Georgia Department of Transportation

Interoffice Memo
Office of Design Policy & Support

DATE: 10/22/2021

FILE: P.I.# 0002525
Cherokee County / GDOT District 6 - Cartersville
Ball Ground Truck Bypass FM SR 5 BU @ Howell Bridge Rd TO SR 372
SO/Ball Ground

FROM: Dave Peters for R. Christopher Rudd, PE, State Design Policy Engineer

TO: SEE DISTRIBUTION

SUBJECT: APPROVED CONCEPT REPORT

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

Attachment

Distribution:

Hiral Patel, Director of Engineering
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Andrew Heath, State Traffic Engineer
Angela Robinson, Financial Management Administrator
Erik Rohde, State Project Review Engineer
Patrick Allen, State Materials Engineer
Nick Fields, State Utilities Administrator
Eric Conklin, State Transportation Data Administrator
Attn: Systems & Classification Branch
Benny Walden, Statewide Location Bureau Chief
Ed David Adams, State Safety Program Manager
Grant Waldrop, District Engineer
David Acree, District Preconstruction Engineer
Jun Birnkammer, District Utilities Manager
John Hightower, Project Manager
BOARD MEMBER - 11th Congressional District

Project Concept Report

Project Type:	New Location Roadway	P.I. Number:	0002525
GDOT District:	6	County:	Cherokee
Federal Route Number:	N/A	State Route Number:	N/A
Project Number:	N/A		

This project proposes a Truck Bypass around the South side of the City of Ball Ground in Cherokee County. The Bypass is proposed from Howell Bridge Road/SR 5 to SR 372 in an easterly direction. ~OB

Submitted for approval: * Concept Report update received 9/13/21

Thomas M. Crochet, PE, PTOE VHB — Date 3/1/2021

Cherokee County — Date 3/1/2021

State Program Delivery Administrator — Kimberly W. Nesbitt — Date 4/21/2012

GDOT Project Manager — John Hightower KESD — Date 4/16/2021 CCB

Recommendation for approval: * Recommendations are on file ~ DRP

* Eric Duff — State Environmental Administrator — Date 6/25/2021

* Chris Raymond — for State Traffic Engineer — Date 5/7/2021

* Joshua Taylor — for Project Review Engineer — Date 6/25/2021

* Marcela Coll — for State Utilities Engineer — Date 6/28/2021

* Grant Waldrop — District Engineer — Date 5/7/2021

* Donn Digamon — State Bridge Engineer — Date 5/12/2021

☒ 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).

* Matt Markham — State Transportation Planning Administrator — Date 9/20/2021

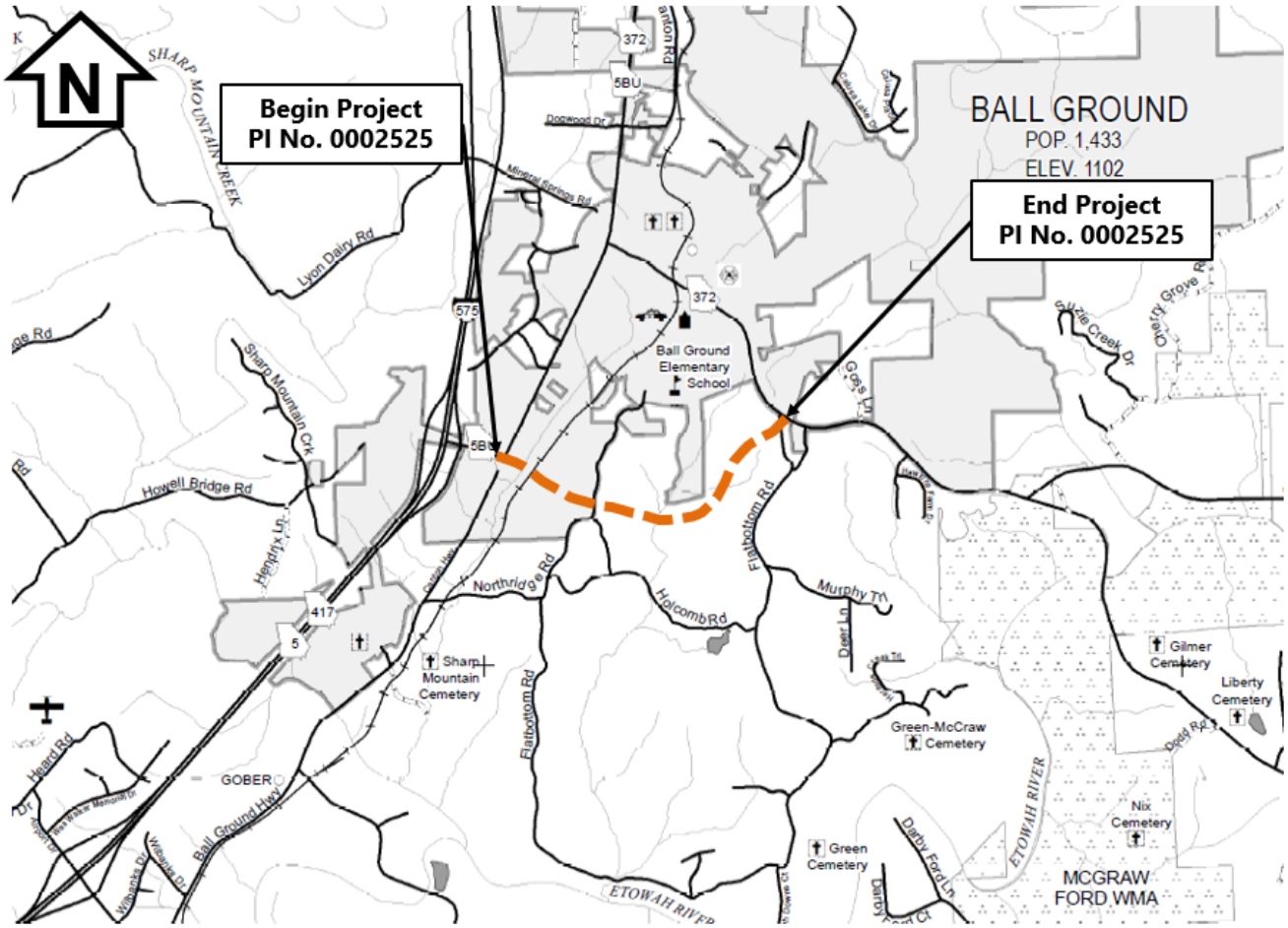
* Recommendations were also received from the following: ~ DRP

* Office of Intermodal: Alan C. Hood (5/6/21)

Template Version: 2020.11.20

PROJECT LOCATION MAP

PI No. 0002525
Ball Ground Truck Bypass FM SR 5 BU @ Howell Bridge Rd TO SR 372
SO/Ball Ground



PLANNING AND BACKGROUND

Prepared By: VHB **Date:** 1/29/2021

Project Justification Statement: This Project Justification Statement was prepared by VHB and Cherokee County. The project was originated by Cherokee County due to increased truck traffic in the City of Ball Ground and was included in the 2016 Cherokee County Comprehensive Transportation Plan as Project ID CTP-016 SR-372 Spur (Ball Ground Bypass) - New Alignment from Canton Hwy/Howell Bridge Rd to SR-372. This project is also identified in the Atlanta Regional Commission TIP as Project ID CH-180. Major issues to be addressed by the project include reduction in crashes, correcting improper geometry, improving level of service, improving pedestrian safety, and reducing traffic on a corridor with pavement in poor condition. There were 17 total crashes in 2015, 15 total crashes in 2016, 21 total crashes in 2017, 18 total crashes in 2018, and 22 total crashes in 2019 for SR 372 in Ball Ground. The total crash rate per 100 MVM in Ball Ground from 2015 to 2019 is higher than statewide average for rural minor arterial facilities in those same years.

Rate Description		Year				
		2015	2016	2017	2018	2019
Fatal Crashes	Segment	0.00	0.00	0.00	0.00	0.00
	Statewide Average	2.13	2.42	2.13	2.00	1.91
Fatalities	Segment	0.00	0.00	0.00	0.00	0.00
	Statewide Average	2.42	2.74	2.37	2.18	2.27
Non-Fatal Injury Crashes	Segment	71	46	22	21	19
	Statewide Average	48	49	42	46	46
Non-Fatal Injuries	Segment	71	46	22	21	38
	Statewide Average	74	74	82	69	69
All Crashes	Segment	237	183	243	249	211
	Statewide Average	152	145	160	162	160

There are less than desirable geometrics on SR 372 through downtown Ball Ground including 9% to 10% grades and narrow lane widths. The level of service (LOS) would be F on SR 372 through downtown in the design year 2050 when analyzed with Synchro. Due to the urban and historic nature of downtown Ball Ground, a Truck Bypass would be desirable to improve pedestrian safety. In addition, the existing pavement in downtown Ball Ground is in poor condition and was not designed to handle the amount of trucks currently using the corridor.

The proposed project limits are Howell Bridge Road to SR 372 East of downtown Ball Ground. The functional classification for SR 372 is rural minor arterial and the functional classification for SR 5 BU/Howell Bridge Road is major collector. The intersection of Howell Bridge Road at SR 5 BU/Canton Highway/Ball Ground Highway currently operates as an all-way stop. The existing LOS is C/D (AM/PM). There is no existing intersection on the Eastern connection with SR 372. The project also has the potential to be included as a truck route on the state route system. Performance goals include a reduction in crashes in Ball Ground, improvement in LOS through downtown Ball Ground and reduced truck traffic in downtown area where pedestrians are present.

Issues potentially affecting Project Justification: Project sponsor(s) need to complete procedures in GDOT Policy No. 3625-1 Directive Setting Procedures for Revising State Highway System through GDOT Office of Transportation Data before Right of Way Authorization in order to satisfy the project justification. In summary, the policy provides guidance for removal of the existing SR 372 designation and adding the bypass roadway to the state route system in order to restrict truck movement thorough downtown City of Ball Ground as described in the project justification statement. The project sponsor(s) must commit to maintain the old state route system once the transfer has been completed.

Existing conditions: SR 372/Gilmer Ferry Road is a two-lane minor arterial roadway in Cherokee County, Georgia. The roadway is urban (10’ lanes) with curb and gutter, sidewalk and roadside parking through the City of Ball Ground. The remainder of the corridor is rural (12’ lanes) with grassed shoulders. Existing major intersections include Howell Bridge Road at SR5 BU/Canton Highway/ Ball Ground Highway. There is an overhead electrical transmission line and underground water and sewer in the project area.

Other projects in the area:
P.I. No. 0010649, CS 791/Valley Street from Depot Street to Howell Bridge Road (streetscape enhancement project for the City of Ball Ground; Completed December 2019)

P.I. No. 0005970, SR 372/Ball Ground Rd from Canton Highway to Cumming Highway (reconstruction/rehabilitation project; Long Range Program PE, ROW, CST in 2051)

P.I. No. 0009903, I-575 @ SR 5BU – SB & NB Ramps (roundabout at ramp intersections with Howell Bridge Road; PE in 2018) – Project Cancelled, No Build Concept Report Submitted 11/9/2020

MPO: Atlanta TMA **TIP #:** N/A
Congressional District(s): 11

Federal Oversight: ☐ **PoDI** ☐ **Exempt** ☐ **State Funded** ☒ **Other - TBD**

Projected Traffic: SR 372
24 HR T: 13% Current Year (2018): 8,600
Open Year (2030): 11,250 Design Year (2050): 16,700
Traffic Projections Performed by: VHB
Date approved by the GDOT Office of Planning: 8/15/2019

Projected Traffic: Ball Ground Truck Bypass
24 HR T: 31.5% Current Year (2018): N/A
Open Year (2030): 3,750 Design Year (2050): 5,450
Traffic Projections Performed by: VHB
Date approved by the GDOT Office of Planning: 8/15/2019

Projected Traffic: SR 5BU
24 HR T: 19.5% Current Year (2018): 9,050
Open Year (2030): 9,650 Design Year (2050): 14,400
Traffic Projections Performed by: VHB
Date approved by the GDOT Office of Planning: 8/15/2019

Projected Traffic: Howell Bridge Road
24 HR T: 15% Current Year (2018): 9,050
Open Year (2030): 11,500 Design Year (2050): 17,050
Traffic Projections Performed by: VHB
Date approved by the GDOT Office of Planning: 8/15/2019

AASHTO Functional Classification (Mainline): Minor Arterial (Ball Ground Truck Bypass & SR 372)
Major Collector (SR 5BU/Howell Bridge Road)
AASHTO Context Classification (Mainline): Rural
AASHTO Project Type (Mainline): New Construction
Is the project located on a NHS roadway? ☒ No ☐ Yes

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

Pedestrian Warrants:

- Standard Pedestrian Warrants #1 is met for a portion of the project between Ball Ground Highway and the Northeastern Railroad (Patriot Rail & Ports).
- Pedestrian accommodations are necessary on a portion of the project due to the presence of existing sidewalks and commercial business in the area.

Note: Shared use paths shall be included for a portion between Ball Ground Highway and Northeastern Railroad (Patriot Rail & Ports) of the project.

Bicycle Warrants:

- Standard Bicycle Warrant #3 is met.
- There are bicycle travel generators along the project alignment including neighborhoods and there is potential for commercial development.

Note: Bikeable shoulders are provided along the new location roadway. Shared use paths will be included West of Northeastern Railroad (Patriot Rail & Ports) to accommodate pedestrians and bicycles.

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

Pavement Evaluation and Recommendations

Initial Pavement Evaluation Summary Report Required? ☒ No ☐ Yes

Feasible Pavement Alternatives: ☒ HMA ☒ PCC ☐ HMA & PCC

Is the project located on a Special Roadway or Network? ☒ No ☐ Yes *Network*

Note: The proposed project is described as a Truck ByPass so has potential to be added to network. ~OB

Do the limits of the project include one or more signalized intersections? ☒ No ☐ Yes

Is Federal Aviation Administration coordination anticipated? ☒ No ☐ Yes

Note: The project is located approximately 1.5 miles from Cherokee County Airport (CNI), it only requires FAA coordination if onstruction equipment exceeds 200' above the ground level. It is outside approach and departure surfaces, and construction itself or the added lighting will not impact the airport ~OB

DESIGN AND STRUCTURAL

Description of the proposed project: The proposed project would construct a truck bypass south of downtown Ball Ground from the intersection SR 5 BU/Canton Highway and Howell Bridge Road to SR 372 near its intersection with Flatbottom Road. The project would construct a partial multilane roundabout at the existing all-way stop controlled intersection of SR 5 BU/Canton Highway and Howell Bridge Road as well as a single lane roundabout at the existing intersection of Howell Bridge Road and Valley Street. The project would construct a new minor leg stop controlled intersection where the proposed truck bypass intersects existing SR 372 at the eastern terminus of the project. The proposed typical section would consist of two 12-foot travel lanes. An 8-foot rural shoulder with a 6.5-foot paved bike shoulder will be constructed. A 21-foot urban shoulder consisting of 2.5-foot curb & gutter, 6-foot grass strip, and a 10-foot shared use path will be constructed within the vicinity of the proposed roundabouts. The project is located within the City of Ball Ground and Cherokee County. The project length is approximately 1.5 miles.

Major Structures:

Structure	Existing	Proposed
Bridge Northridge Road over Ball Ground Truck Bypass	There is no existing structure or roadway crossing here.	The proposed bridge will be approximately 80 feet above the Truck Bypass, 350 ft long and 29 ft wide with 11 ft lanes and 2 ft shoulders.

Accelerated Bridge Construction (ABC) techniques anticipated: ☒ No ☐ Yes

Since this is a new location roadway accelerated bridge construction techniques are not anticipated.

Mainline Design Features:

Ball Ground Truck Bypass & SR 372	**Functional Classification:** Minor Arterial		
Feature	**Existing (SR 372)**	***Policy**	**Proposed (Bypass)**
Typical Section:			
- Number of Lanes	2		2
- **Lane Width(s) (-ft)**	**10 ft – 12 ft**	**12 ft**	**12 ft; 16 ft - 20 ft within roundabouts**
- **Median Width (-ft) & Type**	**N/A**	**N/A**	**0 ft – 56 ft splitter island/median**
- **Shoulder Width (-ft) (Outside)**	**0 ft – 12 ft**	**8 ft graded 6.5 ft paved**	**8 ft graded 6.5 ft paved**
- **Border Area Width (-ft)**	**N/A**	**10 ft – 16 ft**	**21 ft**
- **Cross Slope (%)**	**2%**	**2%**	**2%**
- **Outside Shoulder Slope (%)**	**0% - 50%**	**Urban: 2% Rural: 6%**	**Urban: 2% Rural: 6%**
- **Sidewalks (-ft) urban rural**	**5' N/A**	**N/A N/A**	**10 ft path N/A**
- Auxiliary Lanes (#lanes/-ft width)	N/A		(1) 12 ft lane approaching intersection
- **Bike Accommodations urban rural**	**N/A N/A**	**N/A 6.5 ft paved shoulder**	**10 ft path 6.5 ft paved shoulder**
Posted Speed (mph)	45 mph		45 mph
Design Speed (mph)	**45 mph**	**45 mph**	**45 mph outside of splitter islands; 25 mph inside splitter islands and roundabout**
Minimum Horizontal Curve Radius (-ft)	**200 ft**	**643 ft**	800 ft
Maximum Superelevation Rate (%)	**8%**	**6%**	6%
Maximum Grade (%)	**8%**	**7%**	7%
Access Control	**none**	**none**	**partial**
Design Vehicle	WB-67		WB-67
Check Vehicle	N/A		N/A
Pavement Type	Asphalt		Asphalt

*According to current GDOT Design Policy if applicable

SR 5 BU/Howell Bridge Road	**Functional Classification:** Major Collector		
Feature	**Existing**	***Policy**	**Proposed**
Typical Section:			
- Number of Lanes	2		2
- **Lane Width(s) (-ft)**	**11 ft – 12 ft**	**11 ft – 12 ft**	**12 ft; 16 ft – 20 ft within roundabouts**
- **Median Width (-ft) & Type**	**N/A**	**N/A**	**0 ft – 32 ft splitter island/median**
- **Shoulder Width (-ft) (Outside)**	**0 ft – 8 ft graded 0 ft – 12 ft paved**	**6 ft – 8 ft graded 4 ft – 6.5 ft paved**	**8 ft graded 6.5 ft paved**
- **Border Area Width (-ft)**	**10 ft – 30 ft**	**10 ft – 16 ft**	**21 ft**
- **Cross Slope (%)**	**2%**	**2%**	**2%**
- **Outside Shoulder Slope (%)**	**0% - 10%**	**Urban: 2% Rural: 6%**	**Urban: 2% Rural: 6%**
- **Sidewalks (-ft)**	**5 ft**	**N/A**	**10 ft path**
Posted Speed (mph)	45 mph		45 mph
Design Speed (mph)	**45 mph**	**45 mph**	**45 mph outside of splitter islands; 25 mph inside splitter islands and roundabout**
Minimum Horizontal Curve Radius (-ft)	**2000 ft**	**643 ft**	None
Maximum Superelevation Rate (%)	**8%**	**6%**	None
Maximum Grade (%)	**7%**	**10%**	7%
Access Control	**Partial/permit**	**none**	**Partial/permit**
Design Vehicle	WB-67		WB-67
Check Vehicle	N/A		N/A
Pavement Type	Asphalt		Asphalt

*According to current GDOT Design Policy if applicable

Northridge Road	**Functional Classification:** Local Road and Street		
Feature	**Existing**	***Policy**	**Proposed**
Typical Section:			
- Number of Lanes	2		2
- **Lane Width(s) (-ft)**	**10 ft**	**11 ft – 12 ft**	**11 ft**
- **Median Width (-ft) & Type**	**N/A**	**N/A**	**N/A**
- **Shoulder Width (-ft) (Outside)**	**0 ft – 4 ft**	**4 ft graded 2 ft paved**	**4 ft graded 2 ft paved**
- **Border Area Width (-ft)**	**N/A**	**N/A**	**N/A**
- **Cross Slope (%)**	**2%**	**2%**	**2%**
- **Outside Shoulder Slope (%)**	**0% - 50%**	**6%**	**6%**
- Auxiliary Lanes (#lanes/-ft width)	N/A		N/A
Posted Speed (mph)	25 mph		25 mph
Design Speed (mph)	**25 mph**	**25 mph**	**25 mph**
Minimum Horizontal Curve Radius (-ft)	**115 ft**	**144 ft**	200 ft
Maximum Superelevation Rate (%)	**6%**	**6%**	5.8%
Maximum Grade (%)	**11%**	**15%**	11%
Access Control	**none**	**none**	**none**
Design Vehicle	WB-67		WB-67
Check Vehicle	N/A		N/A
Pavement Type	Asphalt		Asphalt

*According to current GDOT Design Policy if applicable

Design Exceptions/Design Variances to FHWA or GDOT Controlling Criteria anticipated:

FHWA or GDOT Controlling Criteria	No	Undetermined	Yes	DE or DV	Approval Date (if applicable)
1. Design Speed	☒	☐	☐		
2. Design Loading Structural Capacity	☒	☐	☐		
3. Stopping Sight Distance	☒	☐	☐		
4. Horizontal Curve Radius	☒	☐	☐		
5. Maximum Grade	☐	☒	☐	DV	
6. Vertical Clearance	☒	☐	☐		
7. Superelevation Rate	☒	☐	☐		
8. Lane Width	☒	☐	☐		
9. Cross Slope	☒	☐	☐		
10. Shoulder Width	☒	☐	☐		

A design variance may be required for the grades approaching Northridge Road and the crossing with Northeastern Railroad (Patriot Rail & Ports).

Design Variances to GDOT Standard Criteria anticipated:

GDOT Standard Criteria	No	Undetermined	Yes	Approval Date (if applicable)
1. Access Control	☒	☐	☐	
2. Shoulder Width	☒	☐	☐	
3. Intersection Sight Distance	☐	☒	☐	
4. Intersection Skew Angle	☒	☐	☐	
5. Tangent Lengths on Reverse Curves	☒	☐	☐	
6. Lateral Offset to Obstruction	☒	☐	☐	
7. Rumble Strips	☒	☐	☐	

8. Safety Edge	☒	☐	☐	
9. Median Usage	☒	☐	☐	
10. Roundabout Illumination Levels	☒	☐	☐	
11. Complete Streets Warrants	☒	☐	☐	
12. ADA Requirements in PROWAG	☒	☐	☐	
13. GDOT Construction Standards	☒	☐	☐	
14. GDOT Drainage Manual	☒	☐	☐	

The vertical curvature approaching Northridge Road may not be suitable for intersection sight distance. Access control is proposed in the area and should eliminate the potential of any intersections within this area.

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

Lighting Required: ☐ No ☒ Yes
Lighting is required at all proposed roundabouts.

Off-site Detours Anticipated: ☐ No ☐ Undetermined ☒ Yes
A detour will likely be required for Northridge Road to build grade separated section of Truck Bypass.
If yes: Roadway type to be closed: ☒ Local Road ☐ State Route
Detour Route selected: ☒ Local Road ☒ State Route
District Concurrence w/Detour Route: ☒ No/Pending ☐ Received *Date*

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

INTERCHANGES AND INTERSECTIONS

Interchanges/Major Intersections:

- Howell Bridge Road/Truck Bypass at Ball Ground Highway
  - Existing All-Way Stop
  - Proposed Partial Multilane Roundabout
- Howell Bridge Road/Truck Bypass at Valley Street
  - Existing Two-Way Stop
  - Proposed Single Lane Roundabout
- SR 372/Gilmer Ferry Road at Truck Bypass
  - Proposed Minor Stop Control

Intersection Control Evaluation (ICE) Required: ☐ No ☒ Yes

Roundabout Concept Validation Required: ☐ No ☒ Yes ☐ Completed *Date*
Once funding is established, roundabout concept validation will be completed.

UTILITY AND PROPERTY

Railroad Involvement: The Ball Ground Truck Bypass will have an at grade crossing of Georgia Northeastern Railroad (Patriot Rail & Ports). Railroad coordination will be required, and the following information was provided by the GDOT Office of Utilities Railroad Liaison:

- Operating Railroad: Georgia Northeastern Railroad Company (GNRR)
- Inv.# 340872C, Railroad Milepost OKX-0443.5

- Approximately 2 trains per day at this location, broken down into 2 trains from 6 am to 6 pm, no trains from 6 pm to 6 am and no switching trains.
- The maximum train speed is 10 mph.
- GNRR Railroad Contact is Michael J. Keleher, 904-646-8276, Michael.keleher@patriotrail.com

Utility Involvements:

- Cherokee County Water and Sewer Authority
- City of Ball Ground Water
- City of Ball Ground Sewer
- Georgia Power
- Amicalola Electrical Membership Corporation
- TDS Telecom
- AGL
- Elijay Telephone Company
- Windstream

SUE Required: ☐ No ☒ Yes ☐ Undetermined

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

Right-of-Way (ROW): Existing width: 70 – 100 ft. Proposed width: 100 – 220 ft.

Required Right-of-Way anticipated: ☐ None ☒ Yes ☐ Undetermined
Easements anticipated: ☐ None ☒ Temporary ☒ Permanent * ☒ Utility ☐ Other
* Permanent easements include the right to place utilities.

Anticipated total number of impacted parcels:		32
Displacements anticipated:	Businesses:	0
	Residences:	0
	Other:	0
Total Displacements:		0

Location and Design approval: ☐ Not Required ☒ Required

Impacts to USACE property anticipated: ☒ No ☐ Yes ☐ Undetermined

ENVIRONMENTAL & PERMITS

Anticipated Environmental Document: NEPA ~ EA-FONSI

Level of Environmental Analysis:

☒ The environmental considerations noted below are based on preliminary desktop or screening level environmental analysis and are subject to revision after the completion of resource identification, delineation, and agency concurrence.

☐ The environmental considerations noted below are based on the completion of resource identification, delineation, and agency concurrence.

GDOT MS4 Permit Compliance – Is the project located in a GDOT MS4 area? ☒ No ☐ Yes
If yes, is the GDOT MS4 Permit anticipated to apply to all or part of this project? ☒ No ☐ Yes

Is Non-MS4 water quality mitigation anticipated? ☐ No ☒ Yes

Since outfalls along the project area are within the Etowah Basin Non-MS4 water quality measures would likely be required.

Environmental Permits/Variances/Commitments/Coordination anticipated:

Permit/Variance/Commitment/ Coordination Anticipated	No	Yes	Remarks
1. U.S. Coast Guard Permit	☒	☐	
2. Forest Service/NPS	☒	☐	
3. CWA Section 404 Permit	☐	☒	Regional Permit 34 anticipated
4. Tennessee Valley Authority Permit	☒	☐	
5. USACE Real Estate Outgrant	☒	☐	
6. Buffer Variance	☐	☒	
7. Coastal Zone Management Coordination	☒	☐	
8. NPDES	☐	☒	GAR100002
9. FEMA	☒	☐	
10. Cemetery Permit	☒	☐	
11. Other Permits	☐	☐	
12. Other Commitments	☐	☐	
13. Other Coordination	☐	☒	Section 106 Under USACE, if required

Is a PAR required? ☒ No ☐ Yes ☐ Completed *Date*

Environmental Comments and Information:
NEPA/GEPA: NEPA – EA FONSI

Ecology: The project area includes wetlands, streams, Water of the US and buffered state waters. A 404 permit and stream buffer variances are anticipated. The project may impact protected species. Suitable habit and potentially suitable habit were identified in the environmental scoping phase for several species. Aquatic Surveys are likely to be required.

History: The project corridor includes many potentially eligible historic properties. Many of the properties are large, agricultural properties, and several are located on opposite sites of the proposed roadway, making avoidance difficult. The project is anticipated to have an Adverse Effect on historic resources, and an Individual Section 4(f) analysis is anticipated to be required.

Archeology: There are no previously recorded sites in the study area. Due to the new location character of the project and undeveloped nature of the project area, the potential for archaeological resources is high.

Air Quality:

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

Is a Carbon Monoxide hotspot analysis required? ☒ No ☐ Yes

Noise Effects: A Type I Noise Assessment would be required due to the new location nature of the project. The project has potential for noise impacts to receivers.

Public Involvement: An online stakeholder meeting presenting several alternatives was held on 06/05/2020 with the comment period running through 07/3/2020. Additional public involvement will be needed to present the preferred alternative as well as any off-site detours.

Major stakeholders: GDOT, Cherokee County, City of Ball Ground, Cherokee Village Neighborhood, Hawkins Farm Neighborhood, Georgia Northeastern Railroad (Patriot Rail & Ports), Amicalola Electric Membership Corporation, Georgia Power, Ball Ground Historical Society, and the traveling public.

CONSTRUCTION

Issues potentially affecting constructability/construction schedule: A detour will likely be required for Northridge Road to build grade separated section over the Truck Bypass. Rock blasting will likely be required for the construction near Northridge Road.

Early Completion Incentives recommended for consideration: ☒ No ☐ Yes

COORDINATION, ACTIVITIES, RESPONSIBILITIES, AND COSTS

Initial Concept Team Meeting: June 26, 2019
Concept Team Meeting: February 5, 2021
Other coordination to date: A Scoping Study Closeout Meeting was held on July 13, 2020.

Project Activity	Party Responsible for Performing Task(s)
Concept Development	Cherokee County/VHB
Design	Cherokee County/Consultant (TBD)
Right-of-Way Acquisition	Cherokee County/Consultant (TBD)
Utility Coordination (Preconstruction)	Cherokee County
Utility Relocation (Construction)	Utility Owner
Letting to Contract	Cherokee County
Construction Supervision	Cherokee County
Providing Material Pits	Contractor
Providing Detours	Contractor
Environmental Studies, Documents, & Permits	Cherokee County/Consultant (TBD)
Environmental Mitigation	Cherokee County
Construction Inspection & Materials Testing	Cherokee County

Project Cost Estimate Summary and Funding Responsibilities:

	PE Activities		ROW	Reimbursable Utilities	CST*	Total Cost
	PE Funding	Section 404 Mitigation				
Date of Estimate:	1/7/2020	1/7/2020	6/24/2021	12/8/2020	5/24/2021	
Funded By:	Local / Federal TBD	Local / Federal TBD	Local / Federal TBD	Local / Federal TBD	Local / Federal TBD	
Programmed Cost:	$681,000		$2,200,000	N/A	$8,000,000	$10,881,000
Estimated Cost:	$2,454,500	$1,388,672	$4,339,000	$2,269,080	$18,105,592	$28,556,844
Total Cost Difference:						$17,675,844

*CST Cost includes: Construction, Engineering and Inspection, Contingencies and Liquid AC Cost Adjustment.
Railroad reimbursable costs are included in the estimated costs for PE and Reimbursable Utilities.
There are currently no programmed cost for Right of Way, Utilities, or Construction.

Local Government is seeking state or federal funds. Should federal funds be programmed for the project, the Preferred Alternative (Alternative B) may result in Section 4(f) impacts and would either need to be refined or another alternative would need to be selected.

ALTERNATIVES DISCUSSION

Alternative selection:

Preferred Alternative (Alternative B): The preferred alternative would construct a 2-lane bypass south of downtown ball ground that passes the southern cul-de-sac of Cherokee Village Ct. The alignment would have a western terminus west of the intersection of Howell Bridge Rd and Ball Ground Highway/SR 5 and an eastern terminus at the existing intersection of SR 372 and Flatbottom Rd.			
Estimated Property Impacts:	**32**	**Estimated Total Cost:**	**$28,556,844**
Estimated ROW Cost:	**$4,339,000***	**Estimated CST Time:**	**24 Months**
Rationale: The preferred alternative will reduce truck traffic in downtown Ball Ground and improve level of service. By providing an alternative route around the downtown area of Ball Ground, the proposed bypass is anticipated to reduce crash frequency and/or severity while improving pedestrian mobility in downtown Ball Ground. The preferred alternative accomplishes the goals of the project with the lowest total cost, minimal impacts to historic properties, and zero displacements.			

*Estimated ROW cost by design team.

No-Build Alternative: A truck bypass is not constructed.			
Estimated Property Impacts:	**0**	**Estimated Total Cost:**	**0**
Estimated ROW Cost:	**0**	**Estimated CST Time:**	**0**
Rationale: This alternative does not remove truck traffic from downtown Ball Ground, reduce traffic congestion, improve pedestrian facilities, or improve substandard existing geometry through downtown Ball Ground. This alternative was not selected as it does not accomplish the goals of the project.			

Alternative A: A truck bypass would be constructed north of the preferred alternative. The proposed bypass would include an at grade intersection with Cherokee Village Ct. The alignment would have a western terminus west of the intersection of Howell Bridge Rd and Ball Ground Highway/SR 5 and an eastern terminus at the intersection of the proposed Ball Ground Bypass and SR 372 west of the existing intersection of SR 372 and Flatbottom Rd.			
Estimated Property Impacts:	**30**	**Estimated Total Cost:**	**$30,332,351**
Estimated ROW Cost:	**$4,941,000***	**Estimated CST Time:**	**24 Months**
Rationale: This alternative would also reduce truck traffic in downtown Ball Ground and improve level of service. By providing a route around the downtown area of Ball Ground, this alternative is also anticipated to reduce crash frequency and/or severity while improving pedestrian mobility in downtown Ball Ground. However, this alternative would create 4 residential displacements and would have significant impacts to an existing residential neighborhood. This alternative would also impact historic properties at the intersection of the proposed Ball Ground Bypass and SR 372 and therefore was not selected as the preferred alternative.			

*Estimated ROW cost by design team.

Alternative C: A truck bypass would be constructed south of the preferred alternative. The proposed bypass would include an at grade intersection with Flatbottom Rd. The alignment would have a western terminus west of the intersection of Howell Bridge Rd and Ball Ground Highway/SR 5 and an eastern terminus at the intersection of the proposed Ball Ground Bypass and SR 372 east of the existing intersection of SR 372 and Flatbottom Trail.			
Estimated Property Impacts:	**31**	**Estimated Total Cost:**	**$34,011,713**
Estimated ROW Cost:	**$4,500,000***	**Estimated CST Time:**	**24 Months**
Rationale: This alternative would also reduce truck traffic in downtown Ball Ground and improve level of service. By providing a route around the downtown area of Ball Ground, this alternative is also anticipated to reduce crash frequency and/or severity while improving pedestrian mobility in downtown Ball Ground. However, this alternative would have significant impacts to historic properties including splitting a historic farm east of Flatbottom Trail. This alternative would also create 1 residential displacement and due to the increased length of this bypass the total cost would be higher than the preferred alternative and therefore this alternative was not selected.			

*Estimated ROW cost by design team.

Alternative D: A truck bypass would be constructed south of the preferred alternative as well as south of an existing transmission line. The proposed bypass would include an at grade intersection with Flatbottom Rd but would avoid impacts to any historic properties. The alignment would have a western terminus west of the intersection of Howell Bridge Rd and Ball Ground Highway/SR 5 and an eastern terminus at the intersection of the proposed Ball Ground Bypass and SR 372 east of the existing intersection of SR 372 and Goss Ln.			
Estimated Property Impacts:	**39**	**Estimated Total Cost:**	**$41,669,932**
Estimated ROW Cost:	**$5,575,000***	**Estimated CST Time:**	**24 Months**
Rationale: This alternative would also reduce truck traffic in downtown Ball Ground and improve level of service. By providing a route around the downtown area of Ball Ground, this alternative is also anticipated to reduce crash frequency and/or severity while improving pedestrian mobility in downtown Ball Ground. However, the increased length of the bypass would result in a significant increase in overall project cost therefore this alternative was not selected.			

*Estimated ROW cost by design team.

Comments: Variations of the above alternatives were evaluated and presented to the public as part of the stakeholder meeting. Additional alternatives are shown on the Alternatives Concept Layout. These alternatives were eliminated for similar reasons to those above including total cost, displacements, environmental impacts, and neighborhood impacts.

LIST OF ATTACHMENTS/SUPPORTING DATA

1. Alternatives Layout and Matrix
2. Concept Layout
3. Typical sections
4. Detailed Cost Estimates:
    a. Construction Estimate including Engineering and Inspection and Contingencies
    b. Revisions to Programmed Costs forms, & Liquid AC Cost Adjustment forms
    c. Right-of-Way (ROW Cost Estimate submitted to ROW Office on 1/20/21, approval pending)
    d. Environmental Mitigation
    e. Utilities & Railroad
5. Concept Utility Report
6. Crash summaries
7. Design Traffic diagrams
8. ICE Report(s) or Approved ICE Waiver
    a. Stage 1 Screening Decision Record
    b. Concurrence Memo
    c. Stage 2 Alternative Selection Decision Record
9. Initial Concept Team Meeting Minutes

10. Scoping Study Closeout Meeting Minutes
11. Response Letter to Stakeholder Meeting Comments
12. Concept Team Meeting Minutes
13. Lighting Commitment Letter

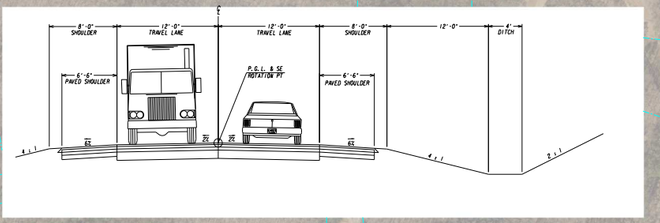
APPROVALS

Concur: _____ 10/22/2021
Director of Engineering — Date

Approve: _____ 10/22/2021
Chief Engineer — Date

ID NUMBER	OWNER NAME
101-PP	DUFFY, CHRISTOPHER JOHN
103-PP	MORLEY, PHILIP MORLEY ASHLEY
105-PP	ELIBANKS, WILLIAM DAVID & ELIBANKS, AMANDA LEE
107-PP	LIBERATTI, CAROL YN, SUE, & LIBERATTI, JOHN PAUL AS TRUSTEE
109-PP	MURPHY, MICHAEL J. & VIVIAN L
111-PP	HOY, TRAVIS C. HOY, MELISSA J
100-HFL	ROGERS, MICHAEL DANE & HOLLY A.
102-HFL	BUGBY, MATTHEW D. & BURTON, MELISSA A.
106-HFL	JORDAN, HULON & BRENDA R
108-HFL	CHOCHOR, JASON NEIL CHOCHOR, CHRISTINA KAY
110-HFL	BARBER, JONATHAN & BARBER, LAURA
112-HFL	WATERS, JAMES MASON & TABATHA
114-HFL	MALONE, MICHAEL B
116-HFL	BROWN, JAMES R
118-HFL	PERRY, JEREMY
120-HFL	SPIVEA, CHRIS
122-HFL	JONES, RUDY LAMAR & JACKIE S
124-HFL	DOBBS, ROBERT C. & DOBBS, NANCI JO
126-HFL	FLANAGAN, GRADY P FLANAGAN, KESHIA M
128-HFL	REYNOLDS, JASON REYNOLDS, KAYLA
130-HFL	910 PROPERTY GEORGIA, L.P C/O INVITATION HOMES- TAX DEPT.
132-HFL	HALSTEAD, KARL D.
134-HFL	ANDREWS, KRISTIN D ANDREWS, ROBERT P.
136-HFL	BREEDING, ALICE H. & WILLIAM M. BREEDING
111-CVT	COULETT, JEREMY & COULETT, SYNTHIA
116-CVT	FRANKLIN, ALICE F.
118-CVT	LANGFORD, GLEN G. & LANGFORD, JENNIFER K.
124-CVT	BENZEL, FRANCES CAROL
124A-CVT	BENZEL, FRANCES CAROL
134-CVT	BUTLER, PATRICK RAY & BUTLER, SUSSETTE
140-CVT	EDWARDS, VIRGINIA WIMBERLY
143-CVT	WILLIAMS, AELLA & BUDDY C.
146-CVT	DOBSON PROPERTIES, INC
149-CVT	LINGERFELT, ROY T. JR. & LINDA
155-CVT	HOPKINS, TH,RMAN CLAY & GALE N
156-CVT	CHAPMAN, LEAH FOWLER & CHAPMAN, NATHAN L
158-CVT	JONES, BARBARA T & JONES, CHARLES A
159-CVT	TOMPKINS, JOSHUA H & TOMPKINS, BRITTANY
162-CVT	WILCOSKY, WILLIAM A JR WILCOSKY, KAREN
163-CVT	SCHNEIDER, PATRICIA JOYCE MCGUIRE
165-CVT	DENSMORE PROPERTY MANAGEMENT, LLC
166-CVT	BUCKNER, HERBERT SCOTT & BUCKNER, JULIE AHLSTEDT
172-CVT	GUIDOTTI, ANTHONY V JR GUIDOTTI, VANNESSA RENAE
177-CVT	LOVOY, JASON
178-CVT	BOYD, KENNETH & BOYD, ELISABETH G
179-CVT	LOVOY, JASON
182-CVT	DARUDA, MICHAEL DAVID

ID NUMBER	OWNER NAME
185-CVT	CLARRIDGE, DAVID
185-CVT	LEACH, MICHAEL KING, JENNIFER
191-CVT	COLEMAN, THOMAS L., JR.
194-CVT	SMITH, MATTHEW A SMITH, LESLEY
198-CVT	HICKMON, TROY W. & RILANCHARD, COURTNEY L
199-CVT	DENSMORE PROPERTY MANAGEMENT, LLC
199A-CVT	CITY OF BALL GROUND, GEORGIA
125-CVD	COLLIS, STEVEN & COLLIS, JOANN &.
125-CVD	GWENS, BILLY M.
127-CVD	SPRIGGS, TERRY
133-CVD	HARRIS, BARRY T. & HARRIS, CHRISTY M.
139-CVD	SALLER, CARL A.
141-CVD	HOLCOMB, ERIC M. & HOLCOMB, TRACEY M
146-CVD	CANTRELL, GENEVA LYNN & CANTRELL, DAVID
149-CVD	KING, JOSHUA G & KING, JESSICA C
152-CVD	LANE, KIMBERLEY G & LANE, MICHAEL C
157-CVD	STARAY, JOHN DOUGLAS
164-CVD	SMITH, EDWARD L. JR.
164-CVDIR	STEVENS, RUTH
170-CVDIR	ADAMS, CAROL S.
176-CVDIR	KENNEMUR, STEVEN PAUL
170-CVD	CLARRIDGE, WILLIAM
171-CVD	MCHAN, CARL MARK
175-CVD	SMITH, NICHOLAS B & BOM, ALEXANDRA S.
182-CVD	FOWLER, STEVEN FOWLER, CHRISTINA
188-CVD	BOHRMANN, JOHN G & BOHRMANN, ROX F
194-CVD	DELONG, MICHAEL C. & DELONG, LYNN V.
195-CVD	POPHAM, AMANDA R.
205-CVD	GANTZ, KEVIN K. & GANTZ, CINDY K.
211-CVD	STANFORD, JULIA N.
211-CVD	WISEMAN, JIMMY R & WISEMAN, BETTY I
214-CVD	CORRAO, RICHARD E. & ANNE L.
215-CVD	HOMILLER, SANDRA
217-CVD	TILLMAN, MICHAEL W.
226-CVD	ELLIS, MICHAEL S. & ELLIS, JANICE M.
226-CVD	HALL, GEORGE E
232-CVD	WEBB, DAN G.
238-CVD	WILKERSON, CLIFTON
229-CVD	BRADBERRY, JEREMIAH L.
235-CVD	FLEMING, ASHLEY & CRANEY, BRIAN S
241-CVD	LUNA, ZACHARY & BETH
15-BGR	REED, FRANKLIN J & HEATHER R
960-BGR	DOLAN, SHAWN JOSEPH & DOLAN, JAIME LYNN
970-BGR	COVIN, ERIC J
4620-FR	HOLCOMB, JIMMY LAMAR JR. & HOLCOMB, AMANDA
4650-FR	WHEELER, JOHN BRANDON WHEELER, EVELYN
209-FT	BURNS, RAY A.
251-FT	SMITHWICK, MICHAEL & SMITHWICK, SHARRON
265-FT	GOSS, TINA



STOP CONTROLLED INTERSECTION ANTICIPATED AT BALL GROUND BYPASS AND SR 372 WITH STOP CONTROL ON BYPASS AND FREE FLOWING ACCESS ON SR 372. FURTHER ANALYSIS AND GDOT APPROVAL OF INTERSECTION IS PENDING.

LANE CONFIGURATION HAS BEEN SHOWN FOR SOME ALTERNATIVES BUT OMITTED FOR OTHERS FOR CLARITY OF DRAWING. OTHER ALTERNATIVES WILL BE SIMILAR TO WHAT IS SHOWN.

ROUNDABOUTS ARE ANTICIPATED AT THE INTERSECTION OF BALL GROUND BYPASS AND VALLEY STREET AS WELL AS BALL GROUND BYPASS AND BALL GROUD HIGHWAY. FURTHER ANALYSIS AND GDOT APPROVAL OF INTERSECTION IS PENDING.

NOTE: PROPOSED LAYOUT AND REQUIRED RIGHT OF WAY ARE CONCEPTUAL AND SUBJECT TO CHANGE. FUNDING HAS NOT BEEN IDENTIFIED FOR THIS PROJECT. THIS LAYOUT IS BEING PROVIDED FOR PUBLIC INPUT ONLY. AS FUNDING IS IDENTIFIED, ALTERNATIVES MAY BE MODIFIED OR ADDED. FURTHER STUDIES AND PUBLIC INPUT WILL BE NEEDED BEFORE PREFERRED ALTERNATIVE IS CHOSEN.

LEGEND

- EXISTING PROPERTY LINE
- WETLAND
- WETLAND, OPEN WATER AND STREAM BUFFERS
- POTENTIALLY HISTORICALLY ELIGIBLE
- EPHEMERAL CHANNEL
- INTERMITTENT STREAM
- PERENNIAL STREAM
- OPEN WATER
- RESIDENCES (APPROXIMATE)
- APPROX. REQUIRED RIGHT OF WAY (COLOR CORRESPONDS TO ASSOCIATED ALIGNMENT)
- POTENTIAL DISPLACEMENT (INSIDE COLOR(S) ASSOCIATED WITH ALIGNMENT)
- POTENTIAL STORMWATER POND (SWP)
- POTENTIAL DRAINAGE OUTFALL

ALTERNATIVES LAYOUT
BALL GROUND TRUCK BYPASS
P.I. NO. 0002525

CHEROKEE COUNTY, GEORGIA
JANUARY 2021

vhb

SCALE IN FEET
0 200 400 800

BALL GROUND TRUCK BYPASS ALTERNATIVES ANALYSIS MATRIX (Estimated Impacts & Costs)							
RFQ 2018-048, Cherokee County P.I. No. 0002525							December 2020
Alternative No.	A	A-2	B	B-C	C	C-D	D
Displacements							
Residential	4	2	0	2	1	0	0
Commercial	0	0	0	0	0	0	0
Church	0	0	0	0	0	0	0
Other	0	0	0	0	0	0	0
Proximity of proposed roadway to residences							
less than 25'	3	1	0	1	0	0	0
less than 50'	6	3	0	2	1	0	0
less than 100'	10	7	3	5	4	3	3
less than 200'	12	11	9	11	10	5	6
less than 300'	17	16	11	13	13	13	14
less than 400'	20	20	19	17	15	29	29
less than 500'	22	24	22	23	17	33	34
Neighborhood Impacts							
Neighborhoods impacted	1	1	0	0	0	0	0
Required Right of Way							
Required R/W Area (acres)	40	40	43	44	47	72	76
Wetlands and Waters Impacts							
Wetland Impact Area (acres)	0.00	0.00	1.36	1.36	0.08	0.82	0.96
Open Water (Pond) Impact Area (acres)	0.00	0.00	0.00	0.00	0.14	0.00	0.00
Stream Impact Length (feet)	632	650	1026	704	413	1874	2067
Stream buffers (acres)	0.77	0.80	1.41	0.71	0.31	2.13	2.40
Historical properties impacts							
Historical properties impacted (each)	4	2	2	6	6	3	3
Severity of impacts	Adverse/Moderate	Not Adverse	Adverse/Low	Adverse/Severe	Adverse/Severe	Adverse/Low	Not Adverse
Section 4f	Yes	No	Yes	Yes	Yes	No	No
Roadway Lengths (miles)							
Bypass Length (SR 5 BU to SR 372)	1.28	1.32	1.47	1.73	1.81	2.30	2.30
Comparative Travel Length Along Bypass and SR 372 (SR 5 BU to SR 372 at Hawkins Farm Lane/Preserve Parkway	2.02	2.00	2.08	2.08	2.16	2.41	2.41
Cost							
Construction	$18,690,000	$17,720,000	$16,980,000	$21,930,000	$22,040,000	$21,950,000	$26,120,000
Right of Way	$4,941,000	$4,610,000	$4,235,000	$4,655,000	$4,500,000	$5,122,000	$5,575,000
Utilities	$2,300,000	$2,300,000	$2,000,000	$2,600,000	$2,600,000	$2,500,000	$2,500,000
Mitigation	$561,000	$578,000	$1,389,000	$1,178,000	$377,000	$1,910,000	$2,153,000
TOTAL COST	**$26,492,000**	**$25,208,000**	**$24,604,000**	**$30,363,000**	**$29,517,000**	**$31,482,000**	**$36,348,000**

CONCEPT LAYOUT
BALL GROUND TRUCK BYPASS
P.I. NO. 0002525
PREFERRED ALTERNATIVE

CHEROKEE COUNTY, GEORGIA

MAY 2021

vhb

SCALE IN FEET

0 100 200 400

LEGEND

- EXISTING PROPERTY LINE
- WETLAND
- WETLAND, OPEN WATER AND STREAM BUFFERS
- POTENTIALLY HISTORICALLY ELIGIBLE
- EPHEMERAL CHANNEL
- INTERMITTENT STREAM
- PERENNIAL STREAM
- OPEN WATER
- RESIDENCES (APPROXIMATE)
- APPROX. REQUIRED RIGHT OF WAY
- APPROX. REQUIRED RIGHT OF WAY & LIMIT OF ACCESS
- APPROX. PERMANENT EASEMENT
- POTENTIAL STORMWATER POND
- POTENTIAL DRAINAGE OUTFALL

NOTE: PROPOSED LAYOUT AND REQUIRED RIGHT OF WAY ARE CONCEPTUAL AND SUBJECT TO CHANGE. FUNDING HAS NOT BEEN IDENTIFIED FOR THIS PROJECT. THIS LAYOUT IS BEING PROVIDED FOR PUBLIC INPUT ONLY. AS FUNDING IS IDENTIFIED, ALTERNATIVES MAY BE MODIFIED OR ADDED. FURTHER STUDIES AND PUBLIC INPUT WILL BE NEEDED BEFORE PREFERRED ALTERNATIVE IS CHOSEN.

CONCEPT LAYOUT
BALL GROUND TRUCK BYPASS
P.I. NO. 0002525
PREFERRED ALTERNATIVE

CHEROKEE COUNTY, GEORGIA

MAY 2021

vhb

SHEET 1 OF 4

LEGEND

- EXISTING PROPERTY LINE
- WETLAND
- WETLAND, OPEN WATER AND STREAM BUFFERS
- POTENTIALLY HISTORICALLY ELIGIBLE
- EPHEMERAL CHANNEL
- INTERMITTENT STREAM
- PERENNIAL STREAM
- OPEN WATER
- RESIDENCES (APPROXIMATE)
- APPROX. REQUIRED RIGHT OF WAY
- APPROX. REQUIRED RIGHT OF WAY & LIMIT OF ACCESS
- APPROX. PERMANENT EASEMENT
- POTENTIAL STORMWATER POND (SWP)
- POTENTIAL DRAINAGE OUTFALL

BEGIN PROJECT
PI NO. 0002525

I-575

HOWELL BRIDGE ROAD/ S.R. 5

EXISTING R/W

REQ'D R/W

10' SHARED USE PATH

100+00

105+00

110+00

115+00

BALL GROUND HWY/ S.R. 5

VALLEY ST

GEORGIA NORTHEASTERN RAILROAD (GNRR)

N/F BG CORNER LLC

N/F DEWAR JOHNSON LLC

N/F AMERICAN PETRO INC

N/F BG MEDICAL PARK I, LLC

N/F CHEROKEE COUNTY DEV AUTH % MELISSA LINDH CPA CFO

N/F EDWARDS, BARBARA JONES

N/F EDWARDS, BARBARA ANN

N/F MOUNTAIN EXPRESS OIL COMPANY

N/F WAFFLE HOUSE INC

N/F VALLEY STATION, LLC

N/F CITY OF BALL GROUND

N/F J L SPEARS PROPERTIES LLC

AT GRADE RAILROAD CROSSING

6.5' PAVED SHOULDER

BLA

REQ'D R/W & L/A

N/F SOUTHERN SKY DEVELOPMENT, LLC C/O DOUG CAGLE

N/F M & A CAPITAL PARTNERS LLC

MATCHLINE SEE SHEET 2

N

SCALE IN FEET

0 200 400 800

CONCEPT LAYOUT
BALL GROUND TRUCK BYPASS
P.I. NO. 0002525
PREFERRED ALTERNATIVE

CHEROKEE COUNTY, GEORGIA

MAY 2021

vhb

CHEROKEE COUNTY

SHEET 2 OF 4

BRIDGE NORTHRIDGE ROAD OVER BALL GROUND BYPASS

NORTHRIDGE RD

DENNY HILL ROAD

CHEROKEE VILLAGE CT

EXISTING R/W

REQ'D R/W & L/A

BLA

6.5' PAVED SHOULDER

SWP

WATCHLINE SEE SHEET 1

WATCHLINE SEE SHEET 3

115+00

120+00

125+00

130+00

135+00

140+00

145+00

N/F COVINGTON, MICHAEL D & ELLA L

N/F COVINGTON, DAVID P & KENNETH & MICHAEL

N/F COVINGTON, MYRTLE

N/F SOUTHERN SKY DEVELOPMENT, LLC C/O DOUG CAGLE

N/F COVINGTON, DAVID P

N/F PAYNE, JOEL L.

N/F COVINGTON, MICHAEL DWAYNE & COVINGTON, DAVID PAUL & DARRYL

N/F BUCKNER, HERBERT SCOTT & BUCKNER, J ULIE AHLSTEDT

N/F DENSMORE PROPERTY MANAGEMENT, LLC

N/F GUIDOTTI, ANTHONY W JR GUIDOTTY, VANNESSA RENAE

N/F JORDY, JASON

N/F BOYD, KENNETH & BOYD, ELISABETH G

N/F DARUDA, MICHAEL DAVID

N/F CLARISSE, DAVID

N/F COLEMAN, THOMAS L., JR.

N/F LEACH, MICHAEL KING, JENNIFER

N/F SMITH, MATTHEW & SMITH, LESLEY

N/F CLAYTON, JAMES LEONARD

N/F CITY OF BALL GROUND, GEORGIA

N/F HICKMON, TROY W. & BLANCHARD, COURTNEY L.

N/F MURPHY, KIRK D. & MURPHY, KAREN B

N/F MURPHY, HELEEN E.

N/F W & A CAPITAL PARTNERS LLC

N/F GEORGIA POWER COMPANY BIN 10151

SCALE IN FEET

0 200 400 800

N/F FARRIBA, JAMES

N/F COVINGTON, MICHAEL DWAYNE & COVINGTON, VID PAUL & DARRYL

N/F BUCKNER, HERBERT SCOTT & BUCKNER, J ULIE AHLSTEDT

N/F DENSMORE PROPERTY MANAGEMENT, LLC

N/F GUIDOTTI, ANTHONY W JR GUIDOTTI, VANNESSA RENAE

N/F JORDY, JASON

N/F BOYD, KENNETH & BOYD, ELISABETH G

N/F JORDY, JASON

N/F CLARISSE, DAVID

N/F DARUDA, MICHAEL DAVID

N/F COLEMAN, THOMAS L., JR.

N/F LEACH, MICHAEL KING, JENNIFER

N/F SMITH, MATTHEW & SMITH, LESLEY

N/F CITY OF BALL GROUND, GEORGIA

N/F DENSMORE PROPERTY MANAGEMENT, LLC

N/F HICKMON, TROY W. & BLANCHARD, COURTNEY L.

N/F MURPHY, KIRK D. & MURPHY, KAREN B

N/F MURPHY, HELEEN E.

N/F FARRIBA, JOSEPH S. & KENNETH C. FARRIBA, ALAN W.

N/F STEPHENS, CHRIS

N/F RAY, KENNETH

N/F LAVALL, KATHERINE H.

N/F STEPHENS, ALTON M. & STEPHENS, BRENDA J

N/F KELLEY, RONNIE KELLEY, DEBBIE

N/F STEPHENS, AIMEE KRISTIN STEPHENS, CHRIS

N/F DODD, SHIRLEY W.

N/F BLACK,

N/F KELLEY, RONNIE & KELLEY, DEBBIE

N/F WHEELER, JOHN BRANDON WHEELER, EVELYN

N/F GOSS, TINA

N/F SMITHWICK, MICHAEL & SMITHWICK, SHARRON

N/F HOLCOMB, JIMMY LAMAR JR. & HOLCOMB, AMANDA

N/F BURNS, RAY A.

N/F EDWARDS, BROOKE C/O EDWARDS, BROOKE MRS

N/F SMITH, RICHARD F SMITH, JANET

N/F BROOKS, JACK E. SHELIA B

N/F EDWARDS, J. KENN

REQ'D R/W & L/A

EXIST. R/W

SWP

6.5' PAVED SHOULDER

165+00

160+00

155+00

150+00

145+00

140+00

CHEROKEE VILLAGE CT

FLATBOTTOM RD

MATCHLINE SEE SHEET 2

MATCHLINE SEE SHEET 4

SCALE IN FEET

0 200 400 800

N

CONCEPT LAYOUT
BALL GROUND TRUCK BYPASS
P.I. NO. 0002525
PREFERRED ALTERNATIVE

CHEROKEE COUNTY, GEORGIA

MAY 2021

vhb

CHEROKEE COUNTY

SHEET 3 OF 4

CONCEPT LAYOUT
BALL GROUND TRUCK BYPASS
P.I. NO. 0002525
PREFERRED ALTERNATIVE

CHEROKEE COUNTY, GEORGIA

MAY 2021

vhb

CHEROKEE COUNTY

SHEET 4 OF 4

SCALE IN FEET

0 200 400 800

N

N/F MARTINEZ, JENNIFER J. & MARTINEZ, CY E

N/F GILMER ROAD INVESTMENTS LLC

N/F PURCELL, JOHN C. & PURCELL, WANDA K.

EXISTING R/W

END PROJECT PI NO. 0002525

N/F DEWRELL, GENELLA L. DEWRELL, WILLIAM (BILL) E.

N/F WILSON, JOHN H. JR.

N/F COX, EVELYN

RED'D R/W

N/F BLACKWELL, STEVEN L.

N/F BROOKS, KERRI L.

N/F OWEN, JASON S. & OWEN, GINGER M

175+00

N/F WOODALL, STACY L.

6.5' PAVED SHOULDER

N/F EDWARDS, JACK

EXISTING R/W

BALL GROUND RD/ S.R. 372

170+00

ELA

SWP

MATCHLINE SEE SHEET 3

FLATBOTTOM RD

N/F HAMIL, MARLENE

N/F BRANHAM, TYLER

EXISTING R/W

165+00

RED'D R/W & L/A

N/F GOSS, TINA

N/F WHEELER, JOHN BRANDON WHEELER, EVELYN

N/F SMITHWICK, MICHAEL & SMITHWICK, SHARRON

N/F EDWARDS, JACK

N/F HOLCOMB, JIMMY LAMAR JR. & HOLCOMB, AMANDA

EXIST. R/W

N/F BURNS, RAY A.

N/F KELLEY, RONNIE & KELLEY, DEBBIE

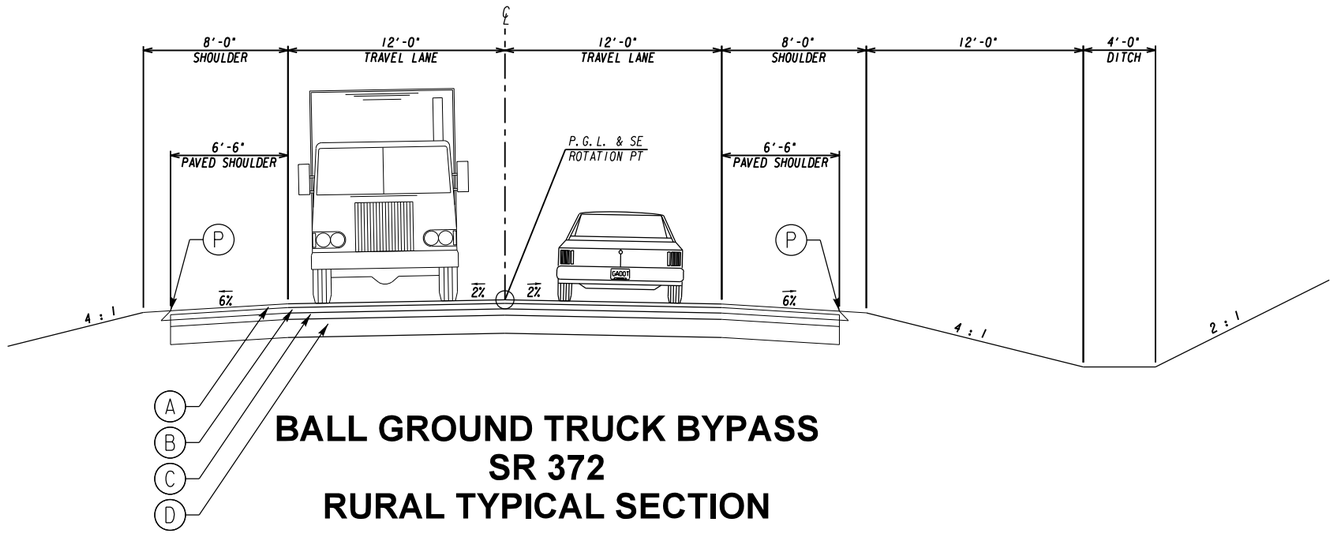
N/F EDWARDS, BROOKE C/O EDWARDS, BROOKE MRS

FLATBOTTOM TRAIL

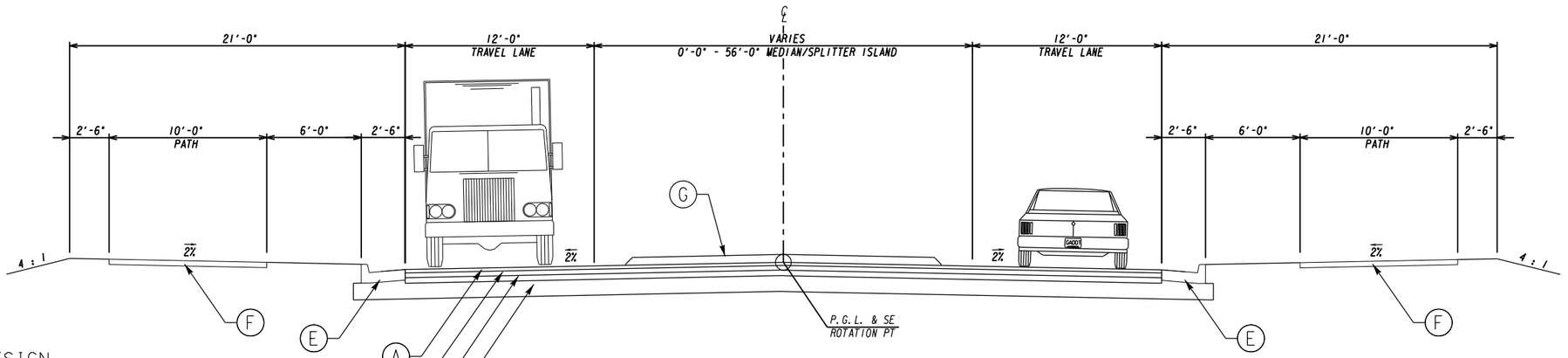
N/F EDWARDS, IRELAND & EDWARDS, ELENETTE A.

N/F FARRIBA, JOSEPH S. & KENNETH C. FARRIBA, ALAN W.

N/F EDWARDS, J. KENNETH



BALL GROUND TRUCK BYPASS
SR 372
RURAL TYPICAL SECTION



BALL GROUND TRUCK BYPASS
SR 372
HOWELL BRIDGE RD
SR 5 BU
URBAN TYPICAL SECTION
ROUNDABOUT APPROACH W/ SPLITTER ISLAND

PAVEMENT DESIGN

- (A) 165 LB/SY RECYCLED ASPHALTIC CONCRETE 12.5 MM SUPERPAVE, GP 2 ONLY, INCL BITUM MATL & H LIME
- (B) 220 LB/SY RECYCLED ASPHALTIC CONCRETE 19 MM SUPERPAVE, GP 1 OR 2 INCL BITUM MATL & H LIME
- (C) 770 LB/SY RECYCLED ASPHALTIC CONCRETE 25 MM SUPERPAVE, GP 1 OR 2, INCL BITUM MATL & H LIME
- (D) 12" GRADED AGGREGATE BASE
- (E) GA DOT STD 9032B, TYPE 2 CONCRETE CURB & GUTTER, 8" X 30"
- (F) CONCRETE SIDEWALK, 6 IN
- (G) RAISED CONC MEDIAN W/ TP 7 FACE
- (P) PAVEMENT EDGE TREATMENT GDOT DET P-7

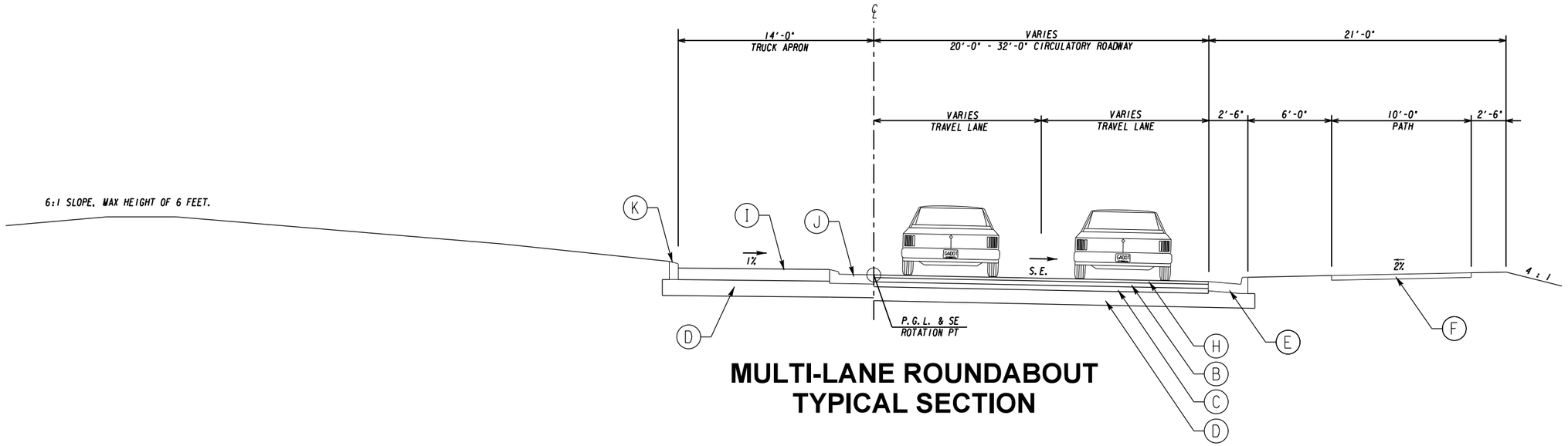
CONCEPTUAL TYPICAL SECTION
BALL GROUND BYPASS
P.I. NO. 0002525

CHEROKEE COUNTY, GEORGIA
MAY 2021

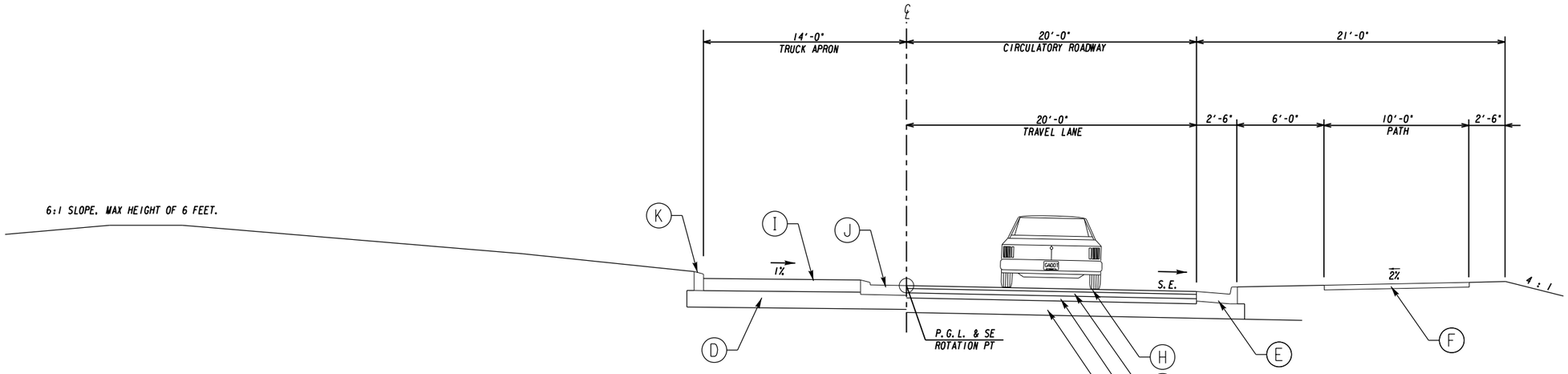
Georgia Department of Transportation

vhb

NTS
SHEET 1 OF 3



MULTI-LANE ROUNDABOUT TYPICAL SECTION



SINGLE LANE ROUNDABOUT TYPICAL SECTION

PAVEMENT DESIGN

- (A) 165 LB/SY RECYCLED ASPHALTIC CONCRETE 12.5 MM SUPERPAVE, GP 2 ONLY, INCL BITUM MATL & H LIME
- (B) 220 LB/SY RECYCLED ASPHALTIC CONCRETE 19 MM SUPERPAVE, GP 1 OR 2 INCL BITUM MATL & H LIME
- (C) 770 LB/SY RECYCLED ASPHALTIC CONCRETE 25 MM SUPERPAVE, GP 1 OR 2, INCL BITUM MATL & H LIME
- (D) 12" GRADED AGGREGATE BASE
- (E) GA DOT STD 9032B, TYPE 2 CONCRETE CURB & GUTTER, 8" X 30"
- (F) CONCRETE SIDEWALK, 6 IN
- (G) RAISED CONC MEDIAN W/ TP 7 FACE
- (H) 165 LB/SY RECYCLED ASPHALTIC CONCRETE 12.5 MM SUPERPAVE, GP 2 ONLY, INCL POLYMER-MODIFIED BITUM MATL & H LIME
- (I) 10" THICK PLAIN PC CONCRETE PAVEMENT, STAMPED, COLORED & SEALED FEDERAL COLOR CODE 31136 INSIGNIA RED
- (J) GA DOT STD 9032B, TYPE 9 CONCRETE CURB & GUTTER
- (K) GA DOT STD 9032B, 4 INCH CONCRETE HEADER CURB, TYPE 9
- (P) PAVEMENT EDGE TREATMENT GDOT DET P-7

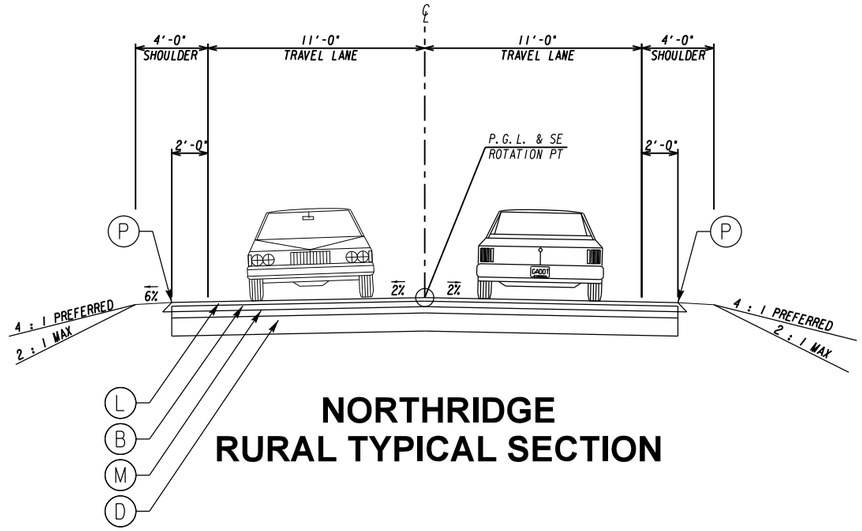
CONCEPTUAL TYPICAL SECTION
BALL GROUND BYPASS
P.I. NO. 0002525

CHEROKEE COUNTY, GEORGIA
MAY 2021

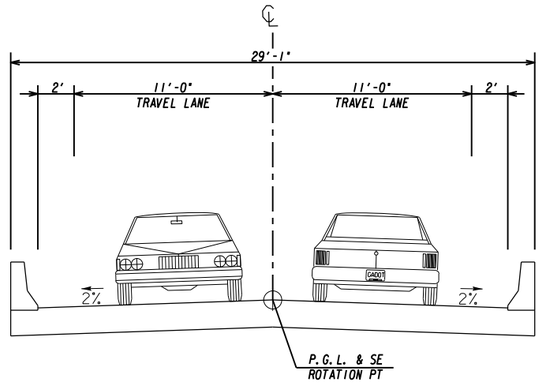
Georgia Department of Transportation

vhb

NTS
SHEET
2 OF 3



NORTHRIDGE
RURAL TYPICAL SECTION



NORTHRIDGE RD
BRIDGE TYPICAL SECTION

PAVEMENT DESIGN

- (L) 135 LB/SY RECYCLED ASPHALTIC CONCRETE 9.5 MM SUPERPAVE, TP 2, BLEND 1, INCL BITUM MATL & H LIME
- (B) 220 LB/SY RECYCLED ASPHALTIC CONCRETE 19 MM SUPERPAVE, GP 1 OR 2 INCL BITUM MATL & H LIME
- (M) 330 LB/SY RECYCLED ASPHALTIC CONCRETE 25 MM SUPERPAVE, GP 1 OR 2, INCL BITUM MATL & H LIME
- (D) 12" GRADED AGGREGATE BASE
- (E) GA DOT STD 9032B, TYPE 2 CONCRETE CURB & GUTTER, 8" X 30"
- (F) CONCRETE SIDEWALK, 6 IN
- (G) RAISED CONC MEDIAN W/ TP 7 FACE
- (P) PAVEMENT EDGE TREATMENT GDOT DET P-7

CONCEPTUAL TYPICAL SECTION
BALL GROUND BYPASS
P.I. NO. 0002525

CHEROKEE COUNTY, GEORGIA
MAY 2021

Georgia Department of Transportation

vhb

NTS
SHEET
3 OF 3

AASHTOWare Cost Estimate Alternative B

DATE: 5/26/2021
CONCEPT: 0002525

LINE	ITEM	UNITS	DESCRIPTION	QUANTITY	PRICE	AMOUNT
0005	150-1000	TRAFFIC CONTROL -	LS	1	$600,000.00	$600,000.00
0010	153-1300	FIELD ENGINEERS OFFICE TP 3	EA	1	$88,902.38	$88,902.38
0015	201-1500	CLEARING & GRUBBING -	LS	1	$1,300,000.00	$1,300,000.00
0020	205-0001	UNCLASS EXCAV	CY	410000	$7.00	$2,870,000.00
0025	205-0210	EXCAVATION - ROCK	CY	30000	$27.00	$810,000.00
0030	206-0002	BORROW EXCAV, INCL MATL	CY	40000	$10.00	$400,000.00
0035	207-0203	FOUND BKFILL MATL, TP II	CY	170	$81.41	$13,839.24
0040	310-1101	GR AGGR BASE CRS, INCL MATL	TN	29847	$33.91	$1,012,246.98
0045	318-3000	AGGR SURF CRS	TN	220	$37.53	$8,256.89
0050	402-1812	RECYCLED ASPH CONC LEVELING, INCL BITUM MATL & H LIME	TN	900	$108.00	$97,198.89
0055	402-3102	RECYCLED ASPH CONC 9.5 MM SUPERPAVE, TYPE II, BLEND 1, INCL BITUM MATL & H LIME	TN	19	$125.41	$2,382.82
0060	402-3121	RECYCLED ASPH CONC 25 MM SUPERPAVE, GP 1 OR 2, INCL BITUM MATL & H LIME	TN	16479	$81.87	$1,349,100.30
0065	402-3130	RECYCLED ASPH CONC 12.5 MM SUPERPAVE, GP 2 ONLY, INCL BITUM MATL & H LIME	TN	3294	$95.91	$315,912.82
0070	402-3190	RECYCLED ASPH CONC 19 MM SUPERPAVE, GP 1 OR 2,INCL BITUM MATL & H LIME	TN	4739	$94.52	$447,948.67
0075	402-4510	RECYCLED ASPH CONC 12.5 MM SUPERPAVE, GP 2 ONLY, INCL POLYMER-MODIFIED BITUM MATL	TN	285	$110.58	$31,515.49
0080	413-0750	TACK COAT	GL	4323	$0.25	$1,091.38
0085	432-5010	MILL ASPH CONC PVMT, VARIABLE DEPTH	SY	560	$14.79	$8,280.62
0090	433-1000	REINF CONC APPROACH SLAB	SY	187	$239.49	$44,784.76
0095	439-0022	PLAIN PC CONC PVMT, CL 3 CONC, 10 INCH THK	SY	880	$135.00	$118,800.00
0100	441-0016	DRIVEWAY CONCRETE, 6 IN TK	SY	100	$69.93	$6,993.47
0105	441-0018	DRIVEWAY CONCRETE, 8 IN TK	SY	80	$62.23	$4,978.27
0110	441-0106	CONC SIDEWALK, 6 IN	SY	3979	$45.00	$179,055.00
0115	441-0108	CONC SIDEWALK, 8 IN	SY	352	$79.92	$28,130.36
0120	441-0754	CONCRETE MEDIAN, 7 1/2 IN	SY	2404	$76.00	$182,704.00
0125	441-4030	CONC VALLEY GUTTER, 8 IN	SY	88	$67.00	$5,896.00
0130	441-5025	CONCRETE HEADER CURB, 4 IN, TP 9	LF	528	$16.00	$8,448.00
0135	441-6222	CONC CURB & GUTTER, 8 IN X 30 IN, TP 2	LF	4148	$20.71	$85,916.53
0140	441-6745	CONC CURB & GUTTER, 8 IN X 32 IN, TP 9	LF	654	$27.00	$17,658.00
0145	446-1100	PVMT REINF FABRIC STRIPS, TP 2, 18 INCH WIDTH	LF	1609	$9.41	$15,139.34
0150	456-2015	INDENTATION RUMBLE STRIPS - GROUND-IN-PLACE (SKIP)	GLM	2	$1,355.01	$2,710.02
0155	500-3002	CLASS AA CONCRETE	CY	73	$1,500.00	$109,500.00
0160	500-3800	CLASS A CONCRETE, INCL REINF STEEL	CY	9	$1,579.09	$14,211.83
0165	511-1000	BAR REINF STEEL	LB	5064	$1.43	$7,241.22
0170	550-1180	STORM DRAIN PIPE, 18 IN, H 1-10	LF	2000	$46.10	$92,196.72
0175	550-1240	STORM DRAIN PIPE, 24 IN, H 1-10	LF	400	$58.65	$23,460.95
0180	550-1480	STORM DRAIN PIPE, 48 IN, H 1-10	LF	180	$142.00	$25,560.00
0185	550-2180	SIDE DRAIN PIPE, 18 IN, H 1-10	LF	258	$48.81	$12,593.54
0190	550-4118	FLARED END SECTION 18 IN, SIDE DRAIN	EA	10	$660.33	$6,603.35
0195	550-4218	FLARED END SECTION 18 IN, STORM DRAIN	EA	2	$969.14	$1,938.29
0200	550-4224	FLARED END SECTION 24 IN, STORM DRAIN	EA	1	$1,092.64	$1,092.64
0205	634-1200	RIGHT OF WAY MARKERS	EA	120	$138.78	$16,653.27
0210	641-1100	GUARDRAIL, TP T	LF	84	$100.71	$8,459.92
0215	641-1200	GUARDRAIL, TP W	LF	3097	$22.48	$69,620.28
0220	641-5001	GUARDRAIL ANCHORAGE, TP 1	EA	10	$1,397.67	$13,976.70
0225	641-5015	GUARDRAIL TERMINAL, TP 12A, 31 IN, TANGENT, ENERGY-ABSORBINC	EA	10	$3,209.11	$32,091.09
0230	643-1152	CH LK FENCE, ZC COAT, 6 FT, 9 GA	LF	4500	$37.00	$166,500.00
0235	643-8200	BARRIER FENCE (ORANGE), 4 FT	LF	1600	$2.53	$4,048.75
0240	668-1100	CATCH BASIN, GP 1	EA	20	$3,735.75	$74,715.08
0245	668-2100	DROP INLET, GP 1	EA	15	$2,798.36	$41,975.40
0250	668-4300	STORM SEWER MANHOLE, TP 1	EA	4	$3,021.54	$12,086.16
0255	163-0232	TEMPORARY GRASSING	AC	71	$540.43	$38,370.85
0260	163-0240	MULCH	TN	1211	$46.53	$56,349.61
0265	163-0301	CONSTRUCT AND REMOVE CONSTRUCTION EXITS	EA	8	$2,181.17	$17,449.33
0270	163-0503	CONSTRUCT AND REMOVE SILT CONTROL GATE, TP 3	EA	8	$650.78	$5,206.28
0275	163-0520	CONSTRUCT AND REMOVE TEMPORARY PIPE SLOPE DRAIN	LF	1950	$17.92	$34,934.41
0280	163-0527	CONSTRUCT AND REMOVE RIP RAP CHECK DAMS, STONE PLAIN RIP RAP/SAND BAGS	EA	95	$456.02	$43,321.99

0285	163-0531	CONSTRUCT AND REMOVE SEDIMENT BASIN, TP 1, STA NO -	EA	1	$26,342.32	$26,342.32
0290	163-0531	CONSTRUCT AND REMOVE SEDIMENT BASIN, TP 1, STA NO -	EA	1	$26,342.32	$26,342.32
0295	163-0531	CONSTRUCT AND REMOVE SEDIMENT BASIN, TP 1, STA NO -	EA	1	$26,342.32	$26,342.32
0300	163-0531	CONSTRUCT AND REMOVE SEDIMENT BASIN, TP 1, STA NO -	EA	1	$26,342.32	$26,342.32
0305	163-0531	CONSTRUCT AND REMOVE SEDIMENT BASIN, TP 1, STA NO -	EA	1	$26,342.32	$26,342.32
0310	163-0531	CONSTRUCT AND REMOVE SEDIMENT BASIN, TP 1, STA NO -	EA	1	$26,342.32	$26,342.32
0315	163-0531	CONSTRUCT AND REMOVE SEDIMENT BASIN, TP 1, STA NO -	EA	1	$26,342.32	$26,342.32
0320	163-0540	CONSTRUCT AND REMOVE RETROFIT, STA NO -	EA	1	$2,000.00	$2,000.00
0325	163-0540	CONSTRUCT AND REMOVE RETROFIT, STA NO -	EA	1	$2,000.00	$2,000.00
0330	163-0540	CONSTRUCT AND REMOVE RETROFIT, STA NO -	EA	1	$2,000.00	$2,000.00
0335	163-0540	CONSTRUCT AND REMOVE RETROFIT, STA NO -	EA	1	$2,000.00	$2,000.00
0340	163-0540	CONSTRUCT AND REMOVE RETROFIT, STA NO -	EA	1	$2,000.00	$2,000.00
0345	163-0540	CONSTRUCT AND REMOVE RETROFIT, STA NO -	EA	1	$2,000.00	$2,000.00
0350	163-0540	CONSTRUCT AND REMOVE RETROFIT, STA NO -	EA	1	$2,000.00	$2,000.00
0355	163-0541	CONSTRUCT AND REMOVE ROCK FILTER DAMS	EA	6	$1,290.38	$7,742.31
0360	163-0550	CONSTRUCT AND REMOVE INLET SEDIMENT TRAP	EA	35	$232.91	$8,151.80
0365	165-0010	MAINTENANCE OF TEMPORARY SILT FENCE, TP A	LF	4055	$0.55	$2,211.96
0370	165-0030	MAINTENANCE OF TEMPORARY SILT FENCE, TP C	LF	8110	$0.78	$6,333.91
0375	165-0041	MAINTENANCE OF CHECK DAMS - ALL TYPES	LF	1425	$2.60	$3,698.15
0380	165-0060	MAINTENANCE OF TEMPORARY SEDIMENT BASIN, STA NO -	EA	1	$2,978.33	$2,978.33
0385	165-0060	MAINTENANCE OF TEMPORARY SEDIMENT BASIN, STA NO -	EA	1	$2,978.33	$2,978.33
0390	165-0060	MAINTENANCE OF TEMPORARY SEDIMENT BASIN, STA NO -	EA	1	$2,978.33	$2,978.33
0395	165-0060	MAINTENANCE OF TEMPORARY SEDIMENT BASIN, STA NO -	EA	1	$2,978.33	$2,978.33
0400	165-0060	MAINTENANCE OF TEMPORARY SEDIMENT BASIN, STA NO -	EA	1	$2,978.33	$2,978.33
0405	165-0060	MAINTENANCE OF TEMPORARY SEDIMENT BASIN, STA NO -	EA	1	$2,978.33	$2,978.33
0410	165-0060	MAINTENANCE OF TEMPORARY SEDIMENT BASIN, STA NO -	EA	1	$2,978.33	$2,978.33
0415	165-0087	MAINTENANCE OF SILT CONTROL GATE, TP 3	EA	8	$197.44	$1,579.55
0420	165-0095	MAINTENANCE OF RETROFIT, STA NO -	EA	1	$2,000.00	$2,000.00
0425	165-0095	MAINTENANCE OF RETROFIT, STA NO -	EA	1	$2,000.00	$2,000.00
0430	165-0095	MAINTENANCE OF RETROFIT, STA NO -	EA	1	$2,000.00	$2,000.00
0435	165-0095	MAINTENANCE OF RETROFIT, STA NO -	EA	1	$2,000.00	$2,000.00
0440	165-0095	MAINTENANCE OF RETROFIT, STA NO -	EA	1	$2,000.00	$2,000.00
0445	165-0095	MAINTENANCE OF RETROFIT, STA NO -	EA	1	$2,000.00	$2,000.00
0450	165-0095	MAINTENANCE OF RETROFIT, STA NO -	EA	1	$2,000.00	$2,000.00
0455	165-0101	MAINTENANCE OF CONSTRUCTION EXIT	EA	8	$933.01	$7,464.10
0460	165-0105	MAINTENANCE OF INLET SEDIMENT TRAP	EA	35	$132.88	$4,650.72
0465	165-0110	MAINTENANCE OF ROCK FILTER DAM	EA	6	$465.83	$2,794.95
0470	165-0310	MAINTENANCE OF CONSTRUCTION EXIT TIRE WASH AREA (PER EACH)	EA	4	$802.63	$3,210.53
0475	167-1000	WATER QUALITY MONITORING AND SAMPLING	EA	6	$275.48	$1,652.86
0480	167-1500	WATER QUALITY INSPECTIONS	MO	24	$1,602.25	$38,454.07
0485	171-0010	TEMPORARY SILT FENCE, TYPE A	LF	4055	$2.85	$11,570.82
0490	171-0030	TEMPORARY SILT FENCE, TYPE C	LF	8110	$4.75	$38,532.23
0495	441-0204	PLAIN CONC DITCH PAVING, 4 IN	SY	1350	$50.04	$67,553.84
0500	603-2181	STN DUMPED RIP RAP, TP 3, 18 IN	SY	800	$60.34	$48,274.36
0505	603-2182	STN DUMPED RIP RAP, TP 3, 24 IN	SY	300	$61.00	$18,300.00
0510	603-7000	PLASTIC FILTER FABRIC	SY	1100	$4.91	$5,395.62
0515	700-6910	PERMANENT GRASSING	AC	36	$995.15	$35,825.36
0520	700-7000	AGRICULTURAL LIME	TN	72	$100.02	$7,201.44
0525	700-8000	FERTILIZER MIXED GRADE	TN	25	$720.04	$18,000.92
0530	700-8100	FERTILIZER NITROGEN CONTENT	LB	1800	$2.55	$4,589.86
0535	716-2000	EROSION CONTROL MATS, SLOPES	SY	15800	$1.64	$25,875.34
0540	169-0015	DRY DETENTION BASIN, NO. -	EA	1	$60,000.00	$60,000.00
0545	169-0015	DRY DETENTION BASIN, NO. -	EA	1	$60,000.00	$60,000.00
0550	169-0015	DRY DETENTION BASIN, NO. -	EA	1	$60,000.00	$60,000.00
0555	169-0015	DRY DETENTION BASIN, NO. -	EA	1	$60,000.00	$60,000.00
0560	169-0015	DRY DETENTION BASIN, NO. -	EA	1	$60,000.00	$60,000.00
0565	169-0015	DRY DETENTION BASIN, NO. -	EA	1	$60,000.00	$60,000.00
0570	169-0015	DRY DETENTION BASIN, NO. -	EA	1	$60,000.00	$60,000.00
0575	169-0016	DRY DETENTION BASIN MAINTENANCE	EA	1	$10,000.00	$10,000.00
0580	169-0016	DRY DETENTION BASIN MAINTENANCE	EA	1	$10,000.00	$10,000.00
0585	169-0016	DRY DETENTION BASIN MAINTENANCE	EA	1	$10,000.00	$10,000.00

0590	169-0016	DRY DETENTION BASIN MAINTENANCE	EA	1	$10,000.00	$10,000.00
0595	169-0016	DRY DETENTION BASIN MAINTENANCE	EA	1	$10,000.00	$10,000.00
0600	169-0016	DRY DETENTION BASIN MAINTENANCE	EA	1	$10,000.00	$10,000.00
0605	169-0016	DRY DETENTION BASIN MAINTENANCE	EA	1	$10,000.00	$10,000.00
0610	429-1000	RUMBLE STRIPS	EA	12	$812.00	$9,744.00
0615	500-3104	CLASS A CONCRETE, SIGNS	CY	28	$691.00	$19,348.00
0620	632-0003	CHANGEABLE MESSAGE SIGN, PORTABLE, TYPE 3	EA	6	$5,940.93	$35,645.57
0625	636-1033	HIGHWAY SIGNS, TP 1 MATL, REFL SHEETING, TP 9	SF	375	$19.50	$7,312.66
0630	636-1036	HIGHWAY SIGNS, TP 1 MATL, REFL SHEETING, TP 11	SF	490	$21.29	$10,432.84
0635	636-1041	HIGHWAY SIGNS, TP 2 MATL, REFL SHEETING, TP 9	SF	360	$21.66	$7,796.02
0640	636-1077	HIGHWAY SIGNS, ALUM EXTRUDED PANELS, REFL SHEETING, TP 9	SF	372	$28.00	$10,416.00
0645	636-2070	GALV STEEL POSTS, TP 7	LF	1203	$8.76	$10,535.91
0650	636-3000	GALV STEEL STR SHAPE POST	LB	11870	$6.00	$71,220.00
0655	636-9094	PILING IN PLACE, SIGNS, STEEL H, HP 12 X 53	LF	70	$150.00	$10,500.00
0660	653-0110	THERMOPLASTIC PVMT MARKING, ARROW, TP 1	EA	3	$81.94	$245.82
0665	653-0120	THERMOPLASTIC PVMT MARKING, ARROW, TP 2	EA	14	$87.48	$1,224.73
0670	653-0210	THERMOPLASTIC PVMT MARKING, WORD, TP 1	EA	2	$142.16	$284.33
0675	653-0296	THERMOPLASTIC PVMT MARKING, WORD, TP 15	EA	8	$207.00	$1,656.00
0680	653-1704	THERMOPLASTIC SOLID TRAF STRIPE, 24 IN, WHITE	LF	200	$7.71	$1,541.77
0685	653-1804	THERMOPLASTIC SOLID TRAF STRIPE, 8 IN, WHITE	LF	4800	$1.93	$9,260.98
0690	653-1810	THERMOPLASTIC SOLID TRAF STRIPE, 10 IN, WHITE	LF	200	$3.30	$660.00
0695	653-2501	THERMOPLASTIC SOLID TRAF STRIPE, 5 IN, WHITE	LM	5	$776.00	$3,880.00
0700	653-2502	THERMOPLASTIC SOLID TRAF STRIPE, 5 IN, YELLOW	LM	3	$783.00	$2,349.00
0705	653-3501	THERMOPLASTIC SKIP TRAF STRIPE, 5 IN, WHITE	GLF	1300	$0.50	$650.00
0710	653-4830	THERMOPLASTIC SKIP TRAF STRIPE, 18 IN, WHITE	GLF	170	$2.30	$391.00
0715	653-6004	THERMOPLASTIC TRAF STRIPING, WHITE	SY	600	$4.85	$2,911.89
0720	653-6006	THERMOPLASTIC TRAF STRIPING, YELLOW	SY	100	$4.51	$451.25
0725	654-1001	RAISED PVMT MARKERS TP 1	EA	485	$4.31	$2,090.12
0730	654-1002	RAISED PVMT MARKERS TP 2	EA	256	$4.35	$1,114.18
0735	654-1003	RAISED PVMT MARKERS TP 3	EA	150	$3.88	$581.57
0740	657-1085	PREFORMED PLASTIC SOLID PVMT MKG, 8 IN, CONTRAST (BLACK-WHITE), TP PE	LF	700	$7.60	$5,318.47
0745	657-6085	PREFORMED PLASTIC SOLID PVMT MKG, 8 IN, CONTRAST (BLACK-YELLOW), TP PE	LF	700	$7.39	$5,175.74
0750	543-9000	CONSTRUCTION OF BRIDGE COMPLETE -	LS	1	$1,600,000.00	$1,600,000.00
0755	607-1000	MORTAR RUBBLE MASONRY	CY	132	$750.00	$99,000.00
0760	515-2020	GALV STEEL PIPE HANDRAIL, 2 IN, ROUND	LF	400	$45.00	$18,000.00
0765	005-0002	INSTALLATION OF LIGHTING FACILITIES	LS	1	$150,000.00	$150,000.00
0770	005-0002	INSTALLATION OF LIGHTING FACILITIES	LS	1	$100,000.00	$100,000.00
0775	009-2000	LANDSCAPING WITH IRRIGATION	LS	1	$30,000.00	$30,000.00
					TOTAL	**$14,310,094.99**

Georgia Department of Transportation

Interoffice Memo

FILE

PI NUMBER	0002525	PROJECT DESCRIPTION	Ball Ground Truck Bypass FM SR 5 BU @ Howell Bridge Rd To TO SR 327 SO/Ball Ground
OFFICE	Program Delivery		
DATE	Monday, May 24, 2021		

From: Kimberly Nesbitt, State Program Delivery Administrator

To: Erik Rohde, P.E., State Project Review Engineer
via email Mailbox: CostEstimatesandUpdates@dot.ga.gov

Subject: **REVISIONS TO PROGRAMMED COSTS**

Project Manager:	John Hightower
Management Let Date:	Long Range
Management Right of Way Date:	Long Range

Cost Estimate Review Iteration

Date of Submittal #1	
Date of Submittal #2	
Date of Submittal #3	

Summary of Programmed Costs and Proposed Revised Costs:

Estimate Type	Cost Estimate Amounts (T-Pro Without Inflation)	Last Estimate Date	Revised Cost Estimate
CONSTRUCTION			$18,105,592.00
RIGHT OF WAY			$4,339,000.00
UTILITIES			$2,269,080.00

Explanation for Cost Change and Contingency Justification:

Contingency of 18% used for concept design phase with project type new construction.

Attachments:

1. Detailed Cost Estimate Printout from GDOT 411.

Georgia Department of Transportation

Interoffice Memo

Design Phase Leader Validation of Final QC/QA for Construction Cost Estimate Used In This Revision to Programmed Costs:

Consultant Company or GDOT Design Office:	VHB
Printed Name:	Matthew Thompson, PE
Title:	Project Engineer
Signature:	
Date:	4/8/21

FOR PROJECTS WITH A LOCAL SPONSOR	
If the project has a local sponsor, the project manager should ensure that the local authority completes the following validation indicating that it has reviewed the construction cost estimate and whether it is in concurrence with the construction costs presented.	
Please select the appropriate validation below upon review of the cost estimate: ☑ I acknowledge that I have reviewed the project construction cost estimate and concur with the costs presented. ☐ I acknowledge that I have reviewed the project construction cost estimate but do not concur with the costs presented.	
Please provide an explanation for non-concurrence.	
Local Authority Name and Title:	JAMES WILCUS SPLOST ROADWAY PROJECT MANAGER
Local Authority Signature:	

Georgia Department of Transportation

Interoffice Memo

Date:	1/13/2021

Georgia Department of Transportation

Interoffice Memo

Cost Estimate Worksheet:

CONSTRUCTION COST ESTIMATE (Required base estimate entered from CES and should not include E&I). →	**A**	$ 14,310,094.99
ENGINEERING AND INSPECTION (The default E&I percentage is 5.0%, but may be adjusted per project scope.) →	**D**	$ 715,504.75

Construction Cost	E&I Percentage	E&I Cost
B	C	D = B x C
$ 14,310,094.99	5%	$ 715,504.75

CONTINGENCY (Refer to the Risk and Contingencies Table included in GDOT Policy 3A-9 Cost Estimating Purpose) →	**I**	$ 2,704,607.95

Construction Cost	E&I Cost	Construction + E&I	Contingency Percentage	Contingency Cost
E	F	G = E + F	H	I = G x H
$ 14,310,094.99	$ 715,504.75	$ 15,025,599.74	18%	$ 2,704,607.95

ASPHALT FUEL PRICE ADJUSTMENT (Leave blank if not applicable) →	**Q**	$ 375,384.30

Date	May 2021
Regular Unleaded	$2.699/ GAL
Diesel	$2.947/ GAL
Liquid AC	$480.00/ TON

Current Asphalt Fuel Index Prices can be found at the link below:

http://www.dot.ga.gov/PS/Materials/AsphaltFuelIndex

		Tons	Percentage of Asphaltic Concrete	Tons of Asphaltic Concrete	Total Monthly Tonnage of Asphalt Cement (TMT)	Monthly Asphalt Cement Price month project let (APL)	Max. Cap	Monthly Asphalt Cement Price month placed (APM)	Price Adjustment (PA)
Liquid AC	Description	J	K	L = J x K	M = Sum of Columns L, T & W	N	O	P = (N x O)+N	Q = [((P - N) / N)] x M x N
	Leveling	900.00 TN	5.00%	45.00 TN	1303.42 TN	$480.00/ TON	60%	$ 768.00	$ 375,384.30
	Patching								
	9.5 mm SP								
	12.5 OGFC								
	12.5 PEM								
	12.5 mm SP	3579.00 TN	5.00%	178.95 TN					
	19 mm SP	4739.00 TN	5.00%	236.95 TN					
	25 mm SP	16479.00 TN	5.00%	823.95 TN					
Bituminous Tack Coat		Tack Coat	GL/TN	Tons					
	Description	R	S	T = R/S					
	Tack Coat	4323.00 GL	232.8234 GL/TN	18.57 TN					
Bituminous Tack Coat (Surface Treatment)		SY	GL/SY	TN					
	Description	U	V	W = (U x V) / (232.8234 GL/TN)					
	Single Surface Treatment		0.20 Gl/SY						
	Double Surface Treatment		0.44 Gl/SY						
	Triple Surface Treatment		0.71 Gl/SY						

CONSTRUCTION TOTAL COST →	**X = A+D+I+Q**	$ 18,105,592.00
RIGHT OF WAY COST →	**Y**	$ 4,339,000.00
UTILITIES COST (Provided by Utility Office) →	**Z = Sum of Reimbursable Costs**	$ 2,269,080.00

Utility Owner	Reimbursable Cost	Utility Owner	Reimbursable Cost
GA Power	$ 721,000.00		
Cherokee County Water & Sewer Authority	$ 143,280.00		
City of Ball Ground Water	$ 162,800.00		
City of Ball Ground Sewer	$ 60,000.00		
AGL	$ 280,000.00		
Georgia Northeastern Railroad Company	$ 902,000.00		

GEORGIA DEPARTMENT OF TRANSPORTATION
PRELIMINARY ROW COST ESTIMATE SUMMARY

Date: 1/12/2021 Project: Ball Ground Bypass
Revised: County: Cherokee
PI: 0002525
Description: Ball Ground Bypass - Preferred Alternate "B"
Project Termini: Ball Ground Highway to Flatbottom Road
Existing ROW: None
Parcels: 32 Required ROW: Varies

Land and Improvements		$3,545,625.00
Proximity Damage	*$80,000.00*	
Consequential Damage	*$200,000.00*	
Cost to Cures	*$40,000.00*	
Trade Fixtures	*$25,000.00*	
Improvements	*$50,000.00*	
Valuation Services		$186,875.00
Legal Services		$209,100.00
Relocation		$96,000.00
Demolition		$31,500.00
Administrative		$269,000.00
TOTAL ESTIMATED COSTS		$4,338,100.00
TOTAL ESTIMATED COSTS (ROUNDED)		***$4,339,000.00***

Prepared By: Benjamin M. Garland Jr. 1/12/2021
Print Name Signature Date

Cost Estimation Supervisor : Valencia Carter *Valencia Carter* *6/24/2021*
Print Name Signature Date

NOTE: Superviser is only attesting that the estimate was completed using the correct information provided for the the project. The Supervisor is not attesting to property values or the accuracy of the market value estimations provided in this report. No Market Appreciation is included in this Preliminary Cost Estimate.

Comments: Comparable Sales and Parcel Breakdown in the Appraiser Workfile and can be provided upon request. Damages and site improvement impacts were estimated with the best available information from conceptual plans and inspection.

The appraiser has supported the valuations and current market value ranges. However, due to current market trends and values, the estimate might slightly increase to depict values towards the higher end of the range.

allsop

PI 0002525, Ball Ground Bypass - Environmental Mitigation Cost Estimate Summary		
Total Stream Mitigation Credits	Cost/Stream Credit (Etowah River Watershed)	Total Stream Mitigation Costs
11289.60	$70.00	$790,272.00
Total Wetland Mitigation Credits	Cost/Wetland Credit (Etowah River Watershed)	Total Stream Mitigation Costs
10.88	$55,000.00	$598,400.00
	Total Environmental Mitigation Cost:	**$1,388,672.00**

Qualitative Worksheet Summary For Wetland Adverse Impacts						
Worksheet Number	**Name of Wetland**	**Wetland Type**	**Acres of Impact (ac.)**	**Impact Duration**	**2018 Credits**	**Grandfathered Credits**
1	Alternative	Riverine/Lacustrine Fringe Wetlands	1.36	Permanent/Reoccurring	1.36	10.88
2			0.00	Choose Duration	Credits Owed	Grandfathered Credits Owed
3			0.00	Choose Duration	Credits Owed	Grandfathered Credits Owed
4			0.00	Choose Duration	Credits Owed	Grandfathered Credits Owed
5			0.00	Choose Duration	Credits Owed	Grandfathered Credits Owed
6			0.00	Choose Duration	Credits Owed	Grandfathered Credits Owed
7			0.00	Choose Duration	Credits Owed	Grandfathered Credits Owed
8			0.00	Choose Duration	Credits Owed	Grandfathered Credits Owed
9			0.00	Choose Duration	Credits Owed	Grandfathered Credits Owed
10			0.00	Choose Duration	Credits Owed	Grandfathered Credits Owed

Summary of Credits Owed			
Wetland Type	**Acres of Impact (ac.)**	**2018 Credits**	**Grandfathered Credits**
Freshwater Tidal Wetlands	0.00	0.00	0.00
Saltwater Tidal Wetlands	0.00	0.00	0.00
Riverine/Lacustrine Fringe Wetlands	1.36	1.36	10.88
Slope Wetlands	0.00	0.00	0.00
Depressional/Flat Wetlands	0.00	0.00	0.00
Open Water/Ditch/Canal	0.00	0.00	0.00

Worksheet 1: Qualitative Worksheet for Wetland Adverse Impacts

Project Name:	Ball Ground Alternatives Analysis Mitigation
Impact Wetland Name:	Alternative
Acres of Impact (Acres):	1.36
Wetland Type:	Riverine/Lacustrine Fringe Wetlands
Date:	February 11, 2020

Impact Factors	**Index Description**	**Index Value**
1. Wetland Qualitative Functional Capacity Score (*WQFC*)	High	1.00
2. Impact Category Description (*Impact Category*)	Discharge of Fill	1.00
3. Product of WQFC and Impact (*WQFC Impact*) =		1.00
4. Duration of Impact (*Duration*)	Permanent/Reoccurring	1.00
5. Product of WQFC Impact and Duration (*Total WQFC Impact*) =		1.00
6. Product of Total WQFC Impact and Acres (***Total 2018 Wetland Credits Owed***) =		**1.36**
7. Conversion of Total 2018 Wetland Compensation to Grandfathered Credits (***Grandfathered Wetland Credits Owed***) =		**10.88**

Legend
Green Cells = User must manually input information.
Orange Cells = User must select the index choice from the drop-down list.
Grey Cells = The calculation of these cells is automated.

Qualitative Worksheet Summary For Stream Adverse Impacts						
Worksheet Number	**Name of Stream**	**Stream Type**	**Length of Impact (L.F.)**	**Impact Duration**	**2018 Credits**	**Grandfathered Credits**
1	Alternative B - IS/EC	Intermittent/Ephemeral Streams	508	Permanent/Reoccurring	305	3658
2	Alternative B - Perennial	Perennial Streams (greater than 3 square miles)	518	Permanent/Reoccurring	518	6216
3				Choose Duration	Credits Owed	Grandfathered Credits Owed
4				Choose Duration	Credits Owed	Grandfathered Credits Owed
5				Choose Duration	Credits Owed	Grandfathered Credits Owed
6				Choose Duration	Credits Owed	Grandfathered Credits Owed
7				Choose Duration	Credits Owed	Grandfathered Credits Owed
8				Choose Duration	Credits Owed	Grandfathered Credits Owed
9				Choose Duration	Credits Owed	Grandfathered Credits Owed
10				Choose Duration	Credits Owed	Grandfathered Credits Owed

Summary of Credits Owed			
Stream Type	**Length of Impact (L.F.)**	**2018 Credits**	**Grandfathered Credits**
Intermittent/Ephemeral Streams	508	**305**	**3658**
Perennial Streams (less than 3 square miles)			
Perennial Streams (greater than 3 square miles)	518	**518**	**6216**
Open Water/Ditch/Canal			

Worksheet 1: Qualitative Worksheet for Stream Adverse Impacts

Project Name:	Ball Ground Alternatives Analysis Mitigation Estimate
Impact Reach Name:	Alternative B - IS/EC
Linear Feet of Impact (*Feet*):	508
Stream Type:	Intermittent/Ephemeral Streams
Date:	February 22, 2020

Impact Factors	**Index Description**	**Index Value**
1. Stream Qualitative Functional Capacity Score (*SQFC*)	High	1.00
2. Type of Impact (*Impact*)	Discharge of Fill (Including Culverts)	1.00
3. Product of SQFC and Impact (*SQFC Impact*) =		1.00
4. Duration of Impact (*Duration*)	Permanent/Reoccurring	1.00
5. Product of SQFC Impact and Duration (*Total SQFC Impact*) =		1.00
6. Product of Total SQFC Impact and Linear Feet (***Total 2018 Stream Credits Owed***) =		**304.80**
7. Conversion of Total 2018 Stream Compensation to Grandfathered Credits (***Grandfathered Stream Credits Owed***) =		**3,657.60**

Legend
Green Cells = User must manually input information.
Orange Cells = User must select the index choice from the drop-down list.
Grey Cells = The calculation of these cells is automated.

Worksheet 2: Qualitative Worksheet for Stream Adverse Impacts

Project Name:	Ball Ground Alternatives Analysis Mitigation Estimate
Impact Reach Name:	Alternative B - Perennial
Linear Feet of Impact (*Feet*):	518
Stream Type:	Perennial Streams (greater than 3 square miles)
Date:	February 11, 2020

Impact Factors	**Index Description**	**Index Value**
1. Stream Qualitative Functional Capacity Score (*SQFC*)	High	1.00
2. Type of Impact (*Impact*)	Discharge of Fill (Including Culverts)	1.00
3. Product of SQFC and Impact (*SQFC Impact*) =		1.00
4. Duration of Impact (*Duration*)	Permanent/Reoccurring	1.00
5. Product of SQFC Impact and Duration (*Total SQFC Impact*) =		1.00
6. Product of Total SQFC Impact and Linear Feet (***Total 2018 Stream Credits Owed***) =		**518.00**
7. Conversion of Total 2018 Stream Compensation to Grandfathered Credits (***Grandfathered Stream Credits Owed***) =		**6,216.00**

Legend
Green Cells = User must manually input information.
Orange Cells = User must select the index choice from the drop-down list.
Grey Cells = The calculation of these cells is automated.

Ball Ground Alternatives Analysis

Stream Mitigation Worksheet: When applying under criterion 2(h), a multiplier of 1.1 or 1.2 will be placed on the number of stream credits needed to serve as mitigation for not addressing the post-development total suspended solids and stormwater runoff reduction and/or water quality protection components. These stream credits are calculated by first determining the number of stream credits required according to the State's Standard Operating Procedure, Calculation of Stream Buffer Credits. The applicant then calculates the number of stream credits with the multiplier of 1.1 or 1.2 for not addressing post-development total suspended solids and stormwater runoff reduction and/or water quality protection components. Lastly, the applicant calculates the difference between the two stream credit calculations. This difference is the amount of stream credits that must be purchased to offset not addressing post-development total suspended solids and stormwater runoff reduction and/or water quality protection components

ALTERNATIVE B

61524.14 ft^2 of impact X 0.046 credits per ft^2 X 2.5 factor for off-site = **7075.28**

7075.28 stream credits X 1.0 (in-basin multiplier) = **7075.28**

7075.28 stream credits X 1.2 (multiplier for hydrologic and water quality protection) = **8490.33**

8490.33 stream credits – **7075.28** stream credits = **1415.06**

Stream Credits = **1416** Required Stream Credits

Utility Conceptual Cost Estimate:

Project No:		Office:	**Duluth**
County	**Cherokee**	Date:	**December 7, 2020**
P.I.#	**0002525**		
Description:	***Ball Ground Truck Bypass***		

FROM Jason Walton, Utility Coordinator

TO GDOT

SUBJECT **CONCEPT UTILITY COST ESTIMATE**

A review of utilities located on the above referenced project has been conducted with a design concept. Listed below is a breakdown of the anticipated reimbursable and non-reimbursable cost.

Utility Owner		Reimbursable	Non-Reimbursable	Estimate Based on
Ga Power		$721,000.00	$42,000.00	Site Visit / Available Drawings
Amicalola EMC		$0.00	$40,000.00	Site Visit / Available Drawings
Ga Power Transmission	NC	$0.00	$0.00	Site Visit / Available Drawings
TDS Telecom		$0.00	$27,000.00	Site Visit / Available Drawings
CCWSA	**	$143,280.00	$0.00	Site Visit / Available Drawings
City of Ball Ground Water	**	$162,800.00	$0.00	Site Visit / Available Drawings
City of Ball Ground Sewer	**	$60,000.00	$0.00	Site Visit / Available Drawings
AGL		$280,000.00	$369,080.00	Site Visit / Available Drawings
Ellijay Telephone Company		$0.00	$50,400.00	Site Visit / Available Drawings
Windstream		$0.00	$42,720.00	Site Visit / Available Drawings
Total	100.00%	$1,367,080.00	$571,200.00	
Department Responsibility	100.00%	$1,367,080.00		
Local Sponsor Responsibility	0.00%	$0.00		PFA Dated N/A with N/A

** Indicates Potential Utility Aid Request from Local Gov't

Estimate is based on the best available information at the current stage, unforeseen prior rights information may be provided by the Utility Company at a later date that could cause some non-reimbursable costs to shift to the reimbursable cost column.

DEPARTMENT OF TRANSPORTATION
STATE OF GEORGIA

INTERDEPARTMENT CORRESPONDENCE

FILE: PI #0002525, Cherokee County

OFFICE: State Utilities Office

FROM: Jill Franks for: Patrick Allen, State Utilities Administrator

DATE: February 08, 2020

TO: Kimberly Nesbitt, State Program Delivery Administrator
Attn: John Hightower, Project Manager

SUBJECT: PRELIMINARY RAILROAD COST (CONCEPT ESTIMATE)

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

FACILITY OWNER	NON-REIMBURSABLE	REIMBURSABLE
Georgia Northeastern Railroad Company (GNRR)		
– P.E. review cost for at-grade railroad crossing	$0.00	$ 45,000.00- LOCAL
– Const. cost for at-grade railroad crossing	$0.00	$ 377,000.00- LOCAL
– P.E. review cost for warning devices	$0.00	$ 9,500.00- LOCAL
– Const. cost for warning devices including two temporary gates	$0.00	$ 525,000.00- LOCAL

Subtotal Reimbursable Railroad PE cost:	**$ 54,500.00**
Subtotal Reimbursable Railroad UTIL/CONSTR cost:	**$ 902,000.00**
Total Reimbursement Cost:	**$ 956,500.00**

Please note that this amount does not include other reimbursable utility costs that may be associated with this project. This project is funding by the LOCAL for PE and Utilities.

If you have any questions, please contact Jill Franks, (404) 631-1370, jfranks@dot.ga.gov or Teshome Yitateku, (404) 631-1072, tyitateku@dot.ga.gov.

PA:tty
cc: Marcela Coll, Utilities Preconstruction Manager
Angela Robinson, State Financial Management Administrator
Jun Birnkammer, District 6 Utilities Manager
Kevin Cowan, Utilities Railroad Crossing Manager

Concept Utility Report

Project Number: NA **District:** 6

County: Cherokee **Prepared By:** Jason Walton

P.I. #: 0002525 **Date:** December 7, 2020

Project Description: This project will provide a truck bypass between SR 5 and SR 372

The information provided Herein has been gathered from Georgia811 and/or field visits and serves as an estimate. Nothing contained in this report is to be used as a substitute for 1st submission or SUE.

Are SUE services recommended? Yes

Level: A and B

Public Interest Determination (PID): No Use

Is a separate utility funding phase recommended? No

Potential Project (Schedule/Budget) Impacts: Schedule impacts are possible due to poor cooperation of certain utilities. There could also be a large relocation cost if some of the Georgia Power and AGL facilities are not avoided. This could result in an impact to the budget.

Capital Improvement Projects (Utilities) Anticipated in the Area: Most likely there will be some to water and power.

Project Specific Recommendations for Avoidance/Mitigation: Avoid Ga Power MCM 1000 and switch cabinets if possible as well as 8" steel gas main.

Right of Way Coordination: Mandatory to minimize delays to the project.

Environmental Coordination: N/A

Additional Remarks: None

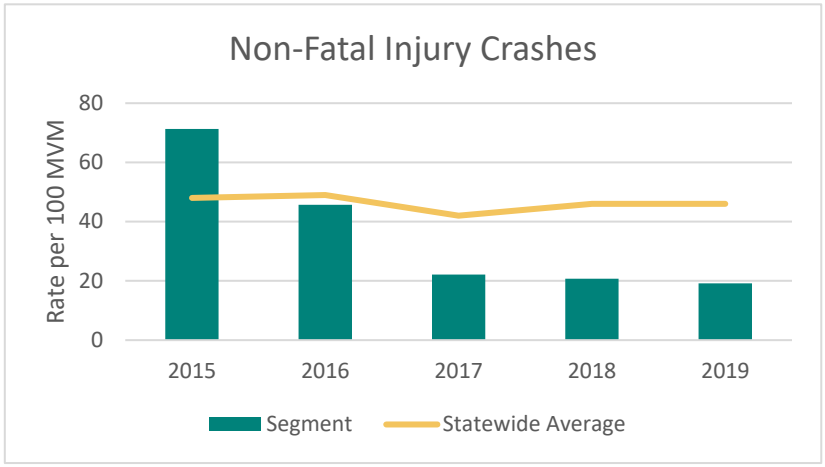
Utilities have facilities within the project limits.

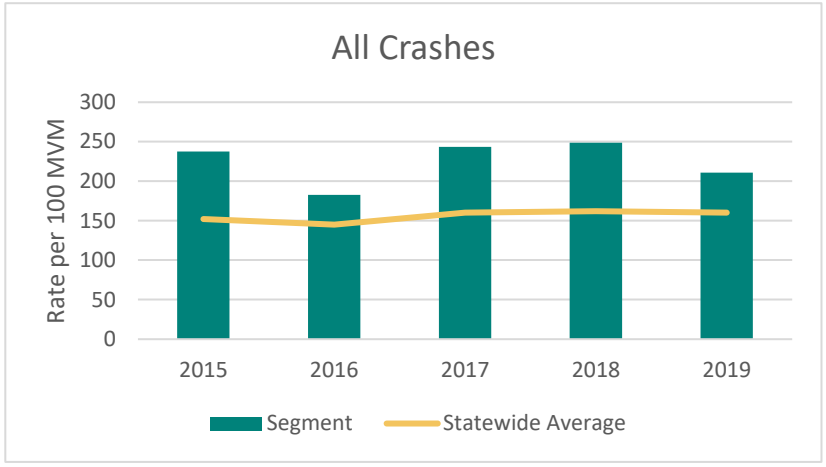
Utilities have been identified using Georgia811 and/or Filed visits.

Facility Owner	Facility Owner contact email address	Existing Facilities	General description of location	Facilities to avoid	Facilities retention recommended
Atlanta Gas Light	Chesleigh J. Charles, ccharles@southernco.com.	8" steel, 4" steel, 4" plastic, 2" plastic	Running along every road within project	8" steel main and 4" steel main	
Amicalola EMC		Overhead 3 phase primary	Ball Ground Rd and Flat Bottom Rd	None	
City of Ball Ground Water	Eric Wilmarth, Ewilmarth@cityofballground.com.	Water and Sewer mains	Ball Ground Rd, Flat Bottom Rd, Ball Ground Hwy, Howell Bridge Rd.	none	
Cherokee County Water	Rusty Moss, rusty.moss@ccwsa.com.	8" DIP, 8" PVC	8"PVC on S side of SR 372, 8" DIP on E side of Flat Bottom Rd	none	
Ellijay telephone company	Danny Marshall, dannym@ellijay.com.	Buried and aerial fiber/copper	Buried and aerial fiber/copper along Ball Ground Rd HWY 5 and Howell Bridge Rd/Wilhunt Rd	None	
Georgia Power	John Gay, JCGAY@southernco.com.	Overhead 3 phase primaries, buried 1000 MCM cable and buried street light cables. Multiple transformers and switch cabinets.	Aerial and buried primaries along Howell Bridge Rd/Wilhunt Rd, aerial primary along HWY 5, aerial primary along SR 372	Switch cabinets and the underground 1000MCM cable, 3 power poles on corner of Howell Bridge Rd/Wilhunt Rd at SR 5	
TDS Telecom		Buried fiber	Buried fiber along Howell Bridge Rd/Wilhunt Rd	None	
Windstream	Lisa Zingula, Lisa.Zingula@windstream.com.	Buried Fiber	Buried along HWY 5, the CSX railroad ROW and Howell Bridge Rd/Wilhunt Rd.	None	

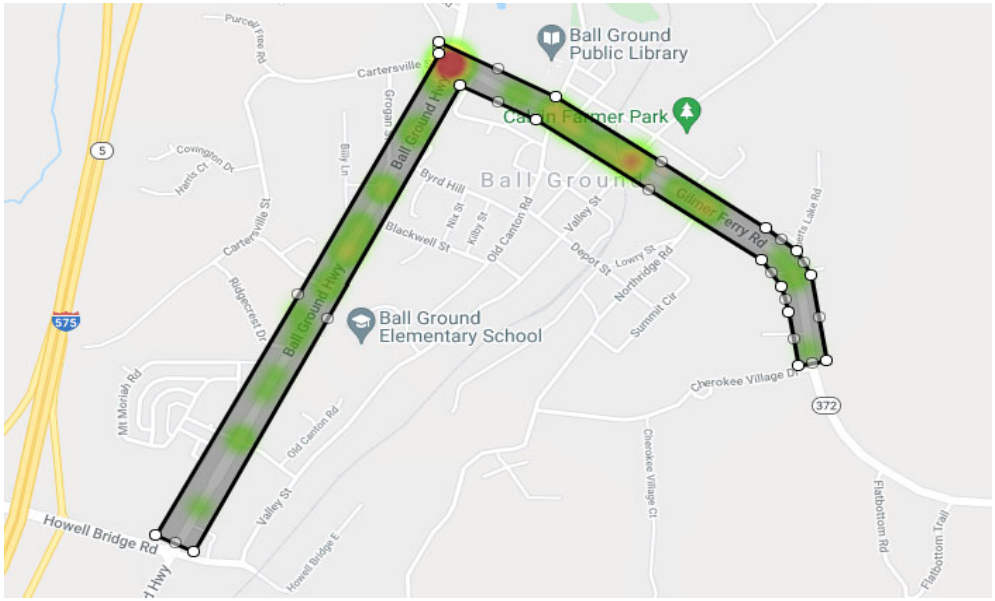
SR 372 Comparison to Statewide Averages

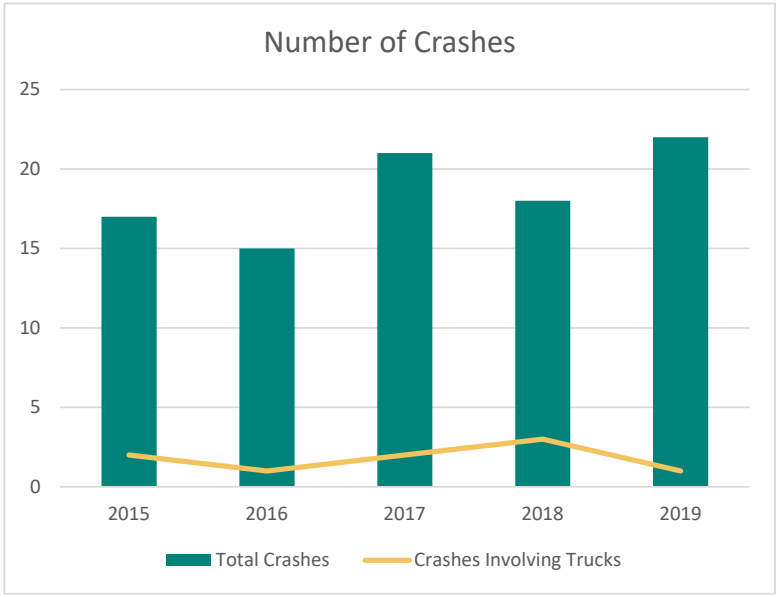
Rate Description		Year				
		2015	2016	2017	2018	2019
Fatal Crashes	Segment	0.00	0.00	0.00	0.00	0.00
	Statewide Average	2.13	2.42	2.13	2.00	1.91
Fatalities	Segment	0.00	0.00	0.00	0.00	0.00
	Statewide Average	2.42	2.74	2.37	2.18	2.27
Non-Fatal Injury	Segment	71	46	22	21	19
	Statewide Average	48	49	42	46	46
Non-Fatal Injuries	Segment	71	46	22	21	38
	Statewide Average	74	74	82	69	69
All Crashes	Segment	237	183	243	249	211
	Statewide Average	152	145	160	162	160





Crash Type	2015		2016		2017		2018		2019		2015-2019 Crashes	
Angle	4	24%	3	20%	4	19%	4	22%	2	9%	17	18%
Head On	1	6%	1	7%	1	5%	2	11%	2	9%	7	8%
Not A Collision with Motor Vehicle	3	18%	1	7%	4	19%	1	6%	5	23%	14	15%
Rear End	3	18%	7	47%	8	38%	5	28%	8	36%	31	33%
Sideswipe-Opposite Direction	1	6%	1	7%	0	0%	0	0%	2	9%	4	4%
Sideswipe-Same Direction	1	6%	2	13%	3	14%	2	11%	0	0%	8	9%
Other/Unknown	4	24%	0	0%	1	5%	4	22%	3	14%	12	13%
Total Crashes	**17**	**100%**	**15**	**100%**	**21**	**100%**	**18**	**100%**	**22**	**100%**	**93**	**100%**
Injury Crashes	5		2		2		1		1		11	
Injuries	6		2		2		1		2		13	
Fatal Crashes	0		0		0		0		0		0	
Fatalities	0		0		0		0		0		0	





Georgia Department of Transportation

Interoffice Memo

FILE: Cherokee County
P.I. # 0002525

DATE: August 15, 2019

FROM: Paul Tanner, State Transportation Planning Administrator

TO: Kimberly Nesbitt, State Program Delivery Administrator
Attention: Gretel Sims

SUBJECT: **Design Traffic Forecasts** for SR 372 SPUR FM SR 5BU@ HOWELL BR RD TO SR 372 SO/BALL GROUND

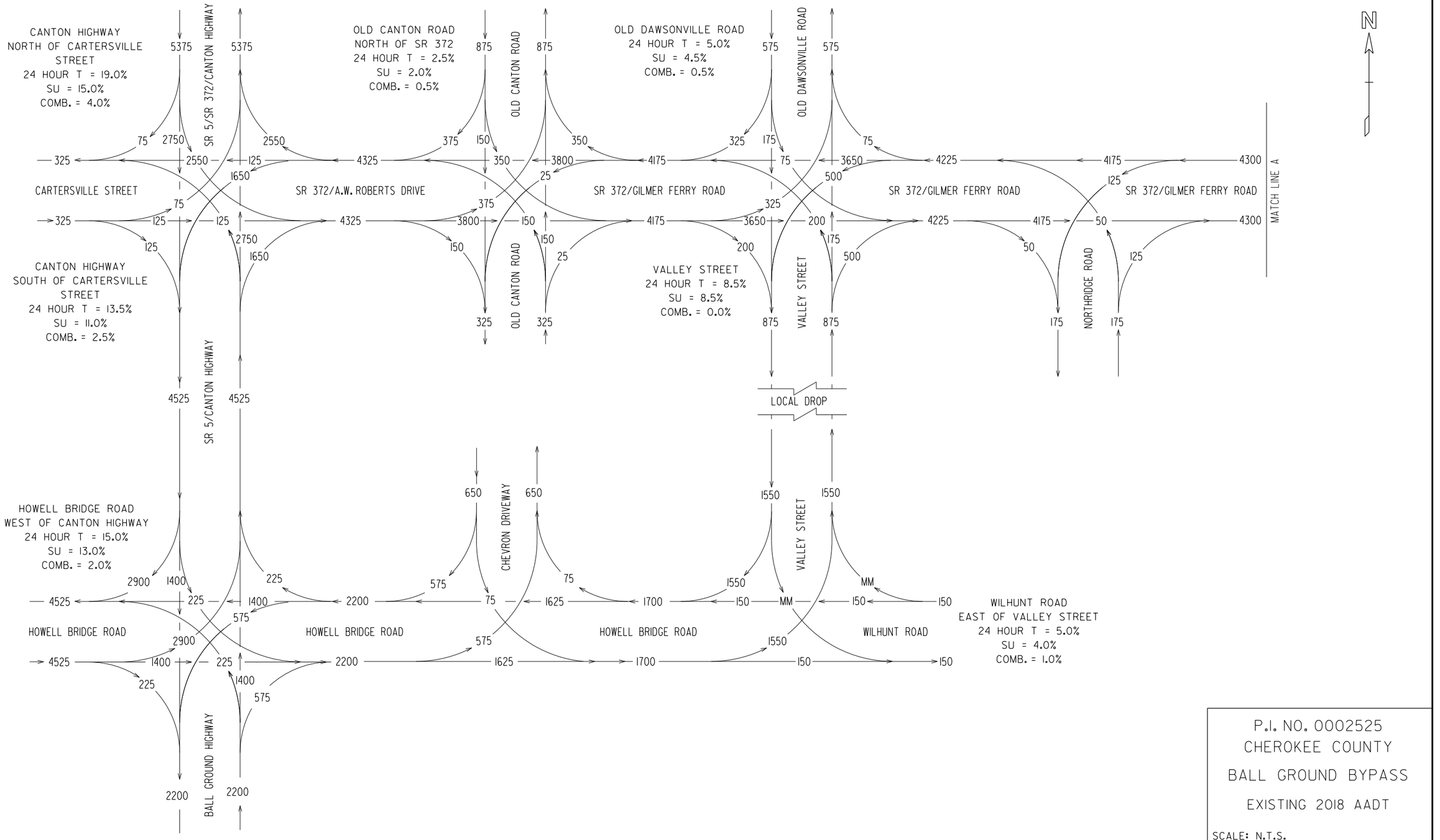
Per request, we have reviewed the consultant's design traffic forecasts for the above scoping project. Based on the information furnished, we find the design traffic forecasts to be satisfactory and are furnishing a **conditional approval**, as this project is currently in a scoping phase with multiple build alternatives. As the project progresses into the concept phase, and a preferred build alternative is identified, the design traffic forecasts should be revised with the preferred build alternative and resubmitted to the Office of Planning to seek a final approval to be included with the concept report.

The reviewed and approved design traffic forecasts for the above scoping project is attached in 0002525_10.pdf and 0002525_10.dgn.

If you have any questions concerning this information please contact Andre Washington at 404-631-1925.

Nithin Gomez
Gresham Smith
Design Traffic Review Consultant to GDOT
678-478-3350

RPT/NMG



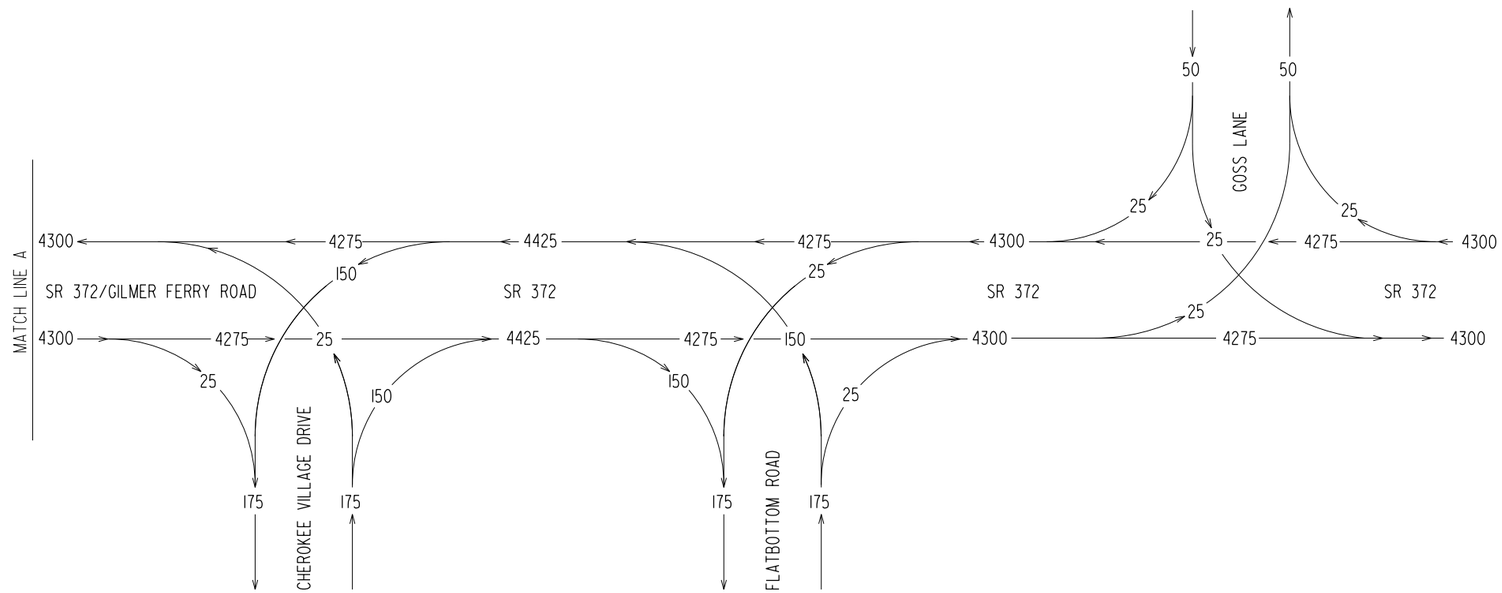
P.I. NO. 0002525
CHEROKEE COUNTY
BALL GROUND BYPASS
EXISTING 2018 AADT

SCALE: N.T.S.

REVISION DATES		

TRAFFIC DIAGRAM
BALL GROUND BYPASS
HOWELL BRIDGE RD TO BALL GROUND RD

CHECKED:	RLR	DATE: 02/26/19	DRAWING No.
BACKCHECKED:	WMG	DATE: 02/28/19	10-0001
CORRECTED:		DATE:	
VERIFIED:		DATE:	



SR 372
EAST OF GOSS LANE
24 HOUR T = 13.0%
SU = 8.5%
COMB. = 4.5%

N

P.I. NO. 0002525
CHEROKEE COUNTY
BALL GROUND BYPASS
EXISTING 2018 AADT

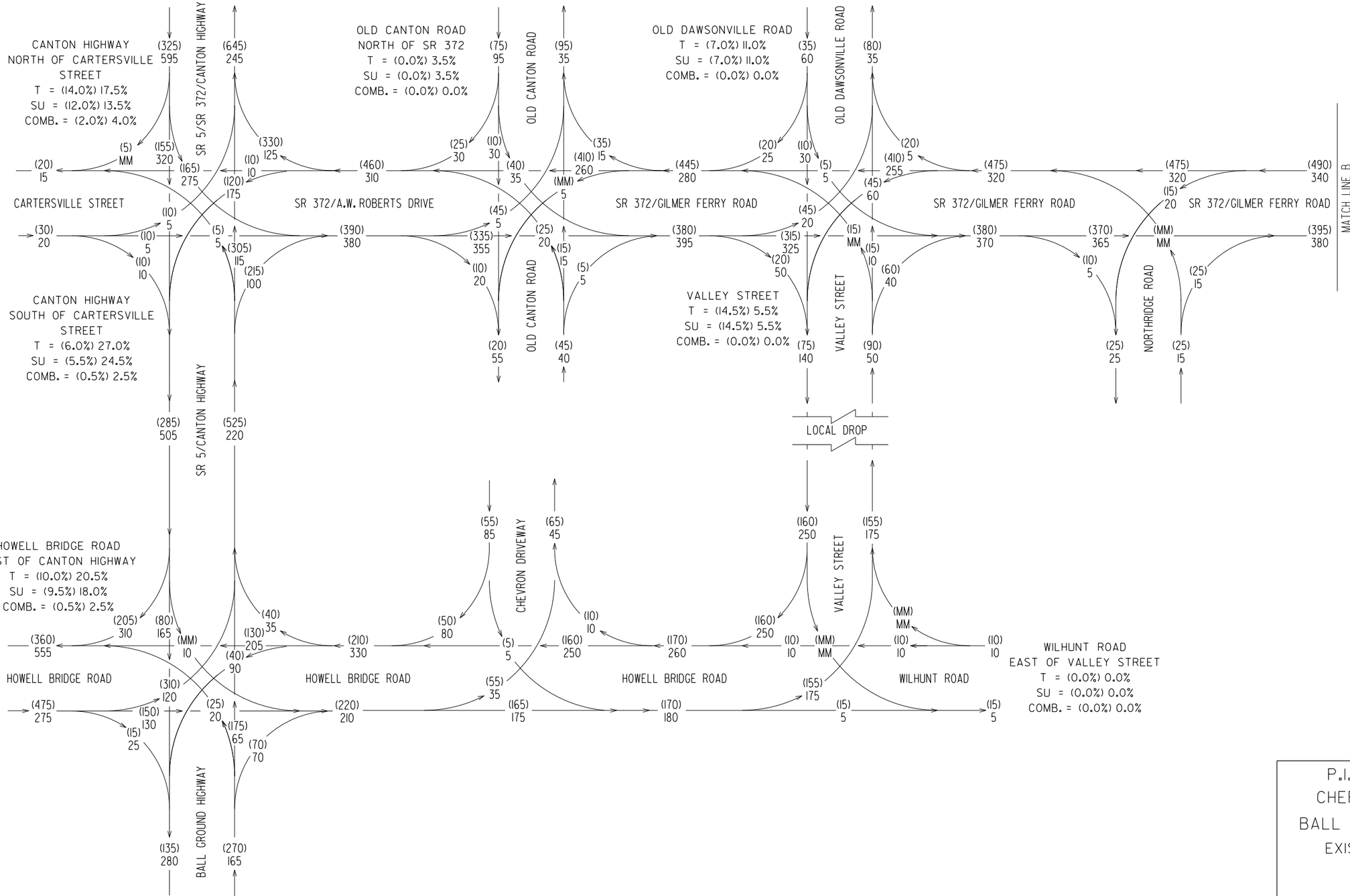
SCALE: N.T.S.

REVISION DATES

TRAFFIC DIAGRAM
BALL GROUND BYPASS
HOWELL BRIDGE RD TO BALL GROUND RD

CHECKED:	RLR	DATE: 02/26/19	DRAWING No.
BACKCHECKED:	MWG	DATE: 02/28/19	10-0002
CORRECTED:	RLR	DATE: 04/08/19	
VERIFIED:	MWG	DATE: 04/08/19	

10/23/2015 GPLN



P.I. NO. 0002525
CHEROKEE COUNTY
BALL GROUND BYPASS
EXISTING 2018 DHV
PM = (000)
AM = 000
SCALE: N.T.S.

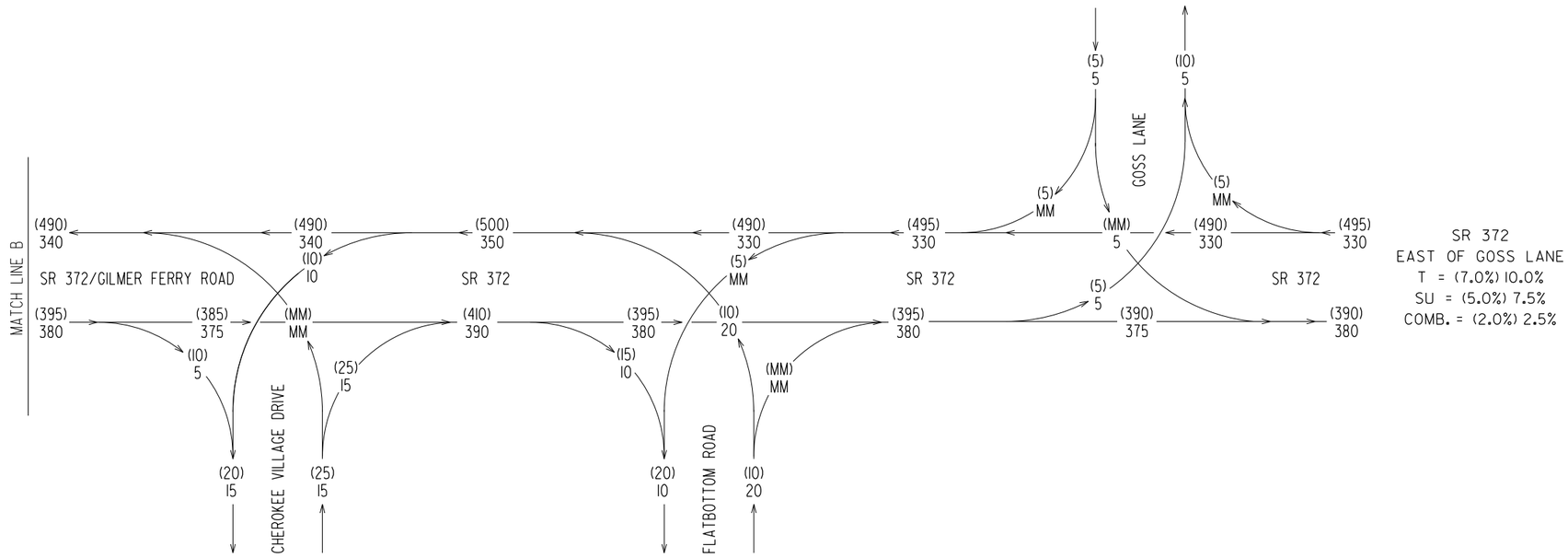
REVISION DATES

TRAFFIC DIAGRAM
BALL GROUND BYPASS
HOWELL BRIDGE RD TO BALL GROUND RD

CHECKED:	RLR	DATE:	02/26/19
BACKCHECKED:	MWG	DATE:	02/28/19
CORRECTED:	RLR	DATE:	04/08/19
VERIFIED:	MWG	DATE:	04/08/19

DRAWING No. 10-0003

10/23/2015 GPLN



SR 372
EAST OF GOSS LANE
T = (7.0%) 10.0%
SU = (5.0%) 7.5%
COMB. = (2.0%) 2.5%

P.I. NO. 0002525
CHEROKEE COUNTY
BALL GROUND BYPASS
EXISTING 2018 DHV
PM = (000)
AM = 000
SCALE: N.T.S.

REVISION DATES		

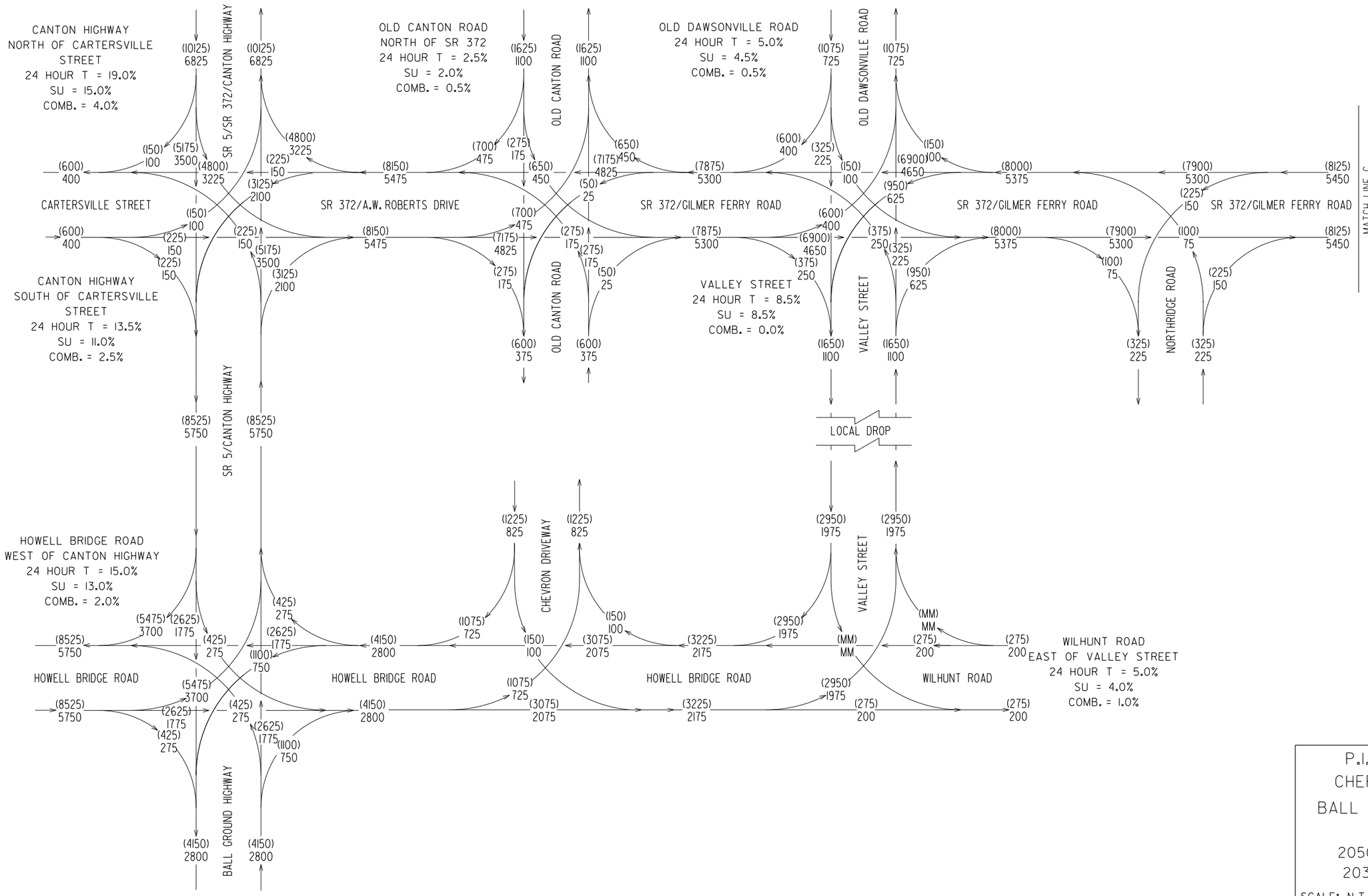
TRAFFIC DIAGRAM
BALL GROUND BYPASS
HOWELL BRIDGE RD TO BALL GROUND RD

CHECKED:	RLR	DATE:	02/26/19
BACKCHECKED:	MWG	DATE:	02/28/19
CORRECTED:	RLR	DATE:	04/08/19
VERIFIED:	MWG	DATE:	04/08/19

DRAWING No. 10-0004

10/23/2015 GPLN

DATE$$$ TIME$$$ $PRFB$ DGN P. I. No. 0002525
$USER$ $$PENTABLE$$



P.I. NO. 0002525
CHEROKEE COUNTY
BALL GROUND BYPASS
NO BUILD
2050 AADT = (000)
2030 AADT = 000

SCALE: N.T.S.

REVISION DATES		

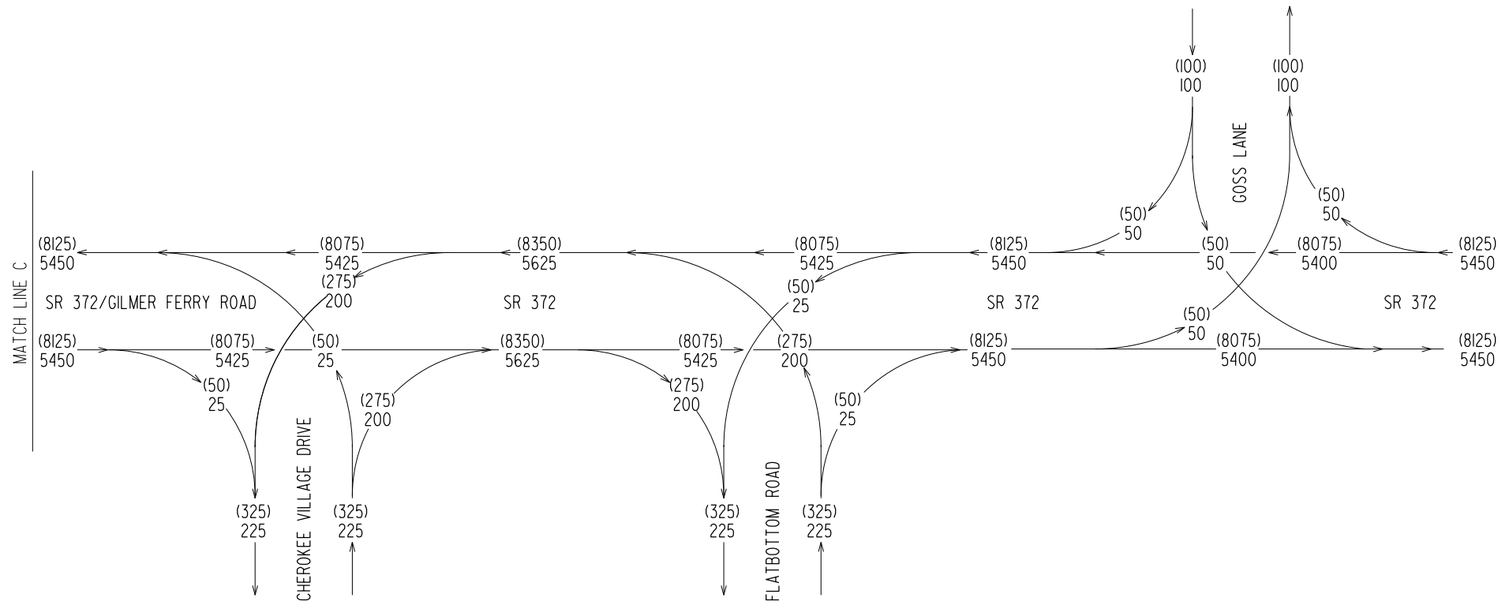
TRAFFIC DIAGRAM

BALL GROUND BYPASS

HOWELL BRIDGE RD TO BALL GROUND RD

CHECKED:	RLR	DATE: 6/11/19	DRAWING No.
BACKCHECKED:	BMT	DATE: 6/11/19	10-0005
CORRECTED:		DATE:	
VERIFIED:		DATE:	

10/23/2015 GPLN



SR 372
EAST OF GOSS LANE
24 HOUR T = 13.0%
SU = 8.5%
COMB. = 4.5%

P.I. NO. 0002525
CHEROKEE COUNTY
BALL GROUND BYPASS
NO BUILD
2050 AADT = (000)
2030 AADT = (000)

SCALE: N.T.S.

REVISION DATES

TRAFFIC DIAGRAM

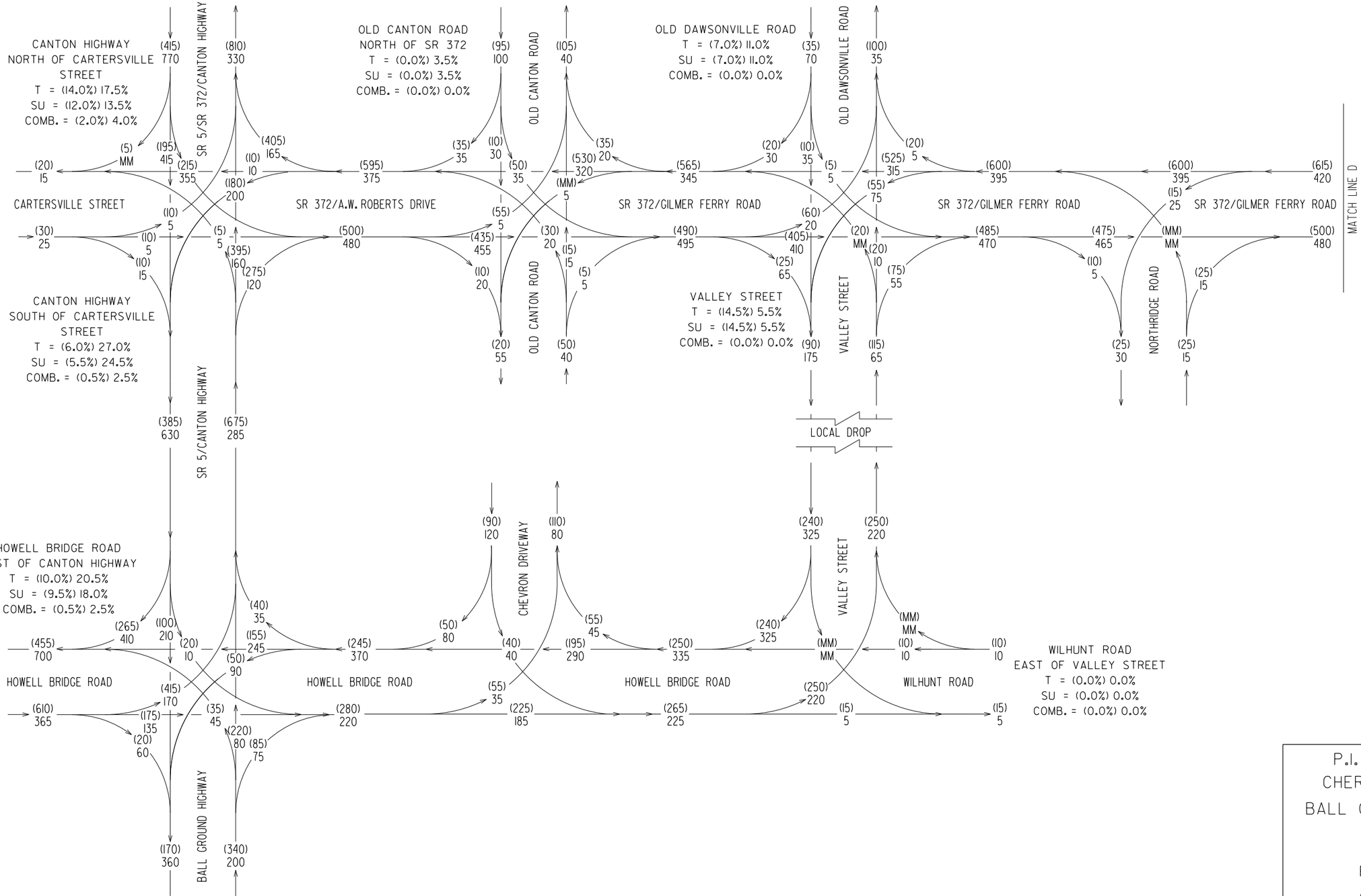
BALL GROUND BYPASS

HOWELL BRIDGE RD TO BALL GROUND RD

CHECKED:	RLR	DATE: 6/11/19	DRAWING No.
BACKCHECKED:	MWG	DATE: 6/11/19	10-0006
CORRECTED:		DATE:	
VERIFIED:		DATE:	

DATE$$$ TIME$$$ $PRFB$ DGN P. I. No. 0002525

$USER$ $$PENTABLE$$



P.I. NO. 0002525
CHEROKEE COUNTY
BALL GROUND BYPASS
NO BUILD
2030 DHV
PM = (000)
AM = (000)
SCALE: N.T.S.

REVISION DATES

TRAFFIC DIAGRAM

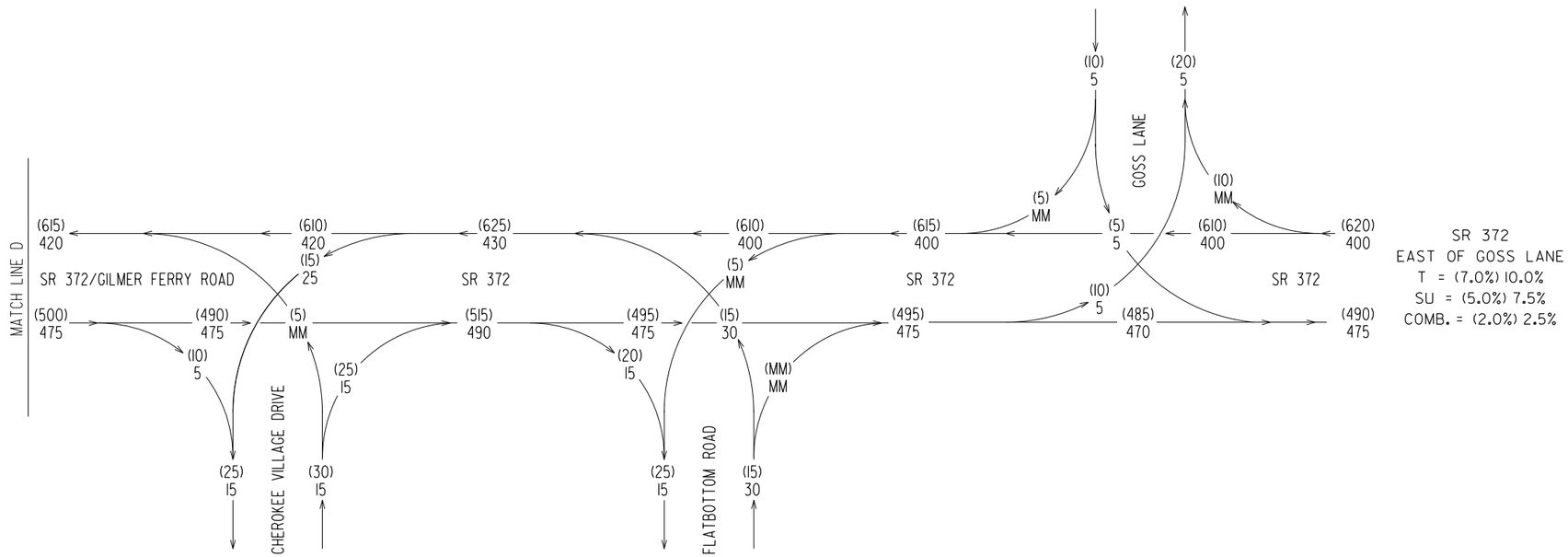
BALL GROUND BYPASS

HOWELL BRIDGE RD TO BALL GROUND RD

CHECKED:	BMT	DATE:	06/11/19
BACKCHECKED:	WMG	DATE:	06/11/19
CORRECTED:		DATE:	
VERIFIED:		DATE:	

DRAWING No. 10-0007

10/23/2015 GPLN



SR 372
EAST OF GOSS LANE
T = (7.0%) 10.0%
SU = (5.0%) 7.5%
COMB. = (2.0%) 2.5%

P.I. NO. 0002525
CHEROKEE COUNTY
BALL GROUND BYPASS
NO BUILD
2030 DHV
PM = (000)
AM = (000)
SCALE: N.T.S.

REVISION DATES

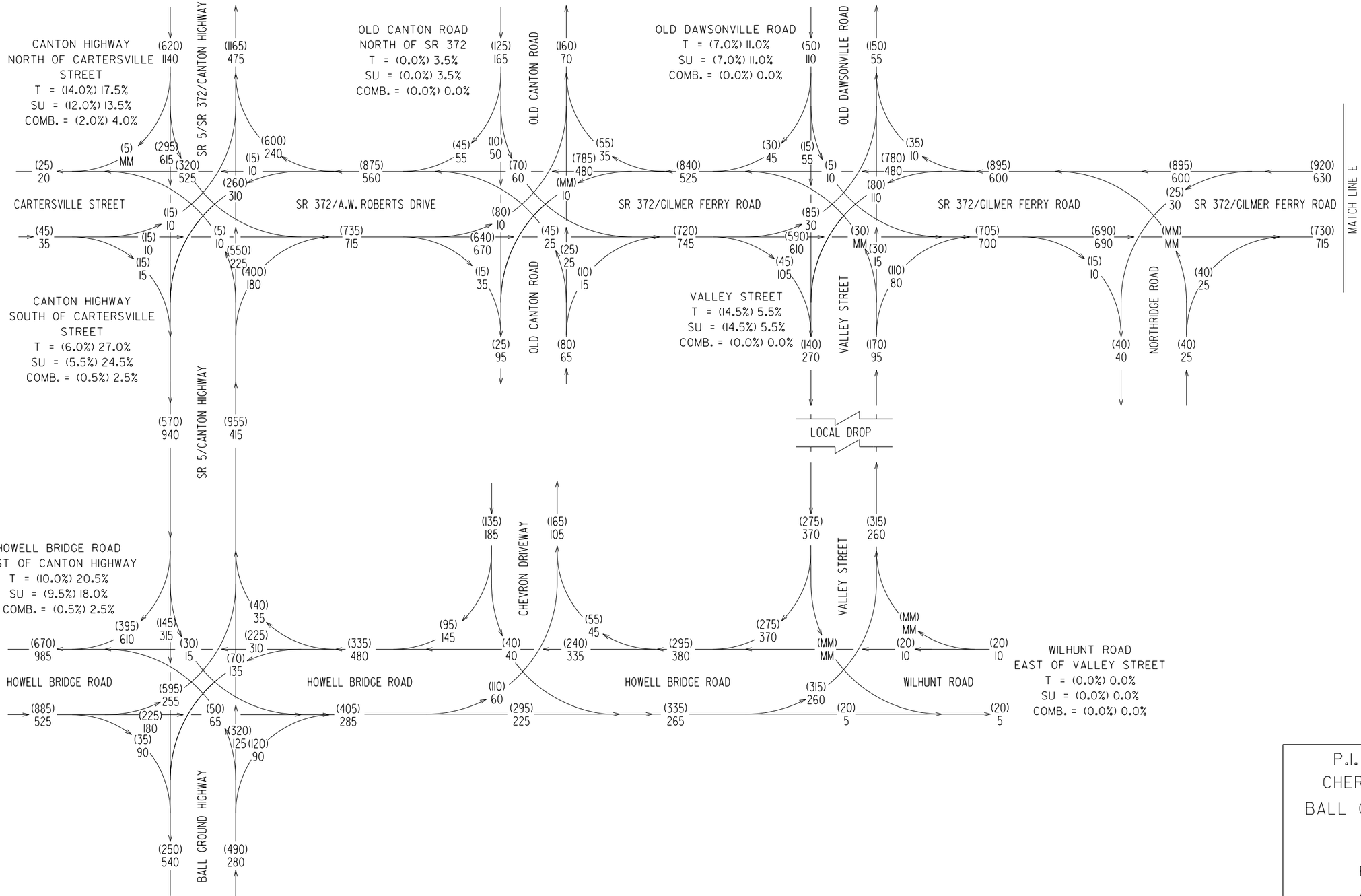
TRAFFIC DIAGRAM
BALL GROUND BYPASS
HOWELL BRIDGE RD TO BALL GROUND RD

CHECKED:	RLR	DATE:	02/26/19
BACKCHECKED:	MWG	DATE:	02/28/19
CORRECTED:	RLR	DATE:	04/08/19
VERIFIED:	MWG	DATE:	04/08/19

DRAWING No. 10-0008

10/23/2015 GPLN

DATE$$$ TIME$$$ $PRFB$ DGN P. I. No. 0002525
$USER$ $$PENTABLE$$



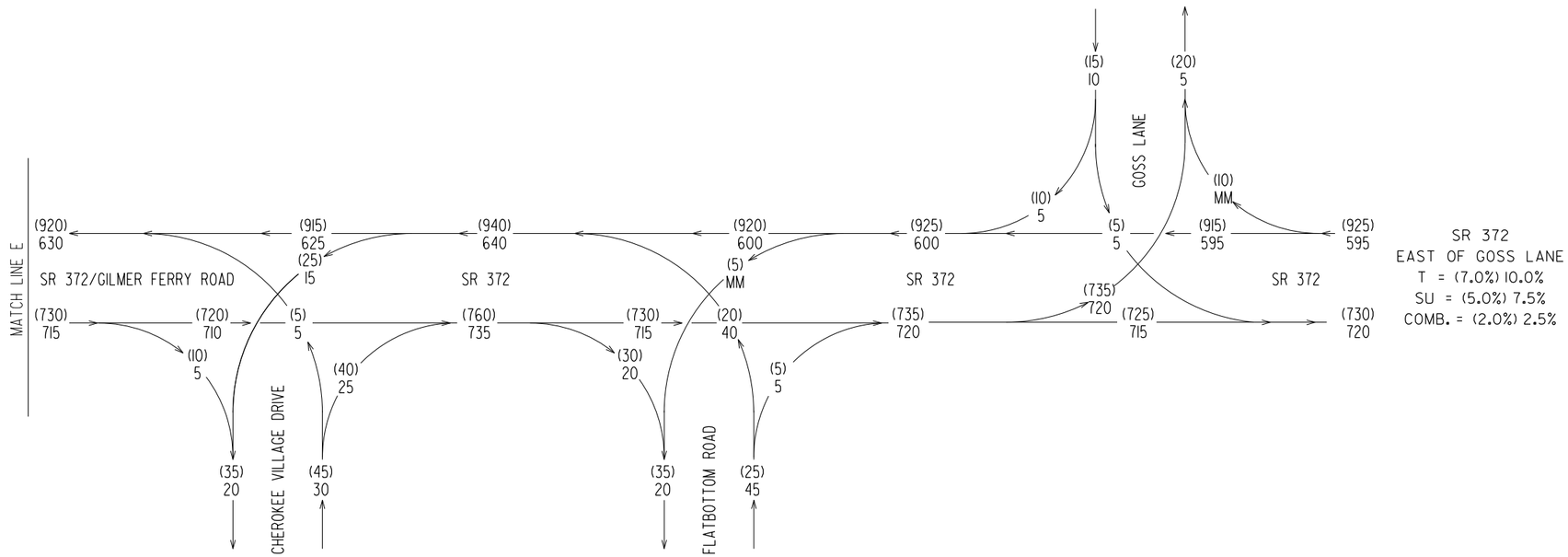
P.I. NO. 0002525
CHEROKEE COUNTY
BALL GROUND BYPASS
NO BUILD
2050 DHV
PM = (000)
AM = (000)
SCALE: N.T.S.

REVISION DATES

TRAFFIC DIAGRAM
BALL GROUND BYPASS
HOWELL BRIDGE RD TO BALL GROUND RD

CHECKED:	RLR	DATE: 02/26/19	DRAWING No.
BACKCHECKED:	MWG	DATE: 02/28/19	10-0009
CORRECTED:	RLR	DATE: 04/08/19	
VERIFIED:	MWG	DATE: 04/08/19	

10/23/2015 GPLN



SR 372
EAST OF GOSS LANE
T = (7.0%) 10.0%
SU = (5.0%) 7.5%
COMB. = (2.0%) 2.5%

P.I. NO. 0002525
CHEROKEE COUNTY
BALL GROUND BYPASS
NO BUILD
2050 DHV
PM = (000)
AM = (000)
SCALE: N.T.S.

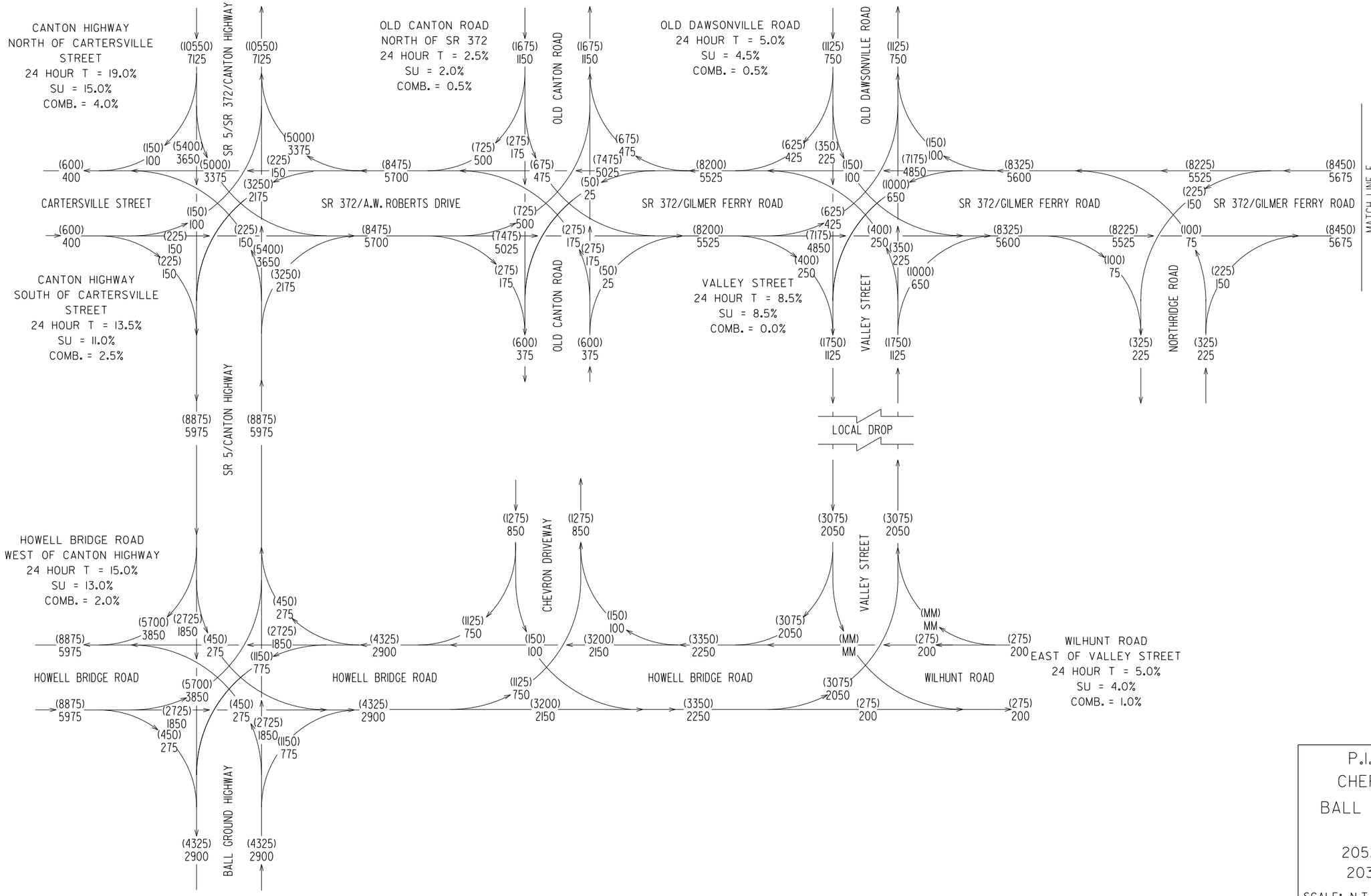
REVISION DATES

TRAFFIC DIAGRAM
BALL GROUND BYPASS
HOWELL BRIDGE RD TO BALL GROUND RD

CHECKED:	RLR	DATE:	02/26/19
BACKCHECKED:	MWG	DATE:	02/28/19
CORRECTED:	RLR	DATE:	04/08/19
VERIFIED:	MWG	DATE:	04/08/19

DRAWING No. 10-0010

DATE$$$ TIME$$$ $PRFB$ DGN GDOT P. I. No. 0002525
$USER$ $$PENTABLE$$



P.I. NO. 0002525
CHEROKEE COUNTY
BALL GROUND BYPASS
NO BUILD
2052 AADT = (000)
2032 AADT = 000
SCALE: N.T.S.

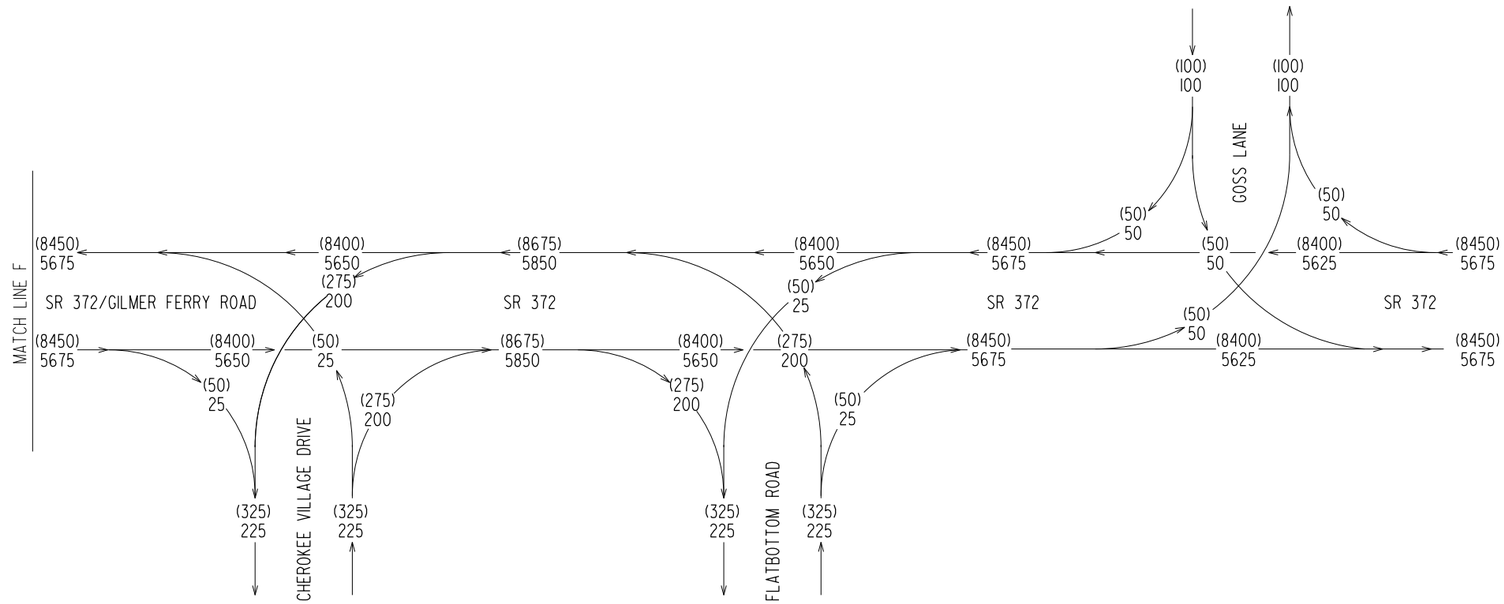
REVISION DATES

TRAFFIC DIAGRAM
BALL GROUND BYPASS
HOWELL BRIDGE RD TO BALL GROUND RD

CHECKED:	RLR	DATE:	02/26/19
BACKCHECKED:	MWG	DATE:	02/28/19
CORRECTED:	RLR	DATE:	04/08/19
VERIFIED:	MWG	DATE:	04/08/19

DRAWING No. 10-0011

10/23/2015 GPLN



SR 372
EAST OF GOSS LANE
24 HOUR T = 13.0%
SU = 8.5%
COMB. = 4.5%

P.I. NO. 0002525
CHEROKEE COUNTY
BALL GROUND BYPASS
NO BUILD
2052 AADT = (000)
2032 AADT = (000)

SCALE: N.T.S.

REVISION DATES		

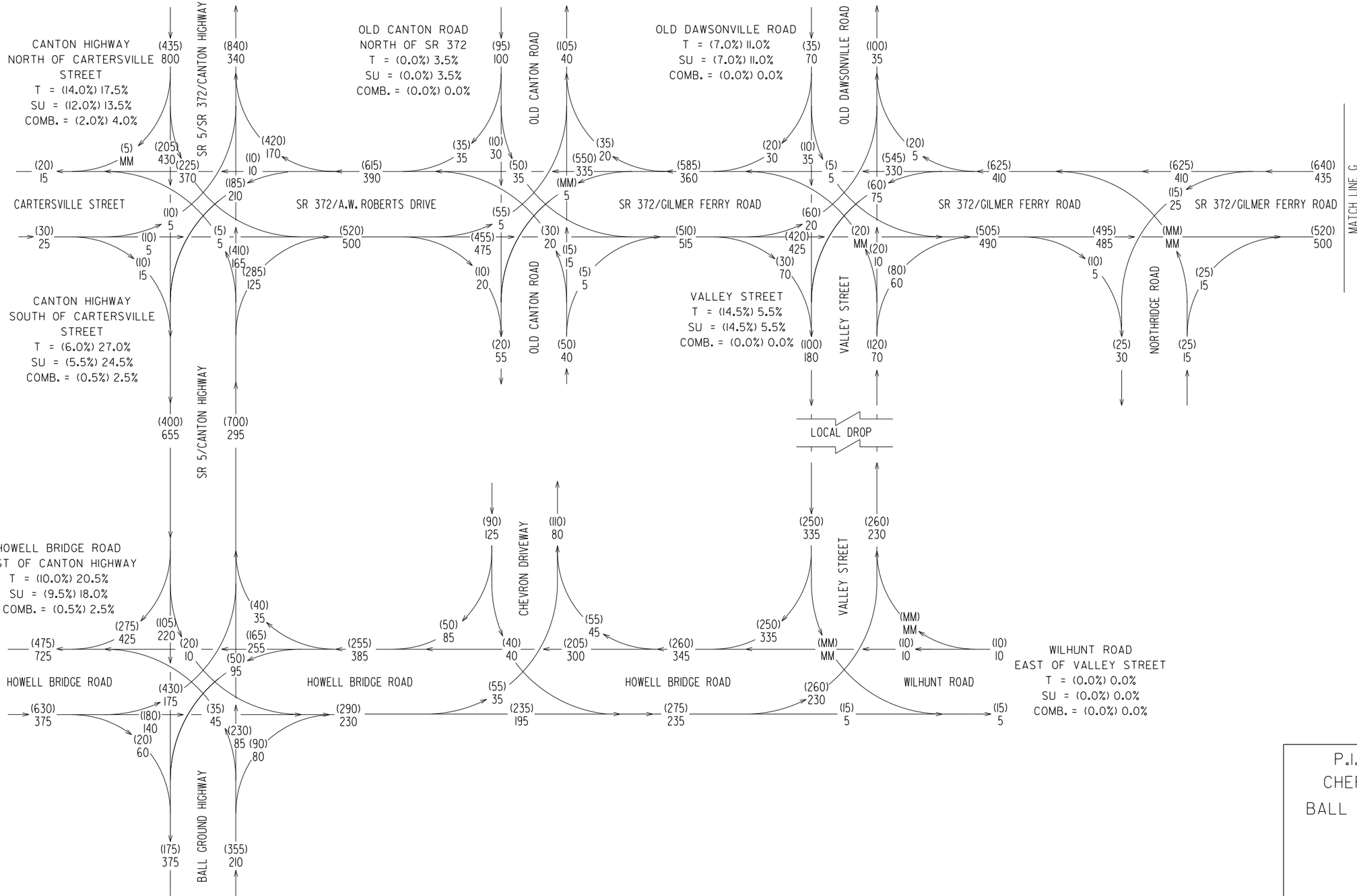
TRAFFIC DIAGRAM

BALL GROUND BYPASS

HOWELL BRIDGE RD TO BALL GROUND RD

CHECKED:	RLR	DATE: 02/26/19	DRAWING No.
BACKCHECKED:	MWG	DATE: 02/28/19	10-0012
CORRECTED:	RLR	DATE: 04/08/19	
VERIFIED:	MWG	DATE: 04/08/19	

10/23/2015 GPLN



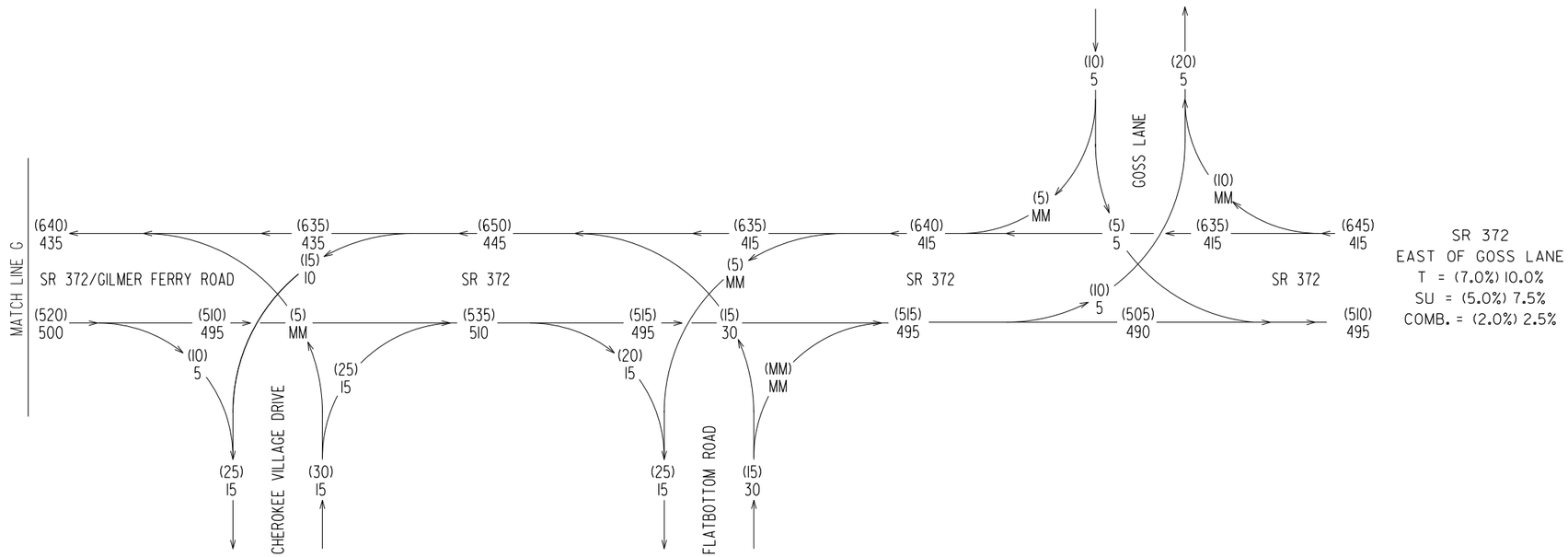
P.I. NO. 0002525
CHEROKEE COUNTY
BALL GROUND BYPASS
NO BUILD
2032 DHV
PM = (000)
AM = (000)
SCALE: N.T.S.

REVISION DATES

TRAFFIC DIAGRAM
BALL GROUND BYPASS
HOWELL BRIDGE RD TO BALL GROUND RD

CHECKED:	RLR	DATE: 02/26/19	DRAWING No.
BACKCHECKED:	MWG	DATE: 02/28/19	10-0013
CORRECTED:	RLR	DATE: 04/08/19	
VERIFIED:	MWG	DATE: 04/08/19	

10/23/2015 GPLN



SR 372
EAST OF GOSS LANE
T = (7.0%) 10.0%
SU = (5.0%) 7.5%
COMB. = (2.0%) 2.5%

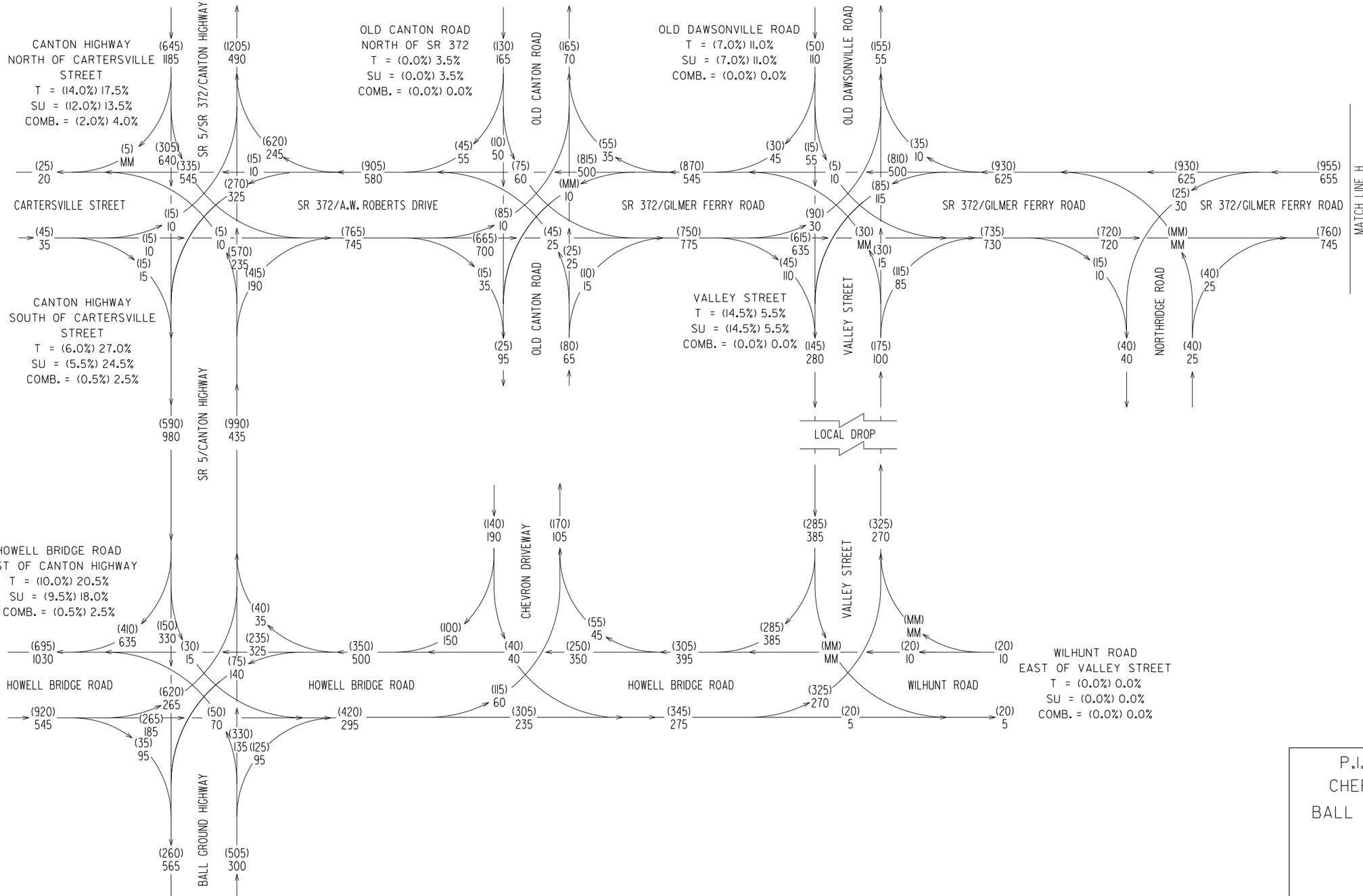
P.I. NO. 0002525
CHEROKEE COUNTY
BALL GROUND BYPASS
NO BUILD
2032 DHV
PM = (000)
AM = (000)
SCALE: N.T.S.

REVISION DATES		

TRAFFIC DIAGRAM
BALL GROUND BYPASS
HOWELL BRIDGE RD TO BALL GROUND RD

CHECKED:	RLR	DATE:	02/26/19	DRAWING No.
BACKCHECKED:	MWG	DATE:	02/28/19	
CORRECTED:	RLR	DATE:	04/08/19	10-0014
VERIFIED:	MWG	DATE:	04/08/19	

10/23/2015 GPLN



P.I. NO. 0002525
CHEROKEE COUNTY
BALL GROUND BYPASS
NO BUILD
2052 DHV
PM = (000)
AM = (000)
SCALE: N.T.S.

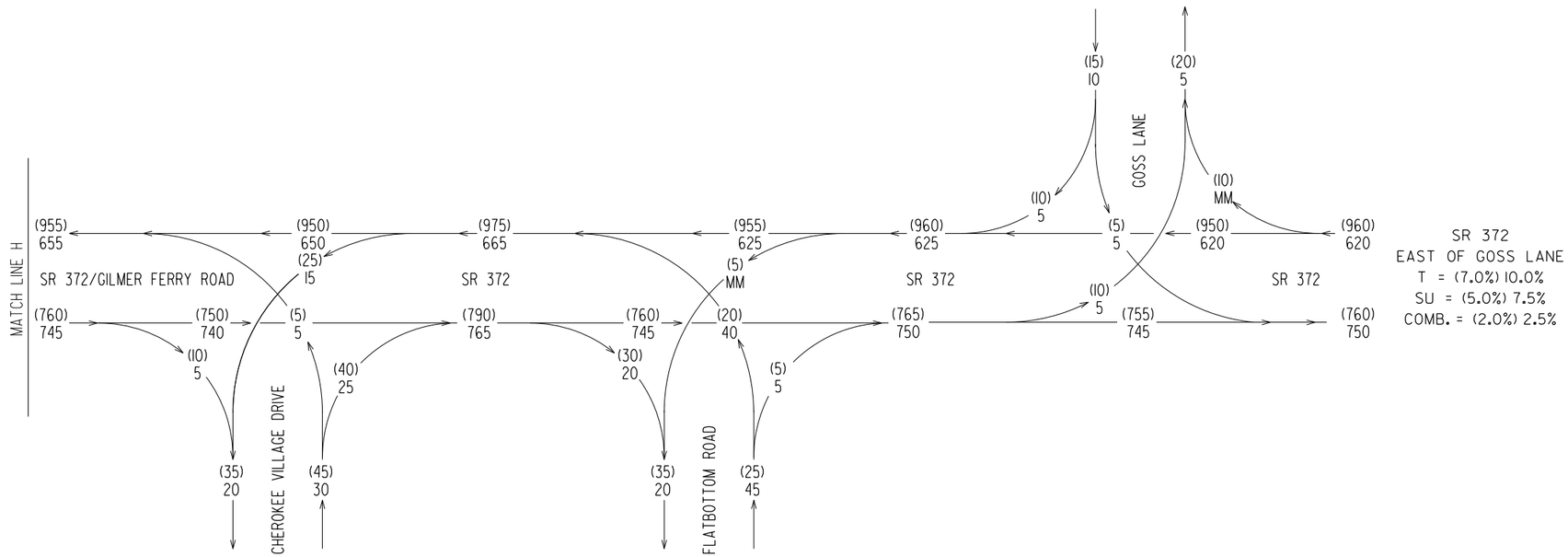
REVISION DATES

TRAFFIC DIAGRAM
BALL GROUND BYPASS
HOWELL BRIDGE RD TO BALL GROUND RD

CHECKED:	RLR	DATE:	02/26/19
BACKCHECKED:	MWG	DATE:	02/28/19
CORRECTED:	RLR	DATE:	04/08/19
VERIFIED:	MWG	DATE:	04/08/19

DRAWING No. 10-0015

10/23/2015 GPLN



SR 372
EAST OF GOSS LANE
T = (7.0%) 10.0%
SU = (5.0%) 7.5%
COMB. = (2.0%) 2.5%

P.I. NO. 0002525
CHEROKEE COUNTY
BALL GROUND BYPASS
NO BUILD
2052 DHV
PM = (000)
AM = (000)
SCALE: N.T.S.

REVISION DATES		

TRAFFIC DIAGRAM
BALL GROUND BYPASS
HOWELL BRIDGE RD TO BALL GROUND RD

CHECKED:	RLR	DATE:	02/26/19
BACKCHECKED:	MWG	DATE:	02/28/19
CORRECTED:	RLR	DATE:	04/08/19
VERIFIED:	MWG	DATE:	04/08/19

DRAWING No. 10-0016

10/23/2015 GPLN

DATE$$$ TIME$$$ $PRFB$ DGN P. I. No. 0002525
$USER$ $$PENTABLE$$

CANTON HIGHWAY
NORTH OF CARTERSVILLE STREET
24 HOUR T = 19.0%
SU = 15.0%
COMB. = 4.0%

OLD CANTON ROAD
NORTH OF SR 372
24 HOUR T = 0.0%
SU = 0.0%
COMB. = 0.0%

OLD DAWSONVILLE ROAD
24 HOUR T = 0.0%
SU = 0.0%
COMB. = 0.0%

SR 5/SR 372/CANTON HIGHWAY

OLD CANTON ROAD

OLD DAWSONVILLE ROAD

(10125) 6825
(1625) 1100
(1075) 725
(600) 400
(325) 225
(150) 100
(5450) 3675
(4525) 3050
(700) 475
(275) 175
(650) 450
(4975) 3350
(5500) 3675
(5425) 3625
(5675) 3800
(225) 150
(6225) 4175
(5250) 3525
(5950) 4000
(1475) 975
(50) 25
(375) 225
(250) 175
(75) 50

CARTERSVILLE STREET

SR 372/A.W. ROBERTS DRIVE

SR 372/GILMER FERRY ROAD

SR 372/GILMER FERRY ROAD

SR 372/GILMER FERRY ROAD

MATCH LINE I

CANTON HIGHWAY
SOUTH OF CARTERSVILLE STREET
24 HOUR T = 19.5%
SU = 15.5%
COMB. = 4.0%

SR 372/GILMER FERRY RD
EAST OF CANTON HWY
24 HOUR T = 0.0%
SU = 0.0%
COMB. = 0.0%

OLD CANTON ROAD

VALLEY STREET
24 HOUR T = 0.0%
SU = 0.0%
COMB. = 0.0%

VALLEY STREET

(600) 375
(1075) 700
(7150) 4800

LOCAL DROP

(325) 225

NORTHRIDGE ROAD

SR 5/CANTON HIGHWAY

HOWELL BRIDGE ROAD
WEST OF CANTON HIGHWAY
24 HOUR T = 15.0%
SU = 13.0%
COMB. = 2.0%

CHEVRON DRIVEWAY

VALLEY STREET

BALL GROUND BYPASS
EAST OF VALLEY STREET
24 HOUR T = 31.5%
SU = 20.5%
COMB. = 11.0%

(1225) 825
(2375) 1575
(MM) MM
(700) 450
(3825) 2575
(2625) 1775
(4275) 2900
(2775) 1900
(2500) 1700
(8525) 5750
(6075) 4100
(5000) 3375
(5150) 3475
(1100) 750
(425) 275

HOWELL BRIDGE ROAD

HOWELL BRIDGE ROAD

HOWELL BRIDGE ROAD

BALL GROUND BYPASS
(ALTERNATIVE IA)

LOCAL DROP

MATCH LINE J

BALL GROUND HIGHWAY

NORTHRIDGE ROAD

(4150) 2800

P.I. NO. 0002525
CHEROKEE COUNTY
BALL GROUND BYPASS
ALTERNATIVE IA
2050 AADT = (000)
2030 AADT = 000
SCALE: N.T.S.

REVISION DATES

TRAFFIC DIAGRAM
BALL GROUND BYPASS
HOWELL BRIDGE RD TO BALL GROUND RD

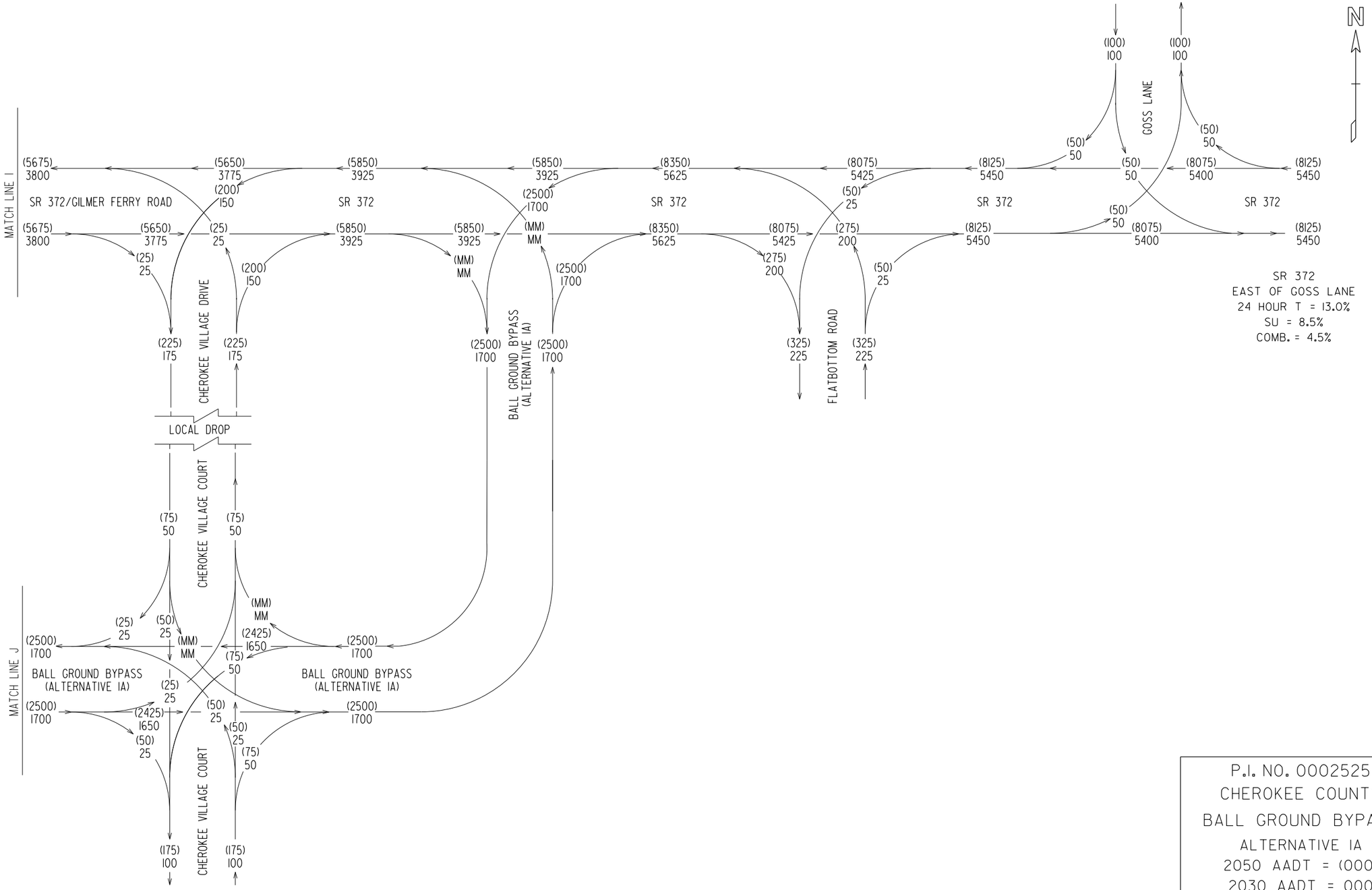
CHECKED:	RLR	DATE:	02/26/19
BACKCHECKED:	MMG	DATE:	02/28/19
CORRECTED:	RLR	DATE:	04/08/19
VERIFIED:	MMG	DATE:	04/08/19

DRAWING No. 10-0017

10/23/2015 GPLN

DATE$$$ TIME$$$ $PRFB$ DGN P. I. No. 0002525

$USER$ $$PENTABLE$$



SR 372
EAST OF GOSS LANE
24 HOUR T = 13.0%
SU = 8.5%
COMB. = 4.5%

P.I. NO. 0002525
CHEROKEE COUNTY
BALL GROUND BYPASS
ALTERNATIVE IA
2050 AADT = (000)
2030 AADT = 000
SCALE: N.T.S.

REVISION DATES

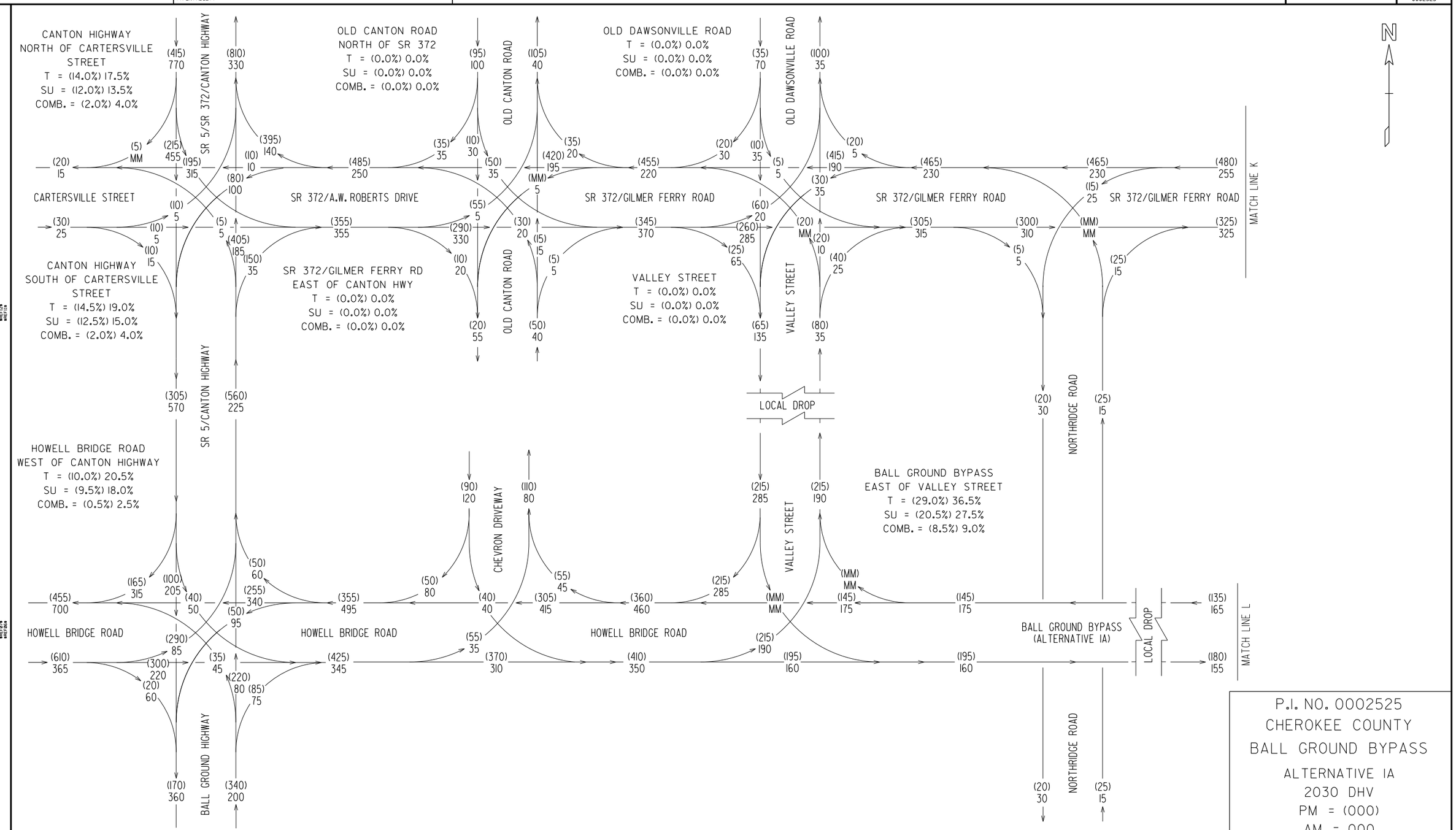
TRAFFIC DIAGRAM

BALL GROUND BYPASS

HOWELL BRIDGE RD TO BALL GROUND RD

CHECKED:	RLR	DATE: 02/26/19	DRAWING No.
BACKCHECKED:	MWG	DATE: 02/28/19	10-0018
CORRECTED:	RLR	DATE: 04/08/19	
VERIFIED:	MWG	DATE: 04/08/19	

10/23/2015 GPLN



P.I. NO. 0002525
CHEROKEE COUNTY
BALL GROUND BYPASS
ALTERNATIVE IA
2030 DHV
PM = (000)
AM = 000
SCALE: N.T.S.

REVISION DATES		

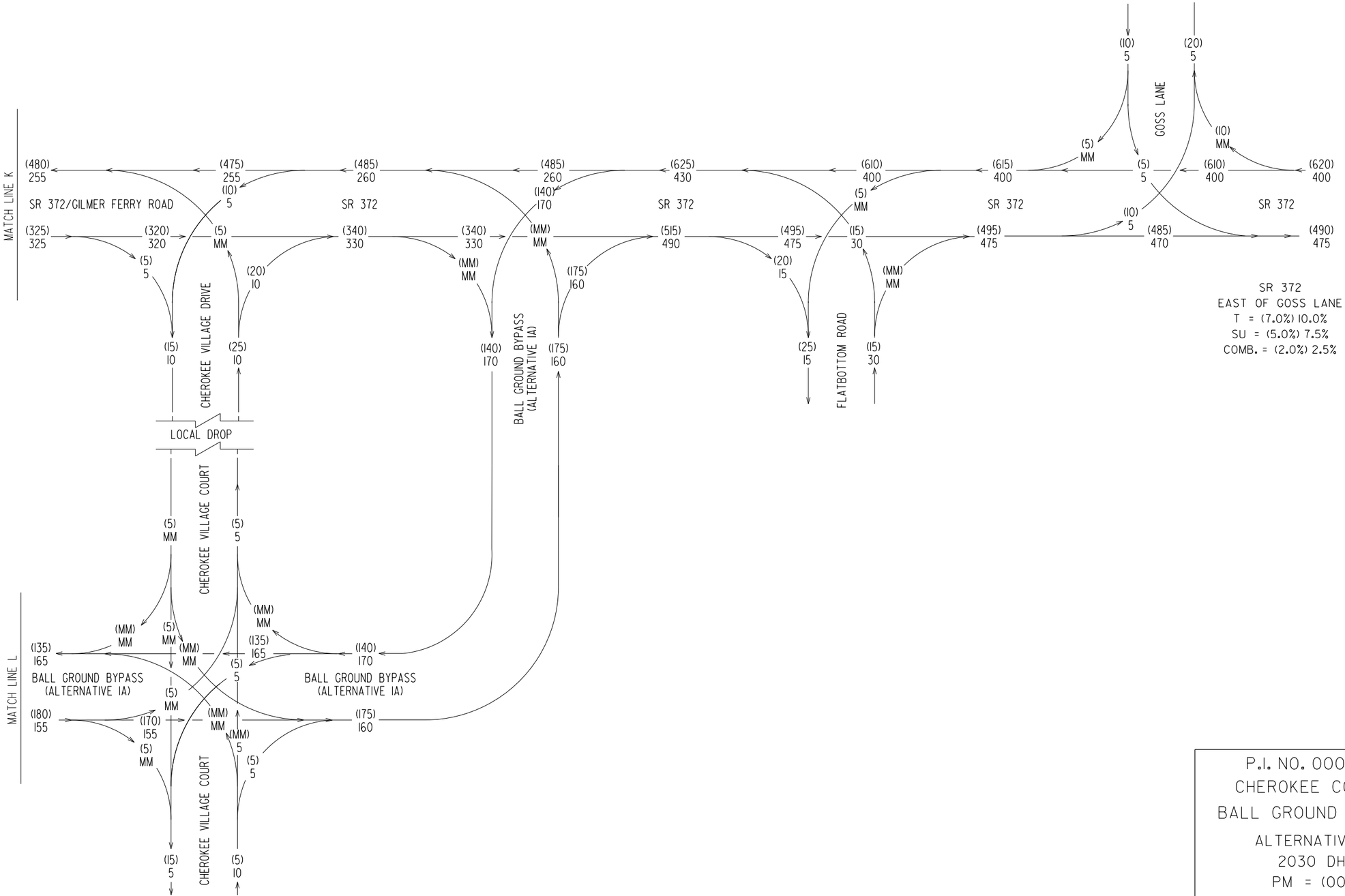
TRAFFIC DIAGRAM

BALL GROUND BYPASS

HOWELL BRIDGE RD TO BALL GROUND RD

CHECKED:	RLR	DATE: 02/26/19	DRAWING No.
BACKCHECKED:	MWG	DATE: 02/28/19	10-0019
CORRECTED:	RLR	DATE: 04/08/19	
VERIFIED:	MWG	DATE: 04/08/19	

10/23/2015 GPLN



P.I. NO. 0002525
CHEROKEE COUNTY
BALL GROUND BYPASS
ALTERNATIVE IA
2030 DHV
PM = (000)
AM = 000
SCALE: N.T.S.

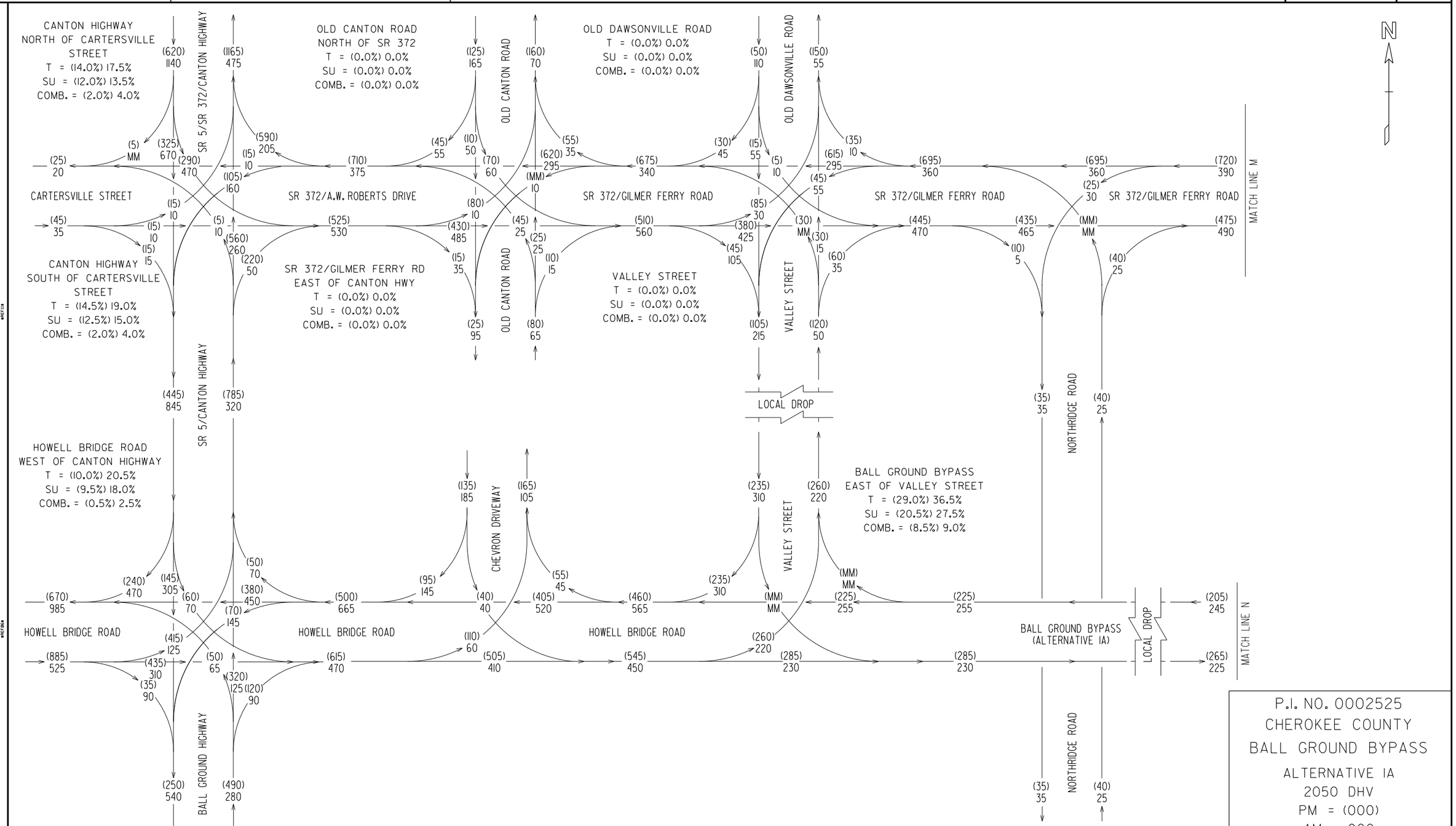
REVISION DATES

TRAFFIC DIAGRAM
BALL GROUND BYPASS
HOWELL BRIDGE RD TO BALL GROUND RD

CHECKED:	RLR	DATE: 02/26/19	DRAWING No.
BACKCHECKED:	MWG	DATE: 02/28/19	10-0020
CORRECTED:	RLR	DATE: 04/08/19	
VERIFIED:	MWG	DATE: 04/08/19	

10/23/2015 GPLN

DATE$$$ TIME$$$ $PRFB$ DGN P. I. No. 0002525
$USER$ $$PENTABLE$$



P.I. NO. 0002525
CHEROKEE COUNTY
BALL GROUND BYPASS
ALTERNATIVE IA
2050 DHV
PM = (000)
AM = 000
SCALE: N.T.S.

REVISION DATES

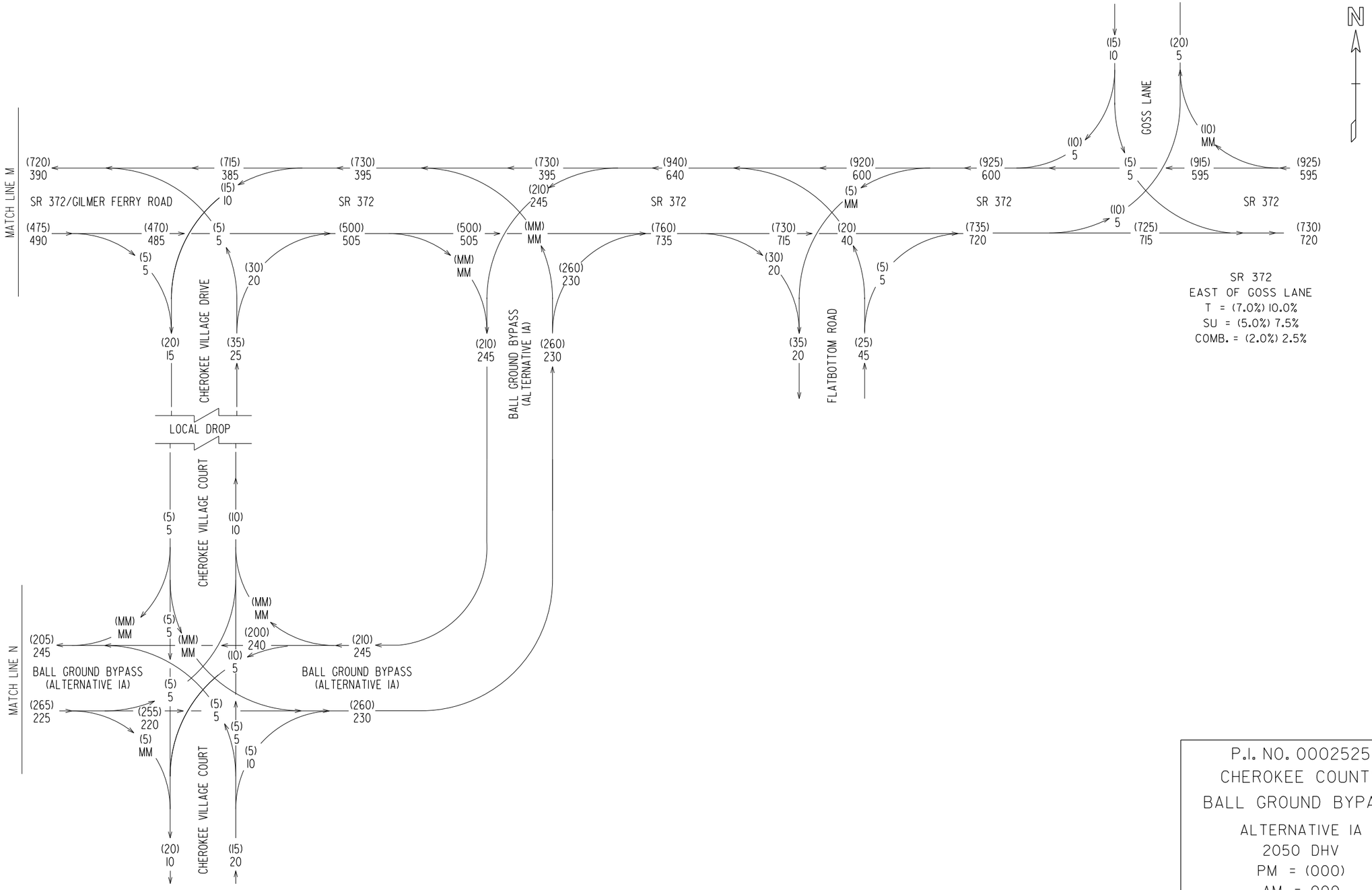
TRAFFIC DIAGRAM
BALL GROUND BYPASS
HOWELL BRIDGE RD TO BALL GROUND RD

CHECKED:	RLR	DATE: 02/26/19	DRAWING No.
BACKCHECKED:	MWG	DATE: 02/28/19	10-0021
CORRECTED:	RLR	DATE: 04/08/19	
VERIFIED:	MWG	DATE: 04/08/19	

10/23/2015 GPLN

DATE$$$ TIME$$$ $PRFB$ DGN P. I. No. 0002525

$USER$ $$PENTABLE$$



P.I. NO. 0002525
CHEROKEE COUNTY
BALL GROUND BYPASS
ALTERNATIVE IA
2050 DHV
PM = (000)
AM = 000
SCALE: N.T.S.

REVISION DATES

TRAFFIC DIAGRAM

BALL GROUND BYPASS

HOWELL BRIDGE RD TO BALL GROUND RD

CHECKED:	RLR	DATE: 02/26/19	DRAWING No.
BACKCHECKED:	MWG	DATE: 02/28/19	10-0022
CORRECTED:	RLR	DATE: 04/08/19	
VERIFIED:	MWG	DATE: 04/08/19	

10/23/2015 GPLN

DATE$$$ TIME$$$ $PRFB$ DGN P. I. No. 0002525
$USER$ $$PENTABLE$$

CANTON HIGHWAY
NORTH OF CARTERSVILLE STREET
24 HOUR T = 19.0%
SU = 15.0%
COMB. = 4.0%

OLD CANTON ROAD
NORTH OF SR 372
24 HOUR T = 0.0%
SU = 0.0%
COMB. = 0.0%

OLD DAWSONVILLE ROAD
24 HOUR T = 0.0%
SU = 0.0%
COMB. = 0.0%

SR 5/SR 372/CANTON HIGHWAY

OLD CANTON ROAD

OLD DAWSONVILLE ROAD

(10550) 7125 (10550) 7125 (1675) 1150 (1675) 1150 (1125) 750 (1125) 750

(150) 100 (5675) 3850 (4725) 3175 (4725) 3175 (225) 150 (1525) 1025 (6475) 4350 (725) 500 (275) 175 (675) 475 (5475) 3675 (50) 25 (6200) 4175 (625) 425 (350) 225 (150) 100 (5175) 3500 (375) 250 (5700) 3850 (5625) 3800 (250) 175 (5875) 3975

(600) 400 CARTERSVILLE STREET SR 372/A.W. ROBERTS DRIVE SR 372/GILMER FERRY ROAD SR 372/GILMER FERRY ROAD SR 372/GILMER FERRY ROAD

(150) 100 (600) 400 (225) 150 (225) 150 (225) 150 (225) 150 (5675) 3850 (1525) 1025 (6475) 4350 (725) 500 (5475) 3675 (275) 175 (275) 175 (50) 25 (6200) 4175 (625) 425 (5175) 3500 (400) 250 (350) 225 (375) 250 (5700) 3850 (5625) 3800 (75) 50 (75) 50 (250) 175 (5875) 3975

MATCH LINE O

CANTON HIGHWAY
SOUTH OF CARTERSVILLE STREET
24 HOUR T = 19.5%
SU = 15.5%
COMB. = 4.0%

SR 372/GILMER FERRY RD
EAST OF CANTON HWY
24 HOUR T = 0.0%
SU = 0.0%
COMB. = 0.0%

VALLEY STREET
24 HOUR T = 0.0%
SU = 0.0%
COMB. = 0.0%

(600) 375 (600) 375 (1125) 725 (1125) 725

(7425) 5025 (7425) 5025

LOCAL DROP

(325) 225 (325) 225

NORTHRIDGE ROAD

SR 5/CANTON HIGHWAY

HOWELL BRIDGE ROAD
WEST OF CANTON HIGHWAY
24 HOUR T = 15.0%
SU = 13.0%
COMB. = 2.0%

CHEVRON DRIVEWAY

VALLEY STREET

BALL GROUND BYPASS
EAST OF VALLEY STREET
24 HOUR T = 31.5%
SU = 20.5%
COMB. = 11.0%

(1275) 850 (1275) 850 (2450) 1650 (2450) 1650

(3975) 2700 (2725) 1850 (725) 475 (725) 475 (4450) 3000 (1150) 775 (6325) 4250 (1125) 750 (150) 100 (5200) 3500 (5350) 3600 (2450) 1650 (MM) MM (2900) 1950 (2900) 1950 (2625) 1750

(8875) 5975 HOWELL BRIDGE ROAD HOWELL BRIDGE ROAD HOWELL BRIDGE ROAD BALL GROUND BYPASS (ALTERNATIVE IA)

(3975) 2700 (4450) 3000 (450) 275 (450) 275 (2725) 1850 (1150) 775 (6325) 4250 (1125) 750 (5200) 3500 (5350) 3600 (2450) 1650 (2900) 1950 (2900) 1950 (2625) 1750

(8875) 5975

LOCAL DROP

MATCH LINE P

(4325) 2900 (4325) 2900 (325) 225 (325) 225

BALL GROUND HIGHWAY NORTHRIDGE ROAD

P.I. NO. 0002525
CHEROKEE COUNTY
BALL GROUND BYPASS
ALTERNATIVE IA
2052 AADT = (000)
2032 AADT = 000
SCALE: N.T.S.

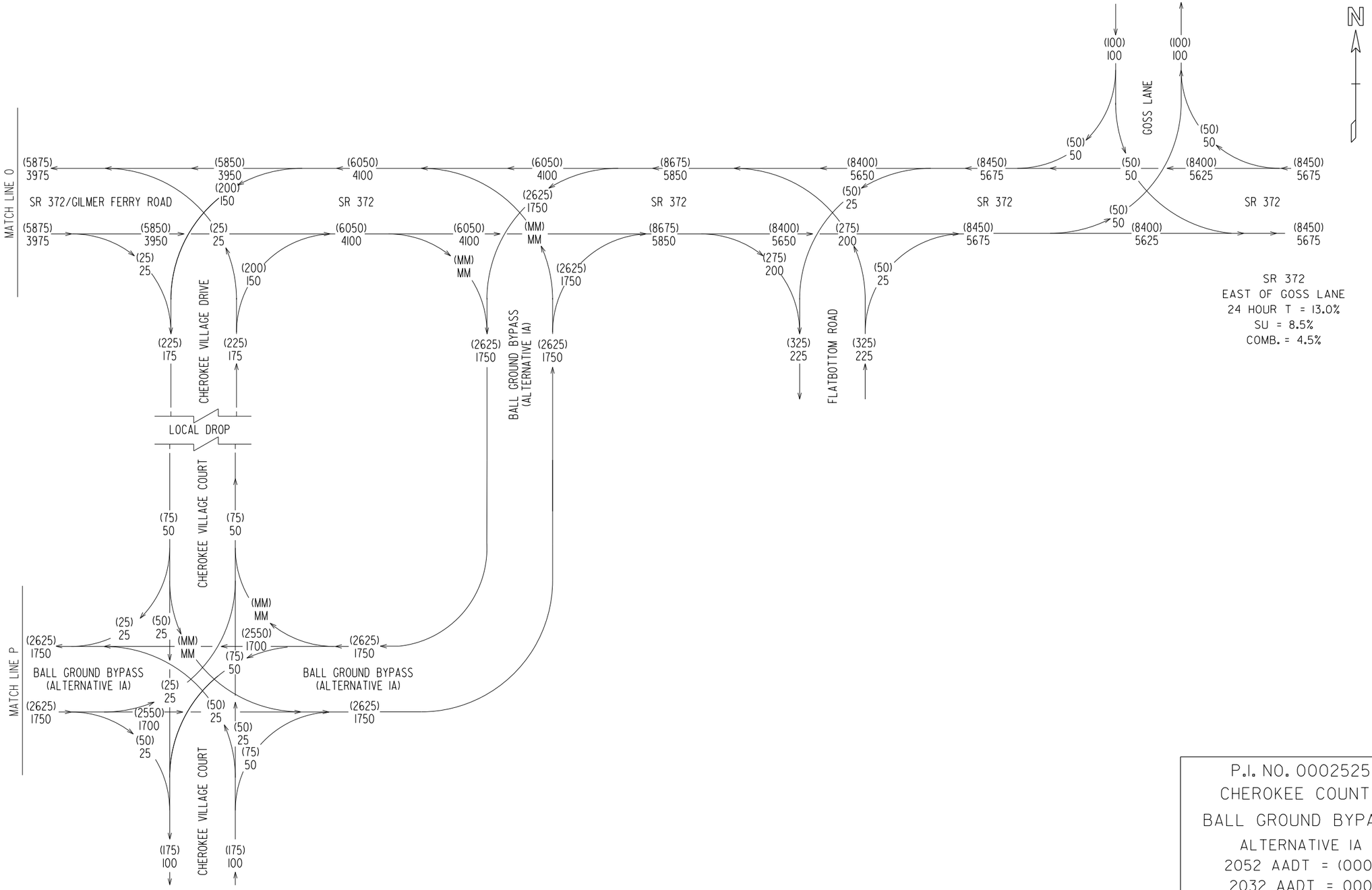
REVISION DATES

TRAFFIC DIAGRAM
BALL GROUND BYPASS
HOWELL BRIDGE RD TO BALL GROUND RD

CHECKED:	RLR	DATE:	02/26/19
BACKCHECKED:	MMG	DATE:	02/28/19
CORRECTED:	RLR	DATE:	04/08/19
VERIFIED:	MMG	DATE:	04/08/19

DRAWING No. 10-0023

10/23/2015 GPLN



P.I. NO. 0002525
CHEROKEE COUNTY
BALL GROUND BYPASS
ALTERNATIVE IA
2052 AADT = (000)
2032 AADT = 000
SCALE: N.T.S.

REVISION DATES

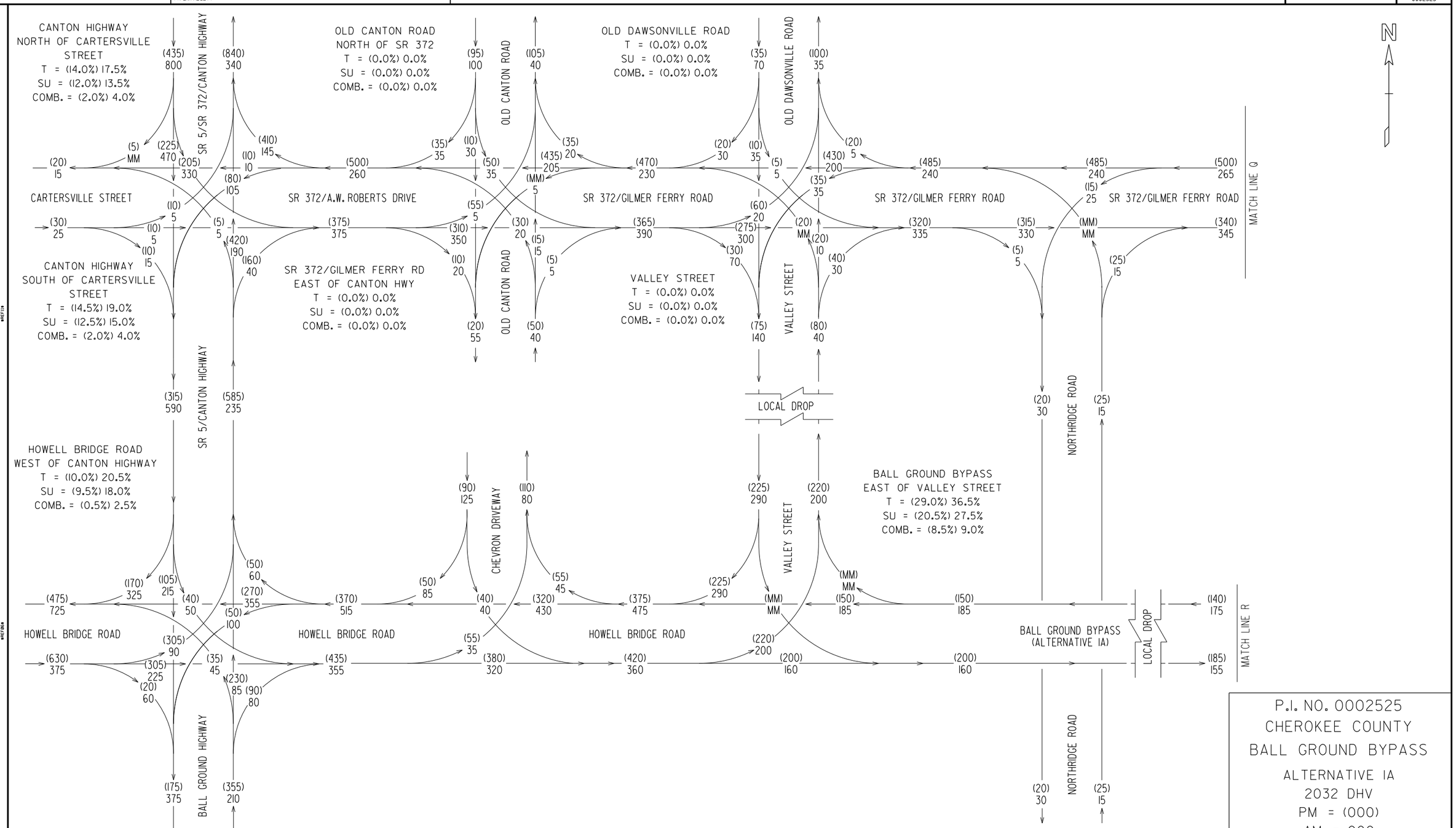
TRAFFIC DIAGRAM

BALL GROUND BYPASS
HOWELL BRIDGE RD TO BALL GROUND RD

CHECKED:	RLR	DATE: 02/26/19	DRAWING No.
BACKCHECKED:	MWG	DATE: 02/28/19	
CORRECTED:	RLR	DATE: 04/08/19	10-0024
VERIFIED:	MWG	DATE: 04/08/19	

10/23/2015 GPLN

DATE$$$ TIME$$$ $PRFB$ DGN P. I. No. 0002525
$USER$ $$PENTABLE$$



P.I. NO. 0002525
CHEROKEE COUNTY
BALL GROUND BYPASS
ALTERNATIVE IA
2032 DHV
PM = (000)
AM = 000
SCALE: N.T.S.

REVISION DATES

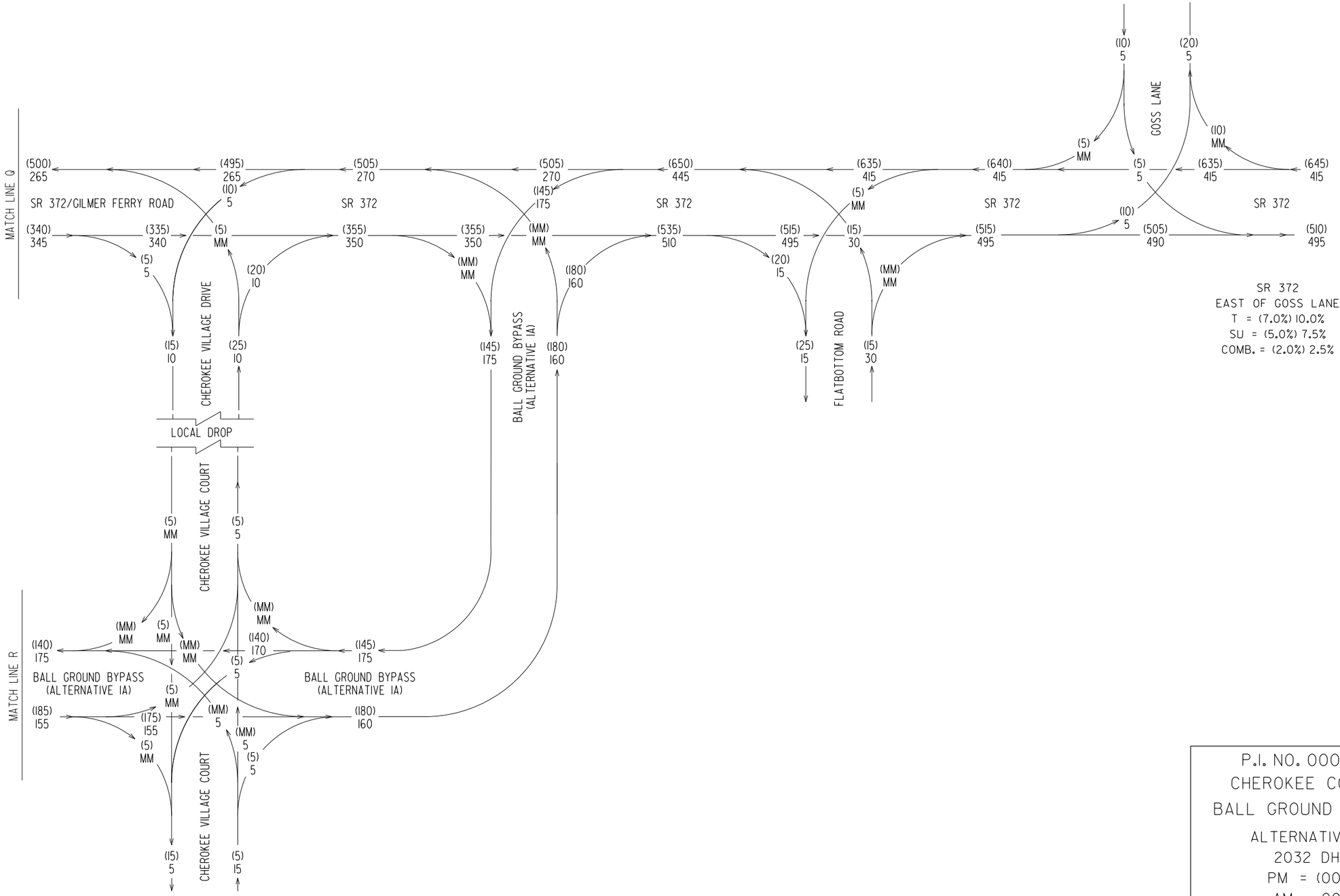
TRAFFIC DIAGRAM
BALL GROUND BYPASS
HOWELL BRIDGE RD TO BALL GROUND RD

CHECKED:	RLR	DATE: 02/26/19	DRAWING No.
BACKCHECKED:	MWG	DATE: 02/28/19	10-0025
CORRECTED:	RLR	DATE: 04/08/19	
VERIFIED:	MWG	DATE: 04/08/19	

10/23/2015 GPLN

DATE$$$ TIME$$$ $PRFB$ DGN P. I. No. 0002525

$USER$ $$PENTABLE$$



P.I. NO. 0002525
CHEROKEE COUNTY
BALL GROUND BYPASS
ALTERNATIVE IA
2032 DHV
PM = (000)
AM = 000
SCALE: N.T.S.

REVISION DATES

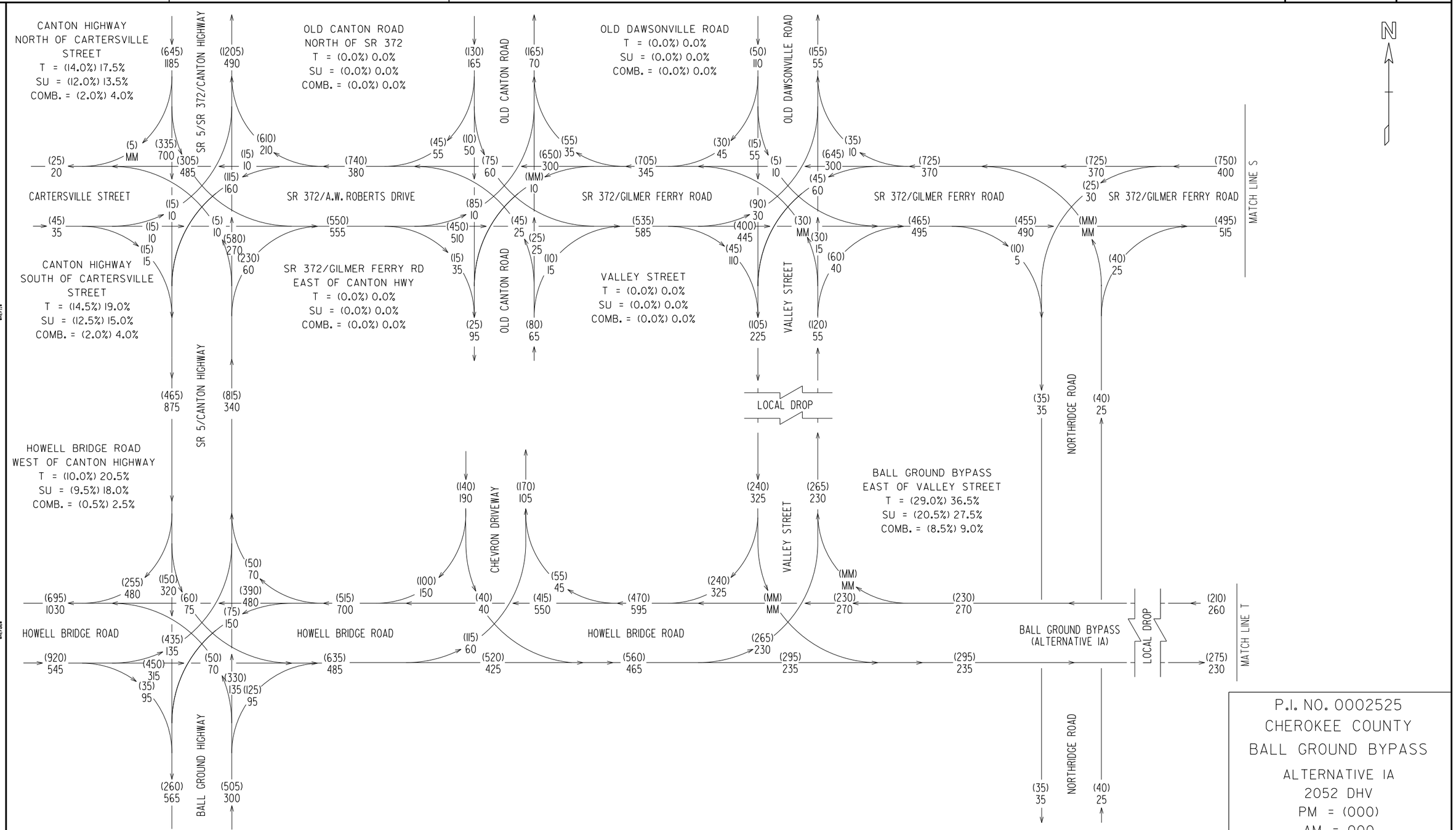
TRAFFIC DIAGRAM

BALL GROUND BYPASS

HOWELL BRIDGE RD TO BALL GROUND RD

CHECKED:	RLR	DATE: 02/26/19	DRAWING No.
BACKCHECKED:	MWG	DATE: 02/28/19	10-0026
CORRECTED:	RLR	DATE: 04/08/19	
VERIFIED:	MWG	DATE: 04/08/19	

10/23/2015 GPLN



P.I. NO. 0002525
CHEROKEE COUNTY
BALL GROUND BYPASS
ALTERNATIVE IA
2052 DHV
PM = (000)
AM = 000
SCALE: N.T.S.

REVISION DATES

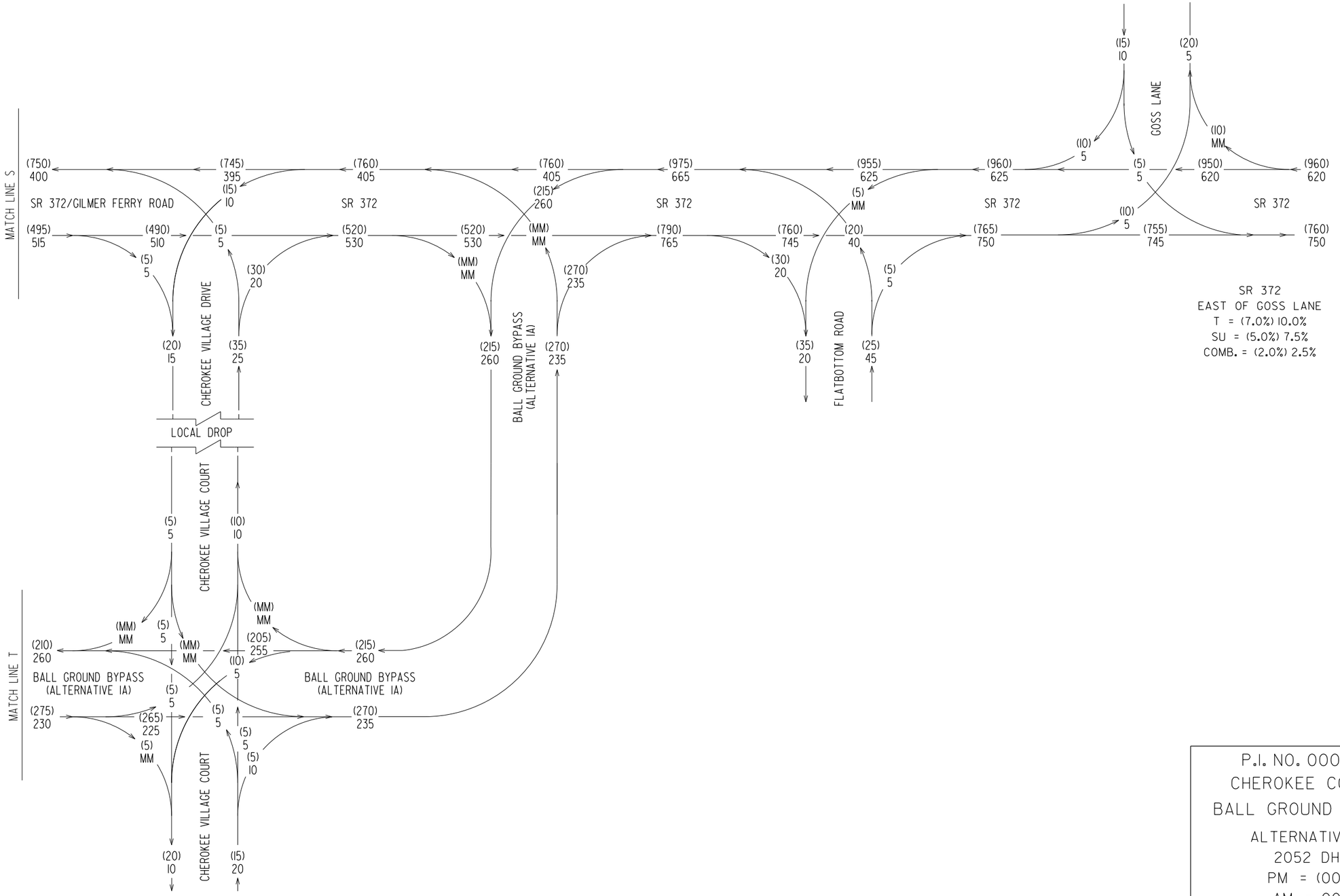
TRAFFIC DIAGRAM
BALL GROUND BYPASS
HOWELL BRIDGE RD TO BALL GROUND RD

CHECKED:	RLR	DATE: 02/26/19	DRAWING No.
BACKCHECKED:	MWG	DATE: 02/28/19	10-0027
CORRECTED:	RLR	DATE: 04/08/19	
VERIFIED:	MWG	DATE: 04/08/19	

10/23/2015 GPLN

DATE$$$ TIME$$$ $PRFB$ DGN P. I. No. 0002525

$USER$ $$PENTABLE$$



P.I. NO. 0002525
CHEROKEE COUNTY
BALL GROUND BYPASS
ALTERNATIVE IA
2052 DHV
PM = (000)
AM = 000
SCALE: N.T.S.

REVISION DATES

TRAFFIC DIAGRAM

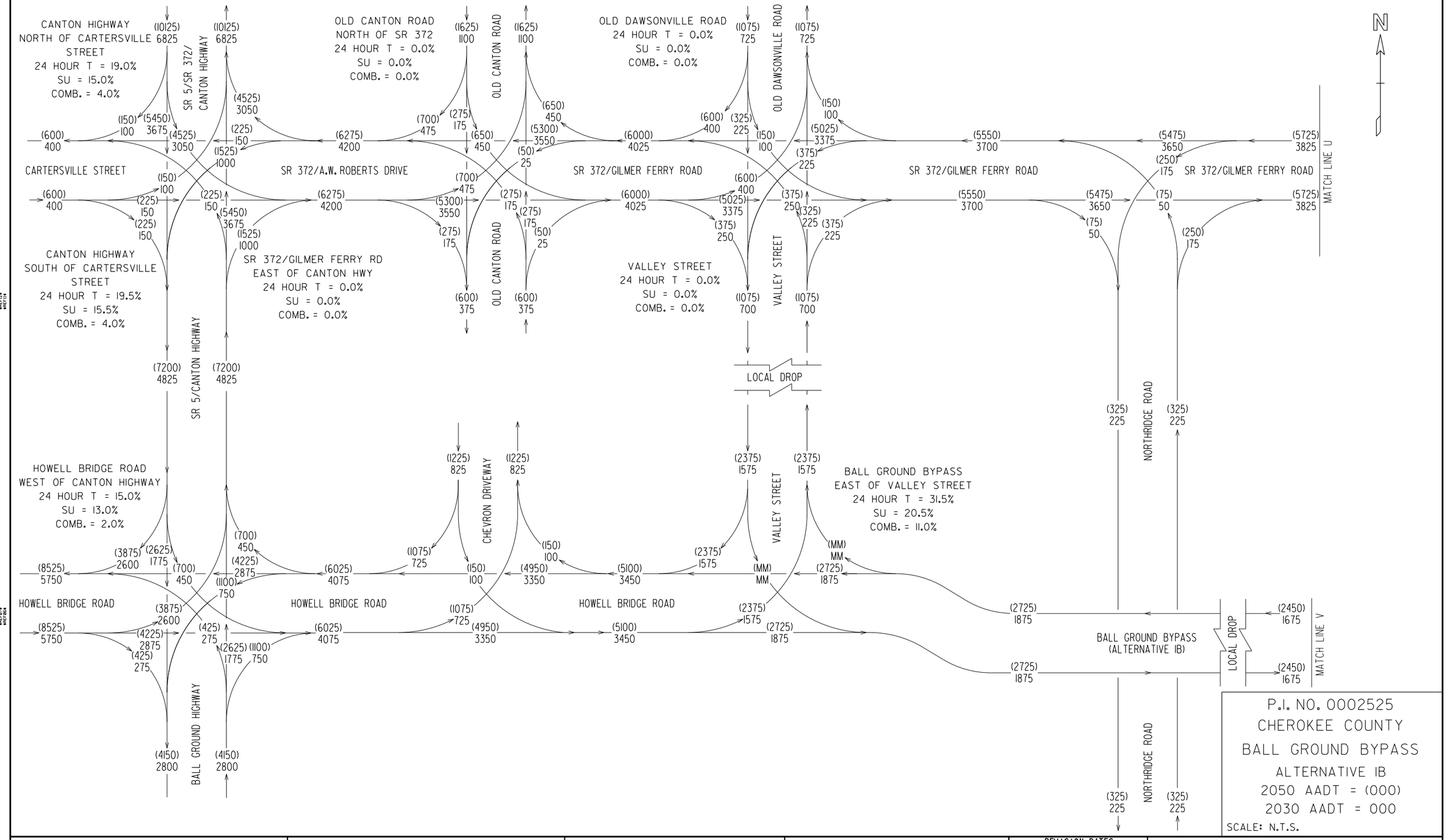
BALL GROUND BYPASS

HOWELL BRIDGE RD TO BALL GROUND RD

CHECKED:	RLR	DATE: 02/26/19	DRAWING No.
BACKCHECKED:	MWG	DATE: 02/28/19	10-0028
CORRECTED:	RLR	DATE: 04/08/19	
VERIFIED:	MWG	DATE: 04/08/19	

10/23/2015 GPLN

DATE$$ TIME$$ $PRFB$ DGN P. I. No. 0002525
$USER$ $$PENTABLE$$



P.I. NO. 0002525
CHEROKEE COUNTY
BALL GROUND BYPASS
ALTERNATIVE IB
2050 AADT = (000)
2030 AADT = 000
SCALE: N.T.S.

REVISION DATES

TRAFFIC DIAGRAM
BALL GROUND BYPASS
HOWELL BRIDGE RD TO BALL GROUND RD

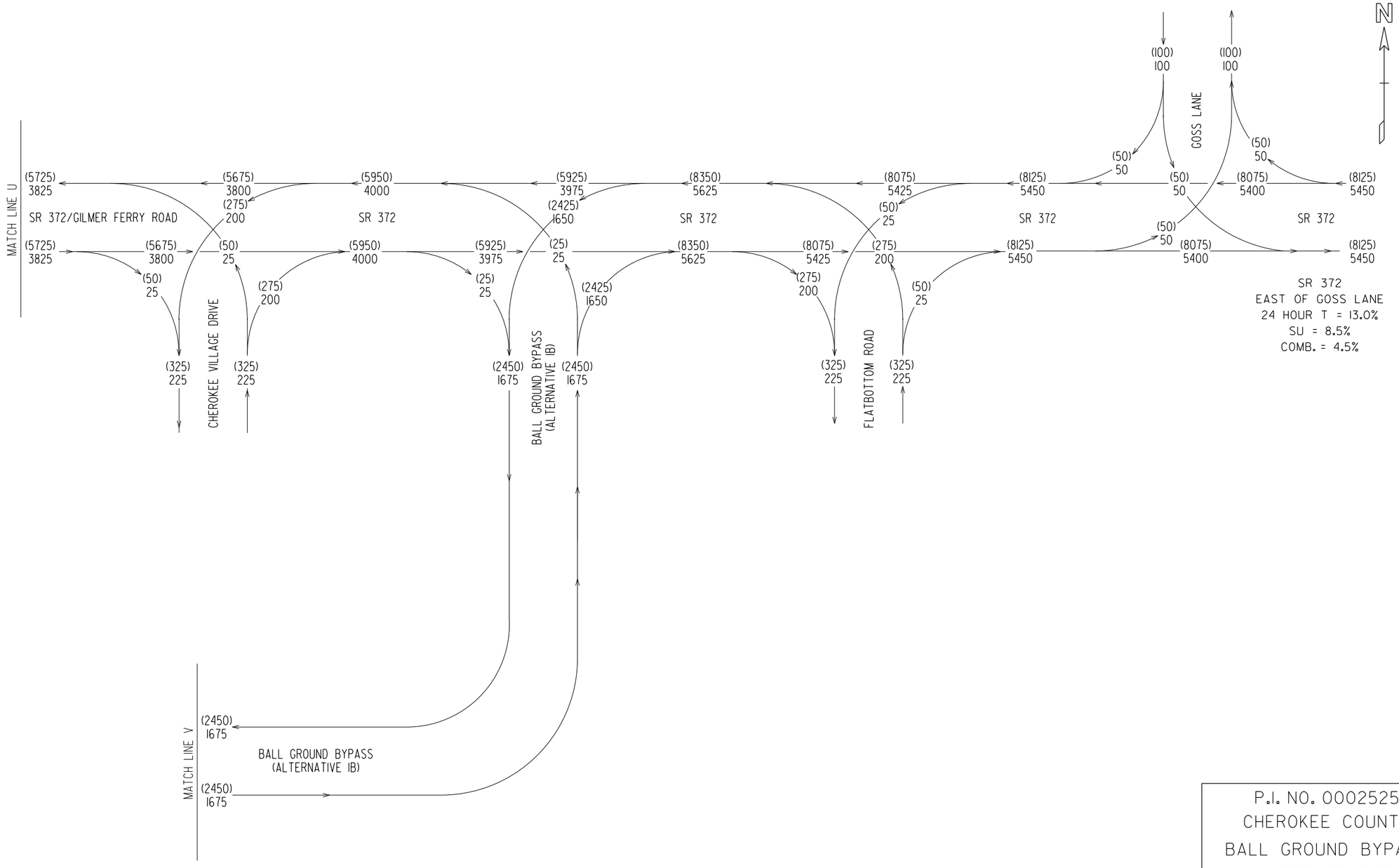
CHECKED:	RLR	DATE:	02/26/19
BACKCHECKED:	MWG	DATE:	02/28/19
CORRECTED:	RLR	DATE:	04/08/19
VERIFIED:	MWG	DATE:	04/08/19

DRAWING No. 10-0029

10/23/2015 GPLN

DATE$$$ TIME$$$ $PRFB$ DGN P. I. No. 0002525

$USER$ $$PENTABLE$$



P.I. NO. 0002525
CHEROKEE COUNTY
BALL GROUND BYPASS
ALTERNATIVE IB
2050 AADT = (000)
2030 AADT = 000
SCALE: N.T.S.

REVISION DATES		

TRAFFIC DIAGRAM

BALL GROUND BYPASS

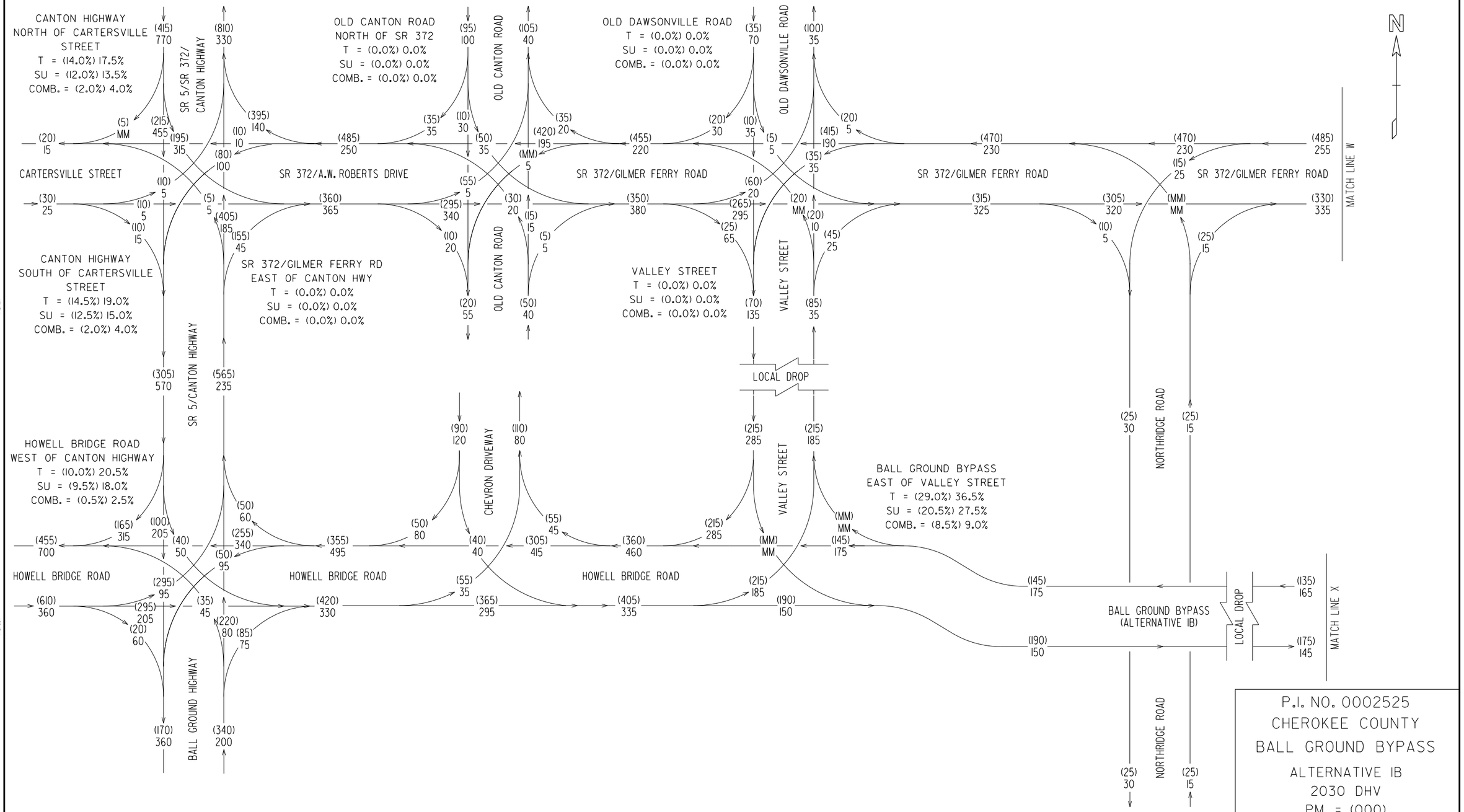
HOWELL BRIDGE RD TO BALL GROUND RD

CHECKED:	RLR	DATE:	02/26/19
BACKCHECKED:	MMG	DATE:	02/28/19
CORRECTED:	RLR	DATE:	04/08/19
VERIFIED:	MMG	DATE:	04/08/19

DRAWING No. 10-0030

10/23/2015 GPLN

DATE$$$ TIME$$$ $PRFB$ DGN P. I. No. 0002525
$USER$ $$PENTABLE$$



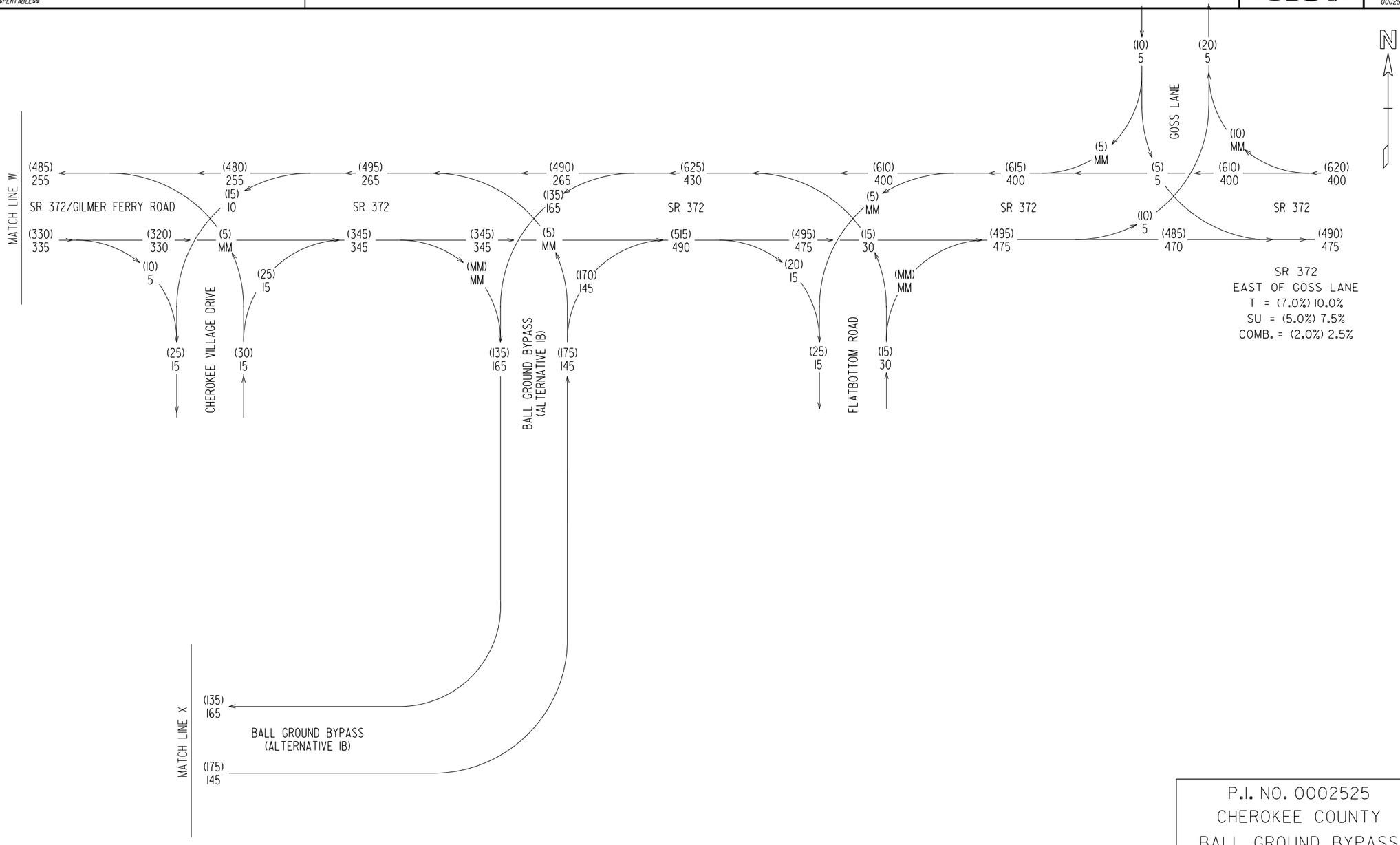
P.I. NO. 0002525
CHEROKEE COUNTY
BALL GROUND BYPASS
ALTERNATIVE IB
2030 DHV
PM = (000)
AM = 000
SCALE: N.T.S.

REVISION DATES

TRAFFIC DIAGRAM
BALL GROUND BYPASS
HOWELL BRIDGE RD TO BALL GROUND RD

CHECKED:	RLR	DATE: 02/26/19	DRAWING No.
BACKCHECKED:	MWG	DATE: 02/28/19	10-0031
CORRECTED:	RLR	DATE: 04/08/19	
VERIFIED:	MWG	DATE: 04/08/19	

10/23/2015 GPLN



P.I. NO. 0002525
CHEROKEE COUNTY
BALL GROUND BYPASS
ALTERNATIVE IB
2030 DHV
PM = (000)
AM = 000
SCALE: N.T.S.

REVISION DATES

TRAFFIC DIAGRAM

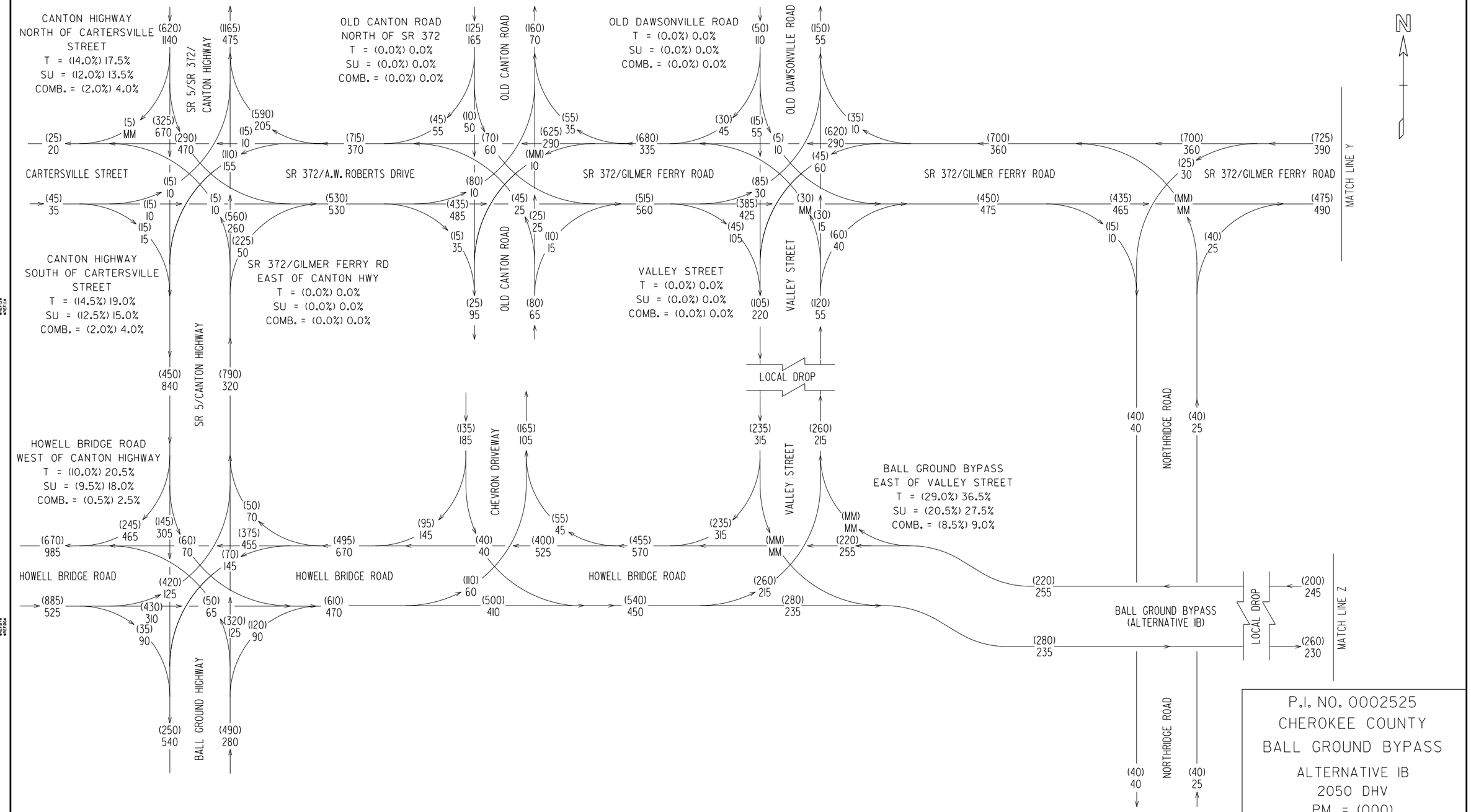
BALL GROUND BYPASS

HOWELL BRIDGE RD TO BALL GROUND RD

CHECKED:	RLR	DATE:	02/26/19
BACKCHECKED:	WMG	DATE:	02/28/19
CORRECTED:	RLR	DATE:	04/08/19
VERIFIED:	WMG	DATE:	04/08/19

DRAWING No. 10-0032

DATE$$$ TIME$$$ $PRFB$ DGN P. I. No. 0002525
$USER$ $$PENTABLE$$



P.I. NO. 0002525
CHEROKEE COUNTY
BALL GROUND BYPASS
ALTERNATIVE IB
2050 DHV
PM = (000)
AM = 000
SCALE: N.T.S.

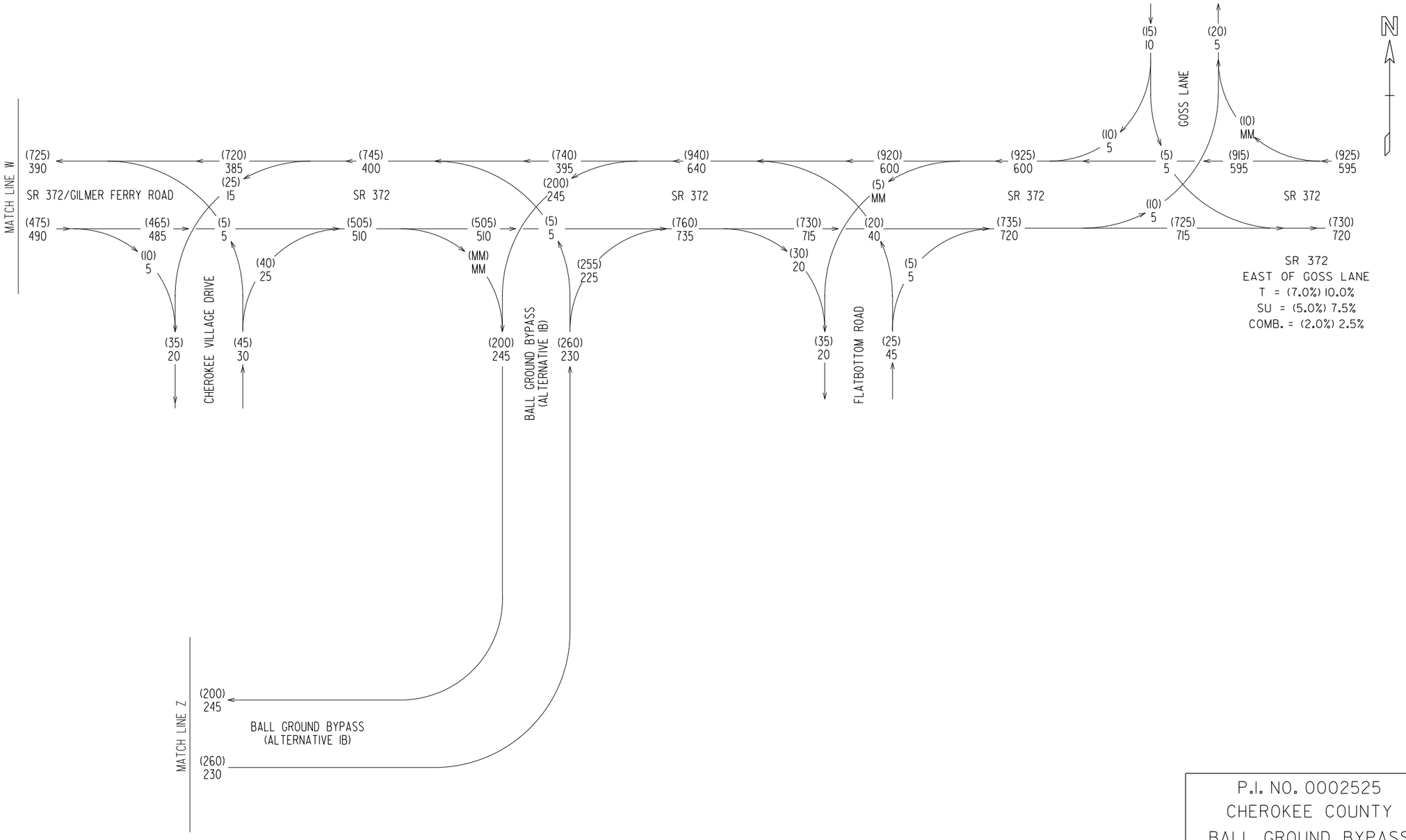
REVISION DATES

TRAFFIC DIAGRAM
BALL GROUND BYPASS
HOWELL BRIDGE RD TO BALL GROUND RD

CHECKED:	RLR	DATE: 02/26/19	DRAWING No.
BACKCHECKED:	MWG	DATE: 02/28/19	
CORRECTED:	RLR	DATE: 04/08/19	10-0033
VERIFIED:	MWG	DATE: 04/08/19	

10/23/2015 GPLN

DATE$$$ TIME$$$ | $PRFB$ | DGN | GDOT | P. I. No. 0002525
$USER$ | $$PENTABLE$$



P.I. NO. 0002525
CHEROKEE COUNTY
BALL GROUND BYPASS
ALTERNATIVE IB
2050 DHV
PM = (000)
AM = 000
SCALE: N.T.S.

REVISION DATES

TRAFFIC DIAGRAM

BALL GROUND BYPASS

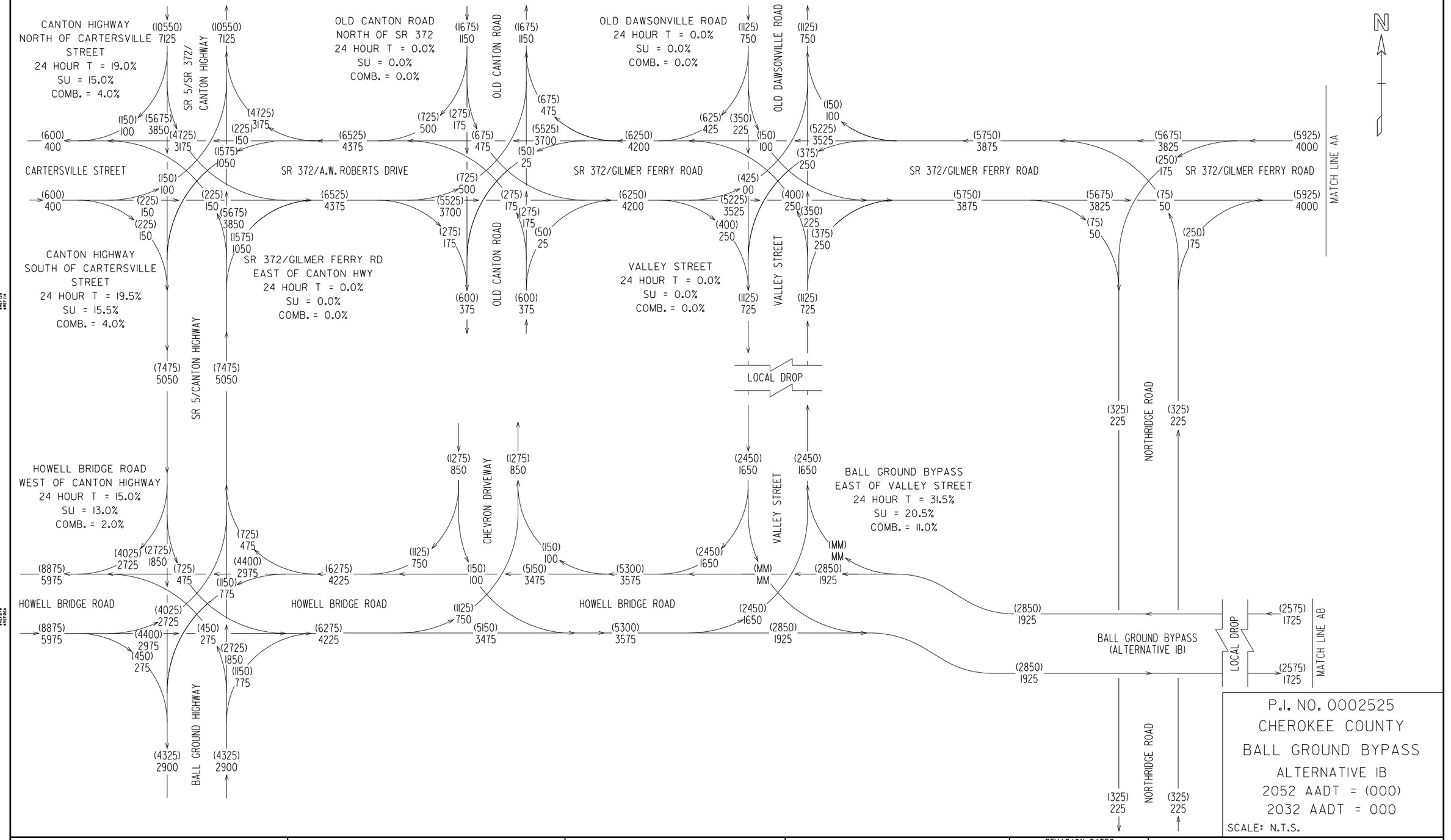
HOWELL BRIDGE RD TO BALL GROUND RD

CHECKED:	RLR	DATE:	02/26/19
BACKCHECKED:	WMG	DATE:	02/28/19
CORRECTED:	RLR	DATE:	04/08/19
VERIFIED:	WMG	DATE:	04/08/19

DRAWING No. 10-0034

10/23/2015 GPLN

DATE$$$ TIME$$$ $PRFB$ DGN P. I. No. 0002525
$USER$ $$PENTABLE$$ GDOT



P.I. NO. 0002525
CHEROKEE COUNTY
BALL GROUND BYPASS
ALTERNATIVE IB
2052 AADT = (000)
2032 AADT = 000
SCALE: N.T.S.

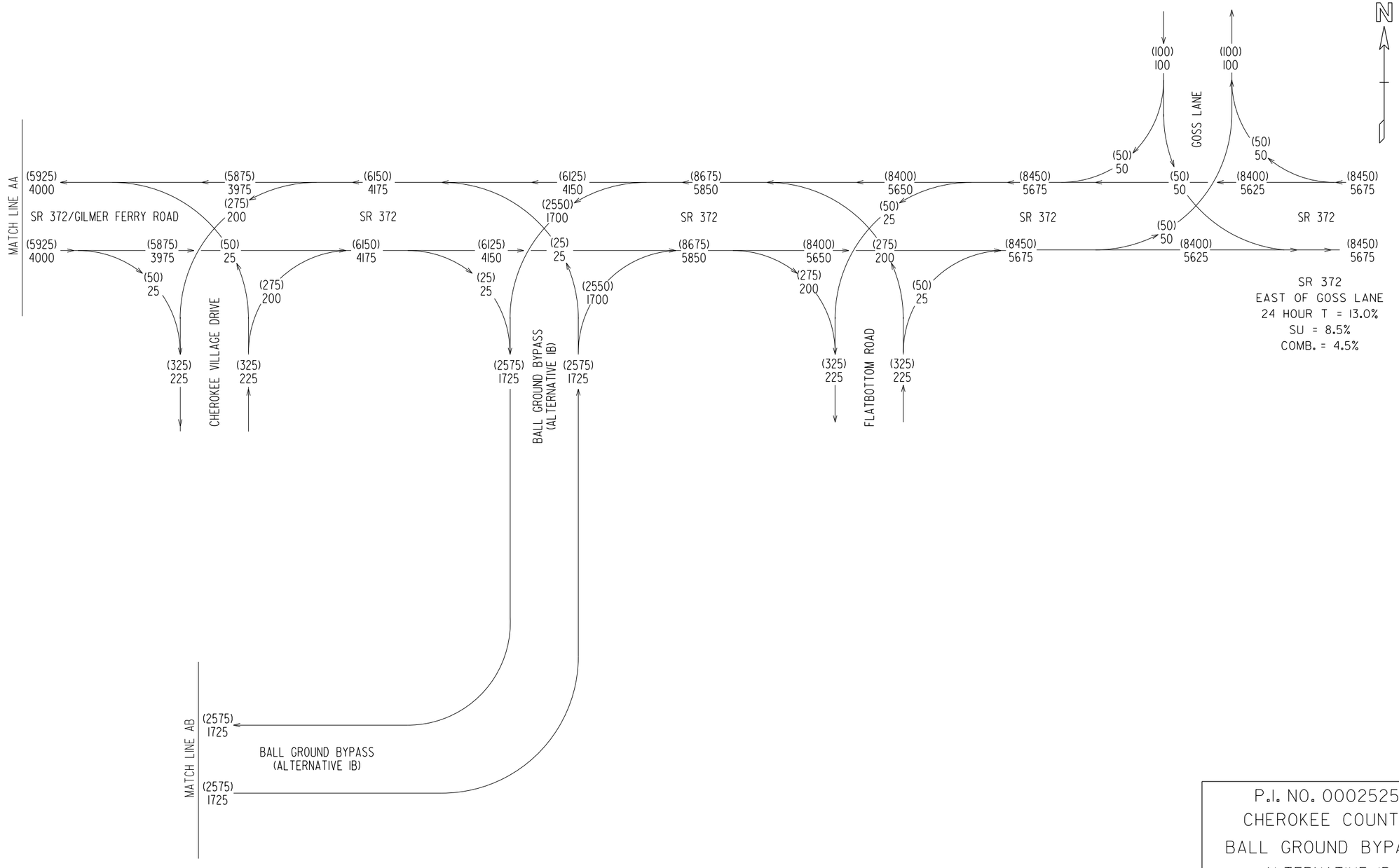
REVISION DATES

TRAFFIC DIAGRAM
BALL GROUND BYPASS
HOWELL BRIDGE RD TO BALL GROUND RD

CHECKED:	RLR	DATE:	02/26/19
BACKCHECKED:	MWG	DATE:	02/28/19
CORRECTED:	RLR	DATE:	04/08/19
VERIFIED:	MWG	DATE:	04/08/19

DRAWING No. 10-0035

10/23/2015 GPLN



P.I. NO. 0002525
CHEROKEE COUNTY
BALL GROUND BYPASS
ALTERNATIVE IB
2052 AADT = (000)
2032 AADT = 000
SCALE: N.T.S.

REVISION DATES		

TRAFFIC DIAGRAM

BALL GROUND BYPASS

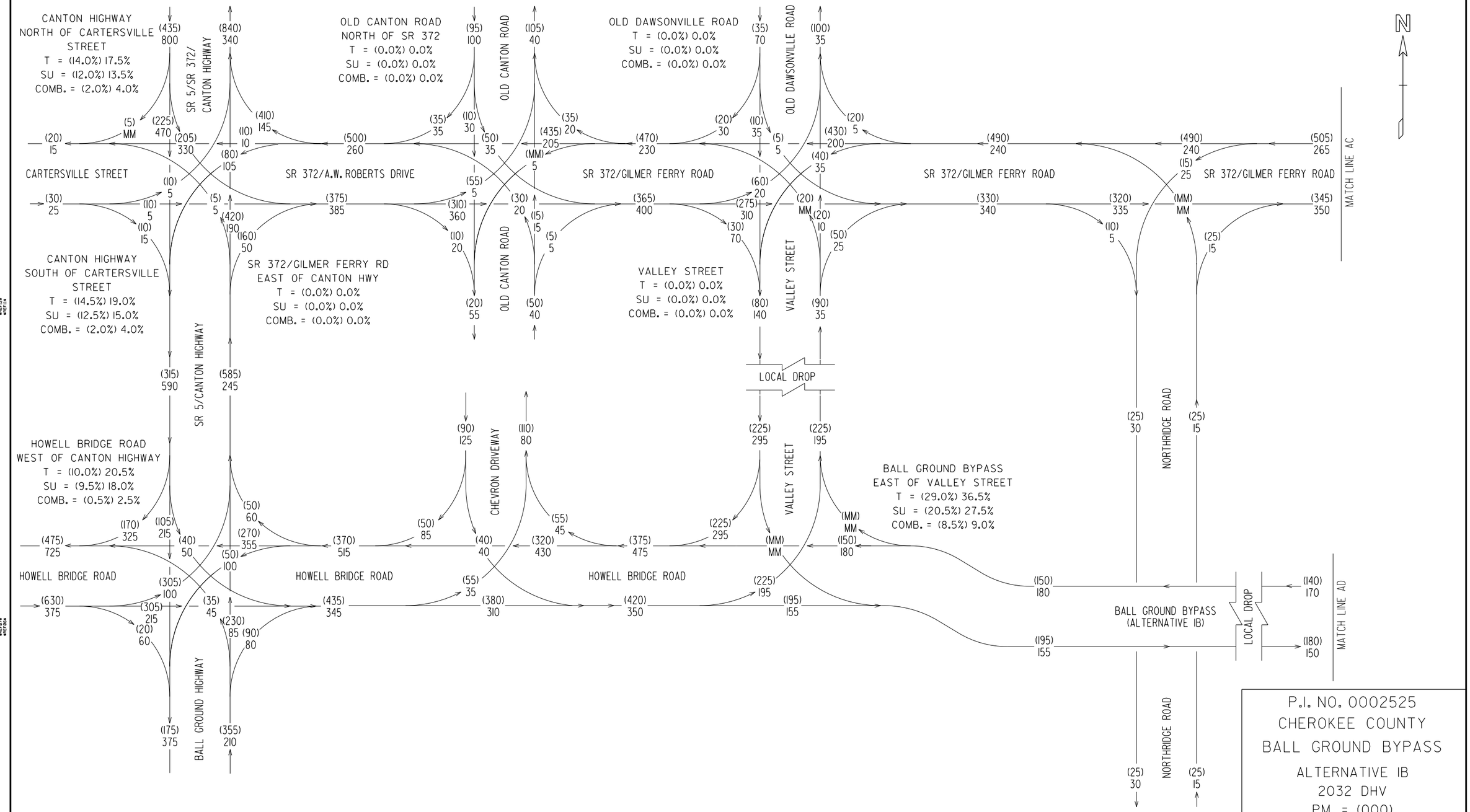
HOWELL BRIDGE RD TO BALL GROUND RD

CHECKED:	RLR	DATE:	02/26/19
BACKCHECKED:	WMG	DATE:	02/28/19
CORRECTED:	RLR	DATE:	04/08/19
VERIFIED:	WMG	DATE:	04/08/19

DRAWING No. 10-0036

10/23/2015 GPLN

DATE$$$ TIME$$$ $PRFB$ DGN P. I. No. 0002525
$USER$ $$PENTABLE$$



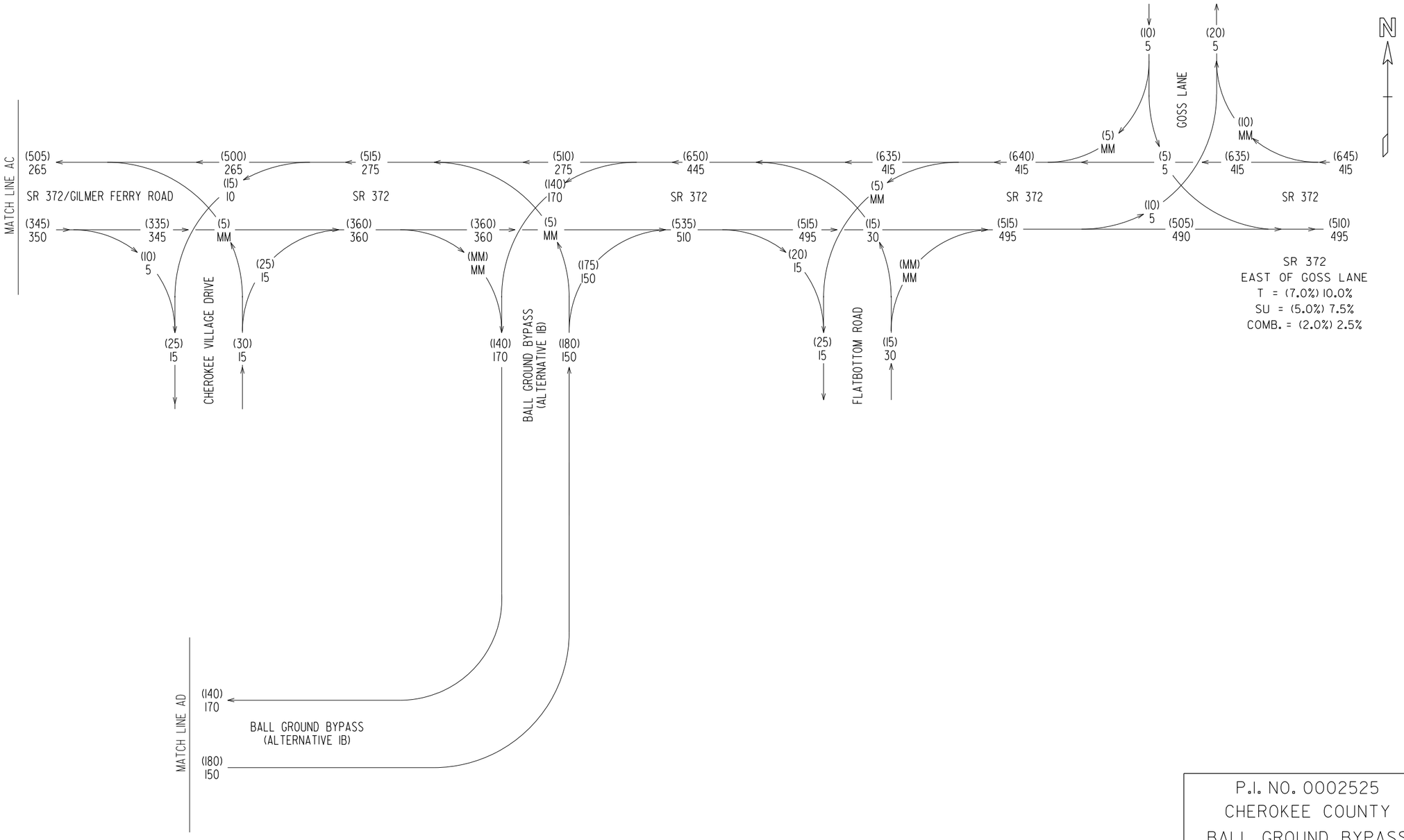
P.I. NO. 0002525
CHEROKEE COUNTY
BALL GROUND BYPASS
ALTERNATIVE IB
2032 DHV
PM = (000)
AM = 000
SCALE: N.T.S.

REVISION DATES

TRAFFIC DIAGRAM
BALL GROUND BYPASS
HOWELL BRIDGE RD TO BALL GROUND RD

CHECKED:	RLR	DATE: 02/26/19	DRAWING No.
BACKCHECKED:	MWG	DATE: 02/28/19	
CORRECTED:	RLR	DATE: 04/08/19	10-0037
VERIFIED:	MWG	DATE: 04/08/19	

10/23/2015 GPLN



P.I. NO. 0002525
CHEROKEE COUNTY
BALL GROUND BYPASS
ALTERNATIVE IB
2032 DHV
PM = (000)
AM = 000
SCALE: N.T.S.

REVISION DATES

TRAFFIC DIAGRAM

BALL GROUND BYPASS

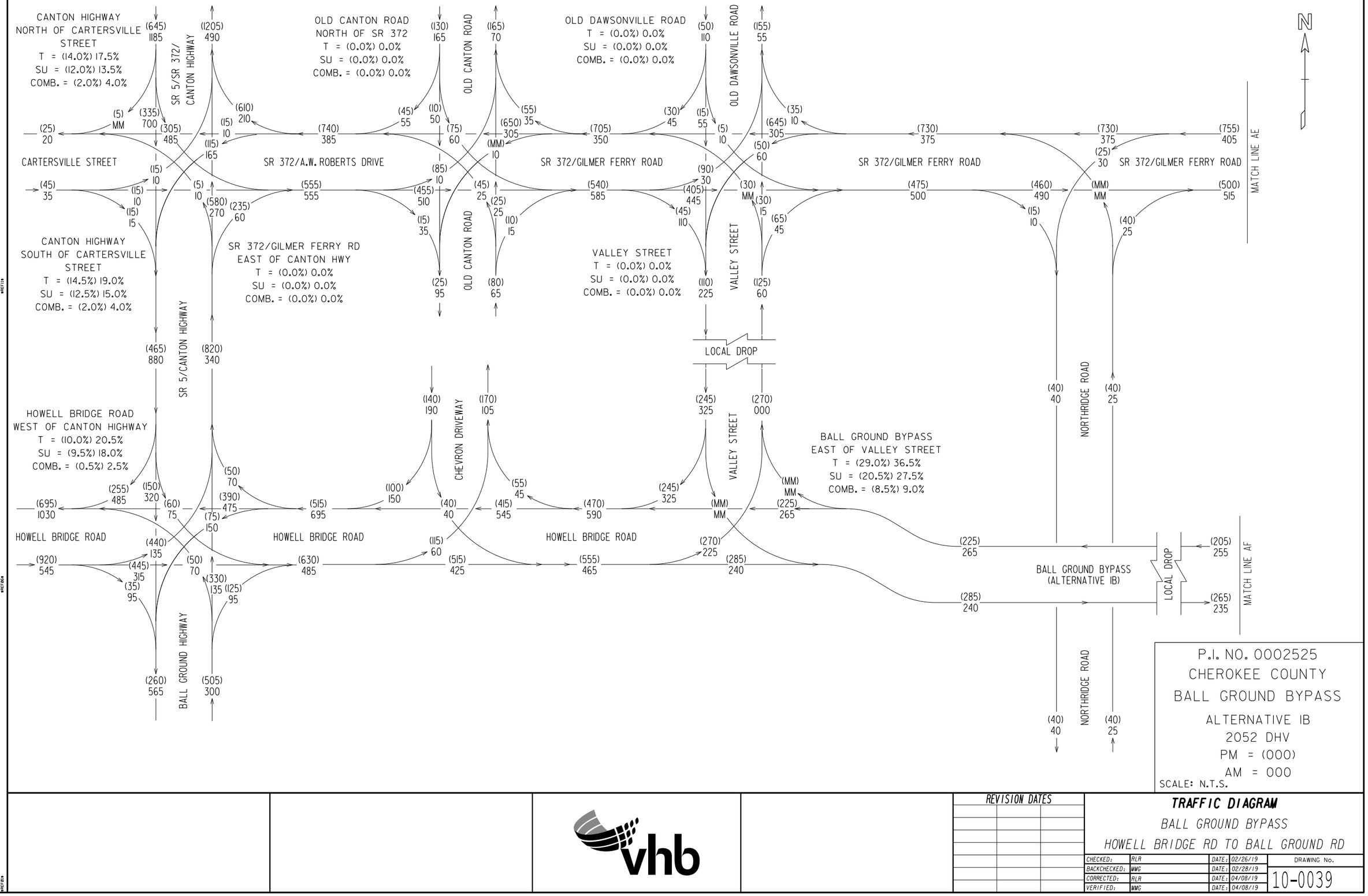
HOWELL BRIDGE RD TO BALL GROUND RD

CHECKED:	RLR	DATE:	02/26/19
BACKCHECKED:	MWG	DATE:	02/28/19
CORRECTED:	RLR	DATE:	04/08/19
VERIFIED:	MWG	DATE:	04/08/19

DRAWING No. 10-0038

10/23/2015 GPLN

DATE$$$ TIME$$$ $PRFB$ DGN P. I. No. 0002525
$USER$ $$PENTABLE$$ GDOT



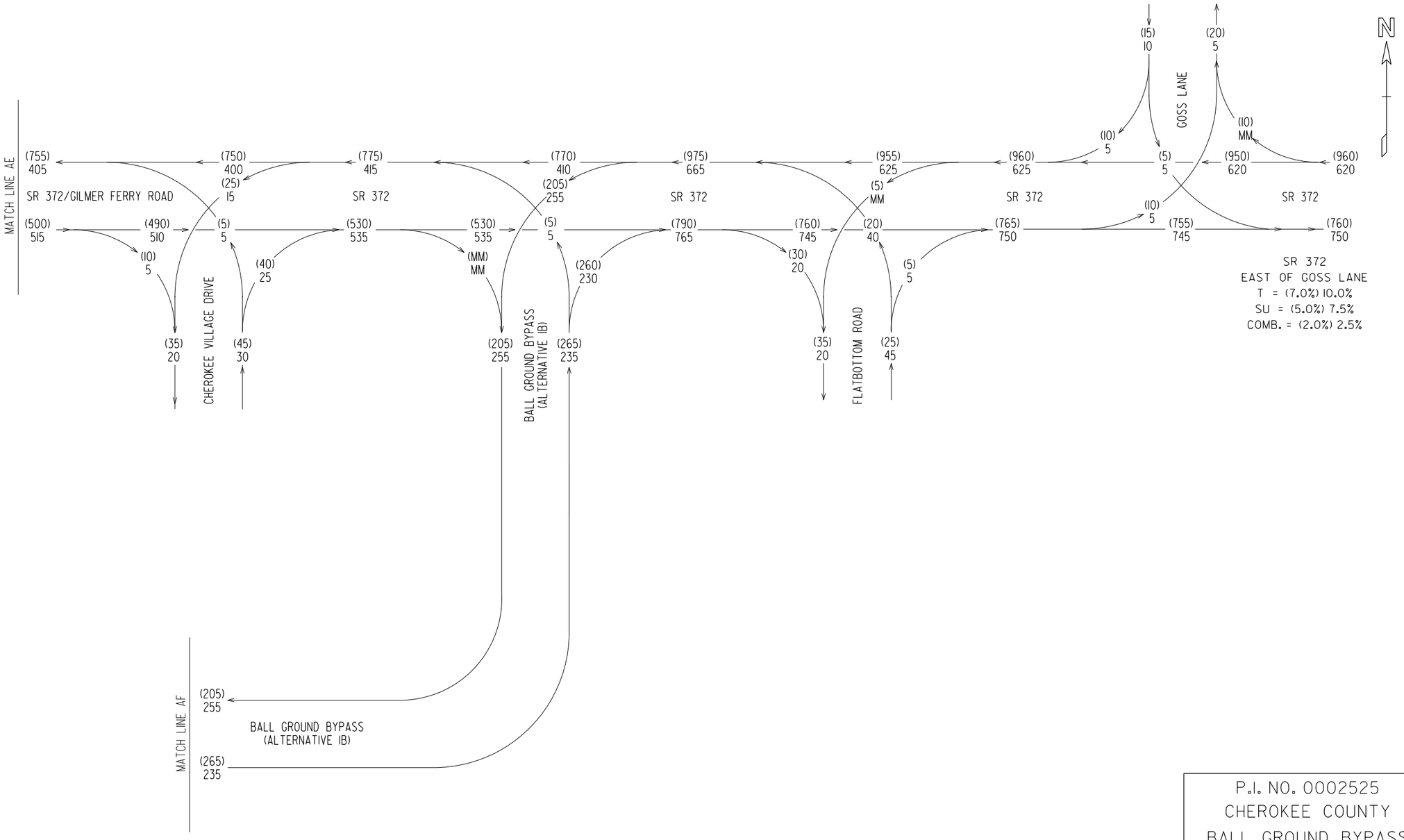
P.I. NO. 0002525
CHEROKEE COUNTY
BALL GROUND BYPASS
ALTERNATIVE IB
2052 DHV
PM = (000)
AM = 000
SCALE: N.T.S.

REVISION DATES

TRAFFIC DIAGRAM
BALL GROUND BYPASS
HOWELL BRIDGE RD TO BALL GROUND RD

CHECKED:	RLR	DATE: 02/26/19	DRAWING No.
BACKCHECKED:	MWG	DATE: 02/28/19	
CORRECTED:	RLR	DATE: 04/08/19	10-0039
VERIFIED:	MWG	DATE: 04/08/19	

10/23/2015 GPLN



P.I. NO. 0002525
CHEROKEE COUNTY
BALL GROUND BYPASS
ALTERNATIVE IB
2052 DHV
PM = (000)
AM = 000
SCALE: N.T.S.

REVISION DATES

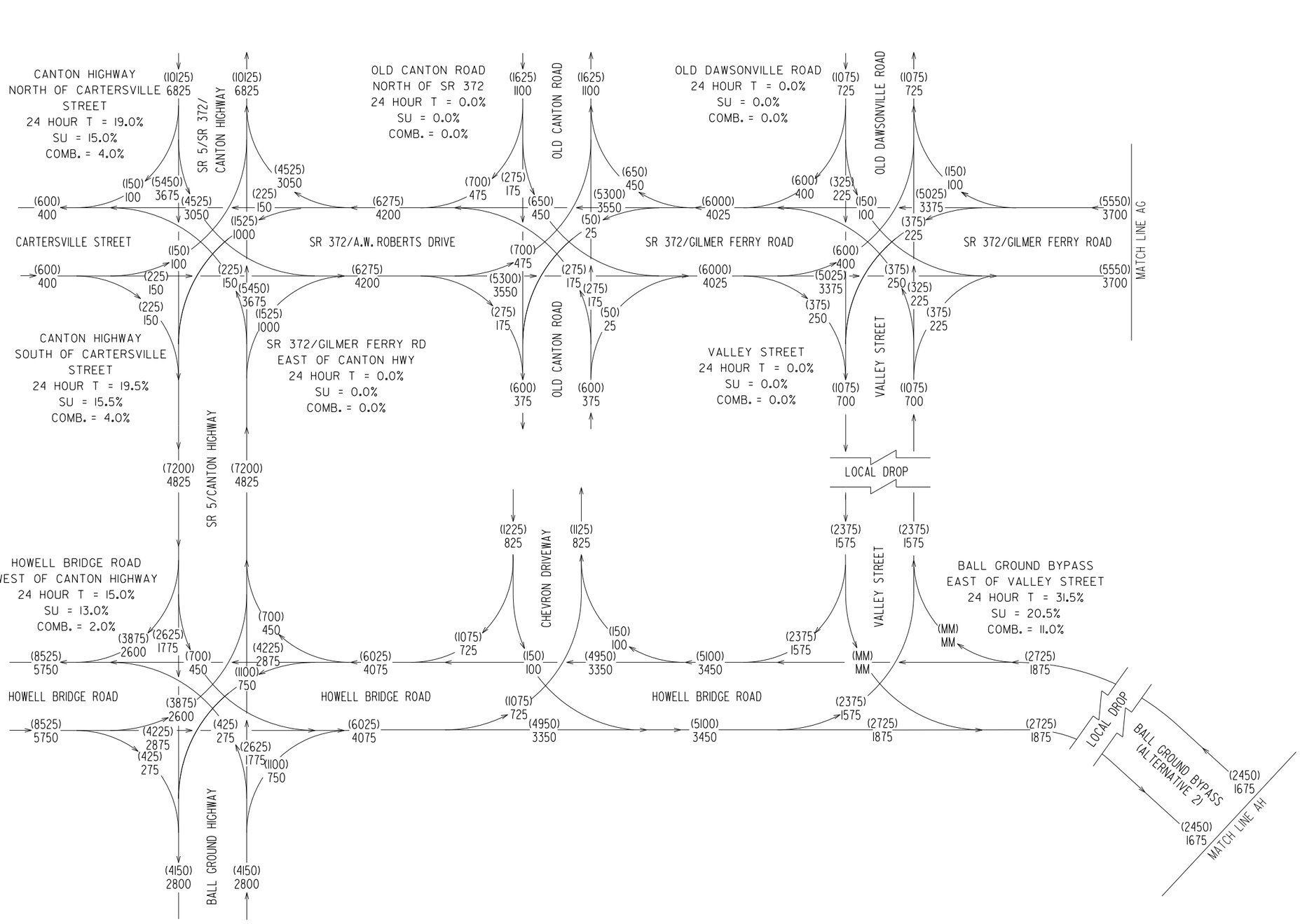
TRAFFIC DIAGRAM

BALL GROUND BYPASS

HOWELL BRIDGE RD TO BALL GROUND RD

CHECKED:	RLR	DATE:	02/26/19
BACKCHECKED:	WMG	DATE:	02/28/19
CORRECTED:	RLR	DATE:	04/08/19
VERIFIED:	WMG	DATE:	04/08/19

DRAWING No. 10-0040



P.I. NO. 0002525
CHEROKEE COUNTY
BALL GROUND BYPASS
ALTERNATIVE 2
2050 AADT = (000)
2030 AADT = 000
SCALE: N.T.S.

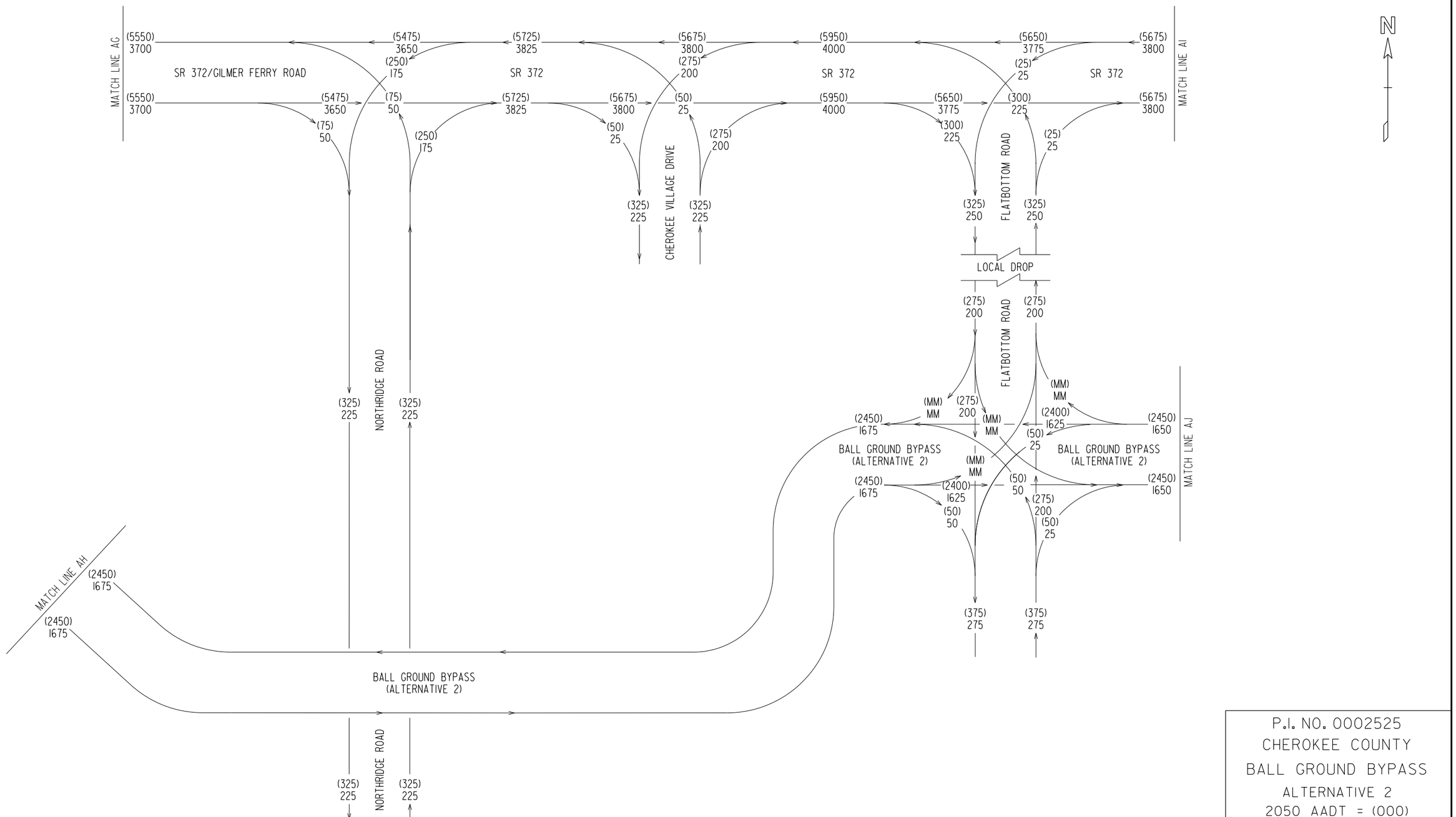
REVISION DATES

TRAFFIC DIAGRAM

BALL GROUND BYPASS
HOWELL BRIDGE RD TO BALL GROUND RD

CHECKED:	RLR	DATE: 02/26/19	DRAWING No.
BACKCHECKED:	MWG	DATE: 02/28/19	
CORRECTED:	RLR	DATE: 04/08/19	10-0041
VERIFIED:	MWG	DATE: 04/08/19	

10/23/2015 GPLN



N

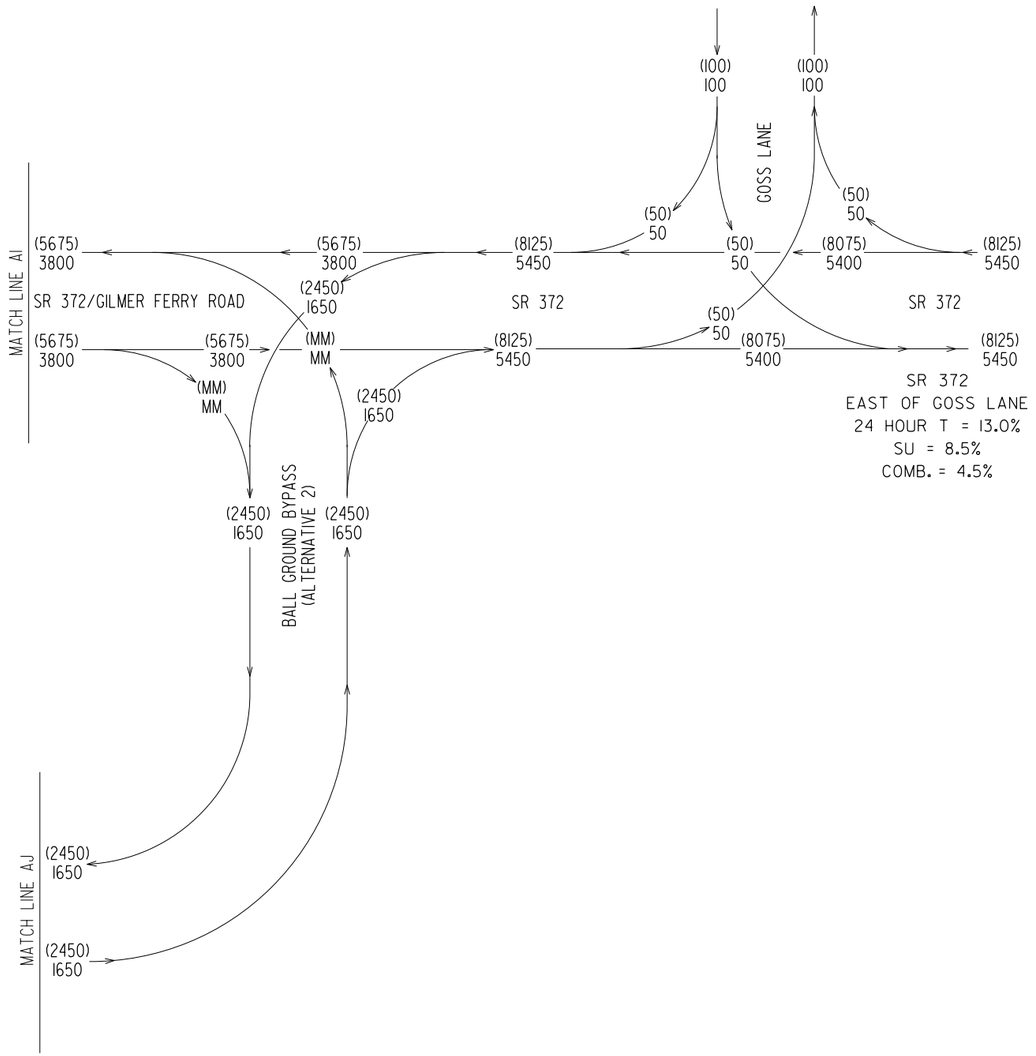
P.I. NO. 0002525
CHEROKEE COUNTY
BALL GROUND BYPASS
ALTERNATIVE 2
2050 AADT = (000)
2030 AADT = 000
SCALE: N.T.S.

REVISION DATES

TRAFFIC DIAGRAM
BALL GROUND BYPASS
HOWELL BRIDGE RD TO BALL GROUND RD

CHECKED:	RLR	DATE: 02/26/19	DRAWING No.
BACKCHECKED:	MWG	DATE: 02/28/19	10-0042
CORRECTED:	RLR	DATE: 04/08/19	
VERIFIED:	MWG	DATE: 04/08/19	

10/23/2015 GPLN



P.I. NO. 0002525
CHEROKEE COUNTY
BALL GROUND BYPASS
ALTERNATIVE 2
2050 AADT = (000)
2030 AADT = 000
SCALE: N.T.S.

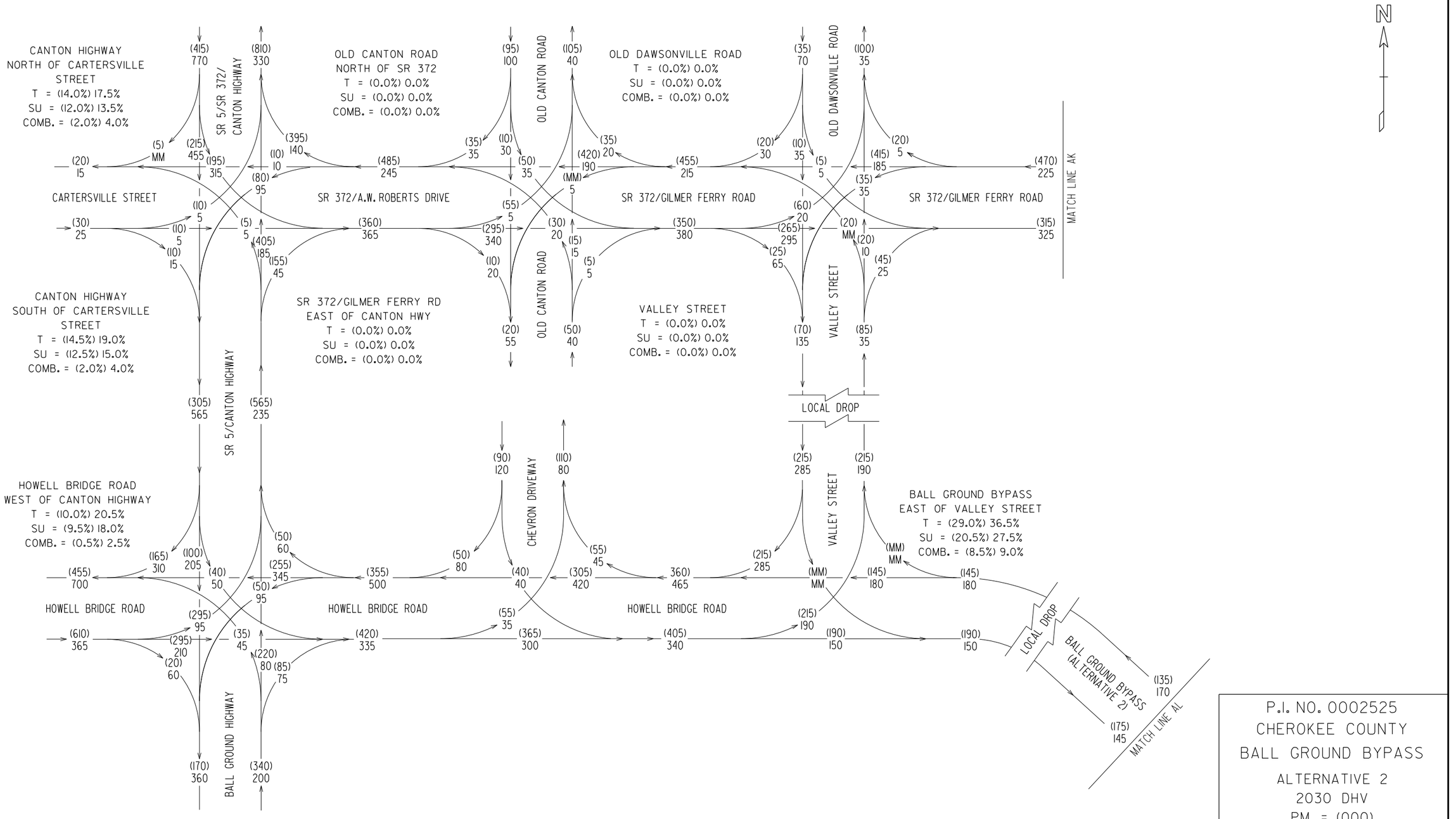
REVISION DATES

TRAFFIC DIAGRAM

BALL GROUND BYPASS

HOWELL BRIDGE RD TO BALL GROUND RD

CHECKED:	RLR	DATE: 02/26/19	DRAWING No.
BACKCHECKED:	MWG	DATE: 02/28/19	10-0043
CORRECTED:	RLR	DATE: 04/08/19	
VERIFIED:	MWG	DATE: 04/08/19	



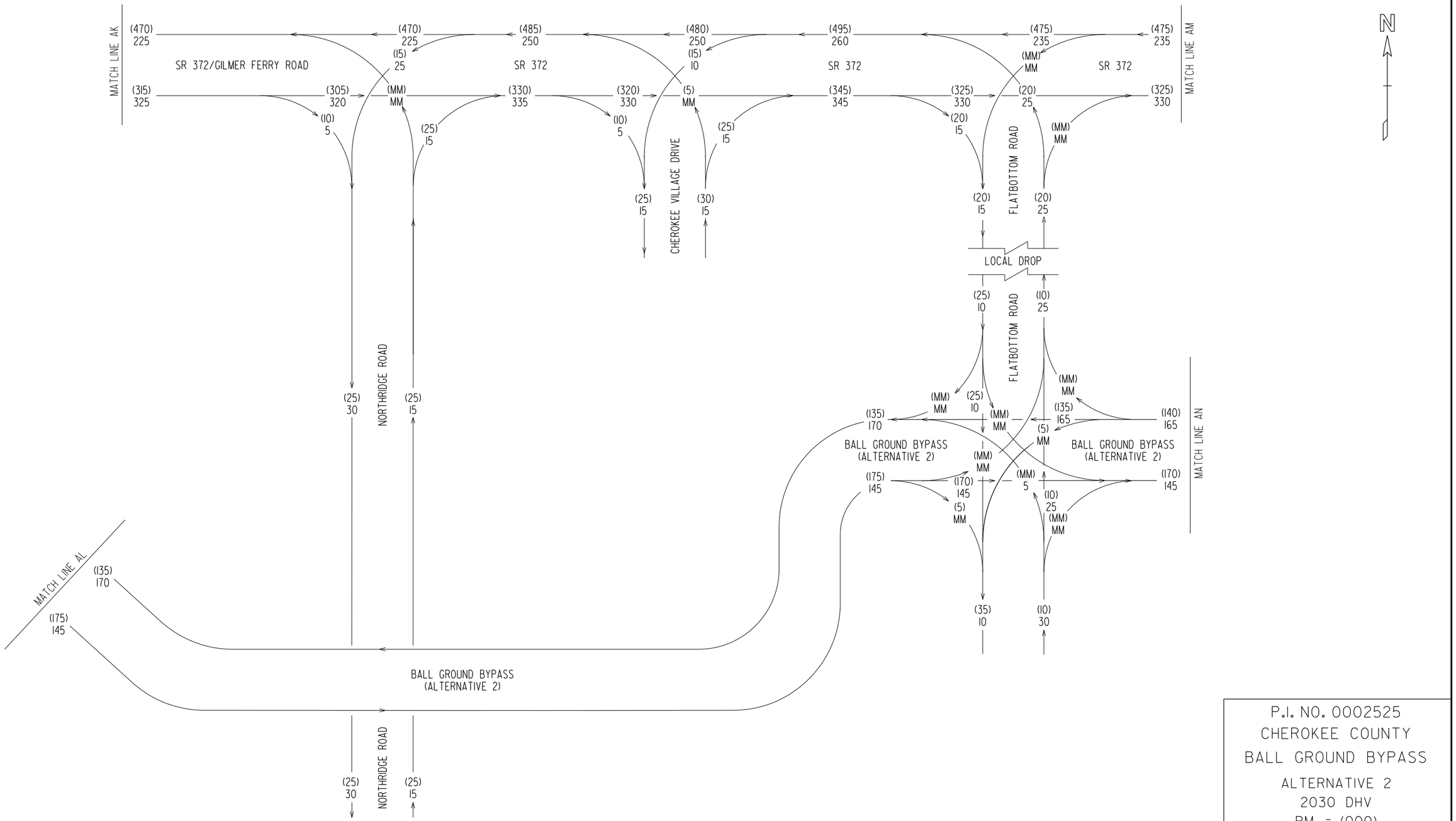
P.I. NO. 0002525
CHEROKEE COUNTY
BALL GROUND BYPASS
ALTERNATIVE 2
2030 DHV
PM = (000)
AM = 000
SCALE: N.T.S.

REVISION DATES		

TRAFFIC DIAGRAM
BALL GROUND BYPASS
HOWELL BRIDGE RD TO BALL GROUND RD

CHECKED:	RLR	DATE:	02/26/19	DRAWING No.
BACKCHECKED:	MWG	DATE:	02/28/19	10-0044
CORRECTED:	RLR	DATE:	04/08/19	
VERIFIED:	MWG	DATE:	04/08/19	

10/23/2015 GPLN



P.I. NO. 0002525
CHEROKEE COUNTY
BALL GROUND BYPASS
ALTERNATIVE 2
2030 DHV
PM = (000)
AM = 000
SCALE: N.T.S.

REVISION DATES

TRAFFIC DIAGRAM
BALL GROUND BYPASS
HOWELL BRIDGE RD TO BALL GROUND RD

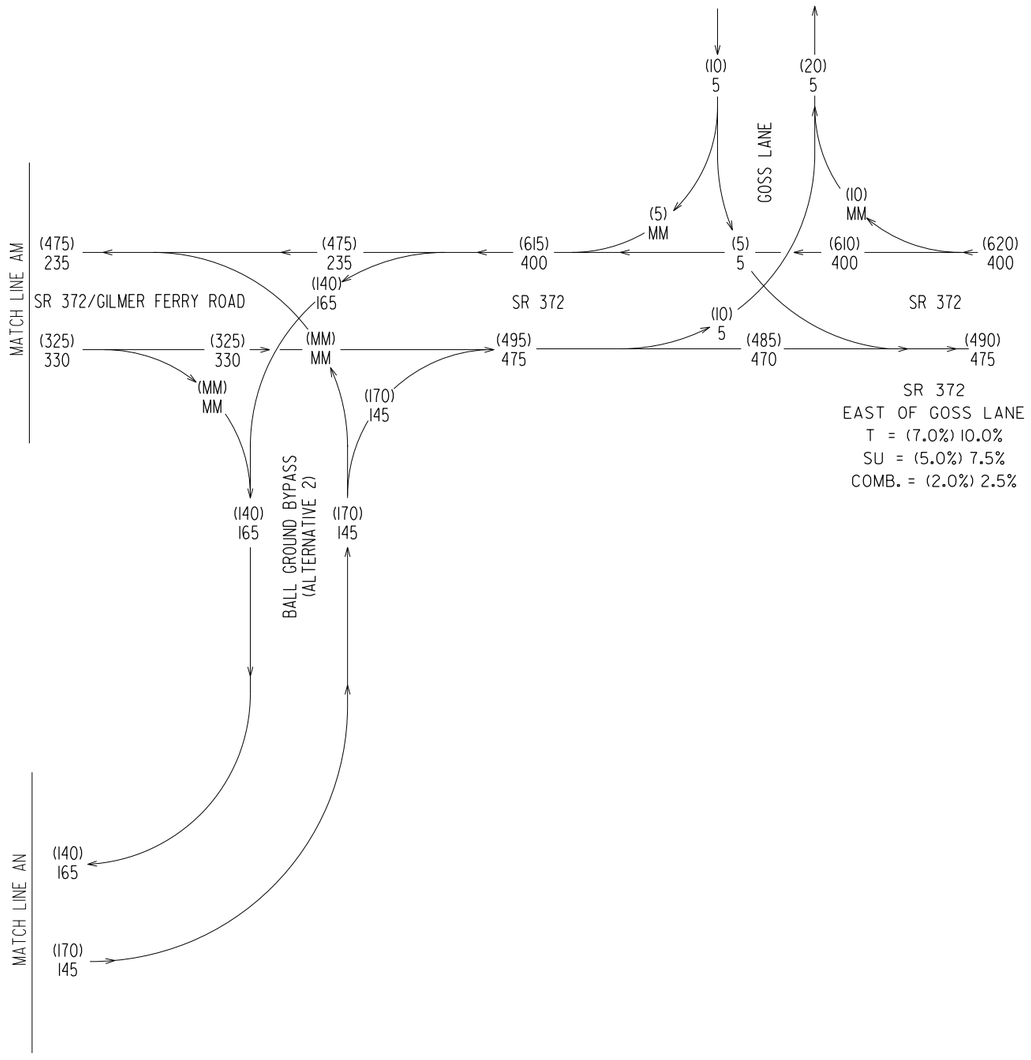
CHECKED:	RLR	DATE:	02/26/19
BACKCHECKED:	MWG	DATE:	02/28/19
CORRECTED:	RLR	DATE:	04/08/19
VERIFIED:	MWG	DATE:	04/08/19

DRAWING No. 10-0045

10/23/2015 GPLK

DATE$$$ TIME$$$ $PRFB$ DGN P. I. No. 0002525

$USER$ $$PENTABLE$$



P.I. NO. 0002525
CHEROKEE COUNTY
BALL GROUND BYPASS
ALTERNATIVE 2
2030 DHV
PM = (000)
AM = 000
SCALE: N.T.S.

REVISION DATES

TRAFFIC DIAGRAM

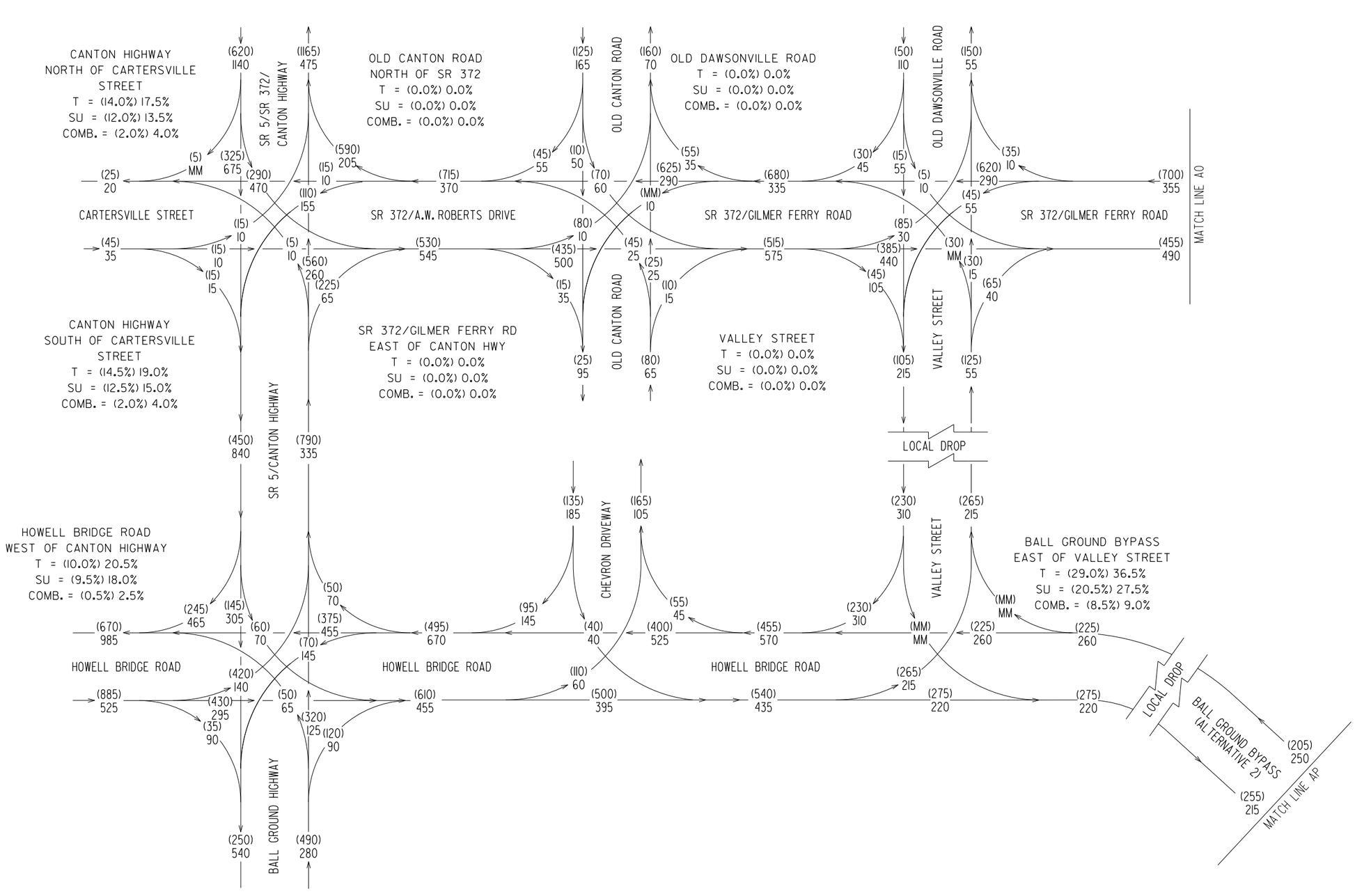
BALL GROUND BYPASS

HOWELL BRIDGE RD TO BALL GROUND RD

CHECKED:	RLR	DATE:	02/26/19
BACKCHECKED:	MWG	DATE:	02/28/19
CORRECTED:	RLR	DATE:	04/08/19
VERIFIED:	MWG	DATE:	04/08/19

DRAWING No. 10-0046

10/23/2015 GPLN



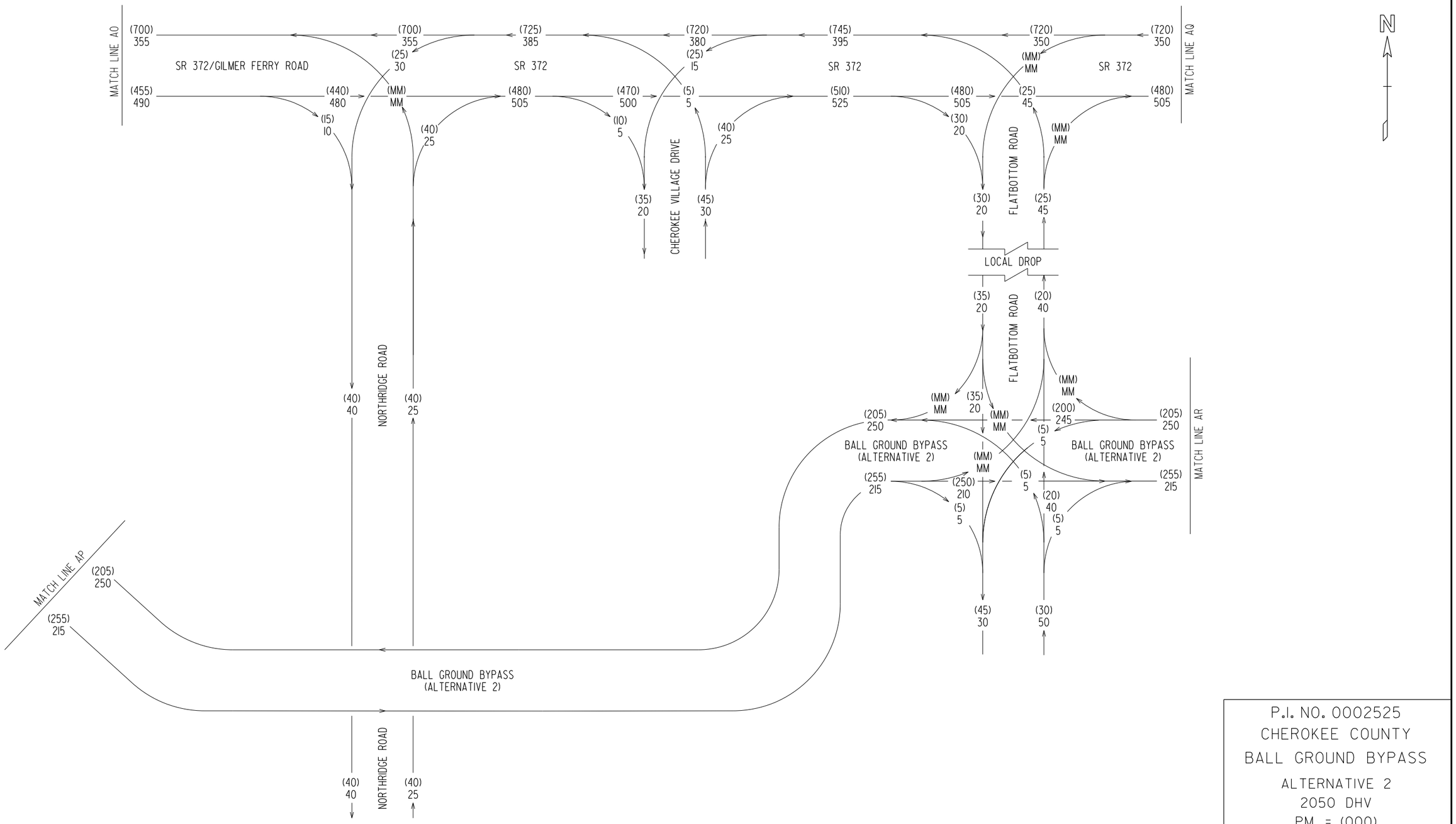
P.I. NO. 0002525
CHEROKEE COUNTY
BALL GROUND BYPASS
ALTERNATIVE 2
2050 DHV
PM = (000)
AM = 000
SCALE: N.T.S.

REVISION DATES		

TRAFFIC DIAGRAM
BALL GROUND BYPASS
HOWELL BRIDGE RD TO BALL GROUND RD

CHECKED:	RLR	DATE: 02/26/19	DRAWING No.
BACKCHECKED:	MWG	DATE: 02/28/19	10-0047
CORRECTED:	RLR	DATE: 04/08/19	
VERIFIED:	MWG	DATE: 04/08/19	

10/23/2015 GPLN



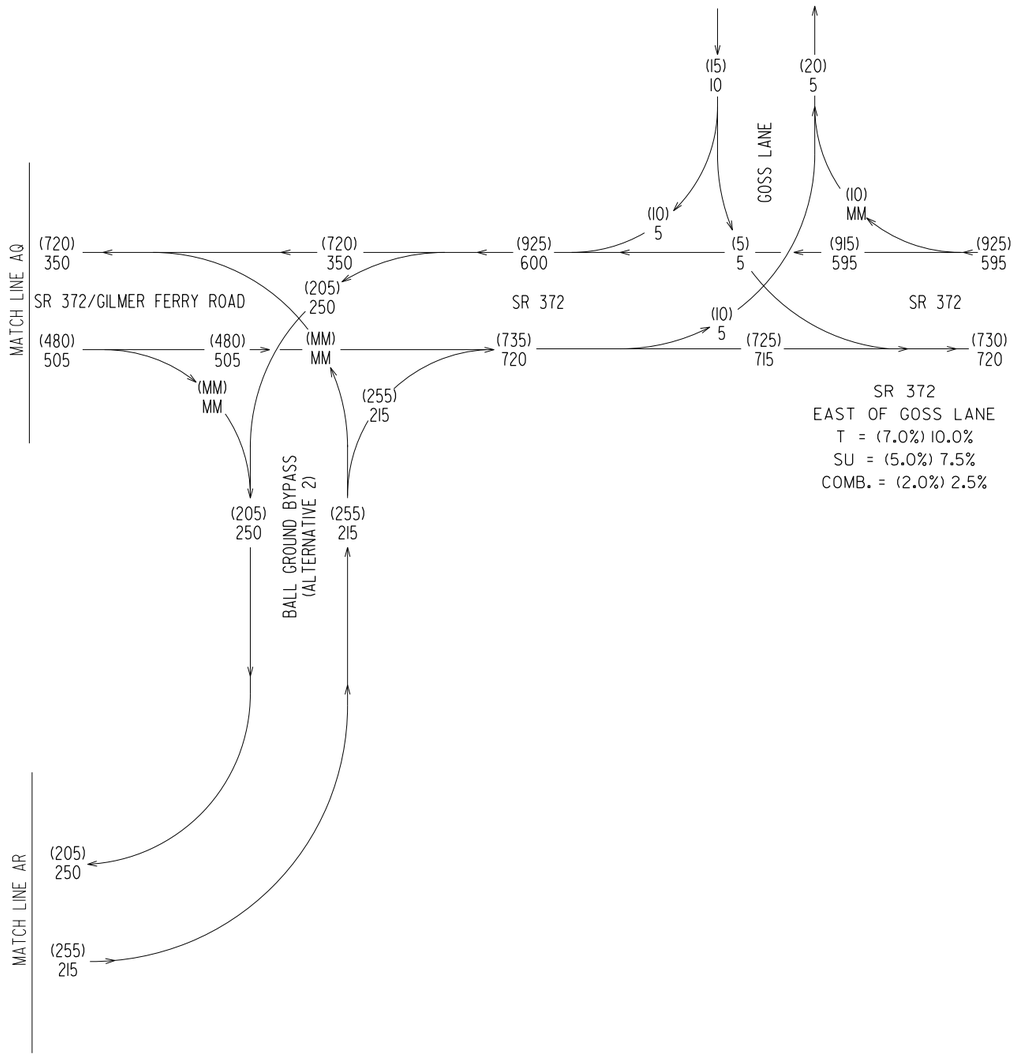
P.I. NO. 0002525
CHEROKEE COUNTY
BALL GROUND BYPASS
ALTERNATIVE 2
2050 DHV
PM = (000)
AM = 000
SCALE: N.T.S.

REVISION DATES

TRAFFIC DIAGRAM
BALL GROUND BYPASS
HOWELL BRIDGE RD TO BALL GROUND RD

CHECKED:	RLR	DATE: 02/26/19	DRAWING No.
BACKCHECKED:	MWG	DATE: 02/28/19	10-0048
CORRECTED:	RLR	DATE: 04/08/19	
VERIFIED:	MWG	DATE: 04/08/19	

10/23/2015 GPLN



N

P.I. NO. 0002525
CHEROKEE COUNTY
BALL GROUND BYPASS
ALTERNATIVE 2
2050 DHV
PM = (000)
AM = 000
SCALE: N.T.S.

REVISION DATES

TRAFFIC DIAGRAM

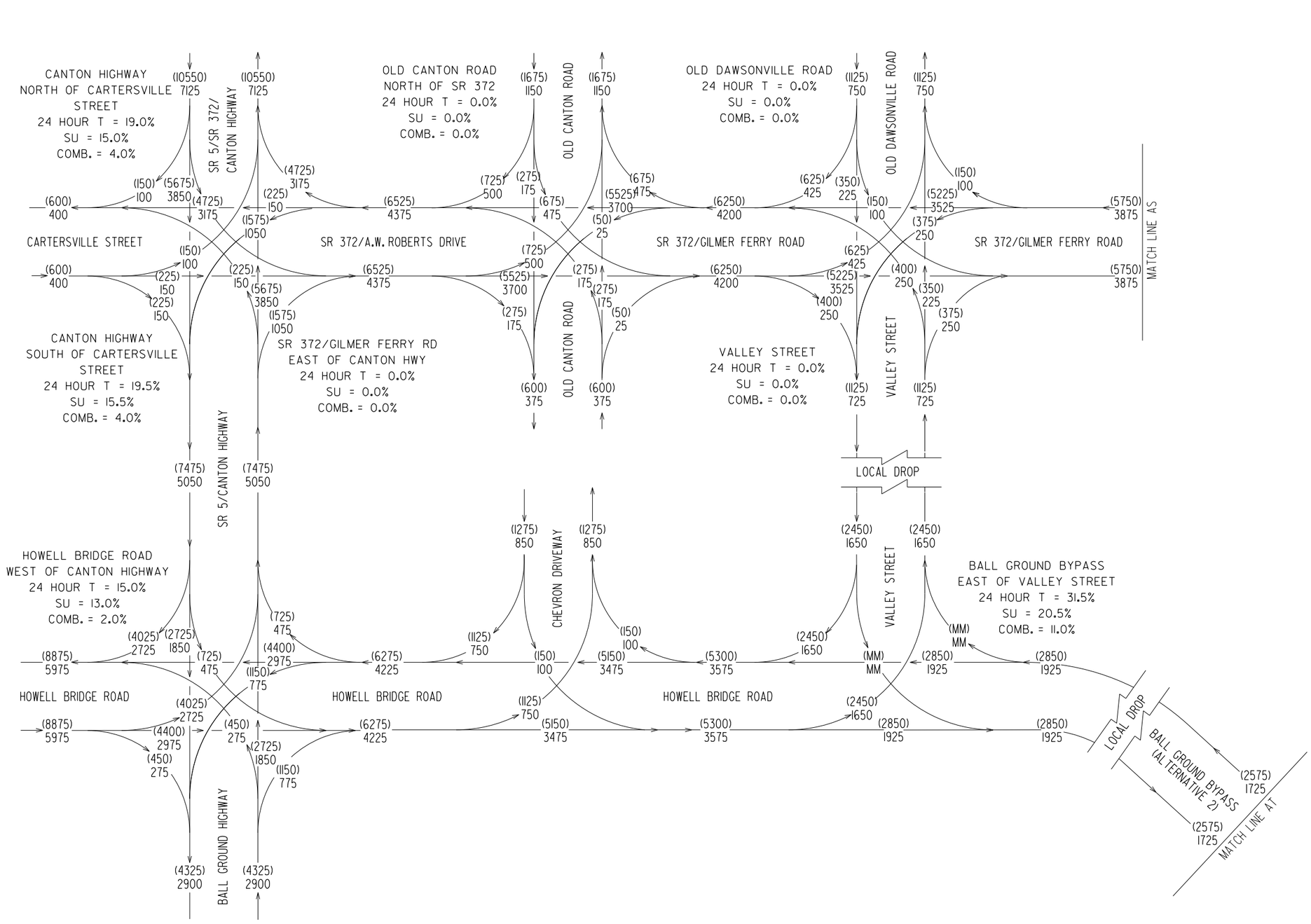
BALL GROUND BYPASS

HOWELL BRIDGE RD TO BALL GROUND RD

CHECKED:	RLR	DATE:	02/26/19
BACKCHECKED:	WMG	DATE:	02/28/19
CORRECTED:	RLR	DATE:	04/08/19
VERIFIED:	WMG	DATE:	04/08/19

DRAWING No. 10-0049

10/23/2015 GPLN



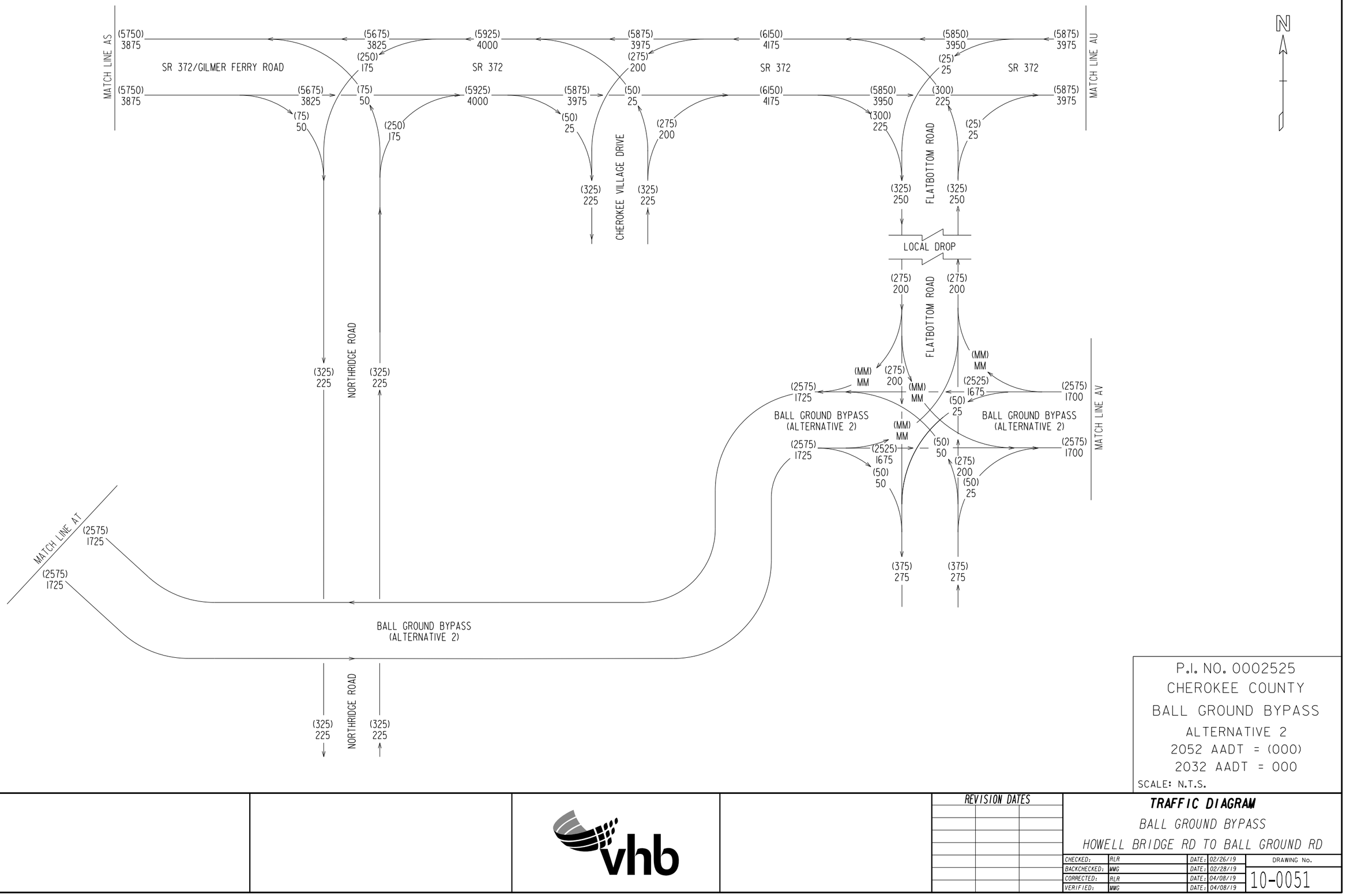
P.I. NO. 0002525
CHEROKEE COUNTY
BALL GROUND BYPASS
ALTERNATIVE 2
2052 AADT = (000)
2032 AADT = 000
SCALE: N.T.S.

REVISION DATES		

TRAFFIC DIAGRAM
BALL GROUND BYPASS
HOWELL BRIDGE RD TO BALL GROUND RD

CHECKED:	RLR	DATE: 02/26/19	DRAWING No.
BACKCHECKED:	MWG	DATE: 02/28/19	10-0050
CORRECTED:	RLR	DATE: 04/08/19	
VERIFIED:	MWG	DATE: 04/08/19	

10/23/2015 GPLN



P.I. NO. 0002525
CHEROKEE COUNTY
BALL GROUND BYPASS
ALTERNATIVE 2
2052 AADT = (000)
2032 AADT = 000
SCALE: N.T.S.

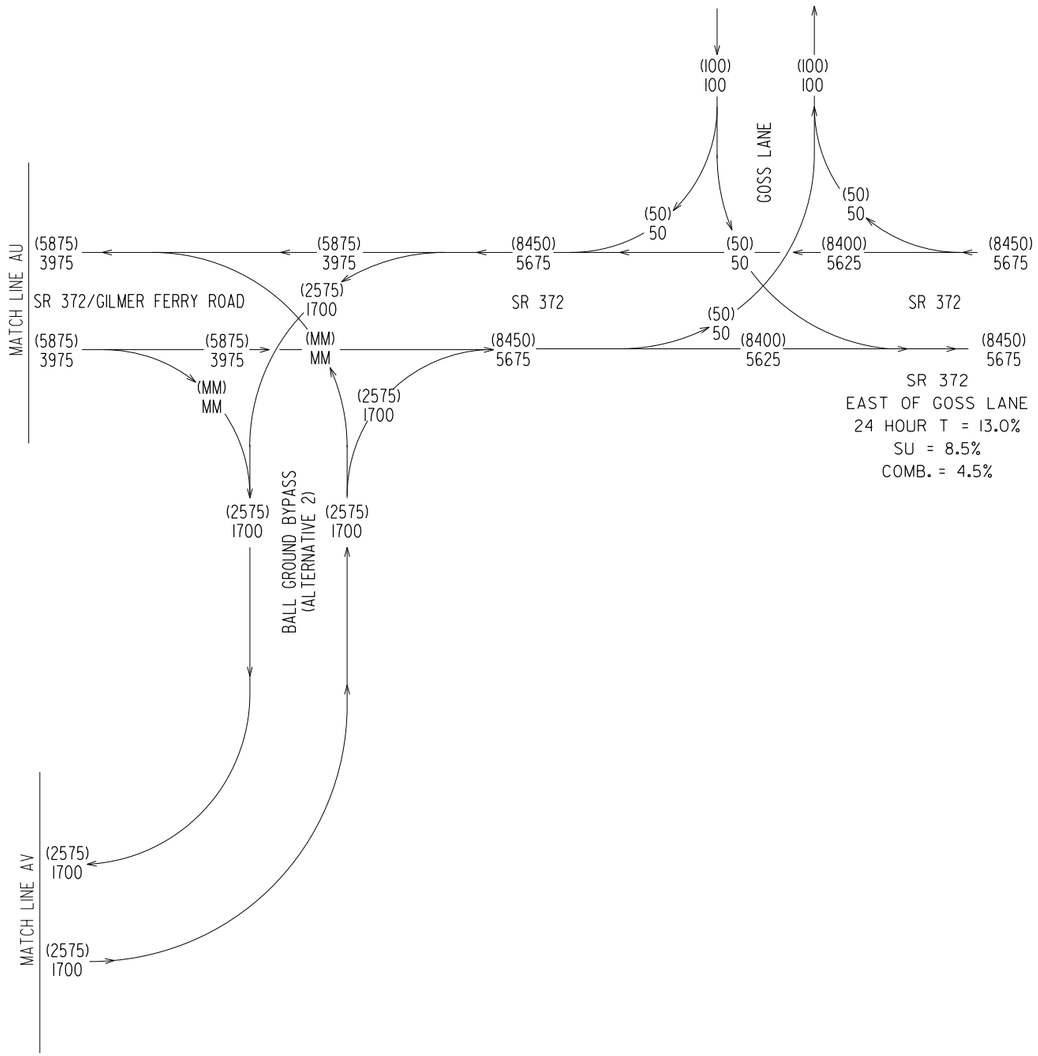
REVISION DATES		

TRAFFIC DIAGRAM
BALL GROUND BYPASS
HOWELL BRIDGE RD TO BALL GROUND RD

CHECKED:	RLR	DATE:	02/26/19
BACKCHECKED:	MWG	DATE:	02/28/19
CORRECTED:	RLR	DATE:	04/08/19
VERIFIED:	MWG	DATE:	04/08/19

DRAWING No. 10-0051

10/23/2015 GPLN



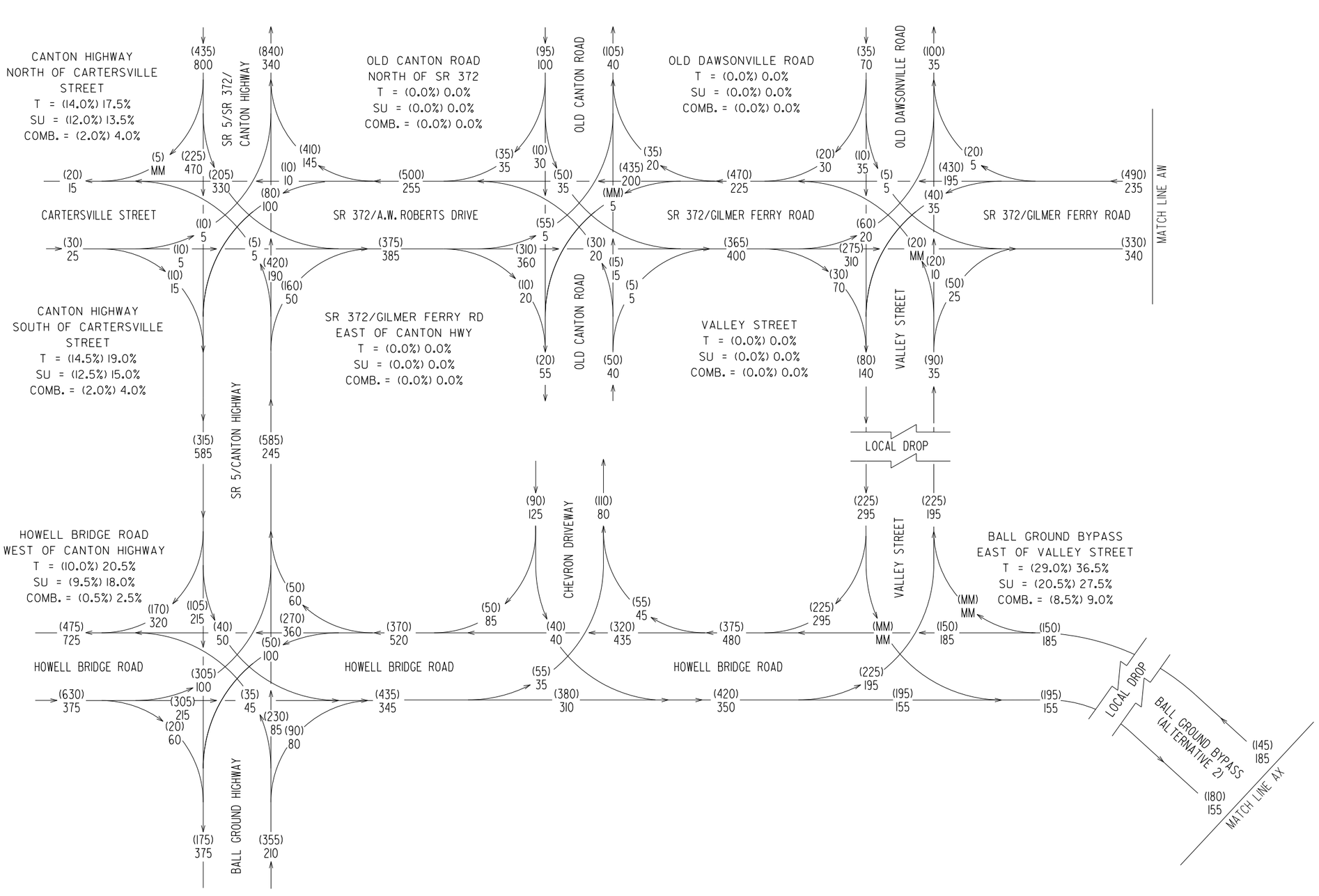
P.I. NO. 0002525
CHEROKEE COUNTY
BALL GROUND BYPASS
ALTERNATIVE 2
2052 AADT = (000)
2032 AADT = 000
SCALE: N.T.S.

REVISION DATES

TRAFFIC DIAGRAM
BALL GROUND BYPASS
HOWELL BRIDGE RD TO BALL GROUND RD

CHECKED:	RLR	DATE: 02/26/19	DRAWING No.
BACKCHECKED:	MWG	DATE: 02/28/19	10-0052
CORRECTED:	RLR	DATE: 04/08/19	
VERIFIED:	MWG	DATE: 04/08/19	

10/23/2015 GPLN



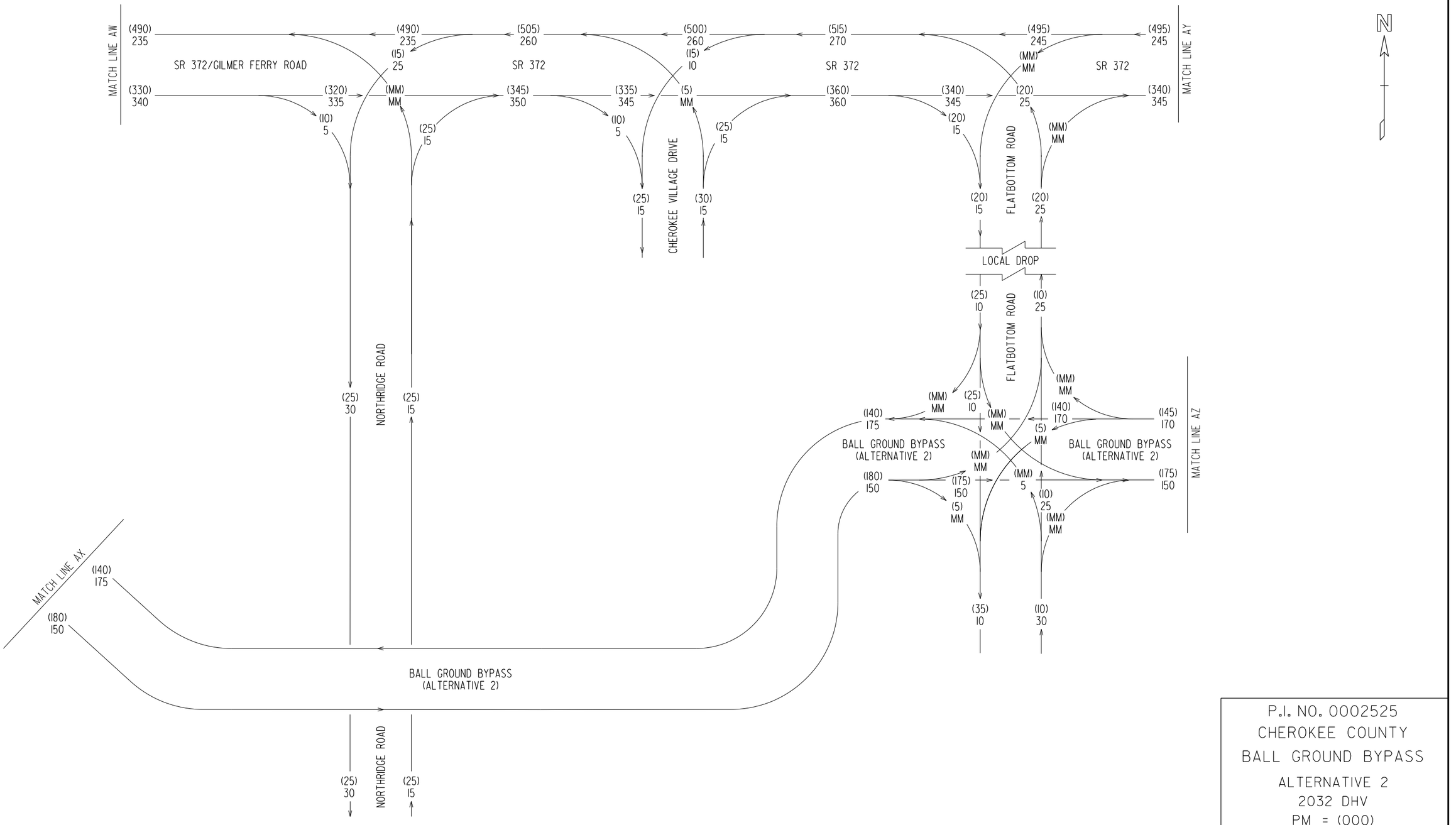
P.I. NO. 0002525
CHEROKEE COUNTY
BALL GROUND BYPASS
ALTERNATIVE 2
2032 DHV
PM = (000)
AM = 000
SCALE: N.T.S.

REVISION DATES		

TRAFFIC DIAGRAM
BALL GROUND BYPASS
HOWELL BRIDGE RD TO BALL GROUND RD

CHECKED:	RLR	DATE:	02/26/19	DRAWING No.
BACKCHECKED:	MWG	DATE:	02/28/19	10-0053
CORRECTED:	RLR	DATE:	04/08/19	
VERIFIED:	MWG	DATE:	04/08/19	

10/23/2015 GPLN



P.I. NO. 0002525
CHEROKEE COUNTY
BALL GROUND BYPASS
ALTERNATIVE 2
2032 DHV
PM = (000)
AM = 000
SCALE: N.T.S.

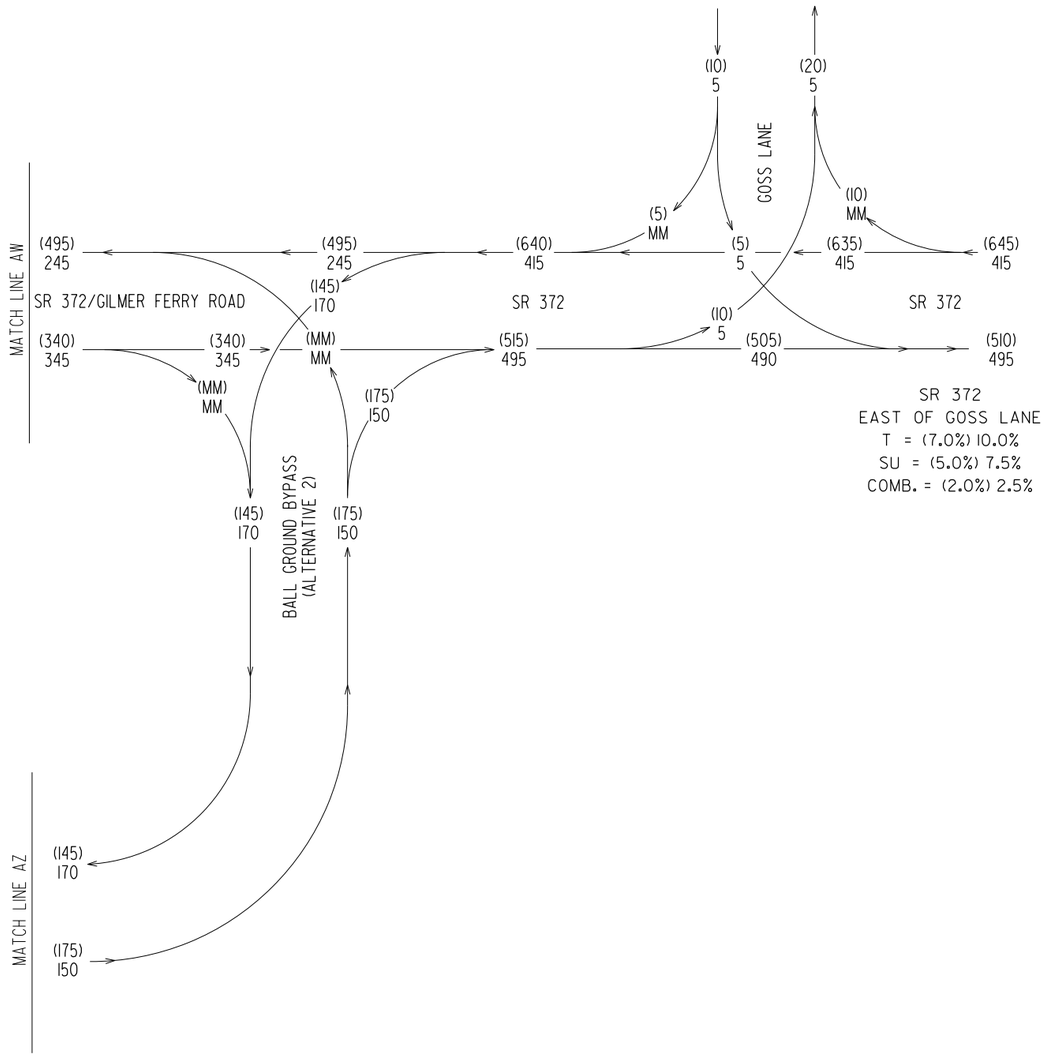
REVISION DATES

TRAFFIC DIAGRAM
BALL GROUND BYPASS
HOWELL BRIDGE RD TO BALL GROUND RD

CHECKED:	RLR	DATE:	02/26/19
BACKCHECKED:	WMG	DATE:	02/28/19
CORRECTED:	RLR	DATE:	04/08/19
VERIFIED:	WMG	DATE:	04/08/19

DRAWING No. 10-0054

10/23/2015 GPLW



P.I. NO. 0002525
CHEROKEE COUNTY
BALL GROUND BYPASS
ALTERNATIVE 2
2032 DHV
PM = (000)
AM = 000
SCALE: N.T.S.

REVISION DATES		

TRAFFIC DIAGRAM

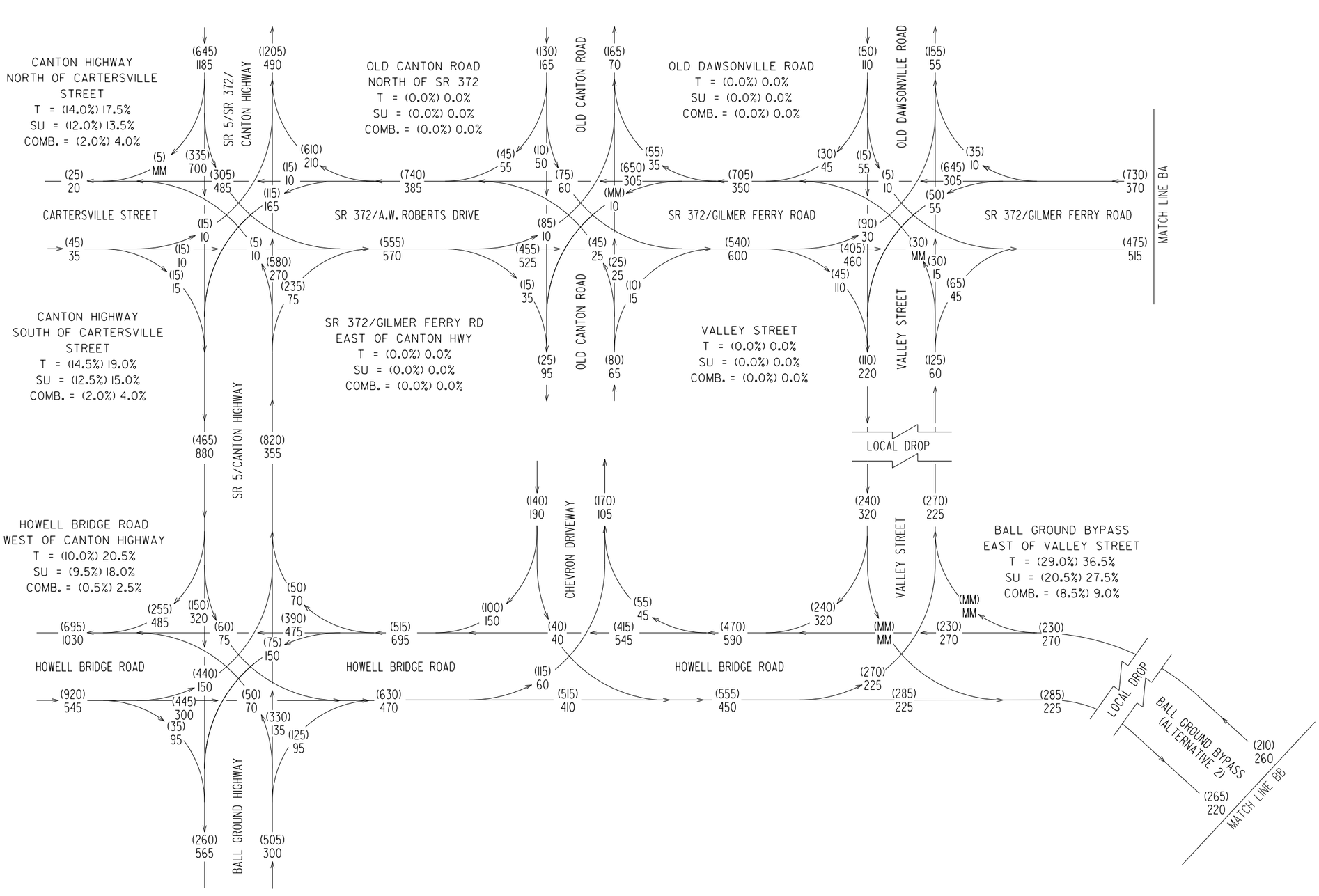
BALL GROUND BYPASS

HOWELL BRIDGE RD TO BALL GROUND RD

CHECKED:	RLR	DATE:	02/26/19
BACKCHECKED:	MWG	DATE:	02/28/19
CORRECTED:	RLR	DATE:	04/08/19
VERIFIED:	MWG	DATE:	04/08/19

DRAWING No. 10-0055

10/23/2015 GPLN



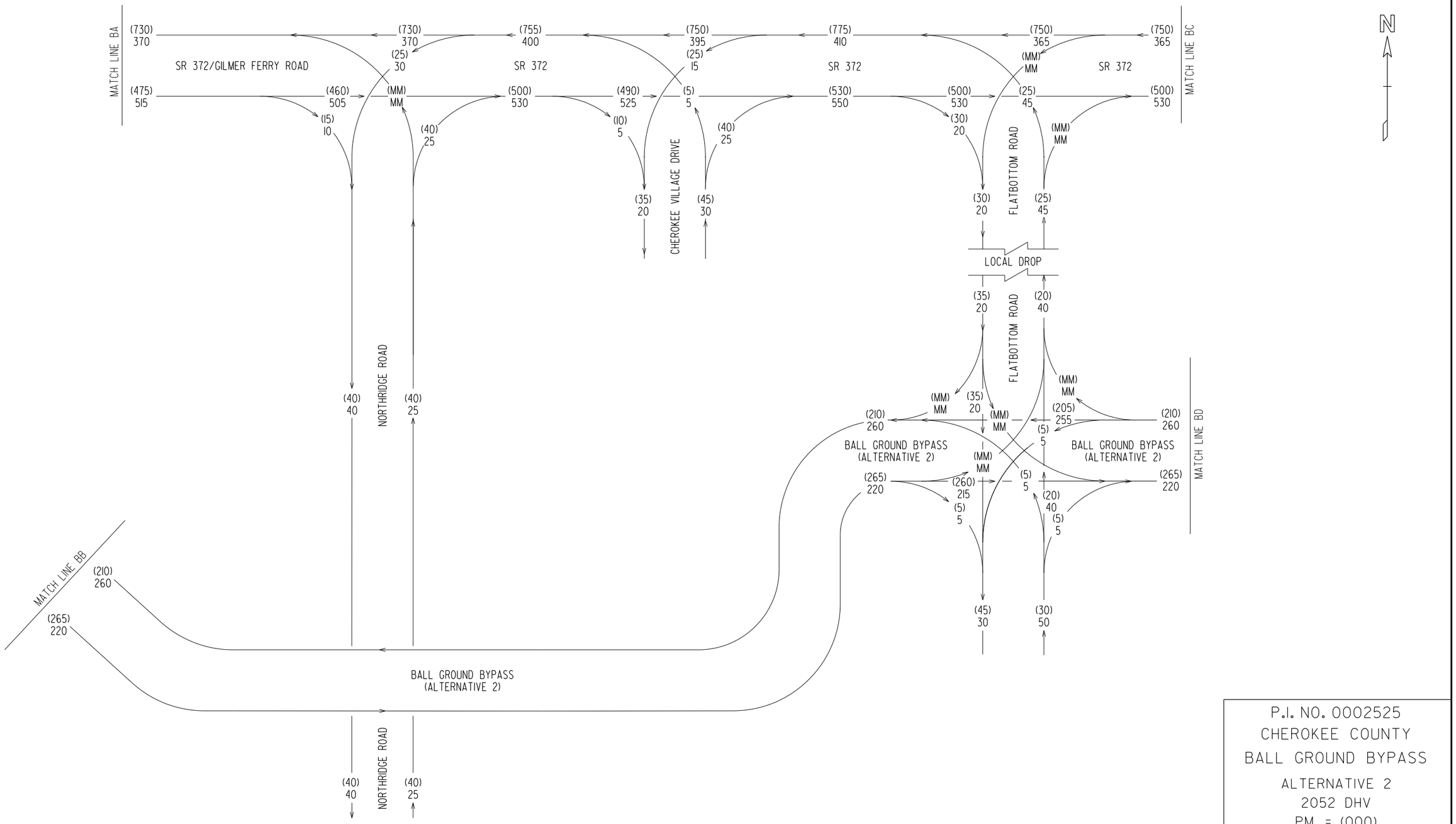
P.I. NO. 0002525
CHEROKEE COUNTY
BALL GROUND BYPASS
ALTERNATIVE 2
2052 DHV
PM = (000)
AM = 000
SCALE: N.T.S.

REVISION DATES

TRAFFIC DIAGRAM
BALL GROUND BYPASS
HOWELL BRIDGE RD TO BALL GROUND RD

CHECKED:	RLR	DATE: 02/26/19	DRAWING No.
BACKCHECKED:	MWG	DATE: 02/28/19	10-0056
CORRECTED:	RLR	DATE: 04/08/19	
VERIFIED:	MWG	DATE: 04/08/19	

10/23/2015 GPLN



P.I. NO. 0002525
CHEROKEE COUNTY
BALL GROUND BYPASS
ALTERNATIVE 2
2052 DHV
PM = (000)
AM = 000
SCALE: N.T.S.

REVISION DATES

TRAFFIC DIAGRAM

BALL GROUND BYPASS

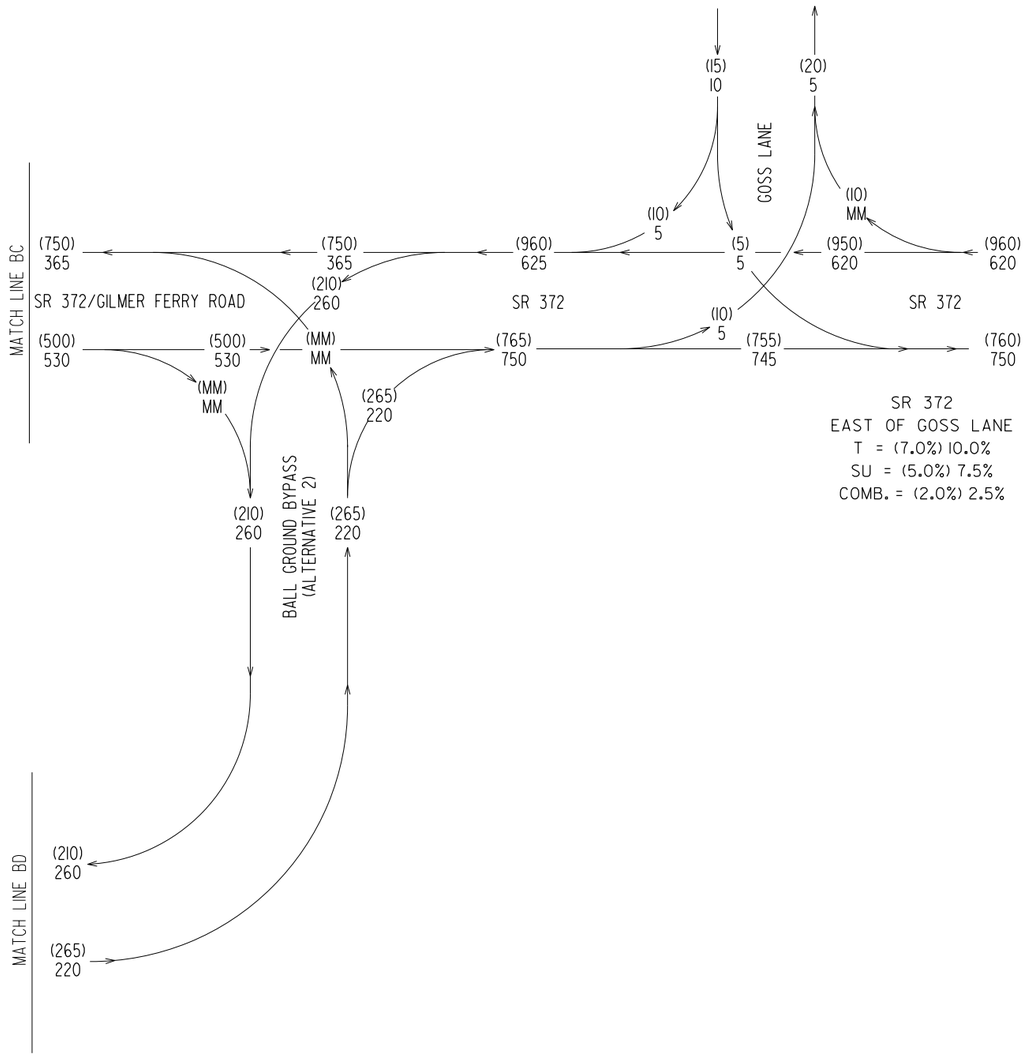
HOWELL BRIDGE RD TO BALL GROUND RD

CHECKED:	RLR	DATE: 02/26/19	DRAWING No.
BACKCHECKED:	MWG	DATE: 02/28/19	
CORRECTED:	RLR	DATE: 04/08/19	10-0057
VERIFIED:	MWG	DATE: 04/08/19	

10/23/2015 GPLN

DATE$$$ TIME$$$ $PRFB$ DGN P. I. No. 0002525

$USER$ $$PENTABLE$$



P.I. NO. 0002525
CHEROKEE COUNTY
BALL GROUND BYPASS
ALTERNATIVE 2
2052 DHV
PM = (000)
AM = 000
SCALE: N.T.S.

REVISION DATES

TRAFFIC DIAGRAM

BALL GROUND BYPASS

HOWELL BRIDGE RD TO BALL GROUND RD

CHECKED:	RLR	DATE:	02/26/19
BACKCHECKED:	MWG	DATE:	02/28/19
CORRECTED:	RLR	DATE:	04/08/19
VERIFIED:	MWG	DATE:	04/08/19

DRAWING No. 10-0058

10/23/2015 GPLN

GDOT ICE Tool: Summary Report for Multiple Locations

ICE Version 2.15
Revised 07/01/2019

Stage 1 Decision Document PI# 0002525

			UNSIGNALIZED												SIGNALIZED											
Study Intersection	**Existing Intersection Type**	**Waiver Request Type**	Conventional (Minor Stop)	Conventional (All-Way Stop)	Mini Roundabout	Single Lane Roundabout	Multilane Roundabout	RCUT (stop control)	RIRO w/down stream U-Turn	High-T (unsignalized)	Offset-T Intersections	Diamond Interch (Stop Control)	Diamond Interch (RAB Control)	Add Turn Ln/Median (Unsig)	Other Unsignalized	Traffic Signal	Median U-Turn (Indirect Left)	RCUT (signalized)	Displaced Left Turn (CFI)	Continuous Green-T	Jughandle	Quadrant Roadway	Diamond Interch (Signal Control)	Diverging Diamond	Single Point Interchange	Add Turn Ln/Median (Signal)	Other Signalized
SR 5 @ Bll Grnd Bypass	Conventional (All-Way Stop)	N/A		x			x																			
Bll Grnd Bypass @ Valley St	Conventional (Minor Stop)	N/A	x	x		x																				
Bll Grnd Bypass @ Cherokee	New Intersection or Other	Conventional (Minor Stop)	x																							
SR 372 @ Bll Grnd Bypass	Conventional (Minor Stop)	N/A	x	x		x																				
Bll Grnd Bypass @ Flat Bottor	New Intersection or Other	Conventional (Minor Stop)	x																							
SR 372 @ Bll Grnd Bypass	Conventional (Minor Stop)	Conventional (Minor Stop)	x	x		x																				
Bll Grnd Bypass @ Chevron D	New Intersection or Other	RIRO w/down stream U-Turn							x																	

Concur with: Christopher Raymond Date: 2020.07.15 07:28:27-04'00' **Date:** _____ **Name:** _____

Chief Engineer (or Approved Delegate)

GDOT INTERSECTION CONTROL EVALUATION (ICE) TOOL

ICE Version 2.15 | Revised 07/01/2019

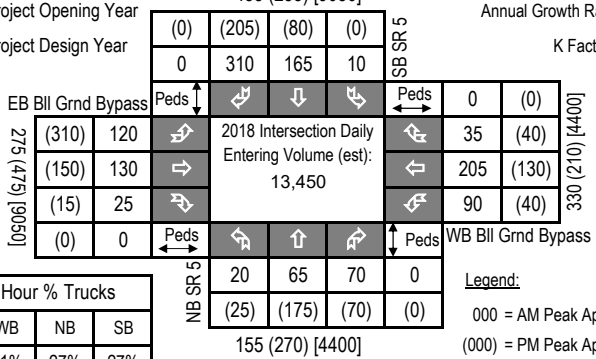
GDOT PI # (or N/A):	0002525	Request By:	GDOT
County:	Cherokee	GDOT District:	6 - Cartersville
Major (State) Road:	SR 5	Speed Limit:	45 mph
Minor (Crossing) ST:	Bll Grnd Bypass	Speed Limit:	45 mph
Major ST Direction:	North/South	Area Type:	Urban
Intersection Control:	Conventional (All-Way Stop)		
Prepared By:	VHB	Analyst:	Brittany Tyson
Date:	4/28/2020	Project ID:	
Project Purpose:	Reduce crashes, improve LOS through downtown Ball Ground and reduce trucks through downtown.		

2018	Existing Data Year
2030	Project Opening Year
2050	Project Design Year

Annual Growth Rate:

K Factor*:

2018 Existing Year Volumes



Peak Hour % Trucks			
EB	WB	NB	SB
21%	21%	27%	27%

Legend:

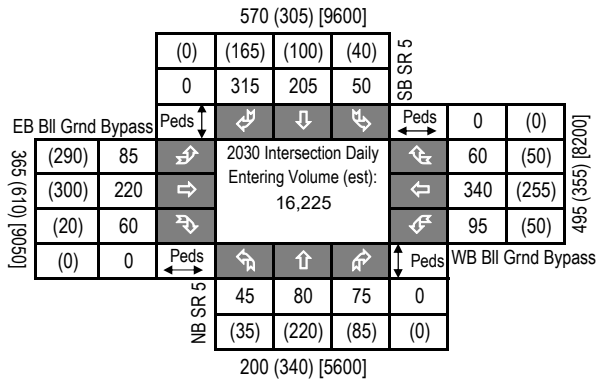
000 = AM Peak Approach Vol

(000) = PM Peak Approach Vol

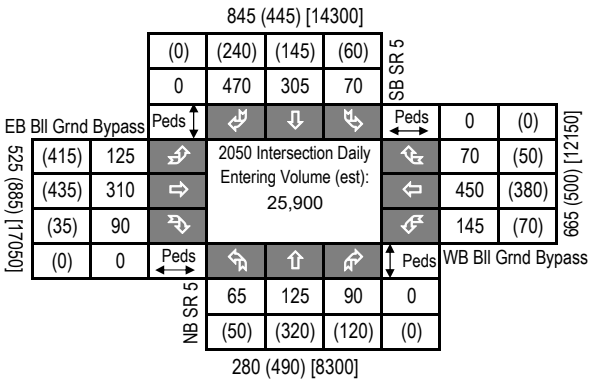
[000] = ADT Volume (Estimate)

Approach Splits: SR 5 - 0.5 / Bll Grnd Bypass - 0.5

2030 Opening Year Volumes



2050 Design Year Volumes



Introduction: In 2005, SAFETEA-LU established the Highway Safety Improvement Program (HSIP) and mandated that each state prepare a Strategic Highway Safety Plan (SHSP) to prioritize safety funding investments. Intersections quickly became a common component of most states' SHSP emphasis areas and HSIP project lists, including Georgia's SHSP. Intersection Control Evaluation (ICE) policies and procedures represent a traceable and transparent procedure to streamline the evaluation of intersection control alternatives, and further leverage safety advancements for intersection improvements beyond just the safety program. Approximately one-third of all traffic fatalities and roughly seventy five percent of all traffic crashes in Georgia occur at or adjacent to intersections. Accordingly, the Georgia SHSP includes an emphasis on enhancing intersection safety to advance the *Toward Zero Deaths* vision embraced by the Georgia Governor's Office of Highway Safety (GOHS). This ICE tool was developed to support the ICE policy, developed and adopted to help ensure that intersection investments across the entire Georgia highway system are selected, prioritized and implemented with defensible benefits for safety towards those ends.

Tool Goal: The goal of this ICE tool is to provide a simplified and consistent way of importing traffic, safety, cost, environmental impact and stakeholder posture data to assess and quantify intersection control improvement benefits. The tool supports the ICE policy and procedures to provide traceability, transparency, consistency and accountability when identifying and selecting an intersection control solution that both meets project purpose and reflects overall best value in terms of specific performance-based criteria.

Requirements: An ICE is required for any intersection improvement (e.g. new or modified intersection, widening/reconstruction or corridor project, or work accomplished through a driveway or encroachment permit that affects an intersection) where: **1)** the intersection includes at least one roadway designated as a State Route (State Highway System) or as part of the National Highway System; or **2)** the intersection will be designed or constructed using State or Federal funding. In certain circumstances where an ICE would otherwise be required, the requirement may be waived based on appropriate evidence presented with a written request. (See the "**Waiver**" tab to review criteria that may make a project waiver eligible and for instructions to submit a waiver request to the Department). An ICE is not required when the proposed work does not include any changes to the intersection design, involves only routine traffic signal timing and equipment maintenance, or for driveway permits where the driveway is not a new leg to an already existing intersection on either 1) a divided, multi-lane highway with a closed median and only right-in/right-out access or 2) an undivided roadway where the development is not required to construct left and/or right turn lanes (as per the Driveway Manual and District Traffic Engineer).

Two-Stage Process: A complete ICE process consists of two (2) distinct stages, and it is expected that the respective level of effort for completing both stages of ICE will correspond to the magnitude and complexity of the intersection. Prior to starting an ICE, the District Traffic Engineer and/or State Traffic Engineer should be consulted for advice on an appropriate level of effort. The Stage 1 and Stage 2 ICE forms are designed minimize required data inputs using drop-down menu choices and limiting text entry. All fields shaded grey include drop down menu choices and all fields shaded blue require data entry. All other cells in the worksheet are locked.

Stage 1: Screening Decision Record Stage 1 should be conducted early in the project development process and is intended to inform which alternatives are worthy of further evaluation in Stage 2. Stage 1 serves as a screening effort meant to *eliminate* non-competitive options and identify which alternatives merit further considerations based on their practical feasibility. Users should use good engineering judgement in responding to the seven policy questions by selecting "Yes" or "No" in the drop-down boxes. Alternatives should not be summarily eliminated without due consideration, and reasons for eliminating or advancing an alternative should be documented in the "Screening Decision Justification" column.

Stage 2: Alternative Selection Decision Record Stage 2 involves a more detailed and familiar evaluation of the alternatives identified in Stage 1 in order to support the selection of a preferred alternative that may be advanced to detailed design. Stage 2 data entry may require the use of external analysis tools to determine costs, operations and/or safety data that, combined with environmental and stakeholder posture data, form the basis of the ICE evaluation. A separate "CostEst" worksheet tab helps users develop pre-planning-level cost estimates for each Stage 2 alternative evaluated, and a separate Users Guide has been prepared to give guidance on Stage 1 and Stage 2 data entry. Once all data is entered, each alternative is scored and ranked, with the results reported at the bottom of the Stage 2 worksheet to inform on the best of the intersection controls evaluated for project recommendation.

Documentation: A complete ICE document consists of the combination of the outputs from either a completed and signed waiver form or both Stage 1 and Stage 2 worksheets (along with supporting costing and/or environmental documentation), to be included in the approved project Concept Report (or equivalent) or as a stand-alone document.

GDOT ICE STAGE 1: SCREENING DECISION RECORD

ICE Version 2.15 | Revised 07/01/2019

GDOT PI #	0002525
Project Location:	SR 5 @ Bll Grnd Bypass
Existing Control:	Conventional (All-Way Stop)
Prepared by:	VHB
Date:	4/28/2020

Answer "Yes" or "No" to each policy question for each control type to identify which alternatives should be evaluated in the Stage 2 Decision Record; enter justification in the rightmost column

Note: Up to 5 alternatives may be selected and evaluated; Use this ICE Stage 1 to screen 5 or fewer alternatives to evaluate in Stage 2

	Intersection Alternative (see "Intersections" tab for detailed description of intersection/interchange type)	1. Does alternative address the project need in a balanced manner and in scale with the project?	2. Does alternative improve safety performance in terms of reducing severe crashes?	3. Does alternative incorporate safety, convenience and accessibility for pedestrians and/or bicyclists?	4. Does alternative improve (or preserve) traffic operations (congestion, delay, reliability, etc.)?	5. Does alternative appear feasible given the site characteristics, constrains & location context?	6. Does alternative appear feasible with respect to other project factors?	7. Overall feasible alternative (select alternative for further evaluation in Stage 2)?	**Screening Decision Justification:**
Unsignalized Intersections	Conventional (Minor Stop)	No	No	No	No	No	No	No	Intersecting roadways have similar volumes
	Conventional (All-Way Stop)	**No**	**Yes**	**No**	**Yes**	**Yes**	**Yes**	**Yes**	Move forward to Stage 2
	Mini Roundabout	No	No	No	No	No	No	No	Context not to scale
	Single Lane Roundabout	No	**Yes**	No	**Yes**	No	No	No	Approach LOS F
	Multilane Roundabout	**No**	**Yes**	**No**	**Yes**	**No**	**No**	**Yes**	Move forward to Stage 2
	RCUT (stop control)	No	No	No	No	No	No	No	Context not to scale
	RIRO w/down stream U-Turn	No	No	No	No	No	No	No	Context not to scale
	High-T (unsignalized)	No	No	No	No	No	No	No	Minimal left turn movement
	Offset-T Intersections	No	No	No	No	No	No	No	Context not to scale
	Diamond Interch (Stop Control)	No	No	No	No	No	No	No	Volume and context not to scale
	Diamond Interch (RAB Control)	No	No	No	No	No	No	No	Volume and context not to scale
	No LT Lane Improvements No RT Lane Improvements	No	No	No	No	No	No	No	N/A
	Other unsignalized (provide description):	No	No	No	No	No	No	No	N/A
Signalized Intersections	Traffic Signal	No	No	No	No	No	No	No	Signal Warrant not met
	Median U-Turn (Indirect Left)	No	No	No	No	No	No	No	Signal Warrant not met
	RCUT (signalized)	No	No	No	No	No	No	No	Signal Warrant not met
	Displaced Left Turn (CFI)	No	No	No	No	No	No	No	Signal Warrant not met
	Continuous Green-T	No	No	No	No	No	No	No	Signal Warrant not met
	Jughandle	No	No	No	No	No	No	No	Signal Warrant not met
	Quadrant Roadway	No	No	No	No	No	No	No	Signal Warrant not met
	Diamond Interch (Signal Control)	No	No	No	No	No	No	No	Signal Warrant not met
	Diverging Diamond	No	No	No	No	No	No	No	Signal Warrant not met
	Single Point Interchange	No	No	No	No	No	No	No	Signal Warrant not met
	No LT Lane Improvements No RT Lane Improvements	No	No	No	No	No	No	No	N/A
	Other Signalized (provide description):	No	No	No	No	No	No	No	N/A

= Intersection type selected for more detailed analysis in Stage 2 Alternative Selection Decision Record

GDOT ICE STAGE 2: ALTERNATIVE SELECTION DECISION RECORD

ICE Version 2.15 | Revised 07/01/2019

GDOT PI # (or N/A): 0002525 | GDOT District: 6 - Cartersville | Date: 4/28/2020
County: Cherokee | Area Type: Urban | Agency/Firm: VHB
Project Location: SR 5 @ Bll Grnd Bypass | Analyst: Brittany Tyson
Existing Intersection Control: Conventional (All-Way Stop) | Type of Analysis: Conventional Non-Safety Funded Project

Opening / Design Year Traffic Operations

Intersection meets signal/AWS warrants?	Meets AWS only	
Traffic Analysis Measure of Effectiveness	Intersection Delay	
Traffic Analysis Software Used	HCS 2010	
Analysis Time Period	AM Peak Hr	PM Peak Hr
2030 Opening Yr No-Build Peak Hr Intersection Delay	156.7 sec	149.8 sec
2030 Opening Yr No-Build Peak Hr Intersection V/C ratio	1.70	1.15
2050 Design Yr No-Build Peak Hr Intersection Delay	427.4 sec	403.8 sec
2050 Design Yr No-Build Peak Hr Intersection V/C ratio	1.85	1.81

Complete Streets Warrants Met?
- ☐ PEDESTRIANS
- ☐ BICYCLES
- ☐ TRANSIT

Crash Data: Enter most recent 5 years of crash data	*Crash Severity* PDO	Injury Crash*	Fatal Crash*	
Crash Type Angle	10	1	0	41%
Head-On	0	0	0	0%
Rear End	8	2	0	37%
Sideswipe - same	1	0	0	4%
Sideswipe - opposite	1	0	0	4%
Not Collision w/Motor Veh	4	0	0	15%
TOTALS:	24	3	0	27

* Number of crashes resulting in injuries / fatalities, not number of persons

Alternatives Analysis:	**Alternative 1**	**Alternative 2**	**Alternative 3**	**Alternative 4**	**Alternative 5**
Proposed Control Type/Improvement:	Conventional (All-Way Stop)	Multilane Roundabout	N/A	N/A	N/A
Project Cost: (From CostEst Worksheet)	*Additional description here*	*Additional description here*			
Construction Cost	$60,000	$1,234,000			
ROW Cost	$0	$105,000			
Environmental Cost	$0	$81,000			
Reimbursable Utility Cost	$3,000	$37,000			
Design & Contingency Cost	$9,000	$389,000			
Cost Adjustment (justification req'd)	0%	0%			
Total Cost	$72,000	$1,846,000			
Traffic Operations:					
Traffic Analysis Software Used	HCS 2010	HCS 2010			
Analysis Period	AM Peak Hr / PM Peak Hr	AM Peak Hr / PM Peak Hr			
2050 Design Yr Build Intersection Delay	424.3 sec / 430.1 sec	16.7 sec / 16.0 sec			
2050 Design Yr Build Intersection V/C	1.85 / 1.87	0.55 / 0.51			
Safety Analysis:					
Predefined CRF: PDO	0%	-107%			
Predefined CRF: Fatal/Inj	0%	100%			
Predefined CRF Source:	N/A	FHWA Clearinghouse #s 6158 / 6159			
User Defined CRF: PDO		-6%			
User Defined CRF: Fatal/Inj		63%			
User Defined CRF Source (write in if applicable):		FHWA Clearinghouse # 4927			
Environmental Impacts:[1]					
Historic District/Property	None	None			
Archaeology Resources	None	None			
Graveyard	None	None			
Stream	None	Minimal			
Underground Tank/Hazmat	None	None			
Park Land	None	None			
EJ Community	None	None			
Wooded Area	None	Minimal			
Wetland	None	None			

*Note: If environmental impact is significant (**RED**), provide justification impact won't jeopardize project delivery using "Env" worksheet*

[1] *Environmental impacts are only preliminary estimates; detailed environmental impact documentation will be included with project concept report*

Stakeholder Posture:					
Local Community Support	Unknown	Unknown			
GDOT Support	Unknown	Unknown			
Final ICE Stage 2 Score:	**1.9**	**2.8**			
Rank of Control Type Alternatives:	**2**	**1**			

Note: Stage 2 score is not given (shown as "**-**") if signal or AWS is selected as control type but respective warrants are not met

Provide additional comments and/or explain any unique analysis inputs, or results (as necessary):

GDOT INTERSECTION CONTROL EVALUATION (ICE) TOOL

ICE Version 2.15 | Revised 07/01/2019

GDOT PI # (or N/A): 0002525 Request By: GDOT

County: Cherokee GDOT District: 6 - Cartersville

Major (State) Road: Bll Grnd Bypass Speed Limit: 45 mph

Minor (Crossing) ST: Valley St Speed Limit: < 35 mph

Major ST Direction: East/West Area Type: Urban

Intersection Control: Conventional (Minor Stop)

Prepared By: VHB Analyst: Brittany Tyson

Date: 4/28/2020 Project ID:

Project Purpose: Reduce crashes, improve LOS through downtown Ball Ground and reduce trucks through downtown.

2018	Existing Data Year
2030	Project Opening Year
2050	Project Design Year

Annual Growth Rate: 0.0%

K Factor*: 0%

N

2018 Existing Year Volumes

250 (160) [3100]

		(0)	(160)	(0)	(0)			
		0	250	0	0			
EB Bll Grnd Bypass	Peds					Peds	0	(0)
180 (170) [3400]	(155)	175		2018 Intersection Daily Entering Volume (est): #DIV/0!			0	(0)
	(15)	5					10	(10)
	(0)	0					0	(0)
	(0)	0	Peds			Peds		
NB Valley St				0	0	0	0	
				(0)	(0)	(0)	(0)	

SB Valley St

10 (10) [300]

WB Bll Grnd Bypass

#DIV/0!

Peak Hour % Trucks			
EB	WB	NB	SB
0%	0%	0%	15%

Legend:

000 = AM Peak Approach Vol

(000) = PM Peak Approach Vol

[000] = ADT Volume (Estimate)

#DIV/0!

2030 Opening Year Volumes

285 (215) [3150]

		(0)	(215)	(0)	(0)			
		0	285	0	0			
EB Bll Grnd Bypass	Peds					Peds	0	(0)
350 (410) [6950]	(215)	190		2030 Intersection Daily Entering Volume (est): #DIV/0!			0	(0)
	(195)	160					175	(145)
	(0)	0					0	(0)
	(0)	0	Peds			Peds		
NB Valley St				0	0	0	0	
				(0)	(0)	(0)	(0)	

SB Valley St

175 (145) [3800]

WB Bll Grnd Bypass

#DIV/0!

2050 Design Year Volumes

310 (235) [4750]

		(0)	(235)	(0)	(0)			
		0	310	0	0			
EB Bll Grnd Bypass	Peds					Peds	0	(0)
450 (545) [10300]	(260)	220		2050 Intersection Daily Entering Volume (est): #DIV/0!			0	(0)
	(285)	230					255	(225)
	(0)	0					0	(0)
	(0)	0	Peds			Peds		
NB Valley St				0	0	0	0	
				(0)	(0)	(0)	(0)	

SB Valley St

255 (225) [5550]

WB Bll Grnd Bypass

#DIV/0!

Introduction: In 2005, SAFETEA-LU established the Highway Safety Improvement Program (HSIP) and mandated that each state prepare a Strategic Highway Safety Plan (SHSP) to prioritize safety funding investments. Intersections quickly became a common component of most states' SHSP emphasis areas and HSIP project lists, including Georgia's SHSP. Intersection Control Evaluation (ICE) policies and procedures represent a traceable and transparent procedure to streamline the evaluation of intersection control alternatives, and further leverage safety advancements for intersection improvements beyond just the safety program. Approximately one-third of all traffic fatalities and roughly seventy five percent of all traffic crashes in Georgia occur at or adjacent to intersections. Accordingly, the Georgia SHSP includes an emphasis on enhancing intersection safety to advance the *Toward Zero Deaths* vision embraced by the Georgia Governor's Office of Highway Safety (GOHS). This ICE tool was developed to support the ICE policy, developed and adopted to help ensure that intersection investments across the entire Georgia highway system are selected, prioritized and implemented with defensible benefits for safety towards those ends.

Tool Goal: The goal of this ICE tool is to provide a simplified and consistent way of importing traffic, safety, cost, environmental impact and stakeholder posture data to assess and quantify intersection control improvement benefits. The tool supports the ICE policy and procedures to provide traceability, transparency, consistency and accountability when identifying and selecting an intersection control solution that both meets project purpose and reflects overall best value in terms of specific performance-based criteria.

Requirements: An ICE is required for any intersection improvement (e.g. new or modified intersection, widening/reconstruction or corridor project, or work accomplished through a driveway or encroachment permit that affects an intersection) where: **1)** the intersection includes at least one roadway designated as a State Route (State Highway System) or as part of the National Highway System; or **2)** the intersection will be designed or constructed using State or Federal funding. In certain circumstances where an ICE would otherwise be required, the requirement may be waived based on appropriate evidence presented with a written request. (See the "**Waiver**" tab to review criteria that may make a project waiver eligible and for instructions to submit a waiver request to the Department). An ICE is not required when the proposed work does not include any changes to the intersection design, involves only routine traffic signal timing and equipment maintenance, or for driveway permits where the driveway is not a new leg to an already existing intersection on either 1) a divided, multi-lane highway with a closed median and only right-in/right-out access or 2) an undivided roadway where the development is not required to construct left and/or right turn lanes (as per the Driveway Manual and District Traffic Engineer).

Two-Stage Process: A complete ICE process consists of two (2) distinct stages, and it is expected that the respective level of effort for completing both stages of ICE will correspond to the magnitude and complexity of the intersection. Prior to starting an ICE, the District Traffic Engineer and/or State Traffic Engineer should be consulted for advice on an appropriate level of effort. The Stage 1 and Stage 2 ICE forms are designed minimize required data inputs using drop-down menu choices and limiting text entry. All fields shaded grey include drop down menu choices and all fields shaded blue require data entry. All other cells in the worksheet are locked.

Stage 1: Screening Decision Record Stage 1 should be conducted early in the project development process and is intended to inform which alternatives are worthy of further evaluation in Stage 2. Stage 1 serves as a screening effort meant to *eliminate* non-competitive options and identify which alternatives merit further considerations based on their practical feasibility. Users should use good engineering judgement in responding to the seven policy questions by selecting "Yes" or "No" in the drop-down boxes. Alternatives should not be summarily eliminated without due consideration, and reasons for eliminating or advancing an alternative should be documented in the "Screening Decision Justification" column.

Stage 2: Alternative Selection Decision Record Stage 2 involves a more detailed and familiar evaluation of the alternatives identified in Stage 1 in order to support the selection of a preferred alternative that may be advanced to detailed design. Stage 2 data entry may require the use of external analysis tools to determine costs, operations and/or safety data that, combined with environmental and stakeholder posture data, form the basis of the ICE evaluation. A separate "CostEst" worksheet tab helps users develop pre-planning-level cost estimates for each Stage 2 alternative evaluated, and a separate Users Guide has been prepared to give guidance on Stage 1 and Stage 2 data entry. Once all data is entered, each alternative is scored and ranked, with the results reported at the bottom of the Stage 2 worksheet to inform on the best of the intersection controls evaluated for project recommendation.

Documentation: A complete ICE document consists of the combination of the outputs from either a completed and signed waiver form or both Stage 1 and Stage 2 worksheets (along with supporting costing and/or environmental documentation), to be included in the approved project Concept Report (or equivalent) or as a stand-alone document.

GDOT ICE STAGE 1: SCREENING DECISION RECORD

ICE Version 2.15 | Revised 07/01/2019

GDOT PI #	0002525
Project Location:	Bll Grnd Bypass @ Valley St
Existing Control:	Conventional (Minor Stop)
Prepared by:	VHB
Date:	4/28/2020

Answer "Yes" or "No" to each policy question for each control type to identify which alternatives should be evaluated in the Stage 2 Decision Record; enter justification in the rightmost column

Note: Up to 5 alternatives may be selected and evaluated; Use this ICE Stage 1 to screen 5 or fewer alternatives to evaluate in Stage 2

	Intersection Alternative (see "Intersections" tab for detailed description of intersection/interchange type)	1. Does alternative address the project need in a balanced manner and in scale with the project?	2. Does alternative improve safety performance in terms of reducing severe crashes?	3. Does alternative incorporate safety, convenience and accessibility for pedestrians and/or bicyclists?	4. Does alternative improve (or preserve) traffic operations (congestion, delay, reliability, etc.)?	5. Does alternative appear feasible given the site characteristics, constrains & location context?	6. Does alternative appear feasible with respect to other project factors?	7. Overall feasible alternative (select alternative for further evaluation in Stage 2)?	Screening Decision Justification:
Unsignalized Intersections	Conventional (Minor Stop)	**Yes**	**No**	**No**	**Yes**	**Yes**	**Yes**	**Yes**	Move forward to Stage 2
	Conventional (All-Way Stop)	**Yes**	**Yes**	**No**	**No**	**Yes**	**Yes**	**Yes**	Move forward to Stage 2
	Mini Roundabout	No	No	No	No	No	No	No	Context not to scale
	Single Lane Roundabout	**Yes**	**Yes**	**No**	**Yes**	**Yes**	**Yes**	**Yes**	Move forward to Stage 2
	Multilane Roundabout	No	No	No	No	No	No	No	Volume and context not to scale
	RCUT (stop control)	No	No	No	No	No	No	No	Context not to scale
	RIRO w/down stream U-Turn	No	No	No	No	No	No	No	Context not to scale
	High-T (unsignalized)	No	No	No	No	No	No	No	Minimal left turn movement
	Offset-T Intersections	No	No	No	No	No	No	No	Context not to scale
	Diamond Interch (Stop Control)	No	No	No	No	No	No	No	Volume and context not to scale
	Diamond Interch (RAB Control)	No	No	No	No	No	No	No	Volume and context not to scale
	No LT Lane Improvements No RT Lane Improvements	No	No	No	No	No	No	No	N/A
	Other unsignalized (provide description):	No	No	No	No	No	No	No	N/A
Signalized Intersections	Traffic Signal	No	No	No	No	No	No	No	Signal Warrant not met
	Median U-Turn (Indirect Left)	No	No	No	No	No	No	No	Signal Warrant not met
	RCUT (signalized)	No	No	No	No	No	No	No	Signal Warrant not met
	Displaced Left Turn (CFI)	No	No	No	No	No	No	No	Signal Warrant not met
	Continuous Green-T	No	No	No	No	No	No	No	Signal Warrant not met
	Jughandle	No	No	No	No	No	No	No	Signal Warrant not met
	Quadrant Roadway	No	No	No	No	No	No	No	Signal Warrant not met
	Diamond Interch (Signal Control)	No	No	No	No	No	No	No	Signal Warrant not met
	Diverging Diamond	No	No	No	No	No	No	No	Signal Warrant not met
	Single Point Interchange	No	No	No	No	No	No	No	Signal Warrant not met
	No LT Lane Improvements No RT Lane Improvements	No	No	No	No	No	No	No	N/A
	Other Signalized (provide description):	No	No	No	No	No	No	No	N/A

= Intersection type selected for more detailed analysis in Stage 2 Alternative Selection Decision Record

GDOT ICE STAGE 2: ALTERNATIVE SELECTION DECISION RECORD

ICE Version 2.15 | Revised 07/01/2019

GDOT PI # (or N/A): 0002525 | GDOT District: 6 - Cartersville | Date: 4/28/2020
County: Cherokee | Area Type: Urban | Agency/Firm: VHB
Project Location: Bll Grnd Bypass @ Valley St | Analyst: Brittany Tyson
Existing Intersection Control: Conventional (Minor Stop) | Type of Analysis: Conventional Non-Safety Funded Project

Opening / Design Year Traffic Operations

Intersection meets signal/AWS warrants?	Meets AWS only	
Traffic Analysis Measure of Effectiveness	Intersection Delay	
Traffic Analysis Software Used	HCS 2010	
Analysis Time Period	AM Peak Hr	PM Peak Hr
2030 Opening Yr No-Build Peak Hr Intersection Delay	10.1 sec	9.6 sec
2030 Opening Yr No-Build Peak Hr Intersection V/C ratio	0.33	0.25
2050 Design Yr No-Build Peak Hr Intersection Delay	10.5 sec	10.0 sec
2050 Design Yr No-Build Peak Hr Intersection V/C ratio	0.38	0.29

Complete Streets Warrants Met?
- ☐ PEDESTRIANS
- ☐ BICYCLES
- ☐ TRANSIT

Crash Data: Enter most recent 5 years of crash data	Crash Severity: PDO	Injury Crash*	Fatal Crash*	
Crash Type: Angle	2	2	0	67%
Head-On	0	0	0	0%
Rear End	2	0	0	33%
Sideswipe - same	0	0	0	0%
Sideswipe - opposite	0	0	0	0%
Not Collision w/Motor Veh	0	0	0	0%
TOTALS:	4	2	0	6

* Number of crashes resulting in injuries / fatalities, not number of persons

Alternatives Analysis:

	Alternative 1	Alternative 2	Alternative 3	Alternative 4	Alternative 5
Proposed Control Type/Improvement:	Conventional (Minor Stop)	Conventional (All-Way Stop)	Single Lane Roundabout	N/A	N/A
Project Cost: (From CostEst Worksheet)	*Additional description here*	*Additional description here*	*Additional description here*		
Construction Cost	$500,000	$500,000	$691,000		
ROW Cost	$100,000	$100,000	$3,000		
Environmental Cost	$0	$0	$0		
Reimbursable Utility Cost	$21,000	$21,000	$21,000		
Design & Contingency Cost	$100,000	$100,000	$205,000		
Cost Adjustment (justification req'd)	0%	0%	0%		
Total Cost	$721,000	$721,000	$920,000		
Traffic Operations:	*User Cost Override*	*User Cost Override*			
Traffic Analysis Software Used	HCS 2010	HCS 2010	HCS 2010		
Analysis Period	AM Peak Hr / PM Peak Hr	AM Peak Hr / PM Peak Hr	AM Peak Hr / PM Peak Hr		
2050 Design Yr Build Intersection Delay	13.3 sec / 11.6 sec	33.2 sec / 45.2 sec	11.0 sec / 13.0 sec		
2050 Design Yr Build Intersection V/C	0.44 / 0.32	0.83 / 0.94	0.55 / 0.67		
Safety Analysis:					
Predefined CRF: PDO	0%	75%	39%		
Predefined CRF: Fatal/Inj	0%	70%	78%		
Predefined CRF Source:	N/A	FHWA Clearinghouse #s 315 / 314	FHWA Clearinghouse #s 233 / 234		
User Defined CRF: PDO					
User Defined CRF: Fatal/Inj					
User Defined CRF Source (write in if applicable):					
Environmental Impacts:[1]					
Historic District/Property	None	None	None		
Archaeology Resources	None	None	None		
Graveyard	None	None	None		
Stream	None	None	None		
Underground Tank/Hazmat	None	None	None		
Park Land	None	None	None		
EJ Community	None	None	None		
Wooded Area	None	None	None		
Wetland	None	None	None		

*Note: If environmental impact is significant (**RED**), provide justification impact won't jeopardize project delivery using "Env" worksheet*

[1] *Environmental impacts are only preliminary estimates; detailed environmental impact documentation will be included with project concept report*

Stakeholder Posture:					
Local Community Support	Unknown	Unknown	Unknown		
GDOT Support	Unknown	Unknown	Unknown		
Final ICE Stage 2 Score:	**4.0**	**5.7**	**5.8**		
Rank of Control Type Alternatives:	**3**	**2**	**1**		

Note: Stage 2 score is not given (shown as "**-**") if signal or AWS is selected as control type but respective warrants are not met

Provide additional comments and/or explain any unique analysis inputs, or results (as necessary):

GDOT INTERSECTION CONTROL EVALUATION (ICE) WAIVER FORM

ICE Version 2.15 | Revised 07/01/2019

Waiver Request - Level 1

In certain circumstances where an ICE would otherwise be required, an ICE may be waived based on appropriate evidence presented with a written request. Scenarios in which an ICE waiver request may be considered include:

1. Proposed improvements do not substantially alter the character of the intersection, and are considered minor in nature, such as extending existing turn lane(s) or modifying signal phasing at an existing traffic signal
2. The intersection consists of a public roadway intersecting a divided, multilane roadway where the access will be limited to a closed median with only right-in/right-out access that will operate acceptably; or
3. The intersection is along an undivided, two-lane roadway that will not be widened and meets the following criteria:
   - Low risk in terms of exposure (total intersection entering volume less than 1,000 vehicles /day)
   - Latest 5 years of crash history is not indicative of a crash problem (no discernible crash patterns coupled with low crash frequency and severity)
   - Layout has no unusual or undesirable geometric features (such as restricted sight distance)
   - The proposed changes are not expected to adversely affect safety

If only one alternative is determined to be feasible from the ICE Stage 1, then a waiver may be submitted in lieu of completing ICE Stage 2. The waiver must clearly explain why there is no other feasible alternative. A Waiver Form should also be submitted to document an agreed upon decision to select a preferred alternative other than the highest scoring alternative in Stage 2.

ICE waiver forms with supporting documentation should be submitted for approval to the Office of Traffic Operations or District Engineer (depending on Waiver level). Questions regarding the waiver process should be routed to the State Traffic Engineer.

Project Information:

Location:	Bll Grnd Bypass @ Chevron Drwy	GDOT PI # (or N/A):	0002525
County:	Cherokee	Requested By:	GDOT
GDOT District:	6 - Cartersville	Prepared By:	VHB
Area Type:	Urban	Analyst:	Brittany Tyson
Existing Intersection Control:	Conventional (Minor Stop)	Date:	4/28/2020
		Waiver Request Type:	GDOT PDP Project

Traffic and Operations Data:[1]

Intersection meets signal/AWS warrants?	None	
Traffic Analysis Type:	Intersection Delay	
Existing Avg Daily Traffic (Major Street):	4,400	
Existing Avg Daily Traffic (Minor Street):	1,300	
Analysis Period:	AM Peak	PM Peak
2030 Opening Yr Peak Hour Intersection Delay:	12.5 sec	10.8 sec
2030 Opening Yr Peak Hour Intersection V/C:	0.21	0.14
2050 Design Yr Peak Hour Intersection Delay:	15.9 sec	12.6 sec
2050 Design Yr Peak Hour Intersection V/C:	0.38	0.24

[1]Crash data required for all existing intersections. ADT's required if available (from data collected or nearest GDOT count station site). Capacity data is optional unless needed to justify basis of the waiver request.

Crash Data (Required):[1]

Crash Type	Crash Data: Enter most recent 5 years of crash data	Crash Severity: PDO	Injury Crash*	Fatal Crash*	
	Angle	0	0	0	<-
	Head-On	0	0	0	
	Rear End	0	0	0	
	Sideswipe - same	0	0	0	
	Sideswipe - opposite	0	0	0	
	Not Collision w/Motor Veh	0	0	0	
	TOTALS:	**0**	**0**	**0**	

* Number of crashes resulting in injuries / fatalities, not number of persons

Description of Work / Justification for Waiver (Required): The RIRO w/down stream U-turn was the only feasible alternative from Stage 1.

Proposed Intersection Control: RIRO w/down stream U-Turn

REQUESTED BY: Matthew Thompson Date: 5/13/2020

Title: Project Engineer

APPROVED BY: Christopher Raymond Date: 2020.07.15 07:25:35-04'00' Date:

Name:

Chief Engineer or (Approved Delegate)

GDOT INTERSECTION CONTROL EVALUATION (ICE) TOOL

ICE Version 2.15 | Revised 07/01/2019

GDOT PI # (or N/A): 0002525 Request By: GDOT

County: Cherokee GDOT District: 6 - Cartersville

Major (State) Road: BII Grnd Bypass Speed Limit: 45 mph

Minor (Crossing) ST: Chevron Drwy Speed Limit: < 35 mph

Major ST Direction: East/West Area Type: Urban

Intersection Control: Conventional (Minor Stop)

Prepared By: VHB Analyst: Brittany Tyson

Date: 4/28/2020 Project ID:

Project Purpose: Reduce crashes, improve LOS through downtown Ball Ground and reduce trucks through downtown.

2018	Existing Data Year
2030	Project Opening Year
2050	Project Design Year

Annual Growth Rate: 0.0%

K Factor*: 0%

N

2018 Existing Year Volumes

85 (55) [1300]

		(0)	(50)	(0)	(5)	SB Chevron Drwy		
		0	80	0	5			
EB BII Grnd Bypass	Peds					Peds	0	(0)
210 (220) [4400]	(55)	35		2018 Intersection Daily Entering Volume (est): #DIV/0!			10	(10)
	(165)	175					250	(160)
	(0)	0					0	(0)
	(0)	0	Peds			Peds	WB BII Grnd Bypass	
						NB Chevron Drwy	0	0
							(0)	(0)

260 (170) [3400]

#DIV/0!

Peak Hour % Trucks			
EB	WB	NB	SB
0%	0%	0%	0%

Legend:

000 = AM Peak Approach Vol

(000) = PM Peak Approach Vol

[000] = ADT Volume (Estimate)

#DIV/0!

2030 Opening Year Volumes

120 (90) [1650]

		(0)	(50)	(0)	(40)	SB Chevron Drwy		
		0	80	0	40			
EB BII Grnd Bypass	Peds					Peds	0	(0)
345 (425) [8200]	(55)	35		2030 Intersection Daily Entering Volume (est): #DIV/0!			45	(55)
	(370)	310					415	(305)
	(0)	0					0	(0)
	(0)	0	Peds			Peds	WB BII Grnd Bypass	
						NB Chevron Drwy	0	0
							(0)	(0)

460 (360) [6950]

#DIV/0!

2050 Design Year Volumes

185 (135) [2450]

		(0)	(95)	(0)	(40)	SB Chevron Drwy		
		0	145	0	40			
EB BII Grnd Bypass	Peds					Peds	0	(0)
470 (615) [12150]	(110)	60		2050 Intersection Daily Entering Volume (est): #DIV/0!			45	(55)
	(505)	410					520	(405)
	(0)	0					0	(0)
	(0)	0	Peds			Peds	WB BII Grnd Bypass	
						NB Chevron Drwy	0	0
							(0)	(0)

565 (460) [10300]

#DIV/0!

Introduction: In 2005, SAFETEA-LU established the Highway Safety Improvement Program (HSIP) and mandated that each state prepare a Strategic Highway Safety Plan (SHSP) to prioritize safety funding investments. Intersections quickly became a common component of most states' SHSP emphasis areas and HSIP project lists, including Georgia's SHSP. Intersection Control Evaluation (ICE) policies and procedures represent a traceable and transparent procedure to streamline the evaluation of intersection control alternatives, and further leverage safety advancements for intersection improvements beyond just the safety program. Approximately one-third of all traffic fatalities and roughly seventy five percent of all traffic crashes in Georgia occur at or adjacent to intersections. Accordingly, the Georgia SHSP includes an emphasis on enhancing intersection safety to advance the *Toward Zero Deaths* vision embraced by the Georgia Governor's Office of Highway Safety (GOHS). This ICE tool was developed to support the ICE policy, developed and adopted to help ensure that intersection investments across the entire Georgia highway system are selected, prioritized and implemented with defensible benefits for safety towards those ends.

Tool Goal: The goal of this ICE tool is to provide a simplified and consistent way of importing traffic, safety, cost, environmental impact and stakeholder posture data to assess and quantify intersection control improvement benefits. The tool supports the ICE policy and procedures to provide traceability, transparency, consistency and accountability when identifying and selecting an intersection control solution that both meets project purpose and reflects overall best value in terms of specific performance-based criteria.

Requirements: An ICE is required for any intersection improvement (e.g. new or modified intersection, widening/reconstruction or corridor project, or work accomplished through a driveway or encroachment permit that affects an intersection) where: **1)** the intersection includes at least one roadway designated as a State Route (State Highway System) or as part of the National Highway System; or **2)** the intersection will be designed or constructed using State or Federal funding. In certain circumstances where an ICE would otherwise be required, the requirement may be waived based on appropriate evidence presented with a written request. (See the "**Waiver**" tab to review criteria that may make a project waiver eligible and for instructions to submit a waiver request to the Department). An ICE is not required when the proposed work does not include any changes to the intersection design, involves only routine traffic signal timing and equipment maintenance, or for driveway permits where the driveway is not a new leg to an already existing intersection on either 1) a divided, multi-lane highway with a closed median and only right-in/right-out access or 2) an undivided roadway where the development is not required to construct left and/or right turn lanes (as per the Driveway Manual and District Traffic Engineer).

Two-Stage Process: A complete ICE process consists of two (2) distinct stages, and it is expected that the respective level of effort for completing both stages of ICE will correspond to the magnitude and complexity of the intersection. Prior to starting an ICE, the District Traffic Engineer and/or State Traffic Engineer should be consulted for advice on an appropriate level of effort. The Stage 1 and Stage 2 ICE forms are designed minimize required data inputs using drop-down menu choices and limiting text entry. All fields shaded grey include drop down menu choices and all fields shaded blue require data entry. All other cells in the worksheet are locked.

Stage 1: Screening Decision Record Stage 1 should be conducted early in the project development process and is intended to inform which alternatives are worthy of further evaluation in Stage 2. Stage 1 serves as a screening effort meant to *eliminate* non-competitive options and identify which alternatives merit further considerations based on their practical feasibility. Users should use good engineering judgement in responding to the seven policy questions by selecting "Yes" or "No" in the drop-down boxes. Alternatives should not be summarily eliminated without due consideration, and reasons for eliminating or advancing an alternative should be documented in the "Screening Decision Justification" column.

Stage 2: Alternative Selection Decision Record Stage 2 involves a more detailed and familiar evaluation of the alternatives identified in Stage 1 in order to support the selection of a preferred alternative that may be advanced to detailed design. Stage 2 data entry may require the use of external analysis tools to determine costs, operations and/or safety data that, combined with environmental and stakeholder posture data, form the basis of the ICE evaluation. A separate "CostEst" worksheet tab helps users develop pre-planning-level cost estimates for each Stage 2 alternative evaluated, and a separate Users Guide has been prepared to give guidance on Stage 1 and Stage 2 data entry. Once all data is entered, each alternative is scored and ranked, with the results reported at the bottom of the Stage 2 worksheet to inform on the best of the intersection controls evaluated for project recommendation.

Documentation: A complete ICE document consists of the combination of the outputs from either a completed and signed waiver form or both Stage 1 and Stage 2 worksheets (along with supporting costing and/or environmental documentation), to be included in the approved project Concept Report (or equivalent) or as a stand-alone document.

GDOT ICE STAGE 1: SCREENING DECISION RECORD

ICE Version 2.15 | Revised 07/01/2019

GDOT PI #	0002525
Project Location:	BII Grnd Bypass @ Chevron Drwy
Existing Control:	Conventional (Minor Stop)
Prepared by:	VHB
Date:	4/28/2020

Answer "Yes" or "No" to each policy question for each control type to identify which alternatives should be evaluated in the Stage 2 Decision Record; enter justification in the rightmost column

Note: Up to 5 alternatives may be selected and evaluated; Use this ICE Stage 1 to screen 5 or fewer alternatives to evaluate in Stage 2

	Intersection Alternative (see "Intersections" tab for detailed description of intersection/interchange type)	1. Does alternative address the project need in a balanced manner and in scale with the project?	2. Does alternative improve safety performance in terms of reducing severe crashes?	3. Does alternative incorporate safety, convenience and accessibility for pedestrians and/or bicyclists?	4. Does alternative improve (or preserve) traffic operations (congestion, delay, reliability, etc.)?	5. Does alternative appear feasible given the site characteristics, constrains & location context?	6. Does alternative appear feasible with respect to other project factors?	7. Overall feasible alternative (select alternative for further evaluation in Stage 2)?	Screening Decision Justification:
Unsignalized Intersections	Conventional (Minor Stop)	No	No	No	**Yes**	**Yes**	**Yes**	No	Minimal left turn movement, close to neighboring intersections
	Conventional (All-Way Stop)	No	**Yes**	No	No	No	No	No	Context not to scale
	Mini Roundabout	No	No	No	No	No	No	No	Context not to scale
	Single Lane Roundabout	No	No	No	No	No	No	No	Context not to scale
	Multilane Roundabout	No	No	No	No	No	No	No	Context not to scale
	RCUT (stop control)	No	No	No	No	No	No	No	Minimal left turn movement, context not to scale
	RIRO w/down stream U-Turn	**No**	**No**	**No**	**Yes**	**Yes**	**Yes**	**Yes**	Move forward to Stage 2
	High-T (unsignalized)	No	No	No	No	No	No	No	Minimal left turn movement
	Offset-T Intersections	No	No	No	No	No	No	No	Context not to scale
	Diamond Interch (Stop Control)	No	No	No	No	No	No	No	Volume and context not to scale
	Diamond Interch (RAB Control)	No	No	No	No	No	No	No	Volume and context not to scale
	No LT Lane Improvements No RT Lane Improvements	No	No	No	No	No	No	No	N/A
	Other unsignalized (provide description):	No	No	No	No	No	No	No	N/A
Signalized Intersections	Traffic Signal	No	No	No	No	No	No	No	Signal Warrant not met
	Median U-Turn (Indirect Left)	No	No	No	No	No	No	No	Signal Warrant not met
	RCUT (signalized)	No	No	No	No	No	No	No	Signal Warrant not met
	Displaced Left Turn (CFI)	No	No	No	No	No	No	No	Signal Warrant not met
	Continuous Green-T	No	No	No	No	No	No	No	Signal Warrant not met
	Jughandle	No	No	No	No	No	No	No	Signal Warrant not met
	Quadrant Roadway	No	No	No	No	No	No	No	Signal Warrant not met
	Diamond Interch (Signal Control)	No	No	No	No	No	No	No	Signal Warrant not met
	Diverging Diamond	No	No	No	No	No	No	No	Signal Warrant not met
	Single Point Interchange	No	No	No	No	No	No	No	Signal Warrant not met
	No LT Lane Improvements No RT Lane Improvements	No	No	No	No	No	No	No	N/A
	Other Signalized (provide description):	No	No	No	No	No	No	No	N/A

= Intersection type selected for more detailed analysis in Stage 2 Alternative Selection Decision Record

GDOT INTERSECTION CONTROL EVALUATION (ICE) WAIVER FORM

ICE Version 2.15 | Revised 07/01/2019

Waiver Request - Level 1

In certain circumstances where an ICE would otherwise be required, an ICE may be waived based on appropriate evidence presented with a written request. Scenarios in which an ICE waiver request may be considered include:

1. Proposed improvements do not substantially alter the character of the intersection, and are considered minor in nature, such as extending existing turn lane(s) or modifying signal phasing at an existing traffic signal
2. The intersection consists of a public roadway intersecting a divided, multilane roadway where the access will be limited to a closed median with only right-in/right-out access that will operate acceptably; or
3. The intersection is along an undivided, two-lane roadway that will not be widened and meets the following criteria:
   - Low risk in terms of exposure (total intersection entering volume less than 1,000 vehicles /day)
   - Latest 5 years of crash history is not indicative of a crash problem (no discernible crash patterns coupled with low crash frequency and severity)
   - Layout has no unusual or undesirable geometric features (such as restricted sight distance)
   - The proposed changes are not expected to adversely affect safety

If only one alternative is determined to be feasible from the ICE Stage 1, then a waiver may be submitted in lieu of completing ICE Stage 2. The waiver must clearly explain why there is no other feasible alternative. A Waiver Form should also be submitted to document an agreed upon decision to select a preferred alternative other than the highest scoring alternative in Stage 2.

ICE waiver forms with supporting documentation should be submitted for approval to the Office of Traffic Operations or District Engineer (depending on Waiver level). Questions regarding the waiver process should be routed to the State Traffic Engineer.

Project Information:

Location:	Bill Grid Bypass @ Flat Bottom Rd
County:	Cherokee
GDOT District:	6 - Cartersville
Area Type:	Urban
Existing Intersection Control:	New Intersection or Other

GDOT PI # (or N/A):	0002525
Requested By:	GDOT
Prepared By:	VHB
Analyst:	Brittany Tyson
Date:	4/28/2020
Waiver Request Type:	GDOT PDP Project

Traffic and Operations Data:[1]

Intersection meets signal/AWS warrants?	None	
Traffic Analysis Type:	Intersection Delay	
Existing Avg Daily Traffic (Major Street):	0	
Existing Avg Daily Traffic (Minor Street):	0	
Analysis Period:	AM Peak	PM Peak
2030 Opening Yr Peak Hour Intersection Delay:	11.4 sec	11.4 sec
2030 Opening Yr Peak Hour Intersection V/C:	0.05	0.05
2050 Design Yr Peak Hour Intersection Delay:	13.4 sec	13.3 sec
2050 Design Yr Peak Hour Intersection V/C:	0.10	0.08

[1]Crash data required for all existing intersections. ADT's required if available (from data collected or nearest GDOT count station site). Capacity data is optional unless needed to justify basis of the waiver request.

Crash Data (Required):[1]

Crash Type	Crash Data: Enter most recent 5 years of crash data	Crash Severity: PDO	Injury Crash*	Fatal Crash*	
	Angle	0	0	0	<-
	Head-On	0	0	0	
	Rear End	0	0	0	
	Sideswipe - same	0	0	0	
	Sideswipe - opposite	0	0	0	
	Not Collision w/Motor Veh	0	0	0	
	TOTALS:	**0**	**0**	**0**	

* Number of crashes resulting in injuries / fatalities, not number of persons

Description of Work / Justification for Waiver (Required): The conventional minor stop was the only feasible alternative from Stage 1.

Proposed Intersection Control: Conventional (Minor Stop)

REQUESTED BY: Matthew Thompson Date: 5/13/2020

Title: Project Engineer

APPROVED BY: Christopher Raymond Date: 2020.07.15 07:24:43-04'00' Date:

Name:

Chief Engineer or (Approved Delegate)

GDOT INTERSECTION CONTROL EVALUATION (ICE) TOOL

ICE Version 2.15 | Revised 07/01/2019

GDOT PI # (or N/A): 0002525 Request By: GDOT

County: Cherokee GDOT District: 6 - Cartersville

Major (State) Road: BII Grnd Bypass Speed Limit: 45 mph

Minor (Crossing) ST: Flat Bottom Rd Speed Limit: < 35 mph

Major ST Direction: East/West Area Type: Urban

Intersection Control: New Intersection or Other

Prepared By: VHB Analyst: Brittany Tyson

Date: 4/28/2020 Project ID:

Project Purpose: Reduce crashes, improve LOS through downtown Ball Ground and reduce trucks through downtown.

2018	Existing Data Year
2030	Project Opening Year
2050	Project Design Year

Annual Growth Rate: 0.0%

K Factor*: 0%

N

2018 Existing Year Volumes

#DIV/0!

		(0)	(0)	(0)	(0)	SB Flat Bottom Rd				
		0	0	0	0					
EB BII Grnd Bypass	Peds					Peds	0	(0)		
#DIV/0!	(0) 0		2018 Intersection Daily Entering Volume (est): #DIV/0!				0	(0)	#DIV/0!	
	(0) 0						10	(0)		
	(0) 0						0	(0)		
	(0) 0	Peds				Peds	WB BII Grnd Bypass			
NB Flat Bottom Rd		0	0	0	0					
		(0)	(0)	(0)	(0)					

#DIV/0!

Peak Hour % Trucks			
EB	WB	NB	SB
0%	0%	0%	0%

Legend:

000 = AM Peak Approach Vol

(000) = PM Peak Approach Vol

[000] = ADT Volume (Estimate)

#DIV/0!

2030 Opening Year Volumes

10 (25) [400]

		(0)	(0)	(25)	(0)	SB Flat Bottom Rd				
		0	0	10	0					
EB BII Grnd Bypass	Peds					Peds	0	(0)		
145 (175) [3350]	(0) 0		2030 Intersection Daily Entering Volume (est): 3,825				0	(0)	165 (140) [3350]	
	(170) 145						165	(135)		
	(5) 0						0	(5)		
	(0) 0	Peds				Peds	WB BII Grnd Bypass			
NB Flat Bottom Rd		5	25	0	0					
		(0)	(10)	(0)	(0)					

30 (10) [550]

2050 Design Year Volumes

20 (35) [550]

		(0)	(0)	(35)	(0)	SB Flat Bottom Rd				
		0	0	20	0					
EB BII Grnd Bypass	Peds					Peds	0	(0)		
215 (255) [4900]	(0) 0		2050 Intersection Daily Entering Volume (est): 5,550				0	(0)	250 (205) [4900]	
	(250) 210						245	(200)		
	(5) 5						5	(5)		
	(0) 0	Peds				Peds	WB BII Grnd Bypass			
NB Flat Bottom Rd		5	40	5	0					
		(5)	(20)	(5)	(0)					

50 (30) [750]

Introduction: In 2005, SAFETEA-LU established the Highway Safety Improvement Program (HSIP) and mandated that each state prepare a Strategic Highway Safety Plan (SHSP) to prioritize safety funding investments. Intersections quickly became a common component of most states' SHSP emphasis areas and HSIP project lists, including Georgia's SHSP. Intersection Control Evaluation (ICE) policies and procedures represent a traceable and transparent procedure to streamline the evaluation of intersection control alternatives, and further leverage safety advancements for intersection improvements beyond just the safety program. Approximately one-third of all traffic fatalities and roughly seventy five percent of all traffic crashes in Georgia occur at or adjacent to intersections. Accordingly, the Georgia SHSP includes an emphasis on enhancing intersection safety to advance the *Toward Zero Deaths* vision embraced by the Georgia Governor's Office of Highway Safety (GOHS). This ICE tool was developed to support the ICE policy, developed and adopted to help ensure that intersection investments across the entire Georgia highway system are selected, prioritized and implemented with defensible benefits for safety towards those ends.

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Requirements: An ICE is required for any intersection improvement (e.g. new or modified intersection, widening/reconstruction or corridor project, or work accomplished through a driveway or encroachment permit that affects an intersection) where: **1)** the intersection includes at least one roadway designated as a State Route (State Highway System) or as part of the National Highway System; or **2)** the intersection will be designed or constructed using State or Federal funding. In certain circumstances where an ICE would otherwise be required, the requirement may be waived based on appropriate evidence presented with a written request. (See the "**Waiver**" tab to review criteria that may make a project waiver eligible and for instructions to submit a waiver request to the Department). An ICE is not required when the proposed work does not include any changes to the intersection design, involves only routine traffic signal timing and equipment maintenance, or for driveway permits where the driveway is not a new leg to an already existing intersection on either 1) a divided, multi-lane highway with a closed median and only right-in/right-out access or 2) an undivided roadway where the development is not required to construct left and/or right turn lanes (as per the Driveway Manual and District Traffic Engineer).

Two-Stage Process: A complete ICE process consists of two (2) distinct stages, and it is expected that the respective level of effort for completing both stages of ICE will correspond to the magnitude and complexity of the intersection. Prior to starting an ICE, the District Traffic Engineer and/or State Traffic Engineer should be consulted for advice on an appropriate level of effort. The Stage 1 and Stage 2 ICE forms are designed minimize required data inputs using drop-down menu choices and limiting text entry. All fields shaded grey include drop down menu choices and all fields shaded blue require data entry. All other cells in the worksheet are locked.

Stage 1: Screening Decision Record Stage 1 should be conducted early in the project development process and is intended to inform which alternatives are worthy of further evaluation in Stage 2. Stage 1 serves as a screening effort meant to *eliminate* non-competitive options and identify which alternatives merit further considerations based on their practical feasibility. Users should use good engineering judgement in responding to the seven policy questions by selecting "Yes" or "No" in the drop-down boxes. Alternatives should not be summarily eliminated without due consideration, and reasons for eliminating or advancing an alternative should be documented in the "Screening Decision Justification" column.

Stage 2: Alternative Selection Decision Record Stage 2 involves a more detailed and familiar evaluation of the alternatives identified in Stage 1 in order to support the selection of a preferred alternative that may be advanced to detailed design. Stage 2 data entry may require the use of external analysis tools to determine costs, operations and/or safety data that, combined with environmental and stakeholder posture data, form the basis of the ICE evaluation. A separate "CostEst" worksheet tab helps users develop pre-planning-level cost estimates for each Stage 2 alternative evaluated, and a separate Users Guide has been prepared to give guidance on Stage 1 and Stage 2 data entry. Once all data is entered, each alternative is scored and ranked, with the results reported at the bottom of the Stage 2 worksheet to inform on the best of the intersection controls evaluated for project recommendation.

Documentation: A complete ICE document consists of the combination of the outputs from either a completed and signed waiver form or both Stage 1 and Stage 2 worksheets (along with supporting costing and/or environmental documentation), to be included in the approved project Concept Report (or equivalent) or as a stand-alone document.

GDOT ICE STAGE 1: SCREENING DECISION RECORD

ICE Version 2.15 | Revised 07/01/2019

GDOT PI #	0002525
Project Location:	BII Grnd Bypass @ Flat Bottom Rd
Existing Control:	New Intersection or Other
Prepared by:	VHB
Date:	4/28/2020

Answer "Yes" or "No" to each policy question for each control type to identify which alternatives should be evaluated in the Stage 2 Decision Record; enter justification in the rightmost column

Note: Up to 5 alternatives may be selected and evaluated; Use this ICE Stage 1 to screen 5 or fewer alternatives to evaluate in Stage 2

	Intersection Alternative (see "Intersections" tab for detailed description of intersection/interchange type)	1. Does alternative address the project need in a balanced manner and in scale with the project?	2. Does alternative improve safety performance in terms of reducing severe crashes?	3. Does alternative incorporate safety, convenience and accessibility for pedestrians and/or bicyclists?	4. Does alternative improve (or preserve) traffic operations (congestion, delay, reliability, etc.)?	5. Does alternative appear feasible given the site characteristics, constrains & location context?	6. Does alternative appear feasible with respect to other project factors?	7. Overall feasible alternative (select alternative for further evaluation in Stage 2)?	Screening Decision Justification:
Unsignalized Intersections	Conventional (Minor Stop)	**No**	**No**	**No**	**Yes**	**Yes**	**Yes**	**Yes**	Move forward to Stage 2
	Conventional (All-Way Stop)	**Yes**	**Yes**	No	**Yes**	**Yes**	**Yes**	No	AWS warrant not met
	Mini Roundabout	No	No	No	No	No	No	No	Volume and context not to scale
	Single Lane Roundabout	No	No	No	No	No	No	No	Volume and context not to scale
	Multilane Roundabout	No	No	No	No	No	No	No	Volume and context not to scale
	RCUT (stop control)	No	No	No	No	No	No	No	Minimal left turn movement, high truck %, context not to scale
	RIRO w/down stream U-Turn	No	No	No	No	No	No	No	Context not to scale
	High-T (unsignalized)	No	No	No	No	No	No	No	N/A for four-way approach
	Offset-T Intersections	No	No	No	No	No	No	No	Context not to scale
	Diamond Interch (Stop Control)	No	No	No	No	No	No	No	Volume and context not to scale
	Diamond Interch (RAB Control)	No	No	No	No	No	No	No	Volume and context not to scale
	No LT Lane Improvements No RT Lane Improvements	No	No	No	No	No	No	No	N/A
	Other unsignalized (provide description):	No	No	No	No	No	No	No	N/A
Signalized Intersections	Traffic Signal	No	No	No	No	No	No	No	Signal Warrant not met
	Median U-Turn (Indirect Left)	No	No	No	No	No	No	No	Signal Warrant not met
	RCUT (signalized)	No	No	No	No	No	No	No	Signal Warrant not met
	Displaced Left Turn (CFI)	No	No	No	No	No	No	No	Signal Warrant not met
	Continuous Green-T	No	No	No	No	No	No	No	Signal Warrant not met
	Jughandle	No	No	No	No	No	No	No	Signal Warrant not met
	Quadrant Roadway	No	No	No	No	No	No	No	Signal Warrant not met
	Diamond Interch (Signal Control)	No	No	No	No	No	No	No	Signal Warrant not met
	Diverging Diamond	No	No	No	No	No	No	No	Signal Warrant not met
	Single Point Interchange	No	No	No	No	No	No	No	Signal Warrant not met
	No LT Lane Improvements No RT Lane Improvements	No	No	No	No	No	No	No	N/A
	Other Signalized (provide description):	No	No	No	No	No	No	No	N/A

= Intersection type selected for more detailed analysis in Stage 2 Alternative Selection Decision Record

GDOT INTERSECTION CONTROL EVALUATION (ICE) WAIVER FORM

ICE Version 2.15 | Revised 07/01/2019

Waiver Request - Level 1

In certain circumstances where an ICE would otherwise be required, an ICE may be waived based on appropriate evidence presented with a written request. Scenarios in which an ICE waiver request may be considered include:

1. Proposed improvements do not substantially alter the character of the intersection, and are considered minor in nature, such as extending existing turn lane(s) or modifying signal phasing at an existing traffic signal
2. The intersection consists of a public roadway intersecting a divided, multilane roadway where the access will be limited to a closed median with only right-in/right-out access that will operate acceptably; or
3. The intersection is along an undivided, two-lane roadway that will not be widened and meets the following criteria:
   - Low risk in terms of exposure (total intersection entering volume less than 1,000 vehicles /day)
   - Latest 5 years of crash history is not indicative of a crash problem (no discernible crash patterns coupled with low crash frequency and severity)
   - Layout has no unusual or undesirable geometric features (such as restricted sight distance)
   - The proposed changes are not expected to adversely affect safety

If only one alternative is determined to be feasible from the ICE Stage 1, then a waiver may be submitted in lieu of completing ICE Stage 2. The waiver must clearly explain why there is no other feasible alternative. A Waiver Form should also be submitted to document an agreed upon decision to select a preferred alternative other than the highest scoring alternative in Stage 2.

ICE waiver forms with supporting documentation should be submitted for approval to the Office of Traffic Operations or District Engineer (depending on Waiver level). Questions regarding the waiver process should be routed to the State Traffic Engineer.

Project Information:

Location:	SR 372 @ Bll Grnd Bypass	GDOT PI # (or N/A):	0002525
County:	Cherokee	Requested By:	GDOT
GDOT District:	6 - Cartersville	Prepared By:	VHB
Area Type:	Urban	Analyst:	Brittany Tyson
Existing Intersection Control:	Conventional (Minor Stop)	Date:	4/28/2020
		Waiver Request Type:	GDOT PDP Project

Traffic and Operations Data:[1]

Intersection meets signal/AWS warrants?	None	
Traffic Analysis Type:	Intersection Delay	
Existing Avg Daily Traffic (Major Street):	8,600	
Existing Avg Daily Traffic (Minor Street):	0	
Analysis Period:	AM Peak	PM Peak
2030 Opening Yr Peak Hour Intersection Delay:	12.9 sec	13.0 sec
2030 Opening Yr Peak Hour Intersection V/C:	0.26	0.29
2050 Design Yr Peak Hour Intersection Delay:	19.8 sec	20.4 sec
2050 Design Yr Peak Hour Intersection V/C:	0.49	0.55

[1]Crash data required for all existing intersections. ADT's required if available (from data collected or nearest GDOT count station site). Capacity data is optional unless needed to justify basis of the waiver request.

Crash Data (Required):[1]

Crash Type	Crash Data: Enter most recent 5 years of crash data	Crash Severity: PDO	Injury Crash*	Fatal Crash*	
	Angle	0	0	0	<-
	Head-On	0	1	0	
	Rear End	0	0	0	
	Sideswipe - same	0	0	0	
	Sideswipe - opposite	0	0	0	
	Not Collision w/Motor Veh	0	0	0	
	TOTALS:	**0**	**1**	**0**	

* Number of crashes resulting in injuries / fatalities, not number of persons

Description of Work / Justification for Waiver (Required): Because of the significant environmental impacts of the roundabout alternative, the minor stop alternative is the preferred alternative.

Proposed Intersection Control: Conventional (Minor Stop)

REQUESTED BY: Matthew Thompson Date: 5/13/2020

Title: Project Engineer

APPROVED BY: Christopher Raymond Date: 2020.07.15 07:25:03-04'00' Date:

Name:

Chief Engineer or (Approved Delegate)

GDOT INTERSECTION CONTROL EVALUATION (ICE) TOOL

ICE Version 2.15 | Revised 07/01/2019

GDOT PI # (or N/A):	0002525	Request By:	GDOT
County:	Cherokee	GDOT District:	6 - Cartersville
Major (State) Road:	SR 372	Speed Limit:	45 mph
Minor (Crossing) ST:	Bll Grnd Bypass	Speed Limit:	45 mph
Major ST Direction:	East/West	Area Type:	Urban
Intersection Control:	Conventional (Minor Stop)		
Prepared By:	VHB	Analyst:	Brittany Tyson
Date:	4/28/2020	Project ID:	Ball Ground Bypass
Project Purpose:	Reduce crashes, improve LOS, and reduce trucks through downtown Ball Ground		

2018	Existing Data Year
2030	Project Opening Year
2050	Project Design Year

Annual Growth Rate: 0.0%

K Factor*: 0%

2018 Existing Year Volumes

#DIV/0!

		(0)	(0)	(0)	(0)	SB Bll Grnd Bypass			
		0	0	0	0				
EB SR 372	Peds					Peds	0	(0)	
#DIV/0!	(0)	0		2018 Intersection Daily Entering Volume (est): #DIV/0!			0	(0)	#DIV/0!
	(395)	380					330	(495)	
	(0)	0					0	(0)	
	(0)	0	Peds			Peds	WB SR 372		
NB Bll Grnd Bypass	0	0	0	0					
	(0)	(0)	(0)	(0)					

#DIV/0!

Peak Hour % Trucks			
EB	WB	NB	SB
0%	0%	0%	0%

Legend:

000 = AM Peak Approach Vol

(000) = PM Peak Approach Vol

[000] = ADT Volume (Estimate)

2030 Opening Year Volumes

#DIV/0!

		(0)	(0)	(0)	(0)	SB Bll Grnd Bypass			
		0	0	0	0				
EB SR 372	Peds					Peds	0	(0)	
330 (325) [7600]	(0)	0		2030 Intersection Daily Entering Volume (est): #DIV/0!			0	(0)	400 (615) [10900]
	(325)	330					235	(475)	
	(0)	0					165	(140)	
	(0)	0	Peds			Peds	WB SR 372		
NB Bll Grnd Bypass	0	0	145	0					
	(0)	(0)	(170)	(0)					

145 (170) [3300]

2050 Design Year Volumes

#DIV/0!

		(0)	(0)	(0)	(0)	SB Bll Grnd Bypass			
		0	0	0	0				
EB SR 372	Peds					Peds	0	(0)	
885 (875) [11350]	(480)	505		2050 Intersection Daily Entering Volume (est): #DIV/0!			0	(0)	600 (925) [16250]
	(395)	380					350	(720)	
	(0)	0					250	(205)	
	(0)	0	Peds			Peds	WB SR 372		
NB Bll Grnd Bypass	0	0	215	0					
	(0)	(0)	(255)	(0)					

215 (255) [4900]

Introduction: In 2005, SAFETEA-LU established the Highway Safety Improvement Program (HSIP) and mandated that each state prepare a Strategic Highway Safety Plan (SHSP) to prioritize safety funding investments. Intersections quickly became a common component of most states' SHSP emphasis areas and HSIP project lists, including Georgia's SHSP. Intersection Control Evaluation (ICE) policies and procedures represent a traceable and transparent procedure to streamline the evaluation of intersection control alternatives, and further leverage safety advancements for intersection improvements beyond just the safety program. Approximately one-third of all traffic fatalities and roughly seventy five percent of all traffic crashes in Georgia occur at or adjacent to intersections. Accordingly, the Georgia SHSP includes an emphasis on enhancing intersection safety to advance the *Toward Zero Deaths* vision embraced by the Georgia Governor's Office of Highway Safety (GOHS). This ICE tool was developed to support the ICE policy, developed and adopted to help ensure that intersection investments across the entire Georgia highway system are selected, prioritized and implemented with defensible benefits for safety towards those ends.

Tool Goal: The goal of this ICE tool is to provide a simplified and consistent way of importing traffic, safety, cost, environmental impact and stakeholder posture data to assess and quantify intersection control improvement benefits. The tool supports the ICE policy and procedures to provide traceability, transparency, consistency and accountability when identifying and selecting an intersection control solution that both meets project purpose and reflects overall best value in terms of specific performance-based criteria.

Requirements: An ICE is required for any intersection improvement (e.g. new or modified intersection, widening/reconstruction or corridor project, or work accomplished through a driveway or encroachment permit that affects an intersection) where: **1)** the intersection includes at least one roadway designated as a State Route (State Highway System) or as part of the National Highway System; or **2)** the intersection will be designed or constructed using State or Federal funding. In certain circumstances where an ICE would otherwise be required, the requirement may be waived based on appropriate evidence presented with a written request. (See the "**Waiver**" tab to review criteria that may make a project waiver eligible and for instructions to submit a waiver request to the Department). An ICE is not required when the proposed work does not include any changes to the intersection design, involves only routine traffic signal timing and equipment maintenance, or for driveway permits where the driveway is not a new leg to an already existing intersection on either 1) a divided, multi-lane highway with a closed median and only right-in/right-out access or 2) an undivided roadway where the development is not required to construct left and/or right turn lanes (as per the Driveway Manual and District Traffic Engineer).

Two-Stage Process: A complete ICE process consists of two (2) distinct stages, and it is expected that the respective level of effort for completing both stages of ICE will correspond to the magnitude and complexity of the intersection. Prior to starting an ICE, the District Traffic Engineer and/or State Traffic Engineer should be consulted for advice on an appropriate level of effort. The Stage 1 and Stage 2 ICE forms are designed minimize required data inputs using drop-down menu choices and limiting text entry. All fields shaded grey include drop down menu choices and all fields shaded blue require data entry. All other cells in the worksheet are locked.

Stage 1: Screening Decision Record Stage 1 should be conducted early in the project development process and is intended to inform which alternatives are worthy of further evaluation in Stage 2. Stage 1 serves as a screening effort meant to *eliminate* non-competitive options and identify which alternatives merit further considerations based on their practical feasibility. Users should use good engineering judgement in responding to the seven policy questions by selecting "Yes" or "No" in the drop-down boxes. Alternatives should not be summarily eliminated without due consideration, and reasons for eliminating or advancing an alternative should be documented in the "Screening Decision Justification" column.

Stage 2: Alternative Selection Decision Record Stage 2 involves a more detailed and familiar evaluation of the alternatives identified in Stage 1 in order to support the selection of a preferred alternative that may be advanced to detailed design. Stage 2 data entry may require the use of external analysis tools to determine costs, operations and/or safety data that, combined with environmental and stakeholder posture data, form the basis of the ICE evaluation. A separate "CostEst" worksheet tab helps users develop pre-planning-level cost estimates for each Stage 2 alternative evaluated, and a separate Users Guide has been prepared to give guidance on Stage 1 and Stage 2 data entry. Once all data is entered, each alternative is scored and ranked, with the results reported at the bottom of the Stage 2 worksheet to inform on the best of the intersection controls evaluated for project recommendation.

Documentation: A complete ICE document consists of the combination of the outputs from either a completed and signed waiver form or both Stage 1 and Stage 2 worksheets (along with supporting costing and/or environmental documentation), to be included in the approved project Concept Report (or equivalent) or as a stand-alone document.

GDOT ICE STAGE 1: SCREENING DECISION RECORD

ICE Version 2.15 | Revised 07/01/2019

GDOT PI #	0002525
Project Location:	SR 372 @ BII Grnd Bypass
Existing Control:	Conventional (Minor Stop)
Prepared by:	VHB
Date:	4/28/2020

Answer "Yes" or "No" to each policy question for each control type to identify which alternatives should be evaluated in the Stage 2 Decision Record; enter justification in the rightmost column

Note: Up to 5 alternatives may be selected and evaluated; Use this ICE Stage 1 to screen 5 or fewer alternatives to evaluate in Stage 2

	Intersection Alternative (see "Intersections" tab for detailed description of intersection/interchange type)	1. Does alternative address the project need in a balanced manner and in scale with the project?	2. Does alternative improve safety performance in terms of reducing severe crashes?	3. Does alternative incorporate safety, convenience and accessibility for pedestrians and/or bicyclists?	4. Does alternative improve (or preserve) traffic operations (congestion, delay, reliability, etc.)?	5. Does alternative appear feasible given the site characteristics, constrains & location context?	6. Does alternative appear feasible with respect to other project factors?	7. Overall feasible alternative (select alternative for further evaluation in Stage 2)?	Screening Decision Justification:
Unsignalized Intersections	Conventional (Minor Stop)	**Yes**	**No**	**No**	**Yes**	**Yes**	**Yes**	**Yes**	Move forward to Stage 2
	Conventional (All-Way Stop)	**No**	**Yes**	**No**	**Yes**	**Yes**	**Yes**	**Yes**	Move forward to Stage 2
	Mini Roundabout	No	No	No	No	No	No	No	Context not to scale
	Single Lane Roundabout	**Yes**	**Yes**	**No**	**Yes**	**No**	**No**	**Yes**	Move forward to Stage 2
	Multilane Roundabout	No	No	No	No	No	No	No	Volume and context not to scale
	RCUT (stop control)	No	No	No	No	No	No	No	Context not to scale
	RIRO w/down stream U-Turn	No	No	No	No	No	No	No	Context not to scale
	High-T (unsignalized)	No	No	No	No	No	No	No	Minimal left turn movement
	Offset-T Intersections	No	No	No	No	No	No	No	Context not to scale
	Diamond Interch (Stop Control)	No	No	No	No	No	No	No	Volume and context not to scale
	Diamond Interch (RAB Control)	No	No	No	No	No	No	No	Volume and context not to scale
	No LT Lane Improvements No RT Lane Improvements	No	No	No	No	No	No	No	N/A
	Other unsignalized (provide description):	No	No	No	No	No	No	No	N/A
Signalized Intersections	Traffic Signal	No	No	No	No	No	No	No	Signal Warrant not met
	Median U-Turn (Indirect Left)	No	No	No	No	No	No	No	Signal Warrant not met
	RCUT (signalized)	No	No	No	No	No	No	No	Signal Warrant not met
	Displaced Left Turn (CFI)	No	No	No	No	No	No	No	Signal Warrant not met
	Continuous Green-T	No	No	No	No	No	No	No	Signal Warrant not met
	Jughandle	No	No	No	No	No	No	No	Signal Warrant not met
	Quadrant Roadway	No	No	No	No	No	No	No	Signal Warrant not met
	Diamond Interch (Signal Control)	No	No	No	No	No	No	No	Signal Warrant not met
	Diverging Diamond	No	No	No	No	No	No	No	Signal Warrant not met
	Single Point Interchange	No	No	No	No	No	No	No	Signal Warrant not met
	No LT Lane Improvements No RT Lane Improvements	No	No	No	No	No	No	No	N/A
	Other Signalized (provide description):	No	No	No	No	No	No	No	N/A

= Intersection type selected for more detailed analysis in Stage 2 Alternative Selection Decision Record

GDOT ICE STAGE 2: ALTERNATIVE SELECTION DECISION RECORD

ICE Version 2.15 | Revised 07/01/2019

GDOT PI # (or N/A): 0002525
County: Cherokee
Project Location: SR 372 @ Bll Grnd Bypass
Existing Intersection Control: Conventional (Minor Stop)

GDOT District: 6 - Cartersville
Area Type: Urban

Date: 4/28/2020
Agency/Firm: VHB
Analyst: Brittany Tyson
Type of Analysis: Conventional Non-Safety Funded Project

Opening / Design Year Traffic Operations

Intersection meets signal/AWS warrants?	Meets AWS only	
Traffic Analysis Measure of Effectiveness	Intersection Delay	
Traffic Analysis Software Used	HCS 2010	
Analysis Time Period	AM Peak Hr	PM Peak Hr
2030 Opening Yr No-Build Peak Hr Intersection Delay	0.0 sec	0.0 sec
2030 Opening Yr No-Build Peak Hr Intersection V/C ratio	0.00	0.00
2050 Design Yr No-Build Peak Hr Intersection Delay	0.0 sec	0.0 sec
2050 Design Yr No-Build Peak Hr Intersection V/C ratio	0.00	0.00

Complete Streets Warrants Met?
- ☐ PEDESTRIANS
- ☐ BICYCLES
- ☐ TRANSIT

Crash Type (Crash Data: Enter most recent 5 years of crash data)	Crash Severity: PDO	Injury Crash*	Fatal Crash*	
Angle	0	0	0	0%
Head-On	0	1	0	100%
Rear End	0	0	0	0%
Sideswipe - same	0	0	0	0%
Sideswipe - opposite	0	0	0	0%
Not Collision w/Motor Veh	0	0	0	0%
TOTALS:	0	1	0	1

* Number of crashes resulting in injuries / fatalities, not number of persons

Alternatives Analysis:

	Alternative 1	Alternative 2	Alternative 3	Alternative 4	Alternative 5
Proposed Control Type/Improvement:	Conventional (Minor Stop)	Conventional (All-Way Stop)	Single Lane Roundabout	N/A	N/A
Project Cost: (From CostEst Worksheet)	*Additional description here*	*Additional description here*	*Additional description here*		
Construction Cost	$500,000	$500,000	$1,200,000		
ROW Cost	$65,000	$65,000	$77,000		
Environmental Cost	$20,000	$20,000	$351,000		
Reimbursable Utility Cost	$13,000	$13,000	$21,000		
Design & Contingency Cost	$209,300	$209,300	$389,000		
Cost Adjustment (justification req'd)	0%	0%	0%		
Total Cost	$807,300	$807,300	$2,038,000		
Traffic Operations:	*User Cost Override*	*User Cost Override*	*User Cost Override*		
Traffic Analysis Software Used	HCS 2010	GDOT RND Tool 4.1	GDOT RND Tool 4.1		
Analysis Period	AM Peak Hr / PM Peak Hr	AM Peak Hr / PM Peak Hr	AM Peak Hr / PM Peak Hr		
2050 Design Yr Build Intersection Delay	19.8 sec / 20.4 sec	83.1 sec / 327.7 sec	14.0 sec / 16.0 sec		
2050 Design Yr Build Intersection V/C	0.49 / 0.55	1.08 / 1.68	0.59 / 0.78		
Safety Analysis:					
Predefined CRF: PDO	0%	75%	39%		
Predefined CRF: Fatal/Inj	0%	70%	78%		
Predefined CRF Source:	N/A	FHWA Clearinghouse #s 315 / 314	FHWA Clearinghouse #s 233 / 234		
User Defined CRF: PDO					
User Defined CRF: Fatal/Inj					
User Defined CRF Source (write in if applicable):					
Environmental Impacts:[1]					
Historic District/Property	Minimal	Minimal	**Significant**		
Archaeology Resources	None	None	None		
Graveyard	None	None	None		
Stream	Minimal	Minimal	**Significant**		
Underground Tank/Hazmat	None	None	None		
Park Land	None	None	None		
EJ Community	None	None	None		
Wooded Area	Minimal	Minimal	Minimal		
Wetland	None	None	None		
Stakeholder Posture:	*Note: If environmental impact is significant (**RED**), provide justification impact won't jeopardize project delivery using "Env" worksheet*				
	[1] *Environmental impacts are only preliminary estimates; detailed environmental impact documentation will be included with project concept report*				
Local Community Support	Unknown	Unknown	Unknown		
GDOT Support	Unknown	Unknown	Unknown		
Final ICE Stage 2 Score:	4.7	3.3	5.7		
Rank of Control Type Alternatives:	2	3	1		

Note: Stage 2 score is not given (shown as "-") if signal or AWS is selected as control type but respective warrants are not met

Provide additional comments and/or explain any unique analysis inputs, or results (as necessary): Because of the significant environmental impacts of the roundabout alternative, the minor stop alternative is the preferred alternative. Waiver provided.

1355 Peachtree Street NE
Suite 100
Atlanta, Georgia 30309
T 404.214.6745

Meeting Minutes

Date: June 26, 2019 Time: 10:30 am

Location: Cherokee County Administrative Offices

Subject: Ball Ground Bypass Initial Concept Team Meeting

Project No: PI No. 0002525, Cherokee County VHB: 63312.00

Recorded By: Matthew Thompson

Attendees:			
	Geoff Morton	Cherokee County	gmorton@cherokeega.com
	Jim Wilgus	Cherokee County	jawilgus@cherokeega.com
	Tommy Crochet	VHB	tcrochet@vhb.com
	Matthew Thompson	VHB	mthompson@vhb.com
	Erin Murphy	VHB	emurphy@vhb.com
	Melissa Gende	VHB	mgende@vhb.com
	Gretel Sims	GDOT OPD	gsims@dot.ga.gov
	Yasmeen Qadimasil	GDOT OES NEPA	yqadimasil@dot.ga.gov
	Carla Benton-Hooks	GDOT OES NEPA	cbenton-hooks@dot.ga.gov
	Marcela Coll	GDOT Utilities-RR	mcoll@dot.ga.gov
	Megan Weiss	GDOT Planning	mweiss@dot.ga.gov
	Donovan Tucker	GDOT Traffic Ops	dtucker@dot.ga.gov
	Jeff Waderich	CC School Depart.	jeff.waderich@cherokeek12.net
	Lavontre Chandler	GDOT	lchandler@dot.ga.gov
	Larry Young	Amicalola EMC	larryy@amicalolaemc.com
	Eric Wilmarth	City of Ball Ground	ewilmarth@cityofballground.com
	Theo Igbalajobi	GDOT OPD	tigbalajobi@dot.ga.gov
	Mike Gows	GDOT District 6	mgows@dot.ga.gov
	Harry Johnston	Cherokee County	hjohnston@cherokeega.com
	Daniel Monteith	GDOT District 6	dmontieth@dot.ga.gov
	Benny Crawford	TDS Telecom	benny.crawford@tdstelecom.com
	David Acree	GDOT District 6	dacree@dot.ga.gov
	John Gay	GA Power	jcgay@southernco.com
	Andrew Pearson (phone)	GDOT	apearson@dot.ga.gov
	Ralph Turner	Windstream	

June 26, 2019
PI No. 0002525

Geoff Morton opened the meeting with introductions and Tommy Crochet gave an overview of the project and scoping study. The meeting followed the agenda outline per the attached presentation.

- Tommy Crochet discussed the project history including the conversion of Gilmer Ferry Road thru downtown Ball Ground to SR 372, and the increased use of SR 372 as a truck route with a high number of agriculture trucks.
- Tommy discussed the existing conditions within the study area and downtown Ball Ground including existing speed limits, geometry, and traffic.
- Geoff noted that he had met with Russell McMurry at GDOT in 2018 to discuss potential Bypass/SR 372 Spur and the county was trying to obtain a better project budget thru the scoping study.
- Eric Wilmarth noted that the existing pavement thru downtown Ball Ground was in poor condition and was not designed to handle the amount of trucks that currently use the corridor. Eric noted that based on recent storm drain construction in Ball Ground the pavement was likely 4 inches of asphalt with no base.
- Tommy discussed the existing and projected traffic volumes reviewing No Build and Build conditions.
- Eric stated that most of the heavy truck traffic diverted onto the potential Ball Ground Bypass would likely use SR 5 heading north to avoid I-575 weight restrictions.
- Geoff and Eric noted that existing pavement conditions should be added to the project justification.
- Tommy discussed current project budget identified in the preconstruction status report and noted that funding source was not currently in place.
- Tommy reviewed the current schedule of the scoping study and noted that at this time only an environmental screening document would be completed. No resource reports, or special studies are currently scoped.
- Tommy stated that it would be prudent to submit a draft concept report for review, but the County may want to wait to finalize the concept report for approval until a funding source had been identified as this could dictate the preferred alternative.
- Tommy discussed the geometric challenges of the potential proposed alignments specifically noting the large vertical difference between Northridge Road and the potential Bypass, which would require either a bridge along Northridge over the Bypass or a Bypass Tunnel under Northridge.
- Tommy noted that the Office of Design Policy advised that a design speed of 45 mph should be used for Bypass design. Desing Policy did state that a good argument could possibly be made for a sight distance design variance at the crossing of Northridge Road allowing 35mph vertical grades and k-values to reduce the large cut.
- Tommy noted that limited access on the Bypass at the crossing of Northridge would also be beneficial due to the insufficient sight design on either side of the potential crest curve.

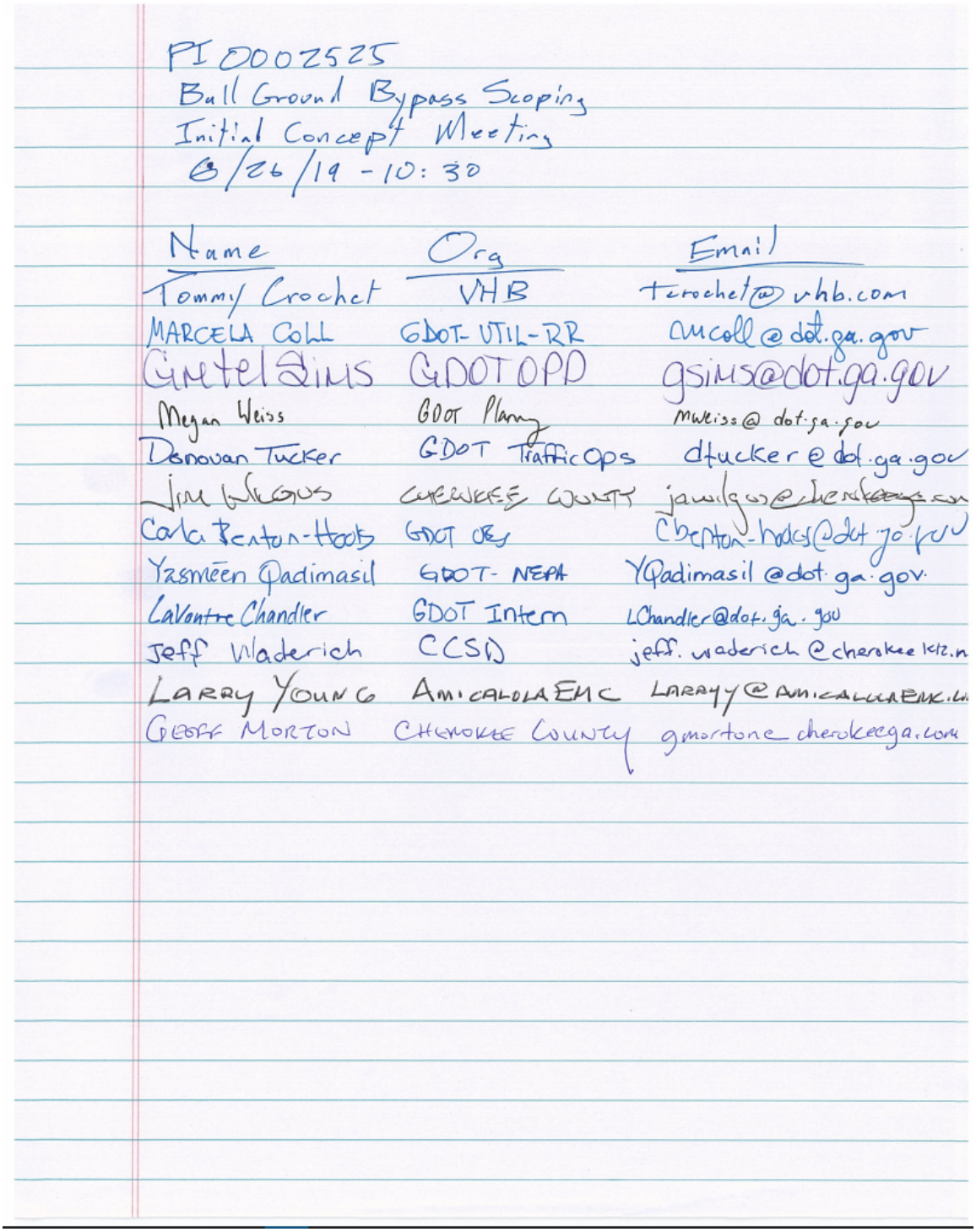
June 26, 2019
PI No. 0002525

- Tommy noted the environmental concerns within the study area including the high number of historic properties.
- Tommy noted that the Corps and U.S. Fish and Wildlife Service would likely push for water quality treatment since outfalls along this project would be within the Etowah Basin and the design team would consider this in cost estimates.
- Tommy reviewed the current alignments under consideration.
- Geoff noted that Cherokee County School Board owned a couple of properties potentially near the southern alignment that ran parallel to existing transmission line easement.
- Jeff Waderich stated that a high school and a middle school were planned for construction on the noted properties, but construction wasn't expected within the next 5 years. Jeff noted that the properties were south of the study area.
- David Acree asked about the potential to make the Bypass as the thru movement onto SR 372 at the east end of the project.
- Tommy noted that using the Bypass as the thru movement from the east end of the project was a potential option. However, based on traffic projections a roundabout should adequately facilitate traffic flow at this intersection in the design year.
- Andrew Pearson requested that the design team follow up with Traffic Ops once they were further along in the ICE process. Andrew noted that it would be best to avoid multiple intersection alternatives at the PIOH.
- Marcell Coll asked if Ball Ground Bypass would be designated as SR 372.
- Geoff stated that State Route designation would be proposed for the Bypass, but it would potentially be SR 372 Spur.
- Tommy briefly reviewed projects near the study area.
- Eric noted that PI 0010649 was near completion and only landscaping work remained.
- Mike Dows stated that PI 0009903, Ramp Roundabouts project, was currently on hold.
- Eric stated that the safety issues at the I-575 interchange start with the all-way stop at Howell Bridge Rd and SR 5 as queues back up to the interchange.
- Eric noted that the existing structure just east of the Georgia Northeastern Railroad was potentially being restored.
- Donovan Tucker asked about the potential to make the Bypass a limited access facility.
- Geoff noted that the County and the City would consider limited access for the Bypass corridor, but it would most likely be partial limited access as certain areas of the Bypass would still need to have access options.

Action Items

- VHB will provide ICTM meeting minutes.

June 26, 2019
PI No. 0002525



PI 0002525
Ball Ground Bypass Scoping
Initial Concept Meeting
6/26/19 - 10:30

Name	Org	Email
Tommy Crochet	VHB	tcrochet@vhb.com
MARCELA COLL	GDOT- UTIL-RR	mcoll@dot.ga.gov
Gmtel Sims	GDOT OPD	gsims@dot.ga.gov
Megan Weiss	GDOT Planning	mweiss@dot.ga.gov
Donovan Tucker	GDOT Traffic Ops	dtucker@dot.ga.gov
Jim Wilcox	Cherokee County	jawilcox@[illegible]
Carla Benton-Hoots	GDOT OES	Cbenton-hoots@dot.ga.gov
Yasmeen Qadimasil	GDOT- NEPA	YQadimasil@dot.ga.gov
LaVontre Chandler	GDOT Intern	LChandler@dot.ga.gov
Jeff Waderich	CCSD	jeff.waderich@cherokee.k12.n
LARRY YOUNG	AMICALOLA EMC	LARRYY@AMICALOLAEMC.co
GEOFF MORTON	CHEROKEE COUNTY	gmorton@cherokeega.com

Meeting Minutes

June 26, 2019
PI No. 0002525

Name	Org	Email
Eric Wilmarth	Ball Ground	ewilmarth@cityofballground.co
Theo Igbalajobi	GDOT-ORS	tigbalajobi@dot-ga.gov
Mike Gowns	GDOT D6	mgowns@dot.ga.gov
Melissa Gende	VHB	mgende@vhb.com
Erin Murphy	VHB	emurphy@vhb.com
Harry Johnston	Cherokee Co.	hjohnston@cherokeega.com
DANIEL MONTEITH	GDOT-D6	DMONTEITH@DOT.GA.GOV
Benny Crawford	TDS	benny.crawford@tdstelecom.com
David Acree	GDOT D6	dacree@dot.ga.gov
Gretel Sims	GDOT OPD	gsims@dot.ga.gov
JOHN GAY	GA POWER	JCGAY@SOUTHERNCO.COM

PI No. 0002525
Ball Ground Bypass
Cherokee County

Initial Concept Meeting

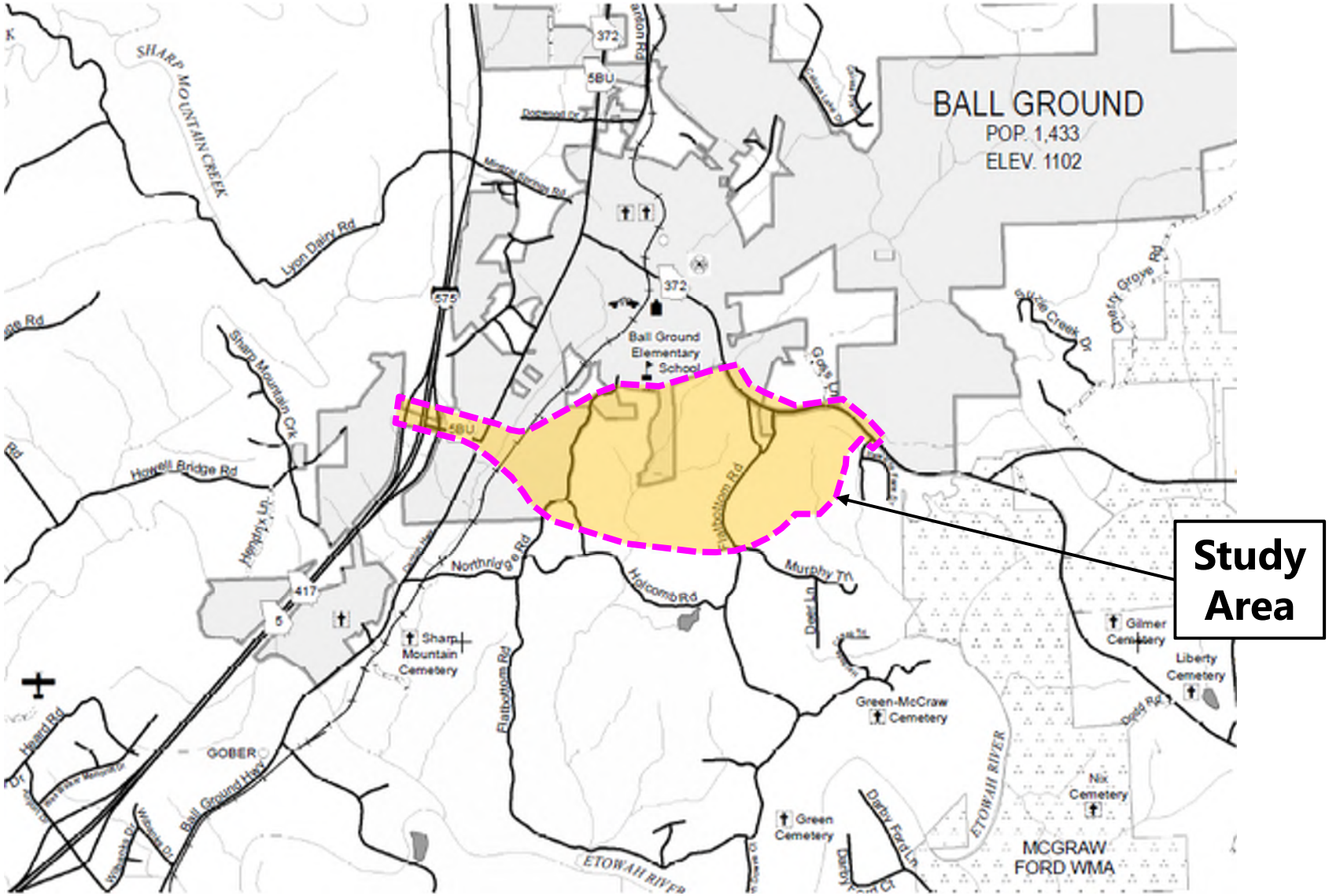
Presented by

June 26, 2019

Project Description & Background

- Project Description
  - This project proposes a Bypass around the south side of the City of Ball Ground in Cherokee County. The Bypass is proposed from Howell Bridge road towards SR 372 in an easterly direction.
- Project Background
  - Gilmer Ferry Road, the main street through downtown Ball Ground, was converted to SR 372 in the 1970's.
  - Ball Ground has become both a destination for local tourists and home to several restaurants and shops over the past several years.
  - SR 372 through Ball Ground has become a regular route for many trucks including agriculture trucks, poultry processing trucks, gravel trucks, and trash trucks.
  - As traffic volumes, particularly truck traffic, have increased over the years, the City of Ball Ground has continued to push for a truck bypass that would route trucks around the downtown area.

Study Area


BALL GROUND
POP. 1,433
ELEV. 1102
Study Area
SHARP MOUNTAIN CREEK
Lyon Dairy Rd
Sharp Mountain Crk
Howell Bridge Rd
Hemphyx Ln
Northridge Rd
Holcomb Rd
Flatbottom Rd
Murphy Trl
Deer Ln
Ball Ground Elementary School
Sharp Mountain Cemetery
Gilmer Cemetery
Liberty Cemetery
Green-McCraw Cemetery
Green Cemetery
Nix Cemetery
ETOWAH RIVER
MCGRAW FORD WMA
GOBER
Heard Rd
Ball Ground Hwy
372
5BU
575
417
5

Existing Conditions

Howell Bridge Road at Ball Ground Highway

Howell Bridge Road Looking West Towards I-575
Across Georgia Northeaster Railroad

Northridge Road

Cherokee Village Court

Existing Conditions

SR 372 West of Flatbottom Road

Flatbottom Road at SR 372

SR 372 Near Goss Lane

SR 372 Near Goss Lane

Existing Conditions

SR 372 at Old Canton Road

SR 372 West of Mound Street

SR 372 East of Mound Street

SR 372 at Valley Drive

Existing Conditions

SR 372 at Ball Ground Highway

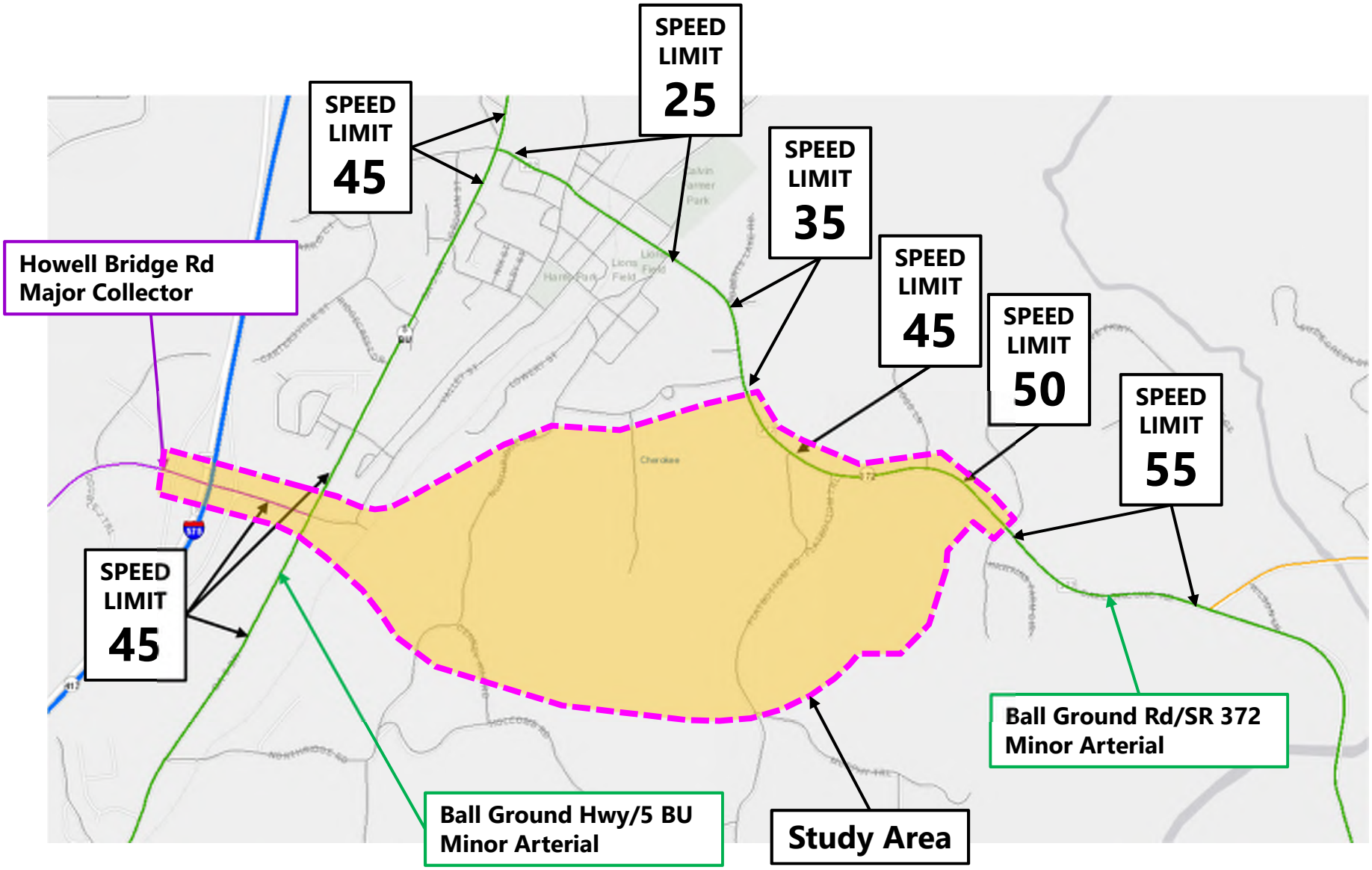
SR 372 East of Ball Ground Highway

SR 372 at Lyons Avenue

SR 372 West of Old Canton Road

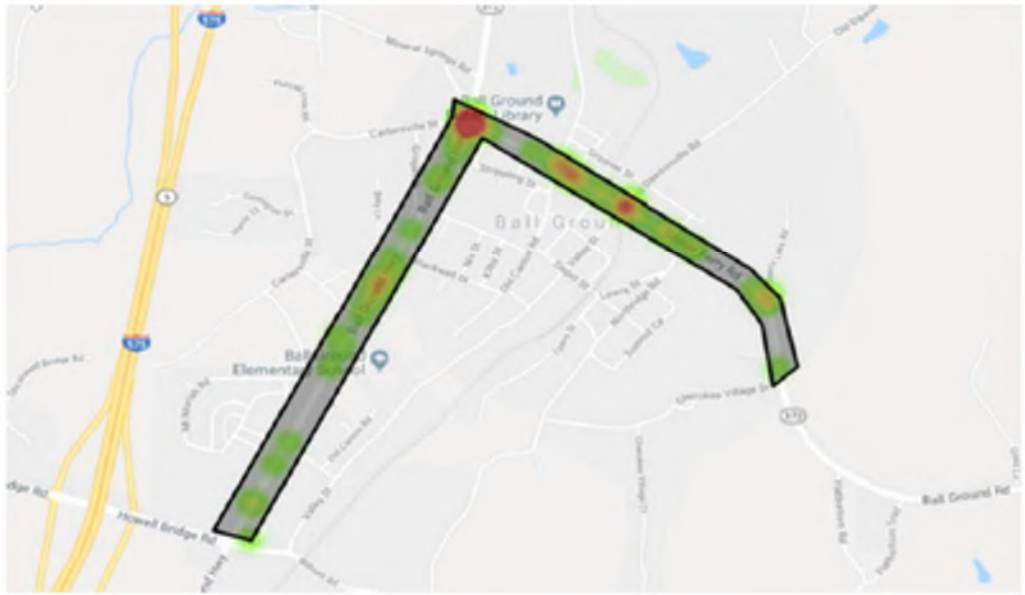
SR 372 at Old Canton Road

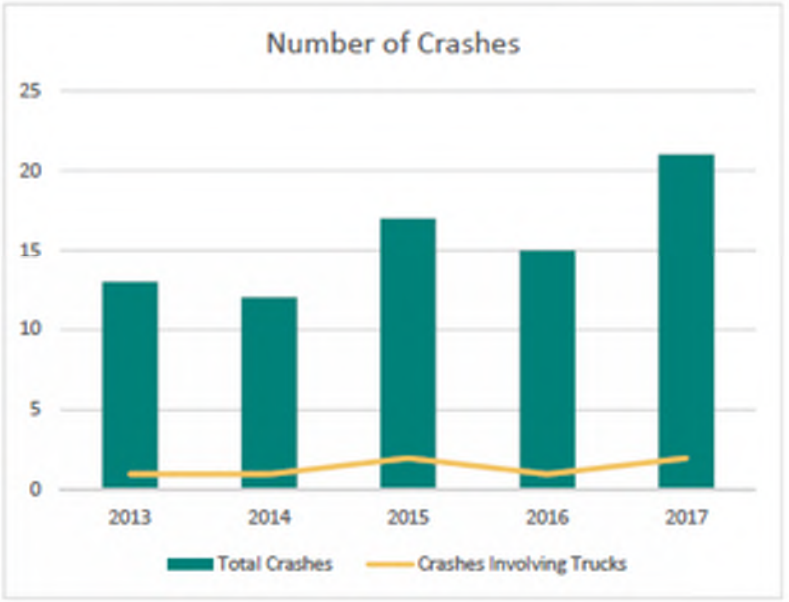
Existing Functional Class/Speed Limits



Existing Conditions – Crash Analysis

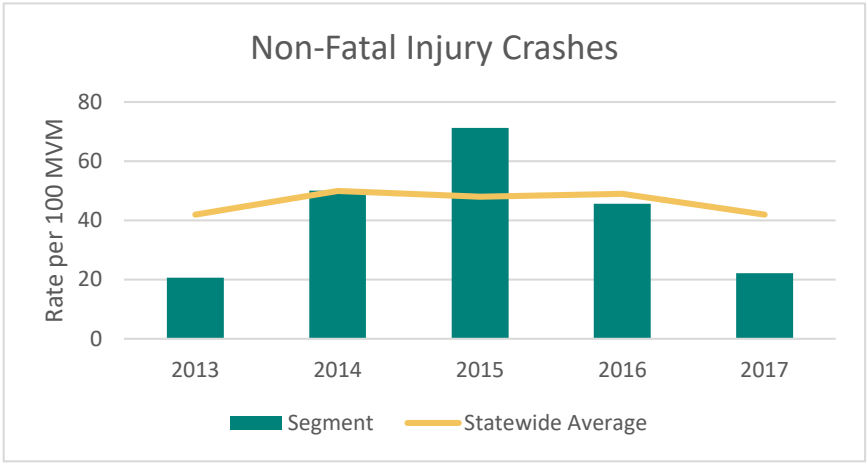
Crash Type	2013		2014		2015		2016		2017		2013-2017 Crashes	
Angle	2	15%	2	17%	4	24%	3	20%	4	19%	15	19%
Head On	0	0%	1	8%	1	6%	1	7%	1	5%	4	5%
Not A Collision with Motor Vehicle	3	23%	2	17%	3	18%	1	7%	4	19%	13	17%
Rear End	5	38%	5	42%	3	18%	7	47%	8	38%	28	36%
Sideswipe-Opposite Direction	2	15%	0	0%	1	6%	1	7%	0	0%	4	5%
Sideswipe-Same Direction	1	8%	2	17%	1	6%	2	13%	3	14%	9	12%
Other/Unknown	0	0%	0	0%	4	24%	0	0%	1	5%	5	6%
Total Crashes	**13**	**100%**	**12**	**100%**	**17**	**100%**	**15**	**100%**	**21**	**100%**	**78**	**100%**
Injury Crashes	2		4		5		2		2		15	
Injuries	2		5		6		2		2		17	
Fatal Crashes	0		0		0		0		0		0	
Fatalities	0		0		0		0		0		0	

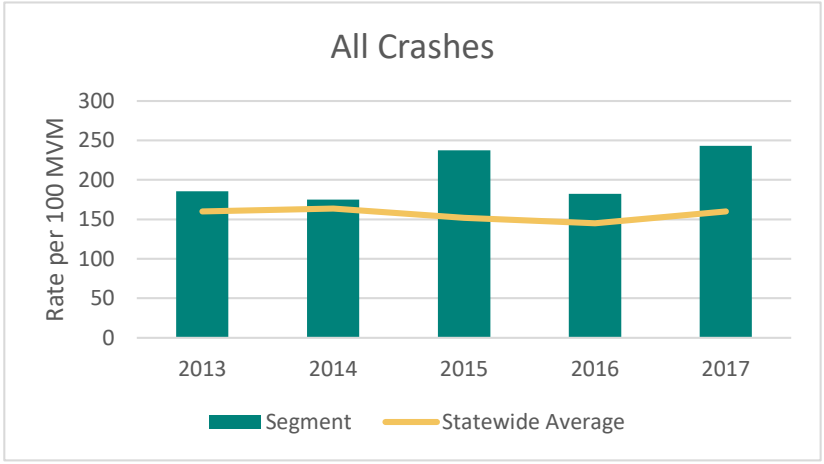




Existing Conditions – SR 372 Crash Rates

Rate Description		Year				
		2013	2014	2015	2016	2017
Fatal Crashes	Segment	0.00	0.00	0.00	0.00	0.00
	Statewide Average	2.13	1.96	2.13	2.42	2.13
Fatalities	Segment	0.00	0.00	0.00	0.00	0.00
	Statewide Average	2.37	2.23	2.42	2.74	2.37
Non-Fatal Injury Crashes	Segment	21	**50**	**71**	46	22
	Statewide Average	42	50	48	49	42
Non-Fatal Injuries	Segment	21	**75**	71	46	22
	Statewide Average	82	74	74	74	82
All Crashes	Segment	**185**	**175**	**237**	**183**	**243**
	Statewide Average	160	164	152	145	160



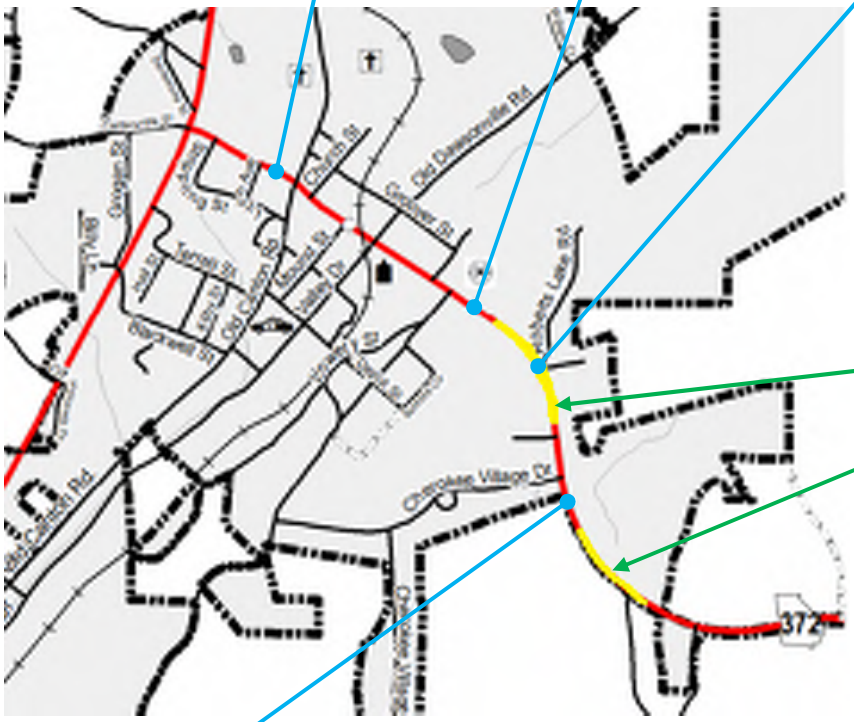


Crash rates per 100 MVM

Existing Conditions – Roadway Geometrics

- Geometric Conditions
  - Series of broken-back curves with less than desirable tangents between 35 mph and 45 mph areas
  - Curves with less than desirable lengths in 35 mph and 45 mph areas
  - Vertical grades over maximum allowed
    - 25 mph maximum 9%; existing 10%
    - 35 mph maximum 8%, existing 9%
  - K values below minimum for vertical curves
    - 35 mph minimum 29, existing 17
    - 45 mph minimum 61, existing 26
    - 55 mph minimum 114, existing 88
  - Existing shoulders/clear zone
    - Appears to be no shoulder and steep slopes intermittently
    - Utility poles possibly inside clear zone
    - Trees possibly inside clear zone and closer than GDOT desirable

Existing Conditions – Roadway Geometrics



10% grade

9% grade

Crest K 17

Series of broken-back curves with less than desirable curve and tangent lengths

Crest K 26

Existing and Projected Traffic Volumes

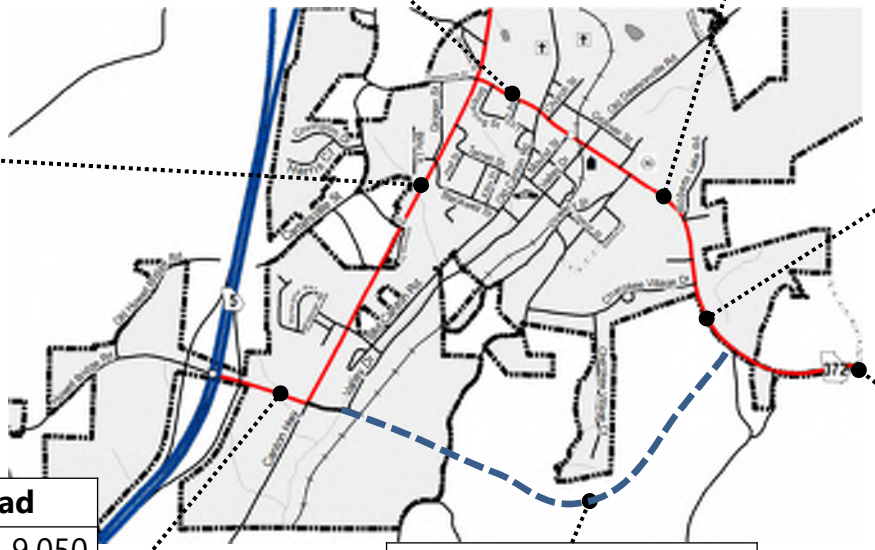
- Average Daily Traffic (ADT)

SR 372	
2018 Existing	8,650
2030 No Build	10,950
2030 Build	8,350
2050 No Build	16,300
2050 Build	12,450

SR 372	
2018 Existing	8.600
2030 No Build	10.900
2030 Build	7,600
2050 No Build	16.250
2050 Build	11.350

SR 372 Trucks	
24 Hr Trucks	13.0%
24 Hr SU	8.5%
24 Hr COMB	4.5%

SR 5BU	
2018 Existing	9,050
2030 No Build	11,500
2030 Build	9,600
2050 No Build	17,050
2050 Build	14,300



SR 372	
2018 Existing	8.850
2030 No Build	11.250
2030 Build	7,850
2050 No Build	16.700
2050 Build	11,700

SR 372	
2018 Existing	8.600
2030 No Build	10.900
2030 Build	10.900
2050 No Build	16.250
2050 Build	16.250

Howell Bridge Road	
2018 Existing	9,050
2030 No Build	11,500
2030 Build	11,500
2050 No Build	17,050
2050 Build	17,050

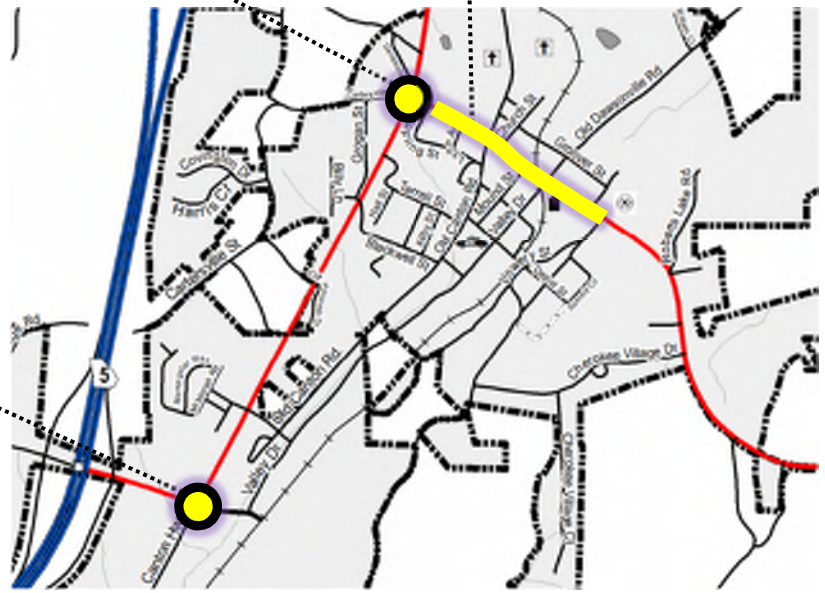
Ball Ground Bypass	
2018 Existing	-
2030 No Build	-
2030 Build	3,800
2050 No Build	-
2050 Build	5,550

Preliminary Traffic Operational Analysis

- SR 372 at SR 5BU Signalized Intersection:
  - Existing Conditions: **LOS B/B** (AM/PM)
  - Future No Build Conditions (2050 Design Year): **LOS D/E** (AM/PM)

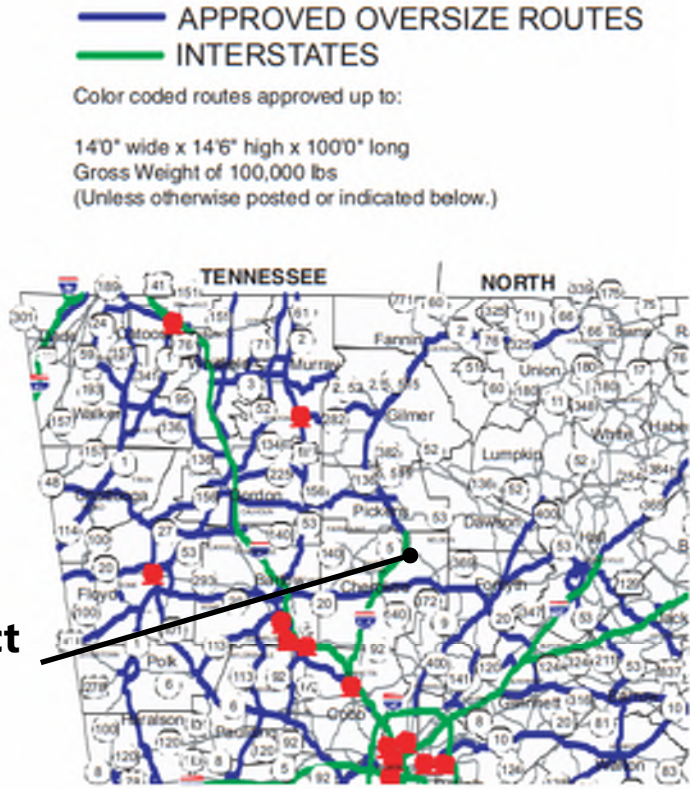
- Howell Bridge Rd at Ball Ground Hwy All-Way Stop Intersection:
  - Existing Conditions: **LOS C/D** (AM/PM)
  - Future No Build Conditions (2050 Design Year): **LOS F/F** (AM/PM)

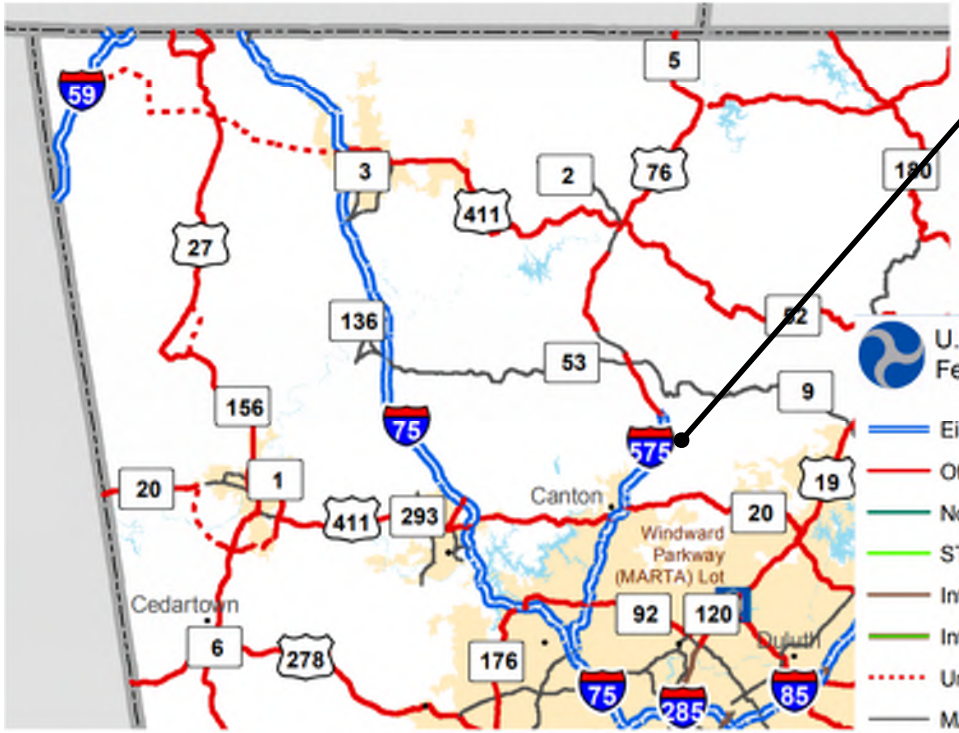
- SR 372 Corridor Through Downtown Ball Ground:
  - Existing Conditions: **LOS C**
  - Future No Build Conditions (2050 Design Year): **LOS F**



Designated Networks

- Not NHS, STRAHNET, Intermodal Connector
- Not an Approved Oversize Route





U.S. Department of Transportation
Federal Highway Administration

- Eisenhower Interstate System
- Other NHS Routes
- Non-Interstate STRAHNET Route
- STRAHNET Connector
- Intermodal Connector
- Intermodal/STRAHNET Connector
- Unbuilt NHS Routes
- MAP-21 NHS Principal Arterials

- Census Urbanized Areas
- Department of Defense
- Water

Project Justification

- Project proposed by the City of Ball Ground to remove through trucks from downtown Ball Ground (currently 450 COMB, 800 SU)
- Total crashes for SR 372 in Ball Ground are 30% higher than statewide average
- Less than desirable geometrics on SR 372 through downtown Ball Ground - 9% to 10% grades, narrow lane widths
- LOS F on SR 372 through downtown in design year
- Urban nature of downtown historic Ball Ground (pedestrian safety, crossings conflicting with state route truck traffic)
- Logical project limits: Howell Bridge Road to SR 372 east of downtown Ball Ground – avoids speed limit of less than 45 mph; direct connection to I-575 at Howell Bridge Road Interchange
- Performance goals: Reduce crashes, improve LOS through downtown Ball Ground

Project Budget

Phase	FY Approved	Approved FY Estimate*	Fund	Phase Status
Construction	2040	$8,000,000.00	LOC	PRECST
SCP	2018	$150,000.00	LOC	AUTHORIZED
Engineering	2030	$650,000.00	LOC	PRECST
Right of Way	2035	$2,200,000.00	LOC	PRECST

- Only Scoping Phase is funded at this time
- City/County will likely seek state and/or federal funding for Right of Way and Construction Phases
- **Unknown funding source may preclude the selection of a preferred alternative!**

Planning Issues

- Planning concept/modeling data
  - Project is not included in ARC's travel-demand model
- STIP project definition
  - Project is not in the STIP
- Need for an Interchange Justification Report (IJR) or Interchange Modification Report (IMR)
  - Project is not expected to effect the I-575 Interchange at Howell Bridge Road
  - IMR should not be required

Safety Concerns

- Volume of heavy trucks in downtown area, conflicts with vehicles and pedestrians
- Providing adequate sight distance in rolling/mountainous terrain

Intersection Control Evaluation (ICE) Potential Stage 2 Evaluations

- Howell Bridge Road/Bypass at Ball Ground Highway
  - All-Way Stop (Existing)
  - Roundabout
  - Signal
- Howell Bridge Road/Bypass at Valley Street
  - Two-Way Stop (Existing)
  - All-Way Stop
  - Roundabout
- SR 372/Gilmer Ferry Road at Bypass
  - Two-Way Stop
  - All-Way Stop
  - Roundabout
  - Signal
  - High-Tee

Miscellaneous Traffic

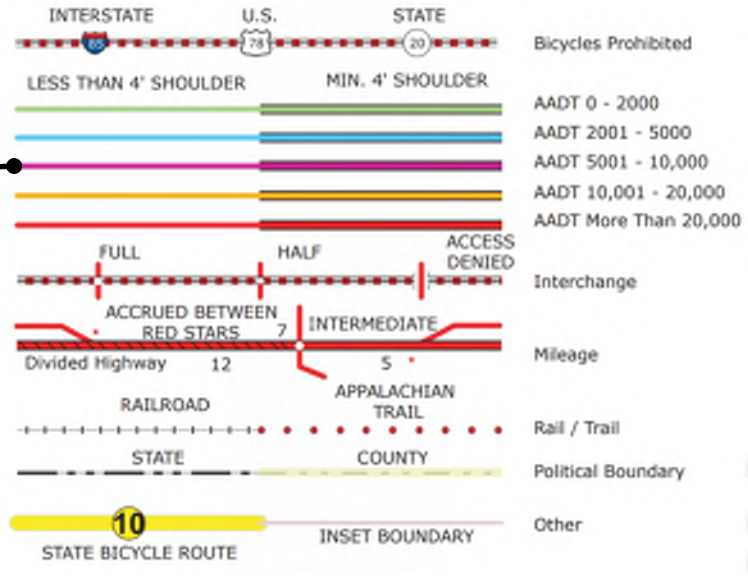
- Traffic Engineering Study (including warrant analysis, if applicable): Need for Study to be Determined
- ITS: Not Applicable
- Traffic Calming Techniques: ??

Staging and Traffic Control

- Traffic Management Plan
  - Northridge detour to build grade separation
  - Staging plans for bypass tie-ins
- Work Zone Safety and Mobility Requirements: ??

Complete Streets

- Pedestrian: Sidewalks Between Ball Ground Highway and Railroad
- Transit: Not Applicable
- Bicycles: Bikeable Shoulders

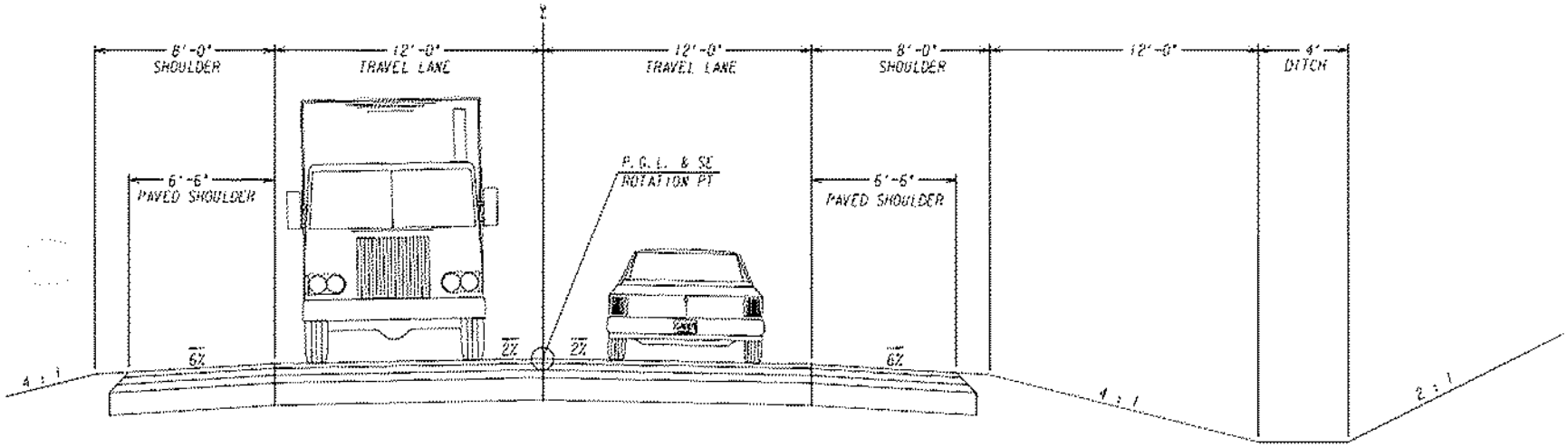


Design Criteria – Ball Ground Bypass

- Functional Class: Minor Arterial, Rural
- Type of Terrain: Mountainous
- Design Vehicle: WB-67
- Design Speed: 45 mph
- Minimum radius: 643’
- Maximum grade: 7%
- Access Control: By Permit

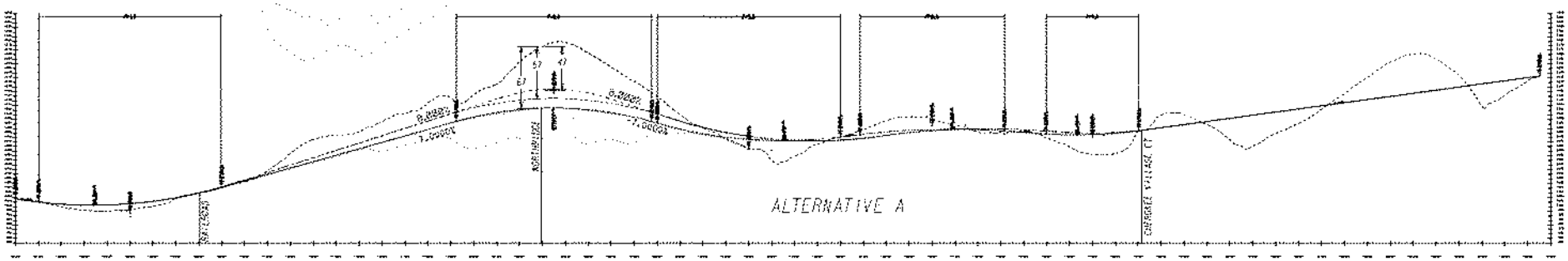
Ball Ground Bypass Typical Section

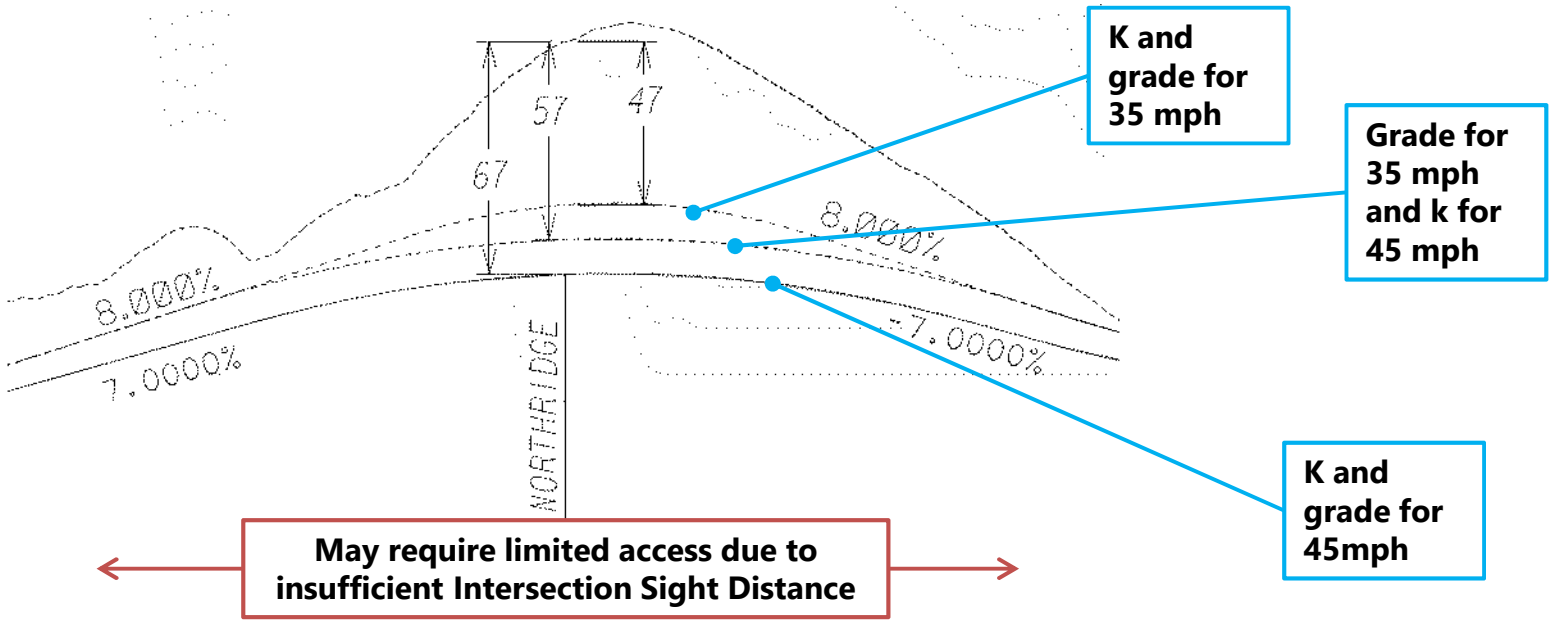
- Two-Lane Roadway, 12’ Lanes
- Overall Shoulder Width: 8’
- Bikeable Shoulders, 6.5’ Paved
- Clear Zone: 24’



Potential Design Exceptions or Variances

- Profile Issues at Railroad Crossing
- Consider 35 mph Crest Vertical Under Northridge Road





K and grade for 35 mph

Grade for 35 mph and k for 45 mph

K and grade for 45mph

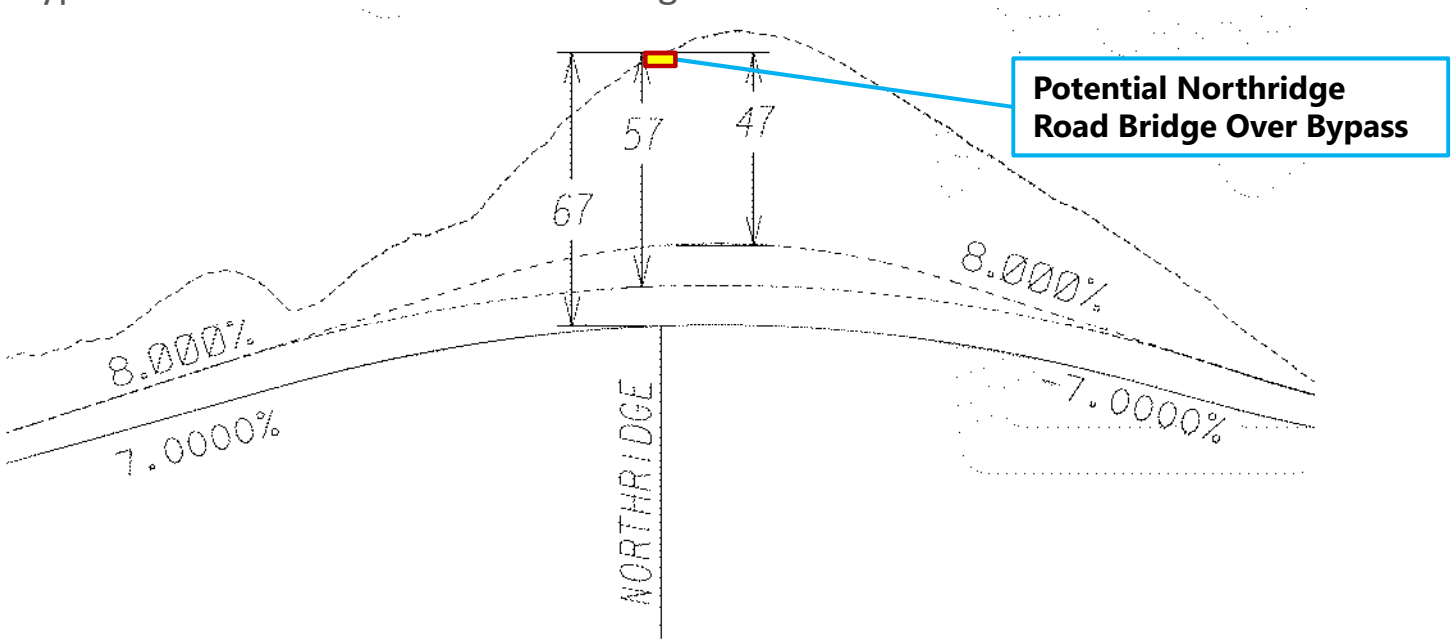
May require limited access due to insufficient Intersection Sight Distance

Public Outreach

- Property Owner Conversations
- Public Information Open House

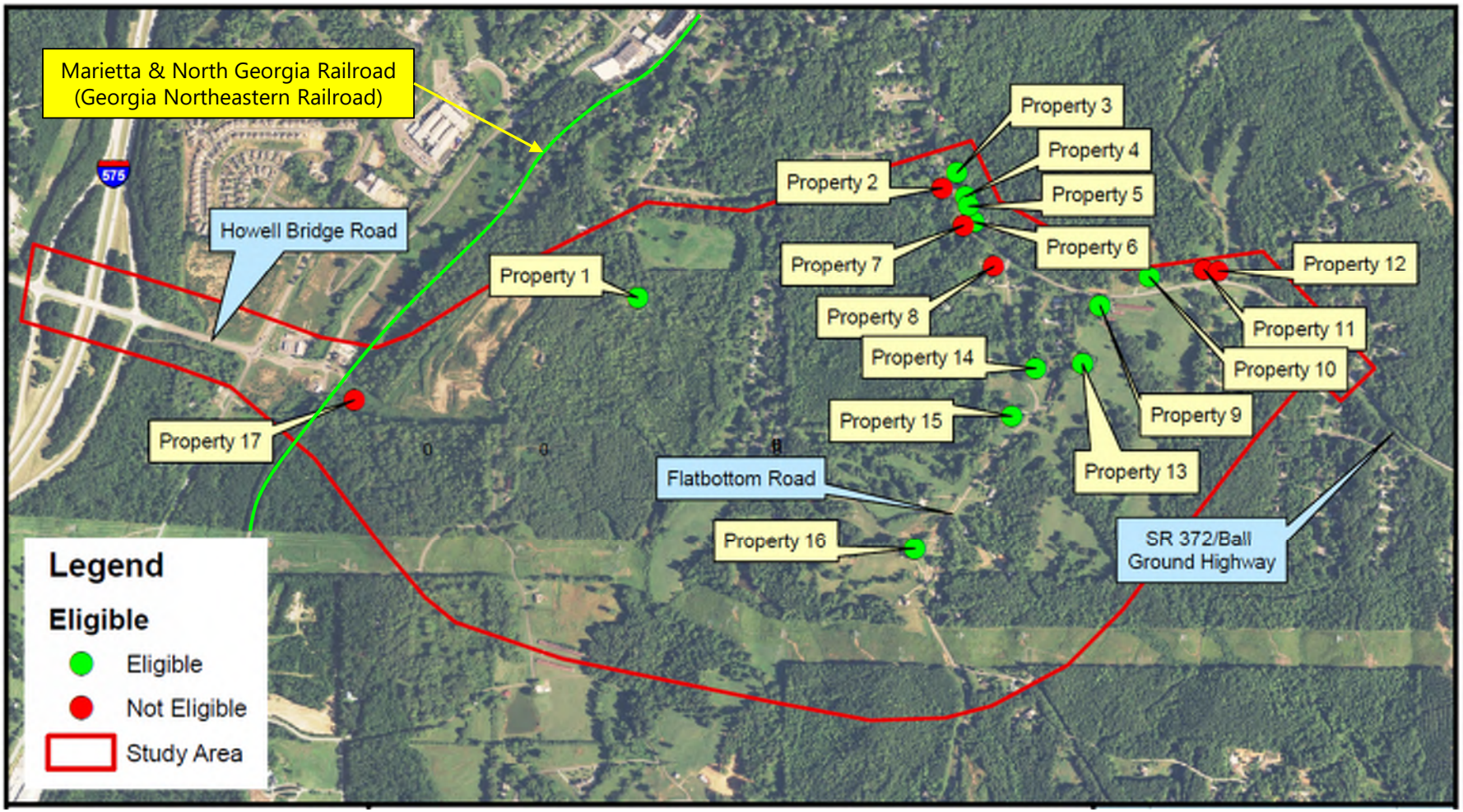
Structures

- Existing Structures: None
- Proposed Structures:
  - Grade Separation of Bypass Under Northridge Road Alternatives
    - Northridge Road Bridge Over Bypass
    - Bypass Cut-and-Cover Tunnel Under Northridge Road
    - Bypass Mined Tunnel Under Northridge Road



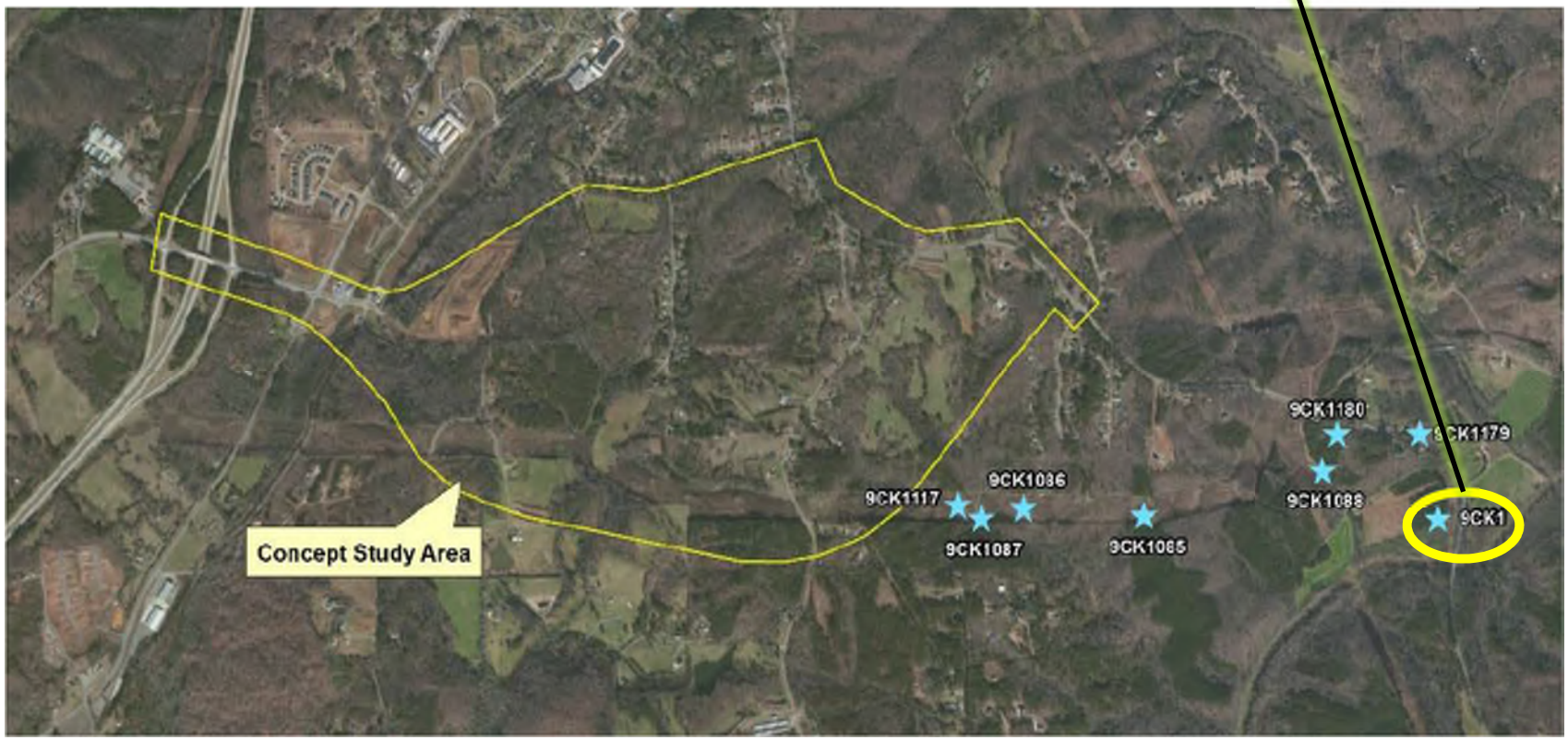
Environmental Concerns - History

- Several Residential, Farm Properties, Georgia NE Railroad



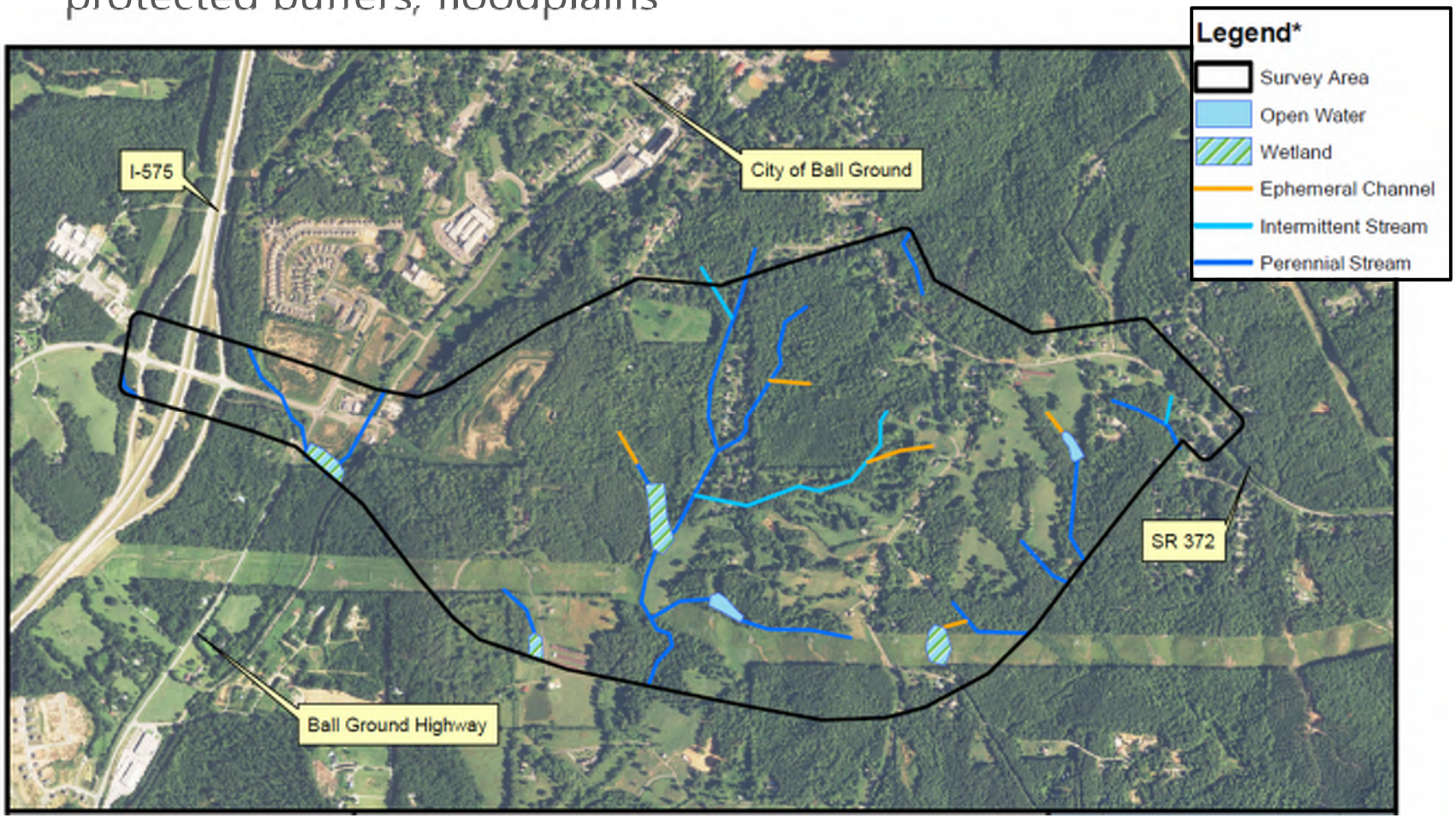
Environmental Concerns - Archaeology

- No Previously Recorded Sites in Study Area
- Of The Previously Recorded Sites, Only One is Eligible



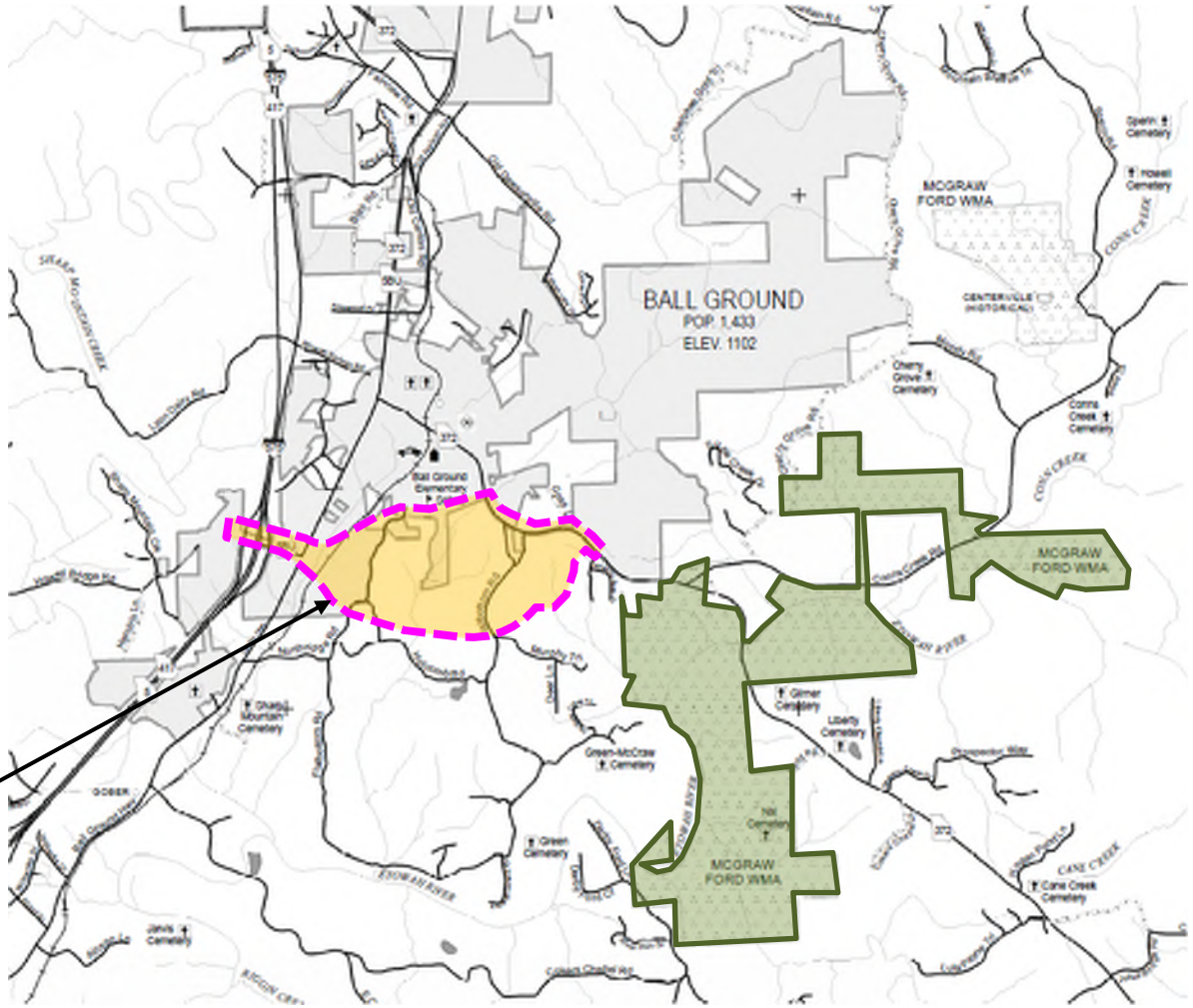
Environmental Concerns - Ecology

- Several Crossings of Wetlands and streams, open waters, state protected buffers, floodplains



Environmental Concerns

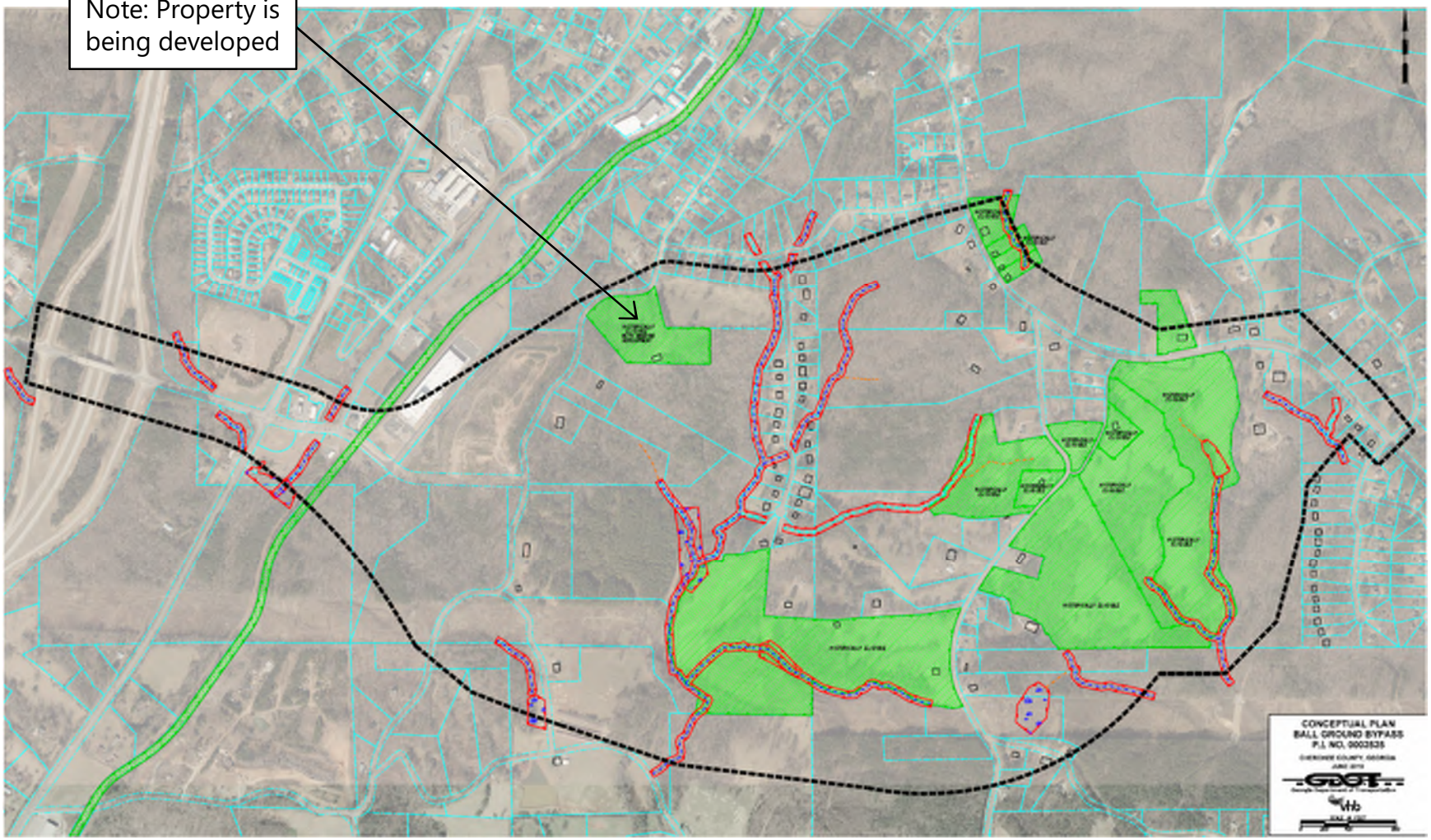
- Parks and recreation: McGraw Ford WMA



Environmental Concerns

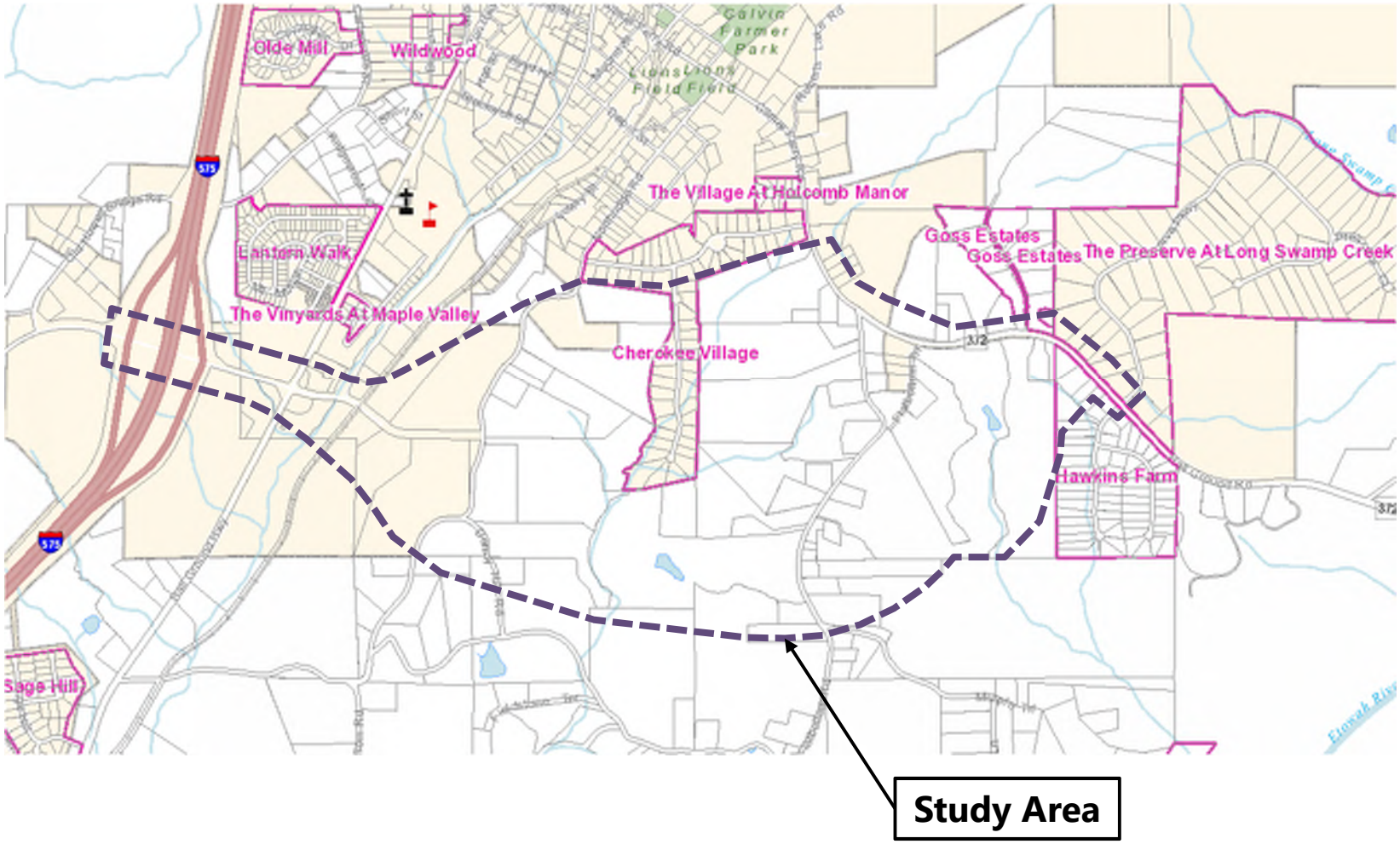
- Cemeteries: None Identified
- Endangered species: TBD
- Air Quality: TBD, No Effect on Decision
- Potential for noise impacts: Potential Residential Impacts Adjacent to New Location Bypass

Environmental Concerns – ENVE Plot



Environmental Concerns

- Neighborhoods



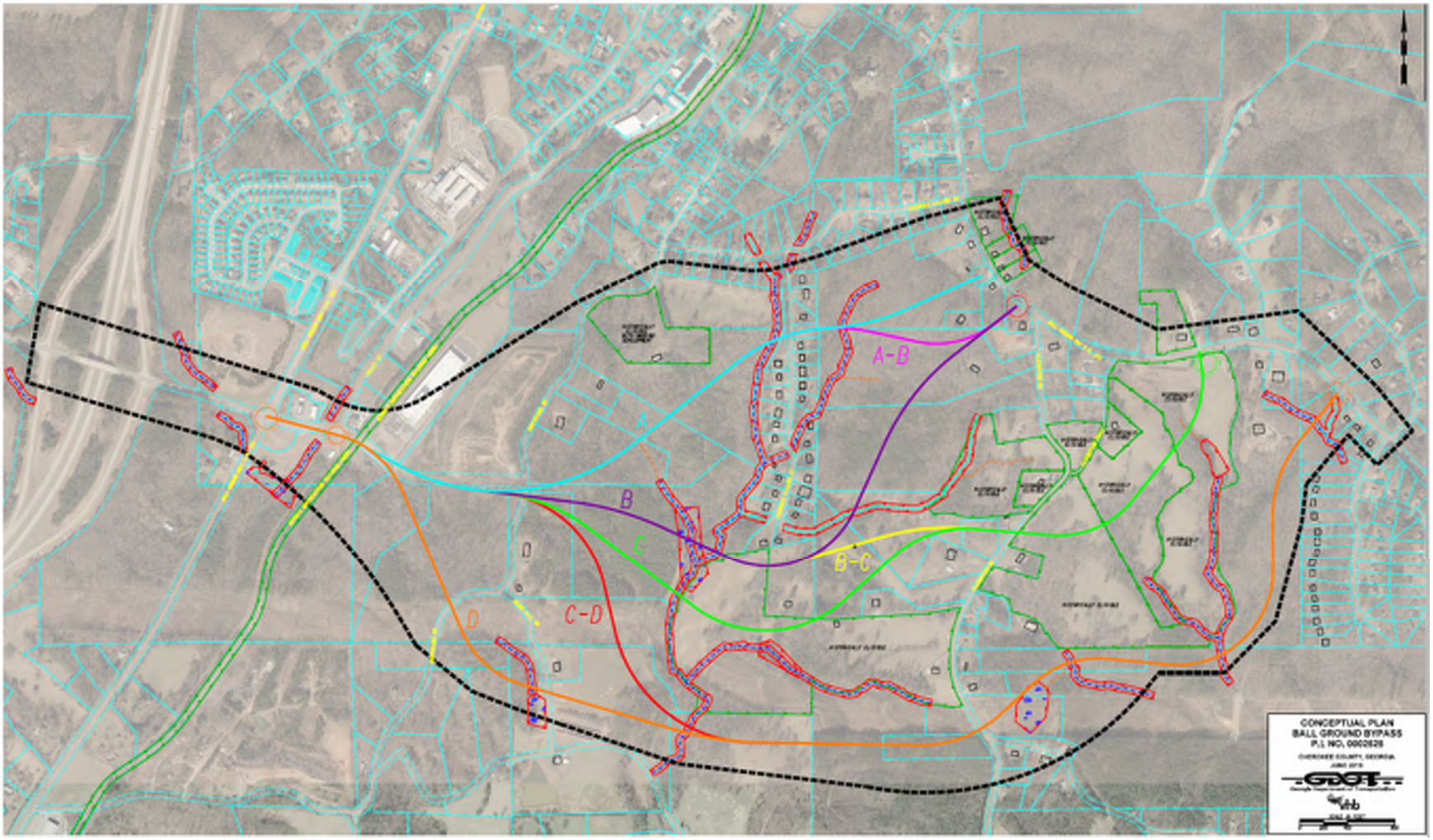
Environmental Concerns – Discussion Topics

- Special interest groups
- Context Sensitive Design
- Need for a Practical Alternatives Report (PAR)
- Erosion and Sedimentation Control
- Designated MS4 Area(s) – Not Currently in MS4 Area

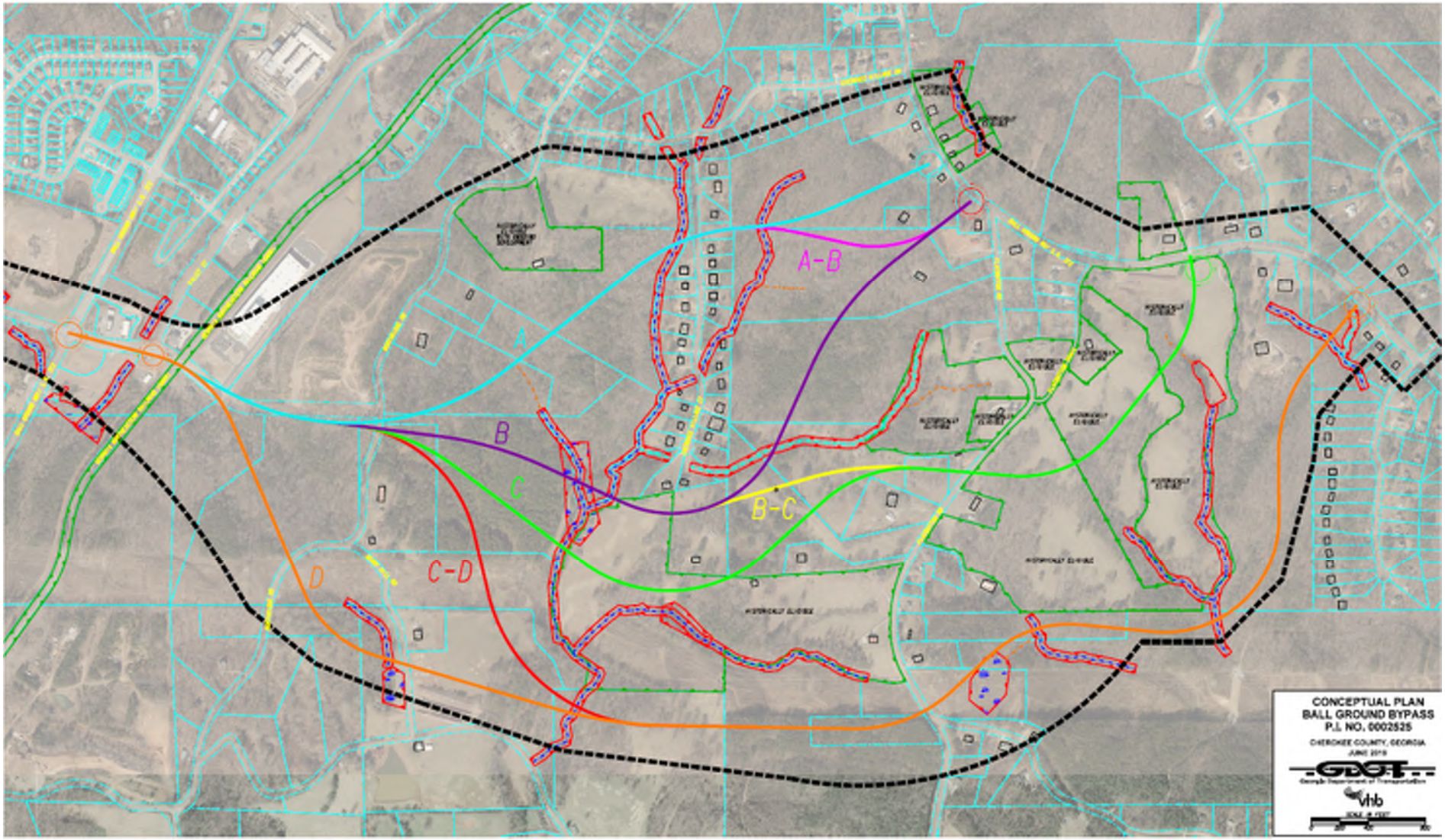
Alternatives Under Consideration

- No Build
- Build Alternative Alignments

Alternatives Under Consideration



Alternatives Under Consideration



Alternatives Analysis Matrix

ALTERNATIVES ANALYSIS MATRIX **(Estimated Impacts & Costs)**
RFQ 2018-048, Cherokee County
P.I. No. 0002525
Ball Ground Bypass
June 12, 2019

DRAFT

Alternative No.->>	A	A-B	B	B-C	C	C-D	D
Displacements							
Residential	1	0	0	1	1	0	0
Commercial	0	0	0	0	0	0	0
Church	0	0	0	0	0	0	0
Other	0	0	0	0	0	0	0
Proximity of proposed roadway to residences							
less than 25'	0	0	0	1	0	0	0
less than 50'	2	0	0	1	0	0	0
less than 100'	4	2	1	2	0	0	0
less than 200'	12	8	8	7	7	1	3
less than 300'	15	9	9	7	9	4	6
less than 400'	16	15	13	11	11	20	23
less than 500'	23	22	18	20	15	27	27
Neighborhood Impacts							
Neighborhoods impacted	1	1	0	0	0	0	0
Family Impacts							
Family plots impacted							
Required Right of Way							
Required R/W Area (acres)	24	19	28	24	35	37	53

Alternatives Analysis Matrix

ALTERNATIVES ANALYSIS MATRIX **(Estimated Impacts & Costs)**

RFQ 2018-048, Cherokee County

P.I. No. 0002525

Ball Ground Bypass

June 12, 2019

DRAFT

	Alternative No.->>	A	A-B	B	B-C	C	C-D	D
Wetlands and Waters Impacts								
	Wetland Impact Area (acres)	0.00	0.00	0.80	0.75	0.01	0.58	0.77
	Open Water (Pond) Impact Area (acres)	0.00	0.00	0.00	0.00	0.00	0.00	0.00
	Stream Impact Length (feet)	534	377	729	340	173	726	1622
	Mitigation Credits (Approximate)							
	Stream buffers (acres)	0.73	0.52	1.00	0.47	0.24	1.03	2.10
Historical properties impacts								
	Historical properties impacted (each)	4	1	2	5	5	2	2
	Severity of impacts	Adverse/Moderate	Adverse/Low	Adverse/Moderate	Adverse/Severe	Adverse/Severe	Adverse/Low	Adverse/Low
	Section 4f	Yes	No	Yes	Yes	Yes	No	No
Roadway Lengths (miles)								
	Bypass Length (SR 5 BU to SR 372)	1.03	1.21	1.09	1.82	1.41	2.35	2.30
	Comparative Travel Length Along Bypass and SR 372 (SR 5 BU to SR 372 at Hawkins Farm Lane/Preserve Parkway	1.81	1.89	1.77	2.20	1.79	2.46	2.42
Cost								
	Construction							
	Right of Way							
	Utilities							
	Mitigation							
	TOTAL COST							

Environmental Coordination

- Coordination Expected:
  - U. S. Army Corps of Engineers Section 404 Permit
    - Anticipate Regional Permit 35
      - Single Crossing Limits – 2,000’ Stream, 4 acres Wetlands
      - Total Linear Project Limits – 5,000’ Stream, 12 acres Wetlands
  - State Stream Buffer Variance
- Coordination Likely Not Required:
  - U. S. Army Corps of Engineers Real Estate Outgrant
  - Tennessee Valley Authority (TVA)
  - U. S. Coast Guard (USCG)

Project Coordination

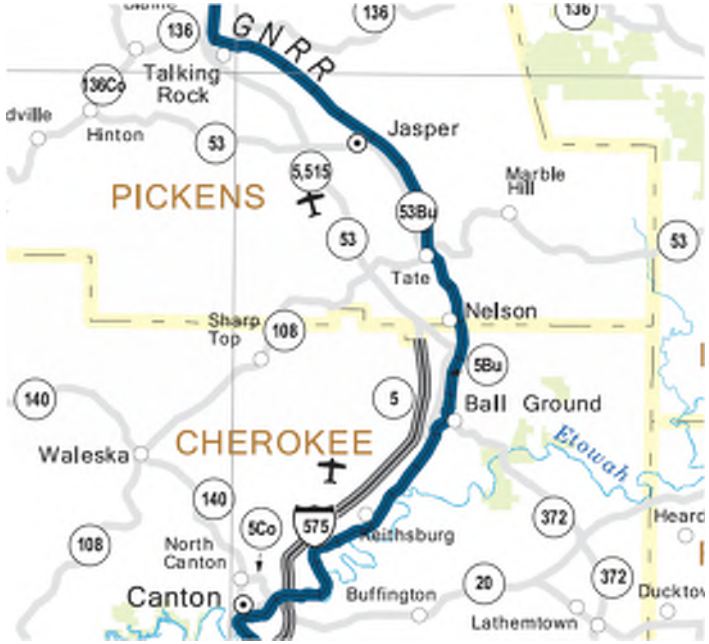
- PI 0010649
  - CS 791/VALLEY STREET FROM DEPOT STREET TO HOWELL BRIDGE ROAD
  - Streetscape Enhancement Project for the City of Ball Ground
  - Under Construction, Completion December 2019
- PI 0005970
  - SR 372/BALLGROUND RD FM CANTON HWY TO CUMMING HWY
  - Reconstruction/Rehabilitation
  - PE, ROW, CST in 2051
- PI 0009903
  - I-575 @ SR 5BU - SB & NB RAMPS
  - Roundabouts at ramp intersections with Howell Bridge Road
  - PE in 2018, CST ???

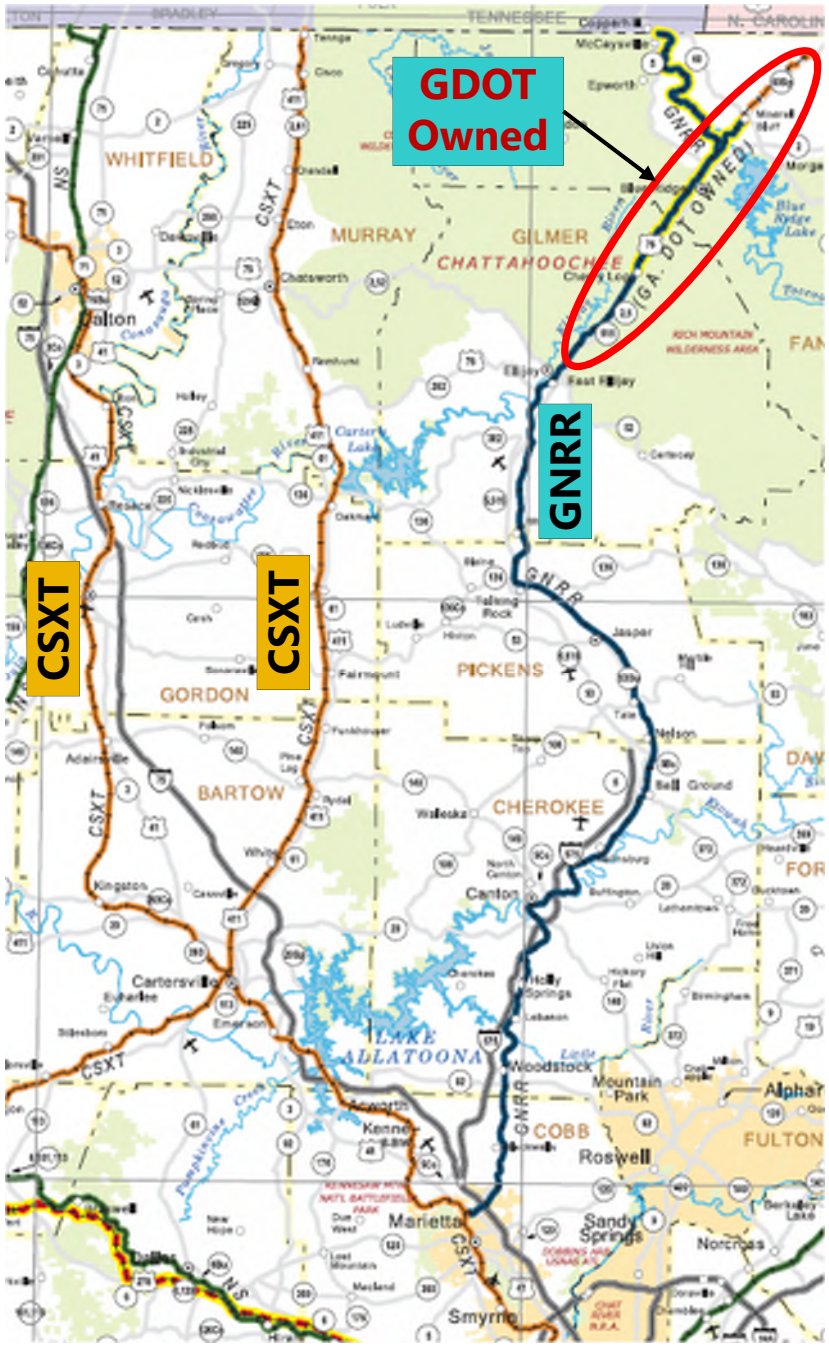
Utilities

- Electrical Transmission
- Distribution
  - Electrical
  - Water
  - Sewer
  - Gas
  - Communications
- Public Interest Determination

Railroad

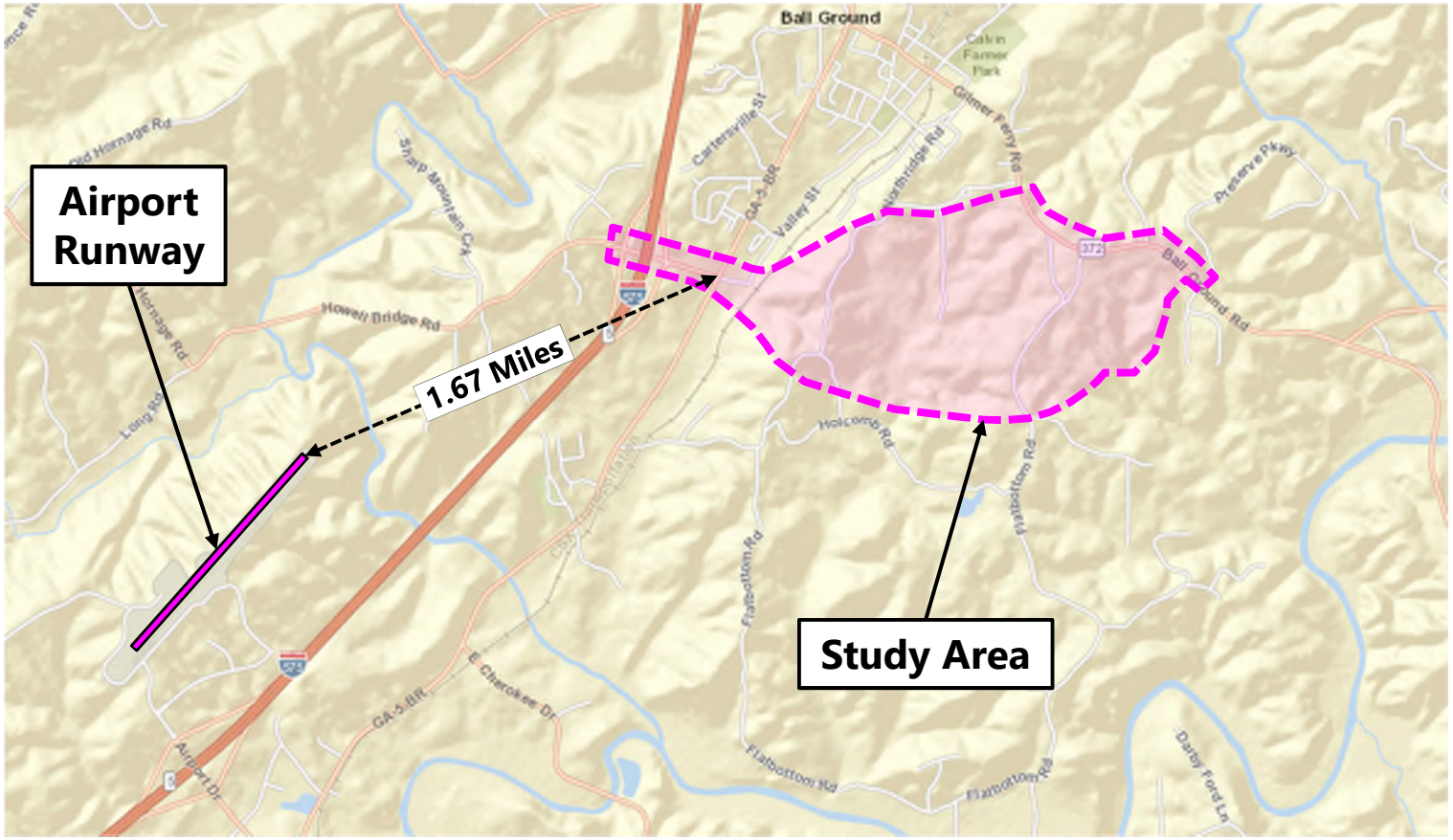
- Georgia Northeastern Railroad (GNRR)
- Managed by Patriot Rail Co.
- Typically Two Trains Daily, 6 AM to 6 PM, 10 MPH





Airports

- **Cherokee County Airport**
- 1.67 miles to west end of proposed Bypass



Risk Assessment

- Project Cost – Funding Availability
- Section 4(f) With Federal Funding
- Community/Neighborhood Opposition
- Impacts to Historic Properties
- High Cuts and Fills
- Water Quality Treatment Requirements
- Future Residential/Commercial Development Conflicting With Potential Alternative Alignments
- ??
- ??

Miscellaneous

- Need for a formal or informal location inspection?
- Maintenance problems, including drainage and pavement problems?
- Coordination with FHWA, FTA, GRTA, State Road and Tollway Authority (SRTA), and other non-environmental Federal, state and local agencies and/or governments?

Questions and Comments?

GDOT Georgia Department of Transportation

CHEROKEE COUNTY

PI No. 0002525
Ball Ground Bypass
Cherokee County

Initial Concept Meeting

Presented by

vhb

June 26, 2019

© Insert image credit here (or delete)

1355 Peachtree Street NE
Suite 100
Atlanta, Georgia 30309
T 404.214.6745

Meeting Minutes

Date: July 13th, 2020 Time: 2:00 pm

Location: N/A – Conference Call

Subject: Ball Ground Bypass Scoping Study Closeout Meeting

Project No: PI No. 0002525, Cherokee County VHB: 63312.00

Recorded By: Candice Thomas

Attendees:

Jim Wilgus	Cherokee County	jawilgus@cherokeega.com
Candice Thomas	VHB	cnthomas@vhb.com
Matt Thompson	VHB	mthompson@vhb.com
Tommy Crochet	VHB	tcrochet@vhb.com
Courtney Farge	VHB	cfarge@vhb.com
Megan Weiss	GDOT Planning	mweiss@dot.ga.gov
Brittany Tyson	VHB	btyson@vhb.com
Christina Barry	GDOT Dist. 6	cbarry@dot.ga.gov
John Hightower	GDOT OPD	jhightower2@dot.ga.gov
Grant Waldrop	GDOT Dist. 6	gwaldrop@dot.ga.gov
Eric Wilmarth	City of Ball Ground	ewilmarth@cityofballground.com
Chris Luly	Cherokee County	celuly@cherokeega.com
Joseph Ciavarro	GDOT Dist. 6	jciavarro@dot.ga.gov
Christopher Broyles	GDOT Dist. 6	cbroyles@dot.ga.gov

The purpose of the meeting is to discuss the comments from the stakeholder virtual meeting as well as the draft concept report.

- Matt Thompson started the meeting by noting that the formal concept report would not be submitted until funding is identified and the County proceeds with Preliminary Engineering. He went on to give a brief project description. Downtown Ball Ground is a historic area with a several restaurants and local businesses. The City wants to continue to provide a pedestrian friendly and area for the local community as well as tourists. Currently SR 372 runs through the Downtown Ball Ground. There are many agriculture

and trash trucks that run through the City that cause concern due to their impacts to pavement quality and the pungent smell from agriculture trucks.

- Eric Wilmarth noted that the City of Ball Ground had found several locations through downtown where there was no base under the existing pavement.
- Matt went on to note that VHB is currently in a scoping study process. VHB met with the City of Ball Ground, Cherokee County, and the GDOT Project Manager early on to identify a study area. A broad area south of Ball Ground and East of I-575 was identified and then a high-level environment screening was completed within the study area. Wetlands, streams, and potentially historic resources were found in the study area.
- Matt reiterated that a high-level screening only was performed. VHB was not scoped to do resources survey reports. More detailed environmental surveys and documentation would be needed when the County proceeds with Preliminary Engineering.
- VHB also obtained existing traffic counts in the study area and at intersections through downtown Ball Ground. Several conceptual alternatives were created, and traffic projections were submitted for the various alternative and approved by GDOT.
- VHB completed high level evaluations for each alternative construction cost, environmental impacts, right of way cost, and utility cost.
- VHB prepared a layout and alternative matrix for an online stakeholder meeting. The comment period for the online stakeholder meeting was from 6/5/2020 to 7/3/2020. The County hosted the online meeting on their website. Hard copies were available at the County administration building and Ball Ground City Hall for anyone who didn't have online access. The County received emails, calls and hard copy feedback as well. The County's intent with the online stakeholder meeting was to gauge support from the public.
- Courtney Farge reviewed a summary of the comments. She noted that there was a total of 226 comments. There were 25 opposed, 164 in support, 1 uncommitted. 34 conditional and 2 who did not indicate. She noted that there was overwhelming support for the project. Reasons for supporting the project included that it would be good for downtown business, nonspecific support, support from truckers, support for pedestrian safety, removal of chicken trucks, congestion relief and air quality. Some of the concerns noted were the following: neighborhood and community impacts including subdivision family complexes and school property, economic impacts, multigenerational families, farmers and historic properties (specifically Edwards Farm, a 150-year-old family property).
- Jim Wilgus noted that the Edwards family has been in contact with the County to reiterate the historical significance of their farm.
- Courtney went on to say that there were questions about what 4F is and what makes a property historic. She noted that there were also comments about impacts to business downtown.
- Courtney elaborated on specific concerns. There was some concern business would shift with the road and that trucks wouldn't use the road because it was a longer route. There was also concerns that the road wouldn't go near downtown destinations, schools and

post offices. In addition, there were property concerns due to high cost of housing in area. There were also concerns about noise level change and impacts to waters. A few people suggested roundabouts at termini as preferred design request. Some voiced confusion over the multiple alternatives and not were sure that none had been selected.

- Courtney noted that there was support for and against each alignment. She said there was support and concern regarding impacts to the future school property in Ball Ground (on Flatbottom Road south of the study area) and concern that the Bypass would provide access. She noted that there were request for other improvements nearby, alternatives routes and suggestion that the truck volumes for bypass were incorrect.
- Tommy Crochet noted that those who are supportive did not voice a preferred route. The bulk who are opposed are living in the corridor study area and would be impacted. Most of the conditional responses preferred an alternative further from their home. The people who lived in the Northern study area preferred the more Southern alternatives and those living in the South preferred the Northern alternatives. He noted that there was nothing in the comments that helps point to preferred alternative.
- Matt noted that the bigger driver in alternative selection would be funding due to large number of potential historic properties within the study area, federal funding would likely require a Section 4(f) Evaluation.
- Eric stated that the downtown business community was divided. Businesses are concerned about losing Gibbs Garden traffic. He also noted that the Southern routes want Northern alternatives and the Northern want Southern alternatives. Cherokee Village wants route South of their neighborhood. He noted that the truck traffic concern near the future school is a new comment and that previously people were concerned about needing a new roadway near the school.
- Jim stated that he had discussions with many property owners and the B route seems to be the least offensive. He has seen support to limit impacts to the Edwards Farm from other residents as well. Jim noted that there would be a lot of push back for the C and D alternatives.
- Matt noted that the ICE is in route for approved signatures. He elaborated that a multilane roundabout was proposed at Howell Bridge Rd/Canton Hwy and a single lane roundabout at Howell Bridge/Valley St. The termini would most likely be minor stop control at Eastern end. The ICE should be approved within a week. A full truck study may need to be completed to further analyze the alternatives.
- Matt noted that submittal of concept report for approval won't be completed until a funding source is identified to help select the proposed alternative.
- Jim noted that the next step is to gauge District 6 for support. The County will need help to at least get PE funded. He also asked if all traffic numbers were collected for a full week and noted that the traffic changes drastically on Saturday and Sunday. There are a lot of people parking and walking in downtown on the weekends.
- Matt noted that project justification notes the pavement quality.

July 13, 2020
PI No. 0002525

- Jim noted the need to prioritize between the Ball Ground Truck Bypass and other Cherokee County projects, what is the most important for District 6.
- Grant Waldrop responded that GDOT can participate in those conversations.
- Jim said the County will setup a meeting or call with GDOT District 6.
- Matt asked about construction and right of way funding.
- Jim noted that he would prefer doing the project without federal money because it would probably be 3 years out. He also noted that future SPLOST funds could be used for some of the project.
- Matt stated that VHB's next step would be to breakdown the comments into groups and see how County wants to respond. There will need to be a formal PIOH for NEPA purposes in the future, but VHB will work with the County to see what needs to be sent out to public first.
- Matt asked if anyone has comments and requested them emailed.
- Eric asked District 6 to look at the 2 roundabouts that are set to be built at the I-75 interchange ramps and to consider a roundabout at Howell Bridge and Canton Highway. He noted that crashes are happening on the Northbound exit ramp because traffic is backed up from the 4 way stop at Howell Bridge and Canton Highway. The bottle neck is at 4-way stop.
- Grant responded that district office can look further into this.
- Tommy said VHB would refine a summary of the responses and present to the County. He said VHB will draft a letter to send to all who responded and those who were previously sent mailings. He noted that we should probably not be responding to specific comments. He reiterated that we can't decide on preferred alternative until funding is identified and further steps in the environmental process are taken.
- John Hightower asked about the schedule. He noted that currently in P6 the concept team meeting is set for 11/2/2020 and the concept report is scheduled to be submitted on 12/4/2020. He asked if those deadlines could be met.
- Matt responded that meeting those dates would be highly unlikely since funding needs to be identified to select a preferred alternative. He went on to say that VHB was not scoped to do further environmental studies. He noted that the purpose was for County to find support and funding for the project.
- John asked when the deadlines should be pushed to.
- Tommy responded that VHB's scope ends very shortly after giving County information on the public outreach.

Action Items

- Cherokee County will setup meeting with GDOT District 6 to discuss project prioritization.
- VHB will refine a summary of responses to public comments, discuss with Cherokee County and verify content of the response letters and how they will be provided to stakeholders.

Cherokee County Government
Engineering Department
Capital Program Management
1130 Bluffs Parkway
Canton, GA 30114
678-493-6077 FAX 678-493-6088
www.cherokeega.com

Click here to enter a date

«AddressBlock»

Re: Responses to Stakeholder Meeting Comments for PI#(s): 0002525, Cherokee County, Ball Ground Truck Bypass Study

«GreetingLine»

Thank you for your comments concerning the proposed project referenced above. We appreciate your participation and all of the input that was received as a result of the *June 5, 2020 Stakeholder Meeting*. Every comment received will be made part of the project's official record.

Of the **226** people who attended the stakeholder meeting and formally commented, **164** were in **support** of the project, **25** were **opposed**, **1** was **uncommitted**, and **34** expressed **conditional support** (2 commenters did not provide a response to their preference).

The attendees of the stakeholder meeting and those persons sending in comments within the comment period raised the following questions. Cherokee County has prepared this one response letter that addresses all comments received so that everyone can be aware of the questions raised and the responses given. Please find the comments summarized below (in *italics*) followed by our response.

- *Comments voicing support for the bypass.*

  Cherokee County appreciates these comments – they have been added to the project record and will be kept on file.

- *Concerns about impacts to communities, multigenerational family properties/family communities, and neighborhoods.*

  During the National Environmental Policy Act (NEPA) process, a Community Impact Assessment is conducted that considers the potential impact of a proposed transportation project, with a focus on quality of life in the community. This assessment looks at a number of possible impacts a proposed project may have on the surrounding community. Consideration is given to the local area and characteristics of the individual project and community. In the cases of potential disproportionate or adverse impacts, additional public involvement is required.

- *Concerns about impacts to farms.*

  During project development, it is required to identify environmental resources, evaluate potential impacts, and assess opportunities for resource avoidance, minimization, or mitigation. Where farmland will be impacted, the NEPA document will contain a map

showing the location of all farmlands in the project impact area, discuss the impacts of the various alternatives and identify measures to avoid or reduce the impacts.

In the event, that ROW is required, the Georgia DOT makes every attempt to minimize property acquisition and relocations during the project design phase. Unfortunately, property acquisitions and displacements are unavoidable for some projects. As the design progresses, the Department will make every effort to minimize the amount of right-of-way impacts to the greatest extent possible.

The Georgia DOT's Right of Way team will meet individually with each property owner to discuss the project and the impacts to the specific property. At that time, the property owner will be shown detailed design drawings and have the opportunity to discuss their specific property and access needs. More information regarding the acquisition process can be found in the pamphlet titled What Happens When Your Property is Needed for a Transportation Facility which can be found on the Georgia DOT website at http://www.dot.ga.gov/PS/Public/ROW.

- *Concerns about impacts to historic properties.*

  The National Historic Preservation Act (NHPA) of 1966 requires federal agencies to take into account the effects of their undertakings on historic and archaeological properties and afford the Advisory Council on Historic Preservation (ACHP) a reasonable opportunity to comment on such undertakings. The Section 106 process seeks to accommodate historic preservation concerns with the needs of federal undertakings through consultation between agency officials and other parties interested in the effects of the undertaking on historic and archaeological properties. The goal of consultation is to identify historic properties that have the potential to be affected by an undertaking, assess the effects of the undertaking on identified historic and archaeological properties and identify ways to avoid, minimize harm or mitigate any adverse effects on historic and archaeological properties. It is important that the agency initiate the Section 106 process early in the planning process in order to ensure that a broad range of alternatives may be considered during the planning process for the undertaking.

  In the event that potentially eligible historic properties are discovered or unanticipated effects on historic properties are found after the agency official has completed the Section 106 process, the agency official will make reasonable efforts to *avoid, minimize or mitigate adverse* effects to such properties.

- *Comments expressing the desire for a better understanding what is considered historic and what is not.*

  Generally, in order to qualify as a potentially eligible historic, the resource must be a minimum of 50 years of age (though exceptions are made if the resource is of great significance, e.g., associated with the Civil Rights Movement). It must then be evaluated under the four National Register of Historic Places Criteria, A through D, listed below;

  A. Association with an event that made a significant contribution to the broad patterns of our history

B. Association with a person significant in our past
C. Significant for its design or construction
D. Significant due to the information it may yield on prehistory or history

A resource may be eligible under one of three levels of significance: national, state, or local recognition of importance.

- *Comments expressing the desire for a better understanding of what Section 4(f) is.*

  Section 4(f) is a provision of the United States (US) DOT Act of 1966 which requires that before land from a significant publicly owned park, recreation area, national wildlife refuge or any eligible historic site can be converted to a transportation use it must be demonstrated that there is no feasible and prudent alternative to this use and that the project includes all possible planning to minimize harm.

- *Concerns about economic impacts to businesses in Downtown Ball Ground and if business will shift with the bypass.*

  During the NEPA process, an Economic Impact Assessment is conducted that considers the potential impact of a proposed transportation project on businesses within the surrounding community. In general, transportation projects are not anticipated to have an adverse effect on businesses and/or employment centers within a project area. Transportation projects are generally intended to improve access to businesses in these areas and reduce travel times and distances for area citizens. Typical projects generally do not change access to businesses and do not cause significant increases in travel distances to businesses.

  In the event, that ROW is required, the Georgia DOT makes every attempt to minimize property acquisition and relocations during the project design phase. Unfortunately, property acquisitions and displacements are unavoidable for some projects. As the design progresses, the Department will make every effort to minimize the amount of right-of-way impacts to the greatest extent possible.

  The Georgia DOT's Right of Way team will meet individually with each property owner to discuss the project and the impacts to the specific property. At that time, the property owner will be shown detailed design drawings and have the opportunity to discuss their specific property and access needs. More information regarding the acquisition process can be found in the pamphlet titled What Happens When Your Property is Needed for a Transportation Facility which can be found on the Georgia DOT website at http://www.dot.ga.gov/PS/Public/ROW.

- *Concerns that travelers will have a longer route on the bypass.*

  Traffic counts are collected to determine the level of traffic congestion and to develop projections of traffic congestion along the project corridor if no improvements are made. This preliminary analysis may determine that travelers will experience increasing levels of high congestion and longer delays if no improvements are made. The design of the project will be developed with the improvement of travel time and level of service, which is a

measure of traffic congestion. While the length of the bypass may be longer than an alternative route, the travel time along the roadway may be shorter due to a decrease in traffic congestion. The utilization of an offsite detour will shorten the construction time and lower overall construction costs as opposed to the use of an on-site detour.

- *Concerns about the financial impacts of relocation due to high current cost of housing.*

  In the event, that ROW is required, the Georgia DOT makes every attempt to minimize property acquisition and relocations during the project design phase. Unfortunately, property acquisitions and displacements are unavoidable for some projects. As the design progresses, the Department will make every effort to minimize the amount of right-of-way impacts to the greatest extent possible.

  The Georgia DOT's Right of Way team will meet individually with each property owner to discuss the project and the impacts to the specific property. At that time, the property owner will be shown detailed design drawings and have the opportunity to discuss their specific property and access needs. More information regarding the acquisition process can be found in the pamphlet titled What Happens When Your Property is Needed for a Transportation Facility which can be found on the Georgia DOT website at http://www.dot.ga.gov/PS/Public/ROW.

- *Concern about noise impacts.*

  Projects using federal funds must adhere to the NEPA. Environmental surveys and reports must be completed and summarized in a NEPA document which is subject to approval by the Federal Highway Administration (FHWA). These surveys include 1) Social Environment, 2) Cultural Resources such as historic and archaeological resources, 3) Natural Resources such as waters, invasive species, threatened and endangered species, etc. and 4) Physical Environment, such as air and noise. Upon identifying all environmental resources, GDOT attempts to develop a conceptual plan that satisfies the proposed need and purpose, addresses citizen feedback, and minimizes the impact to the environmentally sensitive resources. When impacts cannot be avoided, we evaluate ways to minimize and/or mitigate those impacts in the most responsible manner possible.

- *Concerns about impacts to waters.*

  Section 404 of the Clean Water Act (CWA) established programs to regulate the discharge of dredged and/or fill material into Waters of the US. These waters include, but are not limited to wetlands, streams, rivers, ponds and lakes. The program is regulated by the US Army Corps of Engineers (USACE). Activities in Waters of the US that are regulated under this program include fills for development, water resource projects (such as dams or levees), infrastructure development (such as highways and airports), and conversion of wetlands to uplands for farming and forestry.

  No discharge of dredged or fill material can be permitted if a practicable alternative exists that is less damaging to the aquatic environment or if the nation’s waters would be significantly degraded. When applying for a permit, it must be demonstrated that steps have been taken to *avoid and minimize* impacts to jurisdictional Waters of the US and any

remaining, unavoidable impacts will be mitigated through activities to restore, enhance or create Waters of the US.

- *Requests for roundabouts at the project termini.*

  As part of the Concept development of this project, roundabouts shall be considered as alternatives for all intersections within the project limits, including those where a traffic signal is being proposed. When considering a roundabout, a variety of factors are considered to determine whether or not a roundabout is the most appropriate alternative.

- *Comments expressing confusion about the multiple alternatives/not understanding that a route has not yet been selected.*

  When a project is early in the project development process, no final decisions have been made regarding the design. The purpose of this stakeholder meeting is to provide general project information to residents, to gather input on areas of concern along the corridor, and to gauge community support for the projects. As the project progresses, and a preferred alternative is identified, as part of the NEPA process additional public outreach will be made to inform the public and obtain input.

- *Comments voicing support for/against the various alternatives presented.*

  Cherokee County appreciates these comments – they have been added to the project record and will be kept on file. As the project moves further along in the project development process, additional meetings may be held with the public in the future to gain further input on potential alternatives.

- *Concerns about impacts to the current and future school properties, including accessibility and truck traffic.*

  Early Coordination is the means by which federal, state, and local agencies, and project stakeholders are informed of a proposed project. The Early Coordination process gives federal, state, local and agencies, and project stakeholders the opportunity to become involved early in the project development phase and share information concerning the proposed project and surrounding area that could be potentially impacted. During the NEPA process, Early Coordination will be conducted with these agencies and stakeholders, including schools within the project area. As part of the concept development and NEPA process impacts to schools and other institutions will be assesses. Traffic studies will be conducted to determine the appropriate design needed to accommodate truck traffic.

- *Requests for additional improvements to Downtown Ball Ground.*

  The current scope of this project at this stage is gathering information to determine if this potential project has merit to warrant further solicitation of funding based on construction costs, impacts, and need. Cherokee County will not be able to select a preferred alternative until funding is identified for the project and additional public involvement is completed. For information on other Georgia DOT programmed projects in the area, please refer to the Georgia DOT web site at http://www.dot.ga.gov/BS. In reference to the

request for additional improvements beyond the scope of this project, please contact the Georgia DOT district office at (770) 387-3680.

- *Requests for sidewalks and better crossings downtown for pedestrian safety.*

  It is the policy of the Georgia DOT to always consider pedestrian concerns as part of the transportation planning process, as a means of improving mobility, access, and safety. The design of transportation projects requires balancing the needs of all users and each mode, in a manner appropriate to the type of roadway and conditions within the project and surrounding area. The part of the concept development, proposed Ball Ground Truck Bypass will be developed while keeping that need for balance in mind.

- *Requests for improvements in other areas outside of the project limits.*

  The current scope of this project at this stage is gathering information to determine if this potential project has merit to warrant further solicitation of funding based on construction costs, impacts, and need. Cherokee County will not be able to select a preferred alternative until funding is identified for the project and additional public involvement is completed. For information on other Georgia DOT programmed projects in the area, please refer to the Georgia DOT web site at http://www.dot.ga.gov/BS. In reference to the request for additional improvements beyond the scope of this project, please contact the Georgia DOT district office at (770) 387-3680.

- *Concerns that the project's truck volumes for the bypass are incorrect.*

  Cherokee County appreciates the comment – it has been added to the project record and will be kept on file. As part of the Concept development, it is typical to conduct a Traffic Analysis study, where traffic counts and projections will be further delineated and assed.

- *Suggestions for alternative routes or solutions.*

  One of the components of the Concept development and NEPA environmental evaluation is the development of a range of alternatives. Each alternative's potential to address the project need and purpose is considered, in addition to a variety of other factors, including cost, environmental concerns (natural, human, cultural, and physical environments), community input, accessibility, and other considerations. Various concept alternatives may be developed and evaluated, and may include the following:

  - No Build Alternative — This concept would make no improvements. It is always an option and also provides a comparison for other alternatives considered.
  - Transportation System Management Concept — This concept seeks to make operational improvements, relying upon lower cost roadway improvements such as intersection improvements, turn lane additions, traffic signal coordination, and/or shoulder upgrades.
  - Build Alternatives — These concepts evaluate build alternatives to meet the need and purpose of the project.

  The alternatives analysis process starts with a set of broad-brush concepts that are evaluated from a high-level perspective and are reduced to a more focused detailed set

of alternatives. The most effective alternatives and combinations of alternatives are carried forward for further evaluation. The environmental evaluation assesses how the alternatives avoid, minimize, and mitigate impacts to environmental resources. The alternatives analysis process is coordinated with the local, state, and federal agencies involved in the project and is brought to the public for feedback. The Department clearly describes and documents the decision-making process as the project develops.

Again, thank you for your comments. Should you have further questions, comments or concerns, please call the project manager, Jim Wilgus, at jawilgus@cherokeega.com or Geoff Morton at gmorton@cherokeega.com.

Sincerely,

Jim Wilgus
SPLOST Roadway Project Manager
Cherokee County, Georgia

1355 Peachtree Street NE
Suite 100
Atlanta, Georgia 30309
T 404.214.6745

Meeting Minutes

Date: February 5, 2021 Time: 1:00 pm

Location: N/A – Conference Call

Subject: Ball Ground Bypass Concept Team Meeting

Project No. PI No. 0002525, Cherokee County VHB: 63312.00

Recorded By: Candice Thomas

Attendees:

Jim Wilgus	Cherokee County	jawilgus@cherokeega.com
Candice Thomas	VHB	cnthomas@vhb.com
Matt Thompson	VHB	mthompson@vhb.com
Tommy Crochet	VHB	tcrochet@vhb.com
Christina Barry	GDOT Dist. 6	cbarry@dot.ga.gov
John Hightower	GDOT OPD	jhightower2@dot.ga.gov
Grant Waldrop	GDOT Dist. 6	gwaldrop@dot.ga.gov
Joseph Ciavarro	GDOT Dist. 6	jciavarro@dot.ga.gov
Christopher Broyles	GDOT Dist. 6	cbroyles@dot.ga.gov
David Acree	GDOT Preconstruction	dacree@dot.ga.gov
Carla Benton-Hooks	GDOT OES	cbenton-hooks@dot.ga.gov
Cynthia Burney	GDOT Dist. 6	cburney@dot.ga.gov
Chesleigh Charles	SCG/AGL	ccharles@southernco.com
Jennifer Deems	GDOT Dist. 6 Utilities	jdeems@dot.ga.gov
Dwayne Fowler	CCWSA	dwayne@ccwsa.com
Steve Gaston	GDOT Bridge Office	sgaston@dot.ga.gov
John Gay	Southern Co.	jcgay@southernco.com
Geoff Morton	Cherokee County	gmorton@cherokeega.com
Robert Graham	GDOT Lighting	rgraham@dot.ga.gov
Dave Peters	GDOT Design Policy	dpeters@dot.ga.gov
James Porter	TDS TELECOM	james.porter@tdstelecom.com
Yasmeen Qadimasil	GDOT OES	yqadimasil@dot.ga.gov
Reginald James	ARC Planner	rjames@atlantaregional.org
Robert Turner	Windstream	techasst@windstream.net

Meeting Minutes

February 5, 2021
PI No. 0002525

Kleigh Strawder	Windstream	kleigh.strawder@windstream.net
Jim Tolson	Arcadis/GDOT Railroad	jim.tolson@arcadis.com
Donovan Tucker	GDOT Dist. 6	dtucker@dot.ga.gov
Lisa Wesley	GDOT Dist. 6	lwesley@dot.ga.gov
Teshhome Yitateku	GDOT Railroad	tyitateku@dot.ga.gov

- John Hightower started the meeting with introductions and an overview of the project schedule.
- VHB went through a power point presentation (attached) and conceptual layouts of the Ball Ground Truck Bypass project in Cherokee County.
- Jim Wilgus noted that he has received hundreds of calls about the project. He also noted active development going on in the area. He pointed out that the D alternative goes through a recently constructed apartment complex not shown in the aerial images.
- Matt Thompson noted the feedback received from the railroad regarding cost. He pointed out that if the temporary gates are needed during construction, the cost would be increased by $300,000. He asked if VHB should get an updated cost from the railroad or increase amount by $300,000.
- Jim Tolson confirmed that the $300,000 is for two temporary gates to be installed. He also noted that the design would need to be considerate to not create a hump crossing.
- Matt noted that the concept profile was flat through the railroad crossing but would need to be reevaluated during further design. He pointed out that concept profile design was completed on GIS data and that profile would need to be reviewed further with surveyed data.
- Yitateku Teshhome noted that closures take 3 to 7 days and that would need to be taken into consideration during staging. He also pointed out that if the road is designed using concrete pavement it would need to be asphalt for at least 15’ on either side of the rail crossing. He also noted that the commercial development with a driveway just east of the railroad crossing would need to be considered during staging. Since the development’s only access to Howell Bridge is the driveway east of the railroad, any long-term closures of the crossing would landlock the business.
- Matt noted that a pavement design has not yet been submitted or approved but the cost estimate assumes asphalt paving.
- Tommy noted that a temporary pavement section South of the rail crossing with temporary crossings may be desirable since the roadway profile would need to be adjusted to the West to accommodate the proposed roundabouts.
- Steve Gaston asked about the proximity of the roundabouts to the railroad crossing and asked if they would function correctly when train passing by.
- Matt noted that was something that would need to be investigated and coordinated with railroad to ensure we have gates in proper locations in relation to circular traffic.

February 5, 2021
PI No. 0002525

- Jim Tolson asked about the potential need for pedestrian gates on this project.
- Matt noted that a pedestrian gate may be needed since paved shoulder on the bypass would accommodate bikes and a shared use path was being provided through the roundabouts up to a location just east of the railroad where the rural shoulder starts.
- Jim Tolson noted that part of road crossing can be used for pedestrian facilities at times but if those facilities are too far away from the roadway then you would need a separate gate. He specified that a gate typically covers 36.'
- Steve Gaston asked why bike facilities are being provisioned on a truck bypass.
- Matt noted that there is access to downtown and residential areas along the bypass.
- Tommy pointed out the popularity of biking in the NE Georgia Mountains. He noted that VHB would take directions from department regarding the inclusion of bikeable shoulders.
- Dave Peters asked if bike warrants are met and what overall shoulder width would be recommended if bikeable lanes were not provided.
- Tommy clarified that the warrants do not address bike traffic through mountains and that the pedestrian warrant would be met near the roundabouts. He also noted that an 8' overall shoulder width with 4' paved would be recommended if bikeable shoulders were not provided.
- Steve Gaston asked if extending the roadway construction on Northridge to reduce bridge height was considered. He also asked if a variance was considered for the grade on Northridge.
- Tommy noted that both issues should be reevaluated during design but may impact properties along Northridge. He also pointed out the need for geotechnical review in the area due to the possibility of rock.
- Matt asked if SR designation for the bypass should be included in the project description.
- Grant Waldrop noted there were discussions regarding removing the state route designation through downtown Ball Ground. He stated that it would be best to call the bypass roadway Ball Ground Truck Bypass until decision on designation is made.
- Dave Peters noted that some of the design requirements maybe different for state route vs local road.
- Cynthia Burney noted that the name change would be updated on Geo PI when concept report is approved.
- Matt clarified that the name in the concept report should be what is desirable not what is in Geo PI.
- Cynthia confirmed and noted that she would coordinate with VHB on appropriate name in concept report.
- Dave noted that it is easier to reduce impacts and design requirements if not a state route than to expand the impacts later. He recommended that proposed design elements in the concept report for the Bypass assume state route designation.

Meeting Minutes

February 5, 2021
PI No. 0002525

- Carla Benton Hooks noted that RP35 requires the project to go through the PAR process and asked if there an environmental consultant assigned to the project.
    - VHB reviewed the estimated impacts after the meeting. Impacts were well within the guidelines for Regional Permit 34. Concept report will be revised to clarify RP34 and no PAR necessary.
- Carla asked who was leading environmental.
- Tommy noted that Erin Murphy is the environmental lead for VHB.
- Carla asked if she is scoped to update TPRO.
- Tommy noted that VHB's contract with Cherokee County is ending soon and until funding is programmed there would not be any work done on the project.
- Christina Barry noted that the PI 0009903 1-575 @ SR 5 BU will be cancelled.
- Tommy noted that VHB will either note the cancelation or remove the project from concept report.
- Jim noted that a no build for PI 0009903 was submitted on November 9th 2020.
- Robert Turner and Reginald James requested to be copied on minutes when they go out.

Georgia Department of Transportation

PI 0002525
Concept Team Meeting
02-05-2021

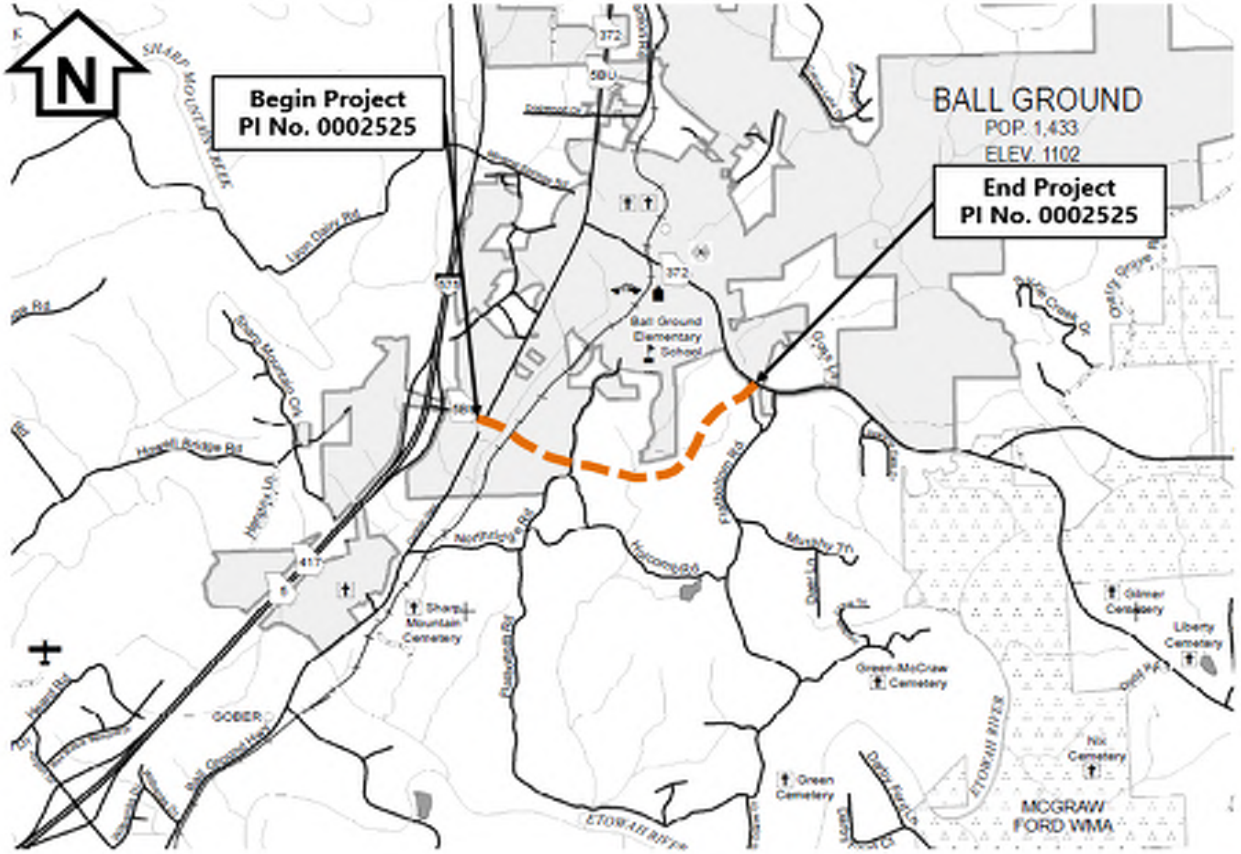
SR 372 SPUR FM SR 5BU@ HOWELL BR RD TO SR 372 SO/BALL GROUND

Ball Ground Truck Bypass
Cherokee County, GA

CHEROKEE COUNTY
A GREAT PLACE TO LIVE, WORK AND PLAY

Project Location

This project will begin at the intersection of SR 5 BU at Howell Bridge Road and continue 1.47 miles east to SR 372 near its intersection with Flatbottom Road.



Project Justification Statement

This Project Justification Statement was prepared by VHB and Cherokee County. The project was originated by Cherokee County due to increased truck traffic in the City of Ball Ground. Major issues to be addressed by the project include reduction in crashes, correcting improper geometry, improving level of service, improving pedestrian safety and reducing traffic on a corridor with pavement in poor condition. The total crashes for SR 372 in Ball Ground are 30% higher than statewide average. There are less than desirable geometrics on SR 372 through downtown Ball Ground including 9% to 10% grades and narrow lane widths. The level of service (LOS) would be F on SR 372 through downtown in the design year 2050. Due to the urban and historic nature of downtown Ball Ground, a Truck Bypass would be desirable to improve pedestrian safety. In addition, the existing pavement in downtown Ball Ground is in poor condition and was not designed to handle the amount of trucks currently using the corridor.

The proposed project limits are Howell Bridge Road to SR 372 East of downtown Ball Ground. The intersection of Howell Bridge Road at SR 5 BU/Canton Highway/Ball Ground Highway currently operates as an all-way stop. The existing LOS is C/D (AM/PM). There is no existing intersection on the Eastern connection with SR 372. The project also has the potential to be the SR 372 Truck Bypass. Performance goals include a reduction in crashes in Ball Ground, improvement in LOS through downtown Ball Ground and reduced truck traffic in downtown area where pedestrians are present.

Existing Conditions

- SR 372/Gilmer Ferry Road is a two-lane minor arterial roadway in Cherokee County, Georgia. The roadway is urban (10’ lanes) with curb and gutter, sidewalk and roadside parking through the City of Ball Ground. The remainder of the corridor is rural (12’ lanes) with grassed shoulders.
- Existing major intersections include Howell Bridge Road at SR5 BU/Canton Highway/ Ball Ground Highway.
- Western project terminus is just east of I-575 Interchange at Howell Bridge Road

SR 372 West of Mound Street

SR 372 East of Ball Ground

Howell Bridge Road at Ball Ground Highway

Existing Conditions (cont.)

- Existing Georgia Northeastern Railroad at-grade crossing of Howell Bridge Road
- Existing electrical distribution, gas distribution, water, sewer, buried and aerial fiber/copper communications
- Existing Northridge Road is about 80 feet above proposed Truck Bypass Alignment Profile
- No existing structures
- Environmental resources include historic properties, wetlands and streams

Howell Bridge Road Looking West Towards I-575 Across Georgia Northeastern Railroad

Northridge Road

Other Projects in the Area

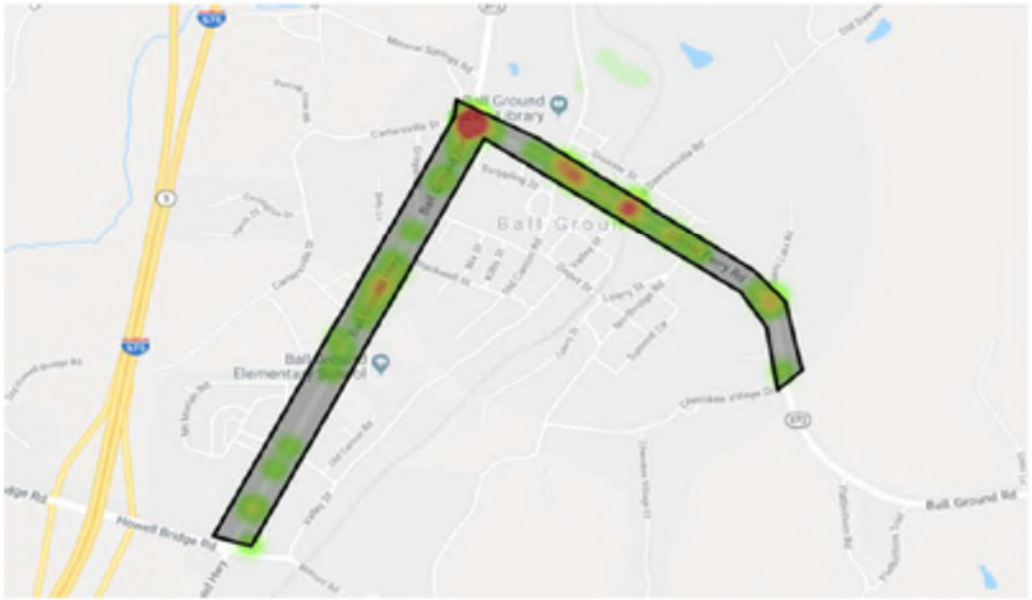
- P.I. No. 0010649, CS 791/Valley Street from Depot Street to Howell Bridge Road (streetscape enhancement project for the City of Ball Ground; Completed December 2019)
- P.I. No. 0005970, SR 372/Ball Ground Rd from Canton Highway to Cumming Highway (reconstruction/rehabilitation project; Long Range Program PE, ROW, CST in 2051)
- P.I. No. 0009903, I-575 @ SR 5BU – SB & NB Ramps (roundabout at ramp intersections with Howell Bridge Road; PE in 2018)

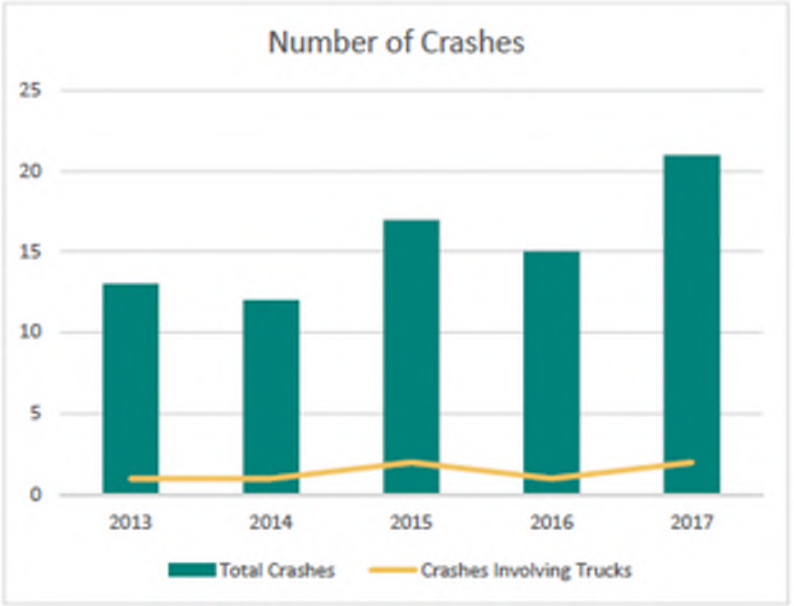
Major Stakeholders

- Cherokee County
- City of Ball Ground
- Cherokee Village Neighborhood, Hawkins Farm Neighborhood
- Georgia Northeastern Railroad (Patriot Rail & Ports)
- Amicalola Electric Membership Corporation, Georgia Power,
- Ball Ground Historical Society

Crash Data

Crash Type	2013		2014		2015		2016		2017		2013-2017 Crashes	
Angle	2	15%	2	17%	4	24%	3	20%	4	19%	15	19%
Head On	0	0%	1	8%	1	6%	1	7%	1	5%	4	5%
Not A Collision with Motor Vehicle	3	23%	2	17%	3	18%	1	7%	4	19%	13	17%
Rear End	5	38%	5	42%	3	18%	7	47%	8	38%	28	36%
Sideswipe-Opposite Direction	2	15%	0	0%	1	6%	1	7%	0	0%	4	5%
Sideswipe-Same Direction	1	8%	2	17%	1	6%	2	13%	3	14%	9	12%
Other/Unknown	0	0%	0	0%	4	24%	0	0%	1	5%	5	6%
Total Crashes	**13**	**100%**	**12**	**100%**	**17**	**100%**	**15**	**100%**	**21**	**100%**	**78**	**100%**
Injury Crashes	2		4		5		2		2		15	
Injuries	2		5		6		2		2		17	
Fatal Crashes	0		0		0		0		0		0	
Fatalities	0		0		0		0		0		0	





Crash Data

- SR 372 Comparison to Statewide Averages

Rate Description		Year				
		2013	2014	2015	2016	2017
Fatal Crashes	Segment	0.00	0.00	0.00	0.00	0.00
	Statewide Average	2.13	1.96	2.13	2.42	2.13
Fatalities	Segment	0.00	0.00	0.00	0.00	0.00
	Statewide Average	2.37	2.23	2.42	2.74	2.37
Non-Fatal Injury	Segment	21	**50**	**71**	46	22
	Statewide Average	42	50	48	49	42
Non-Fatal Injuries	Segment	21	**75**	71	46	22
	Statewide Average	82	74	74	74	82
All Crashes	Segment	**185**	**175**	**237**	**183**	**243**
	Statewide Average	160	164	152	145	160

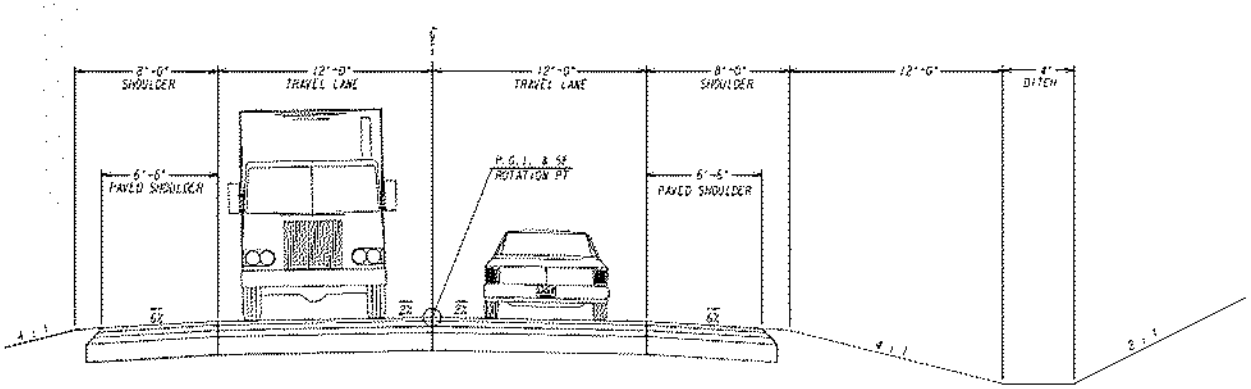
Traffic Volumes

- Conditionally approved 8/15/2019, will need to be updated once PE proceeds
- SR 372 (East of Ball Ground Bypass)
  - 24 HR T: 13%
  - Current Year (2018): 8,600
  - Open Year (2030): 11,250
  - Design Year (2050): 16,700
- Ball Ground Truck Bypass
  - 24 HR T: 31.5%
  - Current Year (2018): n/a
  - Open Year (2030): 3,750
  - Design Year (2050): 5,450

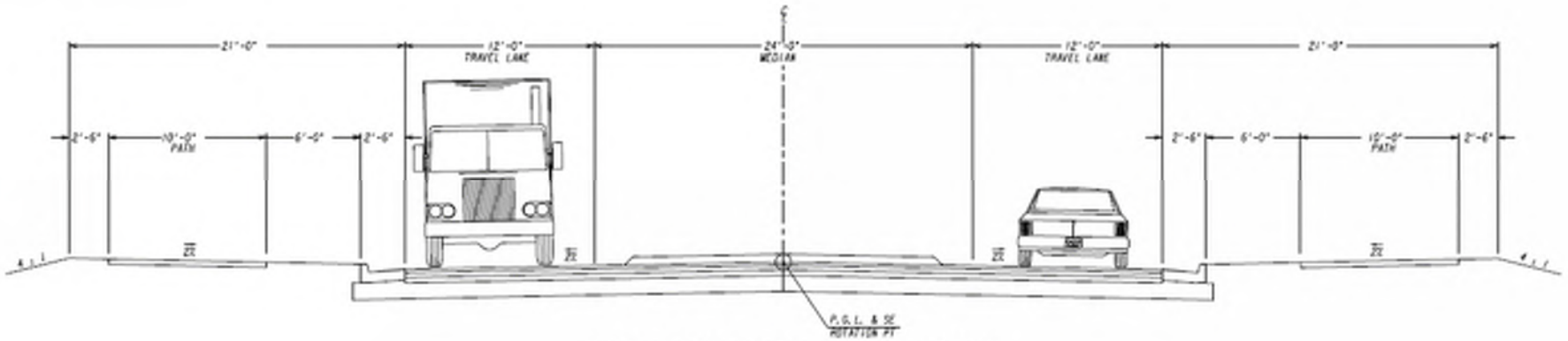
Intersection Control

- ICE Completed, Approved by Traffic Ops
- SR 5 BU at Ball Ground Truck Bypass
  - Multilane Roundabout Recommended over Existing All-Way Stop
- Ball Ground Truck Bypass at Valley Street
  - Single Lane Roundabout Recommended over Existing Minor Stop and All-Way Stop
- SR 372 at Ball Ground Truck Bypass
  - Minor Stop Recommended over Single Lane Roundabout and All-Way Stop

Proposed Typical Sections

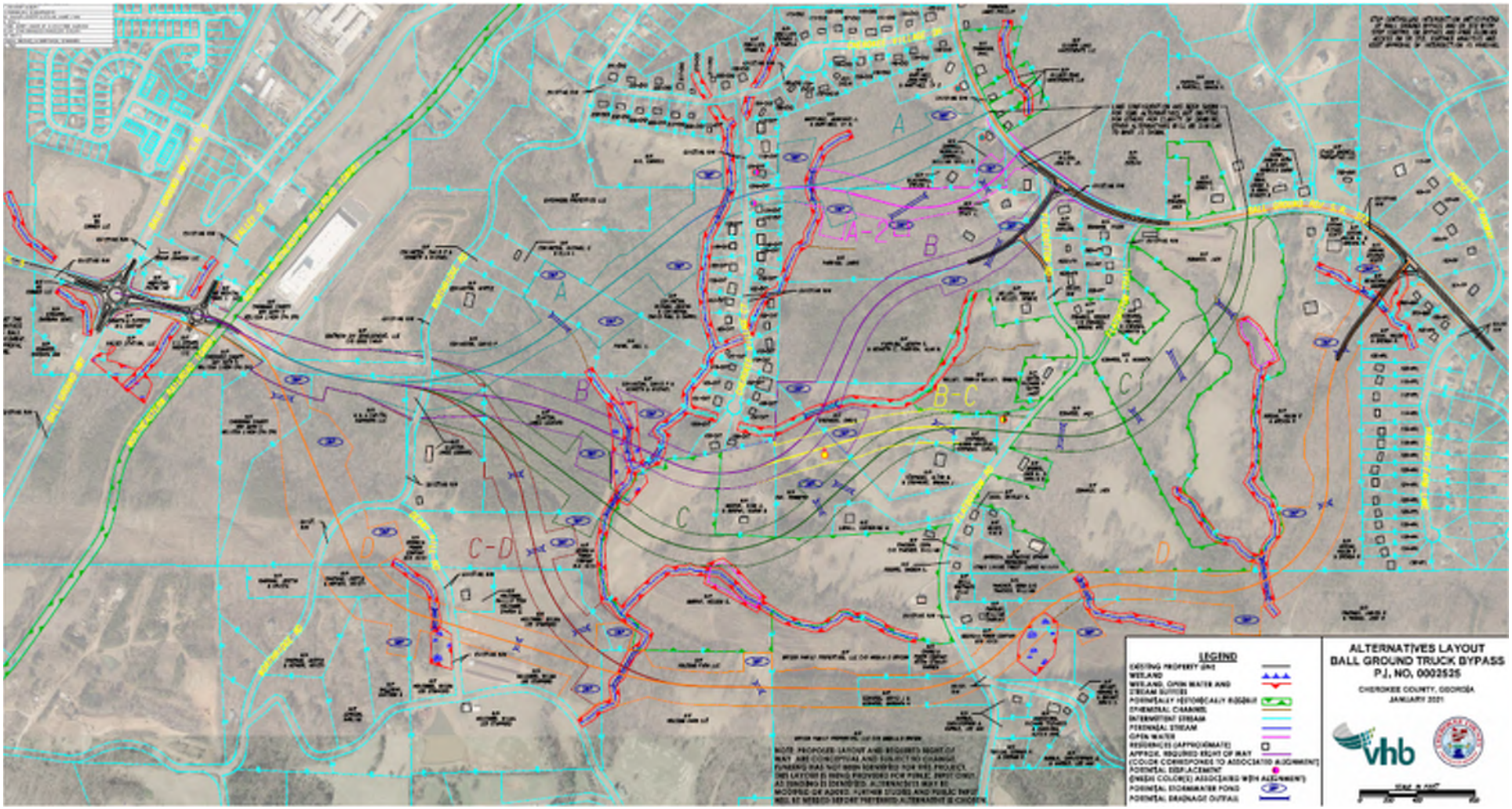


RURAL TYPICAL SECTION



URBAN TYPICAL SECTION

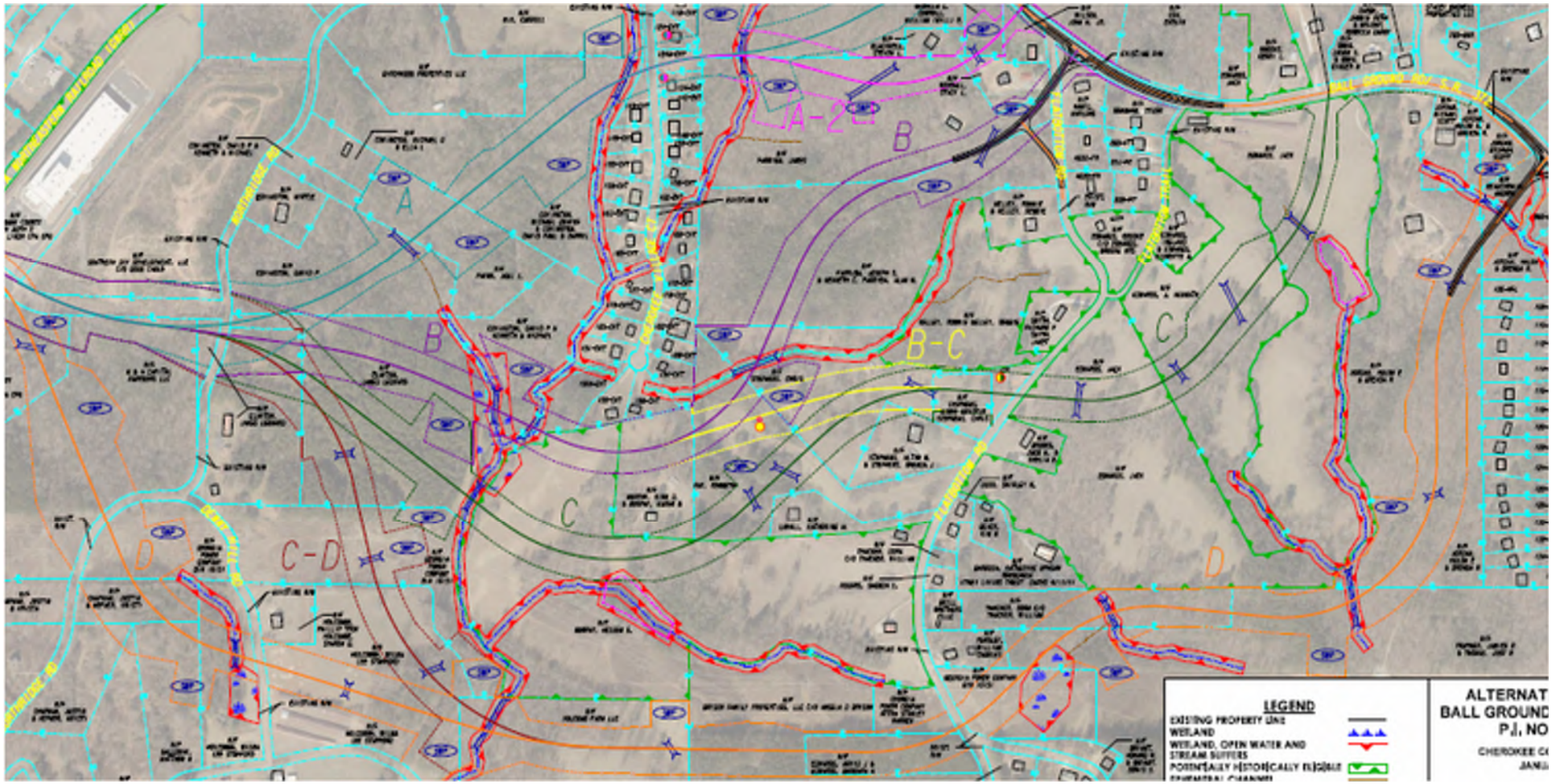
Alternatives Considered



Alternatives Considered

BALL GROUND TRUCK BYPASS ALTERNATIVES ANALYSIS MATRIX (Estimated Impacts & Costs)							
RFQ 2018-048, Cherokee County P.I. No. 0002525							December 2020
Alternative No.	A	A-2	B	B-C	C	C-D	D
Displacements							
Residential	4	2	0	2	1	0	0
Commercial	0	0	0	0	0	0	0
Church	0	0	0	0	0	0	0
Other	0	0	0	0	0	0	0
Proximity of proposed roadway to residences							
less than 25'	3	1	0	1	0	0	0
less than 50'	6	3	0	2	1	0	0
less than 100'	10	7	3	5	4	3	3
less than 200'	12	11	9	11	10	5	6
less than 300'	17	16	11	13	13	13	14
less than 400'	20	20	19	17	15	29	29
less than 500'	22	24	22	23	17	33	34
Neighborhood Impacts							
Neighborhoods impacted	1	1	0	0	0	0	0
Required Right of Way							
Required R/W Area (acres)	40	40	43	44	47	72	76
Wetlands and Waters Impacts							
Wetland Impact Area (acres)	0.00	0.00	1.36	1.36	0.08	0.82	0.96
Open Water (Pond) Impact Area (acres)	0.00	0.00	0.00	0.00	0.14	0.00	0.00
Stream Impact Length (feet)	632	650	1026	704	413	1874	2067
Stream buffers (acres)	0.77	0.80	1.41	0.71	0.31	2.13	2.40
Historical properties impacts							
Historical properties impacted (each)	4	2	2	6	6	3	3
Severity of impacts	Adverse/Moderate	Not Adverse	Adverse/Low	Adverse/Severe	Adverse/Severe	Adverse/Low	Not Adverse
Section 4f	Yes	No	Yes	Yes	Yes	No	No
Roadway Lengths (miles)							
Bypass Length (SR 5 BU to SR 372)	1.28	1.32	1.47	1.73	1.81	2.30	2.30
Comparative Travel Length Along Bypass and SR 372 (SR 5 BU to SR 372 at Hawkins Farm Lane/Preserve Parkway	2.02	2.00	2.08	2.08	2.16	2.41	2.41
Cost							
Construction	$18,690,000	$17,720,000	$16,980,000	$21,930,000	$22,040,000	$21,960,000	$26,120,000
Right of Way	$4,941,000	$4,610,000	$4,235,000	$4,655,000	$4,500,000	$5,122,000	$5,575,000
Utilities	$2,300,000	$2,300,000	$2,000,000	$2,600,000	$2,600,000	$2,500,000	$2,500,000
Mitigation	$561,000	$578,000	$1,389,000	$1,178,000	$377,000	$1,910,000	$2,153,000
TOTAL COST	**$26,492,000**	**$25,208,000**	**$24,604,000**	**$30,363,000**	**$29,517,000**	**$31,482,000**	**$36,348,000**

Alternatives Considered



GDOT
Georgia Department of Transportation

Alternative No.	A	A-2	B	B-C	C	C-D	D
Displacements							
Residential	4	2	0	2	1	0	0
Commercial	0	0	0	0	0	0	0
Church	0	0	0	0	0	0	0
Other	0	0	0	0	0	0	0
Proximity of proposed roadway to residences							
less than 25'	3	1	0	1	0	0	0
less than 50'	6	3	0	2	1	0	0
less than 100'	10	7	3	5	4	3	3
less than 200'	12	11	9	11	10	5	6
less than 300'	17	16	11	13	13	13	14
less than 400'	20	20	19	17	15	29	29
less than 500'	22	24	22	23	17	33	34
Neighborhood Impacts							
Neighborhoods impacted	1	1	0	0	0	0	0
Required Right of Way							
Required R/W Area (acres)	40	40	43	44	47	72	76
Wetlands and Waters Impacts							
Wetland Impact Area (acres)	0.00	0.00	1.36	1.36	0.08	0.82	0.96
Open Water (Pond) Impact Area (acres)	0.00	0.00	0.00	0.00	0.14	0.00	0.00
Stream Impact Length (feet)	632	650	1026	704	413	1874	2067
Stream buffers (acres)	0.77	0.80	1.41	0.71	0.31	2.13	2.40
Historical properties impacts							
Historical properties impacted (each)	4	2	2	6	6	3	3
Severity of impacts	Adverse/Moderate	Not Adverse	Adverse/Low	Adverse/Severe	Adverse/Severe	Adverse/Low	Not Adverse
Section 4f	Yes	No	Yes	Yes	Yes	No	No
Roadway Lengths (miles)							
Bypass Length (SR 5 BU to SR 372)	1.28	1.32	1.47	1.73	1.81	2.30	2.30
Comparative Travel Length Along Bypass and SR 372 (SR 5 BU to SR 372 at Hawkins Farm Lane/Preserve Parkway	2.02	2.00	2.08	2.08	2.16	2.41	2.41
Cost							
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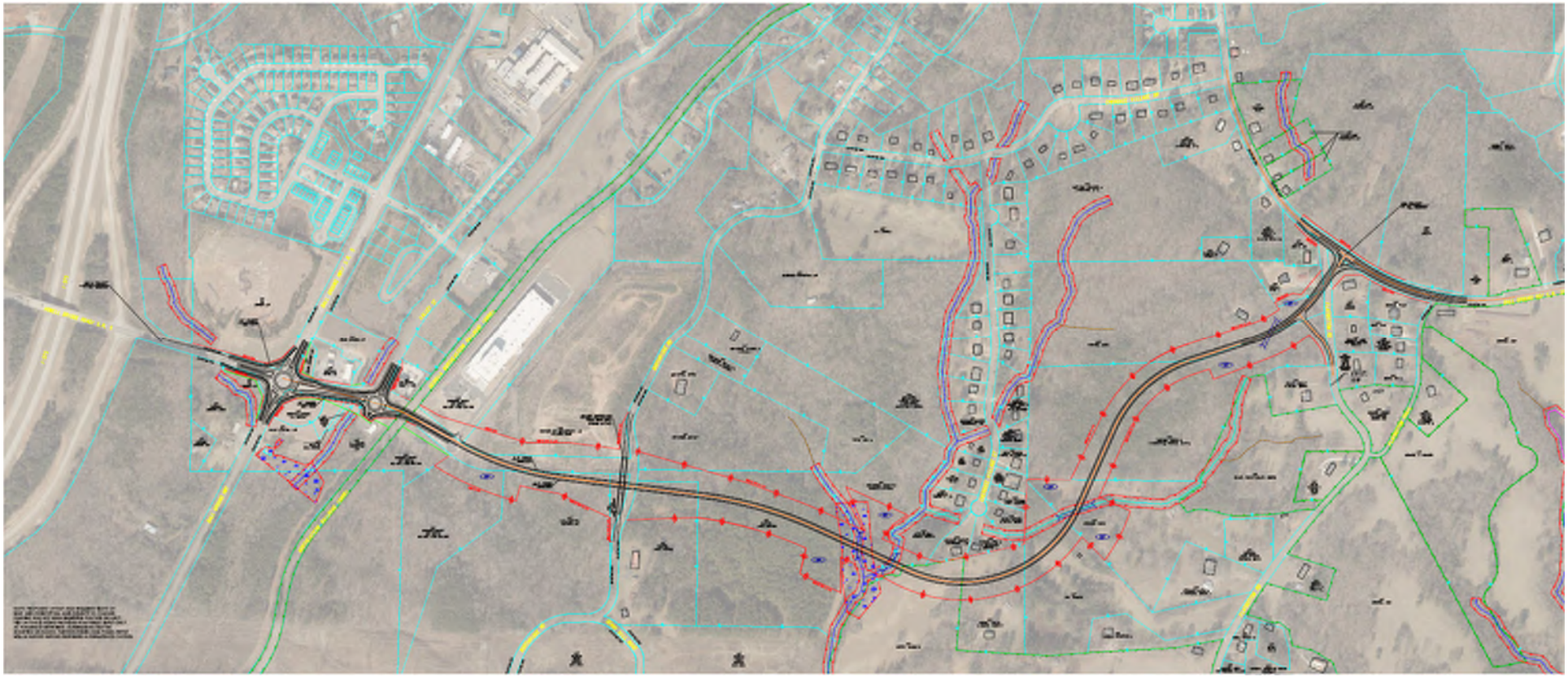
Right of Way	$4,941,000	$4,610,000	$4,235,000	$4,655,000	$4,500,000	$5,122,000	$5,575,000
Utilities	$2,300,000	$2,300,000	$2,000,000	$2,600,000	$2,600,000	$2,500,000	$2,500,000
Mitigation	$561,000	$578,000	$1,389,000	$1,178,000	$377,000	$1,910,000	$2,153,000
TOTAL COST	**$26,492,000**	**$25,208,000**	**$24,604,000**	**$30,363,000**	**$29,517,000**	**$31,482,000**	**$36,348,000**

Proposed Project

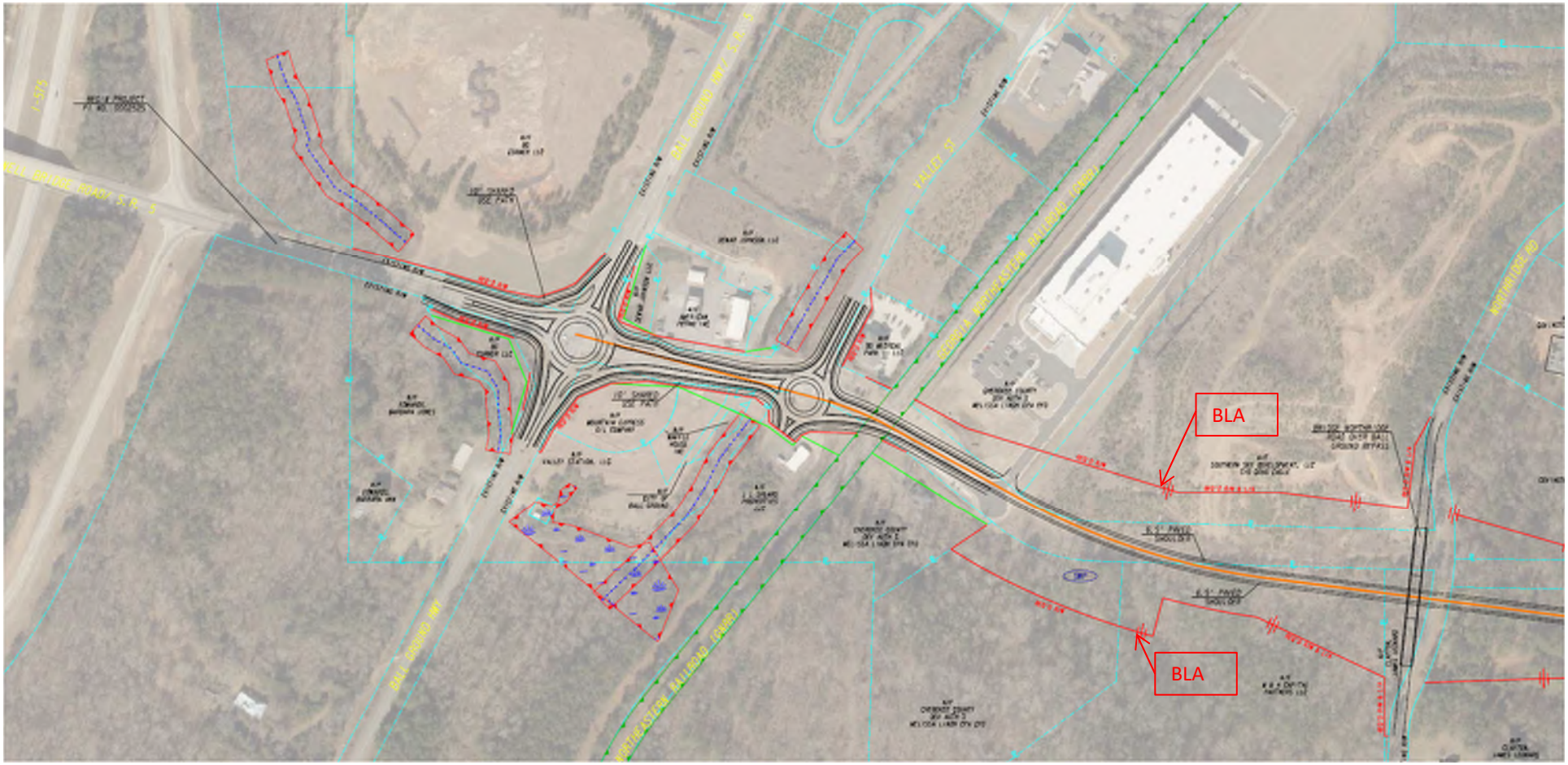
- Preferred Alternative - Alternative B
  - The preferred alternative will reduce truck traffic in downtown Ball Ground, improve level of service, reduce crashes, and improve pedestrian safety. The preferred alternative accomplishes the goals of the project with the lowest total cost, minimal impacts to historic properties, and zero displacements.
- Project Length: 1.5 Miles
- Functional Classification: Rural Minor Arterial
- Design Speed: 45 mph
- Lighting for Roundabouts
- Stormwater
  - Not in MS4 Area
  - Water quality mitigation is anticipated in Etowah River Basin

Preferred Alternative



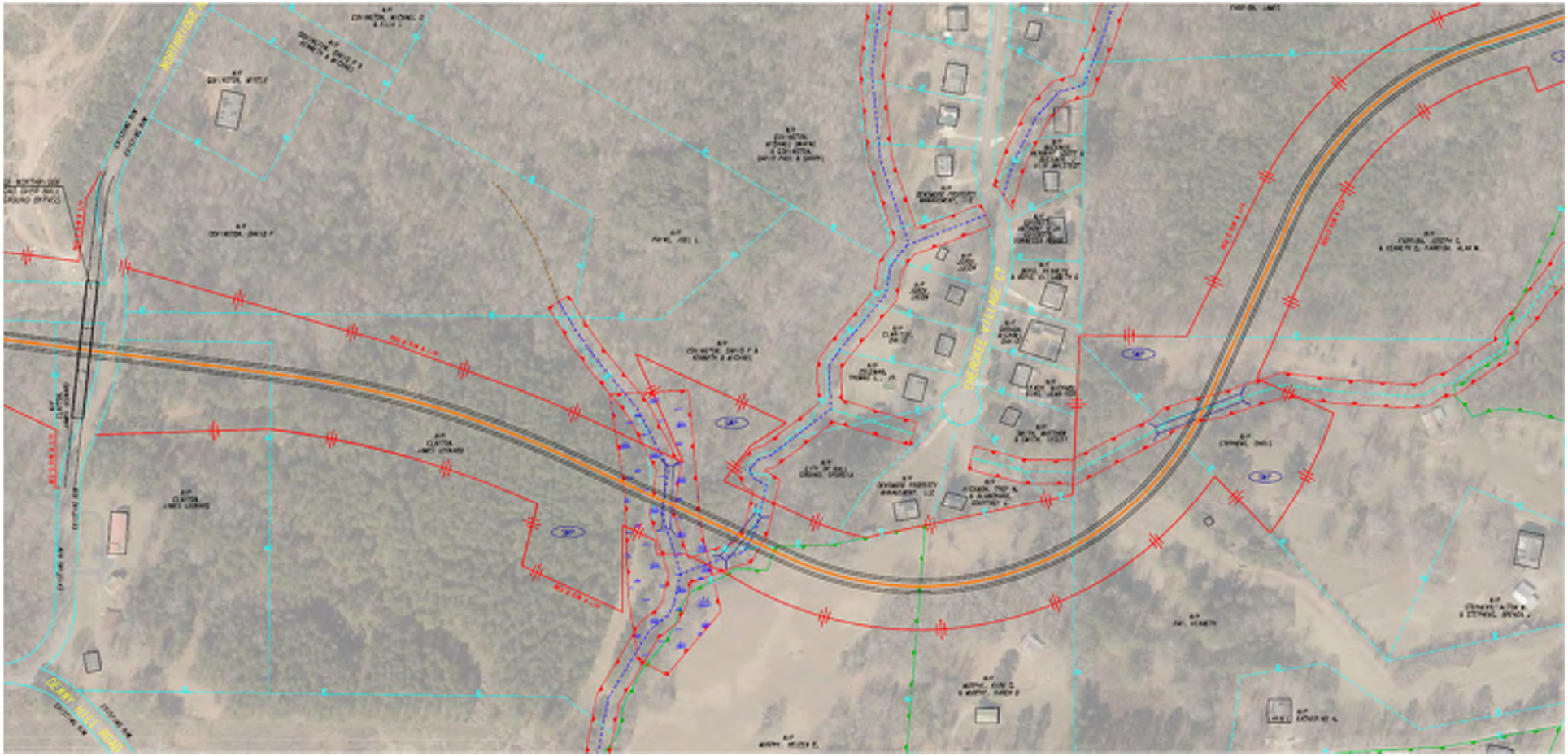
Preferred Alternative

Layout 1 of 3



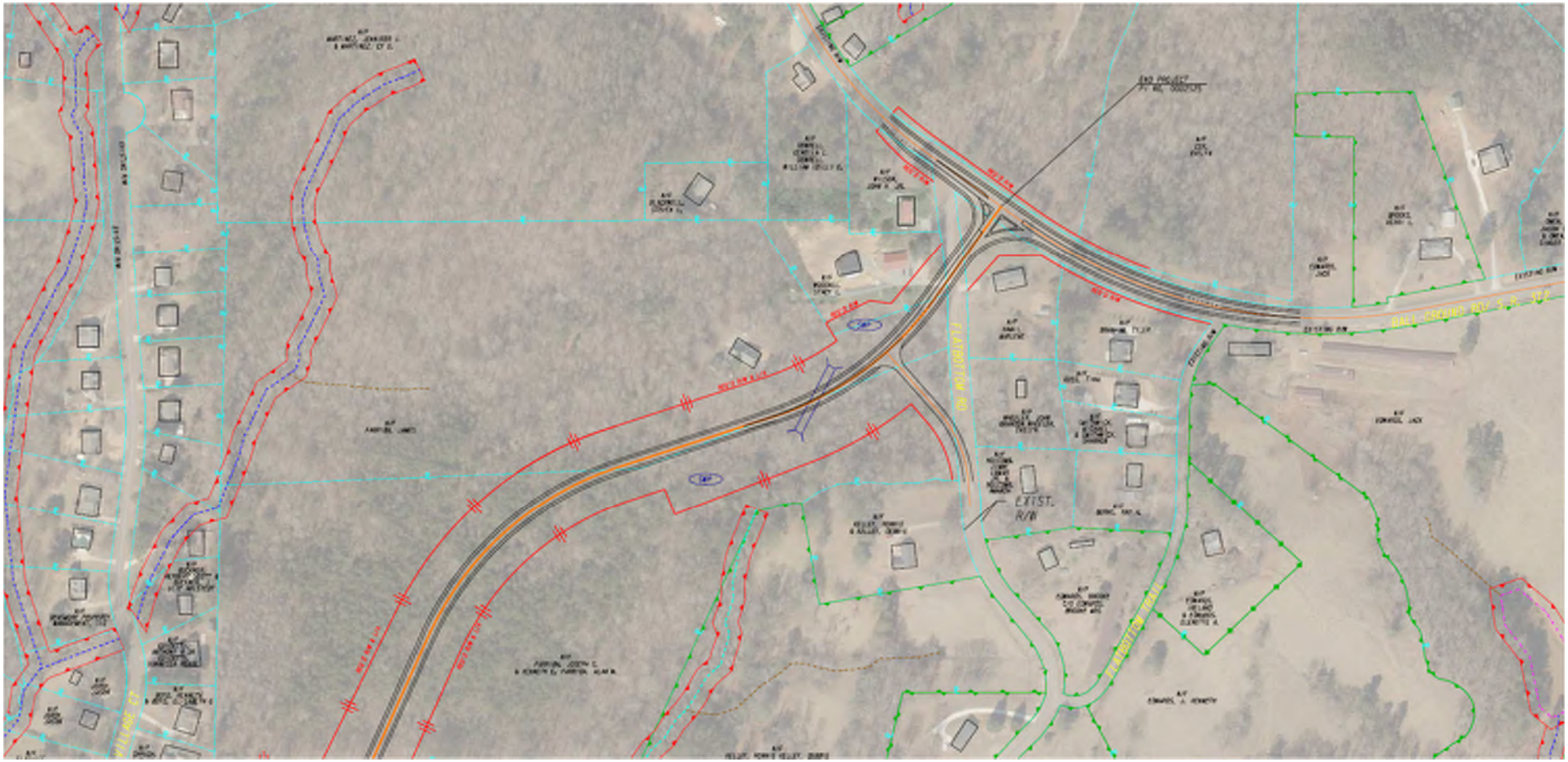
Preferred Alternative

Layout 2 of 3



Preferred Alternative

Layout 3 of 3



Design Variances/Exceptions

- No Design Exceptions anticipated
- Potential Design Variances:
  - Maximum Grade
    - Grades approaching Georgia Northeastern Railroad
    - Steep grades approaching Northridge Road
  - Intersection Sight Distance
    - Vertical curvature on the Truck Bypass near Northridge Road may not be suitable to provide minimum intersection sight distance
    - Limited Access should be acquired in this area

Major Structures

- Northridge Road Bridge over Truck Bypass
  - The proposed bridge will be approximately 80 feet above the Truck Bypass
  - 350 ft long
  - 28 ft wide with 11 ft lanes and 2 ft shoulders.

Railroad Involvement

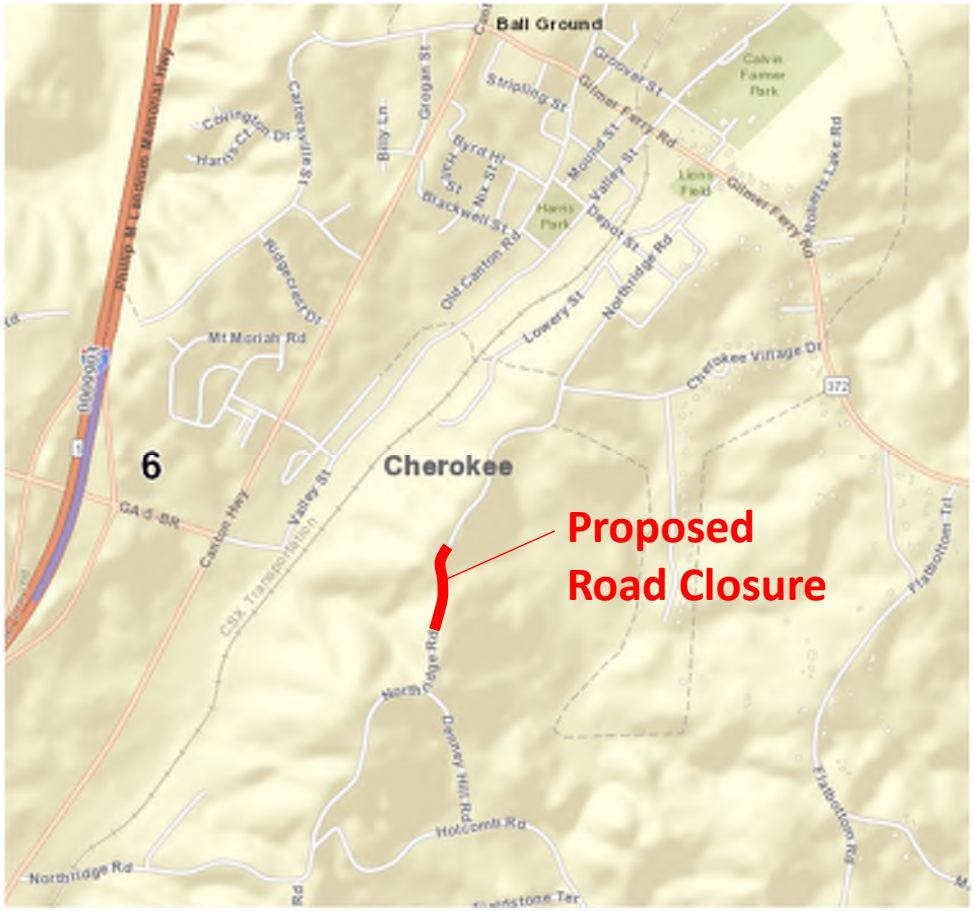
- Georgia Northeastern Railroad (GNRR)
- Managed by Patriot Rail Co.
- Typically Two Trains Daily, 6 AM to 6 PM, 10 MPH

Utility Involvement

- Cherokee County Water and Sewer Authority
- City of Ball Ground Water
- City of Ball Ground Sewer
- Georgia Power
- Amicalola Electrical Membership Corporation
- TDS Telecom
- AGL
- Elijay Telephone Company
- Windstream

Offsite Detours

- Offsite detour will likely be required for a portion of Northridge Road to build grade separation over Truck Bypass
- Detour routes have not been established, reviewed or approved



Right of Way

- Existing ROW width: 70 – 100 ft (Howell Bridge Rd.)
- Proposed required ROW width: 100 – 220 ft
- Anticipated number of impacted parcels: 32
- Displacements anticipated: 0
- Access Control: Partial Limited Access

Public and Stakeholder Involvement

- An online stakeholder meeting presenting several alternatives was held on 06/05/2020 with the comment period running through 07/3/2020
  - 226 people formally commented
  - 164 were in support of the project
  - 25 were opposed
  - 1 was uncommitted
  - 34 expressed conditional support
- Additional public involvement will be needed to present the preferred alternative as well as any off-site detours
- A public involvement plan should be prepared prior to additional outreach

Environmental Resources

Note: Property is being developed, historic structure has been removed

Environmental Information

- NEPA or GEPA documents are not anticipated
- Potential adverse effects to eligible historic properties
- Impacts anticipated to wetlands and streams
- Permits/coordination anticipated:
  - CWA Section 404 – Regional Permit 35
  - GAEPD Stream Buffer Variance
  - NPDES
  - Section 106
  - PAR is not anticipated to be required

Project Responsibilities

Project Activity	Party Responsible for Performing Task(s)
Concept Development	Cherokee County/VHB
Design	Cherokee County/Consultant (TBD)
Right-of-Way Acquisition	Cherokee County/Consultant (TBD)
Utility Coordination (Preconstruction)	GDOT District
Utility Relocation (Construction)	Utility Owner
Letting to Contract	GDOT
Construction Supervision	GDOT
Providing Material Pits	Contractor
Providing Detours	Contractor
Environmental Studies, Documents, & Permits	Cherokee County/Consultant (TBD)
Environmental Mitigation	Cherokee County/Consultant (TBD)
Construction Inspection & Materials Testing	GDOT

Project Costs and Responsibilities

Project Cost Estimate Summary and Funding Responsibilities:						
	PE Activities		ROW	Reimbursable Utilities	CST*	Total Cost
	PE Funding	Section 404 Mitigation				
Date of Estimate:	1/7/2020	1/7/2020	Date	12/8/2020	12/10/2020	
Funded By:	Local	Local	State	State	State	
Programmed Cost:	$650,000		N/A	N/A	N/A	$650,000
Estimated Cost:	$2,400,000	$1,389,000	$4,235,000	$2,032,580	$17,245,488	$27,302,068
Total Cost Difference:						$26,652,068

Project Risks

- Project Cost – Funding Availability
- Section 4(f) With Federal Funding
- Community/Neighborhood Opposition
- Impacts to Historic Properties
- High Cuts and Fills, Potential Rock Excavation
- Water Quality Treatment Requirements
- Future Residential/Commercial Development Conflicting With Potential Alternative Alignments

Discussion Topics

- Lighting Agreement is required with City of Ball Ground
- Project Framework Agreement is required with Cherokee County
- No specialty or proprietary items are anticipated

Questions and Comments?

Mayor
A. R. Roberts, III

Council Members
John Byrd
Frank Homiller
Mickey O'Malley
Lee Prettyman
Andrenia Stoner

CITY OF BALL GROUND

www.cityofballground.com

City Manager
Eric Wilmarth

City Attorney
Darrell Caudill

City Clerk
Karen Jordan

We Roll Out the Red Carpet Not the Red Tape.™

January 25, 2021

Georgia Department of Transportation
District Traffic Engineer
District 6
30 Great Valley Parkway
White, Georgia 30184

Re: Indication of Roundabout Support

To Whom it May Concern:

The **City of Ball Ground** supports the consideration of roundabouts at the location specified below.

State/County Route Numbers**:**

SR 372 Spur FM SR 5 BU @ Howell Bridge Rd TO SR 372 SO/Ball Ground

The undersigned agrees to participate in the following maintenance of the intersection in the event that the roundabout is selected as the preferred concept alternative:

- The full and entire cost of the electric energy used for any lighting installed and the maintenance thereof (if needed)
- Any maintenance costs associated with the landscaping as approved by the local government and the Georgia Department of Transportation (after construction is complete)

We agree to participate in a formal Local Government Lighting Project Agreement during the preliminary design phase. This indication of support is submitted and all of the conditions are hereby agreed to. The undersigned are duly authorized to execute this agreement.

This is the 25th day of January, 2021

Attest:

Karen L Jordan
City Clerk

By: _____

Title: Mayor, City of Ball Ground