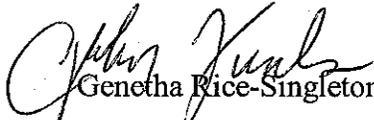


DEPARTMENT OF TRANSPORTATION
STATE OF GEORGIA

INTERDEPARTMENT CORRESPONDENCE

FILE P. I. No. 0006932, Rockdale County **OFFICE** Preconstruction
STP-0006-00(932)
Klondike Road/McDaniel Mill Road/Hurst Road-
Intersection Improvements **DATE** July 20, 2007

FROM  Genetha Rice-Singleton, Assistant Director of Preconstruction

TO  SEE DISTRIBUTION

SUBJECT APPROVED PROJECT CONCEPT REPORT

Attached for your files is the approval for subject project.

Attachment

DISTRIBUTION:

- Brian Summers
- Glenn Bowman
- Ken Thompson
- Michael Henry
- Keith Golden
- Mike Lobdell
- Angela Alexander
- Paul Liles
- Bryant Poole
- BOARD MEMBER

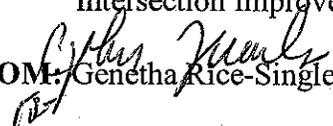
**DEPARTMENT OF TRANSPORTATION
STATE OF GEORGIA**

INTERDEPARTMENTAL CORRESPONDENCE

FILE: P.I. No. 0006932, Rockdale County
STP-0006-00(932)
Klondike Road/McDaniel Mill Road/Hurst Road-
Intersection Improvements

OFFICE: Preconstruction

DATE: July 10, 2007

FROM:  Genetha Rice-Singleton, Assistant Director of Preconstruction

TO: David E. Studstill, Jr., P.E., Chief Engineer

SUBJECT: PROJECT CONCEPT REPORT

This project is the Klondike Road/McDaniel Mill Road/Hurst Road intersection improvements in western Rockdale County. The existing intersection is five-legged with five-way stop control. McDaniel Mill Road is a two lane north-south facility that connects to the I-20 frontage road in the north to Smyrna Road in the south. Klondike Road is a two lane east-west facility that connects Conyers via the I-20/West Avenue Interchange with DeKalb County. Hurst Road is a two lane east-west facility that begins at the intersection with McDaniel Mill Road and Klondike Road and continues west into DeKalb County, ultimately intersecting Turner Hill Road. As the area grows in population and traffic with numerous subdivisions being constructed in nearby areas in both Rockdale and DeKalb Counties, this intersection will experience increasing congestion and potential for accidents. The accident information from 2004 to 2006 indicates a total of ten accidents within the project limits.

The proposed project will realign the approaches of the existing five-legged intersection to create a four-legged intersection that is ADA compliant and with a better intersection (skew) angle. Hurst Road will be relocated to intersect Klondike Road via an alignment that follows the designated right-of-way immediately east of Castle Point subdivision. This new intersection with Hurst Road will be located 700' southwest of the existing intersection. Traffic will be maintained during construction.

Environmental concerns include requiring a Categorical Exclusion will be prepared; a Public hearing is not required; Time saving procedures is appropriate.

P.I. No. 0006932, Rockdale County
July 10, 2007

The estimated costs for this project are:

	<u>PROPOSED</u>	<u>APPROVED</u>	<u>FUNDING</u>	<u>PROG DATE</u>
Construction (includes E&C)	\$ 1,331,000	\$ 591,000	L230	2009
Right-of-way & utilities	Local	Local		

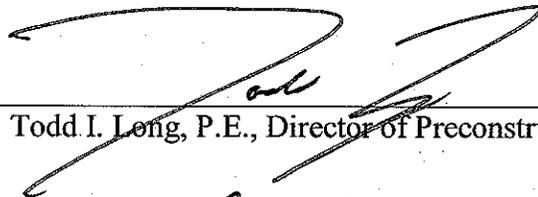
* PMA signed Rockdale do PE & utilities/ ROW and CST to be done by future agreements.

I recommend this project concept be approved.

GRS: JDQ

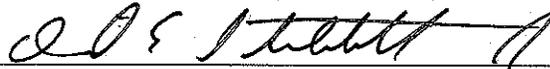
Attachment

CONCUR



Todd I. Long, P.E., Director of Preconstruction

APPROVED



David E. Studstill, Jr., P.E., Chief Engineer

PRECONSTRUCTION STATUS REPORT

PROJ ID	COUNTY	DESCRIPTION	MGMT. ROW DATE	SCHED DATE	MGMT. LET DATE
0006932	Rockdale	CR 57/KLONDIKE ROAD @ CR 62/MCDANIEL MILL ROAD/HURST ROAD		Oct-10	

CSSTP-0006-00(932) **FIELD DIST:** 7
 TIP #: RO-237 **TWIN:** US:
 MPO: Atlanta TMA **EST DATE:**
MODEL YR: 2010
PROJ MGR: Lobdell, Mike **PROJ LENGTH:** 0.40
PROG Safety **TYPE WORK:** Intersection Improvement
TYPE:
CONCEPT: **LET RESP:** LOC

Phase	Approved	Proposed	Cost	Fund	Status
PE	LOCL	LOCL	50,000.00	LOC	PRECST
ROW	LOCL	LOCL	150,000.00	LOC	PRECST
CST	2009	2009	591,000.00	L230	PRECST

Congressional Districts: 13

SCHED START	SCHED FINISH	ACTIVITY	ACTUAL START	ACT/EST FINISH	PCT	DISTRICT COMMENTS
		Define Project Concept	10/16/06	5/18/07	45	ROCKDALE (1/11/06) CONCEPT DEVELOPMENT TO BEGIN SOON. (10/24/06) MET W/COUNTY & CONSULTANT. EXPECT CONCEPT & SCHEDULE SOON. (1/18/07) CONCEPT DEV. UNDERWAY. TRAFFIC STUDY COMPLETE. (3/15/07) MTG. SCHED. TO DISCUSS TRAFFIC STUDY & ALTERNATIVES. REC'D SCHEDULE.
		Concept Meeting	6/5/07	6/5/07	100	
7/6/07	8/9/07	Concept Submittal and Review			0	
8/10/07	8/23/07	Receive Preconstruction Concept Approval			0	
8/23/07	8/23/07	Management Concept Approval Complete			0	
9/14/07	9/14/07	Public Information Open House Held			0	
8/24/07	2/15/08	Environmental Approval			9	
9/17/07	10/19/07	Field Surveys/SDE			0	
10/24/07	11/28/08	Preliminary Plans			0	
8/24/07	9/28/07	Underground Storage Tanks			0	
12/31/07	3/14/08	404 Permit Obtainment			0	
12/22/08	12/22/08	PFPR Inspection			0	
1/27/09	4/20/09	R/W Plans Preparation			0	
6/16/09	6/19/09	R/W Plans Final Approval			0	
1/27/09	1/29/09	L & D Report Development and Approval			0	
6/22/09	8/11/10	R/W Acquisition			0	
11/9/09	11/20/09	Stake R/W			0	
1/27/09	2/6/09	Soil Survey			0	
1/30/09	12/3/09	Final Design			0	
12/25/09	12/25/09	FFPR Inspection			0	
1/8/10	1/21/10	FFPR Response			0	

BIKE PROVISIONS INCLUDED?: N **MEASUREMENT** E **CONSULTANT:** L **UT EST:**

Bridge: NO BRIDGE REQUIRED
Design: GLF/DR
EIS: FAVORS
LGPA: PMA SGN ROCKDALE DO PE & UTIL|ROW & CST TO BE DONE BY FUTURE AGREEMENTS 3-14-06.
Prog. Develop: PROGRAMMED AT THE REQUEST OF ARC - FY05
EMG: SAFETY (INTERSECTION IMPROVEMENT); PE BY COUNTY

R/W INFORMATION:
PREL PARCEL CT: **TOTAL PARCEL CT:** **ACQUIRED BY:** LOC **ACQ MGR:**
UNDER-REVIEW CT: **RELEASED** **OPT-PEND CT:** **DEEDS CT:** **COND-PEND CT:** **COND-FILED CT:**
RW CERT DT: **ACQUIRED CT:** **RELOCATION CT:**

DEPARTMENT OF TRANSPORTATION
STATE OF GEORGIA

DISTRICT 7

PROJECT CONCEPT REPORT

Project Number: STP-0006-00(932)

County: Rockdale

P. I. Number: 0006932

Federal Route Number: N/A

State Route Number: N/A

Klondike Road/McDaniel Mill Road/Hurst Road
Intersection Improvement

See Location Sketch on Next Page

Recommendation for approval:

DATE 6/12/07

[Signature]
Project Manager

DATE 6/13/07

[Signature]
District Engineer

The concept as presented herein and submitted for approval is consistent with that which is included in the Regional Transportation Plan (RTP) and the State Transportation Improvement Program (STIP).

DATE _____

State Transportation Planning Administrator

DATE _____

Office of Financial Management Administrator

DATE _____

State Environmental/Location Engineer

DATE _____

State Traffic Safety & Design Engineer

DATE 7/13/07

[Signature]
Project Review Engineer

DEPARTMENT OF TRANSPORTATION
STATE OF GEORGIA

DISTRICT 7

PROJECT CONCEPT REPORT

Project Number: STP-0006-00(932)

County: Rockdale

P. I. Number: 0006932

Federal Route Number: N/A

State Route Number: N/A

Klondike Road/McDaniel Mill Road/Hurst Road
Intersection Improvement

See Location Sketch on Next Page

Recommendation for approval:

DATE 6/12/07

Walt J. ...
Project Manager

DATE 6/13/07

Ben ...
District Engineer

The concept as presented herein and submitted for approval is consistent with that which is included in the Regional Transportation Plan (RTP) and the State Transportation Improvement Program (STIP).

DATE 6/19/07

Angela S. ...
State Transportation Planning Administrator

DATE _____

Office of Financial Management Administrator

DATE _____

State Environmental/Location Engineer

DATE _____

State Traffic Safety & Design Engineer

DATE _____

Project Review Engineer

**DEPARTMENT OF TRANSPORTATION
STATE OF GEORGIA**

INTERDEPARTMENT CORRESPONDENCE

FILE: P.I. No. 0006932

OFFICE: Environment/Location

DATE: June 26, 2007

FROM: 
Harvey D. Keepler, State Environmental/Location Engineer

TO: Genetha Rice-Singleton, Assistant Director of Preconstruction

SUBJECT: **PROJECT CONCEPT REPORT**
STP-0006-00(932) / Rockdale County
Klondike Rd. / McDaniel Mill Rd. / Hurst Rd. Intersection Improvement

The above subject concept report has been reviewed. This Office has no comment at this time.

If you have any questions, please contact me at (404) 699-4401.

HDK/lc

Attachment

cc: Brian Summers
Bryant Poole
Keith Golden
Angela Alexander
Jamie Simpson

DEPARTMENT OF TRANSPORTATION
STATE OF GEORGIA

DISTRICT 7

PROJECT CONCEPT REPORT

Project Number: STP-0006-00(932)

County: Rockdale

P. I. Number: 0006932

Federal Route Number: N/A

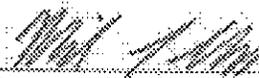
State Route Number: N/A

Klondike Road/McDaniel Mill Road/Hurst Road
Intersection Improvement

See Location Sketch on Next Page.

Recommendation for approval:

DATE: 6/12/07


Project Manager

DATE: 6/13/07


District Engineer

The concept as presented herein and submitted for approval is consistent with that which is included in the Regional Transportation Plan (RTP) and the State Transportation Improvement Program (STIP).

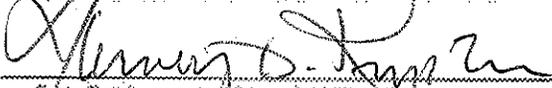
DATE: _____

State Transportation Planning Administrator

DATE: _____

Office of Financial Management Administrator

DATE: 6.25.07


State Environmental/Location Engineer

DATE: _____

State Traffic Safety & Design Engineer

DATE: _____

Project Review Engineer

WCS
6-15-07

DEPARTMENT OF TRANSPORTATION
STATE OF GEORGIA

DISTRICT 7

PROJECT CONCEPT REPORT

Project Number: STP-0006-00(932)

County: Rockdale

P. I. Number: 0006932

Federal Route Number: N/A

State Route Number: N/A

Klondike Road/McDaniel Mill Road/Hurst Road
Intersection Improvement

See Location Sketch on Next Page

Recommendation for approval:

DATE 6/12/07

Neil Smith
Project Manager

DATE 6/13/07

Greg Hood
District Engineer

The concept as presented herein and submitted for approval is consistent with that which is included in the Regional Transportation Plan (RTP) and the State Transportation Improvement Program (STIP).

DATE _____

State Transportation Planning Administrator

DATE 7-2-07

James T. Simpson
Financial Management Administrator

DATE _____

State Environmental/Location Engineer

DATE _____

State Traffic Safety & Design Engineer

DATE _____

Project Review Engineer

DEPARTMENT OF TRANSPORTATION
STATE OF GEORGIA

DISTRICT 7

PROJECT CONCEPT REPORT

Project Number: STP-0006-00(932)

County: Rockdale

P. I. Number: 0006932

Federal Route Number: N/A

State Route Number: N/A

Klondike Road/McDaniel Mill Road/Hurst Road
Intersection Improvement

See Location Sketch on Next Page

Recommendation for approval:

DATE 6/12/07

Walt A. M...
Project Manager

DATE 6/13/07

Raymond...
District Engineer

The concept as presented herein and submitted for approval is consistent with that which is included in the Regional Transportation Plan (RTP) and the State Transportation Improvement Program (STIP).

DATE _____

State Transportation Planning Administrator

DATE _____

Office of Financial Management Administrator

DATE _____

State Environmental/Location Engineer

DATE 7.2.07

Theresa...
State Traffic Safety & Design Engineer

DATE _____

Project Review Engineer

SCORING RESULTS AS PER MOG 2440-2

Project Number: STP-0006-00(932)		County: Rockdale		PI No.: 0006932	
Report Date: June 13,2007		Concept By: DOT Office: District 7 Consultant—Qk4			
<input checked="" type="checkbox"/> Concept Stage					
Project Type: Choose One From Each Column		<input type="checkbox"/> Major <input checked="" type="checkbox"/> Minor	<input type="checkbox"/> Urban <input checked="" type="checkbox"/> Rural	<input type="checkbox"/> ATMS <input type="checkbox"/> Bridge Replacement <input type="checkbox"/> Building <input type="checkbox"/> Interchange Reconstruction <input checked="" type="checkbox"/> Intersection Improvement <input type="checkbox"/> Interstate <input type="checkbox"/> New Location <input type="checkbox"/> Widening & Reconstruction <input type="checkbox"/> Miscellaneous	
FOCUS AREAS	SCORE	RESULTS			
Presentation	100				
Judgment	100				
Environmental	100				
Right of Way	100				
Utility	100				
Constructability	100				
Schedule	100				

NOTICE OF LOCATION AND DESIGN APPROVAL

STP-0006-00(932), Rockdale County
P. I. No. 0006932

Notice is hereby given in compliance with Georgia Code 22-2-109 that the Georgia Department of Transportation has approved the Location and Design of this project.

The date of Location Design Approval is

July 20, 2007

The project is located approximately one mile west of the City Limits of Conyers, Georgia. The logic for establishing termini is due to the improvement of the vertical and horizontal alignments and appropriate tie in locations. The project increases the intersection angle from 45 degrees to 61 degrees, reducing the 5-legged intersection to 4 legs, and improving horizontal and vertical alignments. Hurst Road would be relocated to intersect Klondike Road via an alignment that follows the designated right-of-way immediately east of Castle Point subdivision. This new intersection with Hurst Road would be located approximately 760 feet southwest of the existing intersection. This project lies within land lots 206 and 207 of the 16th District of Rockdale County, Georgia.

Drawings or maps or plats of the proposed project, as approved, are on file and are available for public inspection at the Georgia Department of Transportation.

*Thomas Parker, Area Engineer
Georgia Department of Transportation
805 George Luther Drive
Decatur, Georgia 30032
E-mail: thomas.parker@dot.state.ga.us
Phone: (404) 299-4389*

Any interested party may obtain a copy of the drawings or maps or plats or portions thereof by paying a nominal fee and requesting in writing to:

*Mike Lobdell, District Preconstruction Engineer
Georgia Department of Transportation
5025 New Peachtree Road
Chamblee, Georgia 30341
E-mail: mike.lobdell@dot.state.ga.us
Phone: (770) 986-1257*

Any written request or communication in reference to this project or notice SHOULD include the Project and P.I. Numbers as noted at the top of this notice.

DEPARTMENT OF TRANSPORTATION
STATE OF GEORGIA

DISTRICT 7

PROJECT CONCEPT REPORT

Project Number: STP-0006-00(932)

County: Rockdale

P. I. Number: 0006932

Federal Route Number: N/A

State Route Number: N/A

**Klondike Road/McDaniel Mill Road/Hurst Road
Intersection Improvement**

See Location Sketch on Next Page

Recommendation for approval:

DATE 6/12/07

Walt Smith
Project Manager

DATE 6/13/07

Ray Hood
District Engineer

The concept as presented herein and submitted for approval is consistent with that which is included in the Regional Transportation Plan (RTP) and the State Transportation Improvement Program (STIP).

DATE _____

State Transportation Planning Administrator

DATE _____

Office of Financial Management Administrator

DATE _____

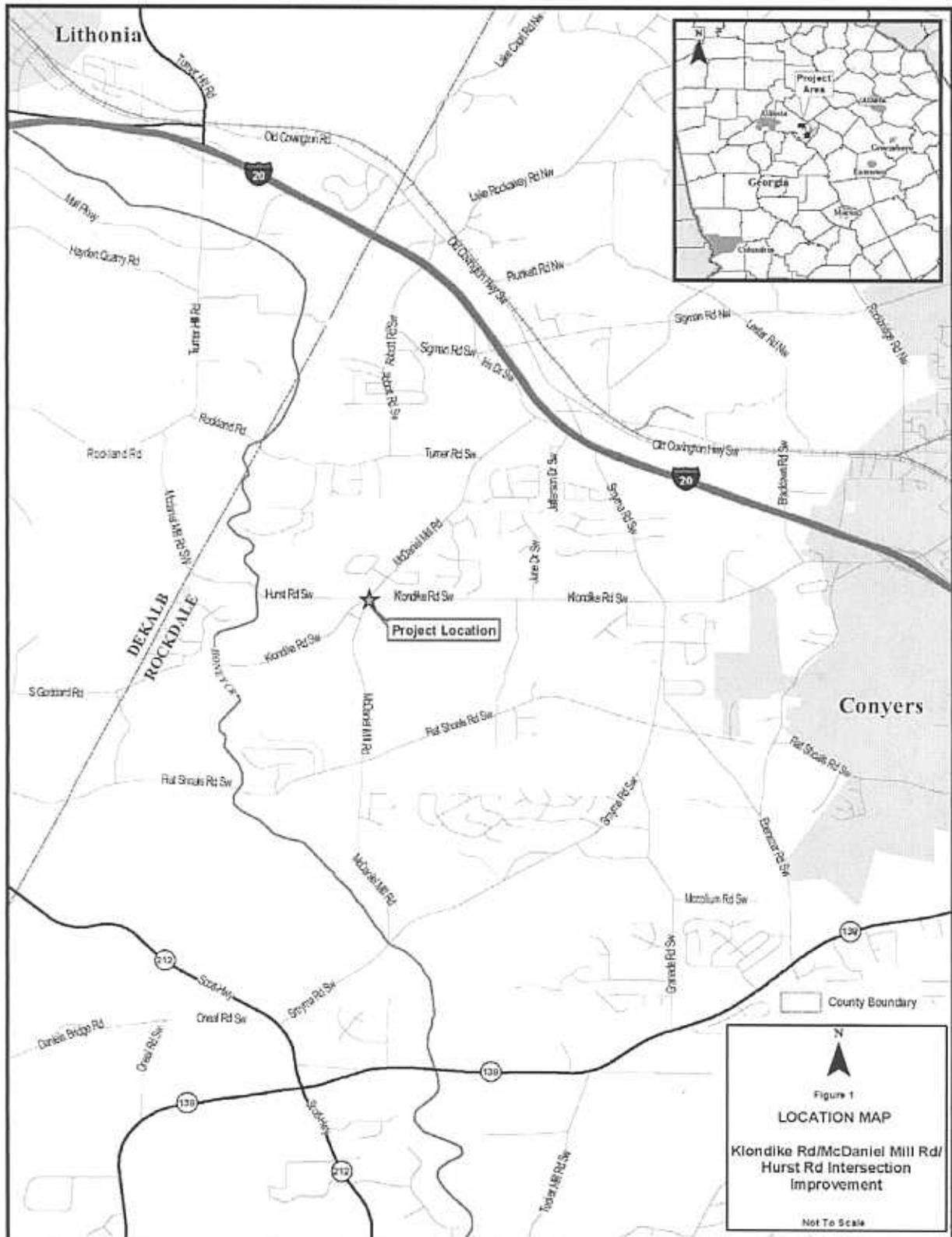
State Environmental/Location Engineer

DATE _____

State Traffic Safety & Design Engineer

DATE _____

Project Review Engineer



Need and Purpose:

Project STP-0006-00(932) will realign the approaches of an existing rural five-legged intersection in western Rockdale County to create a four-legged intersection that is ADA compliant and with a better intersection (skew) angle. The intersection is Klondike Road @ McDaniel Mill Road @ Hurst Road. The surrounding area is currently rural but has begun to transition to urban/suburban lane uses as a large subdivision is being constructed along Klondike Road southwest of the intersection and a fire station is proposed to be constructed along Hurst Road west of the intersection.

McDaniel Mill Road is a two-lane north-south facility that connects the I-20 frontage road in the north to Smyrna Road in the south. Klondike Road is a two-lane east-west facility that connects Conyers via the I-20/West Avenue Interchange with Dekalb County. Hurst Road is a two-lane east-west facility that begins at its intersection with McDaniel Mill Road and Klondike Road and continues west into Dekalb County, ultimately connecting with Turner Hill Road.

The existing intersection is five-legged with five-way stop sign control. The existing geometry is deficient with a 45 degree intersection (skew) angle between Klondike Road and McDaniel Mill Road, with both McDaniel Mill and Klondike Roads continuing through the intersection on curved alignments. Due to the combined effects of the existing curvature of Klondike Road through the intersection, and the flat skew angle, the interior area of the intersection for vehicles following Klondike Road, is up to 150-foot long. There is no channelization or pavement marking provided to aid motorists traveling the intersection in any direction. The presence of the fifth leg compounds driver confusion and increases the accident potential, especially considering the existing geometric layout.

As this area grows in population and traffic with numerous subdivisions being constructed in nearby areas in both Rockdale and Dekalb Counties, this intersection will experience increasing congestion and potential for accidents. This project is included as part of the RTP developed by the Atlanta Regional Commission (Project RO-237). This project is part of the 2003 Conyers/Rockdale County Comprehensive Transportation Plan. This project proposes to improve safety and operational efficiency by relocating the Hurst Road leg away from this intersection and by improving the intersection geometry of the remaining four legs.

There is one historic resource located in the project area. This resource is the New Hope Church, located in the SE quadrant of the Klondike Rd./McDaniel Mill Rd. intersection. The church is likely eligible due to its close proximity to the Arabia Mountain area and its association with the quarrying industry in the area and it is similar to the contributing buildings within the nearby Arabia Mountain Historic District.

Project Location:

This project is located in western Rockdale County, approximately 3 miles west of the City of Conyers and less than one mile east of the Dekalb County line. This project lies within land lots 206 and 207 of the 16th District of Rockdale County, Georgia

Accident Data:

The accident information from 2004 to 2006 received included a total of twenty-one accidents, ten accidents within the project limits. Four of the accidents were caused by deer, four accidents were the result of striking a fixed object, and two accidents were right angle collisions. One of the right angle collisions occurred in the intersection when a vehicle failed to stop at the stop sign. The other right angle collision occurred 400 feet east of the intersection on Klondike when vehicle one attempted to pass in a no passing zone as vehicle two attempted a left turn into a residence.

The ten accidents within the project limits convert to an accident rate of 695 per 100 million vehicle miles. This total compares with 509 accidents per 100 million vehicle miles, which is the 2004 statewide

average rate for an urban minor arterial that is not on the NHS (corresponding to Klondike Road).

Description of the Proposed Project:

The project is located approximately one mile west of the City Limits of Conyers, Georgia. The logic for establishing termini is due to the improvement of the vertical and horizontal alignments and appropriate tie in locations. The concept proposes to satisfy the Need and Purpose by increasing the intersection angle from 45 degrees to 61 degrees, reducing the 5-legged intersection to 4 legs, and improving horizontal and vertical alignments. Hurst Road would be relocated to intersect Klondike Road via an alignment that follows the designated right-of-way immediately east of Castle Point subdivision. This new intersection with Hurst Road would be located approximately 760 feet southwest of the existing intersection.

Is the project located in a Non-attainment area? Yes No

This project is air quality exempt because it does not increase capacity.

PDP Classification: Major Minor

Federal Oversight: Full Oversight (), Exempt(X), State Funded(), or Other ()

Federal Functional Classification: McDaniel Mill Road – Urban Collector Street
Klondike Road – Urban Minor Arterial

U. S. Route Number(s): N/A **State Route Number(s):** N/A

Traffic (AADT):

Klondike Road
Opening Year: (2009) 3,800 Design Year: (2029) 7,500

McDaniel Mill Road
Opening Year: (2009) 4,750 Design Year: (2029) 9,300

Hurst Road
Opening Year: (2009) 1,200 Design Year: (2029) 2,350

Existing design features:

Klondike Road

- Typical Section: Rural facility with two 10' lanes and variable shoulder widths (2' to 6')
- Posted speed: 45 MPH Minimum curve radius: 1040 feet
- Maximum grade: 4.4 %
- Width of right of way: 80 feet
- Major structures: none
- Major interchanges or intersections along the project: Klondike Road/Hurst Road/
McDaniel Mill Road
- Existing length of roadway: N/A

McDaniel Mill Road

- Typical Section: Rural facility with two 10' lanes and variable shoulder widths (2' to 6')
- Posted speed: 45 MPH Minimum curve radius: 1200 feet
- Maximum grade: 10.5 %
- Width of right of way: 80-100 feet
- Major structures: none
- Major interchanges or intersections along the project: Klondike Road/Hurst Road/
McDaniel Mill Road
- Existing length of roadway: N/A

Hurst Road

- Typical Section: Rural facility with two 9' lanes and variable shoulder widths (1' to 6')
- Posted speed: 25 MPH Minimum curve radius: N/A
- Maximum grade: 6.2 %
- Width of right of way: 50 feet
- Major structures: none
- Major interchanges or intersections along the project: Klondike Road/Hurst Road/
McDaniel Mill Road
- Existing length of roadway: N/A

Proposed Design Features:

Klondike Road

- Proposed typical section(s): Two 12' through lanes and 12' left-turn lane with 8' rural shoulders (2' paved)
- Proposed Design Speed Mainline 35 mph
- Proposed Maximum grade Mainline 5.82% Maximum grade allowable 8 %.
- Proposed Maximum grade Side Street N/A% Maximum grade allowable N/A %.
- Proposed Maximum grade driveway 25% Residential, 11% Commercial
- Proposed Minimum radius of curve 371 feet.
- Minimum radius allowable: 371 feet
- Right of way
 - Width: variable 80' – 150'.
 - Easements: Temporary (X), Permanent (), Utility (), Other ().
 - Type of access control: Full (), Partial (), By Permit (X), Other ().
 - Number of parcels: 9 Number of displacements: None
- Structures:
 - Bridges: None
 - Retaining walls: None expected
- Major interchanges or intersections along the project: Klondike Road @ McDaniel Mill Road, Klondike Road @ Hurst Road (proposed)
- Traffic control during construction: Traffic will be maintained during construction.

McDaniel Mill Road

- Proposed typical section(s): Two 12' through lanes and a 12' left-turn lane with 8' rural shoulders (2' paved)
- Proposed Design Speed Mainline 45 mph
- Proposed Maximum grade Mainline 6.73% Maximum grade allowable 9 %.
- Proposed Maximum grade Side Street N/A% Maximum grade allowable N/A %.
- Proposed Maximum grade driveway 25%
- Proposed Minimum radius of curve 1800 feet.
- Minimum radius allowable: 711 feet
- Right of way
 - Width: variable 80' – 130'
 - Easements: Temporary (X), Permanent (), Utility (), Other ()
 - Type of access control: Full (), Partial (), By Permit (X), Other ()
 - Number of parcels: 8 Number of displacements: None
- Structures:
 - Bridges: None
 - Retaining walls: None expected
- Major interchanges or intersections along the project: McDaniel Mill Road @ Klondike Road
- Traffic control during construction: Traffic will be maintained during construction.

Hurst Road

- Proposed typical section(s): Two 12' through lanes with 8' rural shoulders (2' paved)
- Proposed Design Speed Mainline 30 mph
- Proposed Maximum grade Mainline 2.95% Maximum grade allowable 9 %.
- Proposed Maximum grade Side Street N/A% Maximum grade allowable N/A %.
- Proposed Maximum grade driveway 25%
- Proposed Minimum radius of curve 334 feet.
- Minimum radius allowable: 250 feet
- Right of way
 - Width: 60'
 - Easements: Temporary (X), Permanent (), Utility (), Other ()
 - Type of access control: Full (), Partial (), By Permit (X), Other ()
 - Number of parcels: 1 Number of displacements: None
- Structures:
 - Bridges: None
 - Retaining walls: None expected
- Major interchanges or intersections along the project: Existing Hurst Road @ Relocated Hurst Road, Relocated Hurst Road @ Klondike Road
- Traffic control during construction: Roadway is on new alignment

Klondike Road/McDaniel Mill Road/Hurst Road

- Design Exceptions to controlling criteria anticipated:

	<u>UNDETERMINED</u>	<u>YES</u>	<u>NO</u>
HORIZONTAL ALIGNMENT:	()	()	(X)
ROADWAY WIDTH:	()	()	(X)
SHOULDER WIDTH:	()	()	(X)
VERTICAL GRADES:	()	()	(X)
CROSS SLOPES:	()	()	(X)
STOPPING SIGHT DISTANCE:	()	()	(X)
SUPERELEVATION RATES:	()	()	(X)
HORIZONTAL CLEARANCE:	()	()	(X)
SPEED DESIGN*:	(X)	()	()
VERTICAL CLEARANCE:	()	()	(X)
BRIDGE WIDTH:	()	()	(X)
BRIDGE STRUCTURAL CAPACITY:	()	()	(X)

* Design speed on Klondike Rd. is less than current posted speed.
 Posted speed may be lowered prior to construction of project.

- Design Variances: A variance will be needed for an intersection angle of 61 degrees which is less than 70 degrees.
- Environmental concerns: - None anticipated
- Level of environmental analysis:
 - Are Time Savings Procedures appropriate? Yes (X), No (),
 - Categorical exclusion (X),
 - Programmatic Categorical Exclusion (),
 - Environmental Assessment/Finding of No Significant Impact (FONSI) (), or
 - Environmental Impact Statement (EIS) ().
- Utility involvements:
 - Atlanta Gas Light Company
 - BellSouth Telecommunications
 - Comcast
 - Rockdale County Water Resources
 - Snapping Shoals EMC
 - Walton EMC

Project responsibilities:

- | | |
|--------------------------------|-----------------------------------|
| ○ Design, | Rockdale County/Qk4 |
| ○ Right of Way Acquisition, | Rockdale County |
| ○ Relocation of Utilities, | Rockdale County & Local Utilities |
| ○ Letting to contract, | Rockdale County |
| ○ Supervision of construction, | Rockdale County |
| ○ Providing material pits, | Contractor |
| ○ Providing detours. | N/A |

Coordination

- Kick-off Meeting – Held on August 10, 2006 in the Rockdale County Conference Room
- Coordination Meeting – Held on October 24, 2006 in the District 7 Conference Room
- Coordination Meeting - Held on March 28, 2007 in the District 7 Conference Room
- Concept Team Meeting - Held on May 25, 2007 in the District 7 Conference Room

Scheduling – Responsible Parties' Estimate*:

- Time to complete the environmental process*: 12 Months.
- Time to complete preliminary construction plan*s: 5 Months.
- Time to complete right of way plans: 5 Months.
- Time to complete final construction plans* : 6 Months.
- Time to complete to purchase right of way* : 12-15 Months.

* Note: These activities are to be done concurrently where possible.

Alternatives Considered:

A single-lane roundabout alternative was considered. This alternative was not selected due to the proximity of the fire station access. It would also cause a greater impact to the nearby historic resource. The northbound McDaniel Mill Road approach on the roundabout alternative encroached within the historic boundary while the recommended alternative does not.

Attachments:

1. Notice of Location and Design Approval
2. Cost Estimate
3. Typical sections
4. Concept Plan
5. Traffic Memo – Dated 3/2/07 (appendices to this report available upon request)
6. Concept Team Meeting Minutes: May 25, 2007
7. Coordination Meeting Minutes: March 28, 2007
8. Coordination Meeting Minutes: October 24, 2006
9. Initial Concept Alternative Summary Memorandum: September 7, 2006

NOTICE OF LOCATION AND DESIGN APPROVAL

STP-0006-00(932), Rockdale County

P. I. No. 0006932

Notice is hereby given in compliance with Georgia Code 22-2-109 that the Georgia Department of Transportation has approved the Location and Design of this project.

The date of Location Design Approval is _____

The project is located approximately one mile west of the City Limits of Conyers, Georgia. The logic for establishing termini is due to the improvement of the vertical and horizontal alignments and appropriate tie in locations. The project increases the intersection angle from 45 degrees to 61 degrees, reducing the 5-legged intersection to 4 legs, and improving horizontal and vertical alignments. Hurst Road would be relocated to intersect Klondike Road via an alignment that follows the designated right-of-way immediately east of Castle Point subdivision. This new intersection with Hurst Road would be located approximately 760 feet southwest of the existing intersection. This project lies within land lots 206 and 207 of the 16th District of Rockdale County, Georgia.

Drawings or maps or plats of the proposed project, as approved, are on file and are available for public inspection at the Georgia Department of Transportation.

*Thomas Parker, Area Engineer
Georgia Department of Transportation
805 George Luther Drive
Decatur, Georgia 30032
E-mail: thomas.parker@dot.state.ga.us
Phone: (404) 299-4389*

Any interested party may obtain a copy of the drawings or maps or plats or portions thereof by paying a nominal fee and requesting in writing to:

*Mike Lobdell, District Preconstruction Engineer
Georgia Department of Transportation
5025 New Peachtree Road
Chamblee, Georgia 30341
E-mail: mike.lobdell@dot.state.ga.us
Phone: (770) 986-1257*

Any written request or communication in reference to this project or notice SHOULD include the Project and P.I. Numbers as noted at the top of this notice.

**Klondike Road / McDaniel Mill Road / Hurst Road
Conceptual Cost Estimate 6/7/07**

Section Lump Items					
Item Number	Quantity	Units	Unit Price	Item Description	Cost
1000	1	LS	100000	TRAFFIC CONTROL -	100,000.00
0100	1	LS	200000	GRADING COMPLETE -	300,000.00
Section Sub Total					\$400,000.00
Section Erosion Control					
Item Number	Quantity	Units	Unit Price	Item Description	Cost
EROSION CONTROL TOTAL					30,000.00
Section Sub Total					\$30,000.00
Section Base and Paving					
Item Number	Quantity	Units	Unit Price	Item Description	Cost
BASE AND PAVING TOTAL					720,000.00
Section Sub Total					\$720,000.00
Section Signing and Marking					
Item Number	Quantity	Units	Unit Price	Item Description	Cost
SIGNING AND MARKING TOTAL					25,000.00
Section Sub Total					\$25,000.00
Section Drainage					
Item Number	Quantity	Units	Unit Price	Item Description	Cost
DRAINAGE TOTAL					25,000.00
Section Sub Total					\$25,000.00
Section Miscellaneous					
Item Number	Quantity	Units	Unit Price	Item Description	Cost
Miscellaneous					10,000.00
Section Sub Total					\$10,000.00
Total Estimated Cost					\$1,210,000.00
Subtotal Construction Cost					
E&C Rate (10 %)					\$121,000.00
Total Construction Cost					\$1,331,000.00

Right-of-Way Summary (no costs included)	
Total Disturbed Area (area within construction limits)	6.78 acres
Total Disturbed Area Outside Existing Right-of-Way	1.89 acres
Approximate Number of Parcels Affected	14 each



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MEMORANDUM

TO: Shannon Hebb
FROM: Jeff Dyer
SUBJECT: Build and Design Year Traffic Estimates / Level of Service Summary
DATE: 3/2/07
PROJECT: 05609 - Klondike Road @ McDaniel Mill Road / Hurst Road

Build and Design Year Peak hour Traffic Projections

The assumed opening year for this project is 2009. In order to arrive at projected traffic volumes for the "opening" year, generated volumes from three subdivisions within 3 miles of the project either under construction or soon to be under construction plus three years of compounded traffic growth have been added to the existing turning movement volumes.

The three nearby subdivisions include Castle Point (73 lots for two phases) Klondike Heights (60 lots) and Knightsbridge (18 lots). Trips have been generated onto the local roadway network using equations from the *ITE Trip Generation Manual, 7th Edition*; with traffic distribution based on existing traffic patterns. These subdivisions add 135 total trips to the roadway network in the a.m. peak hour and 172 trips in the p.m. peak hour. The existing traffic volumes have been increased by 15.76% to account for three years of compounded traffic growth of 5% per year.

For the purpose of this study, 2009 opening year traffic volumes have been increased by 94.89% to account for 2029 (design year) traffic projections. This assumes a 5% compounded annual increased for the first seven years, 3% compounded annual growth for the following seven years, and 2% compounded annual growth for the final six years. These accounts for the likelihood that the traffic growth rate will be the highest in the early years, when most land is still undeveloped, and that growth percentages will tend to taper off as years go by and there is less land available for new development.

Appendix A includes existing turning movement counts for both the a.m. and p.m. peak periods for the existing 5-legged intersection of Klondike Road @ McDaniel Mill Road / Hurst Road, plus the 24-hour approach counts for each leg of the intersection.

Each concept alternative assumes that the Hurst Road approach will be relocated 700 feet further west along Klondike Road in order to remove it from the intersection with McDaniel Mill Road. The traffic projections for 2009 and 2029 reflect the removal of that approach by including both intersections in the study area.



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Appendix B contains the 2009 a.m. and p.m. peak hour traffic projections for the separated intersections of Klondike Road @ McDaniel Mill Road and Klondike Road @ Hurst Road. Appendix C contains the 2029 a.m. and p.m. peak hour traffic projections for the same two intersections.

Derivation of Truck Percentages

Each intersection approach was counted for 24-hours for use in signal warrant analysis. As part of these counts, vehicular classifications were recorded. Busses, 2-Axle 6-Tire, 3-Axle Single and 4-Axle Single are counted as Single Unit (S.U.) trucks. All vehicles classified as double or larger are counted as combination trucks. Based on the total approach volumes, the total truck percentage (T) was found to be 6%, with 5% of that being S.U. trucks, and the remaining 1% being Combinations. Based on the types of land uses being constructed in this area (residential), truck percentages are not likely to increase over the next 20-years, in fact they may actually decrease as the area becomes more residential and less agricultural. However, it will be assumed that the truck percentage will remain unchanged.

Signal Warrant Analyses

Signal warrant analyses were computed using both the 70% tables and 100% tables. The location and circumstances for this intersection probably would probably meet criteria for the 70% tables, since the posted speeds are currently 45 MPH on the intersection legs, which is greater than 40 MPH, and the overall community is over 10,000 in population, when considering the population of Rockdale County as a whole, even though the immediate vicinity of the intersection is currently lightly developed.

The existing (2006) year, opening year (2009) and design year (2029) were evaluated using both sets of tables, plus the intermediate years of 2019 (both sets of tables) and 2014 (70% only) evaluated as well. The existing lane configuration for each approach was assumed, which is a single through lane. The eastbound Hurst Road approach volumes were combined with the eastbound Klondike Road approach volumes, since Hurst Road is proposed to terminate along Klondike Road west of the intersection with McDaniel Mill Road.

A 15% reduction was made for all McDaniel Mill Road approach volumes in order to allow for some of the right-turning vehicles to be able to turn on red. The 2006 approach volumes were as recorded in August 2006.

The 2009 approach volumes increased all 2006 approach volumes by 27% in order to account for three-year compounded growth plus the generated traffic from the three new subdivisions. All 2009 approach volumes were increased by an additional 28% in order to estimate 2014 volumes, and an additional 54% to account for 2019. For

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the design year of 2029, all 2009 approach volumes were increased by 95% in order to account for the 20 years of compounded growth.

Table 1 summarizes the warrant analysis for each year using the 100% tables for the three most common warrants. As can be seen in the table, no warrants are met for either 2006, 2009, or 2019, although by 2019, the volumes begin to approach meeting warrants 2 and 3. Warrants 2 and 3 are met for 2029, and warrant 1 is close to being met, even though it comes close to being met. Using the 100% tables and the volume growth assumptions described in this document, a signal would probably be warranted by the year 2024.

Table 1: Signal Warrant Summary – Klondike Road @ McDaniel Mill Road – 100% Tables

Warrant	Existing (2006)	Opening (2009)	Intermediate (2019)	Design (2029)
1 - 8-Hour Vehicular Volume	Not Met	Not Met	Not Met	Not Met
2 - 4-Hour Vehicular Volume	Not Met	Not Met	Not Met	Met
3 - Peak Hour	Not Met	Not Met	Not Met	Met

Table 2 summarizes the warrant analysis using the 70% tables for the same three warrants. As can be seen, a signal would still not be warranted by the opening year (2009), but would be warranted within five years (2014), with the warrants getting stronger through the succeeding years. Appendix D contains the signal warrant analysis worksheets for the three analysis years.

Table 2: Signal Warrant Summary – Klondike Road @ McDaniel Mill Road – 70% Tables

Warrant	Existing (2006)	Opening (2009)	Intermediate (2014)	Intermediate (2019)	Design (2029)
1 - 8-Hour Vehicular Volume	Not Met	Not Met	Not Met	Met	Met
2 - 4-Hour Vehicular Volume	Not Met	Not Met	Met	Met	Met
3 - Peak Hour	Not Met	Not Met	Met	Met	Met



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Level of Service Analysis (2009)

Level of service analysis using the 2009 volumes has been performed using *Highway Capacity Manual* (HCM) methodologies. More specifically at Klondike Road @ McDaniel Mill, methodologies for unsignalized 4-way stop control, unsignalized 2-way stop control and roundabouts have been used. Since no signal warrants were met using 2009 volumes, no signalized level of service has been estimated for 2009. Level of service has been estimated for 4-way stop control assuming no additional turn lanes (approximating No-Build, except that the Hurst Road traffic has been reallocated to the west approach of Klondike Road), and also assuming construction of exclusive left-turn lanes on all four approaches.

2-way stop control has been assumed with McDaniel Mill Road having the right-of-way, since it has higher traffic volumes than Klondike Road. In addition, left-turn lanes have been assumed for each approach. Klondike Road @ Hurst Road Connector has been analyzed with stop control on the Hurst Road Connector.

Finally, the capacity of a four-legged roundabout has been estimated using the *HCM* methodology. The roundabout capacity analysis methodology computes volume/capacity ratios for each approach using lower bound estimates based on a more conservative assumption on an acceptable gap that drivers will accept and an upper bound estimate using less conservative assumptions. The roundabout type is assumed to be single-lane urban. Table 3 summarizes the level of service analysis for unsignalized 4-way and 2-way stop control. Table 4 summarizes the capacity analysis of the roundabout. Appendix E contains the level of service/capacity printouts that the table entries are based on.

Table 3: Intersection Level of Service Summary, 2009 Volumes

Traffic Control	Signalized?	Time Period	Worst Approach (2-way.)	Level of Service	Approach Delay/veh (2-way) /Inters. Delay (4-way) - Seconds
4-way stop – no added lanes	No	Am pk	-	C	15.47
4-way stop – added LT lanes	No	Am pk	-	B	13.97
2-way stop– added LT lanes	No	Am pk	EB LT	E	43.4
2-way stop – Klondike Rd. @ Hurst Rd. Connector	No	Am pk	SB	B	11.8
4-way stop – no added lanes	No	Pm pk	-	C	18.19
4-way stop – added LT lanes	No	Pm Pk	-	C	15.82
2-way stop– added LT lanes	No	Pm pk	WB LT	D	30.1
2-way stop – Klondike Rd. @ Hurst Rd. Connector	No	Pm pk		B	11.7



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Table 4: Volume/Capacity Ratio Summary, Roundabout, 2009 Volumes

	Time Period	Eastbound	Westbound	Northbound	Southbound
Upper Bound	a.m. peak	0.21	0.22	0.35	0.19
Lower Bound	a.m. peak	0.26	0.28	0.42	0.23
Upper Bound	p.m. peak	0.23	0.20	0.15	0.39
Lower Bound	p.m. peak	0.29	0.24	0.19	0.47

Table 3 shows that Klondike Road @ McDaniel Mill Road would operate with an acceptable level of service with four-way stop control whether or not left-turn lanes were added. The added left-turn lanes would improve overall level of service to "B" from "C", but multiple approach lanes on 4-way stop controlled intersections tend to increase driver confusion and increase the potential for accidents. Even though the existing traffic control shows acceptable level of service, the level of service and capacity of this intersection is probably overstated if the existing geometry remains, since the level of service methodology doesn't take into account the flat intersection angle or poor horizontal alignment.

Operating Klondike Road @ McDaniel Mill Road with 2-way stop control would result in level of service "E" in the a.m. peak hour and "D" in the p.m. peak hour. Table 4 shows that constructing this intersection as a roundabout would result in volumes well below the capacity of the intersection, assuming either the lower bound or upper-bound capacities. The highest v/c ratio would be 0.47, which is for the southbound approach.

Level of Service Analysis (2029)

Level of service has also been estimated for the 2029 volume projections. The same traffic control assumptions have been used for 2029 as for 2009, except that two signalized scenarios have been added for Klondike Road @ McDaniel Mill Road. One signalized scenario assumes the construction of exclusive left-turn lanes on all four approaches, the other adds exclusive right-turn lanes for each approach.

Table 5 summarizes the level of service analysis for unsignalized 4-way and 2-way stop control as well as signalization. Table 6 summarizes the capacity analysis of the roundabout. Appendix F contains the level of service/capacity printouts that the table entries are based on.



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Table 5: Intersection Level of Service Summary, 2029 Volumes

Traffic Control	Signalized?	Time Period	Worst Approach (2-way.)	Level of Service	Approach Delay/veh (2-way) /Inters. Delay (4-way/sig) - Seconds
4-way stop – no added lanes	No	Am pk	-	F	209.91
4-way stop – added LT lanes	No	Am pk	-	F	84.46
2-way stop– added LT lanes	No	Am pk	WB TR	F	636.2
Signalized, LT lanes only	Yes	Am pk	-	C	24.2
Signalized, LT and RT lanes	Yes	Am pk	-	B	18.6
2-way stop – Klondike Rd. @ Hurst Rd. Connector	No	Am pk	SB	C	17.7
4-way stop – no added lanes	No	Pm pk	-	F	266.35
4-way stop – added LT lanes	No	Pm pk	-	F	123.41
2-way stop– added LT lanes	No	Pm pk	WB TR	F	447.0
Signalized, LT lanes only	Yes	Pm pk	-	C	26.4
Signalized, LT and RT lanes	Yes	Pm pk	-	B	19.5
2-way stop – Klondike Rd. @ Hurst Rd. Connector	No	Pm pk	SB	C	18.1

Table 6: Volume/Capacity Ratio Summary, Roundabout, 2029 Volumes

	Time Period	Eastbound	Westbound	Northbound	Southbound
Upper Bound	a.m. peak	0.41	0.49	0.72	0.37
Lower Bound	a.m. peak	0.51	0.61	0.90	0.45
Upper Bound	p.m. peak	0.53	0.39	0.30	0.79
Lower Bound	p.m. peak	0.67	0.47	0.37	0.97



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Table 5 shows that Klondike Road @ McDaniel Mill Road would break down under 4-way stop control, whether or not left-turn lanes were constructed. The approximate doubling of traffic volumes in the twenty-year interval between 2009 and 2029 lowers the level of service from "B" or "C" to "F".

Operating the intersection with side-street stop control would result in level of service "F" and even longer delays for the Klondike Road approaches, when compared to a 4-way stop. By 2029, no unsignalized traffic control could accommodate the traffic demand at this intersection.

Signalizing this intersection would result in level of service "C", assuming left-turn lanes on all approaches, and level of service "B" if exclusive right-turn lanes were added on each approach as well.

Table 5 also shows that Klondike Road @ Hurst Road connector would operate at level of service "C" as an unsignalized intersection with no turn lanes added. Level of service "C" implies acceptable operation.

Table 6 shows that if Klondike Road @ McDaniel Mill Road were constructed as a roundabout the volume to capacity ratio would still remain below capacity, although barely on the southbound approach, assuming the lower bound assumptions (0.97).



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Conclusions

Based on the assumptions used to arrive at opening year (2009) and design year (2029) volume projections, the intersection of Klondike Road and McDaniel Mill Road would not warrant signalization until sometime after the year 2009, but likely well before the design year of 2029. The level of service analysis for the intersection in the year 2009 supports the likelihood that the intersection will need warrant signalization by that year. By the year 2029, this intersection will have to be signalized, since any kind of unsignalized traffic control would result in level of service "F" on one or more approaches.

Based on level of service analysis, both four-way stop control and two-way stop control would operate adequately at this intersection in the opening year of 2009. If the actual traffic volumes end up matching or exceeding the assumed volume projections, this intersection will need to be signalized much closer to 2009 than 2029. If this intersection retains a "conventional" configuration, it should be designed to accommodate eventual signalization. This could be done by constructing sufficient pavement width on each approach to accommodate future left-turn storage bays, even if it initially continues to operate as a four-way stop with single-lane approaches with paved shoulders.

If this intersection were constructed as a roundabout, it would operate below capacity for all approaches in both analysis years, although it could approach capacity in 2029 on the southbound approach in the p.m. peak hour. Due to the limitations of the HCM methodology, more detailed analysis is summarized in a separate memorandum using RODEL, in order to verify the maximum capacity of a roundabout at this location.

Constructing this intersection as a roundabout would accommodate more traffic than a conventional intersection design without signalization. This intersection does not currently meet signal warrants and probably won't within the next several years. When only considering capacity analysis and traffic flow, a roundabout configuration may be the best choice for this intersection. However, other environmental, physical and geometric factors need to be more fully worked out before it can be determined if a roundabout is the best solution for this intersection.

Even if a roundabout is constructed at Klondike Road @ McDaniel Mill Road, at some point in the future, the vehicular demand could exceed the capacity of one or more approaches, causing excessive queuing on these approaches. Under these circumstances, a future project could eliminate and pave over the splitter islands, center island and apron and convert the roundabout to a signalized intersection, with only minimal widening needed on the approaches to accommodate left-turn bays.



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The proposed at-grade intersection along Klondike Road with the Hurst Road Connector should operate acceptably without the need for signalization. Although the level of service analysis shows no need for turn lanes on any approach, construction of an eastbound left-turn lane and a westbound right-turn lane along Klondike Road would be desirable.

List of Appendices

Appendix A – Existing Traffic Volumes

Appendix B – 2009 Peak Hour Traffic Projections

Appendix C – 2029 Peak Hour Traffic Projections

Appendix D – Signal Warrant Analysis Worksheets

Appendix E – 2009 Level of Service Printouts

Appendix F – 2029 Level of Service Printouts



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MEETING MINUTES

Project: Klondike Road @ McDaniel Mill/Hurst Rd, STP-0006-00(932)
P.I. # 0006932

Purpose: Concept Team Meeting

Place: GDOT District 7 Conference Room 111

Meeting Date: Friday, May 25, 2007

Prepared By: Jeff Dyer

In Attendance: Roger Heatley – Street Smarts (Rockdale Co.)
Gerald Ford – GDOT District 7
Patrick Werho – GDOT Traffic and Safety
Mike Lobdell – GDOT District 7
Wade Woodward – GDOT District 7
David Robbins – GDOT District 7
Oliver Brooks - Comcast
Matt Houser – Qk4
Jeff Dyer - Qk4

The draft Concept Report, submitted on May 7, was reviewed and comments provided to incorporate into the final Concept Report. Key review comments are listed below:

- Remove Qk4 logo from cover sheet
- Remove reference to this project being a GRТА project
- Since a signal does not currently meet warrants, there will be no signalization as part of this project. The Klondike Rd/McDaniel Mill Road intersection will operate initially as a four-way stop.
- Compare accident history to the statewide average. GDOT to provide latest statewide averages.
- Provide further description of the historic resource under the “Alternatives Considered” section.
- Access control will be “By Permit” for all roadways.
- Update list of utilities based on received utility questionnaires.
- Remove inflation from cost estimate and reduce E&C from 20% to 10%, remove signal cost, and update unit prices
- Remove appendices from Traffic Memo attachment.
- Add these minutes to the attachments.



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Other issues/concerns discussed included the following:

Mr. Werho suggested that the speed limit on Klondike Road could be an issue once the intersection is signalized, since free-flowing vehicles could travel along Klondike Road through the signal. If the posted speed limit is lowered to 35 MPH in the vicinity of the intersection, it should be lowered for a considerable distance to the east, so as to adjust driver expectations to the lower speed through the intersection.

The use of 4% max versus 8% max for superelevation will be at the discretion of the County.

The County will probably use "consistent" right-of-way widths with temporary slope easements. GDOT will need a letter from the County for approval of temporary easement.

There will need to be a Location and Design notice added to the final Concept Report.

Since the intersection will not be signalized, stripe approaches without left-turn lanes, but still add crosswalks and ADA ramps on the approaches.

There are utility facilities in the vicinity of the intersection, including a Bell South slick site in the NE quadrant. There is also a power substation nearby on Hurst Road with transmission poles. According to Mr. Brooks, there is Comcast underground through the intersection. Utility relocations could be major cost items on this project.



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MEETING MINUTES

Project: Klondike Road @ McDaniel Mill/Hurst Rd, STP-0006-00(932)
P.I. # 0006932

Purpose: Coordination Meeting

Place: GDOT District 7 Conference Room 111

Meeting Date: Wednesday, March 28, 2007

Prepared By: Jeff Dyer

In Attendance: Shannon Hebb – Jacobs (Rockdale Co.)
Gerald Ford – GDOT District 7
Patrick Werho – GDOT Traffic and Safety
Mike Lobdell – GDOT District 7
David Robbins – GDOT District 7
Scott Lee – GDOT District 7
Jeff Dyer - Qk4

The following items were discussed:

Both the conventional and roundabout alternatives for this intersection improvement were briefly discussed, as well as the analyses and assumptions involved with each.

After review of the concept plans and associated traffic analysis, Georgia DOT has no preference between a roundabout and conventional alternative at Klondike Road @ McDaniel Mill Road. It will be up to Rockdale County to determine which alternative to adopt for this project.

However, there are some concerns related to the roundabout alternative that would need to be addressed if it is adopted.

Mike Lobdell questioned the dramatic improvement in level of service/capacity of the roundabout for the design year of 2009 based a few minor changes to approach radii recommended by the RODEL analysis prepared by Jacobs. Shannon Hebb will provide more information about the basis of the RODEL analysis.

Scott Lee had some concerns about the proximity of a couple of driveways (the church and one residence) to a roundabout intersection and the presence of the raised splitter island in front of them. I replied that the splitter island could be removed in front of those residences to provide direct left-turn access to those driveways, and driveways would be relocated further away from the intersection where practical.



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Mr. Lee also had concerns about fire truck operations through a roundabout, plus the proximity of a proposed fire station and driveway to that intersection. Shannon and I responded that the roundabout would have a mountable apron and that a fire truck could be accommodated by the roundabout. Vehicular turning paths were developed for fire trucks traveling through the roundabout.

Although a final decision has not been made whether or not to construct a roundabout, Shannon mentioned his preference at this time for the conventional alternative.

If a conventional alternative is constructed, based on the assumed traffic projections, a signal would not be warranted at this intersection until 2014 or later. It is recommended that this intersection would operate initially with four-way stop control.

If this intersection is operated as a four-way stop, it should operate with one lane in each direction per approach, or with single through-left lanes plus exclusive right-turn lanes separated by corner islands. If a conventional intersection is selected, the intersection will either be constructed with future three-lane approaches recommended for future signalization but striped as two-lane approaches with paved shoulders, or it will be constructed with only two-lane approaches, but with adequate right-of-way required for future widening and signalization. Rockdale County will make that decision based on available funding.

If a conventional intersection is constructed, a design variance will likely be needed for the intersection (skew) angle. The proposed angle is approximately 61-degrees, which is less than the 70-degrees needed to avoid a variance, but equal to or greater than the minimum 60 degrees based on AASHTO guidelines and greater than the existing 45-degrees.

Based on physical constraints, a 35 MPH curve is required on the west (Klondike Road) approach, even as the posted speed limits on both intersecting roadways are 45 MPH. A design exception will likely be needed for Klondike Road unless the posted speed is lowered to 35 MPH. According to Shannon, Rockdale County will consider lowering the speed limit in this vicinity.



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MEETING MINUTES

Project: Klondike Road @ McDaniel Mill/Hurst Rd, STP-0006-00(932)
P.I. # 0006932

Purpose: Coordination Meeting

Place: GDOT District 7 Utilities Conference Room

Meeting Date: Tuesday, October 24, 2006

Prepared By: Jeff Dyer

In Attendance: Shannon Hebb – Jacobs (Rockdale Co.)
Gerald Ford – GDOT District 7
Mac Cranford – GDOT District 7
Mike Lobdell – GDOT District 7
David Robbins – GDOT District 7
Scott Lee – GDOT District 7
Alex Laffey - GDOT
Harry Graham - GDOT
Srividya Vadlamani – Qk4
Jeff Dyer - Qk4

The following items were discussed:

Five conceptual alternatives have been prepared for the Klondike Road / McDaniel Mill Road intersection and were presented by Mr. Dyer, along with an overview of the pros and cons of each. Three of the five alternatives are conventional intersections and the other two are roundabouts.

Each alternative is briefly identified below:

1. Conventional intersection slightly northwest of existing location. Skew angle improved from 45 to 73 degrees. Multiple curves with 35 MPH design speed. Highest right-of-way requirement
2. Conventional intersection at existing location. Skew angle improved from 45 to 59-60 degrees. Single curve on Klondike Road with 35 MPH design speed. Lower right-of way requirement than Alt 1.
3. Roundabout intersection slightly northwest of existing location. Skew angle improved from 45 to 80 degrees. Numerous curves below 35 MPH design speed. Would require acquisition of one house.
4. Roundabout intersection slightly east of existing intersection. Skew angle improved from 45 to 80 degrees. Two curves at 35 MPH design speed. Probably would not require any homes.



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5. Conventional Intersection at existing location. Maintains existing curvature. Skew angle remains at 45 degrees. Angle could be improved to 50 degrees and still maintain 45 MPH by sharpening curve on west approach on Klondike Road. Both variations leave very flat angled intersection that would be difficult to channelize and safely operate.

The posted speed of both Klondike and McDaniel Mill Road is 45 MPH. Each of the alternatives presented (except possibly the roundabouts) would require design exceptions and/or design variances due to the existing curvature through the intersection and the existing flat intersection angle (45-degrees). Any redesign of this intersection will involve trade-offs between the intersection angle and curvature of the approach roadways.

A technical memorandum had been prepared by Qk4 summarizing each alternative and recommending Alternatives 2 and 4 for further development. Qk4 will email that document to each attendee of this meeting.

If historic resources are not a factor on the locations, the consensus is that Alternatives 2 and 4 are the best alternatives considering the constraints involved on this project, and they will be further developed, along with traffic analysis, prior to a final decision being made on the preferred Alternative.

Qk4 will contact Edwards-Pitman (the environmental sub) to assess the existence and/or location of historic resources in the study area, to see if they will affect location or design of any of the Alternatives presented.



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MEMORANDUM

TO: Rockdale County
FROM: Jeffrey W. Dyer, P.E.
SUBJECT: Initial Concept Alternative Summary for Klondike Road @ McDaniel Mill Road
DATE: 09/07/06
FILE: Klondike Rd. @ McDaniel Mill Rd. / Hurst Rd. STP-0006-00(932)

The memo briefly describes each of the five initial concept alternatives for this intersection improvement project, identifies the advantages and disadvantages for each. Of the five alternatives discussed in this memo, three are conventional intersections and two are roundabouts. One conventional intersection alternative and one roundabout alternative will be recommended for detailed design and traffic analysis, with sufficient detail for use in developing construction cost estimates. At that point, the preferred alternative can be identified.

All conventional intersection alternatives (1, 2, and 5) assume single through lanes with exclusive left-turn lanes provided for all approaches, as well as optional right-turn lanes. Roundabout alternatives (3 and 4) assume construction of a single-lane urban roundabout.

Traffic Analysis Summary

To date, a signal warrant analysis has been performed at the intersection using existing traffic volumes. Using existing traffic with a four-legged intersection configuration, this intersection does not meet a single warrant. In fact, level of service for a 4-way stop with single lane approaches is "B" for both a.m. and p.m. peak hours. However, factoring in the Castle Point subdivision traffic and other future growth in the area will likely lead to the need for signalization at some point in the future. Future traffic analysis of future traffic will likely reveal the need for future signalization, as the conceptual design and analysis is continued.

Capacity analysis of existing volumes reveals that this intersection would operate satisfactorily as a single-lane roundabout. The biggest issue with reconstructing this intersection as a roundabout is the flat intersection angle and existing curvature on both Klondike Road and McDaniel Mill Road. Constructing a roundabout at this location would require significant realignments to "bend" one or both of the approach roadways to fit a roundabout configuration.



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Alternative 1 – Description

Alternative 1 would construct a new conventional intersection slightly northwest of the existing location. It would improve the intersection skew angle from 45 degrees to 73 degrees. In order to provide tangent alignments through the intersection and to improve the skew angle, the north and west approaches have been relocated with new horizontal curvature provided.

Hurst Road is relocated off of its existing alignment to intersect with Klondike Road 440 feet west of the existing intersection with an optional extension shown to McDaniel Mill Road.

Alternative 1 - Pros

- Intersection skew angle is improved substantially from 45 to 73 degrees, no longer requiring a Design Variance or Design Exception.
- Both roadway alignments would be straight through the intersection.
- Relocated Hurst Road would not require vehicles to turn in order to reach Klondike Road.

Alternative 1 - Cons

- Reverse curvature on north approach of McDaniel Mill Road would require the acquisition of the single family home in the northwest quadrant of the existing intersection.
- Proposed horizontal curvature required on north approach of McDaniel Mill Road and the east approach of Klondike Road would not allow a horizontal design speed beyond 35 MPH for $e_{max}=4\%$, which is lower than the existed posted speeds of 45 MPH on these approaches, possibly requiring Design Exceptions.
- The existing telephone utility facility in the northeast quadrant of the intersection would probably have to be relocated.
- The relocation of Hurst Road shown in this Alternative does not follow the proposed right-of-way located on the eastern boundary of the Castle Point subdivision.

The drawing on the following page shows Alternative 1.



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Alternative 2 – Description

Alternative 2 differs from Alternative 1 in that it retains the existing horizontal alignment of McDaniel Mill Road through the intersection but is similar in that it relocates the west approach of Klondike Road onto a new horizontal curve. The intersection skew alignment would improve from the existing 45 degrees to 59 degrees.

Under this Alternative, Hurst Road would be relocated to intersect Klondike Road via an alignment that follows the designated right-of-way immediately east of Castle Point subdivision. One-way access westbound would still be allowed from Klondike Road onto the existing Hurst Road alignment immediately west of the intersection with McDaniel Mill Road.

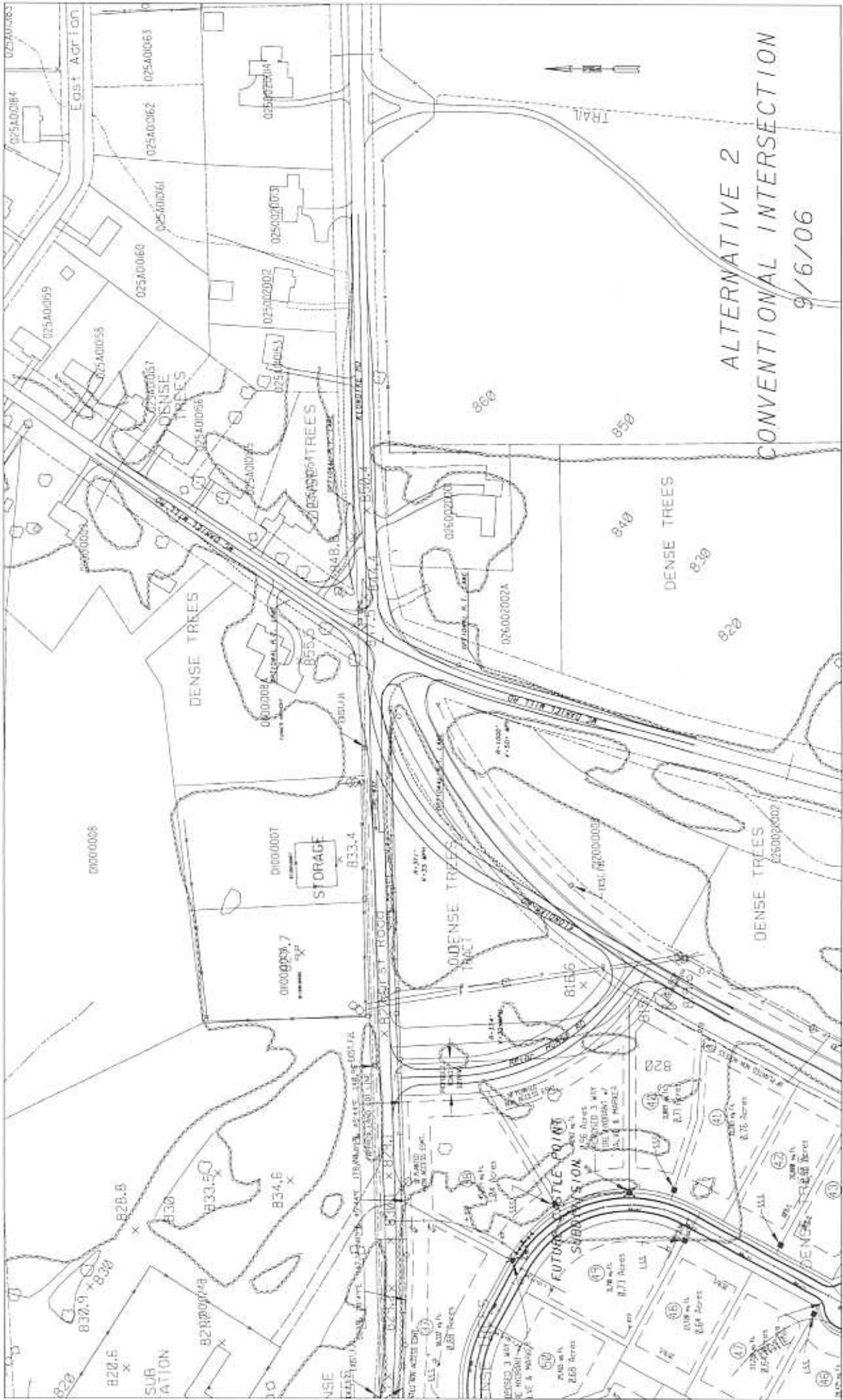
Alternative 2 - Pros

- Intersection skew angle would be improved from 45 to 59 degrees.
- The existing home in the northwest quadrant of the intersection will not likely need to be acquired.
- The horizontal alignment of McDaniel Mill Road will not require a Design Exception or lower posted speed limit.
- Direct access from Klondike Road to existing westbound Hurst Road would still be provided.

Alternative 2 - Cons

- Proposed horizontal curvature required on west approach of Klondike Road would not allow a horizontal design speed beyond 35 MPH for $e_{max}=4\%$, which is lower than the existed posted speed of 45 MPH on this approach, possibly requiring a Design Exception.
- The existing telephone utility facility in the northeast quadrant of the intersection would have to be relocated.
- Even though the intersection skew angle would be improved compared to the existing condition, a Design Variance may still be required, since the angle would only improve to 59 or 60 degrees.

The drawing on the following page shows Alternative 2.





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Alternative 3 – Description

Alternative 3 would reconstruct the intersection as a single-lane roundabout, with the center of the roundabout located approximately 50 feet west of the existing intersection. Ideally, a roundabout should have a 90-degree skew angle but due to limitations of the site as well as the alignments of the existing roadways, 80 degrees is the best angle that can be obtained without severe right-of-way impacts. 80 degrees can be used, with the size of the roundabout enlarged to compensate for the slightly flatter angle.

Constructing a roundabout at this location will require substantial realignment of three of the four approaches in order to meet the geometric requirements of the roundabout. Radii would have to be tight, with radii as small as 200-feet on one approach. However, since a roundabout is designed to slow traffic down to 20 MPH range for safe operation, using sharper curvature on the immediate approaches could be justified. Even so, Design Exceptions would probably be required for this Alternative.

Under this Alternative, Hurst Road would be relocated to intersect Klondike Road via an alignment that follows the designated right-of-way immediately east of Castle Point subdivision, the same as is shown in Alternative 2. One-way access westbound would still be allowed from Klondike Road onto the existing Hurst Road alignment immediately west of the intersection with McDaniel Mill Road.

Alternative 3 - Pros

- Intersection skew angle would be improved from 45 to 80 degrees.
- Both roadway alignments would continue on tangents straight through the intersection.
- Since this design is a roundabout, a traffic signal would never be needed at this location.
- Direct access from Klondike Road to existing westbound Hurst Road would still be provided.
- The existing telephone utility facility may not have to be relocated.

Alternative 3 - Cons

- Proposed horizontal curvature required on three of the four approaches would be below the posted speed of 45 MPH. The north and west approach curves would have radii that correspond with design speeds of 30 MPH and 27 MPH, the tightest of any alternative. Multiple Design Exceptions would likely be required.
- Reverse curvature on north approach of McDaniel Mill Road would require the acquisition of the single family home in the northwest quadrant of the existing intersection.

The drawing on the following page shows Alternative 3.



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Alternative 4 – Description

Alternative 4 would shift the single-lane roundabout approximately 84 feet further east from Alternative 3, which removes the need to acquire the home in the northwest quadrant of the intersection, as well as allowing flatter curvature in two of the intersection approaches. As with Alternative 3, the intersection skew angle would be 80 degrees.

As with Alternatives 2 and 3, Hurst Road would be relocated to intersect Klondike Road via an alignment that follows the designated right-of-way immediately east of Castle Point subdivision. One-way access westbound would still be allowed from Klondike Road onto the existing Hurst Road alignment immediately west of the intersection with McDaniel Mill Road.

Alternative 4 - Pros

- Intersection skew angle would be improved from 45 to 80 degrees.
- Both roadway alignments would continue on tangents straight through the intersection.
- Since this design is a roundabout, a traffic signal would never be needed at this location.
- Direct access from Klondike Road to existing westbound Hurst Road would still be provided. Compared to Alternative 3, the one-way entrance to Hurst Road would be 84 feet further east from the main intersection.
- This Alternative would not require the acquisition of the home in the northwest quadrant of the existing intersection.
- The approach curvature would be flatter than for Alternative 3. No approach radius would be designed for less than 35 MPH.

Alternative 4 - Cons

- Even though the approach radii are flatter than for Alternative 3, Design Exceptions may still be needed, especially if the posted speed limits remain at 45 MPH.

The drawing on the following page shows Alternative 4.



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Alternative 5 – Description

Alternative 5 would construct a conventional intersection at the existing location, with Klondike Road and McDaniel Mill Roads following their existing alignment. Significant changes from the existing condition would include the removal of the Hurst Road approach and the addition of left-turn lanes on all remaining approaches.

The existing intersection skew angle would remain at 45 degrees, and no realignment would be required on either Klondike Road or McDaniel Mill Road. Hurst Road would be relocated as per Alternatives 2-4, but no one-way entrance to the existing roadway would be possible.

Alternative 5 - Pros

- No realignment of either approach roadway would be required, minimizing right-of-way acquisition.
- This is the only alternative that maintains horizontal curvature for both major roadways that would meet current posted speed. No change in speed limits of Design Exceptions would be required.

Alternative 5 - Cons

- The intersection skew angle would not be improved from its existing 45 degrees. This condition would probably require a Design Variance. The flat angle of this intersection would lead to inefficient operation of this intersection, especially as traffic grows over time. Stop bars will have to be set far back in order to avoid left turning vehicles making sharp left turns. The accident potential would be higher due to the large intersection area and potential for driver confusion.
- The existing telephone utility facility in the northeast quadrant of the intersection would have to be relocated.
- It would not be possible to allow the one-way entry onto Hurst Road from westbound Klondike Road.

The drawing on the following page shows Alternative 5.

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Recommendations

Alternative 2 is recommended for further work as the conventional intersection alternative since its right-of-way impacts are more limited than Alternative 1 while improving the intersection layout over Alternative 5. Further refinements will be made in the length and number of approach lane configurations in order to accommodate 20-year traffic projections. Also, we will attempt to further improve the intersection skew angle and to increase the radius of the west approach as much as practical. Finally, vertical profiles and construction limits will be developed so that an accurate construction cost estimate can be developed.

Alternative 4 is recommended for further work as the roundabout alternative, since it has flatter approach curvature and fewer right-of-way impacts compared to Alternative 3. As with Alternative 2, we would refine the design and develop vertical profiles and construction limits so that a more accurate construction cost estimate could be developed.