Development and Performance of Flexible Pavement on the New Jersey Turnpike

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● BEFORE DISCUSSING the performance of flexible pavement on the New Jersey Turnpike, it might be well to give a brief review of the Turnpike's history. The New Jersey Turnpike is 118 miles long from Deepwater in Salem County to State Highway 46 in Bergen County. Starting from the southern terminus of the Turnpike, the pavement was four lanes wide for a distance of 91 miles to the Woodbridge Interchange. From this point to the Lincoln Tunnel Interchange leading to New York City, a distance of 22 miles, six lanes were constructed. From the Lincoln Tunnel Interchange to the northern end of the Turnpike, a distance of 5 miles, the pavement was reduced to four lanes. Acceleration and deceleration lanes, each 1,200 ft long, were constructed at 17 interchanges and 10 service areas to assure additional safety in merging the traffic on the Turnpike. Since the Turnpike was opened to traffic late in 1951, 61 miles of roadway have been widened to provide six lanes where there were originally four. One additional interchange has been added at Florence, N. J. to tie in with the Pennsylvania Extension and the Pennsylvania Turnpike. In addition, the Newark Bay-Hudson County Extension was constructed between the Newark Airport Interchange and the Holland Tunnel with three new interchanges and two service areas. Two other service areas were opened to accommodate patrons traveling to and from the Pennsylvania Extension.

Because of an increase in traffic from 18,239,000 in 1952 to approximately 41,000,000 in 1958, traffic problems have developed which require special handling. It is mandatory that traffic is not interrupted for long periods while construction of new facilities by contract is under way or when the Authority Maintenance Department is performing maintenance or repair work on the roadway. Extreme precautions are taken to assure the safety of the traveling public.

PAVEMENT COMMITTEE

There were six engineering firms, in addition to the General Consultants, selected by the Turnpike Authority as Section Engineers to design and supervise construction of the Turnpike. Because of the importance of preparing a satisfactory pavement design, taking into consideration economics, loads and maintenance, a Paving Committee was formed consisting of one representative from the office of each Section Engineer and one from the office of the General Consulting Engineer. The committee was charged with two principal tasks: (1) to develop a typical grading section which would be suitable for whatever type of pavement was selected, and (2) to develop a design for both rigid and flexible pavement meeting the criteria set up by the Authority.

The typical grading section developed by the committee required excavation of all materials to a minimum of 36 in. below the finished pavement grade. The lower portion of the backfill was to consist of layers of pervious frost resistant material. The top of the finished grading section was 8 in. below grade at the center line with a 2 percent cross slope. The purpose of this was to provide temporary drainage until such time that paving was started.

The second task of developing a design for both a rigid and flexible pavement was then undertaken. Many conferences were held with various organizations, officials of neighboring state highway departments, contractors and material producers in an effort to gather data. A compromise axle load of 36,000 lb was recommended to the Authority by the Paving Committee and was approved. The flexible pavement design consisted of 6 in. of well graded aggregates of a frost resistant character placed in two 3-in. layers as subbase. Two 3-in. layers of water bound macadam and one 2-in. layer of penetration macadam comprised the base course. One 2½-in. binder course and one 2-in. surface course made up the 4½ in. of bituminous concrete. Side forms were called for during the installation of the bituminous concrete. The rigid pavement design consisted of 10 in. of portland cement reinforced concrete pavement on a 6-in. pervious subbase.

The Turnpike Authority desired to take alternate bids on the two types of pavement and accordingly plans were prepared. Bids were received and on November 30, 1950, the Chairman of the Authority announced that after consideration of all factors involved, it was decided to use the flexible pavement design for the New Jersey Turnpike. The decision was made in consultation with the Turnpike Engineers, those of the Paving Committee and the General Consultants.

The totals of the bids received were $39,403,000 for asphaltic concrete and $44,823,000 for reinforced portland cement concrete, a difference of $5,400,000 in favor of asphaltic concrete for the 3,900,000 sq yd of pavement involved. One other important factor which the Authority took into consideration in making the decision to use the flexible pavement was that the materials comprising that pavement probably would be least affected by the then current critical materials situation brought about by the Korean conflict.

Shortly after the award of the paving contracts, several suggested changes in the contract specifications were brought to the attention of the Authority in an effort to expedite construction. The suggested changes were:

1. Substitute two courses of penetration macadam totaling 7½ in. in lieu of 6 in. of dry bound and 2 in. of penetration macadam as the base course.
2. Increase the subbase from 6 in. in depth to 6½ in. in order to make up the design thickness.
3. Provide 3.2 gal. of 85/100 penetration grade asphalt cement per square yard for the penetration macadam which incidentally resulted in a credit of $.10 per square yard to the Authority on the price of the pavement.
4. Eliminate side forms.
5. Substitute three 1½-in. courses of bituminous concrete in lieu of the two courses specified of one 2½-in. and one 2-in. course.

The Authority after due consideration approved the use of asphalt penetration macadam base for that originally specified throughout the Turnpike. With the concurrence of the Section Engineers and the Paving Committee, the Authority approved the substitution of the three courses and the elimination of side forms with the understanding that by eliminating the side forms, the requirements of the specifications regarding line, grade and riding qualities of the pavement would be met.

The penetration macadam proved to be a worthy substitute as the completed base provided the contractors with an excellent haul road with the result that the Turnpike Authority was able to open several sections of the roadway late in 1951 and the remainder early in 1952.

PAVEMENT AS CONSTRUCTED

The Turnpike was divided into seven sections each under the direction of a Section Engineer, and it was, therefore, necessary that proper measures be taken regarding mix control and control of paving methods to insure that the final end product was within the tolerances specified. The bituminous concrete has to be sufficiently stable to withstand high axle loads, high speed traffic and at the same time be flexible enough to resist cracking or deterioration. The surface texture was to be smooth and still maintain a high degree of skid resistance. Seventeen plants meeting Turnpike specifications were used by the various prime paving contractors or their subcontractors to produce either a 4,000- or a 5,000-lb batch. The analysis of the materials for the leveling courses and the wearing course were approximately as shown in Table 1. The average charac-

TABLE 1

AVERAGE SIEVE ANALYSIS OF MATERIALS USED FOR BITUMINOUS CONCRETE PAVEMENT

Sieve Size	Leveling Course Mix (% passing)	Wearing Course Mix (% passing)	New Jersey Turnpike Authority Specifications (%)	
			Leveling Course Mix	Wearing Course Mix
1 in.	100	None	100	None
¾ in.	95	100	-	100
⅜ in.	63	72	50-70	60-80
No. 4	38	44	32-46	40-52
No. 8	32	38	25-36	30-42
No. 30	22	24	16-26	15-25
No. 100	6	6	5-12	6-12
No. 200	3	3	1-5	2-6
Asphalt cement added	4.9	5.6	4.5-5.5	5.0-6.5

TABLE 2

AVERAGE CHARACTERISTICS OF ASPHALT MIXES

Characteristics	Leveling Course	Surface Course
Mixing temperature	295 deg	295 deg
Stability of Marshall Test	1,885	1,580
Density (theoretical maximum)	2.55	2.50
Density (average field)	96%	97%
Flow by Marshall Test	9	11

TABLE 3

RANGE OF TOLERANCES

Passing 3/8-in. and larger sieves	± 5 percent
Passing No. 4 to 30 sieves	± 3 percent
Passing No. 100 sieve	± 2 percent
Passing No. 200 sieve	± 1.0 percent
Amount of asphalt cement added	± 0.2 percent
Temperature of mix on delivery	± 15 F

teristics of the mixes were approximately as given in Table 2. All mixes were required to conform to the tolerances given in Table 3.

The penetration macadam base extended 9 in. beyond the surface course of the bitumenous concrete at the shoulders. Each intermediate course of bituminous concrete was stepped in on either side. Figure 1 indicates a typical cross-section. The Turnpike specifications contained rigid provisions for tolerances such as: (a) maximum tolerance with a 16-ft straight edge placed parallel to the center line to be no greater than 3/16-in. variance on the leveling course and 1/8-in. variance on the surface course; and (b) the surface course to be within 1/4 in. measured vertically of the required grade and cross-section as shown on the plans.

SUBGRADE CONDITIONS

The southern portion of the Turnpike provided no abnormal problems of highway construction as the materials for excavation and embankment met the specifications. Two layers of select subgrade material were placed to a maximum depth of 2 ft 4 in. above the common embankment.

The lower 12-in. layer was specified as Grade B select subgrade and was limited to not more then 10 percent passing the 200 mesh sieve, a plasticity index of not more than 6 and a CBR of not less than 15 at 100 percent maximum density, saturated and soaked. The Grade A select subgrade made up the upper layer and was limited to no more than 6 percent passing the 200 mesh sieve, a plasticity index of not more than 3 and a CBR of not less than 20 at 100 percent maximum density, saturated and soaked. The specifications described the subgrade materials as pervious, free draining and frost resistant. These materials are normally classified as A-3 by the PRA classification. Compaction to 95 percent of maximum density was required and obtained in the fills. Grade A select subgrade material placed by the grading contractor, was in sufficient quantity to provide for the placement of pavement subbase by the paving contractors. Excess material was used to build up the median and shoulders.

The northern portion was to pass through the low tidal flats and marshes known as the Jersey Meadows. These marsh areas have soft deposits varying in depth from a few feet to 100 ft and presented a major construction problem for both highway and bridge construction. The Authority approved the sand drain method for constructing the embankments in this area in lieu of other more generally used methods. Approximately 5,000,000 lin ft of sand drains were driven in Jersey Meadows and vicinity.

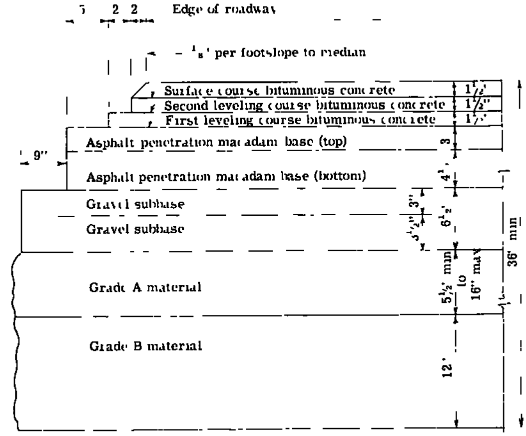


Figure 1. Typical cross-section of New Jersey Turnpike.

EFFECT OF SAND DRAIN AREAS ON FLEXIBLE PAVEMENT

Sand drains for acceleration of the drainage of water from the surrounding mud by forcing it laterally upward and outward when subjected to the pressure of overlying fill were introduced in the northern portion of the Turnpike. This method of consolidation accomplished in months what the older methods of construction would have required years to do. This fast method made it possible to fill, pave and open the section in Jersey Meadows by early 1952. In order to expedite the original stabilization, overloads at these critical areas had been removed when settlement curves had shown a definite tendency to flatten out. Longer periods of overload retention were provided at some locations when possible. It would have been advisable, had time permitted, to extend the overload retention period at other locations to accomplish more complete stabilization. The pavement did not fail in areas of complete stabilization. At other locations some settlement of the pavement created a hazard to traffic, particularly tractor-trailer units. The first signs of settlement in this area, particularly at bridge approaches, were noticed in 1952. Because of this, profile restoration by means of resurfacing was required in 1954, amounting to approximately 48,000 sq yd. In 1956, additional resurfacing amounting to approximately 28,000 sq yd was undertaken. In 1957, approximately 5,000 sq yd were placed and in 1958, the program included the resurfacing of about 4,000 sq yd. This would indicate that settlement, while continuing, is slowing down appreciably. It remains to be seen if this settlement will cease in the near future.

TRAFFIC

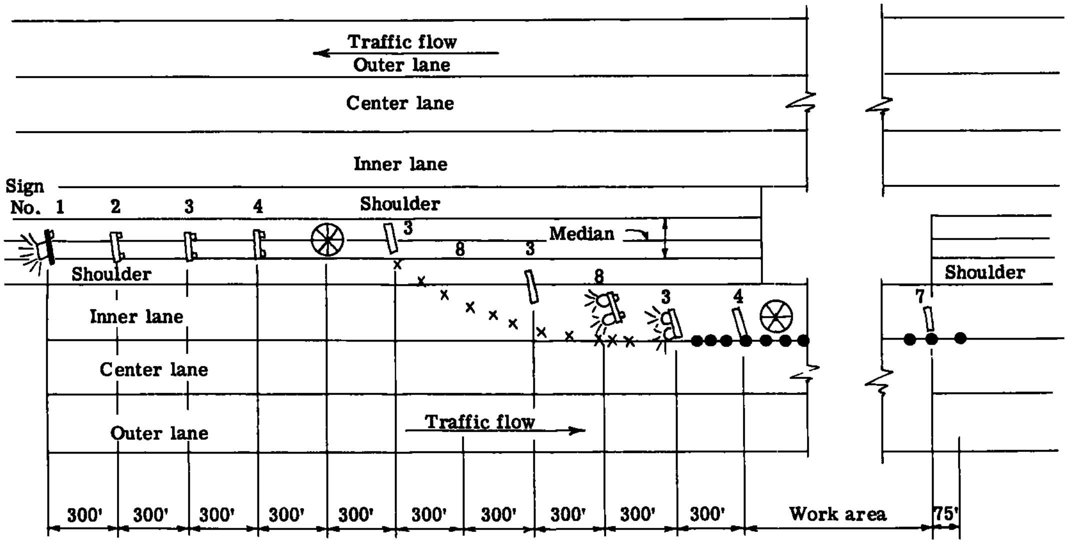
It might be important, before continuing, to give a brief accounting of traffic conditions encountered on the New Jersey Turnpike since it was opened late in 1951. In 1952, the first year that the Turnpike was fully opened to traffic, the road carried 18,239,000 vehicles for a total of 769,154,000 vehicle miles. In 1954, two years later, 24,706,000 vehicles used the Turnpike for a total of 929,324,000 vehicle miles. It became apparent in 1954 that, due to traffic build-up and the pending construction of the Pennsylvania Extension, the section between the Woodbridge Interchange and the North Camden Interchange that had originally been constructed as a four lane highway should be widened to provide for an additional two lanes of traffic. The same traffic build-up was true between the Lincoln Tunnel Interchange and the George Washington Bridge Interchange on Route 46.

The widening construction was undertaken early in 1955 and the third lane was opened to traffic late in December of the same year. The project was not fully completed until July 1956. Traffic in 1955 amounted to 26,000,000 vehicles for a total of 940,000,000 vehicle miles which was below the anticipated volume for this period. In 1956, approximately 32,000,000 vehicles used the Turnpike for a total of over one billion vehicle miles. In 1957, 39,500,000 vehicles were on the Turnpike for a total of 1,206,000,000 vehicle miles. It was anticipated that in 1958, some 41,000,000 vehicles would pass over the New Jersey Turnpike. It might be interesting to note that the average mileage traveled, per vehicle, has been reduced from 40 in 1952 to 30 in 1957 and that the average toll per vehicle decreased from $.90 in 1952 to $.74 in 1957. The total revenue has increased from $16,000,000 in 1952 to $29,000,000 in 1957 with an anticipated total of $31,000,000 in 1958. The average daily number of vehicles using the Turnpike has increased from 49,800 in 1952 to 108,000 in 1957.

WIDENING WORK

As stated earlier, widening work was started early in 1955. Four major contracts were awarded covering every item of work needed to construct the two third lanes and shoulders. The paving specifications from subbase to surface course were written to conform to the original specifications of the Turnpike. One Section Engineer was chosen by the Authority to design and supervise the widening from the Woodbridge Interchange to the North Camden Interchange, a distance of 55 miles. The other Section Engineer was designated by the Authority to design and supervise the widening from the Lincoln Tunnel Interchange to the George Washington Bridge Interchange, a distance of 6 miles.

Rigid regulations governing the protection of traffic were provided in the supplementary specifications. These included the erection of continuous wooden curbs with reflectorized railing, warning and traffic signs, cones, and the use of uniformed flagmen. Contractors' vehicles were prohibited from making U turns and workers were prohibited



Start of lane closing—Sign 1 Work area ahead Size 4' x 4'
Sign 2 Reduce speed Size 4' x 4'
Sign 3 Lane closed Size 4' x 4'
Sign 4 Speed limit 45 Size 4' x 4'
Sign 7 Resume normal speed 4' x 4'
Sign 8 Striped barricades 8' x 8'
⊛ Flagman
X Traffic cones 50-ft intervals
● Traffic cones 75-ft intervals

Figure 2. Traffic protection for one lane closing.

from crossing the roadway. Construction work was permitted only during daylight hours. Turnpike traffic could be limited to one lane for brief periods provided written permission of the Section Engineer was obtained. In each contract one foreman was called for to supervise and instruct watchmen, guards and workers in safety measures. It was also the foreman's responsibility to maintain and install all protective devices. A two-way radio for liaison with the Turnpike police was called for in the specifications and was to be installed in the Traffic Protection Foreman's vehicle. This provision of the contract proved to be instrumental in preventing potentially dangerous traffic tie-ups. Figure 2 shows the location of cones, signs and flagmen required when a lane was closed to traffic to permit construction. Adequate traffic safety control has been a major consideration of the Authority during construction or maintenance work. Approximately $1,000,000 was included in the widening contracts for traffic protection.

Approximately 930,000 sq yd of bituminous concrete surfacing were installed between the Woodbridge Interchange and the North Camden Interchange. Similarly, 77,500 sq yd of bituminous concrete surfacing were installed between the Lincoln Tunnel Interchange and the northern terminus of the Turnpike.

The installation of the subbase material, two courses of penetration and two leveling courses of bituminous concrete, was similar to that of the original construction in 1951. Prior to the installation of the new surface course, the original surface course was cut back an average of 10 in. by means of a mechanical saw capable of making straight and true cuts to the depth of 1½ in. The section of pavement was removed by the contractor by means of a grader blade. No difficulty was experienced in this removal. The overlap of the surface course provided a water stop.

Provisions were made in the contracts to mud-jack concrete bridge approach slabs of existing structures which had settled. Provisions were also made to install some 40,000 tons of bituminous concrete for resurfacing areas of the original two lanes which had settled or had gone out of contour. This resurfacing provided a means to even up the old surface and match the new one. The widening contracts provided for the installation of 3 in. of penetration macadam for inside and outside shoulders. Longitudinal and transverse porous pipe drains were installed in the shoulders as directed by the Engineer. The installation of these drains prevented side slope erosion as sub-surface drainage was concentrated at the drains. Asphalt lip curbs were installed against guardrail posts and down spouts of corrugated metal pipe were placed in the side slopes to drain off storm water from the low spots in the shoulder. Due to the measures which were taken in the widening program a minimum of erosion has taken place.

PENNSYLVANIA EXTENSION

The New Jersey Turnpike Authority and the Pennsylvania Turnpike Commission entered into an agreement in 1954 to construct a high level bridge over the Delaware River from Florence, New Jersey to Edgely, Pennsylvania. The bridge, built as a joint venture of the Authority and the Commission, is maintained by the Pennsylvania Turnpike Commission, however, one-half of the cost is borne by the New Jersey Turnpike Authority.

To connect with the bridge known as the Delaware River Turnpike Bridge, the New Jersey Turnpike Authority constructed a 6-lane highway 5½ miles long, starting from just south of the Bordentown Interchange. Its construction is similar to that of the Turnpike itself in all respects except that the median is 10 ft wider than that on the southern portion of the Turnpike. Due to delays in the grading work in 1955, the major portion of the paving which consisted of approximately 280,000 sq yd of pavement, was installed between the latter part of March 1956 and the middle of May 1956. The completion date set jointly by the Commission-Authority was May 25, 1956 and this date was met. Vehicles leaving the New Jersey Turnpike to travel to Pennsylvania pay their toll at new Interchange No. 6, immediately east of the bridge.

AN EVALUATION OF THE PRESENT CONDITION OF THE TURNPIKE PAVEMENT

As stated early in this paper, it was necessary to provide resurfacing at approaches to bridges, at some locations in the sand drain areas and at several cross drains or similar structures due to settlement. In the past, due to the hard bituminous concrete, the pavement was corrected by removing high spots by the heater planer method and reinstalling bituminous concrete to a new surface grade as established by survey and profile. In order to prevent "feather edging" of resurfacing, all areas to receive resurfacing had the existing bituminous concrete surface removed to such limits and depths as to insure that the resurfacing course would have a minimum thickness of 1½ in. Care was taken that the adjacent or underlying pavement was not damaged by the heater planer. Adjacent shoulders are brought to grade by means of a bituminous concrete plant mix plus a seal coat of cut back asphalt and stone chips. At present, in order to reduce the cost of resurfacing, bituminous concrete is being installed as an overlay in the low areas only, without the use of the heater planer. The ends are "feather edged" with a hot mix of silica sand asphalt. Not only does this result in considerable saving in money expended but inconvenience to motorists is reduced. The completed roadway while not as smooth as visualized in 1950 and constructed in 1951, provides, nevertheless, a comfortable level riding surface with a high degree of skid resistance.

Examination of settled concrete bridge approach slabs revealed that, due to settlement, the end resting on the abutment back wall was higher than the bridge slab. Consequently, it became necessary to either mud jack the slab to its original elevation to meet adjacent resurfacing or, where mud jacking was not practicable, to remove the high concrete by means of power saws and pavement breakers and then cover the entire slab with bituminous concrete. The cost of accomplishing this corrective work is extremely high because of the hand work involved.

In 1956, some longitudinal cracks in all three lanes were observed in fill areas adjacent to bridges and in the sand drain areas. Early in 1958, further longitudinal cracks were found either in the wheel paths or in the center of the middle lane, of fill areas where the new third lane had been added in 1955. It is believed that the cracking in the fill areas is due in part to the weakened condition of the pavement caused by trapped water in the subbase material or in the penetration macadam base. The pavement deflects or rebounds at these locations and the surface is strained in tension or compression or both. The conclusion is that flexural stresses set up by moving traffic lead to crack formations when they exceed the flexural limit of the pavement. The cracks found in the Turnpike pavement vary in depth and width from 1/16 in. to 3/4 in.

In the sand drain areas the cracking is due to the uneven settlement of the pavement while the cracking in the center lane probably may be traced to the loss of lateral support during the widening operation.

Early in 1958 small areas of pavement of the new third lane had become deteriorated. The deterioration caused local pot-holing and disintegration of the surface course of the bituminous concrete pavement. Cores were taken and submitted for test and analysis. The results showed that voids due to poor compaction during construction existed in the top 3 in. of the pavement, which could have been the cause of the disintegration particularly as these failures developed during periods of freezing and thawing. Test results in unaffected areas showed relatively low voids and high densities indicating further consolidation of the pavement.

One source of annoyance to the motorist and to the Authority has been the grooving of the pavement, especially in the outside lane. This lane carried the bulk of the truck traffic, causing channelization and grooving in the wheel paths.

WHAT THE AUTHORITY IS DOING TO CORRECT PAVEMENT DEFICIENCIES

Resurfacing of the pavement has been going on since 1954. The cost of resurfacing has increased from $4.38 per sq yd to $7.70 in 1957. The increased cost is due in part to the higher cost of labor and materials, however, the increase in traffic control is the major cause of the higher cost per square yard. Due to traffic volume increase, protection costs have more than doubled in three years because of the necessity of having additional flagmen, large signs, flasher lights and reflectorized traffic cones with heavy rubber bases. The loss of productive hours of labor due to traffic regulations prohibiting work Monday mornings and Friday afternoons, plus the time lost on other working days due to weather or other conditions, influences higher costs. The specification limits for the resurfacing material are shown in Table 4, while the recommended job mix formula is shown in Table 5.

The sealing of longitudinal cracks is the responsibility of the Maintenance Department of the Authority. This operation is accomplished by pouring asphalt emulsion, Grade RS-1 into the crack and then covering the emulsion with a sharp hard manufactured stone sand. Excessive loose material will be whipped off by traffic.

In August 1958, in an effort to improve this operation, the Maintenance Department undertook some test sections with the use of 3 percent solid neoprene added to each 55 gal. of emulsion. The percentage of neoprene was based on the solid asphalt of the emulsion. This mixture was found very satisfactory and this procedure has become a standard method of maintenance because better sealing and bonding is accomplished. In a normal working day the sealing crew is able to cover about one mile of 3-lane pavement. The cost of this operation is variable but a good average for labor costs would be about $75 per day.

TABLE 4

RESURFACING SPECIFICATIONS LIMITS

Square Sieve Size	Total Percent Passing (by weight)
5/8 in.	100
3/8 in.	60-85
No. 4	35-55
No. 10	30-45
No. 20	15-33
No. 40	10-26
No. 80	5-15
No. 200	2-8
Asphalt cement (percent total weight of aggregates)	5.5-7.5 (85/100 pen.)
Anti-stripping compound	0.5 percent by weight of AC
Temperature, F	275-325

TABLE 5

RECOMMENDED CURVES

Square Sieve Size	Total Percent Passing (by weight)
5/8 in.	100
3/8 in.	75
No. 4	45
No. 10	38
No. 20	28
No. 40	20
No. 80	8
No. 200	5
AC	6.0
Anti-stripping compound	0.5 percent by weight of AC
Temperature, F	300

A number of deteriorated areas about 6 ft square were removed and replaced in the spring of 1958 at a cost of about $30 per ton of bituminous concrete. This is a total cost, including traffic protection. Since that time no new areas have appeared.

No attempt has been made as yet to correct the grooving. Since expanded use of silica sand asphalt has been proven satisfactory by various agencies, it is possible that the Authority will experiment with that material in the longitudinal depressions in the near future, however, at the present time no definite plans have been established.

CHANGES MADE SINCE 1951

Since the Turnpike was opened to traffic in 1951, a number of important improvements connected with the pavement have been made, chief among them are: (1) elimination of about 80 percent of the surface treated gravel shoulders, inside and outside, in favor of 3-in. penetration macadam which has substantially reduced maintenance costs; (2) increase in width of outside shoulders in the widened area from 10 ft to 12 ft, thus providing greater safety to the motorist who stops for emergency repairs; and (3) installation of bituminous concrete lip curb along the guardrail posts in order to concentrate storm drainage to drainage structures and as an erosion control measure.

In 1958 one-half of the original remaining 38 miles of gravel inside shoulders was removed and a 3-in. hot plant mix installed. This was done to expedite construction and to lessen the restriction of traffic. Lower maintenance costs will result from this improvement. Plant mix was also installed on inside and outside shoulders, which are used as deceleration and acceleration lanes to and from maintenance areas, in lieu of penetration macadam or gravel. This has reduced potential traffic hazards as well as maintenance costs.

CONCLUSIONS

The easiest way to summarize the performance of the Turnpike pavement over the past seven years of operation is to say that the design is adequate and that the traffic load is unique in the history of highways. With proper maintenance and repair the Turnpike pavement will be of service for a good many years, however, the type of future maintenance must be determined in advance from experience and experimentation on the roadway itself.

The time is near when a decision must be reached as to the methods of maintenance to be undertaken. This determination must include the type of materials which should be used, costs, expected life and safety. Careful analysis of all conditions which affect the behavior of the pavement, such as, excessive loads and water and base conditions, should be made to determine the necessary remedial measures.

It is apparent that there is a need for the formation of an advisory committee, similar to the Paving Committee established by the Authority in 1950, to study the unusual and intricate pavement maintenance problems of the New Jersey Turnpike. This committee should be composed of experts from various organizations dealing mainly in paving problems. The committee's reports of its findings would assist the Authority in determining proper action to take in the future to insure many years of service to the public traveling on the "fabulous" Turnpike.

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