

SECTION B-1
TECHNICAL SPECIFICATIONS
FOR SIDEWALKS

BUREAU OF ENGINEERING
DEPARTMENT OF PHYSICAL SERVICES

WEST HARTFORD

CONNECTICUT

B-1 TECHNICAL SPECIFICATIONS – SIDEWALKS

1. State of Connecticut, Department of Transportation Standard Specifications for Roads, Bridges, and Incidental Construction, hereafter referred to as Standard State Specifications shall govern in all cases, not covered by these specifications or any other documents included in a Town Contract.

2. MATERIALS

- a. Portland Cement--Portland cement shall conform to “Specifications for Portland Cement” (ASTM Designation*: C-150), and must be manufactured in the United States.
 - a.1 Type II cement only shall be used.
 - a.2 Laboratory test reports made by the cement manufacturer are to be made available to the Town upon request.
- b. Aggregates--aggregates shall conform to Standard State Specifications.
 - b.1 Coarse aggregates--crushed trap rock or Coarse Aggregate as defined in Section M.03.01 of the Standard State Specifications shall be used as course aggregate in the concrete mix. A minimum of two sizes of stone shall be blended at the time of batching to meet the gradation requirements as set forth in “Specifications of Concrete Aggregates” (ASTM Designation: C-33)*
 - b.2 Fine aggregate shall conform to section M.03.01 of the Standard State Specifications.
 - b.3 Laboratory tests of all proposed aggregates are to be made in accordance with ASTM C-33* prior to placing any concrete. Also, materials are to be tested and approved on an annual basis or when the source of materials is changed, or at the Town’s request.
- c. Water--water used in mixing concrete shall be clean, and free from deleterious amounts of acids, alkalies, or organic materials.
- d. Air-Entraining Materials--The entrainment of air in concrete can be accomplished by adding an air-entraining admixture at the time of batching. Admixtures added to the sand or water shall conform with “Specifications for Air-Entraining Admixtures for Concrete” (ASTM Designation: C-260). *

B-1 TECHNICAL SPECIFICATIONS – SIDEWALKS (cont.)

- e. Water Reducing and Set Retarding Admixtures which meet ASTM specifications for chemical admixtures for concrete-ASTM C-494* may be used in concrete mixes, only with prior approval of the Town of West Hartford, and their use shall not reduce the minimum cement content as specified.
- f. Mesh reinforcement shall be used in all sidewalks and apron construction exposed to vehicular traffic. Material shall be 6 x 6 -- #8 wire mesh conforming to ASTM A-185.*
- g. Preformed expansion joint filler to be of the non-extruding type and shall meet ASTM Specification D 1751-65* or AASHTO Specification M-213-65.*
- h. Concrete suppliers shall submit upon request by the Town certification by an independent laboratory that all materials have been tested and conform to these specifications.

NOTE: *Copies of these standards and specifications for review will be made available in the Bureau of Engineering, Construction Inspection Division.

3. CONCRETE QUALITY

- a. Minimum Strength 4000 PSI.
- b. Minimum cement content shall not be less than 6.75 bags per cubic yard.
- c. Maximum size of aggregate shall not exceed 1 inch.
- d. Maximum water content shall not exceed 5.3 gal. per bag of cement.
- e. Slump shall not be less than 2" and not more than 4 inches.
- f. The amount of entrained air (per cent by volume) shall be:

For 3/4 or 1 inch maximum size aggregate –

6 ± 1 Per Cent Air

Test for air content of fresh concrete shall be made during construction. Because of the effects of mixing and vibration, samples for air content preferably should be taken from concrete after it has been placed by qualified technicians per ASTM C-231 or C-233, periodically or at any time as requested by the owner.

B-1 TECHNICAL SPECIFICATIONS – SIDEWALKS (cont.)

4. TEST AND INSPECTION

The Town is authorized to conduct or have conducted such tests, as are deemed necessary, of concrete used in work under these specifications. The contractor shall furnish representatives of the Town with concrete under job conditions for making of standard test cylinders. The Town shall base its approval of methods and details of proportioning, batching, mixing, and placing of concrete upon the results of these tests.

The contractor shall forward daily to the Town a copy of each concrete delivery slip for each truck load of concrete which will include all data as required in ASTM C-94,* Paragraph 14 Certification.

The Town at any time may require batch plant inspection to certify the weights of all materials as batched into trucks serving projects within the Town.

All cost of testing shall be borne by the contractor.

5. BATCH PLANT APPROVAL

Any concrete producer will be required to show that his plant and equipment meet all requirements as established by ASTM Designation C 94-67, * and shall also be currently approved by the State of Connecticut Department of Transportation.

6. FOUNDATIONS AND FORMS

- a. All top soil, deleterious matter and unacceptable sub soil shall be excavated to depth directed by the Town. Generally the depth of excavation will be fifteen (15") inches below the proposed finished grade of the walk. Should this depth be exceeded, the excavation will be brought to sub-base grade with bank-run gravel as specified in the Standard State Specifications in compacted layers of 6 inch maximum. The remaining excavation shall be filled with 10" of Processed Aggregate, for 5" thick concrete and 7" thick for 8" reinforced concrete walk compacted in two equal lifts by rollers or other suitable machinery weighing not less than 500 lbs. Prior to placement of the processed aggregate base the sub-base shall always be leveled and compacted properly, Processed Aggregate shall meet the Connecticut Department of Transportation specifications for crusher run stone, or bank-run crushed gravel as specified in the Standard State Specifications.
- b. FORMS -- Forms shall be in good condition, with not more than one-fourth (1/4) inch variation in horizontal and vertical alignment for each ten (10) feet in length.

B-1 TECHNICAL SPECIFICATIONS – SIDEWALKS (cont.)

Forms shall be set true to line and grade and shall be adequately supported to remain in position while depositing and compacting concrete. Forms shall be designed to permit their removal without damage to the concrete; and prior to depositing of concrete, the forms shall be adequately oiled.

Forms shall be steel or wood, in good condition, be equal in depth to the depth of sidewalk, and acceptable to the Town. Walks, when poured, shall be at least four (4) feet wide and laid on the following inclinations: From outer edge of concrete walk to inner edge of concrete walk a rise of one-quarter (1/4) of an inch to the foot. There shall be half (1/2) inch pitch on all grassed areas rising from the top of curb.

c. SLAB THICKNESS:

A. Pedestrian Traffic only – 5” minimum.

B. Pedestrian and vehicular traffic – 8” minimum with 6x6 #8 wire mesh.

7. PLACING OF CONCRETE

- a. Before the concrete is placed, the base shall be thoroughly dampened so that it is moist throughout, but without puddles of water.
- b. Concrete shall be placed as near to its final position as practicable. Precautions shall be taken not to overwork the concrete while it is still plastic.
- c. The concrete shall be thoroughly spaded along the forms or screeds to eliminate voids or honeycombs at the edges.
- d. With each delivery of concrete, the contractor shall furnish a copy of the delivery ticket indicating the proportions of the mix and stamped by a time clock showing time of batching. Mixes over 1 ½ hours old shall be rejected.
- e. Concrete shall not be placed when the temperature exceeds 90° F. Pozzoloth retarders shall be used at the direction of the inspector should conditions require.

8. PLACING OF REINFORCEMENT

- a. Reinforcement shall be placed 3 inches above the base of the slab and abutting the inside faces of the forms. A minimum of 6-inch overlap shall be made whenever

B-1 TECHNICAL SPECIFICATIONS – SIDEWALKS (cont.)

more than one piece of wire mesh is used. However, no more than two pieces shall be allowed in any 10-foot section of sidewalk.

9. FINISHING

- a. No finishing operation shall be performed while free water is present. Finishing operations shall be delayed until all water and water sheen has left the surface and the concrete has started to stiffen. Re-tempering of concrete shall not be allowed.
- b. 1/4" expansion joints will be placed every 10' feet maximum or as directed by the Town. They shall be placed perpendicular to the longitudinal axis of the walk. Expansion joint material shall be placed at the joint located between handicap ramps and walks, between driveways and walks and between sidewalks and any fixed structure where necessary.
- c. Contraction joints shall generally be spaced at 5 foot intervals. Contraction joints may be formed by cutting a slot in the concrete approximately 1 1/4 inch deep for 5 inch thick slabs and 2 inches deep for 8 inch thick slabs. The slot may be cut by a T-bar forced into the fresh concrete for a depth as noted above. After the concrete has partially hardened, the bar shall be withdrawn and the joint edged with a jointer, held against a straight edge to make a clean, straight joint. The jointer shall have a 3/4 inch bit. When the bar is removed, run a trowel along the joint for the full depth of the concrete to remove all aggregate from the joint area.
- d. After screeding, floating and initial tooling has been done and the watersheen has disappeared, the concrete may then be troweled with a magnesium or wood float. If necessary, tooled edges and joints shall be rerun after floating to maintain uniformity. The surface shall not be over-troweled which may result in a weakened surface.
- e. After floating, the surface shall be brushed by drawing a soft-bristled pushbroom with a long handle over the surface of the concrete to produce a nonslip surface.
- f. Any person who shall construct such walks shall stamp his name and date of construction upon same so that it shall be clear and visible, and where ordered by the engineer.

B-1 TECHNICAL SPECIFICATIONS – SIDEWALKS (cont.)

10. CURING

- a. Concrete shall be protected so that little or no moisture is lost during the early stages of hardening. Newly placed concrete shall not be permitted to dry out too fast and must be protected from the sun and drying winds. This may be done with dampened burlap, sisalkraft paper, or canvas coverings. No polyethelene will be allowed at any time.
- b. As soon as the concrete has hardened enough so that the surface will not be marred, curing of concrete shall be accomplished by the following method:

Horn-Cure 30-D curing compound or approved equal, conforming to “Specification for Liquid Membrane-Forming Compounds for Curing Concrete” (ASTM Designation: C-309) *will be used. The curing compound shall be applied by hand-operated or power driven spray equipment immediately after the concrete has been given its final finish. The concrete surface shall be moist when the coating is applied. Two smooth and even textured coats to ensure complete coverage shall be applied. The second coat, shall be applied at right angles to the first. Such compounds shall be applied in accordance with the recommendations of the manufacturer.
- c. Under to condition shall the forms be removed during the first 24 hours after concrete has been poured.
- d. Pedestrian traffic shall be kept off the walk for 24 hours. Vehicular traffic shall be kept off the walk for a period of 72 hours.
- e. Security measures to prevent vandalism shall be the responsibility of the contractor.

11. COLD WEATHER CONCRETING

- a. The official cut-off date for placement of concrete sidewalks is October 15. Any sidewalks placed after this date must be accompanied with a two year guarantee bond.
- b. Cold weather concrete shall be used only when absolutely necessary and when the delay of work to the following construction season is not possible.

B-1 TECHNICAL SPECIFICATIONS – SIDEWALKS (cont.)

- c. Adequate protection shall be provided where temperatures of 40 degrees F or lower occur during the placing and during the early curing period. The concrete may be placed between 32° and 40° F provided the mix includes the addition of Pozzolith High Early added in liquid form at the plant. Calcium chloride shall not be added to the mix.
- d. The minimum temperature of fresh concrete after placing and for the first 4 days shall be maintained above 55 degrees F for Type II cement. Concrete made with Type III cement, if approved by the Town, must be maintained above 55 degrees F for the first 3 days. In addition to the above requirements, an additional 3 days of protection from freezing shall be maintained.
- e. Generally the concrete must be protected for a period of not less than seven (7) days by the following:
 - A layer of burlap, nine (9) inches of hay and a covering layer of burlap. Sisalkraft or tar paper may be used in lieu of burlap provided it is placed in such a manner as to exclude the contact of the insulating hay directly with the atmosphere.
- f. Sidewalks will not be placed when there exists more than three (3) inches of frost in the ground.

12. ANTI-SPALLING COMPOUND

After a twenty eight (28) day curing period, the sidewalk will be coated with an anti-spalling compound approved by the Town and applied as directed by the manufacturer.

13. PROCEDURES FOR SLAB REMOVAL OR RELAYING AND RESTORATION

Prior to removing or relaying slabs, the turf or sod will be cut neatly and salvaged if possible or replaced with no extra cost to the Town.

Bituminous concrete cuts at driveway and treebelt areas will be neatly cut with gas powered saw prior to slab removal. When bituminous restoration is to be done, it will be placed on a 6" compacted process stone base and all cut edges shall have a tack coat of asphalt emulsion painted on before the bituminous repairs are made.

B-1 TECHNICAL SPECIFICATIONS – SIDEWALKS (cont.)

Restoration of grassed areas and driveways shall be completed no later than seven (7) calendar days from placement of concrete at any section.

14. RELAYING SIDEWALK

- a. A strip of turf or bituminous paving, one foot wide and the full length and depth of the slab shall be cut on both sides.
- b. Each side of the slab shall be raised to a height of approximately one foot in order to uniformly place the necessary amount of stone or sand base. The slab shall then be rocked from side to side with the aid of steel bars in order to uniformly spread the base.
- c. The contractor must take precautionary actions to prevent the slabs from being damaged.

15. SAFETY

Safety shall be maintained at all times when the contractor's equipment is on the paved portion of the street, adjacent to working on removal and replacement of sidewalks and restoration.

Barricades shall be placed at each end of the work area surrounding the equipment. Lighted barricades shall be placed along the construction area at the end of each work day to avoid pedestrian or vehicular accidents.

At no time shall the contractor work on both sides of the street simultaneously in a manner to create a hazard to pedestrians. The location of all signs shall be recorded by the inspector before their removal. All removed signs shall be protected and reinstalled as soon as the work has been completed on any single street. Damaged signs shall be replaced by the contractor with no cost to the Town. Under no condition may a stop sign be removed before it can be replaced with a portable sign.

BITUMINOUS CONCRETE SIDEWALK
(One Course)

16. These walks shall consist of a dense graded bituminous concrete surface, 2 inches thick after compaction, constructed on a 6-inch processed gravel base, thoroughly compacted with a roller weighing not less than 500 pounds. The width of the walk shall be 4 feet. The sides of the walk shall be backfilled with suitable material thoroughly compacted and finished flush with the top of the walk. All surplus shall be removed and the site left in a

B-1 TECHNICAL SPECIFICATIONS – SIDEWALKS (cont.)

neat and presentable condition to the satisfaction of the Engineer. In sections inaccessible to the roller, the base course, surface course and backfill shall be hand tamped with tampers weighing not less than 12 pounds, the face of which shall not exceed 50 square inches in area.

MATERIALS. The materials for this work shall conform to the following requirements.

ASPHALT CEMENT. The asphalt cement shall be homogeneous, free from water, shall not foam when heated to a temperature of 347° F and shall conform to the following requirements:

Tests	Min.	Max.
Penetration at 77° F., 100 gms., 5 secs.	85	100
Flash point, (open cup method) °F	347	
Loss on heating at 325° F., 50 gms., 5 hrs.		1.0%
Penetration of Residue at 77° F., 100 gms., 5 secs. in % of original Penetration	60%	
Ductility at 77°F., in centimeters	100	
Bitumen soluble in carbon disulphide	99.5%	

COARSE AGGREGATE. The coarse aggregate shall consist of clean, hard, tough, durable fragments of broken stone or gravel of uniform quality throughout. It shall not contain more than 1 percent of materials such as crusher dust, sand, elongated or soft disintegrated pieces. It shall be free of mud, dirt, organic or other injurious materials. When gravel is used, at least 50% must be crushed.

LOSS ON ABRASION. When tested by means of the Los Angeles Rattler using A.A.S.H.O. Method T-96, the loss shall not exceed 40%.

FINE AGGREGATE. The fine aggregate shall consist of sand or a mixture of a minimum of 50% sand and a maximum of 50% stone screenings, and shall be composed of clean, tough, rough-surfaced and angular grains. The fine aggregate shall be limited to material 95% of which passes a No. 4 sieve having square openings and not more than 8% of which passes a No. 200 sieve. The material shall be free from clay, loam and foreign materials. When screenings are blended, they shall be free from coatings of fine dust after drying.

MINERAL FILLER. Mineral filler shall be Portland Cement, ground limestone or other material approved by the Engineer, free from lumps or balls or any foreign material, and conforming to the following gradation requirements.

B-1 TECHNICAL SPECIFICATIONS – SIDEWALKS (cont.)

Passing No. 200 sieve	-	not less than 75%
Total Passing No. 80 sieve	-	not less than 95%
Total Passing No. 30 sieve	-	not less than 100%

SOURCES OF SUPPLY. Approval of sources of supply of course and fine aggregate, sand, mineral filler and asphalt cement, shall be obtained from the Engineer prior to delivery of material and samples of each shall be submitted as directed by the Engineer.

CONSTRUCTION METHODS. The methods employed in performing the work and all equipment, tools, machinery and other plant used in handling material and executing any part of the work, shall be subject to the approval of the Town Engineer before the work is started and, whenever found unsatisfactory, shall be changed and improved as required by the Town Engineer. All equipment, tools, machinery and plant used must be maintained in a satisfactory working condition.

GENERAL COMPOSITION OF THE MIX. The mineral aggregate shall be graded and combined to meet the following limits by weight:

Proportionate Amount (Square Mesh Sieves)	Per Cent
Aggregate Passing 1/2"	100
Pass 3/8"	80-100
Pass No. 4	50-75
Pass No. 10	30-55
Pass No. 20	20-40
Pass No. 40	10-30
Pass No. 80	5-15
Pass No. 200	3-8

The proportion of bitumen soluble in Cs2 to total mixture by weight shall be between 5 and 7%. The fraction actually retained between any two consecutive sieves shall be not less than 4%. At least 1/2 of the fraction passing 200-mesh sieve shall meet the requirements for mineral filler. The temperature of the mixture as it is dumped from the mixer must be between 250 and 325° F. The required temperature shall depend on the type of material used and shall be determined by the Engineer.

FORMULA FOR JOB MIX. The general composition limits prescribed above are master ranges of tolerance to govern mixtures made from any raw materials meeting specifications and they are maximum and minimum for all cases. A closer control appropriate to the job materials is required for the specific project in accordance with the job mix formula as follows:

B-1 TECHNICAL SPECIFICATIONS – SIDEWALKS (cont.)

No work shall be started on the specific project nor any mixtures accepted therefore, until the Contractor has submitted and received approval of his intended job mix formula, indicating in writing the single definite percentage for each sieve fraction of aggregate, and for bitumen, which he chooses as the fixed mean in each instance, and also the intended temperatures of completed mixture taken as it is dumped from the mixer and as it is delivered to the paver on the project.

The submission of such job mix formula shall, upon approval and thereafter, bind the manufacturer to furnish paving mixture not only within the above master ranges, but, as a further requirement, also meeting the exact formula thus set up for the project, within the following allowable tolerances:

<u>Job Mix Tolerances</u>	<u>Plus or Minus</u>
Aggregate passing sieve No. 4 and larger	5%
Aggregate passing sieves No. 10 thru #80	4%
Aggregate passing sieve No. 200	2%
Bitumen	0.5%
Temperature of Mixture when dumped from mixer	25° F.
Temperature of Mixture at delivery to Paver	25° F.

The paving plant, preparation, transportation, placing and compaction of the mixture shall conform to the Specifications of the Connecticut Highway Department.

BITUMINOUS CONCRETE SIDEWALK
(Two Course)

17. These walks shall consist of a dense graded bituminous concrete surface course, one inch thick after compaction, and a bituminous concrete binder course, 2 inches thick after compaction, constructed on a 6-inch processed gravel base, thoroughly compacted with a roller weighing not less than 500 pounds. The width of the walk shall be 5 feet. The sides of the walk shall be backfilled with suitable material thoroughly compacted and finished flush with the top of the walk. All surplus material shall be removed and the site left in a neat and presentable condition to the satisfaction of the Engineer. In sections inaccessible to the roller, the base course, binder course, surface course and backfill shall be hand tamped with tampers weighing not less than 12 pounds, the face of which shall not exceed 50 square inches in area.

The dense graded bituminous concrete surface course shall conform to the requirements as specified for a one course walk.

MATERIALS. The materials for this work shall conform to the following requirements:

B-1 TECHNICAL SPECIFICATIONS – SIDEWALKS (cont.)

ASPHALT CEMENT. The asphalt cement shall be homogeneous, free from water, shall not foam when heated to a temperature of 347° F., and shall conform to the following requirements:

Tests	Min.	Max.
Penetration at 77° F., 100 gms., 5 sec.	85	100
Flash point, (open cup method) ° F.	347	
Loss on heating at 325° F., 50 gms., 5 hrs.		1.0%
Penetration of Residue at 77° F., 100 gms. 5 secs. in % of original Penetration	60%	
Ductility at 77° F., in centimeters	60	
Bitumen soluble in carbon disulphide	99.5%	

COURSE AGGREGATE. The coarse aggregate shall consist of clean, hard, tough, durable fragments of broken stone or gravel of uniform quality throughout. It shall not contain more than 1 percent of materials such as crusher dust, sand, elongated or soft disintegrated pieces. It shall be free of mud, dirt, organic or other injurious materials. When gravel is used at least 50% must be crushed.

LOSS ON ABRASION. When tested by means of the Los Angeles Rattler using A.A.S.H.O. Method T-96, the loss shall not exceed 40%.

GRADING. The course aggregate shall conform to the following gradation:

Sq. Testing Sieve in Inches	Percent Passing Testing Sieves
1	100
3/4	90-100
5/8	-
1/2	10-40
3/8	0-20
No. 4	0-5
No. 8	-
No. 100	-

FINE AGGREGATE. The fine aggregate shall be sand composed of clean, tough, rough-surfaced and angular grains, free from clay, loam or other foreign materials.

Sand shall meet the following gradation requirements:

B-1 TECHNICAL SPECIFICATIONS – SIDEWALKS (cont.)

Sieves	Min.	Max.
Passing No. 4	95%	100%
Passing No. 200	0%	6%

SOURCES OF SUPPLY. Approval of sources of supply of course and fine aggregate, sand, mineral filler and asphalt cement shall be obtained from the Engineer prior to delivery of material and samples of each shall be submitted as directed by the Engineer.

CONSTRUCTION METHODS. The methods employed in performing the work and all equipment, tools, machinery and other plan used in handling material and executing any part of the work shall be subject to the approval of the Town Engineer before the work is started and, whenever found unsatisfactory, shall be changed and improved as required by the Town Engineer. All equipment, tools, machinery and plan used must be maintained in a satisfactory working condition.

GENERAL COMPOSITION OF THE MIX. The mineral aggregate, prepared as detailed hereinafter, shall be graded and combined to meet the following limits by weight:

	Proportionate Amount (Square Mesh Sieves) Percent
Aggregate retained on 1"	0-5
Aggregate passing 1"	90-100
Aggregate passing 1/2"	45-75
Aggregate passing #10	15-35

The fraction actually retained between any two consecutive sieves shall not be less than 4%.

The proportion of bitumen to total mixture by weight shall be:

Bitumen (Sol. in solvent)	3.5-6%
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Temperature shall be so controlled that the temperature of the asphalt cement shall not exceed 325° F. and that of the aggregate at the dryer outlet shall be between 300 and 350° F. The temperature of the mixture as it is dumped from the mixer must be between 265 and 325° F.

The paving plant, preparation, transportation, placing and compaction of the mixture shall conform to the Specifications of the Connecticut Highway Department.

B-1 TECHNICAL SPECIFICATIONS – SIDEWALKS (cont.)

METHOD OF EXAMINATION FOR CONCRETE SIDEWALK CONTRACTORS

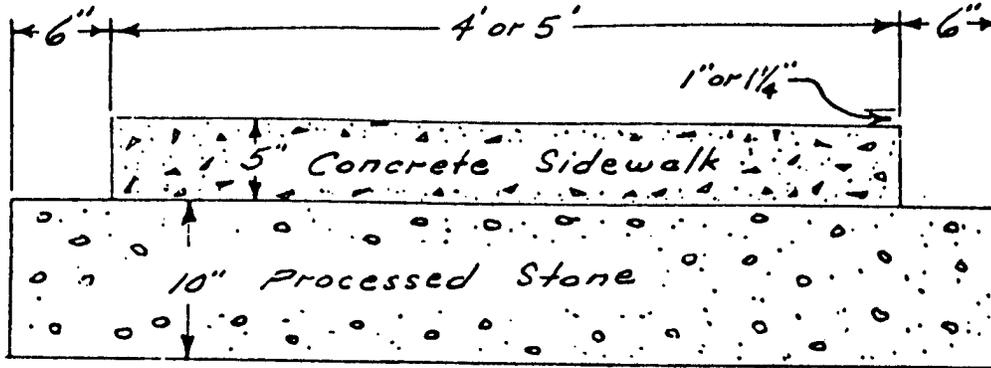
18. All Contractors shall construct a sample of concrete sidewalk at a designated location according to the Town of West Hartford's specifications for approval prior to the commencement of construction

If accepted, the Town shall require the contractor to maintain this standard of workmanship throughout the entire project.

NOTE: This sample will consist of (3) three standard size (4' x 5') concrete slabs.

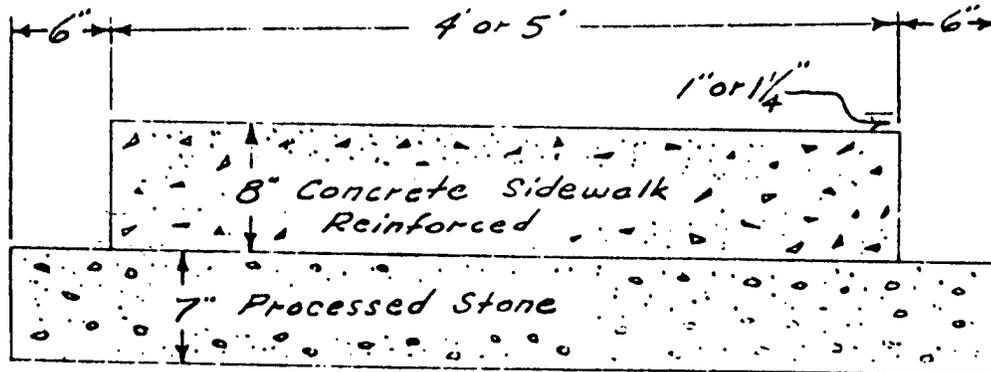
B-1 TECHNICAL SPECIFICATIONS - SIDEWALKS (cont.)

STANDARD CROSS SECTIONS
5" & 8" CONCRETE SIDEWALKS



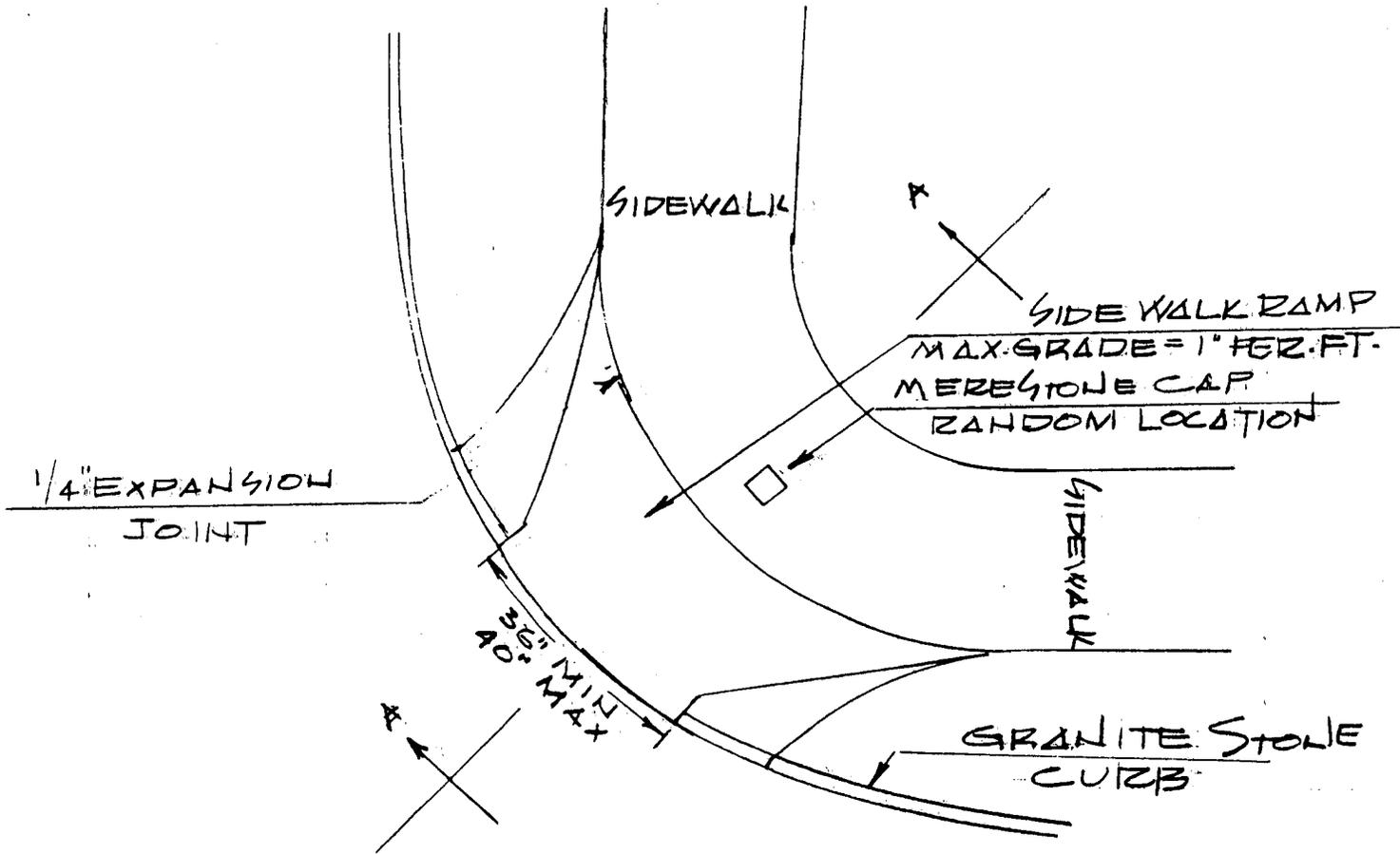
TYPICAL CROSS SECTION - 5" WALK

PITCH TO STREET = 1/4" PER FOOT
ALL WALK

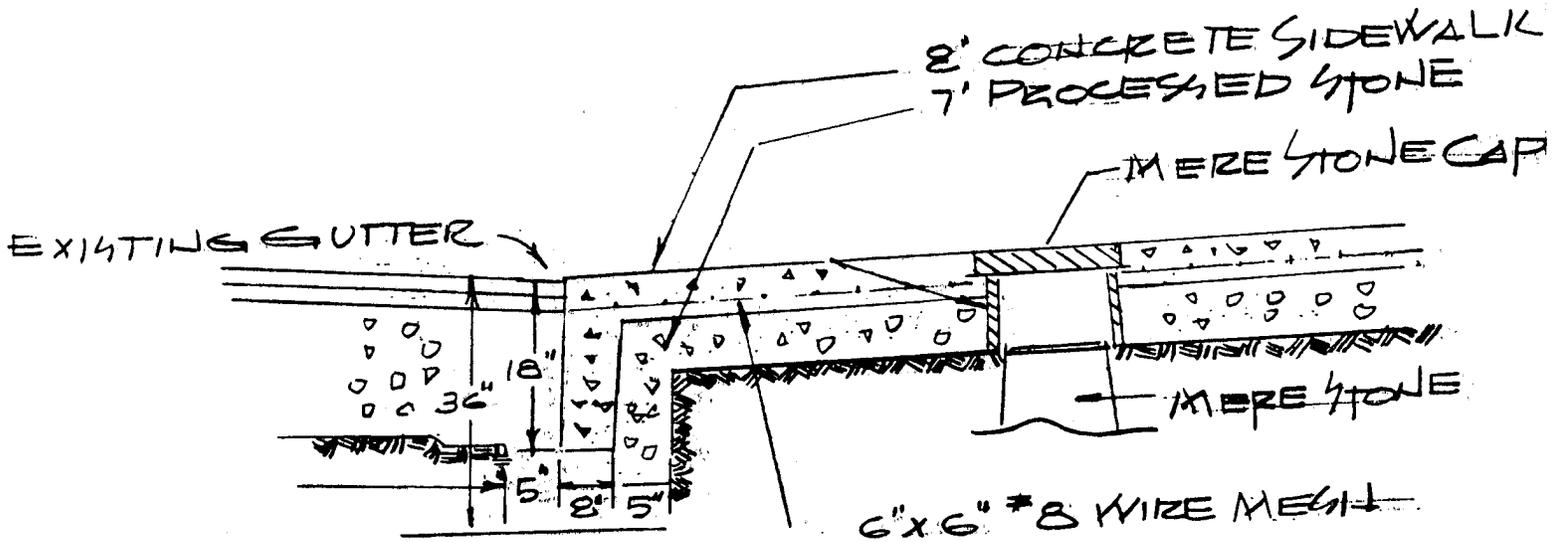


TYPICAL CROSS SECTION - 8" WALK
AT DRIVEWAYS

SCALE: 1" = 1'



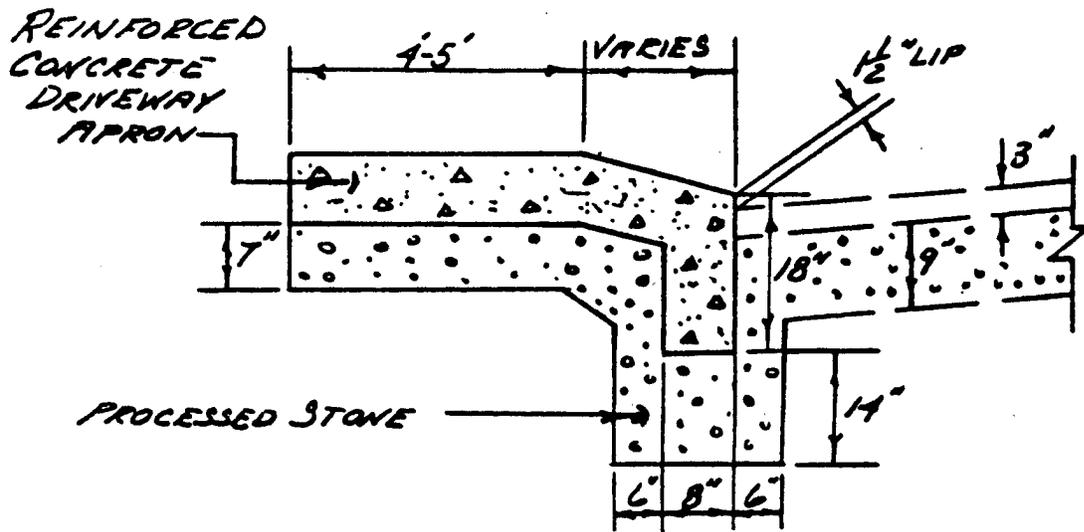
A-A SECTION



TYPICAL CONCRETE SIDEWALK RAMP
WITH MERE STONE CAP INSTALLATION
NOT TO SCALE

TOWN OF WEST HARTFORD
BUREAU OF ENGINEERING

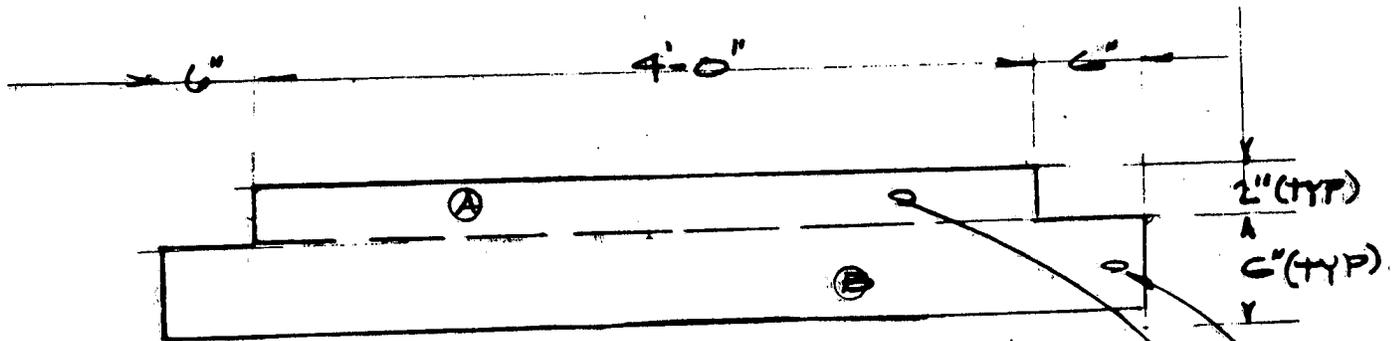
CONCRETE DRIVE-
WAY RAMP
STANDARDS



Mesh reinforcement shall be 6x6" #8 wire mesh
conforming to ASTM A-185.

TYPICAL CROSS SECTION
8" REINFORCED WALK &
DRIVEWAY APRON
SCALE 1"=2'

TOWN OF WEST HARTFORD BUREAU OF ENGINEERING	BITUMINOUS SIDEWALK STANDARD
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Ⓐ 2" MINIMUM CLASS II BIT. CONCRETE

Ⓑ 6" MINIMUM PROCELYN STONE BASE

BITUMINOUS SIDEWALK

SECTION B-2
TECHNICAL SPECIFICATIONS
FOR GRANITE CURBING

BUREAU OF ENGINEERING
DEPARTMENT OF PHYSICAL SERVICES

WEST HARTFORD

CONNECTICUT

B-2 TECHNICAL SPECIFICATIONS FOR GRANITE CURBING

1. DESCRIPTION

This item of work shall consist of furnishing and setting granite curbstones on an approved foundation or base and to the required line and grade, as indicated on the plans and as directed by the Engineer, in accordance with these specifications.

2. MATERIALS

GENERAL

Curbstone shall be of hard and durable granite, of a light color satisfactory to the Engineer, free from seams which impair its structural integrity, and of a good, smooth splitting appearance. Granite shall come from approved quarries and, when tested, shall have a French coefficient of wear not less than 16 or a Los Angeles percentage of wear not more than 32. Test samples shall be hand broken.

NOTE:

1. All curbs with vein of black through the stone shall be rejected. Curbs with black spots, splotches, or streaks may be accepted if they will not detract from physical appearance of exposed surfaces.
2. Curbs with quartz veins may be accepted. However, all stones with quartz veins must be examined very closely to ascertain whether a seam exists along joint between granite and quartz. This characterized by a discoloration (black, pink, yellow) as fine as 1/16" along the joint. All such stones shall be rejected.
3. Curbs with quartz veins shall be limited to about 5% of total delivered and shall be evenly distributed throughout the job. All others shall be rejected.

3. DIMENSIONS

The stones shall be cut to the following dimensions:

<u>Width at Top (inches)</u>	<u>Depth in (inches)</u>	<u>+Minimum Length (feet)</u>	<u>Minimum Width at Bottom (inches)</u>
6	17 to 19	6	5 (for 2/3 length)

+Minimum length does not apply to radial curb and closures.

B-2 TECHNICAL SPECIFICATIONS FOR GRANITE CURBING (cont.)

Curbstone to be set on a radius of one hundred sixty feet or less shall be cut to the curve required.

4. FINISH

Finish and surface dimensions shall conform to the following requirements:

The curbstone shall have a top surface free from wind; it shall be pointed, peen-hammered or sawed to an approximately true plane, and shall have no projections or depressions greater than 1/8 of an inch.

Curbs with surface depressions greater than 1/8 of an inch and less than 1/4 of an inch shall be limited to 20% of total delivered and shall be evenly distributed throughout the job. All others shall be rejected.

Exposed arris lines shall be pitched straight and true with no variation from a straight line greater than 1/8 of an inch. Half drill holes not larger than 1/4 of an inch radius will be permitted in back arris line.

Back surfaces of curbstones, shall have no projection, for a distance of three inches down from the top, which would exceed a batter of three inches in twelve inches.

Front face shall be at right angles to the plane of the top and shall be smooth quarry-split. Drill holes in exposed part of face will not be permitted.

Front face shall have no projections greater than 3/4 of an inch or depressions greater than 1/2 of an inch measured from the vertical plane of the face through the top arris line for a distance down from the top of eight inches. Remaining distance shall have no projections or depressions greater than one inch measured in the same manner.

Ends of all stones shall be square with the planes of the top and face, and so finished when stones are placed end to end as closely as possible, no space more than 3/4 of an inch shall show in the joint for the full width of the top or down on the face for eight inches. Remainder of end may break back not over eight inches from the plane of the joint.

5. FOUNDATIONS

NOTE: These foundations specifications can be applied only when natural sub-soil conditions indicate adequate drainage and a good gravel is available for backfill. Special specifications will be written for other conditions.

B-2 TECHNICAL SPECIFICATIONS FOR GRANITE CURBING (cont.)

6. EXCAVATION TRENCH

Trench for the curb shall be excavated to a width of eighteen (18) inches. Bottom of trench shall be eighteen (18) inches below bottom of proposed curbstone.

7. PREPARING FOUNDATION

Foundation for the curb shall consist of processed stone or processed gravel spread in two (2) lifts and, each lift compacted thoroughly with a vibratory compactor.

The depth of the foundation (base) shall be not less than the depth shown on the appropriate standard cross-sectional drawings attached to these specifications.

8. SETTING CURBSTONES

Curb shall be set a line and grade required, and it shall project five (5) inches above the shoulder grade or pavement, unless otherwise directed or called for on the plans.

Curbstones shall not fit closer to each other than one-eighth (1/8) of an inch, otherwise they shall be fitted together as closely as possible.

Additional gravel shall be provided as required. All spaces under curbstones shall be carefully and thoroughly rammed so that the curbstones shall be completely supported throughout their entire length.

9. POINTING

Joints between curbstones shall be carefully filled with cement mortar and shall be neatly pointed on top and exposed front portions. After pointing, curbstones shall be satisfactorily cleaned of all excess mortar that may have been forced out of the joints.

10. MORTAR

Mortar for pointing joints, when specified, shall be composed of equal parts of cement and sand with sufficient water to form a workable mixture. The materials shall conform to the requirements of A.S.T.M., C-91 and C-144.

B-2 TECHNICAL SPECIFICATIONS FOR GRANITE CURBING (cont.)

11. FILLING ABOUT TRENCH

After curb is set, space between it and wall of the trench shall be filled with approved material thoroughly tamped, to depth directed, care being taken not to affect the line or grade of curb.

12. PROTECTION

The Contractor shall protect curbstones and keep them in first class condition until completion of the entire contract. Particular care must be exercised to prevent discoloration of exposed surfaces.

13. HANDLING

Under no condition may chains be used to load, unload, transport or set granite curbing. Slings used for this purpose shall be the type which will cause no damage to the curbing while being handled. The Engineer shall approve or disapprove the type of slings used.

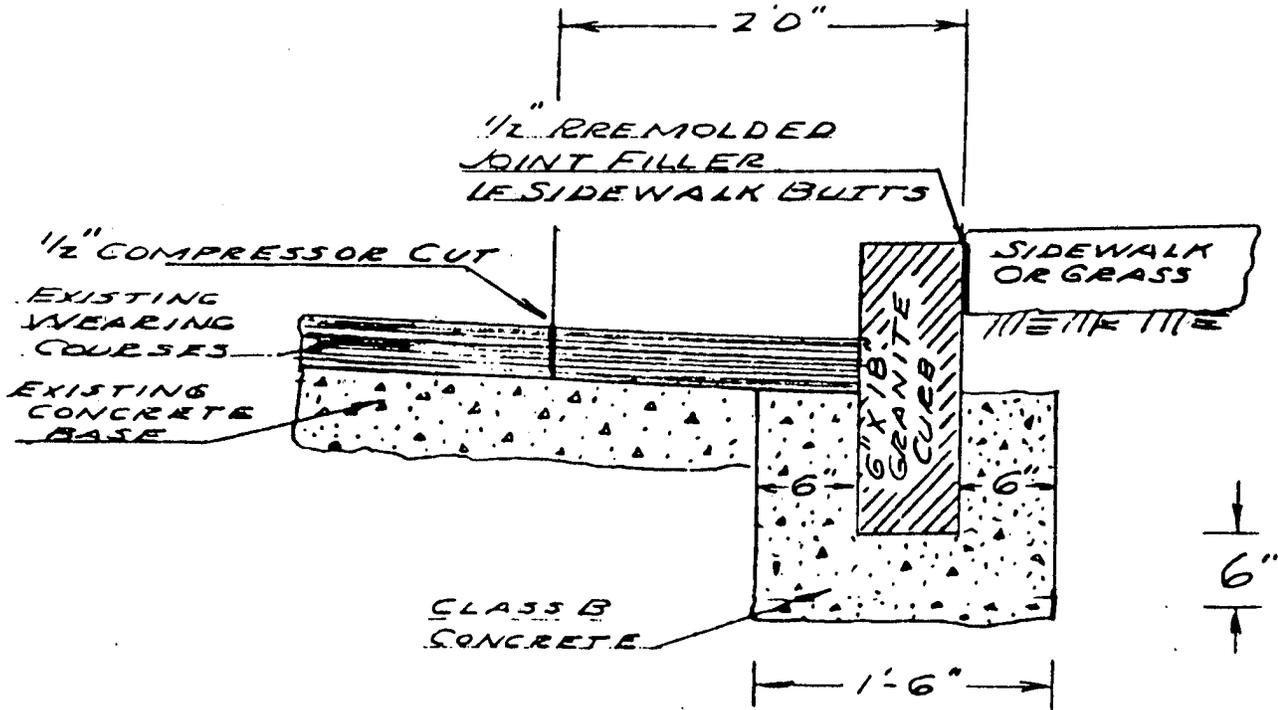
14. STANDARD CROSS-SECTIONS

The following is a list of standard cross-sections acceptable by the Town of West Hartford and part of these specifications.

- For Radius Granite Curbing
- For Straight Granite Curbing
- For Beveled Granite Curbs at each end of driveways
- For replacing concrete curbs with granite and adjacent to concrete pavements

TOWN OF WEST HARTFORD
BUREAU OF ENGINEERING

CURB
STANDARDS

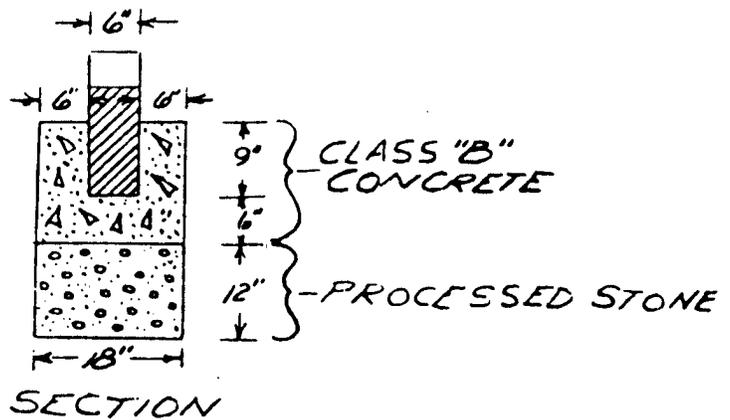
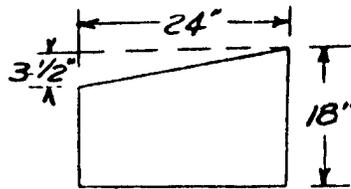


TYPICAL
GRANITE CURB
INSTALLED TO REPLACE
CONCRETE CURB AT LOCATIONS
WITH EXISTING CONCRETE ROADWAY BASE
INSTALLATION

SCALE 1" = 1'-0"

TOWN OF WEST HARTFORD
BUREAU OF ENGINEERING

CURB
STANDARDS

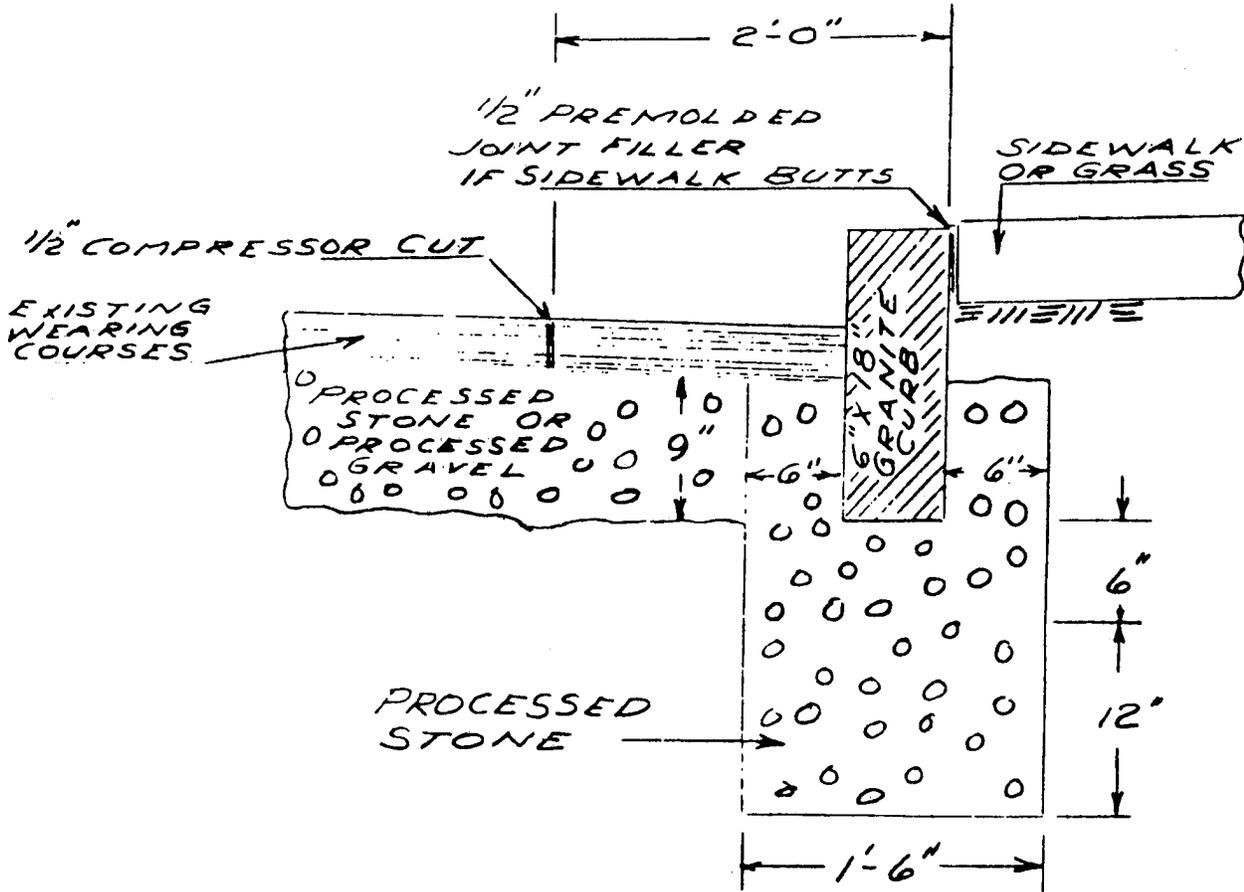


TYPICAL DETAIL DRAWING FOR
BEVELED GRANITE CURB SECTION AT
DRIVEWAYS.

SCALE 1"=20'

TOWN OF WEST HARTFORD
BUREAU OF ENGINEERING

CURB
STANDARDS

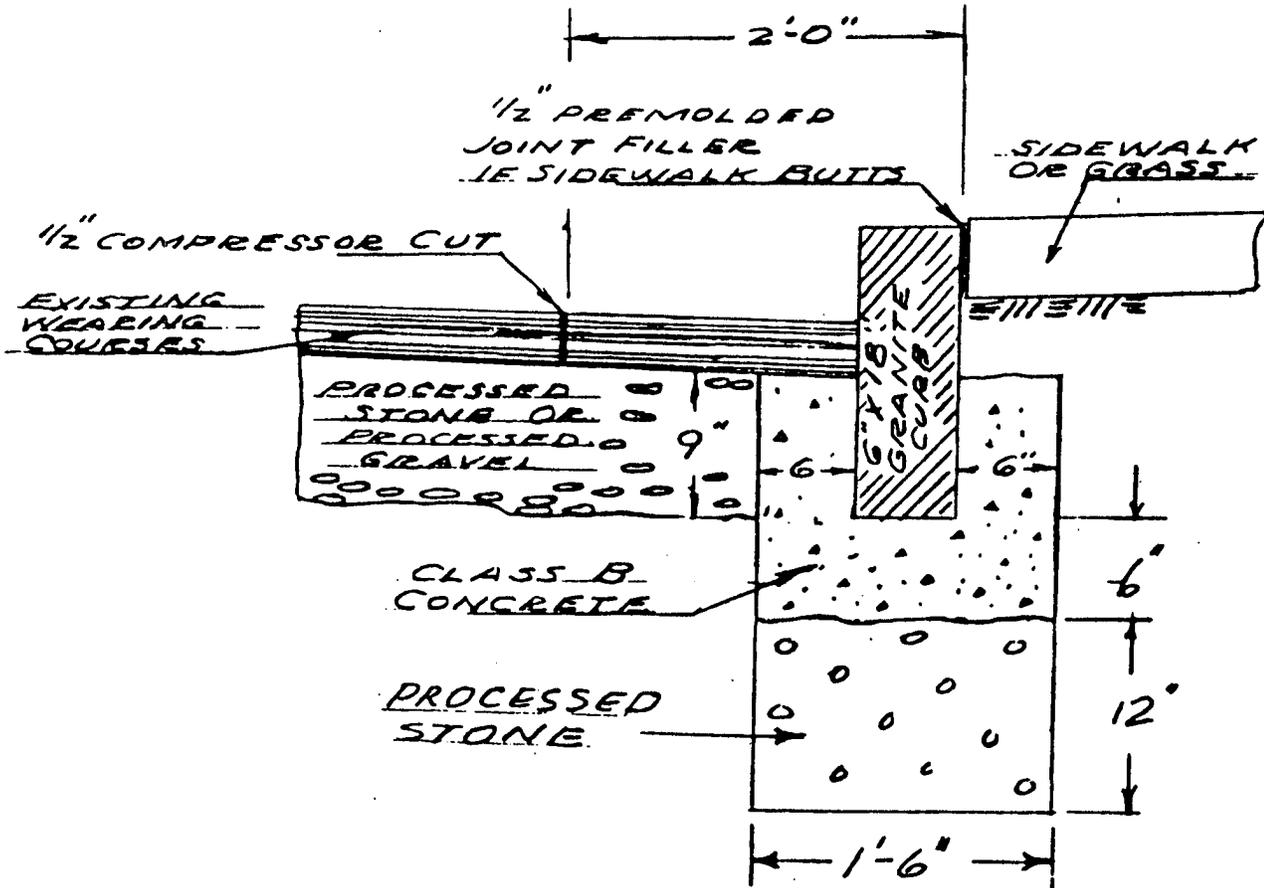


TYPICAL CROSS-SECTION OF
STRAIGHT GRANITE CURB
INSTALLATION

SCALE 1"=1'-0"

TOWN OF WEST HARTFORD
BUREAU OF ENGINEERING

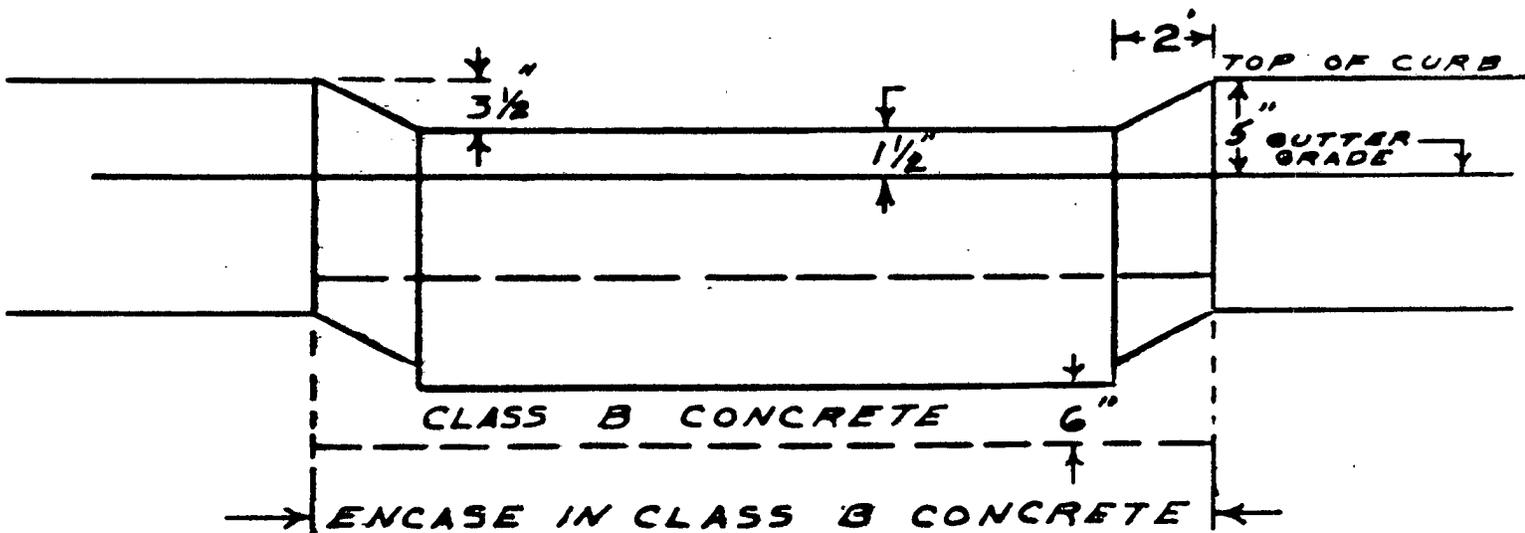
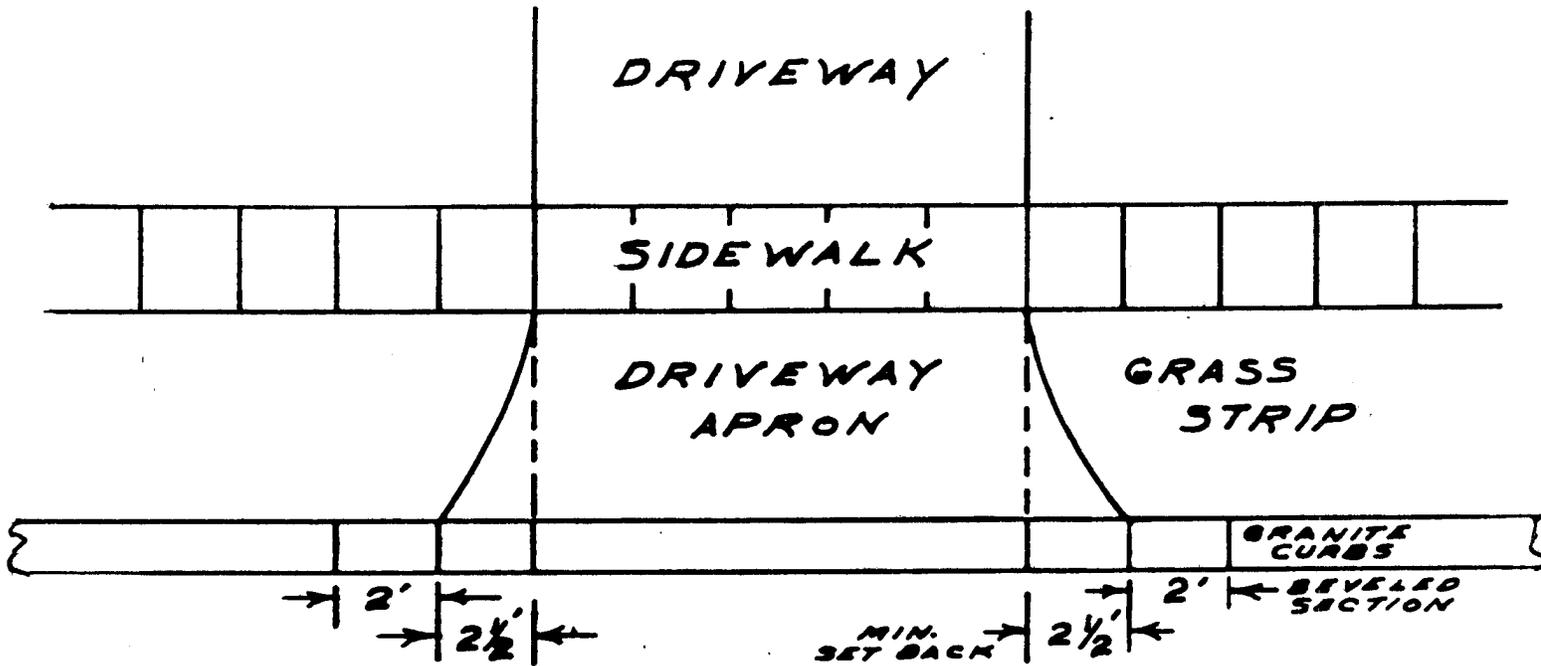
CURB
STANDARDS



TYPICAL RADIUS
GRANITE CURB
INSTALLATION
SCALE 1" = 1'-0"

TOWN OF WEST HARTFORD
BUREAU OF ENGINEERING

CURBING
STANDARDS



DETAIL DRAWING FOR DRIVEWAYS

SECTION B-3
TECHNICAL SPECIFICATIONS
FOR STREET EXCAVATION

BUREAU OF ENGINEERING
DEPARTMENT OF PHYSICAL SERVICES

WEST HARTFORD

CONNECTICUT

B-3 TECHNICAL SPECIFICATIONS FOR STREET EXCAVATION

In accordance with the Code of Ordinance of the Town of West Hartford, Section 2-230 and Section 20-9, the Director of Public Works may, from time to time, adopt such reasonable general rules, regulations and specifications for such excavation or digging, and may reasonably rule, regulate or specify any said particulars with respect to any particular excavation or digging as aforesaid.

1. **EXCAVATED MATERIAL:** All material excavated from trenches or excavations shall be removed from the site of the work.
2. **CONSTRUCTION MATERIALS:** Construction materials on the site shall be limited in quantity and space occupying area so as to not unduly hinder and block the use of the street. There shall be no piled material left within the street right-of-way overnight without special permission of the Director of Public Works. Materials, such as bank-run gravel, processed stone, etc. trucked to the job site shall be kept on the vehicle and dumped directly in the trench in order to minimize any inconvenience to the public.
3. **DUST AND CLEAN UP:** As the excavation work progresses, all streets shall be thoroughly cleaned of all rubbish, excess earth, rock and other debris. The permittee shall take necessary precautions to prevent and avoid dust and to keep the streets clean each day. All clean-up operations shall be accomplished at the expense of the permittee and shall be carried out to the satisfaction of the Director.
4. **PROTECTION OF GUTTERS AND BASINS:** The permittee shall maintain all gutters free and unobstructed for the full depth of the adjacent curb and for at least one foot in width from the face of such curb at the gutter line. Catch basins shall be kept clear and serviceable.

The permittee shall make provisions to take care of all surplus water, muck, silt, slickings, or other run-off pumped from excavations and shall be responsible for any damage resulting from his failure to so provide.

5. **NOISE:** Each permittee shall conduct and carry out excavation work in such manner as to avoid unnecessary inconvenience and annoyance to the general public and occupants of neighboring property (Town of West Hartford, Code of Ordinances, Section 14-52). During the hours of 6:00 P.M. to 7:00 A.M., he shall not use, except with the express written permission of the Director or except in case of an emergency, any tool, appliance

B-3 TECHNICAL SPECIFICATIONS FOR STREET EXCAVATION (cont.)

or equipment producing noise of sufficient volume to disturb the sleep or repose of occupants of the neighboring property.

6. **TRENCHES:** The maximum length of open trench permissible at any time shall be in accordance with existing ordinances or regulations or as may be specified by the Director. No greater length shall be open for pavement removal, excavation, construction, backfilling, patching and all other operations without the written permission of the Director.

7. **PROMPT COMPLETION OF WORK:** After an excavation is commenced, the permittee shall prosecute with diligence and expedition all excavation work covered by the excavation permit and shall promptly complete such work and restore the street to its original condition or as near as may be, so as not to obstruct the street or travel thereon more than is reasonably necessary.

8. **BREAKING THROUGH PAVEMENT**
 - a. The use of hydro-hammers or heavy duty pavement breakers for breaking pavement is prohibited on all streets unless written permission is granted by the Director. Saw cutting is preferred. Limited use of hydro-hammers or heavy duty pavement breakers will be considered upon request.
 - b. Approved cutting of bituminous pavement surface ahead of excavations is required to confine pavement damage to the limits of the trench.
 - c. Sections of sidewalks shall be removed to the nearest scoreline or approved saw cut edge.
 - d. Unstable pavement shall be removed over cave-outs and over breaks and the sub-grade shall be treated as the main trench.
 - e. Pavement edges shall be trimmed to a vertical face and neatly aligned with the center line of the trench.
 - f. Cut-outs outside of the trench lines must be normal or parallel to the trench line.

B-3 TECHNICAL SPECIFICATIONS FOR STREET EXCAVATION (cont.)

- g. Excavations shall be made in open cut and no tunneling will be allowed except by special permission of the Director. Trenches and excavations shall be braced and sheeted when necessary.
 - h. Trenches shall have a minimum length or width of two feet.
 - i. All excavated material shall be loaded into a truck and removed to a disposal site. There shall be no dumping of any material on public or private property within the boundaries of the Town of West Hartford without the permission of the Director of Public Works.
9. BACKFILLING: Excavated material shall not be used for backfill unless it consists of sand or gravel. Broken pavement, large stones, clay, roots and other debris shall not be used in the backfill.

Backfill material shall consist of sand, bank-run gravel or two-inch size processed gravel as approved by the Director.

Sand or bank-run gravel may be used from the bottom of the trench to a point twelve inches below the surface of the pavement. Only two-inch processed gravel is to be used in the top twelve inches of the excavation.

Backfill material shall be placed in six-inch layers, power tamped and moistened when require to secure maximum compaction of the backfill and to reduce settlement. The material shall be compacted to 95% optimum density, and shall be subject to testing by the municipality at the expense of the utility company or contractor.

Temporary surfacing of two inches of bituminous concrete shall be placed on the backfill for a wearing surface. Temporary paving material shall be hot mix except that the permittee may use cold mix during the winter months.

Temporary paving of cuts shall be maintained in safe and satisfactory condition by the permittee.

10. BASE: The base material shall be of processed stone or processed gravel as defined by the State of Connecticut, Form 814, and to the depth it exists in each individual street. In no case shall the base be less than 9" deep.

B-3 TECHNICAL SPECIFICATIONS FOR STREET EXCAVATION (cont.)

11. RESTORATION OF PERMANENT PAVING: (Revised February, 1998) Any trench that is to be permanently restored in a road that has been overlaid or reconstructed within 3 years of the issued permit, shall have the surface coarse restored using the infra-red technology, and include (1) one foot beyond the trench limit to match the existing surface coarse.

a. In pavement restoration, thickness of the individual layers and materials shall conform to the general cross-section of that pavement, but no less than the following:

<u>TYPE</u>	<u>RESTORATION</u>
Finished Concrete	9" thick finished concrete reinforced with wire or rods equal to original reinforcing
Concrete Base	8" thick concrete base reinforced with wire or rods equal to original reinforcing. Minimum acceptable reinforcement shall be 6 X 6 #4 wire mesh
Bituminous Concrete on Concrete Base	Bituminous concrete Class 2
Bituminous Concrete on Gravel Base	3" bituminous concrete Class 2
Penetration Macadam	3" bituminous concrete Class 2

Variation to an existing cross-section of a pavement may be made only with written permission of the Director of Public Works or his representative.

b. All pavement except macadam patches shall be laid in at least two courses.

The surface course shall be 1 1/2 inches thick after compaction. The remaining thickness shall be binder course. No course shall be more than two inches thick after compaction.

c. Permanent restoration of paving cuts shall be made within a three-month period except during winter months.

d. All restoration shall be made by a paving contractor familiar and experienced with paving practices in the Town of West Hartford who has sufficient and proper equipment and is approved by the Director.

e. Notice of the date and location of restoration work shall be given the Department of Public Works at least forty-eight (48) hours before the work is started.

B-3 TECHNICAL SPECIFICATIONS FOR STREET EXCAVATION (cont.)

- f. Restoration of cuts is to be made during the months of April through November 15 so as to have a minimum of unrestored cuts during the winter months.
 - g. The cost of completing unrestored cuts encountered by the Town of West Hartford during repaving, and completed by the Town of West Hartford, shall be billed against and paid for by the person making the cut which was not restored.
 - h. When there is two feet or less between a curb and the edge of the trench or excavation nearest the curb, the restoration of trench or excavation pavement shall be extended to the curb.
12. METHODS AND MATERIALS: In pavements with concrete base, the original cut shall be cut back at least one foot onto undisturbed sub-grade on each side prior to replacing concrete. If the pavement has steel reinforcement, the reinforcement shall be carried through the cut as directed with at least 12 inches of lap. The top surface shall be cut back straight and square for at least six inches wider than the new concrete base. The top of the concrete patch shall be at the same level as the adjoining concrete.

In pavements without concrete base, the pavement shall be cut back at least six inches on each side from the edges of the original trench.

The edges of the pavement shall be clean and tack coated with asphaltic material before the hot-mix material is placed. The preparation of the hot-mix material and its laying shall meet the standard paving specifications of the Bureau of Engineering of the Town of West Hartford. The paving contractor must use a fire box and a tandem ten-ton roller.

On macadam streets, the edges of the pavement may be coated and sealed with emulsified asphalt.

Concrete for base shall comply with the specifications for 4,000 pound concrete and in accordance with the specifications of the State of Connecticut, Department of Transportation.

The concrete mix shall have an air-entraining agent added with the water to produce 6% + 1% entrained air. The agent shall be the vinsol resin type, "Darex" or equal.

When daytime temperatures are below sixty degrees, an accelerator of calcium chloride shall be added to the concrete mix of two pounds of calcium chloride per bag of cement.

Concrete shall be in place forty-eight hours prior to the placing of the bituminous material thereon, unless permitted or requested to do otherwise by the Director.

B-3 TECHNICAL SPECIFICATIONS FOR STREET EXCAVATION (cont.)

In some cases, depending upon location, weather and conditions, the Director may require the use of quick-setting cement in the concrete to allow placing of bituminous material after thirty-six hours.

Restoration of cuts shall be scheduled so as to complete them in minimum time and minimum interference with traffic. If there is delay in obtaining the wearing surface and the cut is in a critical location, the binder shall be placed, barricades removed temporarily and traffic allowed to run on the binder course.

SECTION B-4
TECHNICAL SPECIFICATIONS
FOR STREET CONSTRUCTION

BUREAU OF ENGINEERING
DEPARTMENT OF PHYSICAL SERVICES

WEST HARTFORD

CONNECTICUT

B-4 TECHNICAL SPECIFICATIONS FOR STREET CONSTRUCTION

GENERAL DESCRIPTION

Streets in the Town of West Hartford are classified under Urban Systems into five categories: 1) Primary Arterial, 2) Secondary Arterial, 3) Collector, 4) Downtown Grid, and 5) Residential.

1. Streets Classified #1 thru #4: Width and pavement cross-sections for these types of streets depend mainly on the volume of traffic and soil conditions. All specifications shall be determined by the Town Engineer.
2. Streets Classified #5: They are designated as “type C” streets and shall conform to the typical cross-sections included herein. The pavement of a “type C” street is thirty (30) feet wide and consists of 3” of bituminous concrete, installed in two courses on a 9” thick compacted processed stone or processed gravel base.

All materials and construction methods shall conform to the standard specification for “Roads, Bridges and Incidental Construction”, State of Connecticut, Department of Transportation.

SPECIFICATIONS

A. CLEARING AND GRUBBING:

See Section 2.01, State Department of Transportation Specifications.

B. GRADING:

See Sections 2.02, 2.05, 2.06 of the State Department of Transportation Specifications.

Grading shall include all the necessary labor and material to stabilize and bring the ground to the proposed sub-grade level.

1. There shall be no excavation below sub-base level unless ordered by the Engineer.
2. When ledge rock is encountered, this material shall be excavated to a depth of not less than 12 inches below sub-base and replaced with gravel or other material approved by the Engineer.
3. Unstable material shall be removed and replaced with granular material to a depth approved by the Engineer.
4. Spring or seepage water encountered shall be reported to the Town Engineer. The contractor shall keep the excavation free from water at all times by pumping or by

B-4 TECHNICAL SPECIFICATIONS FOR STREET CONSTRUCTION (cont.)

- any other means that may be necessary. The Engineer shall determine the necessity of underdrains.
5. Fill shall not be started until the area has been inspected and approved by the Town Engineer.
 6. Only material approved by the Town Engineer shall be used as fill.
 7. Fill material shall be compacted in layers not more than 6 inches thick with a minimum 10-ton roller.
 8. Compaction shall be such that no creeping or weaving appear ahead of the roller on the final rolling.
 9. No stone over 5 inches in its greatest dimension shall be placed within 12 inches of the elevation of the sub-grade.
 10. All streets shall be graded the entire width of the right-of-way with side slopes of 2 to 1 as indicated on the standard cross-sections accompanying these specifications. Any exception to this procedure shall be at the discretion of the Director of Public Works.

C. PREPARATION OF THE SUB-GRADE

(See Sections 2.07, 2.09, 2.10, 2.11, 2.12, 2.13, 2.14, 2.15 of the State Department of Transportation Specifications.)

1. The rough sub-grade shall be cleaned of all loose or foreign material and reshaped if rutted. Approved material shall be added to meet the established grades and standard cross-sections. Shaping and compacting, as directed by the Town Engineer, shall be done with blade graders and a 3-wheel power roller weighing a minimum of 10 tons or an equivalent vibratory roller. The Town Engineer shall have the authority to direct the contractor to engage a certified laboratory for the purpose of determining compaction by suitable testing.
2. The finished surface shall be smooth and even and shall not vary more than 1/2-inch from the standard cross-section or established grade. Any deviations from this cross-section and grade shall be corrected by cutting or filling, followed by repeated rolling until a well compacted surface is obtained.

B-4 TECHNICAL SPECIFICATIONS FOR STREET CONSTRUCTION (cont.)

D. CONSTRUCTION OF THE BASE

(See Sections 3.02, 3.04 of the State Department of Transportation Specifications.)

1. The base shall consist of processed stone or processed gravel and shall conform to DOT Spec. 3.04 & Article M.05.01 (State D.O.T. Specifications noted above).
2. The base material shall be placed in layers not more than 6-inches thick. Each layer is to be spread with an approved spreader or stone box and rolled with a 3-wheel roller weighing a minimum of 10 tons or an equivalent vibratory roller.
3. Rolling shall proceed in a longitudinal direction beginning at the gutter line and proceeding toward the center. Sufficient overlap with the inside roller wheel shall be maintained to avoid any unrolled areas. Rolling shall be continued until the material is well keyed and does not creep ahead of the roller. In no case shall one roller complete more than 200 square yards per hour.
4. The base course shall not be constructed during freezing weather or on a wet or frozen sub-grade.

E. BITUMINOUS CONCRETE

(See Sections 4.02, 4.03, 4.04, 4.05, 4.07)

1. For “type C” streets this work shall generally consist of a Class 2 bituminous concrete wearing course 1 1/2-inches thick after compaction on a Class 1 binder course 1 1/2-inches thick after compaction.
2. The thicknesses and type of material to be used in unusual situations shall be determined by the Town Engineer.
3. Bituminous concrete material shall be compacted with a minimum 10-ton roller.

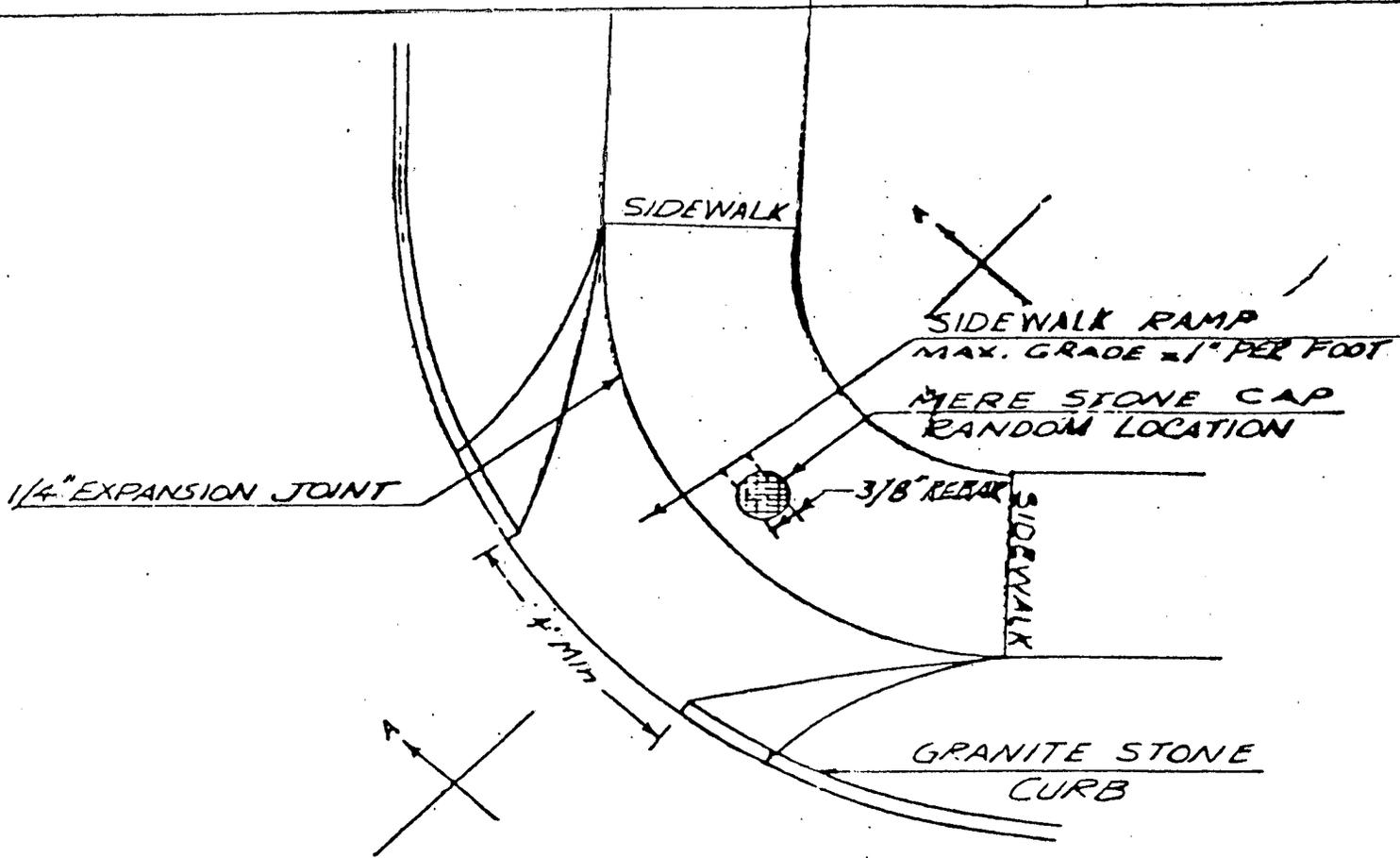
B-4 TECHNICAL SPECIFICATIONS FOR STREET CONSTRUCTION (cont.)

DESIGN STANDARDS

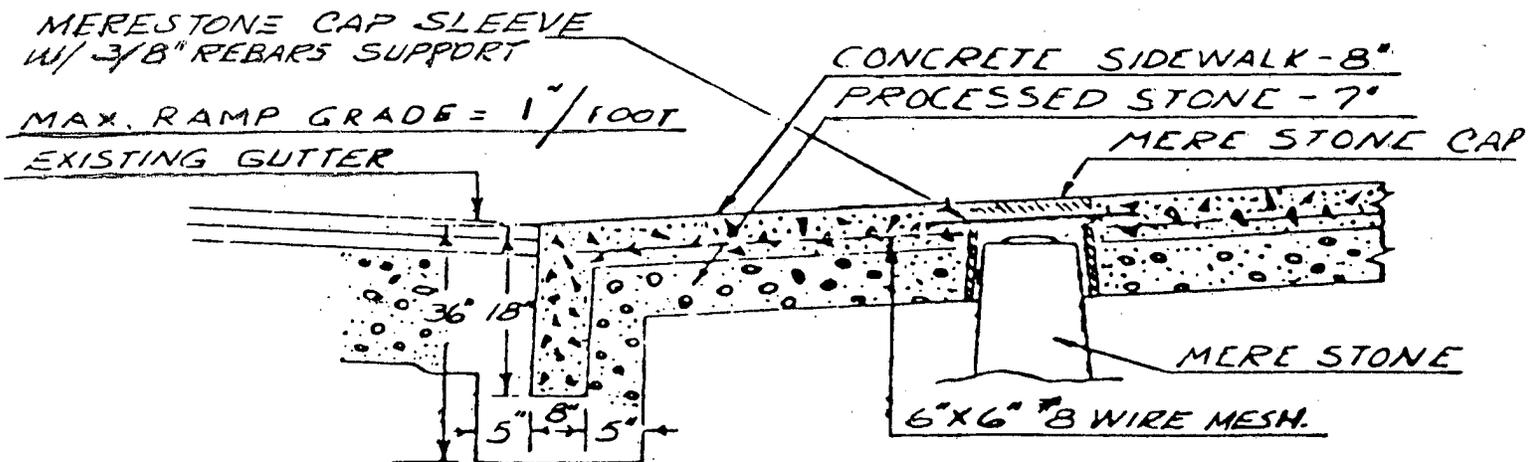
1. Grades for all new streets shall not be less than 1% or exceed 8% unless otherwise approved by the Town Engineer.
2. Minimum width of pavements shall be as shown on the typical cross-section included herein.
3. Sidewalks, curbs, driveway ramps, wheel chair ramps, concrete ramps and sewers shall conform to the appropriate specifications of the Town of West Hartford.
4. In case of ambiguity or conflict in these street specifications, the State Department of Transportation Specifications shall govern.

TOWN OF WEST HARTFORD
BUREAU OF ENGINEERING

RAMP
STANDARDS



A-A SECTION

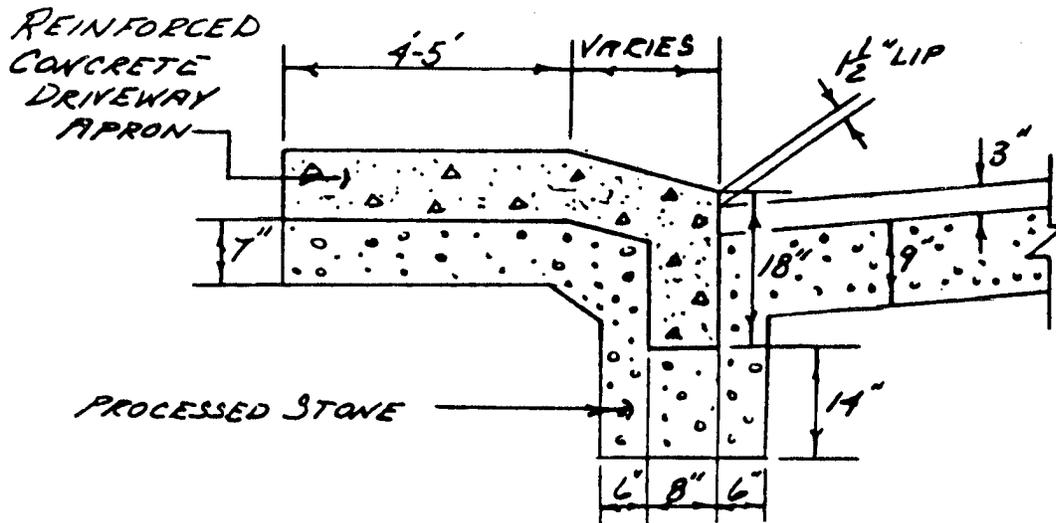


TYPICAL CONCRETE SIDEWALK RAMP
WITH MERE STONE CAP
INSTALLATION

NOT TO SCALE

TOWN OF WEST HARTFORD
BUREAU OF ENGINEERING

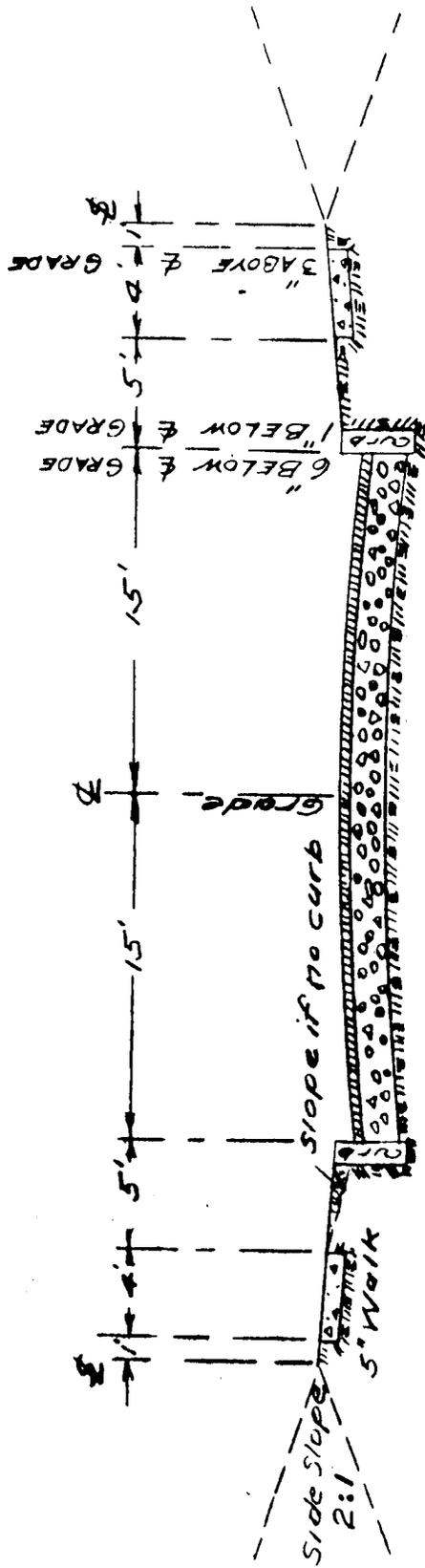
CONCRETE DRIVE-
WAY RAMP
STANDARDS



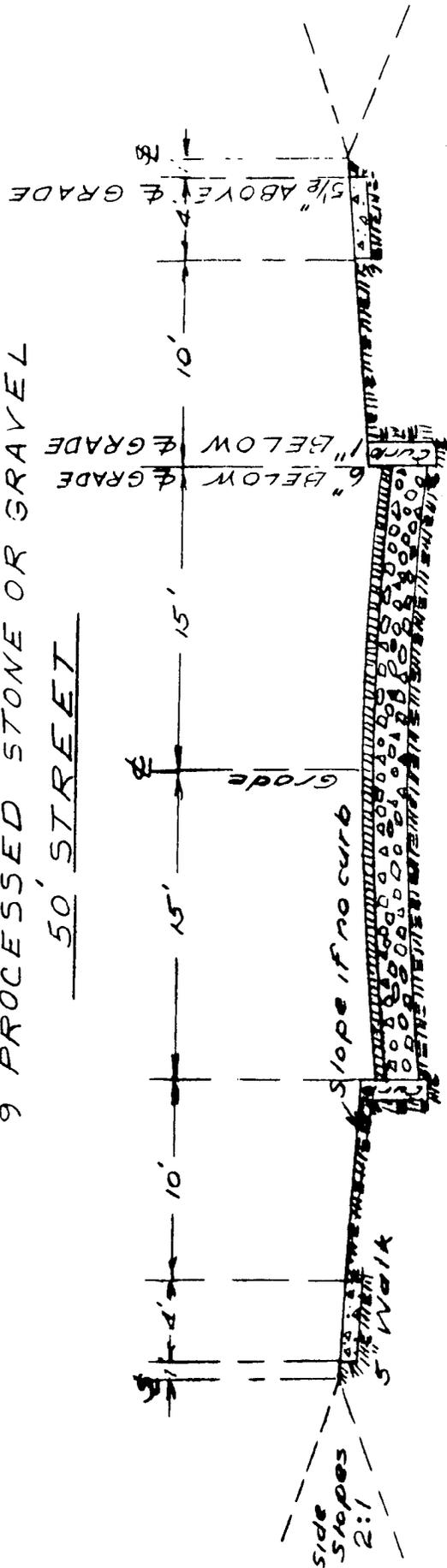
Mesh reinforcement shall be 6"x6" #8 wire mesh
conforming to ASTM A-185.

TYPICAL CROSS SECTION
8" REINFORCED WALK &
DRIVEWAY APRON
SCALE 1"=2'

STANDARD CROSS SECTIONS
 TYPE "C" STREETS
 WEST HARTFORD, CONN.
 DECEMBER 1968



3" BITUMINOUS CONCRETE ON
 9" PROCESSED STONE OR GRAVEL
50' STREET

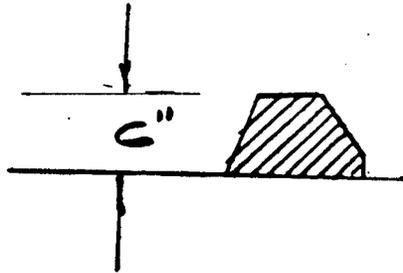


3" BITUMINOUS CONCRETE ON
 9" PROCESSED STONE OR GRAVEL
60' STREET

TOWN OF WEST HARTFORD BUREAU OF ENGINEERING	BITUMINOUS CURBING STANDARDS
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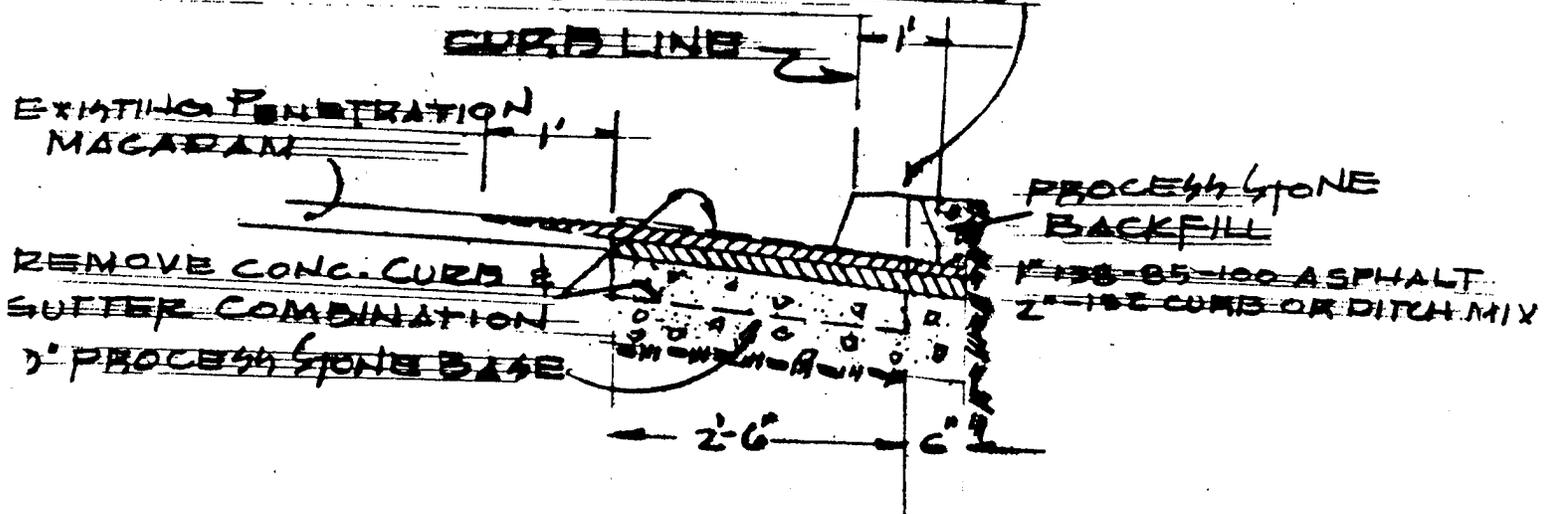
BITUMINOUS CONC. CURB DETAIL

A NEW INSTALLATION



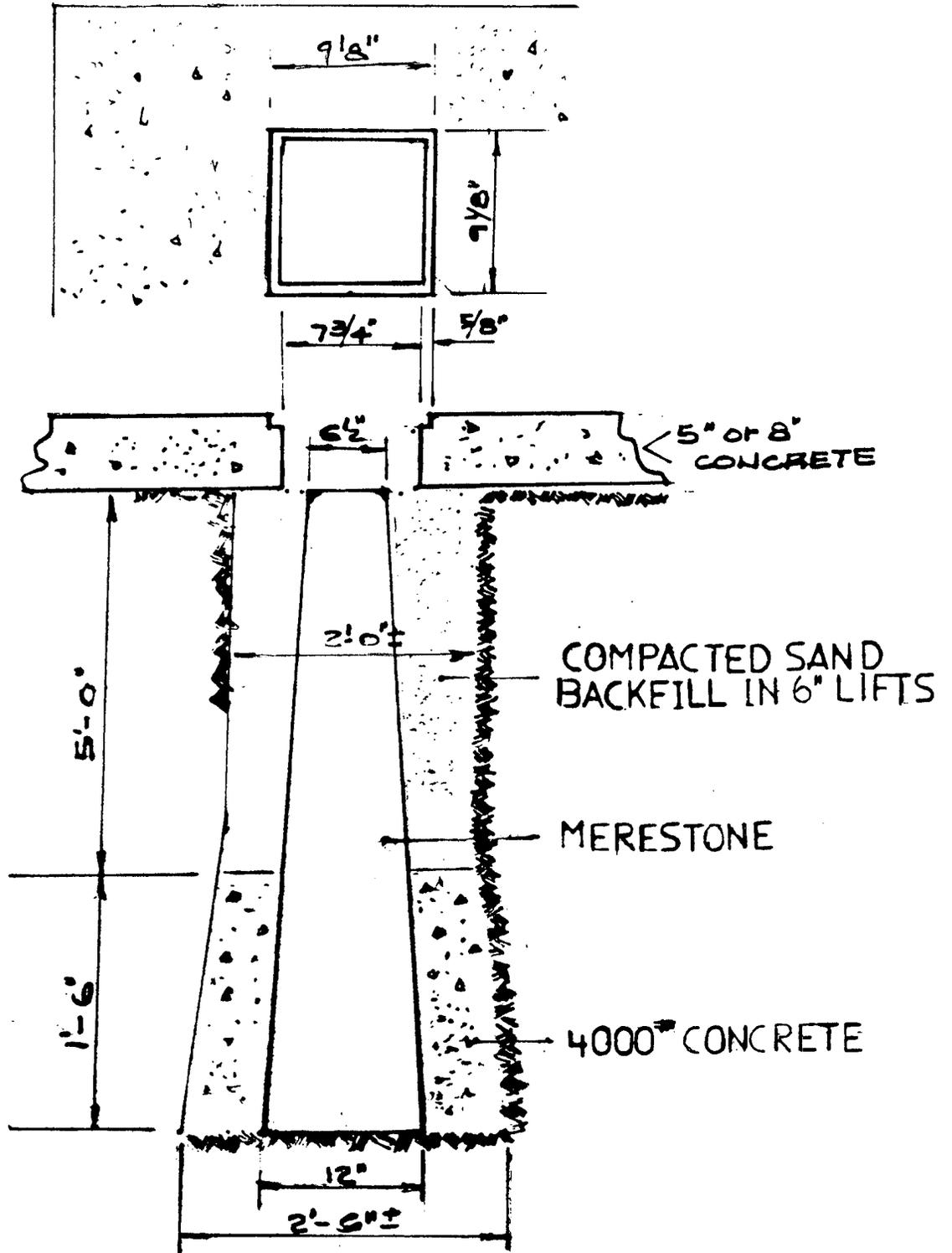
B REPLACEMENT OF CONCRETE CURB AND GUTTER COMBINATION

STANDARD 6" BIT. CONC. CURB



TOWN OF WEST HARTFORD
BUREAU OF ENGINEERING

MERESTONE
NO SCALE



A POLICY
REGARDING THE
MAINTENANCE AND PROTECTION OF TRAFFIC AND PEDESTRIANS
DURING CONSTRUCTION WITHIN STREET RIGHTS OF WAY
(REVISED MARCH 2010)

I. GENERAL

- A. The Town of West Hartford shall control all traffic at construction and non-construction work sites within street rights of way located in Town, **including State roads other than Interstate 84 and its ramps**. This shall include work by permit (State or local) and non-construction work (i.e. manhole, overhead line and cable work).
- B. Permits shall be issued by the Division of Engineering, Department of Community Services, or District One of the State of Connecticut Department of Transportation. All permits are subject to review by the Police Department.
- C. All work in the roadway or affecting pedestrian travel shall require placement and/or modification of appropriate traffic control devices as per the most current edition of the Federal Highway Administration's Manual on Uniform Traffic Control Devices or the Connecticut Department of Transportation's Standard Traffic Control Plans. **The use of Police Officers or other personnel does not eliminate this requirement.**
- D. **Detours, stoppages of traffic, and/or alternating traffic patterns require the approval of the Director of Community Services (through the Division of Engineering), at least one week in advance, except in the event of emergency. This is necessary to allow time for review and possible public notification.**
- E. **Existing signs and pavement markings shall not be removed without prior approval of the Engineering Division.**

II. TRAFFIC CONTROL PERSONNEL

- A. West Hartford Police shall control all traffic for construction and non-construction projects on the following arterial and collector streets:

Town Streets

Asylum Avenue
Boulevard
Brace Road (Arundel Ave - North Main St.)
Caya Avenue (I-84 ramp to Prospect Ave.)
Dale Street
Farmington Avenue
Fern Street
Flagg Road
Flatbush Avenue
Isham Road
Kane Street
LaSalle Road
Mayflower Street
Memorial Road
Mountain Road
New Park Avenue
North Main Street
North Quaker Lane
Oakwood Avenue
Park Road
Prospect Avenue (New Park Avenue
thru Park Road)
Quaker Lane South
Raymond Road
Ridgewood Road
Sedgwick Road
Shield Street
South Road
South Street
South Main Street
Trout Brook Drive
Tunxis Road

State Highways

Albany Avenue Rt. 44
Bloomfield Avenue Rt. 189
Farmington Avenue Rt. 4 (West of
Old Mill Lane)
New Britain Avenue Rt. 71, 173, 529
Newington Road Rt. 173
North Main Rt. 218 (North of
Albany Avenue)
Ridgewood Road Rt. 535 (South of
I-84 Westbound ramp)
Simsbury Road Rt. 185
South Main Street Rt. 173 (New Britain
Avenue to Beechwood Road)

B. Exceptions to Above

1. All non-construction projects (i.e. manhole and overhead linework, but not limited to) four (4) hours or less that does not jeopardize public safety.

2. The Town shall have the authority to require Police on streets not listed above, in the vicinity of schools, or where parking or geometric conditions (e.g. narrowed lanes or visibility restrictions) may otherwise jeopardize safety. Examples of such streets include, but are not limited to: Buena Vista Rd., Highland St., Hunter Dr., King Philip Dr., Loomis Dr., Still Rd., Webster Hill Blvd., Whiting Ln., and other local neighborhood streets adjacent to schools.
3. The contractor may petition for due cause, the elimination of Police requirement, and approval shall rest with the Engineering Division, in consultation with the Police Department.

C. Procedural and other issues

1. Where Police officers are required by Section IIA or IIB.2, officers shall be requested no later than 48 hours before mobilization. Late requests may result in delayed permission to start work, rather than elimination of the Police requirement. When there are not enough officers available to cover all requests, priority locations will be determined by the Engineering Division, in conjunction with the Police Department.
2. When Police Officers are not available for streets listed in Section IIA or IIB.2, the contractor shall designate certified personnel, not engaged in construction activity, charged with the responsibility to maintain traffic and pedestrian safety, including traffic control devices (per Section I.C. of this policy) and passage of traffic.

The following is a list of streets with restricted work hours, assuming maintenance of two-way traffic. The Town reserves the right to modify these hours or require special provisions as necessary, particularly near schools and other significant traffic generators. Streets not listed are subject to Noise Ordinance hours, which are 7:00AM until one hour after sunset. Contractor may petition for extended hours, subject to conditions, and where applicable, availability of Police Officer(s).

Albany Ave.	8:30AM - 4:00PM	Oakwood Ave.	8:30AM - 4:00PM
Asylum Ave. (east of North Main St.)	8:30AM - 4:00PM	Park Rd. (Raymond - T B Dr. 9:00AM-3:30PM)	8:30AM-4:00PM
Bloomfield Ave.	8:30AM - 4:00PM	Prospect Ave.	8:30AM - 4:00PM
Boulevard	8:30AM - 4:00PM	Quaker Lane So.	8:30AM - 4:00PM
Caya Ave.(east end)	8:30AM - 4:00PM	Raymond Road	8:30AM - 4:00PM
Farmington Ave.	8:30AM - 4:00PM (7:00AM in Center)	Ridgewood Rd.	8:30AM - 4:00PM
Fern St.	8:30AM - 4:00PM	Sedgwick Rd.	8:30AM - 4:00PM
Flatbush Ave.	8:30AM - 3:30PM	Simsbury Rd.	8:30AM - 4:00PM
Kane St.	8:30AM - 4:00PM	South St.	8:30AM - 4:00PM
King Philip Dr.	8:30AM - 4:00PM	South Main St.	9:00AM - 3:30PM (7:00AM in Center)
Mountain Rd.	8:30AM - 3:30PM	Steele Rd.	8:30AM - 4:00PM
New Britain Ave.	8:30AM - 3:30PM	Trout Brook Dr.	9:00AM - 3:30PM
Newington Rd.	8:30AM - 4:00PM	Tumblebrook Ln. (west of King Philip Dr.)	8:30AM - 4:00PM
New Park Ave.	8:30AM - 3:30PM		
North Main St.	9:00AM - 3:30PM		

SW:sr

A POLICY
REGARDING THE USE OF STEEL PLATING
IN THE
TOWN OF WEST HARTFORD

PURPOSE

When it is absolutely essential to excavate within a Town right-of-way and more particularly, the paved area of Town streets, it is the policy of the Town of West Hartford that steel plates, when directed, will be used to cover the excavated area when work is not in progress.

The Town also controls excavation within its rights of way and therefore, adopts the following Standards and Procedures.

STANDARDS

Before proceeding with any work, the Contractor or utility company must make application for and receive a permit to excavate. This procedure requires the posting of a bond which is surety that the work will be completed in accordance with Town Standards and Specifications and the submission of a Certificate of Insurance which will hold harmless the Town of West Hartford from any claims of liability.

The Contractor/utility company, is responsible for the selection of plating designed to withstand wheel loads as designated by the American Association of State Highway Officials (AASHO) HS20 Highway Loading Standard.

A 30" x 30" diamond shaped vehicular warning sign is to be placed 200-250 feet ahead of the plating or as directed by the Town Engineer.

A barricade with a working, blinking light is to be placed adjacent to the plate off the road, but visible to the motorist when located at an intersection, warning of the plating must be visible from all directions.

The Contractor/utility company shall be responsible for protective signs and lighting.

Work will be restricted to hours designated by the Town to minimize the impact of this work on vehicular traffic.

All plates are to be pinned to assure no movement.

PROCEDURES

The Contractor/utility company will make application for a permit at the Engineering Division, Room 204 Town Hall.

The Contractor/utility company will contact the Town Engineer to determine required conditions for signing, lighting and traffic control and to receive a copy of the Town's "Maintenance and Protection of Traffic and Pedestrians during Construction within Street Rights of Way". The Contractor is urged to present a modified Traffic Plan to the Town Engineer for approval. This cooperative effort will speed the approval process.

GENERAL INSTALLATION REQUIREMENTS

The Town prefers that the steel plating be recessed in the existing pavement or if recessing is not practical, the Contractor/utility company shall provide a bituminous wedge adjacent to all edges of the plate to provide smooth transition for vehicular traffic crossing the plate.

USE OF STEEL PLATING DURING WINTER MONTHS

Steel plates create hazards for snow plows and their operators. Therefore, the following restrictions are placed on the use of steel plates during the months of November thru March.

Steel Plates will be used only when absolutely essential to the safe and continued supply of public and private utilities and they shall be removed as soon as possible.

The utility/Contractor shall be responsible to call the Department of Public Works at 860-561-8100 daily when steel plates are in place on Town streets. Failure to do so will be cause to revoke the current and future permits of the Contractor/utility. Any claims resulting from improper installation or failure to notify, shall be solely that of the Contractor/utility.

Public Works will notify the snow plow operators on the affected routes.

If directed, the Contractor/utility company will remove the plating and repair the excavation upon the direction of the Town Engineer.