



STATE OF NORTH CAROLINA  
**DEPARTMENT OF TRANSPORTATION**

PAT McCRORY  
GOVERNOR

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SECRETARY

April 26, 2014  
Revised May 2, 2014

**ORANGE COUNTY**

Kumar Nepalli  
Traffic Engineering Program Manager  
Town of Chapel Hill  
405 Martin Luther King Jr. Blvd.  
Chapel Hill, NC 27514

Subject: Proposed Glen Lennox Mixed Use Re-development  
Located on NC 54 at US 15-501  
Review of Traffic Impact Study

Dear Mr. Nepalli,

Per your request, NCDOT Division and Congestion Management Unit staff have reviewed the Traffic Impact Study, (TIA) prepared by HNTB, the preliminary site concept plan enclosed therein and alternative traffic mitigation recommendations prepared by Design Resource Group. Based on the submitted information, we offer the following comments relevant to the impacts to the State maintained highway system.

**General:**

The project consists of re-development of the existing Glen Lennox neighborhood located adjacent to the northeast quadrant of the NC54 and US 15-501 interchange and creation of a mixed use development consisting of approximately 1391 apartment units, 600,000 SF general office space, 108,000 SF retail and a 150 room hotel. The development is planned for three phases with respective phase build out dates of 2018, 2023 and 2028. The site is expected to generate the following cumulative 24-hour trip volumes adjusted for pass-by, internal capture and transit reductions.

Phase 1 (2018) 8026 VPD  
Phase 2 (2023) 14,785 VPD

### Phase 3 (2028) 16,557 VPD

The site concept plan maintains four existing access points on NC 54, a new all-movement access point on US 15-501 approximately 1000' north of the NC 54 interchange and the existing access point on US 15-501 at Brandon Road.

This development is within the study limits of NCDOT project U-5304 which is a feasibility study to evaluate future improvements to the US 15-501 corridor between I-40 and NC 86 (S. Columbia Street). The study is scheduled for completion later this year. Information regarding this proposed development is being provided to project staff.

US 15-501 is designated as a strategic highway corridor. Routes with this designation are considered critical to statewide mobility and connectivity and are subject to specific access management guidelines based on the corridor designation. US 15-501 is designated as a Boulevard with partial control of access. Development access is typically limited to no more than one restricted-movement access with other access provide by connections to service roads or side streets.

#### **US-15-501 Access:**

Because of the specific guidelines relative to this Strategic Highway Corridor as well as analysis provided in the TIA, NCDOT cannot support a new all-movement access on US 15-501 as proposed, due to the anticipated negative impacts on traffic operation on the corridor. NCDOT considers the following two scenarios to be acceptable alternatives that provide for site access while preserving mobility on the corridor.

#### **Scenario 1- Directional Crossover Access**

This configuration provides for direct left turns from US-15-501 to both the proposed new access and Brandon Road while redirecting left turn and through movements from the proposed access, Brandon Road and Christopher Road to U-turns controlled by simple traffic signals located to the north of Brandon Road and at the proposed access location. In addition, the northbound acceleration lane from the NC 54 westbound ramp is extended to terminate as an exclusive right turn lane at the proposed access to provide for acceptable acceleration and weaving distance to accommodate traffic maneuvers between the ramp and the intersection. Required lane configurations, storage lengths, and additional geometric detail is provided on the attached graphic labelled "Directional Crossover Access"

#### **Scenario 2- Brandon Road Conventional Access**

This configuration provides for an all-movement access at the existing Brandon Road/Christopher Road intersection controlled by a single multi-phase traffic signal. The proposed site access is restricted to right-in right-out only. In addition, as in scenario 1, the northbound acceleration lane from the NC 54 westbound ramp is extended to terminate as an exclusive right turn lane at the proposed access to provide for acceptable

acceleration and weaving distance to accommodate traffic maneuvers between the ramp and the intersection. Required lane configurations, storage lengths and additional geometric detail is provided on the attached graphic labelled “Brandon Road Conventional Access”

**NC 54 Access:**

The recommendations regarding access and mitigation provided by HNTB and alternative submitted by Design Resource Group differ substantially. Specifically,

- HNTB recommends closure of the existing Audley Lane access whereas Design Resource Group recommends retaining the access.
- HNTB recommends provision of dual lanes serving left turn movements both to and from Hamilton Road whereas Resource Design Group recommends accommodating left turn movements thru single lanes with extended storage.
- HNTB recommends elimination of site Driveway 1 due to proximity to the ramp intersection.

Based on evaluation of traffic modeling, NCDOT concurs with the HNTB recommendation for provision of dual lanes serving left turn movements at Hamilton Road as the preferred option to preserve efficiency at this intersection and along the corridor. However, in the event that it is demonstrated that construction of dual left turn lanes is not feasible due to right of way constraints, a single left turn lane scenario is acceptable subject to signal timing and operation which provides preference to optimized progression on NC 54.

NCDOT is agreeable to retention of the existing Audley Lane right-in right-out access subject to provision of a right turn deceleration lane.

NCDOT concurs that the HNTB recommendation to eliminate existing Driveway 1 is desirable to reduce vehicle conflict points along NC 54. However, this closure should only be performed after additional evaluation of impacts to the existing convenience store operation and concurrence from the unaffiliated business owner.

Additional geometric detail for lane configurations and storage lengths for these scenarios is provided on the previously referenced graphic attachments.

**Multi-modal Enhancements:**

The TIA recommends certain transit and bicycle/pedestrian enhancements, however additional detail is needed for review. Any stipulated multi-modal enhancements including but not limited to sidewalk, bike lanes, bus pull offs, lighting, landscaping etc... on State maintained routes are subject to NCDOT requirements.

**General Requirements:**

It is necessary to obtain an approved driveway permit and/or encroachment agreement prior to performing work on the NCDOT right of way. As a condition of the permit, the permittee shall be responsible for design and construction of the stipulated improvements in accordance with NCDOT requirements. An approved permit will be issued upon receipt of approved roadway and signal construction plans, inspection fee, and any necessary performance and indemnity bonds.

The applicant shall dedicate any additional right of way necessary to accommodate the required road improvements or future improvements as stipulated.

Intersection radii and geometry shall be designed to accommodate turning movements of the largest anticipated vehicle.

All pavement markings shall be long life thermoplastic. Pavement markers shall be installed if they previously existed on the roadway.

The permittee shall be responsible for the installation and relocation of any additional highway signs that may be necessary due to these improvements and shall comply with the requirements of the MUTCD.

Feel free to contact me if you have any questions.

Sincerely,

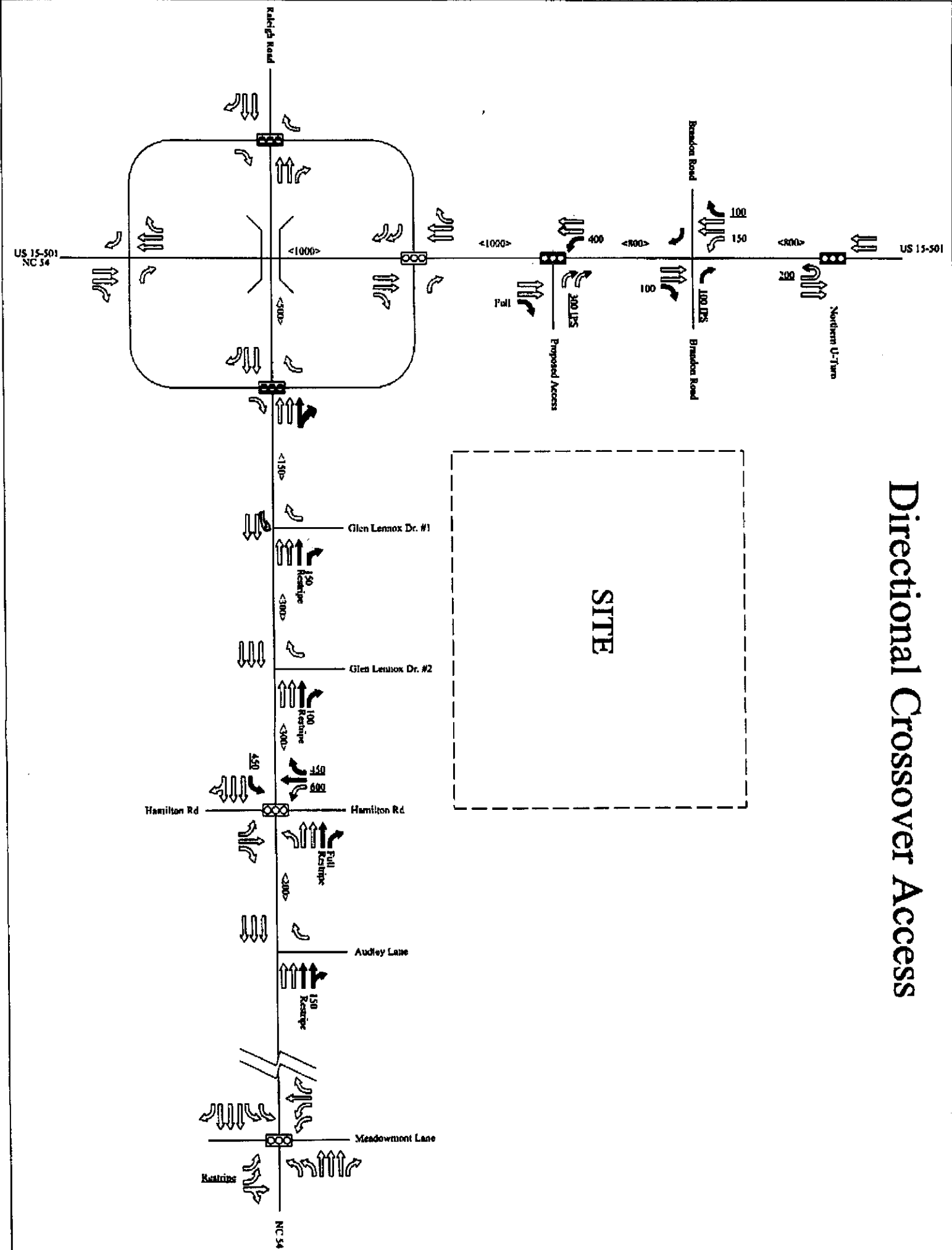


C. N. Edwards Jr., PE  
District Engineer

**Attachments**

Cc: J. M. Mills, PE, Division Engineer  
Dawn Mcpherson, Division Traffic Engineer  
Ed Lewis, PE, Division Planning Engineer  
Doumit Ishak, PE, NCDOT Congestion Management Regional Engineer  
Derrick Lewis, PE, NCDOT Feasibility Study Unit Head  
Robert Ziemba, PE, NCDOT Central Region Signals Engineer  
Rachel Russell, Grubb Properties  
Craig Scheffler, PE, HNTB

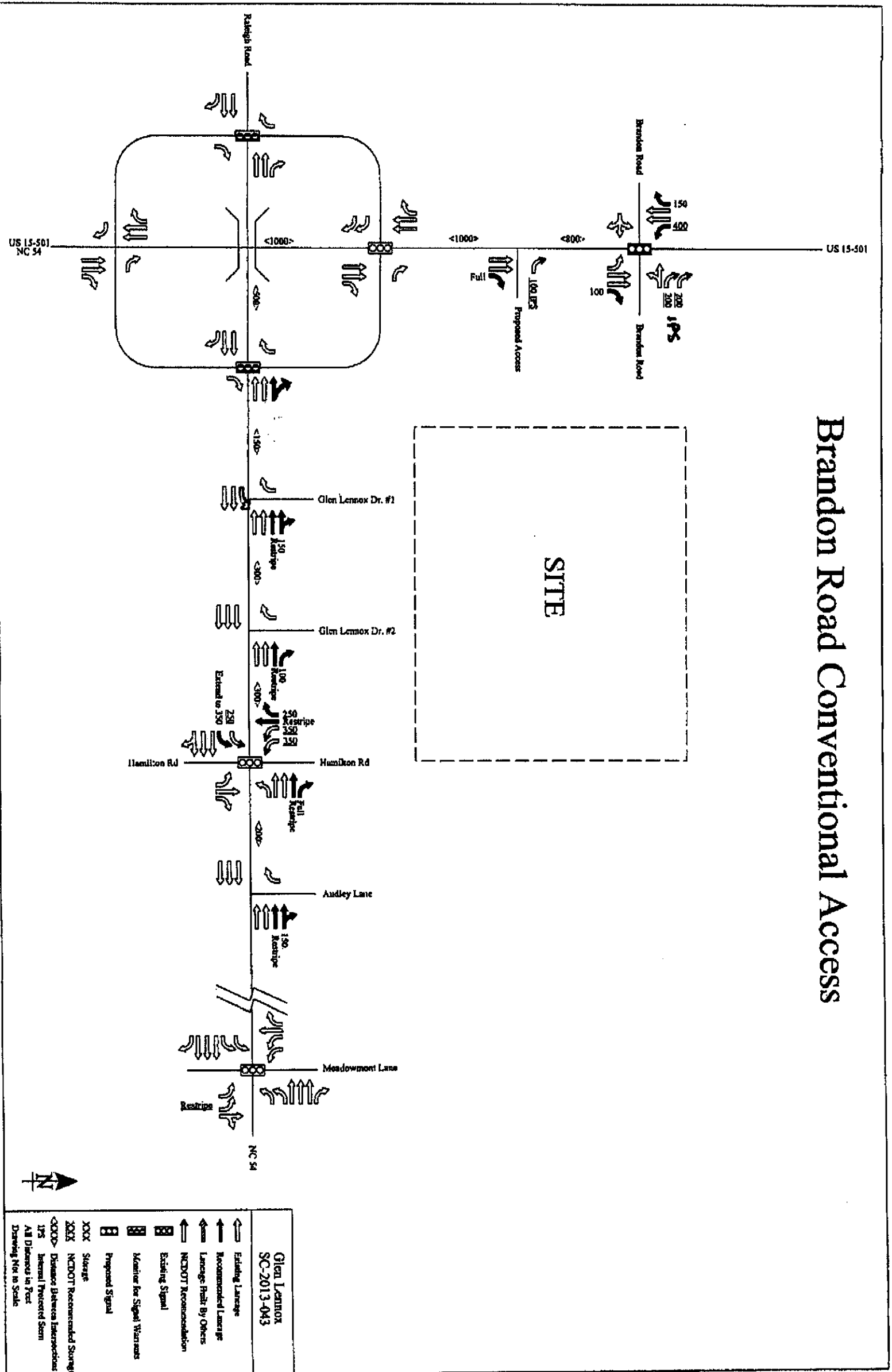
# Directional Crossover Access



<p><b>Glen Lennox</b> SC-2013-043</p>	
	Existing Laneage
	Recommended Laneage
	Laneage Built By Others
	NCDOT Recommendation
	Existing Signal
	Monitor for Signal Warnings
	Proposed Signal
	Shoulder
	NCDOT Recommended Storage
	Distance Between Intersections
	Internal Proposed Street
	All Distances in Feet
	Drawing Not to Scale



# Brandon Road Conventional Access



Glen Lennox SC-2013-043	
	Existing Laneage
	Recommended Laneage
	Laneage Hint By Others
	NCDOT Recommendation
	Existing Signal
	Location for Signal Warrants
	Proposed Signal
	Steeple
	NCDOT Recommended Steeple
	Distance Between Intersections
	Internal Percent Storm
	All Distances in Feet
Drawing Not to Scale	