



Indiana Department of Environmental Management
Office of Water Quality
Waterways Section

Publication Date:
January 21, 2026

IDEM Permit Number:
WQC001429

PUBLIC NOTICE

Closing Date:
February 11, 2026

Corps of Engineers ID Number:
LRL-2023-00981-sam

To all interested parties:

This letter shall serve as a formal notice of the receipt of an application for Section 401 Water Quality Certification by the Indiana Department of Environmental Management (IDEM). The purpose of the notice is to inform the public of active applications submitted for water quality certification under Section 401 of the Clean Water Act (33 U.S.C. § 1341) and to solicit comments and information on any impacts to water quality related to the proposed project. IDEM will evaluate whether the project complies with Indiana's water quality standards as set forth at 327 IAC 2.

- | | | | |
|---------------------------------|--|------------------|---|
| 1. Applicant: | Erin Lish
Indiana Department of Natural Resources
402 W. Washington St.
Indianapolis, IN, 46204 | 2. Agent: | David Duncan
Lochmueller Group
6200 Vogel Rd
Evansville, IN, 47715 |
| 3. Project location: | Chandler, IN, 47610
Latitude: 38.0389
Longitude: -87.3831 | | |
| 4. Affected waterbodies: | Wetlands Regulated under CWA Section 404/401, Streams | | |
| 5. Project Description: | IDNR is proceeding with the development of the Chandler Mitigation Site which is being developed for the Indiana Stream and Wetland Mitigation Program. The proposed project will restore 29.4 acres of land natural habitat to offset wetland and stream impacts.
For additional information visit the Regulatory ePortal at:
https://stormwater.idem.in.gov/nsite/default/map/help | | |

Comment period: Any person or entity who wishes to submit comments or information relevant to the aforementioned project may do so by the closing date noted above. Only comments or information related to water quality or potential impacts of the project on water quality can be considered by IDEM in the water quality certification review process.

Public Hearing: Any person may submit a written request that a public hearing be held to consider issues related to water quality in connection with the project detailed in this notice. The request for a hearing should be submitted within the comment period to be considered timely. The request should also state the reason for the public hearing as specifically as possible to assist IDEM in determining whether a public hearing is warranted.

Questions? Additional information may be obtained by contacting WaterwaysComments@idem.IN.gov. In the subject line of the email, please include the IDEM ID Number listed in the top right corner of the first page of this public notice. Indicate if you wish to receive a copy of IDEM's final decision. Written comments and inquiries may be forwarded to -

Indiana Department of Environmental Management
100 North Senate Avenue
MC65-42 WQS IGCN 1255
Indianapolis, Indiana 46204-2251 FAX: 317/232-8406

Application for Authorization to Discharge Dredged or Fill Material to State Regulated Wetlands or Waters of the U.S.

version 1.6

(Submission #: HQH-YFXD-KAEX1, version 1)

Details

Submission ID HQH-YFXD-KAEX1

Form Input

Pre Application Questions

Intended IDEM Authorization:

Individual 401 Water Quality Certification

Has any pre-application coordination occurred with an IDEM Wetland Project Manager?

Yes

Name of Project Manager:

Marty Maupin/Jay Turner

Coordination Date:

07/16/2025

Type of Coordination:

Email

Applicant Information

Applicant Contact Information

Prefix

NONE PROVIDED

First Name

Erin

Last Name

Lish

Title

Mitigation Project Manager, Indiana Stream & Wetland Mitigation Program (IN SWMP)

Organization Name

Indiana Department of Natural Resources

Phone Type

Business

Number

3178649725

Extension

Email

erlish@dnr.in.gov

Address

402 W. Washington St.

Indianapolis, IN 46204

United States

Applicant Organization:

Landowner

Agent Contact Information (If Applicable)

Prefix

NONE PROVIDED

First Name Last Name

David Duncan

Title

Environmental Specialist III

Organization Name

Lochmueller Group

Phone Type Number Extension

Business 8124796200

Email

dduncan@lochgroup.com

Address

6200 Vogel Rd

Evansville, IN 47715

United States

Project Information

Name of Project:

Chandler Mitigation Site

County:

Warrick

No Available Address

Site Address:

[NO STREET ADDRESS SPECIFIED]

Chandler, IN 47610

Site Latitude/Longitude:

38.038966,-87.383145

Parcel Number:

NONE PROVIDED

Project Overview

Has any construction been started?

No

Anticipated start date

05/04/2026

Anticipated end date

10/30/2026

Purpose of project and overview of activities:

IDNR is proceeding with the development of the Chandler Mitigation Site which is being developed for the Indiana Stream and Wetland Mitigation Program. The proposed project will restore 29.4 acres of land natural habitat to offset wetland and stream impacts.

Worksheet - Summary of Onsite Water Resources and Project Impacts

Please click the checkbox if you would like to display additional instructions

NONE PROVIDED

Please select aquatic resource types that will be impacted by the project

Wetlands Regulated under CWA Section 404/401

Streams

Please select project impacts specific to streams

NONE PROVIDED

Wetlands regulated under CWA Section 404/401

[Wetlands regulated under CWA Section 404 or Section 401.xlsx](#)

Avoidance, Minimization, and Mitigation Information

When activities within WOTUS exceed 300 linear feet or 0.1 acre of impacts (whichever is exceeded first), IDEM requires mitigation for all stream, open water, and wetland impacts is provided at the following minimum ratios:

- i. 1:1 for streams (linear feet), shorelines (linear feet), open water (acres), and farmed wetland (acres)
- ii. 2:1 for emergent wetland
- iii. 3:1 for scrub shrub wetland
- iv. 4:1 for forested wetland

IDEM requires mitigation for all impacts to wetlands regulated under IC 13-18-22, regardless of impact amount. Please refer to IC 13-18-22-6 for additional information: <https://iga.in.gov/laws/2024/ic/titles/13#13-18-22>.

A detailed description of the mitigation plan must be provided, including: the location of the mitigation site, the size and type of mitigation to be performed, the construction sequence or timing of the mitigation, information on post construction monitoring, mitigation techniques, and success criteria of the mitigation site. A mitigation plan, with overview drawings, planting lists, cross sectional views, and other relevant information is recommended as a supplement to answer this question.

Does this project require compensatory mitigation for impacts to aquatic resources?

No

Describe all practical and reasonable alternatives considered to avoid impacts to aquatic resources entirely:

Stream restoration was reduced to limit impacts to Wetland 1.
Site grading was designed to avoid impacts to Wetland 2 and 3.

Describe all practicable and appropriate steps to minimize impacts to aquatic resources that cannot be avoided:

To minimize impacts to water resources riprap placement was kept to the minimum necessary to prevent scour of outlet leaving the site. The new driveway access pipe was located and sized to minimize water resource impacts as much as possible.

Project Documents

Location Map

[A1 MMP_1_Location Map_reduced.pdf - 12/19/2025 11:32 AM](#)

Comment

NONE PROVIDED

Plan drawings of existing site and proposed project

[4 118-0098 Chandler Site Plans 11-14-2025 Enviro Markups Update Design NOTES.pdf - 12/19/2025 11:43 AM](#)

Comment

NONE PROVIDED

Cross sections of proposed activities showing the bankfull width or Ordinary High Water Mark of the stream

[Elevation View from Plans 11-14-2025.pdf - 12/19/2025 11:43 AM](#)

Comment

NONE PROVIDED

At least three photos of the site, labeled

[Site Photos Aigner Site.pdf - 12/19/2025 12:04 PM](#)

Comment

NONE PROVIDED

Copy of wetland delineation/waters report

[5 118-0098 Aigner Site_RegWatersReport_2023-11-22.pdf - 12/19/2025 11:35 AM](#)

Comment

NONE PROVIDED

Copies of correspondence from the Indiana Department of Natural Resources, Division of Nature Preserves

[6 118-0098 Species List_Indiana Ecological Services Field Office.pdf - 12/19/2025 12:05 PM](#)

[6a 118-0098 IDNR-DFW Additional Coord ER-27379.pdf - 12/19/2025 12:05 PM](#)

[7 118-0098 0309 LMG Chandler Mitigation Site, Vanderburgh County.pdf - 12/19/2025 12:05 PM](#)

[8 118-0098 0309 T&E LMG Chandler Mitigation Site, Vanderburgh County.pdf - 12/19/2025 12:05 PM](#)

Comment

NONE PROVIDED

Approved Jurisdictional Determination from the USACE or correspondence from the USACE on the jurisdictional status of the water resource(s) on-site

NONE PROVIDED

Comment

NONE PROVIDED

Classification and exception status of all state regulated wetlands on the tract (if state regulated wetlands are present onsite)

NONE PROVIDED

Comment

NONE PROVIDED

Additional documents

[9 118-0098 AIGNER HEIM MITIGATION 10.11.24.pdf - 12/19/2025 12:05 PM](#)

Comment

NONE PROVIDED

Additional Information that MAY be required

Erosion control and/or storm water management plans

NONE PROVIDED

Comment

NONE PROVIDED

Sediment analysis

NONE PROVIDED

Comment

NONE PROVIDED

Species surveys for fish, mussels, plants and threatened or endangered species

NONE PROVIDED

Comment

NONE PROVIDED

Stream habitat assessment

NONE PROVIDED

Comment

NONE PROVIDED

KLM/GeoJSON file

NONE PROVIDED

Comment

NONE PROVIDED

Any other information IDEM deems necessary to review the proposed project

NONE PROVIDED

Comment

NONE PROVIDED

Permitting Requirements

Does this project require the issuance of a Department of the Army Section 404 Permit from the US Army Corps of Engineers?

Yes

Have you applied for any Army Corps of Engineers Section 404 permit?

No

Please contact the Army Corps of Engineers regarding the possible need for a permit application. A completed USACE accepted application form can be found in the Documents section after this form is submitted.

Have you applied for, received, or been denied a permit from the Department of Natural Resources for this project?

No

Have you applied for, received, or been denied any other federal, state, or local permits, variances, licenses, or certifications for this project?

No

Agreements and Signature(s)

The project proponent hereby requests that the certifying authority review and take action on this CWA 401 Certification request and/or State Regulated Wetlands Permit request within the applicable reasonable period of time.

I, the project proponent, swear or affirm, under penalty of perjury as specified by IC 35-44.1-2-1 and other penalties specified by IC 13-30-10, that the statements and representations in this notification are true, accurate, and complete.

I, the project proponent, certify that I have the authority to undertake and will undertake the activities as described in this application. I understand that any changes in project design subsequent to IDEM's granting of authorization are not authorized and I may be subject to civil and criminal penalties for proceeding without proper authorization. Should an onsite meeting be necessary during the application review period or after IDEM's granting of authorization, I agree to allow representatives of the IDEM to enter and inspect the project site. I understand that the granting of other permits by local, state, or federal agencies does not release me from the requirement of obtaining the authorization requested herein before commencing the project.

Signed Erin Lish on 01/08/2026 at 1:35 PM
By

INDIANA DEPARTMENT OF NATURAL RESOURCES



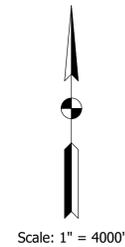
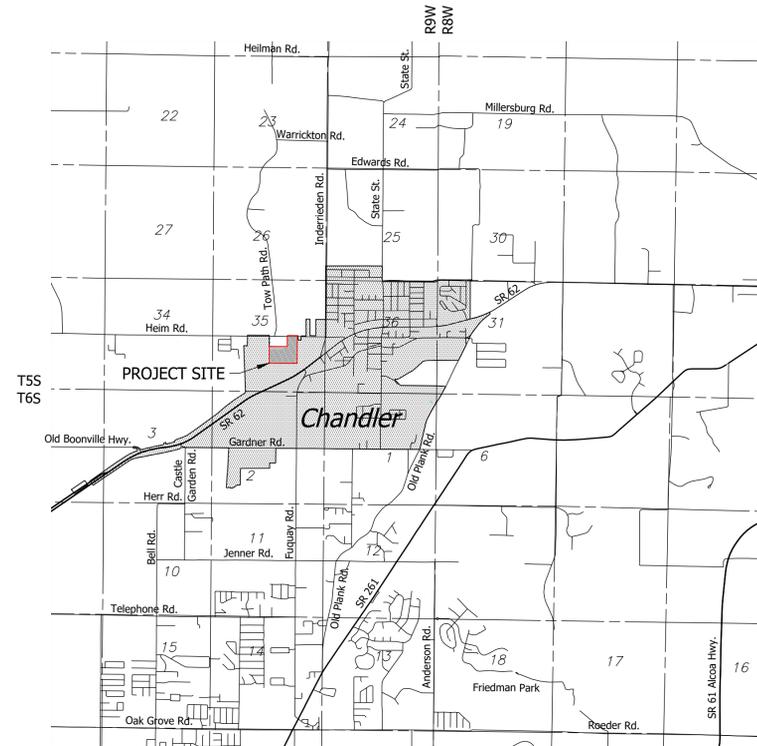
INDIANA STREAM AND WETLAND MITIGATION PROGRAM (IN SWMP) MITIGATION PLANS CHANDLER SITE

Mitigation Site South of Heim Road, Located in
Section 35, T-5-S, R-9-W, Warrick County, Indiana



PROJECT LOCATION SHOWN BY

LATITUDE: 38.041557 N LONGITUDE: -87.385211 W



Scale: 1" = 4000'

Date: Nov 14, 2025, 10:46am User Name: Riley, Kremer File: X:\Production\Files\2025\118-0098\PROJ-02\CAD\PlanSet\Enviro\Title Sheet.dwg



PLANS PREPARED BY: LOCHMUELLER GROUP, INC. (812) 479-6200 PHONE NUMBER
 CERTIFIED BY: _____ DATE _____
 APPROVED BY: _____ INDIANA DEPARTMENT OF NATURAL RESOURCES DATE _____

DRAFT

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LOCH GROUP PROJECT		
118-0098-02E		

NEARBY UTILITIES

AT&T - Distribution Communications
ATT Indiana Utility Coordination
g09871@att.com

Boonville/chandler Natural Gas
Butch Leslie
(812) 897-2260
butch@bngas.com
1425 N Rockport Rd.
Boonville, In 47601

Centerpoint Energy (south Electric) Electric
Jon Eastham
(765) 287-2119
publicproject@centerpointenergy.com
1800 W. 26th St.
Muncie, In 47302

Chandler Utilities Sewer, Storm, Water
Tyler Kinder
(812) 925-6213
tkinder@townofchandler.org
101 Constitution Ct.
Chandler, In 47610

Rcn Telecom Services of Illinois, Llc Dba
Astound Broadband Cable Tv,
Communications, Fiber Optic
William NG
(312) 505-1706
william.ng@astound.com
2640 W. Bradley Pl
Chicago, IL. 60618

Texas Gas Transmission (petersburg) Pipeline
Jared Newton
(270) 688-6378
jared.newton@bwpipelines.com
610 W. 2nd Street
Owensboro, Ky 42301



REVISIONS

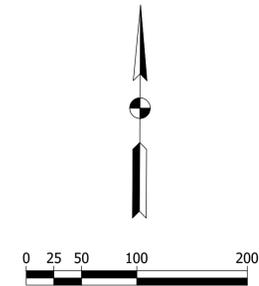
SHEET NO.	DATE	REVISED

INDEX

SHEET NO.	DRAWINGS INDEX
1	TITLE
2	INDEX
3	EXISTING SITE LAYOUT
4	OVERALL SITE PLAN
5	PLANTING LAYOUT
6-15	PLAN AND PROFILE
16-17	MISCELLANEOUS DETAILS
18	PLANTING DETAILS & TABLES
19-20	STREAM CROSS-SECTION DETAILS & STRUCTURES
21-22	EROSION / SEDIMENT CONTROL INFORMATION SHEET
23	EROSION / SEDIMENT CONTROL PLAN
24-25	EROSION / SEDIMENT CONTROL DETAILS

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	DESIGNED: _____ MTR _____	DRAWN: _____ CCW _____	INDEX	VERTICAL SCALE ---
	CHECKED: _____ JAD _____	CHECKED: _____ MTR _____	SHEET 2 of 25 LOCH GROUP PROJECT 118-0098-02E	



ALIGNMENT CONTROL POINT REFERENCES

- BM#1**
PBMK RRS IN S SIDE TELEPHONE POLE #18 15" UP (LEVEL)
Elev. 383.928
N 187873.311
E 763778.779

- BM#2**
PBMK RRS 15" AG IN NE SIDE 15" TREE LEANING WESTERLY (LEVEL)
Elev. 382.217
N 186604.083
E 763772.032

- CONTROL POINT# 1400**
PCPT BARN NAIL IN CURB CRACK (VRS)
Elev. 388.262
N 187570.016
E 764127.23

- CONTROL POINT# 1401**
PCPT 3/4" RBR LOCH REF CAP FLUSH (LEVEL)
Elev. 382.919
N 187868.026
E 763682.459

- CONTROL POINT# 1402**
PCPT 3/4" RBR WITH LOCH GROUP REF CAP BIRDCAGED (LEVEL)
Elev. 381.348
N 186631.586
E 763803.752

- CONTROL POINT# 703**
PCPT STAKED PROP CORNER 3/4" RBR FIRM CAP FLUSH (LEVEL)
Elev. 380.382
N 187370.057
E 763416.178

- CONTROL POINT# 704**
PASB STAKED PROP CORNER MAG FIRM WASHER RECESSED (LEVEL)
Elev. 384.367
N 187895.050
E 763419.272

Date: Nov 14, 2025, 10:47am User Name: Riley, Kramer
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INDIANA
DEPARTMENT OF NATURAL RESOURCES

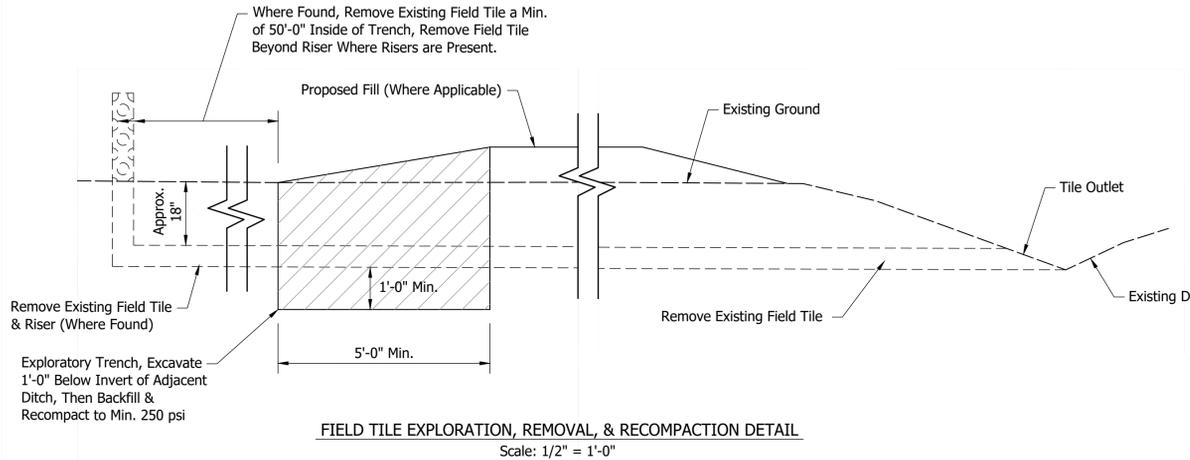
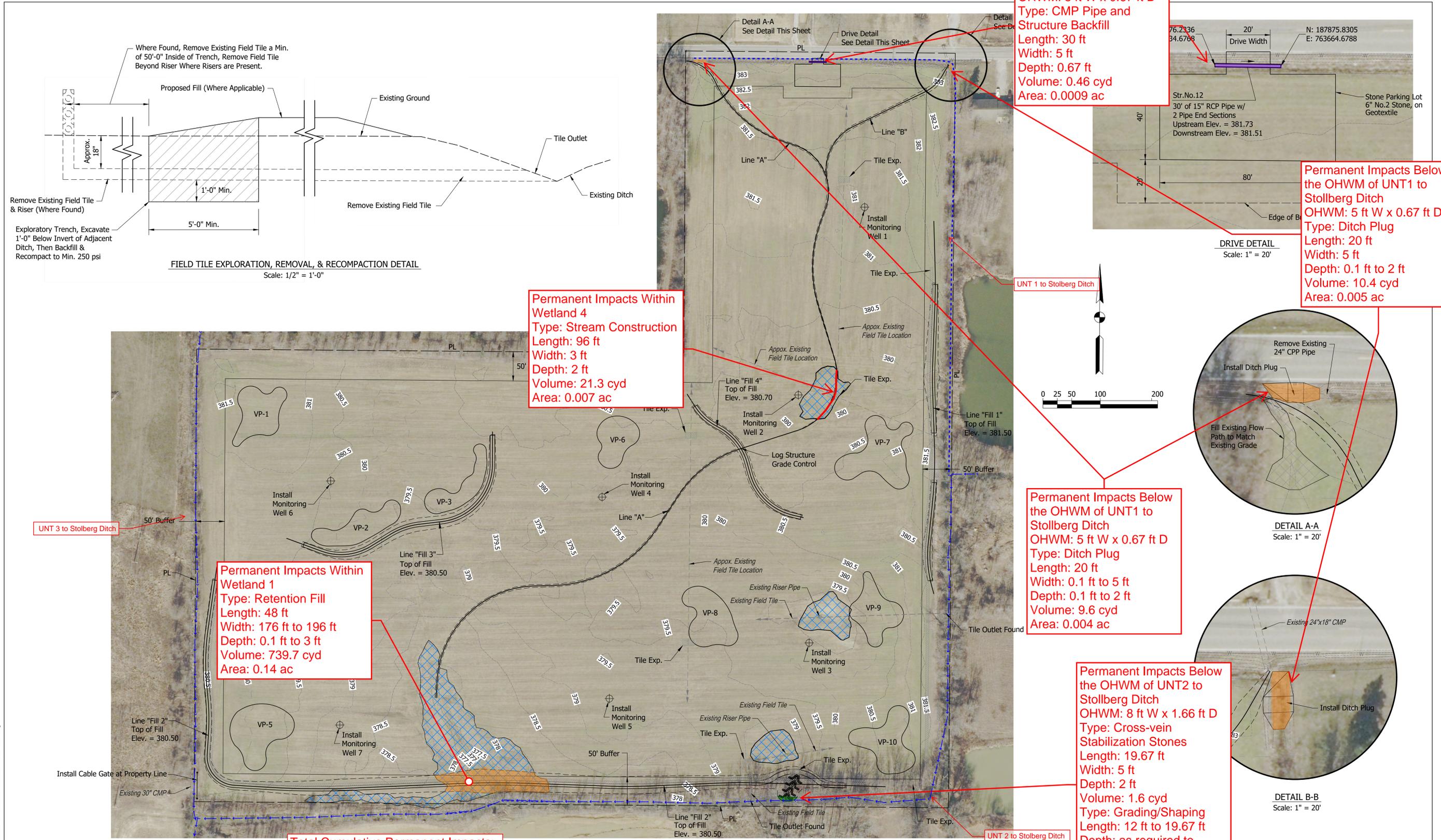
EXISTING SITE LAYOUT

HORIZONTAL SCALE		

VERTICAL SCALE		

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Permanent Impacts



Permanent Impacts Below the OHWM of UNT1 to Stollberg Ditch
 OHWM: 5 ft W x 0.67 ft D
 Type: CMP Pipe and Structure Backfill
 Length: 30 ft
 Width: 5 ft
 Depth: 0.67 ft
 Volume: 0.46 cyd
 Area: 0.0009 ac

Permanent Impacts Below the OHWM of UNT1 to Stollberg Ditch
 OHWM: 5 ft W x 0.67 ft D
 Type: Ditch Plug
 Length: 20 ft
 Width: 5 ft
 Depth: 0.1 ft to 2 ft
 Volume: 10.4 cyd
 Area: 0.005 ac

Permanent Impacts Within Wetland 4
 Type: Stream Construction
 Length: 96 ft
 Width: 3 ft
 Depth: 2 ft
 Volume: 21.3 cyd
 Area: 0.007 ac

Permanent Impacts Within Wetland 1
 Type: Retention Fill
 Length: 48 ft
 Width: 176 ft to 196 ft
 Depth: 0.1 ft to 3 ft
 Volume: 739.7 cyd
 Area: 0.14 ac

Permanent Impacts Below the OHWM of UNT1 to Stollberg Ditch
 OHWM: 5 ft W x 0.67 ft D
 Type: Ditch Plug
 Length: 20 ft
 Width: 0.1 ft to 5 ft
 Depth: 0.1 ft to 2 ft
 Volume: 9.6 cyd
 Area: 0.004 ac

Permanent Impacts Below the OHWM of UNT2 to Stollberg Ditch
 OHWM: 8 ft W x 1.66 ft D
 Type: Cross-vein Stabilization Stones
 Length: 19.67 ft
 Width: 5 ft
 Depth: 2 ft
 Volume: 1.6 cyd
 Type: Grading/Shaping
 Length: 12 ft to 19.67 ft
 Depth: as required to match existing
 Totals:
 Length: 19.67 ft
 Area: 0.004 ac

Total Cumulative Permanent Impacts:
 Stream: 89.67 ft (0.0139 ac)
 Stream Fill: 22.06 cyd
 Wetland: 0.147 ac
 Wetland Fill: 739.7 cyd
 Wetland Excavation: 21.3 cyd

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OVERALL SITE PLAN

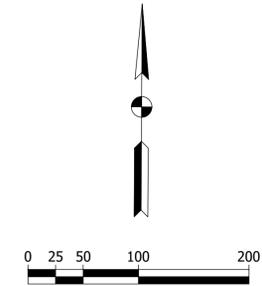
RESOURCES		HORIZONTAL SCALE

		VERTICAL SCALE

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LOCH GROUP PROJECT		
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Date: Nov 14, 2025, 10:46am User Name: Riley Kremer
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ZONE LEGEND

- ZONE A - FORESTED WETLAND
- ZONE B - SCRUB / SHRUB WETLAND
- ZONE C - EMERGENT WETLAND
- ZONE D - RIPARIAN
- ZONE E - BUFFER
- VP - Vernal Pool
- SIGN, "DO NOT DISTURB"
(200' SPACING)
- SIGN, "DNR MITIGATION PROPERTY"

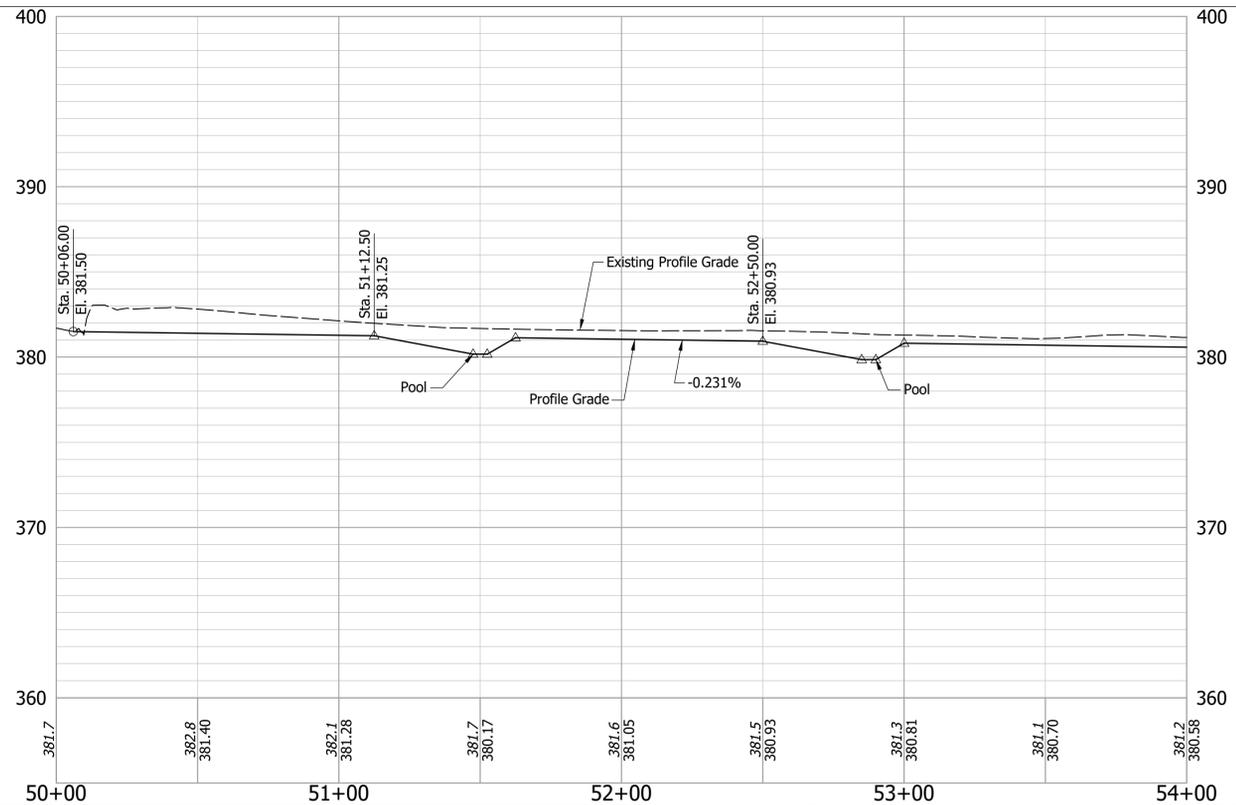
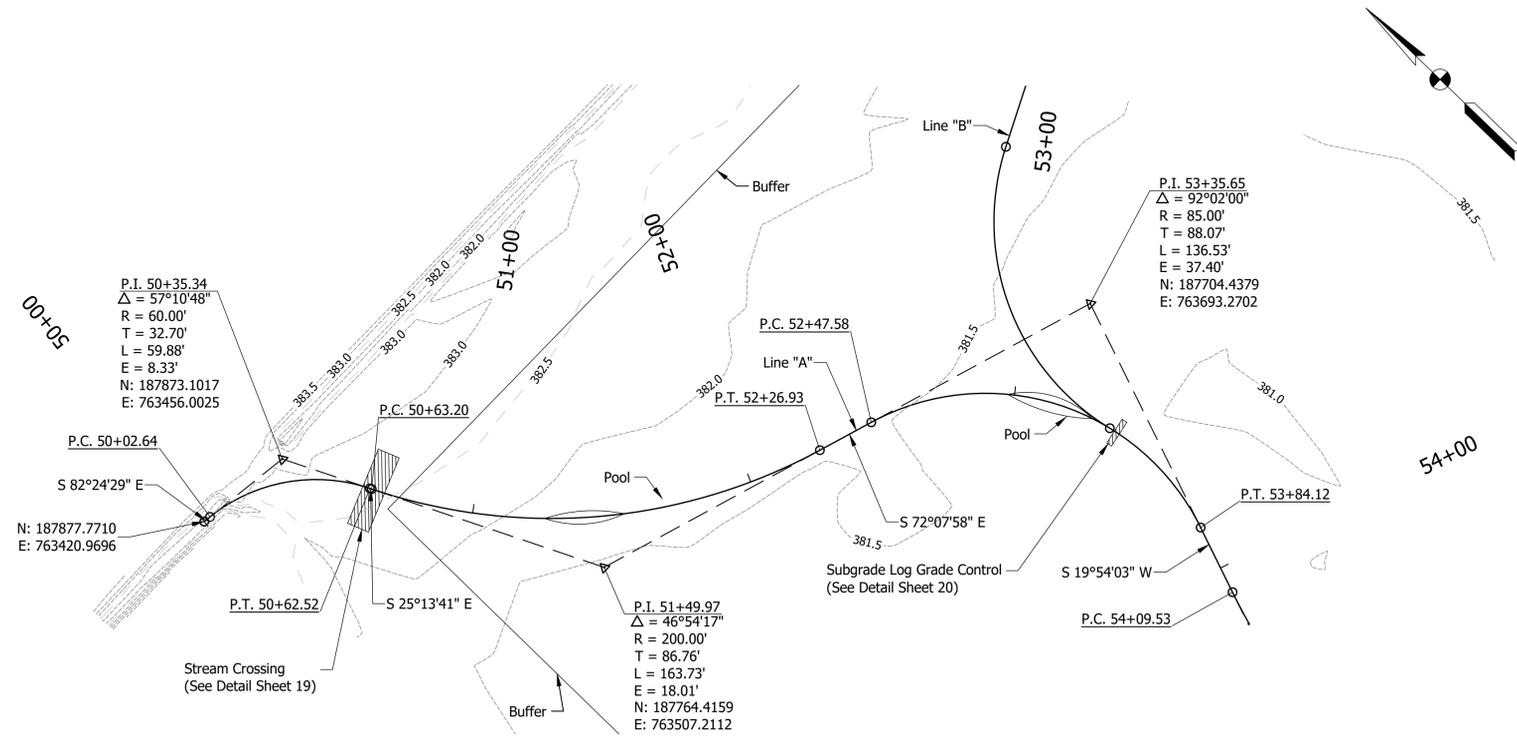
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INDIANA
DEPARTMENT OF NATURAL RESOURCES

PLANTING LAYOUT

HORIZONTAL SCALE	---
VERTICAL SCALE	---
SHEET	5 of 25
LOCH GROUP PROJECT	118-0098-02E



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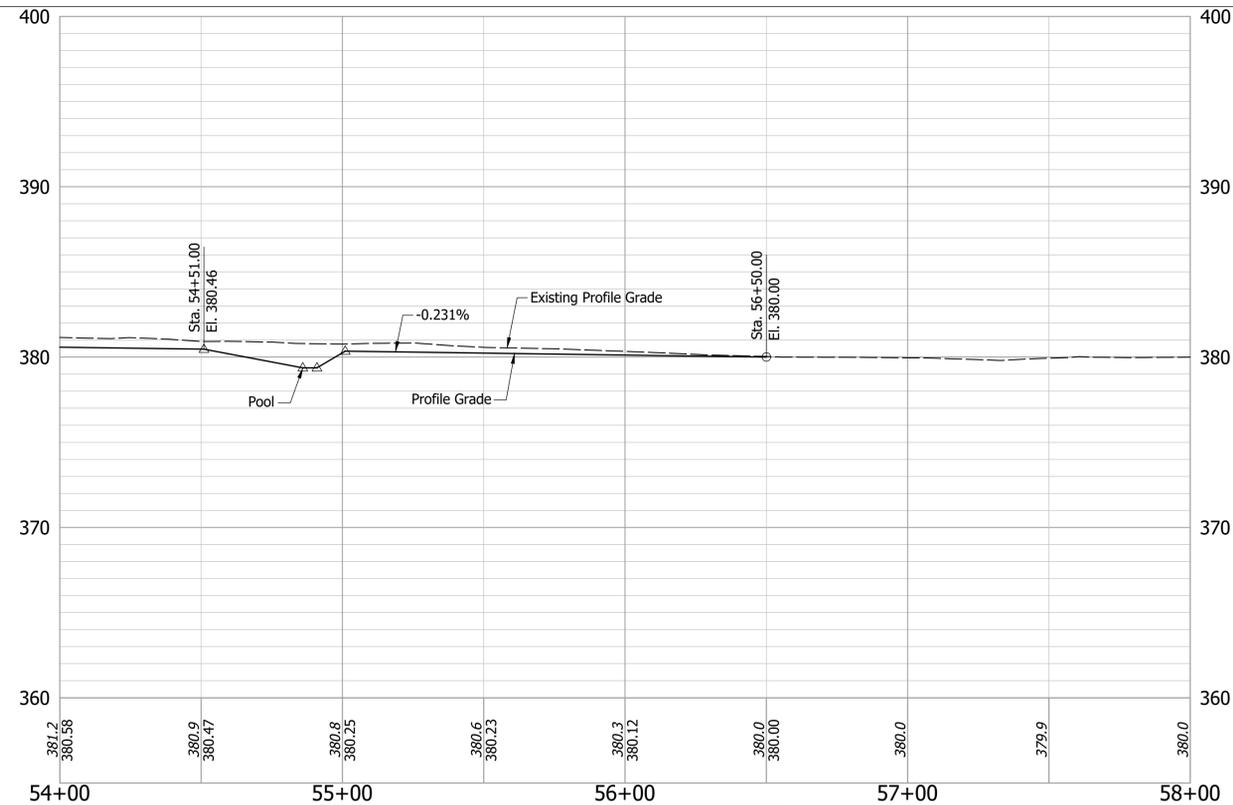
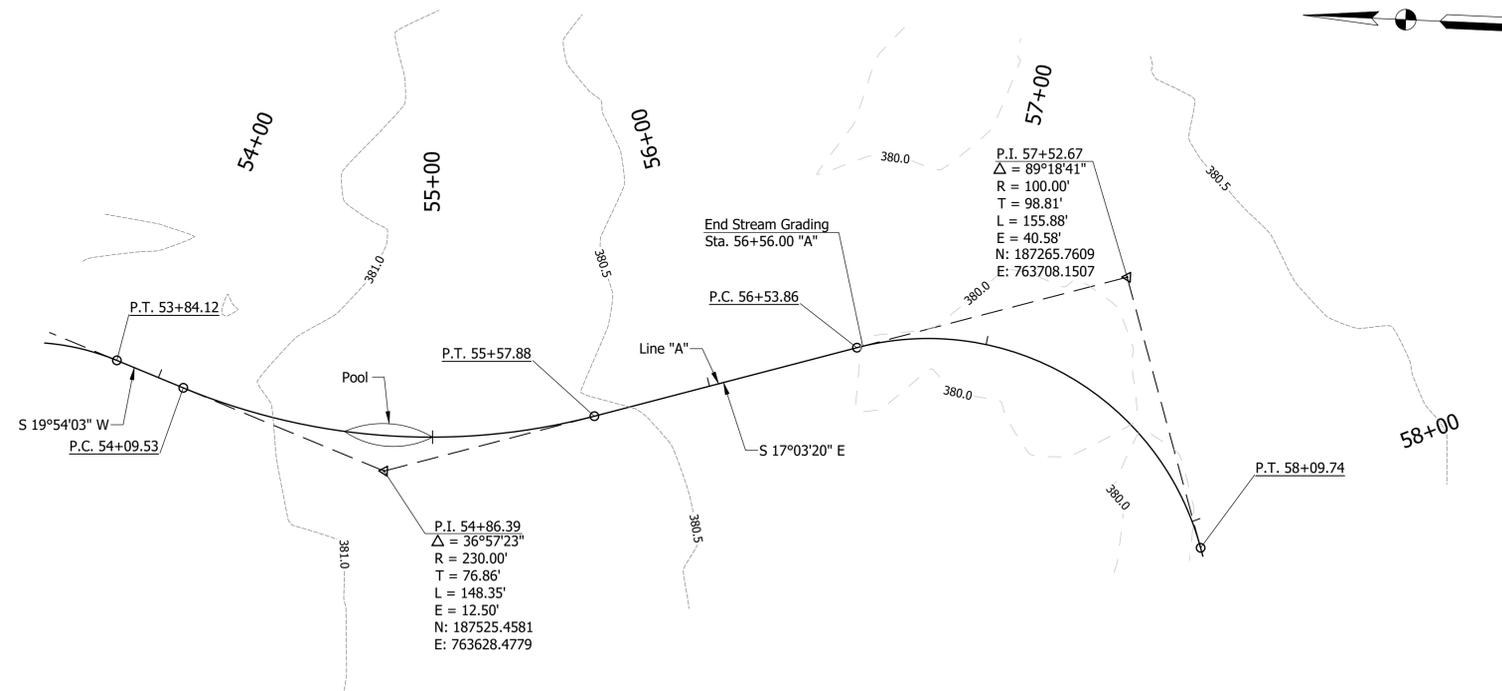
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INDIANA DEPARTMENT OF NATURAL RESOURCES

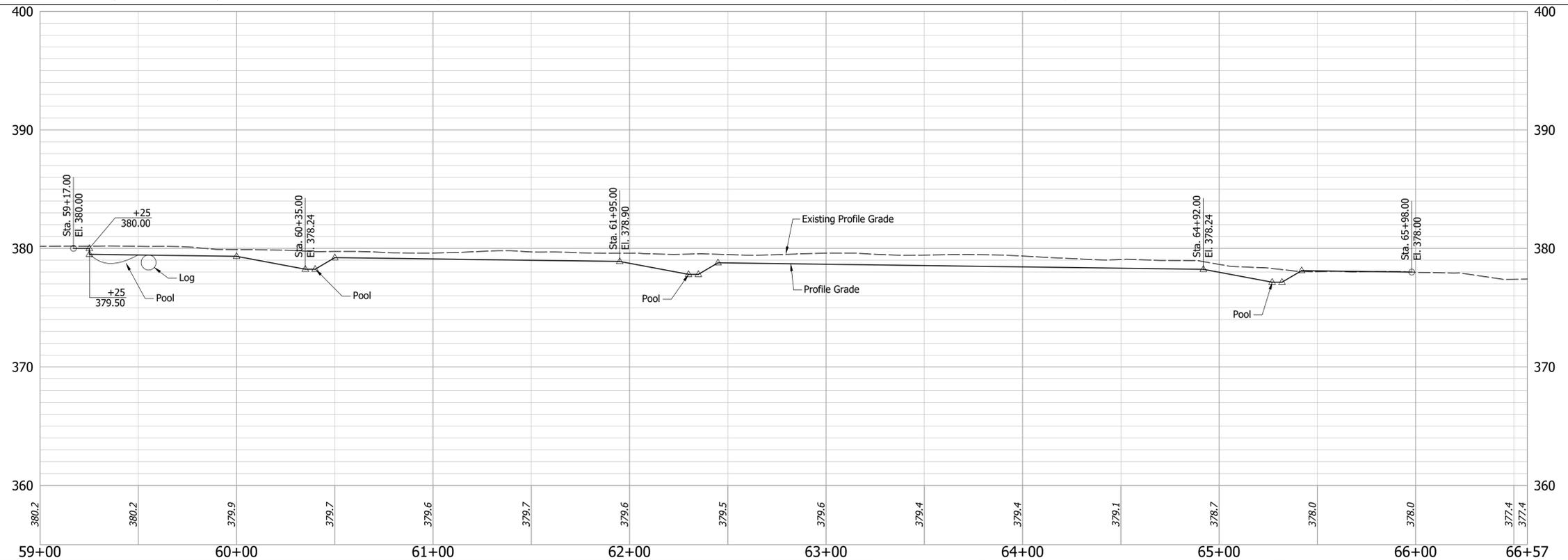
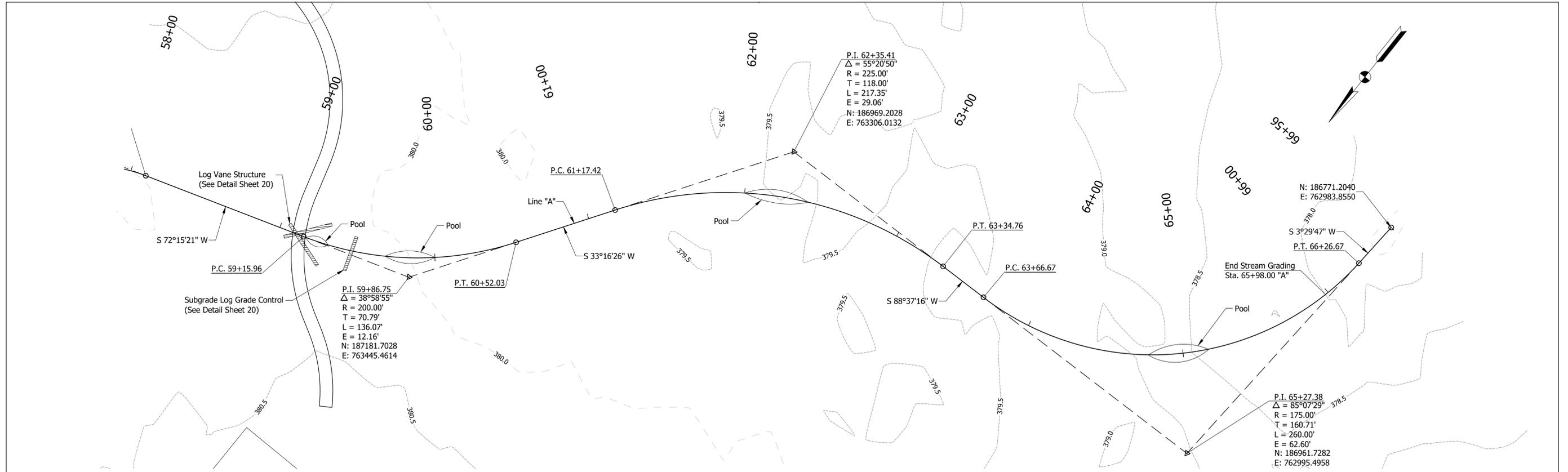
PLAN & PROFILE LINE "A"

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VERTICAL SCALE		
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	CHECKED: _____ JAD _____ CHECKED: _____ MTR _____		LOCH GROUP PROJECT 118-0098-02E



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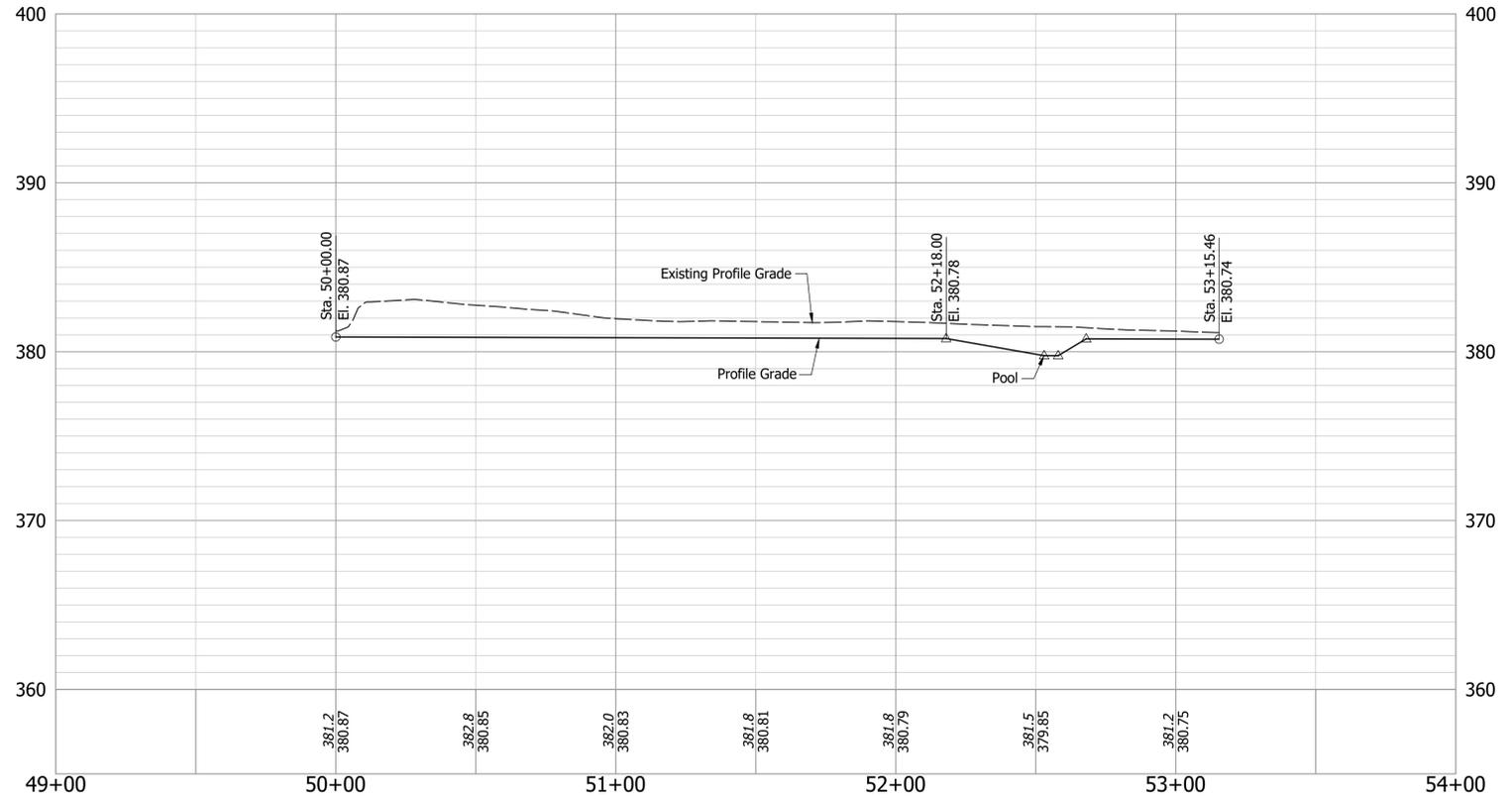
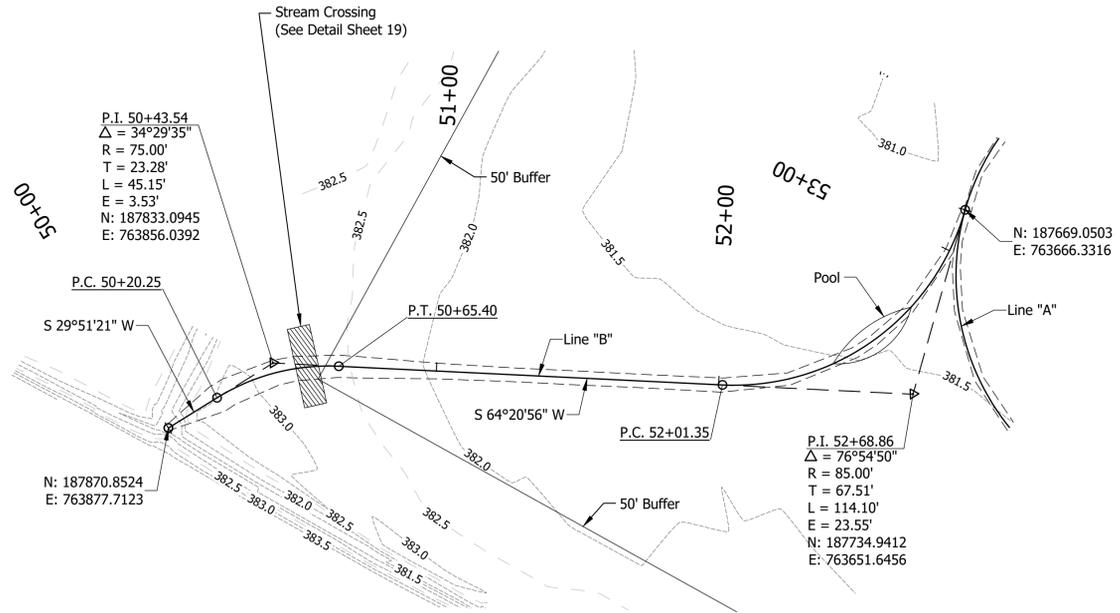
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INDIANA
DEPARTMENT OF NATURAL RESOURCES

PLAN & PROFILE
LINE "A"

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VERTICAL SCALE		
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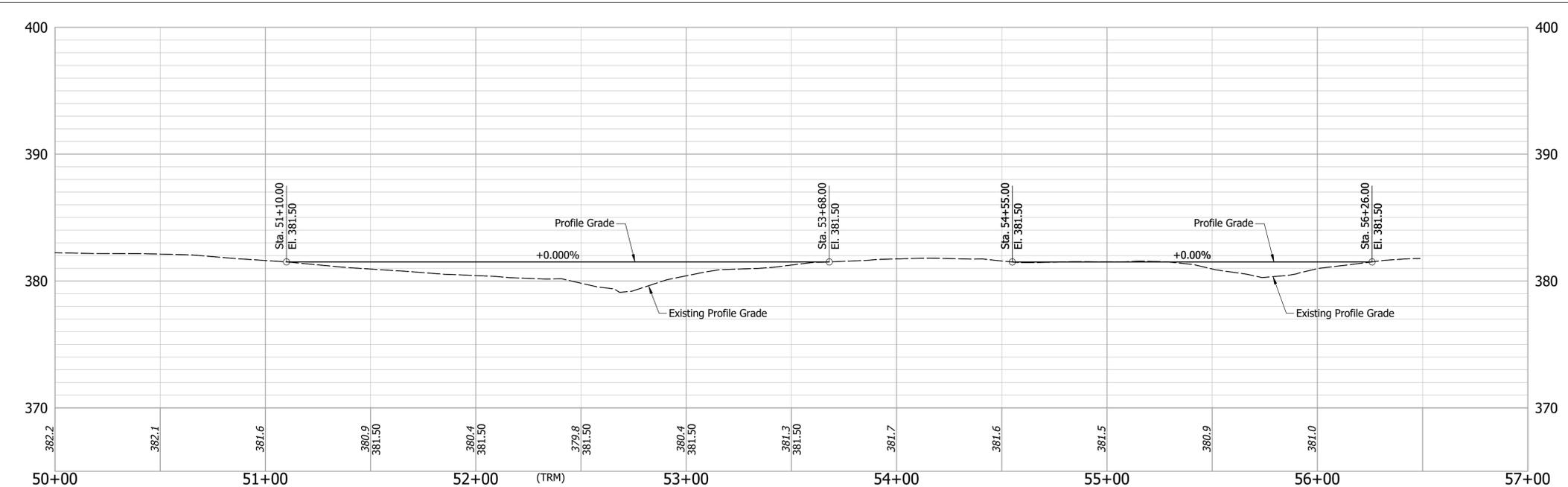
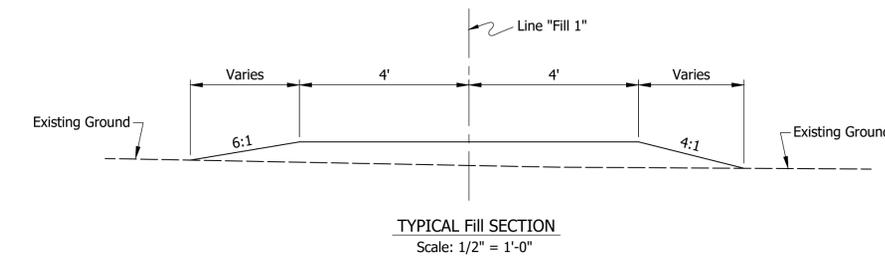
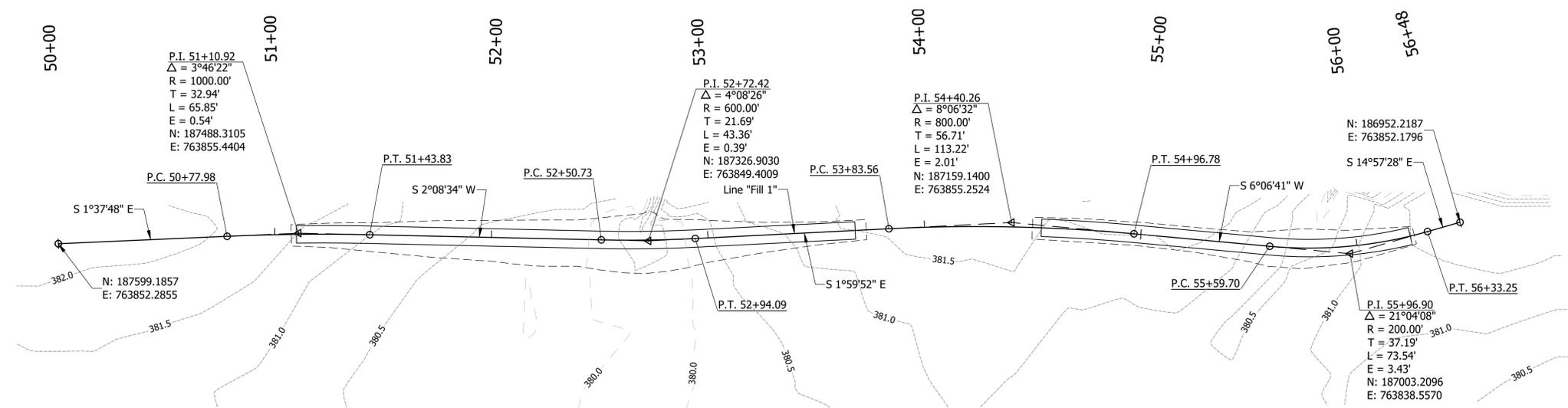
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INDIANA DEPARTMENT OF NATURAL RESOURCES
PLAN & PROFILE
LINE "B"

HORIZONTAL SCALE		
1" = 30'		
VERTICAL SCALE		
1" = 5'		
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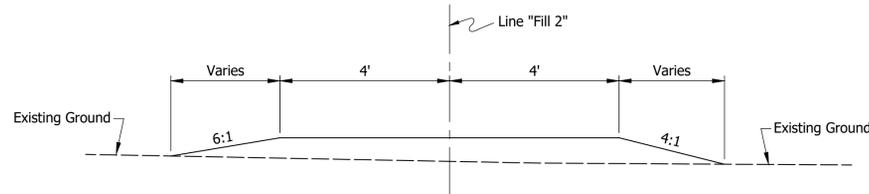
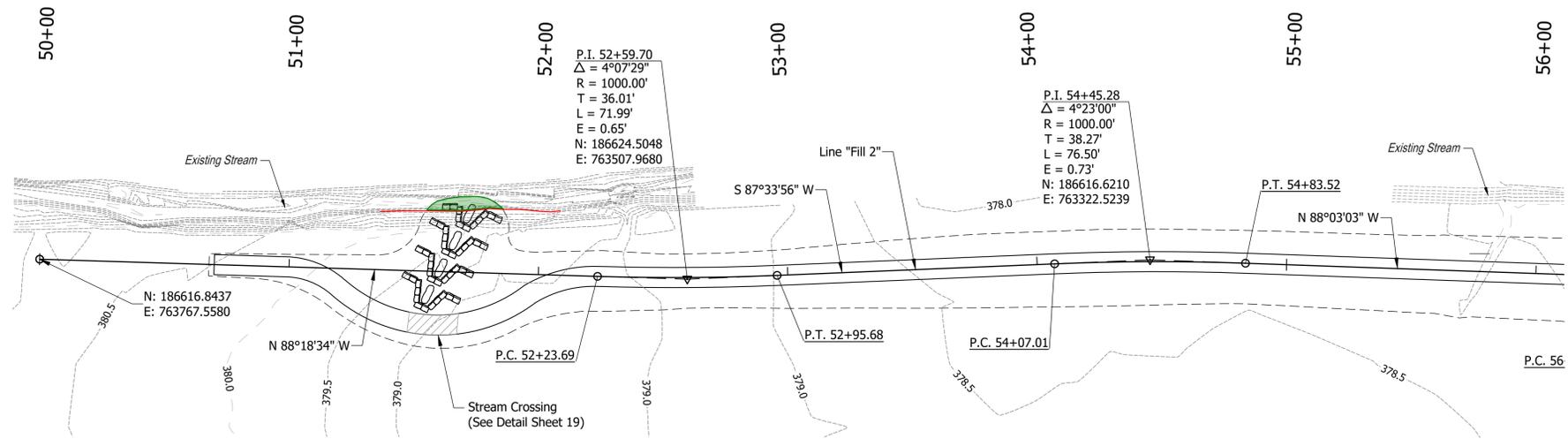
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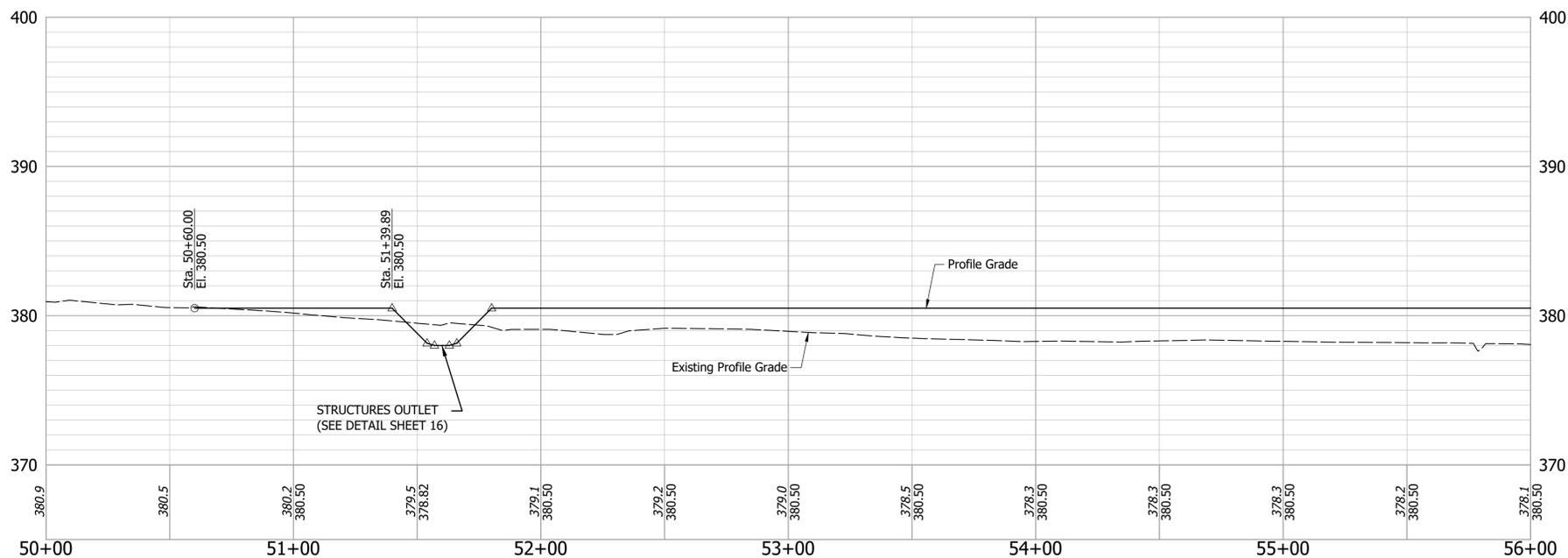
**INDIANA
DEPARTMENT OF NATURAL RESOURCES**

**PLAN & PROFILE
LINE "FILL 1"**

HORIZONTAL SCALE		
1" = 30'		
VERTICAL SCALE		
1" = 5'		
SHEET		
10	of	25
LOCH GROUP PROJECT		
118-0098-02E		

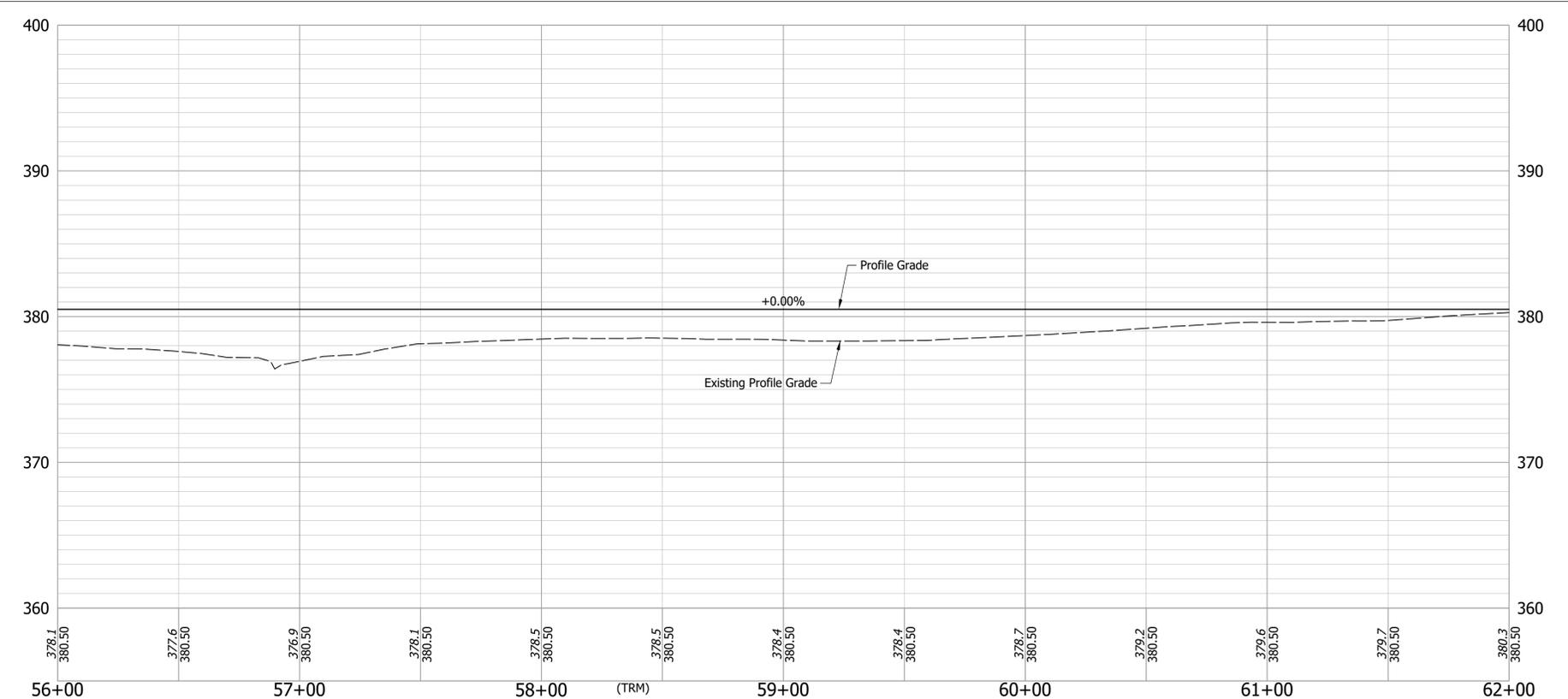
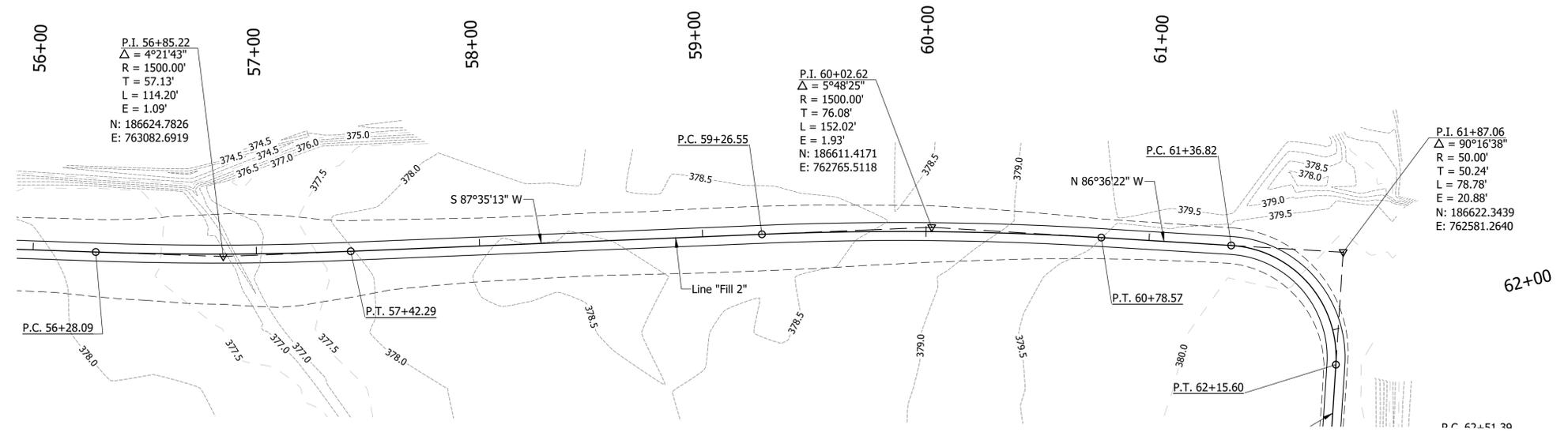


TYPICAL FILL SECTION
Scale: 1/2" = 1'-0"



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DRAFT	RECOMMENDED FOR APPROVAL _____ DATE _____	INDIANA DEPARTMENT OF NATURAL RESOURCES	HORIZONTAL SCALE 1" = 30'
	DESIGNED: MTR DRAWN: CCW	PLAN & PROFILE LINE "FILL 2"	VERTICAL SCALE 1" = 5'
	CHECKED: JAD CHECKED: MTR	SHEET 11 of 25 LOCH GROUP PROJECT 118-0098-02E	



Date: Nov 14, 2025, 10:49am User Name: Riley, Kremer File: X:\ProductionFiles\2018\118-0098\PRO-02\CAD\PlanSet\Environ\Plan & Profile\Fill 2.dwg - (P.P. Fill 2 56+00 - 62+00)

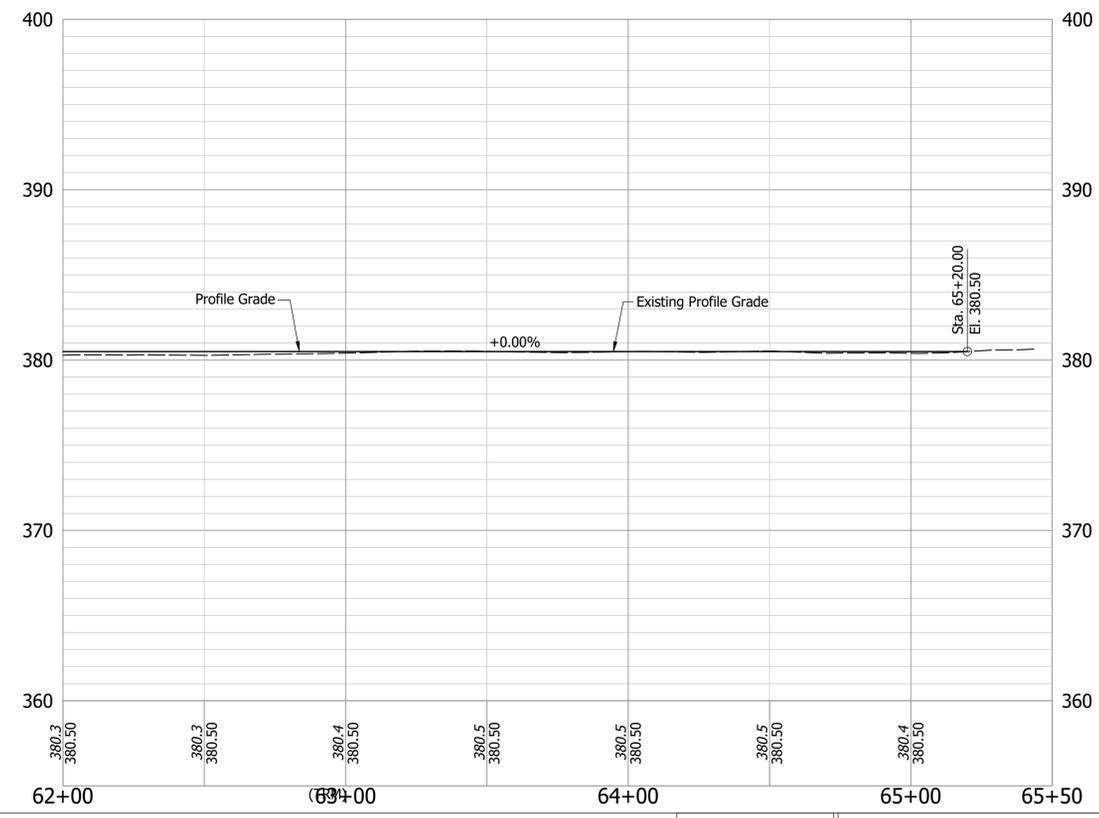
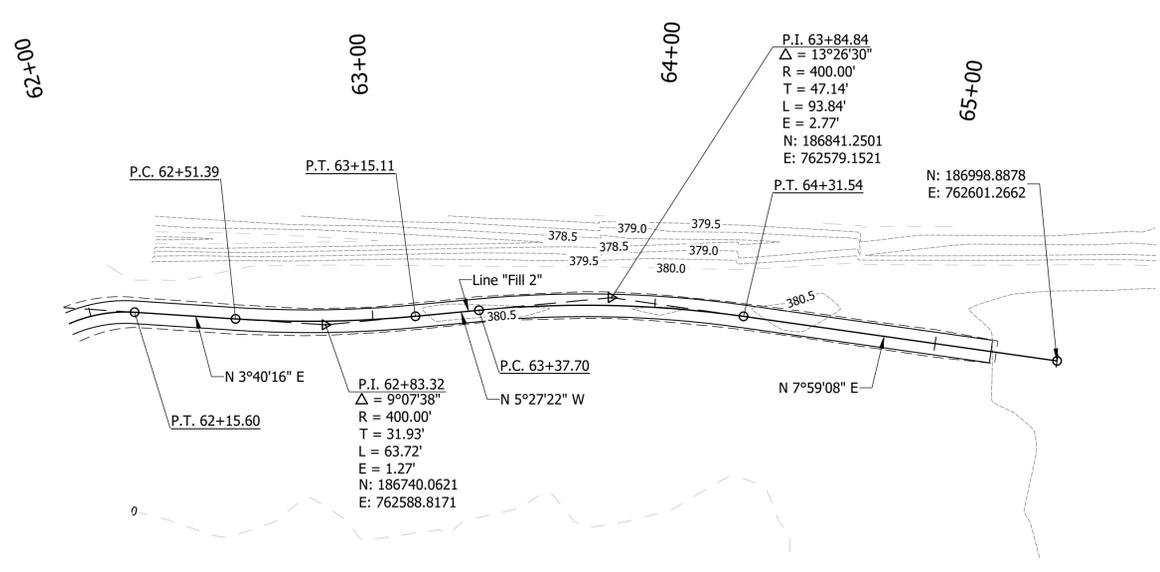
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RECOMMENDED FOR APPROVAL	DESIGN ENGINEER	DATE
DESIGNED: MTR	DRAWN: CCW	
CHECKED: JAD	CHECKED: MTR	

**INDIANA
DEPARTMENT OF NATURAL RESOURCES**

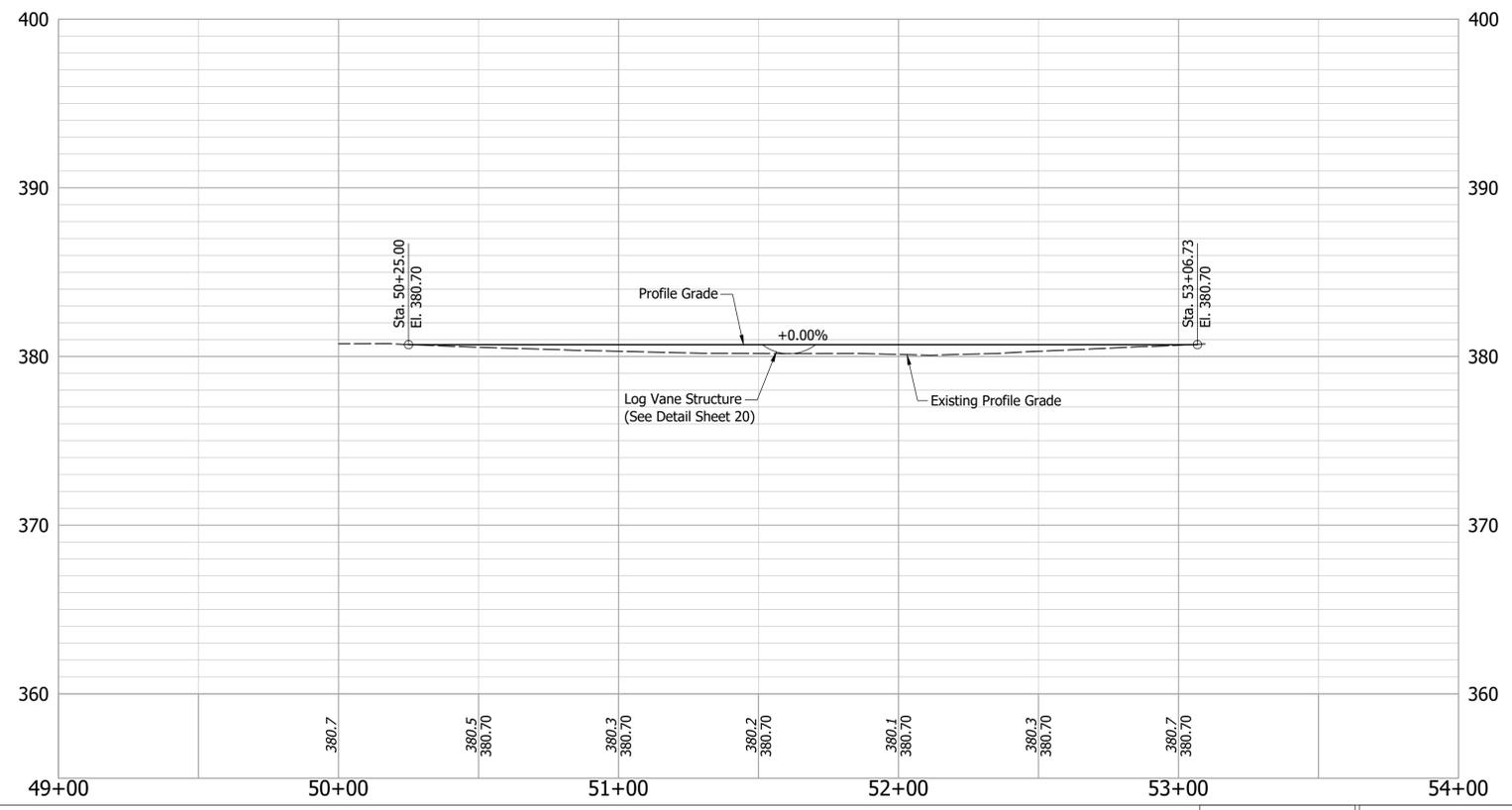
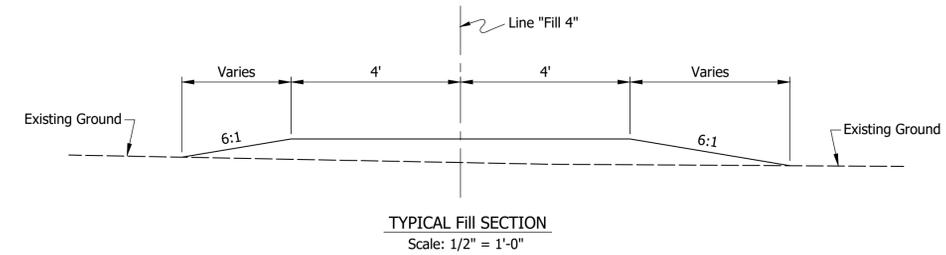
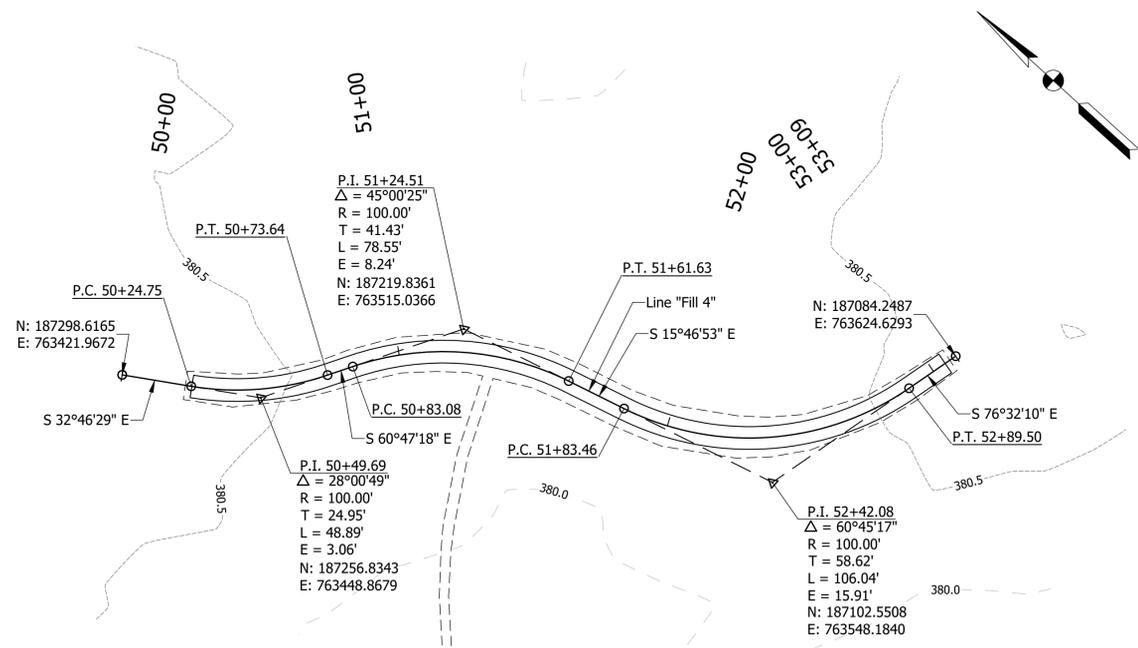
**PLAN & PROFILE
LINE "FILL 2"**

HORIZONTAL SCALE		
1" = 30'		
VERTICAL SCALE		
1" = 5'		
SHEET		
12	of	25
LOCH GROUP PROJECT		
118-0098-02E		



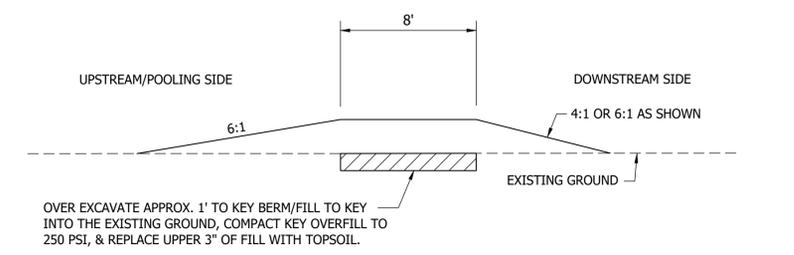
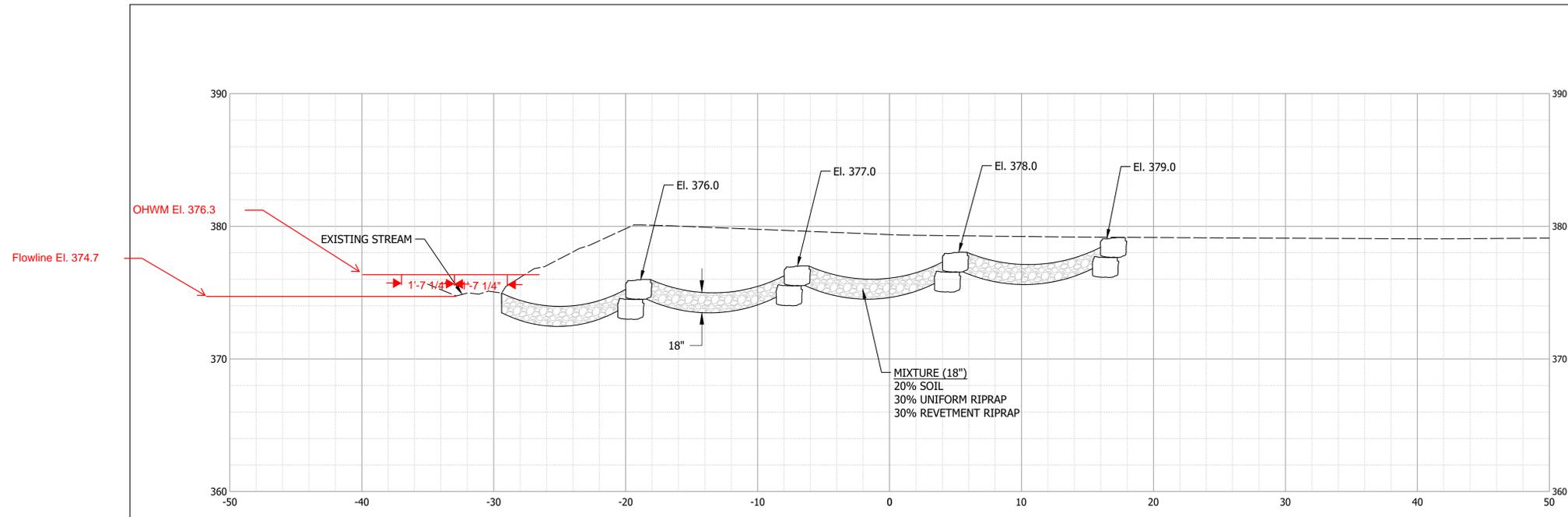
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	DESIGNED: MTR	DRAWN: CCW			VERTICAL SCALE	1" = 5'
	CHECKED: JAD	CHECKED: MTR			SHEET	13 of 25
PLAN & PROFILE LINE "FILL 2"					LOCH GROUP PROJECT	118-0098-02E

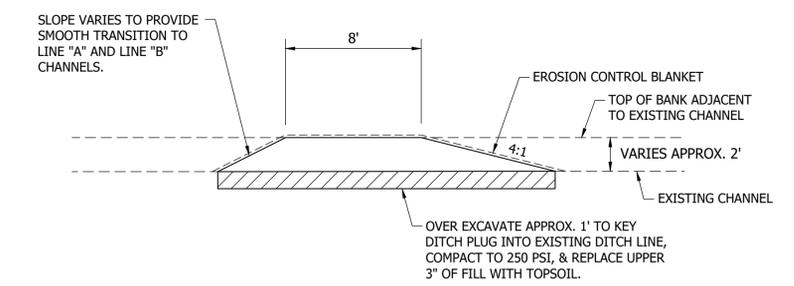


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	DESIGNED: _____ MTR _____	DRAWN: _____ CCW _____		VERTICAL SCALE 1" = 5'
	CHECKED: _____ JAD _____	CHECKED: _____ MTR _____		SHEET 15 of 25 LOCH GROUP PROJECT 118-0098-02E
PLAN & PROFILE LINE "FILL 4"				

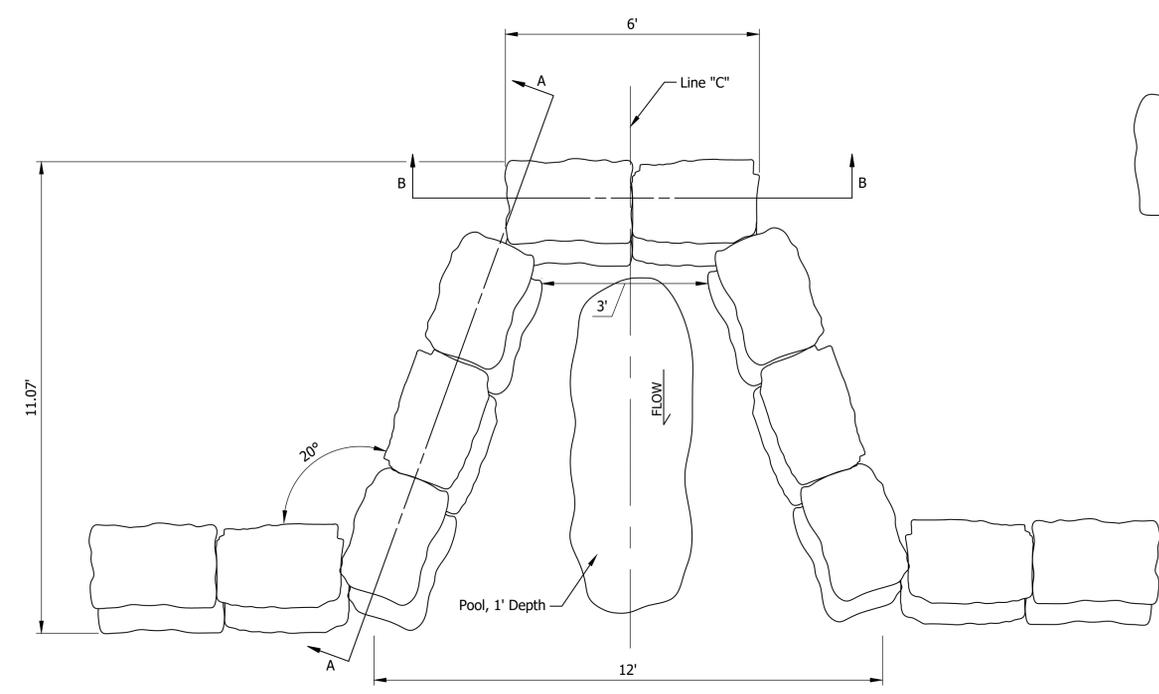


BERM/FILL TYPICAL SECTION
SCALE: 1"=5'

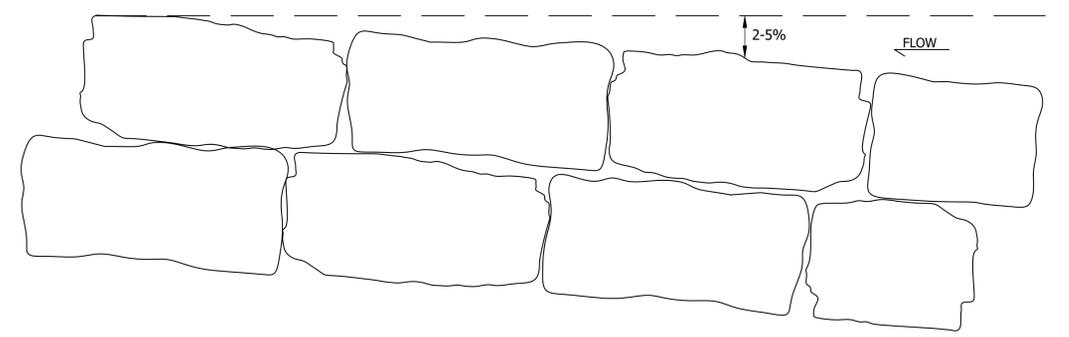


DITCH PLUG TYPICAL SECTION
SCALE: 1"=5'

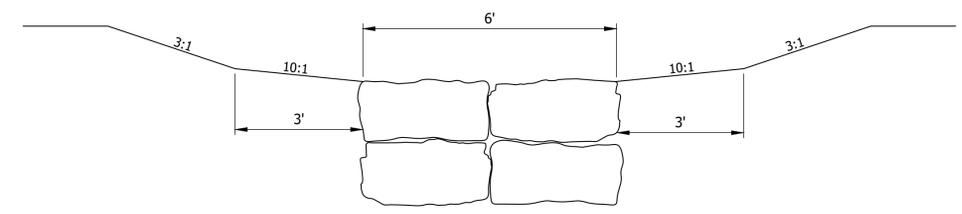
STEP POOL STRUCTURE DETAIL
RNG / PROFILE @ STA. 51+60 LINE "FILL 2"
SCALE: 1"=5'



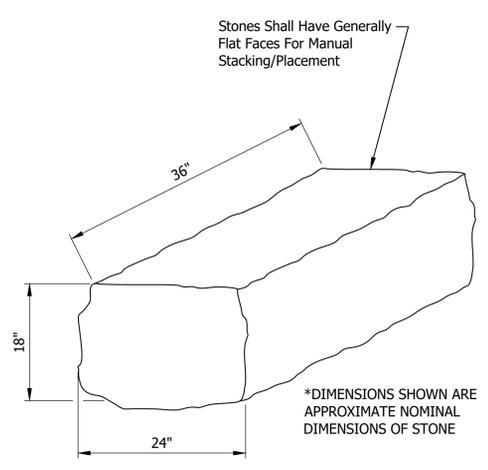
STEP POOL STRUCTURE TYPICAL DETAIL
PLAN VIEW
SCALE: 1"=2'



STEP POOL STRUCTURE SECTION A-A
SCALE: 1"=1'



STEP POOL STRUCTURE SECTION B-B
SCALE: 1"=2'



STEP POOL NATURAL STONE
SCALE: 1"=1'

Date: Nov 14, 2025, 10:50am User Name: Riley, Krenner File: X:\Production\Files\2018\118-0098\PRO-02\CAD\PlanSet\Enviro\Misc_Details & Tables.dwg - (Misc Details 1)

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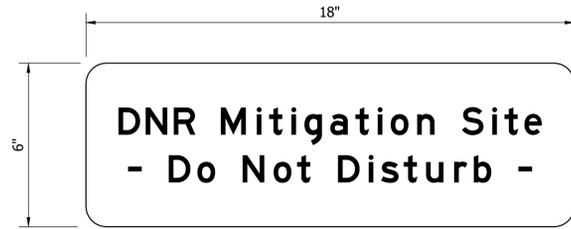
RECOMMENDED FOR APPROVAL	DESIGN ENGINEER	DATE
DESIGNED: MTR	DRAWN: CCW	
CHECKED: JAD	CHECKED: MTR	

INDIANA DEPARTMENT OF NATURAL RESOURCES

MISCELLANEOUS DETAILS

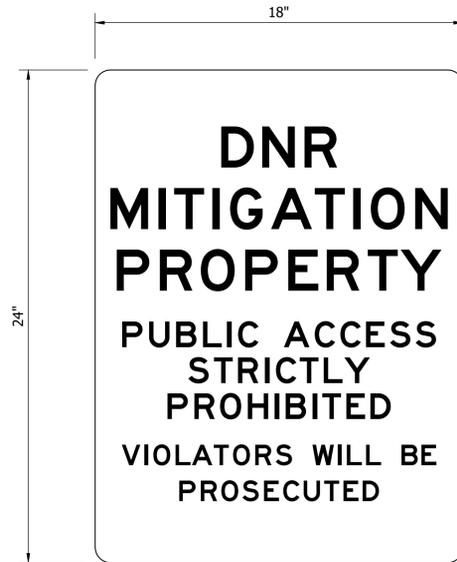
HORIZONTAL SCALE		
AS SHOWN		
VERTICAL SCALE		

SHEET		
16	of	25
LOCH GROUP PROJECT		
118-0098-02E		



**DNR Mitigation Site
- Do Not Disturb -**

SIGN "DO NOT DISTURB"
NOT TO SCALE



**DNR
MITIGATION
PROPERTY
PUBLIC ACCESS
STRICTLY
PROHIBITED
VIOLATORS WILL BE
PROSECUTED**

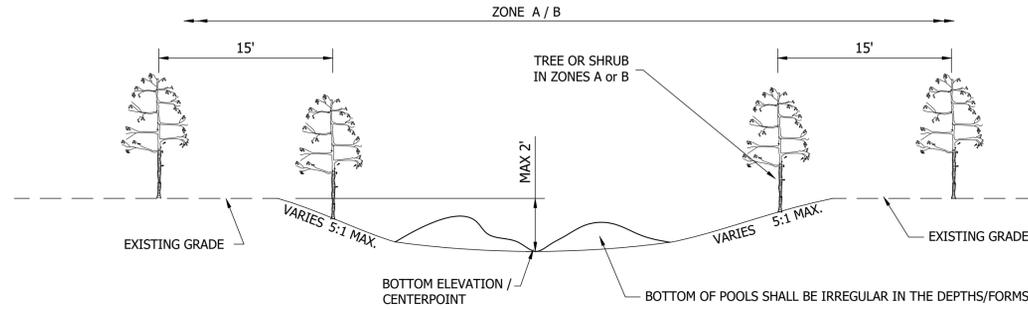
SIGN "DNR MITIGATION PROPERTY"
NOT TO SCALE

**EARTHWORK SUMMARY
(Cu. Yards)**

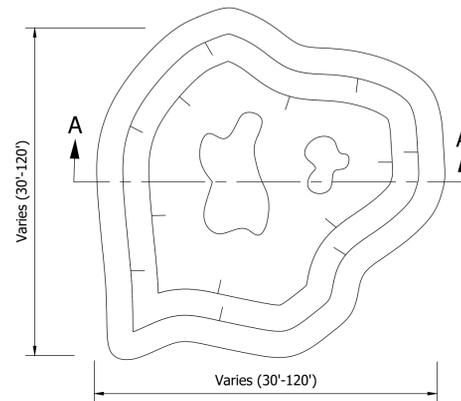
Line	Excavation	Fill	Fill + 25%
"A"	50.0	0.0	----
"B"	300.0	0.0	----
Vernal Pools	1900.0	0.0	----
Step Pool Channel	----	----	----
"Fill 1"	0.0	156.0	195
"Fill 2"	0.0	1426.0	1784
"Fill 3"	0.0	175.0	219
"Fill 4"	0.0	41.4	52
Total	0.0	1798.4	2250

Fill Available 2250 Cyd.

Note: All earthwork shall balance on site. All fill needed will be obtained from excavation at lines "A" and "B" with remaining fill obtained from vernal pools. Installation of the step pools shall be incidental to installation of the structures.



**VERNAL POOL TYPICAL SECTION
SECTION A-A
NOT TO SCALE**



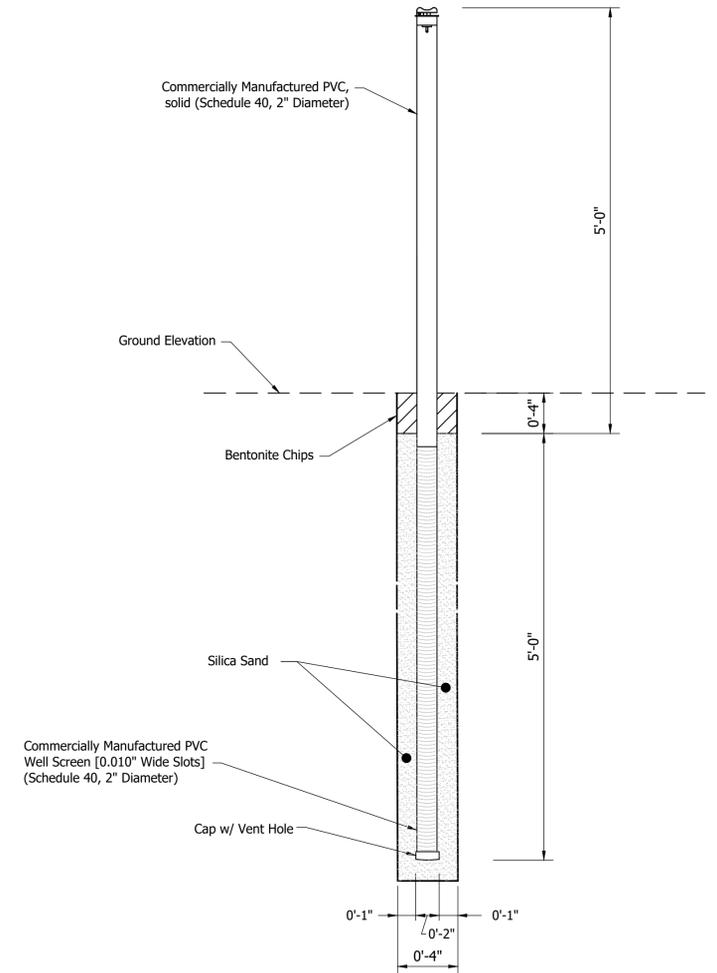
**VERNAL POOL
NOT TO SCALE**

NOTES:

- VERNAL POOLS SHALL VARY IN SHAPES & SIZES, GENERAL AS DIMENSIONS SHOWN ON THE PLANS.
- DEEPEST PORTION OF VERNAL POOL SHALL BE NO MORE THAN 2'

MISC. ITEMS SUMMARY

DESCRIPTION	QUANTITY	UNIT
Tile Exploration, Removal, and Recompaction	2,600	LFT
Monitoring Well	7	Each
Riprap, Revetment	15	Ton
Riprap, Uniform A	16	Ton
No. 2 Stone	200	Ton
Geotextile, Type 1B	500	SYS
Erosion Control Blanket	1,700	SYS
Mulching Material	30	Ton
Sign, Do Not Disturb, w/ Post	33	Each
Sign, DNR Mitigation, w/ Post	1	Each
Gate, Cable	1	Each
Mowing	29.2	Acre
Herbicide Treatment	29.2	Acre
Step Pool Structure	4	Each



Commercially Manufactured PVC Well Screen [0.010" Wide Slots] (Schedule 40, 2" Diameter)

**MW MONITORING WELL
NOT TO SCALE**

MONITORING WELL LOCATION POINTS

POINT NO.	NORTHING	EASTING
MW-1	763731.49	187623.64
MW-2	763615.92	187297.36
MW-3	763634.80	186866.79
MW-4	763273.53	187120.07
MW-5	763286.19	186769.91
MW-6	762800.09	187148.07
MW-7	762815.87	186724.06

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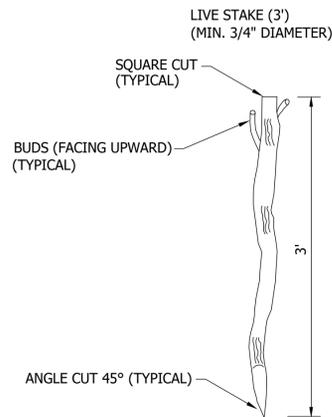
DRAFT	RECOMMENDED FOR APPROVAL _____ DATE _____ DESIGN ENGINEER	INDIANA DEPARTMENT OF NATURAL RESOURCES	HORIZONTAL SCALE AS SHOWN
	DESIGNED: MTR DRAWN: CCW		VERTICAL SCALE ---
	CHECKED: JAD CHECKED: MTR		SHEET 17 of 25 LOCH GROUP PROJECT 118-0098-02E
MISCELLANEOUS DETAILS			

TREE AND SHRUB PLANTING SUMMARY									
Planting Zone		A	B	D	E				
Description		PFO Wetland	PSS Wetland	Riparian	Stream Bank				
Acreage/Length		17.3	1.5	1.6	1,735				
Trees	Planting Density	180	200 stems/ac	180 stems/ac	Varies**	CG	LS (3')	CG	LS (3')
Scientific Name	Common Name	Wetland Status	CG	CG	CG	LS (3')	CG	LS (3')	CG
<i>Betula nigra</i>	River Birch	FACW	--	--	36	--	36	--	--
<i>Carya illinoensis</i>	Pecan	FACW	445	--	36	--	481	--	--
<i>Liquidambar styraciflua</i>	Sweetgum	FACW	--	--	36	--	36	--	--
<i>Quercus bicolor</i>	Swamp White Oak	FACW	445	--	36	--	481	--	--
<i>Quercus lyrata</i>	Overcup Oak	OBL	445	--	--	--	445	--	--
<i>Quercus michauxii</i>	Swamp Chestnut Oak	FACW	445	--	36	--	481	--	--
<i>Quercus palustris</i>	Pin Oak	FACW	445	--	36	--	481	--	--
<i>Platanus occidentalis</i>	Sycamore	FAC	445	--	36	--	481	--	--
<i>Taxodium distichum</i>	Bald Cypress	OBL	444	--	36	--	480	--	--
Totals			3,114	0	288	0	3,366	0	0
Shrubs									
Planting Density		20 stems/ac	200 stems/ac	20 stems/ac	Varies**				
Scientific Name	Common Name	Wetland Status	CG	CG	CG	LS (3')	CG	LS (3')	CG
<i>Amorpha fruticosa</i>	Indigobush	FACW	116	60	12	--	188	--	--
<i>Cephalanthus occidentalis</i>	Buttonbush	OBL	115	60	10	--	185	--	--
<i>Cornus drummondii</i>	Roughleaf Dogwood	FAC	--	60	--	--	60	--	--
<i>Cornus obliqua</i>	Pale Dogwood	FACW	115	60	10	434	185	434	--
<i>Rosa palustris</i>	Swamp Rose	FACW	--	60	--	--	60	--	--
<i>Salix interior</i>	Sandbar Willow	FACW	--	--	--	434	0	434	--
Totals			346	300	32	868	678	868	
Planting Totals						CG	LS (3')		
CG: Tree, 3-Gallon Container Grown (EACH)						3,366	--		
CG: Shrub, 3-Gallon Container Grown (EACH)						678	--		
LS (3'): Live Stake Planting, 3' Length (EACH)						--	868		

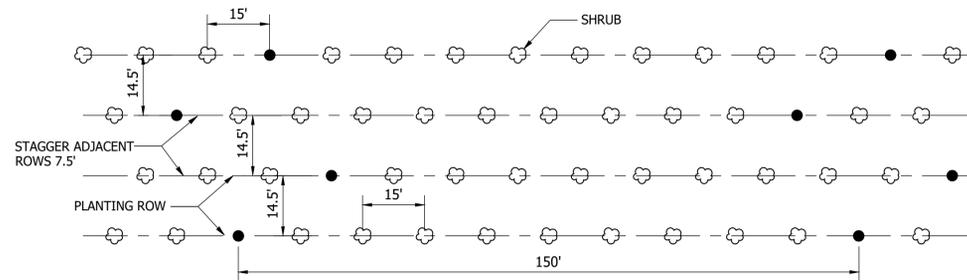
SEEDING SUMMARY								
		Zone (Acres)						
		A	B	C	D	E*	VP	Totals
Seed Mixtures	Rate (lbs/ac)	17.3	1.5	3.0	1.6	5.8	1.3	
Seed Mixture, Buffer (LBS)	43.00	--	--	--	--	249.4	--	249.4
Seed Mixture, Forested Wetland (LBS)	45.50	787.2	--	--	72.8	--	--	860.0
Seed Mixture, Scrub/Shrub (LBS)	41.00	--	61.5	--	--	--	--	61.5
Seed Mixture, Emergent Wetland (LBS)	32.00	--	--	96.0	--	--	41.6	137.6

Zone Descriptions:

- Zone A - Forested Wetland Restoration (PFO)
- Zone B - Scrub/Shrub Wetland Restoration (PSS)
- Zone C - Emergent Wetland Restoration (PEM)
- Zone D - Riparian Reforestation
- Zone E - Buffer Area
- VP - Vernal Pools



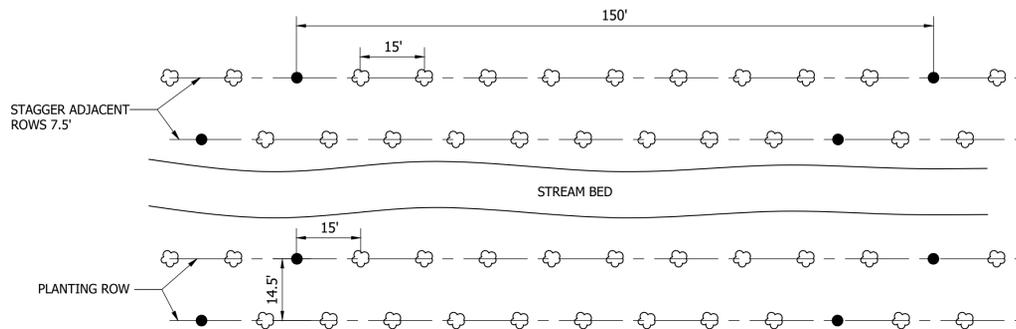
LIVE STAKE DETAIL
NOT TO SCALE



PLANTING LAYOUT ZONE A (FORESTED WETLAND)
NOT TO SCALE

LEGEND

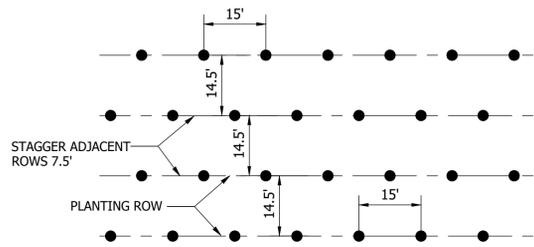
- CONTAINER GROWN CANOPY TREE
- CONTAINER GROWN UNDERSTORY SHRUB



PLANTING LAYOUT ZONE D (RIPARIAN REFORESTATION)
NOT TO SCALE

LEGEND

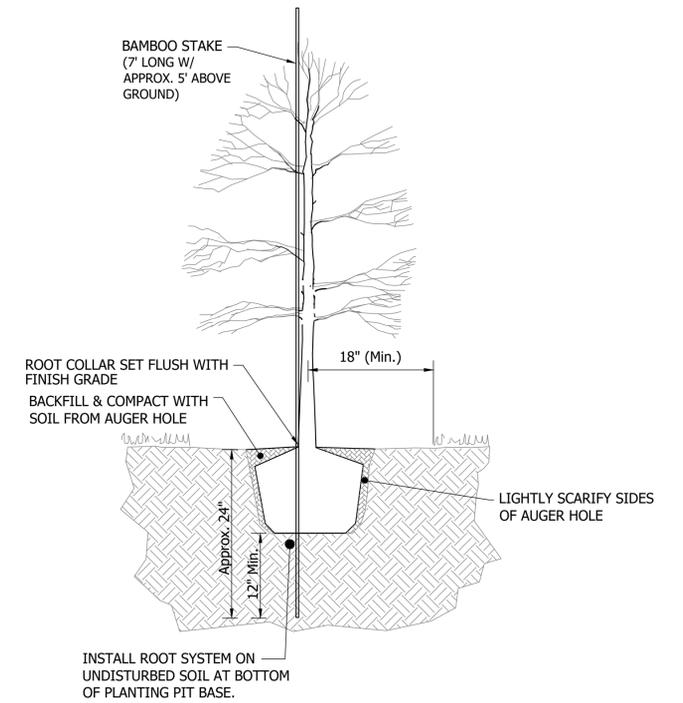
- CONTAINER GROWN CANOPY TREE
- CONTAINER GROWN UNDERSTORY SHRUB



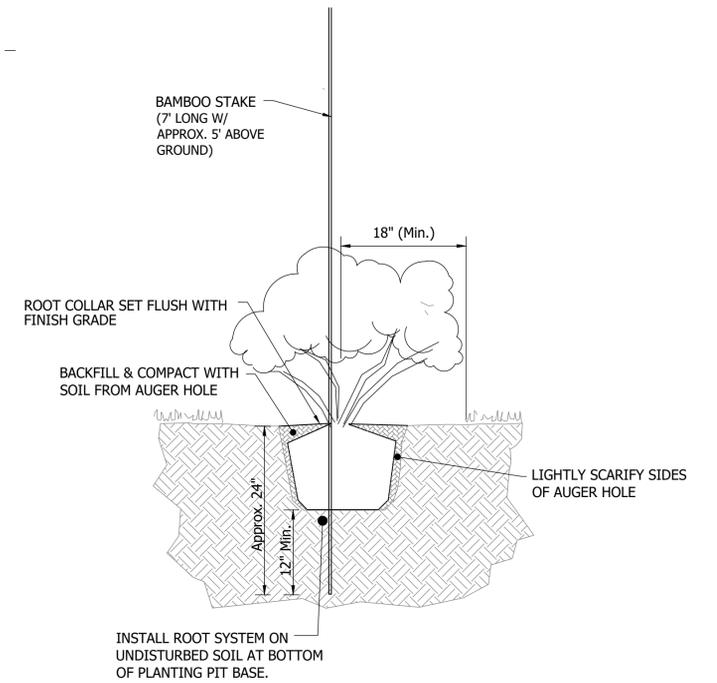
PLANTING LAYOUT ZONE B (SCRUB/SHRUB WETLAND)
NOT TO SCALE

LEGEND

- CONTAINER GROWN UNDERSTORY SHRUB



CONTAINER GROWN TREE PLANTING DETAIL
NOT TO SCALE



CONTAINER GROWN SHRUB PLANTING DETAIL
Not To Scale

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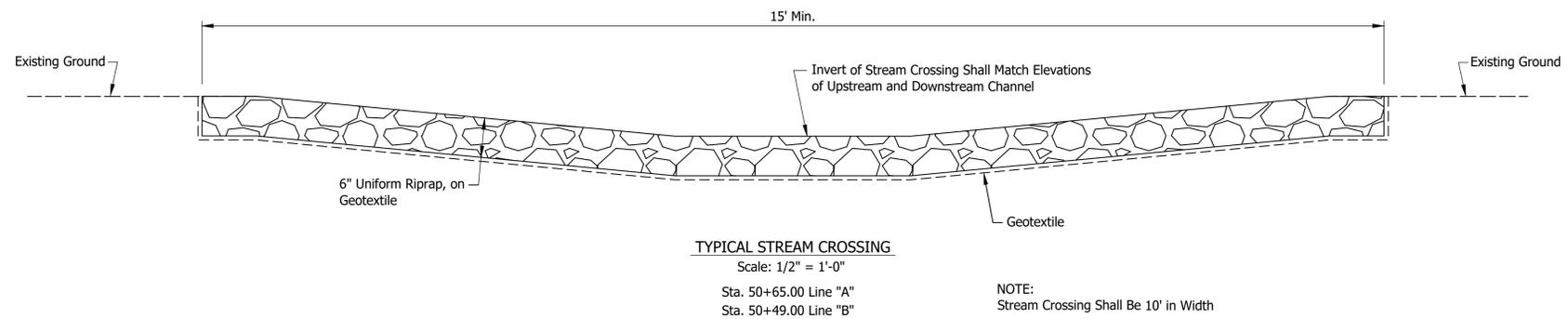
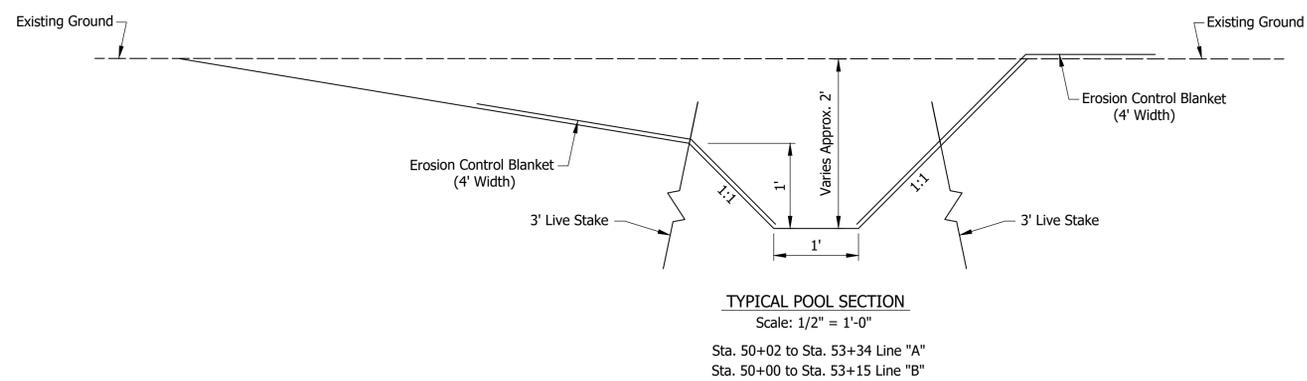
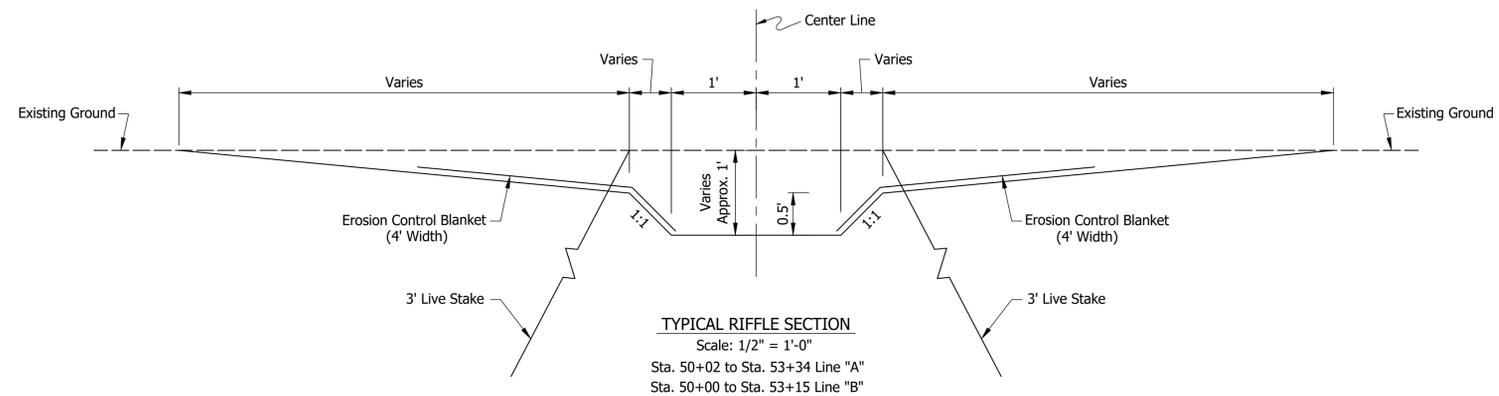
RECOMMENDED FOR APPROVAL	DESIGN ENGINEER	DATE
DESIGNED: MTR	DRAWN: CCW	
CHECKED: JAD	CHECKED: MTR	

INDIANA DEPARTMENT OF NATURAL RESOURCES

PLANTING DETAILS & TABLES

HORIZONTAL SCALE		
AS SHOWN		
VERTICAL SCALE		

SHEET		
18	of	25
LOCH GROUP PROJECT		
118-0098-02E		



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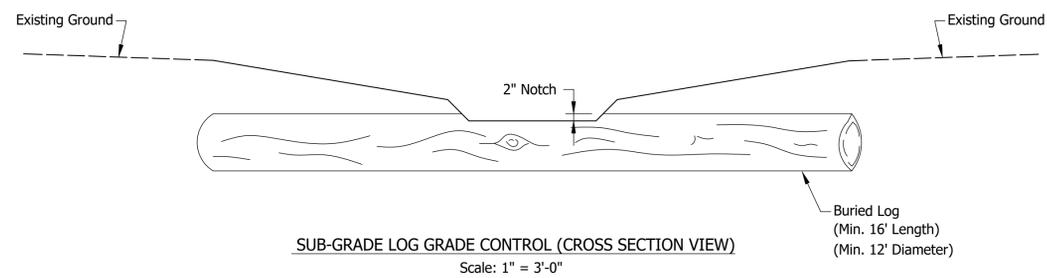
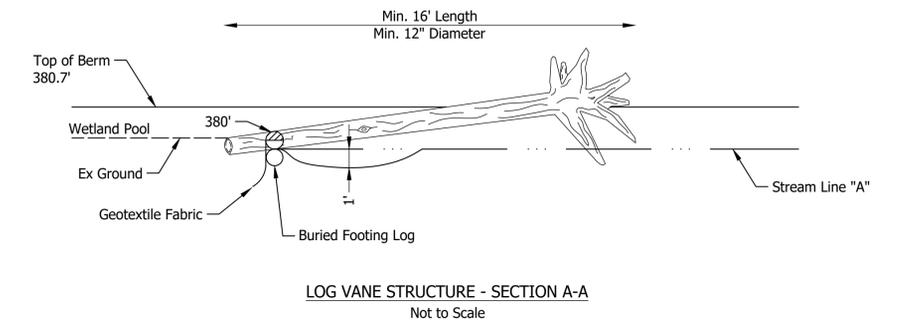
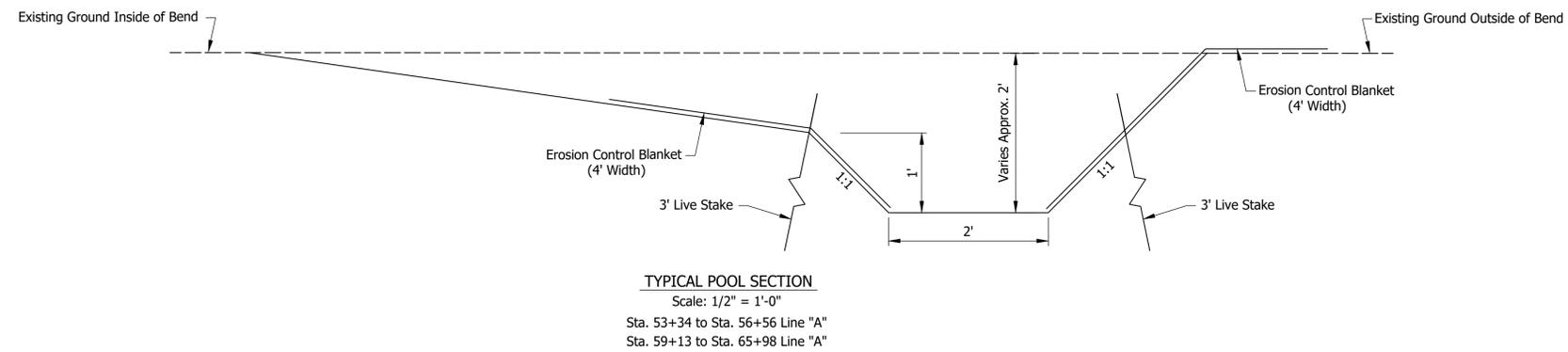
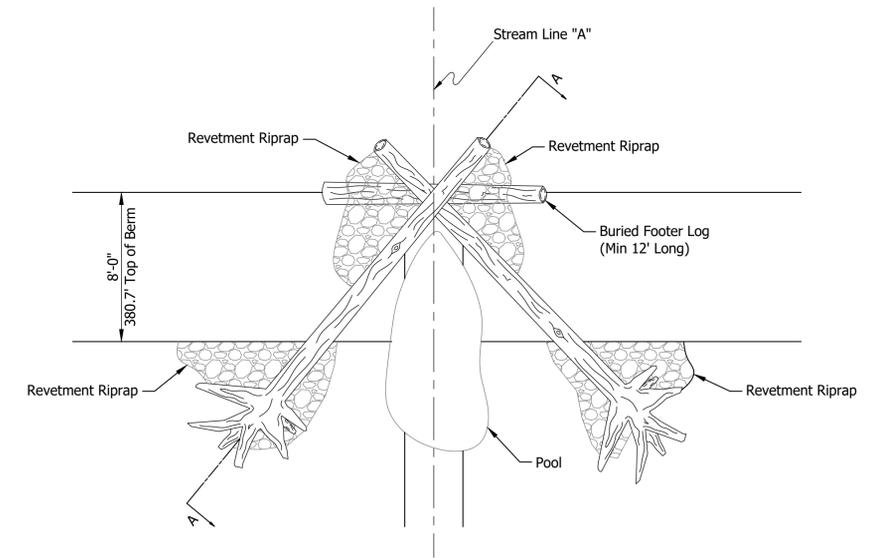
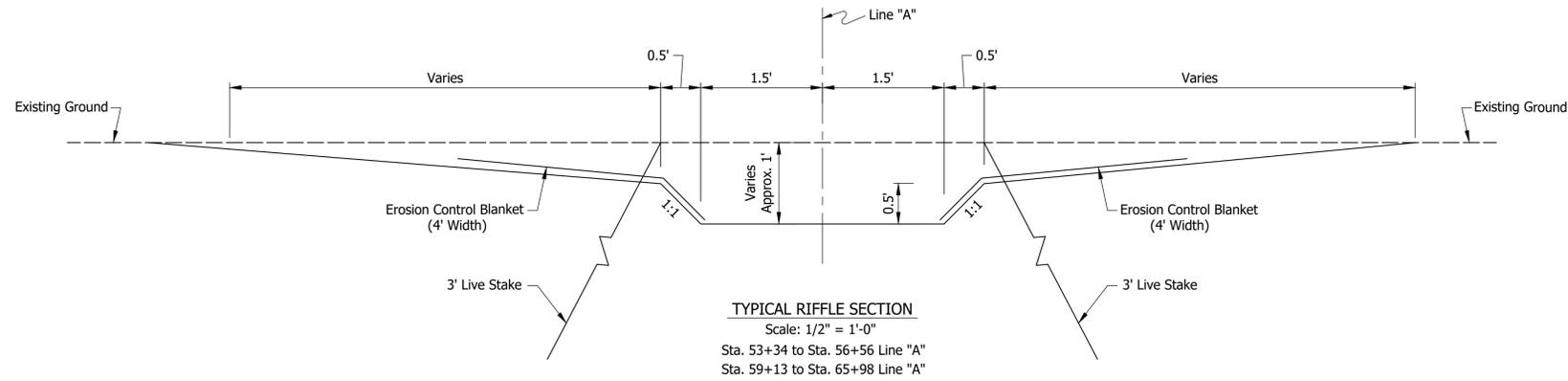
RECOMMENDED FOR APPROVAL	DESIGN ENGINEER	DATE
DESIGNED: MTR	DRAWN: CCW	
CHECKED: JAD	CHECKED: MTR	

INDIANA
DEPARTMENT OF NATURAL RESOURCES

STREAM CROSS-SECTION
DETAILS & STRUCTURES

HORIZONTAL SCALE		
AS SHOWN		
VERTICAL SCALE		

SHEET		
19	of	25
LOCH GROUP PROJECT		
118-0098-02E		



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INDIANA DEPARTMENT OF NATURAL RESOURCES

STREAM CROSS-SECTION DETAILS & STRUCTURES

HORIZONTAL SCALE		
AS SHOWN		
VERTICAL SCALE		

SHEET		
20	of	25
LOCH GROUP PROJECT		
118-0098-02E		

NATURE & PURPOSE OF CONSTRUCTION ACTIVITY

- A-1** Index showing locations of required Plan Elements.
Sheet 21 (This Sheet)
- A-2** Vicinity map depicting site location in relationship to local landmarks, towns, and major roads
See cover page for project location map.
- A-3** Narrative describing the nature and purpose of the project.
The purpose of this project is to create a 29.4 ac mitigation site for the Indiana Stream and Wetland Mitigation Program (IN SWMP).
- A-4** Project location latitude and longitude.
Lat: 38.041557, Long: -87.383211
- A-5** Legal Description of the Project Site
Specifically, the project site is located in:
Indiana, Warrick County, Ohio Township, Highland USGS Quadrangle
Section 35, TSS, R9W
- A-6** 11 X 17-inch plat showing building lot numbers/boundaries and road layout/names.
Sheet 10
- A-7** 100 year floodplains, floodways, and floodway fringes.
According to the enclosed FEMA FIRM map and the BAFH map, the project is located within the floodplain of Pigeon Creek, but outside the floodway.
- A-8** Adjacent landuse
Adjacent land is dominated by agricultural fields, private residences, and commercial properties.
- A-9** Identification of any US EPA approved or established TMDL.
There are no waterways within the project's drainage area listed on Indiana's most recent TMDL.
- A-10** Identification of all receiving waters.
Stollberg (Whittaker) Ditch and Pigeon Creek via Unnamed Tributaries.
- A-11** Identification of discharges to a water on the current 303(d) list.
No streams receiving runoff from the project area are listed on the most recent Indiana 303d List of impaired waters.
- A-12** Soils map including soil descriptions and limitations.
Soil Map was derived from the USGS Soil Survey of Warrick County, IN.
See enclosed soils map and report.
- A-13** Location and name of all wetlands, lakes and water courses on and adjacent to the site.
Wetlands 1 - 4 were identified within the project area. Unnamed Tributaries 1, 2 & 3 to Stollberg Ditch are located adjacent to project boundaries. Private lakes about the project area to the north and south. No impacts to the lakes are anticipated. See Plan and Profile Drawings for location of these features.
- A-14** Notation of any State or Federal water quality permits.
IDEM 401: Applied for concurrently
USACE 404: Applied for concurrently
Construction Stormwater General Permit (CSGP)
- A-15** Identification of existing vegetative cover, including natural buffers.
Project area is currently a fallow farm field covered with crop residue and weedy plant growth.
Trees with undergrowth surround the site on three sides.
- A-16** Existing site topography.
See Plan and Profile Sheets
See Cross-section Sheets
- A-17** Locations where run-off enters the project site.
Runoff will sheet flow onto the site from adjacent properties where it will enter existing roadside ditches.
- A-18** Locations where run-off discharges from the project site prior to land disturbance.
Stormwater runoff sheet-flows from the site to the south and southeast falling into UNT 1 and UNT 2 to Stollberg Ditch. There are no concentrated flow areas where runoff exits the site.
Plan and Profile drawings identify the existing site contours.
- A-19** Location of existing stormwater systems/structures.
See Plan and Profile Drawings
- A-20** Existing permanent retention or detention facilities.
No existing retention or detention facilities are in place.
- A-21** Identification of potential discharges to ground water.
There are no known areas within the project site where stormwater will be discharged to groundwater.
- A-22** Project Area
Total Acreage: 29.4 Acres
- A-23** Proposed Land Disturbance
Total Acreage: 4.0 Acres
- A-24** Proposed final topography.
See Plan and Profile Drawings
See Cross-section Drawings
- A-25** Locations and approximate boundaries of all disturbed areas.
Plan and Profile Drawings show proposed construction limits.
Disturbance is anticipated to remain within these limits.

NATURE & PURPOSE OF CONSTRUCTION ACTIVITY (Cont.)

- A-26** Locations, size, and dimensions of all stormwater drainage systems.
See Plan and Profile Drawings and Structure Detail Sheets for locations and details of the proposed stormwater system.
- A-27** Specific points where stormwater discharge will leave the site.
Stormwater shall sheet flow into constructed channel Line "A". From there it shall overflow via the proposed step pool structures into UNT 2 to Stollberg Ditch. See Plan and Profile Drawings for specific location.
- A-28** Locations of all proposed site improvements.
See Plan and Profile drawings for location of proposed improvements.
- A-29** Locations of proposed soil stockpiles and/or borrow/disposal areas.
No offsite disposal or borrow is required.
- A-30** Location of any construction support activities (i.e. laydown yard, concrete batch plant, staging areas, etc.).
Proposed laydown and material storage areas shall be identified by the Contractor. Contractor shall be responsible for ensuring proper E&SC BMPs are installed around these areas to prevent sediment and chemical discharges into adjacent properties, water resources or stormwater systems. The primary staging and laydown areas are anticipated to be at the site entrance/parking area.
- A-31** Location of any in-stream activities.
UNT 1 to Stollberg Ditch shall be blocked and diverted into the site. See Plan and Profile Drawing for this location.

Construction Component (Section B)

- B-1** Description of potential pollutant sources associated with the construction activities:
Potential pollutant sources associated with this construction activity include those normally associated with construction equipment and construction activities such as: concrete wash out water, soil sediment, oils, fuels, hydraulic fluids, transmission fluids, brake fluid, antifreeze, greases, brake dust. All heavy equipment shall be parked on site at a location, when not in use; leakage from the equipment will be captured by the surrounding terrain, and not be provided a direct path to the surrounding storm water system. Sediment discharge will be controlled by proper work sequencing and proper installation of E&SC BMPs.
- B-2** Construction Entrance:
CEs shall be installed as shown in the Erosion and Sediment Control Sheets. CEs locations shall be adjusted to best support Contractors work sequence. Any mud, soil, rock or other debris tracked onto open public roads shall be immediately removed. CEs shall be installed in accordance with details shown on the Erosion Control Detail Sheet
- B-3** Specifications for temporary and permanent stabilization:
Non-vegetated areas shall be temporarily stabilized if the area remains inactive for more than seven days. The area will be considered inactive when no meaningful work toward accomplishing a pay item has been performed at a site of disturbed soil. Stabilization methods shall be as shown in the SWQCP.
 1. Seed: Temporary seeding shall be placed on disturbed areas that are expected to be inactive for more than seven days, or as agreed to by the Contractor and the Engineer. Seed shall be placed either by drilling in, spraying in a water mixture, or by use of a mechanical method which places the seed in direct contact with the soil. Where inaccessible to mechanical equipment, or where the area to be seeded is small, a hand operated cyclone seeder or other approved equipment may be used. Seed shall not be covered more than 1/2 in. Seed may be distributed by a drill seeder, cyclone seeder, hand or other approved equipment which allows for even distribution of the seed. If as a result of a rain event, the prepared seed bed becomes rutted, crusted or eroded, or depressions exist, the soil shall be reworked until it is smooth. Reworked areas shall be re-seeded. All seeded areas shall be mulched within 24 hours after seeding. Temporary seed shall be used for surface stabilization and temporary ground cover. Temporary cover mixtures shall be placed and be subject to seasonal limitations as defined below. This mixture is not intended to be used as a permanent seed mixture. This mixture shall not be used to satisfy the requirements of the warranty bond.
 - 1.1. Spring Mix: Spring mix shall be used from January 1 through June 15. This mixture shall be applied at the rate of 150 lb/ac. The mix shall consist of oats.
 - 1.2. Fall Mix: Fall mix shall be used from September 1 through December 31. This mixture shall be applied at the rate of 150 lb/ac. This mix shall consist of winter wheat. Unless otherwise indicated in the SWQCP, fertilizer shall be spread uniformly over the area to be seeded and shall be applied at 400 lb/ac. Fertilizer shall only be applied during the active growing season March through November.
 2. Mulch: Mulch shall be applied uniformly in a continuous blanket at the rate of 2.5 t/ac. Mulch shall be punched into the soil so that it is partially covered. The punching operation shall be performed longitudinally to the slope. The tools used for punching purposes shall be disks that are notched and have a minimum diameter of 16 in. The disks shall be flat or uncupped. Disks shall be placed a minimum of 8 in. apart. Shaft or axle sections of disks shall not exceed 8 ft in length. The disk for punching shall be constructed so that weight may be added or hydraulic force may be used to push puncher into the ground. An even distribution of mulch shall be incorporated into the soil. On a slope of 3:1 or steeper but flatter than 2:1, or where specified, temporary mulch stabilization shall also be used. Unless otherwise specified, the following types may be used.

Permanent surface stabilization shall be achieved by the use of permanent seed mixtures as detailed on the Planting Layout Sheet and the Unique Special Provisions.

- B-4** Sediment control measures for concentrated flow areas:
Filter-Sock Check Dam (FCD): FCDs are erosion control features installed toe-to-crest in concentrated flow areas to slow runoff and reduce erosion. Proposed locations for these measures are shown on the plans, but may need to be modified and/or replaced based on the phasing and locations of active construction. FCDs shall be installed in accordance with details shown on the Erosion Control Detail Sheet.
- B-5** Sediment control measures for sheet flow areas:
Filter Socks (FS): A temporary barrier consisting of permeable material (compost or mulch) contained in a permeable geotextile fabric or non-biodegradable net matrix installed to intercept and treat sediment-laden runoff from small unvegetated, or disturbed drainage areas. They will trap sediment by intercepting runoff and reducing the velocity of the runoff into stabilized areas. Filter socks shall be installed as needed along back of curb to treat runoff from sidewalk and greenscape construction. FS shall be installed in accordance with details shown on the Erosion Control Detail Sheet.
Vegetative Filter Strip (VFS): A vegetative filter strip is an area where the ground cover is to be left undisturbed to filter runoff from the disturbed drainage area. All existing vegetation located outside of the construction limits, shall not be disturbed, to act as vegetative filter strips. In some cases, filter socks may not be needed if a minimum 20-foot vegetative filter is left between disturbed areas and the edge of the site or a concentrated flow area.
- B-6** Runoff control measures:
Filter Sock (FS): See B-5 for details.
Vegetative Filter Strip (VFS): See B-5 for details.

Construction Component (Section B - Cont.)

- B-7** Stormwater outlet protection specifications:
Stormwater outlet shall be protected with riprap as shown on the Plan and Profile Sheet for "Fill 2" and Miscellaneous Details Sheet.
- B-8** Grade stabilization structure locations and specifications:
Disturbed grades shall be stabilized in accordance with B-3 and as shown on the Planting Layout Sheet.
- B-9** Dewatering application and management methods:
Dewatering: While dewatering is not specified in the SWPPP design it may be required to remove water collected in excavations or other low areas. Proper outflow of the dewatering activity should be reviewed and planned for to prevent discharge of sediment laden runoff into adjacent storm sewer inlets. Dewatering components include pump, water filtering device (sediment bag), stabilized outlet, and secondary containment (check dam, silt fence, filter sock, etc.).
- B-10** Measures utilized for work within waterbodies:
Pump-Arounds shall be installed while installing the new driveway cross structure and ditch plugs within UNT 1 to Stollberg Ditch. See SWPPP for pump-around locations. Pump-arounds shall be installed in accordance with the detail located on the Erosion Control Sheet.
- B-11** Monitoring and maintenance guidelines for each proposed pollution prevention measure:
Temporary erosion and sediment control measures shall be self-inspected by the Contractor's SWQM, once every seven days and within 24 hours of a 1/2 inch measurable storm event. Inspections shall be documented and records shall be maintained by the Contractor's SWQM and be made available for review upon request. Records shall include, at a minimum: date, inspector's name, maintenance and corrections needed based on the inspection, and status of previously identified deficiencies. The temporary protection measures shall be returned to good working condition within 48 hours after inspection or as directed. Inspections shall continue until the entire contract is complete and has been permanently stabilized and the Notice of Termination has been filed with the reviewing authority.

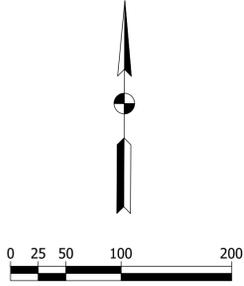
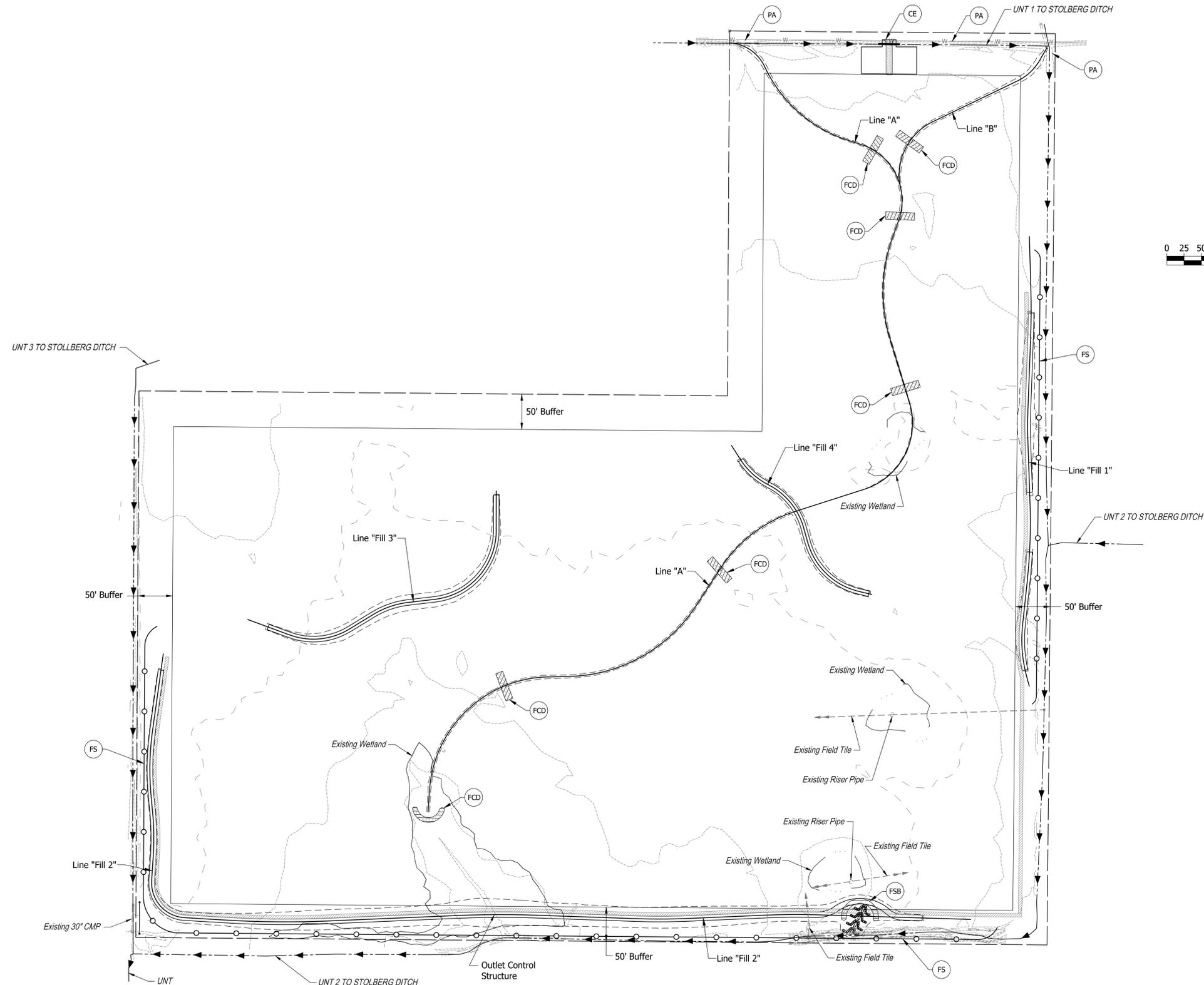
Monitoring and maintenance guidelines for each proposed pollution prevention measure (Cont'd):

The following shall apply to maintaining the specific erosion and sediment control facilities:

- **Construction Entrances:**
 - Inspection
 - Verify entrances are where they are most effective.
 - Ensure entrances do not interfere with existing drainage patterns.
 - Inspect entrances each day they are being used.
 - Monitor tracking onto public roads and observe sediment being collected in the stone.
 - Maintenance
 - Redress #2 stone as necessary to provide clean stone with voids capable of trapping additional sediment.
 - Remove and replace #2 stone on construction entrances near sensitive areas or where redressing could cause a safety or drainage problems.
 - Sweep or otherwise remove sediment from public roads immediately.
 - Reshape, resize or relocate ineffective construction entrances.
- **Filter Sock:**
 - Inspection
 - Monitor sediment accumulation and remove once it reaches one-quarter of the height of the filter sock.
 - Look for areas that been damaged by storm water or equipment.
 - Maintenance
 - Replace or re-secure damaged filter socks.
 - Replace with rock or stronger measure if damage is sever or reoccurring.
 - Remove accumulated sediment once it reaches one-quarter of the height of the filter berm.
- **Vegetative Buffers**
 - Inspection
 - Inspect for the beginning of erosion rills or channel erosion.
 - Inspect for sediment accumulation.
 - Maintenance
 - Promptly repair any small rills that form.
 - Add fertilizer and soil amendments as needed to maintain healthy vegetation.
 - Where filter strip has actively trapped sediment during construction, remove the accumulated sediment, grade the area to match surrounding contours, seed and stabilize with mulch.
- **Filter Sock Check Dam**
 - Inspection
 - Ensure center of dam is lower than the sides and that the sides tied into the slope so water flows across center of dam.
 - Check for filter sock on front face of dam.
 - Geotextile under dam should extend 3 feet down slope.
 - Inspect for channel erosion. If channel erosion is found, space check dams closer so that the bottom of the upstream dam is aligned with the weir of the downstream dam.
 - Maintenance
 - Remove sediment once it reaches one-half the height of the check dam.
 - Repair or replace if damaged or ineffective.

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	DESIGNED: _____ MTR _____	DRAWN: _____ CCW _____			EROSION / SEDIMENT CONTROL INFORMATION		VERTICAL SCALE AS SHOWN	
	CHECKED: _____ JAD _____	CHECKED: _____ MTR _____			SHEET 21 of 25		LOCH GROUP PROJECT	
					118-0098-02E			



LEGEND

- (FCD) [Symbol] TEMPORARY FILTER SOCK CHECK DAM
- (FSB) [Symbol] TEMPORARY FILTER SOCK BERM
- (FS) [Symbol] FILTER SOCK
- (CE) [Symbol] CONSTRUCTION ENTRANCE
- (PA) [Symbol] PUMP AROUND

NOTE:

1. INSTALL PROPERLY SIZED AND CONFIGURED PA WHILE INSTALLING NEW DRIVEWAY STRUCTURE AND DITCH PLUGS

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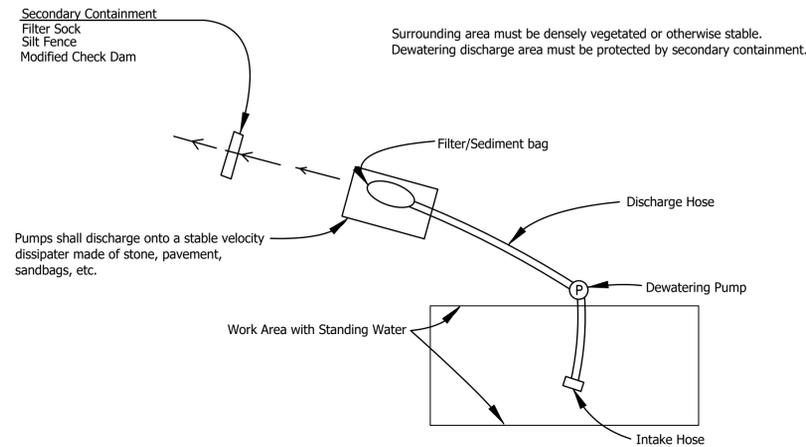
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INDIANA DEPARTMENT OF NATURAL RESOURCES

EROSION / SEDIMENT CONTROL PLAN

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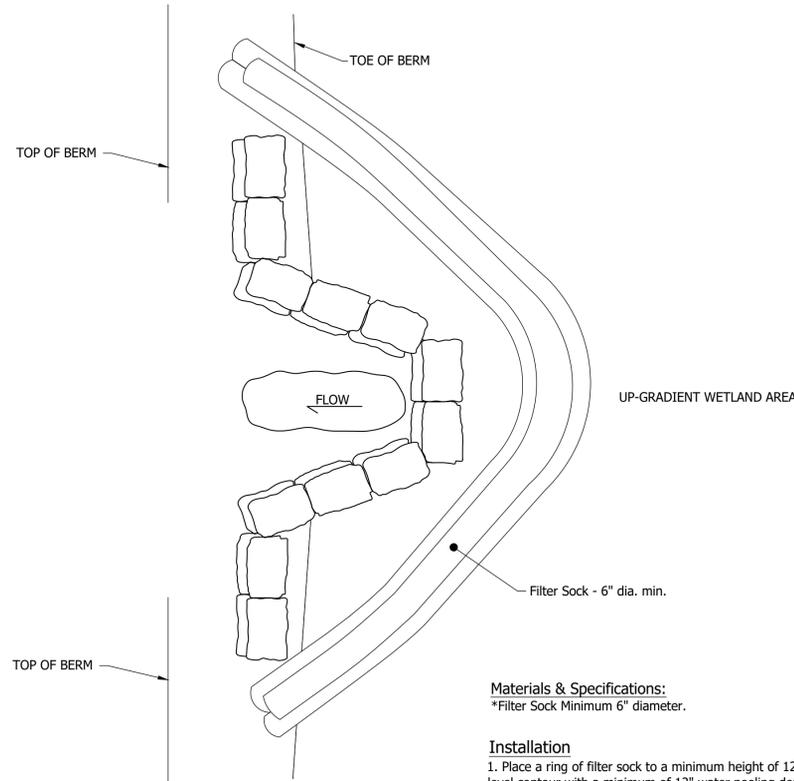


D DEWATERING
NOT TO SCALE

DEWATERING

- Dewatering of the project area shall be performed using a mechanical pump. A dewatering (filter) bag shall be securely connected to the end of the discharge hose. The suction hose shall be floated as long as possible to prevent the pump from pulling sediment from the bottom of the pooled area.
- The dewatering bag may be of the single-use or reusable variety and shall be constructed of non-woven, polypropylene geotextile material. Each type and size of dewatering bag can handle varying rates of flow. The bag shall have the following minimum specifications:

Permittivity	Grab Tensile	Weight	Apparent Opening Size
1.4 sec	200 lbs	8 oz/yd ²	80 US Sieve
- The dewatering bag shall be placed on a flat non-erodible surface. Placing the dewatering bag on top of an aggregate base will help to increase flow through the fabric by providing a larger surface area of discharge and prevent erosion of the supporting soils.
- Water shall not be pumped from the project area at a rate faster than the manufacturer's maximum recommended flow rate of the dewatering bag.
- Dewatering bags shall be placed in a location in which runoff will pass through additional sediment control measures prior to entering the channel (i.e. rock filter berm, check dam, sediment trap, etc.).
- Following completion of dewatering, the sediment accumulated within the dewatering bag shall be removed from the bag and placed in an upland area.



FSB FILTER SOCK BERM
No Scale

Materials & Specifications:
*Filter Sock Minimum 6" diameter.

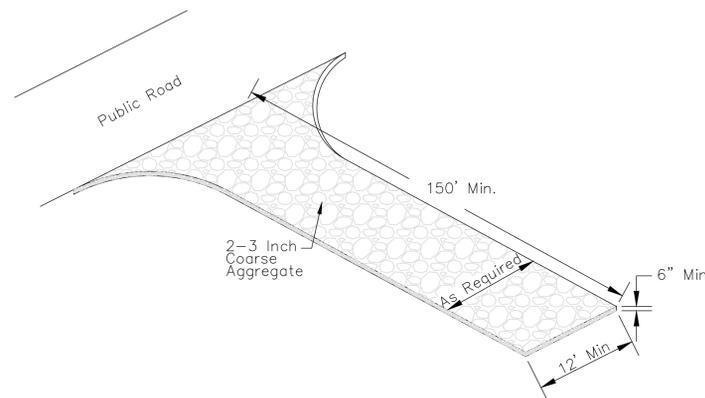
Installation
1. Place a ring of filter sock to a minimum height of 12". Tie the ends into a level contour with a minimum of 12" water pooling depth of the deepest point.
2. The Filter Sock Berm shall be a minimum of 12' in length.

Maintenance
* Inspect the structure after each storm event, and repair any damage immediately.
* Remove sediment from the pool area to ensure adequate runoff storage for the next rain event.
* When contributing drainage area has achieved suitable vegetated cover, remove filter berm and dispose of material properly. Grade disturbed area to design contours and stabilize with seed and mulch.

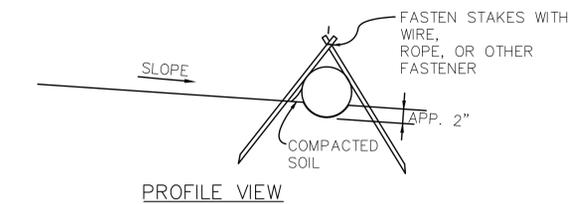
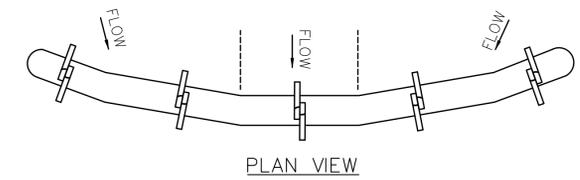
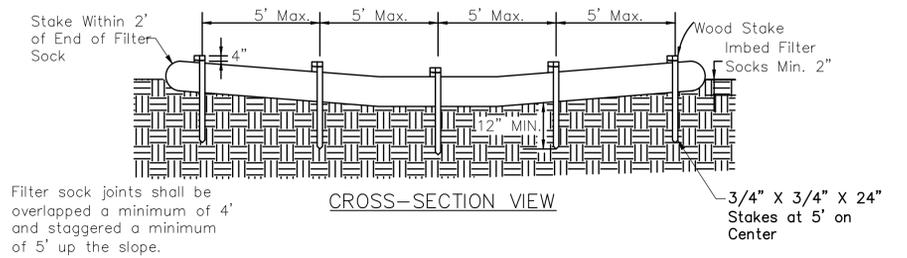
- Installation:**
- Avoid locating on steep slopes or at curves in public roads.
 - Remove all vegetation and other objectionable material from the foundation area. Grade and crown for positive drainage.
 - If slope towards the road exceeds 2%, construct a 6-8 inch high water bar (ridge) with 3:1 side slopes across the foundation area about 15 feet from the entrance to divert runoff away from the road.
 - Install pipe under the pad if needed to maintain proper public road drainage.
 - If wet conditions are anticipated, place geotextile fabric on the graded foundation to improve stability.
 - Place stone to dimensions and grade shown in the erosion/sediment control plan leaving the surface smooth and sloped for drainage.
 - Divert all surface runoff and drainage from the stone pad to a sediment trap or basin.

Maintenance:

- Inspect entrance pad and sediment disposal area weekly and after storm events or heavy use.
- Reshape pad as needed for drainage and runoff control.
- Topdress with clean stone as needed.
- Immediately remove mud and sediment tracked or washed onto public roads by brushing or sweeping. Flushing should only be used if the water is conveyed into a sediment trap or basin.
- Repair any broken road pavement immediately.



CB TEMPORARY CONSTRUCTION ENTRANCE
Not to Scale



FS FILTER SOCK
Not to Scale

Purpose:

Filter Socks are a temporary barrier consisting of a permeable material contained in a permeable fabric or net matrix installed to intercept and reduce velocity of sheet flow and treat sediment-laden run-off from small unvegetated drainage areas.

Materials and Specifications:

Filter Socks shall be either prefabricated rolls or rolled tubes of erosion control blanket. If rolled tubes of erosion control blanket, the tubes shall be assembled as follows:
1. Roll length of erosion control blanket into a tube of minimum 12 in. diameter.
2. Bind roll at each end and every 5 ft. along length of roll with jute-type twine.

Installation:

Install and stake the temporary filter socks in the locations and per the details shown on the cross sections and plans and manufactures recommendations. Rolls shall be equally spaced and installed along a level contour. Turn the ends of the rolls up slope such that the point of contact between the ground and the bottom of the fiber roll end terminates at a higher elevation than the top of the fiber roll at its lowest point. If more than one fiber roll is placed in a row, the socks should be overlapped; not abutted.

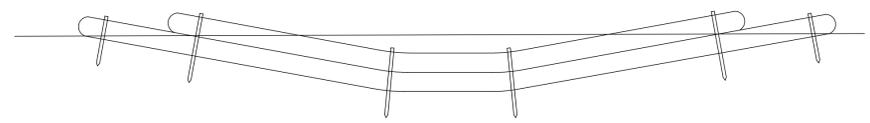
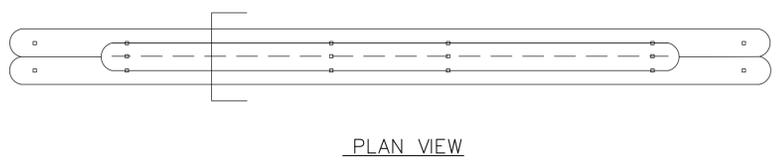
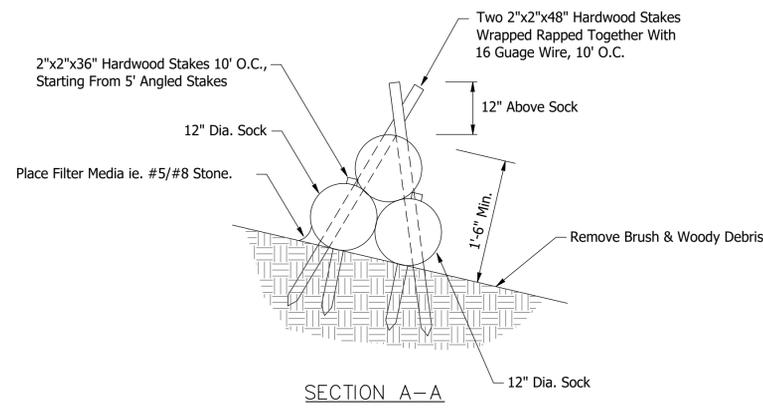
Location:

- * Slope Application
 - Installed on the Contour
 - Five to ten feet from toe of slope (10 feet preferred).
- * Channel/Swale Application
 - Perpendicular to channel flow
 - Less than one acre of drainage
 - Utilize larger product, typically 18 or more inches.

Inspection and Maintenance:

The Contractor shall maintain filter sock in a functional condition at all times and routinely inspect to see if material is functioning properly during storm events. The Contractor shall inspect fiber rolls weekly and within 24 hours of a rainfall event. Repairs to filter socks will be made within 24 hours of failure. The Contractor shall remove sediments collected at the base of the fiber roll when they reach 1/3 of the exposed height of the fiber roll, or as directed by the Engineer.

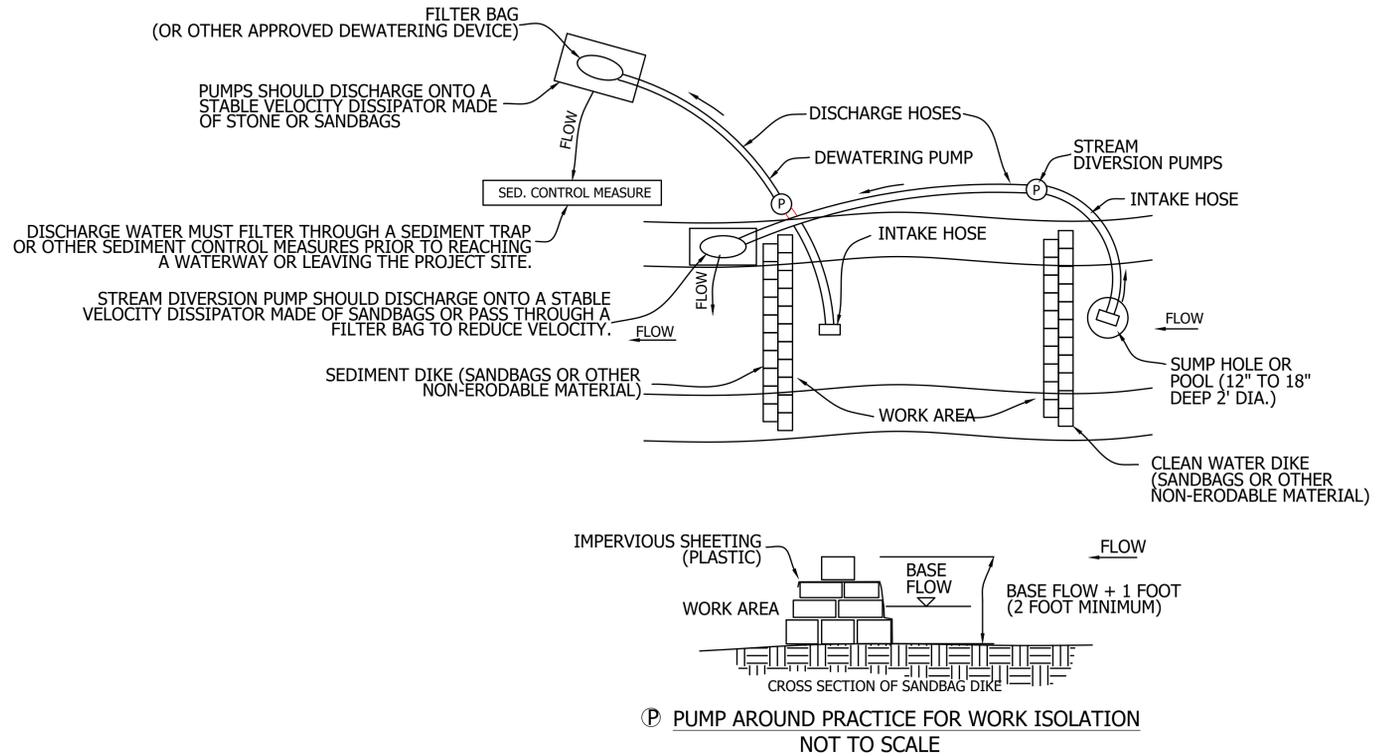
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(FCD) FILTER SOCK CHECK DAM
Not to Scale

Installation:
FCD shall not exceed three socks in height and shall be staked in pyramidal form as shown above. Turn the ends of the rolls up slope such that the point of contact between the ground and the bottom of the fiber roll end terminates at a higher elevation than the top of the fiber roll at its lowest point. If more than one fiber roll is placed in a row, the socks should be overlapped; not abutted.

Inspection and Maintenance:
The Contractor shall maintain filter sock in a functional condition at all times and routinely inspect to see if material is functioning properly during storm events. The Contractor shall inspect fiber rolls weekly and within 24 hours of a rainfall event. Repairs to filter socks will be made within 24 hours of failure. The Contractor shall remove sediments collected at the base of the fiber roll when they reach 1/3 of the exposed height of the fiber roll, or as directed by the Engineer.



(P) PUMP AROUND PRACTICE FOR WORK ISOLATION
NOT TO SCALE

- PUMP AROUND**
- Dewatering of the project area shall be performed using a mechanical pump. A dewatering (filter) bag shall be securely connected to the end of the discharge hose. The suction hose shall be floated as long as possible to prevent the pump from pulling sediment from the bottom of the pooled area.
 - The dewatering bag may be of the single-use or reusable variety and shall be constructed of non-woven, polypropylene geotextile material. Each type and size of dewatering bag can handle varying rates of flow.
 - The bag shall have for following minimum specifications:

Permittivity	Grab Tensile	Weight	Apparent Opening Size
1.4 sec	205 lbs	8 oz/syd	80 US Sieve
 - The dewatering bag shall be placed on a flat surface.
 - Placing the dewatering bag on top of an aggregate base will help to increase flow through the fabric by providing a larger surface area of discharge.
 - Water shall not be pumped from the project area at a rate faster than the manufacturer's maximum recommended flow rate of the dewatering bag.
 - Dewatering bags shall be placed in a location in which runoff will pass through additional sediment control measures prior to entering the storm sewer.
 - Following completion of dewatering, the sediment accumulated within the dewatering bag shall be removed from the bag and placed in an upland area.

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