Planning Board Agenda

Town of Swansboro

Tuesday, October 04, 2022

I. Call to Order

II. Old Business

a. **Starbucks Special Use Permit - 1117 W. Corbett Avenue**
Vaquero Ventures has submitted a special use application for the property located at 1117 W. Corbett Ave (Walmart outparcel). The proposed use will be a Starbucks coffee shop with a drive-through. "Restaurant" is an allowed use in the B-1 zoning district pursuant to the issuance of a special use permit.

Action Needed: Per Section 152.033 of the Unified Development Ordinance, the Planning Board is charged with the preliminary review of quasi-judicial decisions, provided that no part of the forum or recommendation may be used as a basis for the deciding board.

Provide a recommendation including review of the application in accordance with Section 152.210 which addresses plan consistency and any other items deemed appropriate.

III. Chairman/Board Thoughts/Staff Comments

IV. Public Comments

V. Adjournment

Planning Board Meeting
Agenda Item Submittal

Item To Be Considered: **Starbucks Special Use Permit – 1117 W. Corbett Avenue**

Board Meeting Date: **October 4, 2022**

Prepared By: **Paula Webb - Town Manager & Alissa Fender - Town Clerk**

Overview: Vaquero Ventures has submitted a special use application for the property located at 1117 W. Corbett Ave (Walmart outparcel). The proposed use will be a Starbucks coffee shop with a drive-through. "Restaurant" is an allowed use in the B-1 zoning district pursuant to the issuance of a special use permit.

At a special meeting on June 20, 2022, the Planning Board reviewed the application and tabled the request until the TIA (which did not have the Town's Traffic Engineer's comments) could be reviewed in full and comments provided.

On September 18, 2022, Vaquero Ventures resubmitted their special use application with a new Traffic Impact Study. The Town's Traffic Engineer reviewed and returned comments on September 26, 2022.

Background Attachment(s):
Applicable Ordinance Sections
TRC Comments
Special Use Application and Plans
Timmons Group TIA Comments

Action Needed: Per Section 152.033 of the Unified Development Ordinance, the Planning Board is charged with the preliminary review of quasi-judicial decisions, provided that no part of the forum or recommendation may be used as a basis for the deciding board.

Provide a recommendation including review of the application in accordance with Section 152.210 which addresses plan consistency and any other items deemed appropriate.

Action: _____

Staff comments in green.

SPECIAL USES

§ 152.210 PROCEDURE FOR SPECIAL USE PERMITS.

A) Special use permits may be issued by the Administrator, after approval by the Board of Commissioners, for the uses as designated in the table of regulations for special uses. Applications shall include all of the requirements pertaining to it as specified in this section. A hearing shall be held, and all interested persons shall be permitted to offer relevant comments. The Town Board of Commissioners shall consider the application and may approve or deny the requested special use permit.

B) In granting a special use permit, the Board of Commissioners shall give due regard to the nature and state of all adjacent structures and uses, and the districts within which the proposed use is to be located, and shall make written findings of fact concerning the existence or absence of the following criteria:

1) The special use is allowed pursuant to § 152.210 and meets all the required conditions and specifications, including without limitation, those set out in § 152.211. The use, "Restaurants", is allowed by the Table of Uses in the B-1 zoning district pursuant to the issuance of a special use permit.

2) The special use will not materially endanger the public health or safety if located where proposed and developed according to the plan as submitted and approved. The proposed restaurant will be located on an existing outparcel within the Walmart development. Access to the site will be through the existing driveways; no exterior drives are proposed. A traffic impact study has been provided pursuant to Section 152.312 of the UDO by Stantec and was reviewed by the Town's consultant engineer, Jeff Hochanadel with the Timmons Group.

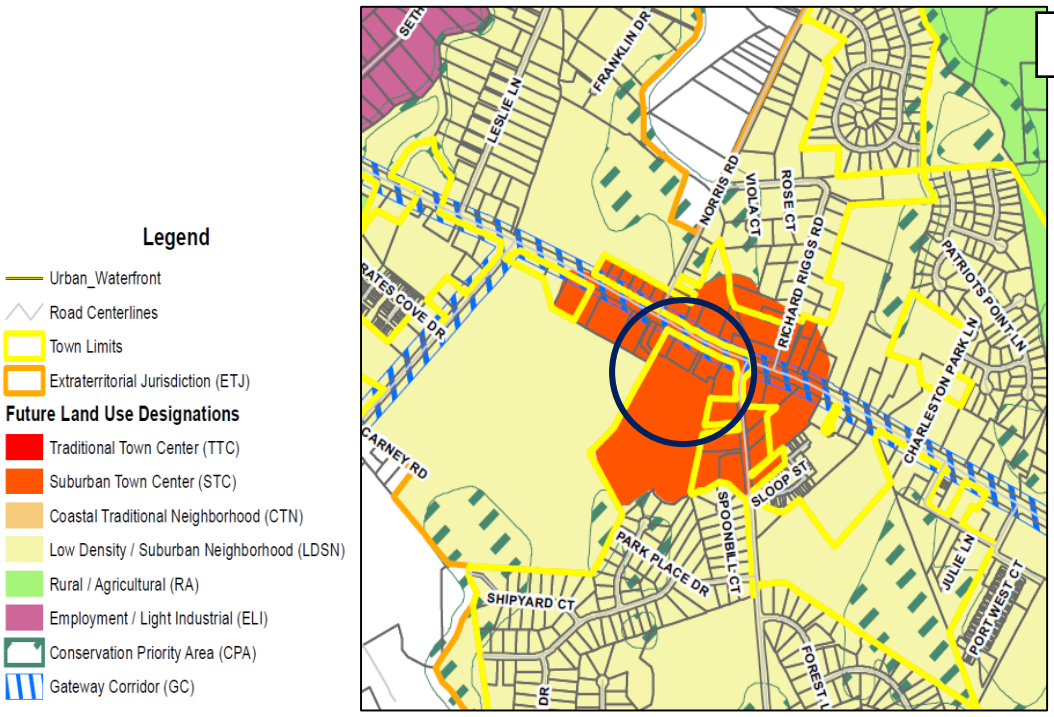
   The Traffic Impact Analysis and the Traffic Engineer's Review Report are included. Findings from the report indicate that "No improvement recommendations were provided nor necessary to mitigate capacity concerns at the intersections. The findings also provide the development minimally increased queues at each intersection.

   NCDOT did not require a TIA for this development for the following reasons:

- The land use was covered in the Swansboro Retail TIA and the Swansboro Commercial TIA, which were later updated with the Norris Road Signal Study.
- All roadway improvements associated with these TIAs have been constructed.
- The Starbucks will only be accessed via internal, non-system roadways which have previously been reviewed as noted above.

3) The special use will not substantially injure the value of adjoining or abutting property, OR the special use is a public necessity. The letter received from Joseph Blake and Associates, Inc., indicates that the development will not impact adjacent property values.

4) The location and character of the special use, if developed according to the plan as submitted and approved, will be in harmony with the area in which it is located. The special use shall demonstrate conformance to the Land Use Plan or other plan in effect at the time and address impacts of the project as required by G.S. §160A-382(b). The CAMA Land Use Plan Update (2019) identifies the property as Suburban Town Center:



These areas are meant to be commercial activity nodes that are more auto oriented such as the intersections of Hammocks Beach Road or Queen's Creek Road with NC 24. In well-designed projects, a person can patronize several businesses via access easements between businesses, a secondary road network, or on foot. Uses may be mixed, generally are larger in scale and include higher density residential including townhomes, market-rate apartments with access to major thoroughfares and existing utilities. Office, civic and institutional uses may be incorporated into this land use class. Development opportunities may occur on green fields or sites with underutilized uses ripe for redevelopment.

This auto-oriented business district, located at nodes along NC 24, supplies goods and services used by the community over the course of a week or month. These businesses are often supported by customers over a large geographic area and may be a regional draw. Uses may be mixed - often mixed horizontally - outlets and larger-scale (ex - grocery, larger-scale retail up to a certain square footage, etc.). While vehicular traffic dominates, all modes of travel are accommodated.

5) Upon the issuance of any special use permit, the Board of Commissioners shall consider whether it is necessary or appropriate to affix conditions thereto for the purposes of protecting neighboring properties and/or the public interest assuring that the use is harmonious with the area, and ensuring that the use is consistent with the spirit of the ordinance, and shall affix to such permit such reasonable and appropriate conditions as it finds are necessary for any of those purposes. If any conditions affixed to any special use permit or any part thereof is held invalid by any competent authority, then said special use permit shall be void.

C) *Orders of Board of Commissioners.* Upon its determination that all of the criteria set out in this section are met, the Board of Commissioners shall enter a written order with findings of fact and conclusions of law and shall issue the special use permit as requested or with such conditions as it finds necessary and appropriate pursuant to this section.

D) Upon its determination that one or more of the criteria set out in this section are not met, the Board of Commissioners shall issue its written order with findings of fact and conclusions of law and shall deny the requested special use permit.

E) Any special use permit approved or approved with conditions shall be recorded in the o[illegible] of the Register of Deeds of Onslow County, North Carolina.

F) All such additional conditions shall be entered in the minutes of the meeting at which the special use permit is granted and also on the special use permit approval, and on the approved plans submitted therewith. All specific conditions shall run with the land and shall be binding on the original applicant for the special use permit, the heirs, successors, and assigns. In order to ensure that such conditions and requirements for each special use permit will be fulfilled, the petitioner for the special use permit may be required to enter into a contract with the Town of Swansboro providing for the installation of the physical improvements required as a basis for the issuance of the special use permit. Performance of said contract shall be secured by cash or surety bond which will cover the total estimated cost of the improvements as determined by the Town of Swansboro; provided, however, that said bond may be waived by the Town Board of Commissioners within its discretion.

G) In addition to the conditions specifically imposed by the Town Board of Commissioners, special uses shall comply with the height, area, and parking regulations of the zone in which they are located (no variances from requirements within zoning ordinance are allowed).

H) In the event of failure to comply with the plans approved by the Board of Commissioners or with any other conditions imposed upon the special use permit, the permit shall thereupon immediately become void and of no effect. No building permits for further construction nor a certificate of compliance under this special use permit shall be issued, and the use of all completed structures shall immediately cease and such completed structures not thereafter be used for any purpose other than a use-by-right as permitted by the zone in which the property is located.

I) Where plans are required to be submitted and approved as part of the application for a special use permit, modifications of the original plans may be authorized by the Town Board of Commissioners.

§ 152.295 PARKING LOT INTERCONNECTIONS.

Vehicle drive connections are required to connect adjacent property when the proposed development is adjacent to a commercial property, public amenity site, public park, public open space and/or residential public street.

A) Connections shall be constructed and stubbed to accommodate future development of adjacent properties;
B) Connections shall be a minimum of 20 feet in width;
C) The requirement for a vehicle drive connection to an adjacent commercial property may be waived by the Zoning Administrator upon a written finding that there is no means due to pre-existing development features, structures, or topographical conditions, to establish such a connection; and
D) The requirement for interconnectivity to Town amenities may be waived by the Zoning Administrator for any reason or for no reason.

- The access to the site is through an internal drive; the applicant has asked for a waiver of the interconnection requirement due to a loss of parking spaces. 22 spaces are required, 34 have been provided.

§ 152.528 PERIMETER AND STREETSCAPE BUFFER YARDS.

(A) *Applicability*. All land uses as defined in § 152.525 Purpose and Applicability shall provide perimeter buffer yards and streetscape buffer yards , as defined herein, to separate that use from adjacent land uses.

(E) *Types and required criteria for buffers.* The four types of natural and landscaped buffers that appear in Table 152.528-1 are described below along with criteria for each. Each of these buffer types may be achieved by meeting the requirements listed below or by an approved alternative method that meets the performance requirements. The preservation and use of natural vegetation is the preferred method of meeting the buffer and landscape requirements, as specified in divisions (F)(4) and (F)(7) of this section.

(1) *Type A.* For every 50 linear feet, or fraction thereof, the five foot-wide buffer yard shall contain: one canopy tree, two under story trees or four under story trees, and six shrubs.

(F) *General buffer standards.*

1) *Coverage.* All portions of required perimeter and streetscape buffer yards not planted with trees or shrubs or covered by a wall, driveway, or other barrier shall be planted with grass, ground cover, or natural mulch of a minimum depth of three inches.
2) *Placement.* New plantings comprising the buffer shall be spread across the entire span of the buffer , not planted in a row or rows, and not concentrated in a limited number of clustered locations such that the purpose of the buffer is violated (as defined in division (B) of this section).
3) *Location.*

a) The perimeter buffers shall be located along the outer perimeter of the parcel and shall extend to the parcel boundary line or right-of-way line; however, the buffers may be located along shared access easements between parcels in non-residential developments . Within non-residential centers/ developments , the perimeter buffer area between outparcels may be shifted totally or in part, elsewhere on the site. For example a 10-foot buffer between like uses may be shifted elsewhere on the site preferably interior to the site as long as the total area is provided for. The intent of this section is to provide for more flexibility in designing sites and potentially save larger natural areas elsewhere on the site.

b) Stormwater management structures may be allowed in a buffer provided that it can be landscaped to meet the intent of the buffer requirements.

c) All perimeter buffer yards and streetscape buffer yards shall not obstruct the view of motorists using any street , private driveway , parking aisles , or the approach to any street intersection so as to constitute a traffic hazard or a condition dangerous to the public safety upon any such street , driveway , parking aisle , or street intersection. Existing healthy vegetation may be removed and no new plantings shall be installed, within required sight triangles as noted in §§ 152.265 through 152.277.

- A revised landscaping pan will be required for permitting demonstrating compliance with these sections.

§ 152.539 TRASH CONTAINMENT AREAS.

(A) All site plans shall show method of garbage collection as well as appropriate details to demonstrate compliance with this subchapter.

- A description of the enclosure has been provided in the exterior finish schedule, but a detail demonstrating compliance with this section will be required for permitting.

§ 152.560 ARCHITECTURAL CHARACTER.

Architectural character focuses on the specific details that greatly affect the overall appearance particular development. These architectural character standards in this section provide direction in aspects of color, facade materials, rooflines, and the enhancement of entryways. The primary goal is to define the 'finishing touches' that provide the development with a sense of permanence, style, and compatibility. The Town discourages proposals that have not taken these matters into account. The Town policy is that all development is compatible of surrounding areas and that it ensures privacy, safety, and visual coherency.

(C) Entryways.

(1) *Required entryway features.* Entryway design elements and variations shall provide orientation and aesthetically pleasing character to the building. The following standards identify desirable entryway design features. Each principle building on a site shall have clearly defined, highly visible customer entrances featuring no less than three of the following: (See also Figures 152.560.5 and 152.560.6 as examples)

(a) Canopies or Porticos;
(b) Arcades;
(c) Overhangs;
(d) Recesses/projections;
(e) Raised corniced parapets over the doors;
(f) Peaked roof forms;
(g) Arches
(h) Wing walls;
(I) Outdoor patio
(j) Display windows;
(k) Planters; and
(l) Architectural details such as tile work and moldings which are designed into the building structure and overall design.

- At least one additional entryway feature is required on the front elevation and two on the south side elevation pursuant to this section.

(7) *Roofs.* The following standards are intended to foster variations in roof lines to soften and reduce the massive scale of large buildings:

d) Flat roofs must be enclosed by a parapet that screens mechanical equipment from view by pedestrians at street level.

e) The height of the parapet shall not exceed 1/3 of the height of the supporting wall and should not exceed a maximum height of six feet. Such parapet shall not be of a constant height for a distance of greater than 150 feet.

- A revised plan will be required for permitting showing compliance with this section.

sm

Town Manager
Paula W. Webb, MMC-NCCMC
pwebb@ci.swanboro.nc.us

Town Clerk
Alissa A. Fender, CMC
afender@ci.swansboro.nc.us

Town of Swansboro

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June 10, 2022

TRC Comments
Starbucks
1117 W. Corbett Ave

ONWASA

- ONWASA site plan approval is required following TRC approval.
- The ONWASA Utility Easement is incorrectly labeled as private, see attached map.

Wynne Ray, Development Services Supervisor
WRay@onwasa.com or (910) 937-7526

NCDOT

- Provided comments via email on 6/8/2022.

Kirsten L. Spirakis, PE, District Engineer
klspirakis@ncdot.gov or (910) 467-0500

DWR

- This project will not require an Individual 401 Water Quality Certification from the NC DWR.

John Perry, Environmental Specialist II, Division of Water Resources
John.Perry@ncdenr.gov or (910) 796-7341

Fire

- Provided comments via email on 6/8/2022.

Captain Kevin Taveirne, SFD/Town of Swansboro Fire Inspector
ktaveirne@ci.swansboro.nc.us

Planning

- Provide a copy of the stormwater/erosion control permits, or, provide documentation showing approval was granted as a part of the original Walmart plan review.
- The following details are required by the Unified Development Ordinance (UDO) and should be noted on the site plan or provided in additional plan sheets:
  - Section 152.295 requires parking lot interconnections between commercial developments.
  - Section 152.528, (E), (1), requires that for every 50 linear feet, or fraction thereof, the five-foot-wide landscaped buffer yard shall contain one canopy tree with two under story trees or four under story trees, and six shrubs. Section 152.529 requires that at least 8% of the gross paved area of the parking lot be landscaped, and Section 152.539 requires an opaque enclosure with plantings for trash containment. These details and calculations need to be shown on the landscaping plan. See Section (F), (3) for placement.
  - A lighting plan should be submitted pursuant to Section 152.501, or the fixture types/details added to the site plan. The plan submitted seems to conflict with Section 152.503.
  - Sidewalks extending along the property boundary with the Walmart entrance and drive areas were discussed in our initial conversations with your office and should be shown.
  - Section 152.560 discusses architectural character and building materials. More detail is required for our review. (C) requires that at least 3 entryway features are provided.

Jennifer Ansell, Planner
jansell@ci.swansboro.nc.us or (910) 326-4428

Walmart Outparcel

6/6/2022, 3:24:19 PM

1:1,128

0 0.01 0.01 0.03 mi

0 0.01 0.03 0.05 km

County Streets

Address

Commercial

Water Service Connections

Water Mains

Potable Water

Water Lateral Lines

Sewer Manholes

Sewer System Valves

Sewer Gravity Mains

Sewer Pressurized Mains

Reclaimed Water

Sewage

Parcels - Full Data

Onslow County Boundary

ONWASASQL.DBO.asbuilts

Jennifer Ansell

From: Spirakis, Kirsten L <klspirakis@ncdot.gov>
Sent: Wednesday, June 8, 2022 3:32 PM
To: Lins, Justin M; Jennifer Ansell
Cc: Racine, Douglas W; Cox, Bryce A
Subject: RE: [External] Request for Comments-1117 W. Corbett Ave: Starbucks
Attachments: Site Plan.pdf; SB-W. Corbett Ave.-Swansboro, NC P7 06-02-21.pdf; RE: [External] RE: TIA Scoping for a proposed Starbucks on W. Corbett Ave in Swansboro (WAYN 1285)(; RE: [External] RE: TIA Scoping for a proposed Starbucks on W. Corbett Ave in Swansboro (WAYN 1285)(

Jennifer,
In addition to Justin's comment below that the access aligns with Norris Road, I also wanted to point out that it is signalized as well.

Just as a reminder regarding previous communication on this development, I have attached emails to you and to the engineer.

Please let us know if you have additional questions.

Thank you,

Kirsten L. Spirakis, PE
District Engineer
Division 3 | District 1
910-467-0500

From: Lins, Justin M <jmlins@ncdot.gov>
Sent: Wednesday, June 8, 2022 9:20 AM
To: Jennifer Ansell <jansell@ci.swansboro.nc.us>
Cc: Racine, Douglas W <dracine@ncdot.gov>; Spirakis, Kirsten L <klspirakis@ncdot.gov>; Cox, Bryce A <bacox2@ncdot.gov>
Subject: RE: [External] Request for Comments-1117 W. Corbett Ave: Starbucks

Good Morning Jennifer,

Checking to see if the proposed developer is aware of the western access point lining up with Norris Road now. I attached the preliminary drawing you sent out from them, which shows the original location. Nothing big hopefully, just want to make sure we are all on the same page.
Thanks,

Justin Lins
Engineering Specialist II
North Carolina Department of Transportation

910 467 0512 Office
910 346 8030 Fax
jmlins@ncdot.gov

295 Wilmington Hwy. Suite A
Jacksonville NC 28540

Jennifer Ansell

From: Kevin Taveirne
Sent: Wednesday, June 8, 2022 2:17 PM
To: Jennifer Ansell
Cc: David Degnan
Subject: Re: Request for Comments-1117 W. Corbett Ave: Starbucks

Good afternoon,

Comments for proposed development are below. Comments based on the assumption of no grill or cooking area that would require a hood extinguishing system or other features.

Due to NC fire code and our FD having an aerial ladder, the entrance will have to be widened to 26 feet wide. Also, the center parking area will have to redesigned some. A 26 foot wide access road must be available to drive the aerial into the parking lot. This could be done by removal of 1-2 parking spots in the center and sliding left parking island buffer moved into those spaces, therefore giving the 26-foot-wide required path.

Comments

503.1.1 - A fire access road shall be provided to within 150 ft of each part of the 1st floor.
503.2.1 - A fire access road shall be a minimum of 26 feet wide and have a vertical clearance of 13 feet 6 inches. * 26 feet wide due to aerial truck.
503.2.3 - A fire access road shall be able to support the weight of the department apparatus. Our heaviest truck weighs 75,000 pounds.
505.1 – Address Identification. New and existing buildings shall be provided with approved address identification. The address identification shall be legible and placed in a position that is visible to the front street or road fronting the property.
506.1 – the fire code official is authorized to require a key box be installed in an approved location. * See Town of Swansboro Knox Box Ordinance.

The location and installation dimensions of the key box will need to be approved by Chief Degnan or FD Fire Inspector. The key box will have to be of Knox Box brand to match the system Swansboro Fire Department has in place. SFD will need to be contacted to have a copy of occupant`s keys put in once box is installed. Key access must allow entry into all portions of building. Should keys change, SFD must be notified immediately so the keys in the Knox Box can be changed out.

509.1.1 – Utility Identification. Where required by the fire code official, gas shutoff valves, electric meters, service switches and other utility equipment shall be clearly and legibly marked to identify the unit or space that it serves. Identification shall be made in an approved manner, readily visible and shall be maintained.
510.1 - Emergency responder coverage in new buildings. All new buildings shall have approved radio coverage for emergency responders within the building based upon the existing coverage levels of the public safety communication systems of the jurisdiction at the exterior of the building.

510.4.1 – Radio Signal Strength. The building shall be considered to have acceptable emergency responder radio coverage when the signal strength measurements in 95% of all areas on each floor of the building meet the signal strength requirements in Sections 510.4.1.1 through 510.4.2.5.
906.2 – Portable fire extinguishers shall be selected, installed and maintained in accordance with this section and NFPA 10.

Thanks,
Captain Kevin Taveirne
SFD/Town of Swansboro Fire Inspector

From: Jennifer Ansell <jansell@ci.swansboro.nc.us>
Sent: Monday, June 6, 2022 3:00 PM
To: Alissa Fender <afender@ci.swansboro.nc.us>; Andres Baena <andres_baena@onslowcountync.gov>; Anna Stanley <astanley@ci.swansboro.nc.us>; Auguste Nelson-Graves <Auguste_Graves@onslowcountync.gov>; wcbarbee@ncdot.gov <wcbarbee@ncdot.gov>; chris_white@onslowcountync.gov <chris_white@onslowcountync.gov>; David Degnan <ddegnan@ci.swansboro.nc.us>; Deanna Trebil <dtrebil@jacksonvillenc.gov>; Ethan Brogden <ethan.brogden@usmc.mil>; Holley Snider <holley.snider@ncdenr.gov>; james_teachey@onslowcountync.gov <james_teachey@onslowcountync.gov>; Jim Stipe <jstipe@ci.swansboro.nc.us>; John Perry <John.Perry@ncdenr.gov>; Jordan.E.Jessop@usace.army.mil <Jordan.E.Jessop@usace.army.mil>; joseph.keily@duke-energy.com <joseph.keily@duke-energy.com>; Justin Lins <jmlins@ncdot.gov>; kwilliams@plurisusa.com <kwilliams@plurisusa.com>; Ken Jackson <kjackson@ci.swansboro.nc.us>; Kevin Taveirne <ktaveirne@ci.swansboro.nc.us>; Kirsten Spirakis <klspirakis@ncdot.gov>; Liz Hair <Sarah.E.Hair@usace.army.mil>; Mike Henderson <mike.henderson@onslow.k12.nc.us>; Musial, Connor E <connor.musial@ncdenr.gov>; Patricia Pike <Patricia_Pike@onslowcountync.gov>; Paula Webb <pwebb@ci.swansboro.nc.us>; Philip Cross <philip_cross@onslowcountync.gov>; rlanier@joemc.com <rlanier@joemc.com>; Racine, Douglas W <dracine@ncdot.gov>; rhoffer@plurisusa.com <rhoffer@plurisusa.com>; Rhonda Murray <rhonda.murray@usmc.mil>; robb.mairs@ncdenr.gov <robb.mairs@ncdenr.gov>; sandy_gurganus@onslowcountync.gov <sandy_gurganus@onslowcountync.gov>; Sonia Johnson <sjohnson@ci.swansboro.nc.us>; skutz@jacksonvillenc.gov <skutz@jacksonvillenc.gov>; Timothy M McCurry CIV <timothy.mccurry@usmc.mil>; Trevor K Carroll <tkcarroll@ncdot.gov>; Wynne Ray <wray@onwasa.com>
Subject: Request for Comments-1117 W. Corbett Ave: Starbucks

All:

Please see attached for the property at 1117 W. Corbett Ave (Walmart outparcel) and provide me with any comments by close of business Friday, 6/10.

Thank you,

Jennifer H. Ansell, CFM, CZO
Planner
Town of Swansboro
601 W. Corbett Avenue
Swansboro, NC 28584
(910) 326-4428
(910) 326-3101 Fax

TOWN OF SWANSBORO
Special Use Application

APPLICANT'S NAME Kaylee Hurych

MAILING ADDRESS 2900 Wingate St. , Suite 200 Fort Worth, TX 76107 Phone # 817-992-7375

OWNER'S NAME Walmart Real Estate Business Trust

OWNER'S ADDRESS 2608 S.E. J Street Bentonville, AR 72716 Phone # 479-367-4828

TAKE NOTICE THAT THE UNDERSIGNED HEREBY PETITIONS THE BOARD OF COMMISSIONERS OF THE TOWN OF SWANSBORO FOR A SPECIAL USE AS DESCRIBED BELOW AND AS ALLOWED BY ARTICLE 10 OF THE UNIFIED DEVELOPMENT ORDINANCE:

Special Use Permit to allow a drive-thru Coffee Shop.

ON THE PREMISES LOCATED AT: 1117 West Corbett Ave. Swansboro, NC 28584

LOT 3 BLOCK _____ MAP 166622

THE PROPERTY IS ZONED: B1 - Highway Business

THIS 24th DAY OF May, 20 22.

APPLICANT'S SIGNATURE Kaylee Hurych

DATE FILED 6/2/2022

RECIPIENT SIGNATURE _____ 6/7/22

ZONING ADMINISTRATOR _____ 6/7/22

APPLICANT OR APPLICANT REPRESENTATIVE MUST BY PRESENT FOR AN APPLICATION TO BE HEARD. IF SOMEONE OTHER THAN THE APPLICANT WILL BE THE REPRESENTATIVE, THE FOLLOWING MUST BE COMPLETED.

I /We DREW R Quitschau, FOR WREBT am /are the owner(s) of the property located at 1117 West Corbett Ave. Swansboro, NC 28584. I /We hereby authorize Kaylee Hurych to appear my behalf in order to ask for a special use permit at this location. I /We understand that the special use permit, if granted, is permanent and runs with the land unless otherwise conditioned.

I Drew R Quitschau 06/01/2022

Owner Date

_____ _____

Owner Date

Benton County, ~~North Carolina~~ Arkansas

I certify that the above person(s) personally appeared before me this day, each acknowledging to me that he/she voluntarily signed ~~the foregoing~~ document for the purpose stated herein.

Date: 06/01/2022

LINDA STELLJES
NOTARY PUBLIC
BENTON COUNTY, ARKANSAS
COMM. EXP. 12/01/27
COMMISSION NO. 12703323

(Official Seal)

Linda Stelljes

Notary Public

My commission expires: 12/01/2027

SPECIAL USE PERMIT APPLICATION CHECKLIST

STOP

If the following items are not included in your application submittal, your application will not be accepted. Please note that this is not a comprehensive list; there may be other items required following the review of your application.

- ☐ Fee(s) as prescribed by the current Town of Swansboro Fee Schedule

- ☐ Application submitted at least 17 days prior to the next Planning Board meeting

- ☐ Application must be filled out completely

- ☐ Owner affidavit on application must be completed if applicant is not the property owner

- ☐ A narrative describing the proposed use of the property. This should include proposed hours of operation, number of employees, etc. Items 1-4 under Section 152.210 (B) of the Unified Development Ordinance (UDO) will also need to be addressed in this narrative.

  A report from a licensed real estate appraiser to address finding #3 on value is required

- ☐ A site plan depicting all existing and proposed structures, proposed outdoor dining areas, existing and proposed parking areas and circulation, proposed signage locations, utilities including hydrant locations, etc. is required with all applications. A comprehensive list can be found in Appendix IV to the UDO

- ☐ For new construction, or if the proposed cost of renovations to the structure exceed 50% of the building value per the Onslow County Tax Office, the Building Design and Compatibility standards of the UDO will apply, and detailed building elevations demonstrating compliance with these standards

must be included. A private appraisal may be provided in lieu of the documented tax value

☐ The Parking standards will apply whenever there is new construction, when any principal building is enlarged or increased in capacity by adding dwelling units, guest rooms, seats, or floor area, or when there is a conversion from one type of use or occupancy to another. The number of spaces, dimensions, proposed layout, and circulation pattern need to be depicted on the site plan

☐ The Landscaping Regulations will apply to all new or changed uses of land, buildings , and structures and to any use of building or structure which sits idle more than 180 consecutive days or is abandoned, except for those uses exempted in sections (C)(1) through (C)(3) under Section 152.525. A landscaping plan must be included with the application when required

☐ The Lighting standards of the UDO apply to any fixtures proposed to be installed. A lighting plan should be included to demonstrate compliance with the ordinance standards

☐ Sidewalks are required for property located in Town Limits when the development of vacant property occurs, the redevelopment of property occurs, or when there are substantial additions to property.

Additionally, sidewalks are required in the Extraterritorial Jurisdiction (ETJ) when the development or redevelopment of vacant commercial property occurs; provided that the development involves the razing, dismantling, or removal of all principal structures existing on a tract of land substantially to ground level. See Section 152.180, Note 5

Proposed sidewalks must be shown on the site plan

Kaylee Hunyeh _____ 6/2/2022

Applicant Signature **Date**

VAQUERO

2900 Wingate St
Suite 200
Fort Worth, Texas 76107
VaqueroVentures.com

PROJECT NARRATIVE

Project Description/Summary:

Starbucks:

The proposed project is a Starbucks (coffee shop) with a drive-through. The project is located at 1117 W. Corbett Ave. Swansboro, NC. It is going to be built on a 1.07 acres lot. The lot is undeveloped and vacant. There is a public sidewalk running along W. Corbett Ave. Their Hours of Operation are approximately M-F 6AM – 7 PM; Sat – Sun 7AM – 6 PM. Approximately 30 employees on a rotating schedule.

Site History:

The lot is undeveloped and vacant currently.

Surrounding Property Use:

North:	Commercial Development – King's Car Wash
East:	Commercial Development – Walmart Convenience Store w/ fuel
South:	Commercial Development – Walmart
West:	Vacant

Existing Site Conditions:

1) Topography: The contours passing through the lot are from range 34-31. There is 3 ft rise in the site from north to south.

2) Existing Land Use: The land is vacant.

3) Existing Circulation (Vehicle and Pedestrian): There is currently no access to the lot.

4) Existing Infrastructure:

   a. Potable water: There is an existing 20' public water easement with existing water service stub we will connect to.

   b. Wastewater: Existing wastewater line at south boundary we are connecting to.

2900 Wingate St
Suite 200
Fort Worth, Texas 76107
VaqueroVentures.com

c. Storm Water: An existing storm sewer line at west boundary draining to the master detention pond to south of boundary.

d. Solid Waste: No existing solid waste structure on site.

e. Electric: Two Utility pole on the north side of the lot. Overhead lines and underground electric lines extending from pole on the north center of the lot.

f. Fire Hydrant: Existing fire hydrant to the east of our boundary across Walmart's access road.

Proposed Site Conditions:

1) Proposed Land Uses:

a. Proposed Topography: The proposed contours passing through the lot are from range 36-32. There is 4 ft rise in the site from north to south similar to that of the exiting conditions.

b. Proposed Land Use: The proposed land use is "Restaurant with a Drive through".

c. Proposed Circulation (vehicle and pedestrian): One access point for ingress/egress. The TIA report outlining the trips generated by the development has been submitted with application. Bike racks has been provided on site as per requirements of the Town. Preexisting sidewalk along north boundary, W. Corbett Ave.

2) Proposed Infrastructure

a. We are using existing public infrastructure.

Joseph J. Blake and Associates, Inc.
Real Estate Valuation and Consulting
5505 Creedmoor Road, Suite 230 | Raleigh, NC 27612 | Phone: 984-322-3002 | Fax: 310-216-2131 | www.josephjblake.com

June 3, 2022

Ms. Kaylee Hurych
Development Manager
Vaquero Ventures
2900 Wingate Street, Suite 200
Fort Worth, TX 76107

Re: Proposed Starbucks planned in the SE/C of W. Corbett Avenue and Norris Road, Swansboro, North Carolina and its impact on adjacent/nearby businesses

Dear Ms. Hurych:

In accordance with your request, we have analyzed the above planned proposed development and considered its possible impact on nearby/adjacent properties. The development in question is a proposed Starbucks coffee shop with a drive-thru lane, with about 2,223± square feet on a 1.07-acre Walmart out parcel. The proposed store is planned to be built at the Southeast Corner of W. Corbett Avenue (a.k.a., Highway 24) and Norris Road (a.k.a., Walmart Drive), with a completion date reportedly scheduled in late 2023. This Starbucks will reportedly be the first store in Swansboro. The closest Starbucks is about 5.5± miles south in Cape Carteret.

W. Corbett Avenue (NC Highway 24) is the longest primary state highway in North Carolina. Traveling east–west between the Charlotte metropolitan area and the Crystal Coast, connecting the cities of Charlotte, Fayetteville, Jacksonville and Morehead City. Highway 24 traverses Swansboro, a community with a population of 3,339 (2020). Swansboro, known as the "Friendly City by the Sea," is located only 5 miles from Emerald Isle. The town sits at the confluence of the Water Oak River and Intracoastal Waterway, with the Atlantic Ocean nearby. These locational attributes draw tourism to Swansboro (especially during summer months).

The question is, what kind of impact will the Starbucks with a drive-thru lane have on the surrounding businesses? The nearby businesses and institutions near this planned development include the Walmart SuperCenter, Coastal Auto Market, Moore's BBQ, Charles Rawls, Queen's Creek Elementary and Swansboro High School. We also note that properties on the north side of W. Corbett Avenue include Battlefield Automotive, Swansboro Tire and Auto, Battlefield Tire Shop and Davis Auto Sales. Here are some of our observations.

1. W. Corbett Avenue is a commercial corridor and is lined with a mixture of commercial and retail uses. There is no residential in the general area along W. Corbett Avenue. The vacant land nearby is designated for commercial use (B1, "Highway Business"), which allows a variety of business/retail uses along a business corridor. A Starbucks store would be a draw to the immediate area and have a positive impact on adjacent commercial land. We note there is no single-family-zoned land along this general pocket of W. Corbett Avenue. Please refer to the Zoning Map in this letter. The current land use patterns near the planned Starbucks store appear to be consistent with the existing B-1 zoning.

2. The proposed Starbucks will generate additional traffic to the commercial corridor of W. Corbett Avenue. According to a traffic report by J.M. Teague Engineering & Planning, dated May 2022, the 2020 Annual Average Daily Traffic (AADT)[1] along W. Corbett Avenue was about 29,500. According to this report, annual traffic is anticipated to increase by 3%. Further, during peak tourism season (summer months), traffic is anticipated to increase by 7%. The projected traffic increase may be viewed as value enhancements to adjacent commercial properties.

3. Two non-business entities include the Queen's Creek elementary school and the Swansboro High School. Even though these institutions are not a for-profit enterprise, given Starbucks good reputation, it is not viewed as a detriment to the school property values. Moreover, the proposed Starbucks may be viewed as an amenity to its enrollment and faculty/staff.

4. The "Starbucks effect": The "Starbucks effect" describes the phenomena of increasing home and property values in the neighborhoods surrounding a new Starbucks location. An article by Zillow claimed that if you lived within 0.25 of a mile of a Starbucks location, the value of your home would have grown by 96% from 1997 to 2014. If you live further out from the coffee giant, your home may have appreciated only 65%.

5. Harvard Business School found another trend worth noting. When a new Starbucks location shows up, homes in that zip code increase in value by 0.05% within just one year. Harvard economist Edward Glaeser said, "Starbucks locations are chosen by individuals with very good judgment about where the prices are going to increase." The company's analytics experts know how to successfully identify the income, demographic, economic trends and other neighborhood factors.

6. The proposed Starbucks is not expected to have any adverse environmental impacts to properties nearby.

Given the favorable attributes associated with the proposed Starbucks use with a drive-thru lane noted we are of the opinion that said development will not have any negative impact on surrounding property values. To the contrary, we believe this planned development will not only compliment the land use patterns established in the area, but also should be a welcomed addition to the commercial corridor that is W. Corbett Avenue.

[1] *Annual average daily traffic (AADT) is the total volume of vehicle traffic on a highway or road for a year divided by 365 days. AADT is a useful and simple measurement of how busy a road is.*

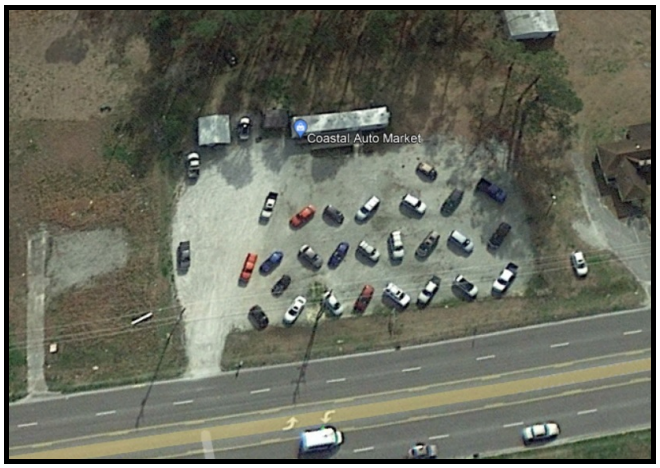
PROPERTIES NEAR THE PROPOSED STARBUCKS				
Property DBA	**Address/Location**	**Parcel ID**	**2022 AV**	**Comment**
1. Proposed Starbucks	SE/C W. Corbett & Norris Rd, Swansboro	--	--	Vacant Pad
2. Walmart SuperCenter with gas pumps	1109 W. Corbett, Swansboro	001318	$12,132,400	–
3. Coastal Auto Market	1227 W. Corbett, Swansboro	018748	$328,500	Retail pad north of Walmart
4. Moore's BBQ	1103 W. Corbett, Swansboro	025404	$1,201,800	Retail pad north of Walmart
5. Charles Rawls	1114 State Road 1511, Swansboro	034708	$296,500	Non-retail pad northeast of Walmart
6. Queen's Creek Elementary	159 Queen's Creek, Swansboro	--	--	West of Walmart
7. Swansboro HS	161 Queen's Creek, Swansboro	--	--	West of Walmart

1. Proposed Starbucks Site

2. Walmart SuperCenter

2. Walmart Fuel Pumps

3. Coastal Auto Market



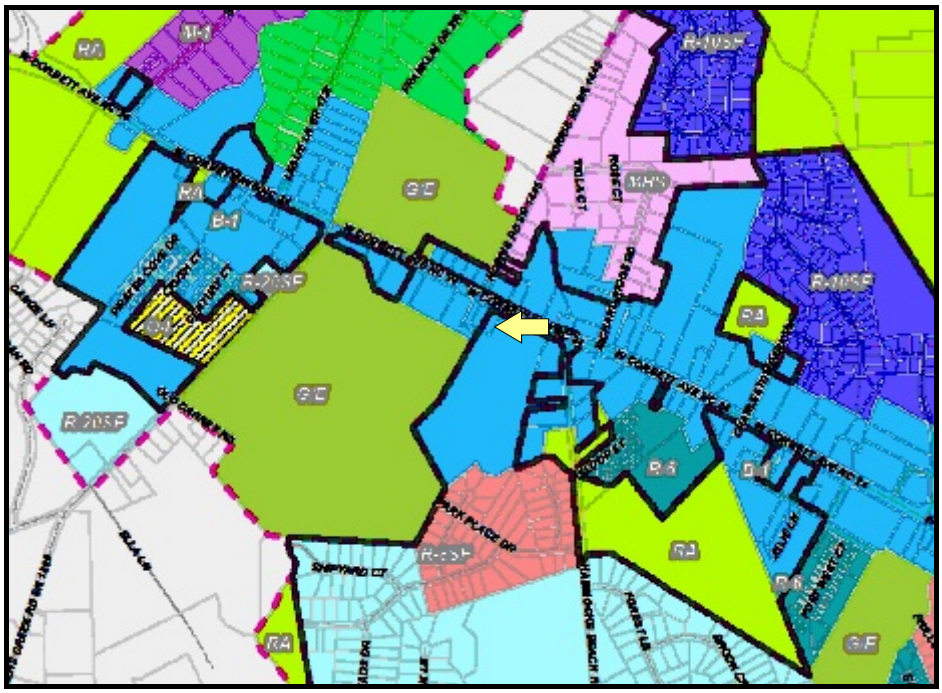
4. Moore's BBQ

5. Charles Rawls

6. Queen's Creek Elementary

7. Swansboro HS

Zoning Map



Respectfully submitted,

JOSEPH J. BLAKE AND ASSOCIATES, INC.

_____

Justin Biers, MAI
Director
State Certified General Real Estate Appraiser
No. A8466 (Expires: June 30, 2022)
Jbiers@josephjblake.com

QUALIFICATIONS OF THE APPRAISER

Justin Biers, MAI

Director

Joseph J. Blake and Associates, Inc.

5505 Creedmoor Road, Suite 230
Raleigh, NC 27612

jbiers@JosephJBlake.com
Direct: (919) 355-0406
Cell: (310) 947-1772
www.JosephJBlake.com

Head of operations in North Carolina. Extensive experience in California and North Carolina markets, as well as most of the surrounding states. Appraised in 16 different states altogether. Specializes in complex appraisal assignments. Supervises and trains staff appraisers.

EXPERIANCED IN THE FOLLOWING PROPERTY TYPES

- Industrial
  - Logistics
  - Flex
  - Manufacturing
- Office
  - All classes
- Multifamily
  - Market
  - Affordable Housing
  - LIHTC
- Retail
  - Community, neighborhood, strip centers
  - Malls
  - Freestanding buildings
  - All others
- Special Use
  - Religious facilities
  - Schools/education facilities from small single buildings to college campus
  - Golf Courses
  - Observatory
- Residential Subdivision Analysis
  - Sell Out Modeling
  - Aggregate Retail Value
  - Bulk Discount Value
- Land
  - Residential
  - Industrial
  - Commercial

PROFESSIONAL AFFILIATIONS

Affiliation	Number
North Carolina Certified General Real Estate Appraiser	No. 8466
California Certified General Real Estate Appraiser	No. AG3002961
Designated Member of the Appraisal Institute	No. 563938

QUALIFICATIONS OF THE APPRAISER

PROFESSIONAL EXPERIENCE	
Joseph J. Blake & Associates	2013 to Present
Butler Burgher Group	2012 to 2013

HIGHER EDUCATION

California State University, Long Beach
Bachelor of Business (Marketing)

REAL ESTATE AND APPRAISAL EDUCATION

Course Name	Provider
Basic Appraisal Procedures	Appraisal Institute
Basic Appraisal Principles	Appraisal Institute
General Appraiser Income Approach 1 & 2	Appraisal Institute
General Appraiser Market Analysis & Highest and Best Use	Appraisal Institute
General Appraiser Report Writing & Case Studies	Appraisal Institute
General Appraiser Site Valuation & Cost Approach	Appraisal Institute
Real Estate Finance, Statistics, and Valuation Modeling	Appraisal Institute
General Appraiser Sales Comparison Approach	Appraisal Institute
Business Practices and Ethics	Appraisal Institute
Quantitative Analysis	Appraisal Institute
Advanced Market Analysis and Highest & Best Use	Appraisal Institute
Report Writing and Case Studies	Appraisal Institute
Advanced Concepts and Case Studies	Appraisal Institute
Advanced Income Capitalization	Appraisal Institute
Demonstration Report	Appraisal Institute
Comprehensive Exam	Appraisal Institute
Advanced Land Valuation: Sound Solutions to Perplexing Problems	Appraisal Institute
Laws and Regulations for California Appraisers	McKissock
Appraisal of Owner-Occupied Commercial Properties	McKissock
Appraisal of Self-Storage Facilities	McKissock
Appraisal of Fast Food Facilities	McKissock
Appraising Small Apartment Properties	McKissock
Introduction to Expert Witness Testimony for Appraisers: To Do or Not to Do	McKissock
North Carolina Supervisory Appraiser/Trainee Appraiser Course	McKissock
Appraisal of Industrial and Flex Buildings	McKissock
The Income Approach: An Overview	McKissock

CERTIFICATION

NORTH CAROLINA APPRAISAL BOARD

APPRAISER QUALIFICATION CARD

REGISTRATION / LICENSE / CERTIFICATE HOLDER

21 JUSTIN L BIERS 22

A8466	G	Y
APPRAISER NUMBER	TYPE	NATIONAL REGISTRY

Appraiser's Signature

Executive Director

EXPIRES JUNE 30, 2022

April 13, 2022

North Carolina Department of Environmental Quality
Land Quality Section
127 Cardinal Drive Extension
Wilmington, NC 28405

RE: Coffee Shop – Stormwater Analysis
1117 West Corbett Avenue
Swansboro, North Carolina

To Whom It May Concern:

The purpose of this letter and attached enclosures is to present the anticipated stormwater analysis for the proposed +/- 1.07-acre Coffee Shop development located at 1117 West Corbett Avenue in Swansboro, North Carolina. This letter is intended to illustrate that the development and site modifications to 1117 West Corbet Avenue are in general conformance with the assumptions and procedures set forth in the Approved Site Plan for The Walmart Super Center - #7178-000 Driveway Extension by Bohler Engineering 6/26/2019 (NCDEQ Permit No. SW8 160501).

GENERAL LOCATION AND DESCRIPTION

Site Location

- The proposed Coffee Shop development is located at 1117 West Corbett Avenue.
- The site is bordered to the northeast by West Corbett Avenue, to the southeast by a Walmart gas station, to the southwest by a Walmart parking lot and associated retention pond, and to the northwest by vacant land.
- Approximate geodetic coordinates for the site are 32°42'05"N, 77°08'58"W.
- See enclosures for a Vicinity Map.

Description of Property

- The site is approximately 1.07 acres in size and is currently occupied by vacant land. Topography generally slopes from the center of the lot outward with slopes between 1% and 6%.
- The project area is contained within FEMA Flood Insurance Rate Maps (FIRM) Panel Number 3720535500K effective June 19th, 2020. The site is located in an area of minimal flood hazard (Zone X). See enclosures for a FEMA FIRMette Exhibit.
- The proposed Coffee Shop development will include the construction of a commercial building along with associated infrastructure.
- Hydrologic Soil Group for the project site is A. See enclosures for the NRCS Web Soil Survey.
- The ultimate receiving water for the site is Cartwheel Branch Creek.

HYDROLOGY

Design Criteria

- Peak storm runoff was determined using the Rational Formula: Q=CIA
- Design storm recurrence intervals are the 2-year storm for the minor event and the 100-year storm for the major event.
- Runoff coefficients have been determined using Table 1 from the NCDEQ Stormwater Design Manual.
- Rainfall intensity was determined using NOAA Atlas 14 Point Precipitation Frequency (PF) Estimates. The rainfall intensities determined for this site are as follows: 2-yr = 6.89 in/hr, 100-yr = 11.9 in/hr.
- See enclosures for all hydrologic calculations.

Runoff Analysis

- The previously mention design criteria was used to determine peak runoff values for the proposed condition of the Coffee Shop site. For the purpose of analysis, the site has been broken up into 5 Sub-Basins. See enclosures for the proposed Drainage Map.
- The proposed site is an outparcel of the existing Walmart SuperCenter at 1121 West Corbett Avenue. The Walmart Supercenter has a wet pond (Pond 3) that was designed to accommodate the proposed Coffee Shop site and provide water quality measures/rate control.
- A Stormwater Analysis was completed for the entire Walmart SuperCenter development and approved by the NCDEQ under Permit No. SW8 160501. Per Sheet DA-2 of the Walmart SuperCenter Site Plan Documents by Bohler Engineering (stamped 6/26/19) the proposed site is part of Drainage Area 3. An impervious area of 38,685 sf was allotted for the future development of the proposed site area within this basin. The proposed improvements will add a total of 24,391 sf of impervious area to the existing empty lot.
- The proposed condition shows a lower total impervious area than what was allotted for the future condition. Therefore, the existing wet pond (Pond 3) will sufficiently provide detention and water quality control for the proposed improvements.
- Please see enclosures for calculations providing the proposed impervious area and runoff analysis.

HYDRAULICS

Design Criteria

- Inlet Capacity was calculated using Figure 4-3 for a Type ‘E’ Grate NCDOT Std. 840.03 Inlet from the City of Charlotte Stormwater Design Manual.
- Hydraulic Grade Lines (HGLs) and sewer capacities have been calculated using Stormwater Studio 2022 v3.0.29 software with standard loss coefficients.

Hydraulic Analysis

- All runoff generated by the proposed site will ultimately be collected by 2 proposed 3' Type 'E' Grate NCDOT Std. 840.03 Inlets within the proposed parking lot. These inlets will tie into the existing storm sewer system provided for this site and will convey runoff to the existing wet pond (Pond 3) southeast of the project site. Per the Walmart SuperCenter Site Plan Documents by Bohler Engineering (stamped 6/26/19) Pond 3 has been sized with adequate volume to detain runoff generated by the proposed improvements and provide water quality measures.
- Basins D1 & D2 will each be collected by 3' Type 'E' Grate NCDOT Std. 840.03 Inlets and conveyed to the existing storm outfall to Pond 3 via proposed RCP storm sewer.
- Basin D3 is entirely rooftop and will be conveyed by roof drains directly into proposed HDPE storm sewer and ultimately to the existing storm outfall to Pond 3.
- Basins OS1 & OS2 will sheet flow offsite to the private drive south of the site and West Corbett Avenue, respectively. Runoff will ultimately be conveyed to the existing storm sewer systems via curb & gutter.
- The proposed on-site storm sewer system has been sized with capacity to carry the 100-year peak runoff.
- See enclosures for the proposed Drainage Map, Hydraulic Calculations, and HGL's for the proposed storm sewer.

CONCLUSIONS

- The drainage design for the proposed Coffee Shop development detailed within this letter is in general compliance with NCEEQ engineering criteria.
- The proposed drainage patterns will comply with the design from the Walmart SuperCenter Site Plan Documents by Bohler Engineering (stamped 6/26/19). All on-site runoff will be conveyed to the existing storm sewer outfall to Pond 3 directly south and West Corbett Ave in compliance with the previously approved design.
- Runoff analysis for the proposed site shows a reduced impervious area compared to the future assumptions used to design the existing storm infrastructure.
- All proposed on-site storm sewer has been designed with capacity for the 100-year storm event.
- There should be no negative impact to downstream infrastructure due to release flows being lower than the corresponding design flows from The Walmart SuperCenter Stormwater Management Calculations.

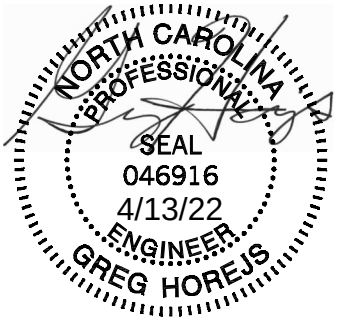
REFERENCES

- *North Carolina Department of Environmental Quality Stormwater Design Manual,* North Carolina Department of Environmental Quality, Revised August 15, 2019

- *Site Plan Documents for Walmart SuperCenter - #719-000 Driveway Extension*, Bohler Engineering, June 26, 2019

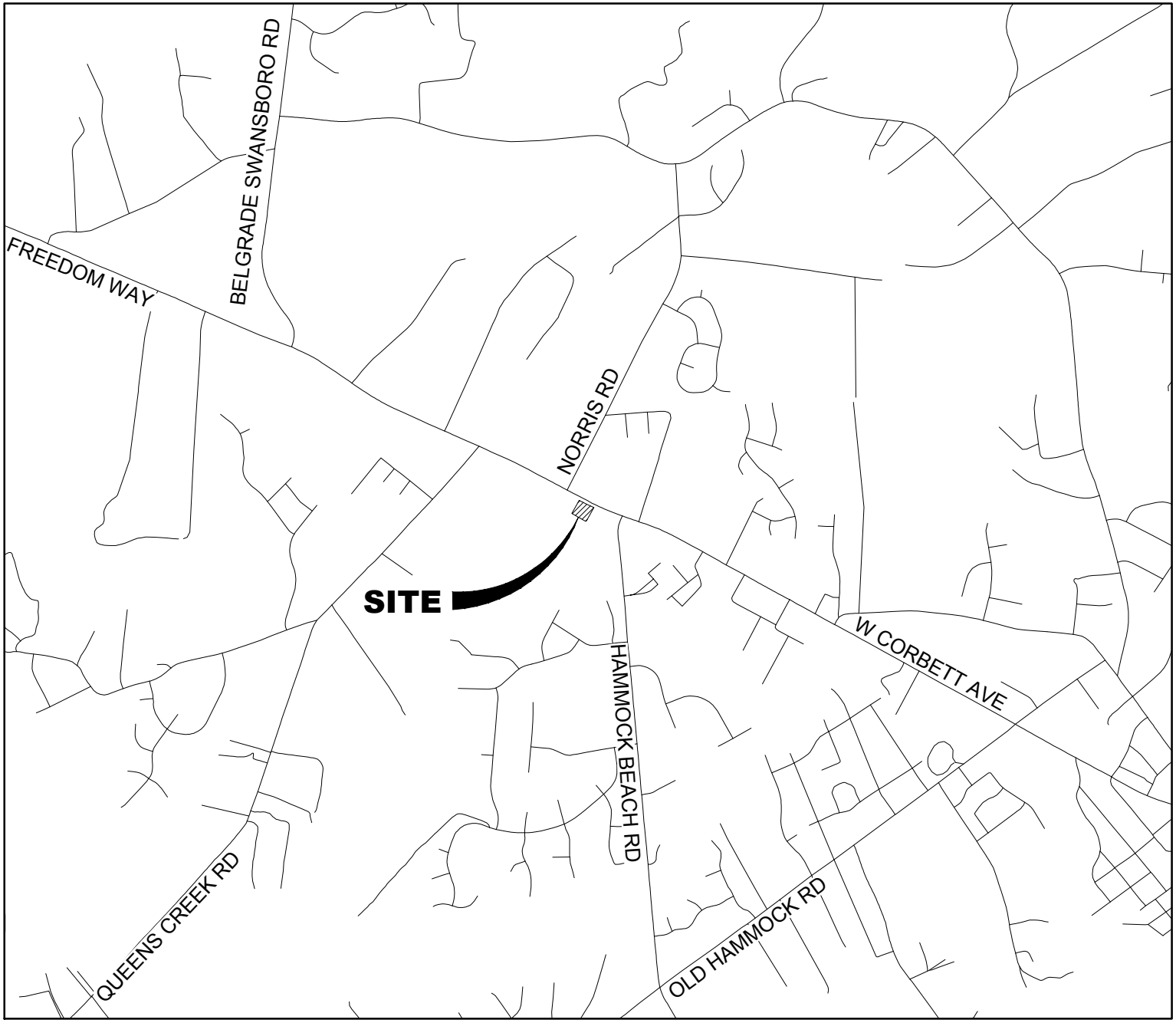
Please contact me with any questions.

Regards,



Rick Katz, P.E.
For and on Behalf of CAGE Civil Engineering

Enclosures:
Vicinity Map
NRCS Hydrologic Soil Map
FEMA FIRMette
NOAA Atlas 14 Point Precipitation Frequency Estimates
Exhibits from the NCDEQ Stormwater Design Manual
Proposed Drainage Basin Map
Proposed Rational Method Calculations
Proposed Hydraulic Calculations
Excerpts from the Site Plan Documents for Walmart SuperCenter - #719-000 Driveway Extension



VICINITY MAP

1" = 2,000'

Hydrologic Soil Group—Onslow County, North Carolina

Map Scale: 1:742 if printed on A landscape (11" x 8.5") sheet.

N

Meters: 0 10 20 40 60

Feet: 0 35 70 140 210

Map projection: Web Mercator Corner coordinates: WGS84 Edge tics: UTM Zone 18N WGS84

MAP LEGEND

Area of Interest (AOI)

- Area of Interest (AOI)

Soils

Soil Rating Polygons

- A
- A/D
- B
- B/D
- C
- C/D
- D
- Not rated or not available

Soil Rating Lines

- A
- A/D
- B
- B/D
- C
- C/D
- D
- Not rated or not available

Soil Rating Points

- A
- A/D
- B
- B/D
- C
- C/D
- D
- Not rated or not available

Water Features

- Streams and Canals

Transportation

- Rails
- Interstate Highways
- US Routes
- Major Roads
- Local Roads

Background

- Aerial Photography

MAP INFORMATION

The soil surveys that comprise your AOI were mapped at 1:24,000.

Warning: Soil Map may not be valid at this scale.

Enlargement of maps beyond the scale of mapping can cause misunderstanding of the detail of mapping and accuracy of soil line placement. The maps do not show the small areas of contrasting soils that could have been shown at a more detailed scale.

Please rely on the bar scale on each map sheet for map measurements.

Source of Map: Natural Resources Conservation Service
Web Soil Survey URL:
Coordinate System: Web Mercator (EPSG:3857)

Maps from the Web Soil Survey are based on the Web Mercator projection, which preserves direction and shape but distorts distance and area. A projection that preserves area, such as the Albers equal-area conic projection, should be used if more accurate calculations of distance or area are required.

This product is generated from the USDA-NRCS certified data as of the version date(s) listed below.

Soil Survey Area: Onslow County, North Carolina
Survey Area Data: Version 24, Jan 21, 2022

Soil map units are labeled (as space allows) for map scales 1:50,000 or larger.

Date(s) aerial images were photographed: Dec 31, 2009—Oct 30, 2017

The orthophoto or other base map on which the soil lines were compiled and digitized probably differs from the background imagery displayed on these maps. As a result, some minor shifting of map unit boundaries may be evident.

Hydrologic Soil Group

Map unit symbol	Map unit name	Rating	Acres in AOI	Percent of AOI
On	Onslow loamy fine sand	A	1.1	100.0%
Totals for Area of Interest			**1.1**	**100.0%**

Description

Hydrologic soil groups are based on estimates of runoff potential. Soils are assigned to one of four groups according to the rate of water infiltration when the soils are not protected by vegetation, are thoroughly wet, and receive precipitation from long-duration storms.

The soils in the United States are assigned to four groups (A, B, C, and D) and three dual classes (A/D, B/D, and C/D). The groups are defined as follows:

Group A. Soils having a high infiltration rate (low runoff potential) when thoroughly wet. These consist mainly of deep, well drained to excessively drained sands or gravelly sands. These soils have a high rate of water transmission.

Group B. Soils having a moderate infiltration rate when thoroughly wet. These consist chiefly of moderately deep or deep, moderately well drained or well drained soils that have moderately fine texture to moderately coarse texture. These soils have a moderate rate of water transmission.

Group C. Soils having a slow infiltration rate when thoroughly wet. These consist chiefly of soils having a layer that impedes the downward movement of water or soils of moderately fine texture or fine texture. These soils have a slow rate of water transmission.

Group D. Soils having a very slow infiltration rate (high runoff potential) when thoroughly wet. These consist chiefly of clays that have a high shrink-swell potential, soils that have a high water table, soils that have a claypan or clay layer at or near the surface, and soils that are shallow over nearly impervious material. These soils have a very slow rate of water transmission.

If a soil is assigned to a dual hydrologic group (A/D, B/D, or C/D), the first letter is for drained areas and the second is for undrained areas. Only the soils that in their natural condition are in group D are assigned to dual classes.

Rating Options

Aggregation Method: Dominant Condition

Component Percent Cutoff: None Specified

Tie-break Rule: Higher

National Flood Hazard Layer FIRMette

FEMA

77°9'17"W 34°42'20"N

77°8'40"W 34°41'50"N

0 250 500 1,000 1,500 2,000 Feet

1:6,000

Basemap: USGS National Map: Orthoimagery: Data refreshed October, 2020

Legend

SEE FIS REPORT FOR DETAILED LEGEND AND INDEX MAP F UT

SPECIAL FLOOD HAZARD AREAS	Without Base Flood Elevation (BFE) *Zone A, V, A99*
	With BFE or Depth *Zone AE, AO, AH, VE, AR*
	Regulatory Floodway
OTHER AREAS OF FLOOD HAZARD	0.2% Annual Chance Flood Hazard, Areas of 1% annual chance flood with average depth less than one foot or with drainage areas of less than one square mile *Zone X*
	Future Conditions 1% Annual Chance Flood Hazard *Zone X*
	Area with Reduced Flood Risk due to Levee. See Notes. *Zone X*
	Area with Flood Risk due to Levee *Zone D*
OTHER AREAS	NO SCREEN Area of Minimal Flood Hazard *Zone X*
	Effective LOMRs
	Area of Undetermined Flood Hazard *Zone D*
GENERAL STRUCTURES	Channel, Culvert, or Storm Sewer
	Levee, Dike, or Floodwall
OTHER FEATURES	20.2 Cross Sections with 1% Annual Chance
	17.5 Water Surface Elevation
	Coastal Transect
	513 Base Flood Elevation Line (BFE)
	Limit of Study
	Jurisdiction Boundary
	Coastal Transect Baseline
	Profile Baseline
	Hydrographic Feature
MAP PANELS	Digital Data Available
	No Digital Data Available
	Unmapped

N

The pin displayed on the map is an approximate point selected by the user and does not represent an authoritative property location.

This map complies with FEMA's standards for the use of digital flood maps if it is not void as described below. The basemap shown complies with FEMA's basemap accuracy standards

The flood hazard information is derived directly from the authoritative NFHL web services provided by FEMA. This map was exported on 4/7/2022 at 5:50 PM and does not reflect changes or amendments subsequent to this date and time. The NFHL and effective information may change or become superseded by new data over time.

This map image is void if the one or more of the following map elements do not appear: basemap imagery, flood zone labels, legend, scale bar, map creation date, community ide FIRM panel number, and FIRM effective date. Map im unmapped and unmodernized areas cannot be used regulatory purposes.

Item II - a.

NOAA Atlas 14, Volume 2, Version 3
Location name: Swansboro, North Carolina, USA*
Latitude: 34.6927°, Longitude: -77.1292°
Elevation: 24.81 ft**
* source: ESRI Maps
** source: USGS

POINT PRECIPITATION FREQUENCY ESTIMATES

G.M. Bonnin, D. Martin, B. Lin, T. Parzybok, M.Yekta, and D. Riley

NOAA, National Weather Service, Silver Spring, Maryland

PF_tabular | PF_graphical | Maps_&_aerials

PF tabular

PDS-based point precipitation frequency estimates with 90% confidence intervals (in inches/hour)[1]

Duration	Average recurrence interval (years)									
	1	2	5	10	25	50	100	200	500	1000
5-min	**5.86** (5.41-6.37)	**6.89** (6.37-7.46)	**7.94** (7.33-8.60)	**8.94** (8.23-9.68)	**10.1** (9.24-10.9)	**11.0** (10.1-11.9)	**11.9** (10.8-12.9)	**12.9** (11.6-13.9)	**14.0** (12.5-15.2)	**15.0** (13.3-16.4)
10-min	**4.68** (4.33-5.09)	**5.51** (5.09-5.97)	**6.36** (5.87-6.89)	**7.15** (6.58-7.75)	**8.04** (7.36-8.70)	**8.78** (8.02-9.50)	**9.49** (8.61-10.3)	**10.2** (9.17-11.0)	**11.1** (9.89-12.0)	**11.8** (10.5-12.9)
15-min	**3.90** (3.60-4.24)	**4.62** (4.27-5.00)	**5.36** (4.95-5.81)	**6.03** (5.55-6.53)	**6.80** (6.22-7.35)	**7.41** (6.76-8.02)	**7.99** (7.26-8.66)	**8.56** (7.72-9.29)	**9.29** (8.30-10.1)	**9.90** (8.76-10.8)
30-min	**2.67** (2.47-2.90)	**3.19** (2.95-3.45)	**3.81** (3.51-4.13)	**4.37** (4.02-4.73)	**5.03** (4.61-5.44)	**5.58** (5.09-6.04)	**6.12** (5.56-6.63)	**6.67** (6.01-7.23)	**7.39** (6.60-8.04)	**8.01** (7.10-8.74)
60-min	**1.67** (1.54-1.81)	**2.00** (1.85-2.17)	**2.44** (2.25-2.65)	**2.85** (2.62-3.08)	**3.35** (3.07-3.62)	**3.78** (3.45-4.09)	**4.22** (3.83-4.57)	**4.68** (4.21-5.07)	**5.30** (4.74-5.77)	**5.85** (5.18-6.38)
2-hr	**1.02** (0.935-1.11)	**1.23** (1.13-1.35)	**1.54** (1.42-1.69)	**1.84** (1.68-2.00)	**2.22** (2.02-2.42)	**2.57** (2.32-2.79)	**2.92** (2.63-3.18)	**3.31** (2.96-3.60)	**3.86** (3.41-4.21)	**4.35** (3.81-4.76)
3-hr	**0.733** (0.671-0.809)	**0.887** (0.813-0.977)	**1.12** (1.02-1.23)	**1.34** (1.22-1.47)	**1.64** (1.49-1.80)	**1.91** (1.72-2.09)	**2.20** (1.97-2.41)	**2.53** (2.24-2.76)	**2.99** (2.62-3.28)	**3.42** (2.96-3.76)
6-hr	**0.447** (0.407-0.497)	**0.540** (0.492-0.601)	**0.682** (0.618-0.758)	**0.818** (0.739-0.909)	**1.00** (0.903-1.12)	**1.18** (1.05-1.30)	**1.36** (1.20-1.50)	**1.57** (1.37-1.73)	**1.87** (1.61-2.06)	**2.14** (1.83-2.37)
12-hr	**0.262** (0.237-0.295)	**0.317** (0.287-0.356)	**0.403** (0.363-0.451)	**0.486** (0.436-0.544)	**0.601** (0.535-0.672)	**0.708** (0.625-0.789)	**0.824** (0.721-0.917)	**0.954** (0.826-1.06)	**1.15** (0.977-1.28)	**1.33** (1.11-1.48)
24-hr	**0.153** (0.139-0.169)	**0.186** (0.169-0.206)	**0.240** (0.218-0.266)	**0.286** (0.259-0.317)	**0.356** (0.319-0.393)	**0.416** (0.370-0.459)	**0.483** (0.426-0.533)	**0.557** (0.485-0.615)	**0.670** (0.572-0.743)	**0.768** (0.646-0.855)
2-day	**0.089** (0.080-0.099)	**0.107** (0.097-0.120)	**0.138** (0.125-0.154)	**0.164** (0.148-0.183)	**0.204** (0.182-0.227)	**0.239** (0.211-0.265)	**0.278** (0.243-0.309)	**0.321** (0.278-0.358)	**0.388** (0.329-0.434)	**0.445** (0.371-0.501)
3-day	**0.063** (0.057-0.070)	**0.076** (0.069-0.084)	**0.097** (0.088-0.108)	**0.115** (0.104-0.127)	**0.142** (0.127-0.156)	**0.164** (0.146-0.182)	**0.190** (0.167-0.210)	**0.218** (0.190-0.242)	**0.261** (0.223-0.291)	**0.299** (0.251-0.335)
4-day	**0.050** (0.045-0.055)	**0.060** (0.055-0.067)	**0.077** (0.070-0.085)	**0.090** (0.082-0.100)	**0.110** (0.099-0.121)	**0.127** (0.114-0.140)	**0.146** (0.129-0.161)	**0.166** (0.146-0.184)	**0.198** (0.171-0.220)	**0.225** (0.191-0.252)
7-day	**0.033** (0.030-0.036)	**0.040** (0.037-0.044)	**0.050** (0.046-0.055)	**0.059** (0.053-0.064)	**0.071** (0.064-0.077)	**0.081** (0.073-0.089)	**0.092** (0.082-0.101)	**0.104** (0.092-0.114)	**0.121** (0.106-0.134)	**0.136** (0.117-0.151)
10-day	**0.026** (0.024-0.028)	**0.031** (0.029-0.034)	**0.039** (0.035-0.042)	**0.045** (0.041-0.049)	**0.054** (0.049-0.059)	**0.061** (0.055-0.067)	**0.069** (0.062-0.075)	**0.077** (0.069-0.085)	**0.090** (0.079-0.099)	**0.100** (0.086-0.111)
20-day	**0.017** (0.016-0.019)	**0.021** (0.019-0.022)	**0.025** (0.023-0.027)	**0.029** (0.027-0.031)	**0.034** (0.031-0.037)	**0.038** (0.035-0.041)	**0.043** (0.039-0.046)	**0.048** (0.043-0.052)	**0.054** (0.048-0.059)	**0.060** (0.052-0.066)
30-day	**0.014** (0.013-0.015)	**0.017** (0.016-0.018)	**0.020** (0.019-0.022)	**0.023** (0.021-0.025)	**0.027** (0.025-0.029)	**0.030** (0.027-0.032)	**0.033** (0.030-0.036)	**0.036** (0.033-0.039)	**0.041** (0.037-0.044)	**0.044** (0.039-0.048)
45-day	**0.012** (0.011-0.013)	**0.014** (0.013-0.015)	**0.017** (0.016-0.018)	**0.019** (0.018-0.020)	**0.022** (0.020-0.024)	**0.025** (0.023-0.026)	**0.027** (0.025-0.029)	**0.030** (0.027-0.032)	**0.034** (0.030-0.037)	**0.037** (0.033-0.040)
60-day	**0.011** (0.010-0.012)	**0.013** (0.012-0.014)	**0.015** (0.014-0.016)	**0.017** (0.016-0.018)	**0.019** (0.018-0.021)	**0.021** (0.020-0.023)	**0.023** (0.021-0.025)	**0.025** (0.023-0.027)	**0.028** (0.025-0.030)	**0.030** (0.027-0.033)

[1] Precipitation frequency (PF) estimates in this table are based on frequency analysis of partial duration series (PDS).

Numbers in parenthesis are PF estimates at lower and upper bounds of the 90% confidence interval. The probability that precipitation frequency estimates (for a given duration and average recurrence interval) will be greater than the upper bound (or less than the lower bound) is 5%. Estimates at upper bounds are not checked against probable maximum precipitation (PMP) estimates and may be higher than currently valid PMP values.

Please refer to NOAA Atlas 14 document for more information.

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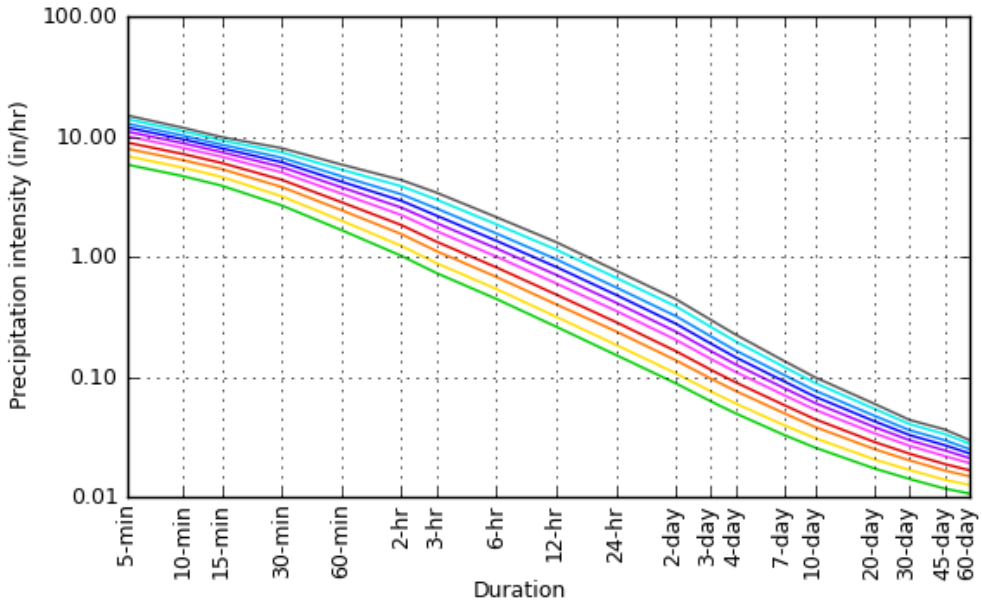
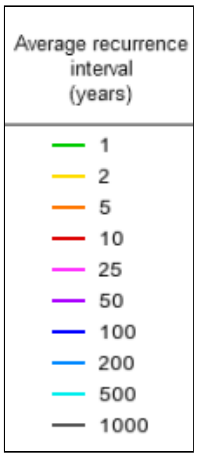
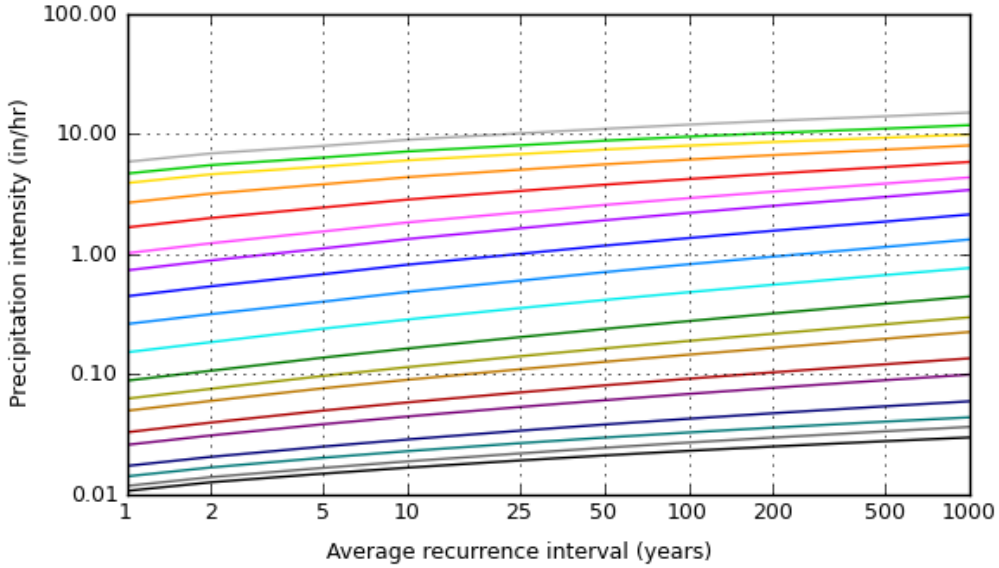
PF graphical

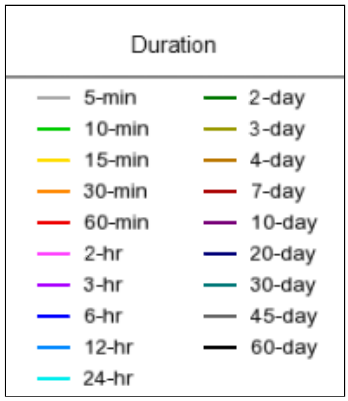
Item II - a.

PDS-based intensity-duration-frequency (IDF) curves
Latitude: 34.6927°, Longitude: -77.1292°









NOAA Atlas 14, Volume 2, Version 3

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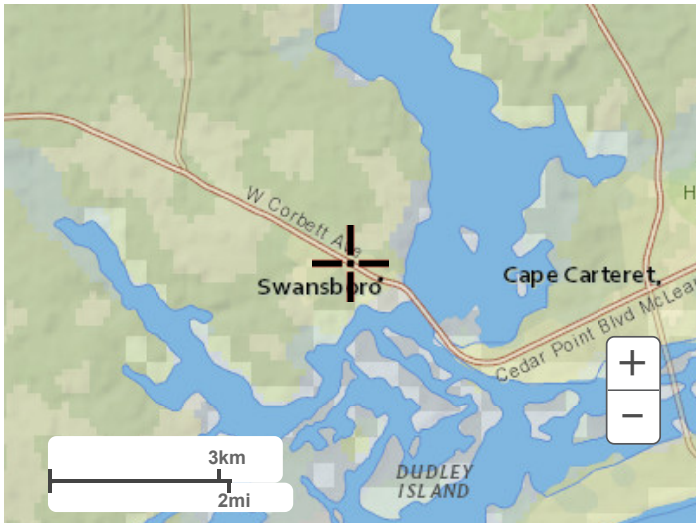
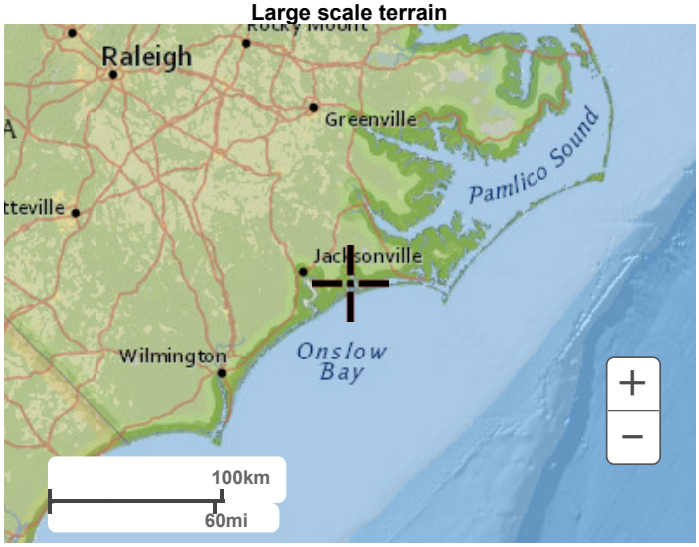
Maps & aerials

Small scale terrain

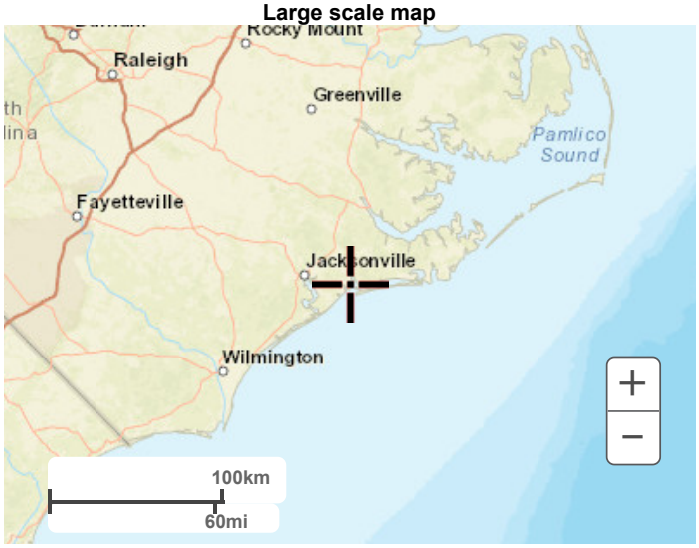
Item II - a.



Large scale terrain

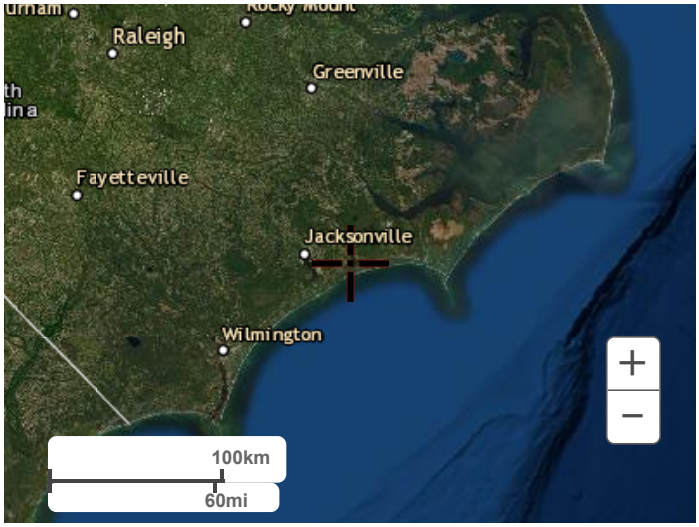


Large scale map



Large scale aerial

Item II - a.



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US Department of Commerce
National Oceanic and Atmospheric Administration
National Weather Service
National Water Center
1325 East West Highway
Silver Spring, MD 20910
Questions?: HDSC.Questions@noaa.gov

Disclaimer

Table 1: Rational Runoff Coefficients by Land Use
(ASCE 1975, Viessman, et al. 1996, and Malcom 1999)

Description of Surface	Rational Runoff Coefficient, C
Unimproved Areas	0.35
Asphalt	0.95
Concrete	0.95
Brick	0.85
Roofs, inclined	1.00
Roofs, flat	0.90
Lawns, sandy soil, flat (<2%)	0.10
Lawns, sandy soil, average (2-7%)	0.15
Lawns, sandy soil, steep (>7%)	0.20
Lawns, heavy soil, flat (<2%)	0.15
Lawns, heavy soil, average (2-5%)	0.20
Lawns, heavy soil, steep (>7%)	0.30
Wooded areas	0.15

The rainfall intensity in inches per hour, I, can be obtained from the NOAA web site. From this web site, select from one of NOAA's numerous data stations throughout the state and select "precipitation intensity." This will open a table that displays precipitation intensity estimates for various annual return intervals (ARIs) (one year through 1,000 years) and various storm durations (5 minutes through 60 days). The requirements of the applicable stormwater program will determine the appropriate values for ARI and storm duration. If the design is for a level spreader that is receiving runoff directly from the drainage area, then the value for I should simply be one inch per hour (more information on level spreader design in Chapter 8).

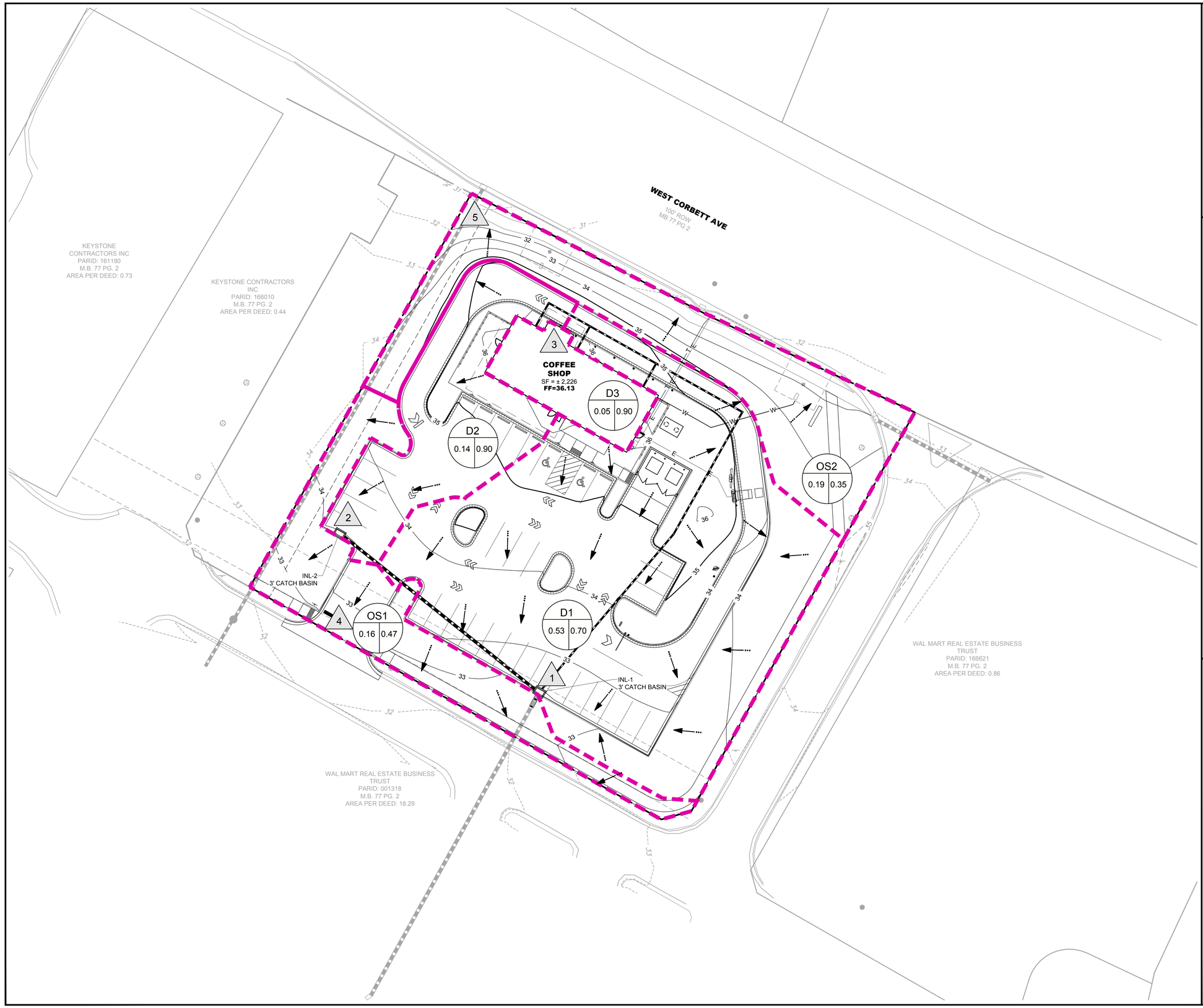
Simple Method for Runoff Volume

$$R_V = 0.05 + 0.9 * I_A$$

Where:
R_V = Runoff coefficient (unitless)
I_A = Impervious fraction (unitless)

$$DV = 3630 * R_D * R_V * A$$

Where:
DV = Design volume (cu ft)
R_D = Design storm depth (in)
A = Drainage area (ac)



BASIN SUMMARY TABLE			
Basin Designation	Area (ac)	Q_2 (cfs)	Q_{100} (cfs)
D1	0.53	2.55	4.41
D2	0.14	0.85	1.47
D3	0.05	0.32	0.55
OS1	0.16	0.51	0.89
OS2	0.19	0.47	0.80

LEGEND

BASIN DESIGNATION — D1
BASIN AREA (ACRES) — #### | ####
COMPOSITE RUNOFF COEFFICIENT

1 — DESIGN POINT
DRAINAGE BASIN BOUNDARY
PROPOSED MAJOR CONTOUR
PROPOSED MINOR CONTOUR
EXISTING MAJOR CONTOUR
EXISTING MINOR SEWER

0 20' 40'
1" = 20' (HORIZONTAL)

CAGE CIVIL ENGINEERING

REV. NO.	DESCRIPTION	DATE

VAQUERO SWANSBORO PARTNERS, LP

COFFEE SHOP

PROPOSED DRAINGE MAP

1117 WEST CORBETT AVENUE
SWANSBORO, NORTH CAROLINA

PROJ NO: 220055
ENG : RAK
DATE : 04/08/2022

SHEET NUMBER
DM1
1 OF 1

Project: Starbucks
Location: Swansboro, NC
Designer: RAK
Date: 4/13/2022
Latest Revision: 4/13/2022

[1]From Table 1 of the NCDEQ Stormwater Design Manual

IMPERVIOUSNESS AND RUNOFF COEFFICIENT CALCULATIONS

				Roofs	Lawn, Sandy Soil, Average	Asphalt/ Concrete		
			Impervious %	90%	2%	100%		
			Runoff Coefficients, C[1]	0.90	0.30	0.95		
Basin Designation	NRCS Hydrologic Soil Group	Total Area (ac)	Total Area (sf)	Roofs (sf)	Lawn (sf)	Pavement (sf)	Percent Impervious	Composite Runoff Coefficients, C
D1	A	0.53	23,011	0	8,785	14,226	62.59%	0.70
D2	A	0.14	6,014	0	503	5,511	91.80%	0.90
D3	A	0.05	2,225	2,225	0	0	90.00%	0.90
OS1	A	0.16	6,968	0	5,184	1,784	27.09%	0.47
OS2	A	0.19	8,406	0	7,761	645	9.52%	0.35
Overall		**1.07**	**46,624**	**2,225**	**22,233**	**22,166**	52.79%	0.57

Total Impervious Area = **24,391**

Project: Starbucks
Location: Swansboro, NC
Designer: RAK
Date: 4/13/2022
Latest Revision: 4/13/2022

Design Storm: 2-Yr

2-YEAR PEAK RUNOFF CALCULATIONS

Basin Designation	Design Point	Area (ac)	C	C X A	T_c (min)	Intensity (in/hr)	Peak Flow, Q (cfs)
D1	1	0.53	0.70	0.37	5.00	6.89	2.55
D2	2	0.14	0.90	0.12	5.00	6.89	0.85
D3	3	0.05	0.90	0.05	5.00	6.89	0.32
OS1	4	0.16	0.47	0.07	5.00	6.89	0.51
OS2	5	0.19	0.35	0.07	5.00	6.89	0.47

Project: Starbucks
Location: Swansboro, NC
Designer: RAK
Date: 4/13/2022
Latest Revision: 4/13/2022

Design Storm: 100-Yr

100-YEAR PEAK RUNOFF CALCULATIONS

Basin Designation	Design Point	Area (ac)	C	C X A	T_c (min)	Intensity (in/hr)	Peak Flow, Q (cfs)
D1	1	0.53	0.70	0.37	5.00	11.90	4.41
D2	2	0.14	0.90	0.12	5.00	11.90	1.47
D3	3	0.05	0.90	0.05	5.00	11.90	0.55
OS1	4	0.16	0.47	0.07	5.00	11.90	0.89
OS2	5	0.19	0.35	0.07	5.00	11.90	0.80

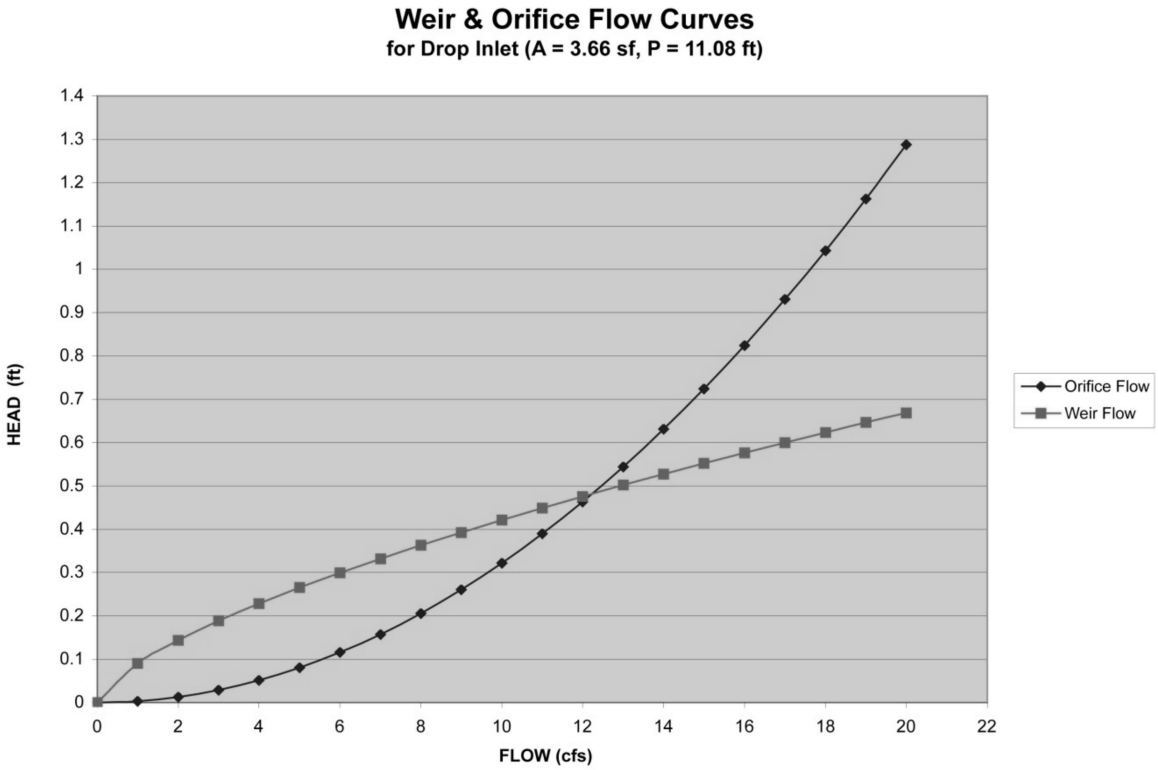


Figure 4-2 Standard Drop Inlet Grate NCDOT Std. 840.16 (2012)

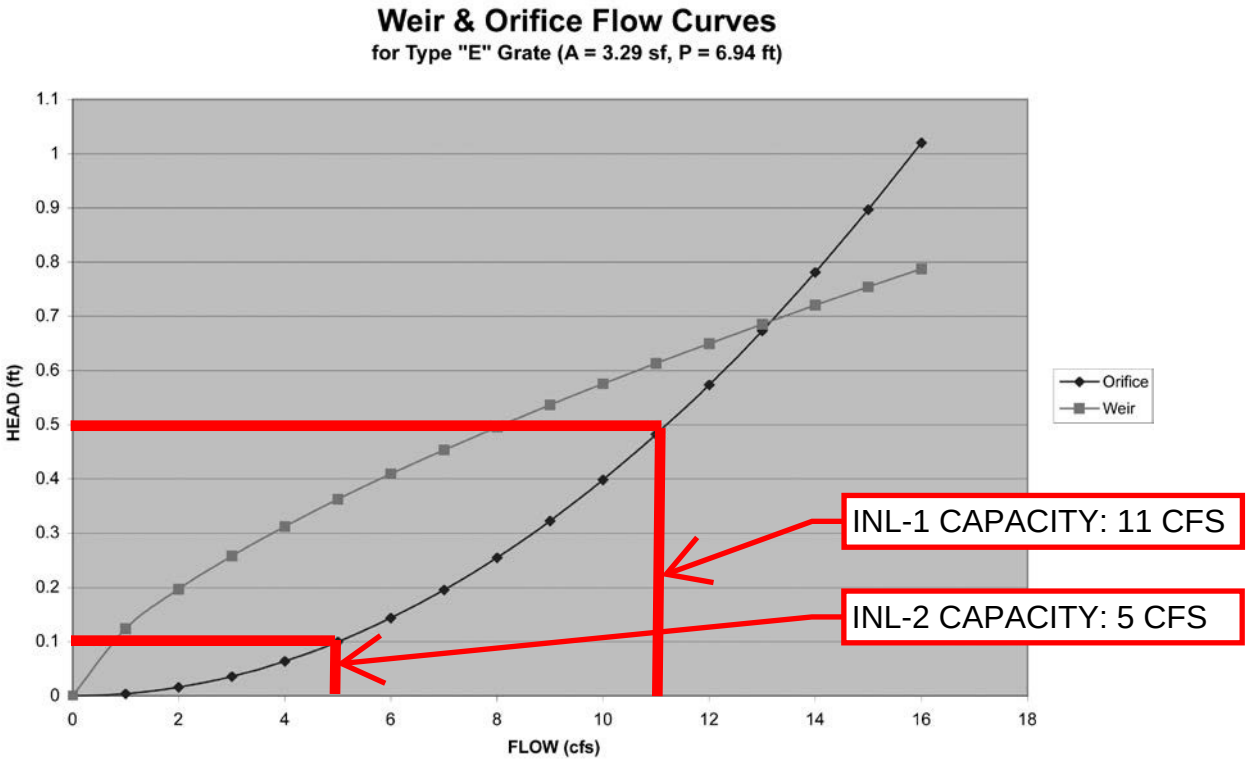


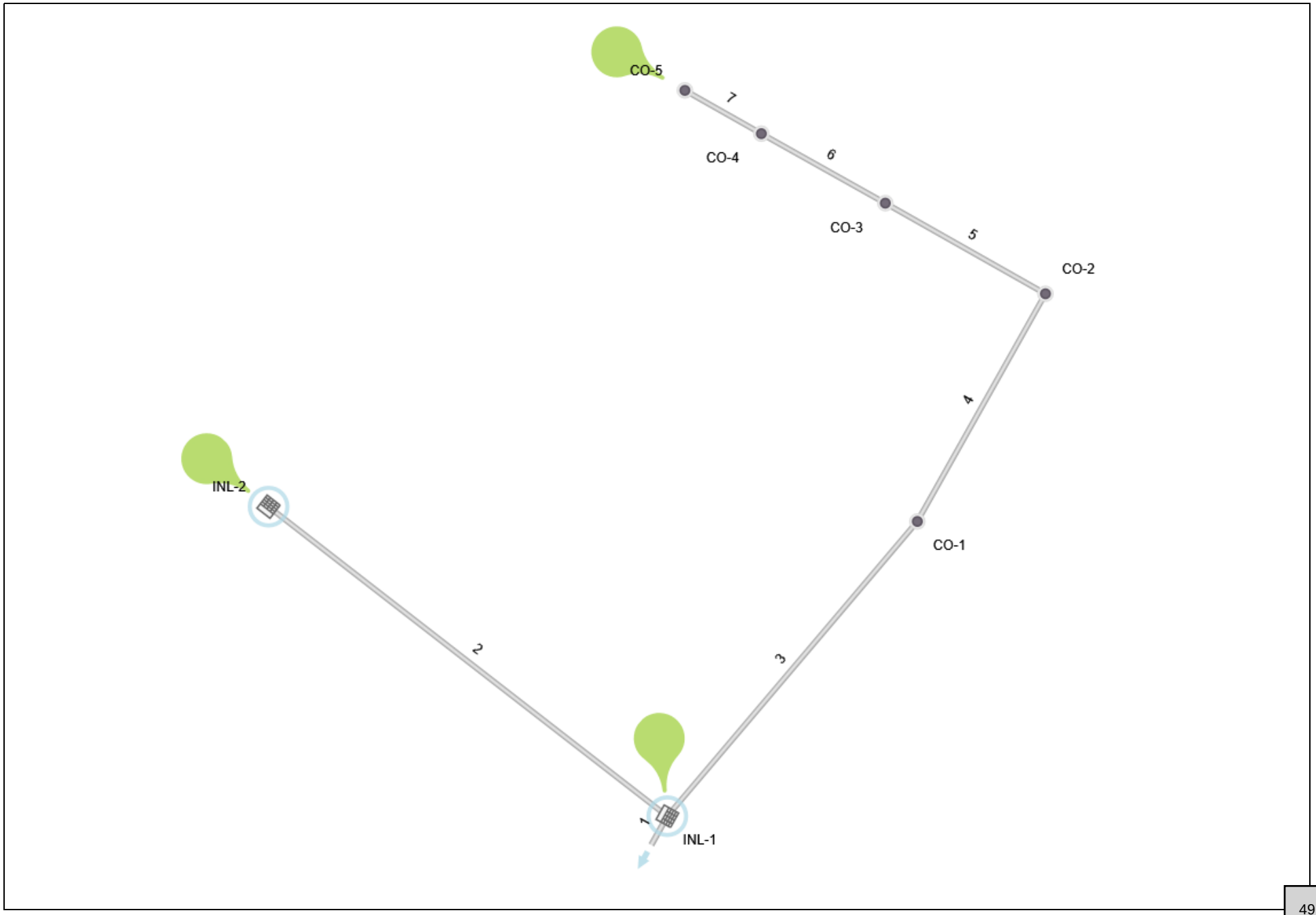
Figure 4-3 Type 'E' Grate NCDOT Std. 840.03 (2012)

Plan View

Stormwater Studio 2022 v 3.0.0.29

Project Name: Starbucks - Sw

04-06-2022

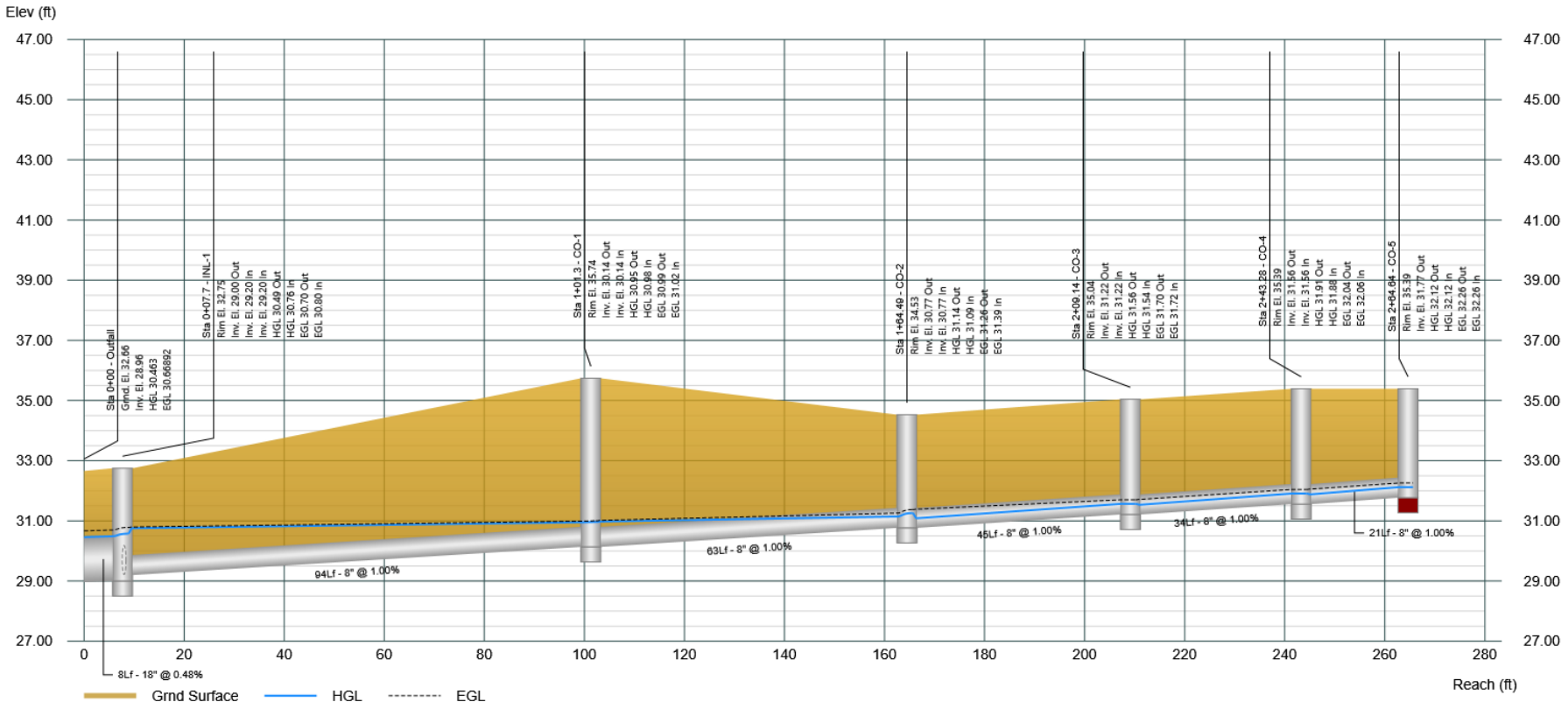


Profile View

Stormwater Studio 2022 v 3.0.0.29

Project Name: Starbucks - Sw

04-13-2022

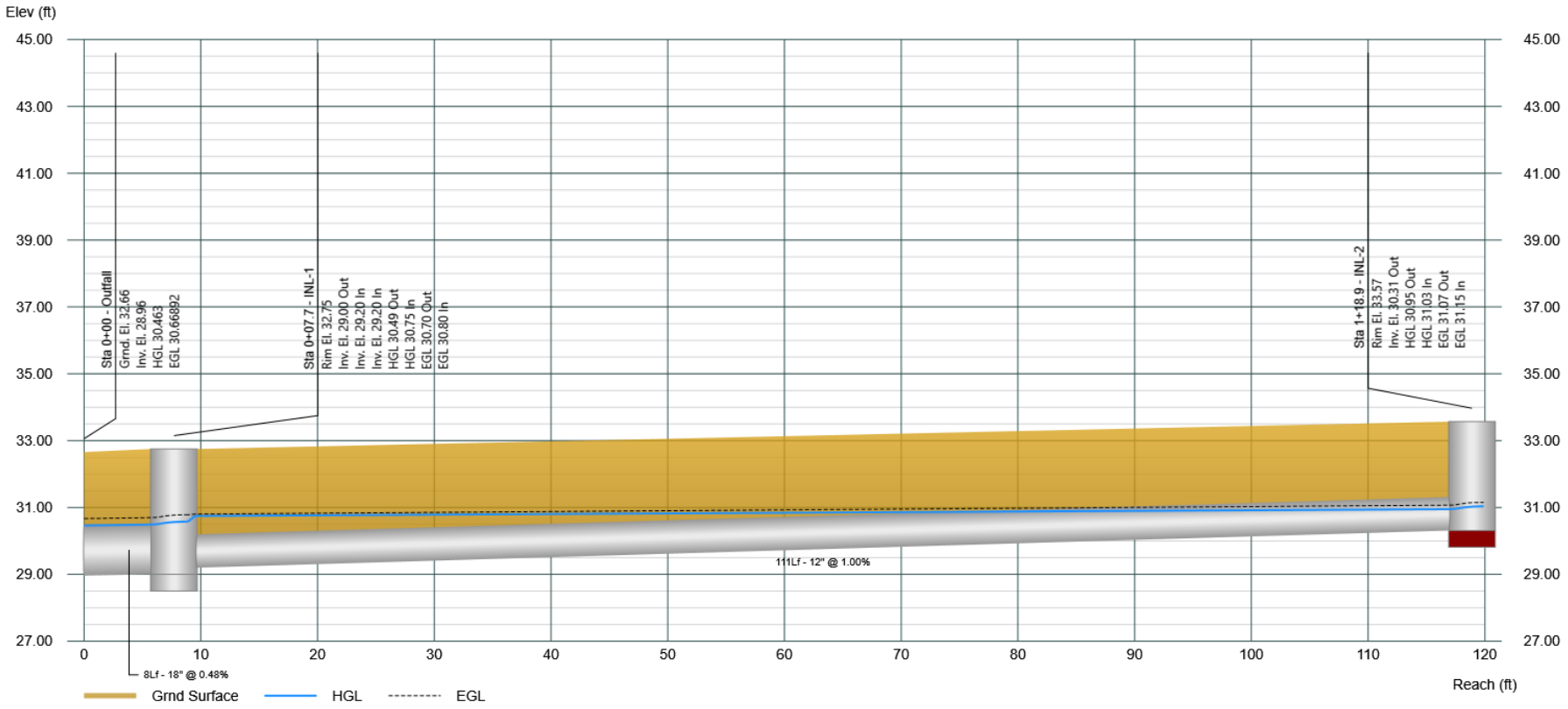


Profile View

Stormwater Studio 2022 v 3.0.0.29

Project Name: Starbucks - Sw

04-13-2022



100-YEAR Report

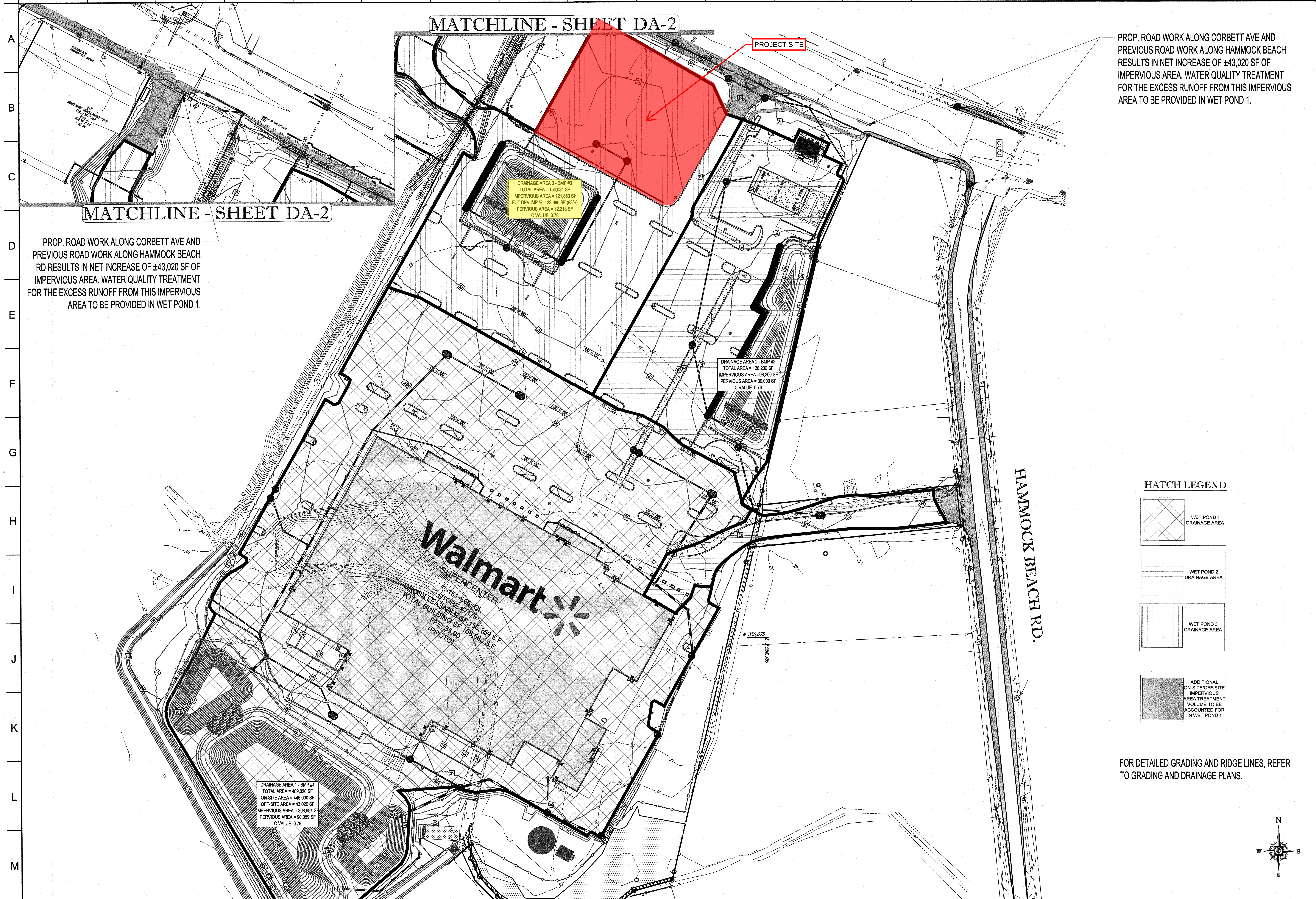
Project Name: Starbucks - Sw

Stormwater Studio 2022 v 3.0.0.29

04-13-2022

Line No.	Inlet ID	Line Length (ft)	Line Size (in)	Line Slope (ft/ft)	Flow Rate (cfs)	Capac. Full (cfs)	Vel Ave (ft/s)	Invert Up (ft)	Invert Dn (ft)	Grnd/Rim Elev Up (ft)	Grnd/Rim Elev Dn (ft)	HGL Up (ft)	HGL Dn (ft)	
1	INL-1	7.70	18	0.0048	6.43	7.28	3.64	29.00	28.96	32.75	32.66	30.49	30.46	
2	INL-2	111.20	12	0.01	1.47	3.56	2.32	30.31	29.20	33.57	32.75	30.95	30.75	
3	CO-1	93.60	8	0.01	0.55	1.21	1.58	30.14	29.20	35.74	32.75	30.95	30.76	
4	CO-2	63.19	8	0.01	0.55	1.21	2.14	30.77	30.14	34.53	35.74	31.14	30.98	
5	CO-3	44.65	8	0.01	0.55	1.21	3.13	31.22	30.77	35.04	34.53	31.56	31.09	
6	CO-4	34.15	8	0.01	0.55	1.21	3.12	31.56	31.22	35.39	35.04	31.91	31.54	
7	CO-5	21.36	8	0.01	0.55	1.21	3.10	31.77	31.56	35.39	35.39	32.12	31.88	

Notes: IDF File = SampleIDF.idf, Return Period = 2-yrs.



GENERAL NOTE:
IT IS THE RESPONSIBILITY OF THE CONTRACTOR TO REVIEW ALL OF THE DRAWINGS AND SPECIFICATIONS ASSOCIATED WITH THIS PROJECT WORK SCOPE PRIOR TO THE INITIATION OF CONSTRUCTION. SHOULD THE CONTRACTOR FIND A CONFLICT WITH THE DOCUMENTS RELATIVE TO THE SPECIFICATIONS OR APPLICABLE CODES, IT IS THE CONTRACTOR'S RESPONSIBILITY TO NOTIFY THE PROJECT ENGINEER OF RECORD IN WRITING PRIOR TO THE START OF CONSTRUCTION. FAILURE BY THE CONTRACTOR TO NOTIFY THE PROJECT ENGINEER SHALL CONSTITUTE ACCEPTANCE OF FULL RESPONSIBILITY BY THE CONTRACTOR TO COMPLETE THE SCOPE OF THE WORK AS DEFINED BY THE DRAWINGS AND IN FULL CONFORMANCE WITH LOCAL REGULATIONS AND CODES.

H:\2013\NCC138078\DRAWINGS\PLAN SETS\PLAN SET (DRIVEWAY EXTENSION)\NCC138078HP0.DWG PRINTED BY: RBRELAND 7.08.19 @ 9:56 AM LAST SAVED BY: RBRELAND

	REVISIONS	BY
1	NCDOT REVISIONS 4/2/19	RJB
2	NCDOT REVISIONS 5/21/19	RJB
3	TRC REVISIONS 6/7/19	RJB
4	TRC REVISIONS 6/19/19	RJB
5	BID SUBMISSION 6/21/19	RJB
6	SWPPP SUBMISSION 6/26/19	RJB

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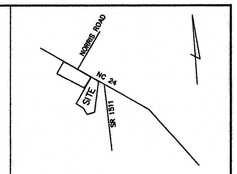
POST-DEVELOPMENT DRAINAGE AREAS

WALMART SUPERCENTER #7179-000
1121 WEST CORBETT AVENUE
SWANSBORO, ONSLOW COUNTY, NORTH CAROLINA

WAL-MART REAL ESTATE BUSINESS TRUST
BENTONVILLE, AR

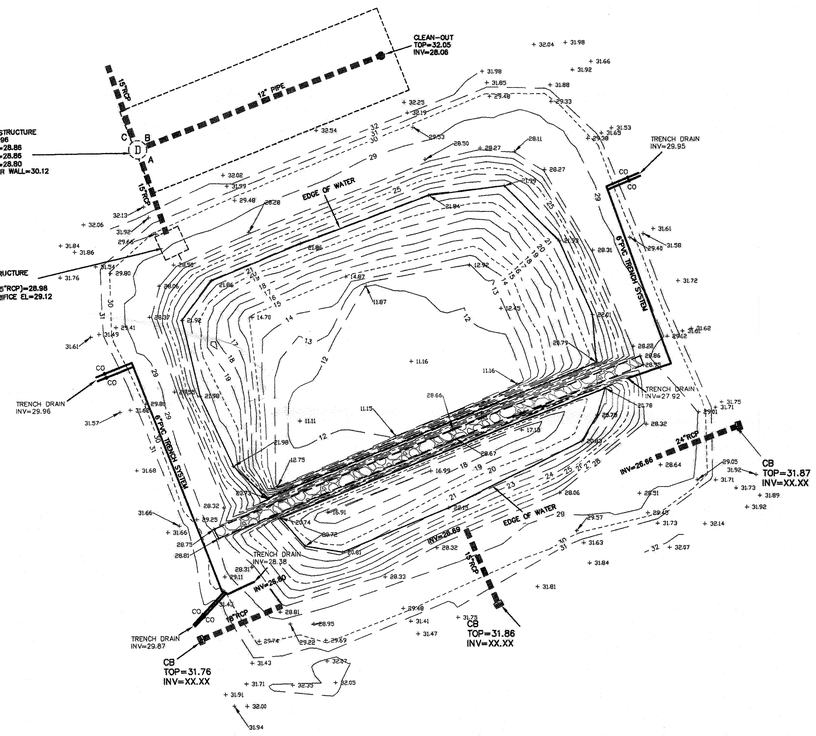
Walmart

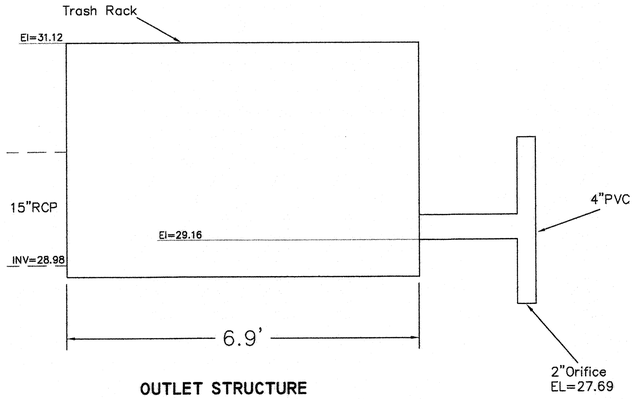
DRAWN	BAB
CHECKED	MAT
DATE	4/2/19
SCALE	1"=60'
JOB No.	NCC138078
SHEET	DA-2



VICINITY SKETCH
NOT TO SCALE

LEGEND:
EIS = EXISTING IRON STAKE
SIS = SET IRON STAKE
EIP = EXISTING IRON PIPE
ECM = EXISTING CONCRETE MONUMENT
CC = CONTROL CORNER
EPK = EXISTING PK NAIL
SPK = SET PK NAIL
ENP = EXISTING NAIL
(BM) = BENCHMARK
℄ = CENTERLINE
R/W = RIGHT OF WAY
EOP = EDGE OF PAVEMENT
MBL = MINIMUM BUILDING LINE
BOC = BACK OF CURB
CO = SANITARY SEWER CLEAN-OUT
WM = WATER METER
PP = POWER POLE
LP = LIGHT POLE
PPT = POWER POLE WITH TRANSFORMER
SL = SECURITY LIGHT
GW = GUY WIRE
CB = CATCH BASIN
DI = DROP INLET
JB = JUNCTION BOX
RCP = REINFORCED CONCRETE PIPE
CMP = CORRUGATED METAL PIPE
INV = INVERT
FES = FLARED END SECTION (PIPE)
AC. = ACRE(S)
SF = SQUARE FEET
EB = ELECTRIC BOX
WV = WATER VALVE
IV = IRRIGATION VALVE
FOC = FIBER OPTIC CABLE BOX
TLB = TRAFFIC LIGHT BOX
TB = TELEPHONE BOX
NTS = NOT TO SCALE
MW = MONITORING WELL
N/F = NOW OR FORMERLY
SSMH = SANITARY SEWER MANHOLE
D&UE = DRAINAGE & UTILITY EASEMENT
DU&AE = DRAINAGE, UTILITY, & ACCESS EASEMENT
UE = UTILITY EASEMENT
FF = FINISH FLOOR
D.B., PG.= DEED BOOK, PAGE
M.B., PG.= MAP BOOK, PAGE
---UT-- = UNDERGROUND TELEPHONE LINE
---UE-- = UNDERGROUND ELECTRICAL LINE
---E--- = OVERHEAD POWERLINE
-UG- = UNDERGROUND GAS
-TS- = OVERHEAD TRAFFIC SIGNAL
-FO- = UNDERGROUND FIBER OPTIC CABLE
-O-O- = 4' CHAIN-LINK FENCE
-□-□- = 6' WOOD FENCE
-SF- = SILT FENCE
= FIRE HYDRANT
= POWER POLE
= LIGHT POLE
= SANITARY SEWER MANHOLE
HC = HANDICAP
HCPS = HANDICAP PARKING SIGN
= HANDICAP PARKING SPACE
= HANDICAP RAMP
STOP = PAINTED STOP BAR
= STOP SIGN
= GRADING LIMITS LINE & SILT FENCE LINE
CPS = COMPACT PARKING SPACE
= PROPOSED TRAFFIC FLOW
= EXISTING TRAFFIC FLOW
SBCF = STEEL BOLLARD WITH CONCRETE FILL
INT. OOO = INTERIOR LANDSCAPING
EXT. OOO = EXTERIOR LANDSCAPING
+17.47 = EXISTING SPOT ELEVATION
0.00 = PROPOSED GRADE
MEG = MATCH EXISTING GRADE
TC-0.00 = PROPOSED GRADE AT TOP OF CURB
TW-0.00 = PROPOSED GRADE AT TOP OF WALK
DBL = DRAINAGE BREAK LINE
= DOUBLE CONCRETE BLOCK FILTER
= FLARED END SECTION





OUTLET STRUCTURE
POND 3
NOT TO SCALE

RECORD DRAWING CERTIFICATION:
THIS DOCUMENT IS ISSUED FOR THE SOLE PURPOSE OF DEPICTING "AS-BUILT" FIELD CONDITIONS OF THE FACILITY(S) AND IS NOT INTENDED TO CONFIRM OR VERIFY COMPLIANCE WITH NCDENR. THE INFORMATION SHOWN IS BASED UPON A LOCATION SURVEY UNDER MY SUPERVISION PERFORMED ON 11/21/17 THRU 5/4/18.

JOHN L. PIERCE, PLS#L-2586 — DATE 5/7/18

NORTH CAROLINA PROFESSIONAL SEAL L-2586 LAND SURVEYOR JOHN L. PIERCE

WET POND RECORD DRAWING
SHOWING
POND #3
WAL-MART SWANSBORO NC
SWANSBORO TOWNSHIP, ONSLOW COUNTY, NC
PREPARED BY
JOHN L. PIERCE & ASSOCIATES, P.A.
NORTH CAROLINA LICENSE No. C-1888
405 JOHNSON BLVD. JACKSONVILLE, NC 28540
PHONE: 910-346-9800 DATE: 12/12/17
SCALE: 1"=20' F.B. , PG.
UPDATED 5-7-18 JOB # Email: BrianJ@jpnc.com

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RECEIVED JUN 22 2018

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Stantec

FINAL Swansboro Starbucks Traffic Impact Analysis

Swansboro, North Carolina

September 28, 2022

Prepared for:

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Sign-off Sheet

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Pierre Tong, PE

Reviewed by

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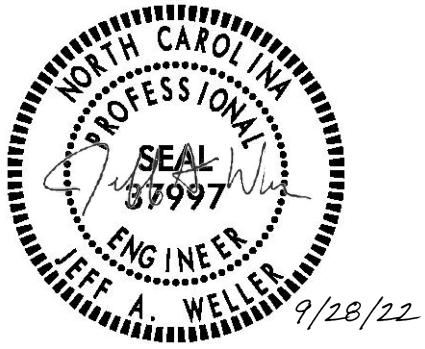
Jeff Weller, PE

Approved by Christa Greene

(signature)

Christa Greene, PE



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Executive Summary

The proposed Starbucks is included as an outparcel for the existing Walmart development located on the south side of NC 24 (West Corbett Avenue) and west of SR 1511 (Hammocks Beach Road) in Swansboro, NC. The proposed development will consist of a 2,223 square-foot coffee shop with a drive-thru and is expected to be complete in 2023.

The proposed development is expected to generate 1,186 trips per average weekday. In the AM and PM peak hours, the development is expected to generate 95 new AM peak hour trips (48 entering and 47 exiting) and 39 new PM peak hour trips (19 entering and 20 exiting). These peak hour trips would result in an approximate increase of 1.5% to the existing trips along the NC 24 corridor during the peak hours.

Access to the site is envisioned to be provided by connecting to the internal network established as part of the original Walmart development.

The purpose of this report is to evaluate the proposed development in terms of traffic conditions, evaluate the ability of the adjacent roadways to accommodate the additional traffic volumes, and recommend transportation improvements needed to mitigate congestion that may result from the additional site traffic. This report presents trip generation, trip distribution, traffic analysis, and recommendations for transportation improvements needed to meet anticipated traffic demands. This report examines the following scenarios for the AM and PM peak hours:

- 2022 Existing
- 2024 Off-season Background
- 2024 Seasonal Background
- 2024 Off-season Build
- 2024 Seasonal Build

Capacity analysis for the AM and PM peak hours in each scenario were performed for the following intersections:

- NC 24 (West Corbett Avenue) at SR 1509 (Queens Creek Road) / Swansboro Middle School Egress
- NC 24 (West Corbett Avenue) at SR 1445 (Norris Road) / Walmart Driveway 1
- NC 24 (West Corbett Avenue) at Walmart Driveway 2
- NC 24 (West Corbett Avenue) at SR 1511 (Hammocks Beach Road)

With the addition of traffic generated by the proposed development, there are no discernable differences in operations between the Background and Build scenarios for either seasonal or off-season analyses. Due to the minimal traffic impact, the existing infrastructure is able to accommodate the proposed development. Access to the internal road network should meet the design requirements in the Town of Swansboro Unified Development Ordinance.

Table ES-1 shows a summary of the capacity analysis results included in this Traffic Impact Analysis (TIA).

Table ES-1: Level of Service Summary Table

Level of Service (Delay, sec/veh)	2022 Existing		2024 No Build		2024 No Build - Seasonal Traffic		2024 Build		2024 Build - Seasonal Traffic	
	AM	PM	AM	PM	AM	PM	AM	PM	AM	PM
NC 24 & Queens Creek Road/Swansboro Middle School	C (30.2)	D (37.8)	C (33.9)	D (44.3)	D (38.3)	D (53.0)	C (34.5)	D (43.4)	D (39.4)	D (52.8)
NC 24 & Norris Road/Walmart Driveway 1	B (10.7)	B (19.9)	B (11.0)	B (18.9)	B (12.2)	C (23.7)	B (14.2)	C (21.6)	B (15.6)	C (25.3)
NC 24 & Walmart Driveway 2	B (11.0)	B (12.0)	B (11.3)	B (12.5)	B (11.5)	B (12.7)	B (11.5)	B (12.6)	B (11.7)	B (12.9)
NC 24 & Hammocks Beach Road	A (8.2)	B (10.6)	A (8.7)	B (10.2)	A (9.5)	B (12.4)	A (8.6)	B (10.5)	A (9.6)	B (12.2)

1.0 INTRODUCTION

The purpose of this report is to evaluate the transportation impacts of the proposed Starbucks outparcel development to the existing Walmart located on the south side of NC 24 (West Corbett Avenue) and west of SR 1511 (Hammocks Beach Road) in Swansboro, NC. The subject parcel is zoned B-1 – Highway Business which has the purpose of providing proper grouping of roadside business uses. This Traffic Impact Analysis (TIA) satisfies the Town of Swansboro Unified Development Ordinance (UDO) requirement of a traffic impact study for a special use permit (SUP) associated with sites expected to generate greater than 200 trips per day. The project location is shown below in Figure 1.

This report evaluates the feasibility of the adjacent transportation system to accommodate the total Build traffic demands of the proposed 2,223 square-foot coffee shop with drive-thru. The proposed development is expected to be complete during 2023 and, per the requirement in the Swansboro UDO that future year scenario analyses occur for Build year +1, the resulting future year analyses will be for 2024. Additionally, the UDO requires analyses for seasonal scenarios to determine the impacts on the adjacent transportation system during peak summer months.

Trip generation, trip distribution, and traffic analysis for the following AM and PM peak hour scenarios are included in this study:

- 2022 Existing
- 2024 Off-season Background
- 2024 Seasonal Background
- 2024 Off-season Build
- 2024 Seasonal Build

Figure 2 shows the conceptual site plan prepared by Franz Architects. An electronic copy of the site plan is provided in the appendix.

Introduction
September 28, 2022

Figure 1: Site Location

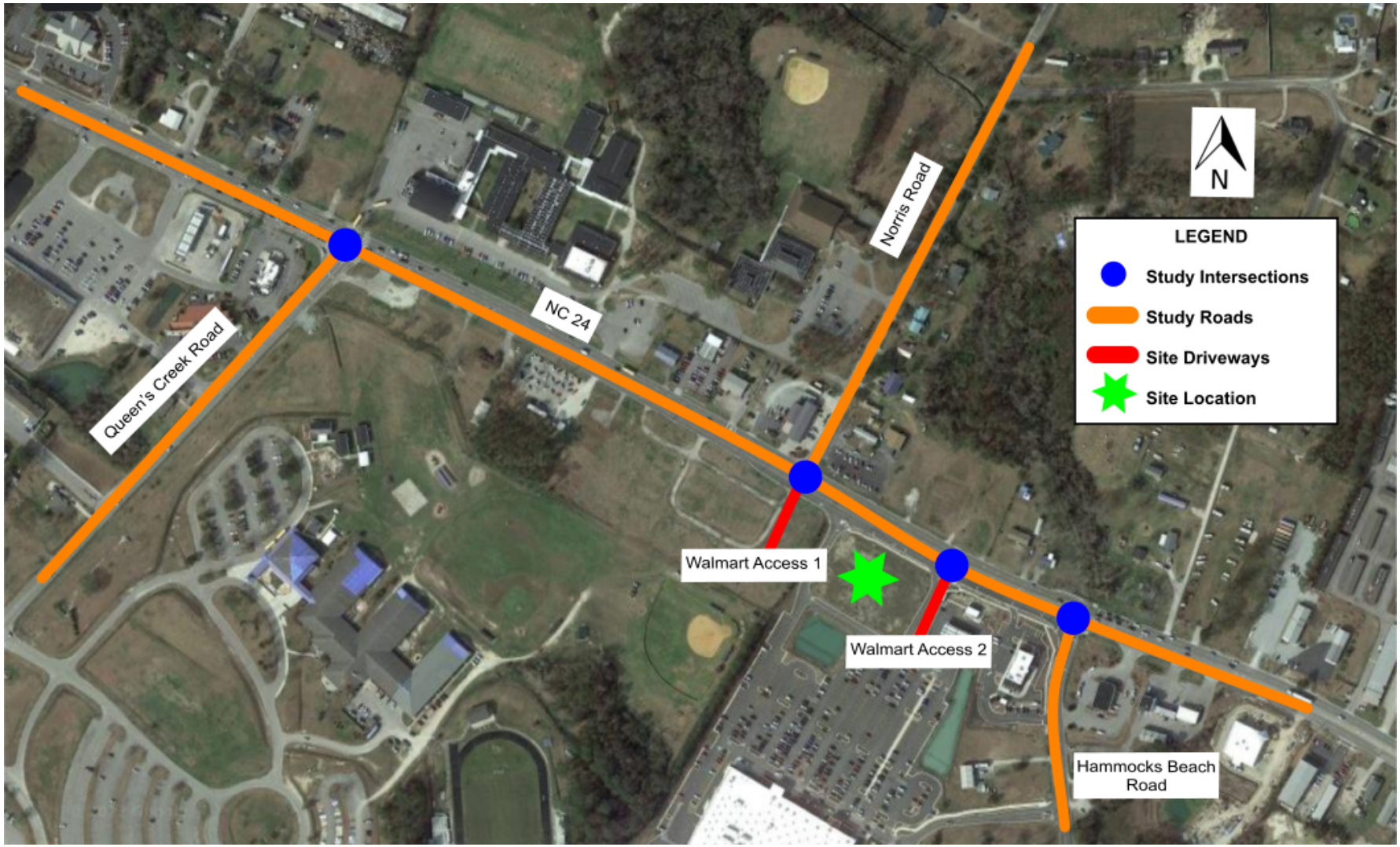
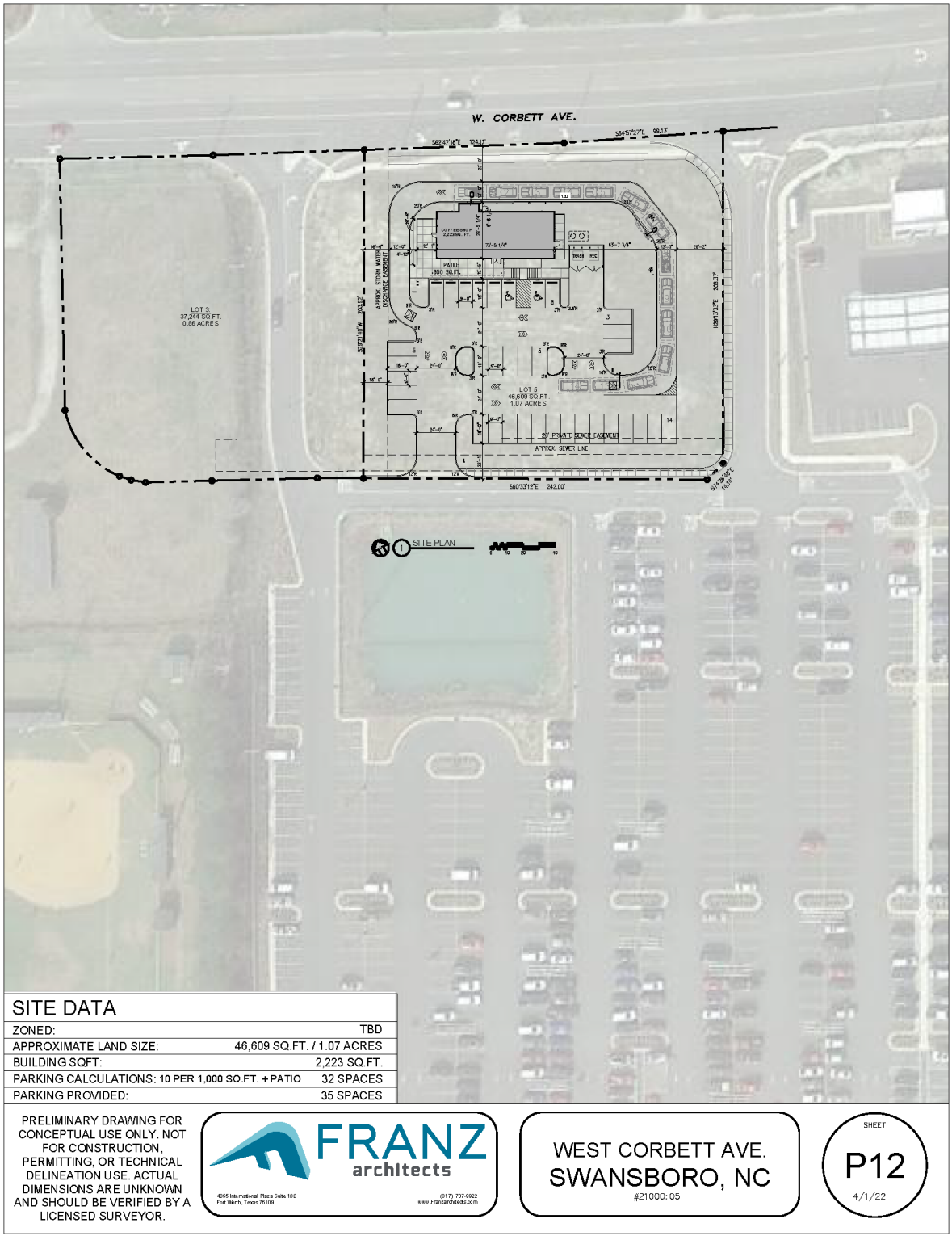


Figure 2: Site Plan



2.0 INVENTORY OF TRAFFIC CONDITIONS

2.1 STUDY AREA

Stantec coordinated with the Town of Swansboro to determine the appropriate study area and assumptions. The following intersections were agreed upon to be analyzed to determine the impacts associated with this development.

- NC 24 (West Corbett Avenue) at SR 1509 (Queens Creek Road) / Swansboro Middle School Egress
- NC 24 (West Corbett Avenue) at SR 1445 (Norris Road) / Walmart Driveway 1
- NC 24 (West Corbett Avenue) at Walmart Driveway 2
- NC 24 (West Corbett Avenue) at SR 1511 (Hammocks Beach Road)

2.2 PROPOSED ACCESS

Access to the site is envisioned to be provided by connecting to the established internal network of the Walmart development. The existing Walmart site connects to the adjacent public roadway network via Walmart Driveway 1 (located at the signalized intersection of West Corbett Avenue and Norris Road), Walmart Driveway 2 (a right-in / right-out driveway connecting to West Corbett Avenue) and Walmart Driveway 3 (a stop-controlled driveway connecting to Hammocks Beach Road).

2.3 EXISTING CONDITIONS

Table 1 provides a detailed description of the existing study area roadway network. All functional classification and average annual daily traffic (AADT) information were obtained from the North Carolina Department of Transportation (NCDOT).

Table 1: Existing Conditions

Road Name	Road Number	Primary Cross-Section	Functional Classification[1]	2020 AADT[2] (vpd)	Speed Limit (mph)	Bicycle/ Pedestrian Facilities	Maintenance Agency
West Corbett Avenue	NC 24	Four-Lane w/TWLTL	Principal Arterial	29,500	35	Limited Sidewalks	NCDOT
Queens Creek Road	SR 1509	Two-Lane w/TWLTL	Major Collector	11,000	45	None	NCDOT
Norris Road	SR 4445	Two-Lane Undivided	Local Road	-	45	None	NCDOT
Hammocks Beach Road	SR 1511	Two-Lane Undivided	Local Road	3,400	35	None	NCDOT

*TWLTL = Continuous Two-Way Left-Turn Lane

The existing lane configuration and traffic control for the study area intersections are illustrated in Figure 3.

2.4 FUTURE HIGHWAY IMPROVEMENTS

The NCDOT proposes to convert the NC 24 corridor from traditional intersections to reduced conflict intersections (RCIs) via State Transportation Improvement Program (STIP) Project R-5885. The project to convert the 3.0-mile corridor which extends beyond the study area of this analysis is currently slated to begin in FY 2027; construction is listed as Post Year and is therefore unfunded and uncommitted. The Draft 2024-2033 STIP further delays the proposed schedule and both ROW acquisition and construction are listed as Post Year. Due to the project delays and uncommitted status, it was determined that inclusion of any planned or proposed improvements associated with this project was unnecessary for the scope of this traffic study.

No approved developments were identified for the study area.

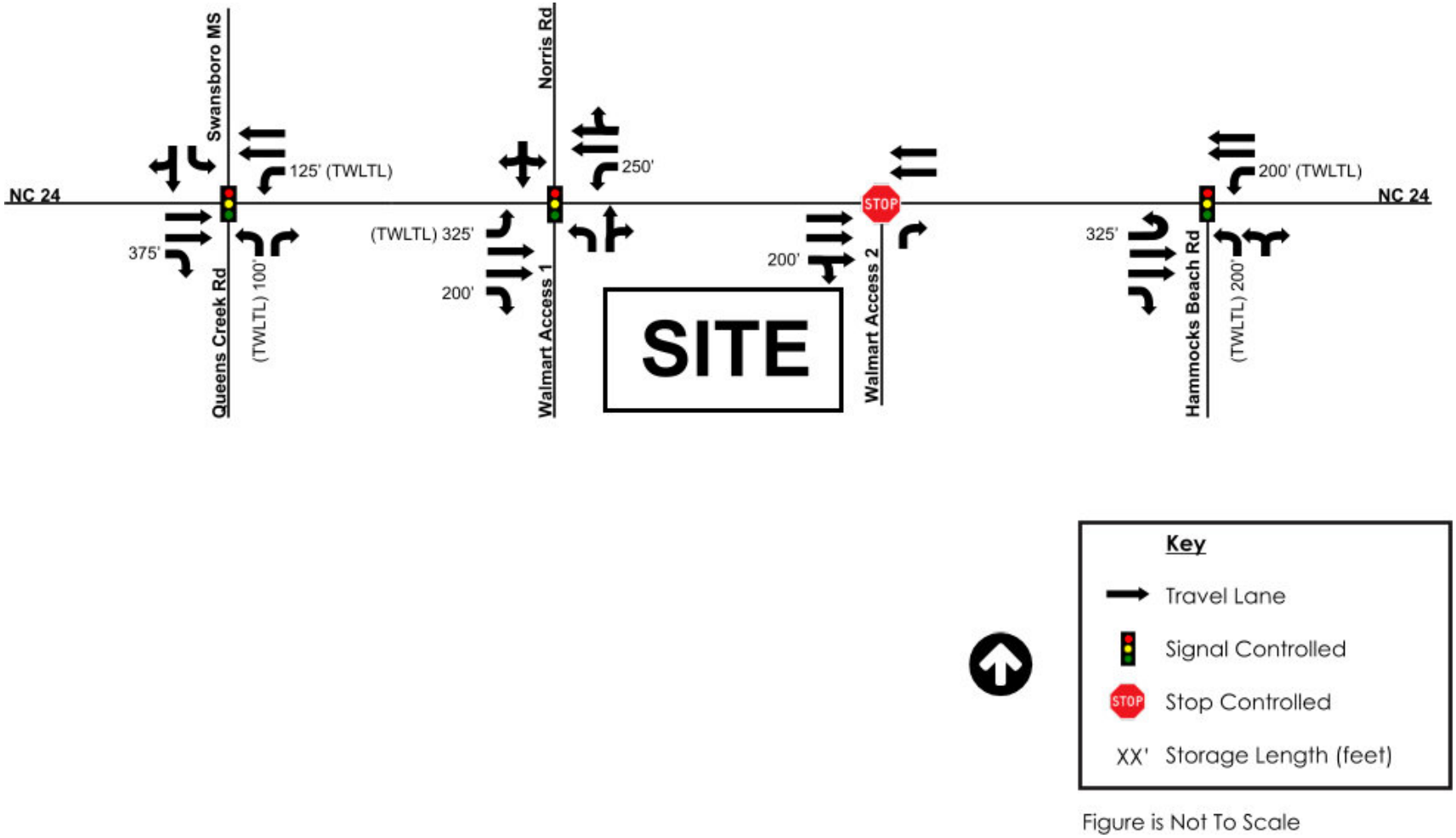
2.5 SAFETY ANALYSIS/REPORT

Crash data was obtained at the signalized study area intersections for the period of January 1, 2017 – December 31, 2021, via the Total Crash Frequency By Intersection[3] map publishing by the NCDOT Traffic Safety Unit. A total of 145 crashes were reported at these intersections and as expected, more than half (84 out of 145) are rear-end or sideswipe crashes which are often associated with congested conditions. There were a number of injury crashes during the analysis period with roughly 25% (36 out of 145) being classified as such. For reference, Table 2 below, provides definitions for each type of injury crashes. The majority of these injury crashes (29) were Type C, while the remaining 7 were classified as Type B injury crashes. No Fatalities or Type A injury crashes were reported. Additionally, a signal was installed at the intersection of NC 24 with Norris Road and incorporated a realignment of Walmart Driveway 1 during the 5-year period. It is assumed that this new signal was part of the Walmart development; however, it is expected that this signalization had a positive impact on the pattern and severity of crashes, although it is still in the evaluation period.

Table 2: Injury Classification

K	Fatality (Killed)
A	Incapacitating injury
B	Non-incapacitating injury
C	Reported injury, not evident

Figure 3: 2022 Existing Lanes and Traffic Control



3.0 TRIP GENERATION AND DISTRIBUTION

3.1 TRIP GENERATION

Table 3 below shows the number of anticipated trips that will be generated by the proposed development. These values are calculated using the 11th Edition of the Institute of Transportation Engineers Trip Generation Manual[4]. While no pass-by reductions are included in the current version of the Trip Generation Manual for this land use code, pass-by reduction rates were requested and approved as part of the scoping process for this study.

Table 3: Trip Generation

Trip Generation													
Land Use	ITE LUC	Size		Daily			AM Peak			PM Peak			
				Total	Enter	Exit	Total	Enter	Exit	Total	Enter	Exit	
Coffee/Donut Shop with Drive-Through Window	937	2.223	1000 GFA	1186	593	593	191	97	94	87	43	44	
				1186	593	593	191	97	94	87	43	44	
Pass-Bys	ITE LUC	Size		Daily			AM Peak			PM Peak			
				Total	Enter	Exit	Total	Enter	Exit	Total	Enter	Exit	
							AM Pass-Bys: 50%			PM Pass-Bys: 55%			
Coffee/Donut Shop with Drive-Through Window	937	2.223	1000 GFA				96	49	47	48	24	24	
Adjusted Trip Generation	ITE LUC	Size		Daily			AM Peak			PM Peak			
				Total	Enter	Exit	Total	Enter	Exit	Total	Enter	Exit	
Coffee/Donut Shop with Drive-Through Window	937	2.223	1000 GFA	1186	593	593	95	48	47	39	19	20	
Total Trips Generated				1186	593	593	95	48	47	39	19	20	

3.2 SITE TRIP DISTRIBUTION

To accurately determine the effect of the proposed development on the surrounding roadway network, an estimate of the expected distribution of traffic entering and exiting the site is needed. The following percentages were used in both the AM and PM peak hours:

- 50% to/from the west on NC 24
- 40% to/from the east on NC 24
- 10% to/from the south on Queen's Creek Road

These percentages were developed using a combination of existing traffic volume counts, historic average annual daily traffic (AADT) recordings provided by NCDOT, and engineering judgment.

Figure 4 shows the distribution described above as well as the turning movement percentages at each intersection and Figure 5 shows the expected pass-by distribution. Figure 6 shows the actual trips that are expected to be generated through the study area intersections and Figure 7 shows the net pass-by trips that are expected to travel through the study area intersections.

Figure 4: Site Trip Distribution

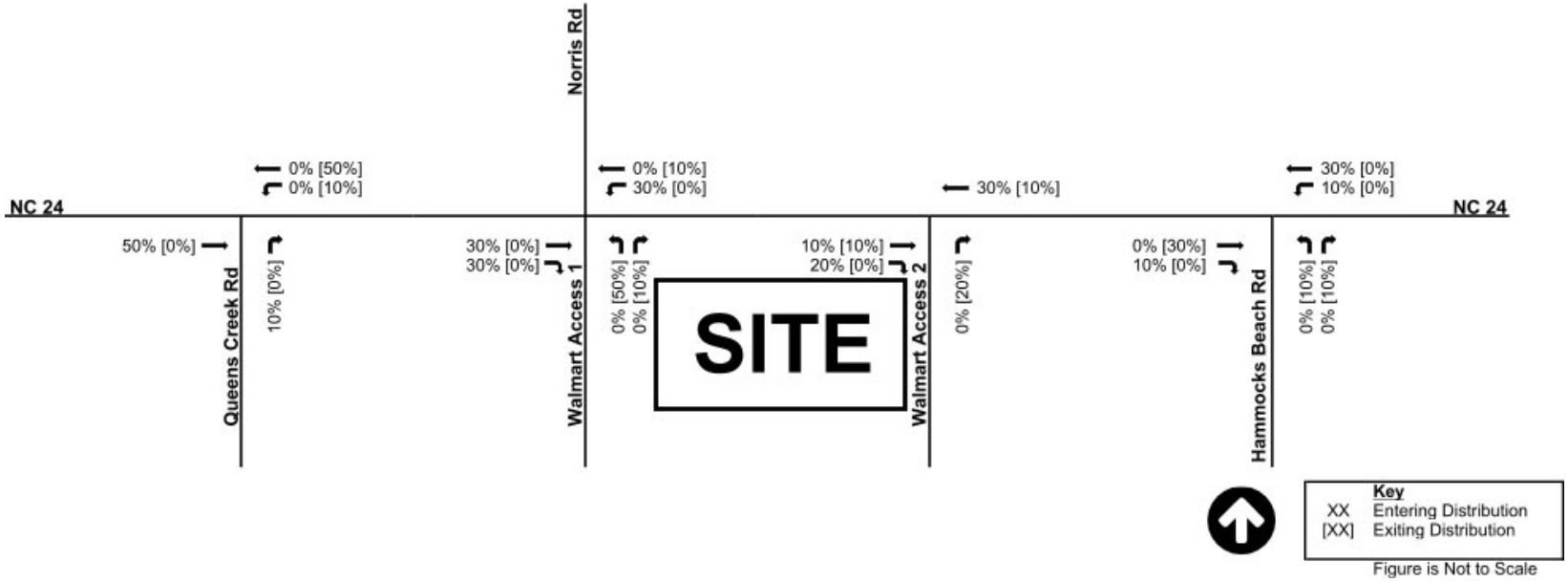


Figure 5: Pass-By Trip Distribution

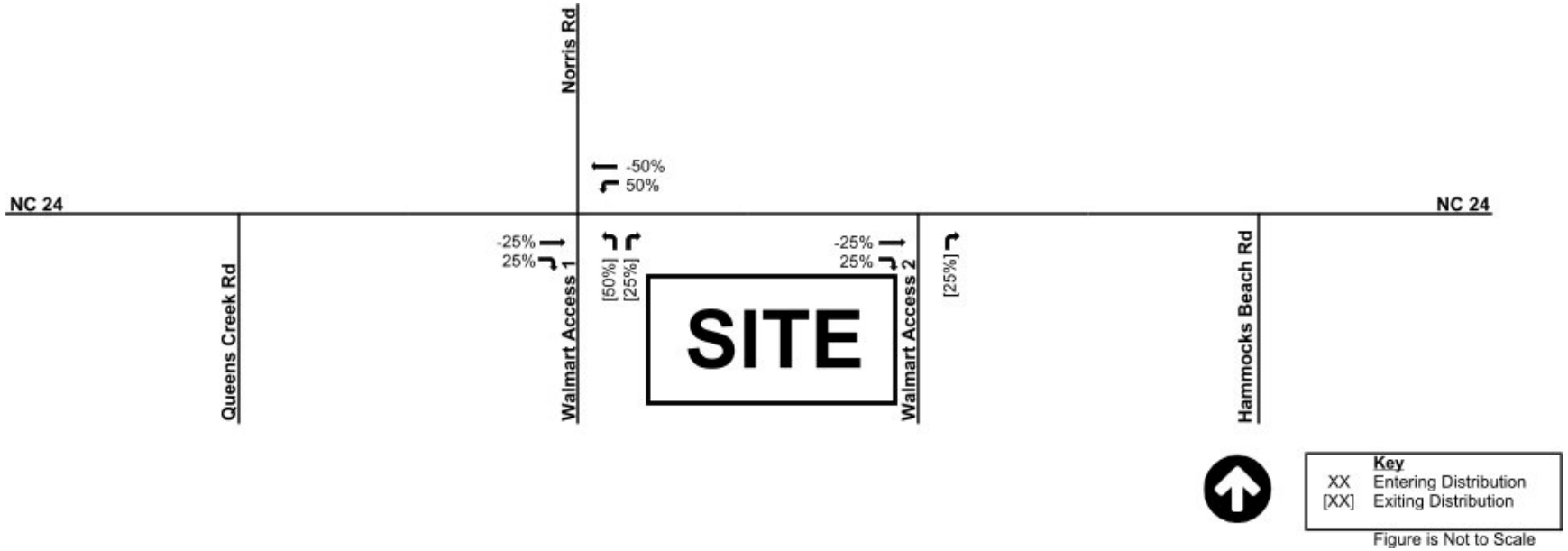


Figure 6: Site Trip Assignment

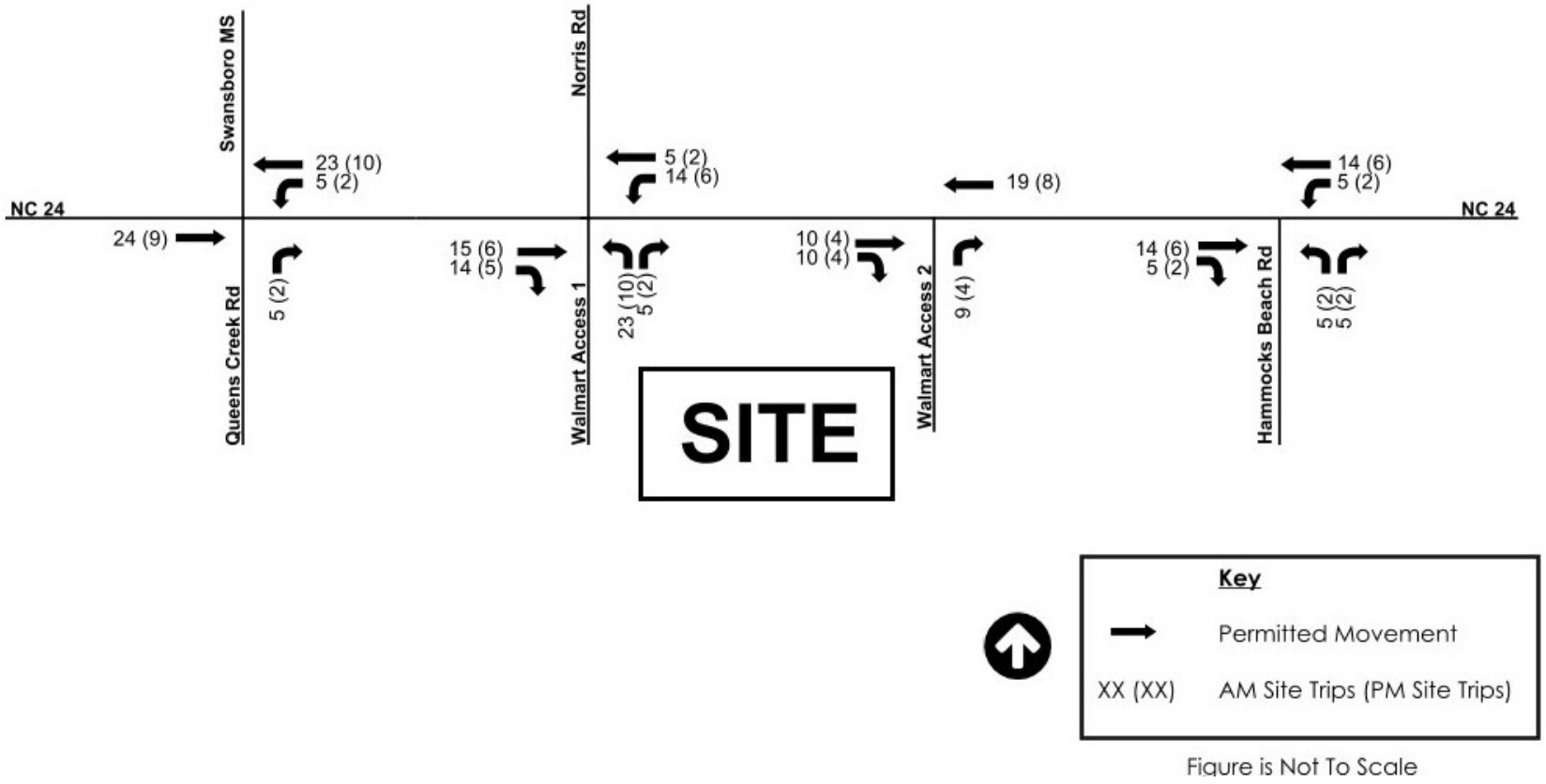


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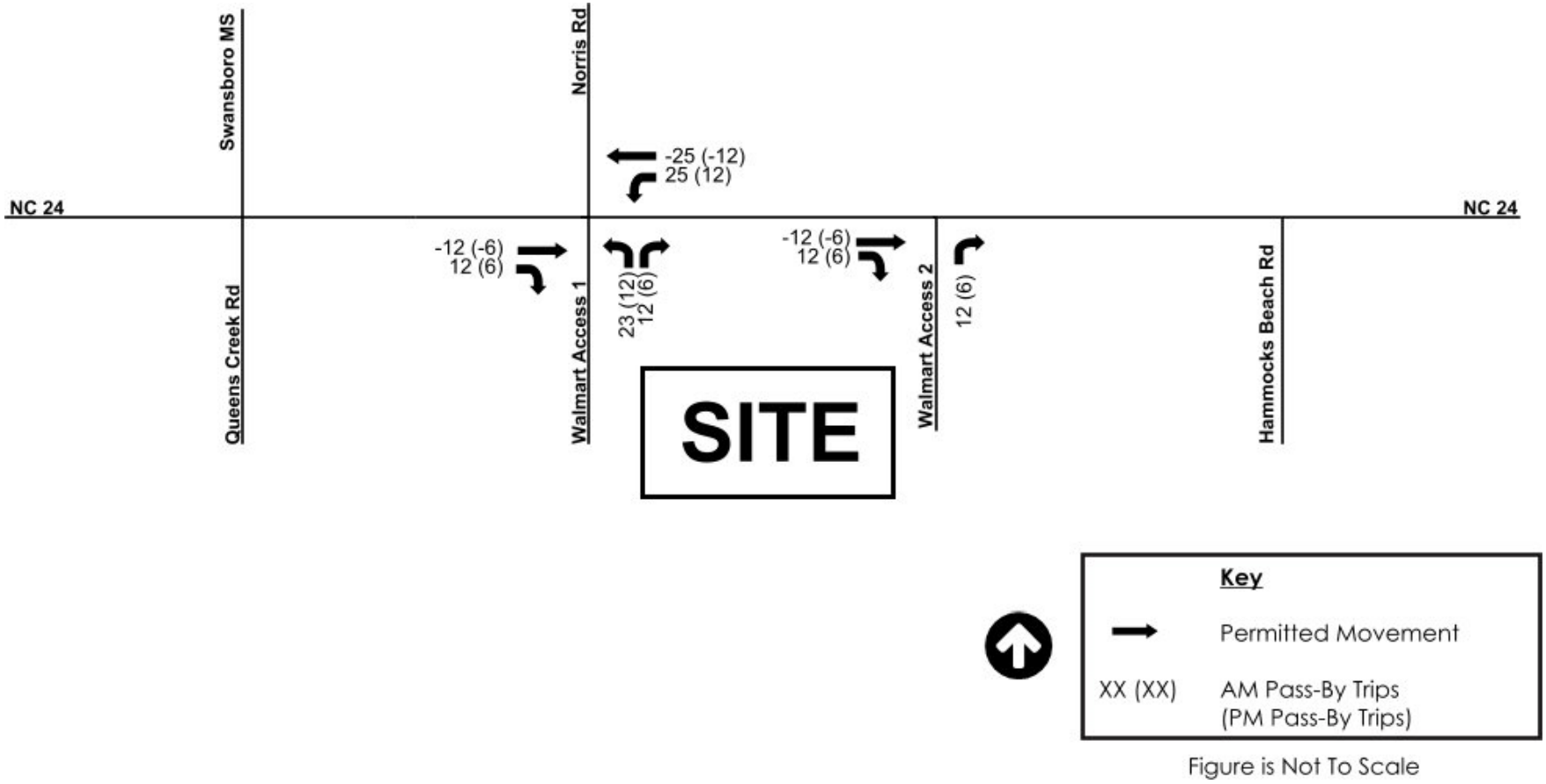
Figure 7: Pass-By Trip Assignment



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4.0 TRAFFIC VOLUMES

4.1 DATA COLLECTION

AM (7:00 – 9:45 AM) and PM (4:00 – 6:00 PM) turning movement counts were collected for a previous study on April 7th, 2022, at the following intersections:

- NC 24 (West Corbett Avenue) at SR 1509 (Queen's Creek Road)
- NC 24 (West Corbett Avenue) at SR 4445 (Norris Road) / Walmart Driveway 1
- NC 24 (West Corbett Avenue) at Walmart Driveway 2
- NC 24 (West Corbett Avenue) at SR 1511 (Hammocks Beach Road)

Raw count data for these locations are included in the appendix. Traffic volumes were balanced between study intersections. The Existing (2022) traffic volumes are shown in Figure 8.

4.2 BACKGROUND TRAFFIC VOLUMES

As stipulated in the Swansboro UDO, the count data was grown by three percent (3%) per year to estimate traffic growth from 2022 to 2024. The historical growth traffic volumes were added to the existing volumes to determine the 2024 Off-season Background traffic volumes. The 2024 Off-season Background traffic volumes are shown in Figure 9.

To account for the increase in traffic during the summer, the 2024 Seasonal Background traffic volumes were further increased by seven percent (7%). The 2024 Seasonal Background traffic volumes are shown in Figure 10.

4.3 BUILD TRAFFIC VOLUMES

The 2024 Off-season Build traffic volumes include the 2024 Off-season Background traffic and the proposed development traffic discussed in Section 3.0. The 2024 Off-season Build traffic volumes are shown in Figure 11 and the 2024 Seasonal Build traffic volumes are shown in Figure 12.

Figure 8: 2022 Existing Traffic Volumes

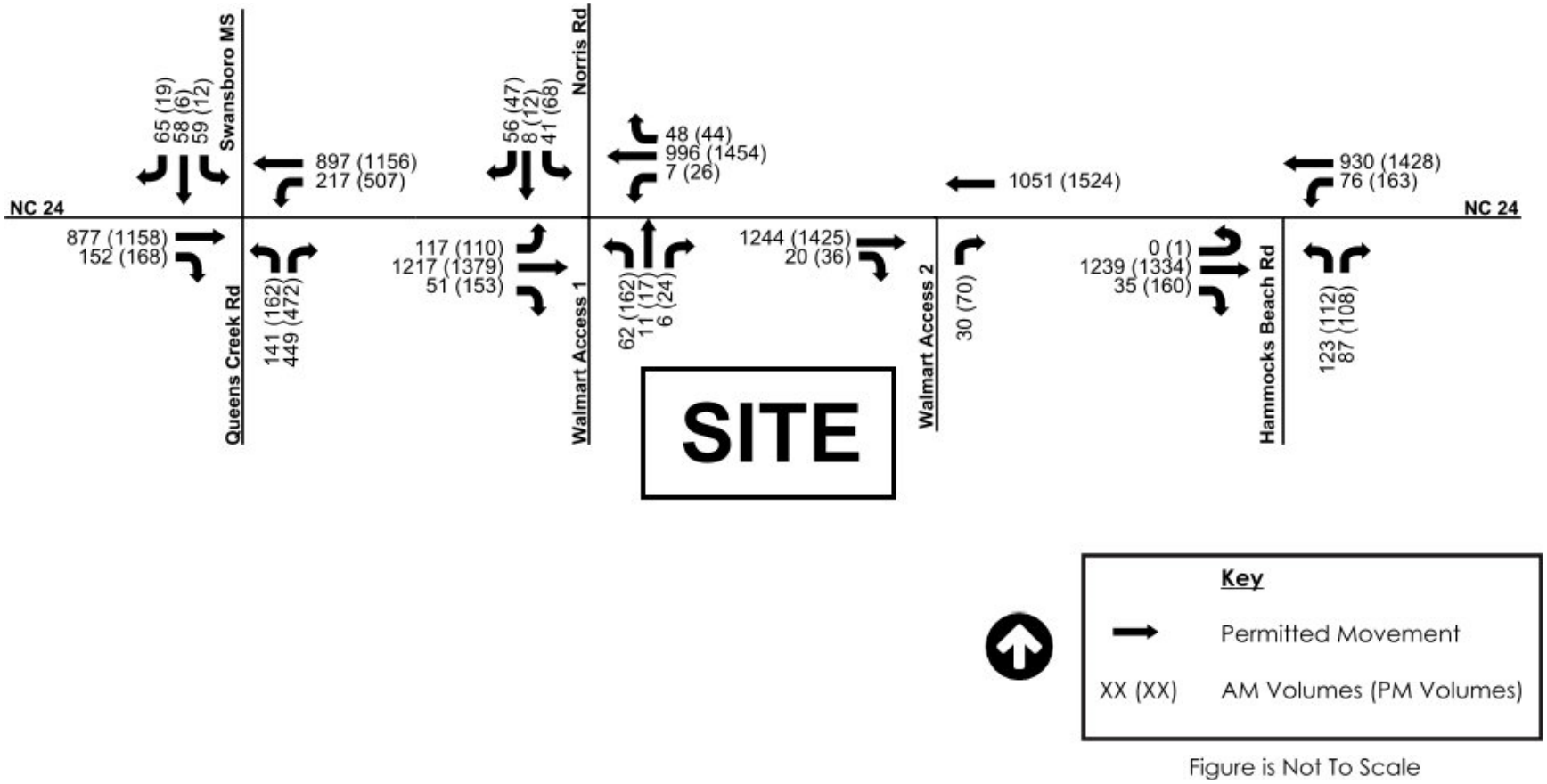

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Figure 9: 2024 No-Build Traffic Volumes

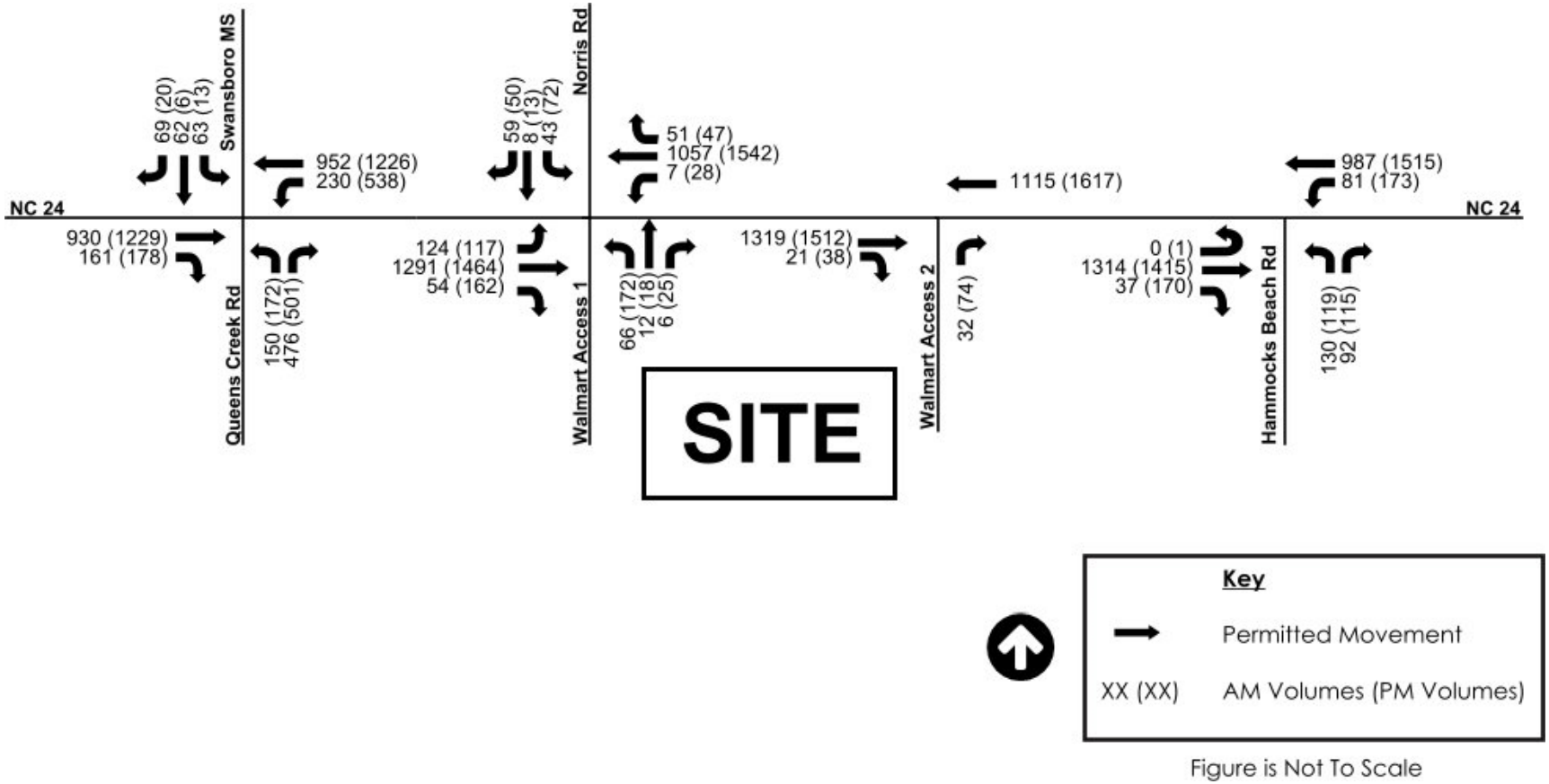

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Figure 10: 2024 No-Build Seasonal Traffic Volumes

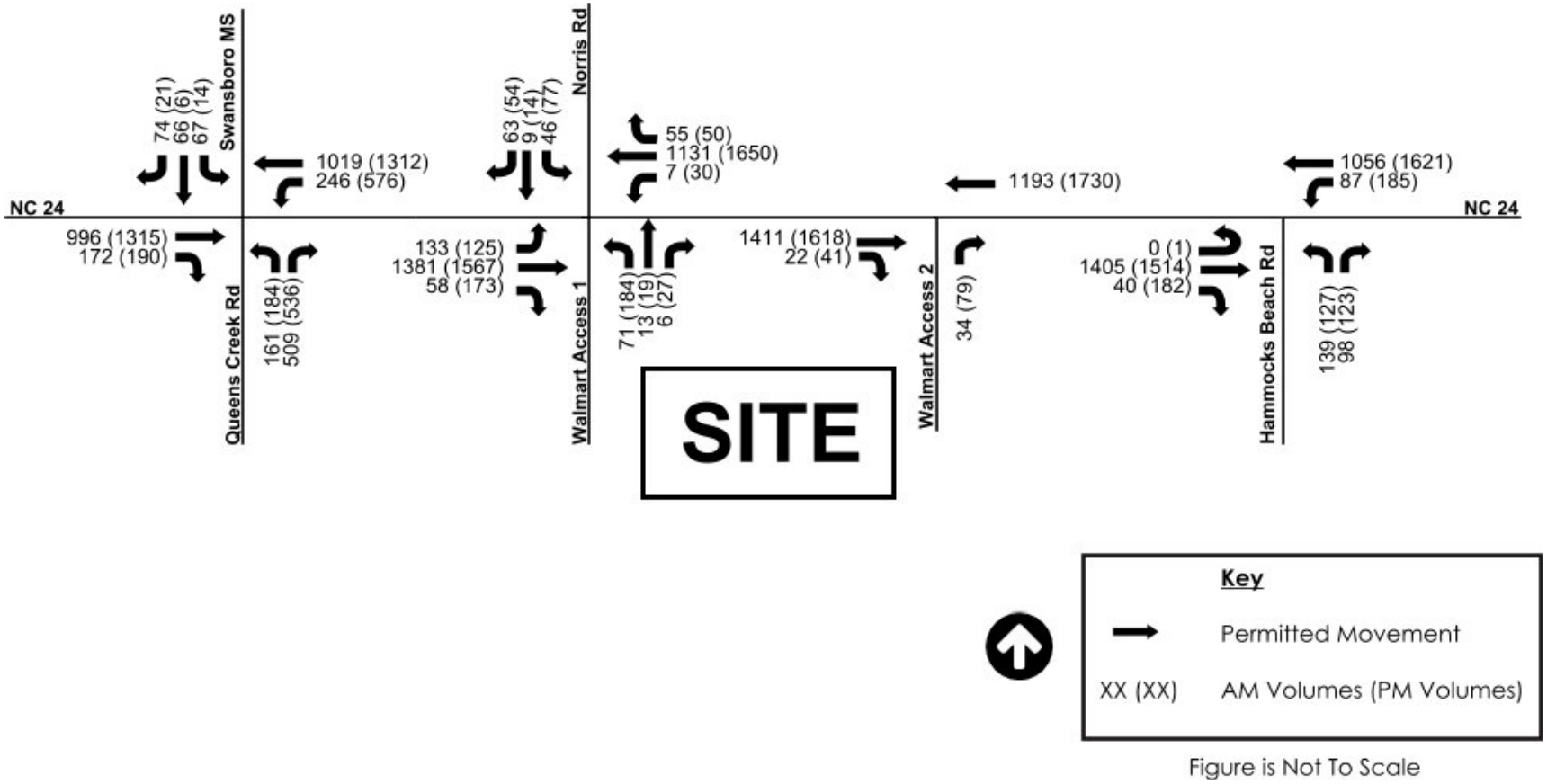

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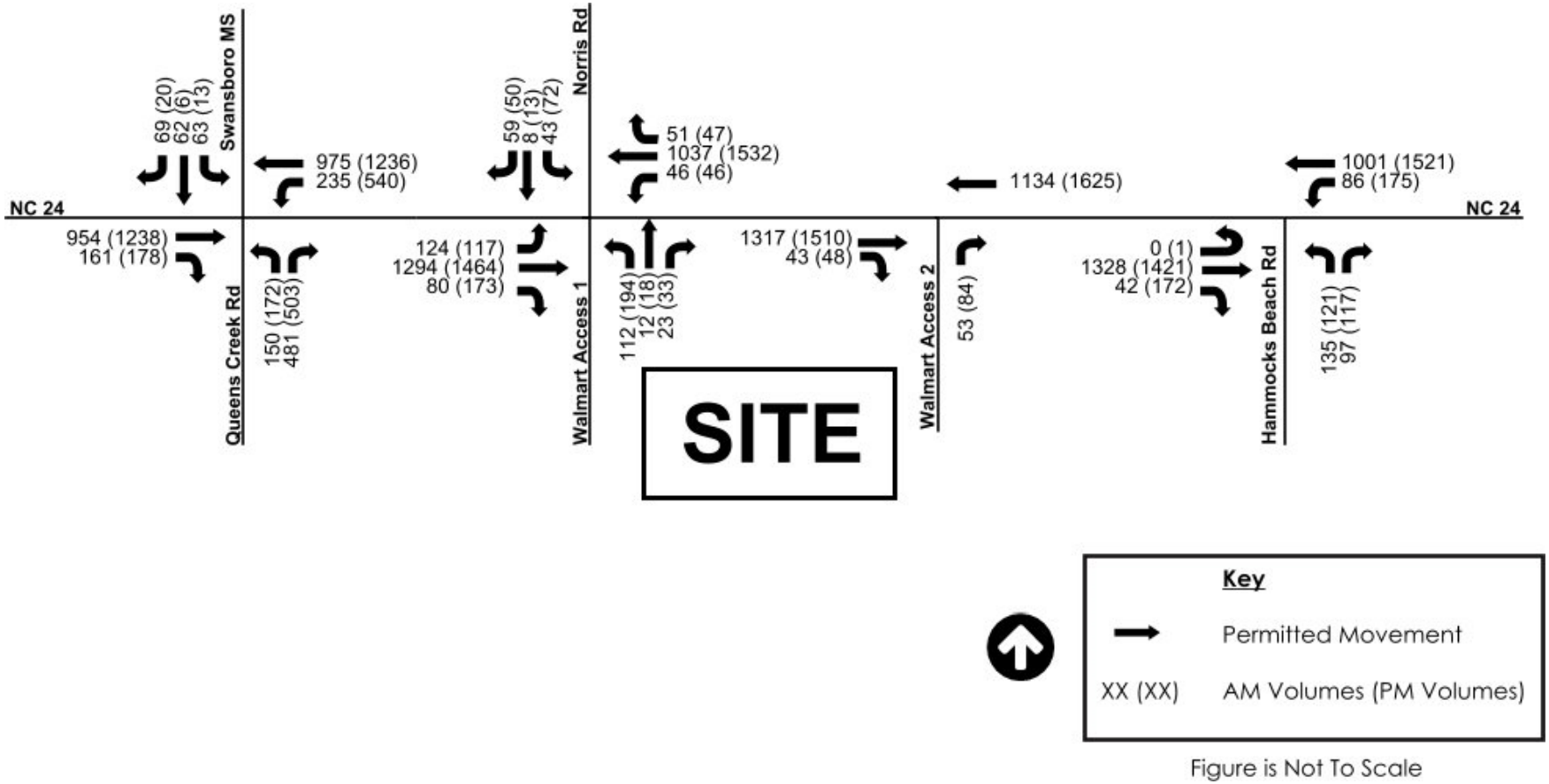
Figure 11: 2024 Build Traffic Volumes



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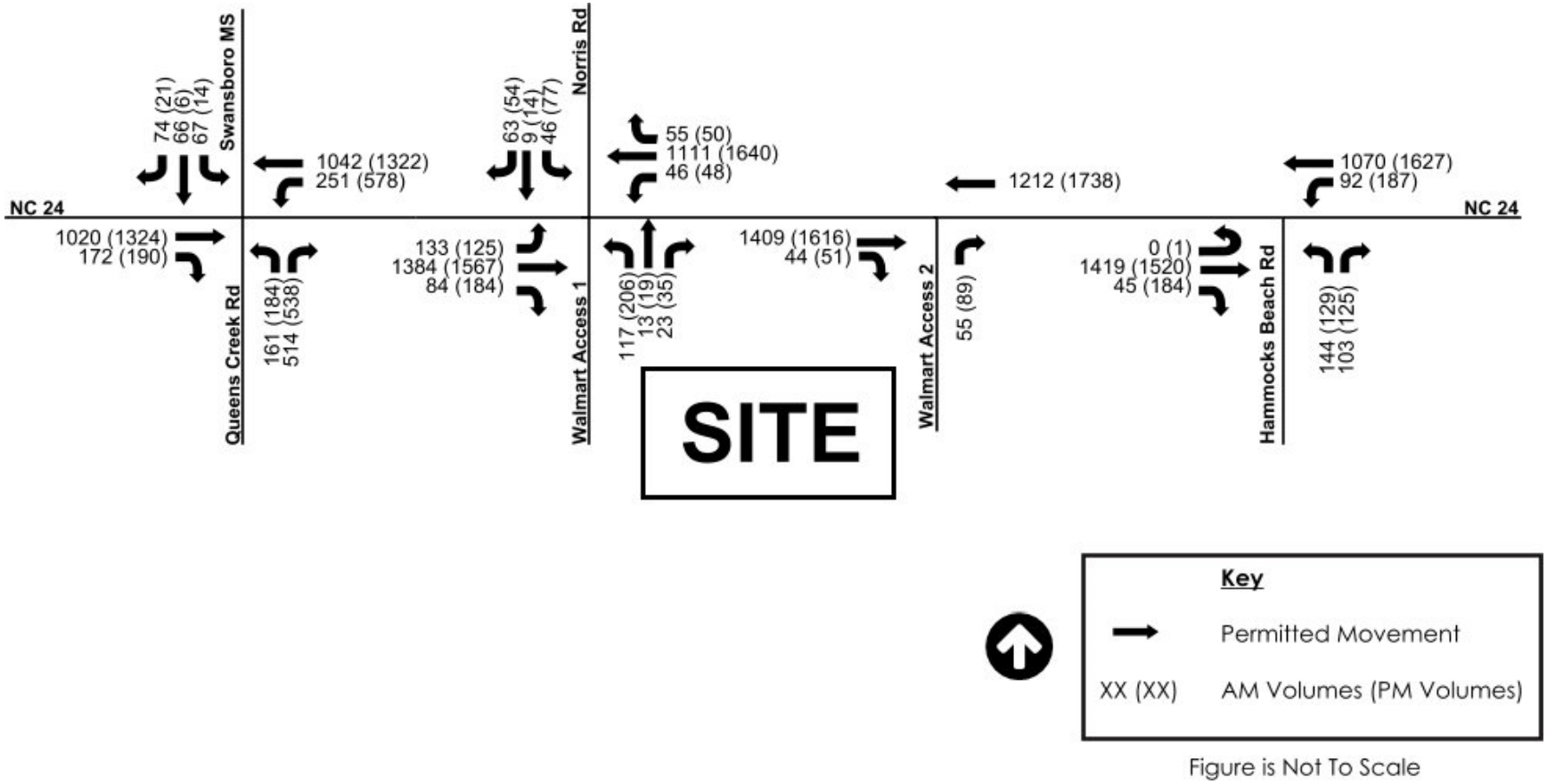
Traffic Volumes
September 28, 2022

Figure 12: 2024 Build Seasonal Traffic Volumes



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5.0 TRAFFIC ANALYSIS

Capacity analyses were performed for the roadway network in the study area. The traffic analysis program Synchro Version 11 was used to analyze all signalized and stop-controlled intersections according to methods put forth by the Transportation Research Board's Highway Capacity Manual[5] (HCM). The HCM defines capacity as the "maximum rate or flow at which persons or vehicles can be reasonably expected to traverse a point or uniform section of a line or roadway during a specified period under prevailing roadway, traffic, and control conditions, usually expressed as vehicles per lane per hour."

Level of service (LOS) is a term used to describe different traffic conditions and is defined as a "qualitative measure describing operational conditions within a traffic stream, and their perception by motorists or passengers." LOS varies from Level A, representing free flow, to Level F where traffic breakdown conditions are evident. At an unsignalized intersection, the primary traffic on the main roadway is virtually uninterrupted. Therefore, the overall delay for the intersection is usually less than what is calculated for the minor street movements. The overall intersection delay and the delay for the intersections' minor movement(s) are reported in the summary tables of this report. LOS D is acceptable for signalized intersections in suburban areas during peak periods. For unsignalized intersections, it is common for some of the minor street movements or approaches to be operating at LOS F during peak hour conditions and that is not necessarily indicative of an area that requires improvements.

Capacity analyses were completed following *NCDOT Capacity Analysis Guidelines*[6] as well as the *Draft NCDOT Capacity Analysis Guidelines Best Practices*[7]. Table 4 presents the criteria of each LOS as indicated in the HCM.

Table 4: Level of Service Criteria

Level of Service (LOS)	Signalized Intersection Control Delay (seconds / vehicle)	Unsignalized Intersection Control Delay (seconds / vehicle)
A	≤ 10	≤ 10
B	>10 and ≤ 20	>10 and ≤ 15
C	>20 and ≤ 35	>15 and ≤ 25
D	>35 and ≤ 55	>25 and ≤ 35
E	>55 and ≤ 80	>35 and ≤ 50
F	>80	>50

Capacity analyses were performed for the following conditions:

- 2022 Existing
- 2024 Off-season Background
- 2024 Off-season Build
- 2024 Seasonal Background
- 2024 Seasonal Build

Peak hour factors for all analysis scenarios were set to 0.9. Dallas permitted & protected (D.P.+P.) left turn/u-turn phasing was used in all future year scenarios where already used in the existing signal phasing. Additionally, corridor signal timings were optimized for all analysis scenarios. All Synchro files and detailed printouts can be found in the appendix. A summary of the results of the analyses is provided in the following sub-sections.

5.1 2022 EXISTING

In the base year of 2022 under the existing geometric conditions, all study intersections operate at an acceptable level of service. In the PM peak hour, the northbound left and southbound through-right movement at the NC 24 & Queen's Creek Road intersection operates at LOS F, as well as the northbound left movement at the NC 24 & Norris Road intersection, and the northbound approach at the NC 24 & Hammocks Beach Road intersection. Synchro level of service, delay, and queuing results for the 2022 Existing analysis scenario are listed in Table 5.

Table 5: 2022 Existing Level of Service and Delay

Intersection		Approach	Lane Group	Delay (sec. / veh.)		Level of Service (LOS)		95th % Queue (feet)	
				AM	PM	AM	PM	AM	PM
	NC 24 & Queens Creek Road/Swansboro Middle School	Overall		30.2	37.8	C	D		
		EB	T	34.7	52.2	C	D	421	843
			R	12.7	17	B	B	88	135
		WB	L	21.9	66.9	C	E	151	780
			T	5	6	A	A	88	236
		NB	L	64.3	89.1	E	F	181	265
			R	52.6	35.7	D	D	455	471
		SB	L	57	77	E	E	95	38
			TR	85.4	85.3	F	F	212	65
	NC 24 & Norris Road/Walmart Driveway 1	Overall		10.7	19.9	B	B		
		EB	L	6.2	29.1	A	C	19	67
			T	4.4	8.1	A	A	164	262
			R	3.5	5.8	A	A	12	36
		WB	L	4.1	7.6	A	A	4	13
			TR	10.3	19.3	B	B	277	845
		NB	L	55	91.2	E	F	93	265
			TR	42.6	52.9	D	D	34	76
		SB	LTR	63.8	65.5	E	E	142	200
STOP	NC 24 & Walmart Driveway 2	NB	R	11	12	B	B	5	13
	NC 24 & Hammocks Beach Road	Overall		8.2	10.6	A	B		
		EB	U	0.8	1.5	A	A	0	0
			T	3.2	4.8	A	A	27	109
			R	0.4	1.1	A	A	0	14
		WB	L	6.6	21.7	A	C	24	82
			T	3.9	5.2	A	A	141	312
		NB	LR	58.6	80.4	E	F	129	173

5.2 2024 OFF-SEASON BACKGROUND

In the 2024 Off-season Background scenario, all of the study intersections operate at an overall acceptable level of service. There are a few movements that operate at LOS F. The northbound left and southbound left movements at the NC 24 & Queen's Creek Road intersection operates at LOS F in the PM peak hour and the southbound through-right movement operates at LOS F in both peak hours.

Synchro level of service, delay, and queuing results for the 2024 Off-season Background analysis scenario are listed in Table 6.

Table 6: 2024 Off-season Background Level of Service and Delay

Intersection	Approach	Lane Group	Delay (sec. / veh.)		Level of Service (LOS)		95th % Queue (feet)	
			AM	PM	AM	PM	AM	PM
NC 24 & Queens Creek Road/Swansboro Middle School	Overall		33.9	44.3	C	D		
	EB	T	35.5	62.4	D	E	455	1005
		R	12	15.4	B	B	91	133
	WB	L	27.7	72	C	E	196	906
		T	5.2	7.5	A	A	96	471
	NB	L	64.1	104.5	E	F	189	316
		R	68.8	45.4	E	D	534	678
	SB	L	58	88.3	E	F	100	45
		TR	95.1	99.8	F	F	232	74
NC 24 & Norris Road/Walmart Driveway 1	Overall		11	18.9	B	B		
	EB	L	7.9	23.8	A	C	18	70
		T	4.3	11.2	A	B	179	368
		R	3.5	5.1	A	A	12	57
	WB	L	4.4	6.8	A	A	4	7
		TR	11.3	19.1	B	B	296	307
	NB	L	55.2	71	E	E	96	225
		TR	42.1	32	D	C	35	54
	SB	LTR	63.6	43.2	E	D	148	141
NC 24 & Walmart Driveway 2	NB	R	11.3	12.5	B	B	5	13
NC 24 & Hammocks Beach Road	Overall		8.7	10.2	A	B		
	EB	U	0.8	1.2	A	A	0	0
		T	4	7.2	A	A	30	44
		R	0.4	1.5	A	A	0	2
	WB	L	8.8	30.8	A	C	26	113
		T	4.2	6.1	A	A	157	227
	NB	LR	58.4	46.2	E	D	134	114

5.3 2024 SEASONAL BACKGROUND

In the 2024 Seasonal Background scenario, all of the study intersections operate at an acceptable overall level of service. There are a few movements that operate at LOS F. The northbound left and southbound left movements at the NC 24 & Queen's Creek Road intersection operates at LOS F in the PM peak hour and the southbound through-right movement operates at LOS F in both peak hours. The northbound left movement at the NC 24 & Norris Road intersection operates at LOS F in the PM peak hour.

Synchro level of service, delay, and queuing results for the 2024 Seasonal Background analysis scenario are listed in Table 7.

Table 7: 2024 Seasonal Background Level of Service and Delay

Intersection	Approach	Lane Group	Delay (sec. / veh.)		Level of Service (LOS)		95th % Queue (feet)	
			AM	PM	AM	PM	AM	PM
NC 24 & Queens Creek Road/Swansboro Middle School	Overall		38.3	53	D	D		
	EB	T	41.5	77.7	D	E	559	1254
		R	13.5	19.6	B	B	109	176
	WB	L	35.2	77	D	E	229	1159
		T	6.4	6.8	A	A	115	238
	NB	L	69.9	141.3	E	F	216	476
		R	74.4	56.1	E	E	582	909
	SB	L	62.6	113.3	E	F	111	57
		TR	104.9	133	F	F	265	88
NC 24 & Norris Road/Walmart Driveway 1	Overall		12.2	23.7	B	C		
	EB	L	10.9	41.8	B	D	16	120
		T	4.8	16.7	A	B	227	602
		R	3.8	10.9	A	B	12	116
	WB	L	4.6	8.8	A	A	4	9
		TR	12.3	21.7	B	C	337	440
	NB	L	61.7	80.3	E	F	109	277
		TR	45.5	37.7	D	D	38	65
	SB	LTR	69.7	49.3	E	D	167	177
NC 24 & Walmart Driveway 2	NB	R	11.5	12.7	B	B	5	15
NC 24 & Hammocks Beach Road	Overall		9.5	12.4	A	B		
	EB	U	0.8	1	A	A	0	0
		T	4.2	9	A	A	32	55
		R	0.3	1.7	A	A	1	6
	WB	L	12.4	40.8	B	D	30	156
		T	4.5	6.7	A	A	184	299
	NB	LR	63.9	56.5	E	E	152	143

5.4 2024 OFF-SEASON BUILD

This analysis scenario evaluates traffic operations under the increased traffic demands associated with the proposed Starbucks.

In the 2024 Off-season Build scenario, all of the study intersections still operate at an overall acceptable level of service. There are a few movements that operate at LOS F. The northbound left and southbound left movements at the NC 24 & Queen's Creek Road intersection operates at LOS F in the PM peak hour and the southbound through-right movement operates at LOS F in both peak hours.

Capacity analysis results for the 2024 Off-season Build analysis scenario are listed in Table 8.

Table 8: 2024 Off-Season Build Level of Service and Delay

Intersection		Approach	Lane Group	Delay (sec. / veh.)		Level of Service (LOS)		95th % Queue (feet)	
				AM	PM	AM	PM	AM	PM
	NC 24 & Queens Creek Road/Swansboro Middle School	Overall		34.5	43.4	C	D		
		EB	T	35.7	67.7	D	E	465	1005
			R	11.7	15.9	B	B	89	131
		WB	L	29.9	55.9	C	E	238	866
			T	5.2	7.1	A	A	90	315
		NB	L	64.1	104.5	E	F	189	316
			R	70.7	44.2	E	D	555	689
		SB	L	59.3	88.5	E	F	101	45
			TR	101.9	100.5	F	F	242	74
	NC 24 & Norris Road/Walmart Driveway 1	Overall		14.2	21.6	B	C		
		EB	L	7.7	19.9	A	B	20	44
			T	7.4	14.9	A	B	217	480
			R	5.6	10.7	A	B	20	99
		WB	L	5.5	9.5	A	A	18	12
			TR	13.1	20.9	B	C	286	322
		NB	L	68.6	75.9	E	E	150	252
			TR	42	31.6	D	C	55	60
		SB	LTR	58.3	40.7	E	D	144	139
STOP	NC 24 & Walmart Driveway 2	NB	R	11.5	12.6	B	B	8	15
	NC 24 & Hammocks Beach Road	Overall		8.6	10.5	A	B		
		EB	U	1.2	0.8	A	A	0	0
			T	3.6	8.3	A	A	55	136
			R	0.1	1.4	A	A	1	7
		WB	L	6.6	25.9	A	C	28	117
			T	4.4	6	A	A	164	229
		NB	LR	58.5	47.4	E	D	139	115

5.5 2024 SEASONAL BUILD

This analysis scenario evaluates traffic operations under the increased traffic demands associated with the proposed Starbucks during the summer months.

In the 2024 Seasonal Build scenario, all of the study intersections still operate at an overall acceptable level of service. There are a few movements that operate at LOS F. The northbound left and southbound left movements at the NC 24 & Queen's Creek Road intersection operates at LOS F in the PM peak hour and the southbound through-right movement operates at LOS F in both peak hours. The northbound left movement at the NC 24 & Norris Road intersection operates at LOS F in both peak hours.

Capacity analysis results for the 2024 Seasonal Build analysis scenario are listed in Table 9.

Table 9: 2024 Seasonal Build Level of Service and Delay

Intersection	Approach	Lane Group	Delay (sec. / veh.)		Level of Service (LOS)		95th % Queue (feet)	
			AM	PM	AM	PM	AM	PM
NC 24 & Queens Creek Road/Swansboro Middle School	Overall		39.4	52.8	D	D		
	EB	T	45.1	79	D	E	643	1268
		R	14.9	19.6	B	B	118	176
	WB	L	38.4	76.3	D	E	263	1121
		T	6.7	5.1	A	A	117	243
	NB	L	75.9	141.3	E	F	231	476
		R	69.2	56.3	E	E	437	916
	SB	L	66.9	113.3	E	F	118	57
		TR	109.9	133	F	F	278	88
NC 24 & Norris Road/Walmart Driveway 1	Overall		15.6	25.3	B	C		
	EB	L	10.8	38.7	B	D	19	76
		T	7.3	18.1	A	B	252	530
		R	5.6	11.7	A	B	20	103
	WB	L	7.6	14.3	A	B	21	15
		TR	14	22.6	B	C	347	424
	NB	L	83.3	89.7	F	F	179	312
		TR	48.7	37.4	D	D	63	73
	SB	LTR	67.5	47.3	E	D	172	175
NC 24 & Walmart Driveway 2	NB	R	11.7	12.9	B	B	8	15
NC 24 & Hammocks Beach Road	Overall		9.6	12.2	A	B		
	EB	U	1	1.2	A	A	0	0
		T	3.1	8.2	A	A	52	60
		R	0.2	1.9	A	A	0	4
	WB	L	13.8	42.1	B	D	32	161
		T	4.6	6.6	A	A	198	302
	NB	LR	69.2	57.5	E	E	169	145

6.0 RECOMMENDATIONS

With the addition of traffic generated by the proposed development (approximately 1.5% increase in the peak hours), there are no discernable differences in operations between the Background and Build scenarios for either seasonal or off-season analyses. All of the study intersections operate at an acceptable level of service in all of the Off-season and Seasonal scenarios. Therefore, no improvements are recommended to be constructed as part of the Swansboro Starbucks Development. Access to the internal road network should meet the design requirements in the UDO.

7.0 REFERENCES

[1] ***NCDOT Functional Classification Map***,
http://ncdot.maps.arcgis.com/home/webmap/viewer.html?layers=029a9a9fe26e43d687d30cd3c08b1792

[2] ***2020 NCDOT Average Daily Traffic Volumes***,
https://ncdot.maps.arcgis.com/apps/webappviewer/index.html?id=964881960f0549de8c3583bf46ef5ed4

[3] ***Total Crash Frequency By Intersection***
https://ncdot.maps.arcgis.com/home/webmap/viewer.html?webmap=dc944f1c834f49a18479c17df1f783b9

[4] ***Trip Generation (11th Edition)***, Institute of Transportation Engineers (ITE), September 2021.

[5] ***Highway Capacity Manual 6th Edition: A Guide for Multimodal Mobility Analysis***. Washington D.C.: Transportation Research Board, 2016.

[6] ***NCDOT Capacity Analysis Guidelines***. North Carolina Department of Transportation (NCDOT), March 2022, https://connect.ncdot.gov/resources/safety/Congestion%20Mngmt%20and%20Signing/Standards%20-%20Capacity%20Analysis%20Guidelines.pdf

[7] ***Draft NCDOT Capacity Analysis Guidelines: Best Practices.*** North Carolina Department of Transportation (NCDOT), March 2022, https://connect.ncdot.gov/resources/safety/Congestion%20Mngmt%20and%20Signing/Best%20Practices%20-%20Capacity%20Analysis%20Guidelines.pdf

8.0 APPENDIX

- Scoping Correspondence
- Site Plan
- Raw Traffic Count Data
- Traffic Volume Calculations
- Synchro Files
- Synchro & SimTraffic Reports

TIMMONS GROUP
YOUR VISION ACHIEVED THROUGH OURS.

September 29, 2022

Paula Webb
Town Manager
Town of Swansboro
601 W. Corbett Ave
Swansboro, NC 28584
(910) 326-4428

RE: Swansboro Starbucks Technical Review Memorandum - Update

Dear Ms. Webb,

Timmons Group reviewed the Swansboro Starbucks Traffic Impact Analysis (TIA) completed by Stantec and submitted to the Town of Swansboro on September 19th, 2022. Initial technical review comments were submitted on September 26th. 2022. The provided comments were addressed by Stantec and a revised TIA was submitted to the Town of Swansboro on September 28th, 2022. Updated echnical review comments have been included as part of this memorandum update.

TIA Memorandum Contents and Requirements

For purposes of analysis, it was assumed that the proposed Starbucks Development will consist of the following land uses:

- 2,223 Square-Foot (SF) coffee shop with drive-thru

Per the Town's request, the Stantec study included the following information:

1. (**Study Area**) See #3 below

2. (**Planned Roadway Improvements**) None

3. (**Roadway / Intersections to be Analyzed**) The following study area intersections were included for analysis:
    - NC-24 (W Corbett Ave) / Queens Creek Road / Swansboro Middle School Drive
    - NC-24 (W Corbett Ave) / Norris Road / Walmart Driveway 1
    - NC-24 (W Corbett Ave) / Walmart Driveway 2
    - NC-24 (W Corbett Ave) / Hammock Beach Road

4. (**Projected Trip Generation**) Trip generation included the Starbucks square footage (2,223 SF).

5. (**Preliminary Traffic Distribution**) The trip distribution was provided by Stantec prior to submittal and approved by Timmons Group. The trip distribution included:
    - NC-24 to the east – 40%
    - NC-24 to the west – 50%
    - Queens Creek Road to the south – 10%

6. (**Other Planned / Approved Developments**) None

7. (**Traffic Growth Rate**) A growth rate of 3.0% per year was used.

5410 Trinity Rd. Suite 102 | Raleigh, NC 27607
TEL 919.866.4952 FAX 919.859.5663
www.timmons.com

8. (**Available Traffic Data**) Turning movement counts collected by JM Teague (4/07/22) were provided to Stantec.

9. (**Study Periods**) The TIA analyzed the following conditions:
    - 2022 Existing
    - 2024 Background
    - 2024 Build
    - 2024 Peak Season** Background
    - 2024 Peak Season** Build

**A 7% increase in traffic was used to account for peak season traffic.

10. (**Other Staff Concerns**) None

TIA Memorandum Findings

The overall NC-24 (W Corbett Ave) / Queens Creek Road / Swansboro Middle School Drive intersection level of service is not projected to exceed LOS D during any analyzed condition. No improvement recommendations were provided or are necessary to mitigate capacity concerns at this intersection.

The overall NC-24 (W Corbett Ave) / Norris Road / Walmart Driveway 1 intersection level of service is not projected to exceed LOS C during any analyzed condition. No improvement recommendations were provided or are necessary to mitigate capacity concerns at this intersection.

The unsignalized northbound right-turn lane at NC-24 (W Corbett Ave) / Walmart Driveway 2 is not projected to exceed LOS B during any analyzed condition. No improvement recommendations were provided or are necessary to mitigate capacity concerns at this intersection.

The overall NC-24 (W Corbett Ave) / Hammock Beach Road intersection level of service is not projected to exceed LOS B during any analyzed condition. No improvement recommendations were provided or are necessary to mitigate capacity concerns at this intersection.

Overall delay percent differences (between Background and Build analyses) for intersections with LOS E or above (overall or intersection approach) did not exceed 12% during any analyzed condition. The development minimally increased queues at each intersection. The document recommended no improvements to mitigate congestion or queuing caused by the proposed development.

Timmons Group TIA Review Summary

Timmons Group reviewed the provided TIA and agrees with the project findings. The technical comments provided in the September 26th. 2022 memorandum are provided below with updated comments (in green).

All the technical review comments have been corrected and no additional comments are provided.

Timmons Group TIA Memorandum Review Comments

Study comments from the September 26th, 2022 memorandum are provided below with updated comments (in Green).

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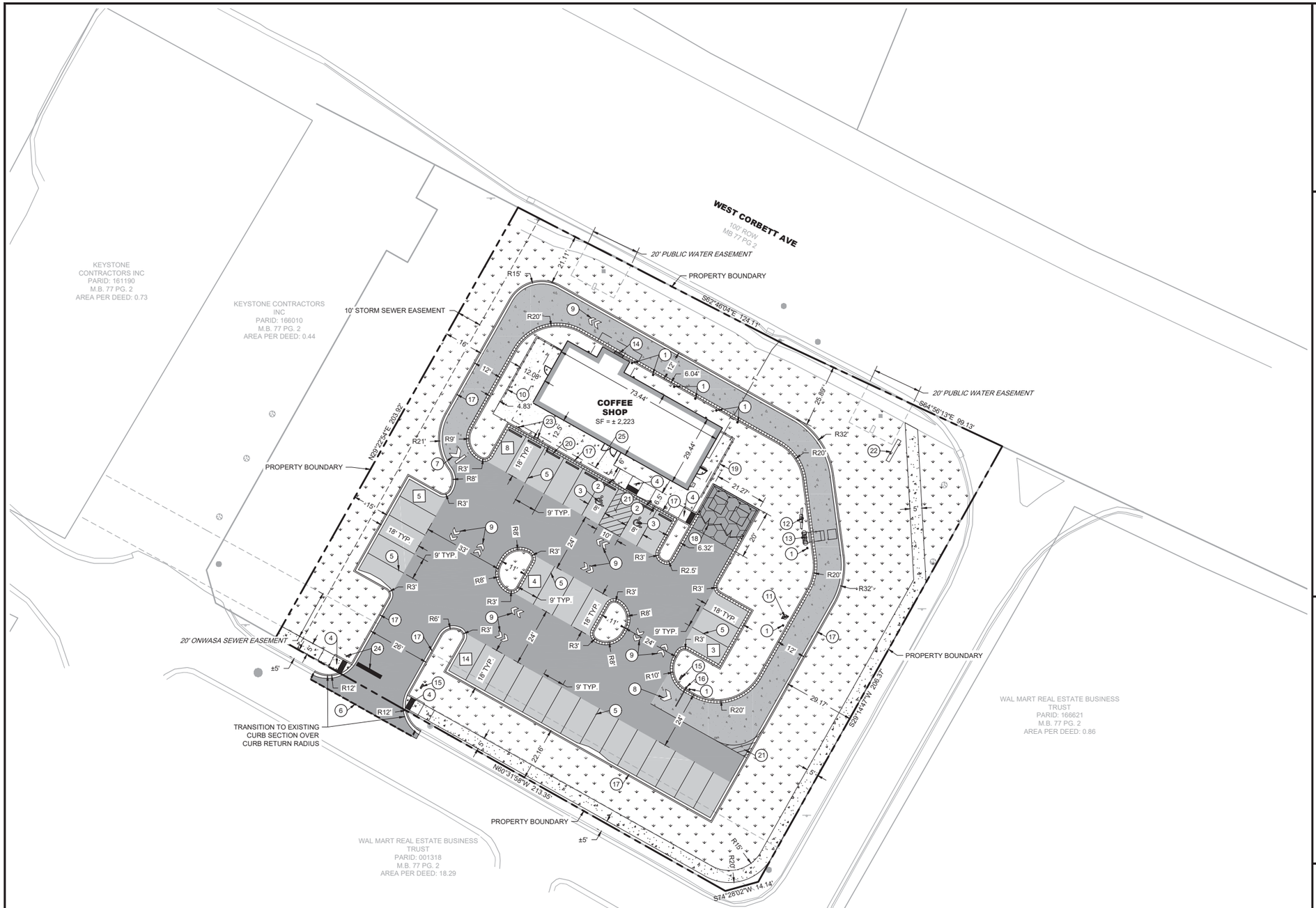
The following was noted in the Synchro analysis review:

- Minor roundoff errors at various locations (<2 vehicles) – no correction required.
- For all signalized intersections – lost time adjust was calculated incorrectly. Per NCDOT standards and guidelines, the following formula should be used:
  - Yellow + All Red + Lost Time Adjust = 5.0 second
  - ➔ Lost times were corrected for all signalized intersections)
- Protected / permitted movements utilizing four-section flashing yellow arrow signal heads should use “DP+P” instead of “pm+pt”.
  - ➔ Protected / permitted movements (with four-section flashing yellow arrow signal heads) were updated to use “DP+P”
- Max Recall was used for both side streets at the Norris Road / Walmart Driveway 1 intersection.
  - ➔ Side street “Max Recall” updated to “None”
- It was assumed that intersections timings were optimized for each analysis condition. This was not specified in the document.
  - ➔ Signal timing optimization was not specified

Should you have any questions regarding this memorandum or need any additional information from Timmons Group, please do not hesitate to contact me.

Sincerely,

Jeffrey P. Hochanadel, PE, PTOE
Principal | North Carolina Transportation Group Leader



SITE PLAN NOTES:

1. ALL CONSTRUCTION SHALL BE IN STRICT CONFORMANCE WITH ALL STATE AND LOCAL JURISDICTIONAL REQUIREMENTS AND/OR SPECIFICATIONS. WHERE DISCREPANCIES ARE FOUND ON THESE PLANS, THE CONTRACTOR SHALL IMMEDIATELY NOTIFY THE ENGINEER PRIOR TO BEGINNING CONSTRUCTION.
2. ALL DIMENSIONS ARE FLOWLINE TO FLOWLINE OR BUILDING FOUNDATION UNLESS OTHERWISE NOTED.
3. ALL IMPROVEMENTS ARE PARALLEL AND PERPENDICULAR TO THE WEST PROPERTY LINE UNLESS OTHERWISE NOTED.
4. BUILDING FOOTPRINT SHOWN IS BASED UPON THE LATEST ARCHITECTURAL INFORMATION PROVIDED TO CAGE ENGINEERING. SUBSEQUENT ARCHITECTURAL CHANGES MAY EXIST. CONTRACTOR SHALL REFER TO LATEST ARCHITECTURAL DRAWINGS FOR PRECISE BUILDING DIMENSIONS AND LAYOUT AND NOTIFY THE ENGINEER OF ANY DISCREPANCIES PRIOR TO CONSTRUCTION.

SITE PLAN KEYNOTES:

1. NON-ILLUMINATED BOLLARD (REFER TO ARCH PLANS)
2. ACCESSIBLE PARKING SIGN (SEE SHEET 12)
3. ACCESSIBLE PARKING SYMBOL (SEE SHEET 12)
4. ACCESSIBLE CONCRETE CURB RAMP
5. 4" WIDE YELLOW PAVEMENT STRIPING (TYP)
6. SAWCUT PAVEMENT, FULL DEPTH
7. EXIT ARROW (SEE SHEET 12)
8. ENTRY ARROW (SEE SHEET 12)
9. DOUBLE ARROW (SEE SHEET 12)
10. PATIO RAILING (REFER TO ARCH PLANS)
11. FREESTANDING PRE-MENU (REFER TO ARCH PLANS)
12. 5 PANEL FREESTANDING MENU (REFER TO ARCH PLANS)
13. DIGITAL ORDER SCREEN WITH CANOPY (REFER TO ARCH PLANS)
14. DRIVE THRU WINDOW BUMPOUT (REFER TO ARCH PLANS)
15. DRIVE THRU DIRECTIONAL SIGN (REFER TO ARCH PLANS)
16. CLEARANCE BAR (REFER TO ARCH PLANS)
17. 6" VERTICAL CURB & GUTTER (SEE SHEET 12)
18. TRASH ENCLOSURE (REFER TO ARCH PLANS)
19. SCREEN WALL (REFER TO ARCH PLANS)
20. WHEEL STOP (TYP, REFER TO ARCH PLANS)
21. PARKING STRIPING 45° 4" YELLOW STRIPING AT 2' O.C.
22. LIGHTED PYLON SIGN (REFER TO ARCH PLANS)
23. PROPOSED "MOBILE ORDER" SIGN (REFER TO ARCH PLANS)
24. PROPOSED 12" STOP BAR AND STOP SIGN
25. PATIO (581.92 SF)

LEGEND

- [#] PARKING COUNT
- STANDARD DUTY PAVEMENT — REFER TO GEOTECHNICAL REPORT
- HEAVY DUTY PAVEMENT — REFER TO GEOTECHNICAL REPORT
- HEAVY DUTY CONCRETE — REFER TO GEOTECHNICAL REPORT
- HEAVY DUTY (DUMPSTER) CONCRETE — REFER TO GEOTECHNICAL REPORT
- CONCRETE SIDEWALK — REFER TO ARCHITECTURAL PLANS FOR SURFACE FINISH ADJACENT TO BUILDING
- LANDSCAPING
- CATCH CURB & GUTTER
- SPILL CURB & GUTTER

SITE DATA TABLE	
SITE AREA	1.07 AC (46,609 SF)
PARKING REQUIRED	10 SPACES/1,000 SF = 22 SPACES
TOTAL PROVIDED PARKING	34 SPACES
ADA PARKING	2 SPACES

UNCC
CALL BEFORE YOU DIG
811
OR
1-800-632-4949
UTILITY NOTIFICATION CENTER OF NORTH CAROLINA

0 20' 40'
1" = 20' (HORIZONTAL)

CAGE CIVIL ENGINEERING

REV. NO.	DESCRIPTION	DATE
3	REVISED PER WALMART COMMENTS	08/29/2022
2	REVISED GREASE TRAP	06/17/2022
1	REVISED PER TOWN COMMENTS	06/10/2022

VAQUERO SWANSBORO PARTNERS, LP

COFFEE SHOP

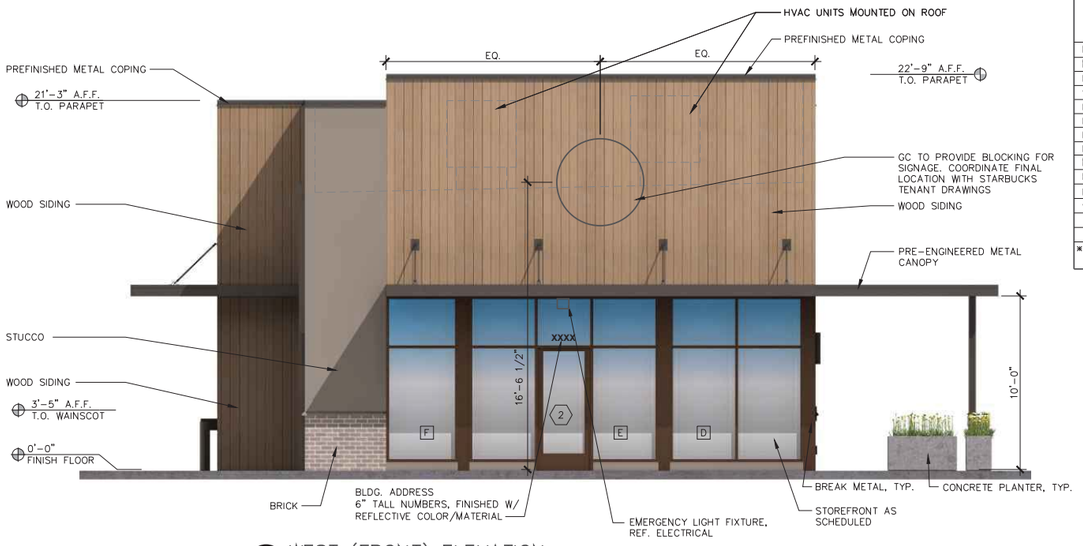
SITE PLAN

1117 WEST CORBETT AVENUE
SWANSBORO, NORTH CAROLINA

NORTH CAROLINA PROFESSIONAL ENGINEER SEAL 040916 8/29/22 ENGINEER GREG NORRIS

PROJ NO: 220055
ENG : RAK
DATE : 04/08/2022

SHEET NUMBER
SP1
7 OF 14



1 WEST (FRONT) ELEVATION
SCALE: 1/4" = 1'-0"

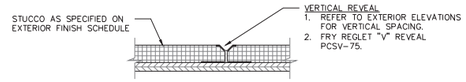
WEST FACADE MATERIAL PERCENTAGES:
STUCCO: 5%
WOOD SIDING: 54%
BRICK: 2%
GLAZING: 39%

EXTERIOR FINISH SCHEDULE

ITEM	COLOR	MANUFACTURER	REMARKS
STUCCO	"KEYSTONE GRAY" SW 7504	SHERWIN WILLIAMS	SANDPEBBLE FINE FINISH
WOOD SIDING	NICHIHA – VINTAGEWOOD CEDAR WOOD CLADDING	NICHIHA FIBER CEMENT	INSTALL VERTICALLY PER MANUFACTURER'S SPECIFICATIONS. HORIZONTAL SEAMS SHALL BE MINIMIZED. ALL SPANS OF 10' OR MORE SHALL HAVE HORIZONTAL CAULKED SEAMS ALIGNED IN THE CENTER OF THE ARCHON. ALL TRIMS SHALL BE FACTORY PAINTED TO MATCH PANELS. VERTICAL APPLICATIONS ONLY (NOT FOR USE ON SOFFITS).
BRICK	VELOUR MEDIUM GRAY	CHEROKEE BRICK	SMOOTH, VELOUR, QUEEN SIZE. THIN BRICK
METAL GATES AT TRASH ENCLOSURE	"BLACK FOX" SW 7020	SHERWIN WILLIAMS	–
PRE-ENGINEERED METAL CANOPY	TO MATCH "BLACK FOX" SW 7020	ARCHITECTURAL FABRICATION	COLOR TO BE REVIEWED AND APPROVED BY STARBUCKS DESIGNER.
STOREFRONT FRAMES	DARK BRONZE ANODIZED FRAME AND DOORS	KAWNEER	REFER TO WINDOW AND DOOR SCHEDULE
HARDWARE	SATIN CLEAR FINISH	FACTORY FINISHED	REFER TO HARDWARE LEGEND
HOLLOW METAL DOOR AND FRAME	"BLACK FOX" SW 7020	SHERWIN WILLIAMS	–
DOWNSPOUTS	TO MATCH STUCCO COLOR	AEP SPAN	FACTORY APPLIED DURATECH FINISH
ROOF LADDER	TO MATCH STUCCO COLOR	SHERWIN WILLIAMS	–
MISCELLANEOUS METALS	"BLACK FOX" SW 7020	SHERWIN WILLIAMS	–
PREFINISHED METAL COPING	"BLACK FOX" SW 7020	SHERWIN WILLIAMS	–
LIGHT FIXTURE A	BLACK	KICHLER	LED (REFER TO ELECT.)
STUCCO @ TRASH ENCLOSURE	"KEYSTONE GRAY" SW 7504	SHERWIN WILLIAMS	SANDPEBBLE FINE FINISH

** COLORS AND MANUFACTURERS INDICATED ARE PREFERRED. G.C. SHALL SUBMIT SAMPLES OF PROPOSED ALTERNATES FOR ARCHITECT'S APPROVAL IN ACCORDANCE WITH DIRECTIONS IN SPECIFICATIONS

PLANTER SCHEDULE				
	SIZE	COLOR	MANUFACTURER	MODEL
CONCRETE PLANTER	48"L x 18"W x 24"H	CONCRETE GRAY	PLANTERS UNLIMITED	TITAN RECTANGULAR C2-TIT-REC481824



3 REVEAL DETAIL
SCALE: 3"=1'-0"

2 SOUTH (SIDE) ELEVATION
SCALE: 1/4" = 1'-0"

SOUTH FACADE MATERIAL PERCENTAGES:
STUCCO: 35%
WOOD SIDING: 30%
BRICK: 9%
GLAZING: 26%

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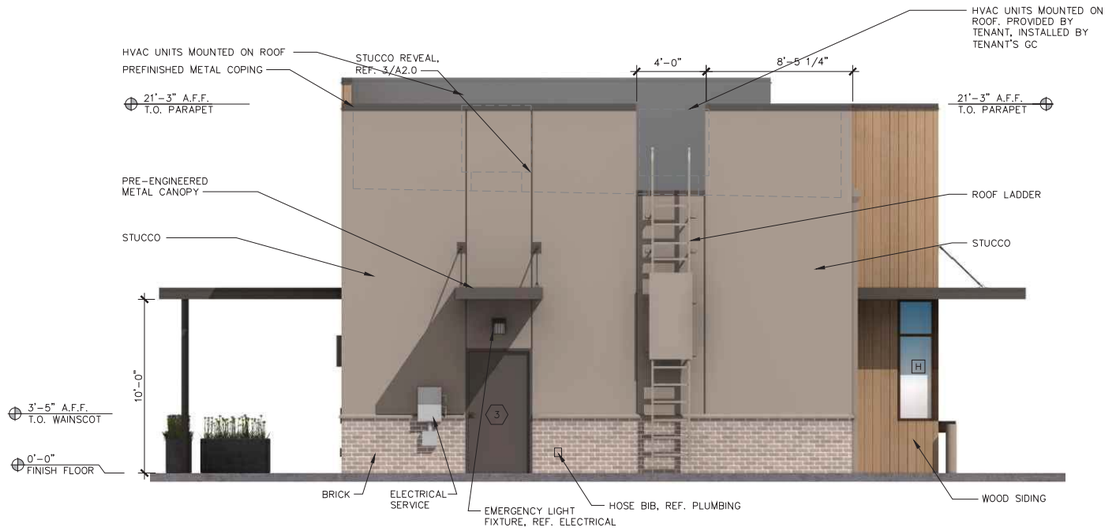
SHELL BUILDING
1117 W. CORBETT AVE.
SWANSBORO, NC 28584

Revisions:

File Name: 21181-A2.0
Project No: 21181
Date: XX/XX/22
Drawn By: MNK
Checked By: JNF

SHEET
A2.0
EXTERIOR ELEVATIONS



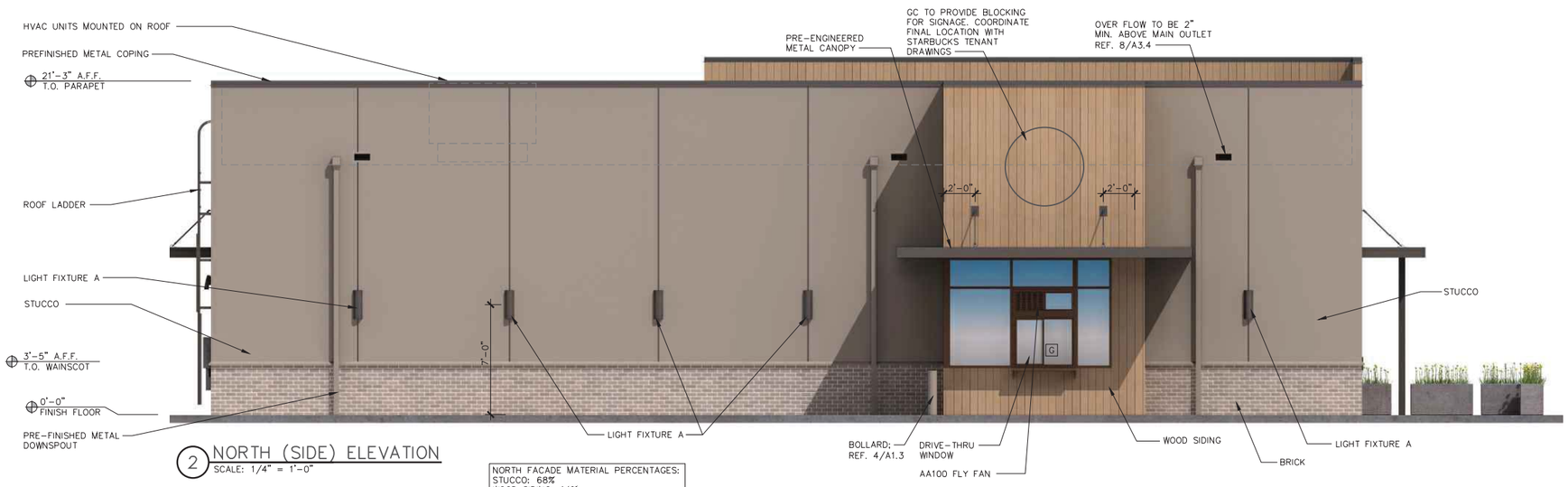
1 EAST (BACK) ELEVATION
SCALE: 1/4" = 1'-0"

EAST FACADE MATERIAL PERCENTAGES:
STUCCO: 71%
WOOD SIDING: 14%
BRICK: 13%
GLAZING: 2%

EXTERIOR FINISH SCHEDULE

ITEM	COLOR	MANUFACTURER	REMARKS
STUCCO	"KEYSTONE GRAY" SW 7504	SHERWIN WILLIAMS	SANDPEBBLE FINE FINISH
WOOD SIDING	NICHIHA – VINTAGEWOOD CEDAR WOOD CLADDING	NICHIHA FIBER CEMENT	INSTALL VERTICALLY PER MANUFACTURER'S SPECIFICATIONS. HORIZONTAL SEAMS SHALL BE MINIMIZED. ALL SPANS OF 10' OR MORE SHALL HAVE HORIZONTAL CAULKED SEAMS ALIGNED IN THE CENTER OF THE ARCHON. ALL TRIMS SHALL BE FACTORY PAINTED TO MATCH PANELS. VERTICAL APPLICATIONS ONLY (NOT FOR USE ON SOFFITS).
BRICK	VELOUR MEDIUM GRAY	CHEROKEE BRICK	SMOOTH, VELOUR, QUEEN SIZE. THIN BRICK
METAL GATES AT TRASH ENCLOSURE	"BLACK FOX" SW 7020	SHERWIN WILLIAMS	–
PRE-ENGINEERED METAL CANOPY	TO MATCH "BLACK FOX" SW 7020	ARCHITECTURAL FABRICATION	COLOR TO BE REVIEWED AND APPROVED BY STARBUCKS DESIGNER.
STOREFRONT FRAMES	DARK BRONZE ANODIZED FRAME AND DOORS	KAWNEER	REFER TO WINDOW AND DOOR SCHEDULE
HARDWARE	SATIN CLEAR FINISH	FACTORY FINISHED	REFER TO HARDWARE LEGEND
HOLLOW METAL DOOR AND FRAME	"BLACK FOX" SW 7020	SHERWIN WILLIAMS	–
DOWNSPOUTS	TO MATCH STUCCO COLOR	AEP SPAN	FACTORY APPLIED DURATECH FINISH
ROOF LADDER	TO MATCH STUCCO COLOR	SHERWIN WILLIAMS	–
MISCELLANEOUS METALS	"BLACK FOX" SW 7020	SHERWIN WILLIAMS	–
PREFINISHED METAL COPING	"BLACK FOX" SW 7020	SHERWIN WILLIAMS	–
LIGHT FIXTURE A	BLACK	KICHLER	LED (REFER TO ELECT.)
STUCCO @ TRASH ENCLOSURE	"KEYSTONE GRAY" SW 7504	SHERWIN WILLIAMS	SANDPEBBLE FINE FINISH

** COLORS AND MANUFACTURERS INDICATED ARE PREFERRED. G.C. SHALL SUBMIT SAMPLES OF PROPOSED ALTERNATES FOR ARCHITECT'S APPROVAL IN ACCORDANCE WITH DIRECTIONS IN SPECIFICATIONS



2 NORTH (SIDE) ELEVATION
SCALE: 1/4" = 1'-0"

NORTH FACADE MATERIAL PERCENTAGES:
STUCCO: 68%
WOOD SIDING: 14%
BRICK: 14%
GLAZING: 4%

PRELIMINARY
NOT TO BE USED FOR
REGULA
APPRO
PERMITTI
CONSTRU

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SHELL BUILDING
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Revisions:

File Name: 21181 A2.1
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SHEET
A2.1
EXTERIOR ELEVATIONS

LIVE OAK (1)

5' TYPE 'A' STREEYARD (SET BACK GREATER THAN 5' FROM SIDEWALK PER 152.532 4e)

5' TYPE 'A' STREEYARD SIDE 1

EXISTING SIDEWALK

EXISTING SIDEWALK

(20' public water easement)

(20' public water easement)

LIVE OAK (1)

LAWN

SITE DISTANCE TRIANGLE (30' X 70')

REDBUD (1)

LAWN

LAWN

RUBY FRINGE (7)

CARISSA HOLLY (9)

MULCH

MULCH LINE

LAWN

LAWN

LIRIOPE (70)

LAWN

LAWN

LIRIOPE (77)

RUBY FRINGE (3)

WHITE MUHLY GRASS- 80- (40 EACH AREA)

WHITE DRIFT ROSE (9)

GEM BOX HOLLY (6)

LIRIOPE (40)

LACEBARK ELM (1)

LANTANA

WHITE MUHLY (11)

LAWN

SIDEWALK

180

LIRIOPE (90 EACH AREA)

REDBUD (2)

10' STORM SEWER EASEMENT

20' ONWASA EASEMENT

LACEBARK ELM (1)

CRAPE MYRTLES (8)

REDBUD (3)

LIVE OAK (1)

LANTANA (12)

LANTANA (20)

LAWN

LIVE OAK (1)

SIDEWALK

LACEBARK ELM (2)

LAWN

5' TYPE 'A' STREEYARD SIDE 3 (SET BACK GREATER THAN 5' FROM SIDEWALK PER 152.532 4e)& ONWASA EASEMENT

- SINGLE STEM CRAPE MYRTLE (8)
- LACEBARK ELM (2)
- 2 CRAPE MYRTLES SET BACK GREATER THAN 5' STREETSCAPE DUE TO EXISTING PUBLIC WATER EASEMENT & SIDEWALK
- WHITE MUHLY (20)
- WHITE DRIFT ROSE (15)
- GEM BOX HOLLY (9)
- LIVE OAK (1) IS SET BACK GREATER THAN 5' DUE TO CONNECTION TO EXISTING SIDEWALK & EASEMENT
- REDBUD (2)
- WHITE DRIFT ROSE (16)
- CARISSA HOLLY 15
- BURFORD (5)
- OPAQUE DUMPSTER ENCLOSURE WITH CONTINUOUS LANDSCAPE BUFFER OF SHRUBS AROUND ENCLOSURE (SEE ARCHITECTURE PLANS FOR ENCLOSURE)
- WHITE MUHLY (25)
- REDBUD (3)
- RUBY FRINGE (6- 2 EACH AREA)
- CARISSA HOLLY (9- 3 EACH AREA)
- WHITE MUHLY (15- 5 EACH AREA)
- 5' TYPE 'A' STREEYARD SIDE 2 (SET BACK GREATER THAN 5' FROM SIDEWALK PER 152.532 4e)

NOTES:

1. PER SECTION 152.295 THE TYPE A STREETYARD/ PERIMETER BUFFER IS 5' WIDTH AND SHALL BE PLANTED WITH 1 CANOPY AND 2 UNDERSTORY TREES EVERY 50. **IN ORDER TO MEET SECTION 152.295 AND SECTION 152.532 4(e) ALL PERIMETER BUFFERS/ STREETYARDS HAVE BEEN SET BACK MORE THAN 5' FROM THE SIDEWALK TO AVOID CONFLICT**:

   Side 1: 223.24 lf - 40' to sidewalk (within site distance triangle) = 183.24'/50 LF= 3.66 X 1= 4 CANOPY TREES REQUIRED AND PROVIDED; 180'/50 LF = 3.6 X 2 UNDERSTORYTREES = 8 UNDERSTORY TREES REQUIRED & PROVIDED. **DUE TO EXISTING SIDEWALK ALONG ALL PERIMETERS THE 5' BUFFER/STREETYARD IS SET ADJACENT TO THE SIDEWALK AND SET BACK GREATER THAN 5' TO AVOID CONFLICT.**

   Side 2: **206.37+ 14.14 - 40' TO SITE DISTANCE TRIANGLE FROM ROW** = 180.51'/50 LF= 3.6 X 1= 4 CANOPY TREES REQUIRED AND PROVIDED; 180'/50 LF = 3.6 X 2 UNDERSTORY TREES = 8 UNDERSTORY TREES REQUIRED & PROVIDED.

   Side 3: 213.35- 27' (DRIVEWAY) AND 10' SS EASEMENT= 176'/50 LF= 3.5 X 1= 4 CANOPY TREES REQUIRED AND PROVIDED; 176'/50 LF = 4 X 2 UNDERSTORY TREES = 8 UNDERSTORY TREES REQUIRED & PROVIDED. (SET BACK GREATER THAN 5' DUE TO SIDEWALK AND 20' ONWASA EASEMENT)

2. PER SECTION 152.529 8% OF THE GROSS PAVED AREA OF THE PARKING LOT SHALL BE LANDSCAPED. PAVED PARKING AREA SHOWN = 13,903 SF X 8%= 1112 SF REQUIRED. OVER 1800 SF OF LANDSCAPED AREA PROVIDED.

3. PER 152.539 (4) THE OPAQUE DUMPSTER ENCLOSURE IS SCREENED WITH CONTINUOUS LANDSCAPE BUFFER OF SHRUBS AROUND THE ENCLOSURE (SEE ARCHITECTURE PLANS FOR ENCLOSURE)

0' 5' 10' 20' North

NORTH CAROLINA REGISTERED LANDSCAPE ARCHITECT 1785 SAMUEL L. BURROUGHS

07/01/22

SageDesign
228 North Front Street, Suite 301
Wilmington, NC 28401
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REV. NO.	DESCRIPTION	DATE

COFFEE SHOP
1117 WEST CORBETT AVENUE
SWANSBORO, NORTH CAROLINA

LANDSCAPE PLAN

PROJ NO.
BY S.L.B.
DATE 07/19/22

SHEET NUMBER
L1 of 2

PLANT MATERIAL NOTES

1. ALL PLANT MATERIAL SHALL CONFORM TO THE MOST CURRENT STANDARDS ESTABLISHED BY 'THE AMERICAN ASSOCIATION OF NURSERYMAN'.
2. CONTAINERIZED PLANTS SHALL HAVE A ROOT SYSTEM SUFFICIENT ENOUGH IN DEVELOPMENT TO HOLD THE SOIL INTACT WHEN REMOVED FROM THE CONTAINER. THE ROOT SYSTEM SHALL NOT BE ROOT BOUND, A CONDITION WHERE THE ROOT SYSTEM IS DENSE IN MASS, EXCESSIVELY INTERTWINED, AND HAS ESTABLISHED A CIRCULAR GROWTH PATTERN.
3. ALL PLANTS SHALL BE FRESHLY DUG, SOUND, HEALTHY, VIGOROUS, WELL-ROOTED PLANTS AND ESTABLISHED IN THE CONTAINER IN WHICH THEY ARE SOLD. THE PLANTS SHALL HAVE TOPS WHICH ARE GOOD QUALITY AND ARE IN A HEALTHY GROWING CONDITION.
4. PLANTS SHALL NOT BE PRUNED PRIOR TO DELIVERY UNLESS APPROVED BY THE LANDSCAPE ARCHITECT PRIOR TO SHIPMENT.
5. ALL TREE PITS, SHRUB BEDS AND PREPARED PLANTING BEDS ARE TO BE COMPLETELY EXCAVATED IN ACCORDANCE WITH THE PLANTING DETAILS AND SPECIFICATIONS.
6. TOPSOIL AMENDMENTS REQUIRED FOR SOIL MIXES SHALL BE PROVIDED BY CONTRACTOR AND APPROVED BY LANDSCAPE ARCHITECT PRIOR TO INSTALLATION. CONTRACTOR MUST LOAD, HAUL, MIX AND SPREAD ALL TOPSOIL AND OTHER SOIL ADDITIVES AS REQUIRED ON SITE.
7. CONTRACTOR SHALL VERIFY AND/ OR AMEND ALL PLANTING SOILS TO ENSURE PROPER SUITABILITY INCLUDING STATE RECOMMENDED QUANTITIES OF NITROGEN, PHOSPHORUS, AND POTASH NUTRIENTS AND SOIL AMENDMENTS TO BE ADDED TO PRODUCE QUALITY PLANTING SOIL FOR ALL PLANT MATERIAL TO SURVIVE.
8. THE CONTRACTOR SHALL BE RESPONSIBLE FOR ENSURING THAT ALL PLANTING PITS PERCOLATE PROPERLY PRIOR TO PLANTING INSTALLATION.
9. SHRUBS, BULBS, AND GROUNDCOVERS SHALL BE TRIANGULARLY SPACED AT SPACING SHOWN ON PLANTING PLANS AND/OR IN THE PLANT SCHEDULE.
10. THE CONTRACTOR SHALL THE VERIFY EXTENT OF SEEDING OR SOD AREA WITH OWNER REPRESENTATIVE AND LANDSCAPE ARCHITECT PRIOR TO INSTALLATION.
11. LANDSCAPER MUST BE A LICENSED NC LANDSCAPE CONTRACTOR.

TREE INSTALLATION NOTES

1. ALL TREES SHALL MEET AMERICAN STANDARD FOR NURSERY STOCK (ANSI, 1990, PART 1, "SHADE AND FLOWERING TREES").
2. TREES SUPPLIED MUST HAVE BEEN PROPERLY PLANTED AND GROWN IN THE NURSERY. THE ROOT CROWN (ALSO CALLED THE TRUNK FLARE) SHALL BE EVIDENT NEAR THE TOP OF THE GROUND. ANY EXCESS SOIL, UP TO 3 INCHES COVERING THE CROWN WILL HAVE TO BE REMOVED CAREFULLY BY HAND, IN ORDER TO PREVENT ROOT SCRAPES. THE TREE IS THEN TO BE PLANTED WITH THE ROOT CROWN IN PROPER RELATION TO THE SURROUNDING GRADE. ANY TREES WITH MORE THAN 3 INCHES OF SOIL ON TOP OF THE ROOT CROWN WILL BE REJECTED. THE NURSERY OWNERS MAY DIG OVERSIZE BALLS AND REMOVE THE SOIL IN ORDER FOR THE ROOT SYSTEM DIAMETER (WHICH IS THE REQUIRED ROOT BALL DIAMETER) TO MEET THE SPECIFICATION FOR THE TRUNK CALIPER REQUIRED.
3. BALL AND BURLAPPED (B&B) PLANTS MUST HAVE FIRM, NATURAL BALLS OF EARTH, OF DIAMETER NOT LESS THAN RECOMMENDED IN THE "TREE AND SHRUB TRANSPLANTING MANUAL", AND BE OF SUFFICIENT DEPTH TO INCLUDE THE FIBROUS AND FEEDING ROOTS. PLANTS MOVED WITH A BALL WILL NOT BE ACCEPTED IF THE BALL IS DRY, CRACKED OR BROKEN BEFORE OR DURING PLANTING OPERATIONS.
4. REMOVE ALL TREATED OR PLASTIC-COATED BURLAP, STRAPPING, WIRE OR NYLON TWINE FROM ROOT BALL. AFTER SETTING IN HOLE, CUT AWAY 2/3 OF WIRE BASKET, IF ANY, AND TOP 1/3 OF BURLAP.
5. SOAK ROOT BALL AND PIT IMMEDIATELY AFTER INSTALLATION.
6. CONSTRUCT 4" HIGH SAUCER (WATER BERM) OUTSIDE OF PLANT MIX BACK FILL.
7. WHERE TREES ARE PLANTED IN ROWS, THEY SHALL BE UNIFORM IN SIZE AND SHAPE.
8. NO EXISTING TREES SHALL BE REMOVED WITHOUT WRITTEN AUTHORIZATION FROM THE OWNER REPRESENTATIVE EXCEPT WHERE NOTED ON PLANS. NO GRUBBING SHALL OCCUR WITHIN EXISTING TREE AREAS.
9. THE CONTRACTOR SHALL STAKE THE LOCATIONS OF ALL PROPOSED TREES AND OBTAIN APPROVAL FROM THE LANDSCAPE ARCHITECT AND OWNER REPRESENTATIVE PRIOR TO INSTALLATION.
10. ALL TREES SHALL BE STAKED AT TIME OF INSTALLATION IN ACCORDANCE WITH PLANTING DETAILS.
11. THE CONTRACTOR SHALL ENSURE THAT TREES REMAIN VERTICAL AND UPRIGHT FOR THE DURATION OF THE GUARANTEE PERIOD.

WATERING NOTES

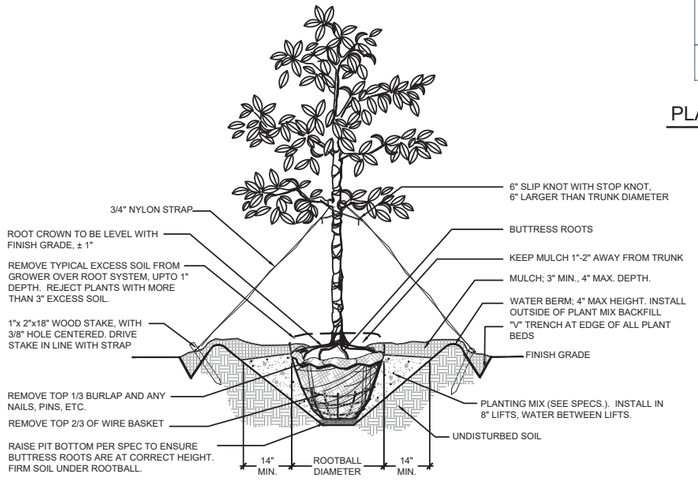
1. CONTRACTOR IS RESPONSIBLE FOR ENSURING ALL PLANT MATERIAL HAS ADEQUATE WATER TO ENSURE PLANT SUCCESS. CONTRACTOR SHALL WATER PLANT MATERIAL THROUGH THE DURATION OF THE PROJECT UNTIL OWNER HAS GIVEN APPROVAL AND/OR RELEASED THE CONTRACTOR FROM THE SITE.

TREE PROTECTION NOTES

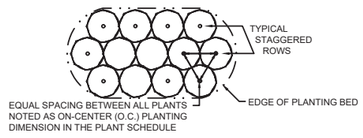
1. PRIOR TO ANY CLEARING, GRADING, OR CONSTRUCTION ACTIVITY, TREE PROTECTION WILL BE INSTALLED AROUND PROTECTED TREES. NO CONSTRUCTION WORKERS, TOOLS, MATERIALS, OR VEHICLES ARE PERMITTED WITHIN THE TREE PROTECTION FENCING.

IRRIGATION NOTES

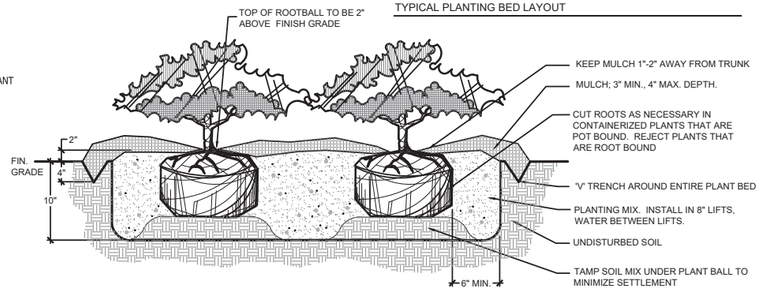
1. CONTRACTOR IS RESPONSIBLE FOR PERMITTING, PROVIDING AND SUBMITTING ALL IRRIGATION PLANS, SPECIFICATIONS, AND PRODUCT MANUALS BASED UPON THE FINAL APPROVED LANDSCAPE PLANS.
2. ALL VALVES AND VALVE BOXES SHALL BE PLACED, WHERE POSSIBLE, IN PLANTED AREAS UNDER MULCH.
3. INSTALL ALL PIPING AS FAR FROM TREES AND ROOT BALLS AS POSSIBLE WHILE MAINTAINING SPRINKLER AND DRIP TUBE SPACING.
4. CONTRACTOR SHALL TEST DYNAMIC PRESSURE BEFORE STARTING WORK, REPORT ANY DEVIATION FROM PRESSURE REQUIRED TO OWNER'S REP. BEFORE CONTINUING.
5. INSTALL CONTROLLER AS DIRECTED BY OWNER'S REPRESENTATIVE. IRRIGATION SYSTEM SHOULD INCLUDE MULTIPLE ZONES CONTRACTOR SHALL SUBMIT LAYOUT PLAN ILLUSTRATING PROPOSED ZONES AND LAYOUT.
6. ALL ABOVE GROUND WIRING, INSIDE AND OUTSIDE OF BUILDING, SHALL BE INSTALLED IN RIGID, METALLIC CONDUIT FOR VANDALISM PROTECTION.
7. COORDINATE LOCATION OF ALL EXISTING AND FUTURE UTILITIES ON SITE AND CONTACT PROPER AUTHORITIES AND UTILITY COMPANIES BEFORE THE START OF WORK.
8. ONCE INSTALLED, CONTRACTOR IS RESPONSIBLE FOR AN ON-SITE WALK THRU WITH OWNER'S REP. AND PROVIDING AN OPERATIONAL MANUAL.
9. ALL SPRINKLER HEADS SHALL BE AIMED TO MINIMIZE WATER RUN-OFF AND OVERWATERING OF THE SITE.



A SINGLE STEM TREE INSTALLATION DETAIL
SCALE: NTS



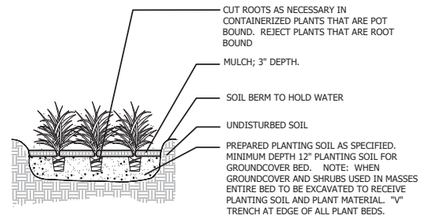
TYPICAL PLANTING BED LAYOUT



B SHRUB INSTALLATION DETAIL
SCALE: NTS

PLANT SCHEDULE						
QTY	KEY	BOTANICAL NAME	COMMON NAME	SIZE	ROOT	SPACING
CANOPY TREE						
5		QUERCUS VIRGINIANA 'CATHEDRAL'	CATHEDRAL LIVE OAK	3" CAL. MIN. & 12' HGT.	B & B/CONT.	AS SHOWN
8		ULMUS PARVIFOLIA 'EMER II'	ALLEE ELM	3" CAL. MIN. & 12' HGT.	B & B/CONT.	AS SHOWN
UNDERSTORY TREE						
13		CERCIS CANADENSIS 'RISING SUN'	RISING SUN REDBUD	6' HT. MIN.	B & B/CONT.	AS SHOWN
16		LAEGESTROEMIA INDICA 'NATCHEZ' SINGLE STEM	SINGLE STEM CRAPE MYRTLE	6' HT. MIN.	B & B/CONT.	AS SHOWN
SHRUBS						
6		ILEX CORNUTA 'BURFORDII'	BURFORD HOLLY	3 GAL x 12" HGT. MIN.	CONTAINER	AS SHOWN
35		ILEX CORNUTA CARISSA	CARISSA HOLLY	3 GAL x 12" HGT. MIN.	CONTAINER	AS SHOWN
15		ILEX GLABRA 'GEM BOX'	GEM BOX HOLLY	3 GAL x 12" HGT. MIN.	CONTAINER	AS SHOWN
16		LOROPETALUM CHINENSE VAR. RUBRUM 'RUBY'	RUBY FRINGE FLOWER	3 GAL x 12" HGT. MIN.	CONTAINER	AS SHOWN
40		ROSA HYBRIDA 'DRIFT'- WHITE	WHITE DRIFT ROSE	3 GAL x 12" HGT. MIN.	CONTAINER	AS SHOWN
GROUNDCOVERS/PERENNIALS/GRASSES- SHALL BE TRIANGULARY SPACED UNLESS OTHERWISE SHOWN						
88	LA	LANTANA - YELLOW	YELLOW LANTANA	1 GAL MIN.	CONTAINER	36" OC
367	LV	LIRIOPE MUSCARI 'VARIEGATA'	VARIEGATED LILYTURF	3" POT/OR PLUG	CONTAINER	12" O.C.
146	MW	MUHLENBERGIA CAPILLARIS	WHITE MUHLY GRASS	1 GAL MIN.	CONTAINER	24" O.C.
OTHER						
	SEEDED LAWN	CENTIPEDE SEED- EREMOCHLOA OPHIUROIDES	SEE PLAN FOR ALL LAWN AREAS SHOWN - PLANTING SHALL FOLLOW ALL SWANSBORO REQUIR			
		MULCH: BROWN HARDWOOD SHREDDED MULCH AT A MINIMUM INSTALLED DEPTH OF 3" ; ALL BEDS BROWN SHREDED HARDWOOD MULCH UNLESS OTHERWISE NOTES ON PLANS	ALL TREES, SHRUBS, AND GROUNDCOVERS/ LANDSCAPE BEDS TO BE INCLUDED IN MULCH BEDS. OWNER TO APPROVE MULCH SIZE AND COLOR. DEPTHS SHALL MEET ALL SWANSBORO REQUIREMENTS (3" MIN.)			
18	EACH	GATOR BAGS:	TREES SHALL HAVE GATOR BAGS UNTIL END OF WARRANTY PERIOD OR UNTIL IRRIGATION HAS BEEN ESTABLISHED			

PLANT SCHEDULE



C GROUNDCOVER INSTALLATION DETAIL
SCALE: NTS

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228 North Front Street, Suite 301
Wilmington, NC 28401
Ph. (910)232-3878

REV. NO.	DESCRIPTION	DATE

COFFEE SHOP
1117 WEST CORBETT AVENUE
SWANSBORO, NORTH CAROLINA

LANDSCAPE DETAILS

DRAWING BY: S.L.B.
DATE: 07/19/22

NORTH CAROLINA REGISTERED LANDSCAPE ARCHITECT 1785 SHAUD L. BURROUGHS
07/01/22

SHEET NUMBER: L2 of 2