.

2. Mixed Stormwater Discharges. This permit may only authorize a stormwater discharge from a construction site or construction activities mixed with a stormwater 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 stormwater 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. stormwater 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 stormwater discharges from construction sites are not authorized by this permit:

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a. stormwater 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-stormwater 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-stormwater discharges) of this permit;

c. stormwater discharges associated with industrial activity that are subject to an existing NPDES individual or general permit. Such discharges may be authorized under this permit after an existing permit expires provided the existing permit did not establish numeric limitations for such discharges; and

d. stormwater discharges from construction sites that the Director (EPD) has determined to be or may reasonably be expected to be contributing to a violation of a water quality standard.

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

D. Authorization.

1. Any person desiring coverage under this permit must submit a Notice of Intent (NOI) to the EPD and the NOI must be received by the EPD in accordance with the requirements of Part II, using the electronic submittal service provided by the EPD, in order for stormwater 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 stormwater from construction sites under the terms and conditions of this permit fourteen (14) days after the date that the NOI is submitted and confirmation of submittal is received. 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 or ownership changes, 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.

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Part II. NOTICE OF INTENT REQUIREMENTS

A. Deadlines for Notification.

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

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

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

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

5. For sites where construction activities will result in land disturbance equal to or greater than one (1) acre that are required as a result of storm- or emergency-related repair work, the Owner or Operator or both shall notify the appropriate EPD District Office within three (3) days of

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commencement of said construction activities. The Owner or Operator or both shall submit the NOI to the appropriate EPD district office as soon as possible after the storm- or emergency-related event but no later than fourteen (14) days after the commencement of construction activities and shall submit the Plan in accordance with Part IV.A.6.

B. Notice of Intent Contents.

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

a. The project construction site name, GPS location (decimal degrees) of construction exit, construction site location (e.g., street address), city (if applicable) and county of the construction site for which the notification is submitted. The construction site location information must be sufficient to accurately locate the construction site;

b. The Owner's legal name, address, telephone number and email address; and if available, the Operator's legal name, address, telephone number and email address; and if applicable, the Duly Authorized Representative's legal name and/or position name, telephone number and email address;

c. The name, telephone number and email address of the individual to whom the permittee has assigned the responsibility for the daily operational control (i.e., construction superintendent, etc.) of the construction site;

d. The name of the initial receiving water(s) or if unnamed the first named blue line stream indicated on the appropriate USGS Topographic map, and when the discharge is through a municipal separate storm sewer system (MS4), the name of the local government operating the municipal separate storm sewer system and the name of the receiving water(s) which receives the discharge from the MS4, and the permittee's determination of whether the receiving water(s) supports warm water fisheries or is a trout stream as indicated in the Rules and Regulations for Water Quality Control, Chapter 391-3-6;

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

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

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or before the effective date of this permit, the start date must be the actual start date of construction;

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

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

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

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

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

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

C. Notice of Intent Submittal. NOIs are to be submitted to EPD using the electronic submittal service provided by EPD and a copy 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. The permittee shall retain a copy of the proof of submittal at the construction site or the proof of submittal shall be readily available at a designated alternative location from commencement of construction until such time as a Notice of Termination (NOT) is submitted in accordance with Part VI.

D. Fees. Any applicable fees shall be submitted by the **Primary Permittee** in accordance with Rules and Regulations for Water Quality Control (Rules) promulgated by the Board of Natural Resources. By submitting an NOI for coverage under this permit the primary permittee agrees to pay any fees required, now or in the future, by such Rules authorized under O.C.G.A. Section 12-5-23(a)(5)(A), which allows the Board of Natural Resources to establish a fee system. Fees may be assessed on land disturbing activity proposed to occur on or after the effective date of this permit and shall be paid in accordance with such Rules.

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E. Renotification. Upon issuance of a new or different general permit for some or all of the stormwater discharges covered by this permit, the permittee is required to notify the EPD of their intent to be covered by the new or different general permit. The permittee must submit a renewal Notice of Intent in accordance with the notification requirements of the new or different general permit.

PART III. SPECIAL CONDITIONS, MANAGEMENT PRACTICES, PERMIT VIOLATIONS AND OTHER LIMITATIONS

A. Prohibition on Non-Stormwater Discharges.

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

2. The following non-stormwater discharges may be authorized by this permit provided the non-stormwater component of the discharge is explicitly listed in the Erosion, Sedimentation and Pollution Control Plan and is in compliance with Part IV.D.7.; discharges from fire fighting activities; fire hydrant flushing; potable water sources including water line flushing; irrigation drainage; air conditioning condensate; springs; uncontaminated ground water; and foundation or footing drains where flows are not contaminated with process materials or pollutants.

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

4. This permit does not authorize the discharge of wastewater from washout and cleanout of stucco, paint, form release oils, curing compounds and other construction materials.

B. Releases in Excess of Reportable Quantities.

1. The discharge of hazardous substances or oil in the stormwater discharge(s) from a site shall be prevented. This permit does not relieve the permittee of the reporting requirements of Georgia's Oil or Hazardous Material Spills or Releases Act (O.C.G.A. §§12-14-2, et seq.), 40 CFR Part 117 and 40 CFR Part 302. Where a release containing a hazardous substance in an amount equal to or in excess of a reporting quantity established under either Georgia's Oil or Hazardous Material Spills or Releases Act (O.C.G.A. §§12-14-2, et seq.), 40 CFR 117 or 40 CFR 302 occurs during a 24 hour period, the permittee is required to notify EPD at (404) 656-4863 or (800) 241-4113 and the National Response Center (NRC) at (800) 424-8802 in accordance with the requirements of Georgia's Oil or Hazardous Material Spills or Releases Act (O.C.G.A. §§12-14-2, et seq.), 40 CFR 117 and 40 CFR 302 as soon as he/she has knowledge of the discharge.

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

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C. Discharges Into, or within One Mile Upstream of and within the Same Watershed as, Any Portion of a Biota Impaired Stream Segment.

Any permittee who intends to obtain coverage under this permit for stormwater discharges associated with construction activity into an Impaired Stream Segment, or within one (1) linear mile upstream of and within the same watershed as, any portion of an Impaired Stream Segment identified as "not supporting" its designated use(s), as shown on Georgia's most current "305(b)/303(d) List Documents (Approved)" at the time of NOI submittal, must satisfy the requirements of Part III.C. of this permit if the Impaired Stream Segment has been listed for criteria violated/cause, "Bio F" (Impaired Fish Community) and/or "Bio M" (Impaired Macroinvertebrate Community), within Category 4a, 4b or 5, and the potential cause is either "NP" (nonpoint source) or "UR" (urban runoff). Those discharges that are located within one (1) linear mile of an Impaired Stream Segment, but are not located within the watershed of any portion of that stream segment, are excluded from this requirement. Georgia's "305(b)/303(d) List Documents (Approved)" can be viewed on the EPD website.

1. If a Total Maximum Daily Load (TMDL) Implementation Plan for sediment has been finalized at least six (6) months prior to the permittee's submittal of the NOI, the Erosion, Sedimentation and Pollution Control Plan (Plan) must address any site-specific conditions or requirements included in the TMDL Implementation Plan that are applicable to the permittee's discharge(s) to the Impaired Stream Segment within the timeframe specified in the TMDL Implementation Plan. If the TMDL Implementation Plan establishes a specific numeric wasteload allocation that applies to a permittee's discharge(s) to the Impaired Stream Segment, then the permittee must incorporate that allocation into the Erosion, Sedimentation and Pollution Control Plan and implement all necessary measures to meet that allocation. A list of TMDL Implementation Plans can be viewed on the EPD website.

2. In order to ensure that the permittee's discharge(s) do not cause or contribute to a violation of State water quality standards, the Plan must include at least four (4) of the following best management practices (BMPs) for those areas of the site which discharge into or within one (1) linear mile upstream and within the same watershed as the Impaired Stream Segment:

a. During all construction activities as defined in this permit, double the width of the 25 foot undisturbed vegetated buffer along all State waters requiring a buffer and the 50 foot undisturbed vegetated buffer along all State waters classified as "trout streams" requiring a buffer. During construction activities, EPD will not grant variances to any such buffers that are increased in width pursuant to this section.

b. Increase all temporary sediment basins and retrofitted stormwater management basins to provide sediment storage of at least 3600 cubic feet (134 cubic yards) per acre drained.

c. Use baffles in all temporary sediment basins and retrofitted stormwater management basins to at least double the conventional flow path length to the outlet structure.

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d. A large sign (minimum 4 feet x 8 feet) must be posted on site by the actual start date of construction. The sign must be visible from a public roadway. The sign must identify the following: (1) the construction site, (2) the permittee(s), (3) the contact person(s) along with their telephone number(s), and (4) the permittee-hosted website where the Plan can be viewed. The permittee-hosted website where the Plan can be viewed must be provided on the submitted NOI. The sign must remain on site and the Plan must be available on the provided website until a NOT has been submitted.

e. Use flocculants or coagulants and/or mulch to stabilize all areas left disturbed for more than seven (7) calendar days in accordance with Part III.D.1. of this permit.

f. Conduct turbidity sampling after every rain event of 0.5 inch or greater within any 24 hour period, recognizing the exceptions specified in Part IV.D.6.d. of this permit.

g. Comply with the applicable end-of-pipe turbidity effluent limit, without the "BMP defense" as provided for in O.C.G.A. 12-7-6(a)(1).

h. Reduce the total planned site disturbance to less than 50% impervious surfaces (excluding any State-mandated buffer areas from such calculations). All calculations must be included on the Plan.

i. Limit the amount of area disturbed 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.

j. Use "Dirt II" techniques available on the EPD website, to model and manage all construction stormwater runoff (including sheet flow). All calculations must be included on the Plan.

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

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

m. Use appropriate erosion control slope stabilization instead of concrete in all construction stormwater ditches and storm drainages designed for a 25 year, 24 hour rainfall event.

n. Use flocculants or coagulants under a passive dosing method (e.g., flocculant blocks) within all construction stormwater ditches and storm drainages that feed into temporary sediment basins and retrofitted management basins.

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

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

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

r. 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.

s. 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 Georgia Soil and Water Conservation Commission).

t. 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 in the Plan.

u. Conduct inspections during the intermediate grading and drainage BMP phase and during the final BMP phase of the project by the design professional who prepared the Plan in accordance with Part IV.A.5. of the permit.

v. Install Post Construction BMPs (e.g., runoff reduction BMPs) which remove 80% TSS as outlined in the Georgia Stormwater Management Manual Known as the Blue Book or an equivalent or more stringent design manual.

D. Management Practices and Permit Violations.

1. Best management practices, as set forth in this permit, are required for all construction activities, and must be implemented in accordance with the design specifications contained in the "Manual for Erosion and Sediment Control in Georgia" (Manual) published by the Georgia Soil and Water Conservation Commission as of January 1 of the year in which the land-disturbing activity was permitted to prevent or reduce the pollution of waters of Georgia. Proper design, installation, and maintenance of best management practices shall constitute a complete defense to any action by the Director or to any other allegation of noncompliance with Part III.D.4. and Part III.D.5.

2. Except as required to install the initial sediment storage requirements and perimeter control BMPs as described in Part IV.D.3., the initial sediment storage requirements and perimeter control BMPs must be installed and implemented prior to conducting any other construction activities (e.g., clearing, grubbing and grading) within the construction site or when applicable,

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within phased sub-parts or segments of the construction site. Failure to comply shall constitute a violation of this permit for each day on which construction activities occur. The design professional who prepared the Plan must inspect the initial sediment storage requirements and perimeter control BMPs in accordance with Part IV.A.5. within seven (7) days after installation.

3. Failure to properly design, install, or maintain best management practices shall constitute a violation of this permit for each day on which such failure occurs. BMP maintenance as a result of the permittee's routine inspections shall not be considered a violation for the purposes of this paragraph. If during the course of the permittee's routine inspection BMP failures are observed which have resulted in sediment deposition into Waters of the State, the permittee shall correct the BMP failures and shall submit a summary of the violations to EPD in accordance with Part V.A.2 of this permit.

4. A discharge of stormwater runoff from disturbed areas where best management practices have not been properly designed, installed, and maintained shall constitute a separate violation for each day on which such discharge results in the turbidity of receiving water(s) being increased by more than ten (10) nephelometric turbidity units for waters classified as trout streams or more than twenty-five (25) nephelometric turbidity units for waters supporting warm water fisheries, regardless of a permittee's certification under Part II.B.1.i. This paragraph shall not apply to any land disturbance associated with the construction of single-family homes which are not part of a subdivision or planned common development unless five (5) acres or more will be disturbed.

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

6. Whenever a permittee finds that a BMP has failed or is deficient (beyond routine maintenance) and has resulted in sediment deposition into waters of the State, the permittee shall immediately take all reasonable steps to address the condition, including cleaning up any contaminated surfaces so the material will not discharge in subsequent storm events. The permittee shall submit a summary of the violations to EPD in accordance with Part V.A.2. of this permit and shall correct such BMP as follows:

a. When the repair does not require a new or replacement BMP or significant repair, the BMP failure or deficiency must be repaired within two (2) business days from the time of discovery;

b. When the repair requires a new or replacement BMP or significant repair, the installation of the new or modified BMP must be completed and the BMP must be operational by no later than seven (7) days from the time of discovery. If it is infeasible

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GEORGIA REGISTERED PROFESSIONAL ENGINEER
No. 030600
RON T. CRUMP
GSWCC LEVEL II CERTIFICATION NO. 14184 EXPIRES 7/26/2021
09/18/18

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BRANCH PROPERTIES, LLC
ASHWOOD CENTER
ISSUED FOR: PRICING PLANS
JURSIDICTION: CITY OF DUNWOODY
LOCATION: 500 ASHWOOD PARKWAY ATLANTA, GA 30338

#	DATE	REVISIONS

DRAWN: KH	CHECK: RTC
JOB NO: 18-108	DATE: 09/18/18

GAR100001 PERMIT (2018)

SHEET C707

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#13..

GAR100001 - STAND ALONE PROJECT - PRIMARY PERMITTEE

GEORGIA REGISTERED No. 030600 PROFESSIONAL ENGINEER RON T. CRUMP

09/18/18

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#	DATE	REVISIONS

DRAWN:	CHECK:
KH	RTC
JOB NO:	DATE:
18-108	09/18/18

GAR100001 PERMIT (2018)

SHEET C708

GAR100001 - STAND ALONE PROJECT - PRIMARY PERMITTEE

"(Note that the permittee may choose to meet the requirements of (ii) and (iii) 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.

3. Non-stormwater discharges. Except for flows from fire fighting activities, sources of non-stormwater listed in Part III.A.2. of this permit that are combined with stormwater 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-stormwater component 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 II.C. by the fifteenth day of the month following the reporting period. Reporting periods are months during which samples are taken in accordance with this permit. Sampling results shall be in a clearly legible format. Upon written notification, EPD may require the applicable permittee to submit the sampling results on a more frequent basis. Sampling and analysis of any stormwater 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 using the electronic submittal service provided by EPD. 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 time(s) analyses were initiated;
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. The results of such analyses, including the bench sheets, instrument readouts, computer disks or tapes, etc., used to determine these results;
h. Results which exceed EPD NTU shall be reported as "exceeds EPD NTUs"; and
i. Certification statement that sampling was conducted as per the Plan.

3. All written correspondence required by this permit shall be submitted by return receipt 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 readily available at a designated location from commencement of construction until such time as a NOT is submitted in accordance with Part VI.

F. Retention of Records.

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

a. A copy of all Notices of Intent submitted to EPD;
b. A copy of the Erosion, Sedimentation and Pollution Control Plan required by this permit;
c. The design professional's report of the results of the inspection conducted in accordance with Part IV.A.5. of this permit;
d. A copy of all sampling information, results, and reports required by this permit;
e. A copy of all inspection reports generated in accordance with Part IV.D.4.a. of this permit;
f. A copy of all violation summaries and violation summary reports generated in accordance with Part III.D.2. of this permit; and
g. Daily rainfall information collected in accordance with Part IV.D.4.a.(2). of this permit.

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

Part V. STANDARD PERMIT CONDITIONS

A. Duty to Comply.

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

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

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

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 or local agency approving sediment and Erosion, Sedimentation and Pollution Control Plans, grading plans, or stormwater management plans, or in the case of a stormwater discharge associated with construction activity which discharges through a municipal separate storm sewer system with an NPDES permit, to the local government operating the municipal separate storm sewer system, any information which is disclosed to determine compliance with this permit. In the case of information submitted to the EPD each information shall be considered public information and available under the Georgia Open Records Act.

F. Other Information. When the permittee becomes aware that he 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 required by the EPD shall be signed as follows:

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

a. For a corporation: by a responsible corporate officer. For the purpose of this permit, a responsible corporate officer means: (1) a president, secretary, treasurer, or vice-president

of the corporation in charge of a principal business function, or any other person who performs similar policy- or 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;

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

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

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

2. All inspection reports, sampling reports, or other reports required 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 overall operations of the regulated facility or activity, such as the position of manager, operator, superintendent, or position of equivalent responsibility (a duly authorized representative may thus 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. §12-8-60, et seq., Chapter 14 of Title 12 of the Official Code of Georgia Annotated, nor is the Director 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 statutes, 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.

M. Inspection and Entry. The permittee shall allow the Director or an authorized representative of EPA, EPD or to designated officials of the local government overseeing sediment and Erosion, Sedimentation and Pollution Control Plans, grading plans, or stormwater management plans or, in the case of a construction site which discharges through a municipal separate storm sewer system, 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:

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

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

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

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

Part VI. TERMINATION OF COVERAGE

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

1. For construction activities, by the permittee where the entire stand alone development has undergone final stabilization, all stormwater 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. For construction activities where the primary permittee has elected to submit NOIs for separate phases of the stand alone development, the phase or phases of the stand alone development on the NOT shall correspond to the phase or phases on the NOI.

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

B. Notice of Termination Contents:

1. The NPDES permit number for the stormwater discharge associated with construction activity identified by the Notice of Termination (i.e., GAR100001 – Stand Alone).

2. The project construction site name, GPS location (decimal degrees) of construction exit, construction site location, city (if applicable) and county of the construction site for which the notification is submitted. This information must correspond to the similar information as provided on the NOI. Where an address for the construction site is not available, the construction site location and situation must be sufficient to accurately locate the construction site.

3. The Owner's legal name, address, telephone number and email address and the Operator's legal name, address, telephone and email address.

4. The name of the initial 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 not previously submitted 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. Any other information specified on the NOT in effect at the time of submittal; and

7. The following certification signed in accordance with Part V.G.1. (signatory requirements):

"I certify under penalty of law that either: (a) all stormwater 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 stormwater 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 (NOT) for this permit shall be submitted to EPD using the electronic submittal service provided by EPD and a copy to the Local Issuing Authority or jurisdiction 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.

APPENDIX A

EPD DISTRICT OFFICES

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

Information shall be submitted to: West Central District Office
Georgia Environmental Protection Division
2640 Shurling Drive
Macon, GA 31211-3576
(478) 751-6612

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

Information shall be submitted to: East Central District Office
Georgia Environmental Protection Division
1025 Fall-in Way Extension
Augusta, GA 30909-1821
(706) 667-4343

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

Information shall be submitted to: Northeast District Office
Georgia Environmental Protection Division
745 Gaines School Road
Athens, GA 30605-3129
(706) 369-6376

D. For facilities/construction sites located in the following counties: Carr-ll, 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

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

Information shall be submitted to: Mountain District - Cartersville Office
Georgia Environmental Protection Division
P.O. Box 3250
Cartersville, GA 30120-1705
(770) 387-4900

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

Information shall be submitted to: Coastal District - Brunswick Office
Georgia Environmental Protection Division
400 Commerce Center Drive
Brunswick, GA 31523-8687
(912) 264-7284

G. For facilities/construction sites located in the following counties: Baker, Ben Hill, Berrien, Brooks, Calhoun, Clay, Colquitt, Cook, Crisp, Decatur, Dodge, Dougherty, Early, Echols, Grady, Irwin, Lanier, Lee, Lowndes, Miller, Mitchell, Quitman, Randolph, Seminole, Stewart, Sumter, Tallan, 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
(229) 430-4164

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 1462 East
Atlanta, Georgia 30334
(404) 463-1511

APPENDIX B

Nephelometric Turbidity Unit (NTU) TABLES

Trout Streams

	Surface Water Drainage Area, square miles								
	0-4.99	5.0-9.99	10-24.99	25-49.99	50-99.99	100-249.99	250-499.99	500+
1.00-9.99	25	50	75	150	150	500	500	550
10.00-24.99	25	25	50	75	150	200	500	500
25.00-50.99	25	25	25	50	75	100	300	500
50.00-100.99	25	25	25	25	50	75	150	300
100.01+	25	25	25	25	25	50	90	100

Size Specific Criteria

Waters Supporting Warm Water Fisheries

	Surface Water Drainage Area, square miles							
	1-4.99	5.0-9.99	10-24.99	25-49.99	50-99.99	100-249.99	250-499.99	500+
1.00-9.99	75	150	250	400	750	750	750	750
10.00-25	50	100	100	200	300	500	750	750
25.00-50	50	50	100	100	200	300	750	750
50.00-100	50	50	50	100	150	150	300	500
100.00+	50	50	50	50	50	100	200	100

Size Specific Criteria

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

Example 1: For a site size of 12.5 acres and a "trout streams" drainage area of 37.5 square miles, the NTU value to use in Part III.D.4. is 25 NTU.

Example 2: For a site size of 31.7 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.

GEORGIA REGISTERED No. 030600 PROFESSIONAL ENGINEER AARON T. CRUMP
STATE OF GEORGIA
DEPARTMENT OF LAW
CERTIFICATE NO. 5-1248
EXPIRES 12/31/2021
09/18/18

CONTINEO GROUP
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SUITE 800
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BRANCH PROPERTIES, LLC

BRANCH PROPERTIES, LLC
3340 PEACHTREE STREET NE, SUITE 600
ATLANTA, GA 30326
(404) 632 - 8900

BRANCH PROPERTIES, LLC
ASHWOOD CENTER

ISSUED FOR: PRICING PLANS
JURISDICTION: CITY OF DUNWOODY
LOCATION: 500 ASHWOOD PARKWAY
ATLANTA, GA 30338

#	DATE	REVISIONS

DRAWN:	CHECK:
KH	RTC
JOB NO:	DATE:
18--108	09/18/18

GAR100001
PERMIT (2018)

SHEET C709

#13..

Disturbed Area Stabilization (With Mulching Only) Ds1

DEFINITION
Applying plant residues or other suitable materials, produced on the site if possible, to the soil surface.

SPECIFICATIONS
Mulching Without Seeding
This standard applies to graded or cleared areas where seedings may not have a suitable growing season to produce an erosion retardant cover, but can be stabilized with a mulch cover.

Site Preparation
1. Grade to permit the use of equipment for applying and anchoring mulch.
2. Install needed erosion control measures as required such as dikes, diversions, berms, terraces and sediment barriers.

2. If the area will eventually be covered with perennial vegetation, 20-30 pounds of nitrogen per acre in addition to the normal amount shall be applied to offset the uptake of nitrogen caused by the decomposition of the organic mulches.
3. Apply polyethylene film on exposed areas.

Anchoring Mulch
1. Straw or hay mulch can be pressed into the soil with a disk harrow with the disk set straight or with a special "packer disk." Disks may be smooth or serrated and should be 20 inches or more in diameter and 8 to 12 inches apart. The edges of the disk should be dull enough not to cut the mulch but to press it into the soil leaving much of it in an erect position. Straw or hay mulch shall be anchored immediately after application.

Disturbed Area Stabilization (With Temporary Seeding) Ds2

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

CONDITIONS
Temporary vegetative measures should be coordinated with permanent measures to assure economical and effective stabilization. Most types of temporary vegetation are ideal to use as companion crops until the permanent vegetation is established. Note: Some species of temporary vegetation are not appropriate for companion crop plantings because of their potential to out-compete the desired species (e.g. annual ryegrass). Contact NRCS or the local SWCD for more information.

SPECIFICATIONS
Grading and Shaping
Excessive water run-off shall be reduced by properly designed and installed erosion control practices such as closed drains, ditches, dikes, diversions, sediment barriers and others.

Disturbed Area Stabilization (With Permanent Vegetation) Ds3

GEORGIA Major Land Resource Areas

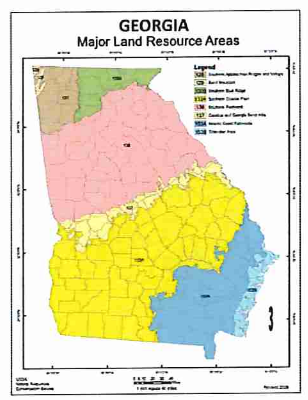

Figure 6-4.1

Table 6-5.1. Fertilizer Requirements

BRANCH PROPERTIES, LLC
ASHWOOD CENTER

ISSUED FOR: PRICING PLANS
JURSIDICTION: CITY OF DUNWOODY
LOCATION: 500 ASHWOOD PARKWAY ATLANTA, GA 30338

CONTINEO GROUP
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BRANCH PROPERTIES, LLC
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ATLANTA, GA 30326
(404) 832 – 8900

GEORGIA REGISTERED No. 030800 PROFESSIONAL ENGINEER ARON T. CRUMP 09/18/18

#	DATE	REVISIONS

These drawings and the design represented herein are the exclusive property of Contineo Group. Reproduction or any use of these drawings other than for the project intended without the expressed written consent of the Contineo Group, LLC is prohibited. Any unauthorized use will be subject to legal action.

DRAWN: KH	CHECK: RTC
JOB NO: 18–108	DATE: 09/18/18

E+S VEGETATIVE PRACTICES

SHEET C710

Packet page:...

Table 6-5.2. Permanent Cover Crops
PLANT, PLANTING RATE, AND PLANTING DATE FOR PERMANENT COVER [1]

Species	Broadcast Rates: Rate Per Acre[2]	Pure Live Seed (PLS) Per 1000 sqft	Resource Area[3]	Remarks
LESPEDEZA, Kobe/Korean, Lespedeza striata / or Appalow, Lespedeza cuneata (Dumont) G. Don				350,000 seed per pound. Height of growth is 18 to 24 inches. Advantageous in urban areas. Spreading-type growth. New growth has bronze coloration. Mix with weeping lovegrass, common bermuda, Bahia, tall fescue for winter grasses. Do not mix with Sericea lespedeza. Slow to develop solid stands. Inoculate seed with EL inoculant.
scarified	60 lbs	1.4 lb	M-L P C	
unscarified	75 lbs	1.7 lb	M-L P C	
LESPEDEZA, SHRUB Lespedeza bicolor Lespedeza thunbergii				
plants	3' x3'		M-L P C	Provide wildlife food and cover.
LOVEGRASS, WEEPING Eragrostis curvula				
alone	4 lbs	0.1 lb	M-L P C	1,500,000 seed per pound. Quick cover. Drought tolerant. Grows well with Sericea lespedeza on roadbanks.
with other perennials	2 lbs	0.05 lb	M-L P C	

Table 6-5.2. Permanent Cover Crops
PLANT, PLANTING RATE, AND PLANTING DATE FOR PERMANENT COVER [1]

Species	Broadcast Rates: Rate Per Acre[2]	Pure Live Seed (PLS) Per 1000 sqft	Resource Area[3]	Remarks
MAIDENCANE Panicum hemitomon				
sprigs	2' x 3' spacing		ALL	For very wet areas. May clog channels. Dig sprigs from local sources. Use along river banks and shorelines.
PANICGRASS, ATLANTIC COASTAL Panicum amarum var. amarulum	20 lbs	0.5 lb	P, C	Grows well on coastal sand dunes, borrow areas, and gravel pits. Provides winter cover for wildlife. Mix with Sericea lespedeza except on sand dunes.
REED CANARY GRASS Phalaris arundinacea				
alone	50 lbs	1.1 lb	M-L	
with other perennials	30 lbs	0.7 lb	P	Grows similar to Tall fescue.
SUNFLOWER, 'AZTEC' MAXIMILIAN Helianthus maximilianii	10 lbs	0.2 lb	M-L P C	227,000 seed per pound. Mix with Weeping lovegrass or other low-growing grasses or legumes.

1 Reduce seeding rates by 50% when drilled.
2 PLS is an abbreviation for Pure Live Seed. Refer to Section V.E. of these specifications.
3 M-L represents the Mountain, Blue Ridge, and Ridges and Valleys MLRAs.
P represents the Southern Piedmont MLRA.
C represents the Southern Coastal Plain, Sand Hills, Black Lands and Atlantic Coast Flatwoods MLRAs. See Figure 6-4.1

Table 6-5.3.

Durable Shrubs and Ground Covers for Permanent Cover

Ground covers include a wide range of low-growing plants planted together in considerable numbers to cover large areas of the landscape. Ground covers grow slower than grasses. Weeds are likely to compete, especially the first year. Maintenance is needed to insure survival. These ground covers will not be used unless proper maintenance is planned. Maintain mulch at three-inch thickness until plants provide adequate cover.

Fall planting is encouraged because the need for constant watering is reduced and plants have time to establish new roots before hot weather.

Common Name	Scientific Name	Mature Height	Plant Spacing	Comments
Abelia	Abelia grandiflora	3-4 ft.	5 ft.	Also a prostrate form 2 feet high. Sun, semi-shade. Semi-evergreen.
Carolina Yellow Jessamine	Gelsemium sempervirens	low	3 ft.	Vine. Yellow, trumpet-like flowers. Hardy, one of best vines. Evergreen. Native to Georgia.
Carpet Bugle	Ajuga reptans	3-4 in.	3 ft.	Needs good drainage, partial shade. Blue or white flowers. Evergreen.
Bearberry Cotoneaster	Cotoneaster dammeri	3-4 ft.	5 ft.	White flowers, red fruit. Sun. Evergreen.
Ground Cover Cotoneaster	Cotoneaster salicifolius 'Repens'	1-2 ft.	5 ft.	White flowers, red fruit. Sun. Evergreen.
Rock Cotoneaster	Cotoneaster horizontalis	1-2 ft.	5 ft.	Semi-evergreen. Sun.
Virginia Creeper	Parthenocissus quinquefolia	low	3 ft.	Red in fall. Vine. Deciduous. Native to Georgia.
Daylily	Hemerocallis spp	2-3 ft.	2 ft.	Many flower colors. Full sun. Very hardy.
English Ivy	Hedera helix	low	3 ft.	Shade only. Climbs.
Compacta Holly	Ilex crenata 'Compacta'	3-4 ft.	5 ft.	Sun, semi-shade.
Chinese Holly	Ilex cornuta 'Rotunda'	3-4 ft.	5 ft.	Very durable. Sun, semi-shade.
Dwarf Burford Holly	Ilex burfordii 'Nana'	5-6 ft.	6 ft.	
Dwarf Yaupon Holly	Ilex vomitoria 'Nana'	3-4 ft.	5 ft.	Very durable, sun, semi-shade.

Table 6-5.3. Durable Shrubs and Ground Covers for Permanent Cover

Common Name	Scientific Name	Mature Height	Plant Spacing	Comments
Repandens Holly	Ilex crenata 'Repandens'	2-3 ft.	5 ft.	Sun, semi-shade.
Andorra Juniper	Juniperus horizontalis 'Plumosa'	2-3 ft.	5 ft.	Excellent for slopes. Sun.
Andorra Compacta Juniper	Juniperus horizontalis 'Plumosa compacta'	1-2 ft.	5 ft.	More compact than andora.
Blue Chip Juniper	Juniperus horizontalis 'Blue Chip'	8-10 in.	4 ft.	
Blue Rug Juniper	Juniperus horizontalis 'Wiltonii'	4-6 in.	3 ft.	Very low. Sun.
Parsons Juniper	Juniperus davurica 'Expansa' (Squamata Parsoni)	18-24 in.	5 ft.	One of the best, good winter cover.
Pfitzer Juniper	Juniperus chinensis 'Pfitzeriana'	6-8 ft.	6 ft.	Needs room.
Prince of Wales Juniper	Juniperus horizontalis 'Prince of Wales'	8-10 in.	4 ft.	Feathery appearance.
Sargent Juniper	Juniperus chinensis 'Sargentii'	1-2 ft.	5 ft.	Full sun. Needs good drainage. Good winter color.
Shore Juniper	Juniperus conferta	2-3 ft.	5 ft.	Emerald Sea or Blue Pacific cultivars are good.
Liriope	Liriope muscari	8-10 in.	3 ft.	

Table 6-5.3. Durable Shrubs and Ground Covers for Permanent Cover

Common Name	Scientific Name	Mature Height	Plant Spacing	Comments
Creeping Liriope	Liriope spicata	10-12 in.	1 ft.	Spreads by runners.
Big Leaf Periwinkle	Vinca major	12-15 in.	4 ft.	Lilac flowers in spring. Semi-shade.
Common Periwinkle	Vinca minor	5-8 in.	4 ft.	Lavender-blue flowers in spring. Semi-shade.
Cherokee Rose	Rosa laevigata	2 ft.	5 ft.	Rampant grower. Not for restricted spaces. State flower.
Memorial Rose	Rosa wichuraiana	2 ft.	5 ft.	Rampant grower.
St. Johnswort	Hypericum calycinum	8-12 in.	3 ft.	Semi-shade.
Anthony Waterer Spirea	Spirea bumalda	3-4 ft.	5 ft.	Sun.
Thunberg Spirea	Spirea thunbergii	3-4 ft.	5 ft.	Sun.

Table 6-5.4

Trees for Erosion Control

SITE	SOIL MATERIAL	COMMON SOILS	PLANTING TREE SPECIES[1]	SPACING	PLANTING DATES[3]
Borrow areas, graded areas, and spoil material	Sandy	Lakeland, Troup	Loblolly pine (Pinus taeda); Longleaf pine (Pinus palustris)	[2]	M-L,P 12/1-3/15; C 12/1-3/1
	Loamy	Orangeburg, Tifton	Loblolly pine; Slash pine; Loblolly pine	[2]	M-L,P 12/1-3/15; C 12/1-3/1
	Clay	Cecil, Faceville	Slash pine; Virginia pine (Pinus virginiana)	[2]	M-L,P 12/1-3/15; C 12/1-3/1
Streambanks			Willows[4] (Salix species)	2 ft x 2 ft	ALL

[1] Other trees and shrubs listed on Table 6-25.3 may be interplanted with the pines for improved wildlife benefits.

[2]

Type of Planting	Tree Spacing	No. of Trees Per Acre
Trees alone	4 ft. x 4 ft.	2722
Trees in combination with grasses, and/or other plants	6 ft. x 6 ft.	1210

[3] M-L represents the Mountains; Blue Ridge; and Ridges and Valleys MLRAs
P represents the Southern Piedmont MLRA
C represents the Southern Coastal Plain; Sand Hills; Black Lands; and Atlantic Coast Flatwoods MLRAs (See Figure 6-4.1)

[4] Fertilization of companion crop is ample for this species.

DISTURBED AREA STABILIZATION (WITH SODDING) Ds4

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, 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.

CONDITIONS
This application is appropriate for areas that require immediate vegetative covers, drop inlets, grass swales, and waterways with intermittent flow.

PLANNING CONSIDERATIONS
Sodding can initially be more costly than seeding, but the advantages justify the increased initial costs:

1. Immediate erosion control, green surface, and quick use.
2. Reduced failure as compared to seed as well as the lack of weeds.
3. Can be established nearly year-round.

Sodding is preferable to seed in waterways and swales because of the immediate protection of the channel after application. Sodding must be staked in concentrated flow areas (See Figure 6-6.1).

Consider using sod framed around drop inlets to reduce sediments and maintaining the grade.

CONSTRUCTION SPECIFICATIONS
Soil Preparation
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.

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 6-6.1.

Table 6-6.1. Fertilizer Requirements for Soil Surface Application			
Fertilizer Type	Fertilizer Rate (lbs/acre)	Fertilizer Rate (lbs/sq ft)	Season
10-10-10	1500	.035	Fall

Agricultural lime should be applied based on soil tests or at a rate of 1 to 2 tons per acre.

Installation
Lay sod with tight joints and in straight lines. Don't overlap joints. Stagger joints and do not stretch sod (See Figure 6-6.2).

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.

1. Sod should be machine cut and contain 3/4" (+ or -1/4") of soil, not including shoots or thatch.
2. Sod should be cut to the desired size within + or -5%. Torn or uneven pads should be rejected.
3. Sod should be cut and installed within 36 hours of digging.
4. Avoid planting when subject to frost heave or hot weather, if irrigation is not available.
5. The sod type should be shown on the plans or installed according to Table 6-6.2. See Figure 6-4.1 for your Resource Area.

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 (See Figure 6-6.2).

Apply one ton of agricultural lime as indicated by soil test or every 4-6 years. Fertilize grasses in accordance with soil tests or Table 6-6.3.

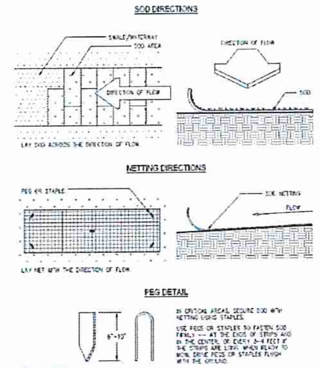
Table 6-6.2 Sod Planting Requirements

Grass	Varieties	Resource Area	Growing Season
Bermudagrass	Common Tifway Tifgreen Tiflawn	M-L,P,C P,C P,C P,C	warm weather
Bahiagrass	Pensacola	P,C	warm weather
Centipede	–	P,C	warm weather
St. Augustine	Common Bitterblue Raleigh	C	warm weather
Zoysia	Emerald Myer	P,C	warm weather
Tall Fescue	Kentucky	M-L,P	cool weather

Table 6-6.3
Fertilizer Requirements for Sod

Types of Species	Planting Year	Fertilizer (N-P-K)	Rate (lbs./acre)	Nitrogen Top Dressing Rate (lbs./acre)
cool season grasses	first / second / maintenance	6-12-12 / 6-12-12 / 10-10-10	1500 / 1000 / 400	50-100 / - / 30
warm season grasses	first / second / maintenance	6-12-12 / 6-12-12 / 10-10-10	1500 / 800 / 400	50-100 / 50-100 / 30

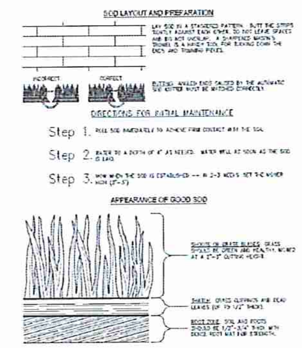
SODDED WATERWAYS



Source: Va. DSWC

Figure 6-6.1

SOD MAINTENANCE AND INSTALLATION



Source: Va. DSWC

Figure 6-6.2

Dust Control on Disturbed Areas Du

DEFINITION
Controlling surface and air movement of dust on construction sites, roads, and demolition sites.

PURPOSE
- To prevent surface and air movement of dust from exposed soil surfaces.
- To reduce the presence of airborne substances that may be harmful or injurious to human health, welfare, or safety, or to animals or plant life.

CONDITIONS
This practice is applicable to areas subject to surface and air movement of dust where on and off-site damage may occur without treatment.

METHOD AND MATERIALS

A. Temporary Methods

Mulches. See standard Ds1 - Disturbed Area Stabilization (With Mulching Only). Synthetic resins may be used instead of asphalt to bind mulch material. Refer to specification Tac - Tackifiers. Resins should be used according to manufacturer's recommendations.

Vegetative Cover. See specification Ds2 - Disturbed Area Stabilization (With Temporary Seeding)

Spray-on Adhesives. These are used on mineral soils (not effective on muck soils). Keep traffic off these areas. Refer to specification Tac - Tackifiers.

Tillage. This practice is designed to roughen and bring clods to the surface. It is an emergency measure that should be used before wind erosion starts. Begin plowing on windward side of site. Chisel-type plows spaced about 12 inches apart, spring-toothed harrows, and similar plows are examples of equipment that may produce the desired effect.

Irrigation. This is generally done as an emergency treatment. Site is sprinkled with water until the surface is wet. Repeat as needed.

Barriers. Solid board fences, snowfences, burlap fences, crate walls, bales of hay and similar material can be used to control air currents and soil blowing. Barriers placed at right angles to prevailing currents at intervals of about 15 times their height are effective in controlling wind erosion.

Calcium Chloride. Apply at rate that will keep surface moist. May need retreatment.

B. Permanent Methods

Permanent Vegetation. See specification Ds3 -Disturbed Area Stabilization (With Permanent Vegetation). Existing trees and large shrubs may afford valuable protection if left in place.

Topsoiling. This entails covering the surface with less erosive soil material. See specification Tp - Topsoiling.

Stone. Cover surface with crushed stone or coarse gravel. See specification Cr-Construction Road Stabilization.

Slope Stabilization Ss

DEFINITION
A protective covering used to prevent erosion and establish temporary or permanent vegetation on steep slopes, shore lines, or channels.

PURPOSE
To provide a cover layer that stabilizes the soil and acts as a rain drop impact dissipater while providing a microclimate that protects young vegetation and promotes its establishment. If using slope stabilization to reinforce channels, please refer to specification, **Ch- Channel Stabilization**.

CONDITIONS
Slope stabilization can be applied to flat areas or slopes where the erosion hazard is high and slope protection is needed during the establishment of vegetation.

PLANNING CONSIDERATIONS
Care must be taken to choose the type of slope stabilization product that is most appropriate for the specific needs of a project. Two general types of slope stabilization products are discussed within this specification.

Rolled Erosion Control Products (RECP)
A natural fiber blanket with single or double photodegradable or biodegradable nets.

Hydraulic Erosion Control Products (HECP)
HECP shall utilize straw, cotton, wood or other natural based fibers held together by a soil binding agent that works to stabilize soil particles. Paper mulch should not be used for erosion control.

CRITERIA
Rolled Erosion Control Products (RECPs) and Hydraulic Erosion Control Products (HECPs):

- Installation and stapling of RECPs and application rates for the HECPs shall conform to manufacturer's guidelines for application.
- Short-Term RECPs as a minimum shall be used to stabilize concentrated flow areas with a velocity less than 5ft/sec on slopes 3:1 or greater with a height of 10 feet or greater.

Materials – HECP
Hydraulic erosion control products shall be prepackaged from the manufacturer. Field mixing of performance enhancing additives will not be allowed. Fibrous components should be all natural or biodegradable.

Products shall be determined to be non-toxic in accordance with EPA-821-R-02-012.

Materials – RECP
Blankets shall be nontoxic to vegetation, seed, or wildlife. Products shall be determined to be non-toxic in accordance with EPA-821-R-02-012. At minimum, the plastic or biodegradable netting shall be stitched to the fibrous matrix to maximize strength and provide for ease of handling.

RECPs are categorized as follows:

a. Short-Term
(functional longevity 12 mo.)

i. Photodegradable
Straw blankets with a top and bottom side photo degradable net. The maximum size of the mesh should be openings of ½" X ½". The blanket should be sewn together on 1.5" centers with degradable thread. Minimum thickness should be 0.35" and minimum density should be 0.5 lbs per square yard.

ii. Biodegradable
Straw blanket with a top and bottom side biodegradable jute net. The top side net should consist of machine direction strands that are

twisted together and then interwoven with cross direction strands (leno weave). The bottom net may be leno weave or otherwise to meet requirements. The approximate size of the mesh should be openings of 0.5" X 1.0". The blanket should be sewn together on 1.5" centers with degradable thread. Minimum thickness should be 0.25" and minimum density should be 0.5 lbs per square yard.

b. Extended-Term
(functional longevity 24 mo.)

i. Photodegradable
Blankets that consist of 70% straw and 30% coconut with a top and bottom side photodegradable net. The top net should have ultraviolet additives to delay breakdown. The maximum size of the mesh should be openings of 0.65" X 0.65". The blanket should be sewn together on 1.5" centers with degradable thread. Minimum thickness should be 0.35" and minimum density should be 0.6 lbs per square yard.

ii. Biodegradable
Blankets that consist of 70% straw and 30% coconut with a top and bottom side biodegradable jute net. The top side net should consist of machine direction strands that are twisted together and then interwoven with cross direction strands (leno weave). The bottom net may be leno weave or otherwise to meet requirements. The approximate size of the mesh should be openings of 0.5" X 1.0". The blanket should be sewn together on 1.5" centers with degradable thread. Minimum thickness should be 0.25" and minimum density should be 0.55 lbs per square yard.

c. Long-Term
(functional longevity 36 mo.)

i. Photodegradable
Blankets that consist of 100% coconut with a top and bottom side photodegradable net. Each net should have ultraviolet additives to delay breakdown. The maximum size of the mesh should be openings of 0.65" X 0.65". The blanket should be sewn together on 1.5" centers with degradable thread. Minimum thickness should be 0.3" and minimum density should be 0.5 lbs per square yard.

iii. Biodegradable
Blankets that consist of 100% coconut with a top and bottom side biodegradable jute net. The top side net should consist of machine direction strands that are twisted together and then interwoven with cross direction strands (leno weave). The bottom net may be leno weave or otherwise to meet requirements. The approximate size of the mesh should be openings of 0.5" X 1.0". The blanket should be sewn together on 1.5" centers with degradable thread. Minimum thickness should be 0.25" and minimum density should be 0.5 lbs per square yard.

NOTES
It is the intention of this section to allow interchangeable use of RECPs and HECPs for erosion protection on slopes. The project engineer should select the type of erosion control product that best fits the need of the particular site.

Site Preparation
After the site has been shaped and graded to the approved design, prepare a friable seedbed relatively free from clods and rocks more than one inch in diameter, and any foreign material that will prevent contact of the soil stabilization mat with the soil surface. Surface must be smooth to ensure proper contact of blankets or matting to the soil surface. If necessary redirect any runoff from the ditch or slope during installation.

MAINTENANCE
All erosion control blankets and matting should be inspected periodically following installation, particularly after rainstorms to check for erosion and undermining. Any dislocation or failure should be repaired immediately. If washouts or breakage occurs, reinstall the material after repairing damage to the slope or ditch. Continue to monitor these areas until they become permanently stabilized.

TYPICAL INSTALLATION GUIDELINES FOR ROLLED EROSION CONTROL PRODUCTS (RECP)

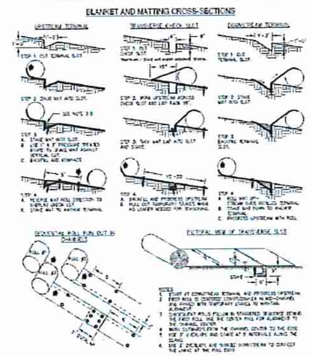
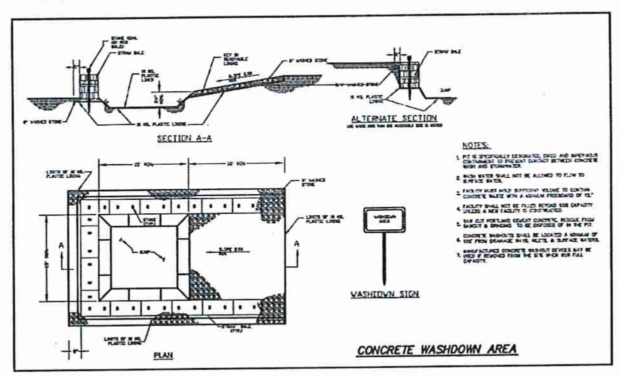


Figure 6-10.1 - Typical Installation Guidelines for Matting and Blankets



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GSWCC LEVEL II CERTIFICATION NO. [illegible] EXPIRES 7/26/2021
09/18/18

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BRANCH PROPERTIES, LLC
ASHWOOD CENTER

ISSUED FOR: PRICING PLANS
JURISDICTION: CITY OF DUNWOODY
LOCATION: 500 ASHWOOD PARKWAY ATLANTA, GA 30338

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JOB NO: 18-108	DATE: 09/18/18

E+S VEGETATIVE PRACTICES
SHEET C711

C:\DROPBOX (CONTINEO-MASTER)\CONTINEO-MASTER\(P-DRIVE) PROJECTS\2018\18-108 - BRANCH - ASHWOOD RESTAURANT\DWG\DETAILS

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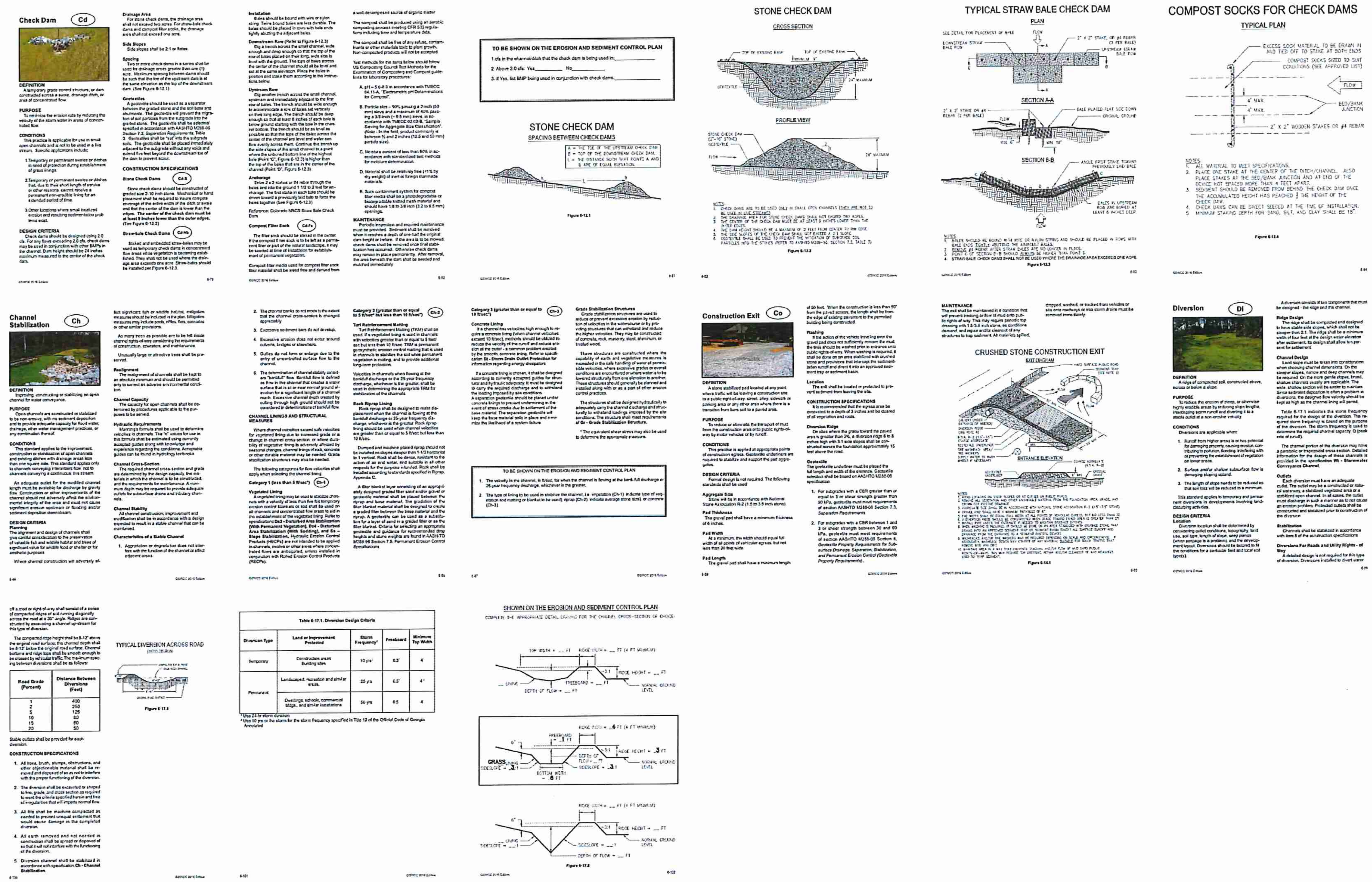

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KH	RTC
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SHEET C712

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Sediment Barrier (Sd1)

DEFINITION
Sediment Barriers are temporary structures made up of a porous material typically supported by steel or wood posts. Types of sediment barriers may include silt fence, brush piles, mulch berms, compost filter socks or other filtering material.

PURPOSE
To minimize and prevent sediment carried by sheet flow from leaving the site and entering natural drainage ways or storm drainage systems by slowing storm water runoff and causing the deposition and/or filtration of sediment at the structure. The barriers retain the soil on the disturbed land until the activities disturbing the land are completed and vegetation is established.

CONDITIONS
Barriers should be installed where runoff can be stored behind the barrier without damaging the submerged area behind the barrier or the structure itself. Sediment barriers shall not be installed across streams, ditches, waterways, or other concentrated flow areas.

DESIGN CRITERIA
Sediment barriers are designed to retain sediment transported by sheet flow from disturbed areas. It is important for the design professional to take into account the profile of the product for use on the site.

Sediment Barriers should also provide a riprap splash pad or other outlet protection device for any point where flow may overtop the sediment barrier. Ensure that the maximum height of the barrier at a protected, reinforced outlet does not exceed 1 foot and that the support spacing does not exceed 4 feet.

Where all runoff is to be stored behind the sediment barrier (where no storm water disposal system is present) maximum continuous slope length behind a sediment barrier shall not exceed those shown in Table 6-27.1. For longer slope lengths, slope interrupters must be used. The drainage area shall not exceed ¼ acre for every 100 feet of sediment barrier.

Table 6-27.1 Criteria for Sediment Barrier

Land Slope	Maximum Slope Length Above Fence
Percent	Feet
< 2	100
2 to 5	75
5 to 10	50
10 to 20	25
> 20*	15

*In areas where the slope is greater than 20%, a flat area a length of 10 feet between the toe of slope to the barrier should be provided.

Placement
The type of sediment barrier depends on whether the area is sensitive or nonsensitive. Sensitive areas can be defined as any area that needs additional protection, these areas include but are not limited to, state waters, wetlands, or any area the design professional designates as sensitive.

When using multiple types of sediment barriers on a site in a single run, the barriers must be overlapped 18 inches or as specified by design professional. See Figure 6-27.5

CONSTRUCTION SPECIFICATIONS

Non-sensitive Areas* (Sd1-NS)
Sediment barriers being used as Type NS shall have a support spacing of no greater than 6 feet on center, with each being driven into the ground a minimum of 18 inches.

Sensitive Areas* (Sd1-S)
Sediment barriers being used as Type S shall have a support spacing of no greater than 4 feet on center, with each being driven into the ground a minimum of 18 inches.

*As of January 1 2016, in the existing Georgia Department of Transportation Qualified Products list #36 (QPL-36), Type A, B, or C will fall under sensitive and non-sensitive applications. **Type C will be classified as sensitive and Type A and B as non-sensitive.** Refer to Appendix A-2 and the Equivalent BMP List.

PRACTICE CLASSIFICATIONS

For silt fence Type A, B, or C, refer to Table 6-27.4.

Type A Silt Fence
This 36-inch wide filter fabric shall be used on developments where the life of the project is great than or equal to six months. **Type A is classified as non-sensitive application.**

Type B Silt Fence
Though only 22-inches wide, this filter fabric allows the same flow rate as Type A silt fence. Type B silt fence shall be limited to use on minor projects, such as residential home sites or small commercial developments where permanent stabilization will be achieved in less than six months. **Type B is classified as non-sensitive application.**

Type C Silt Fence
Type C fence is 36-inches wide with wire reinforcement. The wire reinforcement is necessary because this fabric allows almost three times the flow rate as Type A silt fence. Type C silt fence shall be used where runoff flows or velocities are particularly high or where slopes exceed a vertical height of 10 feet. **Type C is classified as sensitive application.**

Filter Media Sock Specifications
Compost filter media used for sediment barrier filler material shall be weed free and derived from a well-decomposed source of organic matter. **Filter Media Sock is classified as a Type B, non-sensitive application.** The compost shall be produced using an aerobic composting process meeting CFR 503 regulations including time and temperature data. The compost shall be free of any refuse, contaminants or other materials toxic to plant growth. Non-composted products will not be accepted without applicable water quality test results. Test methods for the items below should follow US Composting Council Test Methods for the Examination of Composting and Compost guidelines for laboratory procedures:

A. pH – 5.0-8.0 in accordance with TMECC 04.11-A, "Electrometric pH Determinations for Compost"

B. Particle size – 99% passing a 2 inch (50mm) sieve and a maximum of 40% passing a 3/8 inche (9.5mm) sieve, in accordance with TMECC 02.02-B, "Sample Sieving for Aggregate Size Classification". (Note: In the field, product commonly is between ¾ in./12.5mm and 2 in./50 mm in particle size.)

C. Moisture content of less than 60% in accordance with standardized test methods for moisture determination.

D. Material shall be relatively free (<1% by dry weight) of inert or foreign manmade materials.

E. Sock containment system for compost filter media shall be a photodegradable or biodegradable knitted mesh material and should have 1/8 in. to 3/8 in. openings.

Brush Barrier (Sd1-BB)
(Only during timber clearing operations)

Brush obtained from clearing and grubbing operations may be piled in a row along the perimeter of disturbance at the time of clearing and grubbing. Brush barriers should not be used in developed areas or locations where aesthetics are a concern.

Brush should be wind-rowed on the contour as nearly as possible and may require compaction. Construction equipment may be utilized to satisfy this requirement.

The minimum base width of the brush barrier shall be 5 feet and should be no wider 10 feet. The height of the brush barrier should be between 3 and 5 feet tall.

A brush barrier is a good tool to use in developing pasture in an agricultural situation to prevent sediment from leaving the site until the pasture is stabilized.

If greater filtering capacity is required, a commercially available sediment barrier may be placed on the side of the brush barrier receiving the sediment-laden runoff. The lower edge of the fabric must be buried in a 6-inch deep trench immediately uphill from the barrier. The upper edge must be stapled, tied or otherwise fastened to the brush barrier. Edges of adjacent fabric pieces must overlap each other. See Figure 6-27.5.

Installation
Sediment barriers should be installed along the contour.

Temporary sediment barriers shall be installed according to the following specifications as shown on the plans or as directed by the design professional.

For installation of the barriers, See Figures 6-27.1, 6-27.2, 6-27.3 and 6-27.4, respectively. It is important to remember that not all sediment barriers need to be trenched into the ground but most taller sediment barriers do.

Post installation shall start at the center of a low point (if applicable) with the remaining posts spaced no greater than 6 feet apart for Type NS sediment barriers and no greater than 4 feet apart for Type C sediment barriers. For post size requirements, see Table 6-27.2. Fasteners for wood posts are listed in Table 6-27.3.

Static Slicing Method
The static slicing machine pulls a narrow blade through the ground to create a slit 12" deep, and simultaneously inserts the silt fence fabric into this slit behind the blade. The blade is designed to slightly disrupt soil upward next to the slit and to minimize horizontal compaction, thereby creating an optimum condition for compacting the soil vertically on both sides of the fabric. Compaction is achieved by rolling a tractor wheel along both sides of the slit in the ground 2 to 4 times to achieve nearly the same or greater compaction as the original undisturbed soil. This vertical compaction reduces the air spaces between soil particles, which minimizes infiltration. Without this compaction infiltration can saturate the soil, and water may find a pathway under the fence. When a silt fence is holding back several tons of accumulated water and sediment, it needs to be supported by posts that are driven 18 inches into the soil. Driving in the posts and attaching the fabric to them completes the installation.

Trenching Method
Trenching machines have been used for over twenty-five years to dig a trench for burying part of the filter fabric underground. Usually the trench is about 2"-8" wide with a 6" excavation. Post setting and fabric installation often precede compaction, which make effective compaction more difficult to achieve. EPA supported an independent technology evaluation (ASCE 2001), which compared three progressively better variations of the trenching method with static slicing method. The static slicing method performed better than two lower performance levels of the trenching method and was as good as or better than the trenching method's highest performance level. The best trenching method typically required nearly triple the time and effort to achieve results comparable to the static slicing method.

Along all state waters and other sensitive areas, two rows of Type S sediment barriers shall be used. The two rows of Type S should be placed a minimum of 36 inches apart.

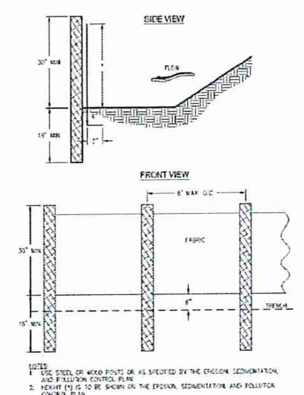
MAINTENANCE
Sediment shall be removed once it has accumulated to one-half the original height of the barrier.

Sediment barriers shall be replaced whenever they have deteriorated to such an extent that the effectiveness of the product is reduced (approximately six months) or the height of the product is not maintaining 80% of its properly installed height.

Temporary sediment barriers shall remain in place until disturbed areas have been permanently stabilized. All sediment accumulated at the barrier shall be removed and properly disposed of before the barrier is removed.

TO BE SHOWN ON THE EROSION, SEDIMENTATION, AND POLLUTION CONTROL PLAN
When a SEDIMENT BARRIER is used, show the product height in inches for each barrier being used on site.

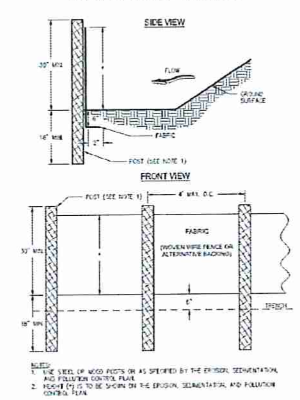
SILT FENCE - TYPE A and B



NOTES:
1. USE STEEL OR WOOD POSTS OR AS SPECIFIED BY THE EROSION, SEDIMENTATION, AND POLLUTION CONTROL PLAN.
2. HEIGHT (*) IS TO BE SHOWN ON THE EROSION, SEDIMENTATION, AND POLLUTION CONTROL PLAN.

Figure 6-27.1

SILT FENCE - TYPE C

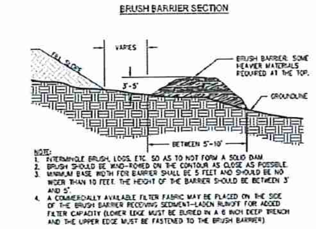


NOTES:
1. USE STEEL OR WOOD POSTS OR AS SPECIFIED BY THE EROSION, SEDIMENTATION, AND POLLUTION CONTROL PLAN.
2. HEIGHT (*) IS TO BE SHOWN ON THE EROSION, SEDIMENTATION, AND POLLUTION CONTROL PLAN.

Figure 6-27.2

SEDIMENT BARRIERS

BRUSH BARRIER SECTION



NOTE:
1. INTERMINGLE BRUSH, LOGS, ETC. SO AS TO NOT FORM A SOLID DAM.
2. BRUSH SHOULD BE WIND-ROWED ON THE CONTOUR AS CLOSE AS POSSIBLE.
3. MINIMUM BASE WIDTH FOR BARRIER SHALL BE 5 FEET AND SHOULD BE NO WIDER THAN 10 FEET. THE HEIGHT OF THE BARRIER SHOULD BE BETWEEN 3' AND 5'.
4. A COMMERCIALLY AVAILABLE FILTER FABRIC MAY BE PLACED ON THE SIDE OF THE BRUSH BARRIER RECEIVING SEDIMENT-LADEN RUNOFF FOR ADDED FILTER CAPACITY (LOWER EDGE MUST BE BURIED IN A 6 INCH DEEP TRENCH AND THE UPPER EDGE MUST BE FASTENED TO THE BRUSH BARRIER).

Figure 6-27.4

Table 6-27.2 Post Size

Type	Min Length	Type of Post	Size of Post
NS	4'	Soft wood Oak Steel	3"dia or 2x4 1.5" x1.5" 1.15lb./ft. min
S	4'	Steel Oak	1.15-1.25 lb./ft. min 2"x2"

Table 6-27.3 Fasteners for Wood Posts

	Gauge	Crown	Legs	Staples / Post
Wire Staples	17 min	3/4" wide	1/2" long	5 min
	Gauge	Length	Button Heads	Nail/Post
Nails	14 min.	1"	3/4"	4 min.

Note: Filter Fabric may also be attached to the post by wire, cords, and pockets.

FASTENERS FOR SILT FENCES

OVERLAP AT FABRIC ENDS

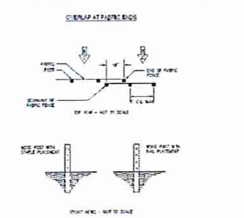


Figure 6-27.5

Table 6-27.4

TYPE FENCE	A	B	C
Tensile Strength (Lbs. Min.) (1) (ASTM D-4632)	Warp - 120 Fill - 100	Warp - 120 Fill - 100	Warp - 260 Fill - 180
Elongation (% Max.) (ASTM D-4632)	40	40	40
AOS (Apparent Opening Size) (Max. Sieve Size) (ASTM D-4751)	#30	#30	#30
Flow Rate (Gal/Min/Sq. Ft.) (GDT-87)	25	25	70
Ultraviolet Stability (2) (ASTM D-4632 after 300 hours weathering in accordance with ASTM D-4355)	80	80	80
Bursting Strength (PSI Min.) (ASTM D-3786 Diaphragm Bursting Strength Tester)	175	175	175
Minimum Fabric Width (Inches)	36	22	36

(1) Minimum roll average of five specimens.
(2) Percent of required initial minimum tensile strength.

Inlet Sediment Trap (Sd2)

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

PURPOSE
To prevent sediment from entering a storm drainage systems prior to permanent stabilization of the disturbed area draining to the inlet.

CONDITIONS
All storm drain drop inlets that receive runoff from disturbed areas.

DESIGN CRITERIA
Through testing there are two different categories (high retention and high flow) supported. In areas where BMPs are being used on paved surfaces, or safety is a concern, the potentially negative effects of ponding should be taken into account. In such cases, a high flow BMP is preferred.

On unpaved areas where ponding will not cause a safety hazard, high retention shall be taken into account. If high retention is not used in this situation a rationale shall be given on the plan and an unpaved application should apply.

Sediment traps must be self-draining unless they are otherwise protected in an approved fashion that will not present a safety hazard. The drainage area entering the inlet sediment trap shall be no greater than one acre.

If runoff may bypass the protected inlet, a temporary dike should be constructed on the down slope side of the structure. Also, a stone filter ring may be used on the up slope side of the inlet to slow runoff and filter larger soil particles. Refer to Fr-Stone Filter Ring.

CONSTRUCTION SPECIFICATIONS
Excavated Inlet Sediment Trap
An excavation may be created around the inlet sediment trap to provide additional sediment storage. The trap shall be sized to provide a minimum storage capacity calculated at the rate of 67 cubic yards per acre of drainage area. A minimum depth of 1.5 feet for sediment storage should be provided. Side slopes shall not be steeper than 2:1.

Sediment traps may be constructed on natural ground surface, on an excavated surface, or on machine compacted fill, provided they have a non-erodible outlet.

Filter Fabric with Supporting Frame (Sd2-F)
This method of inlet protection is applicable where the inlet drains a relatively flat area (slope no greater than 5%) and shall not apply to inlets receiving concentrated flows, such as in street or highway medians. As shown in Figure 6-28.1, Type S silt fence supported by steel posts should be used. The stakes shall be spaced evenly around the perimeter of the inlet a maximum of 3 feet apart, and securely driven into the ground, approximately 18 inches deep. The fabric shall be 36 inches tall and entrenched 12 inches and backfilled with crushed stone or compacted soil. Fabric and wire shall be securely fastened to the posts, and fabric ends must be overlapped a minimum of 18 inches or wrapped together around a post to provide a continuous fabric barrier around the inlet.

Baffle Box (Sd2-B)
For inlets receiving runoff with a higher volume or velocity, a baffle box inlet sediment trap should be used. As shown in Figure 6-28.2, the baffle box shall be constructed of 2" x 4" boards spaced a maximum of 1 inch apart or of plywood with weep holes 2 inches in diameter. The weep holes shall be placed approximately 6 inches on center vertically and horizontally. Gravel shall be placed outside the box, all around the inlet, to a depth of 2 to 4 inches. The entire box is wrapped in Type C filter fabric that shall be entrenched 12 inches and backfilled.

Block and Gravel Drop Inlet Protection (Sd2-Bg)
This method of inlet protection is applicable where heavy flows are expected and where an overflow capacity is necessary to prevent excessive ponding around the structure. As shown in Figure 6-28.3, one block is placed on each side of the structure on its side in the bottom row to allow pool drainage. The foundation should be excavated at least 2 inches below the crest of the storm drain. The bottom row of blocks is placed against the edge of the storm drain for lateral support and to avoid washouts when overflow occurs. If needed, lateral support may be given to subsequent rows by placing 2" x 4" wood studs through block openings. Hardware cloth or comparable wire mesh with 1/2 inch openings shall be fitted over all block openings to hold gravel in place. Clean gravel should be placed 2 inches below the top of the block on a 2:1 slope or flatter and smoothed to an even grade. DOT #57 washed stone is recommended.

Gravel drop Inlet Protection (Sd2-G)
This method of inlet protection is applicable where heavy concentrated flows are expected. As shown in Figure 6-28.4, stone and gravel are used to trap sediment. The slope toward the inlet shall be no steeper than 3:1. A minimum 1 foot wide level stone area shall be left between the structure and around the inlet to prevent gravel from entering the inlet. On the slope toward the inlet, stone 3 inches in diameter and larger should be used. On the slope away from the inlet, 1/2 to 3/4 inch gravel (#57 washed stone) should be used at a minimum thickness of 1 foot.

Sod Inlet Protection (Sd2-S)
This method of inlet protection is applicable only at the time of permanent seeding, to protect the inlet from sediment and mulch material until permanent vegetation has become established. As shown in Figure 6-28.5, the sod shall be placed to form a turf mat covering the soil for a distance of 4 feet from each side of the inlet structure. Sod strips shall be staggered so that adjacent strip ends are not aligned.

Curb Inlet Protection (Sd2-P)
Once pavement has been installed, a curb inlet filter shall be installed on inlets receiving runoff from disturbed areas. This method of inlet protection shall be removed if a safety hazard is created.

One method of curb inlet protection uses "pigs-in-a-blanket" - 8-inch concrete blocks wrapped in filter fabric. See Figure 6-28.6. Another method uses gravel bags constructed by wrapping DOT #57 stone with filter fabric, wire, plastic mesh, or equivalent material.

A gap of approximately 4 inches shall be left between the inlet filter and the inlet to allow for overflow and prevent hazardous ponding in the roadway. Proper installation and maintenance are crucial due to possible ponding in the roadway, resulting in a hazardous condition. Several other methods are available to prevent the entry of sediment into storm drain inlets.

Figure 6-28.7 shows one of these alternative methods.

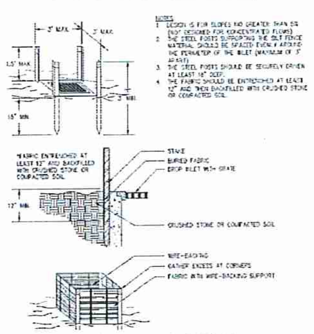
MAINTENANCE
The trap shall be inspected daily and after each rain, and repairs made as needed. Sediment shall be removed when the sediment has accumulated to one-half the height of the trap. Sediment shall be removed from curb inlet protection immediately. For excavated inlet sediment traps, sediment shall be removed when one-half of the sediment storage capacity has been lost to sediment accumulation. Sod inlet protection shall be maintained as specified in Ds4 - Disturbed Area Stabilization (With Sodding).

Sediment shall not be washed into the inlet. It shall be removed from the sediment trap, disposed of and stabilized so that it will not enter the inlet again.

When the contributing drainage area has been permanently stabilized, all materials and any sediment shall be removed and either salvaged or disposed of properly. The disturbed area shall be brought to proper grade, then smoothed and compacted. Appropriately stabilize all disturbed areas around the inlet.

FABRIC AND SUPPORTING FRAME FOR INLET PROTECTION

STEEL FRAME AND TYPE C SILT FENCE INSTALLATION



NOTES:
1. DESIGN IS FOR SLOPES NO GREATER THAN 5% (NOT DESIGNED FOR CONCENTRATED FLOWS).
2. THE STEEL POSTS SUPPORTING THE SILT FENCE MATERIAL SHOULD BE SPACED EVENLY AROUND THE PERIMETER OF THE INLET (MAXIMUM OF 3' APART).
3. THE STEEL POSTS SHOULD BE SECURELY DRIVEN AT LEAST 18" DEEP.
4. THE FABRIC SHOULD BE ENTRENCHED AT LEAST 12" AND THEN BACKFILLED WITH CRUSHED STONE OR COMPACTED SOIL.

Figure 6-28.1 - Fabric and Supporting Frame For Inlet Projection

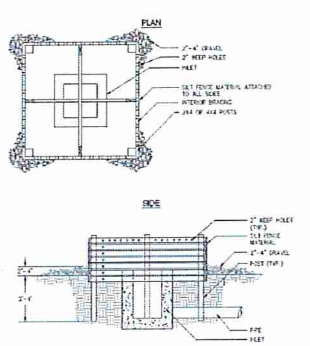
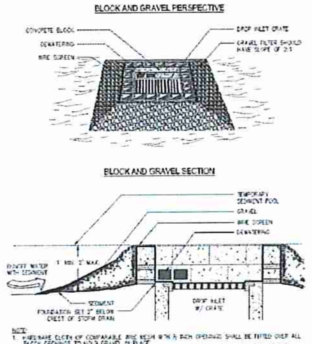


Figure 6-28.2 Baffle Box

BLOCK AND GRAVEL PERSPECTIVE



NOTE:
1. HARDWARE CLOTH OR COMPARABLE WIRE MESH WITH ½ INCH OPENINGS SHALL BE FITTED OVER ALL BLOCK OPENINGS TO HOLD GRAVEL IN PLACE.
2. THE FOUNDATION SHOULD BE EXCAVATED AT LEAST 2 INCHES BELOW THE CREST OF THE STORM DRAIN. THE FIRST ROW OF BLOCKS WILL BE PLACED HERE FOR LATERAL SUPPORT.
3. ONE BLOCK (AS SHOWN) IS TO BE PLACED ON EACH SIDE OF THE STRUCTURE ON ITS SIDE IN THE BOTTOM ROW TO ALLOW FOR POOL DRAINAGE.

Figure 6-28.3 Block and Gravel Drop Inlet Protections

Figure 6-28.4 Gravel Drop Inlet Protection

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

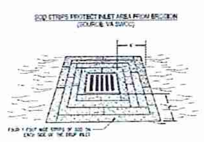
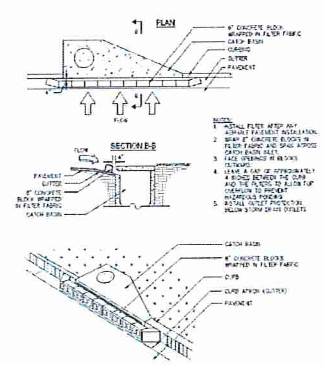


Figure 6-28.5 Sod Inlet Protection

CURB INLET FILTER "PIGS IN BLANKET"



NOTES:
1. INSTALL FILTER AFTER ANY ASPHALT PAVEMENT INSTALLATION.
2. WRAP 8" CONCRETE BLOCKS IN FILTER FABRIC AND SPAN ACROSS CATCH BASIN INLET.
3. FACE OPENINGS IN BLOCKS OUTWARD.
4. LEAVE A GAP OF APPROXIMATELY 4 INCHES BETWEEN THE CURB AND THE FILTERS TO ALLOW FOR OVERFLOW TO PREVENT HAZARDOUS PONDING.
5. INSTALL OUTLET PROTECTION BELOW STORM DRAIN OUTLETS.

Figure 6-28.6 Curb Inlet Filter "Pigs in Blanket"

Figure 6-28.7 Equivalent Inlet Sediment Trap

EXISTING JB — TO BE SHOWN ON THE EROSION AND SEDIMENT CONTROL PLAN
If the EXCAVATED INLET SEDIMENT TRAP is used, show the following information:
1. Drainage area = 0.6 ac
2. Required sediment storage = 67 cy/ac * drainage area; Required sediment storage = 67 cy/ac * 0.6 ac; **Required sediment storage** = 40.2 cy = 1086 cf
3. Assume excavation depth (minimum of 1.5 ft.) = 3 ft
4. Assume slope of sides (shall not be steeper than 2:1) = 3 :1
5. Determine required surface area: SA = Required sediment storage / excavation depth; SA = 40.2 cy / 3 ft; SA = 361 sf
6. Assume shape of excavation and determine dimensions. (A rectangular shape with 2:1 length to width ratio is recommended.) Shape: RECTANGULAR; Dimensions: l = 13 ft w = 28 ft diameter (if applicable) = ____ ft

Provide a detail showing the depth, length and width, or diameter (if applicable), and side slopes of the excavation.

SW23 — TO BE SHOWN ON THE EROSION AND SEDIMENT CONTROL PLAN
1. Drainage area = 0.99 ac
2. Required sediment storage = 67 cy/ac * 0.99 ac; **Required sediment storage** = 66 cy = 1790 cf
3. Assume excavation depth = 2 ft
4. Assume slope of sides = 3 :1
5. SA = 66 cy / 2 ft; SA = 895 sf
6. Shape: RECTANGULAR; Dimensions: l = 20 ft w = 45 ft diameter (if applicable) = ____ ft

SW13 — TO BE SHOWN ON THE EROSION AND SEDIMENT CONTROL PLAN
1. Drainage area = 0.9 ac
2. Required sediment storage = 67 cy/ac * 0.9 ac; **Required sediment storage** = 60.3 cy = 1628 cf
3. Assume excavation depth = 2 ft
4. Assume slope of sides = 3 :1
5. SA = 60.3 cy / 2 ft; SA = 814 sf
6. Shape: RECTANGULAR; Dimensions: l = 20 ft w = 41 ft diameter (if applicable) = ____ ft

TO BE SHOWN ON THE EROSION AND SEDIMENT CONTROL PLAN (blank form)
1. Drainage area = ____ ac
2. Required sediment storage = 67 cy/ac * ____ ac; **Required sediment storage** = ____ cy = ____ cf
3. Assume excavation depth = ____ ft
4. Assume slope of sides = ____ :1
5. SA = ____ cy / ____ ft; SA = ____ sf
6. Shape: ____; Dimensions: l = ____ ft w = ____ ft diameter (if applicable) = ____ ft

SW24 — TO BE SHOWN ON THE EROSION AND SEDIMENT CONTROL PLAN
1. Drainage area = 1 ac
2. Required sediment storage = 67 cy/ac * 1 ac; **Required sediment storage** = 67 cy = 1809 cf
3. Assume excavation depth = 2 ft
4. Assume slope of sides = 3 :1
5. SA = 67 cy / 2 ft; SA = 904 sf
6. Shape: RECTANGULAR; Dimensions: l = 21 ft w = 44 ft diameter (if applicable) = ____ ft

SW25 — TO BE SHOWN ON THE EROSION AND SEDIMENT CONTROL PLAN
1. Drainage area = 0.8 ac
2. Required sediment storage = 67 cy/ac * 0.8 ac; **Required sediment storage** = 53.6 cy = 1447 cf
3. Assume excavation depth = 2 ft
4. Assume slope of sides = 3 :1
5. SA = 53.6 cy / 2 ft; SA = 724 sf
6. Shape: RECTANGULAR; Dimensions: l = 19 ft w = 38 ft diameter (if applicable) = ____ ft

SW14 — TO BE SHOWN ON THE EROSION AND SEDIMENT CONTROL PLAN
1. Drainage area = 0.9 ac
2. Required sediment storage = 67 cy/ac * 0.9 ac; **Required sediment storage** = 60.3 cy = 1628 cf
3. Assume excavation depth = 2 ft
4. Assume slope of sides = 3 :1
5. SA = 60.3 cy / 2 ft; SA = 814 sf
6. Shape: RECTANGULAR; Dimensions: l = 20 ft w = 41 ft diameter (if applicable) = ____ ft

SW15 — TO BE SHOWN ON THE EROSION AND SEDIMENT CONTROL PLAN
1. Drainage area = 0.6 ac
2. Required sediment storage = 67 cy/ac * 0.6 ac; **Required sediment storage** = 40.2 cy = 1086 cf
3. Assume excavation depth = 3 ft
4. Assume slope of sides = 3 :1
5. SA = 40.2 cy / 3 ft; SA = 361 sf
6. Shape: RECTANGULAR; Dimensions: l = 13 ft w = 28 ft diameter (if applicable) = ____ ft

SW20 — TO BE SHOWN ON THE EROSION AND SEDIMENT CONTROL PLAN
1. Drainage area = 0.85 ac
2. Required sediment storage = 67 cy/ac * 0.85 ac; **Required sediment storage** = 57 cy = 1537 cf
3. Assume excavation depth = 3 ft
4. Assume slope of sides = 3 :1
5. SA = 57 cy / 3 ft; SA = 512 sf
6. Shape: RECTANGULAR; Dimensions: l = 15 ft w = 35 ft diameter (if applicable) = ____ ft

SW22 — TO BE SHOWN ON THE EROSION AND SEDIMENT CONTROL PLAN
1. Drainage area = 0.95 ac
2. Required sediment storage = 67 cy/ac * 0.95 ac; **Required sediment storage** = 64 cy = 1718 cf
3. Assume excavation depth = 3 ft
4. Assume slope of sides = 3 :1
5. SA = 64 cy / 3 ft; SA = 573 sf
6. Shape: RECTANGULAR; Dimensions: l = 17 ft w = 34 ft diameter (if applicable) = ____ ft

SW18 — TO BE SHOWN ON THE EROSION AND SEDIMENT CONTROL PLAN
1. Drainage area = 0.95 ac
2. Required sediment storage = 67 cy/ac * 0.95 ac; **Required sediment storage** = 64 cy = 1718 cf
3. Assume excavation depth = 3 ft
4. Assume slope of sides = 3 :1
5. SA = 64 cy / 3 ft; SA = 573 sf
6. Shape: RECTANGULAR; Dimensions: l = 17 ft w = 34 ft diameter (if applicable) = ____ ft

SW17 — TO BE SHOWN ON THE EROSION AND SEDIMENT CONTROL PLAN
1. Drainage area = 1 ac
2. Required sediment storage = 67 cy/ac * 1 ac; **Required sediment storage** = 67 cy = 1809 cf
3. Assume excavation depth = 3 ft
4. Assume slope of sides = 3 :1
5. SA = 67 cy / 3 ft; SA = 603 sf
6. Shape: RECTANGULAR; Dimensions: l = 17 ft w = 35 ft diameter (if applicable) = ____ ft

(Each box: If the EXCAVATED INLET SEDIMENT TRAP is used, show the following information. Provide a detail showing the depth, length and width, or diameter (if applicable), and side slopes of the excavation.)

GEORGIA REGISTERED No. 030600 PROFESSIONAL ENGINEER RON T. CRUMP — 09/18/18

CONTINEO GROUP
755 COMMERCE DRIVE
SUITE 800
DECATUR, GA 30030
678.601.6046
www.tcg.engineer

BRANCH PROPERTIES, LLC
3340 PEACHTREE STREET NE, SUITE 600
ATLANTA, GA 30326
(404) 832 - 8900

BRANCH PROPERTIES, LLC
ASHWOOD CENTER

ISSUED FOR: PRICING PLANS
JURISDICTION: CITY OF DUNWOODY
LOCATION: 500 ASHWOOD PARKWAY ATLANTA, GA 30338

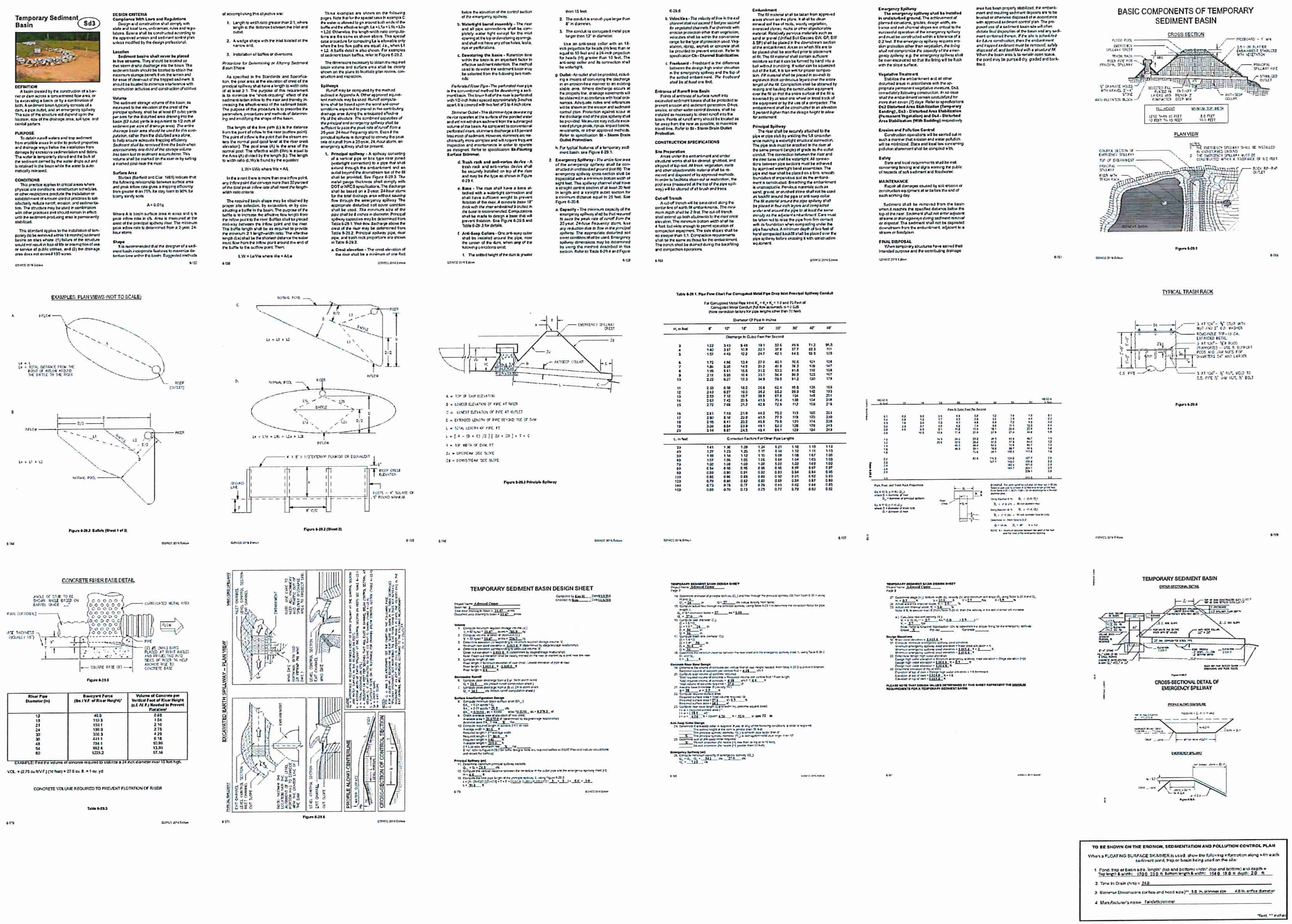
#	DATE	REVISIONS

DRAWN: KH	CHECK: RTC
JOB NO: 18-108	DATE: 09/18/18

E+S STRUCTURAL PRACTICES

SHEET C713

#13..



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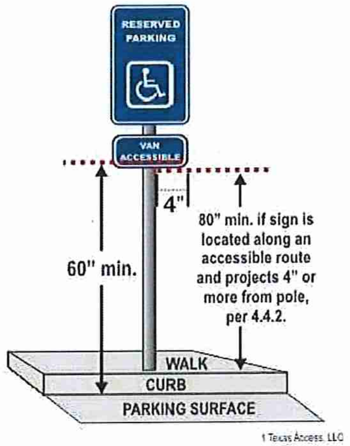
#	DATE	REVISIONS

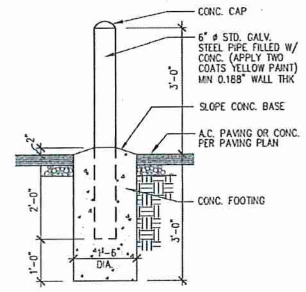
DRAWN:	CHECK:
KH	RTC
JOB NO:	DATE:
18-108	09/18/18

PHASE 1 SD3 CALCULATIONS

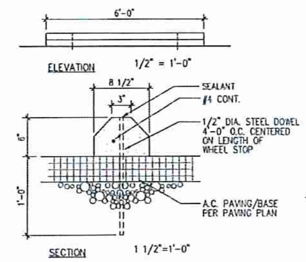
SHEET C714

Packet page:...

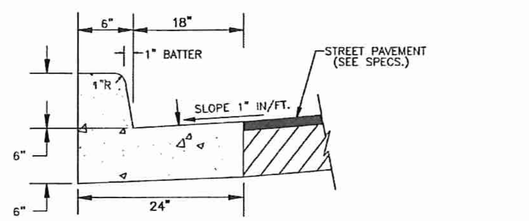




PIPE BOLLARD SCALE: 3/4"=1'-0"

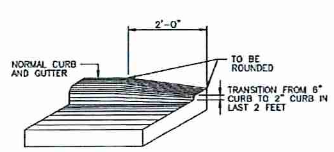


WHEEL STOP SCALE: AS NOTED



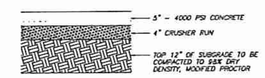
NORMAL GUTTER

24" CURB & GUTTER	N.T.S. January 2004	P-03



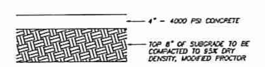
NOTE: THIS OCCURS AT END OF CURB AND GUTTER WHERE CALLED FOR ON PLANS

FEATHERING OF CONCRETE CURB & GUTTER	N.T.S. October 2001	P-02



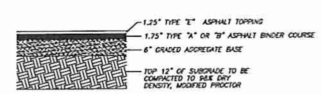
CONCRETE PAVEMENT DETAIL

NOTE: CONFIRM CONCRETE DESIGN W/ GEOTECHNICAL REPORT



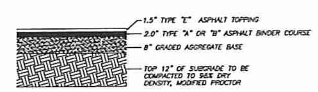
CONCRETE SIDEWALK DETAIL

NOTE: CONFIRM CONCRETE DESIGN W/ GEOTECHNICAL REPORT



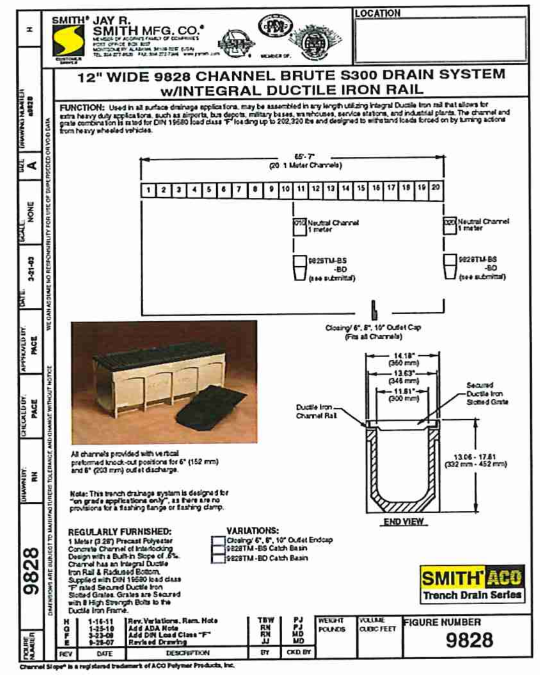
STANDARD PAVEMENT DETAIL

NOTE: CONFIRM PAVEMENT DESIGN W/ GEOTECHNICAL REPORT



HEAVY DUTY PAVEMENT DETAIL

NOTE: CONFIRM PAVEMENT DESIGN W/ GEOTECHNICAL REPORT



SMITH JAY R. SMITH MFG. CO.

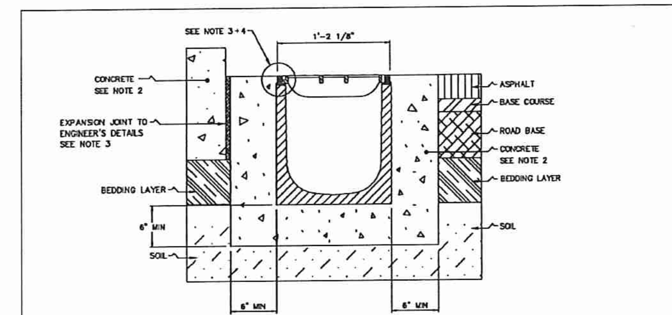
12" WIDE 9828 CHANNEL BRUTE S300 DRAIN SYSTEM w/INTEGRAL DUCTILE IRON RAIL

Channel Number	Deep End Depth* In.	mm	Slope	Channel Length	Weight lbs. Channel w/Grates
9828-S300-1	13.31	338	0.6	39.38/1m	217
9828-S300-2	13.54	344	0.6	39.38/1m	218
9828-S300-3	13.78	350	0.6	39.38/1m	219
9828-S300-4	14.01	356	0.6	39.38/1m	220
9828-S300-5	14.25	362	0.6	39.38/1m	221
9828-S300-6	14.49	368	0.6	39.38/1m	222
9828-S300-7	14.72	374	0.6	39.38/1m	223
9828-S300-8	14.96	380	0.6	39.38/1m	224
9828-S300-9	15.20	386	0.6	39.38/1m	225
9828-S300-10	15.43	392	0.6	39.38/1m	226
9828-S300-010	15.43	392	0.0	39.38/1m	227
9828-S300-11	15.67	398	0.6	39.38/1m	227
9828-S300-12	15.91	404	0.6	39.38/1m	228
9828-S300-13	16.14	410	0.6	39.38/1m	230
9828-S300-14	16.38	416	0.6	39.38/1m	231
9828-S300-15	16.61	422	0.6	39.38/1m	232
9828-S300-16	16.85	428	0.6	39.38/1m	233
9828-S300-17	17.09	434	0.6	39.38/1m	234
9828-S300-18	17.32	440	0.6	39.38/1m	235
9828-S300-19	17.56	446	0.6	39.38/1m	236
9828-S300-20	17.80	452	0.6	39.38/1m	238
9828-S300-020	17.80	452	0.0	39.38/1m	238

NOTE: To calculate invert dim. on deep end of the channel, subtract 1.12" (28mm) from deep end depth shown in above table.

SMITH ACO Trench Drain Series

FIGURE NUMBER 9828BS



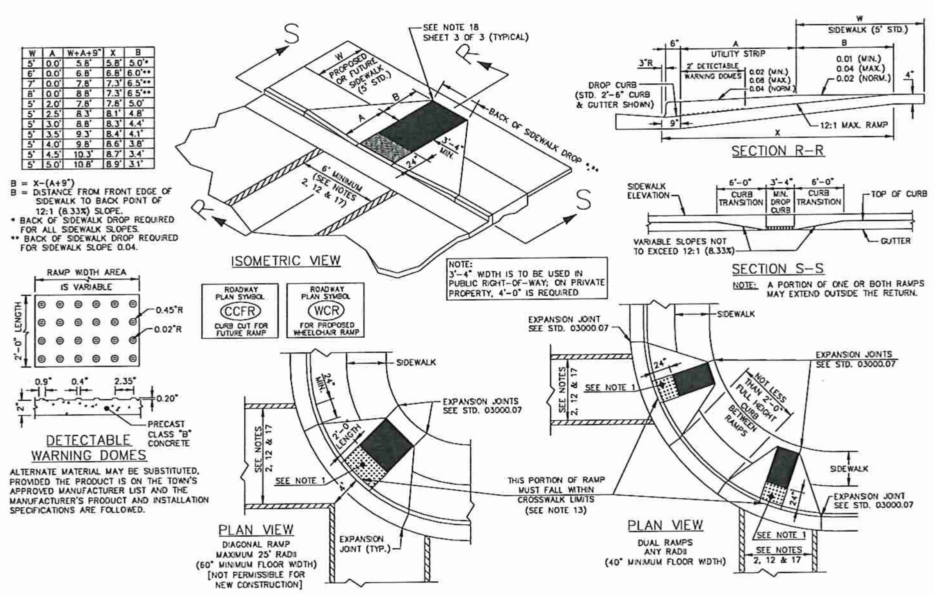
NOTES:
1. It is necessary to ensure the minimum dimensions shown are suitable for the existing ground conditions. Engineering advice may be required.
2. A minimum concrete strength of 3000 PSI is recommended. The concrete should be vibrated to eliminate air pockets.
3. Expansion and crack control joints are recommended to protect the channel and the concrete surround. Engineering advice may be required.
4. The finished level of the concrete surround must be approx. 1/8" (3) above the top of the channel edge.
5. Refer to SMITH/ACO's latest Installation Instructions for complete details.
6. Concrete base thickness should match slab thickness.

SMITH DRAINAGE SYSTEMS — JAY R. SMITH MFG CO. DIV. OF SMITH INDUSTRIES MONTGOMERY, AL — WWW.JRSMITH.COM

INSTALLATION DRAWING
9828 SERIES TRENCH DRAIN – LOAD CLASS E INSTALLED IN ASPHALT
PM-1471

W	A	W+A+9"	X	B
5'	0.0'	5.8'	5.8'	5.0'*
6'	0.0'	6.8'	6.8'	6.0'**
7'	0.0'	7.8'	7.3'	6.5'**
8'	0.0'	8.8'	7.3'	6.5'**
5'	2.0'	7.8'	7.8'	5.0'
5'	2.5'	8.3'	8.1'	4.8'
5'	3.0'	8.8'	8.3'	4.4'
5'	3.5'	9.3'	8.4'	4.1'
5'	4.0'	9.8'	8.6'	3.8'
5'	4.5'	10.3'	8.7'	3.4'
5'	5.0'	10.8'	8.9'	3.1'

B = X-(A+9")
B = DISTANCE FROM FRONT EDGE OF SIDEWALK TO BACK POINT OF 12:1 (8.33%) SLOPE.
* BACK OF SIDEWALK DROP REQUIRED FOR ALL SIDEWALK SLOPES.
** BACK OF SIDEWALK DROP REQUIRED FOR SIDEWALK SLOPE 0.04.



ALTERNATE MATERIAL MAY BE SUBSTITUTED, PROVIDED THE PRODUCT IS ON THE TOWN'S APPROVED MANUFACTURER LIST AND THE MANUFACTURER'S PRODUCT AND INSTALLATION SPECIFICATIONS ARE FOLLOWED.

NOTE: 3'-4" WIDTH IS TO BE USED IN PUBLIC RIGHT-OF-WAY; ON PRIVATE PROPERTY, 4'-0" IS REQUIRED

STANDARD WHEELCHAIR RAMP

CONTINEO GROUP
755 COMMERCE DRIVE
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BRANCH PROPERTIES, LLC
ASHWOOD CENTER

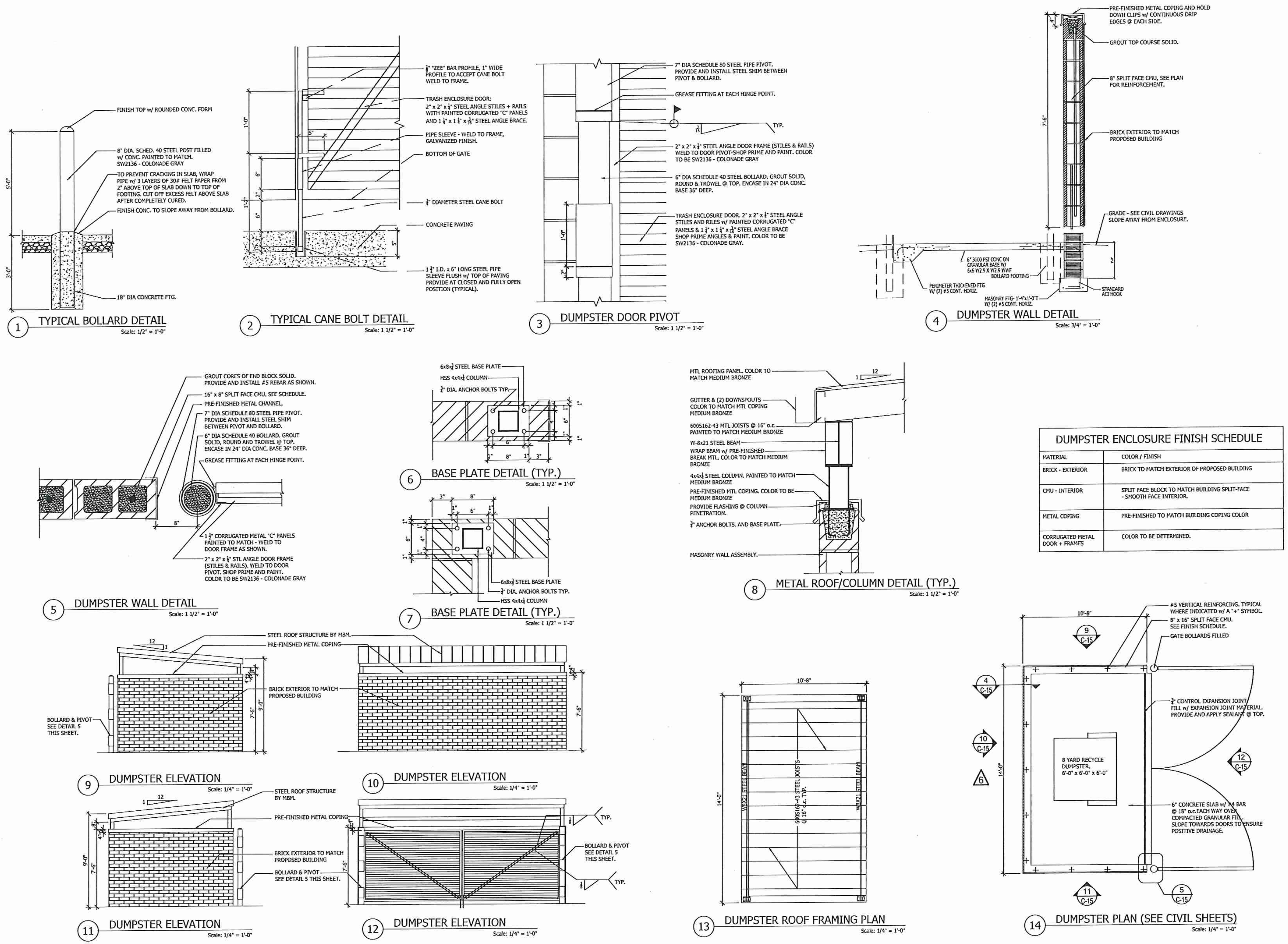
ISSUED FOR: PRICING PLANS
JURISDICTION: CITY OF DUNWOODY
LOCATION: 500 ASHWOOD PARKWAY ATLANTA, GA 30338

REVISIONS

DRAWN: KH	CHECK: RTC
JOB NO: 18-108	DATE: 09/18/18

SITE DETAILS

SHEET C801



DUMPSTER ENCLOSURE FINISH SCHEDULE	
MATERIAL	COLOR / FINISH
BRICK - EXTERIOR	BRICK TO MATCH EXTERIOR OF PROPOSED BUILDING
CMU - INTERIOR	SPLIT FACE BLOCK TO MATCH BUILDING SPLIT-FACE - SMOOTH FACE INTERIOR.
METAL COPING	PRE-FINISHED TO MATCH BUILDING COPING COLOR
CORRUGATED METAL DOOR + FRAMES	COLOR TO BE DETERMINED.

GEORGIA REGISTERED PROFESSIONAL ENGINEER RON T. CRUMP 09/18/18

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755 COMMERCE DRIVE
SUITE 800
DECATUR, GA 30030
678.401.4046
www.tcg.engineer

BRANCH PROPERTIES, LLC
3340 PEACHTREE STREET NE, SUITE 800
ATLANTA, GA 30326
(404) 832 - 8800

BRANCH PROPERTIES, LLC
ASHWOOD CENTER

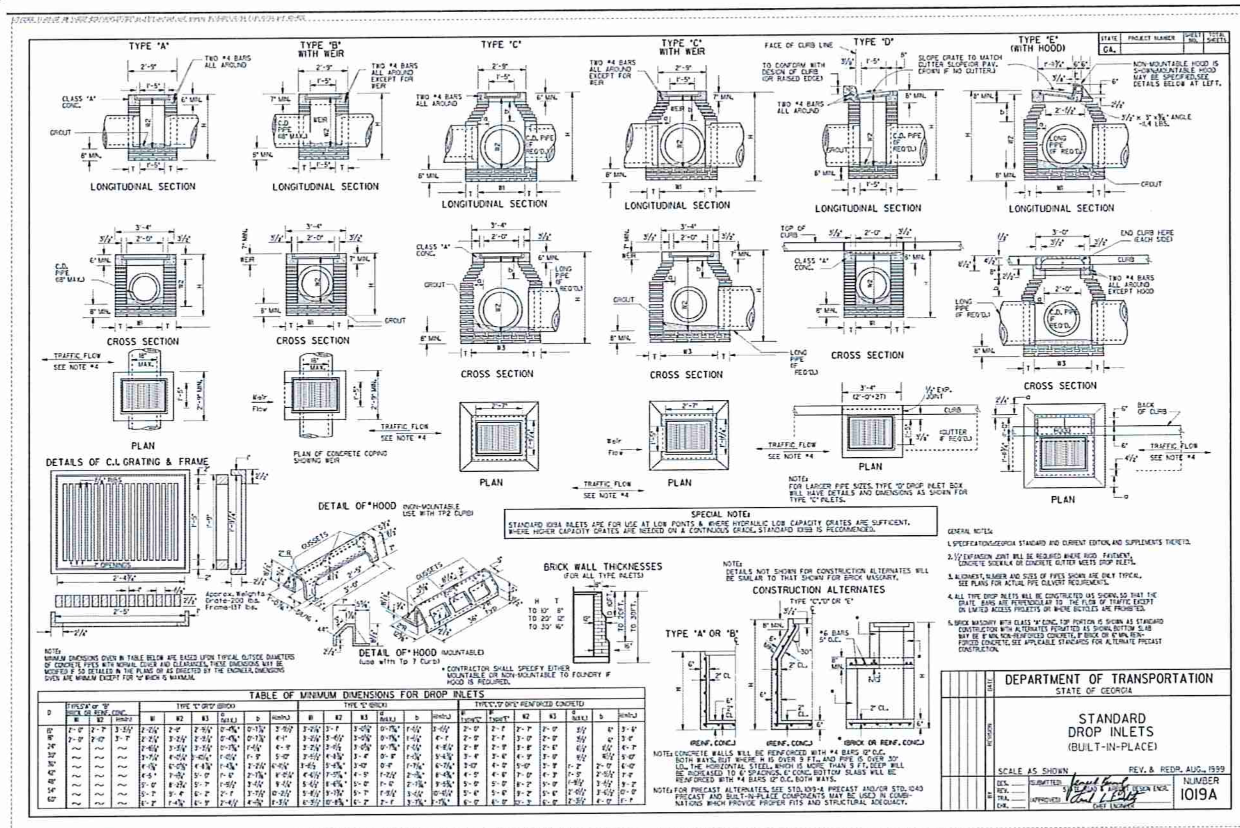
ISSUED FOR: PRICING PLANS
JURISDICTION: CITY OF DUNWOODY
LOCATION: 500 ASHWOOD PARKWAY ATLANTA, GA 30338

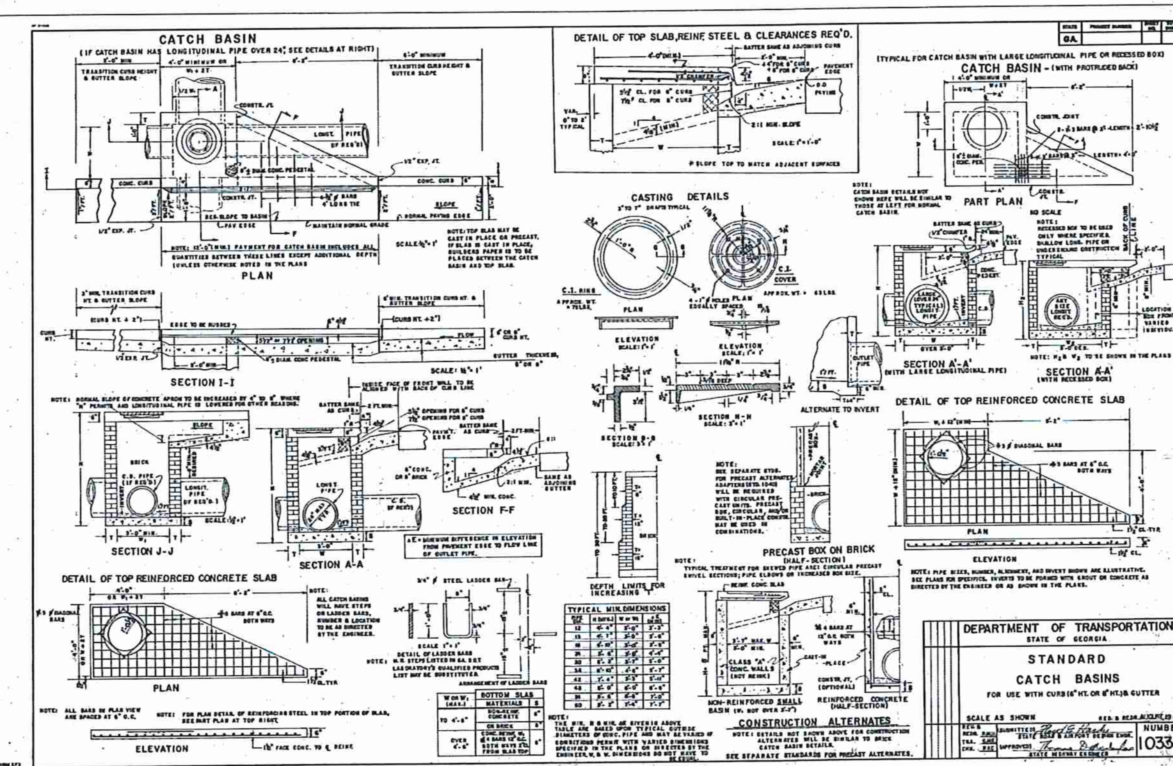
DATE	REVISIONS

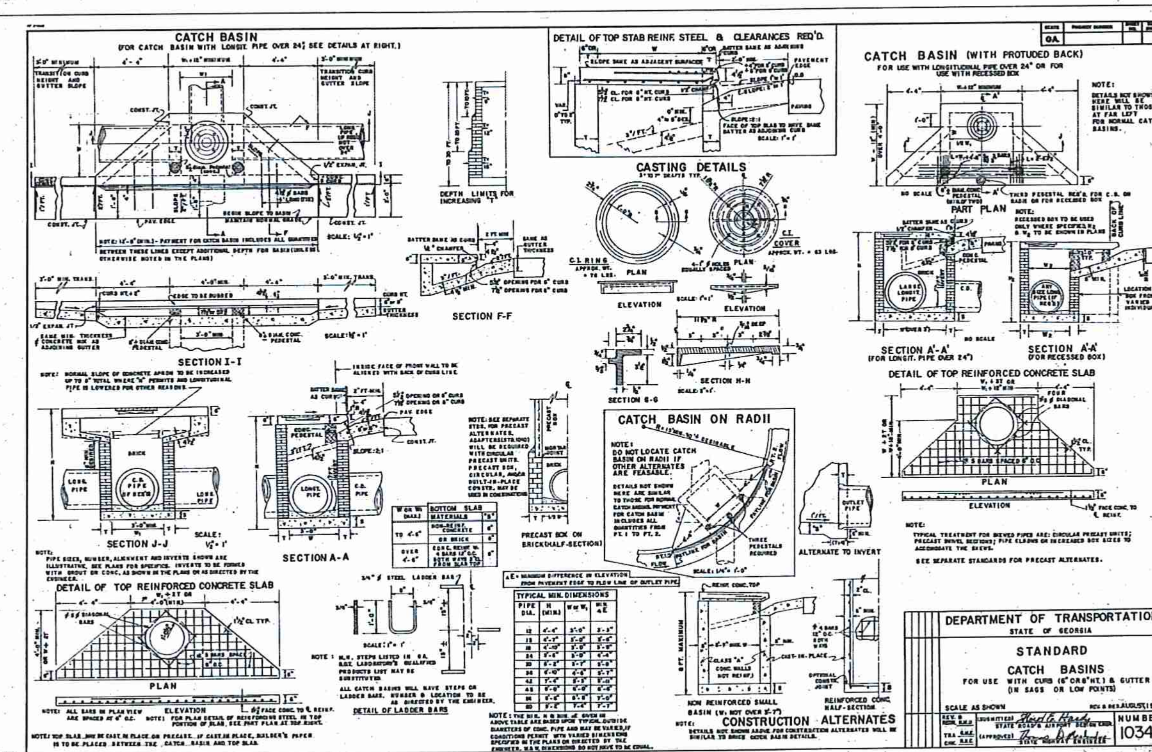
DRAWN: KH	CHECK: RTC
JOB NO: 18-108	DATE: 09/18/18

SITE DETAILS

SHEET C802







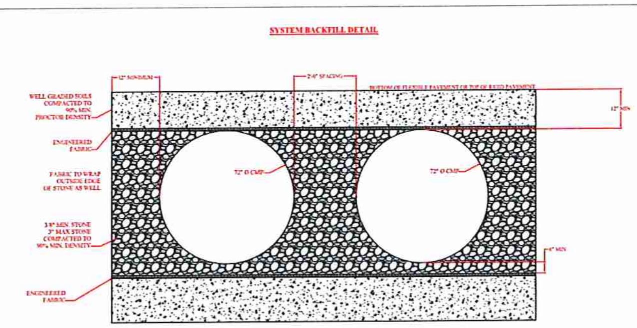
BRANCH ASHWOOD CENTER
Prepared by Microsoft
HydroCAD® 10.00-15 s/n 07072 © 2015 HydroCAD Software Solutions LLC

Rainfall not specified
Printed 9/17/2018
Page 1

Stage-Area-Storage for Pond 3P: 72 INCH PERF'D CMP

Elevation (feet)	Storage (cubic-feet)	Elevation (feet)	Storage (cubic-feet)	Elevation (feet)	Storage (cubic-feet)
1,007.50	0	1,008.56	13,329	1,009.62	33,400
1,007.52	204	1,008.58	13,668	1,009.64	33,809
1,007.54	409	1,008.60	14,009	1,009.66	34,218
1,007.56	613	1,008.62	14,352	1,009.68	34,628
1,007.58	817	1,008.64	14,697	1,009.70	35,039
1,007.60	1,021	1,008.66	15,044	1,009.72	35,450
1,007.62	1,226	1,008.68	15,393	1,009.74	35,862
1,007.64	1,430	1,008.70	15,744	1,009.76	36,275
1,007.66	1,634	1,008.72	16,096	1,009.78	36,689
1,007.68	1,839	1,008.74	16,451	1,009.80	37,103
1,007.70	2,043	1,008.76	16,807	1,009.82	37,518
1,007.72	2,247	1,008.78	17,165	1,009.84	37,934
1,007.74	2,451	1,008.80	17,525	1,009.86	38,351
1,007.76	2,656	1,008.82	17,886	1,009.88	38,768
1,007.78	2,860	1,008.84	18,249	1,009.90	39,186
1,007.80	3,064	1,008.86	18,613	1,009.92	39,604
1,007.82	3,269	1,008.88	18,979	1,009.94	40,023
1,007.84	3,473	1,008.90	19,347	1,009.96	40,443
1,007.86	3,677	1,008.92	19,716	1,009.98	40,863
1,007.88	3,881	1,008.94	20,066	1,010.00	41,283
1,007.90	4,086	1,008.96	20,458	1,010.02	41,705
1,007.92	4,290	1,008.98	20,832	1,010.04	42,126
1,007.94	4,494	1,009.00	21,206	1,010.06	42,548
1,007.96	4,699	1,009.02	21,582	1,010.08	42,971
1,007.98	4,903	1,009.04	21,960	1,010.10	43,394
1,008.00	5,107	1,009.06	22,339	1,010.12	43,817
1,008.02	5,318	1,009.08	22,719	1,010.14	44,241
1,008.04	5,542	1,009.10	23,101	1,010.16	44,666
1,008.06	5,778	1,009.12	23,483	1,010.18	45,091
1,008.08	6,027	1,009.14	23,867	1,010.20	45,516
1,008.10	6,287	1,009.16	24,252	1,010.22	45,942
1,008.12	6,552	1,009.18	24,639	1,010.24	46,368
1,008.14	6,822	1,009.20	25,026	1,010.26	46,795
1,008.16	7,097	1,009.22	25,415	1,010.28	47,222
1,008.18	7,377	1,009.24	25,804	1,010.30	47,649
1,008.20	7,662	1,009.26	26,195	1,010.32	48,077
1,008.22	7,950	1,009.28	26,587	1,010.34	48,505
1,008.24	8,242	1,009.30	26,980	1,010.36	48,934
1,008.26	8,538	1,009.32	27,374	1,010.38	49,363
1,008.28	8,838	1,009.34	27,769	1,010.40	49,792
1,008.30	9,140	1,009.36	28,165	1,010.42	50,221
1,008.32	9,446	1,009.38	28,562	1,010.44	50,651
1,008.34	9,755	1,009.40	28,960	1,010.46	51,082
1,008.36	10,067	1,009.42	29,359	1,010.48	51,512
1,008.38	10,381	1,009.44	29,759	1,010.50	51,943
1,008.40	10,699	1,009.46	30,161	1,010.52	52,374
1,008.42	11,019	1,009.48	30,562	1,010.54	52,805
1,008.44	11,342	1,009.50	30,965	1,010.56	53,236
1,008.46	11,667	1,009.52	31,369	1,010.58	53,668
1,008.48	11,994	1,009.54	31,774	1,010.60	54,100
1,008.50	12,325	1,009.56	32,179	1,010.62	54,532
1,008.52	12,657	1,009.58	32,585	1,010.64	54,964
1,008.54	12,992	1,009.60	32,992	1,010.66	55,396

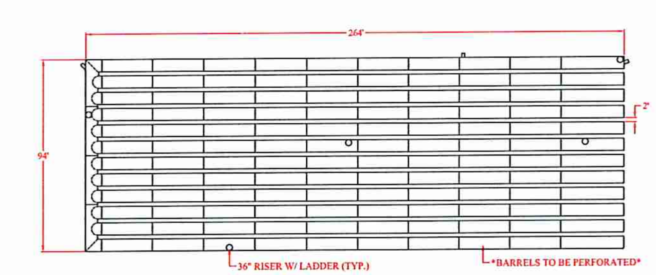
SYSTEM BACKFILL DETAIL



NOTE:
PIPE TO BE INSTALLED PER ASTM A 798
AASHTO A1 IS THE PREFERRED BACKFILL MATERIAL. HOWEVER, OTHER GRANULAR MATERIALS MAY BE USED. BECAUSE DETENTION SYSTEMS ARE OFTEN EXPOSED TO HEAVY CONSTRUCTION LOADS DURING TOTAL COMPLETION OF THE PROJECT, THERE IS NEED FOR EXTRA CARE.
TO HANDLE THESE LOADS, IF THE MINIMUM COVER IS MORE THAN THE DIAMETER/6 AND THE DIAMETER IS LESS THAN 84", A2 OR A3 MATERIAL MAY GENERALLY BE USED IF THEY ARE PLACED IN 8" LIFTS AND COMPACTED TO 90% PROCTOR DENSITY. AS PIPE DIAMETERS INCREASE AND COVER DECREASES(APPROACHING THE MINIMUM COVER LEVEL), THE QUALITY OF THE BACKFILL AND COMPACTION DENSITY BECOMES MORE IMPORTANT.

LIVE LOAD: AASHTO HS20-44

SOUTHEAST CULVERT, INC.
REV | DATE | DESCRIPTION
CUSTOMER:
PROJECT:
LOCATION:
MATERIAL:
QUANTITY:
SCALE: N/A
DWG: BACKFILL DETAIL
A



SYSTEM LAYOUT
PERFORATED 72" DIAMETER 14 GAUGE 5x1 ALUMINIZED TYPE 2
CORRUGATED STEEL PIPE DETENTION SYSTEM

*UNLABELED PIECES ARE 25' LENGTHS.
*PIPE TO BE ALUMINIZED STEEL TYPE 2 PER AASHTO M 274.
*SYSTEM TO BE INSTALLED PER AASHTO SECTION 26.
*ACCESS RISERS CUT 1.5' SHORT OF GRADE TO LEAVE ROOM FOR CONCRETE CAP AND GRATE/COVER (BY OTHERS)

SOUTHEAST CULVERT, INC.
REV | DATE | DESCRIPTION
CUSTOMER:
PROJECT: BRANCH ASHWOOD CENTER
LOCATION: DUNWOODY
MATERIAL: PERF'D AT2
QUANTITY:
SCALE: N/A
DWG: BRANCH ASHWOOD CENTER
A

GEORGIA REGISTERED No. 030600 PROFESSIONAL ENGINEER RON T. CRUMP
09/18/18

CONTINEO GROUP
755 COMMERCE DRIVE
SUITE 800
DECATUR, GA 30030
678.601.6046
www.tcg.engineer

BRANCH PROPERTIES, LLC
3340 PEACHTREE STREET NE, SUITE 600
ATLANTA, GA 30326
(404) 832 - 8900

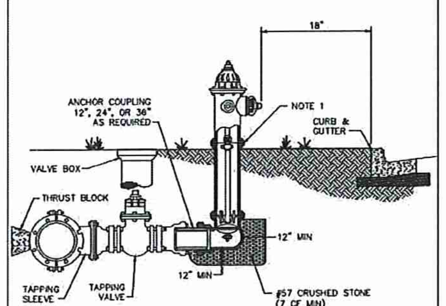
BRANCH PROPERTIES, LLC
ASHWOOD CENTER

ISSUED FOR:	PRICING PLANS
JURISDICTION:	CITY OF DUNWOODY
LOCATION:	500 ASHWOOD PARKWAY ATLANTA, GA 30338

#	DATE	REVISIONS

DRAWN:	CHECK:
KH	RTC
JOB NO: 18-108	DATE: 09/18/18

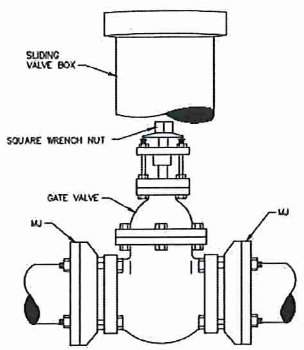
SITE DETAILS
SHEET C803



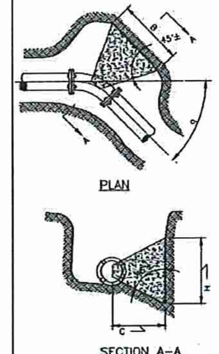
NOTES:

1. BREAKAWAY FLANGE NOT GREATER THAN 6" ABOVE FINAL GRADE

DeKalb County GEORGIA | STANDARD DETAILS — Typical Fire Hydrant Detail Tap Installation — NOT TO SCALE | 09/17 — DETAIL NO. W-004



DeKalb County GEORGIA | STANDARD DETAILS — Typical Gate Valve Installation — NOT TO SCALE | 09/17 — DETAIL NO. W-007

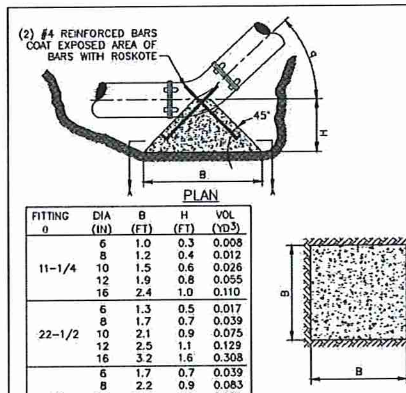


FITTING θ	(IN)	B (FT)	H (FT)	C (FT)	VOL (YD³)
11-1/4	6	0.9	0.8	0.45	0.010
	8	1.2	1.1	0.60	0.022
	10	1.5	1.3	0.75	0.041
	12	1.8	1.6	0.90	0.071
	16	2.3	2.2	1.15	0.149
22-1/2	6	1.3	1.1	0.65	0.023
	8	1.6	1.6	0.80	0.048
	10	2.1	1.9	1.05	0.097
	12	2.5	2.3	1.25	0.165
	16	3.3	3.0	1.65	0.362
45	6	1.7	1.6	0.85	0.050
	8	2.2	2.2	1.10	0.113
	10	2.8	2.7	1.40	0.222
	12	3.3	3.3	1.65	0.375
	16	4.5	4.3	2.25	0.887
90	6	2.3	2.2	1.15	0.118
	8	3.1	2.9	1.55	0.278
	10	3.8	3.7	1.90	0.530
	12	4.6	4.4	2.30	0.921
	16	6.1	5.9	3.05	2.142
TEES	6	2.1	1.8	1.00	0.073
	8	2.6	2.5	1.30	0.170
	10	3.2	3.1	1.60	0.319
	12	3.9	3.7	1.95	0.565
	16	5.1	5.0	2.55	1.303

NOTES:

1. DIMENSIONS OF THRUST BLOCKS WERE CALCULATED ASSUMING A STATIC PRESSURE OF 250 PSI AND A SOIL BEARING PRESSURE OF 2,000 PSF.
2. DIMENSIONS SHOWN CAN BE VARIED AS FIELD CONDITIONS DICTATE, BUT IT IS IMPORTANT THAT THE CORRECT VOLUME AS SHOWN IN TABLE BE USED AND THAT ALLOWABLE SOIL BEARING PRESSURE NOT BE EXCEEDED.
3. IT IS THE RESPONSIBILITY OF THE DESIGN ENGINEER TO VERIFY THAT THE THRUST BLOCKS IN THE CHART MEET THE REQUIRED FORCES THAT ARE ASSOCIATED WITH THE PROPOSED WATER LINE OR FORCE MAIN.

DeKalb County GEORGIA | STANDARD DETAILS — Blocking Detail Horizontal Thrust Water and Forcemain — NOT TO SCALE | 09/17 — DETAIL NO. G-001

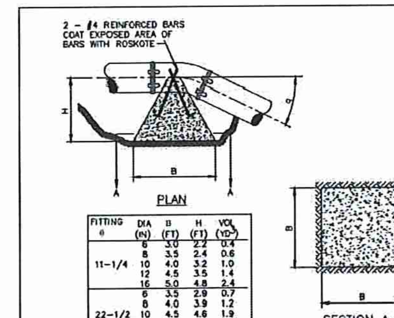


FITTING θ	DIA (IN)	B (FT)	H (FT)	VOL (YD³)
11-1/4	6	1.0	0.3	0.008
	8	1.2	0.4	0.012
	10	1.5	0.6	0.026
	12	1.9	0.8	0.055
	16	2.4	1.0	0.110
22-1/2	6	1.3	0.5	0.017
	8	1.7	0.7	0.039
	10	2.1	0.9	0.075
	12	2.5	1.1	0.129
	16	3.2	1.6	0.308
45	6	1.7	0.7	0.039
	8	2.2	0.9	0.083
	10	2.7	1.2	0.164
	12	3.3	1.5	0.305
	16	4.3	2.0	0.688

NOTE:

1. DIMENSIONS OF THRUST BLOCKS WERE CALCULATED ASSUMING A STATIC PRESSURE OF 250 PSI, A DEPTH OF COVER OF 4 FT., AND A SOIL BEARING PRESSURE OF 2,000 PSF.
2. DIMENSIONS SHOWN CAN BE VARIED AS FIELD CONDITIONS DICTATE, BUT IT IS IMPORTANT THAT THE CORRECT VOLUME AS SHOWN IN TABLE BE USED AND THAT ALLOWABLE SOIL BEARING PRESSURE NOT BE EXCEEDED.
3. IT IS THE RESPONSIBILITY OF THE DESIGN ENGINEER TO VERIFY THAT THE THRUST BLOCKS IN THE CHART MEET THE REQUIRED FORCES THAT ARE ASSOCIATED WITH THE PROPOSED WATER LINE OR FORCE MAIN.

DeKalb County GEORGIA | STANDARD DETAILS — Blocking Detail Downward Thrust — NOT TO SCALE | 09/17 — DETAIL NO. G-002



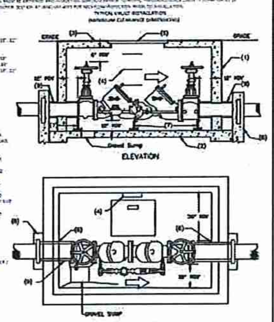
FITTING θ	DIA (IN)	B (FT)	H (FT)	VOL (YD³)
11-1/4	6	3.0	2.2	0.4
	8	3.5	2.4	0.6
	10	4.0	3.2	1.0
	12	4.5	3.5	1.4
	16	5.0	4.8	2.4
22-1/2	6	3.5	2.9	0.7
	8	4.0	3.9	1.2
	10	4.5	4.6	1.9
	12	5.5	4.8	2.7
	16	6.5	5.9	4.8
45	6	4.5	3.4	1.3
	8	5.0	4.6	2.2
	10	6.0	5.1	3.5
	12	6.5	6.2	5.0
	16	8.0	7.3	8.6

NOTES:

1. VOLUME WAS CALCULATED NEGLECTING WEIGHT OF FITTING, WATER, AND BACKFILL USING A STATIC PRESSURE OF 250 PSI.
2. DIMENSIONS OF BLOCK WERE CALCULATED ASSUMING A SOIL BEARING PRESSURE OF 2,000 POUNDS PER SQUARE FOOT.
3. DIMENSIONS SHOWN CAN BE VARIED AS FIELD CONDITIONS DICTATE, BUT IT IS IMPORTANT THAT THE CORRECT VOLUME AS SHOWN IN TABLE BE USED AND THAT ALLOWABLE SOIL BEARING PRESSURE NOT BE EXCEEDED.
4. IT IS THE RESPONSIBILITY OF THE DESIGN ENGINEER TO VERIFY THAT THE THRUST BLOCKS IN THE CHART MEET THE REQUIRED FORCES THAT ARE ASSOCIATED WITH THE PROPOSED WATER LINE OR FORCE MAIN.

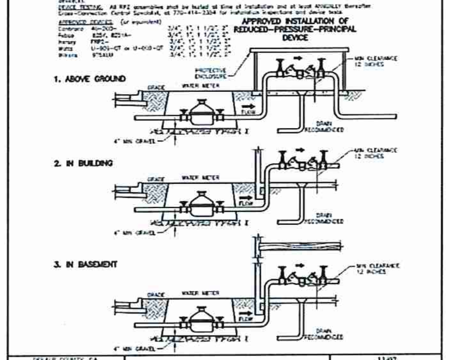
DeKalb County GEORGIA | STANDARD DETAILS — Blocking Detail Upward Thrust — NOT TO SCALE | 09/17 — DETAIL NO. G-003

MINIMUM CONTAINMENT PROTECTION REQUIREMENT
NEW CONSTRUCTION AND RETROFIT INSTALLATIONS NONHAZARDOUS
DEDICATED FIRELINE SERVICE CONNECTION
SERVICE SIZE: 2 1/2" AND ABOVE
DOUBLE CHECK DETECTOR ASSEMBLY (DCDA)

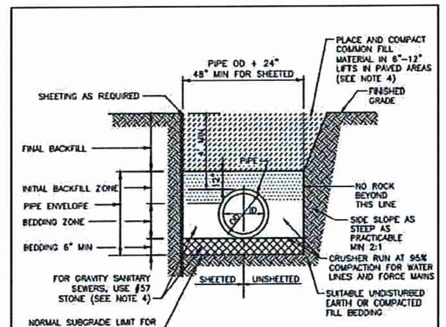


DeKalb County GEORGIA | STANDARD DETAILS — DCDA BFP Installation Non Hazardous Fire Line Installation — NOT TO SCALE | 09/17 — DETAIL NO. W-009

MINIMUM CONTAINMENT PROTECTION REQUIREMENT
NEW CONSTRUCTION AND RETROFIT INSTALLATIONS
SERVICE SIZE: 3/4" THROUGH 2" METER SIZE: THROUGH 2"
REDUCED PRESSURE ZONE BACKFLOW PREVENTER (RPZ BFP) ASSEMBLY



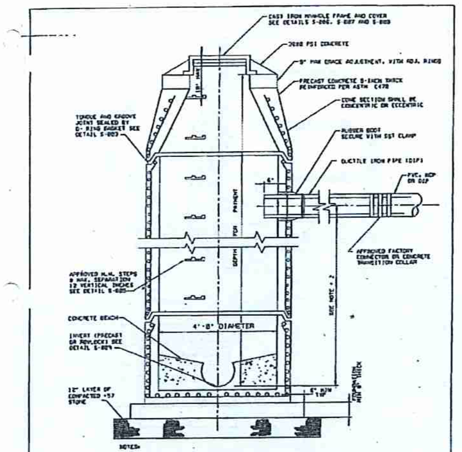
DEKALB COUNTY, GA. Department of Watershed Management | STANDARD DETAILS — RPZ BFP Installation 3/4" to 2" — NOT TO SCALE | 11/07 — DETAIL NO. W-014



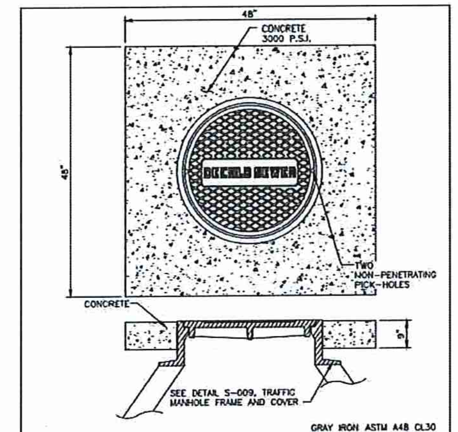
NOTES:

1. SEE DESIGN STANDARDS FOR ADDITIONAL BEDDING AND TRENCH BACKFILL REQUIREMENTS.
2. DEPTH OF COVER OVER WATER MAINS, FORCE MAINS AND GRAVITY SANITARY SEWERS SHALL BE 4'-0" AS MEASURED FROM TOP OF PAVEMENT OR FINISHED GRADE TO TOP OF PIPE.
3. NO ROCK, ONLY BEDDING MATERIAL IN BACKFILL FOR FIRST 2'-0" ABOVE TOP OF PIPE.
4. BEDDING AND BACKFILL TO BE CRUSHER RUN AT 95% COMPACTION UNDER ALL PAVING FROM 12" ABOVE THE TOP OF PIPE TO THE BOTTOM OF THE CONCRETE ROAD CAP.
5. BACKFILL TO BE FREE OF ORGANICS, OBJECTIONABLE MATERIAL AND STONES LARGER THAN 3" IN ITS LONGEST DIMENSION.

DeKalb County GEORGIA | STANDARD DETAILS — Backfill and Allowable Trench Widths Detail — NOT TO SCALE | 09/17 — DETAIL NO. G-004



DEKALB COUNTY, GA. DEPARTMENT OF WATERSHED MANAGEMENT | STANDARD DETAILS — Standard Precast Manhole — NOT TO SCALE | 12/07 — DETAIL NO. S-001



GRAY IRON ASTM A48 CL30
FRAME WT = 282 LBS
LID WT. = 178 LBS
TOTAL WT. = 460 LBS

NOTE: CONCRETE COLLARS ONLY REQUIRED IN STREETS, ROADWAYS AND OTHER AREAS SUBJECT TO VEHICULAR TRAFFIC.

DeKalb County GEORGIA | STANDARD DETAILS — Concrete Collar for Manhole Frame and Cover — NOT TO SCALE | 09/17 — DETAIL NO. S-007

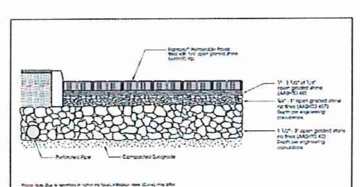
HANOVER® GUIDELINE SPECIFICATION
Paving and Surfacing
Permeable Paving Units

PRODUCT NAME: Hanover® Permeable Paving Units

MANUFACTURER: Hanover® Architectural Products

1 PRODUCT DESIGN:

2 TECHNICAL DATA:



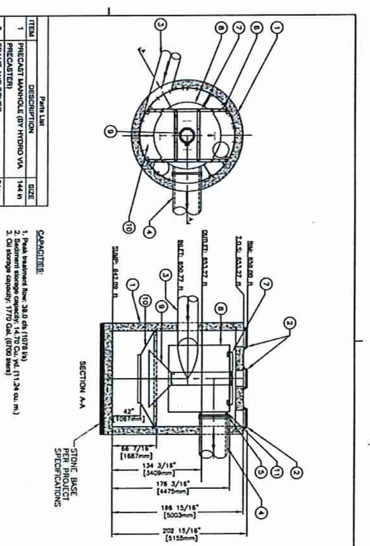
HANOVER® Architectural Products | Hanover® Permeable Paver - Typical Installation | Date: 12/11/2015

ITEM	DESCRIPTION	SIZE
1	PRECAST MANHOLE (BY HYDRO VIA PRECASTER)	144 in
2	FRAME AND COVER	24 in
3	INLET PIPE (BY OTHERS)	36 in
4	OUTLET PIPE (BY OTHERS)	36 in
5	PIPE COUPLING (BY OTHERS)	
6	LEDGER ANGLE	
7	SUPPORT FRAME	
8	DIP PLATE	
9	CENTER SHAFT AND CONE	
10	BENCHING SKIRT	
11	OUTLET PIPE STUB	36 in

CAPACITIES:

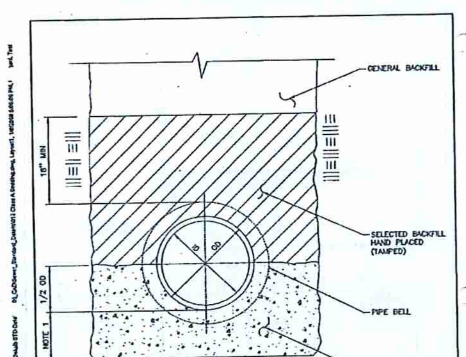
1. Peak treatment flow: 38.0 cfs (1076 l/s)
2. Sediment storage capacity: 14.70 Cu. yd. (11.24 cu. m.)
3. Oil storage capacity: 1770 Gal. (6700 liters)

ADDITIONAL DESIGN INFORMATION:



12-FT DIAMETER DOWNSTREAM DEFENDER — GENERAL ARRANGEMENT

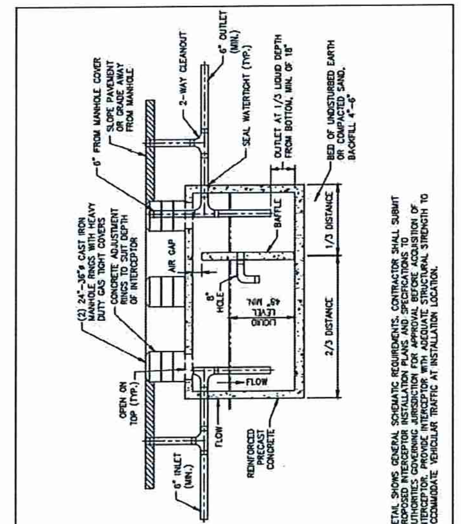
Hydro International — Stormwater Solutions, 94 Hutchins Drive, Portland, Maine 04102 — CAD Ref: D12GA — Drawing No. D12GA Rev. C



NOTES:

1. CONCRETE DEPTH BELOW PIPE:
   a.) PIPE DIAMETER UP TO 12":
      i.) EQUAL TO 1/2 TIMES THE OUTSIDE DIAMETER (OD)
      ii.) MINIMUM 6"
   b.) PIPE DIAMETER GREATER THAN 12":
      i.) EQUAL TO 1/4 TIMES THE OUSIDE DIAMETER (OD)
      ii.) MINIMUM 8"
   c.) MAXIMUM 12"

DEKALB COUNTY, GA. Department of Watershed Management | STANDARD DETAILS — Class "A" Bedding — NOT TO SCALE | 12/07 — DETAIL NO. S-012



DETAIL SHOWS GENERAL SCHEMATIC REQUIREMENTS. CONTRACTOR SHALL SUBMIT PROPOSED INTERCEPTOR INSTALLATION PLANS AND SPECIFICATIONS TO AUTHORITIES GOVERNING JURISDICTION FOR APPROVAL BEFORE ACQUISITION OF INTERCEPTOR. PROVIDE INTERCEPTOR WITH ADEQUATE STRUCTURAL STRENGTH TO ACCOMMODATE VEHICULAR TRAFFIC AT INSTALLATION LOCATION.

DeKalb County GEORGIA | STANDARD DETAILS — PRECAST CONCRETE FAT, OIL & GREASE INTERCEPTOR 1000, 1500 & 2000 GAL. CAPACITY — Not To Scale | 09/17 — DETAIL NO. S-021

GEORGIA REGISTERED No. 030600 PROFESSIONAL ENGINEER ARON T. CRUMP — 09/18/18

CONTINEO GROUP
755 COMMERCE DRIVE
SUITE 800
DECATUR, GA 30030
678.601.6046
www.lcg.engineer

BRANCH PROPERTIES, LLC
3340 PEACHTREE STREET NE, SUITE 600
ATLANTA, GA 30326
(404) 832 - 8900

BRANCH PROPERTIES, LLC
ASHWOOD CENTER

ISSUED FOR: PRICING PLANS
JURISDICTION: CITY OF DUNWOODY
LOCATION: 500 ASHWOOD PARKWAY ATLANTA, GA 30338

#	DATE	REVISIONS

DRAWN: KH | CHECK: RTC
JOB NO: 18-108 | DATE: 09/18/18

SITE DETAILS
SHEET C804

ALTA/NSPS LAND TITLE SURVEY
FOR
BRANCH ASHWOOD ASSOCIATES, LLC &
CHICAGO TITLE INSURANCE COMPANY
(600 ASHWOOD PARKWAY)
LOCATED IN
LAND LOTS 349 & 350, 18TH DISTRICT
DEKALB COUNTY, GEORGIA

AREA TABLE

PARCEL 1	193,561 SQ.FT.	OR	4.4435 AC.
PARCEL 2	186,579 SQ.FT.	OR	4.2833 AC.
PARCEL 3	18,880 SQ.FT.	OR	0.4334 AC.
PARCEL 4	22,889 SQ.FT.	OR	0.5255 AC.
PARCEL 5	16,190 SQ.FT.	OR	0.3717 AC.

TOTAL AREA 438,099 SQ.FT. OR 10.0574 AC.

SITE INFORMATION

CURRENT OWNER: BRANCH ASHWOOD ASSOCIATES LLC
DB. 20527 PG. 224 - 236

TAX PARCEL ID #
TRACT 1: 18 350 02 001
TRACT 2: 18 349 01 037
TRACT 3: 18 350 02 003
TRACT 4: 18 349 01 048
TRACT 5: 18 349 01 046

ADDRESS: 600 ASHWOOD PARKWAY, ATLANTA, GA 30338

ZONING: C-1
JURISDICTION: CITY OF DUNWOODY

SETBACKS:
FRONT -50 FEET
SIDE -20 FEET
REAR -30 FEET

PARKING COUNT:
REGULAR PARKING - 238
HANDICAPPED PARKING - 10
TOTAL PARKING COUNT - 248

REFERENCE MATERIAL

1. ALTA/ACSM LAND TITLE SURVEY OF ASHWOOD RESTAURANT PARK FOR BRANCH ASHWOOD ASSOCIATES, LLC PREPARED BY HDR ENGINEERING, INC. DATED DECEMBER 18, 2007.
2. LIMITED WARRANTY DEED RECORDED IN DB. 20527 PG. 224 AMONG THE LAND RECORDS OF DEKALB COUNTY, GEORGIA
3. LIMITED WARRANTY DEED RECORDED IN DB. 25847 PG. 293 AFORESAID RECORDS

TITLE NOTES

ACCORDING TO THE "FIRM" (FLOOD INSURANCE RATE MAP) OF DEKALB COUNTY, GEORGIA (PANEL NUMBERS 13089C0012J), DATED MAY 16, 2013; NO PORTION OF THIS PROPERTY LIES WITHIN A SPECIAL FLOOD HAZARD AREA.

SUBJECT PROPERTY HAS DIRECT VEHICULAR ACCESS TO THE PUBLIC RIGHT OF WAY OF ASHWOOD PARKWAY & MEADOW LANE ROAD.

AS OF THE DATE OF THIS SURVEY, TITLE TO SUBJECT PROPERTY APPPEARS TO LIE VESTED IN BRANCH ASHWOOD ASSOCIATES, LLC, A GEORGIA LIMITED LIABILITY COMPANY, PER DEED RECORDED AMONG THE LAND RECORDS OF DEKALB COUNTY, GEORGIA IN DEED BOOK 20527 PAGE 224

THIS SURVEY WAS PREPARED WITH THE BENEFIT OF A TITLE REPORT, PROVIDED BY CHICAGO TITLE INSURANCE COMPANY, COMMITMENT NO. 72X2610-75412608, WITH AN EFFECTIVE DATE OF DECEMBER 26, 2007 AT 10:42 A.M. WHICH REVEALS THE FOLLOWING ENCUMBRANCES:

3. RIGHTS OF TENANTS IN POSSESSION. AS TENANTS ONLY, UNDER RECORDED AND UNRECORDED LEASES, INCLUDING BUT NOT LIMITED TO: (A)SHORT FORM OF LEASE BETWEEN MONY LIFE INSURANCE COMPANY AND MCCORNICK & SCHNICK OPERATING CORP., DATED AS OF FEBRUARY 21, 2000, FILED FOR RECORD APRIL 4, 2000 AT 2:18 P.M., RECORDED IN DEED BOOK 11289, PAGE 575, RECORDS OF DEKALB COUNTY, GEORGIA; (B)SHORT FORM OF LEASE BY AND BETWEEN MONY LIFE INSURANCE COMPANY AND BRAVO DEVELOPMENT, INC., DATED AS OF MAY 29, 2002, FILED FOR RECORD AUGUST 27, 2002 AT 3:40 P.M., RECORDED IN DEED BOOK 13546, PAGE 53, AFORESAID RECORDS; AND (C)UNRECORDED LEASE BY AND BETWEEN THE MUTUAL LIFE INSURANCE COMPANY OF NEW YORK, AS LANDLORD, AND P.F. CHANG'S CHINA BISTRO, INC., AS TENANT, DATED JULY 18, 1997. **(AFFECTS SUBJECT PROPERTY, CONDITIONS BLANKET IN NATURE.)**

4. EASEMENT FROM H.J. WILSON TO GEORGIA POWER COMPANY, DATED OCTOBER 12, 1934, FILED FOR RECORD FEBRUARY 4, 1935 AT 10:00 A.M., RECORDED IN DEED BOOK 408, PAGE 407, AFORESAID RECORDS. **(MAY AFFECT SUBJECT PROPERTY, TOO VAGUE TO PLOT.)**

5. EASEMENT FROM S.T. SPRUILL TO GEORGIA POWER COMPANY DATED FEBRUARY 1, 1946, FILED FOR RECORD APRIL 1, 1946 AT 12:00 P.M., RECORDED IN DEED BOOK 946, PAGE 271, AFORESAID RECORDS. **(MAY AFFECT SUBJECT PROPERTY, TOO VAGUE TO PLOT.)**

6. EASEMENT FROM C.C. TATE TO GEORGIA POWER COMPANY DATED MAY 5, 1948, FILED FOR RECORD OCTOBER 13, 1949 AT 5:00 P.M., RECORDED IN DEED BOOK 743, PAGE 369, AFORESAID RECORDS. **(MAY AFFECT SUBJECT PROPERTY, TOO VAGUE TO PLOT.)**

7. EASEMENT FROM H.J. WILSON TO GEORGIA POWER COMPANY, FILED FOR RECORD JANUARY 20, 1950 AT 4:00 P.M., RECORDED IN DEED BOOK 800, PAGE 134, AFORESAID RECORDS. **(MAY AFFECT SUBJECT PROPERTY, TOO VAGUE TO PLOT.)**

8. RIGHT OF WAY EASEMENT FROM E.N. O'BEIRNE TO GEORGIA POWER COMPANY, DATED JULY 17, 1961, FILED FOR RECORD AUGUST 28, 1961 AT 12:02 P.M., RECORDED IN DEED BOOK 1800, PAGE 330, AFORESAID RECORDS. **(MAY AFFECT SUBJECT PROPERTY, TOO VAGUE TO PLOT.)**

9. SANITARY SEWER EASEMENT FROM JIM COWART & ASSOC., INC. TO DEKALB COUNTY, GEORGIA, ITS SUCCESSORS AND ASSIGNS, DATED JANUARY 10, 1979, FILED FOR RECORD JANUARY 18, 1979 AT 3:38 P.M., RECORDED IN DEED BOOK 3971, PAGE 92, AFORESAID RECORDS, AS SHOWN ON PLAT OF SURVEY ENTITLED "ALTA/ACSM LAND TITLE SURVEY OF ASHWOOD RESTAURANT PARK FOR BRANCH ASHWOOD ASSOCIATES, LLC, AND CHICAGO TITLE INSURANCE COMPANY" PREPARED BY HDR ENGINEERING, INC., BEARING THE SEAL AND CERTIFICATION OF ADAM M. DEEGAN, GEORGIA REGISTERED LAND SURVEYOR NUMBER 2929, DATED DECEMBER 18, 2007 (THE "SURVEY"). **(AFFECTS SUBJECT PROPERTY, DEED TOO VAGUE TO PLOT, SHOWN PER ABOVE REFERENCED SURVEY.)**

10. DRAINAGE RIGHTS CONTAINED IN THAT CERTAIN RIGHT OF WAY DEED FROM ONNIE MAE SPRUILL TO DEKALB COUNTY, A POLITICAL SUBDIVISION OF THE STATE OF GEORGIA, DATED OCTOBER 28, 1980, FILED FOR RECORD OCTOBER 30, 1980 AT 4:34 P.M., RECORDED IN DEED BOOK 4386, PAGE 4, AFORESAID RECORDS. **(AFFECTS SUBJECT PROPERTY, DRAINAGE RIGHT CONDITIONS BLANKET IN NATURE, ALSO ESTABLISHES CURRENT RIGHT OF WAY LINE OF ASHFORD DUNWOODY ROAD.)**

11. AMENDED AND RESTATED DECLARATION OF PROTECTIVE COVENANTS FOR ASHWOOD-DEKALB COUNTY, BY AND AMONG MONY LIFE INSURANCE COMPANY, A NEW YORK CORPORATION F/K/A THE MUTUAL LIFE INSURANCE COMPANY OF NEW YORK, HPT IHG PROPERTIES TRUST, A MARYLAND REAL ESTATE INVESTMENT TRUST, MARYLAND CASUALTY COMPANY, A MARYLAND CORPORATION, TEAGUE ASHWOOD, LLC, A GEORGIA LIMITED LIABILITY COMPANY, TRANSWESTERN/MONY ASHWOOD 900, L.L.C., A DELAWARE LIMITED LIABILITY COMPANY AND TRANSWESTERN/MONY ASHWOOD 1200, L.L.C., A DELAWARE LIMITED LIABILITY COMPANY, DATED AS OF FEBRUARY 17, 2004, FILED FOR RECORD FEBRUARY 18, 2004 AT 3:32 P.M., RECORDED IN DEED BOOK 15821, PAGE 733, AFORESAID RECORDS. **(AFFECTS SUBJECT PROPERTY, CONDITIONS BLANKET IN NATURE.)**

12. DECLARATION OF EASEMENTS BY LAING PROPERTIES, INC., A DELAWARE CORPORATION, DATED MARCH 1, 1993, FILED FOR RECORD MARCH 2, 1993 AT 2:24 P.M., RECORDED IN DEED BOOK 4723, PAGE 361, AFORESAID RECORDS; AS AMENDED BY AMENDED AND RESTATED DECLARATION OF PROTECTIVE COVENANTS FOR ASHWOOD-DEKALB COUNTY, BY AND AMONG MONY LIFE INSURANCE COMPANY, A NEW YORK CORPORATION F/K/A THE MUTUAL LIFE INSURANCE COMPANY OF NEW YORK, HPT IHG PROPERTIES TRUST, A MARYLAND REAL ESTATE INVESTMENT TRUST, MARYLAND CASUALTY COMPANY, A MARYLAND CORPORATION, TEAGUE ASHWOOD, LLC, A GEORGIA LIMITED LIABILITY COMPANY, TRANSWESTERN/MONY ASHWOOD 900, L.L.C., A DELAWARE LIMITED LIABILITY COMPANY AND TRANSWESTERN/MONY ASHWOOD 1200, L.L.C., A DELAWARE LIMITED LIABILITY COMPANY, DATED AS OF FEBRUARY 17, 2004, FILED FOR RECORD FEBRUARY 18, 2004 AT 3:32 P.M., RECORDED IN DEED BOOK 15821, PAGE 733, AFORESAID RECORDS. NOTE: THE DRAINAGE EASEMENT AREA AND THE ROAD EASEMENT PROPERTY AS CONTAINED IN THIS DECLARATION HAVE BEEN DEDICATED TO DEKALB COUNTY BY VIRTUE OF THAT CERTAIN RIGHT OF WAY DEED FROM THE MUTUAL LIFE INSURANCE COMPANY OF NEW YORK, A NEW YORK CORPORATION TO DEKALB COUNTY, A POLITICAL SUBDIVISION OF THE STATE OF GEORGIA, DATED AUGUST 24, 1987, FILED FOR RECORD AUGUST 28, 1987 AT 10:35 A.M., RECORDED IN DEED BOOK 5931, PAGE 402, AFORESAID RECORDS. **(AFFECTS SUBJECT PROPERTY, CONDITIONS BLANKET IN NATURE.)**

13. EASEMENT AS CONTAINED IN RIGHT OF WAY DEED FROM LAING PROPERTIES, INC. TO DEKALB COUNTY, A POLITICAL SUBDIVISION OF THE STATE OF GEORGIA, DATED APRIL 1, 1993, FILED FOR RECORD APRIL 1, 1993 AT 3:16 P.M., RECORDED IN DEED BOOK 4737, PAGE 304, AFORESAID RECORDS (AFFECTS APPURTENANT EASEMENTS ONLY). **(MAY AFFECT SUBJECT PROPERTY, TOO VAGUE TO PLOT.)**

14. EASEMENT AS CONTAINED IN RIGHT OF WAY DEED FROM LAING PROPERTIES, INC. TO DEKALB COUNTY, A POLITICAL SUBDIVISION OF THE STATE OF GEORGIA, DATED APRIL 1, 1993, FILED FOR RECORD APRIL 1, 1993 AT 3:16 P.M., RECORDED IN DEED BOOK 4737, PAGE 305, AFORESAID RECORDS. **(MAY AFFECT SUBJECT PROPERTY, TOO VAGUE TO PLOT.)**

15. EASEMENT FROM LAING PROPERTIES, INC. TO GEORGIA POWER COMPANY, DATED AUGUST 15, 1983, FILED FOR RECORD DECEMBER 7, 1993 AT 9:33 A.M., RECORDED IN DEED BOOK 4882, PAGE 125, AFORESAID RECORDS (AFFECTS APPURTENANT EASEMENTS ONLY). **(MAY AFFECT SUBJECT PROPERTY, TOO VAGUE TO PLOT.)**

16. SEWER EASEMENT FROM LAING PROPERTIES, INC. TO DEKALB COUNTY, GEORGIA, DATED MARCH 7, 1994, FILED FOR RECORD MARCH 9, 1994 AT 10:29 A.M., RECORDED IN DEED BOOK 4935, PAGE 329, AFORESAID RECORDS, AS SHOWN ON THE SURVEY. **(AFFECTS SUBJECT PROPERTY, SHOWN ON SURVEY.)**

17. DECLARATION OF DRIVEWAY EASEMENT BY THE MUTUAL LIFE INSURANCE COMPANY OF NEW YORK, A NEW YORK CORPORATION, DATED JULY 25, 1996, FILED FOR RECORD JULY 28, 1966 AT 10:35 A.M., RECORDED IN DEED BOOK 5536, PAGE 235, AFORESAID RECORDS, AS SHOWN ON THE SURVEY. **(AFFECTS SUBJECT PROPERTY, SHOWN ON SURVEY.)**

18. EASEMENT FROM THE MUTUAL LIFE INSURANCE COMPANY OF NEW YORK TO GEORGIA POWER COMPANY, DATED APRIL 3, 1969, FILED FOR RECORD APRIL 18, 1997 AT 8:09 A.M., RECORDED IN DEED BOOK 6410, PAGE 592, AFORESAID RECORDS, AS SHOWN ON THE SURVEY. **(AFFECTS SUBJECT PROPERTY, SHOWN ON SURVEY.)**

19. EASEMENT FROM THE MUTUAL LIFE INSURANCE CO. OF NEW YORK, TO GEORGIA POWER COMPANY, DATED DECEMBER 12, 1997, FILED FOR RECORD MAY 1, 1998 AT 2:54 P.M., RECORDED IN DEED BOOK 5974, PAGE 351, AFORESAID RECORDS. **(AFFECTS SUBJECT PROPERTY, CONDITIONS BLANKET IN NATURE.)**

20. DECLARATION OF EASEMENTS, COVENANTS, CONDITIONS AND RESTRICTIONS FOR ASHWOOD RESTAURANT COMPLEX BY THE MUTUAL LIFE INSURANCE COMPANY OF NEW YORK, DATED JULY 14, 1997, FILED FOR RECORD AUGUST 8, 1997 AT 8:30 A.M., RECORDED IN DEED BOOK 9562, PAGE 251, AFORESAID RECORDS; AS ASSIGNED BY ASSIGNMENT OF DECLARANT'S RIGHTS BY AND BETWEEN MONY LIFE INSURANCE COMPANY, A NEW YORK CORPORATION, AND BRANCH ASHWOOD ASSOCIATES, LLC, A GEORGIA LIMITED LIABILITY COMPANY, DATED AS OF DECEMBER 21, 2007, FILED FOR RECORD DECEMBER 26, 2007 AT 10:42 A.M., RECORDED IN DEED BOOK 20527, PAGE 237, AFORESAID RECORDS, BUT OMITTING ANY RESTRICTION BASED ON RACE, COLOR, RELIGION, SEX, HANDICAP, FAMILIAL STATUS, OR NATIONAL ORIGIN UNLESS AND ONLY TO THE EXTENT THAT SAID COVENANT (A) IS EXEMPT UNDER CHAPTER 42, SECTION 3607 OF THE UNITED STATES CODE OR (B) RELATES TO HANDICAP BUT DOES NOT DISCRIMINATE AGAINST HANDICAPPED PERSONS. NOTE: THIS DECLARATION CONTAINS EASEMENTS, COVENANTS, CONDITIONS AND RESTRICTIONS BETWEEN THE LEASEHOLD INTERESTS AND THE UNDERLYING REVERSIONARY FEE INTEREST OF THE REMAINDER DEFINED THEREIN. **(AFFECTS SUBJECT PROPERTY, CONDITIONS BLANKET IN NATURE, ESTABLISHES TRACTS 3 TO 5.)**

21. SIGN EASEMENT AGREEMENT BY AND BETWEEN THE MUTUAL LIFE INSURANCE COMPANY OF NEW YORK AND CENTRE ACQUISITIONS, LLC, DATED NOVEMBER 12, 1998, FILED FOR RECORD NOVEMBER 17, 1998 AT 2:09 P.M., RECORDED IN DEED BOOK 10309, PAGE 46, AFORESAID RECORDS; AS AMENDED BY FIRST AMENDMENT TO SIGN EASEMENT AGREEMENT BY AND BETWEEN MONY LIFE INSURANCE COMPANY, A NEW YORK CORPORATION F/K/A THE MUTUAL LIFE INSURANCE COMPANY OF NEW YORK AND HPT IHG PROPERTIES TRUST, A MARYLAND REAL ESTATE INVESTMENT TRUST, SUCCESSOR-IN-INTEREST TO CENTRE ACQUISITIONS, LLC, DATED AS OF SEPTEMBER 16, 2003, FILED FOR RECORD SEPTEMBER 17, 2003 AT 12:54 P.M., RECORDED IN DEED BOOK 15034, PAGE 288, AFORESAID RECORDS. **(AFFECTS SUBJECT PROPERTY, EASEMENT NOT PLOTTABLE.)**

22. EASEMENT AS SET FORTH IN QUIT CLAIM DEED FROM MONY ASSETS CORP., A NEW YORK CORPORATION, TO ASHWOOD TWO JOINT VENTURE, A GEORGIA JOINT VENTURE, DATED JUNE 30, 1999, FILED FOR RECORD JULY 1, 1999 AT 12:23 P.M., RECORDED IN DEED BOOK 10714, PAGE 622, AFORESAID RECORDS, AS SHOWN ON THE SURVEY. **(AFFECTS SUBJECT PROPERTY, SHOWN ON SURVEY.)**

23. SIGNAGE EASEMENT BY AND AMONG TRANSWESTERN/MONY ASHWOOD 900, L.L.C., A DELAWARE LIMITED LIABILITY COMPANY, AND MONY LIFE INSURANCE COMPANY, A NEW YORK CORPORATION F/K/A THE MUTUAL LIFE INSURANCE COMPANY OF NEW YORK, IN FAVOR OF TEAGUE ASHWOOD, LLC, A GEORGIA LIMITED LIABILITY COMPANY, DATED AS OF SEPTEMBER 16, 2003, FILED FOR RECORD SEPTEMBER 17, 2003 AT 12:54 P.M., RECORDED IN DEED BOOK 15034, PAGE 309, AFORESAID RECORDS. **(AFFECTS SUBJECT PROPERTY, CONDITIONS BLANKET IN NATURE.)**

24. EMBANKMENTS OR CUTS WHICH SUPPORT OR ACCOMMODATE THE IMPROVEMENTS CONSTRUCTED IN CONNECTION WITH THAT CERTAIN TEMPORARY CONSTRUCTION EASEMENT FOR CONSTRUCTION OF DRIVEWAY, FROM MONY LIFE INSURANCE COMPANY TO DEKALB COUNTY, GEORGIA, AND THE GEORGIA DEPARTMENT OF TRANSPORTATION, DATED JUNE 10, 2005, FILED FOR RECORD DECEMBER 1, 2005 AT 8:43 A.M., RECORDED IN DEED BOOK 18189, PAGE 364, AFORESAID RECORDS. **(DOES NOT AFFECT SUBJECT PROPERTY DUE TO EXPIRATION.)**

26. EASEMENT FROM THE MUTUAL LIFE INSURANCE COMPANY OF NEW YORK, TO GEORGIA POWER COMPANY, DATED MAY 15, 1969, FILED FOR RECORD JUNE 6, 1969 AT 9:40 A.M., RECORDED IN DEED BOOK 6448, PAGE 606, AFORESAID RECORDS, AS SHOWN ON THE SURVEY. **(AFFECTS SUBJECT PROPERTY, CONDITIONS BLANKET IN NATURE.)**

THIS SURVEY WAS PREPARED WITH THE BENEFIT OF A CERTIFICATE OF TITLE REPORT, PROVIDED BY TRINITY TITLE INSURANCE AGENCY, INC. FILE NO. 65754, WITH AN EFFECTIVE DATE OF JULY 16, 2018 AT 5:00 P.M. WHICH REVEALS THE FOLLOWING ENCUMBRANCES:

1. ACKNOWLEDGMENT REGARDING DECLARATION OF PROTECTIVE COVENANTS FOR ASHWOOD-DEKALB COUNTY, BY AND AMONG APG 1200, LLC, HPT TRS IHG-2, INC., JPMCC 2005-LDP2 OFFICE 900, LP, THE GRAMERCY CONDOMINIUMS, INC. (SUCCESSOR IN INTEREST TO ASHTON ATLANTA RESIDENTIAL, LLC), BRANCH ASHWOOD ASSOCIATES, LLC, AND WALTON ASHWOOD, LLC, DATED APRIL 30, 2015, FILED JUNE 23, 2015, RECORDED IN DEED BOOK 25009, PAGE 53, AFORESAID RECORDS. **(AFFECTS SUBJECT PROPERTY, CONDITIONS BLANKET IN NATURE.)**

2. ACKNOWLEDGMENT REGARDING DECLARATION OF PROTECTIVE COVENANTS FOR ASHWOOD-DEKALB COUNTY, BY AND AMONG ALBANY ROAD-ASHWOOD LLC., HPT TRS IHG-2, INC., 900 ATLANTA OFFICE, LLC, THE GRAMERCY CONDOMINIUM ASSOCIATION, INC. (SUCCESSOR IN INTEREST TO ASHTON ATLANTA RESIDENTIAL, LLC), BRANCH ASHWOOD ASSOCIATES, LLC, AND WALTON ASHWOOD, LLC, DATED JUNE 5, 2017, FILED JUNE 8, 2017, RECORDED IN DEED BOOK 26303, PAGE 621, AFORESAID RECORDS. **(AFFECTS SUBJECT PROPERTY, CONDITIONS BLANKET IN NATURE.)**

SITE MAP

PICTURE LOCATION AND DIRECTION

AERIAL IMAGE PROVIDED BY GOOGLE EARTH
IMAGERY DATED MARCH 14, 2018

PHOTO #1

PHOTO #2

PHOTO #3

PHOTO #4

SPECIAL NOTES

1. CERTIFICATION AND DECLARATION IS MADE TO THE ENTITIES AS LISTED IN THE TITLE BLOCK AND/OR CERTIFICATIONS. THE CERTIFICATIONS AND DECLARATIONS ON THIS PLAT ARE NOT TRANSFERABLE TO ADDITIONAL INSTITUTIONS OR SUBSEQUENT OWNERS.
2. SUBSURFACE AND ENVIRONMENTAL CONDITIONS WERE NOT EXAMINED OR CONSIDERED AS A PART OF THIS SURVEY. NO STATEMENT IS MADE CONCERNING THE EXISTENCE OF UNDERGROUND OR OVERHEAD CONTAINERS OR FACILITIES THAT MAY AFFECT THE USE OR DEVELOPMENT OF THIS PROPERTY.
3. PURSUANT TO RULE 180-6.09 OF THE GEORGIA STATE BOARD OF REGISTRATION FOR PROFESSIONAL ENGINEERS AND SURVEYORS, THE TERM "CERTIFICATION" RELATING TO PROFESSIONAL ENGINEERING AND LAND SURVEYING SERVICES SHALL MEAN A SIGNED STATEMENT BASED UPON FACTS AND KNOWLEDGE KNOWN TO THE REGISTRANT AND IS NOT A GUARANTEE OR WARRANTY, EITHER EXPRESSED OR IMPLIED.
4. THIS SURVEY IS NOT PREPARED IN ACCORDANCE TO HB 76 AND SHALL NOT BE RECORDED WITHIN THE APPLICABLE LAND RECORDS.

LOCATION MAP

NOT TO SCALE
LAT - 33°55'22.95" N
LONG - 84°20'48.26" W

SURVEY NOTES

EQUIPMENT USED:
A TRIMBLE "S" SERIES TOTAL STATION WAS USED TO OBTAIN ANGULAR MEASUREMENTS AND DISTANCE MEASUREMENTS.

A TRIMBLE R-10 DUAL FREQUENCY GPS UNIT WAS USED FOR ESTABLISHING CONTROL. A NETWORK ADJUSTED RTK SURVEY WAS PERFORMED AND ADJUSTED BY RELATIVE POSITIONAL ACCURACY.

CLOSURE STATEMENT:
THIS OVERALL SURVEY HAS BEEN CALCULATED FOR CLOSURE AND IS ACCURATE WITHIN ONE FOOT IN 169,400 FEET.

THE FIELD DATA UPON WHICH THIS SURVEY IS BASED, ARE WITHIN THE POSITIONAL TOLERANCES ALLOWED FOR ALTA/NSPS LAND TITLE SURVEYS PER THE 2016 MINIMUM TECHNICAL STANDARDS ESTABLISHED BY ALTA AND NSPS AND WAS ADJUSTED USING THE LEAST SQUARES METHOD.

THE BEARINGS SHOWN ON THIS SURVEY ARE COMPUTED ANGLES BASED ON A GRID BEARING BASE (GA WEST ZONE) NAD83.

DUE TO VARIANCES IN GPS EQUIPMENT, TECHNIQUES, FEDERAL ADJUSTMENTS TO STATE PLANE MODELS AND DAILY CONDITIONS IMPACTING GPS RECEPTIVITY, GPS SOLUTIONS MAY VARY FROM THOSE PROVIDED ON THIS SURVEY BOTH HORIZONTALLY AND VERTICALLY. ANY AND ALL CONTRACTORS, CONSULTANTS, INDIVIDUALS OR ENTITIES RELYING ON STATE PLANE COORDINATES TO RELATE TO DATA PROVIDED ON THIS SURVEY MUST LOCALIZE TO THE SURVEY CONTROL, BENCHMARKS OR PROPERTY MONUMENTATION, ESTABLISHED BY THIS SURVEY IN ORDER TO ENSURE ACCURACY OF DATA. THE OWNER, HIS EMPLOYEES, HIS CONSULTANTS, HIS CONTRACTORS, AND/OR HIS AGENTS SHALL HEREBY DISTINCTLY UNDERSTAND THAT THE SURVEYOR IS NOT RESPONSIBLE FOR THE CORRECTNESS OR SUFFICIENCY OF THIS INFORMATION SHOWN HEREON EXCEPT BY APPROVAL OF SAID AUTHORITY.

ALL HORIZONTAL DISTANCES SHOWN ARE GROUND DISTANCES. MEASURING UNITS OF THIS SURVEY ARE IN U.S. SURVEY FEET.

CONTOURS ARE SHOWN AT TWO FOOT INTERVALS. ELEVATIONS ARE BASED ON RTK GLOBAL POSITIONING SYSTEMS OBSERVATION AND ARE RELATIVE TO NAVD 88 DATUM.

FIELD WORK FOR THIS PROPERTY WAS COMPLETED ON AUGUST 8, 2018.

INFORMATION REGARDING SIZE, LOCATION, AND SPECIES OF EXISTING TREES IS SHOWN HEREON. THERE IS NO CERTAINTY OF THE SIZE AND SPECIES OF THE SAID TREES WITHOUT VERIFICATION FROM THE DESIGNATED ARBORIST BY THE LOCAL REGULATORY AUTHORITY. THE OWNER, HIS EMPLOYEES, HIS CONSULTANTS, HIS CONTRACTORS, AND/OR HIS AGENTS SHALL HEREBY DISTINCTLY UNDERSTAND THAT THE SURVEYOR IS NOT RESPONSIBLE FOR THE CORRECTNESS OR SUFFICIENCY OF THIS INFORMATION SHOWN HEREON EXCEPT BY APPROVAL OF SAID AUTHORITY.

THIS SURVEY MAY NOT REPRESENT OFFSITE PAINT STRIPING TO THE ACCURACY REQUIRED FOR LANE DESIGN. TERRAMARK LOCATES THE EDGE OF PAVING AND CRITICAL POINTS TO REFLECT ACCURATE TOPOGRAPHIC DATA ONLY. ACCURACY OF PAINT LOCATIONS SHOULD BE VERIFIED WITH SURVEYOR PRIOR TO USING THIS SURVEY FOR DESIGN.

INFORMATION REGARDING THE REPUTED PRESENCE, SIZE, CHARACTER, AND LOCATION OF EXISTING UNDERGROUND UTILITIES AND STRUCTURES IS SHOWN HEREON. THERE IS NO CERTAINTY TO THE ACCURACY OF THIS INFORMATION AND IT SHALL BE CONSIDERED IN THAT LIGHT BY THOSE USING THIS DRAWING. THE LOCATION AND ARRANGEMENT OF UNDERGROUND UTILITIES AND STRUCTURES SHOWN HEREON MAY BE INACCURATE AND UTILITIES AND STRUCTURES NOT SHOWN MAY BE ENCOUNTERED. THE OWNER, HIS EMPLOYEES, HIS CONSULTANTS, HIS CONTRACTORS, AND/OR HIS AGENTS SHALL HEREBY DISTINCTLY UNDERSTAND THAT THE SURVEYOR IS NOT RESPONSIBLE FOR THE CORRECTNESS OR SUFFICIENCY OF THIS INFORMATION SHOWN HEREON AS TO SUCH UNDERGROUND INFORMATION.

INFORMATION REGARDING STORM SEWER AND SANITARY SEWER AS SHOWN HEREON, IS BASED ON OBSERVATIONS TAKEN BY TERRAMARK EMPLOYEES AT THE GROUND ELEVATION OF THE EXISTING STRUCTURE. TERRAMARK EMPLOYEES ARE NOT AUTHORIZED TO ENTER A CONFINED SPACE STRUCTURE. THEREFORE, THERE IS NO CERTAINTY OF THE PIPE SIZES AND PIPE MATERIAL THAT ARE SHOWN ON THIS SURVEY. EXCAVATION BY A CERTIFIED CONTRACTOR IS THE ONLY WAY TO VERIFY PIPE SIZE AND MATERIAL. THE OWNER, HIS EMPLOYEES, HIS CONSULTANTS, HIS CONTRACTORS, AND/OR HIS AGENTS SHALL HEREBY DISTINCTLY UNDERSTAND THAT THE SURVEYOR IS NOT RESPONSIBLE FOR THE CORRECTNESS OR SUFFICIENCY OF THE PIPE INFORMATION SHOWN HEREON.

TERRAMARK LAND SURVEYING, INC. WAS UNABLE TO DETERMINE THE EXTENT OF PIPES MARKED AS APPROXIMATE DIRECTION ONLY. AFORESAID PIPE IS DRAWN ON THE SURVEY TO REFLECT THE OBSERVED DIRECTION BASED UPON A VISUAL INSPECTION OF THE STRUCTURE ONLY AND IS SHOWN FOR INFORMATIONAL PURPOSES.

STATE WATERS AND BUFFERS AS SHOWN OR NOT SHOWN HEREON ARE SUBJECT TO REVIEW BY LOCAL JURISDICTION OFFICIALS. IT IS THE RESPONSIBILITY OF THE LOCAL AUTHORITY TO DETERMINE SPECIFIC WATER CLASSIFICATION. THEREFORE TERRAMARK LAND SURVEYING ACCEPTS NO RESPONSIBILITY IN THE IDENTIFICATION OF SAID WATERS OR BUFFERS IDENTIFIED OR NOT IDENTIFIED HEREON.

PROPERTY IS SUBJECT TO RIGHTS OF UPPER AND LOWER RIPARIAN OWNERS IN AND TO THE WATER OF CREEKS AND BRANCHES CROSSING OR ADJOINING SUBJECT PROPERTY AND THE NATURAL FLOW THEREOF, FREE FROM DIMINUTION OR POLLUTION.

THIS SURVEY WAS PREPARED FOR THE EXCLUSIVE USE OF THE PERSON, PERSONS OR ENTITY NAMED HEREON. THIS SURVEY DOES NOT EXTEND TO ANY UNNAMED PERSON, PERSONS OR ENTITY WITHOUT THE EXPRESS CERTIFICATION BY THE SURVEYOR NAMING SAID PERSON, PERSONS OR ENTITY.

TERRAMARK LAND SURVEYING, INC. DOES NOT WARRANT THE EXISTENCE OR NON-EXISTENCE OF ANY WETLANDS OR HAZARDOUS WASTE IN THE SURVEY AREA.

SURVEYOR'S CERTIFICATE

TO: BRANCH ASHWOOD ASSOCIATES, LLC & CHICAGO TITLE INSURANCE COMPANY

THIS IS TO CERTIFY THAT THIS MAP OR SURVEY AND THE SURVEY ON WHICH IT IS BASED WERE MADE IN ACCORDANCE WITH THE 2016 MINIMUM STANDARD DETAIL REQUIREMENTS FOR ALTA / NSPS LAND TITLE SURVEYS, JOINTLY ESTABLISHED AND ADOPTED BY ALTA AND NSPS, AND INCLUDES ITEMS 1,2,3,4,5,6(b),7(a),7(b1),7(c),8,9,10,11,13,14 & 16 OF TABLE A THEREOF. THE FIELD WORK WAS COMPLETED ON AUGUST 8, 2018. THE DATE OF THE SURVEY OR MAP AUGUST 13, 2018.

PRELIMINARY
PENDING REVIEW AND COMMENT

SCOTT E. BURSON, RLS
REGISTERED NUMBER 3037

TerraMark Land Surveying, Inc.
1386 Bells Ferry Road
Marietta, Georgia 30066
Phone No.: (770) 421-1927
Fax No.: (770) 421-1552
www.TerraMark.com
C. O. A.# LSF000810
TerraMark
Professional Land Surveying

Revision	Date
#1	
#2	
#3	
#4	
#5	
#6	
#7	
#8	

Project No:	2018-127
Survey Crew:	JV
Drawn By:	PDS
Approved By:	SEB
Date:	08/13/18
Scale:	1"=30'
PATH:	S:\SURVEY\2018\2018-127\DWG\2018-127 TM 18-121.DWG

ALTA/NSPS LAND TITLE SURVEY
FOR
BRANCH ASHWOOD ASSOCIATES, LLC &
CHICAGO TITLE INSURANCE COMPANY
(600 ASHWOOD PARKWAY)
LOCATED IN
LAND LOTS 349 & 350, 18TH DISTRICT
DEKALB COUNTY, GEORGIA

SHEET NO.
1/4

DRAWING# TM 18-121

JOB NUMBER TD18-121 PLOT SIZE 24 X 36

PROPERTY DESCRIPTIONS AND BUILDING INFORMATION

UTILITY PROVIDERS

GAS

SOUTHERN COMPANY GAS
10 PEACHTREE STREET NE
ATLANTA, GA 30309
AMANDA FLAKE
(404) 584-4338

POWER

GEORGIA POWER COMPANY
823 JEFFERSON STREET
ATLANTA, GA 30318
(404) 506-4569
IKE COLLINS

WATER

DEKALB COUNTY WATER & SEWER DEP.
4572 MEMORIAL DRIVE
DECATUR, GA 30032
(770) 612-7222
JEFFEREY WOODS
(770) 724-1404

OTHER
DEKALB COUNTY TRAFFIC & SAFETY
VINCE COOPER
(404) 297-3946

COMMUNICATION

AT&T
208 S. AKARD STREET
DALLAS, TX 75202
(210) 821-4105
ANGELO HINES
(770) 784-3972

COMCAST
(770) 559-6879
SANDRA ANDREWS

COMMUNICATION (CONT.)

WINDSTREAM COMMUNICATION
750 N. JEFFERSON STREET NE
MILLEDGEVILLE, GA 31061
(888) 599-3166

LEVEL 3 COMMUNICATIONS, INC
1025 ELDORADO BOULEVARD
BROOMFIELD, CO 80021
(877) 366-8344 EXT. 3

VERIZON / MCI
2400 N GLENVILLE
RICHARDSON, TX 75082
(478) 471-1042
DENNIS RAINEY

TW TELECOM
10475 PARK MEADOWS DRIVE
LITTLETON, CO 80124
(678) 526-3767

CHARTER COMMUNICATIONS
(866) 447-4188

XO / AGLN
10 PEACHTREE PLACE NE
ATLANTA, GA 30309
(770) 901-9160
STEVE GAINES
(404) 473-0750

FIBERLIGHT, LLC
11700 GREAT OAKS WAY, STE. 100
ALPHARETTA, GA 30022
DELL MILLER

ZAYO FIBER SOLUTIONS
400 CENTENNIAL PKWY. STE. 200
LOUISVILLE, CO 80027
(678) 666-2493
NIC FLORES

UTILITY NOTES

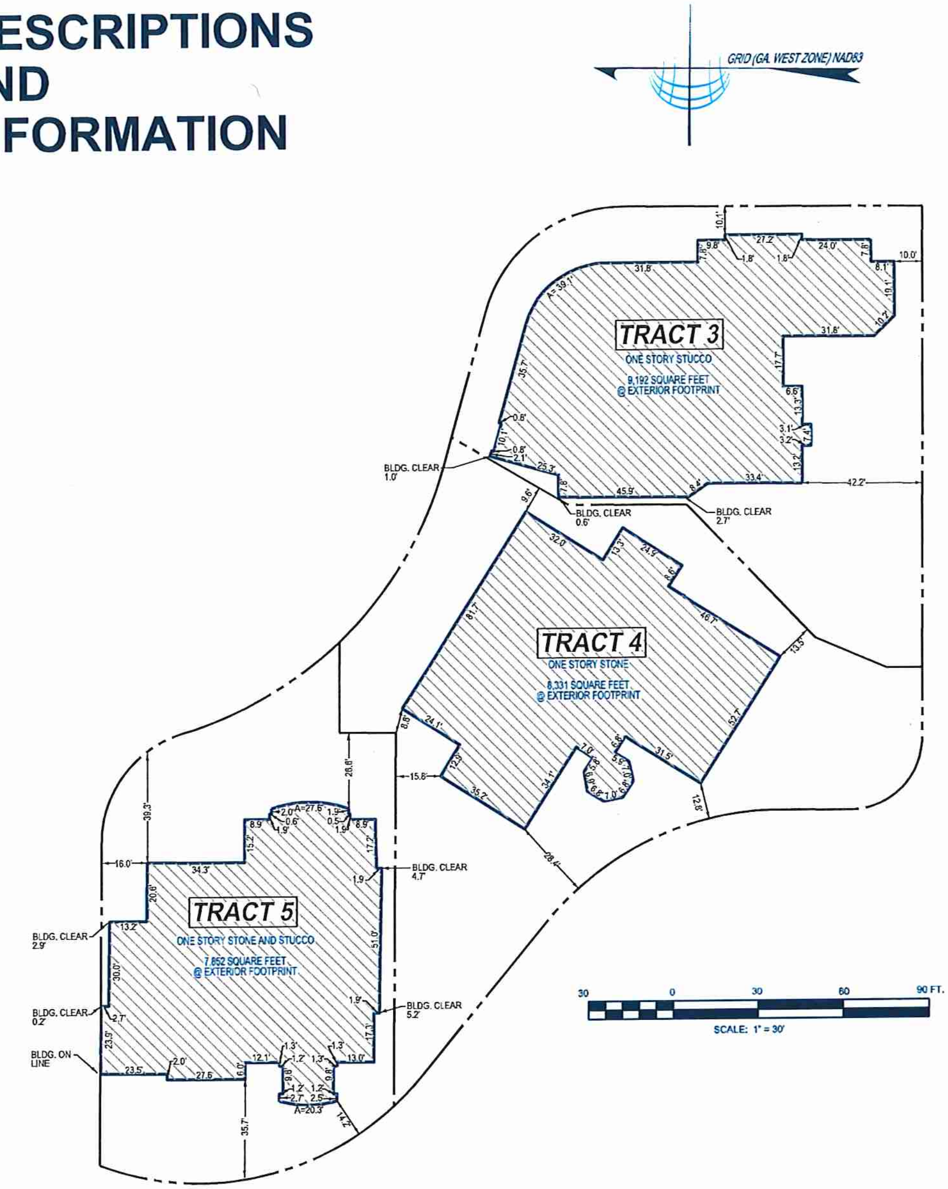
THE UNDERGROUND UTILITIES SHOWN HEREON ARE BASED ON LOCATION OF MARKINGS PROVIDED BY:

UTILISURVEY, LLC.
154 GRANT ROAD
FAYETTEVILLE, GA. 30215
PHONE: 404-312-6912
ATTENTION: HANS WONNEBERGER

THE UNDERGROUND UTILITIES (EXCEPT THE LOCATION OF EXISTING DRAINAGE, SEWER, AND IRRIGATION UTILITIES AS WELL AS UNDERGROUND STORAGE TANKS) WERE LOCATED BY UTILISURVEY, LLC. UTILIZING RADIO FREQUENCY TECHNIQUE AND IN ACCORDANCE TO LEVEL "B" UTILITY LOCATION CRITERIA. THIS TECHNIQUE IS CAPABLE OF LOCATING METALLIC UTILITIES AND TRACER WIRES. ANY NON- METALLIC UTILITIES (WITHOUT TRACER WIRE) ARE NOT LOCATED.

THE SURVEYOR MAKES NO GUARANTEES THAT THE UNDERGROUND UTILITIES SHOWN COMPRISE ALL SUCH UTILITIES IN THE AREA, EITHER IN- SERVICE OR ABANDONED. UNDERGROUND UTILITIES NOT OBSERVED OR LOCATED UTILIZING THIS TECHNIQUE MAY EXIST ON THIS SITE BUT ARE NOT SHOWN, AND MAY BE FOUND UPON EXCAVATION. THE SURVEYOR FURTHER DOES NOT WARRANT THAT THE UNDERGROUND UTILITIES SHOWN ARE IN THE EXACT LOCATION INDICATED ALTHOUGH THE SURVEYOR DOES CERTIFY THAT THEY ARE LOCATED AS ACCURATELY AS POSSIBLE FROM INFORMATION AVAILABLE.

INFORMATION REGARDING MATERIAL AND SIZE OF UTILITIES IS BASED ON RECORDS ACQUIRED FROM THE UTILITY OWNERS.



PROPERTY DESCRIPTION (OVERALL)

All that tract or parcel of land lying and being in Land Lots 349 & 350, 18th District, DeKalb County, Georgia and being more particularly described as follows:

Beginning at the east end of a cornered intersection of the Westerly Right-of-Way Line of Ashford Dunwoody Road, (apparent 107' width), and the Northerly Right-of-Way Line of Meadow Lane Road (apparent variable width); thence, leaving said Point of Beginning and running with the said cornered intersection between the said roads

1. South 84° 39' 44" West, 24.00 feet; thence,
2. South 05° 20' 16" East, 10.00 feet; thence,
3. South 10° 06' 16" East, 3.47 feet to the said line of Meadow Lane Road; thence, running with the said line of Meadow Lane Road
4. South 89° 40' 43" West, 133.62 feet; thence,
5. 196.33 feet along the arc of a curve deflecting to the right, having a radius of 4634.13 feet and a chord bearing and distance of North 89° 06' 28" West, 196.31 feet; thence,
6. North 87° 53' 39" West, 90.57 feet; thence,
7. North 00° 20' 08" East, 12.01 feet to a nail found; thence,
8. North 87° 53' 39" West, 51.89 feet; thence,
9. 97.53 feet along the arc of a curve deflecting to the right, having a radius of 1275.56 feet and a chord bearing and distance of North 85° 42' 13" West, 97.51 feet; thence,
10. South 83° 34' 25" West, 49.63 feet; thence,
11. 45.62 feet along the arc of a curve deflecting to the right, having a radius of 1287.56 feet and a chord bearing and distance of North 80° 20' 41" West, 45.62 feet to a capped 1/2" rebar found; thence, leaving the said line of Meadow Lane Road
12. North 00° 20' 08" East, 333.47 feet; thence,
13. North 44° 53' 53" West, 160.13 feet to the South line of Ashford Parkway (apparent variable width); thence, running with the said line of Ashford Parkway
14. North 45° 06' 07" East, 182.92 feet; thence,
15. 229.49 feet along the arc of a curve deflecting to the right, having a radius of 257.82 feet and a chord bearing and distance of North 70° 36' 07" East, 221.99 feet; thence,
16. South 83° 53' 53" East, 163.98 feet; thence,
17. 135.02 feet along the arc of a curve deflecting to the left, having a radius of 726.08 feet and a chord bearing and distance of South 89° 13' 32" East, 134.83 feet to a capped 1/2" rebar found; thence,
18. North 85° 26' 50" East, 10.95 feet to a curved intersection of the said Ashford Parkway and the said Ashford Dunwoody Road; thence, running along the said curved intersection
19. 140.18 feet along the arc of a curve deflecting to the right, having a radius of 90.03 feet and a chord bearing and distance of South 49° 56' 44" East, 126.44 feet to the said West line of Ashford Dunwoody Parkway; thence, running with the said West line of Ashford Dunwoody Parkway
20. South 05° 20' 16" East, 565.79 feet to the Point of Beginning, containing 438,099 square feet or 10.0574 acres of land, more or less.

Property is subject to all easements and rights of way recorded and unrecorded.

PROPERTY DESCRIPTION (TRACT 1)

All that tract or parcel of land lying and being in Land Lots 349 & 350, 18th District, DeKalb County, Georgia and being more particularly described as follows:

Beginning at the east end of a cornered intersection of the Westerly Right-of-Way Line of Ashford Dunwoody Road, (apparent 107' width), and the Northerly Right-of-Way Line of Meadow Lane Road (apparent variable width); thence, leaving said Point of Beginning and running with the said cornered intersection between the said roads

1. South 84° 39' 44" West, 24.00 feet; thence,
2. South 05° 20' 16" East, 10.00 feet; thence,
3. South 10° 06' 16" East, 3.47 feet to the said line of Meadow Lane Road; thence, running with the said line of Meadow Lane Road
4. South 89° 40' 43" West, 133.62 feet; thence,
5. 143.00 feet along the arc of a curve deflecting to the right, having a radius of 4634.13 feet and a chord bearing and distance of North 89° 26' 15" West, 142.99 feet to a point found on the West line of the said Land Lot 350; thence, leaving the said line of Meadow Lane Road and running with the said West line of Land Lot 350
6. North 08° 01' 31" West, 196.58 feet; thence, leaving the said West line of Land Lot 350
7. South 89° 39' 52" East, 77.72 feet; thence,
8. North 00° 20' 08" East, 105.79 feet; thence,
9. 65.16 feet along the arc of a curve deflecting to the left, having a radius of 50.00 feet and a chord bearing and distance of North 36° 59' 55" West, 60.65 feet; thence,
10. North 74° 19' 58" West, 56.20 feet; thence,
11. 12.74 feet along the arc of a curve deflecting to the right, having a radius of 135.00 feet and a chord bearing and distance of North 71° 55' 18" West, 12.73 feet to the said West line of Land Lot 350; thence, running with the said West line of Land Lot 350
12. North 08° 01' 31" West, 306.58 feet to the South line of Ashwood Parkway (apparent variable width); thence, leaving the said West line of Land Lot 350 and running with the said South line of Ashwood Parkway
13. South 83° 53' 53" East, 99.00 feet; thence,
14. 135.02 feet along the arc of a curve deflecting to the left, having a radius of 726.08 feet and a chord bearing and distance of South 89° 13' 32" East, 134.83 feet to a capped 1/2" rebar found; thence,
15. North 85° 26' 50" East, 10.95 feet to a curved intersection of the said Ashwood Parkway and the said Ashford Dunwoody Road; thence, running along the said curved intersection
16. 140.18 feet along the arc of a curve deflecting to the right, having a radius of 90.03 feet and a chord bearing and distance of South 49° 56' 44" East, 126.44 feet to the said West line of Ashford Dunwoody Parkway; thence, running with the said West line of Ashford Dunwoody Parkway

17. South 05° 20' 16" East, 565.79 feet to the Point of Beginning, containing 193,561 square feet or 4.4435 acres of land, more or less.

Property is subject to all easements and rights of way recorded and unrecorded.

PROPERTY DESCRIPTION (TRACT 2)

All that tract or parcel of land lying and being in Land Lots 349 & 350, 18th District, DeKalb County, Georgia and being more particularly described as follows:

To Find the Point of Beginning, commence at the east end of a cornered intersection of the Westerly Right-of-Way Line of Ashford Dunwoody Road, (apparent 107' width), and the Northerly Right-of-Way Line of Meadow Lane Road (apparent variable width); thence, running with the said cornered intersection between the said roads South 84° 39' 44" West, 24.00 feet; thence, South 05° 20' 16" East, 10.00 feet; thence, South 10° 06' 16" East, 3.47 feet to the said line of Meadow Lane Road; thence, running with the said line of Meadow Lane Road South 89° 40' 43" West, 133.62 feet; thence, 143.00 feet along the arc of a curve deflecting to the right, having a radius of 4634.13 feet and a chord bearing and distance of North 89° 26' 15" West, 142.99 feet to a point found on the West line of the said Land Lot 350 and being the Point of Beginning; thence, running with the said line of Meadow Lane Road and leaving the said West line of Land Lot 350

1. 53.33 feet along the arc of a curve deflecting to the right, having a radius of 4634.13 feet and a chord bearing and distance of North 88° 13' 26" West, 53.33 feet; thence,
2. North 87° 53' 39" West, 90.57 feet; thence,
3. North 00° 20' 08" East, 12.01 feet to a nail found; thence,
4. North 87° 53' 39" West, 51.89 feet; thence,
5. 97.53 feet along the arc of a curve deflecting to the right, having a radius of 1275.56 feet and a chord bearing and distance of North 85° 42' 13" West, 97.51 feet; thence,
6. South 83° 34' 25" West, 49.63 feet; thence,
7. 45.62 feet along the arc of a curve deflecting to the right, having a radius of 1287.56 feet and a chord bearing and distance of North 80° 20' 41" West, 45.62 feet to a capped 1/2" rebar found; thence, leaving the said line of Meadow Lane Road
8. North 00° 20' 08" East, 333.47 feet; thence,
9. North 44° 53' 53" West, 160.13 feet to the South line of Ashwood Parkway (apparent variable width); thence, running with the said line of Ashwood Parkway
10. North 45° 06' 07" East, 182.92 feet; thence,
11. 229.49 feet along the arc of a curve deflecting to the right, having a radius of 257.82 feet and a chord bearing and distance of North 70° 36' 07" East, 221.99 feet; thence,
12. South 83° 53' 53" East, 64.98 feet to the West line of the said Land Lot 350; thence, leaving the said line of Ashwood Parkway and running with the said West line of Land Lot 350
13. South 08° 01' 31" East, 306.58 feet; thence, leaving the said West line of Land Lot 350
14. 124.55 feet along the arc of a curve deflecting to the right, having a radius of 135.00 feet and a chord bearing and distance of North 42° 47' 17" West, 120.18 feet; thence,
15. 51.18 feet along the arc of a curve deflecting to the left, having a radius of 40.00 feet and a chord bearing and distance of North 53° 00' 18" West, 47.76 feet; thence,
16. North 89° 39' 52" West, 114.11 feet; thence,
17. 124.90 feet along the arc of a curve deflecting to the left, having a radius of 100.00 feet and a chord bearing and distance of South 14° 59' 31" East, 116.94 feet; thence,
18. South 50° 43' 01" East, 70.49 feet; thence,
19. 94.46 feet along the arc of a curve deflecting to the right, having a radius of 106.00 feet and a chord bearing and distance of South 25° 11' 26" East, 91.37 feet; thence,
20. South 00° 20' 08" West, 24.44 feet; thence,
21. 39.28 feet along the arc of a curve deflecting to the left, having a radius of 25.00 feet and a chord bearing and distance of South 44° 39' 52" East, 35.36 feet; thence,
22. South 89° 39' 52" East, 109.86 feet to the said West line of Land Lot 350; thence, running with the said West line of Land Lot 350
23. South 08° 01' 31" East, 196.58 feet to the Point of Beginning, containing 186,579 square feet or 4.2833 acres of land, more or less.

Property is subject to all easements and rights of way recorded and unrecorded.

PROPERTY DESCRIPTION (TRACT 3)

All that tract or parcel of land lying and being in Land Lots 349 & 350, 18th District, DeKalb County, Georgia and being more particularly described as follows:

To Find the Point of Beginning, commence at the east end of a cornered intersection of the Westerly Right-of-Way Line of Ashford Dunwoody Road, (apparent 107' width), and the Northerly Right-of-Way Line of Meadow Lane Road (apparent variable width); thence, running with the said cornered intersection between the said roads South 84° 39' 44" West, 24.00 feet; thence, South 05° 20' 16" East, 10.00 feet; thence, South 10° 06' 16" East, 3.47 feet to the said line of Meadow Lane Road; thence, running with the said line of Meadow Lane Road South 89° 40' 43" West, 133.62 feet; thence, 143.00 feet along the arc of a curve deflecting to the right, having a radius of 4634.13 feet and a chord bearing and distance of North 89° 26' 15" West, 142.99 feet to a point found on the West line of the said Land Lot 350; thence, leaving the said line of Meadow Lane Road and running with the said West line of Land Lot 350 North 08° 01' 31" West, 196.58 feet to the Point of Beginning; thence, leaving the said West line of Land Lot 350 and running

1. North 89° 39' 52" West, 84.88 feet; thence,
2. North 00° 20' 08" East, 12.37 feet; thence,
3. North 23° 12' 12" East, 27.20 feet; thence,
4. North 46° 04' 16" East, 65.55 feet; thence,
5. North 00° 20' 08" East, 41.63 feet; thence,
6. North 30° 20' 08" East, 47.78 feet; thence,
7. South 74° 19' 58" East, 46.04 feet; thence,
8. 65.16 feet along the arc of a curve deflecting to the right, having a radius of 50.00 feet and a chord bearing and distance of South 36° 59' 55" East, 60.65 feet; thence,
9. South 00° 20' 08" West, 105.79 feet; thence,
10. North 89° 39' 52" West, 77.72 feet to the Point of Beginning, containing 18,880 square feet or 0.4334 acres of land, more or less.

Property is subject to all easements and rights of way recorded and unrecorded.

PROPERTY DESCRIPTION (TRACT 4)

All that tract or parcel of land lying and being in Land Lots 349 & 350, 18th District, DeKalb County, Georgia and being more particularly described as follows:

To Find the Point of Beginning, commence at the east end of a cornered intersection of the Westerly Right-of-Way Line of Ashford Dunwoody Road, (apparent 107' width), and the Northerly Right-of-Way Line of Meadow Lane Road (apparent variable width); thence, running with the said cornered intersection between the said roads South 84° 39' 44" West, 24.00 feet; thence, South 05° 20' 16" East, 10.00 feet; thence, South 10° 06' 16" East, 3.47 feet to the said line of Meadow Lane Road; thence, running with the said line of Meadow Lane Road South 89° 40' 43" West, 133.62 feet; thence, 143.00 feet along the arc of a curve deflecting to the right, having a radius of 4634.13 feet and a chord bearing and distance of North 89° 26' 15" West, 142.99 feet to a point found on the West line of the said Land Lot 350; thence, leaving the said line of Meadow Lane Road and running with the said West line of Land Lot 350 North 08° 01' 31" West, 196.58 feet; thence, leaving the said West line of Land Lot 350 and running North 89° 39' 52" West, 84.88 feet to the Point of Beginning; thence, running

1. North 89° 39' 52" West, 24.99 feet; thence,
2. 39.28 feet along the arc of a curve deflecting to the right, having a radius of 25.00 feet and a chord bearing and distance of North 44° 39' 52" West, 35.36 feet; thence,
3. North 00° 20' 08" East, 24.44 feet; thence,
4. 94.46 feet along the arc of a curve deflecting to the left, having a radius of 106.00 feet and a chord bearing and distance of North 25° 11' 26" West, 91.37 feet; thence,
5. North 50° 43' 01" West, 70.49 feet; thence,
6. 13.82 feet along the arc of a curve deflecting to the right, having a radius of 100.00 feet and a chord bearing and distance of North 46° 48' 52" West, 13.81 feet; thence,
7. South 89° 39' 52" East, 131.72 feet; thence,
8. North 00° 20' 08" East, 19.98 feet; thence,
9. South 89° 39' 44" East, 32.02 feet; thence,
10. 73.10 feet along the arc of a curve deflecting to the left, having a radius of 135.00 feet and a chord bearing and distance of South 59° 06' 45" East, 72.21 feet; thence,
11. South 74° 19' 58" East, 10.16 feet; thence,
12. South 30° 20' 08" West, 47.78 feet; thence,
13. South 00° 20' 08" West, 41.63 feet; thence,
14. South 46° 04' 16" West, 65.55 feet; thence,
15. South 23° 12' 12" West, 27.20 feet; thence,
16. South 00° 20' 08" West, 12.37 feet to the Point of Beginning, containing 22,889 square feet or 0.5255 acres of land, more or less.

Property is subject to all easements and rights of way recorded and unrecorded.

PROPERTY DESCRIPTION (TRACT 5)

All that tract or parcel of land lying and being in Land Lot 349, 18th District, DeKalb County, Georgia and being more particularly described as follows:

To Find the Point of Beginning, commence at the east end of a cornered intersection of the Westerly Right-of-Way Line of Ashford Dunwoody Road, (apparent 107' width), and the Northerly Right-of-Way Line of Meadow Lane Road (apparent variable width); thence, running with the said cornered intersection between the said roads South 84° 39' 44" West, 24.00 feet; thence, South 05° 20' 16" East, 10.00 feet; thence, South 10° 06' 16" East, 3.47 feet to the said line of Meadow Lane Road; thence, running with the said line of Meadow Lane Road South 89° 40' 43" West, 133.62 feet; thence, 143.00 feet along the arc of a curve deflecting to the right, having a radius of 4634.13 feet and a chord bearing and distance of North 89° 26' 15" West, 142.99 feet to a point found on the West line of the said Land Lot 350; thence, leaving the said line of Meadow Lane Road and running with the said West line of Land Lot 350 North 08° 01' 31" West, 196.58 feet; thence, leaving the said West line of Land Lot 350 and running North 89° 39' 52" West, 109.86 feet; thence, 39.28 feet along the arc of a curve deflecting to the right, having a radius of 25.00 feet and a chord bearing and distance of North 44° 39' 52" West, 35.36 feet; thence, North 00° 20' 08" East, 24.44 feet; thence, 94.46 feet along the arc of a curve deflecting to the left, having a radius of 106.00 feet and a chord bearing and distance of North 25° 11' 26" West, 91.37 feet; thence, North 50° 43' 01" West, 70.49 feet; thence, 13.82 feet along the arc of a curve deflecting to the right, having a radius of 100.00 feet and a chord bearing and distance of North 46° 48' 52" West, 13.81 feet to the Point of Beginning; thence, running

1. 111.08 feet along the arc of a curve deflecting to the right, having a radius of 100.00 feet and a chord bearing and distance of North 11° 01' 58" West, 105.46 feet; thence,
2. South 89° 39' 52" East, 114.11 feet; thence,
3. 51.18 feet along the arc of a curve deflecting to the right, having a radius of 40.00 feet and a chord bearing and distance of South 53° 00' 18" East, 47.76 feet; thence,
4. 64.19 feet along the arc of a curve deflecting to the left, having a radius of 135.00 feet and a chord bearing and distance of South 29° 58' 43" East, 63.59 feet; thence,
5. North 89° 39' 44" West, 32.02 feet; thence,
6. South 00° 20' 08" West, 19.98 feet; thence,
7. North 89° 39' 52" West, 131.72 feet to the Point of Beginning, containing 16,190 square feet or 0.3717 acres of land, more or less.

Property is subject to all easements and rights of way recorded and unrecorded.

ALTA/NSPS LAND TITLE SURVEY FOR BRANCH ASHWOOD ASSOCIATES, LLC & CHICAGO TITLE INSURANCE COMPANY (600 ASHWOOD PARKWAY) LOCATED IN LAND LOTS 349 & 350, 18TH DISTRICT DEKALB COUNTY, GEORGIA

TerraMark Professional Land Surveying

SHEET NO. 2/4

LINE TABLE

LINE	BEARING	DISTANCE
L1	N 89°39'52" W	84.85'
L2	N 00°20'08" E	12.37'
L3	N 23°12'12" E	27.20'
L4	N 46°04'16" E	65.55'
L5	N 00°20'08" E	41.63'
L6	N 30°20'08" E	47.78'
L7	S 74°19'58" E	46.04'
L8	S 00°20'08" W	105.79'
L9	N 89°39'52" W	77.72'
L10	N 89°39'52" W	24.99'
L11	N 00°20'08" E	24.44'
L12	N 50°43'01" W	70.49'
L13	S 89°39'52" E	131.72'
L14	N 00°20'08" E	19.98'
L15	S 89°39'59" E	32.02'
L16	S 74°19'58" E	10.16'
L17	S 89°39'52" E	114.11'

BENCHMARK #1 DETAIL

CURVE TABLE

CURVE	ARC	RADIUS	CHORD	BEARING
C1	65.16'	50.00'	60.65'	S 36°59'55" E
C2	39.28'	25.00'	35.36'	N 44°39'52" W
C3	94.46'	106.00'	91.37'	N 25°11'26" W
C4	13.82'	100.00'	13.81'	S 46°49'19" E
C5	73.10'	135.00'	72.21'	S 59°06'35" E
C6	111.08'	100.00'	105.46'	N 11°01'53" E
C7	51.18'	40.00'	47.76'	S 53°00'18" E
C8	64.19'	135.00'	63.59'	S 29°58'54" E
C9	12.74'	135.00'	12.73'	S 71°55'18" E

ABBREVIATIONS

A	ARC LENGTH	IPS	IRON PIN SET (CAPPED)
AC.	ACRE	N/F	NOW OR FORMERLY
AE	ACCESS EASEMENT	OTP	OPEN TOP PIPE
BSL	BUILDING SETBACK LINE	PB.	PLAT BOOK
BW	BARBWIRE	PG.	PAGE
CH	CHORD LENGTH	POB	POINT OF BEGINNING
CLF	CHAIN LINK FENCE	POC	POINT OF COMMENCEMENT
CMF	CONCRETE MONUMENT FOUND	R	RADIUS LENGTH
CMP	CORRUGATED METAL PIPE	R/W	RIGHT OF WAY
CONC.	CONCRETE	R/W MON	RIGHT OF WAY MONUMENT
CTP	CRIMP TOP PIPE	RB	REBAR
DB.	DEED BOOK	RCP	REINFORCED CONCRETE PIPE
DIP	DUCTILE IRON PIPE	SDE	STORM DRAINAGE EASEMENT
FDC	FIRE DEPARTMENT CONNECTION	SQ. FT.	SQUARE FEET
FND	FOUND	SSE	SANITARY SEWER EASEMENT
HDPE	HIGH DENSITY POLYETHYLENE PIPE	WPF	WOOD PRIVACY FENCE
IPF	IRON PIN FOUND		

SEE SHEET 2 OF 4 FOR ADDITIONAL BUILDING INFORMATION.

TREE LEGEND (ABBREVIATIONS)

DECIDUOUS (TREE)

CONIFEROUS (TREE)

BIR	BIRCH	HLY	HOLLY
BCH	BEECH	HW	HARDWOOD
CM	CRAPE MYRTLE	MAG	MAGNOLIA
CHY	CHERRY	MAP	MAPLE
CYP	CYPRESS	OAK	OAK
FIR	FIR	ORN	ORNAMENTAL
GINGKO	GINGKO	PEAR	PEAR
GUM	SWEET GUM	POP	POPLAR
HIC	HICKORY	SYC	SYCAMORE

ENCROACHMENT TABLE

(#) AREA OF ENCROACHMENT

1. BUS STOP SHELTER ENCROACHES THE PROPERTY LINE AND UNDERGROUND COMMUNICATION LINE CROSSES PROPERTY LINE.
2. GUY WIRES ENCROACH THE PROPERTY LINE.
3. 10" X 6' BOX CULVERT CROSSES PROPERTY LINE.
4. 12" PVC STORM DRAINAGE PIPE CROSSES PROPERTY LINE.
5. DRAIN TRENCH STRUCTURE ENCROACHES THE PROPERTY LINE.
6. 10" PVC SANITARY SEWER PIPE CROSSES PROPERTY LINE.
7. 24" RCP STORM DRAINAGE PIPE AND 8" DIP SANITARY SEWER PIPE CROSSES PROPERTY LINE.
8. UNDERGROUND ELECTRIC LINES CROSS PROPERTY LINE.
9. CONCRETE SIDEWALK CROSSES PROPERTY LINE.
10. 18" RCP STORM DRAINAGE PIPE, CONCRETE SIDEWALK, AND BRICK SIDEWALK CROSS PROPERTY LINE.
11. UNDERGROUND WATER UTILITY LINE CROSSES PROPERTY LINE.
12. 10' X 7' BOX CULVERT CROSSES PROPERTY LINE.
13. UNDERGROUND COMMUNICATION LINES CROSS PROPERTY LINE.
14. STORM DRAINAGE LINE POSSIBLY CROSSES PROPERTY LINE.

LEGEND

CURB AND GUTTER (C&G)	CATCH BASIN (DWCB)	IRRIGATION CONTROL VALVE (ICV)	LIGHT POLE (LP)
FENCE	CATCH BASIN (SWCB)	FIRE HYDRANT (FH)	POWER POLE WITH LIGHT
HANDRAIL	DROP INLET (DI)	WATER VALVE (WV)	POWER POLE (PP)
STORM DRAIN LINE	JUNCTION BOX (JB)	WATER METER (WM)	UTILITY MANHOLE (UM)
SANITARY SEWER	HEAD WALL (HW)	FIRE DEPT. CONNECTION (FDC)	SPOTLIGHT
WATER LINE	CURB INLET (CI)	WATER VALVE MARKER	GAS METER (GM)
GAS LINE	FLARED END SECTION (FES)	TRANSFORMER BOX (TX)	GAS VALVE (GV)
UNDERGROUND POWER LINE	OUTLET CONTROL STRUCTURE	AIR CONDITIONER (AC)	TELEPHONE PEDESTAL
OVERHEAD POWER LINE	YARD DRAIN INLET	ELECTRIC METER (EM)	COMMUNICATION BOX
UNDERGROUND COMMUNICATION	SS MANHOLE (MH)	ELECTRIC UTILITY	TRAFFIC SIGNAL
TOPOGRAPHIC CONTOUR	CLEAN OUT (CO)	GREASE TRAP (GT)	BOLLARD (BO)
PROPERTY LINE			MAIL BOX
			SIGN

CROSSWALK SIGNAL

X 1000.00 SPOT ELEVATION

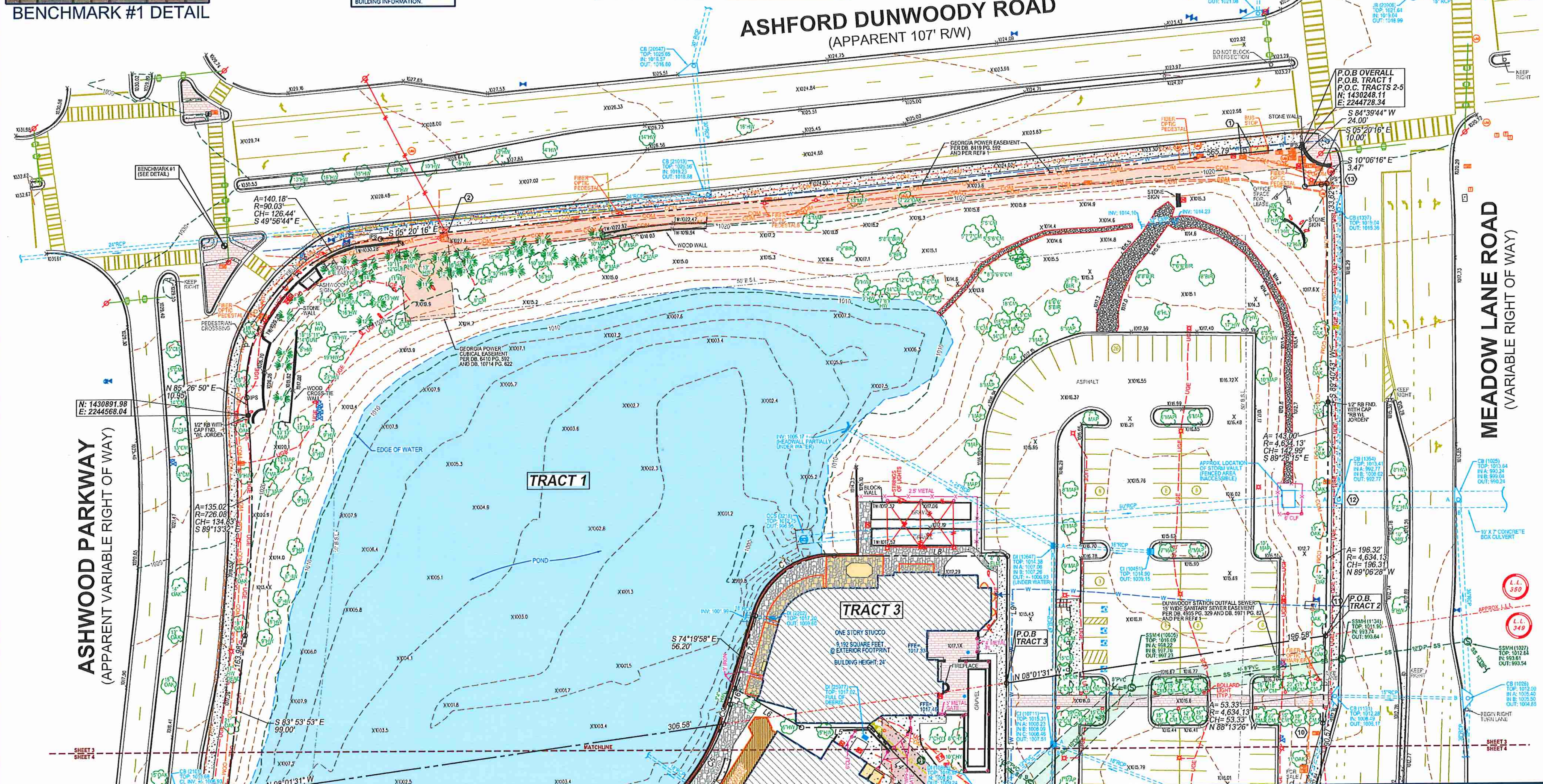
CONCRETE AREA

OVERHANG AREA

RIP-RAP AREA

BRICK AREA

STONE PAVER AREA



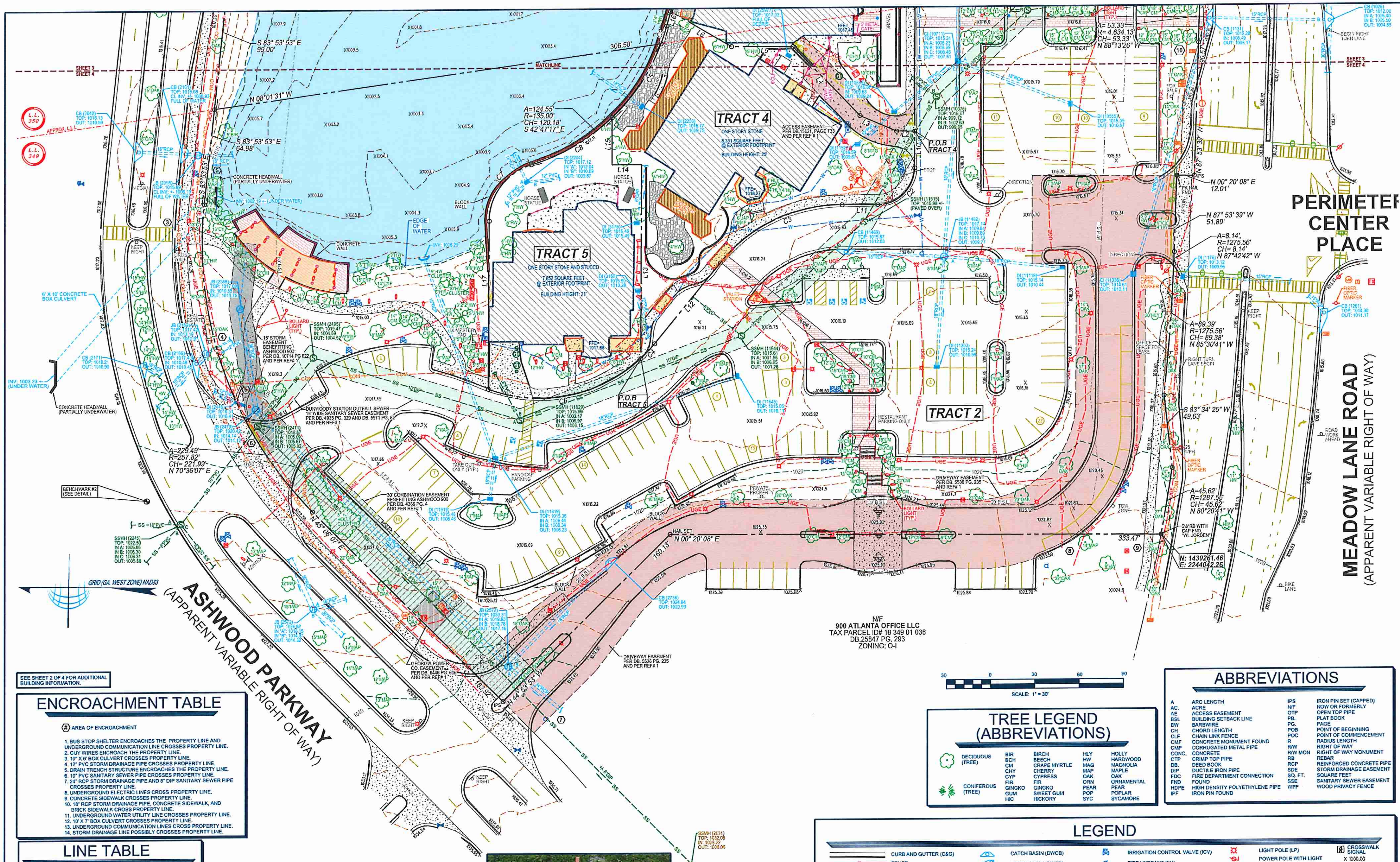
ALTA/NSPS LAND TITLE SURVEY
FOR
BRANCH ASHWOOD ASSOCIATES, LLC &
CHICAGO TITLE INSURANCE COMPANY
(600 ASHWOOD PARKWAY)
LOCATED IN
LAND LOTS 349 & 350, 18TH DISTRICT
DEKALB COUNTY, GEORGIA

		No	Revision	Date
Project No.	2018-121	#1		
Survey Crew:	JH	#2		
Drawn By:	RFS	#3		
		#4		
Approved By:	SEB	#5		
		#6		
Date:	08-13-18	#7		
		#8		
Scale:	1"=30'	PATH:	S: SURVEY\2018\2018-121DGN\TOPO.DGN	

TerraMark Professional Land Surveying
TerraMark Land Surveying, Inc.
1396 Bells Ferry Road
Marietta, Georgia 30066
Phone No. (770) 421-1927
Fax. No. (770) 421-0552
www.TerraMark.com
Surveying C. O. A.# LSF000810

SHEET NO.
3/4
DRAWING# TM 18-121

JOB NUMBER 2018-121 PLOT SIZE 24 X 36



SEE SHEET 2 OF 4 FOR ADDITIONAL BUILDING INFORMATION.

ENCROACHMENT TABLE

(#) AREA OF ENCROACHMENT

1. BUS STOP SHELTER ENCROACHES THE PROPERTY LINE AND UNDERGROUND COMMUNICATION LINE CROSSES PROPERTY LINE.
2. GUY WIRES ENCROACH THE PROPERTY LINE.
3. 10" X 6' BOX CULVERT CROSSES PROPERTY LINE.
4. 12" PVC STORM DRAINAGE PIPE CROSSES PROPERTY LINE.
5. DRAIN TRENCH STRUCTURE ENCROACHES THE PROPERTY LINE.
6. 10" PVC SANITARY SEWER PIPE CROSSES PROPERTY LINE.
7. 24" RCP STORM DRAINAGE PIPE AND 8" DIP SANITARY SEWER PIPE CROSSES PROPERTY LINE.
8. UNDERGROUND ELECTRIC LINES CROSS PROPERTY LINE.
9. CONCRETE SIDEWALK CROSSES PROPERTY LINE.
10. 18" RCP STORM DRAINAGE PIPE, CONCRETE SIDEWALK, AND BRICK SIDEWALK CROSS PROPERTY LINE.
11. UNDERGROUND WATER UTILITY LINE CROSSES PROPERTY LINE.
12. 10' X 7' BOX CULVERT CROSSES PROPERTY LINE.
13. UNDERGROUND COMMUNICATION LINES CROSS PROPERTY LINE.
14. STORM DRAINAGE LINE POSSIBLY CROSSES PROPERTY LINE.

LINE TABLE

LINE	BEARING	DISTANCE
L1	N 89°39'52" W	84.86'
L2	N 00°20'08" E	12.37'
L3	N 23°12'12" E	27.20'
L4	N 46°04'16" E	65.55'
L5	N 00°20'08" E	41.63'
L6	N 30°20'08" E	47.78'
L7	S 74°19'58" E	46.04'
L8	S 00°20'08" W	105.79'
L9	S 89°39'52" E	77.72'
L10	N 89°39'52" W	24.99'
L11	N 00°20'08" E	24.44'
L12	N 50°43'01" W	70.49'
L13	S 89°39'52" E	131.72'
L14	N 00°20'08" E	19.98'
L15	S 89°39'44" E	32.02'
L16	S 74°19'58" E	10.16'
L17	S 89°39'52" E	114.11'

CURVE TABLE

CURVE	ARC	RADIUS	CHORD	BEARING
C1	65.16'	50.00'	60.65'	N 36°59'55" W
C2	39.28'	25.00'	35.36'	N 44°39'52" W
C3	94.46'	106.00'	91.37'	N 25°11'26" W
C4	13.82'	100.00'	13.81'	N 46°48'52" W
C5	73.10'	135.00'	72.21'	S 59°06'35" E
C6	111.08'	100.00'	105.45'	N 11°01'58" W
C7	51.18'	40.00'	47.76'	S 53°00'18" E
C8	64.19'	135.00'	63.59'	S 29°58'43" E
C9	12.74'	135.00'	12.73'	S 71°55'18" E

BENCHMARK #2 DETAIL

TREE LEGEND (ABBREVIATIONS)

DECIDUOUS (TREE)
CONIFEROUS (TREE)

BIR	BIRCH	HLY	HOLLY
BCH	BEECH	HW	HARDWOOD
CM	CRAPE MYRTLE	MAG	MAGNOLIA
CHY	CHERRY	MAP	MAPLE
CYP	CYPRESS	OAK	OAK
FIR	FIR	ORN	ORNAMENTAL
GINGKO	GINGKO	PEAR	PEAR
GUM	SWEET GUM	POP	POPLAR
HIC	HICKORY	SYC	SYCAMORE

ABBREVIATIONS

A	ARC LENGTH	IPS	IRON PIN SET (CAPPED)
AC.	ACRE	N/F	NOW OR FORMERLY
AE	ACCESS EASEMENT	OTP	OPEN TOP PIPE
BSL	BUILDING SETBACK LINE	PB.	PLAT BOOK
BW	BARBWIRE	PG.	PAGE
CH	CHORD LENGTH	POB	POINT OF BEGINNING
CLF	CHAIN LINK FENCE	POC	POINT OF COMMENCEMENT
CMF	CONCRETE MONUMENT FOUND	R	RADIUS LENGTH
CMP	CORRUGATED METAL PIPE	R/W	RIGHT OF WAY
CONC.	CONCRETE	R/W MON	RIGHT OF WAY MONUMENT
CTP	CRIMP TOP PIPE	RB	REBAR
DB.	DEED BOOK	RCP	REINFORCED CONCRETE PIPE
DIP	DUCTILE IRON PIPE	SDE	STORM DRAINAGE EASEMENT
FDC	FIRE DEPARTMENT CONNECTION	SQ. FT.	SQUARE FEET
FND	FOUND	SSE	SANITARY SEWER EASEMENT
HDPE	HIGH DENSITY POLYETHYLENE PIPE	WPF	WOOD PRIVACY FENCE
IPF	IRON PIN FOUND		

LEGEND

CURB AND GUTTER (C&G)	CATCH BASIN (DWCB)	IRRIGATION CONTROL VALVE (ICV)	LIGHT POLE (LP)	CROSSWALK SIGNAL
FENCE	CATCH BASIN (SWCB)	FIRE HYDRANT (FH)	POWER POLE WITH LIGHT	X 1000.00 SPOT ELEVATION
HANDRAIL	DROP INLET (DI)	WATER VALVE (WV)	POWER POLE (PP)	CONCRETE AREA
STORM DRAIN LINE	JUNCTION BOX (JB)	WATER METER (WM)	UTILITY MANHOLE (UM)	OVERHANG AREA
SANITARY SEWER	HEAD WALL (HW)	FIRE DEPT. CONNECTION (FDC)	SPOTLIGHT	RIP-RAP AREA
WATER LINE	CURB INLET (CI)	WATER VALVE MARKER	GAS METER (GM)	BRICK AREA
GAS LINE	FLARED END SECTION (FES)	TRANSFORMER BOX (TX)	GAS VALVE (GV)	STONE PAVER AREA
UNDERGROUND POWER LINE	OUTLET CONTROL STRUCTURE	AIR CONDITIONER (AC)	TELEPHONE PEDESTAL	
OVERHEAD POWER LINE	YARD DRAIN INLET	ELECTRIC METER (EM)	COMMUNICATION BOX	
UNDERGROUND COMMUNICATION	SS MANHOLE (MH)	ELECTRIC UTILITY	TRAFFIC SIGNAL	
TOPOGRAPHIC CONTOUR	CLEAN OUT (CO)	GREASE TRAP (GT)	BOLLARD (BO)	
PROPERTY LINE			MAIL BOX	
			SIGN	

JOB NUMBER 2018-121 PLOT SIZE 24 X 36

TerraMark
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Project No.	2018-121	No	Revision	Date
Survey Crew:	JH	#1		
		#2		
Drawn By:	RFS	#3		
		#4		
Approved By:	SEB	#5		
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Date:	08-13-18	#7		
		#8		
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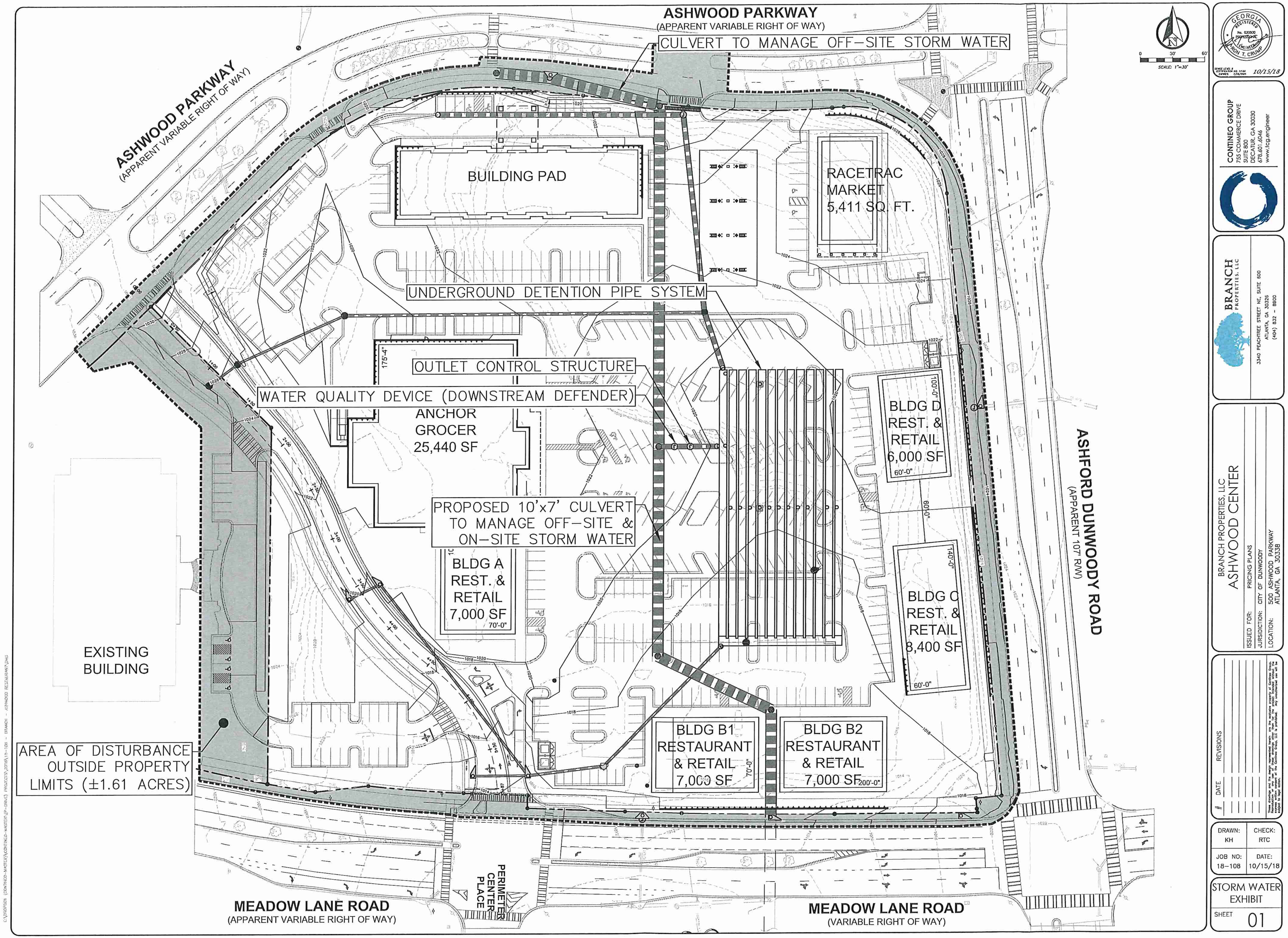
ALTA/NSPS LAND TITLE SURVEY
FOR
BRANCH ASHWOOD ASSOCIATES, LLC &
CHICAGO TITLE INSURANCE COMPANY
(600 ASHWOOD PARKWAY)
LOCATED IN
LAND LOTS 349 & 350, 18TH DISTRICT
DEKALB COUNTY, GEORGIA

SHEET NO.
4/4
DRAWING# TM 18-121

APPENDIX F

Stormwater Exhibit


ASHWOOD PARKWAY
(APPARENT VARIABLE RIGHT OF WAY)
CULVERT TO MANAGE OFF-SITE STORM WATER
ASHWOOD PARKWAY
(APPARENT VARIABLE RIGHT OF WAY)
BUILDING PAD
RACETRAC MARKET 5,411 SQ. FT.
UNDERGROUND DETENTION PIPE SYSTEM
OUTLET CONTROL STRUCTURE
WATER QUALITY DEVICE (DOWNSTREAM DEFENDER)
ANCHOR GROCER 25,440 SF
BLDG D REST. & RETAIL 6,000 SF
PROPOSED 10'x7' CULVERT TO MANAGE OFF-SITE & ON-SITE STORM WATER
BLDG A REST. & RETAIL 7,000 SF
BLDG C REST. & RETAIL 8,400 SF
EXISTING BUILDING
AREA OF DISTURBANCE OUTSIDE PROPERTY LIMITS (±1.61 ACRES)
BLDG B1 RESTAURANT & RETAIL 7,000 SF
BLDG B2 RESTAURANT & RETAIL 7,000 SF
ASHFORD DUNWOODY ROAD
(APPARENT 107' R/W)
MEADOW LANE ROAD
(APPARENT VARIABLE RIGHT OF WAY)
PERIMETER CENTER PLACE
MEADOW LANE ROAD
(VARIABLE RIGHT OF WAY)
SCALE: 1"=30'
10/15/18
CONTINEO GROUP
BRANCH PROPERTIES, LLC
BRANCH PROPERTIES, LLC
ASHWOOD CENTER
ISSUED FOR: PRICING PLANS
JURISDICTION: CITY OF DUNWOODY
LOCATION: 500 ASHWOOD PARKWAY ATLANTA, GA 30338
DATE
REVISIONS
DRAWN: KH
CHECK: RTC
JOB NO: 18-108
DATE: 10/15/18
STORM WATER EXHIBIT
SHEET 01

APPENDIX G

TSS Review Tool and Removal Confirmation

Georgia Stormwater Management Manual
Stormwater Quality Site Development Review Tool
Version 2.2

General Information

Name of Developer:	BRANCH PROPERTIES, LLC	Date Submitted:	9/21/2018
Development Name:	BRANCH ASHWOOD CENTER	Permit Number:	
Site Location / Address:	500 ASHWOOD PARKWAY	Developer Contact:	
	ATLANTA, GA 30338	Phone Number:	404-832-8900
		Name of Engineer(s):	Luke Chou
Development Type:	Commercial/Retail	Maintenance Responsibility:	BRANCH PROPERTIES, LLC

Site Summary

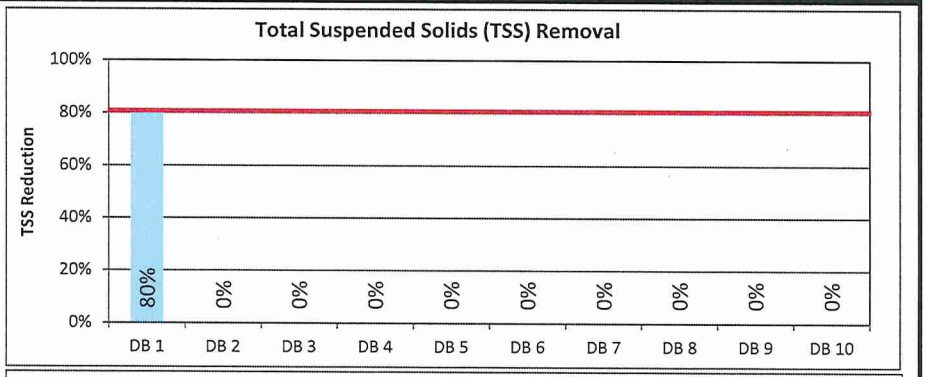
Total Pre-Development Area (ac):	10.05
Total Post-Development Area (ac):	10.05
Total Treated Area (ac):	10.05
Total Untreated Area (ac):	0.00

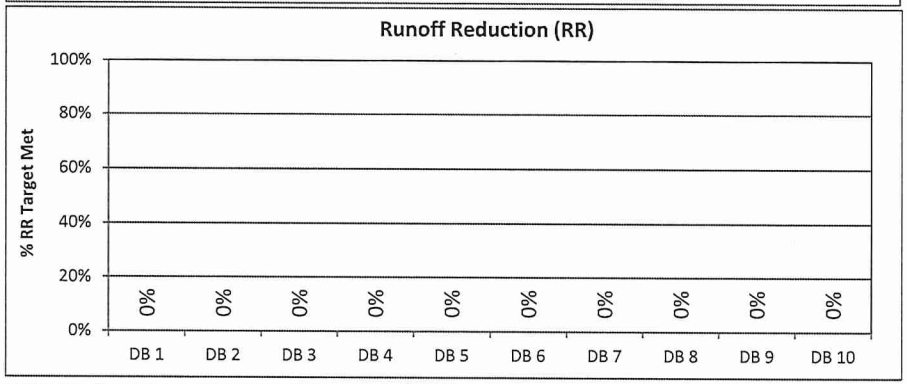
		I (ac)	P (ac)	CA (ac)
1	DB 1	8.03	2.02	0.00
Drainage Basin 2	DB 2	0.00	0.00	0.00
Drainage Basin 3	DB 3	0.00	0.00	0.00
Drainage Basin 4	DB 4	0.00	0.00	0.00
Drainage Basin 5	DB 5	0.00	0.00	0.00
Drainage Basin 6	DB 6	0.00	0.00	0.00
Drainage Basin 7	DB 7	0.00	0.00	0.00
Drainage Basin 8	DB 8	0.00	0.00	0.00
Drainage Basin 9	DB 9	0.00	0.00	0.00
Drainage Basin 10	DB 10	0.00	0.00	0.00
	TOTAL	8.03	2.02	0.00

I = Impervious Area, P = Pervious Area, CA = Conservation Area

Target Runoff Reduction Volume Achieved?	No
Target TSS Removal Achieved?	Yes

Total Target Runoff Reduction Volume (cf)	28,058
Runoff Reduction Volume Achieved (cf)	0
Total Target Water Quality Volume (cf)	33,670
% TSS Removal Achieved	80%





Official Use Only

Tracking #:		Conditions of Approval:	
Reviewed By:			
Date Approved:			

Georgia Stormwater Management Manual
Stormwater Quality Site Development Review Tool, v2.2
Runoff Reduction and TSS Removal Efficiencies

data input cells constant values

	Runoff Reduction %	Effective TSS Removal %	Runoff Reduction Method	Drainage Area Restrictions	Units	Min/Max
Bioretention Basin (w/ underdrain)	50%	85%	Storage	5	acres	Max
Bioretention Basin (w/ upturned underdrain)	75%	85%	Storage	5	acres	Max
Bioretention Basin (w/o underdrain)	100%	100%	Storage	5	acres	Max
Bioslope (A & B hydrologic soils)	50%	85%	Storage	--	--	--
Bioslope (C & D hydrologic soils)	25%	85%	Storage	--	--	--
Downspout Disconnect (A & B hydrologic soils)	50%	80%	Convey	2500	ft^2	Max
Downspout Disconnect (C & D hydrologic soils)	25%	80%	Convey	2500	ft^2	Max
Dry Detention Basin	0%	60%	Storage	75	acres	Max
Dry Extended Detention Basin	0%	60%	Storage	--	--	--
Dry Well	100%	100%	Storage	2500	ft^2	Max
Enhanced Dry Swale (w/ underdrain)	50%	80%	Storage	5	acres	Max
Enhanced Dry Swale (w/o underdrain)	100%	100%	Storage	5	acres	Max
Enhanced Wet Swale	0%	80%	Storage	5	acres	Max
Grass Channel (A & B hydrologic soils)	25%	50%	Convey	5	acres	Max
Grass Channel (C & D hydrologic soils)	10%	50%	Convey	5	acres	Max
Gravity (oil-grit) Separator	0%	40%	Convey	5	acres	Max
Green Roof	60%	80%	Storage	--	--	--
Infiltration Trench	100%	100%	Storage	5	acres	Max
Multi-Purpose Detention Basin	0%		Storage	--	--	--
Organic Filter	0%	80%	Storage	10	acres	Max
Permeable Paver System (w/ underdrain)	50%	80%	Storage	--	--	--
Permeable Paver System (w/ upturned underdrain)	75%	80%	Storage	--	--	--
Permeable Paver System (w/o underdrain)	100%	100%	Storage			
Pervious Concrete (w/ underdrain)	50%	80%	Storage	--	--	--
Pervious Concrete (w/ upturned underdrain)	75%	80%	Storage			
Pervious Concrete (w/o underdrain)	100%	100%	Storage	--	--	--
Porous Asphalt (w/ underdrain)	50%	50%	Storage	--	--	--
Porous Asphalt (w/ upturned underdrain)	75%	50%	Storage			
Porous Asphalt (w/o underdrain)	100%	100%	Storage	--	--	--
Porous Asphalt (OGFC, PEM)	0%	50%	Convey	--	--	--
Proprietary System						
Rainwater Harvesting			Storage			
Regenerative Stormwater Conveyance	0%	80%	Storage	50	acres	Max
Sand Filter	0%	80%	Storage	10	acres	Max
Site Reforestation/Revegetation	0%	0%	Convey	--	--	--
Soil Restoration (can be used to remediate C & D soils)	0%	0%	Convey	--	--	--
Stormwater Planter / Tree Box	50%	80%	Storage	2500	ft^2	Max
Stormwater Pond	0%	80%	Storage	10-25	acres	Min
Stormwater Wetlands – Level 1	0%	80%	Convey	5	acres	Min
Stormwater Wetlands – Level 2	0%	85%	Convey	5	acres	Min
Submerged Gravel Wetlands	0%	80%	Convey	5	acres	Min
Underground Detention	0%	0%	Convey	--	--	--
Vegetated Filter Strip (A & B hydrologic soils)	50%	60%	Convey	--	--	--
Vegetated Filter Strip (C & D hydrologic soils)	25%	60%	Convey	--	--	--
First Defense	0%	80%	Convey			
[User Input 2]						
[User Input 3]						

Georgia Stormwater Management Manual
Stormwater Quality Site Development Review Tool, v2.2

Development Name: BRANCH ASHWOOD CENTER
Drainage Basin Name: 1

data input cells
calculation cells
constant values

Site Data

Indicate Pre-Development Land Cover and Runoff Curve Numbers in the Site's Disturbed Area

Cover Type	HSG* A (acres)	CN	HSG B (acres)	CN	HSG C (acres)	CN	HSG D (acres)	CN	Total	% Cover
Open space - Good condition (grass cover > 75%)		39	10.05	61		74		80	10.05	100%
Select a land cover type...		0		0		0		0	0.00	0%
Select a land cover type...		0		0		0		0	0.00	0%
Select a land cover type...		0		0		0		0	0.00	0%
Select a land cover type...		0		0		0		0	0.00	0%
Local Jurisdiction Input									0.00	0%
Other									0.00	0%
Total	0.00		10.05		0.00		0.00		10.05	100%

*HSG = hydrologic soil group

Impervious (ac)	0.00
Weighted CN	61
Potential Max Soil Retention, S_{pre} (in)	6.39

Indicate Post-Development Land Cover and Runoff Curve Numbers in the Site's Disturbed Area

Cover Type	HSG A (acres)	CN	HSG B (acres)	CN	HSG C (acres)	CN	HSG D (acres)	CN	Total	% Cover
Impervious		98	8.03	98		98		98	8.03	80%
Open space - Good condition (grass cover > 75%)		39	2.02	61		74		80	2.02	20%
Select a land cover type...		0		0		0		0	0.00	0%
Select a land cover type...		0		0		0		0	0.00	0%
Select a land cover type...		0		0		0		0	0.00	0%
Local Jurisdiction Input									0.00	0%
Other									0.00	0%
Total	0.00		10.05		0.00		0.00		10.05	100%

Impervious (ac)	8.03
Rv	0.77
Weighted CN	91
Potential Max Soil Retention, S_{post} (in)	1.04

Conservation Area Credits

Scenario 1: Natural Conservation Area **See the GSMM Volume 2, Section 2.3.3.3 for more information.*

☐ Check the box if a portion of the post-developed area is protected by a conservation easement or equivalent form of protection.

Area (ac) of development protected by a conservation easement or equivalent form of protection.

Note: The green cell will unlock if the Scenario 1 box above is checked

Scenario 2: Site Reforestation/Revegetation **See the GSMM Volume 2, Section 4.22 for more information.*

☐ Check the box if a portion of the post-developed area employs site reforestation/revegetation and is protected by a conservation easement or equivalent form of protection.

Area (ac) of development reforested/revegetated and protected by a conservation easement or equivalent form of protection.

Note: The green cell will unlock if the Scenario 2 box above is checked

Scenario 3: Soil Restoration **See the GSMM Volume 2, Section 4.23 for more information.*

☐ Check the box if a portion of the post-developed area employs soil restoration and is protected by a conservation easement or equivalent form of protection.

Area (ac) of development with restored soils and protected by a conservation easement or equivalent form of protection.

Note: The green cell will unlock if the Scenario 3 box above is checked

Scenario 4: Site Reforestation/Revegetation & Soil Restoration **See the GSMM Volume 2, Section 4.22 and 4.23 for more information.*

☐ Check the box if the same portion of the post-developed area employs site reforestation/revegetation and soil restoration, and is protected by a conservation easement or equivalent form of protection.

Area (ac) with restored soils in a reforested & revegetated area and protected by a conservation easement or equivalent form of protection.

Note: The green cell will unlock if the Scenario 4 box above is checked

Total Conservation Area Credit (acres) 0.00

Georgia Stormwater Management Manual
Stormwater Quality Site Development Review Tool, v2.2

Development Name: BRANCH ASHWOOD CENTER
Drainage Basin Name: 1

data input cells
calculation cells
constant values

Water Quality Goals

Target Runoff Reduction Storm (in): 1.00

Total Site Area for Water Quality Volume (acres): 10.05
Target Runoff Reduction Volume (cf): 28,058
Target Water Quality Volume (cf): 33,670

Select BMPs for Runoff Reduction and Water Quality

		Area Draining to Each BMP			Storage Volume Provided by BMP (cf)	RR Conveyance Volume Provided by BMP (cf)	Down-stream BMP	Runoff Reduction Calculations						WQ Calculations	
		On-site Pervious Area (acres)	On-site Impervious Area (acres)	Offsite Area (acres)				RR Volume from Direct Drainage (cf)	RR Volume from Upstream Practices (cf)	Total RR Volume Received by BMP (cf)	Runoff Reduction %	RR Achieved (cf)	Remaining RR Volume (cf)	WQ$_v$ from Direct Drainage (cf)	Effective TSS Removal %
BMP 1	Underground Detention	2.02	8.03			28,058	BMP 2	28,058	0	28,058	0%	0	28,058	33,670	0%
BMP 2	Downstream Defender					28,058		0	28,058	28,058	0%	0	28,058	0	80%
BMP 3	Select a BMP...							0	0	0	N/A	0	0	0	N/A
BMP 4	Select a BMP...							0	0	0	N/A	0	0	0	N/A
BMP 5	Select a BMP...							0	0	0	N/A	0	0	0	N/A
BMP 6	Select a BMP...							0	0	0	N/A	0	0	0	N/A
BMP 7	Select a BMP...							0	0	0	N/A	0	0	0	N/A
BMP 8	Select a BMP...							0	0	0	N/A	0	0	0	N/A
BMP 9	Select a BMP...							0	0	0	N/A	0	0	0	N/A
BMP 10	Select a BMP...							0	0	0	N/A	0	0	0	N/A
	TOTAL	2.02	8.03	0.00				28,058				0		33,670	
	UNTREATED AREA (acres)	0.00	0.00												

Target Runoff Reduction Volume (cf)	28,058
Target Achieved?	No
Remaining Runoff Reduction Volume (cf)	28,058

Target Water Quality Volume (cf)	33,670
% TSS Removal Achieved	80%
Target Achieved?	Yes!
Remaining TSS Removal %	0%

Channel and Flood Protection Calculations

Georgia Stormwater Management Manual
Stormwater Quality Site Development Review Tool, v2.2

Development Name: BRANCH ASHWOOD CENTER
Drainage Basin Name: 1

data input cells
calculation cells
constant values

	1-yr, 24-hr storm	2-yr, 24-hr storm	25-yr, 24-hr storm	100-yr, 24-hr storm
Target Rainfall Event (in)	3.29	3.69	5.85	7.30

	1-yr, 24-hr storm	2-yr, 24-hr storm	25-yr, 24-hr storm	100-yr, 24-hr storm
Pre-Development Runoff Volume (in)	0.48	0.66	1.91	2.92
Post Development Runoff Volume (in) with no BMPs	2.30	2.68	4.76	6.18
Post-Development Runoff Volume (in) with BMPs	2.30	2.68	4.76	6.18
Adjusted CN	90	90	90	90

*See Stormwater Management Standards to Determine Detention Requirements.

Comments

Hydro International First Defense OK-110 Sand SSC (TSS) Removal Confirmation Test November 12, 2004

Reported by Jeff Dennis
Division of Watershed Management, DEP

On November 12, 2004 I witnessed a confirmation test of the ability of a 4 ft diameter First Defense® unit with an 8 inch inlet to remove OK-110 grade silica sand. The test was performed in the laboratory of the Hydro International office on Hutchins Drive in Portland, Maine. The target flow rate for the test was 320 gpm.

Lab Set-Up

The laboratory set-up for the test consists of a 23,300 gallon clean water storage reservoir from which water is pumped into an 8 in pipe which feeds water to a 4 ft diameter First Defense® unit. The pipe from the storage reservoir is fitted with a valved bypass to divert excess flows back to the storage reservoir, a butterfly valve along with a variable frequency drive for flow control, and an ISCO UniMag Magnetic Flowmeter. OK-110 sand is fed into the inflow pipe from an elevated 60 gal sand slurry barrel. The sand is kept in a relatively uniform suspension in the slurry tank using a propeller type mixer. Slurry is pumped through plastic tubing from the slurry tank into the inflow pipe by a peristaltic pump. An automatic sampler is located upstream of the slurry feed to collect background samples. Several feet downstream of the slurry feed in the inflow pipe there is a 6 inch T with a sluice gate for collection of inflow samples.

The outflow pipe from the First Defense® unit has a free-fall discharge back into the storage reservoir. Outflow samples are collected by passing the sample bottle through the free fall discharge into the reservoir.

Test Procedure

The target test flow for the test was 320 gpm. The mean water detention time in the system at this flow rate is 78 seconds. Outflow samples lagged inflow samples by this amount. The interval between samples for both the inflow and outflow samples was 60 seconds. Back ground samples were collected at the same time as inflow samples. Flow was observed throughout the test.

The flow rate was stabilized at around 300 gpm and the slurry feed pump started. The system was then allowed to reach equilibrium for a period in excess of four detention times, before the first inflow sample was taken. Outflow sampling commenced about 78 seconds later. Background sampling commenced prior to inflow sampling and continued throughout the test. Six sets of samples were taken.

Inflow, outflow and background samples were taken to the University of Maine Environmental Chemistry Lab for Suspended Sediment Concentration analysis. The analyses was performed by John Cangelosi.

Results

Results of the test are presented in the attached tables. Inflow concentrations ranged from 189.1 mg/l to 299.8 mg/l. Outflow concentrations ranged from 12.6 mg/l to 17.3 mg/l. Background concentrations ranged between 0.9 and 1.9 mg/l.

The removal efficiencies indicated by inflow/outflow pairs ranged from 93.3% up to 95.4%, with a mean of 94.2%. When adjusted for recycled background concentrations, efficiencies were slightly higher, from 94.0% to 95.7% with a mean of 94.7%.

Flow for the test varied from 262 gpm to 328 gpm with a mean of 290 gpm, slightly lower than the target flow rate of 320 gpm.

Conclusions

All the paired sample removal efficiencies exceeded 80%, as did their mean whether or not they were adjusted for background concentrations, so it is very clear that at 290 gpm, a 4 ft diameter First Defense® unit can remove at least 80% of OK-110 grade silica sand, and seems to be able to remove more than 90% at this flow. Variation in paired removal efficiencies was low, and variation in inflow concentration was high, but still acceptable. Since removal efficiencies were so much higher than the required 80% and the flow for at least one pair exceeded 320 gpm, it is reasonable to conclude that, even though the mean flow was less than the target flow of 320 gpm, the unit can remove greater than 80% of OK-110 grade silica sand at the target flow rate of 320 gpm.

Therefore, the conclusion of this report is that the test performed on November 11, 2004, in substantial accordance with the Lab Testing Protocol, indicates that a 4 ft diameter First Defense® unit operating at an average flow rate of 320 gpm provides at least 80% removal of the specified OK-110 grade silica sand.

Signed: _____ Date: 7/27/05