NORTHAMPTON COUNTY COUNCIL - EASTON, PA

Ordinance No. 398 SESSION 20 03 Bill No. 429

Introduced by Michael F. Corriere and Nicholas R. Sabatine on February 20, 2003

Enacted March 24, 2003 Effective April 23, 2003

Title: AN ORDINANCE PROVIDING FOR IMPROVEMENTS SPECIFICATIONS REQUIRED TO BE BUILT, PLACED, ERECTED OR PLANTED WITHIN EXISTING OR PROPOSED PUBLIC ROADS OR RIGHTS-OF-WAY OR ON PRIVATE PROPERTY ELIGIBLE FOR USE BY THE PUBLIC IN THE COUNTY OF NORTHAMPTON, PENNSYLVANIA

BE IT HEREBY ORDAINED AND ENACTED, By the Northampton County Council, County of Northampton, Easton, Pennsylvania, as follows:

(1) The attached shall constitute the Northampton County Improvements Specifications Ordinance of 2003.

(2) The purpose of this Ordinance is to provide that all improvements required to be built, placed, erected or planted within existing or proposed public roads or rights-of-way or on private property eligible for use by the public, shall conform to the standards for improvements construction set forth in this Ordinance.

(3) All ordinances, or parts of ordinances, insofar as such shall be inconsistent herewith, shall be and the same expressly are repealed.

(4) The provisions of this Ordinance shall become effective thirty (30) days after the date of enactment.

This Ordinance was advertised on the 3rd day of March, 2003 and was adopted by the Northampton County Council on the 20th day of March, 2003.

Attest: Frank E. Flisser
Frank E. Flisser
Clerk to Council

J. Michael Dowd
J. Michael Dowd
County Council President

Glenn F. Reibman
Glenn F. Reibman
County Executive

(S:\2003\bills\bill429)

Northampton County

Improvements Specifications

Ordinance of 2003

Ordinance number 152 of 1989 is hereby declared null and void.

100 GENERAL STANDARDS

101 Scope

All improvements required to be built, placed, erected or planted within existing or proposed public roads or rights-of-way or on private property eligible for use by the public, shall conform to these standards for improvements construction.

102 Reference

Throughout these standards, references will be made to various standard specifications. When such standards are referenced, they shall be considered as being fully incorporated into these standards and shall be the latest edition of the respective standard.

103 Control of Work

The municipality and/or its agents, employees or consultants, have no direct or indirect supervisory control over improvements construction. Construction methods, procedures and safety provisions are the responsibility of the developer and/or contractor.

104 Safety

In particular, compliance with all local, state and Federal regulations regarding safety of all operations, of all workers and of the general public, is the responsibility of the developer and/or contractor.

105 Inspection

Municipal inspection of improvements construction will be made to check general compliance with the material and workmanship criteria of these standards. Such inspection shall not relieve the developer from full responsibility for the quality of his work product or the accurate layout of improvements to the lines and grades on the approved plans.

106 Notification

It shall be the responsibility of the developer to notify the appropriate inspection consultant for the municipality or designated authority at least forty-eight (48) hours prior to commencing any construction activity. Any improvements installed without proper notification to the inspection consultant may be rejected.

107 Conflict

Where a conflict exists between the requirements of these standards and the requirements of another jurisdiction, it shall be the responsibility of the developer to resolve the conflict prior to proceeding with construction. Where conflicts between standards exist, the more restrictive requirement will govern.

200 STREETS

201 Grading

Streets shall be graded to the full width of the right-of-way, surfaced and improved to the grades and dimensions shown on the plans, profiles and cross-sections submitted by the developer and approved by the Lehigh Valley Planning Commission. In subdivisions or land developments where sidewalks are not required, the sidewalk area shall be graded in the same manner as if sidewalks were to be constructed.

201.1 Subgrade

Roadbed shall be formed to established subgrade elevation and slope as specified in Section 210 of PennDOT Form 408.

201.2 Geotextiles

Where required by the Municipal Engineer based on soil conditions, geotextile may be required for layer separation conforming to Section 212 of PennDOT Form 408.

202 Subbase and Underdrain

A six inch (6") compacted subbase consisting of Type "C" or better No. 2A stone shall be constructed on a properly prepared subgrade for all roads. Subbase shall be constructed in accordance with the requirements of *Section 350 PennDOT Form 408*. Where subgrade conditions dictate, the use of underdrain may be required when specified by the Municipal Engineer. Where required, underdrain shall be constructed in accordance with *Section 610 of PennDOT Form 408*.

203 Base Course

For all classifications of streets, base course shall be constructed of a minimum of four inches (4") compacted depth bituminous concrete base course B.C.B.C. constructed in accordance with *Section 305 of PennDOT Form 408*. Prior to placement of the base course, all vertical surfaces, including curbing and existing pavement, shall be tack coated. Unless full depth stone backfill is used for underground utilities construction, a six (6) month waiting period shall be required between completion of utilities and placement of base course.

204 Surface Course

204.1 Leveling Course

Where, in the opinion of the Municipal Engineer, the surface of the B.C.B.C. is not sufficiently uniform or level for placement of the binder or wearing course, a leveling course shall be constructed prior to placement of the next pavement surface. The wearing course shall not be placed until 75% of the homes or development has occurred on the lots to limit damage caused by

construction and truck loads. The wearing course shall not be placed prior to inspection and approval by the Municipal Engineer.

204.2 Tack Coat

Tack Coat conforming to *Section 460 of PennDOT Form 408* shall be required on all B.C.B.C. surfaces prior to placement of new paving, if in the opinion of the Municipal Engineer, it is required due to the condition of the existing pavement.

204.3 Arterial Streets

The surface course shall consist of a minimum of two inches (2") compacted depth binder course and a minimum of one and one-half (1½") inches of compacted depth wearing course as specified in *Sections 420 and 421 of PennDOT Form 408.*

204.4 Collector Streets

The surface course shall consist of a minimum of one and one-half (1½") inches of compacted depth binder course and one (1") inch of compacted depth wearing course as specified in *Sections 420 and 421 of PennDOT Form 408.*

204.5 Local Roads

The surface course shall consist of a minimum of one and one-half (1½") inches of compacted depth wearing course as specified in *Section 420 of PennDOT Form 408.* No binder course shall be required.

204.6 Traffic Lines and Markings

Following completion of the final paving, permanent and, if required, temporary traffic lines and markings shall be placed in accordance with the approved plans and *Section 962 of PennDOT Form 408.*

300 CURBING

301 Type

Curbing shall be plain cement concrete vertical curb having a height of eighteen inches (18") and tapering from a top width of seven inches (7") to a base width of eight inches (8") and conforming to the requirements of Section 630 of PennDOT Form 408 and RC-64 of the PennDOT Standards for Roadway Construction. A seven inch (7") exposed curb face shall be used.

302 Subgrade

The subgrade shall be substantially dry, unfrozen, firmly compacted soil. Thorough compaction shall be attained by using an approved pneumatic compactor or self-

contained compactor, capable of delivering a minimum of 800 to 1,000 pounds at the shoe.

303 Forms

Forms shall be made of approved substantial material, preferably of steel, and shall be smooth, free of warp and sufficiently rigid and supported to prevent misalignment. These forms shall be of a depth equal to that of the proposed curb. Prior to pouring the concrete, all forms and templates shall be thoroughly cleaned and treated with an approved material to prevent the concrete from adhering thereto. Material which will adhere to or discolor the concrete shall not be used.

304 Concrete

Concrete shall meet the requirements of *PennDOT Form 408 Section 704 for Class A Cement Concrete*. No concrete shall be mixed or placed when the air temperature is below 50°F or above 90°F. Cold and hot weather curing methods shall be used when required by the Municipal Engineer.

305 Pouring

Curbs shall be carefully poured monolithically without segregation of constituents, tamped and screeded true to grade and section, eliminating all voids. Sufficient mortar shall be brought to the surface for finishing in a smooth, neat and even manner using approved tools.

306 Joints

Each curb section shall be constructed in lengths of ten feet (10') where practicable. In no case shall a section be less than five feet (5') long. Each section shall be separated when pouring by a ⅛ inch steel template equal to the full depth of the curb.

307 Finishing

Forms may be removed no earlier than twelve (12) hours after placement of the concrete. All construction joints shall then be filled with approved dry, sharp sand. Minor defects and honeycombing shall be corrected by patching with mortar; no plastering will be permitted. All exposed concrete shall be rubbed to a smooth surface and edges at joints finished with a suitable tool.

308 Handicap Accessibility Requirements

Handicap accessible ramps shall be constructed at all intersections in accordance with the requirements of the Americans with Disabilities Act (ADA).

309 Curb Machines

Construction of concrete curb through the use of a curb machine shall be permitted only with the approval of the Municipal Engineer and contingent upon any conditions

required by the Municipal Engineer. If the storm sewer inlets are not set before the curb is constructed, curb shall be continued through the location and carefully cut prior to hardening. Cut joints shall be installed every 10 feet and ½ inch premolded expansion joints shall be installed every 30 feet. All wasted concrete must be properly disposed of.

400 SIDEWALKS/CROSSOVERS

401 Subgrade

The subgrade shall be substantially dry, unfrozen, firmly compacted soil. Thorough compaction shall be attained by using an approved pneumatic compactor or self-contained compactor capable of delivering a minimum of 800 to 1,000 pounds at the shoe.

402 Base

A stone bed shall be placed and thoroughly compacted to a depth of three inches (3") using the above-mentioned compactors. The stone shall be AASHTO No. 57.

403 Forms

Forms shall be made of approved substantial material, preferable of steel, and shall be smooth, free of warp and sufficiently rigid and supported to resist misalignment. These forms shall be of a depth equal to that of the proposed sidewalk. Prior to pouring the concrete, all forms and templates shall be thoroughly cleaned and treated with an approved material to prevent the concrete from adhering thereto. Material which will adhere to or discolor the concrete shall not be used.

404 Concrete

Concrete shall meet the requirements of *Section 704 PennDOT Form 408* for Class A cement concrete. No concrete shall be mixed or placed when the air temperature is below 50°F or above 90°F.

405 Pouring

Sidewalk and crossovers shall be carefully poured monolithically without segregation of constituents to full depths (see details) and screeded true to grade and sections, eliminating all voids. Sufficient mortar shall be brought to the surface for finishing in a smooth, neat and even manner using approved wood floats.

All sidewalks and residential driveway crossovers shall be poured to a depth of five inches (5"). All commercial driveway crossovers shall be poured to a depth of six inches (6") and reinforced the full length and width of the crossover with 6" x 6" #6 wire mesh (see details).

406 Construction

Sidewalk shall slope toward the street at the rate of ¼" per foot. It shall be constructed in separate slabs of thirty feet (30') in length, except for closures. These slabs shall be separated for the full depth by expansion joints of approved ½ inch premolded bituminous material. This premolded material shall also be placed longitudinally at the joint where sidewalk slabs abut concrete curb and existing sidewalk. Between the transverse expansion joints, the slabs shall be divided into blocks five feet (5') in length by using ⅛ inch steel templates equal in depth to that of the slab. Where existing light standards, poles, fire hydrants, etc., are within the sidewalk area, full depth expansion material shall be used to create a concrete block eight inches (8") wider than the maximum dimension of the structure. All joints shall be edged with an edger having a ¼ inch radius.

407 Handicap Accessibility Requirements

Handicap ramps shall be constructed at all intersections in accordance with the requirements of the Americans with Disabilities Act (ADA).

500 BACKFILL

501 General

All trenches and excavations shall be backfilled within a reasonable time after the pipe and appurtenances are installed. The method of backfilling shall be as follows:

502 Within State Highway Right-of-Way

Backfilling shall be done in accordance with the requirements of the State Highway Occupancy Permit. Backfill requirements begin at the top of the pipe envelope and continue to the existing or proposed subgrade.

503 Within Municipal Roads

When excavation of an existing Municipal Road is required, it shall be done in accordance with requirements of the Municipal Road Opening Permit. The backfill shall be as follows:

503.1 Prior to excavation, all trenches in the existing road are to be sawcut the full depth of the bituminous paving.

503.2 Backfill with PennDOT 2A or 2RC crushed stone compacted in 8" layers to finished grade and meeting the compaction requirements of Section 505.

503.3 Top existing trench with two inches of compacted bituminous stockpile patching material (cold patch).

503.4 After 90 days of settlement time, the cold patch and backfill material shall be removed and the trench shall be sawcut an additional one foot beyond the initial cut and paved in accordance with Northampton County specifications.

504 All Other Areas:

Backfill for the remainder of the trenches or excavations shall be approved material and free from organic matter, large or frozen lumps, or stones over 10 inches in their largest dimensions. Stones which are used in backfilling shall be so distributed through the mass that all interstices are filled with the material.

The material shall be moistened or dried, if necessary, to obtain the required compaction. Backfill material shall be approved by the Municipal Engineer. Special care shall be taken in placing the backfill. Particular care shall be used to obtain thorough compaction under the haunches and along the sides of the top of the pipe.

All backfill shall be placed in loose layers not exceeding 6 inches in depth under and around the pipe and not exceeding 8 inches over the pipe. Successive layers shall be added and thoroughly compacted by hand and pneumatic tampers until the trench is completely filled to the elevation as directed. Compaction shall be in accordance with the requirements of Section 505. Backfilling shall be done in such a manner as to avoid injurious top or side pressures on the pipe.

505 Compaction Requirements

Backfill shall be compacted to a density satisfactory to the Municipal Engineer. A thoroughly and satisfactorily compacted backfill is defined as having a minimum dry density of 95 percent of the maximum density. The maximum density is the maximum dry weight density in pounds per cubic foot as determined by the AASHTO Standard Density Test, T 99, Method C. Where the backfill material consists of sand or silt containing less than 20 percent by weight of particles passing the No. 200 mesh sieve, a minimum dry density of 100 percent of maximum density will be required.

All trenches backfilled with earth shall be allowed to settle for at least 180 days before the permanent base course or pavement may be constructed unless the following procedure is used:

506 Utility Trench Backfill Requirements

All utility trenches shall be backfilled with select material and shall be properly compacted with approved mechanical tampers to a minimum compaction of 97%. Select material is backfill material which does not contain frozen material, organic matter or rocks larger than one-half cubic foot in volume. Compaction testing is required and shall be performed as determined by the Municipal Engineer. All unsuitable or unstable material shall be replaced with stable backfill material.

Subbase and base course shall not be placed until 30 days prior to the issuance of the first certification of occupancy and shall be placed on only those specific roadways required for the occupancy of the unit.

Prior to construction of the bituminous concrete wearing course, all trench settlement areas shall be excavated to the depth of the unconsolidated or unacceptable backfill material, as determined by the Municipal Engineer. The excavated areas shall be backfilled with crushed stone material compacted in maximum lifts of six (6") inches to a minimum compaction of 97%, after which the base course shall be replaced.

The bituminous concrete wearing course shall not be constructed until at least two years after the base course is completed.

The maintenance period for the roadway shall be extended to three (3) years.

Placement of subbase and bituminous concrete base course for proposed roads within municipal right-of-way where the trenches were backfilled with crushed stone can proceed following completion of backfill.

600 STORM DRAINAGE SYSTEMS

Storm drainage systems shall be installed in accordance with the design standards and requirements set forth in Section 460 of the Subdivision and Land Development Ordinance.

601 Materials

601.1 Storm Sewer Pipe:

601.11 Storm sewers shall have a minimum diameter of eighteen (18") inches and shall be made of reinforced concrete.

Reinforced cement concrete pipe shall comply with PennDOT Form 408, Section 601.2, AASHTO Designation A-170 and ASTM C-76.

The minimum wall design shall be Class III, Wall B.

601.12 Joints:

Joints to be full mortar inside and outside. "O"-Ring gasket joints are acceptable.

601.13 Manholes:

Manholes shall conform to ASTM C-478, PennDOT Publication 408 Specifications, Sections 605, 606 and 714 and PennDOT Construction Standards RC-39.

Steps: Provide manhole steps at 12" centers meeting the requirements of Publication 408 Specifications, Section 605.2(c) for aluminum alloy steps.

601.14 Frames and Covers:

Provide manhole frames and covers meeting the requirements of ASTM A-48 and PennDOT Publication 408 Specifications, Section 605.2(b) and PennDOT Construction Standards RC-39. Design frame and cover and grade adjustment rings for H-20 live load. Adjust to grade with concrete grade rings and cement mortar.

Manhole casting shall have a clear opening of 21" diameter and a manhole lid diameter of 22¾". The words "STORM SEWER" in 2-inch letters shall be cast in the manhole lid.

Frame and precast concrete grade rings to be attached to the top of the manhole using three ½" diameter threaded studs with hex nuts and washers, inserted through frame and rings. Holes to be spaced at 120° and two inches (2") from outside edge of frame. Embed studs four inches (4") into manhole.

601.15 Inlets:

Inlets shall be precast concrete or poured in place construction. Construction shall be in accordance with PennDOT Publication 408 Specifications, Sections 605, 606, 714 and PennDOT Construction Standards RC-39.

For inlets that exceed five feet (5') in height provide steps as specified in manholes.

601.16 Inlet Frame and Grates:

Tops: PennDOT Publication 408 and RC-34, Type C, Type M and Type S, as directed.

Frames: PennDOT Publication 408 and RC-34, ductile iron, or structural steel frames, as directed.

Grates: PennDOT Publication 408 and RC-34, structural steel, bicycle safe, as directed.

601.17 Concrete End-all/Head walls:

Provide materials and workmanship in accordance with the appropriate specifications as outlined in Publication 408, Section 605 and PennDOT Construction Standards RC-31.

601.18 Concrete End Sections:

Provide concrete end sections meeting requirements of Publication 408, Section 616 and PennDOT Construction Standards RC-33, for precast concrete end sections.

602 Construction

602.1 Installation of Pipe:

All pipe laying shall carefully progress uphill with hubs upgrade and ends fully and closely jointed. Trench widths shall not exceed the outside diameter of the pipe plus sixteen inches (16"), eight inches (8") on either side of the pipe. Trench depths shall be as required. Trench wall shall be vertical to one foot above the top of pipe and trench bottom shall be horizontal.

602.2 Lines and Grades:

The lines and grades for storm sewer pipe to be constructed shall be established by means of offset stakes, pins or other marks. Grades shall be furnished at intervals of 50 feet for grades of 0.80% and over and at 25 feet for grades under 0.80%.

When the construction of the storm sewer pipe line and grade is controlled by the use of a laser, periodic checks shall be made by the Contractor from grade stakes furnished at intervals not greater than 100 feet.

602.3 Denaturing:

Any water which collects in an excavation shall be removed before proceeding with the pipe line or structure.

602.4 Rock Excavation:

In rock, the contractor shall excavate the trench to the required grade plus an additional eight inches (8") below grade prior to installation of the pipe. The extra excavation shall be filled and compacted to grade with bedding material. Blasting shall only be done by a licensed blasted only after obtaining the necessary permits required by the State and Local agencies, as applicable.

602.5 Unsuitable Soil:

Should unsuitable soil be encountered, the Municipal Engineer may deem it necessary to excavate and remove the unsuitable material. The unsuitable material shall be replaced with AASHTO #3 stone to the bottom of the pipe bedding.

602.6 Pipe and Structure Bedding:

Prior to laying the pipe in the trench, a bedding of PennDOT #2A stone shall be placed the full width of the trench bottom. The material shall be a minimum of four inches (4") in depth and thoroughly compacted, with approved mechanical tampers. The bedding material shall be extended to a minimum of 12 inches above the top of the pipe and shall be compacted in 8 inch lifts with approved mechanical tampers. The bedding shall be graded to provide a uniform and continuous bearing support for the pipe and the sidewall of the trench throughout the entire length. Bell holes shall be provided at the ends of each pipe length.

Bedding for structures (manholes/inlets) shall be PennDOT #2A stone, 2 to 3 inches in depth, placed on a solid trench bottom or on undisturbed earth.

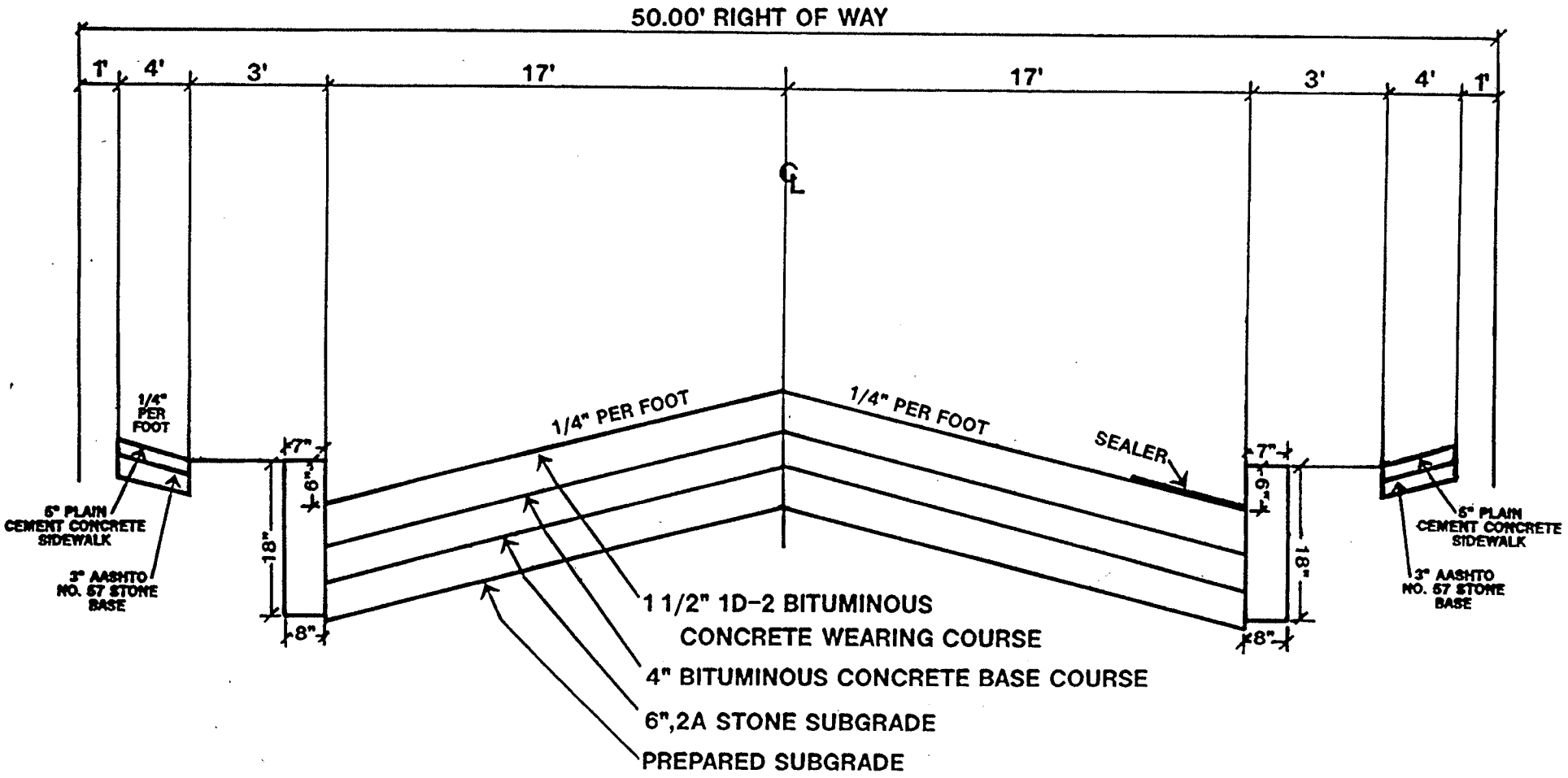
603 Backfilling

Trench backfill shall be done in accordance with the requirements of Section 500.

APPENDIX

1. Typical Roadway Cross-Section – Local Road
2. Typical Roadway Cross-Section – Collector Road
3. Typical Roadway Cross-Section – Arterial Road
4. Bituminous Driveway Removal and Repair Within Existing Municipal Streets
5. Trench Backfill and Temporary Paving Detail
6. Bituminous Driveway Pavement Repair
7. Curb Replacement Detail
8. Curb Detail/Depressed Curb
9. Inlet Types
10. Level Spreader Detail

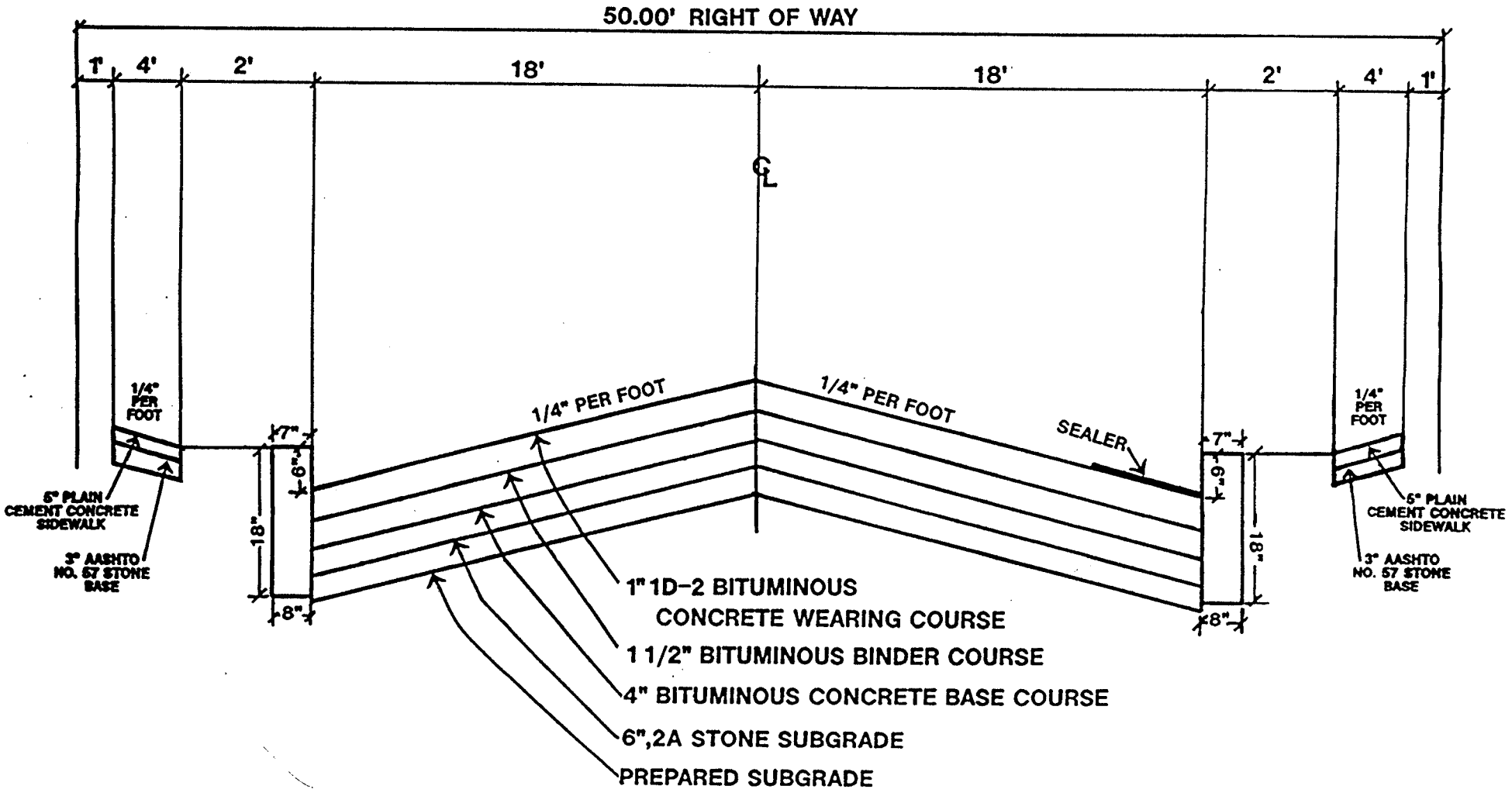
DRAWING 1
TYPICAL ROADWAY CROSS-SECTION
LOCAL ROAD



LEHIGH VALLEY
PLANNING COMMISSION-2002

NOT TO SCALE

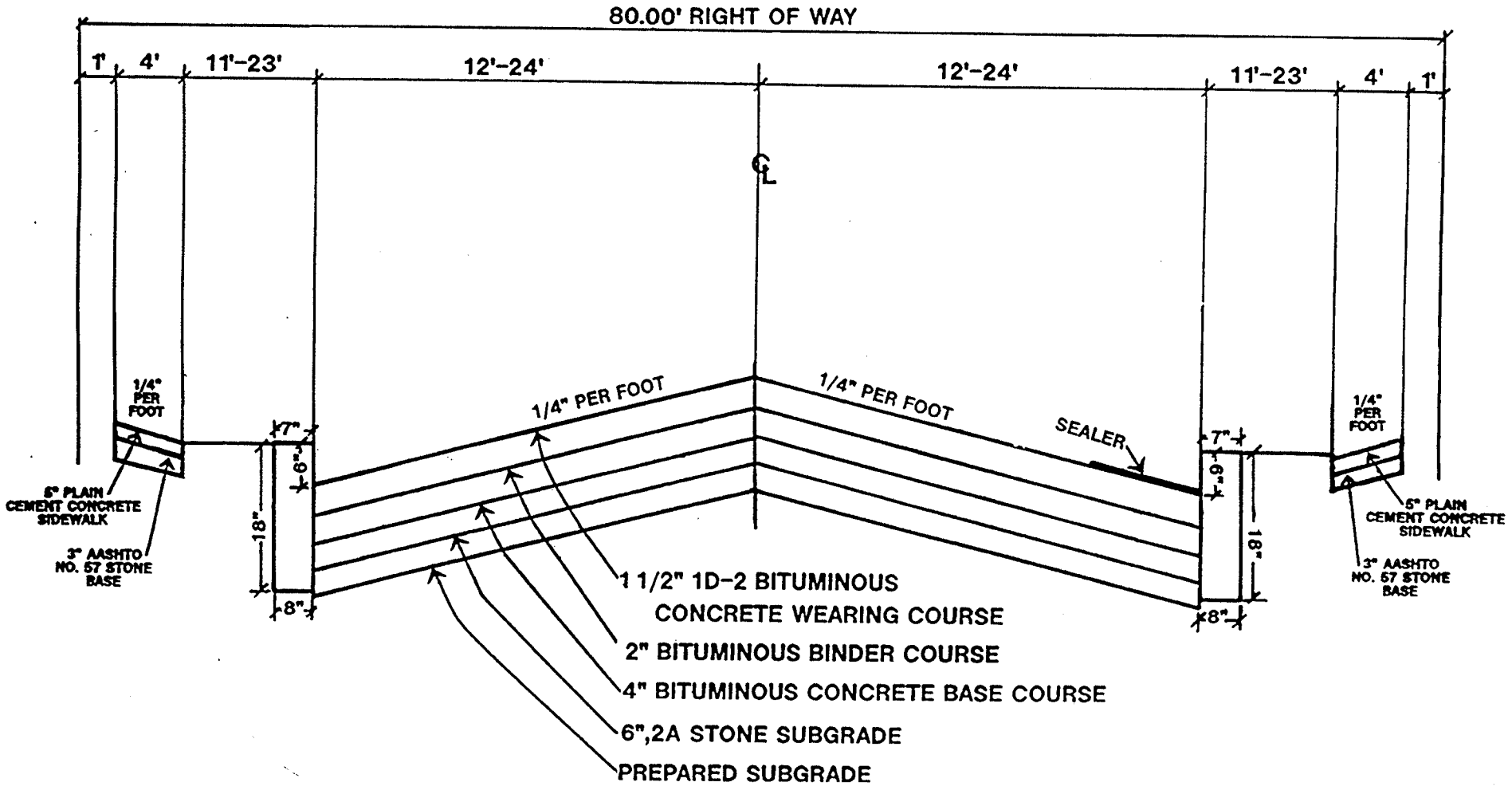
DRAWING 2
TYPICAL ROADWAY CROSS-SECTION
COLLECTOR ROAD



LEHIGH VALLEY
PLANNING COMMISSION-2002

NOT TO SCALE

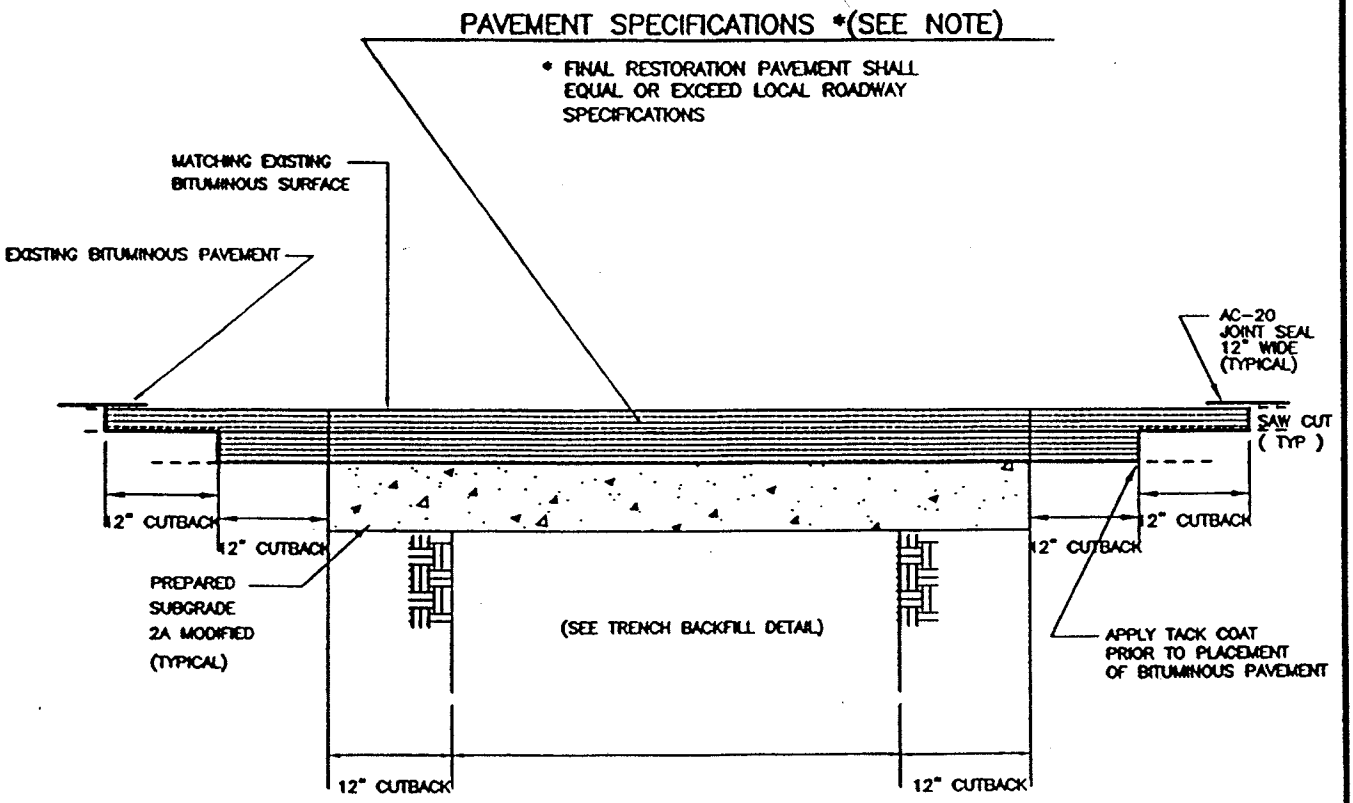
DRAWING 3
TYPICAL ROADWAY CROSS-SECTION
ARTERIAL ROAD



LEHIGH VALLEY
PLANNING COMMISSION-2002

NOT TO SCALE

ROADWAY CLASSIFICATION	ID-2 WEARING	ID-2 BINDER	BITUMINOUS BASE COURSE	2A STONE SUBBASE
LOCAL	1 1/2"		4"	6"
COLLECTOR	1"	1 1/2"	4"	6"
ARTERIAL	1 1/2"	2"	4"	6"
INDUSTRIAL	MATCH ARTERIAL SPECIFICATION AS MIN. OR MEET EXISTING PAVEMENT DESIGN			



DRAWING 4
BITUMINOUS PAVEMENT REMOVAL AND REPAIR WITHIN EXISTING MUNICIPAL STREETS

NOTE: NEWLY PAVED ROADWAYS MAY REQUIRE BORING IN LIEU OF OPEN TRENCHING

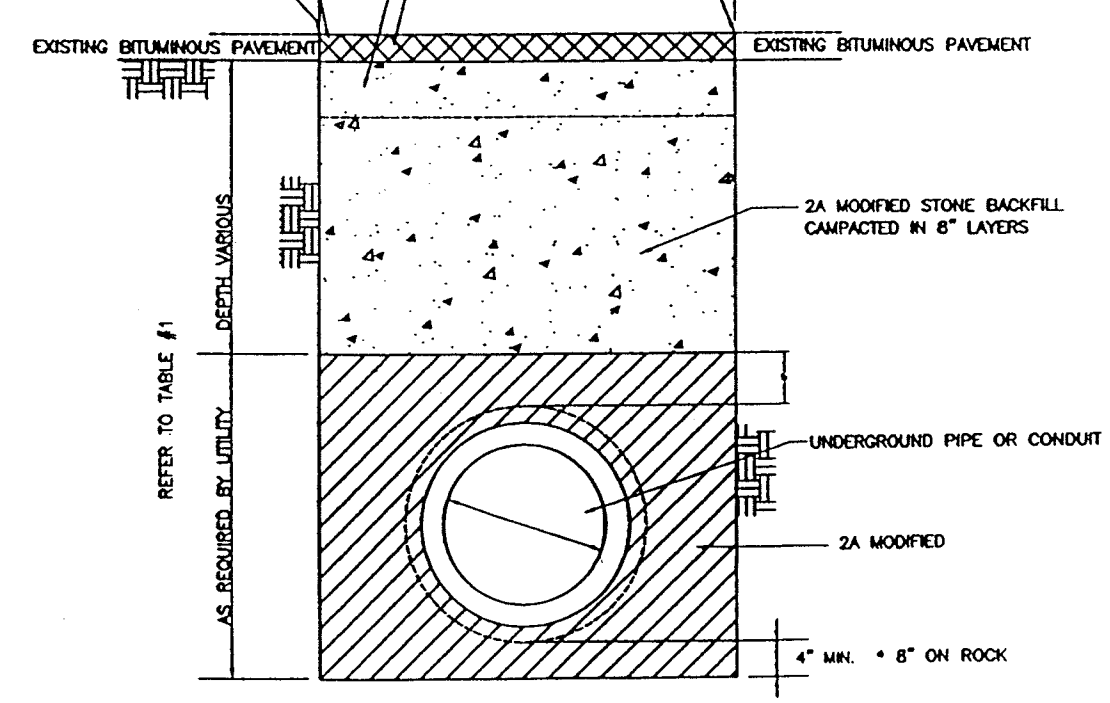
TABLE #1

TRENCH WIDTH VS. DEPTH FOR 8" THROUGH 16" SANITARY SEWER PIPE AND MANHOLES

DEPTH	TRENCH WIDTH
TYPE 1 TO 8'	I.D. PIPE +16"
TYPE 2 >8' TO 12'	I.D. PIPE +24"
TYPE 3 MORE THAN 12'	I.D. PIPE + 30"

TEMPORARY PATCHING

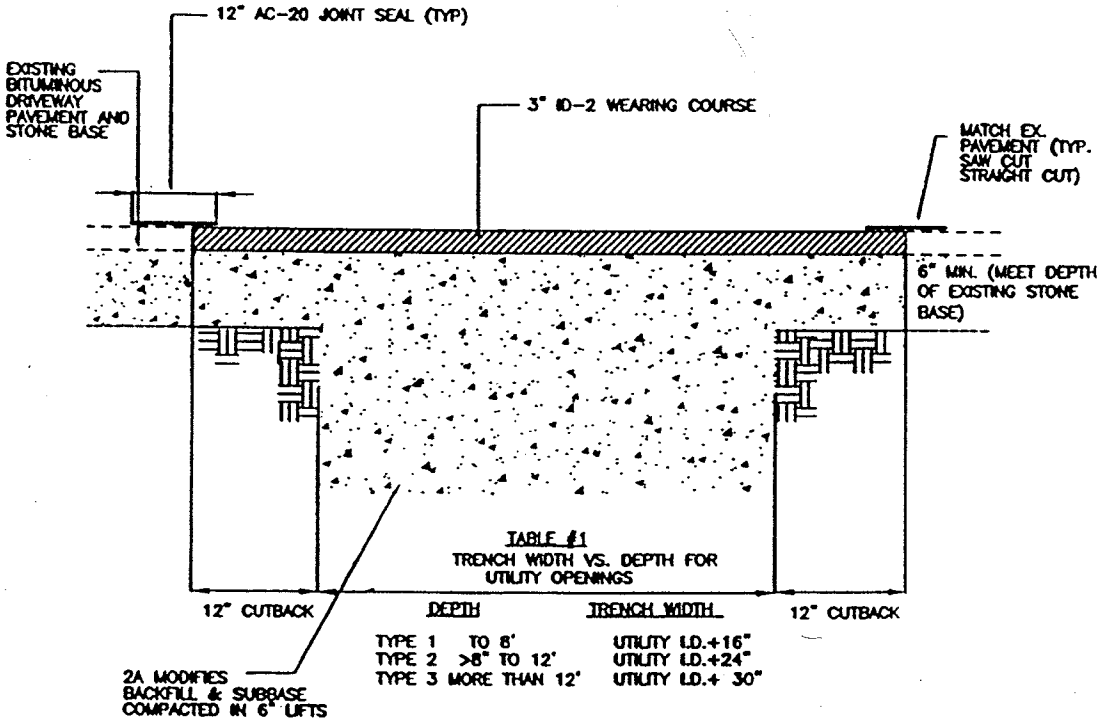
2 1/2" (MIN) BITUMINUOS STOCKPILE PATCHING MATERIAL, CLASS MC-400E (COLD)
OR
2 1/2" ID-2 BINDER COURSE (AS DIRECTED)



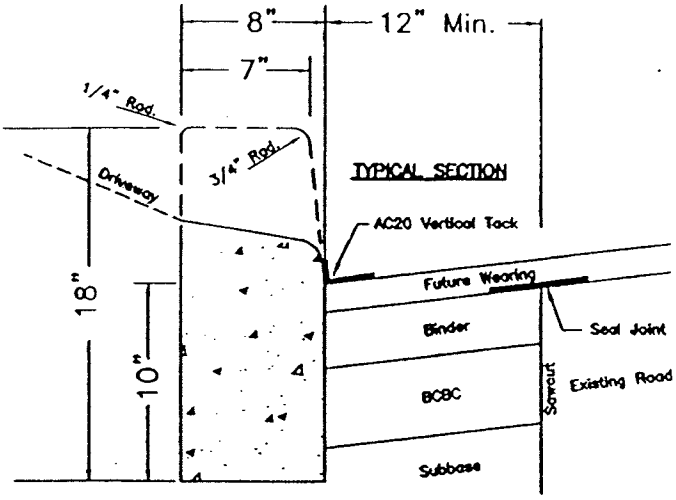
DRAWING 5

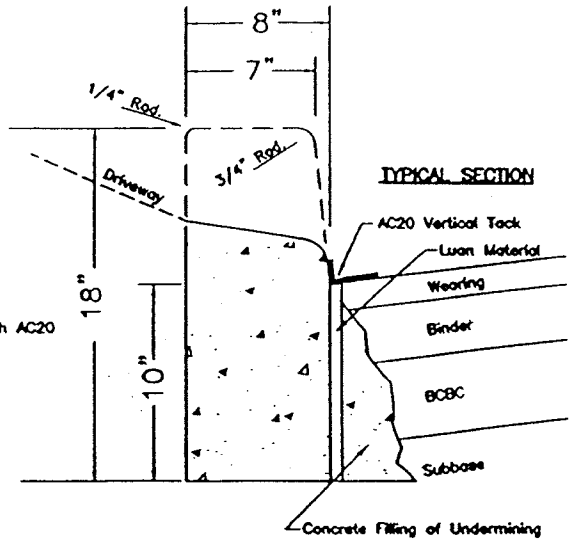
TRENCH BACKFILL AND TEMPORARY PAVING DETAIL

(SEE FINAL PAVEMENT REPLACEMENT DETAIL FOR FINAL RESTORATION)



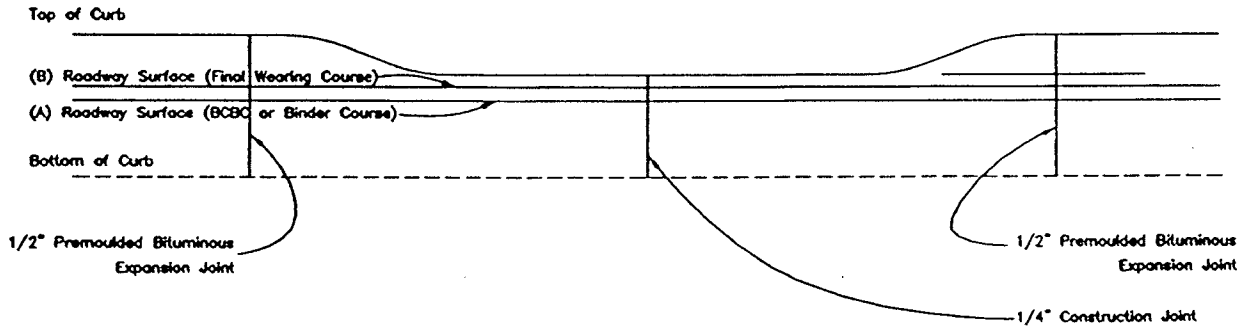
DRAWING 6
BITUMINOUS DRIVEWAY PAVEMENT REPAIR





Condition A – Roadway with BCBC or Binder:

Condition B – Roadway with 1 1/2" Wearing:



Condition A – Roadway with BCBC or Binder:

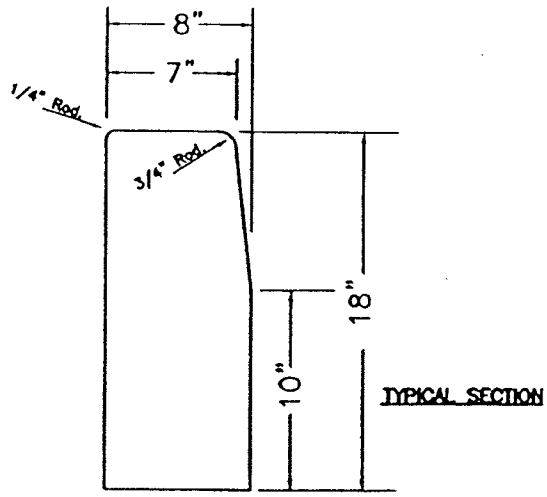
Roadway must be sawcut back from the face of the existing curb a minimum of 12 inches. New curb to be constructed using double faced forms. Restoration of roadway must be equal to existing conditions.

Condition B – Roadway with 1 1/2" Wearing:

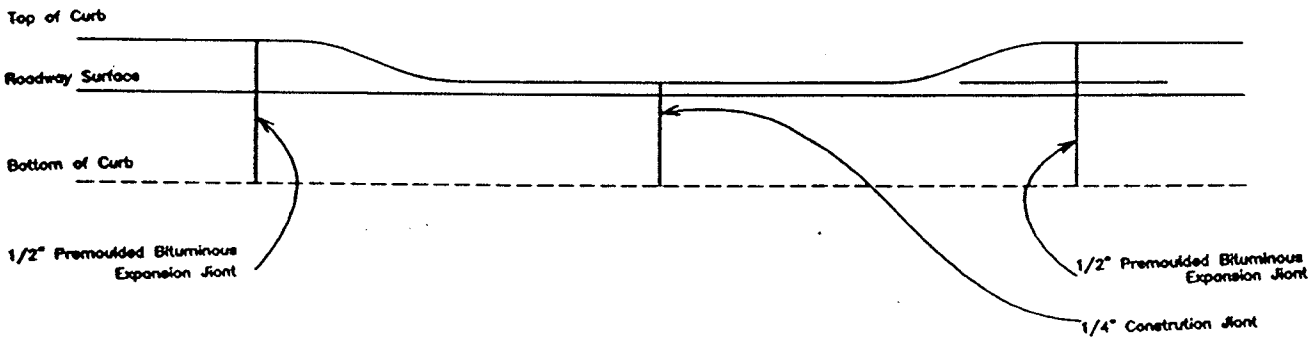
When final paving has been placed, the contractor must excavate and expose the back of the curb to be removed prior to removing the existing curb. This must be completed as not to disturb the subbabse nor undermine the roadway. Any undermining that occurs during excavation must be filled with concrete. A piece of luan material must then be placed between the concrete filling and the new curb prior to the pouring of the new curb. A 1 1/2" thick form can be placed on the final wearing course to obtain the depth of the depressed curb.

DRAWING 7

ELEVATION VIEW OF EXISTING CURB REPLACEMENT FOR DRIVEWAY CROSSOVER

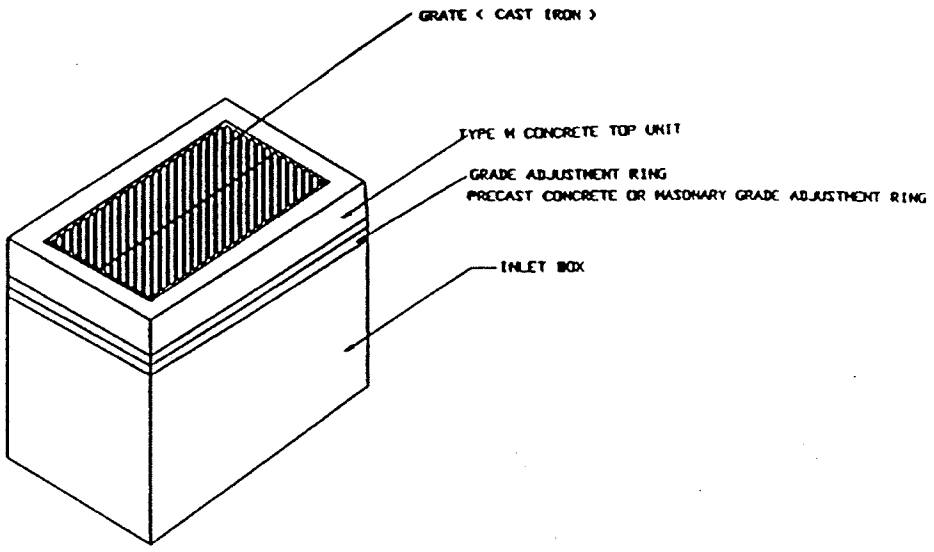


CURB DETAIL

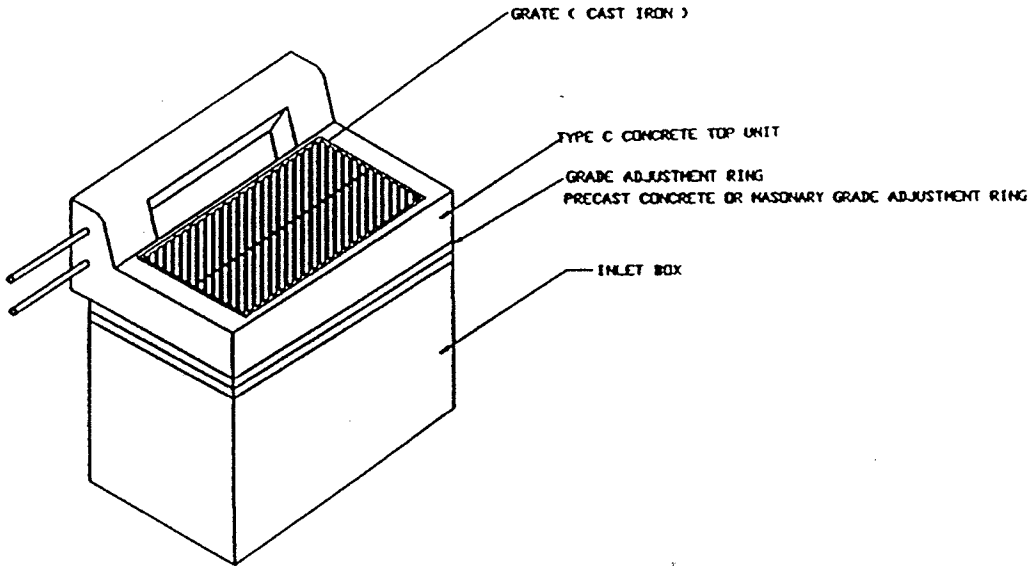


DRAWING 8

FRONT VIEW OF TYPICAL DEPRESSED CURB AT CROSSOVER



TYPE M INLET

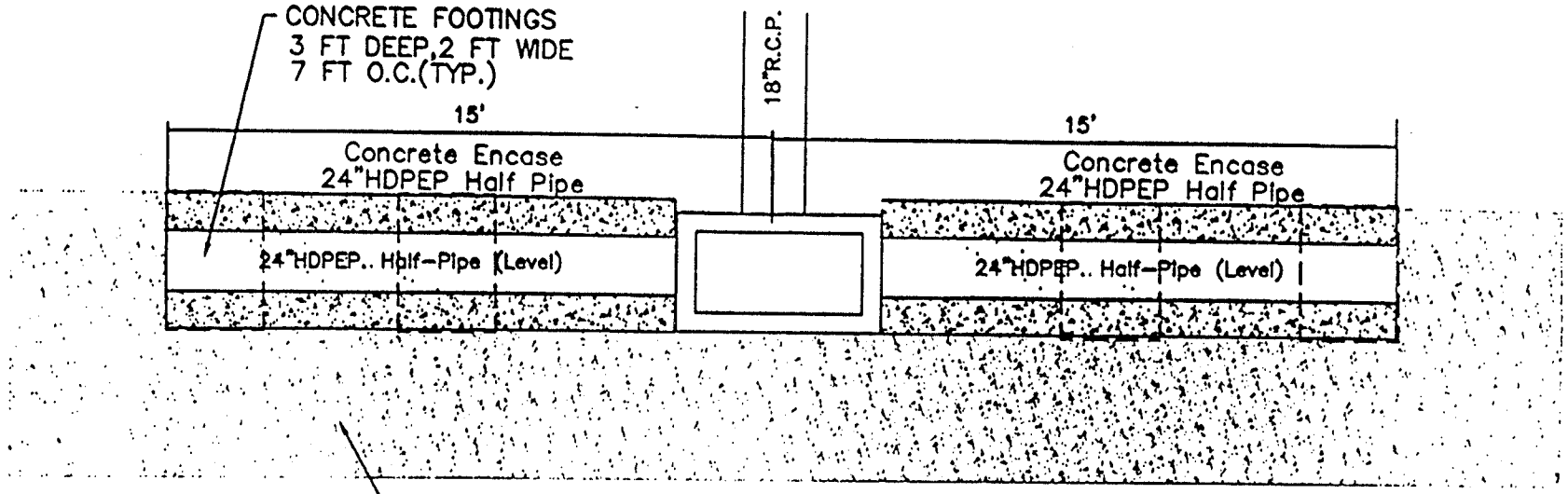


TYPE C INLET

DRAWING 9

INLET TYPES

DRAWING 10



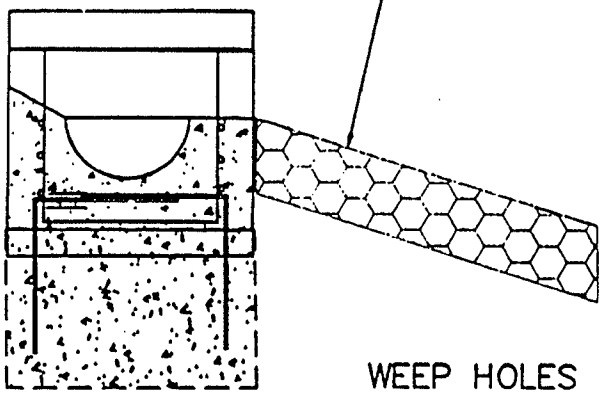
PLAN VIEW

TYPE 'M' TOP

CONCRETE APRON
4'WIDE,12"THICK

TOP HALF-PIPE
Concrete Encase
24"HDPEP Half Pipe

REINFORCE CONCRETE
WITH #4 BARS
DOWEL SPREADER TO
BOX WITH #4 BARS



WEEP HOLES

SIDE VIEW

KCE keystone consulting engineers inc.
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LEVEL SPREADER DETAIL

CW97-026

N.T.S.

LEVELSPRDERwo-rocks.dwg