

D.O.T. 66

**DEPARTMENT OF TRANSPORTATION
STATE OF GEORGIA**

INTERDEPARTMENT CORRESPONDENCE

FILE P. I. No. 610870, Gordon County **OFFICE** Preconstruction
NH-STP-75-3(203)
I-75 at Union Grove Road Interchange **DATE** July 13, 2005

FROM *for* *John Jinks* Margaret B. Pirkle, P.E., Assistant Director of Preconstruction

TO SEE DISTRIBUTION

SUBJECT APPROVED REVISED PROJECT CONCEPT REPORT

Attached for your files is the approval for subject project.

MBP/cj

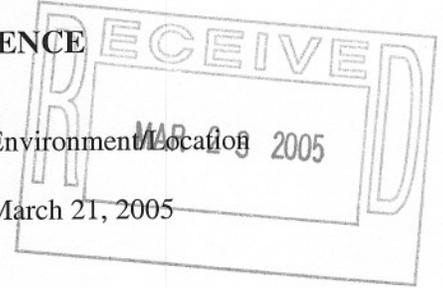
Attachment

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DEPARTMENT OF TRANSPORTATION
STATE OF GEORGIA

INTERDEPARTMENT CORRESPONDENCE



FILE: I-75 INTERCHANGE @ UNION GROVE ROAD
NH-STP-75-3(203)
P.I. No.: 610870
Gordon County
OFFICE: Environmental/Location
DATE: March 21, 2005

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

TO: Meg Pirkle, Assistant Director of Preconstruction

SUBJECT: **Revised Project Concept Report – I-75 Interchange @ CR 65/Union Grove Road**

Attached is the original copy of the Revised Concept Report for your further handling for approval in accordance with the Plan Development Process (PDP).

In order to correspond with proposed revisions to STP-00MS(7), it is recommended to revise the alignment, typical section and project termini of NH-STP-75-3(203) in Gordon County. The right-of-way limits are also recommended for revision to accommodate the proposed revised typical sections. Retaining walls are proposed to be constructed in the northwest and southwest quadrants of the interchange to reduce impacting industrial structures.

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

DATE: 4/1/05 _____
Joseph P. Palladi
State Transportation Planning Administrator

HDK/KET/DRP/dle

Attachments

- Distribution:
- David Mulling**, Project Review Engineer
 - Keith Golden**, State Traffic Safety & Design Engineer
 - Joe Palladi**, State Transportation Planning Administrator
 - Jamie Simpson**, State Transportation Financial Management Administrator
 - Brent Story**, State Road and Airport Design Engineer
 - Kent Sager**, Cartersville District Engineer
 - Paul Liles**, State Bridge & Structural Design Engineer

REVISED PROJECT CONCEPT REPORT

NH-STP-75-3(203) - GORDON COUNTY

Need and Purpose: The proposed South Calhoun Bypass will divert through traffic from the commercial area of SR- 53 and specifically help reduce the through truck traffic in the area. It will also provide additional access to the Airport and the industrial park area located near Union Grove Road. With construction of the proposed interchange at Union Grove Road, the bypass will provide alternate access to I-75 from SR 53.

The South Calhoun Bypass was recommended in the "Gordon County Transportation Planning Study" completed in 1992. The Bypass in conjunction with the Union Grove Interchange is in the county's Comprehensive Plan and in the city's 2001 three year Transportation Improvement Program.

The proposed bypass will provide access to the only public airport in Gordon County. The Tom B. David Field Airport is located west of I-75 south of the City of Calhoun along SR 3 at Union Grove Road. It is classified as a Level III airport and services recreational and business airplanes; agricultural spraying; police/law enforcement; forest fire fighting; ultra-lights and experimental aircrafts. There are 64 planes based at the airport and approximately 19,600 annual aircraft takeoffs and landings from the airport. The number of planes based at the airport is projected to increase to 79 by 2021 and the number of takeoffs and landings is expected to increase to approximately 22,000.

The industrial land use is located south of SR 53 and west of I-75. This is also where the airport is located and Union Grove Road. The proposed bypass will be located just south of the industrial area. This will provide trucks an alternate to SR 53.

Based on the 2000 Census data the City of Calhoun's population was 10,667. This is a 49.5% increase over the 1990 population. The County's population only increased 25.8% over the same period. Calhoun's population consists of 7.6% Blacks and 17.1% Hispanic, while the County has 3.5% Blacks and 7.4% Hispanics and the State has 28.7% Blacks and 5.3% Hispanics. The City's black population lives southwest of downtown and the Hispanic population is west of I-75.

2002 population: 11,715

There are a number of projects in the area. In the immediate area the projects include the widening of SR 53, SR 3 and the South Calhoun Bypass. Project 621620, STP-065-1(34) will widen SR-53 from four lanes to six lanes starting at W.C. Bryant Parkway east to just west of I-75. Project 610870, NH-STP-75-3(203) is the construction of the Union Grove interchange; and Project 621365, STP-001-6(35), will widen SR 3 from two lanes to four lanes beginning at Union Grove Road and extending north to SR 53. While the construction of an interchange at Union Grove Road (Project 610870) greatly enhances the south bypass, the project can function independently of interchange and not limit future improvements.

Traffic on SR 53 is highly congested between SR 3 and I-75. This area is highly commercial with used car lots, fast food and retail stores. Through traffic has to contend with local traffic and traffic from I-75 that exit onto SR 53 for fast food and other shopping opportunities. Traffic volumes reach there peak at the intersection of SR 53 and SR 3. Volumes for SR 53 were 37,000 vehicles per day (vpd) in 2003 and 12,500 vpd for SR 3. These volumes are expected to increase to 81,000 vpd along SR 53 by 2025 and 27,000 vpd along SR 3 without construction of the South Calhoun Bypass. With the bypass in place, traffic volumes on SR 53 are projected at 67,000 vpd and 25,000 vpd on SR 3.

SR 53 east of SR 3 currently functions at an unacceptable Level-of-Service, while it functions at an acceptable LOS west of SR 3. The section of SR 53 between W.C. Bryant Parkway and SR 3 functions at a

LOS C currently and will decrease to a LOS of D without any improvements. East of SR 3, SR 53 currently functions at a LOS D and the LOS will decrease to a LOS F before 2025. With construction of the projects currently programmed, the bypass and the widening of SR 53, SR 53 can maintain its current Level-of-Service D east of SR 3 and C west of SR 3.

Constructing the South Calhoun Bypass will provide traffic traveling along SR 53 to avoid the highly congested commercial area between W.C. Bryant and I-75. This will also remove through trucks from the commercial area and provide an alternate route to the airport and industrial area. In conjunction with the Union Grove Interchange, the bypass will provide an alternate access to I-75 allowing a more direct route to the Industrial area and the airport.

Project location: The NH-STP-75-3(203) proposed concept would be on new location within Gordon County. This concept begins approximately at milepost 5.4 on CR 65/Union Grove Road and ends approximately at milepost 5.2 along CR 65/Union Grove Road. The total length of the project is approximately 0.6 miles. NH-STP-75-3(203) is paired with STP-00MS(7).

Description of the approved concept: NH-STP-75-3(203) Gordon County consists of the construction of a full diamond interchange at the intersection of I-75 and CR 65/Union Grove Road. This project would include all structures associated with the interchange.

PDP Classification: Major/Construction on new location

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

Functional Classification: Rural Principal Arterial

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

Traffic (AADT) as shown in the approved concept:

Current Year: 2005 AADT: 2,200 – 3,500 Design Year: 2025 AADT: 4,250 – 6,500

Proposed features to be revised:

NH-STP-75-3(203)

- **Project Termini:** It is recommended to revise the project/termini to include the relocation of CR 68/Johnson Lake Road and CR 68/Belwood Road.
- **Alignment:** To correspond with the proposed revised alignment of STP-00MS(7) as well as reduce impacting adjacent industrial areas, it is recommended that the alignment be revised.
- **Typical Section:** It is recommended that the typical section be revised to correspond with the proposed revised typical section of STP-00MS(7).
- **Right-of-Way:** It is recommended that the right-of-way limits for this project be revised to accommodate the revised typical sections.

Describe the revised feature(s) to be approved:

- **Project Termini:** This concept would begin approximately at CS 825/Marine Road and end approximately 0.2 miles east of the existing intersection of CR 68/Johnson Lake Road and CR 68/Belwood Road. At this location, relocated CR 68/Johnson Lake Road and CR 68/Belwood Road would intersect with the proposed revised alignment of STP-00MS(7). The revised project termini for NH-STP-75-3(203) would allow CR 68/Johnson Lake Road and CR 68/Belwood Road to be relocated after being impacted by the proposed interchange ramps.
- **Alignment:** The mainline continues the STP-00MS(7) proposed revised alignment along CR 65/Union Grove Road within the proposed revised project termini for NH-STP-75-3(203). To

reduce impacts to businesses, CR 68/Johnson Lake Road would tie back into existing CR 68 approximately 0.2 miles south of its existing CR 65/Union Grove Road intersection. CR 68/Belwood Road would be relocated to provide a new crossover with relocated CR 68/Johnson Lake Road. The total length of the CR 65/Union Grove Road mainline is approximately 0.6 miles.

- **Typical Section:** Four 12-foot lanes with a 20-foot raised median urban section would be constructed to the south along CR 65/Union Grove Road from the proposed beginning terminus to the proposed ending terminus. Relocated CR 68/Johnson Lake Road and CR 68/Belwood Road would have two 12-foot lanes with open ditch drainage. The interchange ramps would have 16-foot lane typical sections. A new single bridge to accommodate the typical section would be constructed over I-75 to replace the existing bridge. The speed design for the 20-foot raised median section would be 45 mph. The relocated portions of CR 68/Johnson Lake Road and CR 68/Belwood Road would have a speed design of 35 mph. The speed design for the interchange ramps would be 55 mph.

Retaining walls would be constructed in the northwest and southwest quadrants of the interchange to reduce impacting industrial structures.

- **Right-of-Way:** The mainline would have 130 feet of proposed right-of-way. The right-of-way would vary from 100 feet to 120 feet for relocated CR 68/Johnson Lake Road and CR 68/Belwood Road. The proposed right-of-way for the full diamond interchange would vary from approximately 300 feet to 1,240 feet.

Updated traffic data (AADT):

Current Year: 2005 AADT: 10,000 – 14,000 Design Year: 2025 AADT: 18,500 – 26,000

** Updated traffic data corresponds to proposed project termini along mainline.

Programmed/Schedule:

P.E. 1998 R/W: 2008 Construction: 2010

Revised cost estimates:

1. Construction cost including inflation and E&C: \$ 10,434,000
2. Right-of-way: \$ 7,699,200
3. Utilities: \$ 226,449

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

Recommendation: It is recommended that the proposed revision to this concept be approved for implementation.

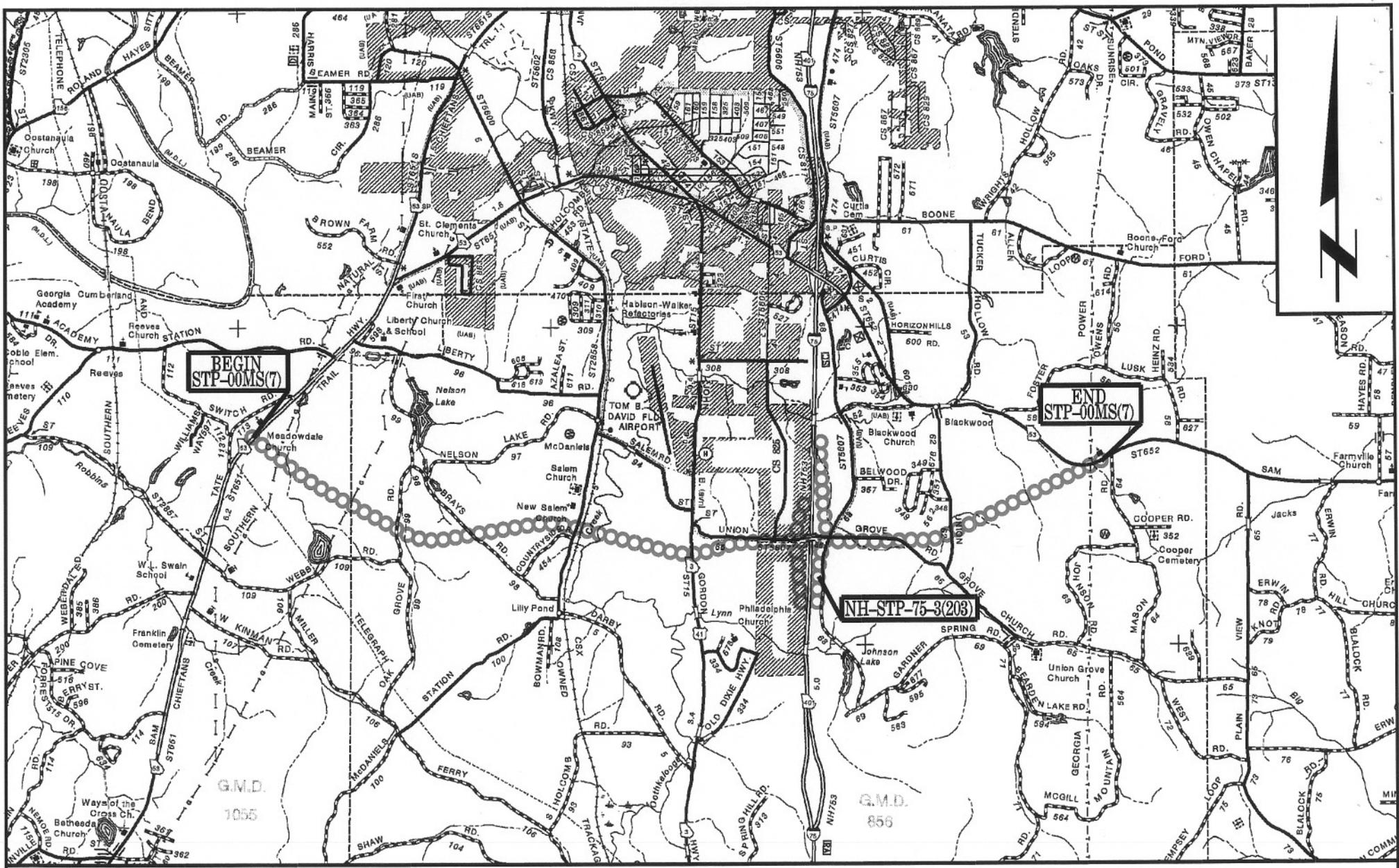
Attachments:

1. Sketch Map,
2. Cost Estimate,
3. Typical Sections

Concur: Buddy SA
Director of Preconstruction

Approve: Shassan Chandne
FBI Administrator, FHWA

Approve: O.S. / [Signature]
Chief Engineer



SCALE IN MILES



LOCATION

STRIP MAP
STP-OOMS(7) & NH-STP-75-3(203)
SOUTH CALHOUN BYPASS
GORDON COUNTY
 P.I.# 662510 & 610870

SOURCE: GENERAL HIGHWAY MAP, GORDON CO., GEORGIA
 PREPARED BY THE GEORGIA DEPARTMENT OF TRANSPORTATION, 1997, 2004

CONCEPT COST ESTIMATE

Office of Environment/Location

March 21, 2005 8:58 AM

County(s)

PI Number Project Number

Project Name Project Length Miles

Project Description

CR 65/Union Grove Road bridge over I-75, interchange ramps, and relocation of CR 68/Johnson Lake Road & CR 68/Belwood Road.

Existing Roadway

Rural 2-lane

Comments

Includes mainline from approximately CS 825/Marine Road to approximately 970 feet east of CR 68/Belwood Road.

TRAFFIC:

Current Design Year Daily Volume (AADT)

Future Design Year Daily Volume (AADT)

Concept Estimate

Feasibility Estimate

Typical Section(s) Used in Estimate

Typical Section Length

Urban New Location: 4-Lanes with 20 ft Raised Median	<input type="text" value="0.60"/> Miles
Rural New Location: 2-Lanes with 24 ft Pavement (INTERCHANGE RAMPs)	<input type="text" value="2.50"/> Miles
Rural New Location: 2-Lanes with 24 ft Pavement (CR 68 RELOCATIONS)	<input type="text" value="0.70"/> Miles
<input type="text"/>	<input type="text"/> Miles
<input type="text"/>	<input type="text"/> Miles
<input type="text"/>	<input type="text"/> Miles

Prepared By

MAJOR STRUCTURES*Note! All distances are in feet***Bridges: Stream Crossings & Grade Separations**

NO	LOCATION	QTY	CROSSING TYPE	WIDTH	LENGTH	UNIT COST	TOTAL
1	Union Grove Road over I-75	1	Roadway-New	91.50	330.0	57.00	1,721,000
2							
3							
4							
5							
6							
7							
8							
9							
10							
11							
12							

Bridge Culverts

NO	LOCATION	TYPE / W x H / FILL	LENGTH	UNIT COST	TOTAL
1					
2					
3					
4					
5					
6					
7					
8					

Walls

NO	LOCATION	TYPE	HEIGHT	LENGTH	UNIT COST	TOTAL
1	I-75 South exit ramp to Union Grove Rd.	MSE	10.0	300.0	65.00	195,000
2	I-75 South entrance ramp from Union Grove Rd.	MSE	15.0	500.0	65.00	488,000
3						
4						
5						
6						

MAJOR STRUCTURES SUBTOTAL \$ 2,404,000

Typical Section

Urban New Location: 4-Lanes with 20 ft Raised Median

Typical Section Length Miles

Right-of-Way Width Feet

GRADING AND DRAINAGE

1. EARTHWORK

- a. Unclassified Excavation Soil
- b. Unclassified Excavation Rock
- c. Borrow Excavation

2. MINOR DRAINAGE

QUANTITY	UNIT COST	TOTAL
5,000 CY	3.44	17,000
1,000 CY	10.00	10,000
20,000 CY	4.64	93,000
0.60 MI	449,586	270,000
GRADING AND DRAINAGE SUBTOTAL		\$390,000

BASE AND PAVING

1. GRADED AGGREGATE BASE

2. ASPHALT PAVING

- a. Asph Conc 9.5 mm Superpave
- b. Asph Conc 19 mm Superpave
- c. Asph Conc 25 mm Superpave
- d. Bituminous Tack Coat

3. CONCRETE PAVING

- a. Curb and Gutter
- b. Miscellaneous

4. OTHER PAVING

THICKNESS and SPREAD RATE	QUANTITY	UNIT COST	TOTAL
10"	10,431 TN	16.53	172,000
1 1/2" (165 LB/SY)	1,394 TN	39.09	54,000
3" (330 LB/SY)	2,821 TN	46.30	131,000
4" (440 LB/SY)	3,824 TN	44.00	168,000
	2,138 GL	1.12	2,000
	12,672 LF	15.43	196,000
	0.60 MI	78,088	47,000
BASE AND PAVING SUBTOTAL			\$847,000

LUMP ITEMS

- 1. TRAFFIC CONTROL
- 2. CLEARING AND GRUBBING
- 3. EROSION CONTROL
- 4. SIGNING & MARKING
- 5. MISCELLANEOUS

QUANTITY	UNIT COST	TOTAL
0.60 MI	36,500	22,000
9.45 AC	6,000	57,000
0.60 MI	116,237	70,000
0.60 MI	65,535	39,000
0.60 MI	250,440	150,000
LUMP ITEM SUBTOTAL		\$338,000

MISCELLANEOUS PROJECT ITEMS

- 1. GUARDRAIL
- 2. GUARDRAIL ANCHORS
- 3. DETOURS
- 4. SPECIAL FEATURES

QUANTITY	UNIT COST	TOTAL
6,000 LF	11.54	69,000
16 EA	414.83	7,000
	MI	453,560
MISCELLANEOUS SUBTOTAL		\$76,000

Typical Section

Rural New Location: 2-Lanes with 24 ft Pavement (INTERCHANGE RAMPS)

Typical Section Length MilesRight-of-Way Width Feet**GRADING AND DRAINAGE****1. EARTHWORK**

- a. Unclassified Excavation Soil
- b. Unclassified Excavation Rock
- c. Borrow Excavation

2. MINOR DRAINAGE

QUANTITY	UNIT COST	TOTAL
20,000 CY	3.44	69,000
1,000 CY	10.00	10,000
269,700 CY	4.64	1,251,000
2.50 MI	56,667	34,000
GRADING AND DRAINAGE SUBTOTAL		\$1,364,000

BASE AND PAVING**1. GRADED AGGREGATE BASE****2. ASPHALT PAVING**

- a. Asph Conc 9.5 mm Superpave
- b. Asph Conc 19 mm Superpave
- c. Asph Conc 25 mm Superpave
- d. Bituminous Tack Coat

3. CONCRETE PAVING

- a. Curb and Gutter
- b. Miscellaneous

4. OTHER PAVING

THICKNESS and SPREAD RATE	QUANTITY	UNIT COST	TOTAL
10"	27,452 TN	16.53	454,000
1 1/2" (165 LB/SY)	4,477 TN	39.09	175,000
3" (330 LB/SY)	9,024 TN	46.30	418,000
4" (440 LB/SY)	7,967 TN	44.00	351,000
	5,710 GL	1.12	6,000
	2.50 MI	17,251	43,000
BASE AND PAVING SUBTOTAL			\$1,592,000

LUMP ITEMS

- 1. TRAFFIC CONTROL
- 2. CLEARING AND GRUBBING
- 3. EROSION CONTROL
- 4. SIGNING & MARKING
- 5. MISCELLANEOUS

QUANTITY	UNIT COST	TOTAL
2.50 MI	10,696	27,000
36.36 AC	6,000	218,000
2.50 MI	146,517	366,000
2.50 MI	10,726	27,000
2.50 MI	36,375	91,000
LUMP ITEM SUBTOTAL		\$729,000

Typical Section

Rural New Location: 2-Lanes with 24 ft Pavement (CR 68 RELOCATIONS)

Typical Section Length MilesRight-of-Way Width Feet**GRADING AND DRAINAGE****1. EARTHWORK**

- a. Unclassified Excavation Soil
- b. Unclassified Excavation Rock
- c. Borrow Excavation

2. MINOR DRAINAGE

QUANTITY	UNIT COST	TOTAL
43,700 CY	3.44	150,000
4,000 CY	10.00	40,000
0.70 MI	56,667	34,000
GRADING AND DRAINAGE SUBTOTAL		\$224,000

BASE AND PAVING**1. GRADED AGGREGATE BASE****2. ASPHALT PAVING**

- a. Asph Conc 9.5 mm Superpave
- b. Asph Conc 19 mm Superpave
- c. Asph Conc 25 mm Superpave
- d. Bituminous Tack Coat

3. CONCRETE PAVING

- a. Curb and Gutter
- b. Miscellaneous

4. OTHER PAVING

THICKNESS and SPREAD RATE	QUANTITY	UNIT COST	TOTAL
10"	7,687 TN	16.53	127,000
1 1/2" (165 LB/SY)	1,254 TN	39.09	49,000
3" (330 LB/SY)	2,527 TN	46.30	117,000
4" (440 LB/SY)	2,231 TN	44.00	98,000
	1,599 GL	1.12	2,000
	0.70 MI	17,251	12,000
BASE AND PAVING SUBTOTAL			\$446,000

LUMP ITEMS

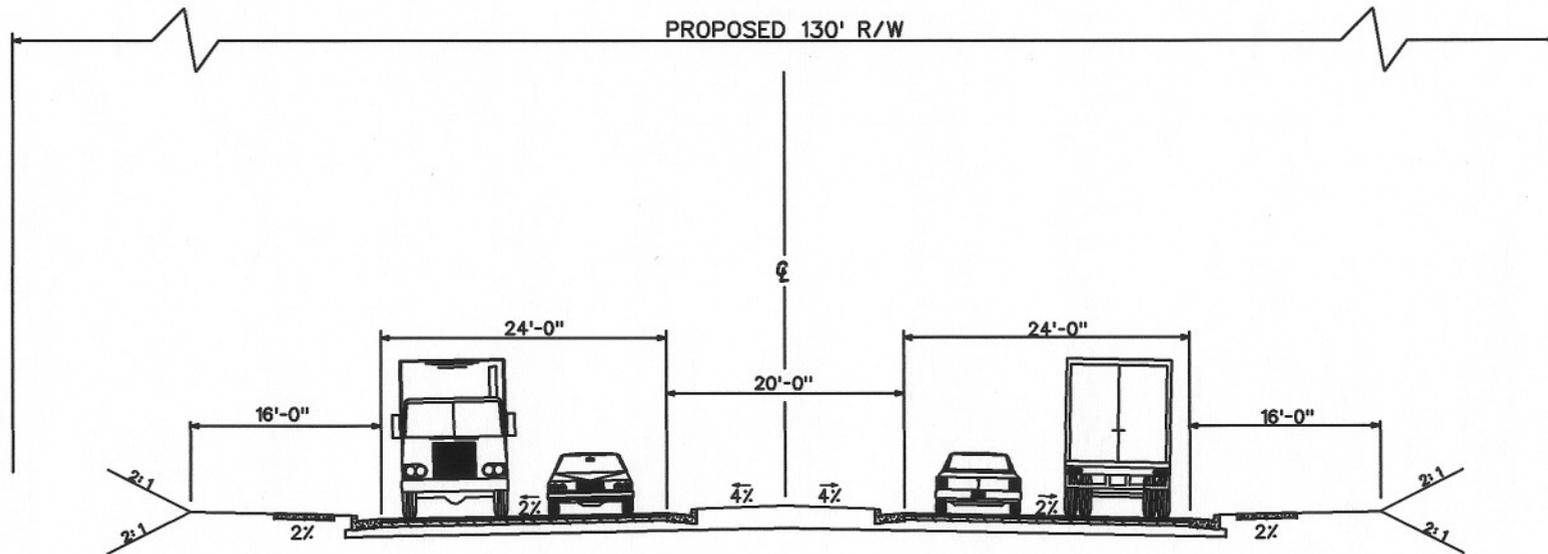
- 1. TRAFFIC CONTROL
- 2. CLEARING AND GRUBBING
- 3. EROSION CONTROL
- 4. SIGNING & MARKING
- 5. MISCELLANEOUS

QUANTITY	UNIT COST	TOTAL
0.70 MI	10,696	7,000
8.48 AC	6,000	51,000
0.70 MI	146,517	103,000
0.70 MI	10,726	8,000
0.70 MI	36,375	25,000
LUMP ITEM SUBTOTAL		\$194,000

ESTIMATE SUMMARY

TYPICAL SECTION	COST (per mile)
1. Urban New Location: 4-Lanes with 20 ft Raised Median	\$ 2,625,000
2. Rural New Location: 2-Lanes with 24 ft Pavement	\$ 1,474,000
3. Rural New Location: 2-Lanes with 24 ft Pavement	\$ 1,234,000
PROJECT COST	
A. MAJOR STRUCTURES	\$ 2,404,000
B. GRADING AND DRAINAGE	\$ 1,978,000
C. BASE AND PAVING	\$ 2,885,000
D. LUMP ITEMS	\$ 1,261,000
E. MISCELLANEOUS	\$ 76,000
SUBTOTAL CONSTRUCTION COST	\$ 8,604,000
ENGINEERING & CONTINGENCIES (10%)	\$ 860,000
INFLATION <u> 2 </u> yr(s) @ <u> 5 </u> % per yr	\$ 970,000
GRAND TOTAL CONSTRUCTION COST	\$ 10,434,000

TYPICAL SECTION
20-FOOT RAISED MEDIAN URBAN SECTION
45 MPH SPEED DESIGN

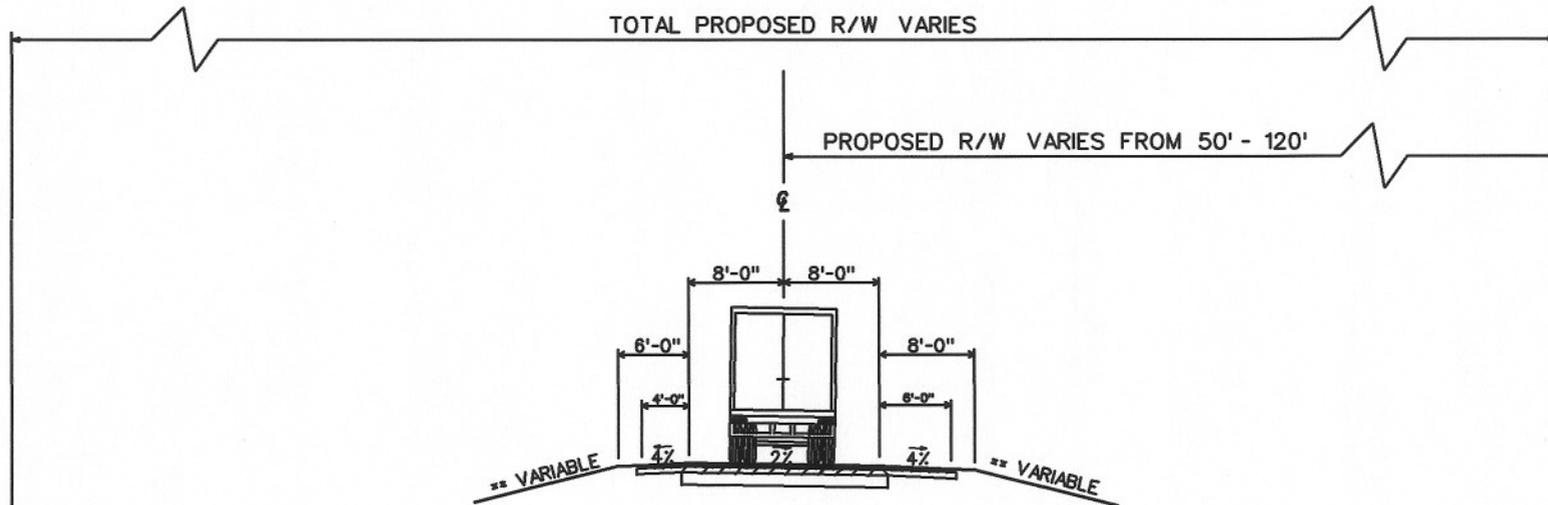


SOUTH CALHOUN BYPASS
I-75 INTERCHANGE
NH-STP-75-3(203) GORDON CO.

CR 65 / UNION GROVE ROAD MAINLINE
FROM APPROXIMATELY CS 825 / MARINE ROAD
TO APPROXIMATELY 0.2 MILES EAST OF CR 68 / BELWOOD ROAD

NOT TO SCALE

TYPICAL SECTION
16-FOOT INTERCHANGE RAMP
55 MPH SPEED DESIGN



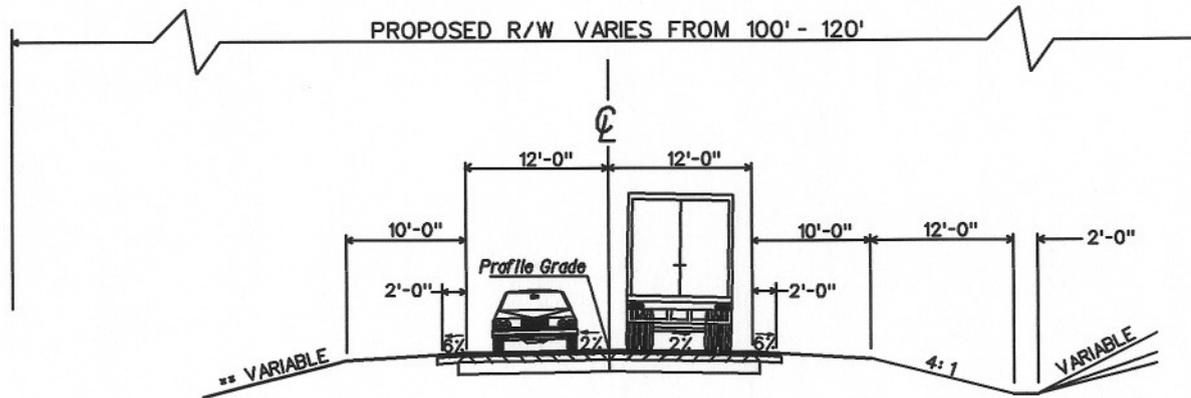
** Guardrail Required when steeper than 4:1
15'-6" shoulder with guardrail

SOUTH CALHOUN BYPASS
I-75 INTERCHANGE
NH-STP-75-3(203) GORDON CO.

I-75 AND CR 65 / UNION GROVE ROAD
ENTRANCE & EXIT RAMP

NOT TO SCALE

TYPICAL SECTION
2-LANE RURAL SECTION
45 MPH SPEED DESIGN
(RELOCATION & TIE-INS)



** Guardrail Required when steeper than 4:1
15'-6" shoulder with guardrail

SOUTH CALHOUN BYPASS
I-75 INTERCHANGE
NH-STP-75-3(203) GORDON CO.

RELOCATION & TIE-INS FOR
CR 68 / JOHNSON LAKE ROAD
CR 68 / BELWOOD ROAD

NOT TO SCALE