PUBLIC NOTICE

US Army Corps of Engineers®
New England District
696 Virginia Road
Concord, MA 01742-2751

Comment Period Begins: October 2, 2012
Comment Period Ends: November 2, 2012
File Number: NAE-2012-1589
In Reply Refer To: Michael Riccio
Phone: (978) 318-8685
E-mail: Michael.S.Riccio@usace.army.mil

The District Engineer has received a permit application to conduct work in waters of the United States as described below.

APPLICANT: City of Norwalk

ACTIVITY:
Replacement of existing culvert at Rowayton Avenue crossing of Keeler Brook and the widening, grading and realignment of the existing channel in order to improve water conveyance and reduce flooding impacts.

A detailed description and plans of the activity are attached. .

WATERWAY AND LOCATION OF THE PROPOSED WORK
This work is proposed in Keeler Brook at the Rowayton Avenue Crossing in Norwalk, Connecticut. The site coordinates are: Latitude N 41° 5' 8.5" Longitude W 73° 26' 35."

AUTHORITY
Permits are required pursuant to:
____ Section 10 of the Rivers and Harbors Act of 1899
_X___ Section 404 of the Clean Water Act
____ Section 103 of the Marine Protection, Research and Sanctuaries Act).

The decision whether to issue a permit will be based on an evaluation of the probable impact of the proposed activity on the public interest. That decision will reflect the national concern for both protection and utilization of important resources. The benefit which may reasonably accrue from the proposal must be balanced against its reasonably foreseeable detriments. All factors which may be relevant to the proposal will be considered, including the cumulative effects thereof; among those are: conservation, economics, aesthetics, general environmental concerns, wetlands, cultural value, fish and wildlife values, flood hazards, flood plain value, land use, navigation, shoreline erosion and accretion, recreation, water supply and conservation, water quality, energy needs, safety, food production and, in general, the needs and welfare of the people.

The Corps of Engineers is soliciting comments from the public; Federal, state, and local agencies and officials; Indian Tribes; and other interested parties in order to consider and evaluate the impacts of this proposed activity. Any comments received will be considered by the Corps of Engineers to determine whether to issue, modify, condition or deny a permit for this proposal. To make this decision, comments are used to assess impacts on endangered species, historic properties, water quality, general environmental effects, and the other public interest factors listed above. Comments are used in the preparation of an Environmental Assessment

and/or an Environmental Impact Statement pursuant to the National Environmental Policy Act. Comments are also used to determine the need for a public hearing and to determine the overall public interest of the proposed activity.

NATIONAL HISTORIC PRESERVATION ACT

Based on his initial review, the District Engineer has determined that little likelihood exists for the proposed work to impinge upon properties with cultural or Native American significance, or listed in, or eligible for listing in, the National Register of Historic Places. Therefore, no further consideration of the requirements of Section 106 of the National Historic Preservation Act of 1966, as amended, is necessary. This determination is based upon one or more of the following:

a. The permit area has been extensively modified by previous work.
b. The permit area has been recently created.
c. The proposed activity is of limited nature and scope.
d. Review of the latest published version of the National Register shows that no presence of registered properties listed as being eligible for inclusion therein are in the permit area or general vicinity.
e. Coordination with the State Historic Preservation Officer and/or Tribal Historic Preservation Officer(s)

ENDANGERED SPECIES CONSULTATION

The New England District, Army Corps of Engineers has reviewed the list of species protected under the Endangered Species Act of 1973, as amended, which might occur at the project site. It is our preliminary determination that the proposed activity for which authorization is being sought is designed, situated or will be operated/used in such a manner that it is not likely to adversely affect any Federally listed endangered or threatened species or their designated critical habitat. By this Public Notice, we are requesting that the appropriate Federal Agency concur with our determination.

The following authorizations have been applied for, or have been, or will be obtained:

(X) Permit, License or Assent from State.
( ) Permit from Local Wetland Agency or Conservation Commission.
(X) Water Quality Certification in accordance with Section 401 of the Clean Water Act.

In order to properly evaluate the proposal, we are seeking public comment. Anyone wishing to comment is encouraged to do so. **Comments should be submitted in writing by the above date.** If you have any questions, please contact **Michael Riccio** at (978) 318-8685, (800) 343-4789 or (800) 362-4367, if calling from within Massachusetts.

Any person may request, in writing, within the comment period specified in this notice, that a public hearing be held to consider the application. Requests for a public hearing shall specifically state the reasons for holding a public hearing. The Corps holds public hearings for the purpose of obtaining public comments when that is the best means for understanding a wide variety of concerns from a diverse segment of the public.

The initial determinations made herein will be reviewed in light of facts submitted in response to this notice. All comments will be considered a matter of public record. Copies of letters of objection will be forwarded to the applicant who will normally be requested to contact objectors directly in an effort to reach an understanding.

CENAE-R
FILE NO. NAE-2012-1589

THIS NOTICE IS NOT AN AUTHORIZATION TO DO ANY WORK.

Robert J. DeSista
Chief, Permits and Enforcement Branch
Regulatory Division

If you would prefer not to continue receiving Public Notices by email, please contact Ms. Tina Chaisson at (978) 318-8058 or e-mail her at bettina.m.chaisson@usace.army.mil. You may also check here ( ) and return this portion of the Public Notice to: Bettina Chaisson, Regulatory Division, U.S. Army Corps of Engineers, 696 Virginia Road, Concord, MA 01742-2751.

NAME: _____
ADDRESS: _____
PHONE: _____

PROPOSED WORK AND PURPOSE

The work includes the discharge of dredged or fill material for the replacement of the existing 6' x 3.7' corrugated metal pipe arch culvert with a new 20' ConSpan arch culvert, and the grading, widening and realigning of approximately 400 linear feet of the stream channel.

The replacement of the existing culvert entails the removal of existing stone headwalls, relocation of a water main, reconfiguration of an existing sewer main located under the brook, removal of the stone retaining walls on the downstream side of the culvert and installation of retaining walls on both the upstream and downstream sides of the new culvert.

The channel modifications include the excavation of approximately 400 linear feet of the brook in order to create a 20' wide channel with a 1' deep low flow channel at a slope of .037% from the downstream end of the replacement culvert.

The City of Norwalk has undertaken an effort to identify and fix problem flood areas along Keeler Brook. A 2007 flood abatement study conducted by Milone & MacBroom, Inc. found several crossings along the brook with limited conveyance of flow that were responsible for raised water surface elevations. The replacement of the Rowayton Avenue crossing is expected to be one stream crossing improvement in a long term effort to abate flooding problems along the Keeler Brook.

The work is described on the enclosed plans entitled "Rowayton Avenue Culvert Replacement Keeler Brook" on 17 sheets, and dated "July 2012."

MITIGATION:

The project is expected to improve the stream's ability to convey storm flows and is expected to have an overall beneficial impact to the water resource. Accordingly the project has been designed to avoid and minimize negative impacts and no further mitigation is expected to be required.

ROWAYTON AVENUE CULVERT REPLACEMENT
KEELER BROOK

ROWAYTON AVENUE
NORWALK, CONNECTICUT

JULY 2012

REGULATORY SUBMISSION

REGULATORY PERMITTING PLANS - NOT FOR CONSTRUCTION

UTILITY CONTACTS:

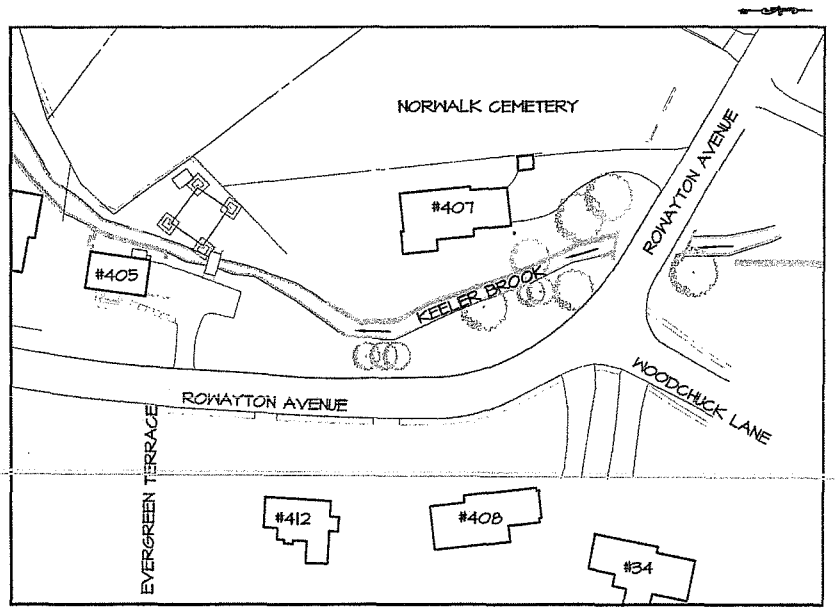
COMMUNICATION:
CABLEVISION OF CONNECTICUT
122 RIVER STREET
BRIDGEPORT, CT 06604
DAVID STOFKO
(203) 696-4768

ELECTRIC:
NORTHEAST UTILITIES SERVICE COMPANY
107 SELDEN STREET
BERLIN CT, 06037
STEPHEN KLUBNIK
(860) 665-2473

GAS:
TENNESSEE GAS PIPELINE
8 ANNGINA DRIVE
ENFIELD, CT 06082
DAVID WOOD
(860) 763-6005

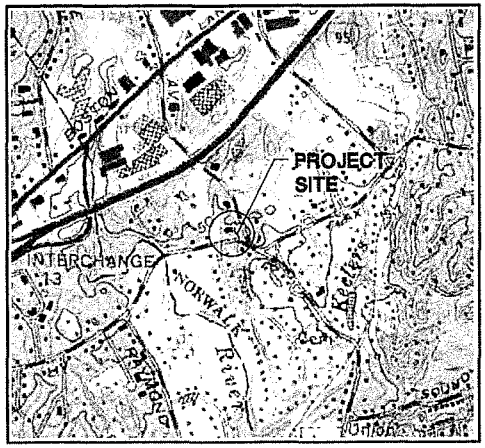
WATER:
CITY OF NORWALK
FIRST DISTRICT WATER DEPARTMENT
12 NEW CANAAN AVE - PO BOX 27
NORWALK, CT 06852
FRANCO CHIEFFALO
(203) 847-7387

SEWER & STORM DRAINAGE:
CITY OF NORWALK PUBLIC WORKS DEPT
125 EAST AVENUE
NORWALK, CT 06856
(203) 854-7844



PROJECT SITE

0 1/2" 1"
SCALE: 1"=60'



LOCATION MAP SCALE 1" = 1000'

LIST OF DRAWINGS

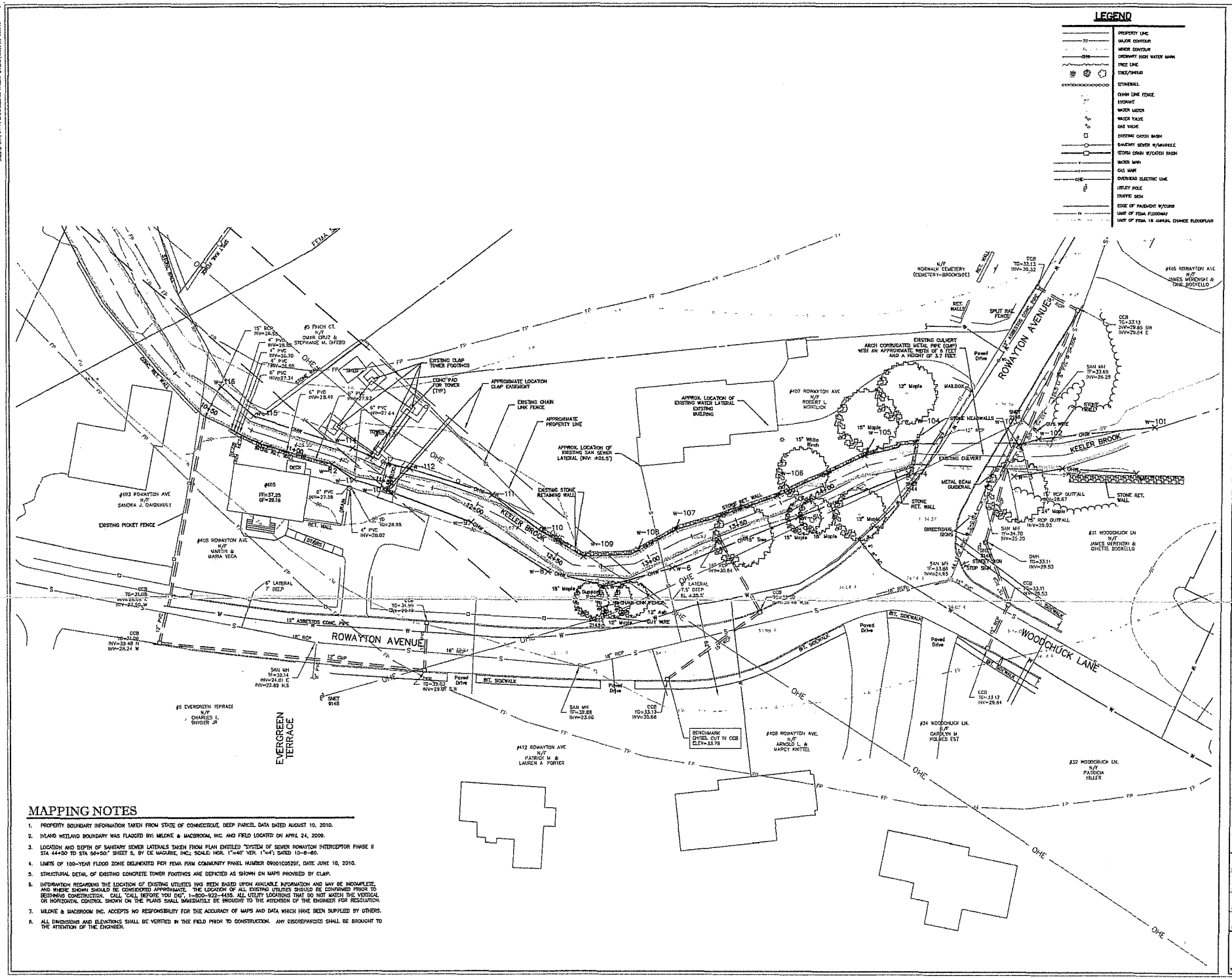
1	TITLE SHEET
2	SITE PLAN - EXISTING CONDITIONS
3	SITE PLAN - LAYOUT
4	SITE PLAN - GRADING
5	SITE PLAN - UTILITIES
6	SITE PLAN - RIPARIAN ZONE MITIGATION PLANTING
7	SITE PLAN - WATER CONTROL AND S&E CONTROL
8-9	PROPOSED SECTIONS
10-11	SITE DETAILS
12	SEDIMENT & EROSION CONTROL DETAILS
13	CULVERT GENERAL PLAN, SECTION AND ELEVATION
14	CULVERT DETAILS
15	WINGWALL DETAILS (1)
16	WINGWALL DETAILS (2)
17	BORING LOGS AND CONSTRUCTION DETAILS

PREPARED FOR:

CITY OF NORWALK
DEPARTMENT OF PUBLIC WORKS
125 EAST AVENUE
NORWALK, CONNECTICUT 06856

PREPARED BY:

MILONE & MACBROOM®
Engineering, Landscape Architecture and Environmental Science
99 Realty Drive
Cheshire, Connecticut 06410
(203) 271-1773 Fax (203) 272-9733
www.miloneandmacbroom.com



MAPPING NOTES

1. PROPERTY BOUNDARY INFORMATION TAKEN FROM STATE OF CONNECTICUT, DEEP PARCEL DATA DATED AUGUST 10, 2010.
2. INLAND WETLAND BOUNDARY WAS FLAGGED BY: MILONE & MACBROOM, INC. AND FIELD LOCATED ON APRIL 24, 2009.
3. LOCATION AND DEPTH OF SANITARY SEWER LATERALS TAKEN FROM PLAN ENTITLED "SYSTEM OF SEWER ROWAYTON INTERCEPTOR PHASE II STA 44+50 TO STA 56+50." SHEET 5, BY CE MAGUIRE, INC.; SCALE: HOR. 1"=40' VER. 1"=4'; DATED 10-8-80.
4. LIMITS OF 100-YEAR FLOOD ZONE DELINEATED PER FEMA FIRM COMMUNITY PANEL NUMBER 09001C0529F, DATE JUNE 18, 2010.
5. STRUCTURAL DETAIL OF EXISTING CONCRETE TOWER FOOTINGS ARE DEPICTED AS SHOWN ON MAPS PROVIDED BY CL&P.
6. INFORMATION REGARDING THE LOCATION OF EXISTING UTILITIES HAS BEEN BASED UPON AVAILABLE INFORMATION AND MAY BE INCOMPLETE, AND WHERE SHOWN SHOULD BE CONSIDERED APPROXIMATE. THE LOCATION OF ALL EXISTING UTILITIES SHOULD BE CONFIRMED PRIOR TO BEGINNING CONSTRUCTION. CALL "CALL BEFORE YOU DIG", 1-800-922-4455. ALL UTILITY LOCATIONS THAT DO NOT MATCH THE VERTICAL OR HORIZONTAL CONTROL SHOWN ON THE PLANS SHALL IMMEDIATELY BE BROUGHT TO THE ATTENTION OF THE ENGINEER FOR RESOLUTION.
7. MILONE & MACBROOM INC. ACCEPTS NO RESPONSIBILITY FOR THE ACCURACY OF MAPS AND DATA WHICH HAVE BEEN SUPPLIED BY OTHERS.
8. ALL DIMENSIONS AND ELEVATIONS SHALL BE VERIFIED IN THE FIELD PRIOR TO CONSTRUCTION. ANY DISCREPANCIES SHALL BE BROUGHT TO THE ATTENTION OF THE ENGINEER.

SCALE IN FEET
0 15 30

REVISIONS

Engineering, Landscape Architecture and Environmental Science
MILONE & MACBROOM
99 Realty Drive
Cheshire, Connecticut 06410
(203) 271-1773 Fax (203) 272-9733
www.milonemacbroom.com

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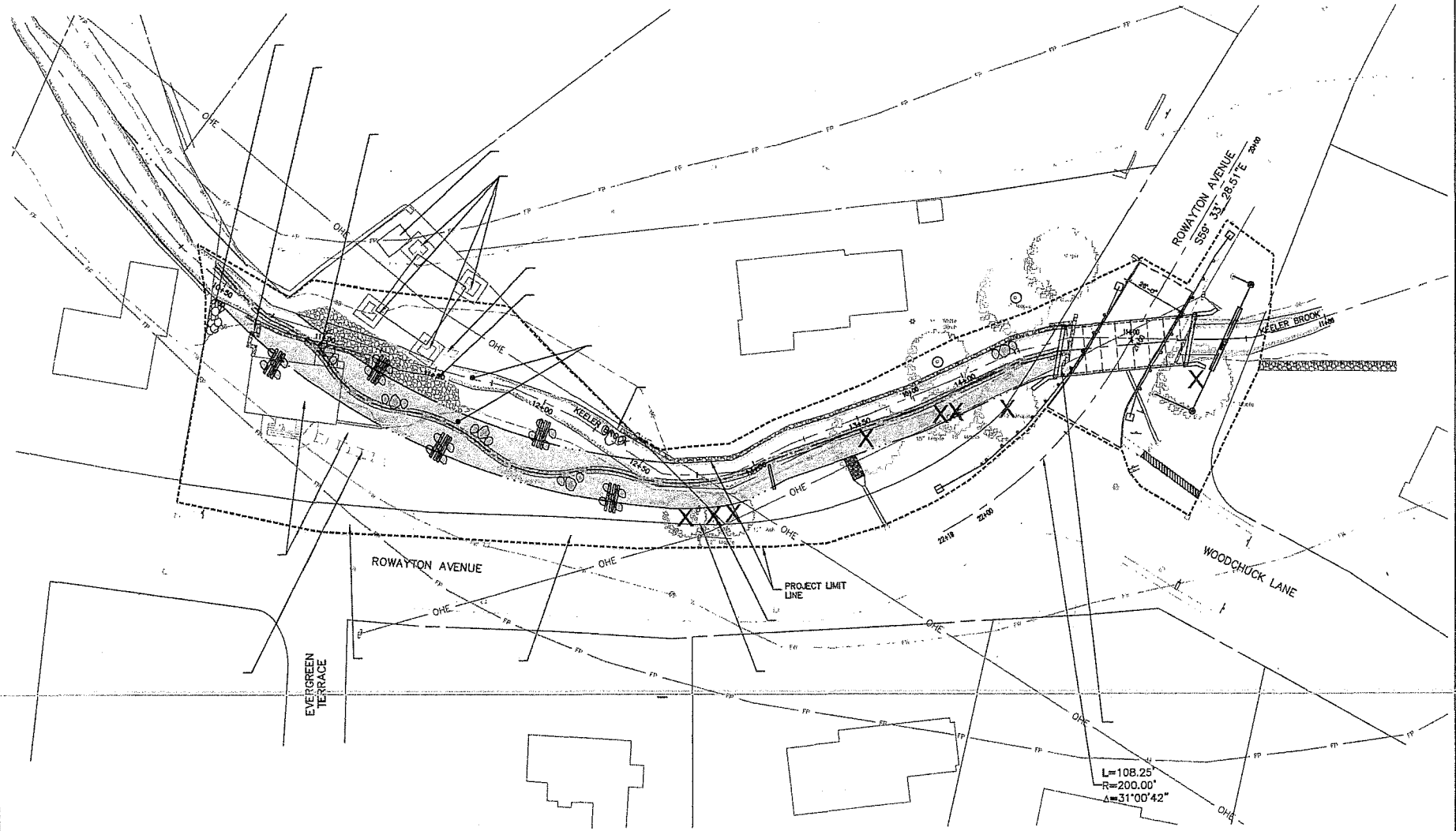
SITE PLAN - EXISTING CONDITIONS

ROWAYTON AVENUE CULVERT REPLACEMENT
KEELER BROOK
ROWAYTON AVENUE
NORWALK, CONNECTICUT

DESIGNED	DRAWN	CHECKED
—	BAM	DO

SCALE: 1"=30'
DATE: JULY 2012
PROJECT NO.: 1383-21
SHEET NO.: 02



GENERAL NOTES

1. INFORMATION REGARDING THE LOCATION OF EXISTING UTILITIES HAS BEEN BASED UPON AVAILABLE INFORMATION AND MAY BE INCOMPLETE, AND WHERE SHOWN SHOULD BE CONSIDERED APPROXIMATE. THE LOCATION OF ALL EXISTING UTILITIES SHOULD BE CONFIRMED PRIOR TO BEGINNING CONSTRUCTION. CALL "CALL BEFORE YOU DIG", 1-800-922-4455. ALL UTILITY LOCATIONS THAT DO NOT MATCH THE VERTICAL OR HORIZONTAL CONTROL SHOWN ON THE PLANS SHALL IMMEDIATELY BE BROUGHT TO THE ATTENTION OF THE ENGINEER FOR RESOLUTION.
2. MILONE & MACBROOM INC. ACCEPTS NO RESPONSIBILITY FOR THE ACCURACY OF MAPS AND DATA WHICH HAVE BEEN SUPPLIED BY OTHERS.
3. ALL UTILITY SERVICES ARE TO BE UNDERGROUND. THE EXACT LOCATION AND SIZE OF ELECTRIC, TELEPHONE, CABLE TELEVISION AND GAS ARE TO BE DETERMINED BY THE RESPECTIVE UTILITY COMPANIES.
4. ALL DIMENSIONS AND ELEVATIONS SHALL BE VERIFIED IN THE FIELD PRIOR TO CONSTRUCTION. ANY DISCREPANCIES SHALL BE BROUGHT TO THE ATTENTION OF THE ENGINEER.
5. ALL DISTURBED AREAS SHALL RECEIVE A MINIMUM OF 6" TOPSOIL AND BE SEEDED WITH GRASS OR SODDED, AS SHOWN ON THE PLANS.
6. ALL STORM DRAIN PIPE SHALL BE SMOOTH LINED REINFORCED CONCRETE PIPE (RCP) UNLESS OTHERWISE INDICATED.
7. ALL PROPOSED CONTOURS AND SPOT ELEVATIONS INDICATE FINISHED GRADE.
8. ALL GRAVITY SANITARY SEWER PIPE SHALL BE PVC SDR35 UNLESS OTHERWISE INDICATED.
9. ALL CONSTRUCTION MATERIALS AND METHODS SHALL CONFORM TO THE CITY OF NORWALK REQUIREMENTS AND TO THE THE APPLICABLE SECTIONS OF THE STATE OF CONNECTICUT DEPARTMENT OF TRANSPORTATION STANDARD SPECIFICATIONS FOR ROADS, BRIDGES, AND INCIDENTAL CONSTRUCTION, FORM 816 AND ADDENDUMS
10. THE PLANS REQUIRE A CONTRACTOR'S WORKING KNOWLEDGE OF LOCAL, MUNICIPAL, NOTES AUTHORITY, AND STATE CODES FOR UTILITY SYSTEMS. ANY CONFLICTS BETWEEN MATERIALS AND LOCATIONS SHOWN, AND LOCAL REQUIREMENTS SHALL BE BROUGHT TO THE ATTENTION OF THE ENGINEER PRIOR TO THE EXECUTION OF WORK. THE ENGINEER WILL NOT BE HELD LIABLE FOR COSTS INCURRED TO IMPLEMENT OR CORRECT WORK WHICH DOES NOT CONFORM TO LOCAL CODE.
11. ALL FUEL, OIL, PAINT, OR OTHER HAZARDOUS MATERIALS SHOULD BE STORED IN A SECONDARY CONTAINER AND REMOVED TO A LOCKED INDOOR AREA WITH AN IMPERVIOUS FLOOR DURING NON-WORK HOURS.

SITE PLAN LEGEND

LOG SILL

BOULDER CLUSTER

PROPOSED GUIDERAIL

SCALE IN FEET

0' 15' 30'

REVISIONS

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and Environmental Science
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SITE PLAN - LAYOUT

ROWAYTON AVENUE CULVERT REPLACEMENT
KEELER BROOK
ROWAYTON AVENUE
NORWALK, CONNECTICUT

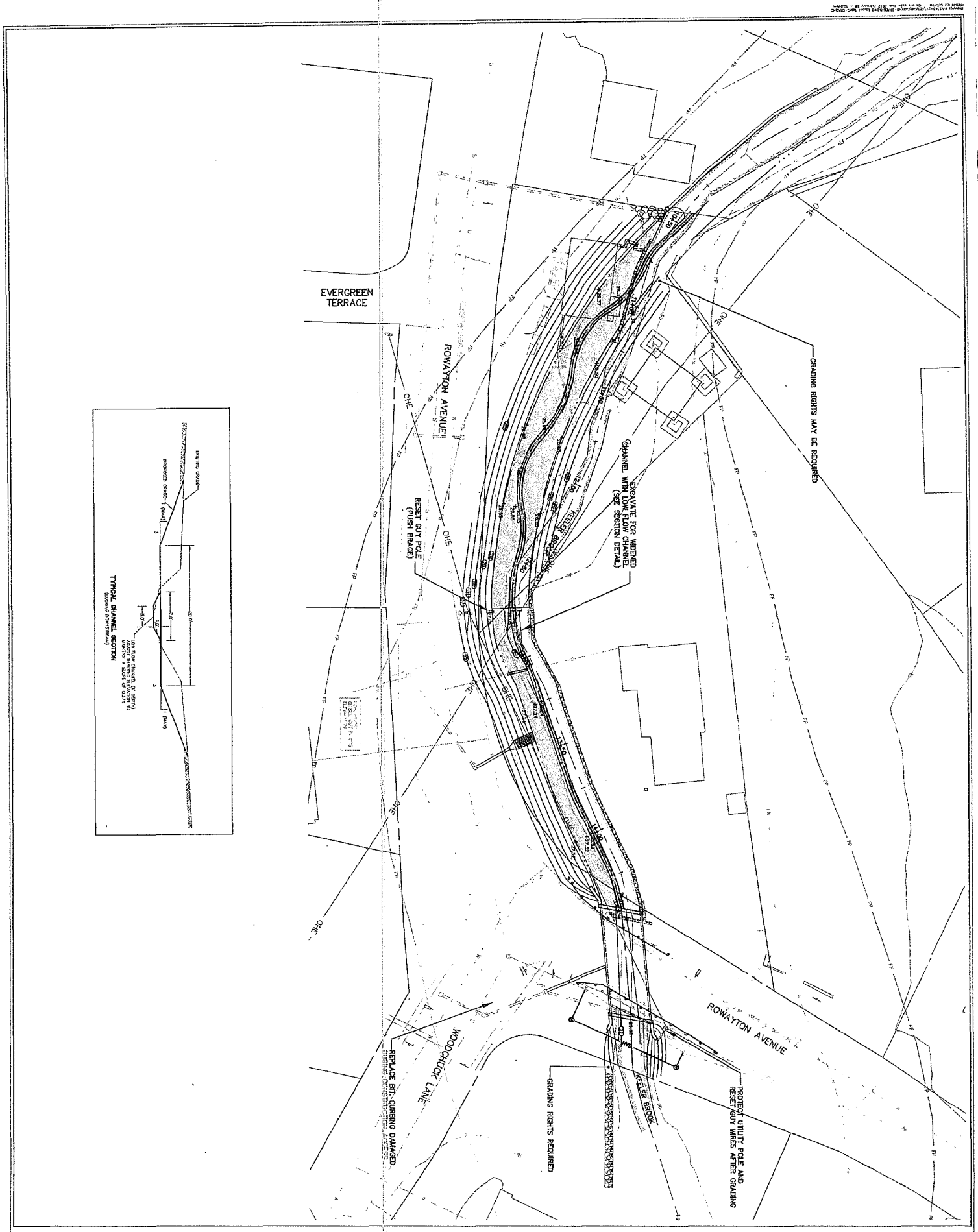
BAM	BAM	JAG
DESIGNED	DRAWN	CHECKED

SCALE 1"=30'

DATE JULY 2012

PROJECT NO. 1383-21

SHEET NO. 03



SHEET NO. 04	SCALE 1"=30'	DATE JULY 2012	PROJECT NO. 1383-21
DESIGNED BAM	DRAWN BAM	CHECKED JAG	

SITE PLAN - GRADING

ROWAYTON AVENUE CULVERT REPLACEMENT
KEELER BROOK

ROWAYTON AVENUE
NORWALK, CONNECTICUT

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www.miloneandmacbroom.com

REVISIONS

SCALE IN FEET
0 15' 30'

INSTALL STONE AT EXISTING STORM OUTFALL

5' COVER AT SHUTOFF VALVE

OUTLET EXISTING STORM DRAIN THROUGH WINGWALL
MITER END TO MATCH LINE OF WINGWALL

EXISTING WATER MAIN TO BE ACCOMMODATED THROUGH FROST WALL UNDER STREAM BED. A WALL SLEEVE AND LINK SEAL SHALL BE PROVIDED ON EACH SIDE OF THE CULVERT. FOOTING TO BE ADJUSTED IF NECESSARY. CONTRACTOR TO CONDUCT TEST PIT TO CONFIRM DEPTH OF WATER MAIN AT STREAM CROSSING PRIOR TO CONSTRUCTION.

TEST PIT TO CONFIRM LOCATION OF EXISTING WATER MAIN

REPLACE EXISTING WATER SERVICE
BETWEEN RETAINING WALL AND LATERAL STUB

PROTECT EXISTING
CONCRETE-ENCASED SEWER LATERAL
AND ENCASE IN CONCRETE THE
EXISTING SEWER LATERAL EXPOSED
BY GRADING

PROTECT UTILITY POLE AND
RESET GUY WIRES AFTER GRADING

7 L.F. 8" PVC SAN S=8.6%

PROP. SMH
TF: 33.0
INV: 25.68

60 L.F. 8" PVC SAN S=0.5%
ENCASE SAN. SEWER IN CONCRETE
FOR 30 L.F. CENTERED ON STREAMBED

REMOVE EXISTING SEWER LINE

PROP. SMH
TF: 33.0
INV: 25.38

16 L.F. 8" PVC SAN S=0.5%

6' COVER AT SHUTOFF VALVE

PROP. STORM DRAIN TO OUTLET THROUGH
CONSPAN CULVERT (PRECAST OUTLET)
MITER END TO MATCH LINE OF CULVERT
35 L.F. 15" RCP S=7.80%
INV: 26.80

REMOVE EXISTING STORM PIPE AND REPLACE
WITH 20 L.F. 15" RCP AT S=1.1%
INSTALL 15" CONCRETE FES WITH
INTERMEDIATE RIPRAP SPLASH PAD AT INV: 30.25 (TYP.)

CAP EXISTING SEWER LATERAL

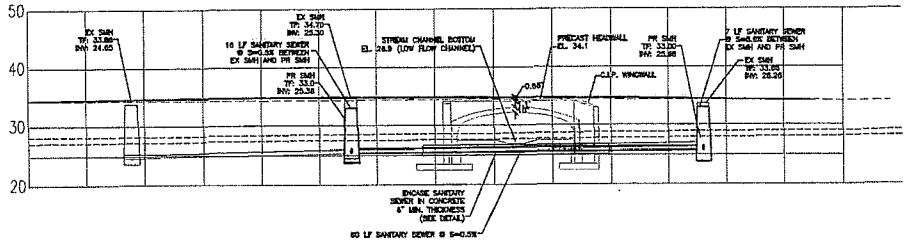
ROWAYTON AVENUE

KEELER BROOK

WOODCHUCK LANE

EVERGREEN TERRACE

OHE



PROPOSED UPSTREAM SEWER REPLACEMENT

(LOOKING DOWNSTREAM)
SCALE: 1"=15'

SCALE IN FEET
0 15' 30'

REVISIONS

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SITE PLAN - UTILITIES

ROWAYTON AVENUE CULVERT REPLACEMENT
KEELER BROOK
ROWAYTON AVENUE
NORWALK, CONNECTICUT

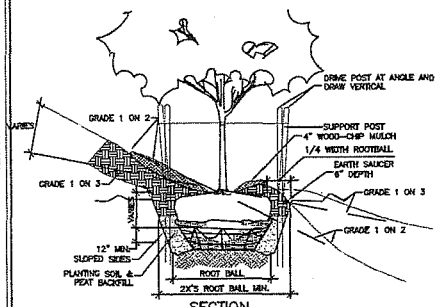
DESIGNED	DRAWN	CHECKED
BAM	BAM	JAG

SCALE: 1"=30'

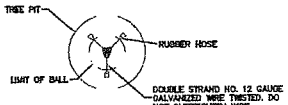
DATE: JULY 2012

PROJECT NO.: 1383-21

SHEET NO.: 05



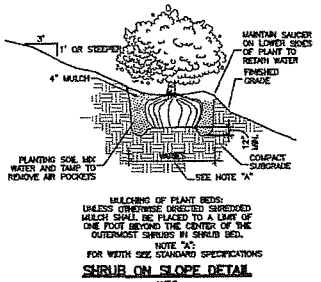
SECTION
GRADING FOR TREE ON SLOPE



PLAN

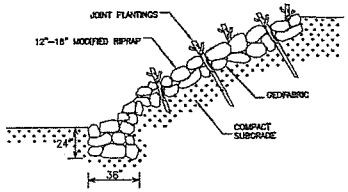
NOTES:
1. SUPPORT STAKES SHALL BE REMOVED BY THE CONTRACTOR ONE YEAR AFTER INSTALLATION

TREE ON SLOPE DETAIL
N.T.S.



MULCHING OF PLANT BEDS:
UNLESS OTHERWISE DIRECTED SHREDDED MULCH SHALL BE PLACED TO A LIMIT OF ONE FOOT BEYOND THE CENTER OF THE OUTERMOST SHRUBS IN SHRUB BED.
NOTE "A":
FOR WIDTH SEE STANDARD SPECIFICATIONS

SHRUB ON SLOPE DETAIL
N.T.S.



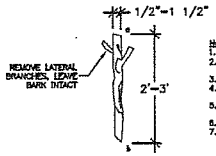
STONE RIPRAP WITH JOINT PLANTING
NOT TO SCALE
ADOPTED FROM THE U.S. DEPARTMENT OF AGRICULTURE, NATURAL RESOURCES CONSERVATION SERVICE STANDARD DETAIL

PLANT LIST

TREES	REV	QTY	KEY	BOTANICAL NAME	COMMON NAME	SIZE	COMMENTS
		1	AR	Acer rubrum	Red Maple	4-6' HT.	B&B
		1	QP	Quercus palustris	Pin Oak	4-6' HT.	B&B
		1	BN	Betula nigra	River Birch	4-6' HT.	B&B
		9	QR	Quercus rubra	Red Oak	4-6' HT.	B&B
		1	QA	Quercus alba	White Oak	4-6' HT.	B&B
SHRUBS/PERENNIALS	**REV**	**QTY**	**KEY**	**BOTANICAL NAME**	**COMMON NAME**	**SIZE**	**COMMENTS**
		62	CR	Cornus racemosa	Grey Stemmed Dogwood	24"-30" HT.	FULL & DENSE
		32	CA	Cornus amomum	Silky Dogwood	36"-42" HT.	FULL & DENSE
		40	SD	Salix discolor	Pussy Willow	24"-30" HT.	FULL & DENSE
		58	AI	Alnus incana	Speckled Alder	24"-30" HT.	FULL & DENSE
		96	SL	Spirea latifolia	Meadowsweet	18"-24" HT.	FULL & DENSE
SEED MIX	**REV**	**QTY**	**KEY**	**BOTANICAL NAME**	**COMMON NAME**	**SIZE**	**COMMENTS**
				NEW ENGLAND EROSION CONTROL/RESTORATION MIX (FOR DRY SITES)	N/A	N/A	N/A
				NEW ENGLAND CONSERVATION/WILDLIFE MIX	N/A	N/A	N/A
JOINT PLANTINGS	**REV**	**QTY**	**KEY**	**BOTANICAL NAME**	**COMMON NAME**	**SIZE**	**COMMENTS**
		110	CR	Cornus racemosa	Grey Stemmed Dogwood	1"ø, 2-3' L	LIVE STAKE
		110	CS	Cornus sericea	Red Osier Dogwood	1"ø, 2-3' L	LIVE STAKE

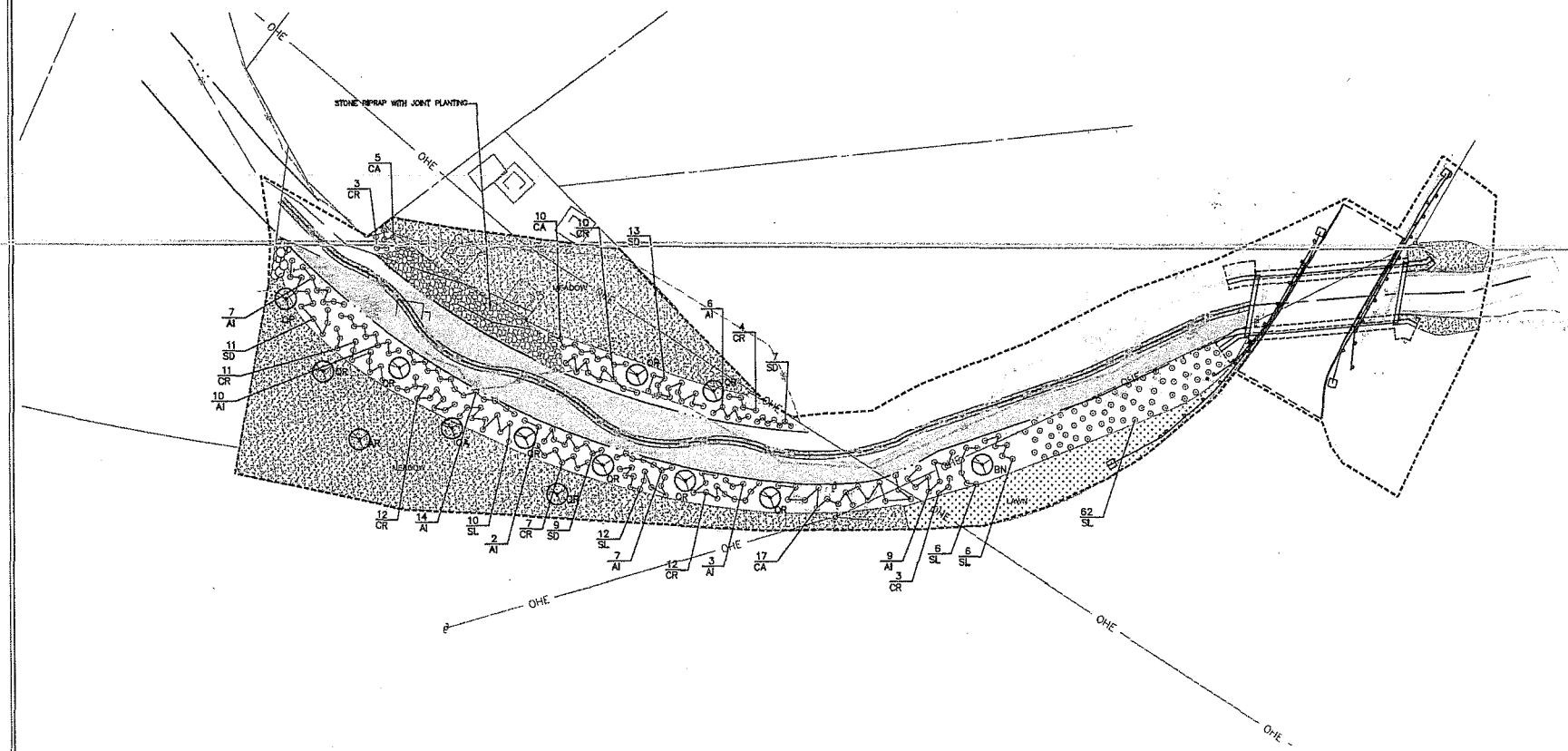
NOTES:

1. ALL DISTURBED AREAS TO RECEIVE MINIMUM 6" OF TOPSOIL AND RESTORATION SEED MIX AS SPECIFIED.



LIVE STAKE DETAIL
N.T.S.

NOTES:
1. LIVE STAKE ARE DORMANT PLANT MATERIAL THAT WILL ROOT WHEN PLACED IN THE GROUND.
2. STAKES TO BE EQUAL PARTS RED-OSIER DOGWOOD (*CORNUS SERICEA*) AND GREY STEMMED DOGWOOD (*CORNUS RACEMOSA*). MIX SPECIES RANDOMLY IN PLANTING PLAN.
3. TAMP THE LIVE STAKE INTO THE GROUND AT RIGHT ANGLES TO THE SLOPE. USE A DEAD BLOW HAMMER TO AVOID SPLITTING THE STAKES.
4. INSTALL THE STAKES 2 TO 3 FEET APART USING TRIANGULAR SPACING. THE DENSITY OF THE INSTALLATION SHOULD RANGE FROM 2 TO 4 STAKES PER YARD.
5. FOUR-FIFTHS OF THE STAKE SHOULD BE BURIED IN THE GROUND, AND SOIL FIRMLY PACKED AROUND IT AFTER INSTALLATION. THE BUDS SHOULD BE ORIENTED UP.
6. PLANT STAKES WITHIN 5 DAYS AFTER COLLECTION.
7. KEEP STAKES MOIST AND SHADED DURING STORAGE BETWEEN COLLECTION AND PLANTING.



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REVISIONS

SITE PLAN - RIPARIAN ZONE MITIGATION PLANTING

ROWAYTON AVENUE CULVERT REPLACEMENT
KEELER BROOK
ROWAYTON AVENUE
NORWALK, CONNECTICUT

FOR PERMITTING ONLY, NOT FOR CONSTRUCTION.

BAM	BAM	JAG
DESIGNED	DRAWN	REVIEWED

SCALE: 1"=30'

DATE: JULY 2012

PROJECT NO.: 1383-21

SHEET NO.: 06

GENERAL NOTES

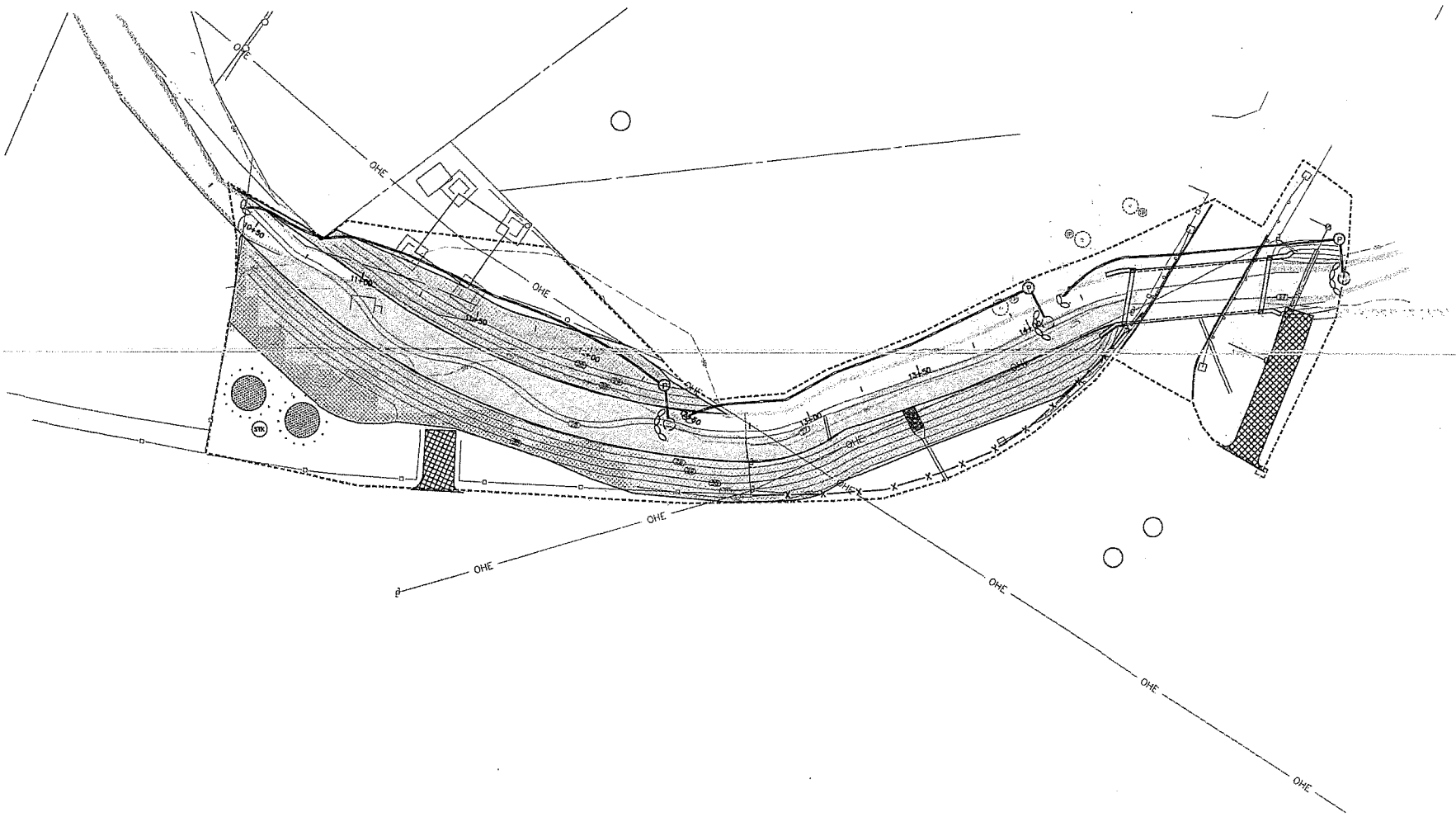
1. SEDIMENT AND EROSION CONTROL MEASURES AS DEPICTED ON THESE PLANS AND DESCRIBED WITHIN THE SEDIMENT AND EROSION CONTROL NARRATIVE SHALL BE IMPLEMENTED AND MAINTAINED UNTIL PERMANENT COVER AND STABILIZATION IS ESTABLISHED. ALL SEDIMENT AND EROSION CONTROL MEASURES SHALL CONFORM TO THE "GUIDELINES FOR SOIL EROSION AND SEDIMENT CONTROL, CONNECTICUT – 2002, AND IN ALL CASES BEST MANAGEMENT PRACTICES SHALL PREVAIL.
2. THE PLANS INCLUDE A CONTRACTOR'S WORKING KNOWLEDGE OF LOCAL, MUNICIPAL, WATER AUTHORITY, AND STATE CODES FOR UTILITY SYSTEMS. ANY CONFLICTS BETWEEN MATERIALS AND LOCATIONS SHOWN, AND LOCAL REQUIREMENTS SHALL BE BROUGHT TO THE ATTENTION OF THE ENGINEER PRIOR TO THE EXECUTION OF WORK. THE ENGINEER WILL NOT BE HELD LIABLE FOR COSTS INCURRED TO IMPLEMENT OR CORRECT WORK WHICH DOES NOT CONFORM TO LOCAL CODE.
3. ALL FUEL, OIL, PAINT, OR OTHER HAZARDOUS MATERIALS SHOULD BE STORED IN A SECONDARY CONTAINER AND REMOVED TO A LOCKED INDOOR AREA WITH AN IMPERVIOUS FLOOR DURING NON-WORK HOURS.
4. THE CONTRACTOR SHALL MAINTAIN (REPAIR/REPLACE WHEN NECESSARY) THE SILTATION CONTROL UNTIL ALL DEVELOPMENT ACTIVITY IS COMPLETED AND ALL DISTURBED AREAS ARE PERMANENTLY STABILIZED.
5. SEDIMENT AND EROSION CONTROLS SHALL BE INSPECTED AT LEAST ONCE A WEEK AND WITHIN 24 HOURS OF THE END OF A STORM WITH A RAINFALL AMOUNT OF 0.5 INCH OR GREATER.
6. THE SEDIMENT AND EROSION CONTROL PLAN SHALL BE MODIFIED BY THE CONTRACTOR AT THE DIRECTION OF THE ENGINEER AND THE CITY'S DESIGNATED REPRESENTATIVE AS NECESSITATED BY CHANGING SITE CONDITIONS
7. INSPECTION OF THE SITE FOR EROSION SHALL CONTINUE FOR A PERIOD OF THREE MONTHS AFTER COMPLETION WHEN RAINFALLS OF ONE INCH OR MORE OCCUR.
8. THE SITE SHOULD BE KEPT CLEAN OF LOOSE DEBRIS, LITTER, AND BUILDING MATERIALS SUCH THAT NONE OF THE ABOVE ENTER WATERS OR WETLANDS.
9. A COPY OF ALL PLANS AND REVISIONS, AND THE SEDIMENT AND EROSION CONTROL PLAN SHALL BE MAINTAINED ON-SITE AT ALL TIMES DURING CONSTRUCTION.

CONSTRUCTION SEQUENCE

1. PRIOR TO COMMENCEMENT OF WORK A PRECONSTRUCTION MEETING SHALL BE HELD WITH CITY STAFF AND REPRESENTATIVES OF THE CONTRACTOR. AT THIS MEETING, ONE PERSON WILL BE PLACED IN CHARGE OF SEDIMENT AND EROSION CONTROL FOR THE ENTIRE SITE.
2. CONTRACTOR TO STAKE OUT LIMIT OF DISTURBANCE AND VEGETATION TO BE RETAINED. NO DISTURBANCE IS TO TAKE PLACE BEYOND THE LIMITS OF WORK SHOWN.
3. CONTRACTOR TO INSTALL SEDIMENT AND EROSION CONTROLS ALONG THE PERIMETER, STABILIZED CONSTRUCTION ENTRANCES, AND TEMPORARY CONSTRUCTION SAFETY FENCING.
4. COMPLETE DEMOLITION WORK. DISPOSE OF ALL WASTE MATERIALS IN CONFORMANCE WITH LOCAL, STATE AND FEDERAL LAWS.
5. CLEAR AND GRUB WORK AREA AND STOCKPILE TOPSOIL. PLACE SEDIMENT FILTER FENCE AND HAYBALES AROUND STOCKPILES.
6. INSTALL TEMPORARY BYPASS PIPING AND PUMP FOR DOWNSTREAM CHANNEL GRADING. COMPLETE DOWNSTREAM PORTION OF CHANNEL REALIGNMENT AND GRADING (PHASE I).
7. INSTALL TEMPORARY BYPASS PIPING AND PUMP FOR UPSTREAM PORTION OF CHANNEL GRADING. COMPLETE REMAINING PORTION OF CHANNEL REALIGNMENT AND GRADING (PHASE II).
8. RELOCATE EXISTING WATER SERVICE LATERAL AND INSTALL CONCRETE ENCASEMENT AROUND EXISTING SEWER LATERAL. INSTALL STORM DRAINAGE PIPE AND RIPRAP SPLASH PAD.
9. INSTALL TEMPORARY BYPASS PIPING AND PUMP FOR CULVERT REPLACEMENT AND ASSOCIATED UPSTREAM UTILITY RELOCATION.
10. COMMENCE CULVERT REPLACEMENT WORK, INCLUDING DEMOLITION OF EXISTING WINGWALLS, RELOCATION OF WATER MAIN, RELOCATION OF SEWER MAIN WITH CONCRETE ENCASEMENT, ASSOCIATED BANK GRADING, CULVERT INSTALLATION, REPAVING OF DISTURBED SECTIONS OF ROWAYTON AVENUE, AND REPLACEMENT OF BITUMINOUS SIDEWALK AND CURBING DISTURBED DURING CONSTRUCTION ACTIVITIES. RELOCATE EXISTING SEWER MAIN AND WATER MAIN.
11. ALL DEWATERING WASTE WATERS SHALL BE DISCHARGED IN A MANNER WHICH MINIMIZES THE DISCOLORATION OF THE RECEIVING WATERS.
12. STABILIZE ALL SLOPES IMMEDIATELY AFTER THEIR ESTABLISHMENT.
13. INSTALL RIPARIAN PLANTINGS AS SHOWN ON THE RIPARIAN ZONE MITIGATION PLANTING PLAN.
14. REMOVE CONSTRUCTION FENCING AND TEMPORARY EROSION CONTROLS UPON COMPLETION OF WORK.

EROSION CONTROL LEGEND

SSF	SEDIMENT FILTER FENCE
HB	STAKED HAYBALES
CE	CONSTRUCTION ENTRANCE
ECB	EROSION CONTROL BLANKET NORTH AMERICAN GREEN S150 OR APPROVED EQUAL
SP	TEMPORARY SOIL STOCKPILE AREA SURROUNDED WITH SEDIMENT FILTER FENCE
IP	INLET PROTECTION (TYP. ALL STRUCTURES)
OCF	SQUARE MESH ORANGE CONSTRUCTION SAFETY FENCE
SBB	TEMPORARY SANDBAG COFFERDAM –SEE DETAIL
TP	TREE PROTECTION



REVISIONS

Engineering, Landscape Architecture, Land Surveying and Planning
MILONE & MACBROOM
99 Realty Drive
Cheshire, Connecticut 06410
(203) 271-1773 Fax (203) 272-9733
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SITE PLAN - WATER CONTROL AND S&E CONTROL

ROWAYTON AVENUE CULVERT REPLACEMENT
KEELER BROOK
ROWAYTON AVENUE
NORWALK, CONNECTICUT

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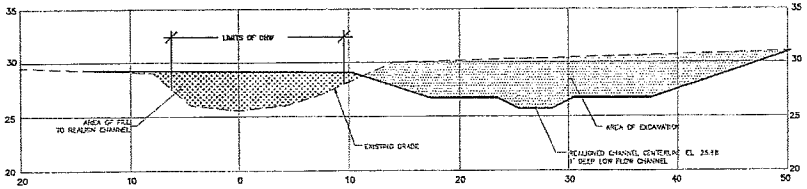
BAM	BAM	JAG
DESIGNED	DRAWN	CHECKED

SCALE: 1"=30'

DATE: JULY 2012

PROJECT NO.: 1383-21

SHEET NO.: 07



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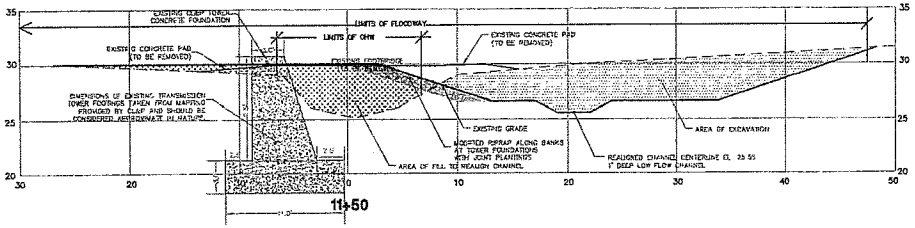

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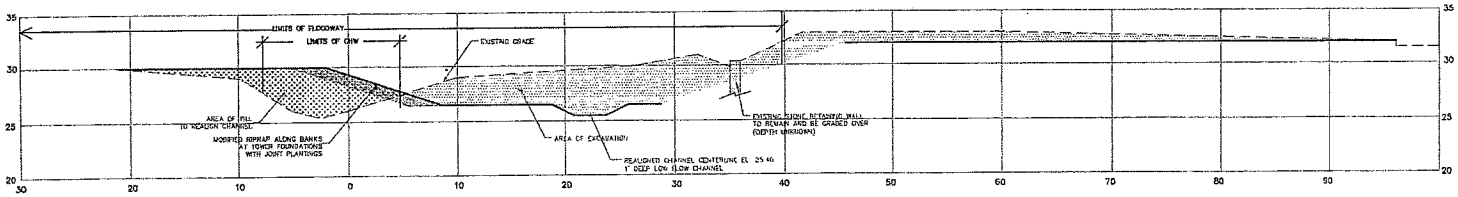

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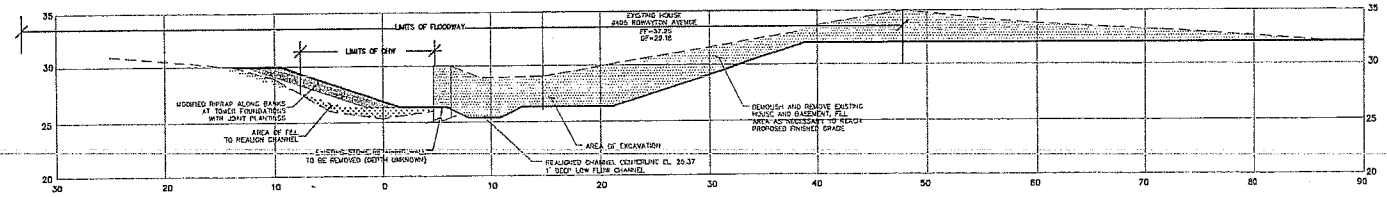

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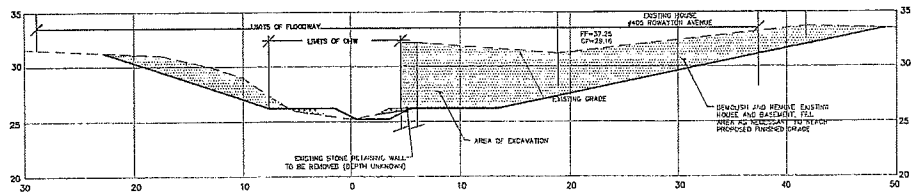

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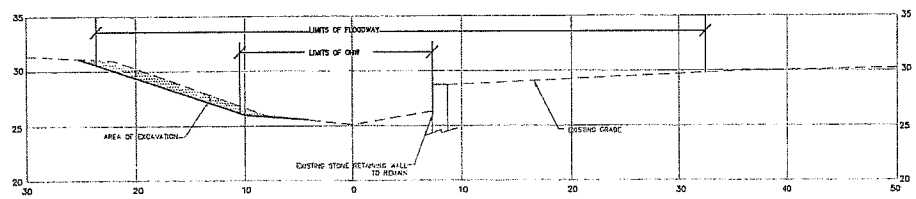

10+50

ALL SECTIONS LOOK UPSTREAM

SCALE IN FEET

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99 Realty Drive
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(203) 271-1773 Fax (203) 272-9733
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CROSS SECTIONS (STA 10+50 TO STA 11+75)

ROWAYTON AVENUE CULVERT REPLACEMENT
KEELER BROOK

ROWAYTON AVENUE
NORWALK, CONNECTICUT

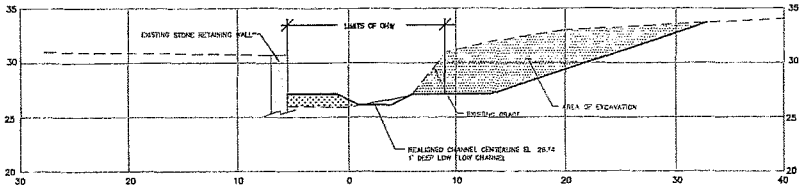
DESIGNED	DRAWN	CHECKED
BAM	BAM	DO

SCALE: 1"=8'

DATE: JULY 2012

PROJECT NO. 1383-21

SHEET NO. 08



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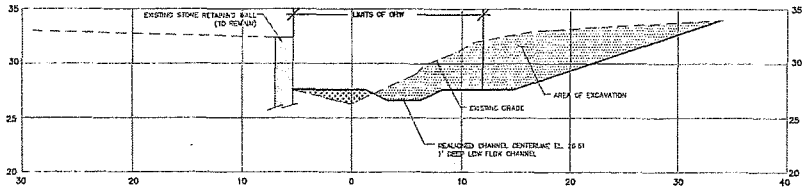

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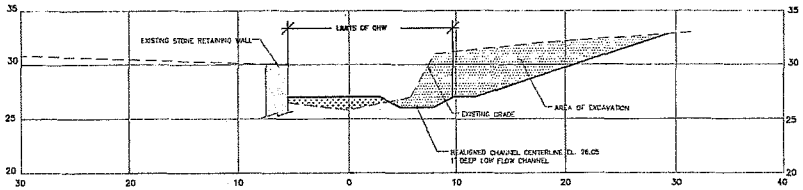

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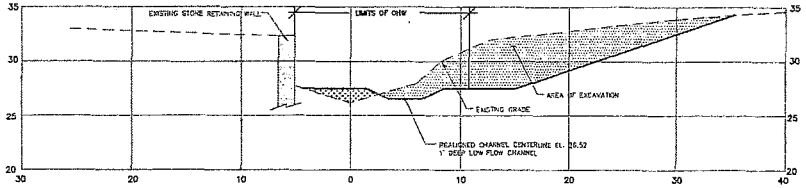

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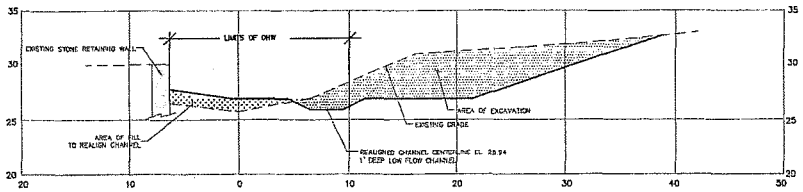

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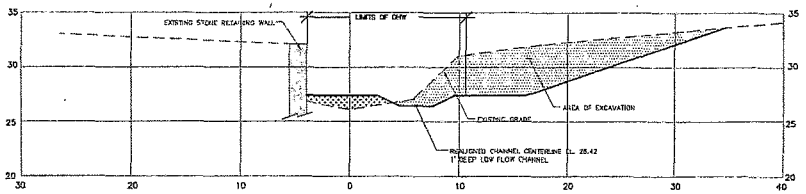

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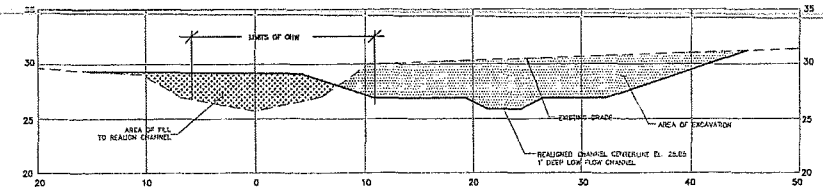

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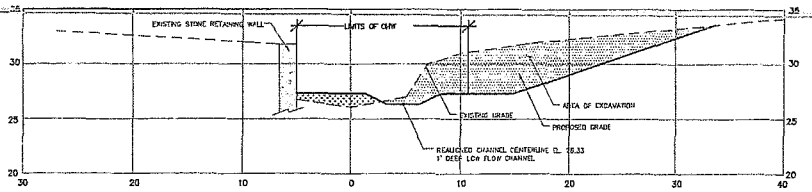

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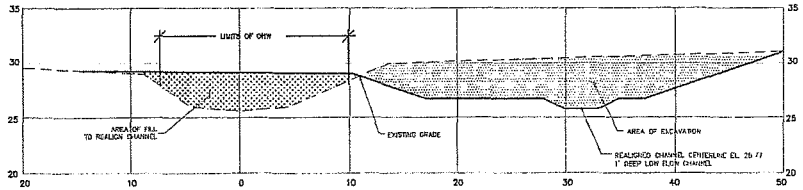

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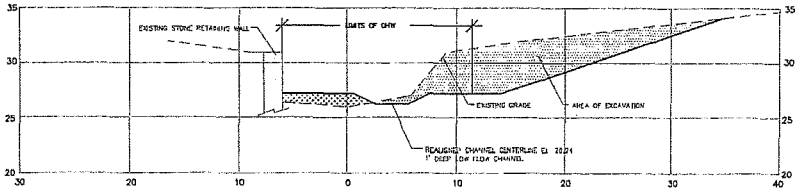

13+25

ALL SECTIONS LOOK UPSTREAM

SCALE IN FEET

0' 4' 8'

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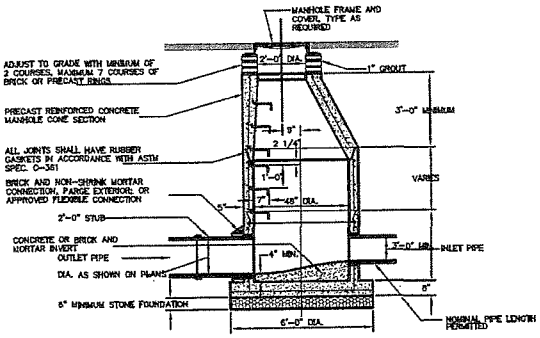
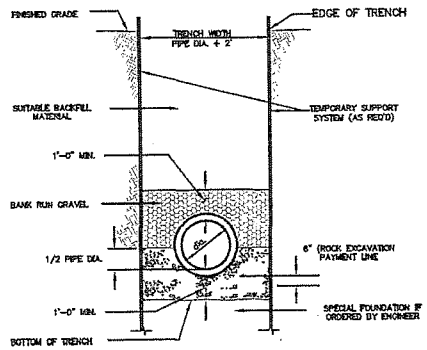
SHEET NO. 09



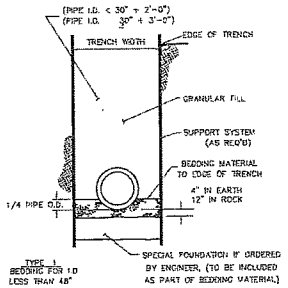
PRECAST CONCRETE SANITARY MANHOLE

NOT TO SCALE



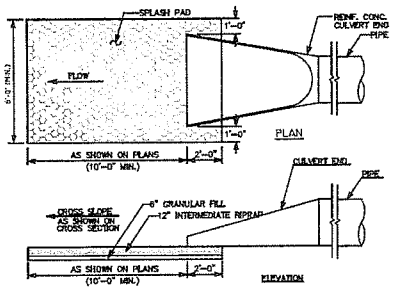
SANITARY SEWER TRENCH

NOT TO SCALE



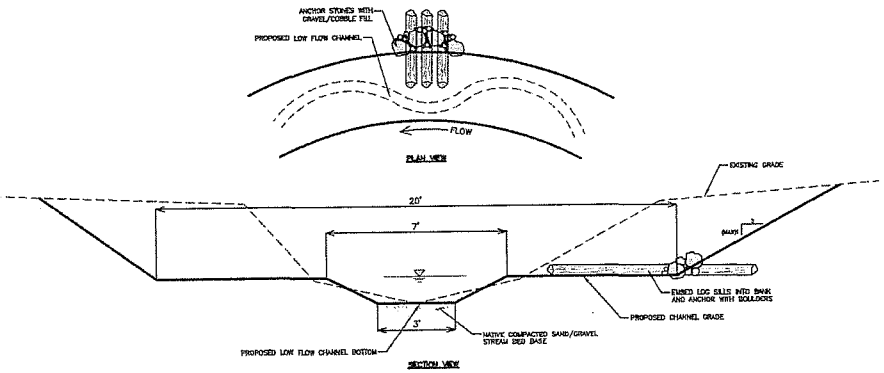
TYPICAL TRENCH SECTION
STORM DRAINS AND CULVERTS

NOT TO SCALE



FLARED END SECTION WITH
RIPRAP SPLASH PAD.

NOT TO SCALE

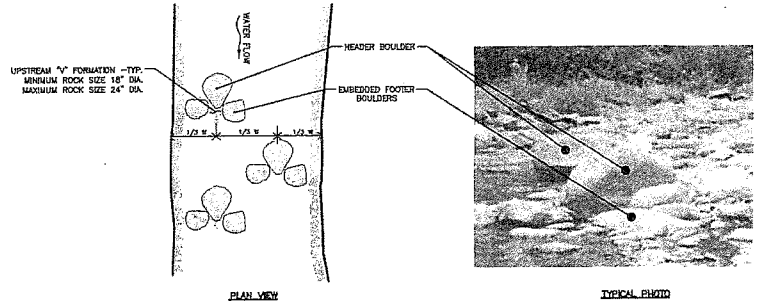


LOG SILL

(SCALE: N.T.S.)

NOTES:

1. USE 12 TO 24 INCH DIAMETER LOGS AT LEAST 10 FEET IN LENGTH.
2. KEY LOGS INTO TOE OF BANK ON CHANNEL BED. LOGS SHOULD BE ORIENTED PERPENDICULAR TO THE STREAM FLOW.
3. [illegible] LOGS AT LEAST A THIRD OF THEIR LENGTH INTO THE STREAM BANK.
4. USE MINIMUM OF 3 LOGS PER LOG SILL.

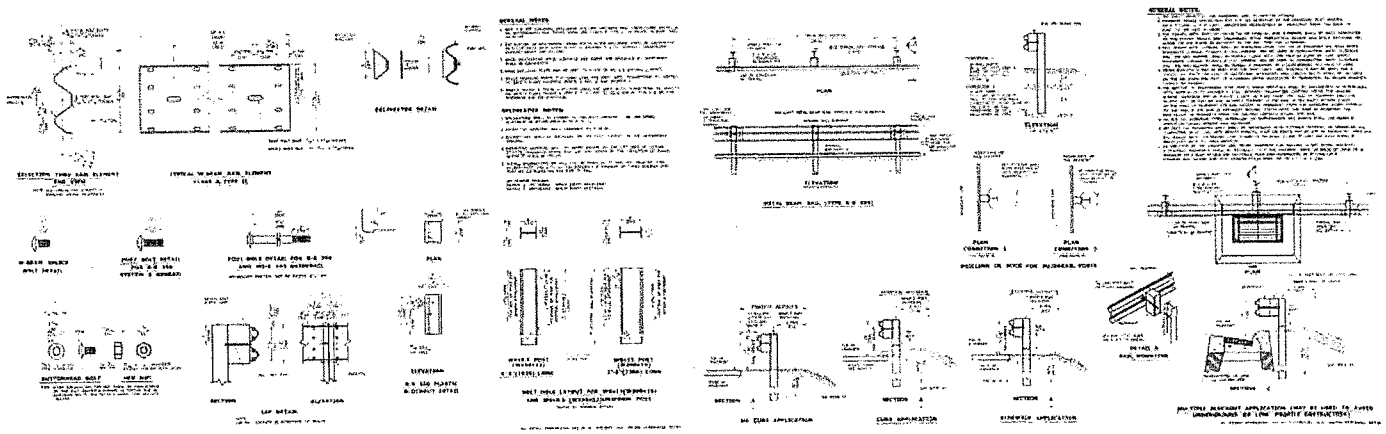


RANDOM BOULDER CLUSTER

NOT TO SCALE

NOTES:

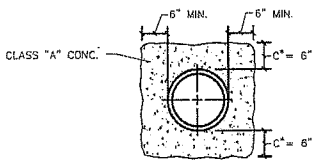
1. 3 BOULDERS PER RANDOM BOULDER CLUSTER.
2. PLACE BOULDERS IN THE MIDDLE THIRD OF THE STREAM WITHIN DEEPEST PORTION OF CHANNEL.
3. POSITION BOULDER GROUPS IN A UPSTREAM "V" FORMATION.
4. INDIVIDUAL BOULDERS PLACED IN THE STREAM SHOULD BE 18" TO 24" IN DIAMETER.
5. POSITION BOULDERS WITH THEIR LONG AXIS PARALLEL TO THE STREAM FLOW.
6. INSTALL FOOTER BOULDER TO WEDGE HEADER BOULDER IN PLACE FROM DOWNSTREAM.
7. INSTALL HEADER BOULDERS AT A LOW PROFILE SUCH THAT THEY ARE PARTIALLY SUBMERGED DURING NORMAL LOW FLOW. INSTALL SUCH THAT 1/3 OF ROCK DIAMETER IS BURIED IN STREAM CHANNEL.
8. FINISHED ELEVATION OF THE BOULDERS WILL BE DETERMINED IN THE FIELD.



METAL BEAM RAIL (TYPE R-B 350)

NOT TO SCALE

DETAIL TAKEN FROM CT DOT STANDARD DRAWINGS



CONCRETE ENCASEMENT

N.T.S.

*NOTE:
WHEN THE VERTICAL CLEARANCE BETWEEN THE PIPES IS LESS THAN 6" THE 'C' SHALL EQUAL VERTICAL CLEARANCE PLUS 3".

REVISIONS

Registered Landscape Architects Land Planners Environmental Consultants
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DESIGNED	DRAWN	CHECKED
-	-	-

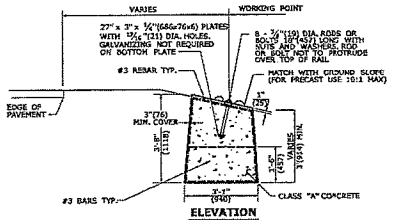
SCALE: ---

DATE: JULY 2012

PROJECT NO. 1383-21

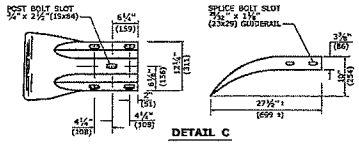
SHEET NO. 10

1. R-B END ANCHORAGE TYPE II INSTALLED ON FREEWAYS AND RAMPS SHALL USE CLASS B (10 GAUGE) TERMINAL AND W-BEAM RAIL ELEMENTS. ALL OTHER R-B END ANCHORAGE TYPE I SHALL USE 12 GAUGE TERMINAL AND W-BEAM RAIL ELEMENTS.
2. R-B END ANCHORAGE TYPE II MAY ONLY BE USED WHEN THE RAIL IS TURNED AND EXTENDED INTO A DRIVEWAY BEYOND CLEAR ZONE ON RAMPS WITH DESIGN SPEEDS < 45mph (72kph) TYPE II END ANCHORS SHALL USE CLASS A (12 GAUGE) TERMINAL ELEMENTS.
3. OTHER RADII WHICH CAN BE DEMONSTRATED TO PROVIDE THE INSTALLATIONS SHOWN FOR END ANCHORAGE TYPE II MAY BE APPROVED.
4. J-HOOK BOLTS MAY BE SUBSTITUTED FOR BOTTOM PLATE ANCHORAGE IN CONCRETE END ANCHORS OF THE SAME SIZE STRENGTH AND LENGTH AS NOTED ON THE PLANS.



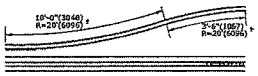
ELEVATION
DETAIL A

CONCRETE END ANCHOR FOR ROADSIDE



DETAIL C

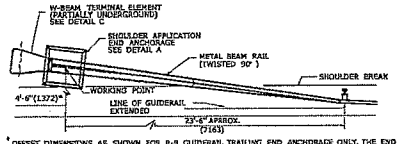
W-BEAM TERMINAL ELEMENT



DETAIL D

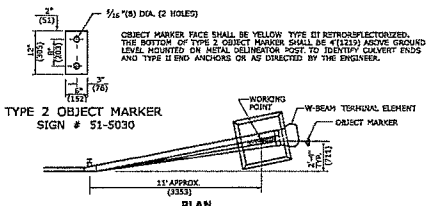
SHOP CURVED RAIL

SEE NOTE 3



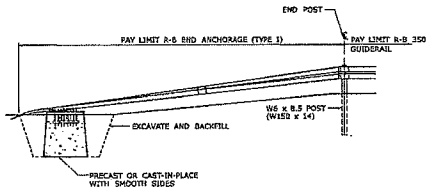
* OFFSET DIMENSIONS AS SHOWN FOR R-B GUIDERAIL TRAILING END ANCHORAGE ONLY. THE END POST OF LEADING END ANCHORAGE SHALL BE PLACED AT THE CLEAR ZONE AND THEN THE ANCHOR PLACED 4'-6"(1372) BEYOND THE EXTENDED GUIDERAIL OR AS DIRECTED BY THE ENGINEER.

PLAN



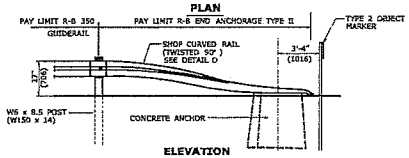
TYPE 2 OBJECT MARKER
SIGN # 51-5030

PLAN



ELEVATION

R-B END ANCHORAGE TYPE I (ROADSIDE APPLICATION)



ELEVATION

R-B END ANCHORAGE TYPE II

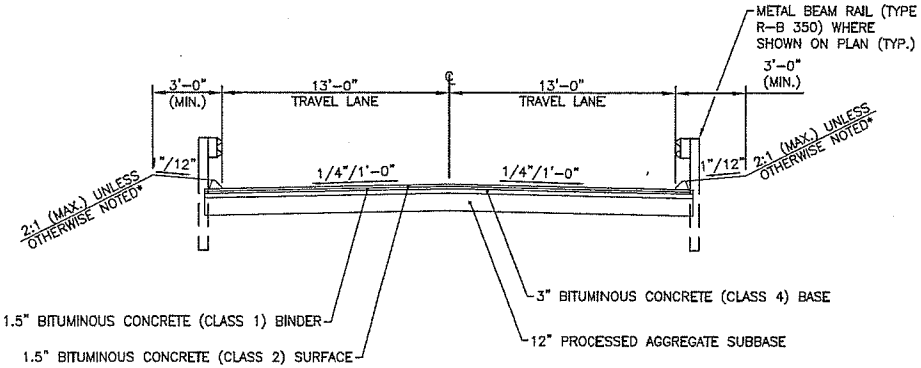
SEE NOTE 2

ALL METRIC DIMENSIONS ARE IN MILLIMETERS (mm) UNLESS OTHERWISE NOTED.

METAL BEAM RAIL END ACHORAGE DETAILS

NOT TO SCALE

DETAIL TAKEN FROM CT DOT STANDARD DRAWINGS



*SEE GRADING PLAN

TYPICAL ROADWAY SECTION

NOT TO SCALE

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ROWAYTON AVENUE
NORWALK, CONNECTICUT

DESIGNED	DRAWN	CHECKED
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SCALE: –

DATE: JULY 2012

PROJECT NO. 1383-21

SHEET NO. 11

SEDIMENT & EROSION CONTROL SPECIFICATIONS

GENERAL:

THESE GUIDELINES SHALL APPLY TO ALL WORK CONSISTING OF ANY AND ALL TEMPORARY AND/OR PERMANENT MEASURES TO CONTROL WATER POLLUTION AND SOIL EROSION, AS MAY BE REQUIRED, DURING THE CONSTRUCTION OF THE PROJECT.

IN GENERAL, ALL CONSTRUCTION ACTIVITIES SHALL PROCEED IN SUCH A MANNER SO AS NOT TO POLLUTE ANY WETLANDS, WATERCOURSE, WATERBODY, AND CONDUIT CARRYING WATER, ETC. THE CONTRACTOR SHALL LIMIT, INSOFAR AS POSSIBLE, THE SURFACE AREA OF EARTH MATERIALS EXPOSED BY CONSTRUCTION METHODS AND IMMEDIATELY PROVIDE PERMANENT AND TEMPORARY POLLUTION CONTROL MEASURES TO PREVENT CONTAMINATION OF ADJACENT WETLANDS, WATERCOURSES, AND WATERBODIES, AND TO PREVENT, INSOFAR AS POSSIBLE, EROSION ON THE SITE.

LAND GRADING

GENERAL:

1. THE RESHAPING OF THE GROUND SURFACE BY EXCAVATION AND FILLING OR A COMBINATION OF BOTH, TO OBTAIN PLANNED GRADES, SHALL PROCEED IN ACCORDANCE WITH THE FOLLOWING CRITERIA:

   a. THE CUT FACE OF EARTH EXCAVATION SHALL NOT BE STEEPER THAN TWO HORIZONTAL TO ONE VERTICAL (2:1).

   b. THE PERMANENT EXPOSED FACES OF FILLS SHALL NOT BE STEEPER THAN TWO HORIZONTAL TO ONE VERTICAL (2:1).

   c. THE CUT FACE OF ROCK EXCAVATION SHALL NOT BE STEEPER THAN ONE HORIZONTAL TO FOUR VERTICAL (1:4).

   d. PROVISION SHOULD BE MADE TO CONDUCT SURFACE WATER SAFELY TO STORM DRAINS TO PREVENT SURFACE RUNOFF FROM DAMAGING CUT FACES AND FILL SLOPES.

   e. EXCAVATIONS SHOULD NOT BE MADE SO CLOSE TO PROPERTY LINES AS TO ENDANGER ADJOINING PROPERTY WITHOUT PROTECTING SUCH PROPERTY FROM EROSION, SLIDING, SETTLING, OR CRACKING.

   f. NO FILL SHOULD BE PLACED WHERE IT WILL SLIDE OR WASH UPON THE PREMISES OF ANOTHER OWNER OR UPON ADJACENT WETLANDS, WATERCOURSES, OR WATERBODIES.

   g. PRIOR TO ANY REGRADING, A STABILIZED CONSTRUCTION ENTERANCE SHALL BE PLACED AT THE ENTRANCE TO THE WORK AREA IN ORDER TO REDUCE MUD AND OTHER SEDIMENTS FROM LEAVING THE SITE.

TOPSOILING

GENERAL:

1. TOPSOIL SHALL BE SPREAD OVER ALL EXPOSED AREAS IN ORDER TO PROVIDE A SOIL MEDIUM HAVING FAVORABLE CHARACTERISTICS FOR THE ESTABLISHMENT, GROWTH, AND MAINTENANCE OF VEGETATION.
2. UPON ATTAINING FINAL SUBGRADES, SCARIFY SURFACE TO PROVIDE A GOOD BOND WITH TOPSOIL.
3. REMOVE ALL LARGE STONES, TREE LIMBS, ROOTS AND CONSTRUCTION DEBRIS.
4. APPLY LIME ACCORDING TO SOIL TEST OR AT THE RATE OF TWO (2) TONS PER ACRE.

MATERIAL:

1. TOPSOIL SHOULD HAVE PHYSICAL, CHEMICAL, AND BIOLOGICAL CHARACTERISTICS FAVORABLE TO THE GROWTH OF PLANTS.
2. TOPSOIL SHOULD HAVE A SANDY OR LOAMY TEXTURE.
3. TOPSOIL SHOULD BE RELATIVELY FREE OF SUBSOIL MATERIAL AND MUST BE FREE OF STONES (OVER 1" IN DIAMETER), LUMPS OF SOIL, ROOTS, TREE LIMBS, TRASH, OR CONSTRUCTION DEBRIS. IT SHOULD BE FREE OF ROOTS OR RHIZOMES SUCH AS THISTLE, HATGRASS, AND QUACKGRASS.
4. AN ORGANIC MATTER CONTENT OF SIX PERCENT (6%) IS REQUIRED. AVOID LIGHT COLORED SUBSOIL MATERIAL.
5. SOLUBLE SALT CONTENT OF OVER 500 PARTS PER MILLION (PPM) IS LESS SUITABLE. AVOID TIDAL MARSH SOILS BECAUSE OF HIGH SALT CONTENT AND SULFUR ACIDITY.
6. THE pH SHOULD BE MORE THAN 6.0. IF LESS, ADD LIME TO INCREASE pH TO AN ACCEPTABLE LEVEL.

APPLICATION

1. AVOID SPREADING WHEN TOPSOIL IS WET OR FROZEN.
2. SPREAD TOPSOIL UNIFORMLY TO A DEPTH OF AT LEAST FOUR INCHES (4"), OR TO THE DEPTH SHOWN ON THE LANDSCAPING PLANS.

TEMPORARY VEGETATIVE COVER

GENERAL:

1. TEMPORARY VEGETATIVE COVER SHALL BE ESTABLISHED ON ALL UNPROTECTED AREAS THAT PRODUCE SEDIMENT, AREAS WHERE FINAL GRADING HAS BEEN COMPLETED, AND AREAS WHERE THE ESTIMATED PERIOD OF BARE SOIL EXPOSURE IS LESS THAN 12 MONTHS. TEMPORARY VEGETATIVE COVER SHALL BE APPLIED IF AREAS WILL NOT BE PERMANENTLY SEEDED BY SEPTEMBER 1.

SITE PREPARATION:

1. INSTALL REQUIRED SURFACE WATER CONTROL MEASURES.
2. REMOVE LOOSE ROCK, STONE, AND CONSTRUCTION DEBRIS FROM AREA.
3. TILLAGE SHOULD ACHIEVE A REASONABLY UNIFORM LOOSE SEEDBED. WORK ON CONTOUR IF SITE IS SLOPING.

ESTABLISHMENT:

1. SELECT APPROPRIATE SPECIES FOR THE SITUATION. NOTE RATES AND SEEDING DATES (SEE VEGETATIVE COVER SELECTION & MULCHING SPECIFICATION BELOW).
2. APPLY SEED UNIFORMLY ACCORDING TO THE RATE INDICATED BY BROADCASTING, DRILLING, OR HYDRAULIC APPLICATION.
3. UNLESS HYDROSEEDED, COVER RYEGRASS SEEDS WITH NOT MORE THAN 4 INCHES OF SOIL USING SUITABLE EQUIPMENT.
4. MULCH IMMEDIATELY AFTER SEEDING IF REQUIRED. (SEE VEGETATIVE COVER SELECTION & MULCHING SPECIFICATION BELOW.) APPLY STRAW OR HAY MULCH AND ANCHOR TO SLOPES GREATER THAN 3:1 OR WHERE CONCENTRATED FLOW WILL OCCUR.

PERMANENT VEGETATIVE COVER

GENERAL:

1. PERMANENT VEGETATIVE COVER SHALL BE ESTABLISHED AS VARIOUS SECTIONS OF THE PROJECT ARE COMPLETED IN ORDER TO STABILIZE THE SOIL, REDUCE DOWNSTREAM DAMAGE FROM SEDIMENT AND RUNOFF, AND TO ENHANCE THE AESTHETIC NATURE OF THE SITE. IT WILL BE APPLIED TO ALL CONSTRUCTION AREAS SUBJECT TO EROSION WHERE FINAL GRADING HAS BEEN COMPLETED AND A PERMANENT COVER IS NEEDED.

SITE PREPARATION:

1. INSTALL REQUIRED SURFACE WATER CONTROL MEASURES.
2. REMOVE LOOSE ROCK, STONE, AND CONSTRUCTION DEBRIS FROM AREA.
3. PERFORM ALL PLANTING OPERATIONS PARALLEL TO THE CONTOURS OF THE SLOPE.
4. APPLY TOPSOIL AS INDICATED ELSEWHERE HEREIN.
5. APPLY FERTILIZER ACCORDING TO SOIL TEST OR:
   - SPREAD SEEDING: WORK DEEPLY IN SOIL BEFORE SEEDING, 300 LBS. OF 10-10-10 FERTILIZER PER ACRE (7 LBS. PER 1,000 SQ. FT.); THEN SIX (6) TO EIGHT (8) WEEKS LATER, APPLY ON THE SURFACE AN ADDITIONAL 300 LBS. OF 10-10-10 FERTILIZER PER ACRE. AFTER SEPTEMBER 1, TEMPORARY VEGETATIVE COVER SHALL BE APPLIED.
   - FALL SEEDING: WORK DEEPLY IN SOIL BEFORE SEEDING, 600 LBS. OF 10-10-10 FERTILIZER PER ACRE (14 LBS. PER 1,000 SQ. FT.).

MULCHING:

STRAW OR HAY 70-90 LBS./1,000 SQ.FT.
(TEMPORARY VEGETATIVE AREAS)

WOOD FIBER IN HYDROMULCH SLURRY 25-50 LBS./1,000 SQ. FT.

VEGETATIVE COVER SELECTION & MULCHING

TEMPORARY VEGETATIVE COVER:

PERENNIAL RYEGRASS 3 LBS./1,000 SQ.FT.
(LOLIUM PERENNE)

PERMANENT VEGETATIVE COVER:

CREEPING RED FESCUE 2 LBS./1,000 SQ.FT.
(FESTUCA RUBRA)

REDTOP 1 LB./1,000 SQ.FT.
(AGROSTIS ALBA)

TALL FESCUE 2 LBS./1,000 SQ.FT.
(FESTUCA ARUNDINACEA)

MULCHING:

STRAW OR HAY 70-90 LBS./1,000 SQ.FT.
(TEMPORARY VEGETATIVE AREAS)

WOOD FIBER IN HYDROMULCH SLURRY 25-50 LBS./1,000 SQ. FT.

ESTABLISHMENT:

1. SMOOTH AND FIRM SEEDBED WITH CULTIPACKER OR OTHER SIMILAR EQUIPMENT PRIOR TO SEEDING (EXCEPT WHEN HYDROSEEDING).
2. SELECT ADAPTED SEED MIXTURE FOR THE SPECIFIC SITUATION. NOTE RATES AND THE SEEDING DATES (SEE VEGETATIVE COVER SELECTION & MULCHING SPEC. BELOW).
3. APPLY SEED UNIFORMLY ACCORDING TO RATE INDICATED, BY BROADCASTING, DRILLING, OR HYDRAULIC APPLICATION.
4. COVER GRASS AND LEGUME SEED WITH NOT MORE THAN 1/4 INCH OF SOIL WITH SUITABLE EQUIPMENT (EXCEPT WHEN HYDROSEEDING).
5. MULCH IMMEDIATELY AFTER SEEDING, IF REQUIRED, ACCORDING TO TEMPORARY MULCHING SPECIFICATIONS. (SEE VEGETATIVE COVER SELECTION & MULCHING SPECIFICATION BELOW).
6. USE PROPER INOCULANT ON ALL LEGUME SEEDINGS. USE FOUR (4) TIMES NORMAL RATES WHEN HYDROSEEDING.
7. USE SOD WHERE THERE IS A HEAVY CONCENTRATION OF WATER AND IN CRITICAL AREAS WHERE IT IS IMPORTANT TO GET A QUICK VEGETATIVE COVER TO PREVENT EROSION.

MAINTENANCE:

1. TEST FOR SOIL ACIDITY EVERY THREE (3) YEARS AND LIME AS REQUIRED.
2. ON SITES WHERE GRASSES PREDOMINATE, BROADCAST ANNUALLY 500 POUNDS OF 10-10-10 FERTILIZER PER ACRE (12 LBS. PER 1,000 SQ. FT.) OR AS NEEDED ACCORDING TO ANNUAL SOIL TESTS.
3. ON SITES WHERE LEGUMES PREDOMINATE, BROADCAST EVERY THREE (3) YEARS OR AS INDICATED BY SOIL TEST 300 POUNDS OF 0-20-20 OR EQUIVALENT PER ACRE (8 LBS PER 1,000 SQ. FT.).

EROSION CHECKS

GENERAL:

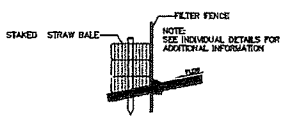
1. TEMPORARY PERVIOUS BARRIERS USING BALES OF HAY OR STRAW, HELD IN PLACE WITH STAKES DRIVEN THROUGH THE BALES AND INTO THE GROUND OR SEDIMENT GEOTEXTILE FASTENED TO A FENCE POST AND BURIED INTO THE GROUND, SHALL BE INSTALLED AND MAINTAINED AS REQUIRED TO CHECK EROSION AND REDUCE SEDIMENTATION.

CONSTRUCTION:

1. BALES SHOULD BE PLACED IN A ROW WITH ENDS TIGHTLY ABUTTING THE ADJACENT BALES.
2. EACH BALE SHALL BE EMBEDDED INTO THE SOIL A MINIMUM OF FOUR (4") INCHES.
3. BALES SHALL BE SECURELY ANCHORED IN PLACE BY WOOD STAKES OR REINFORCEMENT BARS DRIVEN THROUGH THE BALES AND INTO THE GROUND. THE FIRST STAKE IN EACH BALE SHALL BE ANGLED TOWARD THE PREVIOUSLY LAID BALE TO FORCE BALES TOGETHER.
4. GEOTEXTILE SHALL BE SECURELY ANCHORED AT THE TOP OF A THREE FOOT (3') HIGH FENCE AND BURIED A MINIMUM OF FOUR INCHES (4") TO THE SOIL. SEAMS BETWEEN SECTIONS OF FILTER FABRIC SHALL OVERLAP A MINIMUM OF TWO FEET (2').

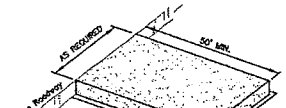
INSTALLATION AND MAINTENANCE:

1. BALED HAY EROSION BARRIERS SHALL BE INSTALLED AT ALL STORM SEWER INLETS WHEN BASIN IS BOTTOM OF ALL SLOPES.
2. BALED HAY EROSION BARRIERS AND SEDIMENT FILTER FENCE SHALL BE INSTALLED AT THE LOCATION INDICATED ON THE PLAN AND IN ADDITIONAL AREAS AS MAY BE DEEMED APPROPRIATE DURING CONSTRUCTION.
3. ALL EROSION CHECKS SHALL BE MAINTAINED UNTIL ADJACENT AREAS ARE STABILIZED.
4. INSPECTION SHALL BE FREQUENT (AT MINIMUM WEEKLY AND BEFORE AND AFTER HEAVY RAIN) AND REPAIR OR REPLACEMENT SHALL BE MADE PROMPTLY AS NEEDED.
5. EROSION CHECKS SHALL BE REMOVED WHEN THEY HAVE SERVED THEIR USEFULNESS SO AS NOT TO BLOCK OR IMPEDE STORMWATER FLOW OR DRAINAGE.



SEDIMENT FILTER FENCE AND HAYBALE

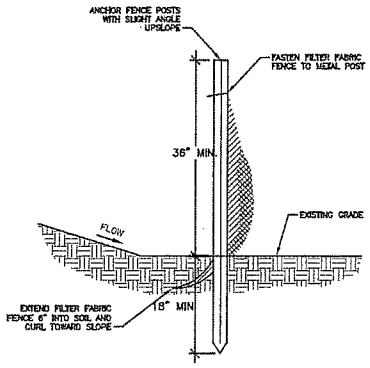
NOT TO SCALE



NOTE:
CONSTRUCTION ENTRANCE PAD SHALL BE INSTALLED AND MAINTAINED DURING OPERATIONS WHICH PROMOTE VEHICULAR TRACKING OF MUD.

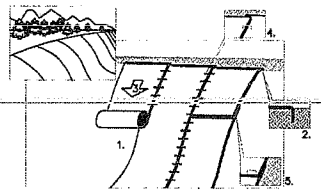
CONSTRUCTION ENTRANCE PAD

NOT TO SCALE



SEDIMENT FILTER FABRIC FENCE

NOT TO SCALE

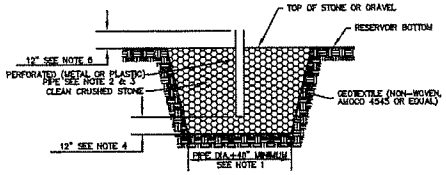


1. PREPARE SOIL BEFORE INSTALLING BLANKETS, INCLUDING APPLICATION OF LIME, FERTILIZER, AND SEED. NOTE: WHEN USING S150, DO NOT SEED PREPARED AREA. S150 MUST BE INSTALLED WITH PAPER SIDE DOWN.
2. BEGIN AT THE TOP OF THE SLOPE BY ANCHORING THE BLANKET IN A 6" DEEP BY 6" WIDE TRENCH. BACKFILL AND COMPACT THE TRENCH AFTER STAPLING.
3. ROLL THE BLANKETS DOWN THE SLOPE IN THE DIRECTION OF THE WATER FLOW.
4. THE EDGES OF PARALLEL BLANKETS MUST BE STAPLED WITH APPROXIMATELY 2" OVERLAP.
5. WHEN BLANKETS MUST BE SPLICED DOWN THE SLOPE, PLACE BLANKETS END OVER END (SHINGLE STYLE) WITH APPROXIMATELY 5" OVERLAP. STAPLE THROUGH OVERLAP AREA, APPROXIMATELY 12" APART.

REFER TO GENERAL STAPLE PATTERN GUIDE IN NORTH AMERICAN GREEN CATALOG FOR CORRECT STAPLE PATTERN RECOMMENDATIONS FOR SLOPE INSTALLATIONS.

APPLICATION OF EROSION CONTROL BLANKET ON SLOPES

NOT TO SCALE



TEMPORARY CONSTRUCTION DEWATERING SUMP

NOT TO SCALE

NOTES:

1. OVERALL SUMP PIT DIMENSIONS TO BE COMPATIBLE WITH ANTICIPATED SEEPAGE RATES AND PUMP TO BE USED.
2. THE STAND PIPE DIAMETER AND NUMBER OF PERFORATIONS TO BE COMPATIBLE WITH THE PUMP SIZE BEING USED.
3. PERFORATIONS IN THE STANDPIPE TO BE EITHER CIRCULAR OR SLOTS, PERFORATION SIZE SHALL NOT EXCEED 1/2" IN DIAMETER.
4. CRUSHED STONE TO BE NO SMALLER THAN CT DOT 3/4" SIZE NOR LARGER THAN CT DOT 2" SIZE. CRUSHED STONE SHALL EXTEND A MINIMUM OF 12" BELOW THE BOTTOM OF THE STANDPIPE.
5. A PROPERLY DESIGNED GEOTEXTILE TO BE PLACED BETWEEN THE EXISTING SOILS AND THE CRUSHED STONE BACKFILL.
6. THE STANDPIPE SHALL EXTEND A MINIMUM OF 12" ABOVE THE SURROUNDING GROUND.

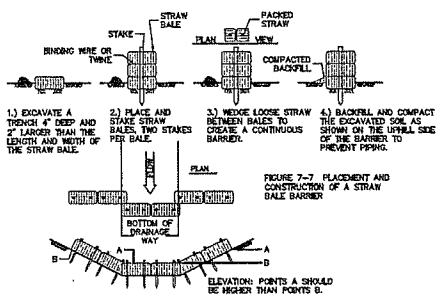
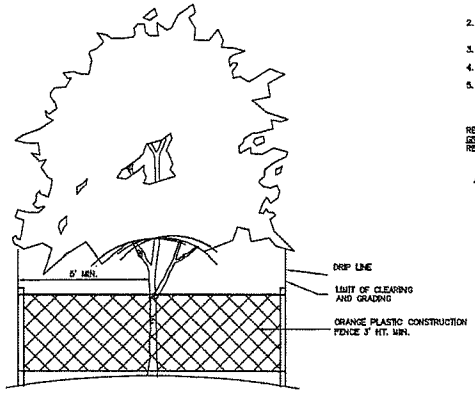


FIGURE 7-7 PLACEMENT AND CONSTRUCTION OF A STRAW BALE BARRIER

PLACEMENT & CONSTRUCTION OF A STRAW BALE BARRIER

NOT TO SCALE



TREE PROTECTION DETAIL

N.T.S.

REVISIONS

Engineering, Land Surveying, Architecture and Environmental Science
MILONE & MACBROOM
99 Realty Drive
Cheshire, Connecticut 06410
(203) 271-1773 Fax (203) 272-9733
www.miloneandmacbroom.com

SEDIMENT AND EROSION CONTROL DETAILS

ROWAYTON AVENUE CULVERT REPLACEMENT
KEELER BROOK
ROWAYTON AVENUE
NORWALK, CONNECTICUT

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DESIGNED	DRAWN	CHECKED
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SCALE: —

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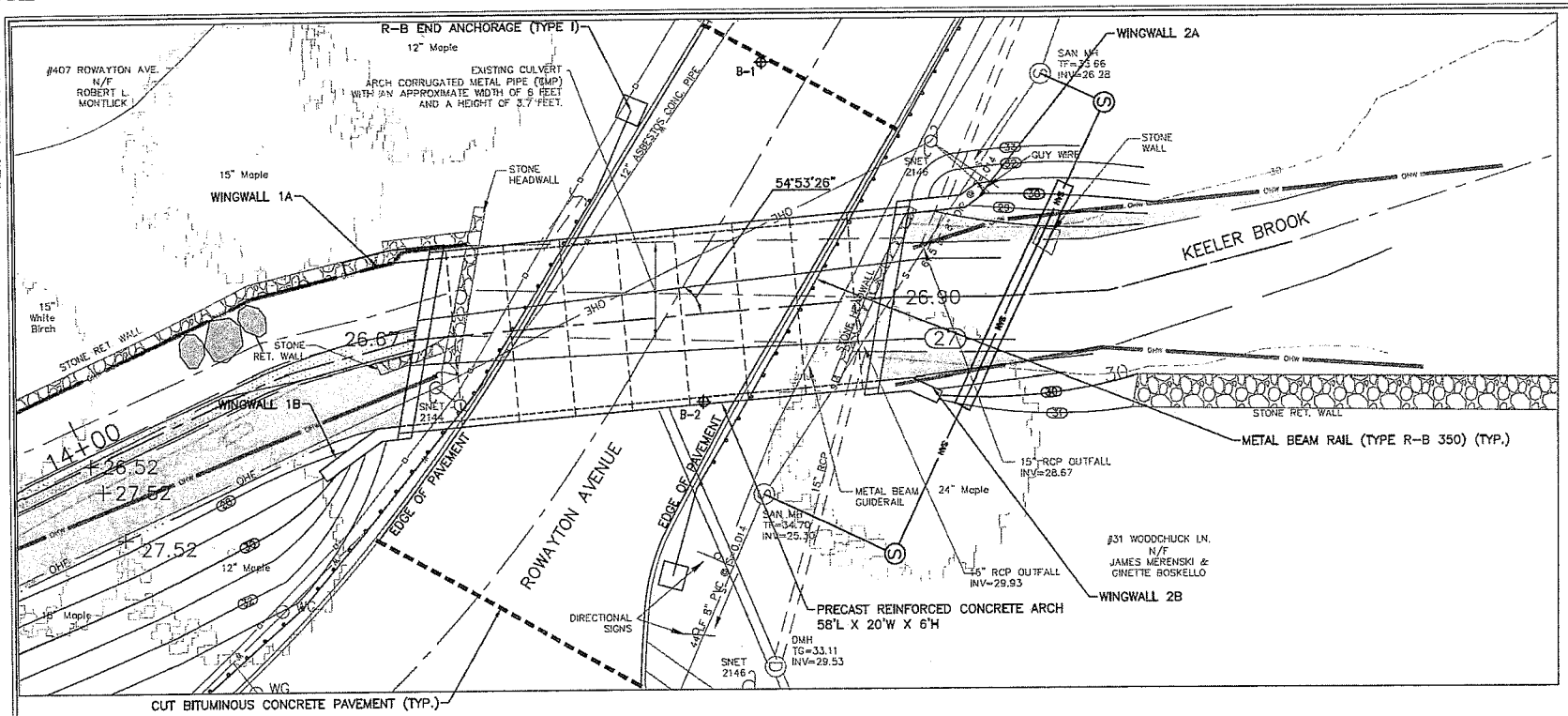
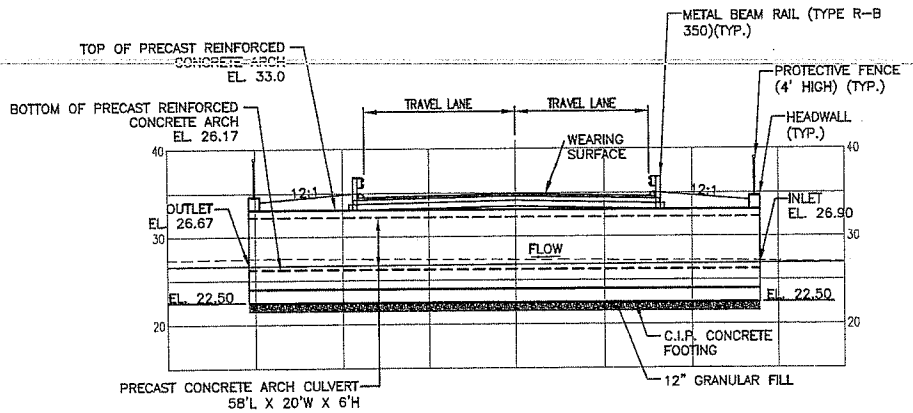
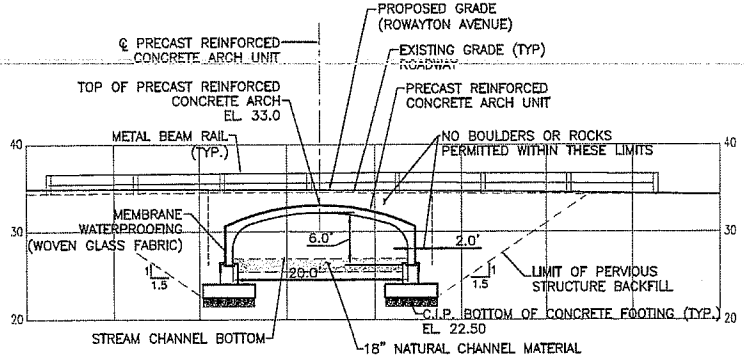


PLAN VIEW
SCALE: 1"=10'



CULVERT ELEVATION
SCALE: 1"=10'



TYPICAL CULVERT SECTION
SCALE: 1"=10'

SCALE IN FEET

REVISIONS

MILONE & MACBROOM
Registered Landscape Architecture and Environmental Science
99 Realty Drive
Cheshire, Connecticut 06410
(203) 271-1773 Fax (203) 272-9733
www.milone&macbroom.com

CULVERT GENERAL PLAN, SECTION, AND ELEVATION

ROWAYTON AVENUE CULVERT REPLACEMENT
KEELER BROOK
ROWAYTON AVENUE
NORWALK, CONNECTICUT

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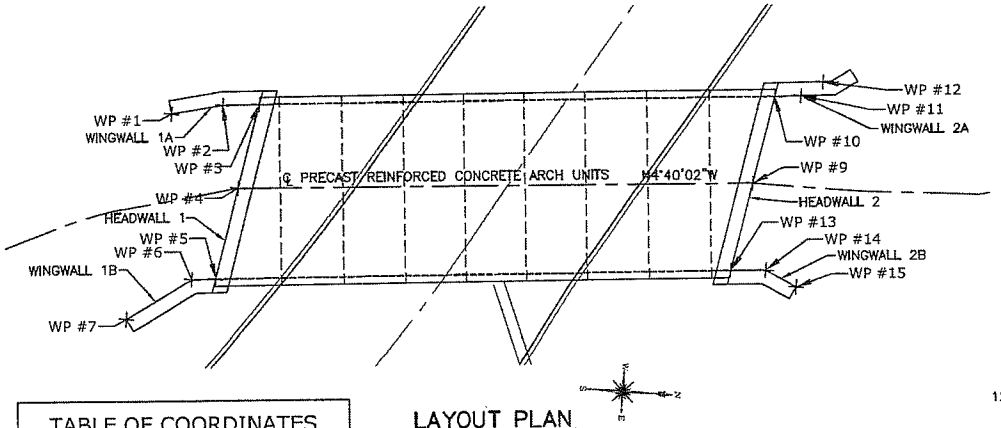
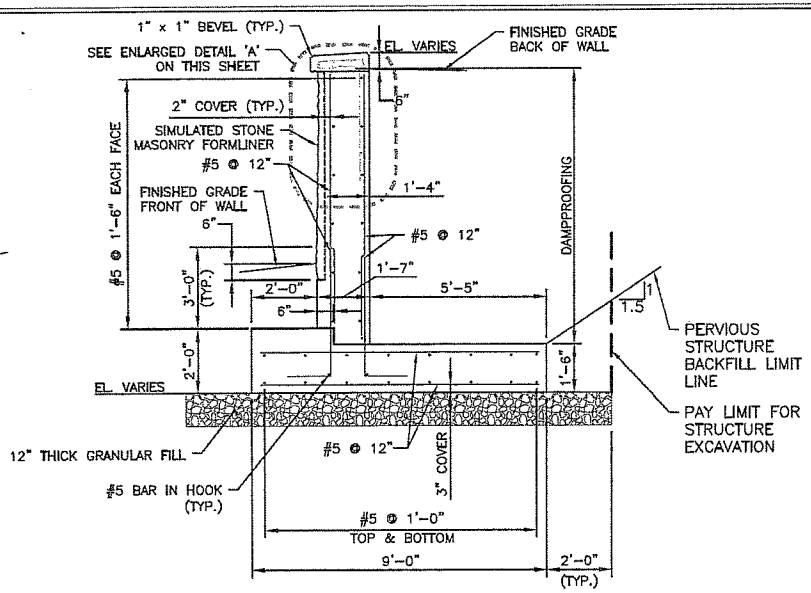
SCALE 1"=10'		
DATE JULY 2012		
PROJECT NO. 1383-21		
SHEET NO. 13		



LAYOUT PLAN

SCALE: 1"=10'

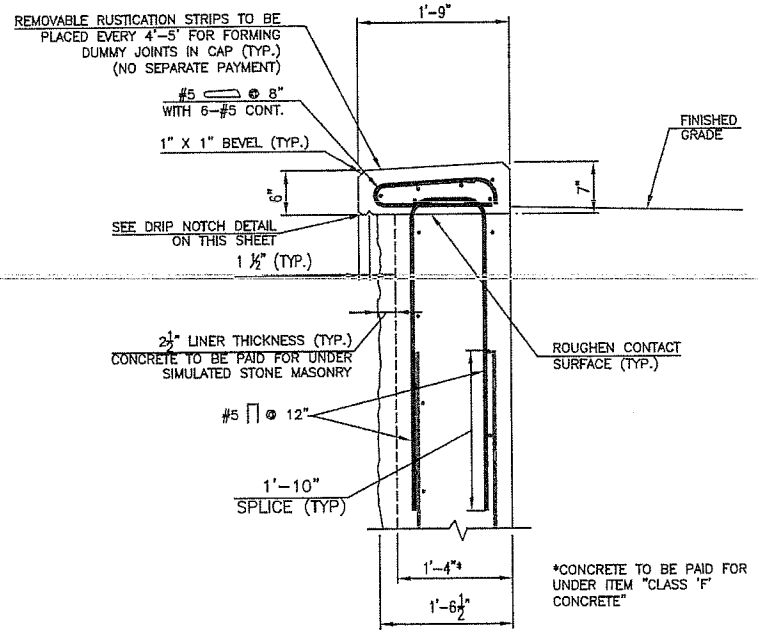
TABLE OF COORDINATES		
WP#	N-COORDINATE	E-COORDINATE
1	592646.10	808940.18
2	592651.90	808938.74
3	592656.05	808938.38
4	592654.35	808948.19
5	592652.52	808958.76
6	592649.78	808959.04
7	592642.68	808964.16
9	592712.81	808943.42
10	592714.57	808933.23
11	592717.56	808932.92
12	592719.99	808931.17
13	592711.04	808953.61
14	592715.02	808953.26
15	592718.65	808954.95



MAXIMUM DESIGN FOUNDATION PRESSURE = 1.93 KSF (STRENGTH 1)
1.33 KSF (SERVICE 1)

TYPICAL WINGWALL SECTION

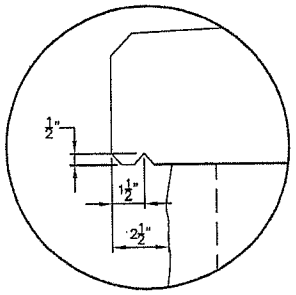
SCALE: 3/8" = 1'-0"



NOTES:
1. ENDS OF CONCRETE WALL TO BE TEXTURED EXCEPT WHERE NOT EXPOSED DUE TO ABUTTING ANOTHER STRUCTURE.
2. THE PATTERN SHALL BE CONTINUIOUS FROM FACE TO FACE AND AROUND THE END OF THE WALL.
3. CONCRETE WALL TO BE STAINED. SEE SPECIAL PROVISIONS FOR "SIMULATED STONE MASONRY".
4. MINIMUM 2" COVER UNLESS FOR REINFORCEMENT OTHERWISE NOTED.

ENLARGED DETAIL 'A"

SCALE: 1" = 1'-0"



DRIP NOTCH DETAIL

SCALE: 3" = 1'-0"

SCALE IN FEET

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99 Realty Drive
Cheshire, Connecticut 06410
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www.milonemacbroom.com

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CULVERT DETAILS

ROWAYTON AVENUE CULVERT REPLACEMENT
KEELER BROOK
ROWAYTON AVENUE
NORWALK, CONNECTICUT

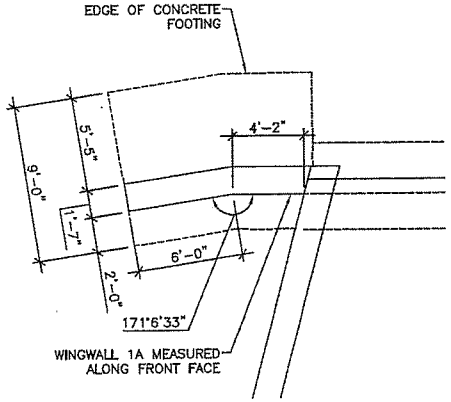
DESIGNED	DRAWN	CHECKED
—	TEB	—

SCALE 1"=10'

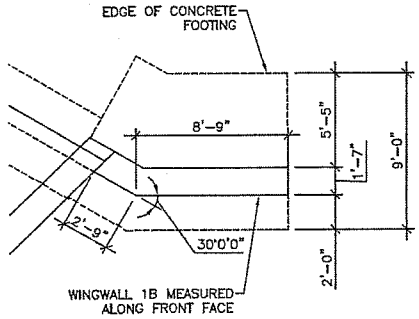
DATE JULY 2012

PROJECT NO. 1383-21

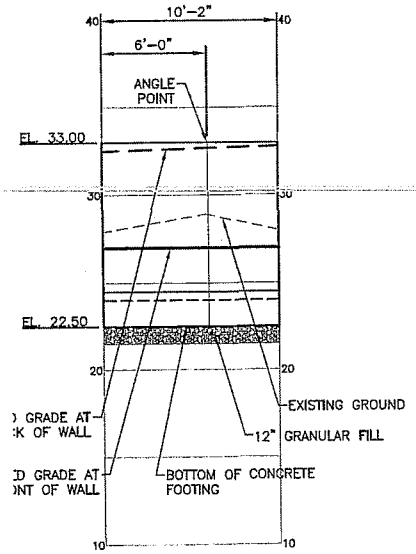
SHEET NO. 14



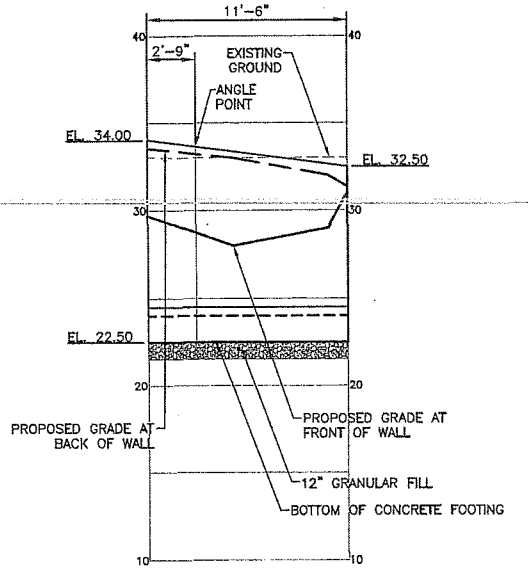
PLAN - WINGWALL 1A
SCALE: 1"=5'



PLAN - WINGWALL 1B
SCALE: 1"=5'



ELEVATION - WINGWALL 1A
SCALE: 1"=5'



ELEVATION - WINGWALL 1B
SCALE: 1"=5'

SCALE IN FEET

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99 Realty Drive
Cheshire, Connecticut 06410
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WINGWALL DETAILS (1)

ROWAYTON AVENUE CULVERT REPLACEMENT
KEELER BROOK

ROWAYTON AVENUE
NORWALK, CONNECTICUT

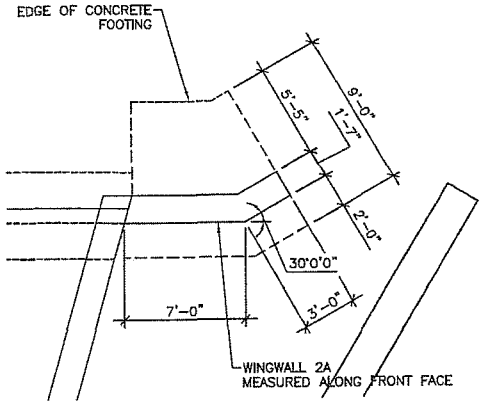
DESIGNED	DRAWN	CHECKED
-	TEB	-

SCALE: 1"=5'

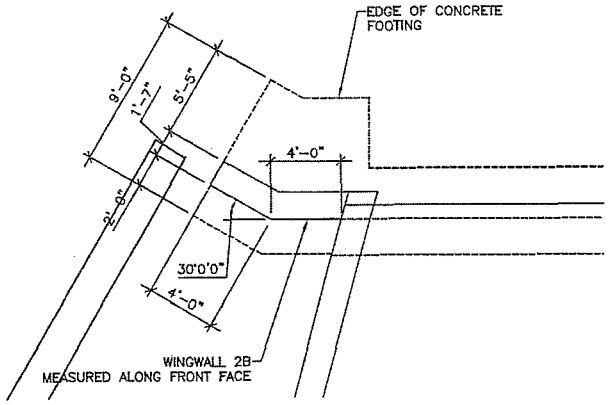
DATE: JULY 2012

PROJECT NO.: 1383-21

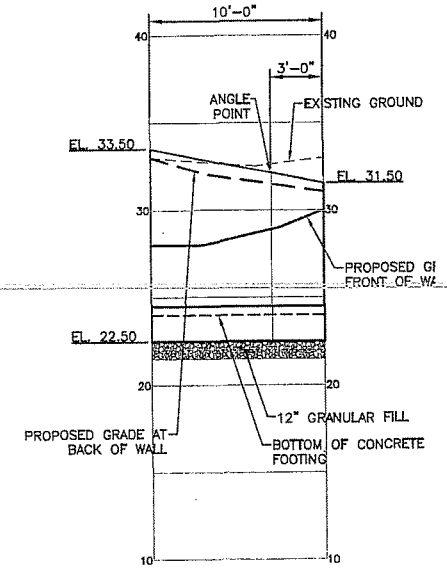
SHEET NO.: 15



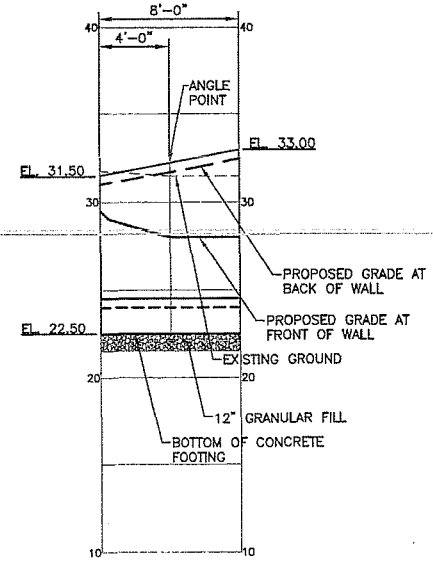
PLAN - WINGWALL 2A
SCALE: 1"=5'



PLAN - WINGWALL 2B
SCALE: 1"=5'



ELEVATION - WINGWALL 2A
SCALE: 1"=5'



ELEVATION - WINGWALL 2B
SCALE: 1"=5'

SCALE IN FEET

REVISIONS

Engineering, Land Surveying, Architecture and Environmental Science
MILONE & MACBROOM
99 Realty Drive
Cheshire, Connecticut 06410
(203) 271-1773 Fax (203) 272-9733
www.milonemacbroom.com

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WINGWALL DETAILS (2)

ROWAYTON AVENUE CULVERT REPLACEMENT
KEELER BROOK

ROWAYTON AVENUE
NORWALK, CONNECTICUT

—	TEB	—
DESIGNED	DRAWN	CHECKED

SCALE 1"=5'

DATE JULY 2012

PROJECT NO. 1383-21

SHEET NO. 16

GENERAL NOTES

1. SPECIFICATIONS: CONNECTICUT DEPARTMENT OF TRANSPORTATION FORM 816 (2004), SUPPLEMENTAL SPECIFICATIONS DATED JULY 2010 AND SPECIAL PROVISIONS.
2. DESIGN SPECIFICATIONS: AASHTO LRFD BRIDGE DESIGN SPECIFICATIONS (AASHTO–2004), WITH THE INTERIM SPECIFICATIONS UP TO AND INCLUDING 2010, AS SUPPLEMENTED BY THE CONNECTICUT DEPARTMENT OF TRANSPORTATION BRIDGE DESIGN MANUAL (2003).
3. ALLOWABLE DESIGN STRESSES:

   CLASS "A" BASED ON $f'c$ = 3,000 PSI FOR CAST–IN–PLACE
   BASED ON $f'c$ = 5,000 PSI FOR PRECAST

   REINFORCEMENT
   (ASTM A615 GRADE 60) fy = 24,000 PSI
4. LIVE LOAD: HS 20–44; 24,000# DUAL AXLES AT 4' O.C.
5. FUTURE PAVING ALLOWANCE: NONE

CONCRETE NOTES

1. REMAIN–IN–PLACE FORMS: THE USE OF REMAIN–IN–PLACE FORMS ON THIS STRUCTURE IS NOT ALLOWED.
2. CLASS "A" CONCRETE: CLASS "A" CONCRETE SHALL BE USED FOR THE FOOTINGS AND WINGWALLS.
3. EXPOSED EDGES: EXPOSED EDGES OF CONCRETE SHALL BE BEVELED 1" X 1" UNLESS DIMENSIONED OTHERWISE.
4. CONCRETE COVER: ALL REINFORCEMENT SHALL HAVE 2" COVER UNLESS DIMENSIONED OTHERWISE.
5. REINFORCEMENT: ALL REINFORCEMENT SHALL BE ASTM A615 GRADE 60.
6. CONSTRUCTION JOINTS: CONSTRUCTION JOINTS, OTHER THAN THOSE SHOWN ON THE PLANS, WILL NOT BE PERMITTED WITHOUT THE PRIOR APPROVAL OF THE ENGINEER.
7. THE CONTRACTOR SHALL DESIGN, MANUFACTURE AND CONSTRUCT PRECAST BOX CULVERT IN ACCORDANCE WITH THE SPECIAL PROVISIONS FOR "PRECAST BOX CULVERT" AND PER THE INSIDE DIMENSIONS, LENGTH AND DETAILS SHOWN ON THESE PLANS.
8. ALL INSERTS OR HOLES CAST INTO THE CULVERT SECTIONS FOR THE SOLE PURPOSE OF HANDLING AND SETTING THE UNITS SHALL BE GROUTED OVER TO A SMOOTH FINISH UPON COMPLETION OF WORK. NON–SHRINK GROUT SHALL BE USED TO GROUT THE REINFORCEMENT. THE COST OF FURNISHING AND INSTALLING INSERTS SHALL BE INCLUDED IN THE ITEM " PRECAST CONCRETE ARCH" AND SHALL BE ONE OF THE FOLLOWING:
   1. STAR EXPANSION INDUSTRIES CORP. TYPE P–35–T
   2. RICHMOND SCREW ANCHOR CO. TYPE LF
   3. DAYTON SUPERIOR CORP. TYPE F–57
9. ALL INSERTS SHALL HAVE A CORROSIVE RESISTANT COATING. THE #5 BARS WITH THREADED END SHALL BE COMPATIBLE WITH THE THREADED INSERTS (SEE NOTE 10). THREADS SHALL BE LONG ENOUGH TO FULLY ENGAGE INSERTS. THE THREADED BARS SHALL CONFORM TO THE REQUIREMENTS OF ASTM A615, GRADE 60.
10. MANUFACTURER SHALL SUBMIT SHOP DRAWINGS FOR APPROVAL. DRAWINGS SHALL BE STAMPED BY A CONNECTICUT–LICENSED PROFESSIONAL ENGINEER. MATERIAL CERTIFICATIONS AND CERTIFICATION OF COMPLIANCE WITH SPECIFICATIONS SHALL BE PROVIDED.

ADVANCED ENGINEERING TECHNOLOGIES, INC
55 LAURA STREET
NEW HAVEN, CONNECTICUT 06512

CLIENT: Milone & MacBroom, Inc.
99 Realty Drive
Cheshire, CT 06410

PROJECT NAME: Keeler Brook Bridge
Rowayton Avenue
LOCATION: Norwalk, CT

DRILLER: TH III — Line & Sinker
INSPECTOR: Office
CONTRACTOR: M. Greenbaker; R. Greenbaker
JOB #: 0550T11 — BORING NO: B-1
DATE STARTED: 06/08/11 — Sheet #: 1 of 1
DATE FINISHED: 06/08/11
SURFACE ELEV:
GROUND WATER ELEV:

GROUND WATER OBSERVATIONS
AT: 8 ft AFTER: 0 hours
AT: ft AFTER: hours

	Casing	Sampler	Core Bar
TYPE:	HSA	STD	
SIZE I.D.(inches):	2.5	1 3/8"	1 5/8"
HAMMER WT (lbs.):	140		
HAMMER FALL (inches):	30		

DEPTH (FEET)	CASING BLOWS PER FOOT	SAMPLE NO	TYPE	PEN. (FEET)	REC. (FEET)	DEPTH (FEET) FROM	TO	BLOWS PER 6" ON SAMPLER FOR 0-6	6-12	12-18	18-24	CORED TIME PER FT. (MIN)	STRATA CHANGE DEPTH / ELEV.	FIELD IDENTIFICATION OF SOIL REMARKS (INCL. COLOR, LOSS OF WASH WATER, ETC.)
													0.7	Asphalt.
														Misc. brown sand and gravel (Fill), some cobbles.
5													5.0	
		1	SS	2.0	1.0	5.0	7.0	13	15	10	7			Gray brown fine sand, some silt, trace gravel (Possible Fill).
													9.0	
10													11.0	Brown fine sand, some silt (Wet).
		2	SS	2.0	1.0	10.0	12.0	3	6	11	15			Gray fine sand.
15													16.0	
		3	SS	2.0	1.5	15.0	17.0	7	22	49	49			Gray F/C sand and gravel, trace silt.
20														
		4	SS	2.0	1.5	20.0	22.0	16	16	15	18		24.0	
25														Refusal.
30														

GROUND SURFACE TO FT. USED * AUGER THEN * CASING TO FT.
D = DRY, W = WASHED, C = CORED, P = PIT, A = AUGER
PROPORTIONS USED: Trace = 1% - 10%, Little = 10% - 20%, Some = 20% - 35%, And = 35% - 50%

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CLIENT: Milone & MacBroom, Inc.
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Cheshire, CT 06410

PROJECT NAME: Keeler Brook Bridge
Rowayton Avenue
LOCATION: Norwalk, CT

DRILLER: TH III — Line & Sinker
INSPECTOR: Office
CONTRACTOR: M. Greenbaker; R. Greenbaker
JOB #: 0550T11 — BORING NO: B-2
DATE STARTED: 06/08/11 — Sheet #: 1 of 1
DATE FINISHED: 06/08/11
SURFACE ELEV:
GROUND WATER ELEV:

GROUND WATER OBSERVATIONS
AT: 8 ft AFTER: 0 hours
AT: ft AFTER: hours

	Casing	Sampler	Core Bar
TYPE:	HSA	STD	
SIZE I.D.(inches):	2.5	1 3/8"	1 5/8"
HAMMER WT (lbs.):	140		
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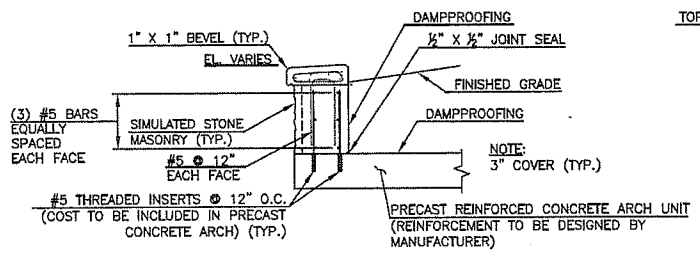
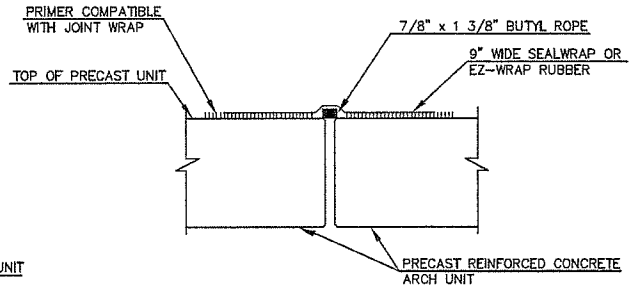
DEPTH (FEET)	CASING BLOWS PER FOOT	SAMPLE NO	TYPE	PEN. (FEET)	REC. (FEET)	DEPTH (FEET) FROM	TO	BLOWS PER 6" ON SAMPLER FOR 0-6	6-12	12-18	18-24	CORED TIME PER FT. (MIN)	STRATA CHANGE DEPTH / ELEV.	FIELD IDENTIFICATION OF SOIL REMARKS (INCL. COLOR, LOSS OF WASH WATER, ETC.)
													0.5	Asphalt.
														Brown F/C sand gravel and cobbles (Fill).
5														
		1	SS	2.0	0.5	5.0	7.0	8	13	15	15			
													9.0	
10														Brown F/M sand, little silt.
		2	SS	2.0	1.5	10.0	12.0	3	5	9	10			
													14.0	
15														Refusal.
														Boulders.
		3	C	5.0	1.0	14.0	19.0						19.0	
20														E.O.B.
25														
30														

GROUND SURFACE TO FT. USED * AUGER THEN * CASING TO FT.
D = DRY, W = WASHED, C = CORED, P = PIT, A = AUGER
PROPORTIONS USED: Trace = 1% - 10%, Little = 10% - 20%, Some = 20% - 35%, And = 35% - 50%



HEADWALL SECTION
NOT TO SCALE



JOINT SEAL DETAIL
SCALE: 1 1/2" = 1'-0"

REVISIONS

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BORING LOGS AND CONSTRUCTION DETAILS
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KEELER BROOK
ROWAYTON AVENUE
NORWALK, CONNECTICUT

DESIGNED	DRAWN	REVIEWED
–	TEB	–

SCALE: AS NOTED
DATE: JULY 2012
PROJECT NO.: 1363-21
SHEET NO.: 17