

ADVANCE PLANNING REPORT

**STATE ROUTE 1 (SUMMER AVENUE)
FROM INTERSTATE 40 TO ELMORE ROAD
MEMPHIS, SHELBY COUNTY, TENNESSEE**

Prepared by
JACKSON PERSON AND ASSOCIATES, INC.
For
**TENNESSEE DEPARTMENT OF TRANSPORTATION
BUREAU OF PLANNING AND DEVELOPMENT**

Approved By: 

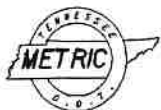
Director, Bureau of Planning and Development

1-3-97

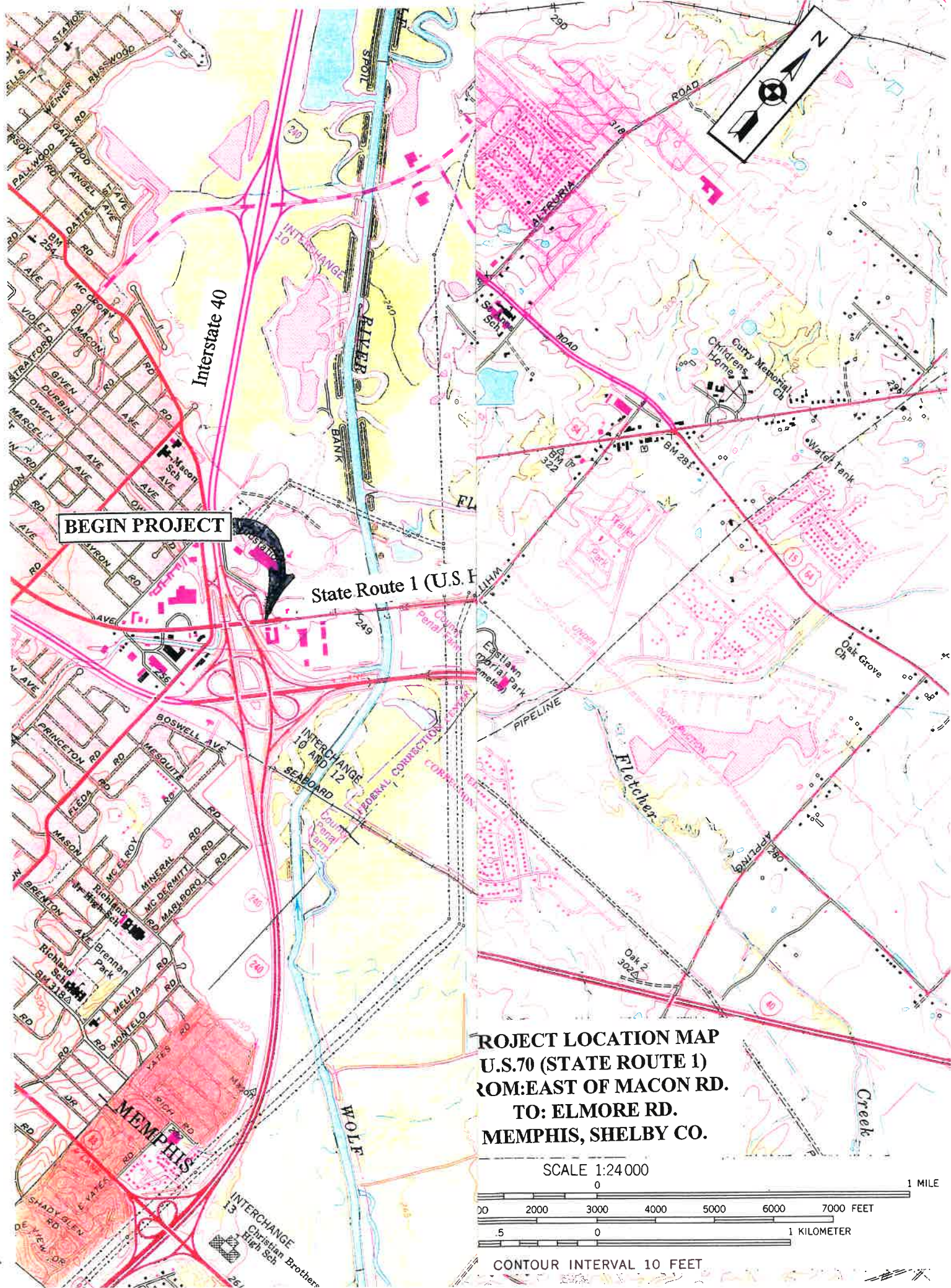
Date

REVISION

Recommended by:	INITIALS	DATE	Recommended by:	INITIALS	DATE
TRANS. DIRECTOR PLANNING DIVISION	GAB	11/1/96	TRANS. DIRECTOR PLANNING DIVISION		
ENGR. DIRECTOR DESIGN DIVISION	PM	12/9/96	ENGR. DIRECTOR DESIGN DIVISION		
ENGR. DIRECTOR STRUCTURES DIVISION	DT	12/10/96	ENGR. DIRECTOR STRUCTURES DIVISION		
TRANS. DIRECTOR PROG. DEV. DIVISION	NEC	12-31-96	TRANS. DIRECTOR PROG. DEV. DIVISION		
ASST. EXEC. DIRECTOR PLN. AND DEV.	HNSM	1/3/97	ASST. EXEC. DIRECTOR PLN. AND DEV.		
ASST. EXEC. DIRECTOR PLAN AND DEV.	EWEN	1/3/97	ASST. EXEC. DIRECTOR PLAN AND DEV.		



NOTE: THIS REPORT GIVES BOTH METRIC AND ENGLISH MEASUREMENTS.
THE ENGLISH UNITS ARE PROVIDED FOR INFORMATION PURPOSES ONLY.



BEGIN PROJECT

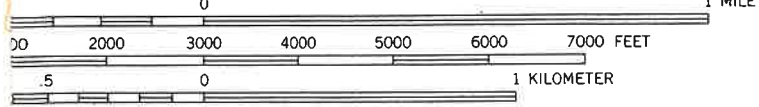
Interstate 40

State Route 1 (U.S. 70)

MEMPHIS

PROJECT LOCATION MAP
U.S. 70 (STATE ROUTE 1)
FROM: EAST OF MACON RD.
TO: ELMORE RD.
MEMPHIS, SHELBY CO.

SCALE 1:24 000



CONTOUR INTERVAL 10 FEET

DATA TABLE - State Route 1

ITEM	EXISTING	PROPOSED
Functional Class	Urban Principal Arterial	Urban Principal Arterial
System Class	Urban Principal Arterial	Urban Principal Arterial
Length (Kilometers)	5.1	5.1
Length (Miles)	3.2	3.2
Cross Section (Meters)	14.6/24.4	28.8/35
Cross Section (Feet)	48/80	96/116
Present ADT (1998)	34,200	34,200
Future ADT (2018)	54,700	54,700
DHV		5,470
% Trucks		4
Estimated Right-of-Way Acquisition (Hectares)		3.77
Estimated Right-of-Way Acquisition (Acres)		9.33
Estimated Right-of-Way Tracts Affected		89
Estimated Family Displacements		2
Estimated Business Displacements		4
Estimated Non-Profit Displacements		0
Estimated Right-of-Way Cost	\$	2,160,000
Estimated Utility Cost Reimbursable	\$	0
Estimated Utility Cost Non-Reimbursable	\$	1,150,000
Estimated Construction Cost	\$	13,003,000
Estimated Preliminary Engineering Cost	\$	1,183,000
Total Estimated Project Cost	\$	17,496,000

PURPOSE OF STUDY

This study was identified in the Accelerated Highway Plan that was passed by the 94th Legislative session. Background data on the project indicates an insufficient level of service for the facility which this study has been directed to address. Additionally, the project has been prioritized with the local Metropolitan Planning Organization (Memphis and Shelby County MPO) Transportation Improvement Program (TIP) 1996 - 2000. This report contains a Project Location Map, design criteria table, data tables, construction cost breakdown, and a checklist depicting preliminary impacts as a result of project implementation.

DEFICIENCIES

Geometrics X Structures X Operational X R/R Crossing
Accident Rate 5.46 Statewide Average Rate 5.29

Current deficiencies relate directly to the operation of the facility in terms of its current capacity and relatively high hourly volume at peak driving times. Reconstruction of the road to a six lane facility will increase capacity and result in a higher level of service due to the additional lane in each direction above the current configuration. Summer Avenue is classified as an Urban Principal Arterial. It functions as an alternative to Interstate - 40 to connect with Interstate - 240. Summer Avenue is a major route in its own right and is a heavily used east / west transportation route. Vertical sight distances at four specific points in the project area have been noted as insufficient.

PROPOSED IMPROVEMENT

The proposed project is composed of the reconstruction of Summer Avenue from four lanes to a six lane facility with a turn lane and runs from the signalized intersection with Interstate - 40 to Elmore Road. (Please refer to Project Location Map) The proposed cross section has been given as 28.8/35 meters or 96'/116' which would consist of three lanes and a bicycle lane each direction with a turn lane. Each lane will be 3.6 meters (12') and a 1.2 meter (4') bicycle lane in width to make up the 96' of lanage within the proposed 35 meter (116') right-of-way. The proposed improvement will consist of these given dimensions for the length of the project which is 5.1 kilometers (3.2 miles), with exceptions as noted at Sycamore View Road. The entire project will have .6 meter (2') curb and gutter with 1.5 meter (5') sidewalks placed to the back of the clear zone. The proposed improvement is no longer consistent with the Major Road Plan submitted by the local Metropolitan Planning Organization, and a change to allow for the bicycle lane has been added.

Design speed for the project has been set for 70 km/h (45 mph). Proposed improvements would be symmetrical from the existing centerline and require acquisition north and south of the facility. The proposed right-of-way will require a minimum of 35 meters (116').

Two left turn lanes will be placed in both directions at the intersection of Summer Avenue and Sycamore View Road to permit increased north and south turning movements on to Sycamore View Road. A wider right-of-way width of an additional 3.65 meters (12 ') will be required as an approach to this particular intersection. The right-of-way in this area will be expanded to a maximum of 38.6 meters (128') to accept the additional turn lane in both directions. The turn lanes

will be transitioned in symmetrically 76.2 meters (250') both north and south of the intersection of Summer Avenue and Sycamore View Road.

Structural deficiencies in two bridge spans over the Wolf River and Fletcher Creek will be corrected with seismic replacements. The Wolf River crossing was constructed in 1926 and widened in 1978. It is rated in fair condition but is seismically vulnerable. The Fletcher Creek structure was also erected in 1926 and does not have adequate pile embedment for the predicted scour, and the structure is seismically vulnerable as well. The 28.8 meter (96') seven lane cross section will continue over both structures. Four 3.3 meter wide lanes will be maintained during the construction of the new bridge structures. Current Shelby County Assessor maps indicate the right-of-way over one of the structures (Fletcher Creek) to be 48.8 meters (160') which is more than sufficient to continue the turn lane over the existing bridge structure as a median. Existing right-of-way of the bridge structure spanning the Wolf River has been identified as 48.8 meters (160').

Additionally, vertical sight distances at four locations between Sycamore View Road and Elmore Road should be improved to address current safety concerns along this heavily traveled thoroughfare. These locations will be identified in the survey and design phase of the project. The entire project will have curbs and gutters.

There are several signals along the existing route. Signal warrants should be performed during the design phase to determine if additional signals are warranted.

ENVIRONMENTAL CONSIDERATIONS

There are no known sites in the project area which would require remediation due to construction of the proposed improvement.

FIELD INVESTIGATION

A field review was conducted for the project on Wednesday, May 1, 1996 at 11:30 a.m. The meeting was attended by Mr. Harold Clawson, Mr. Charles Graves, Mr. John Morris, Mr. Johnnie Daniel and Mr. James Sumler of the Tennessee Department of Transportation and Mr. Robert Romeo and Mr. Eric Wise of Jackson Person and Associates, Inc. Mr Paul Morris attended representing the Memphis Shelby County Metropolitan Planning Organization (MPO).

CHECK LIST OF DETERMINANTS FOR LOCATION STUDY

If preliminary field reviews indicate the presence of any of the following facilities or ESE categories, place an "x" in the blank opposite the item. Where more than one alternate is to be considered, place its letter designation in the blank.

- 1. Agricultural land usage X
- 2. Airport (existing or proposed) _____
- 3. Commercial area, shopping center X
- 4. Floodplain _____
- 5. Forested land X
- 6. Historical, archaeological, cultural, or natural landmark, or cemeteries _____
- 7. Industrial park, factory _____
- 8. Institutional usages:
 - a. School or other educational institution X
 - b. Church or other religious institution X
 - c. Hospital or other medical facility _____
 - d. Public building, e.g., fire station X
 - e. Defense installation _____
- 9. Recreational usages:
 - a. Park or recreational area, State Natural Area _____
 - b. Wildlife refuge or wildlife management area _____
- 10. Residential establishment X
- 11. Urban area, town, city, or community **Memphis (Population 618,288)** X
- 12. Waterway, lake, pond, river, stream, spring, wetland X
(Permit required: Coast Guard _____, Section 404 X , Section 10 _____,
TVA Section 26a review _____, NPDES X , Aquatic Resource Alteration Permit X)
Injection Wells X
- 13. Location coordinated with local officials X
- 14. Railroad Crossings _____
- 15. Hazardous Material Site.(U.S.T.) X
- 16. Other: _____

TENNESSEE DEPARTMENT OF TRANSPORTATION
DESIGN CRITERIA FOR LOCATION AND DESIGN PHASE

ROUTE State Route 1 ALTERNATE N/A SECTION _____

REGION 4 COUNTY Shelby PROJECT NO. _____

LOCATION: FROM: Interstate 40

TO: Elmore Road

1998 A.D.T.	34,200
2018 A.D.T.	54,700
PERCENT TRUCKS	4%
D.H.V.	5,470
FUNCTIONAL CLASSIFICATION	Urban Principal Arterial
MINIMUM DESIGN SPEED	70 km/h (45 mph)
ACCESS CONTROL	N/A
MINIMUM CURVE	Existing
MAXIMUM GRADE	6%
MINIMUM STOPPING SIGHT DISTANCE	94.1m - 110.8m (350' - 400')
SURFACE WIDTH	2 @ 10.8 m (36 ft.)
NUMBER OF LANES	6
USABLE SHOULDER WIDTH	2 @1.8m (6') includes curb and gutter*
MEDIAN WIDTH	3.6m (12') turn lane
MINIMUM RIGHT OF WAY	35m (116 ft.)**
SIGNALIZATION	NO

REMARKS: See attached functional drawings for additional information. Easements will be required outside the right-of-way limits.

* includes a 1.2 m (4') bike lane
** Construction easements may be required.

COST DATA SHEET

PROJECT: State Route 1 from Interstate 40 northeast to Elmore Road

LENGTH: 5.1 km (3.2 mi.) CROSS SECTION: 24.4/33.0 (84 ft./116 ft.)

Right-of-Way

Land, Improvements, and Damages (2.5 Hectares)(6.2 Acres)	\$	1,835,000
Incidentals (89 Tracts @ \$2,500 Ea)	\$	225,000
Relocation Payments (2 Residences)	\$	100,000
(4 Businesses)		
(0 Non-Profits)		
Total Right-Of-Way Cost	\$	2,160,000

Utility Relocation

Reimbursable	\$	0
Non-Reimbursable	\$	1,150,000
Total Adjustment Cost	\$	1,150,000

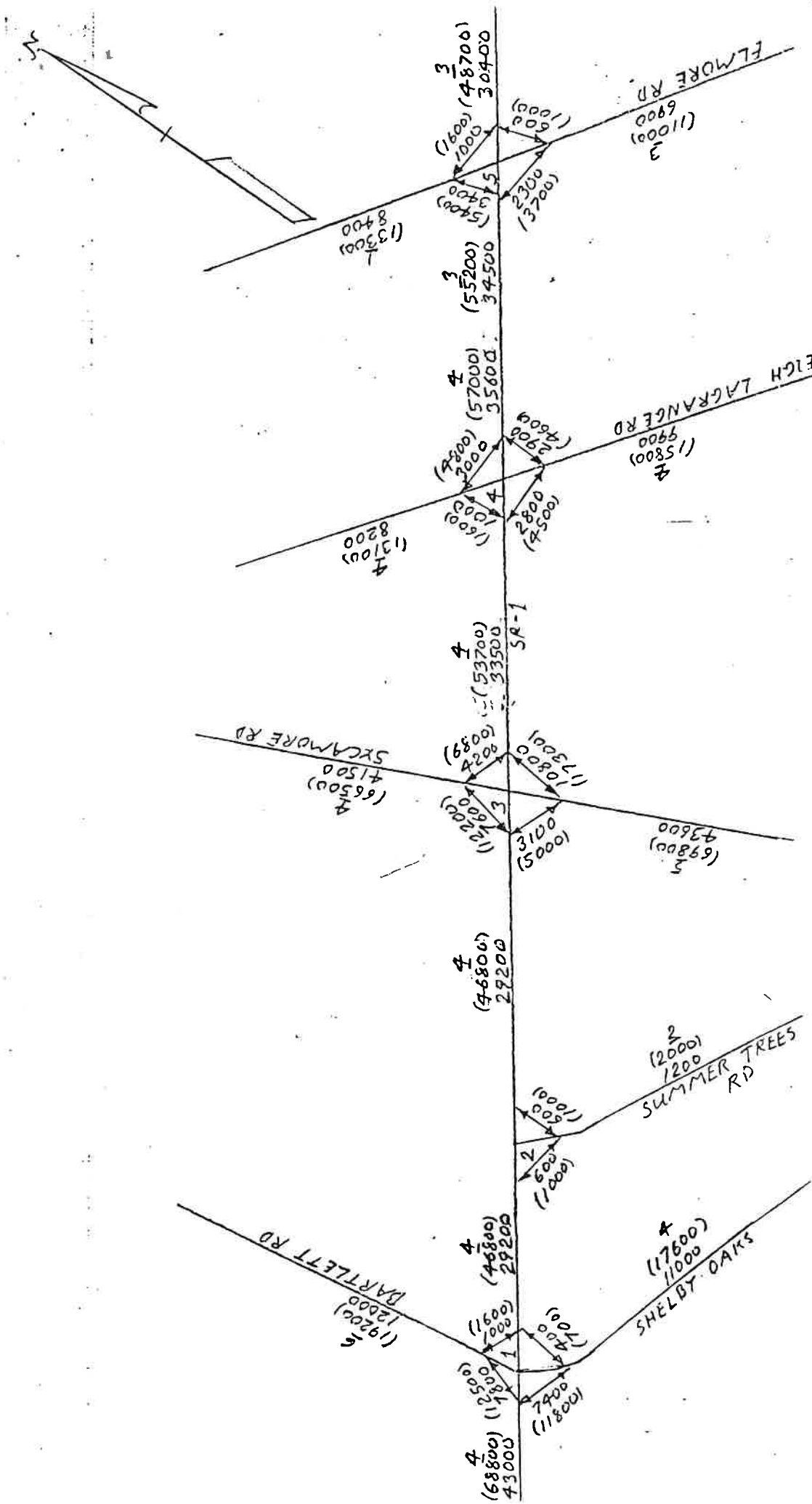
Construction

Clear and Grubbing	\$	50,000
Earthwork	\$	750,000
Pavement Removal	\$	85,000
Drainage (includes erosion control)	\$	235,000
Structures	\$	4,480,000
Railroad Crossing	\$	0
Paving	\$	3,885,000
Retaining Walls	\$	140,000
Maintenance of Traffic	\$	250,000
Topsoil	\$	10,000
Seeding	\$	10,000
Sodding	\$	130,000
Signing	\$	15,000
Signalization	\$	215,000
Fence	\$	0
Guardrail	\$	20,000
Rip Rap or Slope Protection	\$	200,000
Other Const. Items (8.5%)	\$	890,000
Mobilization	\$	455,000
10% Engr. & Cont.	\$	1,183,000
Total Construction Cost	\$	13,003,000

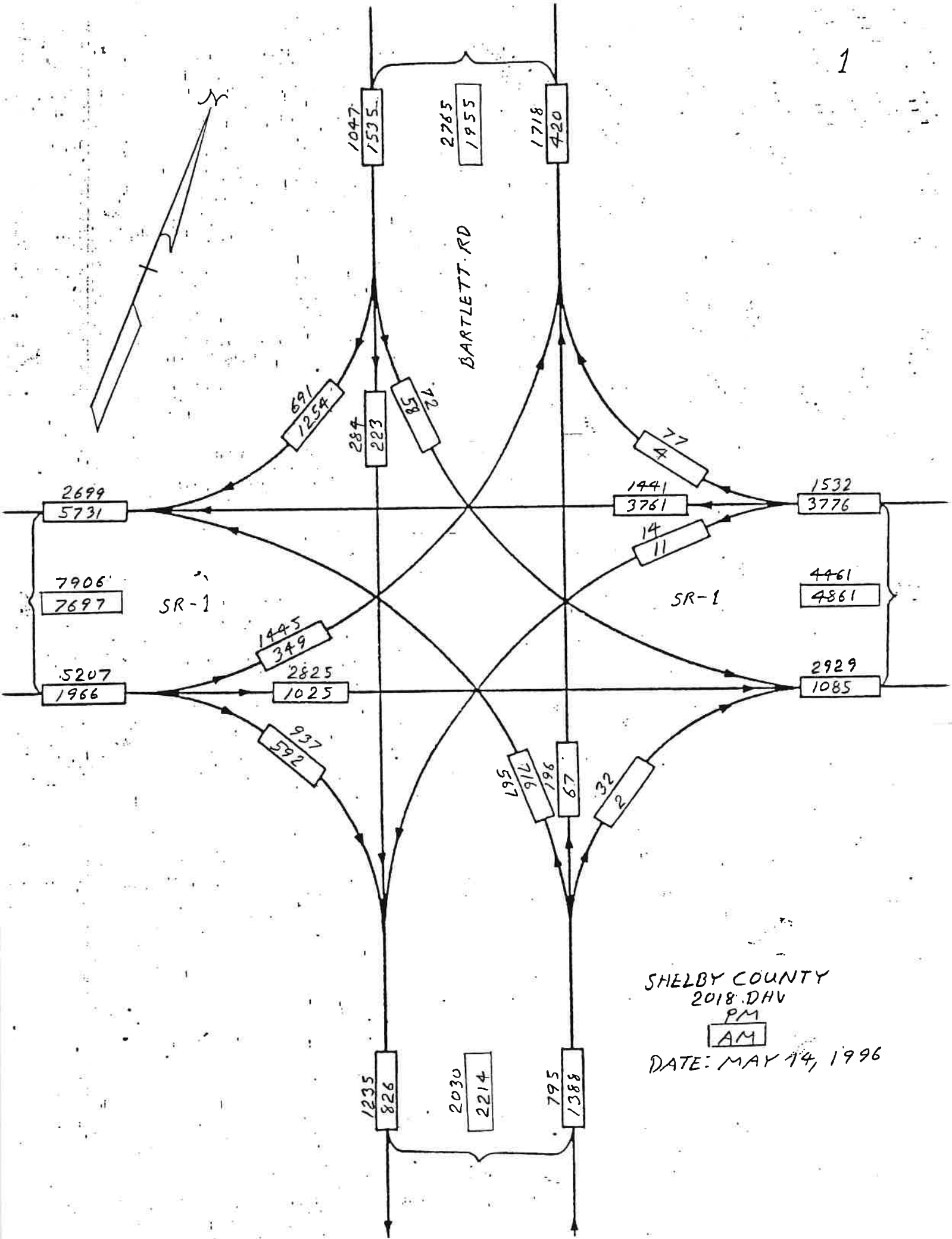
Preliminary Engineering (10%)

	\$	1,183,000
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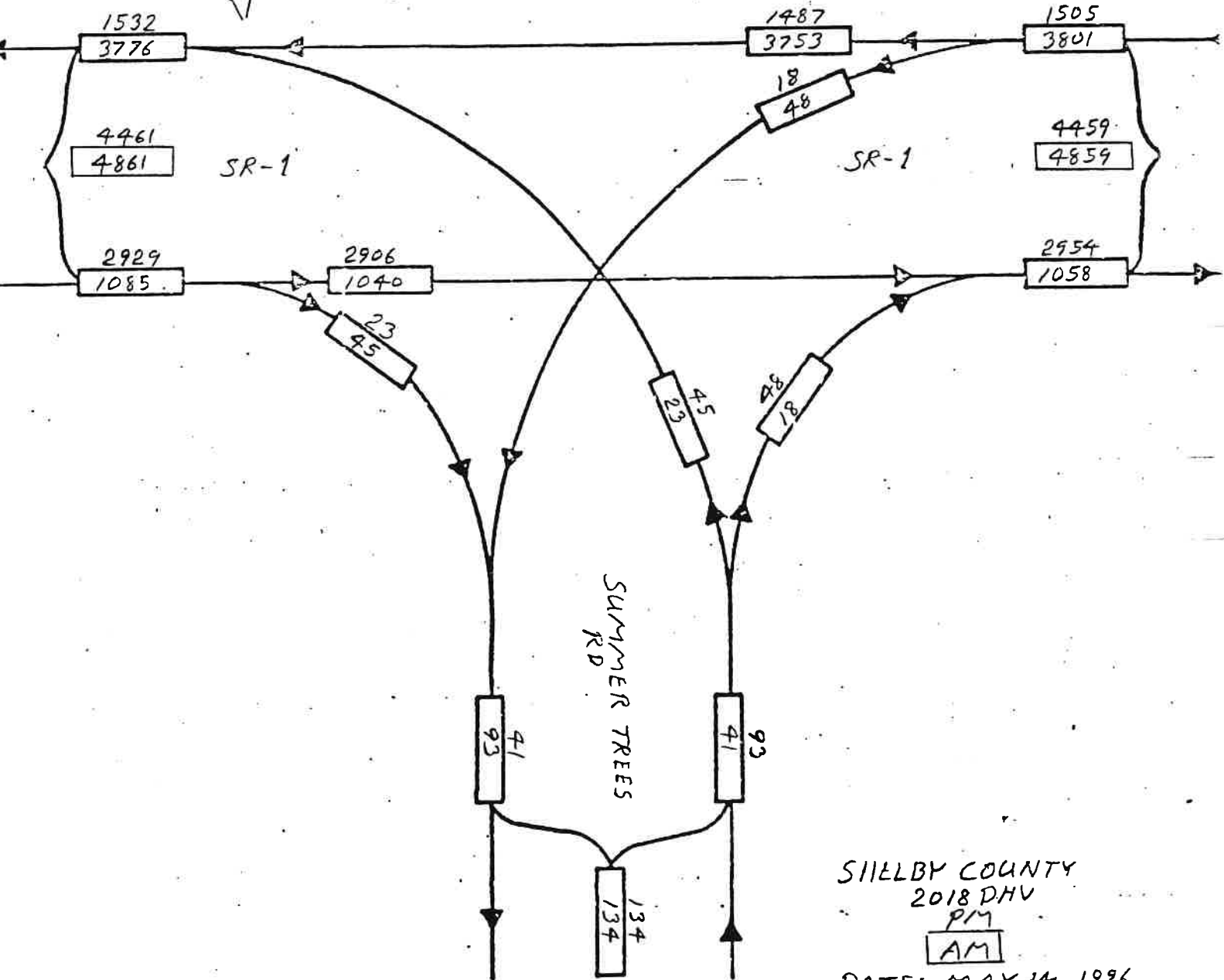
TOTAL PROJECT COST **\$ 17,496,000**



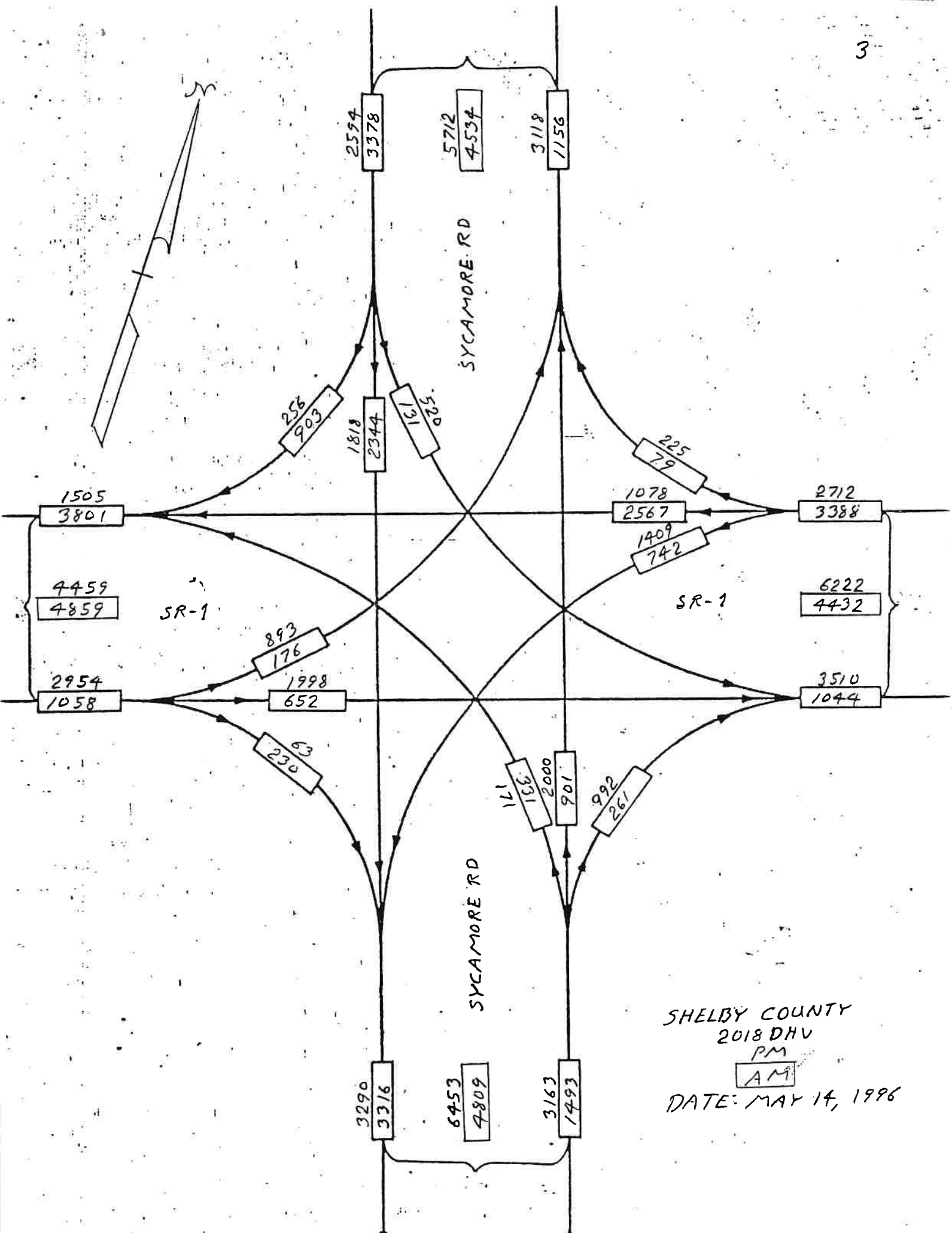
SHELBY COUNTY
 SR-1
 LEGEND:
 1998 ADT 000
 2018 ADT (000)
 ADT TRUCK %
 DATE: MAY 14, 1996
 JRS



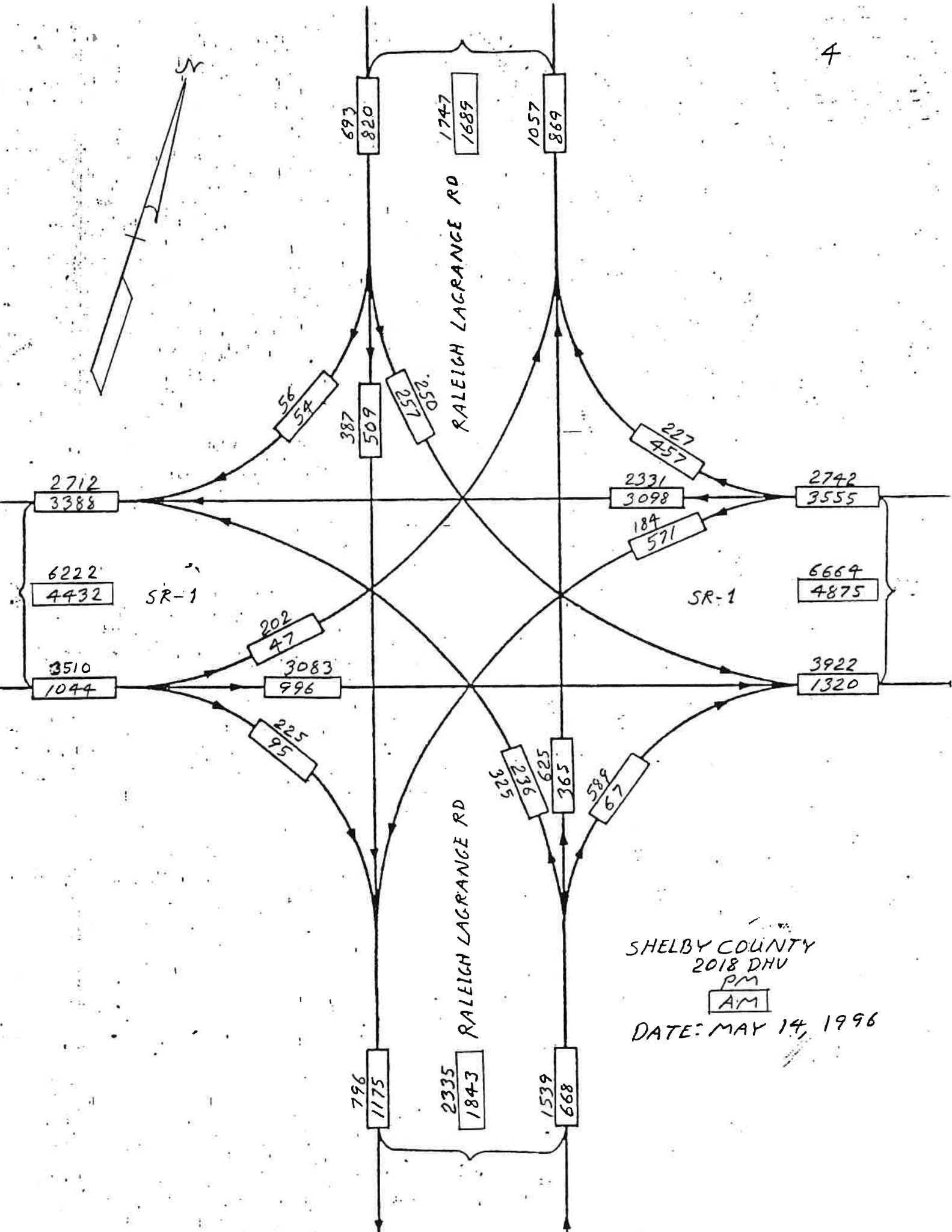
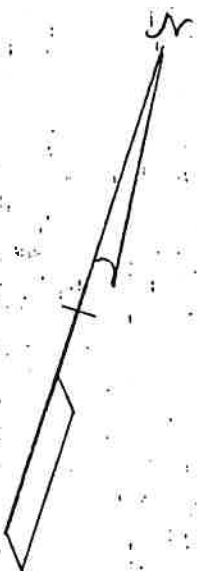
SHELBY COUNTY
 2018.DHV
 PM
 AM
 DATE: MAY 14, 1996



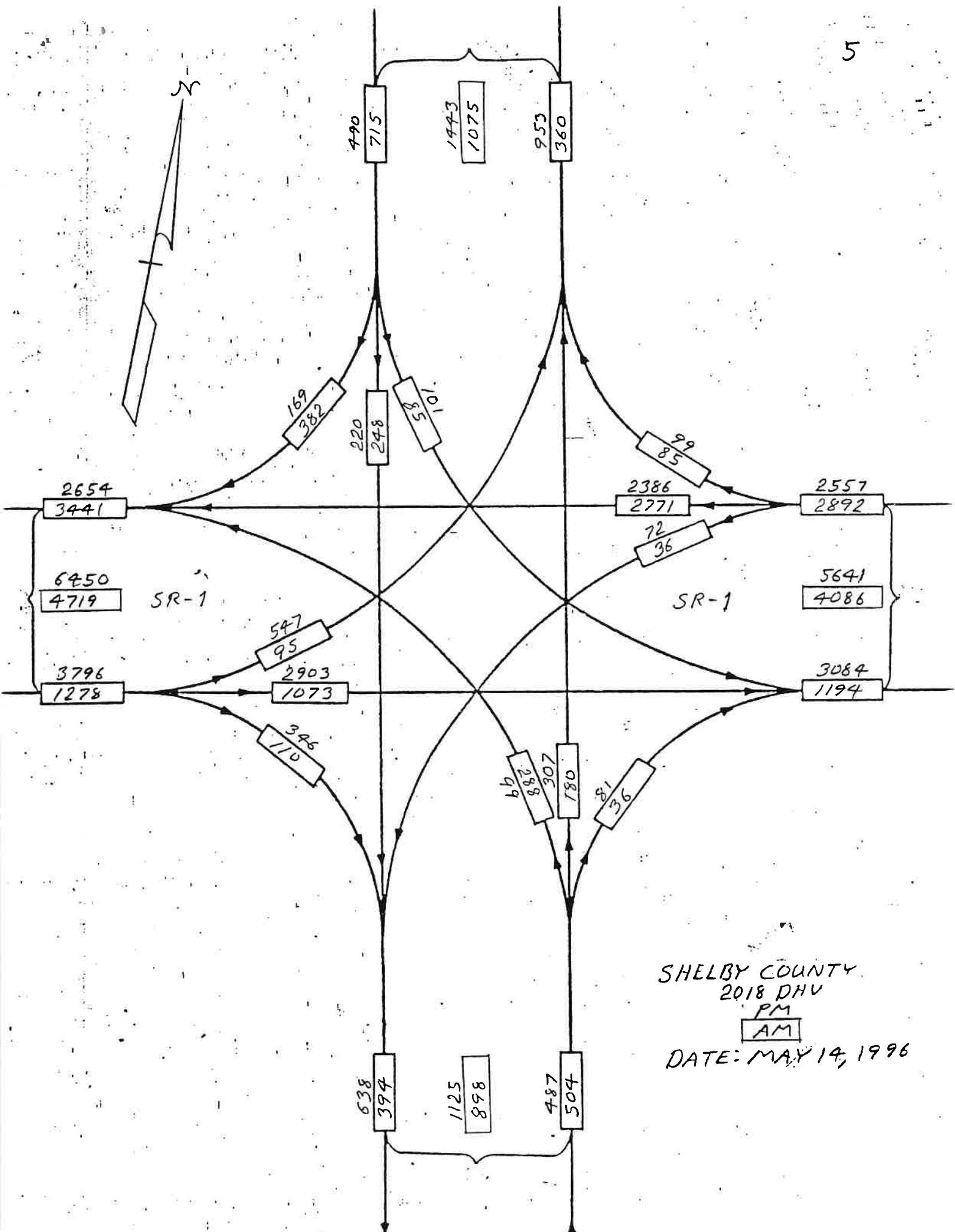
SHELBY COUNTY
 2018 DHV
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