



REPLY TO

**DEPARTMENT OF THE ARMY**  
BUFFALO DISTRICT, CORPS OF ENGINEERS  
1776 NIAGARA STREET  
BUFFALO, NEW YORK 14207-3199

June 18, 2009

Regulatory Branch

SUBJECT: Department of Army Application No. 2008-01179, Nationwide Permit No. (38) as Published in the Federal Register, Volume 72, No. 47, on Monday March 12, 2007

Lockheed Martin Corporation.  
Steve Vardavas  
1210 Massillon Road  
Akron, OH 44315

Dear Mr. Vardavas:

This pertains to your proposal to remove soils in wetlands and restore a stream located on your property. The property does not have a true street address and is bordered on the northern by East Archwood Avenue and to the south by Triplett Boulevard; South Seiberling Street and Landon Street are located to the east of the property in the city of Akron, Summit County, Ohio.

This project is requesting to impact 3 wetlands and a perennial stream known as Haley's Ditch to remove PCB contaminated soils and to restore the entire project area (Sheet 1 of 7 and 3 of 7). After PCB contaminated soils are removed under U.S. EPA cleanup goals guidance (see letter, Appendix B), the project will impact 0.84 acres of wetlands (Wetland A, B, and C) and 1,800 L.F. of Haley's Ditch (Sheet 2 of 7). Haley's Ditch is currently channelized the entire length of the property. To mitigate for the impact from the removal of the contaminated soils within the wetlands and Haley's Ditch, a natural stream channel design will be implemented to provide a more natural flow and improve water quality and local flood storage capability. The new location of the stream will be increased by 231 linear feet (L.F.), to total 2039 L.F. of stream when the project is completed. One and 0.36 acres of floodplain will be created where no floodplains were identified before. Wetland restoration after soil removal will increase to 0.95 total acres (Sheets 4 of 7, 5 of 7, 6 of 7, and 7 of 7; and Appendix A - 20 pages).

I have evaluated the impacts associated with your proposal, and have concluded that they are authorized by the enclosed Nationwide Permit provided that the attached conditions are satisfied.

Verification of the applicability of this Nationwide Permit is valid for two years from the date of this correspondence unless the Nationwide Permit is modified, suspended or revoked. This verification will remain valid for two years if during this two year period the

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Nationwide Permit is reissued without modification or your activity complies with any subsequent permit modification. Please note that if you commence or are under contract to commence this activity in reliance of your Permit prior to the date this Nationwide Permit is suspended or revoked, or is modified such that your activity no longer complies with the terms and conditions, you have twelve months from the date of permit modification, expiration, or revocation to complete the activity under the present terms and conditions of this Nationwide Permit, unless this Nationwide Permit has been subject to the provisions of discretionary authority.

It is your responsibility to remain informed of changes to the Nationwide Permit program. A public notice announcing any changes will be issued when they occur. Finally, note that if your activity is not undertaken within the defined period or the project specifications have changed, you must immediately notify this office to determine the need for further approval or reverification.

This affirmation is limited to the attached Nationwide Permit and associated Water Quality Certification, and does not obviate the need to obtain any other project specific Federal, state, or local authorization.

In addition to the general conditions attached to the Nationwide Permit, your attention is directed to the following Special Conditions which are also appended at the end of the Nationwide Permit General Conditions:

1. All unsuitable/excess excavated material may not used as backfill and shall be removed and disposed of at a separately approved upland disposal site. Soils removal under this permit does not alleviate the applicant from other regulatory rules and standards established under the U.S. EPA clean up under 40 CFR 761.61 (c) for proper soil disposal. Contact their office to ensure you will stay in compliance under their rules and regulations for cleanup if questions arise.
2. That you are responsible for ensuring that the contractor and/or workers executing the activity(s) authorized by this permit have knowledge of the terms and conditions of the authorization and that a copy of the permit document is at the project site throughout the period the work is underway.
3. That the disposal of trees, brush and other debris in any stream corridor, wetland or surface water is prohibited.
4. Siltation barriers shall be installed using best management practices to protect downstream as much as possible during remedial work, to prevent siltation from entering into the stream. Barriers shall remain in place until all construction is

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completed and the area is stabilized.

5. That no in-water work shall be performed between April 15- June 30 to preclude adverse impacts on the spawning, nursery, and feeding activities of indigenous fish species.
6. That at the request of an authorized representative of the Buffalo District, U.S. Army Corps of Engineers, you shall allow access to the project site to determine compliance with the conditions of this permit.
7. There shall be no construction or placing of buildings, camping accommodations or mobile homes, billboards or other advertising material, or other structures within the limits of the designated restoration area.
8. The restoration plan entitled "Haley's Ditch Restoration Plan" in Summit County, Ohio and dated May 18, 2009, is hereby incorporated into and made part of the permit as Appendix A.
9. A baseline report shall be forwarded to this office by December 31 in the year of completion of all construction activities, or by an approved extension. For purposes of this special condition, "completion" means all activities associated with site grading and seeding and/or planting. The baseline report must include the following:
  - a. An "as-built" topographic survey of the restored area at 0.5 foot contour intervals.
  - b. Photographs from fixed locations with a photo location map.
  - c. A list of plants introduced through seeding and/or planting.
  - d. A list of any modifications that were made from the original restoration plan.
  - e. Summary statement regarding the perceived success of the project. The report will evaluate the success of the restoration as well as current wetland and stream functions. These reports must also address any potential problem areas and include suggestions and timetable for correction if it is anticipated that projected goals may not be met.
  - f. Date of field inspection.
10. Annual monitoring reports for the restoration project must be submitted to this office for the first five years following completion of construction based upon data collected during each monitored year between June and October. The first annual report is due by December 31 in the year following completion of mitigation construction, or by an approved extension date. Subsequent reports must be submitted by December 31 of the subsequent four years, or by an approved extension date. This requirement may be

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waived for years 3 and 4 if, after the first two growing seasons, the restoration area is shown to meet the requirements for successful mitigation.

These reports must include:

- a. An "as-built" topographic survey of the mitigation area at 0.5 foot contour intervals, including a delineated boundary of the wetland and wetland acreage determination.
- b. Photographs from fixed locations with a photo-location map.
- c. A plant series list which give USFWS Wetland Indicator Status and strata. Dominant plants should be highlighted and the percent cover is to be noted. Plants introduced through seeding or planting shall also be indicated. The date of field inspection is to be noted.
- d. Fish and wildlife observations on the site.
- e. Summary statement regarding the perceived success of the project. The report will evaluate the success of the restoration as well as current wetland and stream functions. These reports must also address any potential problem areas and include suggestions and timetable for correction if it is anticipated that projected goals may not be met.

I have evaluated your submitted wetland delineation map and have determined that the wetland and water boundaries shown on the map accurately represent on-site conditions. Please note that this is a Preliminary Jurisdictional Determination (JD). Preliminary JDs are non-binding written indications that there may be waters of the United States on your parcel and approximate locations of those waters. Preliminary JDs are advisory in nature and may not be appealed.

Pursuant to Regulatory Guidance Letter 08-02, any permit application made in reliance on this Preliminary JD will be evaluated as though all wetlands or waters on the site are regulated by the Corps. Further, all waters, including wetlands will be used for purposes of assessing the area of project related impacts and compensatory mitigation. If you require a definitive response regarding Department of the Army jurisdiction for any or all of the waters identified on the submitted drawings, you may request an approved jurisdictional determination from this office. If an approved jurisdictional determination is requested, please be aware that this is often a lengthy process and we may require the submittal of additional information.

In accordance with Regulatory Guidance Letter 05-02, "Preliminary jurisdictional determinations are not definitive determinations of areas within regulatory jurisdiction and do not have expirations dates." Lastly, this determination has been conducted only to identify the limits of waters that may be subject to Corps Clean Water Act or Rivers and Harbors Act jurisdiction.

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Questions pertaining to this matter should be directed to me at (440) 437-8970, by writing to the following address: U.S. Army Corps of Engineers, 33 Grand Valley Ave., Orwell, Ohio 44076, or by e-mail at: [LChantelle.Carroll@usace.army.mil](mailto:LChantelle.Carroll@usace.army.mil)

Sincerely,

Chantelle Carroll  
Biologist

CC: EnviroScience (Jamie Krejsa)  
USEPA (Margaret Guerriero, John Nordine)

Enclosures

COMPLIANCE CERTIFICATION

General Condition 14 of the Nationwide Permit you were affirmed requires that:

*"Every permittee who has received a Nationwide permit verification from the Corps will submit a signed certification regarding the completed work and any required mitigation. The certification will be forwarded by the Corps with the authorization letter and will include: a) A statement that the authorized work was done in accordance with the Corps authorization, including any general or specific conditions; b) A statement that any required mitigation was completed in accordance with the permit conditions; c) The signature of the permittee certifying the completion of the work and mitigation."*

APPLICANT:  
Lockheed Martin Corp.  
1210 Massillon Road  
Akron, OH 44315

POINT of CONTACT:  
Mr. Steve Vardavas  
1210 Massillon Road  
Akron, OH 44315

File Number: 2008-01179  
File Closed: June 18, 2009

Upon completion of the activity authorized by this permit sign this certification and return it to the address listed below within **30-days** of project completion.

Please note that your permitted activity is subject to a compliance inspection by a U.S. Army Corps of Engineers representative. If you fail to comply with this permit you are subject to permit suspension, modification, or revocation.

\_\_\_\_\_  
Steve Vardavas

\_\_\_\_\_  
Date

Permittee Telephone Number: \_\_\_\_\_

Project Location: Lockheed Martin Corp., 1210 Massillon Road, in the city of Akron, Summit County, Ohio

Project Description: impact 3 wetlands and a perennial stream known as Haley’s Ditch to remove PCB contaminated soils

Authorized Impacts (Waters of U.S. Impacted by Project): 0.84 acres of wetland and 1,800 L.F. of stream  
Waterway and/or Project Setting: Haley’s Ditch and un-named wetlands

Return completed form to:

**Dave Leput  
Regulatory Branch  
U.S. Army Corps of Engineers  
1776 Niagara Street  
Buffalo, New York 14207**

**ATTACHMENT**

**PRELIMINARY JURISDICTIONAL DETERMINATION FORM**

**BACKGROUND INFORMATION**

**A. REPORT COMPLETION DATE FOR PRELIMINARY JURISDICTIONAL DETERMINATION (JD): 10-05-08**

**B. NAME AND ADDRESS OF PERSON REQUESTING PRELIMINARY JD:**  
Lockheed Martin MS2, Steve Vardavas, 1210 Massillon Road, Akron, OH 44315

**C. DISTRICT OFFICE, FILE NAME, AND NUMBER: Buffalo District, ARCADIS/EnviroScience/Davey– Haley Ditch, #2008-01179**

**D. PROJECT LOCATION(S) AND BACKGROUND INFORMATION:** no physical address, bordered by East Archwood Ave to the North and Triplett Blvd. to the South, and Landon Street to the East.

**(USE THE ATTACHED TABLE TO DOCUMENT MULTIPLE WATERBODIES AT DIFFERENT SITES)**

State: OH County/parish/borough: Summit City: Akron  
coordinates of site (lat/long in degree decimal format): Lat. 41.0469 ° N,  
Long. -80.4717 ° W.

Universal Transverse Mercator:

Name of nearest waterbody: Springfield Lake Outlet -Haley's Ditch

Identify (estimate) amount of waters in the review area:

Non-wetland waters: 1757 linear feet: 13 width (ft) and/or 0.52 acres.

Cowardin Class:

Stream Flow: Perennial

Wetlands: 0.839 acres.

Cowardin Class: PEM/PFO

Name of any water bodies on the site that have been identified as Section 10 waters: NONE

Tidal:

Non-Tidal:

**E. REVIEW PERFORMED FOR SITE EVALUATION (CHECK ALL THAT APPLY):**

Office (Desk) Determination. Date: 10-01-08

Field Determination. Date(s): 10-01-08

1. The Corps of Engineers believes that there may be jurisdictional waters of the United States on the subject site, and the permit applicant or other affected party who requested this preliminary JD is hereby advised of his or her option to request and obtain an approved jurisdictional determination (JD) for that site. Nevertheless, the permit applicant or other person who requested this preliminary JD has declined to exercise the option to obtain an approved JD in this instance and at this time.

2. In any circumstance where a permit applicant obtains an individual permit, or a Nationwide General Permit (NWP) or other general permit verification requiring "pre-construction notification" (PCN), or requests verification for a non-reporting NWP or other general permit, and the permit applicant has not requested an approved JD for the activity, the permit applicant is hereby made aware of the following: (1) the permit applicant has elected to seek a permit authorization based on a preliminary JD, which does not make an official determination of jurisdictional waters; (2) that the applicant has the option to request an approved JD before accepting the terms and conditions of the permit authorization, and that basing a permit authorization on an approved JD could possibly result in less compensatory mitigation being required or different special conditions; (3) that the applicant has the right to request an individual permit rather than accepting the terms and conditions of the NWP or other general permit authorization; (4) that the applicant can accept a permit authorization and thereby agree to comply with all the terms and conditions of that permit, including whatever mitigation requirements the Corps has determined to be necessary; (5) that undertaking any activity in reliance upon the subject permit authorization without requesting an approved JD constitutes the applicant's acceptance of the use of the preliminary JD, but that either form of JD will be processed as soon as is practicable; (6) accepting a permit authorization (e.g., signing a proffered individual permit) or undertaking any activity in reliance on any form of Corps permit authorization based on a preliminary JD constitutes agreement that all wetlands and other water bodies on the site affected in any way by that activity are jurisdictional waters of the United States, and precludes any challenge to such jurisdiction in any administrative or judicial compliance or enforcement action, or in any administrative appeal or in any Federal court; and (7) whether the applicant elects to use either an approved JD or a preliminary JD, that JD will be processed as soon as is practicable. Further, an approved JD, a proffered individual permit (and all terms and conditions contained therein), or individual permit denial can be administratively appealed pursuant to 33 C.F.R. Part 331, and that in any administrative appeal, jurisdictional issues can be raised (see 33 C.F.R. 331.5(a)(2)). If, during that administrative appeal, it becomes necessary to make an official determination whether CWA jurisdiction exists over a site, or to provide an official delineation of jurisdictional waters on the site, the Corps will provide an approved JD to accomplish that result, as soon as is practicable. This preliminary JD finds that there "*may be*" waters of the United States on the subject project site, and identifies all aquatic features on the site that could be affected by the proposed activity, based on the following information:



**SUPPORTING DATA. Data reviewed for preliminary JD (check all that apply**

- checked items should be included in case file and, where checked and requested, appropriately reference sources below):

- Maps, plans, plots or plat submitted by or on behalf of the applicant/consultant: from Arcadis/Davey Resource Group/EnviroScience.
- Data sheets prepared/submitted by or on behalf of the applicant/consultant.
  - Office concurs with data sheets/delineation report.
  - Office does not concur with data sheets/delineation report.
- Data sheets prepared by the Corps:
- Corps navigable waters' study:
- U.S. Geological Survey Hydrologic Atlas:
  - USGS NHD data.
  - USGS 8 and 12 digit HUC maps.
- U.S. Geological Survey map(s). Cite scale & quad name: 7.5 minute Akron East, OH.
- USDA Natural Resources Conservation Service Soil Survey. Citation:
  
- National wetlands inventory map(s). Cite name: Akron East Quadrangle.
- State/Local wetland inventory map(s):
- FEMA/FIRM maps:
- 100-year Floodplain Elevation is: (National Geodetic Vertical Datum of 1929)
- Photographs:  Aerial (Name & Date): TerraServer 1994 through 2006 project area unchanged by aerial.  
or  Other (Name & Date):
- Previous determination(s). File no. and date of response letter:
- Other information (please specify):

**IMPORTANT NOTE: The information recorded on this form has not necessarily been verified by the Corps and should not be relied upon for later jurisdictional determinations.**



Signature and date of 10-5-08  
Regulatory Project Manager

\_\_\_\_\_  
Signature and date of  
person requesting preliminary JD

<b>File # 2003- 01426</b>	<b>Latitude</b>	<b>Longitude</b>	<b>Cowardin Class</b>	<b>Estimated amount of aquatic resource in review area</b>	<b>Class of aquatic resource</b>
Halley Ditch	41.0429	-81.4732	R4	1757 LF	non-section 10 – non-wetland
Wetland A	41.0471	-81.4716	PEM/PFO	0.722 acre	non-section 10 –wetland
Wetland B	41.0438	-81.4729	PFO	0.093 acre	non-section 10 –wetland
Wetland C	41.0432	-81.4730	PEM	0.024 acre	non-section 10 –wetland

*"Excellence in Ecological Monitoring"*

20 May 2009

Ms. Chantelle Carroll  
U.S. Army Corps of Engineers, Buffalo District  
Regulatory Branch, Orwell Field Office  
33 Grand Valley Avenue  
Orwell, Ohio 44076  
Phone: (440) 437-8970  
Fax: (440) 437-5842

Re: *Section 404 Nationwide Permit Application,  
Haley's Ditch Restoration Project  
North of East Archwood Avenue and south of Triplett Boulevard,  
Akron, Summit County, Ohio 44306*

Dear Ms. Carroll:

Enclosed please find a pdf. copy of the Haley's Ditch Stream and Wetland Restoration plan that details the restoration efforts to follow the remediation. After your review if you require additional information or have questions please contact myself (330-620-7756) or Joel Bingham (330-858-0298). A hard copy has also been sent.

Respectfully,



Jamie Krejsa  
Vice President / Director of Ecological Services

enc: Haley's Ditch Stream and Wetland Restoration Plan

CC:  
Mr. Dave Gunnarson, Lockheed Martin  
File

## Haley's Ditch Restoration Plan



Prepared By:

**RiverWorks**

A Partnership for Stream & Wetland Restoration



EnviroScience, Inc.  
3781 Darrow Rd  
Stow, OH 44224

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May 18, 2009

**Lockheed Martin  
Haley’s Ditch Stream and Wetland Restoration Plan**

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## 1. Introduction

### 1.1 Background

The following is a restoration plan for the Haley's Ditch remediation project in Summit County, Akron, OH. The following information is meant to provide additional detail regarding the proposed restoration for Haley's Ditch with regard to existing condition, restoration approach and design. For a more detailed background regarding the historical cause of PCB contamination refer to ARCADIS Remediation Plan section 1.1 and 1.2. In general, the remediation project will involve the excavation, removal, transportation and offsite disposal of accumulated, unconsolidated sediment deposits in Haley's Ditch, as well as adjacent soils containing PCBs at concentrations above the soil cleanup level of 1.0 mg/kg.

Remediation of Haley's Ditch will generally proceed in an upstream to downstream direction beginning at the culvert outlet from Triplett Blvd to the culvert invert at Archwood Ave. The project is roughly divided into three sections; South, Middle and North Areas. Figure 1 illustrates the project boundaries, proposed horizontal soil and sediment removal limits and depths. The following plan details the restoration activities post-remediation.

The restoration of Haley's Ditch centers on enhancing the remediation area within the limits of contaminated sediment removal. Although not required, Lockheed Martin has made a conscious decision to spend additional resources to provide a functional stream valley, floodplain and riparian corridor as a foundation for ecological recovery. Thus, the limits of remediation are largely the limits of restoration. The restoration approach is also centered on recognizing the existing impairments and limitations of channel morphology, habitat and riparian zone to mitigate for historical impacts as well as alleviate disturbance from remediation. The remediation and restoration activities within wetland areas and waters will be completed in accordance with a Nationwide 38 permit obtained by the United States Army Corps of Engineers.

### 1.2 Existing Conditions

Haley's Ditch is considered a headwater stream (1.04 sq mi drainage area) with a Warm Water Habitat (WWH) use designation by the Ohio EPA. Overall, the Haley's Ditch watershed is heavily urbanized. Prior to development, large portions of the Haley's Ditch watershed consisted of wetlands and forest. However, over the past 100 years of development, drainage, channelization, fill and other practices have altered the watershed from previous conditions. An evaluation of the existing channel morphology, habitat, local biology, vegetation and project area wetlands was performed to satisfy project permitting and facilitate restoration design.

#### 1.2.1 Stream Morphology

Because the existing drainage channel will be excavated and relocated as part of the remediation efforts, limited channel morphology measurements were collected on the existing conditions. Four cross sections were performed in representative areas to assess channel characteristics and conditions. A longitudinal profile was not performed

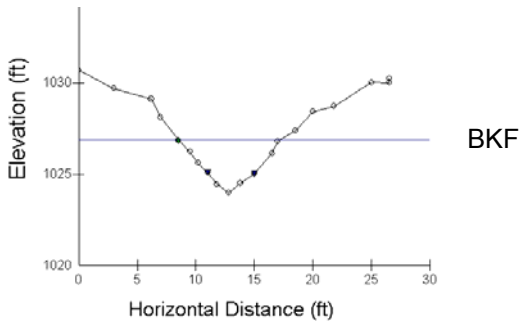
because analysis of the channelized pattern (sinuosity 1.1) in relation to riffle-pool features would offer little information to the restored condition. However, an average slope (0.0035 ft/ft) and bankfull indicators were determined from survey and field observation. The channelized stream geometry is an obvious detriment to the existing channel function and habitat.

Cross sections were surveyed in four riffle areas to characterize channel conditions and their relationship to depositional and floodplain features and terraces (Figures 2-5). The results characterize the channel as a low width:depth ratio (ie. narrow deep) resembling a Type G or E channel. The cross sections represent a likely recovered condition (Type E) for the channelized ditch as there are indications of a small floodplain that has equilibrated within the bank levees. Nonetheless, the channelization and bank levels as they currently exist inhibit frequent flood inundation to the larger floodplain.

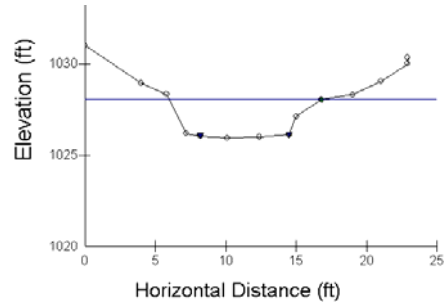
**Table 1. Cross Section Summary**

Cross Section	Bankfull width	Mean Depth	Cross Sectional Area	Width:Depth	Entrenchment Ratio
CS 1	8.58	1.56	13.68	5.4	2.0
CS 2	10.82	1.62	17.5	6.68	1.97
CS 3	15.4	1.16	17.95	13.32	1.68
CS 4	12.1	1.19	14.39	10.15	1.40

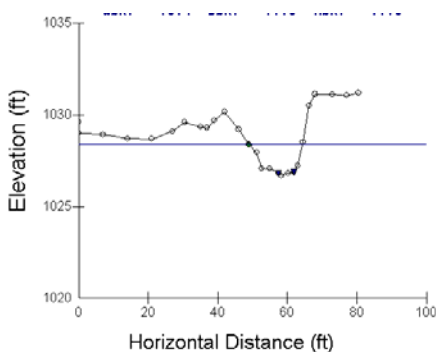
**Figure 2. Cross Section 1 Riffle**



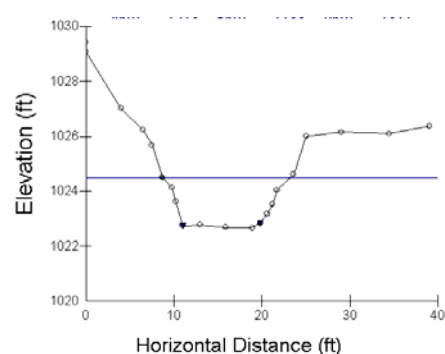
**Figure 3. Cross Section 2 riffle**



**Figure 4. Cross Section 3 Riffle**



**Figure 5. Cross Section 4 riffle**

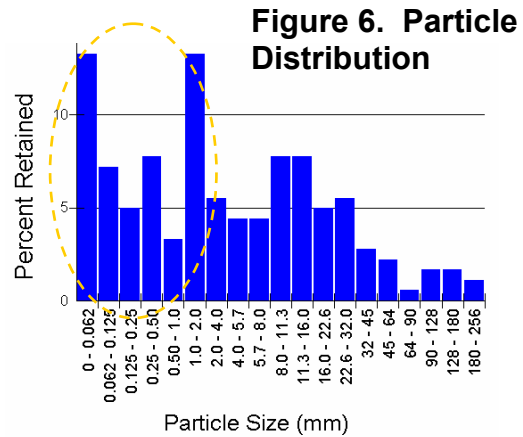




Streambed substrates were characterized using the Wolman pebble count methods. Samples were collected in riffle areas as these would represent best substrate conditions due to the depositional nature of pools. Below, Table 2 and Figure 6 summarize the particle distribution in riffle areas. Notice the high percentage of silt (13.2%) and its corresponding proportion (orange outline) in the bar chart depicting bimodal distribution. This is typical of many channelized or incised streams which do not have access to floodplains for storage of this finer material.

**Table 2. Percent Particle Distribution**

Type	Riffle Areas
Silt/Clay	13.2%
Sand	36.5%
Gravel	45.3%
Cobble	5.0%
Boulder	0%



### 1.2.2 Wetlands

The site contains three wetlands (referred to as Wetlands A, B, and C) totaling 0.84-acres of two types of wetland habitat: palustrine emergent and palustrine forested wetland habitat (Wetland Delineation, Davey Resources Group 2008). Wetlands A, B and C were assessed using the Ohio Rapid Assessment Methodology (ORAM) scoring forms (Ecological Resources Assessment and Indiana Bat Survey, EnviroScience 2008). Wetland A (0.72-acre) was determined to be a Category 2 wetland, Wetland B (0.093-acre) was determined to fall within the Category 1 or 2 gray zone, and Wetland C (0.024-acre) was determined to be a Category 1 wetland (USACE Jurisdictional Determination, 2009).

### 1.2.3 Habitat

In-stream habitat was evaluated with the Qualitative Habitat Evaluation Index (QHEI) which is a standard subjective evaluation performed by the Ohio EPA (Table 3). Haley’s Ditch scored a 55.25 out of 100 possible points. Typically, scores >60 have sufficient habitat to support a WWH fish community. The results from Haley’s Ditch suggest that the existing habitat has a marginal capability to meet WWH standards. Major limiting factors to the site related primarily to Metric 3 channel morphology, Metric 2 diversity of in-stream habitat and Metric 5 riffle-pool quality. Riffle quality was generally poor with shallow depths consisting of moderately embedded substrates. Pool depth was considered average but the number of quality pools was limiting.

**Table 3. QHEI Summary**

Haley’s Ditch	Metric Score
<b>Metric 1. Substrate</b> 20pts max	12
<b>Metric 2. In-Stream Cover</b> 20 pts max	12
<b>Metric 3. Channel Morphology</b> 20 pts max	10
<b>Metric 4. Riparian</b> 10 pts max	4.75
<b>Metric 5. Riffle Pool Quality</b> 20 pts max	8.25
<b>Metric 6. Gradient</b> 10 pts max	8
<b>Total Score</b>	55.25

### 1.2.4 Biology

During June and August of 2008, EnviroScience conducted a supplemental biological evaluation to update biological information within the project area. The Haley's Ditch site evaluated by EnviroScience was located adjacent to the Goodyear Test track approximately 0.70 miles downstream from the project site. Overall, EnviroScience observed similar results as past Ohio EPA sampling events (Table 4). Therefore, it appears that the water quality in the reach has not improved substantially. EnviroScience, with concurrence from Ohio EPA, did not perform a biological evaluation on the Lockheed Martin reach of the Haley's Ditch for several reasons. First, the concurrent evaluation in the watershed provided a sufficient evaluation of the fishery community capable of inhabiting the area under the existing conditions. Second, EnviroScience and Lockheed wanted to avoid disturbing substrates within the project area to minimize the risk of downstream migration prior to remediation activities. Also, since there was no feasible upstream site of natural channel conditions, the downstream data was considered adequate. Additional data regarding the biological integrity of the Little Cuyahoga River watershed is available through the Ohio EPA report entitled; *Biological and Water Quality Study of the Little Cuyahoga River and Tributaries, 1996* (OEPA 1998),

**Table 4. EnviroScience Biological Summary**

Site	June 2008	August 2008	Attainment Status
	IBI	MIwb	WWH
RM 0.2 Springfield Lake Outlet	30	26	Non
RM 0.2 HALEYS DITCH	30	N/A	Non

### 1.2.5 Vegetation and Soils

A majority of the site is surrounded by buildings, parking lots, or residential areas. Consequently, the historical vegetative communities are either lost or severely impacted. However, information on the existing conditions suggest a potential trajectory for recovery and species that will be successful post-restoration. During an ecological investigation of the site (*EnviroScience, Inc. 2008*), three upland plant communities were identified in the project area, consisting of urban, successional forest, and scrub shrub. The northern portion of the site consists primarily of successional forest as well as scrub shrub habitat. The central portion of the site consists primarily of urban area, mowed grass with shrubs and herbaceous vegetation lining Haley's Ditch. The southern portion of the site consists primarily of successional forest as well as scrub shrub and urban habitat types.

Common species found in the successional forest and scrub shrub habitat include *Acer saccharinum* (silver maple, FACW-), *Populus deltoides* (eastern cottonwood, FAC), *Prunus serotina* (black cherry, FACU), *Robinia pseudoacacia* (black locust, FACU-), and *Acer negundo* (box-elder, FAC+) in the tree canopy layer; *Crataegus sp.* (hawthorn), *Cornus foemina* (gray dogwood, FAC), *Lonicera tatarica* (Tartarian honeysuckle, FACU), *Rosa multiflora* (multiflora rose, FACU), and *Rhamnus frangula* (glossy buckthorn, FAC) in the shrub layer; *Alliaria petiolata* (garlic mustard, FACU-), *Impatiens capensis* (spotted touch-me-not, FACW), and *Toxicodendron radicans*

(poison ivy, FAC) in the herbaceous layer; *Vitis riparia* (river-bank grape, FACW) and *Parthenocissus quinquefolia* (Virginia creeper, FACU) in the vine layer.

In summary, the vegetative communities are impacted by regular maintenance or exist in a successional state. The three described communities do not represent a climax vegetative condition, and restoration of these areas will result in better ecological condition in the long term.

The site is found in the *Soil Survey of Summit County, Ohio* (Ritchie and Steiger 1990). According to the survey, the soils within the project area are one of four types consisting of Carlise muck (Cg), Chili-Urban (CuB), Chili-Urban (CuC) or Urban (Ur). The Carlise muck is a hydric soil typical of swampy wetland areas. The remaining soil types are indicative of areas where original Chili soils have been destroyed from borrow, fill or re-grading. The surface layer of the disturbed soil has low organic matter, is droughty and seed germination is poor. Urban land (Ur), a nonhydric soil, is defined as “areas ten acres or more in size that area covered by buildings, pavement, or other manmade surfaces” (Ritchie and Steiger 1990).

### 1.3 Summary

From a morphological, biological and habitat perspective, Haley’s Ditch functions marginally well. This current condition is primarily the result of human induced alteration from industry and settlement in the watershed. However, the evaluation has identified some key impairments that, if restored or addressed through restoration efforts, could increase functionality. Channelization and loss of an accessible bankful floodplain appear to be the most limiting factors. The proposed restoration plan is designed to restore these features through the creation of a restored stream pattern and excavation of an accessible floodplain.

### 1.4 Restoration Approach

From a morphological, habitat and biological perspective, the restoration approach will provide a substantial basis for recovery through its focus of reversing the historical impairments and the impacts to habitat and morphology caused by remediation. The restoration of the physical habitat will be addressed with channel and floodplain restoration (Figure 7). The creation of additional meander bends and stream pattern will provide a basis for more habitat diversity and deeper more varied pool depths. One of the immediate benefits from channel and floodplain restoration will be the potential reduction of fine sediment storage within the channel. The restored floodplain, wetlands and channel will be restored to an elevation and to encourage a higher level of connectivity (Figures 8). The new stream geometry will create greater channel and flow variability and facilitate riffle-pool complexes. Imported substrate for the stream bed will consist of bank run from a nearby gravel-pit, supplemented by larger gravel and cobble sized material. Bank run is unwashed material that provides natural variability synonymous with glacial till. A depth of approximately 1 foot of substrate will be placed over sub-grade within the channel and planned flood storage areas to final grade.

The remediation effort will also displace a large amount of trees and understory but the restoration effort will use most of this material on-site as wood chips added to the soil or as deadfall or in-stream habitat. A significant planting effort of trees shrubs and live cuttings to replace the lost vegetation is proposed through the restoration area (Figure 9). Proposed native species and seed mixes vary depending on location in the floodplain, upland or wetland areas. The planting strategy employs groups and clusters of vegetation to increase chance of success with patchy development rather than randomization. Similar species will be planted together particularly with regard to the shrub species. Fast growing species such as willow and dogwood are focused along the stream banks in the form of containerized and live cuttings for banks stability and habitat. The recovery potential of the site will also increase with time as stream bank vegetation will provide root mats, undercuts, overhanging vegetation and more importantly shade for the restored reach.

Biologically, a regional species pool of 22 fish species is potentially available for recruitment into the restored reach. This pool was generated based on current and historical information from the main stem of the Little Cuyahoga, Springfield Lake Outlet and Haley's Ditch between the Kelly Ave. dam and Mogadore Reservoir Outlet. This pool of species is comprised of various trophic guilds and tolerant and non-tolerant species. This community does have the capacity from a species perspective to develop into a WWH supporting community. The restoration of more habitat heterogeneity, functional morphologic features and riparian zone will greatly assist in the development of that community. While the restored site will likely not support a diversity of 22 species, the regional pool provides a larger variability of tolerances and habitat preferences for potential colonization.

The expansion of the floodway corridor and restoration of a meandering channel provide opportunity to restore riverine wetlands. Wetland restoration efforts will primarily be directed at restoring a proposed 0.84-acre wetland in the northwest corner of the site at the location of existing Wetland A. Several other small seasonally inundated depressional areas will be created in floodplains to mimic oxbow wetlands. These riverine wetlands are prevalent in the Cuyahoga watershed and along intact areas of the Little Cuyahoga River corridor and its tributaries. Riverine wetlands will provide additional habitat diversity, refuge for fish during flooding and a source of food for wildlife. Other beneficial floodplain functions include flood storage, filtration and groundwater recharge. The primary source of hydrology for the wetlands will be precipitation and over bank flooding which will likely access these areas 3-4 times during the growing season. The large 0.84-acre wetland will be restored over top existing Carlise muck (Cg) soils to provide the hydric soil component.

## **2. Property Access and Permit Approvals**

Permits and approvals will be obtained prior to performing remediation and restoration activities at Haley's Ditch. The permits and approvals are as follows:

### Permits

- Grading Permit (City of Akron);

- US Army Corp of Engineers - Nationwide 38 Permit;

#### Approvals

- Risk-Based Disposal Approval for PCB Remediation Waste (US EPA);
- NPDES General Permit (Ohio EPA);
- Storm Water Pollution Prevention Plan (SWPPP) (Summit Soil and Water Conservation District);

### **3. Haley's Ditch Restoration Activities**

#### 3.1 Mobilization

Restoration activities will commence as soon as practical following the remediation effort, thus restoration activities are anticipated to begin approximately 3-4 weeks from remediation start date. Restoration activities will utilize the base equipment staging areas used initially by the remediation effort in the support zone "clean" areas only. Restoration activities will utilize the same construction entrances as remediation activities after the remediation crew has moved into the next zone.

#### 3.2 Survey Layout

The restoration site will be stationing and referenced along the centerline of the proposed bankfull channel alignment. Stationing begins at 1+00 at the downstream culvert invert at E. Archwood Ave. and continues upstream to station 21+39.45 at the culvert invert at the south end of the site coming from Triplett Blvd. Station and offsets on survey lathes shall provide the location of grading limits, channel depth, bank heights etc. in the field. Cross sections were planned at specific locations perpendicular to the centerline to provide horizontal distances of channel shape and secondarily act as an as-built "check" discussed further in construction oversight. Cross sections are spaced approximately 25-50 ft apart.

#### 3.3 Erosion Sediment Controls and Bypass Pumping

Storm water management will include erosion control measures to be installed in accordance with the SWPPP reviewed and approved by the local soil and water conservation district. Scheduling of daily restoration activities will be planned in accordance with the anticipated weather conditions to minimize adverse impacts as a result of severe weather. As a general guideline, the majority of channel restoration work will be performed in the "dry" through the use of either water diversion or bypass pumping. The existing channel will be restored to a sub-grade elevation by the remediation crew using clean soil to allow base flow to bypass long distances in the North and South work zones. If bypass diversion is not feasible (ie. Middle Zone), then daily bypass pumping will minimize water contact with exposed soils. Rock check dams will be installed at specified locations in the sub-grade restored channel and diversion bypass channel as an in-channel BMP. Rock check dams will be placed specifically at riffle crest locations and ultimately incorporated into the final restoration grade. Thus,

the rock checks also become points of vertical grade control. Rock check dams will be removed from diversion bypass channels prior to backfill and grading.

If significant storm events are anticipated, the remediation and restoration crews will perform all practical measures to ensure that the project site and downstream areas will not be negatively impacted. As a general rule, the restoration construction will be completed to a point that any rainfall event can flow through the newly restored areas at the end of each day. In other words, channel diversions are installed such that overtopping can flow into the restored channel if extra capacity is needed. Also, daily bypass pumping procedures will be ceased at the end of the work day. Any continual bypass pumping will be performed solely by the remediation crew.

### 3.4 Restoration Sequence

The Haley's Ditch restoration activities will include the following tasks, generally performed in sequential order. A brief description of each activity is provided below

- Dewatering and Channel diversion- See Section 3.3
- Refine subgrade and stream banks
- Placement of substrate
- In-stream woody habitat
- Finish Grade
- Erosion fabric and topsoil placement for stream banks
- Floodplain grading
- Wood chip placement
- Topsoil placement and grading
- Woody debris deadfall placement
- Tree and plant installation
- Seed and straw mulch
- Wetland Construction
  
- Refine subgrade and stream banks  
Excavation of constant slope sub-grade channel to provide a refined sub-grade of the riffle and pool features. Pool areas will be excavated deeper and material placed at the downstream or upstream area thereby creating the rise and fall of the profile.
- Placement of substrate  
Once the riffle and pool sub-grade has been achieved in a feasible length of stream (i.e. 100-300 ft), a base foundation of bank run material will be added of approximately 0.5 ft (6 inches) over the pool and riffle areas. Bank run material has a high percentage of sand and small gravel that is typical of "sub-pavement" areas of stream beds. This material will be compacted into place using a machine bucket or vibrating skid.

Compaction will be performed to avoid the redistribution of the base material during initial rain events and to increase precision of final grading due to the fine tolerances of low gradient streams.

- In-stream woody habitat

Before finish grade and bank construction, it is beneficial to install any in-stream woody habitat features. Woody debris habitat is a large component of headwater stream habitat particularly in the Cuyahoga basin. Various types of woody debris habitat will be installed within riffle and pool areas. The length and diameter of the woody material will generally range from 10-20 feet in length and a diameter of 6-18 inches. Specific woody debris locations, alignment, type and size will be at the discretion of the restoration team due to the variability of each location and source of wood.

- Finish Grade

The finish grading is the stage where the channel begins to take shape with regard to its fine details, bars and microfeatures typical of natural channels. Finish grade will be accomplished using a coarser mixture of medium-large gravel and small cobble substrate. Material will be compacted into place using machine bucket or vibrating skid. During finish grading, water may be diverted into the channel to facilitate minor adjustments to elevations of riffle crests and shaping of base flow channel areas.

- Erosion fabric and topsoil placement for stream banks

Erosion fabric will provide both short and long-term protection for stream banks as native grasses and live stakes grow through the blanket. A North American Green C125 coconut fiber erosion fabric, Rolanka jute fabric, or equivalent will be applied along both banks. A section of channel that has reached finish grade will undergo topsoil placement and erosion fabric installation to meet final floodplain grade (ie. bankfull elevation). Erosion fabric will be initially laid out along the bank within the channel, so that the left edge is within the channel while the right edge is overlapping the sub-grade bank 1-2 ft (looking downstream). The right edge will be fastened with wooden stakes at regular intervals to lock in the bottom edge of the fabric. Topsoil will be placed at the designated bank edge, compacted in lifts to final elevation. Prior to rolling the left edge of the fabric, the bank will be seeded with native seed mix. Once the fabric has been overlaid and the bank edge is formed, wooden stakes will fasten the fabric in place according to manufacturer specifications.

- Floodplain grading

Adjustments to the sub-grade floodplain will be made at this time to prepare the area for topsoil and finish floodplain grade. Identified areas of compaction from hauling or vehicle traffic will be ripped to a depth of 0.5-1.0 ft to loosen soils.

- Wood chip placement

A percentage of the cleared trees will be chipped and stockpiled. This is an effort not only to reduce material handling but also to keep carbon on-site as a soil additive. The wood chips will help increase the coarse woody organic layer and detritus to potentially increase successional recovery and establish a micro soil fauna similar to wooded or successional areas. Only trees greater than 4 in. dbh will be used to produce woody chips in order to avoid invasive species recruitment from the shrub layer. Wood chip mulch will be spread on the sub-grade in a relatively even layer of 1-3 inches.

- Topsoil placement and grading

Clean topsoil free of PCB's (i.e., PCB concentration less than 0.1 mg/kg) from a local source will be imported and spread over the sub-grade to meet final floodplain and upland elevations. A soil test shall be performed to identify soil characteristics. A composite sample of the imported material will be used from the source location. A standard soil test provides an indication of levels of phosphorus (P), potassium (K), calcium (Ca), magnesium (Mg), pH, cation exchange capacity, lime requirement index and base saturation. An important soil characteristic is a soil pH around 6.5. At this level, most soil nutrients are readily available. Based on the results of the soil test(s) fertilizers or additional constituents can be added to the soil to provide an adequate balance for vegetation.

- Woody debris deadfall placement

Following topsoil placement, woody debris and logs will be placed at locations specified by the restoration biologist. This deadfall will provide additional habitat for wildlife and mimic the natural conditions of a wooded corridor and floodplain. Logs will be slightly buried at one end or along its length in effort to help anchor the wood in case of a large flood event.

- Tree and plant installation

The restored vegetation is an important component to the project as it provides the foundation for the community and sets the trajectory for recovery. The restored plantings will consist primarily of tree, shrub and live cuttings of varying sizes and species. A list of proposed species for each of the distinct areas (floodplain and stream banks, uplands, wetlands) for the project are included in Table 5. Depending on the weather conditions and timing of when areas are ready for plantings, installation may be delayed until early fall to increase chance of survivability. This would save time and effort on watering through hot summer months as the site will be devoid of most natural shade. Planting of containerized or ball and burlap (B&B) trees and shrubs shall be performed according to ODOT CMS 661. Spacing of the plant depends on the species but will generally be 10-15 ft centers for B&B trees and 6-8 ft for containerized plants. Tree guards may be installed at later date depending on deer activity following project completion. Wood chips or wood mulch will be placed around installed trees and shrubs to help



prevent weed competition in the drip line. Live stakes will be installed during March and April 2010 while species are still dormant.

- Seed and straw mulch

Seeding of temporary and native seed will occur as soon as possible in disturbed areas. A table of the proposed seed mix species for each of the distinct areas (floodplain and stream banks, uplands, wetlands) is attached. The objective of seeding is to ensure good seed-to-soil contact at a depth of no more than ½ inch. Areas to be seeded will be properly prepared and seeded at a rate of 15 lbs per acre. All seeded areas shall be covered with straw mulch. Straw mulch will be applied by hand or straw blower at a rate of 2 tons per acre. Immediately after straw is laid, material will be crimped by tracked vehicle running against the slope as to not encourage rill erosion.

- Wetland Construction

*Emergent Riverine Wetlands*

Proposed emergent wetlands will be planted with a wide variety of native herbaceous vegetation, including grasses, sedges and forbs that generally grow 1-3 ft in height. Species were selected based on common species in northeast Ohio and those identified in reference wetland areas upstream. Emergent marshes will provide excellent fish refugia during flood events and possible spawning grounds for amphibians and wildlife habitat. Wetland restoration will entail the following bulleted activities below. Refer to the corresponding descriptions above for general guidelines on activities in addition to any particular notes provided.

- Refine Wetland sub-grade

Grading depressions, swales and berms to create microtopography in accordance with the design plan will be performed at this stage

- Wetland finish grade
- Wetland wood chip placement
- Wetland topsoil placement and grading
- Wetland woody debris deadfall placement
- Wetland tree and plant installation
- Wetland seed and straw mulch

### 3.5 Construction Inspection and Oversight

The restoration of Haley's Ditch stream and wetland features will be performed as a design build construction project. The restoration biologist, engineers and construction managers encompassing the restoration team that conceptualized and designed the project will implement the final product. The restoration biologist will be on-site daily for a majority of the restoration construction. In addition to directing operators and assisting in layout, part of this oversight is the periodic checking of the as-built condition utilizing the design plan sections, profile and plan view. Natural channel construction

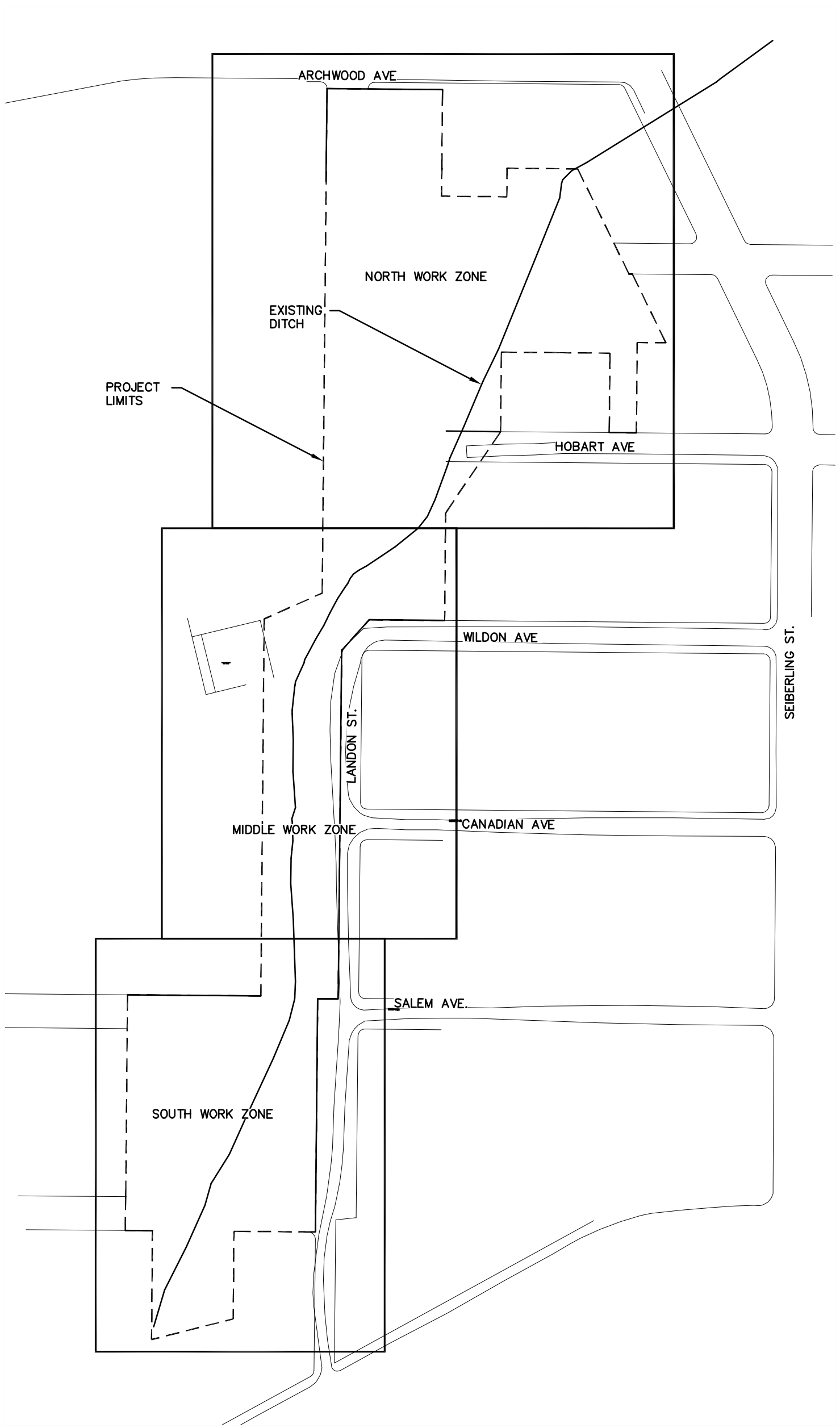
provides flexibility from the design detail as simplified 2-D sections and profiles cannot represent the intricacies, details and variability of natural channels. However, critical elevations such as riffle crests, floodplain elevations and cross sectional areas provide the basis and range of tolerances. Ultimately, the restoration goal is to construct a stream and valley that functions ecologically and morphologically and provides a foundation that can evolve and adapt over time.

#### **4. Schedule**

Lockheed Martin plans to perform the Haley's Ditch remediation activities during the summer of 2009. ARCADIS plans to mobilize to the site in early May 2009 and complete the remediation work in early September 2009. Restoration work is scheduled to be complete by mid October, 2009 with supplemental plantings in spring 2010.

**Table 5. Restoration Proposed Species**

Floodplain / Riparian		Wetland Areas		Upland Areas	
Herbs		Herbs		Herbs	
Genus/Species	Common Name	Genus/Species	Common Name	Genus/Species	Common Name
<i>Agrimonia parviflora</i>	Small-flowered agrimony	<i>Alisma subcordatum</i>	Water plantain	<i>Aster dumosus</i>	Rice button aster
<i>Carex crinita</i>	Fringed sedge	<i>Asclepias incarnata</i>	Swamp milkweed	<i>Aster laevis</i>	Smooth blue aster
<i>Carex grayi</i>	Asa gray's sedge	<i>Carex crinita</i>	Fringed sedge	<i>Aster novae-angliae</i>	New England aster
<i>Carex lurida</i>	Lurid sedge	<i>Carex cristatella</i>	Crested sedge	<i>Elymus riparius</i>	Riverbank Wild Rye
<i>Carex vulpinoidea</i>	Fox sedge	<i>Carex lurida</i>	Lurid sedge	<i>Elymus virginicus</i>	Virginia Wild Rye
<i>Cinna arundinacea</i>	Wood reed grass	<i>Carex scoparia</i>	Broom sedge	<i>Schizachyrium scoparium</i>	little Bluestem
<i>Elymus riparius</i>	Riverbank wild rye	<i>Carex tribuloides</i>	Blunt broom sedge	<i>Solidago altissima</i>	Tall goldenrod
<i>Elymus virginicus</i>	(Virginia Wild Rye)	<i>Carex vulpinoidea</i>	Fox sedge	<i>Sorghastrum nutans</i>	Indian grass
<i>Eupatorium fistulosum</i>	(Joe Pye Weed)	<i>Eleocharis obtusa</i>	Blunt spike-rush	<b>Shrubs/Trees</b>	
<i>Eupatorium maculatum</i>	(Spotted Joe Pye Weed)	<i>Eupatorium fistulosum</i>	Joe Pye Weed	<i>Acer saccharinum</i>	Silver maple
<i>Glyceria striata</i>	Fowl manna grass	<i>Eupatorium maculatum</i>	Spotted Joe Pye Weed	<i>Carpinus caroliniana</i>	American hornbeam
<i>Impatiens capensis</i>	Jewelweed	<i>Eupatorium perfoliatum</i>	boneset	<i>Cornus racemosa</i>	Gray dogwood
<i>Juncus effusus</i>	Soft rush	<i>Glyceria striata</i>	Fowl manna grass	<i>Liquidambar styraciflua</i>	Sweetgum
<i>Leersia virginica</i>	Whitegrass	<i>Hibiscus moscheutos</i>	Rose mallow	<i>Liriodendron tulipifera</i>	Tulip poplar
<i>Monarda fistulosa</i>	Wild bergamot	<i>Iris versicolor</i>	Blue flag	<i>Nyssa sylvatica</i>	Sour gum
<i>Panicum clandestinum</i>	Deertongue	<i>Juncus canadensis</i>	Canada rush	<i>Quercus rubra</i>	Red oak
<i>Penstemon digitalis</i>	Tall White Beard tongue)	<i>Juncus effusus</i>	Soft rush	<i>Rhus glabra</i>	Smooth sumac
<i>Rudbeckia hirta</i>	Black Eyed Susan	<i>Leersia oryzoides</i>	Rice cutgrass	<i>Rhus typhina</i>	Staghorn sumac
<i>Senecio aureus</i>	Golden ragwort	<i>Lobelia cardinalis</i>	Cardinal flower	<b>Area</b>	<b>Acres</b>
<i>Verbesina alternifolia</i>	wingstem	<i>Lycopus americanus</i>	Water horehound	Floodplain/Riparian	
		<i>Mimulus ringens</i>	Monkey flower	Emergent Wetland	
		<i>Onoclea sensibilis</i>	Sensitive fern	Upland	
<b>Shrubs/Trees</b>		<i>Polygonum arifolium</i>	halberdleaf tearthumb	<b>Total</b>	
<b>Genus/Species</b>	<b>Common Name</b>	<i>Scirpus cyperinus</i>	Woolgrass		
<i>Acer negundo</i>	Box elder	<i>Sisyrinchium angustifolium</i>	Blue-eyed grass		
<i>Alnus rugosa</i>	Speckled alder	<i>Spiraea tomentosa</i>	steeplebush		
<i>Cornus amomum</i>	Silky Dogwood	<i>Verbena hastata</i>	Blue vervain		
<i>Cornus sericea</i>	red osier dogwood	<b>Shrubs</b>			
<i>Lindera benzoin</i>	Spicebush	<b>Genus/Species</b>	<b>Common Name</b>		
<i>Platanus occidentalis</i>	American sycamore	<i>Cephalanthus occidentalis</i>	buttonbush		
<i>Quercus bicolor</i>	Swamp white oak	<i>Cornus amomum</i>	Silky Dogwood		
<i>Spiraea alba</i>	Meadow sweet	<i>Cornus sericea</i>	red osier dogwood		
<i>Ulmus americana</i>	American elm	<i>Sambucus canadensis</i>	Common elderberry		



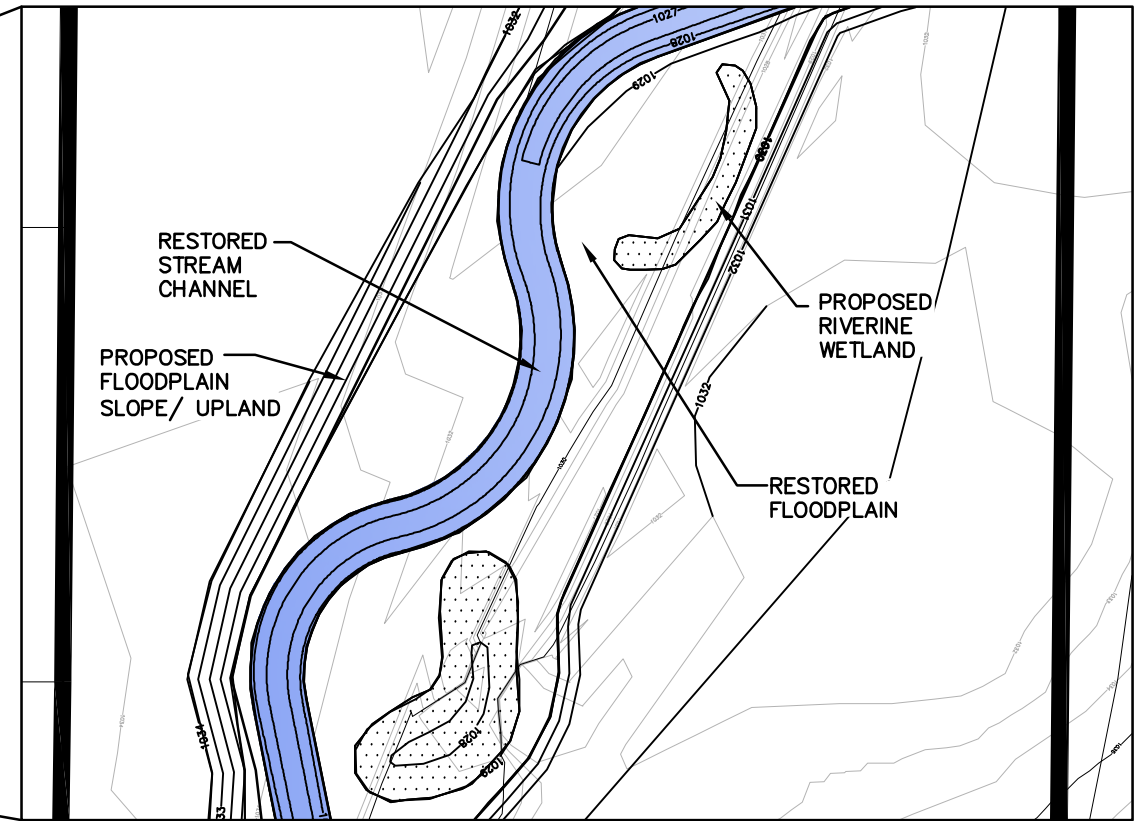
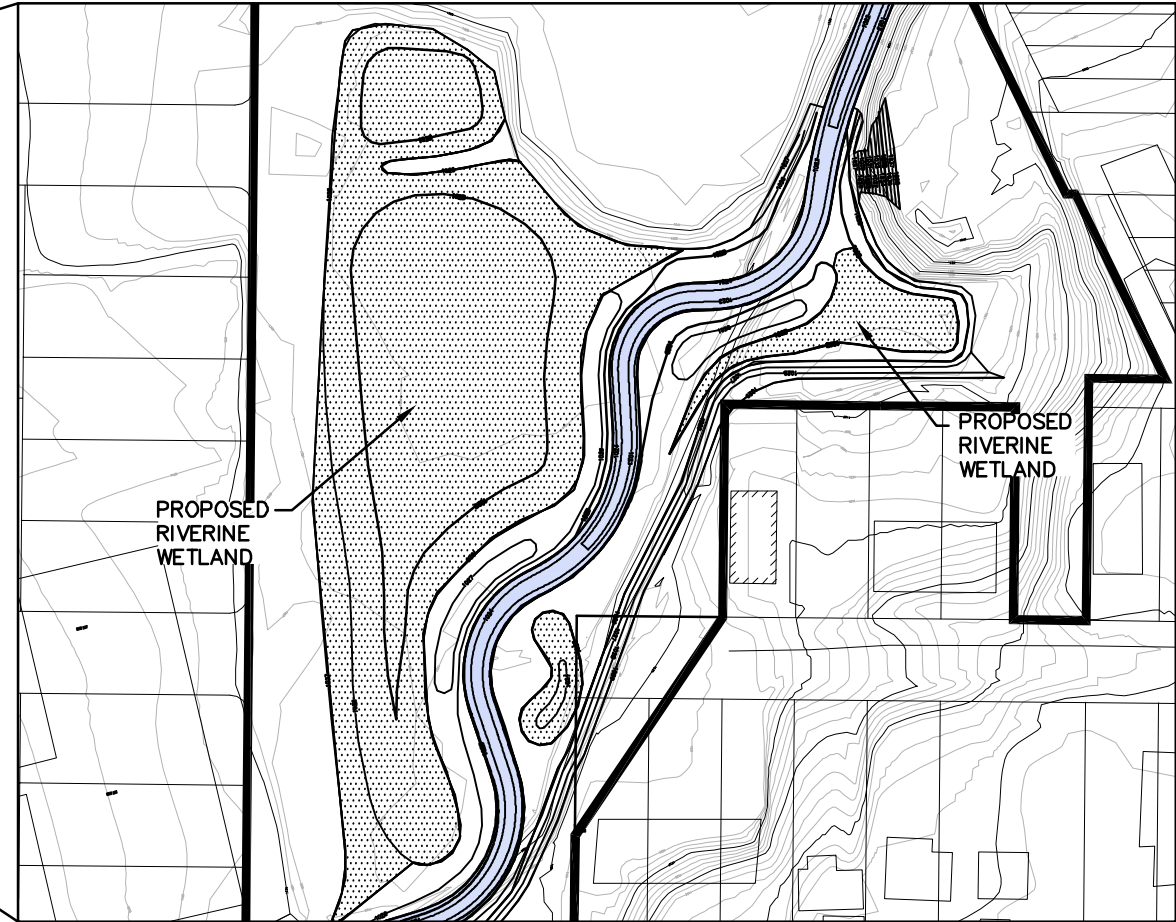
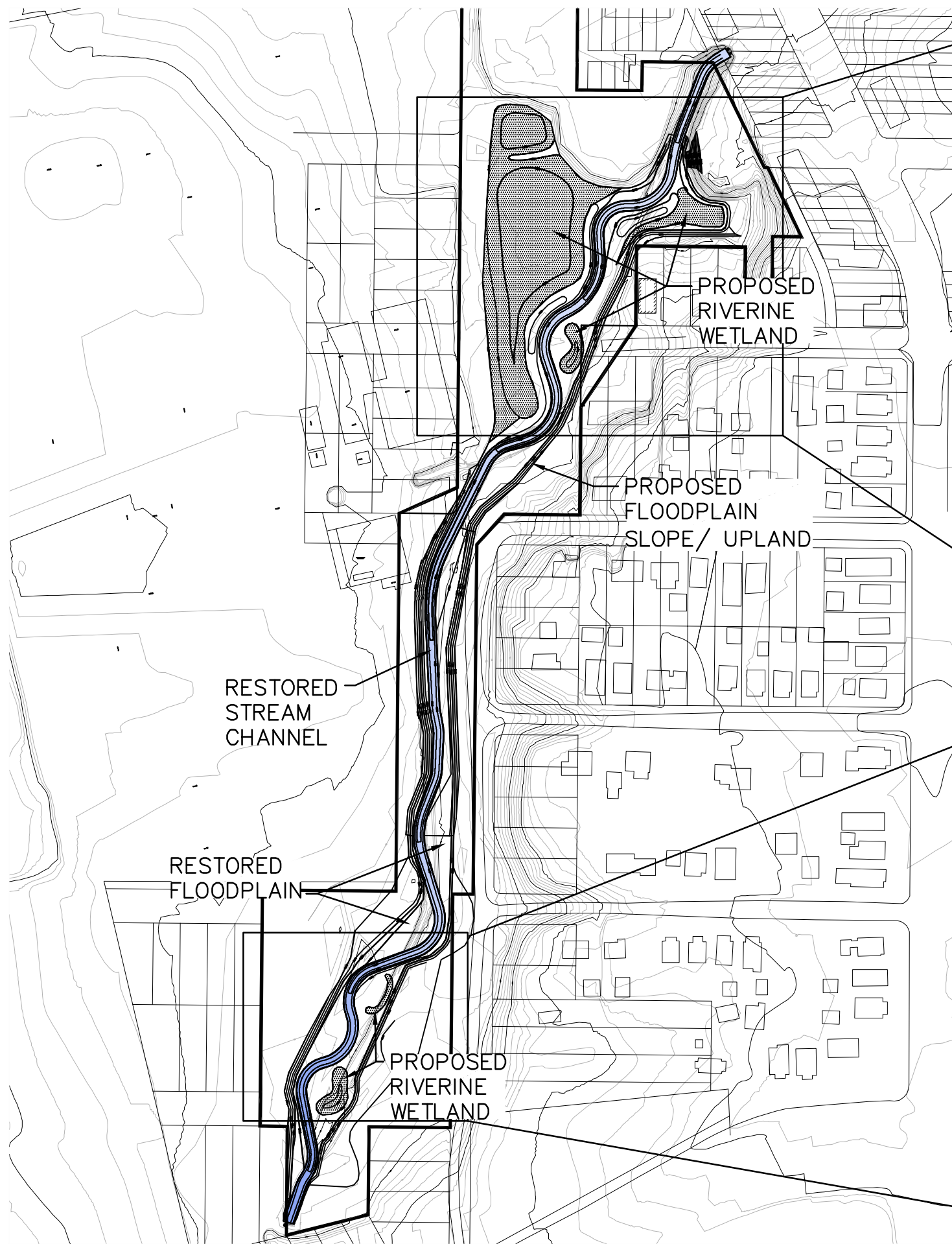
HALEY'S DITCH  
RESTORATION PROJECT

FIGURE 1 – PROJECT AREA

CALCULATED  
—  
CHECKED  
—

NOT TO SCALE  
HORIZONTAL  
SCALE IN FEET





  
 HORIZONTAL SCALE IN FEET  
 CALCULATED \_\_\_\_\_  
 CHECKED \_\_\_\_\_

FIGURE 7 – RESTORATION PLAN





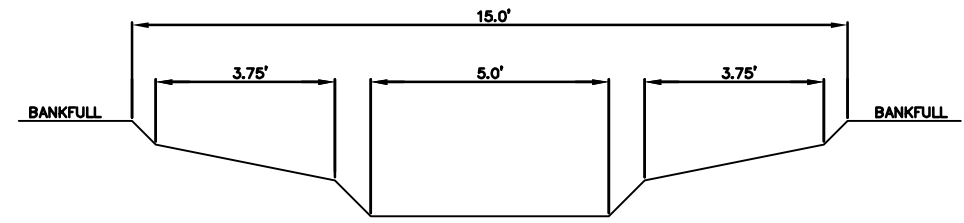


HORIZONTAL SCALE IN FEET

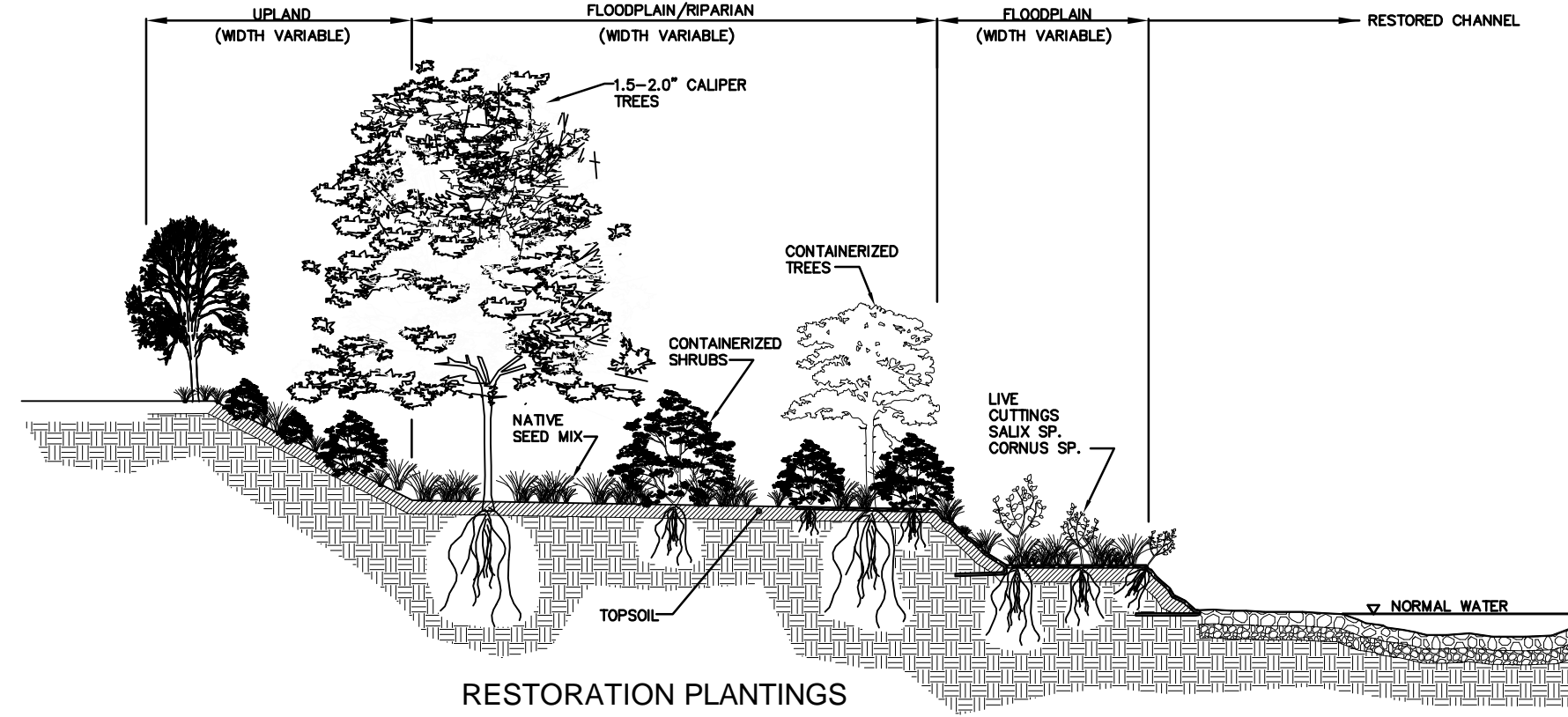
CALCULATED  
CHECKED

FIGURE 8 - TYPICAL SECTIONS

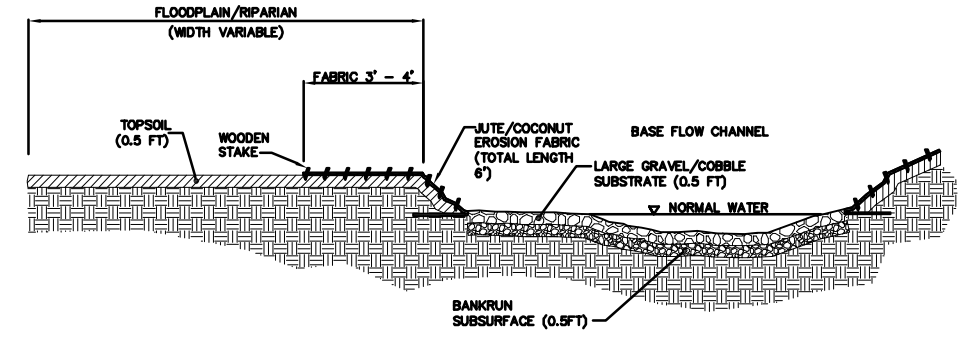
HALEY'S DITCH RESTORATION PROJECT



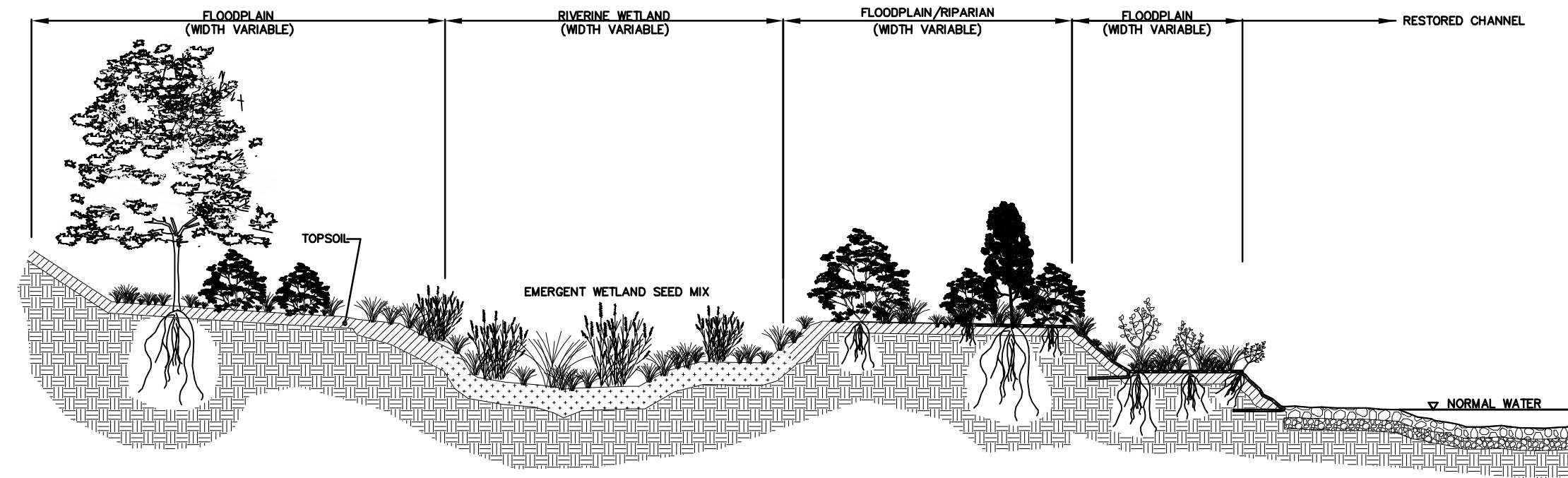
TYPICAL DESIGN SECTION (N.T.S.)



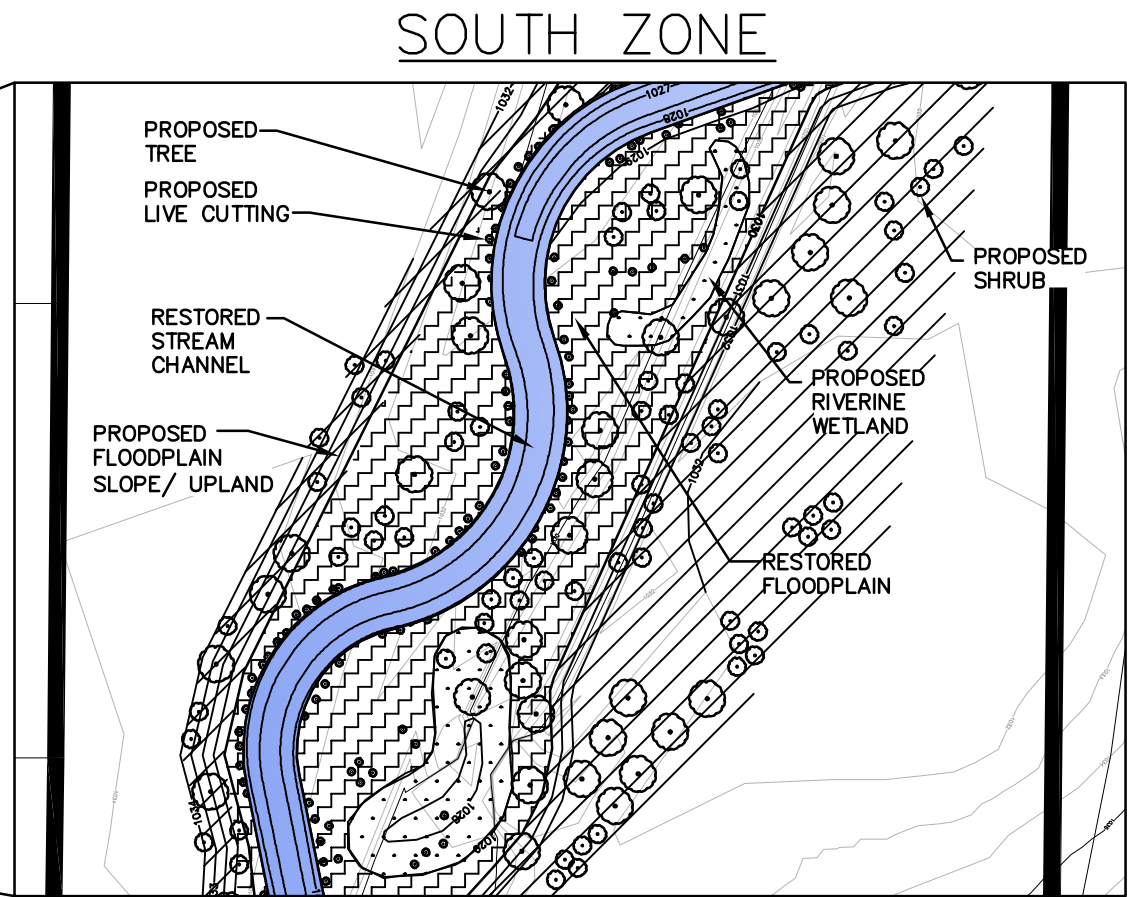
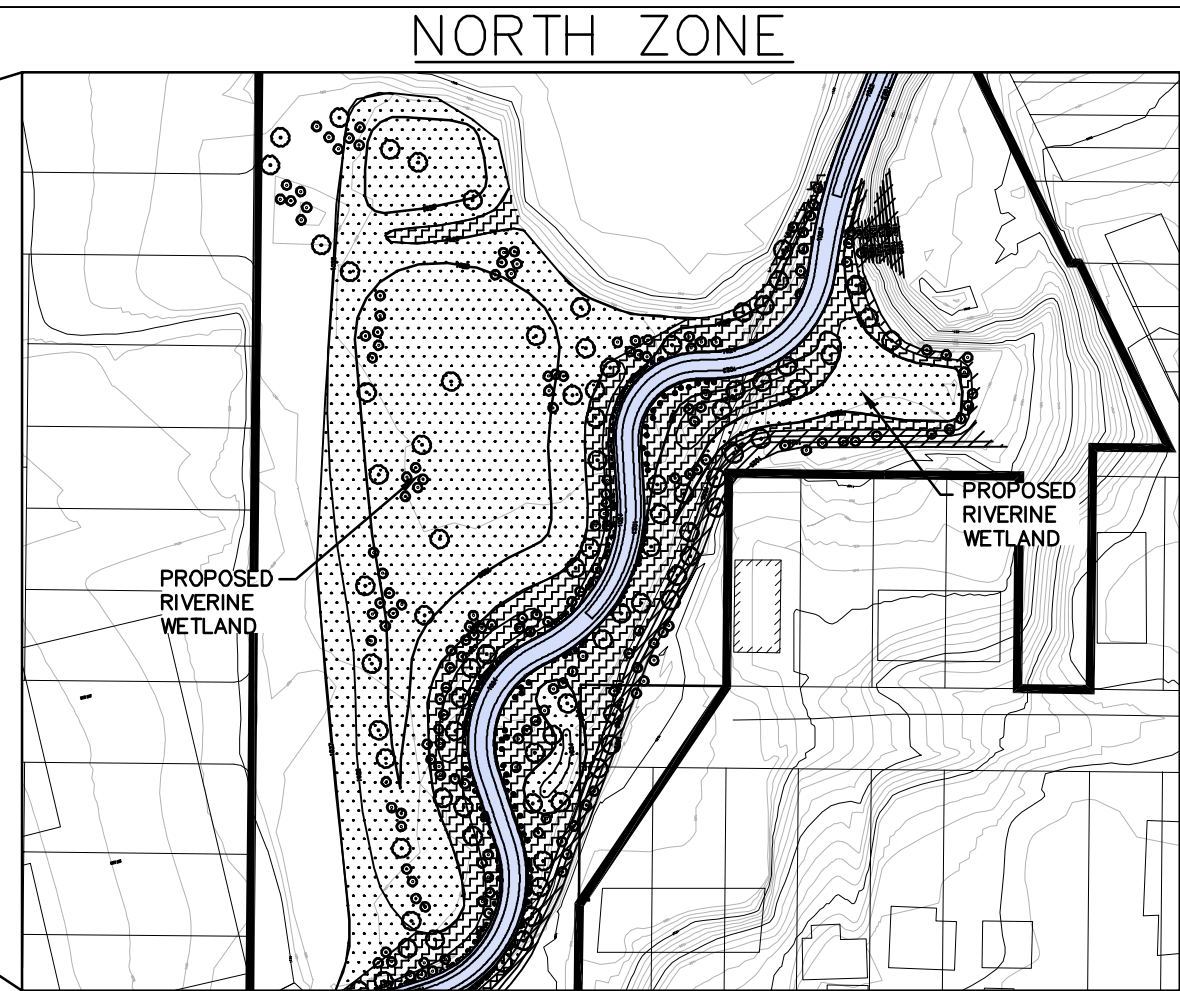
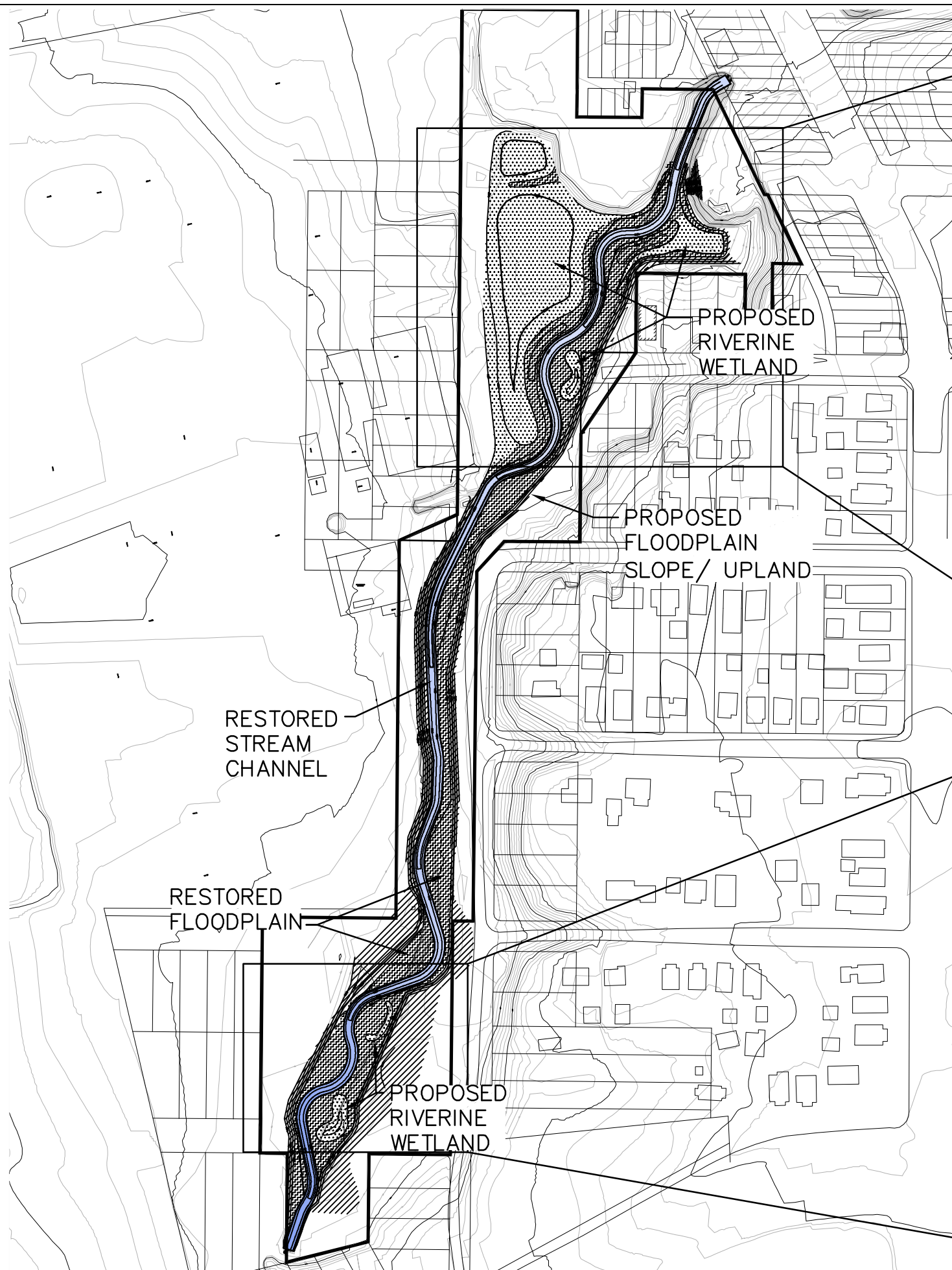
RESTORATION PLANTINGS (N.T.S.)



STREAMBANK AND SUBSTRATE TYPICAL (N.T.S.)



RIVERINE WETLANDS TYPICAL (N.T.S.)



HORIZONTAL SCALE IN FEET

CALCULATED  
CHECKED

FIGURE 9 - RESTORATION PLANTINGS

HALEY'S DITCH RESTORATION PROJECT





UNITED STATES ENVIRONMENTAL PROTECTION AGENCY

REGION 5

77 WEST JACKSON BOULEVARD

CHICAGO, IL 60604-3590

MAY 08 2009

REPLY TO THE ATTENTION OF:

L-8J

**CERTIFIED MAIL: 7001 0320 0005 8933 2171**  
**RETURN RECEIPT REQUESTED**

Mr. David Gunnarson  
Chemical and Environmental Programs  
Lockheed Martin Corporation  
9500 Godwin Drive  
Manassas, Virginia 20110

Re: Risk-Based PCB Cleanup Approval  
Massillon Road, Akron, Ohio 44315

Dear Mr. Gunnarson:

We have completed our review of your January 9, 2009 application for a risk-based cleanup under 40 CFR 761.61(c) for the soil/sediment contamination in Haley's Ditch, which originated from the Lockheed Martin Corporation property located at 1210 Massillon Road in Akron, Ohio. Your application was amended by your letters of March 5, 2009 and March 16, 2009. A self-implementing cleanup under 40 CFR 761.61(a) is not applicable because your application covers cleanup of sediments in a freshwater ecosystem.

Nevertheless, your application proposes a cleanup level of 1.0 ppm, similar to the cleanup level for high occupancy areas under the self-implementing regulations. Your application indicates that you also plan to follow the other procedures described in 40 CFR 761.61(a), except that you propose a more practical sampling and analysis plan for cleanup verification.

We have determined that your proposed cleanup level and your alternate sampling and analysis plan for cleanup verification will not pose an unreasonable risk of injury to human health or the environment. Based on our review, your amended application is hereby approved, subject to the following condition: you must prepare a cleanup completion summary report that describes how you conducted the cleanup in accordance with the approved application. You must send a copy to me within 60 days after the scheduled date for completion of the cleanup.



Please note that this approval does not relieve you from your duty to comply with all other applicable federal, state, and local requirements. For example, you must obtain access agreement form for the affected landowners prior to commencement of the work off-site. You must also make sure that all persons participating in the cleanup activities use the appropriate personal protective equipment.

If you have any questions, please contact John Nordine, of my staff by e-mail at [nordine.john@epa.gov](mailto:nordine.john@epa.gov) or via phone at (312) 353-2143.

Sincerely,

*Willie H. Harris*  
for Margaret M. Guerriero  
Director  
Land and Chemicals Division