PUBLIC NOTICE

US Army Corps
of Engineers
New York District
Jacob K. Javits Federal Building
New York, N.Y. 10278-0090
ATTN: Regulatory Branch

In replying refer to:
Public Notice Number: NAN-2015-00607-WOM
Issue Date: February 8, 2016
Expiration Date: March 9, 2016

To Whom It May Concern:

The New York District, Corps of Engineers has received an application for a Department of the Army permit pursuant to Section 404 of the Clean Water Act (33 U.S.C. 1344).

APPLICANT: Town and Village of Harrison
Alfred F. Sulla, Jr. Municipal Building
1 Heineman Place
Harrison, New York 10528

ACTIVITY: Installation of an approximately 0.47 acre earthen dam, as well as a 0.035 acre earthen flood diversion berm, and access roads, to facilitate a flood control project for Nelson Brook and Woodland Road Brook 2.

WATERWAY: Nelson Brook

LOCATION: Town of Harrison, Westchester County, New York.

A detailed description and plans of the applicant's activity are enclosed to assist in your review.

The decision whether to issue a permit will be based on an evaluation of the probable impact including cumulative impacts 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 reasonably may be expected to 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, historic properties, fish and wildlife values, flood hazards, floodplain values, land use, navigation, shoreline erosion and accretion, recreation, water supply and conservation, water quality, energy needs, safety, food and fiber production, mineral needs, considerations of property ownership 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 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.

ALL COMMENTS REGARDING THE PERMIT APPLICATION MUST BE PREPARED IN WRITING AND MAILED TO REACH THIS OFFICE BEFORE THE EXPIRATION DATE OF THIS NOTICE, otherwise, it will be presumed that there are no objections to the activity. Comments

provided will become a part of the public record for this action.

Comments submitted in response to this notice will be fully considered during the public interest review for this permit application. All written comments, including names and addresses, will be made a part of the administrative record, available to the public under the Freedom of Information Act. The Administrative Record, or portions thereof, may also be posted on a Corps of Engineers internet web site. Due to resource limitations, this office will normally not acknowledge the receipt of comments or respond to individual letters of comment.

Any person may request, in writing, before this public notice expires, that a public hearing be held to collect information necessary to consider this application. Requests for public hearings shall state, with particularity, the reasons why a public hearing should be held. It should be noted that information submitted by mail is considered just as carefully in the permit decision process and bears the same weight as that furnished at a public hearing.

Our preliminary determination is that the activity for which authorization is sought herein is not likely to adversely affect any Federally endangered or threatened species or their critical habitat. However, pursuant to Section 7 of the Endangered Species Act (16 U.S.C. 1531), the District Engineer is consulting with the appropriate Federal agency to determine the presence of and potential impacts to listed species in the project area or their critical habitat.

Based upon a review of the latest published version of the National Register of Historic Places, there are no known sites eligible for, or included in, the Register within the permit area. Presently unknown archeological, scientific, prehistorical, or historical data may be lost by work accomplished under the required permit.

Reviews of activities pursuant to Section 404 of the Clean Water Act will include application of the guidelines promulgated by the Administrator, U.S. Environmental Protection Agency, under authority of Section 404 (b) of the Clean Water Act and the applicant will obtain a water quality certificate or waiver from the appropriate state agency in accordance with Section 401 of the Clean Water Act prior to a permit decision.

In addition to any required water quality certificate, the applicant has obtained or requested the following governmental authorization for the activity under consideration:

- New York State Department of Environmental Conservation

It is requested that you communicate the foregoing information concerning the activity to any persons known by you to be interested and who did not receive a copy of this notice. If you have any questions concerning this application, you may contact this office at (917) 790-8417 and ask for Melanie O'Meara.

In order for us to better serve you, please complete our Customer Service Survey located at http://www.nan.usace.army.mil/Missions/Regulatory/CustomerSurvey.aspx.

For more information on New York District Corps of Engineers programs, visit our website at http://www.nan.usace.army.mil.

Stephan A. Ryba
Chief, Regulatory Branch

Enclosures

WORK DESCRIPTION

The applicant, the Town/Village of Harrison, has requested Department of the Army authorization for the construction of a flood control dam over Nelson Brook, as well as the flood waters diversion of Woodland Road Brook 2, in the Town of Harrison, Westchester County, New York.

The work would involve the installation of a 20-foot-tall earthen dam with an impervious core, across Nelson Brook, as part of a flood control project for Nelson Brook and Brentwood Brook. The dam would permanently impact approximately 20,385 square feet (0.47 acres) of the stream and abutting wetland. During times of normal flow, Nelson Brook would continue to flow through the dam via an approximately 88-foot long 4-foot by 6-foot box culvert. The culvert would be installed below existing grade so as to not hinder flow. The dam would act as a barrier to flood waters and create a retention basin area upstream during storms. The detention basin created by the dam would receive runoff from a drainage basin area of approximately 180 acres and would have a peak 100-year (1%) inflow rate of 316 cubic feet per second. The basin would be empty, except during storm events, and would empty again within 32 hours after a storm. Flood waters would top off at 17 feet in depth and a morning glory culvert would prevent overflow.

In addition, flood waters from Woodland Road Brook 2 would be diverted during flooding events from the current path and would flow into the dam-created basin area of Nelson Brook. This would occur during flooding only and would be accomplished through the placement of an earthen diversion berm across the brook and abutting wetland as well as a rip-rapped diversion path, resulting in approximately 1,524 square feet (0.035 acres) of permanent impacts. To allow normal flow of Woodland Road Brook 2, approximately 52 feet of 48-inch diameter high density polyethylene pipes would be installed under the berm in the streambed.

To facilitate construction and maintenance of the dam and diversion, access roads would be installed. Although the access roads would be mainly constructed in uplands, one road would cross over the diversion berm for Woodland Road Brook 2 and also through an adjacent wetland, resulting in approximately 674 square feet (0.015 acres) of permanent impacts to that wetland. A second road would require a crossing of Woodland Road Brook 1, resulting in approximately 6,146 square feet (0.14 acres) of permanent impacts to the stream. To allow for continued flow of Woodland Road Brook 1, an approximately 20-foot long, 4-foot by 6-foot box culvert would be installed at the crossing.

Silt fences would be placed around all work areas to ensure impacts to all waterbodies are contained within the work zone.

To compensate for unavoidable impacts to the on-site wetlands, mitigation would be completed on-site, resulting in the restoration and enhancement of approximately 0.72 acres of wetlands and buffer areas. This work would increase the biodiversity of the existing vegetation to improve or restore the overall quality of the wetland habitat. Along with proposed plantings, rehabilitation mitigation would include the removal of invasive species (such as *Phragmites australis*) currently compromising some areas and restore native habitat to the wetlands and wetland buffers. The mitigation plan and drawings are included as part of this public notice.

The stated purpose of this project is to prevent flooding in Harrison during storm events. There would be no downstream effects as a result of this work as water diversion would only occur during flooding.

SITE PLANS PREPARED FOR

NELSON BROOK FLOOD CONTROL

TOWN OF HARRISON

WESTCHESTER COUNTY, NEW YORK

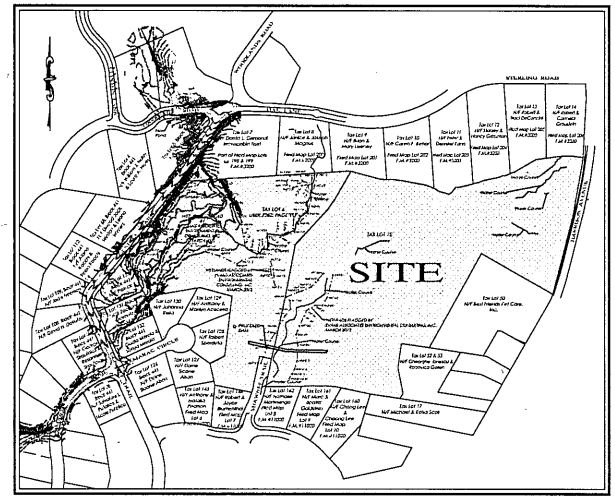
APPLICANT – OWNER
TOWN/VILLAGE OF HARRISON
ALFRED F. SULLA, Jr. MUNICIPAL BUILDING 1
HEINEMANN PLACE
HARRISON, NEW YORK 10528

SITE ENGINEER
LEONARD JACKSON ASSOCIATES
26 FIREMENS MEMORIAL DRIVE, SUITE 201
POMONA, NEW YORK 10970
(845) 354-4382

LAND SURVEYOR
THOMAS C. MERRITTS LAND SURVEYORS, P.C.
394 BEDFORD ROAD
PLEASANTVILLE, NEW YORK 10570
(914) 769-8003

GEOTECHNICAL/STRUCTURAL ENGINEER
MUESER RUTLEDGE CONSULTING ENGINEERS
225 WEST 34th STREET – 14 PENN PLAZA,
6th FLOOR
NEW YORK, NEW YORK 10122
(917) 339-9318

WETLAND CONSULTANT
EVAN ASSOCIATES
88 BRADLEY ROAD
WOODBRIDGE, CONNECTICUT 06525
(203) 393-0690



VICINITY MAP
SCALE: 1" = 200'

LIST OF DRAWINGS

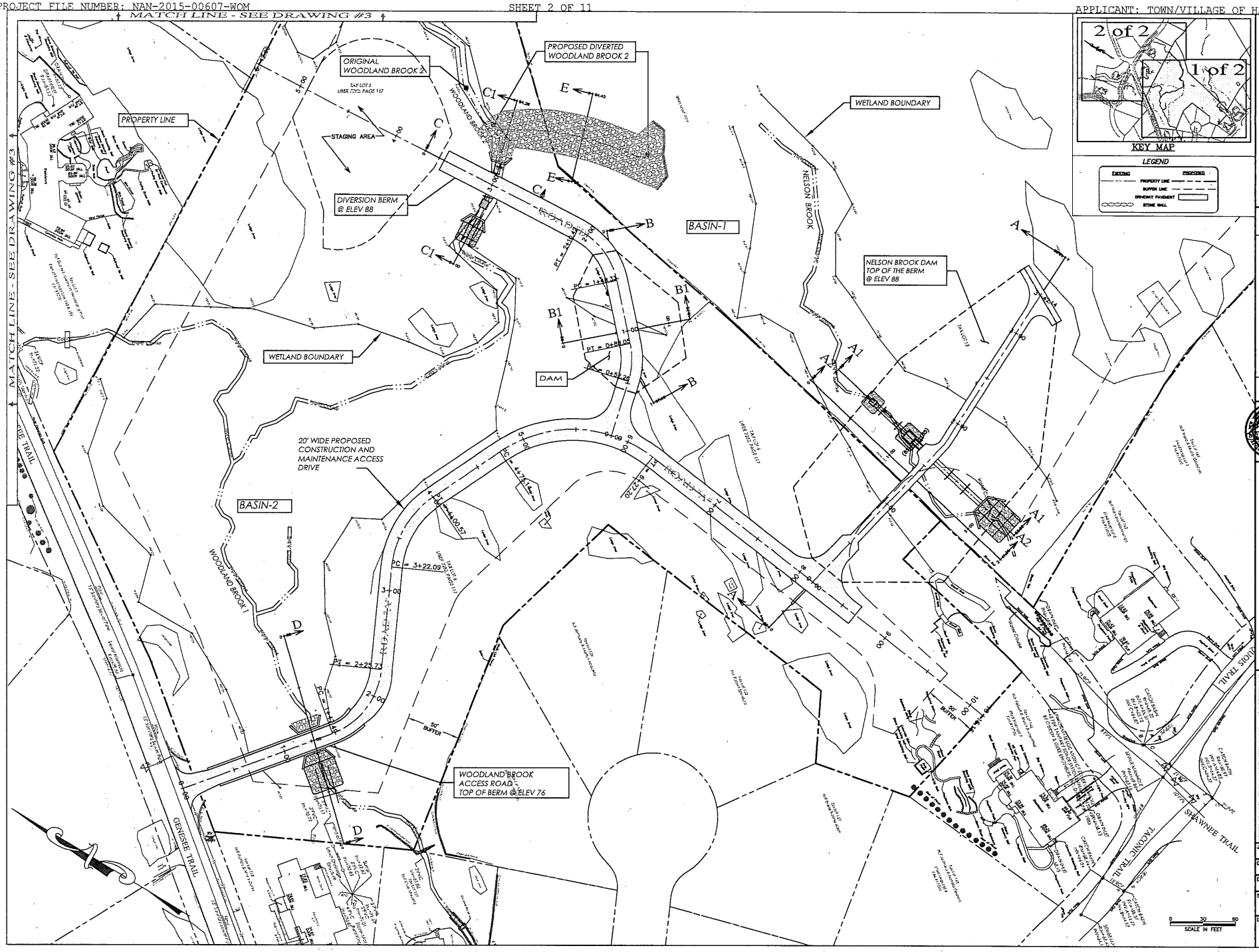
NO.	DESCRIPTION	ORIGINAL DATE	LATEST REVISION DATE
1	TITLE SHEET	4/15/2013	5/2/2014
2	LAYOUT PLAN (1 of 2)	4/15/2013	5/2/2014
3	LAYOUT PLAN (2 of 2)	4/15/2013	5/2/2014
4	GRADING AND DRAINAGE PLAN (1 of 2)	4/15/2013	5/2/2014
5	GRADING AND DRAINAGE PLAN (2 of 2)	4/15/2013	5/2/2014
6	EROSION CONTROL PLAN (1 of 2)	4/15/2013	5/2/2014
7	EROSION CONTROL PLAN (2 of 2)	4/15/2013	5/2/2014
8	ROAD PROFILES	7/31/2013	5/2/2014
9	PROPOSED CULVERT PROFILE	7/31/2013	5/2/2014
10	CONSTRUCTION DETAILS	4/15/2013	5/2/2014
11	SECTIONS	9/12/2013	5/2/2014
ATTACHED INFORMATION DRAWINGS			
A	SUBSURFACE INVESTIGATION (1 of 5)	11/6/2012	
B	SUBSURFACE INVESTIGATION (2 of 5)	11/6/2012	
C	SUBSURFACE INVESTIGATION (3 of 5)	11/6/2012	
D	SUBSURFACE INVESTIGATION (4 of 5)	11/6/2012	
E	SUBSURFACE INVESTIGATION (5 of 5)	11/6/2012	

REV.	DESCRIPTION	DATE
1	NYSDEC – DAM PERMIT SUBMISSION	05/02/14

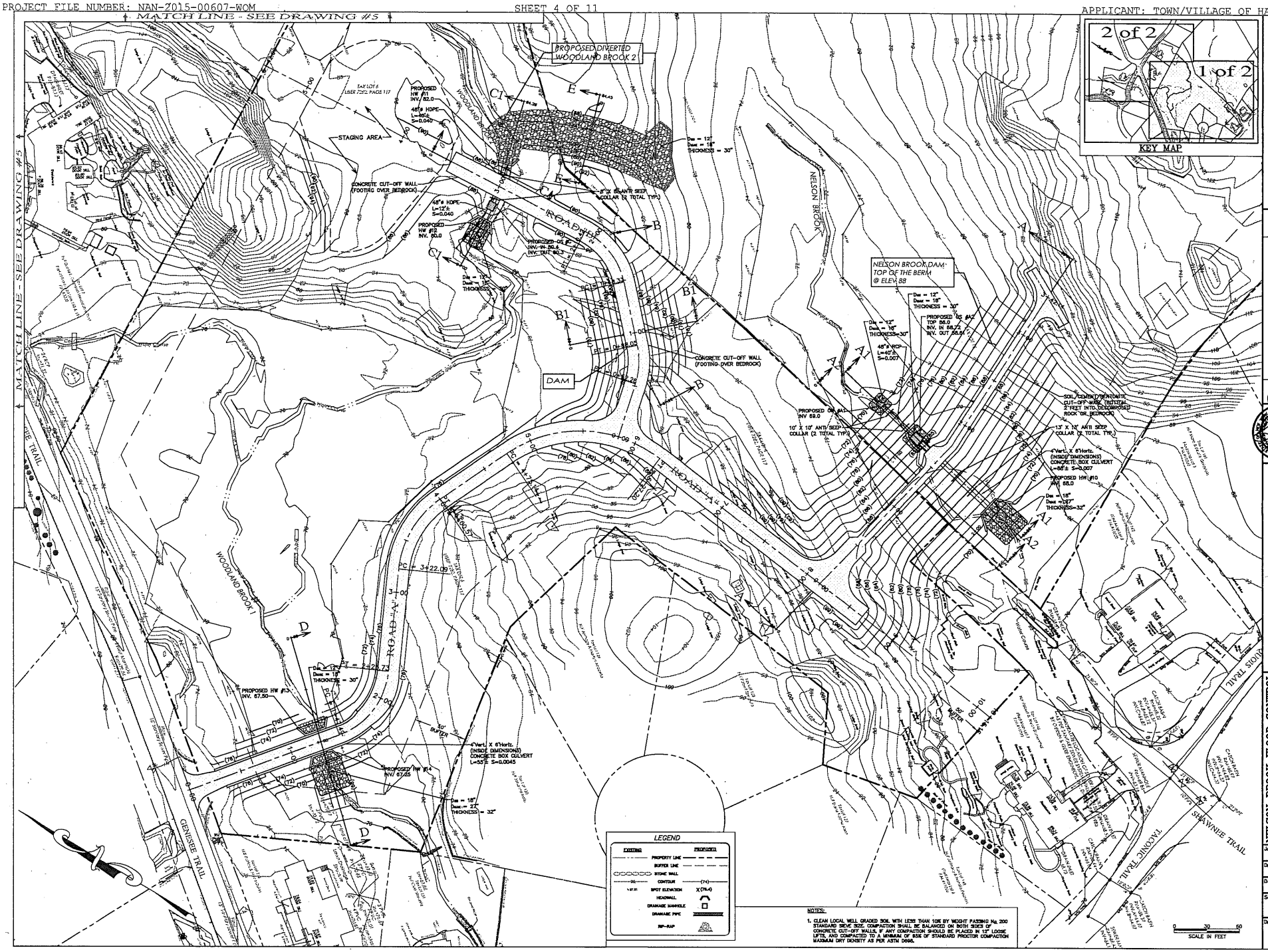
LJA
LEONARD JACKSON ASSOCIATES
CONSULTING ENGINEERS
26 FIREMENS MEMORIAL DRIVE, POMONA, NEW YORK 10970
phone (845) 354-4382 fax (845) 354-4401

NELSON BROOK FLOOD CONTROL
TOWN OF HARRISON
WESTCHESTER COUNTY, NEW YORK
TITLE SHEET

Job number: 12018
Drawn by: AM
Date: 04/15/13
Scale: As Noted
Drawing Number: 1


MATCH LINE - SEE DRAWING #3
ORIGINAL WOODLAND BROOK 2
PROPOSED DIVERTED WOODLAND BROOK 2
PROPERTY LINE
STAGING AREA
DIVERSION BERM @ ELEV 88
WETLAND BOUNDARY
BASIN-1
NELSON BROOK
NELSON BROOK DAM TOP OF THE BERM @ ELEV 88
DAM
20' WIDE PROPOSED CONSTRUCTION AND MAINTENANCE ACCESS DRIVE
BASIN-2
WOODLAND BROOK
WOODLAND BROOK ACCESS ROAD TOP OF BERM @ ELEV 76
50' BUFFER
GENESEE TRAIL
TACONIC TRAIL
SHAWNEE TRAIL
SCALE IN FEET
2 of 2
1 of 2
KEY MAP
LEGEND
EXISTING
PROPOSED
PROPERTY LINE
BUFFER LINE
DRIVEWAY PAVEMENT
STONE WALL
LEONARD JACKSON ASSOCIATES
CONSULTING ENGINEERS
NELSON BROOK FLOOD CONTROL
TOWN OF HARRISON
WESTCHESTER COUNTY, NEW YORK
LAYOUT PLAN (1 of 2)
Job number: 12015
Drawn by: AM
Date: 04/15/13
Scale: 1" = 30'
Drawing Number: 2
REV. DESCRIPTION DATE
1 HYDROLOGY - DAM PERMIT SUBMISSION 05/02/14

2 of 2
1 of 2
KEY MAP
LEGEND
EXISTING
PROPOSED
PROPERTY LINE
BUFFER LINE
DRIVEWAY PAVEMENT
STONE WALL
WOODLANDS ROAD
WOODLANDS ROAD
WOODLAND BROOK 2
MATCH LINE - SEE DRAWING #2
PROPERTY LINE
Sanitary Sewer Pipe
Water Course
SCALE IN FEET
0 30 60
NELSON BROOK FLOOD CONTROL
TOWN OF HARRISON
WESTCHESTER COUNTY, NEW YORK
LAYOUT PLAN (2 of 2)
LJA
LEONARD JACKSON ASSOCIATES
CONSULTING ENGINEERS
1 NYSDEC - DAM PERMIT SUBMISSION 05/02/14
REV. DESCRIPTION DATE
Job number: 12018
Drawn by: AM
Date: 04/15/13
Scale: 1" = 30'
Drawing Number: 3



NOTES:

1. CLEAN LOCAL WELL GRADED SOIL WITH LESS THAN 10% BY WEIGHT PASSING No. 200 STANDARD SIEVE SIZE. COMPACTION SHALL BE BALANCED ON BOTH SIDES OF CONCRETE CUT-OFF WALLS, & ANY COMPACTION SHOULD BE PLACED IN 12" LOOSE LIFTS, AND COMPACTED TO A MINIMUM OF 85% OF STANDARD PROCTOR COMPACTION MAXIMUM DRY DENSITY AS PER ASTM D698.

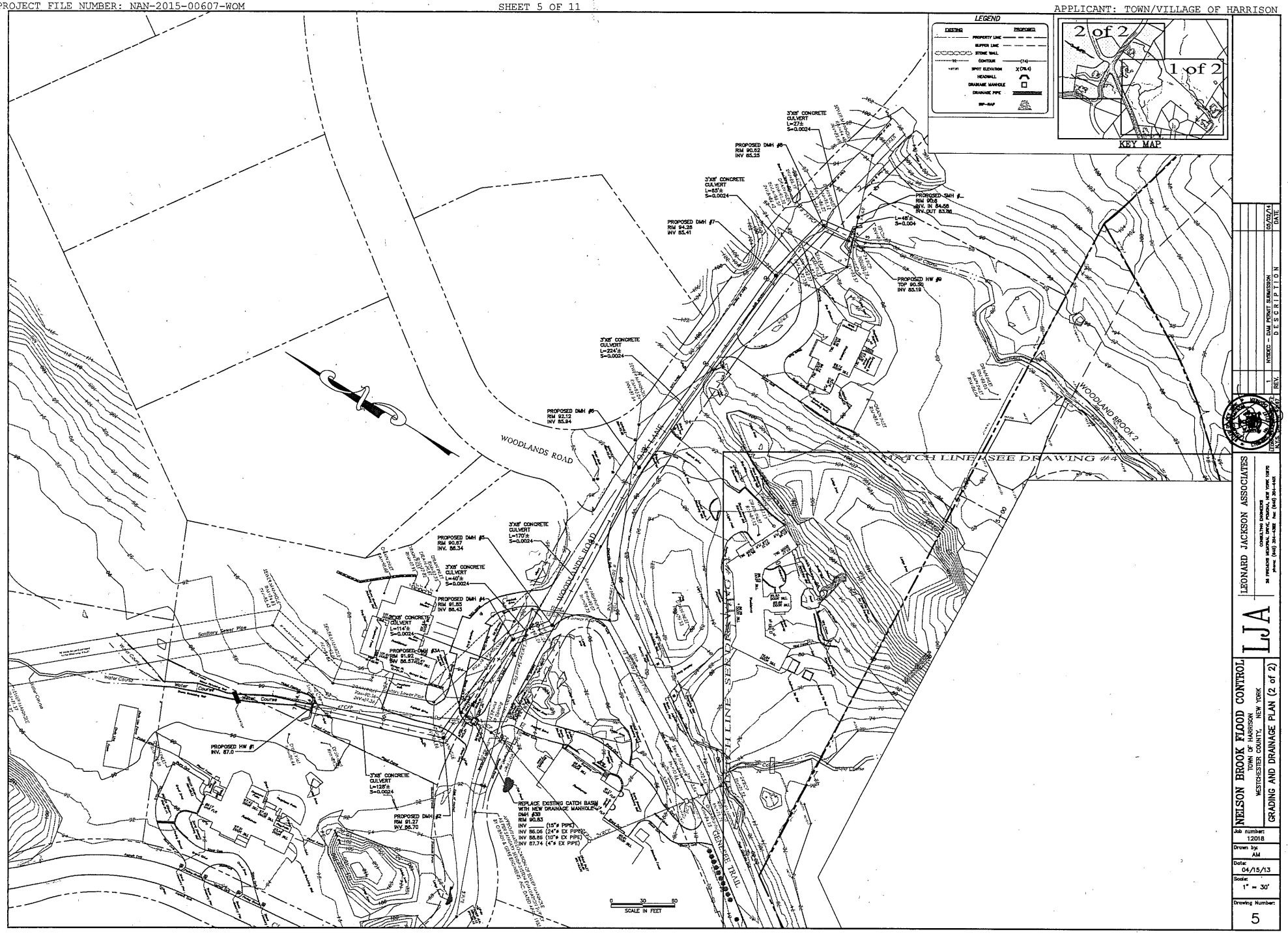
REV.	DESCRIPTION	DATE
1	NYSDEC - DAM PERMIT SUBMISSION	06/10/14

LEONARD JACKSON ASSOCIATES
CONSULTING ENGINEERS
38 TYRSHOW AVENUE, HARRISON, NEW YORK 10528
PHONE (914) 381-1282 FAX (914) 381-1001

LJA

NELSON BROOK FLOOD CONTROL
TOWN OF HARRISON
WESTCHESTER COUNTY, NEW YORK
GRADING AND DRAINAGE PLAN (1 of 2)

Job number: 12018
Drawn by: AM
Date: 04/15/13
Scale: 1" = 30'
Drawing Number: 4



REV.	DESCRIPTION	DATE
1	NYSDEC – DAM PERMIT SUBMISSION	05/02/14

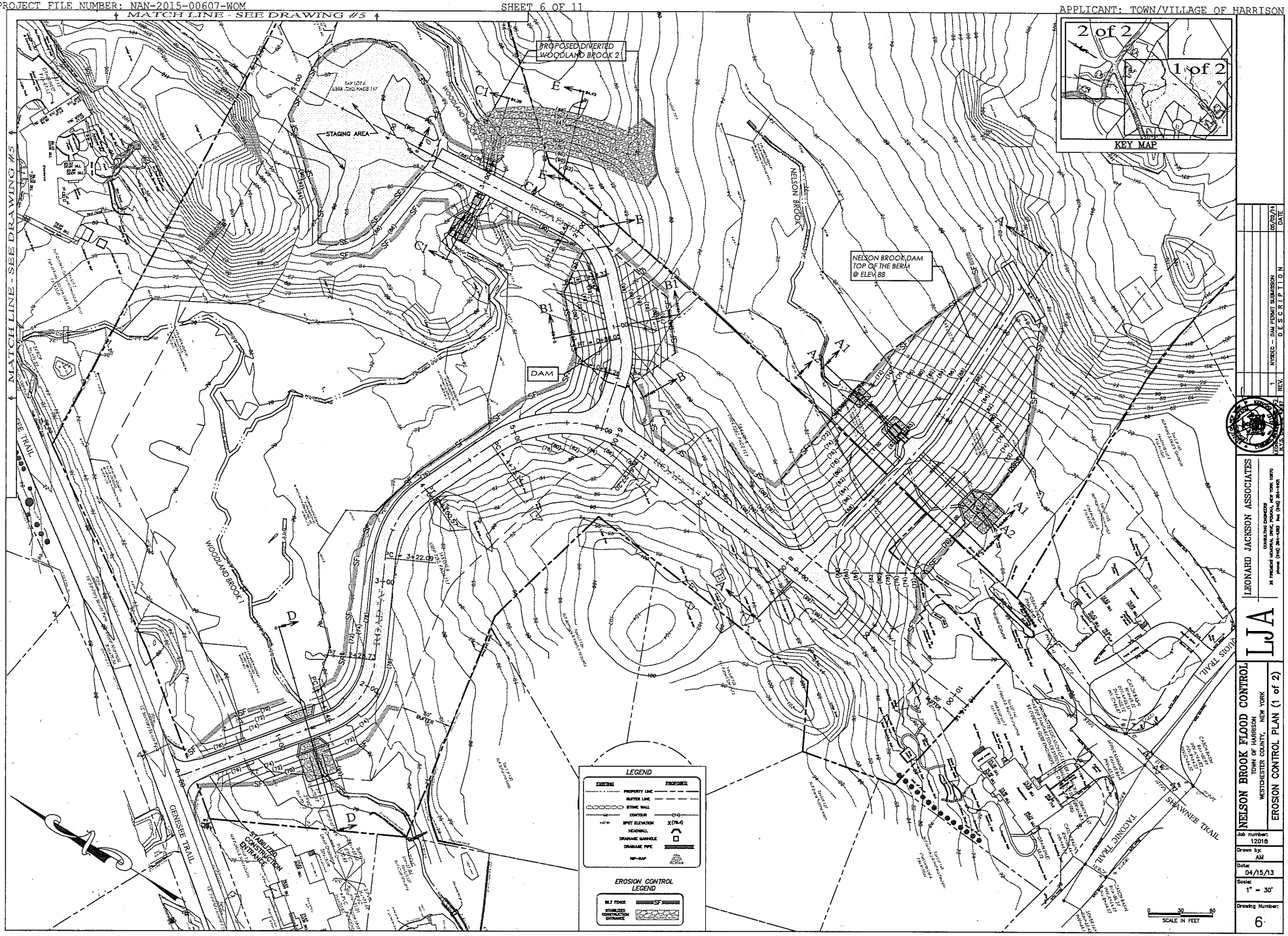
LJA

LEONARD JACKSON ASSOCIATES
CONSULTING ENGINEERS
26 FIREMENS MEMORIAL DRIVE, POUGHKA, NEW YORK 10970
phone: (845) 354-4382 fax: (845) 354-4401

NELSON BROOK FLOOD CONTROL
TOWN OF HARRISON
WESTCHESTER COUNTY, NEW YORK

GRADING AND DRAINAGE PLAN (2 of 2)

Job number: 12018
Drawn by: AM
Date: 04/15/13
Scale: 1" = 30'
Drawing Number: 5



LJA

LEONARD JACKSON ASSOCIATES

CONSULTING ENGINEERS

NELSON BROOK FLOOD CONTROL

TOWN OF HARRISON

WESTCHESTER COUNTY, NEW YORK

EROSION CONTROL PLAN (1 of 2)

REV.	DESCRIPTION	DATE
1	NYSDEC – DAM PERMIT SUBMISSION	05/02/14

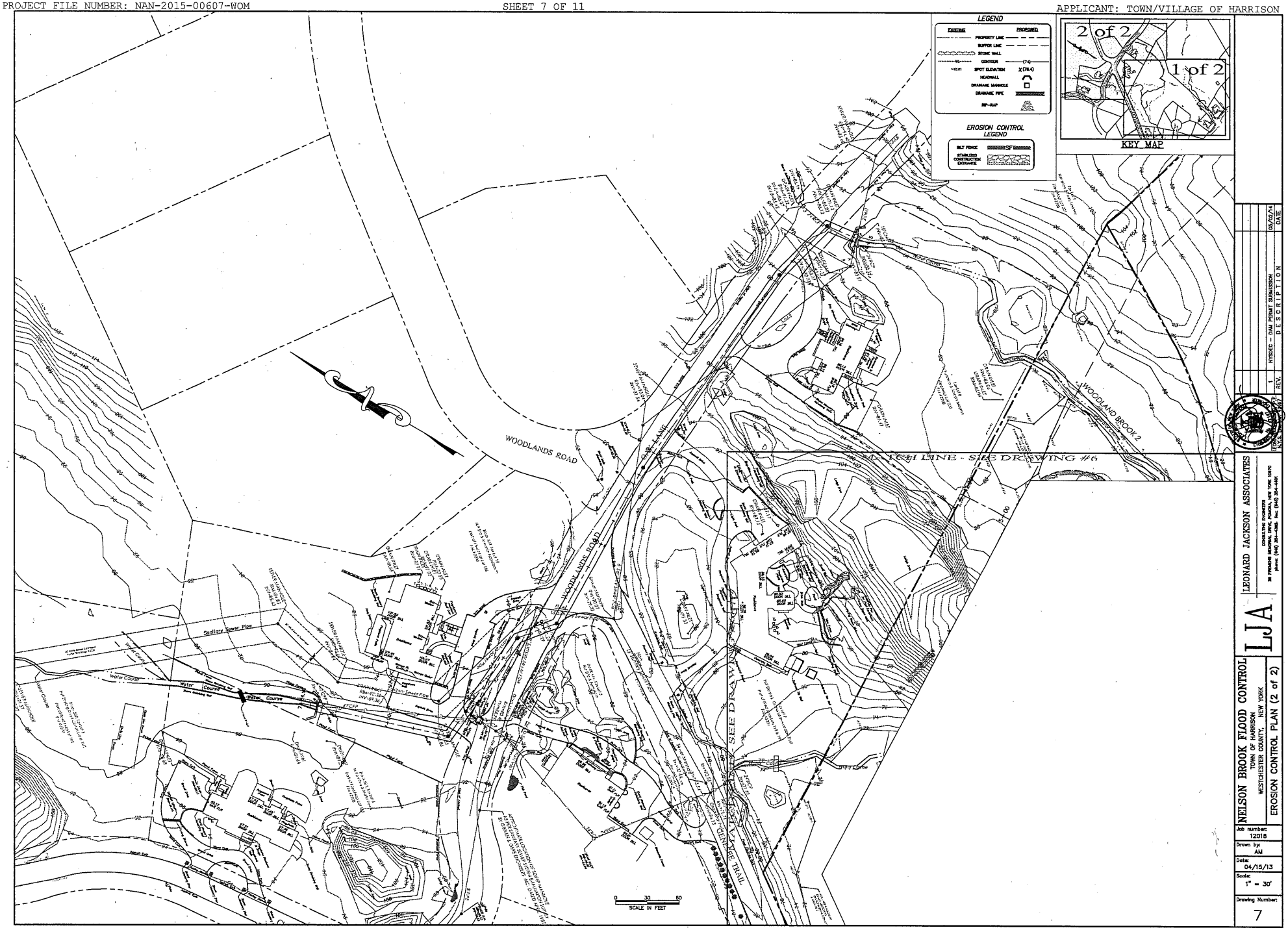
Job number: 12018

Drawn by: AM

Date: 04/15/13

Scale: 1" = 30'

Drawing Number: 6



REV.	DESCRIPTION	DATE
1	NYSDEC – DAM PERMIT SUBMISSION	05/02/14

LJA

LEONARD JACKSON ASSOCIATES

CONSULTING ENGINEERS

NELSON BROOK FLOOD CONTROL

TOWN OF HARRISON

WESTCHESTER COUNTY, NEW YORK

EROSION CONTROL PLAN (2 of 2)

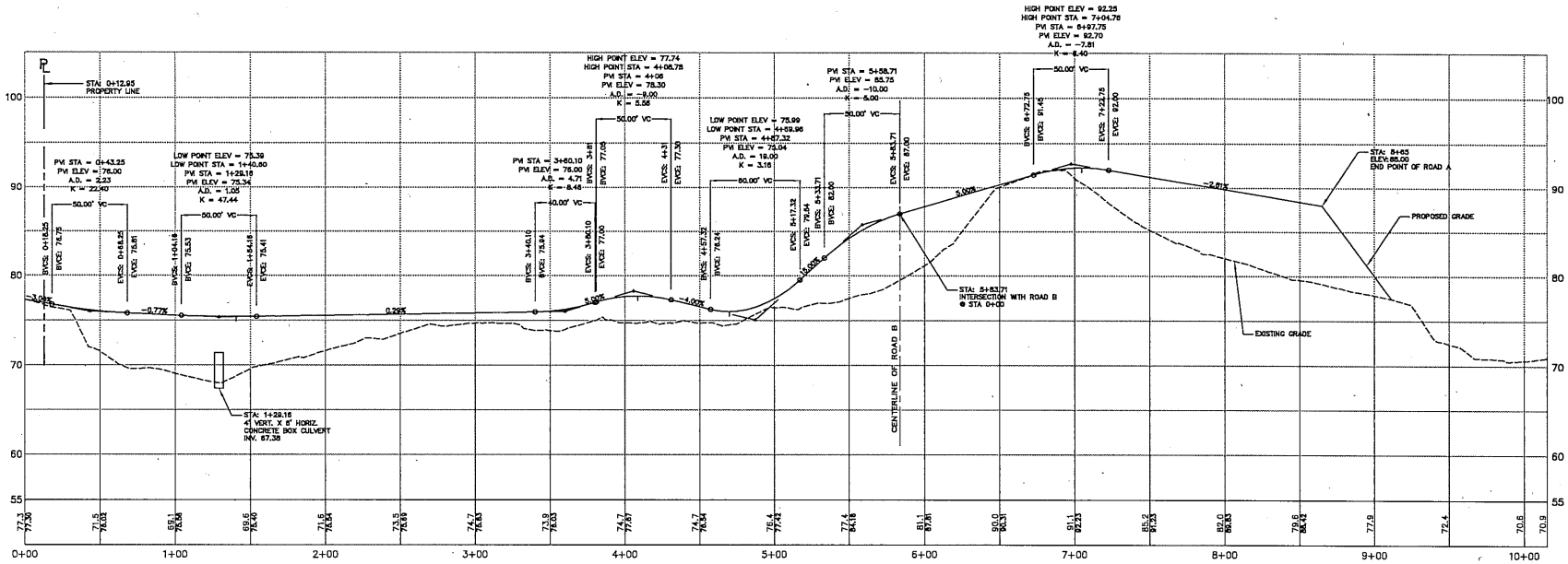
Job number: 12018

Drawn by: AM

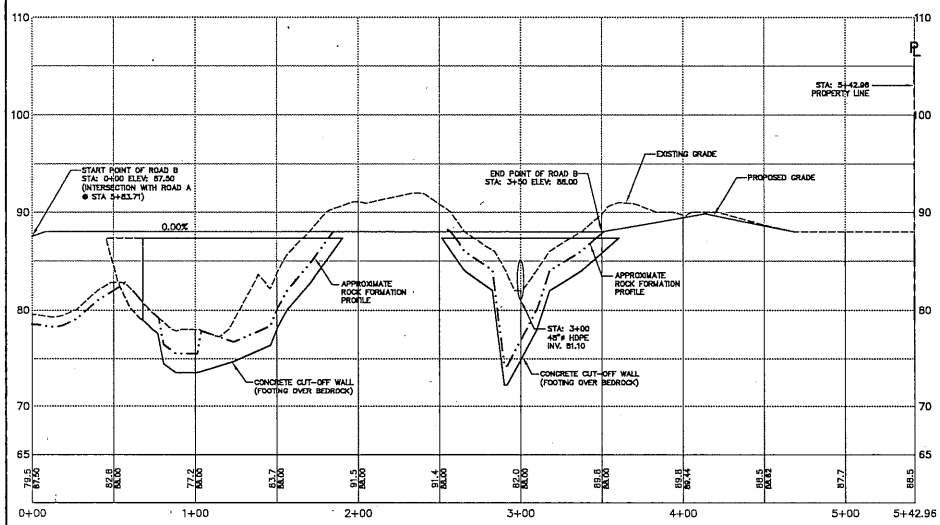
Date: 04/15/13

Scale: 1" = 30'

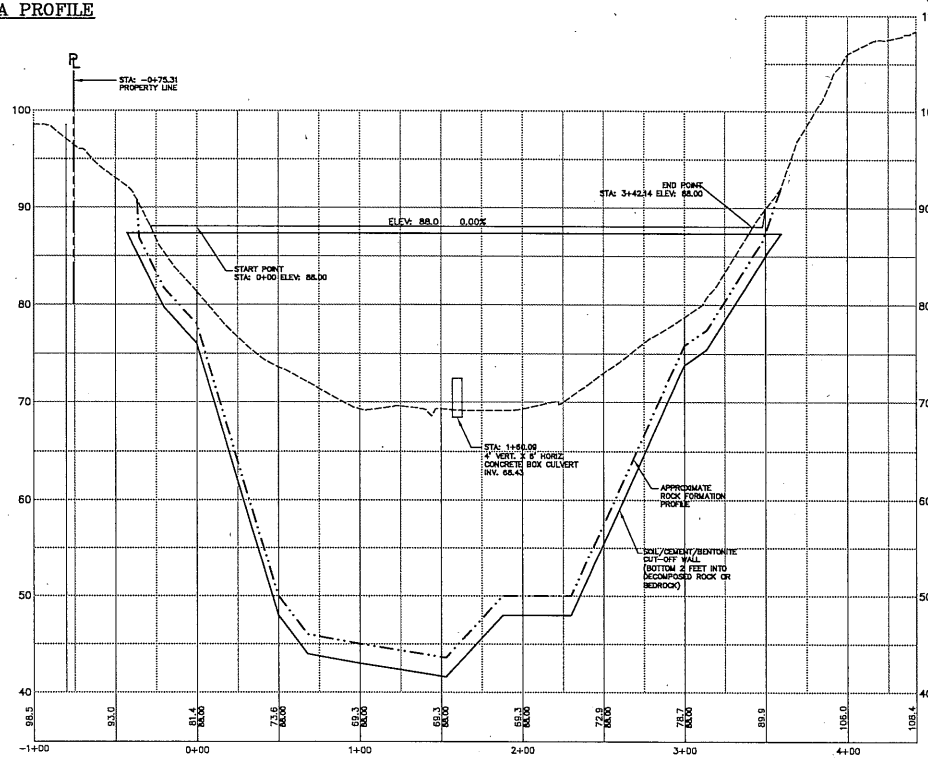
Drawing Number: 7



ROAD A PROFILE



ROAD B PROFILE



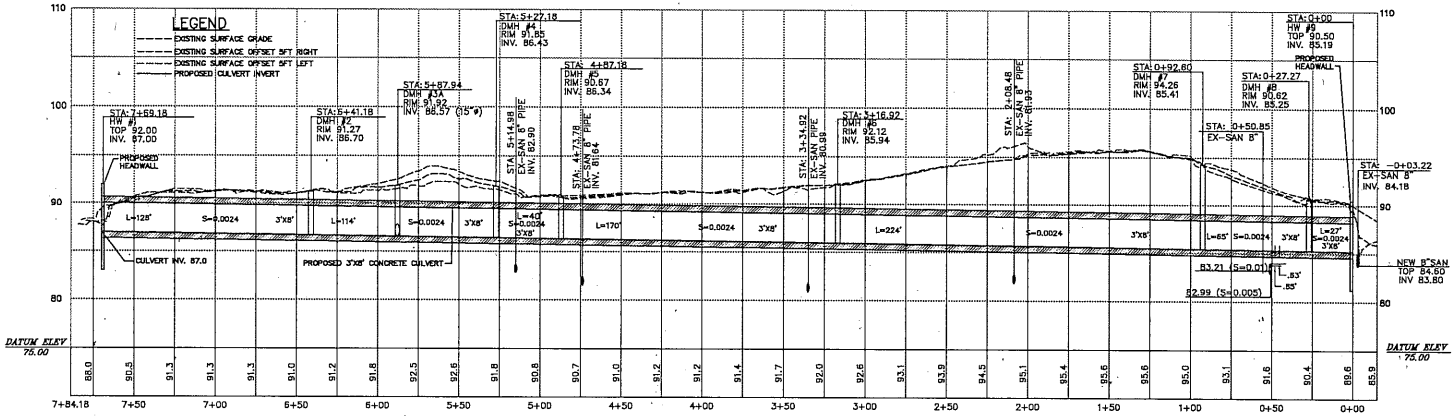
REV.	DESCRIPTION	DATE
1	NYSDEC - DAM PERMIT SUBMISSION	05/02/14

LEONARD JACKSON ASSOCIATES
CONSULTING ENGINEERS
28 FRIEDERS MEMORIAL DRIVE, PUNDIGA, NEW YORK 10970
phone (845) 351-4362 fax (845) 351-4401

LJA

NELSON BROOK FLOOD CONTROL
TOWN OF HARRISON
WESTCHESTER COUNTY, NEW YORK
ROAD PROFILES

Job number: 12018
Drawn by: MAK
Date: 07/31/13
Scale: Horiz.: 1"=30' Vert.: 1"=5'
Drawing Number: 8



PROPOSED STORM CULVERT PROFILE

REV.	DESCRIPTION	DATE
1	NYSDEC - DAM PERMIT SUBMISSION	05/02/14

LEONARD JACKSON ASSOCIATES
CONSULTING ENGINEERS
26 FIREMENS MEMORIAL DRIVE, POMONA, NEW YORK 10970
phone: (845) 354-4382 fax: (845) 354-4401

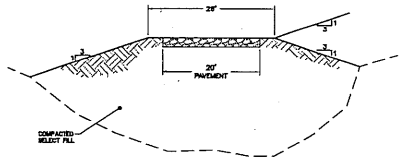
LJA

NELSON BROOK FLOOD CONTROL
TOWN OF HARRISON
WESTCHESTER COUNTY, NEW YORK

PROPOSED CULVERT PROFILE

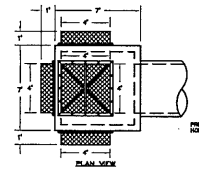
Job number: 12018
Drawn by: MAK
Date: 07/31/13
Scale: Horiz.: 1"=30' Vert.: 1"=5'
Drawing Number: 9

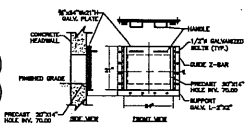
PAVEMENT SECTION: GRAVEL PAVEMENT
N.T.S.



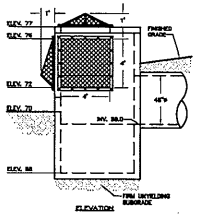
NOTES:
1. SELECT FILL WITH <10% BY WEIGHT PASSING #200 STANDARD STONE SIZE. COMPACTION TO BE DONE IN 12" LOOSE LIFTS. 90% OF STANDARD PROCTOR COMPACTION @ MAXIMUM DRY DENSITY PER ASTM D698.
2. VEGETATION, ORGANIC MATERIAL AND TOPSOIL TO BE CLEANUP OF ROAD EMBANKMENT/SECTION AS SHOWN, PRIOR TO THE PLACEMENT OF SELECT FILL. PROOF-ROLLED PRIOR TO PLACEMENT OF SELECT FILL.
3. THIS SECTION IS APPLICABLE ACROSS STRUCTURES "B" AND "C" OF THIS PROJECT.

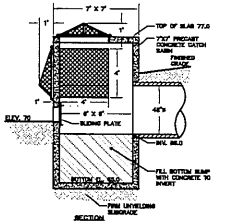
DETAIL: ROADWAY/BERM SECTION
N.T.S.



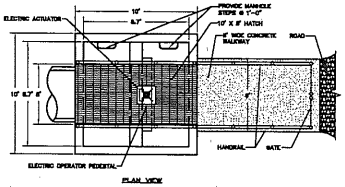


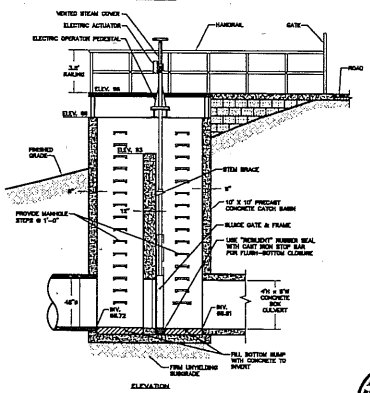
SLIDING PLATE DETAIL
N.T.S.



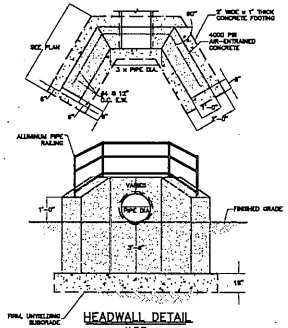


OUTLET STRUCTURE (OS #A1)
SCALE: 1"=4'

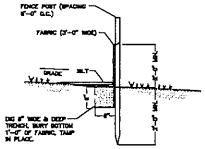




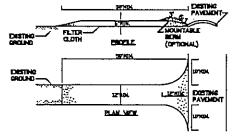
OUTLET STRUCTURE (OS #A2)
SCALE: 1"=4'



HEADWALL DETAIL
N.T.S.
CHAMFER ALL EXPOSED EDGES ONE INCH
(NOT IN CONTRACT)

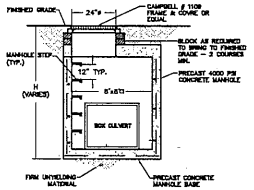


SILT FENCE DETAIL
N.T.S.



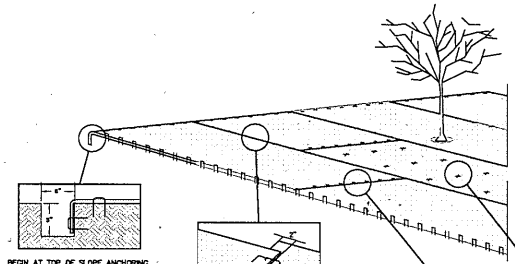
STABILIZED CONSTRUCTION ENTRANCE DETAIL
N.T.S.

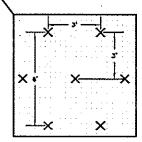
CONSTRUCTION SPECIFICATIONS
1. STONE SIZE – USE 2" STONE, OR RECLAIMED OR RECYCLED CONCRETE EQUIVALENT.
2. LENGTH – NOT LESS THAN 50 FEET (EXCEPT ON A SINGLE RESIDENCE LOT WHERE A 30 FOOT MINIMUM LENGTH WOULD APPLY).
3. THICKNESS – NOT LESS THAN SIX (6) INCHES.
4. WIDTH – TWELVE (12) FOOT MINIMUM, BUT NOT LESS THAN THE FULL WIDTH AT POINTS WHERE INGRESS OR EGRESS OCCURS. TWENTY-FOUR (24) FOOT IF SINGLE ENTRANCE TO SITE.
5. FILTER CLOTH – WILL BE PLACED OVER THE ENTIRE AREA PRIOR TO PLACING OF STONE.
6. SURFACE WATER – ALL SURFACE WATER FLOWING OR DIVERTED TOWARD CONSTRUCTION ENTRANCES SHALL BE PIPED ACROSS THE ENTRANCE. IF PIPING IS IMPRACTICAL, A MOUNTABLE BERM WITH 5:1 SLOPES WILL BE PERMITTED.
7. MAINTENANCE – THE ENTRANCE SHALL BE MAINTAINED IN A CONDITION WHICH WILL PREVENT TRACKING OR FLOWING OF SEDIMENT ONTO PUBLIC RIGHTS-OF-WAY. ALL SEDIMENT SPILLED, DROPPED, WASHED OR TRACKED ONTO PUBLIC RIGHTS-OF-WAY MUST BE REMOVED IMMEDIATELY.
8. WHEN WASHING IS REQUIRED, IT SHALL BE DONE ON A AREA STABILIZED WITH STONE AND WHICH DRAINS INTO AN APPROVED SEDIMENT TRAPPING DEVICE.
9. PERIODIC INSPECTION AND NEEDED MAINTENANCE SHALL BE PROVIDED AFTER EACH RAIN.



STORM MANHOLE DETAIL
N.T.S.

NOTES:
1. SLOPE CASTINGS TO MATCH SLOPE OF FINISHED GRADE.
2. MINIMUM STRENGTH CONCRETE 4000 PSI WALL THICKNESS 4" WITH ADEQUATE STEEL REINFORCEMENT TO WITHSTAND H20 HIGHWAY LOAD AND SOIL LOADS.
3. RISER SECTION JOINTS SHALL BE FIELD-MORTARED.





STAPLE THE FIELD OF BLANKETS EVERY 3' HORIZONTALLY AND VERTICALLY IN A STAGGERED PATTERN (1.2 STAPLES PER YARD)

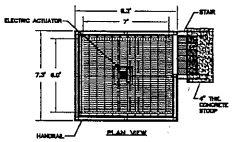
SEED IMPREGNATED
EROSION CONTROL BLANKET
N.T.S.

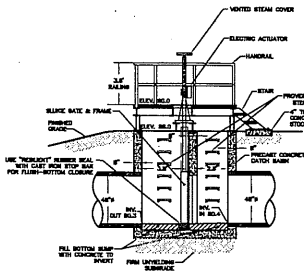
SEED IMPREGNATED BIODEGRADABLE EROSION CONTROL BLANKET ON ALL SLOPES 2:1 OR GREATER. BLANKET SHALL BE ITEM # S150 BN WITH CUSTOM CELL-O-SEED MIX BY NORTH AMERICAN GREEN (1-800-772-2040). SEE PLANTING NOTE BELOW FOR SEED MIX. INSTALL AS PER MANUFACTURERS GUIDELINES WORK BLANKET AROUND NEW TREES AS NECESSARY PREPARE TOPSOIL AS FOR SEEDING – INCLUDING APPLICATION OF LIME FERTILIZER BLANKET WITH CELL-O-SEED, MUST BE INSTALLED PAPER SIDE DOWN INSTALL WITH 6" MIN. WIRE STAPLES.

PLANTING NOTE:

SEED REQUIREMENTS: THE SEED USED SHALL BE FRESH, RECLEANED SEED OF THE LATEST CROP, MIXED IN THE FOLLOWING PROPORTIONS BY WEIGHT, AND MEETING THE FOLLOWING STANDARDS OF PURE LIVE SEED CONTENT. THE TOLERANCE FOR P.L.S. (PURITY X GERMINATION) SHALL BE THOSE CALLED OFFICIAL AND TABULATED ON PAGE 5, UNITED STATES DEPARTMENT OF AGRICULTURE, BULLETIN NO. 480. NO TESTS OF CERTIFIED REPORTS WILL BE REQUIRED UNLESS THE MATERIALS TO BE USED APPEAR TO BE INFERIOR QUALITY. SEED PACKAGES SHALL BEAR THE LABEL OF A SEED MIX, OR APPROVED EQUAL, AS FOLLOWS:

SPECIES OF GRASS	MAXIMUM WEED SEED	
50% CREEPING RED FESCUE (ILLAHEE STRAIN)	0.50%	90%
30% KENTUCKY BLUE GRASS	0.50%	85%
10% RED TOP (FANCY REDLEANED)	1.00%	85%
10% ENGLISH PERENNIAL RYE	0.50%	85%





OUTLET STRUCTURE (OS #C)
SCALE: 1"=4'

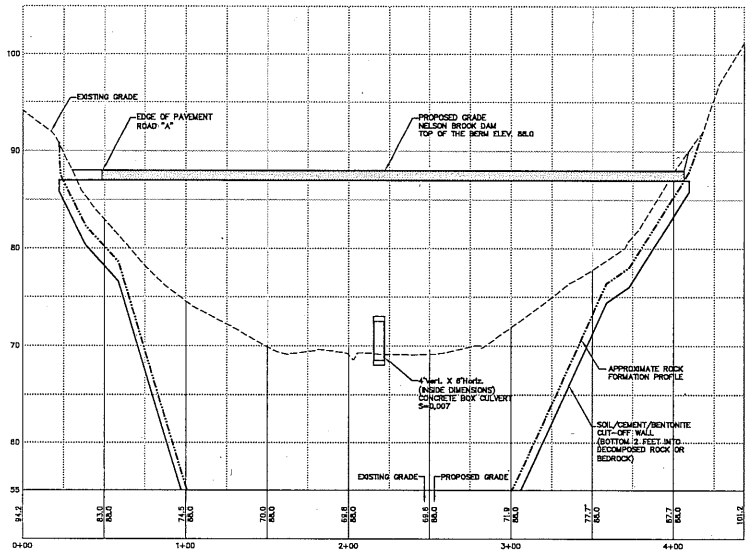
REV.	DESCRIPTION	DATE
1	NYSDEC – DAM PERMIT SUBMISSION	05/02/14

LEONARD JACKSON ASSOCIATES
CONSULTING ENGINEERS
35 PINELAWN ROAD, SUITE 1, HUNTINGTON, NEW YORK 11743
phone (516) 351-1325 fax (516) 351-1401

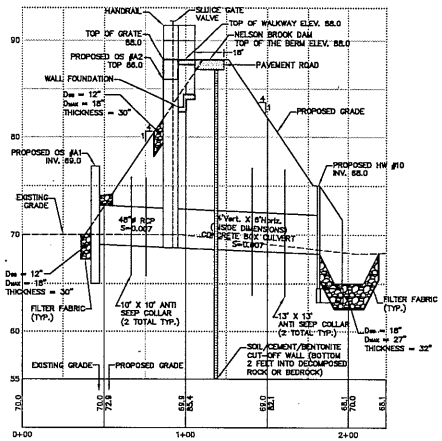
LJA

NELSON BROOK FLOOD CONTROL
TOWN OF HARRISON
WESTCHESTER COUNTY, NEW YORK
CONSTRUCTION DETAILS

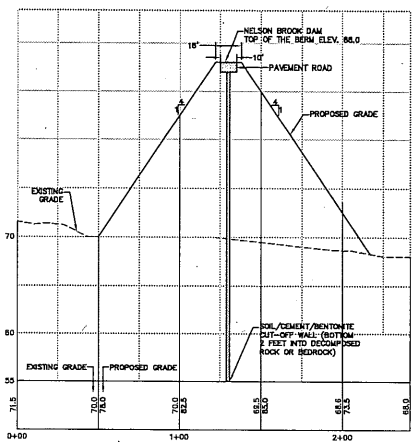
Job number: 12018
Drawn by: AM
Date: 04/15/13
Scale: As Noted
Drawing Number: 10



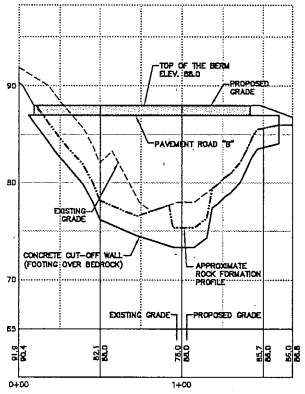
SECTION A



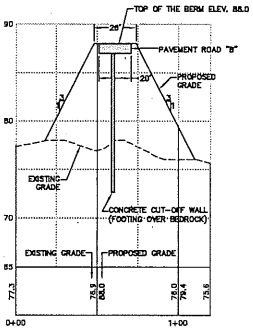
SECTION A1



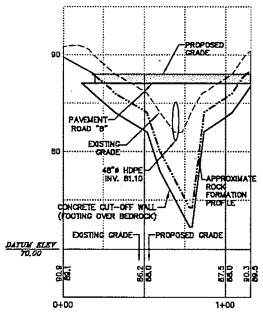
SECTION A2



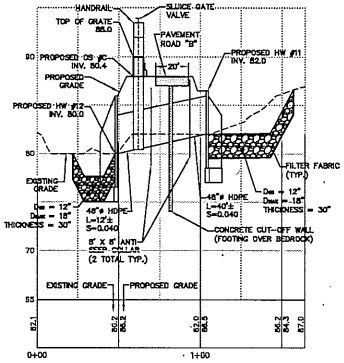
SECTION B



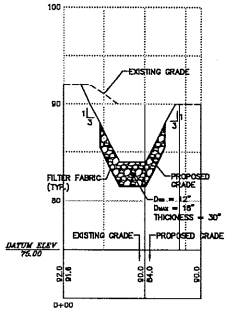
SECTION B1



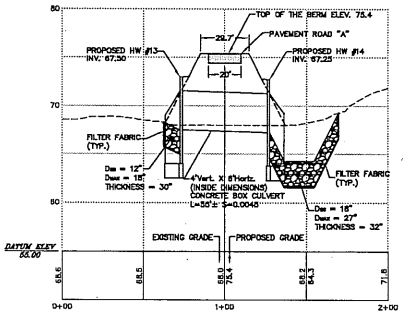
SECTION C



SECTION C1



SECTION E



SECTION D

REV.	DESCRIPTION	DATE
1	NYSDEC - DAM PERMIT SUBMISSION	05/02/14

LEONARD JACKSON ASSOCIATES
CONSULTING ENGINEERS
38 TRUDEAU MEMORIAL DRIVE, POUGHKEEPSIE, NEW YORK 12601
PHONE: (845) 454-5300 FAX: (845) 454-4425

LJA

NELSON BROOK FLOOD CONTROL
TOWN OF HARRISON
WESTCHESTER COUNTY, NEW YORK
SECTIONS

Job number: 12018
Drawn by: AM
Date: 09/12/13
Scale: Horiz.: 1"=30' Vert.: 1"=5'
Drawing Number: 11

Town/Village of Harrison – Nelson Brook Flood Control Project
ACOE Permit Application Number NAN-2015-00607-WOM
Responses to 01/05/2016 ACOE Request for More Information

Compensatory Mitigation Plan Narrative

INTRODUCTION

The above-captioned permit application was submitted for a proposed dam construction project called the Nelson Brook Flood Control Project. The project involves the construction of a regional detention basin to reduce stormwater discharges and flooding along Nelson Brook and Brentwood Brook in the Town/Village of Harrison and in downstream areas. Proposed permanent wetland impacts are within Town/Village-owned property and total 0.65 acres. Impacts include:

- Construction of a dam across Nelson Brook (approximately 0.47 acres of wetlands would be impacted by fill and structures associated with the dam),
- Construction of a diversion of Woodland Road Brook-2 and the associated maintenance road crossing with culvert (approximately 0.035 acres of wetland impact),
- Construction of an access road and culvert crossing Woodland Road Brook-1 from Genesee Trail (approximately 0.14 acres of wetland impact), and
- Changes to the hydrology immediately above the dam, in the form of increased flooding of the existing wetlands and the adjacent wooded uplands.

To mitigate for the proposed permanent impacts, a Compensatory Mitigation Plan has been prepared and is depicted on Drawing MP-1 and MP-2, Conceptual ACOE Mitigation Plan, prepared by Evans Associates Environmental Consulting, Inc., dated last revised January 15, 2016. Four areas of mitigation plantings are proposed for a total of 0.72 acres providing a mitigation ratio of greater than 1:1.

The proposed compensatory mitigation areas comprise sections of two small, intermittent stream wetland corridors (Woodland Road Brook-1 and Nelson Brook) that traverse the woods within and near the areas proposed for disturbance by the project. Portions of the riparian areas along the Nelson Brook corridor would intermittently flood after the proposed dam is installed (see Drawing MP-1 for estimates of the 1 and 5-year flood elevations). Details of this plan are discussed in this narrative.

COMPENSATORY MITIGATION TYPES[1]

Creation

Grading for wetland creation is not proposed in order to avoid unnecessary disturbance to the existing trees and other vegetation within the forested wetlands and upland areas. Wetland creation is not specifically offered as compensatory mitigation even though some wetland areas may be created via flooding after the dam is installed.

Preservation

The subject areas proposed for mitigation are currently regulated by the AOCE and/or the Town/Village of Harrison via wetland regulations (including a Town-regulated 100-foot buffer around wetlands), so the mitigation areas and their surrounding wetlands and riparian areas would already fall under the category of preservation. Therefore, preservation is not counted as one of the mitigation types.

Enhancement

Enhancement plantings are the main form of proposed compensatory mitigation. Plantings considered to fit this category include the enhancements proposed for the areas on site that are currently in a minimally altered or disturbed state. These mitigation plantings will improve the biodiversity by adding native species to the existing vegetation. Most of the areas that will be subject to additional flooding after dam construction are included in this category.

Restoration Through Rehabilitation

Rehabilitation will be provided for the portions of the mitigation areas that have been disturbed or degraded. The main disturbances to the existing wetlands and riparian areas are encroachments by invasive species, and alterations due to anthropogenic activities (land clearing and dumping of refuse and lawn debris). Mitigation plantings and invasive species/debris removal are proposed to restore the biodiversity of these impacted wetlands and immediately-adjacent riparian areas.

MITIGATION AMOUNT

Four areas are proposed for mitigation plantings to compensate for the proposed permanent impacts to the wetlands. Two mitigation planting areas are proposed for the intermittent stream corridor wetland within Nelson Brook that is located immediately to the north of the proposed dam. Area #1 includes 10,300 sq. ft. of plantings within the wetland. Area #2 contains 10,750 sq. ft. of plantings just upstream of Area #1 in the wetland and immediately-surrounding wetland buffer. The other two mitigation areas are located above and below the proposed wetland crossing over Woodland Road Brook-1 for the site access road from Genesee Trail. Area #3 is located above the access road wetland crossing and Area #4 is located below. Area #3 and Area #4 include, respectively, 7,150 sq. ft. and

[1] Reference: 33 CFR 332.2

3,300 sq. ft. of plantings within the intermittent stream corridor wetland and wetland buffer. Proposed mitigation plantings total 31,500 sq. ft. (0.72 acres), which are proposed to offset the direct dam-installation impacts of 28,729 sq. ft. (0.66 acres) by a ratio of greater than 1:1.

MITIGATION PLAN[2]

Objectives and Justification of Compensation

The type and amount of mitigation (discussed above) are proposed to compensate for the unavoidable, permanent impacts to the wetlands on the site. The proposed impacts to the wetlands would result from the installation of a small dam across Nelson Brook, the creation of a diversion for Woodland Road Brook-2, and the installation of roads required to access and maintain these areas. The enhancement and rehabilitation mitigation of the existing wetlands and surrounding upland riparian areas is proposed to increase the biodiversity of the existing vegetation in order to improve or restore the overall quality of the wetland habitat. Along with proposed plantings, rehabilitation mitigation includes the removal of invasive species (such as *Phragmites australis*) currently compromising some areas in order to restore native habitat to the wetlands and wetland buffers. The proposed installation of 0.72 acres of mitigation plantings is offered as compensation for the 0.66 acres of permanent wetland impacts.

The proposed installation of a dam across Nelson Brook would impact the hydrology within the Nelson Brook watershed. The dam is proposed in order to control stormwater runoff and reduce or prevent downstream flooding, which has been a major issue in the Town/Village of Harrison and in neighboring Rye. Reducing flooding in the area will protect adjacent and downstream property, including residential properties, schools, and infrastructure. In addition, reduced flooding could improve the health of streams and Long Island Sound by reducing erosion and sedimentation and by reducing the inflow of pollutants to these waterbodies. There is no direct compensation for the proposed changes in hydrology due to the dam. However, indirect compensation is offered by protection of downstream habitat and property, along with the proposed enhancement plantings within the areas that would be susceptible to flooding after dam installation.

Site Selection and Protection

The areas proposed for mitigation are located on the subject property. The property is owned by the Town/Village of Harrison who will be responsible for the protection of the mitigation areas. In addition, the mitigation plantings are proposed within areas that currently and in the future will contain the hydrology to sustain the proposed plantings.

Existing Site Conditions

The site consists mainly of second-growth forest species, with some larger trees. Two small watercourses, Woodland Road Brook-1 and Woodland Road Brook-2, flow through the western parcel of the site, beginning off site from the north. Woodland

[2] Reference: 33 CFR 332.4 (c) (2) through (14)

Road Brook-2 joins Woodland Road Brook-1 on site, and Woodland Road Brook-1 continues to flow to the southwest, then off site beneath Genesee Trail. Nelson Brook flows through the eastern parcel of the site, beginning off site from the northeast, and exiting the property to the south west, flowing beneath Shawnee Trail. The wetlands on site are depicted as intermittent watercourses on the Mamaroneck USGS topographic map, with the exception of the upper portion of Nelson Brook, which is not shown as a watercourse at all. A recent survey was conducted for this project in order to establish the current channel configuration and associated riparian areas of Nelson Brook. Wetlands immediately adjacent to the watercourses are hillside seep wetlands along with some areas of streamside wetland corridor habitat. The wetlands are sustained by both groundwater and surface water runoff from upgradient areas, including stormwater runoff from surrounding roadways. Upland and wetland plant communities are detailed on data sheets that were included with previously-submitted materials.

Mitigation Work Plan

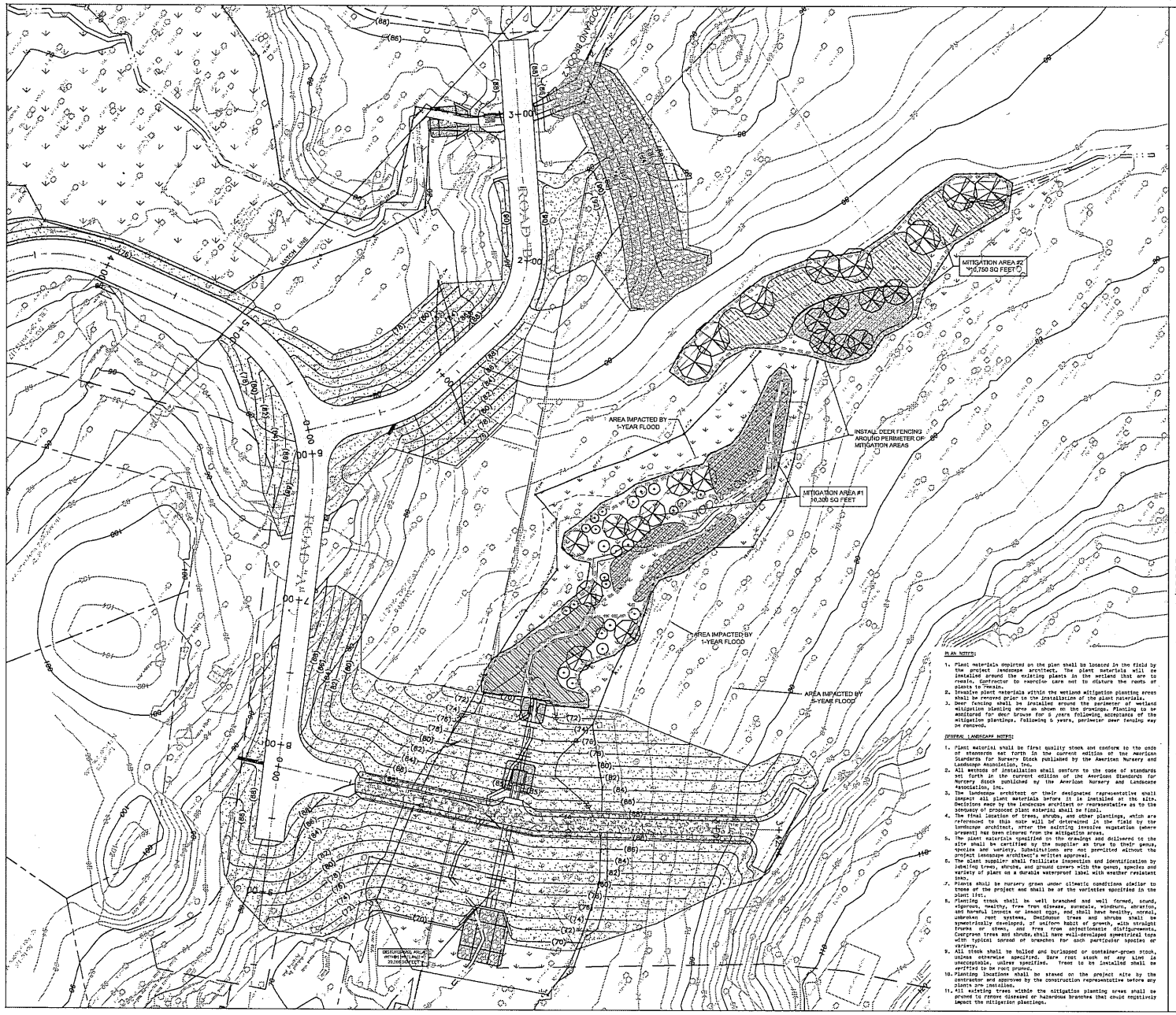
The mitigation planting work plan, including planting sequences, is shown on Drawings MP-1 and MP-2, Conceptual ACOE Mitigation Plan, prepared by Evans Associates Environmental Consulting, Inc., dated last revised January 15, 2016. The locations of the four mitigation areas are shown on the plan. No grading changes are proposed to the existing wetlands or buffers; mitigation plantings and seeds will be installed into the existing soil. Removal of invasive species is included in the Mitigation Maintenance and Monitoring Plan (discussed below).

Mitigation Maintenance and Monitoring Plan

A Mitigation Maintenance and Monitoring Plan (including performance standards) was previously submitted to the ACOE. This plan can be further updated, if necessary, as the application process for the Nelson Brook Flood Control Project progresses.

Financial Assurances for Mitigation Plan

Financial support for the installation, monitoring, and maintenance of the mitigation plan will be funded through the Town/Village of Harrison funding and budgetary process. The Nelson Brook Flood Control Project (including the compensatory mitigation plan) will be funded as a capital improvement through and by the Town/Village.



LEGEND

- PROPOSED NATIVE TREE PLANTING
- PROPOSED NATIVE SHRUB PLANTING
- PROPOSED NATIVE PLANT SEED MIX
- EXISTING TREE (GENUS AND DBH)
- BOUNDARY OF MITIGATION PLANTING AREA
- DEER FENCING (PROPOSED)

TIMING AND SEQUENCE OF PLANTINGS:

Deciduous trees and shrubs:
April 1 to June 1 and October 15 to December 15. Planting of deciduous trees during September 15 through October 15 may be permitted by the project landscape architect.

Evergreen trees and shrubs:
April 1 to June 1 and September 1 to November 15.

Seed Mixes:
New England Wetmix: Seeding can take place on frozen soil, as the freezing and thawing weather of late fall and late winter will work the seed into the soil. If spring conditions are drier than usual watering may be required. If seeding during the summer months supplemental watering will likely be required until germination. A light mulch of clean, weed free straw is recommended. Fall planting is preferred. Seed after August 15. In the spring, plant from April 1 through May 15.
NE Roadside Matrix Wet Meadow Mix: Fall planting is preferred. Seed after August 15. In the spring, plant from April 1 through May 15.
NE Erosion Control Restoration Mix for Dry Sites: Best results are obtained with a Spring or late Summer seeding. Late Spring through Mid-Summer seeding will benefit from a light mulching of weed-free straw to conserve moisture. If conditions are drier than usual, watering will be required.
NE Conservation/Wildlife Mix: Fall planting is preferred. Seed after August 15. In the spring, plant from April 1 through May 15.

SUMMARY OF IMPACTS AND MITIGATION

Area of Direct Wetland Impact	28,728 s.f.	0.66 ac.
PROPOSED MITIGATION:		
Mitigation Area #1	10,200 s.f.	0.24 ac.
Mitigation Area #2	10,750 s.f.	0.25 ac.
Mitigation Area #3	7,150 s.f.	0.16 ac.
Mitigation Area #4	3,300 s.f.	0.08 ac.
TOTAL MITIGATION PROPOSED	31,500 s.f.	0.72 ac.

NELSON BROOK FLOOD CONTROL
MITIGATION PLANT LIST - TREES AND SHRUBS

Conditions: Wet/Moist Soils (OBL to FACW)

Botanical Name	Common Name
Aronia arbutifolia	Red Chokeberry
Alnus rugosa	Speckled Alder
Betula nigra	River Birch
Ilex glabra	Inkberry
Ilex verticillata	Winterberry
Nyssa sylvatica	Black Tupelo
Rhododendron viscosum	Swamp Azalea
Quercus bicolor	Swamp White Oak
Quercus palustris	Pin Oak

Conditions: Moist/Drier Soils (FAC to FACU)

Botanical Name	Common Name
Acer rubrum	Red Maple
Acer saccharum	Sugar Maple
Amelanchier canadensis	Shadblow
Cornus amomum	Gray Dogwood
Hamamelis virginiana	Witch Hazel
Kalmia latifolia	Mountain Laurel
Quercus alba	White Oak
Quercus rubra	Northern Red Oak
Viburnum dentatum	Arrowwood Viburnum

SEED MIXES:

- New England Wetmix
- New England Roadside Matrix Wet Meadow
- New England Erosion Control/Restoration Mix for Dry Sites (also slopes of dam embankments)
- New England Conservation/Wildlife Mix

PLAN NOTES:

1. Plant materials depicted on the plan shall be located in the field by the project landscape architect. The plant materials will be installed around the existing plants in the wetland that are to remain. Contractor to exercise care not to disturb the roots of plants to remain.
2. Invasive plant materials within the wetland mitigation planting areas shall be removed prior to the installation of the plant materials.
3. Deer fencing shall be installed around the perimeter of wetland mitigation planting area as shown on the drawings. Planting to be monitored for deer browse for 5 years following acceptance of the mitigation plantings. Following 5 years, perimeter deer fencing may be removed.

GENERAL LANDSCAPE NOTES:

1. Plant material shall be first quality stock and conform to the code of standards set forth in the current edition of the American Standards for Nursery Stock published by the American Nursery and Landscape Association, Inc.
2. All methods of installation shall conform to the code of standards set forth in the current edition of the American Standards for Nursery Stock published by the American Nursery and Landscape Association, Inc.
3. The landscape architect or their designated representative shall inspect all plant materials before it is installed at the site. Decisions made by the landscape architect or representative as to the adequacy of proposed plant material shall be final.
4. The final location of trees, shrubs, and other plantings, which are referenced to this note will be determined in the field by the landscape architect, after the existing invasive vegetation (where present) has been cleared from the mitigation areas.
5. The plant materials specified on the drawings and delivered to the site shall be certified by the supplier as true to their genus, species and variety. Substitutions are not permitted without the project landscape architect's written approval.
6. The plant supplier shall facilitate inspection and identification by labeling trees, shrubs, and ground covers with the genus, species and variety of plant on a durable waterproof label with weather resistant ink.
7. Plants shall be nursery grown under climatic conditions similar to those of the project and shall be of the varieties specified in the plant list.
8. Planting stock shall be well branched and well formed, sound, vigorous, healthy, free from diseases, pupae, wireworm, wireworm, wireworm, and harmful insects or insect eggs, and shall have healthy, normal, unbroken root systems. Deciduous trees and shrubs shall be symmetrically developed, of uniform habit of growth, with straight trunks or stems, and free from objectionable disfigurements. Evergreen trees and shrubs shall have well-developed symmetrical tops with typical spread of branches for each particular species or variety.
9. All stock shall be balled and burlapped or container-grown stock, unless otherwise specified. Bare root stock of any kind is unacceptable, unless specified. Trees to be installed shall be certified to be root pruned.
10. Planting locations shall be staked on the project site by the contractor and approved by the construction representative before any plants are installed.
11. All existing trees within the mitigation planting areas shall be pruned to remove diseased or hazardous branches that could negatively impact the mitigation plantings.

North

GRAPHIC SCALE

30 0 15 30 60 90

(IN FEET)
1 inch = 20 ft.

CONSULTANTS:

ISSUED:
Amended plan as per ACOE comments 01/15/2016

OWNERSHIP AND USE OF DOCUMENTS

These drawings and specifications are the property of Evans Associates Environmental Consulting, Inc. No part thereof shall be copied, disclosed to others or used in connection with any work or project other than for which they have been prepared without the express written consent of the licensed professional who prepared the document.

SEAL:

REGISTERED LANDSCAPE ARCHITECT
ALAN J. FLICK
No. 000673
STATE OF NEW YORK

PROJECT NAME:
NELSON BROOK FLOOD CONTROL
MITIGATION PLAN
Town of Harrison, New York

LANDSCAPE ARCHITECT AND ENVIRONMENTAL CONSULTANT:
EVANS ASSOCIATES
ENVIRONMENTAL CONSULTING, INC.
205 Amity Road
Bethany, Connecticut 06524
T. (203) 393-0196
F. (203) 393-0196
email: evansassociates@snet.net

Drawing Title:
Conceptual ACOE Mitigation Plan

Date: October 20, 2015

Dwn. by: alp

ID: 3 Dwns.

MP-1

APPLICANT: TOWN/VILLAGE OF HARRISON

SHEET 6 OF 6

USACE PROJECT FILE NUMBER: NAN-2015-00697-NCR

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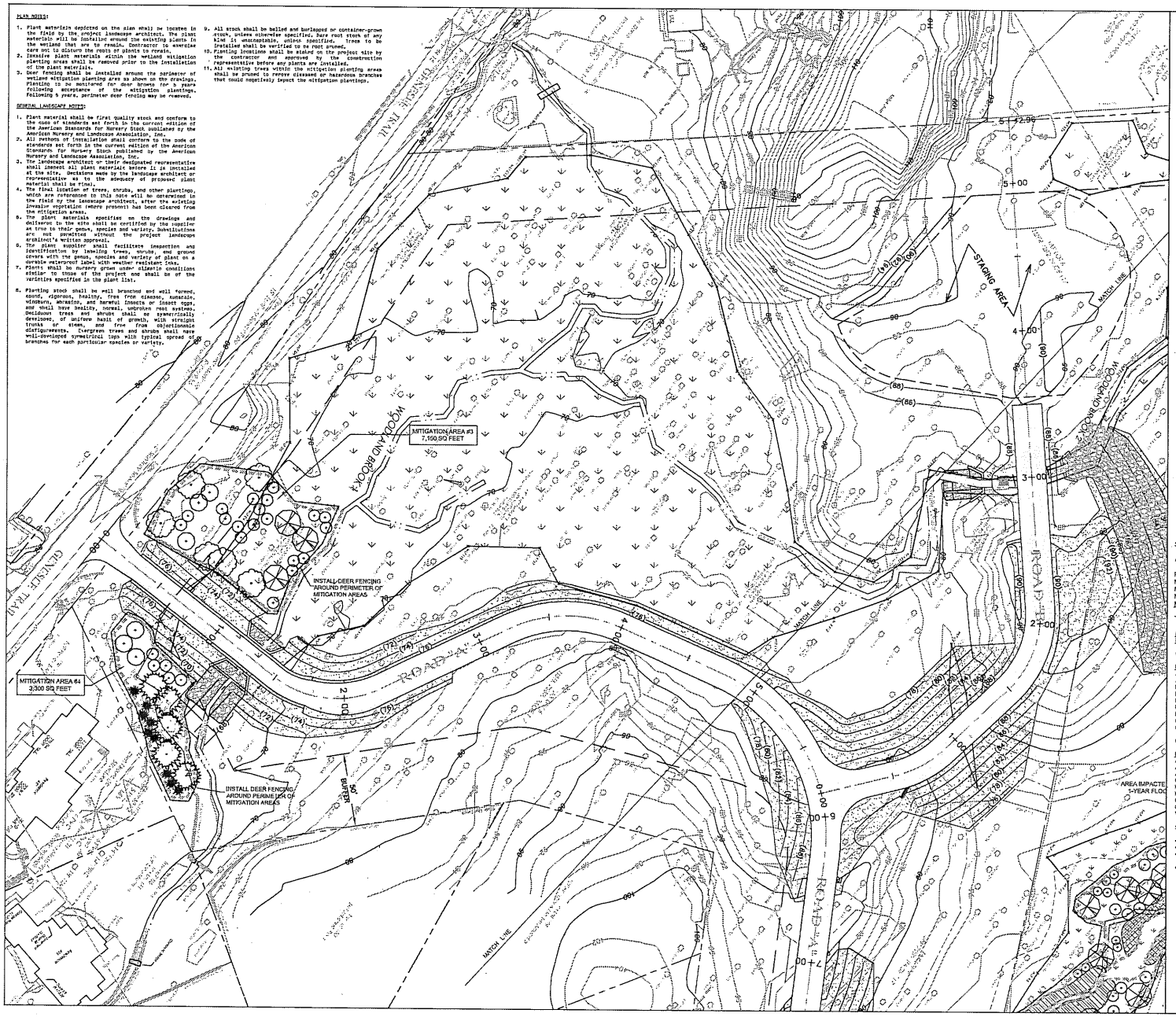

LEGEND

- PROPOSED NATIVE TREE PLANTING
- PROPOSED NATIVE SHRUB PLANTING
- PROPOSED NATIVE PLANT SEED MIX
- EXISTING TREE (GENUS AND DBH)
- BOUNDARY OF MITIGATION PLANTING AREA
- DEER FENCING (PROPOSED)

TIMING AND SEQUENCE OF PLANTINGS:

Deciduous trees and shrubs:
April 1 to June 1 and October 15 to December 15. Planting of deciduous trees during September 15 through October 15 may be permitted by the project landscape architect.

Evergreen trees and shrubs:
April 1 to June 1 and September 1 to November 15.

Seed Mixes:
New England Seeds: Seeding can take place on frozen soil, as the freezing and thawing weather of late fall and late winter will work the seed into the soil. If spring conditions are drier than usual watering may be required. If seeding during the summer months supplemental watering will likely be required until germination. A light mulch of clean, weed free straw is recommended. Fall planting is preferred. Seed after August 15. In the spring, plant from April 1 through May 15.
NE Roadside Matrix Wet Meadow Mix: Fall planting is preferred. Seed after August 15. In the spring, plant from April 1 through May 15.
NE Erosion Control Restoration Mix for Dry Sites: Best results are obtained with a Spring or late Summer seeding. Late Spring through Mid-Summer seeding will benefit from a light mulching of weed-free straw to conserve moisture. If conditions are drier than usual, watering will be required.
NE Conservation/Wildlife Mix: Fall planting is preferred. Seed after August 15. In the spring, plant from April 1 through May 15.

SUMMARY OF IMPACTS AND MITIGATION

Area of Direct Wetland Impact	28,728 s.f.	0.66 ac.
PROPOSED MITIGATION:		
Mitigation Area #1	10,300 s.f.	0.24 ac.
Mitigation Area #2	10,750 s.f.	0.25 ac.
Mitigation Area #3	7,160 s.f.	0.16 ac.
Mitigation Area #4	3,300 s.f.	0.08 ac.
TOTAL MITIGATION PROPOSED	31,500 s.f.	0.72 ac.

NELSON BROOK FLOOD CONTROL
MITIGATION PLANT LIST - TREES AND SHRUBS

Conditions: Wet/Moist Soils (OBL to FACW)

Botanical Name	Common Name
Aronia arbutifolia	Red Chokeberry
Alnus incana	Speckled Alder
Betula nigra	River Birch
Ilex glabra	Inkberry
Ilex verticillata	Winterberry
Nyssa sylvatica	Black Tupelo
Rhododendron viscosum	Swamp Azalea
Quercus bicolor	Swamp White Oak
Quercus palustris	Pin Oak

Conditions: Moist/Drier Soils (FAC to FACU)

Botanical Name	Common Name
Acer rubrum	Red Maple
Acer saccharum	Sugar Maple
Amelanchier canadensis	Shadblow
Cornus amomum	Gray Dogwood
Hamamelis virginiana	Witch Hazel
Kalmia latifolia	Mountain Laurel
Quercus alba	White Oak
Quercus rubra	Northern Red Oak
Viburnum dentatum	Arrowwood Viburnum

SEED MIXES:

- New England Wetmix
- New England Roadside Matrix Wet Meadow
- New England Erosion Control/Restoration Mix for Dry Sites (site slopes of dam embankments)
- New England Conservation/Wildlife Mix

North

GRAPHIC SCALE

30 0 15 30 60 120

(IN FEET)
1 inch = 30 ft.

CONSULTANTS:

ISSUED:
Amended plan as per ACOE comments 01/15/2016

OWNERSHIP AND USE OF DOCUMENTS

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SEAL:

REGISTERED LANDSCAPE ARCHITECT ALAN L. FLOR No. 000915 STATE OF NEW YORK

PROJECT NAME:
NELSON BROOK FLOOD CONTROL
MITIGATION PLAN
Town of Harrison, New York

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Drawing Title:
Conceptual ACOE Mitigation Plan

Date: October 20, 2015

Dwn. by: dlp

ID: 3 Dams.

MP-2