ORIGINAL TO GENERAL FILES

DEPARTMENT OF TRANSPORTATION
STATE OF GEORGIA

OFFICE OF DESIGN POLICY & SUPPORT
INTERDEPARTMENTAL CORRESPONDENCE

FILE P.I. # 0012596
DeKalb & Fulton Counties
GDOT District 7 - Metro Atlanta
SR 42/US 23 @ CS 2113/Arkwright Place
Intersection Improvements

OFFICE Design Policy & Support

DATE 2/3/2016

FROM for Brent Story, State Design Policy Engineer

TO SEE DISTRIBUTION

SUBJECT **APPROVED CONCEPT REPORT**

Attached is the approved Concept Report for the above subject project.

Attachment

DISTRIBUTION:

Hiral Patel, Director of Engineering
Joe Carpenter, Director of P3/Program Delivery
Genetha Rice-Singleton, Assistant Director of P3/Program Delivery
Albert Shelby, State Program Delivery Engineer
Darryl VanMeter, State Innovative Delivery Engineer
Bobby Hilliard, Program Control Administrator
Cindy VanDyke, State Transportation Planning Administrator
Eric Duff, State Environmental Administrator
Andrew Heath, State Traffic Engineer
Angela Robinson, Financial Management Administrator
Lisa Myers, State Project Review Engineer
Charles "Chuck" Hasty, State Materials Engineer
Lee Upkins, State Utilities Engineer
Richard Cobb, Statewide Location Bureau Chief
Kathy Zahul, District Engineer
Scott Lee, District Preconstruction Engineer
Nicholas Fields, District Utilities Engineer
Vinesha Pegram, Project Manager
BOARD MEMBER - 5th Congressional District

DEPARTMENT OF TRANSPORTATION
STATE OF GEORGIA

LIMITED SCOPE PROJECT CONCEPT REPORT

Project Type:	Intersection Improvement	P.I. Number:	0012596
GDOT District:	7	County:	Fulton
Federal Route Number:	US 23	State Route Number:	SR 42 & SR 154
Project Number:	*N/A*		

The project would improve the intersection of SR 42/US 23 (Moreland Avenue) and CS 260301/Arkwright Place and the intersection of SR 42 (Moreland Avenue) and SR 154 (Memorial Drive).

Submitted for approval:

Rudolph Frampton, Health and Livestock Engineer — Date: 9/15/15

Albert Shelby — State Program Delivery Engineer — Date: 10/13/2015

Peter Emmanuel, GDOT Project Manager — KWH — Date: 10/09/2015

Recommendation for approval:

*Hiral Patel/KLP — State Environmental Administrator — Date: 10/25/2015

*Ken Werho/KLP — FOR State Traffic Engineer — Date: 10/23/2015

* Recommendation on file

☒ MPO Area: This project is consistent with the MPO adopted Regional Transportation Plan (RTP)/Long Range Transportation Plan (LRTP).

☐ Rural Area: This project is consistent with the goals outlined in the Statewide Transportation Plan (SWTP) and/or is included in the State Transportation Improvement

Cynthia R Vaughn — State Transportation Planning Administrator — Date: 10-16-15

Approval:

Concur: Hiral Patel — GDOT Director of Engineering — Date: 01-26-2015

Approve: Margaret B. Pitts — GDOT Chief Engineer — Date: 1.27.16

PROJECT LOCATION

Figure 1 – Project Location Map
PI No. 0012596 – Fulton/DeKalb Counties
Moreland Avenue at Arkwright Place
NOT TO SCALE

PLANNING & BACKGROUND DATA
Project Justification Statement:

This project would improve the intersection of SR 42/US 23 (Moreland Ave) and Arkwright Place. SR 42/US 23 is a 5-lane urban minor arterial street (including two-way center turn lane). East of the intersection, Arkwright Place has one lane in each direction, and parallel to Arkwright place to the north of a grassed median is a "slip lane" that is a remnant of the old streetcar line, which is now used as a drive access with on-street parking. This project is located within the Atlanta Metropolitan Planning Organization boundary and is listed in the Transportation Improvement Program as AT-280.

Improvements for this intersection were identified in the City of Atlanta's 2005 LCI study entitled "Ponce de Leon/Moreland Avenue Corridors Study," which recommended closing the Arkwright Place northern slip lane and adding a multiuse trail.

Additionally, the City of Atlanta's 2008 Comprehensive Transportation Plan, "Connect Atlanta," recommended improved bicycle connections on Arkwright Place near this intersection.

Improvements for this intersection were also identified in a road safety audit ("Road Safety Audit Report: Memorial Drive") conducted in April 2012 by GDOT's Office of Traffic Operations in coordination with the City of Atlanta. The report's notes for this intersection mentioned inadequate bicycle and pedestrian infrastructure as well as signal and pavement issues. The report also specifically identified this intersection as part of a major bike route crossing Moreland and traveling parallel to Memorial Drive.

According to the approved design traffic (2014), average daily traffic (ADT) on SR 42/US 23 is 33,200-35,800 with a southbound PM DHV of 1,800 (LOS B) and northbound PM DHV of 1,300 (LOS B). ADT on Arkwright Place is 850-2,000 with an eastbound AM DHV of 110 and a westbound AM DHV of 115 (LOS B). ADT on the slip lane north of Arkwright Place is 400 with an eastbound AM DHV of 20 and a westbound AM DHV of 50 (LOS A).

In the 2038 no-build, ADT on SR 42/US 23 is 43,500-46,950 with a southbound PM DHV of 2,360 (LOS C) and a northbound DHV of 1,705 (LOS B). ADT on Arkwright Place is 1,100-2,600 with an eastbound DHV of 205 and westbound DHV of 65 (LOS B). ADT on the slip lane north of Arkwright Place is 500 with an eastbound DHV of 25 and a westbound DHV of 70 (LOS A).

The crash and injury rates for SR 42/US 23 near CS 2113/Arkwright Place were above the statewide average for urban minor arterial streets in 2007, 2008, and 2009. On SR 42/US 23, the crash rates in 2007, 2008, and 2009, were 1,776, 2,330, and 1,785 per 100 MVM, respectively, compared to statewide averages of 514, 471, and 463. Injury rates for the same years were 616, 562, and 423, compared to statewide averages of 126, 116, and 114. Crash data is not available for CS 2113/Arkwright Place.

This project is justified by recommendations in the City of Atlanta's LCI study of the Moreland Avenue corridor, the Connect Atlanta plan, and GDOT's Road Safety Audit Report. The project is further justified by the need to reduce traffic congestion and the frequency and severity of crashes near the SR 42/US 23 and CS 2113/Arkwright Place intersection.

Existing conditions:

SR 42/US 23 (Moreland Avenue) is a 35 mph urban principal arterial street that travels in a north/south direction through City of Atlanta. Moreland Avenue is a 5-lane undivided roadway (including a two-way center turn lane) with 9-foot lanes and 10-foot urban shoulders. Due to a high rate of crashes, left turns are prevented onto CS 260301 (CS 2113 on Project Justification Statement above)/Arkwright Place. Based on the information available the existing right of way along SR 42 is 78 feet wide.

Arkwright Place is a 30 mph urban local road that travels in a east/west direction. Arkwright Place is a 4-lane divided roadway with two 14-foot lanes on the southern leg, two 10- foot lanes on the northern leg, 10-foot paved shoulders and a 20-foot grass median. At the intersection with Moreland Avenue, for the western approach, Arkwright Place is restricted to through and right-turning movements and the northern leg of Arkwright Place is restricted to right turning movements. The two lanes north of the median are a remnant from the former street car trail that is currently used as a drive access and/or street car parking. Based on the information available the right of way along Arkwright Place is 103 feet wide.

SR 154 (Memorial Drive) is a 35 mph urban minor arterial that travels in a west/east direction through the City of Atlanta. Memorial Drive consist of four 11 foot lanes (two lanes in each direction) through the intersection with Moreland Avenue, which consist of signalized crosswalks at all four legs. Based on the information available the right of way along Memorial Drive is 62 feet wide.

Other projects in the area:

- CS 520/Boulevard Drive FM SR 8/US 78 to CS 2232/Woodward Ave- PI No. 0012592
- SR 154 Memorial Drive from Candler Road to Mountain Drive- PI No. 0007130
- SR 155 from I-285 to SR 154 – Landscape Enhancement- PI No. 0009567
- Battle of Atlanta Greenway Trail- PI No. 0010642
- SR 154/Memorial Drive from SR 42 to SR 155 PI No. 0012597
- SR 42 from CS 1795/Mansfield Ave to CS 3694/DeKalb Ave - PI No. 0013061

Description of the proposed project:

This project is located in Fulton and DeKalb Counties, north of I-20 in downtown Atlanta. The project begins at the intersection of Moreland Avenue with Memorial Drive and ends north of the intersection of Moreland Avenue with Arkwright Place.
The proposed typical section for Moreland Avenue consists of two 10-foot travel lanes in each direction, with a 10 foot wide raised median and 5 to 10 foot sidewalks. The raised median stops north of Arkwright Place where it transitions into a 10 foot two-way center turn lane to tie to the existing center turn lane. The travel and auxiliary lanes taper down to 9’-0” to match the existing lane width on the north end of the project.

The proposed typical section for Arkwright Place consists of two 14’-0” lanes, one in each direction from the intersection with Memorial Drive to the intersection with Mortimer Street. Arkwright Place is separated by a raised median varying in width from 34’-0” to 12’-0”. From Mortimer Street to the eastern limit of the project, the proposed typical section of Arkwright Place consists of two 14’-0” lanes on the southern leg and two 10’-0” lanes on the northern leg. A 10’-0” wide sidewalk is proposed on the north side of Arkwright Place west of Mortimer Street, which ties to the existing median to the east of Mortimer Street. The widened sidewalk will be constructed under this project and will ultimately tie to a future multi-use trail on either side of the project. The future project may provide future lighting for the multi-use trail. In addition the proposed project provides right-in/right-out from Arkwright Place to Moreland Avenue. A minor shift of the Dorothy’s Arkwright Nursery driveway, to the east of its existing location is proposed. Vehicles heading south on Moreland Avenue will need to access the nursery via Merlin Avenue, since left turns from Moreland Avenue to Arkwright Place will be prevented by the raised median.

The proposed improvements at the intersection of Moreland Avenue and Memorial Drive include replacement of the sidewalks and wheelchair ramps in all quadrants of the intersection. The existing signal is proposed to remain in place. Due to the proposed removal of the existing signal at Arkwright Place and Moreland Avenue, and the proposed lane configuration changes throughout the project, signal updates are anticipate at the Memorial Drive intersection.

MPO: Atlanta TMA **TIP #:** *AT-280*

TIA Regional Commission: N/A

MPO Name Congressional District(s): 5

Federal Oversight: ☒Exempt ☐State Funded ☐Other

Projected Traffic: ADT SR 42/US 23 (Moreland Avenue) 24 HR T: 8%
Current Year (2014): 35,800 Open Year (2018): 37,750 Design Year (2038): 46,950

The Traffic Projections were performed by Grice Consulting Group on 02/26/2014 and approved by *GDOT Office of Planning 03*/27/2014. However, modifications were made to the traffic volumes for the open and design years to accurately represent the preferred alternate and alternates 1,3, and 4. See page 15 of the Traffic Engineering Study attached.

Functional Classification (Mainline): Urban Principal Arterial

Complete Streets - Bicycle, Pedestrian, and/or Transit Standards Warrants:
Warrants met: ☐None ☐Bicycle ☒Pedestrian ☐Transit

Pavement Evaluation and Recommendations
Preliminary Pavement Evaluation Summary Report Required? ☐No ☒Yes
Preliminary Pavement Type Selection Report Required? ☒No ☐Yes
Feasible Pavement Alternatives: ☒HMA ☐PCC ☐HMA & PCC

DESIGN AND STRUCTURAL

Description of Proposed Project:

Major Structures: N/A

Mainline Design Features:
Urban Principal Arterial- Moreland Avenue

Feature	Existing	Standard*	Proposed
Typical Section			
- **Number of Lanes**	**4**	**4**	**4**
- **Lane Width(s)**	**9'-0"**	**11'-0"-12'-0"**	**10'-0" to 9'-0"**
- **Median Width & Type**	**N/A**	**20'-0" raised 14'-0" flush**	**Raised Varies 10'-0" to 2'-0" (at left turn)**
- **Outside Shoulder or Border Area Width**		**10'-0"-16'-0"**	**Varies from 9'-6" to 14'-6"**
- **Outside Shoulder Slope**		**2%**	**2%**
- **Inside Shoulder Width**	**N/A**	**N/A**	**N/A**
- **Sidewalks**	**5'-0"**	**5'-0"**	**Varies 5'-0" to 10'-0" (for future multi-use trail)**

- **Auxiliary Lanes**	**Two way center lane**	**N/A**	**Two way center lane**
- **Bike Lanes**	**N/A**		**N/A**
Posted Speed	**35**		**35**
Design Speed		**45**	**45**
Min Horizontal Curve Radius		**711**	**711**
Maximum Superelevation Rate		**4%**	**4%**
Maximum Grade		**7%**	**7%**
Access Control	**By permit**	**By permit**	**By permit**
Design Vehicle	**N/A**	**WB-40 / WB-62**	**WB-40/WB-62/WB-67**
Pavement Type	**Asphalt**	**Asphalt**	**Asphalt**

*According to current GDOT design policy if applicable

Urban Local Road- Arkwright Place

Feature	**Existing**	**Standard***	**Proposed**
Typical Section			
- **Number of Lanes**	**4**	**2-4**	**3**
- **Lane Width(s)**	**12'-0"**	**10'-0"-12'-0"**	**10'-0" and 14"-0"**
- **Median Width & Type**	**N/A**	**N/A**	**18'-0"**
- **Outside Shoulder or Border Area Width**	**6'-0"**	**10'-0"-16'-0"**	**10'-0" to 41'-6"**
- **Outside Shoulder Slope**		**2%**	**2%**
- **Inside Shoulder Width**	**N/A**	**N/A**	**N/A**
- **Sidewalks**	**5'-0"**	**5'-0"**	**Varies 5'-0" to 10'-0" (for future multi-use trail)**
- **Auxiliary Lanes**	**N/A**	**N/A**	**N/A**
- **Bike Lanes**	**N/A**	**N/A**	**N/A**
Posted Speed	**30 mph**		**30 mph**
Design Speed		**40 mph**	**40 mph**
Min Horizontal Curve Radius		**533**	**533**
Maximum Superelevation Rate		**4%**	**4%**
Maximum Grade		**7%**	**7%**
Access Control	**By permit**	**By permit**	**By permit**
Design Vehicle	**N/A**	**SU (Single Unit) and P (Passenger Car)**	**SU (Single Unit) and P (Passenger Car)**
Pavement Type	**Asphalt**	**Asphalt**	**Asphalt**

*According to current GDOT design policy if applicable

Urban Minor Arterial- Memorial Drive

Feature	Existing	Standard*	Proposed
Typical Section			
- **Number of Lanes**	**3**		**3**
- **Lane Width(s)**	**11'-0"**	**11'-0"-12'-0"'**	**11'-0"**
- **Median Width & Type**	**N/A**	**20'-0" raised 14'-0" flush**	**N/A**
- **Outside Shoulder or Border Area Width**	**N/A**	**10'-0"-16'-0"**	**10'-0"**
- **Outside Shoulder Slope**	**N/A**	**2%**	**2%**
- **Inside Shoulder Width**	**N/A**	**N/A**	**N/A**
- **Sidewalks**	**5'-0"**	**5'-0"**	**5'-0"**
- **Auxiliary Lanes**	**N/A**	**N/A**	**N/A**
- **Bike Lanes**	**N/A**	**N/A**	**N/A**
Posted Speed	**35**		**35**
Design Speed	**45**	**45**	**45**
Min Horizontal Curve Radius	**N/A**	**371**	**371**
Maximum Superelevation Rate	**N/A**	**4%**	**4%**
Maximum Grade	**N/A**	**7%**	**7%**
Access Control	**By permit**	**By permit**	**By permit**
Design Vehicle	**N/A**	**WB-40/ BUS 40**	**WB-40 / BUS-40**
Pavement Type	**Asphalt**	**Asphalt**	**Asphalt**

*According to current GDOT design policy if applicable

Major Interchanges/Intersections:
Moreland Avenue at Arkwright Place
Moreland Avenue at Memorial Drive

Lighting required: ☒ No ☐ Yes

Transportation Management Plan [TMP] Required: ☐ No ☒ Yes
If Yes: Project classified as: ☒ Non-Significant ☐ Significant
TMP Components Anticipated: ☒ TTC ☐ TO ☐ PI

Will Context Sensitive Solutions procedures be utilized? ☐ No ☒ Yes
Issues of Concern:
Inadequate pedestrian and signal infrastructure.

Context Sensitive Solutions Proposed:
The intersection of Moreland Avenue and Arkwright Place is to be modified to remove the double right-turn onto Moreland Avenue to reduce the likelihood of crashes. A pedestrian hybrid beacon is proposed to facilitate pedestrian movement across Moreland Avenue on the 10 ft wide sidewalk.
The intersection of Moreland Avenue with Memorial Drive will be upgraded to provide new wheel chair ramps and sidewalks.

Design Exceptions to FHWA/AASHTO controlling criteria anticipated:
A design exception for the proposed 10'-0" lane width is anticipated due to the existing high volume of truck traffic (8% trucks). Per the AASHTO standards, section 7.3.3, a 10'-0" minimum lane width is acceptable only in cases where the truck volume is low (less than 5%) and speeds are less than 35 mph. The reduced lane widths are proposed to minimize right of way impacts.

Design Variance to GDOT Standard Criteria anticipated:
A design variance for median width is anticipated. The proposed 10'-0" median near the intersection of Moreland Avenue with Memorial Drive is less than the required minimum median width of 20'-0" as stated in section 6.12.2 of the GADOT Design Policy Manual. The reduced median width is proposed to minimize right of way impacts.

UTILITY AND PROPERTY
Temporary State Route Needed: ☒ No ☐ Yes ☐ Undetermined

Railroad Involvement: No

Utility Involvements:
Georgia Power Company
Georgia Power Transmission
City of Atlanta Department of Watershed Management
AT&T Communications
Comcast Cable

SUE Required: ☐ No ☒Yes

Public Interest Determination Policy and Procedure recommended? ☐ No ☒ Yes

Right-of-Way: Right of Way is estimated based on GIS data.

Moreland Avenue	Existing width: 78 ft.	Proposed width: 83 ft.
Arkwright Place	Existing width: 103ft.	Proposed width: 110 ft.
Memorial Drive	Existing width: 62ft.	Proposed width: 75 ft.

Required Right-of-Way anticipated: ☐ No ☒ Yes ☐ Undetermined
Easements anticipated: ☐ None ☒ Temporary ☐ Permanent ☐ Utility ☐ Other

Anticipated total number of impacted parcels: 8
Displacements anticipated: Businesses: _____
Residences: _____
Other: _____
Total Displacements: _____

ENVIRONMENTAL & PERMITS
Anticipated Environmental Document:
GEPA: ☐ **NEPA:** ☒ CE ☐ EA/FONSI ☐ EIS

MS4 Permit Compliance – Is the project located in a MS4 area? ☐ No ☒ Yes

Environmental Permits/Variances/Commitments/Coordination anticipated:

Permit/ Variance/ Commitment/ Coordination Anticipated	**No**	**Yes**	**Remarks**
1. U.S. Coast Guard Permit	☒	☐	
2. Forest Service/Corps Land	☒	☐	
3. CWA Section 404 Permit	☒	☐	
4. 33 USC 408 Decision	☒	☐	
5. Tennessee Valley Authority Permit	☒	☐	
6. Buffer Variance	☒	☐	
7. Coastal Zone Management Coordination	☒	☐	
8. NPDES	☐	☒	
9. FEMA	☒	☐	
10. Cemetery Permit	☒	☐	
11. Other Permits	☒	☐	
12. Other Commitments	☒	☐	
13. Other Coordination	☒	☐	

Is a PAR required? ☒ No ☐ Yes ☐ Completed – Date:

Environmental Comments and Information:

NEPA/GEPA: Preparation of the NEPA document has not yet started. It is anticipated that the project would require use of a categorical exclusion (CE). Two Section 4(f) resources, the Reynoldstown Historic District (located in the northwest quadrant of the intersection) and an early 20th century residential neighborhood (located in the northeast quadrant of the intersection) were identified. While measures to minimize right-of-way/easement impacts to these resources should be integrated into the development of the project concept, it cannot be assumed that impacts to these resources can be completely avoided. Per the June 4, 2013 agreement between FHWA and GDOT, actions processed programmatically as CEs (PCE) shall not involve "any use of a resource protected by Section 4(f) of the DOT Act of 1966 as defined by that Act" (3.b.). In addition, a *de minimis* use of these resources disqualifies a project from the PCE agreement. Therefore, an assessment of effects to historic resources is required that results in "No Adverse Effect" or "Conditional No Adverse Effect" as well as a determination of no *de minimis* Section 4(f) uses in order for a PCE to be considered for this project. That effort has not yet been completed.

Ecology: On April 10, 2015, a screening survey was conducted for environmental resources located within and immediately adjacent to the project. The screening survey did not identify any jurisdictional wetlands, streams, or open waters. One non-jurisdictional non-buffered state water was observed.

Additionally as a part of the environmental screening, the US Fish and Wildlife Service's (USFWS) Information, Planning, and Conservation System (IPaC) and the Georgia Department of Natural Resource (GADNR) websites were consulted for information regarding potential impacts to federally protected species related to implementation of the proposed project. The USFWS IPaC list identifies three species of concern within DeKalb County, including the little amphianthus (*Amphianthus pusillus*), black spored quillwort (*Isoetes melanospora*), and dwarf sumac (*Rhus*

michauxii). The USFWS IPaC list identifies five species of concern within Fulton County, including the Gulf moccsasinshell (*Medionidus penicillus*), oval pigtoe (*Pleurobema pyriforme*), purple bankclimber (*Elliptoideus sloatianus*), shinyrayed pocketbook (*Hamiota subangulata*) and the Cherokee darter (*Etheostoma scotti*). The GADNR DeKalb County list identifies the federally listed little amphianthus and the black spored quillwort. The GADNR Fulton County list identifies the federally listed dwarf sumac, threatened Cherokee darter, shinyrayed pocketbook, and Gulf moccasinshell.

No perennial streams occur within the project area; therefore, the Gulf moccasinshell, oval pigtoe, purple bankclimber, shinyrayed pocketbook, and the Cherokee darter would not be species of concern during project development or construction.

Little amphianthus occurs on shallow, flat bottomed depressions on granite outcrops with thin, gravelly soils and winter-spring inundation. No granite outcrops were observed within the screening area and it does not appear that little amphianthus would be a species of concern during project development.

Dwarf sumac are found in dry, open, rocky, or sandy woodlands over mafic bedrock with high level of calcium, magnesium, or iron; often on ridges and river bluffs. The wooded areas observed within the screening area are within maintained lawns and would not provide suitable habitat for the dwarf sumac.

The black-spored quillwort habitat is restricted to shallow, flat-bottomed depressions on granite outcrops, where water collects after a rain. No granite outcrops were observed within the screening area and it does not appear that black-spored quillwort would be a species of concern during project development.

History: One National Register-listed historic property, the Reynoldstown Historic District, was identified along the survey corridor in the northwest quadrant of the intersection. In addition, one likely eligible resource, an early 20th century residential neighborhood in the northeast quadrant of the intersection, was identified. As previously noted, while measures to minimize right-of-way/easement impacts to these resources should be integrated into the development of the project concept, it cannot be assumed that impacts to these resources can be completely avoided. Per the June 4, 2013 agreement between FHWA and GDOT, actions processed programmatically as CEs (PCE) shall not involve "any use of a resource protected by Section 4(f) of the DOT Act of 1966 as defined by that Act" (3.b.). In addition, a *de minimis* use of these resources disqualifies a project from the PCE agreement. Therefore, an assessment of effects to historic resources would be required that resulted in "No Adverse Effect" or "Conditional No Adverse Effect" as well as a determination of no *de minimis* Section 4(f) uses in order for a PCE to be considered for this project. That effort has not yet been completed.

Archeology: On April 9, 2015, a check of the Georgia Archaeological Site File (GASF) was conducted electronically for this project using the GNAHRGIS database at the University of Georgia in Athens. No previously identified archaeological sites are located within a one-kilometer radius of the proposed site. Furthermore, no previously recorded archaeological sites fall within the Area of Potential Effect (APE) of the currently proposed site.

Air Quality:

Is the project located in a $PM_{2.5}$ Non-attainment area? ☐ No ☒ Yes

Is the project located in an Ozone Non-attainment area? ☐ No ☒ Yes

Carbon Monoxide hotspot analysis: ☐ Required ☒ Not Required ☐ TBD

$PM_{2.5}$: It is anticipated that this project, when evaluated by an interagency group consisting of FHWA, EPA, EPD and the MPO, would be Exempt per the Transportation Conformity Rule and thus meet the statutory and regulatory requirements for $PM_{2.5}$ hotspots without a qualitative analysis.

Ozone: This project is identified in the conforming TIP by reference number AT-280.

CO: Given the project type (intersection improvements), it is not anticipated that this project would significantly impact CO concentrations and would, therefore, not require a CO hot-spot analysis.

Noise Effects: It is anticipated that this project meets the definition of a Type III project and does not require a noise study or abatement of highway noise impacts. This determination is based on FHWA's *Highway Traffic Noise: Analysis and Abatement Guidance* (revised January 2011) that states a Type III project is "a federal or federal-aid highway project that does not meet the classifications of a Type I (adds capacity or significantly alters the horizontal or vertical alignment) or Type II (abates noise on an existing facility) project.

Public Involvement: Based on the project type, a Public Information Open House is not anticipated. However, if it is determined that construction of the project would require an off-site detour, a Detour Meeting will be required.

COORDINATION, ACTIVITIES, RESPONSIBILITIES, AND COSTS

Project Meetings:

Project Activity	Party Responsible for Performing Task(s)
Concept Development	Heath & Lineback Engineers
Design	Heath & Lineback Engineers
Right-of-Way Acquisition	GDOT/ District 7 Right of Way
Utility Coordination (Preconstruction)	Heath & Lineback Engineers/GDOT
Utility Relocation (Construction)	Utility Owners
Letting to Contract	GDOT
Construction Supervision	GDOT/ District 7
Providing Material Pits	Construction Contractor
Providing Detours	N/A
Environmental Studies, Documents, and Permits	GDOT OES/ Heath & Lineback Engineers/ Edwards Pitman Environmental
Environmental Mitigation	GDOT
Construction Inspection & Materials Testing	GDOT

Other coordination to date:

- Project kick off meeting April 14, 2015
-Team Concept Meeting August 12, 2015

Project Cost Estimate Summary and Funding Responsibilities:

	Breakdown of PE	**ROW**	**Reimbursable Utility**	**CST***	**Environmental Mitigation**	**Total Cost**
Funded By	GDOT	GDOT	GA Power Transmission	GDOT	N/A	
$ Amount	$150,000.00	$1,057,000.00	$90,000.00	$1,025,720.09	N/A	$2,322,720.09
Date of Estimate	2/1/2013	12/30/2015	07/02/15	1/6/2016	N/A	

*CST Cost includes: Construction, Engineering and Inspection and Liquid AC Cost Adjustment.

ALTERNATIVES DISCUSSION

This concept report divides the project in two sections. The improvements on Moreland Avenue will be section 1 with options 1A, 1B, 1C, and 1D. The improvements for Arkwright Place will be referred to as section 2 with options 2A, 2B, 2C, and 2D. After combining the various options the preferred alternate is the result of combining options 1D and 2D. Below are brief descriptions of the different options and the layouts for each option is attached.

<u>Section 1- Moreland Avenue</u>

- **Option 1A** consists of two 9’-0” lanes in each direction with a 9’-0” wide raised median. The 250-foot long raised median along Moreland Avenue varies in width from 2’-0’ to 9’-0”. Additionally the proposed section will consist of a 2’-0” buffer and 5’-0” sidewalks. The raised median stops north of Arkwright Place to match the existing conditions on the north end of the project limits. The proposed improvements at the intersection of Moreland Avenue and Memorial Drive include replacement of the sidewalks and wheelchair ramps in all quadrants of the intersection. Based on the information available, this option will require 0.027 acres of right of way along the corridor. There would be negligible utility impacts along the east side of the corridor.

- **Option 1B** consists of two 10’-0” lanes in each direction, with a 10’-0” wide raised median. An approximate shift of 1’-6” to the east from the existing alignment is required to provide room for widening (3’-6” to the east from Arkwright Place to Memorial Drive) and the 250-foot long raised median varying in width from 2’-0’ to 10’-0”. Additionally the proposed section will consist of a 2’-0” buffer and 5’-0” sidewalks. The raised median stops north of Arkwright Place and the travel and auxiliary lanes are then reduced to 9’-0” to match the existing conditions on the north end of the project limits. The proposed improvements at the intersection of Moreland Avenue and Memorial Drive include replacement of the sidewalks and wheelchair ramps in all quadrants of the intersection. Based on the information available, this option will require 0.031 acres of right of way along the corridor. There would be minor utility impacts along the east side of the corridor.

- **Option 1C** consists of two 11’-0” lanes in each direction, with an 11’-0” wide raised median. An approximate shift of 2’-6” to the east from the existing alignment is required to provide room for widening (5’-6” to the east from Arkwright Place to Memorial Drive) and the 250-foot long raised median varying in width from 2’-0’ to 11’-0”. Additionally the proposed section will consist of a 2’-0” buffer and 5’-0” sidewalks. The raised median stops north of Arkwright Place and the travel and auxiliary lanes taper down to 9’-0” to match the existing lane width on the north end of the project. The proposed improvements at the intersection of Moreland Avenue and Memorial Drive include replacement of the sidewalks and wheelchair ramps in all quadrants of the intersection. In order to reduce right of way acquisition this alternate will require a retaining wall of approximately 150-foot in length, along the east property line of Dorothy’s Arkwright Nursery. Based on the

information available, this option will require 0.035 acres of right of way along the corridor. Major utility impacts are expected along the east side of the corridor.

- **Option 1D** this option is similar to Option 1B except that a 10'-0" widened sidewalk/future multi-use trail is proposed north of Arkwright Place on both sides of Moreland Avenue. A pedestrian hybrid beacon is proposed across Moreland Avenue at the 10' wide sidewalk. In order to reduce right of way acquisition this alternate will require a retaining wall of approximately 150-foot in length along the east property line of Dorothy's Arkwright Nursery. Based on the information available, this option will require 0.057 acres of right of way along the corridor. There would be minor utility impacts along the east and west side of the corridor.

Section 2- Arkwright Place

- **Option 2A** this alternate proposes two 14'-0" lanes on the southern leg of Arkwright Place and two 10'-0" lanes on the northern leg of Arkwright Place, separated by an 18'-0" wide raised median. A 10'-0" wide sidewalk/future multi-use trail is proposed within this median. Local two way traffic is maintained on Arkwright Place east of Dorothy's Arkwright Nursery existing driveway. Vehicles heading south on Moreland Avenue will need to access the nursery via Merlin Avenue, since left turns from Moreland Avenue to Arkwright Place will be prevented by the raised median. Based on the information available, this option will require 0.043 acres of right of way along Arkwright Place. The utility poles on the existing median will need to be relocated to accommodate the future multi-use trail.

- **Option 2B** this alternate proposes two 14'-0" lanes on the southern leg of Arkwright Place and two 10'-0" lanes on the northern leg of Arkwright Place separated by an 18'-0" wide raised median. A 10'-0" wide sidewalk/future multi-use trail is proposed within this median. Arkwright Place (northern leg) is closed to traffic west of the existing daycare driveway. Local two way traffic is maintained on Arkwright Place east of Dorothy's Arkwright Nursery existing driveway. Vehicles heading south on Moreland Avenue will need to access the nursery via Merlin Avenue, since left turns from Moreland Avenue to Arkwright Place will be prevented by the raised median. Based on the information available, this option will require 0.043 acres of right of way along Arkwright Place. The utility poles on the existing median will need to be relocated to accommodate the trail.

- **Option 2C** this alternate is similar to Option 2B except that this option proposes a new right-in/right-out driveway for the daycare along Moreland Avenue approximately 50-feet north of Arkwright Place. Based on the information available, this option will require 0.054 acres of right of way along Arkwright Place. The utility poles on the existing median will need to be relocated to accommodate the future multi-use trail.

- **Option 2D** this alternate proposes two 14'-0" lanes, one in each direction from the intersection of Memorial Drive and Arkwright Place to Mortimer Street. Arkwright Place is separated by a raised median varying in width from 34'-0" to 12'-0". From Mortimer Street to the eastern limit of the project, the proposed typical section of Arkwright Place consists of two 14'-0" lanes on the southern leg and two 10'-0" lanes on the northern leg. A 10'-0" wide sidewalk/future multi-use trail is proposed on the north side of the proposed two lane section on Arkwright Place, west of Mortimer Street, which ties to the existing median to the east of Mortimer Street. In addition the proposed project provides right-in/right-out from Arkwright Place to Moreland Avenue. A minor shift of the Dorothy's Arkwright Nursery driveway, to the east of its existing location is proposed. Vehicles heading south on Moreland Avenue will need to access the nursery via Merlin Avenue, since left turns from Moreland Avenue to Arkwright Place will be prevented by the raised median.

. Based on the information available, this option will require 0.0142 acres of right of way along Arkwright Place.

Preferred Alternative: *This alternate combines Option 1D and Option 2D.*			
Estimated Property Impacts:	**8**	**Estimated Total Cost:**	**$2,322,720.09**
Estimated ROW Cost:	**$1,057,000.00**	**Estimated CST Time:**	**18 months**
Rationale: *This alternate improves the intersection at Arkwright Place and Moreland Avenue and provides signal updates at the intersection of Memorial Drive and Moreland Avenue. Also, this alternate does not reduce access to the Dorothy Arkwright Nursery. The raised median on Moreland Avenue prevents left turns unto Arkwright Place from Moreland Avenue. The proposed hybrid pedestrian beacon will improve pedestrian movement across Moreland Avenue. Minor right of way areas will be required along Moreland Avenue and Arkwright Place for the sidewalk improvements. This alternate will require minor drainage redesign and utility relocations.*			

No-Build Alternative: *This alternate uses the existing lane configurations on Arkwright Place and Moreland Avenue.*			
Estimated Property Impacts:	**N/A**	**Estimated Total Cost:**	**N/A**
Estimated ROW Cost:	**N/A**	**Estimated CST Time:**	**N/A**
Rationale: *This alternate does not improve the intersection at Arkwright Place and Moreland Avenue. In addition it does not provide operational or pedestrian improvements.*			

Alternative 1: *This alternate combines Option 1A and Option 2A.*			
Estimated Property Impacts:	**4**	**Estimated Total Cost:**	**N/A**
Estimated ROW Cost:	**N/A**	**Estimated CST Time:**	**N/A**
Rationale: *This alternate does not provide adequate operational improvements along Moreland Avenue. The narrow lanes may be the cause of some specific crashes, such as same-direction sideswipe collisions. This alternate will require minor drainage redesign and utility relocations.*			

Alternative 2: *This alternate combines Option 1C and Option 2A.*			
Estimated Property Impacts:	**4**	**Estimated Total Cost:**	**N/A**
Estimated ROW Cost:	**N/A**	**Estimated CST Time:**	**N/A**
Rationale: *This alternate requires significant utility relocations along the east side of the corridor, major drainage redesign, and a retaining wall to avoid extensive right of way acquisition on the east side by the daycare.*			

Alternative 3: *This alternate combines Option 1B and Option 2A.*			
Estimated Property Impacts:	**5**	**Estimated Total Cost:**	**N/A**
Estimated ROW Cost:	**N/A**	**Estimated CST Time:**	**N/A**
Rationale: *This alternate reduces the vehicular access to Dorothy's Arkwright Nursery. In addition, the close proximity of the right turns on both the southern and northern legs of Arkwright Place onto Memorial Drive may cause some specific crashes, such as rear-end collisions.*			

Comments:

- Option 2B was not selected because it further complicates the access to Dorothy's Arkwright Nursery.
- Even though Option 2C provides an additional driveway for the Dorothy Arkwright Nursery, it was not selected. The alternate could pose a potential issue with cut-through traffic if drivers on the northern leg of Arkwright Place choose to travel through the nursery parking lot to turn onto SR 42. In addition, this alternate would have significant impact to the nursery's parking lot.
- Improving the sidewalk to only one side on Moreland Avenue was considered, but it would not be justifiable since this change would not meet current ADA requirements.
- A mini-roundabout was considered, but due to right of way restrictions and proximity of historic properties, that option was determined to be unfeasible and was not studied further.
- During preliminary design, once actual survey data has been received, the impacts to the gas station at the northeast corner of Moreland Avenue and Memorial Drive needs to be revisited. If the proposed widening results in impacts to the gas pumps, accommodation of a u-turn on Moreland Avenue shall be considered.

LIST OF ATTACHMENTS/SUPPORTING DATA

1. Concept Layout
2. Typical sections
3. Cost Estimates
4. Traffic diagrams or projections and Approval Letter
5. Traffic Engineering (TE) Study
6. Environmental Screening Memo
7. Meeting Minutes
8. Responses to comments on Draft Concept Report Received on August 26, 2015 and November 25, 2015.
9. Layouts for Options 1A-1D
10. Layouts for Options 2A-2D
11. Aerial Photograph of existing conditions

SR 42/ US 23 (MORELAND AVENUE) AND CS 260301/ ARKWRIGHT PLACE
PI NO.: 0012596

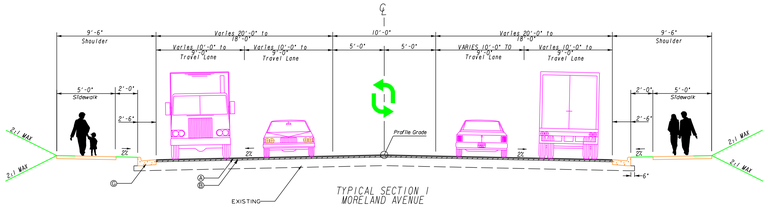
SCALE IN FEET
0 50 100 200

Heath & Lineback Engineers
INCORPORATED
2390 CANTON ROAD, BUILDING 200
MARIETTA, GEORGIA 30066-5393
(770)424-1668

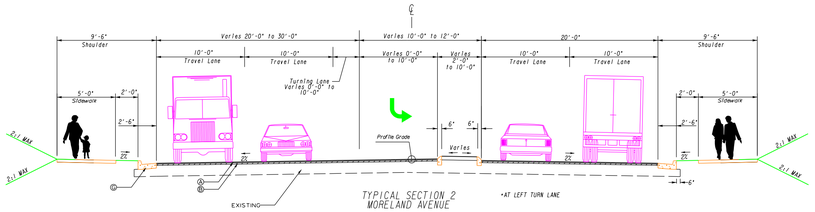
Georgia Department of Transportation

PREFERRED ALTERNATE

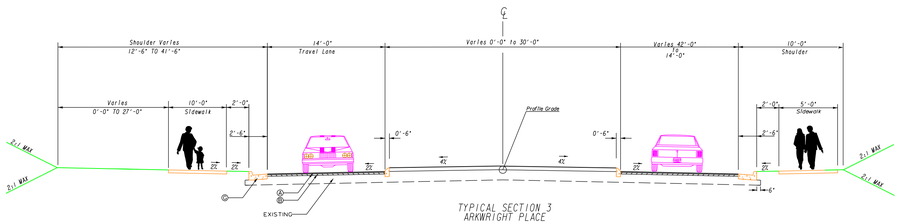
Date Last Updated: 08-27-2015



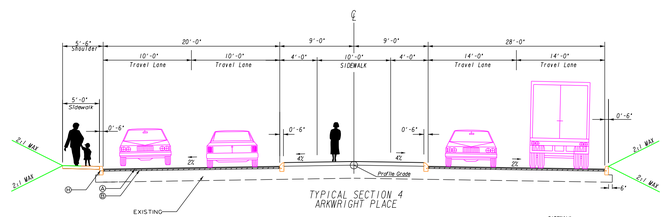
TYPICAL SECTION 1
MORELAND AVENUE



TYPICAL SECTION 2
MORELAND AVENUE
*AT LEFT TURN LANE



TYPICAL SECTION 3
ARKWRIGHT PLACE



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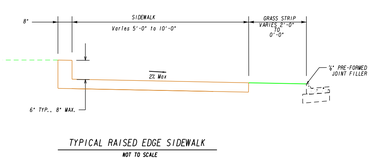
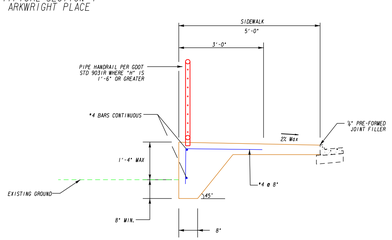
ARKWRIGHT PLACE

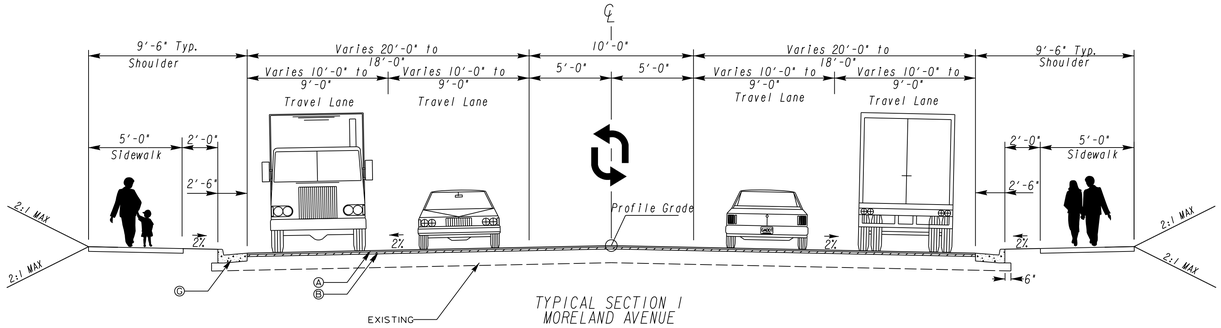


TYPICAL RAISED EDGE SIDEWALK
NOT TO SCALE

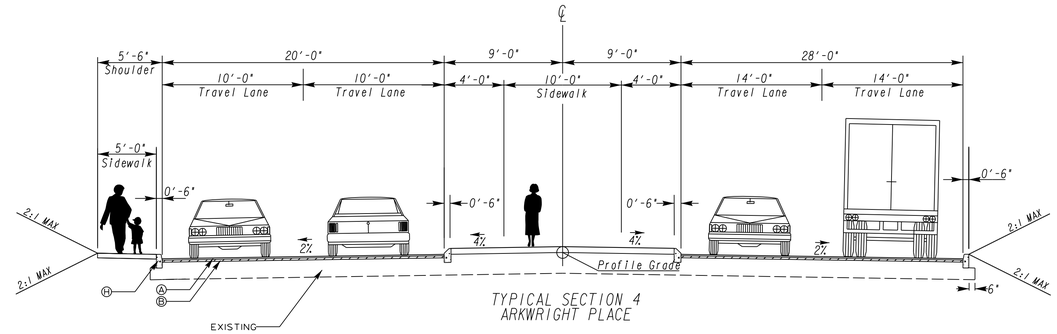


TYPICAL TURNDOWN SIDEWALK
NOT TO SCALE

PERMANENT GRASS



TYPICAL SECTION 1
MORELAND AVENUE



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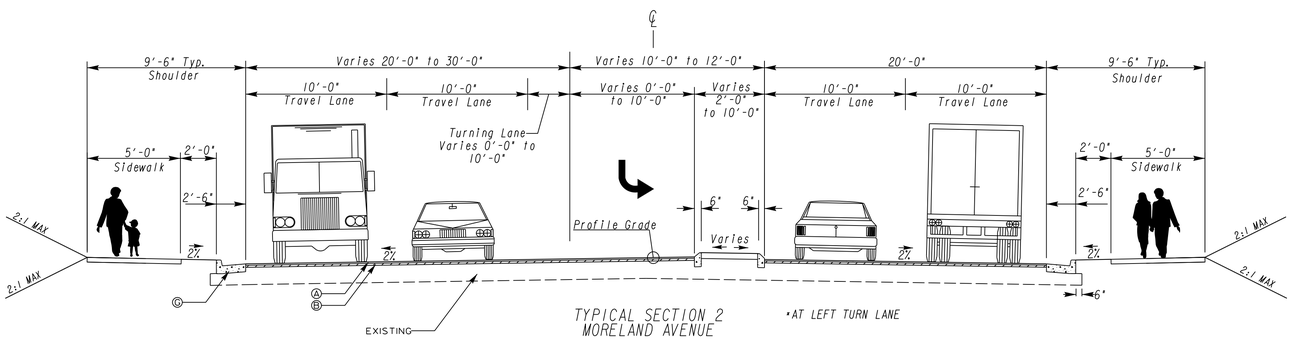
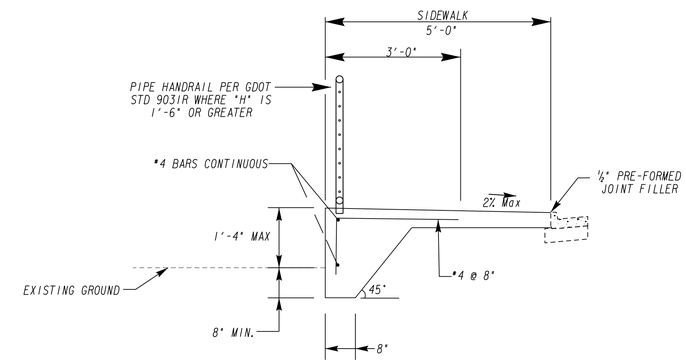
ARKWRIGHT PLACE

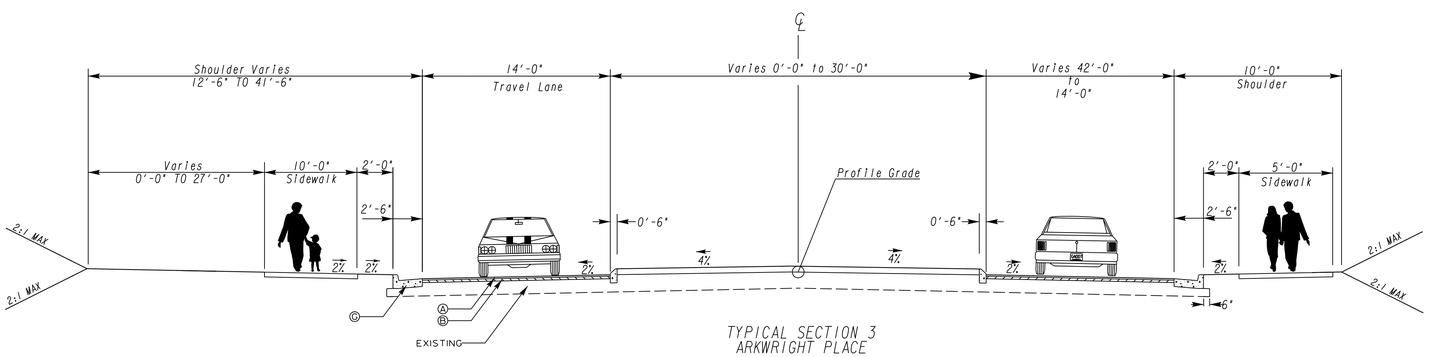


TYPICAL SECTION 2
MORELAND AVENUE

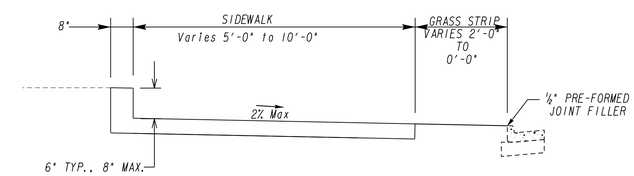
*AT LEFT TURN LANE



TYPICAL TURNDOWN SIDEWALK
NOT TO SCALE



TYPICAL SECTION 3
ARKWRIGHT PLACE



TYPICAL RAISED EDGE SIDEWALK
NOT TO SCALE

SR 42/ US 23 (MORELAND AVENUE) AND CS 260301/ ARKWRIGHT PLACE

STATE HIGHWAY AGENCY

DATE : 11/12/2015
PAGE : 1

JOB DETAIL ESTIMATE

JOB NUMBER : 0012596 SPEC YEAR: 13
DESCRIPTION: SR 42/US 23 (MORELAND AVE) AND CS 260301/ ARKWRIGHT PLACE

ITEMS FOR JOB 0012596

LINE	ITEM	ALT	UNITS	DESCRIPTION	QUANTITY	PRICE	AMOUNT
0005	150-1000		LS	TRAFFIC CONTROL - LUMP SUM	1.000	150000.00	150000.00
0010	210-0100		LS	GRADING COMPLETE - LUMP SUM	1.000	25000.00	25000.00
0015	310-1101		TN	GR AGGR BASE CRS, INCL MATL	290.000	30.18	8753.62
0020	318-3000		TN	AGGR SURF CRS	270.000	23.98	6475.65
0025	402-1812		TN	RECYL AC LEVELING,INC BM&HL	688.000	82.21	56560.98
0030	402-3130		TN	RECYL AC 12.5MM SP,GP2,BM&HL	516.000	109.26	56378.79
0039	413-1200		GL	NON-TRACKING EMULSIFIED TACK COAT	504.000	4.20	2116.80
0040	432-0206		SY	MILL ASPH CONC PVMT/ 1.50 DEP	6250.000	3.38	21136.88
0045	441-0016		SY	DRIVEWAY CONCRETE, 6 IN TK	900.000	38.81	34934.90
0050	441-0748		SY	CONC MEDIAN, 6 IN	455.000	46.82	21303.49
0055	441-0104		SY	CONC SIDEWALK, 4 IN	1158.000	37.49	43423.14
0060	441-4020		SY	CONC VALLEY GUTTER, 6 IN	50.000	41.92	2096.25
0065	441-6222		LF	CONC CURB & GUTTER/ 8X30TP2	1930.000	16.89	32600.29
0069	500-3201		CY	CL B CONC, RET WALL	150.000	628.30	94245.92
0070	500-9999		CY	CL B CONC,BASE OR PVMT WIDEN	119.000	221.31	26335.97
0075	515-2020		LF	GALV STEEL PIPE HDRAIL,2,ROUD	1300.000	31.17	40532.88
0080	634-1200		EA	RIGHT OF WAY MARKERS	19.000	116.46	2212.75
0085	550-1180		LF	STM DR PIPE 18,H 1-10	470.000	49.57	23300.26
0090	611-3010		EA	RECONSTR DROP INLET, GROUP 1	8.000	1910.92	15287.41
0095	611-3030		EA	REC STORM SEW MANHOLE, TYPE 1	1.000	1900.07	1900.07
0100	611-8000		EA	ADJUST CATCH BASIN TO GRADE	3.000	1480.37	4441.11
0105	668-1100		EA	CATCH BASIN, GP 1	2.000	2459.32	4918.64
0110	668-4300		EA	STORM SEW MANHOLE, TP 1	2.000	2024.61	4049.22
0115	610-6872		EA	REM STEEL STRAIN POLE	1.000	4000.00	4000.00
0120	636-1020		SF	HWY SGN,TP1MAT,REFL SH TP3	37.000	16.73	619.12
0125	636-2070		LF	GALV STEEL POSTS, TP 7	61.000	9.18	560.41
0128	647-1000		LS	TRAF SIGNAL INSTALLATION NO - PEDESTRIAN HYBRID BEACON	1.000	75000.00	75000.00
0129	647-1000		LS	TRAF SIGNAL INSTALLATION NO - SIGNAL MODIFICATION	1.000	50000.00	50000.00
0130	653-0110		EA	THERM PVMT MARK, ARROW, TP 1	18.000	65.42	1177.72
0135	653-0120		EA	THERM PVMT MARK, ARROW, TP 2	18.000	80.92	1456.62
0140	653-1704		LF	THERM SOLID TRAF STRIPE,24,WH	98.000	6.63	650.47
0145	653-1804		LF	THERM SOLID TRAF STRIPE, 8,WH	2560.000	2.16	5539.66
0150	653-6004		SY	THERM TRAF STRIPING, WHITE	90.000	4.28	385.92
0155	653-1501		LF	THERMO SOLID TRAF ST 5 IN, WHI	2582.000	0.60	1550.85
0160	653-1502		LF	THERMO SOLID TRAF ST, 5 IN YEL	2240.000	0.56	1270.28
0165	653-3501		GLF	THERMO SKIP TRAF ST, 5 IN, WHI	800.000	0.36	291.06
0170	654-1001		EA	RAISED PVMT MARKERS TP 1	6.000	5.50	33.02
0175	654-1002		EA	RAISED PVMT MARKERS TP 2	20.000	4.51	90.27
0180	654-1003		EA	RAISED PVMT MARKERS TP 3	23.000	3.84	88.49
0185	163-0232		AC	TEMPORARY GRASSING	1.000	237.17	237.17
0190	163-0240		TN	MULCH	150.000	226.61	33992.99

JOB DETAIL ESTIMATE

0195	163-0300	EA	CONSTRUCTION EXIT	3.000	1448.92	4346.78
0200	163-0529	LF	CNST/REM TEMP SED BAR OR BLD STRW CK DM	400.000	4.68	1874.89
0205	163-0550	EA	CONS & REM INLET SEDIMENT TRAP	10.000	134.58	1345.84
0210	165-0030	LF	MAINT OF TEMP SILT FENCE, TP C	200.000	1.03	206.25
0215	165-0101	EA	MAINT OF CONST EXIT	3.000	538.20	1614.60
0220	165-0105	EA	MAINT OF INLET SEDIMENT TRAP	10.000	39.86	398.64
0225	167-1000	EA	WATER QUALITY MONITORING AND SAMPLING	2.000	226.81	453.62
0230	167-1500	MO	WATER QUALITY INSPECTIONS	1.000	587.85	587.85
0235	171-0030	LF	TEMPORARY SILT FENCE, TYPE C	1000.000	3.35	3354.47
0240	700-6910	AC	PERMANENT GRASSING	1.000	869.31	869.31
0245	700-7000	TN	AGRICULTURAL LIME	3.000	107.92	323.77
0250	700-8000	TN	FERTILIZER MIXED GRADE	1.000	601.68	601.69
0255	700-8100	LB	FERTILIZER NITROGEN CONTENT	1.000	5.88	5.89
0260	716-2000	SY	EROSION CONTROL MATS, SLOPES	500.000	1.33	668.13

ITEM TOTAL	871600.79
INFLATED ITEM TOTAL	871600.80

TOTALS FOR JOB 0012596

ESTIMATED COST:	871600.80
CONTINGENCY PERCENT (0.0):	0.00
ESTIMATED TOTAL:	871600.80

DEPARTMENT OF TRANSPORTATION
STATE OF GEORGIA

INTERDEPARTMENT CORRESPONDENCE

FILE P.I. No. **0012596**

OFFICE GADOT, OPD

PROJECT DESCRIPTION

SR 42/US 23 (Moreland Avenue) and CS 260301/Arkwright Place

DATE January 6, 2016

From: Albert V. Shelby III, P.E., State Program Delivery Engineer

To: Lisa L. Myers, State Project Review Engineer

Subject: REVISIONS TO PROGRAMMED COSTS

PROJECT MANAGER Vinesha Pegram

MGMT LET DATE 4/15/2018

MGMT ROW DATE 4/15/2017

PROGRAMMED COSTS (TPro W/OUT INFLATION)			**LAST ESTIMATE UPDATE**	
CONSTRUCTION	$	1,102,500.00	DATE	10/14/2014
RIGHT OF WAY	$	100,000.00	DATE	10/14/2014
UTILITIES	$		DATE	N/A

REVISED COST ESTIMATES

CONSTRUCTION*	$	1,025,720.09
RIGHT OF WAY	$	1,057,000.00
UTILITIES	$	90,000.00

*Cost Contains 10 % Contingency

REASONS FOR COST INCREASE AND CONTINGENCY JUSTIFICATION:

Right of way cost increased based on concept study impacts.

CONTINGENCY SUMMARY

A. CONSTRUCTION COST ESTIMATE:	$ 871,601.00	Base Estimate From CES		
B. ENGINEERING AND INSPECTION (E & I):	$ 43,580.05	Base Estimate (A) x	5	%
C. CONTINGENCY:	$ 91,518.11	Base Estimate (A) + E & I (B) x See % Table in "Risk Based Cost Estimation" Memo	10	%
D. TOTAL LIQUID AC ADJUSTMENT:	$ 19,020.94	Total From Liquid AC Spreadsheet		
E. CONSTRUCTION TOTAL:	$ 1,025,720.09	(A + B + C + D = E)		

REIMBURSABLE UTILTY COSTS

UTILITY OWNER	REIMBURSABLE COST
GA Power Transmission	$ 90,000.00
TOTAL	**$ 90,000.00**

ATTACHMENTS:

Liquid AC Adjustment Spreadsheet

PROJ. NO.		CALL NO.	9/29/2009
P.I. NO.	0012956		
DATE	1/6/2015		

INDEX (TYPE)	**DATE**	**INDEX**
REG. UNLEADED	Aug-15	$ 2.534
DIESEL		$ 2.593
LIQUID AC		$ 470.00

Link to Fuel and AC Index:
http://www.dot.ga.gov/PS/Materials/AsphaltFuelIndex

LIQUID AC ADJUSTMENTS

PA=[((APM-APL)/APL)]xTMTxAPL

Asphalt

Price Adjustment (PA)			**$ 16,976.40**	**$ 16,976.40**
Monthly Asphalt Cement Price month placed (APM)	Max. Cap	60%	$ 752.00	
Monthly Asphalt Cement Price month project let (APL)			$ 470.00	
Total Monthly Tonnage of asphalt cement (TMT)			60.2	

ASPHALT	**Tons**	**%AC**	**AC ton**
Leveling	688	5.0%	34.4
12.5 OGFC	0	5.0%	0
12.5 mm	516	5.0%	25.8
9.5 mm SP	0	5.0%	0
25 mm SP	0	5.0%	0
19 mm SP	0	5.0%	0
	1204		**60.2**

BITUMINOUS TACK COAT

Price Adjustment (PA)			**$ 530.51**	**$ 530.51**
Monthly Asphalt Cement Price month placed (APM)	Max. Cap	60%	$ 752.00	
Monthly Asphalt Cement Price month project let (APL)			$ 470.00	
Total Monthly Tonnage of asphalt cement (TMT)			1.881254204	

Bitum Tack Gals	gals/ton	tons
438	232.8234	1.8812542

BITUMINOUS TACK COAT (surface treatment)

Price Adjustment (PA)			**1514.023075**	**$ 1,514.02**
Monthly Asphalt Cement Price month placed (APM)	Max. Cap	60%	$ 752.00	
Monthly Asphalt Cement Price month project let (APL)			$ 470.00	
Total Monthly Tonnage of asphalt cement (TMT)			5.368876152	

Bitum Tack	SY	Gals/SY	Gals	gals/ton	tons
Single Surf. Trmt.	6250	0.20	1250	232.8234	5.368876152
Double Surf.Trmt.		0.44	0	232.8234	0
Triple Surf. Trmt		0.71	0	232.8234	0
					5.368876152

TOTAL LIQUID AC ADJUSTMENT	**$ 19,020.94**

DEPARTMENT OF TRANSPORTATION
STATE OF GEORGIA

INTER-DEPARTMENT CORRESPONDENCE

FROM: Nicholas Fields
District Utilities Engineer

DATE: July 2, 2015

TO: Bobby Hilliard, State Program Delivery Engineer
Perry Black, Project Manager

SUBJECT: PRELIMINARY UTILITY COST ESTIMATE
SR 42/ US 23 MORELAND AVENUE AND CS 2113/ ARKRIGHT PLACE
FULTON COUNTY P.I. 0006890

As requested by your office, we are furnishing you with a Preliminary Cost Estimate for each utility with facilities potentially located with the project limits.

FACILITY OWNER	REIMBURSABLE	NON-REIMBURSABLE	TOTAL
Georgia Power Company		$320,000.00	$320,000.00
Georgia Power Transmission	$90,000.00		$90,000.00
City Of Atlanta Department of Watershed Management		$50,000.00	$50,000.00
AT&T Communication		$35,000.00	$35,000.00
Comcast Cable		$35,000.00	$35,000.00
			$0.00
			$0.00
			$0.00
			$0.00
			$0.00
			$0.00
			$0.00
			$0.00
			$0.00
			$0.00
			$0.00
			$0.00
			$0.00
			$0.00
			$0.00
TOTAL	**$90,000.00**	$440,000.00	$530,000.00

This estimate is based upon the current information. We will provide an updated estimate when the plans are further developed.

If you have any questions, please contact __Wade Woodard____ at 770-986-1117

KSZ/NF/SW/WW

Cc: Jan Phelps, State Utilities Engineer

GEORGIA DEPARTMENT OF TRANSPORTATION
PRELIMINARY ROW COST ESTIMATE SUMMARY

Date: 12/30/2015 Project: Moreland Avenue
Revised: County: Fulton
PI: 0012596
Description: SR 42/US23(Moreland Avenue) and CS 2113/Arkwright Place
Project Termini: Sidewalk Improvement Project

Existing ROW: Vary
Parcels: 6 Required ROW: Vary

Land and Improvements		$911,250.00
Proximity Damage	*$65,000.00*	
Consequential Damage	*$80,000.00*	
Cost to Cures	*$125,000.00*	
Trade Fixtures	*$0.00*	
Improvements	*$150,000.00*	
Valuation Services		$37,500.00
Legal Services		$41,550.00
Relocation		$12,000.00
Demolition		$2,500.00
Administrative		$52,000.00
TOTAL ESTIMATED COSTS		$1,056,800.00
TOTAL ESTIMATED COSTS (ROUNDED)		***$1,057,000.00***

Preparation Credits	Hours	Signature

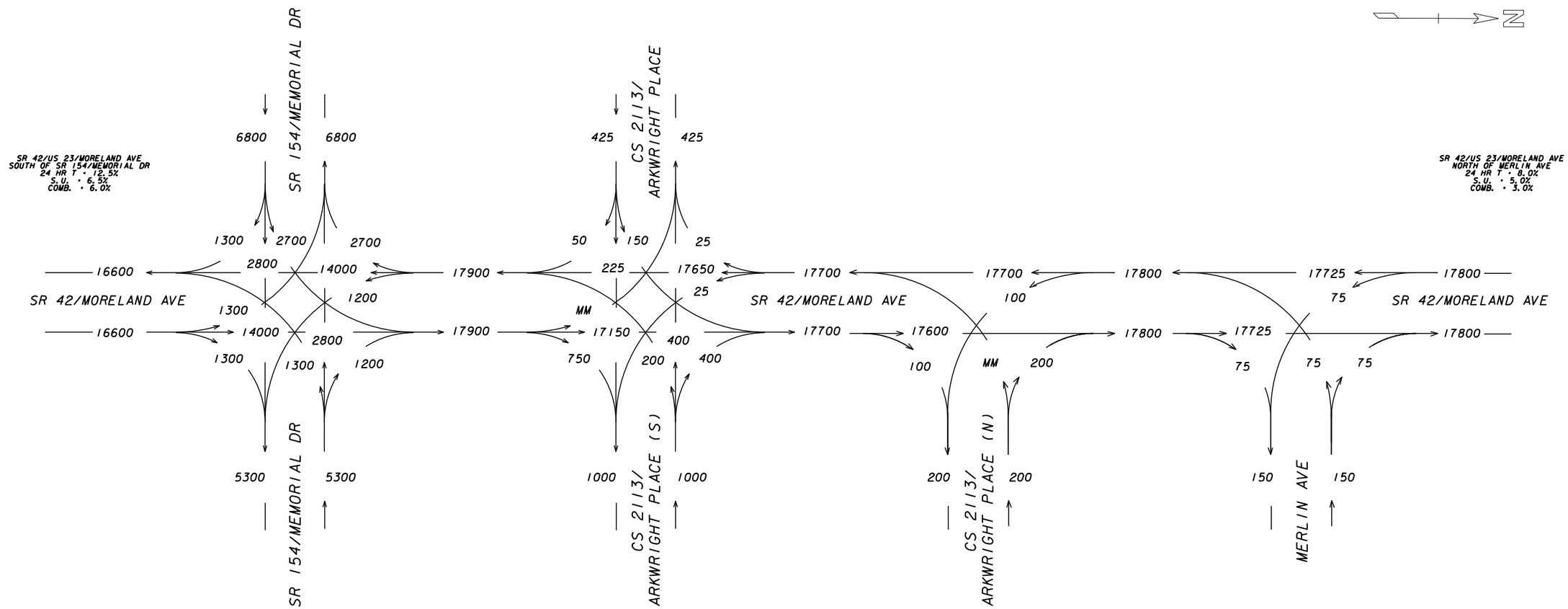
Prepared By: Lashone Alexander CG#: 286999 01/03/2016 (DATE)
Approved By: Lashone Alexander CG#: 286999 01/03/2016 (DATE)

NOTE: No Market Appreciation is included in this Preliminary Cost Estimate

allsop

DATE$$$	TIME$$$	$PRF8$	DGN	STATE	PROJECT NUMBER	SHEET NO.	TOTAL SHEETS
$USER$		$$PENTABLE$$		GA	0012596	1	1

FULTON COUNTY



HF 3/14

PI# 0012596 FULTON COUNTY SR 42/MORELAND AVE FM SR 154/MEMORIAL DR TO MERLIN AVE	2014 ADT EXISTING	GRICE CONSULTING GROUP		REVISION DATES	STATE OF GEORGIA DEPARTMENT OF TRANSPORTATION OFFICE: PLANNING **TRAFFIC DIAGRAM** DRAWING No. 10-1

12/14/2012 GPLN

DATE$$$	TIME$$$	$PRF8$	DGN	STATE	PROJECT NUMBER	SHEET NO.	TOTAL SHEETS
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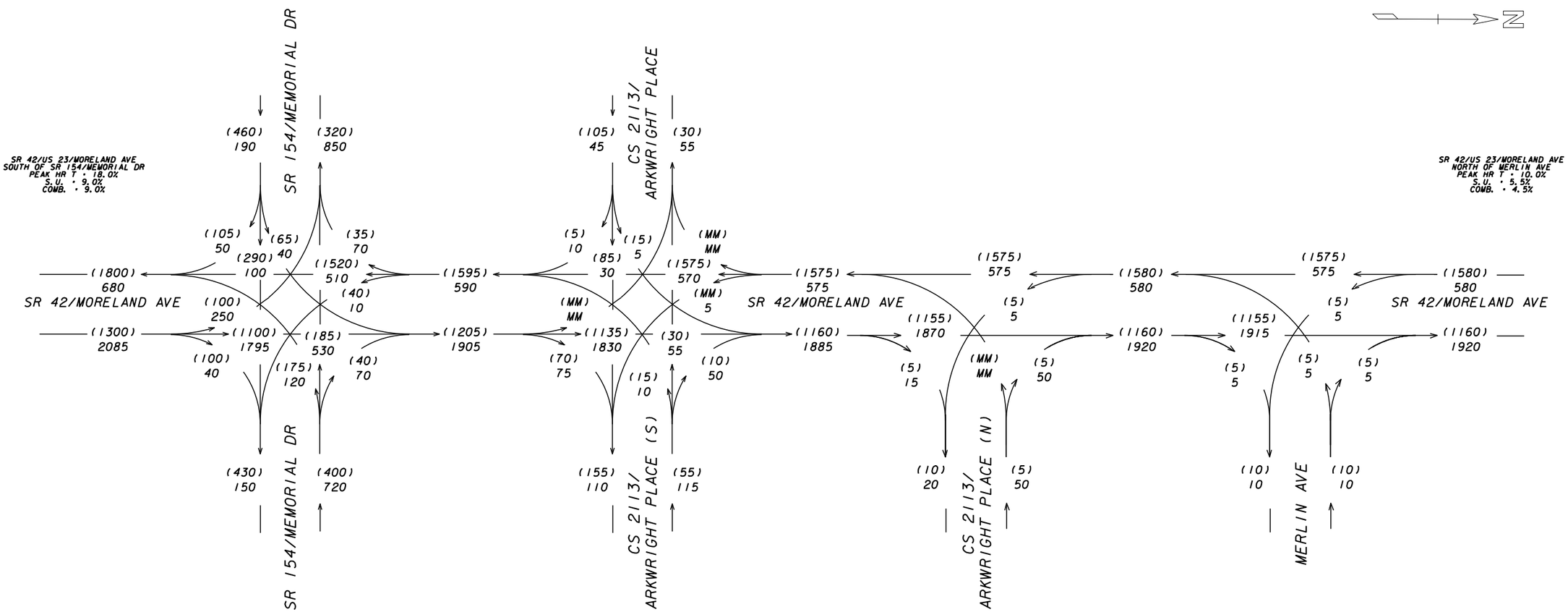
FULTON COUNTY



HF 3/14

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12/14/2012 GPLN

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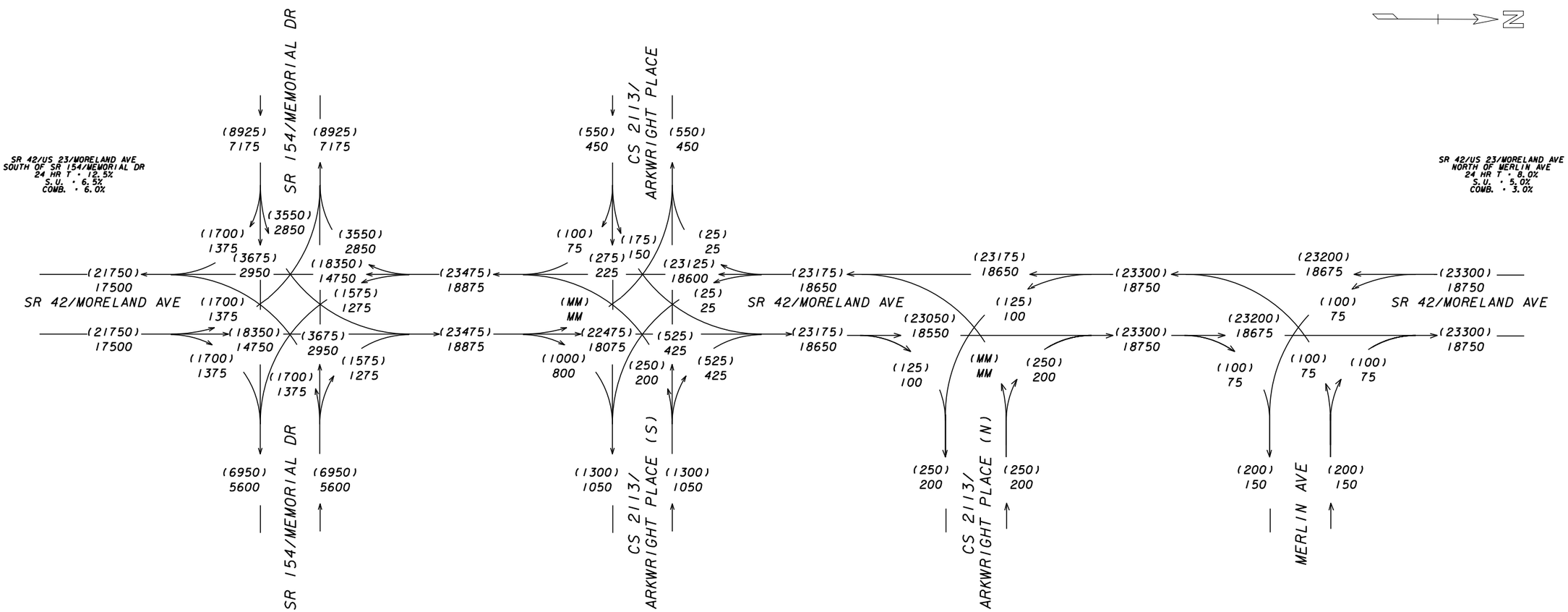
FULTON COUNTY



HF 3/14

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12/14/2012 GPLN

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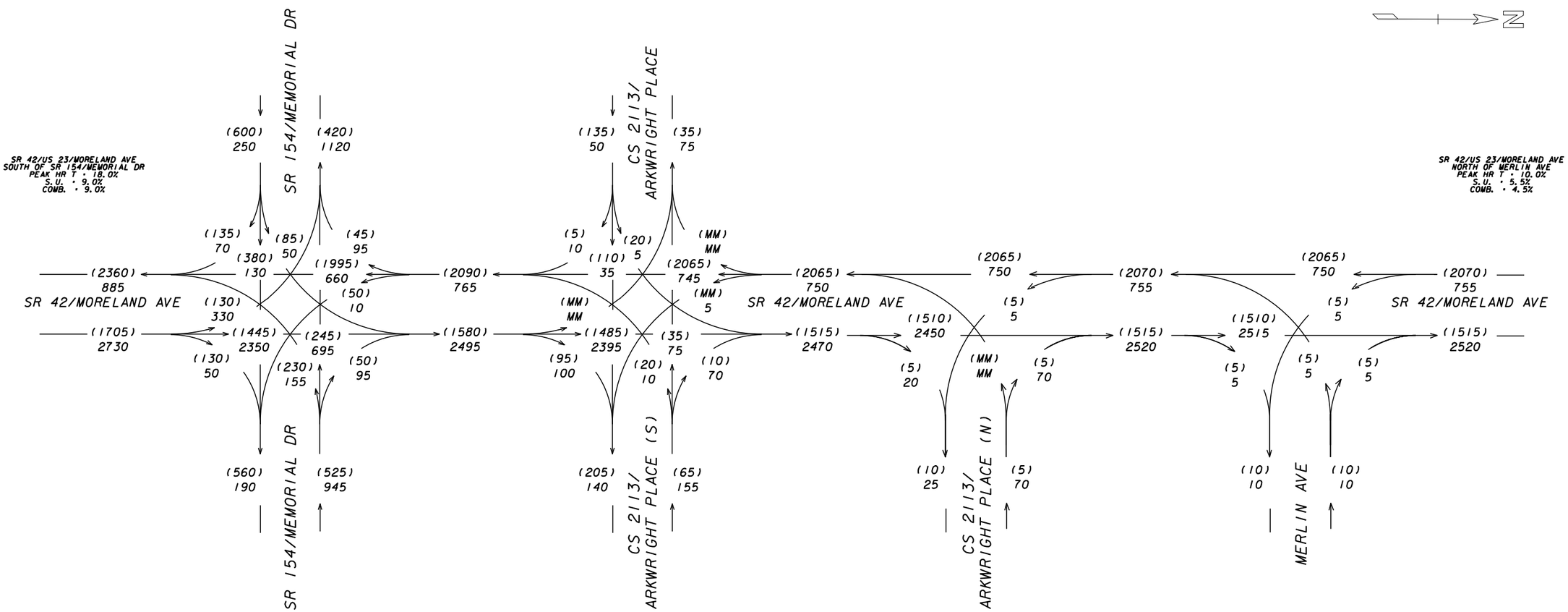
$USER$		$$PENTABLE$$		GA	0012596	1	1

FULTON COUNTY



HF 3/14

PI# 0012596
FULTON COUNTY
SR 42/MORELAND AVE
FM SR 154/MEMORIAL DR
TO MERLIN AVE

2038 PM DHV = (000)
2038 AM DHV = 000
NO BUILD

GRICE CONSULTING GROUP

REVISION DATES		

STATE OF GEORGIA
DEPARTMENT OF TRANSPORTATION
OFFICE: PLANNING

TRAFFIC DIAGRAM

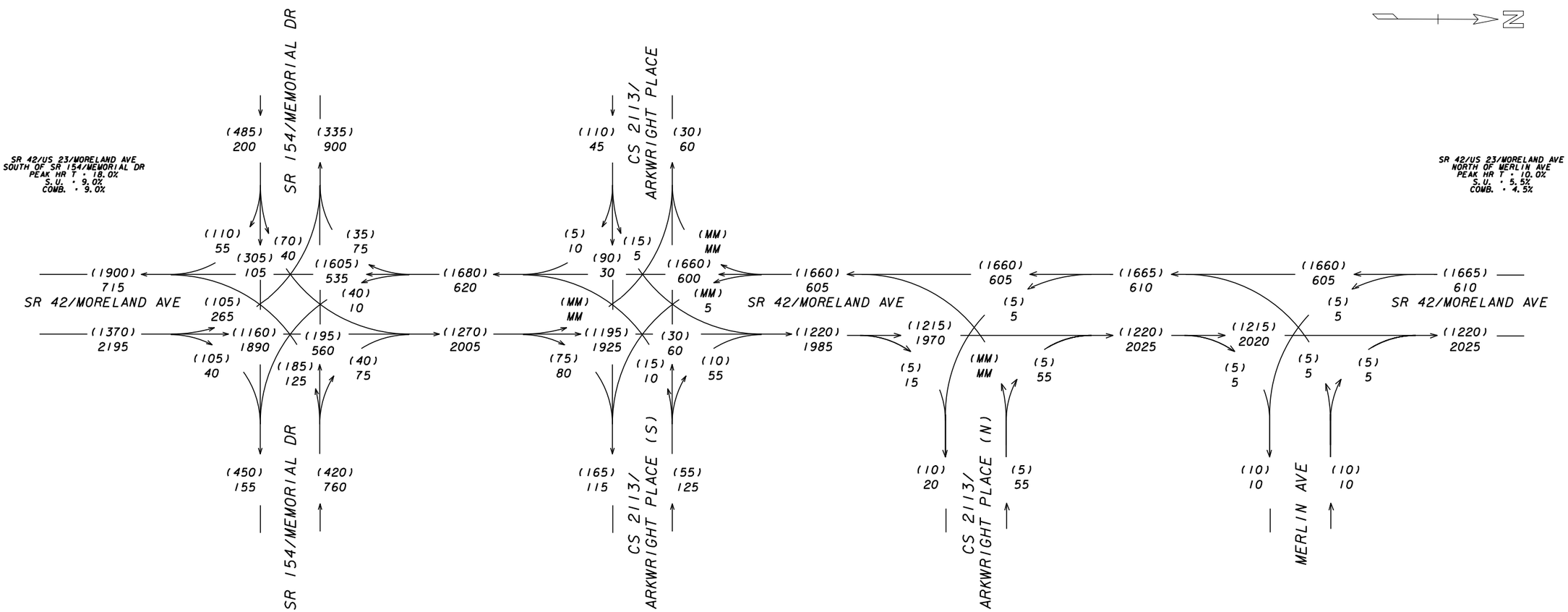
DRAWING No. 10-4

12/14/2012 GPLN

DATE$$$	TIME$$$	$PRF8$	DGN	STATE	PROJECT NUMBER	SHEET NO.	TOTAL SHEETS
$USER$		$$PENTABLE$$		GA	0012596	1	1

FULTON COUNTY

N

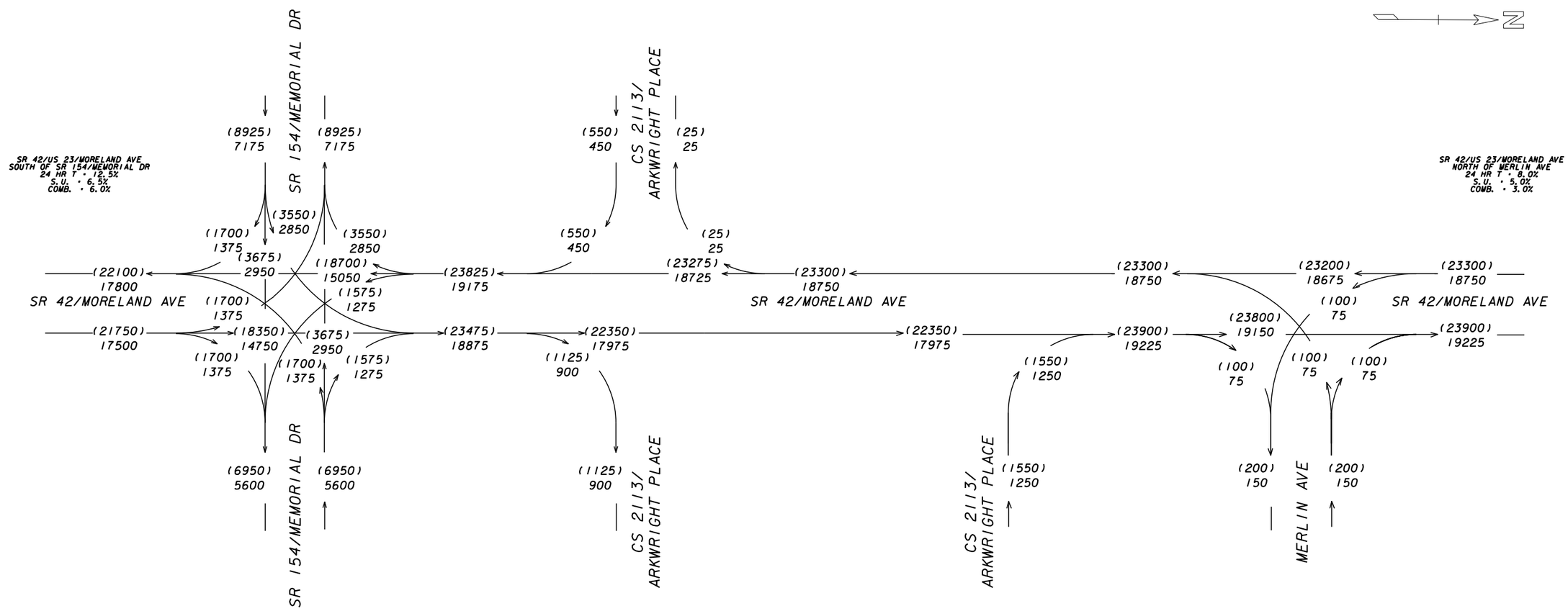


HF 3/14

PI# 0012596 FULTON COUNTY SR 42/MORELAND AVE FM SR 154/MEMORIAL DR TO MERLIN AVE	2018 PM DHV = (000) 2018 AM DHV = 000 NO BUILD	GRICE CONSULTING GROUP		REVISION DATES	STATE OF GEORGIA DEPARTMENT OF TRANSPORTATION OFFICE: PLANNING **TRAFFIC DIAGRAM** DRAWING No. 10-5

12/14/2012 GPLN

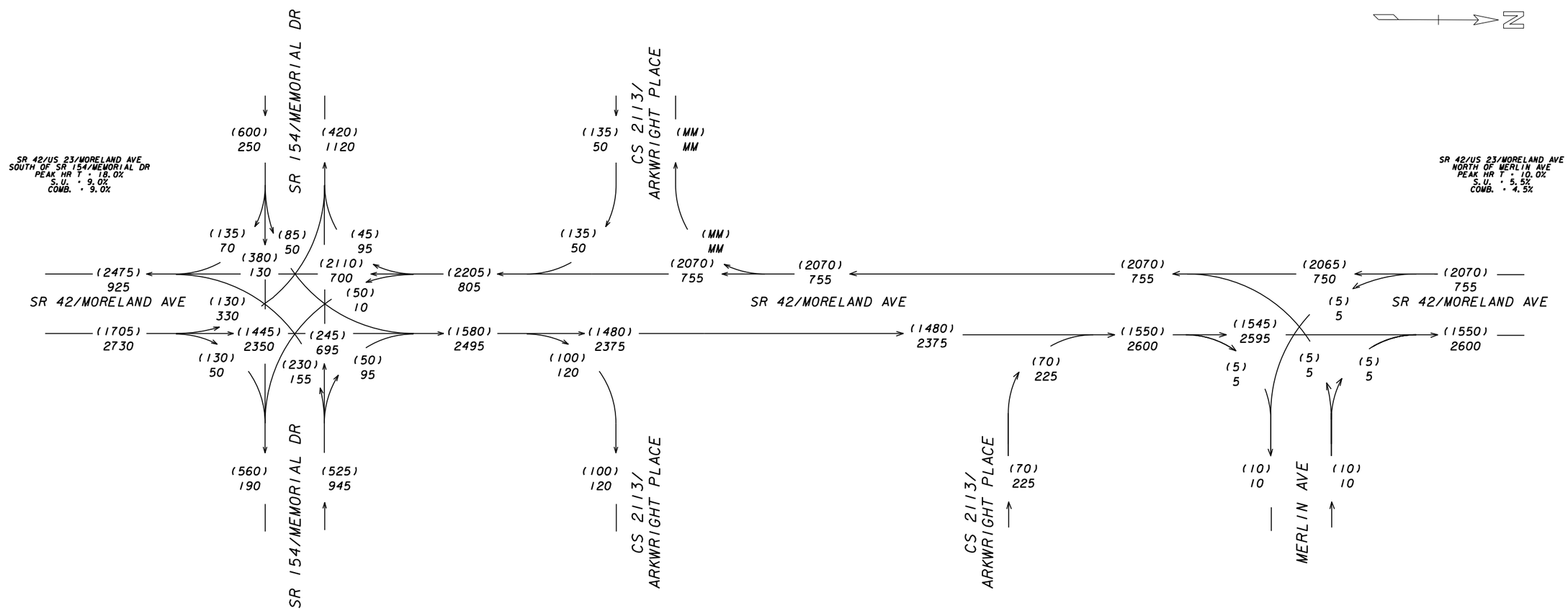
FULTON COUNTY



HF 3/14

PI# 0012596 FULTON COUNTY SR 42/MORELAND AVE FM SR 154/MEMORIAL DR TO MERLIN AVE	2038 ADT= (000) 2018 ADT= 000 BUILD	GRICE CONSULTING GROUP		REVISION DATES	STATE OF GEORGIA DEPARTMENT OF TRANSPORTATION OFFICE: PLANNING **TRAFFIC DIAGRAM** DRAWING No. 10-6

FULTON COUNTY



HF 3/14

PI# 0012596 FULTON COUNTY SR 42/MORELAND AVE FM SR 154/MEMORIAL DR TO MERLIN AVE	2038 PM DHV = (000) 2038 AM DHV = 000 BUILD	GRICE CONSULTING GROUP		REVISION DATES	STATE OF GEORGIA DEPARTMENT OF TRANSPORTATION OFFICE: PLANNING **TRAFFIC DIAGRAM** DRAWING No. 10-7

12/14/2012 GPLN

DATE$$$	TIME$$$	$PRFB$	DGN	STATE	PROJECT NUMBER	SHEET NO.	TOTAL SHEETS
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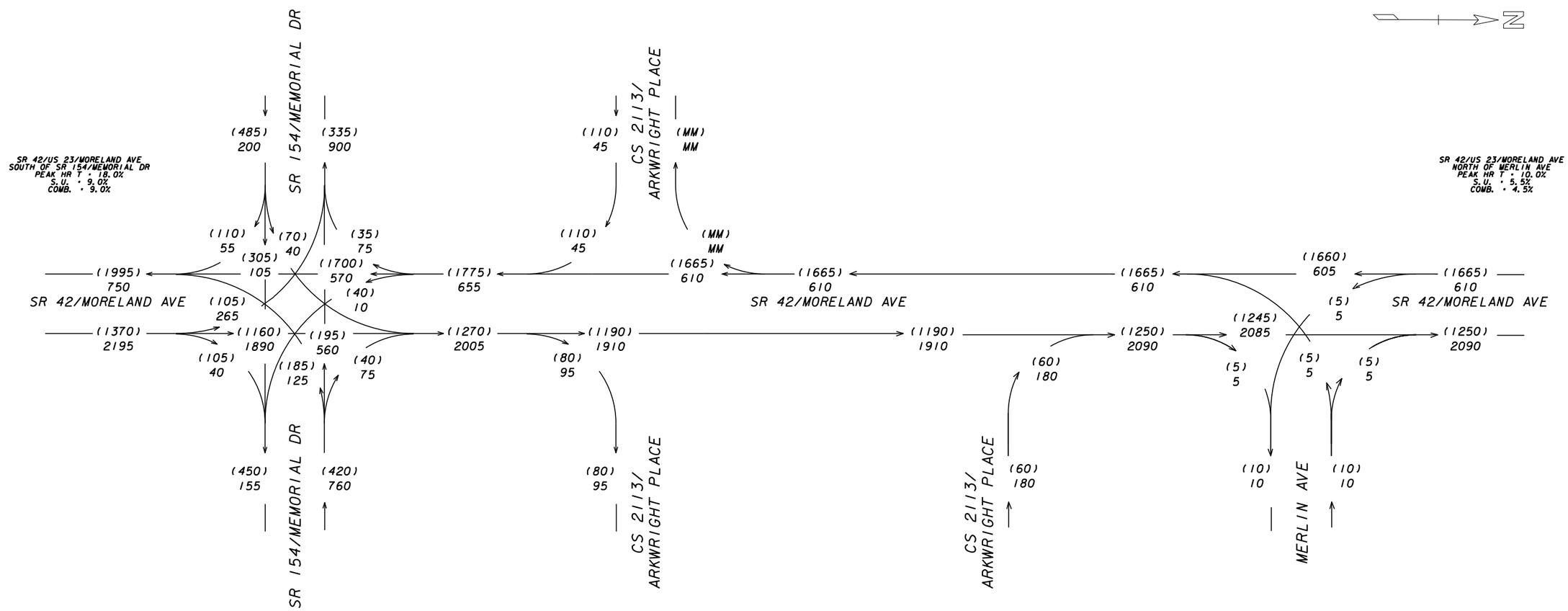
FULTON COUNTY



HF 3/14

PI# 0012596 FULTON COUNTY SR 42/MORELAND AVE FM SR 154/MEMORIAL DR TO MERLIN AVE	2018 PM DHV = (000) 2018 AM DHV = 000 BUILD	GRICE CONSULTING GROUP		REVISION DATES	STATE OF GEORGIA DEPARTMENT OF TRANSPORTATION OFFICE: PLANNING **TRAFFIC DIAGRAM** DRAWING No. 10-8

12/14/2012 GPLN

Department of Transportation
State of Georgia

INTERDEPARTMENT CORRESPONDENCE

FILE Fulton County
P.I. # 0012596

OFFICE Planning

DATE March 27, 2014

FROM Cynthia L. VanDyke, State Transportation Planning Administrator

TO Albert Shelby, Program Delivery Engineer
Attention: Perry Black

SUBJECT **Reviewed Design Traffic** for *SR 42/US 23 @ CS 2113/Arkwright Place*

As per your request, we reviewed the consultant's **Design Traffic** for the above project. :

The **Design Traffic** is approved based on the information furnished. Any questions concerning this review should be addressed to Abby Ebodaghe (404) 631-1923.

CLV/afe

Traffic Engineering Study – DRAFT (2)

SR 42 (Moreland Avenue) at Arkwright Place

City of Atlanta, Georgia

Report Prepared:

May 2015

Revised August 2015

Prepared for:

Georgia Department of Transportation

Prepared by:

Kimley-Horn and Associates, Inc.
2 Sun Court, Suite 450
Peachtree Corners, GA 30092
015905017

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Appendix B: Study Area Photographs
Appendix C: Traffic Flow Diagrams (GDOT-Approved)

AVAILABLE UPON REQUEST

Appendix D: Turning Movement Count Data
Appendix E: ADT Tube Count Data
Appendix F: *Synchro* Analysis Reports

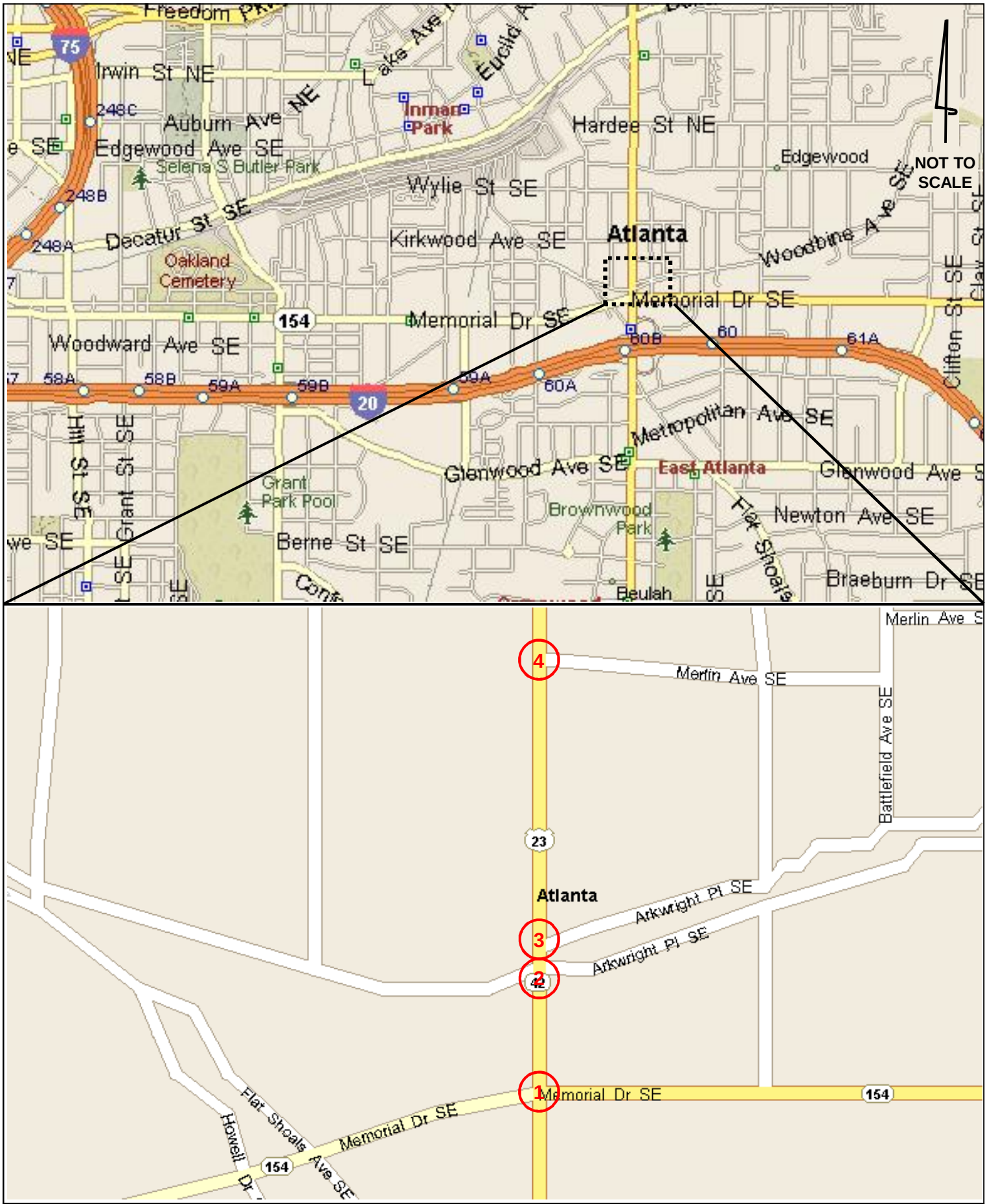
1.0 INTRODUCTION

The segment of SR 42 (Moreland Avenue) between SR 154 (Memorial Drive) and Merlin Avenue in the City of Atlanta, Georgia, has been identified for an operational analysis by the Georgia Department of Transportation (GDOT). This traffic engineering study was completed in an effort to determine what geometric and operational improvements could be made to improve operations and safety with special emphasis placed on the intersection of SR 42 (Moreland Avenue) at Arkwright Place. Furthermore, the operations of the corridor were assessed for future traffic conditions, and recommendations were made to improve traffic flow.

The entire SR 42 corridor is approximately 115.3 miles in total length, connecting Byron, Georgia (Peach County) with Atlanta, Georgia (DeKalb County). SR 42 (Moreland Avenue) intersects SR 154 (Memorial Drive) at the 108.5-mile mark, on the DeKalb-Fulton County line just north of I-20. SR 42 travels through Peach, Crawford, Monroe, Butts, Henry, Clayton, DeKalb, and Fulton Counties.

The project limits along SR 42 are from the intersection with SR 154 (Memorial Drive) to the intersection with Merlin Avenue and covers approximately 630 feet. The proposed improvements are planned to be constructed and open to traffic by year 2018 (Base Year) with a 20-year design horizon of 2038 (Design Year).

This report summarizes the data collection, accident data, analysis of traffic conditions, and conclusions from the analysis of Existing Year 2014 Conditions, No-Build Base Year 2018 Conditions, No-Build Design Year 2038 Conditions, Build Base Year 2018 Conditions, and Build Design Year 2038 Conditions. A project location map showing the study area and intersections is depicted on **Figure 1**. Aerials of the study area are displayed on **Figure 2**. A concept layout illustrating the proposed roadway geometry is included in **Appendix A**. Photographs within the study area are provided in **Appendix B**.



Kimley»Horn	SR 42 at Arkwright Place Traffic Engineering Study	Location of Study Area & Intersections	Figure 1

Kimley»Horn	SR 42 at Arkwright Place Traffic Engineering Study	Study Area Aerial	Figure 2

2.0 EXISTING CONDITIONS

2.1 STUDY AREA

The study area of SR 42 was identified to include the four (4) intersections listed below in **Table 1**.

Table 1
Study Intersections

Intersection ID	Intersection Name	Existing Control
1	SR 42 (Moreland Avenue) at SR 154 (Memorial Drive)	Signalized
2	SR 42 (Moreland Avenue) at Arkwright Place (South)	Signalized
3	SR 42 (Moreland Avenue) at Arkwright Place (North)	Unsignalized
4	SR 42 (Moreland Avenue) at Merlin Avenue	Unsignalized

2.2 ROADWAY CONDITIONS & TRAFFIC CONTROL

Currently, SR 42 (Moreland Avenue) is classified as a five-lane (two northbound and two southbound through travel lanes with a center two-way left-turn lane) urban principal arterial with a posted speed limit of 35 MPH within the study area. For the purposes of this traffic engineering study, the SR 42 corridor will be considered a north-south oriented roadway. SR 154 (Memorial Drive) is a three-lane (one eastbound and one westbound through travel lane with a center reversible travel lane) urban minor arterial with a posted speed limit of 35 MPH. Arkwright Place is a two-lane local street west of SR 42. East of SR 42, Arkwright Place has two separate two-lane alignments. The southern alignment is signalized and the northern alignment is unsignalized. Arkwright Place has a posted speed limit of 30 MPH. Merlin Avenue is a two-lane local road with no posted speed limit. For the purposes of this traffic engineering study, SR 154 (Memorial Drive), Arkwright Place, and Merlin Avenue will be considered east-west oriented roadways.

The southern alignment of Arkwright Place is restricted to through and right-turning movements for the westbound approach at the intersection of SR 42. The northern alignment of Arkwright Place is restricted to right-turning movements for the westbound approach at the intersection of SR 42.

Table 2 gives a summary of the geometry and control type by approach for each study intersection. The existing laneage along the SR 42 corridor, as well as the existing year 2014 traffic volumes (approved by GDOT), are illustrated on **Figure 13**.

Table 2 Study Intersections: Geometry and Signalization				
ID	**Intersection Name**	**Mainline Exclusive Turn Lanes**	**Side Street Approach Geometry**	**Intersection Control Type & Phasing**
1	SR 42 (Moreland Avenue) at SR 154 (Memorial Drive)	NB: left-turn lane SB: left-turn lane	EB: shared through/left-turn lane and shared through/right-turn lane WB: shared through/left-turn lane and shared through/right-turn lane	Signalized NBL: Protected/Permissive SBL: Protected/Permissive WBL: Protected/Permissive EBL: Permissive
2	SR 42 (Moreland Avenue) at Arkwright Place (south)	SB: left-turn lane	EB: shared left-turn/through/right-turn lane WB: shared through/right-turn lane	Signalized NBL: Permissive SBL: Permissive WBL: Permissive EBL: Permissive
3	SR 42 (Moreland Avenue) at Arkwright Place (north)	SB: left-turn lane	WB: exclusive right-turn lane	Unsignalized WB Stop
4	SR 42 (Moreland Avenue) at Merlin Avenue	SB: left-turn lane	WB: shared left-turn/right-turn lane	Unsignalized WB Stop

2.3 VEHICULAR SPEEDS

The posted speed limit on SR 42 is 35 MPH within the study area. The posted speed limit on SR 154 Street is 35 MPH. The posted speed limit on Arkwright Place is 30 MPH. Merlin Avenue has no posted speed limit, but relatively low speeds were assumed for the purposes of this traffic engineering study.

2.4 PEDESTRIAN MOVEMENTS

Pedestrian volume counts were not performed within the study area.

Sidewalks are present along the east and west sides of SR 42 between SR 154 and Merlin Avenue, the entire length of the study area.

Signalized crosswalks are present at the signalized intersection of SR 42 at SR 154, crossing all four legs of the intersection. Signalized crosswalks are present at the signalized intersection of SR 42 at Arkwright Place (south), crossing the west, north, and east legs of the intersection. No other crosswalks are present within the study area.

2.5 DELAY STUDY

A delay study was not performed as a part of this traffic engineering study.

2.6 PARKING

No on-street parking is provided along SR 42 within the study area. No parking is provided or expected at any of the four study intersections.

2.7 ADJACENT SIGNALIZED INTERSECTIONS

The nearest signalized intersection to the south of the study area is SR 42 at I-20 Westbound Ramp, and is located approximately 360 feet south of the signalized intersection of SR 42 at SR 154. The nearest signalized intersection to the north of the study area is SR 42 at Wylie Street, and is located approximately 1,100 feet north of the signalized intersection of SR 42 at Merlin Avenue.

2.8 ACCIDENT HISTORY

Accident data for the SR 42 study corridor was obtained from the Georgia Department of Transportation for years 2012-2014. Note that while all crashes included in these totals occurred on SR 42, some crashes included in these totals may not have occurred within the study area due to incomplete location data logged. **Table 3** summarizes the number of accidents, injuries, fatalities, and number by type of accident.

Table 3
Three-Year Accident History
2012 – 2014

Year	Total Crashes	Injuries	Fatalities	Angle	Head-On	Rear-End	Sideswipe Same Direction	Sideswipe Opposite Direction	Other
2012	28	4	0	8	1	12	3	1	2
2013	34	10	0	8	0	19	3	2	2
2014	31	6	0	9	0	13	8	1	0

During the three-year period, the majority of crashes reported within the study area were of either angle, rear-end, or sideswipe crash type.

3.0 EXISTING TRAFFIC

Vehicle turning movement counts were collected on Tuesday, February 4, 2014 by Traffic Data Services and provided by Grice Consulting Group. The weekday counts were performed during the AM peak period (7:00-9:00) and the PM peak period (4:00-6:00) at two of the study intersections: SR 42 (Moreland Avenue) at SR 154 (Memorial Drive) and SR 42 (Moreland Avenue) at Arkwright Place. The raw turning movement counts is available upon request in **Appendix D**.

Ten 24-hour weekday tube counts were collected during February 2014 by Traffic Data Services and provided by Grice Consulting Group. The tube counts were performed to gather the Average Daily Traffic (ADT) along SR 42 (Moreland Avenue), SR 154 (Memorial Drive), Arkwright Place, and Merlin Avenue. Two of the tube counts were automatic classification tube counts for heavy vehicle percentage data. The raw tube count data is available upon request in **Appendix E**.

It should be noted that Grice Consulting Group created Traffic Flow Diagrams in February 2014 which documents balanced Design Hour Volumes (DHV) and balanced Average Daily Traffic (ADT) volumes for the Existing Year 2014, Base Year 2018, and Design Year 2038 scenarios. These Traffic Flow Diagrams also document peak hour truck percentages and 24-hour truck percentages along SR 42 south of SR 154 and along SR 42 north of Merlin Avenue. These Traffic Flow Diagrams have been approved by GDOT, thus, the diagrams' traffic volumes and truck percentages were used for all analysis scenarios in this traffic engineering study. The GDOT-approved Traffic Flow Diagrams are included in **Appendix C**.

Table 4 summarizes the balanced 2014 ADT volumes at a select few locations within the study area. These ADT volumes are from the Traffic Flow Diagrams, which have been approved by GDOT.

Table 4 Year 2014 Average Daily Traffic (ADT) Source: Approved Traffic Flow Diagrams		
ADT Location	**Volume Direction**	**ADT (2014)**
SR 42 south of SR 154	Two-Way Total	33,200
SR 42 between SR 154 and Arkwright Place (S)	Two-Way Total	35,800
SR 42 between Arkwright Place (S) and Arkwright Place (N)	Two-Way Total	35,400
SR 42 between Arkwright Place (N) and Merlin Avenue	Two-Way Total	35,600
SR 42 north of Merlin Avenue	Two-Way Total	35,600
SR 154 west of SR 42	Two-Way Total	13,600
SR 154 east of SR 42	Two-Way Total	10,600
Arkwright Place west of SR 42	Two-Way Total	850
Arkwright Place (S) east of SR 42	Two-Way Total	2000
Arkwright Place (N) east of SR 42	Two-Way Total	400
Merlin Avenue east of SR 42	Two-Way Total	300

Graphs depicting the directional and 2-way total volumes by hour from 10 select tube counts within the study area are illustrated as **Figure 3**, **Figure 4**, **Figure 5**, **Figure 6**, **Figure 7**, **Figure 8**, **Figure 9, Figure 10, Figure 11,** and **Figure 12.**

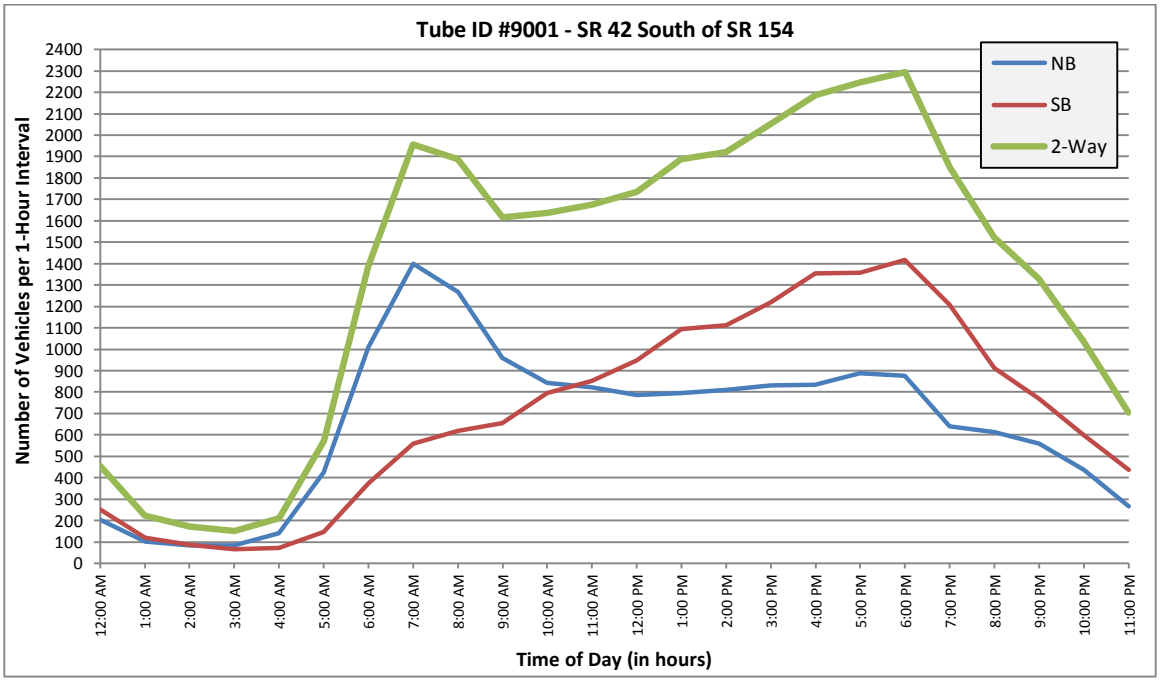


Figure 3: VPH Graph along SR 42 South of SR 154

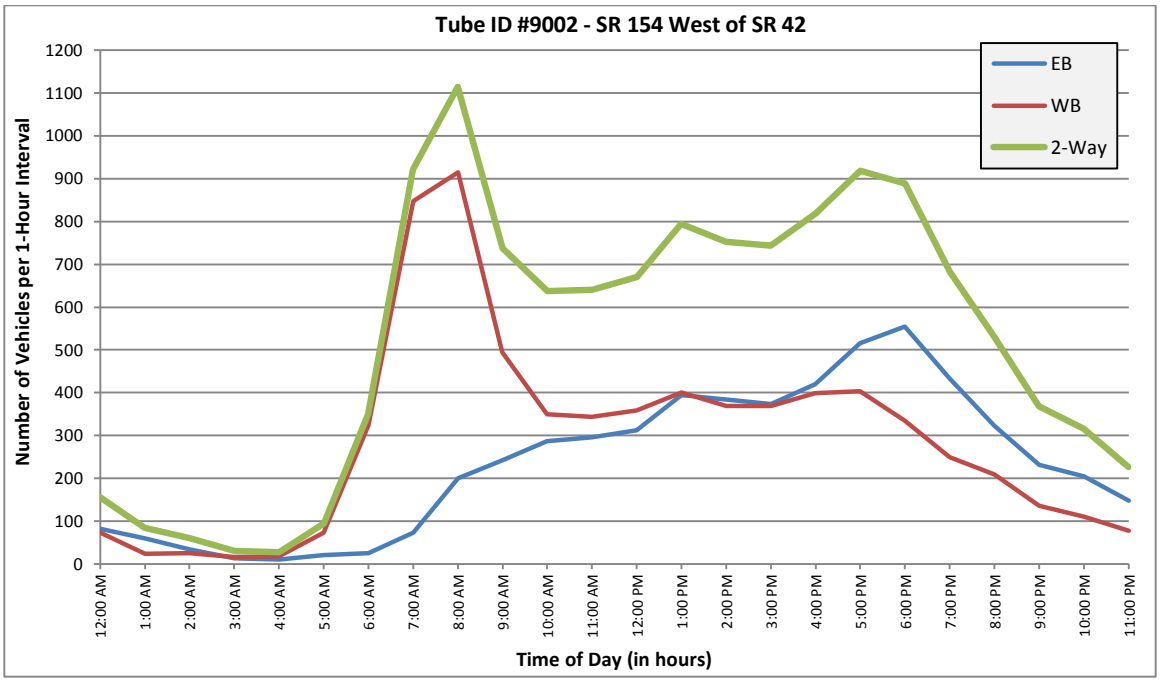


Figure 4: VPH Graph along SR 154 West of SR 42

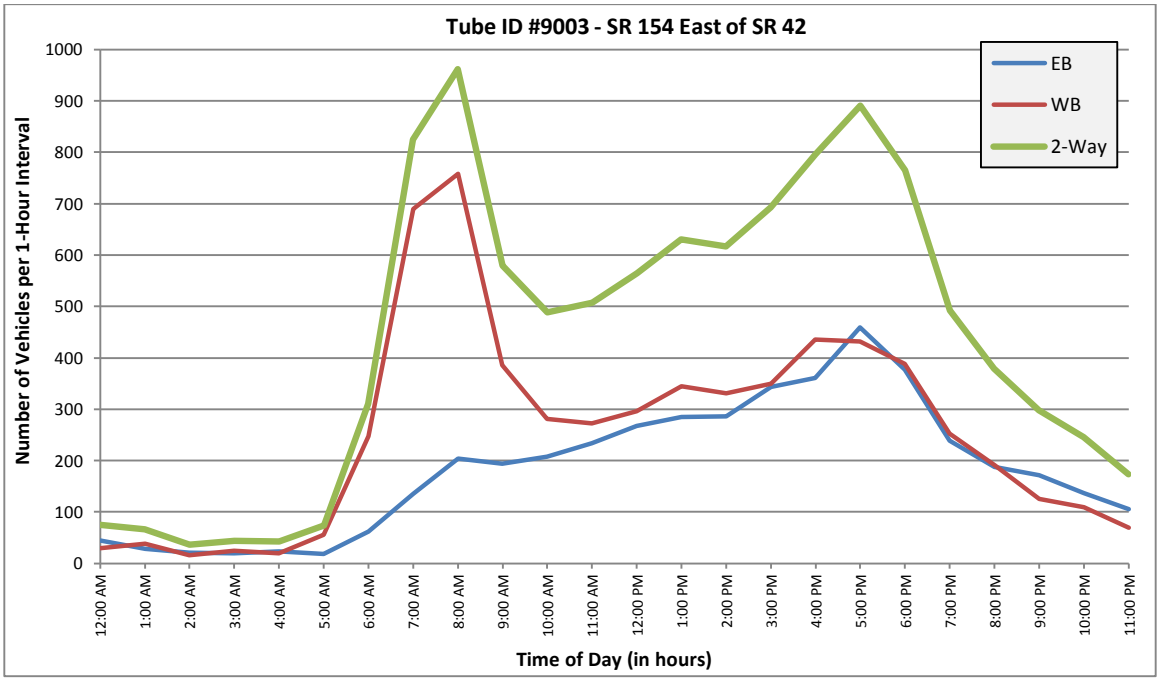


Figure 5: VPH Graph along SR 154 East of SR 42

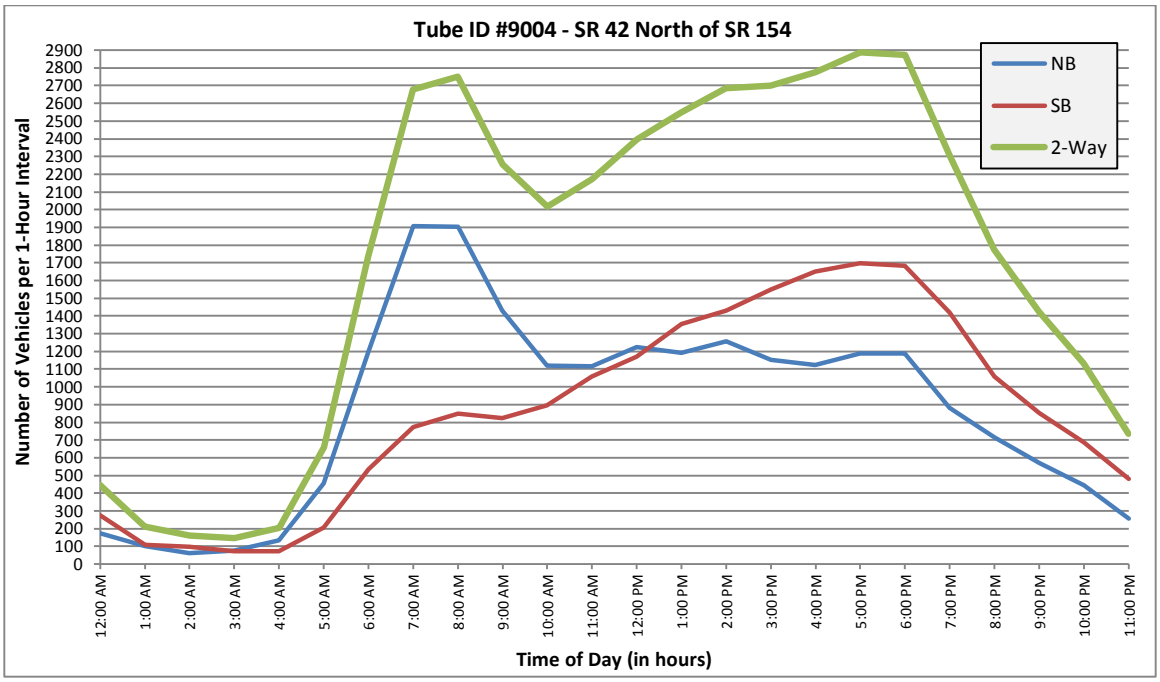


Figure 6: VPH Graph along SR 42 North of SR 154

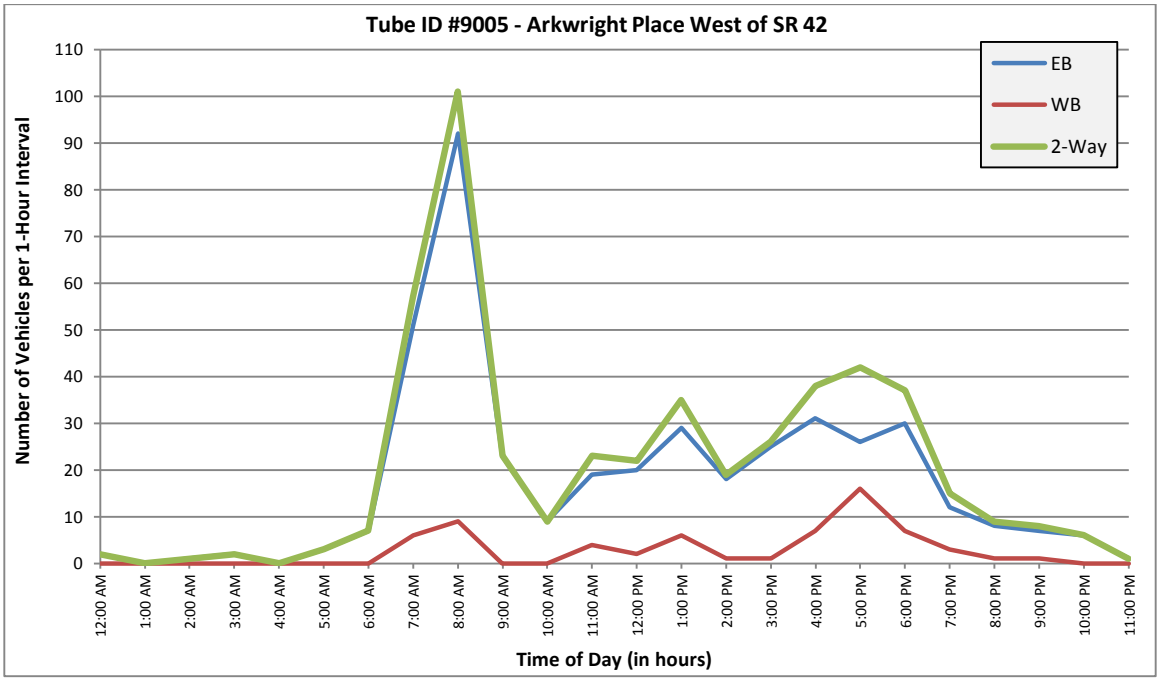


Figure 7: VPH Graph along Arkwright Place West of SR 42

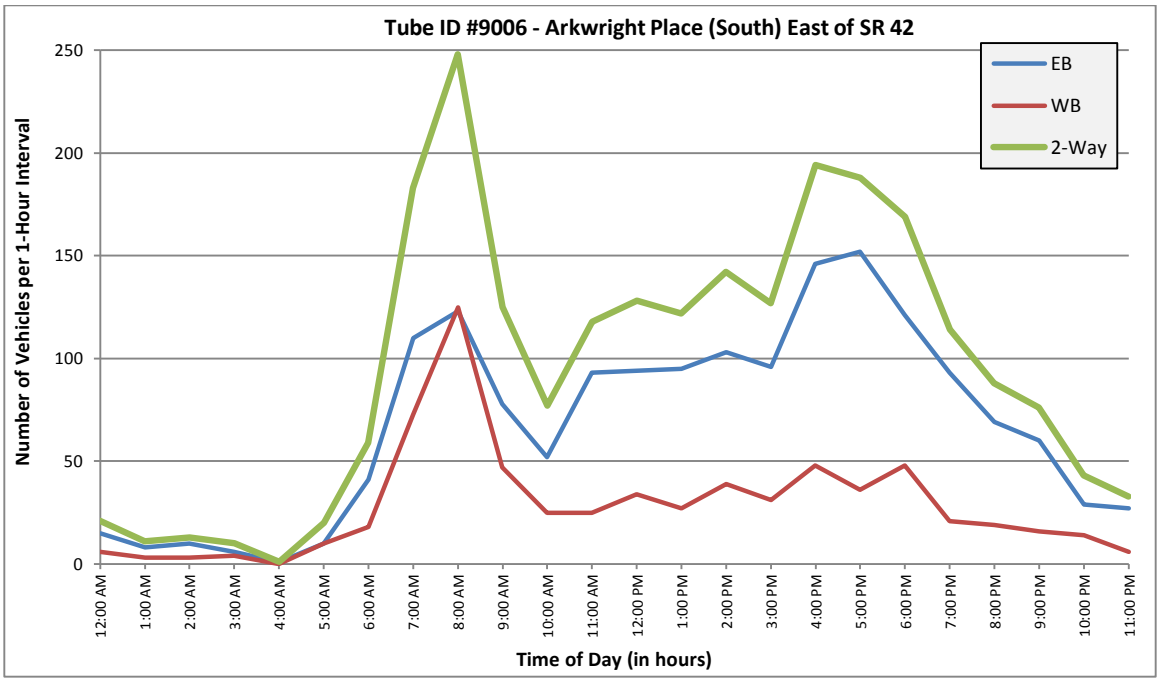


Figure 8: VPH Graph along Arkwright Place (South) East of SR 42

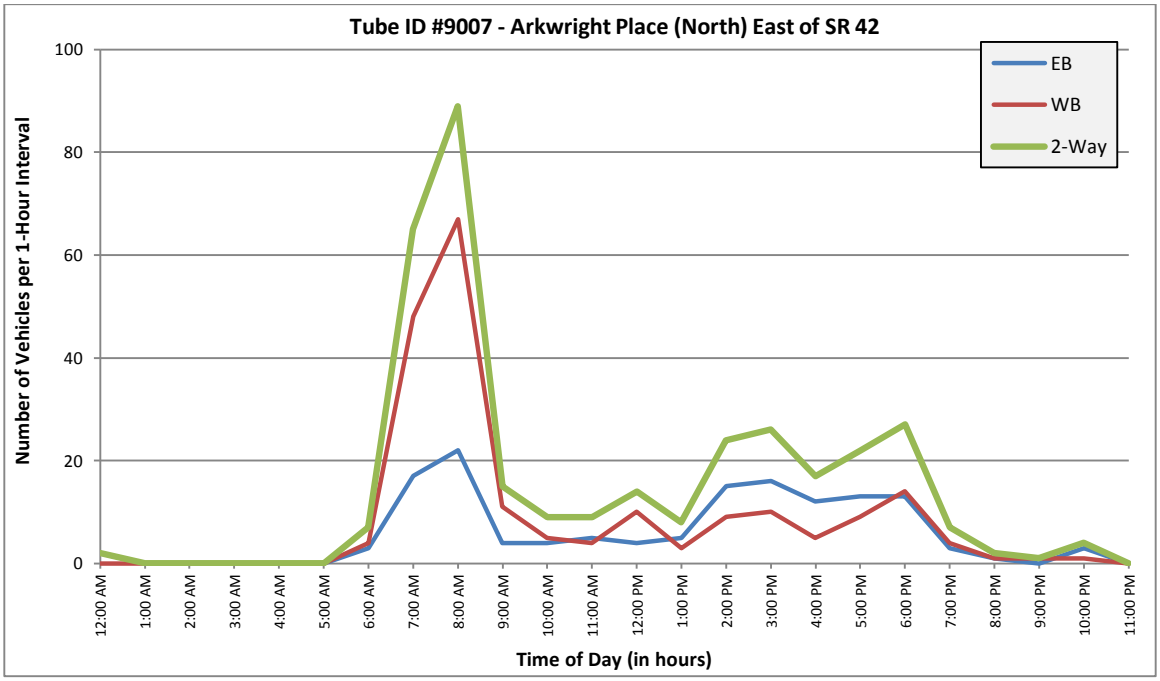


Figure 9: VPH Graph along Arkwright Place (North) East of SR 42

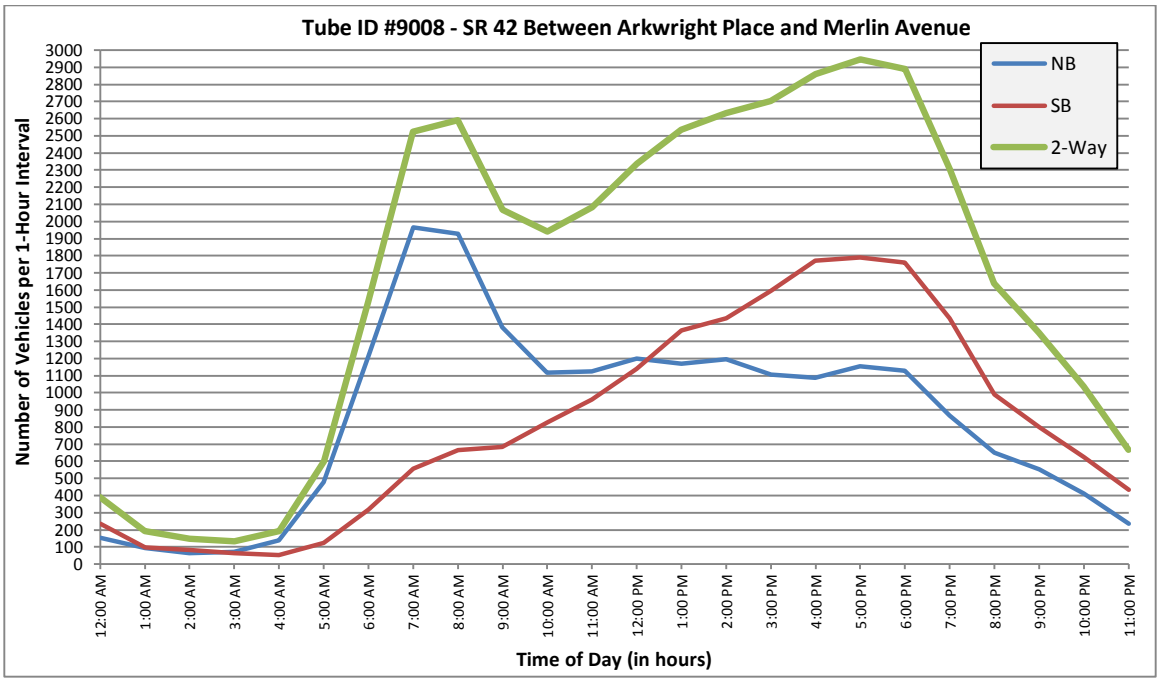


Figure 10: VPH Graph along SR 42 between Arkwright Place and Merlin Avenue

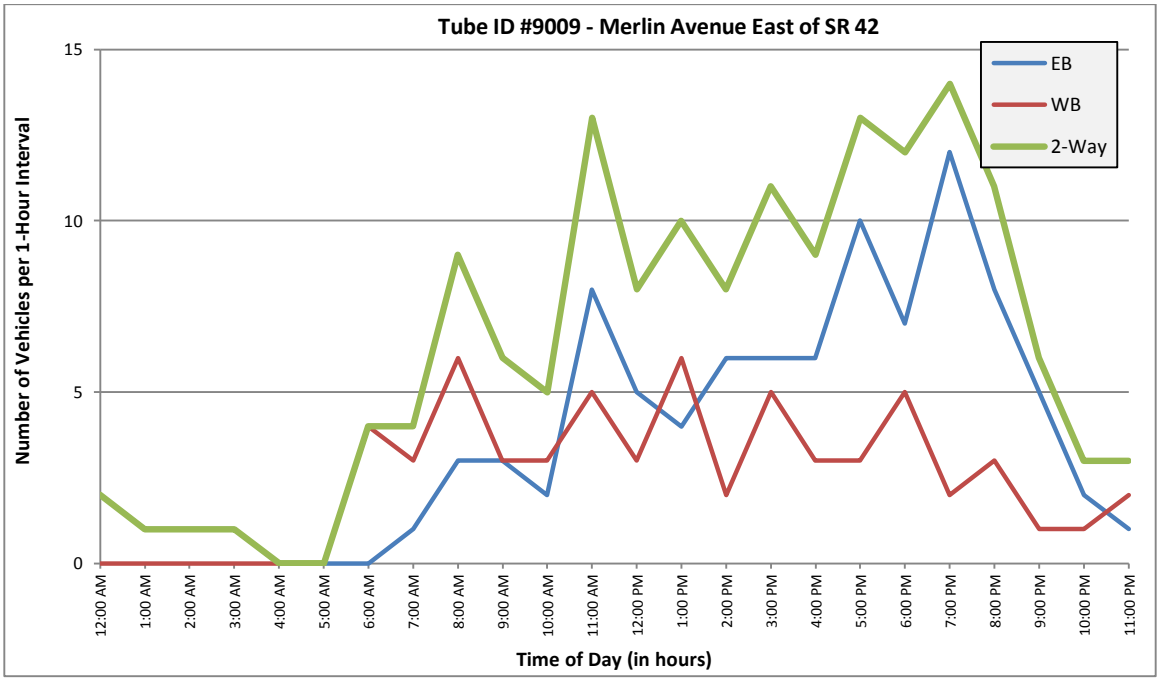


Figure 11: VPH Graph along Merlin Avenue East of SR 42

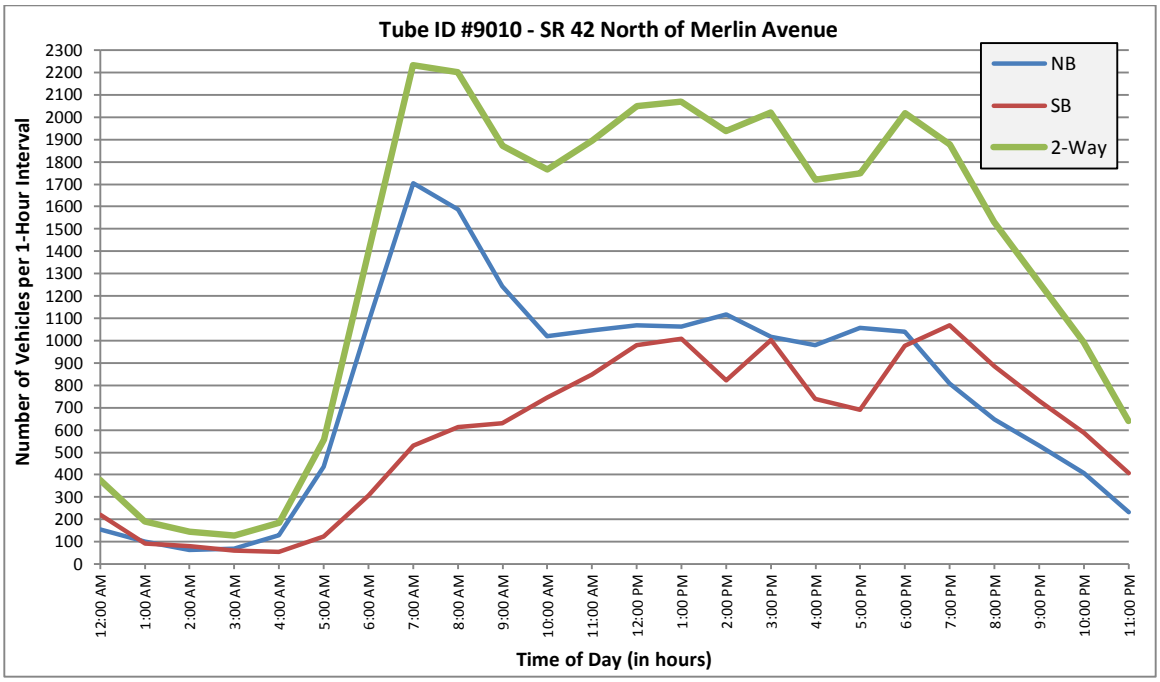


Figure 12: VPH Graph along SR 42 North of Merlin Avenue

Table 5 summarizes the peak hour and 24-hour truck percentages within the study area. These truck percentages are from the Traffic Flow Diagrams (see Appendix C), which have been approved by GDOT.

Table 5
Truck Percentages
Source: Approved Traffic Flow Diagrams

Roadway	Time Period	Single-Unit (SU)	Multi-Unit (MU)	Total Trucks
SR 42 south of SR 154	Peak Hour	9%	9%	18%
	24-Hour	6.5%	6%	12.5%
SR 42 north of Merlin Avenue	Peak Hour	5.5%	4.5%	10%
	24-Hour	5%	3%	8%

Table 6 summarizes historical Annual Average Daily Traffic (AADT) volumes as published by GDOT in their Traffic Counts in Georgia System at four GDOT count station locations.

Table 6
GDOT Historical Annual Average Daily Traffic (AADT)
Source: GDOT's Traffic Counts in Georgia System

Year	SR 42 south of SR 154 (#1215231)	SR 154 east of SR 42 (#0893183)	SR 42 north of Arkwright Place (#1215233)	SR 154 west of SR 42 (#1210399)
2009	n/a	18,910	n/a	n/a
2010	30,480	19,300	34,690	10,580
2011	30,450	17,600	34,640	10,570
2012	34,570	17,500	34,450	14,060
2013	34,730	20,550	42,980	14,130
2014	46,783	20,550	42,980	11,331

4.0 FUTURE VOLUME DEVELOPMENT

Intersection traffic growth projections were determined by Grice Consulting Group and incorporated into their future traffic volume development. Their chosen background traffic growth rate(s) were used to develop DHVs and ADT volumes for the Base Year 2018 and Design Year 2038 scenarios, which are included in **Appendix C**.

An approximate growth rate of 1.30% per year for 4 years was applied to the Existing Year 2014 traffic volumes to determine the Base Year 2018 traffic volumes, and an approximate growth rate of 1.10% per year for 20 years was applied to the Base Year 2018 traffic volumes to determine the Design Year 2038 traffic volumes.

The following five build alternates were analyzed. All alternates include a right-in/right-out for the eastbound approach of Arkwright Place.

Preferred Alternate – Right-in/right-out on Arkwright Place (South); Arkwright Place (North) is closed west of Mortimer Street. The daycare will have full-movement access along Arkwright Place (South) located approximately 120 feet east of SR 42 (Moreland Avenue).

Alternate 1 – Right-in/right-out on Arkwright Place (South) and Right-out only on Arkwright Place (North)

Alternate 2 – Right-in only on Arkwright Place (South) and Right-out only on Arkwright Place (North)

Alternate 3 – Right-in/right-out on Arkwright Place (South); Arkwright Place (North) is closed west of the daycare driveway

Alternate 4 - Right-in/right-out on Arkwright Place (South); Arkwright Place (North) is closed west of the daycare driveway; Create a new right-in/right-out driveway for the daycare on SR 42 approximately 50 feet north of the existing Arkwright Place (North) and 100 feet north of Arkwright Place (South).

The traffic flow diagrams provided by Grice Consulting Group align with Alternate 2 for the Base Year 2018 and Design Year 2038 Build conditions. Modifications were made to the volumes on the traffic flow diagrams to accurately represent the Preferred Alternate and Alternates 1, 3, and 4. These modifications were made based on field observations and engineering judgement.

5.0 CAPACITY ANALYSIS

5.1 INTRODUCTION

Capacity is defined as the maximum number of vehicles that can pass over a particular road segment or through a particular intersection within a specified period under prevailing roadway, traffic, and control conditions. Level-of-service (LOS) is used to describe the operating characteristics of a road segment or intersection in relation to its capacity. LOS is defined as a qualitative measure that describes operational conditions and motorists' perceptions within a traffic stream. The *Highway Capacity Manual* (HCM) defines six levels-of-service, LOS A through LOS F, with A being the best and F the worst. Intersection analyses were performed using *Synchro Professional, Version 8.0* (signalization optimization and analysis program).

LOS at intersections can be defined as a function of the average overall wait time for a vehicle to pass through the intersection. This way, LOS can be quantitatively measured at any intersection. Shown below are the LOS criteria as defined by the HCM.

Signalized Intersections		Unsignalized Intersections	
A	≤10 sec	A	≤10 sec
B	10-20 sec	B	10-15 sec
C	20-35 sec	C	15-25 sec
D	35-55 sec	D	25-35 sec
E	55-80 sec	E	35-50 sec
F	≥80 sec	F	≥50 sec

LOS for signalized intersections is reported for individual movements as well as for the intersection as a whole. One or more movements at an intersection may experience a low LOS, while the intersection as a whole may operate acceptably. An overall signalized intersection LOS of D or better is generally the desirable threshold for operating conditions.

LOS for unsignalized intersections, with stop control on the minor street only, is reported for the side street approaches. Low and failing levels-of-service for side street approaches are not uncommon, as vehicles may experience significant delay in turning onto a major roadway. An unsignalized side street approach LOS of E or better is generally the accepted minimum threshold for operating conditions.

AM peak hour and PM peak hour Level-of-Service analyses (described and reported in *Section 5.2 – Intersection Level-of-Service Analysis*) were performed for Existing Year 2014 Conditions, No-Build Base Year 2018 Conditions, No-Build Design Year 2038 Conditions, Build Base Year 2018 Conditions, and Build Design Year 2038 Conditions.

5.2 INTERSECTION LEVEL-OF-SERVICE ANALYSIS

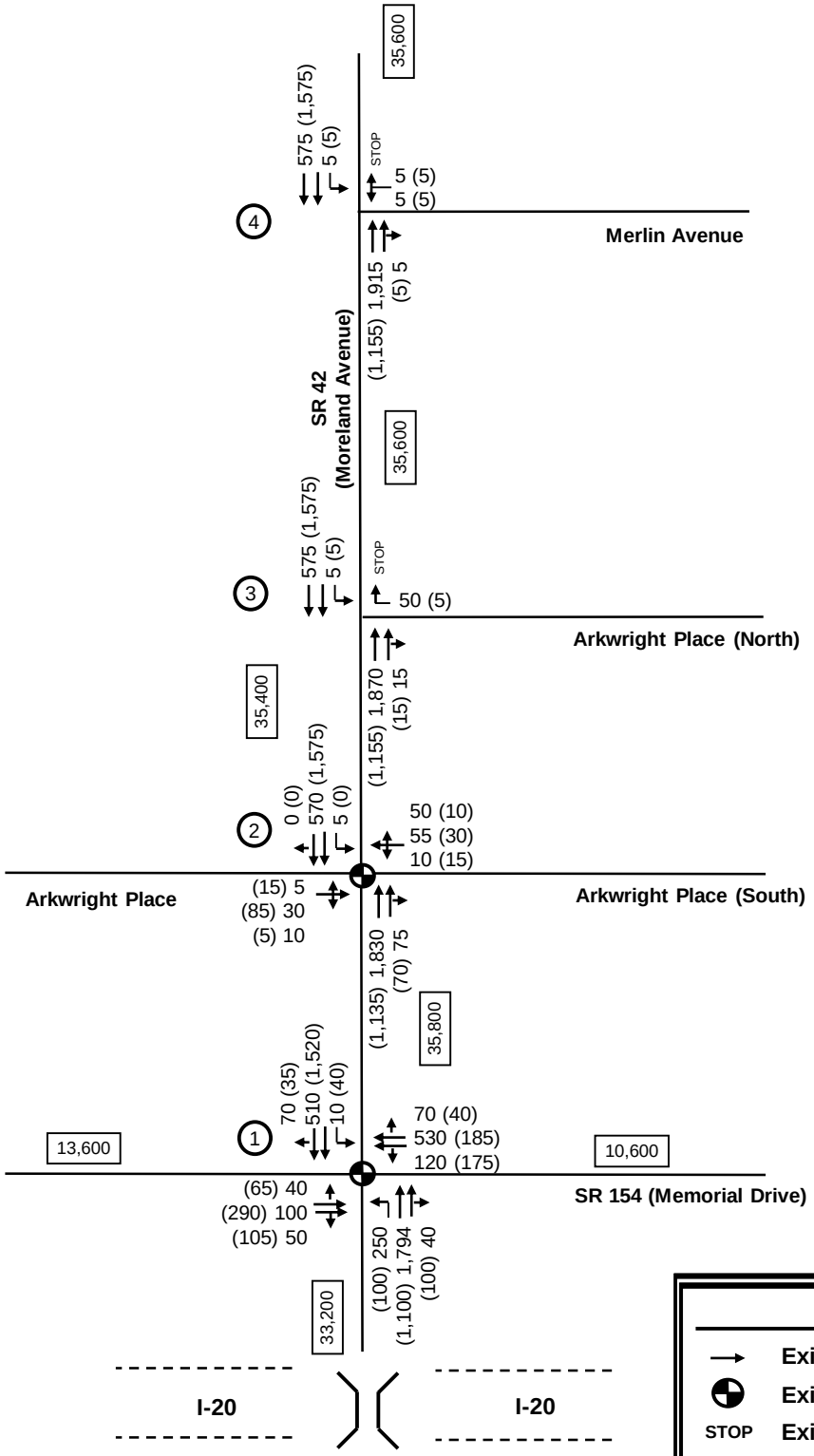
Intersection Level-of-Service (LOS) analyses were performed for the study intersections for Existing Year 2014 Conditions, No-Build Base Year 2018 Conditions, No-Build Design Year 2038 Conditions, Build Base Year 2018 Conditions, and Build Design Year 2038 Conditions.

Analysis for Existing Year 2014 Conditions assumed the existing roadway geometry (intersection laneage) and Existing Year 2014 traffic volumes used for this analysis, as shown on **Figure 13**.

The traffic volumes and roadway geometry for the No-Build Base Year 2018 Conditions and No-Build Design Year 2018 Conditions are shown on **Figure 14** and **Figure 15**, respectively. **Figure 16** through **Figure 25** represent the traffic volumes and roadway geometry for the Build Base Year 2018 Conditions and Build Design Year 2038 Conditions for the five alternatives mentioned previously.

The proposed roadway geometry (intersection laneage) is described in *Section 8.1 – Recommendations*, and is illustrated on the concept layout in **Appendix A**.

Table 7 summarizes the level-of-service and average delay per vehicle (in seconds) for each of the study intersections for each of the aforementioned scenarios during the AM peak hour and PM peak hour. The *Synchro* level-of-service analysis results are available upon request in **Appendix F**.

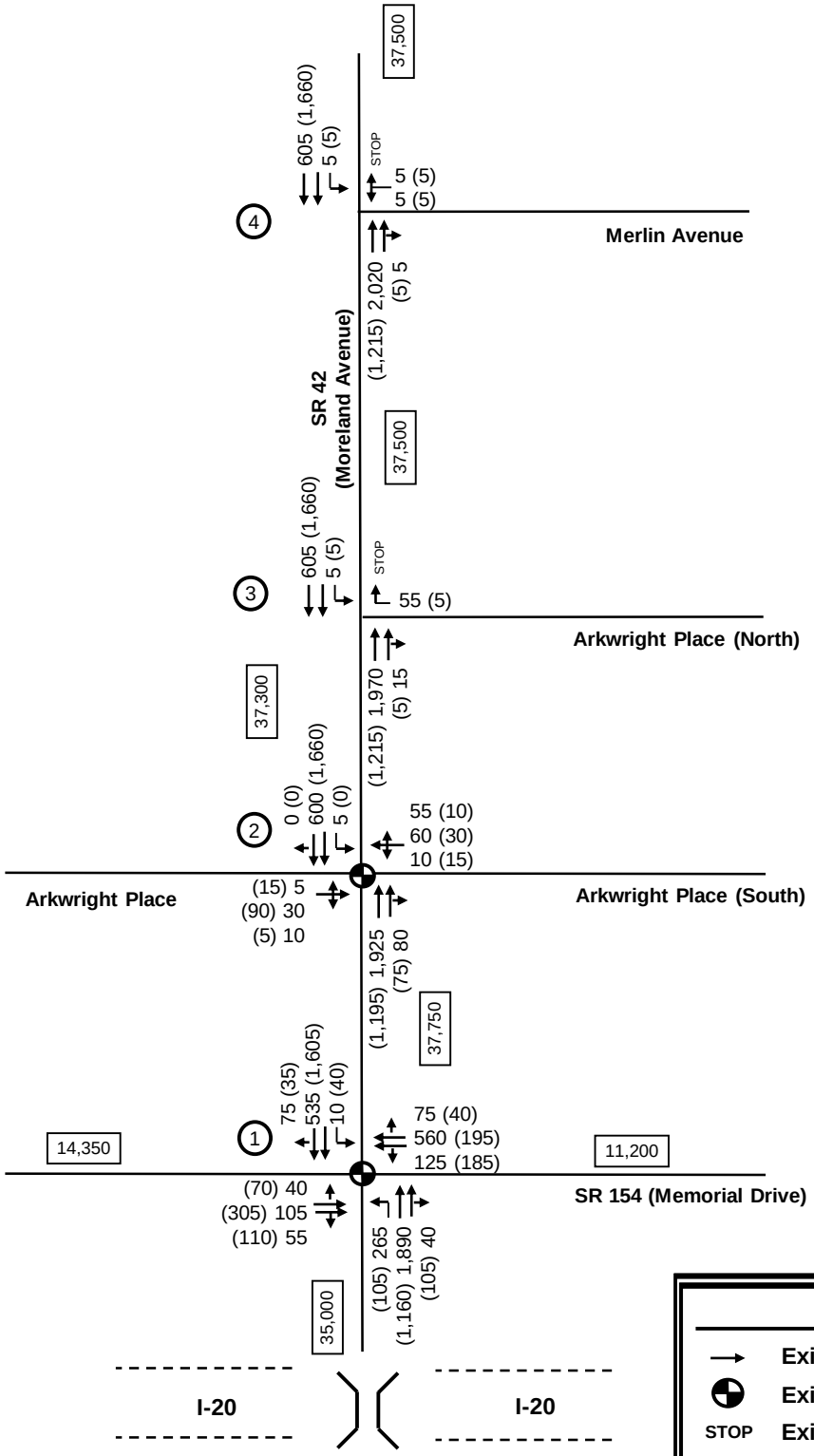


NOT TO SCALE

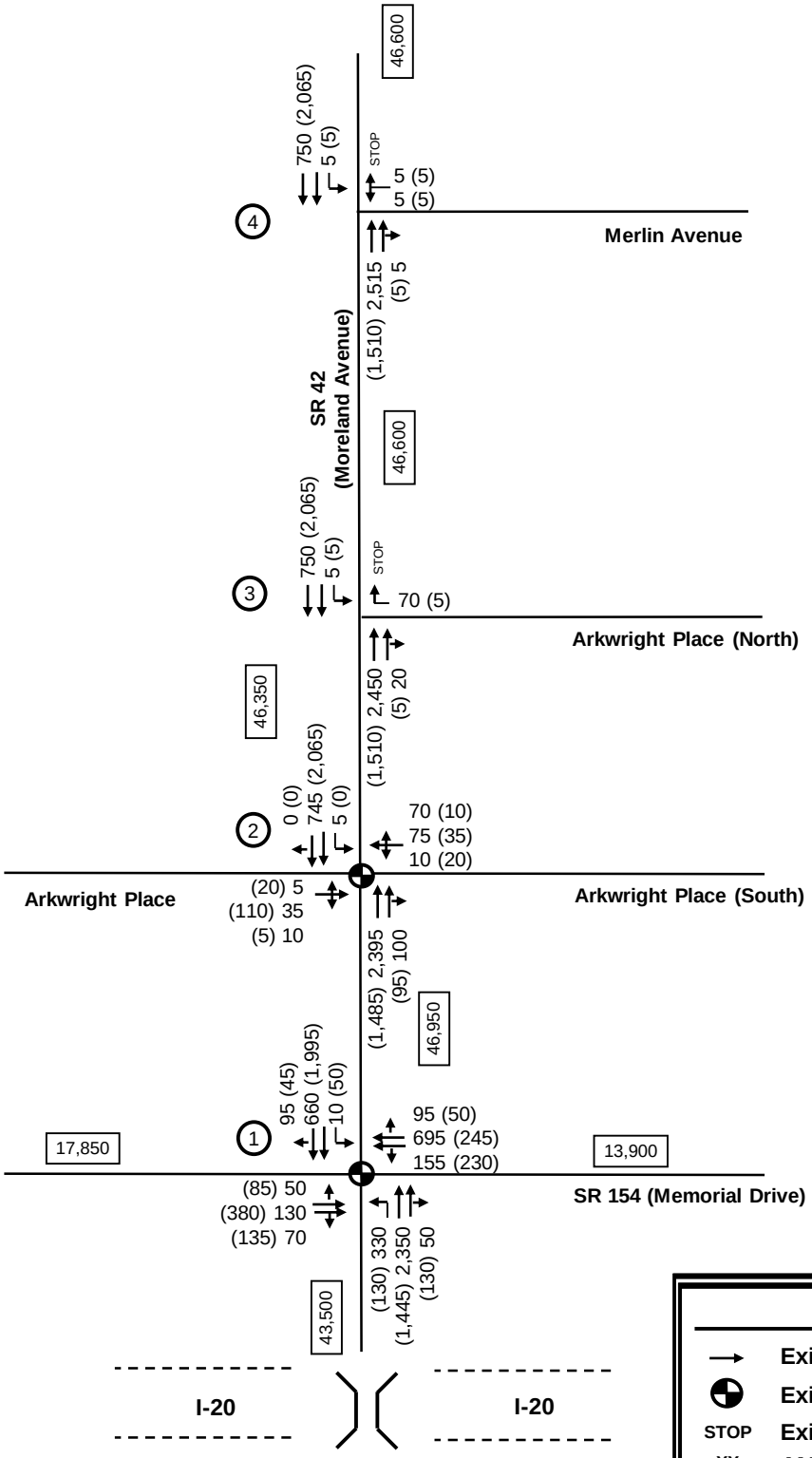
LEGEND

→	Existing Roadway Laneage
⊕	Existing Traffic Signal
STOP	Existing STOP Control
XX	AM Peak Hour Traffic Volumes
(XX)	PM Peak Hour Traffic Volumes
[XX]	Two-Way Daily Traffic Volumes
(X)	Intersection Reference Number

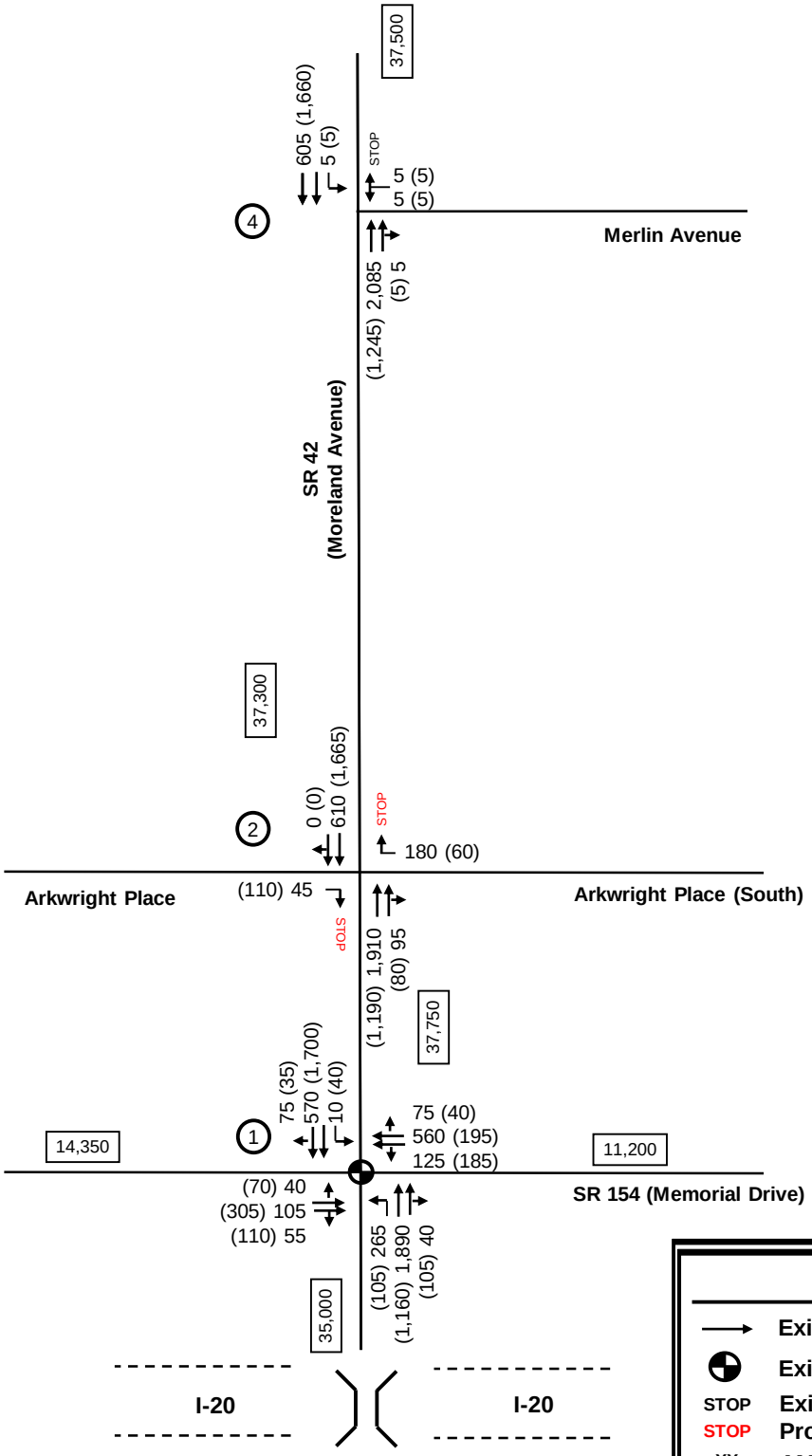
Kimley»Horn	SR 42 at Arkwright Place Traffic Engineering Study	Existing 2014 Laneage & Volumes	Figure 13



Kimley»Horn	SR 42 at Arkwright Place Traffic Engineering Study	Base Year 2018 No-Build Laneage & Volumes	Figure 14



Kimley»Horn	SR 42 at Arkwright Place Traffic Engineering Study	Design Year 2038 No-Build Laneage & Volumes	Figure 15



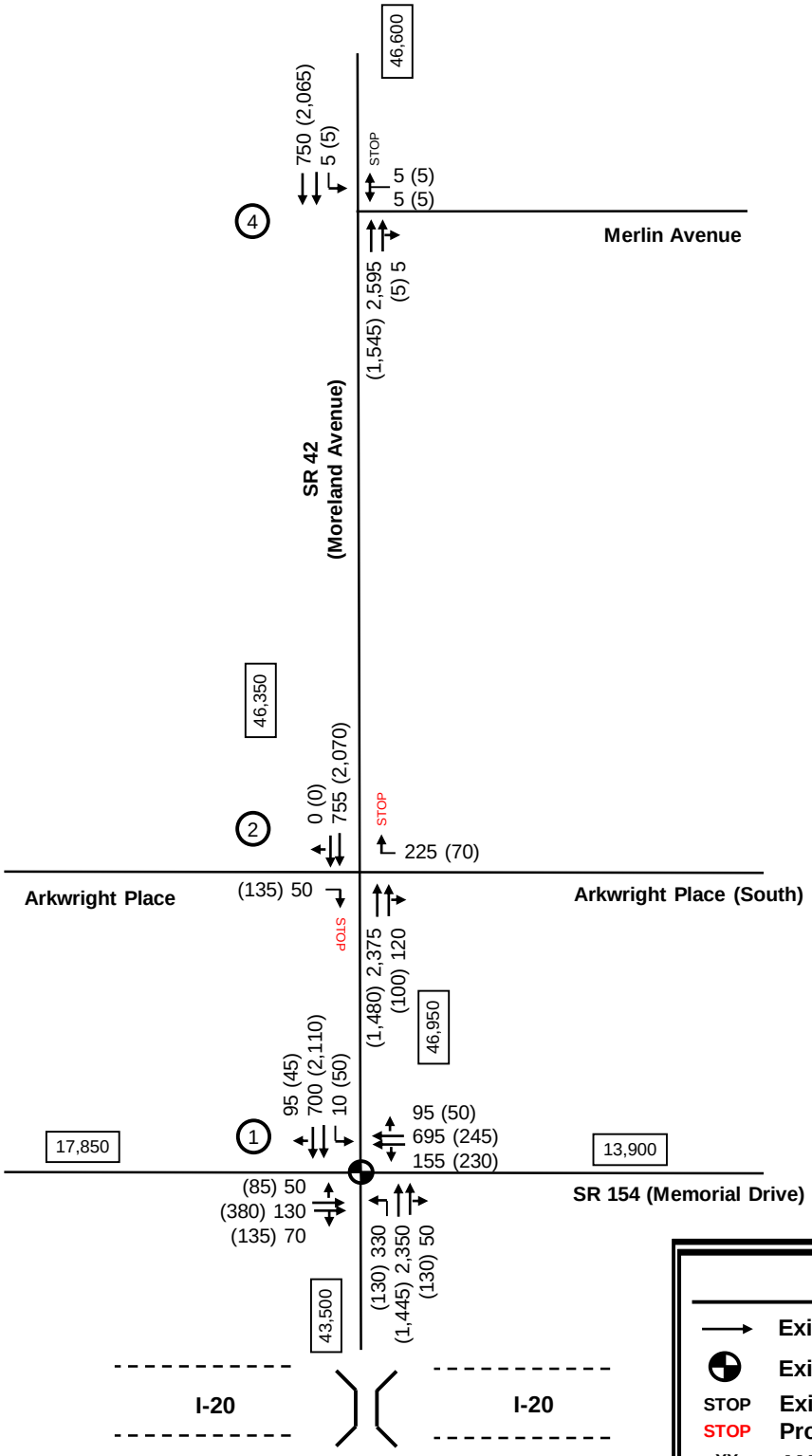
LEGEND

- Existing Roadway Laneage
- Existing Traffic Signal
- STOP — Existing STOP Control
- STOP — Proposed STOP Control
- XX — AM Peak Hour Traffic Volumes
- (XX) — PM Peak Hour Traffic Volumes
- XX — Two-Way Daily Traffic Volumes
- X — Intersection Reference Number

NOT TO SCALE

*Volumes adjusted from GDOT approved Traffic Flow Diagrams

Kimley»Horn	SR 42 at Arkwright Place Traffic Engineering Study	Base Year 2018 Preferred Alternate Laneage & Volumes	Figure 16



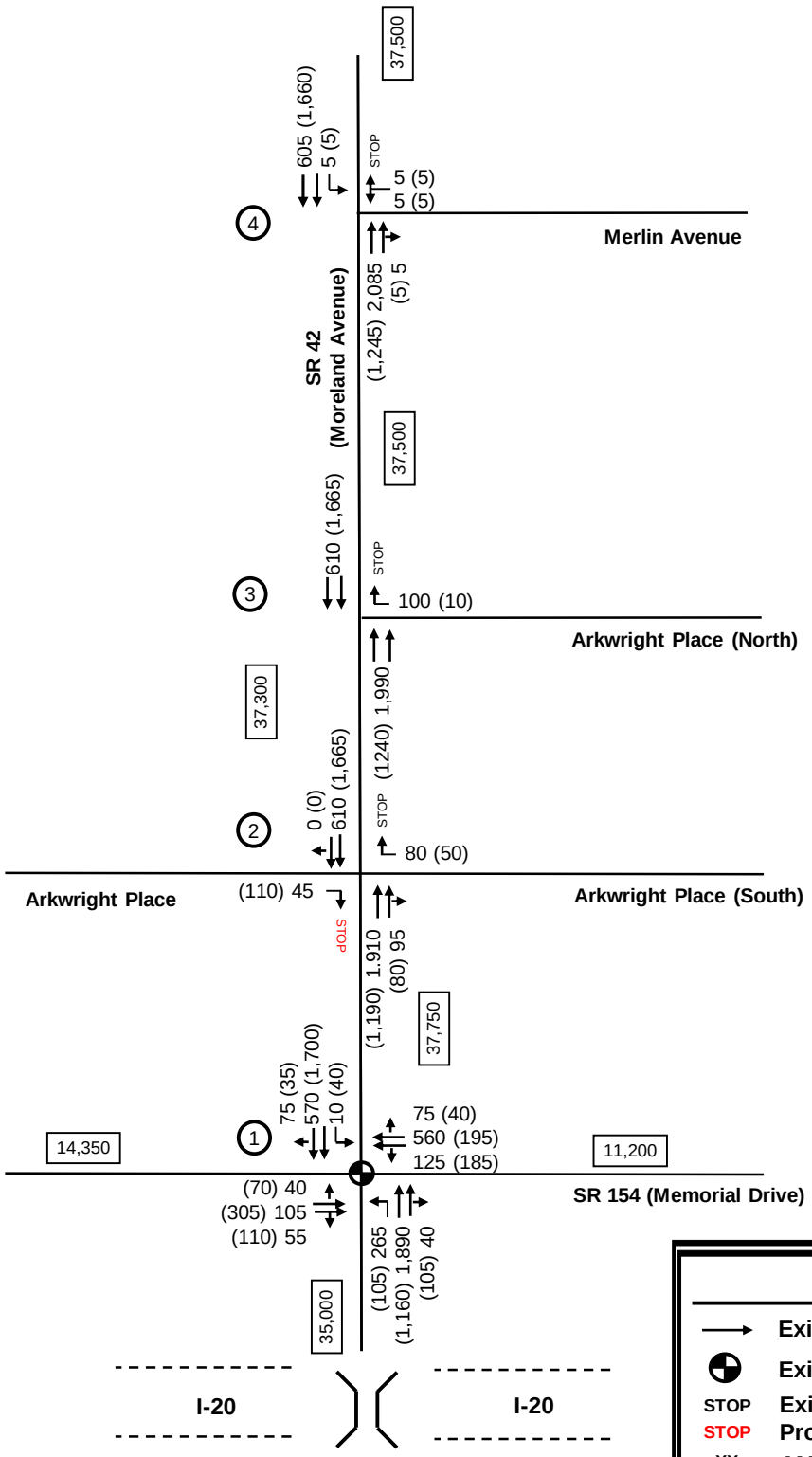
LEGEND

→	Existing Roadway Laneage
⊕	Existing Traffic Signal
STOP	Existing STOP Control
STOP	Proposed STOP Control
XX	AM Peak Hour Traffic Volumes
(XX)	PM Peak Hour Traffic Volumes
[XX]	Two-Way Daily Traffic Volumes
(X)	Intersection Reference Number

NOT TO SCALE

*Volumes adjusted from GDOT approved Traffic Flow Diagrams

Kimley»Horn	SR 42 at Arkwright Place Traffic Engineering Study	Design Year 2038 Preferred Alternate Laneage & Volumes	Figure 17



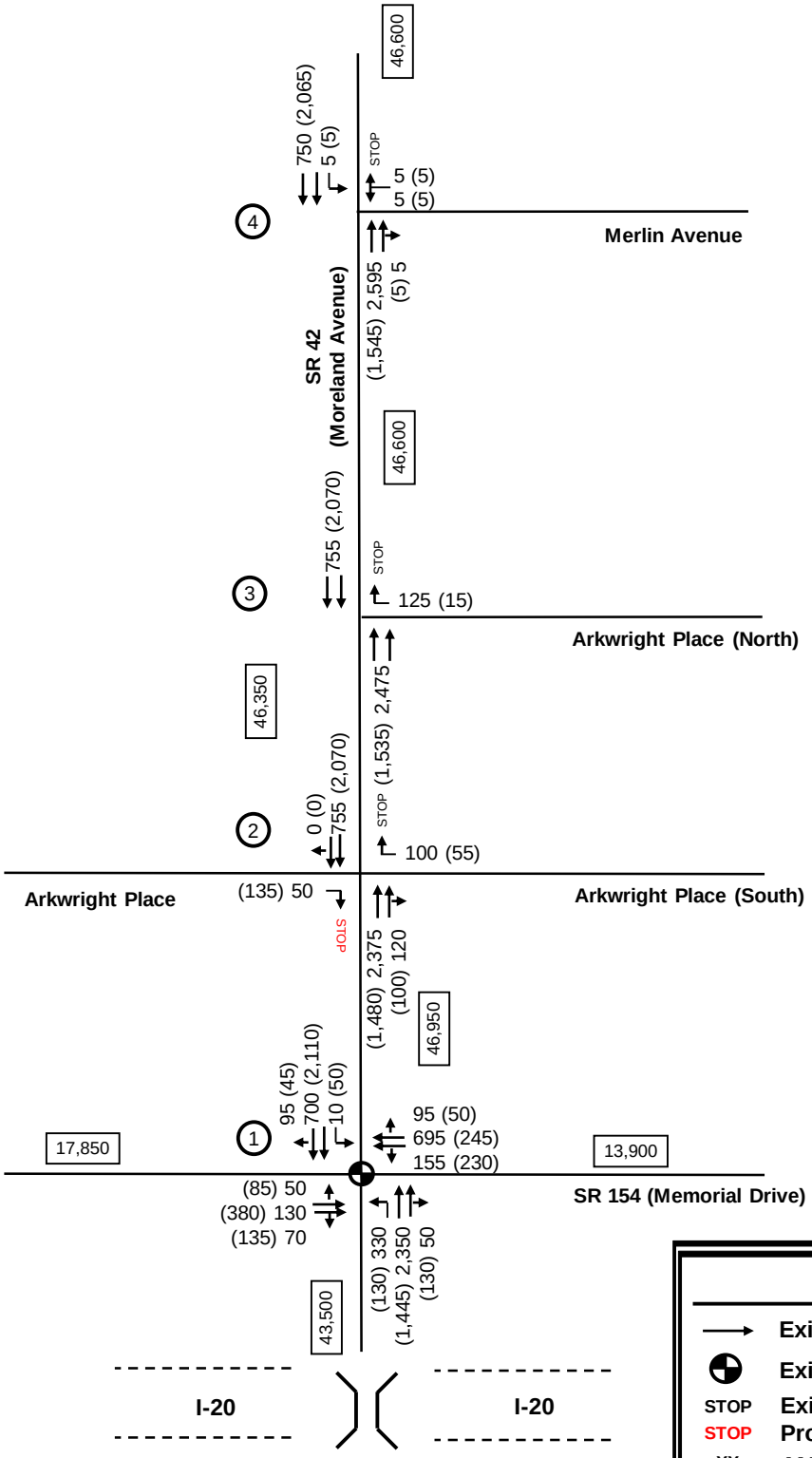
LEGEND

- Existing Roadway Laneage
- Existing Traffic Signal
- STOP — Existing STOP Control
- STOP — Proposed STOP Control
- XX — AM Peak Hour Traffic Volumes
- (XX) — PM Peak Hour Traffic Volumes
- XX — Two-Way Daily Traffic Volumes
- X — Intersection Reference Number

NOT TO SCALE

*Volumes adjusted from GDOT approved Traffic Flow Diagrams

Kimley»Horn	SR 42 at Arkwright Place Traffic Engineering Study	Base Year 2018 Build Alternate 1 Laneage & Volumes	Figure 18



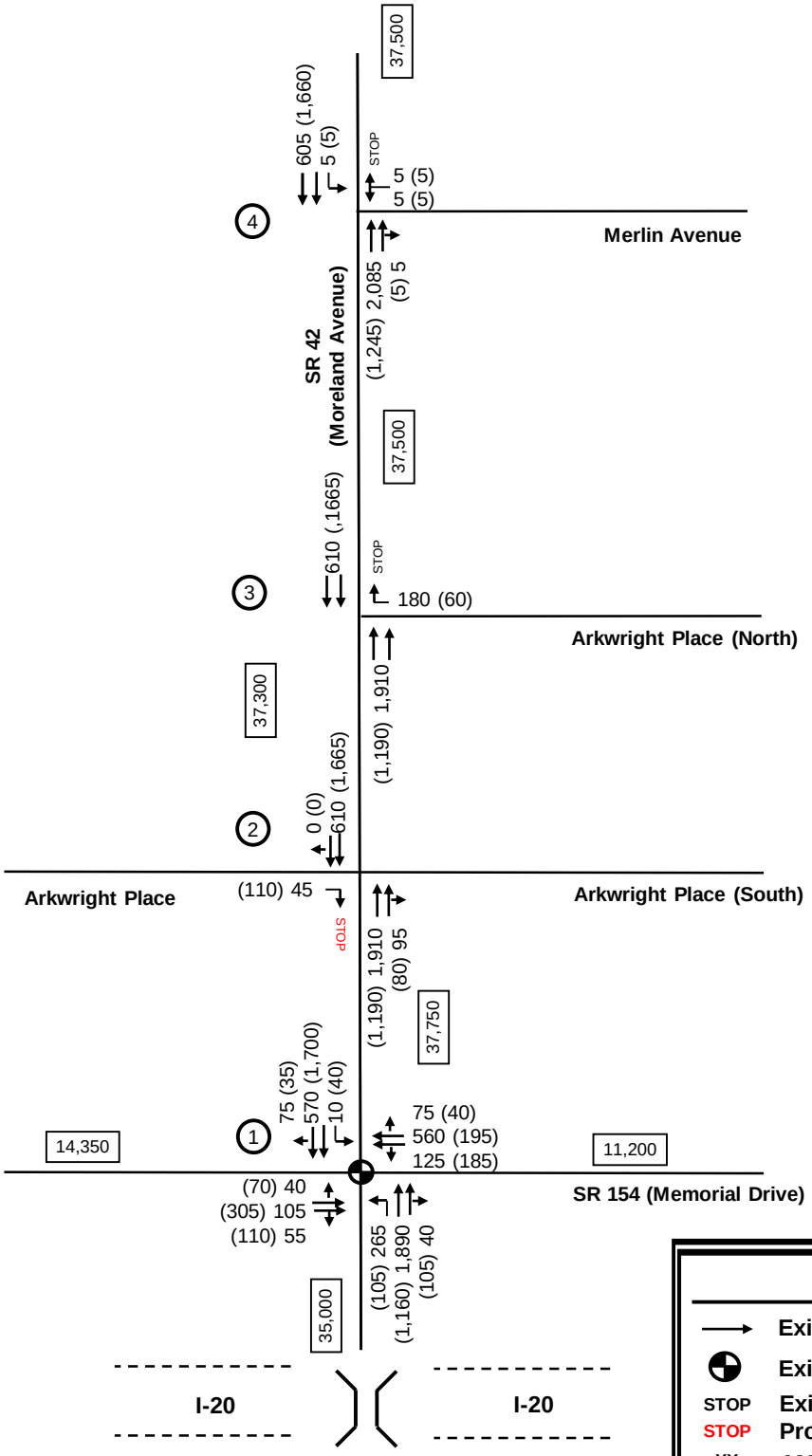
LEGEND

→	Existing Roadway Laneage
⊕	Existing Traffic Signal
STOP	Existing STOP Control
STOP	Proposed STOP Control
XX	AM Peak Hour Traffic Volumes
(XX)	PM Peak Hour Traffic Volumes
XX	Two-Way Daily Traffic Volumes
X	Intersection Reference Number

NOT TO SCALE

*Volumes adjusted from GDOT approved Traffic Flow Diagrams

Kimley»Horn	SR 42 at Arkwright Place Traffic Engineering Study	Design Year 2038 Build Alternate 1 Laneage & Volumes	Figure 19



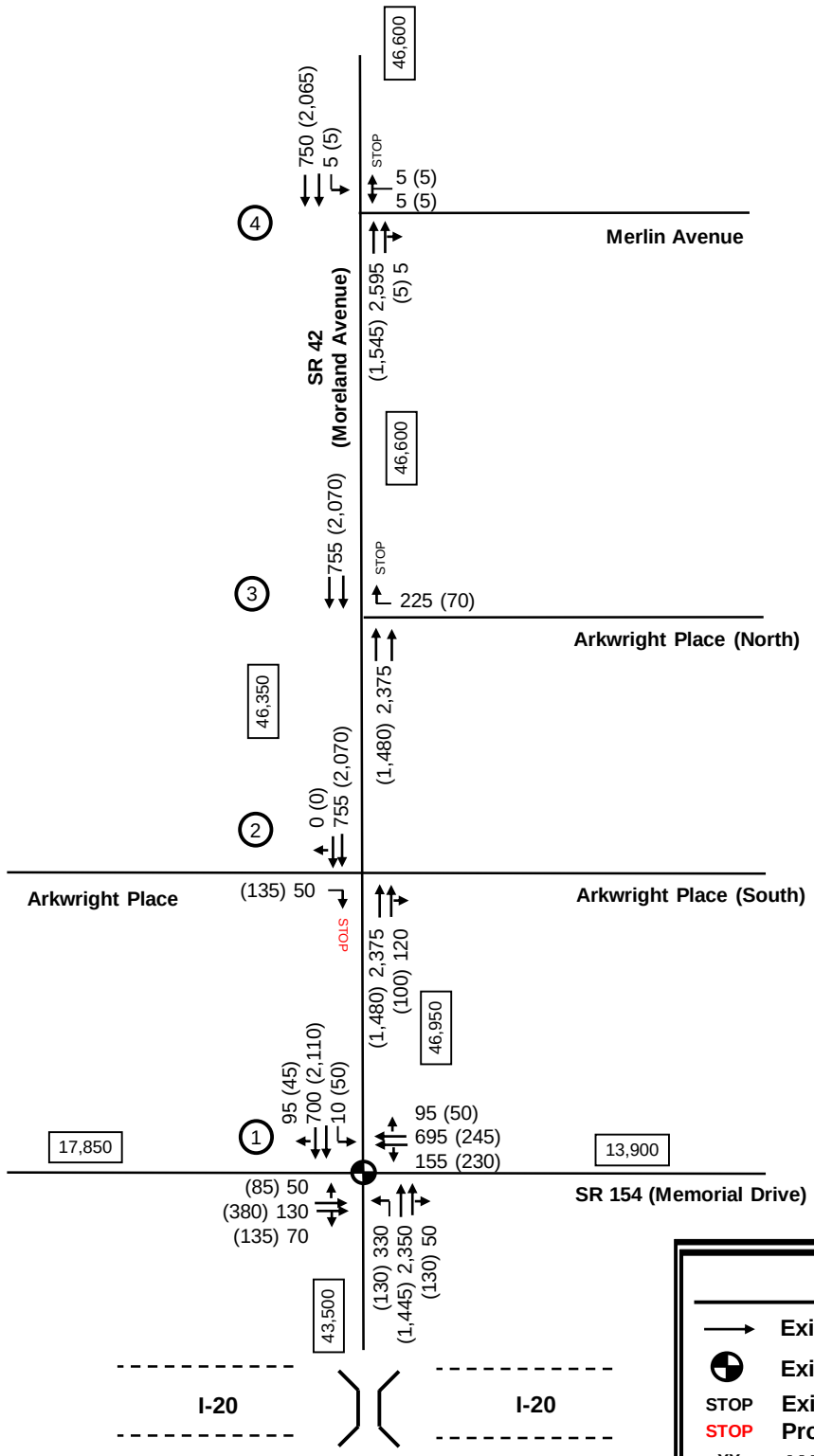
LEGEND

- Existing Roadway Laneage
- Existing Traffic Signal
- STOP — Existing STOP Control
- STOP — Proposed STOP Control
- XX — AM Peak Hour Traffic Volumes
- (XX) — PM Peak Hour Traffic Volumes
- XX — Two-Way Daily Traffic Volumes
- X — Intersection Reference Number

NOT TO SCALE

*Volumes per GDOT approved Traffic Flow Diagrams

Kimley»Horn	SR 42 at Arkwright Place Traffic Engineering Study	Base Year 2018 Build Alternate 2 Laneage & Volumes	Figure 20



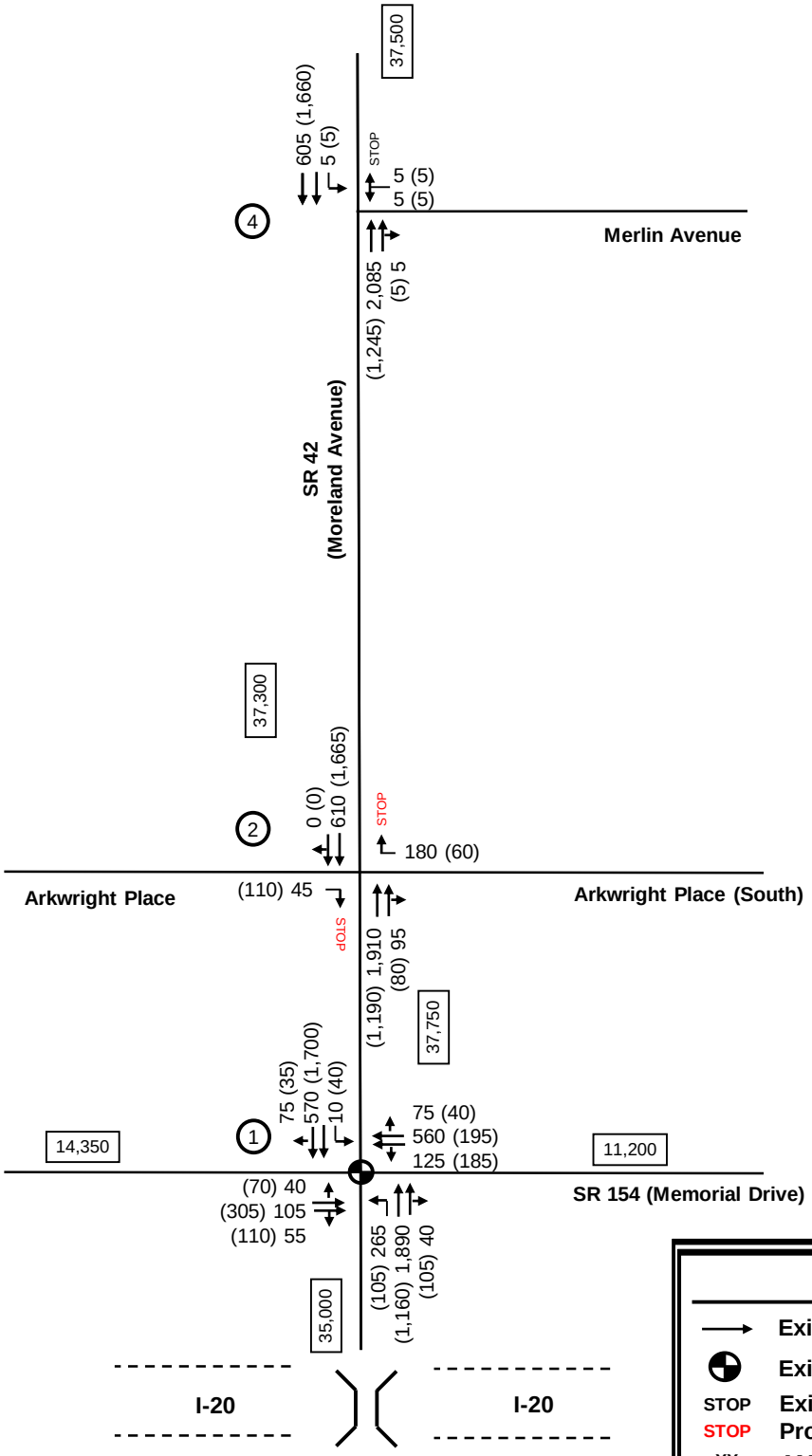
LEGEND

- Existing Roadway Laneage
- Existing Traffic Signal
- STOP — Existing STOP Control
- STOP — Proposed STOP Control
- XX — AM Peak Hour Traffic Volumes
- (XX) — PM Peak Hour Traffic Volumes
- XX — Two-Way Daily Traffic Volumes
- X — Intersection Reference Number

NOT TO SCALE

*Volumes per GDOT approved Traffic Flow Diagrams

Kimley»Horn	SR 42 at Arkwright Place Traffic Engineering Study	Design Year 2038 Build Alternate 2 Laneage & Volumes	Figure 21



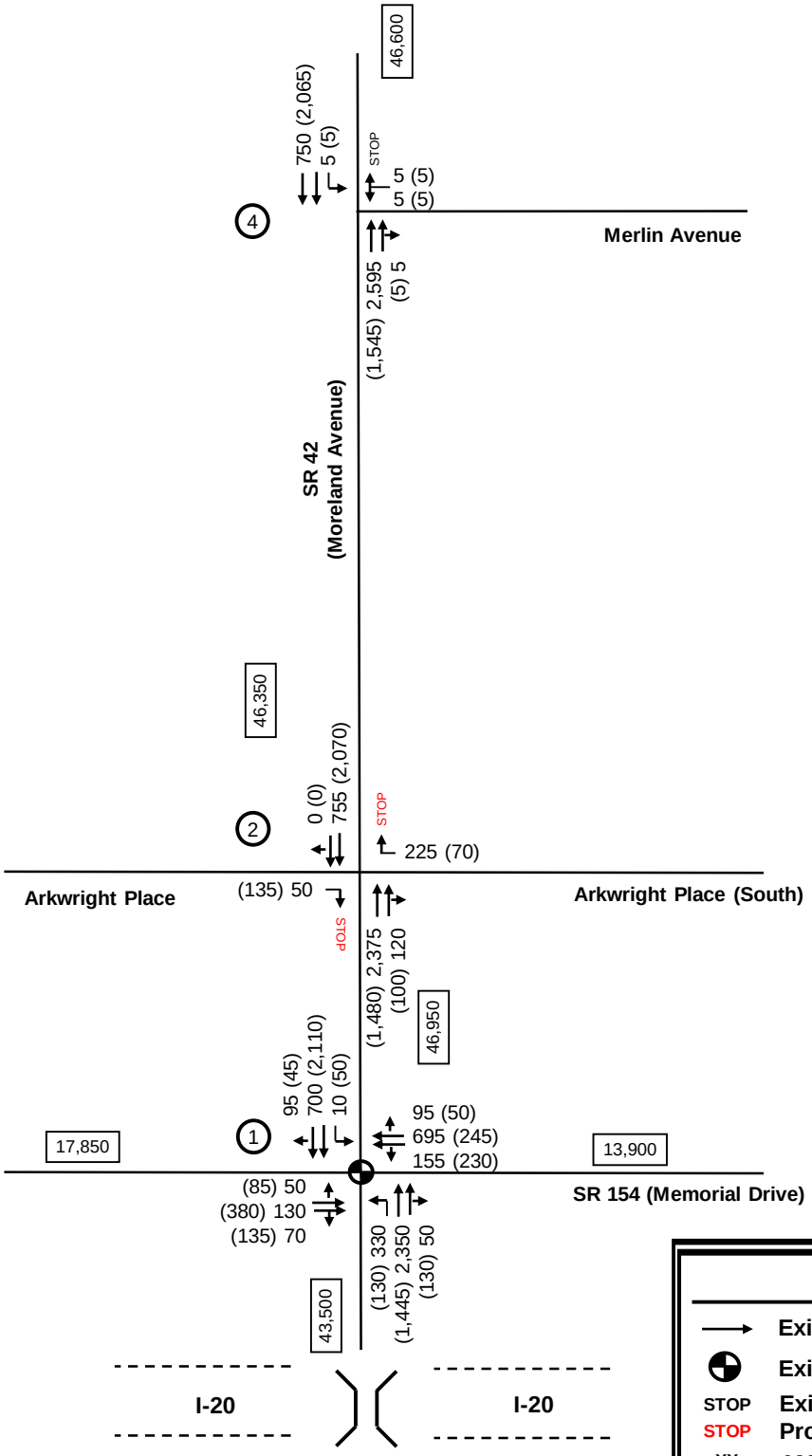
LEGEND

- Existing Roadway Laneage
- Existing Traffic Signal
- STOP Existing STOP Control
- STOP Proposed STOP Control
- XX AM Peak Hour Traffic Volumes
- (XX) PM Peak Hour Traffic Volumes
- XX Two-Way Daily Traffic Volumes
- X Intersection Reference Number

NOT TO SCALE

*Volumes adjusted from GDOT approved Traffic Flow Diagrams

Kimley»Horn	SR 42 at Arkwright Place Traffic Engineering Study	Base Year 2018 Build Alternate 3 Laneage & Volumes	Figure 22



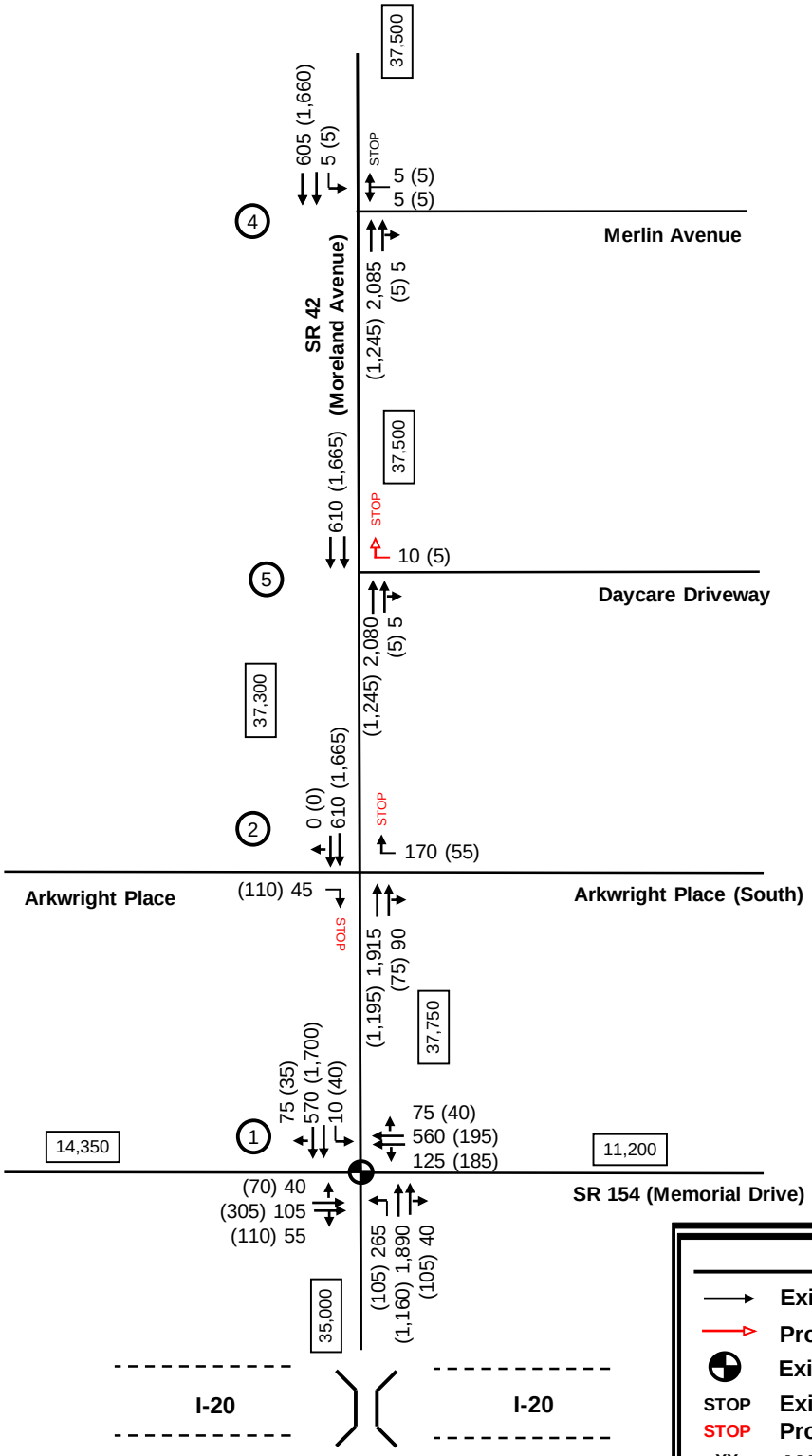
LEGEND

- Existing Roadway Laneage
- Existing Traffic Signal
- STOP — Existing STOP Control
- STOP — Proposed STOP Control
- XX — AM Peak Hour Traffic Volumes
- (XX) — PM Peak Hour Traffic Volumes
- XX — Two-Way Daily Traffic Volumes
- X — Intersection Reference Number

NOT TO SCALE

*Volumes adjusted from GDOT approved Traffic Flow Diagrams

Kimley»Horn	SR 42 at Arkwright Place Traffic Engineering Study	Design Year 2038 Build Alternate 3 Laneage & Volumes	Figure 23



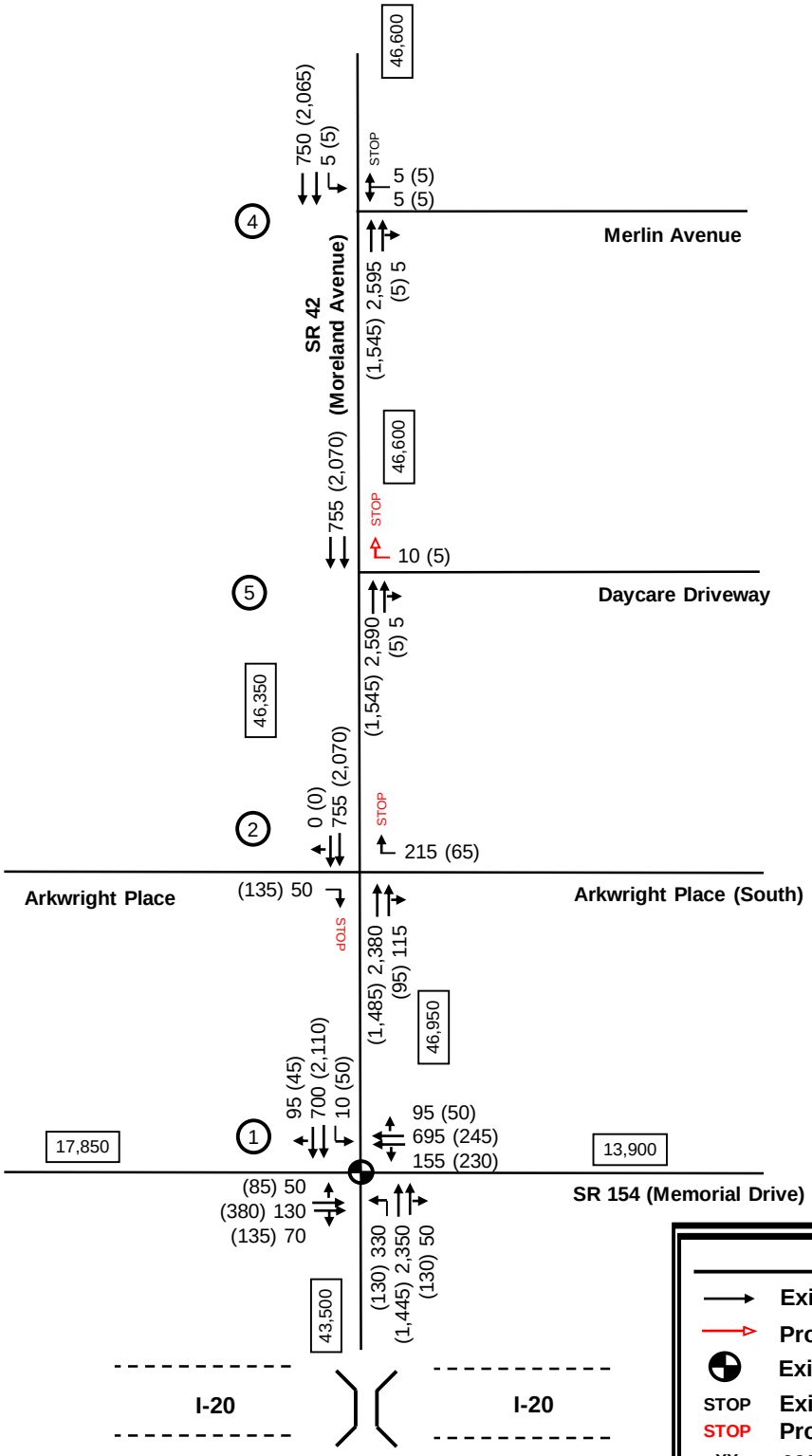
LEGEND

- Existing Roadway Laneage
- Proposed Roadway Laneage
- Existing Traffic Signal
- STOP Existing STOP Control
- STOP Proposed STOP Control
- XX AM Peak Hour Traffic Volumes
- (XX) PM Peak Hour Traffic Volumes
- XX Two-Way Daily Traffic Volumes
- X Intersection Reference Number

NOT TO SCALE

*Volumes adjusted from GDOT approved Traffic Flow Diagrams

Kimley»Horn	SR 42 at Arkwright Place Traffic Engineering Study	Base Year 2018 Build Alternate 4 Laneage & Volumes	Figure 24



LEGEND

- Existing Roadway Laneage
- Proposed Roadway Laneage
- Existing Traffic Signal
- STOP — Existing STOP Control
- STOP — Proposed STOP Control
- XX — AM Peak Hour Traffic Volumes
- (XX) — PM Peak Hour Traffic Volumes
- XX — Two-Way Daily Traffic Volumes
- X — Intersection Reference Number

NOT TO SCALE

*Volumes adjusted from GDOT approved Traffic Flow Diagrams

Kimley»Horn	SR 42 at Arkwright Place Traffic Engineering Study	Design Year 2038 Build Alternate 4 Laneage & Volumes	Figure 25

Table 7 Intersection Level-of-Service Summary AM Peak Hour and PM Peak Hour LOS (average delay per vehicle in seconds)					
ID	**Intersection Name**	**Control**	**Existing 2014**	**Base 2018 No-Build**	**Design 2038 No-Build**
AM Peak Hour					
1	SR 42 at SR 154	Signal	E (55.5)	E (67.3)	F (152.3)
2	SR 42 at Arkwright Place (South)	Signal	A (9.1)	B (10.5)	D (38.6)
3	SR 42 at Arkwright Place (North)	WB Stop	B (11.0)	D (34.0)	D (33.7)
		SB Left Yield	A (1.3)	A (1.6)	A (2.5)
4	SR 42 at Merlin Avenue	WB Stop	D (28.7)	D (29.2)	F (99.3)
		SB Left Yield	C (20.4)	C (22.1)	F (62.0)
PM Peak Hour					
1	SR 42 at SR 154	Signal	D (37.9)	D (42.6)	F (100.9)
2	SR 42 at Arkwright Place (South)	Signal	A (8.6)	A (8.9)	B (12.5)
3	SR 42 at Arkwright Place (North)	WB Stop	B (11.0)	B (11.0)	B (11.1)
		SB Left Yield	A (0.3)	A (0.3)	A (0.4)
4	SR 42 at Merlin Avenue	WB Stop	C (17.0)	C (17.7)	C (21.7)
		SB Left Yield	B (11.7)	B (12.0)	B (14.4)

Table 7 Continued Intersection Level-of-Service Summary AM Peak Hour and PM Peak Hour LOS (average delay per vehicle in seconds)							
ID	**Intersection Name**	**Control**	**Base 2018 Preferred Alternate**	**Base 2018 Build - Alt 1**	**Base 2018 Build - Alt 2**	**Base 2018 Build - Alt 3**	**Base 2018 Build - Alt 4**
AM Peak Hour							
1	SR 42 at SR 154	Signal	E (67.3)	E (67.3)	E (67.3)	E (67.3)	E (67.3)
2	SR 42 at Arkwright Place (South)	EB Stop	B (10.7)	B (10.7)	B (10.7)	B (10.7)	B (10.7)
		WB Stop	C (22.4)	C (16.6)	n/a	C (22.4)	C (21.6)
3	SR 42 at Arkwright Place (North)	WB Stop	n/a	C (17.3)	C (22.1)	n/a	n/a
4	SR 42 at Merlin Avenue	WB Stop	D (27.6)	D (27.6)	D (27.6)	D (27.6)	D (27.6)
		SB Left Yield	C (21.1)	C (21.1)	C (21.1)	C (21.1)	C (21.1)
5	SR 42 at Daycare Driveway	WB Stop	n/a	n/a	n/a	n/a	B (14.3)
PM Peak Hour							
1	SR 42 at SR 154	Signal	D (52.0)*	D (52.0)*	D (52.0)*	D (52.0)*	D (52.0)*
2	SR 42 at Arkwright Place (South)	EB Stop	D (25.2)	D (25.2)	D (25.2)	D (25.2)	D (25.2)
		WB Stop	A (10.0)	A (10.0)	n/a	A (10.0)	A (10.0)
3	SR 42 at Arkwright Place (North)	WB Stop	n/a	A (9.7)	B (10.0)	n/a	n/a
4	SR 42 at Merlin Avenue	WB Stop	C (15.6)	C (15.6)	C (15.6)	C (15.6)	C (15.6)
		SB Left Yield	B (11.2)	B (11.2)	B (11.2)	B (11.2)	B (11.2)
5	SR 42 at Daycare Driveway	WB Stop	n/a	n/a	n/a	n/a	A (9.6)

*The delay at Intersection #1 (SR 42 at SR 154) increases for the Base 2018 Build scenarios compared to the Base 2018 No-Build scenarios for the PM conditions and not the AM conditions. The southbound through movement volume increases for the Base 2018 Build conditions. This movement is the controlling movement for the PM peak hour, while the northbound through movement is the controlling movement for the AM peak hour.

Table 7 Continued Intersection Level-of-Service Summary AM Peak Hour and PM Peak Hour LOS (average delay per vehicle in seconds)							
ID	**Intersection Name**	**Control**	**Design 2038 Preferred Alternate**	**Design 2038 Build - Alt 1**	**Design 2038 Build - Alt 2**	**Design 2038 Build - Alt 3**	**Design 2038 Build - Alt 4**
AM Peak Hour							
1	SR 42 at SR 154	Signal	F (152.3)	F (152.3)	F (152.3)	F (152.3)	F (152.3)
2	SR 42 at Arkwright Place (South)	EB Stop	B (11.5)	B (11.5)	B (11.5)	B (11.5)	B (11.5)
		WB Stop	C (22.7)	C (15.9)	n/a	C (22.7)	C (21.9)
3	SR 42 at Arkwright Place (North)	WB Stop	n/a	C (16.7)	C (22.6)	n/a	n/a
4	SR 42 at Merlin Avenue	WB Stop	F (158.4)	F (158.4)	F (158.4)	F (158.4)	F (158.4)
		SB Left Yield	F (70.5)	F (70.5)	F (70.5)	F (70.5)	F (70.5)
5	SR 42 at Daycare Driveway	WB Stop	n/a	n/a	n/a	n/a	B (13.4)
PM Peak Hour							
1	SR 42 at SR 154	Signal	F (120.2)*	F (120.2)*	F (120.2)*	F (120.2)*	F (120.2)*
2	SR 42 at Arkwright Place (South)	EB Stop	F (51.7)	F (51.7)	F (51.7)	F (51.7)	F (51.7)
		WB Stop	B (12.3)	B (12.1)	n/a	B (12.3)	B (12.2)
3	SR 42 at Arkwright Place (North)	WB Stop	n/a	B (11.5)	B (12.2)	n/a	n/a
4	SR 42 at Merlin Avenue	WB Stop	C (18.4)	C (18.4)	C (18.4)	C (18.4)	C (18.4)
		SB Left Yield	B (12.0)	B (12.0)	B (12.0)	B (12.0)	B (12.0)
5	SR 42 at Daycare Driveway	WB Stop	n/a	n/a	n/a	n/a	B (11.3)

*The delay at Intersection #1 (SR 42 at SR 154) increases for the Design 2038 Build scenarios compared to the Design 2038 No-Build scenarios for the PM conditions and not the AM conditions. The southbound through movement volume increases for the Design 2038 Build conditions. This movement is the controlling movement for the PM peak hour, while the northbound through movement is the controlling movement for the AM peak hour.

The signalized intersection of SR 42 at SR 154 is currently operating at LOS E and D during Existing 2014 Conditions in the AM and PM peak hours, respectively. The intersection is projected to continue to operate at the same LOS during No Build Base Year 2018 Conditions. The intersection is projected to operate at LOS F during No Build Base Year 2038 Conditions for both the AM and PM peak hours. The intersection is projected to operate at the same LOS for each Build alternative for both Base Year 2018 and Design Year 2038 conditions.

The signalized intersection of SR 42 at Arkwright Place (south) is currently operating at LOS A during Existing 2014 Conditions in the AM and PM peak hours, respectively. The intersection is projected to operate at LOS B and A during No Build Base Year 2018 Conditions for the AM and PM peak hours, respectively. The intersection is projected to operate at LOS D and B during No Build Design Year 2038 Conditions for the AM and PM peak hours, respectively.

The unsignalized intersection of SR 42 at Arkwright Place (north) is currently operating at an acceptable LOS during Existing 2014 Conditions and will continue to operate at an acceptable LOS during No Build Design Year 2038 Conditions.

The unsignalized intersection of SR 42 at Merlin Avenue operates at an acceptable LOS during Existing 2014 and No Build Base Year 2018 Conditions. The southbound left-turn movement and westbound approach is projected to operate at LOS F and during No Build Design Year 2038 AM Peak hour Conditions. As discussed previously, it is typical for unsignalized intersections to show long delays for the side-street stop-controlled movements along a multi-lane facility such as SR 42.

The intersections of SR 42 at SR 154 and SR 42 at Merlin Avenue operate similarly throughout all five alternates for the Build Base Year 2018 and Build Design Year 2038 Conditions. All movements for the intersections of SR 42 at Arkwright Place (south) and SR 42 at Arkwright Place (north) operate at an acceptable LOS for all alternates under Build Base Year 2018 and Build Design Year 2038 Conditions with the exception of the eastbound approach of Arkwright Place at SR 42. This unsignalized stop-controlled approach operates at LOS F (51.7 second delay) for all alternates under Build Design Year 2038 PM peak hour Conditions.

5.3 DISCUSSION OF ALTERNATES

Five alternates for the reconfiguration of SR 42 (Moreland Avenue) at Arkwright Place were analyzed in this study. The eastbound approach of Arkwright Place is a right-in/right-out for all five alternates. See **Appendix A** for the concept layout of the five alternates.

1. Preferred Alternate – Right-in/right-out on Arkwright Place (South); Arkwright Place (North) is closed west of Mortimer Street.

   The Preferred Alternate removes the access from the northern leg of Arkwright Place to SR 42. The southern leg of Arkwright Place provides right-in/right-out access. The daycare will have full-movement access along Arkwright Place (South) located approximately 120 feet east of SR 42 (Moreland Avenue).

2. Alternate 1 – Right-in/right-out on Arkwright Place (South) and Right-out only on Arkwright Place (North)

   Alternate 1 maintains the right-out movement on the northern leg of Arkwright Place. This provides accessibility for patrons leaving the daycare in the northeast quadrant of the intersection. Any vehicles accessing the daycare from SR 42 would need to turn at Merlin Avenue or the southern leg of Arkwright Place.

3. Alternate 2 – Right-in only on Arkwright Place (South) and Right-out only on Arkwright Place (North)

   Alternate 2 utilizes the northern and southern legs of Arkwright Place. The northern leg is one-way only in the westbound direction and services the right-out movement onto Moreland Avenue. The southern leg is one-way only in the eastbound direction for approximately 150 feet. This services the right-in movement. Westbound traffic on the southern leg is diverted approximately 150 feet before SR 42 and ties into the northern leg directly across from the existing daycare driveway. This alignment presents operational concerns due to the unexpected turn and a sudden stop for westbound traffic.

4. Alternate 3 – Right-in/right-out on Arkwright Place (South); Arkwright Place (North) is closed west of the daycare driveway

   Alternate 3 removes the access from the northern leg of Arkwright Place to SR 42. The southern leg of Arkwright Place provides right-in/right-out access. While access to the daycare is reduced for this alternate, the elimination of the through traffic on the northern leg of Arkwright Place may provide a safer alternate for the daycare as it is essentially at the end of Arkwright Place (North).

5. Alternate 4 - Right-in/right-out on Arkwright Place (South); Arkwright Place (North) is closed west of the daycare driveway; Create a new right-in/right-out driveway for the daycare on SR 42 approximately 50 feet north of the existing Arkwright Place (North) and 100 feet north of Arkwright Place (South).

   Alternate 4 is similar to Alternate 3 as access from the northern leg of Arkwright Place to SR 42 is removed. This alternate adds a right-in/right-out driveway on SR 42 approximately 100 feet north of the southern leg of Arkwright Place. This concept provides additional accessibility for the daycare, but could pose a potential issue with cut-through traffic if drivers on the northern leg of Arkwright Place may choose to travel through the daycare parking lot to turn onto SR 42.

8.0 CONCLUSION

The segment of SR 42 (Moreland Avenue) between SR 154 (Memorial Drive) and Merlin Avenue in the City of Atlanta, Georgia, has been identified for an operational analysis by the Georgia Department of Transportation (GDOT). This traffic engineering study was completed in an effort to determine what geometric and operational improvements could be made to improve operations and safety with special emphasis placed on the intersection of SR 42 (Moreland Avenue) at Arkwright Place. Furthermore, the operations of the corridor were assessed for future traffic conditions, and recommendations were made to improve traffic flow.

The project limits along SR 42 are from the intersection with SR 154 (Memorial Drive) to the intersection with Merlin Avenue and covers approximately 630 feet. The proposed improvements are planned to be constructed and open to traffic by year 2018 (Base Year) with a 20-year design horizon of 2038 (Design Year).

The proposed improvements are planned to be constructed and open to traffic by year 2018 (Base Year) with a 20-year design horizon of 2038 (Design Year). This report summarized the data collection, accident data, analysis of traffic conditions, and conclusions from the analysis of Existing Year 2014 Conditions, No-Build Base Year 2018 Conditions, No-Build Design Year 2038 Conditions, Build Base Year 2018 Conditions, and Build Design Year 2038 Conditions.

Based on the results of the analyses contained within this traffic engineering study, reconfiguration of the intersection of SR 42 (Moreland Avenue) at Arkwright Place from a signalized intersection to an unsignalized intersection (right-in/right-out) is recommended. The recommended improvements and proposed roadway geometry are further discussed in *Section 8.1 – Recommendations*. The proposed roadway geometry is also illustrated on the concept layout included in **Appendix A**.

8.1 RECOMMENDATIONS

Based on the projected Base Year 2018 Conditions and the projected Design Year 2038 Conditions, we offer the following:

SR 42 (Moreland Avenue) at SR 154 (Memorial Drive) (Intersection #1)

- Based on the traffic volume projections in the traffic flow diagrams, the Projected Design Year 2038 No-Build and Build conditions at the intersection of SR 42 (Moreland Avenue) at SR 154 (Memorial Drive) will result in LOS F. If traffic continues to grow as projected, it is likely that significant improvements, such as the widening of SR 42 (Moreland Avenue) will need to be considered. This type of improvement was considered out of the scope of this study.

SR 42 (Moreland Avenue) at Arkwright Place (Intersections #2 and #3)

- Construct a center median on SR 42 as shown in the Concept Layouts (see Preferred Alternate).
- Remove the traffic signal from the intersection of SR 42 at Arkwright Place and allow right-in/right-out movements.
- Alternate 2 presents operational concerns and is not recommended. While Alternates 1, 3, and 4 each have advantages and will serve the projected traffic conditions, the Preferred Alternate is recommended.

APPENDIX A

Concept Layout

SR 42/ US 23 (MORELAND AVENUE) AND CS 2113/ ARKWRIGHT PLACE
PI NO.: 0012596

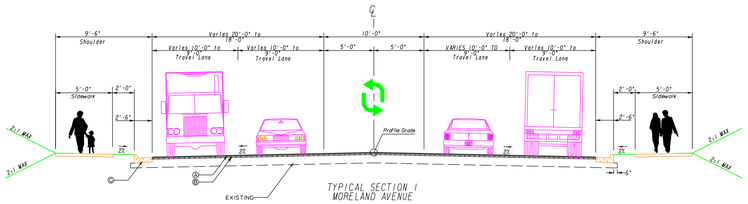
SCALE IN FEET
0 50 100 200

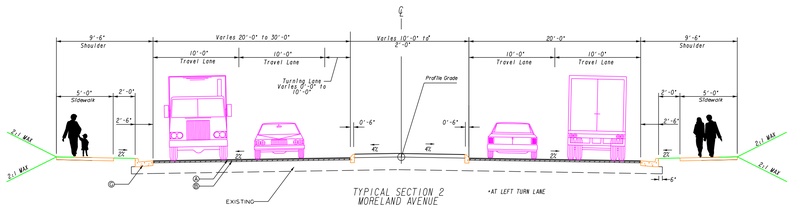
Heath & Lineback Engineers
INCORPORATED
2390 CANTON ROAD, BUILDING 200
MARIETTA, GEORGIA 30066-5393
(770)424-1668

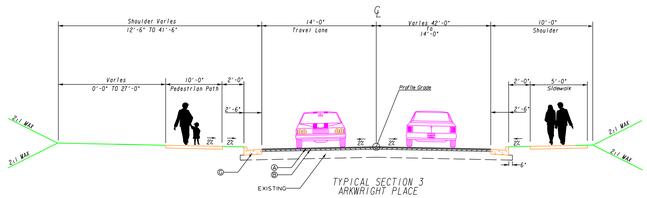
Georgia Department of Transportation

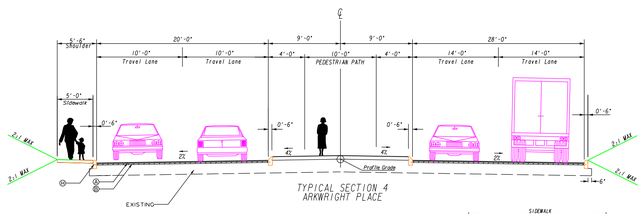
PREFERRED ALTERNATE

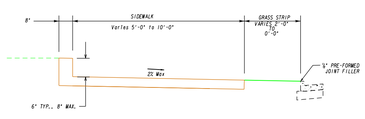
Date Last Updated: 08-27-2015



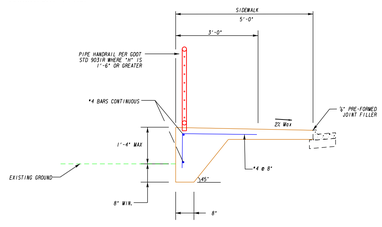








TYPICAL RAISED EDGE SIDEWALK
NOT TO SCALE



TYPICAL TURNDOWN SIDEWALK
NOT TO SCALE

PERMANENT GRASS

ALTERNATE 1

N.T.S.

ALTERNATE 2

N.T.S.

ALTERNATE 3

N.T.S.

ALTERNATE 4

N.T.S.

APPENDIX B

Study Area Photographs

Kimley»Horn

City of Atlanta, Georgia

Photograph Sheet

KHA Job No.: 015905017
Date: May 2015
Page: 1 of 2

SR 42 at Arkwright Place

Photo No. 1

Comments: Westbound approach of Arkwright Place at SR 42 (Moreland Avenue). The signalized approach is on the left and the unsignalized approach is on the right.

Photo No. 2

Comments: Southbound approach of SR 42 at Arkwright Place. Note the No Left Turn sign for the northbound approach.

Kimley»Horn

City of Atlanta, Georgia

Photograph Sheet

KHA Job No.: 015905017
Date: May 2015
Page: 2 of 2

SR 42 at Arkwright Place

Photo No. 1

Comments: Daycare in the northeast quadrant of the intersection of SR 42 (Moreland Avenue) at Arkwright Place. Note the lack of grass in the median due to cars parking in and driving over the median.

Photo No. 2

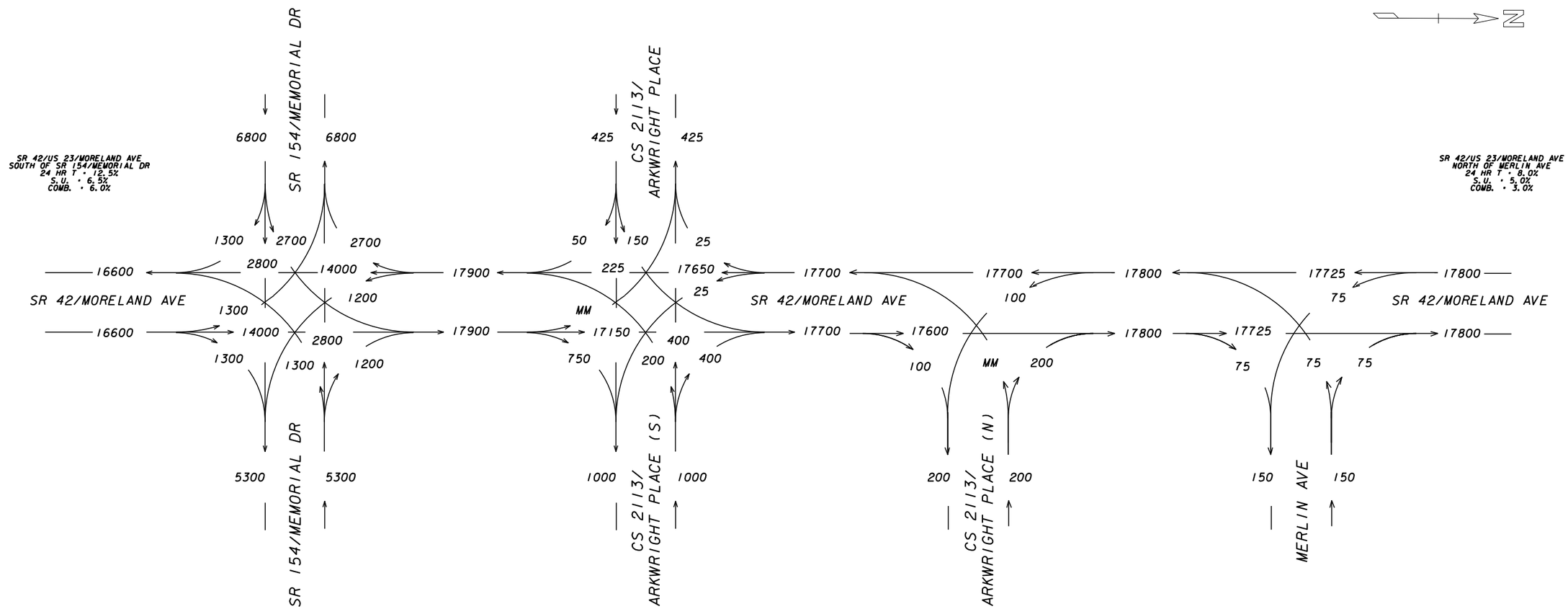
Comments: Close up of the lack of grass in the median between the two westbound Arkwright Place alignments.

APPENDIX C

Traffic Flow Diagrams (GDOT-Approved)

DATE$$$	TIME$$$	$PRF8$	DGN	STATE	PROJECT NUMBER	SHEET NO.	TOTAL SHEETS
$USER$		$$PENTABLE$$		GA	0012596	1	1

FULTON COUNTY



HF 3/14

PI# 0012596 FULTON COUNTY SR 42/MORELAND AVE FM SR 154/MEMORIAL DR TO MERLIN AVE	2014 ADT EXISTING	GRICE CONSULTING GROUP		REVISION DATES	STATE OF GEORGIA DEPARTMENT OF TRANSPORTATION OFFICE: PLANNING **TRAFFIC DIAGRAM** DRAWING No. 10-1

12/14/2012 GPLN

DATE$$$	TIME$$$	$PRF8$	DGN	STATE	PROJECT NUMBER	SHEET NO.	TOTAL SHEETS
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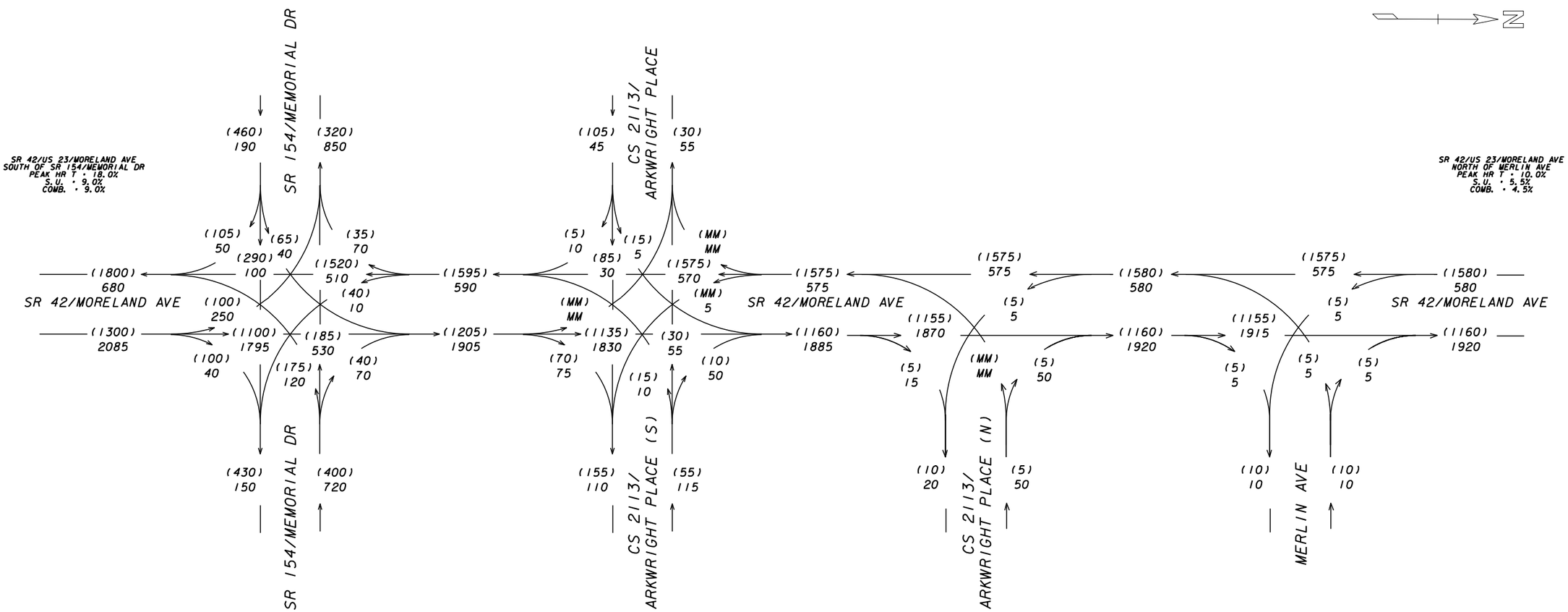
FULTON COUNTY



HF 3/14

PI# 0012596 FULTON COUNTY SR 42/MORELAND AVE FM SR 154/MEMORIAL DR TO MERLIN AVE	2014 PM DHV = (000) 2014 AM DHV = 000 EXISTING	GRICE CONSULTING GROUP		REVISION DATES	STATE OF GEORGIA DEPARTMENT OF TRANSPORTATION OFFICE: PLANNING **TRAFFIC DIAGRAM** DRAWING No. 10-2

12/14/2012 GPLN

DATE$$$	TIME$$$	$PRF8$	DGN	STATE	PROJECT NUMBER	SHEET NO.	TOTAL SHEETS
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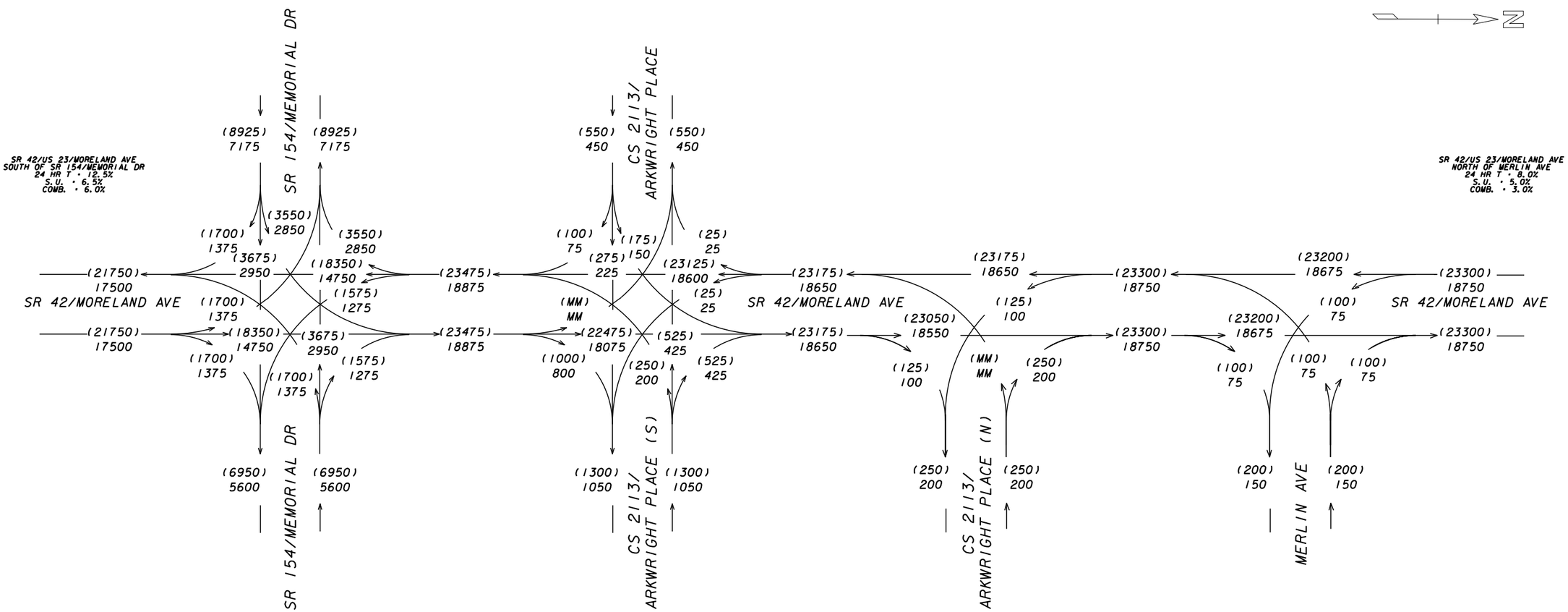
FULTON COUNTY



HF 3/14

PI# 0012596 FULTON COUNTY SR 42/MORELAND AVE FM SR 154/MEMORIAL DR TO MERLIN AVE	2038 ADT= (000) 2018 ADT= 000 NO BUILD	GRICE CONSULTING GROUP		REVISION DATES	STATE OF GEORGIA DEPARTMENT OF TRANSPORTATION OFFICE: PLANNING **TRAFFIC DIAGRAM** DRAWING No. 10-3

12/14/2012 GPLN

DATE$$$	TIME$$$	$PRFB$	DGN	STATE	PROJECT NUMBER	SHEET NO.	TOTAL SHEETS
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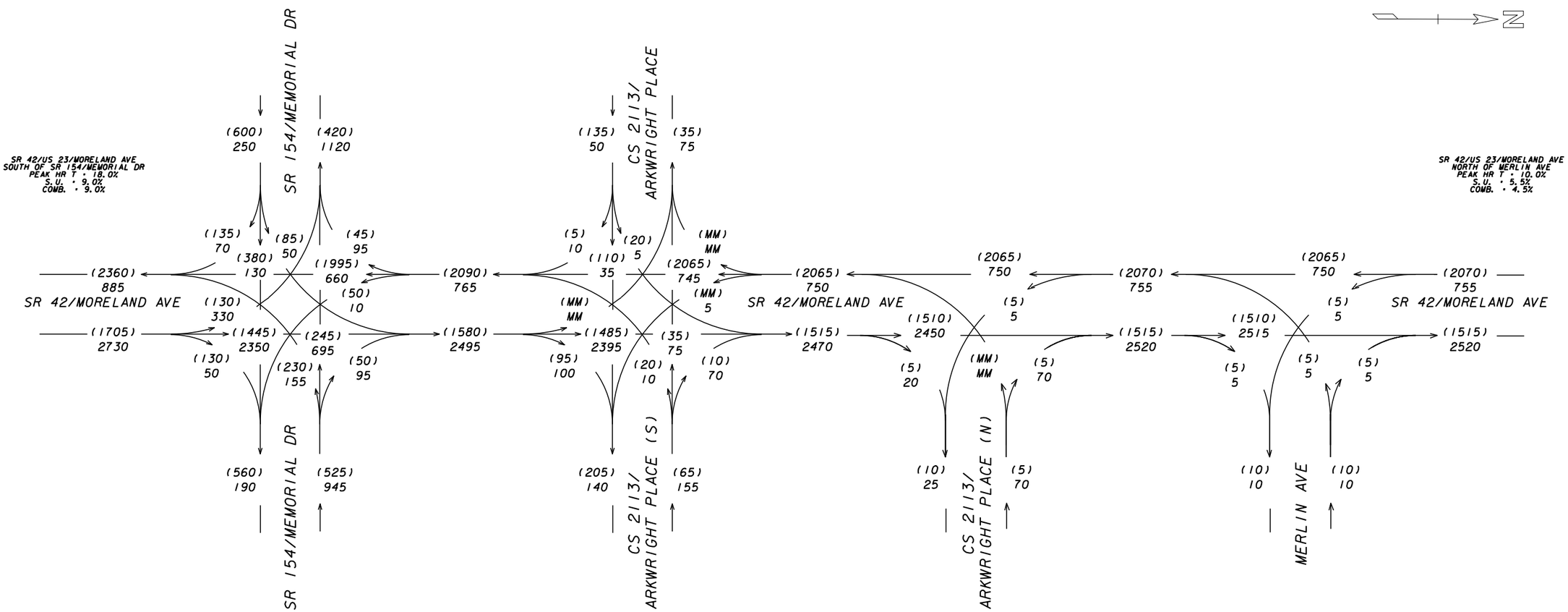
FULTON COUNTY



HF 3/14

PI# 0012596
FULTON COUNTY
SR 42/MORELAND AVE
FM SR 154/MEMORIAL DR
TO MERLIN AVE

2038 PM DHV = (000)
2038 AM DHV = 000
NO BUILD

GRICE CONSULTING GROUP

REVISION DATES		

STATE OF GEORGIA
DEPARTMENT OF TRANSPORTATION
OFFICE: PLANNING

TRAFFIC DIAGRAM

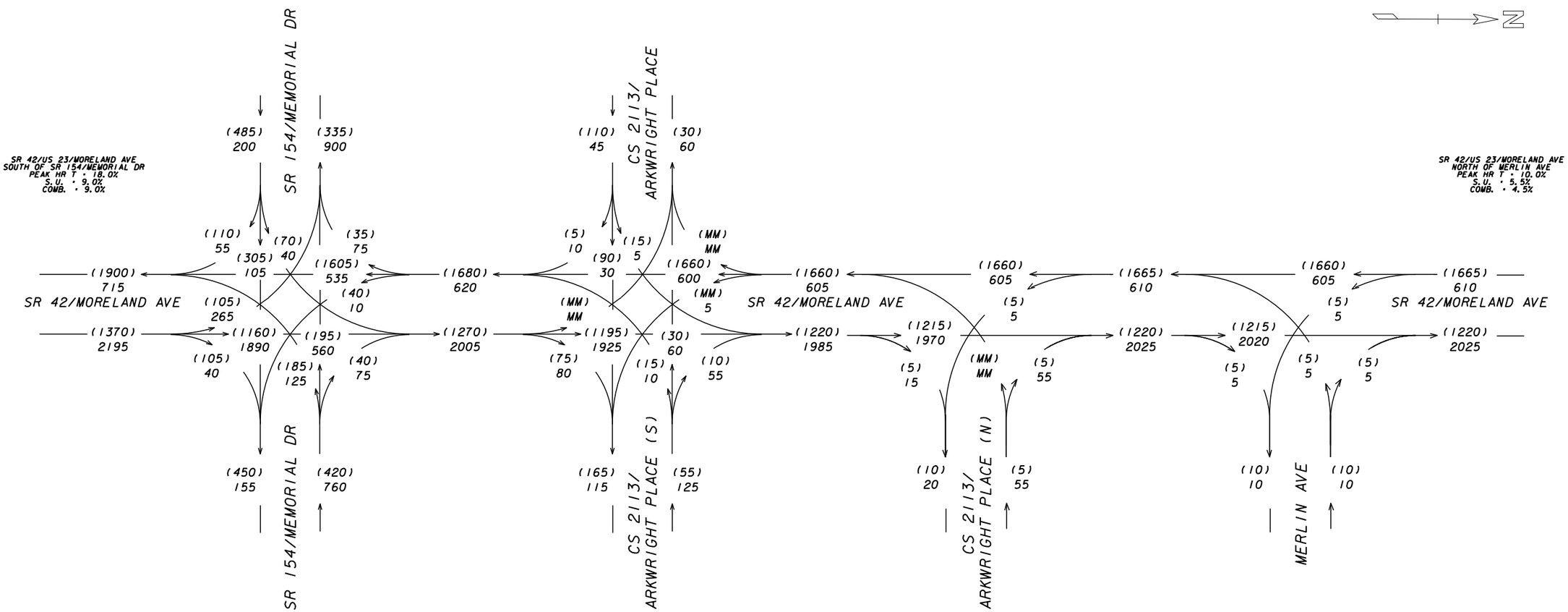
DRAWING No. 10-4

12/14/2012 GPLN

DATE$$$	TIME$$$	$PRF8$	DGN	STATE	PROJECT NUMBER	SHEET NO.	TOTAL SHEETS
$USER$		$$PENTABLE$$		GA	0012596	1	1

FULTON COUNTY

N

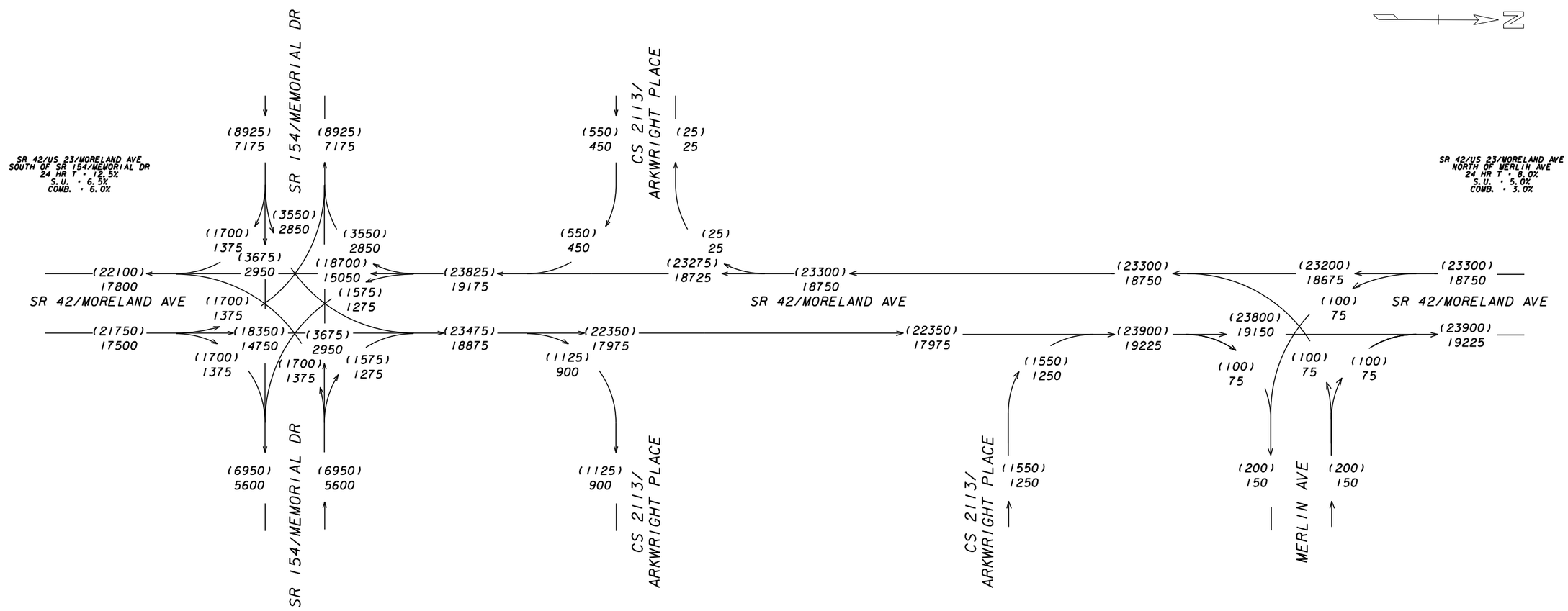


HF 3/14

PI# 0012596 FULTON COUNTY SR 42/MORELAND AVE FM SR 154/MEMORIAL DR TO MERLIN AVE	2018 PM DHV = (000) 2018 AM DHV = 000 NO BUILD	GRICE CONSULTING GROUP		REVISION DATES	STATE OF GEORGIA DEPARTMENT OF TRANSPORTATION OFFICE: PLANNING **TRAFFIC DIAGRAM** DRAWING No. 10-5

12/14/2012 GPLN

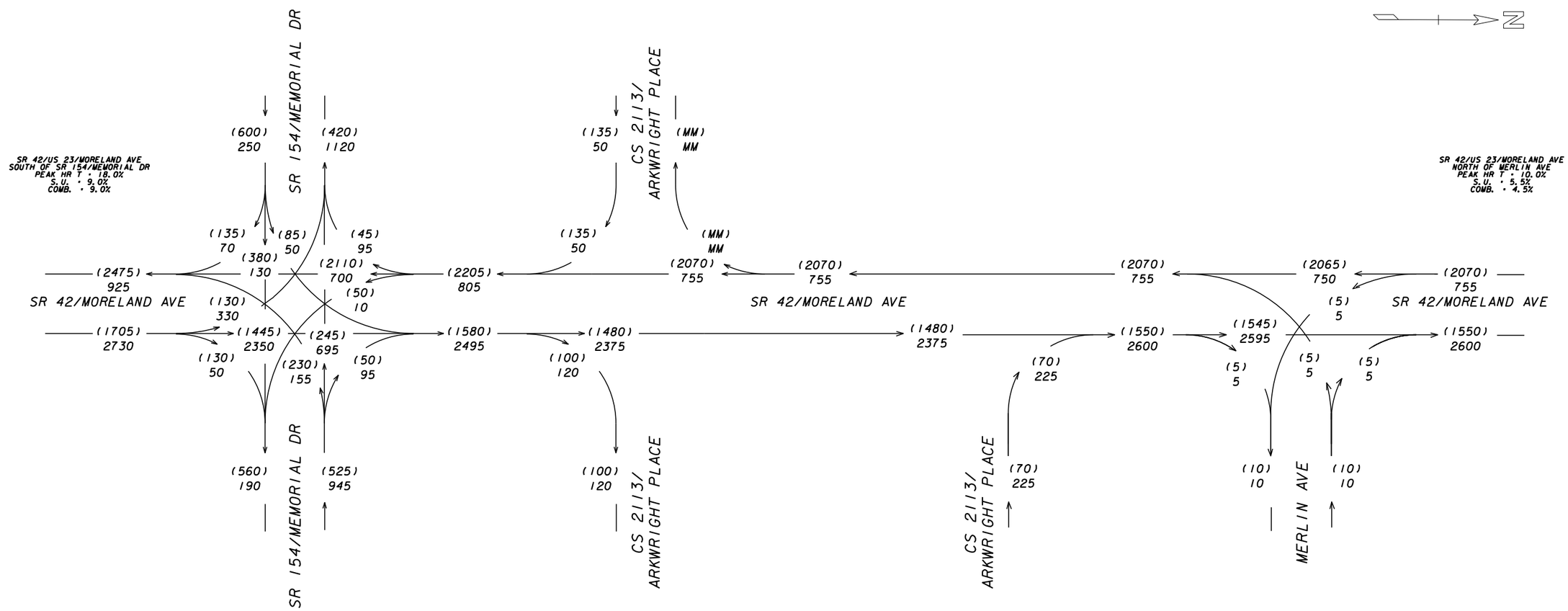
FULTON COUNTY



HF 3/14

PI# 0012596 FULTON COUNTY SR 42/MORELAND AVE FM SR 154/MEMORIAL DR TO MERLIN AVE	2038 ADT= (000) 2018 ADT= 000 BUILD	GRICE CONSULTING GROUP		REVISION DATES	STATE OF GEORGIA DEPARTMENT OF TRANSPORTATION OFFICE: PLANNING **TRAFFIC DIAGRAM** DRAWING No. 10-6

FULTON COUNTY



HF 3/14

PI# 0012596 FULTON COUNTY SR 42/MORELAND AVE FM SR 154/MEMORIAL DR TO MERLIN AVE	2038 PM DHV = (000) 2038 AM DHV = 000 BUILD	GRICE CONSULTING GROUP		REVISION DATES	STATE OF GEORGIA DEPARTMENT OF TRANSPORTATION OFFICE: PLANNING **TRAFFIC DIAGRAM** DRAWING No. 10-7

12/14/2012 GPLN

DATE$$$	TIME$$$	$PRFB$	DGN	STATE	PROJECT NUMBER	SHEET NO.	TOTAL SHEETS
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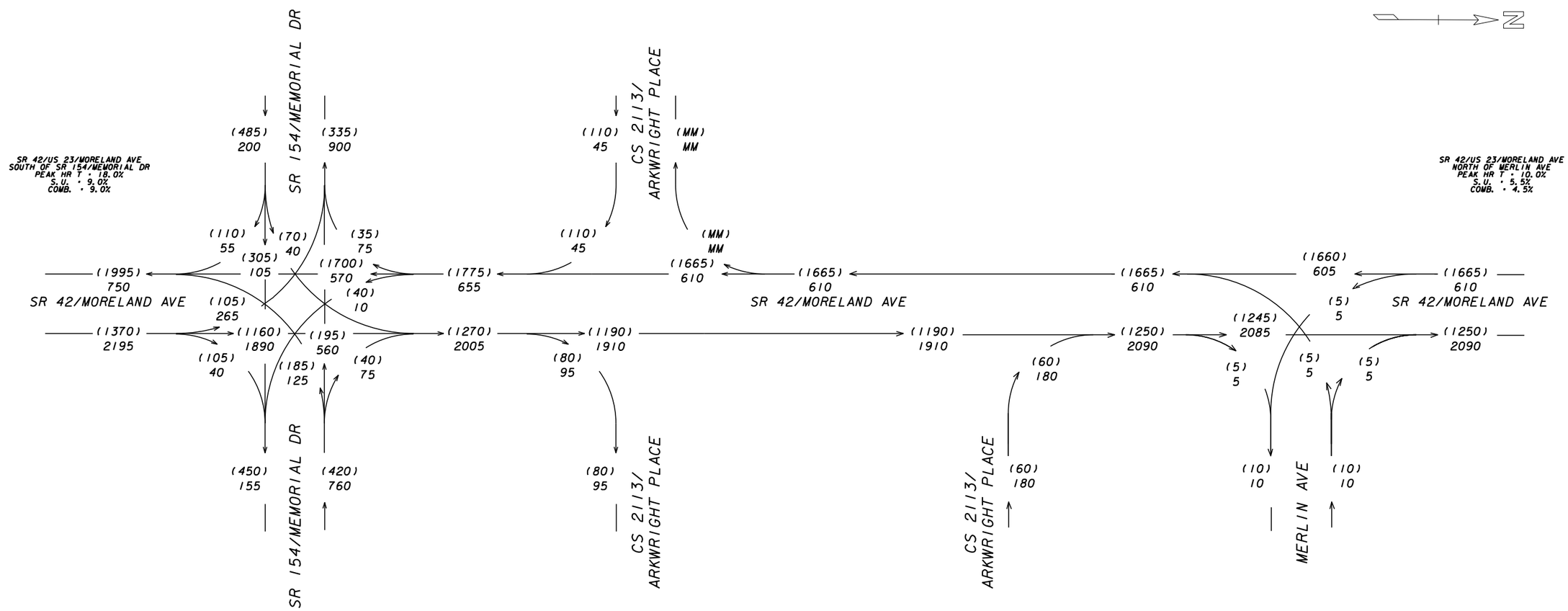
FULTON COUNTY



HF 3/14

PI# 0012596 FULTON COUNTY SR 42/MORELAND AVE FM SR 154/MEMORIAL DR TO MERLIN AVE	2018 PM DHV = (000) 2018 AM DHV = 000 BUILD	GRICE CONSULTING GROUP		REVISION DATES	STATE OF GEORGIA DEPARTMENT OF TRANSPORTATION OFFICE: PLANNING **TRAFFIC DIAGRAM** DRAWING No. 10-8

12/14/2012 GPLN

APPENDIX D

Turning Movement Count Data

(Available Upon Request)

APPENDIX E

ADT Tube Count Data

(Available Upon Request)

APPENDIX F

Synchro Analysis Reports

(Available Upon Request)

Environmental Screening Survey

Project Name: **SR 42 (Moreland Avenue) at CS 2113 (Arkwright Place)**
County: **Fulton/DeKalb**
GDOT P.I. No.: **0012596**
Consultant Firms: **Edwards-Pitman Environmental, Inc. for Heath & Lineback Engineers**
Date: **April 21, 2015**

Site Description: The proposed project would involve improvements to the existing intersection of SR 42/Moreland Avenue and CS 2113/Arkwright Place. Possible elements of this improvement include converting east and west legs of Arkwright Place to right-in-right-out turns only through the installation of a raised median on Moreland Avenue, and the construction of bicycle and pedestrian facilities. The approximate limits of this survey area (as provided by Heath & Lineback Engineers) are provided on the aerial photograph below.

General Land Use Description:

The land within the screening area is predominantly developed commercial properties. Given the intersection's close proximity to Interstate 20 (I-20) and Memorial Drive, two major east-west transportation corridors for metro Atlanta, the natural topography in the area has largely been altered. The north side of Arkwright Place and east of Moreland Avenue consists of single-family housing developments while the southeast quadrant of Arkwright Place east of Moreland Avenue contains a mixture of a commercial and residential buildings. Finally, the triangular section between Arkwright Place, Moreland Avenue and Flat Shoals Avenue contains commercial and institutional buildings. More specifically, development at the intersection quadrants includes the Dorothy Arkwright Nursery (northeast quadrant), Valero gas station (southeast quadrant), one small strip commercial "title loans" establishment (southwest quadrant), and Hope Cathedral Ministries of Atlanta (northwest quadrant).

Ecology:

Author: Charlotte Estes

Date Surveyed: April 10, 2015

Ecological Resource(s) Identified:		Yes	☒	No	☐			
Resource Type:		Stream	☐	Wetland	☐	Open Water	☒	T&E/Habitat ☐
Any State Buffered Waters?	Yes	☐	No	☒				
Any Jurisdictional Waters?	Yes	☐	No	☒				

***Streams/Wetlands*:**

On April 10, 2015, Charlotte Estes, an Edwards-Pitman Environmental, Inc. (EPEI) Senior Ecologist, performed a screening survey for environmental resources located within and immediately adjacent to the screening area depicted on the attached *State and Federal Waters* Map (page 3).

The screening survey did not identify any jurisdictional wetlands, streams, or open waters. One non-jurisdictional non-buffered state water (NBSW) (detention basin, Photo 1), was observed. This resource was not delineated; however, it is approximately located on the attached *State and Federal Waters* Map. This information is for planning purposes only and a full delineation of the waters of the US should be performed prior to project permitting and construction.

Photo 1: Detention Pond along Arkwright Place

Legend
Survey Area
Detention Pond
Source: ESRI Aerial Imagery
State and Federal Waters
Moreland Avenue at Arkwright Place
Fulton and DeKalb Counties
0 125 250 500 750 1,000
Feet
Cobb
Gwinnett
Fulton
DeKalb
Clayton
Henry

Protected Species:
Additionally as a part of the environmental screening, the US Fish and Wildlife Service's (USFWS) Information, Planning, and Conservation System (IPaC) and the Georgia Department of Natural Resource (GADNR) websites were consulted for information regarding potential impacts to federally protected species related to implementation of the proposed project. The USFWS IPaC list identifies three species of concern within DeKalb County, including the little amphianthus (*Amphianthus pusillus*), black spored quillwort (*Isoetes melanospora*), and dwarf sumac (*Rhus michauxii*) The USFWS IPAC list identifies five species of concern within Fulton County, including the Gulf moccsasinshell (*Medionidus penicillus*), oval pigtoe (*Pleurobema pyriforme*), purple bankclimber (*Elliptoideus sloatianus*), shinyrayed pocketbook (*Hamiota subangulata*) and the Cherokee darter (*Etheostoma scotti*). The GADNR DeKalb County list identifies the federally little Amphianthus and the black spored quillwort. The GADNR Fulton County list identifies the federally dwarf sumac, threatened Cherokee darter, shinyrayed pocketbook, and Gulf moccasinshell.

Since no perennial streams occur within the project area; therefore, the Gulf moccasinshell, oval pigtoe, purple bankclimber, shinyrayed pocketbook, and the Cherokee darter would not be species of concern during project development or construction.

Little Amphianthus – Federally Threatened
Little amphianthus occurs on shallow, flat bottomed depressions (vernal pools) on granite outcrops with thin, gravelly soils and winter-spring inundation. No granite outcrops were observed within the screening area. More intensive field surveys may identify habitat for this species; however, based on the screening survey it does not appear that little amphianthus would be a species of concern during project development.

Dwarf Sumac – Federally Endangered
Dwarf sumac are found in dry, open, rocky, or sandy woodlands over mafic bedrock with high level of calcium, magnesium, or iron; often on ridges and river bluffs. The wooded areas observed within the screening area are within maintained lawns and would not provide suitable habitat for the dwarf sumac. More intensive surveys may identify pockets of suitable habitat for this species; however, based on the screening survey it does not appear that dwarf sumac would be a species of concern during project development.

Black Spored Quillwort – Federally Endangered
The black-spored quillwort habitat is restricted to shallow, flat-bottomed depressions on granite outcrops, where water collects after a rain. These depressions are less than 1-foot in depth, and are entirely rock-rimmed, and usually contain soil at least 1-inch deep. They may be dry much of the summer, except during rainy periods. No granite outcrops were observed within the screening area. More intensive field surveys may identify habitat for this species; however, based on the screening survey it does not appear that little amphianthus would be a species of concern during project development.

Archaeology:
Author: Lauren Welch
Date Surveyed: April 9, 2015
Archaeological Resource(s) Identified:

Within One Kilometer:	Yes	☐	No	☒	Number of Sites: 0
Within Survey Boundary:	Yes	☐	No	☒	Number of Sites: 0

On April 9, 2015, a check of the Georgia Archaeological Site File (GASF) was conducted electronically for this project using the GNAHRGIS database at the University of Georgia in Athens. No previously identified archaeological sites are located within a one-kilometer radius of the proposed site. Furthermore, no previously recorded archaeological sites fall within the Area of Potential Effect (APE) of the currently proposed site.

History:
Author: Martha Teall
Date Surveyed: April 17, 2015
Structures 50+ year Identified:
Within Survey Boundary: Yes ☒ No ☐ Number of Sites: 2

For the purposes of the screening, identified resources were grouped into three distinct categories:

1) those requiring individual evaluation for eligibility on the National Register of Historic Places (National Register),
2) those that appear to be part of larger National Register-eligible historic districts, and
3) those that are already listed on the National Register.

For the resources requiring individual evaluation, properties constructed in or prior to 1965 were identified. These resources will be recognized as "historic" by National Register evaluation standards in 2015.

After establishing the spatial and temporal parameters of the screening, Fulton and DeKalb County tax assessor's records were consulted for all properties adjacent to the survey corridor in order to ascertain each property's date of construction. Review of tax assessor's records was also undertaken for numerous properties located beyond the survey corridor in order to establish approximate boundaries of potential historic districts in the vicinity of the corridor. In addition to the tax records, the National Park Service's inventory of National Register-listed properties in Fulton and DeKalb Counties, the Department of Natural Resources' Natural, Archaeological, and Historical Resources GIS (NAHRGIS) database and historic aerial photography were consulted to identify any previously surveyed historic resources located along the corridor. Finally, a windshield survey of the corridor was conducted to determine the validity of the database research.

The results of the screening are as follows (see *Historic Resources Map*, page 6):

● One National Register-listed historic property, the Reynoldstown Historic District (Resource 1), was identified along the survey corridor in the northwest quadrant of the intersection.

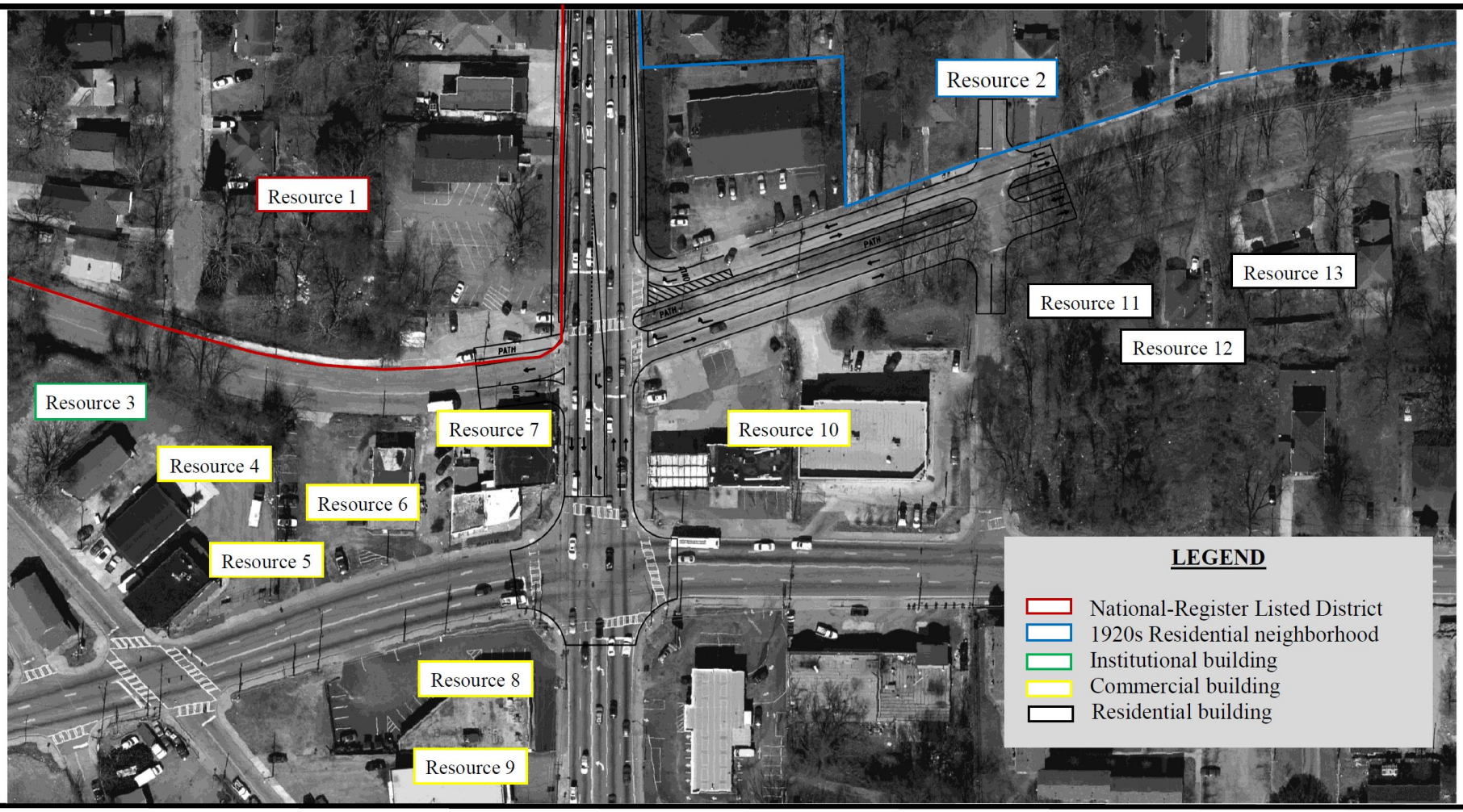
● No previously surveyed historic resources were identified in the Department of Natural Resources' NAHRGIS database.

● Numerous historic resources were identified along the corridor based on information obtained from the Fulton and DeKalb Counties tax assessors' records and the windshield survey. These resources include several examples of single-family housing, commercial, and institutional structures. According to the tax assessor's records, these properties were constructed between the 1920s and 1960s.

The National Register eligibility of most of these properties is unknown. Additional research and documentation would be required before an adequate assessment of each property's National Register eligibility can be made. However, based on the preliminary research and windshield survey, the following conditions were observed:

● The historic resources identified on the north side of Arkwright Place and east of Moreland Avenue (Resource 2) appear to be part of a larger historic district comprised of early 20th century single-family housing developments, many of which appear to be relatively intact. Their inclusion in a district increases the likelihood that these resources are eligible for the National Register.

● The southeast quadrant of Arkwright Place east of Moreland Avenue contains a mixture of a commercial and residential buildings spanning from the early to mid-20th century. These properties (Resources 10-13) do not appear to be eligible for listing in the National Register.



Historic Resources Map

Arkwright Place and Moreland Avenue Intersection Improvements
Fulton and DeKalb Counties, Georgia

N

Source: Heath and Lineback Engineers, Inc.

NOT TO SCALE

- The triangular section between Arkwright Place, Moreland Avenue and Flat Shoals Avenue contains commercial and institutional buildings dating from 1925 to 1960, according to the Fulton County tax assessor's record (Resources 3-9). They do not appear to constitute a historic district given the disparity of time in which they were constructed, and do not appear to be eligible individually.

Therefore, in addition to the National Register-listed historic property, the Reynoldstown Historic District (Resource 1), the only likely eligible resource is the early 20th century residential neighborhood in the northeast quadrant of the intersection (Resource 2).

Air Quality/Noise:
Author: Russ Danser, AICP
Date Surveyed: April 15, 2015
Impacts Anticipated: Yes ☐ No ☒

Ozone: This project is identified in the conforming TIP by reference number #AT-280**.**

CO: Given the project type (intersection improvements), it is not anticipated that this project would significantly impact CO concentrations and would, therefore, not require a CO hot-spot analysis.

$PM_{2.5}$: It is anticipated that this project, when evaluated by an interagency group consisting of FHWA, EPA, EPD and the MPO, would be Exempt per the Transportation Conformity Rule and thus meet the statutory and regulatory requirements for $PM_{2.5}$ hotspots without a qualitative analysis.

MSAT: It is anticipated that the proposed project would be classified as a project with *No Potential MSAT Effects*.

Noise: It is anticipated that this project meets the definition of a Type III project and does not require a noise study or abatement of highway noise impacts.

Underground Storage Tanks/Hazardous Materials Sites:
Author: Russ Danser, AICP
Date Surveyed: April 15, 2015
Sites Identified: Yes ☒ No ☐ Number of Sites: 1

As previously noted, there is one gas station (Valero) located in the southeast quadrant of the project intersection. If right-of-way is required from this property, subsurface investigations (Phase II) will be required for this property. If contamination is encountered, then Standard Specification 107.22 Hazardous and/or Toxic Waste for USTs would be required.

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Memo

To: Elaine Armster

From: Rudolph Frampton

CC: All Attendees

Date: April 14, 2015

Re: TOOPDDES110124
Task Order #37 -PI No. 0012596- SR 42/ US 23 @ CS 2113/Arkwright Place-Fulton County

KICK-OFF MEETING

This meeting was held to discuss the project scope and schedule. The following was discussed:

- Elaine introduced herself as the new GADOT PM for the project.
- The project is for the concept phase only. Elaine stated that funding is only available for the concept phase.
- Rudolph presented the group with a brief description of the project and critical issues regarding the intersection of Arkwright Place and Moreland Avenue were discussed.
- Task Order 37 managed by Rudolph will be coordinated with task order 38 managed by Tom, since they connect at the intersection of Moreland Avenue and Memorial Drive.
- The Task order calls for the Concept Report to be approved by August 31, 2015.
- The environmental screening by Edwards Pitman and the traffic Study by Kimley-Horn are due to Heath and Lineback by the end of May.
- Russ stated that they would have the draft environmental screening done this week.

- The project is focused on operational and pedestrian improvements primarily in the area of Arkwright on Moreland Avenue. There will be no capacity improvements.
- Rudolph recommended that a meeting with the District office may be a good idea to go over some of the design concerns after the environmental screening and traffic studies are completed.
- Russ with Edwards-Pitman mentioned that there are numerous historic buildings in the project area.
- The project could qualify for a Limited Scope Concept Report since we are anticipating minimum to no required right of way impacts.
- John with Kimley-Horn mentioned that the traffic diagrams are available therefore no traffic counts will be needed which will help speed up the traffic studies.

Action Items:

1. Elaine to provide initial schedule.
2. Elaine to check latest guidance on public involvement during the concept phase.
3. Elaine to coordinate a meeting with District 7 before submittal of concept report.
4. HLE to provide monthly updates to GDOT PM on the project status.
5. HLE to provide Edwards Pitman with screening area/project limits.

Attendees:

Elaine Armster – GADOT Project Manager, earmster@dot.ga.gov
Allen Krivsky – HLE, Principal, akrivsky@heath-lineback.com
Rudolph Frampton – HLE Project Manager, rframpton@heath-lineback.com
Tom Barwick – HLE Task Order 38 Project Manager, tbarwick@heath-lineback.com
Paola Rojas – HLE Lead Designer, projas@heath-lineback.com
Russ Danser – Edwards Pitman, rdanser@edwards-pitman.com
John Walker – Kimley-Horn, john.walker@kimley-horn.com

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Memo

To: Elaine Armster

From: Rudolph Frampton

CC: All Attendees

Date: August 12, 2015

Re: TOOPDDES110124
Task Order #37 -PI No. 0012596- SR 42/ US 23 @ CS 2113/Arkwright Place-Fulton County

CONCEPT TEAM MEETING MINUTES

This meeting was held to review the draft concept report and resolve any issues with the concept design. The following was discussed:

- Rudolph provided a background of the project and the project justification.
- Mathew with the office of planning mentioned that the project had been selected by the ARC approximately 3 years ago, as a project to receive funding for its development.
- Rudolph went over the draft concept report.
- Brad with District 7 mentioned the need to provide pedestrian lighting along the multi-use path.
- District 7 confirmed that the existing signal and pedestrian heads on Moreland Avenue and Memorial Drive shall be maintained.
- District 7 recommended moving the multi-use path along Arkwright Place to the northern quadrant and to remove the slip lane, and provide a two lane (one lane on each direction) road along Arkwright Place.
- One benefit of this change is the additional storage length at the left turn lane on Moreland Avenue, turning unto Memorial Drive.
- District 7 mentioned the need to amend the TE Study to reflect the addition of flashing beacons on Moreland Avenue, at the Multi-Use Path crossing and the need for a signal permit.

- Kim with Design Policy and support mentioned the possibility of not needing a design variance for lane widths along Moreland Avenue as the improvements are restricted by Right of Way constraints. Kim also mentioned the possibility of requiring a design exception for the median opening width on Arkwright Place at Mortimer Street.

- Keisha with OES mentioned the need to contact the property owners whose access may be impacted, to make them aware of the changes.

- Keisha suggested checking/adding the LOS as traffic seems high and could trigger an air assessment.

- Keisha also mentioned that attention needs to be placed on the slip lane on the northern leg of Arkwright Place as it is a remnant of the old street car.

- District 7 confirmed that widening the lanes north of Memorial Drive to 10' lanes is a logical approach to match the 10' lanes south of Memorial Drive.

Action Items:

1. GDOT attendees to submit comments on draft concept report by August 21, 2015.

2. District 7 to provide HLE with a copy of the proposed layout.

3. HLE to contact Walt Taylor to verify the need for a design variance for lane width.

4. HLE to inform Kimley Horn about the changes in the concept report so the changes are reflected in the TE Study.

5. HLE to verify if public outreach is a requirement for limited scope concept reports.

6. HLE to provide final concept report to GDOT by August 25, 2015.

Attendees:

Elaine Armster – GADOT Project Manager, earmster@dot.ga.gov
Greg Giuffrida- Central Atlanta Progress, greggiuffrida@gmail.com
Kim Phillips, kiphillips@dot.ga.gov
Matthew Fowler, mfowler@dot.ga.gov
Keisha Jackson, keijackson@dot.ga.gov
Elliot Robertson, erobertson@dot.ga.gov
Julia Billings, jbillings@dot.ga.gov
Brad Humphrey, jhumphrey@dot.ga.gov
Katrina Anderson. kanderson@dot.ga.gov
Chris Woods, cwoods@dot.ga.gov
Patrick Allen, paallen@dot.ga.gov
Michael Turpeau, mturpeau@dot.ga.gov
Rudolph Frampton – HLE Project Manager, rframpton@heath-lineback.com
Paola Rojas – HLE Lead Designer, projas@heath-lineback.com

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August 27, 2015

Albert Shelby, III
State Program Design Engineer
Georgia Department of Transportation
Office of Program Delivery
600 West Peachtree Street, 25th Floor
Atlanta, GA 30308
Attn: Peter Emmanuel

RE: P.I. No. 0012596
SR 42/US 23 (Moreland Avenue) and CS 260301/ Arkwright Place
Responses to the Draft Concept Report Comments

Dear Mr. Emmanuel:

We have revised the preferred layout based on recommendations from District 7 personnel and discussions that took place at the concept team meeting. We have also addressed all of the comments received on August 26, 2015, from Kim Phillips with the Office of Design Policy and Support. Our responses to these comments are as follows:

- Please be sure the signatures from the submitting team are on the cover of the report prior to submission.
  The signatures from the submitting team have been added on the cover of the report prior to submission.

- Please be sure to remove the watermarks prior to submission.
  The watermarks have been removed.

- The county is shown as Fulton and the project is shown as being 100% in Fulton while a large portion of work is being done in DeKalb. This should probably be looked into further. DeKalb County officials other related parties may need to be included in decisions and possibly funding for this project. Funds may be okay since ARC project, but it might should be checked further. In DeKalb, Arkwright is CS 269601. Please see attachments. SR 42 is the Borderline between Fulton and DeKalb.
  DeKalb County has been added to the report as Arkwright is CS 260301 in DeKalb County and improvements are proposed on the road.

- There is no scale on the location map.
  A note stating the map is "NOT TO SCALE" has been added to the location map.

- Since there was a question about limited scope, the criteria from the current PDP is attached. This project currently looks like it should be able to proceed using a limited scope format. It is exempt, a CE is anticipated, right-of-way involvement appears to be minor with only 5 parcels impacted, there is to be no VE, a PAR is not needed, no off-site detours are planned/needed, and utility impacts are minor. Items that may negate the project's eligibility are the number of design

exceptions/variances needed and the fact more than a TTC was selected/needed for traffic management. The project also has the potential to have greater utility, right-of-way and environmental impacts as the project develops.
The criteria from the current PDP has been revisited and the project complies with the requirements for a Limited Concept Report. The section under Traffic Management in the concept report has been corrected to show that a TMP is not required. The staging and traffic plans will be adequate to provide traffic control for this project.

- Were all adjacent and nearby projects accounted for in the report?
  All current/proposed adjacent and nearby projects found on the Transportation Project Information website have been accounted for in the report.

- The first paragraph of the project justification statement is a little misleading. The "lanes" to the north of the median on Arkwright road in the northeast quadrant are stripped that way for only roughly fifty feet. The northernmost lane referred to as a slip lane only allows a right turn. The rest of this paved area ("lanes") north of the median appears to be unmarked from Moreland heading east until ending at Dahlgreen Street. It may be more accurate to refer to this area as a remnant from the former street car path if that is correct or just as a paved drive access since it is now used primarily as a drive access and/or on-street parking.
  The Project Justification Statement dated February 3, 2014 was provided by the office of Planning. It has been revised as suggested.

- Please check the existing information described for Arkwright Road.
  The existing information on Arkwright Place has been verified and the location of the area of the remnant from the former street car has been added.

- Please check the functional classification of SR 42. Most of this route is shown as an Urban Principle Arterial in the transportation data viewer.
  The functional classification of SR 42 has been revised to an Urban Principal Arterial as shown in the Automated Traffic Recorder (ATR) Location map for District 7.

- Feasible pavement alternatives had nothing checked. If this accurate, a note should probably be included to explain why or what material is to be used; otherwise, it looks like an oversight.
  HMA has been checked in the section for feasible pavement alternatives.

- On the table for SR 42, the following was noted:
  1. The proposed has "Varies 10-0" to 2'-0" raised (at left turn)". Should this have been "varies 10' flush median to 2' raised median (at left turn)"?
     The concept proposes a raised median varying in width from 2'-0" to 10'-0" from the intersection of SR 154 (Memorial Drive) with SR 42/US 23 (Moreland Avenue) to north of the proposed midblock crossing.
  2. flush median is not standard for the volume of traffic shown even for existing
     The concept proposes a raised median from the intersection of SR 154 (Memorial Drive) with SR 42/US 23 (Moreland Avenue) to north of the proposed midblock crossing.
  3. Is this area considered rolling? Is an 8% grade accurate?
     The current area is considered rolling. The maximum grade for a design speed of 45 mph is 7%. The report has been updated accordingly.
  4. Where auxiliary lanes are discussed existing is flushed, 20 foot raised preferred 24 raised standard for the amount of traffic, and left turn proposed since a raised median to be placed.

The 20'-0" or 24'-0" raised median has not been proposed as this will require significant widening and right of way along the corridor and was not part of the scope for the project.

5. Although WB-40 or WB-62 are shown as minimum design vehicles for urban primary arterials, it is recommended to check for WB-67 vehicles (using auto turn and noting whether WB-67 can be accommodated). 8% is considered fairly heavy truck traffic and it is now common to encounter WB-67 vehicles.
   WB-67 has been used to check and the proposed layout can accommodate WB-67 vehicles.

- On the table for Arkwright, the following was noted:
  1. Please check the lane width information.
     The proposed lanes on Arkwright Place are 14'-0" wide on both legs from SR 154 (Moreland Avenue) to Mortimer Street to match the existing lane widths.
  2. Please check the shoulder information.
     The shoulder information on Arkwright has been updated to show a border area varying from 10'-0" to 41'-6".
  3. Turn information not shown for auxiliary lanes.
     The layout has been revised and there are no auxiliary lanes on Arkwright Place.

- A table was not provided for SR 154/Memorial Drive.
  A table for SR 154 has been added.

- In the context sensitive issues section, existing conditions are described as inadequate and the subjective word "safety" is used. Please refrain from using subjective wording. It is recommended to just describe the improvement and why it will be beneficial.
  The context sensitive issues section has been revised as suggested to avoid subjective wording.

- On the typical for Moreland, it shows varies 10 to 9 foot (in that order). Is this proposed as shown? If so, the table and proposed description should reflect this.
  The lane widths for SR 42 (Moreland Avenue) is 10'-0" for the majority of the project length. To match existing conditions, on the southern limit of the project. At the north end of the project the lanes taper down 9'-0" to tie to existing. A description of the change in lane width has been added to the project description and the table.

- Under the description where Moreland's design is discussed it is recommended to just state approximately where it begins and ends rather than giving a measurement of length for it.
  The description on the limits of construction for SR 42 (Moreland Avenue) has been revised to provide an approximate location where it begins and ends.

- FHWA and GDOT require roundabouts to be considered. Please discuss your consideration of the roundabout/miniroundabout in the report and why the configuration was not chosen to improve the intersections.
  A roundabout option was considered but due to right of way restrictions and proximity of historic properties, that option was discarded and not studied further. We have added a statement under the alternates considered section in the concept report.

- Four lane do not seem to be justified for Arkwright road based on the traffic and current configuration. Please check the configuration of the typical for this roadway.
  The preferred layout has been revised, such that this is no longer an issue.

- The report states that a design variance is required for the 10' lane widths. The Design Policy Manual considers lane width to be controlling criteria which must meet AASHTO standards, so a design exception would be required if needed. Please check the current AASHTO Greenbook to determine what situation applies to PI# 0012596. Please contact Walter Taylor at 404-631-1922 should any further information be needed.
  A design exception for lane widths is anticipated as section 7.3.3 from AASHTO standards only permits lane widths of 10'-0" in constrained areas where truck and bus volumes are low and speeds are less than 35 mph. The project's projected traffic has an estimate 24 hour truck volume of 8%. 8% considered as fairly heavy truck traffic and therefore the design exception for lane width is required. A statement stating the anticipation of a design exception has been added to the concept report.

- The report states that a design variance is required for the 9.5' shoulder widths. The Design Policy Manual considers shoulder width to be controlling criteria which must meet AASHTO standards, so a design exception would be required if needed. Please consult the current AASHTO Greenbook to determine what situation applies to PI# 0012596. Please keep in mind this is an urban section and that width would be considered for a border area. Please contact Walter Taylor at 404-631-1922 should any further information be needed.
  A design exception is not required for shoulder widths as section 7.3.3 from AASHTO standards (page 7-35) allows for border widths varying from 8'-0" to 12'-0". A design variance will be required for shoulder area width. The proposed 9'-6"shoulder area width on SR 42/US 23 (Moreland Avenue) is less than the required minimum border area width of 10'-0" as stated in Table 6.4 of the current GDOT "*Design Policy Manual.*" The reduced shoulder widths are proposed to minimize right of way impacts.

- If the access break in the proposed median for the kindergarten and/or possibly even for Mortimer Street SW (it may be 300' from intersection this would need to be checked), permission may be needed by the Chief. Please contact Walter Taylor at 404-631-1922 should any further information be needed.
  The preferred layout has been revised such that this is no longer an issue.

- The arrows on the layout do not appear to be oriented correctly on Arkwright Road.
  The orientation of the arrows on Arkwright Place have been corrected.

- Was consideration given to other alternatives not listed such as improving sidewalk to only one side of Moreland?
  Improving the sidewalk to only one side on SR 42 (Moreland Avenue) was considered but could not be justified due to current ADA requirements. In addition, this would result in a short break in the sidewalk which is typical all along Moreland Avenue.

- Traffic cost looks to be a little low especially if signals must be modified at more than one place.
  The traffic cost has been revised to reflect the cost of the signal modification and the Pedestrian Hybrid Signal. Note that, the signal at the intersection of Moreland Avenue and Arkwright Place (west) will be removed and the existing signal at the intersection of Moreland Avenue and Memorial Drive will remain in place and modified.

- Please be sure all supporting documents for costs are approved and attached.
  All supporting documents for costs are approved and attached.

- It is recommended to follow the cost format from Engineering Services.
  The cost estimate has been recreated using the GADOT CES program.

- For design decisions which do not meet currant criteria, design deviations will need to be documented and kept on file.
  For design decisions that do not meet current criteria, design variances and exceptions will be submitted, documented, and kept on file.

- It is recommended to provide an explanation for any design deviations in the concept report.
  An explanation for any design deviations have been included in the concept report in the design exception and variances sections.

- If layouts with fill areas completely cover proposed work over existing, it is recommended to also provide layouts showing the existing for comparison (there is on in the attached study, but it would be more convenient to have one beside the other for comparison.
  An aerial photograph of the existing conditions has been included in the attachments of the concept report.

Please call with any questions.

Very truly yours,
Heath & Lineback Engineers, Inc.

Rudolph L. Frampton, P.E.

Enclosure

Heath & Lineback Engineers, Inc.

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January 6, 2016

Vinesha Pegram
GDOT Project Manager
Georgia Department of Transportation
Office of Program Delivery
600 West Peachtree Street, 25th Floor
Atlanta, GA 30308

RE: P.I. No. 0012596
SR 42/US 23 (Moreland Avenue) and CS 260301/ Arkwright Place
Responses to the Draft Concept Report Comments

Dear Ms. Pegram:

We have addressed the comments dated November 25, 2015 pertaining to the Concept Report for the referenced project. Our responses are as follows:

1. The ROW impacts appear to be underestimated. The gas station in the NE corner of Moreland Ave./Memorial Drive may have more sever damages than shown. Google earth measurement appears to show Moreland Ave. EOP to EOP at 47 feet plus a 7 foot shoulder, and the proposed typical section is 52 feet plus 9.5 foot shoulder. Was this considered in the ROW estimate? Would like to see an enlargement of this area noting distance to pumps.
   The driveway easement has been removed and replaced with right of way to accommodate the sidewalk crossing across the driveway. Based on the information available, we estimate that the distance between the proposed pavement edge to the curb at the pumps is approximately 18 feet. The right of way estimate has also been revised accordingly. The following note has been added to the comments section of the report: "During preliminary design, once actual survey data has been received, the impacts to the gas station at the northeast corner of Moreland Avenue and Memorial Drive needs to be revisited. If the proposed widening results in impacts to the gas pumps, accommodation of a u-turn on Moreland Avenue shall be considered."

2. SB to EB left turn volume at Moreland Ave./Memorial Drive appears to be low, but need confirmation there is enough storage proposed with the raised median turn bay.
   The storage length has been revisited and increased. The concept layout presently shows a storage length of 160 feet which is consistent with Table 4-9 of GDOT's Driveway and Encroachment Control Manual.

3. Concept proposes to install a raised median, but there is no SB to NB u-turn provision which is a disadvantage of the proposed concept.
   In order to accommodate a U-turn on Moreland Avenue, there would be significant impacts to the gas station on the northeast corner of Moreland Avenue and Memorial Drive. Based on the information available, we believe that there is adequate room for the widening, sidewalk crossing and a vehicle at the pump closest to Moreland Avenue. The following note has been added to the

comments section of the report: "During preliminary design, once actual survey data has been received, the impacts to the gas station at the northeast corner of Moreland Avenue and Memorial Drive needs to be revisited. If the proposed widening results in impacts to the gas pumps, accommodation of a u-turn on Moreland Avenue shall be considered."

4. The proposed wide sidewalk/path along the north side of Arkwright Place does not tie to an existing sidewalk at Mortimer Street. What is the timing of the future trail project? If it's programmed after this project, then this project's sidewalk should tie to the existing sidewalk on the north shoulder of north Arkwright Place.
   The timing of the future project is unknown; however, the proposed sidewalk ties to the existing sidewalk on the north side of Arkwright Place. The sidewalk has been revised to end the wide sidewalk immediately after the cross walk at Mortimer Street.

Please call with any questions.

Very truly yours,
Heath & Lineback Engineers, Inc.

Rudolph L. Frampton, P.E.

Enclosure

SR 42/ US 23 (MORELAND AVENUE) AND CS 260301/ ARKWRIGHT PLACE
PI NO.: 0012596

SCALE IN FEET
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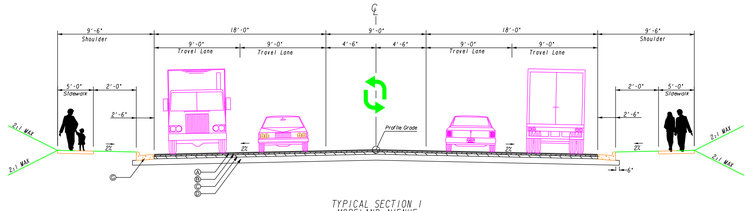
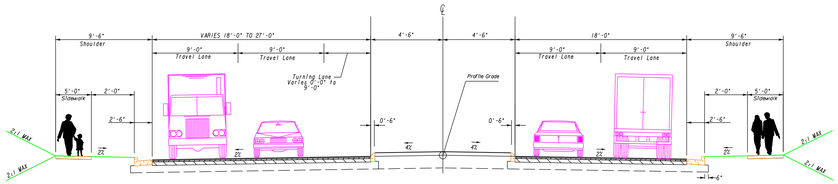
Georgia Department of Transportation

OPTION 1A - SR 42/MORELAND AVENUE

Date Last Updated:



TYPICAL SECTION 1
MORELAND AVENUE



TYPICAL SECTION 2
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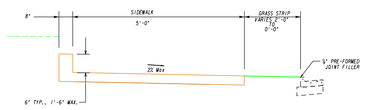
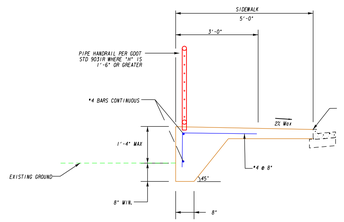


TYPICAL RAISED EDGE SIDEWALK
NOT TO SCALE



TYPICAL TURNDOWN SIDEWALK
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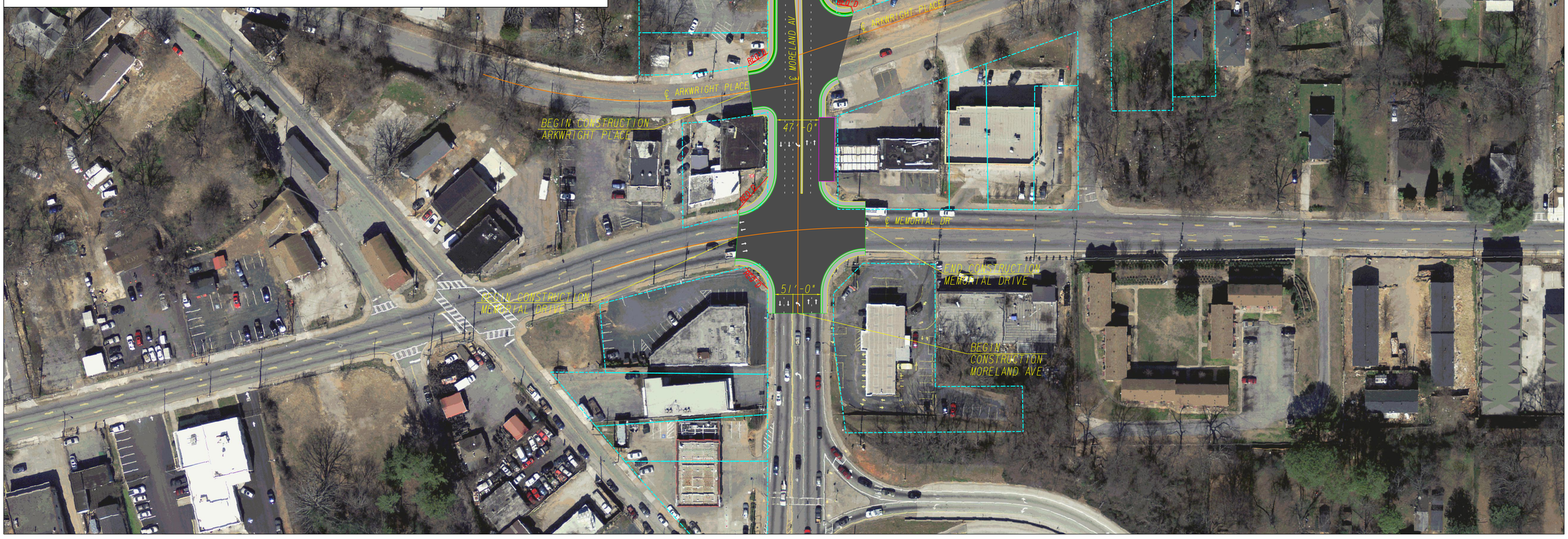

SR 42/ US 23 (MORELAND AVENUE) AND CS 260301/ ARKWRIGHT PLACE
PI NO.: 0012596

SCALE IN FEET
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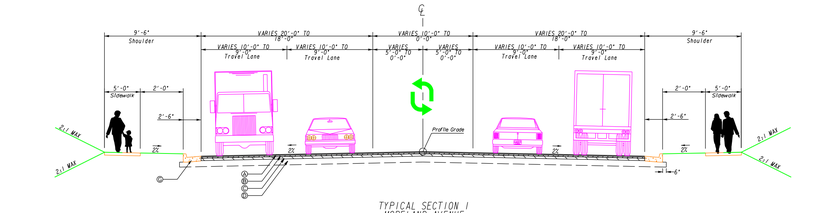
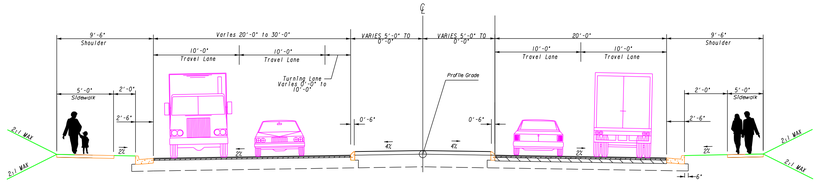
Georgia Department of Transportation

OPTION 1B - SR 42/MORELAND AVENUE

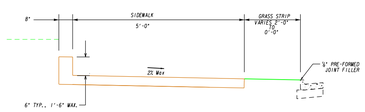
Date Last Updated:



TYPICAL SECTION 1
MORELAND AVENUE



TYPICAL SECTION 2
MORELAND AVENUE



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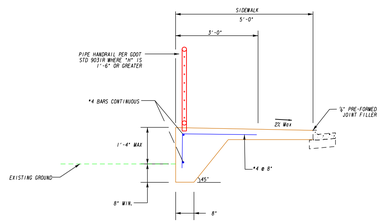

TYPICAL TURNDOWN SIDEWALK
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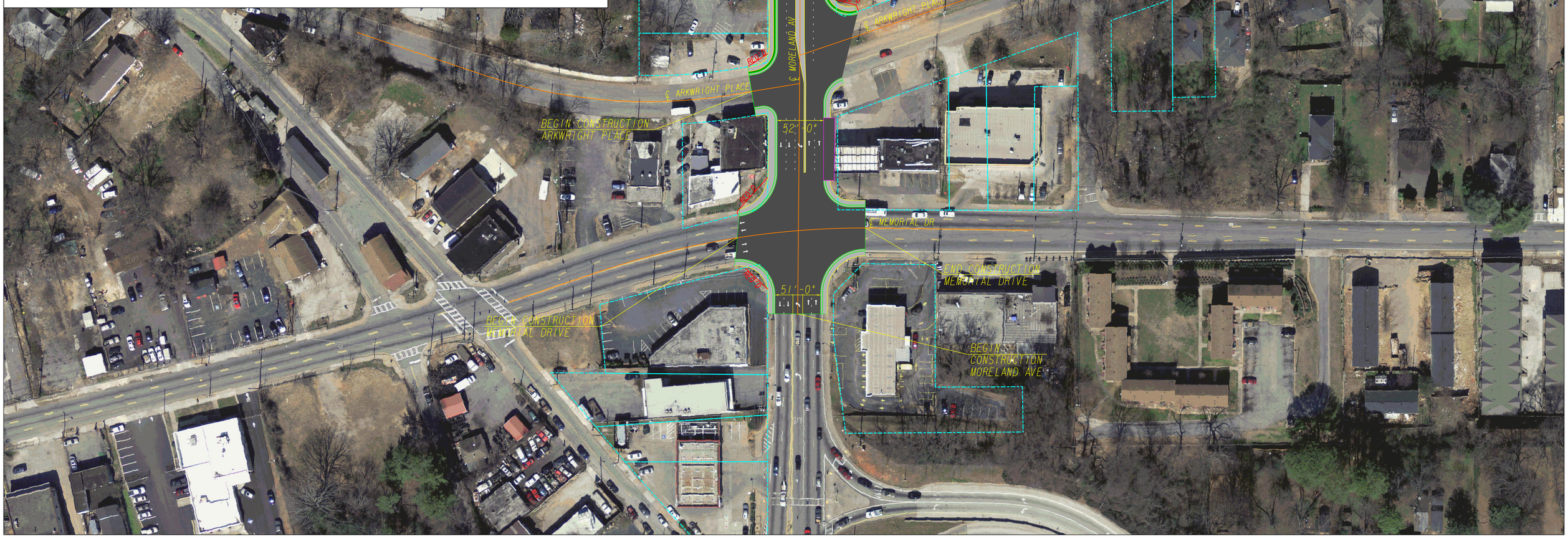

SR 42/ US 23 (MORELAND AVENUE) AND CS 260301/ ARKWRIGHT PLACE
PI NO.: 0012596

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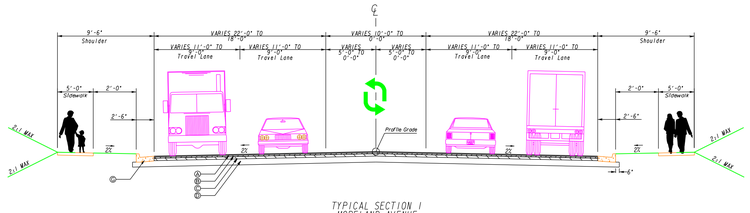
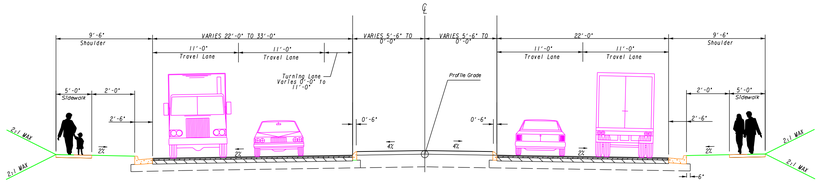
OPTION 1C - SR 42/MORELAND AVENUE

Date Last Updated:

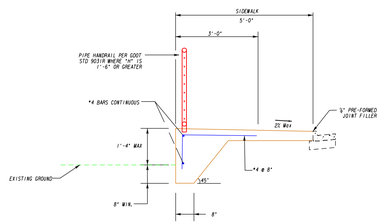


TYPICAL SECTION 1
MORELAND AVENUE



TYPICAL SECTION 2
MORELAND AVENUE

TYPICAL RAISED EDGE SIDEWALK
NOT TO SCALE



TYPICAL TURNDOWN SIDEWALK
NOT TO SCALE

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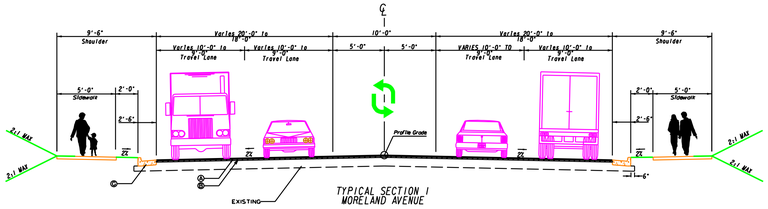
(770)424-1668

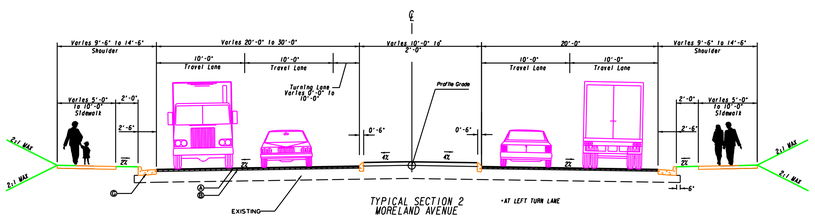
Georgia Department of Transportation

OPTION 1D

Date Last Updated: 08-26-2015

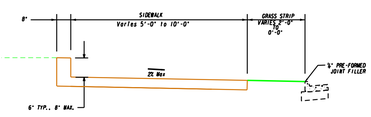


TYPICAL SECTION 1
MORELAND AVENUE

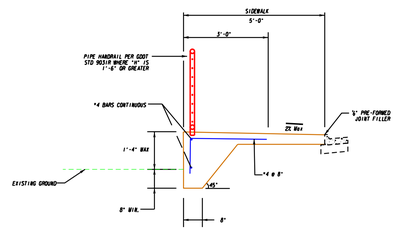


TYPICAL SECTION 2
MORELAND AVENUE

*AT LEFT TURN LANE

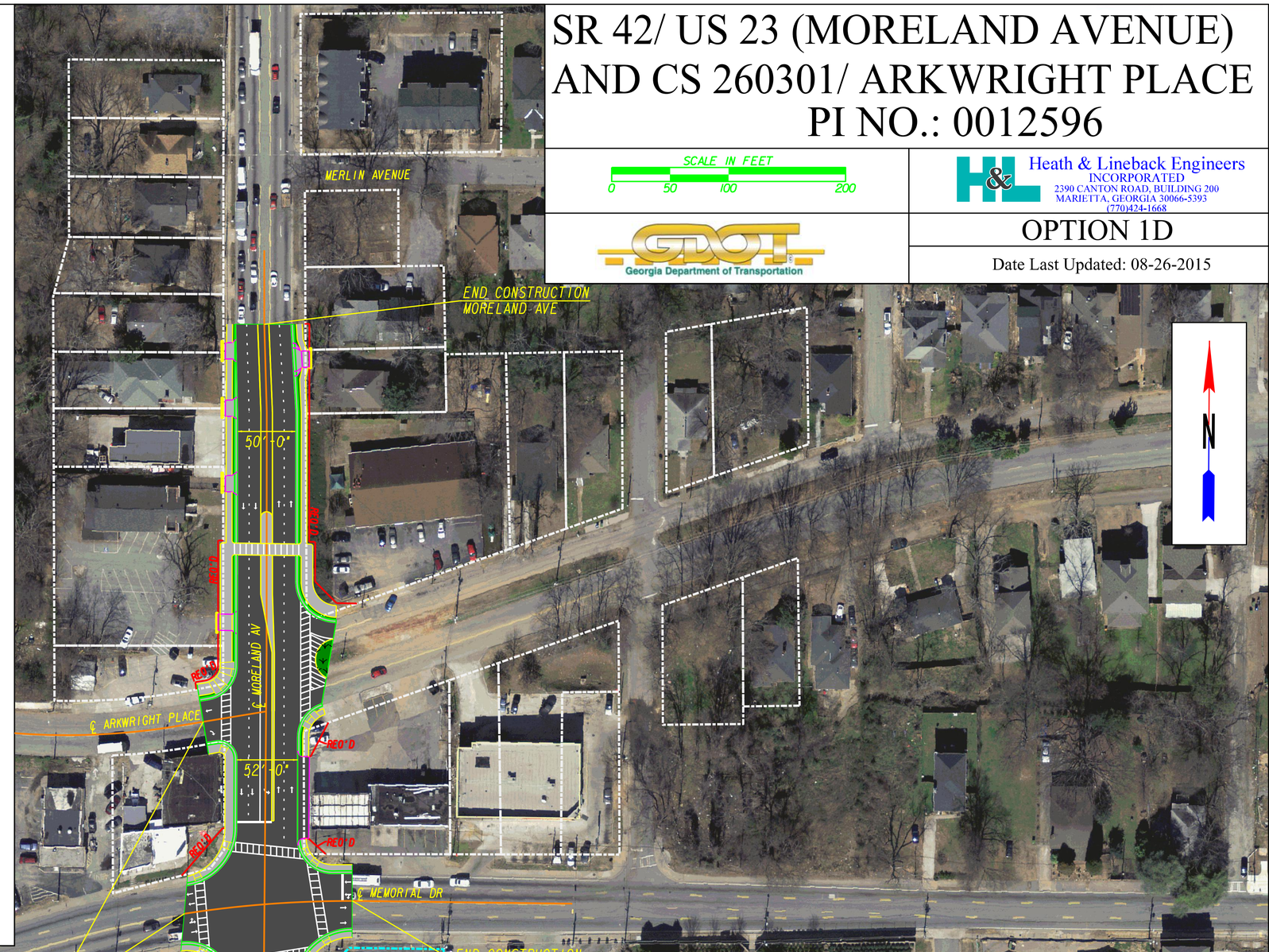


TYPICAL RAISED EDGE SIDEWALK
NOT TO SCALE



TYPICAL TURNDOWN SIDEWALK
NOT TO SCALE

PERMANENT GRASS



SR 42/ US 23 (MORELAND AVENUE) AND CS 260301/ ARKWRIGHT PLACE
PI NO.: 0012596

SCALE IN FEET
0 50 100 200

Heath & Lineback Engineers
INCORPORATED
2390 CANTON ROAD, BUILDING 200
MARIETTA, GEORGIA 30066-5393
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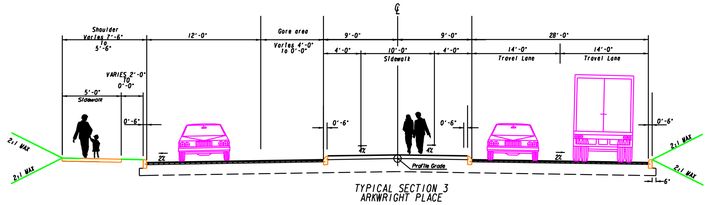
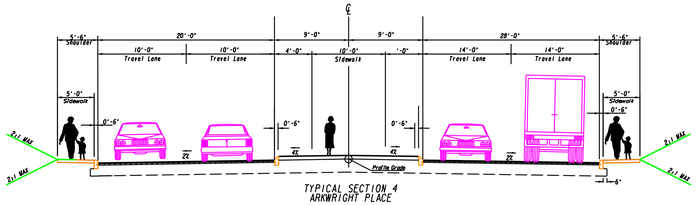
Georgia Department of Transportation

OPTION 2A- ARKWRIGHT PLACE

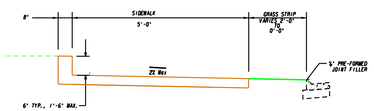
Date Last Updated:



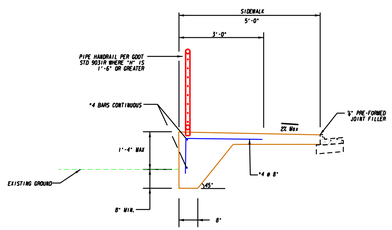
TYPICAL SECTION 3
ARKWRIGHT PLACE



TYPICAL SECTION 4
ARKWRIGHT PLACE



TYPICAL RAISED EDGE SIDEWALK
NOT TO SCALE



TYPICAL TURNDOWN SIDEWALK
NOT TO SCALE

SR 42/ US 23 (MORELAND AVENUE) AND CS 260301/ ARKWRIGHT PLACE
PI NO.: 0012596

SCALE IN FEET
0 50 100 200

Heath & Lineback Engineers
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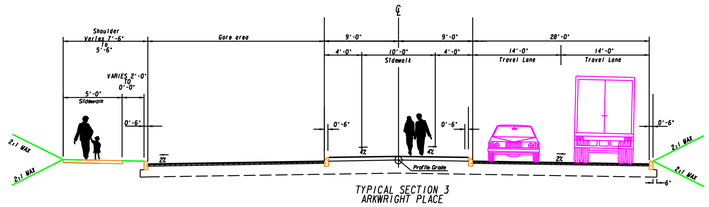
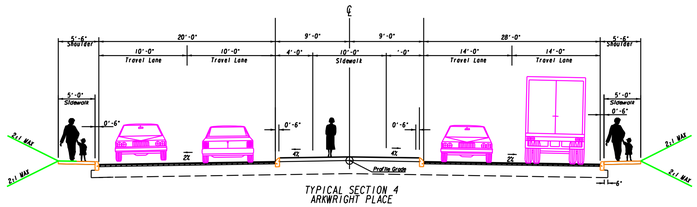
OPTION 2B- ARKWRIGHT PLACE

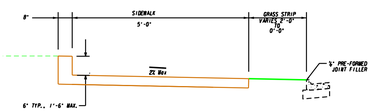
Date Last Updated:



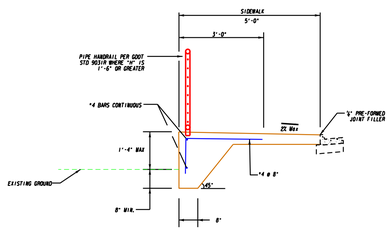
TYPICAL SECTION 3
ARKWRIGHT PLACE



TYPICAL SECTION 4
ARKWRIGHT PLACE



TYPICAL RAISED EDGE SIDEWALK
NOT TO SCALE



TYPICAL TURNDOWN SIDEWALK
NOT TO SCALE

SR 42/ US 23 (MORELAND AVENUE) AND CS 260301/ ARKWRIGHT PLACE
PI NO.: 0012596

SCALE IN FEET
0 50 100 200

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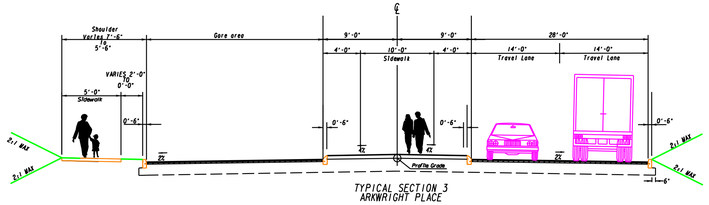
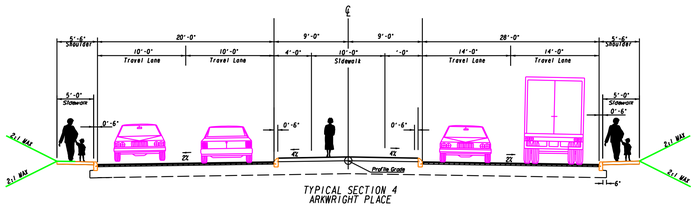
OPTION 2C- ARKWRIGHT PLACE

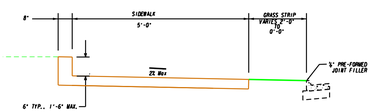
Date Last Updated:



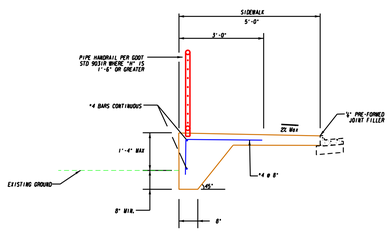
TYPICAL SECTION 3
ARKWRIGHT PLACE



TYPICAL SECTION 4
ARKWRIGHT PLACE



TYPICAL RAISED EDGE SIDEWALK
NOT TO SCALE



TYPICAL TURNDOWN SIDEWALK
NOT TO SCALE

SR 42/ US 23 (MORELAND AVENUE) AND CS 260301/ ARKWRIGHT PLACE
PI NO.: 0012596

SCALE IN FEET
0 50 100 200

Heath & Lineback Engineers
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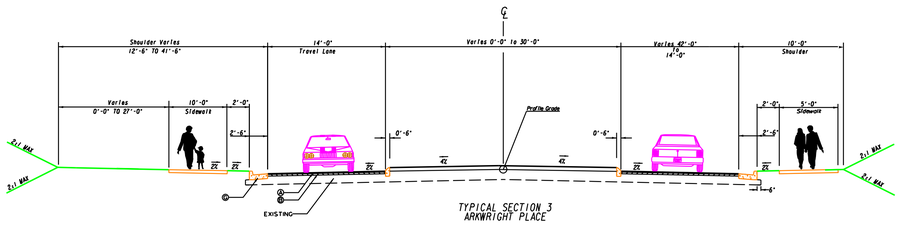
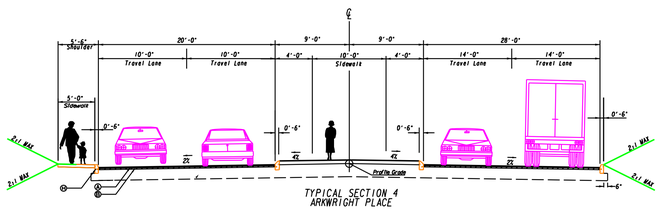
OPTION 2D

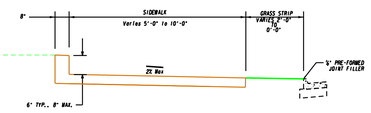
Date Last Updated: 08-26-2015



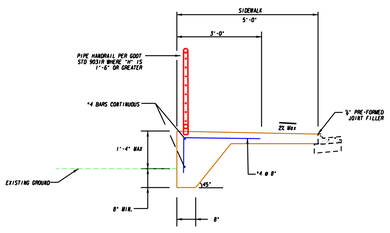
TYPICAL SECTION 3
ARKWRIGHT PLACE



TYPICAL SECTION 4
ARKWRIGHT PLACE



TYPICAL RAISED EDGE SIDEWALK
NOT TO SCALE



TYPICAL TURNDOWN SIDEWALK
NOT TO SCALE

PERMANENT GRASS

SR 42/ US 23 (MORELAND AVENUE) AND CS 260301/ ARKWRIGHT PLACE
PI NO.: 0012596

Georgia Department of Transportation

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EXISTING CONDITIONS (NOT TO SCALE)