

STATE OF NORTH CAROLINA      )  
                                    )  
WAKE COUNTY                    )

TRANSPORTATION INFRASTRUCTURE  
REIMBURSEMENT AGREEMENT

This TRANSPORTATION INFRASTRUCTURE REIMBURSEMENT AGREEMENT (this “**Agreement**”) is entered into this the \_\_\_\_\_ day of \_\_\_\_\_, 2025, by and between the TOWN OF HOLLY SPRINGS, NORTH CAROLINA, a municipal corporation organized and existing under the laws of the State of North Carolina (“**Holly Springs**”), and the TOWN OF APEX, NORTH CAROLINA, a municipal corporation organized and existing under the laws of the State of North Carolina (“**Apex**”) (collectively, the “**Parties**”).

## RECITALS

WHEREAS, Apex and Holly Springs desire to provide safe and efficient transportation infrastructure in the areas within and proximate to their corporate boundaries;

WHEREAS, Apex is willing and able to improve the intersection at Old US Highway 1 and Friendship Road (the “**Intersection**”), located within the corporate boundaries of Apex and proximate to the corporate boundaries of Holly Springs, for the purpose of enhancing the safety and capacity of the intersection;

WHEREAS, the project known as Old US 1 and Friendship Road Turn Lanes (the “**Developer Project**” as further described in pages 9 and 10 of **Exhibit A**) to complete the following improvements to the Intersection is in the design phase: (1) a westbound left turn lane on Old US Highway 1 at Friendship Road, and (2) a northbound left turn lane on Friendship Road at Old US Highway 1;

WHEREAS, the project known as Old US 1 and Friendship Road Traffic Signal (the “**Town Project**” as further described in **Exhibit B**) to complete the following improvements to the Intersection is in the design phase: a traffic signal at the Intersection;

WHEREAS, Apex entered into the Development Agreement with Beazer Homes, LLC on November 4, 2024 attached hereto as **Exhibit A**, wherein Apex agreed to reimburse Beazer Homes, LLC up to \$189,000.00 for completing the Developer Project;

WHEREAS, Apex will complete the Town Project at an estimated cost of \$300,000.00;

WHEREAS, the total sum of expected cost to Apex to complete the Developer Project and the Town Project (collectively, the “**Projects**”) is approximately \$489,000.00;

WHEREAS, Apex and Holly Springs as neighbors in the region collaborate on providing safe and efficient transportation infrastructure to their residents and visitors;

WHEREAS, Holly Springs is agreeable to reimburse Apex for a portion of the Projects; and

WHEREAS, this Agreement is authorized by N.C.G.S § 160A-20.1, § 160A-296, and § 160A-461.

NOW THEREFORE, in consideration of the premises and for other good and valuable consideration, the receipt and sufficiency of which is hereby acknowledged, the Parties agree as follows:

1. **RECITALS; PURPOSE.** The recitals are incorporated into this Agreement. This Agreement shall be effective upon execution by both parties (“**Effective Date**”). This Purpose of this Agreement is for Holly Springs to reimburse Apex for a portion of the Projects’ expenses.
2. **COMPENSATION:** Holly Springs shall pay to Apex the total sum of one hundred fifty thousand two hundred and fifty-three dollars (\$150,253.00) upon completion of the Projects. Payment shall be made within thirty (30) days of receipt of an invoice from Apex.
3. **DELAY BEYOND THE CONTROL OF THE PARTIES.** Neither Holly Springs nor Apex, having taken commercially reasonable precautions, shall be in default of the provisions of this Agreement for delays in performance due to forces beyond the control of the Parties. “Forces beyond the control of the parties” shall mean, but is not limited to, delay caused by natural disaster, fire, flood, earthquakes, storms, lightning, epidemic, pandemic, war, riot, civil disobedience, or other event reasonably outside of the parties’ control.
4. **NO JOINT AGENCY AND NO PERSONNEL.** No joint agency is established by this Agreement, and this Agreement does not create a partnership, joint venture, other joint endeavor, joint ownership, joint operations, or personnel sharing of any kind. No joint personnel are needed by the Parties to carry out this Agreement; this Agreement does not provide for the appointment of any personnel joint or otherwise. Nothing herein shall serve to waive governmental or qualified immunity of either of the Parties.
5. **AMENDMENT.** This Agreement may be amended at any time by the mutual written consent of both Parties.
6. **NOTICE.** All notices and other communications required or permitted by this Agreement shall be in writing and shall be given either by personal delivery, or deposited in the United States mail, postage prepaid, addressed as follows:

The notice address for Holly Springs shall be:

Attn: Randy Harrington, Town Manager  
Town of Holly Springs  
PO Box 8  
Holly Springs, NC 27540

The notice address for Apex shall be:

Attn: Randal E. Vosburg, Town Manager  
Town of Apex  
PO Box 250  
Apex, NC 27502

7. DISPUTE RESOLUTION; GOVERNING LAW; VENUE. In the event a dispute arises between the Parties or involving a third-party lawsuit regarding performance under this Agreement, the Parties agree to bargain in good faith towards a mutual resolution. If the Parties, after honest good faith negotiations, cannot reach a mutually agreeable resolution of the dispute, then a Party may adjudicate its dispute as allowed by North Carolina State Laws. This Agreement shall be governed by the laws of the State of North Carolina. Any and all suits or actions related to this Agreement shall be brought in Wake County, North Carolina. In the event of third-party litigation challenging this contract as ultra vires, the Parties agree to defend this action and indemnify each other as if the Parties engaged in a joint venture, irrespective of the covenants in paragraph 4. This indemnity provision is not insurance purchased and shall not waive governmental or qualified immunity of the Parties.
8. NON-EXCLUSIVE REMEDIES/NO WAIVER. The selection of one or more remedies for breach shall not limit a Party's right to invoke any other remedy available under Agreement or by law. No delay, omission or forbearance to exercise any right, power or remedy accruing to a Party shall impair any such right, power or remedy or shall be construed to be a waiver of any breach hereof or default. Every right, power or remedy may be exercised from time to time and as often as deemed expedient.
9. NO THIRD-PARTY BENEFICIARIES. There are no third-party beneficiaries to Agreement.
10. ELECTRONIC SIGNATURES. Pursuant to Article 40 of Chapter 66 of the North Carolina General Statutes (the Uniform Electronic Transactions Act) this Agreement and all documents related hereto containing an electronic or digitized signature are legally binding in the same manner as are hard copy documents executed by hand signature. The Parties hereby consent to use electronic or digitized signatures in accordance with Apex's Electronic Signature Policy and intend to be bound by the Agreement and any related documents. If electronic signatures are used the Agreement shall be delivered in an electronic record capable of retention by the recipient at the time of receipt.

Remainder of page left blank intentionally.

IN WITNESS WHEREOF, the Parties hereto have caused this Agreement to be executed by their duly authorized officials.

**APEX, Town of Apex**

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Randal E. Vosburg, Town Manager

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Date

Attest:

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---

Allen Coleman, Town Clerk

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Date

**HOLLY SPRINGS, Town of Holly Springs**

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Randy Harrington, Town Manager

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Date

This instrument has been preaudited in the manner required by Local Government Budget and Fiscal Control Act.

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Date

NORTH CAROLINA

DEVELOPMENT AGREEMENT

WAKE COUNTY

4th

This Development Agreement (the "Agreement"), made this the        day of November, 2024, by and between the Town of Apex, a municipal corporation under the laws of North Carolina (the "Town") and Beazer Homes, LLC a North Carolina limited liability company (the "Developer").

W I T N E S S E T H:

WHEREAS, Developer is the owner of that certain tract of real property totaling approximately 16.8 acres and located at 3104 Holland Road Apex, NC 27502 as depicted on the map entitled The Summit MSP Recombination Plat (the "Developer Map"), recorded in Book of Maps 2024, Page 1254 at the Wake County Register of Deeds (the "Developer Property") and plans to develop a residential subdivision commonly known as "The Summit" on the Developer Property; and

WHEREAS, the Town is the owner of that certain tract of real property totaling approximately 92.19 acres and located between Pleasant Plains Road to the west, Kings View Trail to the north, and NC 540 Highway to the east as depicted on the map entitled Survey for Progressive Farms, LLC & Hazel J. Pleasant (the "Town Map"), recorded in Book of Maps 2014, Page 1539 at the Wake County Register of Deeds (the "Town Property") and plans to develop a public park known as "Pleasant Park" on the Town Property; and

WHEREAS, Town has committed, as part of the Pleasant Park Phase 3A Site Plan, to provide (1) 150 feet of storage length for the westbound left turn lane on Old US Highway 1 at Friendship Road, and (2) 100 feet of storage length for the northbound left turn lane on Friendship Road at Old US Highway 1 ("Town Improvements"); and

WHEREAS, Developer has committed, as part of rezoning # 21CZ14 and its associated traffic impact analysis, to provide (1) an eastbound left turn lane on Old US Highway 1 at Holland Road, (2) an additional 50 feet of storage length for the northbound turn lane on Friendship Road at Old US Highway 1, ("Developer Improvements"); and

WHEREAS, as a condition of rezoning #21CZ14, developer is required to install a traffic signal at the intersection of Old US Highway 1 at Holland Road or pay fee in lieu for the anticipated signal design and construction costs based upon an engineer's estimate for the same ("Traffic Signal A"); and

WHEREAS, as a condition of installation of Traffic Signal A, NCDOT requires a traffic signal be installed contemporaneously at the intersection of Old US Hwy 1 and Friendship Road (“**Traffic Signal B**”); and

WHEREAS, Old US Highway 1, Holland Road, and Friendship Road are busy thoroughfares within the corporate limits and extra-territorial jurisdiction of the Town and the Town and Developer desire to coordinate construction of the Town Improvements and Developer Improvements (collectively, the “**Improvements**”) with Developer acting as the contracting and managing party with third parties hired to construct the Improvements; and

WHEREAS, pursuant to North Carolina General Statute § 160A-309, the Town is authorized to contract with a developer for public intersection and roadway improvements that are adjacent of ancillary to a private land development project; and

WHEREAS, the Town finds that the expenditure of public funds will not exceed \$250,000 and the coordination of separately constructed public intersection or roadway improvements would be impracticable.

NOW, THEREFORE, IT IS HEREBY AGREED between the Town and the Developer:

1. Recitals. The foregoing recitals shall constitute an integral part of this Agreement, and this Agreement shall be construed in light thereof.

2. Construction of Improvements. The Developer shall, at its own expense, construct the Improvements, which are more particularly describing in **Exhibit A** attached hereto and incorporated herein by reference (“**Plans**”). The Developer shall design, construct and install the Improvements (i) in a good and workmanlike manner, (ii) in compliance with this Agreement, Town Specifications, and all applicable Federal, State, and local laws, statutes, ordinances, rules, regulations, policies, and specifications, and (iii) in accordance with the Plans.

The Developer shall administer the construction contract without cost or expense to the Town except as provided for in this Agreement, and the Town may require the Developer to file reports of its administration with the Town’s Engineer.

3. Certification, Inspection, and Acceptance of Facilities. Upon completion of construction of the Improvements, Developer shall provide the Town with written certification and as-built drawings from Developer’s designated consulting engineering firm that the Improvements are complete and have been constructed and installed in compliance with this Agreement and within appropriate easements or fee simple parcels. Fee simple interest is required for street rights-of-way. The Improvements shall be offered for public dedication to the North Carolina Department of Transportation (“**NCDOT**”) upon completion of construction and shall be subject to inspection and

acceptance by the NCDOT. Upon the inspection and acceptance of the Improvements, Developer shall take any steps necessary to transfer title to and possession of the Improvements, and all related easements and fee simple parcels to the NCDOT. Thereafter, the NCDOT shall own the Improvements and have exclusive possession and control of the Improvements. In the event that any defect or breach of warranty claim becomes known after acceptance and dedication of the Improvements, Developer agrees either to pursue its rights and claims against the contractor or other party responsible for the defect or breach of warranty and pay over any recoveries to NCDOT or to assign such rights and claims to NCDOT as directed by NCDOT.

4. Approved Project Costs. The “Approved Project Costs” are those costs attributed to Town Improvements, as shown in the estimate provided by the Developer’s Engineer and attached hereto as **Exhibit B**. The Town agrees that within thirty (30) days after inspection and acceptance of the Improvements by NCDOT, the Town shall pay to Developer an amount equal to forty percent (40%) of the costs attributed to the construction of the westbound left turn lane, not to exceed \$111,000.00, and thirty-four percent (34%) of the costs attributed to the construction of the northbound left turn lane, not to exceed \$78,000.00, within the scope of the Improvements as shown in Exhibit B as may be modified as provided herein.

Costs that are not certified by the Developer’s Engineer and approved by the Town’s Engineer shall not be included in the Approved Project Costs. Approved Project Costs shall not include any costs for designing, bidding, and managing services.

The Town shall not participate in or be responsible to pay or reimburse any change order increasing the costs of the Improvements unless agreed to by the Town and approved by the Town’s Engineer in writing prior to execution of the change order. In other words, the costs associated with a change order shall be excluded from the Approved Project Costs unless the change order is pre-approved by the Town’s Engineer, which approval will not be unreasonably withheld, conditioned or delayed. Developer shall immediately upon learning of a proposed change order provide the Town with all the documentation and information needed for the Town to evaluate the proposed change order. In addition, the Approved Project Costs incurred by Developer in constructing the Improvements shall reflect any cost savings that reduce the amount that the Developer actually pays to construct the Improvements.

Developer agrees to provide the Town with any additional information reasonably requested by the Town in connection with the Approved Project Costs, provided that the Town requests such additional information within ten (10) business days of receipt of the detailed invoices from Developer.

5. Satisfaction of Traffic Signal Condition. The completion of the Improvements and payment of Approved Project Costs shall satisfy Condition E of the Holland Road Assembly Planned Unit Development zoning conditions which is associated with the approved rezoning # 21CZ14. Developer shall have no further responsibility for signal warrant analysis, installation of traffic signal,

or payment of fee-in-lieu for a traffic signal at the intersection of Holland Road and Old US Highway 1.

6. Notices. Any notice given pursuant to this Agreement shall be deemed given if (a) delivered by hand, or (b) faxed to the addressee and then deposited in the United States Mail to the addressee, postage paid certified mail, return receipt requested and addressed as follows:

|                 |   |
|-----------------|---|
| If to the Town: | Town of Apex<br>Post Office Box 250<br>Apex, NC 27502-0250<br>Attention: Russell Dalton, Traffic Engineering Manager<br>Email: <a href="mailto:russell.dalton@apexnc.org">russell.dalton@apexnc.org</a> |
|-----------------|---|

|                  |  |
|------------------|--|
| If to Developer: | Beazer Homes LLC<br>801 Corporate Center Dr<br>Raleigh, NC 27607<br>Attn: Daniel Zinner<br>Email: <a href="mailto:daniel.zinner@beazer.com">daniel.zinner@beazer.com</a> |
|------------------|--|

7. Termination for Failure to Complete. If Developer does not complete construction of the Improvements on or before the fifth anniversary of the full execution of this Agreement absent force majeure delays (as defined below), the Town may terminate this Agreement and have no further obligations to Developer.

8. Delay Beyond the Control of the Parties. Neither Developer nor Town, having taken commercially reasonable precautions, shall be in default of the provisions of this Agreement for delays in performance due to forces beyond the control of the parties. "Forces beyond the control of the parties" shall mean, but is not limited to, delay caused by natural disaster, fire, flood, earthquakes, storms, lightning, epidemic, pandemic, war, riot, civil disobedience, or other event reasonably outside of the parties' control. Due to the ever-changing circumstances surrounding the COVID-19 pandemic, situations may arise during the performance of this Agreement that affect availability of resources and staff of Developer or Developer's contractors or the Town. There could be changes in anticipated performance times and service costs. Developer will exercise reasonable efforts to overcome the challenges presented by current circumstances. In the event of changes in performance times or service costs caused by the COVID-19 pandemic the Town reserves the right to terminate this Agreement in accordance with its terms. The Parties agree that they shall not be liable to each other for any delays, expenses, losses, or damages of any kind arising out of the impact of the COVID-19 pandemic.

9. Indemnification. To the extent permitted by law, the Developer agrees to defend, pay on behalf of, indemnify, and hold-harmless the Town of Apex, its elected and appointed officials, employees, agents, and volunteers against any and all claims, demands, suits or losses, including all costs connected therewith, for any damages which may be asserted, claimed or recovered against or from the Town of Apex, its elected or appointed officials, employees, agents, and volunteers by reason of personal injury, including bodily injury or death and/or property damage, including loss of use thereof resulting from the negligence of the Developer or Developer's contractors.

10. Anti-Human Trafficking. The Developer warrants and agrees that no labor supplied by the Developer or the Developer's subcontractors in the performance of this Agreement shall be obtained by means of deception, coercion, intimidation or force, or otherwise in violation of North Carolina law, specifically Article 10A, Subchapter 3 of Chapter 14 of the North Carolina General Statutes, Human Trafficking.

11. Insurance. The Developer shall maintain valid general liability insurance in the minimum amount of \$1,000,000, commercial automobile liability insurance in the minimum amount of \$2,000,000, and provide certificates of such insurance naming the Town of Apex as an additional insured by endorsement to the policies. If the policy has a blanket additional insured provision, the contractor's insurance shall be primary and non-contributory to other insurance. Additionally, the Developer shall require all of the Developer's subcontractors to maintain and show proof of workers' compensation and employer's liability insurance in the minimum amount of \$1,000,000. The Developer shall provide notice of cancellation, non-renewal or material change in coverage to the Town of Apex within 10 days of their receipt of notice from the insurance company. All required certificates of insurance, endorsements, and blanket additional insured policy provisions are attached and considered part of this document. Notwithstanding the foregoing, neither the requirement of Developer to have sufficient insurance nor the requirement that Town is named as an additional insured, shall constitute waiver of the Town's governmental immunity in any respect, under North Carolina law.

12. Nondiscrimination. Pursuant to Section 3-2 of the Town of Apex Code of Ordinances, Developer hereby warrants and agrees that Developer will not discriminate against a protected class in employment, subcontracting practices, or the solicitation or hiring of vendors, suppliers, or commercial customers in connection with this Agreement. For the purposes of this Agreement "protected class" includes age, race, religious belief or non-belief, ethnicity, color, national origin, creed, sex, sexual orientation, gender identity, marital status, natural hair style, genetic information, pregnancy, familial status, disability, veteran or military status, or disabled veteran status.

13. E-Verify Compliance. The Developer shall comply with the requirements of Article 2 of Chapter 64 of the North Carolina General Statutes (E-Verify). Developer shall require all of the Developer's subcontractors to comply with the requirements of Article 2 of Chapter 64 of the North

Carolina General Statutes (E-Verify). Town shall comply with North Carolina General Statute § 160A-169.1 (E-Verify).

14. Complete Agreement, Modifications, Waiver and Assignment. This Agreement constitutes the entire agreement between the parties hereto and it is understood and agreed that all undertakings, negotiations, representations, promises, inducements and agreements heretofore had between these parties are merged herein. This Agreement may not be changed, modified, or amended orally, but only by an agreement in writing signed by both the Town and the Developer. No waiver of any of the provisions to this Agreement shall be valid unless in writing and signed by the party against whom it is sought to be enforced. This Agreement is not assignable without the written consent of all parties to this Agreement. There are no third-party beneficiaries of this Agreement.

15. No Agency, Joint Venturer Relationship. The Town and the Developer agree to exercise good faith in dealing with each other. The Town and the Developer are not agents, partners, or joint venturers of any kind, and the Town shall have no relationship via this Agreement with any third party with whom the Developer contracts in furtherance of this Agreement.

16. Choice of Law, Jurisdiction, and Venue. This Agreement shall be governed, interpreted and construed under the laws of the State of North Carolina without regard to principals of conflicts of laws. The parties agree that any dispute or other matter concerning this Agreement shall be decided by state or federal courts sitting in Wake County, North Carolina. The parties irrevocably submit to the sole and exclusive jurisdiction of such courts and waive all objections and defenses based on jurisdiction and/or improper or inconvenient venue. The parties agree that this Agreement may be enforced by specific performance.

17. Electronic Signature. Pursuant to Article 40 of Chapter 66 of the North Carolina General Statutes (the Uniform Electronic Transactions Act) this Agreement and all documents related hereto containing an electronic or digitized signature are legally binding in the same manner as are hard copy documents executed by hand signature. The Parties hereby consent to use electronic or digitized signatures in accordance with the Town's Electronic Signature Policy and intend to be bound by the Agreement and any related documents. If electronic signatures are used the Agreement shall be delivered in an electronic record capable of retention by the recipient at the time of receipt.

**[REMAINDER OF PAGE INTENTIONALLY BLANK – SIGNATURES FOLLOW]**

IN WITNESS WHEREOF, the Town and the Developer have duly executed this Agreement under seal as of the day and year first above written.

TOWN OF APEX

BY: Randal E. Vosburg (SEAL)  
Randal E. Vosburg, Town Manager

ATTEST:

Allen Coleman  
Allen Coleman, Town Clerk



STATE OF NORTH CAROLINA )  
WAKE COUNTY )

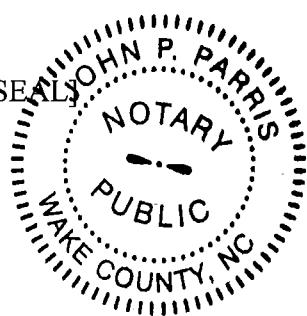
I, a Notary Public of the County and State aforesaid, certify that Allen Coleman, personally came before me this day and acknowledged that he is Town Clerk of the Town of Apex, a North Carolina Municipal Corporation, and that by authority duly given and as the act of the corporation, the foregoing instrument was signed in its name by its Town Manager, sealed with its corporate seal and attested by her as its Town Clerk.

Witness my hand and official stamp or seal, this the 4<sup>th</sup> day of November, 2019.

[Signature of Notary Public] John P. Parris

[AFFIX NOTARIAL STAMP SEALS]

My Commission Expires: 03/29/28



This instrument has been pre-audited in the manner required by the Local Government Budget and Fiscal Control Act

By: Antwan Morrison  
Antwan Morrison, Finance Director  
Town of Apex

BEAZER HOMES, LLC

BY: Matt Christensen  
Print Name: Matt Christensen  
Title: President Divisional - Raleigh

STATE OF North Carolina  
COUNTY OF Wake

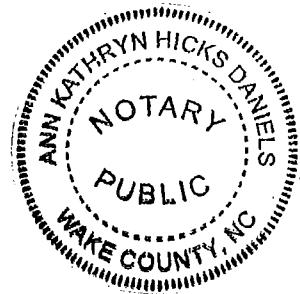
I, a Notary Public of the County and State aforesaid, do hereby certify that  
Matt Christensen, President Divisional - Raleigh of Beazer Homes, LLC a North Carolina limited liability  
company, personally appeared before me this day and acknowledged due execution of the foregoing  
instrument on behalf of Beazer Homes, limited liability company.

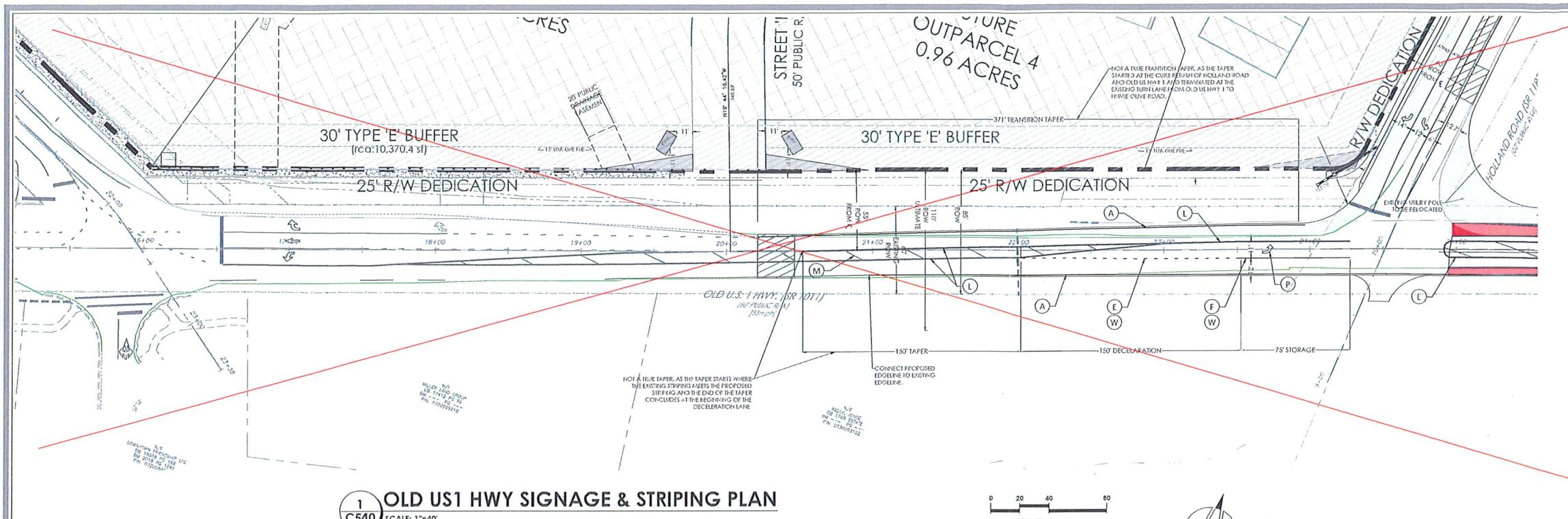
Witness my hand and official stamp or seal, this the 21 day of October, 2024

Ann Kathryn Hicks Daniels  
[Signature of Notary Public]

[AFFIX NOTARIAL STAMP SEAL]

My Commission Expires: 2.8.2029





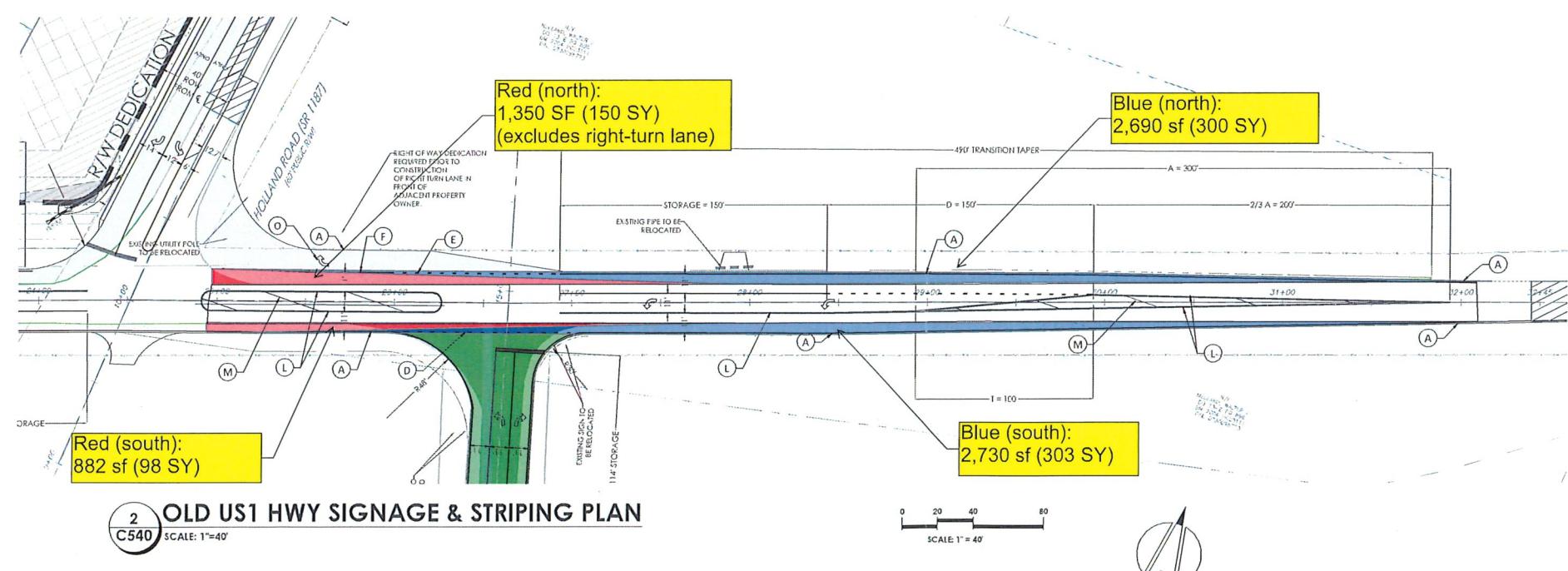
## Exhibit A

Project: (FKA: HOLLAND ROAD MIXED USE)  
**THE SUMMIT**  
22236 OLD US 1 HIGHWAY  
BUCKHORN TOWNSHIP  
APEX, NORTH CAROLINA 27502

The seal is circular with a dotted border. The words "NORTH CAROLINA" are at the top and "PROFESSIONAL" are at the bottom. In the center, it says "SEAL" above the number "24427".

*OLD US 1 HWY  
SIGNAGE &  
STRIPING  
PLAN*

proj #: 200304  
date: APRIL 3, 2023  
dwg by: chkd by:  
FS JR  
scale: As Noted  
sheet:  
**C540**  
(CONSTRUCTION DRAWING)



RED Hatch: roadway improvements required per approved Summit TIA, including taper widening for 360 LF east of Holland Road to Holland Road (widening required to off-set the eastbound left turn lane from Old US 1 to Holland Road).

BLUE Hatch: roadway improvements above and beyond the Summit required improvements (as shown in red) for a Town sponsored westbound left turn lane from Old US 1 to Friendship Road. The turn lane adds ~240' of full lane widening to support the 150' full storage, 150' decel, and 200' approach/departure tapers (6' offset x 50 mph design speed).

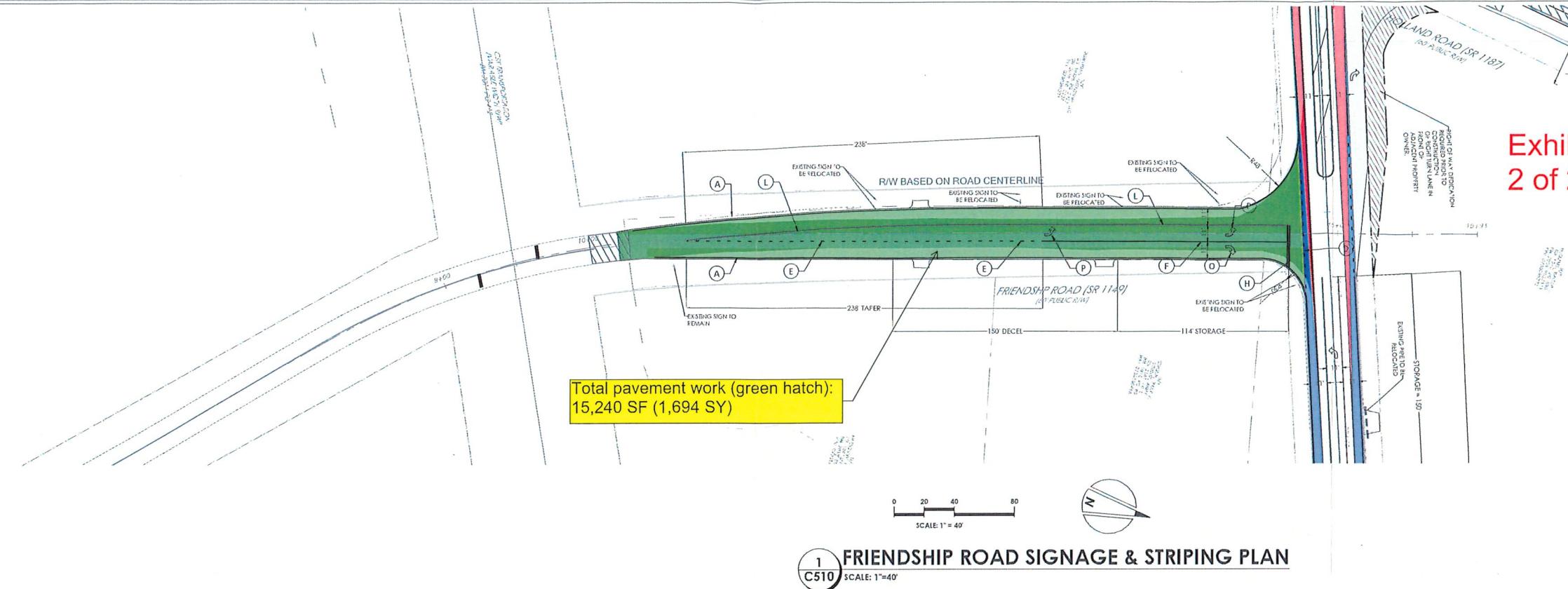
GREEN Hatch: Friendship Road widening improvements. Cost sharing agreement for Friendship Road is 67% (Town of Apex) and 33% (The Summit builder). See following sheets for total improvements.

- Ⓐ THERMOPLASTIC (4" WHITE, 90 MILS) EDGELINE
- Ⓑ THERMOPLASTIC (4" WHITE, 120 MILS) 4"X10' SKIP
- Ⓒ THERMOPLASTIC (12" WHITE, 120 MILS) 12"x3' WITH 3' MINI-SKIP
- Ⓓ THERMOPLASTIC (4" WHITE, 120 MILS) 4"x2' WITH 6' MINI-SKIP
- Ⓔ THERMOPLASTIC (4" WHITE, 120 MILS) 4"x3' WITH 9' MINI-SKIP
- Ⓕ THERMOPLASTIC (4" WHITE, 120 MILS) SOLID LINE
- Ⓖ THERMOPLASTIC (12" WHITE, 90 MILS) DIAGONAL LINE
- Ⓗ THERMOPLASTIC (24" WHITE, 120 MILS) STOP BAR
- Ⓛ THERMOPLASTIC (4" YELLOW, 120 MILS) EDGELINE
- Ⓜ THERMOPLASTIC (4" YELLOW, 120 MILS) 4"x10' SKIP LINE
- Ⓝ THERMOPLASTIC (4" YELLOW, 120 MILS) SINGLE CENTER LINE
- Ⓛ THERMOPLASTIC (4" YELLOW, 120 MILS) DOUBLE CENTER LINE
- Ⓜ THERMOPLASTIC (12" YELLOW, 90 MILS) DIAGONAL LINE 2H:1V SLOPE (REFER TO NCSTD STANDARD DRAWING 1205.09)
- Ⓝ THERMOPLASTIC (WHITE, 120 MILS) DIRECTIONAL ARROW-Straight
- Ⓣ THERMOPLASTIC (WHITE, 120 MILS) DIRECTIONAL ARROW-Straight AND RIGHT
- Ⓓ THERMOPLASTIC (WHITE, 120 MILS) DIRECTIONAL ARROW-RIGHT
- Ⓣ THERMOPLASTIC (WHITE, 120 MILS) DIRECTIONAL ARROW-LEFT
- Ⓐ 4:1 TAPER
- Ⓣ THERMOPLASTIC (8" WHITE, 120 MILS) PEDESTRIAN CROSSWALK LINE
- Ⓣ MUTCD R4-7 (KEEP RIGHT)
- Ⓣ MUTCD OM1-3 (TYPE 1 OBJECT MARKER)
- Ⓣ MUTCD R3-4 (NO U-TURN)
- Ⓣ MUTCD R6-1R (ONE WAY ONLY)
- Ⓣ MUTCD R3-7R (RIGHT TURN ONLY)
- Ⓣ MUTCD R1-1 (STOP SIGN)
- Ⓣ MUTCD R3-5R (RIGHT TURN ONLY)
- Ⓣ THERMOPLASTIC (4" WHITE, 120 MILS) SOLID "ONLY" TEXT LINE

The signatures affixed below certify that this sheet has been reviewed and approved solely per the certifications signed on the cover sheet of these construction plans.

|                                       |  |
|---------------------------------------|--|
| Transportation Engineering            | Planning                               |
| Building Inspections                  | Planning - Transportation              |
| Water Resources - Utility Engineering | Fire                                   |
| Water Resources - Stormwater & SREC   | Parks, Recreation & Cultural Resources |
| Electric                              |  |

**Exhibit A  
2 of 2**



GREEN Hatch: Friendship Road improvements required per discussions with Town of Apex. Summit zoning required 50' full storage left turn lane while Town of Apex Pleasant Park Phase 2 required 150' full storage. Overall Friendship Road cost would be split commensurate with required improvements for each project:

- 66.67% (2/3) to Town of Apex
- 33.33% (1/3) to The Summit

Improvement summary provided within the Construction Estimate provided to the Town of Apex for reimbursement agreement.

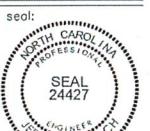
|     |   |
|-----|---|
| (A) | THERMOPLASTIC (4" WHITE, 90 MILS) EDGE LINE   |
| (B) | THERMOPLASTIC (4" WHITE, 120 MILS) 4"X10' SKIP  |
| (C) | THERMOPLASTIC (12" WHITE, 120 MILS) 12"X3' WITH 3' MINI-SKIP  |
| (D) | THERMOPLASTIC (4" WHITE, 120 MILS) 4"X2' WITH 6' MINI-SKIP  |
| (E) | THERMOPLASTIC (4" WHITE, 120 MILS) 4"X3' WITH 9' MINI-SKIP  |
| (F) | THERMOPLASTIC (4" WHITE, 120 MILS) SOLID LANE LINE  |
| (G) | THERMOPLASTIC (12" WHITE, 90 MILS) DIAGONAL LINE  |
| (H) | THERMOPLASTIC (24" WHITE, 120 MILS) STOP BAR  |
| (I) | THERMOPLASTIC (4" YELLOW, 120 MILS) EDGE LINE   |
| (J) | THERMOPLASTIC (4" YELLOW, 120 MILS) 4"X10' SKIP LINE  |
| (K) | THERMOPLASTIC (4" YELLOW, 120 MILS) SINGLE CENTER LINE  |
| (L) | THERMOPLASTIC (4" YELLOW, 120 MILS) DOUBLE CENTER LINE  |
| (M) | THERMOPLASTIC (12" YELLOW, 90 MILS) DIAGONAL LINE 2H:1V SLOPE (REFER TO NCDOT STANDARD DRAWING 1205.09) |
| (N) | THERMOPLASTIC (WHITE, 120 MILS) DIRECTIONAL ARROW-STRAIGHT  |
| (O) | THERMOPLASTIC (WHITE, 120 MILS) DIRECTIONAL ARROW-STRAIGHT AND RIGHT                                    |
| (P) | THERMOPLASTIC (WHITE, 120 MILS) DIRECTIONAL ARROW-RIGHT   |
| (Q) | THERMOPLASTIC (WHITE, 120 MILS) DIRECTIONAL ARROW-LEFT  |
| (R) | 4:1 TAPER   |
| (R) | THERMOPLASTIC (8" WHITE, 120 MILS) PEDESTRIAN CROSSWALK LINE  |
| (S) | MUTCD R4-7 (KEEP RIGHT)   |
| (S) | MUTCD OM1-3 (TYPE 1 OBJECT MARKER)  |
| (S) | MUTCD R3-4 (NO U-TURN)  |
| (S) | MUTCD R6-1R (ONE WAY ONLY)  |
| (S) | MUTCD R3-7R (RIGHT TURN ONLY)   |
| (S) | MUTCD R1-1 (STOP SIGN)  |
| (S) | MUTCD R3-5R (RIGHT TURN ONLY)   |
| (T) | THERMOPLASTIC (4" WHITE, 120 MILS) SOLID "ONLY" TEXT LINE   |
| (W) | REFER TO DETAIL 1205.01 SHEET C707 FOR WIDE STRIP REFERENCES  |

The signatures affixed below certify that this sheet has been reviewed and approved solely per the certifications signed on the cover sheet of these construction plans.

|                                       |  |
|---------------------------------------|--|
| Transportation Engineering            | Planning                               |
| Building Inspections                  | Planning - Transportation              |
| Water Resources - Utility Engineering | Fire                                   |
| Water Resources - Stormwater & SREC   | Parks, Recreation & Cultural Resources |
| Electric                              |  |

proj #: 200304  
date: APRIL 3, 2023  
dwg by: chkd by: FS JR  
scale: As Noted  
sheet: C510  
(CONSTRUCTION DRAWINGS)

project: (FKA HOLLAND ROAD MIXED USE)  
**THE SUMMIT**  
2236 OLD US 1 HIGHWAY  
BUCKHORN TOWNSHIP  
APEX, NORTH CAROLINA 27502



|   |                    |   |                               |
|---|--------------------|---|-------------------------------|
| 1 | April 7, 2023      | 1 | Town of Apex, NC Review No. 1 |
| 2 | September 15, 2023 | 2 | Town of Apex, NC Review No. 2 |
| 3 | November 5, 2023   | 3 | Town of Apex, NC Review No. 3 |
| 4 | February 2, 2024   | 4 | Town of Apex, NC Review No. 4 |
|   | DATE               |   | REVIEWER                      |

title: FRIENDSHIP ROAD SIGNAGE & STRIPING PLAN  
proj #: 200304  
date: APRIL 3, 2023  
dwg by: chkd by: FS JR  
scale: As Noted  
sheet: C510  
(CONSTRUCTION DRAWINGS)

## The Summit - Old US 1 Highway (south-west bound) Left Turn Lane Construction Estimate

June 1, 2024 Revision

| Item   | Quantity | Unit | Overall Project Cost |       | Town of Apex Reimbursement |                 | Total        |
|--|----------|------|----------------------|-------|----------------------------|-----------------|--------------|
|  |          |      | Unit Price           | Total | Quantity                   | % Reimbursement |              |
| Paving Mobilization                          | 1.00     | LS   | \$5,000.00           | LS    | 5,000.00                   | 1.00            | 0.71         |
| Clear, Grub & Haul Off                       | 1.00     | LS   | \$12,000.00          | LS    | 12,000.00                  | 1.00            | 0.71         |
| Utility Location                             | 1.00     | LS   | \$3,900.00           | LF    | 3,900.00                   | 1.00            | 0.71         |
| Traffic Control                              | 1.00     | LS   | \$40,000.00          | LS    | 40,000.00                  | 1.00            | 0.71         |
| Silt Fence/Tree Fence/Limits Dist.           | 110.00   | LF   | \$3.50               | LF    | 385.00                     | 110.00          | 0.71         |
| Seeding - Permanent                          | 0.75     | ACRE | \$2,450.00           |       | 1,837.50                   | 0.75            | 0.71         |
| Milling (ex. Pavnt section only)             | 1728.00  | SY   | \$3.25               | SY    | 5,616.00                   | 1728.00         | 0.71         |
| 1.5" Mill & Butt Joints (tie ins) (Cardinal) | 200.00   | SY   | \$6,000.00           |       | 1226.88                    | 1226.88         | 0.71         |
| Butt Joint Milling (Southern Cross)          | 1.00     | LS   | \$15.00              | SY    | 0.00                       | 0.00            | 0.00         |
| Pavement 1.5" Overlay (entire road overlay)  | 2641.00  | SY   | \$15.00              | SY    | 39,615.00                  | 2641.00         | 0.71         |
| Pavement 1.5" (1st Lift)                     | 851.00   | SY   | \$12,765.00          |       | 851.00                     | 12,765.00       | 0.71         |
| Pavement 3" \$9.5C                           | 0.00     | SY   | \$0.00               | SY    | 0.00                       | 0.00            | 0.00         |
| Pavement 4" \$19.0                           | 851.00   | SY   | \$29,785.00          |       | 851.00                     | 29,785.00       | 0.71         |
| Pavement 10" ABC                             | 240.00   | TON  | \$48.00              | TON   | 11,520.00                  | 240.00          | 0.71         |
| Pavement 5" B25.0                            | 425.00   | SY   | \$60.00              | SY    | 25,500.00                  | 425.00          | 0.71         |
| Pavement - Wedge (ALLOWANCE)                 | 30.00    | TON  | \$250.00             | TON   | 7,500.00                   | 30.00           | 0.71         |
| 6" Concrete Driveway (1 driveways)           | 30.00    | SY   | \$100.00             | SY    | 3,000.00                   | 30.00           | 0.67         |
| Pavement Markings - Thermo                   | 1.00     | LS   | \$30,000.00          | LS    | 30,000.00                  | 1.00            | 0.71         |
| Pavement Markings - 12"-24" Thermo           | 0.00     | LF   | \$14.35              | LF    | 0.00                       | 0.00            | 0.00         |
| Pavement Markings - 4" Thermo                | 0.00     | LF   | \$3.50               | LF    | 0.00                       | 0.00            | 0.00         |
| Pavement Markings - Symbols                  | 0.00     | EA   | \$215.00             | EA    | 0.00                       | 0.00            | 0.00         |
| Road Signs                                   | 6.00     | EA   | \$500.00             | EA    | 3,000.00                   | 6.00            | 0.71         |
| Earthwork & grading                          | 1.00     | LS   | \$18,500.00          | LS    | 18,500.00                  | 1.00            | 0.50         |
| 30" Curb and Gutter                          | 0.00     | LF   | \$18.70              | LF    | 0.00                       | 0.00            | 0.00         |
| Curb Ramps                                   | 0.00     | EA   | \$2,000.00           | EA    | 0.00                       | 0.00            | 0.00         |
| Drainage Structures                          | 0.00     | EA   | \$2,500.00           | EA    | 0.00                       | 0.00            | 0.00         |
| 18" Storm Pipe                               | 0.00     | LF   | \$81.00              | LF    | 0.00                       | 0.00            | 0.00         |
| 15" RCP Class IV Storm Pipe                  | 40.00    | LF   | \$70.00              | LF    | 2,800.00                   | 40.00           | 0.67         |
| Storm Pipe Bedding                           | 40.00    | LF   | \$20.00              | LF    | 800.00                     | 40.00           | 0.67         |
| 15" FES                                      | 0.00     | EA   | \$950.00             | EA    | 0.00                       | 0.00            | 0.00         |
| Rip-Rap                                      | 10.00    | TN   | \$72.00              | TN    | 720.00                     | 10.00           | 0.67         |
| Dry Utility Relocation ALLOWANCE             | 1.00     | LS   | \$14,000.00          | LS    | 14,000.00                  | 1.00            | 0.50         |
| Total  |          |      |                      |       | \$277,708.50               |                 | \$185,560.14 |
| Overhead and Profit                          |          |      |                      |       | \$0.00                     |                 | \$0.00       |
| Final Construction Cost Estimate             |          |      |                      |       | \$277,708.50               |                 | \$185,560.14 |



Overhead and Profit  
Final Construction Cost Estimate





# CERTIFICATE OF LIABILITY INSURANCE

DATE (MM/DD/YYYY)

10/30/2024

THIS CERTIFICATE IS ISSUED AS A MATTER OF INFORMATION ONLY AND CONFERs NO RIGHTS UPON THE CERTIFICATE HOLDER. THIS CERTIFICATE DOES NOT AFFIRMATIVELY OR NEGATIVELY AMEND, EXTEND OR ALTER THE COVERAGE AFFORDED BY THE POLICIES BELOW. THIS CERTIFICATE OF INSURANCE DOES NOT CONSTITUTE A CONTRACT BETWEEN THE ISSUING INSURER(S), AUTHORIZED REPRESENTATIVE OR PRODUCER, AND THE CERTIFICATE HOLDER.

IMPORTANT: If the certificate holder is an ADDITIONAL INSURED, the policy(ies) must have ADDITIONAL INSURED provisions or be endorsed. If SUBROGATION IS WAIVED, subject to the terms and conditions of the policy, certain policies may require an endorsement. A statement on this certificate does not confer rights to the certificate holder in lieu of such endorsement(s).

|  |  |   |                             |        |  |
|--|--|---|-----------------------------|--------|--|
| PRODUCER<br>Burnham Risk & Insurance Solutions<br>15901 Red Hill Ave, Ste 100<br>Tustin CA 92780 |  | CONTACT NAME:<br>PHONE (A/C, No, Ext): 714-505-7000<br>E-MAIL: info@wgbib.com<br>ADDRESS: | FAX (A/C, No): 714-573-1770 |        |  |
|  |  | INSURER(S) AFFORDING COVERAGE   |                             | NAIC # |  |
|  |  | INSURER A : National Fire & Marine Insuran  | 20079                       |        |  |
|  |  | INSURER B : Starr Indemnity and Liability   | 38318                       |        |  |
|  |  | INSURER C : Starr Specialty Insurance Comp  | 16109                       |        |  |
|  |  | INSURER D : Landmark American Insurance Co  | 33138                       |        |  |
|  |  | INSURER E :   |                             |        |  |
|  |  | INSURER F :   |                             |        |  |
| INSURED<br>Beazer Homes USA, Inc.<br>2002 Summit Blvd NE, 15th Floor<br>Atlanta, GA 30319        |  | License#: 0F69771<br>BEAZHOM-03   |                             |        |  |

COVERAGES **CERTIFICATE NUMBER: 1450521565** REVISION NUMBER:  
THIS IS TO CERTIFY THAT THE POLICIES OF INSURANCE LISTED BELOW HAVE BEEN ISSUED TO THE INSURED NAMED ABOVE FOR THE POLICY PERIOD INDICATED. NOTWITHSTANDING ANY REQUIREMENT, TERM OR CONDITION OF ANY CONTRACT OR OTHER DOCUMENT WITH RESPECT TO WHICH THIS CERTIFICATE MAY BE ISSUED OR MAY PERTAIN, THE INSURANCE AFFORDED BY THE POLICIES DESCRIBED HEREIN IS SUBJECT TO ALL THE TERMS, EXCLUSIONS AND CONDITIONS OF SUCH POLICIES. LIMITS SHOWN MAY HAVE BEEN REDUCED BY PAID CLAIMS.

| INSR LTR | TYPE OF INSURANCE   | ADD'L SUBR<br>INSD / WVD | POLICY NUMBER    | POLICY EFF (MM/DD/YYYY) | POLICY EXP (MM/DD/YYYY) | LIMITS  |
|----------|---|--------------------------|------------------|-------------------------|-------------------------|---|
| A        | COMMERCIAL GENERAL LIABILITY<br>CLAIMS-MADE <input checked="" type="checkbox"/> OCCUR   | Y N                      | 42-HBL-150430-02 | 6/1/2023                | 6/1/2025                | EACH OCCURRENCE \$ 20,000,000<br>DAMAGE TO RENTED PREMISES (Ea occurrence) \$ 100,000<br>MED EXP (Any one person) \$ Included<br>PERSONAL & ADV INJURY \$ 20,000,000<br>GENERAL AGGREGATE \$ 30,000,000<br>PRODUCTS - COMP/OP AGG \$ 30,000,000<br>\$ |
|          | GEN'L AGGREGATE LIMIT APPLIES PER:<br>X POLICY <input type="checkbox"/> PRO-<br>JECT <input type="checkbox"/> LOC   |                          |                  |                         |                         |   |
|          | OTHER:  |                          |                  |                         |                         |   |
| B        | AUTOMOBILE LIABILITY<br>ANY AUTO<br>OWNED AUTOS ONLY <input type="checkbox"/> SCHEDULED AUTOS<br>HIRED AUTOS ONLY <input checked="" type="checkbox"/> NON-OWNED AUTOS ONLY  | Y N                      | 1000672953241    | 4/1/2024                | 4/1/2025                | COMBINED SINGLE LIMIT (Ea accident) \$ 1,000,000<br>BODILY INJURY (Per person) \$<br>BODILY INJURY (Per accident) \$<br>PROPERTY DAMAGE (Per accident) \$<br>\$   |
| D        | UMBRELLA LIAB <input checked="" type="checkbox"/> OCCUR<br>EXCESS LIAB <input type="checkbox"/> CLAIMS-MADE   | N N                      | LHA107268        | 4/1/2024                | 4/1/2025                | EACH OCCURRENCE \$ 5,000,000<br>AGGREGATE \$ 5,000,000<br>\$  |
| D        | DED <input type="checkbox"/> RETENTION \$   |                          |                  |                         |                         |   |
| C        | WORKERS COMPENSATION AND EMPLOYERS' LIABILITY<br>ANY PROPRIETOR/PARTNER/EXECUTIVE OFFICER/MEMBER EXCLUDED? <input checked="" type="checkbox"/> N<br>(Mandatory in NH)<br>If yes, describe under DESCRIPTION OF OPERATIONS below | Y / N<br>N / A           | 100 0004944      | 4/1/2024                | 4/1/2025                | X PER STATUTE OTH-ER<br>E.L. EACH ACCIDENT \$ 1,000,000<br>E.L. DISEASE - EA EMPLOYEE \$ 1,000,000<br>E.L. DISEASE - POLICY LIMIT \$ 1,000,000  |
|          |   |                          |                  |                         |                         |   |

DESCRIPTION OF OPERATIONS / LOCATIONS / VEHICLES (ACORD 101, Additional Remarks Schedule, may be attached if more space is required)  
Excess Liability Policy #LHA101583 is Excess of the underlying Auto and Employer's Liability policies evidenced above.  
RE: The Summit  
Town of Apex is included as Additional Insured with respect to General Liability and Auto Liability if required by written contract and subject to terms, conditions and exclusions of the policy.  
Coverage is provided on a Primary & Non-Contributory basis on the General Liability and Auto Liability if required by written contract and subject to terms, conditions and exclusions of the policy.

|   |  |
|---|--|
| CERTIFICATE HOLDER                          | CANCELLATION   |
| Town of Apex<br>PO Box 250<br>Apex NC 27502 | SHOULD ANY OF THE ABOVE DESCRIBED POLICIES BE CANCELLED BEFORE THE EXPIRATION DATE THEREOF, NOTICE WILL BE DELIVERED IN ACCORDANCE WITH THE POLICY PROVISIONS. |
|   | AUTHORIZED REPRESENTATIVE<br>  |

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However:

1. The insurance afforded to such additional insured only applies to the extent permitted by law; and
2. If coverage provided to the additional insured is required by a contract or agreement, the insurance afforded to such additional insured will not be broader than that which you are required by the contract or agreement to provide for such additional insured.

**B.** With respect to the insurance afforded to these additional insureds, the following additional exclusions apply:

This insurance does not apply to "bodily injury" or "property damage" occurring after:

1. All work, including materials, parts or equipment furnished in connection with such work, on the project (other than service, maintenance or repairs) to be performed by or on behalf of the additional insured(s) at the location of the covered operations has been completed; or

2. That portion of "your work" out of which the injury or damage arises has been put to its intended use by any person or organization other than another contractor or subcontractor engaged in performing operations for a principal as a part of the same project.

**C.** With respect to the insurance afforded to these additional insureds, the following is added to **Section III – Limits Of Insurance:**

If coverage provided to the additional insured is required by a contract or agreement, the most we will pay on behalf of the additional insured is the amount of insurance:

1. Required by the contract or agreement; or
2. Available under the applicable Limits of Insurance shown in the Declarations;

whichever is less.

This endorsement shall not increase the applicable Limits of Insurance shown in the Declarations.

All other terms and conditions of this policy remain unchanged.

**B. With respect to the insurance afforded to these additional insureds, the following is added to Section III – Limits Of Insurance:**

If coverage provided to the additional insured is required by a contract or agreement, the most we will pay on behalf of the additional insured is the amount of insurance:

- 1. Required by the contract or agreement; or**

- 2. Available under the applicable Limits of Insurance shown in the Declarations;**

whichever is less.

This endorsement shall not increase the applicable Limits of Insurance shown in the Declarations.

All other terms and conditions of this policy remain unchanged.

**THIS ENDORSEMENT CHANGES THE POLICY. PLEASE READ IT CAREFULLY.**

## **ADDITIONAL INSURED – AUTOMATIC STATUS AMENDATORY ENDORSEMENT**

**Policy Number:** 1000672953241

**Effective Date:** 04/01/2024

**Named Insured:** Beazer Homes USA, Inc.

This endorsement modifies the insurance coverage form(s) listed below that have been purchased by you and evidenced as such on the Declarations page. Please read the endorsement and respective policy(ies) carefully.

AUTO DEALERS COVERAGE FORM  
BUSINESS AUTO COVERAGE FORM  
MOTOR CARRIER COVERAGE FORM

It is hereby agreed that **SECTION II – COVERED AUTOS LIABILITY COVERAGE, A. COVERAGE, 1. Who Is An Insured** of the Business Auto Coverage Form and Motor Carrier Coverage Form, and **SECTION I – COVERED AUTOS COVERAGES, D. Covered Autos Liability Coverage, 2. Who Is An Insured** of the Auto Dealers Coverage Form are amended to include the following:

Any person or organization whom you become obligated to include as an additional insured under this policy, as a result of any written contract or written agreement you enter into which requires you to furnish insurance to that person or organization of the type provided by this policy, but only with respect to liability for "bodily injury" or "property damage" caused, in whole or in part, by your use of a covered "auto". However, the insurance afforded only applies to the extent permitted by law, and will not exceed the lesser of:

- (1)** The coverage and/or limits of this policy, or
- (2)** The coverage and/or limits required by such written contract or written agreement.

All other terms and conditions of this Policy remain unchanged.

**Ship To**

TOWN OF APEX  
PUBLIC WORKS ADMINISTRATION  
105-B UPCHURCH ST.  
Apex, NC 27502

**Bill To**

TOWN OF APEX  
ACCOUNTS PAYABLE  
PO BOX 250  
APEX, NC 27502

**Purchase Order**  
No. 2025-00000553  
**DATE** 10/30/2024

**VENDOR NO.** 6433

**Vendor**

BEAZER HOMES LLC  
801 CORPORATE CENTER DR  
RALEIGH, NC 27607



PURCHASE ORDER NUMBER MUST APPEAR ON ALL INVOICES, SHIPPERS, BILL OF LADING AND CORRESPONDENCE

**DELIVER BY**  
**FREIGHT TERMS FOB APEX**  
**PAGE 1 of 1**  
**ORIGINATOR:** Steve Maynard

**REFERENCE #**

| QTY        | UNIT | DESCRIPTION   | VENDOR PART # | UNIT COST | TOTAL COST   |
|------------|------|---|---------------|-----------|--------------|
| 189,000.00 | Each | Capital Project - Reimburse of construction cost at Old US 1/Friendship Rd<br>63-9250-1126-47300 - Capital Outlay - Improvements 189,000.00 |               | 1.0000    | \$189,000.00 |

Purchase Order terms and conditions: <http://www.apexnc.org/terms>.

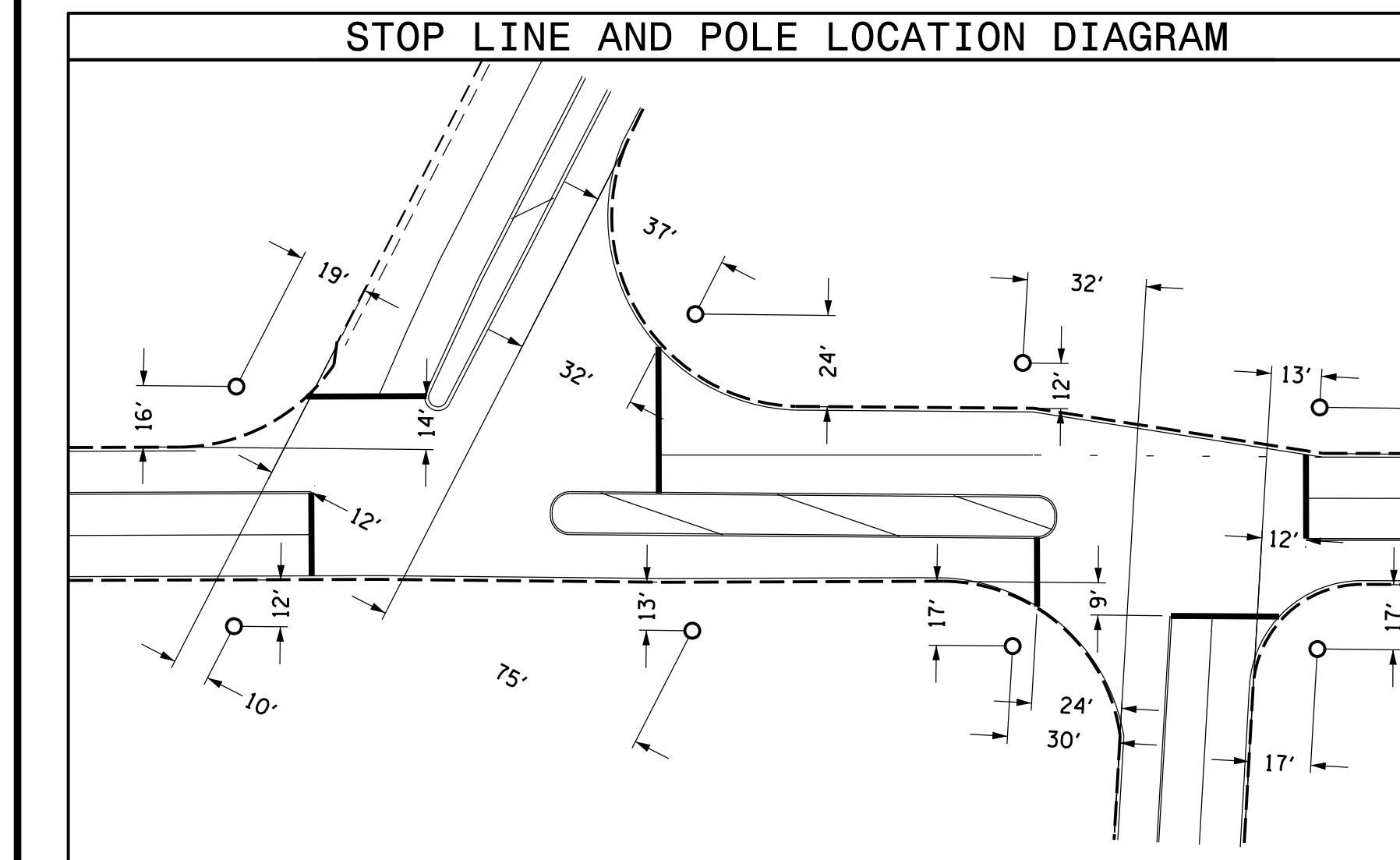
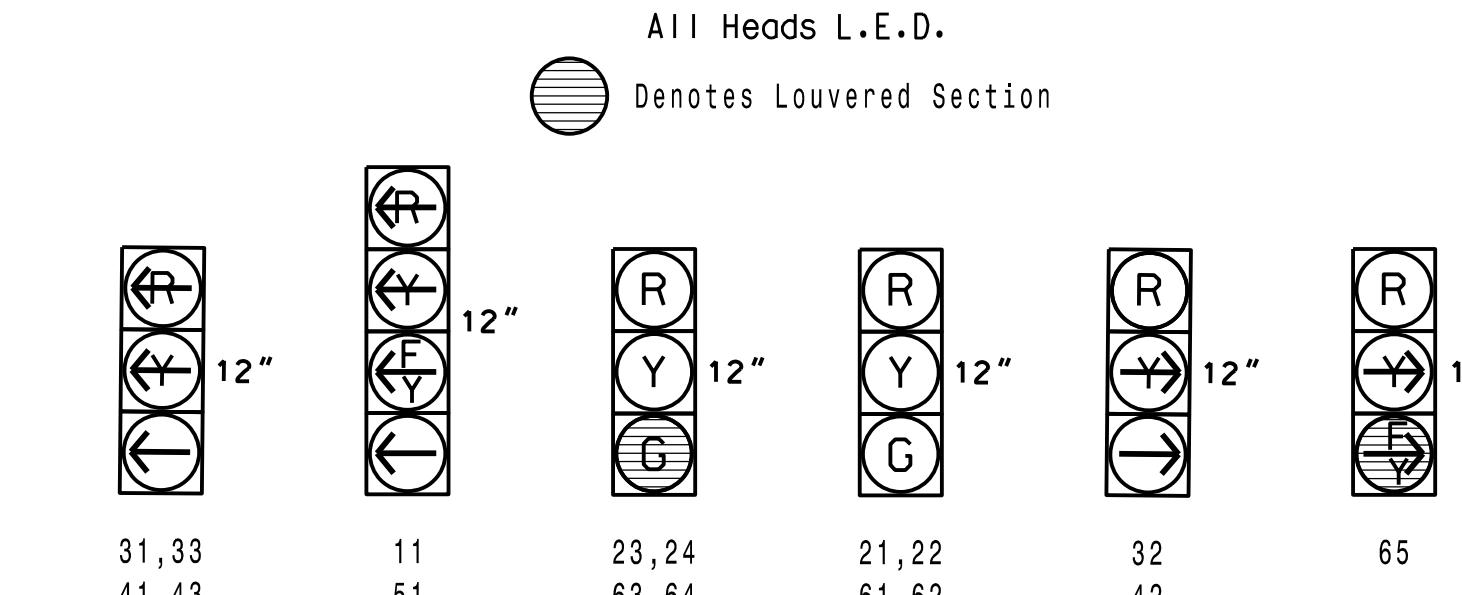
*John W. Harrison*  
Finance Director

*Steve Maynard*  
Purchasing Manager

|           |              |
|-----------|--------------|
| SUBTOTAL  | \$189,000.00 |
| SALES TAX | \$0.00       |
| TOTAL DUE | \$189,000.00 |

Special Instructions

THIS INSTRUMENT HAS BEEN PREAUDITED IN THE MANNER REQUIRED BY THE LOCAL GOVERNMENT BUDGET AND FISCAL CONTROL ACT.

**SIGNAL FACE I.D.****MAXTIME DETECTOR INSTALLATION CHART**

| LOOP | SIZE (FT) | DISTANCE FROM STOPBAR (FT) | TURNS | DETECTOR |            | PROGRAMMING |             |                |            |                    |
|------|-----------|----------------------------|-------|----------|------------|-------------|-------------|----------------|------------|--------------------|
|      |           |                            |       | NEW LOOP | CALL PHASE | DELAY TIME  | EXTEND TIME | EXTEND INITIAL | ADDED CALL | DELAY DURING GREEN |
| 1A   | 6X40      | 0                          | 2-4-2 | X        | 1          | 15.0*       | -           | X              | -          | X                  |
|      |           |                            |       |          | 6 #        | 3:0         | -           | X              | -          | X                  |
| 1B   | 6X40      | 0                          | 2-4-2 | X        | 1          | 15.0        | -           | X              | -          | X                  |
| 2A   | 6X6       | 300                        | 5     | X        | 2          | -           | -           | X              | X          | -                  |
| 3A   | 6X40      | 0                          | 2-4-2 | X        | 3          | 3:0         | -           | X              | -          | X                  |
| 4A   | 6X40      | 0                          | 2-4-2 | X        | 4          | 3:0         | -           | X              | -          | X                  |
| 5A   | 6X40      | 0                          | 2-4-2 | X        | 5          | 15.0*       | -           | X              | -          | X                  |
|      |           |                            |       |          | 2 #        | 3:0         | -           | X              | -          | X                  |
| 5B   | 6X40      | 0                          | 2-4-2 | X        | 5          | 15.0        | -           | X              | -          | X                  |
| 6A   | 6X6       | 300                        | 5     | X        | 6          | -           | -           | X              | X          | -                  |

\* Disable Delay during Alternate Phasing operation.

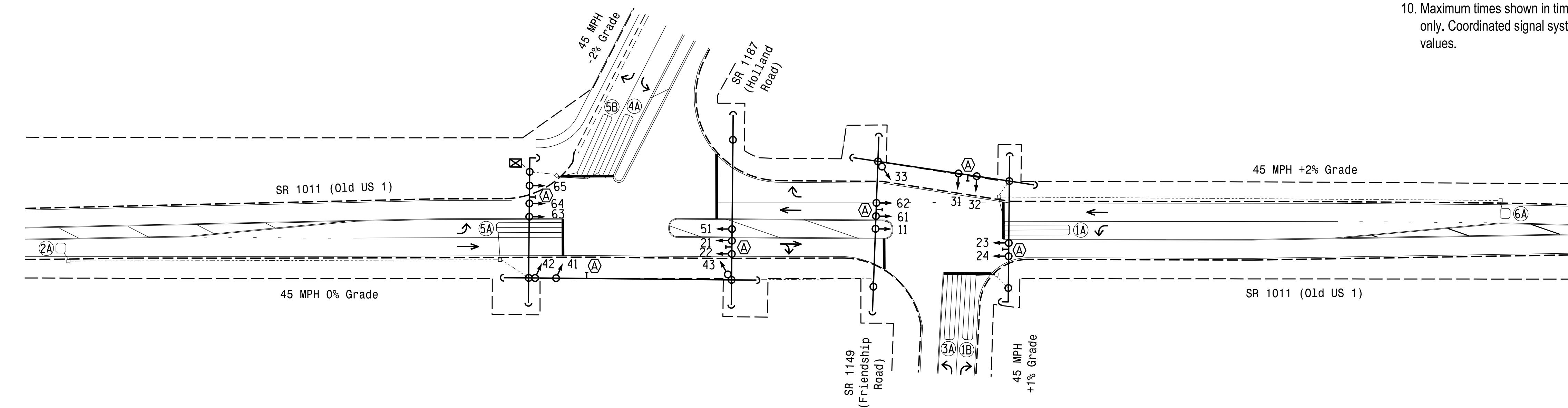
# Disable Phase Call during Alternate Phasing operation.

Exhibit B - 6 pages

6 Phase  
Fully Actuated  
W/ EV Preemption  
SR 1011 (Old US 1) CLS  
Signal System #: D05-47\_Apex

**NOTES**

- Refer to "Roadway Standard Drawings NCDOT" dated January 2024, "Standard Specifications for Roads and Structures" dated January 2024, and all applicable sections of the latest version of the generic Project Special Provisions. The PSP can be accessed at the following website: <https://connect.ncdot.gov/resources/safety/Pages/ITS-DesignResources.aspx>
- Do not program signal for late night flashing operation unless otherwise directed by the Engineer.
- Phase 1 and/or phase 5 may be lagged.
- The order of phase 3 and phase 4 may be reversed.
- Tether signal heads numbered 23, 24, 63, 64, and 65.
- Set all detector units to presence mode.
- Locate new cabinet so as not to obstruct sight distance of vehicles turning right on red.
- This intersection features a GPS preemption system.
- The Division Traffic Engineer will determine the hours of use for each phasing plan.
- Maximum times shown in timing chart are for free-run operation only. Coordinated signal system timing values supersede these values.

**LEGEND**

| PROPOSED | EXISTING                                       |
|----------|--|
| ○ →      | Traffic Signal Head                            |
| ● →      | Modified Signal Head                           |
| —        | N/A  |
| ↑ ↓      | Sign   |
| □ →      | Pedestrian Signal Head With Push Button & Sign |
| ○ ↘ ↗    | Signal Pole with Guy                           |
| ○ ↘ ↗    | Signal Pole with Sidewalk Guy                  |
| —        | Inductive Loop Detector                        |
| —        | Controller & Cabinet                           |
| —        | Junction Box                                   |
| —        | 2-in Underground Conduit                       |
| —        | N/A  |
| —        | Right of Way                                   |
| —        | Directional Arrow                              |
| —        | PUE - Permanent Utility Easement               |
| Ⓐ        | Street Name Sign (D3-1)                        |

| FEATURE                 | PHASE |            |     |     |     |            |       |       |       |       |       |
|-------------------------|-------|------------|-----|-----|-----|------------|-------|-------|-------|-------|-------|
|                         | 1     | 2          | 3   | 4   | 5   | 6          | TOL 1 | TOL 2 | TOL 3 | TOL 4 | TOL 7 |
| Walk *                  | -     | -          | -   | -   | -   | -          |       |       |       |       |       |
| Ped Clear *             | -     | -          | -   | -   | -   | -          |       |       |       |       |       |
| Min Green *             | 7     | 12         | 7   | 7   | 7   | 12         | 5     | 5     | 5     | 5     | 5     |
| Passage *               | 2.0   | 6.0        | 2.0 | 2.0 | 2.0 | 6.0        |       |       |       |       |       |
| Max 1 *                 | 25    | 90         | 30  | 30  | 25  | 90         |       |       |       |       |       |
| Yellow Change           | 3.0   | 4.5        | 3.0 | 3.0 | 3.0 | 4.5        | 3.0   | 4.3   | 3.0   | 4.5   | 4.3   |
| Red Clear               | 1.6   | 1.0        | 1.4 | 2.1 | 1.6 | 1.0        | 1.6   | 1.6   | 1.6   | 1.0   | 1.6   |
| Added Initial *         | -     | 2.5        | -   | -   | -   | 2.5        |       |       |       |       |       |
| Maximum Initial *       | -     | 34         | -   | -   | -   | 34         |       |       |       |       |       |
| Time Before Reduction * | -     | 15         | -   | -   | -   | 15         |       |       |       |       |       |
| Time To Reduce *        | -     | 45         | -   | -   | -   | 45         |       |       |       |       |       |
| Minimum Gap             | -     | 3.0        | -   | -   | -   | 3.0        |       |       |       |       |       |
| Advance Walk            | -     | -          | -   | -   | -   | -          |       |       |       |       |       |
| Non Lock Detector       | X     | -          | X   | X   | X   | -          |       |       |       |       |       |
| Vehicle Recall          | -     | MIN RECALL | -   | -   | -   | MIN RECALL |       |       |       |       |       |
| Dual Entry              | -     | -          | -   | -   | -   | -          |       |       |       |       |       |

**MAXTIME PREEMPTION CHART**

| FUNCTION                 | PRE 3       | PRE 5       |
|--------------------------|-------------|-------------|
| Type                     | EMERG VEH   | EMERG VEH   |
| Exit Phases              | 2, 6        | 2, 6        |
| Delay                    | 0           | 0           |
| Call Extend Time         | 2.0         | 2.0         |
| Max Presence             | 120         | 120         |
| Enter Min Green          | 1           | 1           |
| Enter Walk               | 0           | 0           |
| Enter Ped Clear          | 255 *       | 255 *       |
| Enter Yellow Change      | 25.5 *      | 25.5 *      |
| Enter Red Clear          | 25.5 *      | 25.5 *      |
| Dwell Green              | 7           | 7           |
| Exit Min Green           | 255 *       | 255 *       |
| Exit Yellow Change       | 25.5 *      | 25.5 *      |
| Exit Red Clear           | 25.5 *      | 25.5 *      |
| Exit Type                | EXIT PHASES | EXIT PHASES |
| Ped Clear Through Yellow | -           | -           |
| Require All Red Entry    | -           | -           |

\* Directs controller to use default phase timing.

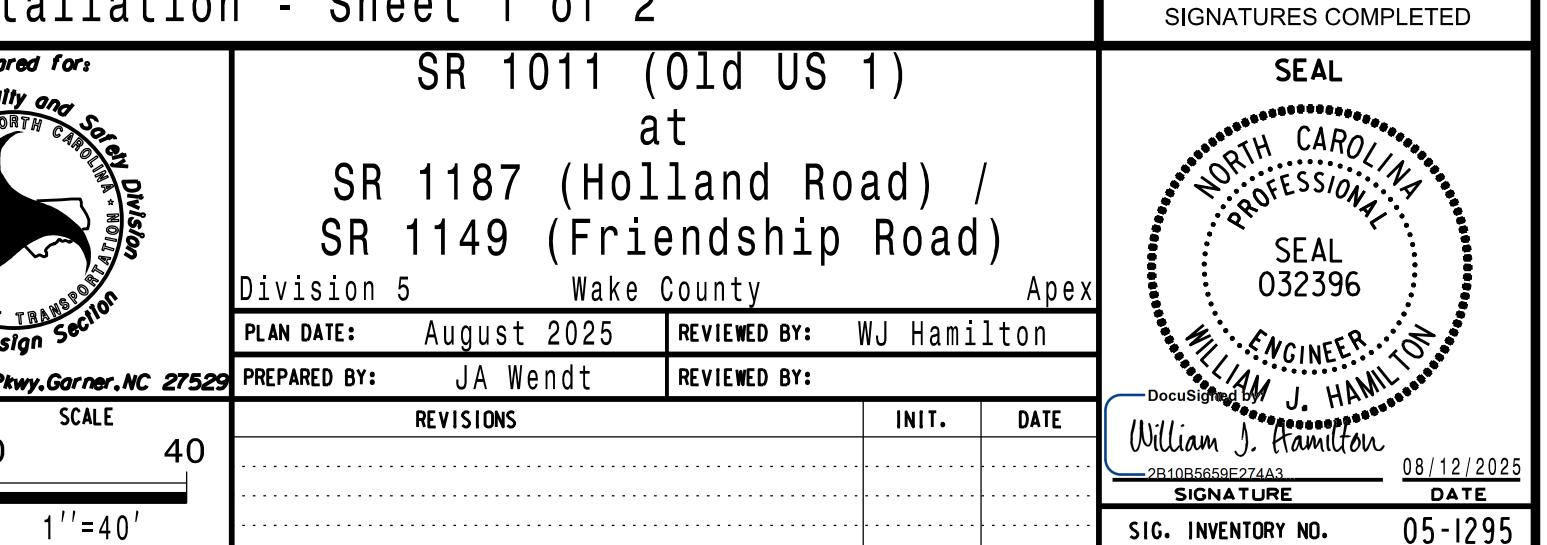
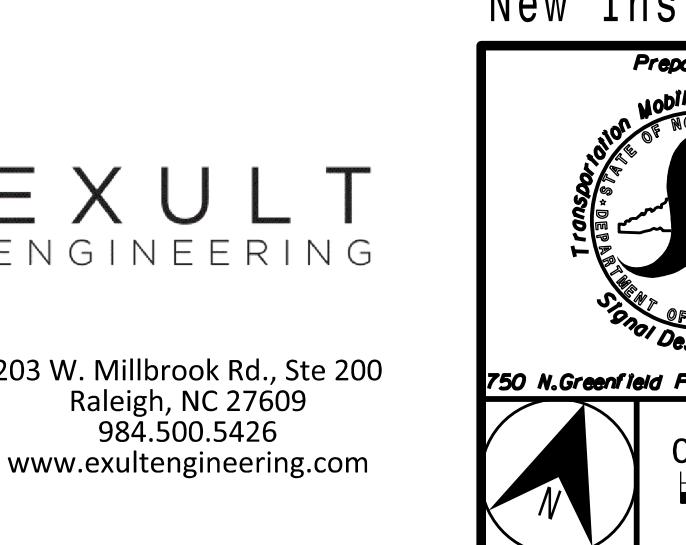
NC Dept of Transportation  
Division of Highways

Final Drawing Date: 09/03/2025

Signed by:  
Robert J. Giemba  
NCDOT Approval

158-0862744494

New Installation - Sheet 1 of 2



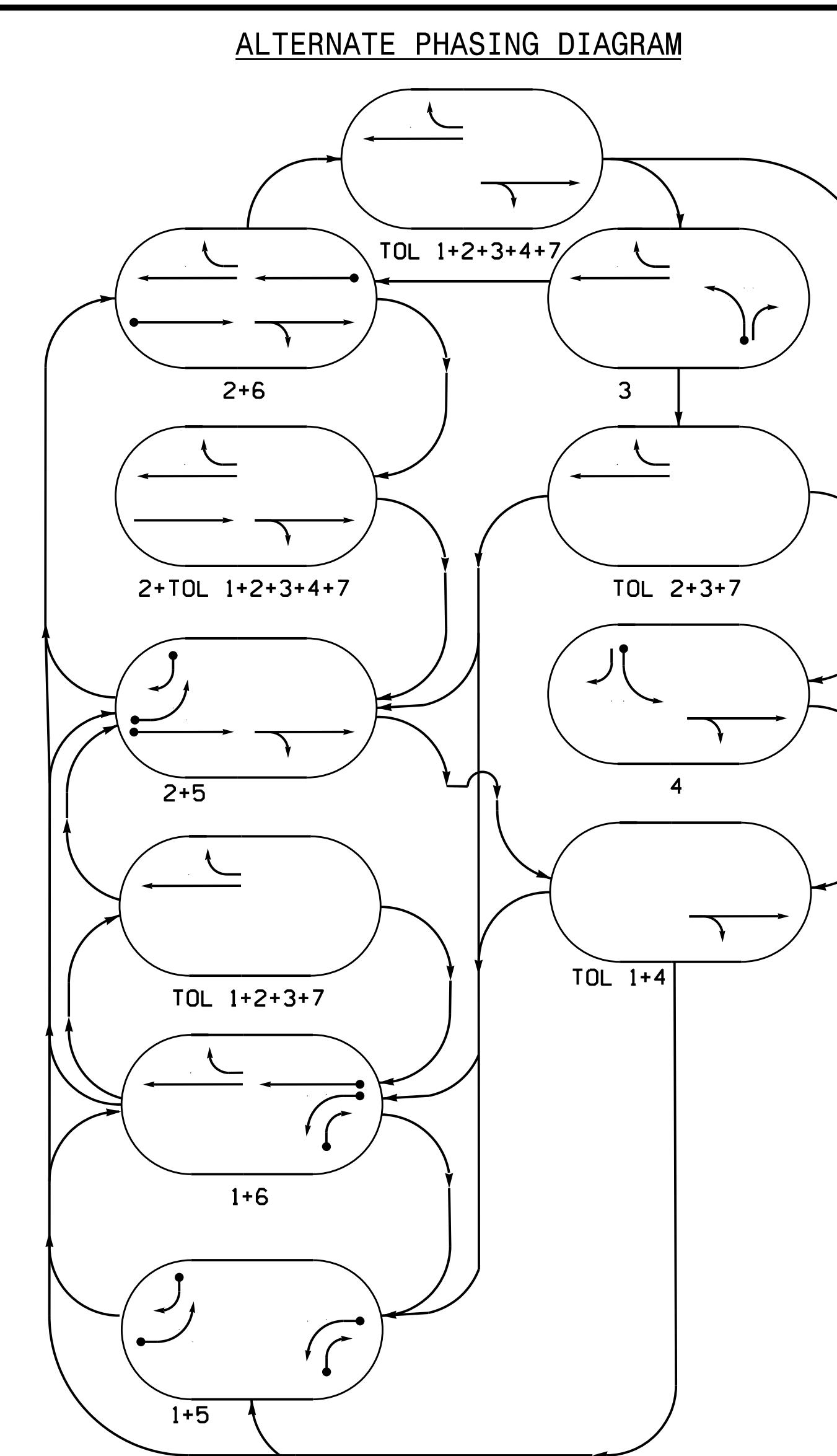
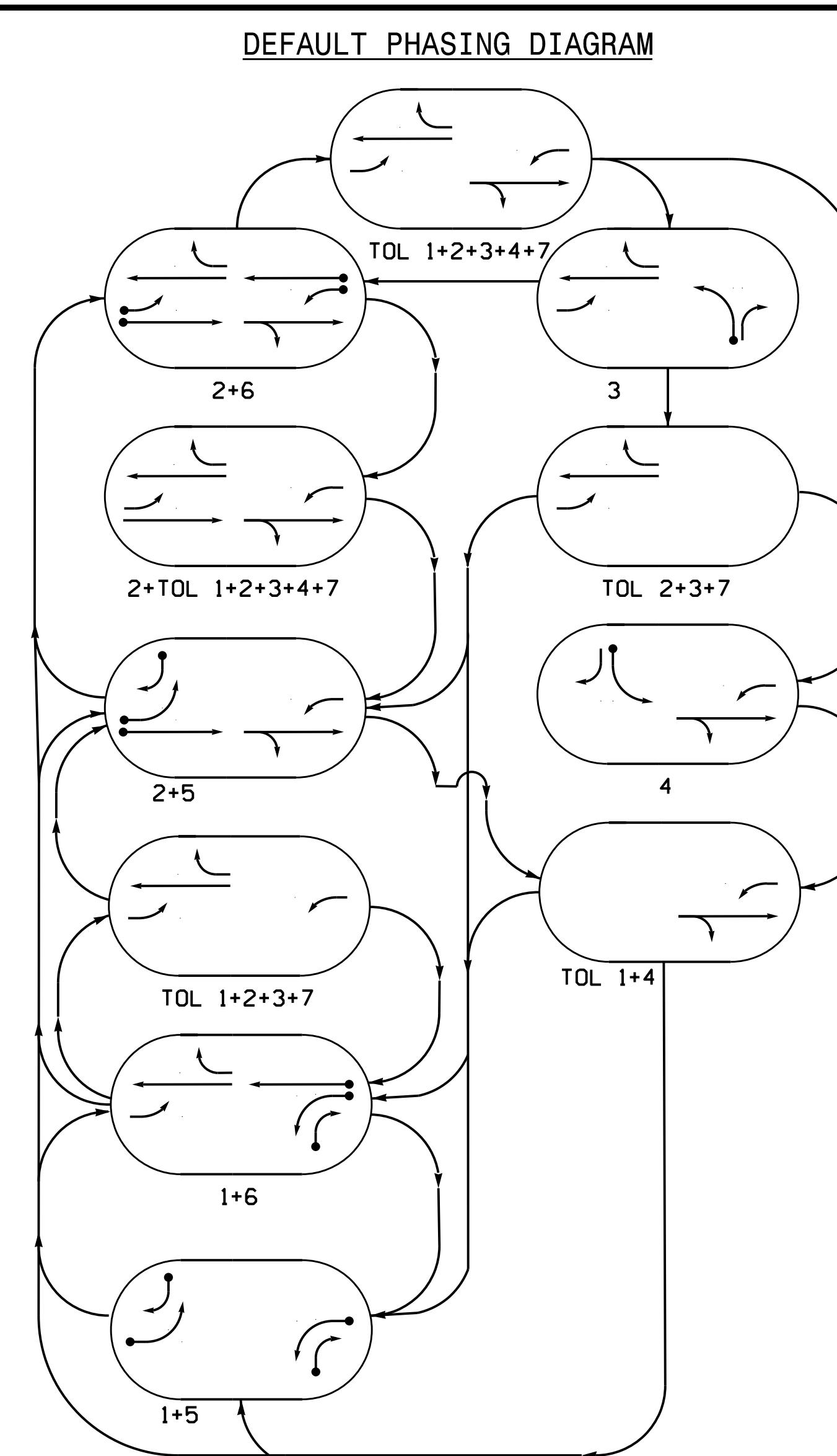
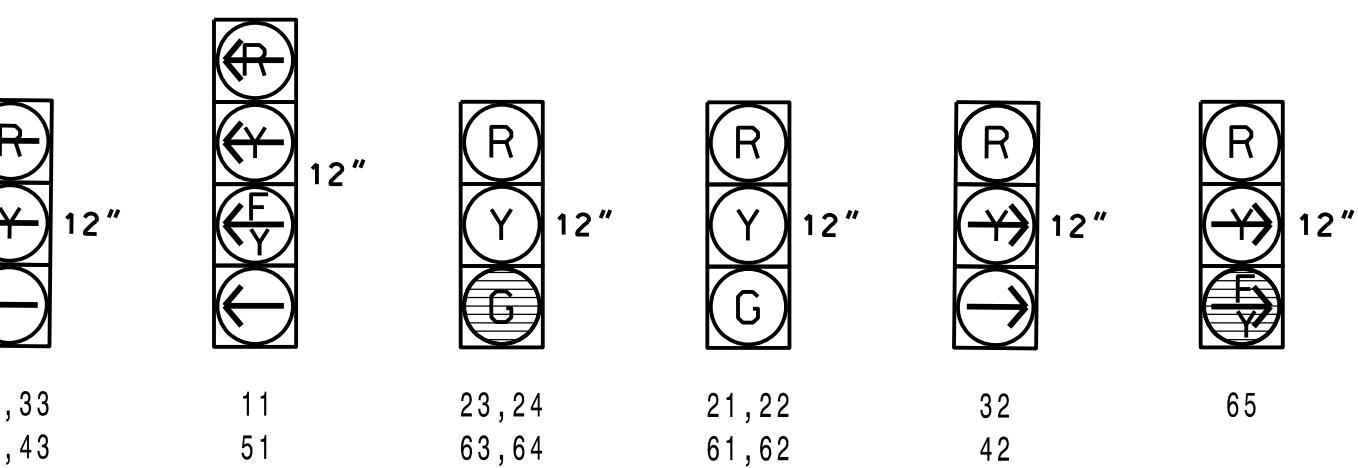
6 Phase  
Fully Actuated  
W/ EV Preemption  
SR 1011 (Old US 1) CLS  
Signal System #: D05-47\_Apex

## NOTES

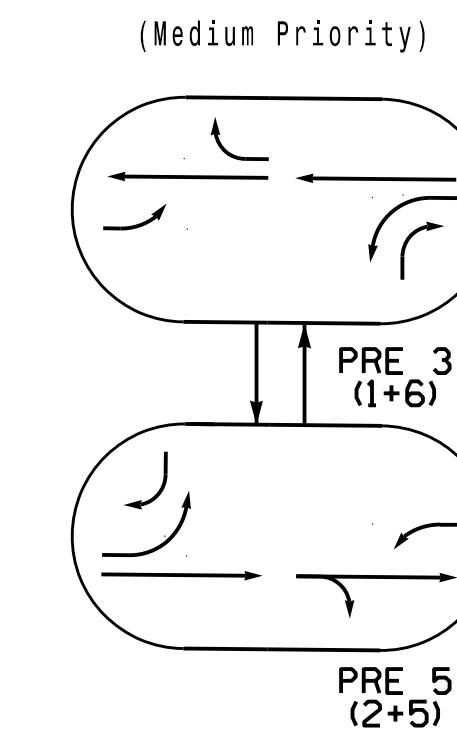
- Refer to "Roadway Standard Drawings NCDOT" dated January 2024, "Standard Specifications for Roads and Structures" dated January 2024, and all applicable sections of the latest version of the generic Project Special Provisions. The PSP can be accessed at the following website: <https://connect.ncdot.gov/resources/safety/Pages/ITS-DesignResources.aspx>
- Do not program signal for late night flashing operation unless otherwise directed by the Engineer.
- Phase 1 and/or phase 5 may be lagged.
- The order of phase 3 and phase 4 may be reversed.
- Tether signal heads numbered 23, 24, 63, 64, and 65.
- Set all detector units to presence mode.
- Locate new cabinet so as not to obstruct sight distance of vehicles turning right on red.
- This intersection features a GPS preemption system.
- The Division Traffic Engineer will determine the hours of use for each phasing plan.
- Maximum times shown in timing chart are for free-run operation only. Coordinated signal system timing values supersede these values.

## SIGNAL FACE I.D.

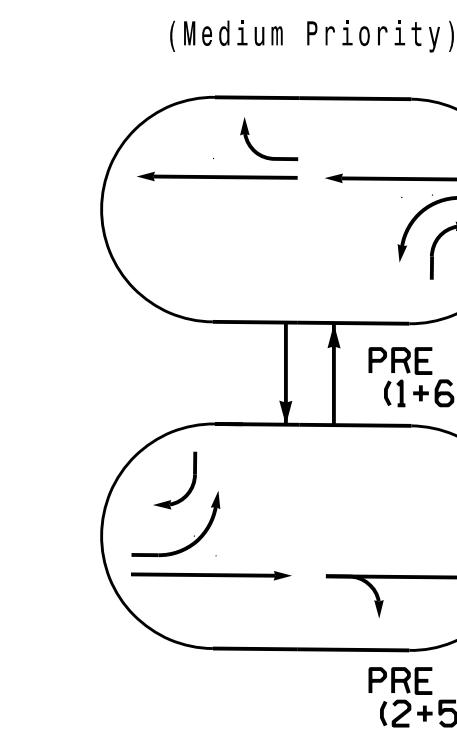
All Heads L.E.D.

 Denotes Louvered Section


## EV PREEMPT PHASES FOR DEFAULT PHASING



## EV PREEMPT PHASES FOR ALTERNATE PHASING

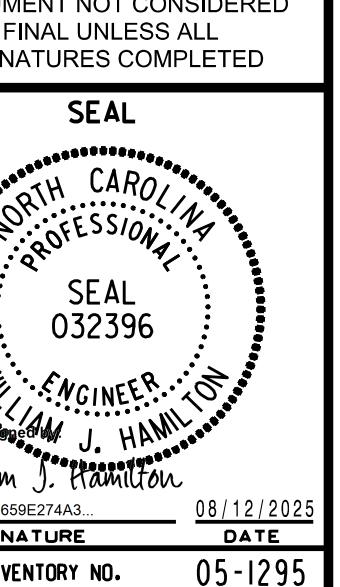


| DEFAULT PHASING TABLE OF OPERATION |        |        |        |        |        |        |        |        |         |         |         |          |
|------------------------------------|--------|--------|--------|--------|--------|--------|--------|--------|---------|---------|---------|----------|
| SIGNAL FACE                        | PHASE  |        |        |        |        |        |        |        |         |         |         |          |
|                                    | 1<br>5 | 1<br>6 | 1<br>7 | 2<br>5 | 2<br>6 | 2<br>7 | 3<br>6 | 3<br>7 | 2<br>13 | 2<br>14 | 2<br>15 | PREFLASH |
| 11                                 | —      | —      | F<br>Y | F<br>Y | F<br>Y | R      | R      | F<br>Y | F<br>Y  | —       | F<br>Y  | R        |
| 21,22                              | R      | R      | R      | G      | G      | G      | R      | R      | R       | R       | R       | G        |
| 23,24                              | R      | R      | R      | G      | G      | G      | R      | R      | G       | C       | R       | R        |
| 31,33                              | —R      | —R      | —R      | R        |
| 32                                 | —      | —R     | R      | R      | R      | R      | —      | R      | R       | R       | —       | R        |
| 41,43                              | —R      | —R      | —R      | R        |
| 42                                 | —      | R      | R      | —      | R      | R      | R      | —      | R       | R       | —       | R        |
| 51                                 | —      | F<br>Y | —      | F<br>Y | F<br>Y | F<br>Y | R      | R      | F<br>Y  | —       | R       | R        |
| 61,62                              | R      | G      | R      | R      | G      | R      | R      | R      | R       | R       | G       | R        |
| 63,64                              | R      | G      | G      | R      | G      | G      | G      | G      | R       | R       | G       | R        |
| 65                                 | R      | F<br>Y | F<br>Y | R      | F<br>Y | F<br>Y | F<br>Y | R      | R       | F<br>Y  | R       | R        |

| ALTERNATE PHASING TABLE OF OPERATION |        |        |        |        |        |        |        |        |         |         |         |          |
|--------------------------------------|--------|--------|--------|--------|--------|--------|--------|--------|---------|---------|---------|----------|
| SIGNAL FACE                          | PHASE  |        |        |        |        |        |        |        |         |         |         |          |
|                                      | 1<br>5 | 1<br>6 | 1<br>7 | 2<br>5 | 2<br>6 | 2<br>7 | 3<br>6 | 3<br>7 | 2<br>13 | 2<br>14 | 2<br>15 | PREFLASH |
| 11                                   | —      | —      | R      | R      | R      | R      | R      | R      | R       | R       | R       | R        |
| 21,22                                | R      | R      | R      | G      | G      | G      | R      | R      | R       | R       | R       | G        |
| 23,24                                | R      | R      | R      | G      | G      | G      | R      | R      | G       | C       | R       | R        |
| 31,33                                | —R      | —R      | —R      | R        |
| 32                                   | —      | —R     | R      | R      | R      | R      | —      | R      | R       | R       | —       | R        |
| 41,43                                | —R      | —R      | —R      | R        |
| 42                                   | —      | R      | R      | —      | R      | R      | R      | —      | R       | R       | —       | R        |
| 51                                   | —      | F<br>Y | —      | F<br>Y | F<br>Y | F<br>Y | R      | R      | F<br>Y  | —       | R       | R        |
| 61,62                                | R      | G      | R      | R      | G      | R      | R      | R      | R       | R       | G       | R        |
| 63,64                                | R      | G      | G      | R      | G      | G      | G      | G      | R       | R       | G       | R        |
| 65                                   | R      | F<br>Y | F<br>Y | R      | F<br>Y | F<br>Y | F<br>Y | R      | R       | F<br>Y  | R       | R        |

New Installation - Sheet 2 of 2

|  |             |   |             |
|--|-------------|---|-------------|
|  EXULT<br>ENGINEERING |             | SR 1011 (Old US 1)  |             |
|  |             | at<br>SR 1187 (Holland Road) /<br>SR 1149 (Friendship Road)                           |             |
| Division 5   |             | Wake County Apex  |             |
| PLAN DATE:   | August 2025 | REVIEWED BY:  | WJ Hamilton |
| PREPARED BY:   | JA Wendt    | REVIEWED BY:  |             |
| NC License #:  | 4445        | INIT.   | DATE        |
| 203 W. Millbrook Rd., Ste 200<br>Raleigh, NC 27609<br>984.500.5426<br>www.exultengineering.com             |             | SCALE   | 40          |
|  |             | 0   | 1' = 40'    |
|  |             |  |             |
| DOCUMENT NOT CONSIDERED<br>FINAL UNLESS ALL<br>SIGNATURES COMPLETED  |             | SIG. INVENTORY NO. 05-1295  |             |



| <p><b>18 CHANNEL CONFLICT MONITOR PROGRAMMING DETAIL</b><br/>(remove jumpers and set switches as shown)</p> <p>REMOVE DIODE JUMPERS 1-5, 1-6, 1-8, 1-9, 1-10, 1-11, 1-17, 1-18, 2-5, 2-6, 2-8, 2-9, 2-10, 2-11, 2-12, 2-18, 3-8, 3-10, 3-11, 3-17, 4-9, 4-12, 4-18, 5-9, 5-11, 5-12, 5-17, 5-18, 6-8, 6-9, 6-10, 6-11, 6-12, 6-17, 8-9, 8-10, 8-11, 8-12, 8-17, 9-10, 9-11, 9-12, 9-17, 9-18, 10-11, 10-12, 10-17, 11-12, 11-17, 11-18, 12-18 and 17-18.</p> <p><b>NOTES:</b></p> <ol style="list-style-type: none"> <li>Card is provided with all diode jumpers in place. Removal of any jumper allows its channels to run concurrently.</li> <li>Ensure jumpers SEL2-SEL5 and SEL9 are present on the monitor board.</li> <li>Ensure that the Red Enable is active at all times during normal operation.</li> <li>Connect serial cable from conflict monitor to comm. port 1 of 2070 controller. Ensure conflict monitor communicates with 2070.</li> </ol> <p><b>INPUT FILE POSITION LAYOUT</b><br/>(front view)</p> <table border="1" style="width: 100%; border-collapse: collapse;"> <tr> <th>1</th><th>2</th><th>3</th><th>4</th><th>5</th><th>6</th><th>7</th><th>8</th><th>9</th><th>10</th><th>11</th><th>12</th><th>13</th><th>14</th> </tr> <tr> <td>Ø 1<br/>1A</td><td>Ø 1<br/>1B</td><td>SLOT<br/>EMPTY</td><td>SLOT<br/>EMPTY</td><td>Ø 3<br/>3A</td><td>Ø 4<br/>4A</td><td>SLOT<br/>EMPTY</td><td>SLOT<br/>EMPTY</td><td>SLOT<br/>EMPTY</td><td>SLOT<br/>EMPTY</td><td>SLOT<br/>EMPTY</td><td>SLOT<br/>EMPTY</td><td>FS<br/>DC ISOLATOR</td> </tr> <tr> <td>NOT USED<br/>2A</td><td></td><td></td><td></td><td>NOT USED</td><td>NOT USED</td><td></td><td></td><td></td><td></td><td></td><td></td><td></td> </tr> <tr> <td>Ø 5<br/>5A</td><td>Ø 5<br/>5B</td><td>SLOT<br/>EMPTY</td><td>SLOT<br/>EMPTY</td><td>SLOT<br/>EMPTY</td><td>SLOT<br/>EMPTY</td><td>SLOT<br/>EMPTY</td><td>SLOT<br/>EMPTY</td><td>SLOT<br/>EMPTY</td><td>SLOT<br/>EMPTY</td><td>SLOT<br/>EMPTY</td><td>SLOT<br/>EMPTY</td><td>SLOT<br/>EMPTY</td> </tr> <tr> <td>NOT USED<br/>6A</td><td></td><td></td><td></td><td></td><td></td><td></td><td></td><td></td><td></td><td></td><td></td><td></td> </tr> </table> <p>EX.: 1A, 2A, ETC. = LOOP NO.'S<br/>FS = FLASH SENSE<br/>ST = STOP TIME</p> <p>CONNECT PHASE SELECTOR TO FIELD ETHERNET SWITCH</p> <p><b>LOAD RESISTOR INSTALLATION DETAIL</b><br/>(install resistors as shown)</p> <p>ACCEPTABLE VALUES</p> <table border="1" style="width: 100%; border-collapse: collapse;"> <tr> <th>Value (ohms)</th><th>Wattage</th> </tr> <tr> <td>1.5K - 1.9K</td><td>25W (min)</td> </tr> <tr> <td>2.0K - 3.0K</td><td>10W (min)</td> </tr> </table> <p>Phase 1 Yellow Field Terminal (126)<br/>Phase 5 Yellow Field Terminal (132)<br/>AC-<br/>AC-</p> | 1  | 2                 | 3             | 4             | 5             | 6             | 7             | 8             | 9             | 10            | 11                 | 12                | 13     | 14     | Ø 1<br>1A | Ø 1<br>1B | SLOT<br>EMPTY | SLOT<br>EMPTY | Ø 3<br>3A | Ø 4<br>4A | SLOT<br>EMPTY | SLOT<br>EMPTY | SLOT<br>EMPTY | SLOT<br>EMPTY | SLOT<br>EMPTY | SLOT<br>EMPTY | FS<br>DC ISOLATOR | NOT USED<br>2A |  |  |  | NOT USED | NOT USED |  |  |  |  |  |  |  | Ø 5<br>5A | Ø 5<br>5B | SLOT<br>EMPTY | NOT USED<br>6A |  |  |  |  |  |  |  |  |  |  |  |  | Value (ohms) | Wattage | 1.5K - 1.9K | 25W (min) | 2.0K - 3.0K | 10W (min) | <p><b>NOTES</b></p> <ol style="list-style-type: none"> <li>To prevent "flash-conflict" problems, insert red flash program blocks for all unused vehicle load switches in the output file. The installer shall verify that signal heads flash in accordance with the signal plan.</li> <li>Program controller to start up in phase 2 Green No Walk and 6 Green No Walk.</li> <li>If this signal will be managed by an ATMS software, enable controller and detector logging for all detectors used at this location.</li> <li>The cabinet and controller are part of the D05-47_Apex Signal System.</li> </ol> <p><b>EQUIPMENT INFORMATION</b></p> <p>Controller.....2070LX<br/>Cabinet.....332 w/ Aux<br/>Software.....Q-Free MAXTIME<br/>Cabinet Mount.....Base<br/>Output File Positions.....18 With Aux. Output File<br/>Load Switches Used.....S1, S2, S4, S5, S7, S8, S11, AUX S1, AUX S2, AUX S3, AUX S4, AUX S5, AUX S6</p> <p>Phases Used.....1, 2, 3, 4, 5, 6<br/>Overlap "1".....*<br/>Overlap "2".....*<br/>Overlap "3".....*<br/>Overlap "4".....*<br/>Overlap "5".....*<br/>Overlap "6".....*<br/>Overlap "7".....*</p> <p>*See overlap programming detail on sheet 2</p> <p><b>INPUT FILE CONNECTION &amp; PROGRAMMING CHART</b></p> <table border="1" style="width: 100%; border-collapse: collapse;"> <thead> <tr> <th>LOOP NO.</th><th>LOOP TERMINAL</th><th>INPUT FILE POS.</th><th>PIN NO.</th><th>INPUT POINT</th><th>DETECTOR NO.</th><th>CALL PHASE</th><th>DELAY TIME</th><th>EXTEND TIME</th><th>ADDED INITIAL</th><th>CALL</th><th>DELAY DURING GREEN</th> </tr> </thead> <tbody> <tr> <td>1A</td><td>TB1-1,2</td><td>I1U</td><td>56</td><td>18</td><td>1 ★</td><td>1</td><td>15.0</td><td></td><td>X</td><td>X</td><td></td> </tr> <tr> <td>1B</td><td>TB2-5,6</td><td>I2U</td><td>39</td><td>~</td><td>29 ★</td><td>6</td><td>3.0</td><td></td><td>X</td><td>X</td><td>X</td> </tr> <tr> <td>2A</td><td>TB2-7,8</td><td>I2L</td><td>43</td><td>5</td><td>2</td><td>1</td><td>15.0</td><td></td><td>X</td><td>X</td><td></td> </tr> <tr> <td>3A</td><td>TB4-5,6</td><td>I5U</td><td>58</td><td>20</td><td>7</td><td>3</td><td>3.0</td><td></td><td>X</td><td>X</td><td></td> </tr> <tr> <td>4A</td><td>TB4-9,10</td><td>I6U</td><td>41</td><td>3</td><td>8</td><td>4</td><td>3.0</td><td></td><td>X</td><td>X</td><td></td> </tr> <tr> <td>5A</td><td>TB3-1,2</td><td>J1U</td><td>55</td><td>~</td><td>15 ★</td><td>5</td><td>15.0</td><td></td><td>X</td><td>X</td><td>X</td> </tr> <tr> <td>5B</td><td>TB3-5,6</td><td>J2U</td><td>40</td><td>2</td><td>16</td><td>5</td><td>15.0</td><td></td><td>X</td><td>X</td><td>X</td> </tr> <tr> <td>6A</td><td>TB3-7,8</td><td>J2L</td><td>44</td><td>6</td><td>17</td><td>6</td><td></td><td></td><td>X</td><td>X</td><td>X</td> </tr> </tbody> </table> <p>★ For the detectors to work as shown on the signal plan see the Detector Programming Detail for Alternate Phasing on Sheet 2 of this plan.</p> <p>INPUT FILE POSITION LEGEND: J2L<br/>FILE J<br/>SLOT 2<br/>LOWER</p> <p><b>SPECIAL DETECTOR NOTES</b></p> <p>Install a GPS preemption system. Perform installation according to manufacturer's directions and NCDOT engineer approved mounting location to accomplish the preemption schemes shown on the Signal Design Plans.</p> | LOOP NO. | LOOP TERMINAL | INPUT FILE POS. | PIN NO. | INPUT POINT | DETECTOR NO. | CALL PHASE | DELAY TIME | EXTEND TIME | ADDED INITIAL | CALL | DELAY DURING GREEN | 1A | TB1-1,2 | I1U | 56 | 18 | 1 ★ | 1 | 15.0 |  | X | X |  | 1B | TB2-5,6 | I2U | 39 | ~ | 29 ★ | 6 | 3.0 |  | X | X | X | 2A | TB2-7,8 | I2L | 43 | 5 | 2 | 1 | 15.0 |  | X | X |  | 3A | TB4-5,6 | I5U | 58 | 20 | 7 | 3 | 3.0 |  | X | X |  | 4A | TB4-9,10 | I6U | 41 | 3 | 8 | 4 | 3.0 |  | X | X |  | 5A | TB3-1,2 | J1U | 55 | ~ | 15 ★ | 5 | 15.0 |  | X | X | X | 5B | TB3-5,6 | J2U | 40 | 2 | 16 | 5 | 15.0 |  | X | X | X | 6A | TB3-7,8 | J2L | 44 | 6 | 17 | 6 |  |  | X | X | X | <p><b>PROJECT REFERENCE NO.</b><br/>36249.4987</p> <p><b>SHEET NO.</b><br/>Sig-1.2</p> <p><b>SIGNAL HEAD HOOK-UP CHART</b></p> <table border="1" style="width: 100%; border-collapse: collapse;"> <thead> <tr> <th>LOAD SWITCH NO.</th><th>S1</th><th>S2</th><th>S3</th><th>S4</th><th>S5</th><th>S6</th><th>S7</th><th>S8</th><th>S9</th><th>S10</th><th>S11</th><th>S12</th><th>AUX S1</th><th>AUX S2</th><th>AUX S3</th><th>AUX S4</th><th>AUX S5</th><th>AUX S6</th> </tr> </thead> <tbody> <tr> <td>CMU CHANNEL NO.</td><td>1</td><td>2</td><td>13</td><td>3</td><td>4</td><td>14</td><td>5</td><td>6</td><td>15</td><td>7</td><td>8</td><td>16</td><td>9</td><td>10</td><td>11</td><td>12</td><td>13</td> </tr> <tr> <td>PHASE</td><td>1</td><td>2</td><td>PED</td><td>3</td><td>4</td><td>PED</td><td>5</td><td>6</td><td>PED</td><td>7</td><td>OL7</td><td>PED</td><td>OL1</td><td>OL2</td><td>OL5</td><td>OL3</td><td>OL4</td><td>OL6</td> </tr> <tr> <td>SIGNAL HEAD NO.</td><td>11 ★</td><td>21,22</td><td>NU</td><td>31,33</td><td>41,43</td><td>NU</td><td>51 ★</td><td>61,62</td><td>NU</td><td>NU</td><td>65 ★</td><td>NU</td><td>11 ★</td><td>63,64</td><td>32</td><td>51 ★</td><td>23,24</td><td>42</td> </tr> <tr> <td>RED</td><td></td><td>128</td><td></td><td></td><td></td><td></td><td></td><td></td><td></td><td></td><td>134</td><td></td><td>107</td><td>A124</td><td>A111</td><td>A101</td><td>A104</td> </tr> <tr> <td>YELLOW</td><td>*</td><td>129</td><td></td><td></td><td></td><td></td><td>*</td><td></td><td></td><td></td><td>135</td><td></td><td></td><td>A125</td><td></td><td>A102</td><td></td> </tr> <tr> <td>GREEN</td><td></td><td>130</td><td></td><td></td><td></td><td></td><td></td><td></td><td></td><td></td><td>136</td><td></td><td></td><td>A126</td><td></td><td>A103</td><td></td> </tr> <tr> <td>RED ARROW</td><td></td><td></td><td></td><td></td><td></td><td></td><td></td><td></td><td></td><td></td><td>116</td><td>101</td><td></td><td>A121</td><td></td><td>A114</td><td></td> </tr> <tr> <td>YELLOW ARROW</td><td></td><td></td><td></td><td></td><td></td><td></td><td></td><td></td><td></td><td></td><td>117</td><td>102</td><td></td><td>A122</td><td>A112</td><td>A115</td><td>A105</td> </tr> <tr> <td>FLASHING YELLOW ARROW</td><td></td><td></td><td></td><td></td><td></td><td></td><td></td><td></td><td></td><td></td><td></td><td></td><td>109</td><td>A123</td><td></td><td>A116</td><td></td> </tr> <tr> <td>GREEN ARROW</td><td></td><td>127</td><td></td><td></td><td></td><td></td><td></td><td>118</td><td>103</td><td></td><td>133</td><td></td><td></td><td></td><td></td><td>A113</td><td></td><td>A106</td> </tr> </tbody> </table> <p>NU = Not Used<br/>* Denotes install load resistor. See load resistor installation detail this sheet.<br/>★ See pictorial of head wiring in detail this sheet.</p> <p><b>FYA SIGNAL WIRING DETAIL</b><br/>(wire signal heads as shown)</p> <table border="1" style="width: 100%; border-collapse: collapse;"> <tr> <td>OL1 RED (A121)</td><td></td> <td>OL3 RED (A114)</td><td></td> </tr> <tr> <td>OL1 YELLOW (A122)</td><td></td> <td>OL3 YELLOW (A115)</td><td></td> </tr> <tr> <td>OL1 GREEN (A123)</td><td></td> <td>OL3 GREEN (A116)</td><td></td> </tr> <tr> <td>01 GREEN (127)</td><td></td> <td>05 GREEN (133)</td><td></td> </tr> </table> <p>11</p> <p>OL7 RED (107) </p> <p>OL7 YELLOW (108) </p> <p>OL7 GREEN (109) </p> <p>51</p> <p>65</p> <p><b>NC Dept of Transportation Division of Highways</b><br/>Final Drawing Date: 09/03/2025<br/>Signed by: Robert J. Giemba<br/>NCDOT Approval: 084B86274A494</p> <p><b>THIS ELECTRICAL DETAIL IS FOR THE SIGNAL DESIGN: 05-1295</b><br/>DESIGNED: Aug 2025<br/>SEALED: 08/12/2025<br/>REVISED: N/A</p> <p><b>Electrical Detail - Sheet 1 of 3</b></p> <table border="1" style="width: 100%; border-collapse: collapse;"> <tr> <td style="width: 15%; vertical-align: top;"> <p><b>ELECTRICAL AND PROGRAMMING DETAILS FOR:</b></p> <p><b>SR 1011 (Old US 1)</b><br/><b>at</b><br/><b>SR 1187 (Holland Road) /</b><br/><b>SR 1149 (Friendship Road)</b></p> <p>Division 5 Wake County Apex</p> <p>PLAN DATE: August 2025 REVIEWED BY: WJ Hamilton</p> <p>PREPARED BY: JA Wendt REVIEWED BY:</p> <p>REVISIONS INIT. DATE</p> </td> <td style="width: 15%; vertical-align: top;"> <p>DOCUMENT NOT CONSIDERED FINAL UNLESS ALL SIGNATURES COMPLETED</p> <p>SEAL</p> <p><b>North Carolina Department of Transportation</b><br/>Division of Highways</p> <p>William J. Hamilton</p> <p>SIGNATURE DATE</p> <p>SIG. INVENTORY NO. 05-1295</p> </td> </tr> </table> | LOAD SWITCH NO. | S1 | S2 | S3 | S4 | S5 | S6 | S7 | S8 | S9 | S10 | S11 | S12 | AUX S1 | AUX S2 | AUX S3 | AUX S4 | AUX S5 | AUX S6 | CMU CHANNEL NO. | 1 | 2 | 13 | 3 | 4 | 14 | 5 | 6 | 15 | 7 | 8 | 16 | 9 | 10 | 11 | 12 | 13 | PHASE | 1 | 2 | PED | 3 | 4 | PED | 5 | 6 | PED | 7 | OL7 | PED | OL1 | OL2 | OL5 | OL3 | OL4 | OL6 | SIGNAL HEAD NO. | 11 ★ | 21,22 | NU | 31,33 | 41,43 | NU | 51 ★ | 61,62 | NU | NU | 65 ★ | NU | 11 ★ | 63,64 | 32 | 51 ★ | 23,24 | 42 | RED |  | 128 |  |  |  |  |  |  |  |  | 134 |  | 107 | A124 | A111 | A101 | A104 | YELLOW | * | 129 |  |  |  |  | * |  |  |  | 135 |  |  | A125 |  | A102 |  | GREEN |  | 130 |  |  |  |  |  |  |  |  | 136 |  |  | A126 |  | A103 |  | RED ARROW |  |  |  |  |  |  |  |  |  |  | 116 | 101 |  | A121 |  | A114 |  | YELLOW ARROW |  |  |  |  |  |  |  |  |  |  | 117 | 102 |  | A122 | A112 | A115 | A105 | FLASHING YELLOW ARROW |  |  |  |  |  |  |  |  |  |  |  |  | 109 | A123 |  | A116 |  | GREEN ARROW |  | 127 |  |  |  |  |  | 118 | 103 |  | 133 |  |  |  |  | A113 |  | A106 | OL1 RED (A121) |  | OL3 RED (A114) |  | OL1 YELLOW (A122) |  | OL3 YELLOW (A115) |  | OL1 GREEN (A123) |  | OL3 GREEN (A116) |  | 01 GREEN (127) |  | 05 GREEN (133) |  | <p><b>ELECTRICAL AND PROGRAMMING DETAILS FOR:</b></p> <p><b>SR 1011 (Old US 1)</b><br/><b>at</b><br/><b>SR 1187 (Holland Road) /</b><br/><b>SR 1149 (Friendship Road)</b></p> <p>Division 5 Wake County Apex</p> <p>PLAN DATE: August 2025 REVIEWED BY: WJ Hamilton</p> <p>PREPARED BY: JA Wendt REVIEWED BY:</p> <p>REVISIONS INIT. DATE</p> | <p>DOCUMENT NOT CONSIDERED FINAL UNLESS ALL SIGNATURES COMPLETED</p> <p>SEAL</p> <p><b>North Carolina Department of Transportation</b><br/>Division of Highways</p> <p>William J. Hamilton</p> <p>SIGNATURE DATE</p> <p>SIG. INVENTORY NO. 05-1295</p> |
|---|--|-------------------|---------------|---------------|---------------|---------------|---------------|---------------|---------------|---------------|--------------------|-------------------|--------|--------|-----------|-----------|---------------|---------------|-----------|-----------|---------------|---------------|---------------|---------------|---------------|---------------|-------------------|----------------|--|--|--|----------|----------|--|--|--|--|--|--|--|-----------|-----------|---------------|---------------|---------------|---------------|---------------|---------------|---------------|---------------|---------------|---------------|---------------|----------------|--|--|--|--|--|--|--|--|--|--|--|--|--------------|---------|-------------|-----------|-------------|-----------|---|----------|---------------|-----------------|---------|-------------|--------------|------------|------------|-------------|---------------|------|--------------------|----|---------|-----|----|----|-----|---|------|--|---|---|--|----|---------|-----|----|---|------|---|-----|--|---|---|---|----|---------|-----|----|---|---|---|------|--|---|---|--|----|---------|-----|----|----|---|---|-----|--|---|---|--|----|----------|-----|----|---|---|---|-----|--|---|---|--|----|---------|-----|----|---|------|---|------|--|---|---|---|----|---------|-----|----|---|----|---|------|--|---|---|---|----|---------|-----|----|---|----|---|--|--|---|---|---|--|-----------------|----|----|----|----|----|----|----|----|----|-----|-----|-----|--------|--------|--------|--------|--------|--------|-----------------|---|---|----|---|---|----|---|---|----|---|---|----|---|----|----|----|----|-------|---|---|-----|---|---|-----|---|---|-----|---|-----|-----|-----|-----|-----|-----|-----|-----|-----------------|------|-------|----|-------|-------|----|------|-------|----|----|------|----|------|-------|----|------|-------|----|-----|--|-----|--|--|--|--|--|--|--|--|-----|--|-----|------|------|------|------|--------|---|-----|--|--|--|--|---|--|--|--|-----|--|--|------|--|------|--|-------|--|-----|--|--|--|--|--|--|--|--|-----|--|--|------|--|------|--|-----------|--|--|--|--|--|--|--|--|--|--|-----|-----|--|------|--|------|--|--------------|--|--|--|--|--|--|--|--|--|--|-----|-----|--|------|------|------|------|-----------------------|--|--|--|--|--|--|--|--|--|--|--|--|-----|------|--|------|--|-------------|--|-----|--|--|--|--|--|-----|-----|--|-----|--|--|--|--|------|--|------|----------------|--|----------------|--|-------------------|--|-------------------|--|------------------|--|------------------|--|----------------|--|----------------|--|---|--|
| 1   | 2  | 3                 | 4             | 5             | 6             | 7             | 8             | 9             | 10            | 11            | 12                 | 13                | 14     |        |           |           |               |               |           |           |               |               |               |               |               |               |                   |                |  |  |  |          |          |  |  |  |  |  |  |  |           |           |               |               |               |               |               |               |               |               |               |               |               |                |  |  |  |  |  |  |  |  |  |  |  |  |              |         |             |           |             |           |   |          |               |                 |         |             |              |            |            |             |               |      |                    |    |         |     |    |    |     |   |      |  |   |   |  |    |         |     |    |   |      |   |     |  |   |   |   |    |         |     |    |   |   |   |      |  |   |   |  |    |         |     |    |    |   |   |     |  |   |   |  |    |          |     |    |   |   |   |     |  |   |   |  |    |         |     |    |   |      |   |      |  |   |   |   |    |         |     |    |   |    |   |      |  |   |   |   |    |         |     |    |   |    |   |  |  |   |   |   |  |                 |    |    |    |    |    |    |    |    |    |     |     |     |        |        |        |        |        |        |                 |   |   |    |   |   |    |   |   |    |   |   |    |   |    |    |    |    |       |   |   |     |   |   |     |   |   |     |   |     |     |     |     |     |     |     |     |                 |      |       |    |       |       |    |      |       |    |    |      |    |      |       |    |      |       |    |     |  |     |  |  |  |  |  |  |  |  |     |  |     |      |      |      |      |        |   |     |  |  |  |  |   |  |  |  |     |  |  |      |  |      |  |       |  |     |  |  |  |  |  |  |  |  |     |  |  |      |  |      |  |           |  |  |  |  |  |  |  |  |  |  |     |     |  |      |  |      |  |              |  |  |  |  |  |  |  |  |  |  |     |     |  |      |      |      |      |                       |  |  |  |  |  |  |  |  |  |  |  |  |     |      |  |      |  |             |  |     |  |  |  |  |  |     |     |  |     |  |  |  |  |      |  |      |                |  |                |  |                   |  |                   |  |                  |  |                  |  |                |  |                |  |   |  |
| Ø 1<br>1A   | Ø 1<br>1B  | SLOT<br>EMPTY     | SLOT<br>EMPTY | Ø 3<br>3A     | Ø 4<br>4A     | SLOT<br>EMPTY | SLOT<br>EMPTY | SLOT<br>EMPTY | SLOT<br>EMPTY | SLOT<br>EMPTY | SLOT<br>EMPTY      | FS<br>DC ISOLATOR |        |        |           |           |               |               |           |           |               |               |               |               |               |               |                   |                |  |  |  |          |          |  |  |  |  |  |  |  |           |           |               |               |               |               |               |               |               |               |               |               |               |                |  |  |  |  |  |  |  |  |  |  |  |  |              |         |             |           |             |           |   |          |               |                 |         |             |              |            |            |             |               |      |                    |    |         |     |    |    |     |   |      |  |   |   |  |    |         |     |    |   |      |   |     |  |   |   |   |    |         |     |    |   |   |   |      |  |   |   |  |    |         |     |    |    |   |   |     |  |   |   |  |    |          |     |    |   |   |   |     |  |   |   |  |    |         |     |    |   |      |   |      |  |   |   |   |    |         |     |    |   |    |   |      |  |   |   |   |    |         |     |    |   |    |   |  |  |   |   |   |  |                 |    |    |    |    |    |    |    |    |    |     |     |     |        |        |        |        |        |        |                 |   |   |    |   |   |    |   |   |    |   |   |    |   |    |    |    |    |       |   |   |     |   |   |     |   |   |     |   |     |     |     |     |     |     |     |     |                 |      |       |    |       |       |    |      |       |    |    |      |    |      |       |    |      |       |    |     |  |     |  |  |  |  |  |  |  |  |     |  |     |      |      |      |      |        |   |     |  |  |  |  |   |  |  |  |     |  |  |      |  |      |  |       |  |     |  |  |  |  |  |  |  |  |     |  |  |      |  |      |  |           |  |  |  |  |  |  |  |  |  |  |     |     |  |      |  |      |  |              |  |  |  |  |  |  |  |  |  |  |     |     |  |      |      |      |      |                       |  |  |  |  |  |  |  |  |  |  |  |  |     |      |  |      |  |             |  |     |  |  |  |  |  |     |     |  |     |  |  |  |  |      |  |      |                |  |                |  |                   |  |                   |  |                  |  |                  |  |                |  |                |  |   |  |
| NOT USED<br>2A  |  |                   |               | NOT USED      | NOT USED      |               |               |               |               |               |                    |                   |        |        |           |           |               |               |           |           |               |               |               |               |               |               |                   |                |  |  |  |          |          |  |  |  |  |  |  |  |           |           |               |               |               |               |               |               |               |               |               |               |               |                |  |  |  |  |  |  |  |  |  |  |  |  |              |         |             |           |             |           |   |          |               |                 |         |             |              |            |            |             |               |      |                    |    |         |     |    |    |     |   |      |  |   |   |  |    |         |     |    |   |      |   |     |  |   |   |   |    |         |     |    |   |   |   |      |  |   |   |  |    |         |     |    |    |   |   |     |  |   |   |  |    |          |     |    |   |   |   |     |  |   |   |  |    |         |     |    |   |      |   |      |  |   |   |   |    |         |     |    |   |    |   |      |  |   |   |   |    |         |     |    |   |    |   |  |  |   |   |   |  |                 |    |    |    |    |    |    |    |    |    |     |     |     |        |        |        |        |        |        |                 |   |   |    |   |   |    |   |   |    |   |   |    |   |    |    |    |    |       |   |   |     |   |   |     |   |   |     |   |     |     |     |     |     |     |     |     |                 |      |       |    |       |       |    |      |       |    |    |      |    |      |       |    |      |       |    |     |  |     |  |  |  |  |  |  |  |  |     |  |     |      |      |      |      |        |   |     |  |  |  |  |   |  |  |  |     |  |  |      |  |      |  |       |  |     |  |  |  |  |  |  |  |  |     |  |  |      |  |      |  |           |  |  |  |  |  |  |  |  |  |  |     |     |  |      |  |      |  |              |  |  |  |  |  |  |  |  |  |  |     |     |  |      |      |      |      |                       |  |  |  |  |  |  |  |  |  |  |  |  |     |      |  |      |  |             |  |     |  |  |  |  |  |     |     |  |     |  |  |  |  |      |  |      |                |  |                |  |                   |  |                   |  |                  |  |                  |  |                |  |                |  |   |  |
| Ø 5<br>5A   | Ø 5<br>5B  | SLOT<br>EMPTY     | SLOT<br>EMPTY | SLOT<br>EMPTY | SLOT<br>EMPTY | SLOT<br>EMPTY | SLOT<br>EMPTY | SLOT<br>EMPTY | SLOT<br>EMPTY | SLOT<br>EMPTY | SLOT<br>EMPTY      | SLOT<br>EMPTY     |        |        |           |           |               |               |           |           |               |               |               |               |               |               |                   |                |  |  |  |          |          |  |  |  |  |  |  |  |           |           |               |               |               |               |               |               |               |               |               |               |               |                |  |  |  |  |  |  |  |  |  |  |  |  |              |         |             |           |             |           |   |          |               |                 |         |             |              |            |            |             |               |      |                    |    |         |     |    |    |     |   |      |  |   |   |  |    |         |     |    |   |      |   |     |  |   |   |   |    |         |     |    |   |   |   |      |  |   |   |  |    |         |     |    |    |   |   |     |  |   |   |  |    |          |     |    |   |   |   |     |  |   |   |  |    |         |     |    |   |      |   |      |  |   |   |   |    |         |     |    |   |    |   |      |  |   |   |   |    |         |     |    |   |    |   |  |  |   |   |   |  |                 |    |    |    |    |    |    |    |    |    |     |     |     |        |        |        |        |        |        |                 |   |   |    |   |   |    |   |   |    |   |   |    |   |    |    |    |    |       |   |   |     |   |   |     |   |   |     |   |     |     |     |     |     |     |     |     |                 |      |       |    |       |       |    |      |       |    |    |      |    |      |       |    |      |       |    |     |  |     |  |  |  |  |  |  |  |  |     |  |     |      |      |      |      |        |   |     |  |  |  |  |   |  |  |  |     |  |  |      |  |      |  |       |  |     |  |  |  |  |  |  |  |  |     |  |  |      |  |      |  |           |  |  |  |  |  |  |  |  |  |  |     |     |  |      |  |      |  |              |  |  |  |  |  |  |  |  |  |  |     |     |  |      |      |      |      |                       |  |  |  |  |  |  |  |  |  |  |  |  |     |      |  |      |  |             |  |     |  |  |  |  |  |     |     |  |     |  |  |  |  |      |  |      |                |  |                |  |                   |  |                   |  |                  |  |                  |  |                |  |                |  |   |  |
| NOT USED<br>6A  |  |                   |               |               |               |               |               |               |               |               |                    |                   |        |        |           |           |               |               |           |           |               |               |               |               |               |               |                   |                |  |  |  |          |          |  |  |  |  |  |  |  |           |           |               |               |               |               |               |               |               |               |               |               |               |                |  |  |  |  |  |  |  |  |  |  |  |  |              |         |             |           |             |           |   |          |               |                 |         |             |              |            |            |             |               |      |                    |    |         |     |    |    |     |   |      |  |   |   |  |    |         |     |    |   |      |   |     |  |   |   |   |    |         |     |    |   |   |   |      |  |   |   |  |    |         |     |    |    |   |   |     |  |   |   |  |    |          |     |    |   |   |   |     |  |   |   |  |    |         |     |    |   |      |   |      |  |   |   |   |    |         |     |    |   |    |   |      |  |   |   |   |    |         |     |    |   |    |   |  |  |   |   |   |  |                 |    |    |    |    |    |    |    |    |    |     |     |     |        |        |        |        |        |        |                 |   |   |    |   |   |    |   |   |    |   |   |    |   |    |    |    |    |       |   |   |     |   |   |     |   |   |     |   |     |     |     |     |     |     |     |     |                 |      |       |    |       |       |    |      |       |    |    |      |    |      |       |    |      |       |    |     |  |     |  |  |  |  |  |  |  |  |     |  |     |      |      |      |      |        |   |     |  |  |  |  |   |  |  |  |     |  |  |      |  |      |  |       |  |     |  |  |  |  |  |  |  |  |     |  |  |      |  |      |  |           |  |  |  |  |  |  |  |  |  |  |     |     |  |      |  |      |  |              |  |  |  |  |  |  |  |  |  |  |     |     |  |      |      |      |      |                       |  |  |  |  |  |  |  |  |  |  |  |  |     |      |  |      |  |             |  |     |  |  |  |  |  |     |     |  |     |  |  |  |  |      |  |      |                |  |                |  |                   |  |                   |  |                  |  |                  |  |                |  |                |  |   |  |
| Value (ohms)  | Wattage  |                   |               |               |               |               |               |               |               |               |                    |                   |        |        |           |           |               |               |           |           |               |               |               |               |               |               |                   |                |  |  |  |          |          |  |  |  |  |  |  |  |           |           |               |               |               |               |               |               |               |               |               |               |               |                |  |  |  |  |  |  |  |  |  |  |  |  |              |         |             |           |             |           |   |          |               |                 |         |             |              |            |            |             |               |      |                    |    |         |     |    |    |     |   |      |  |   |   |  |    |         |     |    |   |      |   |     |  |   |   |   |    |         |     |    |   |   |   |      |  |   |   |  |    |         |     |    |    |   |   |     |  |   |   |  |    |          |     |    |   |   |   |     |  |   |   |  |    |         |     |    |   |      |   |      |  |   |   |   |    |         |     |    |   |    |   |      |  |   |   |   |    |         |     |    |   |    |   |  |  |   |   |   |  |                 |    |    |    |    |    |    |    |    |    |     |     |     |        |        |        |        |        |        |                 |   |   |    |   |   |    |   |   |    |   |   |    |   |    |    |    |    |       |   |   |     |   |   |     |   |   |     |   |     |     |     |     |     |     |     |     |                 |      |       |    |       |       |    |      |       |    |    |      |    |      |       |    |      |       |    |     |  |     |  |  |  |  |  |  |  |  |     |  |     |      |      |      |      |        |   |     |  |  |  |  |   |  |  |  |     |  |  |      |  |      |  |       |  |     |  |  |  |  |  |  |  |  |     |  |  |      |  |      |  |           |  |  |  |  |  |  |  |  |  |  |     |     |  |      |  |      |  |              |  |  |  |  |  |  |  |  |  |  |     |     |  |      |      |      |      |                       |  |  |  |  |  |  |  |  |  |  |  |  |     |      |  |      |  |             |  |     |  |  |  |  |  |     |     |  |     |  |  |  |  |      |  |      |                |  |                |  |                   |  |                   |  |                  |  |                  |  |                |  |                |  |   |  |
| 1.5K - 1.9K   | 25W (min)  |                   |               |               |               |               |               |               |               |               |                    |                   |        |        |           |           |               |               |           |           |               |               |               |               |               |               |                   |                |  |  |  |          |          |  |  |  |  |  |  |  |           |           |               |               |               |               |               |               |               |               |               |               |               |                |  |  |  |  |  |  |  |  |  |  |  |  |              |         |             |           |             |           |   |          |               |                 |         |             |              |            |            |             |               |      |                    |    |         |     |    |    |     |   |      |  |   |   |  |    |         |     |    |   |      |   |     |  |   |   |   |    |         |     |    |   |   |   |      |  |   |   |  |    |         |     |    |    |   |   |     |  |   |   |  |    |          |     |    |   |   |   |     |  |   |   |  |    |         |     |    |   |      |   |      |  |   |   |   |    |         |     |    |   |    |   |      |  |   |   |   |    |         |     |    |   |    |   |  |  |   |   |   |  |                 |    |    |    |    |    |    |    |    |    |     |     |     |        |        |        |        |        |        |                 |   |   |    |   |   |    |   |   |    |   |   |    |   |    |    |    |    |       |   |   |     |   |   |     |   |   |     |   |     |     |     |     |     |     |     |     |                 |      |       |    |       |       |    |      |       |    |    |      |    |      |       |    |      |       |    |     |  |     |  |  |  |  |  |  |  |  |     |  |     |      |      |      |      |        |   |     |  |  |  |  |   |  |  |  |     |  |  |      |  |      |  |       |  |     |  |  |  |  |  |  |  |  |     |  |  |      |  |      |  |           |  |  |  |  |  |  |  |  |  |  |     |     |  |      |  |      |  |              |  |  |  |  |  |  |  |  |  |  |     |     |  |      |      |      |      |                       |  |  |  |  |  |  |  |  |  |  |  |  |     |      |  |      |  |             |  |     |  |  |  |  |  |     |     |  |     |  |  |  |  |      |  |      |                |  |                |  |                   |  |                   |  |                  |  |                  |  |                |  |                |  |   |  |
| 2.0K - 3.0K   | 10W (min)  |                   |               |               |               |               |               |               |               |               |                    |                   |        |        |           |           |               |               |           |           |               |               |               |               |               |               |                   |                |  |  |  |          |          |  |  |  |  |  |  |  |           |           |               |               |               |               |               |               |               |               |               |               |               |                |  |  |  |  |  |  |  |  |  |  |  |  |              |         |             |           |             |           |   |          |               |                 |         |             |              |            |            |             |               |      |                    |    |         |     |    |    |     |   |      |  |   |   |  |    |         |     |    |   |      |   |     |  |   |   |   |    |         |     |    |   |   |   |      |  |   |   |  |    |         |     |    |    |   |   |     |  |   |   |  |    |          |     |    |   |   |   |     |  |   |   |  |    |         |     |    |   |      |   |      |  |   |   |   |    |         |     |    |   |    |   |      |  |   |   |   |    |         |     |    |   |    |   |  |  |   |   |   |  |                 |    |    |    |    |    |    |    |    |    |     |     |     |        |        |        |        |        |        |                 |   |   |    |   |   |    |   |   |    |   |   |    |   |    |    |    |    |       |   |   |     |   |   |     |   |   |     |   |     |     |     |     |     |     |     |     |                 |      |       |    |       |       |    |      |       |    |    |      |    |      |       |    |      |       |    |     |  |     |  |  |  |  |  |  |  |  |     |  |     |      |      |      |      |        |   |     |  |  |  |  |   |  |  |  |     |  |  |      |  |      |  |       |  |     |  |  |  |  |  |  |  |  |     |  |  |      |  |      |  |           |  |  |  |  |  |  |  |  |  |  |     |     |  |      |  |      |  |              |  |  |  |  |  |  |  |  |  |  |     |     |  |      |      |      |      |                       |  |  |  |  |  |  |  |  |  |  |  |  |     |      |  |      |  |             |  |     |  |  |  |  |  |     |     |  |     |  |  |  |  |      |  |      |                |  |                |  |                   |  |                   |  |                  |  |                  |  |                |  |                |  |   |  |
| LOOP NO.  | LOOP TERMINAL  | INPUT FILE POS.   | PIN NO.       | INPUT POINT   | DETECTOR NO.  | CALL PHASE    | DELAY TIME    | EXTEND TIME   | ADDED INITIAL | CALL          | DELAY DURING GREEN |                   |        |        |           |           |               |               |           |           |               |               |               |               |               |               |                   |                |  |  |  |          |          |  |  |  |  |  |  |  |           |           |               |               |               |               |               |               |               |               |               |               |               |                |  |  |  |  |  |  |  |  |  |  |  |  |              |         |             |           |             |           |   |          |               |                 |         |             |              |            |            |             |               |      |                    |    |         |     |    |    |     |   |      |  |   |   |  |    |         |     |    |   |      |   |     |  |   |   |   |    |         |     |    |   |   |   |      |  |   |   |  |    |         |     |    |    |   |   |     |  |   |   |  |    |          |     |    |   |   |   |     |  |   |   |  |    |         |     |    |   |      |   |      |  |   |   |   |    |         |     |    |   |    |   |      |  |   |   |   |    |         |     |    |   |    |   |  |  |   |   |   |  |                 |    |    |    |    |    |    |    |    |    |     |     |     |        |        |        |        |        |        |                 |   |   |    |   |   |    |   |   |    |   |   |    |   |    |    |    |    |       |   |   |     |   |   |     |   |   |     |   |     |     |     |     |     |     |     |     |                 |      |       |    |       |       |    |      |       |    |    |      |    |      |       |    |      |       |    |     |  |     |  |  |  |  |  |  |  |  |     |  |     |      |      |      |      |        |   |     |  |  |  |  |   |  |  |  |     |  |  |      |  |      |  |       |  |     |  |  |  |  |  |  |  |  |     |  |  |      |  |      |  |           |  |  |  |  |  |  |  |  |  |  |     |     |  |      |  |      |  |              |  |  |  |  |  |  |  |  |  |  |     |     |  |      |      |      |      |                       |  |  |  |  |  |  |  |  |  |  |  |  |     |      |  |      |  |             |  |     |  |  |  |  |  |     |     |  |     |  |  |  |  |      |  |      |                |  |                |  |                   |  |                   |  |                  |  |                  |  |                |  |                |  |   |  |
| 1A  | TB1-1,2  | I1U               | 56            | 18            | 1 ★           | 1             | 15.0          |               | X             | X             |                    |                   |        |        |           |           |               |               |           |           |               |               |               |               |               |               |                   |                |  |  |  |          |          |  |  |  |  |  |  |  |           |           |               |               |               |               |               |               |               |               |               |               |               |                |  |  |  |  |  |  |  |  |  |  |  |  |              |         |             |           |             |           |   |          |               |                 |         |             |              |            |            |             |               |      |                    |    |         |     |    |    |     |   |      |  |   |   |  |    |         |     |    |   |      |   |     |  |   |   |   |    |         |     |    |   |   |   |      |  |   |   |  |    |         |     |    |    |   |   |     |  |   |   |  |    |          |     |    |   |   |   |     |  |   |   |  |    |         |     |    |   |      |   |      |  |   |   |   |    |         |     |    |   |    |   |      |  |   |   |   |    |         |     |    |   |    |   |  |  |   |   |   |  |                 |    |    |    |    |    |    |    |    |    |     |     |     |        |        |        |        |        |        |                 |   |   |    |   |   |    |   |   |    |   |   |    |   |    |    |    |    |       |   |   |     |   |   |     |   |   |     |   |     |     |     |     |     |     |     |     |                 |      |       |    |       |       |    |      |       |    |    |      |    |      |       |    |      |       |    |     |  |     |  |  |  |  |  |  |  |  |     |  |     |      |      |      |      |        |   |     |  |  |  |  |   |  |  |  |     |  |  |      |  |      |  |       |  |     |  |  |  |  |  |  |  |  |     |  |  |      |  |      |  |           |  |  |  |  |  |  |  |  |  |  |     |     |  |      |  |      |  |              |  |  |  |  |  |  |  |  |  |  |     |     |  |      |      |      |      |                       |  |  |  |  |  |  |  |  |  |  |  |  |     |      |  |      |  |             |  |     |  |  |  |  |  |     |     |  |     |  |  |  |  |      |  |      |                |  |                |  |                   |  |                   |  |                  |  |                  |  |                |  |                |  |   |  |
| 1B  | TB2-5,6  | I2U               | 39            | ~             | 29 ★          | 6             | 3.0           |               | X             | X             | X                  |                   |        |        |           |           |               |               |           |           |               |               |               |               |               |               |                   |                |  |  |  |          |          |  |  |  |  |  |  |  |           |           |               |               |               |               |               |               |               |               |               |               |               |                |  |  |  |  |  |  |  |  |  |  |  |  |              |         |             |           |             |           |   |          |               |                 |         |             |              |            |            |             |               |      |                    |    |         |     |    |    |     |   |      |  |   |   |  |    |         |     |    |   |      |   |     |  |   |   |   |    |         |     |    |   |   |   |      |  |   |   |  |    |         |     |    |    |   |   |     |  |   |   |  |    |          |     |    |   |   |   |     |  |   |   |  |    |         |     |    |   |      |   |      |  |   |   |   |    |         |     |    |   |    |   |      |  |   |   |   |    |         |     |    |   |    |   |  |  |   |   |   |  |                 |    |    |    |    |    |    |    |    |    |     |     |     |        |        |        |        |        |        |                 |   |   |    |   |   |    |   |   |    |   |   |    |   |    |    |    |    |       |   |   |     |   |   |     |   |   |     |   |     |     |     |     |     |     |     |     |                 |      |       |    |       |       |    |      |       |    |    |      |    |      |       |    |      |       |    |     |  |     |  |  |  |  |  |  |  |  |     |  |     |      |      |      |      |        |   |     |  |  |  |  |   |  |  |  |     |  |  |      |  |      |  |       |  |     |  |  |  |  |  |  |  |  |     |  |  |      |  |      |  |           |  |  |  |  |  |  |  |  |  |  |     |     |  |      |  |      |  |              |  |  |  |  |  |  |  |  |  |  |     |     |  |      |      |      |      |                       |  |  |  |  |  |  |  |  |  |  |  |  |     |      |  |      |  |             |  |     |  |  |  |  |  |     |     |  |     |  |  |  |  |      |  |      |                |  |                |  |                   |  |                   |  |                  |  |                  |  |                |  |                |  |   |  |
| 2A  | TB2-7,8  | I2L               | 43            | 5             | 2             | 1             | 15.0          |               | X             | X             |                    |                   |        |        |           |           |               |               |           |           |               |               |               |               |               |               |                   |                |  |  |  |          |          |  |  |  |  |  |  |  |           |           |               |               |               |               |               |               |               |               |               |               |               |                |  |  |  |  |  |  |  |  |  |  |  |  |              |         |             |           |             |           |   |          |               |                 |         |             |              |            |            |             |               |      |                    |    |         |     |    |    |     |   |      |  |   |   |  |    |         |     |    |   |      |   |     |  |   |   |   |    |         |     |    |   |   |   |      |  |   |   |  |    |         |     |    |    |   |   |     |  |   |   |  |    |          |     |    |   |   |   |     |  |   |   |  |    |         |     |    |   |      |   |      |  |   |   |   |    |         |     |    |   |    |   |      |  |   |   |   |    |         |     |    |   |    |   |  |  |   |   |   |  |                 |    |    |    |    |    |    |    |    |    |     |     |     |        |        |        |        |        |        |                 |   |   |    |   |   |    |   |   |    |   |   |    |   |    |    |    |    |       |   |   |     |   |   |     |   |   |     |   |     |     |     |     |     |     |     |     |                 |      |       |    |       |       |    |      |       |    |    |      |    |      |       |    |      |       |    |     |  |     |  |  |  |  |  |  |  |  |     |  |     |      |      |      |      |        |   |     |  |  |  |  |   |  |  |  |     |  |  |      |  |      |  |       |  |     |  |  |  |  |  |  |  |  |     |  |  |      |  |      |  |           |  |  |  |  |  |  |  |  |  |  |     |     |  |      |  |      |  |              |  |  |  |  |  |  |  |  |  |  |     |     |  |      |      |      |      |                       |  |  |  |  |  |  |  |  |  |  |  |  |     |      |  |      |  |             |  |     |  |  |  |  |  |     |     |  |     |  |  |  |  |      |  |      |                |  |                |  |                   |  |                   |  |                  |  |                  |  |                |  |                |  |   |  |
| 3A  | TB4-5,6  | I5U               | 58            | 20            | 7             | 3             | 3.0           |               | X             | X             |                    |                   |        |        |           |           |               |               |           |           |               |               |               |               |               |               |                   |                |  |  |  |          |          |  |  |  |  |  |  |  |           |           |               |               |               |               |               |               |               |               |               |               |               |                |  |  |  |  |  |  |  |  |  |  |  |  |              |         |             |           |             |           |   |          |               |                 |         |             |              |            |            |             |               |      |                    |    |         |     |    |    |     |   |      |  |   |   |  |    |         |     |    |   |      |   |     |  |   |   |   |    |         |     |    |   |   |   |      |  |   |   |  |    |         |     |    |    |   |   |     |  |   |   |  |    |          |     |    |   |   |   |     |  |   |   |  |    |         |     |    |   |      |   |      |  |   |   |   |    |         |     |    |   |    |   |      |  |   |   |   |    |         |     |    |   |    |   |  |  |   |   |   |  |                 |    |    |    |    |    |    |    |    |    |     |     |     |        |        |        |        |        |        |                 |   |   |    |   |   |    |   |   |    |   |   |    |   |    |    |    |    |       |   |   |     |   |   |     |   |   |     |   |     |     |     |     |     |     |     |     |                 |      |       |    |       |       |    |      |       |    |    |      |    |      |       |    |      |       |    |     |  |     |  |  |  |  |  |  |  |  |     |  |     |      |      |      |      |        |   |     |  |  |  |  |   |  |  |  |     |  |  |      |  |      |  |       |  |     |  |  |  |  |  |  |  |  |     |  |  |      |  |      |  |           |  |  |  |  |  |  |  |  |  |  |     |     |  |      |  |      |  |              |  |  |  |  |  |  |  |  |  |  |     |     |  |      |      |      |      |                       |  |  |  |  |  |  |  |  |  |  |  |  |     |      |  |      |  |             |  |     |  |  |  |  |  |     |     |  |     |  |  |  |  |      |  |      |                |  |                |  |                   |  |                   |  |                  |  |                  |  |                |  |                |  |   |  |
| 4A  | TB4-9,10   | I6U               | 41            | 3             | 8             | 4             | 3.0           |               | X             | X             |                    |                   |        |        |           |           |               |               |           |           |               |               |               |               |               |               |                   |                |  |  |  |          |          |  |  |  |  |  |  |  |           |           |               |               |               |               |               |               |               |               |               |               |               |                |  |  |  |  |  |  |  |  |  |  |  |  |              |         |             |           |             |           |   |          |               |                 |         |             |              |            |            |             |               |      |                    |    |         |     |    |    |     |   |      |  |   |   |  |    |         |     |    |   |      |   |     |  |   |   |   |    |         |     |    |   |   |   |      |  |   |   |  |    |         |     |    |    |   |   |     |  |   |   |  |    |          |     |    |   |   |   |     |  |   |   |  |    |         |     |    |   |      |   |      |  |   |   |   |    |         |     |    |   |    |   |      |  |   |   |   |    |         |     |    |   |    |   |  |  |   |   |   |  |                 |    |    |    |    |    |    |    |    |    |     |     |     |        |        |        |        |        |        |                 |   |   |    |   |   |    |   |   |    |   |   |    |   |    |    |    |    |       |   |   |     |   |   |     |   |   |     |   |     |     |     |     |     |     |     |     |                 |      |       |    |       |       |    |      |       |    |    |      |    |      |       |    |      |       |    |     |  |     |  |  |  |  |  |  |  |  |     |  |     |      |      |      |      |        |   |     |  |  |  |  |   |  |  |  |     |  |  |      |  |      |  |       |  |     |  |  |  |  |  |  |  |  |     |  |  |      |  |      |  |           |  |  |  |  |  |  |  |  |  |  |     |     |  |      |  |      |  |              |  |  |  |  |  |  |  |  |  |  |     |     |  |      |      |      |      |                       |  |  |  |  |  |  |  |  |  |  |  |  |     |      |  |      |  |             |  |     |  |  |  |  |  |     |     |  |     |  |  |  |  |      |  |      |                |  |                |  |                   |  |                   |  |                  |  |                  |  |                |  |                |  |   |  |
| 5A  | TB3-1,2  | J1U               | 55            | ~             | 15 ★          | 5             | 15.0          |               | X             | X             | X                  |                   |        |        |           |           |               |               |           |           |               |               |               |               |               |               |                   |                |  |  |  |          |          |  |  |  |  |  |  |  |           |           |               |               |               |               |               |               |               |               |               |               |               |                |  |  |  |  |  |  |  |  |  |  |  |  |              |         |             |           |             |           |   |          |               |                 |         |             |              |            |            |             |               |      |                    |    |         |     |    |    |     |   |      |  |   |   |  |    |         |     |    |   |      |   |     |  |   |   |   |    |         |     |    |   |   |   |      |  |   |   |  |    |         |     |    |    |   |   |     |  |   |   |  |    |          |     |    |   |   |   |     |  |   |   |  |    |         |     |    |   |      |   |      |  |   |   |   |    |         |     |    |   |    |   |      |  |   |   |   |    |         |     |    |   |    |   |  |  |   |   |   |  |                 |    |    |    |    |    |    |    |    |    |     |     |     |        |        |        |        |        |        |                 |   |   |    |   |   |    |   |   |    |   |   |    |   |    |    |    |    |       |   |   |     |   |   |     |   |   |     |   |     |     |     |     |     |     |     |     |                 |      |       |    |       |       |    |      |       |    |    |      |    |      |       |    |      |       |    |     |  |     |  |  |  |  |  |  |  |  |     |  |     |      |      |      |      |        |   |     |  |  |  |  |   |  |  |  |     |  |  |      |  |      |  |       |  |     |  |  |  |  |  |  |  |  |     |  |  |      |  |      |  |           |  |  |  |  |  |  |  |  |  |  |     |     |  |      |  |      |  |              |  |  |  |  |  |  |  |  |  |  |     |     |  |      |      |      |      |                       |  |  |  |  |  |  |  |  |  |  |  |  |     |      |  |      |  |             |  |     |  |  |  |  |  |     |     |  |     |  |  |  |  |      |  |      |                |  |                |  |                   |  |                   |  |                  |  |                  |  |                |  |                |  |   |  |
| 5B  | TB3-5,6  | J2U               | 40            | 2             | 16            | 5             | 15.0          |               | X             | X             | X                  |                   |        |        |           |           |               |               |           |           |               |               |               |               |               |               |                   |                |  |  |  |          |          |  |  |  |  |  |  |  |           |           |               |               |               |               |               |               |               |               |               |               |               |                |  |  |  |  |  |  |  |  |  |  |  |  |              |         |             |           |             |           |   |          |               |                 |         |             |              |            |            |             |               |      |                    |    |         |     |    |    |     |   |      |  |   |   |  |    |         |     |    |   |      |   |     |  |   |   |   |    |         |     |    |   |   |   |      |  |   |   |  |    |         |     |    |    |   |   |     |  |   |   |  |    |          |     |    |   |   |   |     |  |   |   |  |    |         |     |    |   |      |   |      |  |   |   |   |    |         |     |    |   |    |   |      |  |   |   |   |    |         |     |    |   |    |   |  |  |   |   |   |  |                 |    |    |    |    |    |    |    |    |    |     |     |     |        |        |        |        |        |        |                 |   |   |    |   |   |    |   |   |    |   |   |    |   |    |    |    |    |       |   |   |     |   |   |     |   |   |     |   |     |     |     |     |     |     |     |     |                 |      |       |    |       |       |    |      |       |    |    |      |    |      |       |    |      |       |    |     |  |     |  |  |  |  |  |  |  |  |     |  |     |      |      |      |      |        |   |     |  |  |  |  |   |  |  |  |     |  |  |      |  |      |  |       |  |     |  |  |  |  |  |  |  |  |     |  |  |      |  |      |  |           |  |  |  |  |  |  |  |  |  |  |     |     |  |      |  |      |  |              |  |  |  |  |  |  |  |  |  |  |     |     |  |      |      |      |      |                       |  |  |  |  |  |  |  |  |  |  |  |  |     |      |  |      |  |             |  |     |  |  |  |  |  |     |     |  |     |  |  |  |  |      |  |      |                |  |                |  |                   |  |                   |  |                  |  |                  |  |                |  |                |  |   |  |
| 6A  | TB3-7,8  | J2L               | 44            | 6             | 17            | 6             |               |               | X             | X             | X                  |                   |        |        |           |           |               |               |           |           |               |               |               |               |               |               |                   |                |  |  |  |          |          |  |  |  |  |  |  |  |           |           |               |               |               |               |               |               |               |               |               |               |               |                |  |  |  |  |  |  |  |  |  |  |  |  |              |         |             |           |             |           |   |          |               |                 |         |             |              |            |            |             |               |      |                    |    |         |     |    |    |     |   |      |  |   |   |  |    |         |     |    |   |      |   |     |  |   |   |   |    |         |     |    |   |   |   |      |  |   |   |  |    |         |     |    |    |   |   |     |  |   |   |  |    |          |     |    |   |   |   |     |  |   |   |  |    |         |     |    |   |      |   |      |  |   |   |   |    |         |     |    |   |    |   |      |  |   |   |   |    |         |     |    |   |    |   |  |  |   |   |   |  |                 |    |    |    |    |    |    |    |    |    |     |     |     |        |        |        |        |        |        |                 |   |   |    |   |   |    |   |   |    |   |   |    |   |    |    |    |    |       |   |   |     |   |   |     |   |   |     |   |     |     |     |     |     |     |     |     |                 |      |       |    |       |       |    |      |       |    |    |      |    |      |       |    |      |       |    |     |  |     |  |  |  |  |  |  |  |  |     |  |     |      |      |      |      |        |   |     |  |  |  |  |   |  |  |  |     |  |  |      |  |      |  |       |  |     |  |  |  |  |  |  |  |  |     |  |  |      |  |      |  |           |  |  |  |  |  |  |  |  |  |  |     |     |  |      |  |      |  |              |  |  |  |  |  |  |  |  |  |  |     |     |  |      |      |      |      |                       |  |  |  |  |  |  |  |  |  |  |  |  |     |      |  |      |  |             |  |     |  |  |  |  |  |     |     |  |     |  |  |  |  |      |  |      |                |  |                |  |                   |  |                   |  |                  |  |                  |  |                |  |                |  |   |  |
| LOAD SWITCH NO.   | S1   | S2                | S3            | S4            | S5            | S6            | S7            | S8            | S9            | S10           | S11                | S12               | AUX S1 | AUX S2 | AUX S3    | AUX S4    | AUX S5        | AUX S6        |           |           |               |               |               |               |               |               |                   |                |  |  |  |          |          |  |  |  |  |  |  |  |           |           |               |               |               |               |               |               |               |               |               |               |               |                |  |  |  |  |  |  |  |  |  |  |  |  |              |         |             |           |             |           |   |          |               |                 |         |             |              |            |            |             |               |      |                    |    |         |     |    |    |     |   |      |  |   |   |  |    |         |     |    |   |      |   |     |  |   |   |   |    |         |     |    |   |   |   |      |  |   |   |  |    |         |     |    |    |   |   |     |  |   |   |  |    |          |     |    |   |   |   |     |  |   |   |  |    |         |     |    |   |      |   |      |  |   |   |   |    |         |     |    |   |    |   |      |  |   |   |   |    |         |     |    |   |    |   |  |  |   |   |   |  |                 |    |    |    |    |    |    |    |    |    |     |     |     |        |        |        |        |        |        |                 |   |   |    |   |   |    |   |   |    |   |   |    |   |    |    |    |    |       |   |   |     |   |   |     |   |   |     |   |     |     |     |     |     |     |     |     |                 |      |       |    |       |       |    |      |       |    |    |      |    |      |       |    |      |       |    |     |  |     |  |  |  |  |  |  |  |  |     |  |     |      |      |      |      |        |   |     |  |  |  |  |   |  |  |  |     |  |  |      |  |      |  |       |  |     |  |  |  |  |  |  |  |  |     |  |  |      |  |      |  |           |  |  |  |  |  |  |  |  |  |  |     |     |  |      |  |      |  |              |  |  |  |  |  |  |  |  |  |  |     |     |  |      |      |      |      |                       |  |  |  |  |  |  |  |  |  |  |  |  |     |      |  |      |  |             |  |     |  |  |  |  |  |     |     |  |     |  |  |  |  |      |  |      |                |  |                |  |                   |  |                   |  |                  |  |                  |  |                |  |                |  |   |  |
| CMU CHANNEL NO.   | 1  | 2                 | 13            | 3             | 4             | 14            | 5             | 6             | 15            | 7             | 8                  | 16                | 9      | 10     | 11        | 12        | 13            |               |           |           |               |               |               |               |               |               |                   |                |  |  |  |          |          |  |  |  |  |  |  |  |           |           |               |               |               |               |               |               |               |               |               |               |               |                |  |  |  |  |  |  |  |  |  |  |  |  |              |         |             |           |             |           |   |          |               |                 |         |             |              |            |            |             |               |      |                    |    |         |     |    |    |     |   |      |  |   |   |  |    |         |     |    |   |      |   |     |  |   |   |   |    |         |     |    |   |   |   |      |  |   |   |  |    |         |     |    |    |   |   |     |  |   |   |  |    |          |     |    |   |   |   |     |  |   |   |  |    |         |     |    |   |      |   |      |  |   |   |   |    |         |     |    |   |    |   |      |  |   |   |   |    |         |     |    |   |    |   |  |  |   |   |   |  |                 |    |    |    |    |    |    |    |    |    |     |     |     |        |        |        |        |        |        |                 |   |   |    |   |   |    |   |   |    |   |   |    |   |    |    |    |    |       |   |   |     |   |   |     |   |   |     |   |     |     |     |     |     |     |     |     |                 |      |       |    |       |       |    |      |       |    |    |      |    |      |       |    |      |       |    |     |  |     |  |  |  |  |  |  |  |  |     |  |     |      |      |      |      |        |   |     |  |  |  |  |   |  |  |  |     |  |  |      |  |      |  |       |  |     |  |  |  |  |  |  |  |  |     |  |  |      |  |      |  |           |  |  |  |  |  |  |  |  |  |  |     |     |  |      |  |      |  |              |  |  |  |  |  |  |  |  |  |  |     |     |  |      |      |      |      |                       |  |  |  |  |  |  |  |  |  |  |  |  |     |      |  |      |  |             |  |     |  |  |  |  |  |     |     |  |     |  |  |  |  |      |  |      |                |  |                |  |                   |  |                   |  |                  |  |                  |  |                |  |                |  |   |  |
| PHASE   | 1  | 2                 | PED           | 3             | 4             | PED           | 5             | 6             | PED           | 7             | OL7                | PED               | OL1    | OL2    | OL5       | OL3       | OL4           | OL6           |           |           |               |               |               |               |               |               |                   |                |  |  |  |          |          |  |  |  |  |  |  |  |           |           |               |               |               |               |               |               |               |               |               |               |               |                |  |  |  |  |  |  |  |  |  |  |  |  |              |         |             |           |             |           |   |          |               |                 |         |             |              |            |            |             |               |      |                    |    |         |     |    |    |     |   |      |  |   |   |  |    |         |     |    |   |      |   |     |  |   |   |   |    |         |     |    |   |   |   |      |  |   |   |  |    |         |     |    |    |   |   |     |  |   |   |  |    |          |     |    |   |   |   |     |  |   |   |  |    |         |     |    |   |      |   |      |  |   |   |   |    |         |     |    |   |    |   |      |  |   |   |   |    |         |     |    |   |    |   |  |  |   |   |   |  |                 |    |    |    |    |    |    |    |    |    |     |     |     |        |        |        |        |        |        |                 |   |   |    |   |   |    |   |   |    |   |   |    |   |    |    |    |    |       |   |   |     |   |   |     |   |   |     |   |     |     |     |     |     |     |     |     |                 |      |       |    |       |       |    |      |       |    |    |      |    |      |       |    |      |       |    |     |  |     |  |  |  |  |  |  |  |  |     |  |     |      |      |      |      |        |   |     |  |  |  |  |   |  |  |  |     |  |  |      |  |      |  |       |  |     |  |  |  |  |  |  |  |  |     |  |  |      |  |      |  |           |  |  |  |  |  |  |  |  |  |  |     |     |  |      |  |      |  |              |  |  |  |  |  |  |  |  |  |  |     |     |  |      |      |      |      |                       |  |  |  |  |  |  |  |  |  |  |  |  |     |      |  |      |  |             |  |     |  |  |  |  |  |     |     |  |     |  |  |  |  |      |  |      |                |  |                |  |                   |  |                   |  |                  |  |                  |  |                |  |                |  |   |  |
| SIGNAL HEAD NO.   | 11 ★   | 21,22             | NU            | 31,33         | 41,43         | NU            | 51 ★          | 61,62         | NU            | NU            | 65 ★               | NU                | 11 ★   | 63,64  | 32        | 51 ★      | 23,24         | 42            |           |           |               |               |               |               |               |               |                   |                |  |  |  |          |          |  |  |  |  |  |  |  |           |           |               |               |               |               |               |               |               |               |               |               |               |                |  |  |  |  |  |  |  |  |  |  |  |  |              |         |             |           |             |           |   |          |               |                 |         |             |              |            |            |             |               |      |                    |    |         |     |    |    |     |   |      |  |   |   |  |    |         |     |    |   |      |   |     |  |   |   |   |    |         |     |    |   |   |   |      |  |   |   |  |    |         |     |    |    |   |   |     |  |   |   |  |    |          |     |    |   |   |   |     |  |   |   |  |    |         |     |    |   |      |   |      |  |   |   |   |    |         |     |    |   |    |   |      |  |   |   |   |    |         |     |    |   |    |   |  |  |   |   |   |  |                 |    |    |    |    |    |    |    |    |    |     |     |     |        |        |        |        |        |        |                 |   |   |    |   |   |    |   |   |    |   |   |    |   |    |    |    |    |       |   |   |     |   |   |     |   |   |     |   |     |     |     |     |     |     |     |     |                 |      |       |    |       |       |    |      |       |    |    |      |    |      |       |    |      |       |    |     |  |     |  |  |  |  |  |  |  |  |     |  |     |      |      |      |      |        |   |     |  |  |  |  |   |  |  |  |     |  |  |      |  |      |  |       |  |     |  |  |  |  |  |  |  |  |     |  |  |      |  |      |  |           |  |  |  |  |  |  |  |  |  |  |     |     |  |      |  |      |  |              |  |  |  |  |  |  |  |  |  |  |     |     |  |      |      |      |      |                       |  |  |  |  |  |  |  |  |  |  |  |  |     |      |  |      |  |             |  |     |  |  |  |  |  |     |     |  |     |  |  |  |  |      |  |      |                |  |                |  |                   |  |                   |  |                  |  |                  |  |                |  |                |  |   |  |
| RED   |  | 128               |               |               |               |               |               |               |               |               | 134                |                   | 107    | A124   | A111      | A101      | A104          |               |           |           |               |               |               |               |               |               |                   |                |  |  |  |          |          |  |  |  |  |  |  |  |           |           |               |               |               |               |               |               |               |               |               |               |               |                |  |  |  |  |  |  |  |  |  |  |  |  |              |         |             |           |             |           |   |          |               |                 |         |             |              |            |            |             |               |      |                    |    |         |     |    |    |     |   |      |  |   |   |  |    |         |     |    |   |      |   |     |  |   |   |   |    |         |     |    |   |   |   |      |  |   |   |  |    |         |     |    |    |   |   |     |  |   |   |  |    |          |     |    |   |   |   |     |  |   |   |  |    |         |     |    |   |      |   |      |  |   |   |   |    |         |     |    |   |    |   |      |  |   |   |   |    |         |     |    |   |    |   |  |  |   |   |   |  |                 |    |    |    |    |    |    |    |    |    |     |     |     |        |        |        |        |        |        |                 |   |   |    |   |   |    |   |   |    |   |   |    |   |    |    |    |    |       |   |   |     |   |   |     |   |   |     |   |     |     |     |     |     |     |     |     |                 |      |       |    |       |       |    |      |       |    |    |      |    |      |       |    |      |       |    |     |  |     |  |  |  |  |  |  |  |  |     |  |     |      |      |      |      |        |   |     |  |  |  |  |   |  |  |  |     |  |  |      |  |      |  |       |  |     |  |  |  |  |  |  |  |  |     |  |  |      |  |      |  |           |  |  |  |  |  |  |  |  |  |  |     |     |  |      |  |      |  |              |  |  |  |  |  |  |  |  |  |  |     |     |  |      |      |      |      |                       |  |  |  |  |  |  |  |  |  |  |  |  |     |      |  |      |  |             |  |     |  |  |  |  |  |     |     |  |     |  |  |  |  |      |  |      |                |  |                |  |                   |  |                   |  |                  |  |                  |  |                |  |                |  |   |  |
| YELLOW  | *  | 129               |               |               |               |               | *             |               |               |               | 135                |                   |        | A125   |           | A102      |               |               |           |           |               |               |               |               |               |               |                   |                |  |  |  |          |          |  |  |  |  |  |  |  |           |           |               |               |               |               |               |               |               |               |               |               |               |                |  |  |  |  |  |  |  |  |  |  |  |  |              |         |             |           |             |           |   |          |               |                 |         |             |              |            |            |             |               |      |                    |    |         |     |    |    |     |   |      |  |   |   |  |    |         |     |    |   |      |   |     |  |   |   |   |    |         |     |    |   |   |   |      |  |   |   |  |    |         |     |    |    |   |   |     |  |   |   |  |    |          |     |    |   |   |   |     |  |   |   |  |    |         |     |    |   |      |   |      |  |   |   |   |    |         |     |    |   |    |   |      |  |   |   |   |    |         |     |    |   |    |   |  |  |   |   |   |  |                 |    |    |    |    |    |    |    |    |    |     |     |     |        |        |        |        |        |        |                 |   |   |    |   |   |    |   |   |    |   |   |    |   |    |    |    |    |       |   |   |     |   |   |     |   |   |     |   |     |     |     |     |     |     |     |     |                 |      |       |    |       |       |    |      |       |    |    |      |    |      |       |    |      |       |    |     |  |     |  |  |  |  |  |  |  |  |     |  |     |      |      |      |      |        |   |     |  |  |  |  |   |  |  |  |     |  |  |      |  |      |  |       |  |     |  |  |  |  |  |  |  |  |     |  |  |      |  |      |  |           |  |  |  |  |  |  |  |  |  |  |     |     |  |      |  |      |  |              |  |  |  |  |  |  |  |  |  |  |     |     |  |      |      |      |      |                       |  |  |  |  |  |  |  |  |  |  |  |  |     |      |  |      |  |             |  |     |  |  |  |  |  |     |     |  |     |  |  |  |  |      |  |      |                |  |                |  |                   |  |                   |  |                  |  |                  |  |                |  |                |  |   |  |
| GREEN   |  | 130               |               |               |               |               |               |               |               |               | 136                |                   |        | A126   |           | A103      |               |               |           |           |               |               |               |               |               |               |                   |                |  |  |  |          |          |  |  |  |  |  |  |  |           |           |               |               |               |               |               |               |               |               |               |               |               |                |  |  |  |  |  |  |  |  |  |  |  |  |              |         |             |           |             |           |   |          |               |                 |         |             |              |            |            |             |               |      |                    |    |         |     |    |    |     |   |      |  |   |   |  |    |         |     |    |   |      |   |     |  |   |   |   |    |         |     |    |   |   |   |      |  |   |   |  |    |         |     |    |    |   |   |     |  |   |   |  |    |          |     |    |   |   |   |     |  |   |   |  |    |         |     |    |   |      |   |      |  |   |   |   |    |         |     |    |   |    |   |      |  |   |   |   |    |         |     |    |   |    |   |  |  |   |   |   |  |                 |    |    |    |    |    |    |    |    |    |     |     |     |        |        |        |        |        |        |                 |   |   |    |   |   |    |   |   |    |   |   |    |   |    |    |    |    |       |   |   |     |   |   |     |   |   |     |   |     |     |     |     |     |     |     |     |                 |      |       |    |       |       |    |      |       |    |    |      |    |      |       |    |      |       |    |     |  |     |  |  |  |  |  |  |  |  |     |  |     |      |      |      |      |        |   |     |  |  |  |  |   |  |  |  |     |  |  |      |  |      |  |       |  |     |  |  |  |  |  |  |  |  |     |  |  |      |  |      |  |           |  |  |  |  |  |  |  |  |  |  |     |     |  |      |  |      |  |              |  |  |  |  |  |  |  |  |  |  |     |     |  |      |      |      |      |                       |  |  |  |  |  |  |  |  |  |  |  |  |     |      |  |      |  |             |  |     |  |  |  |  |  |     |     |  |     |  |  |  |  |      |  |      |                |  |                |  |                   |  |                   |  |                  |  |                  |  |                |  |                |  |   |  |
| RED ARROW   |  |                   |               |               |               |               |               |               |               |               | 116                | 101               |        | A121   |           | A114      |               |               |           |           |               |               |               |               |               |               |                   |                |  |  |  |          |          |  |  |  |  |  |  |  |           |           |               |               |               |               |               |               |               |               |               |               |               |                |  |  |  |  |  |  |  |  |  |  |  |  |              |         |             |           |             |           |   |          |               |                 |         |             |              |            |            |             |               |      |                    |    |         |     |    |    |     |   |      |  |   |   |  |    |         |     |    |   |      |   |     |  |   |   |   |    |         |     |    |   |   |   |      |  |   |   |  |    |         |     |    |    |   |   |     |  |   |   |  |    |          |     |    |   |   |   |     |  |   |   |  |    |         |     |    |   |      |   |      |  |   |   |   |    |         |     |    |   |    |   |      |  |   |   |   |    |         |     |    |   |    |   |  |  |   |   |   |  |                 |    |    |    |    |    |    |    |    |    |     |     |     |        |        |        |        |        |        |                 |   |   |    |   |   |    |   |   |    |   |   |    |   |    |    |    |    |       |   |   |     |   |   |     |   |   |     |   |     |     |     |     |     |     |     |     |                 |      |       |    |       |       |    |      |       |    |    |      |    |      |       |    |      |       |    |     |  |     |  |  |  |  |  |  |  |  |     |  |     |      |      |      |      |        |   |     |  |  |  |  |   |  |  |  |     |  |  |      |  |      |  |       |  |     |  |  |  |  |  |  |  |  |     |  |  |      |  |      |  |           |  |  |  |  |  |  |  |  |  |  |     |     |  |      |  |      |  |              |  |  |  |  |  |  |  |  |  |  |     |     |  |      |      |      |      |                       |  |  |  |  |  |  |  |  |  |  |  |  |     |      |  |      |  |             |  |     |  |  |  |  |  |     |     |  |     |  |  |  |  |      |  |      |                |  |                |  |                   |  |                   |  |                  |  |                  |  |                |  |                |  |   |  |
| YELLOW ARROW  |  |                   |               |               |               |               |               |               |               |               | 117                | 102               |        | A122   | A112      | A115      | A105          |               |           |           |               |               |               |               |               |               |                   |                |  |  |  |          |          |  |  |  |  |  |  |  |           |           |               |               |               |               |               |               |               |               |               |               |               |                |  |  |  |  |  |  |  |  |  |  |  |  |              |         |             |           |             |           |   |          |               |                 |         |             |              |            |            |             |               |      |                    |    |         |     |    |    |     |   |      |  |   |   |  |    |         |     |    |   |      |   |     |  |   |   |   |    |         |     |    |   |   |   |      |  |   |   |  |    |         |     |    |    |   |   |     |  |   |   |  |    |          |     |    |   |   |   |     |  |   |   |  |    |         |     |    |   |      |   |      |  |   |   |   |    |         |     |    |   |    |   |      |  |   |   |   |    |         |     |    |   |    |   |  |  |   |   |   |  |                 |    |    |    |    |    |    |    |    |    |     |     |     |        |        |        |        |        |        |                 |   |   |    |   |   |    |   |   |    |   |   |    |   |    |    |    |    |       |   |   |     |   |   |     |   |   |     |   |     |     |     |     |     |     |     |     |                 |      |       |    |       |       |    |      |       |    |    |      |    |      |       |    |      |       |    |     |  |     |  |  |  |  |  |  |  |  |     |  |     |      |      |      |      |        |   |     |  |  |  |  |   |  |  |  |     |  |  |      |  |      |  |       |  |     |  |  |  |  |  |  |  |  |     |  |  |      |  |      |  |           |  |  |  |  |  |  |  |  |  |  |     |     |  |      |  |      |  |              |  |  |  |  |  |  |  |  |  |  |     |     |  |      |      |      |      |                       |  |  |  |  |  |  |  |  |  |  |  |  |     |      |  |      |  |             |  |     |  |  |  |  |  |     |     |  |     |  |  |  |  |      |  |      |                |  |                |  |                   |  |                   |  |                  |  |                  |  |                |  |                |  |   |  |
| FLASHING YELLOW ARROW   |  |                   |               |               |               |               |               |               |               |               |                    |                   | 109    | A123   |           | A116      |               |               |           |           |               |               |               |               |               |               |                   |                |  |  |  |          |          |  |  |  |  |  |  |  |           |           |               |               |               |               |               |               |               |               |               |               |               |                |  |  |  |  |  |  |  |  |  |  |  |  |              |         |             |           |             |           |   |          |               |                 |         |             |              |            |            |             |               |      |                    |    |         |     |    |    |     |   |      |  |   |   |  |    |         |     |    |   |      |   |     |  |   |   |   |    |         |     |    |   |   |   |      |  |   |   |  |    |         |     |    |    |   |   |     |  |   |   |  |    |          |     |    |   |   |   |     |  |   |   |  |    |         |     |    |   |      |   |      |  |   |   |   |    |         |     |    |   |    |   |      |  |   |   |   |    |         |     |    |   |    |   |  |  |   |   |   |  |                 |    |    |    |    |    |    |    |    |    |     |     |     |        |        |        |        |        |        |                 |   |   |    |   |   |    |   |   |    |   |   |    |   |    |    |    |    |       |   |   |     |   |   |     |   |   |     |   |     |     |     |     |     |     |     |     |                 |      |       |    |       |       |    |      |       |    |    |      |    |      |       |    |      |       |    |     |  |     |  |  |  |  |  |  |  |  |     |  |     |      |      |      |      |        |   |     |  |  |  |  |   |  |  |  |     |  |  |      |  |      |  |       |  |     |  |  |  |  |  |  |  |  |     |  |  |      |  |      |  |           |  |  |  |  |  |  |  |  |  |  |     |     |  |      |  |      |  |              |  |  |  |  |  |  |  |  |  |  |     |     |  |      |      |      |      |                       |  |  |  |  |  |  |  |  |  |  |  |  |     |      |  |      |  |             |  |     |  |  |  |  |  |     |     |  |     |  |  |  |  |      |  |      |                |  |                |  |                   |  |                   |  |                  |  |                  |  |                |  |                |  |   |  |
| GREEN ARROW   |  | 127               |               |               |               |               |               | 118           | 103           |               | 133                |                   |        |        |           | A113      |               | A106          |           |           |               |               |               |               |               |               |                   |                |  |  |  |          |          |  |  |  |  |  |  |  |           |           |               |               |               |               |               |               |               |               |               |               |               |                |  |  |  |  |  |  |  |  |  |  |  |  |              |         |             |           |             |           |   |          |               |                 |         |             |              |            |            |             |               |      |                    |    |         |     |    |    |     |   |      |  |   |   |  |    |         |     |    |   |      |   |     |  |   |   |   |    |         |     |    |   |   |   |      |  |   |   |  |    |         |     |    |    |   |   |     |  |   |   |  |    |          |     |    |   |   |   |     |  |   |   |  |    |         |     |    |   |      |   |      |  |   |   |   |    |         |     |    |   |    |   |      |  |   |   |   |    |         |     |    |   |    |   |  |  |   |   |   |  |                 |    |    |    |    |    |    |    |    |    |     |     |     |        |        |        |        |        |        |                 |   |   |    |   |   |    |   |   |    |   |   |    |   |    |    |    |    |       |   |   |     |   |   |     |   |   |     |   |     |     |     |     |     |     |     |     |                 |      |       |    |       |       |    |      |       |    |    |      |    |      |       |    |      |       |    |     |  |     |  |  |  |  |  |  |  |  |     |  |     |      |      |      |      |        |   |     |  |  |  |  |   |  |  |  |     |  |  |      |  |      |  |       |  |     |  |  |  |  |  |  |  |  |     |  |  |      |  |      |  |           |  |  |  |  |  |  |  |  |  |  |     |     |  |      |  |      |  |              |  |  |  |  |  |  |  |  |  |  |     |     |  |      |      |      |      |                       |  |  |  |  |  |  |  |  |  |  |  |  |     |      |  |      |  |             |  |     |  |  |  |  |  |     |     |  |     |  |  |  |  |      |  |      |                |  |                |  |                   |  |                   |  |                  |  |                  |  |                |  |                |  |   |  |
| OL1 RED (A121)  |  | OL3 RED (A114)    |               |               |               |               |               |               |               |               |                    |                   |        |        |           |           |               |               |           |           |               |               |               |               |               |               |                   |                |  |  |  |          |          |  |  |  |  |  |  |  |           |           |               |               |               |               |               |               |               |               |               |               |               |                |  |  |  |  |  |  |  |  |  |  |  |  |              |         |             |           |             |           |   |          |               |                 |         |             |              |            |            |             |               |      |                    |    |         |     |    |    |     |   |      |  |   |   |  |    |         |     |    |   |      |   |     |  |   |   |   |    |         |     |    |   |   |   |      |  |   |   |  |    |         |     |    |    |   |   |     |  |   |   |  |    |          |     |    |   |   |   |     |  |   |   |  |    |         |     |    |   |      |   |      |  |   |   |   |    |         |     |    |   |    |   |      |  |   |   |   |    |         |     |    |   |    |   |  |  |   |   |   |  |                 |    |    |    |    |    |    |    |    |    |     |     |     |        |        |        |        |        |        |                 |   |   |    |   |   |    |   |   |    |   |   |    |   |    |    |    |    |       |   |   |     |   |   |     |   |   |     |   |     |     |     |     |     |     |     |     |                 |      |       |    |       |       |    |      |       |    |    |      |    |      |       |    |      |       |    |     |  |     |  |  |  |  |  |  |  |  |     |  |     |      |      |      |      |        |   |     |  |  |  |  |   |  |  |  |     |  |  |      |  |      |  |       |  |     |  |  |  |  |  |  |  |  |     |  |  |      |  |      |  |           |  |  |  |  |  |  |  |  |  |  |     |     |  |      |  |      |  |              |  |  |  |  |  |  |  |  |  |  |     |     |  |      |      |      |      |                       |  |  |  |  |  |  |  |  |  |  |  |  |     |      |  |      |  |             |  |     |  |  |  |  |  |     |     |  |     |  |  |  |  |      |  |      |                |  |                |  |                   |  |                   |  |                  |  |                  |  |                |  |                |  |   |  |
| OL1 YELLOW (A122)   |  | OL3 YELLOW (A115) |               |               |               |               |               |               |               |               |                    |                   |        |        |           |           |               |               |           |           |               |               |               |               |               |               |                   |                |  |  |  |          |          |  |  |  |  |  |  |  |           |           |               |               |               |               |               |               |               |               |               |               |               |                |  |  |  |  |  |  |  |  |  |  |  |  |              |         |             |           |             |           |   |          |               |                 |         |             |              |            |            |             |               |      |                    |    |         |     |    |    |     |   |      |  |   |   |  |    |         |     |    |   |      |   |     |  |   |   |   |    |         |     |    |   |   |   |      |  |   |   |  |    |         |     |    |    |   |   |     |  |   |   |  |    |          |     |    |   |   |   |     |  |   |   |  |    |         |     |    |   |      |   |      |  |   |   |   |    |         |     |    |   |    |   |      |  |   |   |   |    |         |     |    |   |    |   |  |  |   |   |   |  |                 |    |    |    |    |    |    |    |    |    |     |     |     |        |        |        |        |        |        |                 |   |   |    |   |   |    |   |   |    |   |   |    |   |    |    |    |    |       |   |   |     |   |   |     |   |   |     |   |     |     |     |     |     |     |     |     |                 |      |       |    |       |       |    |      |       |    |    |      |    |      |       |    |      |       |    |     |  |     |  |  |  |  |  |  |  |  |     |  |     |      |      |      |      |        |   |     |  |  |  |  |   |  |  |  |     |  |  |      |  |      |  |       |  |     |  |  |  |  |  |  |  |  |     |  |  |      |  |      |  |           |  |  |  |  |  |  |  |  |  |  |     |     |  |      |  |      |  |              |  |  |  |  |  |  |  |  |  |  |     |     |  |      |      |      |      |                       |  |  |  |  |  |  |  |  |  |  |  |  |     |      |  |      |  |             |  |     |  |  |  |  |  |     |     |  |     |  |  |  |  |      |  |      |                |  |                |  |                   |  |                   |  |                  |  |                  |  |                |  |                |  |   |  |
| OL1 GREEN (A123)  |  | OL3 GREEN (A116)  |               |               |               |               |               |               |               |               |                    |                   |        |        |           |           |               |               |           |           |               |               |               |               |               |               |                   |                |  |  |  |          |          |  |  |  |  |  |  |  |           |           |               |               |               |               |               |               |               |               |               |               |               |                |  |  |  |  |  |  |  |  |  |  |  |  |              |         |             |           |             |           |   |          |               |                 |         |             |              |            |            |             |               |      |                    |    |         |     |    |    |     |   |      |  |   |   |  |    |         |     |    |   |      |   |     |  |   |   |   |    |         |     |    |   |   |   |      |  |   |   |  |    |         |     |    |    |   |   |     |  |   |   |  |    |          |     |    |   |   |   |     |  |   |   |  |    |         |     |    |   |      |   |      |  |   |   |   |    |         |     |    |   |    |   |      |  |   |   |   |    |         |     |    |   |    |   |  |  |   |   |   |  |                 |    |    |    |    |    |    |    |    |    |     |     |     |        |        |        |        |        |        |                 |   |   |    |   |   |    |   |   |    |   |   |    |   |    |    |    |    |       |   |   |     |   |   |     |   |   |     |   |     |     |     |     |     |     |     |     |                 |      |       |    |       |       |    |      |       |    |    |      |    |      |       |    |      |       |    |     |  |     |  |  |  |  |  |  |  |  |     |  |     |      |      |      |      |        |   |     |  |  |  |  |   |  |  |  |     |  |  |      |  |      |  |       |  |     |  |  |  |  |  |  |  |  |     |  |  |      |  |      |  |           |  |  |  |  |  |  |  |  |  |  |     |     |  |      |  |      |  |              |  |  |  |  |  |  |  |  |  |  |     |     |  |      |      |      |      |                       |  |  |  |  |  |  |  |  |  |  |  |  |     |      |  |      |  |             |  |     |  |  |  |  |  |     |     |  |     |  |  |  |  |      |  |      |                |  |                |  |                   |  |                   |  |                  |  |                  |  |                |  |                |  |   |  |
| 01 GREEN (127)  |  | 05 GREEN (133)    |               |               |               |               |               |               |               |               |                    |                   |        |        |           |           |               |               |           |           |               |               |               |               |               |               |                   |                |  |  |  |          |          |  |  |  |  |  |  |  |           |           |               |               |               |               |               |               |               |               |               |               |               |                |  |  |  |  |  |  |  |  |  |  |  |  |              |         |             |           |             |           |   |          |               |                 |         |             |              |            |            |             |               |      |                    |    |         |     |    |    |     |   |      |  |   |   |  |    |         |     |    |   |      |   |     |  |   |   |   |    |         |     |    |   |   |   |      |  |   |   |  |    |         |     |    |    |   |   |     |  |   |   |  |    |          |     |    |   |   |   |     |  |   |   |  |    |         |     |    |   |      |   |      |  |   |   |   |    |         |     |    |   |    |   |      |  |   |   |   |    |         |     |    |   |    |   |  |  |   |   |   |  |                 |    |    |    |    |    |    |    |    |    |     |     |     |        |        |        |        |        |        |                 |   |   |    |   |   |    |   |   |    |   |   |    |   |    |    |    |    |       |   |   |     |   |   |     |   |   |     |   |     |     |     |     |     |     |     |     |                 |      |       |    |       |       |    |      |       |    |    |      |    |      |       |    |      |       |    |     |  |     |  |  |  |  |  |  |  |  |     |  |     |      |      |      |      |        |   |     |  |  |  |  |   |  |  |  |     |  |  |      |  |      |  |       |  |     |  |  |  |  |  |  |  |  |     |  |  |      |  |      |  |           |  |  |  |  |  |  |  |  |  |  |     |     |  |      |  |      |  |              |  |  |  |  |  |  |  |  |  |  |     |     |  |      |      |      |      |                       |  |  |  |  |  |  |  |  |  |  |  |  |     |      |  |      |  |             |  |     |  |  |  |  |  |     |     |  |     |  |  |  |  |      |  |      |                |  |                |  |                   |  |                   |  |                  |  |                  |  |                |  |                |  |   |  |
| <p><b>ELECTRICAL AND PROGRAMMING DETAILS FOR:</b></p> <p><b>SR 1011 (Old US 1)</b><br/><b>at</b><br/><b>SR 1187 (Holland Road) /</b><br/><b>SR 1149 (Friendship Road)</b></p> <p>Division 5 Wake County Apex</p> <p>PLAN DATE: August 2025 REVIEWED BY: WJ Hamilton</p> <p>PREPARED BY: JA Wendt REVIEWED BY:</p> <p>REVISIONS INIT. DATE</p>   | <p>DOCUMENT NOT CONSIDERED FINAL UNLESS ALL SIGNATURES COMPLETED</p> <p>SEAL</p> <p><b>North Carolina Department of Transportation</b><br/>Division of Highways</p> <p>William J. Hamilton</p> <p>SIGNATURE DATE</p> <p>SIG. INVENTORY NO. 05-1295</p> |                   |               |               |               |               |               |               |               |               |                    |                   |        |        |           |           |               |               |           |           |               |               |               |               |               |               |                   |                |  |  |  |          |          |  |  |  |  |  |  |  |           |           |               |               |               |               |               |               |               |               |               |               |               |                |  |  |  |  |  |  |  |  |  |  |  |  |              |         |             |           |             |           |   |          |               |                 |         |             |              |            |            |             |               |      |                    |    |         |     |    |    |     |   |      |  |   |   |  |    |         |     |    |   |      |   |     |  |   |   |   |    |         |     |    |   |   |   |      |  |   |   |  |    |         |     |    |    |   |   |     |  |   |   |  |    |          |     |    |   |   |   |     |  |   |   |  |    |         |     |    |   |      |   |      |  |   |   |   |    |         |     |    |   |    |   |      |  |   |   |   |    |         |     |    |   |    |   |  |  |   |   |   |  |                 |    |    |    |    |    |    |    |    |    |     |     |     |        |        |        |        |        |        |                 |   |   |    |   |   |    |   |   |    |   |   |    |   |    |    |    |    |       |   |   |     |   |   |     |   |   |     |   |     |     |     |     |     |     |     |     |                 |      |       |    |       |       |    |      |       |    |    |      |    |      |       |    |      |       |    |     |  |     |  |  |  |  |  |  |  |  |     |  |     |      |      |      |      |        |   |     |  |  |  |  |   |  |  |  |     |  |  |      |  |      |  |       |  |     |  |  |  |  |  |  |  |  |     |  |  |      |  |      |  |           |  |  |  |  |  |  |  |  |  |  |     |     |  |      |  |      |  |              |  |  |  |  |  |  |  |  |  |  |     |     |  |      |      |      |      |                       |  |  |  |  |  |  |  |  |  |  |  |  |     |      |  |      |  |             |  |     |  |  |  |  |  |     |     |  |     |  |  |  |  |      |  |      |                |  |                |  |                   |  |                   |  |                  |  |                  |  |                |  |                |  |   |  |

## MAXTIME OVERLAP PROGRAMMING DETAIL FOR ALTERNATE PHASING

## Front Panel

Main Menu &gt;Controller &gt;Overlap &gt;Overlap Parameters/Overlap Timings

## Web Interface

Home &gt;Controller &gt;Overlap Configuration &gt;Overlaps

In the table view of the web interface, right click on "Overlap" in the top left corner of the table. Copy the entire contents of Overlap Plan 1. Paste Overlap Plan 1 into Overlap Plan 2. Modify Overlap Plan 2 as shown below and save changes.

## Overlap Plan 2

| Overlap           | 1               | 2      | 3               | 4      | 5      | 6      | 7               |
|-------------------|-----------------|--------|-----------------|--------|--------|--------|-----------------|
| Type              | FYA 4 - Section | Normal | FYA 4 - Section | Normal | Normal | Normal | FYA 4 - Section |
| Included Phases   | -               | 3:6    | -               | 2:4    | 1:3    | 4:5    | 3:6             |
| Modifier Phases   | 1               | -      | 5               | -      | -      | -      | -               |
| Modifier Overlaps | -               | -      | -               | -      | -      | -      | -               |
| Trail Green       | 5               | 5      | 5               | 5      | 0      | 0      | 5               |
| Add Trail Green   | 0:0             | 0:0    | 0:0             | 0:0    | 0:0    | 0:0    | 0:0             |
| Trail Yellow      | 3:0             | 4:3    | 3:0             | 4:5    | 0:0    | 0:0    | 4:3             |
| Trail Red         | 1:6             | 1:6    | 1:6             | 1:0    | 0:0    | 0:0    | 1:6             |

NOTICE INCLUDED PHASE

## MAXTIME DETECTOR PROGRAMMING DETAIL FOR ALTERNATE PHASING LOOPS 1A & 5A

## Front Panel

Main Menu &gt;Controller &gt;Detector &gt;Veh Det Plans

## Web Interface

Home &gt;Controller &gt;Detector Configuration &gt;Vehicle Detectors

In the table view of web interface right click on "Detector" in the top left corner of the table. Copy the entire contents of Detector Plan 1. Paste Detector Plan 1 into Detector Plan 2. Modify Detector Plan 2 as shown below and save changes.

## Plan 2

| Detector | Call Phase | Delay |
|----------|------------|-------|
| 1        | 1          | 0:0   |
| 29       | 0          | 3:0   |

| Detector | Call Phase | Delay |
|----------|------------|-------|
| 15       | 5          | 0:0   |
| 31       | 0          | 3:0   |

## MAXTIME STARTUP AND SOFTWARE FLASH PROGRAMMING DETAIL

## Front Panel

Main Menu &gt;Controller &gt;Unit

## Web Interface

Home &gt;Controller &gt;Unit

Modify parameters as shown below and save changes.

| Start Up Parameters         |
|-----------------------------|
| StartUp Clearance Hold<br>6 |

| Unit Flash Parameters        |
|------------------------------|
| All Red Flash Exit Time<br>6 |

## MAXTIME ALTERNATE PHASING PATTERN PROGRAMMING DETAIL

## Front Panel

Main Menu &gt;Controller &gt;Coordination &gt;Patterns

## Web Interface

Home &gt;Controller &gt;Coordination &gt;Patterns

| Pattern | Veh Det Plan | Overlap Plan |
|---------|--------------|--------------|
| *       | 2            | 2            |

\* The Pattern number(s) are to be determined by the Division Traffic Engineer.

## MAXTIME OVERLAP PROGRAMMING DETAIL FOR DEFAULT PHASING

## Front Panel

Main Menu &gt;Controller &gt;Overlap &gt;Overlap Parameters/Overlap Timings

## Web Interface

Home &gt;Controller &gt;Overlap Configuration &gt;Overlaps

## Overlap Plan 1

| Overlap           | 1               | 2      | 3               | 4      | 5      | 6      | 7               |
|-------------------|-----------------|--------|-----------------|--------|--------|--------|-----------------|
| Type              | FYA 4 - Section | Normal | FYA 4 - Section | Normal | Normal | Normal | FYA 4 - Section |
| Included Phases   | 2:4             | 3:6    | 3:6             | 2:4    | 1:3    | 4:5    | 3:6             |
| Modifier Phases   | 1               | -      | 5               | -      | -      | -      | -               |
| Modifier Overlaps | -               | -      | -               | -      | -      | -      | -               |
| Trail Green       | 5               | 5      | 5               | 5      | 0      | 0      | 5               |
| Add Trail Green   | 0:0             | 0:0    | 0:0             | 0:0    | 0:0    | 0:0    | 0:0             |
| Trail Yellow      | 3:0             | 4:3    | 3:0             | 4:5    | 0:0    | 0:0    | 4:3             |
| Trail Red         | 1:6             | 1:6    | 1:6             | 1:0    | 0:0    | 0:0    | 1:6             |

## Preempt Configuration

| Preempt                 | 3             | 5             |
|-------------------------|---------------|---------------|
| Enabled                 | Enabled       | Enabled       |
| Type                    | Emergency Veh | Emergency Veh |
| Track Phases            | -             | -             |
| Track Overlaps          | -             | -             |
| Dwell Phases            | 1, 6          | 2, 5          |
| Dwell Overlaps          | 1, 2, 3, 5, 7 | 1, 3, 4, 6    |
| Cycling Phases          | -             | -             |
| Cycling Overlaps        | -             | -             |
| Exit Phases             | 2, 6          | 2, 6          |
| Exit Overlaps           | 1,2,3,4,7     | 1,2,3,4,7     |
| Delay                   | 0             | 0             |
| Call Ext Time           | 2:0           | 2:0           |
| Max Pres                | 120           | 120           |
| Max Pres Act            | Terminate     | Terminate     |
| Enter Min Green         | 1             | 1             |
| Enter Walk              | 0             | 0             |
| Enter Ped Clear         | 255           | 255           |
| Enter Yellow Change     | 25.5          | 25.5          |
| Enter Red Clear         | 25.5          | 25.5          |
| Track Green             | -             | -             |
| Track Yellow Clr        | 25.5          | 25.5          |
| Track Red Clear         | 25.5          | 25.5          |
| Dwell Green             | 7             | 7             |
| Exit Min Green          | 255           | 255           |
| Exit Yellow Change      | 25.5          | 25.5          |
| Exit Red Clear          | 25.5          | 25.5          |
| Dwell Ext Time          | 2:0           | 2:0           |
| Exit Type               | Exit Phases   | Exit Phases   |
| Non Locking Memory      | X             | X             |
| Not Ovrd Flash          | X             | X             |
| Not Ovrd Nxt Pre        | X             | X             |
| Track Clear Ovrd        | X             | X             |
| Ped Clear During Yellow | -             | -             |
| Require All Red Entry   | -             | -             |

IN ORDER TO INSURE THAT SIGNALS FLASH CONCURRENTLY ON THE SAME APPROACH, MAKE THE FOLLOWING FLASHER CIRCUIT CHANGES:

1. ON REAR OF PDA - REMOVE WIRE FROM TERM. T2-4 AND TERMINATE ON T2-2.
2. ON REAR OF PDA - REMOVE WIRE FROM TERM. T2-5 AND TERMINATE ON T2-3.
3. REMOVE FLASHER UNIT 2.

THE CHANGES LISTED ABOVE TIES ALL PHASES AND OVERLAPS TO FLASHER UNIT 1.

|                                 |
|---------------------------------|
| NC Dept of Transportation       |
| Division of Highways            |
| Final Drawing Date: 09/03/2025  |
| Signed by: Robert O. Giemba     |
| NCDOT Approval #804805274494... |

|                               |
|-------------------------------|
| THIS ELECTRICAL DETAIL IS FOR |
| THE SIGNAL DESIGN: 05-1295    |
| DESIGNED: Aug 2025            |
| SEALED: 08/12/2025            |
| REVISED: N/A                  |

## Electrical Detail - Sheet 2 of 3

|   |                          |
|---|--------------------------|
| ELECTRICAL AND PROGRAMMING DETAILS FOR:   |                          |
| SR 1011 (Old US 1) at SR 1187 (Holland Road) / SR 1149 (Friendship Road)              |                          |
| Division 5 Wake County Apex   |                          |
| PLAN DATE: August 2025  | REVIEWED BY: WJ Hamilton |
| PREPARED BY: JA Wendt   | REVIEWED BY:             |
| REVISIONS   | INIT. DATE               |
| 203 W. Millbrook Rd., Ste 200 Raleigh, NC 27609 984.500.5426 www.exultengineering.com |                          |
| 750 N. Greenfield Pkwy, Garner, NC 27529  |                          |
| DOCUMENT NOT CONSIDERED FINAL UNLESS ALL SIGNATURES COMPLETED                         |                          |
| SEAL  |                          |
| NORTH CAROLINA PROFESSIONAL ENGINEER'S SEAL   |                          |
| William J. Hamilton 032396  |                          |
| Signature Date 08/12/2025   |                          |
| SIG. INVENTORY NO. 05-1295  |                          |

## OUTPUT CHANNEL CONFIGURATION

Front Panel  
Main Menu >Controller >More>Channels>Channels Config

Web Interface  
Home >Controller >Advanced IO>Channels>Channels Configuration

### Channel Configuration

| Channel | Control Type  | Control Source | Flash Yellow | Flash Red | Flash Alt | MMU Channel |
|---------|---------------|----------------|--------------|-----------|-----------|-------------|
| 1       | Phase Vehicle | 1              |              | X         | X         | 1           |
| 2       | Phase Vehicle | 2              |              | X         |           | 2           |
| 3       | Phase Vehicle | 3              |              | X         | X         | 3           |
| 4       | Phase Vehicle | 4              |              | X         |           | 4           |
| 5       | Phase Vehicle | 5              |              | X         |           | 5           |
| 6       | Phase Vehicle | 6              |              | X         | X         | 6           |
| 7       | Phase Vehicle | 7              |              | X         |           | 7           |
| 8       | Overlap       | 7              |              | X         | X         | 8           |
| 9       | Overlap       | 1              |              | X         | X         | 9           |
| 10      | Overlap       | 2              |              | X         | X         | 10          |
| 11      | Overlap       | 3              |              | X         |           | 11          |
| 12      | Overlap       | 4              |              | X         |           | 12          |
| 13      | Phase Ped     | 2              |              |           |           | 13          |
| 14      | Phase Ped     | 4              |              |           |           | 14          |
| 15      | Phase Ped     | 6              |              |           |           | 15          |
| 16      | Phase Ped     | 8              |              |           |           | 16          |
| 17      | Overlap       | 5              |              | X         | X         | 17          |
| 18      | Overlap       | 6              |              | X         |           | 18          |

## MAXTIME ALTERNATE PHASING ACTIVATION DETAIL

To run alternate phasing, select a Pattern that is programmed to run Overlap Plan 2 and Detector Plan 2. A Pattern can be selected through the scheduler or manually by changing the Operational Mode.

| PHASING                                       | OVERLAP PLAN | VEH DET PLAN |
|---|--------------|--------------|
| ACTIVE PLAN REQUIRED TO RUN DEFAULT PHASING   | 1            | 1            |
| ACTIVE PLAN REQUIRED TO RUN ALTERNATE PHASING | 2            | 2            |

| ALTERNATE PHASING CHANGE SUMMARY   |   |
|--|---|
| THE FOLLOWING IS A SUMMARY OF WHAT TAKES PLACE WHEN OVERLAP PLAN 2 AND VEHICLE DETECTOR PLAN 2 ACTIVATE TO CALL THE "ALTERNATE PHASING": |   |
| OVERLAP PLAN 2:  | Modifies overlap included phases for heads 11 and 51 to run protected turns only. |
| VEH DET PLAN 2:  | Disables phase 6 call on loop 1A and disables delay for phase 1 call on loop 1A.  |
|  | Disables phase 2 call on loop 5A and disables delay for phase 5 call on loop 5A.  |

NOTICE →  
OL7

NC Dept of Transportation  
Division of Highways  
Final Drawing Date: 09/03/2025  
Signed by: Robert O. Niemba  
NCDOT Approval: 158048682744494

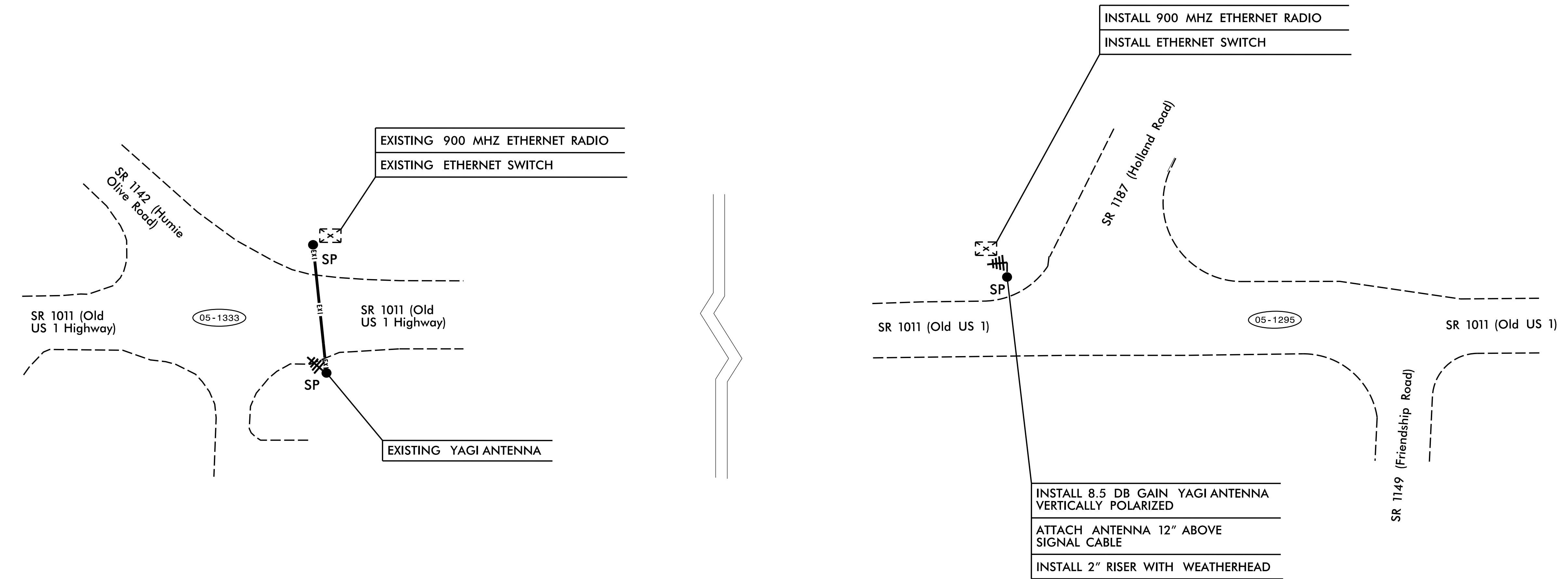
THIS ELECTRICAL DETAIL IS FOR  
THE SIGNAL DESIGN: 05-1295  
DESIGNED: Aug 2025  
SEALED: 08/12/2025  
REVISED: N/A

### Electrical Detail - Sheet 3 of 3

|  |  |  |                          |  |
|--|--|--|--------------------------|--|
| ELECTRICAL AND PROGRAMMING DETAILS FOR:  |  | SR 1011 (Old US 1) at SR 1187 (Holland Road) / SR 1149 (Friendship Road) |                          | SEAL   |
| <br>Division 5 Wake County Apex |  | PLAN DATE: August 2025   | REVIEWED BY: WJ Hamilton | NORTH CAROLINA<br>PROFESSIONAL<br>SEAL<br>032396<br>WILLIAM J. HAMILTON<br>08/12/2025<br>SIGNATURE<br>DATE<br>SIC. INVENTORY NO. 05-1295 |
|  |  | PREPARED BY: JA Wendt  | REVIEWED BY:             |  |
|  |  | REVISIONS  | INIT.                    |  |
|  |  | .....  | .....                    |  |

**LEGEND**

- YAGI ANTENNA (DOUBLE) FOR REPEATER OPERATION
- YAGI ANTENNA (SINGLE)
- EXISTING CONTROLLER AND CABINET
- SIGNAL INVENTORY NUMBER
- EXISTING WOOD POLE
- SIGNAL POLE
- SP

**NOTES FOR WIRELESS COMMUNICATIONS:**

1. FIVE (5) DAYS PRIOR TO BEGINNING WORK ON THE SIGNAL SYSTEM, CONTACT THE DIVISION 5 TRAFFIC ENGINEER AT (919) 536-4000. NOTIFY THE DIVISION ENGINEER AFTER ALL WORK IS PERFORMED TO ENSURE THAT ALL WIRELESS CIRCUITS ARE FUNCTIONING PROPERLY. WORK IS NOT COMPLETE UNTIL ALL SIGNALS ARE COMMUNICATING WITH THE CENTRAL SYSTEM.
2. INSTALL COAXIAL CABLE:
  - A. ON WOOD POLES, REQUIRING A NEW RIGID GALVANIZED STEEL RISER, INSTALL A 2" RISER WITH WEATHERHEAD AND ROUTE THE COAXIAL CABLE TO THE ANTENNA.
  - B. ON METAL POLES WITH MAST ARMS, RUN COAXIAL CABLE UP THROUGH THE POLE AND OUT THE MAST ARM; FIELD DRILL A 1/2" HOLE UP THROUGH THE BOTTOM OF MAST ARM FOR INSTALLATION OF THE COAXIAL CABLE TO THE ANTENNA.
  - C. ON METAL STRAIN POLES, RUN COAXIAL CABLE UP THROUGH THE POLE AND OUT THE WEATHERHEAD AND ROUTE THE COAXIAL CABLE TO THE ANTENNA.
  - D. BETWEEN THE POINT OF EXITING THE RISER, METAL POLE OR MAST ARM AND THE ANTENNA, SECURE THE COAXIAL CABLE TO THE STRUCTURE USING 3/4" STAINLESS STEEL STRAPS EVERY 12".
3. IF AN EXISTING 2" SPARE RIGID GALVANIZED STEEL RISER IS AVAILABLE, INSTALL THE COAXIAL CABLE IN THE SPARE RISER WITH 2" WEATHERHEAD.
4. INSTALL WIRELESS ANTENNA ON POLE WITH RF WARNING SIGN.  
(NOTE: RF WARNING SIGN NOT REQUIRED WHEN ANTENNA IS INSTALLED ON AN NCDOT-OWNED POLE.)
5. MAINTAIN PROPER CLEARANCE FROM ALL UTILITIES PER THE NATIONAL ELECTRICAL SAFETY CODE.
6. REFERENCE SPREAD SPECTRUM RADIO ROADWAY STANDARD DRAWINGS 1736.01.
7. CELL MODEMS TO BE SUPPLIED BY THE DEPARTMENT. CONTACT THE DIVISION 5 DEPUTY ENGINEER AT (919) 536-4000 TO REQUEST THE CELL MODEM. ALLOW 8 WEEKS LEAD TIME BEFORE ANTICIPATED DEPLOYMENT.

