

D.O.T. 66

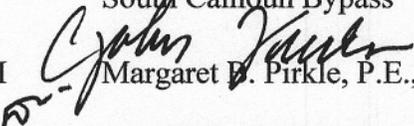
DEPARTMENT OF TRANSPORTATION
STATE OF GEORGIA

INTERDEPARTMENT CORRESPONDENCE

FILE P. I. No. 662510, Gordon County
 STP-OOMS(7)
 South Calhoun Bypass

OFFICE Preconstruction

DATE April 19, 2005

FROM 
 Margaret E. Pirkle, P.E., Assistant Director of Preconstruction

TO SEE DISTRIBUTION

SUBJECT REVISED PROJECT CONCEPT REPORT APPROVAL

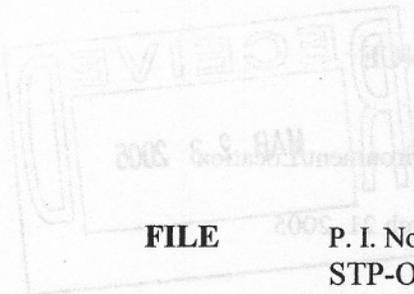
Attached for your files is the approval for subject project.

MBP/cj

Attachment

DISTRIBUTION:

- David Mulling
- Harvey Keeper
- Ken Thompson
- Jamie Simpson
- Michael Henry
- Keith Golden
- Joe Palladi (file copy)
- Babs Abubakari
- Kent Sager
- BOARD MEMBER



4/1/05

DATE

HIDKRETDVW

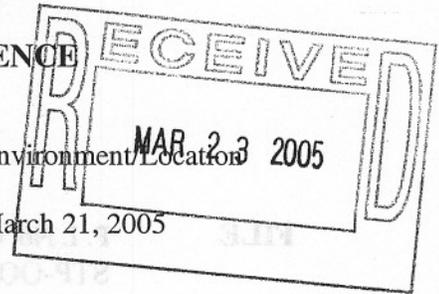
Attachments

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 Stovy, State Road and Airport Design Engineer
 Kent Sager, Central District Engineer
 Paul Ellis, State Bridge & Structural Design Engineer

DEPARTMENT OF TRANSPORTATION
STATE OF GEORGIA

INTERDEPARTMENT CORRESPONDENCE



FILE: SOUTH CALHOUN BYPASS
STP-00MS(7)
P.I. No.: 662510
Gordon County
OFFICE: Environment/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 – South Calhoun Bypass, Gordon County**

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 minimize environmental and social impacts, it is recommended to revise the alignment, typical sections, and speed design of STP-00MS(7) in Gordon County. The proposed right-of-way limits would also be revised to accommodate the revised typical sections. New bridges would still be constructed over CR 98/Brays Road, CR 5 & CSX Railroad, Oothkalooga Creek, and CR 62/Union Grove Church Road. The existing bridge over I-75 would be replaced under project NH-STP-75-3(203).

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

Joe 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

STP-00MS(7) - 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.

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 STP-00MS(7) proposed concept would be on new location within Gordon County. The beginning terminus intersects SR 53 approximately at mile post 4.5 and the ending terminus intersects SR 53 approximately at mile post 12.5. The total length of the project is approximately 6.8 miles. STP-00MS(7) is paired with NH-STP-75-3(203).

Description of the approved concept: Project STP-00MS(7), known as the South Calhoun Bypass, begins at SR 53 southwest of Calhoun near CR 113 in Gordon County. The proposed concept would travel east/southeastward to the intersection of I-75, then veer northeastward and tie back into SR 53 on the east side of Calhoun. The proposed typical section for the South Calhoun Bypass from SR 53 west of Calhoun, to approximately 0.3 mile east of CR 68/Johnson Lake/Belwood Road is two lanes in each direction divided by a 44-foot grassed median most of which is on new location. The right-of-way would vary from 250'-350'. The alignment would follow a short section of CR 65/Union Grove Road from just east of US 41/SR 3 to the interchange at I-75. Due to the horizontal alignment of the proposed concept and unacceptable load capacity and cost effectiveness of the existing bridge over I-75, two new parallel structures would be constructed. In order to avoid impacting the proposed interchange ramps at I-75, CR 68/Johnson Lake/Belwood Road would be relocated approximately 800' further east from its existing location. The proposed right-of-way would be 100'. Approximately 700' east of this new intersection, the typical section would taper down to a two-lane rural section and continue on new location to SR 53 west of Calhoun. The right-of-way would vary from 250' – 350' through this section to allow for the addition of two more lanes and a 44-foot grassed median in the future.

At the beginning, the concept would extend eastward onto new location from SR 53 approximately 0.3 mile north of CR 113. The concept would proceed southeastward and cross over a tributary to the Oostanaula River. It would then intersect CR 99/Oak Grove Road at-grade approximately 0.2 mile north of CR 109/Webb Road. The alignment would then continue eastward and bridge CR 98/Brays Road approximately 0.6 mile north of CR 454/Country Side Drive. It would then proceed eastward and bridge both CR 5 and the CSX Railroad as well as Oothkalooga Creek. Continuing eastward, the proposed alignment would intersect US 41/SR 3 at-grade approximately 0.3 mile south of CR 65/Union Grove Rd. The proposed concept would then turn northeastward. It would tie into CR 65/Union Grove Road approximately 0.5 mile east of US 41/SR 3. From this point, the concept would follow along CR 65/Union Grove Road for approximately 0.5 mile, then bridge I-75 on new location. Once the concept clears the interchange, it would turn northeastward and proceed on new location to a point approximately 0.3 mile east of CR 68. At that point, the concept would taper into a two lane typical section. After the taper, the alignment would continue eastward and bridge over CR 62/Union Grove Church Rd. Just past this intersection, the concept would turn northeastward again and continue to SR 53 on the east side of Calhoun just west of CR 64/Masson Rd.

CR 68/Johnson Lake Road, located just east of the I-75 interchange, would be shifted onto new location for approximately 0.9 mile to avoid being impacted by the new Interchange. CR 68/Belwood Road would be realigned with CR 68/Johnson Lake Road to provide a new crossover. This new intersection would be approximately 800' further east from its existing location. The section between where the concept ties into CR 65/Union Grove Road and relocated CR 68/Johnson Lake Road would have a 45 mph speed design to enhance safety and allow for adequate distance between median crossovers.

This project is currently programmed to begin at SR 3 and end at SR 53 on the east side of Calhoun for a length of 3.2 miles. It is recommended by this office that the project be extended to SR 53 on the west side of Calhoun. This extension would help eliminate logical termini issues and provide a southern bypass of the city of Calhoun. The total length of the concept is 6.7 miles.

PDP Classification: Major/Construction on new location

Federal Oversight: Full Oversight (), Exempt(X), 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: 4,750 – 14,000 Design Year: 2025 AADT: 9,500 – 26,000

Proposed features to be revised:

- **Alignment:** To avoid impact to a historic resource (Moore Property), it is recommended that the alignment be revised.
- **Typical Section:** To reduce impacts to adjacent wetland and industrial areas, it is recommended that the typical section be revised.
- **Speed Design:** It is recommended that the speed design be revised to accommodate the revised typical sections.
- **Right-of-Way:** It is recommended that the right-of-way limits for this project also be revised to accommodate the revised typical sections.

Describe the revised feature(s) to be approved:

- **Alignment:** The alignment remains the same as previously approved until reaching the east side of the proposed NH-STP-75-3(203) I-75 interchange. At that point, the alignment continues eastward reconstructing to the south along CR 65/Union Grove Road. After avoiding the historic Moore Property, the alignment turns northeastward, bridging over CR 62/Union Grove Church Road and continues until reaching the ending terminus at SR 53. The revised total length of this concept is approximately 6.8 miles.
- **Typical Section:** Four 12-foot lanes with a 44-foot depressed median would be constructed on new location from the beginning terminus to approximately 0.2 miles west of US 41/SR 3. The typical section would then become four 12-foot lanes with a 20-foot raised median rural section until approximately 0.1 miles west of CS 825/Marine Road. At that point, the typical section would change to four 12-foot lanes with a 20-foot raised median urban section. The proposed revised concept report for NH-STP-75-3(203) would continue reconstructing CR 65/Union Grove Road with this typical section from approximately CS 825/Marine Road to approximately 0.2

miles east of CR 68/Belwood Road. The urban 20-foot raised median would then continue for approximately 0.5 miles. The typical section would then return to four 12-lanes with a 20-foot raised median rural section until approximately 0.1 miles east of CR 62/Union Grove Church Road. At this point, the typical section would taper into two 12-foot lanes on two lanes of right-of-way and continue to the ending terminus at SR 53. Three new pairs of parallel bridges would be constructed over CR 98/Brays Road, CR 5 & CSX Railroad, and Oothkalooga Creek, as approved. However, a new single bridge would now be constructed over CR 62/Union Grove Church Road to accommodate the four 12-foot lanes with a 20-foot raised median typical section. The single bridge over I-75 would be constructed under the proposed NH-STP-75-3(203) revised concept report.

- **Speed Design:** The speed design for the 44-foot median and two-lane mainline sections would be 55 mph; the 20-foot raised median sections would have a 45 mph speed design.
- **Right-of-Way:** The proposed right-of-way for the 44-foot depressed median section varies from approximately 250 feet to 425 feet in order to accommodate the typical section through steep terrain. The rural 20-foot raised median sections have approximately 200 feet to 450 feet of proposed right-of-way and the urban 20-foot raised median section requires approximately 130 feet. The proposed right-of-way for the two-lane mainline section varies from approximately 280 feet to 450 feet to accommodate the typical section through steep terrain. Relocation and tie-ins for CR 99/Oak Grove Road, CR 65/Union Grove Road (near The Dodd property), and SR 53 east terminus have 100 feet to 200 feet of proposed right-of-way.

Updated traffic data (AADT):

Current Year: N/A AADT: N/A Design Year: N/A AADT: N/A

Programmed/Schedule:

P.E. 1998 R/W: 2008 Construction: 2011

Revised cost estimates:

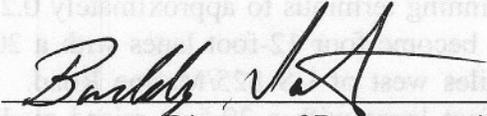
- | | |
|---|---------------|
| 1. Construction cost including inflation and E&C: | \$ 37,344,000 |
| 2. Right-of-way: | \$ 6,805,200 |
| 3. Utilities: | \$ 2,011,680 |

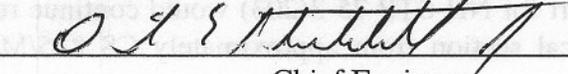
Is the project located in a Non-attainment area? Yes No.

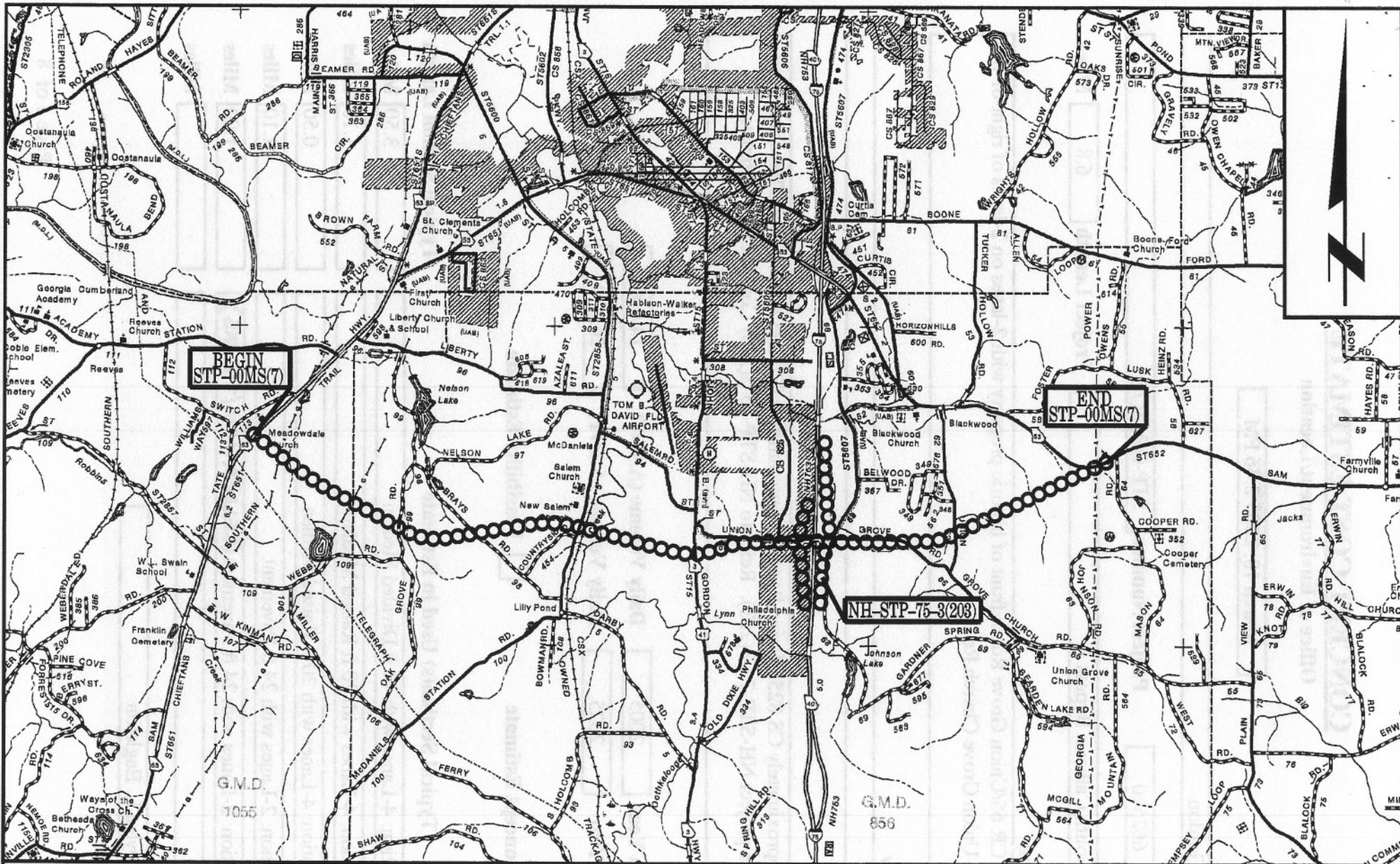
Recommendation: It is recommended that the proposed revision to this concept be approved for implementation.

Attachments:

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

Concur: 
 Director of Preconstruction

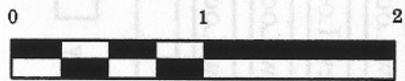
Approve: 
 Chief Engineer



**BEGIN
STP-OOMS(7)**

**END
STP-OOMS(7)**

NH-STP-75-3(203)



SCALE IN MILES



LOCATION

STRIP MAP
STP-OOMS(7) & NH-STP-75-3(203)
SOUTH CALHOON 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 18, 2005 2:46 PM

County(s)

PI Number Project Number

Project Name Project Length Miles

Project Description

Alignment along CR 65/Union Grove Rd. in front of historic property with 2-lanes on 2-lanes of right-of-way after bridge over Union Grove Church Rd.

Existing Roadway

Rural 2-lanes

Comments

Mainline from approximately CS 825/Marine Road to approximately 970 feet east of CR 68/Belwood Road is proposed under project NH-STP-75-3(203). Refer to NH-STP-75-3(203) Concept Cost Estimate.

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

Rural New Location: 4-Lanes with 44 ft Divided Median	<input type="text" value="3.50"/> Miles
Rural New Location: 4-Lanes with 20 ft Raised Median	<input type="text" value="1.10"/> Miles
Urban New Location: 4-Lanes with 20 ft Raised Median	<input type="text" value="0.50"/> Miles
Rural New Location: 2-Lanes with 24 ft Pavement	<input type="text" value="1.10"/> Miles
Rural New Location: 2-Lanes with 24 ft Pavement (RELOCATION/TIE-INS)	<input type="text" value="1.00"/> 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	Brays Road	2	Roadway-New	43.50	282.0	57.00	1,398,000
2	CR 5 & CSX Railroad	2	Roadway-New	43.50	300.0	57.00	1,488,000
3	Oothkalooga Creek	2	Stream-New	43.50	460.0	54.00	2,161,000
4	Union Grove Church Road	1	Roadway-New	91.50	280.0	57.00	1,460,000
5							
6							
7							
8							
9							
10							
11							
12							

Bridge Culverts

NO	LOCATION	TYPE / W x H / FILL	LENGTH	UNIT COST	TOTAL
1	Approx. 0.7mi. from Ending Terminus	Single / 6 x 4 / 50	240.0	522.87	125,000
2					
3					
4					
5					
6					
7					
8					

Walls

NO	LOCATION	TYPE	HEIGHT	LENGTH	UNIT COST	TOTAL
1						
2						
3						
4						
5						
6						

MAJOR STRUCTURES SUBTOTAL \$ 6,632,000

Typical Section

Rural New Location: 4-Lanes with 44 ft Divided 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
978,500 CY	3.44	3,366,000
97,800 CY	10.00	978,000
2,000 CY	4.64	9,000
3.50 MI	178,491	625,000
GRADING AND DRAINAGE SUBTOTAL		\$4,978,000

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"	75,756 TN	16.53	1,252,000
2. ASPHALT PAVING			
1 1/2" (165 LB/SY)	11,011 TN	39.09	430,000
3" (330 LB/SY)	22,217 TN	46.30	1,029,000
4" (440 LB/SY)	27,404 TN	44.00	1,206,000
	16,128 GL	1.12	18,000
3. CONCRETE PAVING			
		LF	
	3.50 MI	45,727	160,000
4. OTHER PAVING			
BASE AND PAVING SUBTOTAL			\$4,505,000

LUMP ITEMS

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

QUANTITY	UNIT COST	TOTAL
3.50 MI	41,000	144,000
106.06 AC	6,000	636,000
3.50 MI	208,155	729,000
3.50 MI	29,623	104,000
3.50 MI	139,436	488,000
LUMP ITEM SUBTOTAL		\$2,101,000

MISCELLANEOUS PROJECT ITEMS

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

QUANTITY	UNIT COST	TOTAL
15,000 LF	11.54	173,000
48 EA	414.83	20,000
	MI	453,560
MISCELLANEOUS SUBTOTAL		\$193,000

Typical Section

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

Typical Section Length Miles

Right-of-Way Width Feet

GRADING AND DRAINAGE

1. EARTHWORK	QUANTITY	UNIT COST	TOTAL
a. Unclassified Excavation Soil	146,100 CY	3.44	503,000
b. Unclassified Excavation Rock			
c. Borrow Excavation	146,100 CY	4.64	678,000
2. MINOR DRAINAGE	1.10 MI	186,858	654,000
GRADING AND DRAINAGE SUBTOTAL			\$1,835,000

BASE AND PAVING

	THICKNESS and SPREAD RATE	QUANTITY		UNIT COST	TOTAL
	1. GRADED AGGREGATE BASE	10"	21,641	TN	16.53
2. ASPHALT PAVING					
a. Asph Conc 9.5 mm Superpave	1 1/2" (165 LB/SY)	3,248	TN	39.09	127,000
b. Asph Conc 19 mm Superpave	3" (330 LB/SY)	6,557	TN	46.30	304,000
c. Asph Conc 25 mm Superpave	4" (440 LB/SY)	7,011	TN	44.00	308,000
d. Bituminous Tack Coat		4,473	GL	1.12	5,000
3. CONCRETE PAVING					
a. Curb and Gutter		11,462	LF	15.43	177,000
b. Miscellaneous		1.10	MI	50,300	55,000
4. OTHER PAVING					133,000
BASE AND PAVING SUBTOTAL					\$1,467,000

LUMP ITEMS

	QUANTITY	UNIT COST	TOTAL
1. TRAFFIC CONTROL	1.10 MI	30,304	33,000
2. CLEARING AND GRUBBING	26.67 AC	6,000	160,000
3. EROSION CONTROL	1.10 MI	156,837	173,000
4. SIGNING & MARKING	1.10 MI	35,053	39,000
5. MISCELLANEOUS	1.10 MI	103,061	113,000
LUMP ITEM SUBTOTAL			\$518,000

Typical Section

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

Typical Section Length Miles

Right-of-Way Width Feet

GRADING AND DRAINAGE

	QUANTITY	UNIT COST	TOTAL
1. EARTHWORK			
a. Unclassified Excavation Soil	21,700 CY	3.44	75,000
b. Unclassified Excavation Rock			
c. Borrow Excavation	21,700 CY	4.64	101,000
2. MINOR DRAINAGE	0.50 MI	449,586	1,574,000
GRADING AND DRAINAGE SUBTOTAL			\$1,750,000

BASE AND PAVING

	THICKNESS and	QUANTITY	UNIT COST	TOTAL
	SPREAD RATE			
1. GRADED AGGREGATE BASE	10"	8,693 TN	16.53	144,000
2. ASPHALT PAVING				
a. Asph Conc 9.5 mm Superpave	1 1/2" (165 LB/SY)	1,162 TN	39.09	45,000
b. Asph Conc 19 mm Superpave	3" (330 LB/SY)	2,351 TN	46.30	109,000
c. Asph Conc 25 mm Superpave	4" (440 LB/SY)	3,187 TN	44.00	140,000
d. Bituminous Tack Coat		1,782 GL	1.12	2,000
3. CONCRETE PAVING				
a. Curb and Gutter		11,082 LF	15.43	171,000
b. Miscellaneous		0.50 MI	78,088	39,000
4. OTHER PAVING				65,000
BASE AND PAVING SUBTOTAL				\$715,000

LUMP ITEMS

	QUANTITY	UNIT COST	TOTAL
1. TRAFFIC CONTROL	0.50 MI	36,500	18,000
2. CLEARING AND GRUBBING	6.06 AC	6,000	36,000
3. EROSION CONTROL	0.50 MI	116,237	58,000
4. SIGNING & MARKING	0.50 MI	65,535	33,000
5. MISCELLANEOUS	0.50 MI	250,440	125,000
LUMP ITEM SUBTOTAL			\$270,000

Typical Section

Rural New Location: 2-Lanes with 24 ft Pavement

Typical Section Length Miles

Right-of-Way Width Feet

GRADING AND DRAINAGE

1. EARTHWORK	QUANTITY	UNIT COST	TOTAL
a. Unclassified Excavation Soil	706,900 CY	3.44	2,432,000
b. Unclassified Excavation Rock	70,690 CY	10.00	707,000
c. Borrow Excavation			
2. MINOR DRAINAGE	1.10 MI	56,667	198,000
GRADING AND DRAINAGE SUBTOTAL			\$3,337,000

BASE AND PAVING

	THICKNESS and SPREAD RATE	QUANTITY	UNIT COST	TOTAL
1. GRADED AGGREGATE BASE	10"	12,079 TN	16.53	200,000
2. ASPHALT PAVING				
a. Asph Conc 9.5 mm Superpave	1 1/2" (165 LB/SY)	1,970 TN	39.09	77,000
b. Asph Conc 19 mm Superpave	3" (330 LB/SY)	3,970 TN	46.30	184,000
c. Asph Conc 25 mm Superpave	4" (440 LB/SY)	3,505 TN	44.00	154,000
d. Bituminous Tack Coat		2,513 GL	1.12	3,000
3. CONCRETE PAVING				
a. Curb and Gutter				
b. Miscellaneous		1.10 MI	17,251	19,000
4. OTHER PAVING				64,000
BASE AND PAVING SUBTOTAL				\$701,000

LUMP ITEMS

	QUANTITY	UNIT COST	TOTAL
1. TRAFFIC CONTROL	1.10 MI	10,696	12,000
2. CLEARING AND GRUBBING	37.33 AC	6,000	224,000
3. EROSION CONTROL	1.10 MI	146,517	161,000
4. SIGNING & MARKING	1.10 MI	10,726	12,000
5. MISCELLANEOUS	1.10 MI	36,375	40,000
LUMP ITEM SUBTOTAL			\$449,000

Typical Section

Rural New Location: 2-Lanes with 24 ft Pavement (RELOCATION/TIE-INS)

Typical Section Length Miles

Right-of-Way Width Feet

GRADING AND DRAINAGE

	QUANTITY	UNIT COST	TOTAL
1. EARTHWORK			
a. Unclassified Excavation Soil	25,000 CY	3.44	86,000
b. Unclassified Excavation Rock	5,000 CY	10.00	50,000
c. Borrow Excavation	20,000 CY	4.64	93,000
2. MINOR DRAINAGE	1.00 MI	56,667	198,000
GRADING AND DRAINAGE SUBTOTAL			\$427,000

BASE AND PAVING

	THICKNESS and SPREAD RATE	QUANTITY	UNIT COST	TOTAL
1. GRADED AGGREGATE BASE	10"	10,981 TN	16.53	182,000
2. ASPHALT PAVING				
a. Asph Conc 9.5 mm Superpave	1 1/2" (165 LB/SY)	1,791 TN	39.09	70,000
b. Asph Conc 19 mm Superpave	3" (330 LB/SY)	3,609 TN	46.30	167,000
c. Asph Conc 25 mm Superpave	4" (440 LB/SY)	3,187 TN	44.00	140,000
d. Bituminous Tack Coat		2,284 GL	1.12	3,000
3. CONCRETE PAVING				
a. Curb and Gutter				
b. Miscellaneous		1.00 MI	17,251	17,000
4. OTHER PAVING				58,000
BASE AND PAVING SUBTOTAL				\$637,000

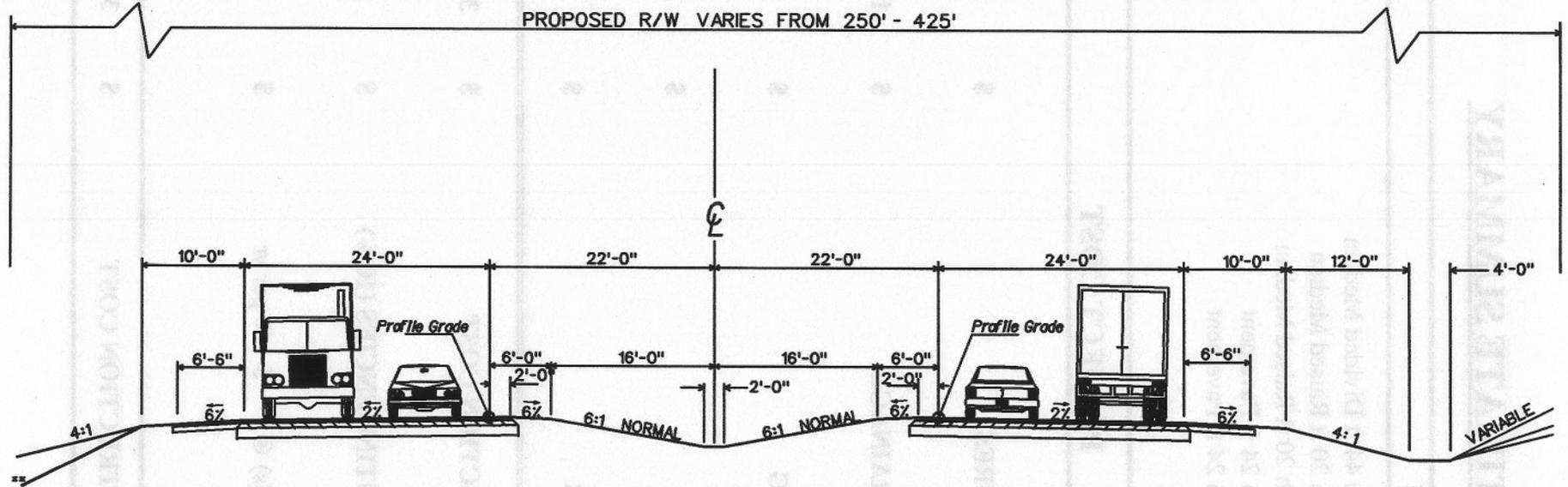
LUMP ITEMS

	QUANTITY	UNIT COST	TOTAL
1. TRAFFIC CONTROL	1.00 MI	10,696	11,000
2. CLEARING AND GRUBBING	12.12 AC	6,000	73,000
3. EROSION CONTROL	1.00 MI	146,517	147,000
4. SIGNING & MARKING	1.00 MI	10,726	11,000
5. MISCELLANEOUS	1.00 MI	36,375	36,000
LUMP ITEM SUBTOTAL			\$278,000

ESTIMATE SUMMARY

TYPICAL SECTION	COST (per mile)
1. Rural New Location: 4-Lanes with 44 ft Divided Median	\$ 3,310,000
2. Rural New Location: 4-Lanes with 20 ft Raised Median	\$ 3,473,000
3. Urban New Location: 4-Lanes with 20 ft Raised Median	\$ 5,470,000
4. Rural New Location: 2-Lanes with 24 ft Pavement	\$ 4,079,000
5. Rural New Location: 2-Lanes with 24 ft Pavement	\$ 1,342,000
PROJECT COST	
A. MAJOR STRUCTURES	\$ 6,632,000
B. GRADING AND DRAINAGE	\$ 12,327,000
C. BASE AND PAVING	\$ 8,025,000
D. LUMP ITEMS	\$ 3,616,000
E. MISCELLANEOUS	\$ 193,000
SUBTOTAL CONSTRUCTION COST	\$ 30,793,000
ENGINEERING & CONTINGENCIES (10%)	\$ 3,079,000
INFLATION <u>2</u> yr(s) @ <u>5</u> % per yr	\$ 3,472,000
GRAND TOTAL CONSTRUCTION COST	\$ 37,344,000

TYPICAL SECTION 44-FOOT DEPRESSED GRASS MEDIAN RURAL SECTION 55 MPH SPEED DESIGN



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

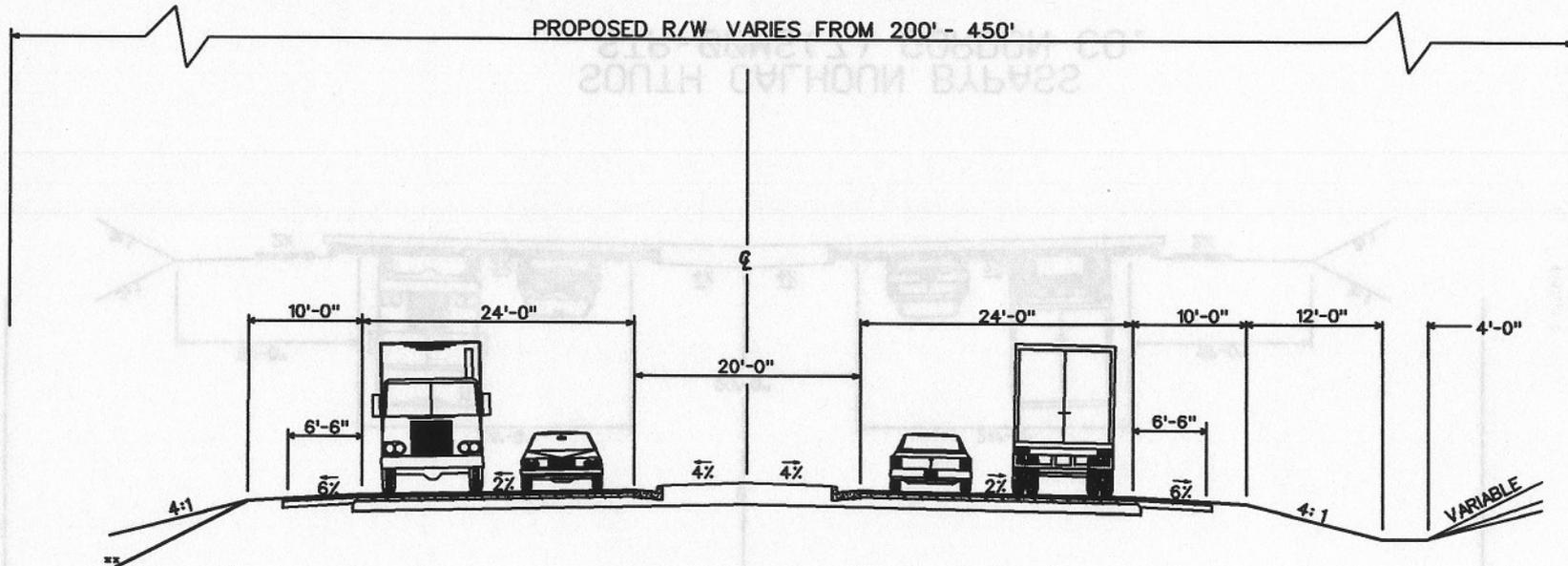
SOUTH CALHOUN BYPASS
STP-00MS(7) GORDON CO.

FROM BEGINNING TERMINUS
TO APPROXIMATELY 0.2 MILES WEST OF US 41 / SR 3

NOT TO SCALE

NOT TO SCALE

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



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

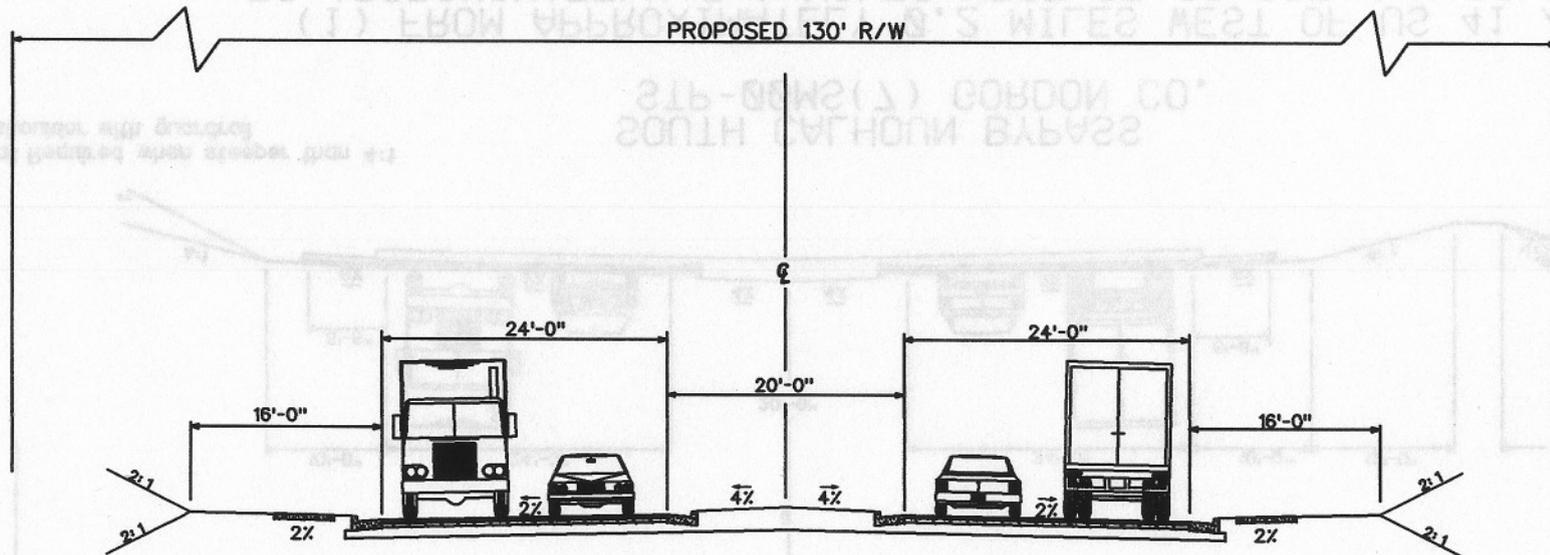
SOUTH CALHOUN BYPASS
STP-00MS(7) GORDON CO.

(1) FROM APPROXIMATELY 0.2 MILES WEST OF US 41 / SR 3
TO APPROXIMATELY 0.1 MILES WEST OF CS 825 / MARINE ROAD

(2) FROM APPROXIMATELY 0.7 MILES EAST OF CR 68 / BELWOOD ROAD
TO APPROXIMATELY 0.1 MILES EAST OF CR 62 / UNION GROVE CHURCH ROAD

NOT TO SCALE

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



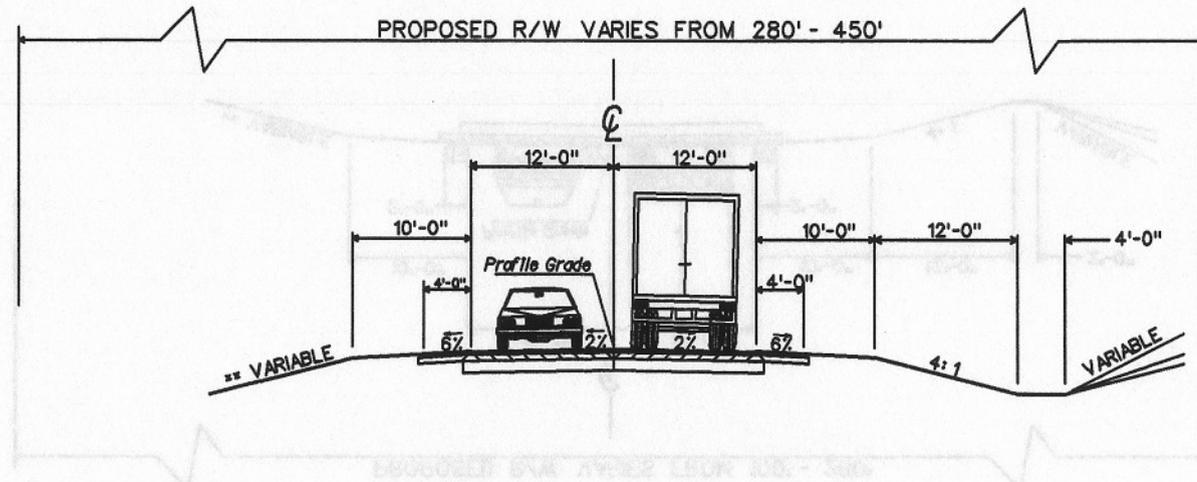
SOUTH CALHOUN BYPASS
STP-00MS(7) GORDON CO.

- (1) FROM APPROXIMATELY 0.1 MILES WEST OF CS 825 / MARINE ROAD
TO APPROXIMATELY CS 825 / MARINE ROAD
- (2) FROM APPROXIMATELY 0.2 MILES EAST OF CR 68 / BELWOOD ROAD
TO APPROXIMATELY 0.7 MILES EAST OF CR 68 / BELWOOD ROAD

NOTE:
THIS TYPICAL SECTION IS CONTINUED UNDER NH-STP-75-3(203)
FROM APPROXIMATELY CS 825/MARINE ROAD
TO APPROXIMATELY 0.2 MILES EAST OF CR 68/BELWOOD ROAD.
REFER TO NH-STP-75-3(203) TYPICALS.

NOT TO SCALE

TYPICAL SECTION
 2-LANE RURAL SECTION
 55 MPH SPEED DESIGN
 (MAINLINE)



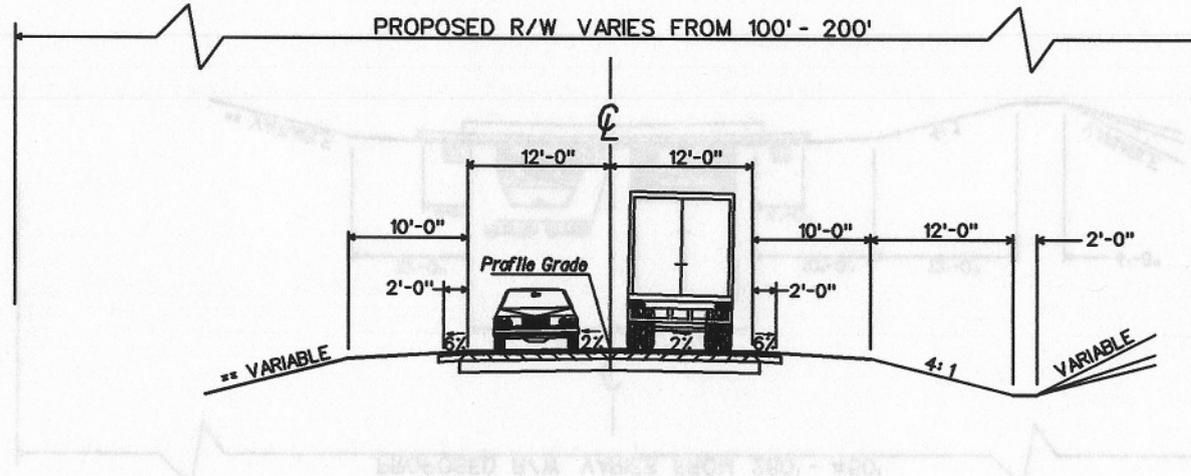
** Guardrail Required when steeper than 4:1
 15'-6" shoulder with guardrail

SOUTH CALHOUN BYPASS
 STP-00MS(7) GORDON CO.

FROM APPROXIMATELY 0.1 MILES EAST OF CR 62 / UNION GROVE CHURCH ROAD
 TO ENDING TERMINUS

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
 STP-00MS(7) GORDON CO.

RELOCATION & TIE-INS FOR
 CR 99 / OAK GROVE ROAD
 CR 65 / UNION GROVE ROAD NEAR THE DODD PROPERTY
 SR 53 AT EASTERN TERMINUS

NOT TO SCALE