HEMINWAY DAM REMOVAL AND STEELE BROOK RESTORATION
DAM NUMBER 153-4-6900
TOWN OF WATERTOWN
LITCHFIELD COUNTY, CONNECTICUT

SHEET INDEX:

<table>
<thead>
<tr>
<th>SHEET NO.</th>
<th>SHEET DESCRIPTION</th>
</tr>
</thead>
<tbody>
<tr>
<td>1</td>
<td>TITLE SHEET</td>
</tr>
<tr>
<td>2</td>
<td>EXISTING CONDITIONS PLAN</td>
</tr>
<tr>
<td>3</td>
<td>PROPOSED CONSTRUCTION SEQUENCE AND SLEC</td>
</tr>
<tr>
<td>4</td>
<td>PROPOSED CONDITIONS PLAN</td>
</tr>
<tr>
<td>5</td>
<td>PLANTING PLAN</td>
</tr>
<tr>
<td>6</td>
<td>CROSS SECTIONS AND LONGITUDINAL PROFILE</td>
</tr>
<tr>
<td>7</td>
<td>CROSS SECTIONS</td>
</tr>
<tr>
<td>8</td>
<td>CONSTRUCTION DETAILS</td>
</tr>
<tr>
<td>9</td>
<td>CONSTRUCTION DETAILS</td>
</tr>
<tr>
<td>10</td>
<td>CONSTRUCTION DETAILS</td>
</tr>
<tr>
<td>11</td>
<td>NOTES</td>
</tr>
<tr>
<td>12</td>
<td>RESTORATION PLAN</td>
</tr>
</tbody>
</table>

PROJECT OWNER / APPLICANT:
TOWN OF WATERTOWN
61 ECHO LAKE ROAD
WATERTOWN, CT 06795

LAURA A.S. WILDMAN
Professional Engineer
CT Lic. No. 1639

REVISED AS PER CLIENT COMMENTS.
REVISED PER ACOE AND CTDEEP INPUT.

CALL BEFORE YOU DIG!
CONNECTICUT’S LAW REQUIRES A CALL TO THE ONE CALL SYSTEM PRIOR TO CONSTRUCTION. WE CALL 811 CALL BEFORE YOU DIG 1-800-922-4455

SCALE: 1" = 500'  2010 NAIP ORTHOIMAGERY

STRAWGER ENGINEERS
200 PRINCE STREET
BLACK HILL ROAD
SOUTH GLASTONBURY, CT 06073
PHONE. 860.652.8911
FAX. 860.652.8922
WWW.PRINCETONHYDRO.COM
HEMINWAY DAM REMOVAL (No. 153-4-6900)

1. THE TOPOGRAPHIC CONTOURS ON THE BASE MAPPING REPRESENT TWO SURVEYS TAKEN IN TWO SEPARATE DATUM THAT VARY IN ELEVATION BY 0.87 FT. THIS HAS BEEN DONE TO EXPAND AREAS SURVEYED BY THE TOWN OF WATERTOWN IN 2012 AT A CONTOUR INTERVAL, OUTSIDE OF PROJECT AREA, OBTAINED IN DIGITAL FORMAT FROM THE TOWN OF WATERTOWN, JULY 2013. INVERTS OBTAINED FROM THE TOWN OF WATERTOWN, JULY 2013.

2. TOPOGRAPHIC SURVEY WITHIN PROJECT AREA PERFORMED BY DIGITIZED FROM NAIP AERIAL PHOTOGRAPHY, DATED 2010, ECOSYSTEMS, LLC DURING APRIL AND MAY 2012. BOTH HORIZONTAL DATUM OF NAD27, BOTH IN FEET.

3. LIDAR CONTOURS DERIVED FROM 2006 FLYOVER, AT TWO (2) FT INTERVAL. BASED ON THE VERTICAL DATUM OF NGVD29 AND VERTICAL DATUM OF NAVD88 AND HORIZONTAL DATUM OF NAD27.

5. WETLAND DELINEATION COMPLETED BY CONNECTICUT ECOSYSTEMS, LLC DURING APRIL AND MAY 2012. BOTH HORIZONTAL DATUM OF NAD27, BOTH IN FEET.

8. BUILDING FOOTPRINTS OUTSIDE OF SURVEYED PROJECT AREA AND OBTAINED FROM CTDEEP.

20. PORTER STREET EXISTING STORMWATER DRAINAGE WAY

7. SANITARY SEWER MANHOLE TOP OF CONCRETE ~ 481.0 BARREL SIPHON ENCASED 6-IN DIAMETER DOUBLE INVERT ELEV. 479.50

8. HISTORICALLY SENSITIVE LAND BOUNDARY EXISTING TREE LINE EXISTING SANITARY SEWER LINE EXISTING CONTOUR MASONRY DAM OHW / EOW ARMY CORPS OF ENGINEERS WETLAND BOUNDARY (TYP.) STATE OF CONNECTICUT WETLAND BOUNDARY (TYP.) ARMY CORPS OF ENGINEERS WETLAND SAND AND GRAVEL BAR STATE OF CONNECTICUT WETLAND BOUNDARY (TYP.) SAN

SAND AND GRAVEL BAR

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NOTE: DURATION OF CONSTRUCTION MAY VARY DUE TO HIGH FLOW EVENTS AND EXTENDED DE-WATERING PERIOD.

INITIAL DEWATERING

ACCESS & SITE RESTORATION

TOP OF CONCRETE ~ 481.0

BARREL SIPHON ENCASED INVERT ELEV. 479.50

SAN 17 13 12 15 19 9 2 1 153 359 425

STEELE BROOK WETLAND BOUNDARY (TYP.)

(GRAVEL/COBBLE MIX) IN CHANNEL TO FINAL GRADES, AND INSTALL BANK STABILIZATION DISTURBANCE TO MATURE VEGETATED AREAS. FILL FORMER MILL RACE AS PER DETAIL D, ROOTWADS INTACT, CARE SHALL BE TAKEN TO AVOID CUTTING TREES OVER 24-INCHES DBH.

PROPOSED CHANNEL. BUILD ACCESSWAY ALONG RIGHT BANK OF PROPOSED CHANNEL EXTEND ACCESSWAY ACROSS MILLRACE INTO IMPOUNDMENT TO GAIN ACCESS TO DELTA TO DIRECT ALL STREAM FLOW THROUGH NOTCH AND SEPARATE FLOW FROM DOWNSTREAM OF SPILLWAY THROUGH MILLRACE; INSTALL TURBIDITY CURTAIN, OIL BOOM, PROHIBITED BETWEEN APRIL 15TH AND AUGUST 31ST TO AVOID DISTURBANCE TO NORTHERN INVASIVE SPECIES TREATMENT MUST BE COMPLETED PER SHEET 12. AVOID ACCESS WITH INSTALL STORMWATER DRAIN PIPE, FLARED END SECTIONS, AND OUTLET PROTECTION INTO GRADE SHALL NOT BE DISTURBED. SELECTIVELY TRIM TREES IN MILLRACE TO ALLOW ACCESS AT PROPOSED GRADES AT ACCESS POINT IN EARTHEN BERM AS PER PROPOSED CONDITIONS.

CONCRETE RUBBLE. SAWCUT LEFT END OF CONCRETE SPILLWAY AS PER CROSS-SECTION MOVING DOWNSTREAM TO UPSTREAM, PLACE CONSTRUCTION ACCESSWAY STONE

CONSTRUCTION SEQUENCE:

REFER TO DETAIL D SHEET 9
EXPOSED OR CUT BANKS ARE NATIVE SOIL. ALSO TO BANK STABILIZATION:

TYPE 3: FABRIC ENCAPSULATED SOIL WRAP
TYPE 2: FABRIC BANK COVER WITH BOULDER TOE - SAME AS TYPE 1 - FABRIC BANK COVER - INTENDED FOR AREAS WHERE

SAN LEGEND

SAN PROPOSED WALKING PATH (BY OTHERS)
NORMAL FLOW
PROPOSED MAJOR CONTOUR
PROPOSED MINOR CONTOUR
BOUNDARY
EXISTING TREE LINE
EXISTING SANITARY SEWER LINE
CHANNEL BLOCK/BREACH BLOCK
APPROXIMATE PROPOSED WATER LEVEL AT STATE OF CONNECTICUT WETLAND
SAN WETLAND BOUNDARY (TYP.)
SAN LOG VANE
LOCATION
PROFILE ALIGNMENT
2+00
1+00
X
XS-1
DETAIL F SHEET 8
487
483
480
485
482
XS-3
484
SX-4
XS-7
XS-5
XS-8
6+00
7+00
8+00
9+00
10+00
11+00
12+00
13+00
14+00
15+00

NO STABILIZATION PROPOSED
ANTICIPATED FLOW PATH
REFER TO DETAIL H SHEET 8
PROPOSED CHANNEL BLOCK
REFER TO DETAIL E SHEET 8
PER IN FIELD DIRECTION
LARGE WOODY DEBRIS
TO BE SCATTERED
CONTINUE SOIL DISPOSAL AREA INTO FORMER STREAM
INTO FIELD DIRECTION

BANK STABILIZATION TYPE 1
BANK STABILIZATION TYPE 2

NORMAL FLOW
PROPOSED MINOR CONTOUR
BOUNDARY
EXISTING TREE LINE
EXISTING SANITARY SEWER LINE

0+00
1+00
4+00
1. The centerline of the roadway approaches on both centerlines shall be at least 0.25 inch per foot.
2. All culverts shall be strong enough to support their associated materials and bedding materials.
3. The barrier shall drape over dam in order to divert all flow through notch.
4. The contractor is responsible to have spill kits ready available on-site during construction, forms 815, 1995.
5. Wetland delineation completed by Connecticut Department of Energy and Environmental Protection.
6. Utility mapping, including sanitary sewer and overhead utility lines, obtained from TIGHE and BOND, INC. (TBI), depicted.
7. Additional information regarding sanitary sewer and overhead utility lines.
8. Building footprints outside of surveyed project area.
9. 5. Wetland delineation completed by CONNECTICUT DEPARTMENT OF ENVIRONMENTAL PROTECTION.
   JURISDICTION, and STATE OF CONNECTICUT DEPARTMENT OF ENSHORE MANAGEMENT, DEPARTMENT OF FORESTRY.
   JURISDICTION, AND STATE OF CONNECTICUT DEPARTMENT OF ENVIRONMENTAL MANAGEMENT, DEPARTMENT OF FORESTRY.
   PROJECT.
10. The natural grade to minimize interference with stream flow direction.
11. The width of the check dam shall match the width of the stream in the proposed location.
12. Height of the mill race check dam shall be approximately 6 inches from the top of the left wall.
14. The contractor shall construct the temporary soil protective fence to prevent water from entering the stream at the sides of the crossing.
15. Rip-rap shall be used to protect the sides of the crossing.
16. The depth of stone cover over length to accommodate the full width of the crossing.
17. Diversion channels will be installed in the approach area.
19. Load bearing construction.
20. Filter fabric placed under the crossing (MIRAFI FW 700 or FILTER FABRIC).
21. The approach pads will consist of ASTM C-33 NO. 2 (2 1/2 to 4 inches).
UNDER THE CONDITIONS PRESENT ON THE LOCATIONS THE PLASTIC SHEET OR MATERIAL HEREON ARE SUGGESTED METHODS, ONLY DREDGING OR FILLING OPERATIONS. EXACT MATERIALS MAY BE USED AS APPROVED BY GENERAL NOTES:

1. The stream channel substrate proposed for the project meet or exceed the rip rap criteria as detailed.

2. Dimensions of stream channel meet or exceed CT guidelines for length, width, and bottom thicknesses of material.

3. The inside stand pipe (center pipe) should be constructed by perforating a corrugated or PVC pipe 7.5" in diameter. The perforations shall be 1/2" in diameter or 1" diameter holes.

4. The center pipe should extend 12' to 18' above the anticipated water surface elevation or riser pipe.

5. The discharge from the filter bag should not pass through a disturbed area or cause an erosion problem downstream.

6. Sediment control bags must be located away from receiving waters and disposed of according to manufacturer's instructions.

7. Additional information regarding sanitary sewer utility lines, obtained from TIGHE and BOND, INC. (TBI), depicted.

Site specific notes:

- Conversion from NGVD29 to NAVD88 is (-0.87) ft.
- Contour interval, outside of project area, obtained and shown in digital format from the Town of Watertown.
- Town survey of the project area was surveyed by the Town of Watertown in 2012 at a one (1) ft contour interval. This was detailed for use as a guide for areas surveyed by the TCI.
- Work will be completed in the more detailed survey and obtained in digital format from the Town of Watertown, CT, December 2012, at one (1) ft contour interval. This is intended to be the definitive survey of order.
- Reference Connecticut Section 1: HEMINWAY DAM REMOVAL (No. 153-4-6900)

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PRINCETON HYDRO
WWW.PRINCETONHYDRO.COM

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CT Lic. No. 1596

PRINCETON HYDRO ENGINEERING, PC
931 MAIN STREET, SUITE 2
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1-800-922-4455

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5. CULVERT SIZE:

CONSTRUCTION ENTRANCE DIMENSIONS (SEE FIGURE CE-2):

IS REQUIRED TO DETERMINE THE CAUSE OF THE FAILURES AND ADJUSTMENTS MADE TO THE STRUCTURE OR EROSION AND INSPECT AND PERFORM ANY REPAIR WORK AT THE END OF EACH DAY THAT THE TEMPORARY STREAM CROSSING AND IN NO CASE SHALL THE CULVERT EXCEED 40 FEET IN LENGTH. IF THE CROSSING APPROACH GRADES REQUIRE EXTENSIVE FILLS CONSTRUCTION UNTIL AFTER THE THREAT OF RAINFALL HAS PASSED.

CHECK WEATHER FORECASTS TO INSURE A STORM IS NOT PREDICTED DURING THE TIME OF CONSTRUCTION. DELAY CULVERT BACKFILL REQUIRES THE USE OF WELL GRADED, FREE DRAINING GRAVEL OR CRUSHED STONE TO FORM THE SHAPE THE STREAM TO ITS ORIGINAL CROSS-SECTION, PROTECT THE BANKS FROM EROSION, AND REMOVE OF ALL SEDIMENT CONTROLS AS NEEDED TO PREVENT FUTURE FAILURES.

When the temporary stream crossing is no longer needed, immediately remove all structures, associated fill, and all non-concrete structure associated with the dam and the dam fragments shall be removed and disposed of off-site.

All temporary fill, such as that used for permitted access roads and/or cofferdams, shall be properly stabilized and secured until the bed of the waterway is reached.

In the event a portion of the stream is filled or dammed, the cross-section of the stream and the area between the stream banks and the sides (including side slopes) shall be cleared to reveal the natural stream bed. Where practical, the stream should be left in its natural condition.

When the stream is to be crossed or altered or in the performance of any water control or work, a 50-foot minimum length of the stream shall be left untreated. Where practical, this minimum length of stream shall be left as a straight horizontal section. If the stream bed is disturbed, this section shall be left undisturbed. Where practical, all trees, shrubs, and vegetation shall be protected and preserved.

If a stream is to be dammed for more than 24 hours, all trees, shrubs, and vegetation shall be protected and preserved only to the extent practical.

In the event a portion of the stream is filled or dammed, the cross-section of the stream and the area between the stream banks and the sides (including side slopes) shall be cleared to reveal the natural stream bed. Where practical, the stream should be left in its natural condition.

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USACE.

A FINAL ASSESSMENT REPORT WILL BE COMPILED AND SUBMITTED TO PERIOD

FOCUS OF THE MONITORING EFFORTS WILL BE ON RIPARIAN/WETLAND VEGETATION

MONITORING AND REPORTING OF THE PROJECT SITE FOR A PERIOD OF FOUR (4)

YEARS ACROSS FOUR (4) TRANSECTS (A-D ON THIS SHEET) THROUGH THE SITE.  THE

TOWN OF WATERTOWN WILL SUBCONTRACT ANNUAL ENVIRONMENTAL

CONSERVATION EASEMEN

AUTHORIZED BY THE US ARMY CORPS OF ENGINEERS.  A CONSERVATION EASEMENT SHALL BE ESTABLISHED WITHIN THE EXTENTS OF

DISTURBANCE, INCLUDING VEHICLE ACCESS EXCEPT THOSE EXPLICITLY

AUTHORIZED BY THE US ARMY CORPS OF ENGINEERS.

A PESTICIDE/HERBICIDE LOG SHOULD BE COMPLETED IN THE FIELD AND

SUBMITTED TO THE ENGINEER FOR REVIEW.

F. A PESTICIDE/HERBICIDE LOG SHOULD BE COMPLETED IN THE FIELD AND

COORDINATE APPLICATIONS WITH OWNER'S

SPRAYING SHOULD BE UTILIZED AS A LAST RESORT.

TO HAND PAINT HERBICIDE DIRECTLY ON EACH PLANT.  HERBICIDE

RECOMMENDATIONS.

HERBICIDE MANUFACTURER RECOMMENDATION REGARDING LENGTH OF

REMOVAL FROM THE PLANTING AREA.

CONTROL AGENTS IN ACCORDANCE WITH REQUIREMENTS OF

AUTHORITIES HAVING JURISDICTION AND MANUFACTURER'S WRITTEN

RECOMMENDATIONS. COORDINATE APPLICATIONS WITH OWNER'S

INVASIVE PLANT ATLAS OF THE UNITED STATES”

AND WITH APPLICABLE PERMITS.  REASONABLE ATTEMPTS SHALL BE MADE

TO ELIMINATE INVASIVES TWICE DURING A SINGLE GROWING SEASON

TO SEEDING AND THE APPLICATION OF EROSION CONTROL FABRIC.

6. HERBICIDE APPLICATION AND TIMING

2. REASONABLE ATTEMPTS SHALL BE MADE TO REMOVE UNDESIRABLE SPECIES

3. ONLY HERBICIDES LABELED FOR “AQUATIC APPLICATION” MAY BE APPLIED

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