FLORIDA DEPARTMENT OF TRANSPORTATION

Environmental Management Study For:

S.R.45 (U.S.41)

From S.R.44 to the Marion County Line

Citrus County, Florida

STATE PROJECT NO.	02010-1537
WORK PROGRAM NO.	5111574
FEDERAL AID PROJECT NO.	SA-301-5-(9)

PRELIMINARY ENGINEERING REPORT

* Revised 1/9/96

Date 10/5/95

SR 45 (US 41)
FROM SR 44 WEST
TO MARION COUNTY LINE
CITRUS COUNTY

STATE PROJECT NO.: 02010-1537
WORK PROGRAM NO.: 5111574
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P.E. No. 43400
Date: 1/9/96

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I. INTRODUCTION

A. Purpose:

The purpose of this report is to identify the deficiencies in the existing facility and develop viable alternative concepts which will provide appropriate highway service commensurate with social, economic and environmental impacts. Analysis of the alternatives will verify those which have the highest potential for implementation and will document the rejection of the others.

B. Background:

SR 45 is a major north-south road connecting Inverness at SR 44 to Dunnellon in Marion County. This route serves both local traffic and interregional movements. As one of the major routes in Citrus County, SR 45 travel demand is expected to increase and thus exceed its capacity. The Citrus County Comprehensive Plan identifies the need to widen SR 45 to four lane.

SR 45 is categorized as a Type 3 facility which is considered restrictive in access and median openings. This therefore requires that the widening consider the use of a median to separate travel lanes.

A location map showing SR 45 and the surrounding roadways can be seen in Figure 1.

II. EXISTING FACILITY

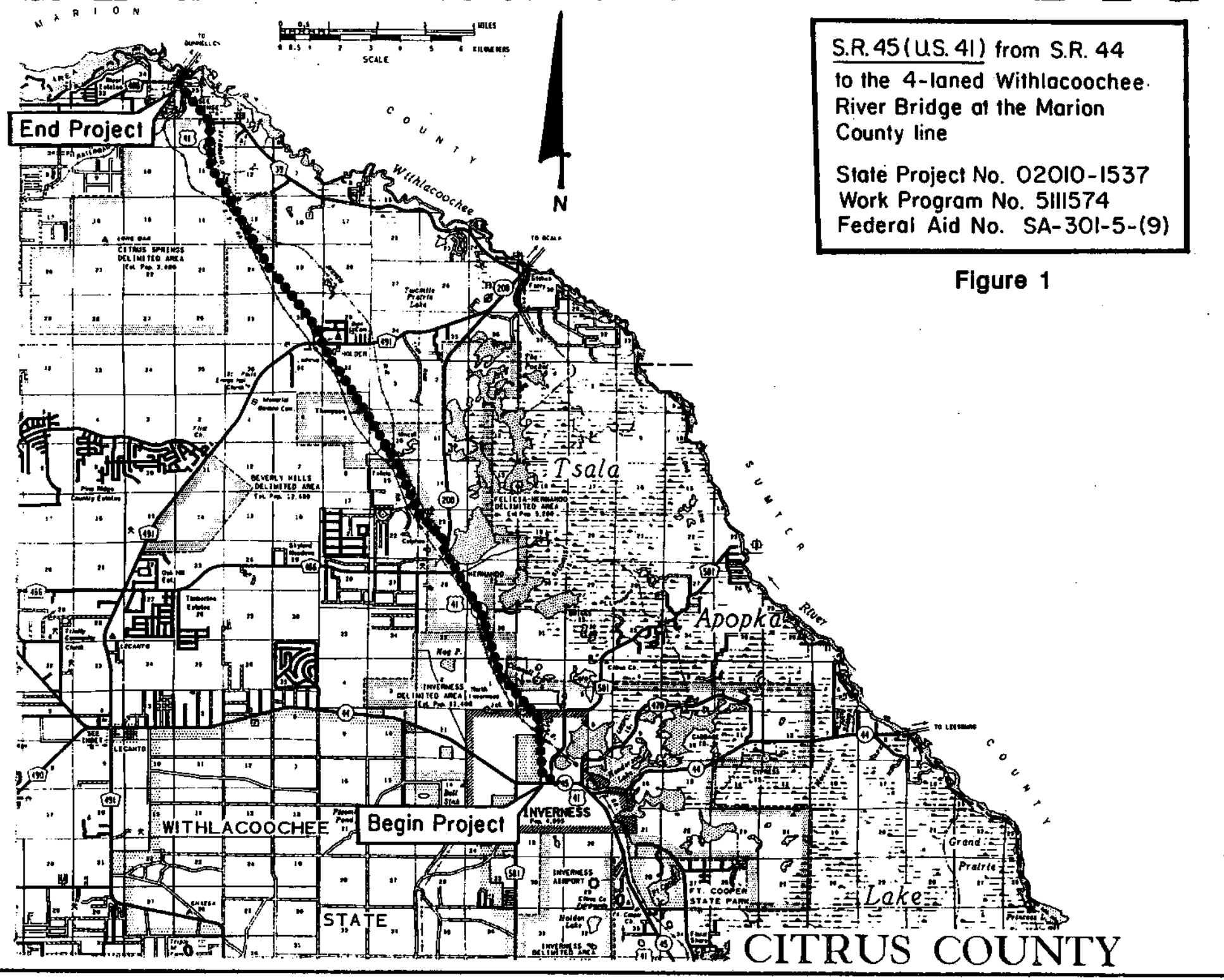
A. Functional Classification:

SR 45 is classified as a "Rural Arterial". The Florida Intrastate Highway System (FIHS) classified SR 45 as a Type 6 from SR 44 to mile post 13.555 which is considered "non-restrictive". From mile post 13.555 (Montgomery Road) to the Marion County line SR 45 is a Type 3 facility which is classified as "restrictive". The "restrictive" classification allows for full median cuts at 800 meters(0.5 mile) intervals and directional median cuts at 400 meters (one quarter mile).

B. Typical Sections:

The section of SR 45 in Inverness from SR 44 to Montgomery Road consists of a single lane in each direction separated by a bi-directional left turn lane. Drainage is controlled by roadside swale ditches and there is an intermittent 1.5 meter (five foot) sidewalk on the east side of the road, and 1.2 meter (4 foot) shoulders on both sides of the road. This typical section can be seen in Figure 2.

From Montgomery Road to County Road 488, SR 45 is basically a two lane undivided roadway with roadside ditches for drainage and 2.4 meter (eight foot) grass shoulders. There are several isolated locations where a 3.6 meter (12 foot) painted median exists for left turns. This typical section can be seen in Figure 3.



S.R. 45 (U.S. 41) from S.R. 44 to the 4-laned Withlacoochee River Bridge at the Marion County line

State Project No. 02010-1537
Work Program No. 5111574
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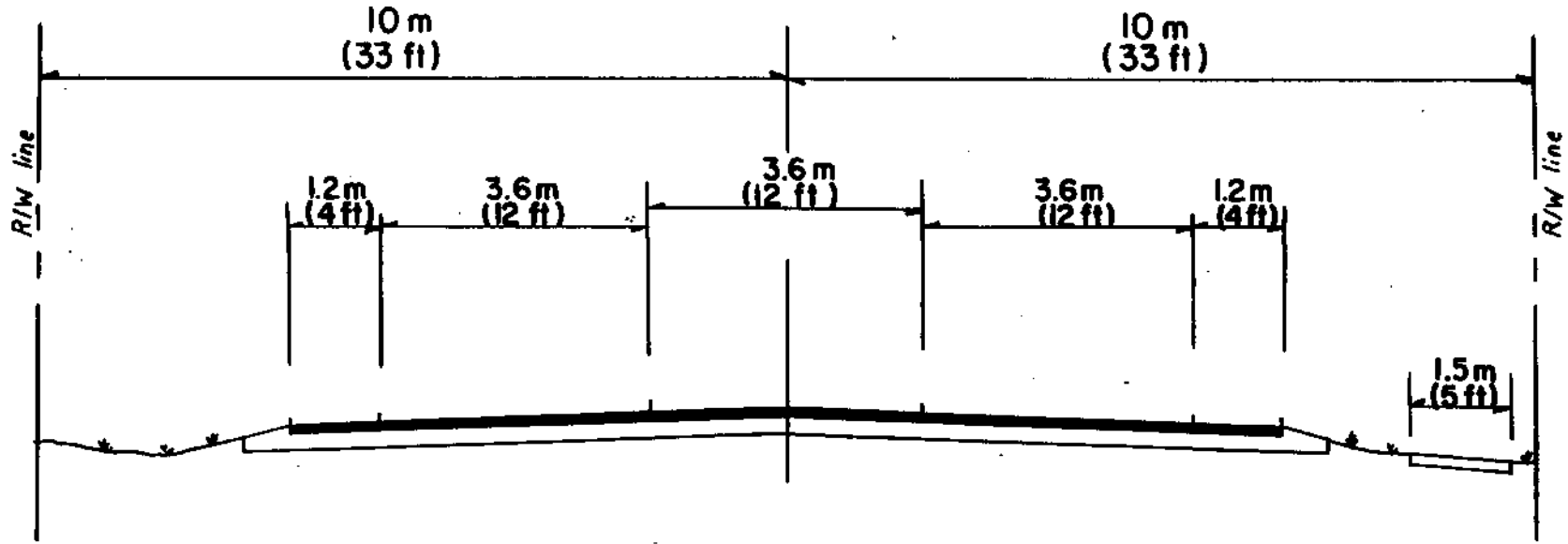
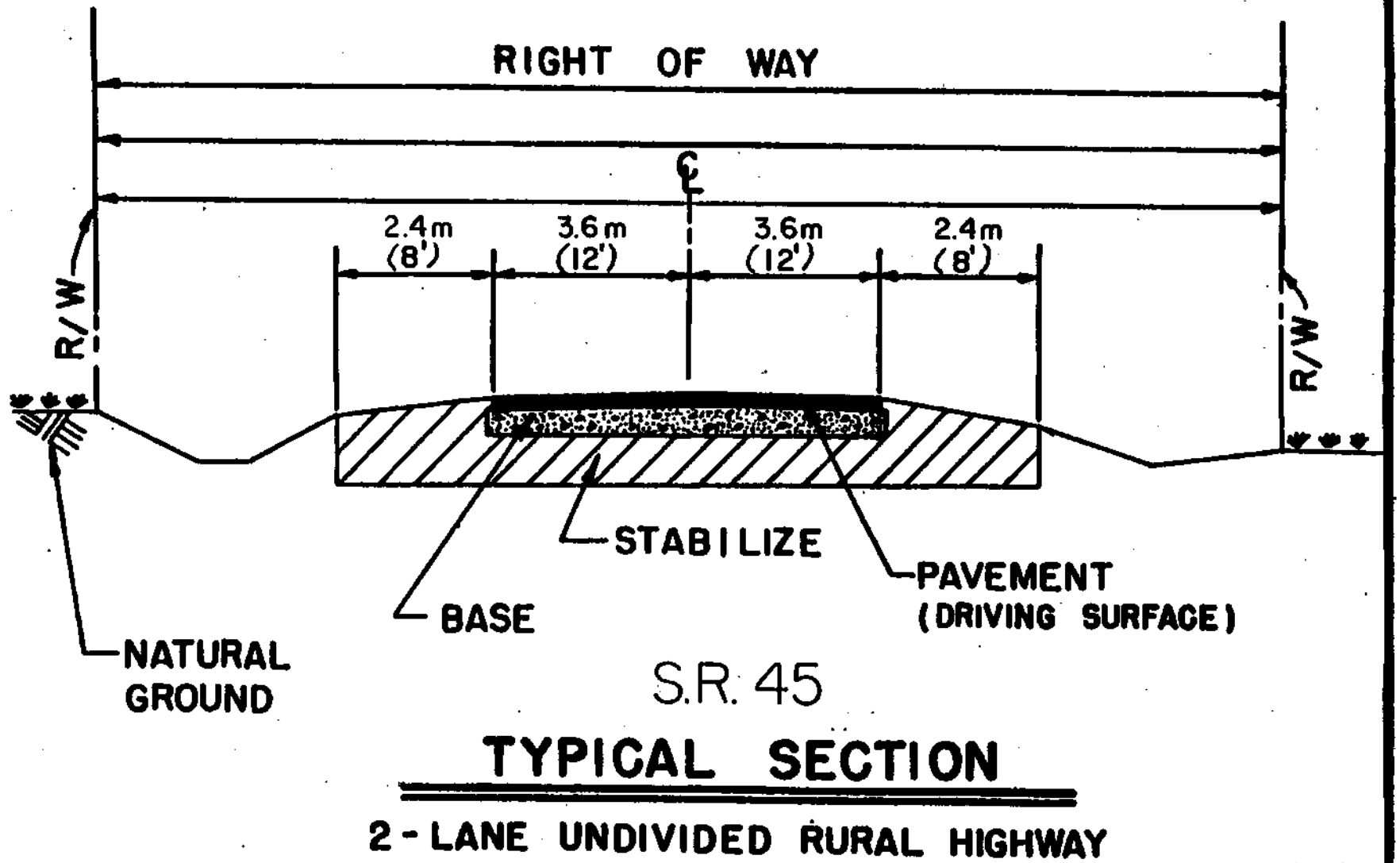
Figure 1



S.R. 45
Existing Typical Section
S.R. 44 to Montgomery Road

Figure 2



S.R. 45

TYPICAL SECTION

2 - LANE UNDIVIDED RURAL HIGHWAY

Figure 3

C. **Horizontal Alignment:**

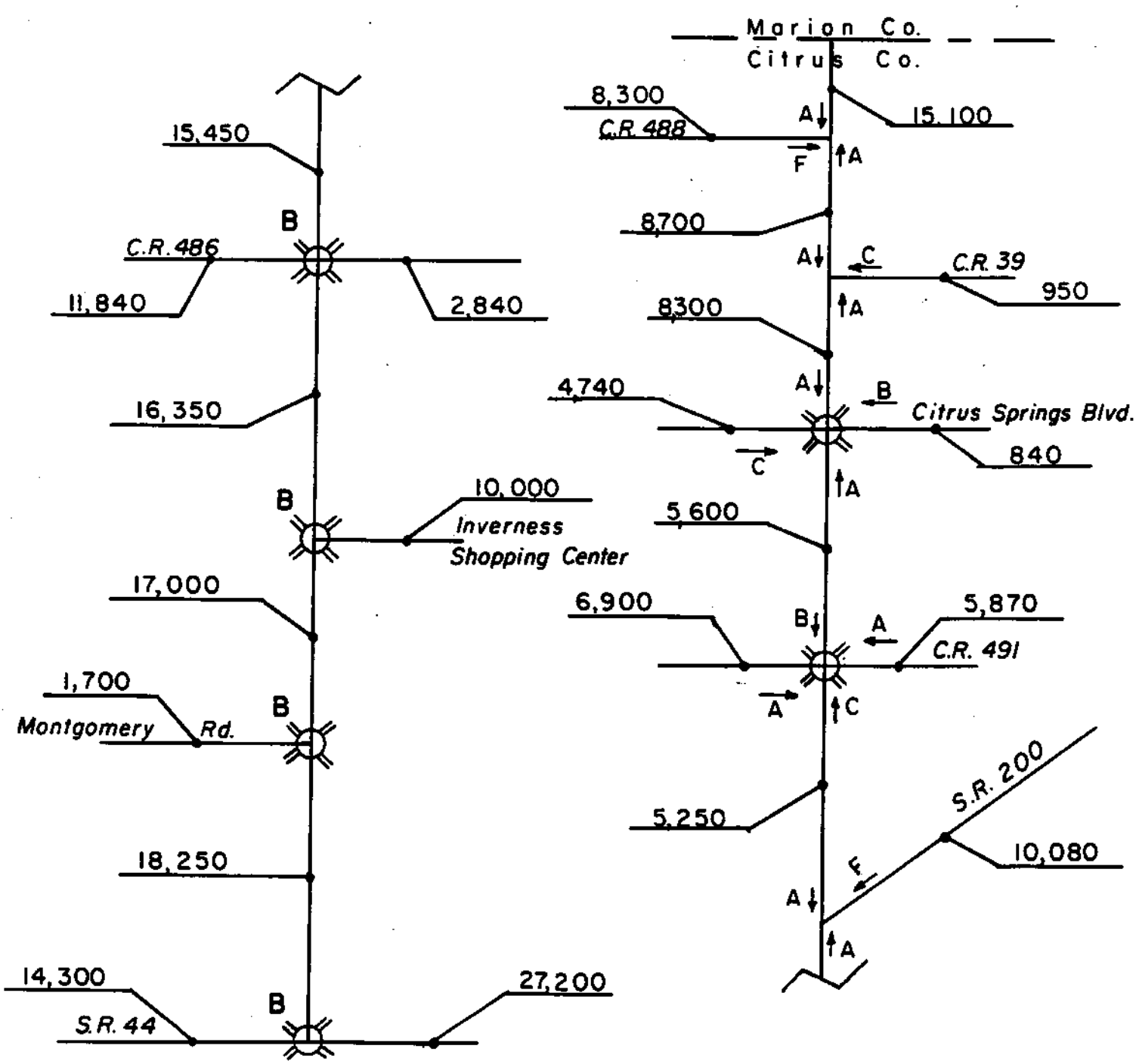
From Inverness, SR 45 runs essentially north north-west. The horizontal alignment consists of tangent sections broken up by curves of varying degrees. In the urbanized areas and those areas with a speed limit of 78 km/h (45 mph) or less, the degree of curvature ranges from 0°30′ to 7°00′. In the rural areas where the speed limit is 90 km/h (55 mph) the degree of curvature ranges from 0°10′ to 3°00′.

D. **Vertical Alignment:**

SR 45 is basically flat following the local terrain. There are three exceptions; the bridge over the abandoned CSX railroad located at mile post 14.250 (station 68+85); the bridge over the existing CSX railroad line located at mile post 29.660 (station 881+90); and the bridge over the Withlacoochee River located at mile post 30.010 (station 902+10). For the three bridges the vertical grades vary from 0.8% to 5.0%.

E. **Traffic Data:**

Present traffic data (year 1992) in terms of Average Daily Traffic (ADT) and Level of Service (LOS) for the project are provided in Figure 4.



Existing Signal/Beacon

S.R. 45

1992

Average Daily Traffic

and Intersection Level of Service

Figure 4

F. Accident Data:

Accident statistics for the years 1984 through 1988 were available to the Department for this study. The number and types of accidents along with the number of injuries and deaths, economic loss and safety ratio for this segment of SR 45 is located in Table 1.

TABLE 1
ACCIDENT DATA
SR 45 (US 41) - CITRUS COUNTY

	87	88	89	90	91	Total	%
Rear End	39	15	21	18	15	108	34.5
Angular	7	7	10	10	15	48	15.3
Left Turn	15	18	17	15	10	75	24.0
Sideswipe	5	4	1	1	0	11	3.5
Right Turn	3	1	3	3	0	10	3.2
Head On	3	1	0	0	2	6	1.9
Pedestrian or Bicycle	0	0	1	1	0	2	0.6
Run Off Road	3	5	1	0	0	9	2.9
Hit Fixed Object	3	9	8	6	3	29	9.3
Other	5	4	0	4	2	15	4.8
Fatalities	2	2	0	1	4	9	---
Injuries	126	83	72	75	80	436	---
Economic Loss $M	**5.811**	**4.475**	**4.108**	**3.723**	**3.069**	**21.186**	**Average**
Ratio*	0.746	0.715	0.795	0.887	0.782	—	0.785

* The safety ratio is the number of accidents per million miles traveled divided by the average number of accidents per mile traveled of similar roadway throughout the state, plus a statistical factor for that type of facility. An accident ratio greater than 1.00 indicates a high accident section.

G. Utilities:

The following have been identified as having utilities which may lie within the project area:

Florida Power Corporation
Post Office Box 14042-Mail Code D2D
St. Petersburg, Florida 33733

City of Dunnellon
P.O. Box 430
Dunnellon, Florida 32630

Citrus County
Department of Technical Services
P.O. Box 440
Lecanto, Florida 32661

Telesat Cablevision, Inc.
2020 Highway 44 West
Inverness, Florida 32650

Cablevision of Central Florida
2850 South Lecanto Highway
Lecanto, Florida 32661

Southern States Utilities
1000 Color Place
Apopka, Florida 32703

Withlacoochee River Electric Coop, Inc.
P.O. Box 278
Dade City, Florida 33525

City of Inverness
212 West Main Street
Inverness, Florida 32650

United Telephone System - Florida
P.O. Box 490048
Leesburg, Florida 32749-0048

Southern Bell Telephone
& Telegraph Co.
1065 U.S. 41, South
Brooksville, Florida 34601

Southern State Utilities
P.O. Box 217
Dunnellon, Florida 32630

Sumter Electric Coop, Inc.
P. O. Box 301
Sumterville, Florida 33585

H. Soils:

According to the United States Department of Agriculture Soil Conservation Service, Soil Survey of Citrus County, Florida general soils maps, the soils on which SR 45 from SR 44 to the Marion County line traverse are generally described as Chandler-Lake-Astatula and Tavares-Adamsville. These soils are described as nearly level to moderately sloping well drained to excessively drained soils that are sandy throughout.

The Soil Conservation Service maps which have more detail, indicate that the primary soil encountered is Lake fine sand. A vast majority of the soils are described as "fine sands" with the exception of "Urban Land Complex" in Inverness, and those small areas described as "Udorthents" and "Lake Clayey Surface". These soils are common "fill soils" in areas where previous mining activities took place. There were no muck or swamp type soils identified along SR 45.

During the design phase a complete geotechnical investigation and analysis should be conducted. Organic soils and water tables should be carefully identified and noted during the geotechnical investigation.

I. Right of Way:

The existing right of way for SR 45 varies from 20 meters (66 feet) to 76.2 meters (250 feet). Table 2 shows the section numbers and right of way for each segment.

TABLE 2

STATION TO STATION	EAST		WEST	
	Meters	(Ft)	Meters	(Ft)
13+58 (SR 44) TO 36+25	10	(33)	10	(33)
36+25 to 43+02	16.7	(55)	10	(33)
43+02 to 57+90	10	(33)	10	(33)
57+90 to 87+00	40.2	(132)	20.7	(68)
87+00 to 90+20	38.1	(125)	38.1	(125)
90+20 to 98+45	10	(33)	10	(33)
98+45 to 122+00	23	(75)	23	(75)
122+00 to 300+38*	10	(33)	10	(33)
300+38 to 382+65	30.5	(100)	30.5	(100)
382+65 to 399+15	30.5	(100)	Varies 21.3-30.5	(70-100)
399+15 to 412+23	30.5	(100)	30.5	(100)
412+23 to 442+80	38.1	(125)	38.1	(125)
442+80 to 464+90	10	(33)	10	(33)
464+90 to 480+10	38.1	(125)	38.1	(125)
400+10 to 486+30	10	(33)	10	(33)
486+30 to 496+90	38.1	(125)	38.2	(125)
496+90 to 505+50	10	(33)	10	(33)
505+50 to 514+45	38.1	(125)	38.1	(125)
514+45 to 553+50	10	(33)	10	(33)
553+50 to 575+86	15.2	(125)	15.2	(50)
575+86 to 591+01	38.1	(125)	15.2	(50)
591+01 to 671+65	38.1	(125)	38.1	(125)
671+65 to 741+40	38.1	(125)	Varies 38.1-13.4	(125-44)
741+40 to 798+90	125		38.1	(125)
798+90 to 821+63	Varies 38.1-9.4	(125-31)	38.1	(125)
821+63 to 830+22	10	(33)	10	(33)
830+22 tc 840+47	15.2	(50)	15.2	(50)
840+47 to 856+74	10	(33)	10	(33)
856+74 to 868+16	38.1	(125)	38.1	(125)
868+16 to 872+00	10	(33)	10	(33)
872+00 to 902+94 (C.L. River)	Varies min. 15.20	(50)	Varies min. 15.2	(50)

* At the CR 486 intersection right of way is 15.2m (50') on both sides.

J. Pedestrian and Bicycle Facilities:

The only existing pedestrian facility (sidewalk) is on the east side of SR 45 in Inverness, and this is intermittent. There does exist a grass shoulder through most of the project which could accommodate pedestrians.

The travel lanes along the road are 3.6 meter (12 feet) and there are no paved shoulders to accommodate bicyclists. There are also no bicycle paths within the study corridor.

The Department of Natural Resources has acquired the abandoned CSX Railroad right of way to be made into a hiking and horseback riding trail. This program is call "Rails to Trails". SR 45 crosses over the abandoned railroad north of Inverness and runs basically parallel to the Rails to Trails right of way. Through much of the project SR 45 right of way is adjacent to the Rails to Trails right of way.

K. Traffic Signals and Lighting:

There presently exists six traffic signals. They are located at SR 44, Montgomery Road, Inverness Shopping Center entrance, CR 486, CR 491 and Citrus Springs Boulevard.

Presently the only lighting is in Inverness and in Hernando between CR 486 and SR 200. The City of Inverness is responsible for maintaining its lighting and Citrus County maintains the lighting in Hernando.

L. Structures:

There are three structures along the SR 45 corridor. Two of the three structures cross existing and abandoned railroad right of way. The third bridge crosses the Withlacoochee River.

The bridge that crossed the Withlacoochee River (station 902+94), has structure number 020026. This bridge was built in 1988 and was last inspected in February 1992. At that time the bridge had a sufficiency rating of 85.0 and a status of "No Significant Deficiency". The existing bridge has a deck width of 23.7 meters (77.7 feet) curb to curb. The existing typical section of this bridge consists of two lanes in each direction separated by a 3.6 meter (12 foot) painted median with 0.6 meter (2 foot) shoulders and a 1.5 meter (5 foot) sidewalk on the west side.

The bridge crossing the abandoned railroad right of way (station 69+50) which is now the Rails to Trails property, has a structure number of 020002. This bridge was built in 1950, and was last inspected in April, 1991. At that time it had a sufficiency rating of 60.9 and a status of "Functionally Obsolete". The bridge deck had a width of 8.5 meters (28 feet) curb to curb. The typical section consists of two 3.6 meter (12 foot) travel lanes and 0.6 meter (2 foot) outside shoulders. The structure length is 40.8 meters (134 feet) and the maximum span length is 13.4 meters (44 feet). The minimum vertical clearance of the middle span is 6.5 meters (21.5 feet).

The bridge crossing the CSX Railroad spur line, (station 882+80) has a structure number of 020025. This bridge was built in 1988, and was last inspected in February 1992, and at that time had a sufficiency rating of 66.0 and a status of "Functionally Obsolete". The bridge deck has a width of 13.4 meters (44.0 feet) curb to curb. This width allows for a typical section to consist of two 3.6 meter (12 foot) lanes and 1.5 meters (5 feet) outside shoulders. The total length of the structure is 67 meters (220 feet) and it has a maximum span length of 23.5 meters (77 feet). The minimum vertical clearance over the railroad is 6.9 meters (22.83 feet).

M. Drainage:

1. Existing Roadway Drainage

Currently, drainage along this rural section of SR 45 (US 41) is conveyed with a combination of overland sheet flow, roadside swales, side drains and crossdrains, which mostly discharge into closed basins. The straight line diagram (SLD) indicates a total of twenty crossdrain structures and two railroad overpasses within the project limits. However, based on field reviews, many of the crossdrains were never found. It appears that many of them may have been plugged and abandoned during previous roadway improvements.

2. Watershed Description

The project is located in the Withlacoochee River Basin and the Coastal Basin in the Southwest Florida Water Management District (SWFWMD). The roadway follows a natural drainage basin divide (sandridge) along portions of the project. The first 240 meters (1,070 feet) of the project drains into the new stormwater sewer system constructed during the SR 44 improvements. The 8 basins from Inverness to Hernando are isolated basins which have no positive outfall. The 3 basins located in Hernando near the SR 200 intersection outfall to Lake Tsala Apopka, which ties into the Withlacoochee River and then the Gulf of Mexico. North of SR 200 to South Dunnellon are 24 basins which are isolated and have no positive outfall. Finally, the basin north of CR 488 in South Dunnellon outfalls to the Withlacoochee River. The isolated basins drain to an existing low area. However, based on the Soil Conservation Service (SCS) County Soil Survey, recovery by percolation occurs very quickly.

Karst terrain, having a composite overland slope varying between zero and eight percent, is characteristic of the general topography. Natural depressions, sink holes and mines serve as storage areas for the closed drainage basins which are typical for the area. Tsala Apopka Lake borders the project several miles to the east at an elevation of approximately 12.2 meters (40 feet) NGVD. The lake outfalls into the Withlacoochee River to

the east which flows northwest and then west under SR 45 at the end of the project to the Gulf of Mexico. The topography ranges in elevation from approximately 9.1 meters (30 feet) to 39.9 meters (131 feet) NGVD. The lower elevations are associated with mines and natural ground elevations bordering the river, lakes and sink holes.

III. ENVIRONMENTAL AND SOCIOECONOMIC DATA

A. Land Use:

The primary land uses along SR 45 are public use, light industrial and commercial, and residential. In the City of Inverness the primary land uses are commercial and public use (Whispering Pines Park). North of Inverness to Hernando the land uses are light industry, commercial, and residential with the Rails to Trails on the west side of SR 45. North of Hernando (SR 200) to south Dunnellon the land use is primarily rural residential. There is a planned residential development (PRD) called Citrus Springs which consists of residential lots approximately one quarter acre in size. The total development is approximately 38.9 square kilometers (15 square miles). South Dunnellon is an unincorporated township with some commercial, light industrial and residential development.

B. Cultural Features and Community Services:

Starting at the southern end of the project, there is a U.S. Post Office on the east side of the road at the Montgomery Road intersection. On the west side of SR 45 from Montgomery Road to the bridge over the Rails to Trails is Whispering Pines Park. This park is a wooded area with some areas cleared for soccer and baseball fields as well as a swimming complex and basketball, tennis, and racket ball courts. Whispering Pines Park is maintained by the City of Inverness.

South of the Rails to Trails on the east side of SR 45 is Inverness Middle school run by the Citrus County School Board. The area fronting SR 45 is open fields with few trees. The school buildings are located approximately 305 meters (1000 feet) from SR 45.

South of CR 486 is the Hernando Church of the Nazarene on the east side of SR 45. At the intersection of SR 45 and CR 486 is the Lake View School which is located in the southeast corner. Located across CR 486 from the Lake View School is the First Baptist Church of Hernando. The Hernado United Methodist Church is located at the intersection of East Orange Street and SR45 in Hernado. North of the CR 491 intersection is the Holder Town Community Center. This Community Center is located on the west side of SR 45.

At the northern end of the project in the South Dunnellon township at section 860+00 is the Moose Lodge, which is located on the west side of SR 45.

Throughout much of the project running parallel to or adjacent to SR 45 is the Rails to Trails. This is a public access trail for hiking, biking, and horseback riding. The Rails to Trails is controlled by the Department of Natural Resources (DNR).

C. **Environmental and Biological Features:**

There exist few wooded areas along the southern half of the project. Throughout the section from SR 44 to SR 200 both sides of the road are developed with light to high density development. There exist some large tracts of open fields where livestock graze. At SR 200 is Lake Tsala Apopka. Throughout the project there are few wetlands.

North of SR 200 are some large tracts of wooded lands. There are large tracts of cleared lands which still bear the signs of past phosphate mining activity.

Between CR 491 and CR 39 is a large planned residential development known as Citrus Springs. Though most of the area is still heavily forested the whole development has been "improved" with a network of paved roads and in some areas, well developed with residences.

IV. MULTIMODAL TRANSPORTATION SYSTEMS

SR 45 through the length of this project is impacted by two other modes of transportation. On the northern end of the project SR 45 bridges a CSX Railroad spur line and the Withlacoochee River is used by pleasure water craft. While there is no commercial bus service on SR 45, there is school bus service which was discussed earlier in this report.

A. Train:

CSX Transportation currently operates a single line on the north end of the project. SR 45 crosses the CSX Rail line at station 882+80. This crossing is numbered 622619M and the SR 45 bridge is number 020025. This rail line serves the electricity producing plan located in Crystal River. In 1992 the single set of tracks had two trips per day. At this time there are no plans to increase the number of trips or abandon these tracks.

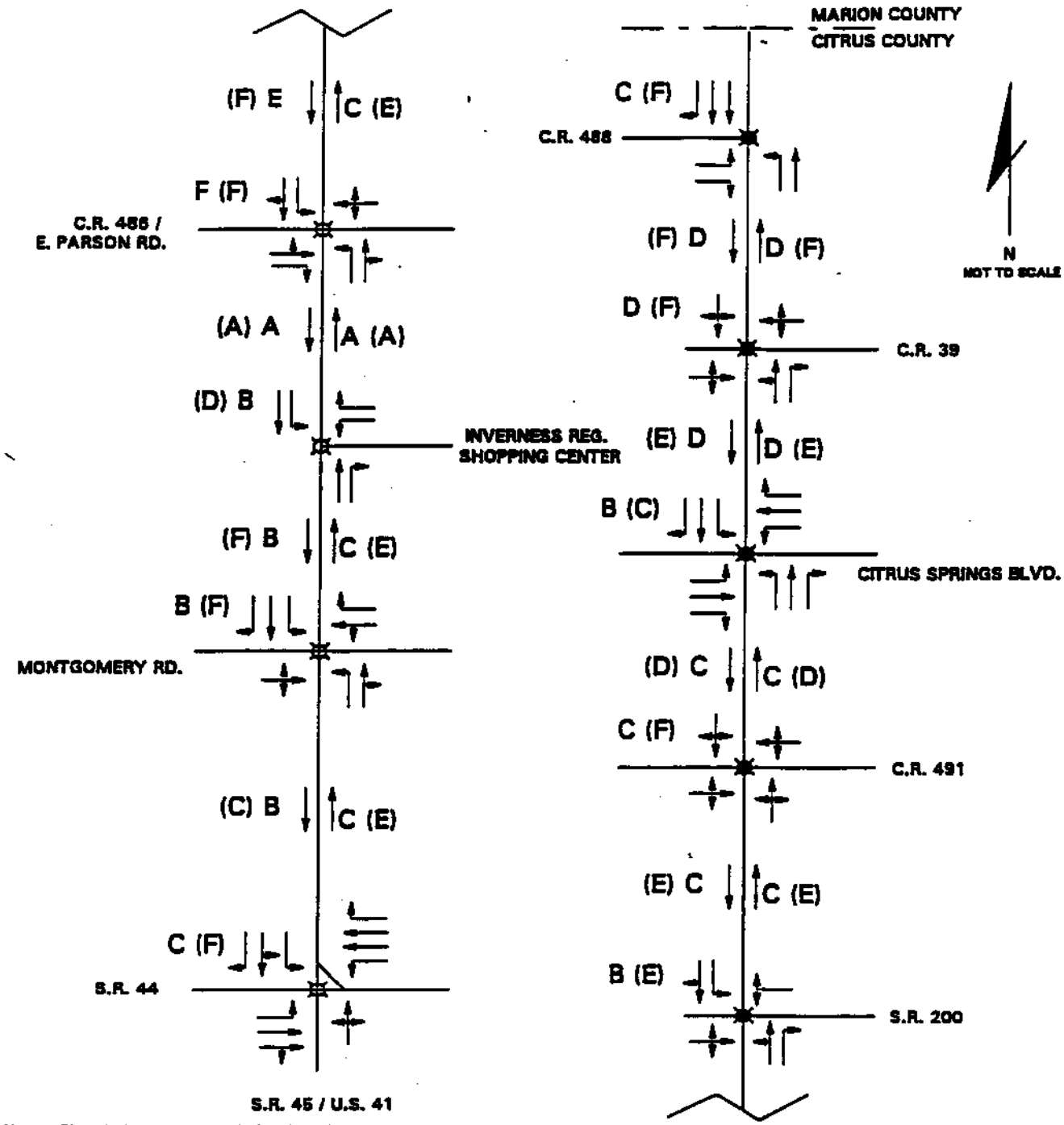
B. Watercraft:

The Withlacoochee River is used by pleasure boaters and fisherman. There is no information regarding the number and size of the boats going under SR 45. The existing SR 45 bridge has a horizontal clearance of 20 meters (65.75) feet and a vertical clearance of 3.4 meters (11.0 feet) when mean high water.

V. NEED FOR IMPROVEMENTS

A. Capacity and Deficiencies:

Presently SR 45 is operating at an acceptable level of service (LOS). However, based on traffic projections by the year 1998 segments of SR 45 will be operating at LOS E and F and one intersection will be operating at LOS F. By the year 2018 most of the intersection will be operating at LOS E AND F. Figure 5 is a schematic diagram showing the existing conditions and the projected level of service.



Note: Signals have been added at locations which meet Signal Warrants.

Greiner, Inc.

LEGEND

- Existing Signal
- Proposed Signal
- Turn Lane
- C (F) - Intersection Level of Service 1998 NO BUILD (2018 NO BUILD)
- C (F) - Number of Lanes Arterial / Rural Highway Level of Service 1998 NO BUILD (2018 NO BUILD)

NO BUILD GEOMETRY AND LEVEL OF SERVICE

Figure 5

structures are the bridge over the abandoned CSX rail line, which is now the Department of Natural Resources' Rails to Trails, the bridge over the CSX Railroad spur line, and the bridge over the Withlacoochee River.

1. The bridge over the abandoned CSX rail line, number 020002.
This bridge was built in 1950. In April, 1991 the bridge was inspected and received a sufficiency rating of 60.9 and a status of "Functionally Obsolete".

The existing bridge was built to overpass a railroad. That rail line has since been abandoned, and the right of way is now controlled by the Department of Natural Resources (DNR) for the Rails to Trails project. DNR is requiring that this trail be uninterrupted, consequently requiring that SR 45 overpass the trail. The vertical and horizontal clearance criteria for an overpass over the trail is different from that required for a railroad.

2. Bridge over the CSX Railroad spur line, number 020025.
This bridge was built in 1988. In February, 1992 the bridge was inspected and received a sufficiency rating of 66.0 and a status of "Functionally Obsolete". The primary reason for the low rating was deck geometry, 2 (lowest operational rating) and approach roadway, 6. The structural evaluation and condition all received 8.

3. Bridge over the Withlacoochee River, number 020028.
This bridge was built in 1988. In February, 1992 the bridge was inspected and received a sufficiency rating of 85 and a status of "No Significant Deficiency".

C. Safety:

As stated in Section II,F. Accident Data, SR 45 does not have an accident ratio greater than 1.00. It was therefore not considered a high accident section or a safety problem. It may be worth noting that while SR 45 does not appear to have an accident problem, it is operating in a non-congested flow. It would be anticipated that if SR 45 were to be left as existing and traffic demand continues to increase SR 45 would operate at an unacceptable condition and the rate of accidents would increase, thus causing the accident ratio to rise.

VI. EXISTING TRANSPORTATION PLAN

There are no Metropolitan Planning Organizations (MPO) that govern SR 45 in Citrus County. The Citrus County Comprehensive Plan does, however, recognize the need to widen SR 45 to four lane by the year 2010.

VII. CORRIDOR ANALYSIS

SR 45 is an existing roadway with much of the existing alignment having right of way in excess of 61 meters (200 feet). This route serves as a north-south arterial connecting the City of Inverness to the City of Dunnellon. South of SR 200 much of the adjacent land is developed with small businesses and homes. North of CR 491 SR 45 goes through the Citrus Springs planned urban development (PUD) with 76.2 meters (250 feet) of right of way. For these reasons the only viable corridor for SR 45 is the existing one, consequently no other corridors were considered.

VIII. ALTERNATIVE ANALYSIS

A. The No-Project Alternative:

The no-project alternative consists of the existing transportation system and assumes that no improvements will be developed. This alternative means that the need for the project will not be fulfilled and thus would result in continued and worsening adverse impacts on the road user, including emergency services. The no-project alternative would not experience construction related and operational impacts, therefore the short term impacts would be beneficial, but the consequences of long term impacts would be severe. Because the alternative does not meet the future transportation needs, it was eliminated from further consideration.

B. Alignment Alternatives:

This project can be broken into three main sections. The first section is that part of the road which lies within the urban and urbanizing of Inverness and Hernando. This section runs from SR 44 to SR 200 and is approximately 8.36 kilometers (5.2 miles) in length. The alignments considered for this section all included an urban section. The concepts considered did not include using existing pavement, this was due to the minimum grades for drainage requirements. The alternatives, therefore, consisted of:

Center- Maintaining the existing centerline and acquiring the required additional right of way on both sides of the road.

West - Holding the east right of way line and only acquire the required additional right of way on the west side. this would move the new centerline 5.2 meters (17 feet) to the west of the existing centerline.

East - Holding the west right of way line and only acquire the required additional right of way on the east side. this would move the new centerline 5.2 meters (17 feet) to the east of the existing centerline.

The second segment is that section of the project which runs from SR 200 to the urban limits of South Dunnellon north of CR 39. This section is approximately 16.7 kilometers

(10.4 miles) in length, and has a design speed of 100 km/h (60 mph). The only exception is in the Holder Township at the intersection of CR 491. This half mile section has a design speed of 70 km/h (45 mph). The existing right of way in this section varies from 20.1 to 76.2 meters (66 to 250 feet). Because of the rural nature and the design speed, a rural typical section was considered. The rural typical section allows for the existing travel lanes to be resurfaced and the additional travel lanes to be built on one side or the other. It is for this reason and the relatively low cost for additional right of way that the concepts consisted of the following:

Center- Maintain the existing centerline and completely rebuild the roadways. This concept would maximize the use of existing right of way and where needed would acquire additional right of way on both sides.

East- Use the existing travel lanes for southbound traffic and add two travel lanes to the east for northbound traffic. This would relocate the centerline 10.7 meters (35 feet) to the east. Additional right of way would be needed on the east side and in some places on the west side also.

West- Use the existing travel lanes for northbound traffic and add two travel lanes to the west for southbound traffic. This would relocate the centerline 10.7 meters (35 feet) to the west. Additional right of way would be needed on the west, and in some places on the east side also.

The third section is that portion of SR 45 from north of CR 39 to the existing four lane section north of CR 488. This is the urbanized area of South Dunnellon. This section is approximately one mile in length and has a maximum design speed of 65 km/h (40 mph). Because this section will consist of an urban typical section, it is highly unlikely that the existing pavement could be used. This is a short distance form the end of the rural section north of the CR 39 intersection and the start of a minimum of 30.5 meters (100 feet) of right of way (approximately 610 meters [2000 feet]). This short distance does not warrant studies of various alignments due to the length of transition from rural to urban and the existing right of way, and therefore only the center alignment be considered.

Through much of the project, the Department of Natural Resources' Rails to Trails project runs parallel to or adjacent to the SR 45 alignment. This land is considered 4(f) lands, consequently none of the study alignments included sections that would require the acquisition of these lands.

Through the townships of Hernando and Holder the only alignment considered was the centerline alignment. These areas are developed on both sides and consequently acquiring all right of way to one side or the other would result in a significant number of relocations.

C. Alternate Analysis

The three segments mentioned earlier were further divided into segments where logical transition to another alignment could be made. Table 3 shows the limits of each sub-section, the approximate construction cost, approximate right of way cost, number of

residential and business relocations, utility impacts, and environmental impacts.

The evaluation matrix in Table 3 indicates which alignment in each subsection has the least amount of impacts. Consequently the preferred alignment is a combination of the best alignments for each section.

TABLE 3
EVALUATION MATRIX
SR 45 MATRIX

Segment 1 Sta. 0+00 (SR 44) to sta. 33+00 (Montgomery Road)			
ALIGNMENT	CENTER	EAST	WEST
Construction $	900,000	900,000	900,000
Right of Way $	3,187,000	2,203,000	2,892,000
Relocation #	1	0	1
Utility Impacts*	2	2	1
Environmental Impacts*	1	1	1
PROPOSED		X	
Segment 2 Sta. 33+00 (Montgomery Road) to sta. 58+00			
ALIGNMENT	CENTER	EAST	WEST
Construction $	900,000	900,000	900,000
Right of Way $	1,238,000	2,200,000	382,000
Relocations #	0	0	0
Utility Impacts*	2	3	1
Environmental **	3	2	3
PROPOSED		X	
Segment 3 Sta. 58+00 to Sta. 145+00			
ALIGNMENT	CENTER	EAST	WEST
Construction $	2,950,000	2,950,000	2,950,000
Right of Way $	2,291,000	349,000	760,000
Relocations #	0	0	0
Utility Impacts *	1	1	1
Environmental *	1	1	1
PROPOSED		X	
Segment 4 Sta. 145+00 to Sta. 230+00			
ALIGNMENT	CENTER	EAST	WEST
Construction $	N/A	3,418,000	N/A
Right of Way $	N/A	1,946,000	N/A
Relocations #	N/A	0	N/A
Utility Impacts *	N/A	1	N/A
Environmental *		1	3
		X	

PROPOSED		X	

Segment 5 Sta. 230+00 to Sta. 305+00 (SR 200)

ALIGNMENT	CENTER	EAST	WEST
Construction $	2,519,000	2,519,000	2,519,000
Right of Way $	6,892,000	5,011,000 $10,472,800	7,985,000
Relocation #	7	6	8
Utility Impacts *	2	1	3
Environmental *	1	2	2

PROPOSED		X	

Segment 6 Sta. 305+00 (SR 200) to sta. 400+00

ALIGNMENT	CENTER	EAST	WEST
Construction $	3,130,000	2,414,000	2,414,000
Right of Way $	56,000	409,000 $824,900	507,000
Relocations #	0	0	0
Utility Impacts *	1	1	1
Environmental *	1	1	1

PROPOSED		X	

Segment 7 Sta. 400+00 to Sta. 560+00 (CR 491)

ALIGNMENT	CENTER	EAST	WEST
Construction $	5,117,000	3,930,000	3,930,500
Right of Way $	1,837,000	2,655,000 $5,[illegible]	3,168,000
Relocations #	3	3	5
Utility Impacts *	1	1	1
Environmental *	1	1	1

PROPOSED		X	

Segment 8 Sta. 560+00 (CR 491) to Sta. 840+00 (CR 39)

ALIGNMENT	CENTER	EAST	WEST
Construction $	8,703,000	6,993,000	6,993,000
Right of Way $	578,000	1,037,000 $[illegible]	1,022,000
Relocations #	0	0	0
Utility Impacts *	1	1	1
Environmental *	1	1	1

PROPOSED			X

Segment 9 Sta. 840+00 (CR 39) to Sta. 900+00 (Existing 4-lanes)			
ALIGNMENT	CENTER	EAST	WEST
Construction $	1,979,200	1,979,200	1,979,200
Right of Way $2,754,300	1,858,000	1,473,000	1,655,000
Relocations #	1	1	2
Utility Impacts *	1	1	1
Environmental *	1	1	1
PROPOSED*	X	X	

* Qualitative Scale 1=Good 2=Fair 3=Poor

★ Section 9 will contain segments of both

** Alignments center and west involve 4(f) impacts associated with Whispering Pines Park.

TOTAL # 33,800,000.

SAY #33.8M

IV. PRELIMINARY DESIGN ANALYSIS

A. Design Alternative:

As stated earlier in this report the southern section from SR 44 to SR 200 and the northern section in South Dunnellon will be an urban design with design speeds of 60 km/hr (40 mph) from SR 44 to Montgomery Road, and 70 km/hr (45 mph) for the rest of the urban design area. From SR 200 to South Dunnellon the road will be a rural design with a design speed of 100 km/hr (60 mph). The design alternate will require two (2) bridges, a new bridge over the Rails to Trails in Inverness and widening of the existing bridge over the CSX Railroad in South Dunnellon. The design alternative does not include any work to be done on the bridge over the Withlacoochee River.

B. Design Traffic Analysis:

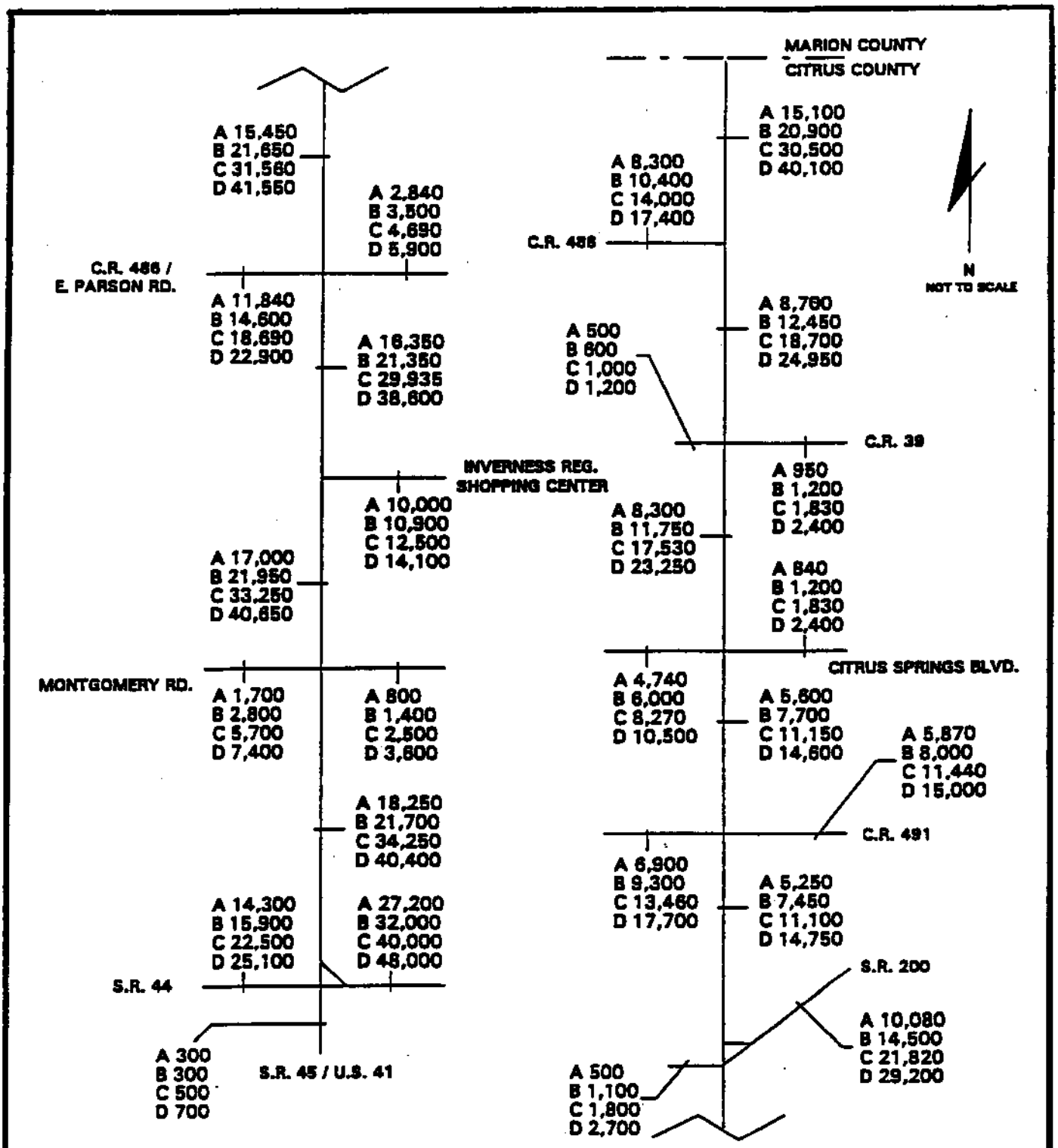
Future traffic projections were developed for no-build and build conditions. These projections were developed by use of trends and growth rate analysis of historic traffic counts, review of population growth for Citrus County, information provided by the Department and an overall review of transportation conditions within the corridor. The analysis of no-build conditions indicates this option will not satisfy future travel demands in the design year of 2018.

Figure 6 provides the build traffic volumes (opening and design year), and Figure 7 shows proposed geometric improvements and projected levels of service for SR 45. The proposed improvements will provide LOS C throughout the project for the opening year (1998) except in one location which operates at LOS D. This roadway link is from CR 486 to SR 200. Based on the K(30) of 9.7 percent used in the analysis, this operational condition will be experienced during peak season conditions similar to the congestion currently experienced along the SR 45 corridor. Table 4 shows the traffic characteristics.

The proposed geometric improvements will also provide overall LOS C or better for the design year 2018 throughout most of the corridor. However, five locations will operate at LOS D. These locations are:

Intersections	S.R. Links
SR 45/SR 44	Montgomery Road to Inverness Reg.Shp.Ctr.
SR 45/Montgomery Road	CR 486 to SR 200
SR 45/CR 486	

As with the opening year condition, the use of K(30) of 9.7 percent for the design hour indicate that the LOS D condition will be experienced during the peak season.



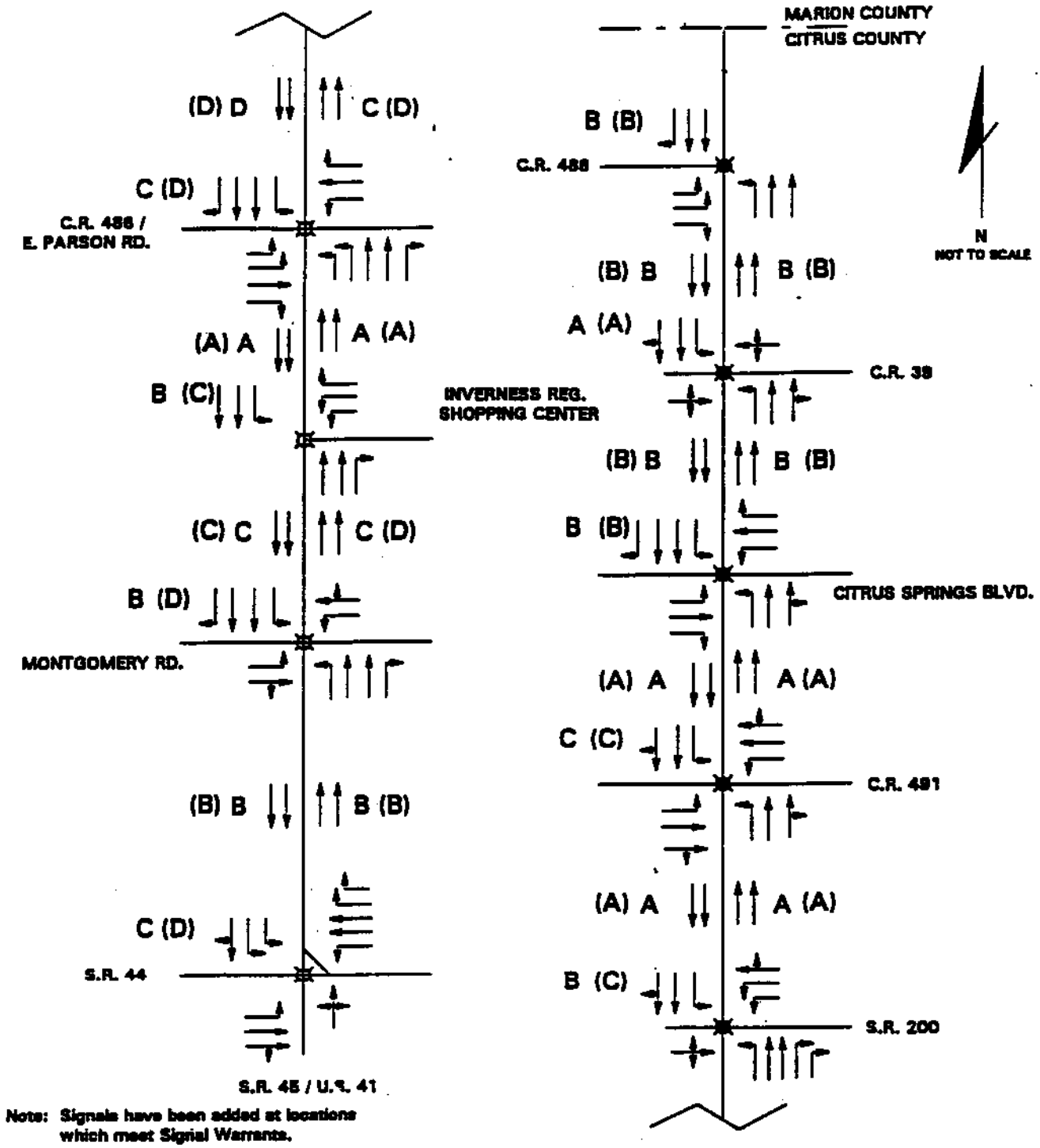
Greiner, Inc.

LEGEND

A = 1992 AADT
B = 1998 BUILD AADT
C = 2008 BUILD AADT
D = 2018 BUILD AADT

DAILY TRAFFIC FORECASTS

Figure 6



Note: Signals have been added at locations which meet Signal Warrants.

Greiner, Inc.

LEGEND

- Existing Signal
- Proposed Signal
- Proposed Geometry
- C (C) - Intersection Level of Service 1998 BUILD (2016 BUILD)
- C (C) - Number of Lanes Arterial / Rural Highway Level of Service 1998 BUILD (2016 BUILD)

BUILD CONDITION GEOMETRY AND LEVEL OF SERVICE (OPENING AND DESIGN YEAR)

Figure 7

TABLE 4
Travel Characteristics

SR 45 from SR 44 to SR 200

		Existing	Design
Peak to Daily Ratio	=	0.085	0.097
D	=	0.53	0.55
T peak (heavy)	=	0.9	0.9
T peak (medium)	=	3.7	3.7
T peak (total)	=	4.6	4.6
T daily (heavy)	=	1.6	1.6
T daily (medium)	=	4.0	4.0
T daily (total)	=	5.6	5.6

SR 45 from SR 200 to CR 488

		Existing	Design
Peak to Daily Ratio	=	0.086	0.105
D	=	0.519	0.525
T peak (heavy)	=	0.9	0.9
T peak (medium)	=	3.7	3.7
T peak (total)	=	4.6	4.6
T daily (heavy)	=	1.6	1.6
T daily (medium)	=	4.0	4.0
T daily (total)	=	5.6	5.6

Based on the overall analysis condition for the SR 45 corridor, intersection improvements, with overall roadway improvements to a four lane divided section will provide overall level of service conditions C or better with the exception of three intersections and two links along SR 45 which will operate at LOS D during peak season conditions.

For the urban/urbanizing area from SR 44 to SR 200 the overall LOS for the arterial is "A" with an average travel speed of 59 km/h (37 mph).

The Level of Service determination was conducted using the Florida Department of Transportation's "Art-Plan" computer program which is based on the 1985 Highway Capacity Manual. The computer printouts are located in the Appendix.

C. Design Criteria:

SR 45 is an arterial with segments having design speeds of 60 km/h, 70 km/h, and 100 km/h (40,45, 60 mph). The design criteria and standards are based on design parameters outlined in A Policy on Geometric Design of Highway and Streets (AASHTO, 1990), Manual of Uniform Minimum Standards for Design Construction and Maintenance for Streets and Highways (FDOT, 1989), Highway Capacity Manual (Transportation Research Board, 1985), Roadway and Traffic Design Standards (FDOT, 1992), and Drainage Manual (FDOT, 1987).

Table 5 is a summary of the design criteria established for this project.

TABLE 5
DESIGN CRITERIA

SECTION	**SR 44 to Montgomery Rd. CSX Bridge to Marion County Line**	**Montgomery Rd. to SR 200 Sta. 545+00 to Sta. 590 CR 39 to CSX Bridge**	**SR 200 to CR39**
Design Speed	60 km/h (40 mph)	70 km/h (45 mph)	100 km/h (60 mph)
Design Element			
Lane Width	3.6 m (12 ft.)	3.6 m (12 ft.)	3.6 m (12 ft.)
Horizontal Curve (Max)	165 m (541 ft.)	220 m (721 ft.)	386 m (1267 ft.)
Superelevation Rate (e Max)	0.05	0.05	0.10
Vertical Grade (% Max)	5	5	3
K (crest) K (sag)	14-18 (60-80) 15-18 (60-70)	23-32 (80-120) 20-25 (70-90)	62-105 (190-310) 37-51 (120-160)
		ALL DESIGN SPEEDS	
Cross Slope			
Roadway		0.02	
Shoulder		0.06	
Embankment Slopes			
Fill Height		0-1.5 m (0-5 ft.)	6:1
		1.5-3.0 m (5-10 ft.)	6:1 & 4:1
		3.0-6.0 m (10-20 ft.)	6:1 & 3:1
		>6.0 m (>20 ft.) w/ guardrail	2:1
		Back Slope	4:1

D. Typical Sections:

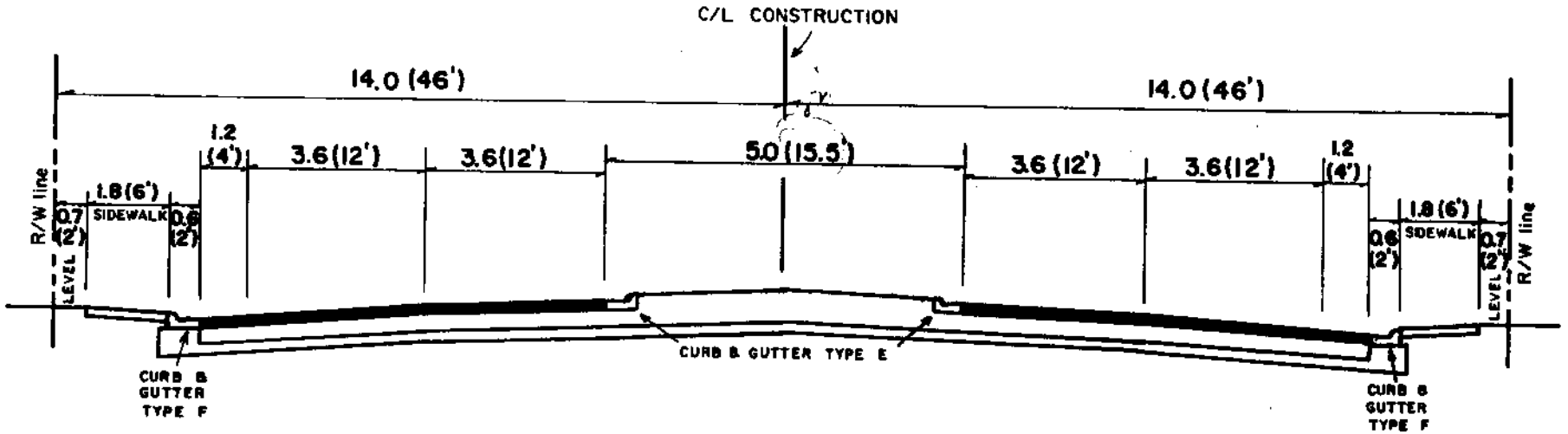
There are basically three different typical sections for this project. Two of the typical sections are urban design with design speeds of 60 and 70 km/hr (40 and 45 mph). The other concept is a rural design with a design speed of 100 km/h (60 mph).

The typical section with a 60 km/hr (40 mph) design speed are at the two ends of the project. From SR 44 to Montgomery Road at the south end, and from station 881+10 (approximately 21.3 (70 feet) south of the bridge over the CSX Rail line) to station 900+00 (south side of N. Waterway Drive). This typical section consists of two 3.6 m (12 ft.) travel lanes with a 1.2 m (4 ft.) undesignated bike lane in each direction separated by a 4.9m (16 ft.) median. Curb and gutter will control stormwater drainage. A 1.5 to 1.8 meter (5 to 6 foot) sidewalk and grass utility strip on both sides will complete the section. This typical section can be seen in Figure 8.

The typical section with a design speed of 70 km/h (45 mph) will be in several locations. This typical section can be seen in Figure 9. This typical section will start at the transition at Montgomery Road and run approximately 8.3 kilometers (5.2 miles) to north of the SR 200 intersection in the Hernando township. SR 45 will also consist of this typical section for approximately 610 meters (2000 feet) at the CR 491 intersection in the township of Holder. This typical section is also proposed from station 548+00 north of the CR 39 intersection, to station 872+00 where it will transition to the earlier mentioned typical section with the design speed of 60 km/h (40 mph). This typical section is similar to the earlier mentioned typical section with the exception that there is a 6.7 m (22 ft.)raised median. This concept will consist of two 3.6m (12 ft.)travel lanes and a 1.2m (4 ft.) undesignated bike lane in both directions. This concept will also have curb and gutter for stormwater drainage and sidewalks and utility strip on both sides of the road.

The rural typical section has a design speed of 100 km/h (60 mph) and makes up a majority of the project. This typical section starts north of the SR 200, intersection in the Hernando township and continues to north of the CR 39 intersection where it transitions to the urban typical section with a design speed of 70 km/h (45 mph). There exists one exception to the rural typical section; in the township of Holder where the urban typical section is used for approximately 610m (2000 ft.).

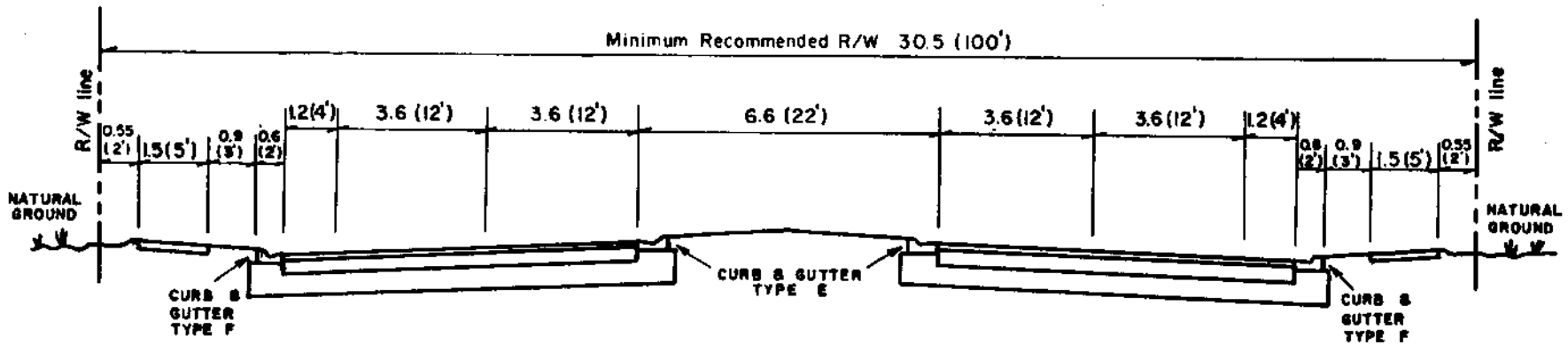
The rural typical section consists of two 3.6m (12 ft.) travel lanes and 3.0m (10 ft.) outside shoulders, 1.5m (5 ft.) paved, 1.8m (6 ft.) inside shoulders, 0.6m (2 ft.) paved, in each direction separated by a 14m (46 ft.) grass median. Swale ditches on both sides of the road will control stormwater drainage. This typical section can be seen in Figures 10 and 11.



FROM SR 44 TO MONTGOMERY RD
STA 15+00 TO STA 33+00
AND
FROM CSX RR TO EXISTING 4-LANES
STA 875+00 TO STA 900+00

DESIGN SPEED 40 MPH

Figure 8



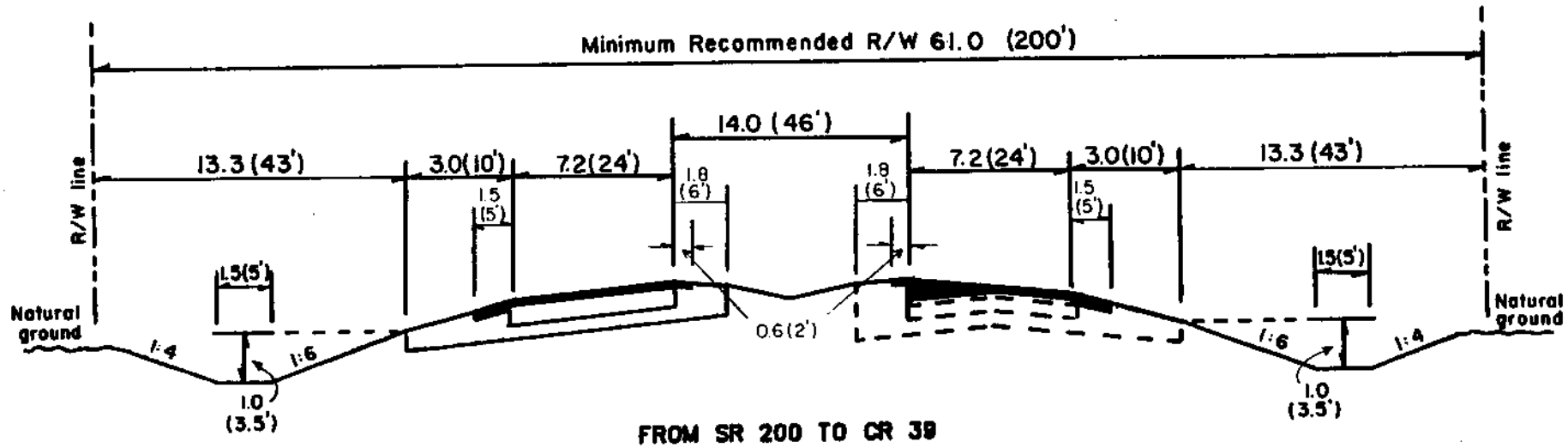
STA 33+00 TO STA 305+00
STA 550+00 TO STA 575+00
STA 840+00 TO STA 875+00

DESIGN SPEED 45 MPH

Proposed Typical Section

S.R. 45

Figure 9



FROM SR 200 TO CR 39

STA 305+00 TO STA 550+00

AND

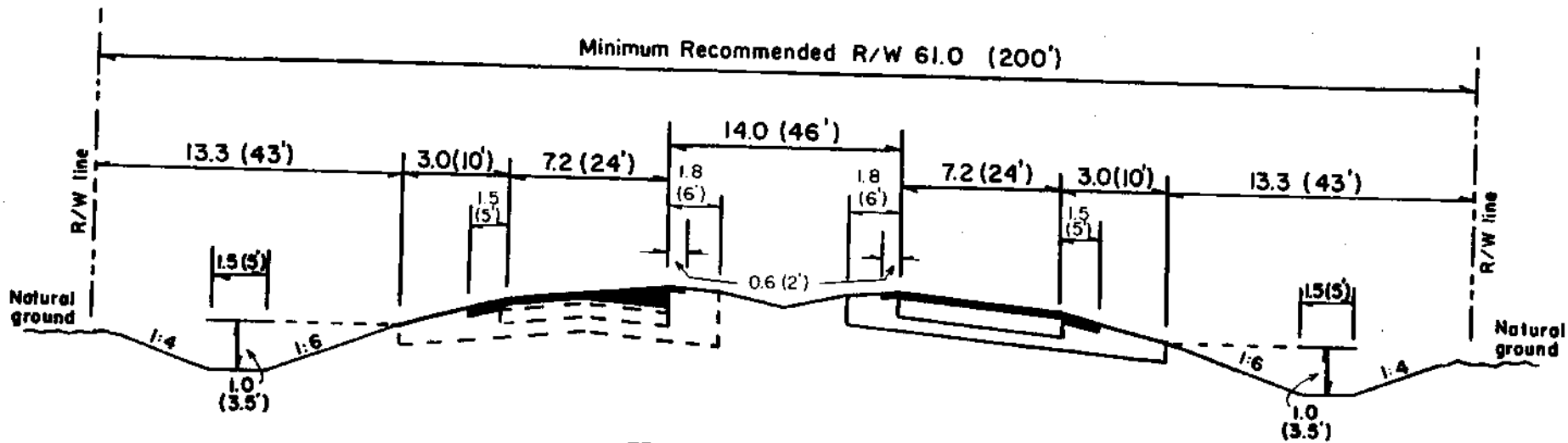
STA 575+00 TO STA 840+00

DESIGN SPEED 60 MPH

Proposed Typical Section

S.R. 45

Figure 10



FROM SR 200 TO CR 39
STA 305+00 TO STA 550+00
AND
STA 575+00 TO STA 840+00

DESIGN SPEED 60 MPH

Proposed Typical Section

S.R. 45

Figure 11

E. Intersection Concepts:

There are presently 4 signalized intersections at SR 44, Montgomery Road, Inverness Shopping Center, and CR 486. In addition to these existing intersections, it is anticipated that signals will be required at five additional sites, SR 200, CR 491, Citrus Springs Boulevard, CR 39, and CR 488. The need for future signal requirements at these locations was determined using Signal Warrants 1 and 2, as specified within the Manual on Uniform Traffic Control Devices (MUTCD). Signal Warrant 1 is the Minimum Vehicle Volume warrant and Signal Warrant 2 is for Interruption of Continuous Traffic. Criteria to warrant signals should be based on actual counts but to assess future signal requirements, existing traffic flows are utilized with future traffic volumes to establish approximate conditions when signals would be warranted for future years. Table 6 provides the intersections and future years in which either Warrant 1 or 2 is satisfied.

F. Structures:

Of the three structures mentioned earlier in this report (Section II,L.) only the bridge over the Rails to trails (bridge number 020002) will be replaced. The new bridge will be built with the minimum required vertical and horizontal clearances previously agreed upon with the Department of Natural Resources.

The new bridge will provide 4.2m (14 ft.) of vertical clearance and have a center horizontal clearance of 10.4m (34 ft.). The new structure will consist of three spans, two at 7.0m (23 ft.) and one at 11.3m (37 ft.) The overall length of the structure will be 25.3m (83 ft.). The typical section across the bridge will match the roadway with two 3.6m (12 ft.) travel lanes and a 1.2m (4 ft.)undesignated bike lane in each direction separated by a 6.7m (22 ft.) median. Guardrail and sidewalk will be placed on both sides of the bridge.

The bridge over the CSX Rail line is proposed to be widened to the west approximately 13.6 m (44.5 ft.). This will allow enough bridge deck to match the roadway typical section. The existing cross-slope on this bridge is 0.082 and the new section will be 0.05. The break in cross-slope will be in the median.

The existing bridge over the Withlacoochee River will be left as existing. This project will terminate at the existing four lane south of the bridge.

Table 6

Future Signal Requirements

Intersection w/SR 45	Year Signal Warranted	Warrants Satisfied[1,2]	
SR 200	1992	Signal Warrant 1	(70%)
CR 491 (No Build)	1998	Signal Warrant 1	(100%)
CR 491 (Build)	1998	Signal Warrant 1 (100% in 2008)	(70%)
Citrus Springs Boulevard (No Build/Build)	1998	Signal Warrant 1 (100% in 2008)	(70%)
CR 39 (No Build/Build)	2018	Signal Warrant 2	(100%)
CR 488	1998	Signal Warrant 1 & 2	(100%)

[1] 1988 Manual on Uniform Traffic Control Devices

[2] Future Signal Warrants based on existing daily traffic variations with future Traffic Volumes

G. Drainage Design:

1. **Proposed Drainage**

The proposed urban typical section will require a new storm sewer system, together with separate retention/detention ponds. As there is limited space for roadside swales within the existing and proposed right of way, which varies between 20.1 meters (66 feet) and 76.2 meters (250 feet), it will not be feasible to use swales in all basins for treatment and meet the SWFWMD regulations. However, there are a few locations where ponds or swales can be designed within the limits of the existing right of way, particularly in some of the wider sections of right of way. The drainage requirements for this typical section will be designed to meet the current FDOT Roadway Design Standards and Florida Administrative Code 14-86. South Florida Water Management District (SFWMD) criteria will be met for water quality and quantity requirements. The recommended retention/detention ponds have been preliminarily sized.

2. **Stormwater Management Feasibility**

The stormwater management feasibility was done to evaluate the potential for providing treatment in swales within the proposed right of way versus treating the runoff in separate stormwater management ponds. These ponds would require purchase of additional right of way. As a result, there were several basins which have a proposed right of way width large enough to construct a retention/detention pons or swale system within the limits of the right of way. These are Basins 14,22 through 26, 30 and 33. In addition, Basin 3 will require a smaller parcel to be purchased along with using the right of way to the west of SR 45 (US 41) within the basin. These basins were determined to have the storage ponds or swales feasible within the right of way based on storage required, available area, depth to the Seasonal High Water Table (SHWT) and type of soil located in that particular area.

Attenuation volumes were assumed to control area water quality volumes. However, due to most of the basins being isolated with no positive outfall, the ponds will have to store the 100 year difference in the volume of runoff between the pre and post development (F.A.C. 14-86).

3. **Floodplain Encroachment**

Typically, every crossdrain is considered to have an associated base floodplain (100 year event) independent of the FEMA flood zone designation. The proposed crossdrain extensions and/or replacements and swale or storm sewer systems will be designed, in the design phase, to minimize the impacts to these floodplains, and minimize the potential for flood damage to adjacent properties.

The degree of floodplain encroachment resulting from the proposed roadway improvements, including the bridges, have been classified as either Category 3 or Category 4 impacts.

Category 4 impacts pertain to projects on the existing alignment involving the replacement of existing drainage structures, with no record of drainage problems. The proposed structures will perform hydraulically in a manner equal to or greater than the existing structures, and backwater surface elevations are not expected to increase. As a result, there will be no significant adverse impacts on natural and beneficial floodplain values, there will be no significant change in flood risks, and there will be no significant change in the potential for interruption or termination of emergency services or emergency evacuation routes. Therefore, it has been determined that this encroachment is not significant, in accordance with the FDOT Drainage Manual.

Category 3 impacts do not involve the replacement of existing structures, but modifications to the existing structures, such as lengthening. The modifications to drainage structures included in this project will result in an insignificant change in their capacity to carry floodwater. This change will cause minimal increases in flood heights and flood limits. These minimal increases will not result in any significant adverse impacts on the natural or beneficial floodplain values or any significant change in flood risks or damage. There will not be a significant change in the potential for interruption or termination of emergency service or emergency evacuation routes. Therefore, it has been determined that this encroachment is not significant.

4. Wetlands

The proposed improvements will have minimal impact to wetland areas identified along SR 45 (US 41). During the design phase, all drainage improvements will be designed to minimize on-site and off-site impacts to wetland areas. It is also recommended that no drainage work (ponds or outfalls) be performed in the wetlands. However, based on our field reviews, there were few wetland areas on or near the site. These are primarily around Lake Tsala Apopka.

5. FEMA and USGS Information

The August 15, 1984 FEMA Flood Insurance Rate Maps (FIRMS) for the unincorporated areas of Citrus County, Florida, and the City of Inverness, Florida, were used to identify potential floodplain and floodway encroachments associated with this project (see Appendix B, FEMA Maps and FEMA Study). According to the FIRMS (Community-Panel Numbers: 120348 0001 B, 120348 0002 B, 120063 0063 B (Not printed; the area is

in Zone C, 120063 0065 B, 120063 0150 B, 120063 0175 B and 120063 255 B), the proposed roadway widening does not cross any floodplains nor does it include any areas within flood zones. There are flood zones adjacent to a portion of the southern one-third of the project which are mostly depressed areas with closed basins. The crossdrains, do however, have a limited floodplain associated with each of them. The project is primarily located in Zone C - areas of minimal flooding.

Appendix B contains United Stages Geological Survey (USGS) Water Resources Data from the surface water and groundwater gaging stations within the area.

H. Pedestrian and Bicycle Facilities:

Throughout those areas designated as urban or urbanizing the typical section has sidewalks on both sides of the road for pedestrian and non-experienced bicyclists. There also exists a 1.2m (4 ft.) undesignated bike lane in each direction through the urban and urbanizing areas.

In the areas where a rural typical section is used there are 1.5 m (5 ft.) paved shoulders which can accommodate bicyclist and pedestrian traffic.

It may be worth noting that throughout most of the project the Department of Natural Resources has acquired abandoned railroad right of way for their Rails to Trails project. The Rails to Trails runs parallel to SR 45 and in some places it is adjacent to SR 45. The Rails to Trails is a multi-functional trail for hiking, biking, and horseback riding.

I. Safety:

As stated earlier in this report (Section V,C.), SR 45 does not have a high accident section and is not considered a safety problem. It can be assumed that as SR 45 becomes more congested and traffic is not allowed freedom of movement, drivers will take risk in passing slower traffic and entering the main road at driveways and intersections. These risks as well as traveling in congested conditions will result in a greater frequency of accidents.

The improvements proposed in this report will meet the travel demands of the future and consequently the anticipated increased in accidents most likely will not occur.

J. **Utility Impacts:**

In the City of Inverness the water lines south of Montgomery Road and the power lines north of Montgomery Road will need to be relocated. These utilities are located in FDOT right of way and consequently the relocation cost will be paid by those utility companies.

North of the Rails to Trails bridge the utilities are sent back far enough to keep from being relocated. The electric and telephone lines on the west may not need to be relocated. For approximately 1.2 kilometers (.8 mile) a cablevision cable on the east side of US 4 will need to be relocated.

In the township of Hernando the utilities located on both sides of the road will need to be relocated, or the need for relocation will need to be further addressed in the design phase.

North of SR 200 in Hernando the electric power lines and telephone lines on the east will need to be relocated. These utilities are located in FDOT right of way.

In the township of Holder at the intersection of CR 491, the electric power lines, telephone cable, and cablevision cable will need to be relocated. All of the utilities are located on FDOT right of way.

Through the area of Citrus Springs, high voltage power lines run parallel to SR 45. To keep from impacting these power lines, non-standard roadside ditches may be needed. In some areas [(station 725+00 to 755+00) and (station 815+00 to station 850+00)] these power lines may need to be relocated. The responsibility of who needs to relocate these lines has not been determined.

In South Dunnellon the electric power lines and a water main will need to be relocated. Both are located on FDOT right of way and consequently the utility companies are responsible for the relocations.

K. **Environmental Impacts:**

For information regarding environmental impacts see the environmental document for this project.

L. **User Benefits:**

The user benefits associated with this project are less congestion and faster, safer traveling for the public. This project will also replace a bridge which is classified as functionally obsolete.

M. Right of Way Requirements and Relocations:

Additional right of way is required through most of the project. From SR 44 to Montgomery Road an additional 6.7 meters (22 feet) will be needed. This will result in several business damages but there are no relocations associated in this section.

From Montgomery Road to SR 200 the typical section requires 30.5 meters (100 feet) of right of way. In some areas additional right of way will be necessary. The additional right of way will result in five (5) relocations and numerous business and residential impacts.

North of SR 200 to the limits of South Dunnellon, the rural typical section requires 61.0 meters (200 feet) of right of way. In some areas additional right of way is needed. The additional right of way will result in one (1) relocations and numerous residential and business impacts.

Through South Dunnellon the typical section requires 30.5 meters (100 feet). Some additional right of way is needed. This acquisition will result in one (1) relocation.

N. Project Costs:

The cost associated with this project can be seen in Table 7. The right of way cost were estimated by Florida Department of Transportation Right of Way Staff. The construction estimate is based on standard unit costs for similar type roadways. All dollars are 1993 dollars.

TABLE 7
PROJECT COSTS

Design	$ 2,600,000
Right of Way	17,643,000
Construction	29,510,000
C.E.I.	2,880,000
	$52,633,000

O. Maintenance of Traffic:

This project is a multi-laning project. It is therefore anticipated that existing traffic can be maintained on the existing pavement. The only area of major concern is the bridge over the Rails to Trails. This bridge is to be removed and replaced with a lower/wider structure. The existing right of way is wide enough to allow an at-grade temporary crossing east of the existing bridge. It is therefore recommended that a temporary roadway be built along the east right of way line and detour traffic to the temporary road. The temporary road would have an at grade intersection with the Rails to Trails project, and would require a pedestrian crossing signal. Once traffic was diverted to the temporary road the existing bridge and approach could be removed and the new bridge built.

P. Public Involvement:

A formal public hearing was held on October 19, 1994 in Inverness at the Citrus County Courthouse. Notices of this meeting were published in the local newspapers. Letters were sent to all property owners within 91.4 meters (300 feet) of the project. District files contain transcript copies of the hearing.

An information meeting was held on June 28, 1993 in Inverness at the Citrus County Courthouse. Notices of this meeting were published in the local newspaper. Letters were sent to all property owners within 91.4 meters (300 feet) of the project. Approximately 40 people attended the meeting.

A brief presentation regarding the project and concepts under consideration was made. After the presentation a 15 minute recess was taken to allow the public to review and exhibits. After the recess there was a formal questions and answer period. The questions were primarily regarding the concepts and how they affected individual property owners. No generalized opposition to the project was made.

Several coordination meetings were held with county and city staff. These meetings were held to incorporate local plans into the future design of SR 45.

Q. Value Engineering

A Value Engineering (VE) Study was conducted on the project. The VE team reached the speculation phase of the Study without identifying a value improvement, and discontinued the Study.

X. COORDINATION DOCUMENTATION

The District files contain copies of actual correspondence relative to this project, which was generated throughout the study period. It includes interoffice memorandums, intergovernmental corespondence of Federal, State and county levels.

Summaries of meetings, public hearings, and coordination with permitting agencies will be filed in the District Office.