

Edition 2011

**SUPPLEMENTARY SPECIFICATIONS
FOR
ENTRY 4 SIDEWALK AND LOT 2 STAIRS
AT WILLIAM PATERSON UNIVERSITY
IN THE TOWNSHIP OF WAYNE
COUNTY OF PASSAIC**

AUTHORIZATION OF CONTRACT

The contract for this project is authorized by the provisions of local public contracts law, NJSA 40A: 11-1 et seq.

SPECIFICATIONS TO BE USED

The 2007 Standard Specifications for Road and Bridge Construction, of the New Jersey Department of Transportation and as amended herein, shall govern the construction of this project.

WAGE RATES

The contractor shall pay the minimum wage rates determined by the New Jersey Department of Labor.

State wage rates may be obtained from the New Jersey Department of Labor (Telephone: 609-292-2259) or by accessing the Department of Labor's web site at http://lwd.dol.state.nj.us/labor/wagehour/wagehour_index.html. The State wage rates in effect at the time of award will be made a part of this Contract, pursuant to Chapter 150, Laws of 1963 (NJSA 34:11-56.25, *et seq.*).

In the event it is found that any employee of the contractor or any subcontractor covered by the contract, has been paid a rate of wages less than the minimum wage required to be paid by the contract, the contracting agency may terminate the contractor's or subcontractor's right to proceed with the work, or such part of the work, as to which there has been a failure to pay required wages and to prosecute the work to completion or otherwise. The contractor and his sureties shall be liable to the contracting agency for any excess costs occasioned thereby.

GENERAL

Award of contract and subletting will not be permitted to, materials will not be permitted from, and use of equipment will not be permitted that is owned and/or operated by, firms and individuals included in the report of suspensions, debarments and disqualifications of firms and individuals as maintained by the Department of the Treasury, General Services Administration, CN-039, Trenton NJ 08625 (609-292-5400).

Payment for a pay item in the proposal includes all the compensation that will be made for the work of that item as described in the contract documents unless the "Measurement and Payment" section provides that certain work essential to that item will be paid for under another pay item.

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 2007 Standard Specifications unless otherwise noted.

Whenever reference to page number is made, it is construed to refer to the 2007 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 municipality or county 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 IS ADDED:

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

101.04 INQUIRIES REGARDING THE PROJECT

THE FOLLOWING IS ADDED TO THIS SUBSECTION:

Direct inquiries regarding the various types of work to the following representatives of the Department:

1. Before Award of the Contract

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

All inquiries must include the following:

- a. Name of the company;
- b. Telephone number, fax number, and contact person; and
- c. Specifics of the inquiry, including anticipated impacts.

The Department will investigate the information provided in the inquiry and then respond through an addendum only if determined to be necessary.

2. After Award of the Contract

Mr. Bill Siegrist
Associate Director
Capital Planning, Design & Construction
William Paterson University
300 Pompton Road
Wayne, NJ 07470
Phone (973) 720-3363

SECTION 105 - CONTROL OF WORK

105.07 COOPERATION WITH 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 B.

Bidders are advised to verify the above information; its accuracy and completeness are not guaranteed.

SECTION 159 – TRAFFIC CONTROL

159.04 MEASUREMENT AND PAYMENT

THE FOLLOWING IS ADDED:

<i>Item</i>	<i>Pay Unit</i>
MAINTENANCE AND PROTECTION OF TRAFFIC	LUMP SUM

Maintenance and Protection of Traffic Devices will not be measured individually for payment but payments will be made on a lump sum basis.

Payment for traffic control devices on a lump sum basis will be made at 50 percent of the contract bid price upon delivery, placement and approval with the balance prorated over the duration of the contract.

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 Maintenance and Protection of Traffic.

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

DIVISION 200 – EARTHWORK

SECTION 201 – CLEARING SITE

201.03.01 Clearing Site

B. Clearing and Grubbing THE FOLLOWING IS ADDED:

Remove trees measuring 12" in diameter or less as shown on the plans or as determined by the RE. Use the methods described in subsection 802.03.02 of these specifications.

THE FOLLOWING IS ADDED TO THIS SUBSECTION:

H. Removal of Existing Features

1. Removal and disposal of all existing features, as shown on the Contract Plans and/or as determined in the field by the RE, necessary to construct the proposed improvements.

201.04 MEASUREMENT AND PAYMENT

THE FOLLOWING IS ADDED:

Removal of trees measuring 12" in diameter or less will not be measured for separate payment but the cost will be included in the unit price bid for 'Clearing Site.'

SECTION 202 – EXCAVATION

202.03 CONSTRUCTION

202.03.03 Excavating Unclassified Material

A. Excavating.

THE SECOND SENTENCE OF THE FIRST PARAGRAPH OF SUBPART 'A' IS CHANGED TO:

Unclassified excavation consists of excavation and management of material of whatever nature encountered, except for regulated material, acid producing soil, or rock excavation.

THE ENTIRE TEXT OF SUBPART 'A3' (ROCK AREAS) IS DELETED.

THE FOLLOWING SUBSECTION IS ADDED:

202.03.10 Rock Excavation

- A. Rock Areas.** Rock Excavation consists of the excavation of boulders more than 1 cubic yard in volume and rock in ledge formations that cannot be excavated except by drilling or drilling and blasting.

The Contractor may remove entire boulders extending beyond the specified limits of excavation. Backfill and compact space created outside the specified limits by such boulder removal using the directed method as specified in 203.03.02.C. Ensure that undrained pockets are not left in the surface of the rock.

After completing the excavation of each lift of rock slope construction and before beginning the next lift, scale the completed slopes to remove loose rock fragments. The RE will examine rock slopes during the excavation to identify possible unstable conditions and to determine the need for stabilization. Provide assistance and equipment necessary for such examination.

If it is determined that in-place stabilization is required, use rock bolting or other stabilization techniques as directed. Before drilling and blasting, remove existing overburden to the top of rock. Take necessary precautions in drilling and blasting operations to preserve the rock remaining in the specified finished slope in a natural undamaged condition. Conduct blasting operations according to the following:

1. **Blasting Plan.** Submit a blasting plan at least 14 days before commencing drilling and blasting operations and before each subsequent shot thereafter. Include the full details of the drilling and blasting patterns and controls to be used for both the presplitting and production blasting. Additionally, include the following minimum information:
 - a. Station limits of proposed shot.
 - b. Plan and section views of proposed drill pattern, including free face, burden, blasthole spacing, diameters and angles, lift height, and subdrill depth.
 - c. Loading diagram showing type and amount of explosives, primers, initiators, and location and depth of stemming.
 - d. Manufacturers' data sheets for explosives, primers, and initiators to be employed.
 - e. Initiation sequence of blastholes including delay times and delay system.
 - f. Planned security measures for storage of explosives.
 - g. Safety plan for personnel and public.
 - h. Copy of blasting license.
 - i. Name and qualifications of blasting supervisor.

The blasting plan submittal is for quality control and record keeping purposes. A review of the blasting plan does not relieve responsibility for the accuracy and adequacy of the plan when implemented in the field.

2. **Blasting Test Sections.** Before commencing full-scale blasting operations, demonstrate the adequacy of the proposed blasting plan by drilling, blasting, and excavating short test sections, up to 100 feet in length, to determine which combination of method, hole spacing, and charge works best. The RE may direct additional test sections when field conditions warrant.

Conform to the requirements for controlled and production blasting operations when blasting in conjunction with the test shots.

Do not drill ahead of the test shot area until the test section has been excavated and the results evaluated. If the results of the test shots are unsatisfactory, revise methods to achieve the required results. Unsatisfactory test shot results include an excessive amount of fragmentation beyond the shown lines and grade, excessive flyrock, or violation of other requirements.

If, at any time during the progress of the work, the methods of drilling and blasting do not produce the desired result of a uniform slope and shear face, within the tolerances specified, drill, blast, and excavate in short sections, not exceeding 100 feet long, until a technique is arrived at that produces the desired results.

3. **Safety.** Handle explosive materials and conduct blasting operations as specified in 105.10. Use only standard explosives, blasting agents, detonating cord, delays, blasting caps, and other blasting accessories prepared and packaged by explosive manufacturing firms.

Restrict access to the entire blast area for a minimum of 5 minutes following a blast to guard against rock fall before commencing work in the cut.

The RE will prohibit or halt the blasting operations if it is apparent that through the methods being employed, the required slopes are not being obtained in a stable condition, or the safety and convenience of the traveling public is being jeopardized.

4. **Methods of Drilling and Blasting.**

- a. **Presplitting.** Presplitting is a controlled blasting method for constructing a shear plane along a specified cut slope through the controlled use of explosives and accessories in properly aligned and spaced drill holes.

After removing the overburden and weathered rock, drill slope holes for presplitting along the line and in the plane of the cut slope. Drill slope holes between 2-1/2 and 3 inches in diameter. Control operations to ensure that the drill holes do not deviate from the plane of the slope by

more than 6 inches and do not deviate within the plane of the slope by more than 6 inches.

Ensure that the drilling equipment for drilling the presplit holes has mechanical devices affixed to accurately determine the angle at which the drill steel enters the rock. The RE will not allow presplit hole drilling if these devices are either missing or inoperative. Do not space slope holes more than 3 feet on centers, and adjust spacing as required to produce a uniform and stable shear plane between slope holes. Under certain conditions, to produce a uniform and stable shear plane, the RE may also require auxiliary holes, which are identical to the slope holes but are not loaded with explosives.

The Contractor may extend the length of the slope holes to the full depth of the cut, to a maximum of 50 feet, if hole alignment is maintained. Otherwise, drill and blast slope holes in lifts. If presplitting in lifts, the RE will allow a maximum offset of 6 inches to accommodate the drill head. Arrange lifts so that the toe of the finished cut slope coincides with the toe of slope. Before placing explosives or blasting agents, ensure that the hole is free of obstructions for its entire depth.

Provide explosives for use in presplit holes with a maximum diameter less than 1/2 the diameter of the presplit hole, and ensure that explosives do not touch the side of the hole. Use only standard explosives manufactured especially for presplitting in presplit holes, unless otherwise approved. Do not load bulk ammonium nitrate and fuel oil in the presplit holes.

Use an amount of explosives in the presplit hole that produces the shearing without causing overbreak. Ensure that the top of the load is far enough below the collar to avoid overbreak at the surface. Extend the detonator cord downline from the collar to the bottom of the bore hole and from the collar to the detonator trunkline or electric blasting caps. Prime the explosive charge according to the recommendations of the manufacturer of the commercial explosive or blasting agent.

If using fractional portions of standard explosive cartridges, firmly affix them to the detonating cord so that the cartridges do not slip down the detonating cord or bridge across the hole. Do not space fractional cartridges along the length of the detonating cord farther than 30 inches on center. Adjust spacing to give the desired results.

Assemble continuous column cartridge type of explosives used with detonating cord, and affix them to the detonating cord according to the explosive manufacturer's recommendations. Provide a copy of these instructions to the RE.

The Contractor may make the bottom charge of a presplit hole larger than the line charges but not so large as to cause overbreak. Place the top charge of the presplitting hole far enough below the collar, and reduce the charge sufficiently, to avoid overbreaking and heaving.

Stem the upper portion of presplit holes, from the topmost charge to the hole collar. Stemming materials shall consist of drill cutting or 3/8-inch clean stone chips.

The Contractor does not need to stem below the topmost charge unless the Department determines that the rock is very seamy and incompetent, in which case, the Contractor may need to full stem such zones.

The Contractor may detonate presplit holes instantaneously or on short delays between each hole. Ensure that delay detonating does not exceed 25 milliseconds between holes. Detonate presplit holes before detonating any production holes.

Extend presplitting a minimum of 50 feet ahead of the production blasting limits, but not more than 100 feet beyond the exposed presplit face.

- b. Production Blasting.** Production blasting is a method of drilling and blasting to produce a high degree of fragmentation of the rock mass to be excavated.

Drill the adjacent line of production holes inside the presplit lines so as to avoid damage to the presplit face. If necessary, the Contractor may drill the first line of production holes parallel to the presplit face to reduce overbreak of this face.

The Contractor may vary hole diameter, spacing, delay patterns, explosives, blasting agents, and other variables to obtain a fragmentation acceptable to the RE, provided that the existing presplit face is not damaged.

- B. Temporarily Storing.** Store rock excavation as specified in 203.03.03B.

202.04 MEASUREMENT AND PAYMENT

THE FOLLOWING IS ADDED TO THE LIST OF ITEMS:

Item

Pay Unit

EXCAVATION, ROCK

CUBIC YARD

DIVISION 500 – BRIDGES AND STRUCTURES

SECTION 504 – STRUCTURAL CONCRETE

504.04 MEASUREMENT AND PAYMENT

THE FOLLOWING ITEM IS ADDED:

<i>Item</i>	<i>Pay Unit</i>
CONCRETE STAIRS	LUMP SUM

The Department will include payment for reinforcement steel, excavation, and compaction for the concrete stairs under the item CONCRETE STAIRS. The Item CONCRETE STAIRS shall also include all concrete landings.

SECTION 509 – BRIDGE RAILING AND FENCE

509.01 DESCRIPTION

THE ENTIRE SUBSECTION IS CHANGED TO:

This Section describes the requirements for constructing metal railings. Metal railing includes metal railing components for non-traffic pedestrian railing.

519.02.01 Materials

Provide materials as specified:

Aluminum Railing.....	913.03.02
Grout.....	903.08.02

THE FOLLOWING IS ADDED:

509.03.03 Handrails and Guards

Adjust aluminum guard and handrail prior to securing in place, to ensure proper matching at butting joints and correct alignment throughout their length. Plumb posts in each direction. Secure posts and rail ends to building construction as follows:

1. Anchor posts in concrete by means of sockets set and anchored into the concrete slab. Provide closure secured to the bottom of sleeve. Before installing posts remove all debris and water from sleeves. Verify that reinforcing bars or tubes have been inserted into posts before installation. Do not install posts without reinforcing bar. For all non-removable railing sections, after the posts have been inserted into the sockets, fill the annular space between posts and sockets solid with grout. Crown grout and slope it to drain away from posts.
2. CONTRACTOR may anchor posts in concrete by core drilling holes in areas selected by him and approved by ENGINEER. Drill holes not less than 1-inch greater than the

outside diameter of post. Reinforcing steel shall not be cut by core drilling. Fill the annular space with grout and crown grout to drain away from posts.

Cutting, Fitting and Placement:

1. Perform cutting, drilling and fitting required for installation. Set the Work accurately in location, alignment and elevation, plumb, level, true and free of rack, measured from established lines and levels.
2. Fit exposed connections accurately together to form tight hairline joints. Do not cut or abrade the surfaces of units which have been finished after fabrication, and are intended for field connections.
3. Permanent field splice connections shall be made using manufacturer's recommended epoxy adhesive and 5-inch minimum length connector sleeves. Tight press-fit all field splice connectors and install in accordance with manufacturer's written instructions. Follow epoxy manufacturer's recommendations for requirements of installation and conditions of use.
4. Permanent field splice connections shall be made using stainless steel blind rivets and 5-inch minimum length connector sleeves. Tight press-fit all field splice connectors and install in accordance with manufacturer's written instruction. Install two blind rivets per joint on 180 degree centers.
5. Make all splices as near as possible to posts but not exceeding 12 inches from nearest post.
6. Field welding will not be permitted. Make all splices using a pipe splice lock employing a single allen screw to lock joint.
7. Drill one 15/64 inch diameter weep hole not more than 1/4 inch above the top of location of solid reinforcing bar or tube in each post.

Expansion Joints:

1. Provide slip joint with internal sleeve extending 2 inches minimum beyond joint on each side.
2. Construct expansion joints as for field splices except fasten internal sleeve securely to one side of rail only.
3. Locate joints within 6 inches of posts.
4. Submit locations and details of all expansion joints to ENGINEER.

Protection from Dissimilar Materials:

1. Coat all surfaces of aluminum in contact with dissimilar materials such as concrete, masonry and steel with bituminous coating conforming to ASTM D1187, 'Standard Specification for Asphalt-Base Emulsions for Use as Protective Coatings for Metal
2. Remove coating where exposed in the finished Work.

509.04 MEASUREMENT AND PAYMENT

THE FOLLOWING IS ADDED:

The Department will measure and make payment for Items as follows:

<i>Item</i>	<i>Pay Unit</i>
HANDRAIL	LINEAR FOOT

DIVISION 600 - MISCELLANEOUS CONSTRUCTION

602.03.03 SETTING CASTINGS, RESETTING CASTINGS, AND RECONSTRUCTING INLETS AND MANHOLES

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 PIECES

THE FOLLOWING IS ADDED AFTER THE LAST PARAGRAPH:

All curb pieces will be NJDEP-compliant, Campbell Foundry Pattern No. 2618N6W2 with "DUMP NO WASTE – DRAINS TO WATERWAYS" on the top of the curb piece or approved equal/equivalent.

THE FOLLOWING SUBSECTION IS ADDED:

602.03.10 Converting 'E' Inlet to 'B' Inlet

Remove castings, grates, damaged wall portions, and ladder runs as directed by the RE. Reuse concrete as specified in 202.03.07A. Dispose of other material as specified in 202.03.07B.

Reconstruct walls to the elevations shown, and, if necessary, install new ladder rungs. Install curb pieces. Bolt the curb piece to the frame before setting the frame in concrete or mortar. Ensure that all castings are set firm and snug. Set castings in mortar beds or anchor castings to the masonry as shown before finishing adjoining Items of work with the same final elevation. If excavation is required to reconstruct, backfill and compact using the directed method as specified in 202.03.02C.

Set the bicycle safe grate on the casting. If the bicycle safe grate is loose or wobbles, grind to obtain a tight fit. Do not open to traffic until 3 days after grout was set.

602.04 MEASUREMENT AND PAYMENT

THE FOLLOWING IS ADDED TO THE LIST OF PAY ITEMS:

<i>Item</i>	<i>Pay Unit</i>
CONVERT 'E' INLET TO 'B' INLET	UNIT

SECTION 606 – SIDEWALKS, DRIVEWAYS, AND ISLANDS

606.03.03 DETECTABLE WARNING SURFACES

THE FOLLOWING IS ADDED TO THE END OF THIS SUBSECTION:

Materials for Detectable Warning Surfaces will be safety red, unless otherwise directed by the RE, and should appear uniform in color after curing. The surface coating material will be an abrasion, UV and chemical resistant, and capable of adhering to existing or new portland cement concrete surfaces. The minimum final dry coat thickness will be 40 mils.

The cured coating will exhibit the following minimum coefficients of friction when tested according to ASTM D 1894:

Static coefficient of friction

Dry 0.95 – 0.99

Wet 1.39 – 1.42

Dynamic coefficient of friction

Dry 0.91 – 0.95

Wet 1.27 – 1.36

THE FOLLOWING IS ADDED TO THIS SECTION:

The Contractor shall construct all sidewalks, handicap 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.

SECTION 607 – CURB

607.03.02 CONCRETE VERTICAL CURB AND CONCRETE SLOPING CURB

D. Placing Concrete.

THE SECOND SENTENCE OF THE FIRST PARAGRAPH IS CHANGED TO:

Do not construct concrete curb between November 1 to March 15, except as approved by the RE. When placing concrete, adhere to the limitations specified in 504.03.02.C.

SECTION 610 – TRAFFIC STRIPES, TRAFFIC MARKINGS, AND RUMBLE STRIPS

610.03.01 LONG-LIFE TRAFFIC STRIPES

THE SUBPART HEADING AND THE ENTIRE TEXT IS CHANGED TO:

610.03.01 TRAFFIC STRIPES

A. Striping Plan. At least 20 days before beginning the work, submit to the RE for approval a striping plan that includes:

1. Schedule of operations for applying traffic stripes.
2. Number and type of equipment.
3. Manufacturer's recommendations for use of the materials, including, but not limited to, mixing ratios and application temperatures.
4. Details on the means and methods for surface preparation
5. Details on the means and methods for premarking
6. Details on the proposed test strip such as location, length, etc.

B. Surface Preparation. Immediately before striping the pavement surface, clean the surface of dirt, oil, grease, and foreign material, including curing compound on new concrete. Clean the surface 2 inches beyond the perimeter of the stripes to be placed.

C. Striping Test Strip. Before beginning striping operations, construct 1 or more striping test strips to demonstrate the Contractor's ability to meet the requirements specified in 610.03.01.D. For each striping test strip, apply striping to approximately 500 linear feet of pavement with the same striping procedure that will be used for the Project. Construct a test strip for each applicator unit and epoxy resin material used. Provide the RE with 50 test cards made of heavy stock paper measuring 8 inches by 2 inches, and two wet film thickness gauges. Construct additional test strips when major equipment repairs or adjustments are made or when the traffic stripes are determined to be defective. Construct additional test strips when traffic striping operations are performed on multiple, non-continuous occasions. Perform additional test strips as requested by the RE. When the test strip is in compliance, as determined by the RE, proceed with striping operations. Each test strip may remain in place and become part of the finished stripes subject to the requirements of 610.03.01.E.

D. Applying Striping. Mix epoxy resin with an automatic proportioning and mixing machine, and hot-spray the compound at a temperature of between 100 and 130 °F onto dry surfaces. Apply the compound with a wet film thickness of 20 ± 1 mil. Apply the material during dry weather conditions when the ambient temperature is a minimum of 45 °F and the surface temperature is a minimum of 50 °F. Adjust operations as required for the prevailing ambient and surface conditions to achieve a no-track drying time of 30 minutes or less.

Immediately after, or in conjunction with, the compound application, uniformly apply 12 pounds of large glass beads per gallon of epoxy resin to the compound. After applying the large glass beads, uniformly apply 12 pounds of small glass beads per gallon of epoxy resin to the compound.

Remove all compound that has been tracked or spilled outside of the intended placement areas.

- E. Performance.** Ensure that the traffic Stripes, show no fading, lifting, cracking, chipping for any reason including but not limited to traffic wear, maintenance activities including snow plowing, until Acceptance. Ensure that 60 days after application, traffic stripes have a minimum retroreflectance value of:

375 millicandelas per square meter per lux for white traffic stripe

250 millicandelas per square meter per lux for yellow traffic stripe

- F. Defective work.** Replace traffic stripes that are determined by the RE before Acceptance to be defective or that are damaged during construction. Remove defective stripes as specified in 610.03.08.

Replace an entire 10-foot skip line if the RE determines the stripe to have a deficiency.

If the RE determines, based upon calculated and measured yields, that the striping has a wet film thickness of less than 19 mils, restripe the entire length with 20 mils of new compound.

Provide the RE with an LTL-X Reflectometer that has been certified by the manufacturer as being calibrated within the last two years. The RE will test the retroreflectance of traffic stripes. Replace traffic stripes that do not meet the retroreflectance values indicated in 610.03.01.E. Replace the entire length of striping where improper curing or discoloration has occurred. Discoloration is localized areas or patches of brown or grayish colored compound. Where improper curing or discoloration occurs intermittently in intervals of 100 feet or less throughout the striping length, replace the entire length of striping from the beginning of the first occurrence until the end of the last occurrence, plus 5 feet on each end.

Replace the entire length of striping that has failed to bond to the pavement, or has chipped or cracked. Where more than 25 spots of chipping, cracking, or poor bonding have occurred within 1000 linear feet of striping, replace the entire 1000 foot length of striping as indicated in 610.03.01.E.

- G. Opening to Traffic.** Complete each application of all types of traffic stripes and allow to thoroughly dry before opening to traffic. At a minimum, delineate center lines on undivided roadways and broken lines between lanes before the traveled way is opened. The RE will determine when the traveled way can be opened to traffic.

610.03.02 Thermoplastic Traffic Markings

THE SUBPART HEADING AND THE ENTIRE TEXT IS CHANGED TO:

610.03.02 Traffic Markings

- A. Marking Plan.** At least 20 days before beginning the work, submit to the RE for approval a marking plan that includes:

1. Schedule of operations for applying traffic markings,
2. Number and type of equipment,
3. Manufacturer's recommendations for use of the materials, including mixing ratios and application temperatures.
4. Details on the means and methods for surface preparation
5. Details on the means and methods for pre-marking

B. Surface Preparation. Immediately before marking the pavement surface, clean the surface of dirt, oil, grease, and foreign material, including curing compound on new concrete. Clean the surface 2 inches beyond the perimeter of the marking to be placed.

C. Applying Traffic Markings. Place preformed thermoplastic or hot extruded thermoplastic traffic markings on thoroughly dry surfaces and during dry weather conditions. Apply using equipment and procedures that produce markings of the specified color, width, and thickness with well-defined edges, uniform retroreflectivity, and proper bonding to the pavement. Apply the thermoplastic material as follows:

1. **Preformed Thermoplastic.** Melt the preformed thermoplastic tape to bond the traffic markings permanently in position according to the manufacturer's recommendations.

Meet the minimum initial retroreflectance value, as specified in 610.03.01.D for thermoplastic tape, by applying additional glass beads to the hot-wet material in a uniform pattern as necessary.

2. **Extruded Thermoplastic.** Uniformly heat the thermoplastic material. When the ambient and surface temperatures are at least 50 °F, apply the melted material at a temperature of between 400 and 425 °F. Extrude the thermoplastic traffic markings on the HMA or concrete pavement ensuring a thickness of 90 1 mils.

Immediately after, or in conjunction with the thermoplastic extrusion, uniformly apply glass beads to the wet material at a minimum rate of 10 pounds per 100 square feet of markings. Apply glass beads by mechanical means only.

D. Performance. Ensure that the traffic markings show no fading, lifting, cracking, chipping for any reason including but not limited to traffic wear, maintenance activities including snow plowing, until Acceptance. Ensure that 60 days after application, traffic markings have a minimum retroreflectance value of:

375 millicandelas per square meter per lux for white traffic markings

250 millicandelas per square meter per lux for yellow traffic markings

E. Defective work. Replace thermoplastic traffic markings that are determined by the RE before Acceptance to be defective or that are damaged during construction. Remove defective markings as specified in 610.03.08.

Replace the entire area of thermoplastic traffic markings determined to be less than the required thickness, to have incorrect color or width, to have failed to bond to the pavement, or to have chipped or cracked. The minimum replacement area is an individual word or symbol, or for longitudinal lines the entire length from where the

deficiency first occurs to where it no longer exists.

The RE will determine initial retroreflectance as follows:

Provide the RE with an LTL-X Reflectometer that has been certified by the manufacturer as being calibrated within the last two years. The RE will test the retroreflectance of traffic markings. Replace traffic markings that do not meet the retroreflectance values indicated in 610.03.02.D.

F. Opening to Traffic. Complete each application of thermoplastic traffic markings and allow to thoroughly dry before opening to traffic. The RE will determine when the traveled way can be opened to traffic.

610.04 MEASUREMENT AND PAYMENT

THE FOLLOWING ITEMS ARE THE RENAMED ITEMS:

<i>Item</i>	<i>Pay Unit</i>
TRAFFIC STRIPES, ____"	LINEAR FOOT
TRAFFIC MARKINGS	SQUARE FOOT

DIVISION 650 – UTILITIES

SECTION 651 – WATER

651.04 MEASUREMENT AND PAYMENT

THE FOLLOWING IS ADDED TO THE END OF THIS SUBSECTION:

Reset Water Valve Box will not be measured for payment, but the cost will be included in various Items in the project.

SECTION 652 – SANITARY SEWERS

652.04 MEASUREMENT AND PAYMENT

THE FOLLOWING IS ADDED TO THE END OF THIS SUBSECTION:

Reset Sanitary Sewer Clean-Outs will not be measured for payment, but the cost will be included in various Items in the project.

SECTION 653 – GAS

653.04 MEASUREMENT AND PAYMENT

THE FOLLOWING IS ADDED TO THE END OF THIS SUBSECTION:

Reset Gas Valve Box will not be measured for payment, but the cost will be included in various Items in the project.

DIVISION 700 - ELECTRICAL

SECTION 701 – GENERAL ITEMS

701.04 MEASUREMENT AND PAYMENT

THE FOLLOWING IS ADDED TO THE END OF THIS SUBSECTION:

Resetting of electrical manhole castings will not be measured for payment, but the cost will be included in various Items in the project. Refer to Appendix B of the specification for appropriate procedure.

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.

902.02.04 SAMPLING AND TESTING

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.

- F. Acceptance of HMA.** The 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.

Alternatively, the Department may accept the HMA by Certification of Compliance according to 106.07.

SECTION 903 – CONCRETE

903.02.02 CHEMICAL ADMIXTURES

THE FOLLOWING IS ADDED TO THIS SUBSECTION:

Corrosion inhibitor products that are to be used in the fabrication of concrete Items will be as follows:

Calcium Nitrite Based as produced by
W.R. Grace & Company
2133 85th Street
North Bergen, NJ 07047
Telephone: 201-869-5220

Calcium Nitrite Based as produced by
The Euclid Chemical Company
5 Joanna Court
East Brunswick, NJ 08816
Telephone: 732-390-9770

Calcium Nitrite Based as produced by
Master Builders Inc.
798 Welsh Road
Huntingdon Valley, PA 19006
Telephone: 215-938-7501

Calcium Nitrite Based as produced by
SIKA Corporation
201 Polito Avenue
Lyndhurst, NJ 07071
Telephone: 800 - 933 - SIKa (7452)

Calcium Nitrite Based as produced by
Great Eastern Technologies, LLC
"Chem Strong CI"
515 Route 528
P. O. Box 3015
Lakewood, NJ 08701
Telephone: 888 - 452 – 9348

903.03.06 Tables

Table 903.03.06-2 Requirements for Structural Concrete Items

THE SEVENTH LINE UNDER CAST-IN-PLACE ITEMS IS CHANGED TO:

Table 903.03.06-2 Requirements for Structural Concrete Items				
	Concrete Class	Slump ¹ (inches)	Percent Air Entrainment for Coarse Aggregate ¹	
			No. 57 & No. 67	No. 8
Stairs, Decks, Sidewalks, Curbs, Parapets, Concrete Patch	A	3 ± 1	6.0 ± 1.5	7.0 ± 1.5

3. Use plates for guide rail on bridges and buried guide rail terminals conforming to ASTM A 36 and galvanized according to ASTM A 123.

SECTION 912 – PAINTS, COATINGS, TRAFFIC STRIPES AND TRAFFIC MARKINGS

912.03.01 Epoxy Traffic Stripes

THE SUBPART HEADING IS CHANGED TO:

912.03.01 Traffic Stripes

A. Epoxy Resin.

THE FIRST SENTENCE IS CHANGED TO:

For pavement striping, use an epoxy resin that is a 2 component, 100 percent solids formulation conforming to the following requirements:

912.03.02 Thermoplastic Traffic Markings

THE SUBPART HEADING IS CHANGED TO:

912.03.02 Traffic Markings

THE FIRST SENTENCE OF THE FIRST PARAGRAPH IS CHANGED TO:

For traffic markings, use either preformed or hot extruded thermoplastic conforming to AASHTO M 249, except that for preformed thermoplastic, the minimum thickness requirement is 90 mils.

APPENDIX A: PREVAILING WAGE RATES

Notice

TO ALL PUBLIC WORKS EMPLOYERS:

Please be advised that effective February 18, 1992, Regulation N.J.A.C. 12:60-2.1 and 6.1 of the New Jersey Prevailing Wage Act, N.J.S.A. 34:11-56.25 et seq. requires that certified payroll records must be submitted to the public body for each employee on the project. The General Contractor is responsible for ensuring that each sub-contractor submits the certified payroll within ten (10) days of the payment of wages. The public body shall receive, file and make available for inspection during normal business hours the certified payroll records.

A copy of the certified payroll form may be obtained by contacting the New Jersey Department of Labor, Division of Workplace Standards, Public Contracts Section, P.O. Box 389, Trenton, NJ 08625-0389, telephone (609) 292-2259.

APPENDIX B: PUBLIC UTILITIES

**TOWNSHIP OF WAYNE
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:

Electric
Public Service Electric and Gas Company
150 Circle Avenue
Clifton, NJ 07011
Attn: Mr. Charles King
Tel: (973) 365-2810

Gas
Public Service Electric and Gas Company
20 Van Vooren Drive
Oakland, NJ 07436
Attn: Mr. Paul Caffery
Tel: (201) 337-2527

Telephone
6000 Hadley Rd
03 Floor Room T-12
South Plainfield, New Jersey 07080
Attn: Elhadji Gueye,
Email: Elhadji.1.Gueye@one.verizon.com
Tel: (908) 412-6171

Water
Division of Water and Sewer
201 Dey Road
Wayne, NJ 07470
Attn: Mrs. Heather Vitz-Del Rio, P.E.
Tel: (973)694-5090 Ext. 4217
Fax: (973) 628-5377

Cable
Cablevision
159 Windermere Ave.
Greenwood Lake, NY 19025
Tel.: (845) 395-0244

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.

APPENDIX C: STANDARD CONSTRUCTION DETAILS

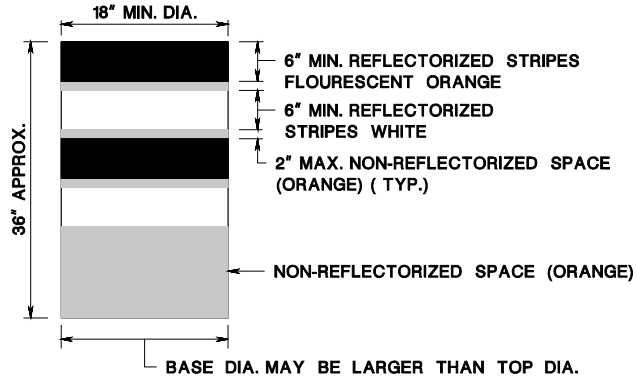
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BDO7D-01-ORIGINAL SHEET

DRUMS SHALL BE MADE OF ORANGE PLASTIC WITH A MINIMUM OF FOUR ALTERNATE FLUORESCENT ORANGE AND WHITE RETROREFLECTIVE STRIPES. IF THERE ARE NON-REFLECTORIZED SPACES BETWEEN THE STRIPES, THEY SHALL BE NO MORE THAN 2' WIDE. RETROREFLECTIVE SHEETING FOR STRIPES SHALL CONFORM WITH ASTM D 4956 TYPE VII OR VIII WITH S2 REQUIREMENTS.

THE TOP OF THE DRUM SHALL NOT BE OPEN. DRUMS SHALL BE CONSTRUCTED TO INHIBIT ROLLING IF KNOCKED OVER.

THE REFLECTORIZED AREA OF DRUMS SHALL BE ROUND EXCEPT THAT OTHER SHAPES, WHICH PROVIDE THE SAME VISIBILITY AS AN 18 INCH DIAMETER ROUND DRUM REGARDLESS OF ORIENTATION, MAY BE USED.



WHEN BALLAST IS REQUIRED BY THE R.E., SAND SHALL BE USED. THE MAXIMUM WEIGHT OF THE BALLAST SHALL BE 50 LBS. AND BE LOCATED APPROXIMATELY AT GROUND LEVEL. ALTERNATE TYPES OF BALLAST SHALL BE APPROVED BY THE R.E..

DRUMS

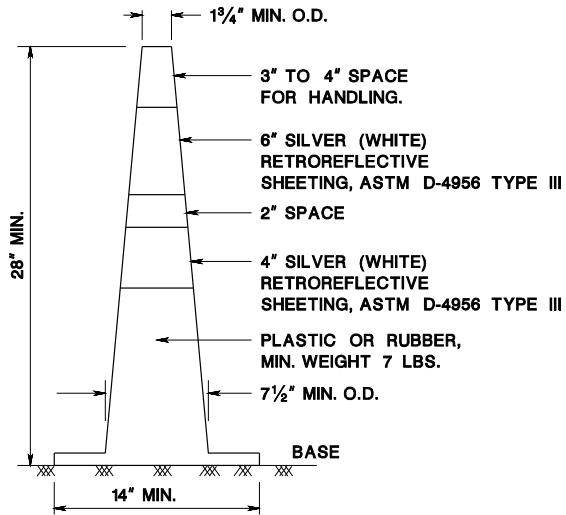
CD-159-1.1

NOTES:

TRAFFIC CONES SHALL BE PREDOMINATELY ORANGE IN COLOR.

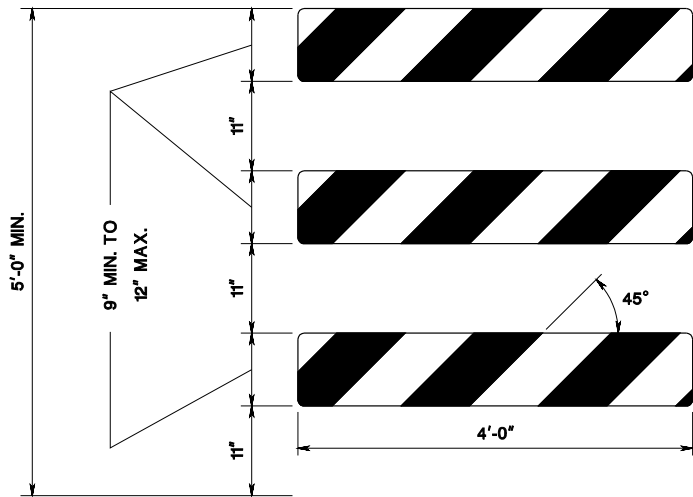
BASES MAY BE OF BREAKAWAY BALLASTED TYPE.

MINOR MANUFACTURER'S VARIATIONS MAY BE ACCEPTABLE UPON APPROVAL OF THE ENGINEER.



TRAFFIC CONES

CD-159-1.2



TYPE III BARRICADE - FRONT VIEW

NOTES:

1. THE 9" MIN. x 48", OR 12" MAX. x 48" BARRICADE RAILS SHALL BE FABRICATED FROM 0.125" MAX. PLASTIC SHEETING AND SHALL BE ATTACHED, 4 PER RAIL, WITH 1 INCH NO. 14 PAN HEAD METAL SCREWS OR PLASTIC RIVETS. ALL CORNERS SHALL BE ROUNDED.
2. ORANGE AND SILVER (WHITE) STRIPES SHALL BE RETROREFLECTIVE SHEETING, ASTM D 4956 TYPE III, AS SHOWN FOR CONSTRUCTION SIGNS. ALTERNATE ORANGE AND SILVER (WHITE) STRIPES 6" WIDE SLOPING DOWNWARD AT AN ANGLE OF 45 DEGREES IN THE DIRECTION TRAFFIC IS TO PASS.
3. IF NECESSARY, THE SANDBAGS SHALL BE FABRICATED AND PLACED ACCORDING TO THE MANUFACTURE'S RECOMMENDATION.
4. THE FRAMING FOR BARRICADE PANELS SHALL BE NCHRP-350 CRASHED TESTED AND FHWA APPROVED.

BREAKAWAY BARRICADES

CD-159-1.3

TRAFFIC CONTROL DEVICES

N.T.S.

CD-159-1

NEW JERSEY DEPARTMENT OF TRANSPORTATION

CONSTRUCTION DETAILS

LETTER	DISTANCE
A	1500'
B	1000'
C	500'
D	_____ MILE
E	_____ MILES AHEAD
F	_____ AHEAD

1. ALUMINUM SHALL BE FLAT SHEET OF ALLOY AND TEMPER 5052-H38 OR 6061-T6 :

A. 0.10" THICK FOR ALL CONSTRUCTION SIGNS EXCEPT SIGNS SHOWN MOUNTED ON BREAKAWAY BARRICADES.

B. 0.024" THICK FOR ALL CONSTRUCTION SIGNS SHOWN MOUNTED ON BREAKAWAY BARRICADES.

1. SIGN SUPPORTS SHALL BE OF WELL SEASONED LUMBER, S4S, FREE OF SPLITS, KNOTS AND WARPS, OR OF STEEL COMPONENTS.
2. WOOD POSTS SHALL HAVE A UNIFORM CROSS-SECTION AND SHALL NOT EXCEED THE FOLLOWING DIMENSIONS FOR:

SINGLE POST = 4" x 6"
TWO POSTS = 3" x 6" OR 4" x 5"
THREE POSTS = 3" x 5" OR 4" x 4"

4" X 6" WOOD POSTS SHALL BE MODIFIED BY DRILLING 1½
INCH DIAMETER HOLES 4 INCHES AND 18 INCHES ABOVE THE
GROUND LINE AND PERPENDICULAR TO THE ROADWAY CENTERLINE.

3. NO BRACING IS PERMITTED. VERTICAL CLEARANCES FOR SIGNS MOUNTED ON WOOD SUPPORTS SHALL BE 7 FOOT MINIMUM. EMBEDMENT DEPTH FOR THE WOOD POST SHALL NOT EXCEED 3.5 FEET.
4. STEEL POSTS SHALL BE IN ACCORDANCE WITH THE STANDARD DETAIL FOR U-POST SIGN SUPPORT.
5. TEMPORARY SIGN SUPPORTS NOT MEETING THIS CRITERIA SHALL BE SHIELDED BY A LONGITUDINAL BARRIER OR CRASH CUSHIONS.
6. WOOD POST TO BE USED ONLY ON TEMPORARY SIGN SUPPORT.

1. SIGN FACES SHALL BE ASTM D 4956 TYPE VII OR VIII FLUORESCENT ORANGE SHEETING.

1. ALL SIGNS SHALL BE SECURELY FASTENED TO THEIR SUPPORTS WITH BOLTS, NUTS AND WASHERS IN ACCORDANCE WITH THE SPECIFICATIONS.

N.T.S.

CD-159-6

NEW JERSEY DEPARTMENT OF TRANSPORTATION

NOTE:

THE BORDER, THE WORDS "GIVE US A", "SLOW
DOWN!", AND THE BRAKE PEDAL ARE BLACK;
LEAVING THE WORD "BRAKE" ORANGE.

CD-159-6.1

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BD02D-0-REVISIONS TO SIGN W8-3, ADD SIGNS
BD00D-03-REVISIONS TO NOTES-BACKING MAT.
REMOVED ON ORIGINAL SHEET



E5 - 1 [60" x 48"]
(20 S.F.)



W50 - 1C [60" x 48"]
(20 S.F.)



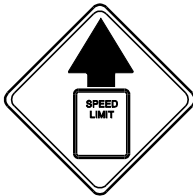
W5 - 4 [48" x 48"]
(16 S.F.)



W(NJ)100 - 1(L OR R)
48" x 48"
(16 S.F.)



W9 - 3 [48" X 48"]
(16 S.F.)



W3 - 5
48" x 48"
(16 S.F.)



W20 - 4F(M) [48" x 48"]
(16 S.F.)



G20 - 5aP
36" x 24"
(6 S.F.)
BLACK ON ORANGE



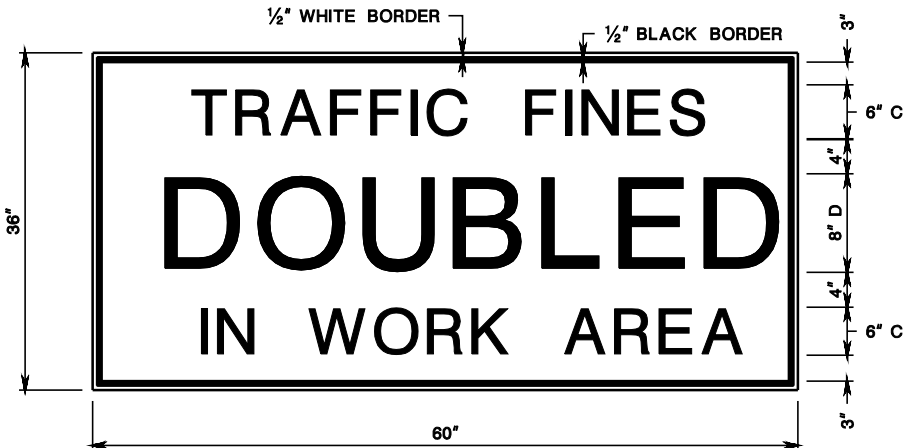
W20 - 10(G) [48" x 48"]
(16 S.F.)



EP1
60" X 36"
(15 S.F.)
BLACK ON ORANGE



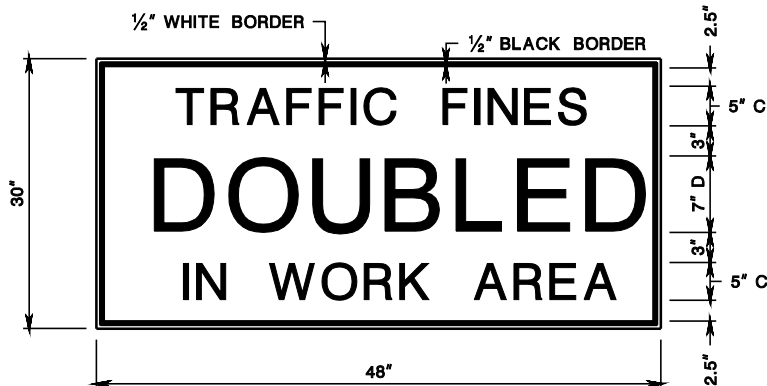
EP2
60" X 36"
(15 S.F.)
BLACK ON ORANGE



NOTE:

MESSAGE TO BE BLACK LETTERS
ON WHITE REFLECTIVE BACKGROUND.

R(NJ)5-17 60" x 36"
(15 S.F.)



NOTE:

MESSAGE TO BE BLACK LETTERS
ON WHITE REFLECTIVE BACKGROUND.

R(NJ)5-17 48" x 30"
(10 S.F.)

GENERAL NOTES:

- DIMENSIONS, COLORS AND DETAILS OF VARIOUS SIZE SIGNS, AND ACCESSORY PANELS TO FOLLOW STANDARDS IN THE CURRENT "STANDARD HIGHWAY SIGN PUBLICATION" AND THE CURRENT "MANUAL ON UNIFORM TRAFFIC CONTROL DEVICES FOR STREETS AND HIGHWAYS".
- LETTERS AND NUMERALS SHALL CONFORM TO THE CURRENT MANUAL, "STANDARD ALPHABETS FOR HIGHWAY SIGNS" U.S. DEPARTMENT OF TRANSPORTATION, FEDERAL HIGHWAY ADMINISTRATION.
- THE CONTRACTOR SHALL OBTAIN THE APPROVAL OF THE ENGINEER FOR THE DISTANCE TO BE USED ON THE ADVANCE WARNING SIGNS, AND FOR THE SPEED LIMIT TO BE USED ON THE R2-1 SIGN.
- DISTANCE LEGEND: SIGN NUMBER FOLLOWED BY A LETTER & DISTANCE, ARE THE SIGN PLACEMENTS FOR USE WITH TCD-3 THROUGH TCD-21 AND PROJECT SPECIFIC PLANS. ALL DISTANCES ARE FROM THE TRANSITION OR POINT OF RESTRICTION.

LETTER	DISTANCE
A	1500'
B	1000'
C	500'
D	1/2 MILE
E	1/4 MILES AHEAD
F	1/8 MILES AHEAD

BACKING MATERIAL

- ALUMINUM SHALL BE FLAT SHEET OF ALLOY AND TEMPER 5052-H38 OR 6061-T6 :
 - 0.10" THICK FOR ALL CONSTRUCTION SIGNS EXCEPT SIGNS SHOWN MOUNTED ON BREAKAWAY BARRICADES.
 - 0.024" THICK FOR ALL CONSTRUCTION SIGNS SHOWN MOUNTED ON BREAKAWAY BARRICADES.

TEMPORARY SIGN SUPPORTS

- SIGN SUPPORTS SHALL BE OF WELL SEASONED LUMBER, S4S, FREE OF SPLITS, KNOTS AND WARPS, OR OF STEEL COMPONENTS.
- WOOD POSTS SHALL HAVE A UNIFORM CROSS-SECTION AND SHALL NOT EXCEED THE FOLLOWING DIMENSIONS FOR:

SINGLE POST = 4" x 6"
TWO POSTS = 3" x 6" OR 4" x 5"
THREE POSTS = 3" x 5" OR 4" x 4"

4" X 6" WOOD POSTS SHALL BE MODIFIED BY DRILLING 1 1/2 INCH DIAMETER HOLES 4 INCHES AND 18 INCHES ABOVE THE GROUND LINE AND PERPENDICULAR TO THE ROADWAY CENTERLINE.
- NO BRACING IS PERMITTED. VERTICAL CLEARANCES FOR SIGNS MOUNTED ON WOOD SUPPORTS SHALL BE 7 FOOT MINIMUM. EMBEDMENT DEPTH FOR THE WOOD POST SHALL NOT EXCEED 3.5 FEET.
- STEEL POSTS SHALL BE IN ACCORDANCE WITH THE STANDARD DETAIL FOR U-POST SIGN SUPPORT.
- TEMPORARY SIGN SUPPORTS NOT MEETING THIS CRITERIA SHALL BE SHIELDED BY A LONGITUDINAL BARRIER OR CRASH CUSHIONS.
- WOOD POST TO BE USED ONLY ON TEMPORARY SIGN SUPPORT.

SIGN FACES

- SIGN FACES SHALL BE ASTM D 4956 TYPE VII OR VIII FLUORESCENT ORANGE SHEETING.

FASTENING

- ALL SIGNS SHALL BE SECURELY FASTENED TO THEIR SUPPORTS WITH BOLTS, NUTS AND WASHERS IN ACCORDANCE WITH THE SPECIFICATIONS.

CONSTRUCTION SIGNS
N.T.S.

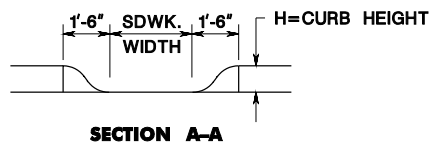
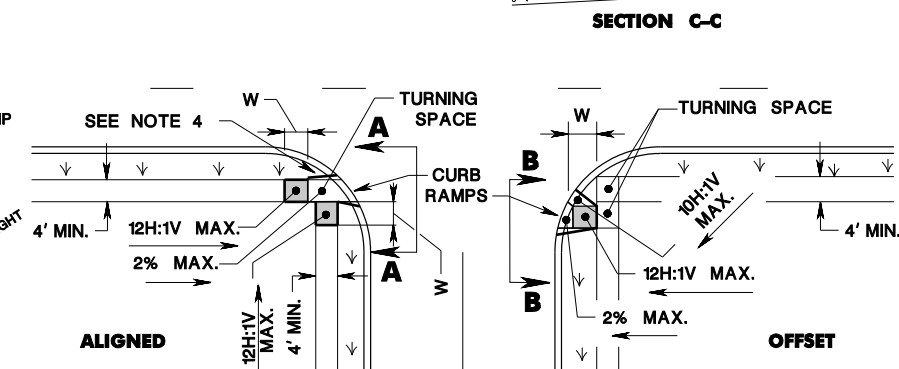
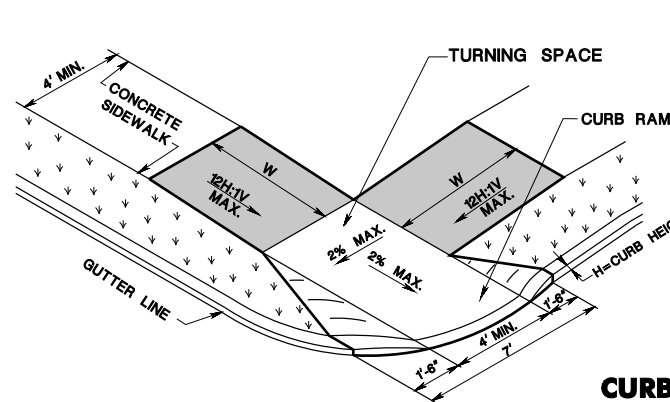
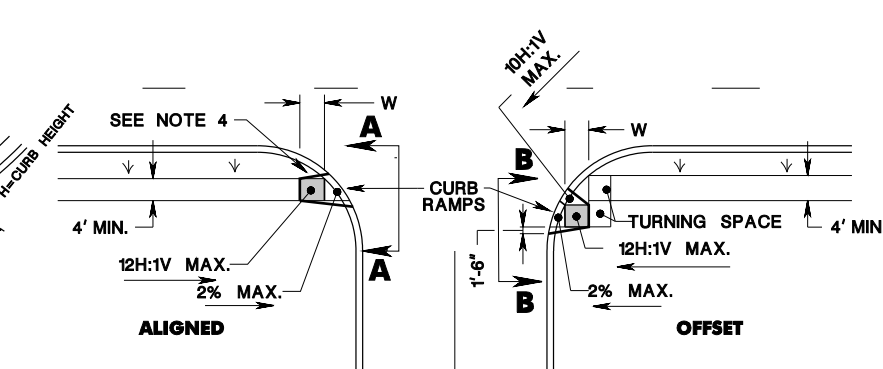
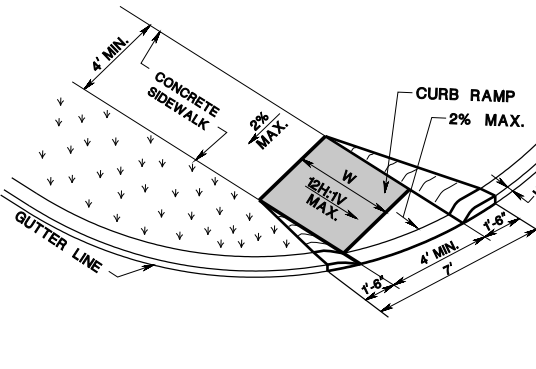
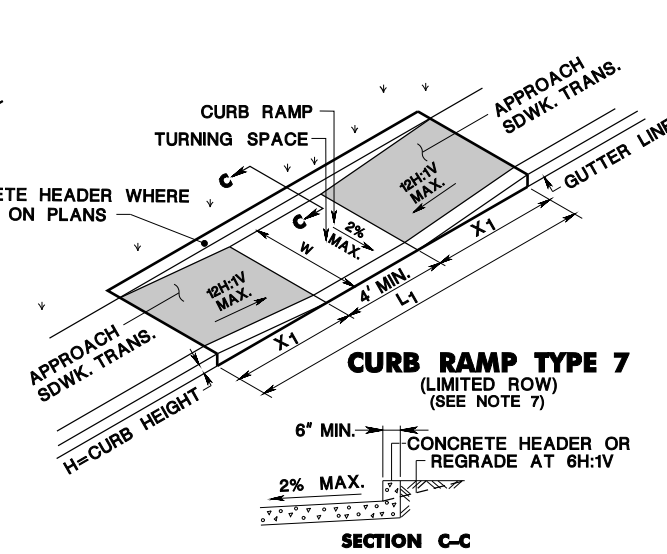
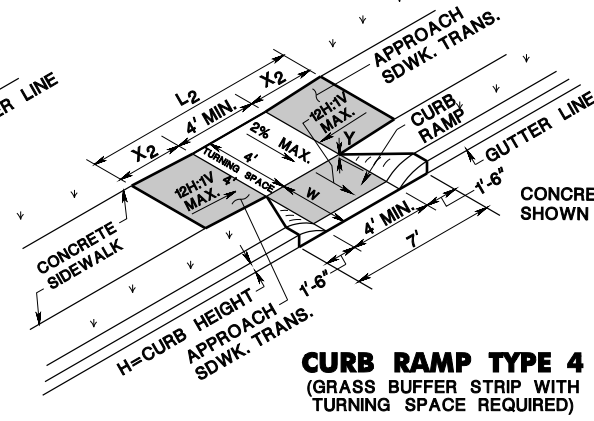
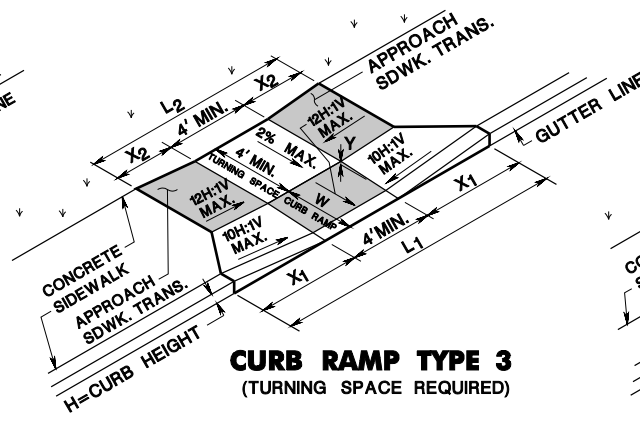
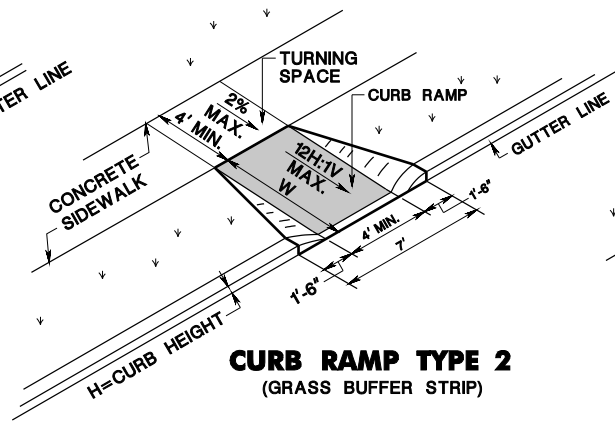
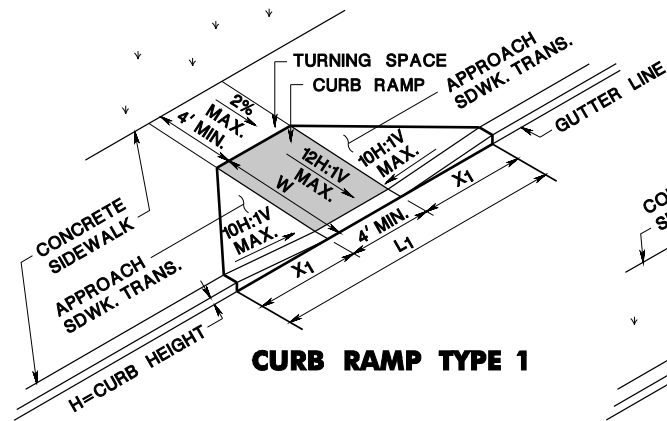
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CONSTRUCTION DETAILS

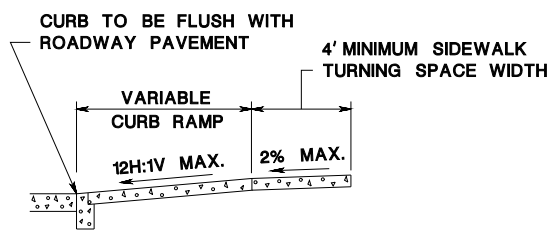
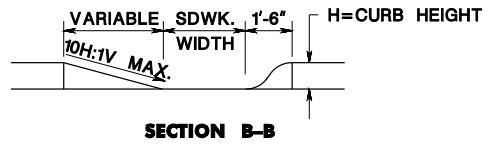
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CD-159-7

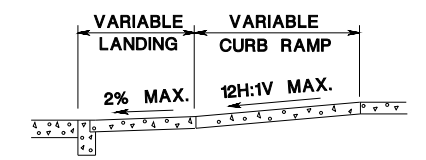
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BDC07D-01-MODIFICATION TO CURB RAMP DETAIL
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NOTE:
CURB RAMP OPENING TO BE FLUSH WITH ROADWAY PAVEMENT (CURB RAMP TYPES 5 & 6).

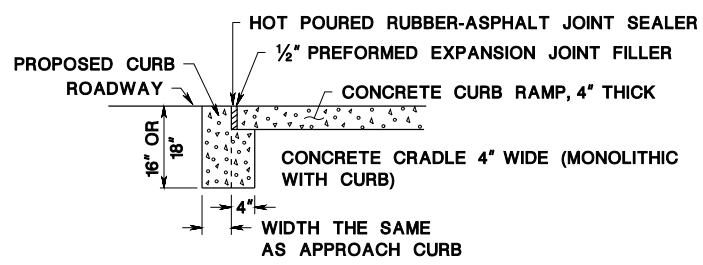


SECTION THROUGH CURB RAMPS 1 THROUGH 4



SECTION THROUGH CURB RAMPS 5 AND 6

- NOTES:**
1. KEEP TURNING SPACE, APPROACH SIDEWALK TRANSITIONS, AND CURB RAMP CLEAR OF OBSTRUCTIONS THAT PROTRUDE ABOVE THE SIDEWALK.
 2. FOR DIMENSIONS SEE CD-606-1B AND CD-606-1C.
 3. CURB (DROPPED CURB) GUTTERLINE TO BE FLUSH WITH ROADWAY PAVEMENT A MINIMUM OF 4 FEET AT ALL CURB RAMPS.
 4. FOR CURB RAMP TYPES 5 AND 6, IF A GRASS BUFFER DOES NOT EXIST, SLOPE CURB TO EQUAL SLOPE OF ADJACENT CURB RAMP.
 5. SIDEWALK AND CURB RAMP WITHIN AREA ENCLOSED BY HEAVY LINES INDICATES THE PAY LIMIT FOR CONCRETE SIDEWALK OF THE APPROPRIATE ADJACENT THICKNESS.
 6. CURB AND HEADER WITHIN AREA ENCLOSED BY HEAVY LINES INDICATES THE PAY LIMIT FOR VERTICAL CURB OR SLOPING CURB OF THE APPROPRIATE ADJACENT SIZE AND KIND.
 7. WHERE THE DISTANCE FROM THE GUTTER LINE TO THE OUTSIDE EDGE OF SIDEWALK IS 6 FEET OR LESS, USE CURB RAMP TYPE 7, INSTEAD OF CURB RAMP TYPE 1 THROUGH 4.
 8. CROSSWALKS AND STOP LINES MAY BE MARKED OR UNMARKED. SEE PLANS.
 9. 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.
 10. THE 12H:1V MAX SLOPE IS THE RUNNING SLOPE FOR CURB RAMPS, BUT ONLY THE 12H:1V SLOPE MEASURED AS X₂ IS THE RUNNING SLOPE FOR TYPE 3 AND TYPE 4 CURB RAMPS. ENSURE THE RUNNING SLOPE OF CURB RAMPS DOES NOT REQUIRE ITS LENGTH TO EXCEED 15 FEET. THE RUNNING SLOPE MAY EXCEED THE 12H:1V MAX SLOPE SO AS NOT TO EXCEED THE 15 FEET MAXIMUM LENGTH.



CONCRETE SIDEWALK
(PUBLIC SIDEWALK CURB RAMP)
N.T.S.

CD-606-1

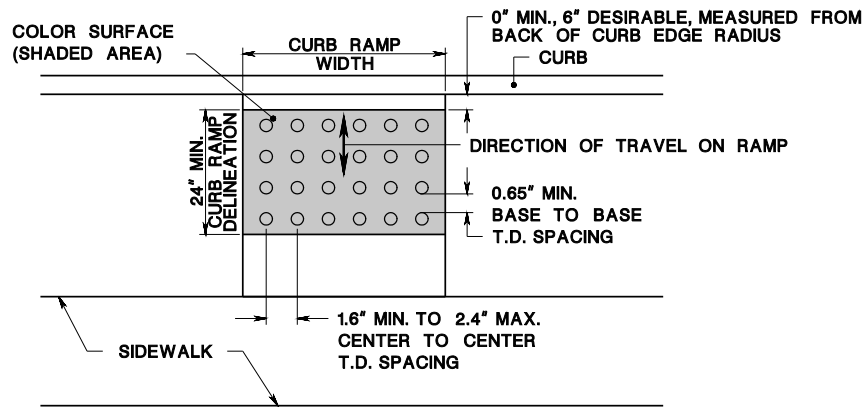
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CONSTRUCTION DETAILS

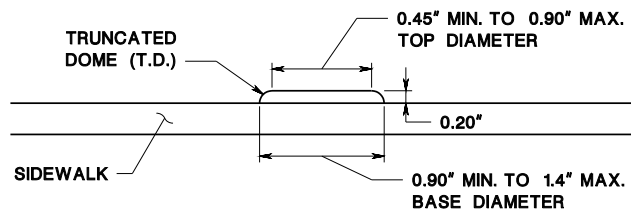
CURB RAMPS

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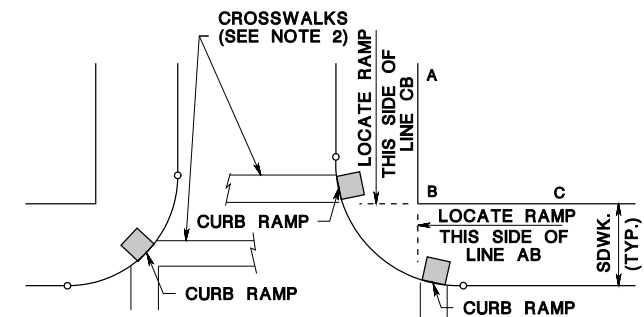


PLAN VIEW



ELEVATION

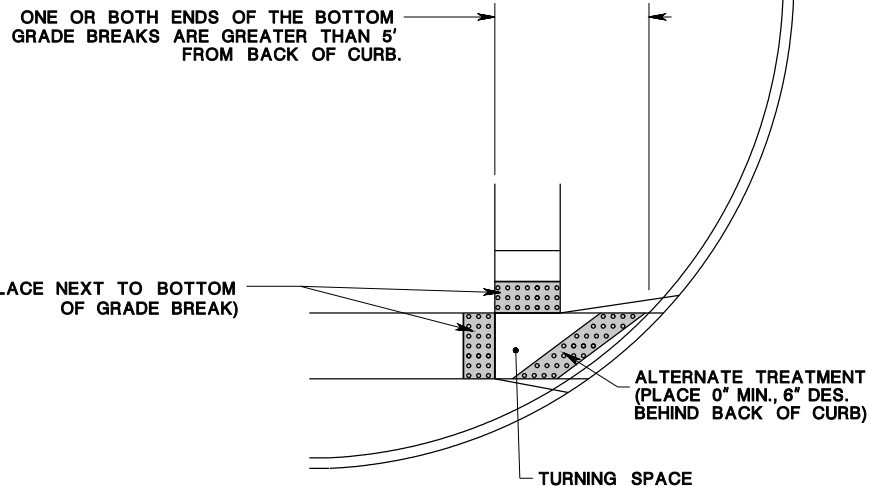
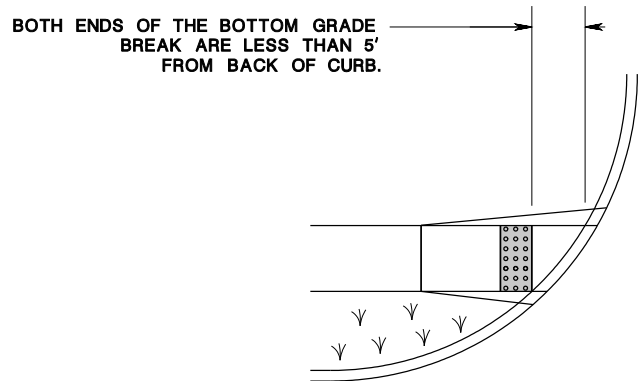
DETECTABLE WARNING SURFACE



ALTERNATE TREATMENT
(SEE NOTE 5)

PREFERRED TREATMENT
(SEE NOTE 5)

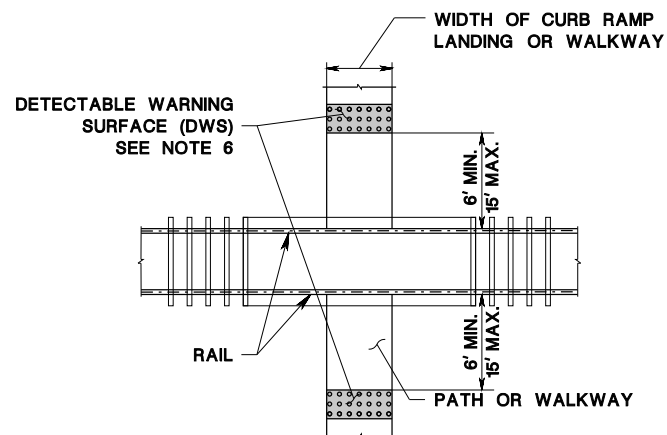
LOCATION OF CURB RAMP TYPES 1, 2, 3, 4 & 7
FOR CROSSING PARALLEL AND PERPENDICULAR
TO HIGHWAY



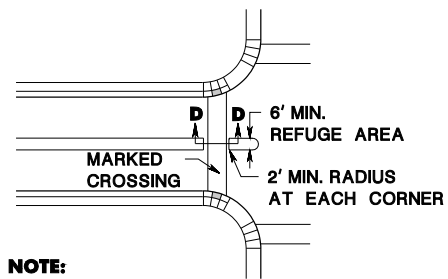
PLACEMENT OF DETECTABLE WARNING SURFACE
FOR CURB RAMP TYPE 5 AND 6

NOTES:

1. KEEP TURNING SPACE, APPROACH SIDEWALK TRANSITIONS, AND CURB RAMP CLEAR OF OBSTRUCTIONS THAT PROTRUDE ABOVE THE SIDEWALK.
2. CROSSWALKS AND STOP LINES MAY BE MARKED OR UNMARKED, SEE PLANS.
3. FOR NARROW ISLAND WIDTH, SEE PEDESTRIAN REFUGE ISLAND WALKWAY OPENING AT INTERSECTIONS DETAIL.
4. FOR MEDIUM AND LARGE ISLAND WIDTH, SEE CURB RAMP TYPE 1 ON CD-606-1.
5. CONSTRUCT CURB RAMP TYPES 1, 2, 3, 4 & 7 PERPENDICULAR TO CURBLINE, AS SHOWN.
6. IF A CURB RAMP IS REQUIRED, THE LOCATION OF THE DETECTABLE WARNING SURFACE MUST BE AT THE BOTTOM OF THE RAMP AND WITHIN THE REQUIRED DISTANCE FROM THE RAIL.

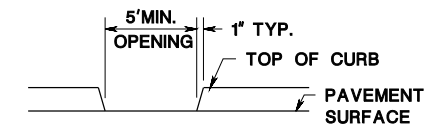


PEDESTRIAN RAILROAD CROSSING



NOTE:

WHERE PRACTICAL, END LEFT TURN ISLAND OR DIVISIONAL ISLAND BEFORE CROSSWALK TO ELIMINATE CUT-THROUGH

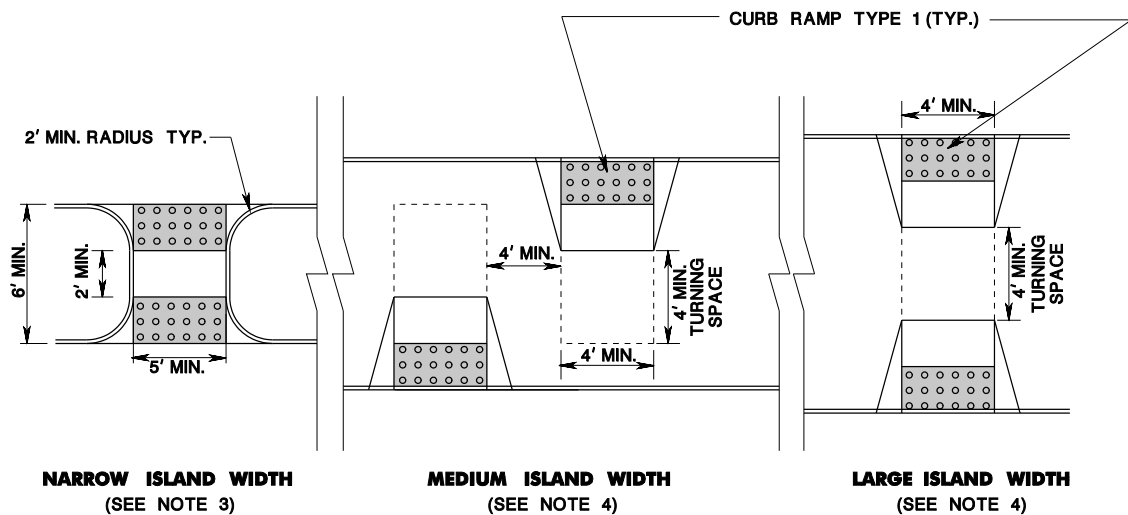


SECTION D-D

NOTE:

5' MIN. WIDE OPENING TO BE FLUSH WITH ROADWAY PAVEMENT

PEDESTRIAN REFUGE ISLAND WALKWAY
OPENING AT INTERSECTIONS



NARROW ISLAND WIDTH
(SEE NOTE 3)

MEDIUM ISLAND WIDTH
(SEE NOTE 4)

LARGE ISLAND WIDTH
(SEE NOTE 4)

PEDESTRIAN REFUGE ISLAND

DETECTABLE WARNING SURFACE
N.T.S.

CD-606-1A

NEW JERSEY DEPARTMENT OF TRANSPORTATION

CONSTRUCTION DETAILS

CD-606-1.1A

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CURB RAMP TYPE 1

0.0 % GUTTER LINE PROFILE				
H INCHES	W FEET	X _{1U} FEET	X _{1L} FEET	L ₁ FEET
3	3	2.50	2.50	9.00
4	4	3.33	3.33	10.67
5	5	4.17	4.17	12.33
6	6	5.00	5.00	14.00
7	7	5.83	5.83	15.67
8	8	6.67	6.67	17.33
9	9	7.50	7.50	19.00

1.0 % GUTTER LINE PROFILE				
H INCHES	W FEET	X _{1U} FEET	X _{1L} FEET	L ₁ FEET
3	3	2.78	2.27	9.05
4	4	3.70	3.03	10.73
5	5	4.63	3.79	12.42
6	6	5.56	4.55	14.10
7	7	6.48	5.30	15.78
8	8	7.41	6.06	17.47
9	9	8.33	6.82	19.15

2.0 % GUTTER LINE PROFILE				
H INCHES	W FEET	X _{1U} FEET	X _{1L} FEET	L ₁ FEET
3	3	3.13	2.08	9.21
4	4	4.17	2.78	10.94
5	5	5.21	3.47	12.68
6	6	6.25	4.17	14.42
7	7	7.29	4.86	16.15
8	8	8.33	5.56	17.89
9	9	9.38	6.25	19.63

3.0 % GUTTER LINE PROFILE				
H INCHES	W FEET	X _{1U} FEET	X _{1L} FEET	L ₁ FEET
3	3	3.57	1.92	9.49
4	4	4.76	2.56	11.33
5	5	5.95	3.21	13.16
6	6	7.14	3.85	14.99
7	7	8.33	4.49	16.82
8	8	9.52	5.13	18.65
9	9	10.71	5.77	20.48

4.0 % GUTTER LINE PROFILE				
H INCHES	W FEET	X _{1U} FEET	X _{1L} FEET	L ₁ FEET
3	3	4.17	1.79	9.95
4	4	5.56	2.38	11.94
5	5	6.94	2.98	13.92
6	6	8.33	3.57	15.90
7	7	9.72	4.17	17.89
8	8	11.11	4.76	19.87
9	9	12.50	5.36	21.86

5.0 % GUTTER LINE PROFILE				
H INCHES	W FEET	X _{1U} FEET	X _{1L} FEET	L ₁ FEET
3	3	5.00	1.67	10.67
4	4	6.67	2.22	12.89
5	5	8.33	2.78	15.11
6	6	10.00	3.33	17.33
7	7	11.67	3.89	19.56
8	8	13.33	4.44	21.78
9	9	15.00	5.00	24.00

6.0 % GUTTER LINE PROFILE				
H INCHES	W FEET	X _{1U} FEET	X _{1L} FEET	L ₁ FEET
3	3	6.25	1.56	11.81
4	4	8.33	2.08	14.42
5	5	10.42	2.60	17.02
6	6	12.50	3.13	19.63
7	7	14.58	3.65	22.23
8	8	15.00	4.17	23.17
9	9	15.00	4.69	23.69

7.0 % GUTTER LINE PROFILE				
H INCHES	W FEET	X _{1U} FEET	X _{1L} FEET	L ₁ FEET
3	3	8.33	1.47	13.80
4	4	11.11	1.96	17.07
5	5	13.89	2.45	20.34
6	6	15.00	2.94	21.94
7	7	15.00	3.43	22.43
8	8	15.00	3.92	22.92
9	9	15.00	4.41	23.41

CURB RAMP TYPE 3

0.0 % GUTTER LINE PROFILE								
H INCHES	W FEET	X _{1U} FEET	X _{1L} FEET	L ₁ FEET	Y INCHES	X _{2U} FEET	X _{2L} FEET	L ₂ FEET
3	2.5	2.50	2.50	9.00	2.5	1.10	1.10	6.20
4		3.33	3.33	10.67		2.10	2.10	8.20
5		4.17	4.17	12.33		3.10	3.10	10.20
6		5.00	5.00	14.00		4.10	4.10	12.21
7		5.83	5.83	15.67		5.10	5.10	14.21
8		6.67	6.67	17.33		6.10	6.10	16.21
9		7.50	7.50	19.00		7.10	7.10	18.21

3	3.0	2.50	2.50	9.00	3.0	1.10	1.10	6.20
4		3.33	3.33	10.67		2.10	2.10	8.20
5		4.17	4.17	12.33		3.10	3.10	10.20
6		5.00	5.00	14.00		4.10	4.10	12.21
7		5.83	5.83	15.67		5.10	5.10	14.21
8		6.67	6.67	17.33		6.10	6.10	16.21
9		7.50	7.50	19.00		7.10	7.10	18.21
3		*	*	*		*	*	*
4		3.33	3.33	10.67		1.72	1.72	7.44
5	3.5	4.17	4.17	12.33	3.5	2.72	2.72	9.44
6		5.00	5.00	14.00		3.72	3.72	11.45
7		5.83	5.83	15.67		4.72	4.72	13.45
8		6.67	6.67	17.33		5.72	5.72	15.45
9		7.50	7.50	19.00		6.72	6.72	17.45
3		*	*	*		*	*	*
4		3.33	3.33	10.67		1.34	1.34	6.68
5		4.17	4.17	12.33		2.34	2.34	8.68
6		5.00	5.00	14.00		3.34	3.34	10.69
7	4.0	5.83	5.83	15.67	4.0	4.34	4.34	12.69
8		6.67	6.67	17.33		5.34	5.34	14.69
9		7.50	7.50	19.00		6.34	6.34	16.69
3		*	*	*		*	*	*
4		*	*	*		*	*	*
5		4.17	4.17	12.33		1.96	1.96	7.92
6		5.00	5.00	14.00		2.96	2.96	9.93
7		5.83	5.83	15.67		3.96	3.96	11.93
8		6.67	6.67	17.33		4.96	4.96	13.93
9		7.50	7.50	19.00		5.96	5.96	15.93

3	3.5	2.50	2.50	9.00	3.5	1.10	1.10	6.20
4		3.33	3.33	10.67		2.10	2.10	8.20
5		4.17	4.17	12.33		3.10	3.10	10.20
6		5.00	5.00	14.00		4.10	4.10	12.21
7		5.83	5.83	15.67		5.10	5.10	14.21
8		6.67	6.67	17.33		6.10	6.10	16.21
9		7.50	7.50	19.00		7.10	7.10	18.21
3		*	*	*		*	*	*
4		3.33	3.33	10.67		1.72	1.72	7.44
5	4.0	4.17	4.17	12.33	4.0	2.72	2.72	9.44
6		5.00	5.00	14.00		3.72	3.72	11.45
7		5.83	5.83	15.67		4.72	4.72	13.45
8		6.67	6.67	17.33		5.72	5.72	15.45
9		7.50	7.50	19.00		6.72	6.72	17.45
3		*	*	*		*	*	*
4		3.33	3.33	10.67		1.34	1.34	6.68
5		4.17	4.17	12.33		2.34	2.34	8.68
6		5.00	5.00	14.00		3.34	3.34	10.69
7	4.5	5.83	5.83	15.67	4.5	4.34	4.34	12.69
8		6.67	6.67	17.33		5.34	5.34	14.69
9		7.50	7.50	19.00		6.34	6.34	16.69
3		*	*	*		*	*	*
4		*	*	*		*	*	*
5		4.17	4.17	12.33		1.96	1.96	7.92
6		5.00	5.00	14.00		2.96	2.96	9.93
7		5.83	5.83	15.67		3.96	3.96	11.93
8		6.67	6.67	17.33		4.96	4.96	13.93
9		7.50	7.50	19.00		5.96	5.96	15.93

3	4.0	*	*	*	4.0	*	*	*
4		4.17	4.17	12.33		1.96	1.96	7.92
5		5.00	5.00	14.00		2.96	2.96	9.93
6		5.83	5.83	15.67		3.96	3.96	11.93
7		6.67	6.67	17.33		4.96	4.96	13.93
8		7.50	7.50	19.00		5.96	5.96	15.93

0.0 % GUTTER LINE PROFILE					
H INCHES	W FEET	Y INCHES	X _{2U} FEET	X _{2L} FEET	L ₂ FEET
3	2.5	2.5	1.10	1.10	6.20
4			2.10	2.10	6.20
5			3.10	3.10	10.20
6			4.10	4.10	12.20
7			5.10	5.10	14.21
8			6.10	6.10	16.21
9			7.10	7.10	18.21
3	3.0	3.0	**	**	**
4			1.72	1.72	7.44
5			2.72	2.72	9.44
6			3.72	3.72	11.45
7			4.72	4.72	13.45
8			5.72	5.72	15.45
9			6.72	6.72	17.45
3	3.5	3.5	**	**	**
4			1.34	1.34	6.68
5			2.34	2.34	8.68
6			3.34	3.34	10.69
7			4.34	4.34	12.69
8			5.34	5.34	14.69
9			6.34	6.34	16.69
3	4.0	4.0	**	**	**
4			**	**	**
5			1.96	1.96	7.92
6			2.96	2.96	9.93
7			3.96	3.96	11.93
8			4.96	4.96	13.93
9			5.96	5.96	15.93

1.0 % GUTTER LINE PROFILE					
H INCHES	W FEET	Y INCHES	X _{2U} FEET	X _{2L} FEET	L ₂ FEET
3	2.5	2.5	1.25	0.98	6.24
4			2.39	1.88	8.27
5			3.53	2.77	10.30
6			4.66	3.66	12.33
7			5.80	4.56	14.36
8			6.94	5.45	16.39
9			8.07	6.34	18.42
3	3.0	3.0	0.82	0.64	5.46
4			1.96	1.54	7.49
5			3.09	2.43	9.52
6			4.23	3.32	11.55
7			5.37	4.22	13.58
8			6.50	5.11	15.61
9			7.64	6.00	17.64
3	3.5	3.5	0.39	0.30	4.69
4			1.53	1.20	6.72
5			2.66	2.09	8.75
6			3.80	2.98	10.78
7			4.94	3.88	12.81
8			6.07	4.77	14.84
9			7.21	5.66	16.87
3	4.0	4.0	**	**	**
4			1.09	0.86	5.95
5			2.23	1.75	7.98
6			3.37	2.65	10.01
7			4.50	3.54	12.04
8			5.64	4.43	14.07
9			6.78	5.32	16.10

2.0 % GUTTER LINE PROFILE					
H INCHES	W FEET	Y INCHES	X _{2U} FEET	X _{2L} FEET	L ₂ FEET
3	2.5	2.5	1.45	0.89	6.34
4			2.77	1.69	8.46
5			4.08	2.50	10.58
6			5.40	3.31	12.71
7			6.72	4.12	14.83
8			8.03	4.92	16.95
9			9.35	5.73	19.08
3	3.0	3.0	0.95	0.58	5.53
4			2.27	1.39	7.65
5			3.58	2.20	9.78
6			4.90	3.00	11.90
7			6.22	3.81	14.02
8			7.53	4.62	16.15
9			8.85	5.42	18.27
3	3.5	3.5	0.45	0.28	4.72
4			1.77	1.08	6.85
5			3.08	1.89	8.97
6			4.40	2.70	11.09
7			5.72	3.50	13.22
8			7.03	4.31	15.34
9			8.35	5.12	17.46
3	4.0	4.0	**	**	**
4			1.27	0.78	6.04
5			2.58	1.58	8.16
6			3.90	2.39	10.29
7			5.22	3.20	12.41
8			6.53	4.00	14.53
9			7.85	4.81	16.66

3.0 % GUTTER LINE PROFILE					
H INCHES	W FEET	Y INCHES	X _{2U} FEET	X _{2L} FEET	L ₂ FEET
3	2.5	2.5	1.72	0.81	6.53
4			3.28	1.55	8.83
5			4.85	2.28	11.13
6			6.41	3.02	13.43
7			7.98	3.75	15.73
8			9.54	4.49	18.03
9			11.10	5.22	20.33
3	3.0	3.0	1.13	0.53	5.66
4			2.69	1.27	7.96
5			4.25	2.00	10.26
6			5.82	2.74	12.55
7			7.38	3.47	14.85
8			8.94	4.21	17.15
9			10.51	4.94	19.45
3	3.5	3.5	0.53	0.25	4.78
4			2.10	0.99	7.08
5			3.66	1.72	9.38
6			5.22	2.46	11.68
7			6.79	3.19	13.98
8			8.35	3.93	16.28
9			9.91	4.66	18.58
3	4.0	4.0	**	**	**
4			1.50	0.71	6.21
5			3.07	1.44	8.51
6			4.63	2.18	10.81
7			6.19	2.91	13.11
8			7.76	3.65	15.41
9			9.32	4.38	17.71

H INCHES	W FEET	X _{IU} FEET	X _{IL} FEET	L _I FEET
3	3	3.00	3.00	10.00
4	4	4.00	4.00	12.00
5	5	5.00	5.00	14.00
6	6	6.00	6.00	16.00
7	7	7.00	7.00	18.01
8	8	8.00	8.00	20.01
9	9	9.00	9.00	22.01

H INCHES	W FEET	X _{IU} FEET	X _{IL} FEET	L1 FEET
3	3	5.77	2.03	11.80
4	4	7.70	2.70	14.40
5	5	9.62	3.38	17.00
6	6	11.55	4.06	19.60
7	7	13.47	4.73	22.20
8	8	15.40	5.41	24.80
9	9	17.32	6.08	27.40

H INCHES	W FEET	X _{1U} FEET	X _{1L} FEET	L ₁ FEET
3	3	3.41	2.68	10.09
4	4	4.55	3.57	12.12
5	5	5.68	4.47	14.15
6	6	6.82	5.36	16.18
7	7	7.96	6.25	18.21
8	8	9.10	7.15	20.24
9	9	10.23	8.04	22.27

5.0 % GUTTER LINE PROFILE				
H INCHES	W FEET	X _{1U} FEET	X _{1L} FEET	L1 FEET
3	3	7.51	1.88	13.38
4	4	10.01	2.50	16.51
5	5	12.51	3.13	19.64
6	6	15.00	3.75	22.75
7	7	15.00	4.38	23.38
8	8	15.00	5.00	24.00
9	9	15.00	5.63	24.63

H INCHES	W FEET	X _{1U} FEET	X _{1L} FEET	L ₁ FEET
3	3	3.95	2.42	10.37
4	4	5.27	3.23	12.49
5	5	6.58	4.03	14.62
6	6	7.90	4.84	16.74
7	7	9.22	5.65	18.86
8	8	10.53	6.45	20.99
9	9	11.85	7.26	23.11

H INCHES	W FEET	X _{1U} FEET	X _{1L} FEET	L1 FEET
3	3	10.73	1.74	16.47
4	4	14.31	2.33	20.63
5	5	15.00	2.91	21.91
6	6	15.00	3.49	22.49
7	7	15.00	4.07	23.07
8	8	15.00	4.65	23.65
9	9	15.00	5.23	24.23

H INCHES	W FEET	X _{1U} FEET	X _{1L} FEET	L ₁ FEET
3	3	4.69	2.21	10.90
4	4	6.25	2.94	13.20
5	5	7.82	3.68	15.49
6	6	9.38	4.41	17.79
7	7	10.94	5.15	20.09
8	8	12.51	5.88	22.39
9	9	14.07	6.62	24.69

H INCHES	W FEET	X _{1U} FEET	X _{1L} FEET	L1 FEET
3	3	15.00	1.63	20.63
4	4	15.00	2.17	21.17
5	5	15.00	2.72	21.72
6	6	15.00	3.26	22.26
7	7	15.00	3.81	22.81
8	8	15.00	4.35	23.35
9	9	15.00	4.89	23.89

4.0 % GUTTER LINE PROFILE					
H INCHES	W FEET	Y INCHES	X _{2U} FEET	X _{2L} FEET	L ₂ FEET
3	2.5	2.5	2.12	0.74	6.86
4			4.04	1.42	9.46
5			5.97	2.10	12.06
6			7.89	2.77	14.66
7			9.82	3.45	17.26
8			11.74	4.12	19.87
9			13.67	4.80	22.47
3	3.0	3.0	1.39	0.49	5.88
4			3.31	1.16	8.48
5			5.24	1.84	11.08
6			7.16	2.52	13.68
7			9.09	3.19	16.28
8			11.01	3.87	18.88
9			12.94	4.54	21.48
3	3.5	3.5	0.66	0.23	4.89
4			2.58	0.91	7.49
5			4.51	1.58	10.09
6			6.43	2.26	12.69
7			8.36	2.93	15.29
8			10.28	3.61	17.89
9			12.20	4.29	20.49
3	4.0	4.0	**	**	**
4			1.85	0.65	6.50
5			3.78	1.33	9.10
6			5.70	2.00	11.70
7			7.62	2.68	14.30
8			9.55	3.35	16.90
9			11.47	4.03	19.50

5.0 % GUTTER LINE PROFILE					
H INCHES	W FEET	Y INCHES	X _{2U} FEET	X _{2L} FEET	L ₂ FEET
3	2.5	2.5	2.76	0.69	7.44
4			5.26	1.31	10.57
5			7.76	1.94	13.70
6			10.26	2.56	16.83
7			12.77	3.19	19.95
8			15.00	3.81	22.81
9			15.00	4.44	23.44
3	3.0	3.0	1.80	0.45	6.26
4			4.31	1.08	9.38
5			6.81	1.70	12.51
6			9.31	2.33	15.64
7			11.81	2.95	18.77
8			14.32	3.58	21.89
9			15.00	4.20	23.20
3	3.5	3.5	0.85	0.21	5.07
4			3.36	0.84	8.20
5			5.86	1.46	11.32
6			8.36	2.09	14.45
7			10.86	2.71	17.58
8			13.37	3.34	20.71
9			15.00	3.96	22.96
3	4.0	4.0	**	**	**
4			2.41	0.60	7.01
5			4.91	1.23	10.14
6			7.41	1.85	13.26
7			9.91	2.48	16.39
8			12.42	3.10	19.52
9			14.92	3.73	22.65

6.0 % GUTTER LINE PROFILE					
H INCHES	W FEET	Y INCHES	X _{2U} FEET	X _{2L} FEET	L ₂ FEET
3	2.5	2.5	3.94	0.64	8.58
4			7.51	1.22	12.74
5			11.09	1.80	16.89
6			14.67	2.38	21.05
7			15.00	2.97	21.97
8			15.00	3.55	22.55
9			15.00	4.13	23.13
3	3.0	3.0	2.58	0.42	7.00
4			6.16	1.00	11.16
5			9.73	1.58	15.31
6			13.31	2.16	19.47
7			15.00	2.75	21.75
8			15.00	3.33	22.33
9			15.00	3.91	22.91
3	3.5	3.5	1.22	0.20	5.42
4			4.80	0.78	9.58
5			8.37	1.36	13.74
6			11.95	1.94	17.89
7			15.00	2.52	21.52
8			15.00	3.11	22.11
9			15.00	3.69	22.69
3	4.0	4.0	**	**	**
4			3.44	0.56	8.00
5			7.02	1.14	12.16
6			10.59	1.72	16.31
7			14.17	2.30	20.47
8			15.00	2.89	21.89
9			15.00	3.47	22.47

7.0 % GUTTER LINE PROFILE					
H INCHES	W FEET	Y INCHES	X _{2U} FEET	X _{2L} FEET	L ₂ FEET
3	2.5	2.5	6.90	0.60	11.50
4			13.16	1.14	18.31
5			15.00	1.69	20.69
6			15.00	2.23	21.23
7			15.00	2.77	21.77
8			15.00	3.32	22.32
9			15.00	3.86	22.86
3	3.0	3.0	4.52	0.39	8.91
4			10.78	0.94	15.72
5			15.00	1.48	20.48
6			15.00	2.02	21.02
7			15.00	2.57	21.57
8			15.00	3.11	22.11
9			15.00	3.65	22.65
3	3.5	3.5	2.14	0.19	6.32
4			8.40	0.73	13.13
5			14.67	1.27	19.94
6			15.00	1.82	20.82
7			15.00	2.36	21.36
8			15.00	2.90	21.90
9			15.00	3.45	22.45
3	4.0	4.0	**	**	**
4			6.03	0.52	10.55
5			12.29	1.07	17.36
6			15.00	1.61	20.61
7			15.00	2.15	21.15
8			15.00	2.70	21.70
9			15.00	3.24	22.24

CD-606-1C

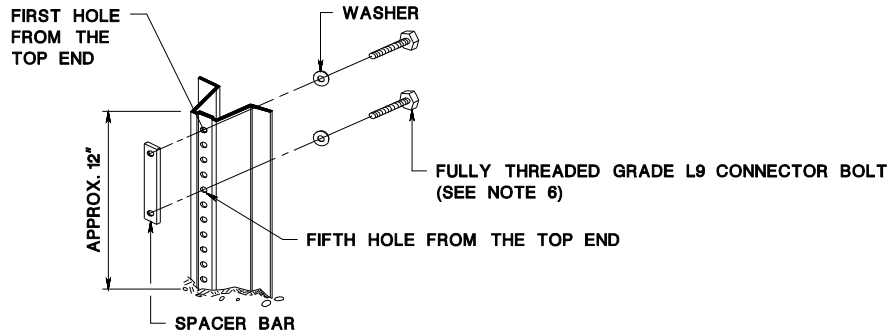
CONSTRUCTION DETAILS

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



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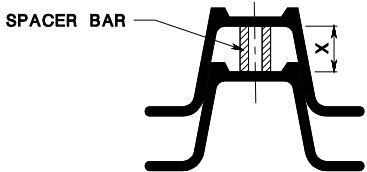
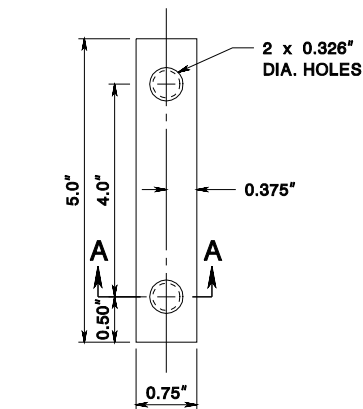
BDCHD-06 DELETED TYPE 2 ANCHOR POST ASSY.
BDCHD-06 ORIGINAL SHEET



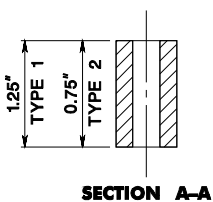
NOTES:

1. DRIVE ANCHOR POST ASSEMBLY TO WITHIN APPROXIMATELY 12 INCHES ABOVE GROUND LEVEL. PLACE BOLT AND WASHER IN FIRST AND FIFTH HOLES FROM THE TOP END, AND SECURE BOLTS ONTO SPACER.
2. DRIVE ANCHOR POST ASSEMBLY TO WITHIN A MAXIMUM OF 4 INCHES ABOVE GROUND LEVEL.
3. DIG OUT AROUND BACK OF ANCHOR POST ASSEMBLY TO ALLOW ROOM FOR TOP POST TO BE ATTACHED.
4. NEST TOP POST ASSEMBLY ONTO PROTRUDING ANCHOR POST ASSEMBLY BOLTS, THROUGH THE FIRST AND FIFTH HOLES FROM THE BOTTOM OF THE TOP POST.
5. PLACE AND TIGHTEN A SELF-LOCKING FLANGE NUT ON EACH BOLT. WHEN INSTALLATION IS COMPLETE, TOP OF GROUND POST SHALL NOT EXCEED 4 INCHES ABOVE GROUND LEVEL.
6. SIZE OF CONNECTOR BOLT FOR TYPE 1, $\frac{5}{16}$ " x $1\frac{1}{2}$ "
SIZE OF CONNECTOR BOLT FOR TYPE 2, $\frac{5}{16}$ " x 2"
7. THE CONNECTOR BOLTS SHALL BE FULLY THREADED. EACH CONNECTOR BOLT AND NUT SHALL BE CLEARLY STAMPED WITH MANUFACTURER'S IDENTIFYING MARK.

ANCHOR POST ASSEMBLY
SIGN SUPPORTS



WHEN X IS GREATER THAN 0.75", USE TYPE 1 SPACER BAR
WHEN X IS 0.75" OR LESS, USE TYPE 2 SPACER BAR



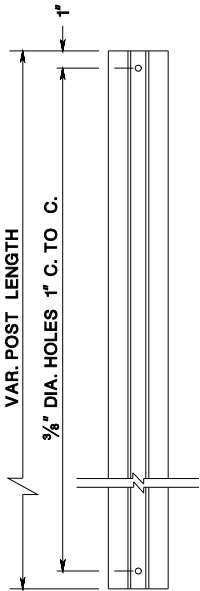
SPACER BAR

CD-612-5.1

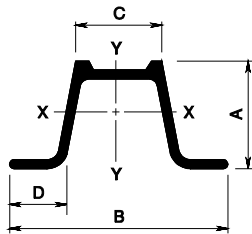
WEIGHT * LBS./FT.	DIMENSIONS (IN)				AREA IN. ²	X-X AXIS **		Y-Y AXIS	
	"A"	"B"	"C"	"D"		I(IN. ⁴)	S(IN. ³)	I(IN. ⁴)	S(IN. ³)
2.50	1.516	3.062	1.278	0.669	0.760	0.228	0.313	0.539	0.352
4.00	1.968	3.500	1.336	0.834	1.187	0.611	0.707	1.161	0.664

* ± 5%
** GOVERNING SECTION

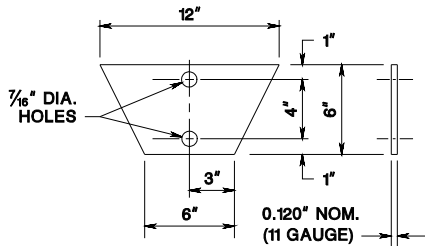
TYPE 1 STEEL U-POST PROPERTIES



TOP POST
U-POST



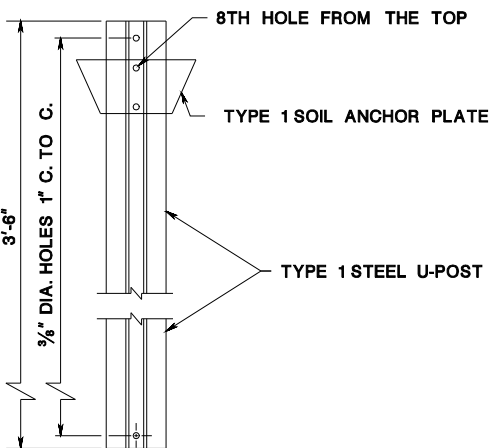
TYPE 1 STEEL
U-POST



TYPE 1
SOIL ANCHOR PLATE

NOTES:

1. ANCHOR POST AND TOP POST SHALL BE OF EQUAL WEIGHT/FEET.
2. SOIL ANCHOR PLATE SHALL BE ATTACHED TO ALL ANCHOR POSTS.
3. THE MATERIAL FOR THE SOIL ANCHOR PLATES SHALL BE CARBON SHEET STEEL.
4. THE STEEL "U" POST SHALL BE GRADE 60.



TYPE 1
ANCHOR POST
ASSEMBLY

STEEL U-POST SIGN
SUPPORTS

N.T.S.

NEW JERSEY DEPARTMENT OF TRANSPORTATION

CONSTRUCTION DETAILS

CD-612-5.2

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BDC9D-04	ADD	NOTE 26
BDC9D-01	CHANGED	"R.E." TO "RE"
BDC9D-08	REVISION	TO NOTE # 28-C
BDC9D-01	REMOVAL	OF NOTE NO. 14
BDC9D-01	ORIGINAL	SHEET

LEGEND

	BREAKAWAY BARRICADES
	BREAKAWAY BARRICADES WITH SIGN
	CONSTRUCTION SIGNS
	DRUMS
	CONE
	PRECAST CONCRETE CURB CONSTRUCTION BARRIER (TYPE SPECIFIED)
	DIRECTION OF TRAFFIC FLOW
	TRAFFIC DIRECTOR, FLAGGER
	TRAILER MOUNTED MOUNTED ARROW BOARD SHOWING CAUTION MODE
	ILLUMINATED FLASHING ARROW MOUNTED ON TOWING VEHICLE SHOWING ARROW PATTERN (Left, Right, Both)
	TRAFFIC CONTROL TRUCK WITH MOUNTED CRASH CUSHION AND ARROW BOARD SHOWING CAUTION MODE
	TRAFFIC CONTROL TRUCK WITH MOUNTED CRASH CUSHION AND ARROW BOARD SHOWING ARROW PATTERN (Left, Right, Both)
	TEMPORARY CRASH CUSHION, INERTIAL BARRIER SYSTEM
	TEMPORARY CRASH CUSHION, (all other approved)
	BUFFER ZONE
	WORK AREA
	PAINT STRIPING TRUCK OR OTHER OPERATING VEHICLE

GENERAL NOTES:

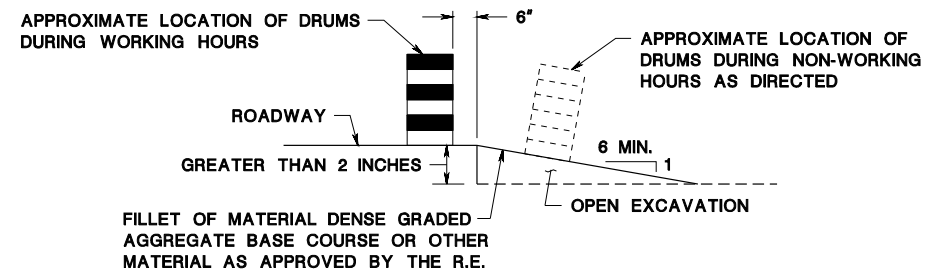
- ADVANCE WARNING SIGNS DISTANCES, AND TAPER LENGTHS MAY BE EXTENDED, AT DIRECTION OF THE DEPARTMENT, TO ADJUST FOR REDUCED VISIBILITY DUE TO HORIZONTAL AND VERTICAL CURVATURE OF THE ROADWAY.
- THE APPROXIMATE LOCATIONS OF THE ILLUMINATED FLASHING ARROW BOARDS ARE SHOWN ON THE TRAFFIC CONTROL PLANS. THESE LOCATIONS MAY BE MODIFIED AS APPROVED BY RE TO ADJUST FOR VISIBILITY DUE TO HORIZONTAL OR VERTICAL CURVATURE OF THE ROADWAY OR TO POSITION AT A SAFER LOCATION. ILLUMINATED FLASHING ARROW BOARDS ARE TO BE USED FOR TEMPORARY LANE CLOSINGS AND AT LOCATIONS SHOWN ON THE TRAFFIC CONTROL PLANS.
- PRIOR TO ANY ROAD CONSTRUCTION, TRAFFIC CONTROL SIGNS AND DEVICES SHALL BE IN PLACE.
- RAMPS AND/OR SIDE STREETS ENTERING THE ROADWAY AFTER THE FIRST ADVANCE WARNING SIGN SHALL BE PROVIDED WITH AT LEAST ONE W20-IF SIGN (ROAD WORK AHEAD) AS A MINIMUM.
- ALL EXISTING ROAD SIGNS, PAVEMENT MARKINGS AND/OR PLOWABLE PAVEMENT REFLECTORS WHICH CONFLICT WITH THE PROPOSED TRAFFIC CONTROL PLAN SHALL BE COVERED, REMOVED OR RELOCATED AS DIRECTED BY THE RE.
- CONFLICTING OR NON-OPERATING SIGNAL INDICATIONS ON EITHER THE EXISTING, TEMPORARY, OR PROPOSED TRAFFIC SIGNAL SYSTEMS SHALL BE BAGGED OR COVERED.
- MAINTENANCE AND PROTECTION OF TRAFFIC SHALL BE IN ACCORDANCE WITH THE MANUAL OF UNIFORM TRAFFIC CONTROL DEVICES - PART VI STANDARDS AND GUIDES FOR TRAFFIC CONTROL FOR STREET AND HIGHWAY CONSTRUCTION, MAINTENANCE, UTILITY, AND INCIDENT MANAGEMENT OPERATIONS, UNLESS OTHERWISE NOTED IN THE PLANS AND SPECIFICATIONS.
- CONSTRUCTION SIGN W89-2 (GIVE US A BRAKE) SHALL BE LOCATED 200 FEET IN ADVANCE OF PROJECT LIMITS.
- A W1-6 (ARROW) SIGN MOUNTED ON A BREAKAWAY BARRICADE AND CENTERED ON THE CLOSED WIDTH SHALL BE LOCATED 100 FEET BEYOND EACH INTERSECTION OR MAIN ACCESS POINT WITHIN THE AREA OF A LANE OR SHOULDER CLOSURE.
- CONSTRUCTION SIGNS R11-4 (ROAD CLOSED TO THRU TRAFFIC) SHALL BE PLACED AT THE INTERSECTING STREETS WHICH ARE CLOSED TO TRAFFIC BECAUSE OF CONSTRUCTION.
- CONSTRUCTION SIGNS W8-9A (SYMBOL FOR UNEVEN PAVEMENT) AND W8-14A (GROOVED PAVEMENT) SHALL BE USED WHEN SUCH PAVEMENT CONDITIONS EXIST. THE PLACEMENT OF THESE SIGNS SHALL BE AS DIRECTED BY THE RE.
- MOVING WORK AREAS IN A LANE CLOSURE REQUIRE A TRAILER MOUNTED ILLUMINATED FLASHING ARROW TO REMAIN AT THE END OF THE TAPER, THE TRAFFIC CONTROL TRUCK WITH MOUNTED CRASH CUSHION THAT SHALL MOVE WITH THE WORK AREAS TO KEEP A 70 FEET MIN. AND 150 FEET MAX. BUFFER IN ADVANCE OF EACH WORK AREA.
- THE CONTRACTOR SHALL SUBMIT A PLAN FOR THE SAFE ACCESS OF CONSTRUCTION VEHICLES THROUGHOUT THE WORK SITE WHERE SPACE CONSTRAINTS PREVENT THE USE OF LANE CLOSURES. THE PLAN SHALL BE SUBMITTED TO THE RE IN ACCORDANCE WITH THE STANDARD SPECIFICATIONS.
- ALL EXCAVATED AREAS WITHIN OR ADJACENT TO THE ROADWAY SHALL BE BACKFILLED AND PLACED ON AT LEAST 6H : 1V SLOPE BEFORE THE END OF EACH WORK DAY. OTHER EXCAVATED AREA WITHIN THE CLEAR ZONE SHALL BE BACKFILLED.
- WHERE REQUIRED, THE CONTRACTOR SHALL MAKE PROVISIONS FOR MAINTAINING PEDESTRIAN CROSSING LOCATIONS AND TYPE AS DIRECTED BY THE RE.
- BITUMINOUS CONCRETE PLACED DURING THE VARIOUS CONSTRUCTION STAGES SHALL BE TRANSITIONED ON A MINIMUM 20H : 1V SLOPE TO MEET THE ADJACENT EXISTING GRADE AT THE LONGITUDINAL AND TRANSVERSE LIMITS OF THE STAGE CONSTRUCTION AREAS UNLESS OTHERWISE NOTED ON THE STAGE CONSTRUCTION PLANS.
- THE PLACEMENT AND OR RELOCATION OF PRECAST CONCRETE CURB, CONSTRUCTION BARRIER SHALL BE DONE DURING APPROVED OFF-PEAK HOURS WHEN TRAFFIC MAY BE REDUCED TO ONE LANE IN EACH DIRECTION.
- CONSTRUCTION ZONE SPEED LIMIT WILL BE DETERMINED BY THE TRAFFIC SIGNAL & SAFETY ENGINEERING, REGIONAL TRAFFIC ENGINEER - WORK ZONE, AT THE TIME OF OR DURING CONSTRUCTION, AS REQUESTED BY THE R.E..
- THE SPEED LIMIT, R2-1 (BLACK ON WHITE) WITH ADDED WORK ZONE PLATE (BLACK ON ORANGE) SIGNS SHALL BE LOCATED THROUGH WORK AREAS AS DIRECTED BY THE TRAFFIC SIGNAL & SAFETY ENGINEERING REGIONAL TRAFFIC ENGINEER - WORK ZONE.
- THE REDUCED SPEED AHEAD SIGN, W3-5(S) (BLACK ON ORANGE) SHALL BE LOCATED IN ADVANCE OF SPEED LIMIT R2-1 SIGNS WHICH REDUCE THE NORMAL POSTED SPEED LIMIT THROUGH THE CONSTRUCTION ZONE.
- TRAFFIC FINES DOUBLED IN WORK AREA R(NJ)5-17(S), 4 FEET BY 2.5 FEET SIGN SHALL BE LOCATED 500 FEET AFTER THE FIRST ADVANCE WARNING SIGN, (W20 SERIES) AT EACH WORK AREA LOCATED WITHIN URBAN AREAS. THIS SIGN SHALL ALSO BE USED ON PROJECTS REQUIRING MOVING OPERATIONS IN WHICH CASE THE SIGN SHALL BE MOUNTED ON A SLOW MOVING CONSTRUCTION VEHICLE.
- THE FINAL HMA SURFACE PAVEMENT SHALL NOT BE CONSTRUCTED UNTIL THE FINAL STAGE OF THE PROJECT UNLESS OTHERWISE DIRECTED BY THE RE OR INDICATED ON THE PLANS. MANHOLES AND INLETS SHALL BE SET TO FINISHED GRADE AND TEMPORARY PAVEMENT RAMPS ARE TO BE CONSTRUCTED AROUND THEM WITH A MINIMUM 20H : 1V SLOPE IN ALL DIRECTIONS USING HOT MIX ASPHALT PAVEMENT. THIS TEMPORARY MATERIAL WILL BE REMOVED IMMEDIATELY PRIOR TO PLACING THE SURFACE COURSE.

- TRAFFIC CONTROL DEVICES FOR LANE CLOSURES INCLUDING SIGNS, CONES, BARRICADES, ETC. SHALL BE PLACED AS SHOWN ON PLANS. SIGNS SHALL NOT BE PLACED WITHOUT ACTUAL LANE CLOSURES AND SHALL BE IMMEDIATELY REMOVED UPON REMOVAL OF THE CLOSURES.
- CONES MAY BE SUBSTITUTED FOR DRUMS AND INSTALLED UPON THE APPROVAL OF THE RE.
- TRAFFIC IMPACT NOTICES AND CHANGES
 - TERMS:
WHEN THE FOLLOWING TERMS ARE USED, THE INTENT AND MEANING SHALL BE AS FOLLOWS:
 - IMPACTS TO NORMAL TRAFFIC FLOW - WORK THAT REQUIRES A PORTION OF THE PAVED ROADWAY BEING BLOCKED OR CLOSED WITH SAFETY DEVICES OR VEHICLES, INCLUDING, BUT NOT LIMITED TO, FULL OR PARTIAL LANE CLOSURES, FULL OR PARTIAL RAMP CLOSURES, SHOULDER CLOSURES, MOVING OPERATIONS SUCH AS TRAFFIC STRIPING OR SWEEPING, LANE SHIFTS, OR ALTERNATING TRAFFIC. THIS APPLIES EVEN WHEN DETOURS ARE PROVIDED.
 - TEMPORARY LANE CLOSURES - WORK DESCRIBED UNDER "IMPACTS TO NORMAL TRAFFIC FLOW" WHICH IS ROUTINELY SET UP AND REMOVED ON A DAILY BASIS.
 - PERMANENT LANE CLOSURES - WORK DESCRIBED UNDER "IMPACTS TO NORMAL TRAFFIC FLOW" WHICH REMAINS IN PLACE CONTINUOUSLY FOR 24 HOURS OR MORE.
 - ADVANCE NOTICES
FOR THE INITIAL START OF WORK THAT REQUIRES "IMPACTS TO NORMAL TRAFFIC FLOW", THE CONTRACTOR SHALL NOTIFY THE RE IN WRITING, ON THE ADVANCE FORM TO-103 PROVIDED BY THE DEPARTMENT, OF THE PROPOSED DATE. THE NOTICE SHALL BE SUBMITTED AT LEAST TWENTY-EIGHT CALENDAR DAYS, BUT NOT MORE THAN SIXTY CALENDAR DAYS, BEFORE THE PROPOSED DATE. START OF WORK THAT IMPACTS NORMAL TRAFFIC FLOW WILL NOT BE PERMITTED PRIOR TO THE DATE STATED IN THE NOTICE. THE CONTRACTOR SHALL CONFIRM, IN WRITING TO THE RE, THE PROPOSED DATE SEVEN (AND/OR FOURTEEN) CALENDAR DAYS BEFORE STARTING THE ESTABLISHMENT OF THE TRAFFIC CONTROL MEASURES FOR THE TRAFFIC IMPACT. THE CONTRACTOR SHALL IMMEDIATELY NOTIFY THE RE IF THE PROPOSED ESTABLISHMENT CAN NOT BE COMPLETED ON THE PROPOSED DATE.
FOR A "PERMANENT LANE CLOSURE", THE CONTRACTOR SHALL NOTIFY THE RE IN WRITING, ON ADVANCE FORM TO-103, OF THE PROPOSED DATE. A NEW TRAFFIC PATTERN WILL BE ESTABLISHED. THE NOTICE SHALL BE SUBMITTED AT LEAST TWENTY-EIGHT CALENDAR DAYS, BUT NOT MORE THAN SIXTY CALENDAR DAYS, IN ADVANCE OF THE PROPOSED DATE. START OF A NEW TRAFFIC PATTERN WILL NOT BE PERMITTED PRIOR TO THE DATE STATED IN THE NOTICE. THE CONTRACTOR SHALL CONFIRM, IN WRITING TO THE RE, THE PROPOSED DATE OF THE NEW TRAFFIC PATTERN SEVEN (AND/OR FOURTEEN) DAYS BEFORE STARTING TRAFFIC CONTROL MEASURES FOR THE ESTABLISHMENT OF THE NEW PATTERN. THE CONTRACTOR SHALL IMMEDIATELY NOTIFY THE RE IF THE PROPOSED ESTABLISHMENT CAN NOT BE COMPLETED ON THE PROPOSED DATE.
STARTING THE ESTABLISHMENT OF A NEW PERMANENT TRAFFIC PATTERN SHALL BEGIN NO EARLIER THAN 11:00 PM FRIDAY AND SHALL BE COMPLETED AND READY FOR OPERATIONS BY 6:00 PM THE FOLLOWING SUNDAY. THE ESTABLISHMENT SHALL BE COMPLETED IN ACCORDANCE WITH THE LANE CLOSURE HOURS SPECIFIED IN THE CONTRACT.
ADVANCE NOTICES SENT PRIOR TO THE PRE-CONSTRUCTION MEETING SHALL BE ADDRESSED TO THE CONTACT PERSON AS SPECIFIED IN SUBSECTION 101.04 OF THE SPECIAL PROVISIONS.
 - PROGRESS NOTICES
ALL "IMPACTS TO NORMAL TRAFFIC FLOW" SCHEDULED FOR THE SEVEN DAY PERIOD STARTING ON THE FOLLOWING MONDAY SHALL BE SUBMITTED TO THE RE BY 9:00 AM OF EACH FRIDAY ON WEEKLY FORM TO-100 PROVIDED BY THE DEPARTMENT.
EACH DAY OF "TEMPORARY LANE CLOSURES" SHALL BE SUBMITTED TO THE RE BY 9:00 AM THE DAY IN ADVANCE OF THE START OF THOSE OPERATIONS ON DAILY FORM TO-101 PROVIDED BY THE DEPARTMENT.
"TEMPORARY LANE CLOSURES" FOR WEEKENDS SHALL BE SUBMITTED TO THE RE BY 9:00 AM ON THE IMMEDIATELY PRECEDING FRIDAY ON THE DAILY FORM TO-101 PROVIDED BY THE DEPARTMENT.
 - CHANGES TO THE SCHEDULED CLOSURES
REQUEST FOR A CHANGE TO THE TRAFFIC CONTROL REQUIREMENTS IN THE CONTRACT DOCUMENTS SHALL BE SUBMITTED IN WRITING TO THE RE AS FOLLOWS:
CHANGES TO THE SCHEDULED HOURS FOR "TEMPORARY LANE CLOSURES" SHALL BE SUBMITTED TO THE R.E. AT LEAST EIGHT CALENDAR DAYS IN ADVANCE OF WHEN THE CHANGE IS PROPOSED TO START.
OTHER PROPOSED CHANGES TO "TEMPORARY LANE CLOSURES" AND ALL CHANGES TO "PERMANENT LANE CLOSURES" SHALL BE SUBMITTED TO THE RE AS SPECIFIED IN THE SPECIFICATIONS.
- WHERE MILLING OR HMA PAVING IS PERFORMED AND THE LANE IS TO BE RE-OPENED TO TRAFFIC EACH DAY, APPLY TEMPORARY TRAFFIC STRIPES.

TCD-1

NEW JERSEY DEPARTMENT OF TRANSPORTATION

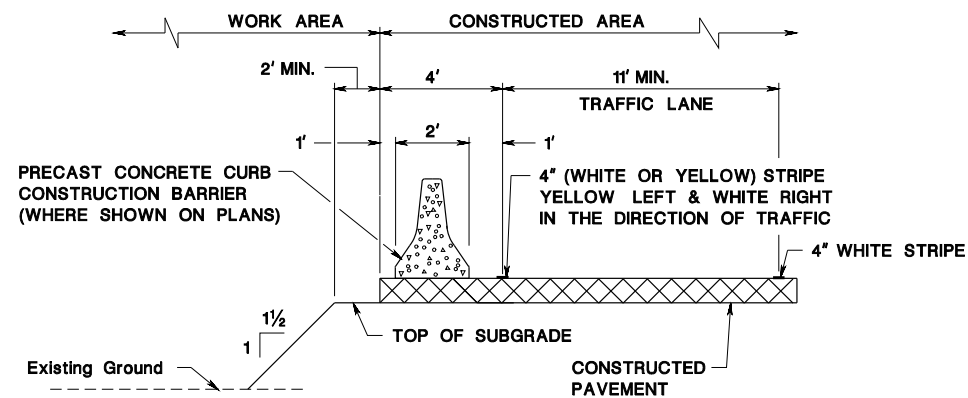
TRAFFIC CONTROL DETAILS



NOTE:

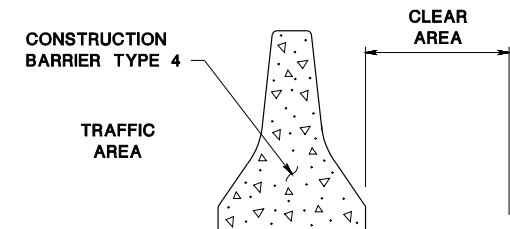
ESCAPE RAMPS MUST BE CONSTRUCTED AND MAINTAINED DURING NON-WORKING HOURS WHERE A VERTICAL DROP GREATER THAN 2 INCHES EXISTS ADJACENT TO TRAVELED LANE.

ESCAPE RAMP DETAIL



TYPICAL SECTION

PLACEMENT OF PRECAST CONCRETE CONSTRUCTION BARRIER



NOTES:

1. CHANGES TO THE PROPOSED JOINT CLASS AT ANY LOCATION MUST BE APPROVED BY THE DEPT.
2. NO ROADWAY DROP OFFS, OBSTRUCTIONS, STORAGE OF MATERIALS OR WORK WILL BE PERMITTED IN THE CLEAR AREA UNLESS APPROVED BY THE R.E.

STAGE	LOCATION	JOINT CLASS
	RTE. STA. TO STA.	

JOINT CLASS	CLEAR AREA
A	20 INCHES
B	16 INCHES
C	11 INCHES

CONSTRUCTION BARRIER, TYPE 4 JOINT CLASS AND CLEAR AREA

REGULATORY APPROACH SPEED OF TRAFFIC MILES/HOUR	RECOMMENDED SIGHT DISTANCE TO BEGINNING OF CHANNELIZING TAPERS		
	DESIRABLE		MINIMUM
	RURAL FEET	URBAN FEET	RURAL AND URBAN FEET
25	375	525	150
30	450	625	200
35	525	725	250
40	600	825	325
45	675	925	400
50	750	1025	475
55	875	1150	550
60	1000	1275	650
65	1050		725

NOTES:

1. AVOIDANCE MANEUVER IS FOR A SPEED, PATH, AND/OR DIRECTION CHANGE PRIOR TO THE BEGINNING OF CHANNELIZING TAPERS.
2. RECOMMENDED DISTANCES BETWEEN TWO SEPARATE LANE CLOSURES SHALL BE DOUBLE THE VALUES SHOWN ABOVE.
3. RURAL AND URBAN ROAD DESIGNATIONS SHALL BE AS DEFINED IN THE NJDOT STATE HIGHWAY STRAIGHT LINE DIAGRAMS.
4. DESIRABLE VALUES SHALL BE PROVIDED WHEREVER POSSIBLE. IF IT IS NOT FEASIBLE OR PRACTICAL TO PROVIDE DESIRABLE VALUES BECAUSE OF HORIZONTAL OR VERTICAL CURVATURE OR IF RELOCATION OF THE TAPER IS NOT POSSIBLE, THEN MINIMUM VALUES CAN BE APPLIED. WHEN MINIMUM VALUES ARE USED, SPECIAL ATTENTION SHOULD BE GIVEN TO THE USE OF SUITABLE TRAFFIC CONTROL DEVICES FOR PROVIDING ADVANCED WARNING OF THE CONDITIONS THAT ARE LIKELY TO BE ENCOUNTERED.
5. TAPERS SHALL BE LOCATED TO MAXIMIZE THE VISIBILITY OF THEIR TOTAL LENGTH.

RECOMMENDED TAPER LENGTH AND SPACING FOR CANCELIZING TAPERS					RECOMMENDED SPACING ALONG TANGENTS	
REGULATORY APPROACH SPEED OF TRAFFIC MILESHOUR	MINIMUM TAPER RATIO IN LENGTH PER FOOT OF WIDTH	MINIMUM TAPER LENGTH L – FOR LANE WIDTHS			MAXIMUM DEVICE (B) SPACING ALONG TAPERS IN FEET	MAXIMUM DEVICE (D) SPACING ALONG TANGENTS IN FEET
		10'	11'	12'		
25	10.5:1	105	115	125	25	50
30	15:1	150	165	180	30	60
35	20.5:1	205	225	245	35	70
40	27:1	270	300	325	40	80
45	45:1	450	495	540	45	90
50	50:1	500	550	600	50	100
55	55:1	550	605	660	55	110
60	60:1	600	660	720	60	120
65	65:1	650	715	780	65	130

NOTE:

THE MAXIMUM DEVICE SPACING ALONG CURVES SHALL BE AS DEFINED FOR TAPERS (B) IN THE ABOVE TABLE.

N.T.S.

CD-2

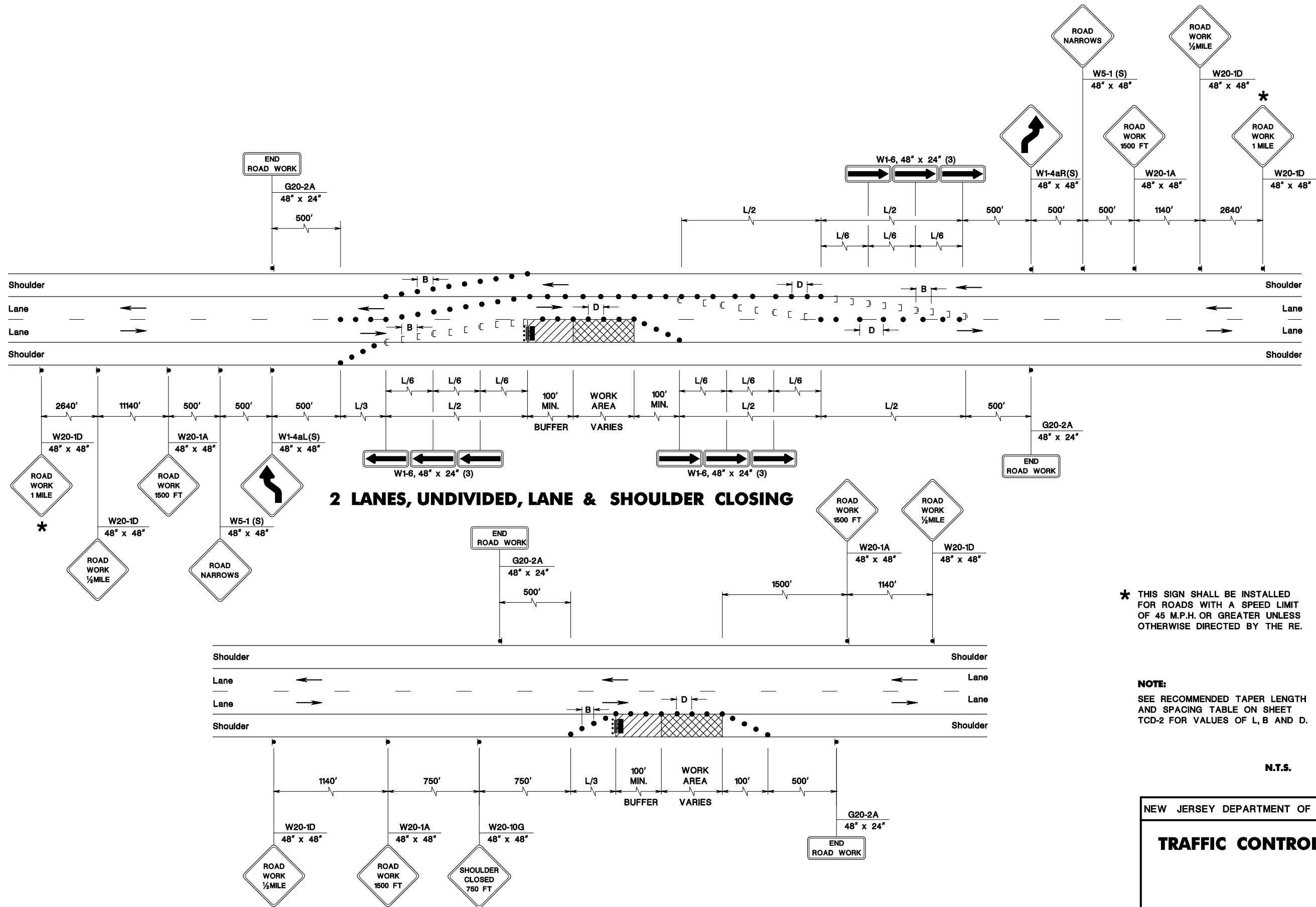
NEW JERSEY DEPARTMENT OF TRANSPORTATION

TRAFFIC CONTROL DETAILS

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BDC07D-01 ORIGINAL SHEET

file=



* THIS SIGN SHALL BE INSTALLED FOR ROADS WITH A SPEED LIMIT OF 45 M.P.H. OR GREATER UNLESS OTHERWISE DIRECTED BY THE RE.

NOTE:
SEE RECOMMENDED TAPER LENGTH AND SPACING TABLE ON SHEET TCD-2 FOR VALUES OF L, B AND D.

N.T.S.

TCD-3
NEW JERSEY DEPARTMENT OF TRANSPORTATION

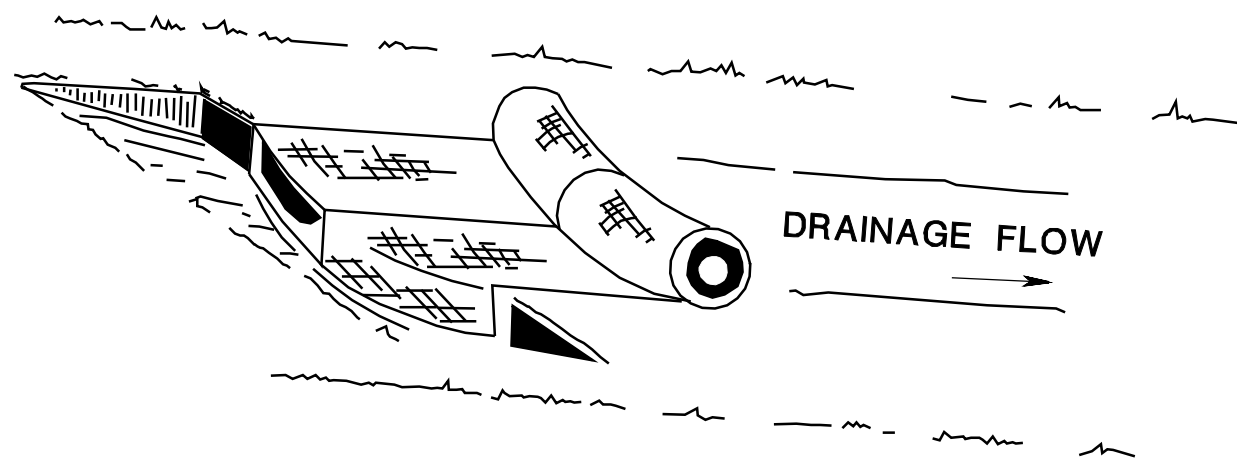
TRAFFIC CONTROL DETAILS

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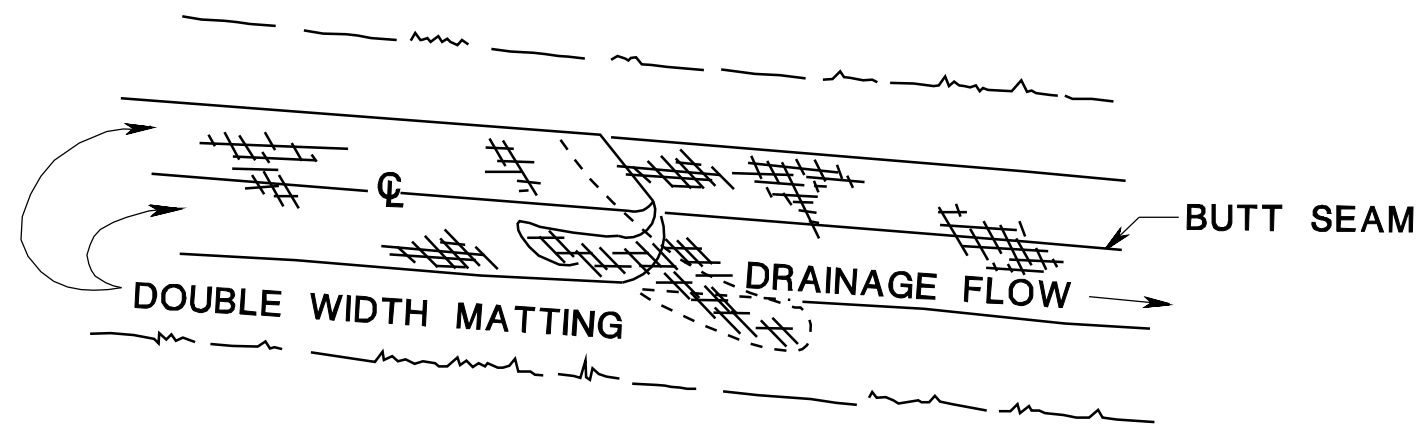
BD007D-01-ORIGINAL SHEET

SWALE OR DITCH

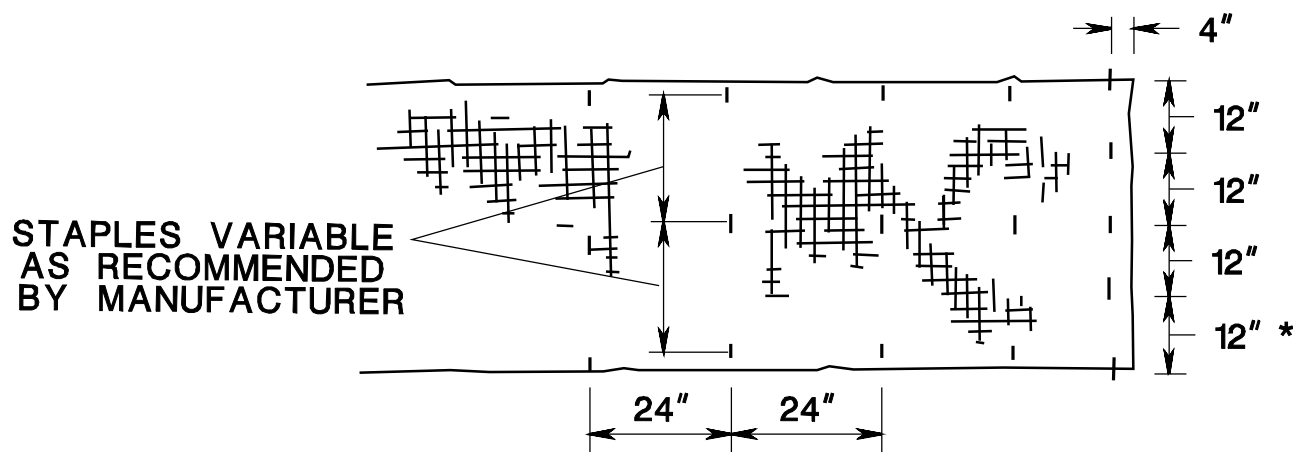
DOUBLE WIDTH MATTING AND BLANKETS IN SWALE, USE 3'-6" OVERLAP WHERE TWO OR MORE STRIPS ARE REQUIRED, AND STAPLE ON 2'-0" CENTERS



BURY TOP END OF MATTING AND BLANKETS IN A 6" TRENCH
TAMP TRENCH FULL OF SOIL. SECURE WITH ROW OF STAPLES,
12" MAXIMUM SPACING 4" DOWN FROM TRENCH.

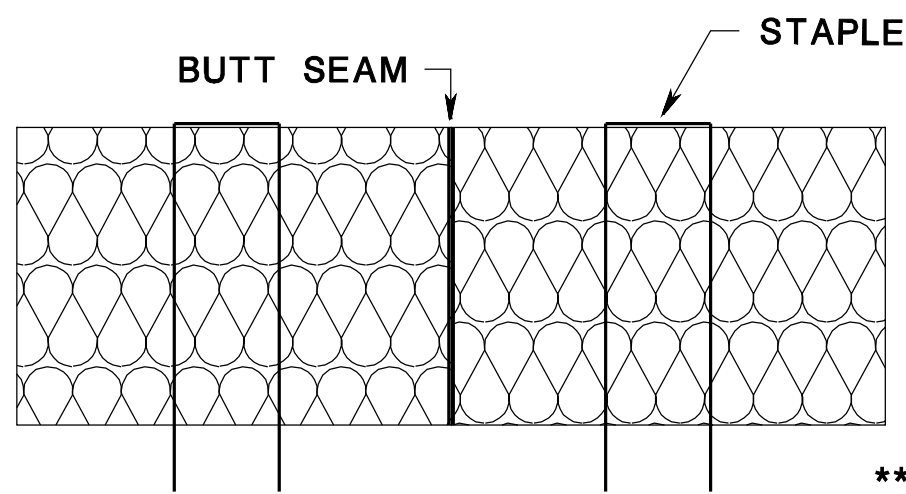


OVERLAP: BURY UPPER END OF LOWER STRIP
AS PER ABOVE DETAIL. OVERLAP END OF TOP
STRIP 6" AND STAPLE EITHER SIDE OF JOINT.



* DEPENDANT ON
WIDTH OF PRODUCT

SECURE MATTING AND BLANKETS WITH STAPLES SPACED 24" APART
ALONG THE SIDES AND DOWN THE CENTER. AT THE ENDS OF THE
MATTING AND AT 50 FOOT INTERVALS STAPLES SHALL BE PLACED
12" APART ACROSS THE WIDTH.



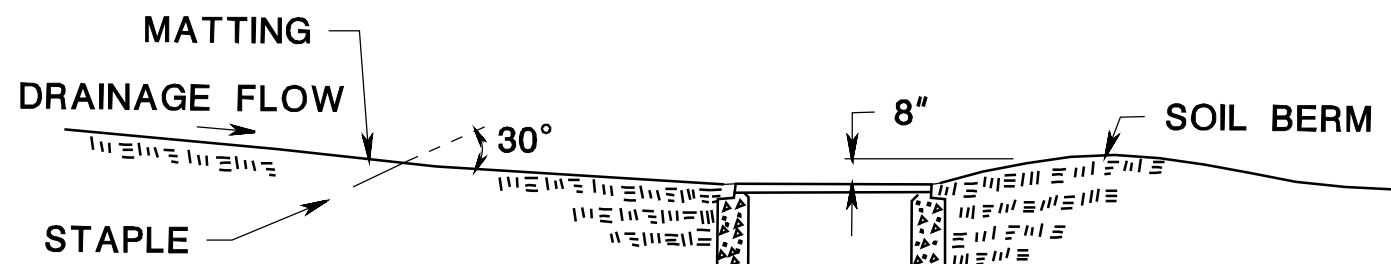
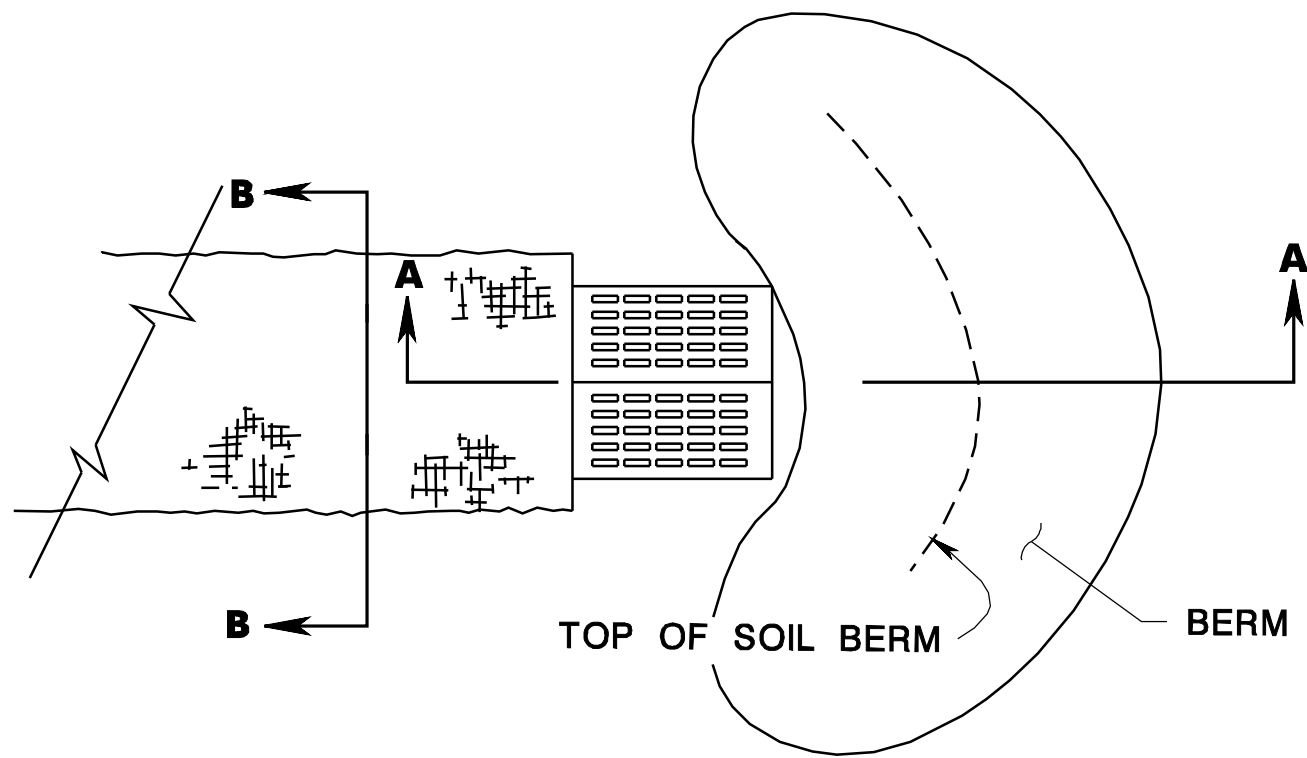
EXCELSIOR BUTT SEAM

** REFER TO SE&SC MANUAL
CHAPTER 3.9 FOR WHERE THIS
TREATMENT IS TO BE USED.

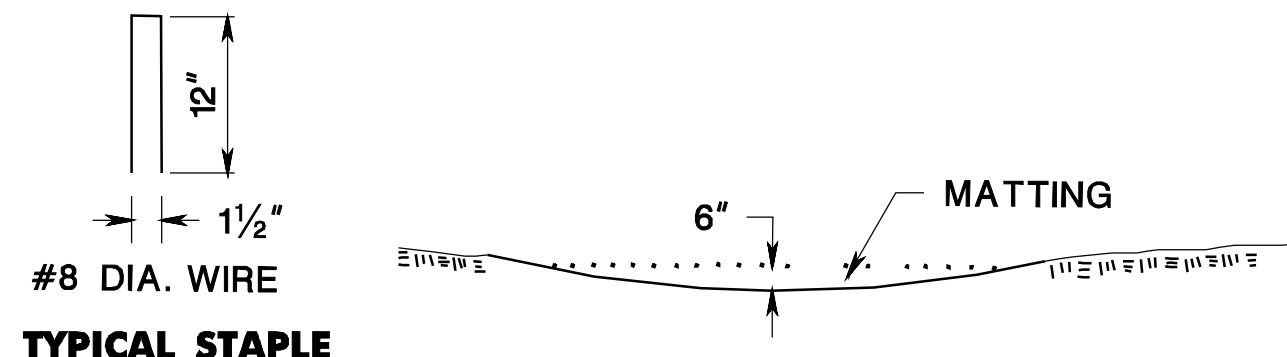
TOPSOIL STABILIZATION MATTING

CD-807-1.1

INLET AND MOUND



SECTION A-A



SECTION B-B

TOPSOIL STABILIZATION

N.T.S.

NEW JERSEY DEPARTMENT OF TRANSPORTATION

CONSTRUCTION DETAILS

CD-807-1