

MILL CREEK HIGHWALL

SITE NO.

309

CONTRACT NO.

DEL2515208031/E008-342

STATE OF INDIANA

INDIANA DEPARTMENT OF NATURAL RESOURCES

DIVISION OF RECLAMATION

ABANDONED COAL MINE

RESTORATION

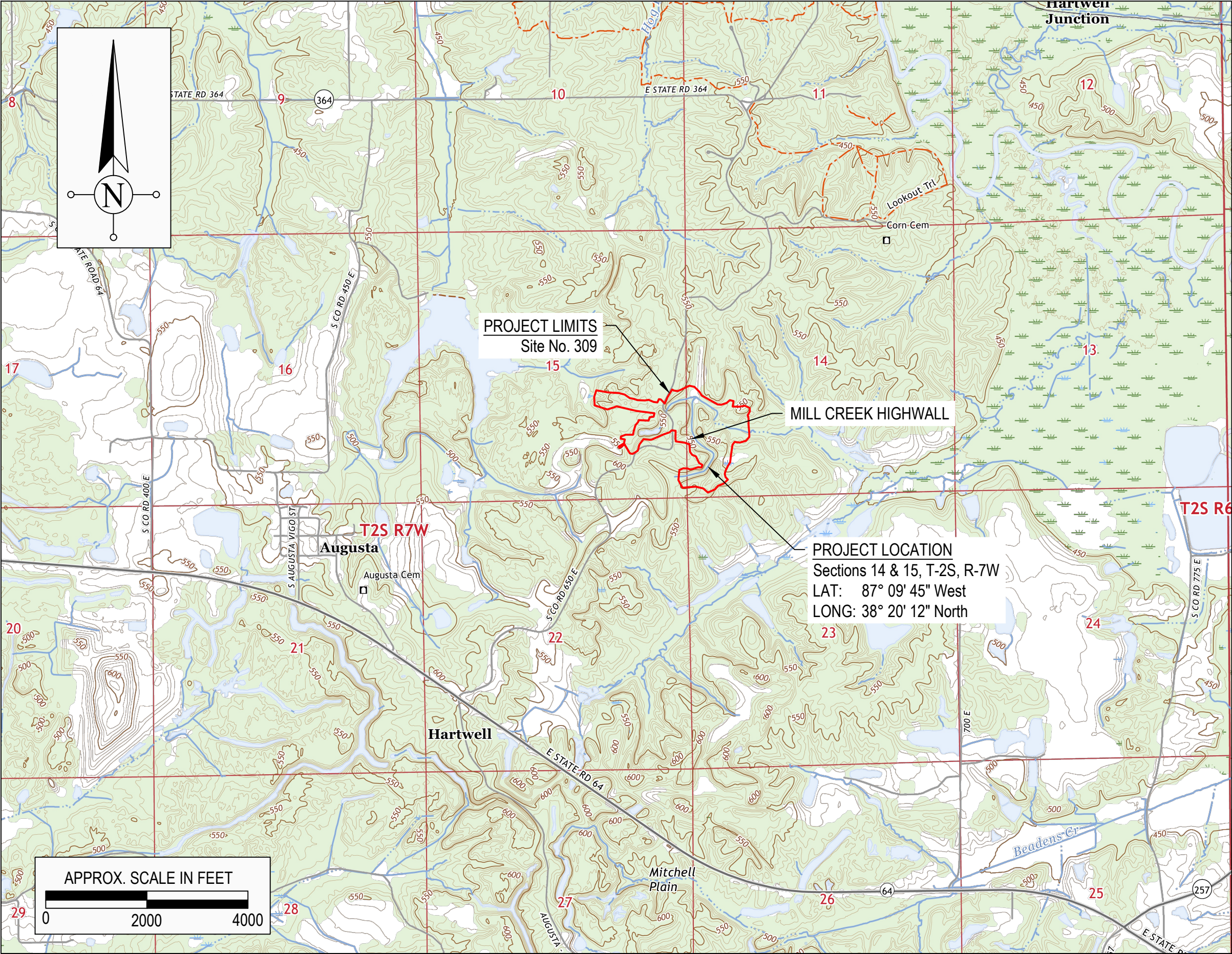
MILL CREEK HIGHWALL

SITE 309

CONTRACT DEL2515208031/E008-342

PIKE COUNTY

Clear and grub, backfill highwalls, construct ponds and wetlands, improve drainage, and revegetate site to enhance wildlife habitat and recreation opportunities.



PROJECT LOCATION MAP
USGS AUGUSTA TOPOGRAPHIC QUADRANGLE (2022)

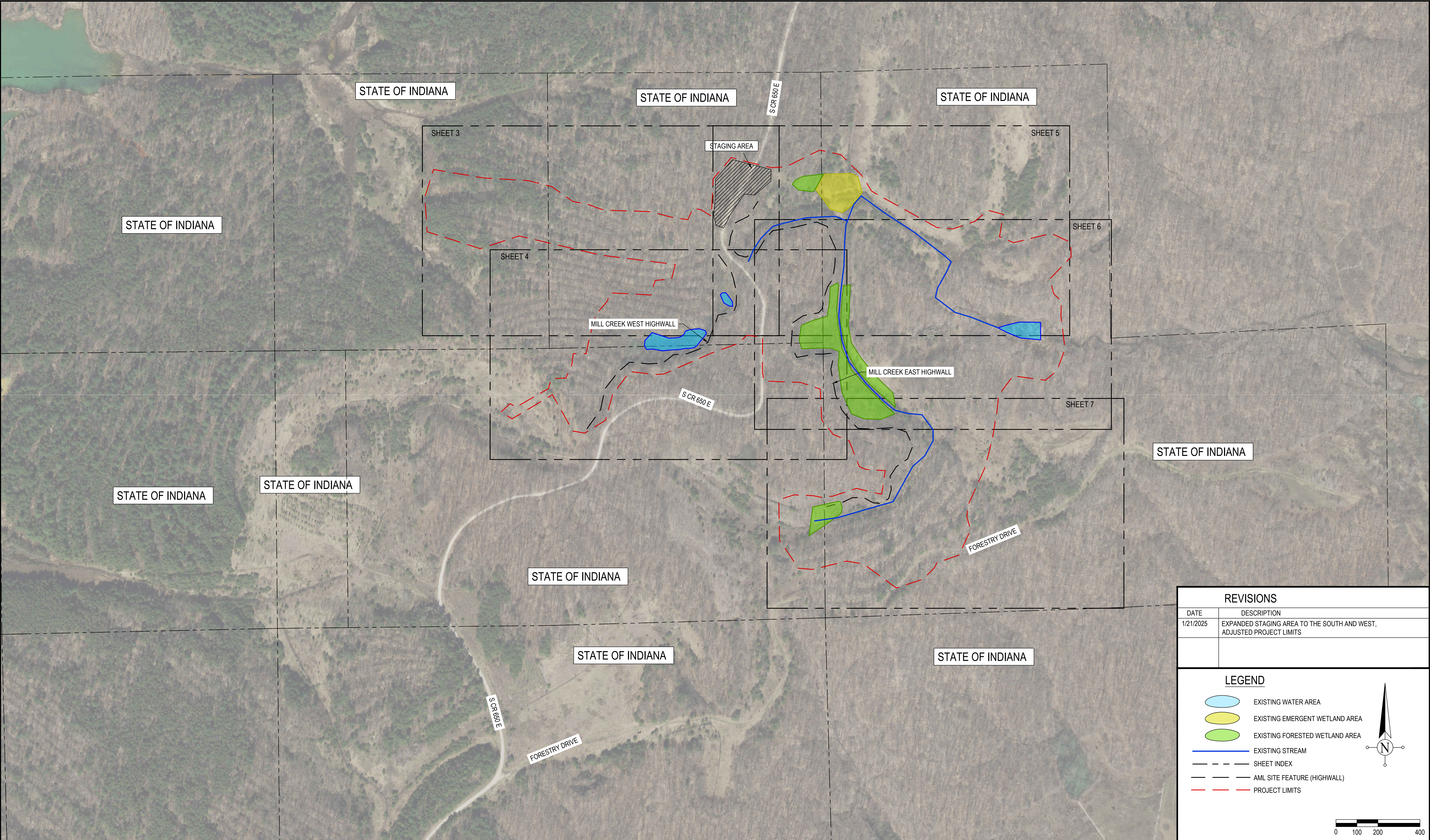
GENERAL NOTES	
2024 AML STANDARD SPECIFICATIONS TO BE USED WITH THESE PLANS	
AN NPDES DISCHARGE PERMIT IS REQUIRED FOR THIS PROJECT	
PLANS DEVELOPED FROM INDIANA MAP 2019 LIDAR TOPO IN NAD 83 INDIANA STATE PLANE WEST, FEET. GROUND SURVEY PERFORMED BY JQOL	
INDEX	
SHEET NO.	SHEET TITLE
1	TITLE, INDEX & LOCATION MAP
2	SITE MAP
3-4	GRADING PLAN - WEST SIDE
5-7	GRADING PLAN - EAST SIDE
8-10	SECTIONS
11	REVEGETATION PLAN
12-13	DETAILS
14	SITE PLAN - WETLAND SUBSTRATE MIXING & DISPOSAL AREAS
UTILITIES	
NO UTILITIES ARE KNOWN TO EXIST NEAR THE PROJECT SITE AND NONE ARE EXPECTED TO BE AFFECTED BY THE PROPOSED CONSTRUCTION. HOWEVER, CONTRACTOR SHALL CALL IUPPS BEFORE ANY DIGGING.	
CALL BEFORE YOU DIG. INDIANA UNDERGROUND PLAN PROTECTION SERVICE (IUPPS) 1-800-382-5544 OR 811 FROM YOUR MOBILE PHONE.	

REVISIONS	
DATE	DESCRIPTION
1/21/2025	ADJUSTED PROJECT LIMITS, REVISED RISER PIPE & UNDERDRAIN DETAILS, ADDED BAT HOUSE & RAPTOR POLE DETAILS, EXTENDED STAGING AREA WEST AND SOUTH, ADDED TWO LOW WATER CROSSINGS ON EAST SIDE OF PROJECT, ADDED TEMPORARY SEED MIX AND ADDED NEW SHEET 14 FOR SUBSTRATE PLANS.
SCALE	SHEET
AS NOTED	1 of 14
PROJECT	SITE
E008-342	309

Patriot Engineering &
Environmental, Inc.



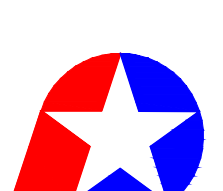


PLANS PREPARED BY:	PATRIOT ENGINEERING & ENVIRONMENTAL, INC.	317-576-8058 PHONE NUMBER
CERTIFIED BY:		1/21/2025 DATE
APPROVED FOR LETTING:	DIVISION OF RECLAMATION	DATE

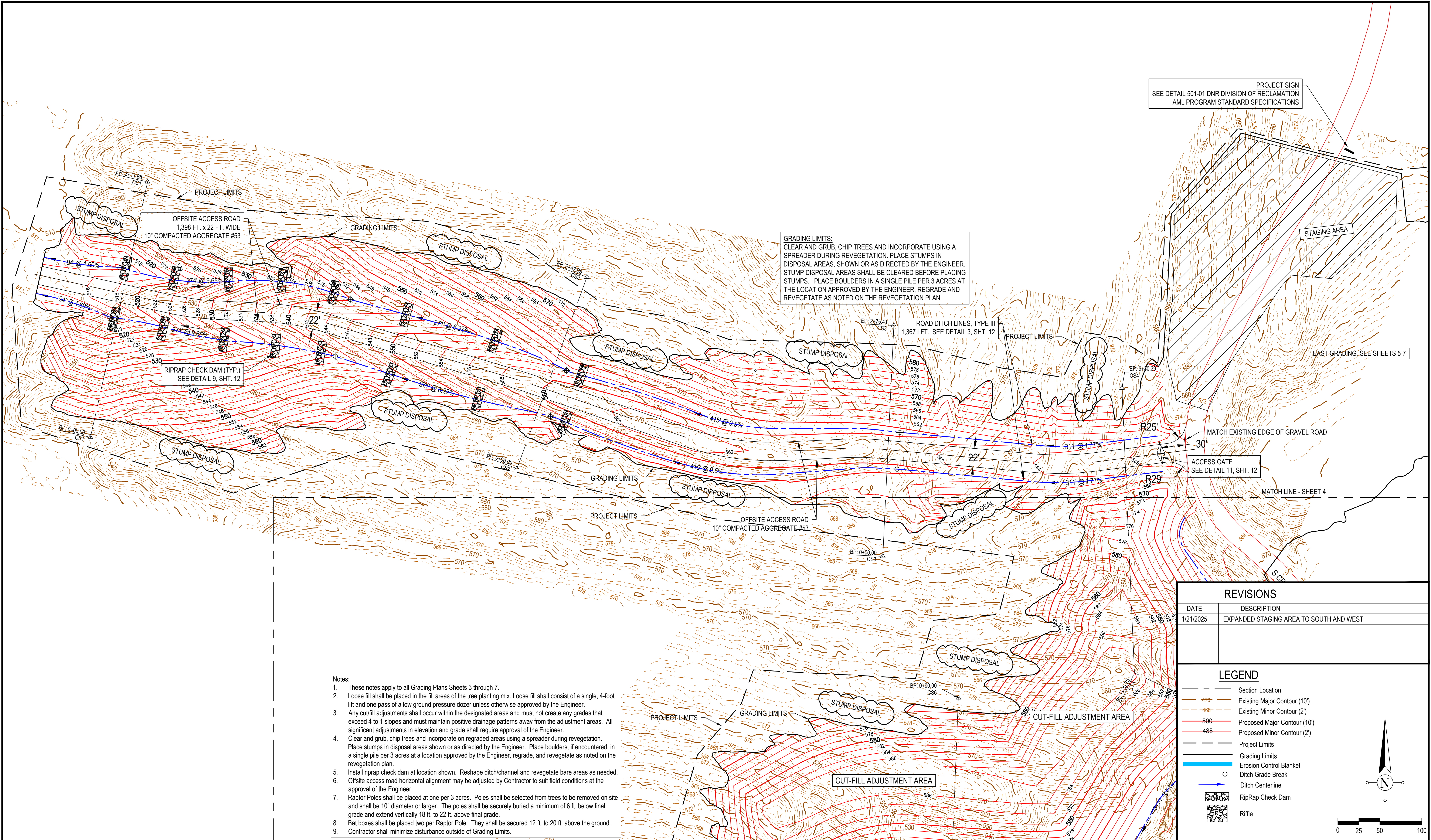


REVISIONS	
DATE	DESCRIPTION
1/21/2025	EXPANDED STAGING AREA TO THE SOUTH AND WEST, ADJUSTED PROJECT LIMITS

LEGEND

- EXISTING WATER AREA
- EXISTING EMERGENT WETLAND AREA
- EXISTING FORESTED WETLAND AREA
- EXISTING STREAM
- SHEET INDEX
- AML SITE FEATURE (HIGHWALL)
- PROJECT LIMITS

 Patriot Engineering & Environmental, Inc.		RECOMMENDED FOR APPROVAL:  1/21/2025 DATE		DATE MADE 12/11/2024	Site Map	SCALE AS NOTED	SHEET 2 of 14
		DESIGNED BY K.S.B.	DRAWN BY J.D.D.	DATE REVISED		PROJECT E008-342	SITE 309
		STATE OF INDIANA DEPARTMENT OF NATURAL RESOURCES DIVISION OF RECLAMATION					



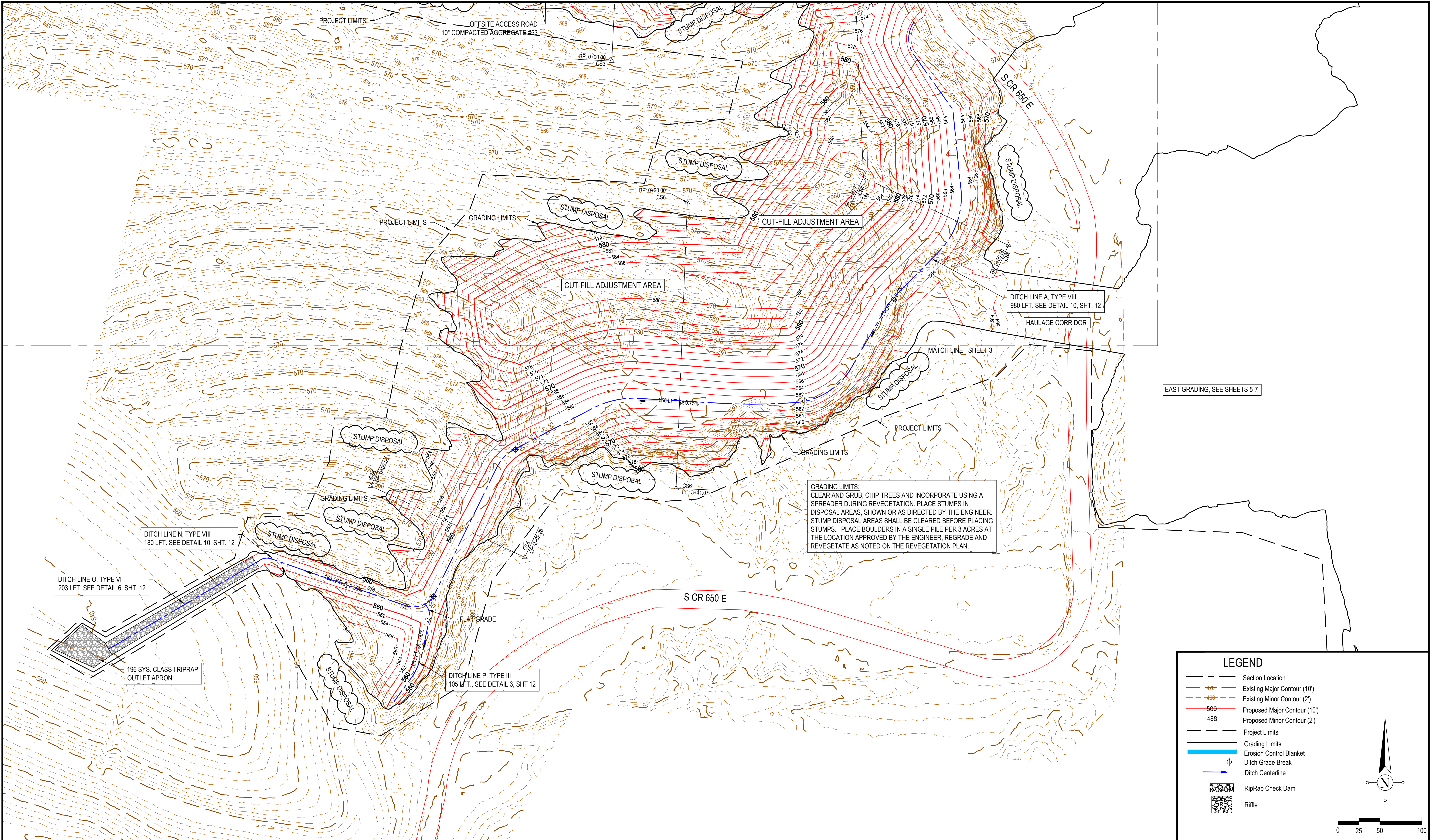
- Notes:
- These notes apply to all Grading Plans Sheets 3 through 7.
 - Loose fill shall be placed in the fill areas of the tree planting mix. Loose fill shall consist of a single, 4-foot lift and one pass of a low ground pressure dozer unless otherwise approved by the Engineer.
 - Any cut/fill adjustments shall occur within the designated areas and must not create any grades that exceed 4 to 1 slopes and must maintain positive drainage patterns away from the adjustment areas. All significant adjustments in elevation and grade shall require approval of the Engineer.
 - Clear and grub, chip trees and incorporate on regraded areas using a spreader during revegetation. Place stumps in disposal areas shown or as directed by the Engineer. Place boulders, if encountered, in a single pile per 3 acres at a location approved by the Engineer, regrade, and revegetate as noted on the revegetation plan.
 - Install riprap check dam at location shown. Reshape ditch/channel and revegetate bare areas as needed. Offsite access road horizontal alignment may be adjusted by Contractor to suit field conditions at the approval of the Engineer.
 - Raptor Poles shall be placed at one per 3 acres. Poles shall be selected from trees to be removed on site and shall be 10" diameter or larger. The poles shall be securely buried a minimum of 6 ft. below final grade and extend vertically 18 ft. to 22 ft. above final grade.
 - Bat boxes shall be placed two per Raptor Pole. They shall be secured 12 ft. to 20 ft. above the ground.
 - Contractor shall minimize disturbance outside of Grading Limits.

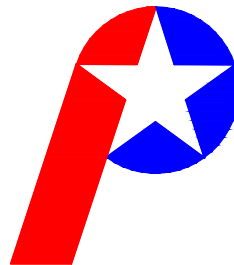


REVISIONS	
DATE	DESCRIPTION
1/21/2025	EXPANDED STAGING AREA TO SOUTH AND WEST

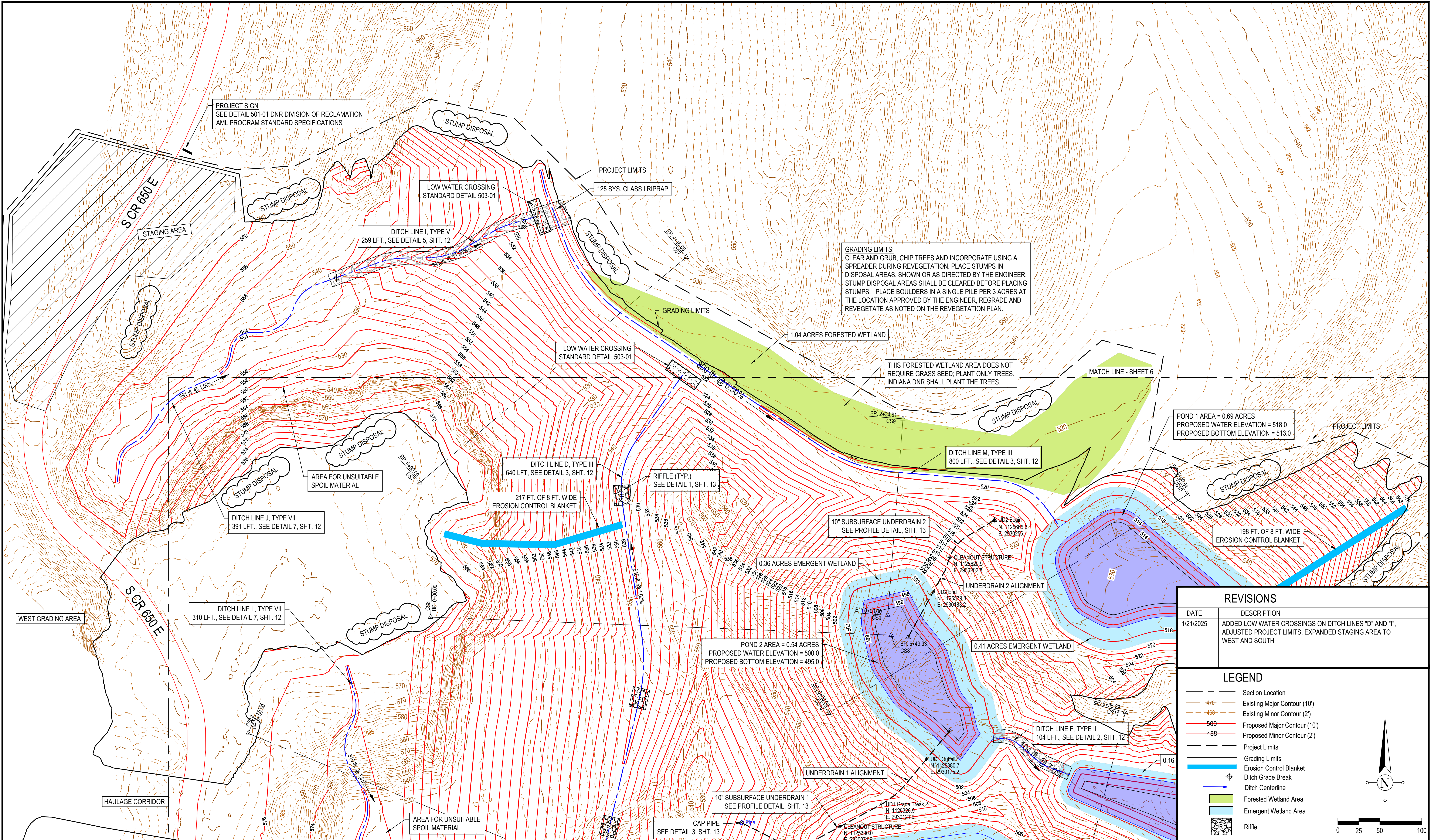
LEGEND

- Section Location
- Existing Major Contour (10')
- Existing Minor Contour (2')
- Proposed Major Contour (10')
- Proposed Minor Contour (2')
- Project Limits
- Grading Limits
- Erosion Control Blanket
- Ditch Grade Break
- Ditch Centerline
- RipRap Check Dam
- Riffle

0 25 50 100



 Patriot Engineering & Environmental, Inc.		RECOMMENDED FOR APPROVAL:  1/21/2025 DATE		DATE MADE 12/11/2024	Grading Plan - West Side STATE OF INDIANA DEPARTMENT OF NATURAL RESOURCES DIVISION OF RECLAMATION	SCALE AS NOTED	SHEET 4 of 14
		DESIGNED BY K.S.B.	DRAWN BY J.D.D.	DATE REVISED		PROJECT E008-342	SITE 309



REVISIONS	
DATE	DESCRIPTION
1/21/2025	ADDED LOW WATER CROSSINGS ON DITCH LINES "D" AND "I", ADJUSTED PROJECT LIMITS, EXPANDED STAGING AREA TO WEST AND SOUTH

LEGEND

Section Location

Existing Major Contour (10')

Existing Minor Contour (2')

Proposed Major Contour (10')

Proposed Minor Contour (2')

Project Limits

Grading Limits

Erosion Control Blanket

Ditch Grade Break

Ditch Centerline

Forested Wetland Area

Emergent Wetland Area

Riffle

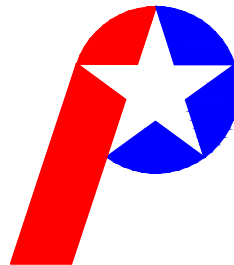


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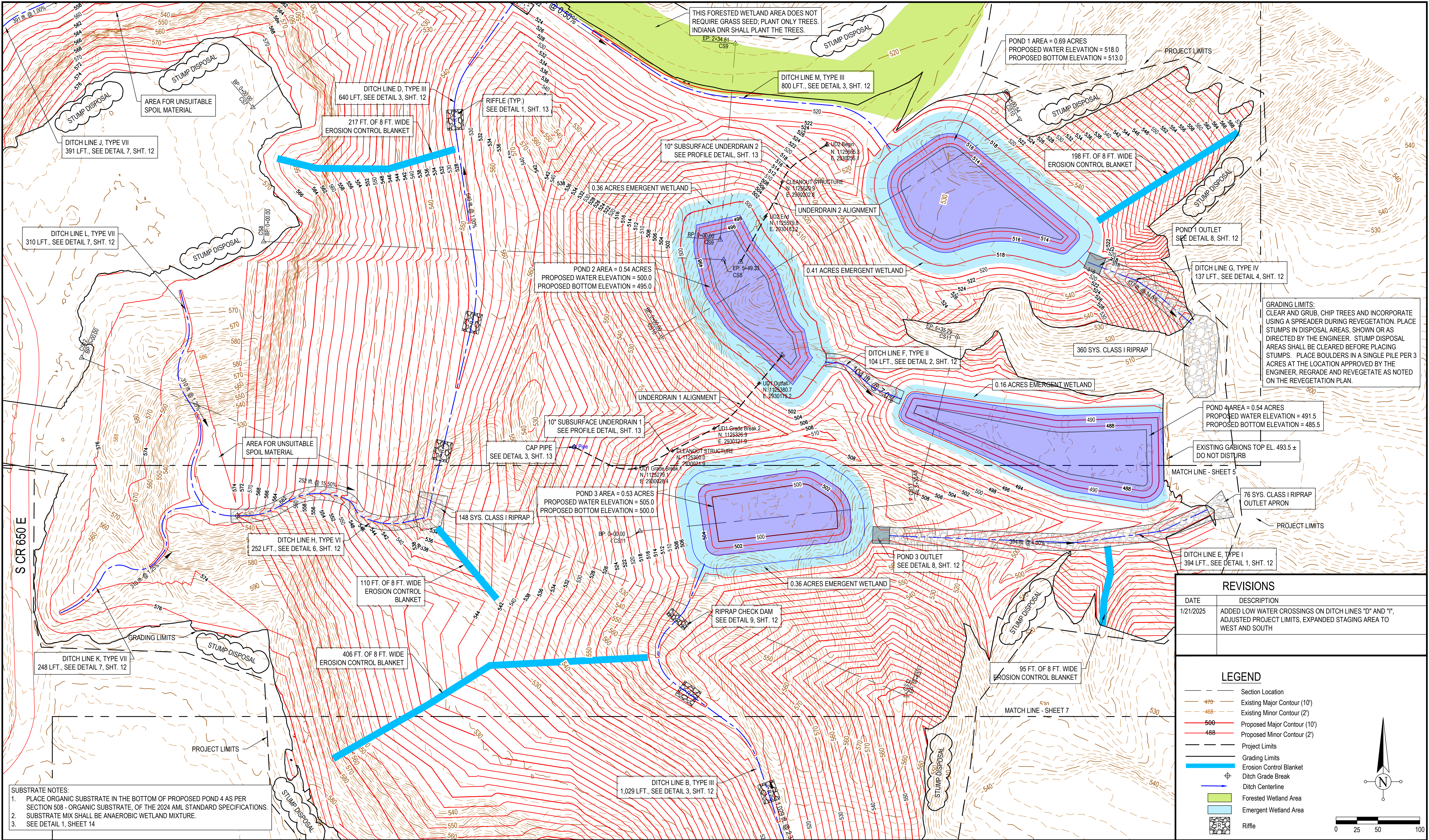
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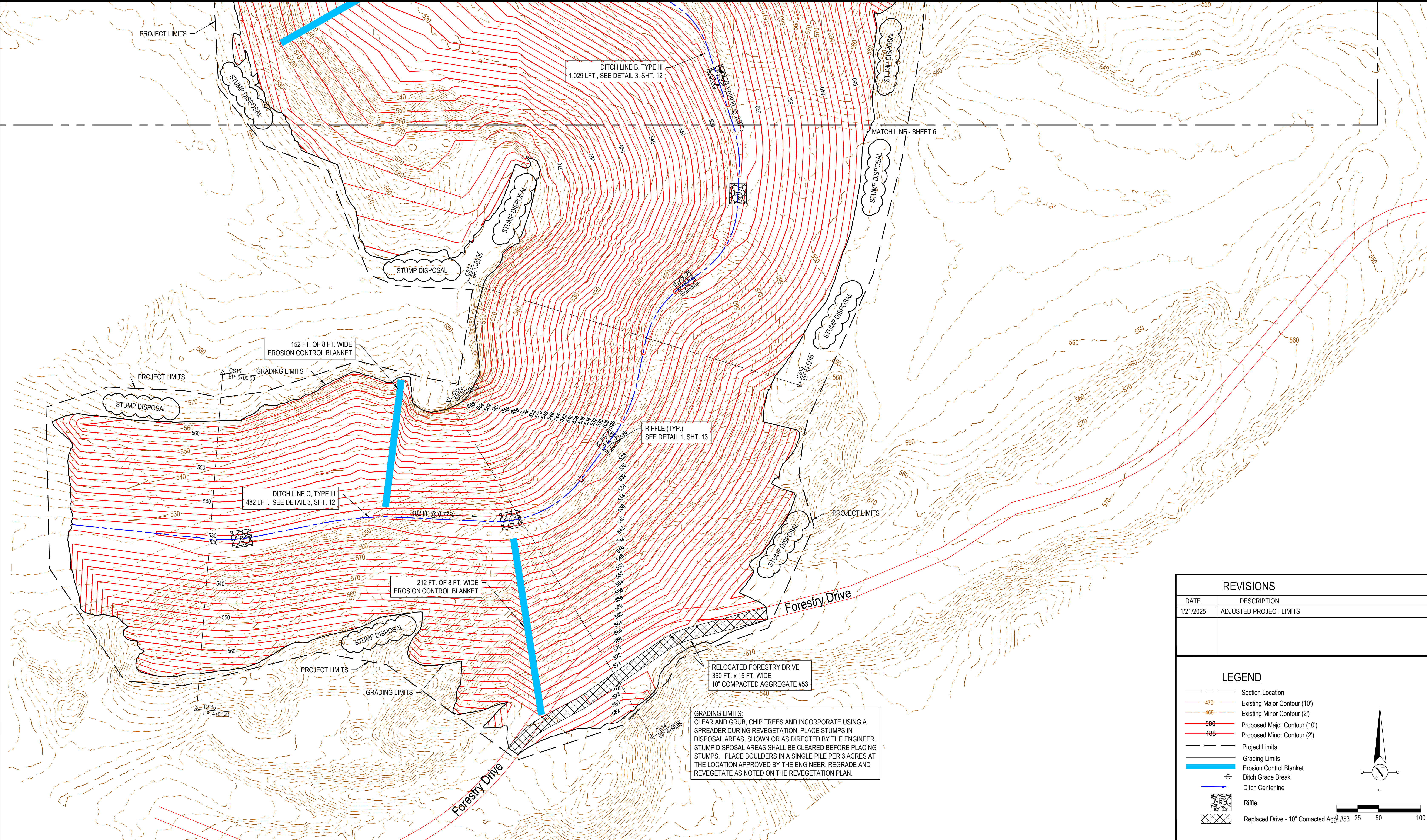
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 <div>Patriot Engineering & Environmental, Inc.</div>		RECOMMENDED FOR APPROVAL: 	1/21/2025 DATE	DATE MADE 12/11/2024	Grading Plan - East Side STATE OF INDIANA DEPARTMENT OF NATURAL RESOURCES DIVISION OF RECLAMATION	SCALE AS NOTED	SHEET 5 of 14
		DESIGNED BY K.S.B.	DRAWN BY J.D.D.	DATE REVISED		PROJECT E008-342	SITE 309

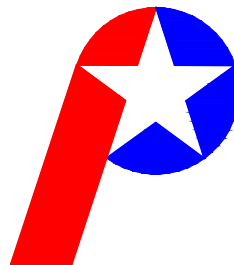




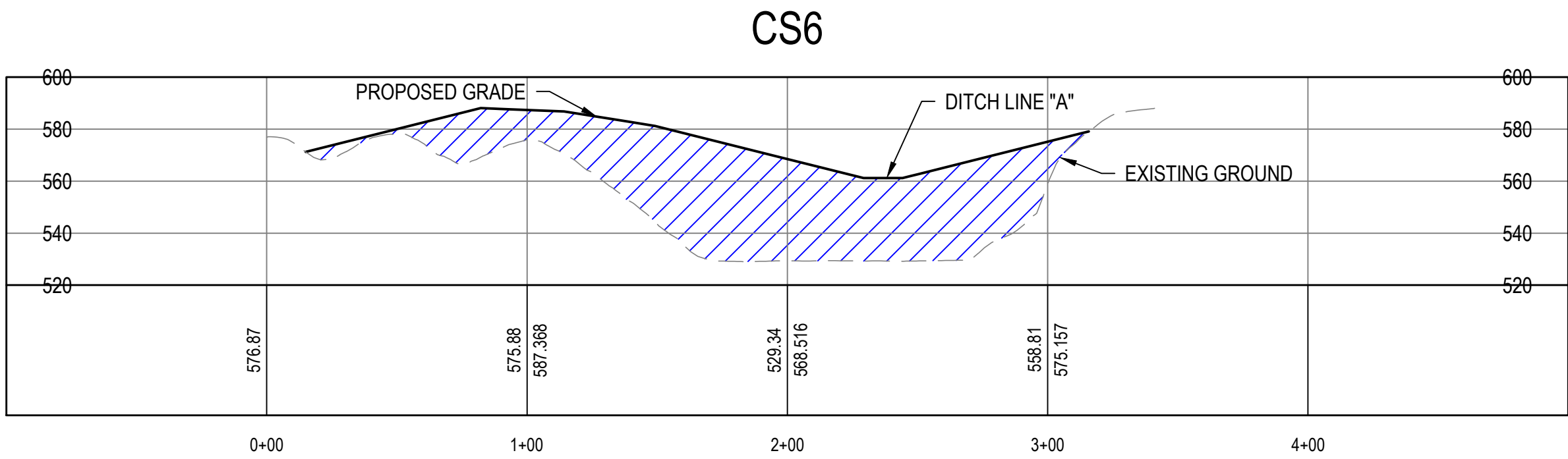
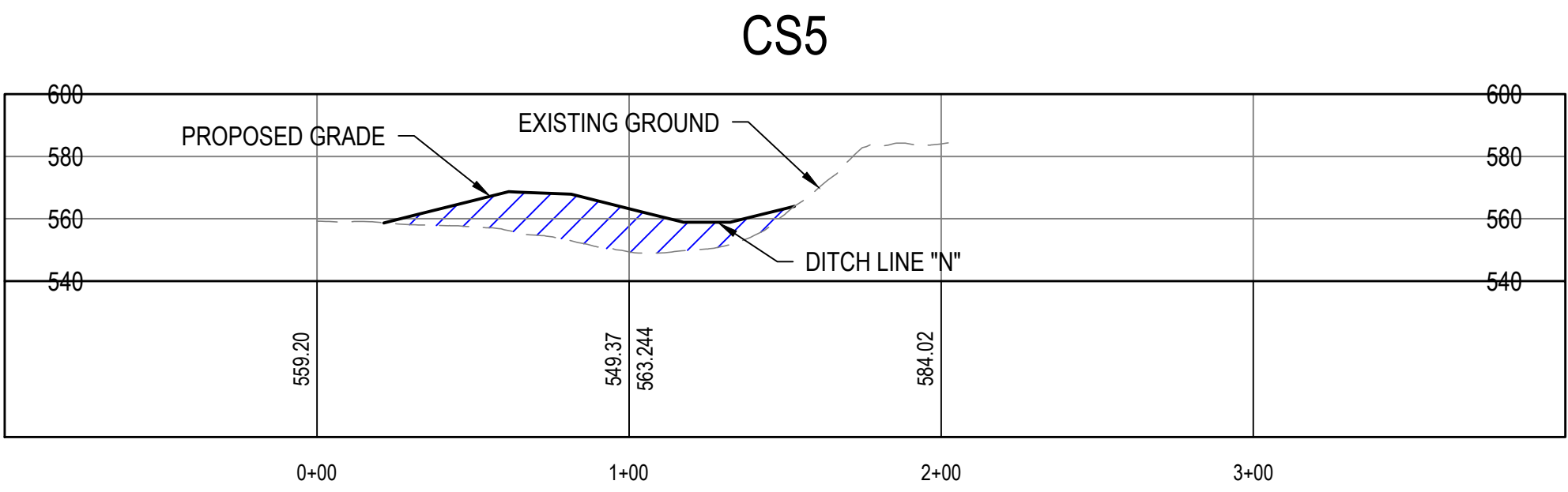
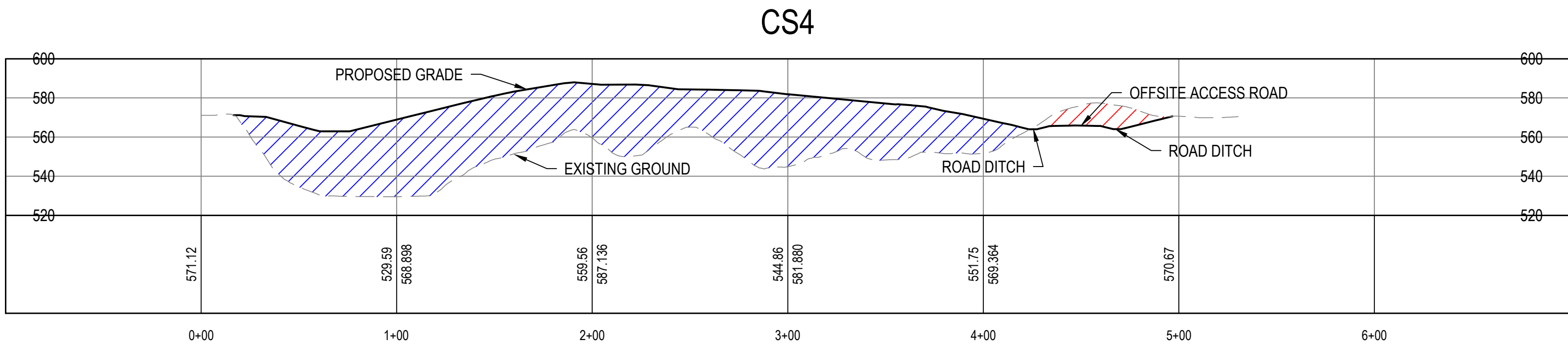
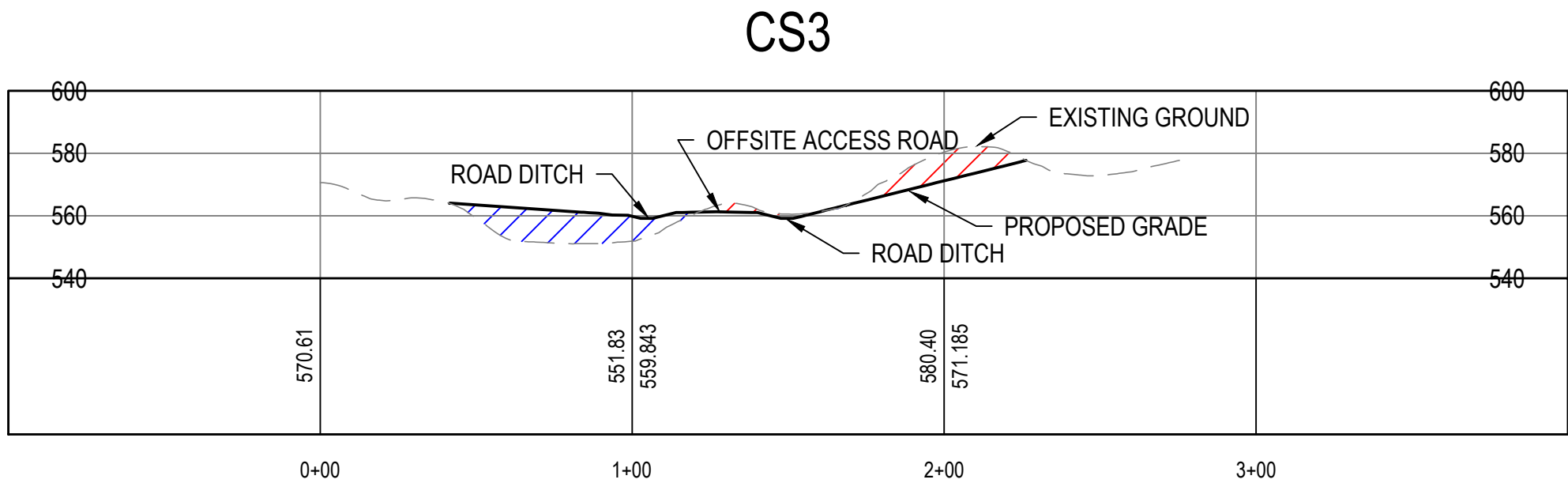
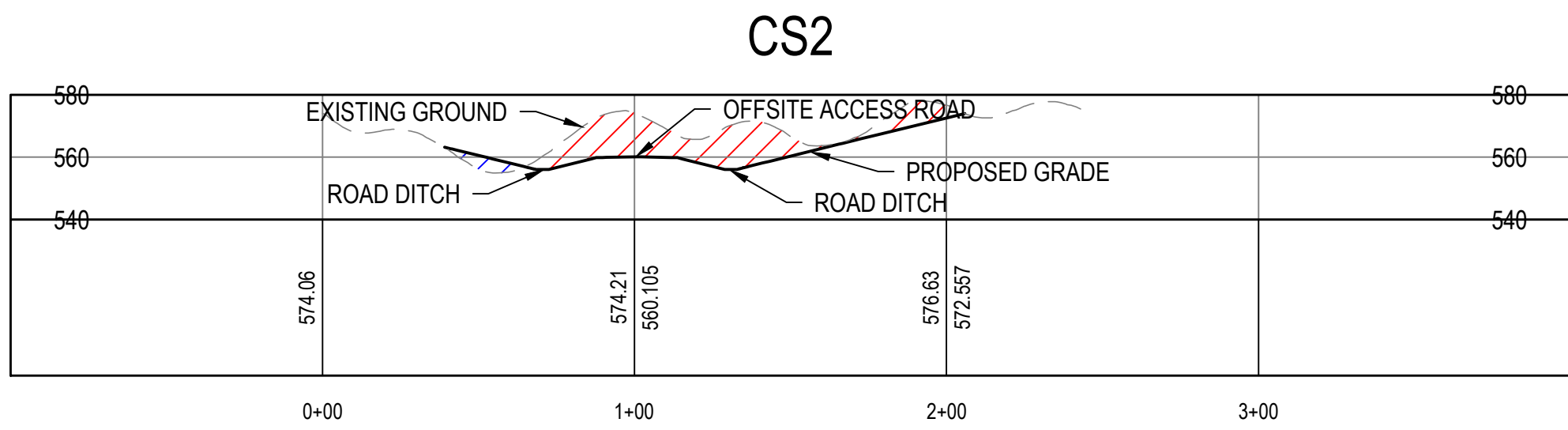
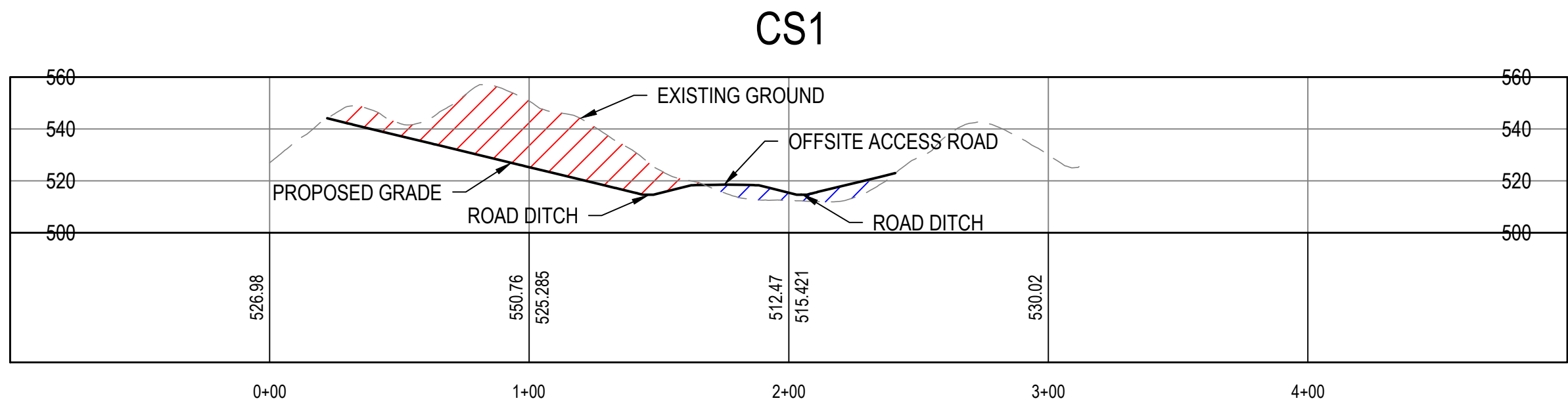


REVISIONS	
DATE	DESCRIPTION
1/21/2025	ADJUSTED PROJECT LIMITS

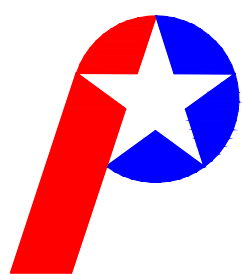
LEGEND

- Section Location
- Existing Major Contour (10')
- Existing Minor Contour (2')
- Proposed Major Contour (10')
- Proposed Minor Contour (2')
- Project Limits
- Grading Limits
- Erosion Control Blanket
- Ditch Grade Break
- Ditch Centerline
- Riffle
- Replaced Drive - 10" Compacted Agg. #53

 <div>Patriot Engineering & Environmental, Inc.</div>		RECOMMENDED FOR APPROVAL:  1/21/2025 DATE	DATE MADE 12/11/2024	Grading Plan - East Side STATE OF INDIANA DEPARTMENT OF NATURAL RESOURCES DIVISION OF RECLAMATION	SCALE AS NOTED	SHEET 7 of 14
		DESIGNED BY K.S.B.	DRAWN BY J.D.D.	DATE REVISED	PROJECT E008-342	SITE 309



LEGEND
CUT AREA
FILL AREA



Patriot Engineering &
Environmental, Inc.



RECOMMENDED
FOR APPROVAL:

Kenn Board

1/21/2025
DATE

DESIGNED BY
K.S.B.

DRAWN BY
J.D.D.

DATE MADE
12/11/2024

DATE REVISED

Sections

STATE OF INDIANA
DEPARTMENT OF NATURAL RESOURCES
DIVISION OF RECLAMATION

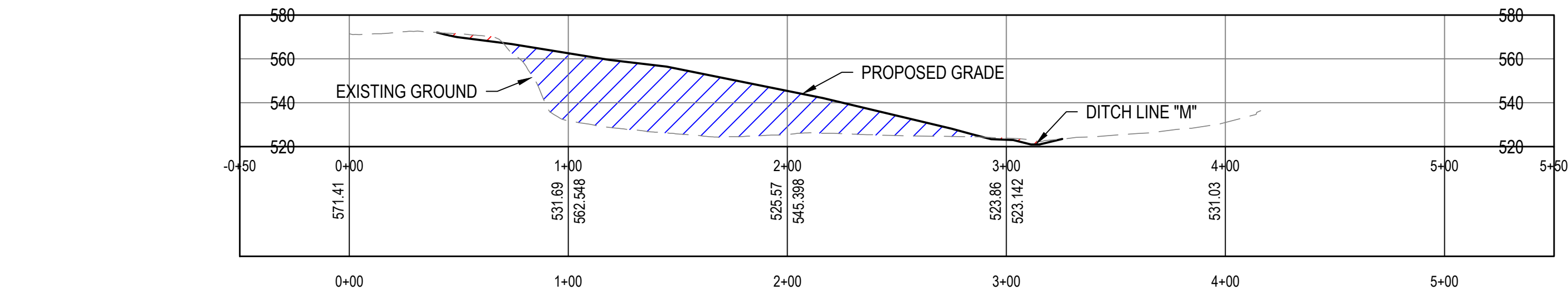
SCALE
AS NOTED

PROJECT
E008-342

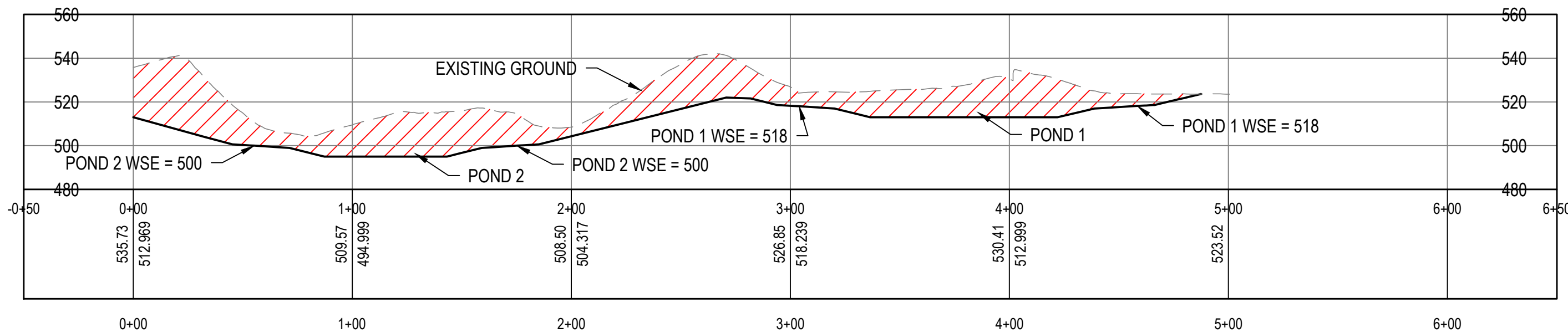
SHEET
8 of 14

SITE
309

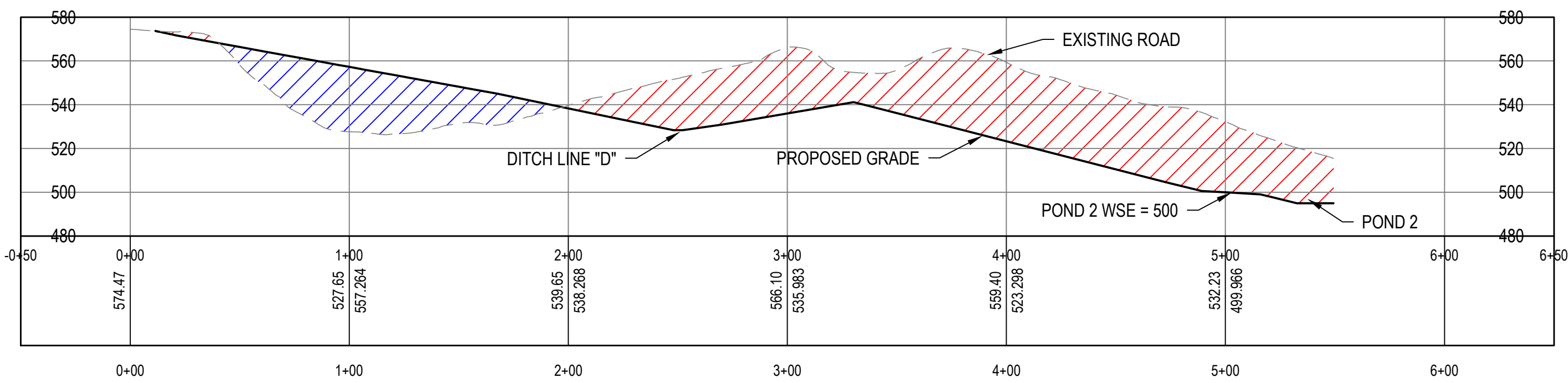
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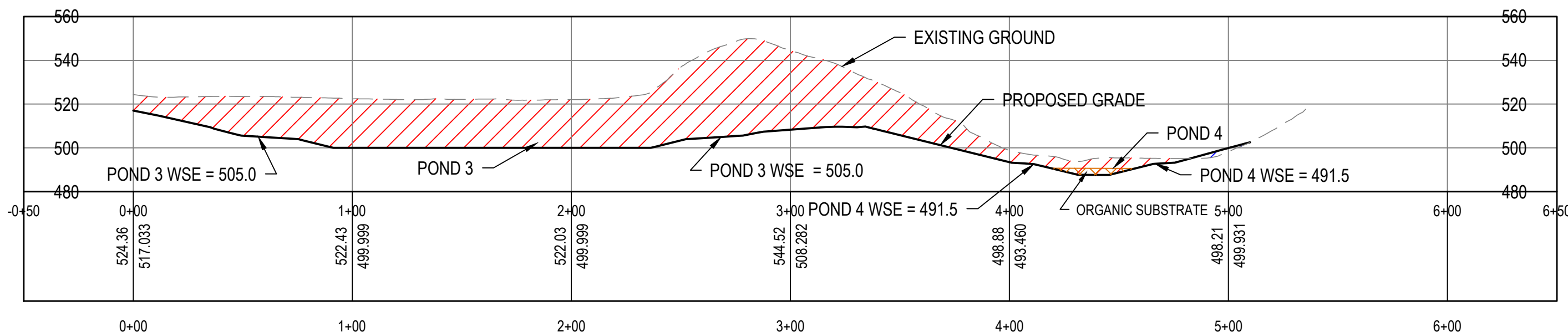
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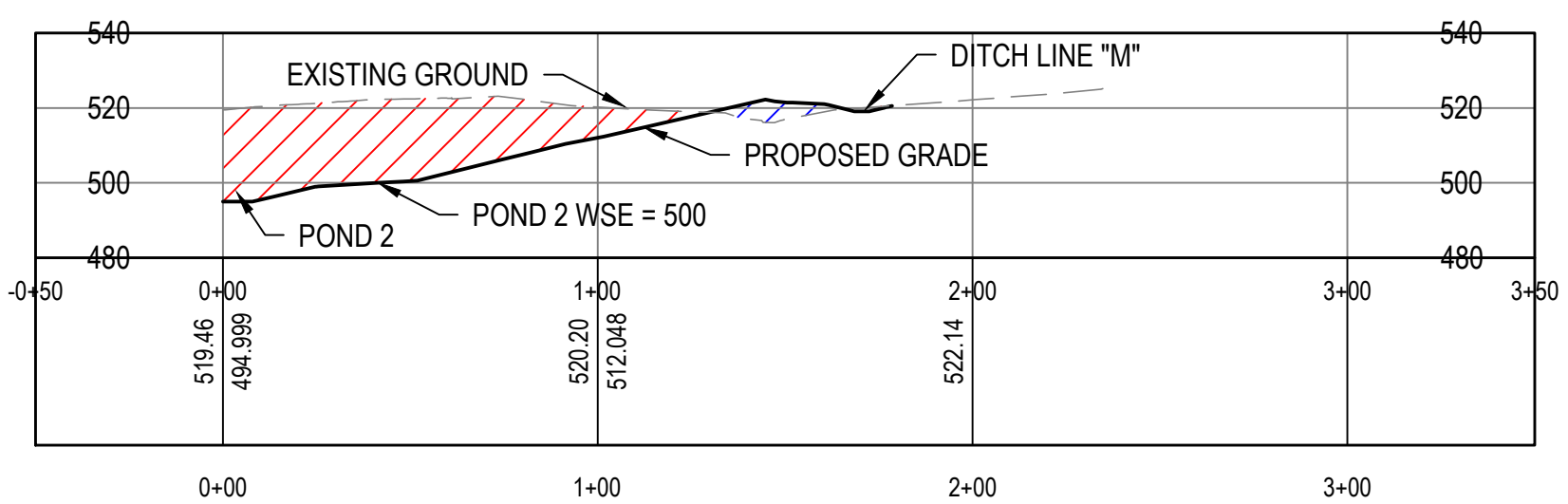
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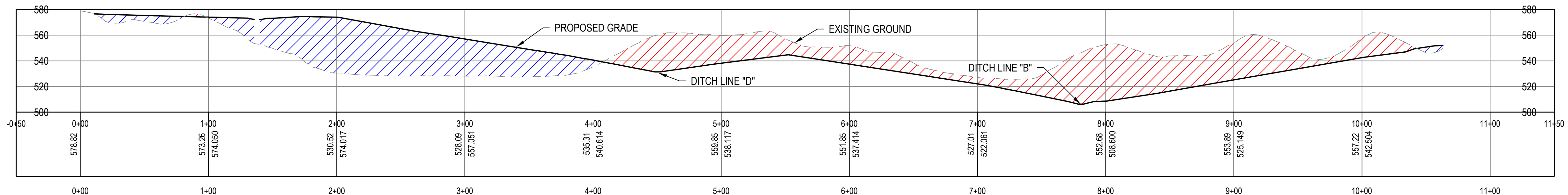
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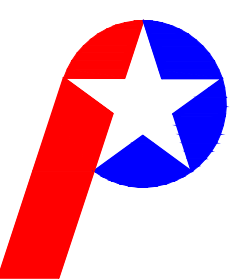
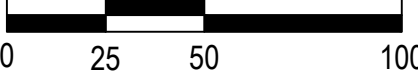
CS9



CS12



LEGEND
CUT AREA
FILL AREA



Patriot Engineering &
Environmental, Inc.



RECOMMENDED
FOR APPROVAL: *Kenneth Boar* 1/21/2025
DATE

DESIGNED BY
K.S.B.

DRAWN BY
J.D.D.

DATE MADE
12/11/2024

DATE REVISED

Sections

STATE OF INDIANA
DEPARTMENT OF NATURAL RESOURCES
DIVISION OF RECLAMATION

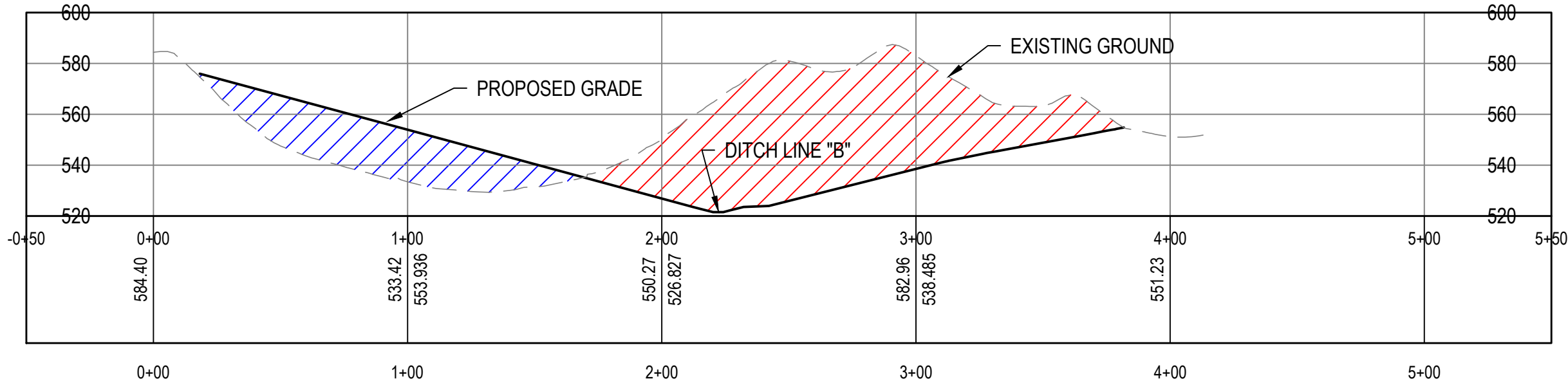
SCALE
AS NOTED

PROJECT
E008-342

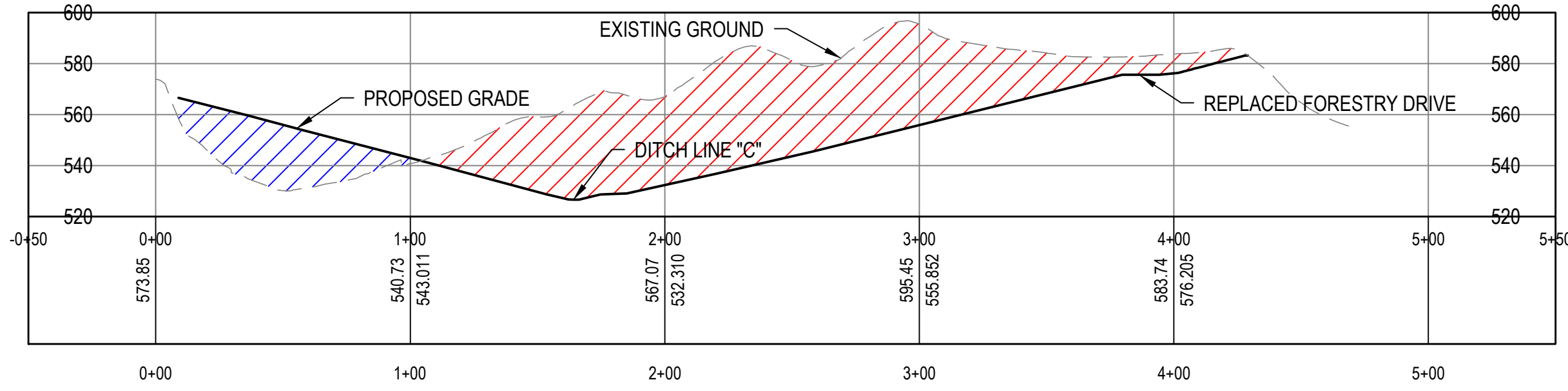
SHEET
9 of 14

SITE
309

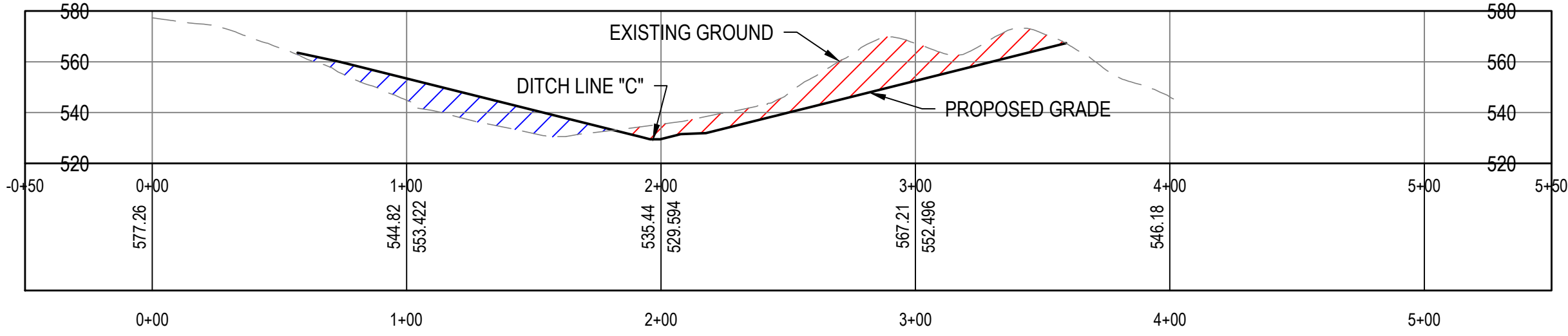
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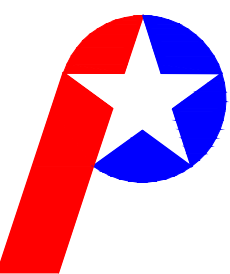
CS14



CS15



LEGEND
CUT AREA
FILL AREA



Patriot Engineering &
Environmental, Inc.



RECOMMENDED
FOR APPROVAL:

Kenn Boser

1/21/2025
DATE

DESIGNED BY
K.S.B.

DRAWN BY
J.D.D.

DATE MADE
12/11/2024

DATE REVISED

Sections

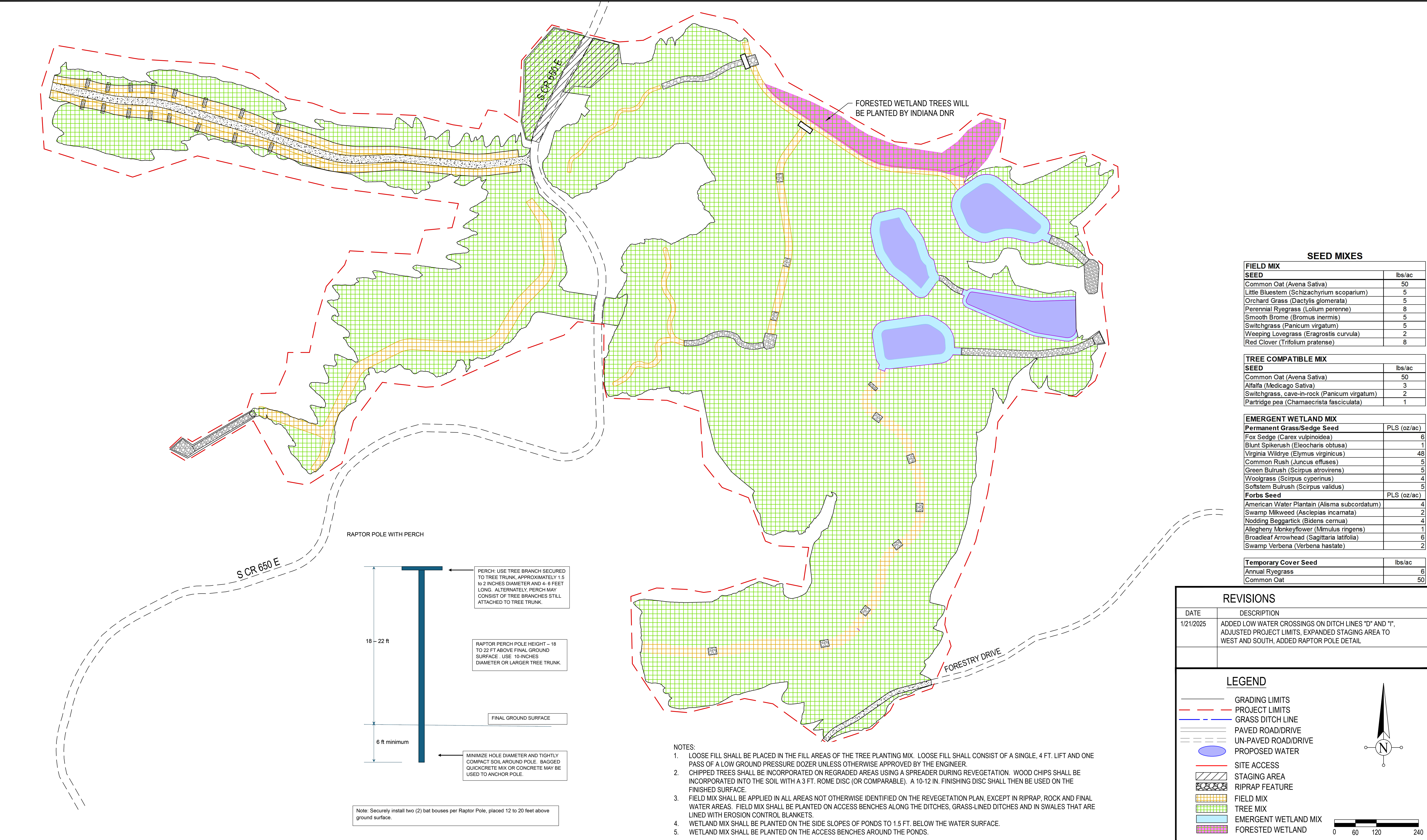
STATE OF INDIANA
DEPARTMENT OF NATURAL RESOURCES
DIVISION OF RECLAMATION

SCALE
AS NOTED

PROJECT
E008-342

SHEET
10 of 14

SITE
309



RECOMMENDED FOR APPROVAL:

Kenn Boser

1/21/2025
DATE

DESIGNED BY
K.S.B.

DRAWN BY
J.D.D.

DATE MADE
12/11/2024

DATE REVISED

Revegetation Plan
STATE OF INDIANA
DEPARTMENT OF NATURAL RESOURCES
DIVISION OF RECLAMATION

SCALE

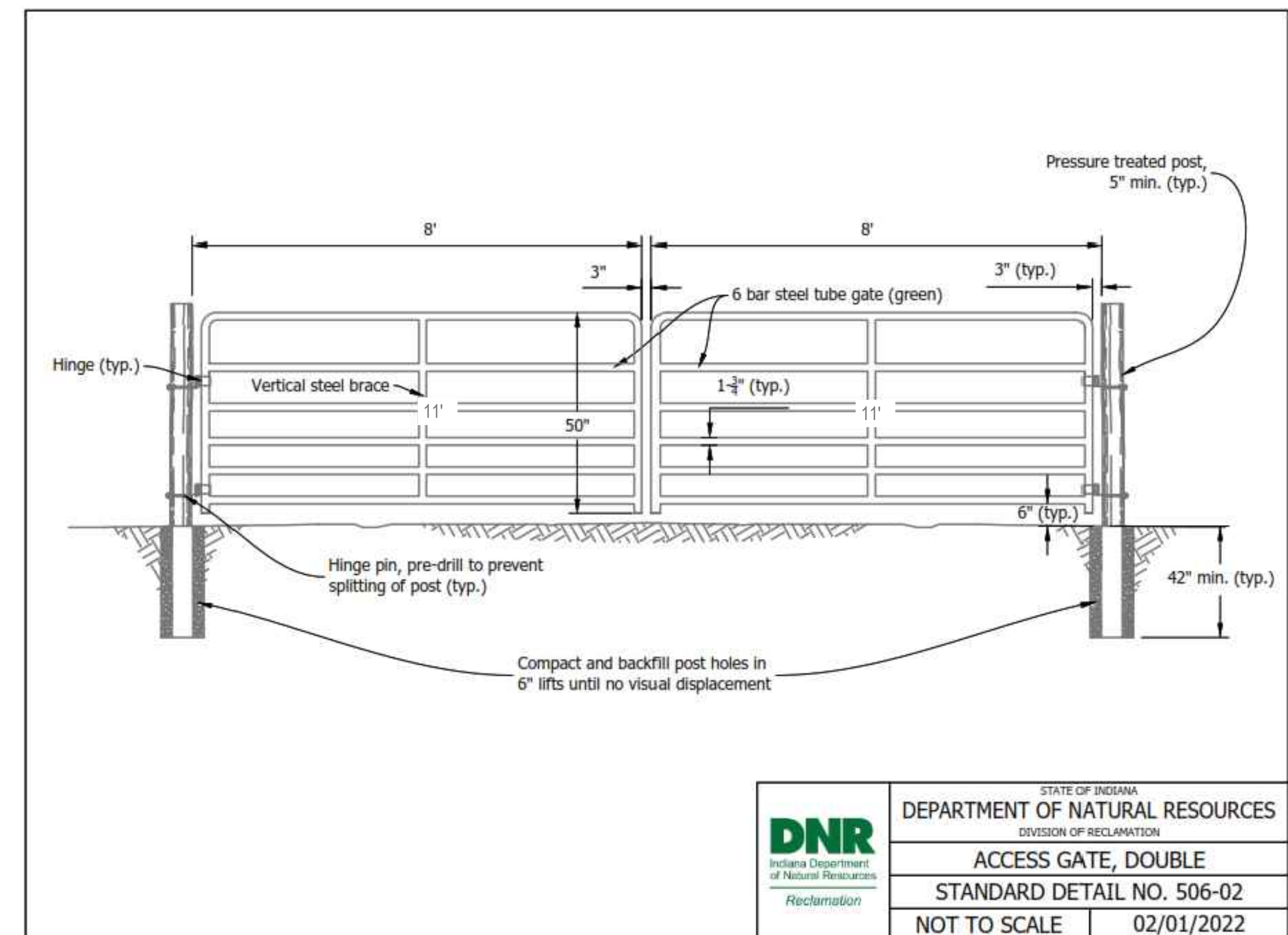
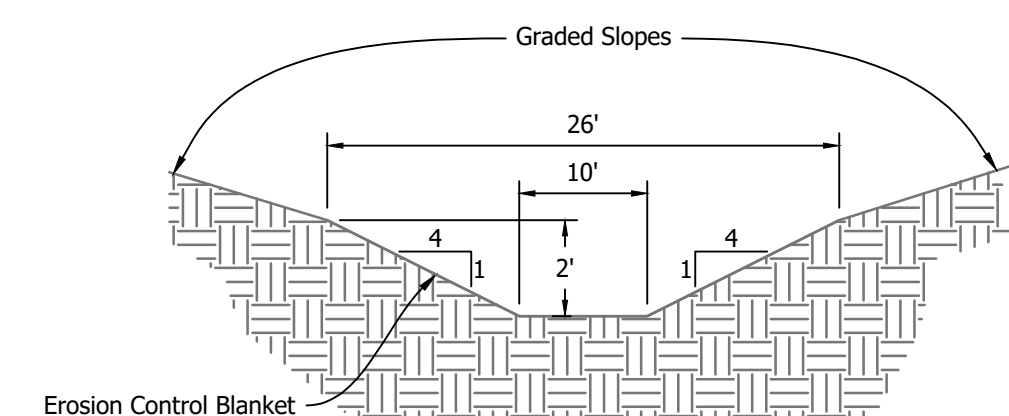
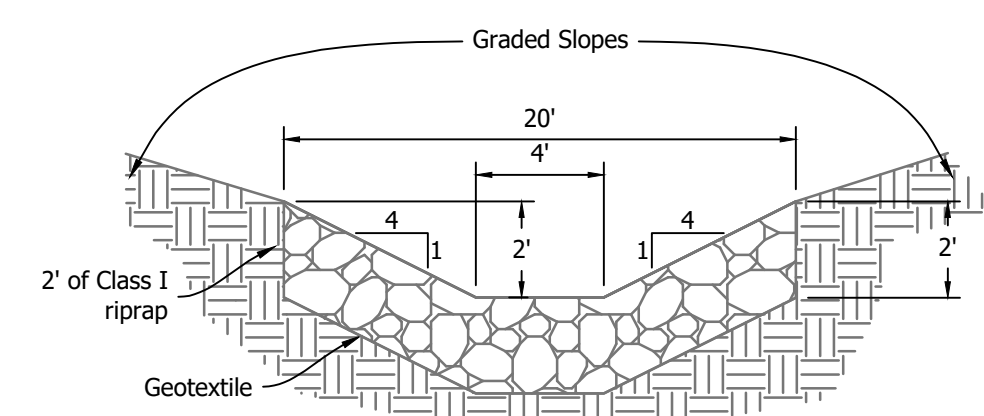
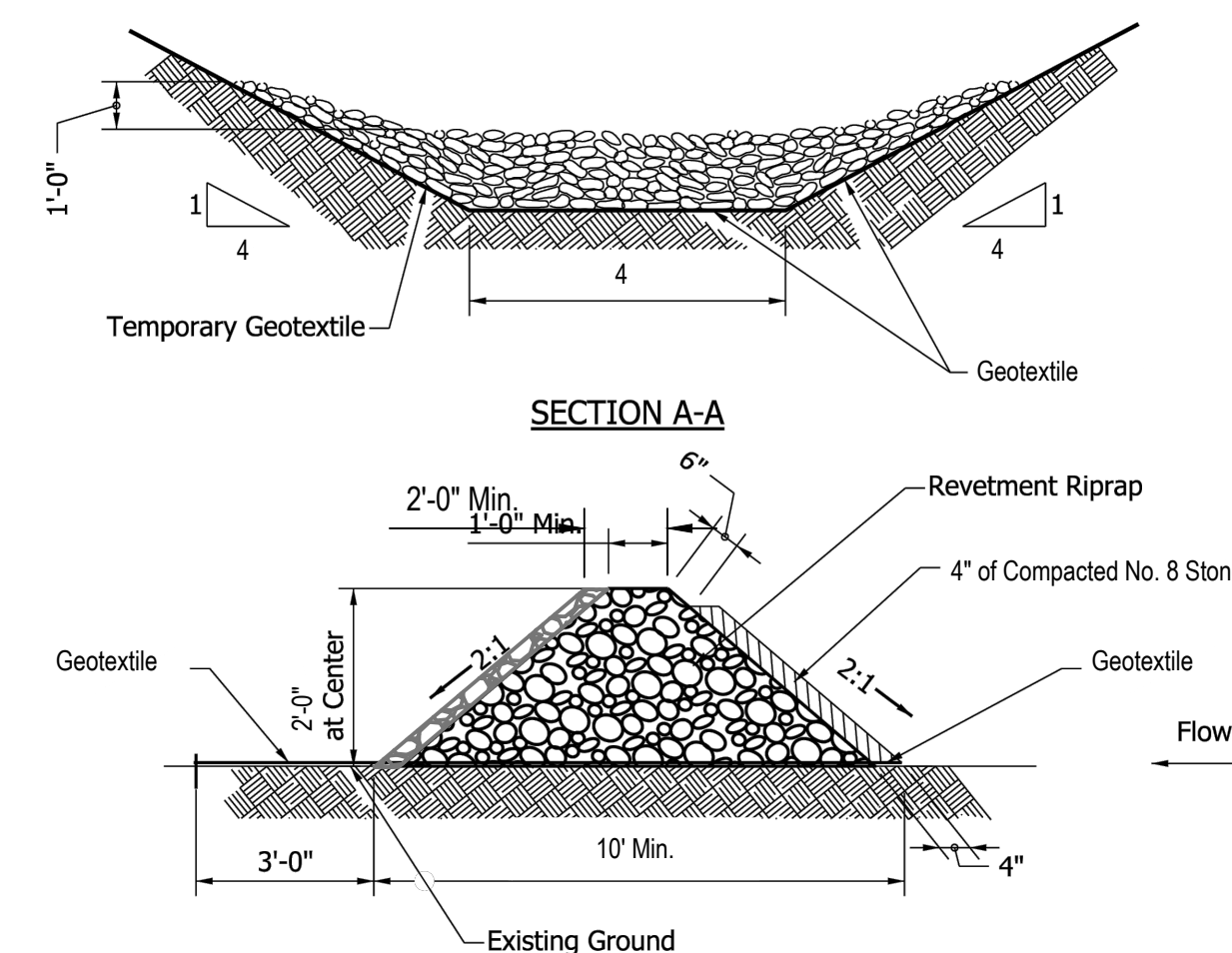
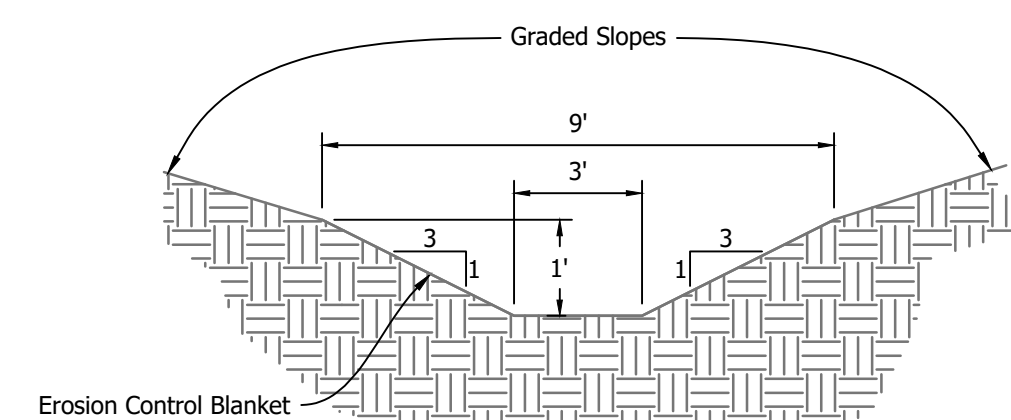
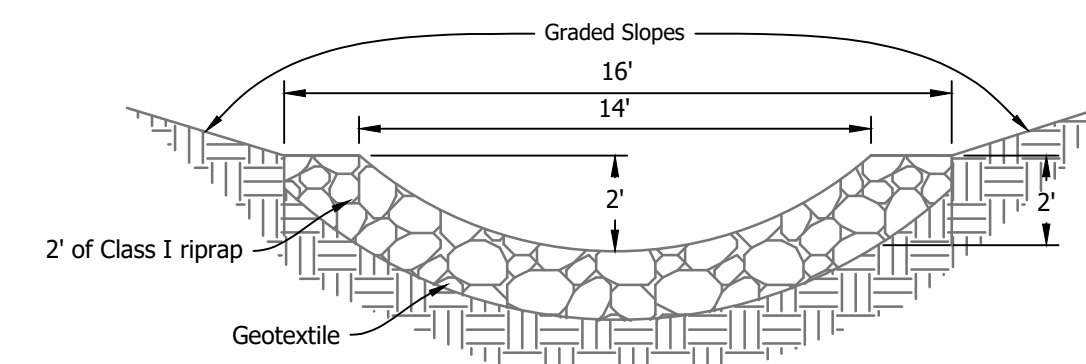
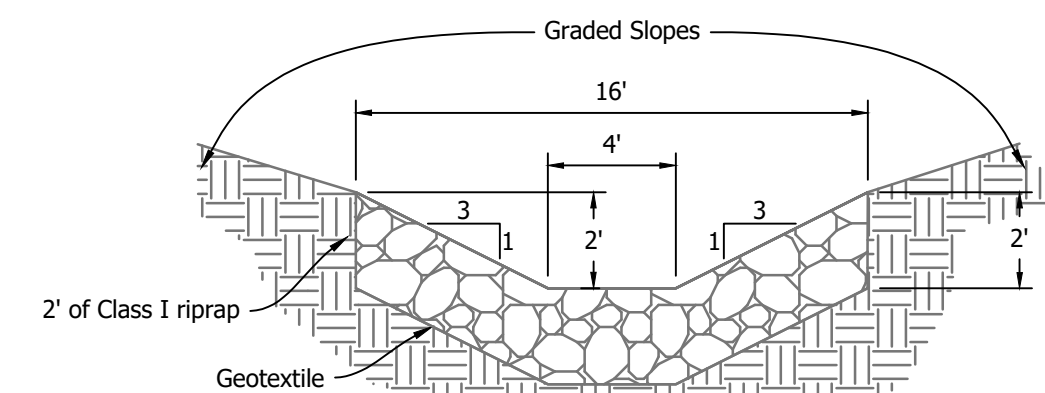
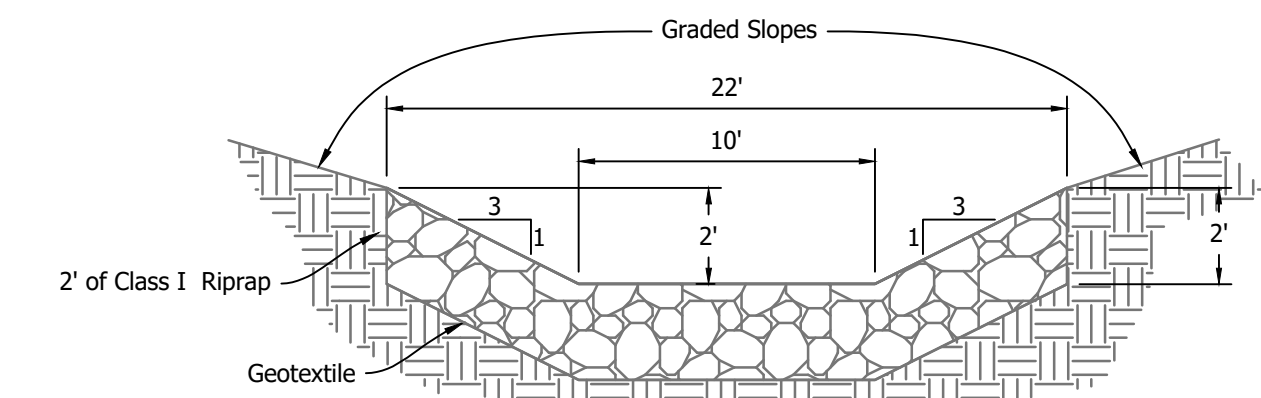
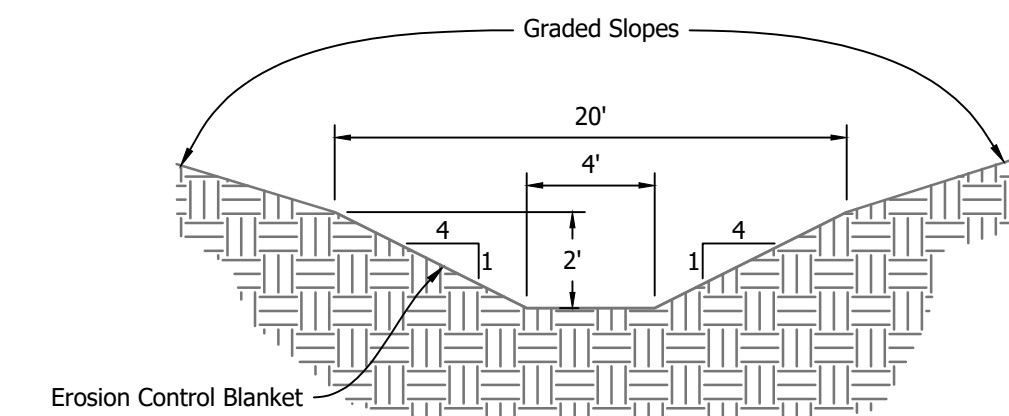
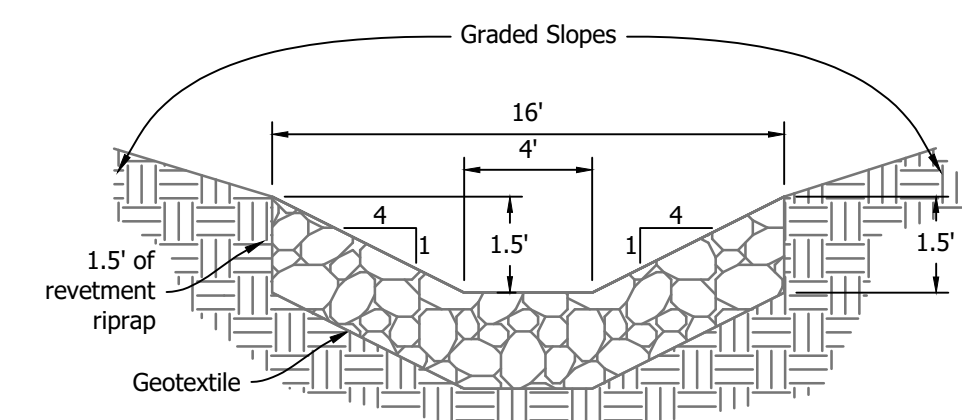
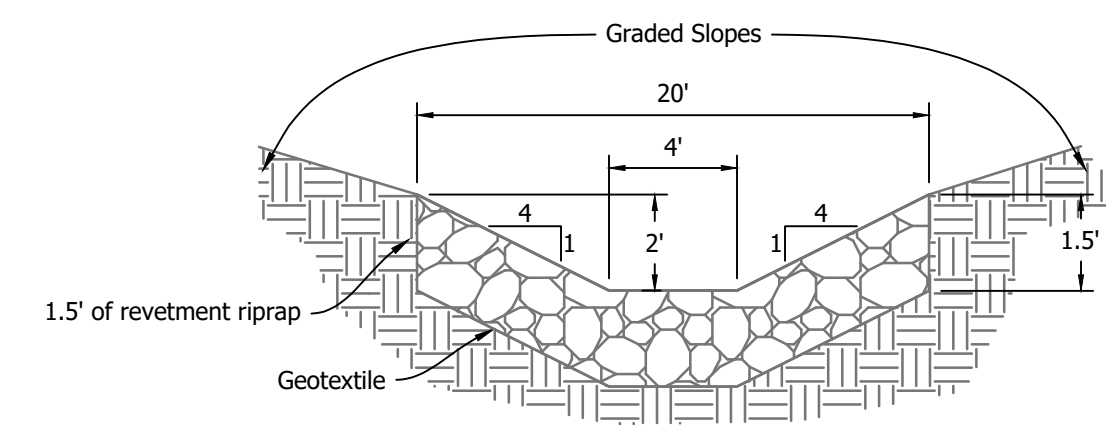
1" = 120'

PROJECT
E008-342

SHEET

11 of 14

SITE
309



REVISIONS	
DATE	DESCRIPTION

RECOMMENDED
FOR APPROVAL:

DESIGNED BY
K.S.B.

DRAWN BY
J.D.D

DATE MADE
12/11/2024

DATE REVISED

1/21/2025
DATE

Details

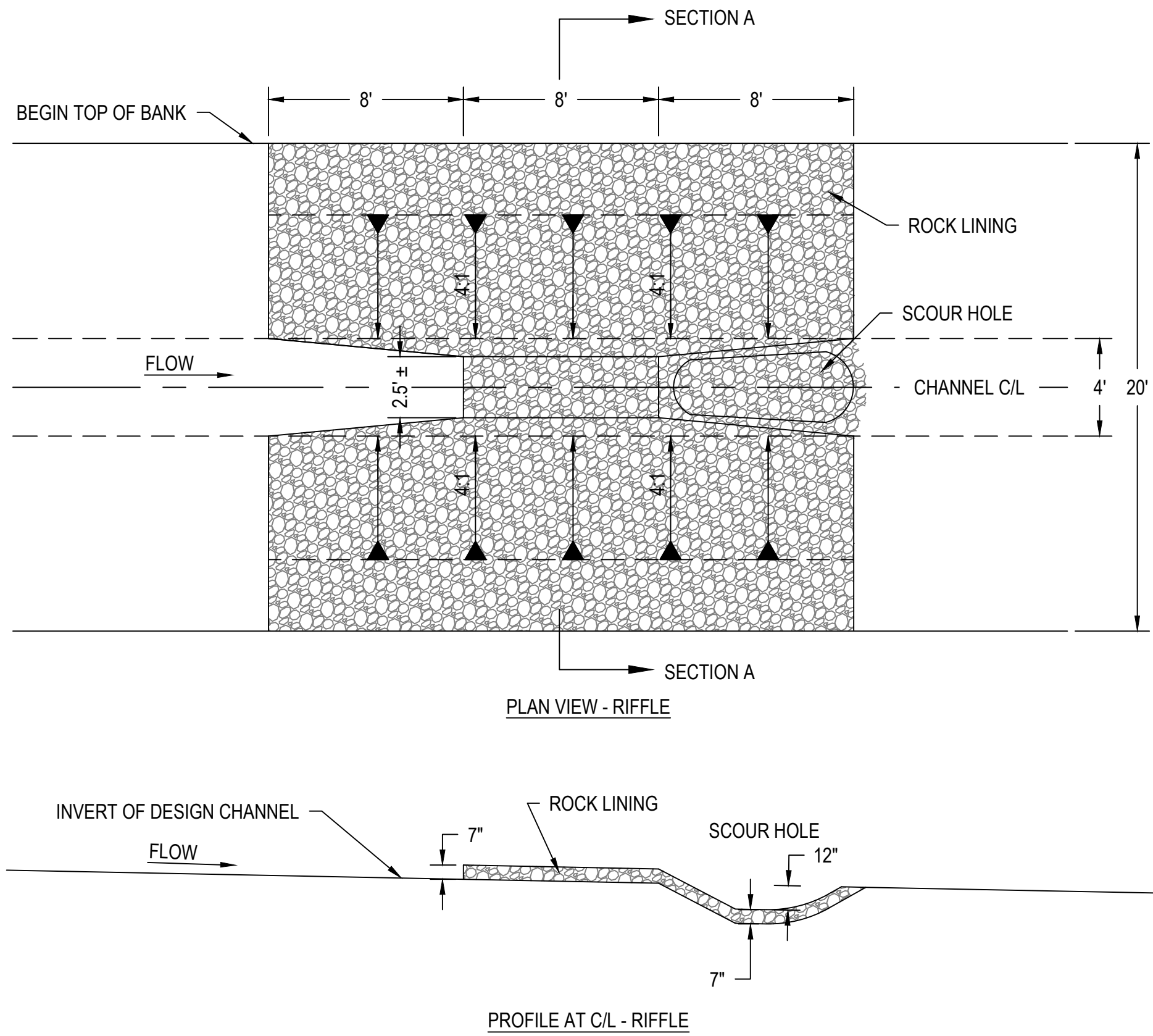
STATE OF INDIANA
DEPARTMENT OF NATURAL RESOURCES
DIVISION OF RECLAMATION

SCALE
AS NOTED

PROJECT
E008-342

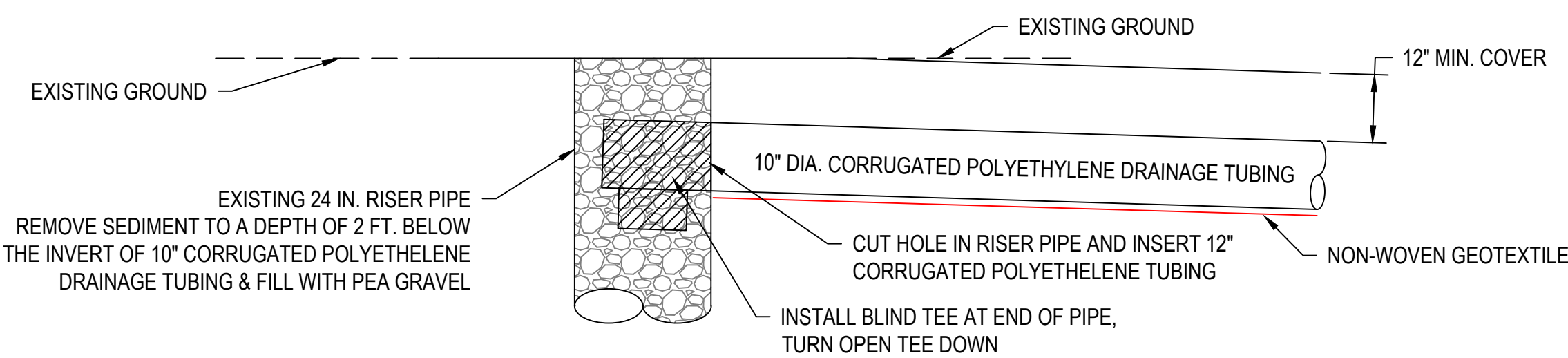
SHEET
12 of 14

SITE
309

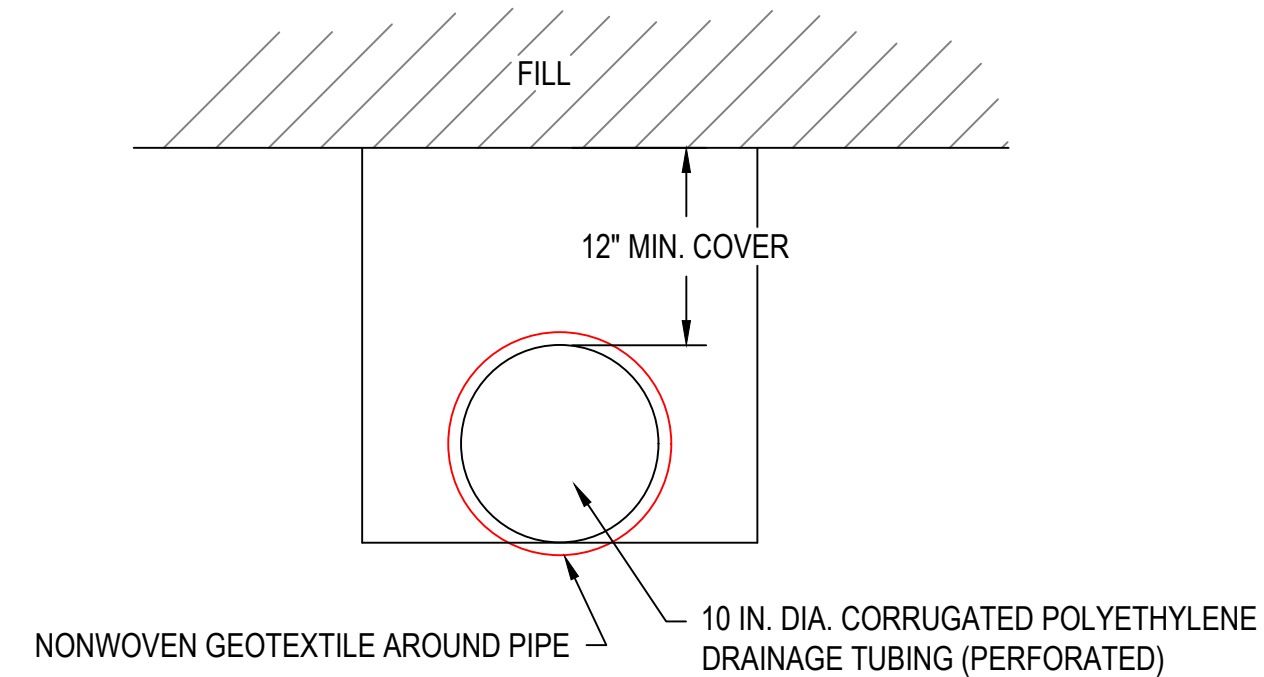
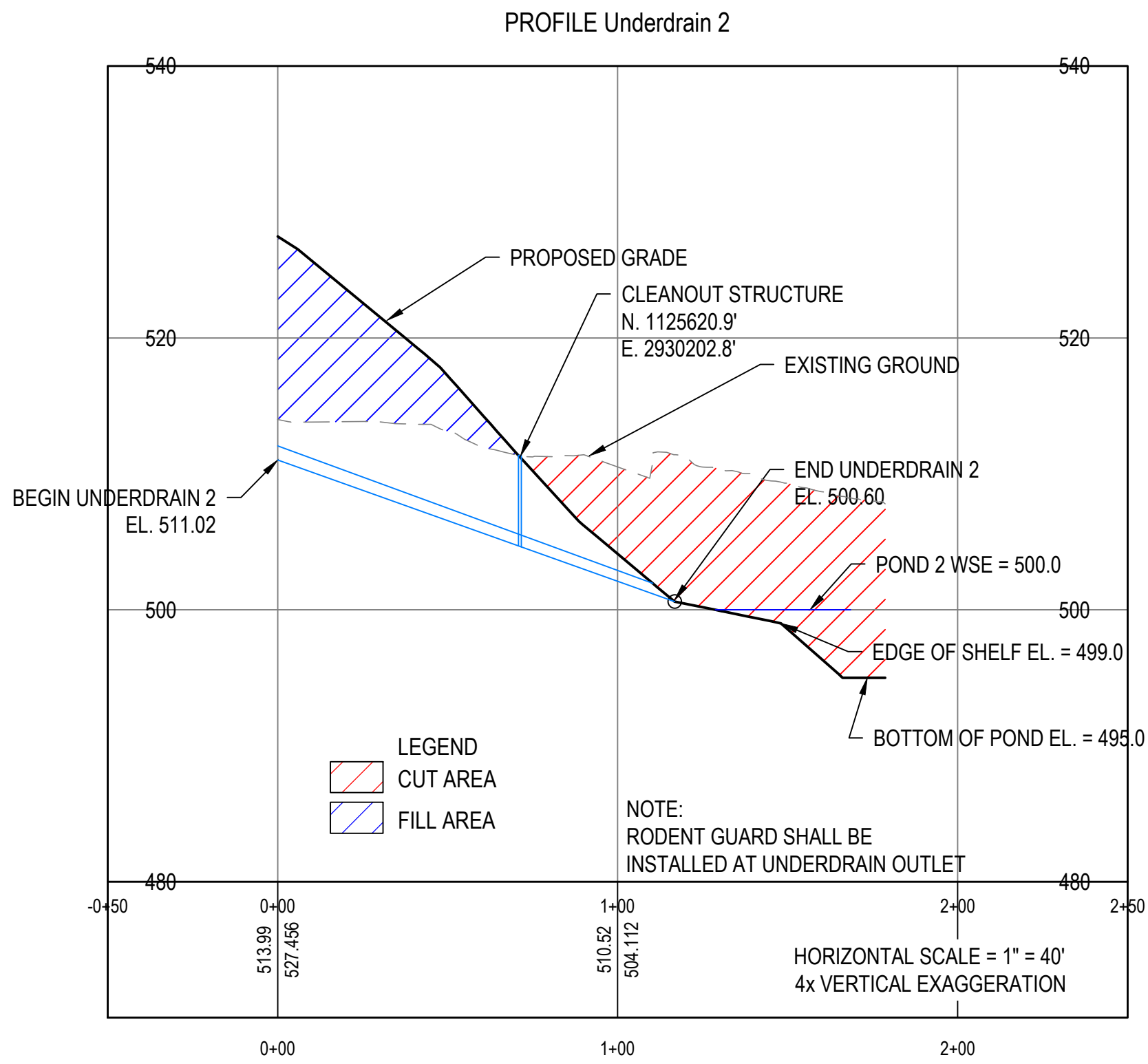
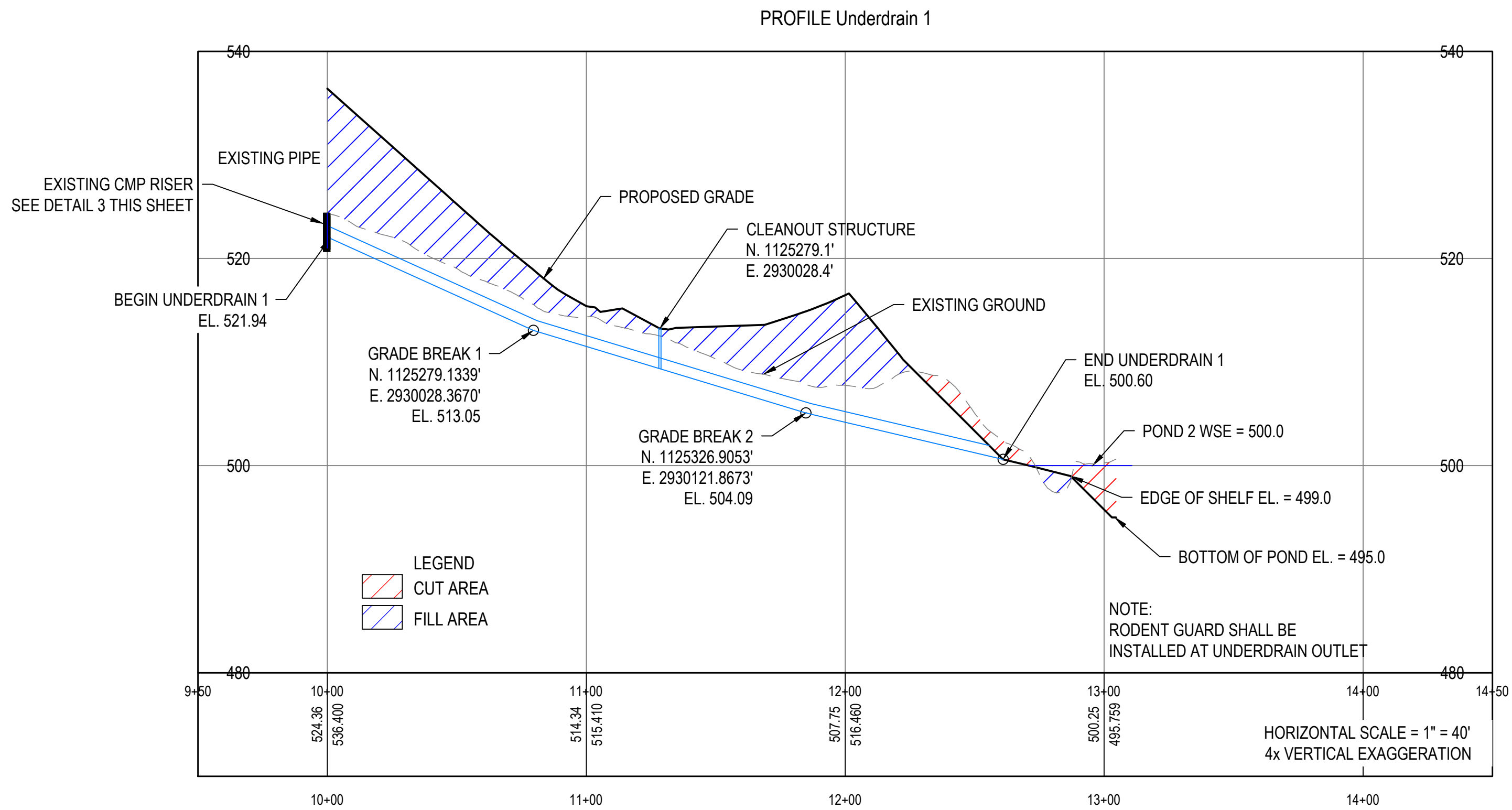


- NOTE:
- ROCK LINING SHALL BE UNIFORM A RIPRAP IN ACCORDANCE WITH AML PROGRAM - STANDARD SPECIFICATION 601.03
 - COMPACT AREAS UNDER RIFFLE AND REGRADE IF NEEDED TO MAINTAIN CHANNEL BOTTOM ALIGNMENT.

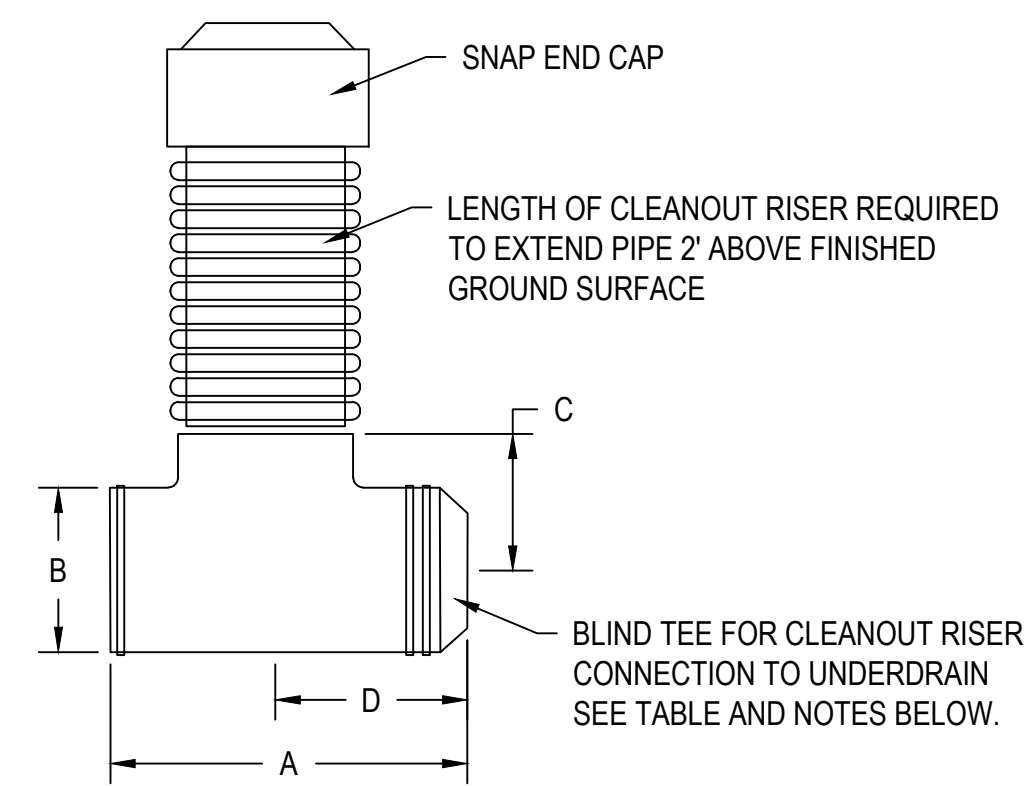
1 Riffle
NOT TO SCALE



3 Existing Riser Pipe - Cap and Underdrain 1 Connection
NOT TO SCALE

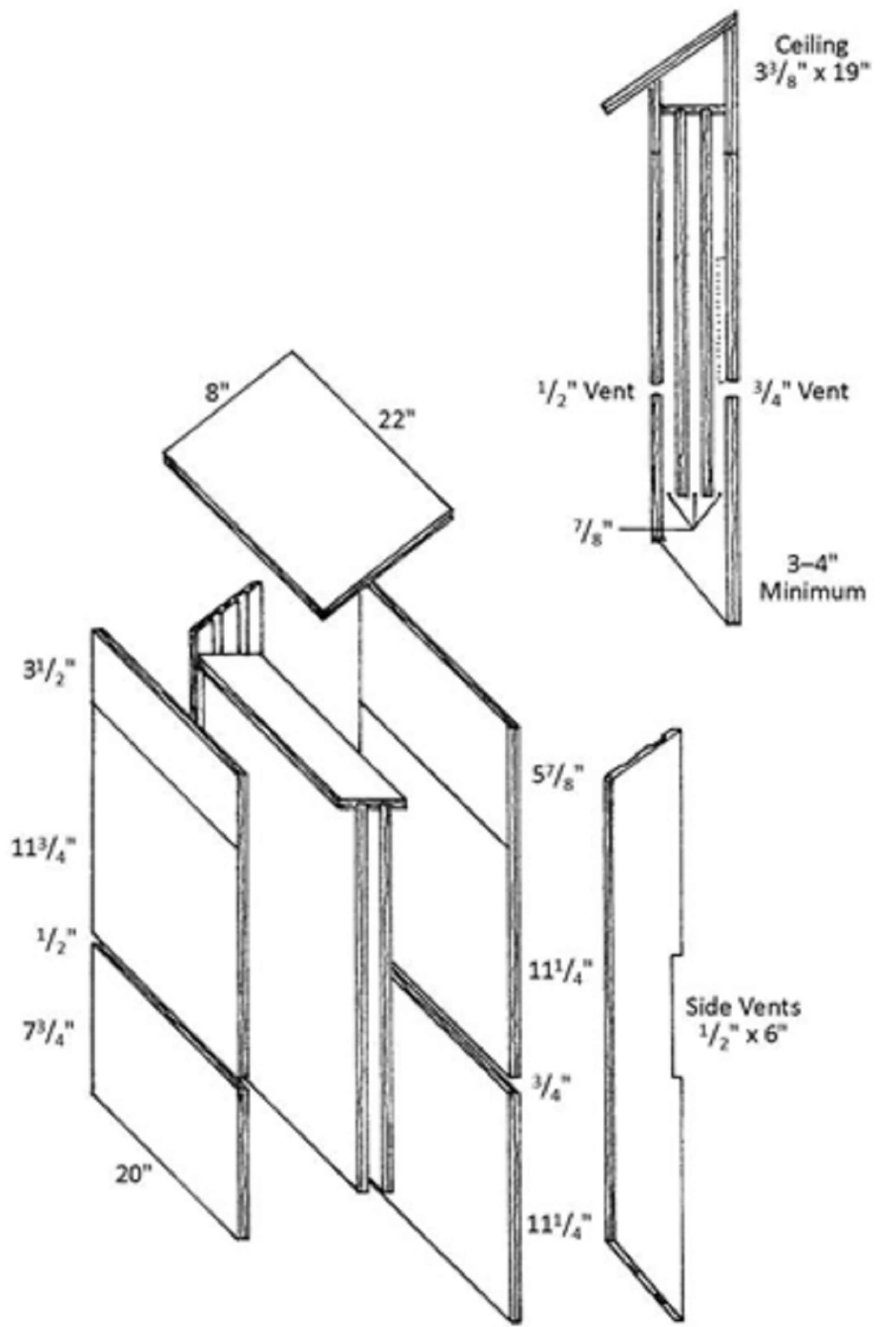


2 Subsurface Underdrain A & B
NOT TO SCALE



BLIND TEE DIMENSIONS				
Pipe Size	A	B	C	D
10 in.	21.5 in.	12.3 in.	12.3 in.	10.8 in.

5 Cleanout Riser Detail
NOT TO SCALE



- Notes: 3-Chamber Bat House:
- Cedar wood shall be used for all parts. Cedar boards should be 1-inch nominal thickness, or 3/4 inch finished thickness. Do not use pressure-treated wood.
 - Vents must be placed as shown to allow air flow and prevent the bats from overheating.
 - The interior wood surfaces must be roughened for the bats to cling to. Rough-cut wood will suffice, or surfaces can be grooved, roughened, or scored horizontally at 1/4-1/2 inch intervals.
 - Caulk all seams using latex caulk, especially around the roof, to keep the bats warm and dry. Cover the roof with shingles, galvanized metal, or tar paper to provide extra protection and to allow the bat house to last longer.
 - A 3 4 inch (minimum) roughened landing pad extending from the bottom the bat house below the entrance, as shown, is required to allow bats to land and climb up into the chamber(s).
 - Bat crevices shall be 1/2-inch minimum and 7/8-inch maximum width.
 - Exterior grade (galvanized, coated, stainless, brass,) screws, rather than nails, are required to increase longevity of the bat house.
 - Dimensions are approximate.

4 Bat House Detail
NOT TO SCALE

- CLEANOUT RISER NOTES
- The application is for single wall 10 in. corrugated polyethylene drainage tubing per AML 2024 Standard specifications 602.06
 - All Dimensions are nominal.
 - Cut Blind flange closed end off for connection to underdrain.

REVISIONS

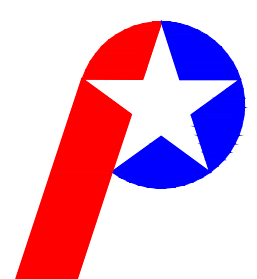
DATE	DESCRIPTION
1/21/2025	REVISED DETAILS 2 AND 3, UNDERDRAIN PROFILES, ADDED BAT HOUSE DETAIL

SCALE
AS NOTED

PROJECT
E008-342

SHEET
13 of 14

SITE
309



Patriot Engineering &
Environmental, Inc.



RECOMMENDED
FOR APPROVAL:

DESIGNED BY
K.S.B.

DRAWN BY
J.D.D

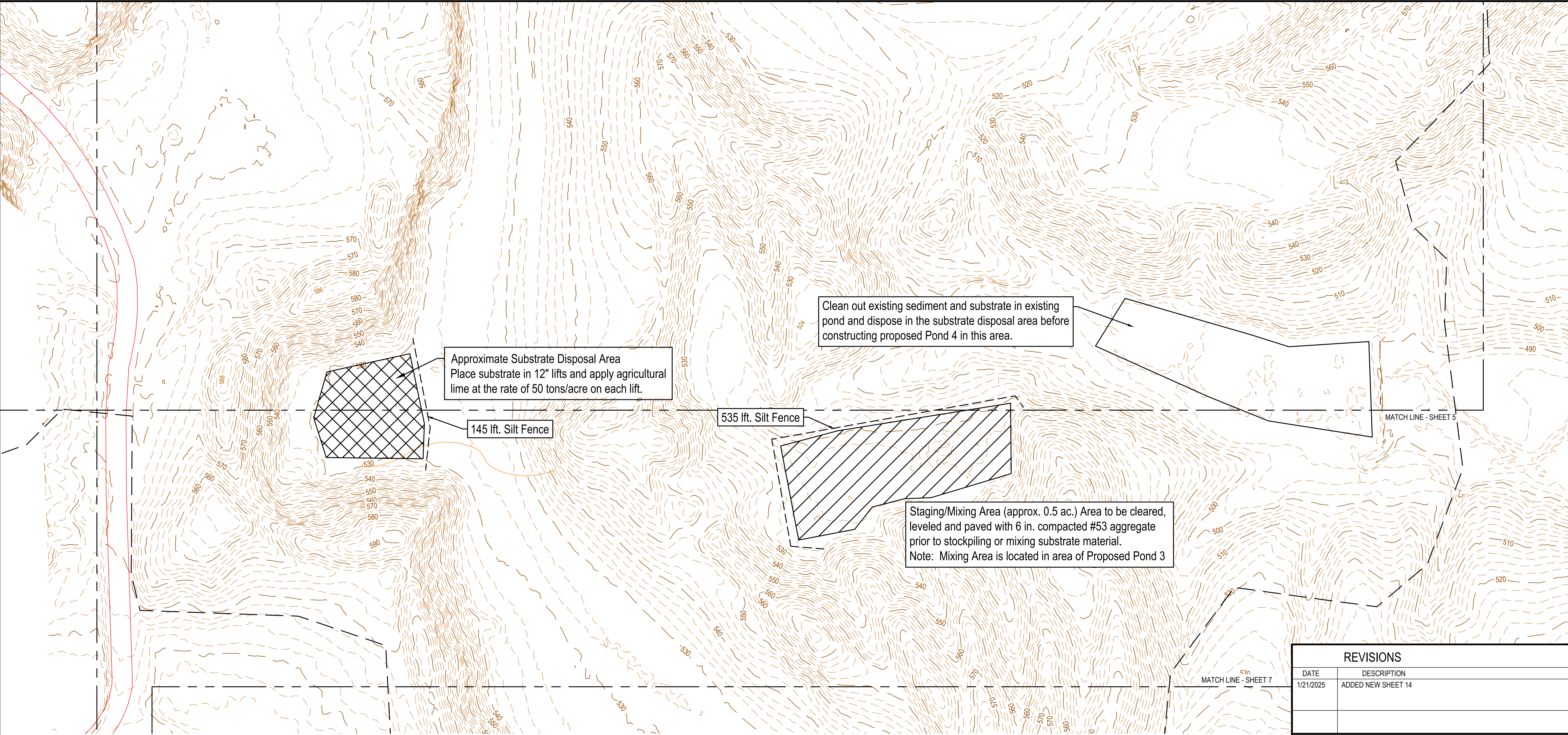
1/21/2025
DATE

DATE MADE
12/11/2024

DATE REVISED

Details

STATE OF INDIANA
DEPARTMENT OF NATURAL RESOURCES
DIVISION OF RECLAMATION



REVISIONS	
DATE	DESCRIPTION
1/21/2025	ADDED NEW SHEET 14

LEGEND

—470—

Existing Major Contour (10')

—466—

Existing Minor Contour (2')

0

25

50

100

N

Note:
New organic substrate material in proposed Pond 4 shall consist of an Anaerobic Wetland Mixture. The mixture shall contain by volume the following material:

- Wood Chips

•

Agricultural Lime

•

Straw/Hay

•

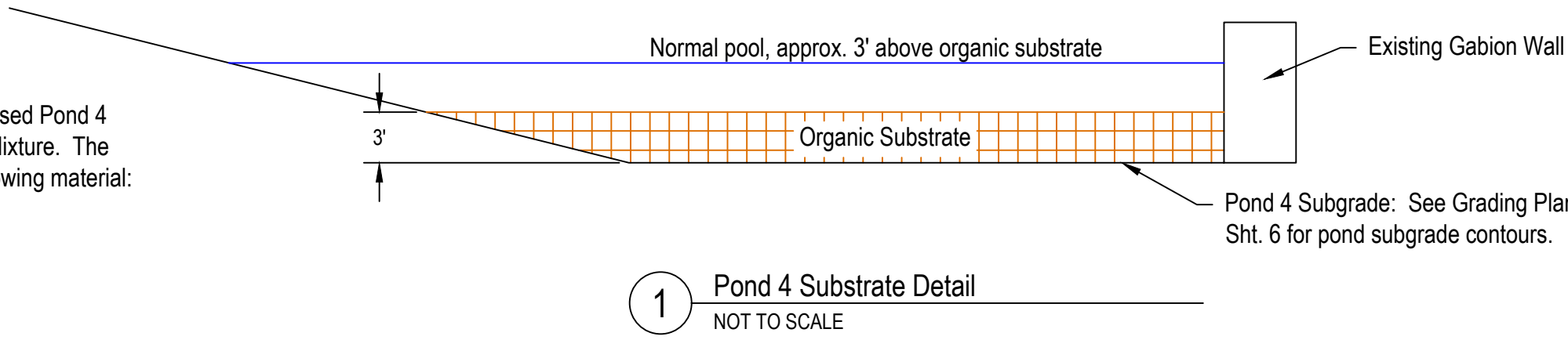
Compost
- 30%




10%

50%

10%

See Section 508 - Organic Substrate, of the 2024 AML Standard Specifications.



 <div>Patriot Engineering & Environmental, Inc.</div>		RECOMMENDED FOR APPROVAL:  1/21/2025 DATE		DATE MADE 1/21/2025	Site Plan - Wetland Substrate Mixing & Disposal Areas	SCALE AS NOTED	SHEET 14 of 14
		DESIGNED BY K.S.B.	DRAWN BY J.D.D.	DATE REVISED	STATE OF INDIANA DEPARTMENT OF NATURAL RESOURCES DIVISION OF RECLAMATION	PROJECT E008-342	SITE 309