PUBLIC NOTICE

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

Comment Period Begins: March 1, 2011
Comment Period Ends: April 1, 2011
File Number: NAE-2011-00015
In Reply Refer To: Cori M. Rose
Phone: (978) 318-8306
E-mail:corirose@usace.army.mil

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

APPLICANT Town of Manchester DPW, Attn: Mark Carlino, P.O. Box 191, Manchester, Connecticut 06045

ACTIVITY The discharge of fill and associated excavation below ordinary high water over a 5,050 square foot area and within or adjacent to the floodway of Bigelow Brook at Center Springs Park for the removal of an existing trash rack, stabilization of eroding banks and reconstruction of the of the Bigelow Brook channel to a more natural configuration. The work is being undertaken at the request of the Connecticut Department of Environmental Protection as a supplemental environmental project.

WATERWAY AND LOCATION OF THE PROPOSED WORK
This work is proposed in Bigelow Brook at Center Springs Park, 442 Main Street, Manchester, Connecticut. The location is on the USGS Manchester quadrangle sheet at geographic coordinates 41.77829 N Latitude and -72.52129 E Longitude.

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.

SECTION 106 COORDINATION
Based on his initial review, the District Engineer has determined that the proposed work may impact properties listed in, or eligible for listing in, the National Register of Historic Places. Additional review and consultation to fulfil requirements under Section 106 of the National Historic Preservation Act of 1966, as amended, will be ongoing as part of the permit review process.

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 States of Connecticut, Maine, Massachusetts, New Hampshire and Rhode Island have approved **Coastal Zone Management Programs**. Where applicable the applicant states that any proposed activity will comply with and will be conducted in a manner that is consistent with the approved Coastal Zone Management Program. By this Public Notice, we are requesting the State concurrence or objection to the applicant's consistency statement.

The following authorizations have been applied for, or have been, or will be obtained:
(X) Permit, License or Assent from State.
(X) 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 Cori M. Rose at (978) 318-8306, (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.

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, 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: _____

PROPOSED WORK AND PURPOSE
The work includes the discharge of fill material in waters and wetlands associated with Bigelow Brook for removal of an existing non-functional trash rack and associated gabions, remediation of bank erosion caused by modification of instream flow forces from installation of the trash rack, and reconstruction of the Bigelow Brook stream channel to a more natural condition with enhancement of stream form and fish habitat.

Impacts in wetlands and waters associated with the proposed activity will include: 1,115 square feet of stream disturbance from the removal of the trash rack, gabion baskets and the re-grading and reconstruction of the channel, fill and grading over a 3,685 square feet area for restoration and stabilization of the eroded bank and floodplain habitat, and 250 square feet of disturbance and discharge of 275 cubic yards of backfill for replacement of five small culverts at the brook's confluence with Center Springs Pond with one single box culvert to improve movement of fish and wildlife through the area.

Following removal of the trashrack, a small pool at elevation 149 feet will be maintained and enhanced with a rounded cobble/gravel bed which will be integrated into reformation of the stream channel immediately upstream and downstream of the removal location. The artificially created channel and eroded bank areas will be restored to vegetated riparian floodplain habitat through the discharge of 240 cubic yards of fill (approximately six inches deep) to an elevation of 152 feet and subsequently vegetated with native wetland plants.

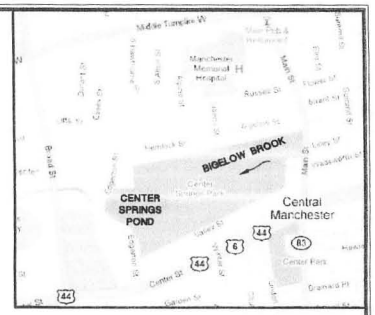
The proposed work will be completed in two phases with Phase I consisting of work along the north bank of the brook and Phase II along the south bank. During the low-flow season (July through September), sediment and erosion controls will be placed downstream of the work area and water within the stream will be temporarily diverted around the construction area with sand bag dams. Access to the work area will be obtained from adjacent uplands.

The purpose of the project is to remove obstructions to stream flow and sources of erosion within Bigelow Brook and to restore the brook and adjacent wetlands to a more natural condition.
The work is described on the enclosed plans entitled "BIGELOW BROOK STREAM CHANNEL RESTORATION CENTER SPRINGS PARK," on 10 sheets, and dated "November 2010."

MITIGATION
Alternatives to the removal of the existing trashrack were considered, but the applicant has concluded that complete removal, rather than replacement, is preferred for the purposes of enhancing existing fish and wildlife conditions within the brook and reducing sediment discharges from chronic erision. The extent of fill is minimal and has been minimized to the maximum extent feasible to allow reestablishment of the stream channel to pre-existing elevations and repair of the vegetated floodplain. Best management practices including work "in the dry" is proposed to minimize impact to the stream from suspended sediment. No additional compensatory mitigation is proposed as the work will result in an overall improvement to the fish and wildlife function and services of Bigelow Brook.

BIGELOW BROOK
STREAM CHANNEL RESTORATION

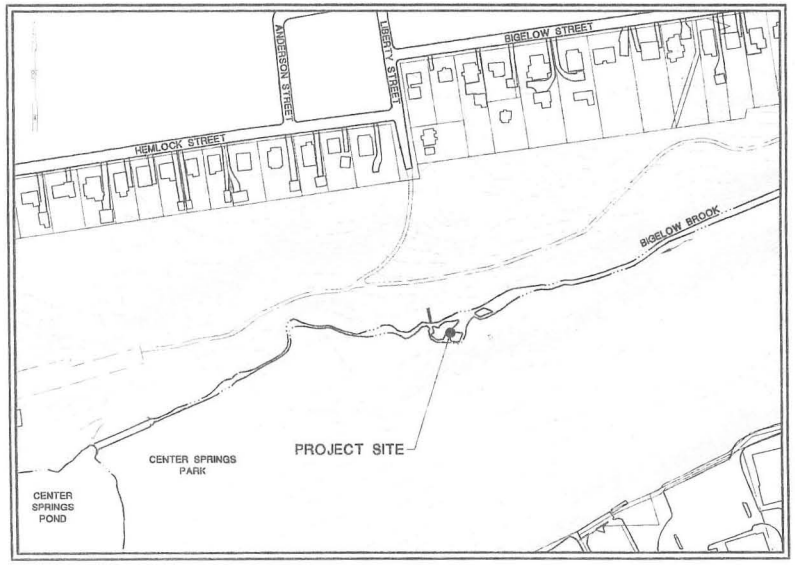
CENTER SPRINGS PARK
MANCHESTER, CONNECTICUT



SITE LOCATION MAP:

0 600' 1200'
SCALE: 1"=1200'

PRELIMINARY DESIGN
NOVEMBER 2010



PROJECT SITE VICINITY MAP:

0 15' 30'
SCALE: 1"=30'

Reduced Plan: Not To Scale

OWNER/APPLICANT

TOWN OF MANCHESTER
494 MAIN STREET
MANCHESTER, CONNECTICUT 06040

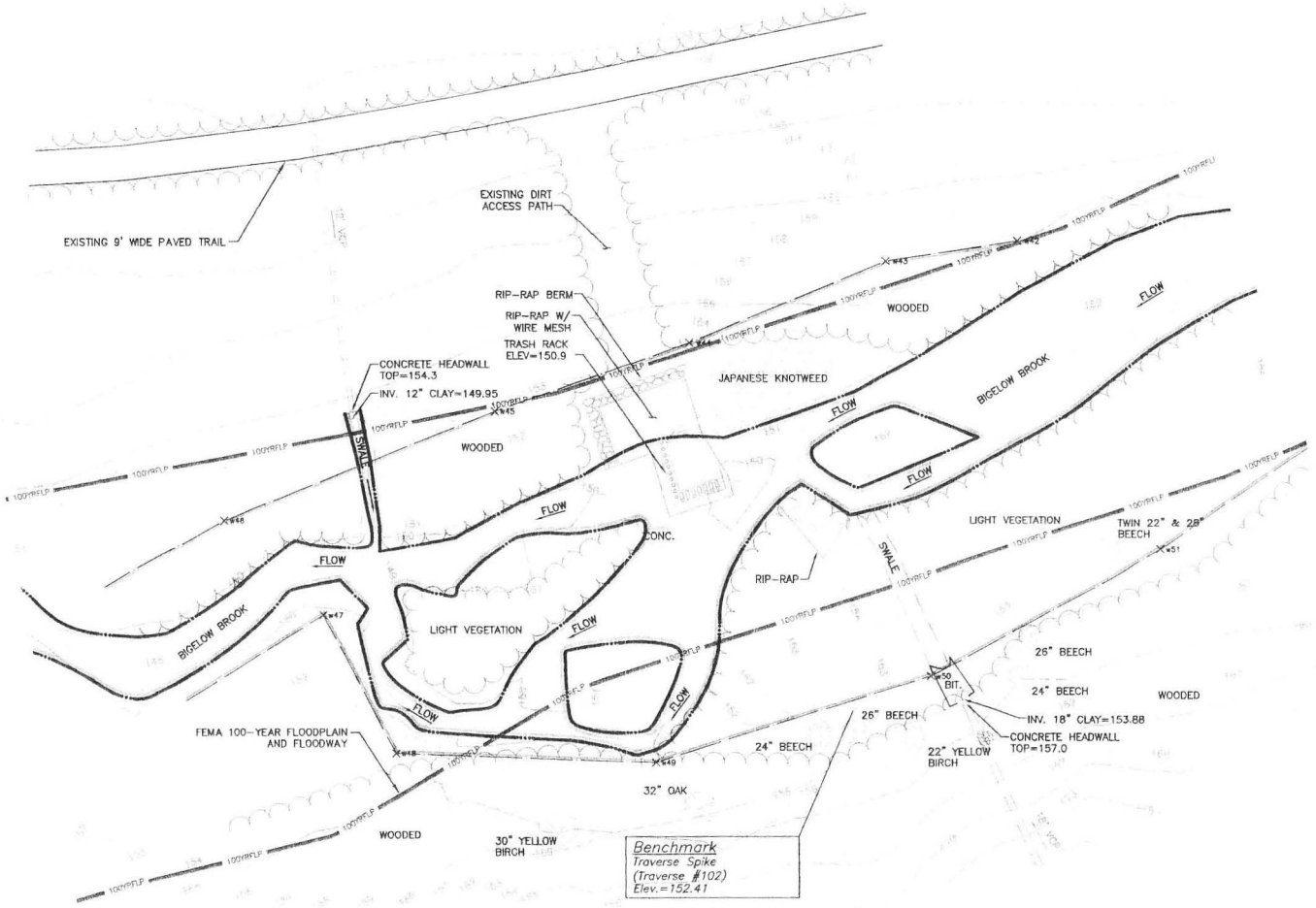
STATE OF CONNECTICUT
JEANINE A. GOUIN
No. 17400
LICENSED
PROFESSIONAL ENGINEER

LIST OF DRAWINGS:

01	TITLE SHEET
02	EXISTING CONDITIONS
03	CONSTRUCTION PLAN - CONSTRUCTION ACCESS AND WATER CONTROL
04	SITE PLAN - PROPOSED REMOVALS AND CHANNEL LAYOUT
05	SITE PLAN - PROPOSED LANDSCAPING, AND RESTORATION
06-07	CONSTRUCTION NOTES AND DETAILS

MILONE & MACBROOM®
Engineering, Landscape Architecture and Environmental Science

99 Realty Drive
Cheshire, Connecticut 06410
(203) 271-1773 Fax (203) 272-9733
www.milone-macbroom.com



LEGEND

- PROPERTY LINE
- STONE WALL
- BARBWIRE FENCE
- CHAIN LINK FENCE
- WATERCOURSE
- WATER MAIN
- SANITARY MAIN
- TREELINE
- HEDGEROW
- WETLAND
- TREE/SHRUB
- CATCH BASIN
- WATER VALVE
- HYDRANT
- LIGHT POST
- UTILITY POLE
- SIGN
- MONITORING WELL
- STREET LIGHT
- WATER METER
- SANITARY MANHOLE
- FENCE POST

MAPPING NOTES:

1. ALL VERTICAL INFORMATION REFERENCED TO THE NORTH AMERICAN VERTICAL DATUM OF 1988 (NAVD88). HORIZONTAL COORDINATES REFERENCED TO THE NORTH AMERICAN DATUM OF 1983 (NAD83).
2. UPLAND TOPOGRAPHY FROM THE TOWN OF MANCHESTER GIS CONTOUR INFORMATION
3. BATHYMETRIC AND TOPOGRAPHIC SURVEY PROVIDED BY THE TOWN OF MANCHESTER ON JUNE 4, 2010.
4. PROPERTY BOUNDARY AND OWNERSHIP INFORMATION IS BASED UPON TOWN OF MANCHESTER GIS ASSESSOR'S MAPPING, AND SHOULD BE CONSIDERED APPROXIMATE.
5. INLAND WETLAND BOUNDARY WAS FLAGGED BY: WILLIAM A. ROOT, CERTIFIED SOIL SCIENTIST, MILONE & MACBROOM, INC. ON JUNE 24, 2010.
6. INFORMATION REGARDING THE LOCATION OF EXISTING UTILITIES IS 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. CONTRACTOR SHALL 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.

SCALE IN FEET
0' 10' 20'
SCALE 1"=20'

REVISIONS

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

Reduced Plan: Not To Scale

EXISTING CONDITIONS

BIGELOW BROOK STREAM CHANNEL RESTORATION

CENTER SPRINGS PARK
MANCHESTER, CONNECTICUT

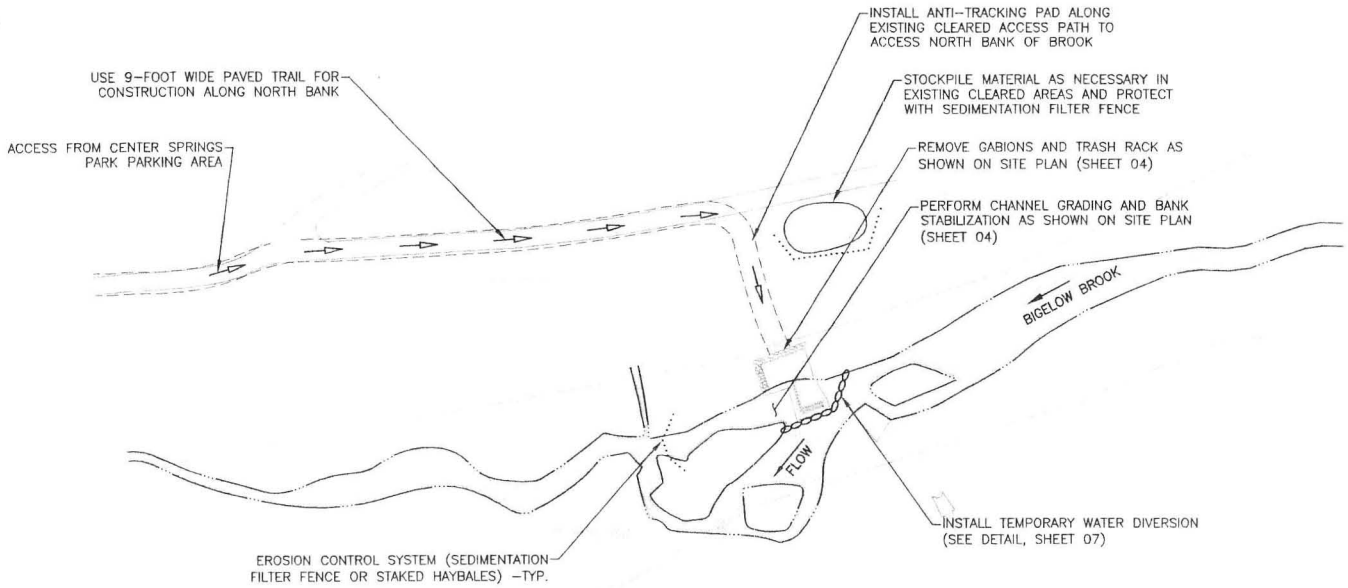
DESIGNED	DRAWN	CHECKED
JCM	JCM	WAG

SCALE: 1"=20'

DATE: NOVEMBER 2010

PROJECT NO.: 1694-20

SHEET NO.: 02

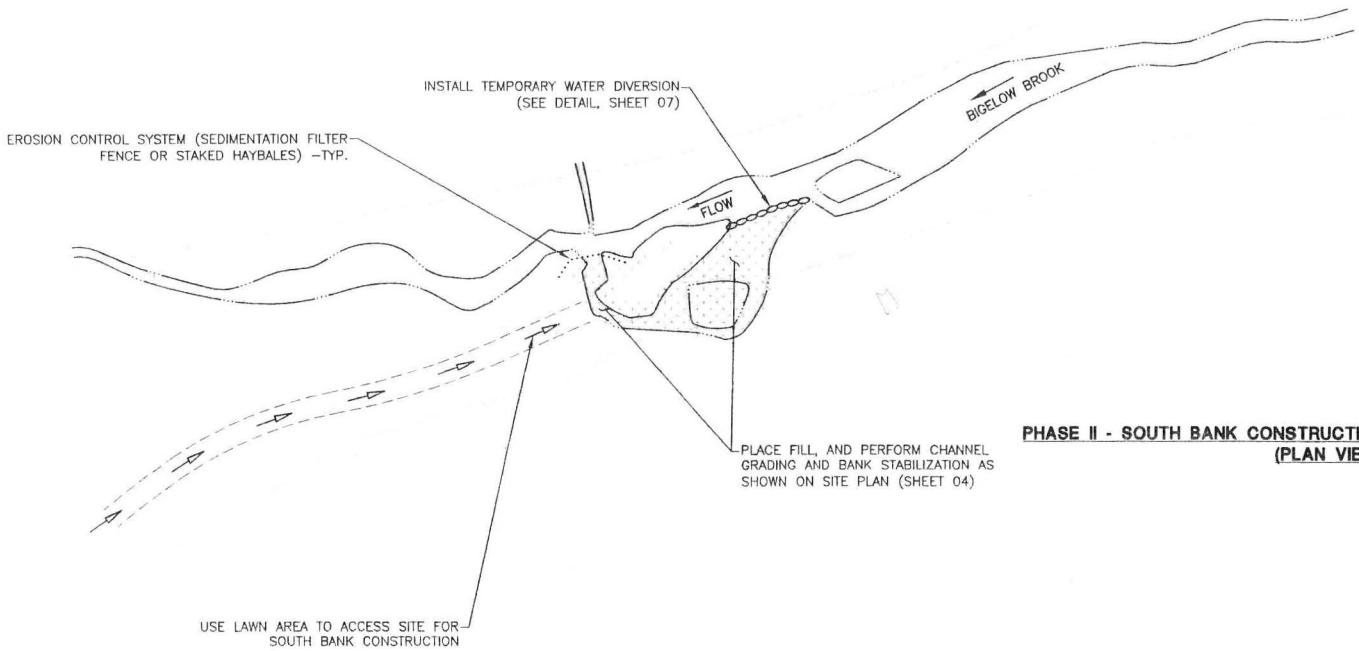


PHASE I - NORTH BANK CONSTRUCTION (PLAN VIEW)

CONSTRUCTION SEQUENCE:

CONSTRUCTION SCHEDULING SHALL BE COORDINATED WITH THE TOWN OF MANCHESTER SO AS NOT TO INTERFERE WITH RECREATIONAL USE OF THE PARK, THEREBY KEEPING PEDESTRIAN RISK TO A MINIMUM.

1. STAKE OUT LIMITS OF DISTURBANCE AND CONSTRUCTION BASELINE FOR PROJECT. ENGINEER TO APPROVE STAKEOUT PRIOR TO CONSTRUCTION ACTIVITIES.
2. INSTALL SEDIMENTATION AND EROSION CONTROLS AS SHOWN ON THE PLAN. ALL SEDIMENT AND EROSION CONTROLS ARE TO REMAIN UNTIL PERMANENT SITE RESTORATION AND VEGETATIVE COVER HAS BEEN ESTABLISHED. CONSTRUCTION SAFETY FENCING TO BE INSTALLED AS NECESSARY TO MAINTAIN PEDESTRIAN SAFETY, AT THE DIRECTION ENGINEER.
3. PREPARE ACCESS ROAD ON NORTH BANK OF BIGELOW BROOK.
4. INSTALL TEMPORARY WATER DIVERSION TO MAINTAIN WATER FLOW AROUND ACTIVE CONSTRUCTION AREA.
5. REMOVE RIPRAP GABIONS, CONCRETE FOOTING, AND STEEL BOLLARDS OF TRASH RACK, AND DISPOSE OF OFF SITE. REGRADE CHANNEL TO PROPOSED GRADE.
6. MOVE TEMPORARY WATER DIVERSION TO REDIRECT WATER FLOW TO COMPLETED CHANNEL, AND DEWATER PROPOSED FILL AREA.
7. PERFORM GRADING TO PROPOSED CONTOURS AS SHOWN ON PLANS.
8. REMOVE ALL TEMPORARY WATER CONTROLS.
9. TOPSOIL, SEED, AND MULCH ALL DISTURBED AREAS.
10. REMOVE ALL EROSION CONTROL MEASURES AFTER PERMANENT VEGETATIVE COVER IS ESTABLISHED.



PHASE II - SOUTH BANK CONSTRUCTION (PLAN VIEW)

SCALE IN FEET
0' 10' 20'
SCALE 1"=20'

REVISIONS

Engineering Landscape Architecture and Environmental Science
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Chesire, Connecticut 06410
(203) 271-1773 Fax (203) 272-9733
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CONSTRUCTION PLAN - CONSTRUCTION ACCESS AND WATER CONTROL

BIGELOW BROOK
STREAM CHANNEL RESTORATION

CENTER SPRINGS PARK
MANCHESTER, CONNECTICUT

Reduced Plan: Not To Scale

JCM	JCM	WAG
DESIGNED	DRAWN	CHECKED

SCALE 1"=40'

DATE NOVEMBER 2010

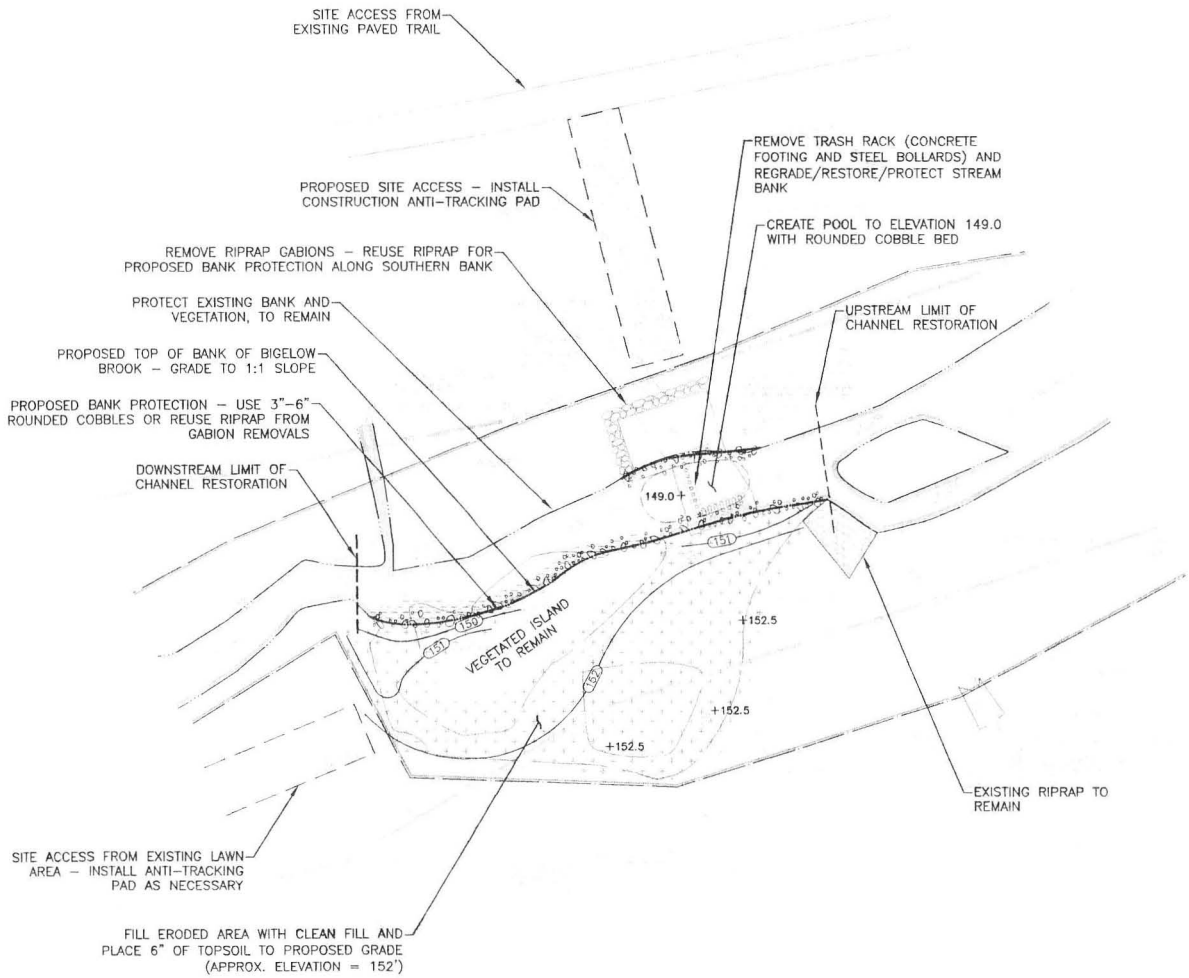
PROJECT NO. 1694-20

SHEET NO. 03

LEGEND

AREA OF PROPOSED FILL

AREA OF PROPOSED CUT



GENERAL NOTES:

1. MILONE & MACBROOM INC. ACCEPTS NO RESPONSIBILITY FOR THE ACCURACY OF MAPS AND DATA THAT HAVE BEEN SUPPLIED BY OTHERS.
2. ALL EXISTING DIMENSIONS AND ELEVATIONS SHALL BE VERIFIED IN THE FIELD PRIOR TO CONSTRUCTION. ANY DISCREPANCIES SHALL BE BROUGHT TO THE ATTENTION OF THE ENGINEER.
3. 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 – REVISED 2002" AND IN ALL CASES BEST MANAGEMENT PRACTICES SHALL PREVAIL.
4. ALL DISTURBED UPLAND AREAS SHALL RECEIVE A MINIMUM OF 6" TOPSOIL AND BE SEEDED WITH GRASS UNLESS OTHERWISE SPECIFIED ON PLANS.
5. ALL PROPOSED CONTOURS AND SPOT ELEVATIONS INDICATE FINISHED GRADE.
6. ALL CONSTRUCTION MATERIALS AND METHODS SHALL CONFORM TO THE TOWN OF MANCHESTER REQUIREMENTS.
7. ALL FUEL, OIL, PAINT, OR OTHER HAZARDOUS MATERIALS SHALL BE STORED A MINIMUM OF FIVE FEET IN ELEVATION ABOVE THE NORMAL WATER ELEVATION, AND OUTSIDE OF THE FEMA DESIGNATED 100–YEAR FLOOD ZONE BOUNDARY.
8. EQUIPMENT REFUELING SHALL OCCUR OFF–SITE.
9. THE CONTRACTOR SHALL BE RESPONSIBLE FOR THE CONTROL OF THE WATER DURING CONSTRUCTION. COSTS ASSOCIATED WITH DELAYS OR DAMAGE TO THE SITE BY EROSION OR FLOODING SHALL BE REPAIRED AT THE CONTRACTOR'S EXPENSE.
10. THE SEDIMENT AND EROSION CONTROL PLAN SHALL BE MODIFIED BY THE CONTRACTOR AT THE DIRECTION OF THE ENGINEER AND THE TOWN'S DESIGNATED REPRESENTATIVE AS NECESSITATED BY CHANGING SITE CONDITIONS.
11. ALL DISTURBED AREAS ARE TO BE RESTORED IN ACCORDANCE WITH SEDIMENTATION AND EROSION CONTROL GUIDELINES PROVIDED.
12. ALL DEWATERING WATER SHALL BE DISCHARGED IN A MANNER THAT MINIMIZES THE DISCOLORATION OF THE RECEIVING WATERS.
13. THE SITE SHOULD BE KEPT CLEAN OF LOOSE DEBRIS, LITTER, AND BUILDING MATERIALS SUCH THAT NONE OF THE ABOVE ENTER WATERS OR WETLANDS.
14. A COPY OF ALL PLANS AND REVISIONS, AND THE SEDIMENT AND EROSION CONTROL PLAN SHALL BE MAINTAINED ON–SITE AT ALL TIMES DURING CONSTRUCTION.

SCALE IN FEET
0' 10' 20'
SCALE 1"=20'

REVISIONS

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

Reduced Plan: Not To Scale

SITE PLAN - PROPOSED REMOVALS AND CHANNEL LAYOUT

BIGELOW BROOK
STREAM CHANNEL RESTORATION

CENTER SPRINGS PARK
MANCHESTER, CONNECTICUT

JCM	JCM	WAG
DESIGNED	DRAWN	CHECKED

1"=20'
SCALE

NOVEMBER 2010
DATE

1694-20
PROJECT NO.

04
SHEET NO.

ABBREVIATIONS

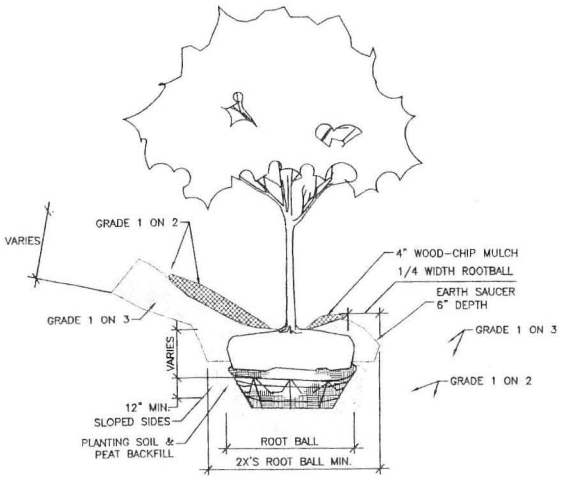
REV. = REVISION
QTY. = QUANTITY
SPR. = SPREAD
HT. = HEIGHT
MIN. = MINIMUM
B&B = BALL AND BURLAP
GAL. = GALLON
CAL. = CALIPER
CONT. = CONTAINER

FLOODPLAIN RESTORATION PLANT LIST

TREES	REV	QTY	KEY	COMMON NAME	BOTANICAL NAME	SIZE	COMMENTS
		3	AR	RED MAPLE	ACER RUBRUM	5'-6' HT.	CONTAINER OR B&B
		3	BA	YELLOW BIRCH	BETULA ALLEGHANIENSIS	5'-6' HT.	CONTAINER OR B&B
		1	QB	SWAMP WHITE OAK	QUERCUR BICOLOR	5'-6' HT.	CONTAINER OR B&B
SHRUBS	**REV**	**QTY**	**KEY**	**COMMON NAME**	**BOTANICAL NAME**	**SIZE**	**COMMENTS**
		23	SD	SILKY DOGWOOD	CORNUS AMOMUM	3'-4' HT.	FULL & DENSE
		15	NA	NORTHERN ARROWWOOD	VIBURNUM DENTATUM	3'-4' HT.	FULL & DENSE
		19	AE	AMERICAN ELDERBERRY	SAMBUCUS CANADENSIS	3'-4' HT.	FULL & DENSE
SEED MIXES	**REV**	**QTY**	**KEY**	**COMMON NAME**		**PROVIDER**	
		3 LBS		NEW ENGLAND CONSERVATION / WILDLIFE SEED MIX		NEW ENGLAND WETLAND PLANTS INC.	
		7 LBS		NEW ENGLAND EROSION CONTROL/RESTORATION MIX FOR DETENTION BASINS AND MOIST SITES		NEW ENGLAND WETLAND PLANTS, INC.	

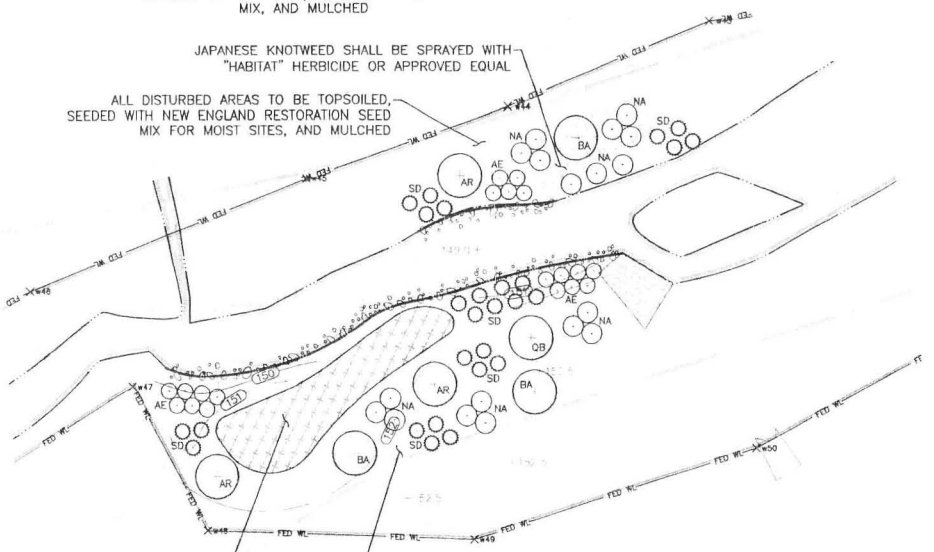
NEW ENGLAND CONSERVATION / WILDLIFE SEED MIX
RECOMMENDED APPLICATION RATE: (1743 SQUARE FEET/ LB)
SEED MIX Species: Big Bluestem (Andropogon gerardii), Switchgrass (Panicum virgatum), Little Bluestem (Schizachyrium scoparium), Canada Wild Rye (Elymus canadensis), Fox Sedge (Carex vulpinoidea), Partridge Pea (Chamaecrista fasciculata), Fringed Bromegrass (Bromus ciliatus), Pennsylvania Smartweed (Polygonum pensylvanicum), Common Milkweed (Asclepias syriaca), Showy Tick-Trefoil (Desmodium canadense), New England Aster (Aster novae-angliae), Flat-top Aster (Aster umbellatus), Nodding Bur-Marigold (Bidens cernua).

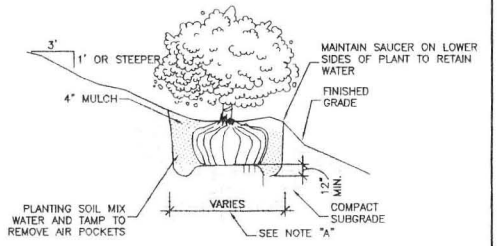
NEW ENGLAND EROSION CONTROL/RESTORATION MIX FOR DETENTION BASINS AND MOIST SITES
RECOMMENDED APPLICATION RATE: (1250 SQUARE FEET/ LB)
SEED MIX Species: Upland Bentgrass (Agrostis perennans), Creeping Bentgrass (Agrostis stolonifera), Big Bluestem, Niagra (Andropogon gerardii), New England Aster (Aster novae-angliae), Fox Sedge (Carex vulpinoidea), Virginia Wild Rye (Elymus virginicus), Boneset (Eupatorium perfoliatum), Grass Leaved Goldenrod (Euthamia graminifolia (Solidago g.)), Creeping Red Fescue (Festuca rubra), Soft Rush (Juncus effusus), Sensitive Fern (Onoclea sensibilis), Switch Grass (Panicum virgatum), Little Bluestem (Schizachyrium scoparium), Green Bulrush (Scirpus atrovirens), Wool Grass (Scirpus cyperinus), Blue Vervain (Verbena hastata)



TREE PLANTING DETAIL

NOT TO SCALE





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 PLANTING DETAIL

NOT TO SCALE

PLANTING NOTES

1. THE CONTRACTOR SHALL VERIFY THE LOCATION OF ALL UNDERGROUND UTILITIES PRIOR TO EXCAVATING PLANT PITS.
2. THE LANDSCAPE CONTRACTOR SHALL PROVIDE A 6" MINIMUM DEPTH OF TOPSOIL FOR ALL DISTURBED AREAS. WATER AND MULCH WITH STRAW OR EROSION CONTROL BLANKET SYSTEM TO ESTABLISH SEED MIXES.
3. PLANT SPECIES MAY BE ADJUSTED BASED ON AVAILABILITY AT TIME OF PLANTING. ALL PLANT MATERIAL SUBSTITUTIONS ARE SUBJECT TO REVIEW AND APPROVAL BY THE ENGINEER. ADJUST PLANT LOCATIONS AS REQUIRED.
4. ALL PLANT MATERIALS SHALL CARRY A FULL GUARANTEE FOR A PERIOD OF ONE YEAR FROM THE DATE OF PROJECT COMPLETION, TO INCLUDE PROMPT TREATMENT OR REMOVAL AND REPLACEMENT OF ANY PLANTS FOUND TO BE IN AN UNHEALTHY CONDITION BY THE ENGINEER. ALL REPLACEMENTS SHALL BE OF THE SAME KIND AND SIZE OF PLANTS SPECIFIED IN THE PLANT LIST.
5. WHERE A SIZE RANGE IS SPECIFIED AT LEAST 50% OF PLANTS PROVIDED SHALL BE OF THE LARGER SIZE.

SCALE IN FEET
0' 10' 20'
SCALE 1"=20'

REVISIONS

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

SITE PLAN - PROPOSED LANDSCAPING, AND RESTORATION
BIGELOW BROOK
STREAM CHANNEL RESTORATION
CENTER SPRINGS PARK
MANCHESTER, CONNECTICUT

Reduced Plan: Not To Scale

JCM	JCM	WAG
DESIGNED	DRAWN	CHECKED

SCALE 1"=20'
DATE NOVEMBER 2010
PROJECT NO. 1694-20
SHEET NO. 05

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 ENTRANCE 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, NUTGRASS, 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 SIX INCHES (6"), 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. APPLY LIME ACCORDING TO SOIL TEST OR AT A RATE OF ONE (1) TON OF GROUND DOLOMITIC LIMESTONE PER ACRE (5 LBS. PER 100 SQ. FT.).

4. APPLY FERTILIZER ACCORDING TO SOIL TEST OR AT THE RATE OF 300 LBS. OF 10-10-10 PER ACRE (7 LBS. PER 1,000 SQ. FT.) AND SECOND APPLICATION OF 200 LBS. OF 10-10-10- (5 LBS. PER 1,000 SQ. FT.) WHEN GRASS IS FOUR INCHES (4") TO SIX INCHES (6") HIGH. APPLY ONLY WHEN GRASS IS DRY.

5. UNLESS HYDROSEEDED, WORK IN LIME AND FERTILIZER TO A DEPTH OF FOUR (4") INCHES USING A DISK OR ANY SUITABLE EQUIPMENT.

6. 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 1/4 INCH 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% 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.
   - FALL SEEDING: WORK DEEPLY IN SOIL, BEFORE SEEDING, 600 LBS. OF 10-10-10 FERTILIZER PER ACRE (14 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 GEOTEXTILE FABRIC 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 FABRIC 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').

VEGETATIVE COVER SELECTION & MULCHING

TEMPORARY VEGETATIVE COVER:

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

PERMANENT VEGETATIVE COVER:

GENERAL SEEDING:

LOFTS – "ATHLETIC FIELD MIXTURE" (OR APPROVED EQUAL)

REBEL 3D, REBEL JR. OR TRIBUTE TALL FESCUE	80%
SYDSPORT, KENTUCKY BLUEGRASS	10%
PALMER II PERENNIAL RYEGRASS	10%

SEEDING RATE: 6 LBS./1000 S.F.

SPRING SEEDING: 4/1 to 5/31

FALL SEEDING: 8/16 to 10/15

WETLAND SWALE SEEDING:

BLACKLEDGE RIVER NURSERY: "WETLAND SEED MIX" (OR "NEW ENGLAND WETMIX")
SEEDING RATE: 1 LBS./3000 S.F.

BLACKLEDGE RIVER NURSERY, INC.
MARLBOROUGH, CT.
1-860-295-1022

WILDFLOWER SEEDING:

NEW ENGLAND WETLAND PLANTS, INC.: "CONSERVATION/WILDFLOWER MIX" (OR APPROVED EQUAL)

SEEDING RATE: 15 LBS. PER ACRE

NEW ENGLAND WETLAND PLANTS, INC.
AMHERST, MA.
1-413-256-1752

TEMPORARY MULCHING:

STRAY 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.).

REVISIONS

Engineering, Landscape Architecture and Environmental Science
MILONE & MACBROOM
99 Realty Drive
Cheshire, Connecticut 06410
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www.miloneandmacbroom.com

Reduced Plan: Not To Scale

CONSTRUCTION NOTES AND DETAILS

BIGELOW BROOK
STREAM CHANNEL RESTORATION
CENTER SPRINGS PARK
MANCHESTER, CONNECTICUT

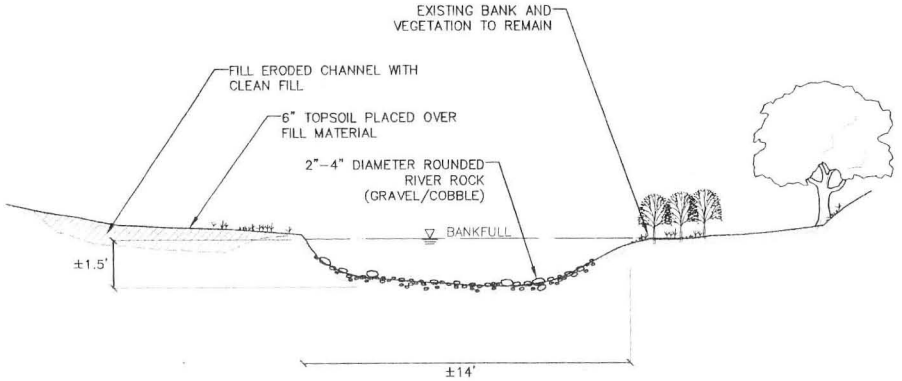
JCM	JCM	WAG
DESIGNED	DRAWN	CHECKED

1"=20'
SCALE

NOVEMBER 2010
DATE

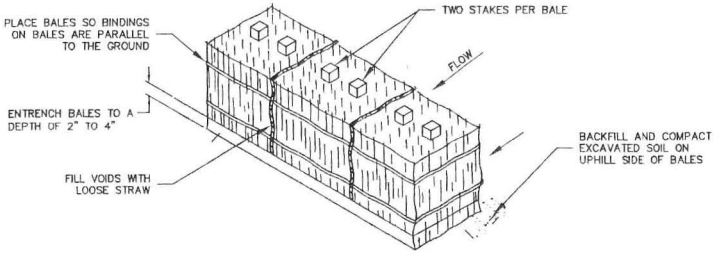
1694-20
PROJECT NO.

06
SHEET NO.



TYPICAL SECTION OF RESTORED CHANNEL

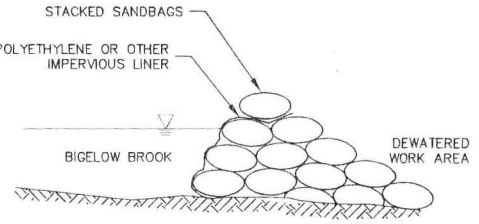
NOT TO SCALE



1. IDEALLY, BALES SHOULD BE ENTRENCHED 2 TO 4 INCHES AND TIGHTLY BUTTED TOGETHER. BALES CAN BE SUCCESSFULLY PLACED WITHOUT A TRENCH IF GOOD GROUND CONTACT IS MADE. REMOVE HEAVY BRUSH AND FILL ALL VOIDS WITH LOOSE STRAW.
2. BALES SHALL BE ONLY USED AS A TEMPORARY BARRIER AND FOR NO LONGER THAN 60 DAYS.
3. WHEN SEDIMENTATION DEPOSITS REACH WITHIN 3" OF THE TOP OF BALES, REMOVE SEDIMENTATION OR ADD ADDITIONAL BALES ON SEDIMENTATION DIRECTLY BEHIND FIRST ROW OF BALES AS DIRECTED BY THE ENGINEER.
4. UPON ESTABLISHMENT OF GROUND COVER ON DISTURBED AREAS AND WHEN DIRECTED BY THE ENGINEER, HAY BALES WILL BE REMOVED AND USED AS MULCH. ANY SEDIMENTATION WILL BE THINLY SPREAD UPON ESTABLISHED GROUND COVER.

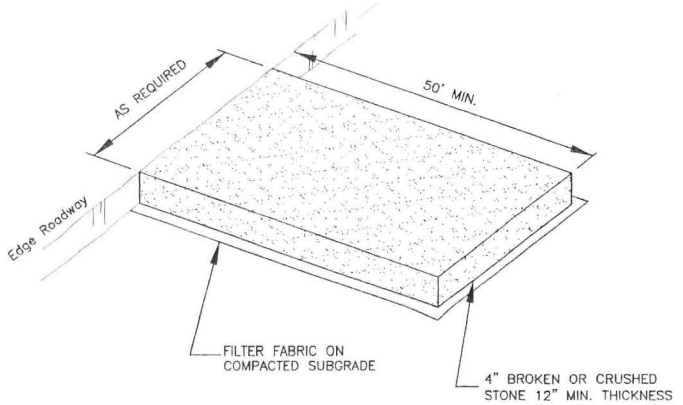
HAYBALE BARRIER PROTECTION

NOT TO SCALE



TEMPORARY WATER DIVERSION

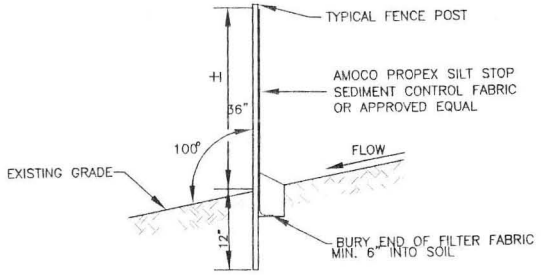
NOT TO SCALE



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

CONSTRUCTION ENTRANCE PAD

NOT TO SCALE



NOTE:
1. CONTRACTOR SHALL HAVE AVAILABLE ON-SITE A MIN. OF 300 LINEAR FEET OF SILT FENCE FOR USE IF REQUIRED BY FIELD CONDITIONS.

SEDIMENT FILTER FENCE

NOT TO SCALE

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CONSTRUCTION NOTES AND DETAILS

BIGELOW BROOK
STREAM CHANNEL RESTORATION

CENTER SPRINGS PARK
MANCHESTER, CONNECTICUT

Reduced Plan: Not To Scale

PRELIMINARY DESIGN PLANS (IWS)

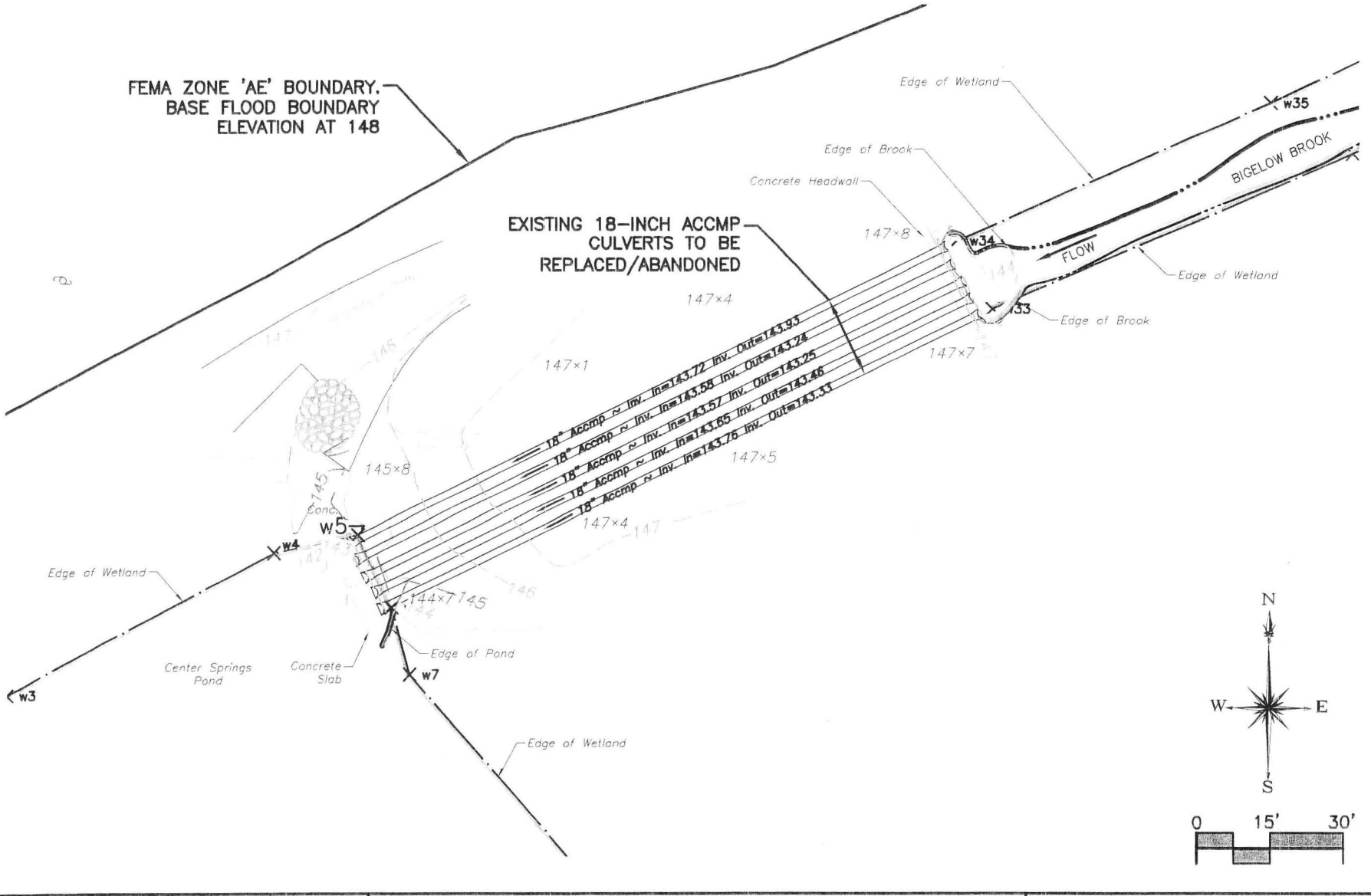
DESIGNED	DRAWN	CHECKED
JCM	JCM	WAG

SCALE: 1"=20'H, 1"=4'V

DATE: NOVEMBER 2010

PROJECT NO.: 1694-20

SHEET NO.: 07



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BIGELOW BROOK

CENTER SPRINGS PARK, MANCHESTER, CONNECTICUT

APPLICANT:
TOWN OF MANCHESTER

MMI#: 1694-20-3

DRAWN BY: GDW

EXISTING CONDITIONS

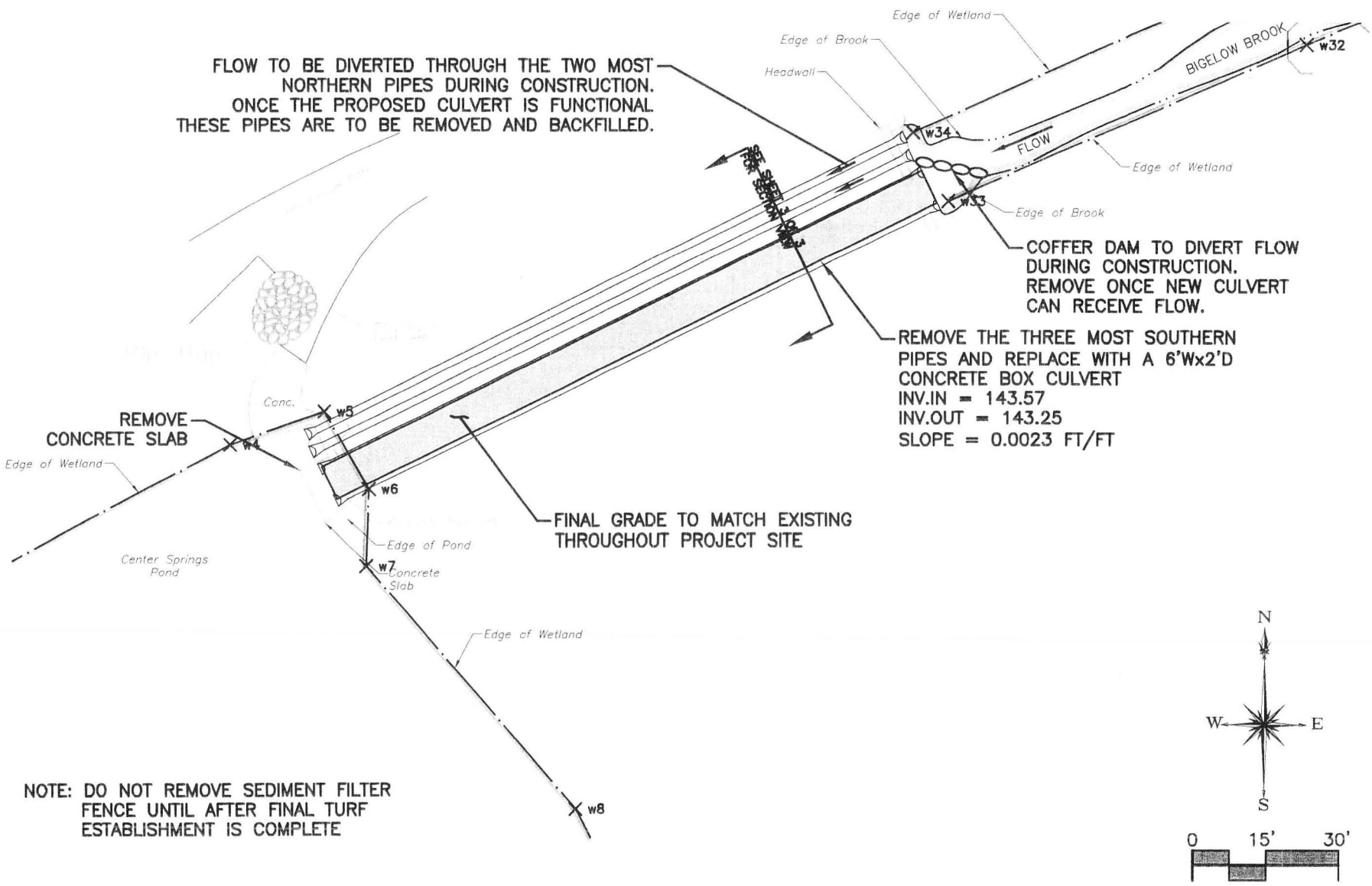
DATE: SEPT 2010

SCALE: 1"=30'

ATTACHMENT B
1 of 3

Drawing: H:\1694-20\DWG\CURRENT\B8-LAYOUT.DWG Layout Tab:ATTACHMENT_B-1 OF 3

Plotted by: GWENW On this date: Mon, 2010 September 20 - 3:25pm



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BIGELOW BROOK

CENTER SPRINGS PARK, MANCHESTER, CONNECTICUT

APPLICANT: TOWN OF MANCHESTER

MMI#: 1694-20-3

DRAWN BY: GDW

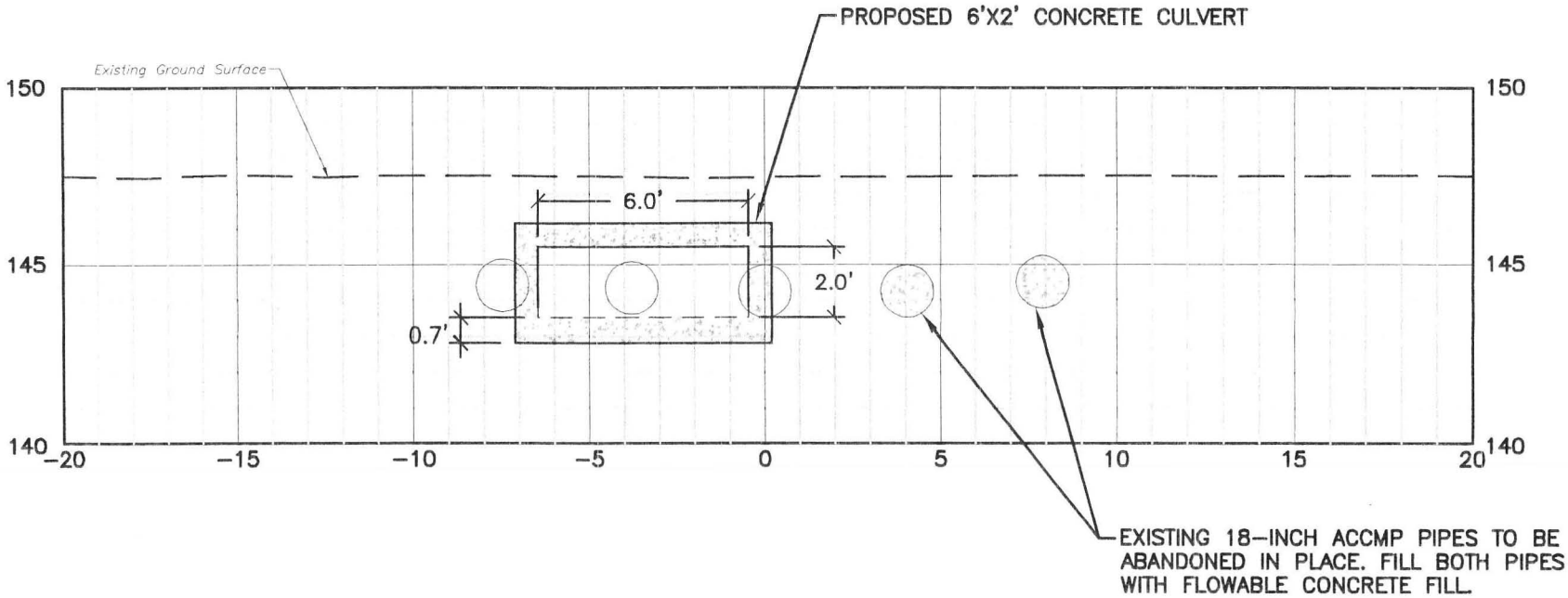
PROPOSED CONDITIONS

DATE: DEC 2010

SCALE: 1"=30'

ATTACHMENT B
2 of 3

Drawing: H:\1694-20\DWG\ARCHIVE\2010-09-29 GDW\BB-LAYOUT.DWG Layout Tab:ATTACHMENT_B-2OF3
Plotted by: DANNE On this date: Tue, 2010 December 7 - 2:49pm



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BIGELOW BROOK

CENTER SPRINGS PARK, MANCHESTER, CONNECTICUT

APPLICANT:
TOWN OF MANCHESTER

MMI#: 1694-20-3

DRAWN BY: GDW

PROPOSED CULVERT

DATE: **OCT. 2010**

SCALE: **1" = 5'**

ATTACHMENT B
3 of 3

Drawing: H:\1694-20\DWG\CURRENT\BB-LAYOUT.DWG Layout Tab:ATTACHMENT_B-3OF3-REV

Plotted by: GWENW On this date: Thu, 2010 October 14 - 1:30pm