



Date:	May 20, 2024
To:	Jael Wagoner, PLA, ASLA Qunity
From:	Baohong Wan, PhD, PE Gannett Fleming
RE:	Summit Church Chatham County Traffic Summary Letter

Gannett Fleming is contracted with Qunity to prepare the Summit Church Chatham County Traffic Impact Analysis (TIA) in accordance with the North Carolina Department of Transportation (NCDOT) Congestion Management Capacity Analysis Guidelines and Chatham County Unified Development ordinance (UDO) requirements.

The proposed development is located in Chatham County, North Carolina, and it encompasses approximately 30 acres of land with the assemblage properties of Chatham County parcel numbers 0018750, 0018896, and 0018897. The preliminary plan is to construct an 88,460 square foot (SF) church with a 1,200-seating capacity sanctuary. Construction of the site is assumed to occur in 2026.

This Technical Memorandum outlines Gannett Fleming’s preliminary findings and observations concerning the proposed development, while data collection and coordination with the NCDOT and Chatham County is underway with the final TIA anticipated to be completed in June 2024.

Trip Generation

The amount of traffic generated by a new development is a function of the size and type of development. Trip generation data for this report was conducted in accordance with the procedures outlined in the Institute of Transportation Engineers (ITE) report entitled **Trip Generation 11th Edition**¹. Table 1 illustrates the total number of weekday daily, weekday AM peak hour, weekday PM peak hour, Sunday daily, and Sunday peak hour trips expected to be generated by the proposed development.

As shown in Table 1, the proposed Summit Church Chatham County is projected to generate approximately 669 vehicular trips on a typical weekday, with 28 trips expected to occur during the AM peak hour and 43 trips during the PM peak hour; it is projected to generate approximately 2,768 trips on a typical Sunday, with 912 trips expected to occur during the Sunday peak hour.

Due to the proposed land use, majority of vehicular tips are anticipated to be passenger vehicles. ITE Trip Generation doesn’t contain truck trip generation data for church; for comparison purposes, an 88 KSF general office building is projected to generate 9 truck trips on a typical weekday. Based on the ITE data, the proposed site is projected to generate approximately 51 Walk + Bike + Transit trips during the Sunday peak hour.

Preliminary Roadway Capacity Assessment

The proposed Summit Church Chatham County is planned to be accessed via two new driveways along US 15-501 (Chapel Hill Road). Other secondary roadways that may be impacted by site traffic include Lystra Road (SR 1721), Briar Chapel Parkway (SR 1690), Vickers Road (SR 1719), and Jack Bennett Road (SR 1717).

US 15-501 is maintained by NCDOT as part of the US Highway System. US 15-501 is a north/south corridor that connects Chatham County with Chapel Hill in Orange County. Under the existing conditions, US 15-501 is a median divided four-lane roadway with little or moderate access control. The speed limit along US 15-501 is 55 miles per hour (mph). Potential capacity along US 15-501 is 35,700 vehicles per day (VPD), while the 2022 AADT along US 15-501 was measured at 22,000 vehicles per day (VPD) north of Briar Chapel Parkway/Vickers Road, and 17,000 VPD south of the same location. The annual average daily truck traffic (AADTT) along US 15-501 was at 550 VPD north of and 430 south of Briar Chapel Parkway/Vickers Road.

Lystra Road (SR 1721) is maintained by NCDOT as a secondary roadway. Under the existing conditions, Lystra Road is a two-lane, undivided roadway with 45 mph speed limit. Potential capacity along Lystra Road is 12,700 vehicles per day. The 2022 AADT was measured at 6,000 VPD along Lystra Road between US 15-501 and Jack Bennett Road.

Briar Chapel Parkway (SR 1690) is maintained by NCDOT as a secondary roadway. Under the existing conditions, Briar Chapel Parkway is a two-lane, partially divided roadway with 35 mph speed limit. Potential capacity along Briar Chapel Parkway is 12,900 vehicles per day. There was no AADT information provided by NCDOT along Briar Chapel Parkway.

Vickers Road (SR 1719) is maintained by NCDOT as a secondary roadway. Under the existing conditions, Vickers Road is a two-lane, undivided roadway with 35 mph speed limit. Potential capacity along Vickers Road is 11,600 vehicles per day. There was no AADT information provided by NCDOT along Vickers Road.

Jack Bennett Road (SR 1717) is maintained by NCDOT as a secondary roadway. Under the existing conditions, Jack Bennett Road is a two-lane, undivided roadway with 45 mph speed limit. Potential capacity along Jack Bennett Road is 12,700 vehicles per day. The 2022 AADT was measured at 3,600 VPD along Jack Bennett Road east of US 15-501.

Anticipated Transportation Improvements

The section of US 15-50 was specified as a synchronized street in the DCHC MPO 2050 Metropolitan Transportation Plan (MTP). Conversion of remaining non-synchronized sections to synchronized street along US 15-501 from Smith Level Road to US 64 Bypass in Chatham County is planned with NCDOT TIP U-6192 as part of 2024-2033 State Transportation Improvement Program (STIP). The right-of-way year for TIP U-6192 is anticipated to be 2028, and construction is expected to start in 2031. With the completion of TIP U-6192, capacity along US 15-501 is expected to improve to 43,900 VPD with moderate access control in place.

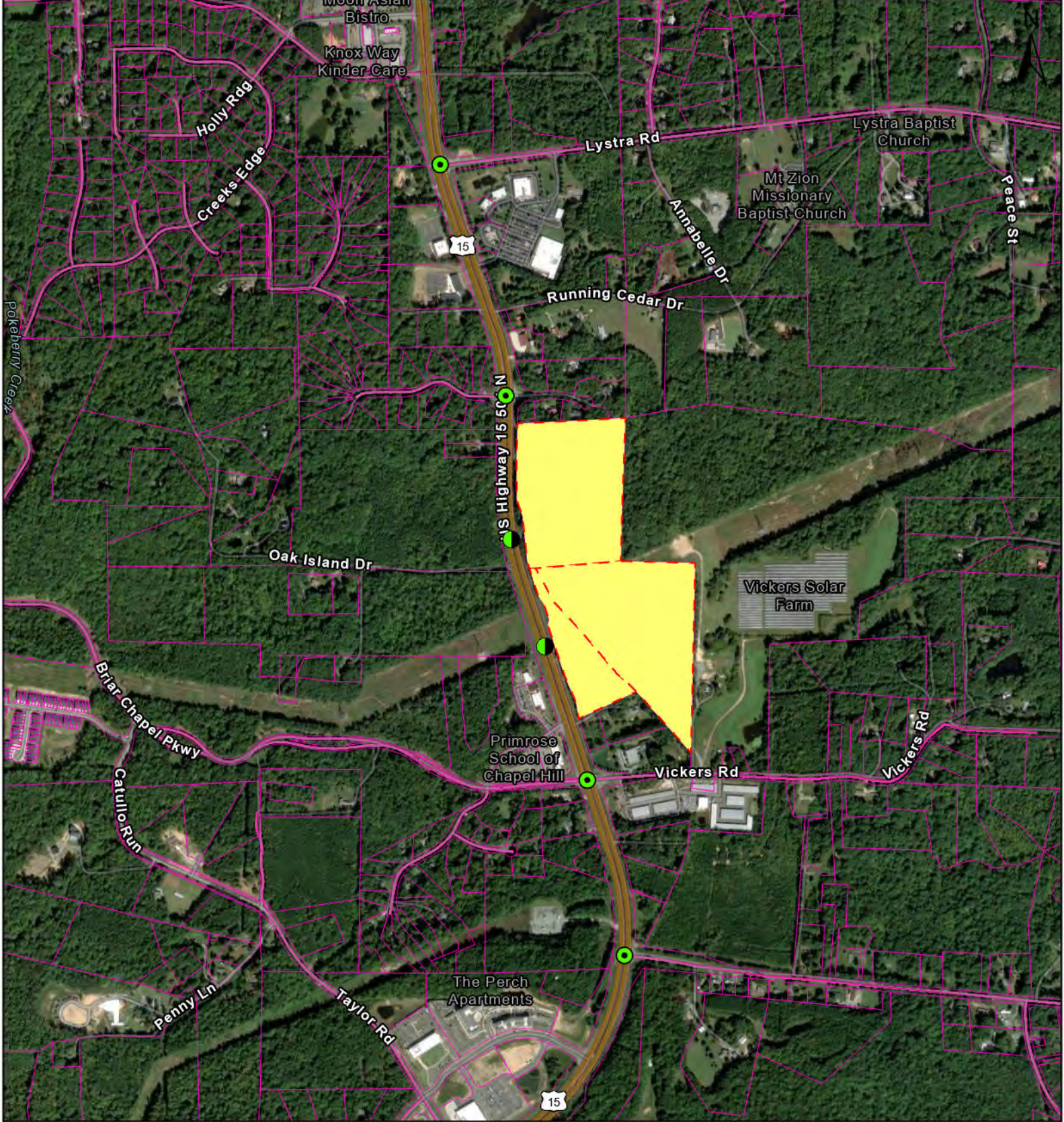
In the DCHC MPO 2050 MTP, the section of Jack Bennett Rd/Lystra Rd from US 15-501 to Farrington Mill/Point Road was recognized as candidate roadway section for potential modernization improvements, although the project funding has not been identified.

Since the proposed Summit Church Chatham County is projected to generate minimal trips on a typical weekday (less than 700 VPD), mitigation measures along off-site roadways are not anticipated, as the roadways should be







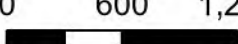
able to operate under capacity after buildout of the proposed site. Nevertheless, due to potential large amounts of inbound and outbound trips during Sunday peak hour (over 900 trips), dedicated turn lanes along US 15-501 will likely be required. Final mitigation determinations and turn lane decisions will be updated with the completion of TIA.


Table 1 – ITE Trip Generation Summary														
Weekday Site Trips						Weekday			AM			PM		
LUC	Description	Density	Variable	PK HR	METHOD	Daily	In	Out	Total	In	Out	Total		
560	Church [Data Range: 10-50]	88	1000 GFA	Adjacent	RATE*	669	17	11	28	19	24	43		
	Church Total					669	17	11	28	19	24	43		
Sunday Site Trips						Sunday			Sunday Peak					
LUC	Description	Density	Variable	PK HR	METHOD	Daily	In	Out	Total					
560	Church [Data Range: 10-50]	88	1000 GFA	Adjacent	RATE*	2,768	438	474	912					



Legend

-  Project Site
-  Intersection
-  Site Access
-  Cross Connection

0 600 1,200
 Feet

NCDOT
 Division 8 District 1:
 Chatham County





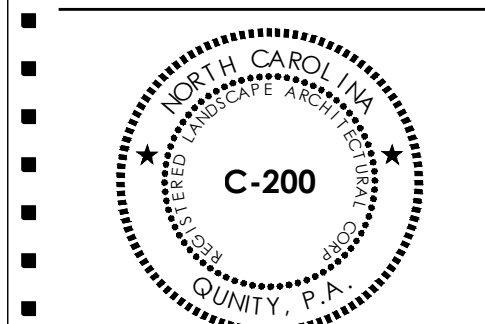
Figure 1
 Summit Church Chatham County
 Study Area Map
 Chapel Hill, NC



5/20/2024

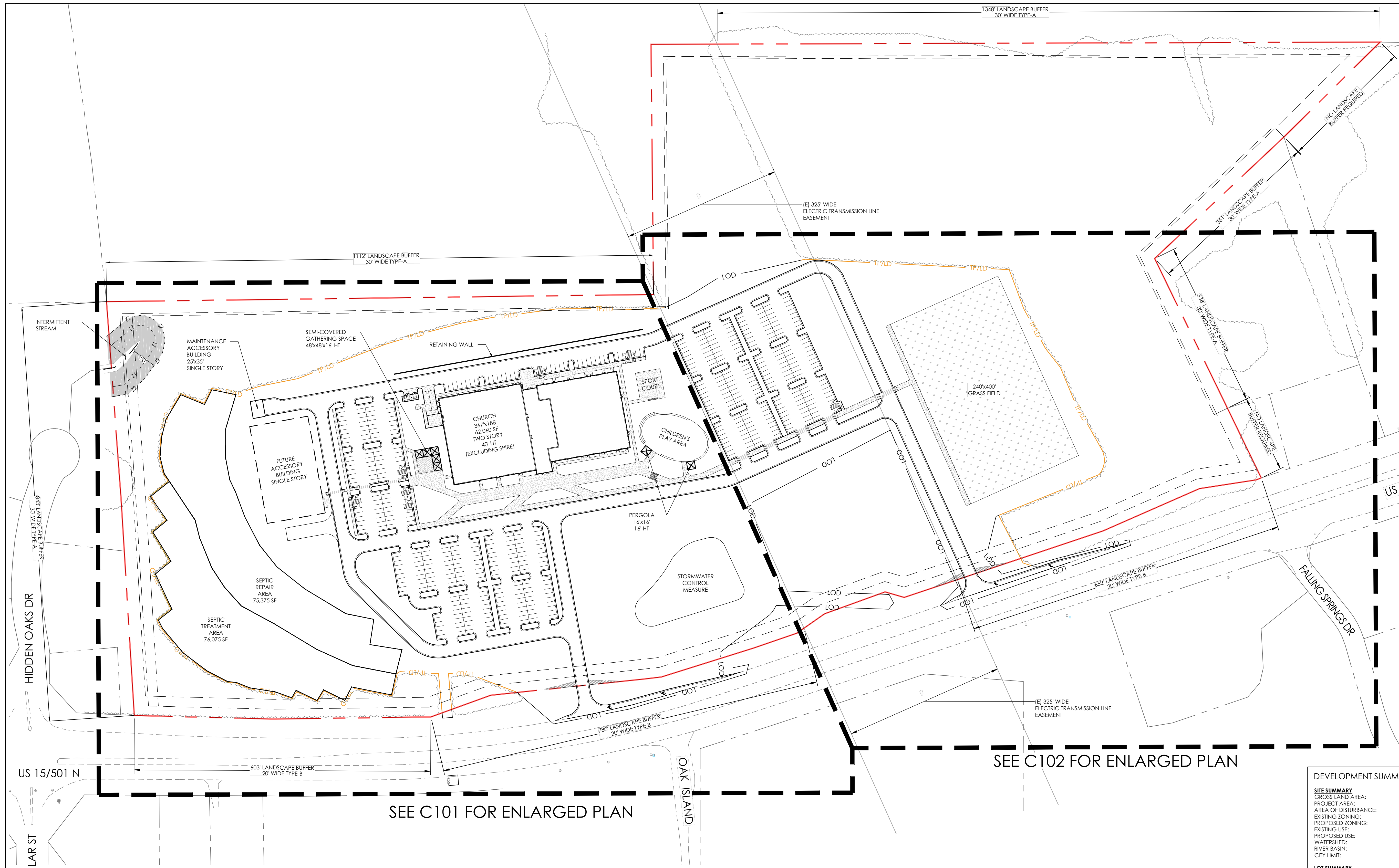
Figure 2

**SITE PLAN
OVERALL**



**PRELIMINARY
DO NOT USE FOR
CONSTRUCTION**

PIN: 9775-01-45-4512
PID: 0018750
PIN: 9775-03-44-4270
PID: 0018896
PIN: 9775-04-54-0411
PID: 0018897



SEE C101 FOR ENLARGED PLAN

SEE C102 FOR ENLARGED PLAN

GENERAL SITE NOTES

- BUILDING AND ROADWAY STAKE OUT TO BE PERFORMED BY A REGISTERED LAND SURVEYOR. NOTIFY THE ENGINEER OF ANY DISCREPANCY.
- ALL PARKING LOT DIMENSIONS ARE TO BACK OF CURB AND FACE OF SIDEWALK, UNLESS OTHERWISE NOTED ON THE PLANS.
- ALL ON SITE PERIMETER CURB & GUTTER SHALL BE 24" UNLESS OTHERWISE NOTED.
- CURB & GUTTER TO SLOPE (NEGATIVE OR POSITIVE) SAME AS PAVEMENT EDGE. PONDING OF WATER IN THE GUTTER IS PROHIBITED.
- ALL CURB & GUTTER RADII SHALL BE 3' (TO BC) UNLESS OTHERWISE NOTED.
- ALL SIDEWALKS ARE 5' WIDE WITH EXPANSION JOINTS @ 30' OC UNLESS OTHERWISE NOTED ON THE DRAWINGS.
- ANY WORK WITHIN THE PUBLIC RIGHT-OF-WAY SHALL BE IN STRICT ACCORDANCE WITH CHATHAM COUNTY STANDARDS AND SPECIFICATIONS.
- THE ESTABLISHMENT OF FIRE LANES, IN ACCORDANCE WITH SECTION 303.3 OF THE 2012 IBC FIRE CODE, MAY BE REQUIRED WHERE IT BECOMES APPARENT AFTER OCCUPANCY OF THE DEVELOPMENT THAT PARKING WITHIN ROADWAYS CREATES DIFFICULTIES FOR THE PASSAGE OF FIRE EQUIPMENT.
- CONTRACTOR TO VERIFY THE WORK TAKING PLACE RELATED TO THE CHANGES IN THIS SITE PLAN WILL BE FULLY COMPLIANT WITH THE NORTH CAROLINA ACCESSIBILITY CODES (ANSI 117.1 - 2009 AND CHAPTER 11 OF THE NCBC) UNLESS AND EXCEPT IN AREAS WHERE AN APPROVED STATEMENT FROM A SITE ENGINEER, SURVEYOR OR ARCHITECT VERIFIES THAT SITE CONDITIONS EXIST WHERE THE TOPOGRAPHY OF THE SITE IS EXTREME AND ONLY ALTERNATE METHODS OF COMPLIANCE ARE POSSIBLE. AN ANALYSIS AND CERTIFICATION OF THE SITE, PERFORMED BY THE DESIGN PROFESSIONAL OR DESIGNEE, MUST BE SUBMITTED TO THE BUILDING INSPECTIONS DEPARTMENT CERTIFYING THAT ALL SITE ACCESSIBILITY CODE REQUIREMENTS SUCH AS CURB CUTS, RAMP SLOPES, SIDEWALK SLOPES AND WIDTHS, AND CROSS SLOPES MEET THE REQUIREMENTS OF THE NC ACCESSIBILITY CODE PRIOR TO CO ISSUANCE.
- THE PROPER PROCEDURE FOR COMPACTED SOIL REMEDIATION IS AS FOLLOWS.
 - REMOVE ALL IMPERVIOUS SURFACES FROM THE SUBJECT AREA.
 - TILL THE AREA TO A DEPTH OF 12" BELOW THE TOP OF COMPACTED SUBGRADE.
 - SUITABLE RATES AND TYPES OF SOIL AMENDMENTS SHOULD BE DETERMINED THROUGH SOIL TESTS. LIMESTONE AND FERTILIZER SHOULD BE APPLIED UNIFORMLY DURING SEEDBED PREPARATION AND MIXED WELL WITH THE TOP 4 TO 6 INCHES OF SOIL.

**1 SITE PLAN
SCALE: 1"=100'**



LEGEND (PROPOSED CONDITIONS)

— LOD	— LIMITS OF DISTURBANCE	▨ 50' STREAM BUFFER
— TPF	— TREE PROTECTION FENCE	▨ MULTIPURPOSE FIELD (GRASS)
— TP/LD	— LIMITS OF DISTURBANCE/ TREE PROTECTION FENCE	
- - - Z1	- - - RIPARIAN BUFFER - ZONE 1 (30')	
- - - Z2	- - - RIPARIAN BUFFER - ZONE 2 (20')	

DEVELOPMENT SUMMARY:

SITE SUMMARY	
GROSS LAND AREA:	2,183,097 SF (50.117 AC)
PROJECT AREA:	1,303,268 SF (29.92 AC)
AREA OF DISTURBANCE:	1,303,268 SF (29.92 AC)
EXISTING ZONING:	CD-CC COMPACT COMMUNITY
PROPOSED ZONING:	O&I: OFFICE & INDUSTRIAL
EXISTING USE:	RESIDENTIAL / VACANT
PROPOSED USE:	CHURCH
WATERSHED:	HAW / CAPE FEAR
RIVER BASIN:	CAPE FEAR
CITY LIMIT:	OUTSIDE
LOT SUMMARY	
MAXIMUM BUILDING HEIGHT:	60' (CHURCH SPIRES ARE EXEMPT)
STREET YARD SETBACK:	40'
SIDE SETBACK:	25'
REAR SETBACK:	25'
BUILDING SUMMARY	
EXISTING BUILDING AREA:	4,525 SF
PROPOSED BUILDING AREA:	88,460 SF
PARKING SUMMARY	
REQUIRED PARKING CHURCH:	1 SPACE / 4 SEATS
	1,200 SEATS = 300 SPACES
REQUIRED ADA PARKING:	6 SPACES
REQUIRED LOADING ZONE:	1 SPACE / 50,000 SF
	88,460 SF = 2 SPACES
STANDARD PARKING PROVIDED (9' X 18')	511 SPACES
ADA PARKING PROVIDED:	16 SPACES
TOTAL PARKING PROVIDED:	527 SPACES
IMPERVIOUS SUMMARY	
MAXIMUM ALLOWABLE IMPERVIOUS AREA:	523,943 SF (12.03 AC) (24.0%)
EXISTING IMPERVIOUS AREA:	4,525 SF (0.10 AC)
TOTAL PROPOSED IMPERVIOUS AREA:	470,250 SF (10.80 AC) (21.5%)

811 - CALL BEFORE YOU DIG	
DRAWN BY:	CHECKED BY:
SBM	JEW
DATE	05/07/2024
PROJECT NO.	2339
SHEET NO.	C100
	CONDITIONAL REZONING