

**APPENDIX B - MILLERSVILLE BOROUGH
TECHNICAL SPECIFICATIONS AND STANDARD DETAILS**

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ARTICLE I. SPECIAL CONDITIONS OF WORK

1. GENERAL

The following paragraphs refer to Special Conditions of Work for all contractors who intend to work within the Borough street rights-of-way.

2. STORAGE OF MATERIALS

Materials shall be stored so as to insure the preservation of their quality and fitness for the work. When considered necessary, they shall be placed on wooden platforms, or any other hard, clean surface, not on the ground. They shall be placed under cover and protected from dampness, dust and fire. Stored materials shall be located so as to facilitate prompt inspection. Lawns, grass plots or other private property shall not be used for storage purposes without written permission of the Owner or Leasee.

3. FIRE

The Contractor shall take every precaution to prevent a fire. Open burning is not permitted within the Borough.

4. NIGHT AND SUNDAY WORK

See Millersville Borough Noise Ordinance for requirements.

5. INSURANCE

The Contractor shall secure and maintain insurance policies with the following coverages:

- (a) **Workmen's Compensation:** The Contractor shall take out and maintain during the life of this permit Workmen's Compensation Insurance for all employed at the site of the project. The Contractor shall require any subcontractor to provide the same coverage.
- (b) **Public Liability and Personal Injury: Public Liability Damage:** Public Liability coverage shall be not less than \$500,000 for all damages rising out of bodily injury, including death at any time resulting there from, sustained by any one person in any one accident and a limit of liability of not less than \$1,000,000 aggregate for any such damages sustained by two or more persons in any one accident.

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- (c) Property Damage: Property Damage coverage shall be not less than \$300,000 for all property damage sustained by any one person in any one accident; and a limit of liability of not less than \$300,000 aggregate for any such damage sustained by two or more persons in any one accident.
- (d) Explosion, Collapse, and Underground shall be covered with insurance in limits as required under Public Liability, Personal Injury and Property Damage for each occurrence.
- (e) Railroad Protective Liability and Property Damage: When the permit includes work on or under Railroad rights-of-way or properties, the Contractor shall secure and maintain Railroad Protective Liability and Property Damage Insurance. The amount of Insurance, term of policy and name or names of the insured shall be in accordance with current railroad requirements.
- (f) Independent Contractors Liability Coverage: Public Liability shall be in an amount not less than \$500,000 for injuries including accidental death to any one person, or in an amount not less than \$1,000,000 on account of each occurrence. Property damage insurance shall not be less than \$300,000.
- (g) Blasting Coverage shall be in an amount not less than \$500,000 for injuries including accidental death to any one person, or in an amount not less than \$1,000,000 on account of each occurrence. Property damage insurance shall not be less than \$300,000.
- (h) Completed Operations Liability shall be in an amount of not less than \$500,000.
- (i) Fire and Extended Coverage Insurances: The Contractor, at his own expense, shall carry insurance upon the insurable value of the work done pursuant to the Permit. Such policies shall provide protection against loss or damage as a result of fire, lightning, or perils covered by an extended coverage endorsement. Policies insuring work done pursuant to the Permit shall be written in the name and for the benefit of the Contractor and the Owner, as their respective interests may appear.
- (j) Automobile and Truck Public Liability, Bodily Injury, and Property Damage: Public Liability shall be in an amount of not less than \$500,000, Personal Injury in an amount of not less than \$500,000 and Property Damage in amount of not less than \$500,000.
- (k) Owner's and Engineer's Liability: The Contractor shall take out and maintain during the life of this Permit, such Public Liability and Property Damage Insurance as shall protect the Owner and the Engineer from claims for damages for personal injury, including accidental death, as well as from claims for property damages, which may arise from operations connected with or caused by any operation or matter related to this Permit. The amounts of such insurance shall be in accordance with the limits stated in paragraph (b) above.
- (l) Umbrella Excess Liability Insurance: The Contractor shall provide a minimum limit of liability of \$1,000,000 per occurrence which shall be in an excess over the primary limits of insurance required in this section.

6. RESPONSIBILITY REGARDING EXISTING UTILITIES AND STRUCTURES

The existence and location of underground utilities, process piping or plant conduits shall be investigated and verified in the field by the contractor before starting work. The Contractor's attention is directed to the existing Local, State and Federal regulations, especially the Pennsylvania One Call System Inc. 1-800-242-1776.

Excavation in the vicinity of existing structures and utilities shall be carefully done. The Contractor should call the Pennsylvania One Call System before he starts to dig.

The Contractor shall be held liable for any damage done by reason of breaking any water, sewer, gas, telephone, electric, process piping, plant conduits, or other utility service. The Contractor shall notify all utility companies and the Owner's operating personnel in advance of construction and cooperate with agents of these companies and the Owner during the progress of the work. If any lines or services become broken or damaged during the progress of the work, the Contractor shall cause them to be repaired at once at his own expense. Delays which would result in adjoining residences or businesses having to go overnight or for needlessly long periods during the day without utilities, or the plant operation to be adversely affected, will not be tolerated. The Owner reserves the right to remedy such delays or neglect by ordering outside parties to make repairs at the expense of the Contractor without written notice.

Care shall be taken not to move, any sewers, culverts, water, gas, electric, telephone, or other pipes or poles or structures. In crossing, or in running parallel with or near utility lines, process piping or plant conduits, such sewers, culverts, water, gas, electric, telephone, or other pipes or poles or structures shall be securely hung, braced or supported in place until the work is completed. Whenever it is necessary to interfere with said structures, the Contractor, at his own expense, shall maintain their respective services, and if necessary, lay temporary lines or structures.

The Contractor shall repair all damage done to any structures and shall keep them in repair for a period of one year after the completion of the work.

7. EROSION AND SEDIMENTATION CONTROL

The Contractor shall adhere to the regulations relating to the control of erosion and sedimentation implemented by Pennsylvania under Chapter 102 of Public Law 1987, as amended.

8. PREVENTION OF ENVIRONMENTAL POLLUTION AND PRESERVATION OF PUBLIC NATURAL RESOURCES

The Contractor shall adhere to the provisions of the Pennsylvania Act No. 247 of 1972 relating to the prevention of environmental pollution and the preservation of public natural resources.

9. MAINTENANCE CREW

The Contractor shall make available 24 hours a day a maintenance crew for the repairs and maintenance of trenches or other work which has become hazardous to the public or plant operations as a result of trench settlement or other reasons.

The Contractor shall make the name, address and telephone number of a responsible maintenance person available to the Borough. If the maintenance person so assigned fails to respond, or the Contractor fails to make the repairs within a reasonable period of time after being directed by the Borough, then the necessary repairs or maintenance shall be performed by others and the full costs of the work charged to the Contractor.

10. WORK ZONE TRAFFIC CONTROL

The Contractor shall provide flagmen, signs, barricades, etc. as required to help ensure safe and efficient traffic movement through the work zones, and also to provide safety for the work force. All work zone traffic control shall be in accordance with PennDOT Publication 213, entitled, "Work Zone Traffic Control", latest edition.

ARTICLE II. TECHNICAL SPECIFICATIONS

The Pennsylvania Department of Transportation Specifications Publication 408, with latest revisions and attachments shall be considered part of these specifications, and all work shall conform to those specifications. Any items that are not specifically listed here in these specifications shall be governed by the appropriate section in Publication 408. Where conflicts occur between Publication 408 and the specifications in this Ordinance, the more restrictive specifications shall apply.

All finished gutter joints at the curb line and all surface joints of the streets and drives shall receive a bituminous seal coat of Emulsified Asphalt at least six (6) inches in width.

At the completion of a project, the Contractor shall deliver a written statement to the Borough certifying that his work was performed in accordance with these specifications.

1. EARTH WORK (Section 200)

2. BASE COURSES (Section 300)

Section 300 – Bituminous Concrete Base.

Section 309 – Superpave Asphalt Mixture Design, Standard Construction, WMA Base Course

The Contractor shall install the wearing surfaces with a maximum of two paving passes, thus resulting in no more than one paving joint along the length of the road.

Section 350 – Subbase.

3. FLEXIBLE PAVEMENT (Section 400)

Section 409 – Superpave Mixture Design, Standard & RPS Construction of Plant – Mixed WMA Courses.

The Contractor shall install the wearing surfaces with a maximum of two paving passes, thus resulting in no more than one paving joint along the length of the street.

4. INCIDENTAL CONSTRUCTION

Section 601 – Pipe Culverts.

Section 605 – Endwalls, Inlets, Manholes and Spring Boxes.

Section 613 – Stone Backfill for Miscellaneous Drainage.

A. 2A Crushed Stone Backfill – Borough Detail Sheet 1.

B. Flowable Backfill

1. Description

This work is construction of flowable backfill of the type specified for trenches and structures.

Flowable Backfill. Future excavation of the backfill may be necessary such as at utility trenches, pipe trenches, bridge abutments, and around box or arch culverts.

2. Material

- (a) Cement: ASTM C150.
- (b) Slag Cement: ASTM C989.
- (c) Fine Aggregate: ASTM C33.
- (d) Air-Entraining ADMIX: ASTM C260.
- (e) Mix Design:

Use Table 1 for the mix design or submit alternate design based on density guidelines and meeting strength requirements of Table 1.

Provide mix designs that meet specific density requirements, where specified. If source of material is changed, submit a revised mix design before using material. Conduct design mix testing at the highest flowability of slump that will be used for the project.

3. Construction

(a) General:

Furnish indicated type of flowable backfill meeting the requirements of Table 1.

Mix and transport in accordance with Section 704 or by other approved methods.

Adjustments to mix in field are permissible provided criteria specified in Table 1 are achieved.

(b) Placement:

Prepare supporting surface to receive flowable backfill as specified. Do not place flowable backfill during rain or through flowing water. Remove and replace flowable backfill damaged by rain or flowing water. When excavation cannot be dewatered, place flowable backfill by a tremie procedure, approved by the Engineer.

Break up lumps by remixing or other approved method.

Do not place flowable backfill at a material temperature below 50° F or when the temperature of either the air or the surface on which the flowable backfill is to be placed is 40° F or lower without protection of the exposed surface.

(Draft 4/15/2025)

(c) Opening to Traffic:

For flowable backfill material, do not open to traffic until 1 hour after the surface bleed water has dissipated by a dry surface and as permitted by the Engineer.

Table 1 Flowable Backfill

FLOWABLE BACKFILL CONCRETE MIX DESIGN (100 PSI)

WEIGHTS PER CUBIC YARD (SATURATED, SURFACE-DRY)	
CEMENT	90 -110
SLAG CEMENT	70 - 80
FINE AGGREGATE, ASTM C33	3000
WATER, LB (GAL-US)	400 (47.9)
TOTAL AIR, %	6.0 +/- 1.5
AIR-ENTRAINING ADMIX, ASTM C260	3.5
WATER/CEMENT RATIO	2.29
SLUMP, IN	9 - 11
CONCRETE UNIT WEIGHT, PCF	120-135
3 DAYS (MIN) PSI	50 - 100

Section 630 – Plain Cement Concrete Curb.

All concrete shall be Class AA.

Section 676 – Cement Concrete Sidewalks.

All concrete shall be Class AA.

5. MATERIALS

Section 704 is revised as follows:

- A. Curing of concrete shall be done using a clear non-pigmented curing compound.
- B. Place no concrete until forms, reinforcing steel and other work required to be built into concrete has been inspected and approved. The Contractor shall notify the Borough twenty-four (24) hours in advance of such inspection.
- C. All steps shall be poured independently of the sidewalk. The Contractor shall take all steps necessary to try to save those steps that are in good condition. If necessary, the contractor shall be required to saw cut around those steps.
- D. It shall be the Contractor's responsibility to provide the means necessary to adequately protect the fresh concrete from damage done by vandals. To this end, it is preferred that all concrete pours be made before noon of each day.
- E. The Contractor shall schedule his concrete pours in sections to minimize the disruption of pedestrian traffic to the residences and businesses. The Contractor shall be required to provide access ramps or bridges over the sidewalk areas to maintain access to businesses and residences during construction.

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- F. All cement concrete for a project shall be supplied by the same manufacturer using materials from the same site to insure the color likeness and durability of the finished product.
- G. The Contractor shall be responsible to install a four inch (4") PVC pipe vertically in the concrete walk in those locations where a sign post will be required. The Contractor shall contact the Borough twenty-four (24) hours in advance for such locations.
- H. Closures, concrete fillers at curbs and angular sections, shall be installed as separate slabs and shall be separated from adjoining slabs by expansion joint filled material, and grooved and edged as dry joints.
- I. Where light standards, poles, fire hydrants, access manhole covers or other similar structures are within the limits of the new sidewalks, the concrete around such structures shall be scored, by edging or grooving, in a block eight (8") inches wider than the maximum dimensions of the structure at the sidewalk elevation. Prior to placing the concrete around such structures, pre-molded expansion joint material shall be placed around the structures to the full depth of the slab.
- J. Formed transverse dummy joints shall be spaced proportionally to form an esthetically pleasing pattern and additional joints added where required to prevent future sidewalk cracking.

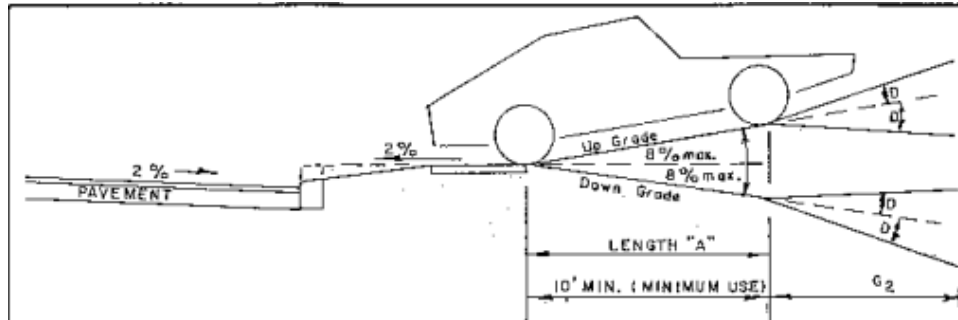
6. ROADSIDE DEVELOPMENT

Section 704 – Seeding and Soil Supplements (Formula B).

ARTICLE III. FIGURES

Figure F-1 Driveway Grade

Note: In areas with sidewalk and curb, the driveway aprons shall be designed to meet the requirements of the Americans with Disabilities Act and PennDOT specifications for driveway aprons (Pub 72 Standards for Roadway Construction Standard RC-67M).



FOR GRADE CHANGES GREATER THAN THOSE SHOWN ABOVE, VERTICAL CURVES AT LEAST 10 FEET LONG SHALL BE CONSTRUCTED AND LENGTH "A" SHALL BE INCREASED.

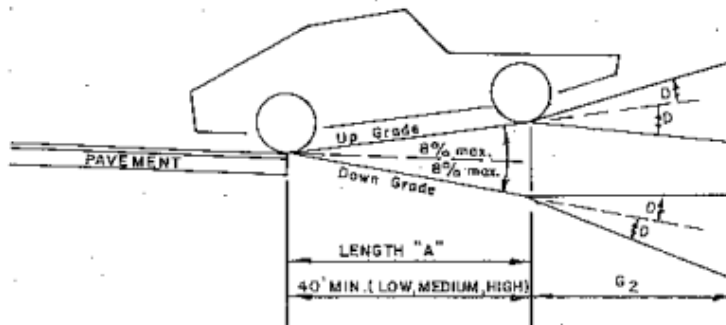
GRADES (G_2) SHALL BE LIMITED TO 15% FOR MINIMUM USE DRIVEWAYS

MAXIMUM GRADE CHANGE (D) DESIRABLE MAXIMUM

MINIMUM USE ± 6% CONTROLLED BY VEHICLE CLEARANCE

MAXIMUM DRIVEWAY GRADE

FIGURE # 1



FOR GRADE CHANGES GREATER THAN THOSE SHOWN ABOVE, VERTICAL CURVES AT LEAST 10 FEET LONG SHALL BE CONSTRUCTED AND LENGTH "A" SHALL BE INCREASED.

MAXIMUM GRADE CHANGE (D) DESIRABLE MAXIMUM

HIGH VOLUME DRIVEWAY	± 1%	± 3%
MEDIUM VOLUME DRIVEWAY	± 3%	± 6%
LOW VOLUME DRIVEWAY	± 6%	CONTROLLED BY VEHICLE CLEARANCE

GRADES (G_2) SHALL BE LIMITED FROM 5% TO 8% FOR LOW, MEDIUM OR HIGH VOLUME DRIVEWAYS.

ARTICLE IV. TYPICAL DETAILS

Table 2 Right-Of-Way, Cartway, Curb and Sidewalk Widths

	(A) ROW (FEET)	(B) Cartway (FEET)	(D) Curb Type	(E) Sidewalk Width (FEET)
Road Designation				
Collector Or Arterial Street (3-lane)	60'	38'	Vertical	5'
Collector Or Arterial Street (2-lane)	60'	30'	Vertical	5'
Local Street (Parking Both Sides)	50'	34'	Vertical	5'
Local Street (Parking 1 Side)	50'	30'	Vertical	5'
Local Street (No Parking)	50'	26'	Vertical	5'
Alley	14'	14'	NA	NA
Alley (Traditional Neighborhood Development, one- way)	10'	10'	NA	NA

Note: Vertical curb reveal shall be 6" or 8".

Table 3 Pavement Designations (less than 2 years exposure)

Table 3 is applicable if exposure of Base Course to the elements will be less than 2 years before placement of Wearing Course.

LOCAL ROADS

ID	DEPTH (inches)	COURSE DESCRIPTION	AGG.	PG	ESALS
I	1 ½"	S.A.M.D., WMA Wearing Course, SRL-H	9.5mm	PG 64-22	0.3 to < 3.0
III	5"	S.A.M.D., WMA Base Course	25 mm	PG 64-22	0.3 to < 3.0
IV	6"	PennDOT 2A Coarse Aggregate			0.3 to < 3.0
		S.A.M.D. Superpave Asphalt Mixture Design			

COLLECTOR & ARTERIAL ROADS

ID	DEPTH (inches)	COURSE DESCRIPTION	AGG.	PG	ESALS
I	2"	S.A.M.D., WMA Wearing Course, SRL-H	12.5mm	PG 64-22	0.3 to < 3.0
III	8"	S.A.M.D., WMA Base Course	25 mm	PG 64-22	0.3 to < 3.0
IV	6"	PennDOT 2A Coarse Aggregate			
		S.A.M.D. Superpave Asphalt Mixture Design			

NOTES:

Min/Max Lift is 2"/3" for Binder and 3"/5" for Base Course.

In the event the developer does not install the 1 ½" Wearing Course within 24 months of SAMD Base Course Material placement, the Borough shall reserve the right to require the Developer to:

1. Remove and replace the Base Course Material in whole or in part,
2. Add fabric, additional pavement thickness, or other construction methods to accommodate for degradation,
3. Establish a 60 month maintenance bond guarantee in lieu of the standard 18 month maintenance bond, or
4. Complete a combination of the above methods 1-3.

(Draft 4/15/2025)

Table 4 Pavement Designation (more than 2 years exposure)

Table 4 is applicable if exposure of Base Course to the elements will be greater than 2 years before placement of Wearing Course.

LOCAL ROADS

ID	DEPTH (inches)	COURSE DESCRIPTION	AGG.	PG	ESALS
I	1 ½"	S.A.M.D., WMA Wearing Course, SRL H	9.5mm	PG 64-22	
II	2"	S.A.M.D., WMA Binder Course	19.5mm	PG 64-22	
III	4"	S.A.M.D., WMA Base Course	25.0mm	PG 64-22	
IV	6"	PennDOT 2A Coarse Aggregate			
		S.A.M.D. Superpave Asphalt Mixture Design			

COLLECTOR & ARTERIAL ROADS

ID	DEPTH (inches)	COURSE DESCRIPTION	AGG.	PG	ESALS
I	2"	S.A.M.D., WMA Wearing Course, SRL H	12.5mm	PG 64-22	
II	3"	S.A.M.D., WMA Binder Course	19.5mm	PG 64-22	
III	5"	S.A.M.D., WMA Base Course	25.0mm	PG 64-22	
IV	6"	PennDOT 2A Coarse Aggregate			
		S.A.M.D. Superpave Asphalt Mixture Design			

NOTES:

Min/Max Lift is 2"/3" for Binder and 3"/5" for Base Course.

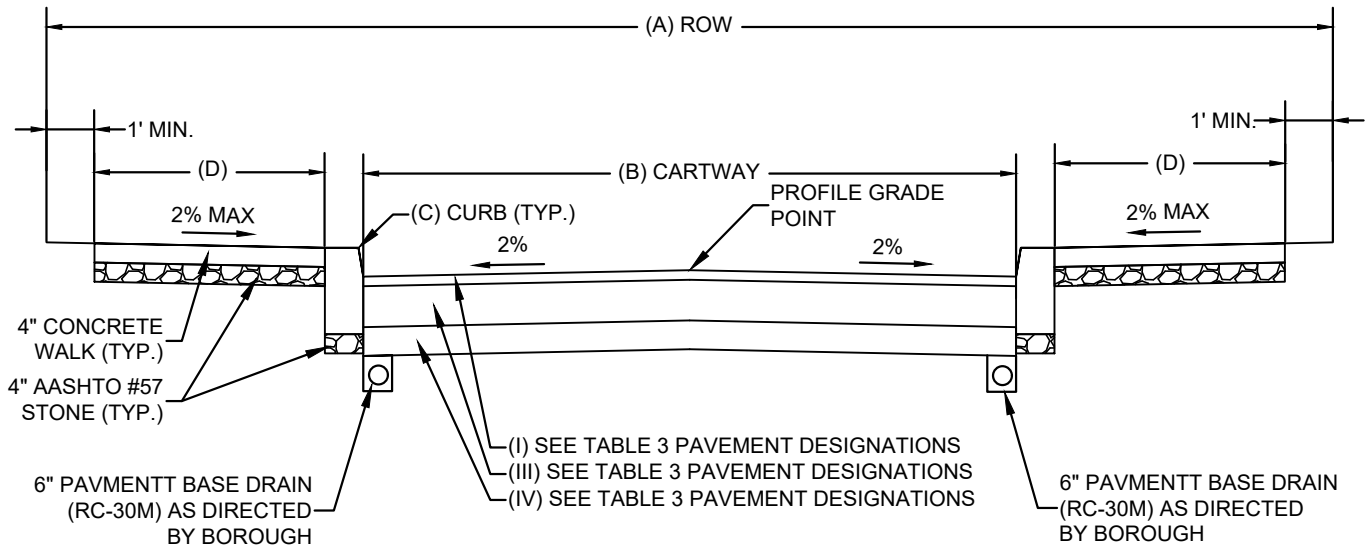
Binder Course shall be installed within 30 days of placement of the Base Course materials, or before traffic from any vehicles greater than a standard automobile, whichever is sooner.

Table 5 Driveway Widths

	Minimum Width (feet)	Maximum Width (Feet)	Minimum Radius (feet)	Maximum Radius (feet)		
Driveway Classifications						
Minimum Use	9'	14'	NA	10'		
Low-Volume (One Way)	10'	20'	15'	35'		
Low -Volume (Two Way)	20'	24'	15'	35'		
Medium-Volume (One Way)	10'	14'	15'	50'		
Medium-Volume (Two Way)	20'	28'	15'	50'		
High Volume (One Way)	10'	14'	15'	50'		
High Volume (Two Way)	20'	28'	15'	50'		

NOTES

1. SEE TABLE 2 FOR RIGHT-OF-WAY, CARTWAY, CURB AND SIDEWALK (A,B,C,D)
2. ALL LONGITUDINAL JOINTS WILL BE SEALED WITH PG 64-22
3. AN ASPHALT TACK COAT SHALL BE APPLIED BETWEEN EACH LAYER OF PAVEMENT.

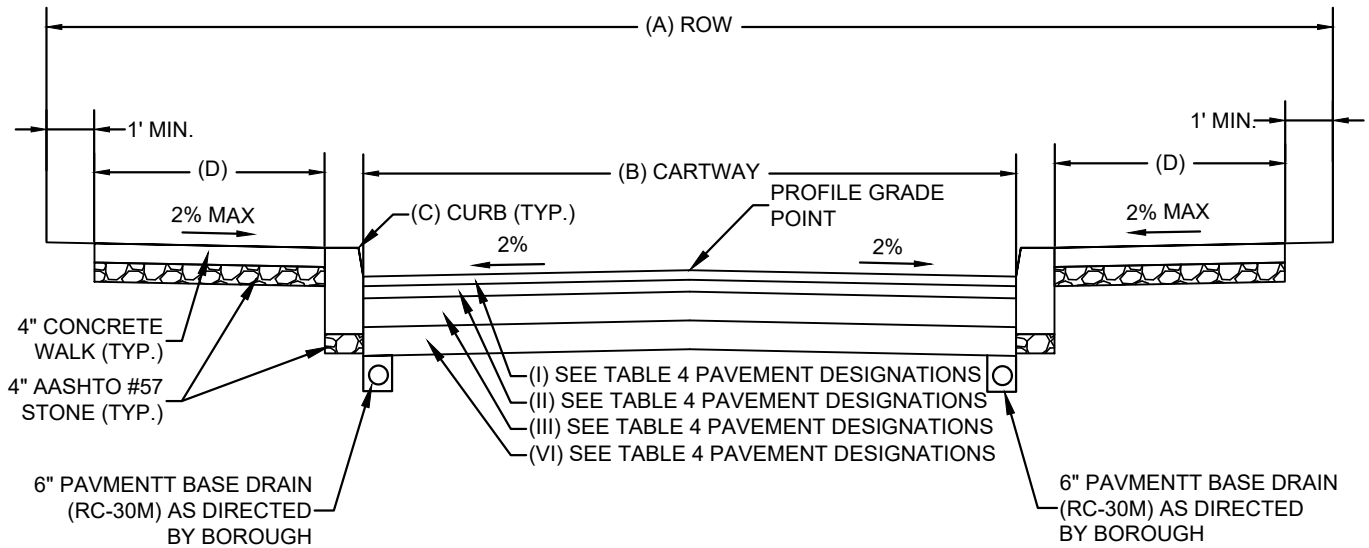


TYPICAL STREET CROSS SECTION

APPLICABLE IF EXPOSURE OF BASE COURSE TO THE ELEMENTS WILL
BE LESS THAN 2 YEARS BEFORE PLACEMENT OF WEARING COURSE.
(NOT TO SCALE)

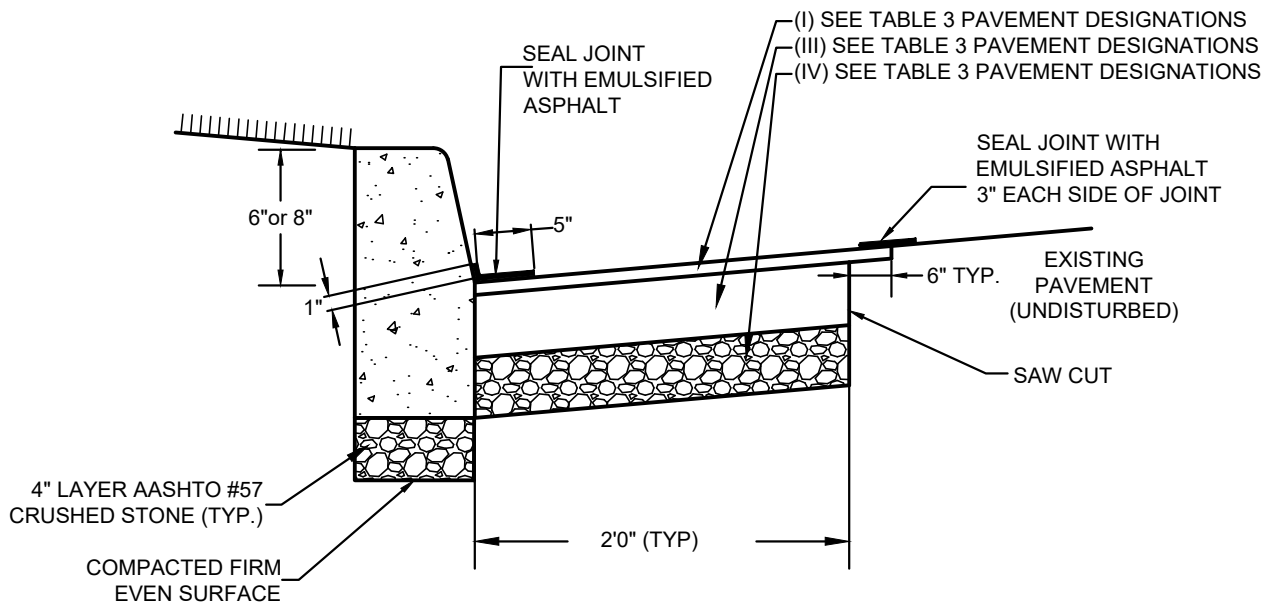
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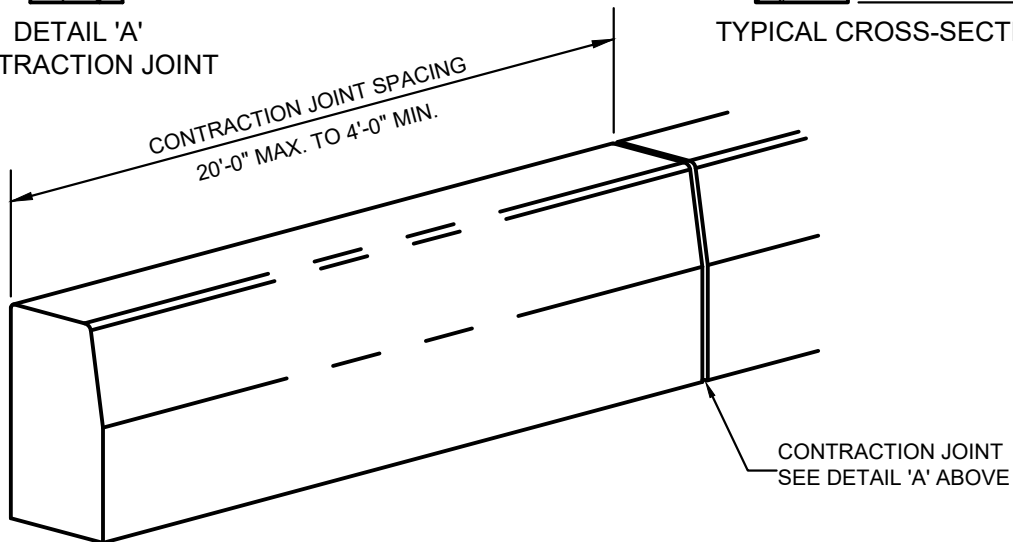
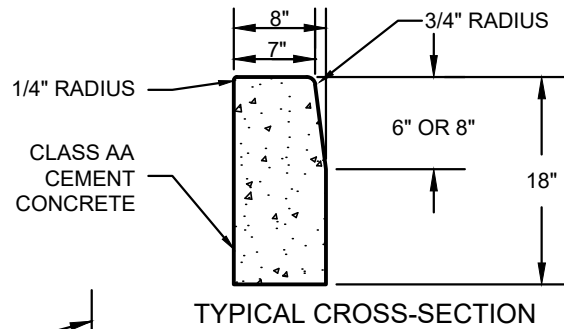
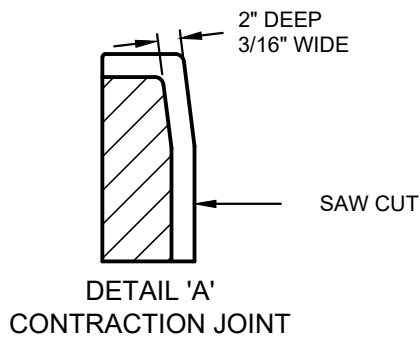
TYPICAL STREET CROSS SECTION

APPLICABLE IF EXPOSURE OF BASE COURSE TO THE ELEMENTS WILL
BE GREATER THAN 2 YEARS BEFORE PLACEMENT OF WEARING COURSE.
(NOT TO SCALE)



PAVEMENT RESTORATION

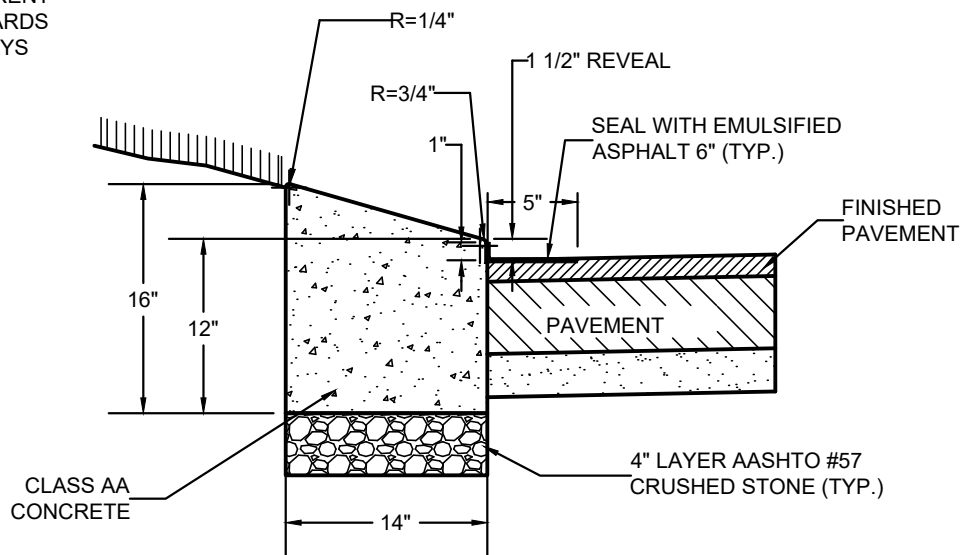
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STANDARD VERTICAL CURB

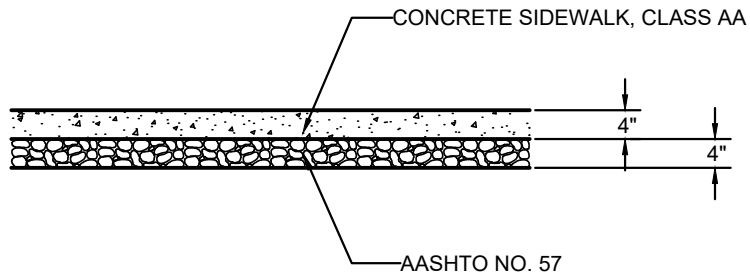
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* MEET CURRENT
ADA STANDARDS
AT DRIVEWAYS



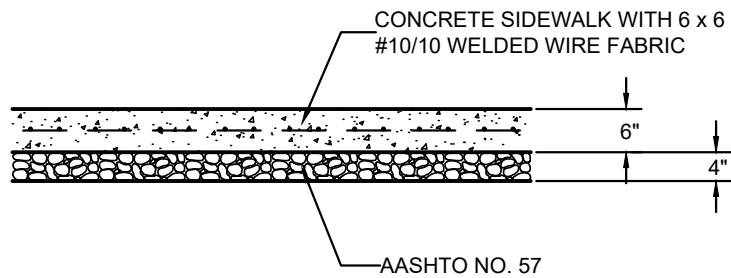
STANDARD SLANT CURB

WHERE APPROVED BY BOROUGH
(NOT TO SCALE)



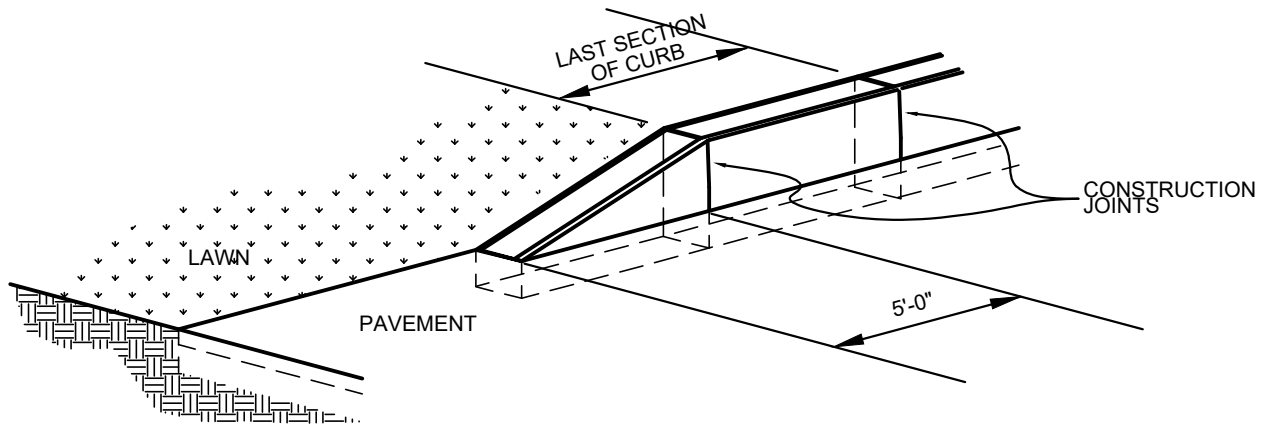
CONCRETE SIDEWALK 4" THICK DETAIL

(NOT TO SCALE)



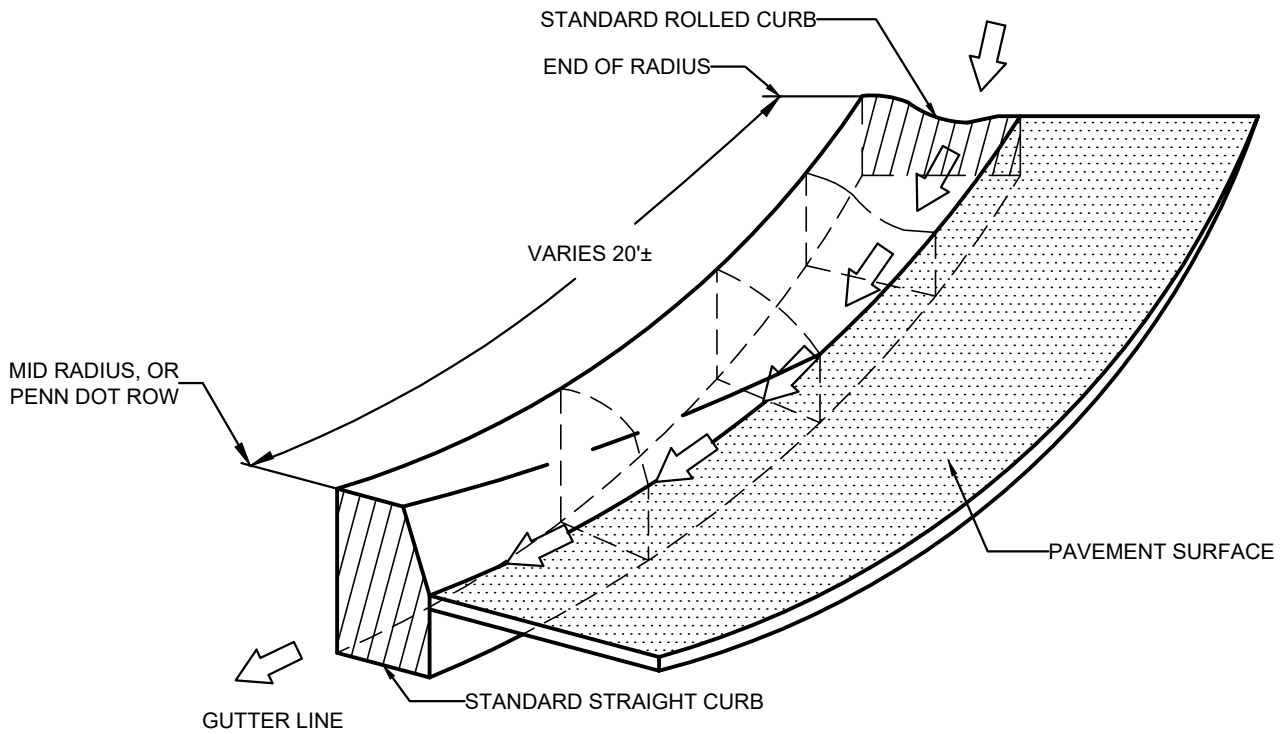
CONCRETE SIDEWALK 6" THICK DETAIL

(NOT TO SCALE)



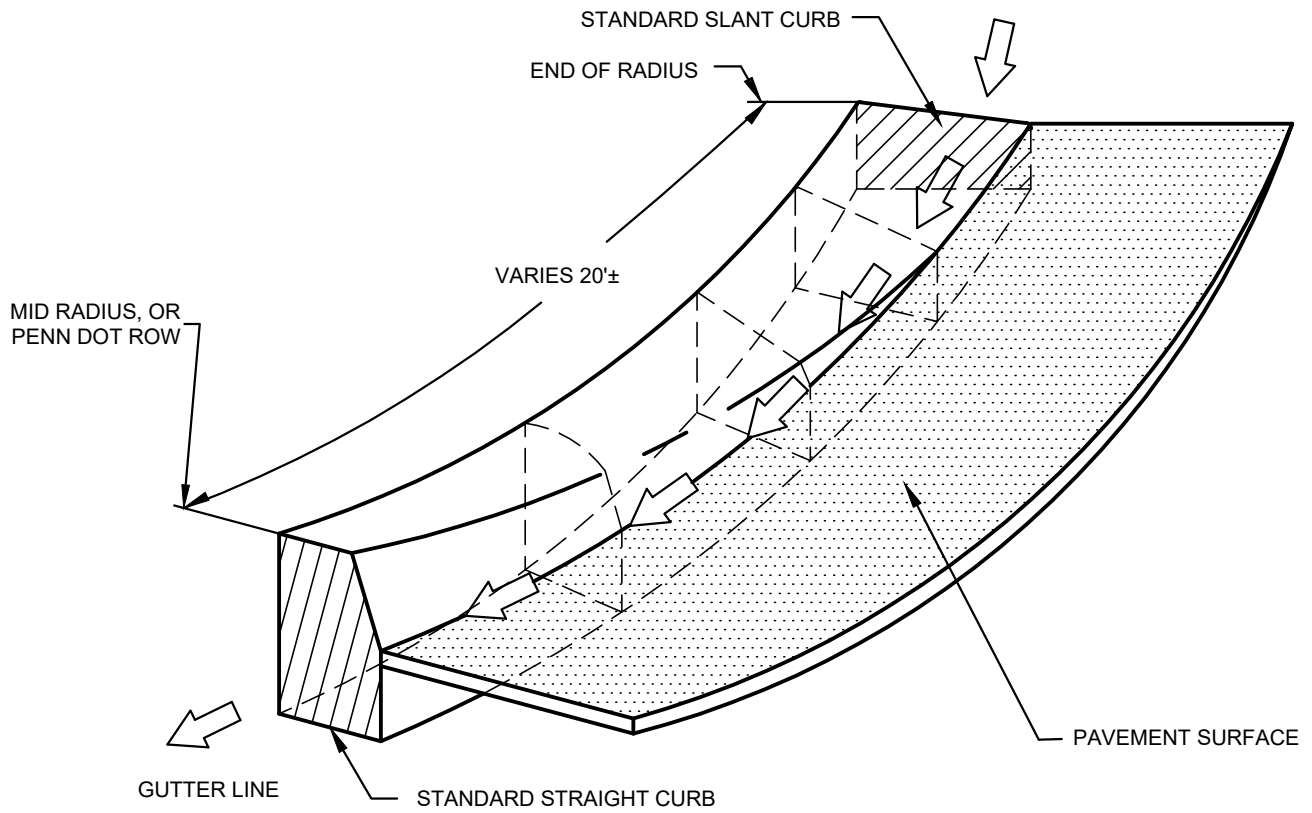
VERTICAL CURB END TREATMENT

(NOT TO SCALE)



CURB TRANSITION DETAIL

(NOT TO SCALE)

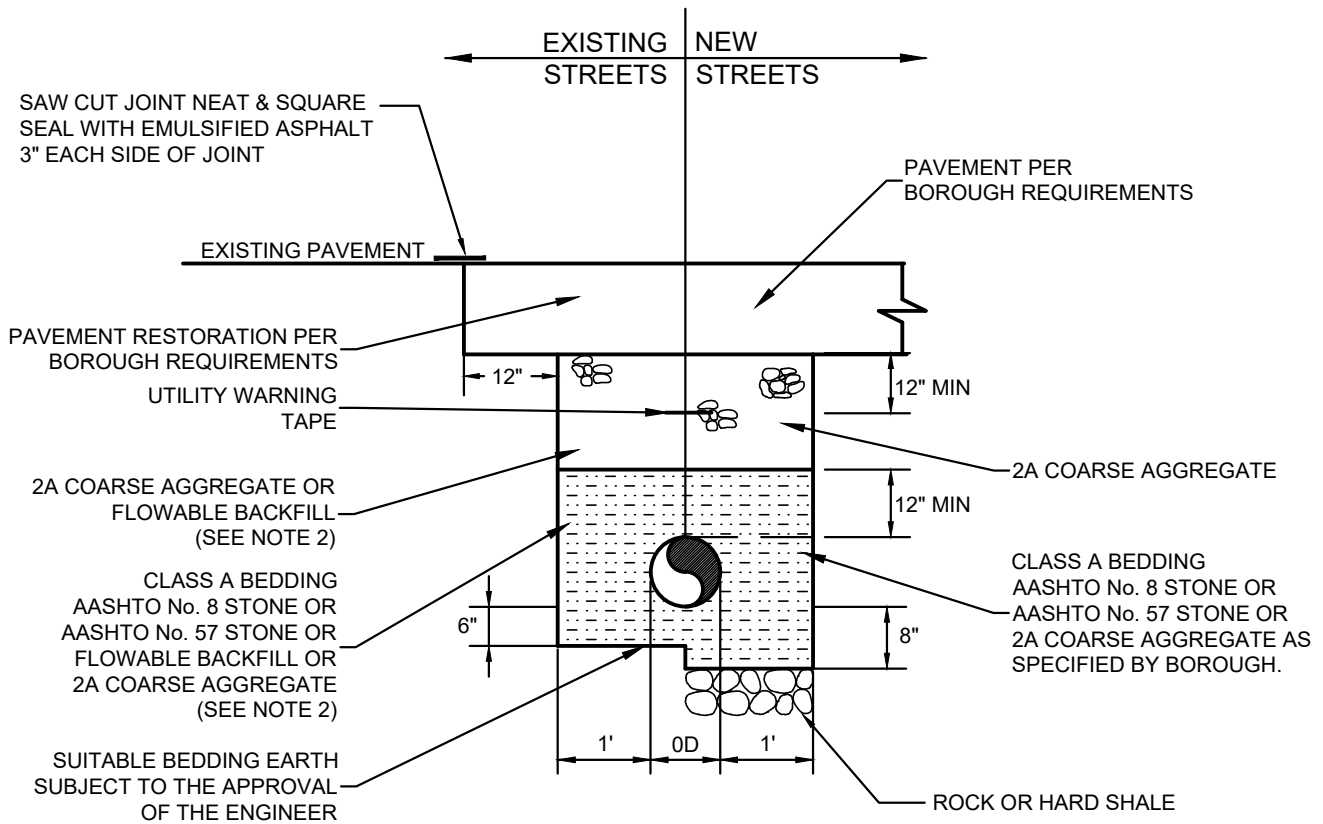


CURB TRANSITION DETAIL

(NOT TO SCALE)

NOTE:

1. SEE PENN DOT PUB 72 RC-30 M FOR COMPACTION REQUIREMENTS.
2. DETAILS SPECIFYING PAVING AND BACKFILLING PROCEDURES AND MATERIALS SHALL BE OBTAINED FROM THE TOWNSHIP PRIOR TO ANY STREET OPENING WORK. THE TYPE OF BACKFILL MATERIAL SHALL BE AS DIRECTED BY THE PUBLIC WORKS DIRECTOR.

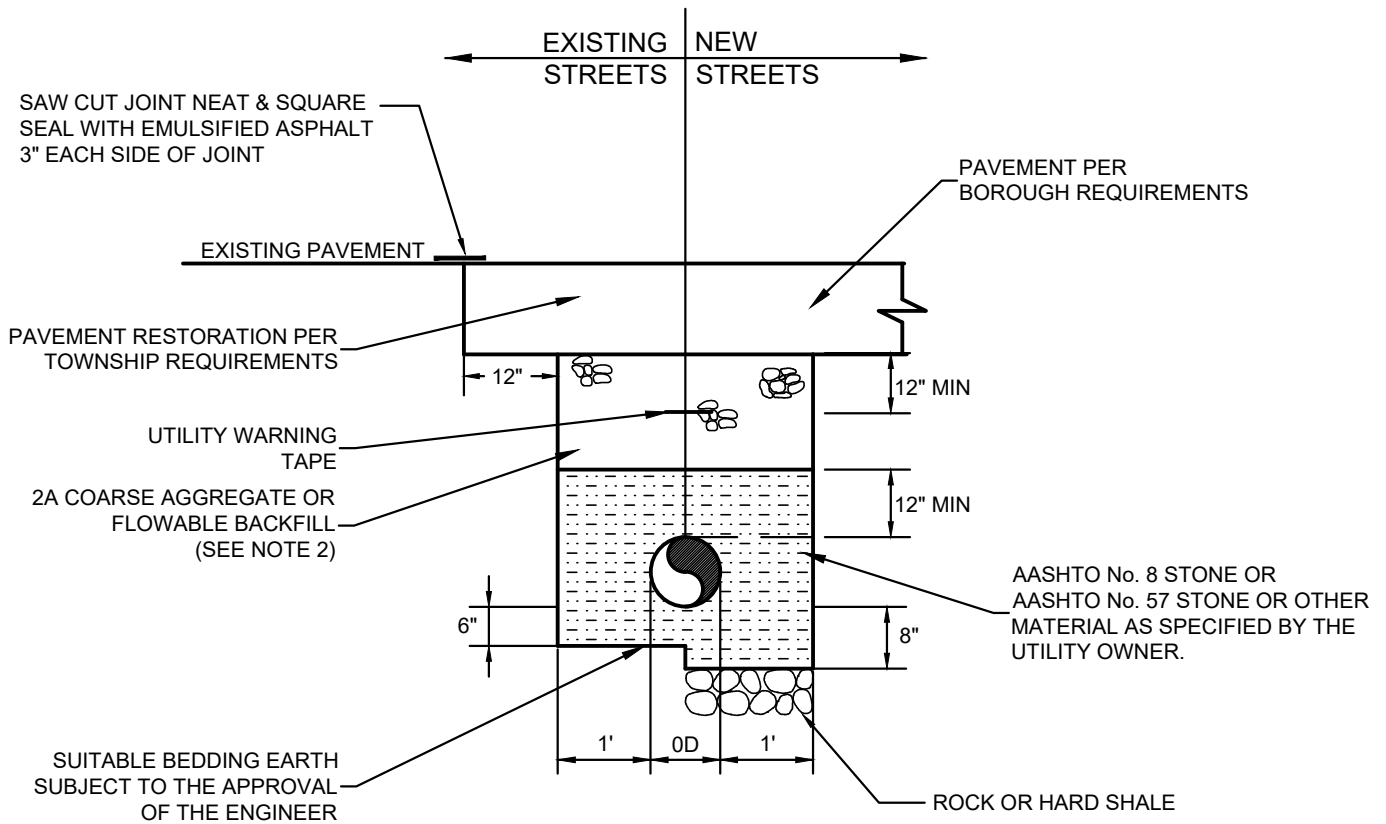


STORM SEWER TRENCH DETAIL BOROUGH ROW

NOT TO SCALE

NOTE:

1. SEE PENN DOT PUB 72 RC-30 M FOR COMPACTION REQUIREMENTS.
2. DETAILS SPECIFYING PAVING AND BACKFILLING PROCEDURES AND MATERIALS SHALL BE OBTAINED FROM THE TOWNSHIP PRIOR TO ANY STREET OPENING WORK. THE TYPE OF BACKFILL MATERIAL SHALL BE AS DIRECTED BY THE PUBLIC WORKS DIRECTOR.



UTILITY TRENCH DETAIL BOROUGH ROW

NOT TO SCALE