SPECIAL PROVISIONS
SPECIAL PROVISIONS

FOR

CARLISLE ROAD RECONFIGURATION
MONTCLAIR STATE UNIVERSITY

IN THE TOWNSHIP OF MONTCLAIR AND TOWNSHIP OF LITTLE FALLS

COUNTY OF ESSEX AND COUNTY OF PASSAIC

SPECIFICATIONS TO BE USED

The 2019 Standard Specifications for Road and Bridge Construction, of the New Jersey Department of Transportation (Department) as amended herein will govern the construction of this Project and the execution of the Contract.

These Special Provisions consist of the following:

Page 1 of 20 inclusive.

The following additional project specific Attachments are located at the end of these Special Provisions:

PUBLIC UTILITIES.................................................................APPENDIX A
NJDOT STANDARD CONSTRUCTION DETAILS...............................APPENDIX B

Whenever any section, subsection, subpart or subheading is amended by such terms as changed to, deleted or added it is construed to mean that it amends that section, subsection, subpart or subheading of the 2019 Standard Specifications unless otherwise noted.

Whenever reference to page number is made, it is construed to refer to the 2019 Standard Specifications unless otherwise noted.

Henceforth in this supplementary specification whenever reference to the State, Department, ME, RE or Inspector is made, it is construed to mean the particular Owner executing this contract.

Whenever reference to Title 27 is made, it is construed to mean Title 40.
DIVISION 100 – GENERAL PROVISIONS

SECTION 101 – GENERAL INFORMATION

101.03 TERMS

THE FOLLOWING TERMS ARE ADDED:

**Full Traffic Access.** All work is complete to allow safe unencumbered use of the final paved portion of roadway throughout the project including but not limited to striping, RPMs, rumble strips, highway lighting, and traffic signals as determined by the RE.

**Parcel.** Property to be acquired for transportation purposes, described by metes and bounds.

REVISE THE FOLLOWING TERM:

actual cost: The computed cost using calculations of direct labor, labor fringe benefits, indirect labor costs, insurance, materials, extraordinary expenses, equipment, profit, overhead, and subcontractors.

101.04 INQUIRIES REGARDING THE PROJECT

THE FOLLOWING PARAGRAPHS ARE REVISED IN THIS SUBSECTION:

1. **Before Award of Contract.** Submit inquiries regarding the various types of work to the following representatives of the Department:

   Mr. Christopher J. Nash, P.E.
   Boswell Engineering
   330 Phillips Avenue
   South Hackensack, New Jersey 07606
   Phone (201) 373-8904
   Fax (201) 641-1831

   Include the following with each inquiry:
   1. Name of the Bidder.
   2. Telephone number, fax number, email address, and contact person.
   3. Specifics of the inquiry, including anticipated results.

   The deadline for submitting inquiries is 12:00 p.m., 7 days before the opening of bids.

   The Department will investigate the information provided in the inquiry and, if the Department determines that a change or response is necessary, the Department will issue an addendum.

   Requests for postponement of bids will not receive a response. The Department will issue an addendum postponing bids if warranted.

   2. **After Award of Contract.**
SECTION 105 – CONTROL OF WORK

105.01 AUTHORITY OF THE DEPARTMENT

105.01.01 RE

REVISE THE SECOND PARAGRAPH TO:

Unless otherwise specified, send correspondence with the Department to the RE. Where correspondence is specified to be directed to persons other than the RE, send a copy to the RE. Ensure that correspondence complies with the following:

1. Assign every correspondence sent to the Department a unique correspondence serial number in the subject line, numbered sequentially beginning with Contractor Correspondence No. 1.

2. If the correspondence includes a request for information or asks for an interpretation of the Contract, also assign a unique RFI serial number in the subject line numbered sequentially beginning with RFI-1.

3. If the correspondence constitutes a notice of change, assign a unique change notice serial number in the subject line numbered sequentially beginning with Change Notice No. 1. For subsequent correspondence referring to a change notice or to the events that are the subject of a previous change notice, refer in the subject line to the original change notice number.

105.02 RESPONSIBILITIES OF THE CONTRACTOR

105.02.05.1

REVISE THE FOLLOWING SECTION TO:

Federal Aid projects. This section intentionally left blank.

105.03 CONFORMITY WITH THE CONTRACT

REVISE THE FIRST SENTENCE OF THE SECOND PARAGRAPH TO:

In the event the Contractor discovers a discrepancy, error, omission, or ambiguity in the Contract, or if the Contractor has any doubt or question as to the intent or meaning of the Contract, the Contractor must immediately notify the RE.
REVISE THE FOURTH SENTENCE OF THE SIXTH PARAGRAPH TO: If the Department loses funding for the nonconforming work, on the basis of permitting nonconforming work to remain, the Department will not pay for the work permitted to remain in place.

105.07  COOPERATION WITH UTILITIES

105.07.01  Working in the Vicinity of Utilities

THE FOLLOWING IS ADDED BEFORE THE FIRST PARAGRAPH:

The corporations, companies, agencies, or municipalities owning or controlling the utilities, and the name, title, address, and telephone number of their local representative are as listed in Appendix A.
DIVISION 150 – CONTRACT REQUIREMENTS

SECTION 153 – PROGRESS SCHEDULE

153.03.03 BAR CHART PROGRESS SCHEDULE UPDATE

REVISE THE THIRD PARAGRAPH TO:

Approval of the schedule by the RE does not modify the Contract or constitute Acceptance of the feasibility of the Contractor’s logic, activity durations, or assumptions used in creating the schedule. The progress schedule does not constitute notice and does not satisfy the notice requirements. Provide 3 color paper copies of a bar chart progress schedule or similar type that is acceptable to the RE for approval as follows:

SECTION 155 – CONSTRUCTION FIELD OFFICE

REPLACE THIS SECTION WITH THE FOLLOWING:

This section intentionally left blank.

SECTION 156 – MATERIALS FIELD LABORATORY AND CURING FACILITY

REPLACE THIS SECTION WITH THE FOLLOWING:

This section intentionally left blank.

SECTION 159 – TRAFFIC CONTROL

159.03.01 Traffic Control Coordinator

THE FIRST PARAGRAPH BEFORE THE LIST IS CHANGED TO:

Before starting Work, submit to the RE the name, training, work experience, and contact information of an employee assigned as the on-site Traffic Control Coordinator (TCC). The TCC must be certified as having successfully completed the Rutgers CAIT Traffic Control Coordinator Program, or an equivalent course as approved by the NJDOT Office of Capital Project Safety. The TCC must also successfully complete an approved Traffic Coordinator refresher course every 2 years. The TCC is a full-time position and the employee designated as TCC must be available on a 24 hour a day, 7 days a week basis. The TCC shall have the responsibility for and authority to implement and maintain all traffic operations for the Project on behalf of the Contractor. Ensure that the TCC is present at the work site at all times while the Work is in progress. The TCC’s responsibilities and duties shall include the following:
159.03.08 Traffic Direction
B. Police

THE ENTIRE SECTION IS CHANGED TO:

Police Traffic Directors will be University of Montclair State Police. Police Traffic Directors will be located where shown on the Plans or at specific locations designated by the RE during construction hours. The University is to be contacted in order to obtain the services of Police Traffic Directors. The name, address, and telephone number of the local representative is listed below:

Mr. Adam McGuire
Project Manager
Capital Planning & Project Management
University of Montclair State
Phone: (973) 655-7789
mcguirea@mail.montclair.edu

159.04 MEASUREMENT AND PAYMENT

If the contractor fails to deliver to the job site or provide the traffic control devices listed below, payment is subject to being withheld. The following signs shall be the minimum required for the project. Cost shall be included in the unit price bid for Construction Signs.

- Construction Signs, 48” X 48” (W20-1A) ............................................8 Unit
- Construction Signs, 48” X 24” (G20-2A) ............................................2 Unit
- Construction Identification Signs, 84” X 42”
  (“On or About” – Start Date of Construction)........................................2 Unit

SECTION 160 – PRICE ADJUSTMENTS

160.03.01 FUEL PRICE ADJUSTMENT

THE FIFTH PARAGRAPH IS CHANGED TO:

The Department will calculate fuel price adjustment on a monthly basis using the following formula:

\[ F = (MF - BF) \times G \]

Where:
- \( F \) = Fuel Price Adjustment
- \( MF \) = Monthly Fuel Price Index for work performed from the first day of the month to the last day of the month for the month prior to the estimate cutoff date
- \( BF \) = Basic Fuel Price Index
- \( G \) = Gallons of Fuel for Price Adjustment
THE SEVENTH PARAGRAPH IS CHANGED TO:

The basic fuel price index is the previous month’s fuel price index before receipt of bids. The Department will use the fuel price index for the month before the regular monthly estimate cutoff date as the Monthly Fuel Price Index for work performed in the previous calendar month. If the Monthly Fuel Price Index increases by 50 percent or more over the Basic Fuel Price Index, do not perform any work involving Items listed in Table 160.03.01-1 without written approval from the RE.

160.03.02 ASPHALT PRICE ADJUSTMENT

THE THIRD PARAGRAPH IS CHANGED TO:

The Department will calculate the asphalt price adjustment by the following formula:

\[ A = (MA - BA) \times T \]

Where:

\( A \) = Asphalt Price Adjustment

\( MA \) = Monthly Asphalt Price Index for work performed from the first day of the month to the last day of the month for the month prior to the estimate cutoff date

\( BA \) = Basic Asphalt price Index

\( T \) = Tons of new Asphalt Binder

1. The Department will determine the weight of asphalt binder for price adjustment by multiplying the new asphalt in the approved job mix formula by the weight of the item containing asphalt binder. If a Hot Mix Asphalt Item has a payment unit other than ton, the Department will apply an appropriate conversion factor to determine the number of tons of asphalt binder used.

THE SIXTH PARAGRAPH IS CHANGED TO:

The basic asphalt price index is the asphalt price index for the month before the opening of bids. The Department will use the asphalt price index for the month before the regular monthly estimate cutoff date as the monthly asphalt price index for work performed in the previous calendar month.
DIVISION 400 – PAVEMENTS

SECTION 401 – HOT MIX ASPHALT (HMA) COURSES

401.03.07 HMA Courses

C. Test Strip

REPLACE THE FIRST PARAGRAPH OF THIS SECTION WITH THE FOLLOWING:

Test Strip. Construct a test strip for each HMA mix for contracts with more than a total of 5,500 tons of HMA. For HMA HIGH RAP, construct the test strip at least 14 days prior to production. Test strips are not necessary for temporary pavement. Ensure that the tack coat or prime coat has been placed as specified in 401.03.05 and 401.03.06, before placing HMA. Transport and deliver, spread and grade, and compact as specified in 401.03.07.D, 401.03.07.E, and 401.03.07.F, respectively, and according to the approved paving plan. Construct a test strip for the first 700 to 1,200 square yards placed for each job mix formula. If the paving lot area is less than 700 square yards, the District Local Aid Office may waive the coring requirements. While constructing the test strip, record the following information and submit to the RE:

H. Air Void Requirements

FOR LOCAL AID PROJECTS, THIS SUBSECTION IS REPLACED BY THE FOLLOWING.

Pavement lots are defined as approximately 15,000 square yards of pavement in Surface area. If pavement lot area is less than 5000 square yards, the District Local Aid Office may waive the air voids requirements.

The RE will designate an independent testing agency (Laboratory) to perform the quality assurance sampling, testing and analysis. The Laboratory is required to be accredited by the AASHTO Accreditation Program (www.amrl.net). The Laboratory’s accreditation must include AASHTO T 166 and AASHTO T 209.

The Laboratory Technician who performs the quality assurance sampling shall be certified by the Society of Asphalt Technologists of New Jersey as an Asphalt Plant Technologist, Level 2.

The Laboratory will determine air voids from 5 (Five) 6 inch diameter cores taken from each lot in random locations within the traveled way and at least one core in each travel lane. The HMA Core Sampling Plan form provided on the Local Aid Website must be utilized by the Laboratory to determine the random locations of the cores. The Laboratory may rerun the random location functions on the HMA Core Sampling Plan form to resolve any conflicts generated by the HMA Core Sampling Plan form and physical limitations of the HMA lot, such as utility conflicts, or the specifications defined herein. The Laboratory must disclose the...
contents of the HMA Core Sampling Plan with the Contractor to assist in the schedule of construction.

The Laboratory will determine air voids of cores from the values for the maximum specific gravity of the mix and the bulk specific gravity of the core. The Laboratory will determine the maximum specific gravity of the mix according to NJDOT B-3 and AASHTO T 209, except that minimum sample size may be waived in order to use a 6-inch diameter core sample. The Laboratory will determine the bulk specific gravity of the compacted mixture by testing each core according to AASHTO T 166.

The Laboratory will calculate the percent defective (PD) as the percentage of the lot outside the acceptable range of 2 percent air voids to 8 percent air voids. The acceptable quality limit is 15 percent defective. For lots in which PD > 15, the Department will assess a negative pay adjustment.

The Laboratory will use and submit form DS8S-PD provided from The Local Aid District Office and verify manually the PD calculation.

The Laboratory will calculate pay adjustments based on the following:

1. **Sample Mean (\( \bar{X} \)) and Standard Deviation (\( S \)) of the N Test Results (\( X_1, X_2, \ldots, X_N \)).**

\[
\bar{X} = \frac{X_1 + X_2 + \cdots + X_N}{N}
\]
\[
S = \sqrt{\frac{(X_1 - \bar{X})^2 + (X_2 - \bar{X})^2 + \cdots + (X_N - \bar{X})^2}{N - 1}}
\]

2. **Quality Index (\( Q \)).**

\[
Q_L = \frac{(\bar{X} - 2.0)}{S}
\]
\[
Q_U = \frac{(8.0 - \bar{X})}{S}
\]

3. **Percent Defective (PD).** Using NJDOT ST for the appropriate sample size, the Laboratory will determine PD\(_L\) and PD\(_U\) associated withQL and QU, respectively. PD = PD\(_L\) + PD\(_U\)

4. **Reduction Per Lot.** Calculate the reduction per lot as specified in Table 401.03.07-3:
Table 401.03.07-3

Reduction in Payment for Nonconformance to Air Void Requirements

<table>
<thead>
<tr>
<th>Percent Defective (PD) Per Lot</th>
<th>Reduction Per Lot (%)</th>
</tr>
</thead>
<tbody>
<tr>
<td>0 &lt; PD ≤ 15</td>
<td>0</td>
</tr>
<tr>
<td>15 &lt; PD ≤ 30</td>
<td>0.5</td>
</tr>
<tr>
<td>30 &lt; PD ≤ 35</td>
<td>2</td>
</tr>
<tr>
<td>35 &lt; PD ≤ 40</td>
<td>10</td>
</tr>
<tr>
<td>40 &lt; PD ≤ 45</td>
<td>15</td>
</tr>
<tr>
<td>45 &lt; PD ≤ 50</td>
<td>20</td>
</tr>
<tr>
<td>50 &lt; PD ≤ 60</td>
<td>30</td>
</tr>
<tr>
<td>60 &lt; PD ≤ 75</td>
<td>45</td>
</tr>
<tr>
<td>PD &gt; 75</td>
<td>Remove &amp; Replace</td>
</tr>
</tbody>
</table>

5. **Outlier Detection.** If PD < 10, the Laboratory will not screen for outliers. If PD ≥ 10, the Laboratory will screen acceptance cores for outliers using a statistically valid procedure. The following procedure applies only for a sample size of 5 or 10.

1. The Laboratory will arrange the core results in ascending order, in which X₁ represents the smallest value and Xₙ represents the largest value.

2. If Xₙ is suspected of being an outlier, the Laboratory will calculate:

   \[ R = \frac{Xₙ - Xₙ(N-1)}{Xₙ - X₁} \]

3. If X₁ is suspected of being an outlier, the Laboratory will calculate:

   \[ R = \frac{X₂ - X₁}{Xₙ - X₁} \]

4. For N = 5 if R > 0.642, the value is judged to be statistically significant and the core is excluded.
   For N = 10 if R > 0.412, the value is judged to be statistically significant and the core is excluded.

   If an outlier is detected for N = 5 and no retest is warranted, the Contractor may replace that core by taking an additional core at the same offset and within 5 feet of the original station. If an outlier is detected and a retest is justified, take a replacement core for the outlier at the same time as the 5 additional retest cores are
taken. If the outlier replacement core is not taken within 15 days, the Laboratory will use the initial core results to determine reduction per lot.

If an outlier is detected for N = 10, the Contractor may replace that core by taking an additional core at the same offset and within 5 feet of the original station. If the outlier replacement core is not taken within 15 days, the Laboratory will use the initial core results to determine the reduction per lot.

6. **Retest.** If the initial series of 5 cores produces a percent defective value of PD ≥30 for mainline or ramp lots, or PD ≥50 for other pavement lots, the Contractor may elect to take an additional set of 5 cores at random locations chosen by the HMA Core Sampling Plan form. Take the additional cores within 15 days of receipt of the initial core results. If the additional cores are not taken within the 15 days, the Laboratory will use the initial core results to determine the PPA. If the additional cores are taken, the Laboratory will recalculate the reduction per lot using the combined results from the 10 cores.

7. **Removal and Replacement.** If the final lot PD ≥ 75 (based on the combined set of 10 cores or 5 cores if the Contractor does not take additional cores), remove and replace the lot and all overlying work. The replacement work is subject to the same requirements as the initial work.
   For shoulder lots, the Department will assess the calculated reduction per lot instead of removal and replacement. Fog seal the lot as specified in 422.03.01.

I. **Thickness Requirements**

DELETE THIS SUBSECTION AND REPLACE THIS SUBSECTION’S CONTENTS WITH THE FOLLOWING:

This subsection is deleted. In no instance will a compacted average thickness of less than 1.25 inches be acceptable.

J. **Ride Quality Requirements.**

REPLACE THIS SUBSECTION WITH THE FOLLOWING:

The Department will evaluate the ride quality of the final riding surface of all constructed pavement on the project, for routes designated as National Highway System (NHS) and routes under NJDOT jurisdiction, using the International Roughness Index (IRI) according to ASTM E 1926. All NHS roadways are listed on the Department’s website [here](#). The Department may evaluate ride quality of other routes not designated as NHS or under NJDOT jurisdiction. The final riding surface is defined as the last lift of the pavement structure where traffic will be allowed. The pavement will be evaluated using the current average IRI (C) to select the target IRI (T) from Table 401.03.07-8. The current average IRI (C) is defined as the preconstruction ride quality measured not more than two years from the start of the project pavement construction.

The RE will designate an independent testing agency to perform the ride quality testing and analysis. The testing agency is required to comply with testing and certification
requirements according to NJDOT R-1. If the current average IRI (C) is not available, then the testing agency will test, analyze and report ride quality before pavement construction to measure current average IRI (C).

For projects paving routes designated NHS or NJDOT jurisdiction on mainline travel lanes equal to or greater than 2,500 feet length and any lane within the project of at least 1,000 feet length, the Department will evaluate the ride quality of the final riding surface of the mainline travel lanes using IRI. The Department will use the measured IRI to calculate the pay adjustment (PA) using pay adjustment equation (PAE) type PA1 as specified in Table 401.03.07-7. PA will be based on lots of 0.01 mile length. The PA will be zero for acceptable quality and negative for inferior quality work.

For projects paving routes designated NHS or NJDOT jurisdiction on mainline travel lanes of less than 2,500 feet length, the RE will visually inspect the final riding surface. Based on visual inspection, if the RE determines that the work may not conform to the ride quality requirements, then the Department will evaluate the ride quality of the final riding surface using IRI. Visual inspection by the RE is considered sufficient grounds for such evaluation. The Department will use the measured IRI to calculate the PA using pay equation type PA1 as specified in Table 401.03.07-7.

For paving on ramps and shoulders, the RE will visually inspect the final riding surface. Based on visual inspection, if the RE determines that the work may not conform to the ride quality requirements, then the Department will evaluate the ride quality of the final riding surface using IRI. Visual inspection by the RE is considered sufficient grounds for such evaluation. The Department will use the measured IRI to calculate the pay adjustment using pay equation type PA2 as specified in Table 401.03.07-7.

When paving over bridge structures on NHS or NJDOT jurisdiction roadways, the Department will use the measured IRI to calculate the pay adjustment using pay equation type PA3 as specified in Table 401.03.07-7.

For paving on Local roadways other than NHS and NJDOT jurisdiction on mainline travel lanes equal to or greater than 2,500 feet length and any lane within the project of at least 1,000 feet length, the Department may evaluate the ride quality of the final riding surface of the mainline travel lanes using IRI. Local roadways are defined as municipal and county roads that are not designated as part of the NHS. The Department will use the measured IRI to calculate the pay adjustment (PA) using pay adjustment equation (PAE) type PA4 as specified in Table 401.03.07-7.

1. Smoothness Measurement. The Department will test the longitudinal profile of the final riding surface for ride quality with a Class 1 Inertial Profiling System according to NJDOT R-1. If project conditions preclude the use of the Class 1 Inertial Profiling System, the Department will use a Class 1 Walking Profiler or lightweight profiler.

2. Quality Control Testing. Perform quality control testing during lift placement to ensure compliance with the ride quality requirements specified in Table 401.03.07-8.

3. Preparation for IRI Testing. Notify the RE when all paving is complete and the RE will request IRI testing by independent testing agency. Provide traffic control when the independent testing agency performs IRI testing. Perform mechanical sweeping of the surface before IRI testing. To facilitate auto triggering on laser profilers, place
a single line of temporary pavement marking tape perpendicular to the roadway baseline at the beginning and end of each lane, shoulder, and ramp to be tested or as per direction of the independent testing agency. Submit the actual stationing for each temporary pavement marking tape location to the RE.

4. Quality Acceptance. The Department will determine acceptance and provide PA based on the following:

a. Pay Adjustment. The acceptable IRI for the roadway pavement will be the target IRI (T) from Table 401.03.07-8 rounded to the nearest whole number for which full payment will be made and will be determined using the latest available current average IRI (C) data. The number of lots for final pay adjustment will be reduced by the number of lots excluded for each segment shown in Table 401.03.07-7. Lots excluded from final PA will be those with the highest recorded IRI numbers for respective roadway and bridge deck segments. A single average IRI value and the corresponding PA for each 0.01 mile lot will be reported. IRI units are in inches per mile.

Table 401.03.07-7 Pay Adjustment Equations (PAE) for Ride Quality

<table>
<thead>
<tr>
<th>Pay Equation Type</th>
<th>Exclusions</th>
<th>Pay Equations</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>PA1</strong></td>
<td>As shown in the Special Provisions Table 401.03.07-7A</td>
<td>IRI&lt;T PA1=0²</td>
</tr>
<tr>
<td></td>
<td></td>
<td>T≤IRI≤170 PA1=PAE</td>
</tr>
<tr>
<td></td>
<td></td>
<td>IRI&gt;170 PA1= -A or Corrective action</td>
</tr>
<tr>
<td><strong>PA2</strong></td>
<td>Will include, if tested</td>
<td>IRI ≤ 120 PA2 =0²</td>
</tr>
<tr>
<td></td>
<td></td>
<td>120 &lt; IRI ≤ 170 PA2 = (IRI − 120) x (−$5.00)</td>
</tr>
<tr>
<td></td>
<td></td>
<td>IRI&gt;170 Maximum Negative Pay or Corrective action</td>
</tr>
<tr>
<td><strong>PA3</strong></td>
<td>Will include, if tested</td>
<td>IRI≤120 PA3=0²</td>
</tr>
<tr>
<td></td>
<td></td>
<td>120&lt;IRI≤170 PA3=PAE</td>
</tr>
<tr>
<td></td>
<td></td>
<td>IRI&gt;170 PA3= -A or Corrective action</td>
</tr>
<tr>
<td><strong>PA4</strong></td>
<td>Will include, if tested</td>
<td>IRI ≤ T PA4=0²</td>
</tr>
<tr>
<td></td>
<td></td>
<td>T &lt; IRI ≤ T+80 or 170 whichever is higher PA4 = (IRI − T) x (−$1.25)</td>
</tr>
<tr>
<td></td>
<td></td>
<td>IRI&gt;T+80 or 170 whichever is higher Maximum Negative Pay or Corrective action</td>
</tr>
</tbody>
</table>
\[
PAE = \frac{A}{-37.75347 \times \log_e(T) + 194.87} - \frac{A}{-37.75347 \times \log_e(IRI) + 194.87}
\]

\[
A = 1267.2 \left( \frac{M}{9} + \frac{PD}{150} \right)
\]

\[P = \text{Bid price of last lift of the pavement structure to be evaluated or price listed in table 401.03.07-7B, whichever is higher, per Ton}\]
\[D^1 = \text{Design thickness of last lift to be evaluated, Inch}\]
\[M = \text{Bid price of Milling, per Square Yard}\]
\[T = \text{Target IRI}\]

1. For various design thicknesses of last lift to be evaluated within a segment, calculate the thickness using the following equation:

\[
\text{Design thickness of last lift to be evaluated (D)} = \frac{D_1 N_1 + D_2 N_2 + \ldots + D_N N_N}{N_1 + N_2 + \ldots + N_N}
\]

Where:
\[D_N = \text{Design thickness of the last lift to be evaluated of N sections having same mix, Inch}\]
\[N_N = \text{Number of lots of N section with design thickness } D_N \text{ of last lift to be evaluated}\]

2. Positive pay adjustment will be used to offset negative pay adjustment. Total pay adjustment will not be greater than zero.

### Table 401.03.07-7B Minimum Value of P

<table>
<thead>
<tr>
<th>Surface Course Mix</th>
<th>P</th>
</tr>
</thead>
<tbody>
<tr>
<td>Hot Mix Asphalt (Dense Graded) with PG 64-22 binder</td>
<td>$60.00</td>
</tr>
<tr>
<td>Hot Mix Asphalt (Dense Graded) with PG 64E-22 binder</td>
<td>$70.00</td>
</tr>
<tr>
<td>Stone Matrix Asphalt, High Performance Thin Overlay, Ultra-Thin Friction Course, Open Graded or Gap Graded Mixes not specified in this table</td>
<td>$80.00</td>
</tr>
<tr>
<td>Bridge Deck Waterproof Surface Course</td>
<td>$250.00</td>
</tr>
</tbody>
</table>

### Table 401.03.07-8 Target IRI for Resurfacing or Reconstruction (T)³

<table>
<thead>
<tr>
<th>Roadway Type</th>
<th>Current average IRI (C)</th>
<th>New Construction or Reconstruction</th>
<th>Number of Operation for other than New Construction or Reconstruction³</th>
<th>Target IRI (T)</th>
</tr>
</thead>
<tbody>
<tr>
<td>NHS &amp; NJDOT Freeways or Limited Access</td>
<td>≤ 60</td>
<td>50</td>
<td>50  50  50  50</td>
<td>50  50  50  50</td>
</tr>
<tr>
<td></td>
<td>61 to ≤ 95</td>
<td>50</td>
<td>53  50  50  50</td>
<td>50  50  50  50</td>
</tr>
<tr>
<td></td>
<td>96 to ≤ 170</td>
<td>50</td>
<td>55  53  50  50</td>
<td>50  50  50  50</td>
</tr>
</tbody>
</table>
### Highways

<table>
<thead>
<tr>
<th>Highways</th>
<th>≤ 60</th>
<th>≤ 95</th>
<th>≤ 170</th>
<th>≤ 200</th>
<th>≤ 285</th>
<th>&gt; 286</th>
</tr>
</thead>
<tbody>
<tr>
<td>171 to ≤ 200</td>
<td>55</td>
<td>53</td>
<td>50</td>
<td>58</td>
<td>55</td>
<td>50</td>
</tr>
<tr>
<td>201 to ≤ 285</td>
<td>60</td>
<td>60</td>
<td>60</td>
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<td></td>
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<tr>
<td>&gt;286</td>
<td>60</td>
<td>60</td>
<td>60</td>
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</tr>
</tbody>
</table>

### NHS & NJDOT

<table>
<thead>
<tr>
<th>Roadways other than Freeways or Limited Access</th>
</tr>
</thead>
<tbody>
<tr>
<td>Highways with speed limit &gt; 35 MPH</td>
</tr>
<tr>
<td>≤ 60</td>
</tr>
<tr>
<td>61 to ≤ 95</td>
</tr>
<tr>
<td>96 to ≤ 170</td>
</tr>
<tr>
<td>171 to ≤ 200</td>
</tr>
<tr>
<td>201 to ≤ 285</td>
</tr>
<tr>
<td>&gt;286</td>
</tr>
</tbody>
</table>

### NHS & NJDOT

<table>
<thead>
<tr>
<th>Roadways other than Freeways or Limited Access</th>
</tr>
</thead>
<tbody>
<tr>
<td>Highways with speed limit ≤ 35 MPH</td>
</tr>
<tr>
<td>≤ 60</td>
</tr>
<tr>
<td>61 to ≤ 95</td>
</tr>
<tr>
<td>96 to ≤ 170</td>
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<tr>
<td>171 to ≤ 200</td>
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<td>201 to ≤ 285</td>
</tr>
<tr>
<td>&gt;286</td>
</tr>
</tbody>
</table>

### Local Roadway

<table>
<thead>
<tr>
<th>Local Roadway with Posted Speed ≥ 45 MPH</th>
</tr>
</thead>
<tbody>
<tr>
<td>≤ 60</td>
</tr>
<tr>
<td>61 to ≤ 95</td>
</tr>
<tr>
<td>96 to ≤ 170</td>
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<tr>
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<td>201 to ≤ 285</td>
</tr>
<tr>
<td>&gt;286</td>
</tr>
</tbody>
</table>

---

1. The Department will determine target IRI (T) of roadways containing multiple speed limits of greater than 35 MPH and less than or equal to 35 MPH based on the following equation:

   \[ \text{Target IRI of a roadway consists of N Roadway type (T)} = \sum \frac{T_I L_I + T_2 L_2 + \cdots + T_N L_N}{L_1 + L_2 + \cdots + L_N} \]

   Where \( T_N \) is the Target IRI of N section and \( L_N \) is the length of N section in miles to the nearest 0.01 mile.

2. Current average IRI (C) is the average of the latest available preconstruction IRI data.

3. The target IRI (T) is selected or calculated from the table and rounded to the nearest whole number.

4. Multiply T with 1.05 for HMA over Concrete, if total HMA after proposed treatment is less than 8 inch thick.

5. Milling is one operation. Paving each layer of asphalt mix is an individual operation unless plans specify paving a mix in two lifts. In such case, each
lift is considered as an operation.
6. Construction or reconstruction of full pavement box on subgrade is new construction or reconstruction.
7. Use Pay Equation as below:
   \[ \begin{align*}
   \text{IRI} \leq T & \quad \text{PA} = 0 \\
   \text{IRI} > T & \quad \text{PA} = \text{PAE}
   \end{align*} \]
8. For paving over rubblized concrete, use \( C > 286 \) to determine target IRI, then multiply \( T \) with 1.05 if total HMA after proposed treatment is less than 8-inch thick.
9. Paving in one lift with no corrective work such as milling, grinding or pre-leveling of at least 25 percent of surface area of existing pavement is one operation.

b. Corrective Action. The Department may require corrective action or assess the maximum negative pay adjustment as computed in Table 401.03.07-7, if the average IRI after testing is performed of NHS or NJDOT jurisdiction roadway is greater than 170 inches per mile, or average IRI local roadway is greater than \( T + 80 \) or 170 whichever is higher. If the Department requires corrective action submit a plan for corrective action. If the plan for corrective action is approved and the lot is corrected, the Department will retest and evaluate the corrected area as a new lot that must meet the same requirements as the initial work. If the plan for corrective action is not approved, the Department may require removal and replacement. The replacement work is subject to the same requirements as the initial work.

401.03.08 Core Samples

REPLACE THIS SUBSECTION WITH THE FOLLOWING:

The RE will designate an independent testing agency (Laboratory) to perform the quality assurance sampling, testing and analysis. The Laboratory is required to be accredited by the AASHTO Accreditation Program (www.amrl.net). The Laboratory’s accreditation must include AASHTO T 166 and AASHTO T 209. The Laboratory Technician who performs the quality assurance sampling shall be certified by the Society of Asphalt Technologists of New Jersey as an Asphalt Plant Technologist, Level 2.

Upon completion of an HMA lot, the Laboratory shall drill cores at random locations at least 12 hours after paving. Take cores in the presence of the RE. The Laboratory will determine air voids from 5 (Five) 6 inch diameter cores taken from each lot in random locations within the traveled way and at least one core in each travel lane. The HMA Core Sampling Plan form provided on the Local Aid Website must be utilized by the Laboratory to determine the random locations of the cores. The Laboratory may rerun the random location functions on the HMA Core Sampling Plan form to resolve any conflicts generated by the HMA Core Sampling Plan form and physical limitations of the HMA lot, such as utility conflicts, or the
specifications defined herein. The Laboratory must disclose the contents of the HMA Core Sampling Plan with the Contractor to assist in the schedule of construction.

The Laboratory shall use drilling equipment with a water-cooled, diamond-tipped masonry drill bit that produces 6 inch nominal diameter cores for the full depth of the pavement. The Laboratory shall remove the core from the pavement without damaging it. After the Laboratory removes the core, the Laboratory shall remove all water from the hole. The Laboratory shall apply an even coating of tack coat to sides of the hole. The Laboratory shall place cold patching material or HMA in maximum lifts of 4 inches in the hole and compact each lift. If cold patching material is utilized to fill the coring hole, then it is not necessary to apply tack coat to the sides of the hole. The Laboratory shall ensure that the final surface is 1/4 inch above the surrounding pavement surface.

For test strip lots and the first traveled way lot lot, the Laboratory shall deliver cores from the field to the testing Laboratory within 48 hours of completing the lot. The Laboratory shall deliver all other acceptance cores within 7 days of completing the lot.

After each air void lot is placed, the Laboratory shall drill cores so that the full depth of the course is recovered for air void acceptance testing. If thickness acceptance testing is required as specified in 401.03.07.I, the Laboratory shall drill the surface course air void cores for the full depth of pavement.

At least 24 hours prior to coring, the Laboratory shall provide a tamper proof core sample box for the RE’s inspection and approval. The Laboratory shall ensure that the core sample box can be locked and sealed and is tamper proof in such a manner that it cannot be opened without removing the seals. The Laboratory shall ensure that the core sample box provides protection for the cores from being disturbed or damaged during transit. The Laboratory shall mark the assigned core number on the side of the sample. The Laboratory shall place core samples in the core sample box. The Laboratory shall transport the sealed core sample boxes to the testing Laboratory. The RE at his discretion may decide to deliver the core samples as indicated above.

The Laboratory will not accept damaged core samples for testing. If the core sample box exhibits indications of tampering, the core samples will be rejected. If any core samples are rejected, drill a replacement core at the same offset and within 5 feet of the original station and deliver to the Laboratory as specified above within 48 hours.

If the Contractor is utilizing quality control cores, the Laboratory shall provide the results of the quality control core testing to the Contractor in a timely manner which will not unnecessarily impede construction.

The Department will not make payment for quality control cores or additional cores for retest under CORE SAMPLES, HOT MIX ASPHALT
DIVISION 600 – MISCELLANEOUS CONSTRUCTION

SECTION 601 – PIPE

601.04 MEASUREMENT AND PAYMENT

REVISE THE SECOND PARAGRAPH TO:

When the RE directs undercutting of unstable material in a pipe trench, the Department will make payment for the additional excavation. The Department will also make payment, for the additional bedding if there is not an excess of excavation available.

SECTION 602 – DRAINAGE STRUCTURES

602.03.03 Setting Casting, Reset Casting, and Reconstructed Inlet and Manhole

THE FOLLOWING IS ADDED AFTER THE LAST PARAGRAPH:

Existing inlet and manhole castings which are no longer required become the property of the Owner.

602.03.07 Curb Piece

THE FOLLOWING IS ADDED AFTER THE LAST PARAGRAPH:

All curb pieces will be NJDEP-compliant, with “DUMP NO WASTE – DRAINS TO WATERWAYS” inscribed on the top of the curb piece. Refer to details for pattern number.

SECTION 606 – SIDEWALKS, DRIVEWAYS, AND ISLANDS

606.03.01 HMA Sidewalks, Driveways, and Islands

606.03.02 Concrete Sidewalks, Driveways, and Islands

THE FOLLOWING IS ADDED BEFORE THE FIRST PARAGRAPH:

The Contractor shall construct all sidewalks, curb ramps and pedestrian facilities within the public right-of-way or easements in full compliance with the “Proposed Accessibility Guidelines for Pedestrian Facilities in the Public “Right-of-Way” located at http://www.access-board.gov/prowac/nprm.htm as published in the Federal Register on July 26, 2011 and the Manual on Uniform Traffic Control Devices (MUTCD). Workmanship and materials shall be in conformance with the New Jersey Department of Transportation Standard Specifications for Road and Bridge Construction as amended and supplemented by County and/or Municipal requirements. The Contractor is notified that the improperly constructed ramps and
facilities, as determined by the Municipality and/or County, will require replacement with compliant ramps and facilities at the sole cost and expense of the Contractor.

606.04 MEASUREMENT AND PAYMENT

REVISE THE SECOND PARAGRAPH TO:

When the RE directs undercutting of unstable material in the excavation area, the Department will make payment, for the additional excavation. The Department will also make payment, for the additional bedding if there is not an excess of excavation available.
DIVISION 900 – MATERIALS

SECTION 902 – ASPHALT

902.02.03 Mix Design

THE FOLLOWING IS ADDED TO THE FIRST PARAGRAPH:

Unless otherwise approved by the engineer, only one source of supply for hot mix asphalt surface course may be used on the project.

**DETERMINATION OF CONFORMANCE TO THE VOLUMETRIC PROPERTIES BY SAMPLING AND TESTING AT THE HMA PLANT BY AN INDEPENDENT TESTING AGENCY AND/OR LABORATORY IS PREFERRED; HOWEVER, THE FOLLOWING CHANGES TO SUBSECTION 902.02.04 MAY BE USED AS AN ALTERNATE TO THE SAMPLING AND TESTING PROVISIONS LISTED IN SUBSECTION 902.02.04 TO DETERMINE CONFORMANCE TO THE SPECIFICATION REQUIREMENTS.**

902.02.04 Sampling and Testing

THE FOLLOWING SUBSECTION IS ADDED:

E. **Acceptance of HMA.** Department may accept the HMA as specified in 902.02.04.A through 902-02.04.E by employing staff or an independent testing agency at the HMA plant during production. The inspector who performs the quality assurance sampling shall be certified by the Society of Asphalt Technologists of New Jersey as an Asphalt Plant Technologist, Level 2. Form “**DS-8 HMA Testing Summary Report – State Aid**” provided on the [Local Aid Website](#) must be utilized by the Laboratory report their findings. Alternatively, the Department may accept the HMA by [Certification of Compliance](#) according to 106.07.
APPENDIX A: PUBLIC UTILITIES
TOWNSHIP OF MONTCLAIR
PUBLIC UTILITIES

The following is a list of all corporations, companies, agencies or municipalities owning or controlling the utilities in the vicinity of the project site, and the name, address and telephone number of their local representatives:

**WATER**
Montclair Water Department
54 Watchung Avenue
Montclair, New Jersey 07042
Attn: Gary Obszarny, Director
Tel: (973) 744-4600

**GAS**
Public Service Electric and Gas Company
40 Rock Avenue
Plainfield, NJ 07063
Attn: James Cavanagh
Tel: (908) 668-3840

**ELECTRIC**
Public Service Electric and Gas Company
150 Circle Avenue
Clifton, New Jersey 07011
Attn: Henry Gregerson
Tel: (973) 365-2990

**CABLE**
Comcast
800 Rahway Avenue
Union, NJ 07083
Attn: Bob Knoepfel
Tel: (732) 602-7444

**TELEPHONE**
Verizon
6000 Hadley Rd
South Plainfield, New Jersey 07080
Attn: Charles C. Comeau
Tel: 973-422-5151
Email: charles.comeau@verizon.com

**SEWERS**
Montclair Sewer Department
54 Watchung Avenue
Montclair, New Jersey 07042
Attn: Gary Obszarny, Director
Tel: (973) 744-4600

Notification of major utilities for markout may be accomplished by calling Garden State Underground Location Service at 1-800-272-1000.
TOWNSHIP OF LITTLE FALLS
PUBLIC UTILITIES

The following is a list of all corporations, companies, agencies or municipalities owning or controlling the utilities in the vicinity of the project site, and the name, address and telephone number of their local representatives:

**Water**
New Jersey American Water
120 Raider Boulevard
Hillsborough, New Jersey 08844
Attn: Mike Wolan
Tel: (908)-431-3225
Email: mike.wolan@amwater.com

**Telephone**
Verizon
657 Florida Grove Road
Hopelawn, New Jersey 08861
Attn: Charles Comeau
Tel: 973-422-551
Email: charles.comeau@verizon.com

**Electric**
PSE&G Co.
150 Circle Avenue
Clifton, New Jersey 07011
Attn: Ed Elian
Tel: (973) 365-2848
Edward.elian@pseg.com

**Gas**
PSE&G Co.
42 Chestnut Street
Clifton, NJ 07011
Attn: Christopher Brunner
Tel: (973) 253-3009
Email: christopher.brunner@pseg.com

**Cable**
Cablevision
40 Potash Road
Oakland, New Jersey 07436
Attn: Mr. Shaun Maxwell
Tel: 201-651-4192
Email: Shaun.Maxwell@AlticeUSA.com

Notification of major utilities for markout may be accomplished by calling Garden State Underground Location Service at 1-800-272-1000.
PSE&G’s PROCEDURE FOR RESETTING OR REPLACING OF MANHOLE FRAMES AND COVERS.

Please be advised that the following steps need to be maintained in order to meet local milling and paving schedules.

Once the contract has been awarded, your contractor should:

- Contact Public Service Electric & Gas (Engineering) 4 to 6 weeks prior to milling to discuss the scope of the project. Sufficient lead-time is essential in obtaining materials and coordinating schedules between PSE&G and local paving projects.

- Provide milling schedule. Project specific dates are required in hard copy.

- Conduct a walk through with job sponsor to identify resets and/or replacements. Please be advised that the final decision to replace facilities due to its condition resides with PSE&G.

- Provide reset elevations to PSE&G’s contractor.

Once this information is received, the PSE&G job sponsor will order material (if required) in accordance with vendors lead time and schedule our contractor to complete manhole resets or replacements immediately following the milling process.

The successful contractor should proceed with care; damage to existing facilities or debris contaminating PSE&G manholes and or transformer vaults will be repaired or remedied at the contractor’s expense.

Please be aware of the Underground Facilities Protection Act, codified NJSA 48:2-73 to 91, which requires contractors to notify “New Jersey One-Call” for utility markout “New Jersey One Call” Can be reached at 1-800-272-1000. PSE&G’s contractor cannot begin work until four (4) business days after the markout request.

Please bring to the successful contractor’s attention in New Jersey High Voltage Proximity Act, codified at N.J.S.A. 34:6-47.1 to 47.10, concerning precautions to be taken when working the proximity of high voltage wires.

In addition, we would also recommend that the contractor review the requirements for operators of construction equipment under the Occupational Safety and Health Act of 1970 (OSHA) and of Subpart “N”, Paragraph 1926.550 of the Rules and Regulations issued thereunder and codified at 29 CFR 1926.550, which, in part, requires different working clearance than the State Law.

If you should have any questions, please contact me at (201) 330-6629 or Richard.dwyer@pseg.com.
BREAKAWAY BARRICADES

**NOTES:**

1. Ensure the top of the drum is not open. Construct drums to inhibit rolling if knocked over.
2. Ensure the retroreflective area of drums is not less than other drums when viewed the same visibility as an 18-inch diameter round drum regardless of orientation, but be used.
3. Ensure drums are made of durable plastic with a minimum of four alternate fluorescence pieces and/or retroreflective strips. If there are non-reflective spaces between the stripes, they are to be no more than 2-inch wide and the retroreflective strips for stripes composed with sixty-degree type of the same visibility as recommended.

**BREAKAWAY BARRICADES - FRONT VIEW**

- 2.5" MIN. O.D.
- 6" SILVER (WHITE) RETROREFLECTIVE SHEETING, ASTM D-4956 TYPE III
- 4" SILVER (WHITE) RETROREFLECTIVE SHEETING, ASTM D-4956 TYPE III

**TRAFFIC CONES**

- PLASTIC OR RUBBER, MIN. WEIGHT 7 LBS.
- BASE 14" MIN. WIDE
- 7" MIN. O.D.
- 28" MIN.
- 2" SPACE
- 3" TO 4" SPACE FOR HANDLING.
- 1.5" MIN. O.D.
- BASES MAY BE OF BREAKAWAY BALLASTED TYPE.

**TRAFFIC CONTROL DEVICES**

NEW JERSEY DEPARTMENT OF TRANSPORTATION

CONSTRUCTION DETAILS
TRAFFIC FINES
DOUBLED IN WORK AREA

NOTE:
MESSAGE TO BE BLACK LETTERS ON WHITE REFLECTIVE BACKGROUND.

EXIT 500 FT

RAMP
HARRIERS

ALL ROUTE TRAFFIC EXIT RIGHT

TRAFFIC FINES
DOUBLED IN WORK AREA

NOTE:
MESSAGE TO BE BLACK LETTERS ON WHITE REFLECTIVE BACKGROUND.

GENERAL NOTES:
1. DIMENSIONS, COLORS, AND DETAILS OF VARIOUS SIZE SIGNS AND ACCESSORY PANELS TO COMPLY WITH STANDARD IN THE CURRENT "STANDARD HIGHWAY SIGN PUBLICATION" AND THE CURRENT "MANUAL ON UNIFORM TRAFFIC CONTROL DEVICES FOR HIGHWAY AND FREEWAYS".
2. KEEP SIGNS IN GOOD CONDITION AND PAINTING OR REPAINTING AS NEEDED.
3. OBTAIN SITE APPROVAL FOR THE DISTANCE TO BE USED ON THE ADVANCE WARNING SIGNS AND FOR THE SPEED LIMIT TO BE USED ON THE ADVANCE WARNING SIGNS.
4. USE URBAN AREA LOWER CASE LETTERS FOLLOWED BY A LETTER AND DISTANCE, FOR THE DATA ELEMENTS FOR USE WITH THE MANDATORY TEXT THROUGH THE USE AND PROJECT SPECIFIC PLANS.

BASE MATERIAL:
1. USE ALUMINUM FLAT SHEET OF ALLOY AND TEMPER TO BE SPECIFIED ON SHEET.
2. USE STEEL FOR ALL CONSTRUCTION SIGNS EXCEPT SIGNS MOUNTED ON BREAKAWAY SUPPORTS.
3. USE LETTER-ENGRAVED MATERIAL.

TEMPORARY SIGN SUPPORTS:
1. USE STEEL POSTS IN ACCORDANCE WITH THE STANDARD DETAIL FOR "U-POST SIGN SUPPORT".
2. USE WOOD POSTS ONLY ON TEMPORARY SIGN SUPPORT.
3. USE SIGN FACES OF ASTM D4956 TYPE VII OR VIII FLUORESCENT ORANGE SHEETING.
4. TEMPORARY SIGN SUPPORTS NOT MEETING THIS CRITERIA TO BE SHIELDED BY A LONGITUDINAL BARRIER OR CRASH CUSHIONS.

CONSTRUCTION SIGNS:

NEW JERSEY DEPARTMENT OF TRANSPORTATION
CONSTRUCTION DETAILS

CD-159-7.1

164
CURB OPENINGS

WHERE CURB PIECE HEIGHT IS 2" GREATER THAN CURB FACE

1. FOR 2" CURB PIECE, USE DRIVEWAY ACCESS PLATE - SEE CD-602-2A.1

CONCRETE CURB
AREA ONLY

5.1. FOR USE IN SHOULDER
SLOPE LINE PROPOSED

LOGOS ON BOTH SIDES OF THE LABEL.

THEORETICAL GUTTER GRADE
WEIGHT OF GRATE = 300 ` 15 LBS
WEIGHT OF FRAME = 312#
WEIGHT OF BACK  = 120#

VAR.

NOTES:
1. SEE ALTERNATE BACK PLATE DETAIL CD-602-2.5
2. SEE GENERAL NOTE 9, CD-602-1.6
3. WEIGHT OF FRAME = 240# 
4. WEIGHT OF GRATE = 300 ` 15 LBS
5. WEIGHT OF CURB PIECE

IN CD-602-1.8

STORM DRAIN INLET LABEL TO READ "NO DUMPING, DRAINS TO

THE CLEAR SPACE IN THE CURB OPENING OR EACH INDIVIDUAL CLEAR
SPACE, IF THE CURB OPENING HAS TWO OR MORE CLEAR SPACES, MUST
HAVE AN AREA OF NO MORE THAN SEVEN (7.0) SQUARE INCHES, OR BE
SET THE EDGE OF FRAME AT SLOPE LINE

SET CURB PIECE AT ELEVATION OF ADJACENT CURB

39

WHERE INLET TYPE B AND TYPE C CASTING

AS SPECIFIED

HAVE AN AREA OF NO MORE THAN SEVEN (7.0) SQUARE INCHES, OR BE
NOT GREATER THAN TWO (2.0) INCHES ACROSS THE SMALLEST DIMENSION.

INLETS, TYPE A, B, & C

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INLETS, TYPE A, B, & C

THEORETICAL GUTTER GRADE
WEIGHT OF GRATE = 300 ` 15 LBS
WEIGHT OF FRAME = 312#
WEIGHT OF BACK  = 120#

VAR.

NOTES:
1. SEE ALTERNATE BACK PLATE DETAIL CD-602-2.5
2. SEE GENERAL NOTE 9, CD-602-1.6
3. WEIGHT OF FRAME = 240# 
4. WEIGHT OF GRATE = 300 ` 15 LBS
5. WEIGHT OF CURB PIECE

IN CD-602-1.8

STORM DRAIN INLET LABEL TO READ "NO DUMPING, DRAINS TO

THE CLEAR SPACE IN THE CURB OPENING OR EACH INDIVIDUAL CLEAR
SPACE, IF THE CURB OPENING HAS TWO OR MORE CLEAR SPACES, MUST
HAVE AN AREA OF NO MORE THAN SEVEN (7.0) SQUARE INCHES, OR BE
SET THE EDGE OF FRAME AT SLOPE LINE

SET CURB PIECE AT ELEVATION OF ADJACENT CURB

39

WHERE INLET TYPE B AND TYPE C CASTING

AS SPECIFIED

HAVE AN AREA OF NO MORE THAN SEVEN (7.0) SQUARE INCHES, OR BE
NOT GREATER THAN TWO (2.0) INCHES ACROSS THE SMALLEST DIMENSION.
A THREADED INSERT MAY BE USED AS AN ALTERNATE TO DRILLING AND TAPPING.

1. A HEAVY DUTY COVER TO BE USED FOR A RISE OF 1" TO 2" INCLUSIVE.

EXTENSION RING FOR EXISTING MANHOLE

NEW JERSEY DEPARTMENT OF TRANSPORTATION

CONSTRUCTION DETAILS

EXTENSION RING

FOR EXISTING MANHOLE

MATERIAL IS ASTM GRADE 36 STEEL

METHOD OF ATTACHING EXTENSION RING

A HEAVY DUTY COVER TO BE USED FOR A RISE OF 1" TO 2" INCLUSIVE.

DRILL AND TAP FOR THREADED HOLES…" - 16 N.C. THREAD

(SEE NOTE 2)

3 THREADED HOLES EQUALLY SPACED " - 16 N.C. THREAD

(SEE NOTE 2)

THREADED INSERT FOR EXTENSION RING, ALTERNATE

BEAD OF EPOXY BEDDING COMPOUND (TYP.)

1. MEASURE THE EXISTING MANHOLE FRAMES AND COVERS TO DETERMINE PROPER DIMENSIONS OF PROPOSED EXTENSION RINGS BEFORE PLACING ORDERS.
2. A THREADLESS INSERT MAY BE USED AS AN ALTERNATE TO DRILLING AND TAPPING.
3. A HEAVY DUTY COVER TO BE USED FOR A RISE OF 1" TO 2" INCLUSIVE.
4. SEE GENERAL NOTE 9, CD-602-1.

MEASURE THE EXISTING MANHOLE FRAMES AND COVERS TO DETERMINE PROPER DIMENSIONS OF PROPOSED EXTENSION RINGS BEFORE PLACING ORDERS.

A THREADLESS INSERT MAY BE USED AS AN ALTERNATE TO DRILLING AND TAPPING.

A HEAVY DUTY COVER TO BE USED FOR A RISE OF 1" TO 2" INCLUSIVE.

SEE GENERAL NOTE 9, CD-602-1.
1. DETECTABLE WARNING SURFACE

   - Color surface marked crossing
   - Curved warning surface
   - Location of curb ramp types 1, 2, 3, 4, 5, 6, and 7

2. ALTERNATE TREATMENT

   - See Note 7

3. LOCATE RAMP

   - Curve ramp type 1 (typ.)
   - Crosswalks
   - Pedestrian railroad crossing
   - Pedestrian refuge island walkway opening at intersections

4. CROSSWALKS

   - Width of curb ramp landing or walkway
   - Max. ramp landing
   - Reflected warning surface

5. PEDESTRIAN RAILROAD CROSSING

   - TYP. top of curb
   - PAVEMENT surface
   - Note S-2

6. NOTE:

   - Where practical, end left turn island or divisional island before crosswalk to eliminate cut-through opening
   - 1" TYP. top of curb
   - PAVEMENT surface marked crossing
   - 2' MIN. RADIUS at each corner
   - 6' MIN.
   - 2' MIN.
   - 5' MIN.
   - 2' MIN. RADIUS TYP.
   - 4' MIN.
   - 4' MIN.
   - 4' MIN.

7. NOTES:

   - For narrow island width, see pedestrian refuge island walkway opening at intersections detail
   - Addendum: application for sidewalks
   - Keep turning space, approach sidewalk transitions, and curb ramp clear of obstructions that protrude above the surface
   - Pedestrian and stop signs may be marked on unmarked site plans
   - For narrow island width, see pedestrian refuge island walkway opening at intersections detail
   - Preferred treatment: both ends of the bottom grade break are less than 5' from back of curb
   - One or both ends of the bottom grade break are greater than 5' from back of curb
   - Preferred treatment: placement of detectable warning surface for curb ramp type 5 and 6
   - Place 0" min., 6" des. behind back of curb
   - Placement of detectable warning surface for curb ramp type 6 and 7
   - Place 0" min., 6" des. behind back of curb
   - The rows of domes on the DWS should follow the direction of travel of the ramp, so pedestrians who use mobile devices can track between the domes
   - Construct curb ramp types 1, 2, 3, 4, & 7 perpendicular to curbline, as shown
   - Crosswalks and stop lines may be marked or unmarked, see plans
   - Pedestrian railroad crossing

8. DETECTABLE WARNING SURFACE

   - Width of curb ramp landing or walkway
   - Reflected warning surface
   - Note S-2

9. CONSTRUCTION DETAILS

   - New Jersey Department of Transportation
   - 63.073306: 1.00000
   - ID = date = pen table = scale = file =

10. BDC16D-01-ORIGINAL SHEET

   - CD-606-2
   - CD-606-2.1
   - 164
   - 53
   - 54
### CURB RAMP TYPE 1

**LEGEND**
- **U** = UPPER SIDE OF GUTTER LINE PROFILE
- **L** = LOWER SIDE OF GUTTER LINE PROFILE
- **FOR THE OTHER ABBREVIATIONS - REFER TO CD-606-1

*TYPE 3 RAMP IS NOT APPLICABLE, USE TYPE 1

**TYPE 4 RAMP IS NOT APPLICABLE, USE TYPE 2

### NOTES:
1. **DIMENSIONS SHOWN IN TABLES ARE FOR 3 INCH TO 9 INCH CURB HEIGHTS. WHERE THE CURB HEIGHTS ARE OTHER THAN WHAT IS PROVIDED IN THE TABLES, THE DIMENSIONS OF THE RAMPS WILL HAVE TO BE CALCULATED BASED ON CROSS SLOPES SHOWN.

### CURB RAMP TYPE 3

**LEGEND**
- **U** = UPPER SIDE OF GUTTER LINE PROFILE
- **L** = LOWER SIDE OF GUTTER LINE PROFILE

*TYPE 3 RAMP IS NOT APPLICABLE, USE TYPE 1

**TYPE 4 RAMP IS NOT APPLICABLE, USE TYPE 2

### NOTES:
1. **DIMENSIONS SHOWN IN TABLES ARE FOR 3 INCH TO 9 INCH CURB HEIGHTS. WHERE THE CURB HEIGHTS ARE OTHER THAN WHAT IS PROVIDED IN THE TABLES, THE DIMENSIONS OF THE RAMPS WILL HAVE TO BE CALCULATED BASED ON CROSS SLOPES SHOWN.

### CURB RAMP TYPE 2

**LEGEND**
- **U** = UPPER SIDE OF GUTTER LINE PROFILE
- **L** = LOWER SIDE OF GUTTER LINE PROFILE

*TYPE 1 RAMP IS NOT APPLICABLE, USE TYPE 2

**TYPE 2 RAMP IS NOT APPLICABLE, USE TYPE 2

### NOTES:
1. **DIMENSIONS SHOWN IN TABLES ARE FOR 3 INCH TO 9 INCH CURB HEIGHTS. WHERE THE CURB HEIGHTS ARE OTHER THAN WHAT IS PROVIDED IN THE TABLES, THE DIMENSIONS OF THE RAMPS WILL HAVE TO BE CALCULATED BASED ON CROSS SLOPES SHOWN.
### CURB RAMP TYPE 4

<table>
<thead>
<tr>
<th>4.0% GUTTER LINE PROFILE</th>
<th>4.0% GUTTER LINE PROFILE</th>
<th>4.0% GUTTER LINE PROFILE</th>
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### CURB RAMP TYPE 7

<table>
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<th>4.0% GUTTER LINE PROFILE</th>
<th>4.0% GUTTER LINE PROFILE</th>
<th>4.0% GUTTER LINE PROFILE</th>
</tr>
</thead>
<tbody>
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</tr>
</tbody>
</table>

### Notes:
1. **NOTES:**
   - THE ABOVE TABLES ARE BASED ON THE SPECIFIC GUTTER PROFILE REFERENCED. THEY DO NOT TAKE INTO ACCOUNT VARIATIONS IN THE GUTTER PROFILE. THE ABOVE TABLES TO BE USED BY THE DESIGNER AND CONTRACTOR TO GET APPROXIMATE DIMENSIONS OF THE CURB RAMPS AT EACH LOCATION. FINAL DIMENSIONS WILL BE DETERMINED BY ACTUAL MEASUREMENTS IN THE FIELD DURING CONSTRUCTION.
   - FOR CURB RAMP TYPES 4, 6, 7, AND 8, THE ABOVE TABLES ALREADY APPLY THE 15 FEET RULE FOR THOSE CALCULATED LENGTHS WHICH EXCEED 15 FEET.
   - DIMENSIONS SHOWN IN TABLES ARE FOR 3 INCH TO 9 INCH CURB HEIGHTS. WHERE THE CURB HEIGHTS ARE OTHER THAN WHAT IS PROVIDED IN THE TABLES, THE DIMENSIONS OF THE RAMPS WILL HAVE TO BE CALCULATED BASED ON CROSS SLOPES SHOWN.

2. **FOR CURB RAMP TYPES 1, 2, 3, AND 5:**
   - THE ABOVE TABLES ARE BASED ON THE SPECIFIC GUTTER PROFILE REFERENCED. THEY DO NOT TAKE INTO ACCOUNT VARIATIONS IN THE GUTTER PROFILE. THE ABOVE TABLES TO BE Used BY THE DESIGNER AND CONTRACTOR TO GET APPROXIMATE DIMENSIONS OF THE CURB RAMPS AT EACH LOCATION. FINAL DIMENSIONS WILL BE DETERMINED BY ACTUAL MEASUREMENTS IN THE FIELD DURING CONSTRUCTION.
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3. **FOR CURB RAMP TYPES 1, 2, 3, AND 5:**
   - THE ABOVE TABLES ARE BASED ON THE SPECIFIC GUTTER PROFILE REFERENCED. THEY DO NOT TAKE INTO ACCOUNT VARIATIONS IN THE GUTTER PROFILE. THE ABOVE TABLES TO BE USED BY THE DESIGNER AND CONTRACTOR TO GET APPROXIMATE DIMENSIONS OF THE CURB RAMPS AT EACH LOCATION. FINAL DIMENSIONS WILL BE DETERMINED BY ACTUAL MEASUREMENTS IN THE FIELD DURING CONSTRUCTION.
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4. **CONCRETE SIDEWALK (PUBLIC SIDEWALK CURB RAMP TABLES):**
   - U = UPPER SIDE OF GUTTER LINE PROFILE
   - L = LOWER SIDE OF GUTTER LINE PROFILE
   - FOR THE OTHER ABBREVIATIONS - REFER TO CD-606-1
   - TYPE 3 RAMP IS NOT APPLICABLE, USE TYPE 1
   - TYPE 4 RAMP IS NOT APPLICABLE, USE TYPE 3

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### LEGEND

- **U** = UPPER SIDE OF GUTTER LINE PROFILE
- **L** = LOWER SIDE OF GUTTER LINE PROFILE
- **FOR THE OTHER ABBREVIATIONS - REFER TO CD-606-1**
- **TYPE 3 RAMP IS NOT APPLICABLE, USE TYPE 1**
- **TYPE 4 RAMP IS NOT APPLICABLE, USE TYPE 3**
CONCRETE ISLAND ON EXISTING PAVEMENT

LONGITUDINAL AND TRANSVERSE JOINT TREATMENT FOR CONCRETE ISLAND

CONCRETE ISLAND, 6" THICK

CONCRETE AND HMA ISLAND

HMA = HOT MIX ASPHALT

New Jersey Department of Transportation

Construction Details
**NEW JERSEY DEPARTMENT OF TRANSPORTATION**

**CONSTRUCTION DETAILS**

**CURB TRANSITIONS**

**PAY LIMIT 9" X 14" CONCRETE VERTICAL CURB**

**SLOPING OR**

**VERTICAL CURB**

**12'-6" CURB TRANSITION**

(SEE NOTE)

**9" X 14" CONCRETE VERTICAL CURB (WHERE SHOWN ON PLANS)**

**10'-0" CURB TRANSITION**

**SLOPING OR**

**VERTICAL CURB**

**NOTE:** A RAIL HEIGHT TRANSITION MAY ALSO BE REQUIRED. SEE CD-609-5.

**METHOD OF TRANSITIONING TO 2" VERTICAL CURB AT A BEAM GUIDE RAIL ANCHORAGE**

**CD-607-2**

**PAY LIMIT 9" X 14" CONCRETE VERTICAL CURB**

**SLOPING OR**

**VERTICAL CURB**

**12'-6" CURB TRANSITION**

(SEE NOTE)

**9" X 14" CONCRETE VERTICAL CURB (WHERE SHOWN ON PLANS)**

**10'-0" CURB TRANSITION**

**SLOPING OR**

**VERTICAL CURB**

**NOTE:** A RAIL HEIGHT TRANSITION MAY ALSO BE REQUIRED. SEE CD-609-5.
1. Anchor Anchor Post Assembly to within approximately 3 inches above ground level. Place Bolt and Washer in first and fifth holes from top end, and secure bolts into place.

2. Drive Anchor Post Assembly to within a maximum of 4 inches above ground level.

3. See out around back of Anchor Post Assembly to allow room for top post to be attached.

4. Anchor Top Post Assembly onto protruding Anchor Post Assembly Bolt, through the first and fifth holes from the bottom of the top post.

5. Place and tighten a self-locking flange nut on base bolt. When installation is complete, top of ground post not to exceed 3 inches above ground level.

6. Size of connector bolt for Type 1 (\(0.75\)") Size of connector bolt for Type 2 (\(1.0\)")

7. The connector bolts are to be fully threaded. Each connector bolt and nut to be clearly stamped with manufacturer's identifying mark.

Notes:

1. Anchor Post and Top Post to be of equal weight/feet.

2. Box Anchor Plate to be attached to all Anchor Posts.

3. The Material for the Soil Anchor Plates to be Carbon Sheet Steel.

4. The Steel \(\frac{1}{4}\) post to be Grade 60.

New Jersey Department of Transportation

Construction Details

Type 1 Steel U-Post Supports

Type 1 Soil Anchor Plate

Steel U-Post Sign Supports
GENERAL NOTES:

1. ORANGE WARNING SIGNS DESCRIBED AND USED ALONG HIGHWAY ARE TO BE EMPLOYED AT TIME OF PRIMARY WORK ZONE AND SECONDARY WORK ZONE.

2. THE APPLIANCES USED TO SUPPORT THE ORANGE WARNING SIGNS ARE TO BE CURVED AT THE TOP TO ADJUST FOR REDUCED VISION DUE TO THE CURVATURE OF THE ROADWAY OR TO POSITION AT A SAFER LOCATION. ILLUMINATED CONSTRUCTION SIGNS W8-9A (SYMBOL FOR UNEVEN PAVEMENT) AND W8-14A (SYMBOL FOR COMMENTARY) ARE TO BE USED TO MARK THE LOCATION OF THE WORK ZONE.

3. THESE APPLIANCES ARE TO BE PLACED IN A ZONE BETWEEN THE WORK ZONE AND THE TRAFFIC STREAM WHERE THE ROADWAY IS IN THE EIGHT TO TWENTY FEET RANGE. THE ROADWAY IS TO BE COVERED, REMOVED, OR RELOCATED AS DIRECTED BY THE RE.

4. THE ROADWAY IN THE EIGHT TO TWENTY FEET RANGE IS TO BE COVERED, REMOVED, OR RELOCATED AS DIRECTED BY THE RE.

5. THESE APPLIANCES ARE TO BE USED ALONG HIGHWAY TO BE EMPLOYED AT TIME OF PRIMARY WORK ZONE AND SECONDARY WORK ZONE.

6. THE ROADWAY IN THE EIGHT TO TWENTY FEET RANGE IS TO BE COVERED, REMOVED, OR RELOCATED AS DIRECTED BY THE RE.

7. THESE APPLIANCES ARE TO BE COVERED, REMOVED, OR RELOCATED AS DIRECTED BY THE RE.

8. THESE APPLIANCES ARE TO BE COVERED, REMOVED, OR RELOCATED AS DIRECTED BY THE RE.

9. THESE APPLIANCES ARE TO BE COVERED, REMOVED, OR RELOCATED AS DIRECTED BY THE RE.

10. THESE APPLIANCES ARE TO BE COVERED, REMOVED, OR RELOCATED AS DIRECTED BY THE RE.

TRAFFIC CONTROL DETAILS

1. TRAFFIC CONTROL TRUCK WITH ILLUMINATED ARROW BOARD AND ARROW BOARD SHOWN ARROW PATTERNS LEFT, RIGHT, BOTH.

2. TRAFFIC CONTROL TRUCK WITH ILLUMINATED ARROW BOARD AND ARROW BOARD SHOWN ARROW PATTERNS LEFT, RIGHT, BOTH.

3. TRAFFIC CONTROL TRUCK WITH ILLUMINATED ARROW BOARD AND ARROW BOARD SHOWN ARROW PATTERNS LEFT, RIGHT, BOTH.

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26. TRAFFIC CONTROL TRUCK WITH ILLUMINATED ARROW BOARD AND ARROW BOARD SHOWN ARROW PATTERNS LEFT, RIGHT, BOTH.
2 LANES, UNDIVIDED, LANE AND SHOULDER CLOSING

NOTE:

INSTALL THIS SIGN FOR ROADS WITH A POSTED SPEED LIMIT OF 45 MPH OR GREATER UNLESS OTHERWISE DIRECTED BY THE RL.

TCD-2 FOR VALUES OF L, B, AND D.

2 LANES, UNDIVIDED, SHOULDER CLOSING