ORIGINAL TO GENERAL FILES

DEPARTMENT OF TRANSPORTATION
STATE OF GEORGIA

OFFICE OF DESIGN POLICY & SUPPORT
INTERDEPARTMENTAL CORRESPONDENCE

FILE P.I. # 0006328
CSSTP-0006-00(328)
Chatham County
GDOT District 5 - Jesup
Brampton Road Connector

OFFICE Design Policy & Support

DATE 3/17/2015

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:

Glenn Bowman, 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
Bobby Hilliard, Program Control Administrator
Cindy VanDyke, State Transportation Planning Administrator
Hiral Patel, State Environmental Administrator
Ben Rabun, State Bridge Engineer
Andrew Heath, State Traffic Engineer
Angela Robinson, Financial Management Administrator
Lisa Myers, State Project Review Engineer
Charles "Chuck" Hasty, State Materials Engineer
Mike Bolden, State Utilities Engineer
Paul Tanner, Asst. State Transportation Data Administrator
Attn: Systems & Classification Branch
Richard Cobb, Statewide Location Bureau Chief
Karon Ivery, District Engineer
Will Murphy, District Preconstruction Engineer
Dallory Rozier, District Utilities Engineer
Aghdas Ghazi, Project Manager
BOARD MEMBER - 1st Congressional District

DEPARTMENT OF TRANSPORTATION
STATE OF GEORGIA
PROJECT CONCEPT REPORT

Project Type:	New Construction	P.I. Number:	0006328
GDOT District:	District 5	County:	Chatham
Federal Route Number:	ST4056	State Route Number:	SR21 SP
		Project Number:	CSSTP-0006-00 (328)

The proposed Brampton Connector will consist of a new location roadway beginning SR25/Main Street intersection at Burnseed Blvd. and continuing northeasterly until connecting with the existing Brampton Road to provide direct access for trucks from I-516 to existing industries along Brampton Road including Georgia Ports Authority. This project will provide better access to I-516, I-16, and US 80, eliminate an at grade railroad crossing at Brampton Road, alleviate delay along Brampton Road, and re-route truck traffic using residential segment of Brampton Road between SR25 and SR21.

Submitted for approval:

Umit Seyhan, PhD, MBA, PE CDM Smith — November 20, 2014
Consultant Designer & Firm *or* GDOT Concept/Design Phase Office Head & Office — Date

Georgia Ports Authority — 11-21-14
Local Government Sponsor — Date

Albert V. Shelby III BNS Albert Shelby — 12/10/14
State Program Delivery Engineer — Date

12/10/14
GDOT Project Manager — Date

Recommendation for approval: *(Delete any inapplicable signature lines)*

* HIRAL PATEL — 12/11/2014
State Environmental Administrator — Date

* KATHY ZAHUL — 12/12/2014
State Traffic Engineer — Date

* LISA MYERS — 12/12/2014
Project Review Engineer — Date

* NICHOLAS FIELDS — 12/22/2014
FOR State Utilities Engineer — Date

* KARON IVERY — 12/23/2014
District Engineer — Date

* BEN RABUN — 12/16/2014
State Bridge Engineer — Date

☑ 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 Program (STIP).

CINTHIA L VANDIKE — 12/16/2014
State Transportation Planning Administrator — Date

Figure 1 – LOCATION MAP– PROJECT NO. : CSSTP-0006-00 (328)

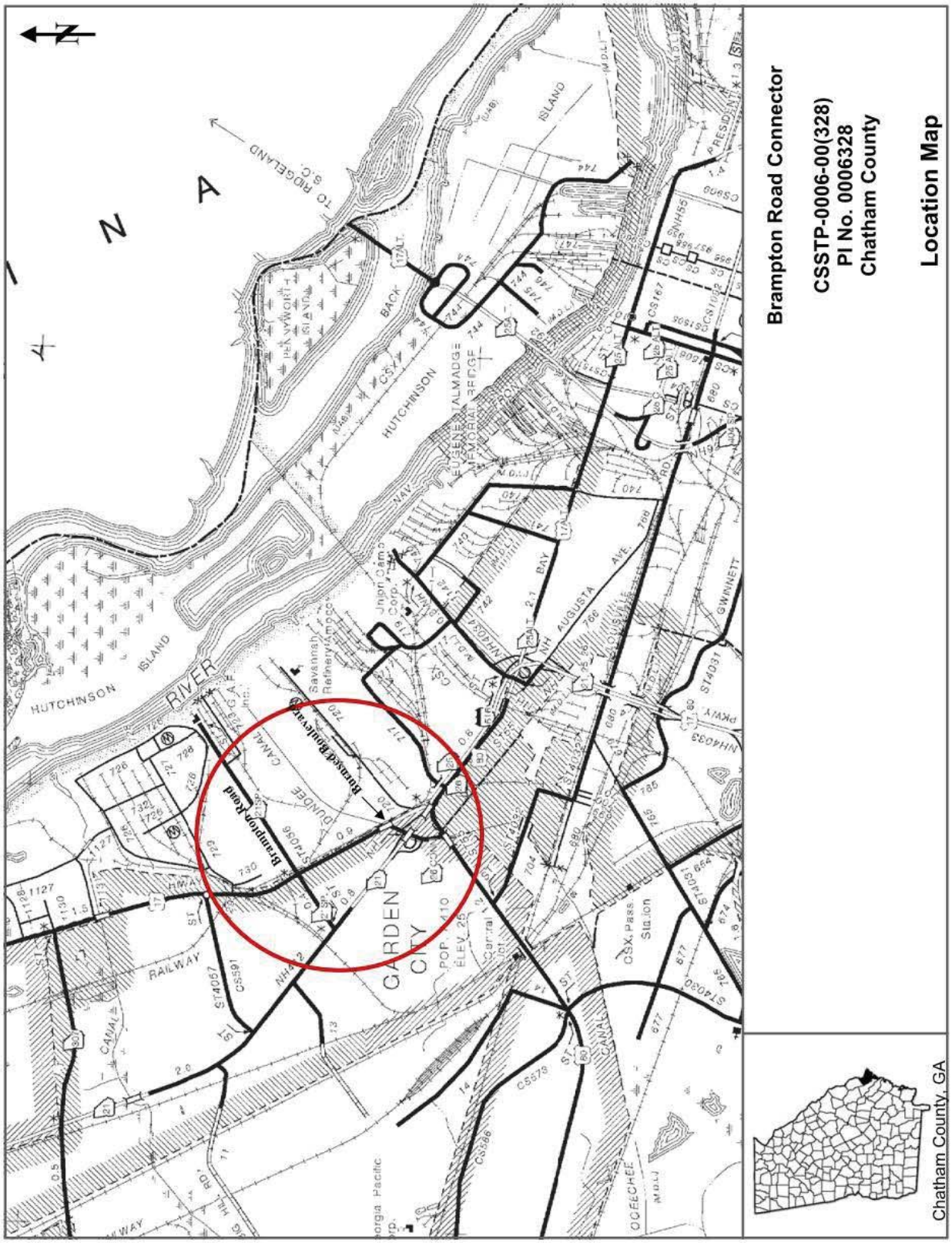
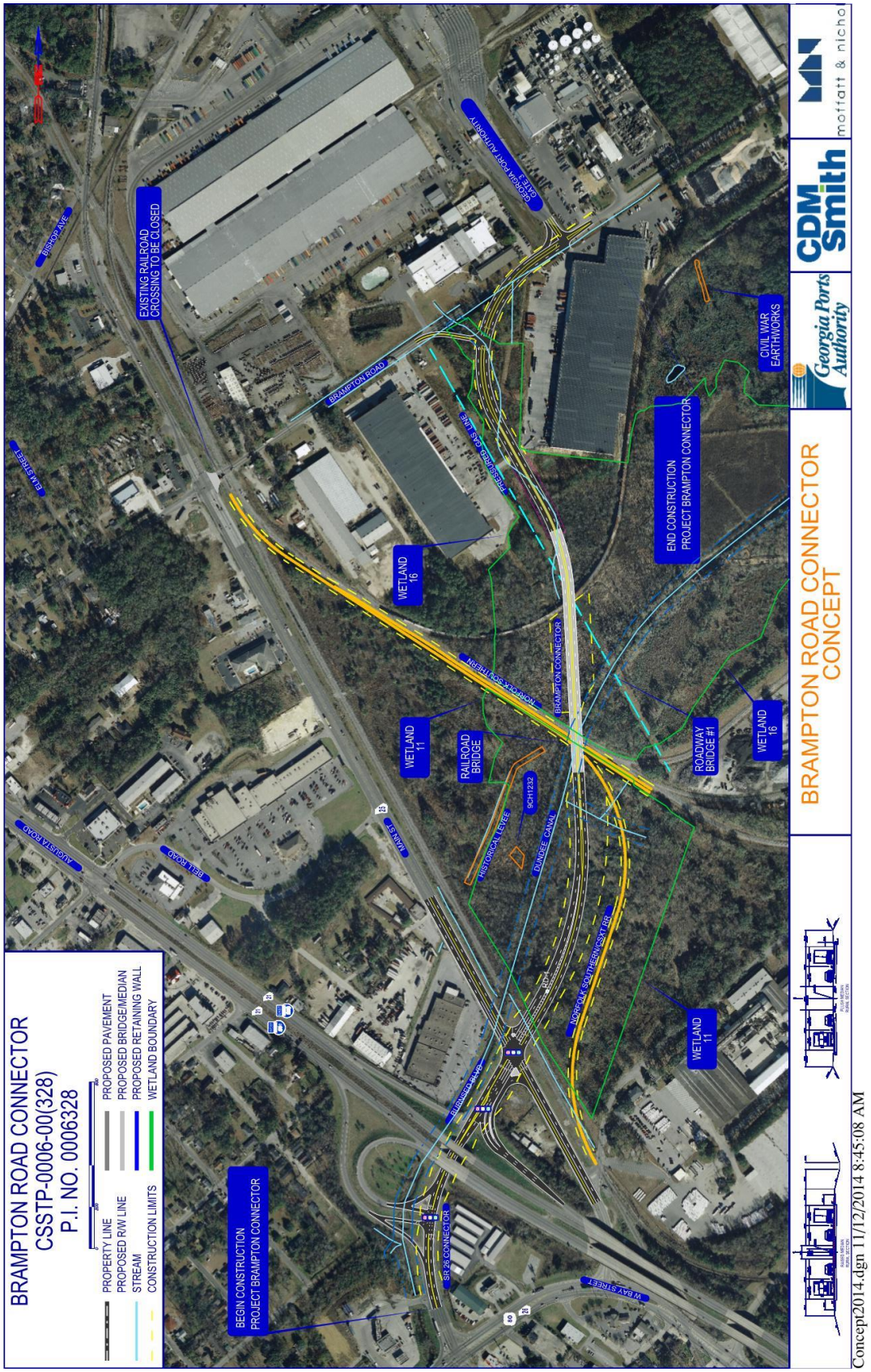


FIGURE 2 - VICINITY MAP – PROJECT NO. : CSSTP-0006-00 (328)



PLANNING AND BACKGROUND

Project Justification Statement:

This project was added to the program in January 2004 at the request of the Georgia Ports Authority and the Savannah MPO. The local sponsor, Georgia Ports Authority, is responsible for PE; ROW and CST are outside the TIP period. This project is identified in the MPO's Long Range Transportation Plan.

Approximately 50 percent (on a tonnage basis) of international waterborne commerce handled by the Georgia Ports Authority (GPA) is through GPA's Garden City Terminal in Chatham County, Georgia. Port activity increases, improved roadway access to Gate 3 will be necessary. Gate 3 is currently accessed from I-516 using the Burnseed Boulevard exit and then travelling north on SR 25 to Brampton Road/SR21 Spur, but southbound traffic from SR 21 cannot turn left from the exit. Because a left turn is not permitted and because the intersection has complicated connections to US 80 and SR 25/Main Street, the preferred route to Gate 3 is along Brampton Road/SR21 Spur between SR 21 and SR 25/Main Street. Brampton Road between SR 21 and SR 25 is an existing residential neighborhood and the high truck volumes cause noise, vibration and emissions that impact the area.

Parallel to SR 25 is an existing Norfolk Southern railroad track that has an at-grade intersection with Brampton Road. All traffic accessing Gate 3 of the Garden City Terminal has to cross the tracks. Based on *US DOT Crossing Inventory Information,* twelve trains travel daily through the SR25 corridor and eight trains make switching operation at this crossing to a spur line which services the port and adjacent warehouses. The rail traffic on the track can cause significant delays (as much as 11 minutes) to trucks trying to access the terminal. Trucks that are waiting to enter the terminal back up on SR 25 and Brampton Road/SR21 Spur. This delay creates a bottleneck at the railroad and the nearby intersection as well as a high risk at grade railroad crossing for trucks and other vehicles. The project location is shown in Figure 1 and 2.

As the amount of cargo passing through the terminal continues to grow, increases in train traffic is likely to exacerbate the delays and congestion on Brampton Road. Considering the increased truck traffic expected through the terminal, this is a potentially critical problem to the operation of the GPA and other industrial and commercial businesses along Brampton Road. This project will improve access from SR21/I-516 and SR25/Main Street to Gate 3 of the GPA's terminal and other existing industries along Brampton Road, alleviate delay on Brampton Road at the railroad crossing, reduce congestion along exiting Brampton Road/SR21 Spur from SR21 to Gate 3, re-route truck traffic using the segment of existing Brampton Road/SR21 Spur within the residential area between SR25 and SR21, provide better access to I-516, I-16, and US 80, and improve the capacity of Brampton Road to handle commercial truck traffic accessing Gate 3 and area commercial businesses. With regard to performance measures as noted in the SSTP, this project is also needed to improve travel time to the Port of Savannah, one of Georgia's gateways for freight.

Existing Conditions and Project Discription:

The proposed project is located in Garden City, Chatham County, Georgia. Brampton Road serves as an entrance to the GPA's Garden City Terminal and intersects with State Route 25/Main Street just north of

its interchange with Interstate 516 (see project location map in Figure 2). The project would consist of a new location roadway beginning northwest of the SR 25/I-516 interchange at the intersection of Burnseed Blvd./SR26 Connector and SR 25 and continuing northeasterly until connecting with the existing Brampton Road. The existing at-grade Norfolk Southern railroad crossing at SR25/Main Street would be eliminated by relocating the Norfolk Southern tracks along the east side of the new location roadway between State Route 25/Main Street and the structure that carries the new location roadway over the existing Norfolk Southern spur tracks and Dundee Canal, at which point the relocated tracks would pass under the new location roadway. The existing Brampton Road/SR 21 Spur will end at SR25/Main Street as a three legged intersection. This proposed change for Brampton Road/SR 21 Spur will be communicated to Georgia Department of Transportation Office of Transportation Data. The remaining portion of existing Brampton Road will be widened to accommodate two eastbound lanes from the GPA's Gate 3 to access proposed Brampton Connector. Design speed is 45 MPH for this project. The main proposed typical sections will be 4-lane rural section with 8-foot raised median and 14-foot flush median closer to the industries to provide dedicated left turn lane.

Other projects in the area:

P.I. #	Description	PE	ROW	CST
522920	SR 404 SPUR/US 17 @ BLACK RIVER 1 MILE N OF SAVANNAH	Authorized	2010	2013
0002923	SR 25 CONN/BAY STRET FROM I-516 TO THE BAY STREET VIA	Authorized	2013	2016
0000345	SR 307 CONSTRUCT NEW OVERPASS OVER NEW PORTS AUTHORITY RAIL LINE	Authorized	2010	2010
0008690	JIMMIE DELOACH PARKWAY EXIT FROM SOUTH OF I-95 TO SOUTH OF SR 307 AT SR21	Authorized	2015	2012
0007885	CS 650/GRANGE ROAD FROM SR21 TO SR 25	Authorized	2013	2015
0008276	CR 9/GULFSTREAM ROAD @ ROBERT B> MILLER ROAD	Authorized	2013	2013

MPO: Chatham Urban Transportation Study (CUTS) **TIP #:** *Not Assigned Yet*

TIA Regional Commission: Coastal Georgia RC *If TIA project, list RC Project ID*

Congressional District(s): 1

Federal Oversight: ☐ PoDI ☒ Exempt ☐ State Funded ☐ Other

Projected Traffic: ADT 24 HR T: 55 %
Current Year (2012): 5,700 Open Year (2018): 8,200 Design Year (2038): 16,000
Traffic Projections Performed by: *CDM Smith*

Functional Classification (Mainline): Urban Collector Street
Roadway classifications are maintained by Office of Transportation Data

Complete Streets - Bicycle, Pedestrian, and/or Transit Standard Warrants:

Warrants met: ☒ None ☐ Bicycle ☐ Pedestrian ☐ Transit

Is this a 3R (Resurfacing, Restoration, & Rehabilitation) Project? ☒ No ☐ Yes

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

Major Structures:

Structure	Existing	Proposed
Railroad Bridge over Canal	1 existing track Approximate Total length-66 feet 3 spans with retaining walls at abutments	Widening the existing bridge or new parallel bridge to accommodate 1 existing and 2 future tracks Approximate total length-66 feet 3 spans with retaining walls at abutments
Roadway Bridge over Canal, Railroad & Railroad Spur	NA	4 12-foot lanes with 8-foot median 8-foot shoulders Approximate total length - 1570 feet 10 spans- 150'-150'-150'-125'-125'-150'-150'-150'-150'-150'
Retaining walls	NA	Retaining walls for bridge abutments and approximately 30-foot high

Mainline Design Features: Brampton Road Connector – Urban Collector Street

Feature	Existing	Standard*	Proposed
Typical Section			
Number of Lanes	2	2 or 4	4
Lane Width(s)	12'	11' – 12'	12'
Median Width & Type	NA	14'-flush or 20'-raised	14'-flush and 8'-raised
Outside Shoulder Width & Type	4'grass-Rural	10' – 16'-Urban	10'-Rural
Outside Shoulder Slope	NA		6%
Inside Shoulder Width & Type	NA	NA	NA
Sidewalks	NA	5'	NA
Auxiliary Lanes	NA	NA	NA
Bike Lanes	NA	NA	NA
Posted Speed	40 MPH		40 MPH
Design Speed	45 MPH	45 MPH	45 MPH
Min Horizontal Curve Radius	565 ft	711 ft	750
Superelevation Rate	2%	max 4%	max 4%
Grade	max 2%	max 5%	max 4%
Access Control	NA	min 300 ft	min 300 ft
Right-of-Way Width	60 ft	-	160 ft
Maximum Grade – Crossroad	2%	2%	2%
Design Vehicle	WB-67	-	WB-67

*According to current GDOT design policy if applicable

Major Interchanges/Intersections:

- I-516 Interchange at SR26 Connector/Burnseed Blvd
- Intersection of Main Street/SR 25 at Burnseed Blvd
- Intersection of Main Street/SR 25 at Brampton Road/SR 21 SP
- Intersection of SR26 Connector/Burnseed Blvd at US 80
- Intersection of SR26 Connector/Burnseed Blvd at US 80
- Intersection of Main Street at US80

Lighting required: ☒ No ☐ Yes

Off-site Detours Anticipated: ☒ No ☐ Yes ☐ Undetermined

Transportation Management Plan [TMP] Required: ☐ No ☒ Yes

If Yes: Project classified as: ☒ Non-Significant ☐ Significant

TMP Components Anticipated: ☒ TTC ☐ TO ☐ PI

Design Exceptions to FHWA/AASHTO controlling criteria anticipated:

FHWA/AASHTO Controlling Criteria	No	Undeter-mined	Yes	Appvl Date (if applicable)
1. Design Speed	☐	☒	☐	
2. Lane Width	☐	☒	☐	
3. Shoulder Width	☐	☒	☐	
4. Bridge Width	☐	☒	☐	
5. Horizontal Alignment	☐	☒	☐	
6. Superelevation	☐	☒	☐	
7. Vertical Alignment	☐	☒	☐	
8. Grade	☐	☒	☐	
9. Stopping Sight Distance	☐	☒	☐	
10. Cross Slope	☐	☒	☐	
11. Vertical Clearance	☐	☒	☐	
12. Lateral Offset to Obstruction	☐	☒	☐	
13. Bridge Structural Capacity	☐	☒	☐	

Design Variances to GDOT Standard Criteria anticipated:

GDOT Standard Criteria	Reviewin g Office	No	Undeter--mined	Yes	Appvl Date (if applicable)
1. Access Control/Median Openings	DP&S	☐	☐	☒	
2. Intersection Sight Distance	DP&S	☒	☐	☐	
3. Intersection Skew Angle	DP&S	☒	☐	☐	
4. Lateral Offset to Obstruction	DP&S	☒	☐	☐	
5. Rumble Strips	DP&S	☒	☐	☐	
6. Safety Edge	DP&S	☒	☐	☐	
7. Median Usage	DP&S	☐	☐	☒	
8. Roundabout Illumination Levels	DP&S	☒	☐	☐	
9. Complete Streets	DP&S	☒	☐	☐	
10. ADA & PROWAG	DP&S	☒	☐	☐	
11. GDOT Construction Standards	DP&S	☐	☐	☒	
12. GDOT Drainage Manual	DP&S	☐	☒	☐	
13. GDOT Bridge & Structural Manual	Bridges	☒	☐	☐	

- Existing access control distance between I-516 northbound off ramp and Main Street/SR 25 is about 250 feet which is less than GDOT's minimum requirement of 300 feet.
- Required median for Urban Collector Street is either 14-foot flush or 20-foot raised median. We are recommending to use 8-foot raised median along the most of Brampton Connector to minimize acquire right-of-way and minimize the construction cost.
- We are proposing to replace the required 10-foot to 16-foot wide urban shoulder section including curb & gutter and sidewalk with the 10-foot wide rural shoulder since Brampton Road will serve all industrial developments. Pedestrian traffic will not be expected along the proposed roadway.

VE Study anticipated: ☒ No ☐ Yes ☐ Completed – Date:

UTILITY AND PROPERTY

Temporary State Route needed: ☒ No ☐ Yes ☐ Undetermined

Railroad Involvement: Northfolk Southern Railroad and CSX
Railroad track will be realigned and Northfolk Southern and CSX are the co-owners of realigned track. Therefore, railroad involvement is required.

Utility Involvements:

- Railroad and railroad utilities – Norfolk Southern and CSX
- Power – Georgia Power Company (Transmission)
- Power – Georgia Power Company (Distribution)
- Gas – AGL Resources Natural Gas
- Gas – Southern Natural Gas
- Sewer – City of Garden City
- Water – City of Garden City
- Water – City of Savannah
- Phone – AT&T
- Cable TV – Comcast

SUE Required: ☒ No ☐ Yes ☐ Undetermined

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

Right-of-Way (ROW): Existing width: 60 ft. Proposed width: 70-120 ft.
Required Right-of-Way anticipated: ☐ None ☒ Yes ☐ Undetermined
Easements anticipated: ☐ None ☒ Temporary ☒ Permanent ☒ Utility ☐ Other

Anticipated total number of impacted parcels:		6
Displacements anticipated:	Businesses:	0
	Residences:	0
	Other:	0
	Total Displacements:	0

Location and Design approval: ☐ Not Required ☒ Required

CONTEXT SENSITIVE SOLUTIONS

Issues of Concern: Civil War Historic District

Context Sensitive Solutions Proposed: Eliminated the impacts during the PAR stage.

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. Tennessee Valley Authority Permit	☐	☒	
5. Buffer Variance	☒	☐	
6. Coastal Zone Management Coordination	☒	☐	
7. NPDES	☒	☐	
8. FEMA	☒	☐	
9. Cemetery Permit	☐	☒	
10. Other Permits	☐	☒	
11. Other Commitments	☐	☒	
12. Other Coordination	☐	☒	

Is a PAR required? ☐ No ☒ Yes ☒ Completed – Date: 11/20/2014

Environmental Comments and Information:

NEPA/GEPA: Supporting Special Studies are under review as part of the PAR process. In addition, several Section 4(f) resources are present and will require 4(f) documentation. See list of historic resources.

Ecology: Anticipate Section 404 Individual Permit. No Suitable habitat for Federal or state listed species was observed in the survey corridor.

History:
- Dundee Canal
- Norfolk Southern Railroad
- Levee

All three identified sites, Dundee Canal, Railroad and Levee, have been determined eligible for the national register.

Archeology: One national register eligible archeological site was identified. SHPO concurrence has not been received.

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

Noise Effects:

A noise impact assessment was completed and no noise abatement measures were recommended.

Public Involvement: One public information open house was performed on June 15, 2010 and the attendance list and received comments are included in appendix. Two additional public

meetings are anticipated; one public information open house and one public hearing open house meeting will be performed for this project.

Major stakeholders:

- Residents along existing Brampton Road between I-516 and Main Street/SR25
- Owners of small businesses along Main Street/SR25
- Owner of industrial facilities along Brampton Road
- Georgia Ports Authority
- Norfolk Southern and CSX Railroads

CONSTRUCTION

Issues potentially affecting constructability/construction schedule: Coordination with Northfolk Southern and CSX for railroad track realignments.

Early Completion Incentives recommended for consideration: ☒ No ☐ Yes

COORDINATION, ACTIVITIES, RESPONSIBILITIES, AND COSTS

Initial Concept Meeting: June 21, 2005 & July 11, 2012

Concept Meeting: October 20, 2006.
Other coordination to date:

Initial Railroad Involvement: July 03, 2012

Project Activity	Party Responsible for Performing Task(s)
Concept Development	CDM Smith and GDOT Office of Program Delivery
Design	CDM Smith and GDOT Office of Program Delivery
Right-of-Way Acquisition	GDOT Office of Program Delivery
Utility Relocation	GDOT
Letting to Contract	GDOT
Construction Supervision	CDM Smith and GDOT
Providing Material Pits	GDOT
Providing Detours	GDOT
Environmental Studies, Documents, and Permits	CDM Smith and GDOT Office of Environmental Services
Environmental Mitigation	GDOT
Construction Inspection & Materials Testing	CDM Smith and GDOT

Project Cost Estimate Summary and Funding Responsibilities:

	Breakdown of PE	ROW	Reimbursable Utility	CST*	Environmental Mitigation	Total Cost
Funded By	GPA	GDOT	GDOT	GDOT	GDOT	
$ Amount	NA	4,076,000.00	12,394,000.00	26,130,230.06	NA	42,600,230.06
Date of Estimate		10/21/2014	10/21/2014	10/21/2014		

*CST Cost includes: Construction, Engineering and Inspection, Liquid AC Cost Adjustment and 5% Contingency.

ALTERNATIVES DISCUSSION

Alternative selection:

(Preferred) Alternative 2: Avoidance Alternative- Eliminates Business Displacement with Railroad Realignment			
Estimated Property Impacts:	6	**Estimated Total Cost:**	30,206,230.06
Estimated ROW Cost:	4,076,000	**Estimated CST Time:**	16 months
Rationale: This is the preferred alternative which reduces the ROW and total costs, and eliminates the project impact to the historical resources, Levee and Civil War earthworks.			

No-Build Alternative: Existing Condition			
Estimated Property Impacts:	0	Estimated Total Cost:	User Cost
Estimated ROW Cost:	0	Estimated CST Time:	0 months
Rationale: This alternative was not selected since it does not meet goals outlined in Project Justifications. This alternative does not improve the safety of the existing roadway as well as not improving user cost in the project corridor.			

Alternative 1: Industrial Facility Displacement with Historical Resource Impact			
Estimated Property Impacts:	6	**Estimated Total Cost:**	31,916,887.31*
Estimated ROW Cost:	10,742,200	**Estimated CST Time:**	16
* Construction cost does not include engineering and inspection (5%), liquid AC cost adjustment and contingency (5%). **Rationale:** This alternative was not selected since it impacts on historical Levee within the project and it requires one business displacement which causes the ROW and total cost to the highest values within the alternatives considered.			

Alternative 3: Reduced roadway curvature & Potential Impact of Industrial Facilities			
Estimated Property Impacts:	6	**Estimated Total Cost:**	26,842,035.68**
Estimated ROW Cost:	3,455,000*	**Estimated CST Time:**	16
*ROW cost does not include the cost of potential adverse impact on two industrial buildings. ** Total cost does not include the cost of potential adverse impact on two industrial buildings, gas line relocation cost, engineering and inspection (5%), liquid AC cost adjustment and contingency (5%). **Rationale:** This alternative was not selected since it impacts on industrial facilities and it requires 14-inch pressurized gas line relocation which causes the ROW and total construction cost to the one of the highest values within the alternatives considered. In addition, this alternative would impact historical resources: Levee and Civil War earthworks.			

Alternative 4: Reduced Cultural Resources, Relocated Railroad spur, & Potential Impact of Industrial Facilities			
Estimated Property Impacts:	6	**Estimated Total Cost:**	26,385,450.52**
Estimated ROW Cost:	3,778,000*	**Estimated CST Time:**	16
*ROW cost does not include the cost of potential adverse impact on two industrial buildings. ** Total cost does not include the cost of potential adverse impact on two industrial buildings, gas line relocation cost, engineering and inspection (5%), liquid AC cost adjustment and contingency (5%). **Rationale:** This alternative was not selected since it would require the existing Brampton Road to be raised by approximately 5 feet and the realignment of the railroad spur in order to tie into Brampton Road. In addition, this alternative would impact the Civil War earthworks.			

Alternative 5: Reduced Cultural Resources & Potential Impact of Industrial Facilities			
Estimated Property Impacts:	6	**Estimated Total Cost:**	25,236,278.02**
Estimated ROW Cost:	3,778,000*	**Estimated CST Time:**	16
*ROW cost does not include the cost of potential adverse impact on two industrial buildings. ** Total cost does not include the cost of potential adverse impact on two industrial buildings, gas line relocation cost, engineering and inspection (5%), liquid AC cost adjustment and contingency (5%). **Rationale:** This alternative was not selected since it would impact historical resources: Levee and Civil War earthworks.			

Comments:
Due to the heavy amount of truck traffic and steep grades, concrete pavement, instead of asphalt, is recommended for the new facility. A pavement design analysis has been conducted for each pavement type; see attachments for Flexible and Rigid Pavement Design Analysis. For this facility, concrete pavement costs approximately $1.8 M more than asphalt pavement; see Cost Estimate.

Attachments:

1. Concept Layout
2. Typical sections
3. Detailed Cost Estimates:
   a. Construction including Engineering and Inspection
   b. Completed Fuel & Asphalt Price Adjustment forms
   c. Right-of-Way
   d. Utilities
   ~~e. Environmental Mitigation (EPD, etc)~~ N/A
4. Crash summaries
5. Traffic diagrams
6. Capacity analysis summary *(tabular format)*
7. Summary of TE Study and/or Signal Warrant Analysis
8. Roundabout Data *(if applicable – see GDOT Design Policy Manual)*
   a. Planning level assessment
   ~~b. Roundabout feasibility study~~ N/A
   ~~c. Lighting agreement or commitment letter~~ N/A
   ~~d. Peer Review and responses~~ N/A
9. Pavement studies *(e.g. Preliminary Pavement Type Selection Report, etc.)*
10. Minutes of Concept meetings
11. Minutes of PIOH
12. PFA's and/or SAA's.

~~13. PAR~~: AVAILABLE UPON REQUEST

APPROVALS

Concur: Glen Bonner
Director of Engineering

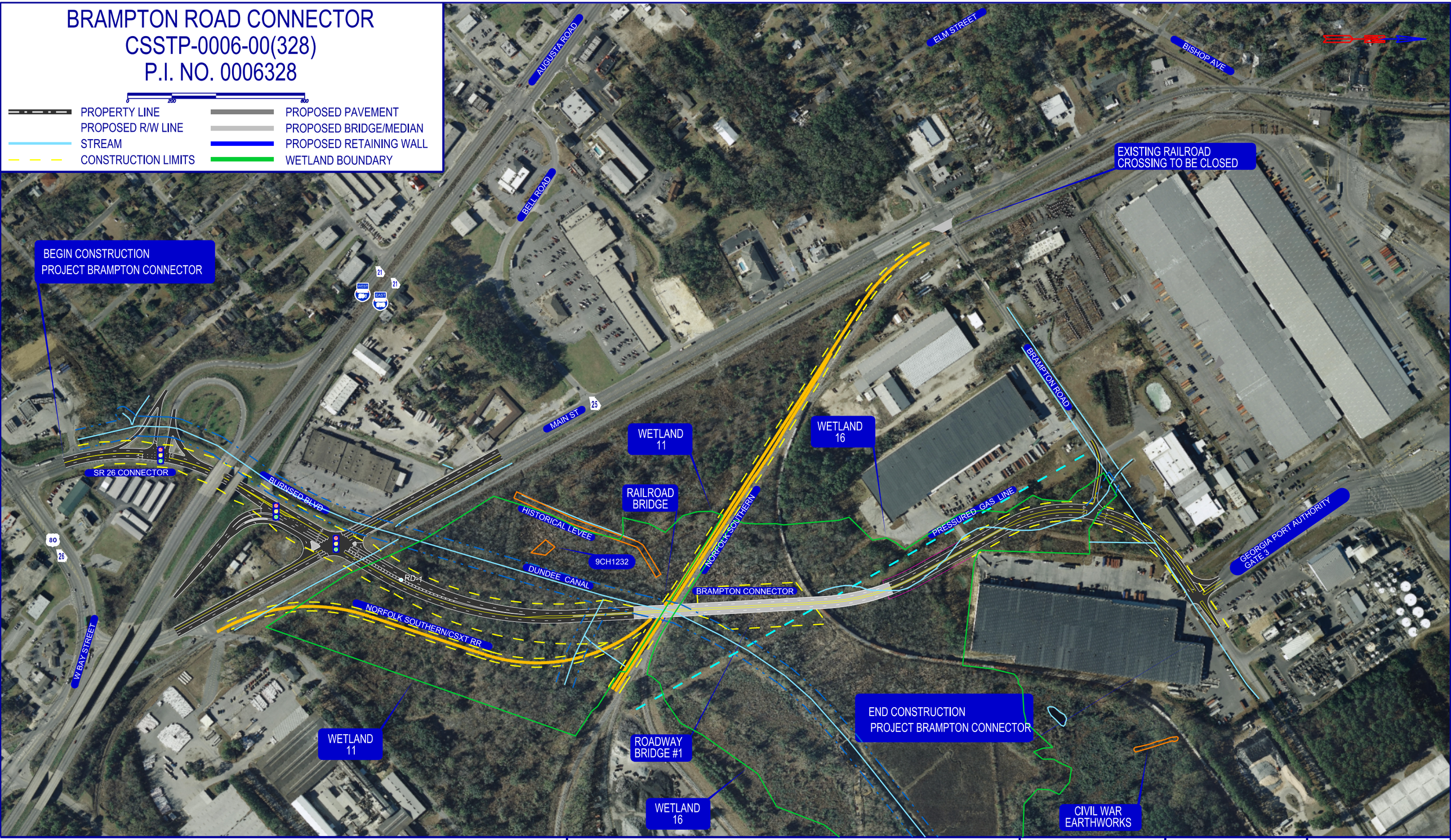
Approve: Margaret B. Pikle 3.5.15
Chief Engineer Date

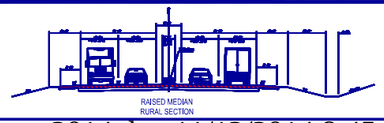
LOCATION MAP

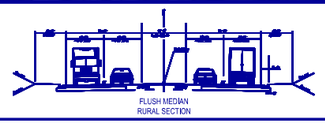
BRAMPTON ROAD CONNECTOR
CSSTP-0006-00(328)
P.I. NO. 0006328

0 200 800

PROPERTY LINE	PROPOSED PAVEMENT
PROPOSED R/W LINE	PROPOSED BRIDGE/MEDIAN
STREAM	PROPOSED RETAINING WALL
CONSTRUCTION LIMITS	WETLAND BOUNDARY







BRAMPTON ROAD CONNECTOR CONCEPT

Georgia Ports Authority

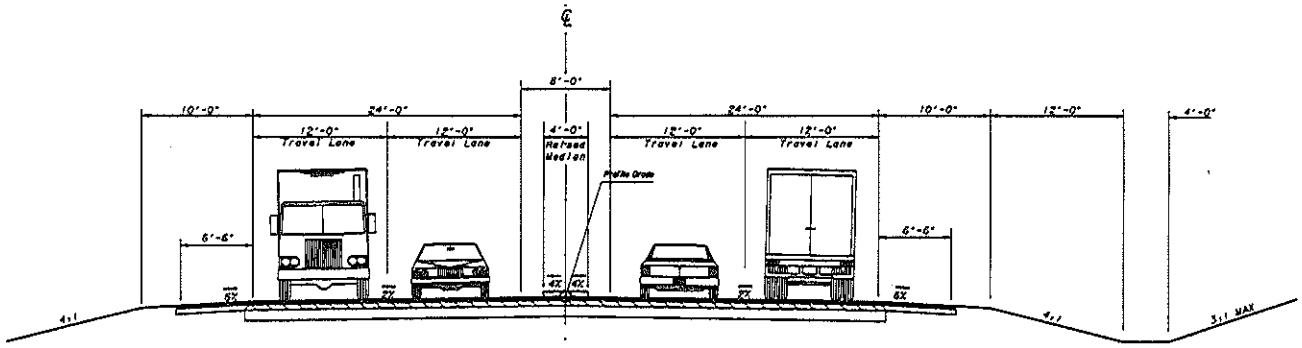
CDM Smith

moffatt & nichol

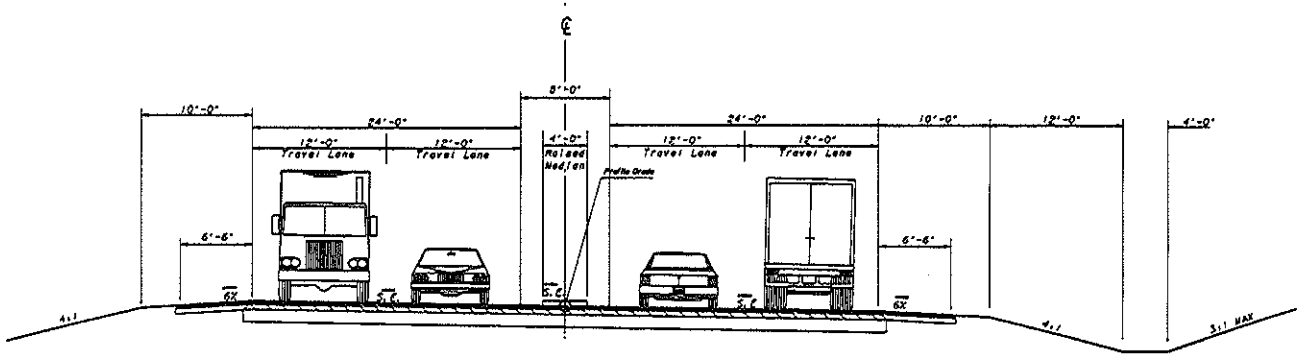
Concept2014.dgn 11/12/2014 8:45:08 AM

TYPICAL SECTIONS

DATE	TIME	DRAWN			STATE	PROJECT NUMBER	SHEET NO.	TOTAL SHEETS
USER		SUPERTABLE			GA			



TYPICAL SECTION #1
4 LANE RURAL W/RAISED MEDIAN
NORMAL CROWN



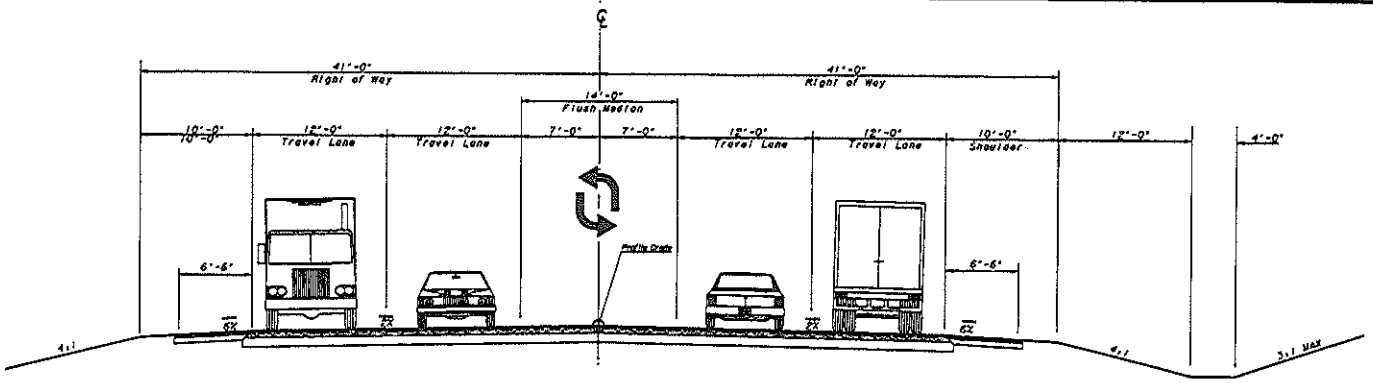
TYPICAL SECTION #1
4 LANE RURAL W/RAISED MEDIAN
SUPERELEVATED

ENGINEERS PLANNERS ECONOMISTS
WilburSmith ASSOCIATES

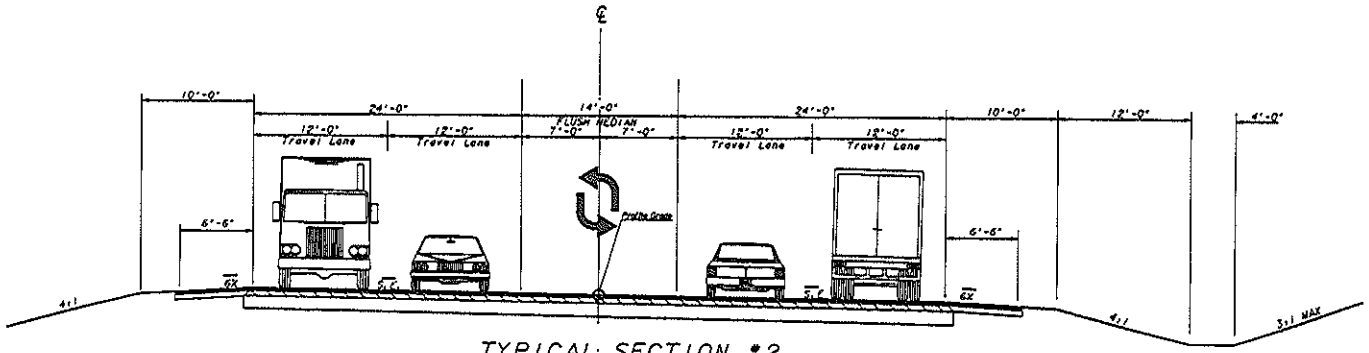
REVISION DATES

STATE OF GEORGIA
DEPARTMENT OF TRANSPORTATION
OFFICE:
TYPICAL SECTIONS

DRAWING NO. 5-01



TYPICAL SECTION #2
4 LANE RURAL W/FLUSH MEDIAN
NORMAL CROWN



TYPICAL SECTION #2
4 LANE RURAL W/FLUSH MEDIAN
SUPERELEVATED

WilburSmith ASSOCIATES
ENGINEERS PLANNERS ECONOMISTS

REVISION DATES

STATE OF GEORGIA
DEPARTMENT OF TRANSPORTATION
OFFICE:
TYPICAL SECTIONS

DRAWING NO. 5-02

COST ESTIMATE

DEPARTMENT OF TRANSPORTATION
STATE OF GEORGIA

INTERDEPARTMENT CORRESPONDENCE

FILE P.I. No. **0006328**

OFFICE Program Delivery

PROJECT DESCRIPTION

Brampton Road Connector From Foundation Drive to SR 21/SR 25/US 80

DATE October 21, 2014

From: Albert V. Shelby, State Program Delivery Engineer

To: Lisa L. Myers, State Project Review Engineer

Subject: REVISIONS TO PROGRAMMED COSTS

PROJECT MANAGER Aghdas Ghazi

MGMT LET DATE 5/15/2017

MGMT ROW DATE 4/1/2015

PROGRAMMED COSTS (TPro W/OUT INFLATION)			**LAST ESTIMATE UPDATE**	
CONSTRUCTION	$	21,583,303.32	DATE	10/23/2013
RIGHT OF WAY	$	4,284,000.00	DATE	10/23/2013
UTILITIES	$	N/A	DATE	

REVISED COST ESTIMATES

CONSTRUCTION*	$	26,130,230.06
RIGHT OF WAY	$	4,076,000.00
UTILITIES	$	12,394,000.00

*Cost Contains 5 % Contingency

REASONS FOR COST INCREASE AND CONTINGENCY JUSTIFICATION:

A conceptual detailed cost estimate was developed for the concept

CONTINGENCY SUMMARY

A. CONSTRUCTION COST ESTIMATE:	$ 23,393,550.70	Base Estimate From CES		
B. ENGINEERING AND INSPECTION (E & I):	$ 1,169,677.54	Base Estimate (A) x	5	%
C. CONTINGENCY:	$ 1,228,161.41	Base Estimate (A) + E & I (B) x See % Table in "Risk Based Cost Estimation" Memo	5	%
D. TOTAL LIQUID AC ADJUSTMENT:	$ 338,840.41	Total From Liquid AC Spreadsheet		
E. CONSTRUCTION TOTAL:	$ 26,130,230.06	(A + B + C + D = E)		

REIMBURSABLE UTILTY COSTS

UTILITY OWNER	REIMBURSABLE COST
Georgia Power Company - Distribution	$ 120,000.00
Georgia Power Company - Transmission	$ 625,000.00
Southern Natural Gas	$ 4,000,000.00
City of Savannah - Potable Water	$ 5,000,000.00
Norfolk Southern Co. & CSX Transportation	$ 2,649,000.00
TOTAL	**$ 12,394,000.00**

ATTACHMENTS:

Detailed Cost Estimate Printout From TRAQS
Liquid AC Adjustment Spreadsheet
ROW Estimate
PSR

PROJ. NO.	CSSTP-0006-00(328)	CALL NO.	9/29/2009
P.I. NO.	0006328		
DATE	10/21/2014		

INDEX (TYPE)	DATE	INDEX
REG. UNLEADED	Oct-14	$ 3.312
DIESEL		$ 3.718
LIQUID AC		$ 615.00

Link to Fuel and AC Index:
http://www.dot.ga.gov/doingbusiness/Materials/Pages/asphaltcementindex.aspx

LIQUID AC ADJUSTMENTS

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

Asphalt

Price Adjustment (PA)			309960	$ 309,960.00
Monthly Asphalt Cement Price month placed (APM)	Max. Cap	60%	$ 984.00	
Monthly Asphalt Cement Price month project let (APL)			$ 615.00	
Total Monthly Tonnage of asphalt cement (TMT)			840	

ASPHALT	Tons	%AC	AC ton
Leveling		5.0%	0
12.5 OGFC		5.0%	0
12.5 mm	2800	5.0%	140
9.5 mm SP		5.0%	0
25 mm SP	6500	5.0%	325
19 mm SP	7500	5.0%	375
	16800		840

BITUMINOUS TACK COAT

Price Adjustment (PA)			$ 9,509.35	$ 9,509.35
Monthly Asphalt Cement Price month placed (APM)	Max. Cap	60%	$ 984.00	
Monthly Asphalt Cement Price month project let (APL)			$ 615.00	
Total Monthly Tonnage of asphalt cement (TMT)			25.77060553	

Bitum Tack Gals	gals/ton	tons
6000	232.8234	25.7706055

BITUMINOUS TACK COAT (surface treatment)

Price Adjustment (PA)			19371.06013	$ 19,371.06
Monthly Asphalt Cement Price month placed (APM)	Max. Cap	60%	$ 984.00	
Monthly Asphalt Cement Price month project let (APL)			$ 615.00	
Total Monthly Tonnage of asphalt cement (TMT)			52.4960979	

Bitum Tack	SY	Gals/SY	Gals	gals/ton	tons
Single Surf. Trmt.		0.20	0	232.8234	0
Double Surf.Trmt.	27778	0.44	12222.32	232.8234	52.4960979
Triple Surf. Trmt		0.71	0	232.8234	0
					52.4960979

TOTAL LIQUID AC ADJUSTMENT	**$ 338,840.41**

DETAILED COST ESTIMATE

Georgia Department of Transportation

Job: 0006328-ALT2

JOB NUMBER *0006328-ALT2* **FED/STATE PROJECT NUMBER**

SPEC YEAR: *01*

DESCRIPTION: *BRAMPTON CONNECTOR, SAVANNAH, GA*

ITEMS FOR JOB 0006328-ALT2

Line Number	ITEM	QUANTITY	UNITS	PRICE	DESCRIPTION	AMOUNT
0385	150-1000	1.000	LS	$750,000.00000	TRAFFIC CONTROL - LUMP SUM	$750,000.00
0010	153-1300	1.000	EA	$77,856.64417	FIELD ENGINEERS OFFICE TP 3	$77,856.64
0225	163-0232	4.000	AC	$877.47726	TEMPORARY GRASSING	$3,509.91
0230	163-0240	300.000	TN	$267.07756	MULCH	$80,123.27
0235	163-0300	6.000	EA	$1,588.40268	CONSTRUCTION EXIT	$9,530.42
0395	163-0527	80.000	EA	$226.72472	CNST/REM RIP RAP CKDM,STN P RIPRAP/SN BG	$18,137.98
0245	163-0531	4.000	EA	$7,662.67763	CONSTR & REM SEDIMENT BASIN,TP 1,STA NO- SEDIMENT BASIN	$30,650.71
0250	165-0010	3600.000	LF	$1.73710	MAINT OF TEMP SILT FENCE, TP A	$6,253.56
0255	165-0030	3600.000	LF	$2.28087	MAINT OF TEMP SILT FENCE, TP C	$8,211.13
0260	165-0101	6.000	EA	$658.79321	MAINT OF CONST EXIT	$3,952.76
0265	171-0010	3600.000	LF	$2.55430	TEMPORARY SILT FENCE, TYPE A	$9,195.48
0270	171-0030	3600.000	LF	$3.99477	TEMPORARY SILT FENCE, TYPE C	$14,381.17
0015	201-1500	1.000	LS	$500,000.00000	CLEARING & GRUBBING - LUMP SUM $500,000	$500,000.00
0120	208-0100	193720.000	CY	$17.00000	IN PLACE EMBANKMENT	$3,293,240.00
0035	310-5120	27900.000	SY	$22.91705	GR AGGR BS CRS 12IN INCL MATL	$639,385.70
0040	402-3113	2800.000	TN	$73.26697	RECYL AC 12.5MM SP,GP1/2,BM&HL	$205,147.52
0045	402-3121	6500.000	TN	$75.28912	RECYL AC 25MM SP,GP1/2,BM&HL	$489,379.28
0050	402-3190	7500.000	TN	$69.60361	RECYL AC 19 MM SP,GP 1 OR 2 ,INC BM&HL	$522,027.08
0055	413-1000	6000.000	GL	$2.05654	BITUM TACK COAT	$12,339.24
0060	432-0206	27000.000	SY	$2.99410	MILL ASPH CONC PVMT/ 1.50" DEP	$80,840.70
0065	433-1200	3600.000	SY	$335.31874	REF CONC APPR SL/I SLOPED EDGE	$1,207,147.46
0070	441-0004	45.000	SY	$48.30707	CONC SLOPE PAV, 4 IN	$2,173.82
0075	441-0104	2222.000	SY	$46.71115	CONC SIDEWALK, 4 IN	$103,792.18
0080	441-4020	200.000	SY	$39.36279	CONC VALLEY GUTTER, 6 IN	$7,872.56
0085	441-6022	3000.000	LF	$23.50957	CONC CURB & GUTTER, 6"X30"TP2	$70,528.71
0390	441-6222	3000.000	LF	$22.43004	CONC CURB & GUTTER/ 8"X30"TP2	$67,290.12
0090	441-6740	7000.000	LF	$15.48229	CONC CURB & GUTTER/ 8"X30" TP7	$108,376.03
0095	456-2012	2.000	GLM	$1,529.87671	INTENT. RUMB. STRIPS - GRND-IN-PL (CONT)	$3,059.75
0125	550-1180	960.000	LF	$38.87762	STM DR PIPE 18",H 1-10	$37,322.52
0130	550-1240	240.000	LF	$46.46796	STM DR PIPE 24",H 1-10	$11,152.31
0135	550-1360	600.000	LF	$70.73811	STM DR PIPE 36",H 1-10	$42,442.87
0140	550-1420	200.000	LF	$97.00983	STM DR PIPE 42",H 1-10	$19,401.97
0145	550-4218	12.000	EA	$730.04000	FLARED END SECT 18 IN, ST DR	$8,760.48
0150	550-4224	3.000	EA	$821.09088	FLARED END SECT 24 IN, ST DR	$2,463.27
0155	550-4236	10.000	EA	$1,152.93262	FLARED END SECT 36 IN, ST DR	$11,529.33
0160	550-4242	4.000	EA	$1,468.29000	FLARED END SECT 42 IN, ST DR	$5,873.16
0180	603-2018	100.000	SY	$45.71450	STN DUMPED RIP RAP, TP 1, 18"	$4,571.45
0185	603-2182	300.000	SY	$65.93084	STN DUMPED RIP RAP, TP 3, 24"	$19,779.25
0190	603-7000	400.000	SY	$5.20682	PLASTIC FILTER FABRIC	$2,082.73
0285	636-1020	20.000	SF	$19.21089	HWY SGN,TP1MAT,REFL SH TP3	$384.22
0295	636-2070	42.000	LF	$10.96826	GALV STEEL POSTS, TP 7	$460.67
0405	636-2090	15.000	LF	$12.06233	GALV STEEL POSTS, TP 9	$180.93
0300	639-4004	20.000	EA	$6,399.70636	STRAIN POLE, TP IV	$127,994.13
0100	641-1100	168.000	LF	$63.72996	GUARDRAIL, TP T	$10,706.63
0105	641-1200	2000.000	LF	$16.36723	GUARDRAIL, TP W	$32,734.46

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DETAILED COST ESTIMATE

Georgia Department of Transportation

Job: 0006328-ALT2

Line Number	ITEM	QUANTITY	UNITS	PRICE	DESCRIPTION	AMOUNT
0110	641-5001	4.000	EA	$707.71232	GUARDRAIL ANCHORAGE, TP 1	$2,830.85
0115	641-5012	4.000	EA	$1,901.78576	GUARDRAIL ANCHORAGE, TP 12	$7,607.14
0020	647-1000	1.000	LS	$50,000.00000	TRAF SIGNAL INSTALLATION NO - TRAFFIC SIGNAL INSTALLATION NO - 1	$50,000.00
0025	647-1000	1.000	LS	$50,000.00000	TRAF SIGNAL INSTALLATION NO - TRAFFIC SIGNAL INSTALLATION NO - 2	$50,000.00
0030	647-1000	1.000	LS	$75,000.00000	TRAF SIGNAL INSTALLATION NO - TRAFFIC SIGNAL INSTALLATION NO - 3	$75,000.00
0305	653-0110	4.000	EA	$77.75404	THERM PVMT MARK, ARROW, TP 1	$311.02
0310	653-0120	20.000	EA	$76.87569	THERM PVMT MARK, ARROW, TP 2	$1,537.51
0315	653-0130	4.000	EA	$95.56465	THERM PVMT MARK, ARROW, TP 3	$382.26
0320	653-0210	16.000	EA	$110.03099	THERM PVMT MARK, WORD , TP 1	$1,760.50
0325	653-0220	2.000	EA	$103.43610	THERM PVMT MARK, WORD , TP 2	$206.87
0330	653-1501	26300.000	LF	$0.41994	THERMO SOLID TRAF ST 5 IN, WHI	$11,044.42
0335	653-1502	18560.000	LF	$0.44316	THERMO SOLID TRAF ST, 5 IN YEL	$8,225.05
0340	653-1704	440.000	LF	$5.27983	THERM SOLID TRAF STRIPE,24",WH	$2,323.13
0345	653-3501	13600.000	GLF	$0.32311	THERMO SKIP TRAF ST, 5 IN, WHI	$4,394.30
0350	653-6004	565.000	SY	$3.78682	THERM TRAF STRIPING, WHITE	$2,139.55
0355	653-6006	185.000	SY	$3.79767	THERM TRAF STRIPING, YELLOW	$702.57
0360	654-1001	70.000	EA	$4.64170	RAISED PVMT MARKERS TP 1	$324.92
0365	654-1003	360.000	EA	$4.54141	RAISED PVMT MARKERS TP 3	$1,634.91
0165	668-1100	15.000	EA	$2,616.75802	CATCH BASIN, GP 1	$39,251.37
0170	668-2100	6.000	EA	$2,239.41165	DROP INLET, GP 1	$13,436.47
0175	668-4300	5.000	EA	$2,554.28024	STORM SEW MANHOLE, TP 1	$12,771.40
0195	700-6910	8.000	AC	$745.44245	PERMANENT GRASSING	$5,963.54
0200	700-7000	24.000	TN	$59.00694	AGRICULTURAL LIME	$1,416.17
0210	700-8000	8.000	TN	$490.91434	FERTILIZER MIXED GRADE	$3,927.31
0215	700-8100	400.000	LB	$3.12475	FERTILIZER NITROGEN CONTENT	$1,249.90
0400	701-0030	5.000	TN	$100.00000	AGRICULTURAL LIME	$500.00
0220	716-2000	20000.000	SY	$1.81367	EROSION CONTROL MATS, SLOPES	$36,273.40
					SUBTOTAL FOR :	**$8,997,458.12**

COST GROUP FOR JOB 0006328-ALT2

LINE NUMBER	UNIT	CALCULATION RULE	QUANTITY	PRICE	COST GROUP ID	DESCRIPTION	AMOUNT
00000001	SF	NORM	1.000	$150,000.00	STRO	STRUCTURES, OTHER (SF)	$150,000.00
00000002	SF	NORM	27850.000	$120.00	STRO	STRUCTURES, OTHER (SF)	$3,342,000.00
00000003	SF	NORM	5300.000	$250.00	STRO	STRUCTURES, OTHER (SF)	$1,325,000.00
00000004	SF	NORM	37500.000	$60.00	WALL	WALLS (SF)	$2,250,000.00
00000005	LS	NORM	6000.000	$250.00	UDEF	USER-DEFINED (LUMP SUM)	$1,500,000.00
00000006	SF	NORM	27850.000	$120.00	STRO	STRUCTURES, OTHER (SF)	$3,342,000.00
00000007	LS	NORM	1.000	$2,500,000.00	UDEF	USER-DEFINED (LUMP SUM)	$2,500,000.00
						SUBTOTAL:	**$14,409,000.00**

TOTALS FOR JOB 0006328-ALT2

ITEMS COST:	$8,997,458.12
COST GROUP COST:	$14,409,000.00
ESTIMATED COST:	$23,393,550.70
CONTINGENCY PERCENT:	0.00
ENGINEERING AND INSPECTION:	0.00
ESTIMATED COST WITH CONTINGENCY AND E&I:	$23,393,550.70

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GEORGIA DEPARTMENT OF TRANSPORTATION
PRELIMINARY ROW COST ESTIMATE SUMMARY

Date: 9/9/2014 Project: CSSTP-0006-00(328)
Revised: County: Chatham
PI: 6328

Description: Brampton Road Connector
Project Termini: I-516 to Brampton Road

Existing ROW:
Parcels: 5 Required ROW:

Land and Improvements	$3,948,750.00
Proximity Damage $0.00	
Consequential Damage $0.00	
Cost to Cures $0.00	
Trade Fixtures $0.00	
Improvements $0.00	
Valuation Services	$31,250.00
Legal Services	$40,875.00
Relocation	$10,000.00
Demolition	$0.00
Administrative	$45,000.00
TOTAL ESTIMATED COSTS	$4,075,875.00
TOTAL ESTIMATED COSTS (ROUNDED)	***$4,076,000.00***

Preparation Credits	Hours	Signature

Prepared By: Bethone Alexander CG#:286999 09/18/2014 (DATE)
Approved By: Bethone Alexander CG#:286999 09/18/2014 (DATE)

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

allsop

DEPARTMENT OF TRANSPORTATION
STATE OF GEORGIA

INTERDEPARTMENT CORRESPONDENCE

FILE CSSTP-0006-00(328), PI 0006328, Chatham
Brampton Road Connector from Foundation Dr to SR 21/SR 25/US 80

OFFICE Jesup

DATE 12-22-2014

FROM Dallory Rozier, District Utilities Engineer

TO Aghdas Ghazi, Project Manager

SUBJECT UPDATED UTILITY COST ESTIMATE

The District Utilities Office is furnishing you with an Utility Cost Estimate of each Utility with facilities located within the above referenced project limits.

FACILITY TYPE	OWNER	REIMBURSABLE	NON-REIMBURSABLE	TOTAL	COMMENT
Electrical	GPC-D	$120,000.00	$200,000.00	$320,000.00	
	GPC-T	$625,000.00		$625,000.00	
Communication	AT&T		$61,000.00	$61,000.00	
	Comcast		$15,000.00	$15,000.00	
Gas	AGL		$80,000.00	$15,000.00	
	SNG	$4,000,000.00		$4,000,000.00	If 14" gas transmission is impacted
Potable Water	COGC		$211,500.00	$211,000.00	
	COS	$5,000,000.00		$5,000,000.00	If 48" water transmission is impacted
Sewer	COGC		$1,000.00	$1,000.000	
Total		$9,745,000.00	$568,000.00	$10,313,5000.00	

CC: Lee Upkins, Assistant State Utilities Engineer
District Office File
Utilities Office File

DEPARTMENT OF TRANSPORTATION
STATE OF GEORGIA

INTERDEPARTMENT CORRESPONDENCE

FILE: **PI # 0006328, Chatham County** **OFFICE: State Utilities Office**

FROM: Jill L Franks for: **Michael J. Bolden, State Utility Engineer** **DATE: December 12, 2014**

TO: Albert Shelby, State Program Delivery Engineer
Attn: Aghdas Sootodeh Ghazi, Project Manager

SUBJECT: **REVISED PRELIMINARY RAILROAD COST FOR SURFACE WORK (CONCEPT ESTIMATE)**

A review of railroads located within the project limits on the above referenced project has been conducted based on the proposed concept report provided. Listed below is a breakdown of the estimated railroad costs:

FACILITY OWNER	NON-REIMBURSABLE	REIMBURSABLE
Norfolk Southern Co. & CSX Transportation		
– P.E. cost for bridge over railroad	**$0.00**	**GA PORT AUTHORITY**
– Const. cost for bridge over railroad	**$0.00**	**$200,000.00**
Norfolk Southern Co. & CSX Transportation		
– P.E. cost for railroad bridge over creek	**$0.00**	**GA PORT AUTHORITY**
– Const. cost for railroad bridge over creek	**$0.00**	**$607,800.00**
Norfolk Southern Co. & CSX Transportation		
– P.E. cost for Track Work	**$0.00**	**GA PORT AUTHORITY**
– Const. cost for Track Work	**$0.00**	**$1,841,200.00**
Total Reimbursement Cost:	**$0.00**	**$2,649,000.00**

Total railroad surface work reimbursable cost for the above project is estimated to be:
$2,649,000.00.

Please note that this amount does not include other reimbursable utility and railroad warning device costs that may be associated with this project. Please keep the railroad costs separate from other utilities in your designer's cost estimate.

If you have any questions, please contact Jill Franks, (404) 631-1370, jfranks@dot.ga.gov or Marcela Coll, (404)631-1372 mcoll@dot.ga.gov.

MJB:jlf

cc: Jun Birnkammer, State Utilities Preconstruction Engineer
Angela Robinson, State Financial Management Administrator
Dallory Rozier, District 5 Utilities Engineer
Michael Nash, Railroad Crossing Program Manager

Preconstruction Status Report

PI Number: 0006328 **BRAMPTON ROAD CONNECTOR FM FOUNDATION DR TO SR 21/SR25/US80**

COUNTY:	Chatham	**MPO:**	Savannah TMA	**PRIORITY CD:**		**BASELINE LET DAT**	5/9/17	**MGMT LET DATE:**	5/15/17
LENGTH (MI):	0	**TIP #:**	2004-H-08	**DOT DIST:**	5	**SCHED LET DATE:**	7/2/19	**MGMT ROW DATE:**	4/15/15
PROJ NO:	CSSTP-0006-00(328)	**MODEL YR:**	2030	**CONG. DIST:**	1	**LIGHTING TYPE:**	None	**WHO LETS?**	GDOT Let
PROJ MGR:	Ghazi, Aghdas Sootodeh	**TYPE WORK:**	Roadway Project	**BIKE:**	N			**LET WITH:**	
AOHD INITIALS:	BWS	**CONCEPT:**	ADD 4U(MED 20)	**MEASURE:**	E				
OFFICE:	Program Delivery	**PROG TYPE:**	New Construction	**SUFF:**					
CONSULTANT:	Local Design, Local PE funds	**BOND PROJ:**							
SPONSOR:	Georgia Ports Authority	**DESIGN FIRM:**	CDM Smith, Inc.						

Print Date 10/9/14
Page 1

BASE START	BASE FINISH	TASKS	ACTUAL START	ACTUAL FINISH	%
1/18/10	12/18/12	Concept Development Summary	8/4/09		91
8/27/12	8/27/12	Concept Meeting	7/11/12	7/11/12	100
12/19/12	**12/19/12**	**Management Concept Approval Complete**			**0**
9/20/12	2/20/13	VE Study Summary			0
1/30/13	1/30/13	Public Information Open House Held			0
12/19/12	**9/17/14**	**Environmental Summary**	**10/1/09**		**40**
2/26/14	4/22/14	Pub Hear Held/Com Resp (EA/FONSI, GEPA)			0
12/19/12	6/5/13	Database Summary			0
2/28/13	5/22/13	Field Survey Summary			0
6/6/13	3/12/14	Preliminary Roadway Plans			0
9/12/13	4/2/14	Preliminary Bridge Design Summary			0
7/7/16	12/21/16	404 Permit Summary			0
11/13/14	11/13/14	PFPR Inspection			0
11/14/14	1/8/15	R/W Plans Preparation			0
1/9/15	**3/11/15**	**R/W Plans Final Approval**			**0**
12/22/14	12/23/14	L & D Approval			0
4/8/15	4/8/15	R/W Authorization			0
9/12/13	6/23/14	Soil Survey Summary			0
4/3/14	1/12/15	BFI Report Summary			0
12/26/14	7/20/16	Final Construction Plans			0
1/13/15	9/21/15	Final Bridge Plans Preparation			0
12/26/14	4/15/15	Buffer Variance Applied for			0
11/18/16	11/18/16	FFPR Inspection			0
2/27/17	2/27/17	Submit Final Plans			0
3/20/17	3/20/17	Construction Authorization			0

Phase	Approved	Proposed	Cost	Fund	Status	Date Auth
PE	2005	2005	$5,000.00	Q24	AUTHORIZED	3/1/05
PE	2013	2013	$195,000.00	M240	AUTHORIZED	3/1/05
PE	LOCL	LOCL	$500,000.00	LOC	PRECST	3/1/05
ROW	2015	2016	$4,457,073.60	M240	PRECST	
CST	2020	2019	$23,829,710.86	M240	PRECST	

COST EST AMTS

PE	$700,000.00	
ROW	$4,284,000.00	10/23/13
CST	$21,583,303.32	10/23/13

STIP AMOUNTS

Activity	Cost	Fund
PE	$0.00	LOC
PE	$0.00	M240
PE		Q24
ROW	$4,009,243.82	M240
CST	$0.00	M240

District Comments

9/22/2014> AG.
Consultant PM>Umit Seyhan w/ CDM Smith> Cell404-643-7414, (770) 936-8650, seyhanu@cdmsmith.com>
STATUS: The Port changed the Alignment due to Arch & Hist. Arch & Hist need addendum. Ecology Report to FHWA 7/30/14. PAR comments to the consultant 9/3/2014 & waiting to receive the revised one. Need early coordination with NMFS.
RISK & ISSUE: We will have an issue if Ecology & PAR will not be approved on time. Recovery plan is needed to put ROW to FY 2016. Consultant is confident to recover prior to PFPR.

Bridge: BRIDGE REQUIRED
Design: C-Concept report pending approval
EIS: EANotApvd| RecovFY15RWCertByJan16| Alimia/Malta 12Sep14
EMG: PE BY LOCAL
Engr Services: <50 Mill
LGPA: REV PFA SGN GA PORTS AUTHORITY DO PE 7-22-09.
PDD: JAN04 LR: Assigned to Urban Design. 1/26/04. GPA. 10/5/04.
Planning: GPA REQUEST; CUTS LRTP 2003; CHATHAM INTERMODE FREIGHT STDY 1998; IMPROVE TRUCK ACCESS & REDUCE CONFLICTS
Programming: CONFIRMED EXEMPT PER FHWA 6-1-2014|GEORGIA PORTS AUTHORITY TO DO PE|#1 8-2012|#2 11-2012
Railroad: NS-Need Prelim Plans After PFPR.
STIP: New roadway 0 to 4 lanes- improve mobility and connectivity- enhance economic development- project connects to Georgia Ports Authority Gate 2- heavy commercial truck traffic- improve efficiency of the transfer of goods-
Utility: Rec'd draft PMA 4-6-04 need to utility & RR committment % SG NEED 1SUBMISSION PLANS FOR UT OWNERS 8-25-14

Pre Parcel CT	15	**Total Parcel in ROW System:**	**Cond Filed:**	**Acquired by:**	DOT	**DEEDS CT:**
Under Review		**Options Pending:**	**Relocations:**	**Acquisition MGR:**		
Released:		**Condemnations - Pend:**	**Acquired:**	**R/W Cert Date:**		

ACCIDENT SUMMARY

Table 1

Brampton Road West of Augusta Road to End of Route						
	Accidents		Fatalities		Injuries	
Year	Number	Rate (Statewide)	Number	Rate (Statewide)	Number	Rate (Statewide)
2006	19	906 (510)	0	0.00 (1.70)	1	48 (184)
2007	33	1,608 (475)	0	0.00 (1.33)	13	634 (166)
2008	29	1,423 (443)	1	49.06 (1.12)	9	442 (154)

Table 2

SR 25 US 80 to Brampton Road						
	Accidents		Fatalities		Injuries	
Year	Number	Rate (Statewide)	Number	Rate (Statewide)	Number	Rate (Statewide)
2006	5	106 (298)	0	0.00 (1.33)	6	127 (120)
2007	8	205 (445)	0	0.00 (1.49)	5	128 (174)
2008	11	286 (430)	0	0.00 (1.33)	3	78 (167)

Table 3

SR 21 Main Street to Brampton Road						
	Accidents		Fatalities		Injuries	
Year	Number	Rate (Statewide)	Number	Rate (Statewide)	Number	Rate (Statewide)
2006	94	798 (298)	0	0.00 (1.33)	43	365 (120)
2007	89	764 (445)	0	0.00 (1.49)	51	438 (174)
2008	74	668 (430)	1	9.03 (1.33)	26	235 (167)

Note:
Those accidents that occurred within intersections have been included in both of the intersecting roads. For example, the only fatal accident occurred at the intersection of SR 21 and Brampton Road in 2008 is showing in both Table 1 and Table 3.

Year	SR 21 from Main Street to Brampton Road Collision Types						
	Angle	Head On	Not A Collision With A Motor Vehicle	Rear End	Sideswipe - Opposite Direction	Sideswipe - Same Direction	Total
2006	19		9	48	1	17	94
2007	26	3	7	42		11	89
2008	22	1	8	30	1	12	74
Total	67	4	24	120	2	40	257
Percent	26.0%	1.5%	9.3%	46.6%	0.7%	15.9%	100.0%

Year	SR 25 from US 80 to Brampton Road Collision Types						
	Angle	Head On	Not A Collision With A Motor Vehicle	Rear End	Sideswipe - Opposite Direction	Sideswipe - Same Direction	Total
2006	1		1	2		1	5
2007	2		1	4		1	8
2008	4			6		1	11
Total	7	0	2	12	0	3	24
Percent	29.1%	0%	8.3%	50.0%	0%	12.6%	100%

Year	Brampton Road from West of Augusta Road to End of Route Collision Types						
	Angle	Head On	Not A Collision With A Motor Vehicle	Rear End	Sideswipe - Opposite Direction	Sideswipe - Same Direction	Total
2006	2		1	14		2	19
2007	9	1	3	17		3	33
2008	9	1		15	2	2	29
Total	20	2	4	46	2	7	81
Percent	24.6%	2.4%	4.9%	56.7%	2.4%	9.0%	100.0%

TRAFFIC DATA AND CAPACITY ANALYSIS

Department of Transportation
State of Georgia

INTERDEPARTMENT CORRESPONDENCE

FILE CSSTP-0006-00(328), Fulton County
P.I. # 0006328

OFFICE Planning

DATE July 30, 2012

FROM Cynthia L. VanDyke, State Transportation Planning Administrator

TO Genetha Rice-Singleton, State Program Delivery Design Engineer
Attention: Aghdas Ghazi

SUBJECT **Reviewed** Design Traffic for BRAMPTON ROAD CONNECTOR FM/ FOUNDATION DR. to SR 21/SR 25/US 80

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. If you have any questions concerning this information please contact Leslie R. Woods at (404) 631-1773.

CLV/LRW

MEMO

To: Abby Ebodaghe

C: Liang Zhou, P.E.

Date: July 9, 2012

From: Umit Seyhan, PhD, P.E.

Subject: Updated Traffic Diagrams for the proposed Brampton Connector, Chatham County

The purpose of this traffic memo is to document the traffic forecasting assumptions and process for the proposed Brampton Connector, Chatham County.

The newly proposed Brampton Connector is intended to facilitate the traffic to and from the current Georgia Ports Authority's (GPA) Garden City Terminal (Gate 3). In July 2010, GDOT has approved the estimated traffic assuming 2034 is the design year. As the project progresses, some design parameters have been updated to reflect many recent concerns. The key changes to the design parameters include:

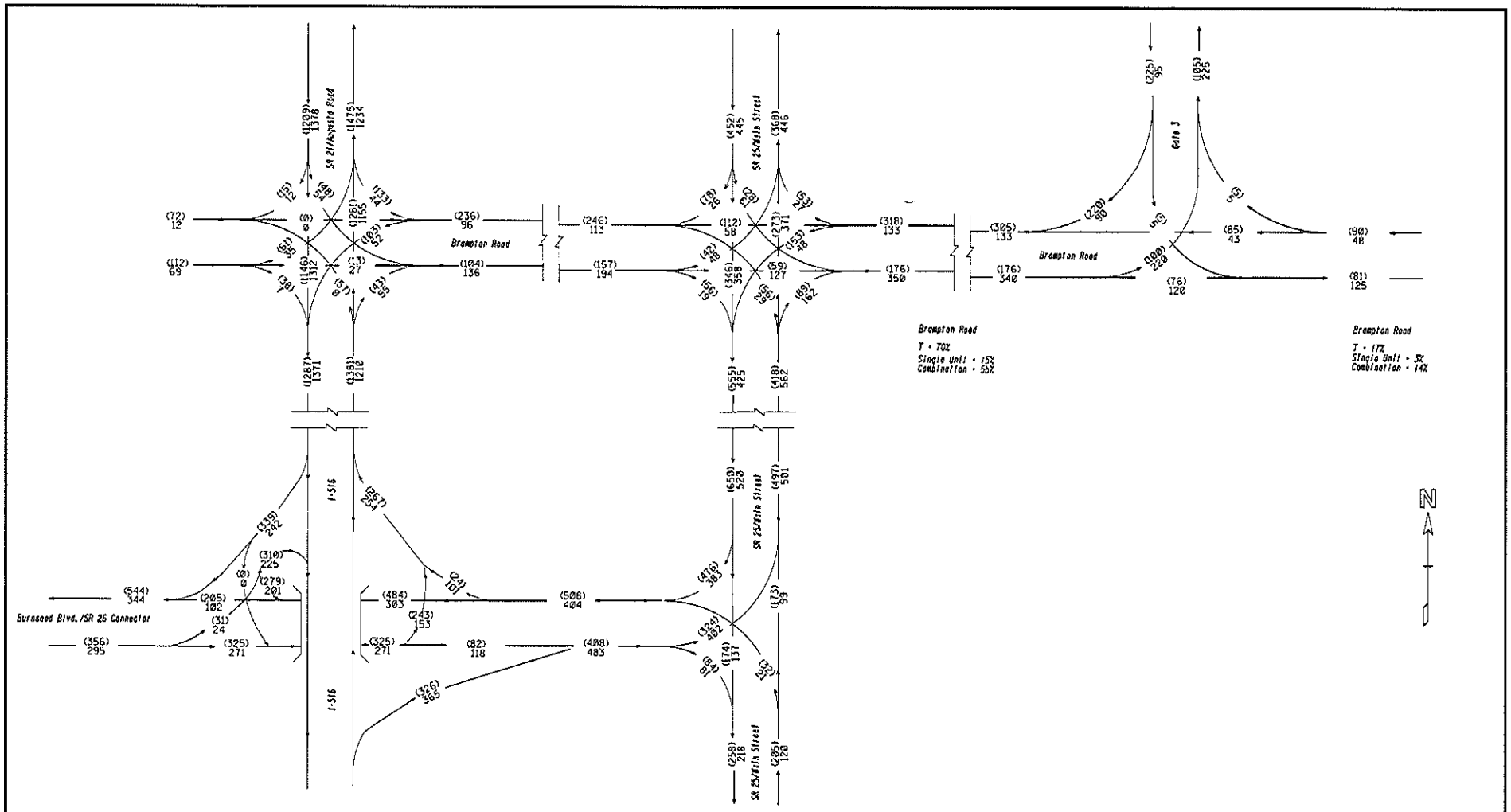
- The geometrics of the proposed Brampton Connector has been altered to avoid relocating a local business;
- The design year is updated to 2038.

In response to the two key changes, CDM Smith evaluated both of them and made corresponding updates to the previous approved traffic diagrams. More specifically, the geometrics of the Brampton Connector have been updated according to the new alignment. The impact brought by the geometric change to future traffic is reflected at the new intersection of Brampton Connector and Brampton Road. The current Gate 3 serves only as an exit while the new entrance to the port facility is shifted to east of Gate 3. The geometric change is assumed to neither further encourage, nor discourage future traffic to/from the port facility. The reason is that the majority of the traffic to/from Gate 3 is going to use the new connector regardless of the changes.

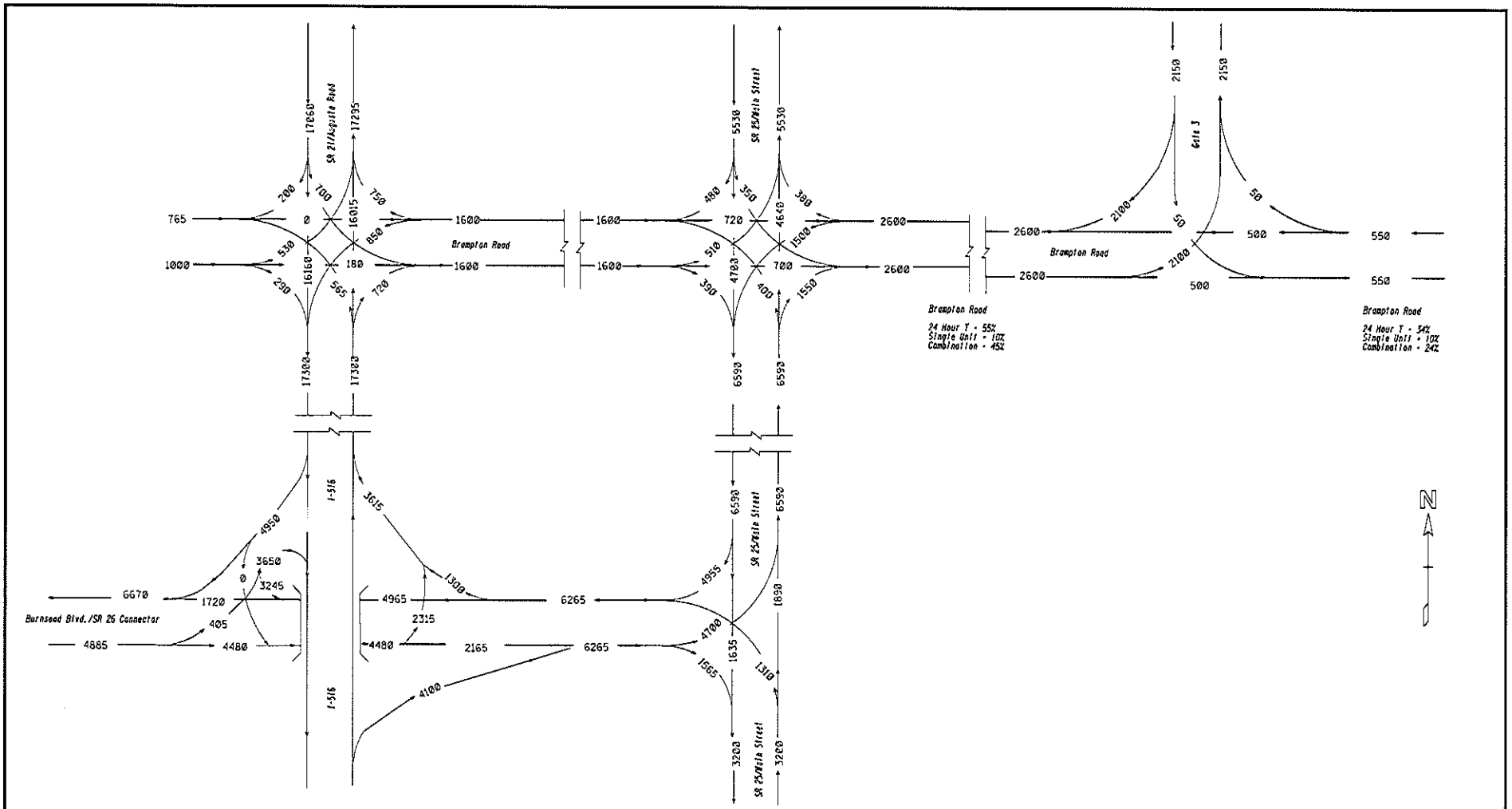
As to the design year change, after reviewing the 2011 traffic counts from Georgia's State Traffic and Report Statistics (STARS), CDM Smith found it is not appropriate to simply extrapolate the previous 2034 traffic to 2038. Based on 2010 and 2011 traffic counts on Brampton Road, SR 21, and SR 25, there is a general trend that 2011 traffic is slightly lower than 2010, which makes traffic forecasting very challenging. Traffic volumes are related to the overall macroeconomic situation, which faces uncertainty currently. Most of the macroeconomic indicators are pointing to a mild recovery from the unprecedented recession this nation has experienced in sixty years.

The 2010 approved traffic volumes are consistent with latest traffic counts on SR 21 and SR 25, but, higher than latest traffic counts on Brampton Road. Therefore, CDM Smith maintained most of original future traffic volumes on SR 21 and SR 25 and focused on updating future traffic on Brampton Road. The background growth rates of daily traffic are generally assumed to be 1-3% annually. Key parameters such as K factors and D factors have been checked to ensure the plausibility given the new design year.

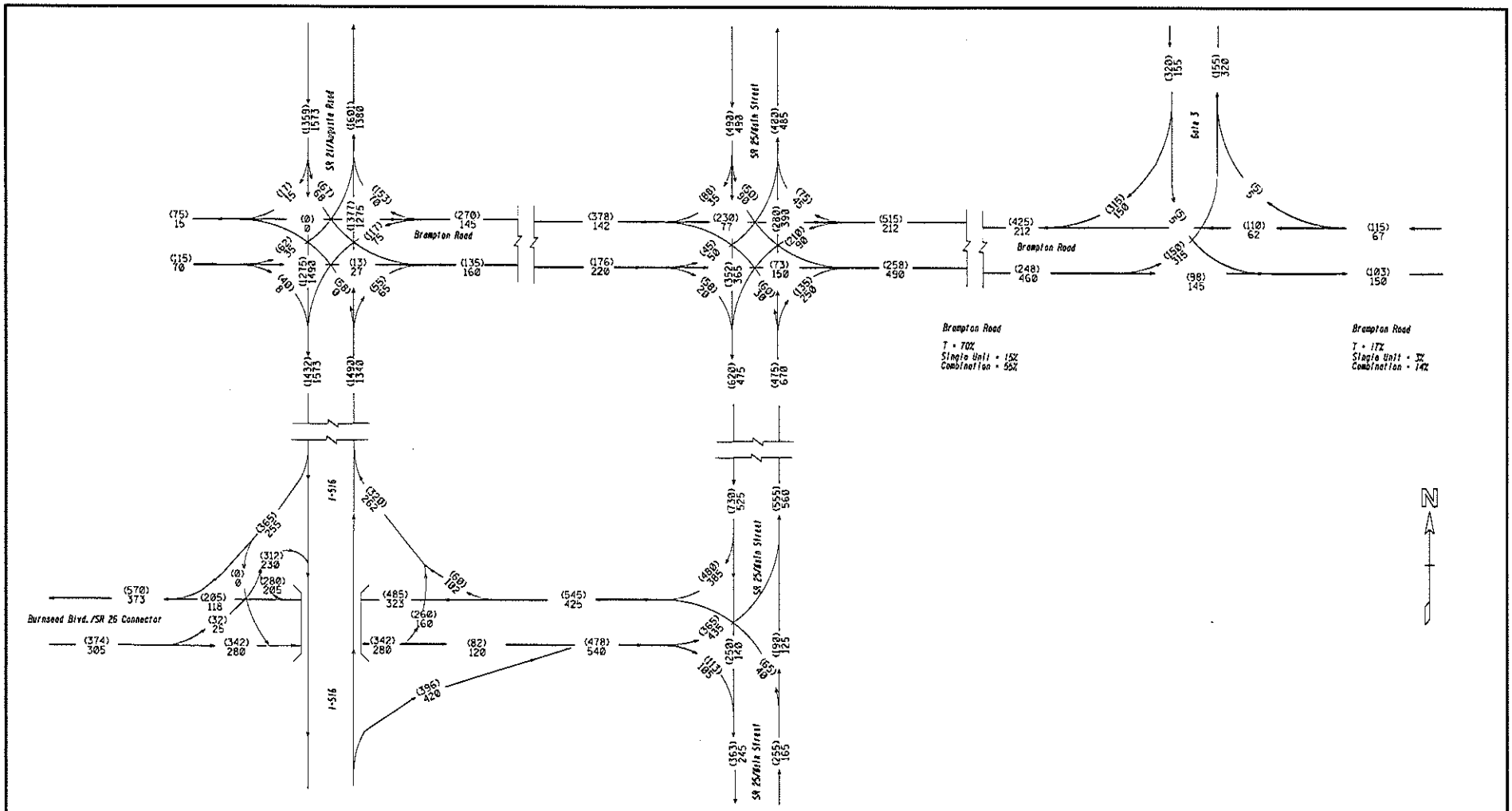
In conclusion, this version of updated traffic volumes has taken new geometrics, new design year and latest traffic counts into consideration. The updated traffic volumes have reasonable K factors, D factors and growth rates, and represent the best educated guess given the time and resource CDM Smith has in the present day.



Existing (2012) PEAK HOURS	PM : (000) AM : 000	BRAMPTON ROAD PI#: 0006328	DATE	REVISIONS	DATE	REVISIONS	STATE OF GEORGIA DEPARTMENT OF TRANSPORTATION TRAFFIC DIAGRAM PROJECT: CSSTP - 0006 - 00 (328) COUNTY - CHATHAM DATE 06-02-2016M OF: 8



EXISTING (2012) ADT		BRAMPTON ROAD PI#: 0006328	DATE	REVISIONS	DATE	REVISIONS	STATE OF GEORGIA DEPARTMENT OF TRANSPORTATION TRAFFIC DIAGRAM PROJECT: CSSTP - 0006 - 00 (328) COUNTY - CHATHAM DATE 06-19-2012H 0F2 8



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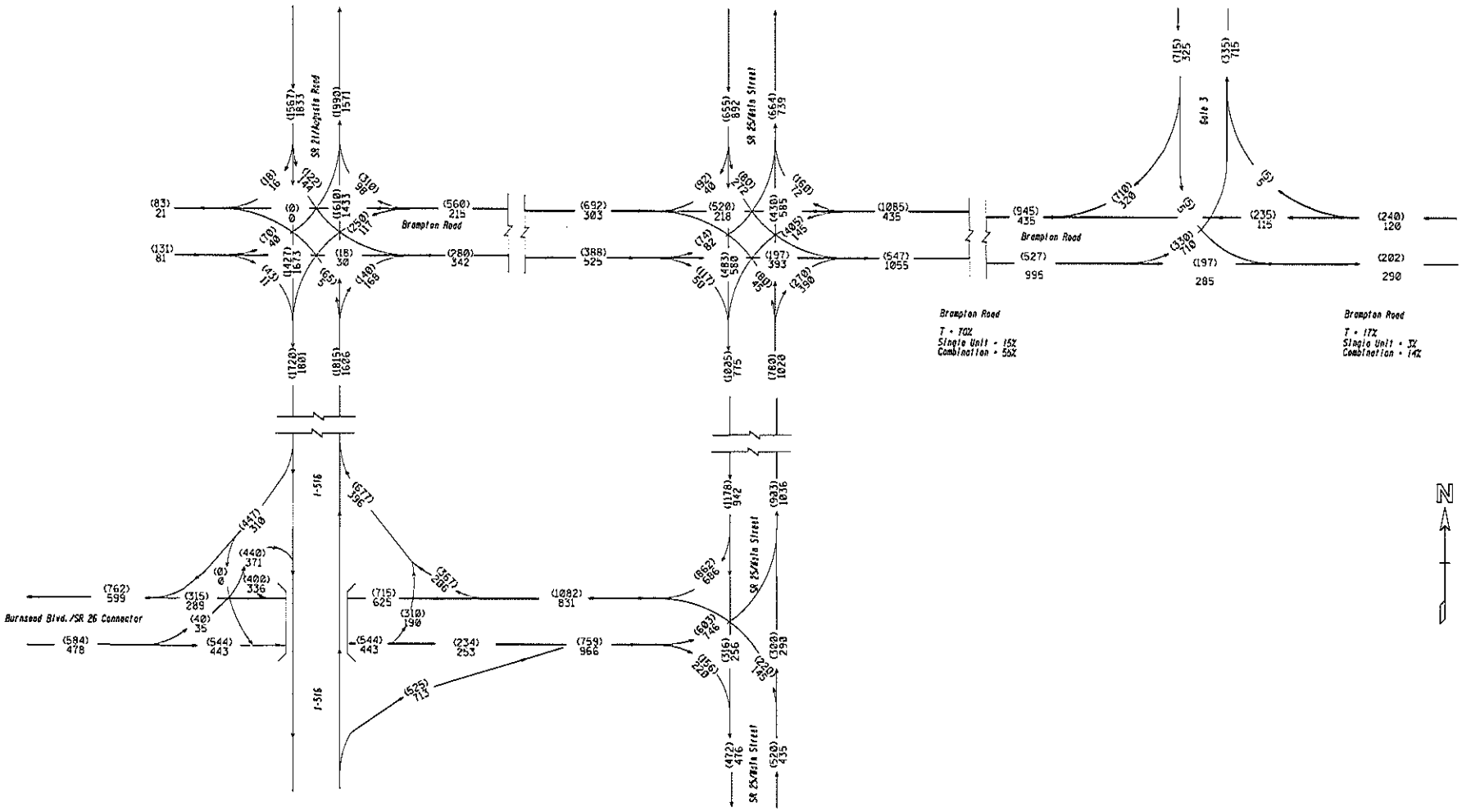

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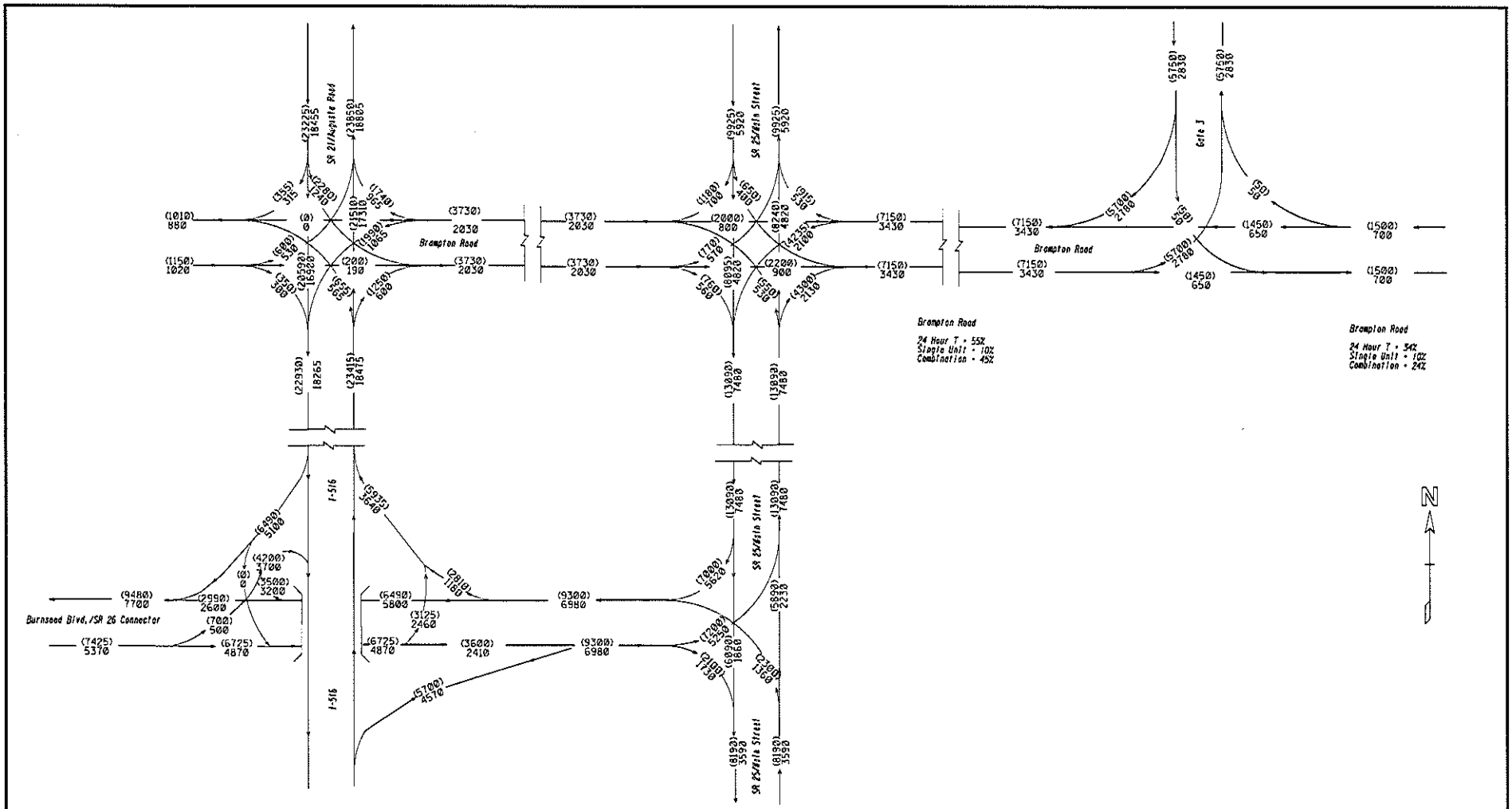

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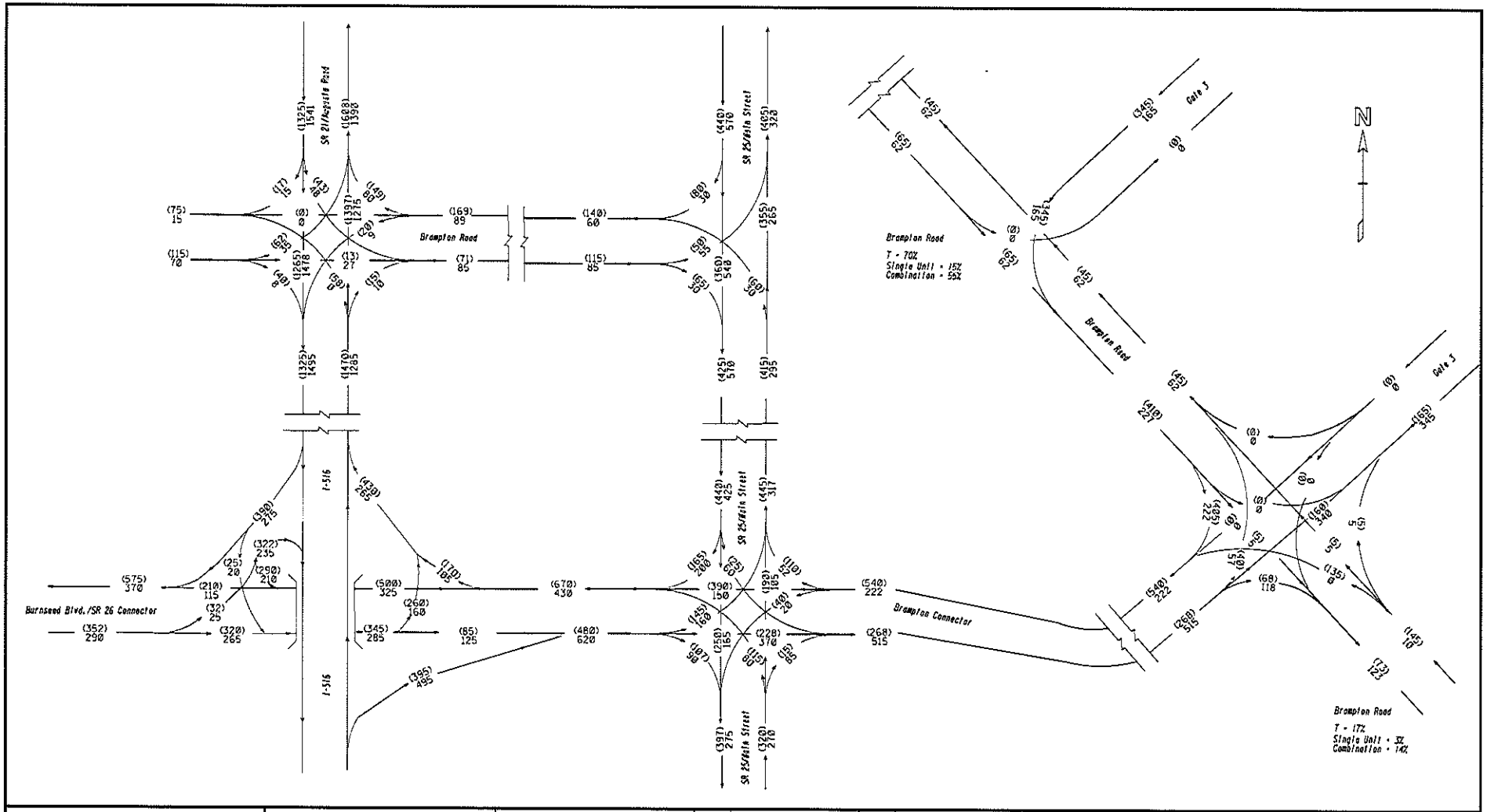

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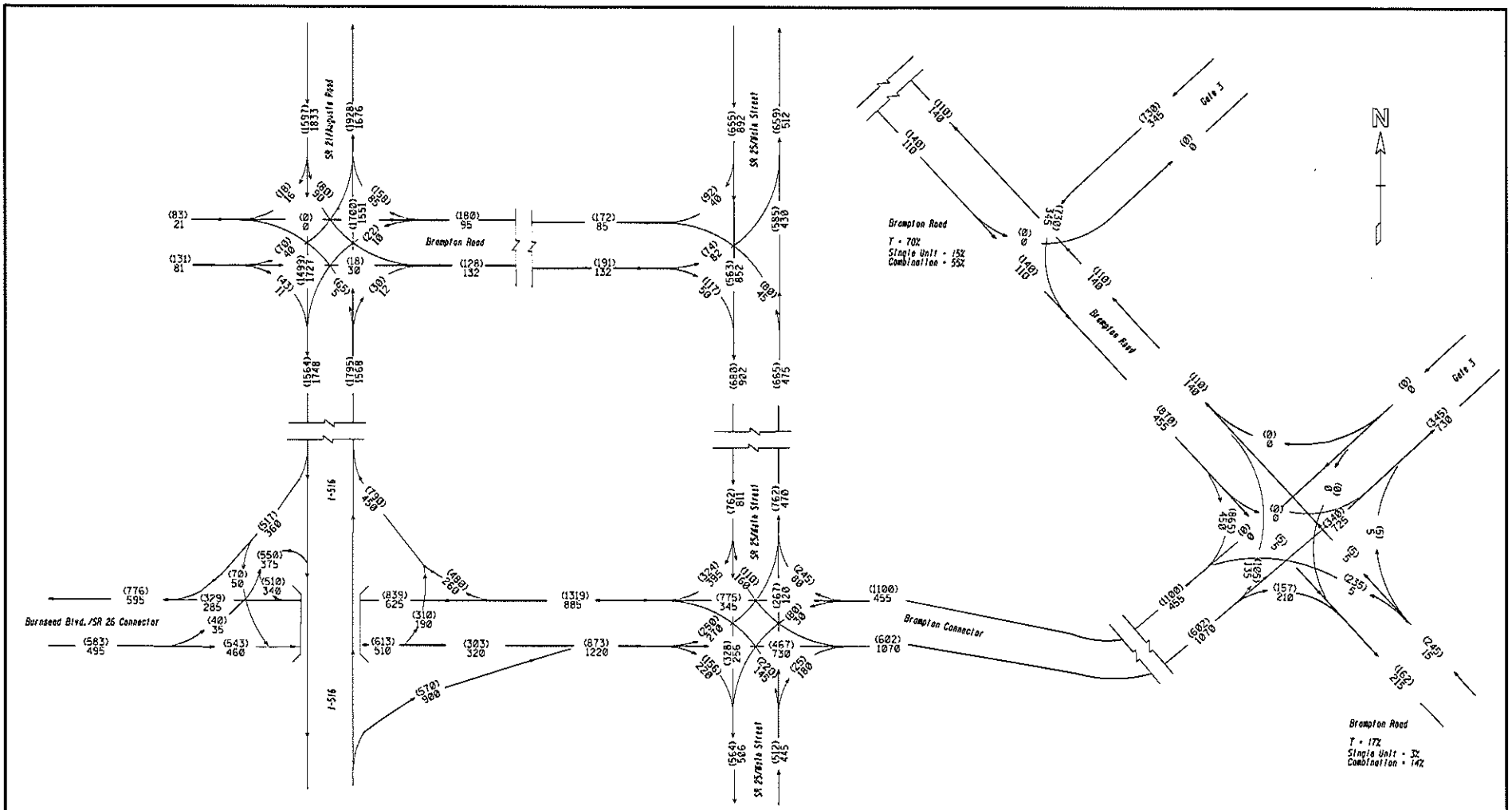

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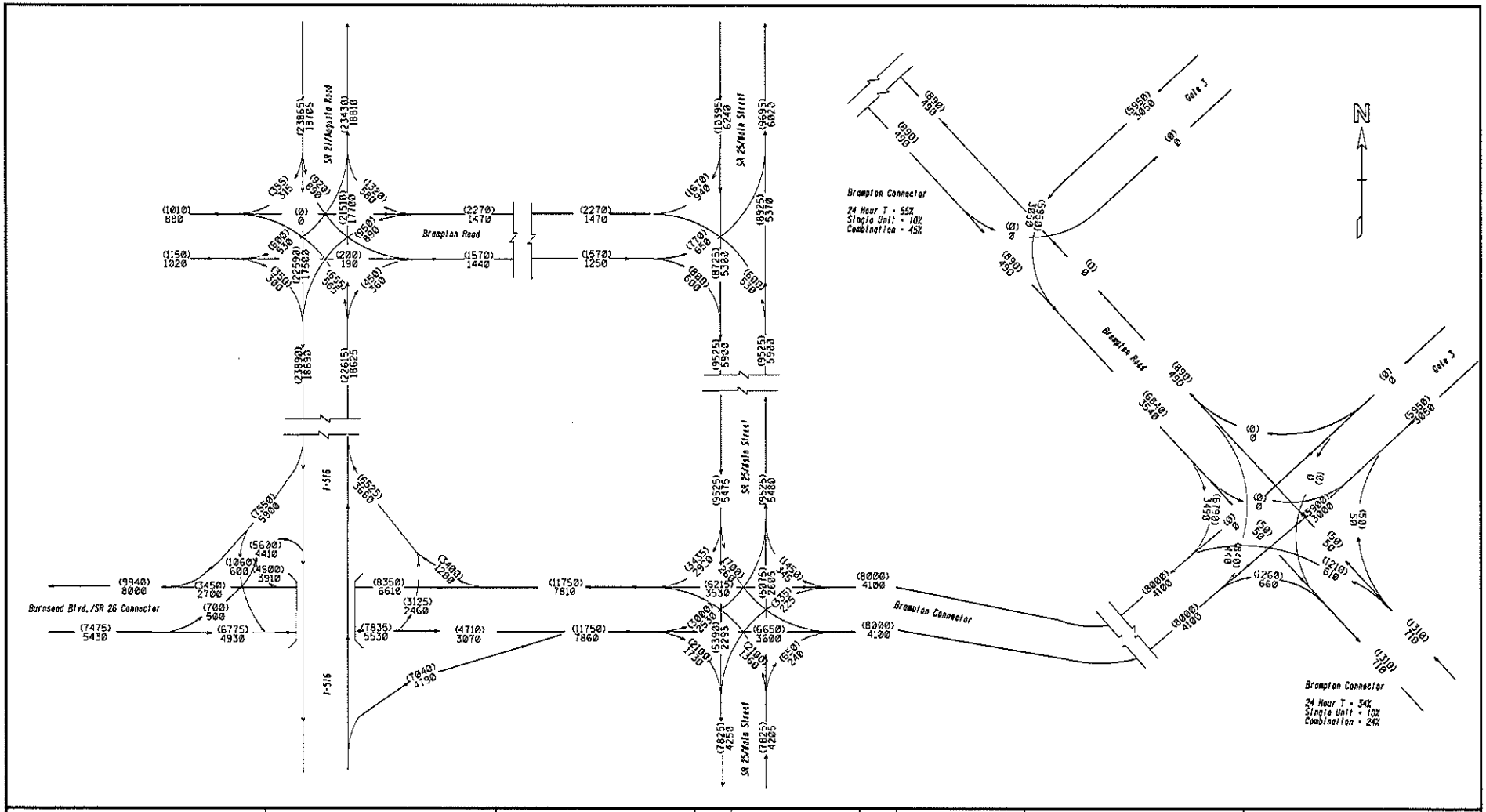


BUILD	2038 ADT = (000) 2018 ADT = 000	BRAMPTON ROAD PI#: 0006328	DATE	REVISIONS	DATE	REVISIONS	STATE OF GEORGIA DEPARTMENT OF TRANSPORTATION TRAFFIC DIAGRAM PROJECT: CSSTP - 0006 - 00 (328) COUNTY - CHATHAM DATE 06-02-2018 OF 8 8

TRAFFIC SIGNAL WARRANT ANALYSIS

Current Conditions

Brampton Road serves as an entrance to the GPA's Garden City Terminal by providing a route from I-516/SR21 to the Terminal's Gate 3 and other Brampton Road industries. On route, Brampton Road intersects with Main Street/SR25 (see Project Location Map). The SR 25/Main Street cross section in this area is five (5) lanes wide with a left turn lane south of SR 21 Spur/Brampton Road and four (4) lanes wide with a left turn lane north of Brampton Road at the intersection, and has a posted speed limit of 45 mph. The right northbound lane ends as a right turn only lane at the intersection. The intersected Brampton Road travels west to east and is a two (2) lanes roadway with an eastbound left turn lane. Currently this is a signalized intersection.

Proposed Conditions

The proposed project will close the east leg of the existing Brampton Road at the intersection of Brampton Road and Main Street. The project would consist of a new location roadway beginning northwest of the SR 25/I-516 interchange at the intersection of Burnsed Blvd. and SR 25, and continue northeasterly until connecting with the existing Brampton Road. The existing portion of Brampton Road will be widened to accommodate two left turn lanes into the GPA's Gate 3. There will be no change to the remainder of Brampton Road from Gate 3 to the river. The west portion of Brampton Road will function as a residential local street.

Traffic Signal Warrants

The various criteria for installing traffic signals are described in the Manual on Uniform Traffic Control Devices (MUTCD).

Warrant 1 – Eight Hour Vehicular Volume

The Eight Hour Vehicular Volume warrant has three separate conditions. This warrant states the minimum traffic volumes that must pass through an intersection.

The first is Condition A, or Minimum Vehicular Volume. **Table 4C-1** from the MUTCD determines the volume criteria for an intersection. The major and minor streets are divided into two separate categories. The number of lanes approaching the intersection dictates the volume requirement. There are also reduction factors that decrease the minimum traffic requirements. These reduction factors are:

- Intersection approaches with posted or 85th percentile speed greater than 40 MPH – 30% reduction.
- Area or Metropolitan Population less than 10,000 – 30% reduction.
- Crash Experience (see Warrant 7) – 20% reduction.

These reduction factors cannot be combined. The largest reduction is used.

Condition B, or Interruption of Continuous Traffic, also uses **Table 4C-1**. It is different from the minimum vehicular volume in that it uses lower minor street volumes, but higher major street volumes. This warrant is designed for lower volume minor streets approaching very heavily traveled arterial streets. The same reduction factors apply to this condition.

There is a third provision in Warrant 1 that states "only after an adequate trial of other alternatives that could cause less delay and inconvenience to traffic has failed to solve traffic problems[1]" a combination of Conditions A and B can be used with a 20% reduction.

Table 4C-1. Warrant 1, Eight-Hour Vehicular Volume

Condition A - Minimum Vehicular Volume							
Number of lanes for moving traffic on each approach		Vehicles per hour on major street (total of both approaches)			Vehicles per hour on higher-volume minor-street approach (one direction only)		
Major Street	Minor Street	100%[a]	80%[b]	70%[c]	100%[a]	80%[b]	70%[c]
1.....	1.....	500	400	350	150	120	105
2 or more...	1.....	600	480	420	150	120	105
2 or more...	2 or more...	600	480	420	200	160	140
1.....	2 or more....	500	400	350	200	160	140

Condition B - Interruption of Continuous Traffic							
Number of lanes for moving traffic on each approach		Vehicles per hour on major street (total of both approaches)			Vehicles per hour on higher-volume minor-street approach (one direction only)		
Major Street	Minor Street	100%[a]	80%[b]	70%[c]	100%[a]	80%[b]	70%[c]
1.....	1.....	750	600	525	75	60	53
2 or more...	1.....	900	720	630	75	60	53
2 or more...	2 or more...	900	720	630	100	80	70
1.....	2 or more....	750	600	525	100	80	70

[a] Basic minimum hourly volume.
[b] Used for combination of Conditions A and B after adequate trial of other remedial measures.
[c] May be used when the major street speed exceeds 70 km/h (40 mph) or in an isolated community with a population of less than 10,000.

Source: Manual on Uniform Traffic Control Devices, 2003 Edition, U.S. Dept. of Transportation, FHWA, p. 4C-3

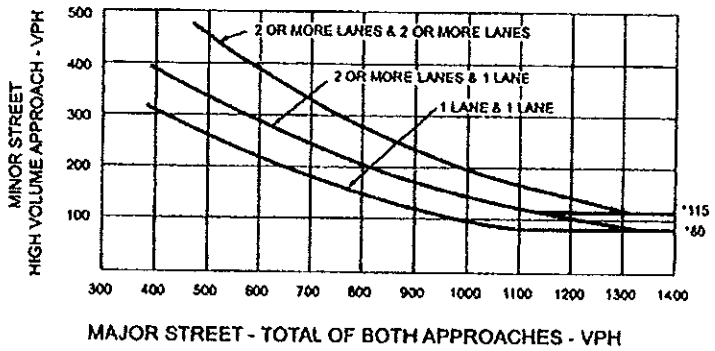
[1] Manual on Uniform Traffic Control Devices, 2003 Edition, U S Dept. of Transportation, FHWA, p. 4C-6

Warrant 2 – Four Hour Vehicular Volume

The MUTCD states that the intent of the Four Hour Vehicular Volume Warrant is to be applied where the intersecting traffic is the primary consideration for installing a traffic signal. This warrant is in graphical form. It is met by plotting points on one of two graphs presented in the Manual. These graphs have multiple lines. Once again, the number of lanes approaching the intersection determines which lines are used on the plots.

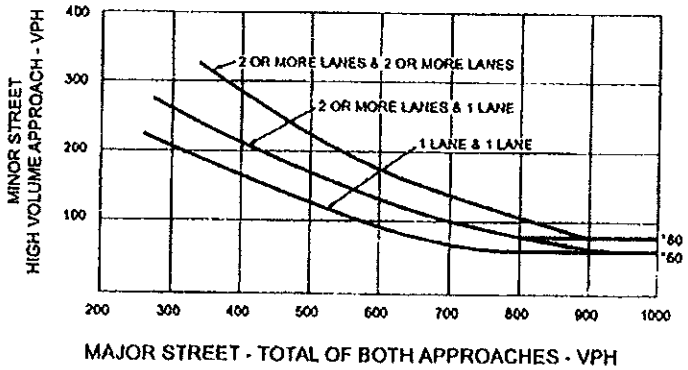
Warrant 2 has only two reduction factors. They are the 30% reductions for high-speed approaches (above 40 mph) or population less than 10,000. Crash experience is not used.

Figure 4C-1. Warrant 2 - Four-Hour Vehicular Volume



*Note: 115 vph applies as the lower threshold volume for a minor street approach with two or more lanes and 80 vph applies as the lower threshold volume for a minor street approach with one lane

Figure 4C-2. Warrant 2 - Four-Hour Vehicular Volume (70% Factor)
(COMMUNITY LESS THAN 10,000 POPULATION OR ABOVE 70 km/h (40 mph) ON MAJOR STREET)



*Note 80 vph applies as the lower threshold volume for a minor street approach with two or more lanes and 60 vph applies as the lower threshold volume for a minor street approach with one lane

Source: Manual on Uniform Traffic Control Devices, 2003 Edition, U.S. Dept. of Transportation, FHWA, p. 4C-5

Warrant 3 – Peak Hour Volume

The peak hour warrant is intended for use where the nature of the minor street traffic suffers undue delay entering or crossing the major street for a minimum of one hour of an average day. The MUTCD explicitly states, "This signal warrant shall be applied only in unusual cases, such as office complexes, manufacturing plants, industrial complexes, or high-occupancy vehicle facilities that attract or discharge large numbers of vehicles over a short time[2]", since Brampton Road is a residential street, warrant 3 does not apply.

Warrant 4 – Pedestrian Volume

A high pedestrian volume is used to determine the necessity for installing traffic signal at an intersection or mid-block location. There must be a minimum of 100 pedestrians for each of any four hours of the day, or a minimum of 190 pedestrians during any one hour of the day. Since Brampton Road has a volume of below 20 pedestrians per day, warrant 4 does not apply in this case.

Warrant 5 – School Crossing

The application of this warrant is reserved for use where school children cross a major street. Similar to the Pedestrian Volume, there are a minimum number of school children that must cross a location before a traffic signal may be considered under this warrant. Also, there are other constraints regarding proximity of surrounding traffic signals, and progressive movements of existing traffic flow. This warrant is intended for use only after implementation of other remedial measures. Since there are no schools in the area, Warrant 5 does not apply in this case.

Warrant 6 – Coordinated Signal System

There are times where the installation of a traffic signal, where one would otherwise not be warranted, may benefit the flow of traffic. Though very limited, these situations arise on coordinated arterial routes where the spacing between consecutive traffic signals is too great to maintain the necessary platooning of vehicles. The MUTCD stresses this measure should not be used where the resultant spacing between traffic signals would be less than 1,000 feet. Warrant 6 does not apply in this case.

Warrant 7 – Crash Experience

As part of every traffic signal analysis, an intersection's crash history must be researched. Not all crashes are analyzed. Only crashes that are "susceptible to correction[3]" are evaluated. By and large, these crashes are right angle collisions involving vehicles turning left onto or from the minor street.

Warrant 7 is designed to reduce the volume requirements for Warrant 1 in the event five or more potentially correctable crashes are reported in any 12-month period.

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[2] Manual on Uniform Traffic Control Devices, 2003 Edition, U S. Dept. of Transportation, FHWA, p 4C-4
[3] Manual on Uniform Traffic Control Devices, 2003 Edition, U S. Dept of Transportation, FHWA, p 4C-8

Warrant 8 – Roadway Network

Similar to Warrant 6, this warrant is intended for use in a roadway network such as that of a downtown area. Warrant 8 does not apply in this case.

Traffic Signal Warrant Analysis

The projected average daily traffic (ADT) on Main Street in 2030 was projected as 17,550 vpd in Concept Report. 48 hours directional counts were collected and are used to analyze projected hourly volume estimates.

The hourly traffic volumes on west portion of Brampton Road was developed based on collected counts and growth rates from CUTS travel model. After the completion of proposed Brampton Road project and the closure of east leg of Brampton Road, the eastbound through traffic will no longer utilize the west portion of Brampton Road.

Most recent five years crash data has been obtained and analyzed (see the following table). About 71 percent accidents are real end accidents during this time period. The high percentage of rear end collisions is likely caused by the installation of existing traffic signal.

Accident History at Intersection of SR 21 Spur/Brampton Rd. and SR 25/Main St.

	2000	2001	2002	2003	2004
Rear-end	2	2	1	4	1
Angle	1	1	1	1	0
Others	0	0	0	0	0
Total	3	3	2	5	1
Injuries	0	1	1	0	0
Fatalities	0	0	0	0	0

Intersection Data Summary Sheet

		Number of lanes	Posted Speed
Major Street:	SR 25 / Main St	2	45
Minor Street:	Brampton Rd	1	

Pedestrian Activity		
Hour	Time	Number
1	7 to 8	
2	8 to 9	
3	9 to 10	
4	10 to 11	
5	11 to 12	
6	12 to 1	
7	1 to 2	
8	2 to 3	
9	3 to 4	
10	4 to 5	
11	5 to 6	
12	6 to 7	

Accident Experience

1 Accidents in a 12 month period

Area Population

Is the population of this area less than 10,000?

NO

Traffic Signal Warrant Reductions

Crash Experience Posted/85th Percentile Speed Population	70%

*Note the largest reduction factor is used. There are no provisions in the MUTCD to combine multiple warrant reductions.

Warrant Anaylsis Tables

WARRANT 1 CRITERIA

CONDITION A		CONDITION B	
MAJ	MIN	MAJ	MIN
420	105	630	53

		Warrant 1									Warrant 4		Warrant 5		Warrant 7
		Condition A			Condition B			Combination							
Hour	Time	Major	Minor	Meets	Major	Minor	Meets	A	B	Meets	Peds	Meets	Peds	Meets	Crash Dates
1	7 to 8	1374	70	No	1374	70	Yes		X	No	0	No		No	3/19/2004
2	8 to 9	1207	32	No	1207	32	No			No	0	No		No	
3	9 to 10	1142	18	No	1142	18	No			No	0	No		No	
4	10 to 11	1101	30	No	1101	30	No			No	0	No		No	
5	11 to 12	1212	66	No	1212	66	Yes		X	No	0	No		No	
6	12 to 1	1358	107	Yes	1358	107	Yes	X	X	Yes	0	No		No	
7	1 to 2	1233	84	No	1233	84	Yes		X	No	0	No		No	
8	2 to 3	1308	59	No	1308	59	Yes		X	No	0	No		No	
9	3 to 4	1500	72	No	1500	72	Yes		X	No	0	No		No	
10	4 to 5	1321	103	No	1321	103	Yes		X	No	0	No		No	
11	5 to 6	1319	70	No	1319	70	Yes		X	No	0	No		No	
12	6 to 7	754	25	No	754	25	No			No	0	No		No	
Number of Hours Met				1 Hours			8 Hours			1 Hours		0 Hours		0 Hours	1 Crashes
Number of Hours Required				8 Hours			8 Hours			8 Hours		4 Hours		1 Hour	5 Crashes
Warrant Satisfied				NO			YES			NO		NO		NO	NO
															(12 month period)

Intersection Data Summary Sheet

		Number of lanes	Posted Speed
Major Street:	SR 25 / Main St	2	40
Minor Street:	Brampton Rd	1	

Pedestrian Activity		
Hour	Time	Number
1	7 to 8	
2	8 to 9	
3	9 to 10	
4	10 to 11	
5	11 to 12	
6	12 to 1	
7	1 to 2	
8	2 to 3	
9	3 to 4	
10	4 to 5	
11	5 to 6	
12	6 to 7	

Accident Experience

1 Accidents in a 12 month period

Area Population

Is the population of this area less than 10,000?

NO

Traffic Signal Warrant Reductions

Crash Experience	
Posted/85th Percentile Speed	
Population	

*Note the largest reduction factor is used. There are no provisions in the MUTCD to combine multiple warrant reductions.

Warrant Anaylsis Tables

WARRANT 1 CRITERIA

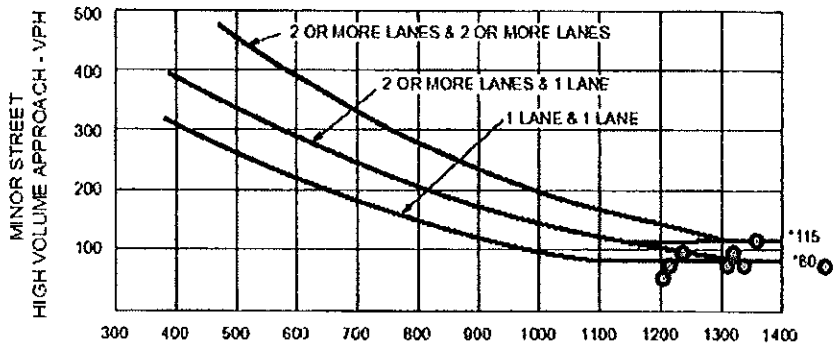
CONDITION A		CONDITION B	
MAJ	MIN	MAJ	MIN
600	150	900	75

		Warrant 1									Warrant 4		Warrant 5		Warrant 7
		Condition A			Condition B			Combination							
Hour	Time	Major	Minor	Meets	Major	Minor	Meets	A	B	Meets	Peds	Meets	Peds	Meets	Crash Dates
1	7 to 8	1374	74	No	1374	74	No			No	0	No		No	3/19/2004
2	8 to 9	1207	33	No	1207	33	No			No	0	No		No	
3	9 to 10	1142	19	No	1142	19	No			No	0	No		No	
4	10 to 11	1101	31	No	1101	31	No			No	0	No		No	
5	11 to 12	1212	70	No	1212	70	No			No	0	No		No	
6	12 to 1	1358	113	No	1358	113	Yes		X	No	0	No		No	
7	1 to 2	1233	88	No	1233	88	Yes		X	No	0	No		No	
8	2 to 3	1308	62	No	1308	62	No			No	0	No		No	
9	3 to 4	1500	76	No	1500	76	Yes		X	No	0	No		No	
10	4 to 5	1321	108	No	1321	108	Yes		X	No	0	No		No	
11	5 to 6	1319	74	No	1319	74	No			No	0	No		No	
12	6 to 7	754	26	No	754	26	No			No	0	No		No	
	Number of Hours Met			0	Hours		4	Hours		0 Hours		0 Hours		0 Hours	1 Crashes
	Number of Hours Required			8	Hours		8	Hours		8 Hours		4 Hours		1 Hour	6 Crashes
	Warrant Satisfied			NO			NO			NO		NO		NO	NO
															(12 month period)

Traffic Signal Warrant 2

SR 21 Spur/Brampton Rd at SR 25/Main St

Figure 4C-1. Warrant 2 - Four-Hour Vehicular Volume

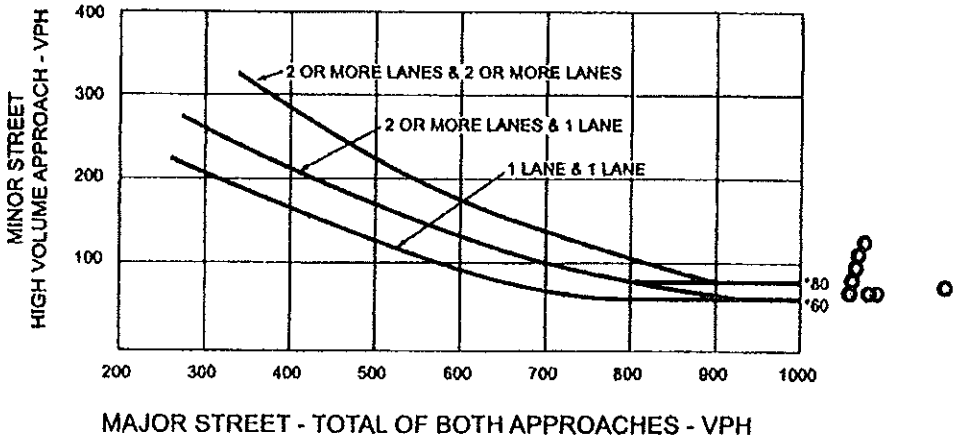


*Note 115 vph applies as the lower threshold volume for a minor street approach with two or more lanes and 80 vph applies as the lower threshold volume for a minor street approach with one lane

Number of hours met = 2 Meets warrant = NO

Figure 4C-2. Warrant 2 - Four-Hour Vehicular Volume (70% Factor)

(COMMUNITY LESS THAN 10,000 POPULATION OR ABOVE 70 km/h (40 mph) ON MAJOR STREET)



*Note: 80 vph applies as the lower threshold volume for a minor street approach with two or more lanes and 60 vph applies as the lower threshold volume for a minor street approach with one lane.

Number of hours met = 8 Meets warrant = YES

Conclusions

A traffic signal warrant study was performed according to MUTCD guidelines.

1) The result of the study shows if the speed limit remains at 45 mph on SR 25/Main Street, Warrant 1 Condition B and Warrant 2 are still satisfied even after the east portion of Brampton Road is closed based on the posted speed limit, projected traffic volumes and geometric conditions. Therefore existing signal at the intersection should be retained.

2) The result of the study also indicates if the posted speed limit is reduced to 40 mph or below, none of the warrants is satisfied. Also the accidents analysis suggests that the major accidents might decrease by removing existing signal. Hence, the existing traffic signal could be removed.

Traffic Signal Removal Procedures

If it is determined that the speed limit on SR25/Main Street can be successfully reduced, the following steps are recommended before removing the traffic signal.

A. Reduce the posted speed limit to 35 mph on both the north and the south approaches on SR 25/Main Street close to this intersection after east portion of SR 21 Spur/ Brampton Road is closed.

B. Determine the appropriate traffic control to be used after removal of the signal.

C. Remove any sight-distance restrictions as necessary.

D. Inform the public of the removal study, for example by installing an informational sign (or signs) with the legend TRAFFIC SIGNAL UNDER STUDY FOR REMOVAL at the signalized location in a position where it is visible to all road users.

E. Flash or cover the signal heads for a minimum of 90 days, and install the appropriate stop control or other traffic control devices.

F. Remove the signal if the engineering data collected during the removal study period confirms that the signal is no longer needed. Instead of total removal of the traffic control signal, the poles and cables may remain in place after removal of the signal heads for continued analysis.

Due to the unique traffic pattern at this intersection and the impact of the proposed Brampton Road connector to this intersection, It is recommended to collect traffic counts and conduct future study after completion of the proposed Brampton Road connector project and closure of east leg of existing Brampton Road.

Since there are two existing northbound approaching lane and only one existing northbound receiving lane at this intersection, signing and pavement marking shall be redesigned when considering closing east portion of Brampton Road and removing the signal.

There is existing crosswalk on south side of Main Street and west side of Brampton Road. Appropriate treatment for pedestrian crossing the streets should be considered when removing the signal.

TECHNICAL MEMO:
DELAY-QUEUING ANALYSIS

JORDAN
JONES &
GOULDING

TECHNICAL MEMORANDUM

DATE: July 27, 2006

PREPARED FOR: Jonathan E. Thomas, P.E

FROM: Yasmin Moreno, PE

SUBJECT: Brampton Road Connector

PROJECT: CSSTP-0006-00(378)

PREPARED BY: Jenny Lee

REVIEWED BY: Robert Bernstein

CC: Ken Anderson, JJG

This technical memo serves to report the findings of the delay and queuing analyses performed for the existing and proposed rail road crossings at Brampton Road using 2030 future traffic volumes.

Delay Analysis

Two future scenarios – a "build" and a "no-build" scenario – were studied in order to gauge the traffic impacts and benefits associated with the proposed new railroad crossing at the Brampton Road Connector. The no-build scenario with the existing railroad crossing at Brampton Road has a typical train blockage time of 10-minutes when a train backing operation is being performed, and the build scenario with the proposed railroad crossing at the Brampton Road Connector would be expected to experience a typical train blockage time of 3 minutes for the same backing operation.[1] With 2030 peak hour traffic volumes, the total delay caused by a backing operation at the existing crossing would be 1,792 veh-min, and the total delay at the proposed crossing would be 200 veh-min. Findings of the delay analysis indicated that the proposed intersection would result in significant travel time savings of approximately 1592 veh-min.

1 . Blockage time for train operations that do not involve backing would be the same for the existing and proposed crossings.

Queuing Analysis

In addition to the delay analysis, we also analyzed queuing at the proposed new crossing. For this analysis we examined a 'worst case' scenario of involving a 15-minute train crossing closure time (the maximum blockage time observed during our field survey). The queue storage length available on Burnsed Rd for the proposed crossing (i.e., the storage on Burnsed between the Main/SR 525 intersection and the northbound I-516 off-ramp onto Burnsed Rd) does not have adequate capacity to hold the all the traffic that will queue up during a 15-minute train crossing. With 2030 peak traffic volumes, a 15-minute blockage would result in a queue storage requirement of nearly 4,600 lane-ft on the off-ramp. Because this storage capacity is not available, queues will back up onto the I-516 mainline during these crossing blockage episodes; the existing two-lane off-ramp is currently 800 ft in length, providing 1,600 ft of queue storage capacity, which would result in a queue spill back onto the I-516 mainline of nearly 3,000 ft each time there is a 15-min blockage during peak hours.

	No-Build – Existing RR Crossing at Brampton Rd	Build – Proposed RR Crossing at Brampton Rd	Worst Case with new Brampton Road Connector
Train Crossing Time	10 minutes	3 minutes	15 minutes*
Total Delay (veh-min)	1,792	200	4,988 on ramp
Off Ramp Queue Length	N/A	646 ft (323 ft per lane)	4583 ft (2291 ft per lane)
Queue Spillback onto I-516	N/A	N/A	2983 ft

** A 15 minute train delay was observed on the rail line at the intersection of Burnsed.*

Below is a list of several mitigation measures to alleviate the potential queue backing onto I-516:

1. Ensure the train crossing time at the proposed intersection not to exceed six minutes, which is the maximum threshold time for the queue to not spill back onto I-516
2. Construct queue storage lane along I-516 shoulder
3. Grade-separate in-bound Port traffic:
   a. via an over-crossing from NB Main St north of Burnsed
   b. via an over-crossing from SB Main St south of Burnsed

ROUNDABOUT DATA

Georgia Department of Transportation

Roundabout Analysis Tool

v 2.1
2/24/12

Welcome to GDOT's Roundabout Analysis Tool. This tool is designed for the user to determine the functionality of a proposed roundabout. The analysis is based on the 2010 Highway Capacity Manual Methodology and NCHRP Report 672, FHWA's Roundabout Informational Guide. Please read the notes in the Instructions tab before using the spreadsheet.

Analyst:	Jeff Vickery
Agency/Company:	CDM Smith
Date:	6/21/2012
Project Name or PI#:	Brampton Connector
Year, Peak Period:	2038 Build, AM
County/District:	Chatham
Intersection:	Brampton Connector & Brampton Road

Insert Project Information Here in the BLUE SPACE. This information is linked to the Single Lane and Multi Lane Worksheets.

Roundabout Considerations Worksheet

Roundabouts may not operate well if there is too much traffic entering the intersection or if the percentage of traffic on the major road is too high. Candidate intersections shall be analyzed to determine whether a roundabout will perform acceptably. Shown below are thresholds to determine if a roundabout capacity analysis is required:

# of circulatory lanes	ADTs (current/ build year)	% traffic on Major Road
Single Lane	less than 25,000	less than 90%
Multi-Lane	less than 45,000	less than 90%

Other things to consider when evaluating roundabouts as an alternative are Right of Way, sight distance, environmental impacts, and access to adjacent properties.

Volume Information (for Analysis Time Period)

1 Enter the Major/Minor Street ADT Volumes in the Chart below:

	Volumes	Split
Major Street	8,000	50%
Minor Street	8,150	50%
Total volumes	16,150	

Proximity to Other Intersections

2 How close is the nearest signal (miles or feet)? 0 mi | 2930 '

3 Is the proposed intersection located within a coordinated signal network? No

Go up to next section...

Proposed Design Configuration Chart

Directions for this Section only: *(see Instructions Tab for other sections)*

1. Select the type of roundabout you are analyzing.
2. Key in the number of approaches and the street names at the proposed intersections.
3. Complete the Approach Characteristics Chart:
   a. Select the Street Name from the pulldown menu for each approach leg
   b. Select the Lane Type for each entry apporach lane
      **The first box is the inner lane, the second box is the outer lane*
   c. Select Yes or No if a right turn bypass will be added to each approach leg

Roundabout Characteristics

Roundabout Type:	Single Lane
# of Approaches:	4
Name of Streets:	Brampton Connector
	Brampton Road
	Gate 3

Chart Key:

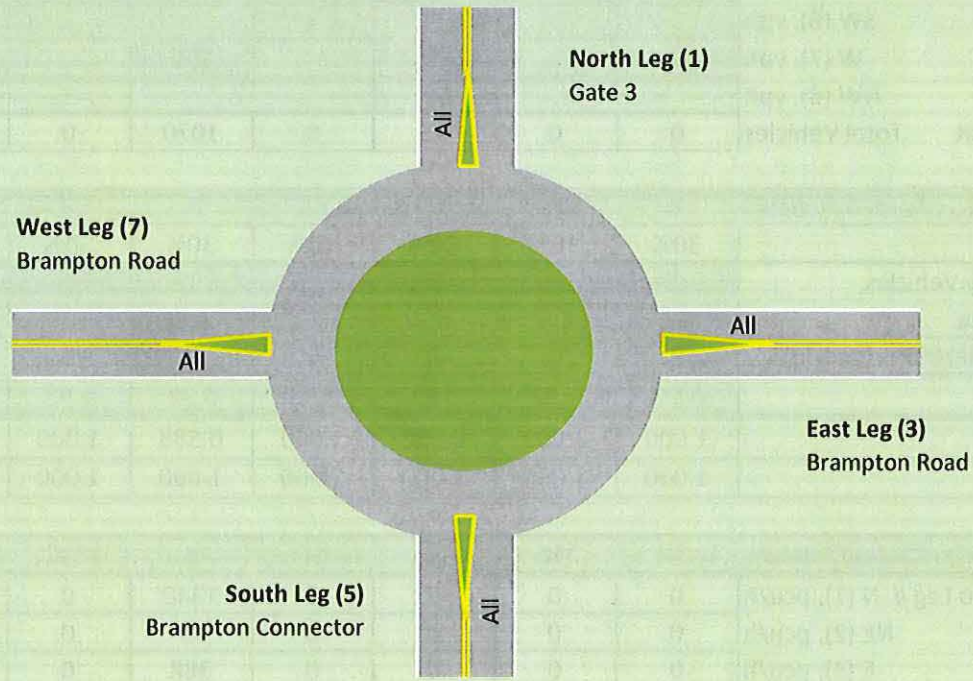
Single Lane	Street Name	
	All	
	Bypass?	
Multi-lane	Street Name	
	Inner Ln	Outer Ln
	Bypass?	

Approach Leg Characteristics:

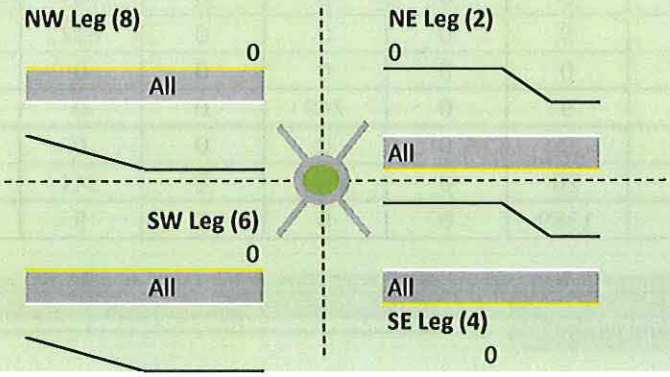
	North Leg (1)	NE Leg (2)	East Leg (3)	SE Leg (4)
Street Name:	Gate 3		Brampton Road	
Entry Lane Config	All	All	All	All
Bypass to Adj Leg?	No		No	

	South Leg (5)	SW Leg (6)	West Leg (7)	NW Leg (8)
Street Name:	Brampton Connector		Brampton Road	
Entry Lane Config	All	All	All	All
Bypass to Adj Leg?	No			

Preliminary Roundabout Rendering**



Additional Legs



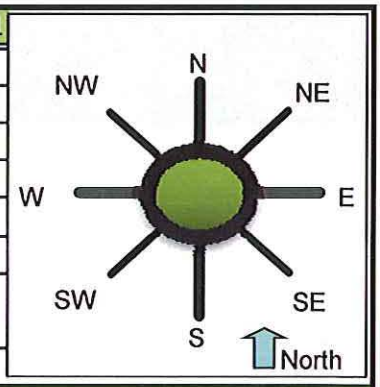
Note

This roundabout sketch does not include the secondary cardinal direction legs due to restrictions in the Excel software. For complex roundabouts, a separate sketch is recommended by the designer.

Roundabout Analysis Tool
Single Lane

8/7/2012
Version 2.1

General & Site Information		v2.1
Analyst:	Jeff Vickery	
Agency/Co:	CDM Smith	
Date:	6/21/2012	
Project or PI#:	Brampton Connector	
Year, Peak Hour:	2038 Build, AM	
County/District:	Chatham	
Intersection Name:	Brampton Connector & Brampton Road	



Volumes		Entry Legs (FROM)							
		N (1)	NE (2)	E (3)	SE (4)	S (5)	SW (6)	W (7)	NW (8)
Exit Legs (TO)	N (1), vph			5		725		0	
	NE (2), vph								
	E (3), vph	0				210		5	
	SE (4), vph								
	S (5), vph	0		5				450	
	SW (6), vph								
	W (7), vph	0		5		135			
	NW (8), vph								
Output	Total Vehicles	0	0	15	0	1070	0	455	0

Volume Characteristics	N	NE	E	SE	S	SW	W	NW
% Cars	30%	30%	30%	30%	30%	30%	30%	30%
% Heavy Vehicles	70%	70%	70%	70%	70%	70%	70%	70%
% Bicycle	0%	0%	0%	0%	0%	0%	0%	0%
# of Pedestrians (ped/hr)	0	0	0	0	0	0	0	0
PHF	*0.92*	*0.92*	*0.92*	*0.92*	*0.92*	*0.92*	*0.92*	*0.92*
F_{HV}	1.000	1.000	0.588	1.000	0.588	1.000	0.588	1.000
F_{ped}	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000

Entry/Conflicting Flows	N	NE	E	SE	S	SW	W	NW
Flow to Leg # N (1), pcu/h	0	0	9	0	1340	0	0	0
NE (2), pcu/h	0	0	0	0	0	0	0	0
E (3), pcu/h	0	0	0	0	388	0	9	0
SE (4), pcu/h	0	0	0	0	0	0	0	0
S (5), pcu/h	0	0	9	0	0	0	832	0
SW (6), pcu/h	0	0	0	0	0	0	0	0
W (7), pcu/h	0	0	9	0	249	0	0	0
NW (8), pcu/h	0	0	0	0	0	0	0	0
Entry flow, pcu/h	0	0	28	0	1977	0	841	0
Conflicting flow, pcu/h	0	0	1589	0	9	0	9	0

Roundabout Type	Standard Single Lane or Urban Compact
Enter type here...	Standard Single Lane

Results: Approach Measures of Effectiveness

HCM 2010 Model (build)	N	NE	E	SE	S	SW	W	NW
Entry Capacity, vph	1130	NA	136	NA	659	NA	659	NA
Entry Flow Rates, vph	0	NA	16	NA	1163	NA	495	NA
V/C ratio	**0.00**		**0.12**		**1.77**		**0.75**	
Control Delay, s/veh	**3**		**31**		**367**		**24**	
LOS	A		D		F		C	
95th % Queue (ft)	**0**		**17**		**2947**		**289**	
Calibrated Model (future)	**N**	**NE**	**E**	**SE**	**S**	**SW**	**W**	**NW**
Entry Capacity, vph	1333	NA	220	NA	778	NA	778	NA
Entry Flow Rates, vph	0	NA	16	NA	1163	NA	495	NA
V/C ratio	**0.00**		**0.13**		**2.54**		**1.08**	
Control Delay, sec/pcu	**3**		**19**		**710**		**78**	
LOS	A		C		F		F	
95th % Queue (ft)	**0**		**18**		**6573**		**938**	

Notes:

v2.1

Unit Legend:
vph = vehicles per hour
PHF = peak hour factor
F_{HV} = heavy vehicle factor
pcu = passenger car unit

Bypass Lane Merge Point Analysis (if applicable)

Bypass Characteristics	Bypass #1	Bypass #2	Bypass #3	Bypass #4	Bypass #5	Bypass #6
Select Entry Leg from Bypass (FROM)						
Select Exit Leg for Bypass (TO)						
Does the bypass have a dedicated receiving lane?						
Volumes						
Right Turn Volume removed from Entry Leg						
Volume Characteristics (for entry leg)						
PHF						
F_{HV}						
F_{ped}						
NOTE: Volume Characteristics for Exit Leg are already taken into account						
Entry/Conflicting Flows						
Entry Flow, pcu/hr						
Conflicting Flow, pcu/hr						
Bypass Lane Results (HCM 2010 Model)						
Entry Capacity of Bypass, vph						
Flow Rates of Exiting Traffic, vph						
V/C ratio						
Control Delay, s/veh						
LOS						
95th % Queue (ft)						
Approach w/Bypass Delay, s/veh						
Approach w/Bypass LOS						

Georgia Department of Transportation

Roundabout Analysis Tool

v 2.1
2/24/12

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Roundabout Considerations Worksheet

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# of circulatory lanes	ADTs (current/ build year)	% traffic on Major Road
Single Lane	less than 25,000	less than 90%
Multi-Lane	less than 45,000	less than 90%

Other things to consider when evaluating roundabouts as an alternative are Right of Way, sight distance, environmental impacts, and access to adjacent properties.

Volume Information (for Analysis Time Period)

1 Enter the Major/Minor Street ADT Volumes in the Chart below:

	Volumes	Split
Major Street	8,000	50%
Minor Street	8,150	50%
Total volumes	16,150	

Proximity to Other Intersections

2 How close is the nearest signal (miles or feet)? 0 mi 2930 '

3 Is the proposed intersection located within a coordinated signal network? No

Go up to next section...

Proposed Design Configuration Chart

Directions for this Section only: *(see Instructions Tab for other sections)*

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Roundabout Characteristics

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# of Approaches:	4
Name of Streets:	Brampton Connector
	Brampton Road
	Gate 3

Chart Key:

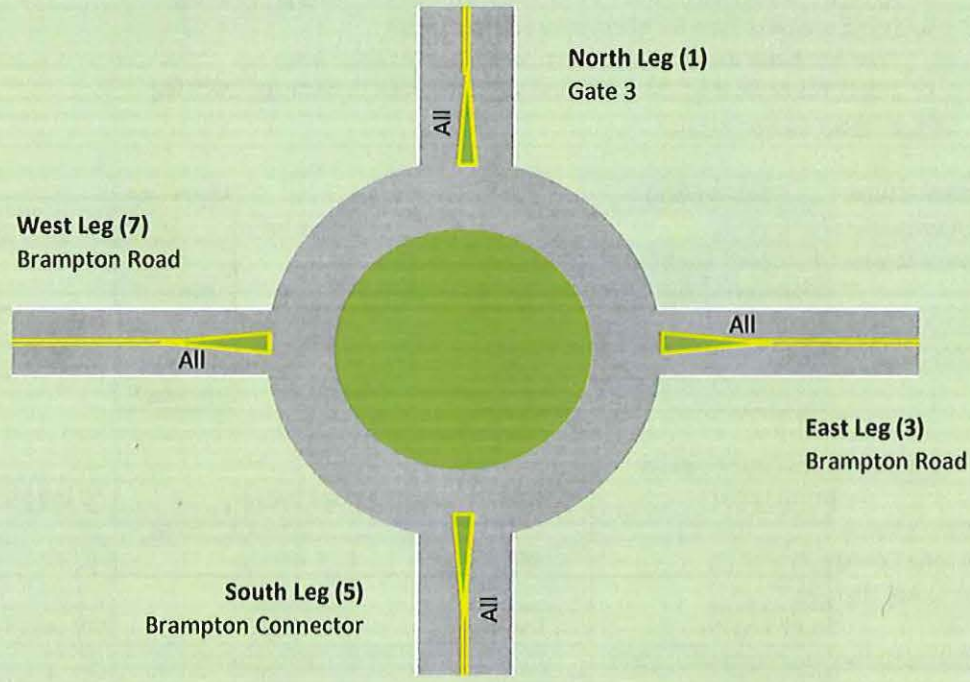
Single Lane	Street Name	
	All	
	Bypass?	
Multi-lane	Street Name	
	Inner Ln	Outer Ln
	Bypass?	

Approach Leg Characteristics:

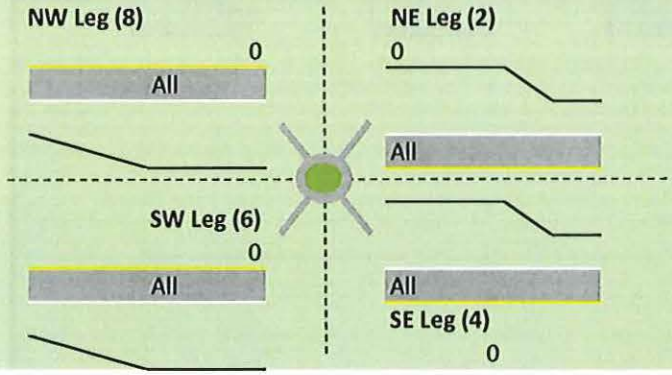
	North Leg (1)	NE Leg (2)	East Leg (3)	SE Leg (4)
Street Name:	Gate 3		Brampton Road	
Entry Lane Config	All	All	All	All
Bypass to Adj Leg?	No		No	

	South Leg (5)	SW Leg (6)	West Leg (7)	NW Leg (8)
Street Name:	Brampton Connector		Brampton Road	
Entry Lane Config	All	All	All	All
Bypass to Adj Leg?	No			

Preliminary Roundabout Rendering**



Additional Legs



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Roundabout Analysis Tool
Single Lane

8/7/2012
Version 2.1

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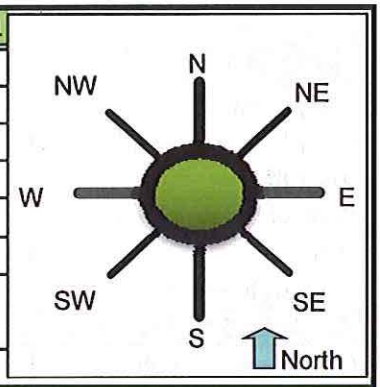


Volumes		Entry Legs (FROM)							
		N (1)	NE (2)	E (3)	SE (4)	S (5)	SW (6)	W (7)	NW (8)
Exit Legs (TO)	N (1), vph			5		340		0	
	NE (2), vph								
	E (3), vph	0				157		5	
	SE (4), vph								
	S (5), vph	0		235				865	
	SW (6), vph								
	W (7), vph	0		5		105			
	NW (8), vph								
Output	Total Vehicles	0	0	245	0	602	0	870	0

Volume Characteristics	N	NE	E	SE	S	SW	W	NW
% Cars	30%	30%	30%	30%	30%	30%	30%	30%
% Heavy Vehicles	70%	70%	70%	70%	70%	70%	70%	70%
% Bicycle	0%	0%	0%	0%	0%	0%	0%	0%
# of Pedestrians (ped/hr)	0	0	0	0	0	0	0	0
PHF	*0.92*	*0.92*	*0.92*	*0.92*	*0.92*	*0.92*	*0.92*	*0.92*
F_{HV}	1.000	1.000	0.588	1.000	0.588	1.000	0.588	1.000
F_{ped}	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000

Entry/Conflicting Flows	N	NE	E	SE	S	SW	W	NW
Flow to Leg # N (1), pcu/h	0	0	9	0	628	0	0	0
NE (2), pcu/h	0	0	0	0	0	0	0	0
E (3), pcu/h	0	0	0	0	290	0	9	0
SE (4), pcu/h	0	0	0	0	0	0	0	0
S (5), pcu/h	0	0	434	0	0	0	1598	0
SW (6), pcu/h	0	0	0	0	0	0	0	0
W (7), pcu/h	0	0	9	0	194	0	0	0
NW (8), pcu/h	0	0	0	0	0	0	0	0
Entry flow, pcu/h	0	0	453	0	1112	0	1608	0
Conflicting flow, pcu/h	0	0	822	0	9	0	434	0

Roundabout Type	Standard Single Lane or Urban Compact
Enter type here...	Standard Single Lane

Results: Approach Measures of Effectiveness

HCM 2010 Model (build)	N	NE	E	SE	S	SW	W	NW
Entry Capacity, vph	1130	NA	292	NA	659	NA	431	NA
Entry Flow Rates, vph	0	NA	266	NA	654	NA	946	NA
V/C ratio	**0.00**		**0.91**		**0.99**		**2.20**	
Control Delay, s/veh	**3**		**71**		**58**		**567**	
LOS	A		F		F		F	
95th % Queue (ft)	**0**		**362**		**655**		**2953**	
Calibrated Model (future)	**N**	**NE**	**E**	**SE**	**S**	**SW**	**W**	**NW**
Entry Capacity, vph	1333	NA	406	NA	778	NA	554	NA
Entry Flow Rates, vph	0	NA	266	NA	654	NA	946	NA
V/C ratio	**0.00**		**1.11**		**1.43**		**2.90**	
Control Delay, sec/pcu	**3**		**111**		**217**		**877**	
LOS	A		F		F		F	
95th % Queue (ft)	**0**		**691**		**2129**		**5785**	

Notes:

v2.1

Unit Legend:
vph = vehicles per hour
PHF = peak hour factor
F_{HV} = heavy vehicle factor
pcu = passenger car unit

Bypass Lane Merge Point Analysis (if applicable)

Bypass Characteristics	Bypass #1	Bypass #2	Bypass #3	Bypass #4	Bypass #5	Bypass #6
Select Entry Leg from Bypass (FROM)						
Select Exit Leg for Bypass (TO)						
Does the bypass have a dedicated receiving lane?						
Volumes						
Right Turn Volume removed from Entry Leg						
Volume Characteristics (for entry leg)						
PHF						
F_{HV}						
F_{ped}						
NOTE: Volume Characteristics for Exit Leg are already taken into account						
Entry/Conflicting Flows						
Entry Flow, pcu/hr						
Conflicting Flow, pcu/hr						
Bypass Lane Results (HCM 2010 Model)						
Entry Capacity of Bypass, vph						
Flow Rates of Exiting Traffic, vph						
V/C ratio						
Control Delay, s/veh						
LOS						
95th % Queue (ft)						
Approach w/Bypass Delay, s/veh						
Approach w/Bypass LOS						

Georgia Department of Transportation

Roundabout Analysis Tool

v 2.1
2/24/12

Welcome to GDOT's Roundabout Analysis Tool. This tool is designed for the user to determine the functionality of a proposed roundabout. The analysis is based on the 2010 Highway Capacity Manual Methodology and NCHRP Report 672, FHWA's Roundabout Informational Guide. Please read the notes in the Instructions tab before using the spreadsheet.

Analyst:	Jeff Vickery
Agency/Company:	CDM Smith
Date:	6/21/2012
Project Name or PI#:	Brampton Connector
Year, Peak Period:	2038 Build, AM
County/District:	Chatham
Intersection:	Brampton Connector & Brampton Road

Insert Project Information Here in the BLUE SPACE. This information is linked to the Single Lane and Multi Lane Worksheets.

Roundabout Considerations Worksheet

Roundabouts may not operate well if there is too much traffic entering the intersection or if the percentage of traffic on the major road is too high. Candidate intersections shall be analyzed to determine whether a roundabout will perform acceptably. Shown below are thresholds to determine if a roundabout capacity analysis is required:

# of circulatory lanes	ADTs (current/ build year)	% traffic on Major Road
Single Lane	less than 25,000	less than 90%
Multi-Lane	less than 45,000	less than 90%

Other things to consider when evaluating roundabouts as an alternative are Right of Way, sight distance, environmental impacts, and access to adjacent properties.

Volume Information (for Analysis Time Period)

1 Enter the Major/Minor Street ADT Volumes in the Chart below:

	Volumes	Split
Major Street	8,000	50%
Minor Street	8,150	50%
Total volumes	16,150	

Proximity to Other Intersections

2 How close is the nearest signal (miles or feet)? 0 mi 2930 '

3 Is the proposed intersection located within a coordinated signal network? No

Go up to next section...

Proposed Design Configuration Chart

Directions for this Section only: *(see Instructions Tab for other sections)*

1. Select the type of roundabout you are analyzing.
2. Key in the number of approaches and the street names at the proposed intersections.
3. Complete the Approach Characteristics Chart:
   a. Select the Street Name from the pulldown menu for each approach leg
   b. Select the Lane Type for each entry apporach lane
      **The first box is the inner lane, the second box is the outer lane*
   c. Select Yes or No if a right turn bypass will be added to each approach leg

Roundabout Characteristics

Roundabout Type:	Multi-Lane
# of Approaches:	4
Name of Streets:	Brampton Connector
	Brampton Road
	Gate 3

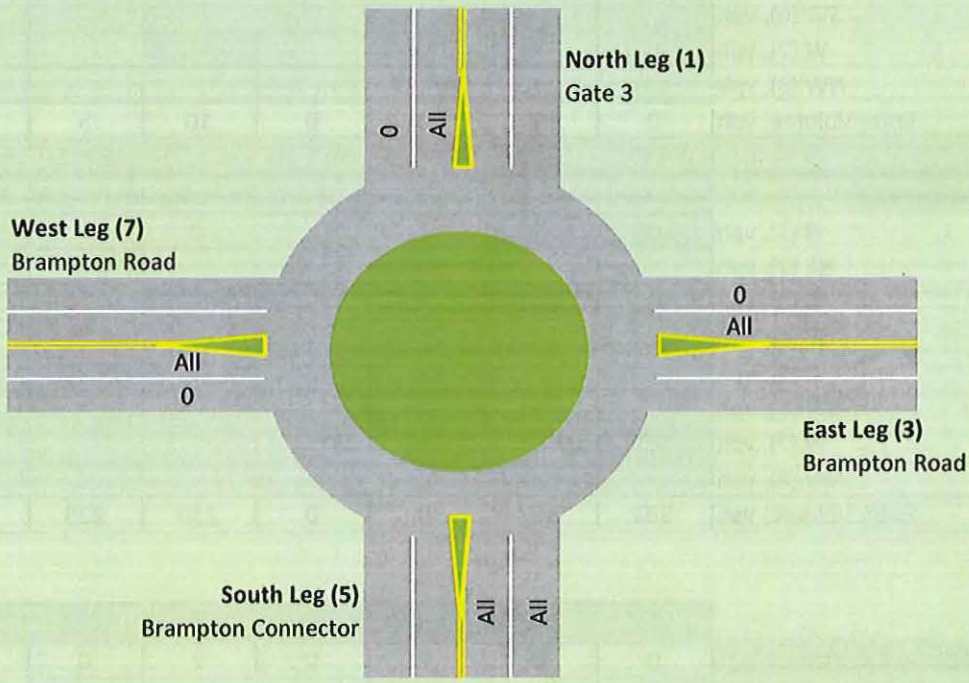
Chart Key:

Single Lane	Street Name	
	All	
	Bypass?	
Multi-lane	Street Name	
	Inner Ln	Outer Ln
	Bypass?	

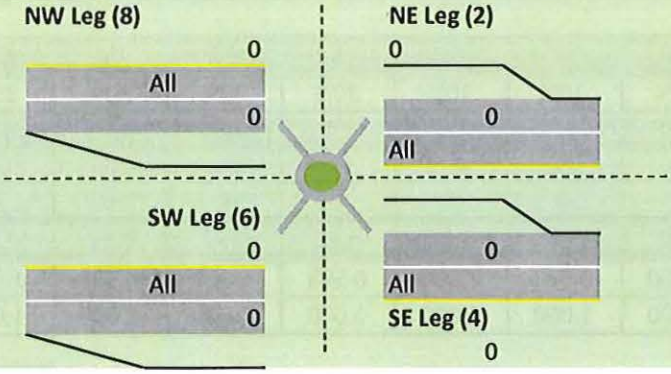
Approach Leg Characteristics:

	North Leg (1)		NE Leg (2)		East Leg (3)		SE Leg (4)	
Street Name:	Gate 3				Brampton Road			
Entry Lane Config	All		All		All		All	
Bypass to Adj Leg?								
	South Leg (5)		**SW Leg (6)**		**West Leg (7)**		**NW Leg (8)**	
Street Name:	Brampton Connector				Brampton Road			
Entry Lane Config	All	All	All		All		All	
Bypass to Adj Leg?								

Preliminary Roundabout Rendering**



Additional Legs



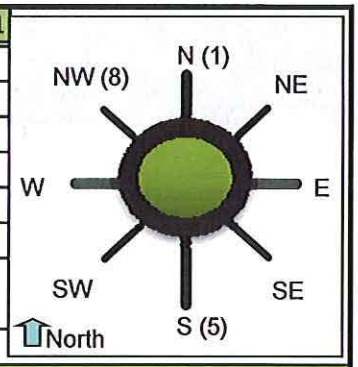
*****Note***

This roundabout sketch does not include the secondary cardinal direction legs due to restrictions in the Excel software. For complex roundabouts, a separate sketch is recommended by the designer.

Roundabout Analysis Tool
Multi-Lane

8/7/2012
Version 2.1

General & Site Information		v2.1
Analyst:	Jeff Vickery	
Agency/Co:	CDM Smith	
Date:	6/21/2012	
Project or PI#:	Brampton Connector	
Year, Peak Hour:	2038 Build, AM	
County/District:	Chatham	
Intersection:	Brampton Connector & Brampton Road	



Volumes	Entry Legs (FROM)							
	N1 (1)	N2 (1)	NE1 (2)	NE2 (2)	E1 (3)	E2 (3)	SE1 (4)	SE2 (4)
Lane Designation	Lf-Th-Rt	SELECT	SELECT	SELECT	Left-Thru	Right only	SELECT	SELECT
Exit Legs (TO) N (1), vph						5		
NE (2), vph								
E (3), vph	0							
SE (4), vph								
S (5), vph	0				5			
SW (6), vph								
W (7), vph	0				5			
NW (8), vph								
Entry Volume, vph	0	0	0	0	10	5	0	0

	S1 (5)	S2 (5)	SW1 (6)	SW2 (6)	W1 (7)	W2 (7)	NW1 (8)	NW2 (8)
Lane Designation	Left-Thru	Right-Thru	SELECT	SELECT	Right-Thru	Right only	SELECT	SELECT
N (1), vph	368	357			0			
NE (2), vph								
E (3), vph	0	210			5			
SE (4), vph								
S (5), vph					225	225		
SW (6), vph								
W (7), vph	135	0						
NW (8), vph								
Entry Volume, vph	503	567	0	0	230	225	0	0

	N	NE	E	SE	S	SW	W	NW
# of Entry Flow Lanes	0	0	2	0	2	0	2	0
# of Conflict Flow Lanes	2	2	2	2	2	2	2	2

Volume Characteristics	N	NE	E	SE	S	SW	W	NW
% Cars	30%	30%	30%	30%	30%	30%	30%	30%
% Heavy Vehicles	70%	70%	70%	70%	70%	70%	70%	70%
% Bicycles	0%	0%	0%	0%	0%	0%	0%	0%
# of Pedestrians (ped/hr)	0	0	0	0	0	0	0	0
PHF	*0.92*	*0.92*	*0.92*	*0.92*	*0.92*	*0.92*	*0.92*	*0.92*
F_{hv}	1.000	1.000	0.588	1.000	0.588	1.000	0.588	1.000
F_{ped}	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000

Entry/Conflicting Flows		N	NE	E	SE	S	SW	W	NW
Flow to	N (1), pcu/h	0	0	9	0	1340	0	0	0
Leg #	NE (2), pcu/h	0	0	0	0	0	0	0	0
	E (3), pcu/h	0	0	0	0	388	0	9	0
	SE (4), pcu/h	0	0	0	0	0	0	0	0
	S (5), pcu/h	0	0	9	0	0	0	832	0
	SW (6), pcu/h	0	0	0	0	0	0	0	0
	W (7), pcu/h	0	0	9	0	249	0	0	0
	NW (8), pcu/h	0	0	0	0	0	0	0	0
	Entry flow, pcu/h	0	0	28	0	1977	0	841	0
	Entry flow Lane 1, pcu/h	0	0	18	0	929	0	425	0
	Entry flow Lane 2, pcu/h	0	0	9	0	1048	0	416	0
	Conflicting flow, pcu/h	0	0	1589	0	9	0	9	0

Results: Approach Measures of Effectiveness

HCM 2010 Model *(build yr)*	N		E		S		W	
Lane Designations	*Lf-Th-Rt*	*Lane 2*	*Left-Thru*	*Right only*	*Left-Thru*	*Right-Thru*	*Right-Thru*	*Right only*
Entry Capacity, veh/h	1130	NA	202	219	660	660	660	660
Entry Flow Rates, veh/h	0	NA	11	5	547	616	250	245
V/C ratio	**0.00**	#VALUE!	**0.05**	**0.02**	**0.83**	**0.93**	**0.38**	**0.37**
Control Delay, s/veh	**3.2**	#VALUE!	**19.1**	**17.0**	**30.3**	**45.2**	**10.6**	**10.5**
LOS	A	#VALUE!	C	C	D	E	B	B
95th % Queue (ft)	**0**	#VALUE!	**7**	**3**	**378**	**539**	**75**	**73**
Approach Delay, LOS	#DIV/0!		18.4 sec, LOS C		38.2 sec, LOS E		10.6 sec, LOS B	
	NE		**SE**		**SW**		**NW**	
Lane Designations	*Lane 1*	*Lane 2*	*Lane 1*	*Lane 2*	*Lane 1*	*Lane 2*	*Lane 1*	*Lane 2*
Entry Capacity, veh/h	NA	NA	NA	NA	NA	NA	NA	NA
Entry Flow Rates, veh/h	NA	NA	NA	NA	NA	NA	NA	NA
V/C ratio			#VALUE!	#VALUE!			#VALUE!	#VALUE!
Control Delay, sec/pcu			#VALUE!	#VALUE!			#VALUE!	#VALUE!
LOS			#VALUE!	#VALUE!			#VALUE!	#VALUE!
95th % Queue (ft)			#VALUE!	#VALUE!			#VALUE!	#VALUE!
Approach Delay, LOS			#VALUE!				#VALUE!	

Calibrated Model *(future yr)*	N		E		S		W	
Lane Designations	*Lf-Th-Rt*	*Lane 2*	*Left-Thru*	*Right only*	*Left-Thru*	*Right-Thru*	*Right-Thru*	*Right only*
Entry Capacity, veh/h	1640	NA	197	231	956	957	956	957
Entry Flow Rates, veh/h	0	NA	11	5	547	616	250	245
V/C ratio	**0.00**	#VALUE!	**0.06**	**0.02**	**0.57**	**0.64**	**0.26**	**0.26**
Control Delay, s/veh	**2.2**	#VALUE!	**19.6**	**16.1**	**11.5**	**13.5**	**6.4**	**6.3**
LOS	A	#VALUE!	C	C	B	B	A	A
95th % Queue (ft)	**0**	#VALUE!	**7**	**3**	**159**	**207**	**45**	**43**
Approach Delay, LOS	#DIV/0!		18.4 sec, LOS C		12.6 sec, LOS B		6.4 sec, LOS A	
	NE		**SE**		**SW**		**NW**	
Lane Designations	*Lane 1*	*Lane 2*	*Lane 1*	*Lane 2*	*Lane 1*	*Lane 2*	*Lane 1*	*Lane 2*
Entry Capacity, veh/h	NA	NA	NA	NA	NA	NA	NA	NA
Entry Flow Rates, veh/h	NA	NA	NA	NA	NA	NA	NA	NA
V/C ratio			#VALUE!	#VALUE!			#VALUE!	#VALUE!
Control Delay, sec/pcu			#VALUE!	#VALUE!			#VALUE!	#VALUE!
LOS			#VALUE!	#VALUE!			#VALUE!	#VALUE!
95th % Queue (ft)			#VALUE!	#VALUE!			#VALUE!	#VALUE!
Approach Delay, LOS			#N/A				#N/A	

v2.1

Bypass Lane Merge Point Analysis (if applicable)

Bypass Characteristics	Bypass #1	Bypass #2	Bypass #3	Bypass #4	Bypass #5	Bypass #6
Select Entry Leg from Bypass (FROM)						
Select Exit Leg for Bypass (TO)						
Does the bypass have a dedicated receiving lane?						
# of Conflicting Exit Flow Lanes	**2**	**2**	**2**	**2**	**2**	**2**
Volumes						
Entry Leg: Insert Right Turn Volume						
Exit Leg: ***(Select Input Method)***						
*Lane Flow in Exit Leg****						
Sum of inner circulatory flow lane to exit leg (leg bypass merges into)	N/A	N/A	N/A	N/A	N/A	N/A
Sum of outer circulatory flow lane to exit leg (leg bypass merges into)	N/A	N/A	N/A	N/A	N/A	N/A
*Critical Lane Flow (Manual) in Exit Leg****						
Volume Characteristics						
PHF (Entry Leg)						
F_{HV} (Entry Leg)						
F_{ped}						
PHF (Exit Leg)***	N/A	N/A	N/A	N/A	N/A	N/A
F_{HV} (Exit Leg)***	N/A	N/A	N/A	N/A	N/A	N/A
******Volume Characteristics are already taken into account for Default method ONLY. Insert Values above if Manual method.***						
Entry/Conflicting Flows						
Entry Flow						
Conflicting Critical Flow						
Bypass Lane Results						
Entry Capacity of Bypass, veh/h						
Flow Rates of Exiting Traffic, veh/h						
V/C ratio						
Control Delay, sec/pcu						
LOS						
95th % Queue (ft)						

Roundabout Analysis Tool

v 2.1
2/24/12

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Agency/Company:	CDM Smith
Date:	6/21/2012
Project Name or PI#:	Brampton Connector
Year, Peak Period:	2038 Build, AM
County/District:	Chatham
Intersection:	Brampton Connector & Brampton Road

Insert Project Information Here in the BLUE SPACE. This information is linked to the Single Lane and Multi Lane Worksheets.

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# of circulatory lanes	ADTs (current/ build year)	% traffic on Major Road
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Other things to consider when evaluating roundabouts as an alternative are Right of Way, sight distance, environmental impacts, and access to adjacent properties.

Volume Information (for Analysis Time Period)

1 Enter the Major/Minor Street ADT Volumes in the Chart below:

	Volumes	Split
Major Street	8,000	50%
Minor Street	8,150	50%
Total volumes	16,150	

Proximity to Other Intersections

2 How close is the nearest signal (miles or feet)? 0 mi | 2930 '

3 Is the proposed intersection located within a coordinated signal network? No

Go up to next section...

Proposed Design Configuration Chart

Directions for this Section only: *(see Instructions Tab for other sections)*

1. Select the type of roundabout you are analyzing.
2. Key in the number of approaches and the street names at the proposed intersections.
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      **The first box is the inner lane, the second box is the outer lane*
   c. Select Yes or No if a right turn bypass will be added to each approach leg

Roundabout Characteristics

Roundabout Type:	Multi-Lane
# of Approaches:	4
Name of Streets:	Brampton Connector
	Brampton Road
	Gate 3

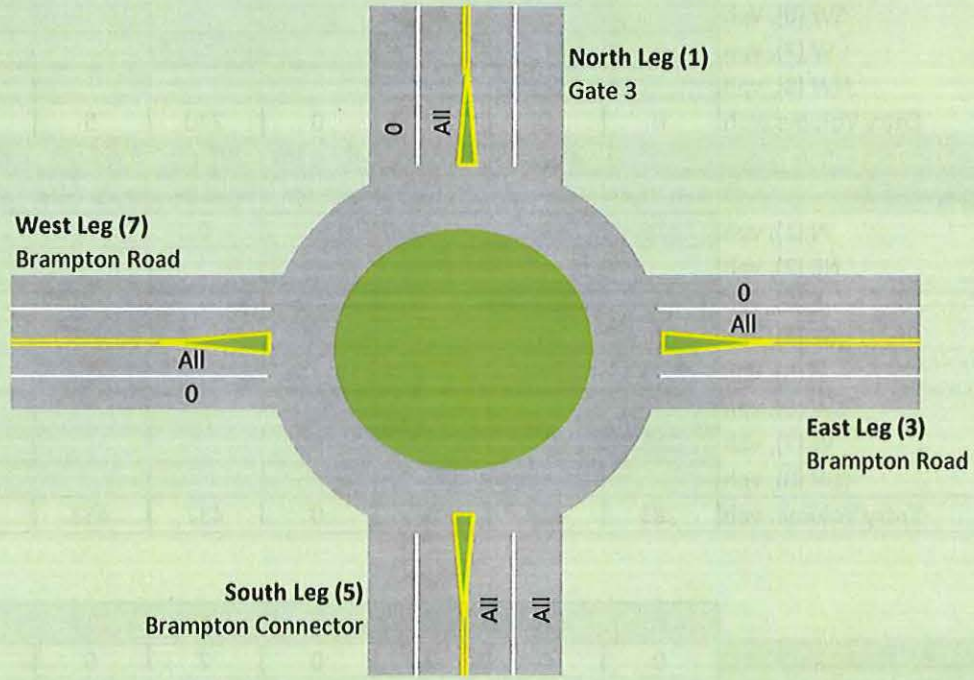
Chart Key:

Single Lane	Street Name	
	All	
	Bypass?	
Multi-lane	Street Name	
	Inner Ln	Outer Ln
	Bypass?	

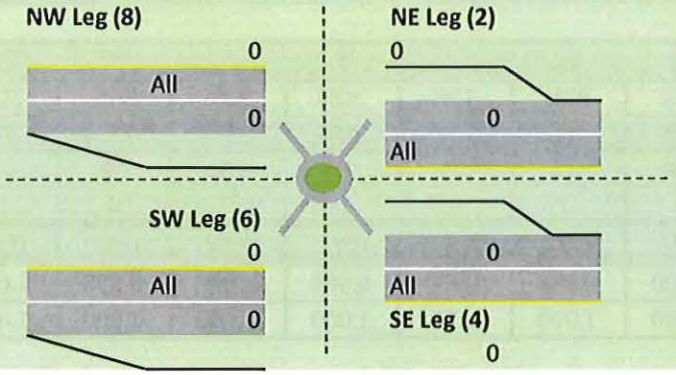
Approach Leg Characteristics:

	North Leg (1)		NE Leg (2)		East Leg (3)		SE Leg (4)	
Street Name:	Gate 3				Brampton Road			
Entry Lane Config	All		All		All		All	
Bypass to Adj Leg?	No		No		No			
	South Leg (5)		SW Leg (6)		West Leg (7)		NW Leg (8)	
Street Name:	Brampton Connector				Brampton Road			
Entry Lane Config	All	All	All		All		All	
Bypass to Adj Leg?	No				No			

Preliminary Roundabout Rendering**



Additional Legs



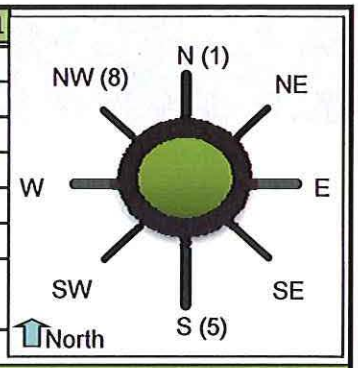
*****Note***

This roundabout sketch does not include the secondary cardinal direction legs due to restrictions in the Excel software. For complex roundabouts, a separate sketch is recommended by the designer.

Roundabout Analysis Tool
Multi-Lane

8/7/2012
Version 2.1

General & Site Information		v2.1
Analyst:	Jeff Vickery	
Agency/Co:	CDM Smith	
Date:	6/21/2012	
Project or PI#:	Brampton Connector	
Year, Peak Hour:	2038 Build, AM	
County/District:	Chatham	
Intersection:	Brampton Connector & Brampton Road	



Volumes		Entry Legs (FROM)							
		N1 (1)	N2 (1)	NE1 (2)	NE2 (2)	E1 (3)	E2 (3)	SE1 (4)	SE2 (4)
Lane Designation		Lf-Th-Rt	SELECT	SELECT	SELECT	Left-Thru	Right only	SELECT	SELECT
Exit Legs (TO)	N (1), vph						5		
	NE (2), vph								
	E (3), vph	0							
	SE (4), vph								
	S (5), vph	0				235			
	SW (6), vph								
	W (7), vph	0				5			
	NW (8), vph								
	Entry Volume, vph	0	0	0	0	240	5	0	0

		S1 (5)	S2 (5)	SW1 (6)	SW2 (6)	W1 (7)	W2 (7)	NW1 (8)	NW2 (8)
Lane Designation		Left-Thru	Right-Thru	SELECT	SELECT	Right-Thru	Right only	SELECT	SELECT
	N (1), vph	178	162			0			
	NE (2), vph								
	E (3), vph	0	157			5			
	SE (4), vph								
	S (5), vph					432	433		
	SW (6), vph								
	W (7), vph	105	0						
	NW (8), vph								
	Entry Volume, vph	283	319	0	0	437	433	0	0

	N	NE	E	SE	S	SW	W	NW
# of Entry Flow Lanes	0	0	2	0	2	0	2	0
# of Conflict Flow Lanes	2	2	2	2	2	2	2	2

Volume Characteristics	N	NE	E	SE	S	SW	W	NW
% Cars	30%	30%	30%	30%	30%	30%	30%	30%
% Heavy Vehicles	70%	70%	70%	70%	70%	70%	70%	70%
% Bicycles	0%	0%	0%	0%	0%	0%	0%	0%
# of Pedestrians (ped/hr)	0	0	0	0	0	0	0	0
PHF	*0.92*	*0.92*	*0.92*	*0.92*	*0.92*	*0.92*	*0.92*	*0.92*
F_{hv}	1.000	1.000	0.588	1.000	0.588	1.000	0.588	1.000
F_{ped}	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000

Roundabout Analysis Tool
Multi-Lane

8/7/2012
Version 2.1

Entry/Conflicting Flows		N	NE	E	SE	S	SW	W	NW
Flow to	N (1), pcu/h	0	0	9	0	628	0	0	0
Leg #	NE (2), pcu/h	0	0	0	0	0	0	0	0
	E (3), pcu/h	0	0	0	0	290	0	9	0
	SE (4), pcu/h	0	0	0	0	0	0	0	0
	S (5), pcu/h	0	0	434	0	0	0	1598	0
	SW (6), pcu/h	0	0	0	0	0	0	0	0
	W (7), pcu/h	0	0	9	0	194	0	0	0
	NW (8), pcu/h	0	0	0	0	0	0	0	0
	Entry flow, pcu/h	0	0	453	0	1112	0	1608	0
	Entry flow Lane 1, pcu/h	0	0	443	0	523	0	808	0
	Entry flow Lane 2, pcu/h	0	0	9	0	589	0	800	0
	Conflicting flow, pcu/h	0	0	822	0	9	0	434	0

Results: Approach Measures of Effectiveness

HCM 2010 Model *(build yr)*	N		E		S		W	
Lane Designations	*Lf-Th-Rt*	*Lane 2*	*Left-Thru*	*Right only*	*Left-Thru*	*Right-Thru*	*Right-Thru*	*Right only*
Entry Capacity, veh/h	1130	NA	359	374	660	660	480	490
Entry Flow Rates, veh/h	0	NA	261	5	308	347	475	471
V/C ratio	**0.00**	#VALUE!	**0.73**	**0.01**	**0.47**	**0.53**	**0.99**	**0.96**
Control Delay, s/veh	**3.2**	#VALUE!	**36.3**	**9.8**	**12.5**	**13.9**	**68.0**	**60.1**
LOS	A	#VALUE!	E	A	B	B	F	F
95th % Queue (ft)	**0**	#VALUE!	**234**	**2**	**105**	**131**	**554**	**514**
Approach Delay, LOS	#DIV/0!		35.7 sec, LOS E		13.2 sec, LOS B		64 sec, LOS F	
	NE		**SE**		**SW**		**NW**	
Lane Designations	*Lane 1*	*Lane 2*	*Lane 1*	*Lane 2*	*Lane 1*	*Lane 2*	*Lane 1*	*Lane 2*
Entry Capacity, veh/h	NA	NA	NA	NA	NA	NA	NA	NA
Entry Flow Rates, veh/h	NA	NA	NA	NA	NA	NA	NA	NA
V/C ratio			#VALUE!	#VALUE!			#VALUE!	#VALUE!
Control Delay, sec/pcu			#VALUE!	#VALUE!			#VALUE!	#VALUE!
LOS			#VALUE!	#VALUE!			#VALUE!	#VALUE!
95th % Queue (ft)			#VALUE!	#VALUE!			#VALUE!	#VALUE!
Approach Delay, LOS			#VALUE!				#VALUE!	

Calibrated Model *(future yr)*	N		E		S		W	
Lane Designations	*Lf-Th-Rt*	*Lane 2*	*Left-Thru*	*Right only*	*Left-Thru*	*Right-Thru*	*Right-Thru*	*Right only*
Entry Capacity, veh/h	1640	NA	424	460	956	957	625	653
Entry Flow Rates, veh/h	0	NA	261	5	308	347	475	471
V/C ratio	**0.00**	#VALUE!	**0.62**	**0.01**	**0.32**	**0.36**	**0.76**	**0.72**
Control Delay, s/veh	**2.2**	#VALUE!	**24.2**	**8.0**	**7.2**	**7.7**	**25.5**	**22.1**
LOS	A	#VALUE!	C	A	A	A	D	C
95th % Queue (ft)	**0**	#VALUE!	**170**	**2**	**59**	**71**	**295**	**260**
Approach Delay, LOS	#DIV/0!		23.9 sec, LOS C		7.4 sec, LOS A		23.8 sec, LOS C	
	NE		**SE**		**SW**		**NW**	
Lane Designations	*Lane 1*	*Lane 2*	*Lane 1*	*Lane 2*	*Lane 1*	*Lane 2*	*Lane 1*	*Lane 2*
Entry Capacity, veh/h	NA	NA	NA	NA	NA	NA	NA	NA
Entry Flow Rates, veh/h	NA	NA	NA	NA	NA	NA	NA	NA
V/C ratio			#VALUE!	#VALUE!			#VALUE!	#VALUE!
Control Delay, sec/pcu			#VALUE!	#VALUE!			#VALUE!	#VALUE!
LOS			#VALUE!	#VALUE!			#VALUE!	#VALUE!
95th % Queue (ft)			#VALUE!	#VALUE!			#VALUE!	#VALUE!
Approach Delay, LOS			#N/A				#N/A	

v2.1

Bypass Lane Merge Point Analysis (if applicable)						
Bypass Characteristics	**Bypass #1**	**Bypass #2**	**Bypass #3**	**Bypass #4**	**Bypass #5**	**Bypass #6**
Select Entry Leg from Bypass (FROM)						
Select Exit Leg for Bypass (TO)						
Does the bypass have a dedicated receiving lane?						
# of Conflicting Exit Flow Lanes	**2**	**2**	**2**	**2**	**2**	**2**
Volumes						
Entry Leg: Insert Right Turn Volume						
Exit Leg: ***(Select Input Method)***						
*Lane Flow in Exit Leg****						
Sum of inner circulatory flow lane to exit leg (leg bypass merges into)	N/A	N/A	N/A	N/A	N/A	N/A
Sum of outer circulatory flow lane to exit leg (leg bypass merges into)	N/A	N/A	N/A	N/A	N/A	N/A
*Critical Lane Flow (Manual) in Exit Leg****						
Volume Characteristics						
PHF (Entry Leg)						
F_{HV} (Entry Leg)						
F_{ped}						
PHF (Exit Leg)***	N/A	N/A	N/A	N/A	N/A	N/A
F_{HV} (Exit Leg)***	N/A	N/A	N/A	N/A	N/A	N/A
Volume Characteristics are already taken into account for Default method ONLY. Insert Values above if Manual method.						
Entry/Conflicting Flows						
Entry Flow						
Conflicting Critical Flow						
Bypass Lane Results						
Entry Capacity of Bypass, veh/h						
Flow Rates of Exiting Traffic, veh/h						
V/C ratio						
Control Delay, sec/pcu						
LOS						
95th % Queue (ft)						

FLEXIBLE PAVEMENT DESIGN ANALYSIS

FLEXIBLE PAVEMENT DESIGN ANALYSIS

Project: CSSTP-0006-00(328) **County:** CHATHAM
P.I. no.: 006328
Description: BRAMPTON ROAD CONNECTOR

Traffic Data (NOTE: AADTs are one-way)
24-hour Truck Percentage: 55.00%
AADT initial year of design period: 4,890 vpd (2010)
AADT final year of design period: 10,215 vpd (2030)
Mean AADT (one-way): 7,552 vpd

Design Loading

Mean AADT		LDF		Trucks		18-K ESAL		Total Daily Loads
7,552	*	0.85	*	0.550	*	1.28	=	4,520

Total predicted design period loading = 4520 * 20 * 365 = 32,996,000

Design Data
Terminal Serviceability Index: 2.50
Soil Support: 4.00
Regional Factor: 1.70

PROPOSED FLEXIBLE PAVEMENT STRUCTURE

Material	Thickness mm	(in.)	Structural Coefficient	Structural Value
12.5 mm Superpave	40	(1.57)	0.0173	0.69
19 mm Superpave	74	(2.91)	0.0173	1.28
	26	(1.02)	0.0118	0.31
25 mm Superpave	100	(3.94)	0.0118	1.18
Graded Aggregate Base	305	(12.01)	0.0063	1.92

Required SN = 6.20 Proposed SN = 5.38

>>> Proposed pavement is 13.3% Underdesign <<<

Remarks: Typical = 4-lane w/raised median and rural shoulders

Prepared by Yasmin Moreno March 31, 2005
Date

Recommended _____
State Urban Design Engineer **Date**

Approved _____
Chief Engineer **Date**

RIGID PAVEMENT DESIGN ANALYSIS

RIGID PAVEMENT DESIGN ANALSIS
(BASED ON AASHO INTERIM GUIDE FOR THE DESIGN OF RIGID PAVEMENT STRUCTURES)

P.I. NO. 0006328 PROJECT NUMBER C SSTP-0006-00(878) COUNTY CHATHAM

LENGTH 1 mile TYPE SECTION 4 LANE (Partial Flush Median & Raised median)

DESCRIPTION Access for trucks to Gate 3 - GA Ports from I-516

TYPE OF ADJOINING PAVEMENT: BEGINNING OF PROJECT: Asphalt
END OF PROJECT: Asphalt

TRAFFIC DATA: 24 HR. TRUCK PERCENTAGE 55%

ONE-WAY AADT BEGINNING OF DESIGN PERIOD	4890	VPD 2010	YEAR
ONE-WAY AADT END OF DESIGN PERIOD	10,215	VPD 2050	YEAR
MEAN AADT (ONE WAY)	7552		VPD

DESIGN LOADING:
DESIGN LANE TRAFFIC

MEAN AADT		LDF		TRUCKS		18K ESAL		
7552	X	0.85	X	55%	X	2.68	=	9,462
7552	X	0.85	X	45%	X	0.004	=	12
	X		X		X		=	

TOTAL DAILY LOADING = 9,474

TOTAL DESIGN PERIOD LOADING = 9,474 Loads/day x (20 yrs) x (365 days/yr) = 69,160,200

DESIGN DATA: SERVICEABILITY (Pt) 2.5 WORKING STRESS 450 psi

MODULUS OF SUBGRADE REACTION K = 190 PCI (4.0 soil support value)
MODULUS OF SUBBASE REACTION K1 = 280 PCI on 12" GAB; 345 on 3" AC BASE
RIAL DEPTH OF CONCRETE PAVEMENT 12"
ACTUAL STRESS FROM NOMOGRAPH 500 psi PERCENT OVER-UNDER DESIGN 11% under

RECOMMENDED RIGID PAVEMENT STRUCTURE:

Construction performance - relative to achieving a higher working stress (typically 450 psi) - is practical in this situation. Simply requiring that the working stress be 500 psi will bring the actual stress exactly in line and the underdesign will move to 0%. Actual stress in the field are typically greater than 600 psi.

REMARKS: 12" PCC
3" Asphalt
12" GAB

PREPARED BY: Wayne G. Mote, Jr. 4-14-05
DATE

RECOMMENDED
STATE ROAD AND AIRPORT DESIGN ENGINEER DATE

APPROVED
CHIEF ENGINEER DATE

INITIAL CONCEPT TEAM
MEETING MINUTES

Brampton Road Initial Concept Meeting Minutes

Project Number: CSSTP-0006-00(328)

P.I. Number: 0006328

Where: GDOT District 5 – Area 5 Office

Time: 1:30 PM **Date: 07/11/2012**

Minutes:

Utilities

1. There will be an issue with existing gas lines in the project area. **The roadway bridge can be extended to over existing pressurized gas line. CDM Smith has also contacted the utility owner, and they are ok with putting a sleeve over the gas line and constructing over it.**
2. Georgia Power currently have a 115kV line parallel to the existing Norfolk Southern rail line and a 46kV line that runs down Main Street. There could be a possible conflict with the proposed intersection of Brampton Connector and Main Street. Georgia Power also has distribution down Brampton Road, so any widening will likely impact that.
3. Will there be a traffic signal at the intersection of Brampton Connector and Brampton Road? **CDM Smith will conduct a signal warrant analysis for that intersection.**
4. There may be an issue with I&D water line that is currently on an easement on Norfolk Southern property.

Environmental

5. Is the Norfolk Southern railroad historical? **The railroad is technically considered a historic utility.**
6. There could be an issue in terms of impacts to relocate historical railroad.
7. There could be issues with inpacts to wetland and the Dundee Canal given the proximity of the proposed rail line peel-off near the Dundee Canal as currently shown on the concept layout. **CDM Smith will likely modify the concept so that the rail line peel-off will not impact Dundee Canal. CDM Smith will also do a historical survey, ecology assessments, resource survey, etc (likely around the end of August 2012).**
8. Are there any displacements? **There are no physical displacements for Alternative 4 other than the sand pile next to National Chemical.**

Planning

9. A state route (SR 21 spur) revision will be needed for the closure of the intersection at SR 25 and Brampton Road. This will need to be addressed early on.
10. Area will change to Congressional District 1 in January 2013.

Miscellaneous Comments/Questions

11. What is the historical resource shown on the concept layout? **It is a levy/berm dug out during the Civil War.**
12. There are 3 lanes shown on the exit ramp from I-516 to Burnsed Blvd and the exit is shown with a proposed traffic signal. Permit requests for intersection revisions will need to be submitted (likely 3 revisions). It will also need to be determined how many signals need to be coordinated.
13. Send a copy of the roundabout analysis to GDOT (Ken Werho). **CDM Smith will send GDOT a copy of the roundabout analysis.**
14. Provide 10-foot shoulders along Brampton Connector including on the bridge.

15. Is GDOT going to pay for borrow pits and detour? **Borrow pits will be paid by the contractor.**
16. Is the construction cost of $24.85 million listed in the concept report correct? **The construction cost of $24.85 million is correct.**
17. A VE study will need to be completed for this project. **A VE study will be done in preliminary design.**
18. Design speed should be revised to 55mph with a posted speed limit of 45mph. **The design speed and speed limit will be changed to 55mph and 45mph, respectively.**
19. Are there any raised medians? **Yes, there is an 8-foot raised median for almost the entire length of the project, but transitions to a 14-foot flush median shortly before tying into Brampton Road.**
20. Can we eliminate curb and gutter and make a rural section (8' flush median)? **GDOT does not see a problem with. It is a valid idea to consider as a possibility for reducing costs.**
21. Will noise walls be needed? **The noise study needs to be updated, but the last time it was done noise walls were not needed. The project area is not a residential area and Brampton Connector will be taking traffic off of Main Street.**
22. When is the projected construction schedule? **It is in long-range.**
23. Is it necessary to have another concept meeting? **As long as the alignment stays in the current corridor, then another concept meeting is not necessary. CDM Smith will send GDOT signal-related information to GDOT once that information is determined.**

Attendees:

See attached sign-in roster.

Meeting Sign-In Sheet

Title: CSST-0006-00(328) Chatham -Initail Concept Team Meeting	**Meeting Date: July 11, 2012**
Location: Jesup District Five - Area 5 Office 630 West Bundray Street Savannah , GA 30402 Georgia Department of Transportation	Time: 1:30 pm Room: Conference Room

Name / Agency	Address	Phone	E-mail
Aghdas Ghazi (GDOT)	600 West Peachtree Street 25th Floor. Atlanta GA 30308	912-271-7027	aghazi@dot.ga.gov
Umit Seyhan (CDMSmith)		678-244 0279	seyhanu@cdmsmith.com
Jeff Vickery (CDM Smith)	3715 Northside Pkwy NW Atlanta, GA 30327	770-936-9843	VICKERYJ@CDMSMITH.com
Annie Gillespie, CDMSMITH	160 Clairemont Ave, Ste 200 Decatur 30330	678.954.5840	GILLESPIEAE@CDMSMITH.COM
Steve Price GDOT		912-427-5756	stprice@dot.ga.gov
James Thames SNG	202 Bay St Au Suite 150 SAV GA 31401	912-658-5114	James_Thames@kimley-horn.com
BRAD SAXON - GDOT		912-427-5715	bsaxon@dot.ga.gov
Randy Weitman, GPA	P.O. Box 2406 Savannah GA 31402	912-964-3916	rweitman@gaports.com
John Kopotic - GDOT	128 Public Safety Blvd Brunswick GA 31525	912-264-7247	jKopotic@dot.ga.gov
Cynthia Phillips GDOT		912-427-5767	cyphillips@dot.ga.gov
Stephen Thomas GDOT		912-427-5779	sthomas@dot.ga.gov
Will Murphy		912-427-5733	Wmurphy@dot.ga.gov

Meeting Sign-In Sheet

Title: CSST-0006-00(328) Chatham-Initail Concept Team Meeting

Meeting Date: July 11-2012

Location: Jesup District Five - Area 5 Office
630 West Bundray Street
Savannah, GA 31402

Georgia Department of Transportation

Time: 1:30 pm

Room: Conference Room

Name / Agency	Address	Phone	E-mail
Teresa Scott GDOT; Utilities		912-427-5754	tscott@dot.ga.gov
Troy Pittman GDOT Savannah		912-651-2144	tpittman@dot.ga.gov
Ken Wecho GDOT T.O. TMC		404-635-2859	kwecho@
Rick Long Ga. Power		912-897-3922	rdlong@southernco.com
Dan Everitt Georgia Power		(404) 506-2889	DEEVERIT@SOUTHERNCO.COM
Jim Hargett	2 Bud Brown Dr. (Garden City) water ess.	966-7790	Charles Draeger
Slade Cole		912-651-2144	gcole@dot.ga.gov
Donnie Little	145 Pack of Commerce Dr	912-658-7466	DONNIE-LITTLE@CABLE.COMCAST.COM
E. L. Jackson, Jr.	1200 Peachtree Stree, NE Atlanta, GA 30309	404-529 1251	ernest.jackson@nscorp.com

NORFOLK SOUTHERN MEETING
SIGN-IN SHEET

Brampton Road Meeting Minutes

Project Number: CSSTP-0006-00(328)

P.I. Number: 0006328

Where: Norfolk Southern Atlanta Office

Time: 1:00 PM **Date: 07/03/2012**

Minutes:

1. What type of historical resource is located in proposed project area? **Identified historical resource in proposed project area is a Civil War trench.**
2. NS currently has industrial plan in the works that would run new track through proposed roadway concept between proposed roadway bridge and General Chemical property, can CDM Smith obtain plans for this conceptual track? **NS will provide Umit with information of proposed track (MicroStation file, etc). CDM Smith will work this into roadway concept for review.**
3. Is original right-of-entry agreement still in effect for accessing NS property? **CDM Smith will provide NS with updated project manager and company address information. Right-of entry agreement will be updated by NS with this information and grant permission for access to NS property for survey.**
4. Does NS have any survey that they can provide to CDM Smith? **NS will see if they have any survey in project area that they can send to Umit.**
5. What curvature was used for realigned Chatham Terminal? **Umit stated that CDM Smith rail designer used NS standards for realigning track. Umit will verify which standards were used and send that information to NS.**
6. What is the right-of-way release for area between existing Brampton Road and beginning of proposed Brampton Connector? **NS is not currently sure, that is something that will have to be figured out.**
7. When will right-of-way acquisition begin? **Planned opening year is 2018 according to GDOT currently, but Umit will be pushing for an earlier opening. Preliminary design will begin approximately in September 2012. The Preliminary Field Plan Review (PFPR) will occur around the end of 2013, and right-of-way acquisition would begin after that, around early 2014.**
8. What issues are involved with selling right-of-way? **Right-of-way release will occur and the area will be cleaned up. There is the potential for future business to have rail access.**
9. What are likely issues to be raised by GDOT at next meeting on 7/11/12? **It's anticipated that GDOT will only ask what are any potential fatal flaws with the conceptual design. Also, what could be considered a standard right-of-way width. NS has indicated a 50' right-of-way width with 25' centerline.**
10. Will this be a GDOT project? **Yes.**
11. Jason Reiner (NS) asks Leon Jackson (NS) if he sees any issues with concept? **Leon (NS) states that he doesn't really see any problems. Prefers to see a clearance of 25' from centerline of any proposed track, but 23' clearance at a minimum.**
12. Umit states that he will take GPS unit down to project area next week and collect points/elevations along embankments behind General Chemical Company and along top of rail. **Umit will send this information to NS**

13. What is the curvature required for proposed rail? **6-degree curvature is required for Chatham Terminal line. NS would like to have 8-degree curvature for realigned track, but would be fine with 10-degree.**
14. Any other issues with concept? **Let CSX know of what is going on – as long as access is preserved, everything should be ok. Biggest issue that NS sees is the need for length of reconfigured rail.**
15. Would straightening out Foundation Drive be better for NS? **NS has no objections to working that into the design, but it should be noted that doing that would mean Foundation Drive would be crossing superelevated rail line.**
16. Who will be the primary contact at NS? **Leon Jackson will be the primary point of contact for NS. Umit will send all communication directly to Richard Crowley at GDOT and copy Leon Jackson (NS) and Aghdas Ghazi (GDOT). Umit will also copy Jason Reiner (NS) on all railroad related communication.**

Attendees:

See attached sign-in roster.

CDM Smith

CLIENT _____ JOB NO. _____ COMPUTED BY _____
PROJECT _____ DATE CHECKED _____ DATE _____
DETAIL Meeting With Norfolk Southern CHECKED BY _____ PAGE NO. _____

Tues, July 3rd, 2012

Sign-In

Name	Company	Email
Jeffrey Vickery	CDM Smith	VICKERYJ@CDMSMITH.COM
Craig Orcutt	NS - Real Estate	CRAIG.ORCUTT@NSCORP.com
Jason Reiner	NS	jtreiner@nscorp.com
Bob Schoeneman	NS Joint facilities	Robert.Schoeneman@nscorp.com
Randy Hunt	NS Joint Facilities	rwhunt@nscorp.com
E.L. Jackson	NS Public Improvements	ERNEST.JACKSON@NSCORP.COM
Joel Harrell	NS Gov't. Relations	JOEL.HARRELL@NSCORP.COM
Jamie Gumctney	Moffatt + Nichol	JGUMCTNEY@MOFFATTNICHOL.com
Randy Whitman	GPA	RWhitman@gaports.com

PIOH ATTENDANCE LIST AND COMMENTS RECEIVED

Vance C. Smith, Jr., Commissioner

GEORGIA DEPARTMENT OF TRANSPORTATION

One Georgia Center, 600 West Peachtree Street, NW
Atlanta, Georgia 30308
Telephone: (404) 631-1000

June 15, 2010

Thank you for attending the public information open house for CSSTP-0006-00(328), P.I. No. 0006328, the proposed Brampton Road Connector. In this handout package you will find a project description, location map, and comment card.

As you enter the room, you will notice displays of the proposed project. Department of Transportation (DOT) representatives, who can be identified by the nametags they are wearing, are available to discuss the project and answer your questions. Please take this opportunity to discuss the project with a DOT representative. There will be no formal presentation.

A court reporter will be available for those persons who would like to make a verbal statement about the project. You may also complete a comment card and deposit it into the box provided here, or send in written comments about the project until June 25, 2010. Written comments should be sent to Mr. Glenn Bowman, P.E., State Environmental Administrator, Georgia Department of Transportation, 600 West Peachtree Street NW, 16th Floor, Atlanta, Georgia 30308. Comments can also be made via the web at ***www.dot.ga.gov***. Click on **Public Outreach** from the **Information Center** dropdown menu at the top right side of the page. All comments will be made a part of the project record. We hope you will take advantage of one of these opportunities to let the Department know your view of the proposal.

The displays and plans will be available for review for ten days after the public information open house at the Georgia Department of Transportation District 5 Area Office located at 630 W. Boundary Street, Savannah, Georgia 31402. A copy of all comments received will be available for public review at this same location and at the Georgia Department of Transportation, Office of Environment Services, 600 West Peachtree Street NW, 16th Floor, Atlanta, Georgia 30308, as soon as compilation is completed.

Again, thank you for attending this public information open house and for giving us your comments. If you should have any questions or need additional information, feel free to contact the project manager Aghdas Ghazi at (912) 271-7027 or Larry Bowman at (404) 631-1362 of the Office of Environmental Services.

Sincerely,

Bobby Hilliard

Bobby Hilliard
State Program Delivery Engineer

GWD:ADO/er

Attachments

CSSTP-0006-00(328); P.I. No. 0006328
Chatham County

PROJECT DESCRIPTION:
The proposed project is located in northern Savannah, Chatham County. Brampton Road serves as an entrance to the Georgia Port Authority's Garden City Terminal and intersects with State Route 25/Main Street just north of its interchange with Interstate 516. The project would consist of a new location roadway beginning northwest of the SR 25/I-516 interchange at the intersection of Burnsed Boulevard and SR 25/Main Street and continuing northeasterly until connecting with the existing Brampton Road. The existing grade crossing would be eliminated by relocating the Norfolk Southern (NS) tracks along the east side of the new location roadway between SR 25/Main Street and the structure that carries the new location roadway over the existing NS spur tracks, at which point the relocated tracks would pass under the new location roadway (the existing at-grade NS railroad crossing at SR 25/Main Street would be closed). The existing portion of Brampton Road will be widened to accommodate two left turn lanes into the GPA's Gate 3. The terminus of the project is set at a distance sufficient to taper from the widened section to the existing two lane section just beyond Gate 3. Construction limits will be extended to include reconstruction of the I-516 northbound and southbound ramps at the intersections with Burnsed Boulevard.