

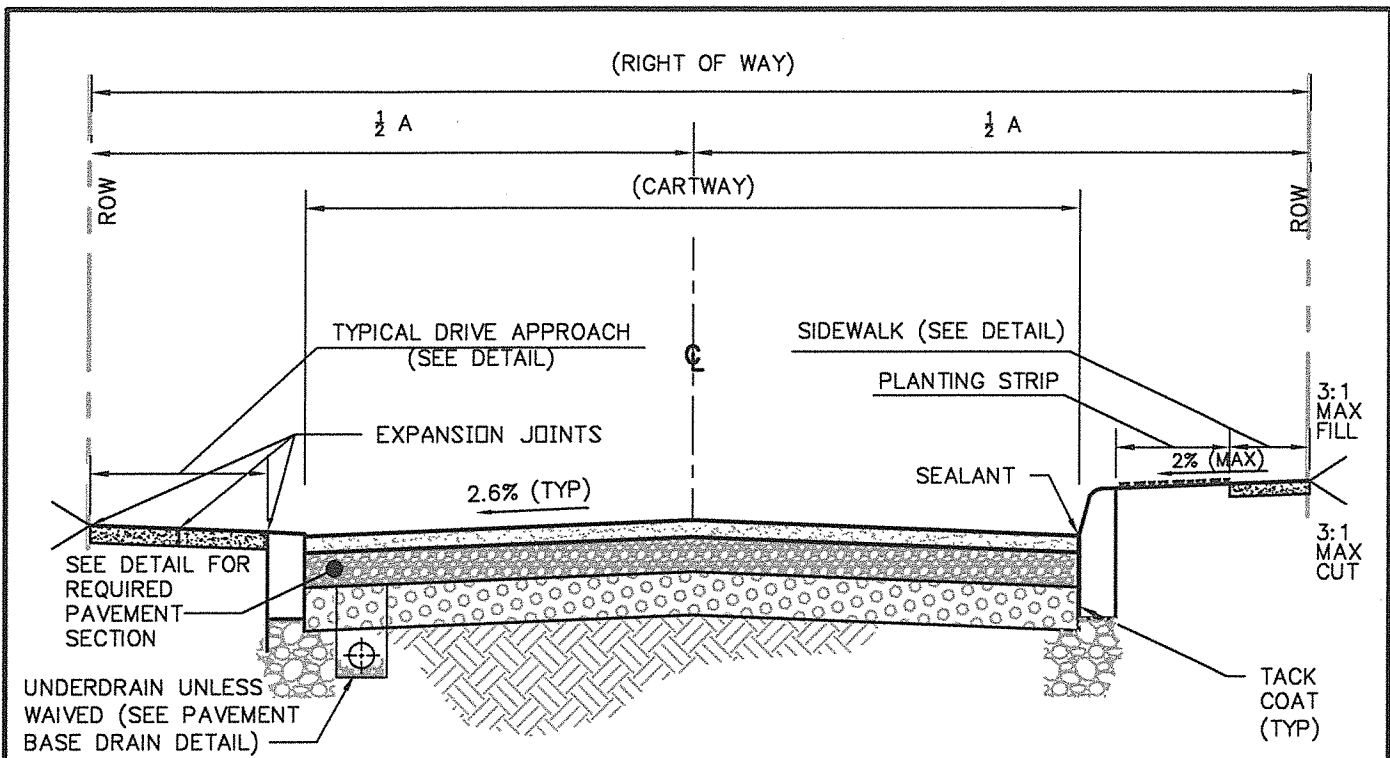
TOWNSHIP OF BRISTOL BUCKS COUNTY, PENNSYLVANIA

SPECIFICATIONS AND DESIGN STANDARDS



2501 Bath Road
Bristol, PA 19007

NOVEMBER 2014



- * DIMENSIONS PER SALDO SECTION 503
- ** VARIES DEPENDING UPON PADOT CARTWAY REQUIREMENTS.

NOTES:

1. ALL CONSTRUCTION TO CONFORM TO PADOT PUBLICATION 408, LATEST EDITION.
2. ALL NEW STREETS SHALL BE PROPERLY POSTED W/SPEED LIMIT SIGNS IN ACCORDANCE WITH DESIGN SPEED.
3. REQUIRED MINIMUM WIDTH OF PLANTING STRIP AND SIDEWALK PER DETAIL 203C AND PADOT RC-67, LATEST ADDITION.
4. AN EASEMENT SHALL BE PROVIDED FOR ALL PROPOSED SIDEWALKS NOT LOCATED WITHIN THE PUBLIC RIGHT-OF-WAY.
5. A TACK COAT SHALL BE APPLIED TO ALL VERTICAL SURFACES BELOW PAVING LINE. IF BASE COURSE IS IN PLACE FOR MORE THAN 30 DAYS THE SURFACE MUST BE CLEANED AND TACK COATED PRIOR TO INSTALLATION OF THE WEARING COURSE. TACK COAT SHALL BE PER PADOT PUBLICATION 408, SECTION 460.
6. ALL ASPHALT JOINTS INCLUDING ALONG THE CURB LINE SHALL BE SEALED WITH ASPHALT PG64-22 SEALANT OR APPROVED EQUAL. JOINT AND CRACK SEALING SHALL BE PER PADOT PUBLICATION 408, SECTION 469.

TYPICAL ROADWAY SECTION FOR TOWNSHIP ROADS

GILMORE & ASSOCIATES, INC.
 ENGINEERING & CONSULTING SERVICES
 65 EAST BUTLER AVENUE, SUITE 100
 NEW BRITAIN, PA 18901-5106 • (215) 345-4330
 www.gilmore-assoc.com

BRISTOL TOWNSHIP
 SPECIFICATIONS AND DESIGN STANDARDS
 2501 BATH ROAD BRISTOL, PA 19007 (215) 785-3680

DATE: NOVEMBER 2014
 NOT TO SCALE
 DETAIL: 100R

DURING THE COURSES OF CONSTRUCTION OF ROADS THE ENGINEER MUST BE NOTIFIED 48 HOURS PRIOR TO THE FOLLOWING OPERATIONS:

1. PREPARATION OF THE SUBGRADE
2. LAYING AND ROLLING OF THE SUBBASE
3. LAYING AND ROLLING OF THE BINDER COURSE
4. LAYING AND ROLLING OF THE WEARING COURSE
5. POURING OF CONCRETE CURBS
6. POURING OF CONCRETE SIDEWALKS
7. POURING OF CONCRETE DRIVEWAY APRONS
8. TRENCH BACKFILL FOR ALL UTILITIES
9. INFRARED PAVEMENT RESTORATION

THE FOLLOWING ITEMS WILL BE CAUSE FOR REJECTION OF THE PAVING, CURBS, DRIVEWAY APRONS, AND SIDEWALKS BY THE ENGINEER.

I. PAVING

1. ALLIGATOR SURFACE, CRACKING OR OTHER DETERIORATION INDICATING SUBGRADE FAILURE.
2. DIPS OR DEPRESSIONS INDICATING EXCESSIVE SETTLEMENT UNDER THE PAVING, INCLUDING TRENCHES SUCH AS FOR WATER LINE, SEWER LINE, GAS LINE.
3. POT HOLES OR OTHER SURFACE BREAKS.
4. EXCESSIVE SURFACE SCARRING CAUSED BY CONTRACTORS EQUIPMENT (EG. BULLDOZER TRACKS).
5. IRREGULARITIES CAUSING PONDING.
6. PAVING DOES NOT MEET DRAINAGE STANDARDS.
7. WORK NOT COMPLETED IN COMPLIANCE WITH PADOT PUB 408, LATEST EDITION AND PADOT DETAILS RC-67, LATEST EDITION.
8. WORK NOT COMPLETED IN COMPLIANCE WITH OF ADAAG AND/OR PROWAG, LATEST EDITIONS.

II. CURBS

1. METHODS AND MATERIALS NOT MEETING MINIMUM SPECIFICATIONS PROVIDED IN THE DETAIL.
2. CHIPS MORE THAN 1/4 INCH DEEP.
3. CRACKS OF ANY WIDTH.
4. MISALIGNMENT MORE THAN 1/4 INCH IN ANY DIRECTION AT CRACKS OR JOINTS.
5. WORK NOT COMPLETED IN COMPLIANCE WITH PADOT PUB 408, LATEST EDITION AND PADOT DETAILS RC-64 AND RC-67, LATEST EDITION.
6. WORK NOT COMPLETED IN COMPLIANCE WITH ADAAG AND/OR PROWAG, LATEST EDITIONS.

III. CURBS (DEPRESSED)

1. METHODS AND MATERIALS NOT MEETING MINIMUM SPECIFICATIONS PROVIDED IN THE DETAIL.
2. ANY DEPRESSED CURB THAT IS FORMED BY CHIPPING OUT OF STRAIGHT CURB. DEPRESSED CURBS MUST BE MADE BY COMPLETE REMOVAL OF THE STRAIGHT CURB TO THE NEAREST JOINT BEYOND THE DEPRESSED AREA AND NEW DEPRESSED CURB SECTIONS POURED.
3. ANY DEPRESSED CURB THAT HAS A LIP MORE THAN 1 1/2 INCHES ABOVE THE EDGE OF PAVING AT DRIVEWAY APRONS OR MORE THAN 1/4 INCH AT CURB RAMPS.
4. CHIPS MORE THAN 1/4 INCH DEEP.
5. CRACKS OF ANY WIDTH.
6. MISALIGNMENT MORE THAN 1/4 INCH IN ANY DIRECTION AT CRACKS OR JOINTS.
7. WORK NOT COMPLETED IN COMPLIANCE WITH PADOT PUB 408, LATEST EDITION AND PADOT DETAILS RC-64 AND RC-67, LATEST EDITION.
8. WORK NOT COMPLETED IN COMPLIANCE WITH ADAAG AND/OR PROWAG, LATEST EDITIONS..

IV. DRIVEWAY APRON

1. METHODS AND MATERIALS NOT MEETING MINIMUM SPECIFICATIONS PROVIDED IN THE DETAIL.
2. CRACKS OF ANY WIDTH.
3. CHIPS MORE THAN 1/4 INCH DEEP.
4. MISALIGNMENT MORE THAN 1/4 INCH IN ANY DIRECTION AT JOINTS.
5. MONOLITHIC POURS BETWEEN CURB & APRON, APRON SIDEWALK & ADJACENT SIDEWALK, AS SHOWN IN DETAIL 204C "CONCRETE DRIVEWAY APRON FOR DRIVEWAYS" UNLESS OTHERWISE APPROVED IN ADVANCE BY THE TOWNSHIP ENGINEER.
6. CONFIGURATIONS AND CHANGES IN GRADE NOT IN COMPLIANCE WITH PADOT PUBLICATION 13M (DM-2), CHAPTER 7.
7. WORK NOT COMPLETED IN COMPLIANCE WITH PADOT PUB 408, LATEST EDITION AND PADOT DETAILS RC-67, LATEST EDITION.
8. WORK NOT COMPLETED IN COMPLIANCE WITH ADAAG AND/OR PROWAG, LATEST EDITIONS..

V. SIDEWALK

1. METHODS AND MATERIALS NOT MEETING MINIMUM SPECIFICATIONS PROVIDED IN THE DETAIL.
2. ANY DRIVEWAY BLOCK FORMING PART OF THE SIDEWALK, WHICH DOES NOT CORRESPOND TO DRIVE APRON.
3. ANY CRACK, OTHER THAN AT AN EXPANSION OR CONTRACTION JOINT OF ANY WIDTH.
4. MISALIGNMENT IN A VERTICAL DIRECTION MORE THAN 1/4 INCH AT ANY CRACK OR JOINT.
5. INSTALLATION OF SIDEWALK AND CURB RAMPS FOR HANDICAP ACCESS SHALL MEET ADA REQUIREMENTS AND SHALL BE IN ACCORDANCE WITH PADOT DETAILS RC-67, LATEST EDITION. PADOT DETAILS ARE INCLUDED HEREWITH BY REFERENCE.
6. WORK NOT COMPLETED IN COMPLIANCE WITH PADOT PUB 408, LATEST EDITION.
7. WORK NOT COMPLETED IN COMPLIANCE WITH ADAAG AND/OR PROWAG, LATEST EDITIONS.

ROADWAY OPENING & DEDICATION CHECKLIST FOR ENGINEER'S APPROVAL



GILMORE & ASSOCIATES, INC.
ENGINEERING & CONSULTING SERVICES
65 EAST BUTLER AVENUE, SUITE 100
NEW BRITAIN, PA 18901-5108 • (215) 345-4330
www.gilmore-assoc.com

BRISTOL TOWNSHIP
SPECIFICATIONS AND DESIGN STANDARDS
2501 BATH ROAD BRISTOL, PA 19007 (215) 785-3680

DATE: NOVEMBER 2014
NOT TO SCALE
DETAIL: 101R

1. THE BRISTOL TOWNSHIP PUBLIC WORKS DIRECTOR MUST BE NOTIFIED 48 HOURS PRIOR TO ANY STREET OPENING REPAIR TO PROVIDE SUFFICIENT TIME TO SCHEDULE CONSTRUCTION OBSERVATION.
2. NO OPENING MAY BE MADE FOR MORE THAN 200 LINEAR FEET AT ONE TIME, UNLESS AUTHORIZED BY BRISTOL TOWNSHIP PUBLIC WORKS DIRECTOR.
3. THE EDGES OF THE EXISTING PAVEMENT SHALL BE NEATLY AND CLEANLY CUT TO STRAIGHT LINES. THE EDGES OF THE PAVEMENT SHALL BE NEAT-CUT BACK FROM THE EDGES OF THE TRENCH AT A MINIMUM DISTANCE OF 1 FT ON EACH SIDE.
4. ALL BACKFILLING FOR STREET OPENINGS ARE UNDER THE JURISDICTION OF THE PUBLIC WORKS DIRECTOR AND THE SCHEDULING OF RESTORATION SHALL BE AT HIS/HER DISCRETION.
5. FOR ALL TOWNSHIP ROADWAYS: THE CONTRACTOR SHALL BACKFILL THE STREET OPENING TRENCH WITH NO. 2A COURSE AGGREGATE THOROUGHLY COMPACTED, PER THE APPROPRIATE PAVEMENT CROSS SECTION FOR TOWNSHIP ROADS.
6. MILL & OVERLAY: WHERE TRENCH IS CUT LONGITUDINALLY IN TRAVEL LANE(S) OF ROADWAY, FULL WIDTH OF SAID TRAVEL LANE SHALL RECEIVE MILL AND OVERLAY OF WEARING COURSE, ADDITIONALLY:
 - TRENCH RESTORATION FOR ANY ROADWAY WHICH HAS BEEN RESURFACED WITHIN 5 YEARS SHALL INCLUDE MILL AND OVERLAY FOR FULL WIDTH OF THE ROADWAY.
 - WHERE WIDTH OF ROADWAY IS LESS THAN 25 FEET, FULL WIDTH OF ROADWAY SHALL RECEIVE MILL AND OVERLAY.
 - FOR ALL ROADWAY AND UTILITY OPENINGS LESS THAN 250 SQUARE FEET, THE JOINTS FORMED BETWEEN THE EXISTING PAVEMENT AND THE NEW PAVEMENT SHALL BE SEALED USING INFRARED PAVEMENT RESTORATION AS FOLLOWS:
 - SWEEP THE AREA CLEAN OF ALL DEBRIS.
 - MARK THE AREA TO BE RESTORED A MINIMUM OF 6" BEYOND THE JOINTS FORMED BETWEEN THE EXISTING PAVEMENT AND THE NEW PAVEMENT OR ANY OTHER PAVEMENT DAMAGE.
 - LOWER THE INFRARED HEATER TO THE AREA TO BE RESTORED, EVENLY RAISING THE TEMPERATURE TO SOFTEN THE ASPHALT TO A DEPTH OF 2-3", WITHOUT BURNING THE PAVEMENT.
 - SCARIFY THE PAVEMENT USING AN ASPHALT RAKE TO A DEPTH OF 2".
 - APPLY ASPHALT REJUVENATOR (CYCLOGEN OR APPROVED EQUAL).
 - ADD NEW HOT MIX ASPHALT AS NEEDED TO LEVEL THE REPAIR, RAKING THE AREA SMOOTH AND LEVEL.
 - COMPACT, ROLLING THE EDGES OF THE PATCH FIRST, USING A ROLLER AT 2400 LB/IN².
7. WHERE THERE IS MORE THAN ONE LATERAL TRENCH WITHIN 100 FEET OF ROADWAY, THE ROADWAY SHALL RECEIVE A FULL-WIDTH MILL AND OVERLAY OF WEARING COURSE.
8. EXISTING ROADWAYS ALONG THE FRONTAGE OF THE DEVELOPED PROPERTY SHALL RECEIVE MILL AND OVERLAY OF WEARING COURSE IF ANY OF THE FOLLOWING CONDITIONS ARE NOTED AT THE CONCLUSION OF CONSTRUCTION ACTIVITIES:
 - ALLIGATOR SURFACE, CRACKING OR OTHER DETERIORATION.
 - DIPS, DEPRESSIONS OR OTHER IRREGULARITIES CAUSING PONDING.
 - POT HOLES OR OTHER SURFACE BREAKS.
 - EXCESSIVE SURFACE SCARRING CAUSED BY CONTRACTORS EQUIPMENT (EG. BULLDOZER TRACKS).
9. THE CONTRACTOR SHALL PROTECT ITS OPENINGS TO PROVIDE FOR SAFETY OF THE TRAVELING PUBLIC, INCLUDING MOTORISTS, BICYCLISTS AND PEDESTRIANS.
10. DISTURBED PORTIONS OF A PUBLIC SPACE, INCLUDING BUT NOT LIMITED TO SLOPES, APPURTENANCES AND STRUCTURES SUCH AS GUIDERAIL, CURB, SIGNS, PAVEMENT MARKINGS, DRAIN PIPES, DRIVEWAYS AND VEGETATION, SHALL BE RESTORED TO A CONDITION AT LEAST EQUAL TO THAT WHICH EXISTED BEFORE THE START OF WORK.
11. THE CONTRACTOR WHO PERFORMED THE STREET OPENING REPAIR SHALL BE RESPONSIBLE FOR ITS MAINTENANCE FOR A PERIOD OF 18 MONTHS FROM THE BRISTOL TOWNSHIP PUBLIC WORKS DIRECTOR'S APPROVAL AND ACCEPTANCE OF THE REPAIR.

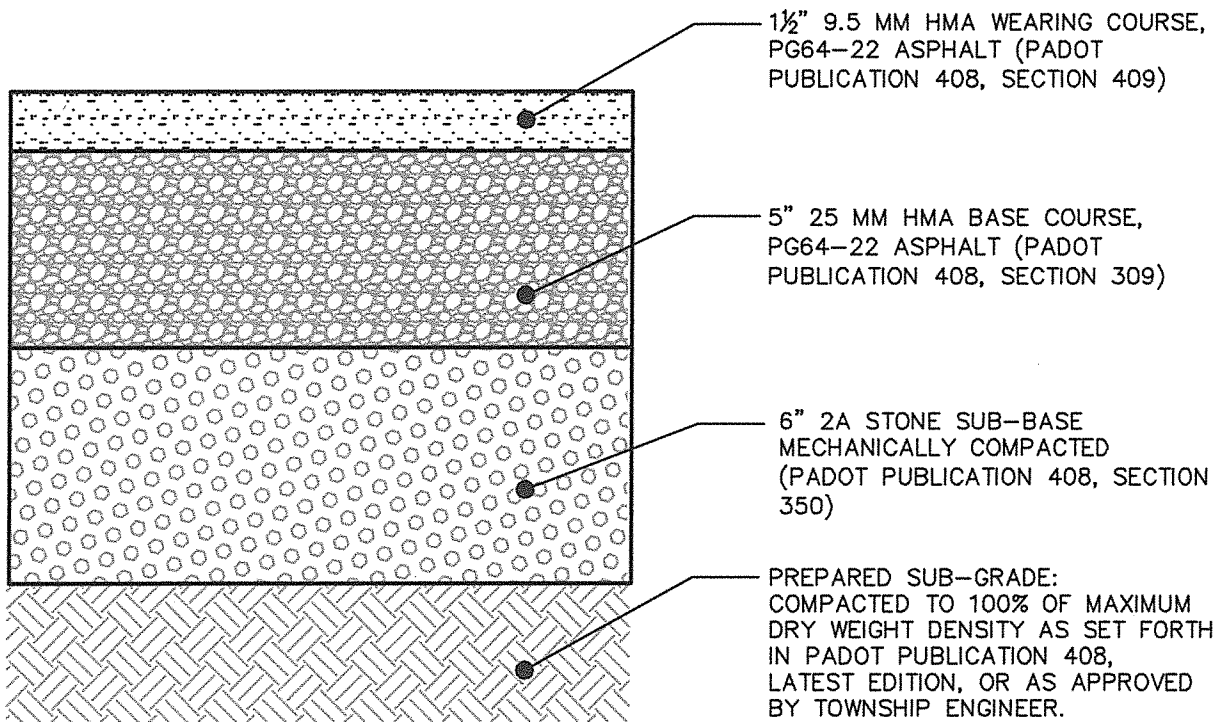
ROADWAY OPENING REPAIR STANDARDS



GILMORE & ASSOCIATES, INC.
 ENGINEERING & CONSULTING SERVICES
 65 EAST BUTLER AVENUE, SUITE 100
 NEW BRITAIN, PA 18901-5105 • (215) 345-4330
 www.gilmore-assoc.com

BRISTOL TOWNSHIP
 SPECIFICATIONS AND DESIGN STANDARDS
 2501 BATH ROAD BRISTOL, PA 19007 (215) 785-3680

DATE:
 NOVEMBER 2014
 NOT TO SCALE
 DETAIL: **102R**



NOTES:

1. ALL CONSTRUCTION SHALL BE IN ACCORDANCE WITH THE SPECIFICATIONS OF PADOT PUBLICATION 408, LATEST EDITION AND COMPLETED IN ACCORDANCE WITH 102R.

PAVEMENT DETAIL FOR TOWNSHIP ROADS



GILMORE & ASSOCIATES, INC.
ENGINEERING & CONSULTING SERVICES
65 EAST BUTLER AVENUE, SUITE 100
NEW BRITAIN, PA 18901-5106 • (215) 345-4330
www.gilmore-assoc.com

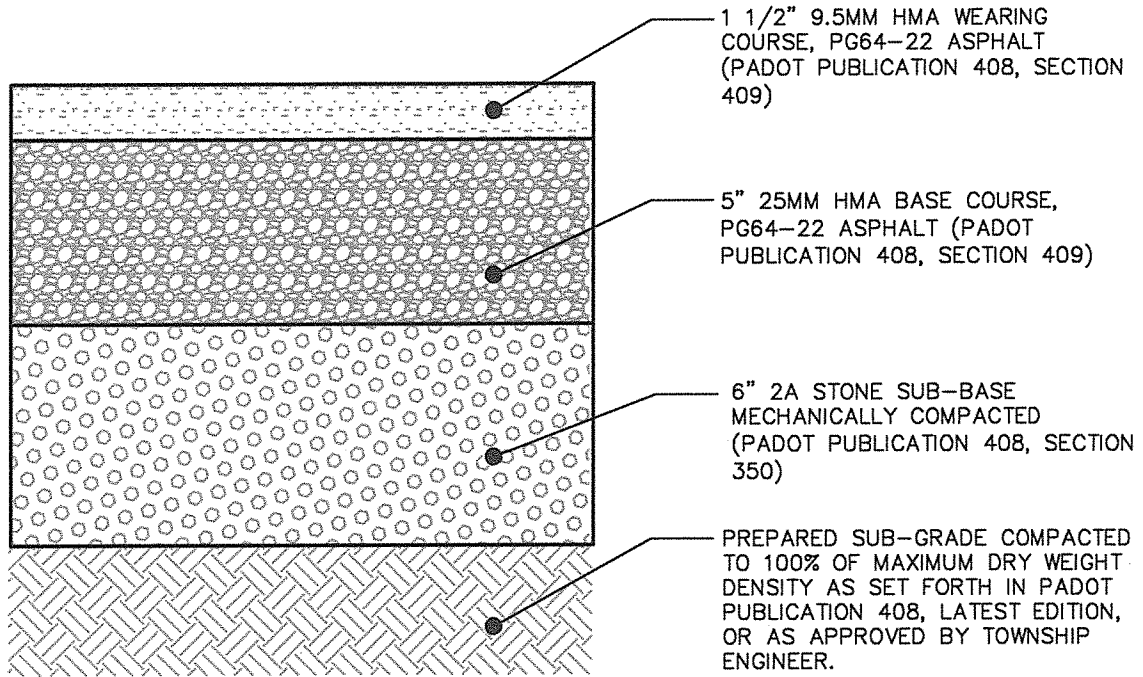
BRISTOL TOWNSHIP

SPECIFICATIONS AND DESIGN STANDARDS
2501 BATH ROAD BRISTOL, PA 19007 (215) 785-3680

DATE:
NOVEMBER 2014

NOT TO SCALE

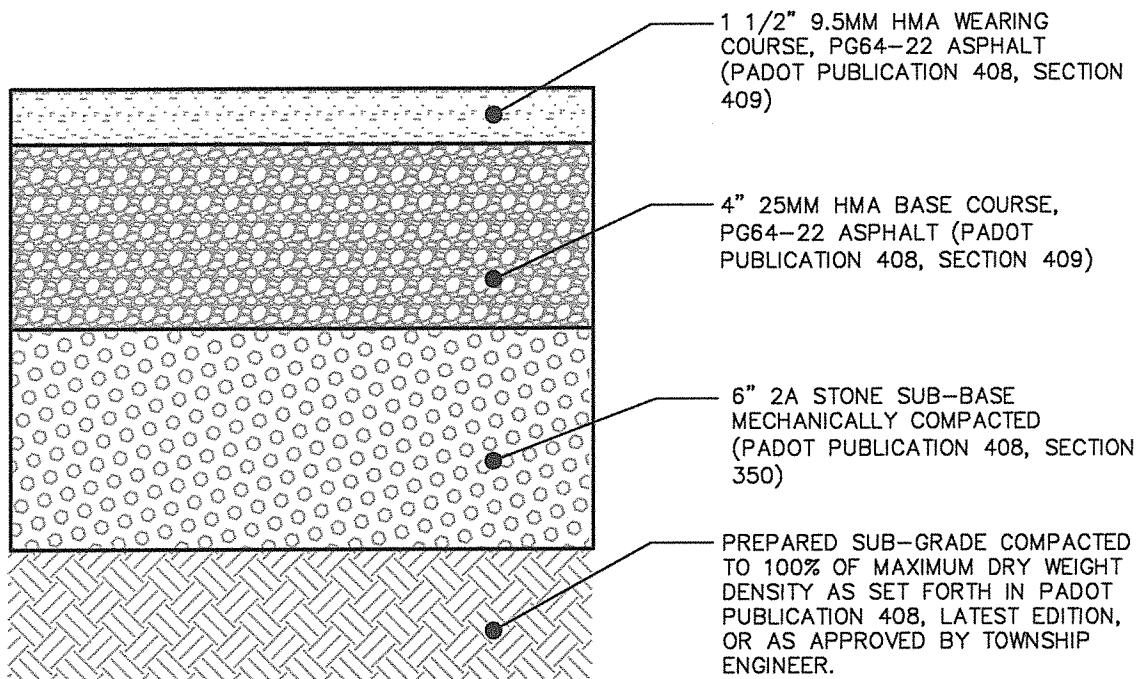
DETAIL: **103R**



NOTES:

1. SUBGRADE SHALL BE COMPACTED IN ACCORDANCE WITH SPECIFICATIONS OF PADOT PUBLICATION 408, LATEST EDITION. WHERE PARKING AREA(S) ARE TO BE USED FOR INFILTRATION PRACTICES, SUBGRADE SHALL NOT BE COMPACTED AND IT SHALL BE PROTECTED FROM COMPACTION FROM CONSTRUCTION EQUIPMENT, TRAFFIC, STORAGE OF MATERIALS, ETC. TO PRESERVE INFILTRATION CAPACITY OF SUBGRADE SOILS.

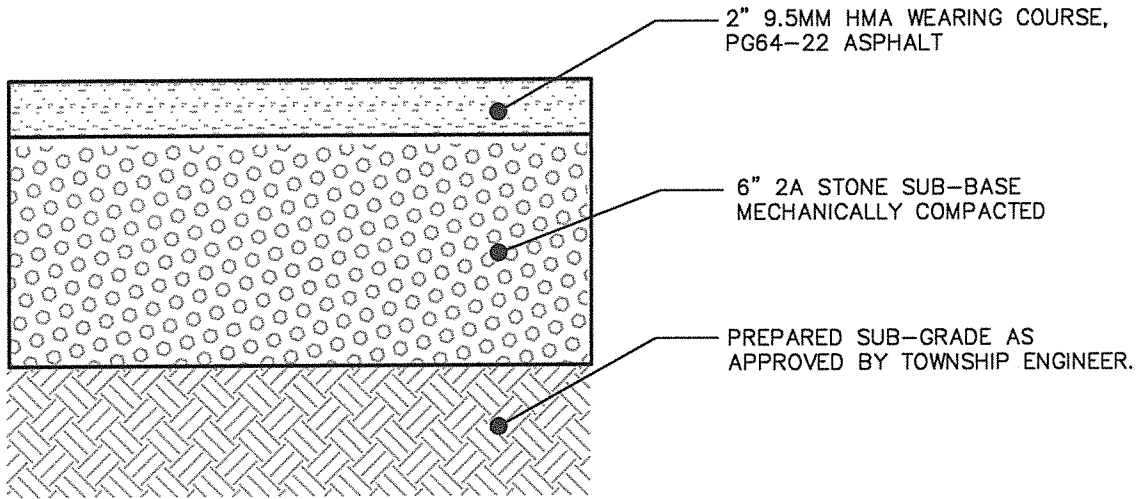
PAVEMENT DETAIL FOR TRUCK TRAFFIC ON DRIVEWAYS AND PARKING LOTS



NOTES:

1. SUBGRADE SHALL BE COMPACTED IN ACCORDANCE WITH SPECIFICATIONS OF PADOT PUBLICATION 408, LATEST EDITION. WHERE PARKING AREA(S) ARE TO BE USED FOR INFILTRATION PRACTICES, SUBGRADE SHALL NOT BE COMPACTED AND IT SHALL BE PROTECTED FROM COMPACTION FROM CONSTRUCTION EQUIPMENT, TRAFFIC, STORAGE OF MATERIALS, ETC. TO PRESERVE INFILTRATION CAPACITY OF SUBGRADE SOILS.

PAVEMENT DETAIL FOR CAR TRAFFIC ONLY ON DRIVEWAYS AND PARKING LOTS



NOTES:

1. SUBGRADE SHALL BE COMPACTED IN ACCORDANCE WITH SPECIFICATIONS OF PADOT PUBLICATION 408, LATEST EDITION. WHERE PARKING AREA(S) ARE TO BE USED FOR INFILTRATION PRACTICES, SUBGRADE SHALL NOT BE COMPACTED AND IT SHALL BE PROTECTED FROM COMPACTION FROM CONSTRUCTION EQUIPMENT, TRAFFIC, STORAGE OF MATERIALS, ETC. TO PRESERVE INFILTRATION CAPACITY OF SUBGRADE SOILS.

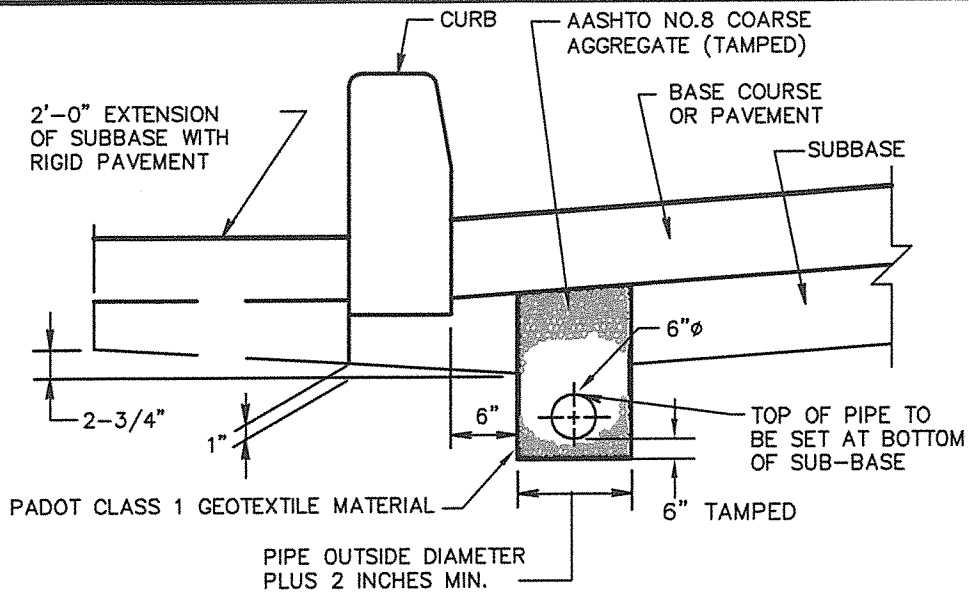
PAVEMENT DETAIL FOR SINGLE-FAMILY RESIDENTIAL DRIVEWAYS



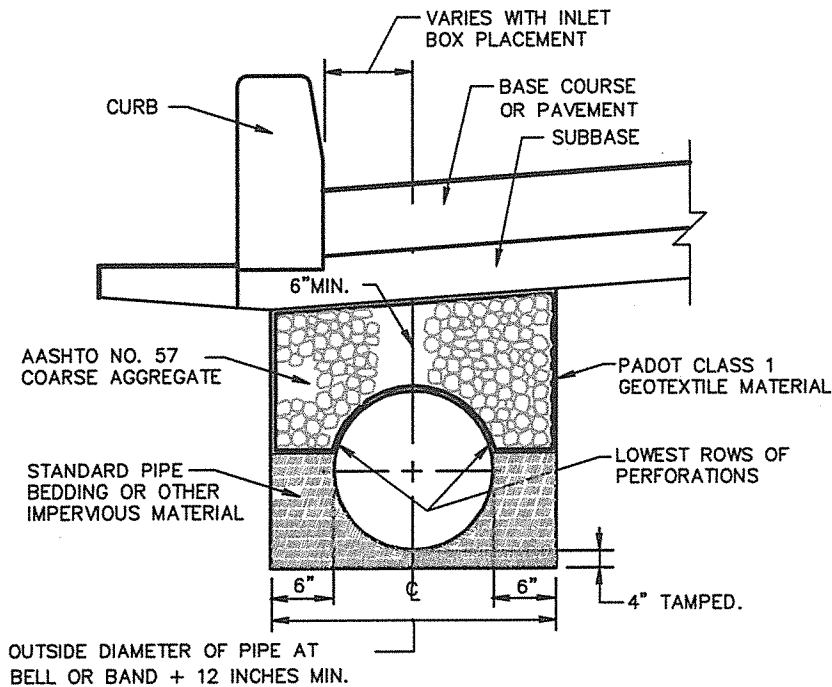
GILMORE & ASSOCIATES, INC.
ENGINEERING & CONSULTING SERVICES
65 EAST BUTLER AVENUE, SUITE 100
NEW BRITAIN, PA 18901-8106 • (215) 345-4330
www.gilmore-assoc.com

BRISTOL TOWNSHIP
SPECIFICATIONS AND DESIGN STANDARDS
2501 BATH ROAD BRISTOL, PA 19007 (215) 785-3680

DATE:
NOVEMBER 2014
NOT TO SCALE
DETAIL: 106R



STANDARD PAVEMENT BASE DRAIN



COMBINATION STORM SEWER-UNDERDRAIN

NOTES:

1. PROVIDE MATERIALS MEETING REQUIREMENTS OF PADOT SPECIFICATIONS, PUBLICATION 408, LATEST EDITION.
2. PREFABRICATED PAVEMENT BASE DRAIN IS NOT RECOMMENDED UNDER CURBED SECTIONS OR ADJACENT TO WIDENED PAVEMENT.
3. PAVEMENT BASE DRAIN SHALL BE BY APPROVAL OF TOWNSHIP ENGINEER.
4. USE OF COMBINATION STORM SEWER-UNDERDRAIN SHALL BE BY APPROVAL OF TOWNSHIP ENGINEER.
5. ALL CONSTRUCTION SHALL BE IN ACCORDANCE WITH THE SPECIFICATIONS OF PADOT PUBLICATION 408, LATEST EDITION AND COMPLETED IN ACCORDANCE WITH 102R.

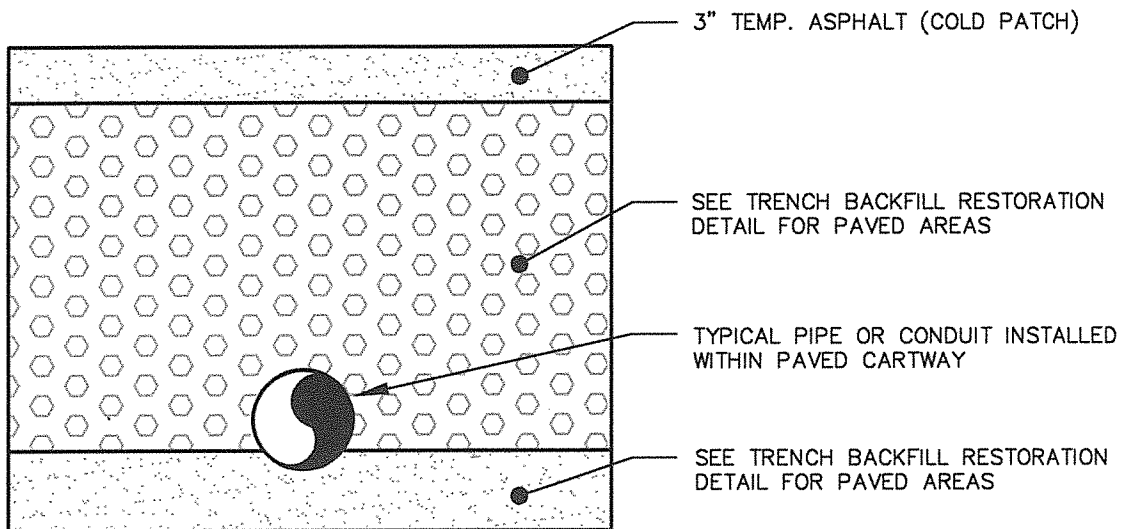
PAVEMENT BASE DRAIN DETAIL



GILMORE & ASSOCIATES, INC.
 ENGINEERING & CONSULTING SERVICES
 65 EAST BUTLER AVENUE, SUITE 100
 NEW BRITAIN, PA 18901-5106 • (215) 345-4330
 www.gilmore-assoc.com

BRISTOL TOWNSHIP
 SPECIFICATIONS AND DESIGN STANDARDS
 2501 BATH ROAD BRISTOL, PA 19007 (215) 785-3680

DATE:
 NOVEMBER 2014
 NOT TO SCALE
 DETAIL: 107R



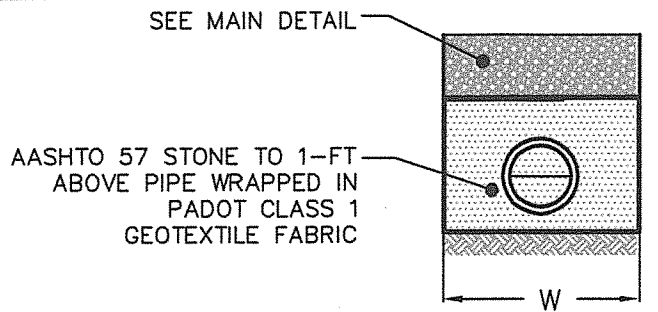
NOTE:
 TEMPORARY ASPHALT (COLD PATCH) SHALL BE MAINTAINED BY CONTRACTOR UNTIL PERMANENT PAVING RESTORATION IS COMPLETE. TEMPORARY ASPHALT (COLD PATCH) SHALL BE CHECKED AT LEAST ONCE A WEEK AND IMMEDIATELY FOLLOWING MAJOR RAIN, SNOW OR RUNOFF EVENTS. SETTLEMENTS, RUTS, DEPRESSIONS, ETC. IN TEMPORARY ASPHALT SHALL BE CORRECTED BY FILLING THE AREAS WITH ADDITIONAL COLD PATCH AND MECHANICALLY COMPACTING.

TEMPORARY RESTORATION OF TOWNSHIP ROADS

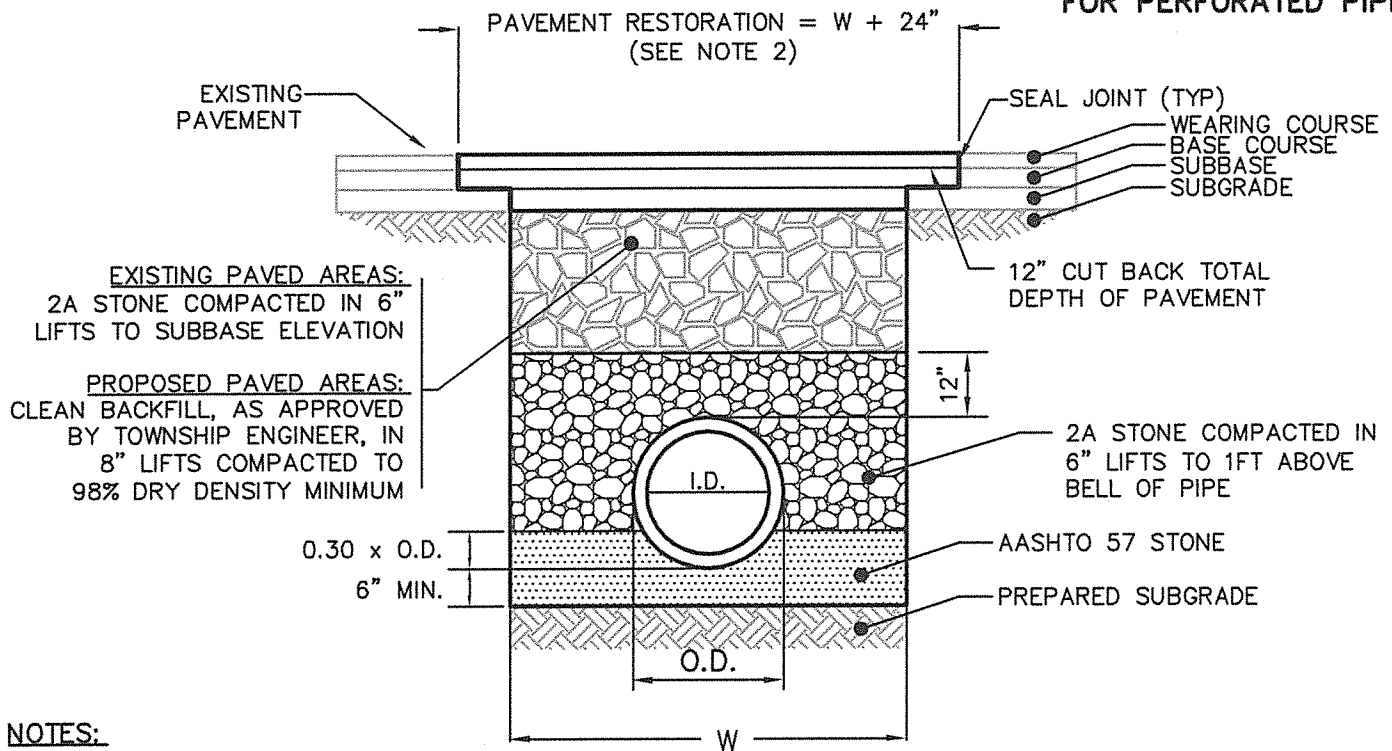
G & A GILMORE & ASSOCIATES, INC.
 ENGINEERING & CONSULTING SERVICES
 65 EAST BUTLER AVENUE, SUITE 100
 NEW BRITAIN, PA 18901-5106 • (215) 345-4330
 www.gilmore-assoc.com

BRISTOL TOWNSHIP
 SPECIFICATIONS AND DESIGN STANDARDS
 2501 BATH ROAD BRISTOL, PA 19007 (215) 785-3680

DATE: NOVEMBER 2014
 NOT TO SCALE
 DETAIL: 108R



FOR PERFORATED PIPE



NOTES:

I.D. = NOMINAL INSIDE DIAMETER OF PIPE
H = HEIGHT OF FILL OVER TOP OF PIPE

O.D. = OUTSIDE DIAMETER OF PIPE BARREL OR SHELL
H.D. = HUB DIAMETER,
OUTSIDE DIAMETER OF PIPE AT BELL OR BAND

W = TRENCH WIDTH AS FOLLOWS:

- 2.0 FT + H.D. FOR PIPES OR PIPE-ARCHES 48" AND LESS I.D. OR SPAN
- 2.5 FT + H.D. FOR PIPES OR PIPE-ARCHES GREATER THAN 48" I.D. OR SPAN

1. PIPE SHALL BE CENTERED IN TRENCH.
2. REFER TO DETAIL 102R FOR ROAD OPENING REPAIR STANDARDS AND DETAILS 103R THROUGH 106R FOR APPLICABLE PAVEMENT DETAIL.
3. ALL CONSTRUCTION SHALL BE IN ACCORDANCE WITH THE SPECIFICATIONS OF PADOT PUBLICATION 408, LATEST EDITION AND COMPLETED IN ACCORDANCE WITH 102R.

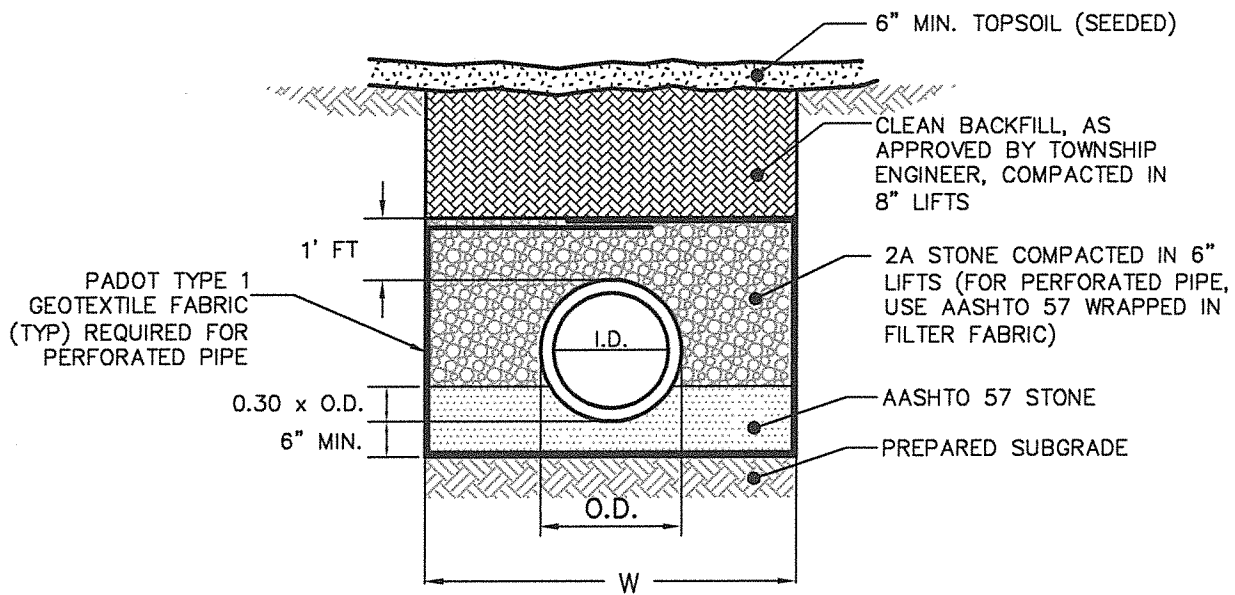
TRENCH BACKFILL RESTORATION DETAIL FOR PAVED AREAS



GILMORE & ASSOCIATES, INC.
ENGINEERING & CONSULTING SERVICES
65 EAST BUTLER AVENUE, SUITE 100
NEW BRITAIN, PA 18901-5106 • (215) 345-4330
www.gilmore-assoc.com

BRISTOL TOWNSHIP
SPECIFICATIONS AND DESIGN STANDARDS
2501 BATH ROAD BRISTOL, PA 19007 (215) 785-3680

DATE: NOVEMBER 2014
NOT TO SCALE
DETAIL: 109R



NOTES:

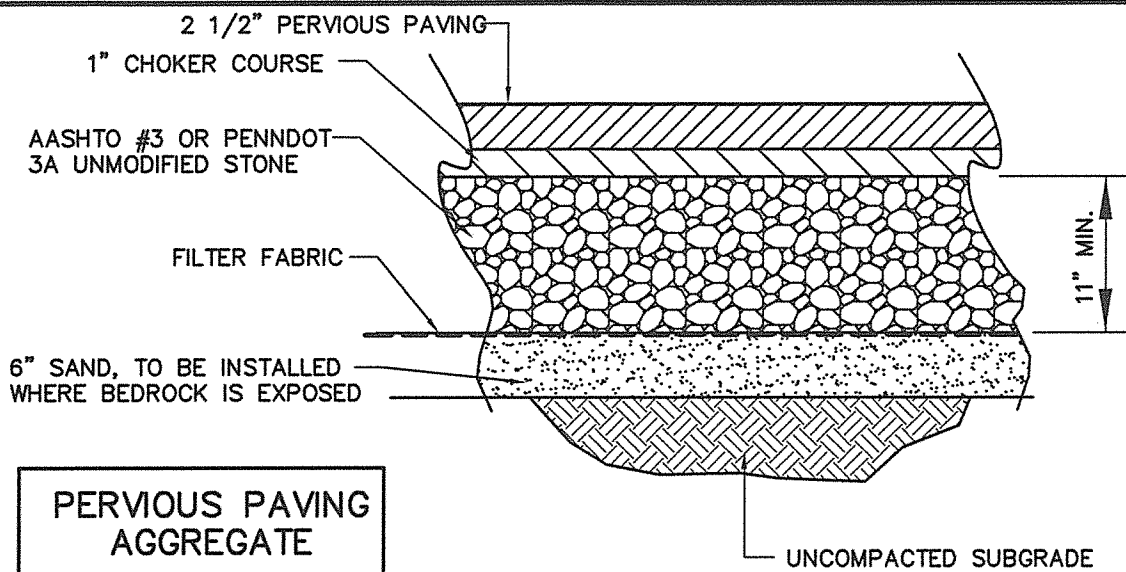
- I.D. = NOMINAL INSIDE DIAMETER OF PIPE
- O.D. = OUTSIDE DIAMETER OF PIPE BARREL OR SHELL
- H.D. = HUB DIAMETER, OUTSIDE DIAMETER OF PIPE AT BELL OR BAND
- H = HEIGHT OF FILL OVER TOP OF PIPE
- W = TRENCH WIDTH AS FOLLOWS:
 - 2.0 FT + H.D. FOR PIPES OR PIPE-ARCHES 48" AND LESS I.D. OR SPAN
 - 2.5 FT + H.D. FOR PIPES OR PIPE-ARCHES GREATER THAN 48" I.D. OR SPAN
- 1. PIPE SHALL BE CENTERED IN TRENCH.

TRENCH BACKFILL RESTORATION DETAIL FOR NON-PAVED AREAS

GILMORE & ASSOCIATES, INC.
 ENGINEERING & CONSULTING SERVICES
 65 EAST BUTLER AVENUE, SUITE 100
 NEW BRITAIN, PA 18901-5106 • (215) 345-4330
 www.gilmore-assoc.com

BRISTOL TOWNSHIP
 SPECIFICATIONS AND DESIGN STANDARDS
 2501 BATH ROAD BRISTOL, PA 19007 (215) 785-3680

DATE: NOVEMBER 2014
 NOT TO SCALE
 DETAIL: 110R



PERVIOUS PAVING AGGREGATE	
SIEVE SIZE	% PASSING
1/2 "	100 - 85
3/8 "	75 - 50
# 4	40 - 20
# 8	10 - 5
# 200	4 - 2

PERVIOUS PAVING DETAIL
NOT TO SCALE

SPECIFICATION BASED ON F.H.A. GUIDELINES FOR OPEN-GRADED FRICTION COURSE.

NOTES FOR PERVIOUS PAVING:

1. BASE MATERIAL SHALL BE WASHED AASHTO #3 STONE OR PADOT 3A UNMODIFIED, FREE OF SLATE, SHALE, CLAY, SILT, AND/OR VEGETATION.
2. BASE MATERIAL SHALL BE WRAPPED IN FILTER FABRIC TO MAINTAIN SEPARATION FROM SUBGRADE MATERIAL AND CRUSHED AGGREGATE BASE COURSE UNDER STANDARD PAVEMENT.
3. STONE BASE SHALL BE COMPACTED WITH STATIC ROLLER ONLY. USE OF A VIBRATORY ROLLER IS NOT PERMITTED.
4. CHOKER COURSE SHALL BE AASHTO #57 STONE.
5. ASPHALT BINDER SHALL BE MODIFIED WITH AN ELASTOMERIC POLYMER TO PRODUCE A BINDER MEETING THE REQUIREMENTS OF PG 76-22. PERVIOUS PAVING SHALL CONSIST THE SPECIFIED AGGREGATE WITH 5.75 - 6.0% ASPHALT BINDER BY WEIGHT.
6. PERVIOUS PAVING SHALL BE PLACED IN A SINGLE LIFT OF 2 1/2" FINAL THICKNESS. PAVING MATERIAL SHALL BE COMPACTED BY NO MORE THAN 2 PASSES OF A 10-TON ROLLER.
7. AFTER COMPACTION, PERVIOUS PAVING AREAS SHALL REMAIN UNDISTURBED FOR A MINIMUM OF 24 HOURS.
8. AT NO TIME SHALL PERVIOUS PAVING AREAS BE USED BY CONSTRUCTION VEHICLES OR FOR THE STORAGE OF MATERIALS.

PERVIOUS PAVING

FUNCTIONAL CLASSIFICATION	INTERSECTION SPACING	CLEAR SIGHT TRIANGLE	MIN. INTERSECTION RADIUS	HORIZONTAL CURVE RADIUS (CENTERLINE)
ARTERIAL STREET	*	*	*	*
COLLECTOR STREET	500'	100'	35'	MIN 500'
PRIMARY STREET	400'	75'	35'	MIN 350'
SECONDARY STREET	250'	50'	25'	MIN 150'
MARGINAL ACCESS	250'	50'	25'	MIN 150'

NOTES:

1. FUNCTIONAL CLASSIFICATION PER SALDO SECTION 503.
 2. ALL NEW STREETS SHALL BE PROPERLY POSTED W/SPEED LIMIT SIGNS IN ACCORDANCE WITH DESIGN SPEED.
 3. HORIZONTAL CURVE RADIUS PER SALDO SECTION 504.a(2).
- *AS RECOMMENDED BY THE PENNSYLVANIA DEPARTMENT OF TRANSPORTATION.

INTERSECTION AND ROADWAY ALIGNMENT STANDARDS



GILMORE & ASSOCIATES, INC.
 ENGINEERING & CONSULTING SERVICES
 65 EAST BUTLER AVENUE, SUITE 100
 NEW BRITAIN, PA 18901-5106 • (215) 345-4330
 www.gilmore-assoc.com

BRISTOL TOWNSHIP
 SPECIFICATIONS AND DESIGN STANDARDS
 2501 BATH ROAD BRISTOL, PA 19007 (215) 785-3680

DATE: NOVEMBER 2014
 NOT TO SCALE
 DETAIL: 112R

PARKING DIMENSIONS				
ANGLE	STALL WIDTH (PERP TO STALL)	STALL DEPTH (PERP. TO AISLE)	AISLE - 1 WAY	AISLE - 2 WAY
(deg)	(ft)	(ft)	(ft)	(ft)
0	8	22	12	20
30	10	20	12	20
45	10	20	16	20
60	10	20	18	20
90	9	22	22	24

Parking requirements per SALDO Section 509.
 ADA requirements apply for accessible spaces.

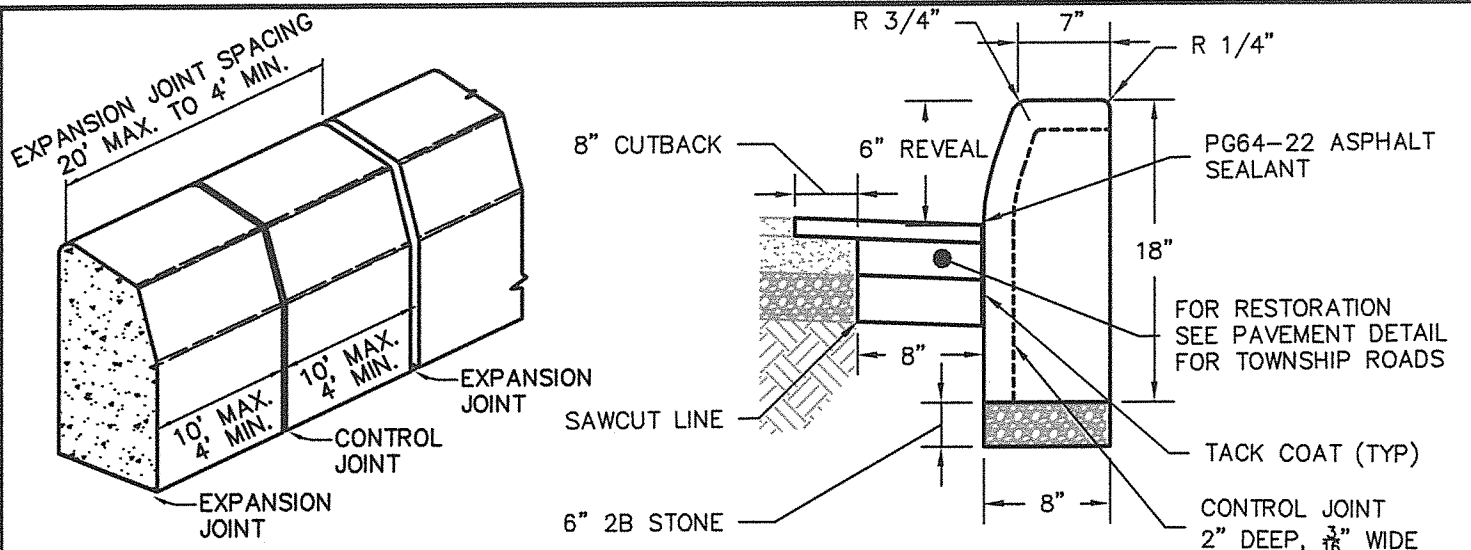
PARKING STALL AND AISLE DIMENSIONS



GILMORE & ASSOCIATES, INC.
 ENGINEERING & CONSULTING SERVICES
 65 EAST BUTLER AVENUE, SUITE 100
 NEW BRITAIN, PA 18901-5106 • (215) 345-4330
 www.gilmore-assoc.com

BRISTOL TOWNSHIP
 SPECIFICATIONS AND DESIGN STANDARDS
 2501 BATH ROAD BRISTOL, PA 19007 (215) 785-3680

DATE: NOVEMBER 2014
 NOT TO SCALE
 DETAIL: 113R



INSTALLATION NOTES:

1. TAPERED CURB IS TO BE USED WHEN EXISTING CURB BEING REPLACED IS TAPERED OR NEW CURB IS BEING INSTALLED. ALL OTHER EXISTING CURBS TO BE NON-TAPERED.
2. ALL CONCRETE TO BE CLASS A FROM PADOT APPROVED SUPPLIER.
3. ALL CONSTRUCTION AND MATERIALS SHALL CONFORM WITH PADOT PUBLICATION 408, LATEST EDITION.
4. EXISTING ROAD SURFACE TO BE SAWCUT ALONG CURB NO MORE THAN 16" MAXIMUM FROM CURB FACE.
5. EXPANSION JOINTS SHALL BE PLACED AT A MAXIMUM INTERVAL OF 20 FEET, AT THE END OF EVERY DAY, AND ON BOTH SIDES OF ALL STRUCTURES. JOINTS SHALL BE 1/2" THICK PRE-MOLDED MATERIAL.
6. INTERMEDIATE CONTROL JOINTS TYPICAL 2" DEEP X 3/16" WIDE. JOINTS TO BE PLACED AT 10' INTERVALS (MIN. OF 4' FOR CLOSURE OR CURVES).
7. TACK COAT EXISTING PAVEMENT AND ALL VERTICAL SURFACES BELOW PAVING LINE. IF BASE COURSE IS IN PLACE FOR MORE THAN 30 DAYS, THE SURFACE MUST BE CLEANED AND TACK COATED PRIOR TO INSTALLATION OF WEARING COURSE.
8. ALL ASPHALT JOINTS INCLUDING ALONG THE CURBLINE SHALL BE SEALED IN ACCORDANCE WITH 102R.
9. ALL CURB FORMS MUST BE APPROVED BY THE TOWNSHIP ENGINEER. ALL SLIP FORM CONSTRUCTION SHALL BE OBSERVED BY THE TOWNSHIP ENGINEER.

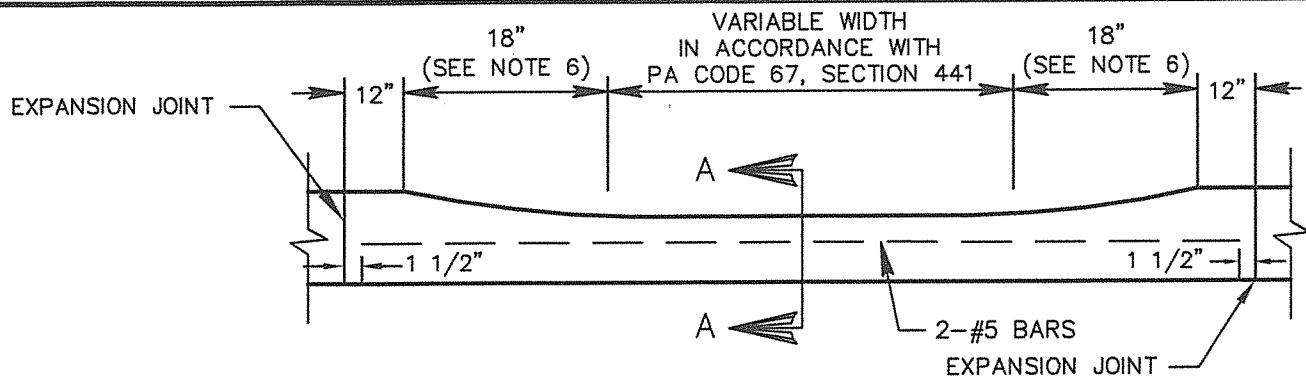
CURB EVALUATION CRITERIA – WHEN EVALUATING CURB FOR REPLACEMENT, IF ONE OF THE APPEARANCE OR MISALIGNMENT CONDITIONS LISTED BELOW EXISTS, THE CURB IS MARKED FOR REPLACEMENT.

1. MISSING CURB.
2. EVIDENCE OF DETERIORATED CONDITION AND/OR SECTIONS ARE LOOSE OR GONE.
3. DIAGONAL CRACKS.
4. MULTIPLE VERTICAL CRACKS IN A 10-FT SECTION. A SINGLE VERTICAL CRACK CAN BE SAW-CUT IF THEY APPEAR TO BE OLD STRESS CRACKS.
6. CHIPS LARGER THAN 2" ACROSS AND 1/4" DEEP.
7. CURB THAT HAS BEEN PATCHED OR CAPPED WITH CONCRETE.
8. CURB THAT HAS BEEN ALTERED BY HOMEOWNER. THIS MAINLY OCCURS AT DRIVEWAYS.
9. SIDEWALKS, DRIVEWAY APRONS, AND DRIVEWAY DEPRESSIONS THAT HAVE BEEN PAVED OVER WITH ASPHALT.
10. THE CURB HAS DROPPED OR RAISED AND THE TOP IS MISALIGNED MORE THAN 1/4".
11. THE CURB IS LEANING FORWARD TOWARDS THE ROAD SURFACE OR BACK TO THE GRASS STRIP AND IS MISALIGNED MORE THAN 1/4" ALONG THE VERTICAL JOINT.
12. IF THE CURB HAS BEEN PUSHED AND IS MISALIGNED BY MORE THAN 1/4".
13. TOP OF CURB AND FACE OF CURB SHALL BE FREE OF SURFACE DEFECTS. (I.E. HONEY COMB).

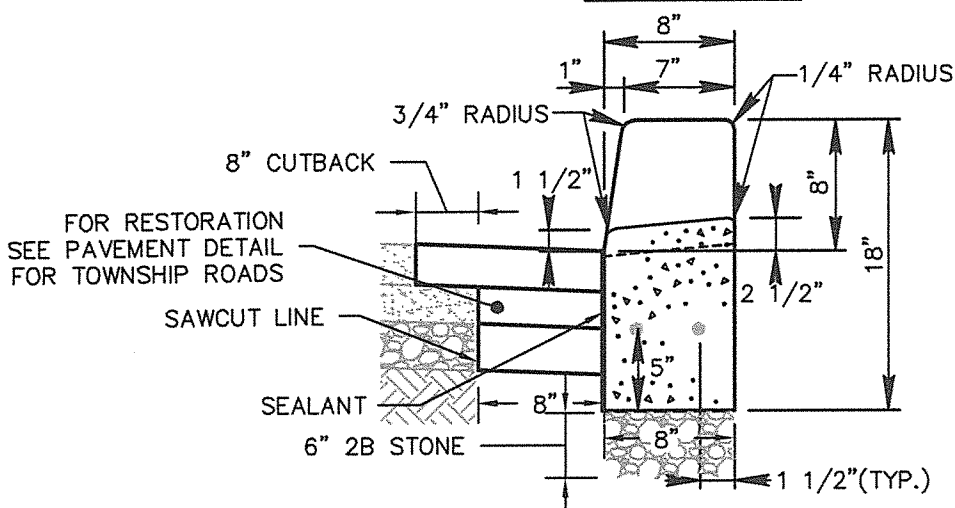
CURB REPLACEMENT STANDARDS

1. THE SHORTEST SECTION OF CURB TO BE REPLACED IS 5 FEET.
2. THE EXISTING ROADWAY IS TO BE SAW CUT & FULL FORMS ARE TO BE USED ON THE FACE OF CURB UNLESS APPROVED IN ADVANCE BY THE TOWNSHIP ENGINEER.
3. MONOLITHIC POURS OF CURB & DRIVEWAY APRON ARE NOT PERMITTED UNLESS APPROVED IN ADVANCE BY THE TOWNSHIP ENGINEER.
4. EXPANSION MATERIAL IS REQUIRED TO BE PLACED AGAINST THE EXISTING CONCRETE.

STANDARD CONCRETE CURB FOR NON-PADOT APPLICATIONS



PLAN VIEW



SECTION A-A

NOTES:

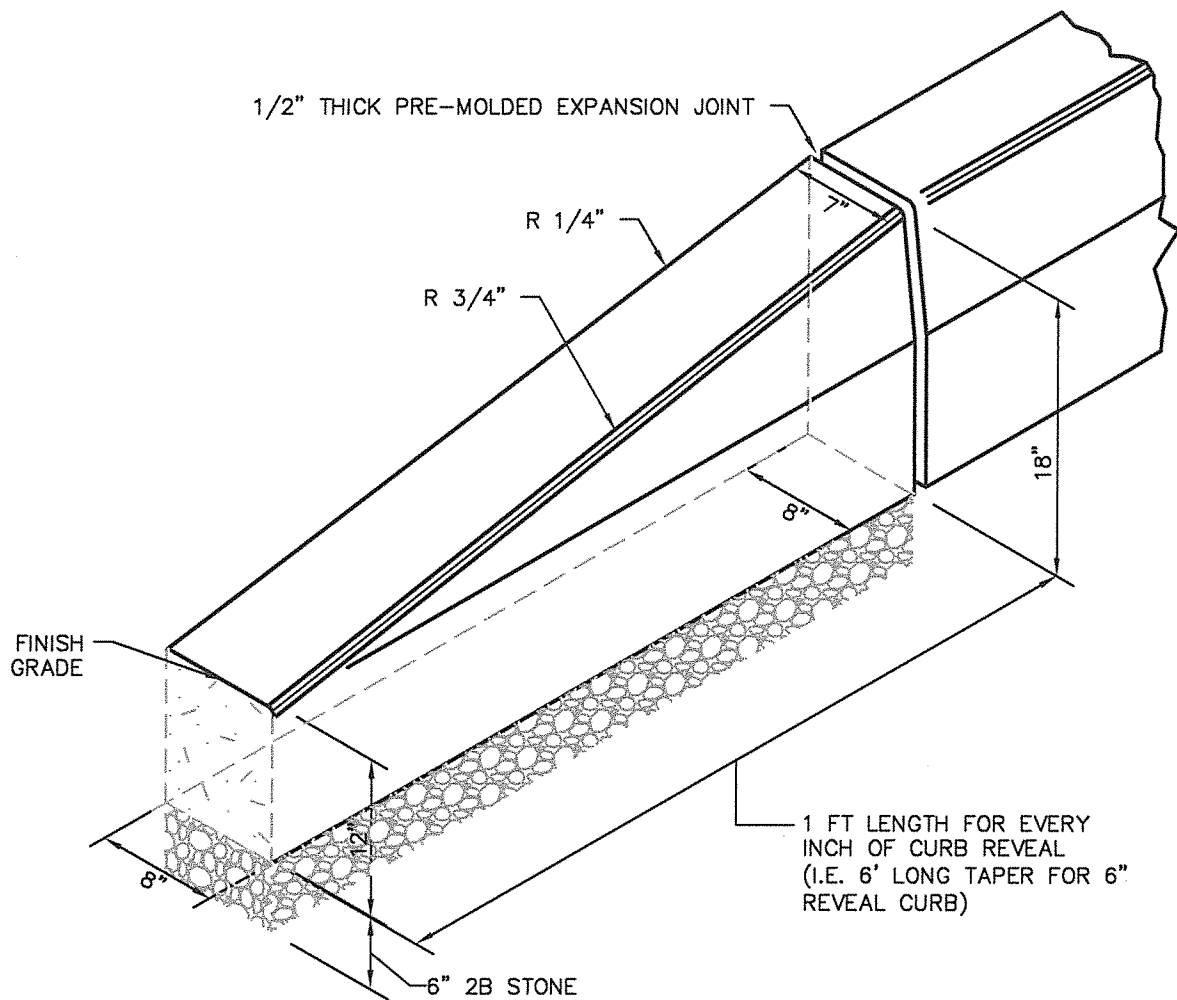
1. TAPERED CURB IS TO BE USED WHEN EXISTING ADJACENT CURB IS TAPERED OR NEW CURB IS BEING INSTALLED. ALL OTHER EXISTING CURBS TO BE NON-TAPERED.
2. ALL CONCRETE TO BE CLASS A FROM PADOT APPROVED SUPPLIER.
3. ALL CONSTRUCTION AND MATERIALS SHALL CONFORM WITH PADOT PUBLICATION 408, LATEST EDITION AND COMPLETED IN ACCORDANCE WITH 102R.
4. EXISTING ROAD SURFACE TO BE SAWCUT ALONG CURB, NO MORE THAN 16" WIDTH.
5. INTERMEDIATE CONTROL JOINTS TYPICAL 2" DEEP X 3/16" WIDE. JOINTS TO BE PLACED AT 10' INTERVALS (MIN. OF 4' FOR CLOSURE OR CURVES).
6. A TRANSITION LENGTH OF 18 INCHES IS NOT ACCEPTABLE FOR LOCATIONS WITHOUT GRASS STRIP BETWEEN CURB & SIDEWALK. TRANSITION LENGTH SHALL BE INCREASED TO 3 FEET OR AS MAY BE NECESSARY TO PROVIDE AN ACCESSIBLE SIDEWALK MEETING ADA REQUIREMENTS.
7. PLACE 2" DEEP, 3/16" WIDE CONTROL JOINTS IN TOP OF DEPRESSED CURB IN UNIFORM SPACING OF 10' MAX.
8. PLACE 1/2" PREMOLDED EXPANSION JOINT FILLER ADJACENT TO CURB OR TO CONFORM TO CROSS SECTIONAL MATERIAL AT STRUCTURES AND AT THE END OF THE WORK DAY. CUT MATERIAL TO CONFORM TO AREA OF CURB.
9. SEE RC-50 FOR PLAIN CONCRETE CURB SLOPED TOP TREATMENT AT END OF STRUCTURES.
10. EXPANSION JOINTS ARE NOT PERMITTED THROUGH REINFORCEMENT BARS. END REINFORCEMENT BARS 1 1/2" FROM EXPANSION JOINTS.
11. ALL CURB FORMS MUST BE APPROVED BY THE TOWNSHIP ENGINEER.

DEPRESSED CONCRETE CURB FOR DRIVEWAYS & DIAGONAL CURB RAMPS

GILMORE & ASSOCIATES, INC.
 ENGINEERING & CONSULTING SERVICES
 65 EAST BUTLER AVENUE, SUITE 100
 NEW BRITAIN, PA 18901-5106 • (215) 345-4330
 www.gilmore-assoc.com

BRISTOL TOWNSHIP
 SPECIFICATIONS AND DESIGN STANDARDS
 2501 BATH ROAD BRISTOL, PA 19007 (215) 785-3680

DATE: NOVEMBER 2014
 NOT TO SCALE
 DETAIL: 201C



NOTE:

1. ALL CONSTRUCTION AND MATERIALS SHALL CONFORM WITH PADOT PUBLICATION 408, LATEST EDITION.
2. ALL CONCRETE TO BE CLASS A FROM PADOT APPROVED SUPPLIER.
3. ALL CURB FORMS MUST BE APPROVED BY THE TOWNSHIP ENGINEER.

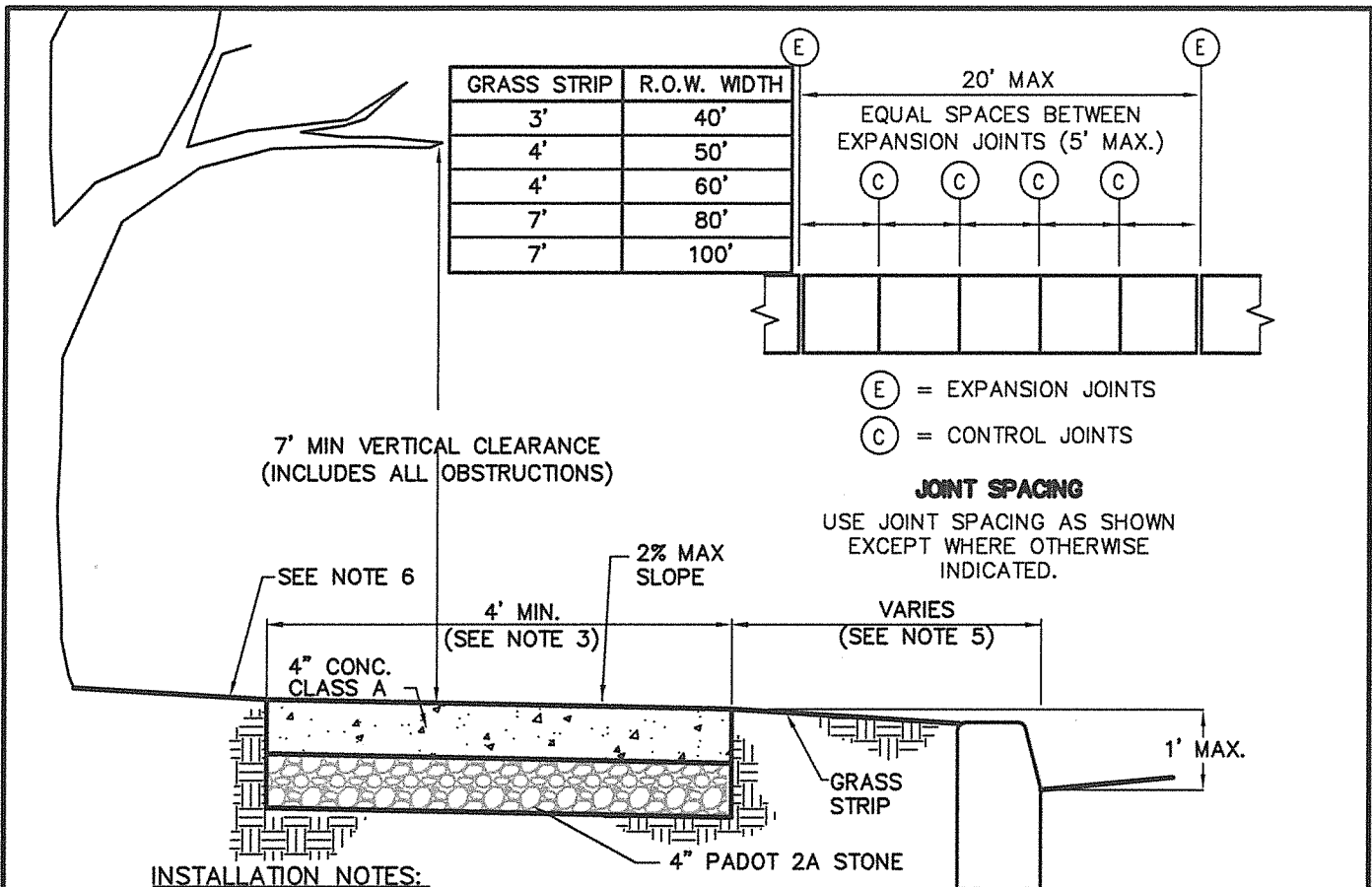
TAPERED CONCRETE CURB FOR NON-PADOT APPLICATIONS



GILMORE & ASSOCIATES, INC.
 ENGINEERING & CONSULTING SERVICES
 65 EAST BUTLER AVENUE, SUITE 100
 NEW BRITAIN, PA 18901-5106 • (215) 345-4330
 www.gilmore-assoc.com

BRISTOL TOWNSHIP
 SPECIFICATIONS AND DESIGN STANDARDS
 2501 BATH ROAD BRISTOL, PA 19007 (215) 785-3680

DATE:	NOVEMBER 2014
	NOT TO SCALE
DETAIL:	202C



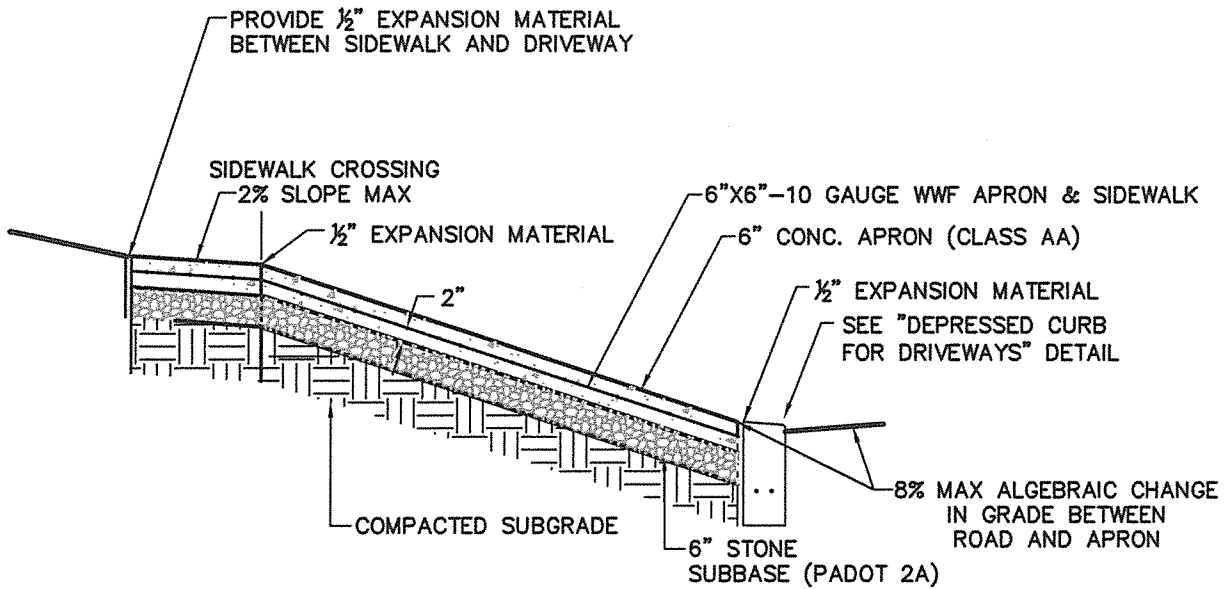
INSTALLATION NOTES:

1. ALL CONSTRUCTION AND MATERIALS TO CONFORM WITH PADOT PUBLICATION 408, LATEST EDITION.
2. INSTALLATION OF CURB RAMPS FOR ACCESSIBILITY SHALL MEET ADA REQUIREMENTS AND SHALL BE IN ACCORDANCE WITH PADOT DETAILS RC-67M, LATEST EDITION. PADOT DETAILS ARE INCLUDED HEREWITH BY REFERENCE.
3. TOWNSHIP COUNCIL MAY REQUIRE ADDITIONAL WIDTH IN AREAS WHERE HIGHER VOLUMES OF PEDESTRIAN TRAFFIC ARE ANTICIPATED.
4. SIDEWALK SHALL NOT EXTEND BEYOND THE RIGHT-OF-WAY (NEW CONSTRUCTION) UNLESS EASEMENTS ARE PROVIDED AND SHALL NOT INTERFERE WITH MONUMENTS AND PINS. REFER TO NOTE 4 OF DETAIL 100R TYPICAL ROADWAY SECTION FOR TOWNSHIP ROADS.
5. WHERE EXISTING SIDEWALK ABUTS CURB, SURFACES SHALL BE FLUSH AND SHALL BE SEPARATED BY A 1/2" PREMOLDED EXPANSION JOINT, SECTION 511.
6. TRIM ROOTS AND INSTALL ROOT BARRIER IN ACCORDANCE WITH "ROOT PRUNING" AND "ROOT BARRIER" STANDARDS AS NEEDED.
7. ALL CONCRETE TO BE CLASS A FROM PADOT APPROVED SUPPLIER.
8. 1/2" PREMOLDED EXPANSION JOINTS SHALL BE PLACED EVERY THIRTY (30) FEET MAX WITH CONTROL JOINTS EVERY FIVE (5) FEET MAX AND A MINIMUM OF ONE (1) INCH IN DEPTH.
9. BROOM FINISH FOR NON-SLIP SURFACE.
10. THIS STANDARD IS NOT INTENDED FOR SIDEWALK WHICH CROSSES A DRIVEWAY.

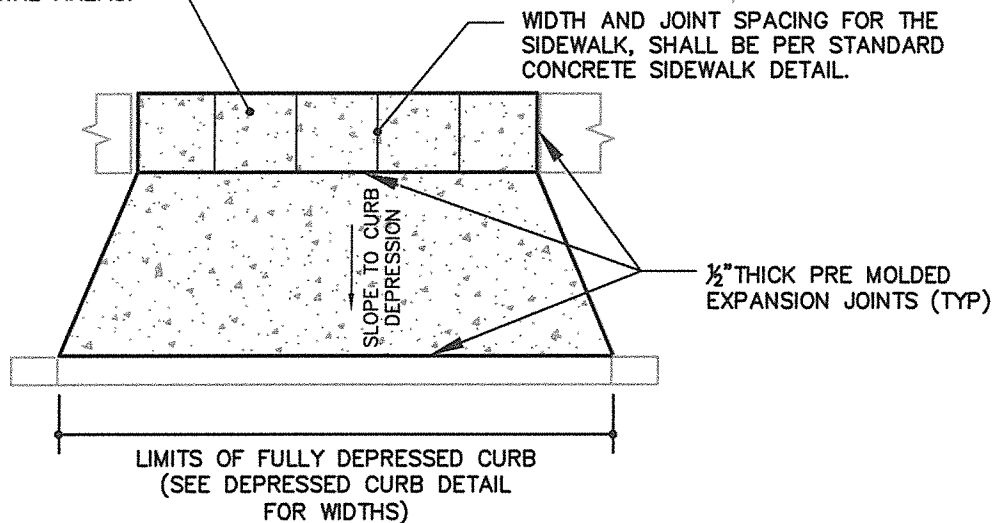
SIDEWALK REPAIR AND REPLACEMENT STANDARDS:

1. SIDEWALKS SHALL BE REPLACED WHEN THE FOLLOWING CONDITIONS OCCUR:
 - A. EVIDENCE OF DETERIORATED CONDITION.
 - B. SECTIONS WITH VERTICAL MISALIGNMENTS GREATER THAN 1/4" WITH WALKABLE SURFACES.

CONCRETE SIDEWALK INSTALLATION



SIDEWALK ALIGNMENT AND CROSS-SLOPE TO BE CONTINUOUS ACROSS DRIVE IN RESIDENTIAL AREAS.



INSTALLATION NOTES:

1. ALL CONSTRUCTION AND MATERIALS TO CONFORM WITH PADOT PUBLICATION 408, LATEST EDITION.
2. ALL CONCRETE TO BE CLASS AA FROM PADOT APPROVED SUPPLIER.
3. ALL DRIVEWAYS OR APRONS CONSTRUCTED ADJACENT TO CURB SHALL HAVE DEPRESSED CURB INSTALLED IN ACCORDANCE WITH THE DEPRESSED CONCRETE CURB FOR DRIVEWAYS DETAIL.

DRIVEWAY APRON REPLACEMENT STANDARDS – DRIVEWAY APRONS SHALL BE REPLACED WHEN THE FOLLOWING CONDITIONS OCCUR:

1. EVIDENCE OF DETERIORATED CONDITION.
2. APRONS PLACED WITH VERTICAL MISALIGNMENT OF 1/4" HIGHER OR LOWER THAN REQUIRED DEPRESSED CURB HEIGHT.

CONCRETE APRON FOR DRIVEWAY CROSSINGS