THE NEWS LETTER
OF THE
BUREAU OF PUBLIC ROADS

VOL. 3, NO. 6 APRIL, 1928 A. C. ROSE, EDITOR

CONTENTS

THE WORK OF THE BUREAU FOR THE NATIONAL PARK SERVICE

EXTRACT FROM AN ADDRESS MADE BY DR. HEWES AT THE ANNUAL CONFERENCE OF THE PARK SUPERINTENDENTS OF THE NATIONAL PARK SERVICE HELD IN SAN FRANCISCO, CALIF. ON FEBRUARY 16, 1928.

(NOT FOR RELEASE)

THE WORK OF THE BUREAU FOR THE NATIONAL PARK SERVICE PROPERLY BEGINS WITH THE SURVEY, BY CAPTAIN KITTREDGE, OF THE TRANSMOUNTAIN HIGHWAY IN GLACIER PARK IN THE FALL OF 1924. THE CONTRACT FOR THIS WORK WAS AWARDED IN JUNE, 1925, AND THE WORK IS NOW 90 PER CENT COMPLETE. SINCE THEN THE BUREAU HAS SURVEYED 52 ADDITIONAL PROJECTS IN THE NATIONAL PARKS IN THE WEST, AT A COST OF $356,969. THIS IS AT THE RATE OF APPROXIMATELY $426 PER MILE FOR FINISHED PLANS FOR 838 MILES, BUT THIS FIGURE INCLUDES 491 MILES ON WHICH PLANS AND ESTIMATES WERE ONLY 74 PER CENT COMPLETE ON THE FIRST OF THE YEAR BUT WITH ESTIMATED COMPLETE COSTS.

THE BUREAU HAS HANDLED CONSTRUCTION IN THE NATIONAL PARKS ON 61 PROJECTS. WORK ALREADY BEGUN BY THE PARK SERVICE WAS COMPLETED ON 90.7 MILES, AND WORK IS NOW UNDER WAY ON AN ADDITIONAL 157.3 MILES, MAKING A TOTAL OF 248 MILES OF CONSTRUCTION. THE COST OF THIS CONSTRUCTION WORK, INCLUDING ENGINEERING, IS ESTIMATED AT $7,470,443, WHICH FIGURE INCLUDES $581,388 EXPENDED BY THE PARK SERVICE AND ALSO THE ESTIMATED AMOUNT NECESSARY TO COMPLETE THE GOING PROJECTS. THIS CONSTRUCTION IS THUS AT AN AVERAGE COST OF $30,122 PER MILE. OUR ESTIMATED RESIDENT ENGINEERING TO DATE IS ABOUT 5.7 PER CENT OF THE TOTAL COST AND THE INDICATIONS ARE THAT THIS RATE IS STABILIZED. FOR COMPARISON, OUR ENGINEERING COSTS ON FOREST HIGHWAYS UP TO THE FIRST OF THIS YEAR HAVE BEEN 7.1 PER CENT OF THE TOTAL COST. THE CONSTRUCTION IN THE FORESTS HAS NOT AVERAGED AS HEAVY AS IN THE PARKS AND THIS ACCOUNTS FOR THE SLIGHTLY INCREASED PERCENTAGE OF ENGINEERING. FOR SURVEYS IN THE NATIONAL FORESTS WE HAVE AVERAGED 2.4 PER CENT OF THE TOTAL COSTS, AND OUR ADMINISTRATIVE EXPENSE HAS AVERAGED 2.7 PER CENT. THESE FIGURES ARE FOR A TOTAL OF APPROXIMATELY FIFTY MILLION DOLLARS WORTH OF FOREST HIGHWAYS. THAT IN BRIEF IS THE REPORT OF WORK DONE TO DATE IN THE NATIONAL PARKS.

DURING THE PAST FALL, BY AN ARRANGEMENT APPROVED BY THE SECRETARY OF THE INTERIOR, WE MADE AN INSPECTION OF ABOUT 92 MILES OF PARK HIGHWAYS WHICH IT IS EXPECTED TO LET TO CONTRACT WITHIN THE NEXT 90 DAYS. THIS MILEAGE IS DISTRIBUTED IN 16 PROJECTS AND

THE ESTIMATE OF CONSTRUCTION IS APPROXIMATELY $4,000,000. PLANS FOR THESE PROJECTS ARE NOW ABOUT READY.

BUT THE ABOVE FIGURES DO NOT TELL THE ENTIRE STORY OF HIGHWAY TRANSPORTATION AS AFFECTING THE NATIONAL PARKS. WITHIN A ZONE FOR THE MOST PART NOT EXCEEDING FIFTY MILES FROM THE WESTERN NATIONAL PARKS, THERE HAVE BEEN CONSTRUCTED BY THE BUREAU FOREST HIGHWAYS LEADING THERETO, TOTALLING 641 MILES, AT A COST OF ABOUT $7,700,000, AND THERE IS PROJECTED FOR THE 1928 SEASON APPROXIMATELY $355,000 FOR ADDITIONAL APPROACH HIGHWAYS.

ON THE FEDERAL-AID HIGHWAY SYSTEM THERE HAS ALSO BEEN AN IMPRESSIVE EXPENDITURE FOR HIGHWAYS IN A CORRESPONDING ZONE SURROUNDING THE NATIONAL PARKS. THE TOTAL MILEAGE OF FEDERAL-AID DIRECT-APPROACH PROJECTS IS 478, AND THE TOTAL COST $8,807,967, OF WHICH FEDERAL FUNDS ARE $5,374,284. THE AMOUNT BUDGETED FOR THIS YEAR (1928) FOR SUCH DIRECT-APPROACH FEDERAL-AID ROADS IS $1,799,000. THUS THE TOTAL HIGHWAY CONSTRUCTION FINISHED OR GOING ON AND BENEFITING DIRECTLY THE NATIONAL PARKS AND INVOLVING FEDERAL FUNDS AND SUPERVISION, AMOUNTS TO $20,539,673, WITH $6,154,000 ADDITIONAL PROGRAMMED FOR THIS YEAR - A GRAND TOTAL OF $26,693,673 DIRECTLY TO THE ADVANTAGE OF PARK TRAFFIC.

UNITED STATES DEPARTMENT OF AGRICULTURE

BUREAU OF PUBLIC ROADS

STATUS OF CURRENT FEDERAL-AID ROAD WORK

FOR THE FISCAL YEAR ENDING JUNE 30, 1928

AS OF MARCH 31, 1928

STATES	BALANCE OF FEDERAL-AID FUND AVAILABLE FOR NEW PROJECTS	*UNDER CONSTRUCTION			APPROVED FOR CONSTRUCTION			AMOUNT PAID STATES DURING FISCAL YEAR	COMPLETED AND PAID DURING FISCAL YEAR			AGREEMENTS NOW IN FORCE			P. S. & E. RECOMMENDED FOR APPROVAL BY DISTRICT ENGINEER			STATES
		FEDERAL AID	MILEAGE		FEDERAL AID	MILEAGE			FEDERAL AID	MILEAGE		FEDERAL AID	MILEAGE		FEDERAL AID	MILEAGE		
			ORIGINAL	STAGE		ORIGINAL	STAGE			ORIGINAL	STAGE		ORIGINAL	STAGE		ORIGINAL	STAGE	
Alabama	$ 2,082,339.77	$ 4,811,329.02	505.3	57.8	$ 222,863.69	35.1		$ 1,785,990.08	$ 712,525.58	108.8		$ 3,810,128.74	407.4	26.5	$ 1,224,063.97	133.0	31.2	Alabama
Arizona	3,949,271.70	827,674.26	66.1	4.4	58,152.85	0.5	0.5	329,001.50	451,055.92	15.7		844,938.70	66.3	4.9	40,888.41	0.3		Arizona
Arkansas	2,041,390.55	2,109,648.77	246.0		396,330.06	26.0		315,758.55	92,922.87	18.4		1,976,369.14	222.2		530,609.69	49.9		Arkansas
California	4,321,635.69	3,582,214.87	156.1	6.2	155,078.73	9.3	2.0	1,889,606.28	2,015,680.89	103.1	0.4	3,240,785.13	144.5	6.2	496,508.47	20.9	2.0	California
Colorado	3,384,155.78	3,098,699.84	235.8	12.0	207,336.84	18.0		1,055,542.96	461,241.53	63.8	0.4	3,058,976.48	234.5	12.0	247,060.30	19.3		Colorado
Connecticut	605,113.62	1,353,375.63	57.4		190,451.17	11.8		339,385.23	677,628.04	35.4		1,471,694.05	63.9		82,142.75	5.3		Connecticut
Delaware	241,409.97	209,908.50	11.3	3.9	104,568.27	8.0		303,850.84	303,850.84	34.4		189,191.47	11.3	2.1	125,283.30	8.0	1.8	Delaware
Florida	1,359,356.77	2,484,574.58	162.7	5.4	387,752.10	27.8		1,033,616.41	2,026,119.95	83.1	24.7	2,208,177.02	126.3		664,149.66	54.2	5.4	Florida
Georgia	1,184,512.96	2,390,582.20	200.8	52.6	485,312.12	42.3	11.8	1,755,546.99	3,239,437.32	236.0	121.0	1,970,815.55	156.9	37.6	895,078.77	88.2	26.8	Georgia
Idaho	653,551.13	1,314,265.44	151.7	82.4	323,950.12	16.0	14.9	774,354.30	1,050,478.15	114.3	14.8	913,213.02	110.7	31.0	725,002.54	57.0	46.2	Idaho
Illinois	2,052,898.02	7,243,789.27	498.6	2.3	3,130,922.31	207.5		2,335,231.55	912,725.80	67.9		6,713,648.58	474.4		3,661,053.00	231.7	2.3	Illinois
Indiana	979,995.31	5,958,406.82	378.2		1,403,931.83	102.3	3.5	1,837,075.41	2,471,687.84	166.7		5,979,115.72	386.2		1,393,221.93	94.3	3.5	Indiana
Iowa	495,994.58	3,998,183.03	223.5	167.2	1,485,053.09	14.6	104.5	2,542,659.84	3,191,018.55	393.4	66.5	4,514,231.69	236.5	192.7	969,004.43	1.5	79.0	Iowa
Kansas	2,175,292.62	4,249,046.52	538.5	7.3	52,000.00	10.2		2,836,714.21	2,386,970.38	354.7	10.2	4,193,037.60	528.4	7.3	108,008.92	20.3		Kansas
Kentucky	1,275,815.44	3,802,380.70	349.6	42.4	178,581.72	23.5		2,009,236.81	1,284,212.39	122.8	36.9	3,754,289.35	346.5	42.4	226,773.07	26.6		Kentucky
Louisiana	372,776.58	2,709,183.03	196.0	7.5	531,344.70	51.8		587,034.17	597,801.46	48.6		2,485,762.90	179.5	7.5	753,764.83	68.3		Louisiana
Maine	1,737,903.13	453,994.44	33.9		43,956.00	5.6		459,684.26	732,746.76	61.7		497,950.44	39.5					Maine
Maryland	628,573.28	357,376.05	33.4					526,705.63	684,194.40	71.2		310,176.05	33.4		47,200.00			Maryland
Massachusetts	2,583,239.41	2,087,701.70	130.5		31,500.00	2.1		158,264.74	158,264.74	9.6		2,030,595.01	126.5		88,506.69	6.1		Massachusetts
Michigan	1,265,653.66	4,712,891.31	273.1	3.5	1,807,202.00	103.6	6.5	2,084,404.17	2,652,420.04	192.9	9.2	3,860,237.81	234.8	3.5	2,659,855.50	141.9	6.5	Michigan
Minnesota	537,471.43	1,203,100.00	216.7	3.9	1,037,000.00	124.7	71.3	1,978,203.15	2,001,398.90	248.7	110.2	1,395,100.00	261.3	7.7	845,000.00	80.1	67.5	Minnesota
Mississippi	1,079,823.92	2,557,145.37	256.5	16.8	471,348.54	43.8	19.5	1,510,814.63	1,623,013.55	166.8	15.0	2,252,336.54	246.7	16.8	876,157.37	53.6	19.5	Mississippi
Missouri	2,415,892.61	2,737,541.91	206.3	22.7	670,397.18	58.9	12.9	2,289,008.18	2,091,099.82	169.2	25.4	2,754,779.01	210.1	22.7	653,160.08	55.1	12.9	Missouri
Montana	4,992,254.96	2,807,171.20	319.6	4.2	1,020,333.45	189.2	1.3	1,391,595.42	421,911.70	67.9	9.2	3,281,129.04	441.2	4.2	546,375.61	66.6	1.3	Montana
Nebraska	1,936,398.97	5,286,655.43	1,038.7	400.4	154,167.91	30.7	34.9	2,219,045.32	2,688,847.30	575.8	472.3	5,268,060.90	1,060.6	421.5	192,662.44	16.8	13.8	Nebraska
Nevada	887,763.45	1,524,773.83	196.8	27.3	146,534.92	15.8	18.0	673,862.74	553,479.11	78.1	10.7	1,396,036.96	169.4	29.0	275,271.79	42.2	16.3	Nevada
New Hampshire	313,195.18	352,772.73	22.0		83,607.96	1.8		315,972.87	372,238.38	27.8		376,067.73	23.6		60,312.66	0.2		New Hampshire
New Jersey	757,912.00	797,536.62	62.2		177,210.00	13.5		1,109,130.00	1,109,130.00	74.0		797,536.52	52.2		177,210.00	13.5		New Jersey
New Mexico	2,160,449.49	2,255,180.28	181.3		102,868.80	12.9		1,190,026.06	882,413.37	99.9		2,090,717.93	175.2		277,331.15	19.0		New Mexico
New York	6,209,507.47	9,370,781.45	584.3		1,32[illegible]	85.9	8.5	3,860,980.64	2,710,163.93	174.7		10,541,713.95	659.9	8.5	154,950.00	10.3		New York
North Carolina	1,488,451.93	882,448.18	43.1	24.9	824,764.14	64.4	7.4	1,207,140.68	1,431,904.59	112.9	9.7	873,448.18	43.1	24.9	833,764.14	64.4	7.4	North Carolina
North Dakota	1,087,980.62	1,731,861.61	551.5	150.2	518,945.47	171.6	187.9	1,243,698.75	2,054,168.62	488.9	342.1	1,698,155.45	645.6	149.9	550,451.63	77.5	188.2	North Dakota
Ohio	4,081,176.49	2,989,049.92	185.5	4.2	1,942,336.25	124.8	8.8	1,819,084.74	2,908,029.67	231.9		3,170,519.92	213.3	4.2	1,760,866.26	97.0	8.8	Ohio
Oklahoma	1,464,800.55	3,003,684.98	388.1	22.0	357,640.14	27.5	14.0	1,172,741.58	617,029.12	57.6	21.1	2,661,538.37	348.8	22.0	699,786.75	68.8	14.0	Oklahoma
Oregon	1,314,675.32	1,327,846.88	71.2	9.2	242,118.11	8.2		508,984.83	325,162.75	16.5	32.6	1,287,921.20	71.2	9.2	282,043.79	8.2		Oregon
Pennsylvania	2,813,520.42	4,525,930.97	276.2		2,096,799.98	133.5		2,575,911.67	2,253,430.31	153.1	3.0	5,072,770.44	312.2		1,550,960.51	97.5		Pennsylvania
Rhode Island	644,887.53	389,422.41	24.2		138,825.00	9.2		295,987.46	227,205.00	15.1		489,412.41	30.8		38,835.00	2.6		Rhode Island
South Carolina	153,714.66	2,659,985.16	263.1	129.1	377,000.00	38.4	43.8	805,153.91	1,198,355.38	70.7	7.7	2,106,384.41	225.5	95.0	930,601.75	74.0	77.9	South Carolina
South Dakota	900,294.50	2,258,582.25	629.8	122.4	265,882.37	95.5	47.8	885,143.43	678,550.24	232.0	55.5	2,235,190.96	565.9	154.6	289,273.66	59.2	15.4	South Dakota
Tennessee	832,337.02	3,128,728.14	210.8	23.8	1,404,251.65	36.1	84.3	685,283.53	1,590,594.64	96.3	38.5	2,805,194.36	180.1	23.8	1,927,785.43	66.8	84.3	Tennessee
Texas	6,188,200.60	6,168,325.15	431.3	224.0	1,455,687.46	137.5	98.6	3,239,453.30	4,227,106.34	355.8	163.2	6,297,206.80	442.0	280.8	1,326,805.81	126.8	61.8	Texas
Utah	601,204.18	1,677,878.04	133.9	14.5	344,705.72	33.1		986,739.66	1,122,910.11	128.8		1,472,082.27	118.1	14.5	550,501.49	48.9		Utah
Vermont	351,589.78	446,721.78	28.8		48,140.00	4.4		673,425.91	804,449.43	42.8		446,721.78	28.8		48,140.00	4.4		Vermont
Virginia	646,424.96	1,531,148.07	77.7	4.0	842,658.64	69.4	8.4	1,192,447.98	824,401.18	51.7		1,529,489.58	77.9	4.0	844,317.13	89.2	6.4	Virginia
Washington	948,567.73	1,134,600.00	83.6		784,000.00	49.4	18.1	427,106.00	1,308,714.32	62.1		1,174,600.00	90.2		744,000.00	42.8	18.1	Washington
West Virginia	767,601.07	1,969,333.43	178.2	4.0	67,899.94	4.4		971,103.42	1,581,360.55	110.6	8.0	1,966,258.94	176.2	4.0	80,974.43	4.4		West Virginia
Wisconsin	3,142,966.69	2,231,821.76	190.9	18.6	577,000.00	44.9	5.1	2,951,035.32	3,373,834.65	274.0	25.4	2,095,567.78	180.5	18.6	713,254.00	55.2	5.1	Wisconsin
Wyoming	873,194.16	1,322,970.11	217.4	84.2	52,928.57			838,878.11	1,051,830.11	102.8	54.9	1,287,375.13	205.2	64.2	88,522.55	12.2		Wyoming
Hawaii	1,121,742.78	337,110.89	18.8					290,925.27	275,109.33	14.1		278,727.46	15.8		60,383.43	3.2		Hawaii
TOTALS	84,116,119.45	126,488,015.43	11,510.8	1,725.3	28,725,350.11	2,363.5	832.0	64,078,747.38	68,289,824.77	8,592.5	1,686.6	122,913,480.45	11,489.0	1,733.9	32,297,885.09	2,385.3	823.4	TOTALS

* Includes projects reported completed (final vouchers not yet paid) totaling: Federal aid, $ 38,351,738.01 Mileage: Original 3,178.9 Stage 607.4

COST OF CABLE-WAY FOR ZION PARK GRADING CAMP

COMPILED FROM A REPORT SUBMITTED BY P. J. TRONSON
OF THE DIVISION OF MANAGEMENT

(NOT FOR RELEASE)

BECAUSE THE CONSTRUCTION CAMP, WHICH WAS LOCATED WITHIN EASY WALKING DISTANCE OF THE TUNNEL AND GRADING WORK ON THE ZION NATIONAL PARK PROJECT IN UTAH, WAS INACCESSIBLE TO TRAVEL FROM THE OUTSIDE, IT WAS NECESSARY TO BUILD A CABLE-WAY SHOWN IN THE ACCOMPANYING SKETCH, TO ELEVATE SUPPLIES AND MATERIALS ABOUT 400 FEET UP THE SIDE OF THE CANYON. THE DESCRIPTION AND COSTS OF CONSTRUCTING THE CABLE-WAY, WHICH COVERS A HORIZONTAL DISTANCE OF APPROXIMATELY 800 FEET, FOLLOW:

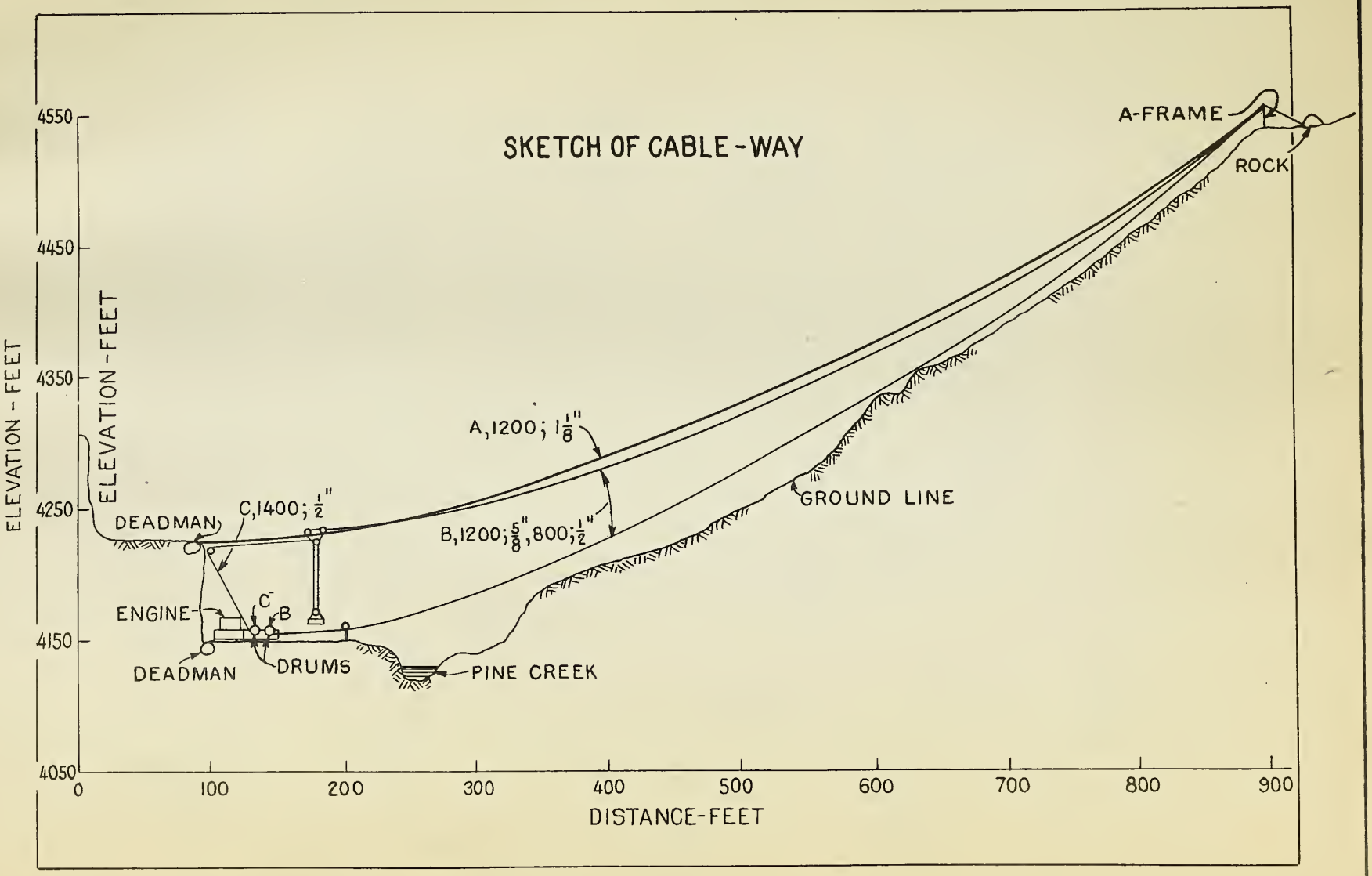
DESCRIPTION OF CABLE-WAY

THE TOTAL LENGTH OF THE MAIN 1-1/8-INCH CARRIER CABLE USED IN THE CONSTRUCTION WAS 1,200 FEET. TWO SMALLER CABLES OPERATE THE CARRIER WHICH RUNS ON THE MAIN CARRIER CABLE. A 35-HORSE POWER NOVO STATIONARY ENGINE WITH TWO DRUMS WAS USED TO CONTROL THE OPERATING CABLES. THE HOISTING CABLE CONSISTED OF 1,200 FEET OF 5/8-INCH AND 800 FEET OF 1/2-INCH CABLE, AND THE PULL-BACK CABLE WAS 1,400 FEET IN LENGTH. AT THE UPPER END, THE 1-1/8-INCH MAIN CARRIER CABLE WAS PASSED OVER AN A-FRAME AND ANCHORED TO A LARGE ROCK, AND AT THE BOTTOM IT WAS FASTENED TO A "DEADMAN", FIXED IN THE TOP OF THE CLIFF, ABOUT 75 FEET ABOVE WHERE THE CARRIER WAS LOADED. WHEN THE PULL-BACK CABLE IS RELEASED, THE CARRIER DESCENDS PREPARATORY TO LOADING OR UN-LOADING. MATERIALS ARE TRANSPORTED EITHER BY PLACING IN A 3-1/2-FOOT BY 8-FOOT BOX PROVIDED FOR THE PURPOSE, OR BY PICKING THEM UP DIRECTLY WITH THE LIFTING HOOK.

THE METHOD OF CONSTRUCTION CONSISTED IN PULLING THE 5/8-INCH CABLE TO THE TOP BY HAND, PASSING IT OVER THE PULLEY AND BACK TO THE HOISTING ENGINE SO THAT THE LARGE CABLE AND OTHER MATERIALS COULD BE HAULED TO THE TOP BY THE POWER UNIT.

COST DATA

THE INFORMATION AS TO THE COST OF THE ENGINE, CABLES, AND LABOR WERE OBTAINED FROM THE BOOKS OF THE CONTRACTING COMPANY. THE COSTS OF DISMANTLING AND DEPRECIATION WERE ESTIMATED.


SKETCH OF CABLE-WAY
ELEVATION - FEET
ELEVATION-FEET
4550
4450
4350
4250
4150
4050
0
100
200
300
400
500
600
700
800
900
DISTANCE-FEET
A-FRAME
ROCK
A,1200; 1 1/8"
B,1200; 5/8", 800; 1/2"
C,1400; 1/2"
DEADMAN
ENGINE
C
B
DEADMAN
DRUMS
PINE CREEK
GROUND LINE

Cost of Construction of Cable-Way

Cost of Materials:

Cost of 35-H.P. Novo donkey engine.....	$1,200.00	
Freight and delivery.....	120.00	
Sub-total		$1,320.00
Cost of cables:		
1,200 lineal feet of 1-1/8-inch.....	351.00	
1,200 do do do 5/8-inch.....	182.00	
2,400 do do do 1/2-inch.....	268.00	
Freight and delivery.....	230.00	
Sub-total		1,031.00
Cost of lumber, poles, etc., delivered		170.00
Total cost of materials		$2,521.00

Cost of Labor (for 5-day construction period):

1 foreman - 5 days @ $7.50.....	37,50	
1 carpenter - 5 do @ 5.00.....	25.00	
1 mechanic - 5 do @ 5.00.....	25.00	
4 laborers - 5 do @ 3.50.....	70.00	
Total cost of labor		157.50
Total cost of construction....		$2,678.50

The cost of operating the cable-way per day was $17.76 segregated as follows:

1 donkey operator.....	$ 5.00
3 laborers @ $3.50.....	10.50
9 gallons gasoline @ $0.24	2.16
Oil.....	0.10
Total cost of one day's operation....	$17.76

The time consumed per load varied from 9 to 20 minutes, and the maximum weight carried was 1,800 pounds. For an average round trip of the carrier of 12 minutes, the cost per load per 8-hour day based upon the foregoing figures would be

$$\frac{12}{60} \times \$17.76 \times 1/8 = \$0.44$$

The overhead cost may be considered as the total cost of the cable-way in place, plus the cost of dismantling, less the salvage value of the equipment at the end of 6 months of operation. The cost of dismantling is estimated at 1/2 the cost of the construction labor, and the salvage value of all the equipment at 80 per cent of the new price of the engine and cables, as follows:

$$\text{Overhead per day} = \frac{\$2,678 + \$79 - \$1,600}{180 \text{ days}} = \$6.42$$

$$\text{Overhead per load} = \frac{\$6.42}{40} = \$0.16$$

$$\text{Total cost per load} = \$0.44 + \$0.16 = \$0.60$$

NECESSARY APPROACHES CONSTITUTE PART OF A BRIDGE

The attitude of the Bureau, as to whether an approach should be considered as constituting a part of a bridge, was expressed affirmatively in answer to a query made by the State Highway Department concerning the status of a proposed State-owned toll bridge across the Red River near Fulton, Ark. In this case the main bridge across the river required an embankment approach, together with 4 bridge openings, each of more than 20 feet clear span, which extended southwestward for a distance of 2 miles across an overflow area covered annually to an average depth of 9 feet with flood waters from the Red River. This long approach was necessary to connect the bridge over the main channel with high ground so that it would be available for travel for 12 months in the year.

The Bureau held that this proposed embankment with the four bridge openings could properly be regarded as constituting an approach to the bridge across the main channel of the river, and as such it would be eligible for Federal aid to the extent of 50 per cent of its cost. Legal citations were given to show that it is well established by court decisions that necessary approaches should be considered as part of a bridge where the main bridge would be inaccessible to traffic without the approach.

UNITED STATES DEPARTMENT OF AGRICULTURE
BUREAU OF PUBLIC ROADS

MV-1 (1927)
R.S.A.

MOTOR VEHICLE REGISTRATIONS, 1927 1/
(CALENDAR YEAR) 2/

(COMPILED FROM REPORTS OF STATE AUTHORITIES)

STATES AND DISTRICT OF COLUMBIA	3/ 1927-REGISTERED MOTOR VEHICLES, INDIVIDUALLY & COMMERCIALLY OWNED			OTHER REGISTERED VEHICLES		TAX-EXEMPT OFFICIAL MOTOR CARS AND MOTORCYCLES			NUMBER OF LICENSES, OR PERMITS (AUTOS)			1926 GRAND TOTAL REGISTERED MOTOR CARS AND TRUCKS	YEAR'S CHANGE IN MOTOR VEHICLE REGISTRATIONS		STATES AND DISTRICT OF COLUMBIA
	GRAND TOTAL REGISTERED MOTOR CARS AND TRUCKS	PASSENGER AUTOMOBILES TAXIS AND BUSSES	MOTOR TRUCKS & ROAD TRACTORS	TRAILERS 4/	MOTOR-CYCLES	U.S. CARS	STATE AND LOCAL CARS	MOTOR-CYCLES (OFFIC.)	DEALERS	OPERATORS	CHAUFFERS		NUMBER, INCREASE OR DECREASE (-)	PER CENT	
ALABAMA	243,539	211,633	31,906	1,472	420	167	-	-	3,919	-	1,630	225,930	17,609	7.8	ALABAMA
ARIZONA	81,047	79,802	1,245	-	271	176	815	-	212	400	401	73,682	7,365	10.0	ARIZONA
ARKANSAS	206,568	174,524	32,044	1,977	303	39	736	21	479	-	4,932	209,419	-(2,851)	- 1.4	ARKANSAS
CALIFORNIA	1,693,195	5/ 1,479,411	5/ 213,784	34,126	9,444	1,217	6/ 23,214	461	3,270	129,792	111,193	1,600,475	92,720	5.8	CALIFORNIA
COLORADO	266,492	245,107	23,385	88	1,362	283	-	-	-	-	-	248,613	19,879	8.0	COLORADO
CONNECTICUT	281,521	238,509	43,012	150	3,083	71	2,459	281	5,600	7/ 323,881	-	263,235	18,286	6.9	CONNECTICUT
DELAWARE	47,124	38,037	9,087	243	313	44	-	-	438	7/ 51,945	-	44,834	2,290	5.1	DELAWARE
FLORIDA	394,734	332,979	8/ 61,755	8/ 1,000	1,243	75	3,451	206	2,547	-	4,949	401,562	-(6,828)	- 1.7	FLORIDA
GEORGIA	300,635	262,630	38,005	-	909	934	-	-	792	-	2,553	277,468	23,167	8.4	GEORGIA
IDAHO	101,336	91,306	10,030	186	440	103	1,210	-	406	-	476	94,760	6,576	6.9	IDAHO
ILLINOIS	1,438,985	5/ 1,254,421	5/ 184,564	3,489	6,135	979	10/ -	-	4,594	-	100,398	1,370,503	68,482	5.0	ILLINOIS
INDIANA	813,637	697,359	116,278	6,599	3,501	3,184	4,083	-	2,584		39,212	772,326	41,311	5.3	INDIANA
IOWA	704,203	649,309	54,894	170	1,787	44	2,827	-	2,531	2,964	-	698,998	5,205	0.7	IOWA
KANSAS	501,901	447,273	54,628	-	1,218	192	2,360	-	2,525	-	-	491,276	10,625	2.2	KANSAS
KENTUCKY	285,621	255,892	29,729	-	693	90	1,742	59	1,051	-	8,410	281,557	4,064	1.4	KENTUCKY
LOUISIANA	255,000	216,000	39,000	3,500	510	209	-	-	487	-	14,177	239,500	15,500	6.5	LOUISIANA
MAINE	163,823	132,927	30,596	1,012	1,245	64	1,173	66	1,297	186,975	7,309	151,486	12,137	8.0	MAINE
MARYLAND	270,935	265,768	5,167	516	2,415	1,969	950	-	6,788	33,614	40,679	252,852	18,083	7.1	MARYLAND
MASSACHUSETTS	594,107	614,359	79,748	443	7,245	556	800	-	2,046	102,285	-	690,190	3,917	0.6	MASSACHUSETTS
MICHIGAN	1,154,773	5/ 998,781	5/ 155,992	17,853	3,585	371	10/ -	-	2,128	220,954	76,463	1,118,785	35,988	3.2	MICHIGAN
MINNESOTA	546,682	565,401	81,281	3,286	2,295	252	2,450	-	2,087	-	17,988	630,285	16,397	2.6	MINNESOTA
MISSISSIPPI	215,043	196,239	21,804	2,317	83	74	-	-	656	-	-	205,200	12,843	6.2	MISSISSIPPI
MISSOURI	682,419	610,303	72,116	1,739	1,835	311	1,428	3	2,367	5,230	26,269	654,554	27,865	4.2	MISSOURI
MONTANA	112,735	94,733	16,002	-	156	229	1,158	9	481	-	338	103,956	8,777	8.4	MONTANA
NEBRASKA	373,912	5/ 342,357	5/ 31,555	1,828	1,109	226	1,029	-	3,052	-	-	366,773	7,139	1.9	NEBRASKA
NEVADA	25,776	20,414	5,362	104	99	42	-	-	533	-	-	24,014	1,762	7.3	NEVADA
NEW HAMPSHIRE	96,009	83,415	12,594	565	1,387	22	-	-	541	73,474	43,242	89,001	7,008	7.9	NEW HAMPSHIRE
NEW JERSEY	712,396	586,510	125,886	1,827	6,857	708	6,294	913	2,917	814,593	6,422	651,415	60,981	9.4	NEW JERSEY
NEW MEXICO	59,291	57,643	1,648	193	170	156	630	-	170	-	-	54,996	4,295	7.8	NEW MEXICO
NEW YORK	1,937,918	1,624,535	313,383	6,936	16,347	1,666	12,116	1,262	4,482	1,701,383	616,025	1,815,434	122,484	5.7	NEW YORK
NORTH CAROLINA	9/ 430,499	390,223	40,276	1,616	1,194	429	5,419	-	6,330	-	-	8/ 385,047	45,452	11.8	NORTH CAROLINA
NORTH DAKOTA	160,701	144,830	15,871	-	277	3	-	-	-	-	-	157,822	2,879	1.8	NORTH DAKOTA
OHIO	1,570,734	1,374,402	196,332	12,134	7,749	2,362	9,067	-	26,997	-	-	1,460,246	90,488	6.1	OHIO
OKLAHOMA	503,126	437,776	65,350	-	1,200	530	-	-	-	-	-	499,938	3,188	0.6	OKLAHOMA
OREGON	244,572	223,582	20,990	-	2,030	141	1,132	-	604	39,355	15,769	233,568	11,004	4.7	OREGON
PENNSYLVANIA	1,554,915	1,354,548	200,367	3,780	14,267	1,383	942	-	28,347	1,564,161	-	1,455,184	99,731	6.9	PENNSYLVANIA
RHODE ISLAND	118,014	98,861	19,153	57	1,250	56	671	87	300	136,860	-	110,746	7,268	6.6	RHODE ISLAND
SOUTH CAROLINA	199,635	179,571	20,064	1,387	325	91	-	-	509	-	-	161,189	18,446	10.2	SOUTH CAROLINA
SOUTH DAKOTA	169,552	153,019	16,533	-	229	85	1,019	-	-	-	-	168,230	1,322	0.8	SOUTH DAKOTA
TENNESSEE	294,567	269,086	25,481	4/ -	904	132	2,914	-	632	-	-	279,639	14,928	5.3	TENNESSEE
TEXAS	1,111,407	996,397	115,010	9,826	3,081	2,505	-	-	3,323	41,775	11,490	1,049,869	61,538	5.9	TEXAS
UTAH 11/	93,976	80,731	13,245	-	531	173	-	-	-	-	-	85,380	8,596	10.1	UTAH
VERMONT	79,527	73,308	6,219	-	501	28	-	-	658	-	-	74,063	5,464	7.4	VERMONT
VIRGINIA	337,607	288,666	48,941	466	2,025	1,141	-	253	2,950	-	8,450	322,614	14,993	4.6	VIRGINIA
WASHINGTON	384,583	326,667	57,916	2,072	2,501	637	4,682	144	4,879	397,975	-	363,279	21,304	5.9	WASHINGTON
WEST VIRGINIA	245,519	217,689	28,130	392	1,431	33	1,862	-	13,701	61,600	25,200	227,836	17,983	7.9	WEST VIRGINIA
WISCONSIN	698,289	609,795	88,494	-	2,963	92	668	79	2,949	-	-	662,282	36,007	5.4	WISCONSIN
WYOMING	51,955	45,539	6,416	-	134	209	257	-	306	-	-	49,883	2,072	4.2	WYOMING
DIST. OF COL.	111,680	98,162	13,518	-	1,151	837	2,131	212	1,958	57,014	1,581	111,497	183	0.2	DIST. OF COL.
TOTAL	23,127,315	20,230,429	2,896,886	123,451	120,303	12/ 33,179	101,689	4,056	155,444	5,948,430	1,185,576	22,001,393	1,125,922	5.1	TOTAL

NOTE:-

1/ THIS TABLE LISTS ONLY THE NUMBER OF MOTOR VEHICLE REGISTRATIONS, LICENSES AND PERMITS: FOR THE FINANCIAL STATEMENT SEE TABLE MV-2 (1927).

2/ ALL STATES REPORT CALENDAR YEAR TOTALS EXCEPT NORTH CAROLINA WHICH REPORTS ONLY 6 MONTHS TOTALS (JULY 1 TO DECEMBER 31), AS THEIR FISCAL YEAR FOR REGISTRATION ENDED JUNE 30.

3/ THE FIRST 3 COLUMNS RECORD THE REGULARLY REGISTERED MOTOR CARS AND TRUCKS WHICH PAY THE REGULAR LICENSE FEES ELIMINATING REREGISTRATIONS AND NON-RESIDENT OWNERS' CARS. THE GRAND TOTAL OF FIRST COLUMN IS SUBDIVIDED AS INDICATED: PASSENGER SERVICE CARS BEING SHOWN IN SECOND COLUMN AND FREIGHT SERVICE, TRUCKS AND ROAD TRACTORS, IN THE THIRD COLUMN. SOME STATES, AS NOTED, CLASSIFY BUSSES WITH TRUCKS. SPECIAL TABLES SHOWING THE EXTENT AND KINDS OF BUS SERVICE FROM NON-GOVERNMENT SOURCES CAN BE FOUND IN THE FEBRUARY 1928 ISSUE OF "BUS TRANSPORTATION."

4/ SOME STATES INCLUDE TRAILERS WITH MOTOR TRUCKS, AS NOTED: OTHER STATES DO NOT REGISTER SAME.

5/ BUSSES INCLUDED WITH TRUCKS.

6/ INCLUDES OVER 8,000 CARS AND TRUCKS OF PUBLIC SERVICE CORPORATIONS EXEMPT BY LAW.

7/ INCLUDES CHAUFFEURS.

8/ TRAILERS (1,000 ESTIMATED) EXCLUDED FROM TRUCKS.

9/ LAST SIX MONTHS OF YEAR REGISTRATION ONLY AS YEAR COMMENCED JULY 1.

10/ OFFICIAL CARS INCLUDED IN FIRST THREE COLUMNS AS $2.00 FEE CHARGED.

11/ PRELIMINARY DATA, SUBJECT TO REVISION.

12/ AS REPORTED IN 1925 BY BUREAU OF BUDGET, AND INCLUDES 7,959 "CARS-AT-LARGE", NOT ALLOCATED TO ANY STATE.

UNITED STATES DEPARTMENT OF AGRICULTURE
BUREAU OF PUBLIC ROADS

MV-2 (1927)
R.S.A.

MOTOR VEHICLE REGISTRATION FEES, LICENSES, PERMITS, FINES, ETC. 1927
ALSO GROSS RECEIPTS AND DISPOSITION OF FUND 1/
(FOR CALENDAR YEAR) 2/

(COMPILED FROM REPORTS OF STATE AUTHORITIES)

STATES AND DISTRICT OF COLUMBIA	TOTAL GROSS RECEIPTS	REGISTRATION RECEIPTS 3/					MISCELLANEOUS RECEIPTS			DISPOSITION OF GROSS RECEIPTS					STATES AND DISTRICT OF COLUMBIA
		MOTOR CAR RECEIPTS			OTHER VEHICLES						FOR RURAL HIGHWAY PURPOSES				
		TOTAL FROM MOTOR CARS	PASSENGER CARS AND BUSSES	TRUCKS AND TRACTORS	TRAILERS	MOTOR-CYCLES	DEALERS' LICENSE	CHAUFFEUR AND OPERATOR PERMITS	OTHER MISCELLANEOUS	COLLECTION AND ADMINISTRATION	STATE HIGHWAYS	LOCAL ROADS	STATE AND COUNTY ROAD BONDS 4/	FOR OTHER PURPOSES	
ALABAMA	$ 3,127,000	$ 3,109,976	-	-	-	-	$ 3,919	$ 8,246	$ 4,859	$ 125,956	$ 843,850	$ 609,765	$ 1,547,429	-	ALABAMA
ARIZONA	454,429	443,084	-	-	-	$ 531	3,366	1,528	5,930	-	454,429	-	-	-	ARIZONA
ARKANSAS	3,652,272	3,619,482	-	-	-	-	5,469	23,338	13,983	73,246	805,700	476,095	(C) 2,307,231	-	ARKANSAS
CALIFORNIA	8,796,348	7,492,228	$ 4,851,767	$ 2,640,461	$ 258,980	33,735	45,858	290,323	675,224	1,243,924	3,775,453	3,775,453	-	6/ 1,518	CALIFORNIA
COLORADO	1,600,222	1,499,784	1,248,325	251,459	1,410	2,303	-	-	96,725	80,011	760,106	760,105	-	-	COLORADO
CONNECTICUT	6,805,664	5,196,922	3,894,856	1,302,066	274	14,121	72,776	979,629	541,942	-	6,805,664	-	-	-	CONNECTICUT
DELAWARE	846,289	673,682	489,004	184,678	3,619	1,284	7,685	158,637	1,382	-	846,289	-	-	-	DELAWARE
FLORIDA	5,692,128	5,600,653	4,077,130	1,523,523	-	5,971	33,860	9,325	42,319	584,154	3,829,579	1,276,526	-	6/ 1,969	FLORIDA
GEORGIA	3,712,978	3,658,646	3,039,048	619,598	-	4,222	40,260	4,998	4,852	114,730	3,598,248	-	-	-	GEORGIA
IDAHO	1,502,185	1,458,694	1,211,031	247,663	3,793	2,195	24,225	952	12,326	-	156,269	1,345,916	-	-	IDAHO
ILLINOIS	14,839,593	13,929,037	10,635,412	3,293,625	61,930	20,644	89,860	353,472	384,650	-	9,191,015	-	5,606,010	7/ 42,568	ILLINOIS
INDIANA	5,430,806	5,069,422	3,914,846	1,154,576	31,406	6,414	52,030	36,955	234,579	251,341	5,179,465	-	-	-	INDIANA
IOWA	10,371,639	9,742,671	8,785,993	956,678	3,322	8,354	78,604	77,693	463,155	414,070	9,604,549	353,080	-	-	IOWA
KANSAS *	6,518,622	-	-	-	-	-	-	-	-	252,822	3,934,480	2,331,320	-	-	KANSAS *
KENTUCKY	4,365,062	4,304,022	3,375,500	928,522	-	5,262	29,888	16,143	9,747	224,289	3,676,512	464,261	-	-	KENTUCKY
LOUISIANA *	4,199,347	-	-	-	-	-	-	-	-	-	4,199,347	-	-	-	LOUISIANA *
MAINE	2,558,046	1,980,811	1,535,384	445,427	3,375	6,733	48,683	405,848	112,596	201,546	8/ 1,370,251	-	986,249	-	MAINE
MARYLAND	2,987,912	2,347,223	2,070,731	276,492	16,029	10,933	31,349	189,665	392,713	298,791	2,151,297	-	-	9/ 537,824	MARYLAND
MASSACHUSETTS	13,136,442	10,557,782	7,318,651	3,239,131	19,468	32,177	60,990	1,628,188	837,837	1,266,525	10,821,659	-	1,048,258	-	MASSACHUSETTS
MICHIGAN	17,984,210	16,527,569	12,464,719	4,062,850	200,949	13,658	94,568	249,812	897,654	10/ 1,117,214	9,784,936	6,000,000	1,082,060	-	MICHIGAN
MINNESOTA	10,233,644	10,110,633	8,210,901	1,899,732	14,277	8,781	38,535	20,330	41,088	-	6,449,904	-	(C) 3,763,410	7/ 20,330	MINNESOTA
MISSISSIPPI	2,556,627	2,220,942	-	-	-	-	-	-	335,685	125,602	202,077	2,228,948	-	-	MISSISSIPPI
MISSOURI *	6,253,009	-	-	-	-	-	-	-	-	401,822	11/ 2,715,162	-	5,136,025	-	MISSOURI *
MONTANA	1,136,103	1,039,235	855,491	183,744	-	1,087	37,078	676	58,027	30,858	-	1,105,245	-	-	MONTANA
NEBRASKA	3,740,553	3,574,994	3,016,632	558,362	5,079	3,728	43,319	-	112,833	111,983	1,088,571	2,539,999	-	-	NEBRASKA
NEVADA	229,839	229,124	-	-	-	495	-	-	220	9,872	89,870	-	130,097	-	NEBRASKA
NEW HAMPSHIRE	1,915,291	1,536,502	-	-	-	7,540	28,690	264,055	78,504	156,044	1,759,247	-	-	-	NEW HAMPSHIRE
NEW JERSEY	12,963,541	9,293,964	5,680,418	3,613,546	66,552	13,714	72,775	2,450,201	1,066,335	532,755	7,900,000	4,530,786	-	-	NEW JERSEY
NEW MEXICO	528,193	502,447	444,401	58,046	2,621	527	8,759	-	13,839	53,795	316,265	158,133	-	-	NEW MEXICO
NEW YORK	31,757,889	28,375,610	20,140,775	8,234,835	76,825	70,654	188,907	2,465,776	580,117	1,922,049	22,072,465	4,743,169	-	12/ 3,020,206	NEW YORK
NORTH CAROLINA *	13/ 3,246,853	-	-	-	-	-	-	-	-	14/ 150,000	14/ 2,331,853	-	14/ 765,000	-	NORTH CAROLINA *
NORTH DAKOTA	1,595,442	1,570,120	1,338,798	231,322	-	1,362	-	-	23,960	170,000	15/ 777,721	647,721	-	-	NORTH DAKOTA
OHIO	10,745,471	10,398,977	-	-	-	23,014	124,302	9,979	189,199	366,883	5,128,532	5,250,056	-	-	OHIO
OKLAHOMA *	5,753,912	-	-	-	-	-	-	-	-	-	2,301,565	3,452,347	-	-	OKLAHOMA *
OREGON	6,527,341	6,325,637	5,408,300	917,337	-	11,209	29,312	66,636	94,547	367,341	1,356,800	-	(C) 4,803,200	-	OREGON
PENNSYLVANIA	26,017,495	19,693,780	13,734,183	5,959,597	41,031	35,775	330,316	2,325,947	3,590,646	1,565,703	15,048,520	1,501,550	7,800,447	16/ 101,275	PENNSYLVANIA
RHODE ISLAND	2,093,309	1,693,999	1,265,199	428,800	1,034	4,438	13,440	273,720	106,678	179,304	1,914,005	-	-	-	RHODE ISLAND
SOUTH CAROLINA	2,187,250	2,078,546	1,771,878	306,668	22,386	1,293	23,457	-	61,608	-	2,178,290	9,000	-	-	SOUTH CAROLINA
SOUTH DAKOTA	2,491,581	2,472,926	2,142,266	330,660	-	1,072	-	-	17,983	67,463	1,236,999	1,187,519	-	-	SOUTH DAKOTA
TENNESSEE *	3,765,775	-	-	-	-	-	-	-	-	92,850	3,672,925	-	-	-	TENNESSEE *
TEXAS	15,626,531	15,045,978	12,583,812	2,462,166	117,998	12,024	55,872	69,678	324,981	598,805	10,884,403	4,143,323	-	-	TEXAS
UTAH *	672,403	-	-	-	-	-	-	-	-	132,000	-	-	540,403	-	UTAH *
VERMONT	1,878,550	1,610,899	1,385,081	225,818	-	4,146	30,350	203,187	30,368	119,619	1,759,331	-	-	-	VERMONT
VIRGINIA	5,235,853	4,840,384	4,143,391	696,993	4,692	6,863	61,354	39,445	283,215	257,790	4,978,163	-	-	-	VIRGINIA
WASHINGTON	6,462,354	5,930,338	4,606,495	1,323,843	44,869	13,454	86,833	399,517	7,343	248,877	4,940,884	892,976	-	17/ 399,517	WASHINGTON
WEST VIRGINIA	4,004,391	3,605,153	3,084,218	520,935	3,396	5,587	54,089	136,696	199,470	256,888	1,390,324	-	2,320,000	16/ 37,179	WEST VIRGINIA
WISCONSIN	9,772,887	9,518,220	7,872,419	1,645,801	-	17,655	36,354	103,655	97,003	550,000	5,428,287	3,794,600	-	-	WISCONSIN
WYOMING	525,807	515,019	404,275	110,744	-	638	9,500	-	650	-	274,028	-	251,779	-	WYOMING
DIST. OF COL.	531,044	120,279	99,026	21,253	-	1,151	1,958	185,271	222,385	159,388	-	-	-	18/ 371,656	DIST. OF COL.
DETAILED TOTALS 3/	268,651,211	239,515,394	19/	19/	1,005,315	412,744	1,999,180	13,449,421	12,269,157	-	-	-	-	-	DETAILED TOTALS 3/
GRAND TOTAL	301,061,132	-	-	-	-	-	-	-	-	14,876,410	189,985,269	53,577,693	36,087,598	4,533,942	GRAND TOTAL

NOTE:-

1/ FINANCIAL DATA ONLY ON THIS TABLE: FOR NUMBER OF REGISTRATIONS, LICENSES, ETC. SEE TABLE MV-1 (1927).
2/ ALL STATES REPORT AMOUNTS FOR CALENDAR YEAR EXCEPT NORTH CAROLINA WHICH REPORTS FOR SIX MONTHS JULY 1 TO DECEMBER 31 FOR REGISTRATION FOR LAST HALF OF YEAR.
3/ THE STATES STARRED DO NOT SHOW COMPLETE RECEIPT DETAILS AND ARE NOT INCLUDED IN TOTALS UNDER FIRST NINE RECEIPT COLUMNS, SHOWN AS "DETAILED TOTAL". THE DISPOSITION OF TOTAL GROSS RECEIPTS IS SHOWN FOR ALL STATES AND SUCH TOTALS ARE SHOWN IN THE LAST FIVE COLUMNS.
4/ COUNTY BOND PAYMENTS, MARKED (C), IN ARKANSAS AMOUNT TO $2,124,118, IN OREGON $1,540,000 AND IN MICHIGAN THE FULL AMOUNT SHOWN.
5/ UNDISTRIBUTED RECEIPTS.
6/ UNPAID CLAIMS.
7/ TO STATE GENERAL FUND.
8/ INCLUDES $140,000 FOR STATE POLICE.
9/ FOR BALTIMORE CITY STREETS.
10/ EXCLUDES PART OF COLLECTION EXPENSE PAID FROM STATE APPROPRIATIONS.
11/ INCLUDES $1,006,128 FOR ADMINISTRATION OF STATE HIGHWAY DEPARTMENT.
12/ NEW YORK CITY GENERAL FUND.
13/ SECOND HALF OF YEAR ONLY AS FISCAL YEAR CHANGED TO CALENDAR YEAR IN 1928.
14/ GROSS RECEIPTS (WITH MOTOR FUEL TAXES) FORM STATE HIGHWAY FUND USED FOR: (a) ADMINISTRATION (a) FINANCING HIGHWAY OBLIGATIONS (b) MAINTENANCE AND CONSTRUCTION OF STATE HIGHWAY SYSTEM. THE DATA IS ESTIMATED PRO-RATA HERE).
15/ INCLUDES $130,000 OF SPECIAL BRIDGE FUND.
16/ REFUNDS.
17/ HIGHWAY SAFETY FUND DERIVED FROM OPERATORS' PERMITS.
18/ FOR REPAIR AND CONSTRUCTION OF WASHINGTON STREETS, IF SO APPROPRIATED BY CONGRESS.
19/ ONLY 35 STATES REPORT DETAILS OF MOTOR CAR REGISTRATION RECEIPTS, WHICH TOTAL HERE AS FOLLOWS:- PASSENGER CARS AND BUSSES $167,100,356, TRUCKS AND TRACTORS $50,856,961 MAKING A COMBINED TOTAL OF $217,957,307.

UNITED STATES DEPARTMENT OF AGRICULTURE
BUREAU OF PUBLIC ROADS

GASOLINE TAXES, 1927

TOTAL TAXES EARNED ON MOTOR VEHICLE FUEL, ETC., REFUNDS, DISPOSITION OF FUND, AND GALLONS TAXED

(FROM REPORTS OF STATE AUTHORITIES)

STATES AND DISTRICT OF COLUMBIA	GROSS TAX ASSESSED PRIOR TO DEDUCTION OF REFUNDS	EXEMPTION REFUNDS: (DEDUCTED FROM GROSS TAX)	TOTAL TAX EARNINGS ON FUEL FOR MOTOR VEHICLES (1)	OTHER RECEIPTS, UNDER TAX LAW (LICENSES)	GRAND TOTAL EARNINGS (TAX AND OTHER RECEIPTS	DISPOSITION OF GRAND TOTAL EARNINGS: COLLECTION COSTS (2)	CONSTRUCTION & MAINTENANCE ON RURAL ROADS: STATE HIGHWAY	CONSTRUCTION & MAINTENANCE ON RURAL ROADS: LOCAL ROADS	STATE (B) AND COUNTY (C) ROAD BOND PAYMENTS	FOR MISCELLANEOUS PURPOSES	TAX RATES, 1927: CENTS PER GALLON: JAN 1ST	TAX RATES, 1927: CENTS PER GALLON: DEC 31	TAX RATES, 1927: DATE OF RATE CHANGE	NET GALLONS OF GASOLINE TAXED, AND USED BY MOTOR VEHICLES	STATES AND DISTRICT OF COLUMBIA
ALABAMA	$ 6,908,986		$ 5,908,986	-	$ 6,908,886	$ 23,542	$ 2,618,865	$ 2,962,829	$ (3)(8) 303,760	-	2	4	1/25	149,620,507	ALABAMA
ARIZONA	1,646,375	$ 257,545	1,388,830	-	1,388,830	-	820,691	768,139	-	-	3	4	8/12	40,216,927	ARIZONA
ARKANSAS (4)			4,338,737	-	4,338,737	-	1,041,297	584,036	(5) 2,733,404	-	4	5	6/9	(8) 94,345,820	ARKANSAS
CALIFORNIA	24,453,585	1,986,502	22,467,083	-	22,467,083	41,782	13,168,714	9,266,607	-	-	2	3	7/29	928,748,702	CALIFORNIA
COLORADO	3,272,537	132,943	3,139,594	-	3,139,594	(7) 21,221	2,150,745	967,628	-	-	2	3	6/1	122,493,107	COLORADO
CONNECTICUT	3,054,906	-	3,054,906	$ 42,522	3,097,428	(8) -	3,097,428	-	-	-	2	2	-	152,745,302	CONNECTICUT
DELAWARE	681,466	18,307	662,159	-	662,158	(9) -	662,158	-	-	-	2	3	3/24	23,486,804	DELAWARE
FLORIDA	10,980,686	-	10,980,586	27,955	11,008,541	2,800	7,552,018	2,513,401	-	(10)$ 940,322	4	6	7/1	251,410,081	FLORIDA
GEORGIA	7,068,109	-	7,068,109	11,394	7,077,503	4,200	4,799,581	1,919,833	-	(11) 353,889	3½	4	9/1	192,103,248	GEORGIA
IDAHO	1,669,057	97,308	1,671,749	-	1,671,749	11,966	1,436,096	-	-	(12) 123,687	3	4	3/1	10,876,738	IDAHO
ILLINOIS (13)	6,248,009	48,500	6,199,509	-	6,199,509	25,000	3,087,256	(14) 3,087,254	(14)(C)-	-	0	(15)2	8/1	309,975,466	ILLINOIS
INDIANA	10,500,307	366,739	10,133,568	-	10,133,568	15,184	6,745,589	2,529,596	-	(15) 843,199	3	3	-	337,769,317	INDIANA
IOWA	7,612,106	363,892	7,248,214	-	7,248,214	67,756	1,833,000	3,666,000	-	(17) 1,691,459	2	3	7/4	288,619,674	IOWA
KANSAS	5,093,617	498,987	4,594,650	-	4,594,650	(18) -	1,850,720	743,930	-	-	2	2	-	229,732,510	KANSAS
KENTUCKY	5,913,396	-	5,913,396	-	5,913,396	11,700	5,901,696	-	-	-	5	5	-	118,267,918	KENTUCKY
LOUISIANA	3,034,056	-	3,034,056	-	3,034,056	-	3,034,056	-	-	-	2	2	-	151,702,807	LOUISIANA
MAINE	2,344,347	56,414	2,288,933	-	2,288,933	12,952	2,275,981	-	-	-	3	4	10/29	(19) 72,007,253	MAINE
MARYLAND	4,314,297	144,900	4,169,397	-	4,169,397	2,500	2,973,416	-	-	20) 1,193,481	2	4	4/1	118,336,211	MARYLAND
MASSACHUSETTS	NO TAX	-	-	-	-	-	-	-	-	-	-	0	No Tax	(21) -	MASSACHUSETTS
MICHIGAN	15,327,752	1,067,188	14,260,564	-	14,260,564	43,797	8,409,937	2,806,830	(8) 3,000,000	-	2	3	9/4	61,144,507	MICHIGAN
MINNESOTA	5,510,257	336,377	5,174,880	-	5,174,880	-	6,174,880	-	-	-	2	2	-	258,743,986	MINNESOTA
MISSISSIPPI	(22) 4,890,686	-	4,890,686	-	4,890,686	3,600	2,302,347	2,378,311	(23)(C) 206,428	-	4	4	-	3,342,686	MISSISSIPPI
MISSOURI	6,449,655	118,672	6,330,983	-	6,330,983	48,488	6,282,455	-	-	-	2	2	-	316,549,141	MISSOURI
MONTANA	1,601,621	165,223	1,436,398	-	1,436,398	(24) -	1,436,398	-	-	-	3	3	-	47,879,927	MONTANA
NEBRASKA	3,685,318	20,399	3,664,919	-	3,664,919	8,013	3,656,906	-	-	-	2	2	-	133,245,970	NEBRASKA
NEVADA	509,936	38,312	471,624	-	471,624	-	235,912	235,812	-	-	4	4	-	1,790,615	NEVADA
NEW HAMPSHIRE	1,291,499	22,592	1,268,907	-	1,268,907	-	1,268,907	-	-	-	2	(25)3	5/1	44,897,901	NEW HAMPSHIRE
NEW JERSEY	4,775,137	692,277	4,082,860	16,125	4,097,985	25,000	3,982,985	-	-	(26) 90,000	0	2	7/1	204,142,900	NEW JERSEY
NEW MEXICO	1,415,690	-	1,415,690	16,502	1,432,192	30,975	1,296,217	-	(9) 106,000	-	3	5	3/7	30,117,191	NEW MEXICO
NEW YORK	NO TAX	-	-	-	-	-	-	-	-	-	0	0	No Tax	(27) -	NEW YORK
NORTH CAROLINA	9,111,297	324,615	8,786,682	-	8,786,682	(28) 47,288	(28) 6,444,313	-	(28)(B) 2,295,081	-	4	4	-	219,667,060	NORTH CAROLINA
NORTH DAKOTA	1,673,633	398,068	1,275,565	858	1,276,423	26,000	1,210,000	-	-	(29) 41,423	2	2	-	63,778,243	NORTH DAKOTA
OHIO	20,476,688	565,207	19,910,481	-	19,910,481	-	11,998,462	7,812,029	-	-	2	3	5/25	752,028,064	OHIO
OKLAHOMA	7,224,276	26,320	7,197,956	-	7,197,956	(30) -	4,798,637	2,399,319	-	-	3	3	-	239,931,866	OKLAHOMA
OREGON	3,879,393	236,202	3,643,191	-	3,643,191	8,386	3,634,805	-	-	-	3	3	-	122,822,583	OREGON
PENNSYLVANIA	17,296,333	-	17,296,333	-	17,296,333	-	13,839,523	3,457,810	-	-	2	3	7/1	691,562,015	PENNSYLVANIA
RHODE ISLAND	915,959	-	915,959	-	916,959	(31) -	736,447	-	(8) 179,512	-	1	2	6/1	56,144,687	RHODE ISLAND
SOUTH CAROLINA	5,086,899	6,514	5,080,385	-	5,080,385	5,000	3,045,231	1,522,616	(C) 507,538	-	5	5	-	101,607,700	SOUTH CAROLINA
SOUTH DAKOTA	3,074,595	681,003	2,393,692	-	2,393,592	4,760	2,074,669	-	(8) 242,243	(32) 71,920	3	4	7/1	65,965,089	SOUTH DAKOTA
TENNESSEE	4,476,180	-	4,476,180	-	4,476,180	-	4,476,180	-	-	-	3	3	-	149,206,016	TENNESSEE
TEXAS	16,650,841	-	16,650,841	-	16,650,841	-	11,738,131	-	-	(33) 3,912,710	1	3	3/16	594,592,077	TEXAS
UTAH	1,461,261	-	1,461,261	428	1,461,689	6,376	943,814	-	(8) 512,500	-	3½	3½	-	41,773,559	UTAH
VERMONT	905,244	-	905,244	-	905,244	-	905,244	-	-	-	2	3	6/1	33,167,246	VERMONT
VIRGINIA	7,515,859	376,162	7,139,707	-	7,139,707	-	4,759,805	2,379,902	-	-	4½	(34)4½	-	158,423,951	VIRGINIA
WASHINGTON	4,086,891	265,453	3,821,438	-	3,821,438	(35) -	3,821,438	-	-	-	2	2	-	191,071,925	WASHINGTON
WEST VIRGINIA	3,897,644	103,576	3,794,068	13,254	3,807,322	-	3,807,322	-	(36)(B)-	-	3½	4	7/1	99,817,717	WEST VIRGINIA
WISCONSIN	6,271,738	244,624	6,027,114	-	6,027,114	8,982	2,214,939	3,368,279	-	(37) 433,914	2½	2	-	301,356,684	WISCONSIN
WYOMING	756,049	-	756,049	-	756,049	3,667	752,382	-	-	-	2½	3	3/1	25,884,393	WYOMING
DIST. OF COL.	1,155,104	7,310	1,148,794	-	1,148,794	-	-	-	-	(38) 1,148,794	2	2	-	57,439,721	DIST. OF COL.
TOTALS	-	-	258,838,813	128,038	268,966,851	499,933	192,096,503	65,440,161	10,086,456	10,844,798	AVER. 2.76	-	-	(39) 9,366,651,892	TOTALS

NOTES:

1/ THIS IS THE NET TAX AFTER DEDUCTION OF REFUNDS FOR EXEMPTIONS ACCORDING TO LAW AND REPRESENTS THE ACTUAL TAXES AVAILABLE FOR DISPOSAL; THE FIRST TWO COLUMNS SHOW ONLY THE PROCEDURE AND ARE NOT TOTALED, BEING OF MINOR IMPORTANCE.
2/ COLLECTION COSTS IN MANY STATES ARE PAID FROM OTHER STATE FUNDS AND WHEN AMOUNTS AND SOURCES ARE REPORTED NOTES ARE ENTERED BELOW.
3/ ON STATE HIGHWAY BONDS, SERIES G ONLY.
4/ TENTATIVE DATA, AS ACCOUNTS ARE TO BE AUDITED.
5/ INCLUDES $216,937 ON STATE HIGHWAY BONDS AND $2,516,487 ON LOCAL ROAD BONDS.
6/ ESTIMATE, BASED ON RATES, AND AMOUNTS RECEIVED.
7/ EXCLUDES $31,547 FROM GASOLINE INSPECTION FEE FUND.
8/ APPROXIMATELY $46,000 CHARGED TO MOTOR VEHICLE DEPARTMENT.
9/ APPROXIMATELY $60.00 CHARGED TO STATE TREASURY.
10/ FOR FREE PUBLIC SCHOOL FUND $616,125; FOR PERMANENT BUILDING FUND $308,057; AND BALANCE OF $16,140 IN STATE TREASURY.
11/ FOR STATE TREASURY.
12/ UNALLOTTED BALANCE.
13/ EARNINGS FOR LAST FIVE MONTHS OF YEAR ONLY.
14/ COUNTY BOND PAYMENTS INCLUDED IN LOCAL ROAD ALLOTMENTS.
15/ TAX DISCONTINUED FEBRUARY 25, 1928.
16/ FOR CITY STREETS.
17/ SPECIAL REFUNDS FOR RIGHTS OF WAY AND BRIDGES.
18/ FROM STATE GENERAL FUND.
19/ INCLUDES 2,770,705 GALLONS NOT CONSUMED BY MOTOR VEHICLES BUT TAXED 1 CENT PER GALLON.
20/ BALTIMORE CITY $743,042; GRADE CROSSING $450,439.
21/ ESTIMATED CONSUMPTION BASED ON MOTOR VEHICLE REGISTRATION, 310,000,000 GALLONS.
22/ INCLUDES $131,206 FROM EXTRA TAX IN HARRISON AND HANCOCK COUNTIES FOR SEA-WALL TO PROTECT STATE HIGHWAY.
23/ SEA-WALL BONDS.
24/ STATE APPROPRIATION OF $12,000.
25/ GASOLINE TAX BECAME 4 CENTS ON JANUARY 1, 1928.
26/ FOR DEPARTMENT OF COMMERCE AND NAVIGATION.
27/ ESTIMATED CONSUMPTION BASED ON MOTOR VEHICLE REGISTRATION, 920,000,000 GALLONS.
28/ ALLOCATION OF FUND ESTIMATED.
29/ GENERAL STATE FUND.
30/ STATE APPROPRIATION OF $5,700 FROM GENERAL REVENUE.
31/ STATE APPROPRIATION OF $5,000.
32/ RESERVE FOR REFUNDS.
33/ FOR FREE SCHOOL FUND.
34/ INCREASED TO 5 CENTS ON MARCH 19, 1928.
35/ FROM MOTOR VEHICLE FUND, $5,000.
36/ PAYMENTS ON STATE ROAD BONDS CHARGED TO GASOLINE FUND; AMOUNT NOT STATED.
37/ FOR CITY STREETS.
38/ RECEIPTS EXPENDED ON WASHINGTON STREETS FOR IMPROVEMENT AND REPAIRS.
39/ FOR APPROXIMATE TOTAL OF ALL STATES, ADD ESTIMATED AMOUNTS GIVEN IN NOTES 21 AND 27 FOR MASSACHUSETTS AND NEW YORK TO TOTAL HERE GIVEN.

DUAL SCREENS INCREASE CAPACITY OF ASPHALT PAVING PLANT

COMPILED FROM A REPORT SUBMITTED BY R. H. TATLOW OF THE DIVISION OF MANAGEMENT

(NOT FOR RELEASE)

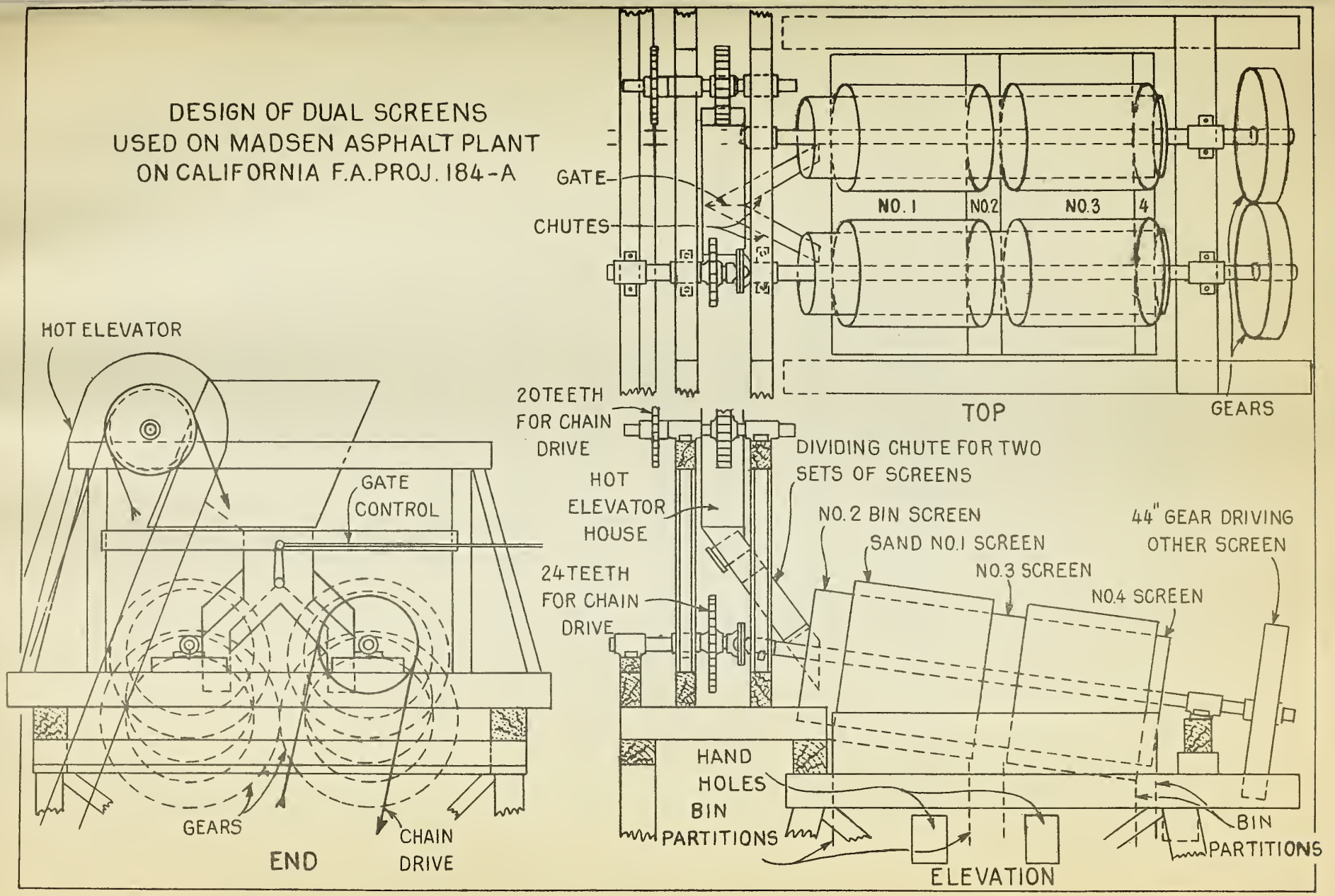
A DUAL SCREEN, SHOWN IN THE ACCOMPANYING SKETCH, FOR INCREASING THE CAPACITY OF A 3,000 POUND MADSEN ASPHALT PAVING PLANT HAS PROVED HIGHLY SATISFACTORY ON CALIFORNIA FEDERAL-AID PROJECT 184-A.

THE CUSTOMARY SCREEN DESIGN, FOR SEPARATING THE HOT MINERAL AGGREGATE AT THE TOP OF THE BINS, CONSISTS OF A SINGLE SET OF SCREENS. ALL THE AGGREGATE MUST PASS THROUGH THIS ONE SCREEN AND CARE MUST BE TAKEN TO PREVENT OVERLOADING SO THAT PORTIONS OF THE FINER AGGREGATES SHALL NOT BE CARRIED OVER INTO THE BINS FOR THE COARSER MATERIAL. THIS MAKES IT NECESSARY TO VARY THE MIXTURE OF THE MATERIAL SO AS TO MAINTAIN A UNIFORM DENSITY OF THE PAVEMENT - A CONDITION REQUISITE TO A STABLE AND EVEN SURFACE.

THE DUAL SCREENS, USED ON THIS PLANT, CONSIST ESSENTIALLY OF TWO ORDINARY SINGLE SCREENS MOUNTED SIDE BY SIDE AS SHOWN IN THE ACCOMPANYING DIAGRAM. THE ADMISSION OF THE AGGREGATES FROM THE ELEVATOR IS CONTROLLED BY A SWINGING GATE AT THE JUNCTION OF TWO OUTLET CHUTES LEADING TO THE TWO SCREENS. THIS SWINGING GATE MAY BE ADJUSTED SO AS TO DIVIDE THE MATERIAL IN ANY DESIRED PROPORTION BETWEEN THE TWO SCREENS, OR TO VARY THE LOAD SO THAT, IF NECESSARY, ALL THE AGGREGATE SHALL PASS THROUGH ONE SCREEN.

THE POWER-DRIVEN 44-INCH GEAR ON THE END OF ONE SCREEN MESHES WITH A SIMILAR GEAR ON THE OTHER SCREEN. HAVING THE TWO SCREENS REVOLVING IN OPPOSITE DIRECTIONS, SO THAT THE AGGREGATE IS ROTATED AND DEPOSITED TOWARDS THE CENTER OF THE BINS, IS THE MOST DESIRABLE ARRANGEMENT.

THESE DUAL SCREENS HAVE INCREASED THE CAPACITY, AND HAVE DECREASED THE STORAGE SPACE, AS COMPARED WITH A SINGLE-SCREEN PLANT.


DESIGN OF DUAL SCREENS
USED ON MADSEN ASPHALT PLANT
ON CALIFORNIA F.A.PROJ. 184-A
GATE
CHUTES
NO. 1
NO.2
NO.3
4
TOP
GEARS
HOT ELEVATOR
GATE
CONTROL
GEARS
CHAIN
DRIVE
END
20TEETH
FOR CHAIN
DRIVE
HOT
ELEVATOR
HOUSE
24TEETH
FOR CHAIN
DRIVE
DIVIDING CHUTE FOR TWO
SETS OF SCREENS
NO. 2 BIN SCREEN
SAND NO.1 SCREEN
NO.3 SCREEN
NO.4 SCREEN
44" GEAR DRIVING
OTHER SCREEN
HAND
HOLES
BIN
PARTITIONS
BIN
PARTITIONS
ELEVATION

U. S. DEPARTMENT OF AGRICULTURE - BUREAU OF PUBLIC ROADS.

GM-1(1926)
R.S.A.

MONTHLY GASOLINE CONSUMPTION (IN GALLONS) AS USED BY MOTOR VEHICLES, 1926 (1ST HALF YEAR)

DERIVED FROM AMOUNT EARNED IN STATES HAVING GASOLINE TAX (ALLOWING FOR DEDUCTIONS DUE TO EXEMPTIONS)

(COMPILED FROM REPORTS OF STATE AUTHORITIES)

	JANUARY (1926)	FEBRUARY	MARCH	1ST QUARTER	APRIL	MAY	JUNE	2ND QUARTER	FIRST HALF YEAR	GASOLINE TAX RATES 1926 JAN. 1	DATE OF CHANGE	JUNE 30	DATE OF CHANGE	DEC. 30	
GRAND TOTAL U.S.	493,118.244	489,236.984	533,200.593	1.515,555.821	616,348.522	694,859,346	719,561,241	2,030.769,109	3,546.324,930						GRAND TOTAL U.S.
NEW ENGLAND	14,170.945	10,929,062	14,726.841	39,826,648	18,943,457	29,254,753	32,736,014	80,834,224	120,760,872						NEW ENGLAND
MASSACHUSETTS	(NO TAX)														MASSACHUSETTS
CONNECTICUT	7.446.355	5.739.051	8.439,734	21,625,140	10.154,779	12,580,254	13,294,283	36,018.316	67,644,486	2		2			CONNECTICUT
MAINE	1,562.357	1.021.541	1.081,632	3,665.630	2,103.173	6,588,431	7,160,789	14,842,393	18.507.923	3		3			MAINE
RHODE ISLAND	2,949.514	2.478.040	3.378,717	8,806,271	3,914.189	4,915,101	4,833,706	13.862,996	22,469.267	1		1			RHODE ISLAND
NEW HAMPSHIRE	1,386,702	1,000,902	1,145,598	3,533.202	1,796.279	3,626,470	4,211,746	9,833,495	13,166.697	2		2			NEW HAMPSHIRE
VERMONT	826,017	689,528	680,960	2.196.505	978,037	2.544,497	3,255,490	6.778,024	8,872.529	2		2			VERMONT
MIDDLE ATLANTIC	38,225,268	39,225.268	39,225.268	117.676,804	49,031,585	49,031,585	49,031,585	147,094.755	264.770,559	-		-			MIDDLE ATLANTIC
NEW YORK	(NO TAX)									-		-			NEW YORK
PENNSYLVANIA(Q) 1/	39,225.268	39.225.268	39,225,268	117,676,804	49,031,585	49,031,585	49,031,586	147,094,755	264,770,559	2		2			PENNSYLVANIA
NEW JERSEY	(NO TAX)									-		-			NEW JERSEY
EAST NORTH CENTRAL	94,242,259	96.431.379	107,000,303	297,673,941	131,190,755	162,367,845	167,853,990	461,212,590	758,886.631	-		-			EAST NORTH CENTRAL
ILLINOIS	(NO TAX)									-		-			ILLINOIS
OHIO	37,989,495	36,888.900	43,971.118	118.849.513	51,866.168	63.224.949	63.010.475	178,101.592	298.951.105	2		2			OHIO
MICHIGAN	28,342.078	28.062.669	30.585,817	86,990,464	36,159.189	47.060,972	48.479,274	131,689.435	218.679,899	2		2			MICHIGAN
INDIANA	14.915,989	19,970.086	19.760.987	54,647.062	23,425,477	27,724,806	28.333,352	79,483.635	134.130,697	3		3			INDIANA
WISCONSIN	12.994.697	11.509,824	12.682.381	37.186,902	19,739,921	24,367.118	27.830.889	71,937.928	109,124,830	2		2			WISCONSIN
WEST NORTH CENTRAL	71,745.267	72,563.571	83.440,112	227,748,850	100,983.481	117,113,810	121,456,924	339,554,215	567,303,165	-		-			WEST NORTH CENTRAL
MISSOURI	17,552,320	16,899,379	20.667,371	55.019.070	24.052.357	25,202.906	27.050,685	76.305.948	131,325,018	2		2			MISSOURI
IOWA	14.051,703	13.551.201	15,729.514	43,332,418	20,326,765	22,958.436	23,062,635	66,347,826	109,680,244	2		2			IOWA
MINNESOTA	13.894,750	12.614.400	12,400,960	38.910,100	19.266.850	23.960.400	23.470,150	66,696,400	105.606,500	2		2			MINNESOTA
KANSAS	12.086,800	12.737,400	15,641,200	40.465,400	14,458.950	17,397.550	19.663,750	51,520,250	91,985,650	2		2			KANSAS
NEBRASKA	9.214,750	9,479,550	11,787,850	30.482,150	12,612,600	13,234,300	13,818,000	39.664.900	70,147,050	2		2			NEBRASKA
NORTH DAKOTA	1,487,200	5,618.800	4,214.500	11,320,500	5,401,700	8,228,400	7,909,100	21,539.200	32.859,700	1	1	1	7/31	2	NORTH DAKOTA
SOUTH DAKOTA	3.457.744	1,662.841	3,098.727	8,219,312	4,865,269	6,131,818	6,482.604	17.479.691	25.699,003	3		3			SOUTH DAKOTA
SOUTH ATLANTIC	82.984,941	78.855.505	85,890,198	247,730,644	93,262,760	97,200,635	98,142,009	288,605,404	536,336,048	-		-			SOUTH ATLANTIC
GEORGIA (Q)	11,090,581	11.090.581	11.090.580	33,271,742	13.349,856	13.349,855	13,349.856	40.049.566	73.321.308	3½		3½			GEORGIA
NORTH CAROLINA	15,916,098	14,672,024	13,481,668	44,069,790	14.061.605	14.518.917	17,310,096	45,890,518	89,960.308	4		4			NORTH CAROLINA
VIRGINIA	8,191.605	7,600.004	8.649,381	24,440,990	11.085.686	12.124,575	12.406,453	35.616.714	60,057,704	3	3/10	4½			VIRGINA
SOUTH CAROLINA	6.406,480	6,224,480	6,850.220	19,481.180	7,709,800	7.422.700	7,376,800	22,509,300	41.990,480	5		6			SOUTH CAROLINA
WEST VIRGINA	3,481,973	3,335.513	4.294.378	11,111,862	6,305,004	8,543.495	8,253,631	23,102,130	34,213,992	3½		3½			WEST VIRGINIA
MARYLAND	6.883,997	5.935,361	7,946,257	20,545.615	9,588,933	10,496,199	11,039,255	31,124,387	51,670,002	2		2			MARYLAND
FLORIDA	26,084,837	25.784.768	28,261,762	80,737.367	25,191,717	24.268,629	22,160,140	71,620,486	152,351,853	4		4			FLORIDA
DISTRICT OF COLUMBIA	3,394,670	3.147.759	3.898.068	10.440.497	4,261,700	4,656,671	4,551.977	13.470,348	23,910,845	2		2			DISTRICT OF COLUMBIA
DELAWARE	1,1[illegible],700	1.065,015	1,417,886	3.637.601	1.708,560	1,819,594	1,693,801	5.221.955	8.859,556	2		2			DELAWARE
EAST SOUTH CENTRAL	30.102,[illegible]86	29.259,346	32,797,666	92,159,298	36,287,488	40,940,387	39,894,095	117,121,970	209,281,266	-		-			EAST SOUTH CENTRAL
KENTUCKY	5,855,452	5,756,738	7,208.012	18.823,252	7,866.758	9,976.996	9,686,036	27,529.790	46,363,042	3	2/21	5			KENTUCKY
ALABAMA	8,415,572	8.519.323	9.440.737	26,375,632	10,598,586	11,101,521	10.681,863	32,381,970	58.757,602	2		2			ALABAMA
TENNESSEE	9,244,450	7.995,590	7,647.495	24,887.545	9.655.537	10,806.610	10.776,727	31,237.874	56.125.419	3		3			TENNESSEE
MISSISSIPPI	6.583.802	6.987,645	8.501.422	22.072,869	8,166.607	9,056,260	8,749,469	25,972,336	48,045,205	3	4/1	4			MISSISSIPPI
WEST SOUTH CENTRAL	65,835,750	66.478,446	66.638.903	198.953,099	71.680,577	77,662,569	83,105,938	232,449,084	431,402,183	-		-			WEST SOUTH CENTRAL
TEXAS	33.914.713	36,200.347	36.452,616	106.567,676	39.246,659	43.756,062	45,961,617	128.964.338	235,532,014	1		1			TEXAS
OKLAHOMA	15.202,566	14,330,575	14.248,098	44.781,239	14.865.860	14,854.324	17,894.002	47,714.186	92.495.425	3		3			OKLAHOMA
LOUISIANA	8,886,271	10.211,624	9,537.514	28.635.409	11,466,683	11,415,883	11.242.019	34,124,585	62,759,994	2		2			LOUISIANA
ARKANSAS	6,832.200	5.735,900	6.400.675	18,968,775	6.101,375	7,536.300	8,008,300	21,645.975	40,614,750	4		4			ARKANSAS
MOUNTAIN	18,225,669	17.697,374	20.492.141	56,415,184	22,213,862	26,600.879	29,824,913	78,639,654	135,054,838	-		-			MOUNTAIN
COLORADO 2/	5.839,073	6,159,352	7,420.750	19.419.175	6.373,972	7,626.950	10.007,933	24.008.855	43,428,030	2		2			COLORADO
MONTANA (Q)	2,476.850	2.476.850	2,478.900	7.436,600	4.003.550	4.003,550	4,003.600	12.010.700	19.447.300	2		2			MONTANA
UTAH	2.495,354	2,014.827	2,355,315	6,865.496	2,766,988	3,741,069	3,610,211	10,118,268	16,983,764	3½		3½			UTAH
IDAHO	1,828,894	1.600,404	2,460.470	5,889,768	2,814,898	3,331,386	3,866.193	10,012,477	15,902,245	3		3			IDAHO
NEW MEXICO	1,805,392	1.587,014	1,533,503	4,925,909	1,767,072	2,050,484	2,203,774	6,021,330	10,947,239	3		3			NEW MEXICO
ARIZONA	2.260,533	2.378.526	2,474,065	7.113,124	2,518,257	2,710,554	2,869.163	8,097,994	15,211,118	3		3			ARIZONA
WYOMING	1.079.509	961.700	1,052,027	3,093,236	1,237,616	2,224,825	2.235,477	5,697,918	8,791,154	2½		2½			WYOMING
NEVADA	438.064	516.701	717.111	1,671,876	731,509	912,061	1.028,542	2,672,112	4,343,988	4		4			NEVADA
PACIFIC	76.585,859	77,797,033	82,989,361	237,372,253	92,754,557	94,686,883	97,715,773	285,157,213	522,529,466	-		-			PACIFIC
CALIFORNIA (Q)	60.679.100	60.679,100	60.679,122	182,037,322	69.332.900	69,332.900	69,331,439	207,997,239	390,034.561	2		2			CALIFORNIA
WASHINGTON	9.745.074	10,600,766	13.423,194	33,769.034	14,060.636	15,163,505	16.771,928	45,996,069	79.765.103	2		2			WASHINGTON
OREGON	6.161.685	6,517.167	8.887.045	21.565.897	9,361,021	10,190,478	11,512.406	31.163.905	52,729.802	3		3			OREGON

REMARKS. THE GALLONAGE ABOVE IS APPROXIMATE IN SOME STATES DUE TO EXEMPTIONS FOR DEDUCTIONS WHICH WERE NOT ALLOCATED TO MONTHS WHEN SALES WERE MADE BUT WERE REPORTED FOR MONTHS WHEN DEDUCTION PAYMENTS WERE COLLECTED.

FOUR STATES MARKED "Q" COLLECT TAXES QUARTERLY, AND THE MONTHLY CONSUMPTION IS DIVIDED EQUALLY IN EACH QUARTER.

NOTES. 1. THE QUARTERLY CONSUMPTION SHOWN IS ESTIMATED, AS ONLY COLLECTIONS WERE REPORTED WHICH DO NOT INDICATE CONSUMPTION.

2. GALLONAGE ADJUSTED TO AGREE WITH REPORTED RECEIPTS.

U. S. DEPARTMENT OF AGRICULTURE - BUREAU OF PUBLIC ROADS

GM-2(1926)
R-6-A.

MONTHLY GASOLINE CONSUMPTION (IN GALLONS) AS USED BY MOTOR VEHICLES, 1926 (2d HALF YEAR)

DERIVED FROM AMOUNT EARNED IN STATES HAVING GASOLINE TAX (ALLOWING FOR DEDUCTIONS DUE TO EXEMPTIONS)

(COMPILED FROM REPORTS OF STATE AUTHORITIES)

	July (1926)	August	September	3d Quarter	October	November	December	4th Quarter	Second Half Year	Full Calendar Year	
GRAND TOTAL U.S.	802,653,950	796,835,479	763,487,081	2,361,986,510	706,813,480	658,849,777	611,008,863	1,975,672,120	4,337,858,630	7,883,983,560	GRAND TOTAL U.S.
NEW ENGLAND	39,222,113	39,137,265	34,625,490	112,984,858	30,786,468	25,976,548	20,323,865	78,086,871	191,071,729	311,832,801	NEW ENGLAND
Massachusetts	(No Tax)										Massachusetts
Connecticut	15,046,806	14,401,657	13,317,648	42,765,112	12,365,613	11,890,266	9,802,160	34,058,038	76,824,151	134,468,807	Connecticut
Maine	9,193,870	9,494,324	8,112,239	26,800,433	6,860,336	5,167,797	2,784,171	14,792,303	41,582,735	50,090,659	Maine
Rhode Island	5,896,938	5,392,377	4,813,003	15,901,318	4,587,367	4,301,137	3,930,662	12,819,056	28,720,374	51,189,641	Rhode Island
New Hampshire	5,380,986	5,763,188	4,786,542	15,930,716	3,885,661	3,186,005	2,260,021	9,331,687	25,262,403	38,429,100	New Hampshire
Vermont	3,904,513	4,085,709	3,596,067	11,586,279	3,097,602	2,431,443	1,566,841	7,095,786	18,682,065	27,654,594	Vermont
MIDDLE ATLANTIC	68,837,902	58,837,902	58,837,903	176,513,707	49,031,585	49,031,585	49,031,585	147,094,755	323,608,462	588,379,021	MIDDLE ATLANTIC
New York	(No Tax)										New York
Pennsylvania (Q)1/	68,837,902	58,837,902	58,837,903	176,613,707	48,031,585	48,031,585	49,031,585	147,094,755	323,608,462	588,379,021	Pennsylvania
New Jersey	(No Tax)										New Jersey
EAST NORTH CENTRAL	187,047,760	186,140,823	170,478,027	543,667,600	158,563,387	142,897,464	122,406,406	423,946,266	967,513,866	1,726,500	NORTH CENTRAL
Illinois	(No Tax)										Illinois
Ohio	70,123,657	67,926,414	64,481,320	202,541,381	58,808,825	66,712,503	48,848,472	163,370,800	366,912,191	662,363,296	Ohio
Michigan	54,301,433	56,454,636	50,137,242	159,893,211	45,073,603	42,667,336	36,774,866	125,515,704	285,408,915	504,088,814	Michigan
Indiana	30,709,799	31,453,135	28,314,030	90,556,964	27,821,624	24,896,501	21,863,239	74,370,364	164,927,328	299,058,026	Indiana
Wisconsin	31,832,961	31,308,738	27,536,436	90,676,034	26,048,445	19,622,126	15,018,828	60,689,398	151,365,432	260,490,262	Wisconsin
WEST NORTH CENTRAL	145,456,257	134,440,728	128,098,807	405,995,592	112,753,383	98,729,478	85,645,194	297,128,066	703,123,658	1,870,426,823	WEST NORTH CENTRAL
Missouri	29,128,890	29,089,813	25,374,195	83,522,898	23,861,784	22,787,418	21,560,162	88,209,354	161,732,252	283,057,270	Missouri
Iowa	26,286,727	26,697,173	22,614,956	74,537,856	22,654,439	18,876,218	16,672,613	57,903,270	132,441,126	242,121,370	Iowa
Minnesota	27,624,760	26,587,800	24,847,000	73,069,560	23,016,360	18,396,850	14,157,132	55,568,332	134,627,882	240,234,382	Minnesota
Kansas	26,322,250	23,434,260	21,884,500	71,621,000	18,635,500	18,407,743	16,519,500	51,562,743	123,183,743	215,169,393	Kansas
Nebraska	15,654,550	16,046,850	13,860,550	45,661,950	13,921,750	11,262,750	11,102,857	36,287,357	81,849,307	151,996,357	Nebraska
North Dakota	15,688,912	5,786,900	8,869,860	30,328,662	6,252,300	3,418,800	832,000	10,503,100	40,829,762	73,689,462	North Dakota
South Dakota	5,830,178	6,797,942	8,737,656	21,365,876	6,512,270	5,780,700	4,800,940	17,093,910	38,459,586	64,168,589	South Dakota
SOUTH ATLANTIC	103,307,492	101,482,151	101,592,277	308,381,980	99,211,062	97,819,773	96,449,915	293,480,750	599,862,670	1,136,198,718	SOUTH ATLANTIC
Georgia (Q)	14,873,337	14,873,337	14,873,337	44,620,011	14,525,659	14,526,658	14,525,658	43,676,977	88,196,988	161,618,296	Georgia
North Carolina	16,611,428	16,496,185	18,194,826	51,302,438	18,220,177	17,518,277	17,660,625	53,399,079	104,701,617	194,661,825	North Carolina
Virginia	13,546,939	13,662,054	13,371,943	40,580,936	12,146,567	11,974,897	11,053,957	35,175,421	75,756,357	136,814,061	Virginia
South Carolina	8,197,500	8,310,700	8,061,360	24,569,560	7,884,240	7,733,560	7,761,512	23,379,312	47,948,872	89,939,352	South Carolina
West Virginia	9,684,786	9,323,081	9,198,893	28,206,760	8,156,068	7,178,709	5,749,479	21,084,246	49,291,006	83,504,996	West Virginia
Maryland	11,719,518	11,231,609	11,110,667	34,061,894	10,246,380	9,781,171	8,963,226	28,960,776	63,022,670	114,692,672	Maryland
Florida	22,072,196	20,979,085	20,424,976	63,476,257	21,796,374	23,061,242	25,111,430	69,959,046	133,435,303	285,787,156	Florida
Dist. of Columbia	4,779,028	4,549,816	4,434,803	13,763,647	4,515,060	4,379,241	4,191,878	13,085,179	26,848,826	50,759,671	Dist. of Columbia
Delaware	1,822,660	2,066,284	1,921,473	6,800,417	1,721,547	1,897,017	1,442,160	4,860,714	10,661,131	19,520,687	Delaware
EAST SOUTH CENTRAL	45,060,187	44,677,218	44,847,900	134,575,305	43,230,544	40,004,478	38,623,484	121,858,506	256,433,811	465,715,078	EAST SOUTH CENTRAL
Kentucky	10,988,841	10,791,708	10,222,677	32,001,026	9,321,429	8,560,062	7,242,103	26,123,594	57,124,620	103,477,662	Kentucky
Alabama	12,304,128	11,960,070	11,467,275	35,731,473	11,450,425	10,910,443	11,092,595	33,443,463	69,174,936	127,932,538	Alabama
Tennessee	11,391,117	11,782,355	13,342,131	36,515,604	12,889,866	11,681,178	11,406,386	36,778,430	72,292,034	128,417,463	Tennessee
Mississippi	10,368,301	10,143,084	9,815,817	30,327,202	9,768,824	8,852,795	8,883,400	27,515,019	57,842,221	106,887,426	Mississippi
WEST SOUTH CENTRAL	88,022,583	93,325,905	91,016,659	272,364,157	86,068,989	82,457,455	82,547,051	251,063,496	523,427,652	954,829,835	WEST SOUTH CENTRAL
Texas	50,054,223	50,942,061	45,489,131	150,485,416	45,[illegible]77,771	46,572,197	44,891,181	136,671,149	287,156,564	522,588,578	Texas
Oklahoma	18,170,430	21,466,426	20,292,069	59,928,926	19,000,633	17,225,410	18,429,903	54,665,946	114,584,871	207,080,296	Oklahoma
Louisiana	12,219,390	12,149,593	12,323,484	36,692,467	12,297,260	11,757,598	11,921,048	35,975,906	72,668,373	135,428,367	Louisiana
Arkansas	7,678,550	8,767,825	8,910,975	25,257,350	8,553,325	7,902,250	7,304,919	23,760,494	49,017,844	89,632,594	Arkansas
MOUNTAIN	29,675,944	32,404,904	33,159,430	95,240,278	30,066,009	27,348,679	24,586,540	82,101,228	177,341,506	312,396,344	MOUNTAIN
Colorado 2/	9,793,905	10,080,233	11,811,808	31,685,946	11,280,848	9,586,733	8,506,903	28,473,484	61,169,430	104,587,460	Colorado
Montana (Q)	4,513,750	4,513,750	4,513,750	13,541,250	3,515,650	3,515,700	3,515,675	10,547,026	24,088,276	43,535,576	Montana
Utah	2,609,046	3,992,620	3,713,762	10,315,428	3,187,380	2,918,393	2,538,152	8,643,925	18,959,353	35,943,117	Utah
Idaho	4,388,105	4,588,780	3,842,614	12,819,499	3,500,635	2,974,505	2,207,102	8,682,242	21,501,741	37,403,986	Idaho
New Mexico	2,188,193	2,535,739	2,584,636	7,308,568	2,448,384	2,346,484	2,378,583	7,172,561	14,481,119	25,428,358	New Mexico
Arizona	2,845,732	2,774,452	2,846,175	8,466,360	2,896,164	3,014,140	3,021,039	8,931,343	17,387,703	32,608,821	Arizona
Wyoming	2,199,242	2,777,133	2,884,158	7,860,533	2,301,364	2,133,308	1,657,213	6,091,885	13,962,418	22,743,572	Wyoming
Nevada	1,137,971	1,142,197	962,526	3,242,694	935,584	860,415	762,772	2,558,772	5,801,466	10,145,454	Nevada
PACIFIC	106,033,712	106,388,593	102,840,788	314,263,093	96,122,033	93,584,316	91,206,834	280,912,183	595,175,276	1,117,704,742	PACIFIC
California (Q)	74,863,267	74,863,266	74,863,294	224,589,827	70,160,600	70,160,600	70,160,581	210,481,781	435,071,608	825,106,169	California
Washington	17,899,124	17,490,994	16,246,594	51,636,712	16,296,979	14,062,696	13,343,147	42,702,821	94,339,533	174,104,636	Washington
Oregon	13,271,321	13,034,333	11,730,900	38,036,554	10,664,454	9,361,021	7,702,106	27,727,581	65,764,135	118,493,937	Oregon

FOR REMARKS AND NOTES SEE TABLE GM-1

TRIPLE EARTH-SLIDE-CONTROL METHOD TO BE USED ON OHIO FEDERAL-AID PROJECT

CONTRIBUTED BY D. T. BROWN OF THE DIVISION OF DESIGN

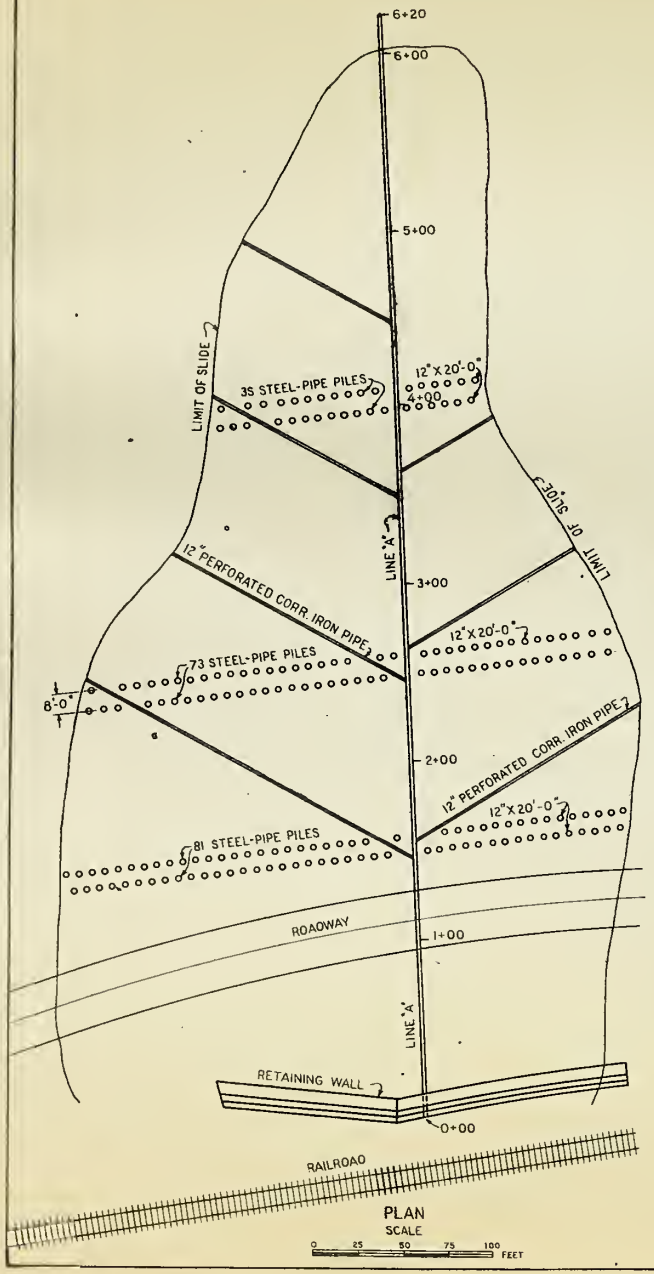
(NOT FOR RELEASE)

A COMBINATION OF 3 METHODS FOR CONTROLLING AN EARTH SLIDE WILL BE USED IN THE CONSTRUCTION OF OHIO FEDERAL-AID PROJECT 534-A. AS SHOWN IN THE ATTACHED SKETCH, A RETAINING WALL WILL BE USED TO PREVENT THE EARTH FOUNDATION OF THE ROADWAY FROM SLIDING OVER UPON THE RAILROAD BELOW. ABOVE THE ROADWAY THREE ROWS OF PILING FORMED BY STEEL WELL-CASING FILLED WITH CONCRETE WILL BE SUNK THROUGH THE SLIDING LAYER INTO THE SOLID ROCK BENEATH. TO INSURE THE DRAINAGE OF THE IMPERVIOUS ROCK SURFACE UPON WHICH THE SLIDING MATERIAL MOVES, A 24-INCH VITRIFIED CLAY PIPE, FED AT INTERVALS WITH 12-INCH PERFORATED CORRUGATED IRON PIPE LATERALS, IS TO BE PLACED THE FULL LENGTH OF THE SLIDE FROM THE TOP TO THE FOOT OF THE SLOPE.

THE CONCRETE PILES ARE TO BE CONSTRUCTED IN PLACE. FIRST, HOLES WILL BE DRILLED IN THE PROPER LOCATION WITH A WELL DRILL, EXTENDING THROUGH THE EARTH SLIDE FOR 6 FEET INTO THE SOLID ROCK. STEEL-CASING PIPE WILL THEN BE DRIVEN INTO THE HOLES AND THREE ROUND-STEEL REINFORCING BARS WILL BE INSERTED IN THE PIPE WHICH WILL BE TAMPED FULL OF CONCRETE. THE COST OF THE PILES, IN PLACE, IS ESTIMATED AT $2.00 PER LINEAL FOOT. THE RETAINING WALL AND DRAIN PIPES INVOLVE NO UNUSUAL CONSTRUCTION FEATURES.

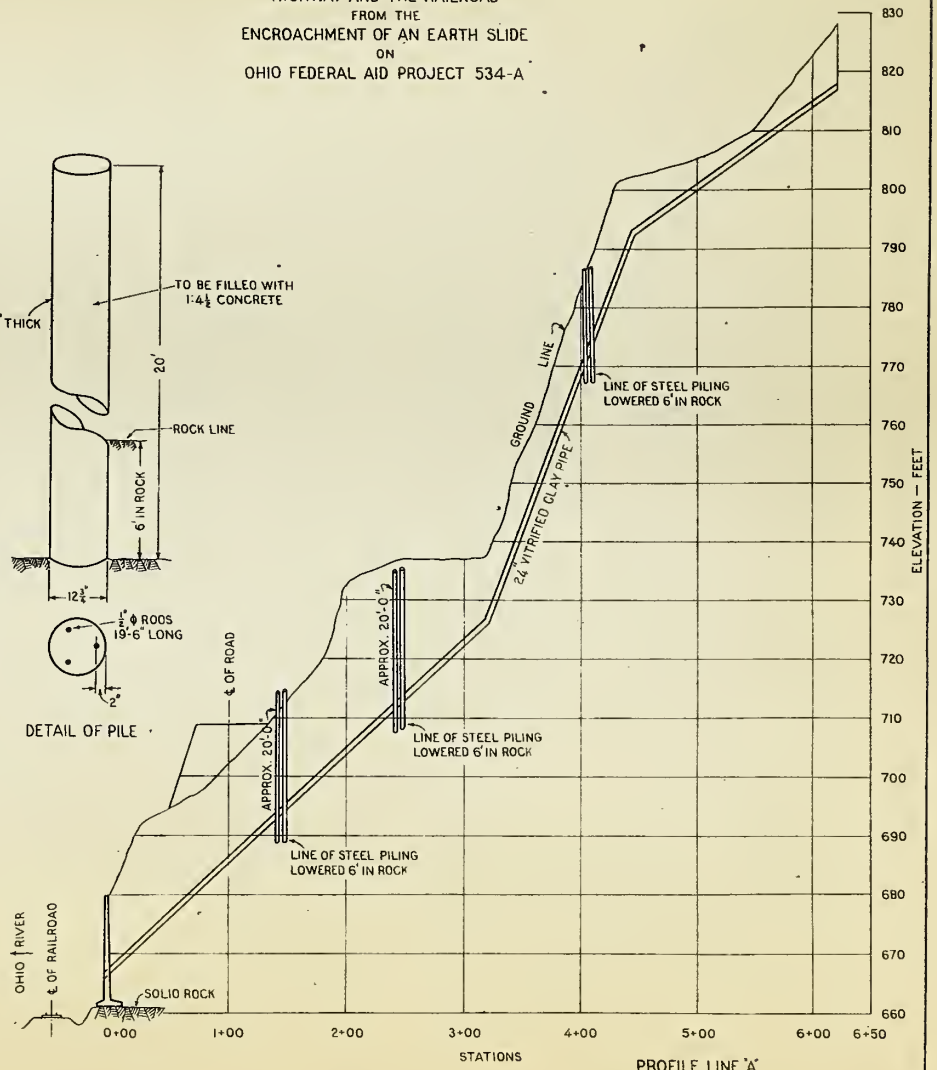
THE ESTIMATED COST OF THIS SLIDE-CONTROL FEATURE IS AN INDICATION OF THE VALUE PLACED ON SLIDE CONTROL, IN THIS REGION WHERE EARTH SLIDES ARE PREVALENT. THE COST OF GRADING AND DRAINING THE PROJECT IS ESTIMATED AT $76,000 PER MILE, OR $380,000 FOR THE 4.9 MILES. THE ESTIMATED COST OF CONSTRUCTION OF THE SLIDE-CONTROL METHODS, ILLUSTRATED IN THE ATTACHED SKETCH, FOLLOWS:

PLAN AND PROFILE
OF THE
METHOD PROPOSED FOR THE PROTECTION
OF THE
HIGHWAY AND THE RAILROAD
FROM THE
ENCROACHMENT OF AN EARTH SLIDE
ON
OHIO FEDERAL AID PROJECT 534-A



PLAN
SCALE
0 25 50 75 100 FEET

DETAIL OF PILE



PROFILE LINE "A"
SCALE
VERTICAL 0 5 10 FEET
HORIZONTAL 0 25 50 75 100 FEET

DRAIN PIPE

620 LINEAL FEET OF 24-INCH VITRIFIED CLAY PIPE, IN PLACE, AT $5.00 PER LINEAL FOOT - - - -	$3,100
890 LINEAL FEET OF 12-INCH PERFORATED CORRUGATED IRON PIPE, IN PLACE, AT $3.00 PER LINEAL FOOT - - - - - - - - - - - - - - - -	2,670

CONCRETE PILING AND RETAINING WALL

3,780 LINEAL FEET OF 12-INCH STEEL-PIPE PILING, IN PLACE, AT $2.00 PER LINEAL FOOT - - - -	7,560
52,400 POUNDS OF STEEL REINFORCEMENT AT $.05 PER POUND - - - - - - - - - - - - - - - - -	2,620
514 CUBIC YARDS OF 1:5-1/2 CONCRETE, IN PLACE, AT $17.00 PER CUBIC YARD - - - - - - - -	8,738
336 SQUARE FEET OF 1/2-INCH PREMOULDED EXPANSION JOINT MATERIAL AT $0.25 - - - - - -	84
2,040 CUBIC YARDS OF EXCAVATION INCLUDING BACKFILL AT $1.50 PER CUBIC YARD - - - - - -	3,060
TOTAL	$27,832

LIP CURB FOR CONCRETE PAVEMENTS SUBMITTED BY 4 STATES

CONTRIBUTED BY ST. CLAIR T. THOMAS OF THE DIVISION OF DESIGN

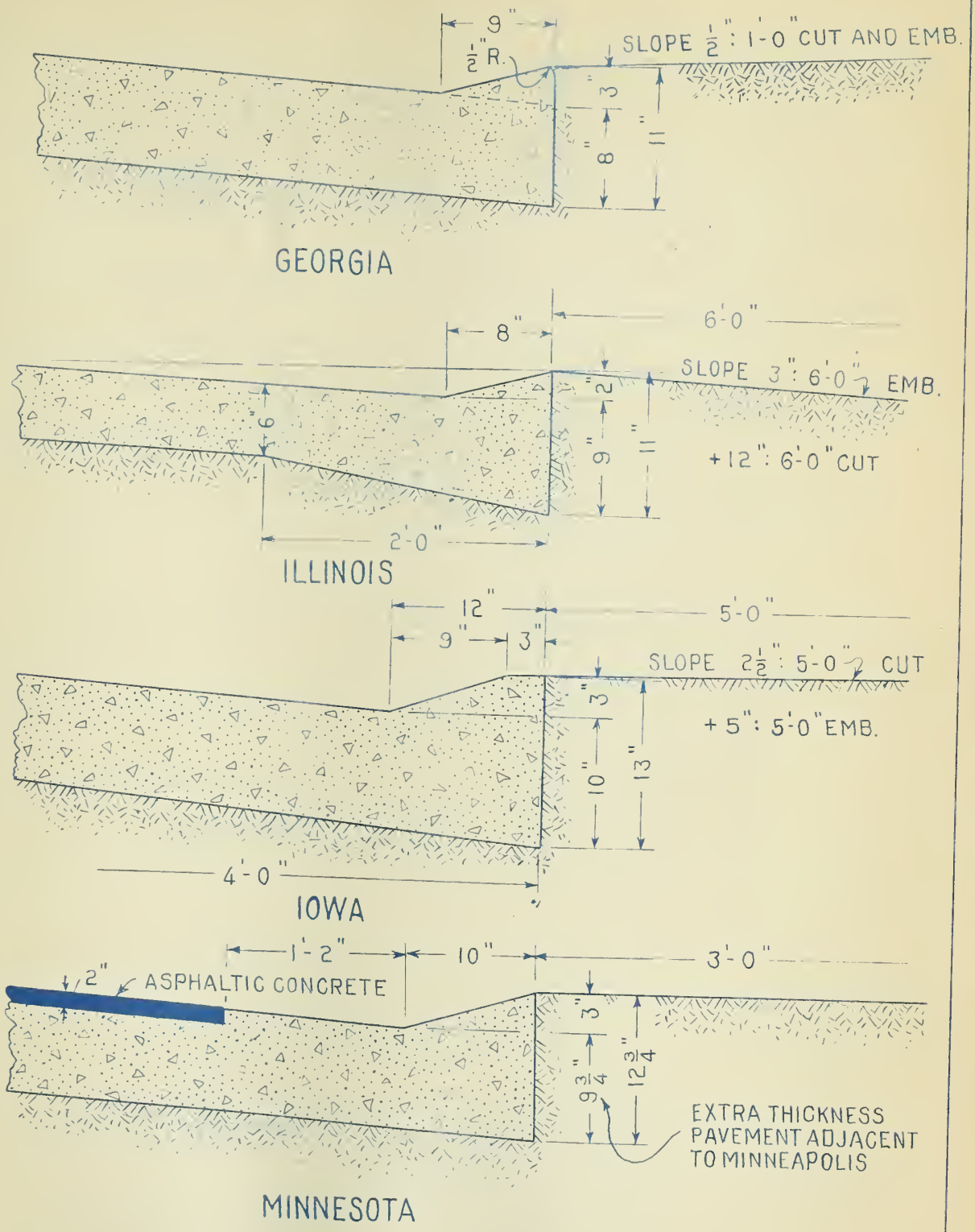
(NOT FOR RELEASE)

LIP CURBS, TO PROTECT THE EARTH SHOULDERS OF CONCRETE PAVEMENTS FROM EROSION BY THE RUN OFF OF RAIN WATER, HAVE BEEN INCLUDED IN DESIGNS SUBMITTED FOR FEDERAL-AID PROJECTS, BY FOUR STATES - GEORGIA, ILLINOIS, IOWA, AND MINNESOTA, AS SHOWN IN THE ATTACHED CROSS SECTIONS. THE LIP CURB, OR EDGING, CONSTRUCTED ON THE TOP OF THE PAVEMENT, SERVES THE PURPOSE OF CARRYING THE RAIN WATER TO THE NEAREST OFFTAKE. IT DIFFERS FROM THE INTEGRAL CURB, OR THE CURB AND GUTTER, IN THAT IT IS SUITABLE ONLY FOR NORMAL RAINFALLS, AND THE HEIGHT - 2 TO 3 INCHES IN 8 TO 12 INCHES - IS NOT SUFFICIENT TO PREVENT TRAFFIC FROM RUNNING OVER THE EDGE OF THE PAVEMENT.

THE NECESSITY FOR LIP CURB IS DETERMINED BY THE CHARACTER OF THE SHOULDER MATERIAL AND THE GRADE OF THE PAVEMENT. IT IS USUALLY NOT REQUIRED IN THE HEAVIER SOILS, SUCH AS CLAY, WHICH DO NOT ERODE AS READILY AS SILT OR SAND. IOWA, WHERE THE LOESS SOIL ERODES READILY, WAS ONE OF THE FIRST STATES TO SUBMIT LIP CURB ON A FEDERAL-AID PROJECT.

THE LIP CURB IS CONSTRUCTED IMMEDIATELY AFTER THE PAVEMENT PROPER HAS BEEN FINISHED. FIRST THE ELEVATION OF THE TOP OF THE SIDE FORMS IS RAISED THE DESIRED AMOUNT, AND THEN THE EXTRA CONCRETE OF THE SAME MIX AS THE PAVEMENT IS SPREAD NEXT TO THE FORM, AND FINISHED TO THE PROPER CROSS SECTION WITH A FLOAT. IN GEORGIA THE CORNER IS ROUNDED WITH AN EDGING TOOL. SUITABLE OFFTAKES ARE BUILT, AT RIGHT ANGLES TO THE CENTER LINE OF THE ROADWAY WHERE THE GRADE IS NOT OVER 1-1/2 PER CENT, AND AT AN ANGLE OF 45 DEGREES WHEN THE GRADE EXCEEDS 1-1/2 PER CENT.

IN BOTH ILLINOIS AND GEORGIA THE UNIT FOR PAYMENT IS THE LINEAL FOOT OF LIP CURB. ON ONE PROJECT IN ILLINOIS THE PRICE WAS 10 CENTS, AND ON A JOB IN GEORGIA THE COST WAS 4 CENTS A LINEAL FOOT. IN MINNESOTA AND IOWA THE COST IS INCLUDED IN THE UNIT PRICE BID FOR THE CONCRETE PAVEMENT.



DESIGNS OF LIP CURBS FOR CONCRETE PAVEMENTS
SUBMITTED BY GEORGIA, ILLINOIS, IOWA AND MINNESOTA

UNITED STATES DEPARTMENT OF AGRICULTURE
BUREAU OF PUBLIC ROADS

P-1 (1928)
R.S.A.

PROGRAMS OF ESTIMATED STATE AND LOCAL HIGHWAY AND BRIDGE EXPENDITURES
FOR CALENDAR YEAR - 1928

(As REPORTED BY STATE AUTHORITIES)

STATE	GRAND TOTAL EXPENDITURES (ESTIMATED) ON STATE AND LOCAL ROADS	PROBABLE EXPENDITURES BY STATE HIGHWAY DEPARTMENTS: TOTAL STATE ROAD EXPENDITURES	TOTAL ROAD AND BRIDGES	CONSTRUCTION EXPENDITURES: ROADS	BRIDGES	MAINTENANCE (1): RECONSTRUCTION	ROAD UPKEEP	MISCELLANEOUS INCLUDING OVERHEAD (2)	PROBABLE EXPENDITURES ON ROADS AND BRIDGES BY LOCAL AUTHORITIES	ESTIMATED ROAD MILEAGE TO BE BUILT BY STATE HIGHWAY DEPARTMENTS: TOTAL MILEAGE	EARTH IMPROVED	SAND-CLAY, GRAVEL, AND MACADAM	ASPHALT, CONCRETE, AND BRICK	MILES OF ROAD MAINTAINED BY STATE HIGHWAY DEPARTMENT	STATES
ALABAMA	$ 25,400.000	$15.400,000	$ 14,000,000	$ 12,000.000	$ 2,000,000	$ 135,000	$ 1,265.000	- -	$ 10,000,000	800	300	300	200	3,400	ALABAMA
ARIZONA	6,419.275	4,782,287	3,297,348	2,482,773	814,676	1,862	723,022	$ 760,065	1.636,988	355	241	100	14	1.620	ARIZONA
ARKANSAS	33.500.000	30,500.000	28.000.000	23,000.000	5,000,000	- -	2,500,000	- -	3.000,000	2,540	700	1,800	40	5,000	ARKANSAS
CALIFORNIA	78,630,000	24,630,000	17,450,000	16,000,000	1.450,000	- -	4,580,000	2,600,000	54,000,000	510	- -	(3) 366	144	6,364	CALIFORNIA
COLORADO	11,170,500	8.170.500	6,539.000	5.539.000	1.000.000	- -	1,400.000	231.500	3.000,000	360	100	200	50	3,067	COLORADO
CONNECTICUT	(4)														CONNECTICUT
DELAWARE	3.215,000	2.120.000	1.800.000	1.600,000	200,000	- -	195,000	135,000	1,095.000	95	50	5	(5) 40	629	DELAWARE
FLORIDA	49,693,385	14,693,385	11,184,047	8,684,047	2,600,000	- -	2,040,000	1,469,338	35,000,000	400	100	200	100	2,785	FLORIDA
GEORGIA	28,450.000	13.450.000	10,765.000	10.265.000	500.000	- -	2,000,000	695,000	15,000,000	630	130	220	280	6.729	GEORGIA
IDAHO	7.000,000	4.500,000	3.350,000	3,000,000	350,000	300.000	700,000	150.000	2.500.000	626	20	600	6	2.260	IDAHO
ILLINOIS	74,300,000	44,800,000	40.160,000	36.150,000	4,000,000	- -	2.750,000	1,900,000	29,500.000	1,600	400	- -	1,200	6.675	ILLINOIS
INDIANA	42,110,407	14,478,407	10,763,407	8,650,000	2,213,407	- -	3,596,000	120,000	27,632,000	355	42	21	293	4,845	INDIANA
IOWA	52,500,000	33,500.000	28,000.000	25,500,000	2,500.000	- -	4.000,000	1,500,000	19,000.000	1.425	500	300	625	7,078	IOWA
KANSAS	25.650.000	14.250.000	11.500.000	11,500,000	(6) - -	200,000	2.300,000	250,000	11.400.000	2.000	850	1,050	100	8.600	KANSAS
KENTUCKY	18,250,000	14.000,000	10.350.000	8.500,000	1,850,000	- -	2,750,000	900.000	4.250.000	550	250	200	100	3.400	KENTUCKY
LOUISIANA	16,000,000	10,000,000	6,700,000	5,700,000	1,000,000	- -	2,800,000	500,000	6,000,000	500	- -	450	50	6,000	LOUISIANA
MAINE	12.275.000	8,575,000	6.250.000	5.350,000	900.000	- -	1,975.000	450,000	3.600.000	406	- -	370	36	4.800	MAINE
MARYLAND	11,702.000	8.702.000	4,030,000	3,210.000	820,000	2,685	4.169,316	500,000	(7) 3.000,000	125	- -	45	80	2.685	MARYLAND
MASSACHUSETTS	13.790.000	11,290.000	3.500.000	3.050.000	450,000	5,300,000	2.200,000	290,000	2,500,000	260	- -	60	200	(8) 1,589	MASSACHUSETTS
MICHIGAN	53,630,000	23,630,000	17,000,000	14,000,000	3,000,000	- -	5,380,000	1,250,000	30,000,000	425	50	100	275	7,365	MICHIGAN
MINNESOTA	32.275.000	14,775,000	9,800,000	8.800,000	1,000,000	- -	4.500,000	475.000	17,500,000	758	300	350	108	6,956	MINNESOTA
MISSISSIPPI	6.675.000	5,175.000	3,000,000	2,000,000	1,000,000	100.000	1.900.000	175,000	1,500,000	220	100	60	60	4.300	MISSISSIPPI
MISSOURI	28.742.900	18,742.900	14.858,900	13,058.900	1.800,000	- -	2,784,000	1,100.000	(7) 10.000,000	829	472	225	132	7.600	MISSOURI
MONTANA	9,926,000	4,825,000	3,760,000	3,140,000	620,000	- -	470,000	595,000	(7) 5,000,000	257	236	20	1	1,500	MONTANA
NEBRASKA	14.320,000	4.320,000	2,000,000	1.750.000	250,000	50,000	2.280,000	20,000	10.000.000	600	250	350	- -	6.300	NEBRASKA
NEVADA	2,259,039	1.709,039	1,138.118	1,078.118	60,000	- -	375,921	195.000	550.000	257	- -	174	83	1,465	NEVADA
NEW HAMPSHIRE	11.865,000	8,665,000	2.415,000	2,315.000	100.000	(9) 4.000,000	2,000,000	250,000	3,000,000	110	- -	75	35	2,000	NEW HAMPSHIRE
NEW JERSEY	53,728,000	33,728,000	28,555,200	29,555,200	(6) - -	- -	2,000,000	3,172,800	20,000,000	158	16	- -	142	3,900	NEW JERSEY
NEW MEXICO	5,685,000	5,535,000	4,325,000	3,700,000	625,000	- -	1,000,000	210,000	150,000	556	300	246	10	5.041	NEW MEXICO
NEW YORK	134,688,713	94,688,713	86,188.713	81.188.713	5.000,000	- -	8,500,000	- -	40,000,000	1,487	- -	- -	(10) 1,487	10,208	NEW YORK
NORTH CAROLINA	42.300,000	26.300.000	22,100,000	19.600.000	2.500,000	3,200,000	- -	- -	(7) 17,000,000	1,250	150	400	700	6.797	NORTH CAROLINA
NORTH DAKOTA	10,077,797	5,707,797	4,586,830	3,913,330	673,530	237,892	883,075	- -	4,370,000	919	460	458	1	3,323	NORTH DAKOTA
OHIO	69.200.000	32.200,000	22,700,000	22,700,000	(6) - -	- -	9,500,000	- -	(7) 37,000,000	900	- -	900	- -	10.000	OHIO
OKLAHOMA	22,000,000	12,500,000	9,026,000	7.275.000	1,750,000	300,000	2,300,000	875.000	9,500,000	545	360	60	125	6.000	OKLAHOMA
OREGON	14,000,000	7,000,000	2,600,000	2.200,000	400,000	- -	3,800.000	600.000	7.000,000	190	105	85	- -	3,280	OREGON
PENNSYLVANIA	91,000,000	61,000,000	26,000,000	26,000,000	(6) - -	- -	18,000,000	7,000,000	(7) 40,000,000	875	- -	255	620	12,055	PENNSYLVANIA
RHODE ISLAND	7.100.000	6,150,000	5.100,000	3.600,000	1,500,000	- -	850.000	200,000	950.000	40	- -	- -	40	480	RHODE ISLAND
SOUTH CAROLINA	21.300,000	18,800,000	16,200.000	15,000,000	1.200,000	- -	2,300.000	300.000	2,500,000	800	50	200	550	5.200	SOUTH CAROLINA
SOUTH DAKOTA	9.500.000	4,000,000	2,420.000	2,170,000	250,000	275,000	975.000	330.000	5,500,000	407	- -	(3) 400	7	4,860	SOUTH DAKOTA
TENNESSEE	31,590,000	22,590,000	15,760,000	10,760,000	5,000,000	2,900,000	2,570,000	1,360,000	9,000,000	570	420	- -	150	6,038	TENNESSEE
TEXAS	39,078.000	24,078.000	10.000,000	7,000,000	3,000,000	4.000,000	9,000.000	1,078.000	15.000,000	800	400	100	300	18,000	TEXAS
UTAH	3.825.000	2,625,000	1,550,000	1.275.000	275,000	- -	800.000	275.000	1,200,000	148	- -	140	8	3.300	UTAH
VERMONT	4.500.000	3,500,000	1.700.000	1,475.000	226,000	- -	1.500,000	300.000	1,000,000	165	- -	125	40	4,400	VERMONT
VIRGINIA	19,457,760	12,457,760	8,697,000	8,133,000	564,000	- -	3,463,760	297,000	(7) 7,000,000	(11)-	- -	- -	- -	5,245	VIRGINIA
WASHINGTON	22,000.000	12,000,000	10.600,000	9,100,000	1.500.000	- -	1.400.000	- -	(7) 10,000,000	298	116	108	74	3,168	WASHINGTON
WEST VIRGINIA	(4)														WEST VIRGINIA
WISCONSIN	33.692.000	19.439.000	14,664.000	13.000,000	1,664,000	- -	4,610,000	165,000	14,253,000	1,446	111	1,032	303	10,000	WISCONSIN
WYOMING	3,656,000	2.756,000	1.860,000	1.460,000	400,000	- -	670.000	226,000	900.000	400	184	216	- -	2,930	WYOMING
TOTALS (12)															TOTALS

REMARKS:- ROAD BOND PAYMENTS EXCLUDED IN ABOVE EXPENDITURES. THE ESTIMATES ARE GENERALLY CONSERVATIVE.

NOTES:-
(1) STATES REPORTING RECONSTRUCTION OF ROAD COSTS UNDER MAINTENANCE ARE SO SHOWN HERE.
(2) WHERE NO ENTRY IS SHOWN, OVERHEAD IS INCLUDED IN CONSTRUCTION AND MAINTENANCE.
(3) INCLUDES SOME EARTH IMPROVED MILEAGE.
(4) NO ROAD PROGRAM ESTIMATES AVAILABLE.
(5) COVERS ONLY WIDENING OF EXISTING ROADS.
(6) INCLUDED WITH ROAD CONSTRUCTION.
(7) ESTIMATES BASED ON 1926 ROAD SURVEY DATA.
(8) ALSO 8000 MILES OF TOWN WAYS ARE MAINTAINED IN COOPERATION WITH TOWNS.
(9) INCLUDES $3.000.000 FOR REPLACEMENTS DUE TO 1927 FLOOD.
(10) INCLUDES STATE PARKWAY MILEAGE.
(11) NO MILEAGE REPORTED, BUT 58% OF CONSTRUCTION EXPENDITURES TO BE ON HARD PAVEMENTS AND 25% ON INTERMEDIATE GRADE SURFACINGS.
(12) NO TOTALS SHOWN, ON ACCOUNT OF OMISSION OF TWO STATES.

PROGRESS OF FEDERAL HIGHWAY LEGISLATION

(NOT FOR RELEASE)

NEW BILLS INTRODUCED IN CONGRESS SINCE THE LAST ISSUE OF THE NEWS LETTER AND FURTHER ACTION ON BILLS PREVIOUSLY INTRODUCED ARE SUMMARIZED BELOW:

H. R. 4625. - INTRODUCED IN THE HOUSE ON DECEMBER 5, BY R. W. MOORE OF VIRGINIA, AND DESCRIBED IN THE DECEMBER, 1927, NEWS LETTER. THIS IS THE AUTHORIZATION BILL FOR THE MOUNT VERNON MEMORIAL HIGHWAY. IT WAS REPORTED OUT FAVORABLY BY THE COMMITTEE ON ROADS ON MARCH 28, 1928.

H. R. 8269. - SIGNED BY THE PRESIDENT ON FEBRUARY 2, 1928. INCLUDES AN APPROPRIATION OF $3,000, AS DESCRIBED IN THE JANUARY, 1928, NEWS LETTER, TO PAY THE QUOTA OF THE UNITED STATES IN THE PERMANENT ASSOCIATION OF INTERNATIONAL ROAD CONGRESSES.

H. R. 9136. - THIS IS THE APPROPRIATION BILL FOR THE DEPARTMENT OF INTERIOR FOR THE FISCAL YEAR ENDING JUNE 30, 1929. IT HAS BEEN PASSED BY BOTH HOUSES OF CONGRESS AND WAS SIGNED BY THE PRESIDENT ON MARCH 7, 1928, BECOMING PUBLIC - NO. 100. THE BILL INCLUDES THE APPROPRIATIONS AND PROVISIONS FOR NATIONAL PARK ROADS DESCRIBED IN THE LAST NEWS LETTER.

H. R. 9767. - AUTHORIZES AN APPROPRIATION OF $2,654,000 FOR THE RELIEF OF VERMONT ON ACCOUNT OF THE DESTRUCTION OF ROADS AND BRIDGES BY THE RECENT FLOOD, AS DESCRIBED IN THE FEBRUARY, 1928, NEWS LETTER. THIS APPROPRIATION WAS INCLUDED IN THE AGRICULTURAL APPROPRIATION BILL, AS AN AMENDMENT, ON MARCH 29, 1928.

H. R. 10565. - AUTHORIZES AN APPROPRIATION OF $1,831,794 FOR THE RELIEF OF KENTUCKY ON ACCOUNT OF THE DESTRUCTION OF ROADS AND BRIDGES BY THE RECENT FLOOD, AS DESCRIBED IN THE FEBRUARY, 1928, NEWS LETTER. THIS APPROPRIATION WAS INCLUDED IN THE AGRICULTURAL APPROPRIATION BILL, AS AN AMENDMENT, ON MARCH 29, 1928.

H. R. 10864. - AUTHORIZES AN APPROPRIATION OF $653,300 FOR THE RELIEF OF NEW HAMPSHIRE ON ACCOUNT OF THE DESTRUCTION OF ROADS AND BRIDGES BY THE RECENT FLOOD, AS DESCRIBED IN THE FEBRUARY, 1928, NEWS LETTER. THIS APPROPRIATION WAS INCLUDED IN THE AGRICULTURAL APPROPRIATION BILL, AS AN AMENDMENT, ON MARCH 29, 1928.

H. R. 12380. - Introduced in the House on March 24, by J. S. Parker of New York, and referred to the Committee on Interstate and Foreign Commerce. Provides for the regulation of motor vehicles operating in interstate commerce as common carriers of persons on the public highways. Provides that State boards shall administer the Act, where they exist; otherwise the Interstate Commerce Commission shall function. Provides that no person shall engage in interstate commerce with motor vehicles until a certificate of public convenience and necessity has been obtained, after having filed a specified application. The applicant motor carrier must also file a bond, with the board or Commission, binding himself to pay damages arising out of the death or injury of persons or property. Provides that rates and fares shall be just and reasonable as determined by the board or Commission. Provides that the board or Commission shall have authority to require continuous and adequate service at just and reasonable rates. Provides that where a controverted question involves two or more States that the several boards in session may decide the matter. Provides for the creation of a joint board from representatives of the several State boards to decide on matters other than rates. Provides for appeals from the decision of a State board or the joint board to the Interstate Commerce Commission. Provides for the service of orders of the boards upon interstate motor carriers. Provides a fine of $100 for the first offense and a fine of not more than $500 for subsequent violations of the orders of the board or Commission. Provides that the act shall not be construed to affect interstate commerce by motor carriers. These are subject only to State laws and supervision.

H. R. 12385. - Introduced in the House on March 24, by D. B. Colton of Utah, and referred to the Committee on Roads. Provides for certain amendments to the existing Federal-aid road legislation. Provides that paragraph 4, section 4 of the Post Office Appropriation bill for the fiscal year ending June 30, 1923, prescribing limitations on the payments of Federal funds per mile, shall be so amended that the Federal share shall in no case exceed 50 per cent of the total cost of the project except as authorized to be increased in the public-land States. Provides that paragraph 6 of the Federal highway act, approved November 9, 1921, requiring that not more than 60 per cent of the Federal aid allotted to any State shall be expended upon the primary roads, as further qualified, shall be repealed. Provides for the further amendment of Section 11 of the Federal highway act, approved November 9, 1921, so that Federal aid may be granted up to one hundred per cent of the cost of the project

ON CERTAIN ROADS IN THE PUBLIC-LAND STATES, PROVIDED THE STATE SHALL ALLOCATE DURING THE SAME FISCAL YEAR, UPON SOME OTHER FEDERAL-AID PROJECT, THE AMOUNT IT WOULD ORDINARILY HAVE BEEN REQUIRED TO SPEND ON THE 100-PER CENT PROJECT. PROVIDES FOR THE PLANTING AND MAINTENANCE OF SHADE TREES UPON APPROVED SECTIONS OF THE FEDERAL-AID HIGHWAY SYSTEM. PROVIDES THAT THE TOTAL MILEAGE OF THE FEDERAL-AID HIGHWAY SYSTEM IN A STATE MAY EXCEED 7 PER CENT OF THE TOTAL MILEAGE IN THE STATE, BY THE MILEAGE OF ROADS IN THE SYSTEM WITHIN FEDERAL RESERVATIONS. PROVIDES THAT FEDERAL FUNDS MAY BE EXPENDED ON THAT PORTION OF A HIGHWAY OR STREET WITHIN A MUNICIPALITY HAVING A POPULATION OF 2,500 OR MORE, ALONG WHICH, FROM A POINT ON THE CORPORATE LIMITS INWARDLY, THE HOUSES AVERAGE MORE THAN 200 FEET APART: PROVIDED, THAT NO FEDERAL FUNDS SHALL BE EXPENDED FOR THE CONSTRUCTION OF ANY BRIDGE WITHIN OR PARTLY WITHIN ANY MUNICIPALITY HAVING A POPULATION OF MORE THAN 30,000 AS SHOWN BY THE LATEST AVAILABLE FEDERAL OR STATE CENSUS; BUT THIS LIMITATION SHALL NOT APPLY IN THE CASE OF AN INTERSTATE BRIDGE, INCLUDING APPROACHES, CONNECTING SUCH MUNICIPALITY IN ONE STATE WITH A POINT IN AN ADJOINING STATE WHICH MAY BE WITHIN A MUNICIPALITY HAVING A POPULATION OF NOT MORE THAN 10,000. PROVIDES THAT ALL ACTS OR PARTS OF ACTS INCONSISTENT WITH THE PROVISIONS OF THIS ACT SHALL BE REPEALED.

H. J. RES. 107. - THIS RESOLUTION WAS DESCRIBED IN THE FEBRUARY, 1928, NEWS LETTER. S. J. RES. 31 WAS SUBSTITUTED FOR THIS BILL, PASSED, AND SIGNED BY THE PRESIDENT, ON MARCH 29, 1928.

H. J. RES. 108. - THIS RESOLUTION WAS DESCRIBED IN THE FEBRUARY, 1928, NEWS LETTER. S. J. RES. 30 WAS SUBSTITUTED FOR THIS BILL, PASSED, AND SIGNED BY THE PRESIDENT ON APRIL 4, 1928.

H. J. RES. 252. - INTRODUCED IN THE HOUSE ON MARCH 27, BY C. COLE OF IOWA, AND REFERRED TO THE COMMITTEE ON FOREIGN AFFAIRS. AUTHORIZES THE ASSISTANCE OF THE UNITED STATES GOVERNMENT IN THE CONSTRUCTION OF AN INTER-AMERICAN HIGHWAY IN THE WESTERN HEMISPHERE.

H. J. RES. 256. - INTRODUCED IN THE HOUSE ON MARCH 28, BY W. J. SEARS OF FLORIDA AND REFERRED TO THE COMMITTEE ON ROADS: AUTHORIZES THE BUREAU TO MAKE A SURVEY TO DETERMINE THE COST OF CERTAIN BRIDGES ON UNITED STATES ROUTE 1, AND ITS EXTENSION FROM THE FLORIDA MAINLAND TO KEY WEST. A SIMILAR BILL - H. RES. 117 - WAS DESCRIBED IN THE LAST NEWS LETTER.

H. J. Res. 259. - Introduced in the House on April 2, by C. J. McLeod of Michigan, and referred to the Committee on Foreign Affairs. Authorizes the assistance of the United States Government in the construction of an Inter-American highway in the Western Hemisphere.

H. Res. 117. - This bill was described in the last issue of the News Letter. It was reported out on March 27, 1928, by the Committee on Roads with an amendment eliminating the clause endorsing the construction of the bridges by the Government, thus limiting the work of the Bureau to a survey and estimate of the cost of the work.

S. 1718. - This bill was described in the December, 1927, News Letter. It was reported out without amendment on April 13, 1928, by the Senate Committee on Post Offices and Post Roads.

S. 2699. - This bill was described in the February, 1928, News Letter. It is similar to H. R. 9767 described above. On March 3, 1928, this appropriation was included as an amendment to the agricultural appropriation bill.

S. 3674. - Introduced in the House on March 19, by T. L. Oddie of Nevada, and referred to the Committee on Post Offices and Post Roads. Amends existing Federal-aid road legislation and authorizes an appropriation of $3,500,000 for each of the fiscal years 1929, 1930, and 1931, for the construction of roads on the Federal-aid system in the public-land States. These sums are in addition to the other Federal aid authorized to be appropriated, and no contribution from the States shall be required in the expenditure thereof. On April 13, this bill was reported out from the Committee without amendment.

S. 3874. - Introduced in the Senate on April 3, by T. J. Walsh of Montana, and referred to the Committee on Post Offices and Post Roads. Authorizes an appropriation of $1,943,200 for the construction of a highway from Red Lodge, Montana, to the boundary of Yellowstone National Park near Cooke City.

S. 3992. - Introduced in the Senate on April 9, by J. E. Watson of Indiana, and referred to the Committee on Interstate Commerce. This bill is identical with H. R. 12380 as described above.

S. J. Res. 30. - This bill was described in the December, 1927, News Letter. It was signed by the President on April 4, 1928, and is now Public Resolution 24.

S. J. Res. 31. - This bill was described in the December, 1927, News Letter. It was signed by the President on April 29, 1928, and is now Public Resolution 18.