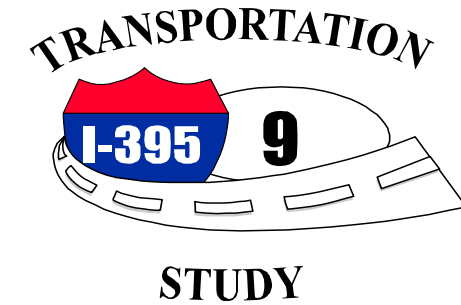


**Summary of Preliminary Impacts and Feasibility of the Range of Reasonable Alternatives Retained for Continued Screening  
September 2002**

**Purpose and Needs**

**Physical and Biological Environment**

Alternative	Satisfy Purpose (yes/no)	Satisfy Needs (yes/no)	NWI & Hydric Soils (acres)	NWI / Hydric Soils (acres)	# of Wetlands (each/acre)	Water Crossings (No./ Fish)	Undeveloped Wildlife Habitat (acres)	Notable Wildlife Habitat (acres)	Aquifers: Surface Area Impacted (acres)	High Yield Aquifers (acres)	Floodplains (acres)	Community Wells Directly Impacted (each)	Active Farmland (acres)	Prime Farmland Soils (acres)	Farmland Soils of Statewide Importance (acres)
No-build	no	no													
1-1	no	no	29.0	2.7/28.5	7/29.0	4/0	91	2.2	209	0	1.0	1	23.5	60.6	0
1-2	yes	yes	30.3	2.7/28.8	7/30.3	4/0	93	2.2	208	0	1.0	3	21.6	60.8	0
1-3	yes	yes	28.5	2.8/28.1	7/28.5	4/0	89	2.2	203	0	1.0	2	22.6	57.4	0
1-4	yes	yes	32.4	2.8/32.1	3/32.4	4/0	86	1.8	205	0	1.0	2	21.0	63.4	0
1-4B-1	no	no	40.9	3.4/40.1	6/40.9	7/0	178	2.3	262	0	0.8	2	10.8	42.2	0
1-4B-2	yes	yes	42.2	3.4/41.4	6/42.2	7/0	181	2.3	261	0	0.8	4	8.9	41.1	0
1-4B-3	yes	yes	40.5	3.4/39.7	6/40.5	7/0	177	2.3	255	0	0.8	3	9.9	39.0	0
1-4B-4	yes	yes	44.4	3.4/43.7	3/44.4	7/0	174	1.9	258	0	0.8	2	10.6	44.4	0
2B <sup>2,3</sup>	yes	yes	27.8	4.1/24.4	5/27.8	6/2	93	0.0	120	0	10.5	0	17.1	23.3	0
2B-1	yes	yes	35.4	5.9/34.5	9/35.4	11/2	186	0.0	222	0	10.7	0	18.8	37.0	0
2BE3K	yes	yes	53.9	9.3/51.2	11/53.9	11/2	170	0.0	209	0	15.1	0	8.8	39.3	0
3EIK	yes	yes	46.8	4.5/45.5	8/46.8	7/0	211	3.2	226	0	7.4	0	4.1	20.5	0
3EIK-1	yes	yes	48.0	5.0/42.4	7/48.0	8/0	205	13.9	224	0	15.6	0	7.9	22.7	0
3A-3EIK-1	yes	yes	50.0	5.6/48.2	5/50.0	8/1	182	12.5	205	0	22.8	0	9.3	22.2	0
4B	yes	yes	44.4	3.2/43.5	3/44.4	10/0	253	1.8	276	0	0.8	0	6.9	18.6	0



**Land Use**

**Cultural Resources**

**Engineering Feasibility**

Alternative	Commercial Land (acres)	Residential Land (acres)	Agricultural (acres)	Undeveloped Land (acres)	Other Land (acres)	Total Land (acres)	Residential Displacements <sup>4</sup>	Commercial Displacements	Number of Buildings in Proximity <sup>5,6</sup>	Env. Risk Sites	Archaeological Areas (each)	Recorded Archaeological Sites (each)	Historic Properties (each)	Satisfy Design Criteria (yes/no)	Length of New Roadway (miles)	Bridge (No./Length in feet)	Length of Local Roads Created (miles) <sup>7</sup>	Cut (millions of cubic yards)	Fill (millions of cubic yards)	Net Earthwork (millions of cubic yards)	Deepest Cut (feet)	Deepest Fill (feet)	Roadway Crossings	Average Grade (percent)	Average Curvature (degrees)
No-build														no											
1-1	11.7	40.4	23.5	91	43.0	209	17	3	112	0				no <sup>9</sup>	1.5	2/685	4.9	0.81	1.11	-0.30	33	42	12	1.6	0.9
1-2	10.7	39.9	21.6	93	42.6	208	15	1	143	0				no <sup>9</sup>	1.5	6/1,210	6.8	0.81	1.11	-0.30	33	42	9	1.6	0.9
1-3	10.5	38.1	22.6	89	42.6	203	12	3	108	0				no <sup>9</sup>	1.5	9/2,178	4.9	0.81	1.11	-0.30	33	42	12	1.6	0.9
1-4	10.4	46.1	21.0	86	41.3	205	21	3	118	0				no <sup>9</sup>	1.5	5/1,571	8.2	0.81	1.11	-0.30	33	42	8	1.6	0.9
1-4B-1	11.3	31.6	10.8	178	29.8	262	13	3 <sup>7</sup>	87	0				no <sup>9</sup>	6.1	6/2,572	4.9	3.04	2.47	0.57	82	64	13	1.8	0.5
1-4B-2	10.3	31.1	8.9	181	29.3	261	11	1 <sup>7</sup>	85	0				no <sup>9</sup>	6.1	10/3,097	6.8	3.04	2.47	0.57	82	64	10	1.8	0.5
1-4B-3	10.1	29.3	9.9	177	29.3	255	8	3 <sup>7</sup>	82	0				no <sup>9</sup>	6.1	13/4,065	4.9	3.04	2.47	0.57	82	64	13	1.8	0.5
1-4B-4	10.0	37.5	10.6	174	25.4	258	17	3 <sup>7</sup>	77	0				no <sup>9</sup>	6.1	9/3,458	8.2	3.04	2.47	0.57	82	64	9	1.8	0.5
2B <sup>2,3</sup>	0.0	4.9	17.1	93	5.5	120	3	0	200 <sup>8</sup>	0				yes	5.8	7/4,354	0	0.89	0.91	-0.03	37	29	4	1.1	0.6
2B-1	0.0	10.0	18.8	186	6.9	222	8	0	60	0				yes	10.7	8/4,669	0	1.74	1.75	-0.01	56	50	5	1.1	0.7
2BE3K	0.0	10.9	8.8	170	18.6	209	8	0	73	1				yes	10.1	8/3,021	0	1.59	1.58	0.01	47	27	6	1.1	0.7
3EIK	1.5	2.5	4.1	211	6.4	226	2	0	22	0				yes	10.4	10/3,948	0	1.90	2.19	-0.29	66	37	4	1.5	0.6
3EIK-1	1.0	4.1	7.7	205	6.9	224	4	1	21	0				yes	10.2	7/2,797	0	2.19	2.18	0.01	75	56	4	1.45	0.8
3A-3EIK-1	0.0	7.9	10.9	182	4.6	205	8	0	41	0				yes	9.2	7/2,809	0	2.11	2.10	0.01	75	62	3	1.36	0.8
4B	1.0	9.3	6.9	253	6.2	276	5	1 <sup>7</sup>	31	0				yes	11.0	11/3,486	0	4.08	3.84	0.24	82	64	9	2.03	0.5

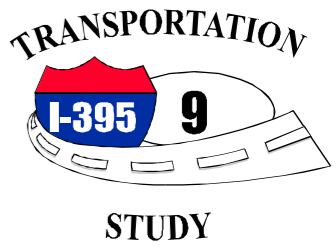
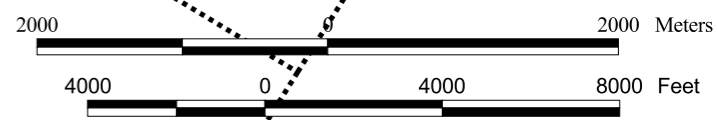
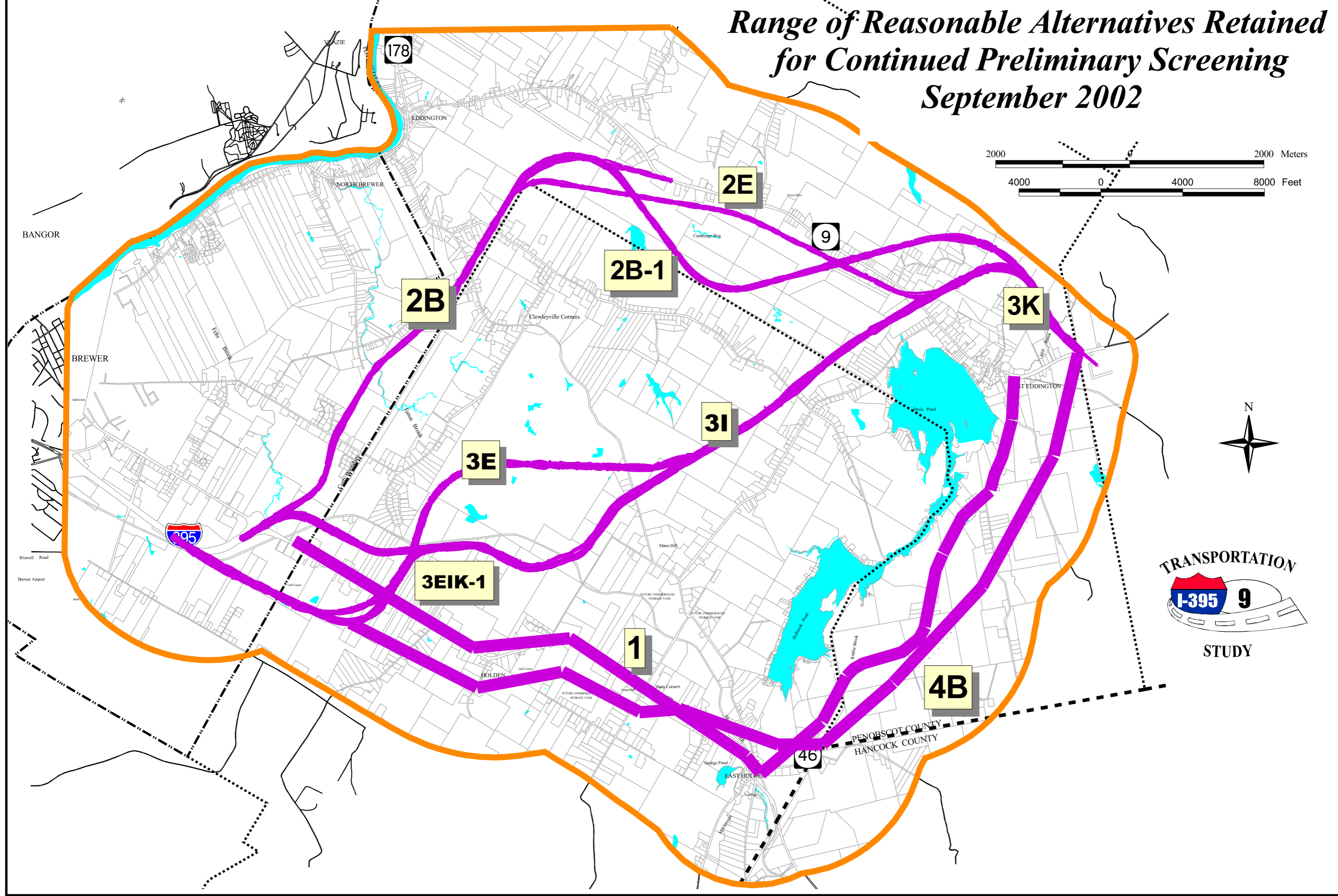
**Notes:**

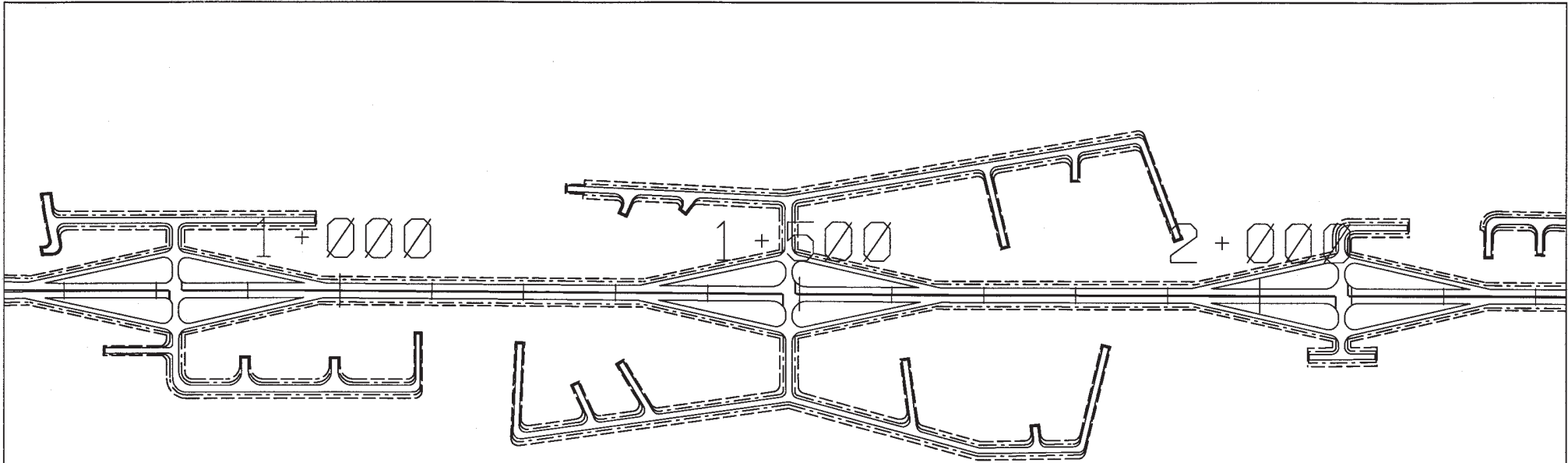
- <sup>1</sup> Hydric soils were considered wetlands.
- <sup>2</sup> Connects to Route 9 between Davis Road and Chemo Road
- <sup>3</sup> Impacts from alternative include impacts along its entire length of Route 9 to the east of East Eddington providing for equal comparison between alternatives
- <sup>4</sup> A residence was considered displaced if it was directly impacted by an alternative
- <sup>5</sup> Proximity is defined as within 500 ft. on either side of a proposed alternative.
- <sup>6</sup> New column added in June 2002
- <sup>7</sup> Results in operational impacts to the Boy Scouts of America, Camp Roosevelt
- <sup>8</sup> 47 houses and businesses in proximity along a portion of the alternative on new alignment between I-395 and Rt. 9. 153 houses and businesses in proximity along Rt. 9 between the portion on new alignment and where other alternatives join Rt. 9 to the east of East Eddington.
- <sup>9</sup> 1,600 ft. or 8.5% of the length of Rt. 1A does not meet vertical geometry criteria along Existing Rt. 1A.

**For Alternative 1 (upgrade) and Alternative 1-4B (partial upgrade):**

- Modifications ending in -1 consist of a series of jughandles on Rt. 1A with traffic signals and "pacer" lights.
- Modifications ending in -2 consist of a series of diamond interchanges on Rt. 1A with parallel service roads.
- Modifications ending in -3 consist of grade separations on Rt. 1A with only right-in and right-out movements for turns.
- Modifications ending in -4 consist of collector/distributor lanes along Rt. 1A.

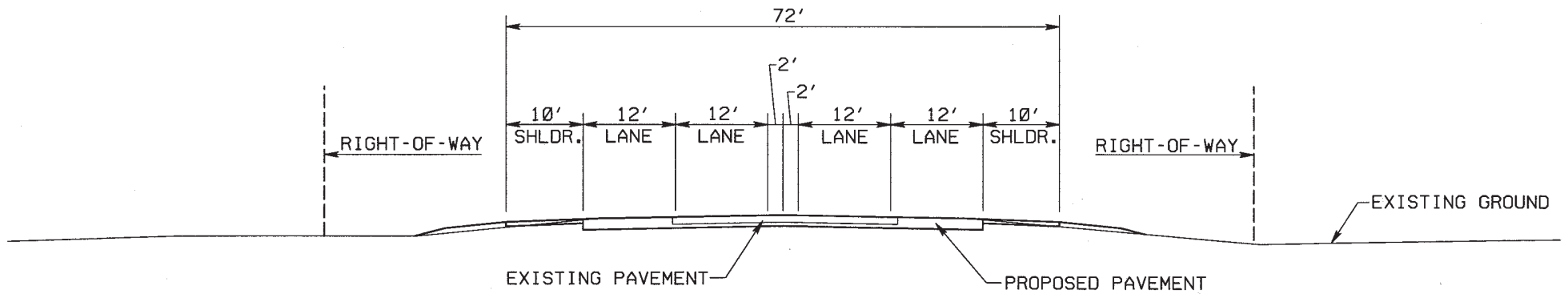
# Range of Reasonable Alternatives Retained for Continued Preliminary Screening September 2002



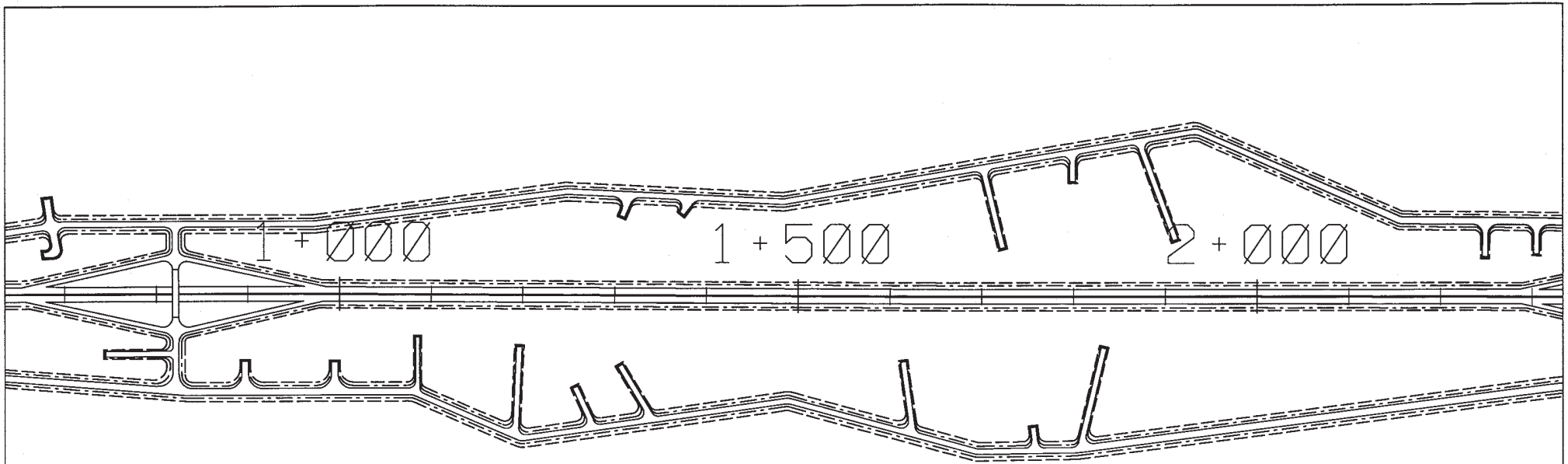


ALTERNATIVES 1-1 & 1-4B-1 - TYPICAL PLAN VIEW ALONG RT 1A

8 AT-GRADE INTERSECTIONS ALONG RT 1A  
 Ø BRIDGE LOCATIONS ALONG RT 1A

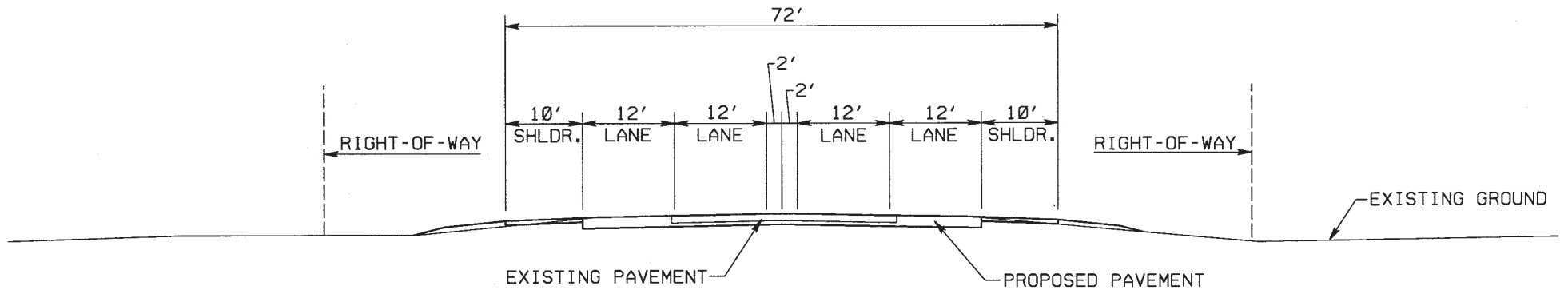


ALTERNATIVES 1-1 & 1-4B-1 - TYPICAL SECTION ALONG RT 1A

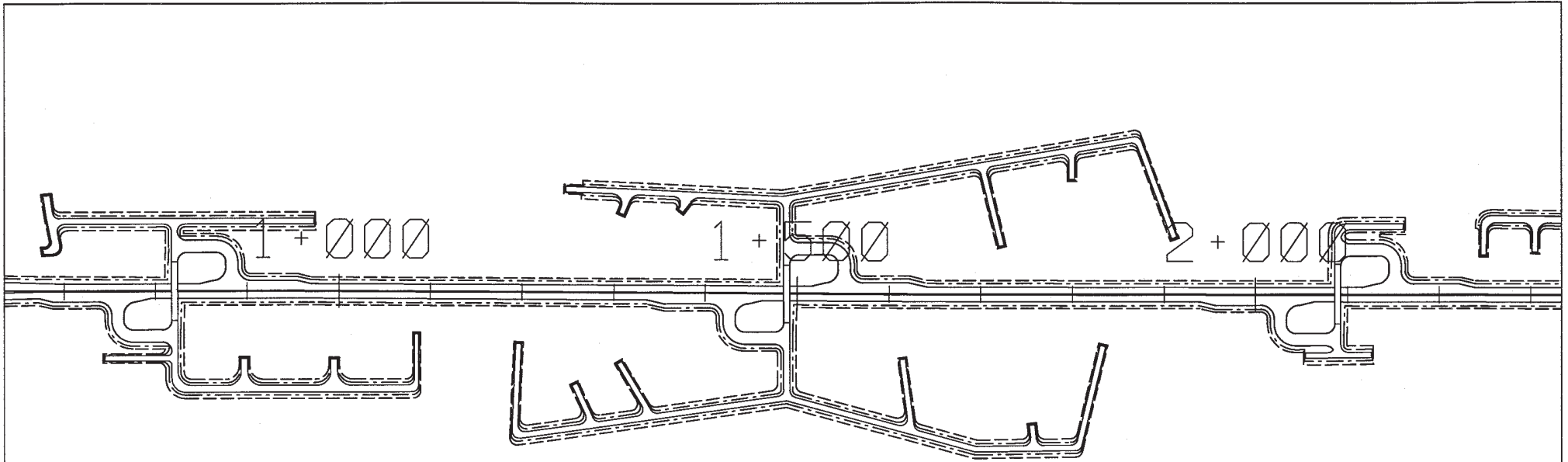


ALTERNATIVES 1-2 & 1-4B-2 - TYPICAL PLAN VIEW ALONG RT 1A

4 GRADE-SEPARATED DIAMOND INTERCHANGES ALONG RT 1A  
 4 BRIDGE LOCATIONS ALONG RT 1A

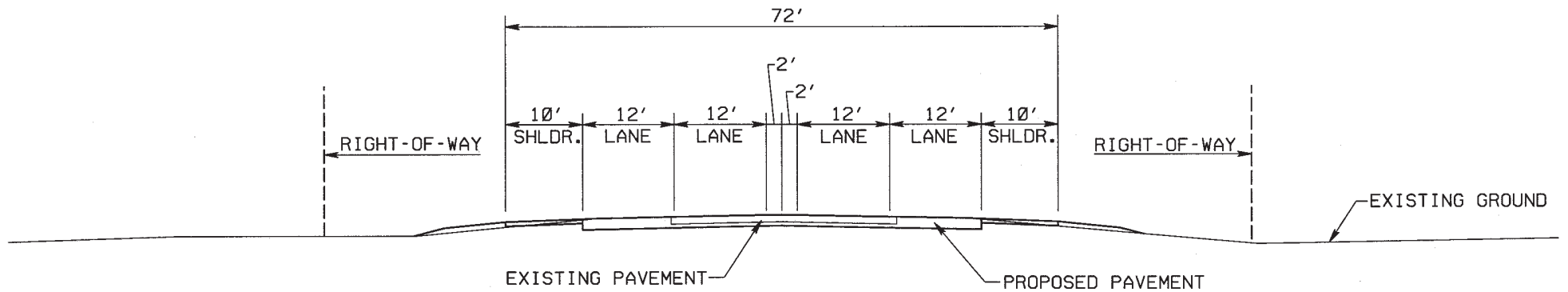


ALTERNATIVES 1-2 & 1-4B-2 - TYPICAL SECTION ALONG RT 1A



ALTERNATIVES 1-3 & 1-4B-3 - TYPICAL PLAN VIEW ALONG RT 1A

- 1 AT-GRADE INTERSECTION ALONG RT 1A
- 7 ON/OFF INTERCHANGES ALONG RT 1A
- 7 BRIDGE LOCATIONS ALONG RT 1A



ALTERNATIVES 1-3 & 1-4B-3 - TYPICAL SECTION ALONG RT 1A

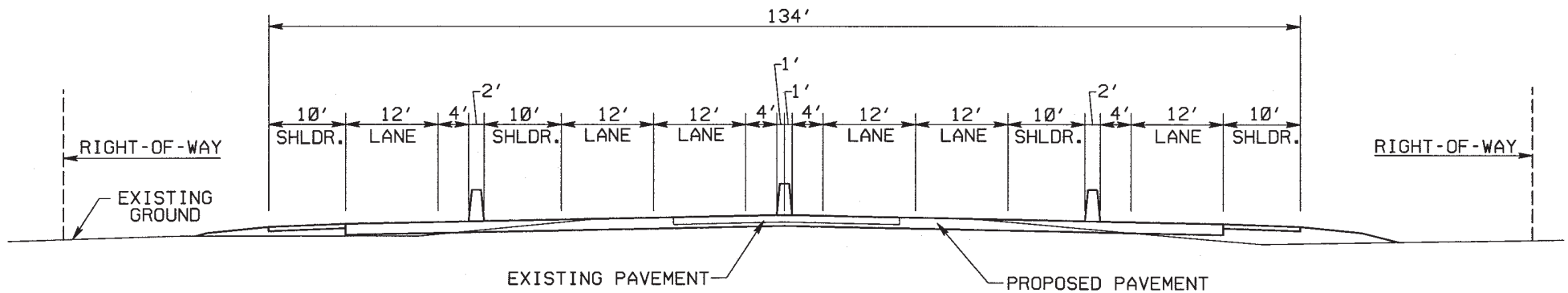
1 + 000

1 + 500

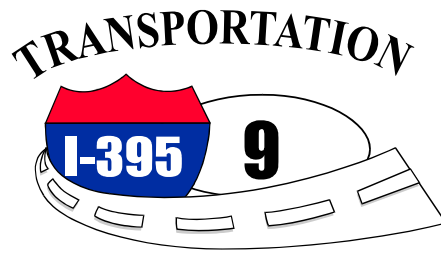
2 + 000

ALTERNATIVES 1-4 & 1-4B-4 - TYPICAL PLAN VIEW ALONG RT 1A

3 GRADE SEPARATED CROSSINGS ALONG RT 1A  
3 BRIDGE LOCATIONS ALONG RT 1A



ALTERNATIVES 1-4 & 1-4B-4 - TYPICAL SECTION ALONG RT 1A



## STUDY

### Study Purpose

---

The purpose of the study is to: 1) improve a section of Maine's National Highway System from I-395 in Brewer to Route 9, consistent with current American Association of State Highway and Transportation Officials (AASHTO) policy on design; 2) improve regional system linkage; and 3) improve safety on Routes 9, 46 and 1A; and 4) improve the current and future flow of traffic and shipment of goods to the interstate system.

The PAC assembled for this study supports this purpose. In recognition of this overall purpose, the goals of the PAC are to promote:

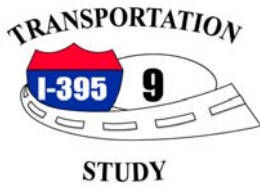
- Safer travel from I-395 to Rt. 9
- Travel efficiency
- Neighborhood integration
- Economic development
- Environmental protection
- Long-range, comprehensive planning
- Connectivity with other roads and towns
- Access for emergency vehicles and general traffic
- Historical/archaeological preservation
- Financial return for investment

### Study Needs

---

The need for the study is based on poor roadway geometry in the study area coupled with an increase in commercial, local, and regional traffic. The result has been:

- **Poor System Linkage**
  - Improve the National Highway System and roadway connectivity
  - Current and future flow of traffic and shipment of goods to the interstate system
  - The study area is the origin/destination for relatively few trucks; the majority of the truck traffic is passing through the study area
  - Trucks with trailers greater than 48 feet use Route 46 illegally, contributing to the safety problem
  - Component of an East-West Highway
- **Safety**
  - Four high crash locations exist (data from 1997-1999):
    - Intersection of Routes 9 and 46 — 8 crashes
    - Route 46 Mann Hill Road to Holden – Eddington line — 8 crashes
    - Intersection of Route 1A and Copeland Road — 8 crashes
    - Intersection of Routes 9 and 178 — 11 crashes
- **Traffic Congestion**
  - Since 1990, traffic has increased 60% on Route 46 and 15% on Route 9
  - Heavy truck traffic on Route 9 has nearly doubled since 1990
  - 5 out of 6 heavy trucks on Route 46 and Route 1A use I-395
  - Congestion exists on Route 1A north of Route 46
  - By the year 2030, traffic volumes on Route 1A north of Route 46 are forecast to increase by approximately 69% for all vehicles and approximately 56% for heavy trucks.
  - By the year 2030, traffic volumes on Route 46 are forecast to increase by approximately 238% for all vehicles and approximately 93% for heavy trucks
  - By the year 2030, traffic volumes for on Route 9 east of Route 46 are forecasted to increase by approximately 97% for all vehicles and approximately 75% for heavy trucks



<b>DESIGN ELEMENT</b>	<b>MAINE DEPARTMENT OF TRANSPORTATION HIGHWAY DESIGN GUIDE</b>
Design Year	2030
Functional Classification	Limited Access Two-Lane Highway within a Four-Lane Right-of-Way
Terrain	Level
Design Speed	110km/h (70 mph)
Lane Widths	3.6m (12')
Shoulder Widths	Right 3.0m (10') Left 1.2m (4')
Cross Slopes	6.0% max. superelevation 2.1% normal 4.2% shoulder – normal
Median Width	To be determined by field conditions. Minimum 6.71m (22')
Clear Zone	Variable. Dependant on design speed, traffic volume and side slopes.
Side Slopes Cut Front of Slope Depth of Ditch  Back Slope  Fill 0m – 6.10m Height > 6.10m Height	1:6 A rounded ditch section should be used unless hydraulic capacity warrants the use of a trapezoidal ditch. The depth of ditch shall be maintained 0.31m (1') below subgrade. 1:2  1:6 / 1:4 (hinged) 1:2
Minimum Stopping Sight Distance	259.08m (850')
Decision Sight Distance	335.25m (1100')
Minimum Radius	635.05m (2083.48')
Vertical Grades	3% max. 0.25% minimum desirable 0% minimum
Minimum Vertical Clearance	5.03m (16'-6") for New and Replaced Overpassing Bridges. 4.88m (16'-0") for Existing Overpassing Bridges.