



Metropolitan Planning Organization

Congested Intersections Study

Submitted By
**TRANSPORT ANALYSIS
PROFESSIONALS**

In Association With
Civil Works Inc &
EAC Consulting Inc

TAP

*Miami-Dade County
Metropolitan Planning Organization (MPO)*

Congested Intersection Improvements Study

Executive Summary

Prepared by Transport Analysis Professional, Inc.

Prepared for the Metropolitan Planning Organization

June 1999

Background

In 1996, the consulting firm of David Plummer & Associates conducted the Congestion Management System (CMS) for the Metropolitan Planning Organization (MPO). The CMS was one of the seven management systems required by the Intermodal Surface Transportation Efficiency Act (ISTEA). As part of the recommendations made in the report, a concept was proposed to create a team for evaluating improvements at congested intersections and small roadway segments. This concept known as Resourceful Use of Streets and Highways (RUSH) was designed to provide the county with a tool for expediting and implementing low cost improvement projects.

In order to identify the intersections and evaluate the potential traffic improvements for alleviating traffic congestion at the selected locations, a Congested Intersection Improvements Study (CIIS) was undertaken as part of the Unified Planning Work Program (UPWP). This study is the mechanism developed to implement the RUSH concept and culminate the ultimate goal of the process by constructing the proposed improvements.

Introduction

Transport Analysis Professionals, Inc. (TAP), along with their subconsultants, EAC Consulting and Civil Works, Inc., were selected to perform the Congested Intersection Improvements Study (CIIS) for implementing RUSH. The CMS established the development of a system that ranked congested locations throughout the County using a Relative Congestion Ratio (RCR). A table of congested locations was exhibited in the CMS report. These locations were ranked as; highly congested, moderately congested and nearly congested. As an outfall of the CMS or Mobility Management Process (MMP) as renamed in the State of Florida, the study identified 35 congested corridors and 77 congested spots.

As part of the CIIS, a steering committee was formed. This committee is composed of two representatives of the Florida Department of Transportation (FDOT), two representatives of the Miami-Dade County Public Works Department and one representative of the Metropolitan Planning Organization. The committee's first task was to establish the criteria which was applied to identify potential candidates projects.

A box element was established in the Transportation Improvement Program (TIP) for the construction of projects identified under the CIIS. A total amount of \$500,000 for construction was allocated to this line item, for the first year of the RUSH concept.

Criteria

The ultimate goal of the CIIS is to identify intersections or roadway locations that congestion is known to occur. Candidate locations were evaluated on the criteria established by the steering committee. Different weights were assigned to each factor considered in the criteria, according to their importance in meeting the program's goals.

This criteria screened out expensive or lengthy design and construction processes. Once the locations were selected, then the projects were placed into the county's Transportation Improvement Program (TIP) where the programmed funds will be used for construction.

- **No Right-of-Way acquisition**
- **No or insignificant environmental impacts**
- **Ability to complete design and construction within 1-2 years**
- **Available data**
- **Project cost**
- **Multi-modal, operational and safety benefits**

Process

Using the established criteria, the general process outlined below directed the development of this study.

1. **Compile Annual Candidates**
Candidate locations identified for improvements were obtained from the CMS/MMP, state and county.
2. **Approval of Candidates' List**
The Steering Committee team evaluated over 150 locations to identify perspective RUSH concept improvements.
3. **Screening and Evaluation**
Using the established criteria, more than 60 locations were selected for further evaluation by the consultant team.
4. **Approval of Final List**
The Steering Committee approved in priority order 20 locations for improvement.
5. **Development of Improvements**
Data was collected and operational traffic improvements were developed to alleviate traffic congestion and safety enhancements at selected locations.
6. **Preparation of Conceptual Design**
Conceptual schematic designs for the 20 selected locations were prepared with a brief write-up of location's condition.
7. **Implementation**
Intersections for improvements were selected and will be submitted to the corresponding jurisdictional agency (FDOT or Public Works) for final design and construction.

Project Selection

Once all locations were scored, the ones having the highest weighted number were used until the estimated cost was near to the allotted \$500,000.00 budget for the project. As can be seen in the following list, approximately \$450,000 have been estimated for project improvements. The estimated amount is intentionally less than the programmed funds to allow room for a contingency cushion.

List of Intersections

Location

Type of Improvement

Cost

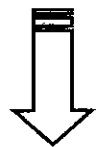
1. NW 22nd Ave & NW 111th Street
2. NW 7th Ave & NW 19th Street
3. Kendale Blvd. & Killian Parkway
4. W Flagler & W 102nd Ave
5. SW 112th Ave & Kendall Drive
6. SW 109th Ct & SW 104th Street
7. Maynada Bump Bridge
8. Douglas Rd. & Ingraham Hwy.
9. NE 19th Ave, 19th Dr & NE 121st St
10. NW 77th Ct & NW 154th Street
11. US 1 & Red Road
12. SW 97th Ave & SW 48th Street
13. SW 107th Ave & SW 184th Street
14. SW 107th Ave & SW 160th Street
15. SW 87th Ave & SW 96th Street
16. SW 92nd Ave & SW 64th Street
17. SW 87th Ave & SW 48th Street
18. SW 87th Ave & SW 128th Street
19. NW 32nd Ave & NW 119th Street
20. Biscayne Boulevard

1. Reposition of median nose
2. Reposition of median nose
3. Realign intersection
4. Construction of a right turn lane
5. Construction of a right turn lane
6. Construction of a left turn lane
7. Safety improvements
8. Improvement to bike path
9. Improvement to intersection
10. Construction of a left turn lane
11. Extend NB left turn lane
12. Extend SB left turn lane
13. Widening to accommodate left turns
14. Redesign intersection
15. Provide NB & SB left turn lanes
16. Provide left turn lanes
17. Extend EB left turn lane
18. Improvement to intersection
19. Extend SB left turn lane
20. Provide bus bays

1. \$ 6,000
2. \$ 4,000
3. \$ 35,600
4. \$ 27,400
5. \$ 18,300
6. \$ 24,500
7. \$ 30,000
8. \$ 7,500
9. \$ 49,500
10. \$ 25,800
11. \$ 30,000
12. \$ 30,000
13. \$ 5,000
14. \$ 16,800
15. \$ 52,750
16. \$ 30,000
17. \$ 20,750
18. \$ 20,000
19. \$ 7,500
20. \$ 30,000

The twenty (20) locations were visited to record physical conditions, observation of traffic, plus some minor data collection by the MPO's engineering consultant team. As a result, schematic improvement plans were prepared to illustrate the proposed modifications along with an estimate of the cost of the intended improvements.

TOTAL



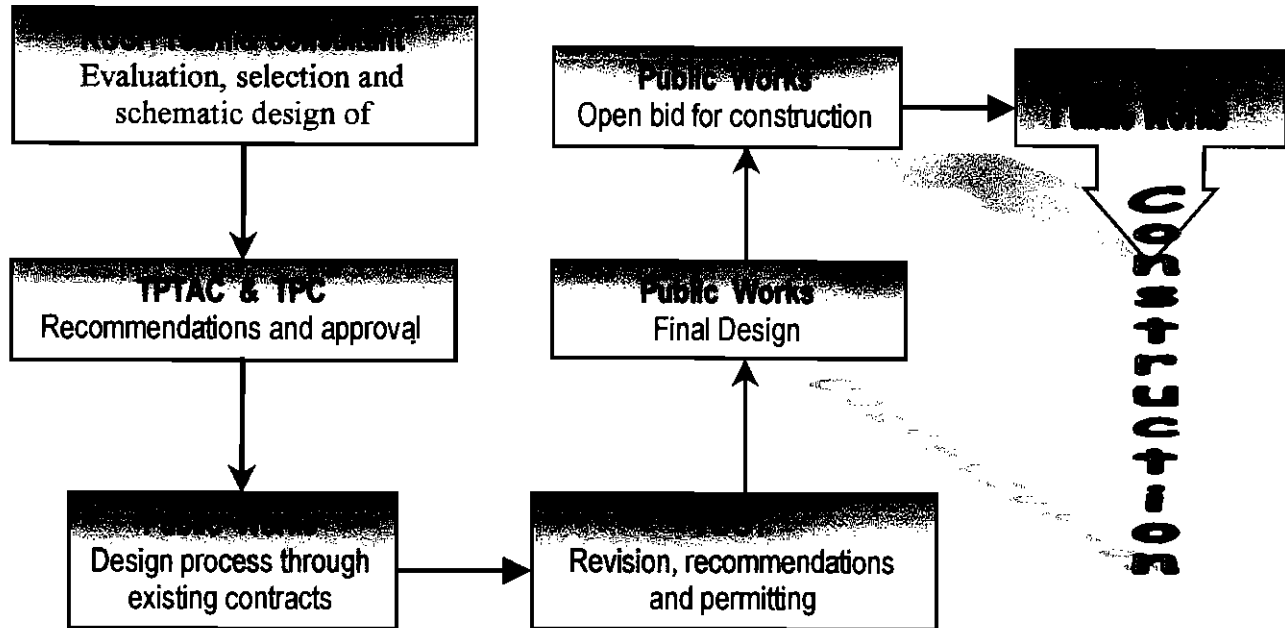
\$471,400

FUNDING SOURCES

Construction	\$500,000	DDR - district dedicated revenue
FDOT Support	\$100,000	DIH - state in-house product support

Implementation

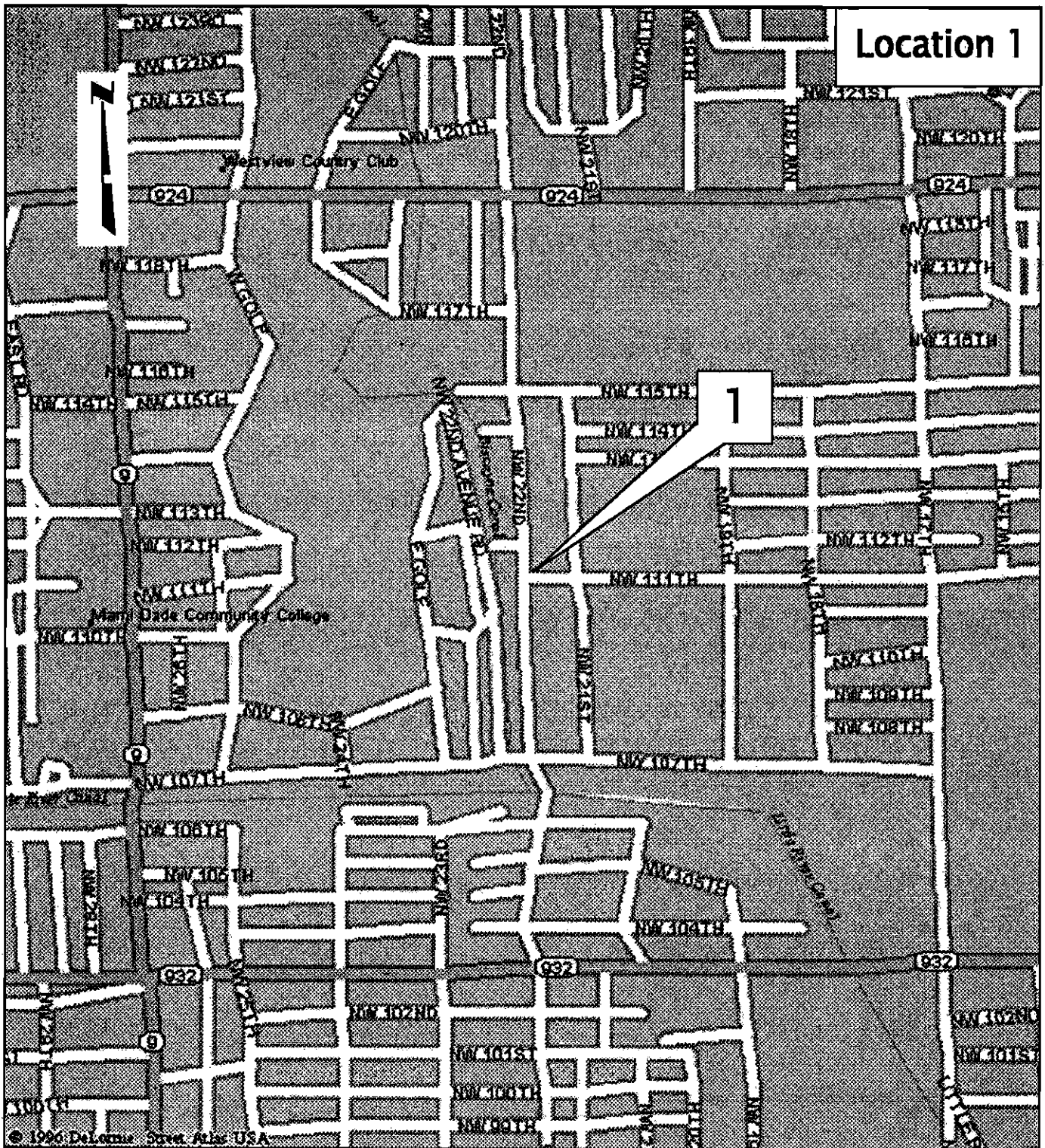
The process for implementing the proposed improvements at the 20 selected locations is shown in the following diagram.



Conclusion

In today's money conscience minded public, the simplest of roadway/intersection improvement projects can be subject to a myriad of red tape reviews. **The Congestion Intersection Improvement concept is intended to isolate obvious improvements that in the past had to be over-engineered or studied with expensive documentation to achieve an obvious results.** The obvious fix for each location was readily transparent to the steering committee comprised of members having several years of engineering experience. This experience helped to curb elaborate data collection otherwise essential to similar past projects' elaborate justification for the need to modify the simplest roadway modifications. For example, one need not know the actual number of left turns at an intersection to see that left turning vehicles spill out into the through traffic lanes causing a congested condition. To actually lengthen the left turn bay is less expensive than a full-blown study that determines its need. In other words, a full-blown traffic study requiring hours and hours of data collection can be avoided by having a people with traffic engineering experience visually inspect a site during peak activity periods and then document the problem and recommend the necessary and obvious improvements.

The Final Report includes schematic designs for each location, as well as pictures to help visualize the problem. Additionally, other recommendations are included in the report to improve the process for the next cycle of RUSH projects. The Congested Intersection Improvement Study has demonstrated that low cost and quickly implementable projects can be identified and built using the RUSH concept.



NW 22 Av & NW 111 St MPO Congested Intersection Study



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FIELD OBSERVATION OF PROBLEM:

Southbound NW 22 Avenue left turn median nose protrudes into pedestrian cross-walk. This existing condition does not comply with current design or ADA standards (see attached photographs).

RECOMMEND IMPROVEMENT:

Remove median nose and reconstruct pedestrian cross-walk area (see attached sketch).

CONSTRUCTION COST ESTIMATE

ITEMS	UNIT	QUANT.	UNIT COSTS	EXTENSION
Mobilization	LS	1	\$500	\$ 500
Maintenance of traffic	LS	1	\$750	\$ 750
Curb & Sidewalk Removal	SY	14	\$25	\$ 350
Type "F" Curb	LF	20	\$60	\$ 1,200
Asphalt & Base	SY	13	\$30	\$ 390
Remark Cross Walk	LS	1	\$750	\$ 750
TOTAL				\$3,940



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CONGESTED INTERSECTIONS STUDY
NW 22nd AVE & NW 111th ST

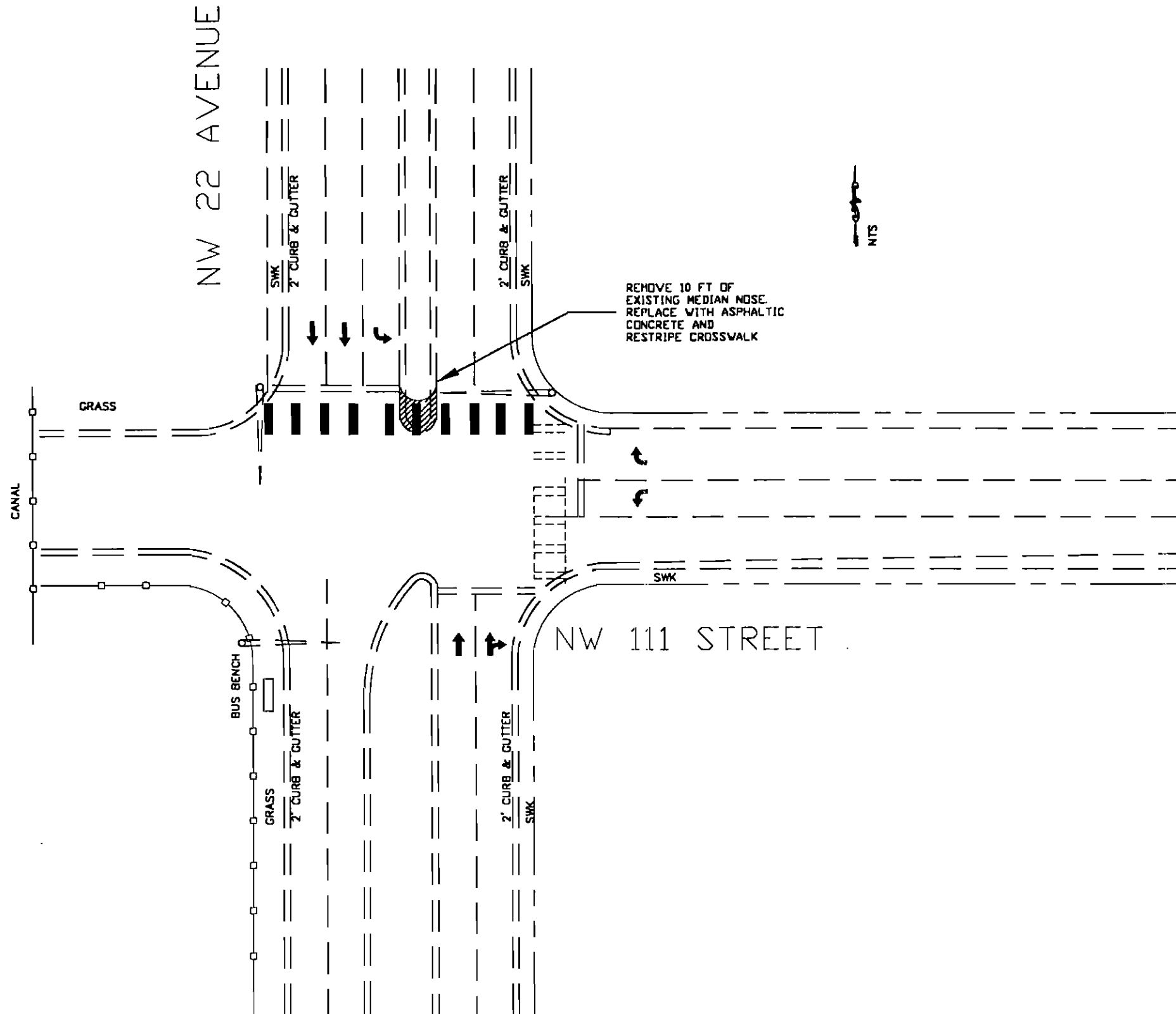
FIGURE



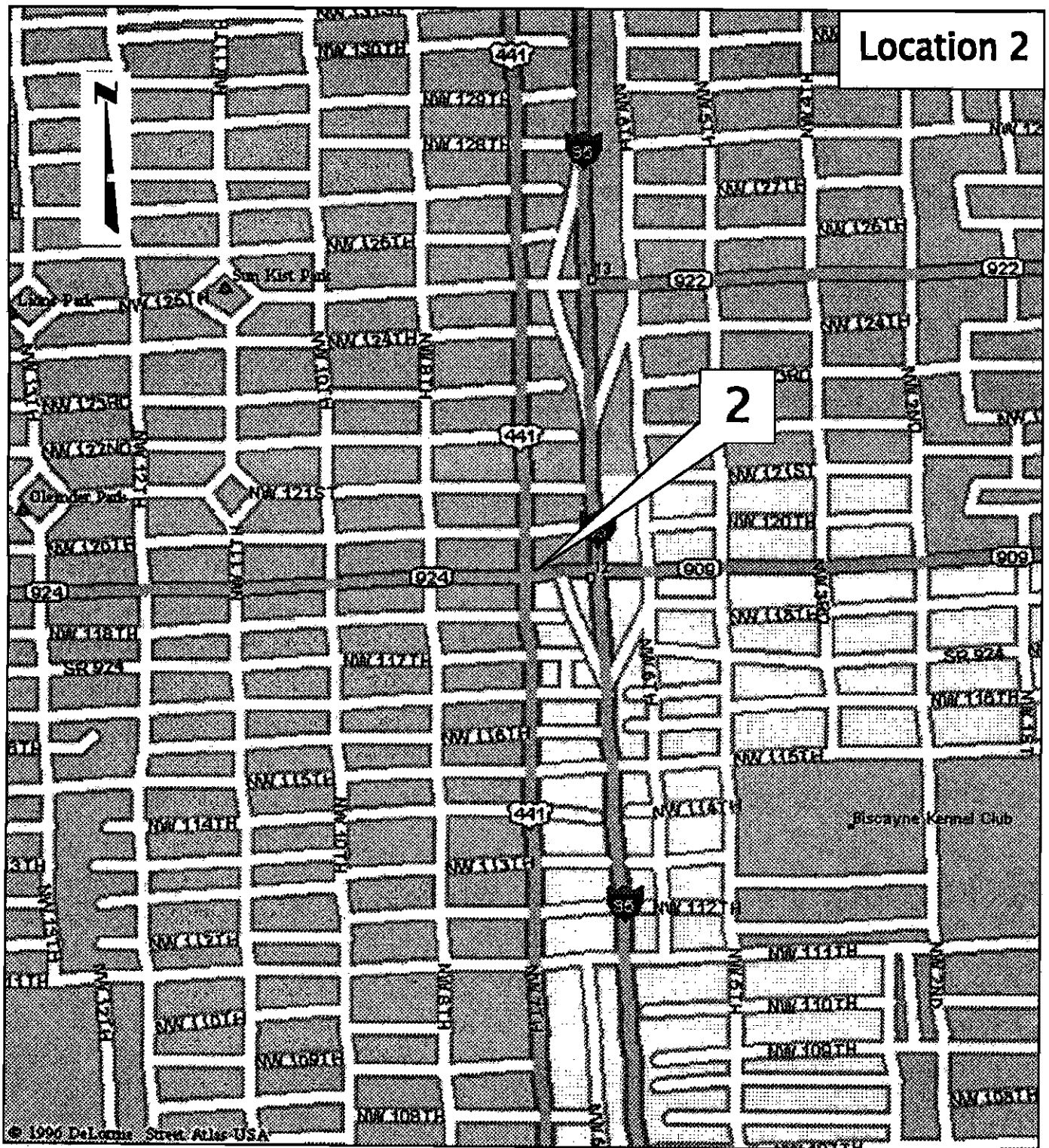
MEDIAN NOSE (LOOKING EAST)



MEDIAN NOSE TO BE REMOVED (LOOKING NORTH)



Location 2



NW 7 Av & NW 119 St MPO Congested Intersection Study



TRANSPORT ANALYSIS PROFESSIONALS

Location ID : NW 7 Avenue and NW 119 Street (Gratigny Boulevard)- *Master List No. 2* . . .

Problem : Median Nose protudes into N-S crosswalk.

Proposed Solution(s) : 1). Repositioning of the median nose by an offset of 7 feet west of its current . . .
 . location.

CRITERIA MATRIX

No	Criteria	Comment
1.	Right of Way Acquisition	N/A.
2.	Environmental Impacts	None.
3	Quick Implementable Solution(s)	Yes.
4	Multi-Modal Benefits	Modification would benefit crosswalk users especially the disabled or wheel chair users.
5	Safety Benefits	Increased safety for all users of the N-S crosswalk
6	Operational Benefits	N/A
7	Sufficient Data To Evaluate	N/A
8	Relocation of Utilities	N/A
9	Cost	\$4,000

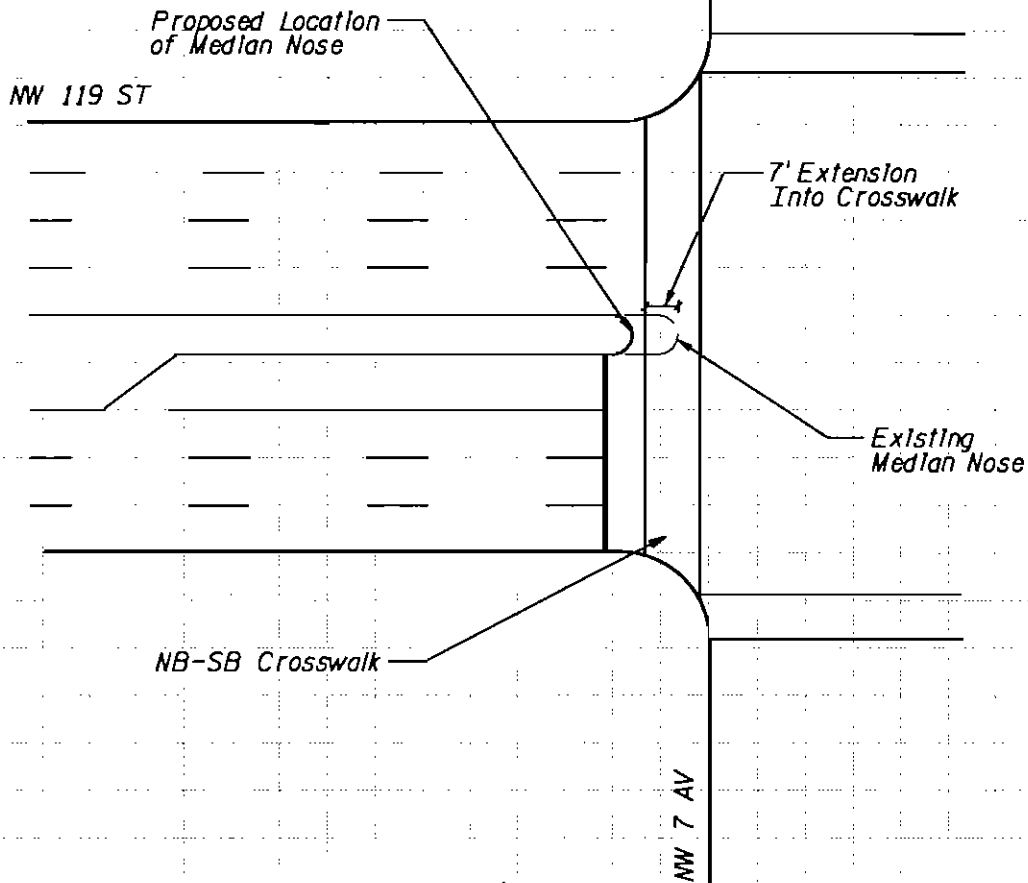
Discussion : . Other noticeable defects to the intersection include.;
 1). the absence of a crosswalk ramp at the south end of the crosswalk.
 2). the absence of a crosswalk ramp at the north end of the crosswalk.



WEST LEG MEDIAN WITHIN N-S CROSSWALK



EXISTING WEST LEG MEDIAN SHOWING HAZARD
POTENTIAL TO N-S CROSSWALK USERS

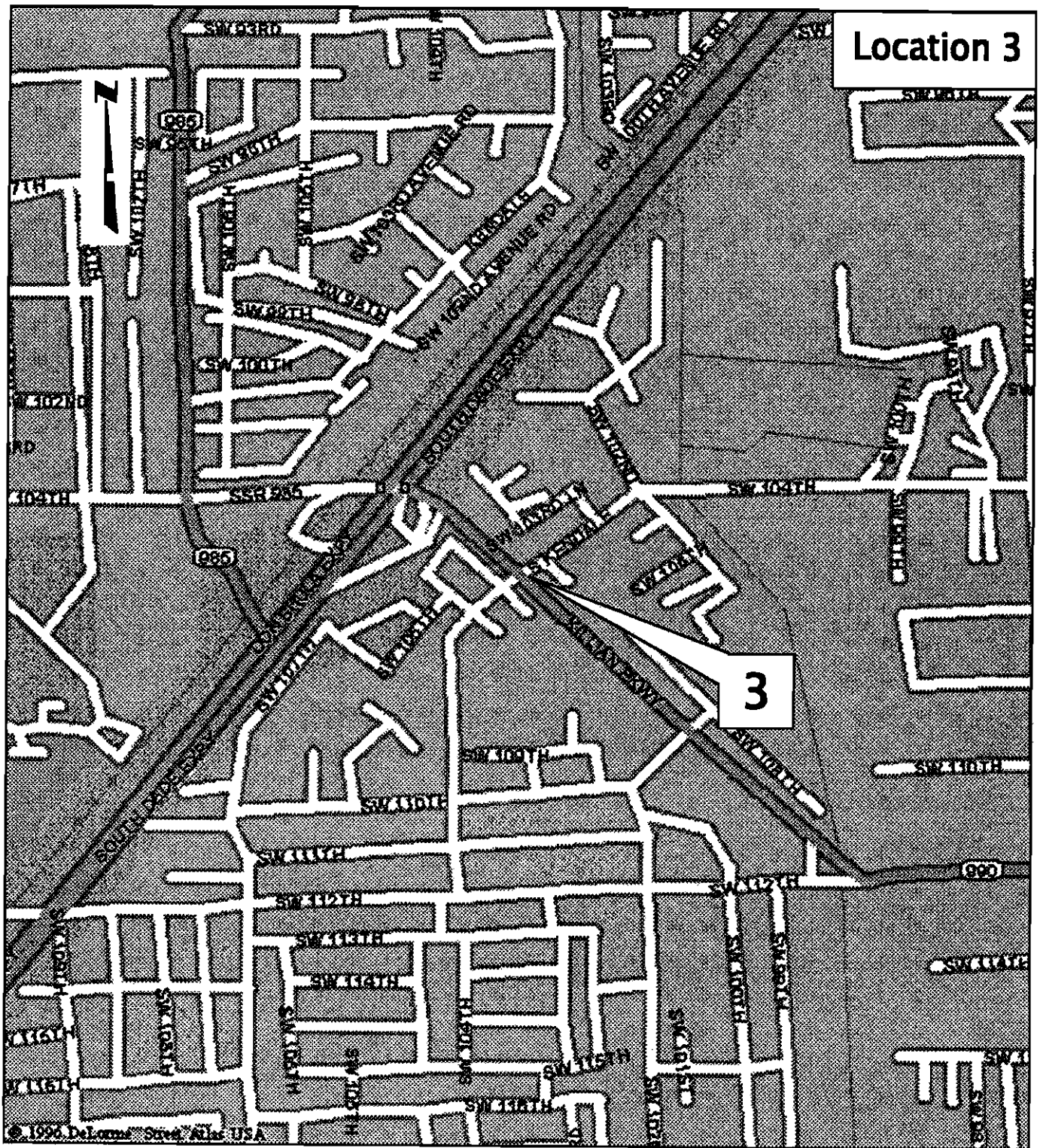


MIAMI-DADE COUNTY
METROPOLITAN PLANNING
ORGANIZATION

CONGESTED INTERSECTIONS STUDY

NW 7 AVENUE & NW 119 STREET

SHEET
2



Kendall Blvd & Killian Pkwy MPO Congested Intersection Study



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FIELD OBSERVATION OF PROBLEM:

Southbound Kendale Boulevard South (SW 104th Street) left/through lane is miss aligned with the receiving lane south of the intersection (see attached photographs). The existing southbound approach for the left/through movement is aligned directly across from the opposing northbound left turn lane. This condition does not provide an acceptable alignment for the southbound through movement across Killian Parkway, creating traffic delays at the intersection.

RECOMMEND IMPROVEMENT:

The southbound approach of Kendale Boulevard South needs to be widened and remarked to provide an acceptable alignment for the southbound through movement across Killian Parkway. The existing southbound right turn lane needs to be shifted 12 feet west to provide a dedicated southbound through lane. The existing left/through lane will be remarked to provide a left turn lane (see attached sketch).

This improvement will align the southbound through lane approach with the receiving lane south of Killian Parkway. This improvement will require the construction of curb & gutter along a portion the existing westerly sidewalk of Kendale Boulevard South, removal of approximately 5 trees, construction of new asphalt and base, and remarking of the southbound approach.

CONSTRUCTION COST ESTIMATE

ITEMS	UNIT	QUANT.	UNIT COSTS	EXTENSION
Mobilization	LS	1	\$5,000	\$ 5,000
Maintenance of Traffic	LS	1	\$2,500	\$ 2,500
Clearing & Grubbing	SY	380	\$15	\$ 5,700
Type "F" Curb	LF	130	\$35	\$ 4,550
Tree Relocation	EA	6	\$1,200	\$ 7,200
Sub-grade	SY	340	\$7.50	\$ 2,550
Asphalt Pavement & Base	SY	340	\$15	\$ 5,100
Pavement Markings	LS	1	\$3,000	\$ 3,000
TOTAL				\$35,600



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CONGESTED INTERSECTIONS STUDY
KENDALE BLVD. & KILLIAN PARKWAY

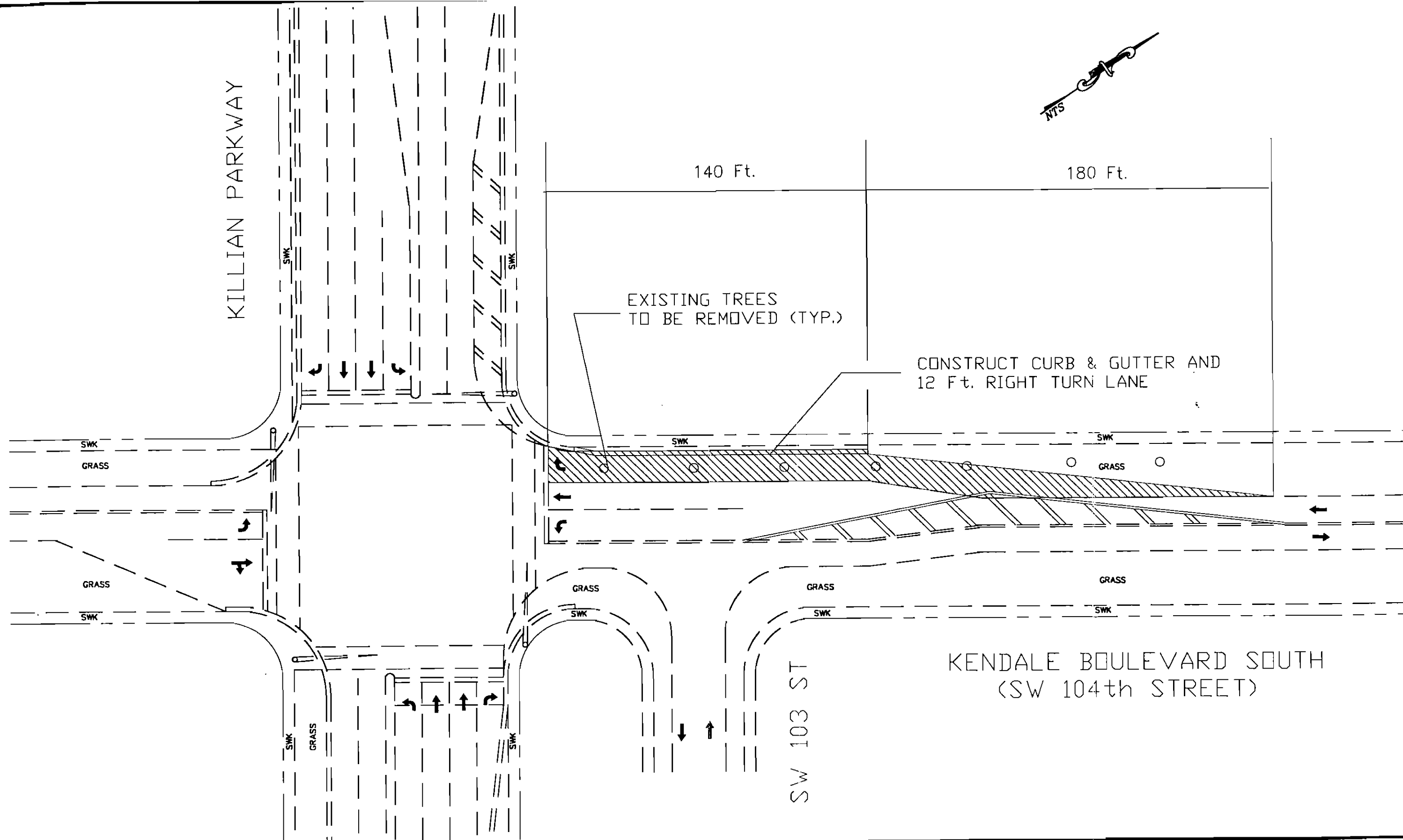
FIGURE

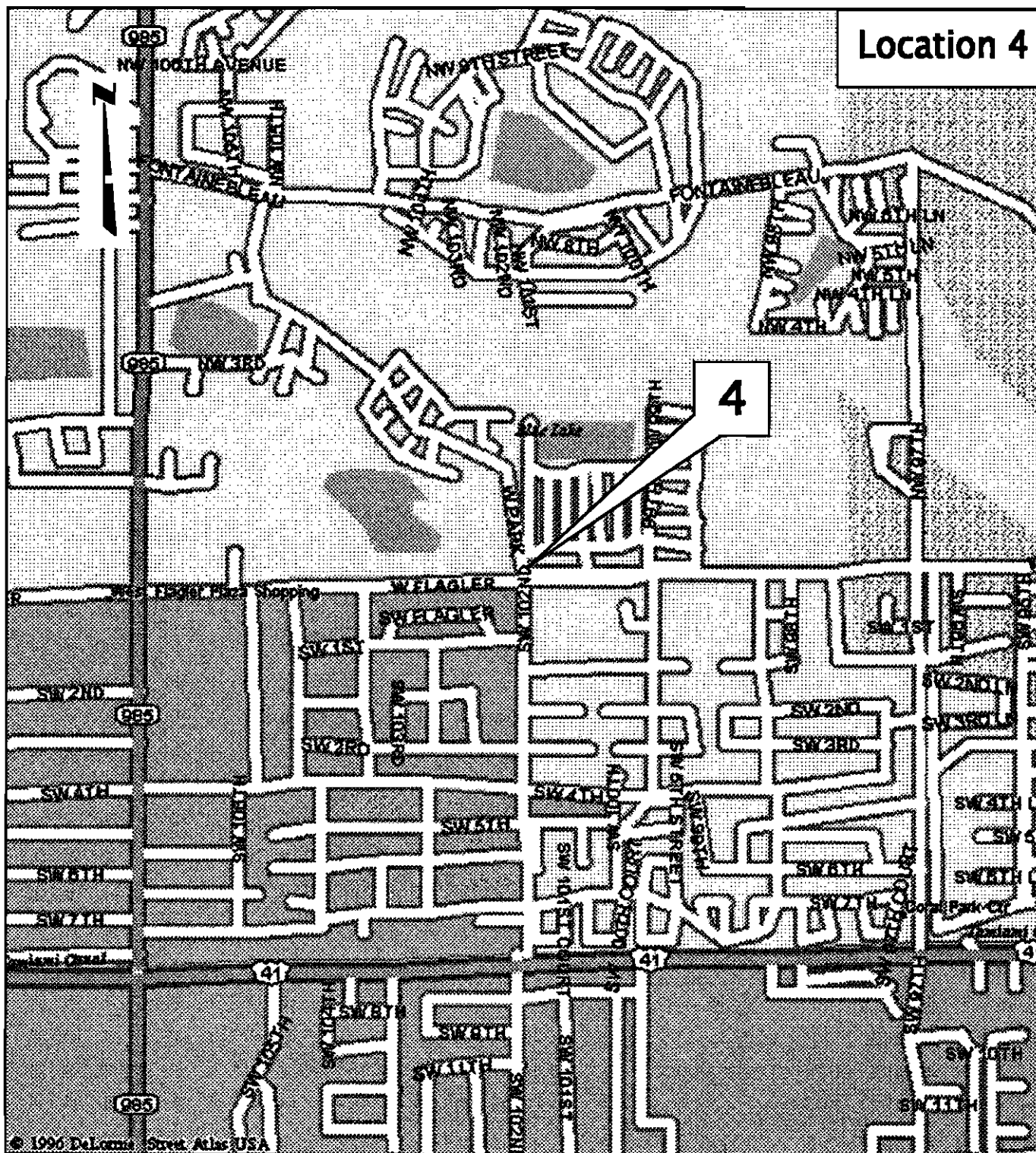


KENDALE BOULEVARD APPROACH TO KILLIAN PARKWAY (LOOKING SOUTH)



EXISTING ALIGNMENT OF THROUGH LANE (LOOKING SOUTH)





W. Flagler St & SW 102 Av MPO Congested Intersection Study



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FIELD OBSERVATION OF PROBLEM:

Existing northbound SW 102nd Avenue is a two-way, two lane roadway with the existing curb returns from West Flagler Street designed for future widening. When northbound through and left turning traffic queues at the existing signal, northbound right turning traffic will drive along the grass swale to by-pass the queued vehicles (see attached photographs).

RECOMMEND IMPROVEMENT:

Maintain the existing intersection alignment and widen the northbound lane to provide a separate right turn lane (see attached sketch). This recommendation will improve the northbound movement by reducing the existing traffic delays at this intersection, as well as potential accidents. Several trees will require relocation, in addition, type "F" curb and gutter should be installed to provide separation between the northbound right turn lane and the existing utility poles located along the east sidewalk. SW 102nd Avenue slopes southward from West Flagler Street to an existing catch basin located approximately 200 feet south of the intersection, therefore, additional drainage should not be required.

CONSTRUCTION COST ESTIMATE

ITEMS	UNIT	QUANT.	UNIT COSTS	EXTENSION
Mobilization	LS	1	\$5,000	\$ 5,000
Maintenance of Traffic	LS	1	\$1,500	\$ 1,500
Clearing & Grubbing	SY	300	\$15	\$ 4,500
Type "F" Curb	LF	245	\$15	\$ 3,675
Tree Relocation	EA	6	\$750	\$ 4,500
Sub-grade	SY	290	\$7.50	\$ 2,175
Asphalt Pavement & Base	SY	290	\$15	\$ 4,350
Pavement Markings	LS	1	\$1,200	\$ 1,200
Sign Relocation & Installation	EA	2	\$250	\$ 500
TOTAL				\$27,400



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CONGESTED INTERSECTIONS STUDY
W. FLAGLER ST. & W. 102nd AVE.

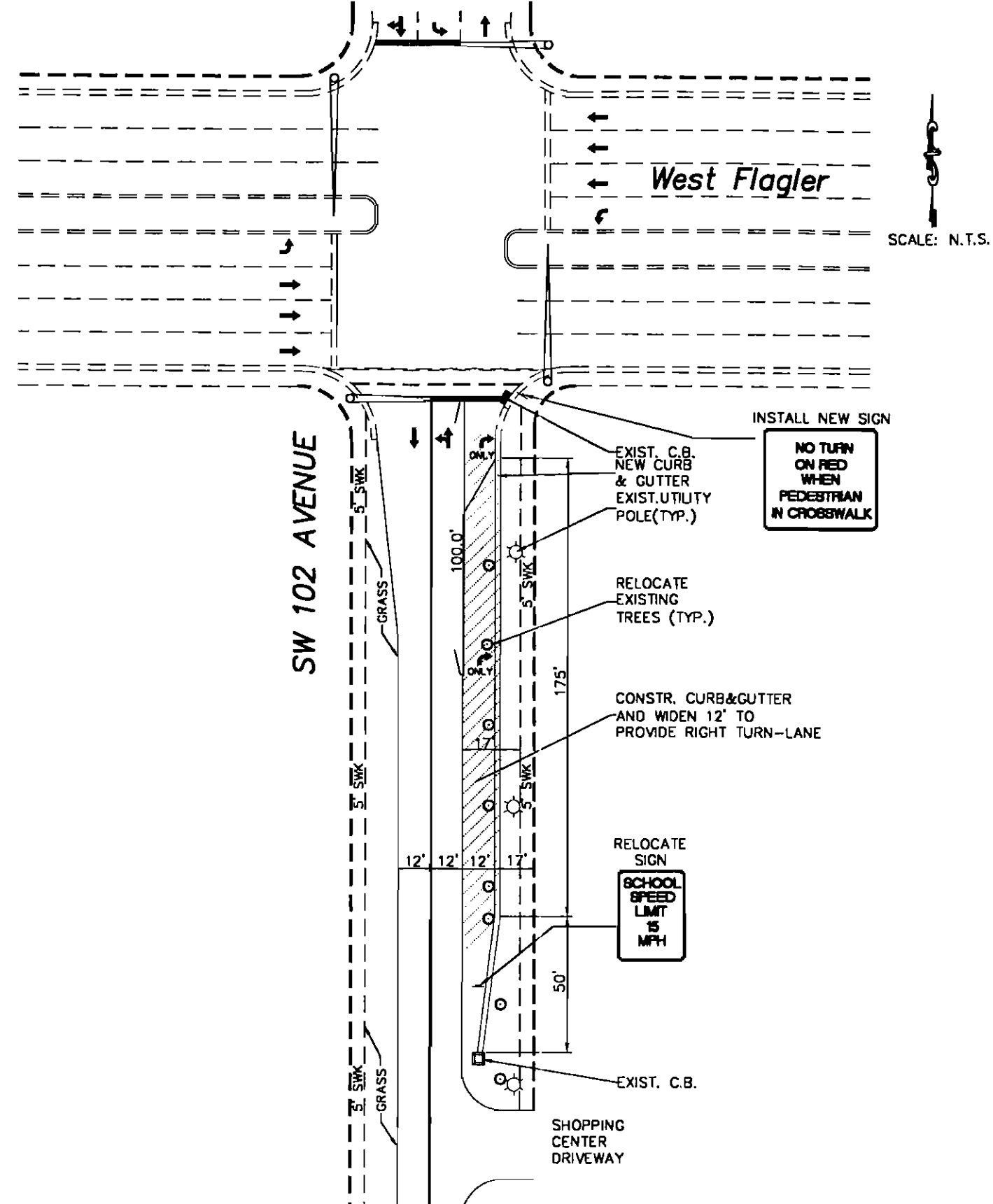
FIGURE



EXISTING SHOULDER USED AS A LANE (LOOKING NORTH)



EXISTING INTERSECTION USED AS TWO LANES (LOOKING NORTH)



**MIAMI DADE COUNTY
METROPOLITAN PLANNING ORZGANIZATION**

FIGURE

FIELD OBSERVATION OF PROBLEM:

SW 112 Avenue is a T-intersection with Kendall Drive with a northbound left turn lane and a combined northbound left/right turn lane, along with a southbound left turn bay and a wide (18 foot) southbound through lane (see attached photographs). The existing dual left turn lane configuration prevents the numerous right turning vehicles from being able to make a "right-on-red" when there are waiting left turning vehicles occupying both left turn lanes. The left turning volume is large enough to warrant the dual left turn lanes.

In addition, the existing southbound left turn bay into the adjacent office complex complicates the operation of this intersection. The striping of this lane is such that it acts as the receiving lane for left turning vehicles from Kendall Drive (westbound to southbound) onto SW 112 Avenue. However, once southbound vehicles complete this left turn they are required to immediately change lanes to continue southbound on SW 112 Avenue or be trapped in the left turn bay.

RECOMMEND IMPROVEMENT:

Remark the SW 112 Avenue approach to provide dual left turn lanes and a right turn lane (see attached sketch). The existing extra wide southbound through lane of SW 112 Avenue can be used to provide the needed space for the northbound right turn. The proposed northbound lanes will consist of a 10 foot right turn lane (total width will be 11.5 feet with the gutter pan of the curb & gutter), two 11 foot left turn lanes, a 10 foot striped island and a 12 foot southbound through lane.

This realignment of SW 112 Avenue will require a modification of the median nose within Kendall Drive to provide the proper control radius for the northbound left turns. In addition, the proposed creation of the striped island will help guide the turning vehicles into the southbound through lane of SW 112 Avenue (currently the geometry guides the vehicles into the left turn bay of the office complex).

CONSTRUCTION COST ESTIMATE

ITEMS	UNIT	QUANT.	UNIT COSTS	EXTENSION
Mobilization	LS	1	\$2,500	\$ 2,500
Maintenance of Traffic	LS	1	\$1,200	\$ 1,200
Clearing & Grubbing	SY	106	\$25	\$ 2,650
Type "F" Curb	LF	60	\$60	\$ 3,600
Sub-grade	SY	80	\$7.50	\$ 600
Asphalt & Base	SY	80	\$15	\$ 1,200
Remove Existing Markings	LS	1	\$3,000	\$ 3,000
Pavement Marking	LS	1	\$3,500	\$ 3,500
TOTAL				\$18,250



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CONGESTED INTERSECTIONS STUDY
SW 112th AVE & KENDALL DRIVE

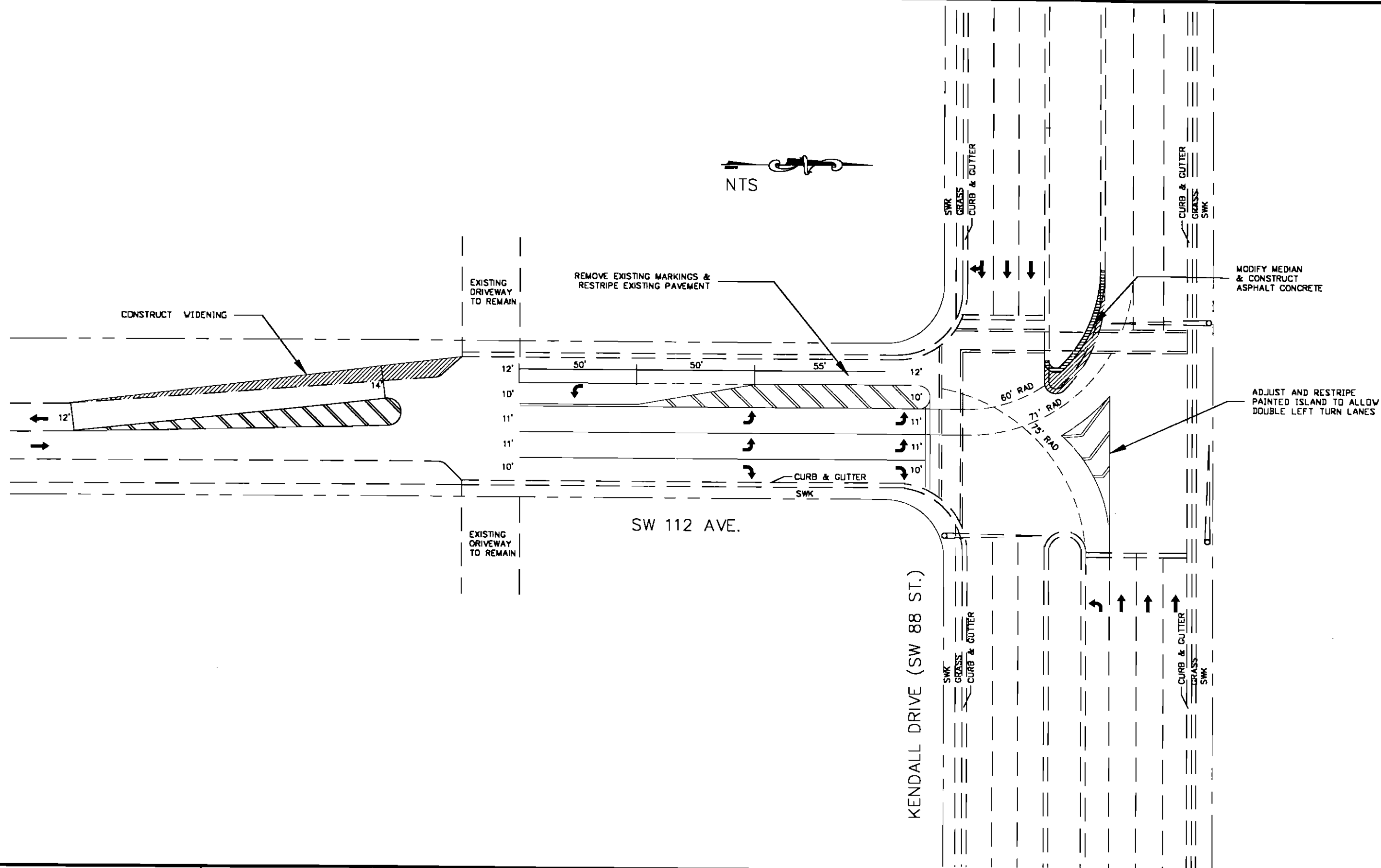
FIGURE



SW 112th AVENUE APPROACH (LOOKING NORTH)



EXISTING SW 112th AVENUE (LOOKING NORTH)



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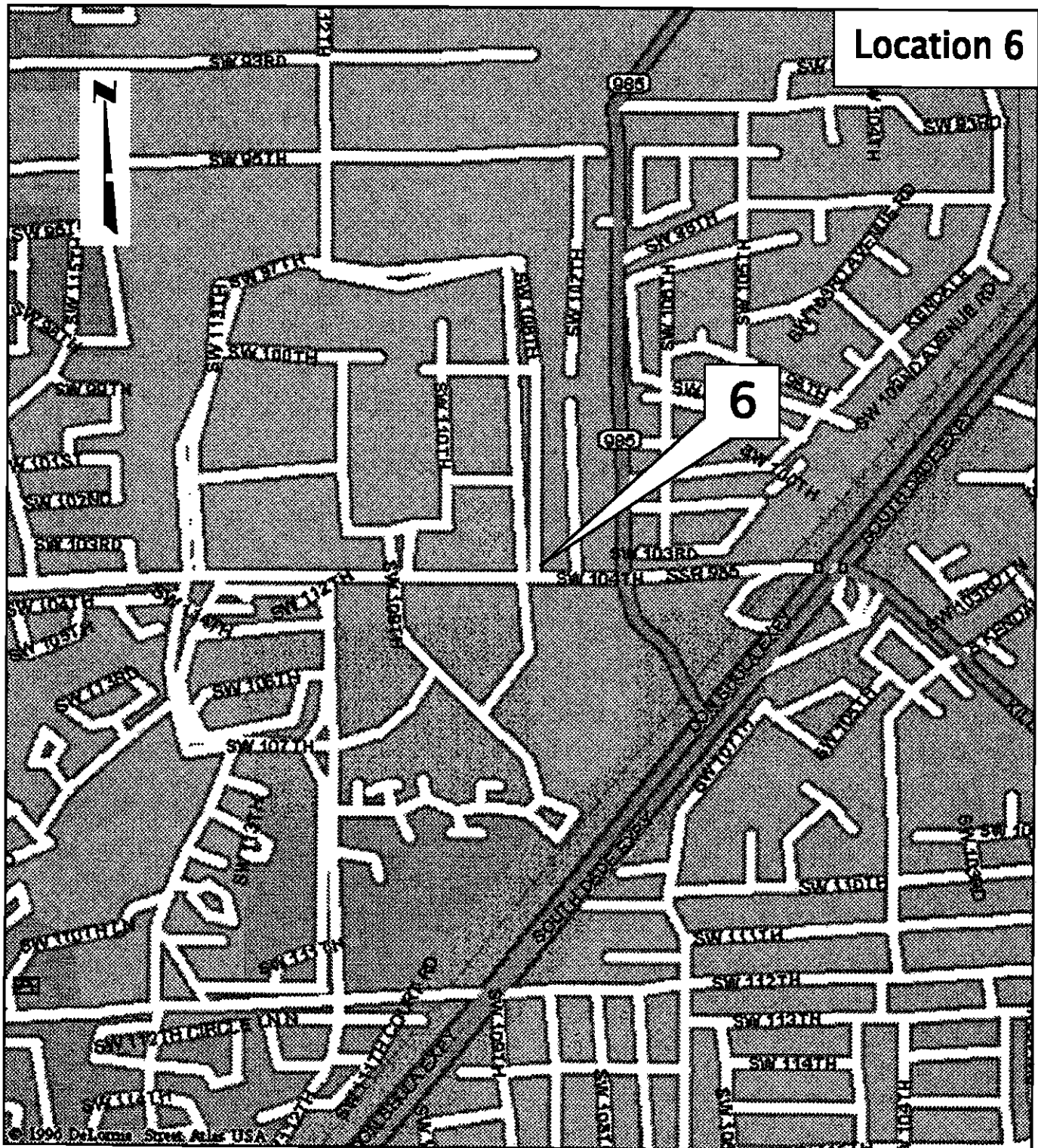
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METROPOLITAN PLANNING ORZGANIZATION

CONGESTED INTERSECTIONS STUDY
SW 112 Avenue & Kendall Drive

FIGURE

Location 6

6



SW 109 Ct & SW 104 St MPO Congested Intersection Study



TRANSPORT ANALYSIS PROFESSIONALS

FIELD OBSERVATION OF PROBLEM:

SW 109 Court's existing northbound left/through lane does not provide adequate capacity for the existing demand (see attached photographs). Existing left turning traffic experiences multiple signal cycles to clear the intersection during peak hours.

RECOMMEND IMPROVEMENT:

Widen the existing left turn/through lane to provide a dedicated left turn lane and a combined left/through lane to increase the lane capacity (see attached sketch). Widening will require the relocation of an existing ground water monitoring well, relocation of two US Postal Service drop boxes and the construction of new type "F" curb and gutter along with new pavement. An additional signal loop will need to be installed for the new left turn lane and wired into the controller cabinet.

CONSTRUCTION COST ESTIMATE

ITEMS	UNIT	QUANT.	UNIT COSTS	EXTENSION
Mobilization	LS	1	\$5,000	\$ 5,000
Maintenance of Traffic	LS	1	\$1,500	\$ 1,500
Clearing & Grubbing	SY	290	\$15	\$ 4,350
Type "F" Curb	LF	300	\$15	\$ 4,500
Sub-grade	SY	290	\$7.50	\$ 2,175
Asphalt & Base	SY	280	\$15	\$ 4,200
Pavement Markings	LS	1	\$1,200	\$ 1,200
Monitoring Well	EA	1	\$1,500	\$ 1,500
TOTAL				\$24,425



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CONGESTED INTERSECTIONS STUDY
SW 109th COURT & SW 104th ST

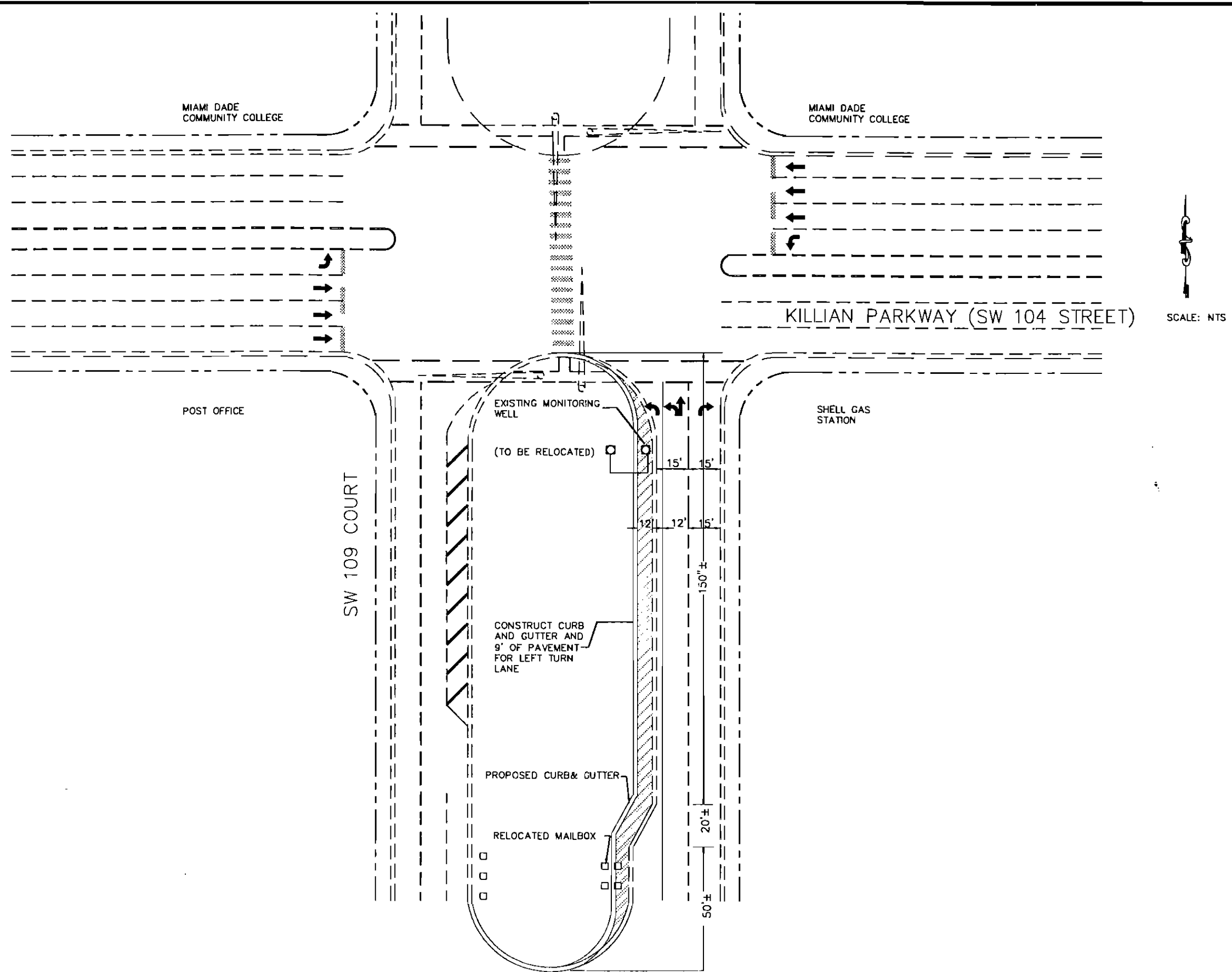
FIGURE



SW 109th COURT APPROACH (LOOKING NORTH)



EXISTING MAIL BOXES TO BE RELOCATED (LOOKING NORTH)



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CONGESTED INTERSECTIONS STUDY
SW 109 Court & SW 104 Street

FIGURE

Location ID : Maynada Bump Bridge - *Master List No. 7*.....

Problem : Sight Distance problems causing traffic delays at intersection.....

Proposed

Solution(s) : The following safety improvements are recommended;

- 1). Install stop bars to 10 feet from Maynada Street on EB and WB approaches on S. Alhambra and Alfonso (see intersection drawing "Sheet 2").....
- 2). Relocate Stop Signs (R1-1) 5 feet from stop bars as shown in Sheet 2.....
- 3). Install Stop Ahead Signs (W3-1a) ahead of all Stop Signs.....
- 4). Replace existing speed signs on Maynada Street with bigger and more legible size (W13-1 size 24"x24").....
- 5). Install Bump Sign (W8-1) before begin of bump bridge as shown in Sheet 2.
- 6). Install Reduced Speed Ahead Sign (R2-5a) at appropriate distance north of Alfonso approaching Maynada Bump Bridge and south of S. Alhambra approaching Maynada Bump Bridge.....
- 7). Add Merge Lane to SB Maynada, South of Alhambra for Right Turn Vehicles.
- 8). Add Merge Lane to NB Maynada, North of Alfonso for Right Turn Vehicles.
- 9). Install No Left Turn Signs at all approaches.....

CRITERIA MATRIX

No	Criteria	Comment
1.	Right of Way Acquisition	R/W needed.
2.	Environmental Impacts	N/A
3	Quick Implementable Solution(s)	Yes
4	Multi-Modal Benefits	N/A
5	Safety Benefits	Safety to Vehicular Traffic EB, WB, NB and SB.
6	Operational Benefits	N/A
7	Sufficient Data To Evaluate	N/A
8	Relocation of Utilities	None.
9	Cost	\$30,000



SB MAYNADA STREET APPROACHING S.ALHAMBRA



WB ALFONSO SHOWING SIGHT DISTANCE LIMITS

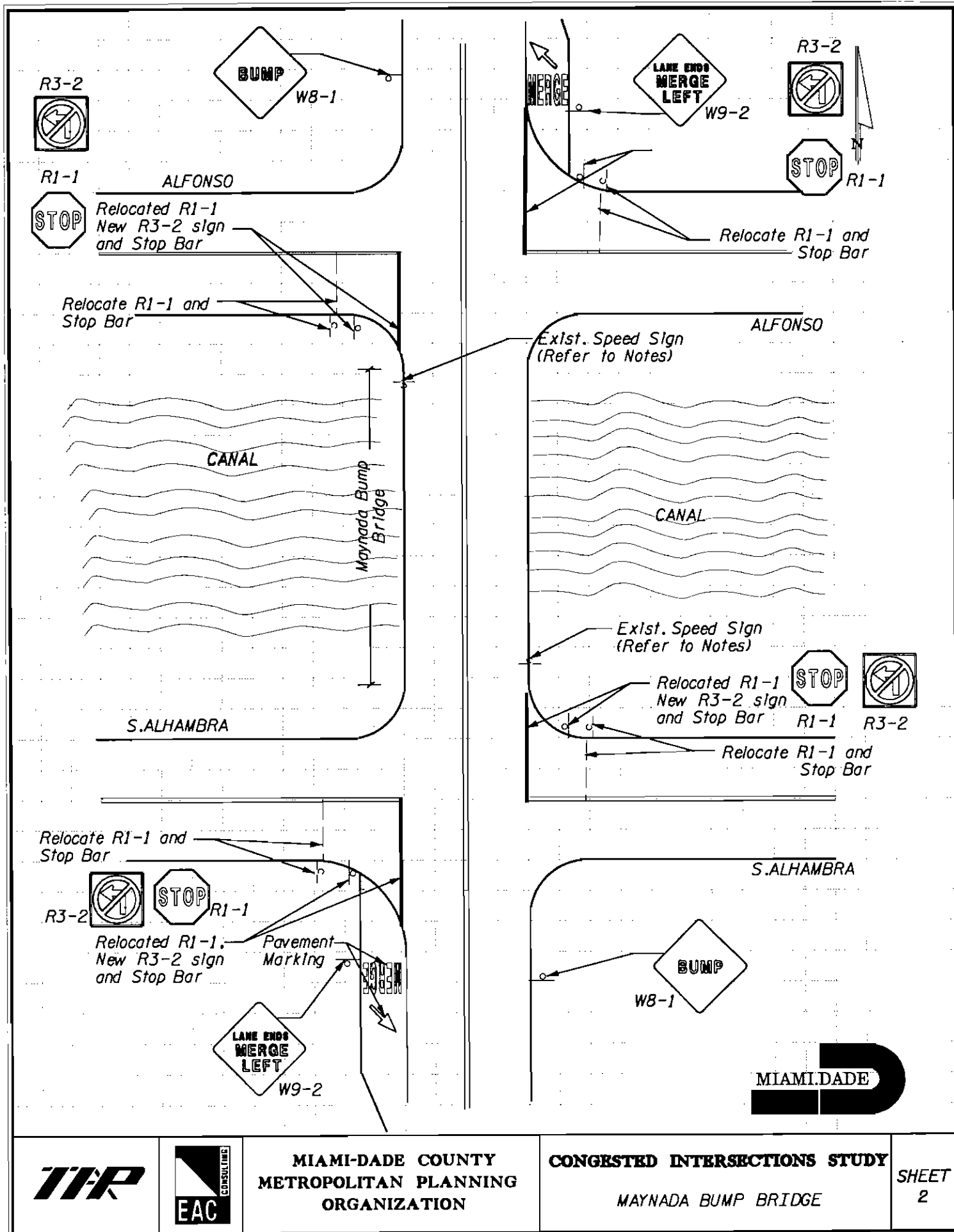


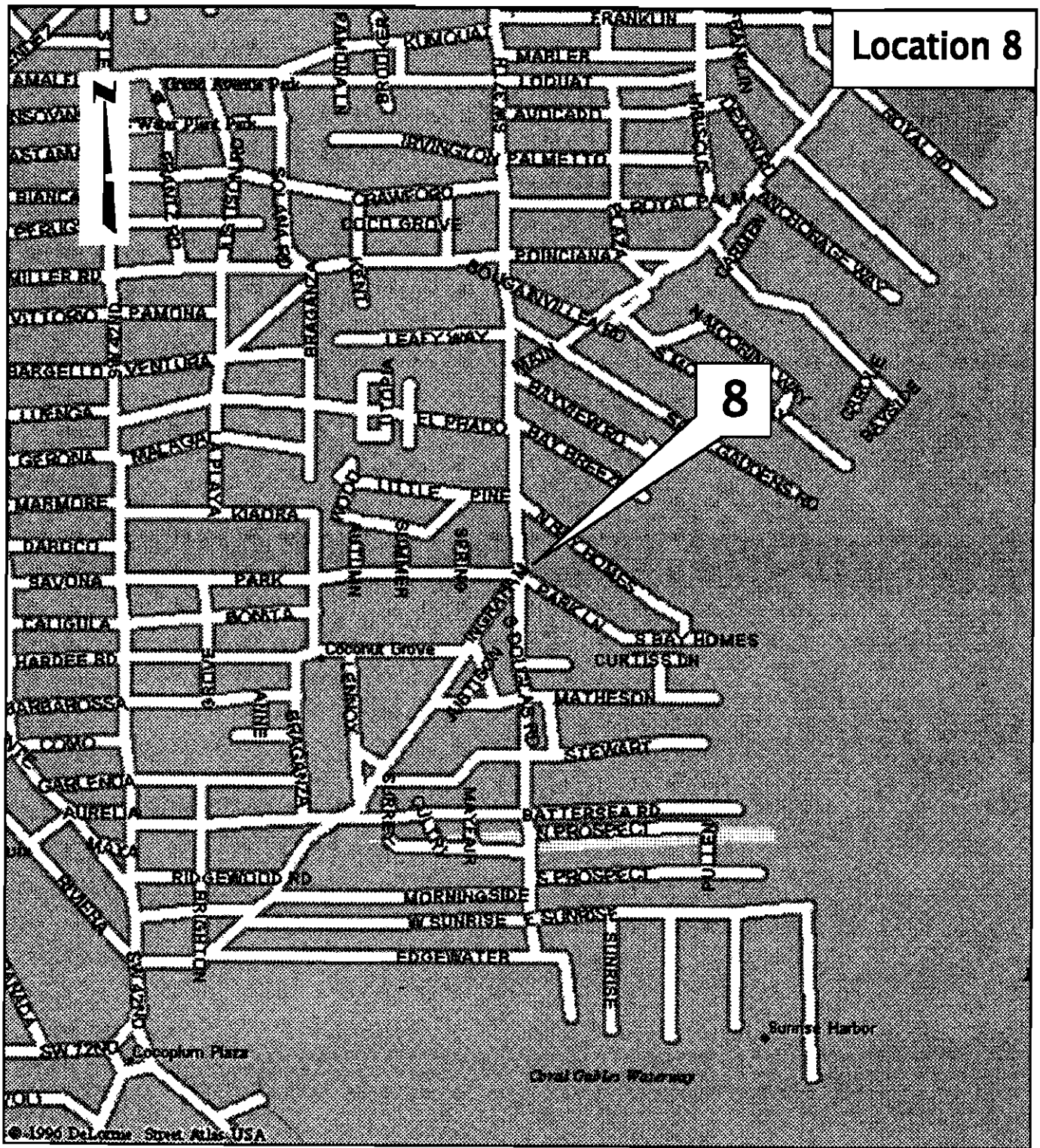
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CONGESTED INTERSECTIONS STUDY
MAYNADA BUMP BRIDGE

SHEET
1





Douglas Rd & Ingraham Hwy MPO Congested Intersection Study



TRANSPORT ANALYSIS PROFESSIONALS

Location ID : Douglas Road (SW 37 Avenue) and Ingraham Highway - *Master List No. 8* . . .

Problem : Sight Distance problem and bike accidents.
.....

Proposed Solution(s) : Installation of Signs (D11-1, D-3, M7-1, R1-1, R9-3b, W5-4 and R5-6)
(See intersection drawing "Sheet 2" for location and description of signs)
The objective of the signs is to eliminate crossing by bikers at the intersection,
thereby reducing collisions between vehicular traffic and bikers.
. Move NB Douglas Road Stop Sign 3-4 feet from EOP

CRITERIA MATRIX

No	Criteria	Comment
1.	Right of Way Acquisition	N/A.
2.	Environmental Impacts	None.
3	Quick Implementable Solution(s)	Yes.
4	Multi-Modal Benefits	N/A
5	Safety Benefits	Safety enhanced for bikers.
6	Operational Benefits	Reduced conflicts between vehicular traffic and bikers.
7	Sufficient Data To Evaluate	N/A.
8	Relocation of Utilities	None.
9	Cost	\$7,500

Discussion : .The intent of placing signs according to Sheet 2 is to discourage bikers from . . .
crossing at the intersection of Douglas Road and Ingraham Highway...Bikers . .
would therefore remain in the path provided for their use. As part of safety
improvements to the intersection, a stop sign, a yield to bikers sign and a
stop bar should be provided at the WB Main Avenue approach.
In addition relocation of existing stop sign at the NB Douglas approach is
recommended because its present location creates an obstruction to bike traffic.



INTERSECTION OF INGRAHAM HIGHWAY AND DOUGLAS ROAD



NB DOUGLAS ROAD APPROACHING INGRAHAM HIGHWAY

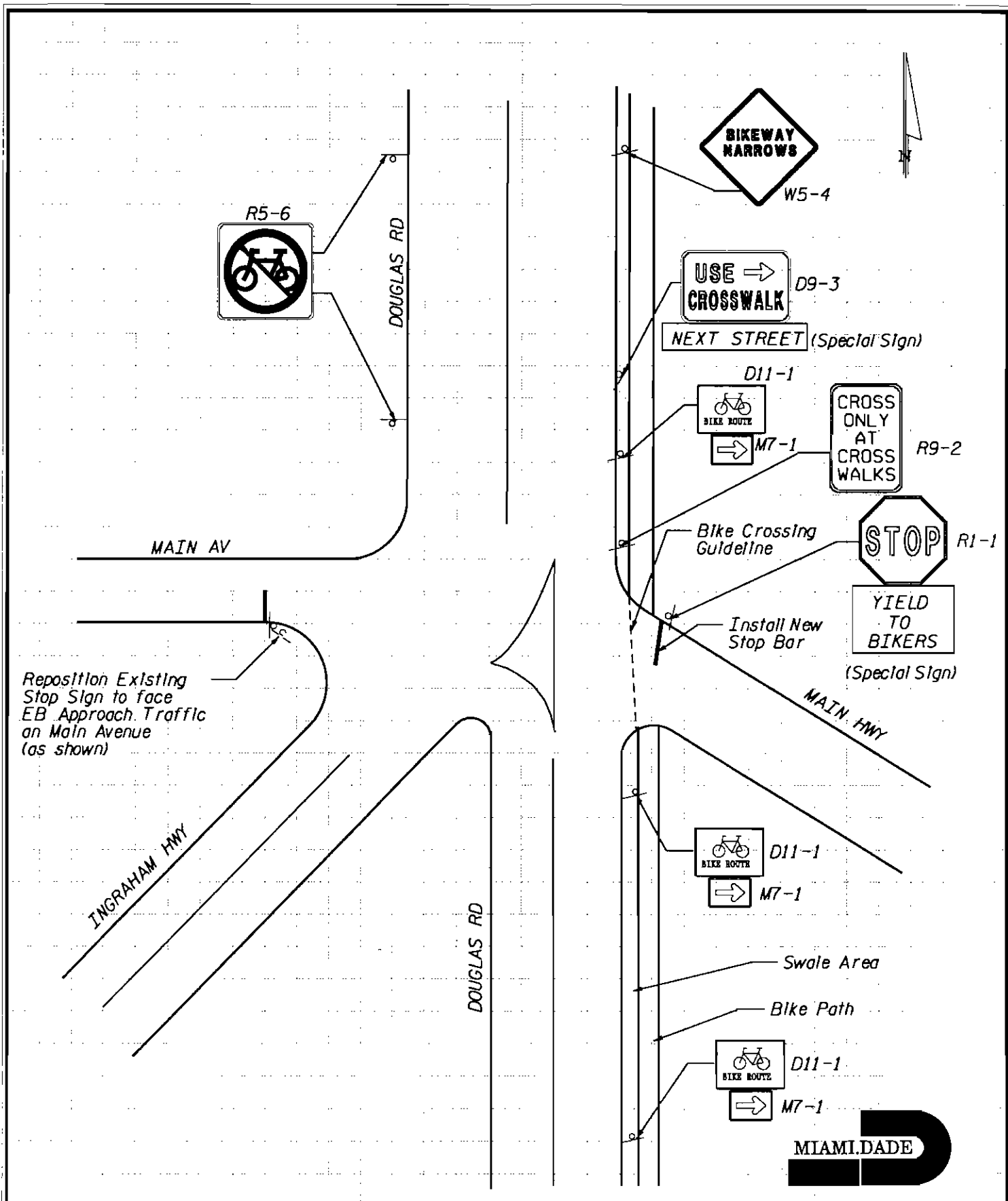


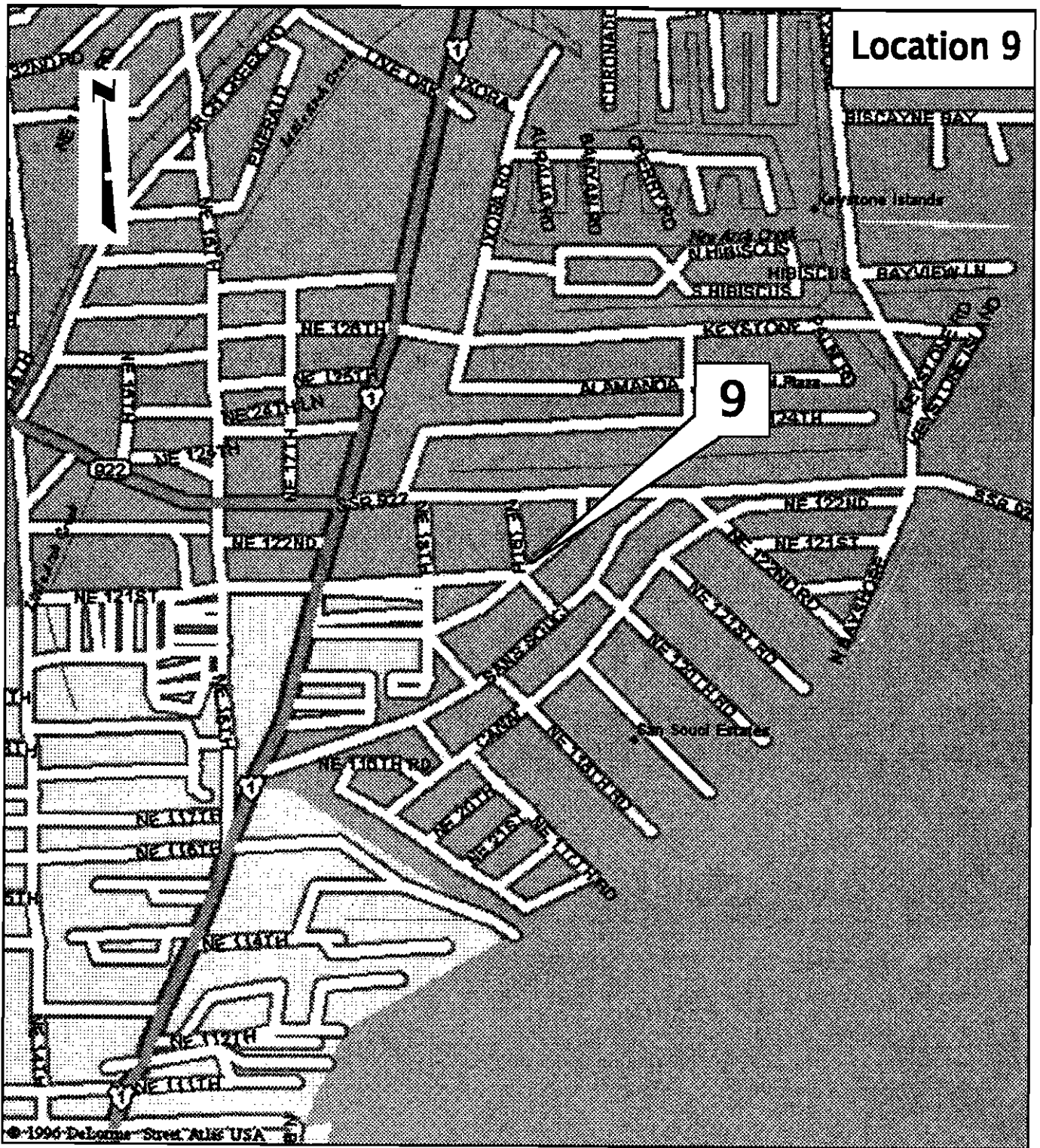
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CONGESTED INTERSECTIONS STUDY
DOUGLAS ROAD & INGRAHAM HIGHWAY

SHEET
1





NE 19 Av, 19 Dr & NE 121 St MPO Congested Intersection Study



TRANSPORT ANALYSIS PROFESSIONALS

FIELD OBSERVATION OF PROBLEM:

The existing intersection of NE 19th Avenue, NE 19th Drive and NE 121st Street is too wide to provide good directional control to the drivers (see attached photographs). The intersection is paved from sidewalk to sidewalk without any physical delineation of the travel ways, in addition, parking is permitted along all sides of the roadways.

RECOMMEND IMPROVEMENT:

Construct a round-a-bout within the main area of the intersection to provide positive guidance and to provide traffic calming. The round-a-bout should be approximately 60 feet in diameter with type "E" mountable curb and the interior of the round-a-bout sodded. In addition, existing pavement around each intersection return should be removed and replaced with sod to delineate the edge of pavement and remove parking from within the influence area of the intersection (see attached sketch). Two existing street light poles should be removed from the edges of the intersection and replaced with a single light pole (with dual fixtures) located within the center of the round-a-bout.

CONSTRUCTION COST ESTIMATE

ITEMS	UNIT	QUANT.	UNIT COSTS	EXTENSION
Mobilization	LS	1	\$5,000	\$ 5,000
Maintenance of Traffic	LS	1	\$1,500	\$ 1,500
Asphalt & base Removal	SY	1136	\$15	\$ 17,040
Type "E" Curb	LF	195	\$30	\$ 5,850
Manhole Adjustment	EA	1	\$1,200	\$1,200
Pavement Marking	LS	1	\$2,500	\$ 2,500
Signage (R3-2, R1-2, R6-1)	EA	15	\$250	\$ 3,750
Sod & Top Soil	SY	1130	\$8.50	\$ 9,605
Light Pole Relocation	EA	2	\$1,500	\$ 3,000
TOTAL				\$49,445



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METROPOLITAN PLANNING
ORGANIZATION

CONGESTED INTERSECTIONS STUDY
NE 19 AVE., NE 19 DRIVE & NE 121 STREET

FIGURE



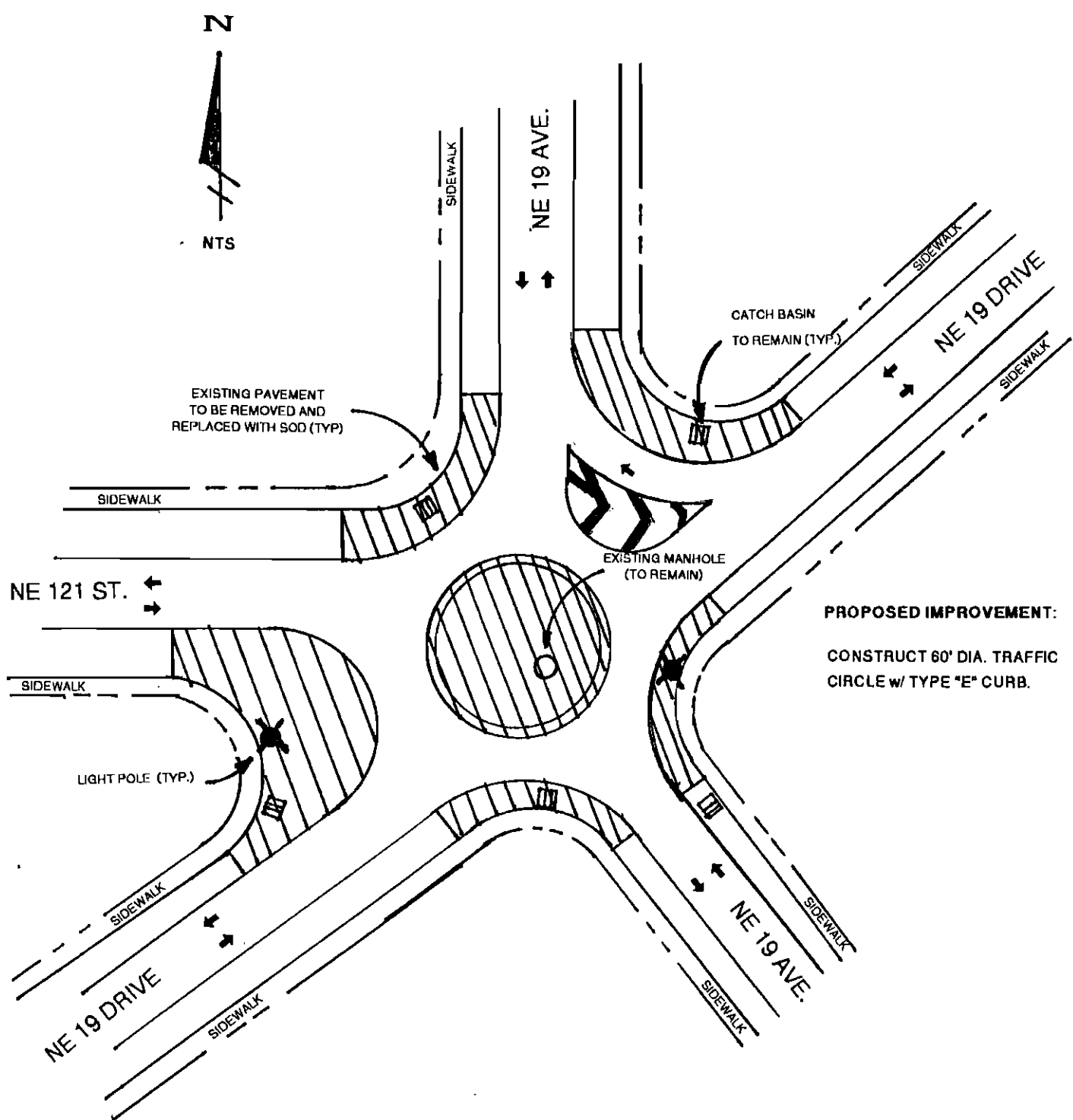
EXISTING UTILITY POLE (NORTHEAST CORNER)



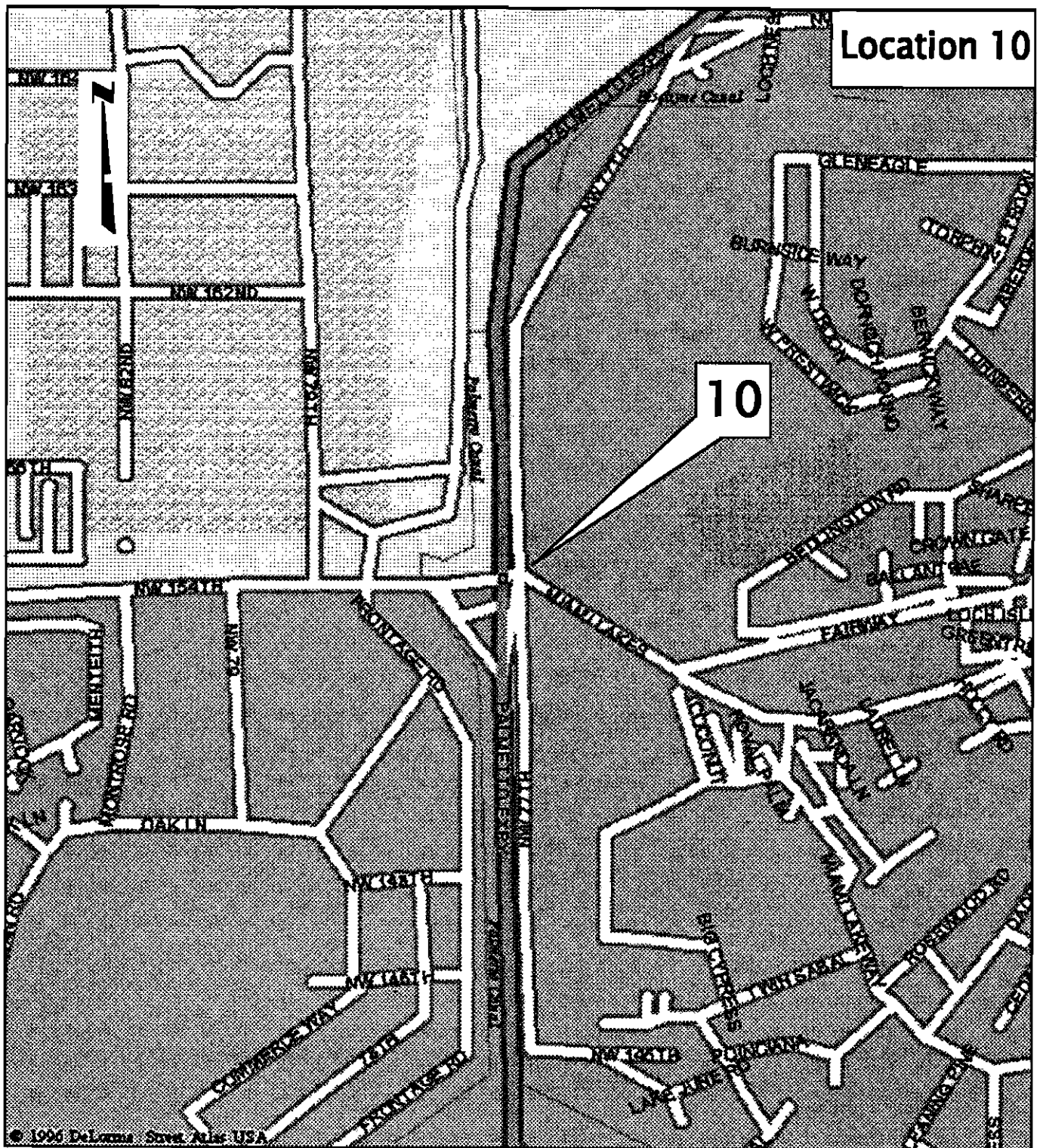
EXISTING UTILITY POLE (SOUTHWEST CORNER)



EXISTING WIDE INTERSECTION (LOOKING SOUTH)



- Notes: 1) Install R1-2 (Yield Sign) at all approaches.
 2) Install R3-2 (No Left Turn Sign) at all approaches.
 3) Install, in the traffic circle, R6-1 (One Way Sign) across from all approaches.



NW 77 Ct & NW 154 St MPO Congested Intersection Study



TRANSPORT ANALYSIS PROFESSIONALS

FIELD OBSERVATION OF PROBLEM:

Northbound NW 77th Court approach at NW 154th Street consist of a left turn lane and a through/right turn lane at this signalized intersection (see attached photographs). The predominant movement at this approach is a northbound right turn onto NW 154th Street. Often when northbound through vehicles are stopped at the signal, aggressive drivers will use the left turn lane to by-pass the stopped vehicle to make a "right-on-red" right turn. The existing northbound left turn lane provides approximately 80 feet of storage between the stop bar and an existing driveway located south of the intersection. The existing northbound left turn lane is aligned with the opposing southbound left turn lane.

In addition, along the east side of NW 77th Court are Black Olive trees located approximately 3 feet off of the pavement edge. These trees are not separated from the travel lane by any curbing or protective guard rail. The closeness of these trees to the roadway is a safety hazard from both a standpoint of a roadside hazard and from a potential sight obstruction of the signal.

RECOMMEND IMPROVEMENT:

To maintain the proper alignment of the northbound through lane with the receiving lane and to improve the northbound right turn capacity a right turn lane should be added to this approach (see attached sketch). The existing southeast curb return from NW 154th Street to NW 77th Court is of sufficient size to indicate that existing right-of-way should exist along NW 77th Court to allow for a right turn lane. Widening of the northbound approach will require the relocation of the Black Olive trees currently lining the approach, thus remending this safety hazard at the same time. It is anticipated that an existing street light for NW 154th Street will also require relocation, however, the existing signal mast arm and drainage structure should not be affected on the southeast return.

CONSTRUCTION COST ESTIMATE

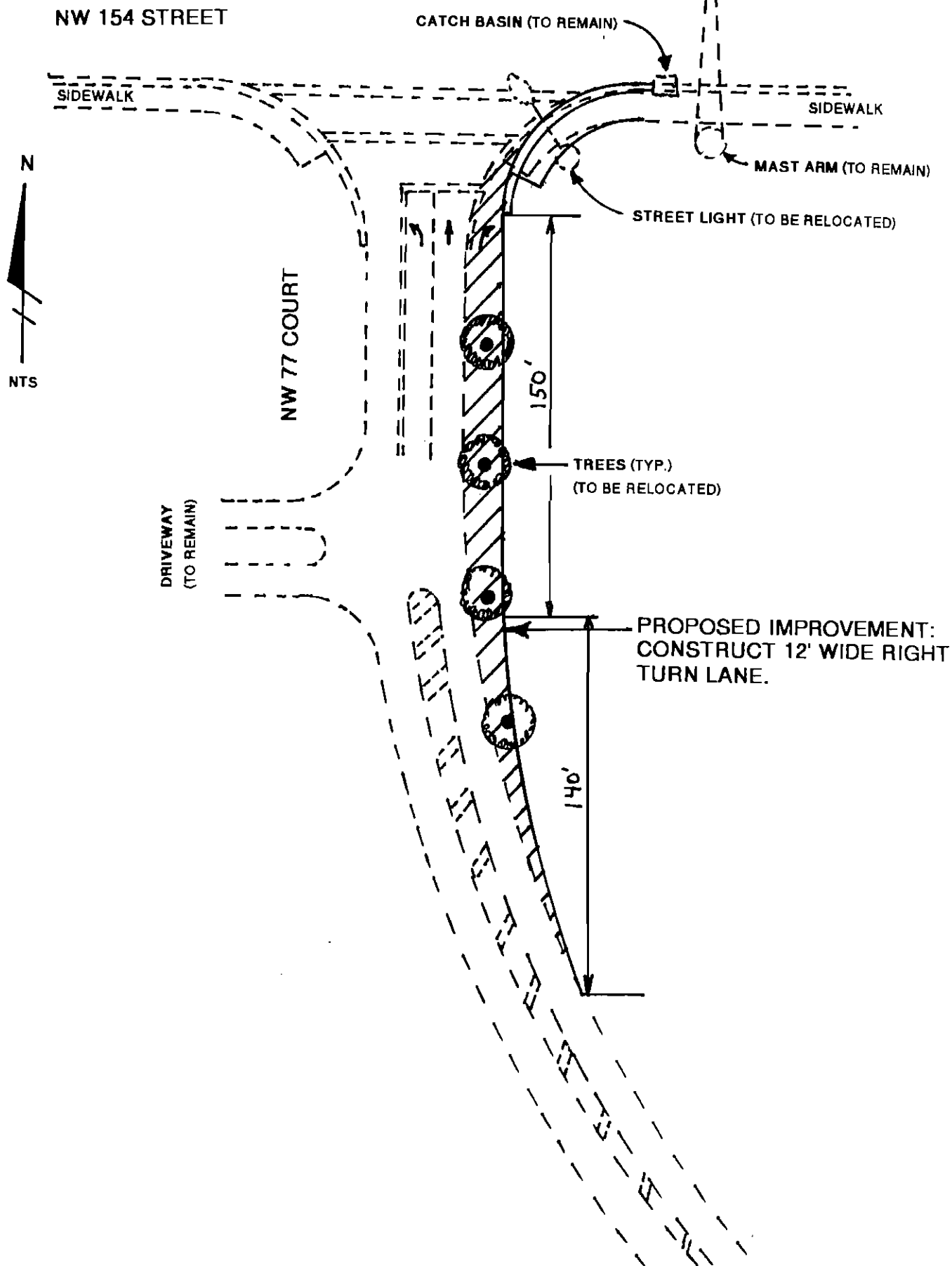
ITEMS	UNIT	QUANT.	UNIT COSTS	EXTENSION
Mobilization	LS	1	\$5,000	\$ 5,000
Maintenance of Traffic	LS	1	\$1,500	\$ 1,500
Clearing & Grubbing	SY	300	\$15	\$ 4,500
Type "F" Curb	LF	60	\$30	\$ 1,800
Sub-grade	SY	290	\$7.50	\$ 2,175
Asphalt & Base	SY	290	\$15	\$ 4,350
Sidewalk Construction	SY	33	\$30	\$ 990
Tree Relocation	EA	4	\$750	\$ 3,000
Light Pole Relocation	EA	1	\$2,500	\$ 2,500
TOTAL				\$25,815

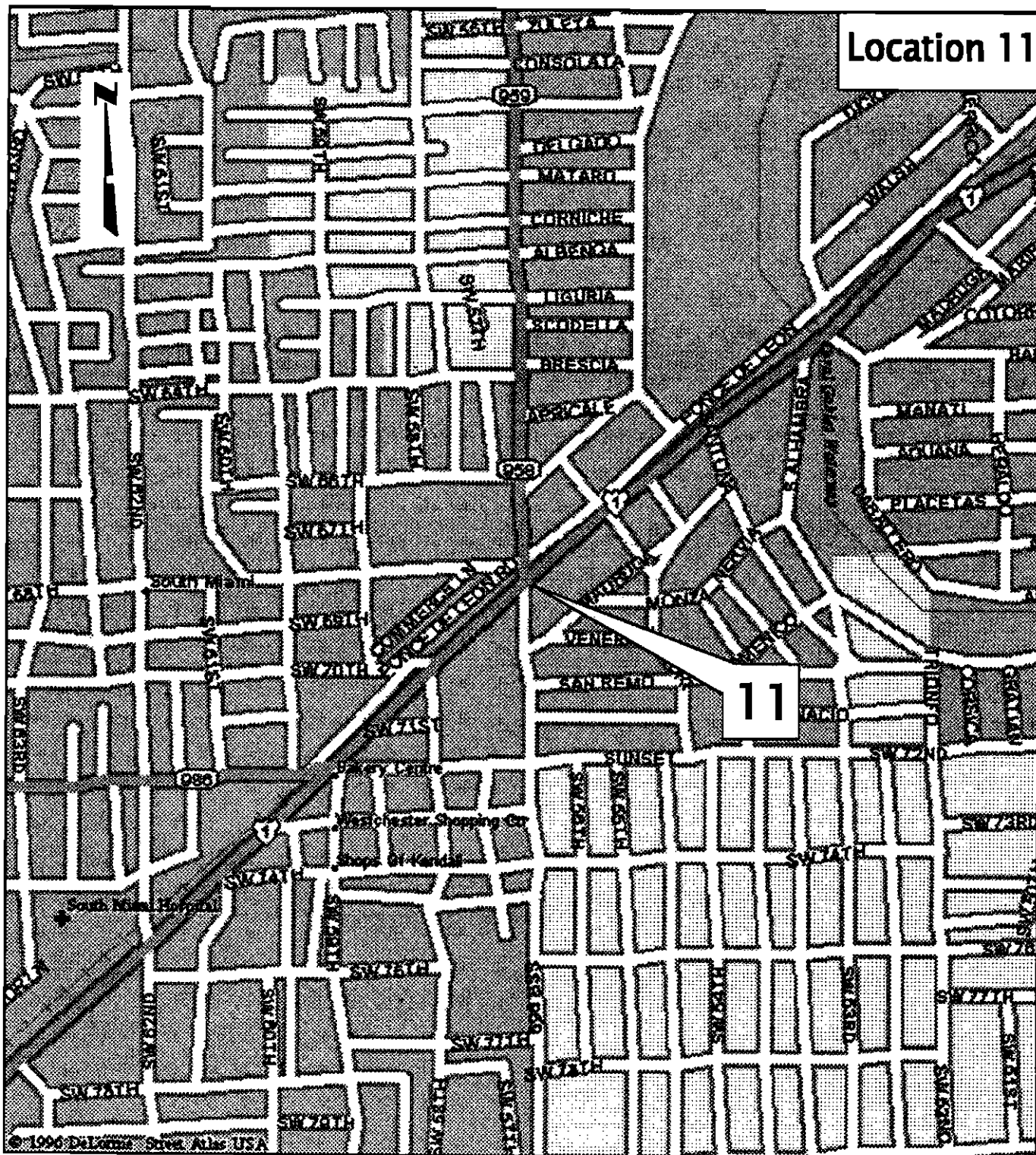


NW 77th COURT EXISTING LANES (LOOKING NORTH)



NORTHBOUND APPROACH TO INTERSECTION





US 1 & Red Road MPO Congested Intersection Study



TRANSPORT ANALYSIS PROFESSIONALS

Location ID : US-1(South.Dixie Hwy).and SW. 57. Avenue (Red.Road).- *Master.List No. 11.*

Problem : NB.Left turn from US-1 to Red Road is too short.
.....

Proposed Solution(s) :.Due to obvious geometry restrictions, fine tuning of the traffic signal timing is recommended. Fine tuning should be effected to optimize the left turn phase.. to meet the traffic demand, there by reducing congestion.....
.....
.....

CRITERIA MATRIX

No	Criteria	Comment
1.	Right of Way Acquisition	N/A
2.	Environmental Impacts	N/A
3	Quick Implementable Solution(s)	Yes.
4	Multi-Modal Benefits	N/A
5	Safety Benefits	N/A
6	Operational Benefits	Yes.
7	Sufficient Data To Evaluate	N/A
8	Relocation of Utilities	None
9	Cost	\$30,000

Discussion : Northbound Left turn.(US-1)traffic spills over to the through lanes. However, extension of left turn lane would adversely affect SB US-1 left turn lane into... 5700 Block.....
.....
.....
.....
.....
.....



INTERSECTION OF RED ROAD AND NB US-1



LEFT TURN STORAGE ON NB US-1

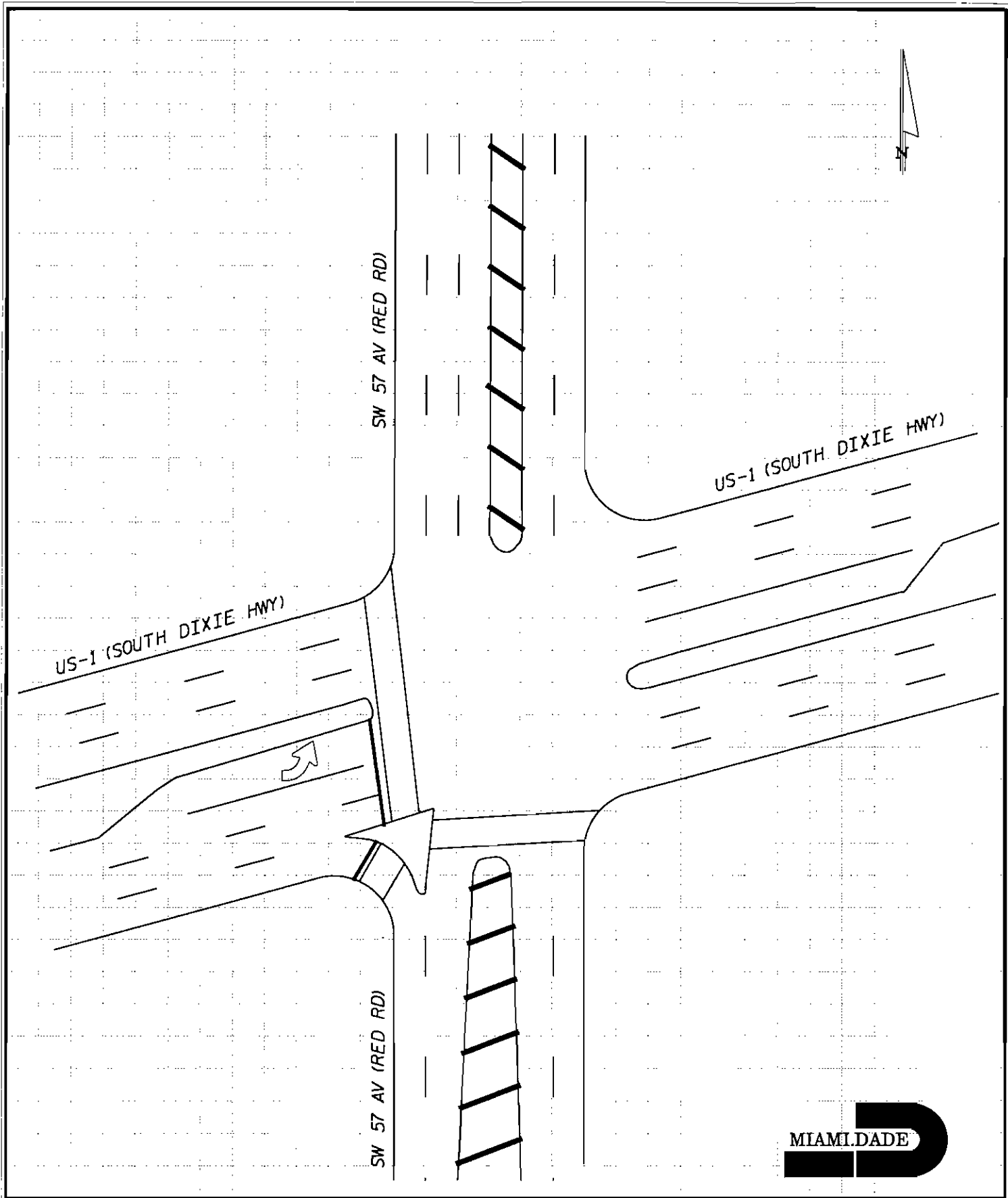


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CONGESTED INTERSECTIONS STUDY
US-1 & SW 57 AVENUE (RED ROAD)

SHEET
1

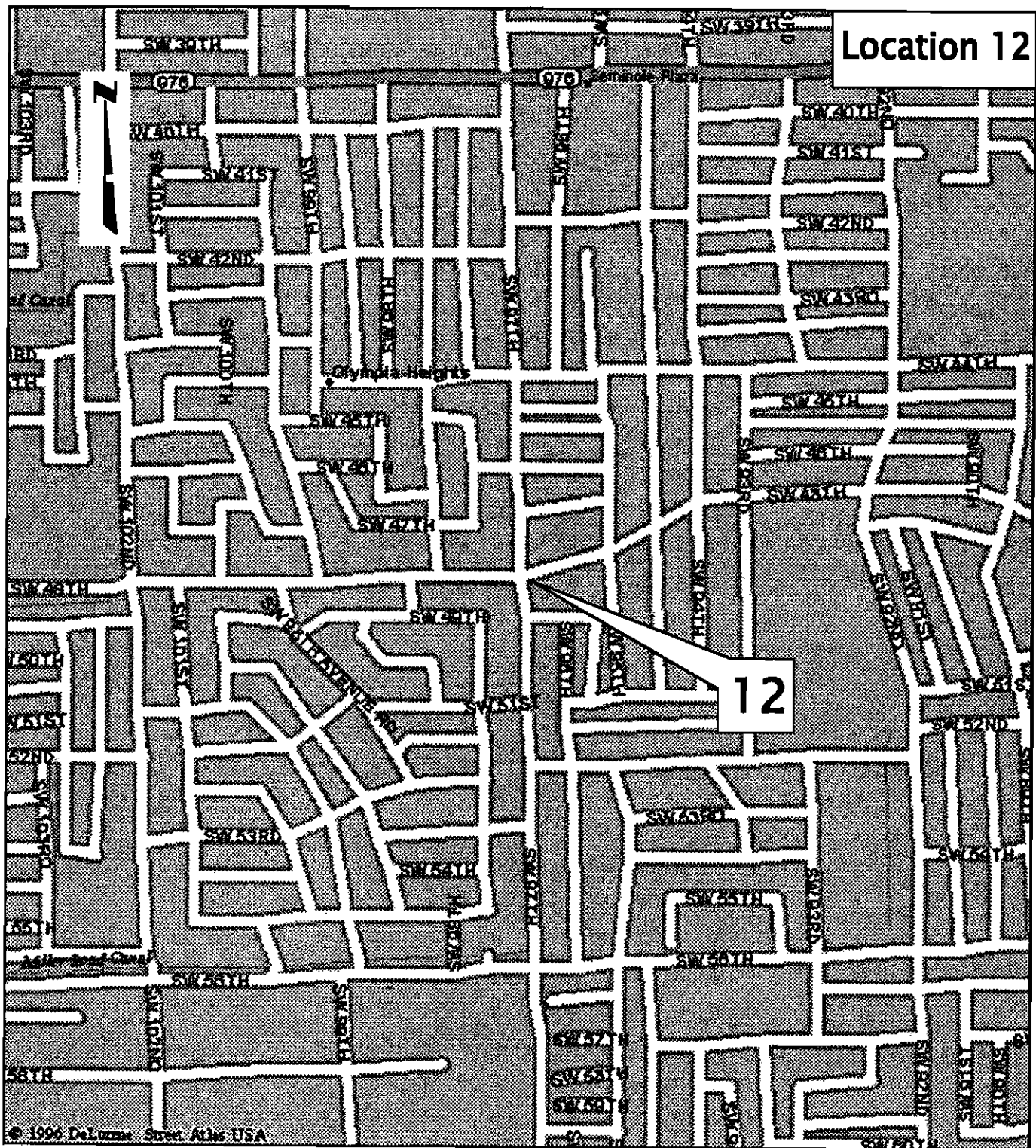


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ORGANIZATION

CONGESTED INTERSECTIONS STUDY

US-1 & SW 57 AVENUE (RED ROAD)

SHEET
2



SW 97 Av & SW 48 St MPO Congested Intersection Study



TRANSPORT ANALYSIS PROFESSIONALS

Location ID : .SW 97 Avenue and SW 48 Street - *Master List No. 12*

Problem : .Need left turn on all approaches.....
.....

Proposed Solution(s) : 1. Provide Left Turn lanes on all approaches.....
2. Modify Traffic Signal to include leading left turn phases for all approaches..
3. Install sign W9-2 and pavement markings as shown.....

CRITERIA MATRIX

No	Criteria	Comment
1.	Right of Way Acquisition	ROW available.
2.	Environmental Impacts	None
3	Quick Implementable Solution(s)	N/A
4	Multi-Modal Benefits	N/A
5	Safety Benefits	Increased Safety because by-passing is avoided.
6	Operational Benefits	Reduced Delay
7	Sufficient Data To Evaluate	N/A
8	Relocation of Utilities	None
9	Cost	\$30,000

Discussion : During observation it was noticed that the delays to all approaches were not critical. Improvements are recommended to eliminate the delays caused by the left turn movements.



INTERSECTION OF SW 97 AVENUE AND SW 48 STREET



POTENTIAL DELAY TO THROUGH TRAFFIC DUE
TO LEFT TURN DELAY

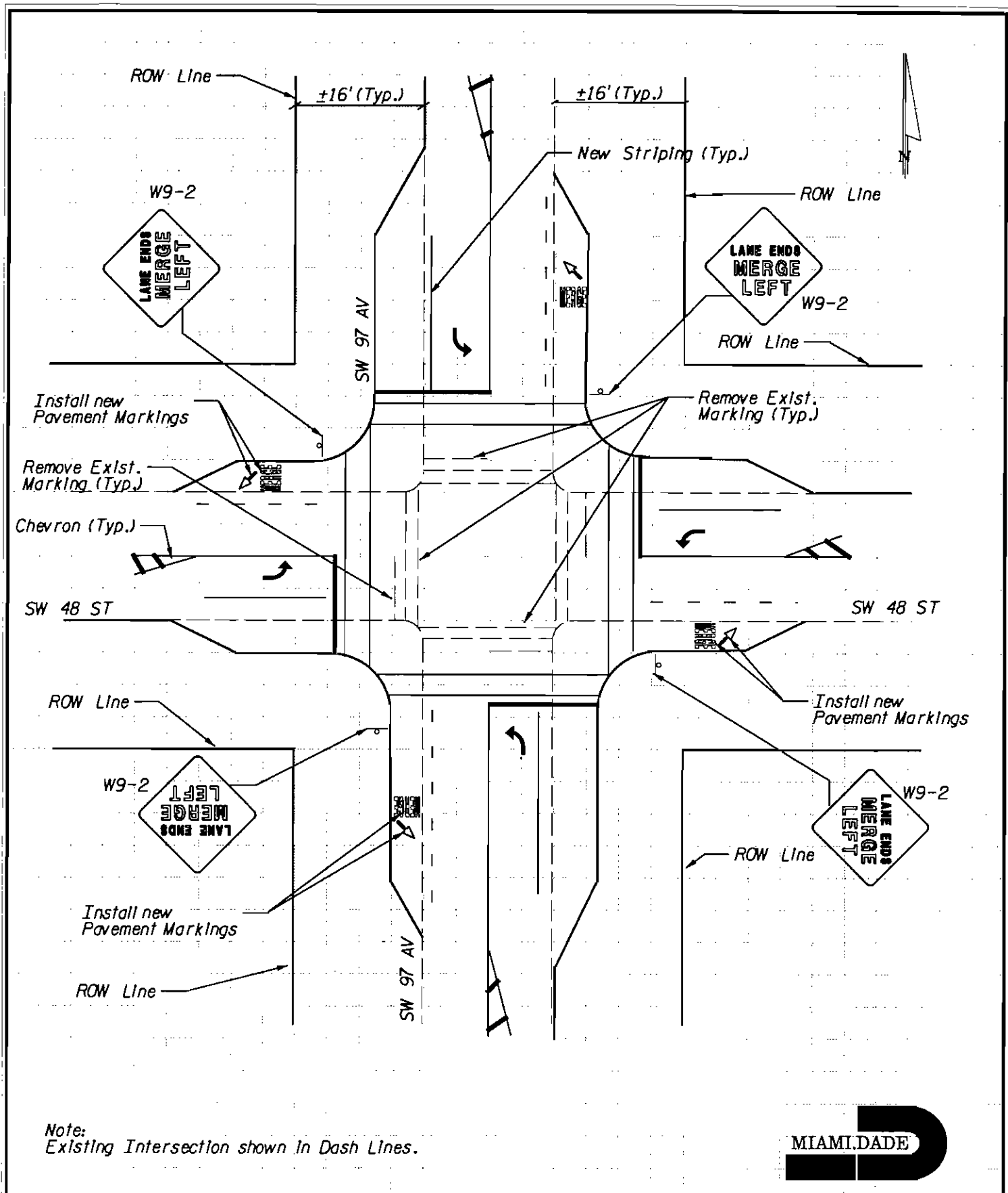


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CONGESTED INTERSECTIONS STUDY
SW 97 AVENUE & SW 48 STREET

SHEET
1



Location ID : SW 107 Avenue and SW 184 Street (Eureka Drive) - *Master List No. 13*

Problem : Poor Transition from EB SW 184 Street to NB SW 107 Avenue.
.....

Proposed Solution(s) : 1). Suggested widening of NB SW 107 Avenue may not be possible due to the need
for the acquisition of Right of Way.....
2). Install 6" Dotted Yellow Guideline from EBL (SW 184 Street) to NB SW 107
Avenue.....
.....

CRITERIA MATRIX

No	Criteria	Comment
1.	Right of Way Acquisition	Not needed for recommended improvement.
2.	Environmental Impacts	None.
3	Quick Implementable Solution(s)	Yes.
4	Multi-Modal Benefits	N/A.
5	Safety Benefits	To EBL , WBT and WBR Traffic.
6	Operational Benefits	Reduced Delay for EBL
7	Sufficient Data To Evaluate	N/A.
8	Relocation of Utilities	None.
9	Cost	Less than \$5000

Discussion : 1). As stated, the initial proposed improvement of widening NB (SW 107 Avenue)
may not be implementable since there is really no ROW available.
The transition of vehicles from the EB to NB may be facilitated by the installation
6" dotted yellow guideline striping per Index 17346 (FDOT Roadway and Traffic
Design Standards).....
2). Other left turn movements will also be facilitated by the installation of 6" dotted
yellow guideline striping per Index 17346 (FDOT Roadway and Traffic
Design Standards).....
.....



INTERSECTION OF SW 107 AVENUE AND SW 184 STREET



*EB SW 184 STREET SHOWING ABSENCE OF GUIDELINE
PAVEMENT MARKING FOR LEFT TURN MOVEMENT*

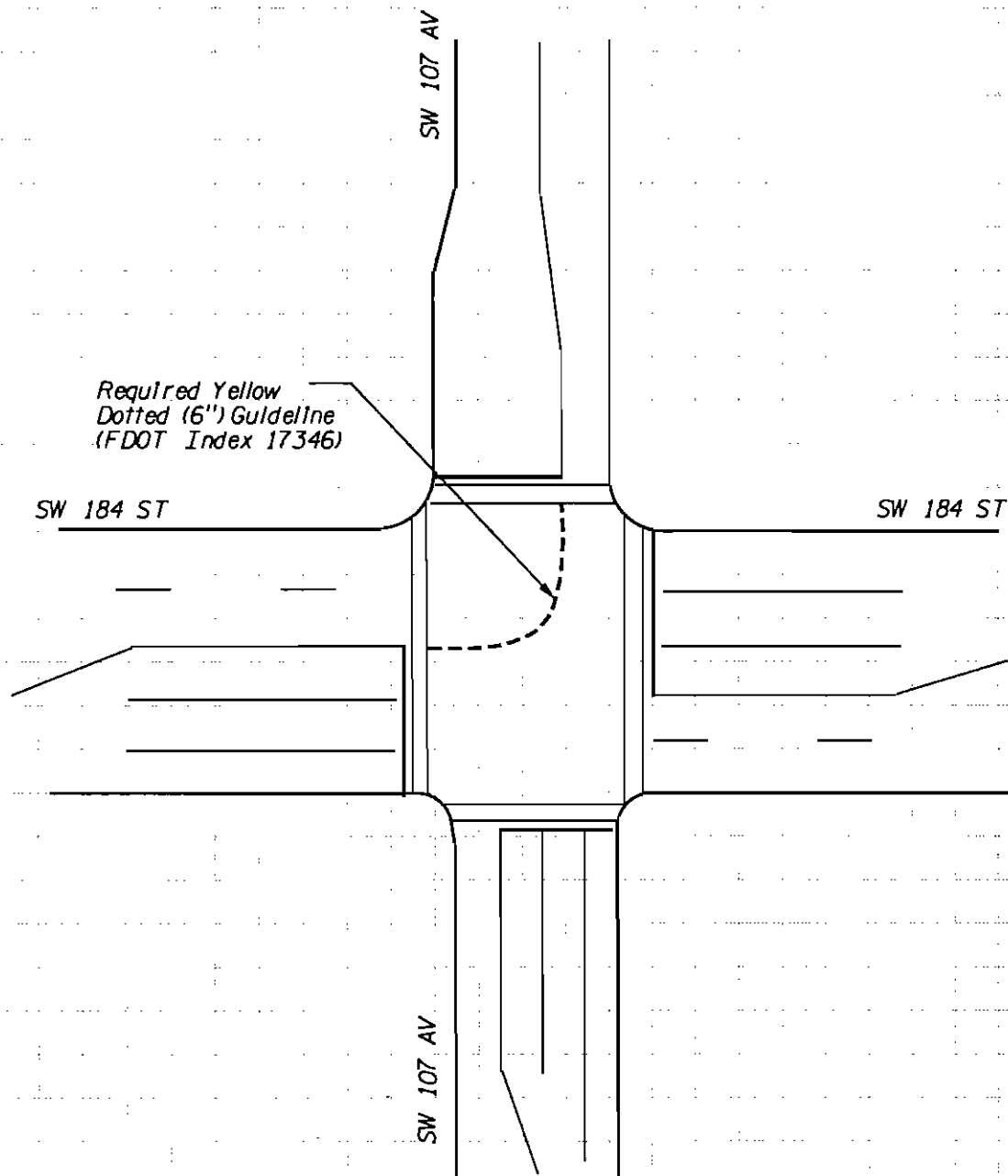


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ORGANIZATION**



CONGESTED INTERSECTIONS STUDY
SW 107 AVENUE & SW 184 STREET

*SHEET
1*

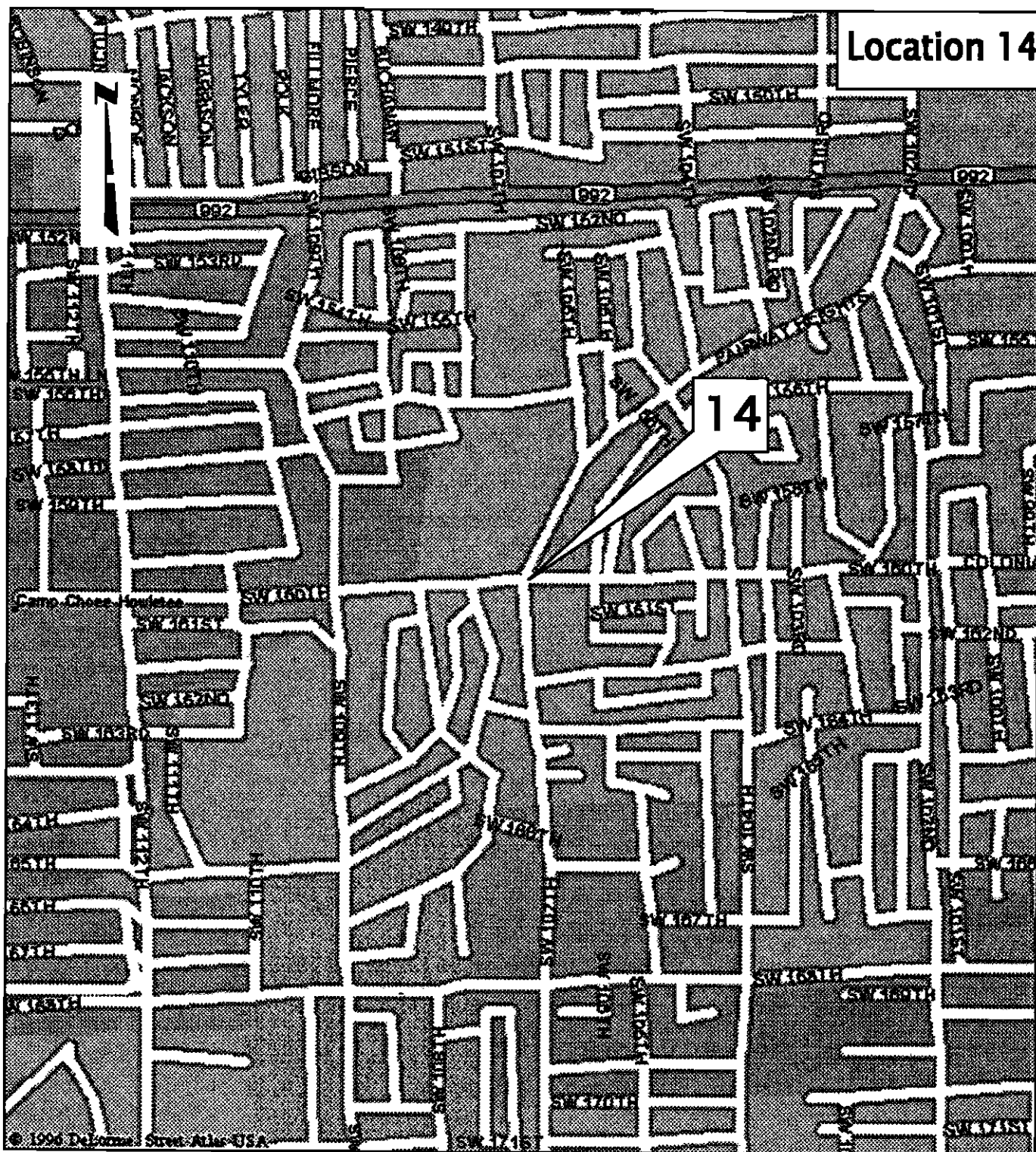


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METROPOLITAN PLANNING
ORGANIZATION

CONGESTED INTERSECTIONS STUDY

SW 107 AVENUE & SW 184 STREET

SHEET
2



SW 107 Av & SW 160 St MPO Congested Intersection Study



TRANSPORT ANALYSIS PROFESSIONALS

FIELD OBSERVATION OF PROBLEM:

The northbound approach of SW 107th Avenue to SW 160th Street consist of a single left, through and right turn lane separated from the southbound movement with a 5 foot striped median (see attached photographs). Northbound left turning traffic delay the through and right turning traffic since this is a single lane approach. Overall intersection operation could be improved if an additional northbound left turn lane was provided.

RECOMMEND IMPROVEMENT:

Widen the southbound receiving lane of SW 107th Avenue 7 feet and remark the intersection to provide a dedicated northbound left turn lane and a combined through and right turn lane (see attached sketch). This improvement will create a 7 foot offset through the intersection for the southbound movement, however, it will maintain a grass strip separating the northbound traffic from the existing sidewalk along the east side of the approach.

CONSTRUCTION COST ESTIMATE

ITEMS	UNIT	QUANT.	UNIT COSTS	EXTENSION
Mobilization	LS	1	\$3,500	\$ 3,500
Maintenance of Traffic	LS	1	\$1,500	\$ 1,500
Clearing & Grubbing	SY	220	\$15	\$ 3,300
Sub-grade	SY	200	\$7.50	\$ 1,500
Asphalt & Base	SY	200	\$15	\$ 3,000
Pavement Markings (Removal)	LS	1	\$2,500	\$ 2,500
Pavement Markings (New)	LS	1	\$1,500	\$ 1,500
TOTAL				\$16,800



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CONGESTED INTERSECTIONS STUDY
SW 160th ST & SW 107th AVE

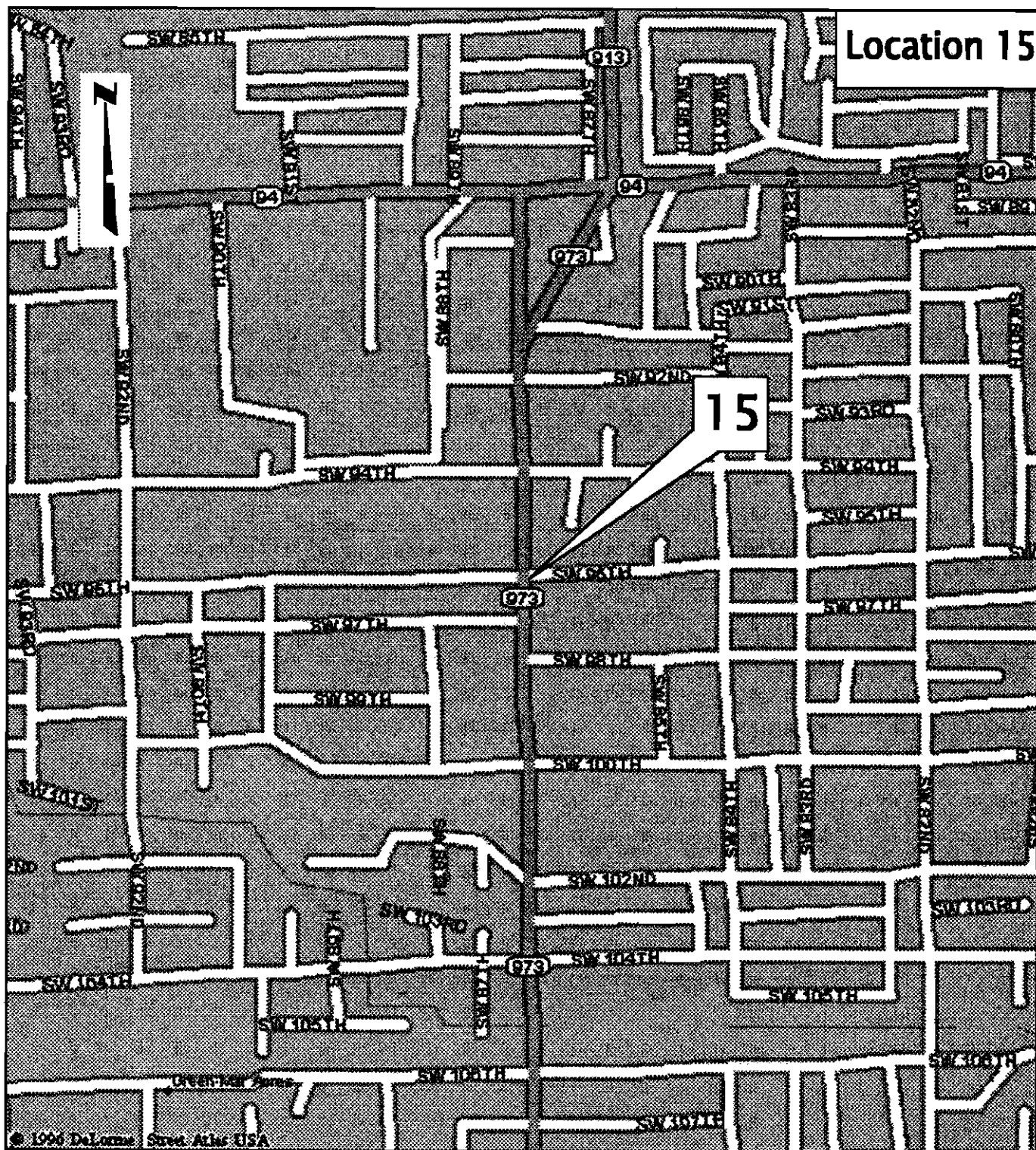
FIGURE



SW 107th AVENUE APPROACH (LOOKING SOUTH)



SW 107th AVENUE APPROACH (LOOKING NORTH)



SW 87 Av & SW 96 St MPO Congested Intersection Study



TRANSPORT ANALYSIS PROFESSIONALS

FIELD OBSERVATION OF PROBLEM:

The north and southbound approaches of SW 87th Avenue at SW 96th Street are two lane undivided approaches (see attached photographs). Approximately 150 feet south of the intersection is a school pedestrian crossing signal. SW 96th Street is identified as a "safe route to school" by Miami-Dade County Public Works Department. Left turning vehicles from SW 87th Avenue impede the through movement of northbound and southbound traffic along 87th Avenue. The overall level of service of SW 87th Avenue would be improved if the turning volume was removed from the through movements at this intersection.

RECOMMEND IMPROVEMENT:

Widen all approaches to the intersection to provide left turn lanes in all directions. The northbound and southbound approaches of SW 87th Avenue should be widened to provide a minimum of 155 feet of left turn storage, the eastbound and westbound approaches of SW 96th Street should be widened to provide a minimum of 125 feet of left turn storage at this intersection (see attached sketch). These turn lane lengths are only an estimate based upon design minimums for residential roadways, therefore, peak period turning movement counts will need to be performed at this intersection to establish the final turn lane storage length requirements.

An additional operational improvement would be the removal of the pedestrian crossing signal from SW 87th Avenue and/or the incorporation of the pedestrian crossing features into a new signal at this intersection. The signaling of this intersection would not only improve the operation of the intersection, it would probably improve the overall operation of the SW 87th Avenue corridor.

CONSTRUCTION COST ESTIMATE

ITEMS	UNIT	QUANT.	UNIT COSTS	EXTENSION
Mobilization	LS	1	\$5,000	\$ 5,000
Maintenance of Traffic	LS	1	\$1,500	\$ 1,500
Clearing & Grubbing	SY	1200	\$15	\$ 18,000
Sub-grade	SY	1100	\$7.50	\$ 8,250
Asphalt & Base	SY	1000	\$15	\$ 15,000
Pavement Markings (Removal)	LS	1	\$2,000	\$ 2,000
Pavement Markings (New)	LS	1	\$3,000	\$ 3,000
TOTAL				\$52,750



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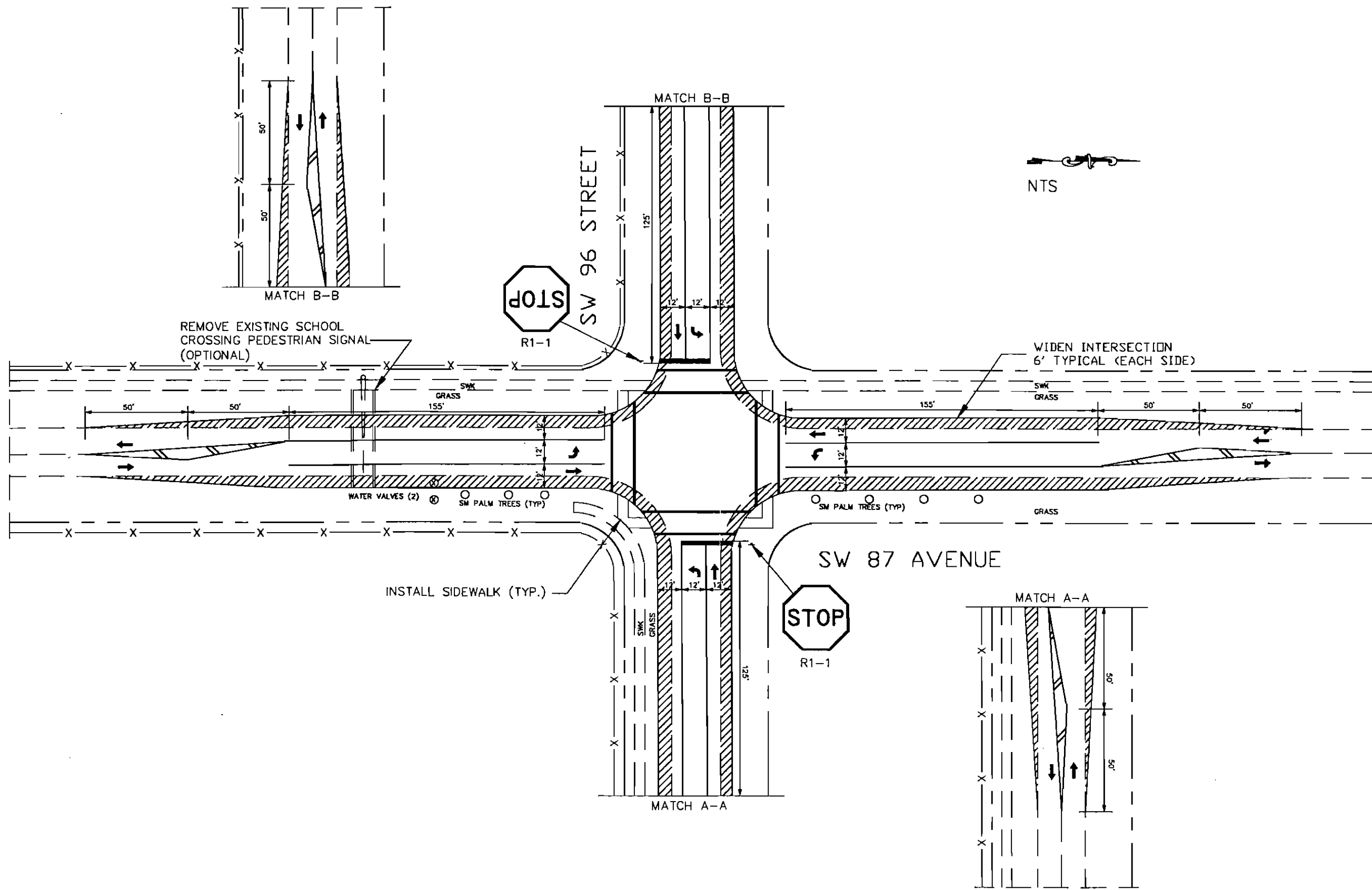
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ORGANIZATION

CONGESTED INTERSECTIONS STUDY
SW 87th AVE. & SW 96th ST.

FIGURE



SW 87th AVE. @ SW 96th ST. (LOOKING NORTH)
(Existing School Pedestrian Signal Is Also Shown in Picture)

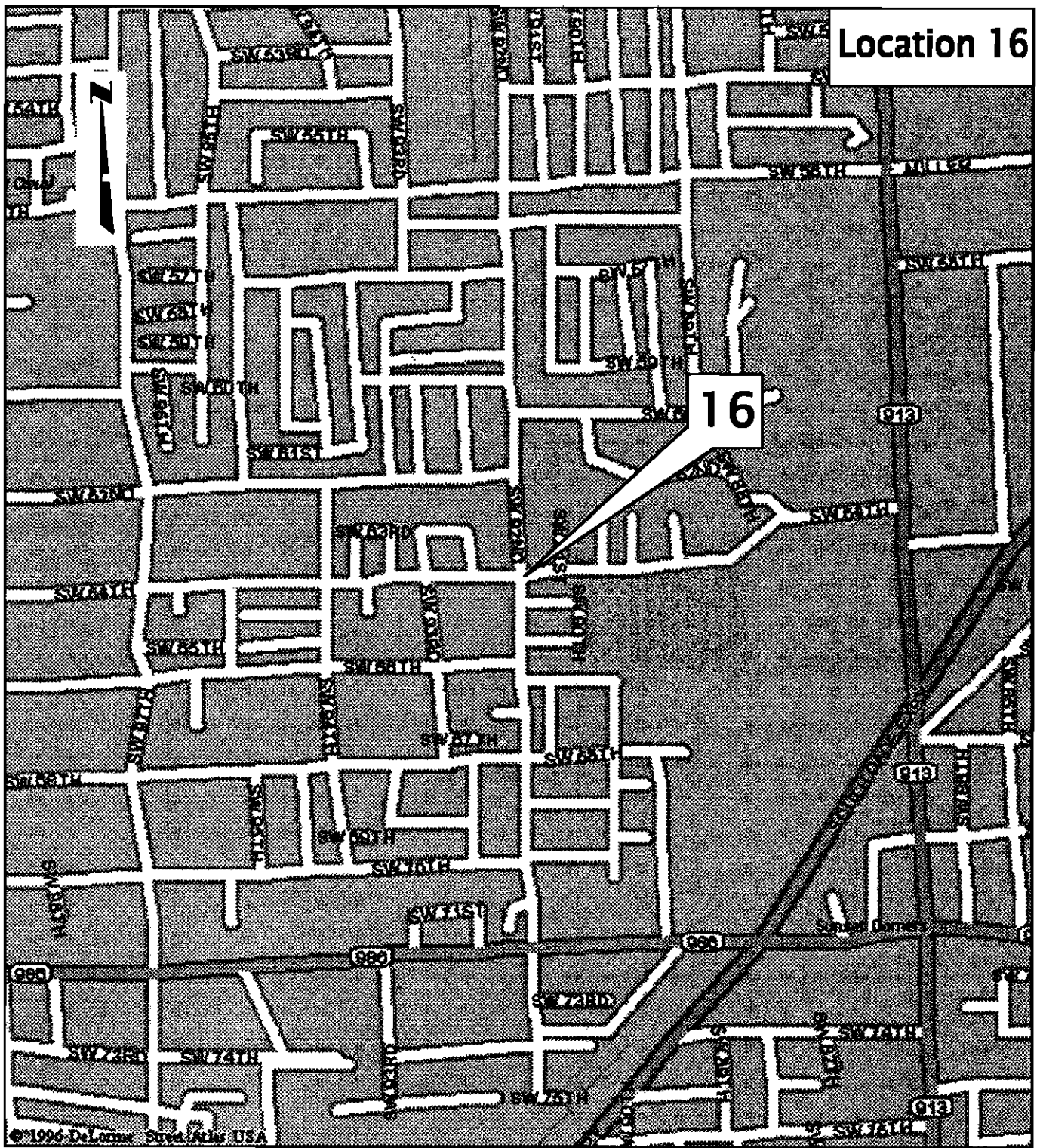


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CONGESTED INTERSECTIONS STUDY
SW 87 Avenue & SW 96 Street

FIGURE



SW 92 Av & SW 64 St MPO Congested Intersection Study



TRANSPORT ANALYSIS PROFESSIONALS

Location ID : SW.92 Avenue and SW.64 Street - *Master List No. 16*

Problem : Needs left turn lanes in all approaches.
.....

Proposed Solution(s) : 1). Provide Left Turn Lane in all approaches to minimize delay and congestion.
2). Warrant Analysis to determine the need for traffic signal at the intersection.
.....
.....

CRITERIA MATRIX

No	Criteria	Comment
1.	Right of Way Acquisition	ROW exists for provision of left turn lanes.
2.	Environmental Impacts	N/A
3	Quick Implementable Solution(s)	None
4	Multi-Modal Benefits	N/A
5	Safety Benefits	N/A
6	Operational Benefits	Reduced Delay
7	Sufficient Data To Evaluate	N/A
8	Relocation of Utilities	None
9	Cost	Improvements without Traffic Signal Installation - \$ 30,000 Improvements including Traffic Signal Installation- \$ 130,000

Discussion : In addition it was observed that the SB approach does not have a stop bar ahead crosswalk.
.....
.....
.....
.....
.....



INTERSECTION OF SW 92 AVENUE AND SW 64 STREET
SHOWING NBL MOVEMENT



INTERSECTION OF SW 92 AVENUE AND SW 64 STREET
SHOWING EB APPROACH

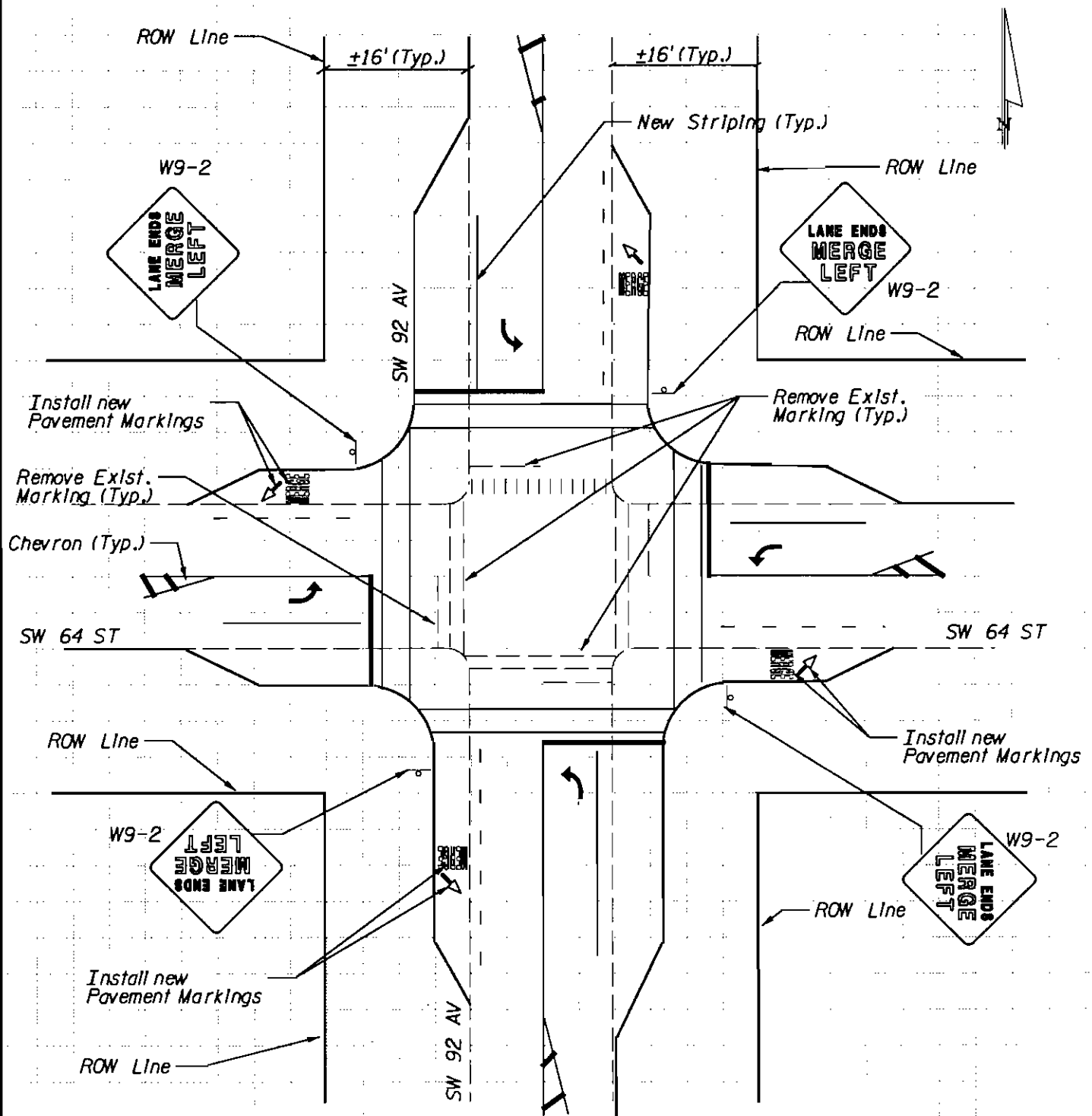


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CONGESTED INTERSECTIONS STUDY
SW 92 AVENUE & SW 64 STREET

SHEET
1



Note:

1. Existing Intersection shown in Dash Lines.
2. If Intersection is not upgraded to signalized, relocate all Existing Intersection Signs accordingly.



T&P

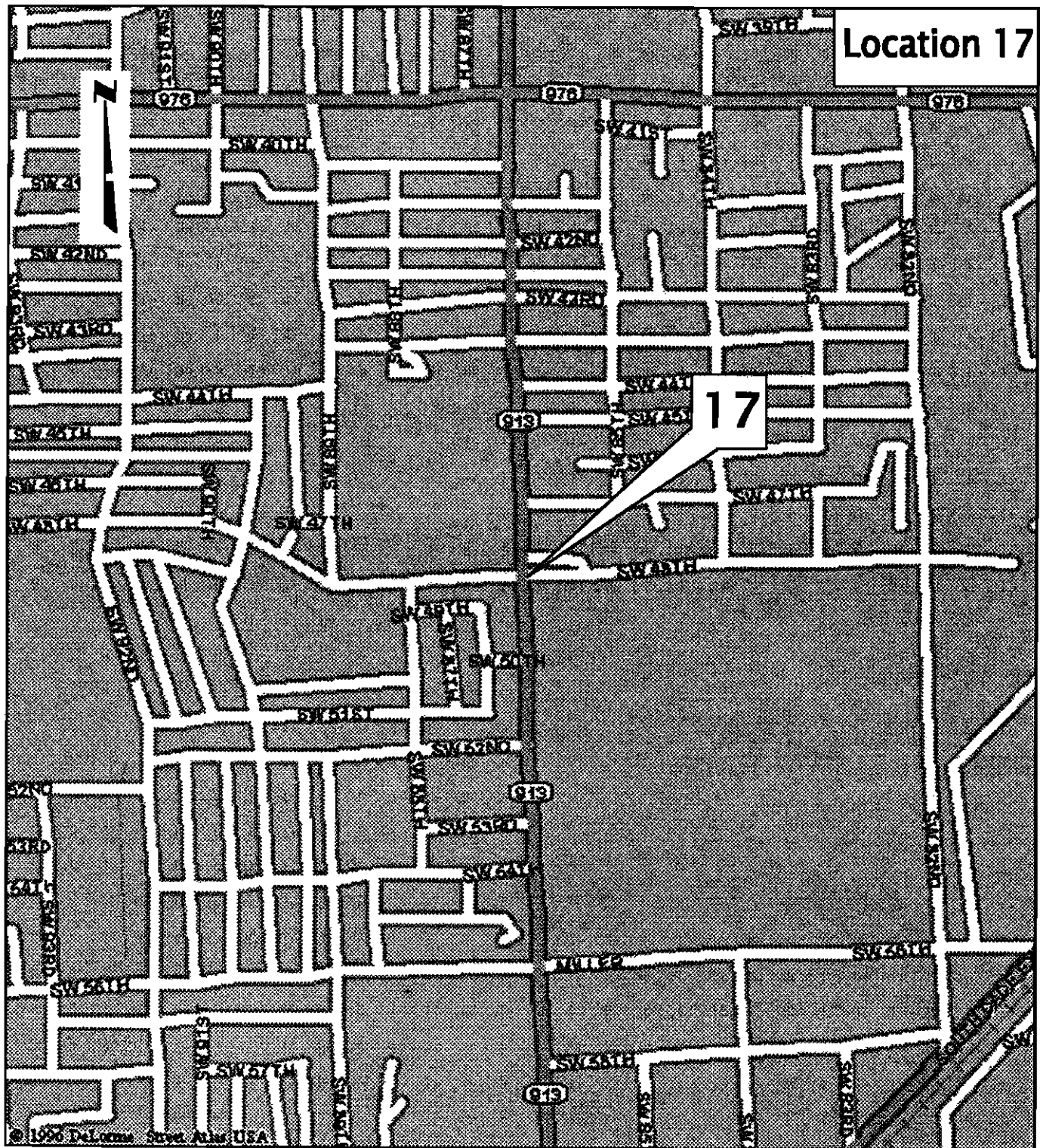


**MIAMI-DADE COUNTY
METROPOLITAN PLANNING
ORGANIZATION**

CONGESTED INTERSECTIONS STUDY

SW 92 AVENUE & SW 64 STREET

**SHEET
2**



SW 87 Av & SW 48 St MPO Congested Intersection Study



TRANSPORT ANALYSIS PROFESSIONALS

FIELD OBSERVATION OF PROBLEM:

The existing eastbound left turn lane on SW 48th Street at SW 87th Avenue is only approximately 60 feet in length (see attached photographs). This turn lane is too short for the left turning volume at this intersection. In addition the through volume often queues up at this approach and blocks the entrance to the left turn lane, thus further reducing the overall operation of the signal.

RECOMMEND IMPROVEMENT:

Extend the eastbound left turn storage at this intersection to a minimum of 125 feet (see attached sketch). This improvement may require the removal of an existing large Ficus tree on the southwest corner of the intersection. In addition, the widening of approach may also impact some existing Royal Palm trees along the westbound lane of SW 48th Street.

CONSTRUCTION COST ESTIMATE

ITEMS	UNIT	QUANT.	UNIT COSTS	EXTENSION
Mobilization	LS	1	\$5,000	\$ 5,000
Maintenance of Traffic	LS	1	\$1,500	\$ 1,500
Clearing & Grubbing	SY	90	\$25	\$ 2,250
Tree Relocation	EA	2	\$1,200	\$ 2,400
Sub-grade	SY	80	\$15	\$ 1,200
Asphalt & Base	SY	80	\$30	\$ 2,400
Pavement Markings (Removal)	LS	1	\$3,500	\$ 3,500
Pavement Markings (New)	LS	1	\$2,500	\$ 2,500
TOTAL				\$20,750



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ORGANIZATION

CONGESTED INTERSECTIONS STUDY
SW 87th AVE. & SW 48th ST

FIGURE



SW 48th STREET APPROACH (LOOKING EAST)

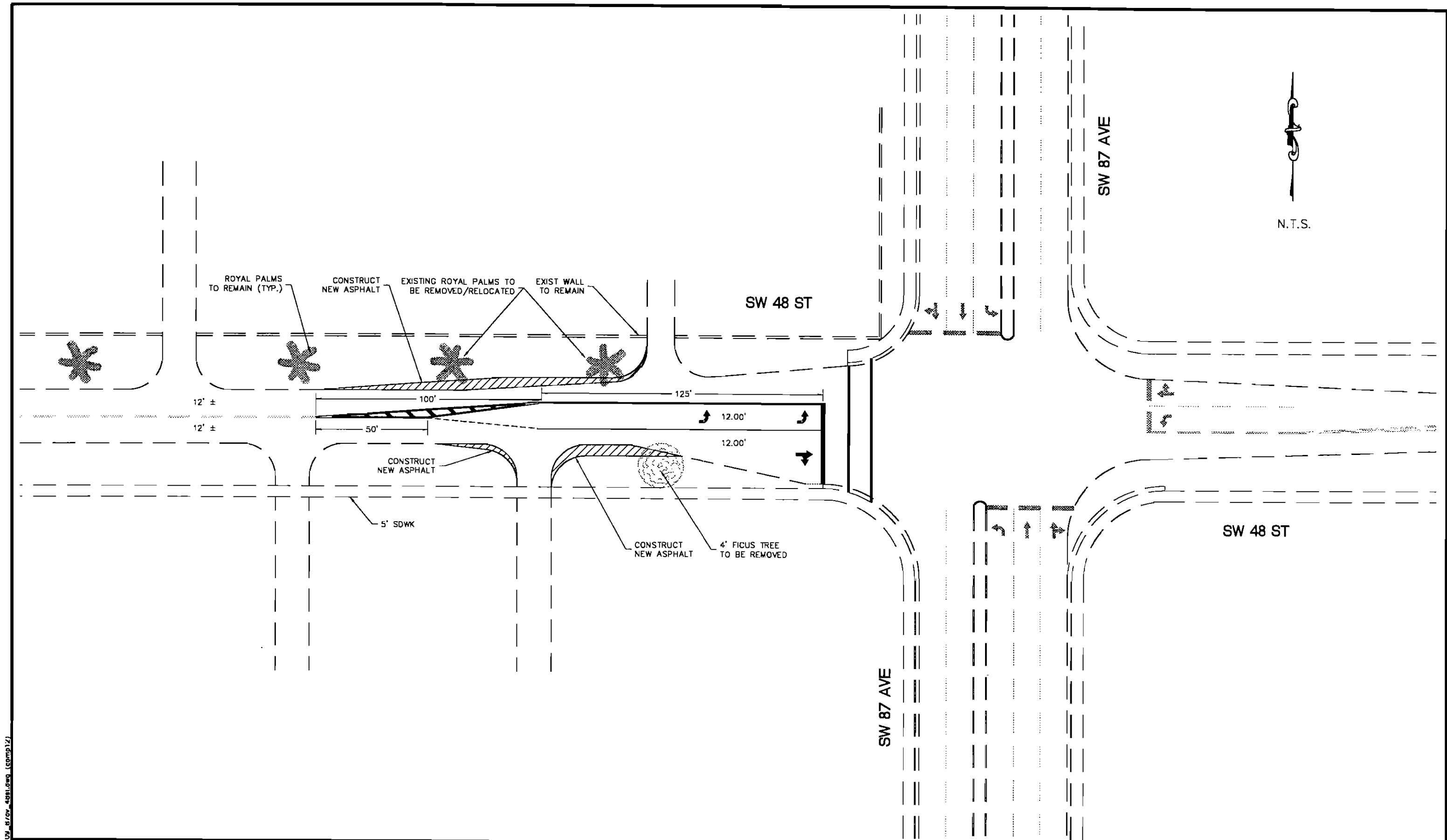


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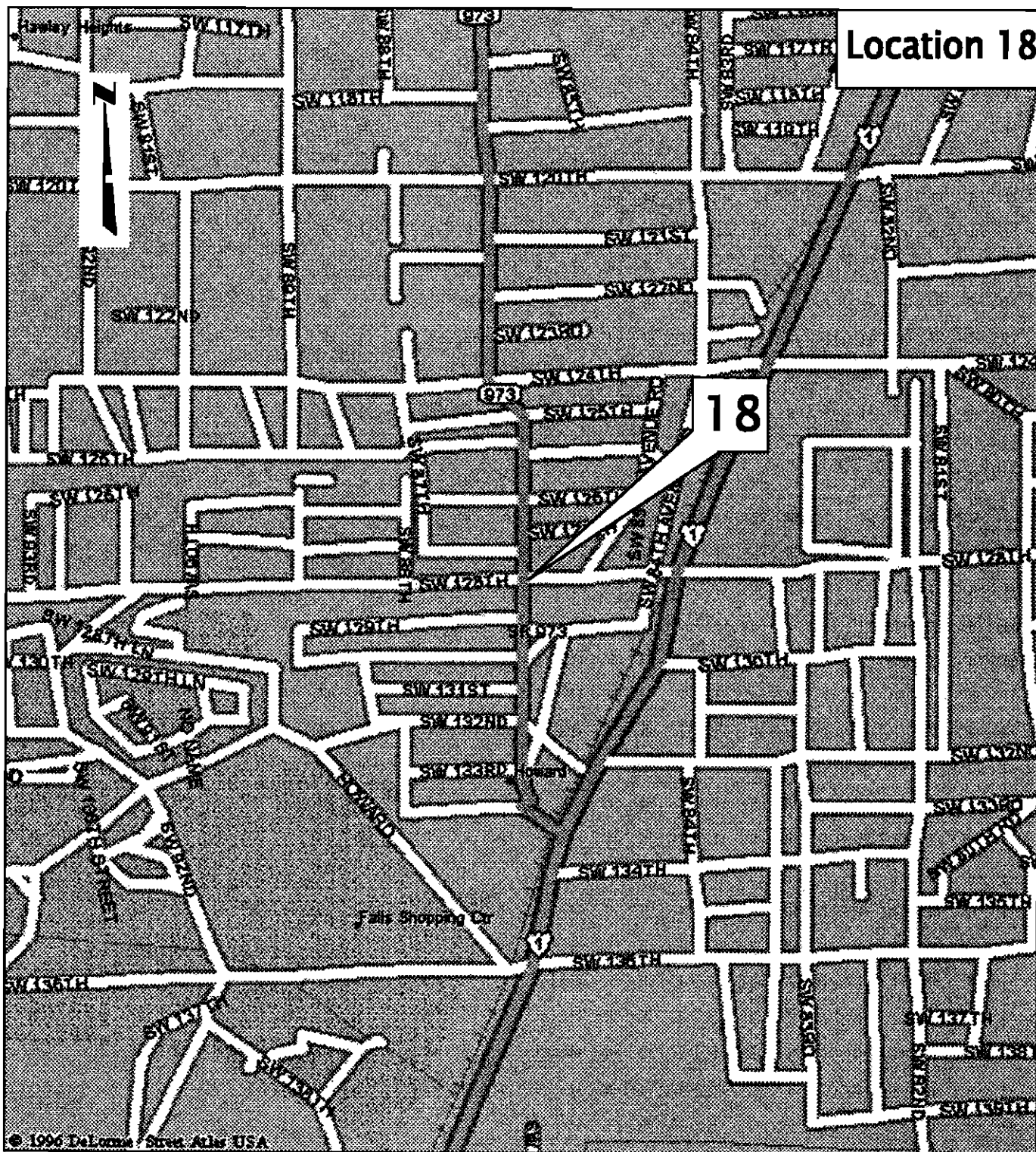
CONGESTED INTERSECTIONS STUDY
SW 87 AVE & SW 48 ST.

FIGURE



C:\projects\104\104\104_01\104_01.dwg (comp12)

	CWI Civil Works, Inc.	MIAMI DADE COUNTY METROPOLITAN PLANNING ORZGANIZATION	CONGESTED INTERSECTIONS STUDY SW 87 Avenue & SW 48 Street	FIGURE
-------------------------------------------------------------------------------------	---------------------------------	------------------------------------------------------------------------	--------------------------------------------------------------------------------	---------------



SW 87 Av & SW 128 St MPO Congested Intersection Study



TRANSPORT ANALYSIS PROFESSIONALS

Location ID : SW 87 Avenue and SW 128 Street - *Master List No. 18*

Problem : Northbound Congestion.....
.....

Proposed Solution(s) : 1). To reduce NB congestion, allow for two NBT movement approach lanes and add Merge Lane to northside of intersection.....
.....
.....
.....

CRITERIA MATRIX

No	Criteria	Comment
1.	Right of Way Acquisition	N/A
2.	Environmental Impacts	None
3	Quick Implementable Solution(s)	No
4	Multi-Modal Benefits	N/A
5	Safety Benefits	N/A
6	Operational Benefits	Reduced Delay especially Northbound.
7	Sufficient Data To Evaluate	N/A
8	Relocation of Utilities	None
9	Cost	\$20,000

Discussion :
.....
.....
.....
.....
.....
.....
.....
.....



INTERSECTION OF SW 87 AVENUE AND SW 128 STREET
SHOWING NORTHBOUND APPROACH



INTERSECTION OF SW 87 AVENUE AND SW 128 STREET
SHOWING SOUTHBOUND APPROACH

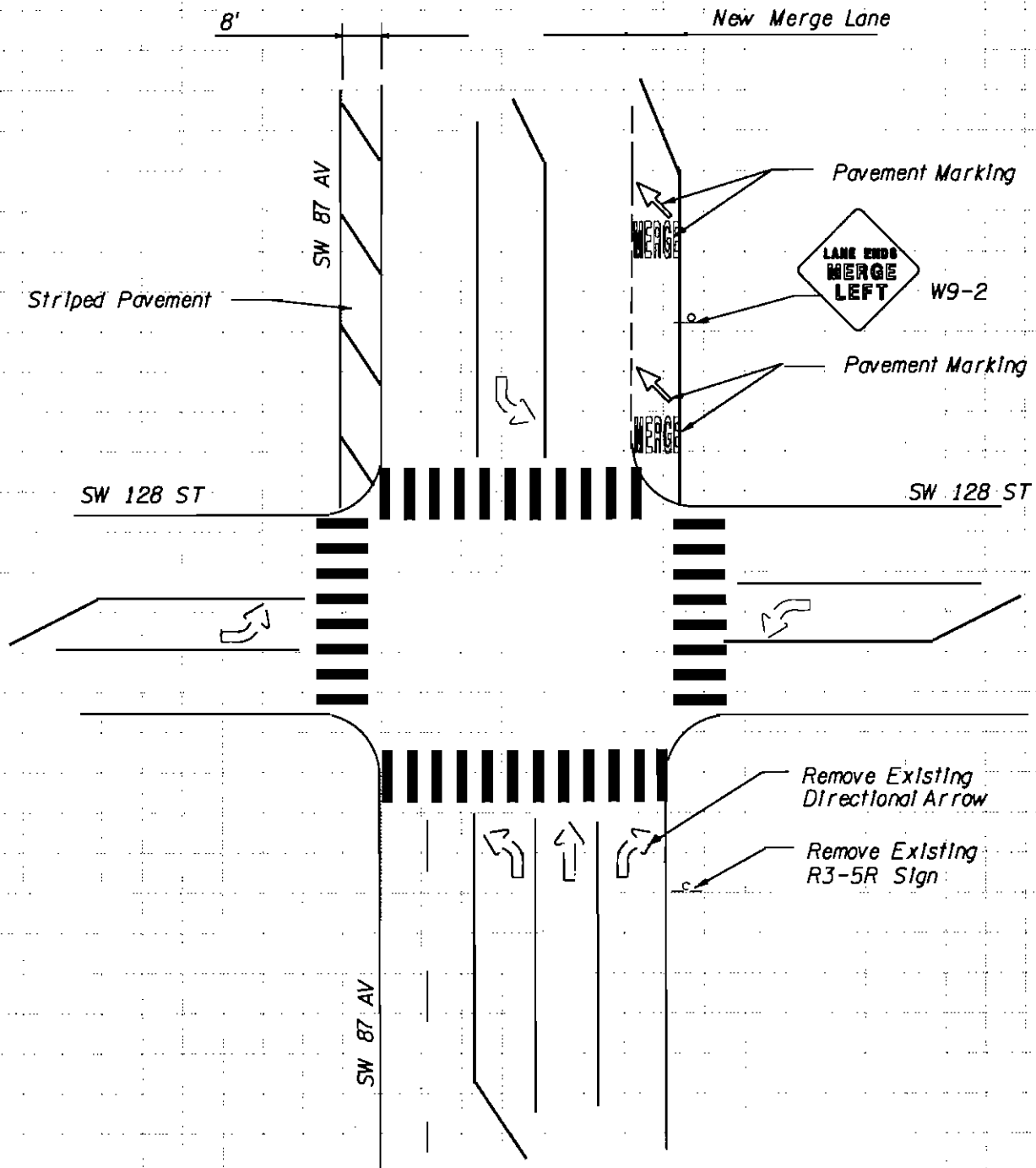


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ORGANIZATION



CONGESTED INTERSECTIONS STUDY
SW 87 AVENUE & SW 128 STREET

SHEET
1

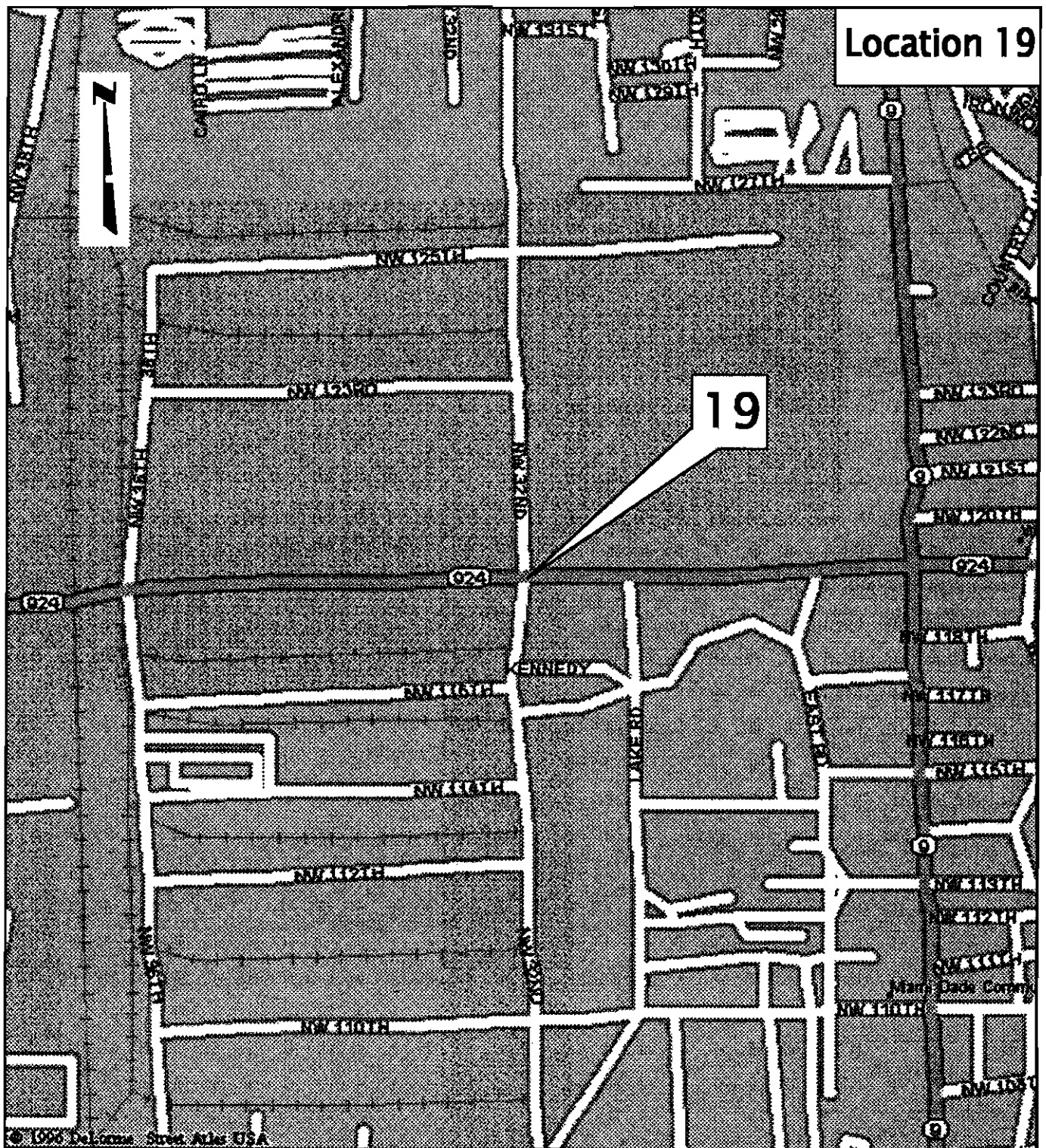


MIAMI-DADE COUNTY
METROPOLITAN PLANNING
ORGANIZATION

CONGESTED INTERSECTIONS STUDY

SW 87 AVENUE & SW 128 STREET

SHEET
2



NW 32 Av & NW 119 St MPO Congested Intersection Study



TRANSPORT ANALYSIS PROFESSIONALS

Location ID : NW 32 Avenue and NW 119 Street.(Gratigny Boulevard).- *Master List No. 19*

Problem : SBL turn lane is short.....
.....

Proposed

Solution(s) : 1).Increase storage in the left turn pocket by extending the storage length by ...
.. 80 feet or more.....
.....
.....
.....

CRITERIA MATRIX

No	Criteria	Comment
1.	Right of Way Acquisition	N/A
2.	Environmental Impacts	None.
3	Quick Implementable Solution(s)	Yes.
4	Multi-Modal Benefits	N/A
5	Safety Benefits	N/A
6	Operational Benefits	More storage would facilitate the movement SBT traffic.
7	Sufficient Data To Evaluate	N/A
8	Relocation of Utilities	N/A
9	Cost	\$5,000 - \$10,000

Discussion: . There exists a lot of warehouse activity in the vicinity of the intersection causing traffic delays. The available left turn storage is not adequate considering warehouse trailer traffic.....
.....
.....
.....
.....



INTERSECTION OF NW 32 AVENUE AND NW 119 STREET
SHOWING SBL MOVEMENT



LEFT TURN STORAGE ON SOUTHBOUND NW 32 AVENUE

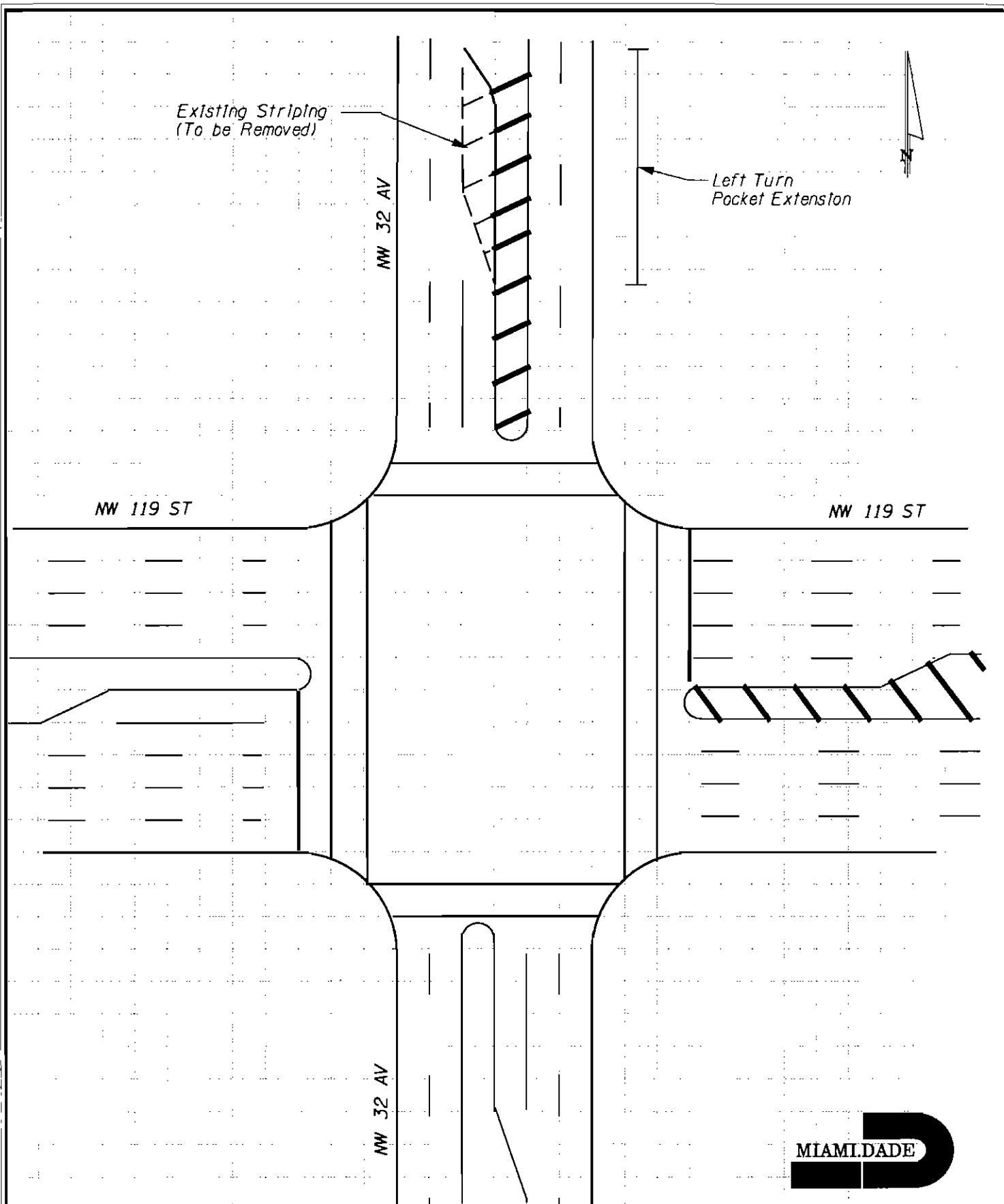


MIAMI DADE COUNTY
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CONGESTED INTERSECTIONS STUDY
NW 32 AVENUE & NW 119 STREET

SHEET
1



MIAMI-DADE COUNTY
METROPOLITAN PLANNING
ORGANIZATION

CONGESTED INTERSECTIONS STUDY

NW 32 AVENUE & NW 119 STREET

SHEET
2



TRANSPORT ANALYSIS PROFESSIONALS

Location ID : Northbound Biscayne Boulevard - *Master List No. 20*

Problem : Potential Bus Turn Out Location.
.....

Proposed Solution(s) : 1). Far Side NE 18 Street Bus stop.
.....
.....

CRITERIA MATRIX

No	Criteria	Comment
1.	Right of Way Acquisition	Adequate ROW exists.
2.	Environmental Impacts	N/A
3	Quick Implementable Solution(s)	N/A
4	Multi-Modal Benefits	N/A
5	Safety Benefits	N/A
6	Operational Benefits	Reduced Delay.
7	Sufficient Data To Evaluate	N/A
8	Relocation of Utilities	Yes - Light Pole , Manholes, Trees and Water Valves.
9	Cost	\$30,000 - \$50,000

Discussion : Based on Miami-Dade County Public Works Department specifications, an ...
acquisition of 155 ft length by 25 ft width is required to locate a Bus Turn out.
This potential location satisfies the requirement by taking advantage of the excessive
northbound lane width, north of NE 18 Street.
In addition to locating the Bus Turn Out, the NB lane limits would have to be
properly striped. Also the curb (18 St to Biscayne) needs to be modified.
.....
.....



BUS STOP, FAR SIDE OF NE 18 STREET (NB VIEW)



BUS STOP, FAR SIDE OF NE 18 STREET (SB VIEW)



NE 18 STREET FAR SIDE BUS STOP SHOWING AVAILABLE R.O.W



NE 18 STREET FAR SIDE BUS STOP SHOWING ADDITIONAL R.O.W FROM NB LANE

