N

0 1,000 2,000 4,000 Feet

1 inch = 1,200 feet

Borough of Naugatuck - Street Ammrnity Standards

BOROUGH OF NAUGATUCK

DEPARTMENT OF PUBLIC WORKS

Streetscape and Sidewalk Amenity Standards and Specifications

INTRODUCTION

This document was developed in order to create design standards for the development of the Naugatuck downtown area. It is the intent of this document to standardize amenities throughout the downtown without limiting design flexibility. The goal of this plan is to transform our downtown into a pedestrian friendly and vibrant area, connecting it to the Naugatuck River and the Naugatuck River Greenway and to attract commercial and residential development.

DISCUSSION

This document describes the technical specifications and construction methods for the streetscape and amenities design used and required for the downtown areas, specifically Zone 1 and Zone 2 as shown on the attached map. These standards shall be used in and all future Streetscape phases as well as any other development in downtown area. All Road and sidewalks shall meet Borough of Naugatuck standards and specifications.

Granite Curbs Zone 1 and 2

Granite Curbing shall be utilized along roadways in zones 1 and 2. Granite Curbing is encouraged in access drives and parking lots. Curbing shall be 5" by 18" with an eased edge, Curbing in Street ROW's shall be set in a continuous bed of concrete.

Fencing – Zones 1 and 2

Fencing proposed along Rights of Ways shall be Industrial Grade Ornamental Aluminum fencing Aberdeen 3 Rail Flush Bottom Fencing black in color or approved equal.

Decorative Cross Walks - Zone 1

Thermoplastic cross walks shall be utilized on all designated street pedestrian crossings within Zone 1 utilizing Colonial Brick in Color. The pattern shall be Diagonal Herringbone with Stacked Brick Boarders, "TrafficPattersXD" or approved equal.

Decorative Street and Pedestrian Lighting - Zone 1

Decorative Street and Pedestrian lighting shall be incorporated within zone 1. The lighting shall be spaced at 120' to 150' when located on both sides of the street and shall be placed 60' to 100'approximately when placed on only on one side. Street lights post tops shall be Black, Hadco VX600 "VX600-64-G2-A-C-3-E-W-A-5-N-N-N-NSP2-N"

Light poles shall be HADCO Series P4465, 14' High, Black, w/outlet "P4465-14-A-T-D-G"

Site Furnishings- Zone 1

Site furnishings shall be DuMor in Black. Benches shall be spaces regularly in zone 1 including bus stops and pocket park areas.

Bench

Manufacturer:	DuMor, Inc. Mifflintown, PA or approved equal
Catalogue Number:	Cast Iron, #58-60
Color:	Black

Trash Receptacle

Manufacturer:	DuMor, Inc. Mifflintown, PA or approved equal
Catalogue Number:	Cast Iron, #102-32dm
Color:	Black

Bike Rack

Manufacturer:	DuMor, Inc. Mifflintown, PA or approved equal
Catalogue Number:	Galvinized Steel Tube, #83-00/S1 Embedment
Color:	Black

Pavers - Zone 1

Unit Pavers used in Zone 1 to match the proposed Downtown design standard. Pavers within the ROW area shall be set on a concrete base, asphalt leveling course and Neoprene-modified asphalt setting adhesive as per the Borough specification.

Brick Pavers: Products shall be manufactured by one of the following:

The Belden Brick Company
PO Box 20910 Canton, Ohio 44701-0910
Phone: 330-451-2031

OR

Whitacre Greer
1400 S. Mahoning Ave.
Alliance, Oh 44601
P: [330] 823-1610 | F: [330] 823-5502

REV: 11/1/2022

PRODUCT COLORS

	Whitacre Greer	**Belden**
Soldier Course	No. 30 Clear Red	Regimental
Infill	Equal Mix of No. 30, 32, 36	Regimental Full Range
Product shape(s):	4" x 8" x 2-1/4"	
Product option(s):	Bevel & lug, smooth	

Sidewalks- All Roadways

All sidewalks- shall be concrete and a minimum of 5’ wide and include a Grass/Snow shelf when feasible, Sidewalk width shall be increased to accommodate outdoor dining and other expected outdoor activities. Concrete sidewalks shall extend through residential and commercial driveways. Larger shopping plazas are permitted to maintain asphalt entrances. Sidewalks shall be as shown in the attached Naugatuck Standard detail drawings.

Street Trees- All Roadways

Street Trees shall be incorporated in all roadway projects where feasible. Street trees shall be located generally at 50’ intervals or more frequent as required by the zoning regulations. In selecting street tree types and locations the designer shall take into account; buildings, signs, lighting, above and below ground utilities as well as sightlines. Tree pit size and design shall be approved by the Borough Engineer. The attached tree lists shall be utilized in selecting the proposed street trees.

Borough of Naugatuck Street Tree List

The following is a list of tree species recommended by the Borough of Naguatuck DPW. Trees were chosen for their ability to withstand drought, compacted soil, pollution, and other urban stresses. All are cold hardy to USDA Zone 5. Other species or cultivars may be substituted subject to the Town Engineer's approval, unless contained in the Prohibited Trees List. Please note that tree species which are native to Connecticut are highlighted in grey.

LARGE TREES: Mature height greater than 50 feet tall						
TREE SPECIES		SHAPE	VISUAL INTEREST	ENVIRONMENTAL TOLERANCES	ENVIRONMENTAL SENSITIVITIES	COMMENTS
Scientific Name	Common Name					
Acer Rubrum	Red Maple	Rounded	Red fall color	Wet soils	Salt/Compaction	
Acer Saccharum	Sugar Maple	Rounded	Orange fall color	Shade	Salt/Compaction	For large lawn areas
Betula Nigra 'Heritage'	River Birch	Pyramidal	Brown peeling bark	Wet soils		Heritage® is best
Celtis Occidentalis	Hackberry	Rounded		Wet or dry soils/wide pH		Does well in the shore area
Ginkgo Biloba	Ginkgo	Upright	Yellow fall color	Drought/salt/wide pH	Permanently wet soils	Male only – does not bear fruit
Gleditsia Triacanthos Inermis	Honey Locust	Irregular	Yellow fall color	Wet or dry soils	Shade	
Gymnocladus Dioicus	Kentucky coffeetree	Rounded	Double compound leaf	Drought/salt	Needs space	For large lawn areas
Liquidambar Styraciflua	Sweetgum	Pyramidal	Yellow/maroon fall color	Wet or dry soils	Shade	Plant spring only / messy fruit
Liriodendron Tulipifera	Tulip Tree	Pyramidal	Green/orange flowers		Drought/needs space	For large lawn areas
Metasequoia Glyptostroboides	Dawn Redwood	Pyramidal		Wet or dry soils/wide pH	Needs space	Deciduous conifer
Platanus X Acerifolia	London Planetree	Rounded		Wet or dry soils/wide pH	Needs space	Leaf fungus defoliates in spring
Quercus Bicolor	Swamp White Oak	Rounded		Wet or dry soils	High pH	Plant spring only/flacking bark
Quercus Imbricaria	Shingle Oak	Rounded	Russet fall color		Needs space	Plant spring only/slow recovery
Quercus Palustris	Pin Oak	Pyramidal		Wet or dry soils/compaction	Needs space/high pH	
Quercus Phellos	Willow Oak	Rounded	Russet fall color	Wet or dry soils	High pH	Plant spring only/unlobed leaves
Quercus Robur	English Oak	Rounded		Dry soils		Plant spring only
Quercus Rubra	Red Oak	Rounded	Russet fall color	Dry soils/compaction	Needs space	Plant spring only
Styphnolobium Japonicum	Sophora	Rounded	July flowers,fall seed pods	Dry soils/salt/compaction	Shade	Northern hardiness limit
Taxodium Distichum	Baldcypress	Pyramidal		Wet or dry soils/salt	Shade/needs space	Deciduous conifer/hardiness limit
Tilia Americana 'Redmond'	American Linden	Rounded	Yellow fall color	Compaction/wide pH	Salt/foliage insects	Fragrant flowers/basal suckering
Tilia Cordata	Littleleaf Linden	Pyramidal	Yellow fall color	Wide pH	Salt	Fragrant flowers
Tilia Tomentosa	Silver Linden	Rounded		Dry soils/compaction/wide pH		Fragrant flowers
Ulmus 'Homestead'	Homestead Elm	Oval		Wet or dry soils/salt/wide pH	Shade	Fast growth
Ulmus Americana	American Elm	Vase-like	Yellow fall color	Wet or dry soils/salt/wide pH	Shade	Only DED resistant cultivars
Ulmus Parvifolia	Chinese Elm	Rounded	Yellow fall color	Wet or dry soils/salt/wide pH		Ornamental bark
Zelkova Serrata	Japanese Zelkova	Vase-like	Bronze fall color	Dry soils/salt/wide pH	Shade	Structural prune when young

MEDIUM TREES: Mature height between 35 and 50 feet tall						
TREE SPECIES		SHAPE	VISUAL INTEREST	ENVIRONMENTAL TOLERANCES	ENVIRONMENTAL SENSITIVITIES	COMMENTS
Scientific Name	Common Name					
Aesculus X Carnea	Red Horsechestnut	Rounded	Pink/red flowers	Wide pH	Dry soils	
Carpinus Betulus	European Hornbeam	Oval	Yellow fall color	Wide pH	Salt	
Cercidiphyllum Japonicum	Katsura Tree	Pyramidal	Yellow fall color	Wide pH	Dry soils	Lawn areas only
Cladrastis Kentukea	Yellowwood	Rounded	Yellow fall color	Wide pH	Dry soils	Lawn areas only
Corylus Colurna	Turkish Filbert	Rounded		Wide pH	Dry soils	
Eucommia Ulmoides	Hardy Rubber Tree	Rounded		Dry soils/wide pH		Slow growth
Koelreuteria Paniculata	Golden Raintree	Rounded	Papery seed capsules	Dry soils/salt/wide pH		
Nyssa Sylvatica	Black Tupelo	Oval	Purple/scarlet fall colors	Wet soils/salt		Plant spring only/small/difficult
Ostrya Virginiana	Hophornbeam	Rounded	Yellow fall color	Wide pH	Dry soils	Plant spring only/small/difficult
Pyrus Calleryana 'Aristocrat'	Callery Pear	Oval	White flowers	Wet or dry soils/salt/wide pH		Overplanted
Quercus Acutissima	Sawtooth Oak	Rounded	Yellow fall color	Salt		Plant spring only

SMALL TREES: Mature height less than 35 feet tall (suitable for planting beneath utility wires)						
TREE SPECIES		SHAPE	VISUAL INTEREST	ENVIRONMENTAL TOLERANCES	ENVIRONMENTAL SENSITIVITIES	COMMENTS
Scientific Name	Common Name					
Acer Campestre	Hedge Maple	Rounded	Yellow fall color	Dry soils/salt/wide pH		
Acer Ginnala	Amur Maple	Rounded		Dry soils/salt/wide pH		
Acer Truncatum	Shantung Maple	Rounded		Dry soils/wide pH		
Amelanchier Spp.	Serviceberry	Rounded	Spring flowers/fall colors		Salt/dry soils	For lawn areas only
Crataegus Crus-Galli Inermis	Thornless Hawthorn	Rounded	Spring flowers/fall color	Dry soils/salt/wide pH	Foliar diseases	
Maackia Amurenesis	Amur Maackia	Rounded	June flowers	Wide pH	Compacted soils	For lawn areas only
Prunus Cerasifera	Flowering Plum	Vase-like	Early spring flowers	Wide pH		Low branching/short-lived
Prunus Sargentii	Sargent Cherry	Vase-like	Spring flowers/fall colors	Salt	Dry soil	For lawn areas only
Prunus Serrulata 'Kwanzan'	Kwanzan Cherry	Vase-like	Spring flowers			Double flower
Prunus Virginiana ' Schubert'	Schubert Cherry	Oval	Maroon leaves			Leaves first green,then maroon
Prunus X Yedoensis	Yoshino Cherry	Rounded	Spring flowers			
Syringa Reticulata	Japanese Tree Lilac	Oval	White flowers	Dry soils/salt/wide pH		Flowers showy/fragrant

UNAUTHORIZED TREES		
Scientific Name	Common Name	Reason
Acer Platanoides	Norway Maple	Invasive exotic/over-planted
Acer Pseudoplatanus	Sycamore Maple	Invasive exotic
Aesculus Hippocastanum	Horsechestnut	Very weak structure
Ailanthus Altissima	Tree of Heaven	Invasive exotic
Albizia Julibrissin	Mimosa	Invasive exotic
Morus Spp.	Mulberry	Invasive exotic/hazard/poor structure
Phellodendron Amurense	Amur Corktree	Invasive exotic
Pyrus Calleryana 'Bradford'	Bradford Pear	Hazard/poor structure/over planted

ITEM #0921015A – UNIT PAVER SIDEWALK

Description:

The work under this item shall include all labor and materials necessary to the limits shown on the plans to provide for installing unit paver sidewalks, accessible ramps, and detectable warning strips where shown on the drawing, including all necessary excavation and compaction for proper subgrade preparation.

Installation shall be by a contractor and crew with at least three years of experience in placing interlocking concrete pavers on projects of similar nature or dollar cost.

Materials:

Materials are to be supplied by: Hanover Architectural Products
5000 Hanover Road
Hanover, PA 17331
p. 717-637-0500

Products from qualified manufacturers having a minimum of 5 years experience manufacturing unit pavers will be acceptable by the Engineer as equal, if they meet the following specifications for design, size, color and fabrication.

Paver Field
- Model: Apian Brick – Tumbled Finish
- Size: Mixed
- Color: Salmon/Charcoal
- Pattern: Random
- Or approved equal

Paver Banding
- Model: Halifax Flagstone
- Size: 12”x12” and 8”x12”
- Color: South Mountain Sand
- Pattern: Soldier Course
- Or approved equal

Concrete Pavers:

Pavers shall meet the minimum material and physical properties set forth in ASTM C 936, Standard Specification for Interlocking Concrete Paving Units.

1. Average compressive strength 8000 psi with no individual unit under 7,200 psi.

2. Average absorption of 5% with no unit greater than 7% when tested according to ASTM C 140.

3. Resistance to 50 freeze-thaw cycles, when tested according to ASTM C 67, with no breakage greater than 1.0% loss in dry weight of any individual unit. This test method shall be conducted not more than 12 months prior to delivery of units.

Pigment in concrete pavers shall conform to ASTM C 979. ACI Report No. 212.3R provides guidance on the use of pigments.

Processed Aggregate Base:

Processed Aggregate Base shall conform to the requirements of section 3.04 of the Standard Specifications.

Concrete:

The concrete shall conform to the requirements of section 9.21 of the Standard Specifications.

Reinforcing:

The reinforcing shall conform to the requirements of Article M.06.01 of the Standard Specifications.

Setting Bed:

Bituminous concrete leveling course: Class 12 per DOT Form 816.

Neoprene Tack Coat shall meet the following requirements:

1. Mastic (asphaltic adhesive):
   a) Solids (base) content by volume = 75 ± 1%.
   b) Weight = 8 to 8.5 lb./gal
   c) Solvent vehicle – Varsol (over 75 degrees F flash)

2. Base (2% neoprene, 10% fibers, 82% asphalt):
   a) Melting point (ASTM D-36-95) = 200 degrees F, minimum
   b) Penetration at 77 degrees F 3.5 oz. load 5 second = 23 to 27.
   c) Ductility (ASTM D-113-99 at 77 degrees F 3/16"/minute = 50 in. minimum.

Joint Sand:

Unilock® Unicare Polymeric Sand Plus (for Heavy Traffic Areas), color: Tan, or approved equivalent.

Paver Edge Restraint:

Paver edge restraint to be Pave Edge Rigid as manufactured from Pave Tech, Inc., 8626 Hollander Drive, Franksville, Wisconsin 53126, Phone: (262)-884-800, Fax: (262)-884-8006, or

approved equivalent.

Submittals:

1. Shop or product drawings and product data shall be submitted.

2. Full size samples of concrete paving units shall be submitted to indicate color and shape selections. Color will be selected by Owner or Owner's Representative from available colors.

3. Test results shall be submitted from an independent testing laboratory for compliance of paving unit requirements to ASTM C 936 or other applicable requirements.

4. One 5'x5' sample panel shall be installed as specified and detailed for approval by the Landscape Architect and Borough Engineer.

Paver sample panels shall be installed in an area approved by the Engineer and shall be protected throughout duration of the project.

These sample panels will be used to determine joint sizes, lines, laying pattern(s), color(s), and other design features.

These panels shall be the standard from which the work will be judged.

Construction Methods:

Do not install pavers during heavy rain or snowfall.

Verify that subgrade preparation, compacted density and elevations conform to the specifications.

Site Preparation

The site must be stripped of all topsoil and other objectionable materials to the grades specified.

All sub drainage of underground services within the pavement area must be completed in conjunction with subgrade preparation and before the commencement of subbase construction.

After trimming to the grades specified, the subgrade is to be proof rolled to 95 percent Standard Proctor Density in the presence of the Engineer, with soft spots or localized pockets of objectionable material excavated and properly replaced with approved processed aggregate base.

The subgrade shall be trimmed to within 0 to ½ in. of the specified grades. The surface of the prepared subgrade shall not deviate by more than 3/8 in. from the bottom edge of a 10 ft. straight edge laid in any direction.

The Contractor shall ensure that the prepared subgrade is protected from damage from inundation by surface water. No traffic shall be allowed to cross the prepared subgrade. Repair of any resulting damage shall be the responsibility of the Contractor and shall be repaired.

Under no circumstances shall further pavement construction proceed until the Owner and/ or the Consultant has inspected the subgrade.

Processed Aggregate Base

Install processed aggregate base in conformance with Section 3.04 of the Standard Specifications and as shown on the details.

Concrete Base Installation

The concrete base shall be installed in conformance with Section 9.21 of the Standard Specifications and as shown on the details. The concrete base shall be finished to within 0 to 3/8 in. of the specified grade. The surface of the prepared concrete base shall not deviate more than 3/8 in. from the bottom edge of a 10 ft. straight edge laid in any direction.

Provide a finished surface for the concrete to the dimensions and details as shown on the plans.

Paver Installation

The contractor shall not install any pavers until after the Engineer has approved the paver sample panels.

Before placing pavers, the concrete base shall be inspected by the Engineer. Install a bituminous concrete leveling course as detailed on the plans.

A coating of neoprene-modified asphalt setting adhesive shall be applied by mopping, squeegeeing or troweling over the top surface of the bituminous concrete leveling course so as to provide a bond under the pavers. If adhesive is trowel-applied, trowel shall be serrated type with serration not to exceed 1/16".

Pavers shall be installed in patterns as shown on drawings. In areas where standard patterns do not apply, Contractor shall obtain design modifications from the Engineer prior to the installation of the pavers. Where required, cut pavers with an approved cutter to fit accurately, neatly and without damaged edges. After a section of the sidewalk has been completed, fill joints by sweeping in dry clean polymeric sand and tamp down pavers uniformly with a mechanical vibrator to true grade and free of movement.

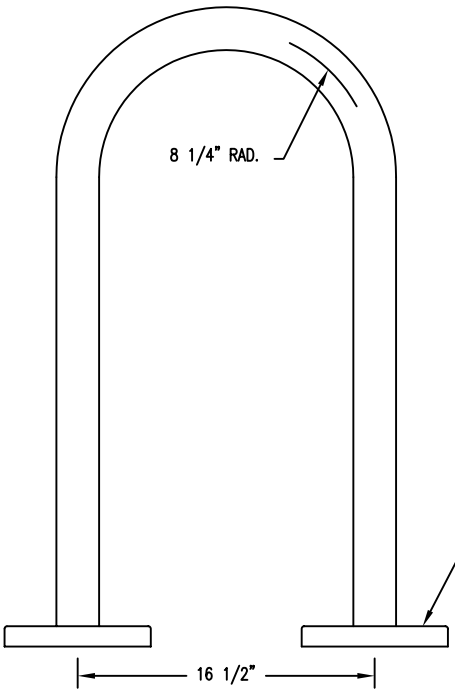
It is the responsibility of the Contractor to discard all damaged pavers during the installation process. The Contractor shall replace any damaged pavers identified by the Engineer during final inspection.

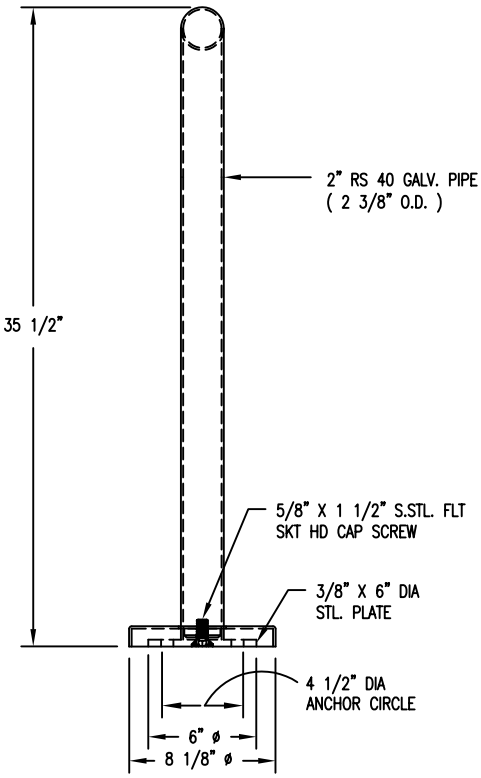
Along all edges where pavers do not abut any other pavement, curbing, structures, or any stable materials, the Contractor shall install edging in order to retain pavers, regardless if edging is identified on drawings.

Method of Measurement and Basis of Payment:

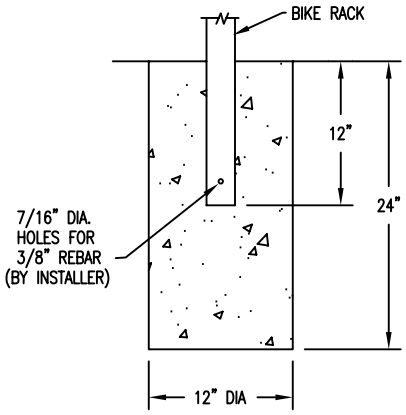
All work associated with this item shall be paid as follows: "Unit Paver Sidewalk" by the square yard complete in place, which price shall include all excavation, subgrade, processed aggregate base, concrete base, expansion and construction joint dowels, reinforcing, bituminous concrete leveling course, neoprene tack coat, polymeric sand, pavers, paver edge restraints, all materials, equipment, tools, and labor incidental thereto.

Description	Unit
Unit Paver Sidewalk	SY

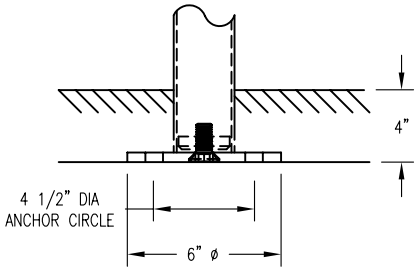




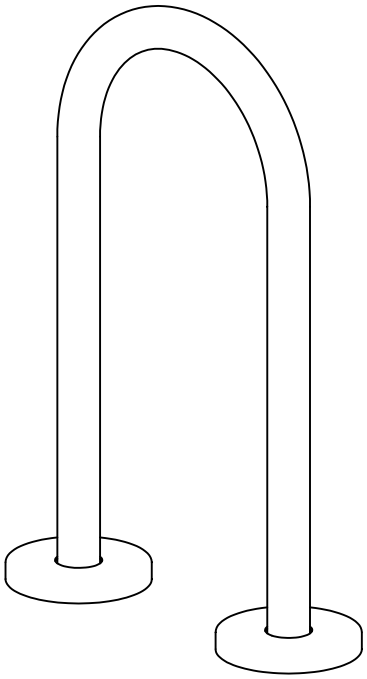
☐ S-2 SURFACE MOUNT



☐ S-1 EMBEDMENT



☐ S-4 SUB FLOOR



FINISH OPTIONS

☐ GALV. FINISH

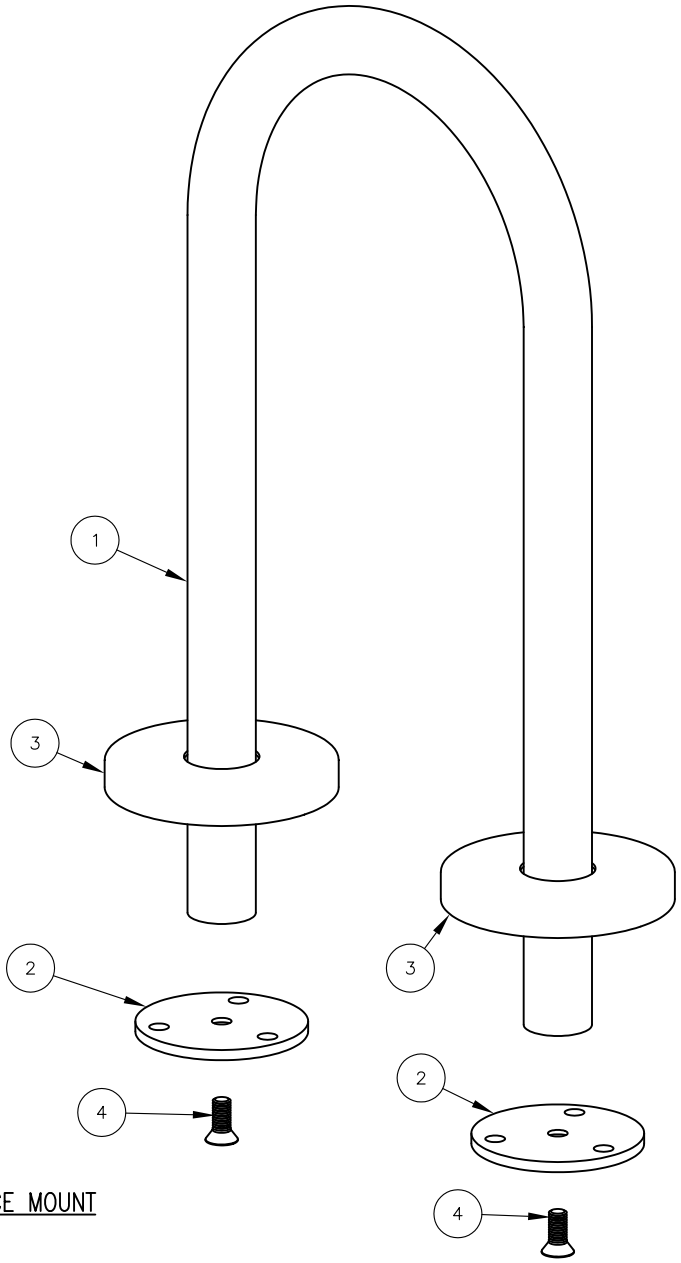
☐ COATED W/ ZINC RICH EPOXY THEN FINISHED W/ POLYESTER POWDER COATING.

NOTE:

1.) 1/2" X 3 3/4" EXPANSION ANCHOR BOLTS PROVIDED FOR OPTIONS S-2 & S-4.

DuMor, inc.
P.O. Box 142 Mifflintown, PA 17059-0142

SCALE : NONE	TITLE : LOOP BIKE RACK			
DATE DRAWN : 3/22/94				
DRAWN BY : CDC	REV. F	DRAWING NUMBER 83 SERIES	SHEET 1 OF 2	
DATE REV. : 11/11/09				
REV. BY : AWH				



INSTALLATION FOR SURFACE MOUNT

STEP 1:

USE 1 – PC. BIKE LOOP, SURFACE MOUNT (1)
2 – PCS. 3/8" THK SURFACE MOUNT PLATE (2)
2 – PCS. 10 GA X 8" DIA ANCHOR PLATE COVER (3)
2 – PCS. 5/8" X 1 1/2" SS FLT SKT HD CAP SCREW (4)
SLIDE 10 GA X 8" DIA ANCHOR COVER (3) OVER BIKE LOOP, SURFACE MOUNT (1) LEGS. ATTACH 3/8" THK. SURFACE MOUNT PLATE (2) TO BIKE LOOP, SURFACE MOUNT (1) USING HARDWARE (4).

STEP 2:

ANCHOR ACCORDINGLY.

INSTALLATION FOR SUB FLOOR

SAME AS SURFACE MOUNT BUT DO NOT USE 10 GA X 8" DIA ANCHOR PLATE COVER.

ITEM	QTY	PART NO	DESCRIPTION
1	1	0-83-00-01/S-2	BIKE LOOP, SURF MOUNT
2	2	0-83-00-03	3/8" THK SURFACE MOUNT PLATE
3	2	0-83-00-04	10 GA X 8" DIA STL ANCHOR PLATE COVER
4	2	1-12-102	5/8" X 1 1/2" SS FLT SKT HD CAP SCR

DuMor, inc.
P.O. Box 142 Mifflintown, PA 17059-0142

SCALE : NONE
DATE DRAWN : 3/22/94
DRAWN BY : CDC
DATE REV. : 11/11/09
REV. BY : AWH

TITLE : LOOP BIKE RACK ASSEMBLY

REV. F

DRAWING NUMBER 83 SERIES

IRON WORLD
9390 DAVIS AVENUE
HOWARD COUNTY, MD 20723
PHONE: (301) 776-7630
TOLL FREE: 1-866-310-2747
FAX: (301) 776-7449
www.ironworldfencing.com

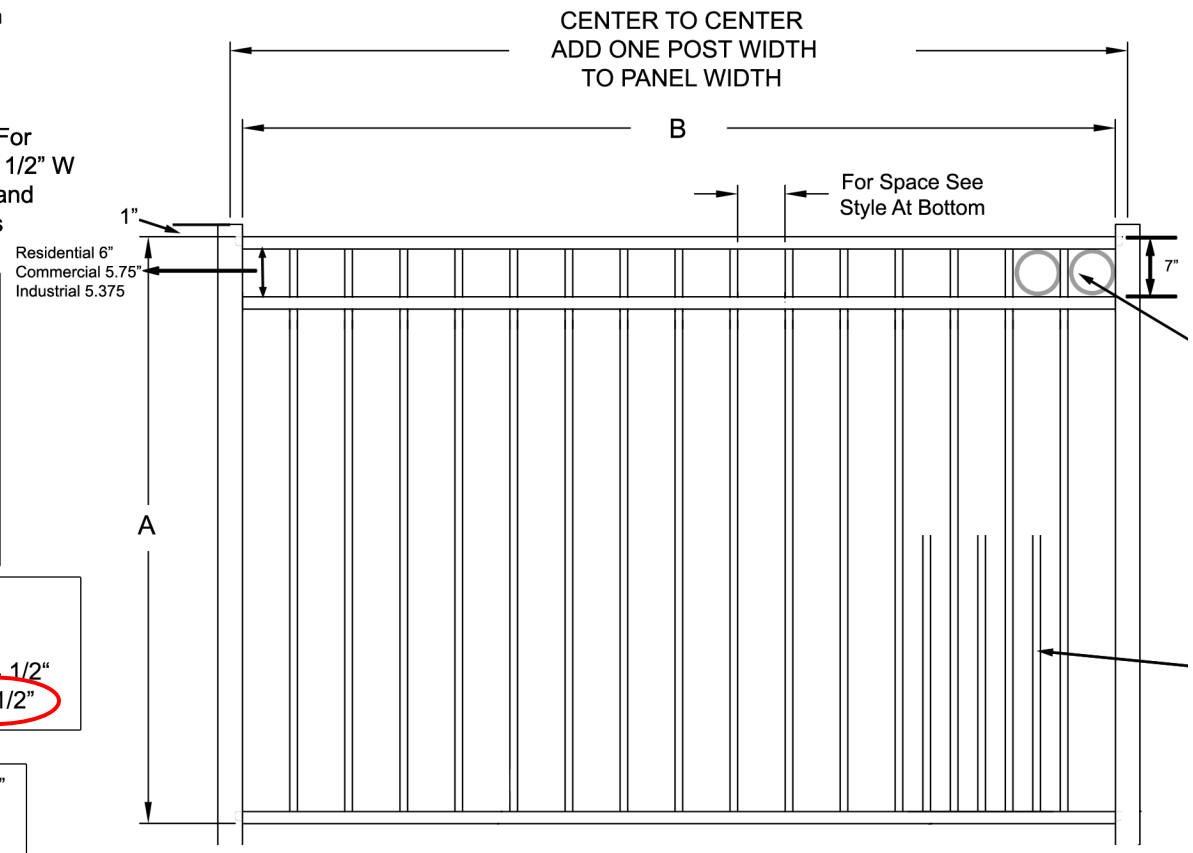
IRON WORLD

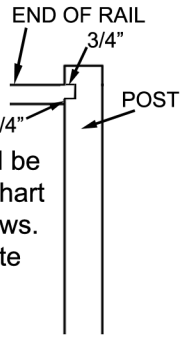
* Refer to Pricing Guide For Rail Requirements for All 94 1/2" W Panels, Double Pickets and Puppy Pickets Panels

* Exact Panel Ht. (A)
3' 0" - 3R
3' 6" - 3R
4' 0" - 3R
4' 6" - 3R
5' 0" - 3R
6' 0" - 3R

PANEL WIDTH (B)
Residential 70 1/2"
Commercial 70 1/2" & 94 1/2"
Industrial 70 1/2" & 94 1/2"

Picket Screws: #8 x 3/4"
Post/Rail Screws:
2" Post: #10 x 1"
2 1/2" Post: #10 x 1"
3" Post: #10 x 1 1/2"
4" Post: #10 x 2"





Posts are notched for rails to insert and be fastened with (see chart SS self tapping screws. Line/Corner/End/Gate

NOT TO SCALE

MAVERICK™

ORNAMENTAL ALUMINUM FENCING

ABERDEEN 3 RAIL FLUSH BOTTOM

RL 8/17

○ ABOVE STYLE

RESIDENTIAL
POSTS
2" X 2" .062 Wall
2" X 2" .093 Wall
2 1/2" X 2 1/2" .080 Wall
2 1/2" X 2 1/2" .125 Wall
RAILS
1" X 1" .080 Wall
PICKET SIZE
5/8" x 5/8" .045 Wall
PICKET SPACING
3 7/8"

○ ABOVE STYLE

COMMERCIAL
POSTS
2" X 2" .062 Wall
2" X 2" .093 Wall
2 1/2" X 2 1/2" .080 Wall
2 1/2" X 2 1/2" .125 Wall
RAILS
1 1/4" X 1 1/4" .080 Wall
PICKET SIZE
3/4" x 3/4" .050 Wall
PICKET SPACING
3 3/4" (+ -)

○ ABOVE STYLE

INDUSTRIAL
POSTS
2 1/2" X 2 1/2" .080 Wall
2 1/2" X 2 1/2" .125 Wall
3" X 3" .125 Wall
4" X 4" .125 Wall
RAILS
1 5/8" X 1 5/8" .100 Wall
PICKET SIZE
1" x 1" .060 Wall
PICKET SPACING
3 3/4" (+ -)

GraybaR

25 RESEARCH PARKWAY
WALLINGFORD CT 06492-1927
Phone: 203-284-4529
Fax: 203-287-4551

To: TOWN OF NAUGATUCK
607 RUBBER AVENUE
NAUGATUCK CT 06770
Attn: SANDY LUCAS
Phone: 203-720-7071
Fax:
Email: SHARON.TIERNEY@GRAYBAR.COM

Date: 01/31/2020
Proj Name: REVISED- CHURCH ST & OLD
GB Project Qte#: 0234518680 Rev-1
Release Nbr:
Purchase Order Nbr:
Additional Ref#
Valid From: 01/17/2020
Valid To: 02/16/2020
Contact: SHARON TIERNEY
Email: sharon.tierney@graybar.com

Proposal

We Appreciate Your Request and Take Pleasure in Responding As Follows

Notes: **OMNIA PARTNERS US COMMUNITIES CONTRACT EV2370**

*** SIGNATURE OF APPROVAL DRAWINGS REQUIRED***

NOTES: REVISION

*** FREIGHT INCLUDED.**

*** ONE SET UP QUOTED; CUSTOMER TO PROVIDE INFORMATION ON TOTAL NUMBER OF SET UPS REQUIRED.**

*** IF GOOGLE EARTH IS TO BE USED AS A TEMPLATE FOR CALCULATIONS, NAUGATUCK WILL NEED TO PROVIDE A DRAWING THAT SHOWS THE LOCATION OF EACH FIXTURE SO THAT WE CAN PROVIDE PROPER PHOTOMETRIC CALCULATIONS.**

*** AS A COMPARISON, THE PREVIOUS ORDER FOR THE MAPLE STREET BRIDGE HAD FIXTURES THAT WERE PROVIDED WITH A LUMEN OUTPUT OF 6,482 LUMENS.**

PLEASE CONTACT SHARON.TIERNEY@GRAYBAR.COM TO ORDER; M 860-987-9704

THANK YOU FOR THE OPPORTUNITY!

Item	Item/Type	Quantity	Supplier	Catalog Nbr	Description	Price	Unit	Ext.Price
100		1 EA	SIGNIFY NORTH AMER	VX60064G2AC3E WA5NNNNSP1N		$2,091.00	1	$2,091.00
Item Note:					*3000 KELVIN. NO DYNADIMMER INCLUDED FOR DIMMING. NO HOUSE SHIELD *			
					FIXTURES QUOTED ABOVE ARE 8,192 LUMENS AT 3000K. THIS IS THE MAXIMUM FOR THIS FIXTUREWITH TYPE III DISTRIBUTION.			

This equipment and associated installation charges may be financed for a low monthly payment through Graybar Financial Services (subject to credit approval). For more information call 1-800-241-7408 to speak with a leasing specialist.

To learn more about Graybar, visit our website at www.graybar.com **24-Hour Emergency Phone#: 1-800-GRAYBAR**

P4465 P4465

Pole

Specifications

Tenon/Top:
3" OD

Bolt Circle:
8" - 12"

Anchor Rods:
(4) 3/4" dia. x 19"

Base Dimensions:
15 1/2" dia. x 48"

Hand Hole :
11" x 5"

Shaft:
5" Straight Flat Fluted

Wall Thickness:
0.188 - 0.267 Aluminum

Height :
12', 14', 16', 18'

Pole EPA Values

	Height			
Windspeed(mph)	12'	14'	16'	18'
80	23.2900	15.2100	12.6900	10.5900
100	14.4000	9.1400	7.4100	5.9500

Signify North America Corporation
200 Franklin Square Drive
Somerset, NJ 08873
Telephone 855-486-2216

Signify Canada Ltd.
281 Hillmount Road
Markham, ON, Canada L6C 2S3
Telephone 800-668-9008

www.hadco.com

HADCO
by signify

Urban

Architectural

VX600 Post top

Project:

Location:

Cat No:

Type:

Lamps: Qty:

Notes:

The Hadco Architectural LED post top is a masterful blend of tradition and modern technology captured in sturdy cast aluminum, rendering years of maintenance-free operation. It creates a warm and friendly ambiance with its design while at the same time offering high-end technology and photometric performance is the strength of this beautiful luminaire.

Ordering guide

Example: VX600-48-A-C-2-N-W-A-3-N-N-N-N-SP1-N

Series	LED count	Gen	Finish	Panels	Optics	Photo Control	Color Temp	Voltage	Drive Current	Integral Controls[2]	Options #1[2]	Options #2[2]	Options #3[2]	Surge Protect	House Side Shield
VX600	32[1,3] 32 LEDs 48 48 LEDs 64 64 LEDs	G2 Gen 2	A Black B White G Verde H Bronze J Green	C Clear F Frosted	2 Type 2 3 Type 3 3W Type 3 Wide 4 Type 4 5 Type 5	E 120 VAC button eye H 208/240/277 VAC button eye R 3-Pin Twist Lock Receptacle N None	N Neutral 4000K W Warm 3000K	A 120-277 B[2,3] 347-480	3 350mA 5 530mA 7[1] 700mA	DA 4 Hrs, 25% reduction DB 4 Hrs, 50% reduction DC 4 Hrs, 75% reduction DD 6 Hrs, 25% reduction DE 6 Hrs, 50% reduction DF 6 Hrs, 75% reduction DG 8 Hrs, 25% reduction DH 8 Hrs, 50% reduction DJ 8 Hrs, 75% reduction DL DALI N None	AST Adjustable Start Up Time N None	CLO Constant Light Output N None	OTL Over The Life N None	SP1 10kV/10kA Surge Protector SP2 20kV/20kA Surge Protector	H House Side Shield N None

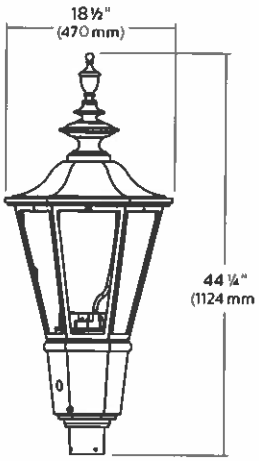
1 The 700mA (7) current is only compatible for 32 LEDs (32) configurations
2 Configurations with 347-480VAC (B) voltage are not compatible with optional dimming or optional programming
3 Configurations with 32 LEDs (32) at 350mA (3) and 530mA (5) currents are not compatible with 347-480 VAC (B) voltage

PROJECT: NAUGATUCK CHURCH ST & OLD FIREHOUSE RD
MANUFACTURER: HADCO
CAT# VX60064G2AC3EWA5NNNNSP1N

VX600 Architectural

Post top

Dimensions



VX600
Height: 44 1/4" (113cm)
Width: 18 1/2" (47cm)
Max. EPA: 2.8 sq. ft
Max. Weight: 34 lbs

LED Wattage and Lumen Values for 3000K fixtures

VX60064G2AC3EWA5NNNNSP1N

Ordering Code (3000K)	Total LEDs	System current (mA)	Average System Watts[1] (W)	Type 2			Type 3			Type 3W			Type 4			Type 5		
				Lumen Output[2]	Efficacy (LPW)	BUG Rating	Lumen Output[2]	Efficacy (LPW)	BUG Rating	Lumen Output[2]	Efficacy (LPW)	BUG Rating	Lumen Output[2]	Efficacy (LPW)	BUG Rating	Lumen Output[2]	Efficacy (LPW)	BUG Rating
Clear Panel VX600 3000K																		
32-G2-C-x-W3	32	350	38	2866	75	B1-U2-G1	2858	75	B1-U2-G1	2905	76	B1-U2-G1	2881	76	B1-U2-G1	2979	78	B2-U2-G1
32-G2-C-x-W5	32	530	53	4111	78	B1-U2-G1	4099	77	B1-U2-G1	4167	79	B1-U2-G1	4132	78	B1-U2-G1	4273	81	B3-U3-G1
32-G2-C-x-W7	32	700	71	5185	73	B1-U2-G1	5170	73	B1-U2-G1	5255	74	B1-U3-G1	5212	73	B1-U3-G1	5389	76	B3-U3-G1
48-G2-C-x-W3	48	350	51	4299	84	B1-U2-G1	4287	84	B1-U2-G1	4358	85	B1-U2-G1	4322	85	B1-U2-G1	4469	88	B3-U3-G1
48-G2-C-x-W5	48	530	79	6166	78	B1-U3-G1	6149	78	B1-U3-G1	6250	79	B1-U3-G2	6199	78	B1-U3-G2	6410	81	B3-U3-G2
64-G2-C-x-W3	64	350	68	5739	84	B1-U2-G1	5711	84	B1-U2-G1	5866	86	B1-U3-G2	5708	84	B1-U3-G2	5963	88	B3-U3-G1
64-G2-C-x-W5	64	530	104	8232	79	B2-U3-G2	8192	79	B2-U3-G2	8414	81	B2-U3-G2	8187	79	B2-U3-G2	8553	82	B3-U3-G2
Frosted Panel VX600 3000K																		
32-G2-F-x-W3	32	350	38	2637	69	B1-U3-G2	2651	70	B1-U3-G2	2694	71	B1-U3-G2	2663	70	B1-U3-G2	2764	73	B1-U3-G2
32-G2-F-x-W5	32	530	53	3782	71	B1-U3-G2	3803	72	B1-U3-G2	3864	73	B1-U3-G3	3820	72	B1-U3-G3	3965	75	B2-U3-G2
32-G2-F-x-W7	32	700	71	4770	67	B1-U3-G3	4796	68	B1-U3-G3	4874	69	B1-U3-G3	4817	68	B1-U3-G3	5000	70	B2-U3-G3
48-G2-F-x-W3	48	350	51	3956	78	B1-U3-G2	3977	78	B1-U3-G3	4041	79	B1-U3-G3	3995	78	B1-U3-G3	4146	81	B2-U3-G2
48-G2-F-x-W5	48	530	79	5674	72	B2-U3-G3	5704	72	B2-U3-G3	5796	73	B2-U3-G3	5730	73	B1-U3-G3	5947	75	B2-U3-G3
64-G2-F-x-W3	64	350	68	5374	79	B1-U3-G3	5262	77	B1-U3-G3	5391	79	B1-U3-G3	5259	77	B1-U3-G3	5625	83	B2-U3-G3
64-G2-F-x-W5	64	530	104	7708	74	B2-U4-G3	7548	73	B2-U3-G3	7733	74	B2-U3-G4	7544	73	B2-U3-G4	8069	78	B3-U4-G3

Actual performance may vary due to installation variables including optics, mounting/ceiling height, dirt depreciation, light loss factor, etc.; highly recommended to confirm performance with a layout - contact Applications at outdoorlighting applications@philips.com

Note: Some data may be scaled based on tests of similar, But not identical luminaires

VX600 Architectural

Post top

LED Wattage and Lumen Values for 4000K fixtures

Ordering Code: (4000K)	Total LEDs	System current (mA)	Average System Watts[1] (W)	Type 2			Type 3			Type 3W			Type 4			Type 5		
				Lumen Output[2]	Efficacy (LPW)	BUG Rating	Lumen Output[2]	Efficacy (LPW)	BUG Rating	Lumen Output[2]	Efficacy (LPW)	BUG Rating	Lumen Output[2]	Efficacy (LPW)	BUG Rating	Lumen Output[2]	Efficacy (LPW)	BUG Rating
Clear Panel VX600 4000K																		
32-G2-C-x-N3	32	350	38	3253	86	B1-U2-G1	3244	85	B1-U2-G1	3297	87	B1-U2-G1	3270	86	B1-U2-G1	3381	89	B2-U2-G1
32-G2-C-x-N5	32	530	53	4666	88	B1-U2-G1	4653	88	B1-U2-G1	4729	89	B1-U2-G1	4690	88	B1-U2-G1	4850	92	B3-U3-G1
32-G2-C-x-N7	32	700	71	5884	83	B1-U2-G1	5868	83	B1-U3-G1	5964	84	B1-U3-G2	5915	83	B1-U3-G2	6116	86	B3-U3-G1
48-G2-C-x-N3	48	350	51	4879	96	B1-U2-G1	4865	95	B1-U2-G1	4945	97	B1-U3-G1	4905	96	B1-U2-G1	5071	99	B3-U3-G1
48-G2-C-x-N5	48	530	79	6998	89	B2-U3-G2	6979	88	B1-U3-G2	7094	90	B2-U3-G2	7035	89	B1-U3-G2	7274	92	B3-U3-G2
64-G2-C-x-N3	64	350	68	6513	96	B1-U3-G1	6482	95	B1-U3-G1	6657	98	B2-U3-G2	6478	95	B1-U3-G2	6767	100	B3-U3-G2
32-G2-F-x-N3	32	350	38	2993	79	B1-U3-G2	3009	79	B1-U3-G2	3057	80	B1-U3-G2	3022	80	B1-U3-G2	3137	83	B2-U3-G2
32-G2-F-x-N5	32	530	53	4293	81	B1-U3-G2	4316	81	B1-U3-G3	4386	83	B1-U3-G3	4335	82	B1-U3-G3	4500	85	B2-U3-G3
32-G2-F-x-N7	32	700	71	5414	76	B1-U3-G3	5443	77	B1-U3-G3	5531	78	B2-U3-G3	5467	77	B1-U3-G3	5675	80	B2-U3-G3
48-G2-F-x-N3	48	350	51	4489	88	B1-U3-G3	4513	88	B1-U3-G3	4586	90	B1-U3-G3	4533	89	B1-U3-G3	4705	92	B2-U3-G3
48-G2-F-x-N5	48	530	79	6439	82	B2-U3-G3	6473	82	B2-U3-G3	6578	83	B2-U3-G3	6503	82	B2-U3-G3	6749	85	B3-U3-G3
64-G2-F-x-N3	64	350	68	6099	90	B2-U3-G3	5972	88	B2-U3-G3	6119	90	B2-U3-G3	5969	88	B1-U3-G3	6384	94	B3-U3-G3
64-G2-F-x-N5	64	530	104	8748	84	B2-U4-G4	8566	82	B2-U4-G4	8776	84	B2-U4-G4	8562	82	B2-U4-G4	9158	88	B3-U4-G4

Actual performance may vary due to installation variables including optics, mounting/ceiling height, dirt depreciation, light loss factor, etc., highly recommended to confirm performance with a layout - contact Applications at outdoorlighting applications@philips.com

Note: Some data may be scaled based on tests of similar but not identical luminaires

Specifications

Housing

Roof: Hinged roof with stainless steel thumb screw. 356HM low-copper cast aluminum alloy.

Panels: Two panel options. Clear panels are made of an U.V Stabilized sheet material and include a frosted decorative glass chimney. Frosted Panels are U.V. Stabilized sheet material. All panels are attached with a clip and can easily be removed for cleaning.

Fitter: Slip Fitter Dimensions: 3" I.D. x 3" deep. Removable door to access photocontrol components.

Light Engine

LEDgine is composed of five main components: Heat Sink, Lens, LED lamp, Optical System, and Driver. Electrical components are RoHS compliant.

LED Module

Composed of high-performance white LEDs. Color temperature as per ANSI/NEMA bin - Neutral White, 4000 Kelvin nominal (3985K +/- 275K or 3710K to 4260K) or Warm White, 3000 Kelvin nominal (3045K +/- 175K or 2870K to 3220K), CRI 70 Min. 75 Typical.

Heat Sink

Made of cast aluminum optimizing the LEDs efficiency and life. Product does not use any cooling device with moving parts (only passive cooling device).

Optical System

Type 2, 3, 3W, 4 and Type 5 composed of high performance optical grade PMMA acrylic refractor lenses to achieve desired distribution optimized to get maximum spacing, target lumens and a superior lighting uniformity. Optical system is rated IP66. Performance shall be tested per LM 63, LM 79 and TM 15 (IESNA) certifying its photometric performance. Street side indicated.

Driver

Driver comes standard with 0-10V dimming capability. High power factor of 95%. Electronic driver, operating range 50/60 Hz. Auto adjusting universal voltage input from 120 to 277 VAC rated for both application line to line or line to neutral, Class I, THD of 20% max. Maximum ambient operating temperature from 40°F (4°C) to 130°F (55°C). Certified in compliance to UL1310 cULus requirement (dry and damp location). Assembled on a unitized removable tray with Tyco quick disconnect plug resisting to 221°F (105°C). The current supplying the LEDs will be reduced by the driver if the driver experiences internal overheating as a protection to the LEDs and the electrical components. Output is protected from short circuits, voltage overload and current overload. Automatic recovery after correction. Standard built in driver surge protection of 2.5kV (min).

VX600 Architectural

Post top

Specifications (continued)

Driver Options

AST: Pre-set driver for progressive start-up of the LED module(s) to optimize energy management and enhance visual comfort at start-up.

CLO: Pre-set driver to manage the lumen depreciation by adjusting the power given to the LEDs offering the same lighting intensity during the entire lifespan of the LED module.

OTL: Pre-set driver to signal end of life of the LED module(s) for better fixture management.

Dimming Options

DA: 4 Hrs 25% reduction
DB: 4 Hrs 50% reduction
DC: 4 Hrs 75% reduction
DD: 6 Hrs 25% reduction
DE: 6 Hrs 50% reduction
DF: 6 Hrs 75% reduction
DG: 8 Hrs 25% reduction
DH: 8 Hrs 50% reduction
DJ: 8 Hrs 75% reduction

Surge Protection

Surge protector tested in accordance with ANSI/IEEE C62.45 per ANSI/IEEE C62.41.2 Scenario I Category C High Exposure 10kV/10kA waveforms for Line Ground, Line Neutral and Neutral Ground, and in accordance with U.S. DOE (Department of Energy) MSSLC (Municipal Solid State Street Lighting Consortium) model specification for LED roadway luminaires electrical immunity requirements for High Test Level 10kV / 10kA. Option for SP2 20kV/20kA.

Luminaire Useful Life

Refer to IES files for energy consumption and delivered lumens for each option. Based on ISTMT in situ thermal testing in accordance with UL1598 and UL8750, using LM-80 data from LED manufacturers and engineering prediction methods, the luminaire useful life is expected to reach 100,000+ hours with >L70 lumen maintenance @ 25°C (48 LED and 64LED at 530mA is 68,000). Luminaire useful life accounts for LED lumen maintenance and additional factors, including LED life, driver life, PCB substrate, solder joints on/off cycles and burning hours for nominal applications.

Hardware

All non-ferrous fasteners prevent corrosion and ensure longer life.

Wiring

18 AWG wire, 6" (152mm) minimum exceeding from luminaire.

Options

HS House side shield

SP2 20kV/20kA integral surge protector (optional)

LED Performance

Predicted lumen depreciation data[1]				
Ambient Temperature (°C)	Driver mA	Calculated L_{70} hours[1,2]	L_{70} per TM-21[2,3]	Lumen Maintenance % @ 60,000 hours
25°C	up to 700 mA	>100,000	>60,000	90%

1 Predicted performance derived from LED manufacturer's data and engineering design estimates, based on IESNA LM-80 methodology. Actual experience may vary due to field application conditions
2 L_{70} is the predicted time when LED performance depreciates to 70% of initial lumen output
3 Calculated per IESNA TM21-11. Published L_{70} hours limited to 6 times actual LED test hours

Finish

Color in accordance with the AAMA 2603 standard. Application of polyester powder coat paint (4 mils/100 microns) with ± 1 mils / 24 microns of tolerance. The Thermosetting resins provides a discoloration resistant finish in accordance with the ASTM D2244 standard, as well as luster retention in keeping with the ASTM D523 standard and humidity proof in accordance with the ASTM D2247 standard. The surface treatment achieves a minimum of 2000 hours for salt spray resistant finish in accordance with testing performed and per ASTM B117 standard.

LED products manufacturing standard

electrostatic discharge (ESD) such as light emitting diodes (LEDs) are assembled in compliance with IEC61340 5 1 and ANSI/ESD S20.20 standards so as to eliminate ESD events that could decrease the useful life of the product.

Quality Control

The manufacturer must provide a written confirmation of its ISO 9001 2008 and ISO 14001 2004 International Quality Standards Certification.

Meets the ANSI C136.31 2010, American national Standard for Roadway Luminaire Vibration specifications for Normal Applications.

Certifications and Compliance

cETL listed to Canadian safety standards for wet locations. Manufactured to ISO 9001:2008 Standards. UL8750 and UL1598 compliant. ETL listed to U.S. safety standards for wet locations. cETL listed to Canadian safety standards for wet locations. LM80 & LM79 tested. Listed on the DesignLightsTM Consortium (DLC) Qualified Products List (QPL).

IP Rating

The LED optics chamber is IP66 rated.

Warranty

5 year extended warranty.

Signify North America Corporation
200 Franklin Square Drive
Somerset, NJ 08873
Telephone 855-486-2216

Signify Canada Ltd.
281 Hillmount Road
Markham, ON, Canada L6C 2S3
Telephone 800-668-9008

www.hadco.com

HADCO by signify

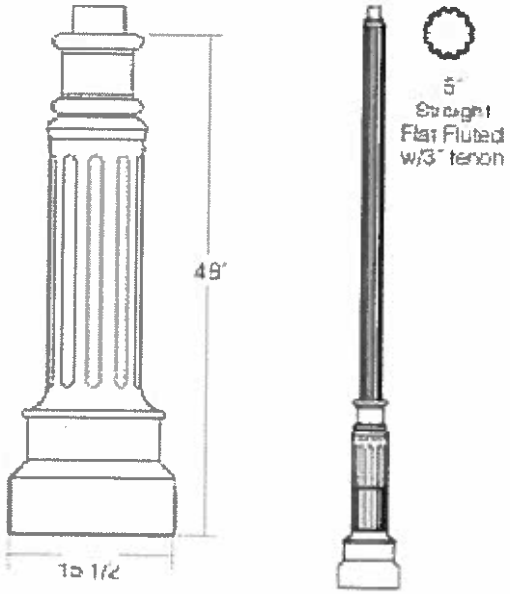
Urban

P4465

P4465 Pole

GraybaR

Project
Location
Cat No
Type
Lamps Qty
Notes



Ordering Guide

Example: P4465 12 A T D

Product Code	P4465	
Pole Height	12	12'
	14	14'
	16	16'
	18	18'
Finish	A	Black
	B	White
	G	Verde
	H	Bronze
	J	Green
Outlet Location (Optional)	T	12" Down from Top - Aligned with House Side
	B	4" Up from Top of Base - Aligned with House Side
Outlet Options (Optional)	D	Standard Duplex
	G	GFI Duplex

Specifications

HOUSING:
356 HM high-strength, low-copper, proprietary cast aluminum alloy. 6005-T5 extruded aluminum. Anchor rods are hot dipped galvanized steel. Tenon is 356 HM sand cast aluminum.

FINISH:
A durable polyurethane enamel finish is applied after assemblies are shot blasted to create a surface profile which allows for the highest level of paint adhesion. Laboratory tested for superior weatherability and fade resistance in accordance with ASTM B-117-64 and ANSI/ASTM G53-77 specifications. For larger projects where a custom color is required, contact the factory for more information.

WARRANTY:
Three-year limited warranty.

OUTLET:
Standard Duplex Outlet has universal metal weatherproof cover. Weatherproof while in use. Heavy-duty all-metal construction. Lockable security cover. Meets NEC 406.9 (B). Weather resistant. GFI Duplex Outlet has dual-function indicator light, universal metal weatherproof cover. Weatherproof while in use. Heavy-duty all-metal construction. Lockable security cover. Meets NEC 406.9 (B). Weather resistant.

PROJECT: NAUGATUCK CHURCH ST & OLD FIREHOUSE RD
MANUFACTURER: HADCO
CAT# P4465-14ATG

To: TOWN OF NAUGATUCK
607 RUBBER AVENUE
NAUGATUCK CT 06770
Attn: SANDY LUCAS

Date: 01/31/2020
Proj Name: REVISED- CHURCH ST & OLD
GB Project Qte#: 0234518680 Rev-1

Proposal

We Appreciate Your Request and Take Pleasure in Responding As Follows

SEE SUBMITTAL

200	**1 EA**	**SIGNIFY NORTH AMER**	**P4465-14ATG POLE**	**$2,319.00**	**1**	**$2,319.00**
Item Note:	**POLE CONSISTS OF:**					
	1 HADC T01000071 TEMPLATE, P4400, NEW BASE **1 HADC 4110027 ANCHOR ROD 3/4 OD 4 PER BOX**					

Total in USD (Tax not included): $4,410.00

This equipment and associated installation charges may be financed for a low monthly payment through Graybar Financial Services (subject to credit approval). For more information call 1-800-241-7408 to speak with a leasing specialist.

To learn more about Graybar, visit our website at www.graybar.com **24-Hour Emergency Phone#: 1-800-GRAYBAR**

Subject to the standard terms and conditions set forth in this document. Unless otherwise noted,freight terms are F.O.B. shipping point prepaid and bill. Unless noted the estimated ship date will be determined at the time of order placement.

To: TOWN OF NAUGATUCK
607 RUBBER AVENUE
NAUGATUCK CT 06770
Attn: SANDY LUCAS

Date: 01/31/2020
Proj Name: REVISED- CHURCH ST & OLD
GB Project Qte#: 0234518680 Rev-1

Proposal

We Appreciate Your Request and Take Pleasure in Responding As Follows

GRAYBAR ELECTRIC COMPANY, INC.
TERMS AND CONDITIONS OF SALE

1. ACCEPTANCE OF ORDER; TERMINATION - Acceptance of any order is subject to credit approval and acceptance of order by Graybar Electric Company, Inc. ("Graybar") and, when applicable, Graybar's suppliers. If credit of the buyer of the goods or services ("Buyer") becomes unsatisfactory to Graybar, Graybar reserves the right to terminate upon notice to Buyer and without liability to Graybar.
2. PRICES AND SHIPMENTS - Unless otherwise quoted, prices for goods shall be those in effect at time of shipment, which shall be made F.O.B. shipping point, prepaid and bill. Unless otherwise indicated in the applicable quotation or statement of work, prices for services shall be those in effect at the time of completion. The contract price for goods and or services shall be increased by the amount of any applicable tariff, excise, fee, assessment, levy, charge or duty of any kind whatsoever, imposed, assessed or collected by any governmental body, whether or not reflected in the costs charged to Graybar, and Graybar may increase its cost for goods and or services appropriately to take into account such increases in Graybar's costs.
3. RETURN OF GOODS - Credit may be allowed for goods returned with prior approval. A deduction may be made from credits issued to cover cost of handling. Returns will not be accepted for services or any material which has been modified at the request of or by Buyer. In addition, no custom orders may be returned.
4. TAXES - Prices shown do not include sales or other taxes imposed on the sale of goods or services. Taxes now or hereafter imposed upon sales, shipments or services will be added to the purchase price. Buyer agrees to reimburse Graybar for any such tax or provide Graybar with acceptable tax exemption certificate.
5. DELAY IN DELIVERY - Graybar is not to be accountable for delays in delivery of goods or services occasioned by acts of God, failure of its suppliers to ship or deliver on time, or other circumstances beyond Graybar's reasonable control. Factory shipment or delivery dates are best estimates, and in no case shall Graybar be liable for any consequential or special damages arising from any delay in provision of services, shipment or delivery.
6. LIMITED WARRANTIES - Graybar warrants that all goods sold are free of any security interest and will make available to Buyer all transferable warranties (including without limitation warranties with respect to intellectual property infringement) made to Graybar by the manufacturer of the goods. Buyer acknowledges that the performance of any service which alters the manufacturer provided goods as indicated in the statement of work may void the manufacturer's warranty. Graybar shall use the same care and skill a similarly situated provider of like services would exercise following commonly accepted industry practices in the performance of its duties under this agreement. GRAYBAR MAKES NO OTHER EXPRESS OR IMPLIED WARRANTIES, AND SPECIFICALLY DISCLAIMS ALL IMPLIED WARRANTIES INCLUDING BUT NOT LIMITED TO THE IMPLIED WARRANTIES OF MERCHANTABILITY AND FITNESS FOR PURPOSE. UNLESS OTHERWISE AGREED IN WRITING BY AN AUTHORIZED REPRESENTATIVE OF GRAYBAR, PRODUCTS SOLD HEREUNDER ARE NOT INTENDED FOR USE IN OR IN CONNECTION WITH (1) ANY SAFETY APPLICATION OR THE CONTAINMENT AREA OF A NUCLEAR FACILITY, OR (2) IN A HEALTHCARE APPLICATION, WHERE THE GOODS HAVE POTENTIAL FOR DIRECT PATIENT CONTACT OR WHERE A SIX (6) FOOT CLEARANCE FROM A PATIENT CANNOT BE MAINTAINED AT ALL TIMES.
7. LIMITATION OF LIABILITY - Buyer's remedies under this agreement are subject to any limitations contained in manufacturer's terms and conditions to Graybar, a copy of which will be furnished upon written request. Furthermore, Graybar's liability shall be limited to either repair or replacement of the goods, re-performance of the services, or refund of the purchase price, all at Graybar's option, and IN NO CASE SHALL GRAYBAR BE LIABLE FOR INCIDENTAL, SPECIAL, OR CONSEQUENTIAL DAMAGES. In addition, claims for shortages, other than loss in transit, must be made in writing not more than five (5) days after receipt of shipment. Unless otherwise agreed in the applicable statement of work, acceptance of services will occur not more than five (5) days after completion of performance.
8. WAIVER - The failure of Graybar to insist upon the performance of any of the terms or conditions of this agreement or to exercise any right hereunder shall not be deemed to be a waiver of such terms, conditions, or rights in the future, nor shall it be deemed to be a waiver of any other term, condition, or right under this agreement.
9. MODIFICATION OF TERMS AND CONDITIONS - These terms and conditions, and any associated statement of work, supersede all other communications, negotiations, and prior oral or written statements regarding the subject matter of these terms and conditions. No change, modification, rescission, discharge, abandonment, or waiver of these terms and conditions shall be binding upon Graybar unless made in writing and signed on its behalf by a duly authorized representative of Graybar. No conditions, usage of trade, course of dealing or performance, understanding or agreement, purporting to modify, vary, explain, or supplement these terms and conditions shall be binding unless hereafter made in writing and signed by the party to be bound. Any proposed modifications or additional terms are specifically rejected and deemed a material alteration hereof. If this document shall be deemed an acceptance of a prior offer by Buyer, such acceptance is expressly conditional upon Buyer's assent to any additional or different terms set forth herein.
10. REELS - When Graybar ships returnable reels, a reel deposit may be included in the invoice. The Buyer should contact the nearest Graybar service location to return reels.
11. CERTIFICATION - Graybar hereby certifies that these goods were produced in compliance with all applicable requirements of Sections 6, 7, and 12 of the Fair Labor Standards Act, as amended, and of regulations and orders of the United States Department of Labor issued under Section 14 thereof. This agreement is subject to Executive Order 11246, as amended, the Rehabilitation Act of 1973, as amended, the Vietnam Veterans' Readjustment Assistance Act of 1974, as amended, E.O. 13496, 29 CFR Part 471, Appendix A to Subpart A, and the corresponding regulations, to the extent required by law. 41 CFR 60-1.4, 60-741.5, and 60-250.5 are incorporated herein by reference, to the extent legally required.
12. FOREIGN CORRUPT PRACTICES ACT - Buyer shall comply with applicable laws and regulations relating to anti-corruption, including, without limitation, (i) the United States Foreign Corrupt Practices Act (FCPA) (15 U.S.C. §§78dd-1, et. seq.) irrespective of the place of performance, and (ii) laws and regulations implementing the Organization for Economic Cooperation and Development's Convention on Combating Bribery of Foreign Public Officials in International Business Transactions, the U.N. Convention Against Corruption, and the Inter-American Convention Against Corruption in Buyer's country or any country where performance of this agreement or delivery of goods will occur.
13. ASSIGNMENT - Buyer shall not assign its rights or delegate its duties hereunder or any interest herein without the prior written consent of Graybar, and any such assignment, without such consent, shall be void.
14. GENERAL PROVISIONS - All typographical or clerical errors made by Graybar in any quotation, acknowledgment or publication are subject to correction. This agreement shall be governed by the laws of the State of Missouri applicable to contracts to be formed and fully performed within the State of Missouri, without giving effect to the choice or conflicts of law provisions thereof. All suits arising from or concerning this agreement shall be filed in the Circuit Court of St. Louis County, Missouri, or the United States District Court for the Eastern District of Missouri, and no other place unless otherwise determined in Graybar's sole discretion. Buyer hereby irrevocably consents to the jurisdiction of such court or courts and agrees to appear in any such action upon written notice thereof.
15. PAYMENT TERMS - Payment terms shall be as stated on Graybar's invoice or as otherwise mutually agreed. As a condition of the sales agreement, a monthly service charge of the lesser of 1-1/2% or the maximum permitted by law may be added to all accounts not paid by net due date. Visa, MasterCard, American Express, and Discover credit cards are accepted at point of purchase only.
16. EXPORTING - Buyer acknowledges that this order and the performance thereof are subject to compliance with any and all applicable United States laws, regulations, or orders. Buyer agrees to comply with all such laws, regulations, and orders, including, if applicable, all requirements of the International Traffic in Arms Regulations and/or the Export Administration Act, as may be amended. Buyer further agrees that if the export laws are applicable, it will not disclose or re-export any technical data received under this order to any countries for which the United States government requires an export license or other supporting documentation at the time of export or transfer, unless Buyer has obtained prior written authorization from the United States Office of Export Control or other authority responsible for such matters.
17. CANCELLATION; CHANGES FOR SERVICES - Buyer may cancel or make changes to a statement of work up to five (5) business days prior to commencement of the work. All changes and cancellations after such date are subject to Graybar's prior written approval in Graybar's sole and absolute discretion. Buyer shall pay to Graybar amounts necessary to cover cancellation, restocking fees and other charges applicable to the cancelled goods or services including those incurred or committed to by Graybar.

Signed:_____

This equipment and associated installation charges may be financed for a low monthly payment through Graybar Financial Services (subject to credit approval). For more information call 1-800-241-7408 to speak with a leasing specialist.

To learn more about Graybar, visit our website at www.graybar.com **24-Hour Emergency Phone#: 1-800-GRAYBAR**

Subject to the standard terms and conditions set forth in this document. Unless otherwise noted, freight terms are F.O.B. shipping point prepaid and bill.
Unless noted the estimated ship date will be determined at the time of order placement.

GraybaR

NAUGATUCK CHURCH ST & OLD FIREHOUSE RD

To: SHARON TIERNEY GRAYBAR - WALLINGFORD 25 RESEARCH PARKWAY WALLINGFORD, CT 06492-1927 PH: (203) 284-4500 Fax (203) 284-4551	Submittal Date: 1/31/2020

Type	Mfg	Description	Comments
	HADCO	VX60064G2AC3EWA5NNNNSP1N	
	HADCO	P4465-14ATG	
	HADCO	T01000071 TEMPLATE, P4400, NEW BASE	
	HADCO	4110027 ANCHOR ROD 3/4 OD 4 PER BOX	

A.M Rizzo Electrical Contractors Inc

TRANSMITTAL
No. 00006

64 Triangle Street
Danbury, CT 06810

Phone: 203-731-3131

PROJECT: 087-146 Rubber Ave, Naugatuck

DATE: 1/14/2020

TO: BL Companies
335 Research Parkway
Meriden, CT 06450

REF: 087-146 Naugatuck Rubber Avenue
RFC#00001

ATTN: Peter Schirmer

WE ARE SENDING:	SUBMITTED FOR:	ACTION TAKEN:
☐ Shop Drawings	☑ Approval	☐ Approved as Submitted
☐ Letter	☐ Your Use	☐ Approved as Noted
☐ Prints	☐ As Requested	☐ Returned After Loan
☐ Change Order	☑ Review and Comment	☐ Resubmit
☐ Plans		☐ Submit
☐ Samples	**SENT VIA:**	☐ Returned
☐ Specifications	☑ Attached	☐ Returned for Corrections
☑ Other: RFC#00001	☐ Separate Cover Via:	☐ Due Date:

ITEM NO.	COPIES	DATE	ITEM NUMBER	REV. NO.	DESCRIPTION	STATUS
1	1	1/14/2020			087-146 RFC#00001	NEW

Remarks: Please see attached RFC#00001 submitted for your review and approval.

SUBMITTAL REVIEW
BL COMPANIES

(✔) No Exceptions Noted
( ) Exceptions as Noted
( ) Revise and Resubmit
( ) Rejected

Submittal # 00001

Date 1/17/2020 By M. Shepley, PE, PTC

This review is only for general conformance with the design concept and information given in the Construction Documents. Corrections or comments made on the shop drawings during this review do not relieve the Contractor from compliance with the requirements of the plans and specifications. Review of a specific item shall not include review of an assembly of which the item is a component. The Contractor is responsible for: dimensions to be confirmed and correlated at the jobsite; information that pertains solely to the fabrication processes or to the means, methods, techniques, sequences and procedures of construction; coordination of the Work with that of all other trades; and performing all Work in a safe and satisfactory manner.
Rev. 3/02, 10/17

CC: James Murcia

Signed: _____
Marc Bonacci

A.M Rizzo Electrical Contractors Inc

REQUEST FOR CHANGE
No. 00001

64 Triangle Street
Danbury, CT 06810

Phone: 203-731-3131

TITLE: RFC for item #0922003A

PROJECT: 087-146 Rubber Ave, Naugatuck

TO: Attn: Peter Schirmer
BL Companies
335 Research Parkway
Meriden, CT 06450

DATE: 1/14/2020

JOB: 19036

STARTED:

COMPLETED:

REQUIRED: 1/21/2020

QUESTION:

The subcontractor providing item #0922003A – Decorative Bituminous Concrete (Pattern Type) has a product that does not match the specification. Please see the attached submittal from our contractor and approve the product proposed.

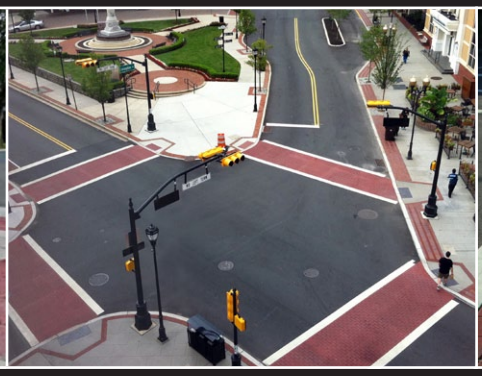
Requested By: A.M Rizzo Electrical Contractors Inc **Date:** 1/14/2020

Signed: _____
Marc Bonacci

TrafficPatternsXD™

A TrafficScapes™ Solution by Ennis-Flint

DESIGN MANUAL



ENNIS-FLINT

A Traffic Safety Solutions Company

DESIGN MANUAL

There are literally hundreds of design combinations for TrafficPatternsXD crosswalks and traffic calming surfaces. The purpose of this Design Manual is to provide a visual glance of ideas and suggestions using various combinations of patterns, borders, and colors.

Specifications and CAD drawings are available at www.ennisflint.com and www.CADdetails.com

TrafficPatternsXD™
by Ennis-Flint




Made of durable preformed thermoplastic pavement marking material, TrafficPatternsXD provides a cost-effective alternative to the use of brick and stone pavers and is virtually maintenance free. The pattern and color combinations allow designers the flexibility to create the ideal crosswalk or traffic calming pattern that complements an overall streetscape design.

Ennis-Flint, the world's leading manufacturer and distributor of preformed thermoplastic pavement marking materials, makes a complete line of products at our U.S. facility which is ISO 9001:2008 certified for design, development, and manufacturing. Ennis-Flint offers pavement markings for use on streets and highways, crosswalks, intersections, parking areas, and many airside and landside uses at airports. From lines, legends, and arrows to traffic calming crosswalks and detectable warnings, Flint's products help motorists, cyclists, pilots, and pedestrians move in the right direction…*safely*.

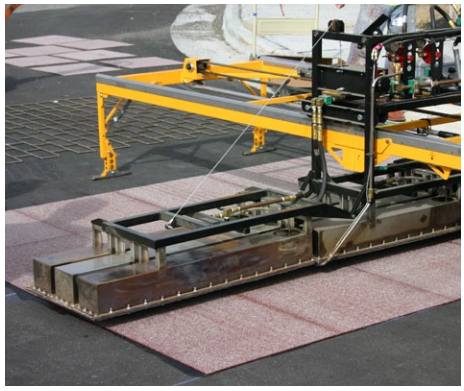
115 Todd Court Thomasville, NC 27360 (336) 475-6600 www.ennisflint.com

APPLICATION OVERVIEW

Applications are performed by Certified Applicators only. The 2 ft. x 2 ft. sheets of material are positioned on the non-stamped, prepared asphalt surface. The material is heated to allow proper embedment of the anti-skid elements. A specialized grid gently stamps a pattern into the material and just into the top layer of the asphalt.

1. APPLY SEALER & POSITION

2. HEAT MATERIAL



3. STAMP WITH WIRE GRID

TrafficPatternsXD Photos

Offset Brick

Ashlar Slate

Diagonal Herringbone

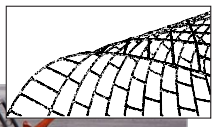
Diagonal Herringbone

Square Tile

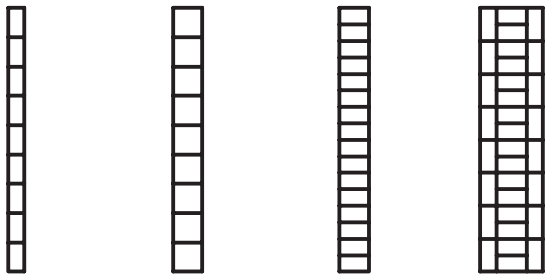
Square Tile

POPULAR BORDERS & PATTERNS

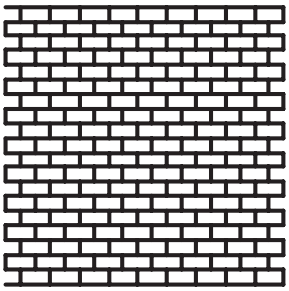
Drawings below represent the wire grids that are stamped into the asphalt surface to create specified pattern.



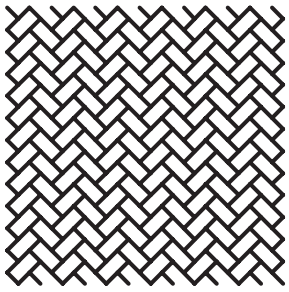
BORDERS



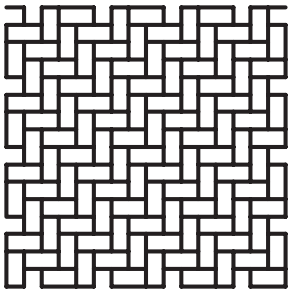
PATTERNS



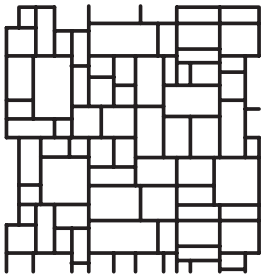
Offset Brick
Brick Size: 4-3/4"x9-5/8"
(12.4cm x 24.3cm)



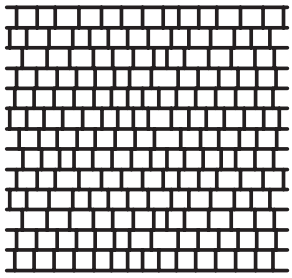
Diagonal Herringbone
Brick Size: 4-7/8" x 9-3/4"
(12.3cm x 24.7cm)



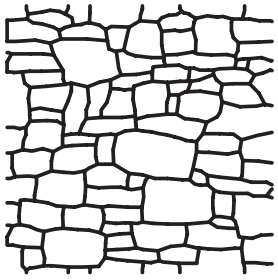
Standard Herringbone
Brick Size: 4-7/8" x 9-3/4"
(12.3cm x 24.7cm)



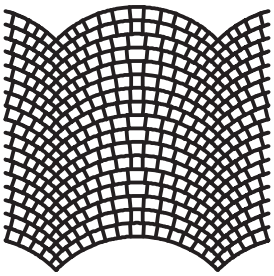
Slate
Brick Size: 3" to 16"
(7.6cm to 40.56cm)



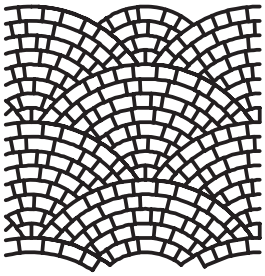
Cobble
Brick Size: 4-7/8" x varies
(12.3cm x varies)



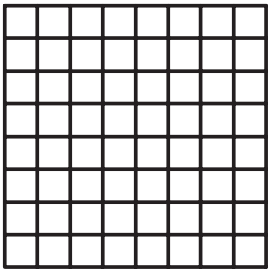
Stone
Brick Size: varies 4" to 1'-4"
(varies 10cm to 40cm)



Eurofan
Brick Sizes: 3" to 4" x varies
(7.6cm to 10.1cm x varies)



Scallop
Brick Size: 4-1/2" x varies
(11.4cm x varies)



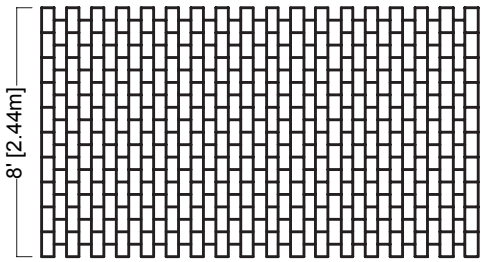
Tile
Brick Size: 4", 8", 10" and12"
(10.1, 20.3, 25.4, and 30.4cm)

OFFSET BRICK

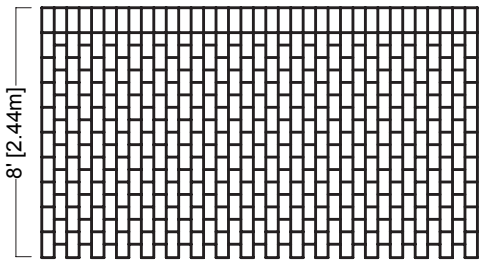
Wire-Rope Grid		
XDG-10-100	8’W x 14’L	Offset Brick
XDG-10-101	14’W x 8’L	Offset Brick
XDG-10-102	8'W x 14'L	Open Offset Brick with Stacked Brick Border
XDG-10-103	8'W x 14'L	Closed Offset Brick Stacked Brick Borders
XDG-10-104	6'W x 10'L	Offset Brick
XDG-10-105	11'W x 6'L	Offset Brick
XDG-10-106	6'W x 10'L	Open Offset Brick with Stacked Brick Border
XDG-10-110	1’7”W x 12’L	Offset Brick Edger
XDG-10-111	8’W x 2’9”L	Offset Brick

Drawings below represent the wire grids that are stamped into the asphalt surface to create specified pattern.

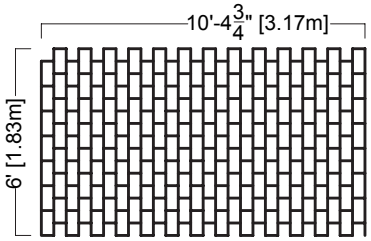
10-100



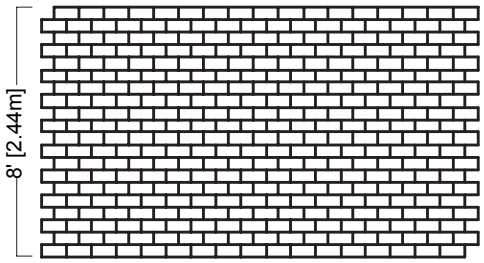
10-102



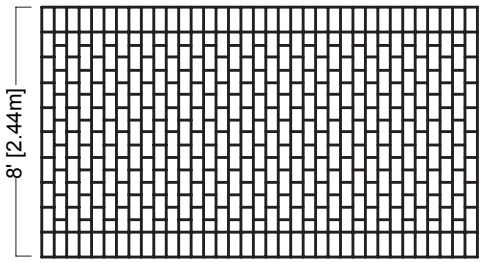
10-104



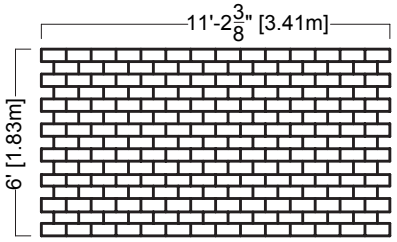
10-101



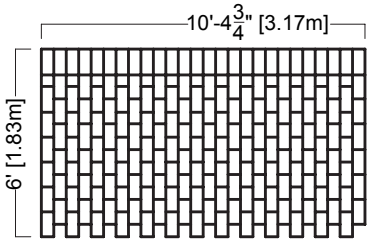
10-103



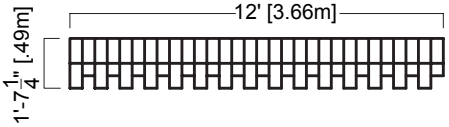
10-105



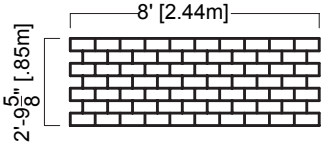
10-106



10-110



10-111



SEE PAGE 12 FOR SUPPORTING BORDERS: 10-110, 18-100, 18-106

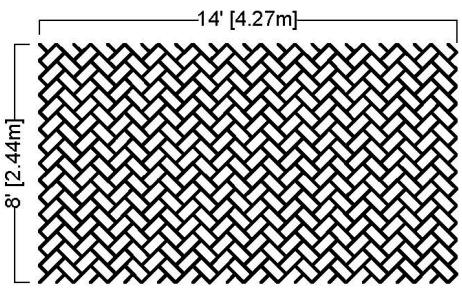
HERRINGBONE

Wire-Rope Grid		
XDG-12-101	8'L x 14'W	Diagonal Herringbone
XDG-12-102	8'W x 14'L	Open Diagonal Herringbone with Tile Border
XDG-12-103	8'W x 14'L	Closed Diagonal Herringbone with Tile Borders
XDG-12-104	6'L x 11'W	Diagonal Herringbone
XDG-12-105	6'W x 11'L	Open Diagonal Herringbone with Tile Border
XDG-12-110	2'W x 12'10"L	Diagonal Herringbone Edger
XDG-12-111	3'1"W x 7'8"L	Open Diagonal Herringbone
XDG-11-120-120	13'W x 9'9"L	Standard Herringbone for SR120
XDG-11-1-120	13'W x 6'L	Standard Herringbone
XDG-11-1-219	10'W x 6'L	Standard Herringbone
XDG-11-1-121	5'W x 8'L	Standard Herringbone

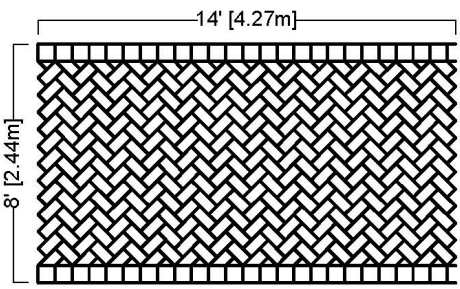
Drawings below represent the wire grids that are stamped into the asphalt surface to create specified pattern.

DIAGONAL HERRINGBONE

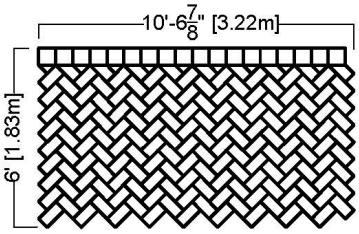
12-101



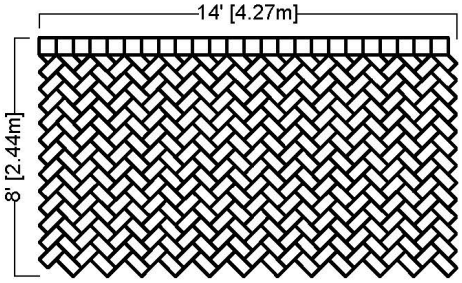
12-103



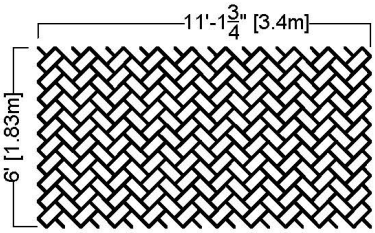
12-105



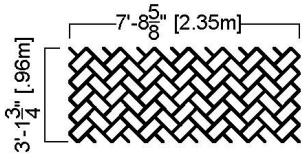
12-102



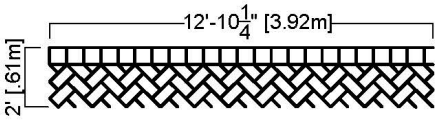
12-104



12-111

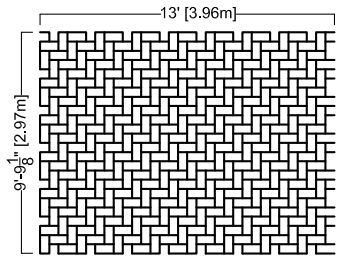


12-110

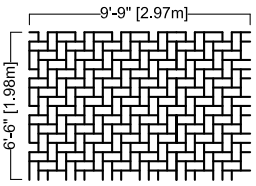


STANDARD HERRINGBONE

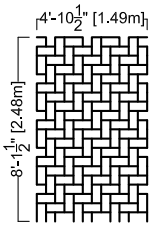
11-120-120



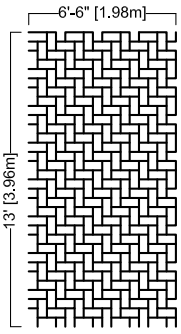
11-1-219



11-1-121



11-1-120



SEE PAGE 12 FOR SUPPORTING BORDERS: 12-110, 18-101, 18-107

SLATE

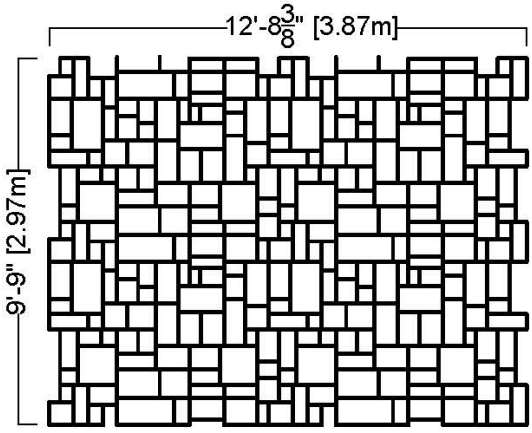
Wire-Rope Grid		
XDG-13-120-146	12’9” x 9’9”	Ashlar Slate for SR120
XDG-13-61-399	6’11” x 9’9”	Ashlar Slate Half size of SR120, works with SR60
XDG-13-111	8’ x 2’10”	Mini Accent

Wire-Rope Grid		
XDG-28-120-374	12’x 9’	Random Slate SR-120
XDG-28-1-374	12’ x 6’	Random Slate
XDG-28-1-375	9’ x 6’	Random Slate
XDG-28-1-376	6’ x 6’	Random Slate

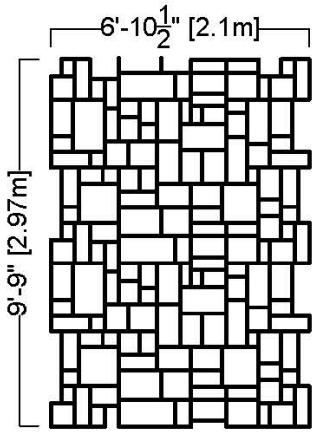
Drawings below represent the wire grids that are stamped into the asphalt surface to create specified pattern.

ASHLAR SLATE

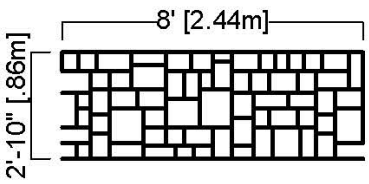
13-120-146



13-61-399

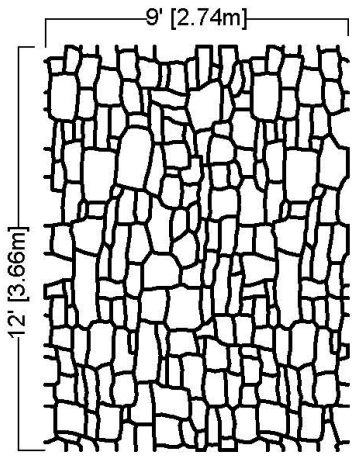


13-111

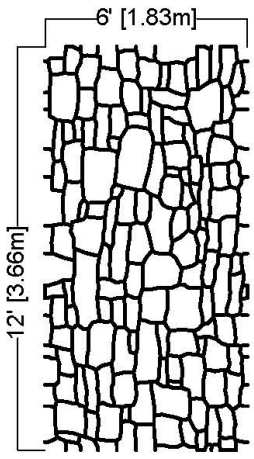


RANDOM SLATE

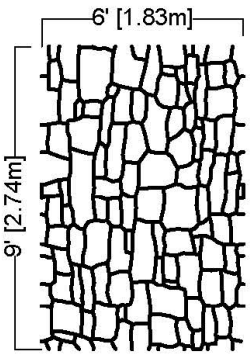
28-120-374



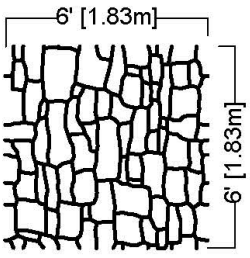
28-1-374



28-1-375



28-1-376



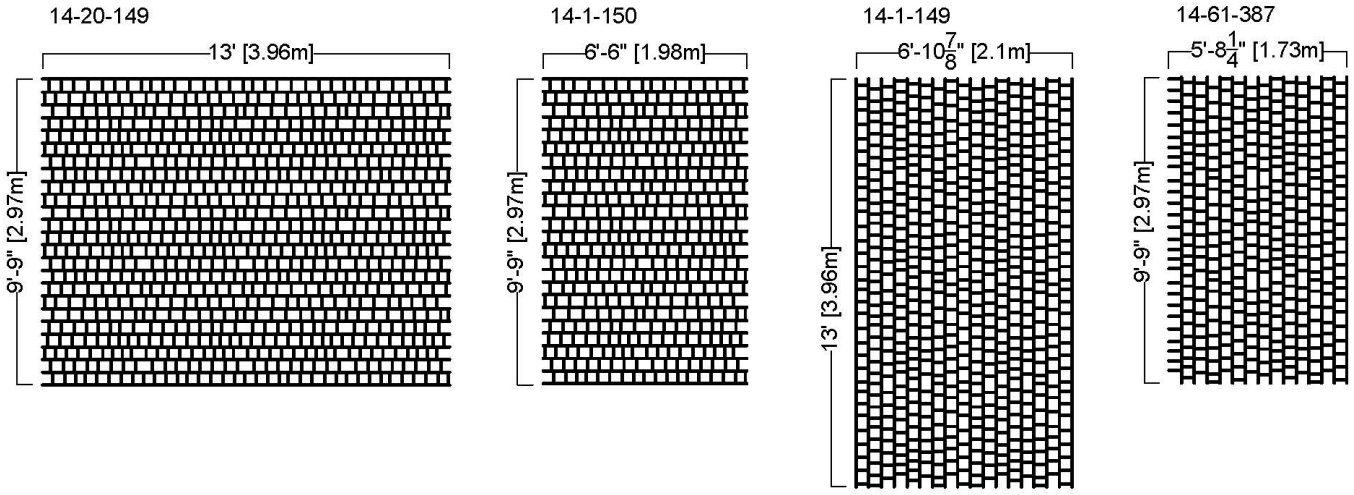
COBBLE

Wire-Rope Grid		
XDG-14-120-149	13'W x 9'9"L	British Cobble
XDG-14-1-149	13'W x 6'L	British Cobble
XDG-14-1-150	6'W x 9'L	British Cobble
XDG-14-61-387	10'W X 6'L	British Cobble

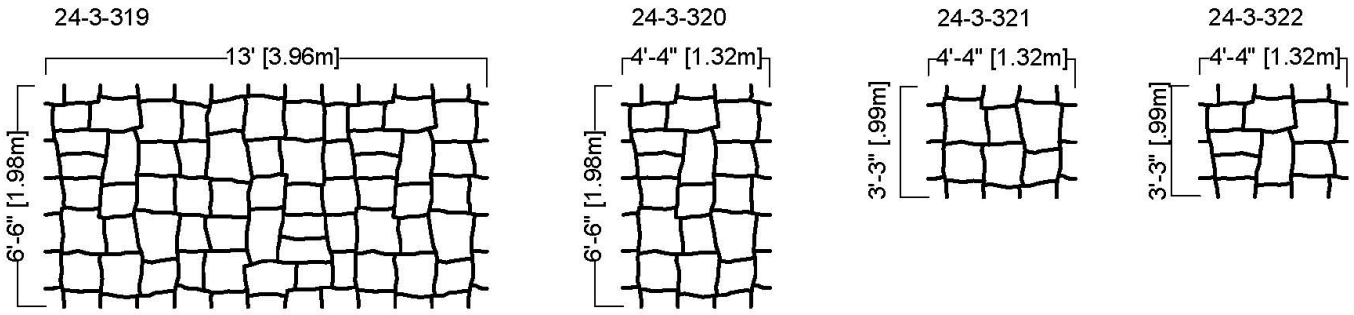
Wire-Rope Grid		
XDG-24-3-319	13'W x 6'6"L	Large Random Cobble
XDG-24-3-320	4'4"W x 6'6"L	Small Random Cobble
XDG-24-3-321	3'3"W x 4'4"L	Random Cobble Type A
XDG-24-3-322	3'3"W x 4'4"L	Random Cobble Type B

Drawings below represent the wire grids that are stamped into the asphalt surface to create specified pattern.

BRITISH COBBLE



RANDOM COBBLE



Brick Size: varies 8" to 2' (varies 20cm to 60cm)

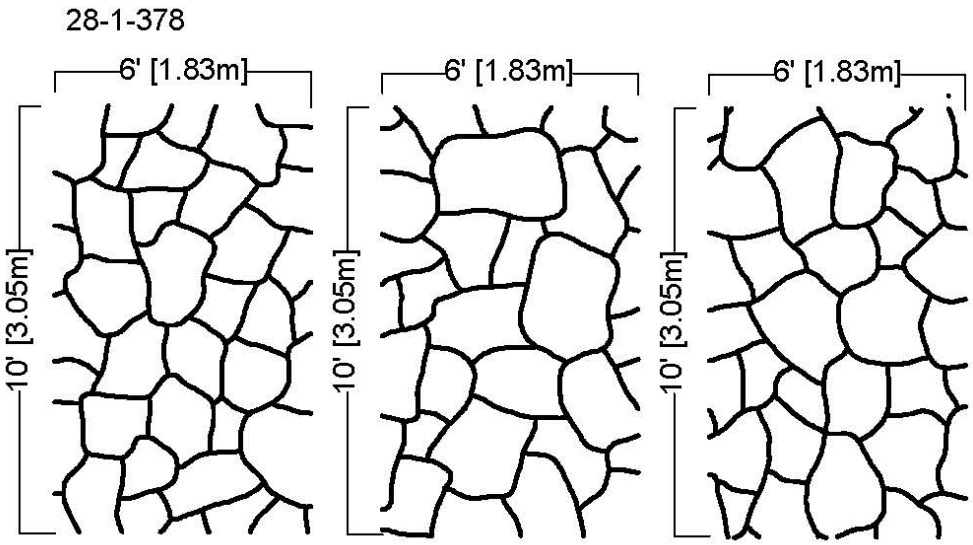
STONE

Wire-Rope Grid		
XDG-28-1-378	18'W x 10'L	Thompson Stone - set of 3

Wire-Rope Grid		
XDG-21-1-252	10'8"W x 5'4"L	Random Stone
XDG-21-1-253	5'4"W x 5'4"L	Random Stone

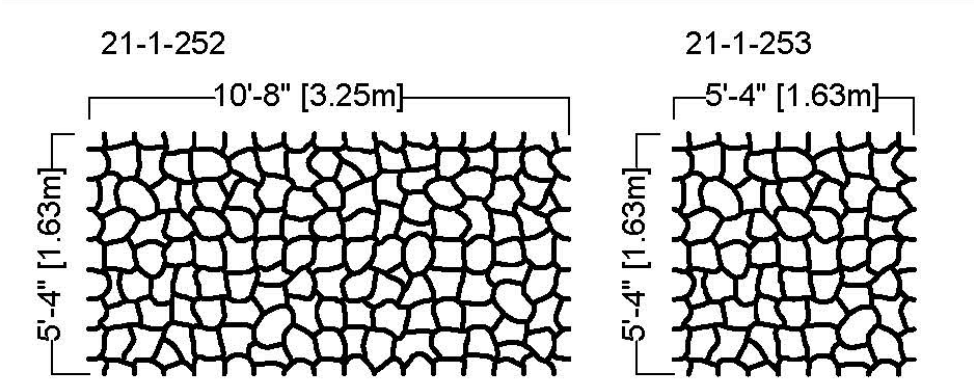
Drawings below represent the wire grids that are stamped into the asphalt surface to create specified pattern.

THOMPSON STONE



Brick Size: varies 1'to 3' (varies 30cm to 90cm)

RANDOM STONE

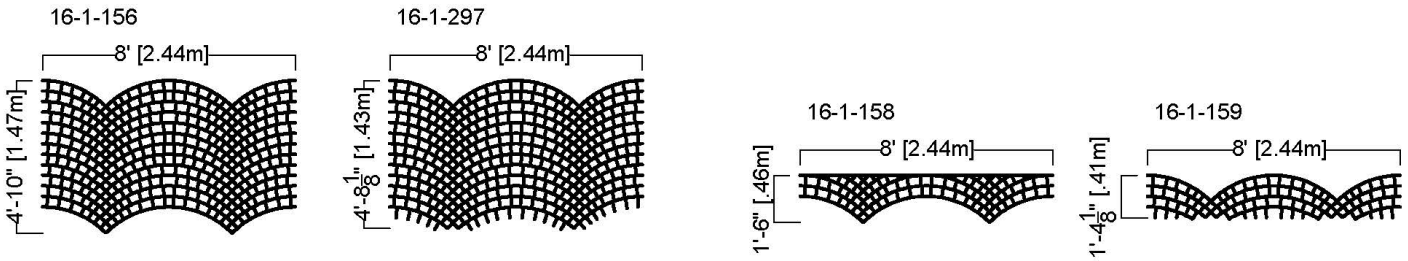


Brick Size: varies 8" to 12" (varies 20cm to 30cm)

EUROFAN

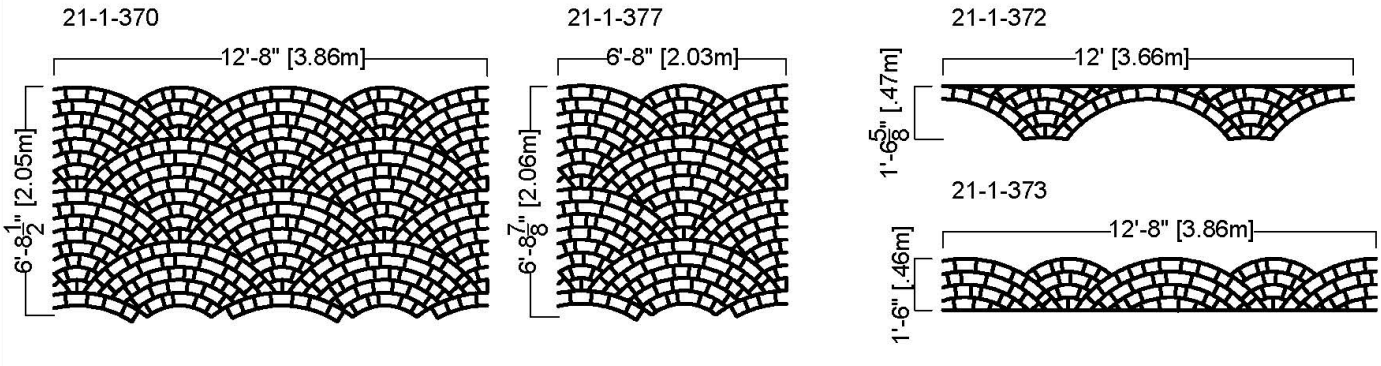
Wire-Rope Grid		
XDG-16-1-156	8′W x 4′ 10″L	Eurofan
XDG-16-1-297	8′W x 5′L	Eurofan w/ open bottom
XDG-16-1-158	8′W	Eurofan Top
XDG-16-1-159	8′W	Eurofan Bottom

Drawings below represent the wire grids that are stamped into the asphalt surface to create specified pattern.



SCALLOP

XDG-21-1-370	12′ 8″W x 6′ 8″L	Scallop
XDG-21-1-377	6′ 8″W x 6′ 8″L	Scallop
XDG-21-1-372	12′W x 1′ 6″L	Scallop Top Piece
XDG-21-1-373	12′ 8″W X 1′ 6″L	Scallop Bottom Piece

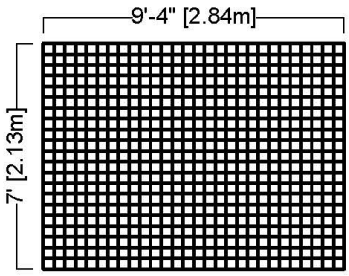


TILE

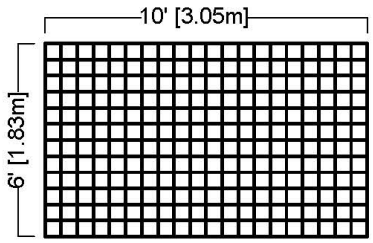
Wire-Rope Grid		
XDG-20-61-258	9'W x 7'L	4" Square Tile
XDG-20-61-259	9'W x 6.5'L	5" Square Tile
XDG-20-101	6'W x 10'L	6" Square Tile
XDG-20-102	7'6"W x 14'L	6" Square Tile
XDG-20-61-261	9.5'W x 6.5'L	8" Square Tile
XDG-20-61-262	9'W x 6.5'L	10" Square Tile
XDG-20-61-263	9'W x 7'L	12" Square Tile
XDG-30-61-385	8'10" x 5'10"L	5" Diagonal Tile

Drawings below represent the wire grids that are stamped into the asphalt surface to create specified pattern.

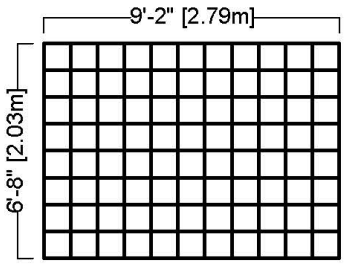
20-61-258



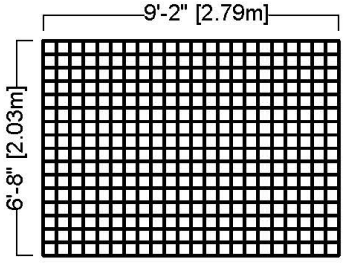
20-101



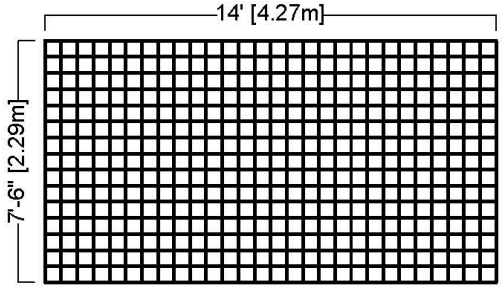
20-61-262



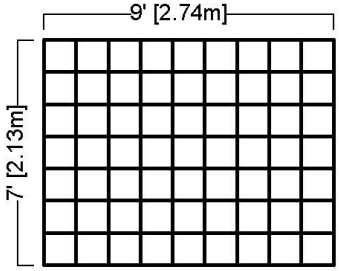
20-61-259



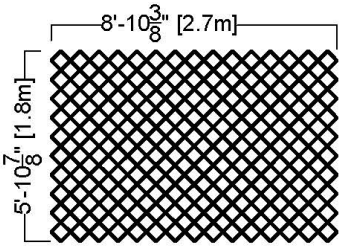
20-102



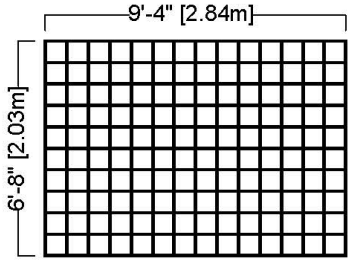
20-61-263



30-61-385



20-61-261

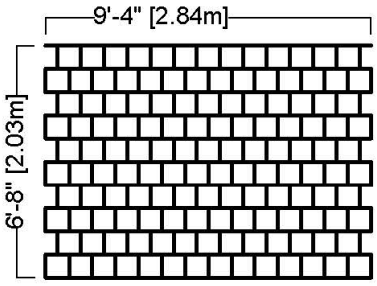


OFFSET TILE

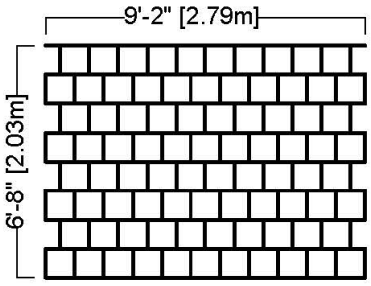
Wire-Rope Grid		
XDG-20-61-500	9'4"W x 6' 8"L	8" Offset Tile
XDG-20-61-501	9'4"W x 6' 8"L	8" Offset Tile
XDG-20-61-502	9'2"W x 6' 8"L	10" Offset Tile
XDG-20-61-503	9'2"W x 6' 8"L	10" Offset Tile
XDG-20-61-504	9' x 7'	12" Offset Tile
XDG-20-61-505	7' x 9'	12" Offset Tile

Drawings below represent the wire grids that are stamped into the asphalt surface to create specified pattern.

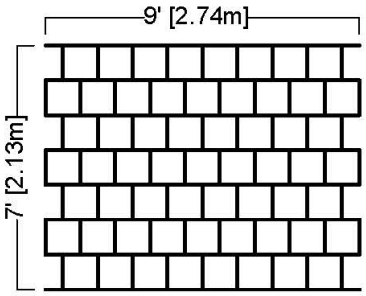
20-61-500



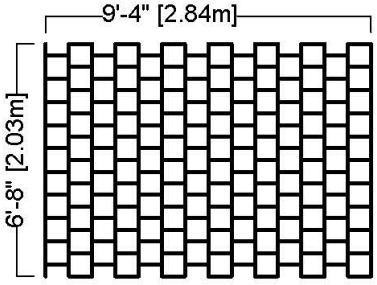
20-61-502



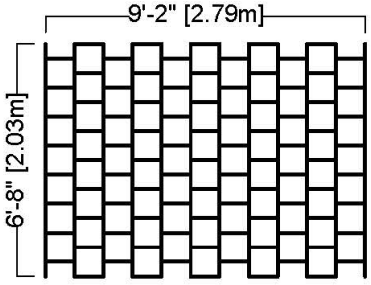
20-61-504



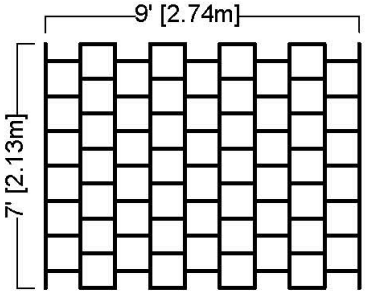
20-61-501



20-61-503



20-61-505



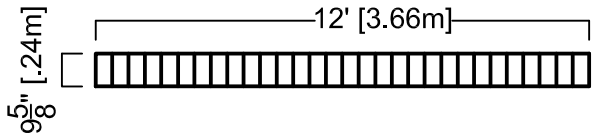
BORDERS

Wire-Rope Grid		
XDG-18-100	12’W x 10”L	Stacked Brick Border
XDG-18-101	12’W x 7”L	Tile Border
XDG-18-1-203	12’2”W x 5”L	Cobble Border
XDG-18-1-205	12’W x9”L	Texas Cobble Border
XDG-18-1-207	11’10”W x 5L	End-to-End Border
XDG-18-1-199	12’2”W x 1’7”L	Soldier Course Straight

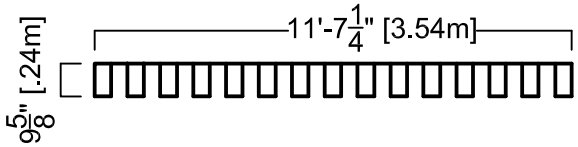
Wire-Rope Grid		
XDG-18-106	11’7”W x 10”L	Stacked Brick Flex
XDG-18-107	12’W x 7”L	Tile Border Flex
XDG-18-1-204	11’10”W x 5”L	Cobble Border Flex
XDG-18-1-206	11’1”W x 9”L	Texas Cobble Border Flex
XDG-18-1-208	11’1”W x 5”L	End-to-End Border Flexible
XDG-18-1-336	11’9”W x 1’6”L	Double Texas Cobble Border

Drawings below represent the wire grids that are stamped into the asphalt surface to create specified pattern.

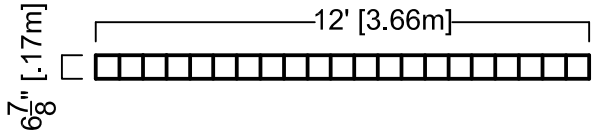
18-100



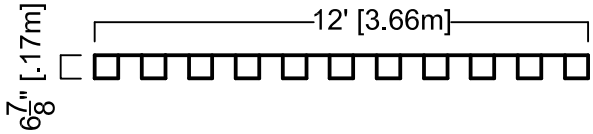
18-106



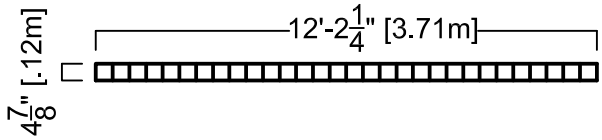
18-101



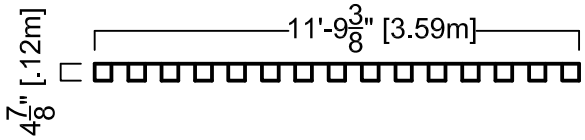
18-107



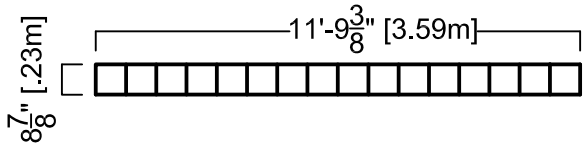
18-1-203



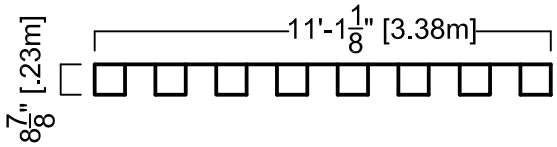
18-1-204



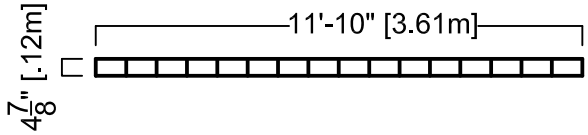
18-1-205



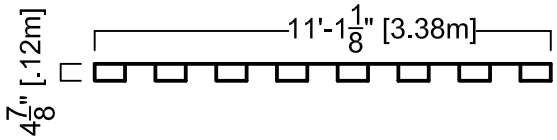
18-1-206



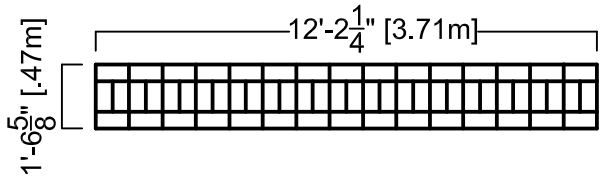
18-1-207



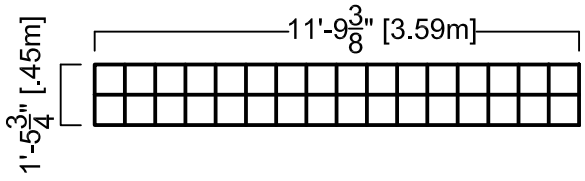
18-1-208



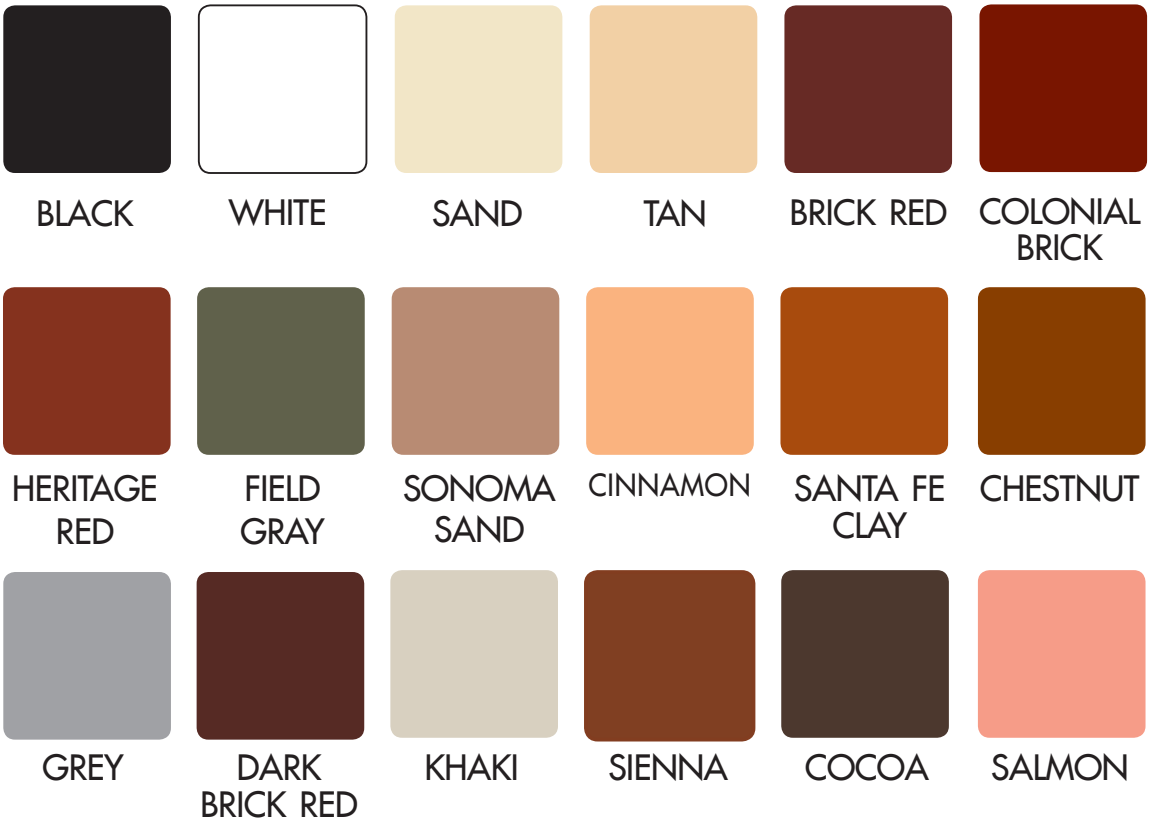
18-1-199



18-1-336



STANDARD COLORS



ENNIS-FLINT
A Traffic Safety Solutions Company

Safety Data Sheet

Section 1: PRODUCT AND COMPANY IDENTIFICATION

Ennis-Flint
115 Todd Court
Thomasville, NC 27360

Company Phone Number: 1-800-331-8118
24-Hour Emergency Phone: 1-800-424-9300 CHEMTREC

Product Name: **TrafficPatterns®**

Issue Date: 04/01/2010 Revised Date: 04/04/2016 Version Number: 4

Product Use: Intended Use: Pavement Marking
Specific Use: Pavement Marking

Section 2: HAZARDS IDENTIFICATION

Emergency Overview: Form: Solid plastic sheet Odor: No distinguishable odor

This product, as packaged, is an article and does not meet the requirements of a hazardous chemical as defined by the OSHA Hazard Communication Standard, CFR TITLE 29 1910-1200. This product contains a component suspected of causing cancer. However, it is in a non-respirable form and inhalation is unlike to occur from exposure. This classification is relevant when exposed to dust or powder form only (e.g. sanding, grinding).

Classification Symbol(s) of Product: No GHS Symbols Exist
Signal Word: NA

Immediate health, physical, and environmental hazards:	The environmental properties of this product present a low environmental hazard. This product, when used under reasonable conditions and in accordance with the Ennis-Flint directions for use, should not present a health hazard. However, use or processing of the product in a manner not in accordance with the product's directions for use may affect the performance of the product and may present potential health and safety hazards.
Potential Health Effects:	See Section 11 for more information
Primary Route of Entry:	Not Applicable
Skin Contact:	Not relevant for cold product. Molten or heated thermoplastic material can cause serious burns to unprotected skin. Immediately immerse in or flush area with large amounts of cold water. Do not attempt to remove product from skin. Get prompt medical attention.
Eyes:	Not relevant for cold product. For contact with molten material or if exposed to excessive levels of dust created by cutting, sanding, grinding or machining, immediately flush eyes with plenty of water for at least 15 minutes.
Inhalation:	Not relevant for cold product. If exposed to excessive levels of dust or fumes, Remove to fresher air and get medical attention if symptoms develop.
Ingestion:	Do not induce vomiting. Give milk or water. Get medical attention.
Chronic:	None known

Section 3: COMPOSITION INFORMATION

Component Name	CAS #	% Composition
Titanium Dioxide	13463-67-7	<15%

Section 4: FIRST AID MEASURES

Inhalation: If exposed to excessive levels of dust created by cutting, sanding, grinding or machining or fumes, remove to fresher air and get medical attention if symptoms develop.

Eyes: For contact with molten material or if exposed to excessive levels of dust created by cutting, sanding, grinding or machining, immediately flush eyes with plenty of water for at least 15 minutes.

Skin: For contact with molten material, immediately immerse in or flush area with large amounts of cold water. Do not attempt to remove product from skin. Get prompt medical attention.

Ingestion: Do not induce vomiting. Give milk or water. Get medical attention.

Section 5: FIRE FIGHTING MEASURES

Flash Point: 500º F
Auto-ignition Temperature: Not Determined
Limits of Flammability: LEL: Not Determined UEL: Not Determined
Extinguishable Media: Water, Water Spray, Dry Chemical, Foam or CO2
Special Fire & Unusual Hazards: Fire fighters should wear self-contained breathing apparatus in the positive pressure mode with full-face piece when there is the possibility of exposure to smoke, fumes or hazardous decomposition products. The application of high velocity water will spread the burning material. May emit toxic fumes when burning.

Section 6: ACCIDENTAL RELEASE MEASURES

Accidental Release Measures: Collect or scrape up. Allow molten hot materials to solidify.

Section 7: HANDLING AND STORAGE

Handling: Avoid skin contact with molten or heated thermoplastic material at all times

Practice good personal hygiene.

Avoid breathing of dust created by cutting, sanding, grinding or machining. This product is considered to be an article which does not release or otherwise result in exposure to a hazardous chemical under normal use conditions.

Storage: Store in a cool dry place.

Section 8: EXPOSURE CONTROLS / PERSONAL PROTECTION

Personal Protection: Leather or equivalent protective gloves are recommended. Protective work clothes that cover skin and industrial work shoes. Practice good personal hygiene.

Under normal use conditions, airborne exposures are not expected to be significant enough to require respiratory protection. Avoid breathing of dust created by cutting, sanding, grinding or machining.

Use with appropriate local exhaust ventilation. Provide appropriate local exhaust for cutting, grinding, sanding or machining. Use general dilution ventilation and/or local exhaust ventilation to control airborne exposures to below Occupational Exposure Limits and/or control dust, fume, or airborne particles. If ventilation is not adequate, use respiratory protection equipment.

Section 9: PHYSICAL AND CHEMICAL PROPERTIES

Boiling Point:	Not Applicable	Solubility in Water:	Not soluble
Melting Point:	226º F - 248º F	Specific Gravity:	1.9 – 2.0
Vapor Pressure @ 20C:	Not Applicable	Evaporation Rate:	Not Applicable
Vapor Density:	Not Applicable	Odor:	No distinguishable
Appearance:	Solid Plastic Sheet		

Section 10: STABILITY AND REACTIVITY

Stability: Material is stable.

Hazardous Decomposition Products: This product is not a hazardous chemical as defined by the OSHA Hazard Communication Standard, CFR TITLE 29 1910-1200. However thermal processing and decomposition fumes from this product may be hazardous.

Hazardous Polymerization: Will not occur

Section 11: TOXICOLOGY INFORMATION

This product, as packaged, is an article and does not meet the requirements of a hazardous chemical as defined by the OSHA Hazard Communication Standard, CFR TITLE 29 1910-1200.

Section 12: ECOLOGICAL INFORMATION

This substance does not leach metals or other RCRA (Resource Conservation and Recovery Act) listed TCLP (Toxic Characteristic Leaching Procedure) hazardous substances at concentrations that would make the product a hazardous waste.

Section 13: DISPOSAL CONSIDERATIONS

Waste Disposal Method: Handle disposal of waste material in a manner which complies with local, state, province, and federal regulations.

Landfill if solidified or incinerate at agency approved waste-disposal facility

Section 14: TRANSPORTATION INFORMATION

U.S. Department of Transportation Proper Shipping Name: Pavement Markings

UN Number: Not regulated
ADR/RID Class: Not regulated
IMDG/GGV See Class: Not regulated
Marine Pollutant: Not a Marine Pollutant
ICAO/IATA Class: Not regulated

Section 15: REGULATORY INFORMATION

Contact Ennis-Flint for more information.

Section 16: OTHER INFORMATION

NFPA Hazard Classification

Health: 0 Flammability: 1 Reactivity: 0 Special Hazards: None

Issue Date: 04/01/2010 Revised Date: 04/04/2016 Version Number: 4
Revision Note: Updated to GHS format, expand section 14.

Contact Ennis-Flint for more information.

The information on this sheet corresponds to our present knowledge. It is not a specification and it does not guarantee specific properties. The information is intended to provide general guidance as to health and safety based upon our knowledge of the handling, storage, and use of the product. It is not applicable to unusual or non-standard uses of the product where instructions and recommendations are not followed. Any use of the product not in conformance with this SDS or in combination with any other product or process is the responsibility of the user.

Standard Detail Drawings

Borough of Naugatuck, Connecticut

ENGINEERING DEPARTMENT

October 2011

BOROUGH OF NAUGATUCK
STANDARD DETAIL DRAWINGS

TABLE OF CONTENTS

DRAINAGE STRUCTURES

SD-31	Small Drainage Swale (Grass)
SD-55	Water Bar or Water Break
SD-56	Rip-Rap Level Spreader
SD-57	Retention Basin Example
SD-58	Plunge Pool
SD-59	Headwall
SD-60	Large Drainage Swale (Grass)
SD-61	Type “L” Endwall
SD-62	Dry Retention Basin Example

EARTHWORK / LANDSCAPING

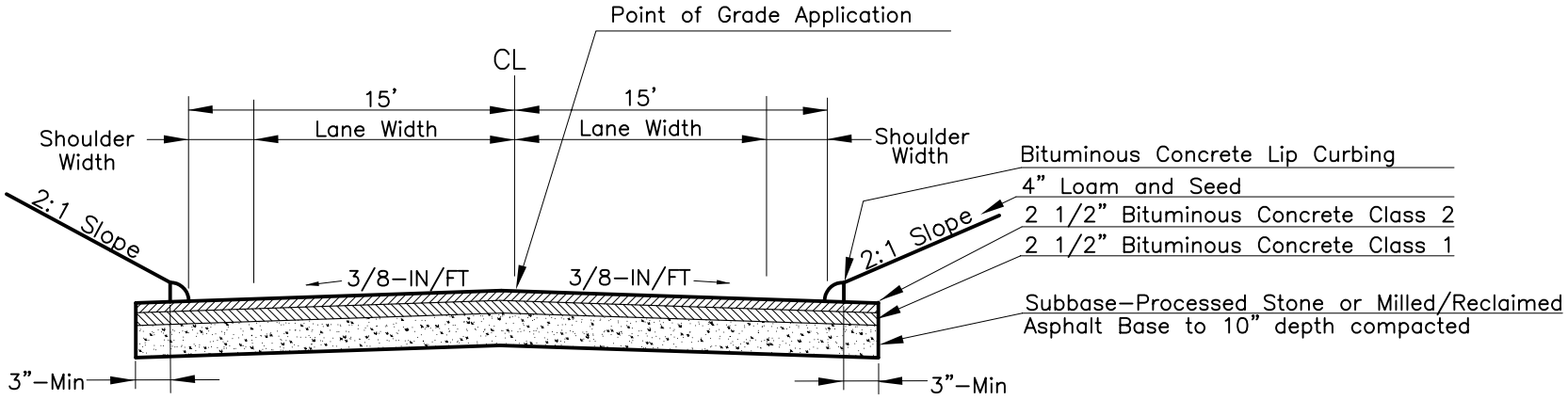
SD-9	Typical Residential Rain Garden
SD-29	Tree Planting
SD-43	Tree Well
SD-44	Concrete Sidewalk with Tree Well
SD-64	Dry Stone Retaining Wall
SD-65	Stone Slope and Stone Slope Paving
SD-66	Unreinforced Segmental Retaining Wall

EROSION CONTROL

SD-21	Erosion Control Blanket on Fill Slope
SD-23	Anti-Tracking Pad
SD-26	Catch Basin Erosion Control
SD-30	Hay Bale Barrier
SD-35	Typical Erosion Control on Slopes
SD-41	Filter Fabric Sediment Control Fence Placement and Construction
SD-42	Hay Bale Sediment Check Dam
SD-68	Sediment Control Systems

INCIDENTALS

SD-18	Bridge Rail
SD-20	Metal Beam Rail
SD-27	Chain Link Double Swing Gate
SD-38	Chain Link Fence
SD-63	Timber Guide Rail
SD-67	Bollard
SD-69	Concrete Stairs



BOROUGH OF NAUGATUCK
INCORPORATED 1844
CONNECTICUT

ROAD CROSS SECTION

BOROUGH OF NAUGATUCK
ENGINEERING DEPARTMENT
STANDARD DETAIL

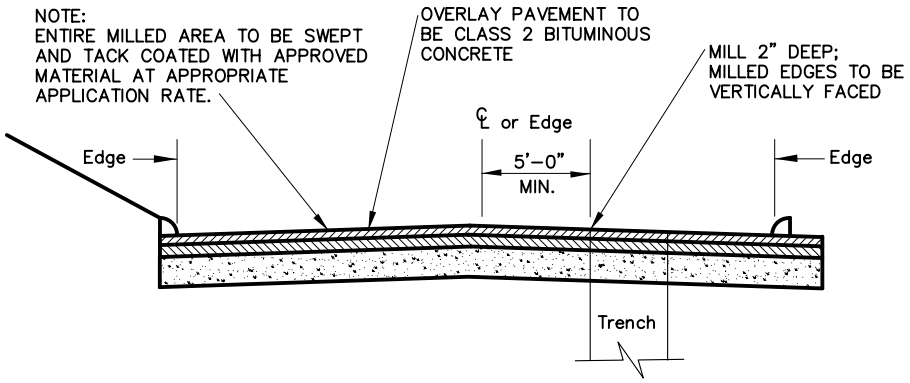
229 Church Street, Naugatuck, CT 06770 www.naugatuck-ct.gov

Scale: NTS

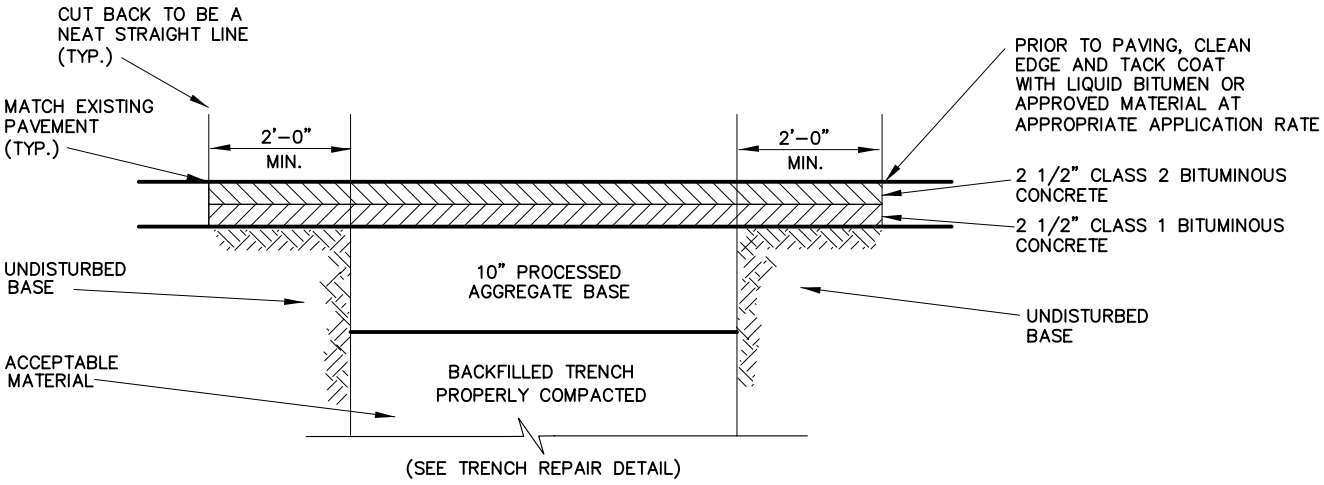
Drawing No.

SD-1

Date:10/2011



ROAD PAVING WITHIN LAST 8 YEARS



ROAD PAVING OVER 8 YEARS OLD

NOTES:
ACCEPTABLE MATERIAL COMPACTED IN LIFTS NOT TO EXCEED 12" WITH 95% COMPACTION FOR EACH LIFT.
24" LIFTS MAY BE APPROVED IF COMPACTED BY HOE-PACK WITH 95% COMPACTION FOR EACH LIFT.
COMPACTION TO MEET 95% MODIFIED PROCTOR DENSITY REQUIREMENTS.
COMPACTION TESTS MAY BE REQUIRED PER INSPECTOR. ALL COSTS FOR COMPACTION TESTS TO BE BORNE BY CONTRACTOR.

BOROUGH OF NAUGATUCK INCORPORATED 1844 CONNECTICUT

PERMANENT PAVEMENT REPAIR IN BOROUGH STREET

BOROUGH OF NAUGATUCK ENGINEERING DEPARTMENT STANDARD DETAIL

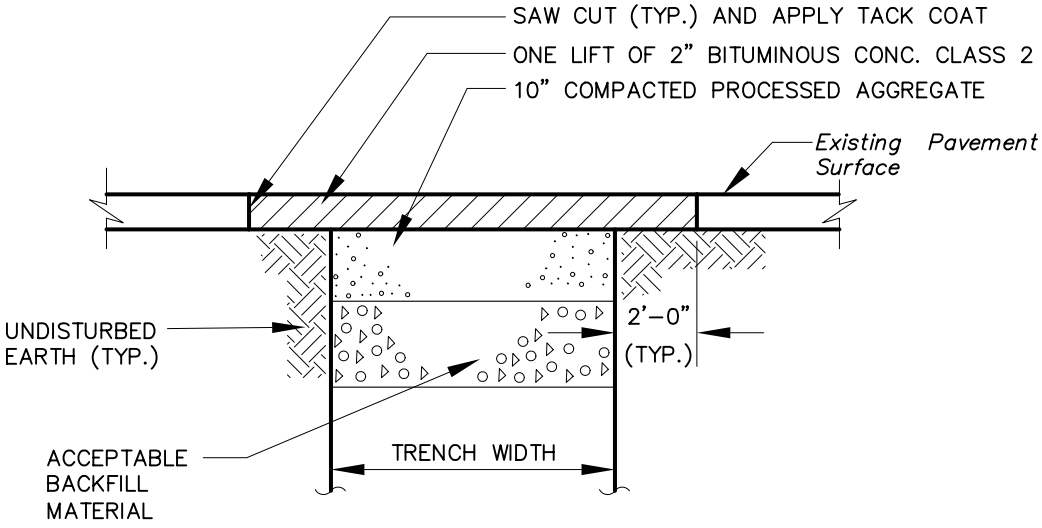
229 Church Street, Naugatuck, CT 06770 www.naugatuck-ct.gov

Scale: NTS

Drawing No.

SD-2

Date:10/2011



TEMPORARY PAVEMENT REPAIR IN BOROUGH STREET

BOROUGH OF NAUGATUCK ENGINEERING DEPARTMENT STANDARD DETAIL

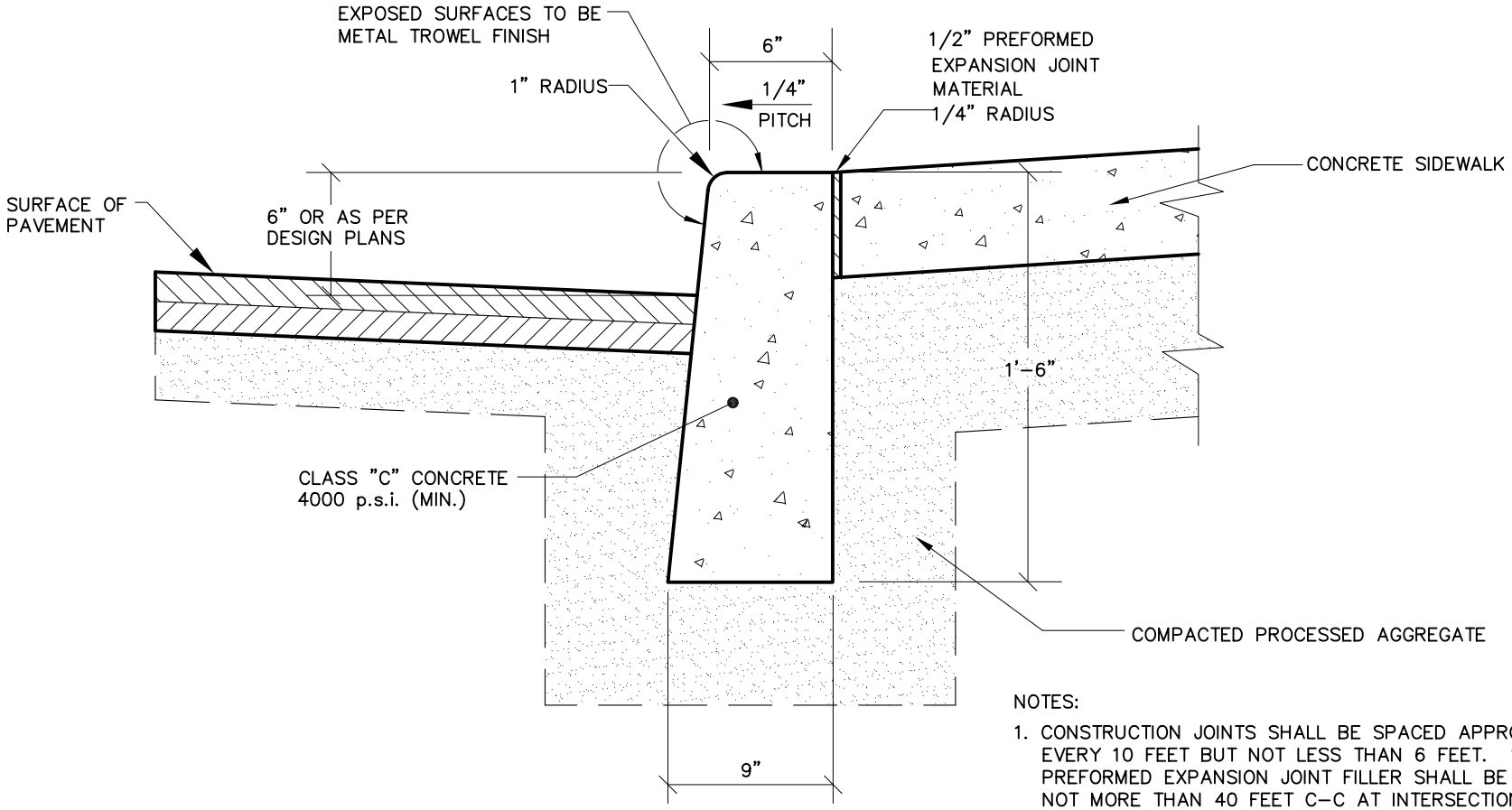
229 Church Street, Naugatuck, CT 06770 www.naugatuck-ct.gov

Scale: NTS

Drawing No.

SD-3

Date:10/2011



NOTES:

1. CONSTRUCTION JOINTS SHALL BE SPACED APPROXIMATELY EVERY 10 FEET BUT NOT LESS THAN 6 FEET. 1/2" THICK PREFORMED EXPANSION JOINT FILLER SHALL BE INSTALLED NOT MORE THAN 40 FEET C-C AT INTERSECTION OF CONCRETE SIDEWALK AND CURB AND AT SIDEWALK-BUILDING INTERFACE.

2. FORMWORK SHALL REMAIN IN PLACE FOR 24 HOURS FOLLOWING CONCRETE POURING.

CAST-IN-PLACE CONCRETE CURB

BOROUGH OF NAUGATUCK
ENGINEERING DEPARTMENT
STANDARD DETAIL

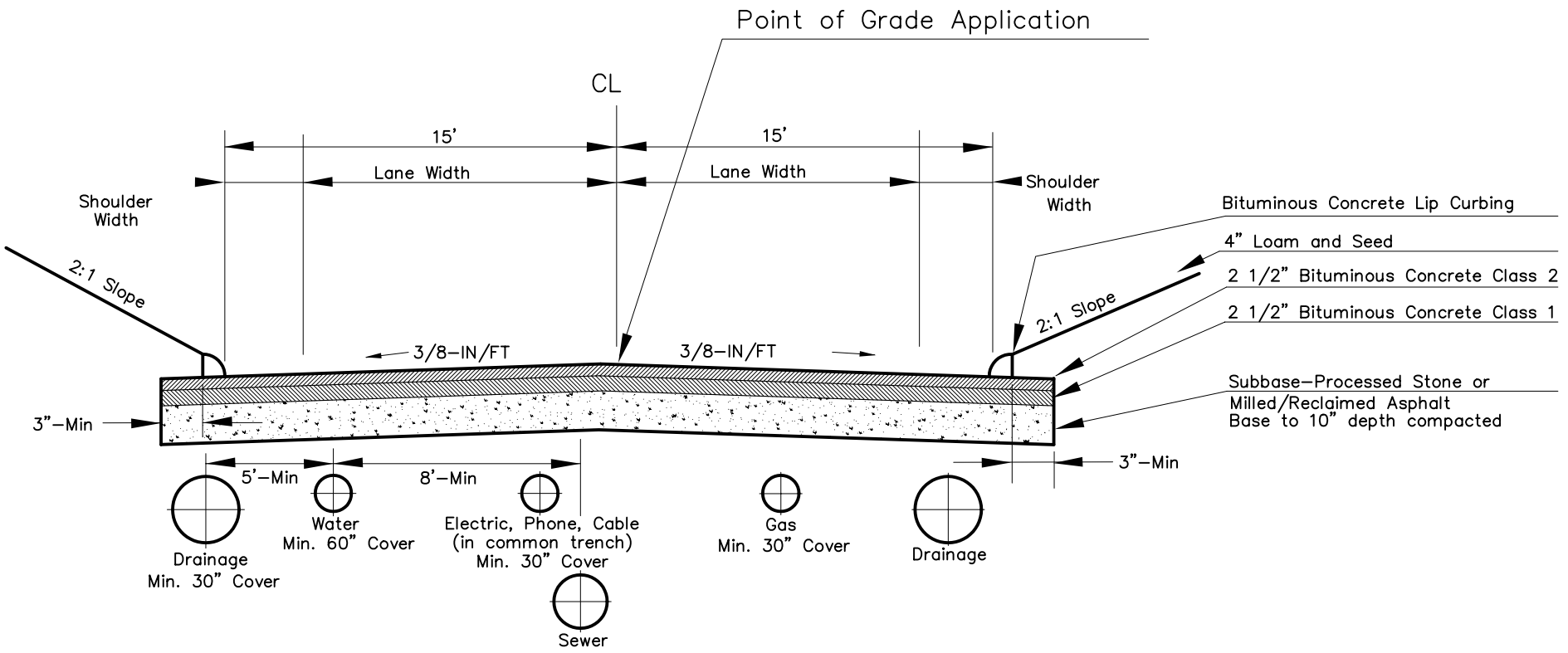
229 Church Street, Naugatuck, CT 06770 www.naugatuck-ct.gov

Scale: NTS

Drawing No.

SD-4

Date:10/2011



DEPTHS AND LOCATION DIMENSIONS

BOROUGH OF NAUGATUCK
INCORPORATED 1844
CONNECTICUT

TYPICAL UTILITY PLACEMENT IN BOROUGH STREET

BOROUGH OF NAUGATUCK
ENGINEERING DEPARTMENT
STANDARD DETAIL

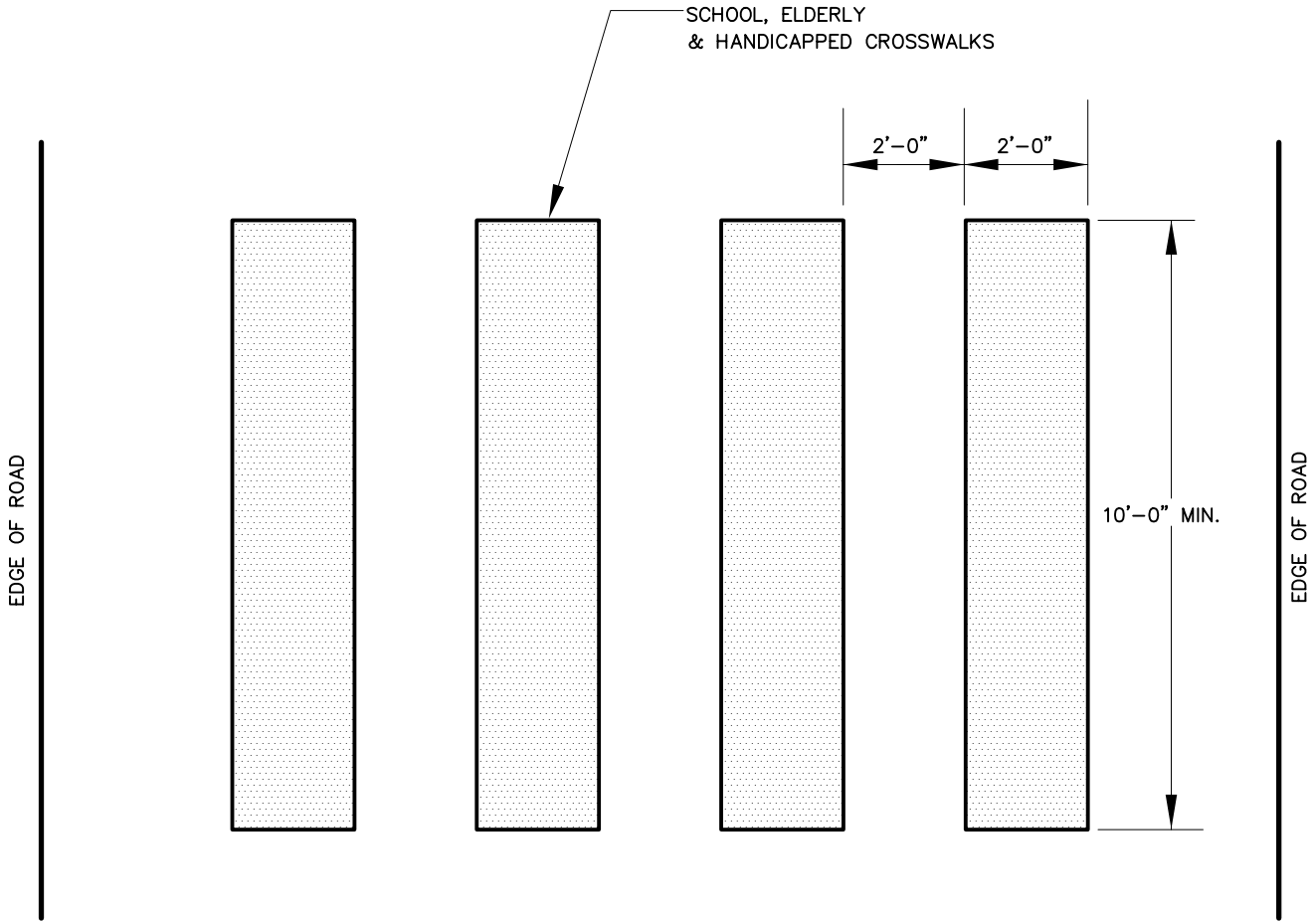
229 Church Street, Naugatuck, CT 06770 www.naugatuck-ct.gov

Scale: NTS

Drawing No.

SD-5

Date:10/2011



CROSS WALK

BOROUGH OF NAUGATUCK
ENGINEERING DEPARTMENT
STANDARD DETAIL

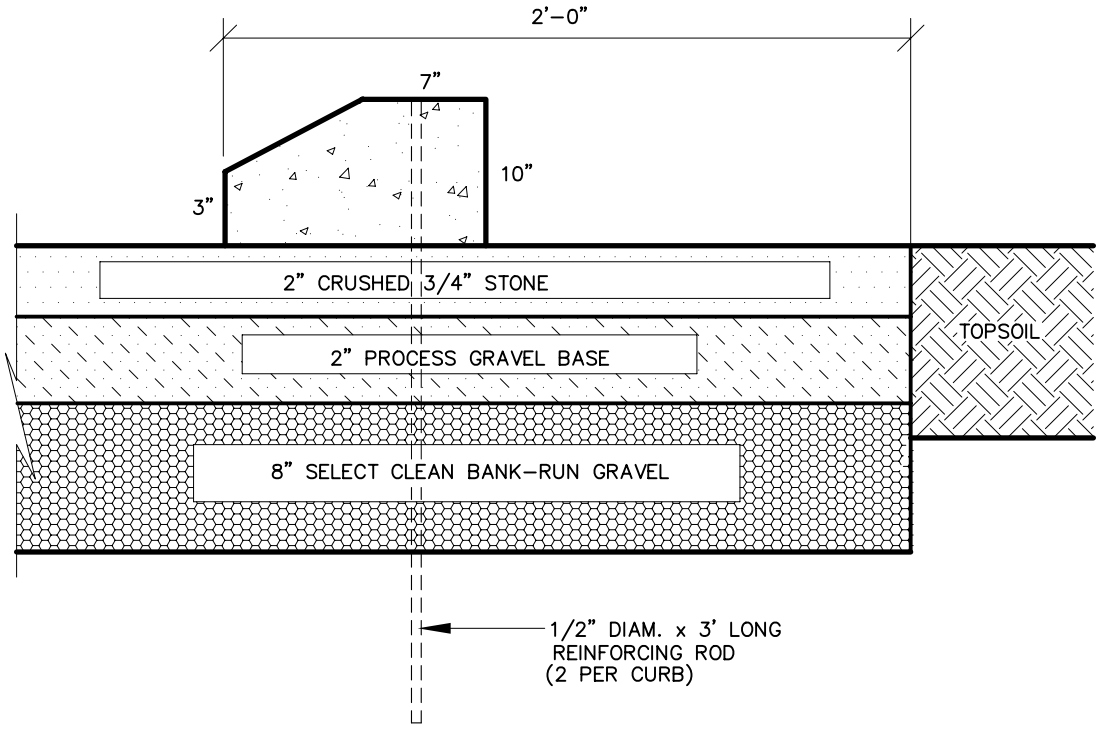
229 Church Street, Naugatuck, CT 06770 www.naugatuck–ct.gov

Scale: NTS

Drawing No.

SD–6

Date:10/2011



BOROUGH OF NAUGATUCK
INCORPORATED 1844
CONNECTICUT

GRAVEL PARKING AREA WITH REINFORCED CONCRETE WHEEL STOP

BOROUGH OF NAUGATUCK
ENGINEERING DEPARTMENT
STANDARD DETAIL

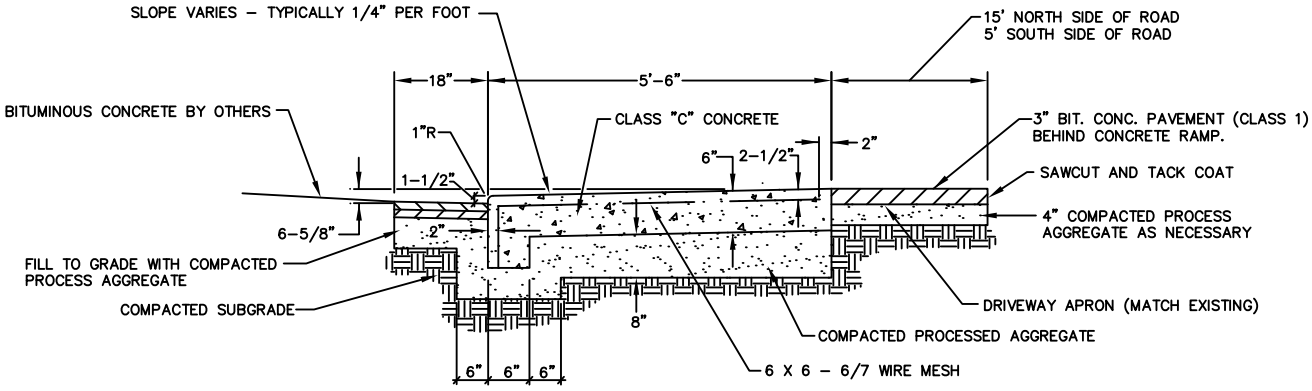
229 Church Street, Naugatuck, CT 06770 www.naugatuck–ct.gov

Scale: NTS

Drawing No.

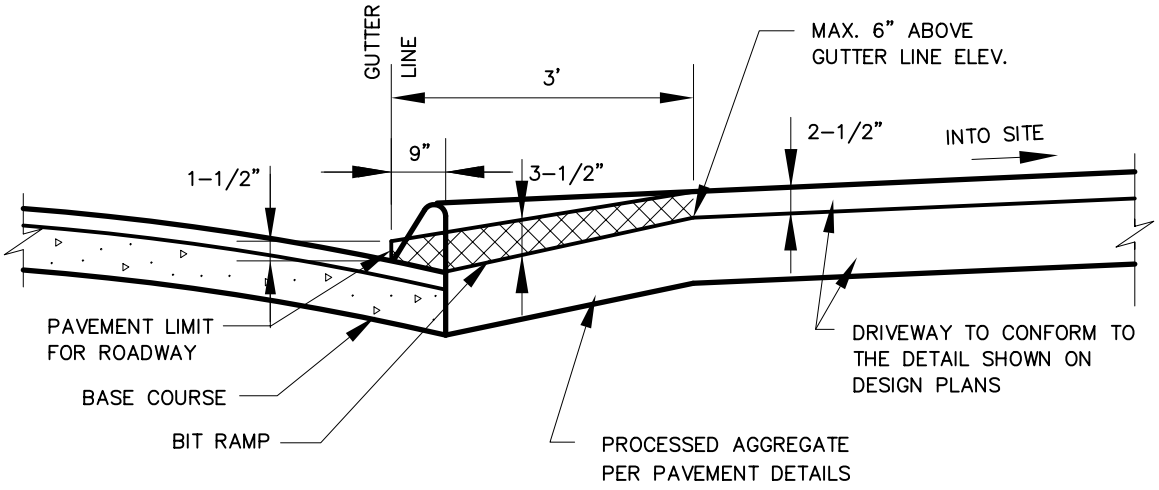
SD–15

Date:10/2011



NOTE:
DEPRESS CONCRETE SIDEWALK ACROSS DRIVEWAY WHEN NECESSARY TO MATCH EXISTING DRIVEWAY. SLOPE SIDEWALK APPROACHES DOWN TO MEET DRIVEWAY FROM A DISTANCE OF 5 FEET.

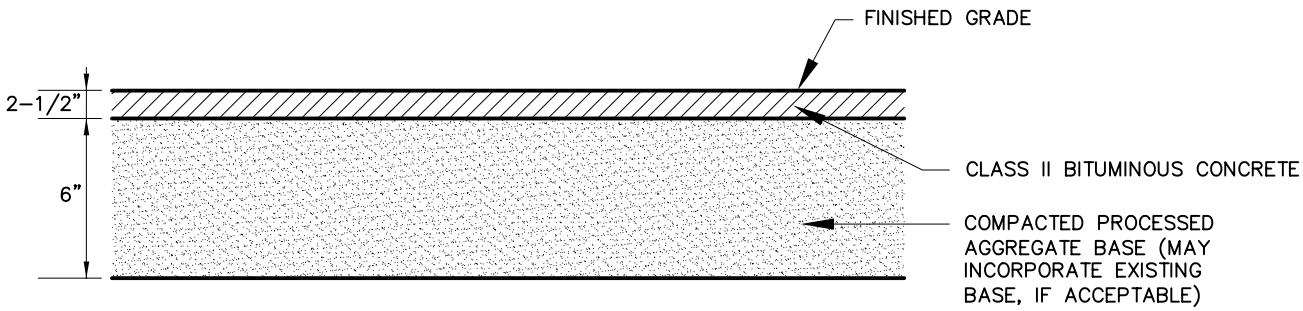
BOROUGH OF NAUGATUCK INCORPORATED 1844 CONNECTICUT	AT–GRADE DRIVEWAY RAMP/SIDEWALK	Scale: NTS
	BOROUGH OF NAUGATUCK ENGINEERING DEPARTMENT STANDARD DETAIL	Drawing No. SD–22
	229 Church Street, Naugatuck, CT 06770 www.naugatuck–ct.gov	Date:10/2011



NOTE:

1. COMPACTION TO BE COMPLETED IN 4" LIFTS
2. DEPTHS SHOWN ARE AFTER COMPACTION

BOROUGH OF NAUGATUCK INCORPORATED 1844 CONNECTICUT	BITUMINOUS CONCRETE DRIVEWAY APRON	Scale: NTS
	BOROUGH OF NAUGATUCK ENGINEERING DEPARTMENT STANDARD DETAIL	Drawing No. SD-24
	229 Church Street, Naugatuck, CT 06770 www.naugatuck-ct.gov	Date:10/2011



BITUMINOUS CONCRETE WALK

Scale: NTS

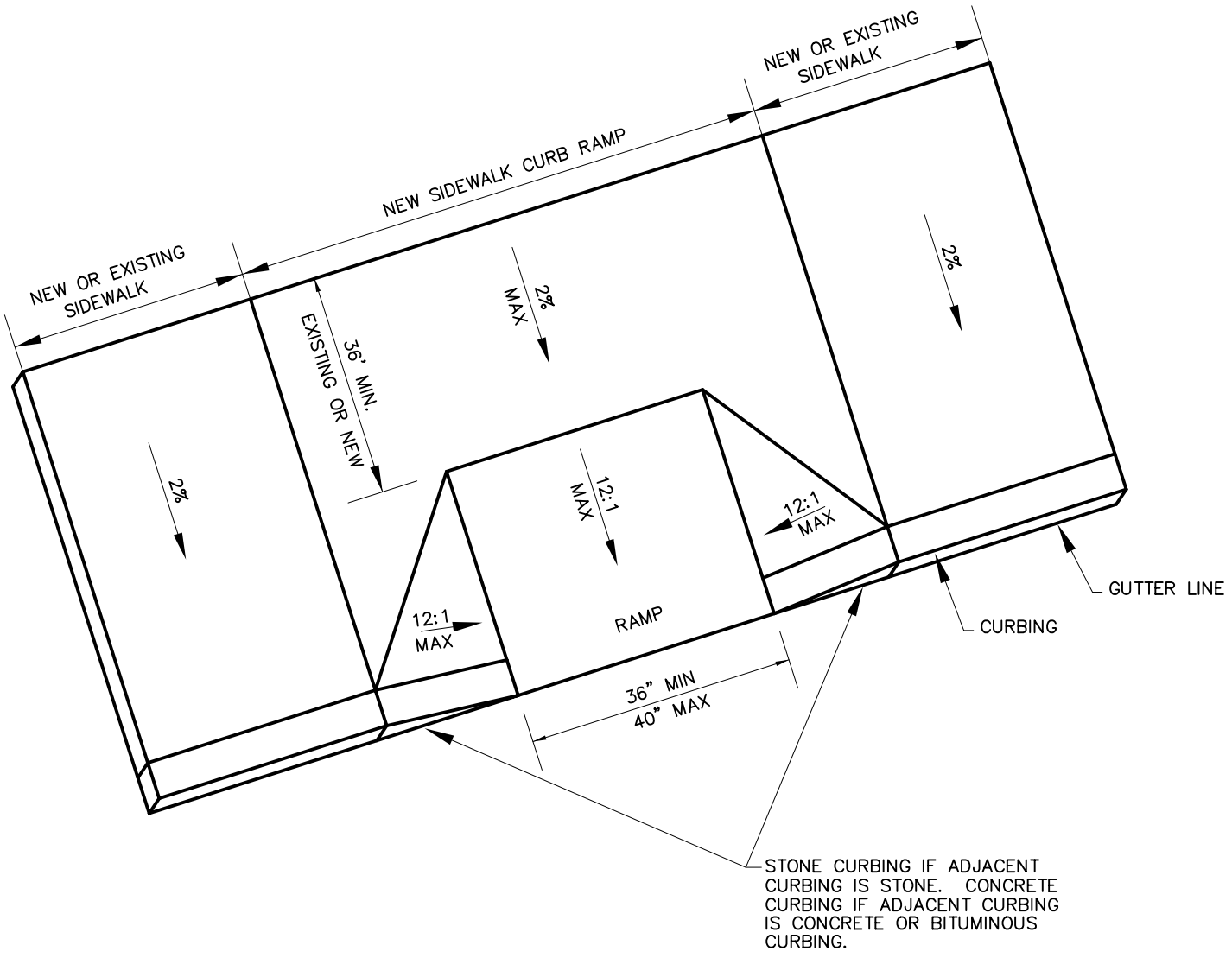
Drawing No.

SD–25

BOROUGH OF NAUGATUCK
ENGINEERING DEPARTMENT
STANDARD DETAIL

229 Church Street, Naugatuck, CT 06770 www.naugatuck–ct.gov

Date:10/2011



BOROUGH OF NAUGATUCK
INCORPORATED 1844
CONNECTICUT

SIDEWALK CURB RAMP

BOROUGH OF NAUGATUCK
ENGINEERING DEPARTMENT
STANDARD DETAIL

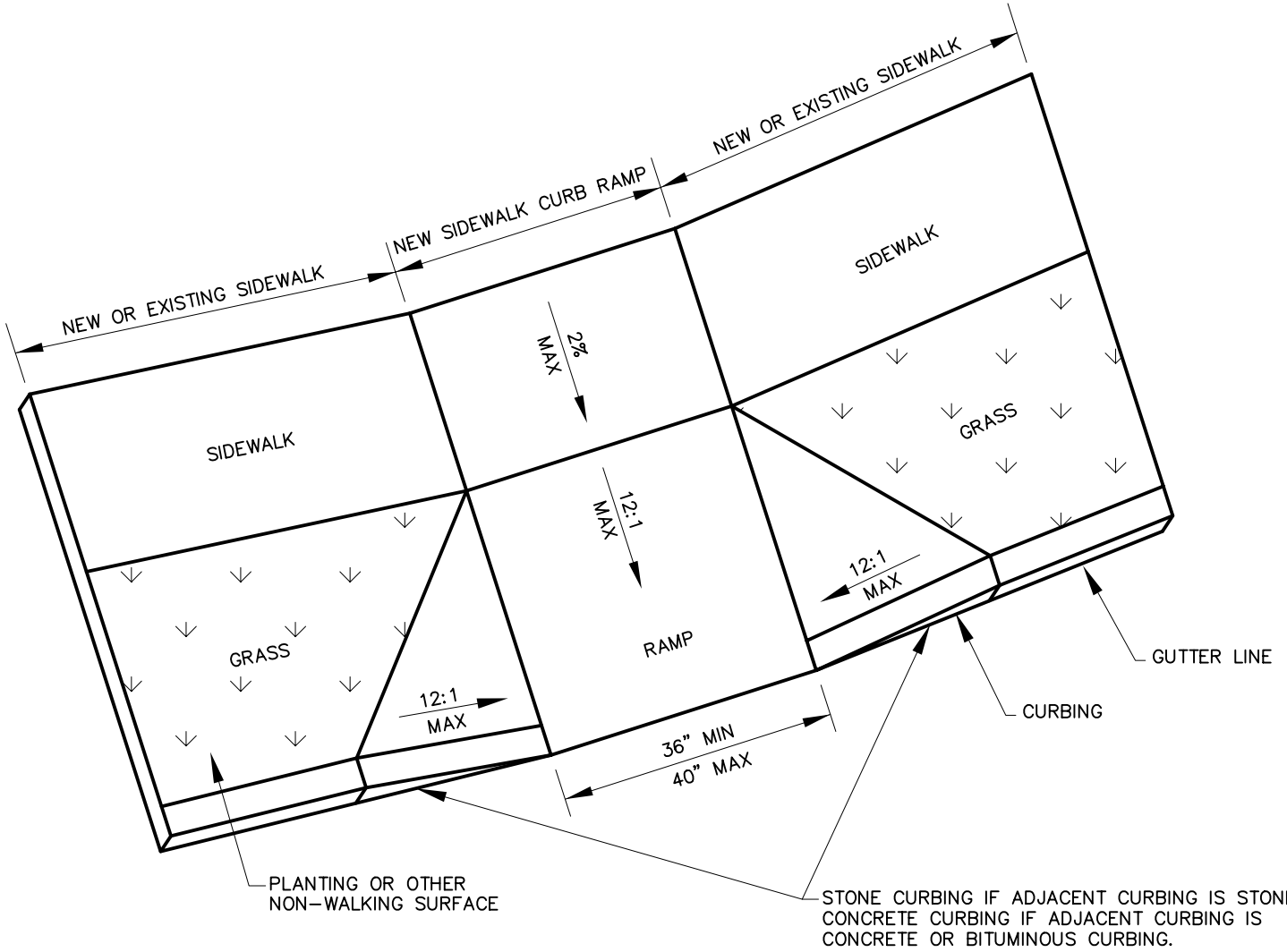
229 Church Street, Naugatuck, CT 06770 www.naugatuck-ct.gov

Scale: NTS

Drawing No.

SD-33

Date:10/2011



BOROUGH OF NAUGATUCK
INCORPORATED 1844
CONNECTICUT

SIDEWALK CURB RAMP CURVED SECTION

BOROUGH OF NAUGATUCK ENGINEERING DEPARTMENT STANDARD DETAIL

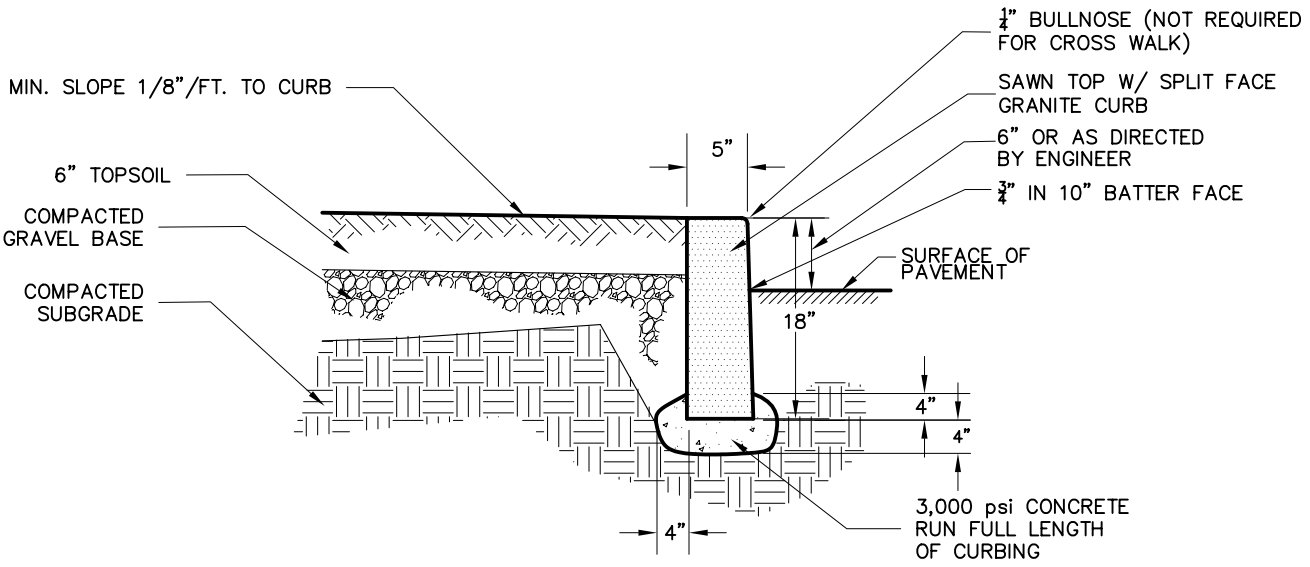
229 Church Street, Naugatuck, CT 06770 www.naugatuck-ct.gov

Scale: NTS

Drawing No.

SD-34

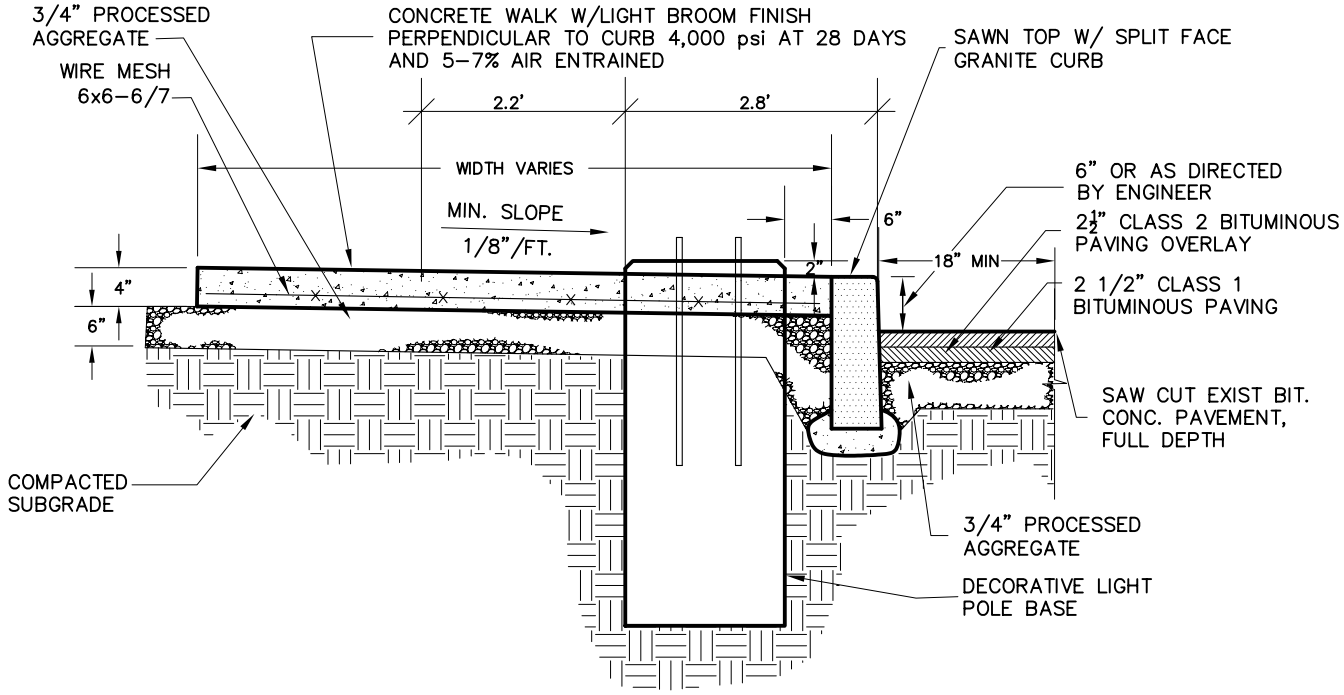
Date:10/2011



THE CURBING SHALL HAVE A SMOOTH, QUARRY–SPLIT FRONT FACE, NO EXPOSED DRILL HOLES, NO PROJECTIONS GREATER THEN ¾" OR DEPRESSIONS GREATER THEN ½".

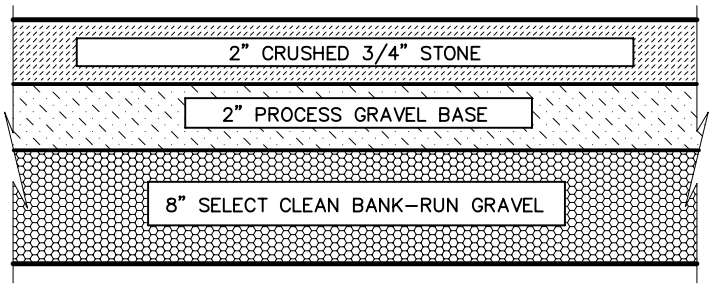
CURVED SECTIONS SHALL BE PROVIDED FOR RADIUS OF 50' OR LESS.

GRANITE CURB



SIDEWALK/GRANITE CURB WITH LIGHT POLE BASE

BOROUGH OF NAUGATUCK INCORPORATED 1844 CONNECTICUT	SIDEWALK/GRANITE CURB	Scale: NTS
		Drawing No. SD–36
	BOROUGH OF NAUGATUCK ENGINEERING DEPARTMENT STANDARD DETAIL	
	229 Church Street, Naugatuck, CT 06770 www.naugatuck–ct.gov	Date:10/2011



GRAVEL PARKING AREA

Scale: NTS

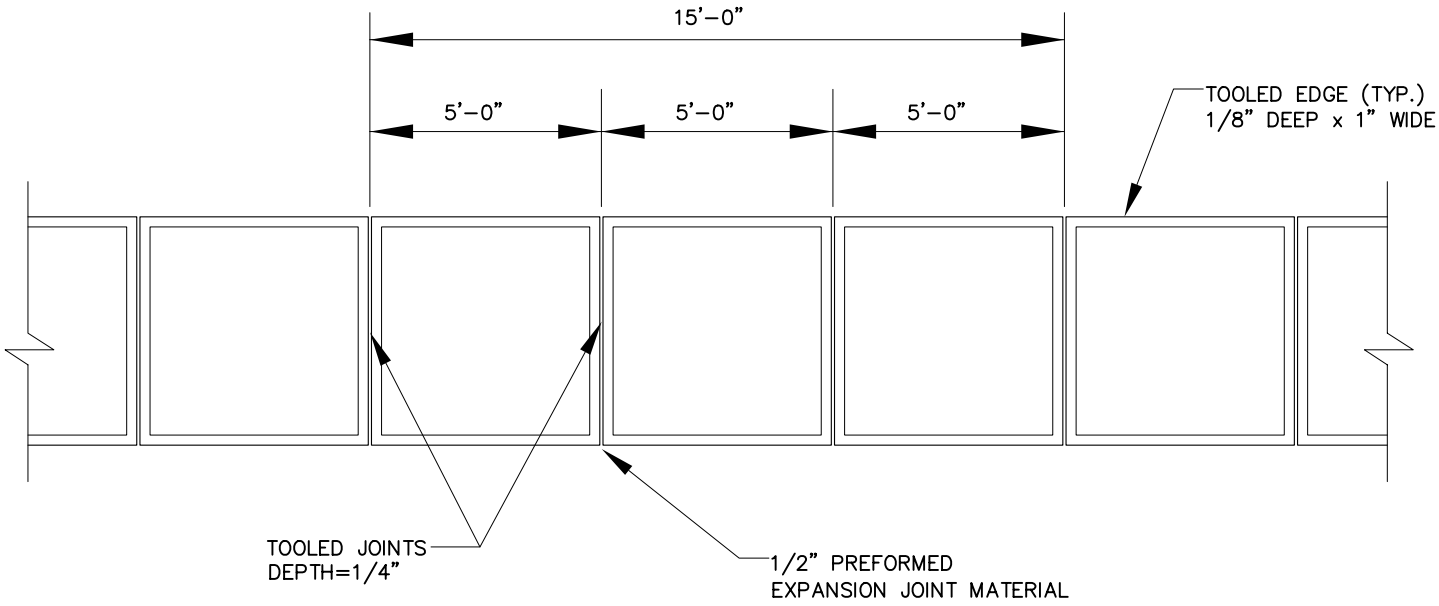
Drawing No.

SD-37

BOROUGH OF NAUGATUCK
ENGINEERING DEPARTMENT
STANDARD DETAIL

229 Church Street, Naugatuck, CT 06770 www.naugatuck-ct.gov

Date:10/2011



SIDEWALK JOINTS

BOROUGH OF NAUGATUCK
ENGINEERING DEPARTMENT
STANDARD DETAIL

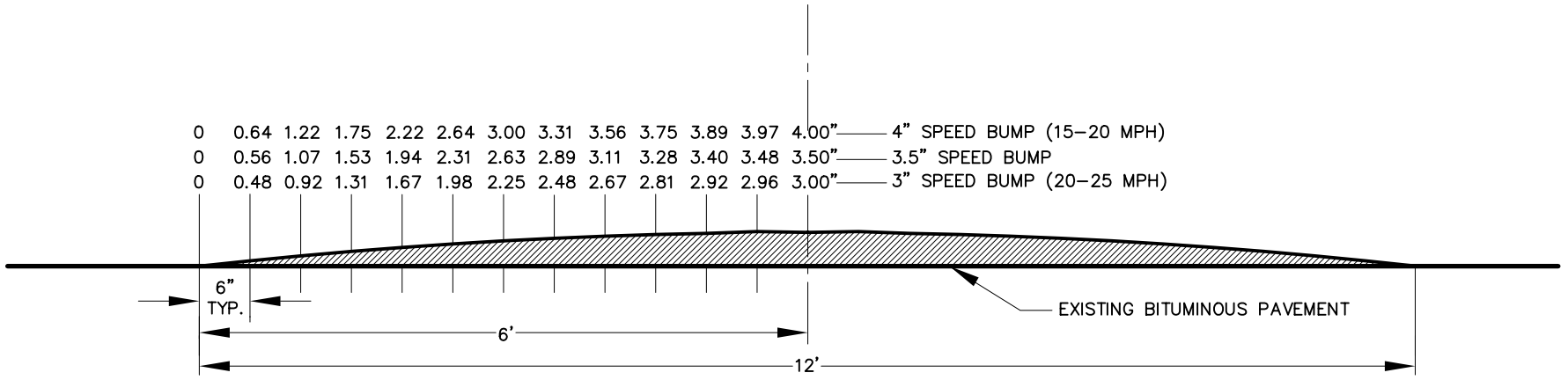
229 Church Street, Naugatuck, CT 06770 www.naugatuck–ct.gov

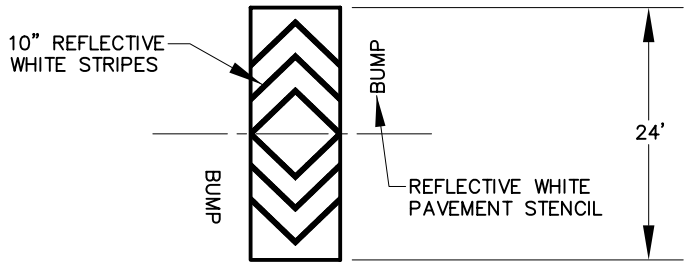
Scale: NTS

Drawing No.

SD–39

Date:10/2011





SPEED BUMP

BOROUGH OF NAUGATUCK
ENGINEERING DEPARTMENT
STANDARD DETAIL

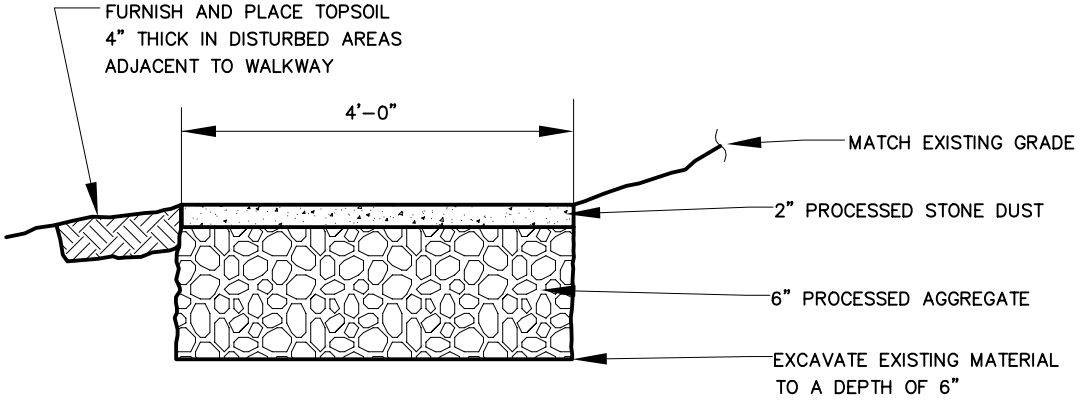
229 Church Street, Naugatuck, CT 06770 www.naugatuck-ct.gov

Scale: NTS

Drawing No.

SD-40

Date:10/2011



PROCESSED AGGREGATE AND STONE DUST SHALL
BE COMPACTED TO 98% MAXIMUM DENSITY

STONE DUST WALKWAY

BOROUGH OF NAUGATUCK
ENGINEERING DEPARTMENT
STANDARD DETAIL

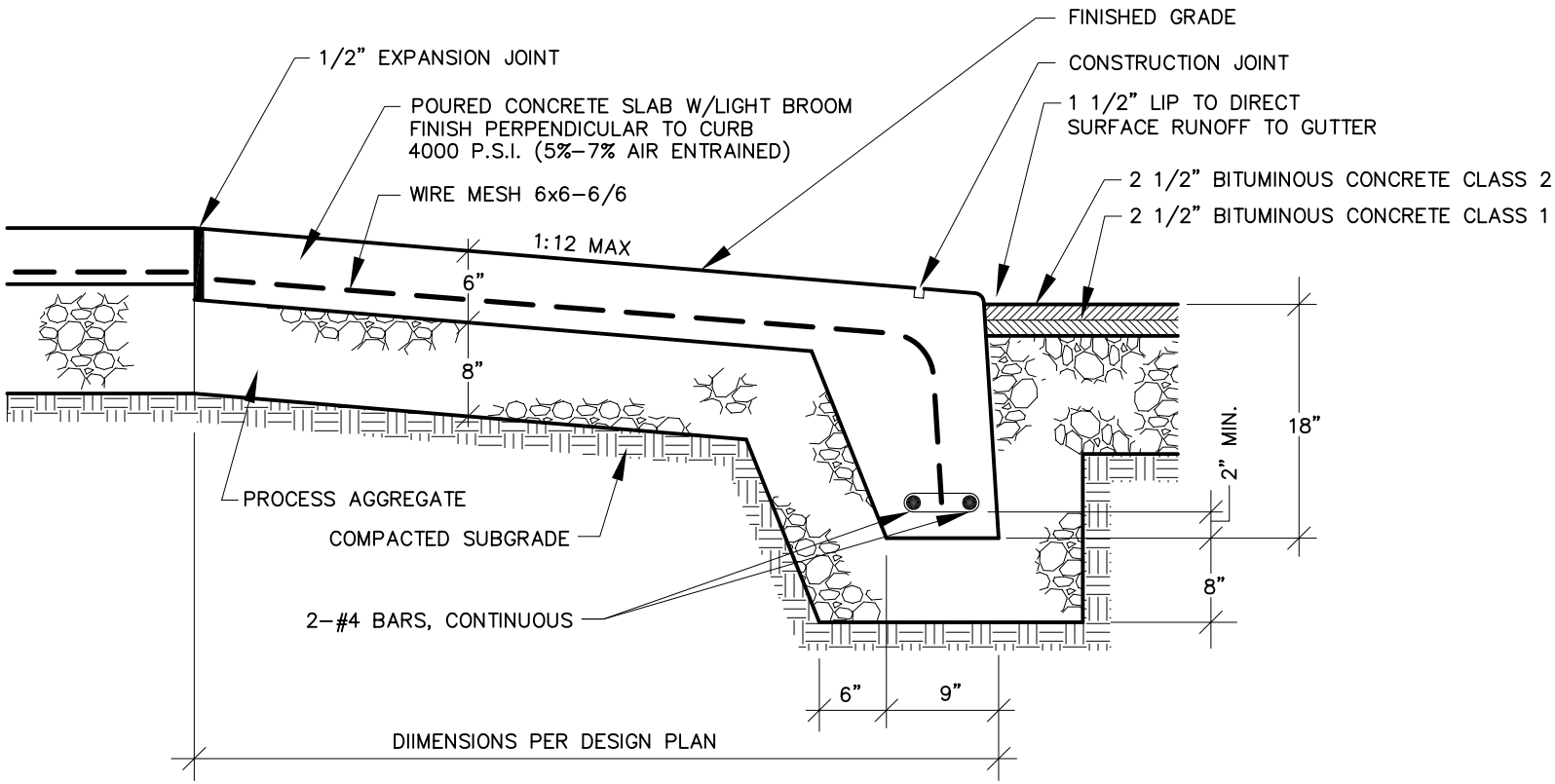
229 Church Street, Naugatuck, CT 06770 www.naugatuck-ct.gov

Scale: NTS

Drawing No.

SD-45

Date:10/2011



NOTE:
ALL CAST CONCRETE STRUCTURES TO BE CURED IN ACCORDANCE WITH STANDARD CURING PRACTICE.

BOROUGH OF NAUGATUCK
INCORPORATED 1844
CONNECTICUT

CONCRETE RAMP INTEGRAL WITH DRIVEWAY

BOROUGH OF NAUGATUCK ENGINEERING DEPARTMENT STANDARD DETAIL

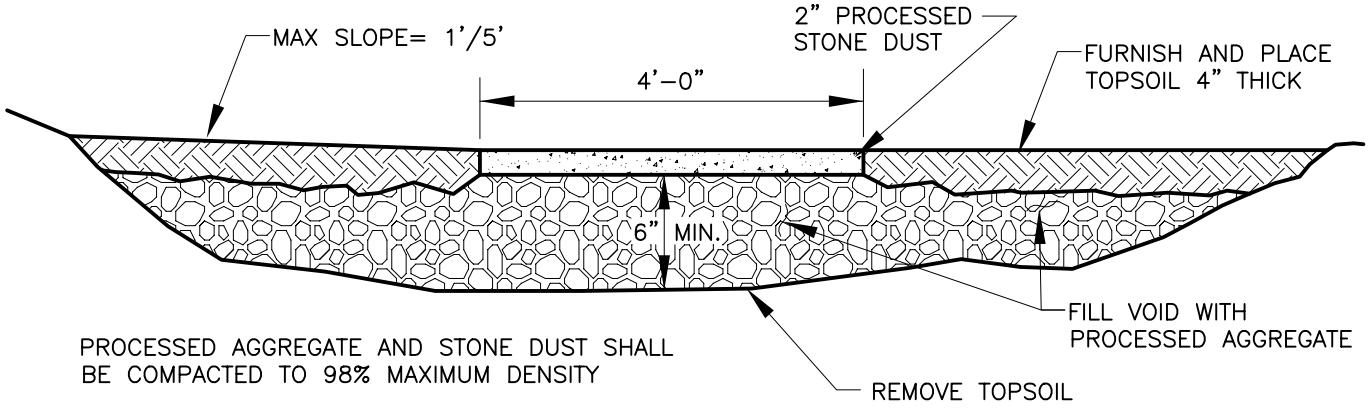
229 Church Street, Naugatuck, CT 06770 www.naugatuck–ct.gov

Scale: NTS

Drawing No.

SD–46

Date:10/2011



STONE DUST WALKWAY IN FILL AREAS

BOROUGH OF NAUGATUCK
ENGINEERING DEPARTMENT
STANDARD DETAIL

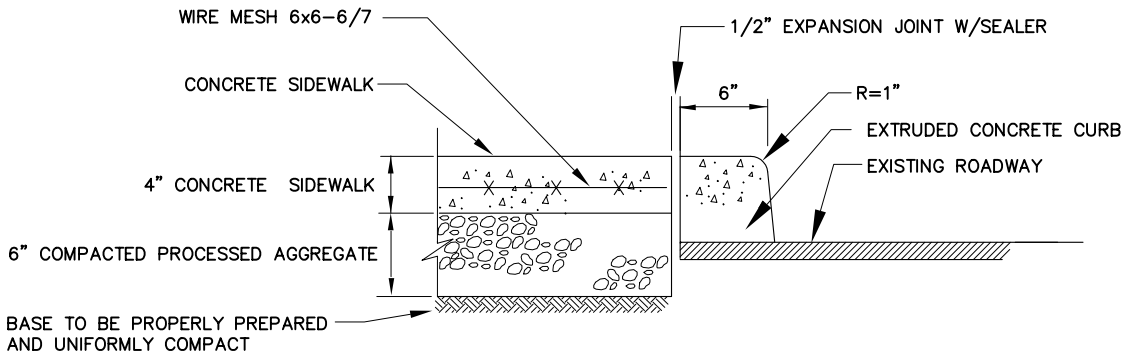
229 Church Street, Naugatuck, CT 06770 www.naugatuck-ct.gov

Scale: NTS

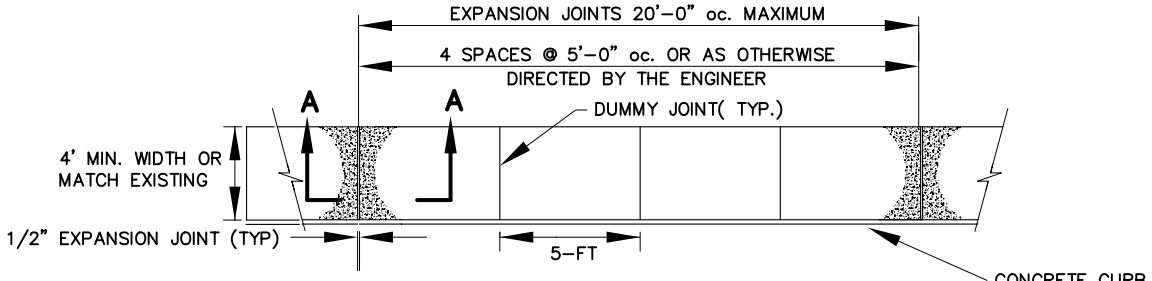
Drawing No.

SD-47

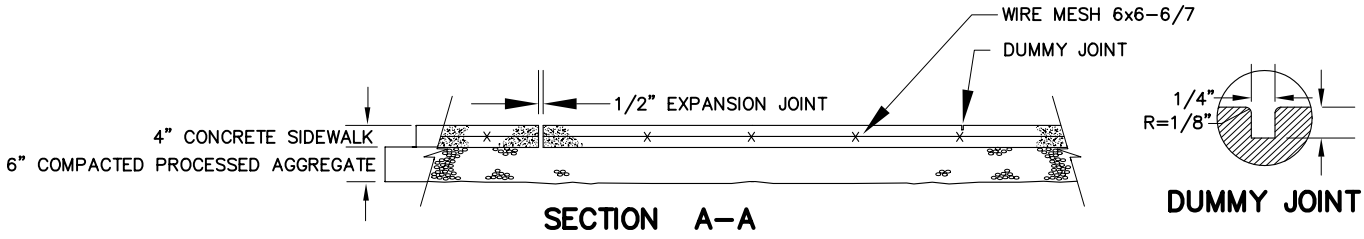
Date:10/2011



EXTRUDED CONCRETE CURB AND WALK DETAIL

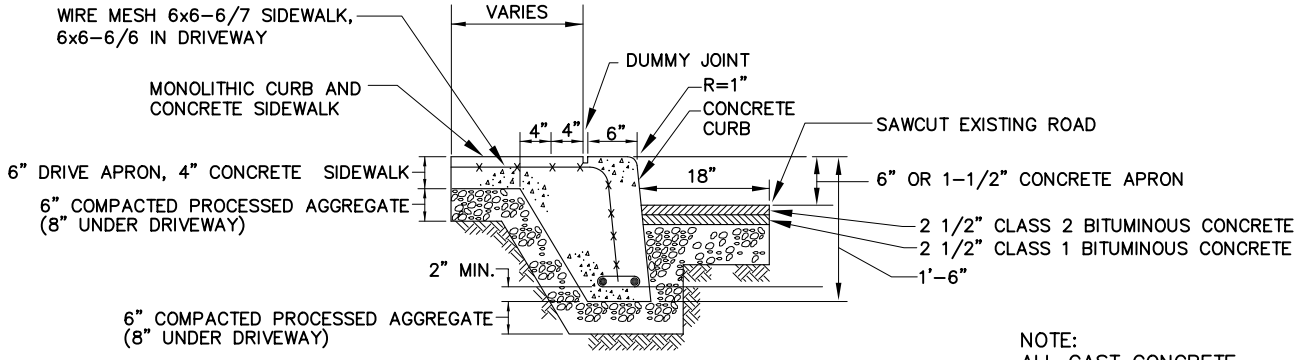


PLAN VIEW



SECTION A-A

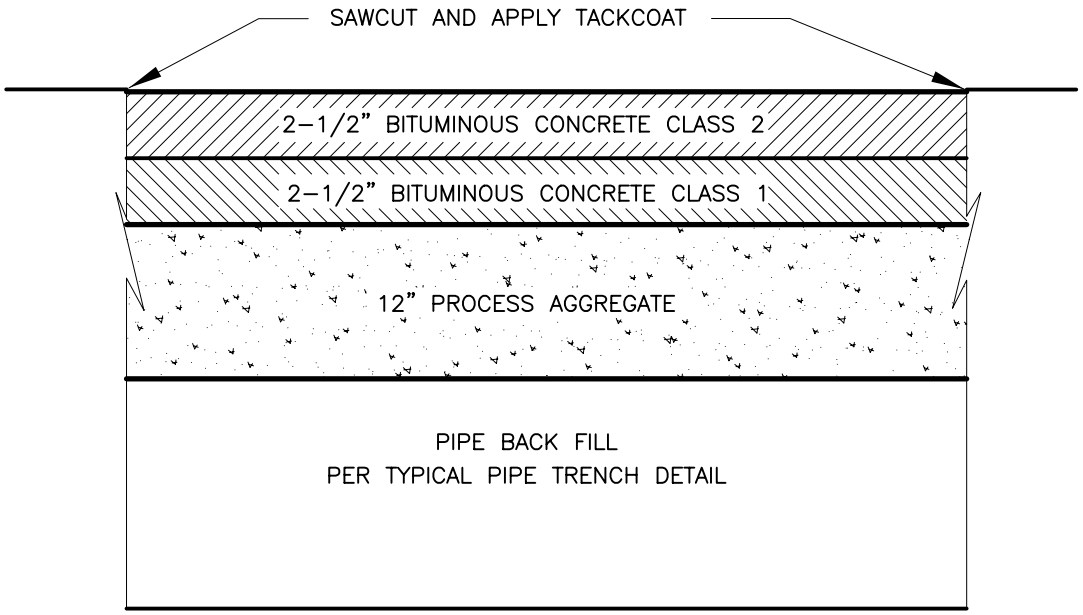
DUMMY JOINT



MONOLITHIC CURB AND SIDEWALK DETAIL

NOTE:
ALL CAST CONCRETE STRUCTURES TO BE CURED IN ACCORDANCE WITH STANDARD CURING PRACTICE.

BOROUGH OF NAUGATUCK INCORPORATED 1844 CONNECTICUT	COMBINED CONCRETE SIDEWALK DETAILS	Scale: NTS
		Drawing No. SD-48
	BOROUGH OF NAUGATUCK ENGINEERING DEPARTMENT STANDARD DETAIL 229 Church Street, Naugatuck, CT 06770 www.naugatuck-ct.gov	Date:10/2011



TRENCH REPAIR – BOROUGH STREETS

BOROUGH OF NAUGATUCK
ENGINEERING DEPARTMENT
STANDARD DETAIL

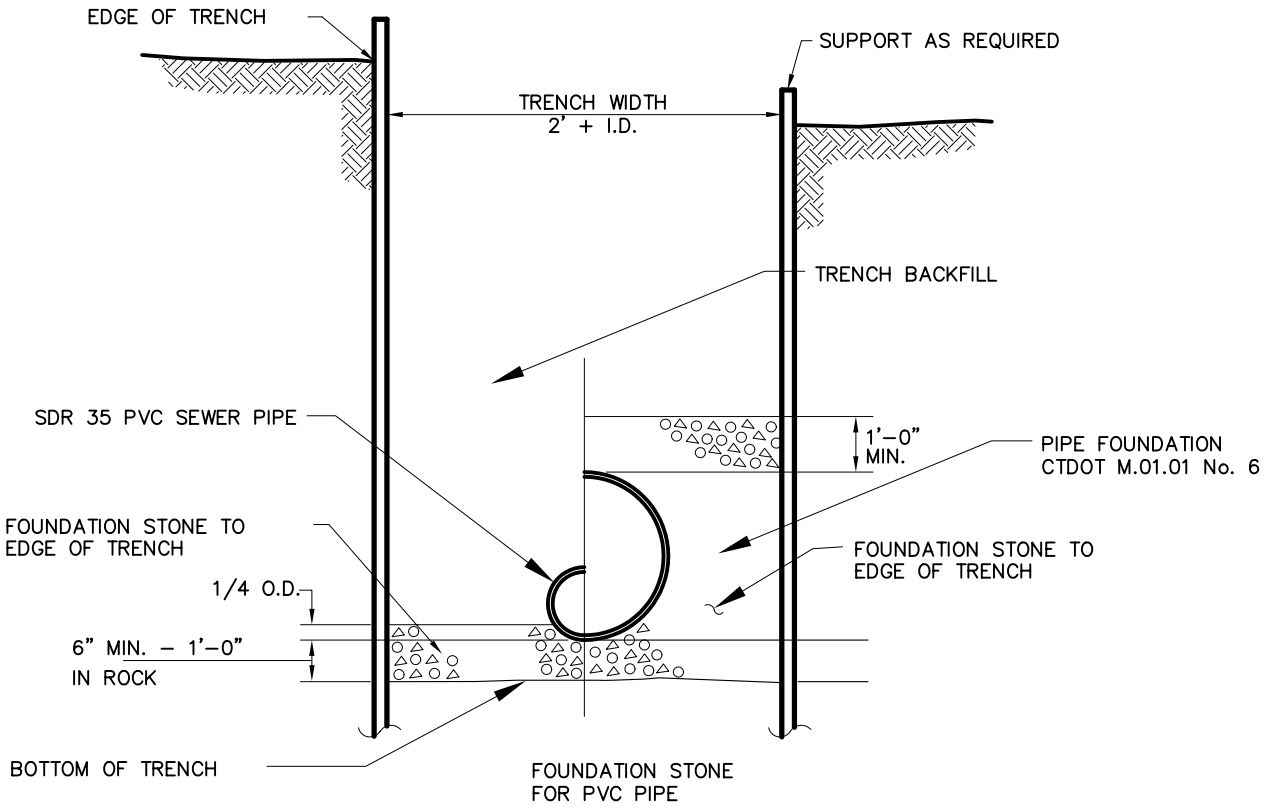
229 Church Street, Naugatuck, CT 06770 www.naugatuck–ct.gov

Scale: NTS

Drawing No.

SD–51

Date:10/2011



SANITARY SEWER TRENCH SECTION

Scale: NTS

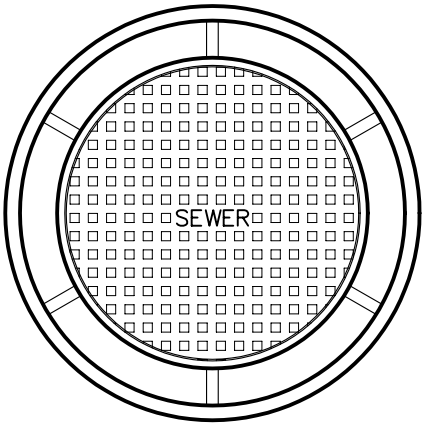
Drawing No.

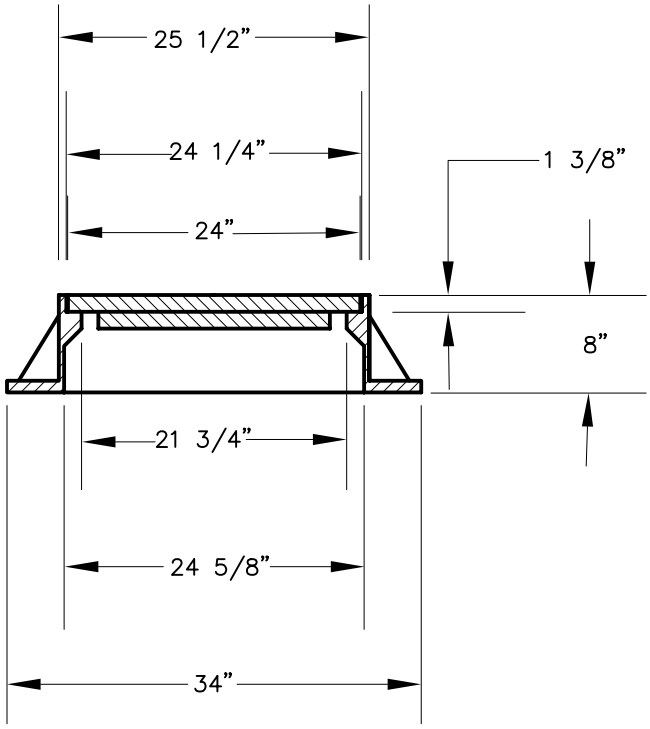
SD-7

BOROUGH OF NAUGATUCK
ENGINEERING DEPARTMENT
STANDARD DETAIL

229 Church Street, Naugatuck, CT 06770 www.naugatuck-ct.gov

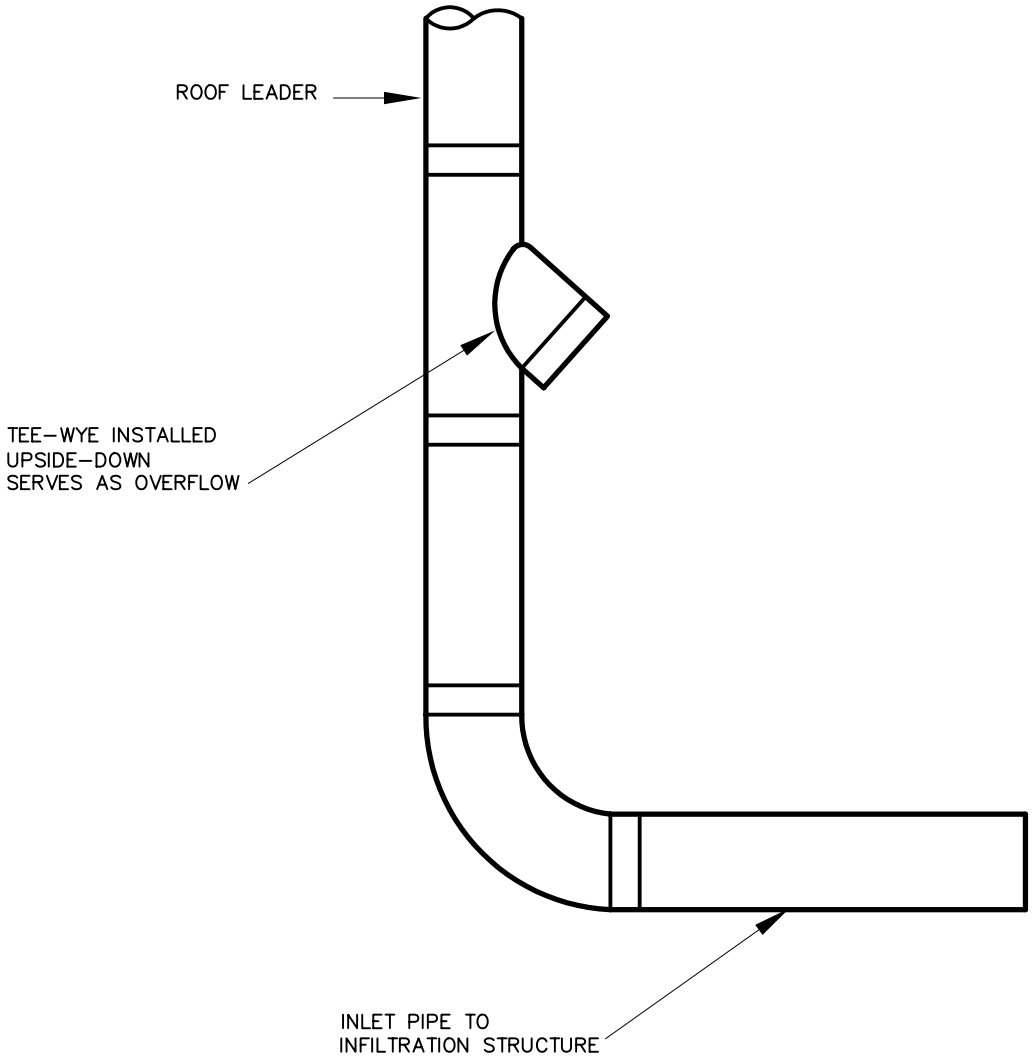
Date:10/2011





CAMPBELL CONSTRUCTION CASTINGS
PATTERN NO. 1007D
HEAVY DUTY MANHOLE FRAME AND COVER

BOROUGH OF NAUGATUCK INCORPORATED 1844 CONNECTICUT	HEAVY DUTY MANHOLE FRAME AND COVER	Scale: NTS
	BOROUGH OF NAUGATUCK ENGINEERING DEPARTMENT STANDARD DETAIL	Drawing No. SD–8
	229 Church Street, Naugatuck, CT 06770 www.naugatuck–ct.gov	Date:10/2011



ROOF LEADER CONNECTION

BOROUGH OF NAUGATUCK
ENGINEERING DEPARTMENT
STANDARD DETAIL

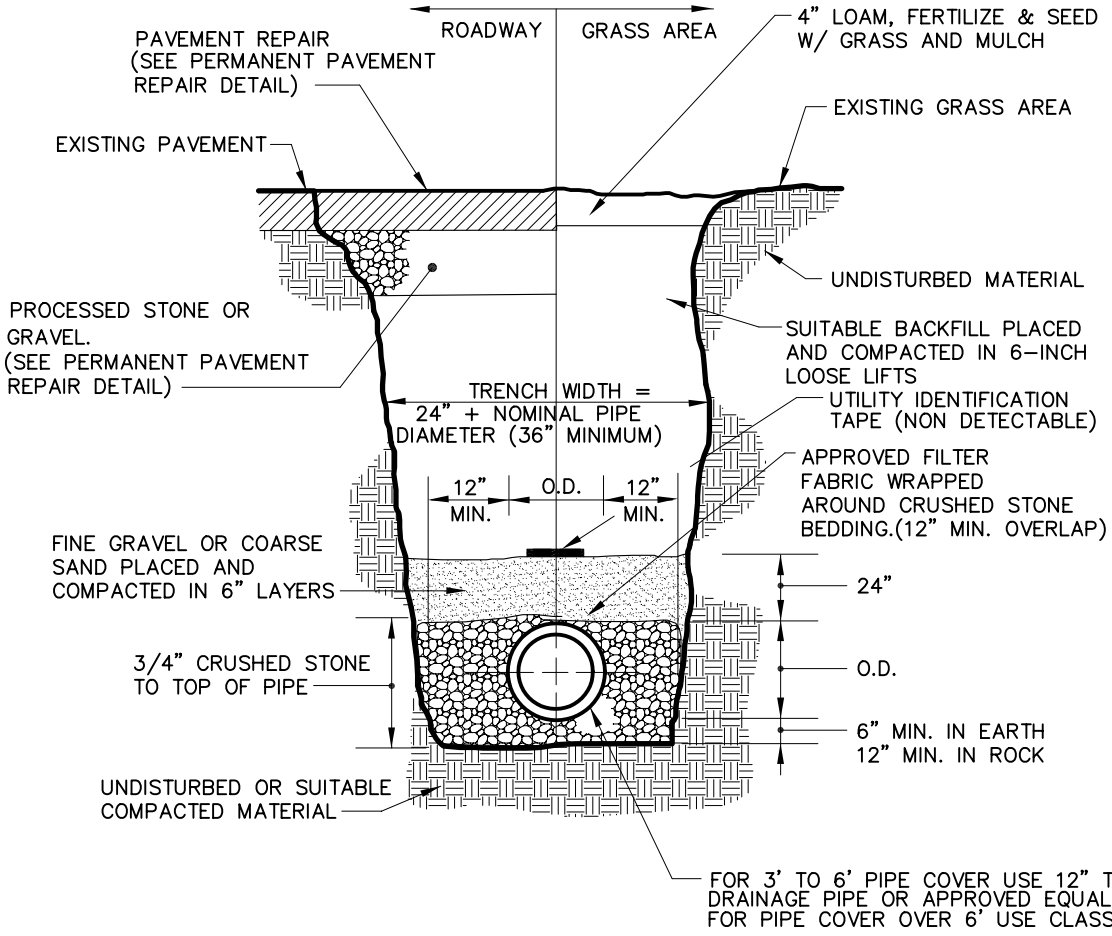
229 Church Street, Naugatuck, CT 06770 www.naugatuck–ct.gov

Scale: NTS

Drawing No.

SD–10

Date:10/2011



NOTES:

1) ALL PIPE SYSTEMS SHALL BE INSTALLED IN ACCORDANCE WITH STANDARD PRACTICE FOR UNDERGROUND INSTALLATION OF SEWER AND DRAINAGE PIPES AND OTHER GRAVITY FLOW APPLICATIONS.

2) ALL TRENCH WORK TO BE SUPPORTED AS REQUIRED.

BOROUGH OF NAUGATUCK
INCORPORATED 1844
CONNECTICUT

TYPICAL PIPE TRENCH

Scale: NTS

Drawing No.

SD-11

BOROUGH OF NAUGATUCK
ENGINEERING DEPARTMENT
STANDARD DETAIL

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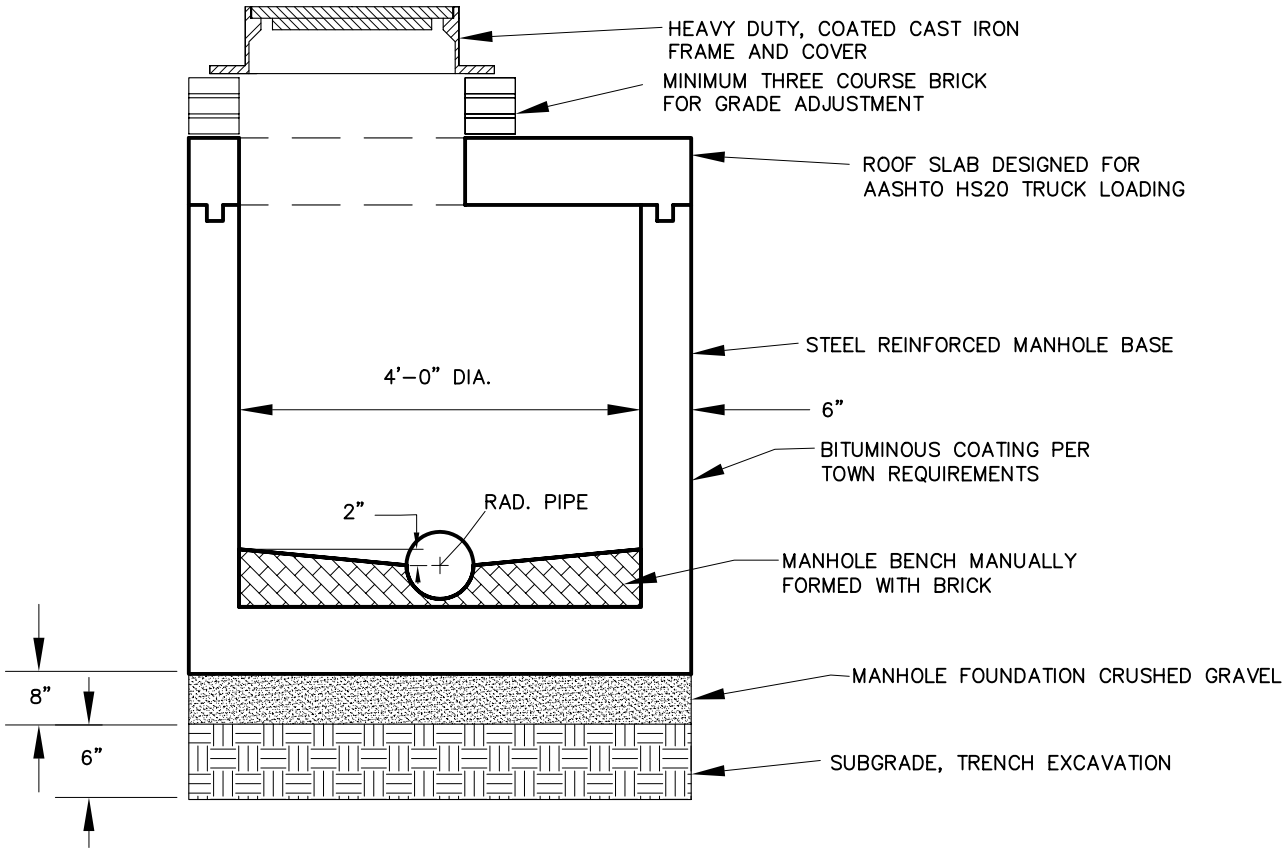
Date:10/2011



SHALLOW MANHOLE

Scale: NTS

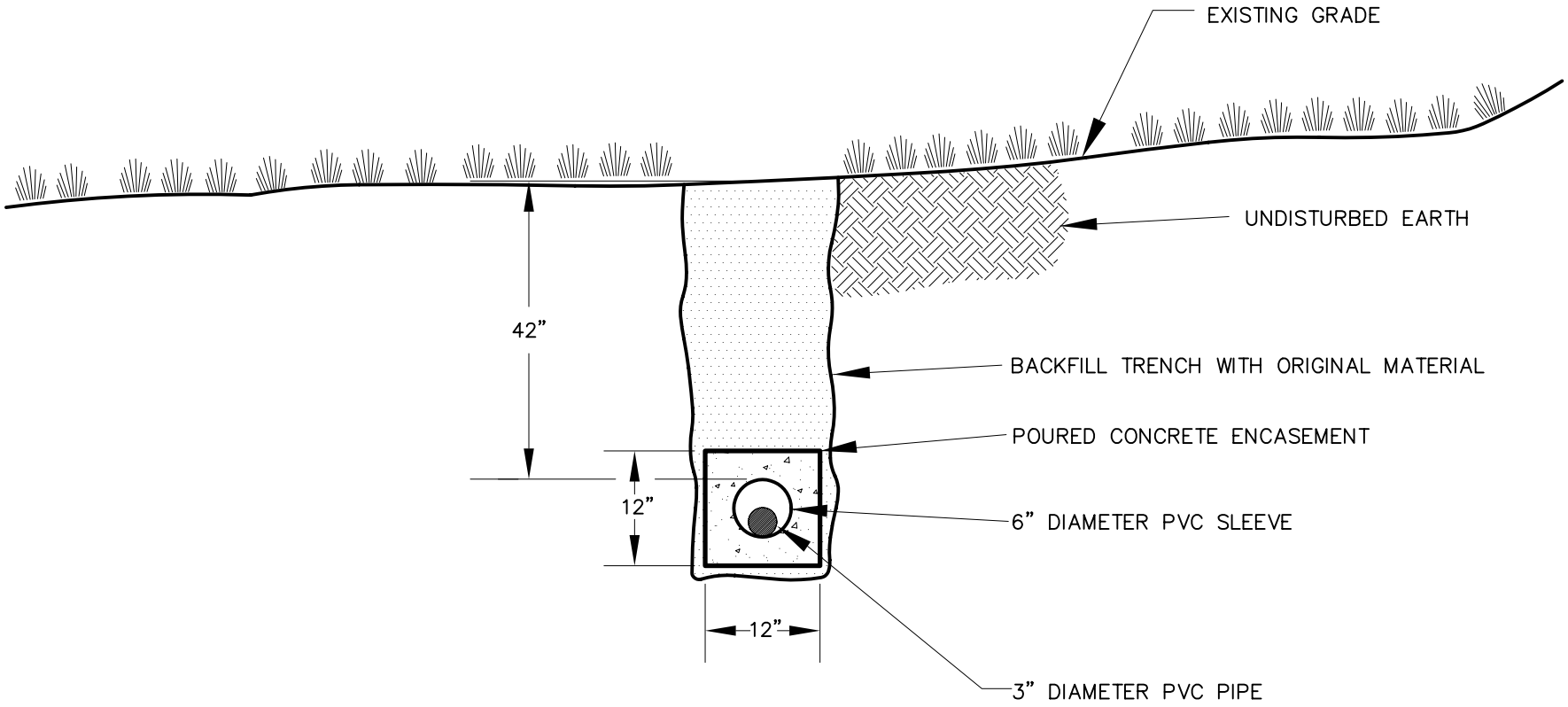
Drawing No.

SD–12

BOROUGH OF NAUGATUCK
ENGINEERING DEPARTMENT
STANDARD DETAIL

229 Church Street, Naugatuck, CT 06770 www.naugatuck–ct.gov

Date:10/2011



SEWER LINE CROSSING SECTION

BOROUGH OF NAUGATUCK
ENGINEERING DEPARTMENT
STANDARD DETAIL

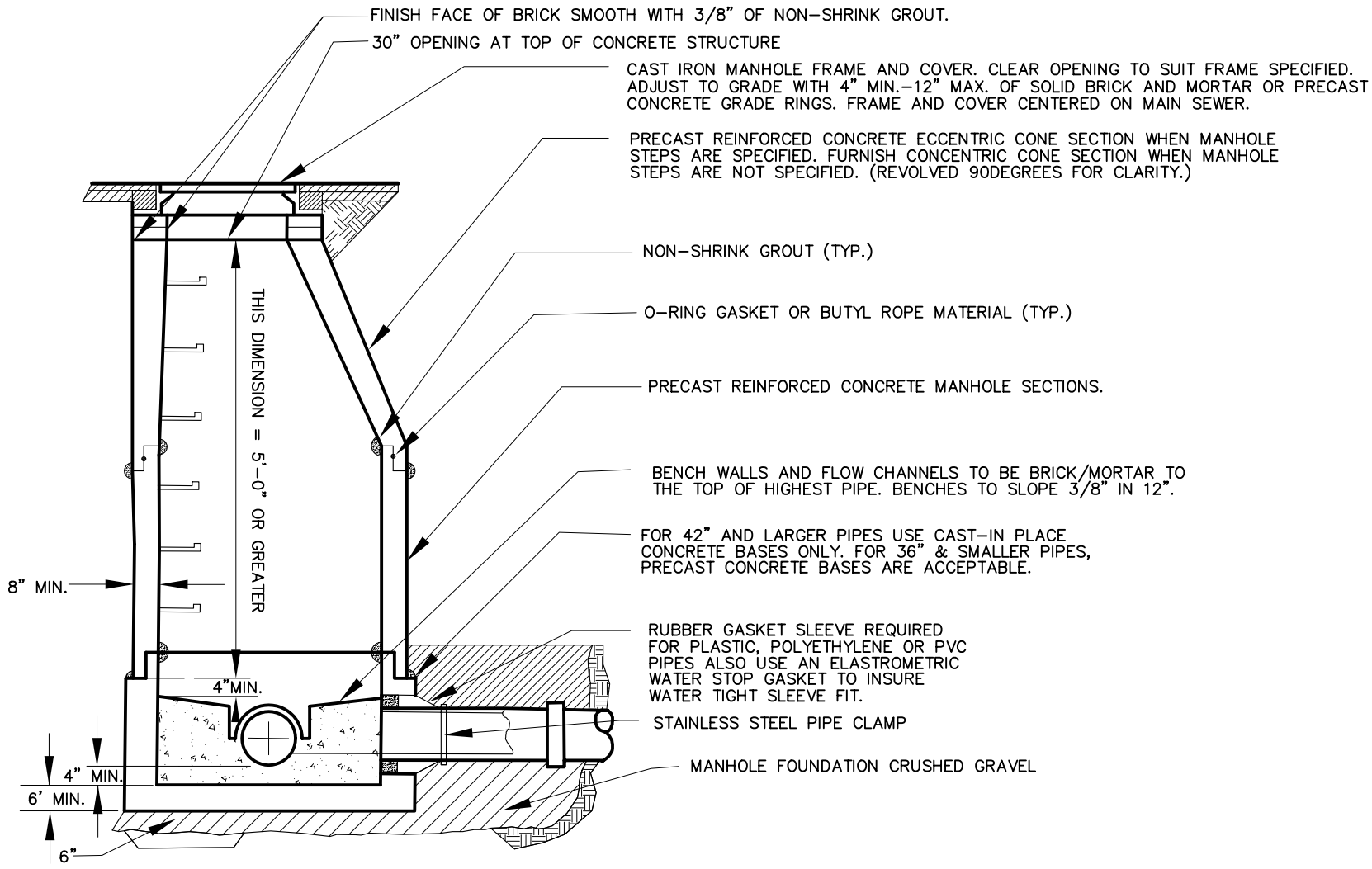
229 Church Street, Naugatuck, CT 06770 www.naugatuck-ct.gov

Scale: NTS

Drawing No.

SD-13

Date:10/2011



SEWER MANHOLE

BOROUGH OF NAUGATUCK
ENGINEERING DEPARTMENT
STANDARD DETAIL

229 Church Street, Naugatuck, CT 06770 www.naugatuck-ct.gov

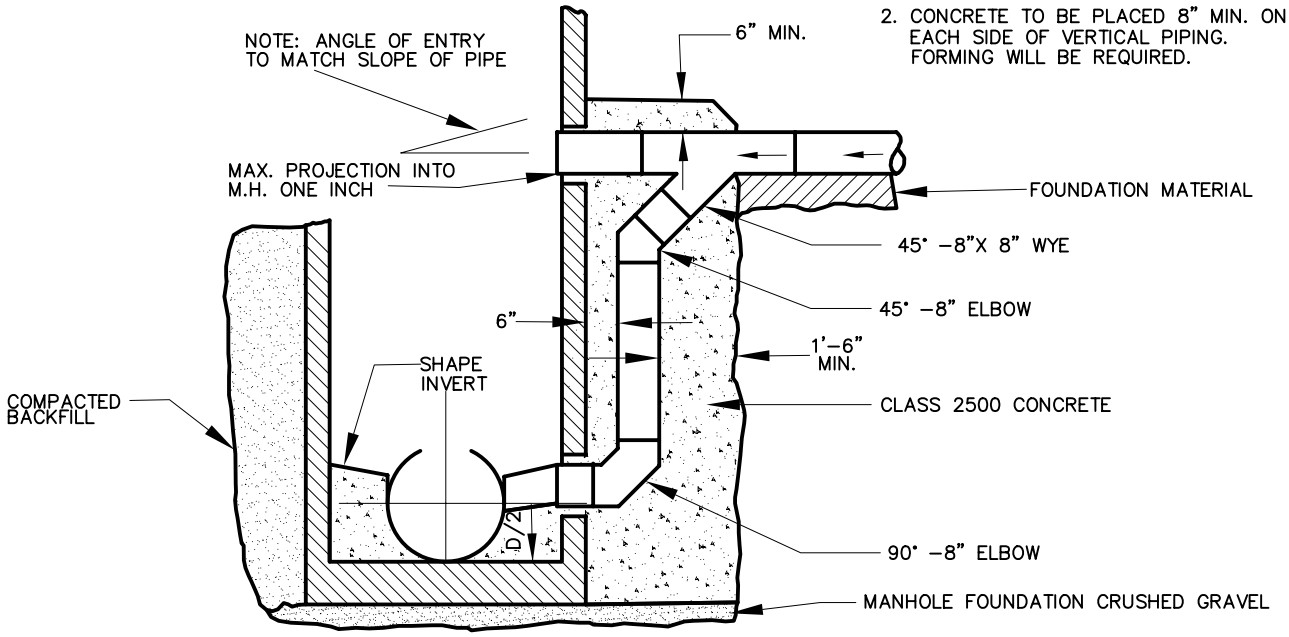
Scale: NTS

Drawing No.

SD-14

Date:10/2011

NOTES: 1. NO FILL TO BE PLACED ON TOP OF DEEP DROP CONNECTION UNTIL CONCRETE HAS SET.
2. CONCRETE TO BE PLACED 8" MIN. ON EACH SIDE OF VERTICAL PIPING. FORMING WILL BE REQUIRED.



DEEP DROP MANHOLE CONNECTION (OUTSIDE DROP)

Scale: NTS

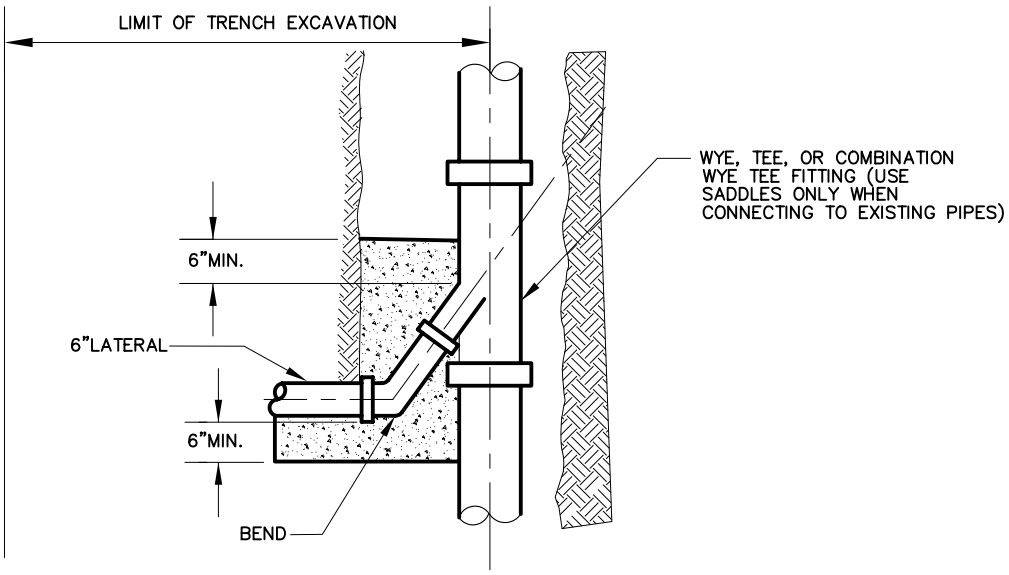
Drawing No.

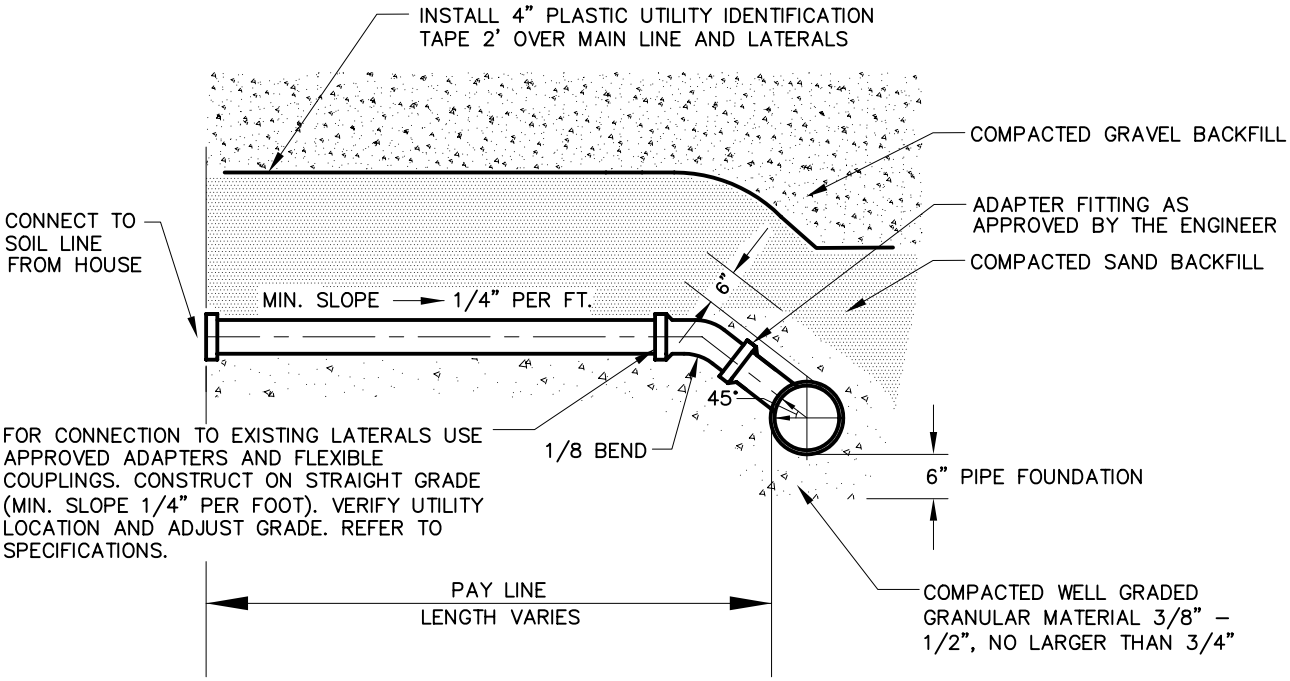
SD-16

BOROUGH OF NAUGATUCK ENGINEERING DEPARTMENT STANDARD DETAIL

229 Church Street, Naugatuck, CT 06770 www.naugatuck-ct.gov

Date:10/2011





NOTES:

1.) THE END OF THE COMPLETED LATERAL SHALL BE LEFT EXPOSED UNTIL THE ENGINEER HAS TIME TO LOCATE THE LATERAL FOR AN AS–BUILT.
2.) FOR LATERAL CONNECTIONS TO EXISTING PIPE WHERE NO TEE IS PROVIDED, USE INJECTION MOLDED RUBBER GASKETED TEE SADDLE.

BOROUGH OF NAUGATUCK INCORPORATED 1844 CONNECTICUT

SANITARY SEWER LATERAL CONNECTION

Scale: NTS

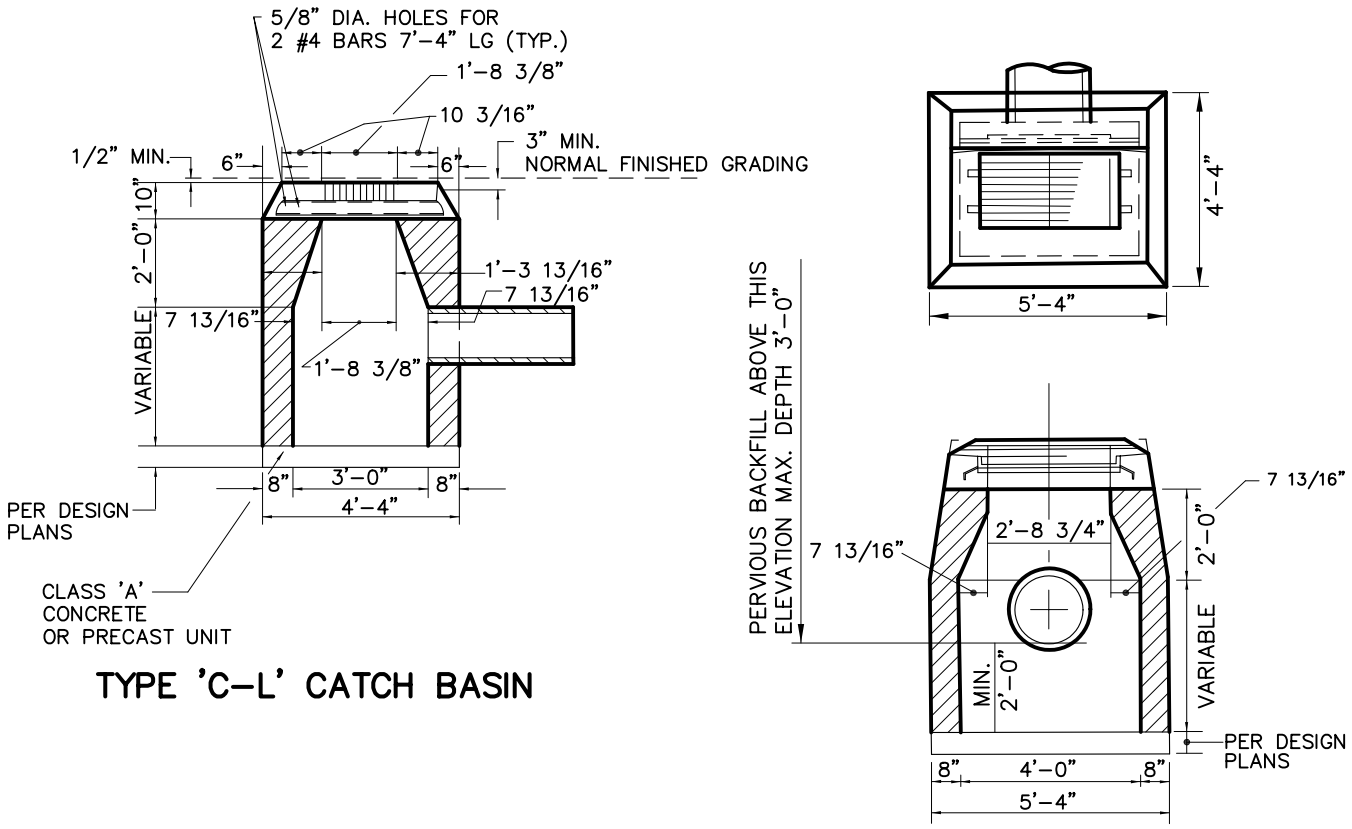
Drawing No.

SD–17

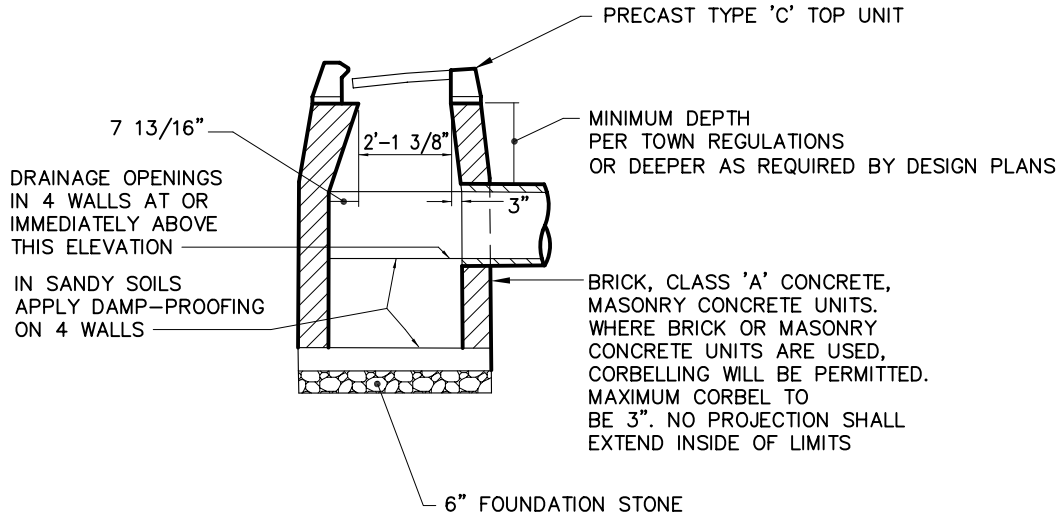
BOROUGH OF NAUGATUCK
ENGINEERING DEPARTMENT
STANDARD DETAIL

229 Church Street, Naugatuck, CT 06770 www.naugatuck–ct.gov

Date:10/2011



TYPE 'C-L' CATCH BASIN



TYPE 'C' CATCH BASIN

BOROUGH OF NAUGATUCK
INCORPORATED 1844
CONNECTICUT

CATCH BASIN (ConnDOT)

Scale: NTS

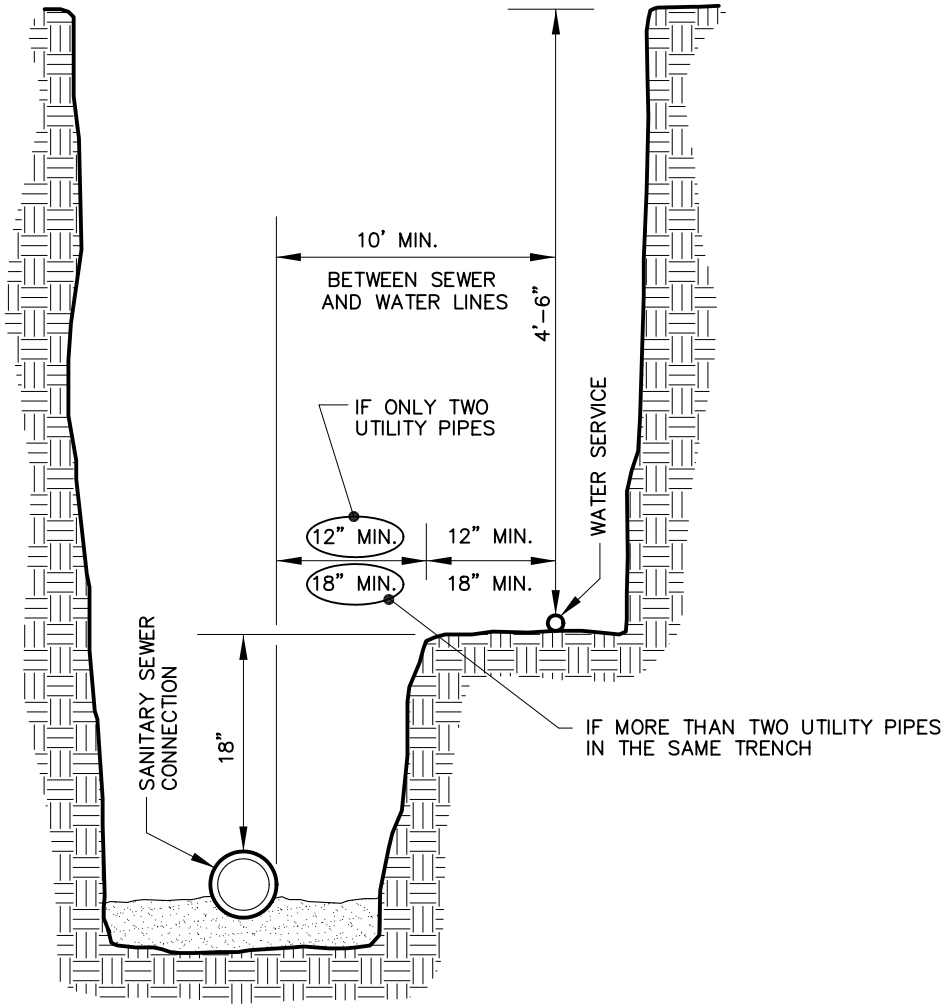
Drawing No.

SD-19

BOROUGH OF NAUGATUCK
ENGINEERING DEPARTMENT
STANDARD DETAIL

229 Church Street, Naugatuck, CT 06770 www.naugatuck-ct.gov

Date:10/2011



SANITARY SEWER HOUSE CONNECTION AND WATER SERVICE IN TRENCH

Scale: NTS

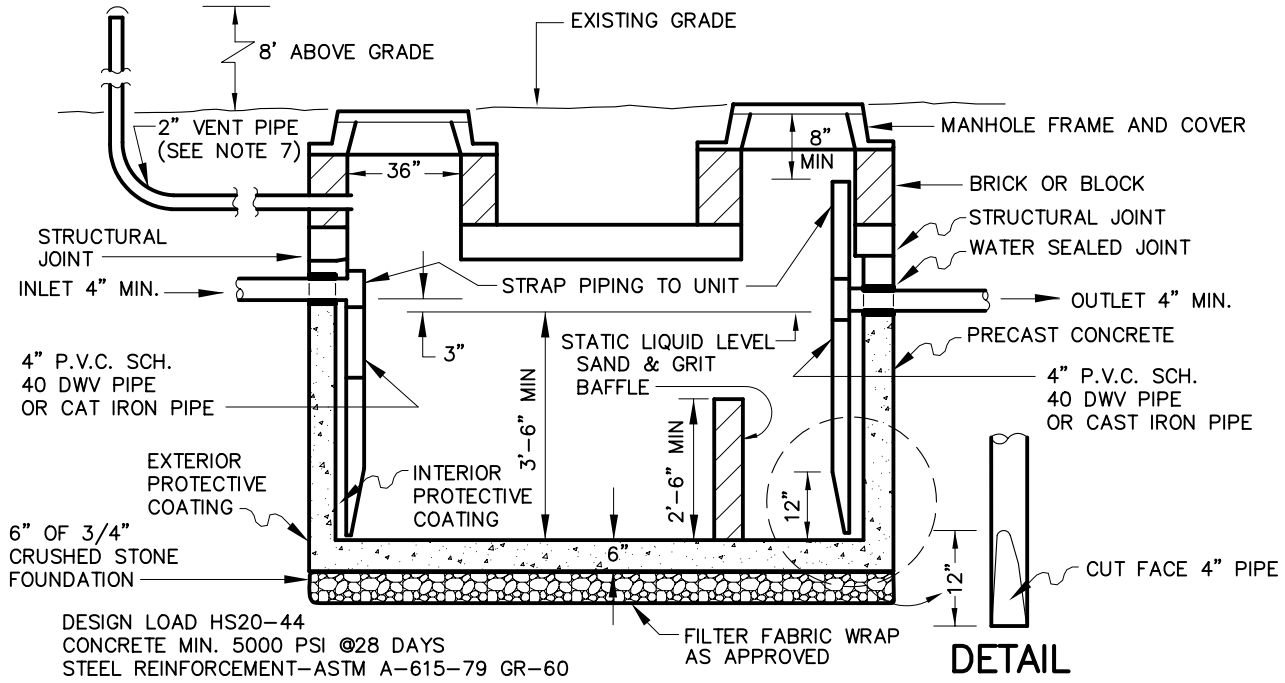
Drawing No.

SD-28

BOROUGH OF NAUGATUCK
ENGINEERING DEPARTMENT
STANDARD DETAIL

229 Church Street, Naugatuck, CT 06770 www.naugatuck-ct.gov

Date:10/2011



1. Tank shall have a minimum capacity sufficient to pre-treat the maximum daily flow proposed and no less than 1000 gallons. Tank shall be constructed of precast concrete.

2. Interior of the tank and extension to grade manholes shall be coated with an epoxy petroleum resistant sealant. Exterior of the tank and extension grade manholes shall be coated with a waterproof foundation sealant. This includes the tank exteriors top and bottom.

3. Structural seam of the tank shall be filled in with non-shrinking cement or water plug and coated with a waterproof sealant.

4. Voids between inlet and outlet piping of the tank shall be grouted with non-shrinking cement and coated with a waterproof sealant.

5. The tank shall have extensions to grade above the inlet and outlet piping. The extension shall have frames and manhole covers. The manholes, extensions and accesses to the tank shall be at least 24 inches in diameter.

6. The outlet piping shall utilize a tee-pipe on the interior of the tank. The tee-pipe shall be equipped with a stand pipe riser extending up the extension to grade but no closer than eight (8) inches from the manhole cover. The tee-pipe shall extend six (6) to twelve (12) inches from the bottom of the tank.

7. The inlet extension to grade shall be provided with a vent line which extends eight (8) feet above finished grade and properly secured to the building. The size of the vent shall be half the size of the outlet discharge line.

8. The horizontal structural seam of the tank shall be located above the static liquid level of the tank.

9. The incoming pipe shall not include any sources of domestic wastewater.

10. The outlet pipe shall be connected to the sanitary sewer.

11. The outlet pipe shall be at least the size of the inlet pipe or greater and at a minimum should be 4.0 inches in diameter.

12. If heavy piping, such as cast iron is used, all piping must be structurally secured.

13. The concrete covers provided by the oil separator manufacturor must be removed and discarded.

BOROUGH OF NAUGATUCK
INCORPORATED 1844
CONNECTICUT

OIL-WATER SEPARATOR (GREASE TRAP)

BOROUGH OF NAUGATUCK ENGINEERING DEPARTMENT STANDARD DETAIL

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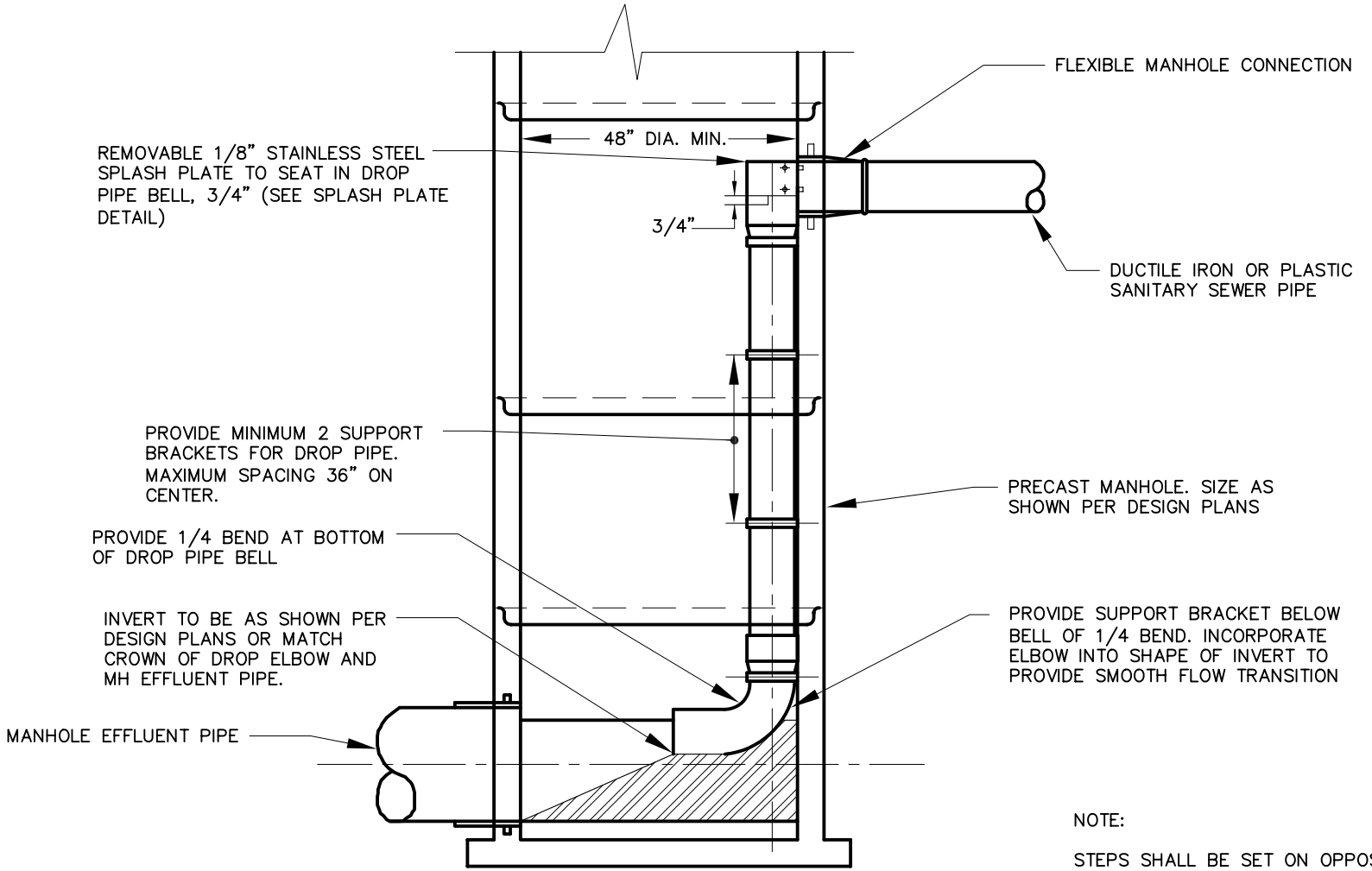
Scale: NTS

Drawing No.

SD-32

Date:10/2011



NOTE:

STEPS SHALL BE SET ON OPPOSITE SIDE OF MANHOLE THAN DROP PIPING.
INSIDE MANHOLE DIAMETER TO BE 48" MINIMUM FOR ACCESS AND SERVICEABILITY.

INSIDE DROP MANHOLE

BOROUGH OF NAUGATUCK
ENGINEERING DEPARTMENT
STANDARD DETAIL

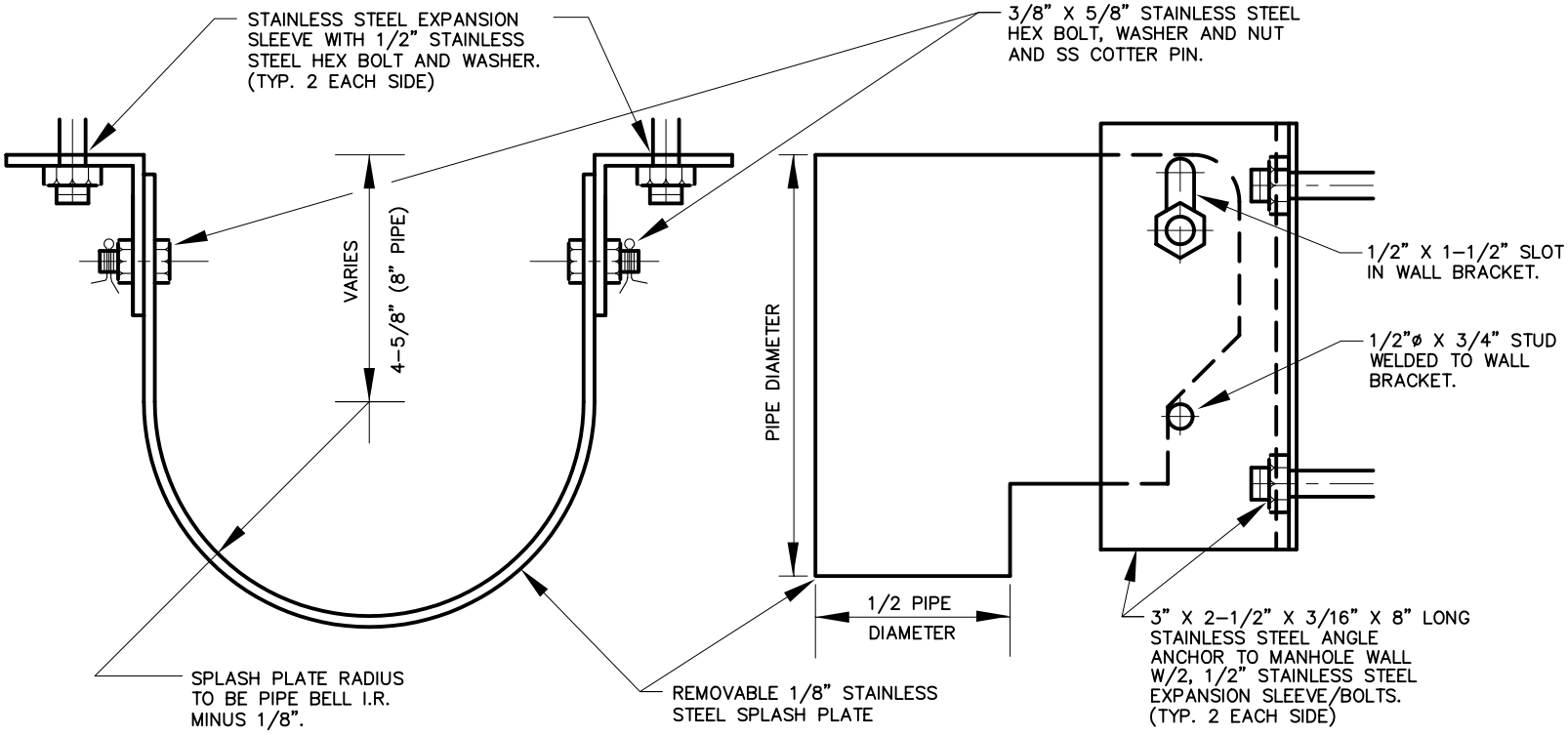
229 Church Street, Naugatuck, CT 06770 www.naugatuck-ct.gov

Scale: NTS

Drawing No.

SD-49

Date:10/2011



STAINLESS STEEL SPLASH PLATE

BOROUGH OF NAUGATUCK
ENGINEERING DEPARTMENT
STANDARD DETAIL

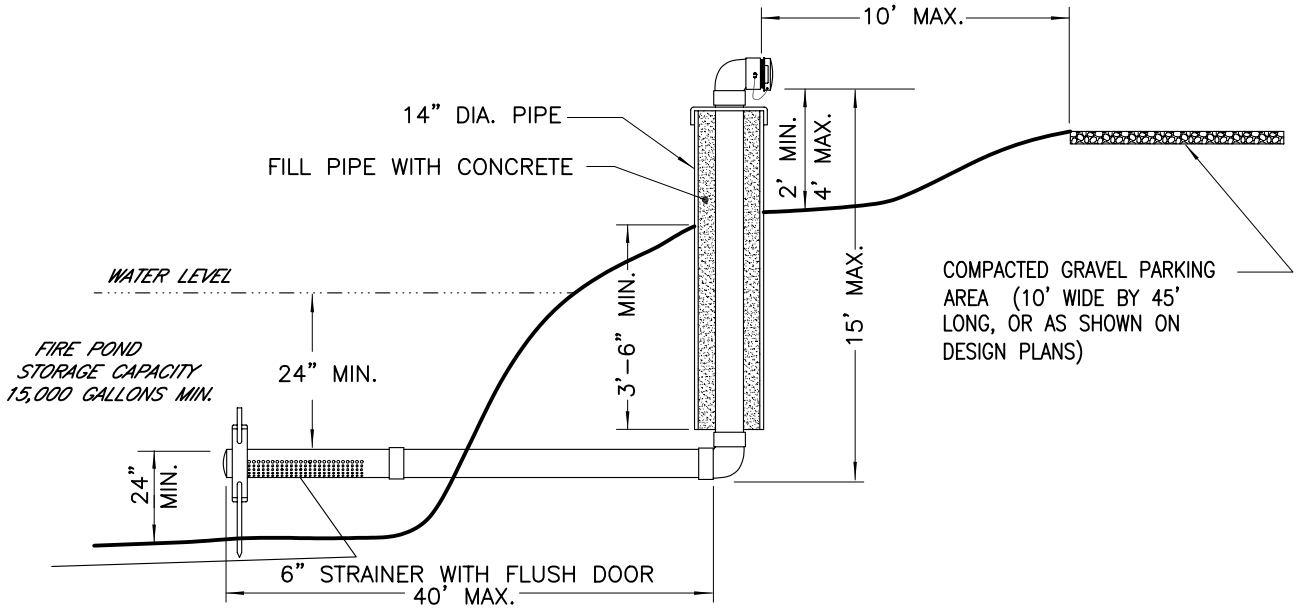
229 Church Street, Naugatuck, CT 06770 www.naugatuck-ct.gov

Scale: NTS

Drawing No.

SD-50

Date:10/2011



1.) ALL UNDERGROUND AND UNDERWATER PIPING SHALL BE PVC SCHEDULE 40 WITH A MINIMUM DIAMETER OF 6 INCHES.

2.) ALL JOINTS SHALL BE CLEANED AND SECURELY GLUED BEFORE BEING PLACED IN THE WATER. ALL JOINTS UNDERGROUND OR UNDERWATER WILL BE SCREWED WITH STAINLESS STEEL SCREWS ON EVERY JOINT AT LEAST THREE PLACES. GLUING OF JOINTS ABOVE GROUND OR ABOVE WATER IS ACCEPTABLE.

3.) ALL PIPING EXTENDING INTO THE WATER SUPPLY SHALL BE SUPPORTED ON AND SECURED TO CONCRETE OR STONE BLOCKS AT LEAST EVERY 10 FEET. THE STRAINER PORTION SHOULD BE SET A MINIMUM OF 24 INCHES OFF THE BOTTOM OF THE WATER SUPPLY. THE STRAINER AND HYDRANT HEAD TO BE PURCHASED FROM THE CONNECTICUT WATER CO. AT THEIR COST.

4.) HYDRANT RISER SHALL BE PROTECTED BY TWO STEEL CONCRETE FILLED POST 6 INCHES IN DIAMETER, PLACED 24 INCHES ON EITHER SIDE OF THE RISER AND EXTEND 48 INCHES ABOVE THE FINISH GRADE. THE POSTS SHALL BE EMBEDDED IN CONCRETE AFTER THE HYDRANT IS ACCEPTED BY THE CONNECTICUT WATER CO. POST SHALL BE PAINTED SAFETY YELLOW WITH 6 INCH RED BAND AT THE TOP.

BOROUGH OF NAUGATUCK INCORPORATED 1844 CONNECTICUT

DRY HYDRANT

BOROUGH OF NAUGATUCK
ENGINEERING DEPARTMENT
STANDARD DETAIL

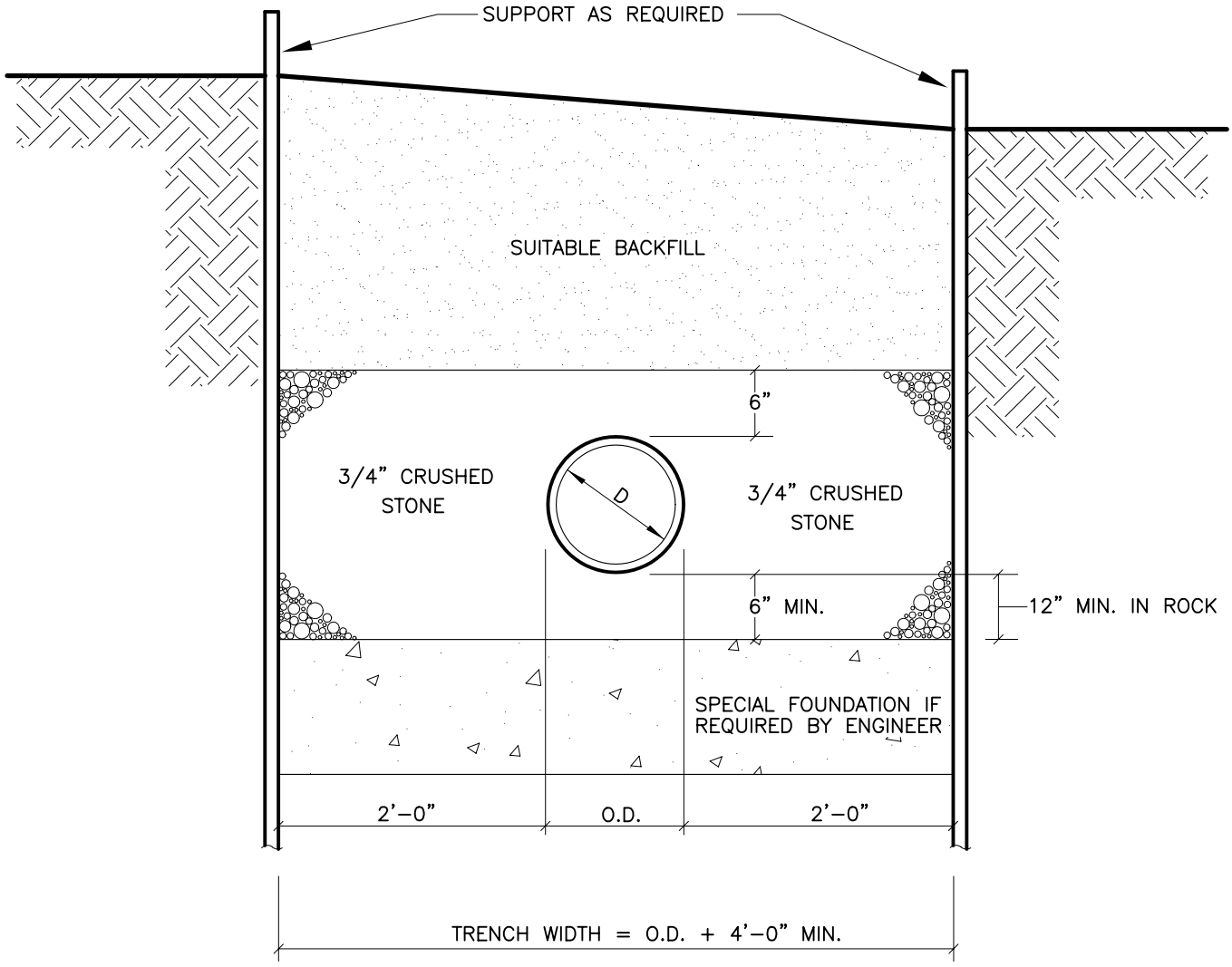
229 Church Street, Naugatuck, CT 06770 www.naugatuck-ct.gov

Scale: NTS

Drawing No.

SD-52

Date:10/2011



TYPICAL SANITARY SEWER TRENCH

Scale: NTS

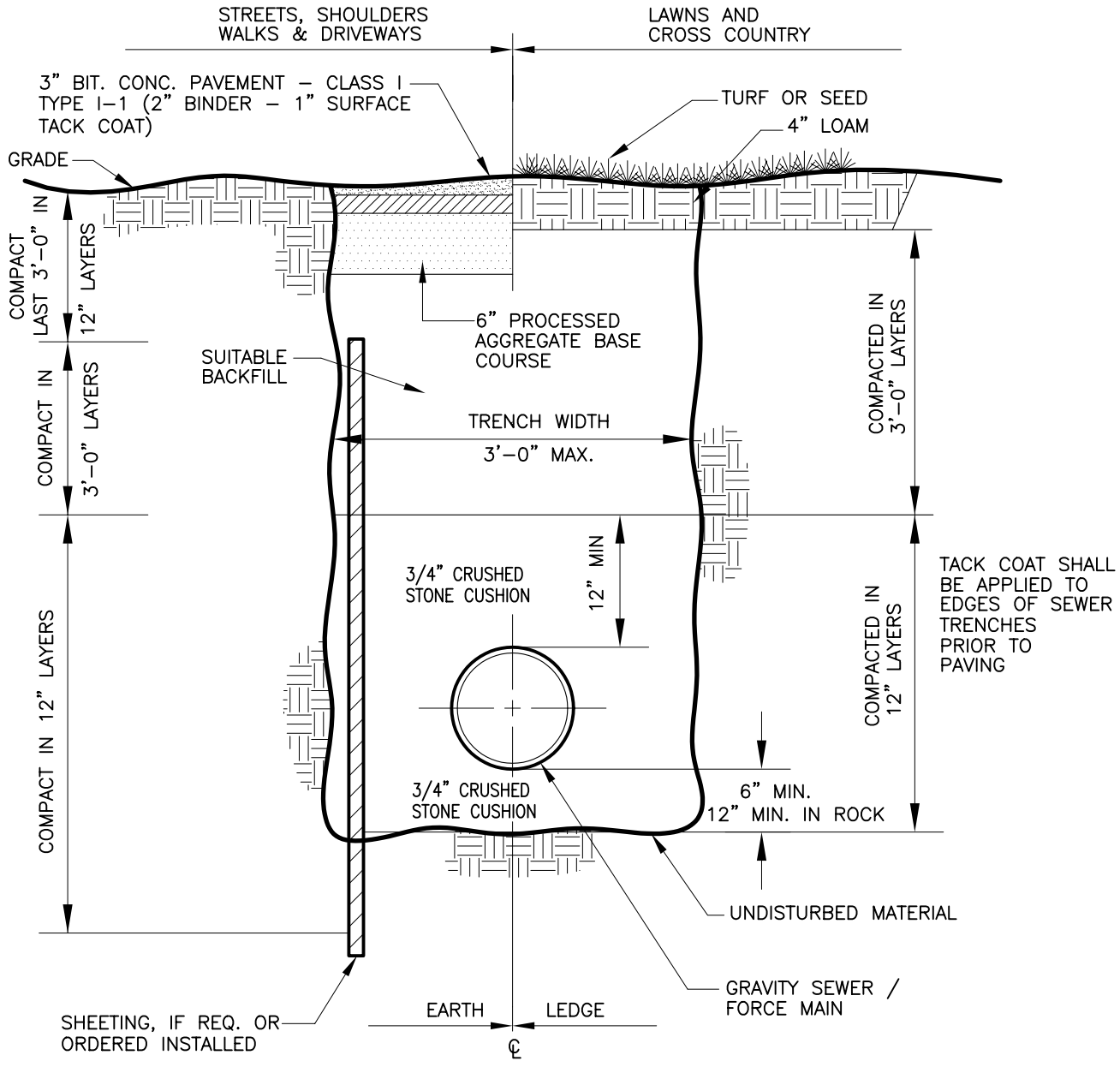
Drawing No.

SD-53

BOROUGH OF NAUGATUCK
ENGINEERING DEPARTMENT
STANDARD DETAIL

229 Church Street, Naugatuck, CT 06770 www.naugatuck-ct.gov

Date:10/2011



TYPICAL SANITARY SEWER LATERAL TRENCH

BOROUGH OF NAUGATUCK ENGINEERING DEPARTMENT STANDARD DETAIL

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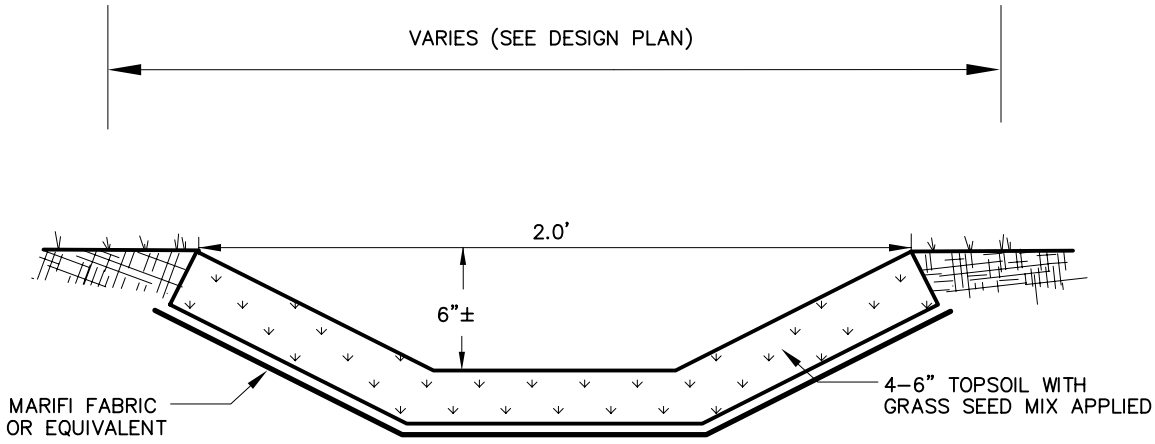
Scale: NTS

Drawing No.

SD–54

Date:10/2011



SMALL DRAINAGE SWALE (GRASS)

Scale: NTS

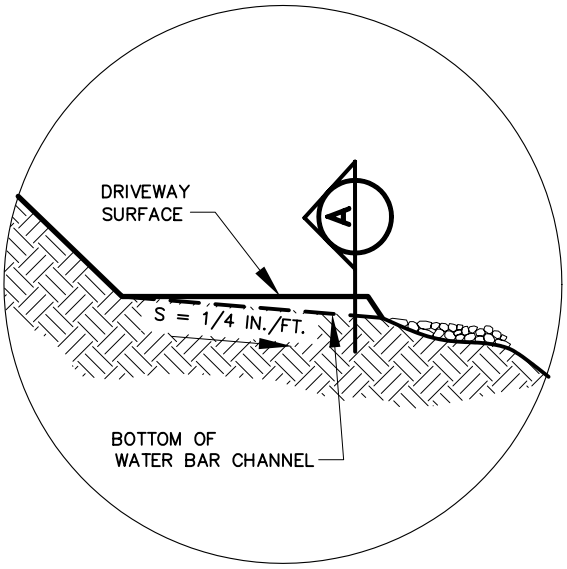
Drawing No.

SD–31

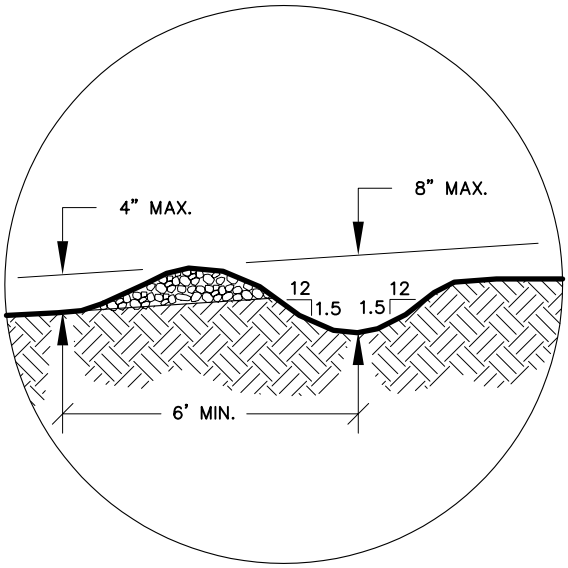
BOROUGH OF NAUGATUCK
ENGINEERING DEPARTMENT
STANDARD DETAIL

229 Church Street, Naugatuck, CT 06770 www.naugatuck–ct.gov

Date:10/2011

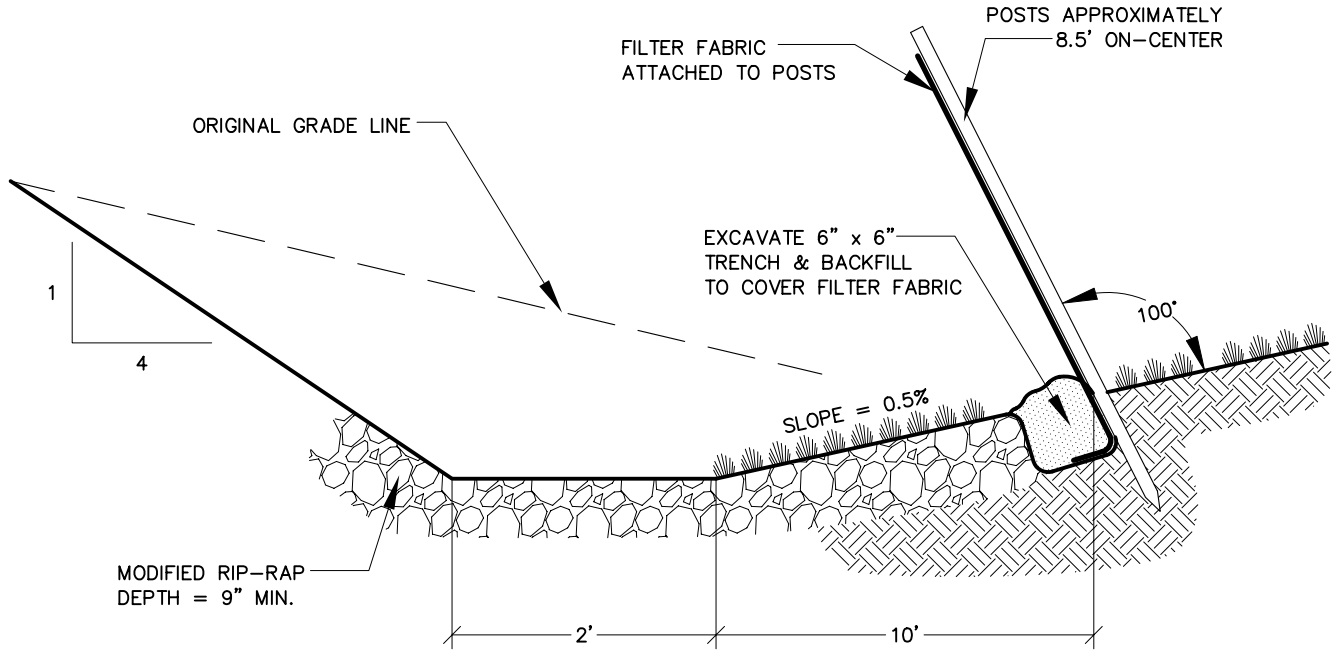


WATER BAR OR WATER BREAK



SECTION A

BOROUGH OF NAUGATUCK INCORPORATED 1844 CONNECTICUT	WATER BAR OR WATER BREAK	Scale: NTS
	BOROUGH OF NAUGATUCK ENGINEERING DEPARTMENT STANDARD DETAIL 229 Church Street, Naugatuck, CT 06770 www.naugatuck-ct.gov	Drawing No. SD-55
		Date:10/2011



RIP-RAP LEVEL SPREADER

BOROUGH OF NAUGATUCK
ENGINEERING DEPARTMENT
STANDARD DETAIL

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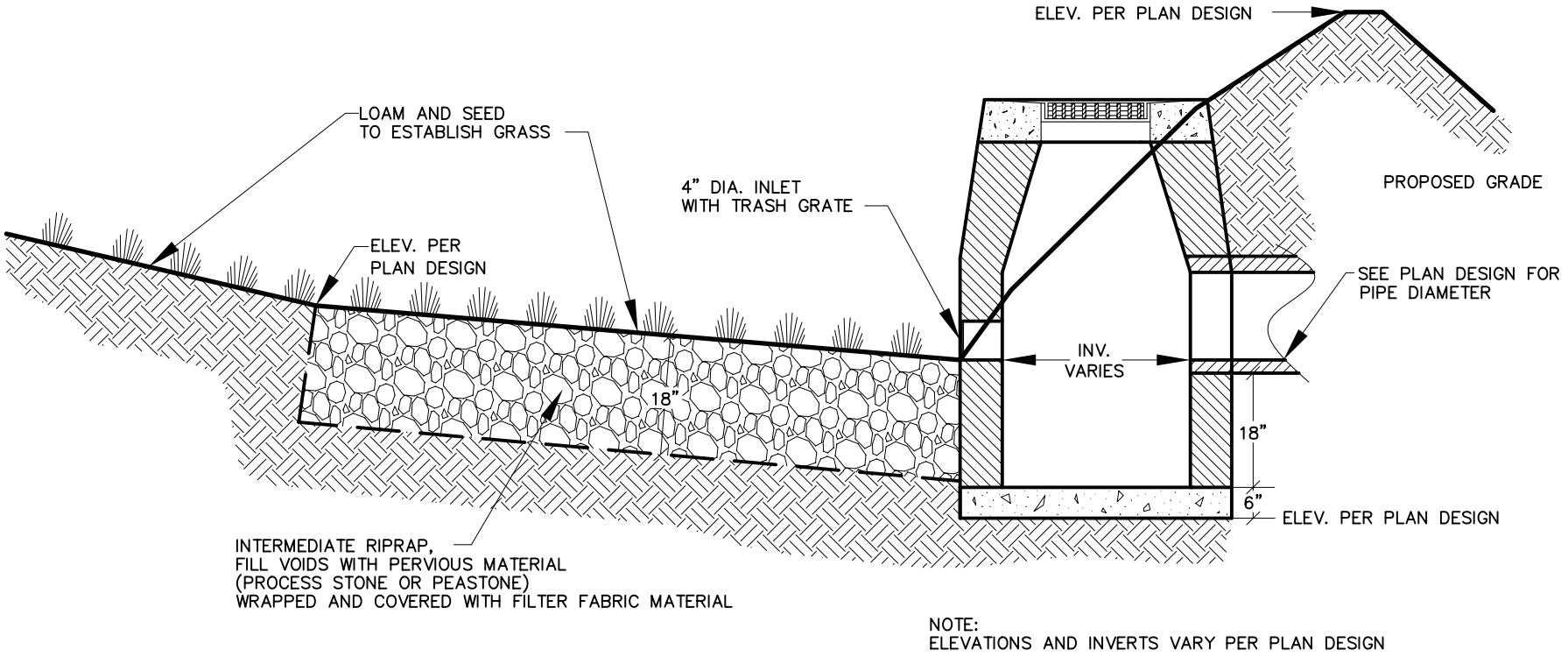
Scale: NTS

Drawing No.

SD-56

Date:10/2011



NOTE:
ELEVATIONS AND INVERTS VARY PER PLAN DESIGN

RETENTION BASIN EXAMPLE

BOROUGH OF NAUGATUCK
ENGINEERING DEPARTMENT
STANDARD DETAIL

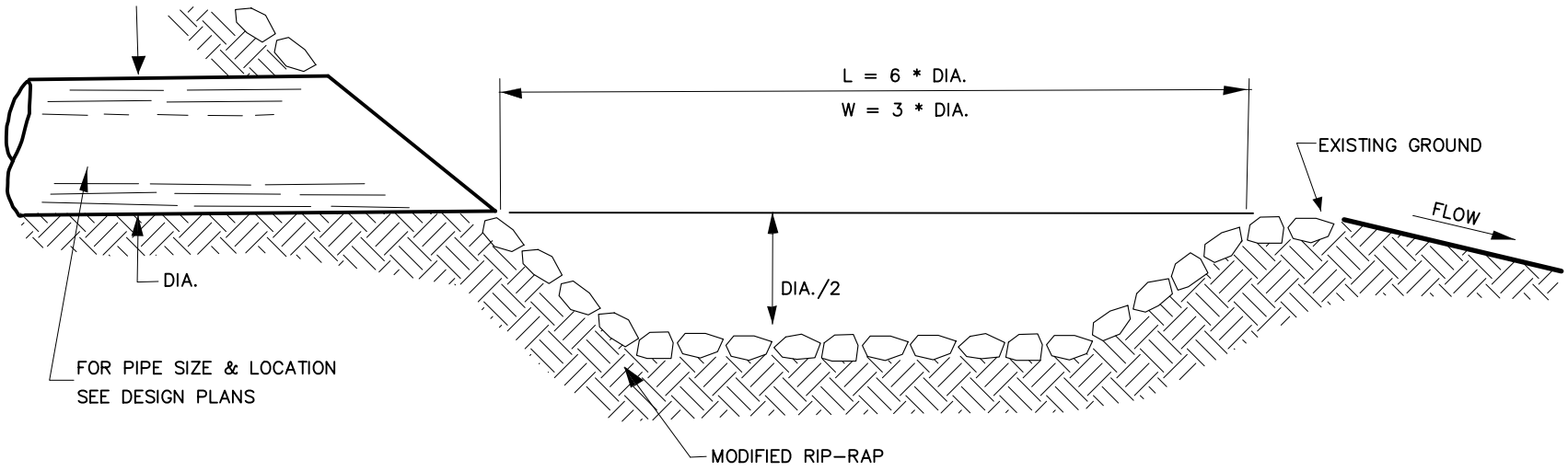
229 Church Street, Naugatuck, CT 06770 www.naugatuck-ct.gov

Scale: NTS

Drawing No.

SD-57

Date:10/2011



NOTE:
PLUNGE POOL TO BE SIZED ACCORDING TO DESIGN PLANS

PLUNGE POOL

BOROUGH OF NAUGATUCK
ENGINEERING DEPARTMENT
STANDARD DETAIL

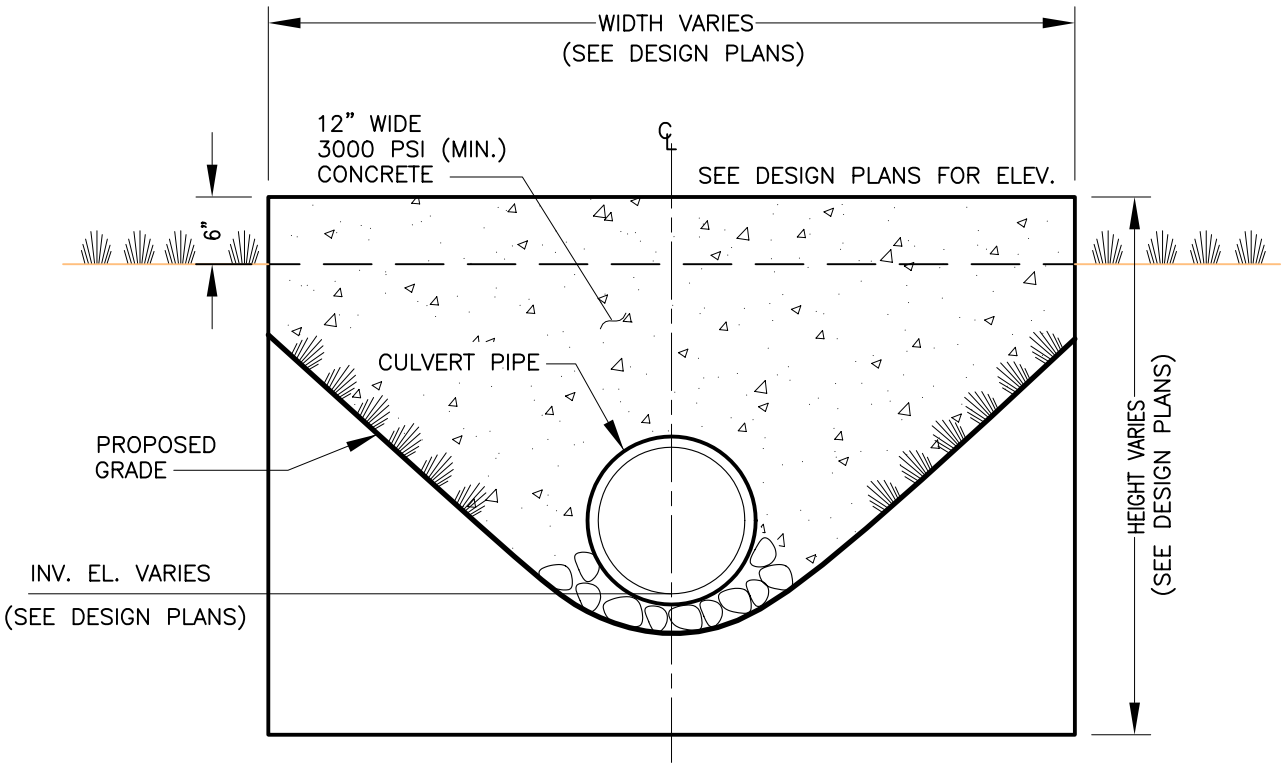
229 Church Street, Naugatuck, CT 06770 www.naugatuck-ct.gov

Scale: NTS

Drawing No.

SD-58

Date:10/2011



BOROUGH OF NAUGATUCK
INCORPORATED 1844
CONNECTICUT

HEADWALL

BOROUGH OF NAUGATUCK
ENGINEERING DEPARTMENT
STANDARD DETAIL

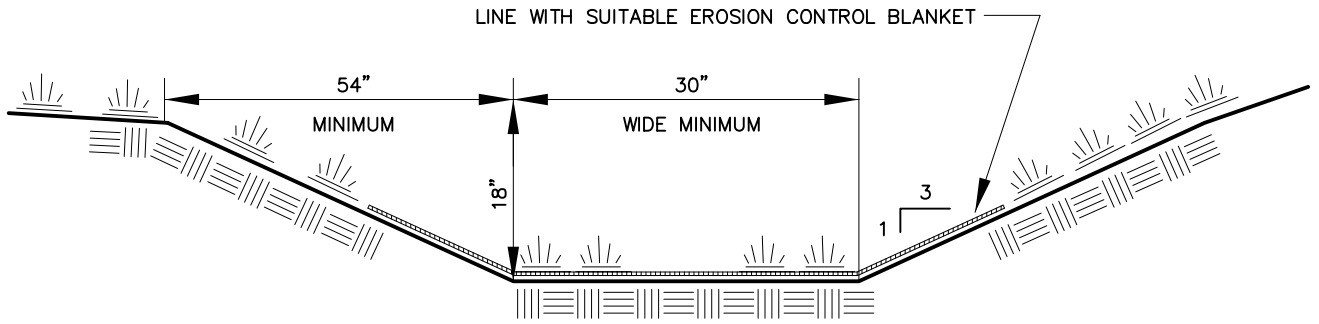
229 Church Street, Naugatuck, CT 06770 www.naugatuck-ct.gov

Scale: NTS

Drawing No.

SD-59

Date:10/2011



LARGE DRAINAGE SWALE (GRASS)

BOROUGH OF NAUGATUCK
ENGINEERING DEPARTMENT
STANDARD DETAIL

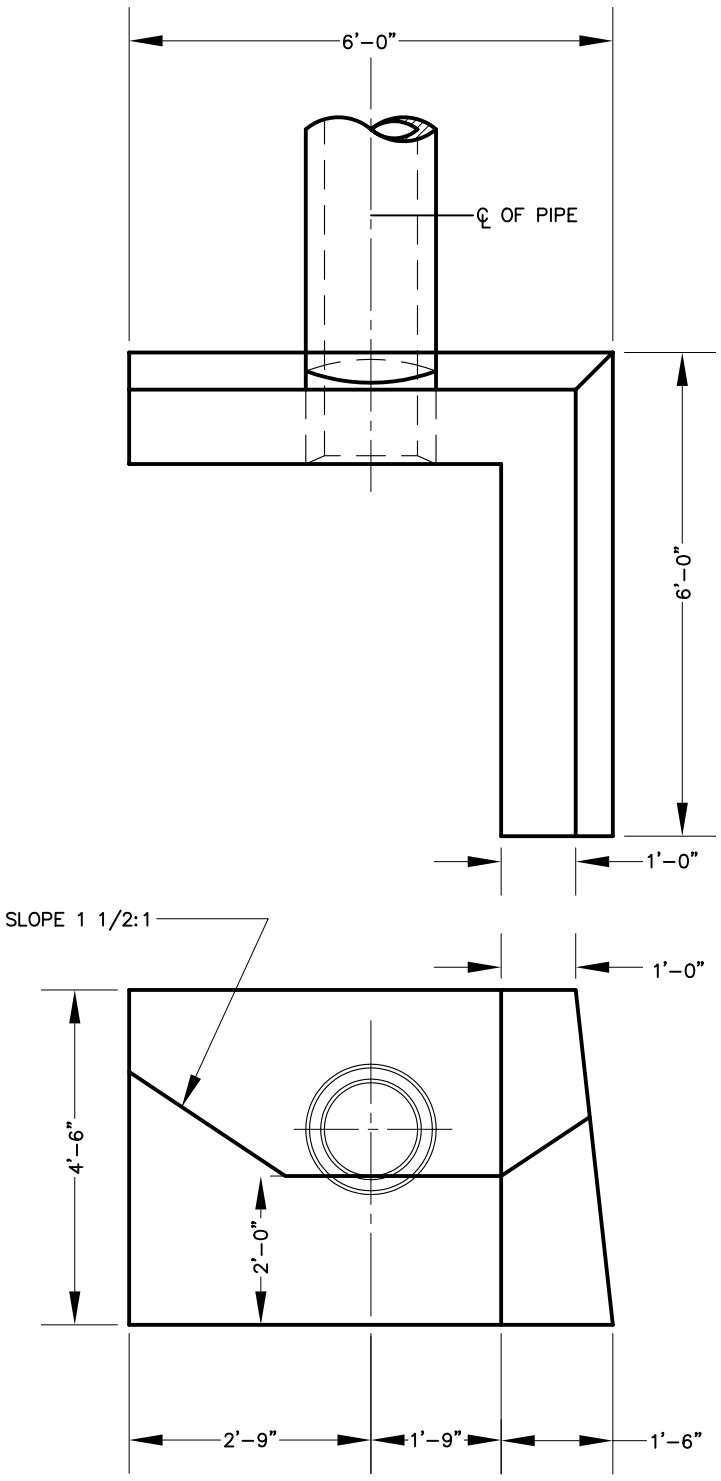
229 Church Street, Naugatuck, CT 06770 www.naugatuck-ct.gov

Scale: NTS

Drawing No.

SD-60

Date:10/2011



TYPE "L" ENDWALL

Scale: NTS

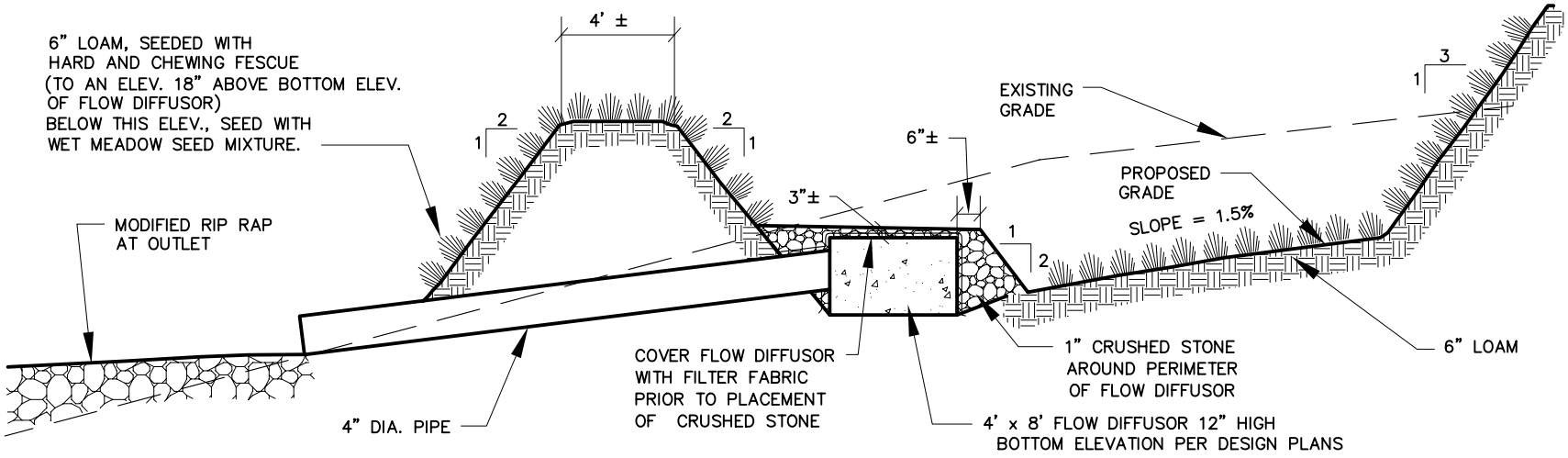
Drawing No.

SD-61

Date:10/2011

BOROUGH OF NAUGATUCK
ENGINEERING DEPARTMENT
STANDARD DETAIL

229 Church Street, Naugatuck, CT 06770 www.naugatuck-ct.gov



NOTE:
ELEVATIONS AND INVERTS PER DESIGN PLANS

BOROUGH OF NAUGATUCK
INCORPORATED 1844
CONNECTICUT

DRY RETENTION BASIN EXAMPLE

BOROUGH OF NAUGATUCK
ENGINEERING DEPARTMENT
STANDARD DETAIL

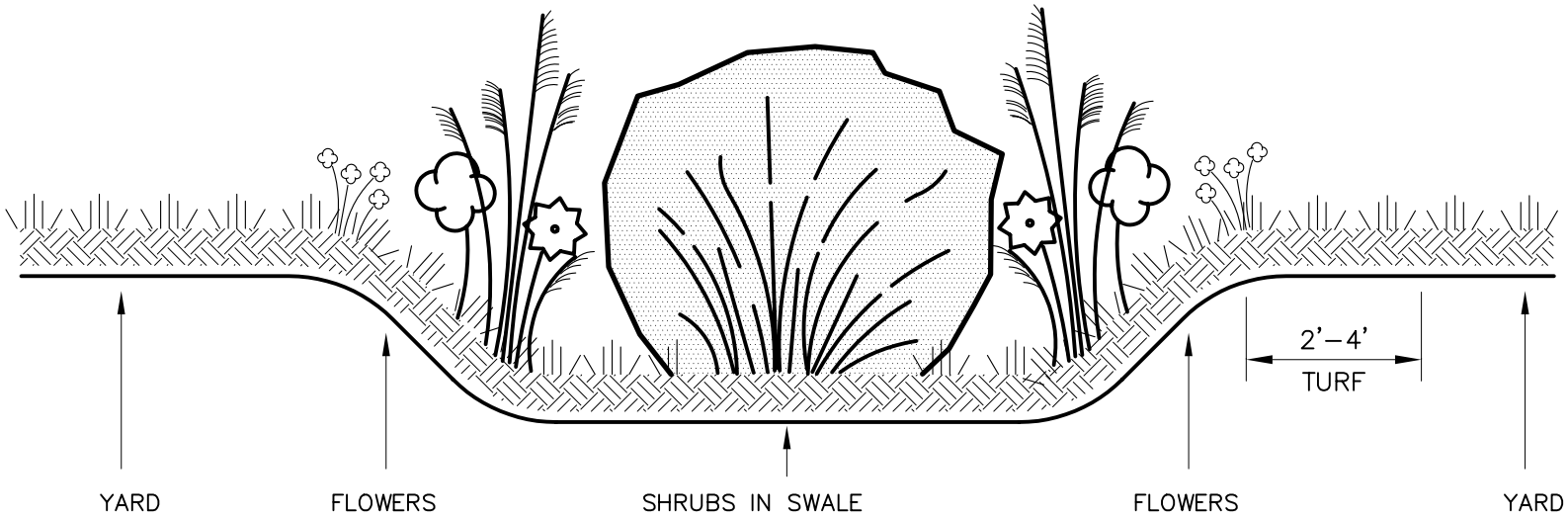
229 Church Street, Naugatuck, CT 06770 www.naugatuck-ct.gov

Scale: NTS

Drawing No.

SD-62

Date:10/2011



TYPICAL RESIDENTIAL RAIN GARDEN

BOROUGH OF NAUGATUCK
ENGINEERING DEPARTMENT
STANDARD DETAIL

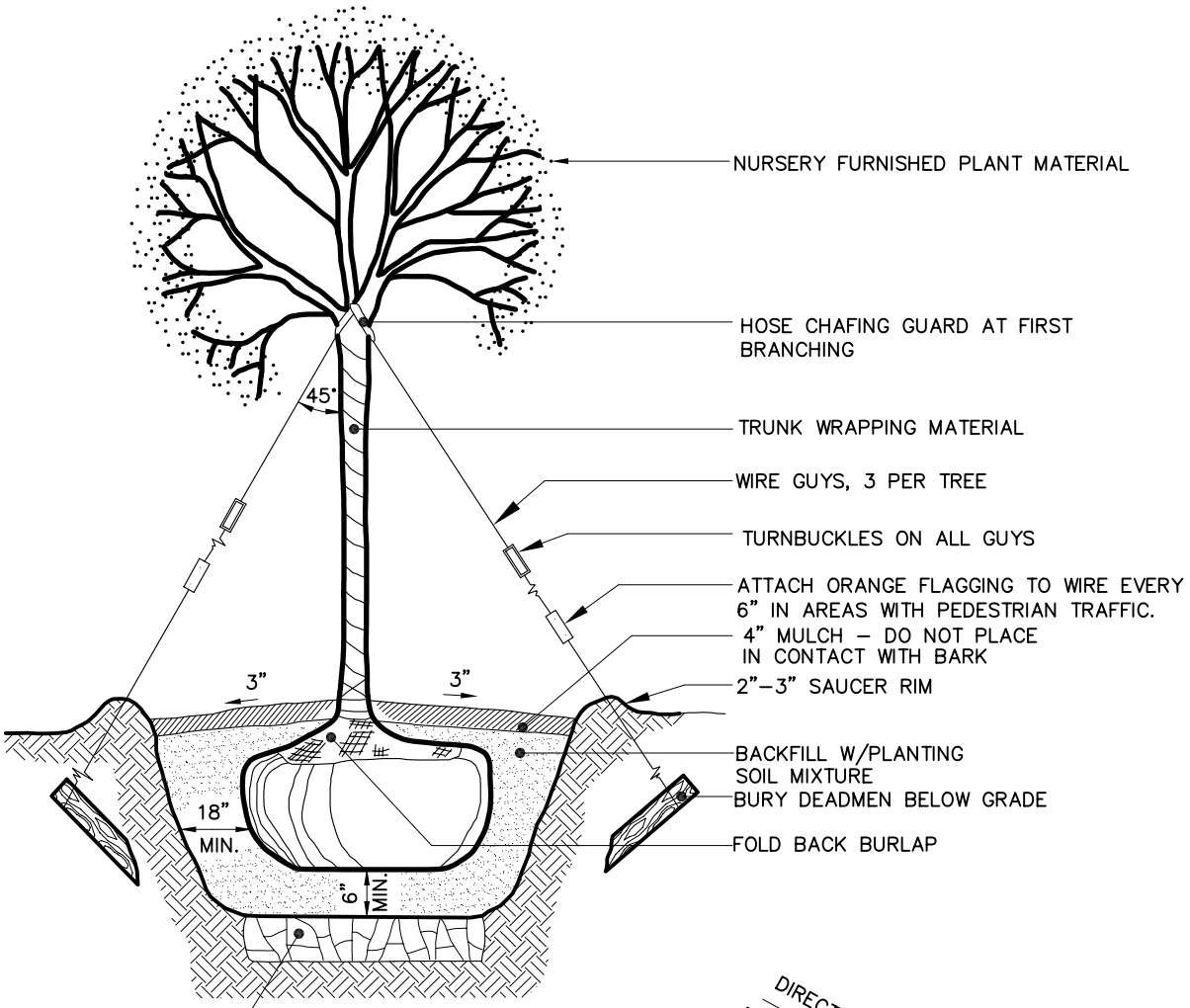
229 Church Street, Naugatuck, CT 06770 www.naugatuck–ct.gov

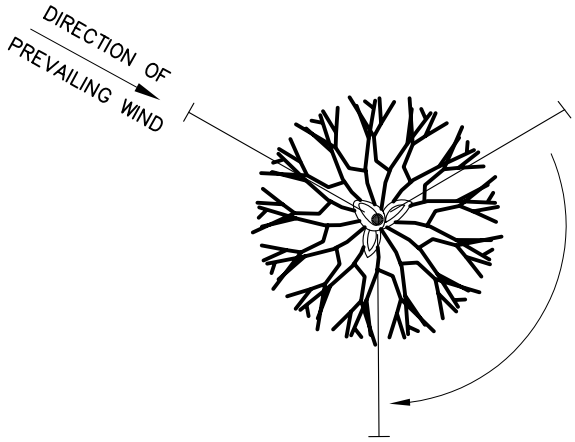
Scale: NTS

Drawing No.

SD–9

Date:10/2011



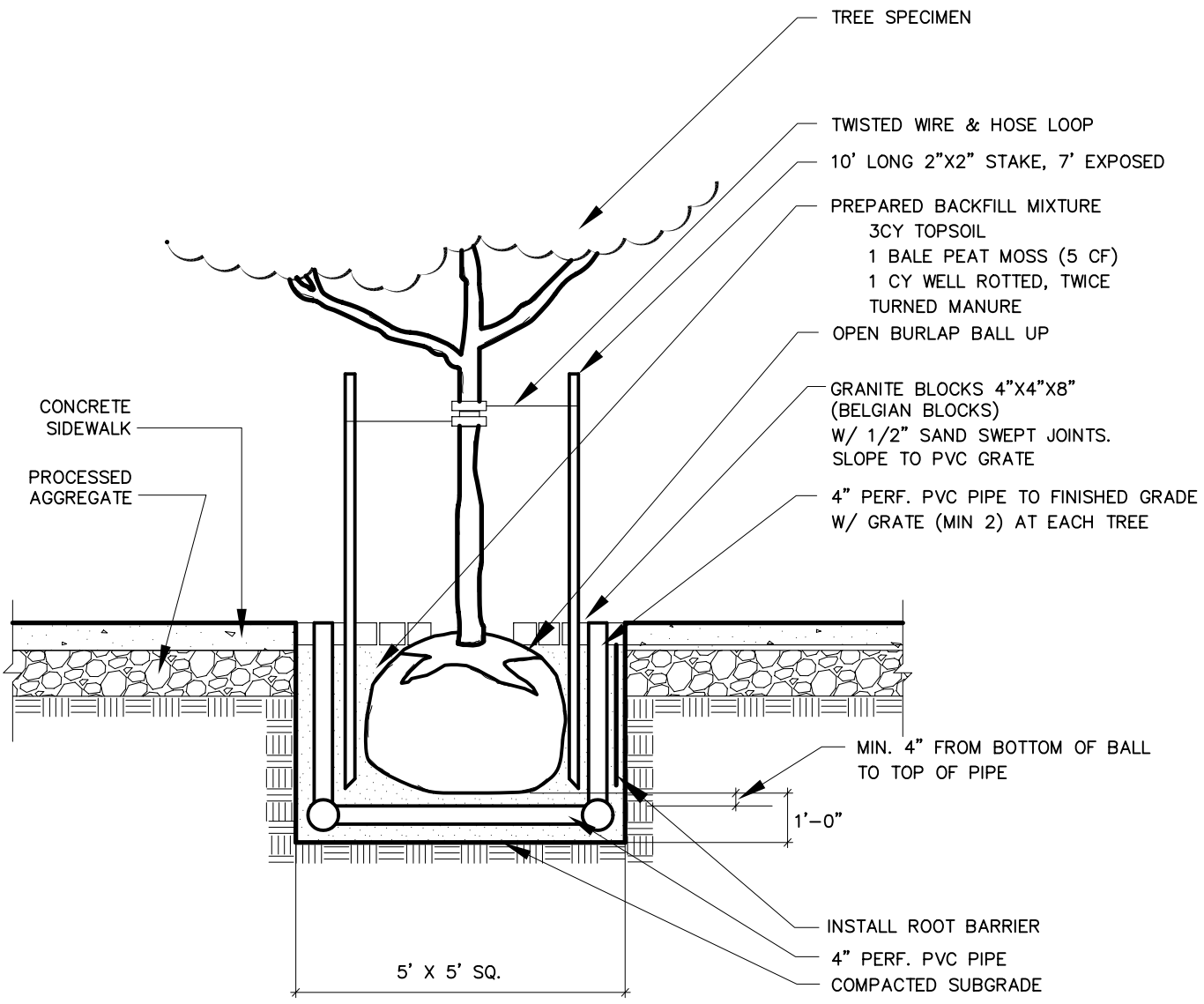


NOTE:
ALL TREES PLANTED WITHIN PARKING LOT ISLANDS SHALL BE INSTALLED WITH A ROOT BARRIER. (SEE TREE WELL DETAIL.)

TREE PLANTING

PLAN VIEW

BOROUGH OF NAUGATUCK INCORPORATED 1844 CONNECTICUT	TREE PLANTING	Scale: NTS
	BOROUGH OF NAUGATUCK ENGINEERING DEPARTMENT STANDARD DETAIL	Drawing No. SD–29
	229 Church Street, Naugatuck, CT 06770 www.naugatuck–ct.gov	Date:10/2011



TREE WELL

BOROUGH OF NAUGATUCK
ENGINEERING DEPARTMENT
STANDARD DETAIL

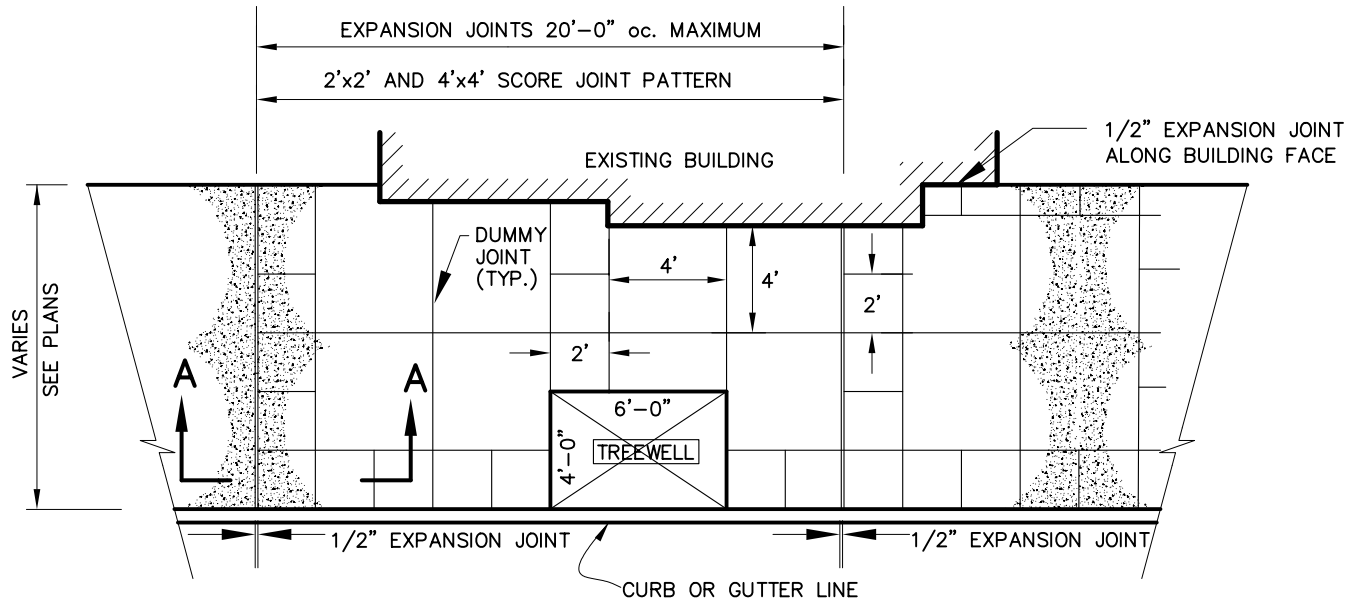
229 Church Street, Naugatuck, CT 06770 www.naugatuck-ct.gov

Scale: NTS

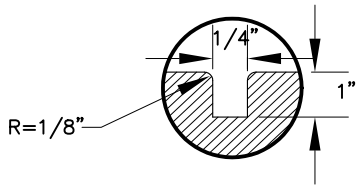
Drawing No.

SD-43

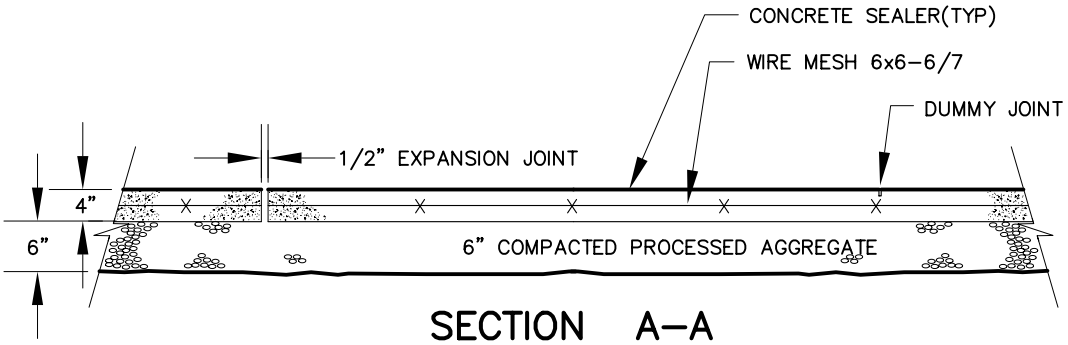
Date:10/2011



PLAN VIEW

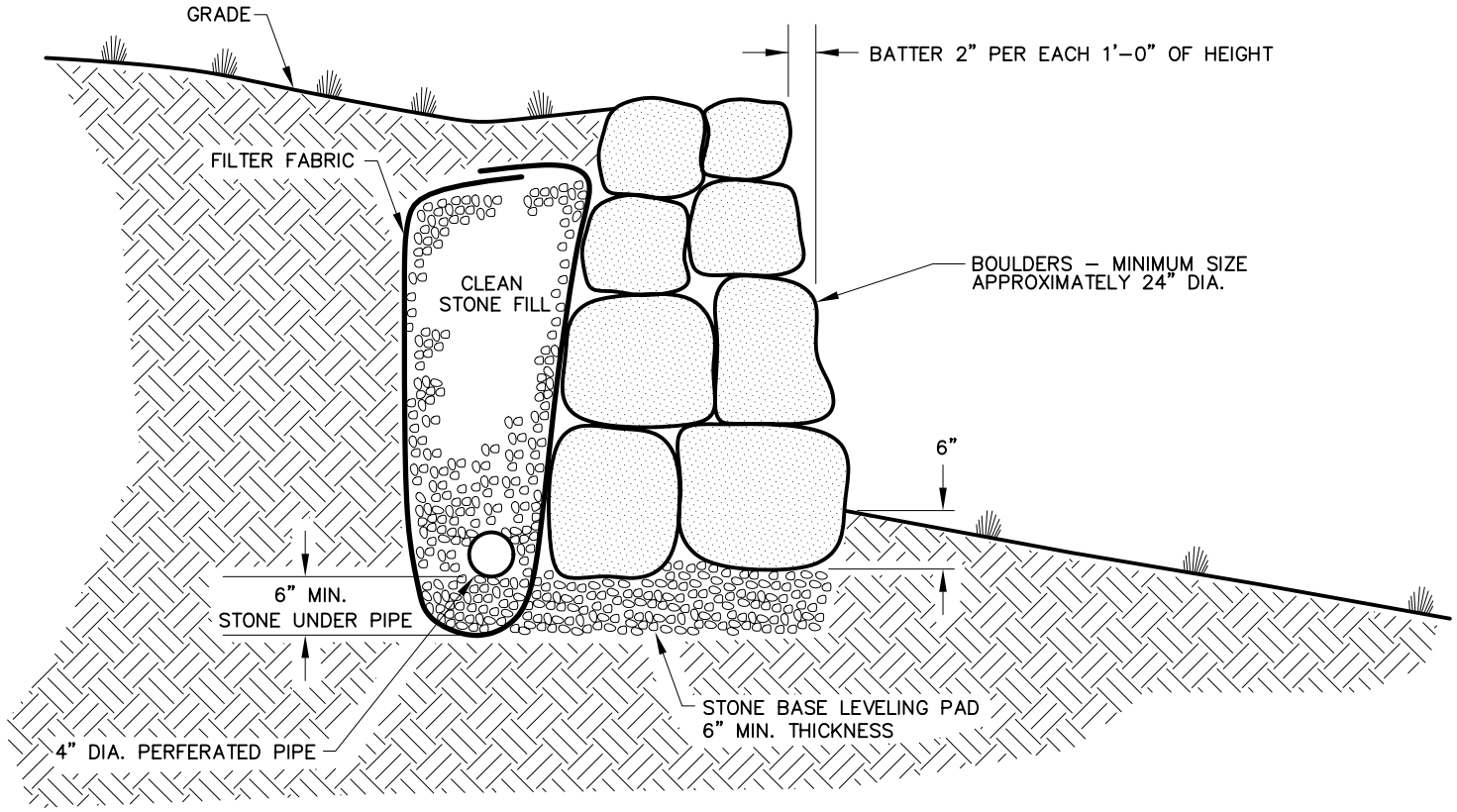


DUMMY JOINT



SECTION A–A

BOROUGH OF NAUGATUCK INCORPORATED 1844 CONNECTICUT	CONCRETE SIDEWALK WITH TREE WELL	Scale: NTS
	BOROUGH OF NAUGATUCK ENGINEERING DEPARTMENT STANDARD DETAIL	Drawing No. SD–44
	229 Church Street, Naugatuck, CT 06770 www.naugatuck–ct.gov	Date:10/2011



NOTE:
WALLS OVER 3' IN HEIGHT REQUIRE DESIGN AND CERTIFICATION BY A PROFESSIONAL ENGINEER.

DRY STONE RETAINING WALL

BOROUGH OF NAUGATUCK
ENGINEERING DEPARTMENT
STANDARD DETAIL

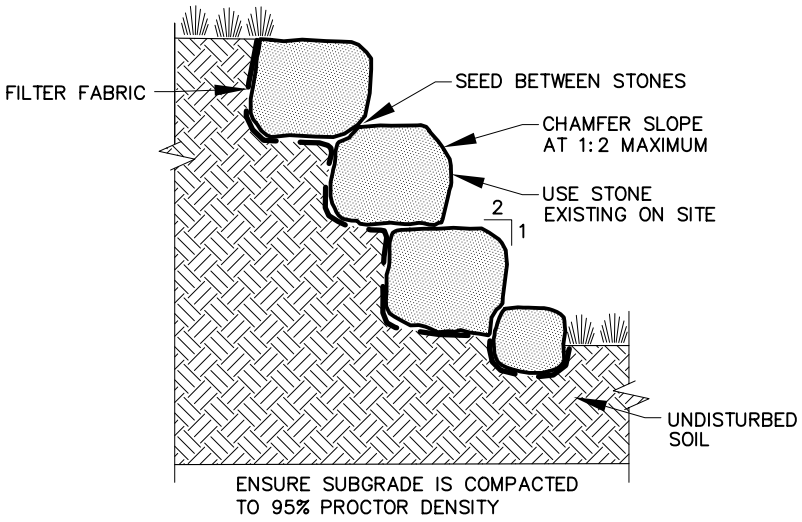
229 Church Street, Naugatuck, CT 06770 www.naugatuck–ct.gov

Scale: NTS

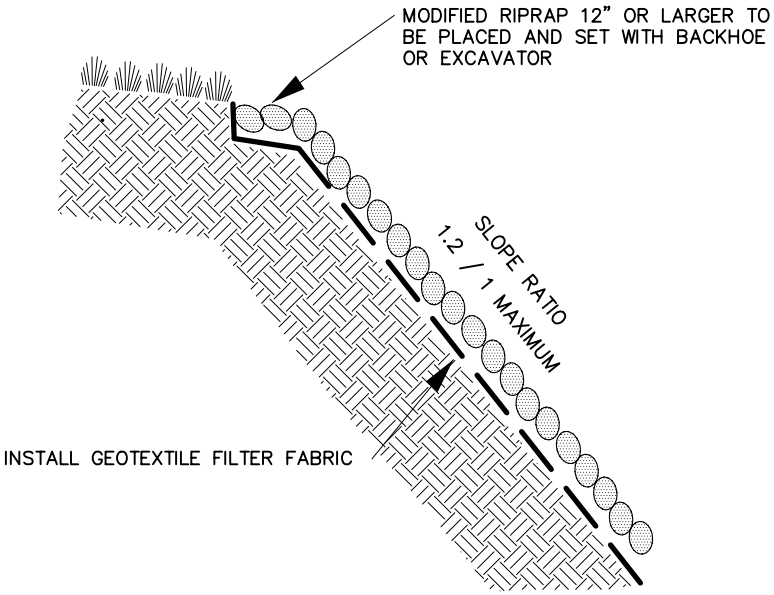
Drawing No.

SD–64

Date:10/2011



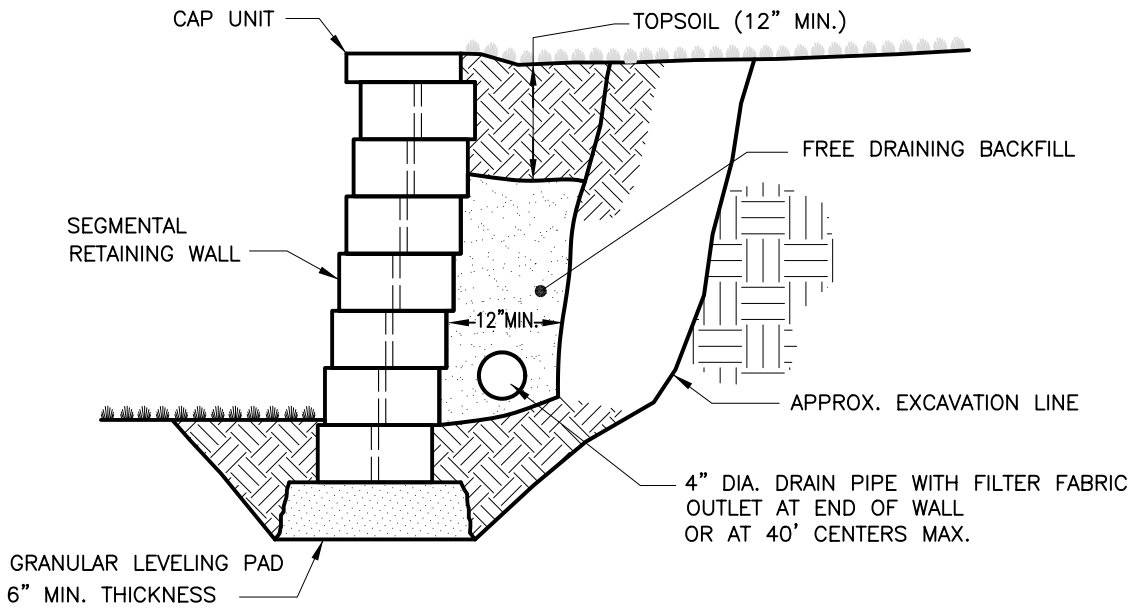
STONE SLOPE



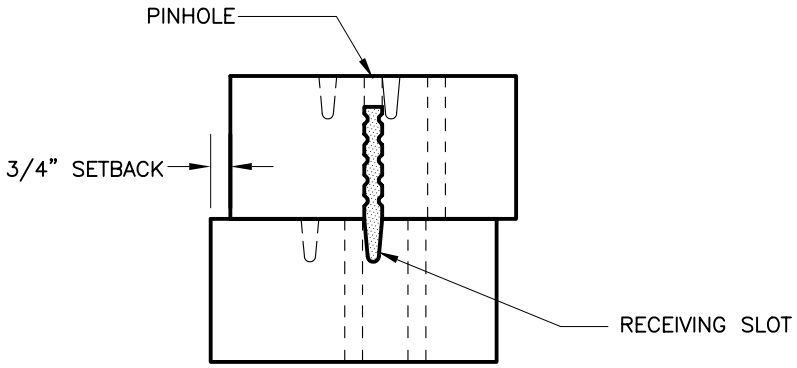
STONE SLOPE PAVING

NOTE:
STONE SLOPES OVER 2:1 GRADE REQUIRE DESIGN AND CERTIFICATION BY A PROFESSIONAL ENGINEER.

BOROUGH OF NAUGATUCK INCORPORATED 1844 CONNECTICUT	STONE SLOPE AND STONE SLOPE PAVING	Scale: NTS
	BOROUGH OF NAUGATUCK ENGINEERING DEPARTMENT STANDARD DETAIL	Drawing No. SD–65
	229 Church Street, Naugatuck, CT 06770 www.naugatuck–ct.gov	Date:10/2011



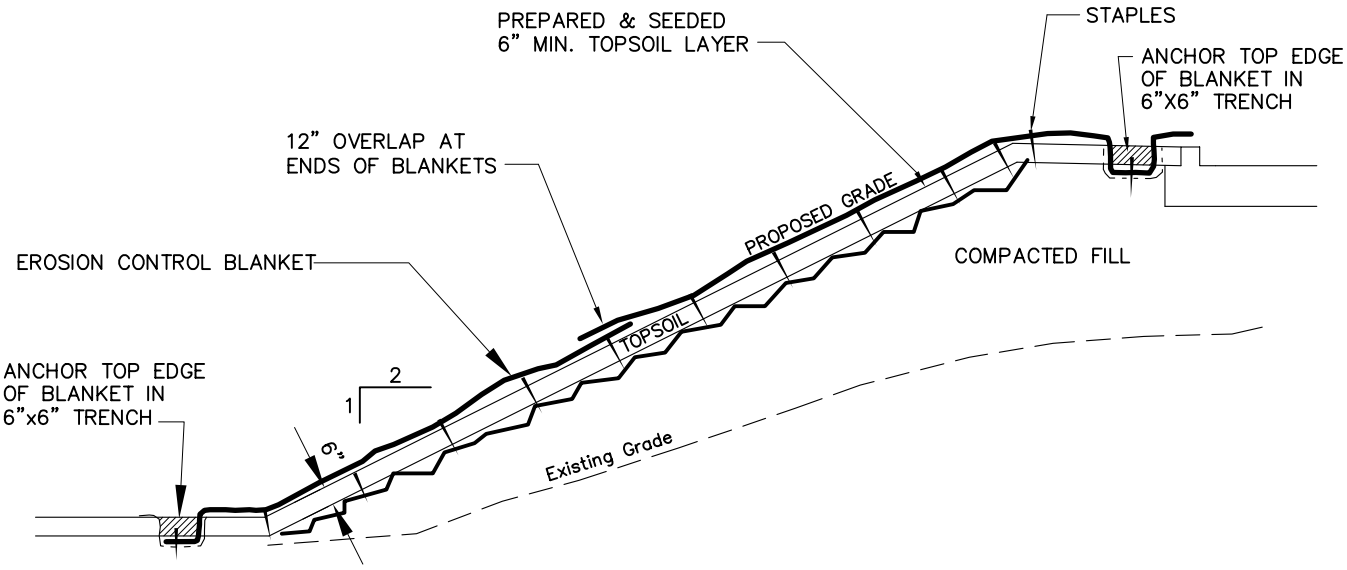
UNREINFORCED SEGMENTAL RETAINING WALL SECTION

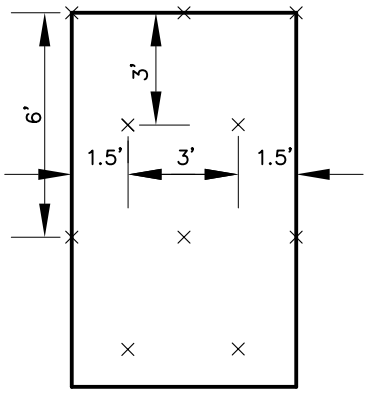


PINNING DETAIL

WALLS OVER 3' IN HEIGHT REQUIRE DESIGN AND CERTIFICATION BY PROFESSIONAL ENGINEER.

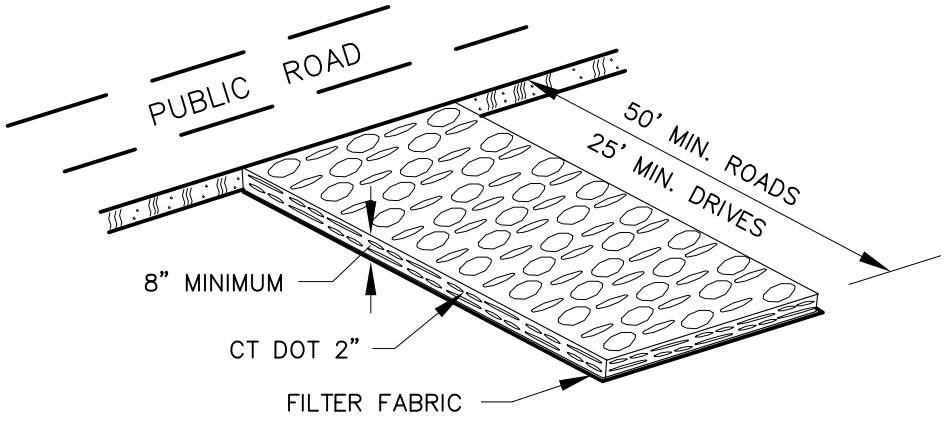
BOROUGH OF NAUGATUCK INCORPORATED 1844 CONNECTICUT	UNREINFORCED SEGMENTAL RETAINING WALL	Scale: NTS
	BOROUGH OF NAUGATUCK ENGINEERING DEPARTMENT STANDARD DETAIL	Drawing No. SD–66
	229 Church Street, Naugatuck, CT 06770 www.naugatuck–ct.gov	Date:10/2011





STAPLE PATTERN "C"

BOROUGH OF NAUGATUCK INCORPORATED 1844 CONNECTICUT	EROSION CONTROL BLANKET ON FILL SLOPE	Scale: NTS
		Drawing No.
	BOROUGH OF NAUGATUCK ENGINEERING DEPARTMENT STANDARD DETAIL	SD–21
	229 Church Street, Naugatuck, CT 06770 www.naugatuck–ct.gov	Date:10/2011



SEE STORMWATER MANUAL FOR SIZING FORMULA.

ANTI-TRACKING PAD

Scale: NTS

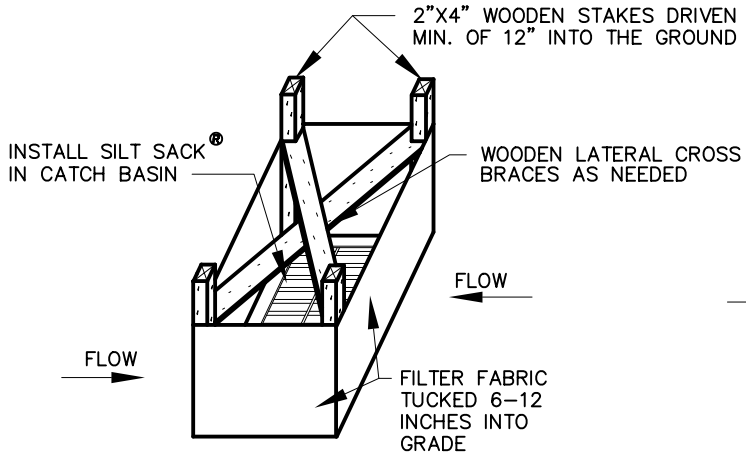
Drawing No.

SD-23

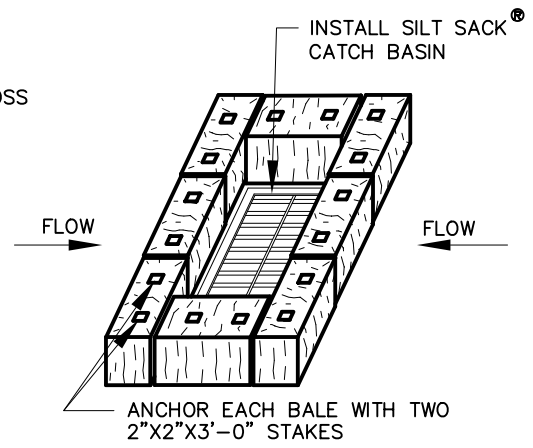
BOROUGH OF NAUGATUCK
ENGINEERING DEPARTMENT
STANDARD DETAIL

229 Church Street, Naugatuck, CT 06770 www.naugatuck-ct.gov

Date:10/2011



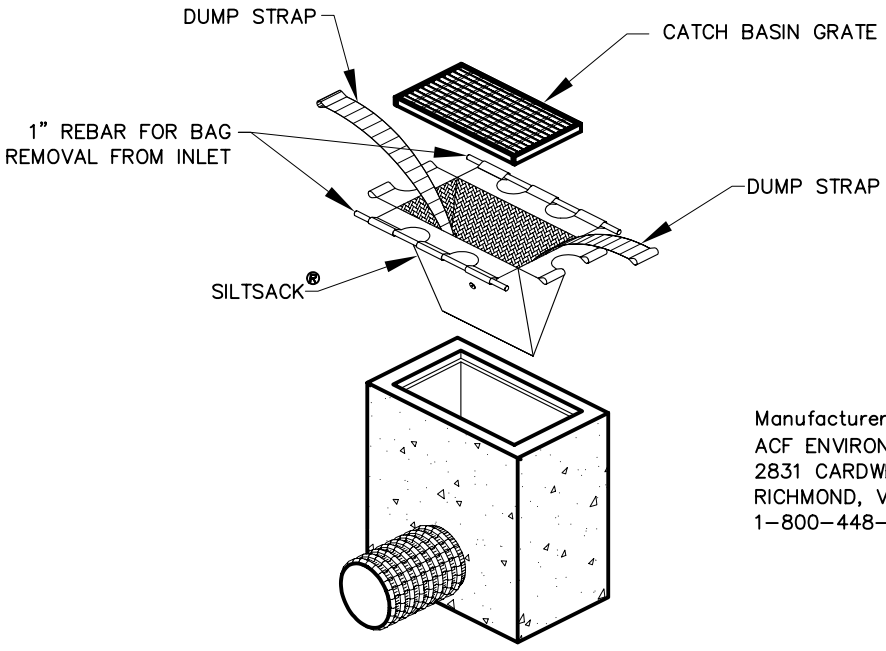
SILT FENCE INSTALLATION AT CATCH BASINS AT LOW POINTS



HAY BALE FILTER INSTALLATION AT CATCH BASIN AT LOW POINTS

STORMWATER INLETS WHICH DO NOT DISCHARGE TO SEDIMENT TRAPS OR BASINS, MUST BE PROTECTED UNTIL THE TRIBUTARY AREAS ARE STABILIZED.

SEDIMENT MUST BE REMOVED FROM SILT SACK INLET PROTECTION AFTER EACH STORM EVENT.



Manufacturer:
ACF ENVIRONMENTAL
2831 CARDWELL ROAD
RICHMOND, VA 23234
1–800–448–3636

SILTSACK SEDIMENT CONTROL DEVICE

BOROUGH OF NAUGATUCK INCORPORATED 1844 CONNECTICUT

CATCH BASIN EROSION CONTROL

Scale: NTS

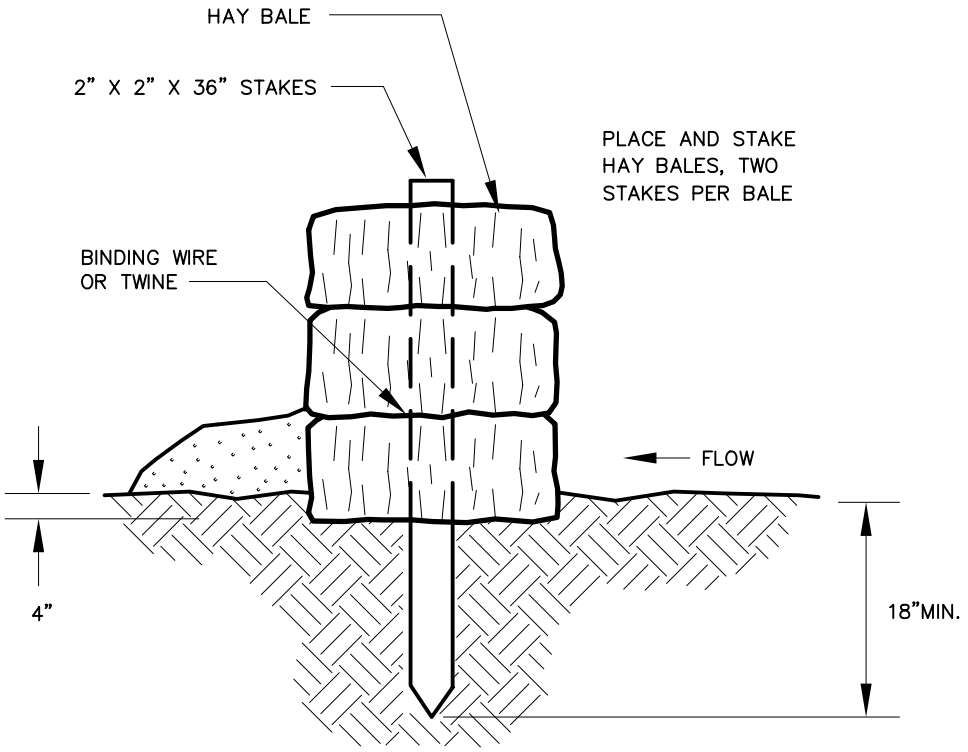
Drawing No.

SD–26

BOROUGH OF NAUGATUCK ENGINEERING DEPARTMENT STANDARD DETAIL

229 Church Street, Naugatuck, CT 06770 www.naugatuck–ct.gov

Date:10/2011

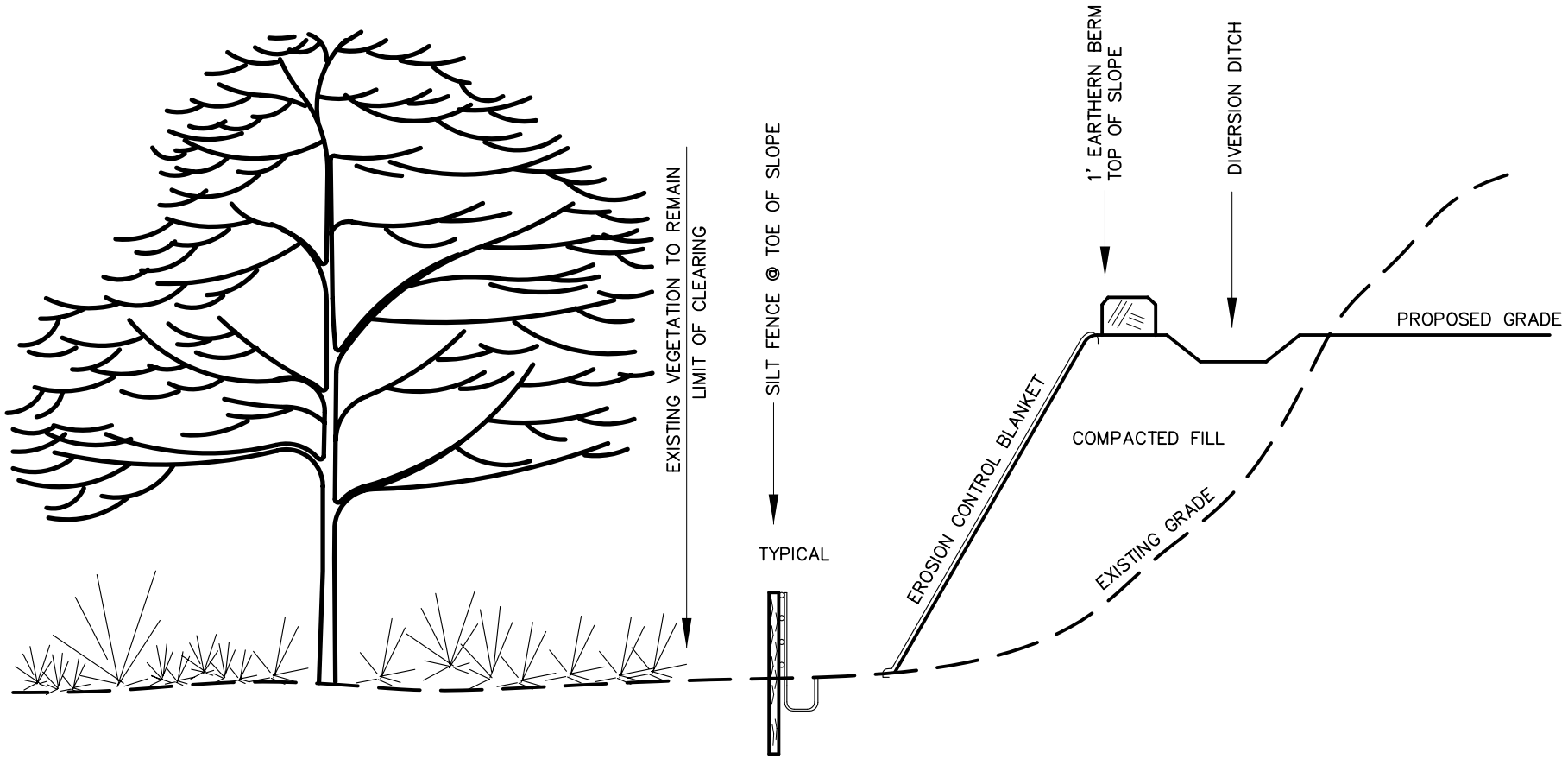


HAY BALE BARRIERS SHOULD NOT BE USED FOR MORE THAN 3 MONTHS.

SEDIMENT MUST BE REMOVED WHEN ACCUMULATIONS REACH 1/3 THE ABOVE GROUND HEIGHT OF THE BARRIER.

ANY SECTION OF HAY BALE BARRIER WHICH HAS BEEN UNDERMINED OR TOPPED MUST BE IMMEDIATELY REPLACED WITH A ROCK FILTER OUTLET.

BOROUGH OF NAUGATUCK INCORPORATED 1844 CONNECTICUT	HAY BALE BARRIER	Scale: NTS
	BOROUGH OF NAUGATUCK ENGINEERING DEPARTMENT STANDARD DETAIL	Drawing No. SD-30
	229 Church Street, Naugatuck, CT 06770 www.naugatuck-ct.gov	Date:10/2011



TYPICAL EROSION CONTROL ON SLOPES

BOROUGH OF NAUGATUCK
ENGINEERING DEPARTMENT
STANDARD DETAIL

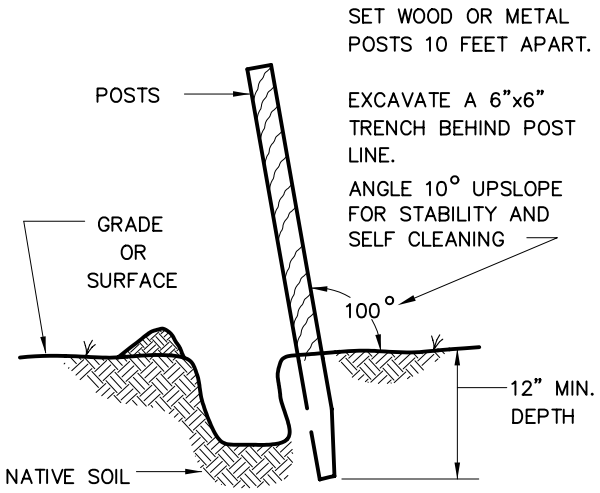
229 Church Street, Naugatuck, CT 06770 www.naugatuck-ct.gov

Scale: NTS

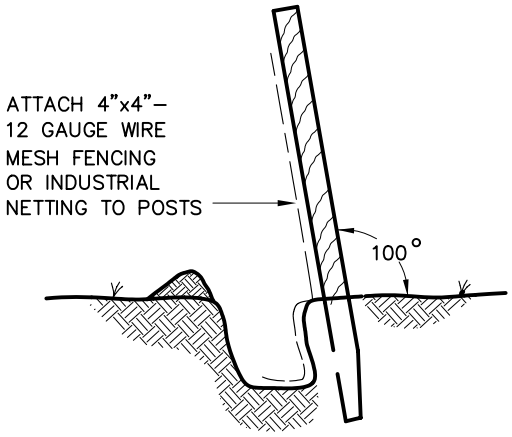
Drawing No.

SD-35

Date:10/2011

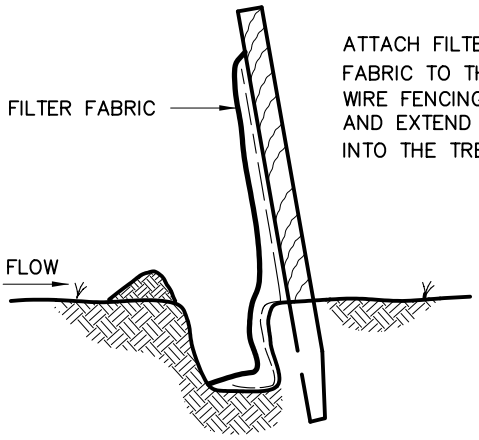


1

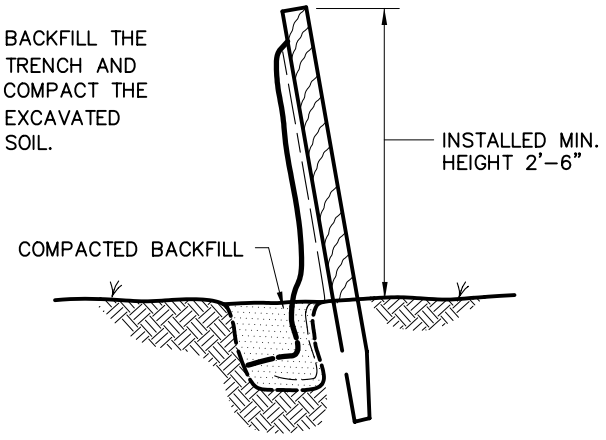


2

3



4



NOTE:
FENCE TO BE INSTALLED PRIOR TO CONSTRUCTION.
PREASSEMBLED UNITS ALSO MAY BE USED, INSTALLED
AS INDICATED.

BOROUGH OF NAUGATUCK
INCORPORATED 1844
CONNECTICUT

FILTER FABRIC SEDIMENT CONTROL FENCE PLACEMENT AND CONSTRUCTION

BOROUGH OF NAUGATUCK
ENGINEERING DEPARTMENT
STANDARD DETAIL

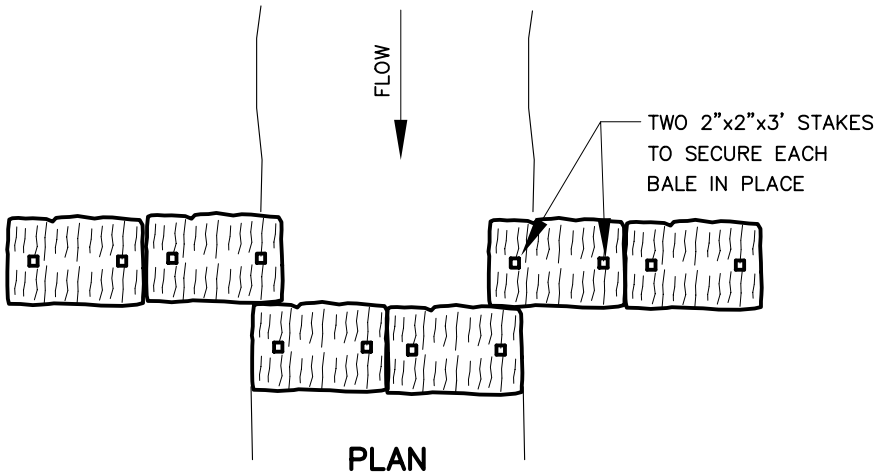
229 Church Street, Naugatuck, CT 06770 www.naugatuck–ct.gov

Scale: NTS

Drawing No.

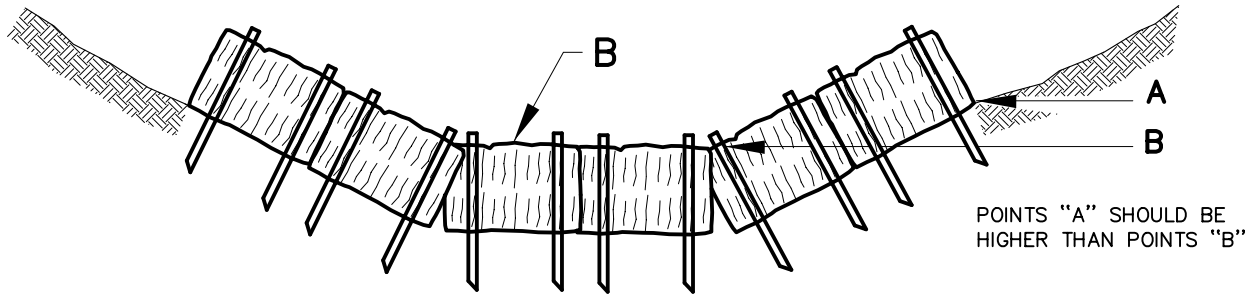
SD–41

Date:10/2011



PLAN

TO BE INSTALLED AT DRAINAGE DITCH OR BROOK CROSSINGS



ELEVATION

BOROUGH OF NAUGATUCK
INCORPORATED 1844
CONNECTICUT

HAY BALE SEDIMENT CHECK DAM

BOROUGH OF NAUGATUCK
ENGINEERING DEPARTMENT
STANDARD DETAIL

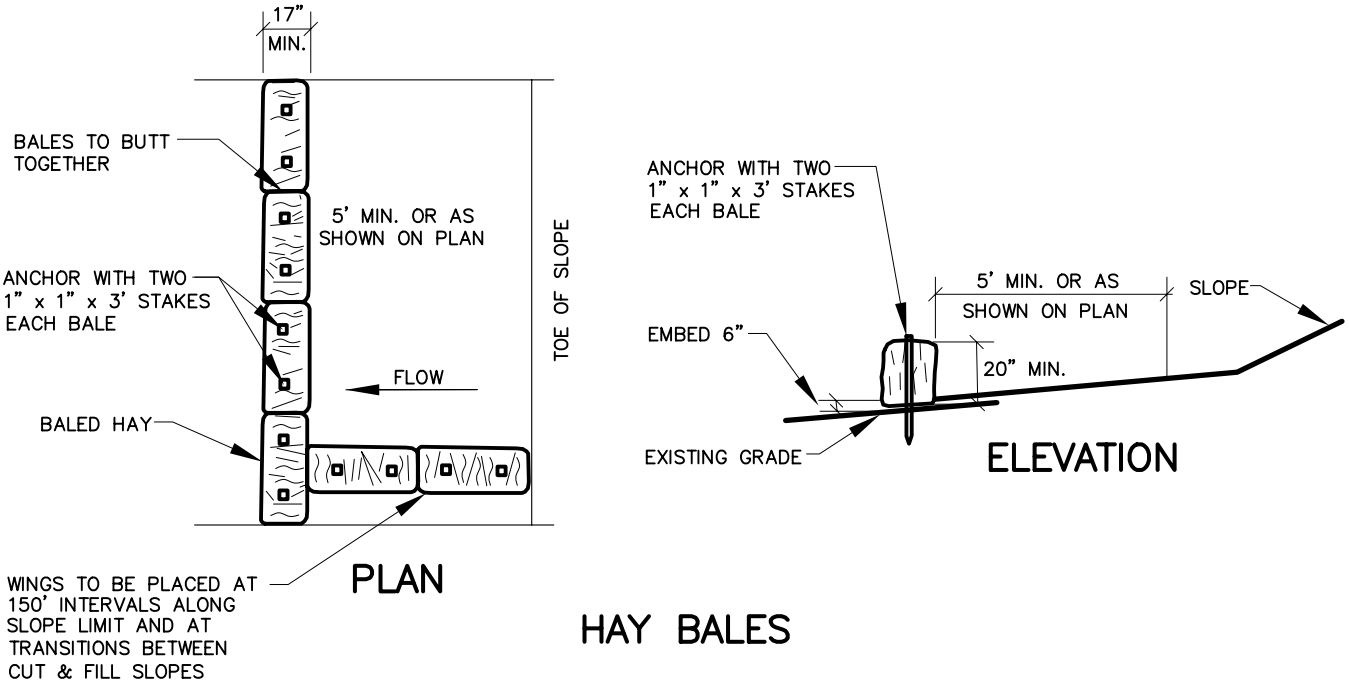
229 Church Street, Naugatuck, CT 06770 www.naugatuck-ct.gov

Scale: NTS

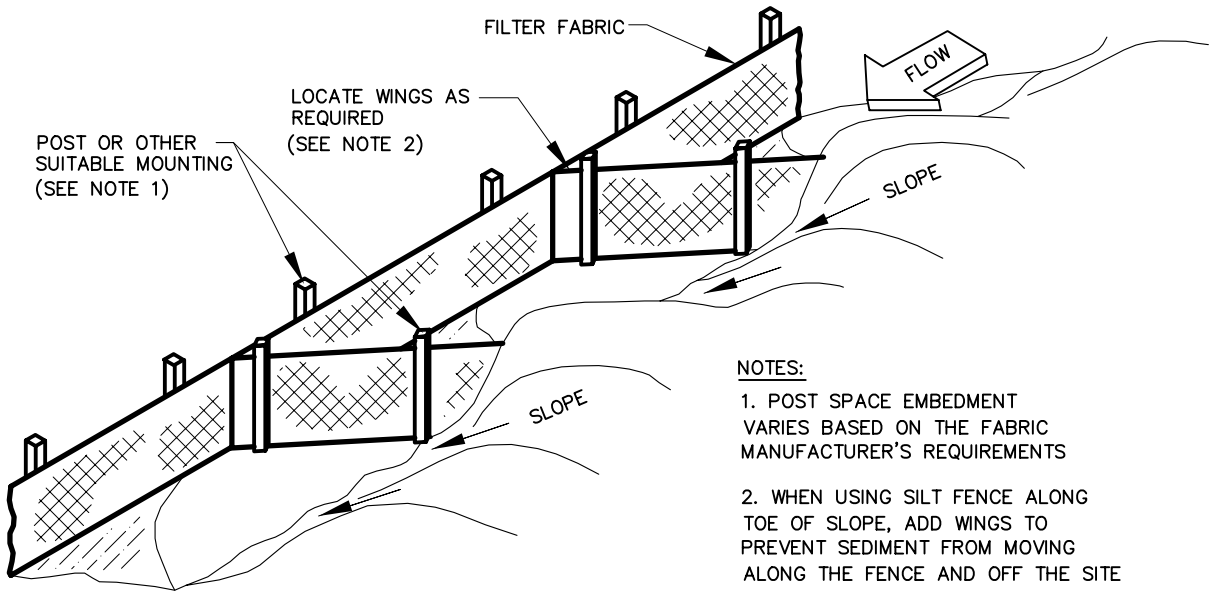
Drawing No.

SD-42

Date:10/2011



HAY BALES



NOTES:

1. POST SPACE EMBEDMENT VARIES BASED ON THE FABRIC MANUFACTURER'S REQUIREMENTS

2. WHEN USING SILT FENCE ALONG TOE OF SLOPE, ADD WINGS TO PREVENT SEDIMENT FROM MOVING ALONG THE FENCE AND OFF THE SITE

SIDE SECTION

BOROUGH OF NAUGATUCK INCORPORATED 1844 CONNECTICUT

SEDIMENT CONTROL SYSTEMS

Scale: NTS

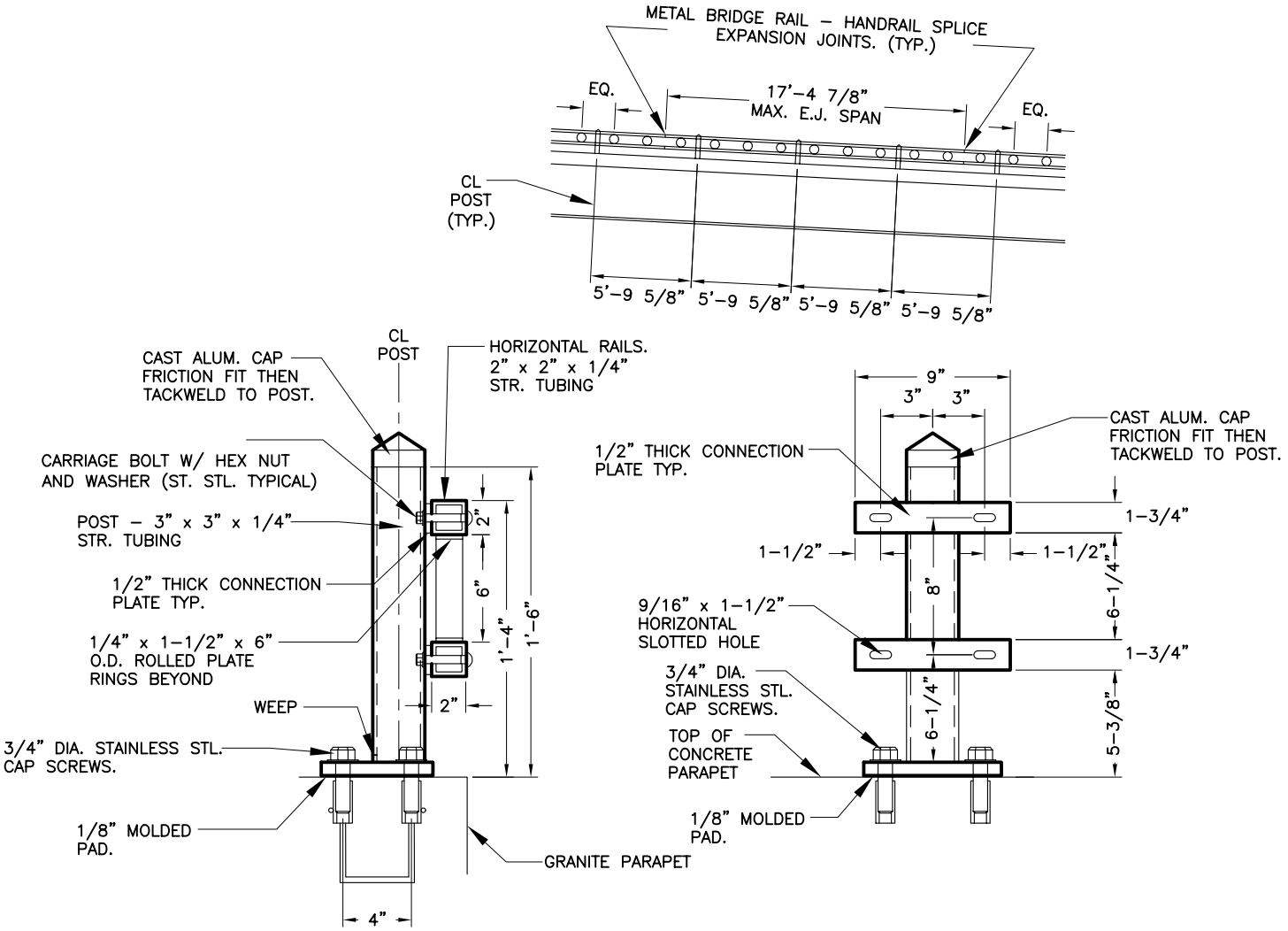
Drawing No.

SD–68

BOROUGH OF NAUGATUCK
ENGINEERING DEPARTMENT
STANDARD DETAIL

229 Church Street, Naugatuck, CT 06770 www.naugatuck–ct.gov

Date:10/2011



BOROUGH OF NAUGATUCK
INCORPORATED 1844
CONNECTICUT

BRIDGE RAIL

BOROUGH OF NAUGATUCK
ENGINEERING DEPARTMENT
STANDARD DETAIL

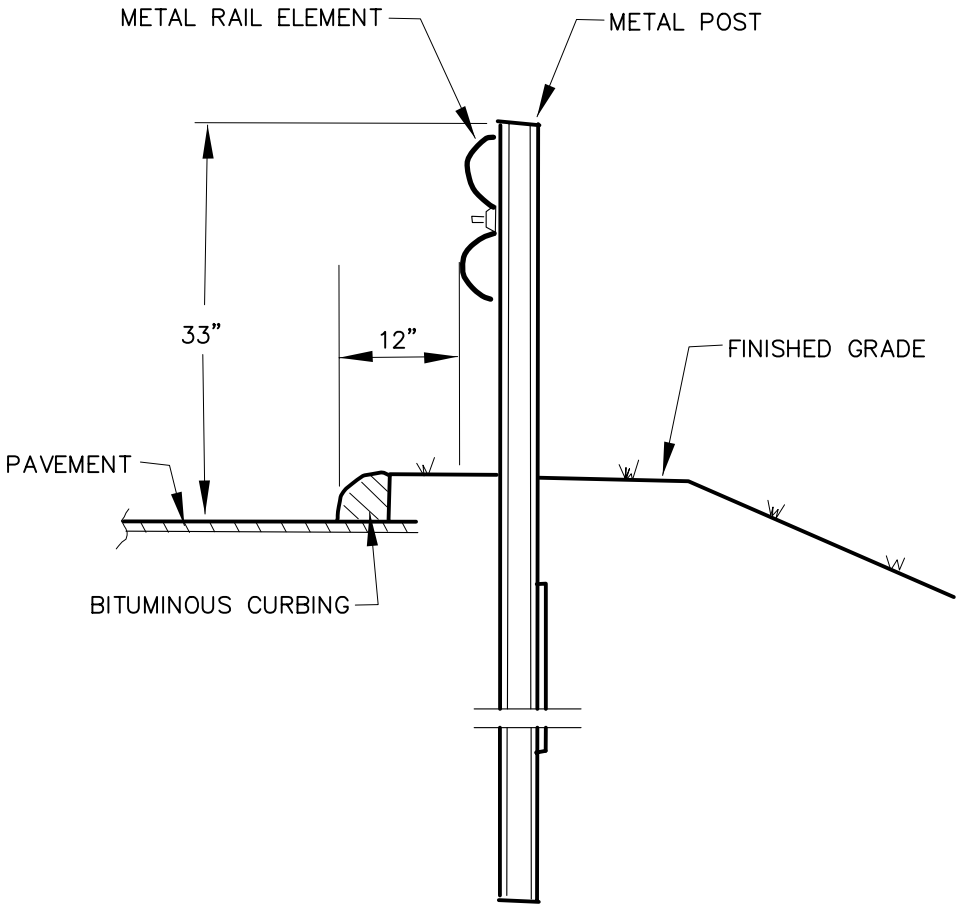
229 Church Street, Naugatuck, CT 06770 www.naugatuck–ct.gov

Scale: NTS

Drawing No.

SD–18

Date:10/2011



METAL BEAM RAIL

BOROUGH OF NAUGATUCK
ENGINEERING DEPARTMENT
STANDARD DETAIL

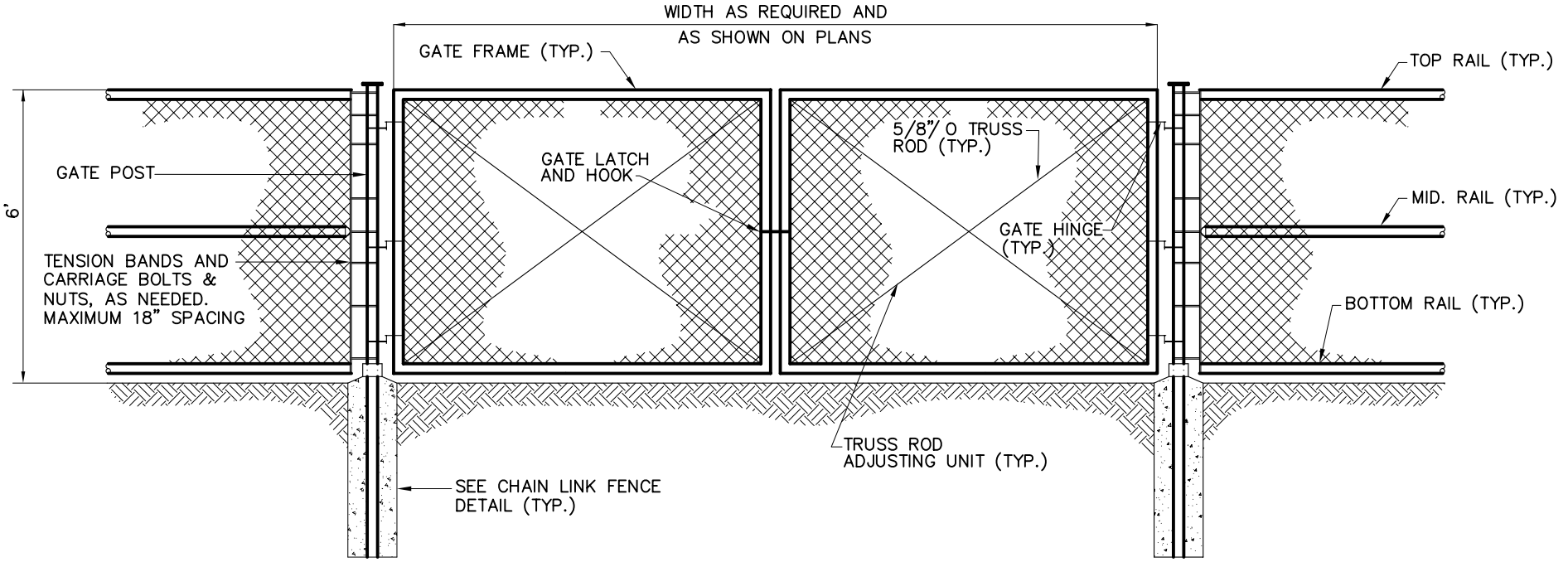
229 Church Street, Naugatuck, CT 06770 www.naugatuck-ct.gov

Scale: NTS

Drawing No.

SD-20

Date:10/2011



CHAIN LINK DOUBLE SWING GATE

BOROUGH OF NAUGATUCK
ENGINEERING DEPARTMENT
STANDARD DETAIL

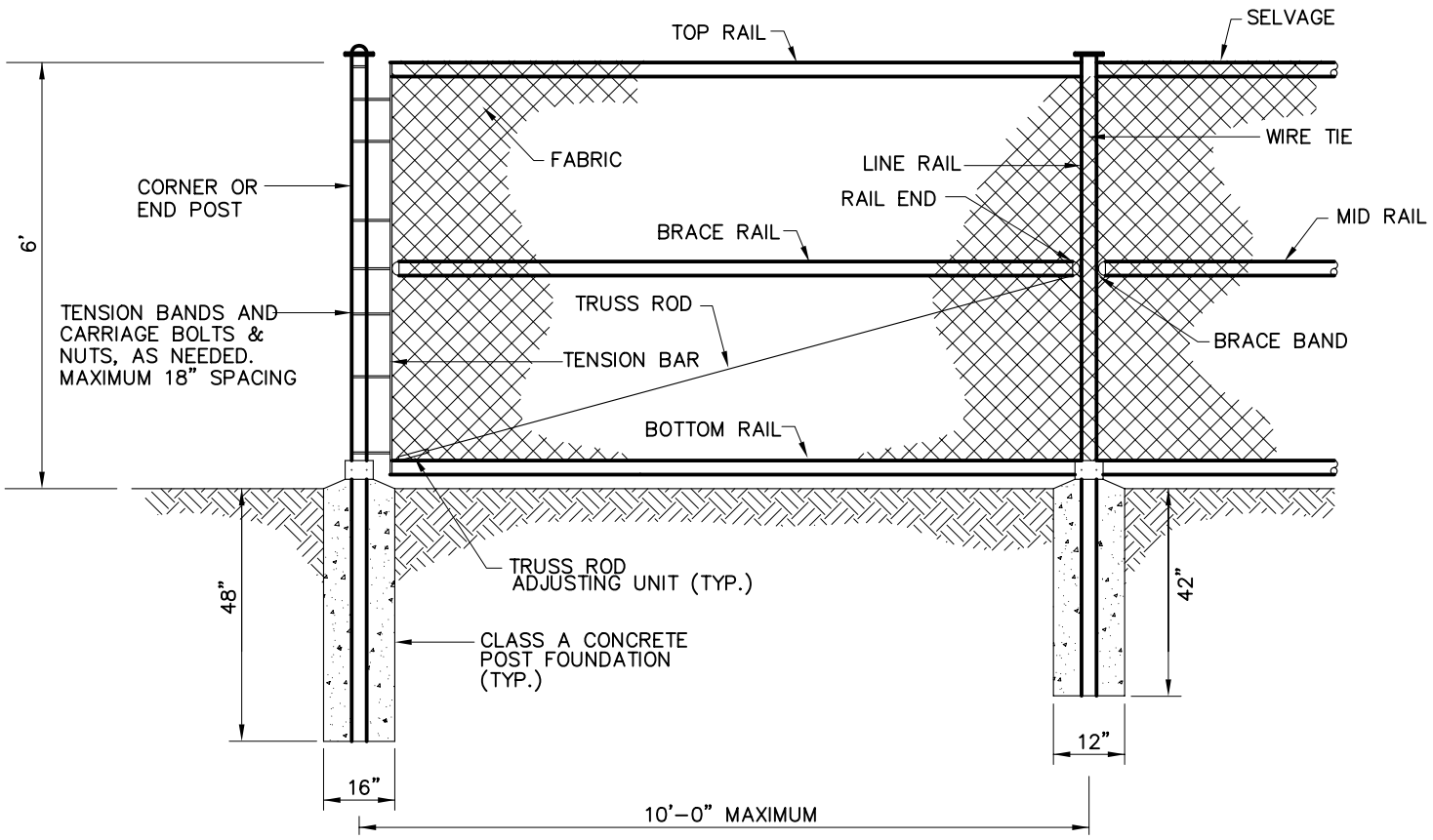
229 Church Street, Naugatuck, CT 06770 www.naugatuck-ct.gov

Scale: NTS

Drawing No.

SD-27

Date:10/2011



BOROUGH OF NAUGATUCK
INCORPORATED 1844
CONNECTICUT

CHAIN LINK FENCE

BOROUGH OF NAUGATUCK
ENGINEERING DEPARTMENT
STANDARD DETAIL

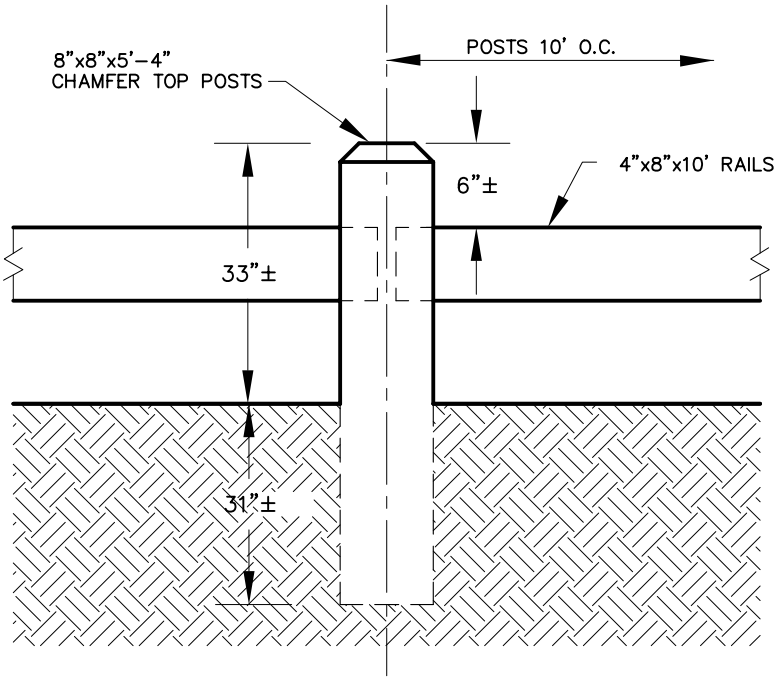
229 Church Street, Naugatuck, CT 06770 www.naugatuck-ct.gov

Scale: NTS

Drawing No.

SD-38

Date:10/2011



NOTE:
TIMBER TO BE .4 CCA
SOUTHERN YELLOW PINE

TIMBER GUIDERAIL

BOROUGH OF NAUGATUCK
ENGINEERING DEPARTMENT
STANDARD DETAIL

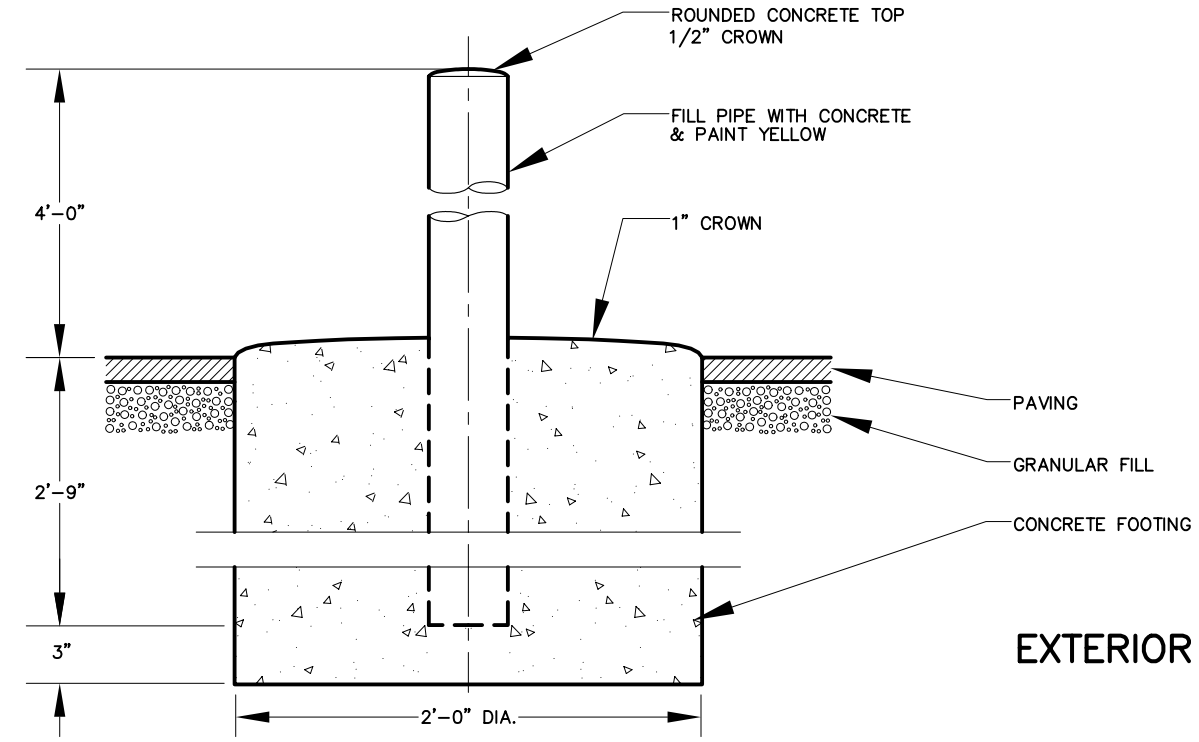
229 Church Street, Naugatuck, CT 06770 www.naugatuck-ct.gov

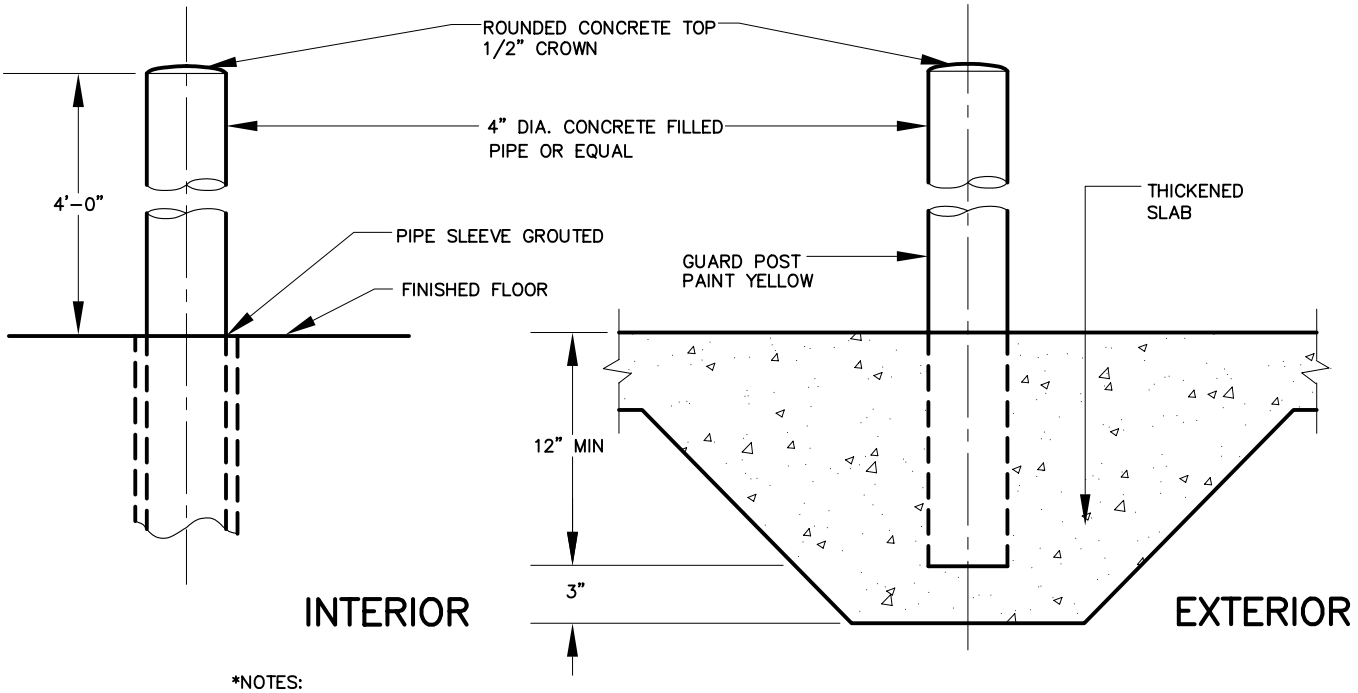
Scale: NTS

Drawing No.

SD-63

Date:10/2011





*NOTES:

1) DIAMETER AND MATERIAL FOR PIPES USED AS BOLLARDS SHOULD BE CHOSEN BASED ON VEHICULAR TRAFFIC IN THE BOLLARD AREA, AND THE LOADS LIKELY TO BE APPLIED.

BOROUGH OF NAUGATUCK
INCORPORATED 1844
CONNECTICUT

BOLLARD

BOROUGH OF NAUGATUCK
ENGINEERING DEPARTMENT
STANDARD DETAIL

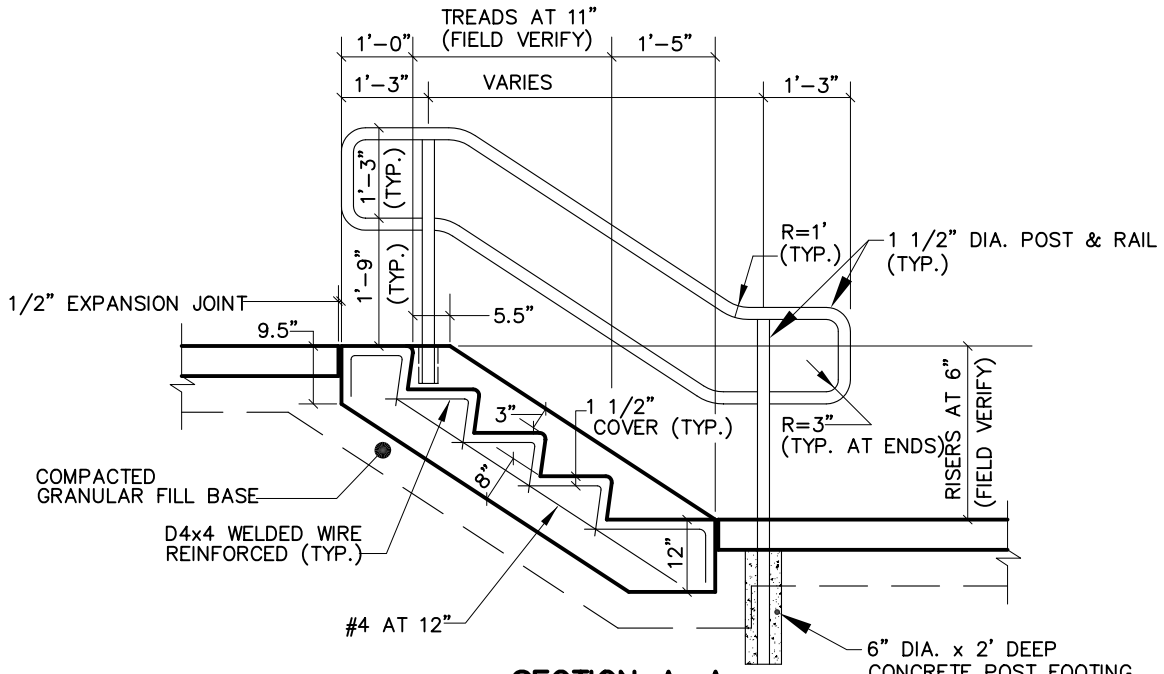
229 Church Street, Naugatuck, CT 06770 www.naugatuck-ct.gov

Scale: NTS

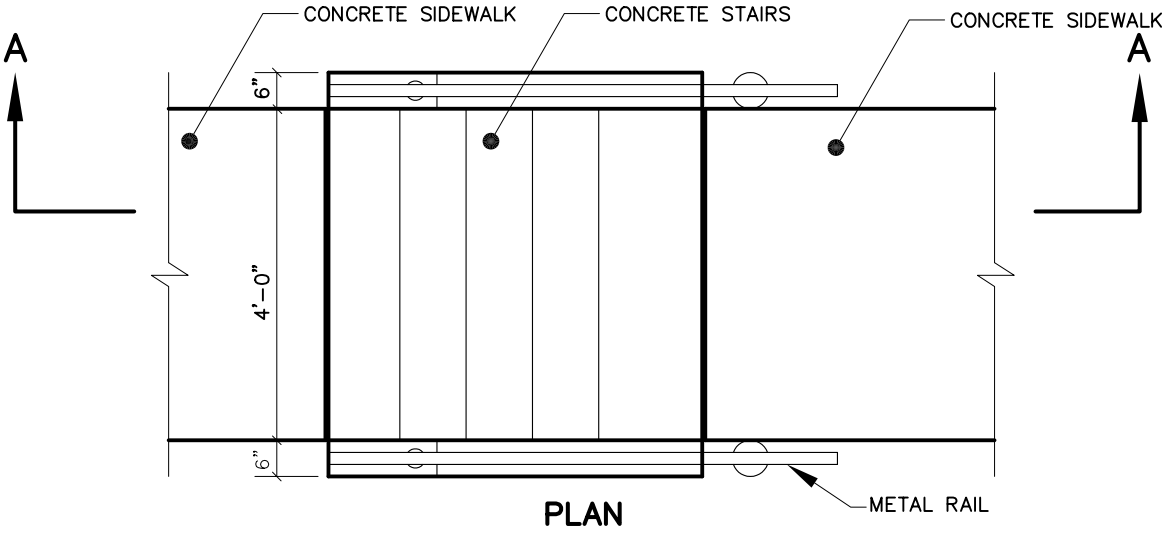
Drawing No.

SD-67

Date:10/2011



SECTION A–A



PLAN

CONCRETE STAIRS

BOROUGH OF NAUGATUCK
ENGINEERING DEPARTMENT
STANDARD DETAIL

229 Church Street, Naugatuck, CT 06770 www.naugatuck-ct.gov

Scale: NTS

Drawing No.

SD-69

Date:10/2011