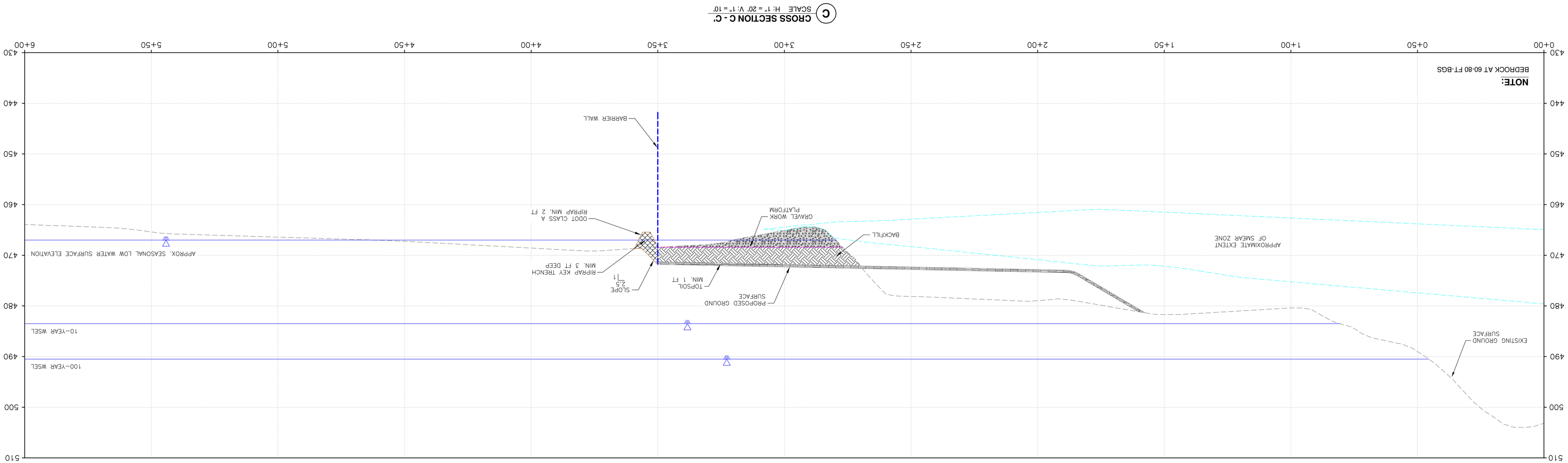

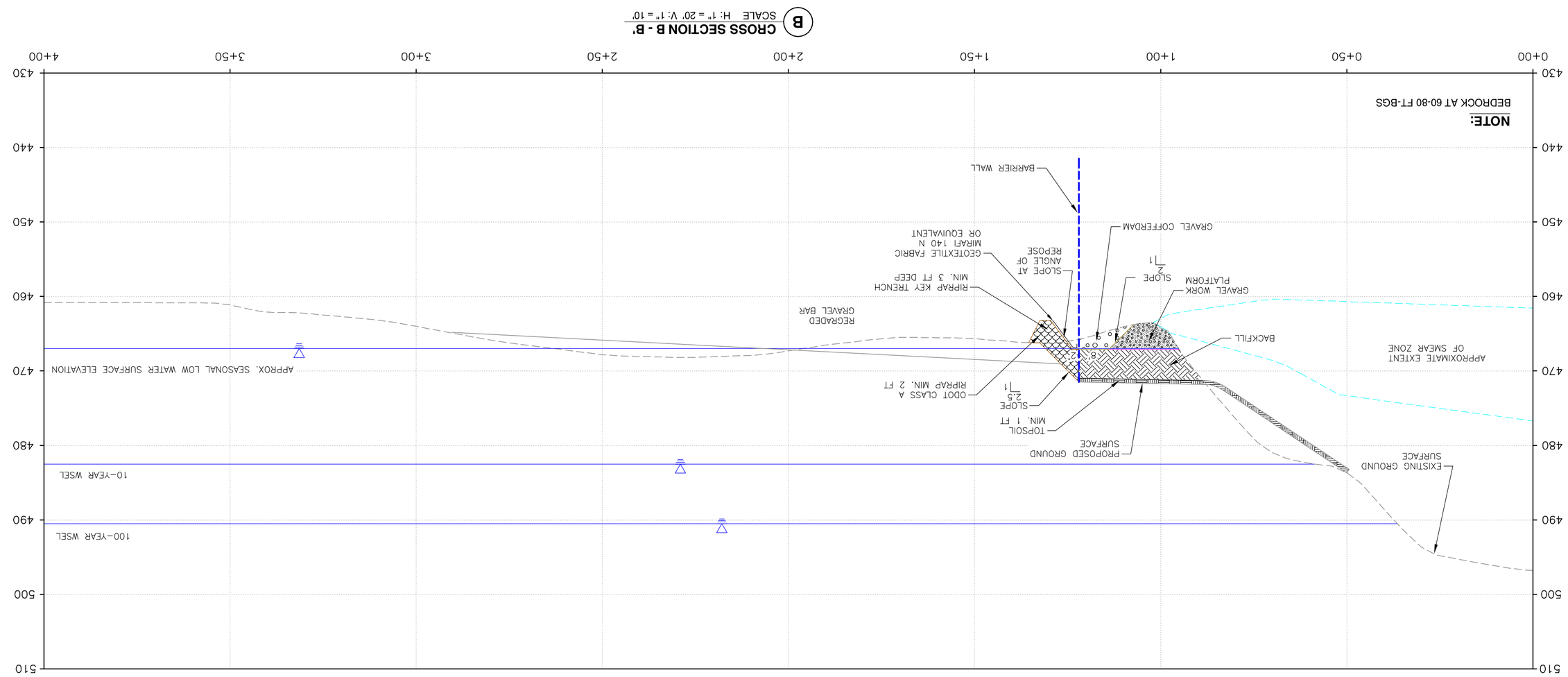

EXPLANATION

WATER SURFACE ELEVATION	WSEL
FEET ABOVE MEAN SEA LEVEL	FT AMSL
WATER SURFACE ELEVATION	

WARNING

IF THIS BAR DOES NOT MEASURE 1" IN LENGTH THEN DRAWING IS NOT AT INTENDED SCALE

REV.	DATE	DESCRIPTION	BY	CHK'D
A	12/28/2007	WORK PLAN SUBMITTAL TO EPA	REP	JGP
0	07/17/2007	PEER ASSIST	SV	JGP

REVISIONS

FILE: 500GMRTYPSECTIONS_S3-4

DRAWN BY: REP

CHECKED BY: JGP

DATE: 12/28/07

SCALE: AS SHOWN

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1252 Commerce Drive
Laramie, Wyoming 82070
www.tribhydro.com
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CROSS SECTION B-B' AND CROSS SECTION C-C'

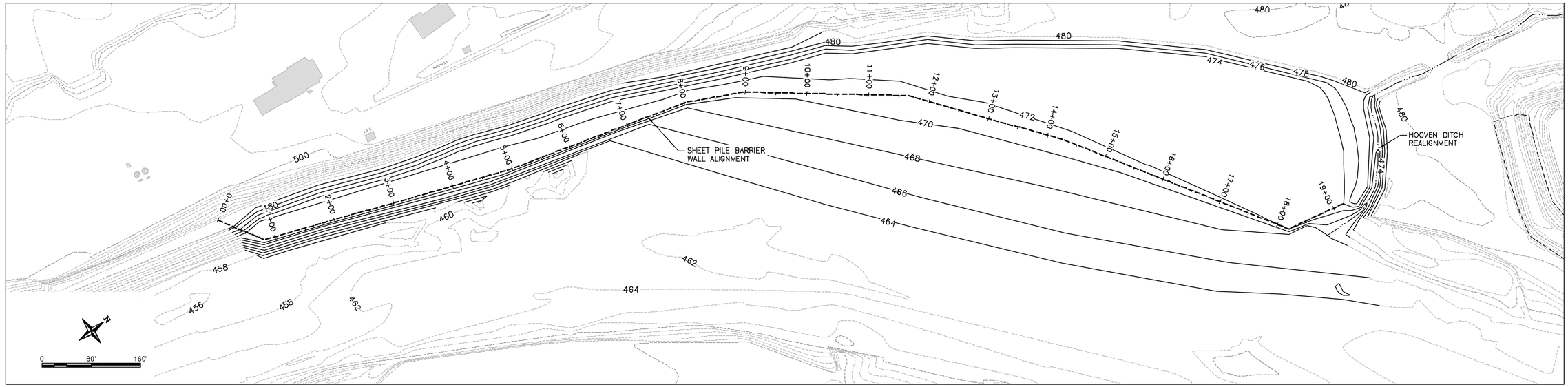
SHEET PILE BARRIER AND RIVER BANK STABILIZATION PROJECT

CHEVRON CINCINNATI FACILITY, OHIO

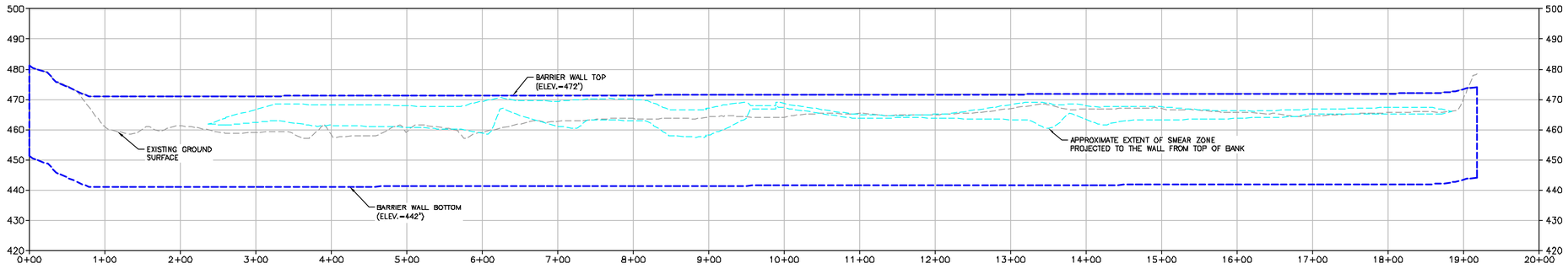
SHEET 4

4 OF 8

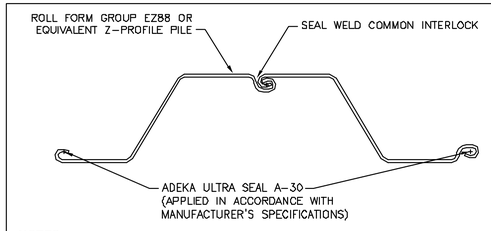
REV: A



1 **SHEET PILE BARRIER PLAN**
SCALE: 1" = 80'



A **SHEET PILE BARRIER PROFILE**
SCALE H: 1" = 80' V: 1" = 20'



NOTES:
1. EACH PAIR SHALL BE SEAL WELDED AT THE COMMON INTERLOCK
2. ALL OTHER CONNECTIONS SHALL BE SEALED WITH ADEKA ULTRA SEAL A-30 FOR THE ENTIRE DEPTH

B **TYPICAL CONNECTION**
SCALE: NONE

EXPLANATION

480 PROPOSED GROUND SURFACE (INTERVAL: 2 FT, EL: FT AMSL)

480 EXISTING GROUND SURFACE (INTERVAL: 2 FT, EL: FT AMSL)

FT AMSL FEET ABOVE MEAN SEA LEVEL

REV.	DATE	DESCRIPTION	BY	CHK'D
		REVISIONS		
A	12/28/2007	WORK PLAN SUBMITTAL TO EPA	REP	JGP
0	07/17/2007	PEER ASSIST	SV	JGP

WARNING
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DATE: 12/28/07
SCALE: AS SHOWN
FILE: 500SHEETPILEPPD_S5

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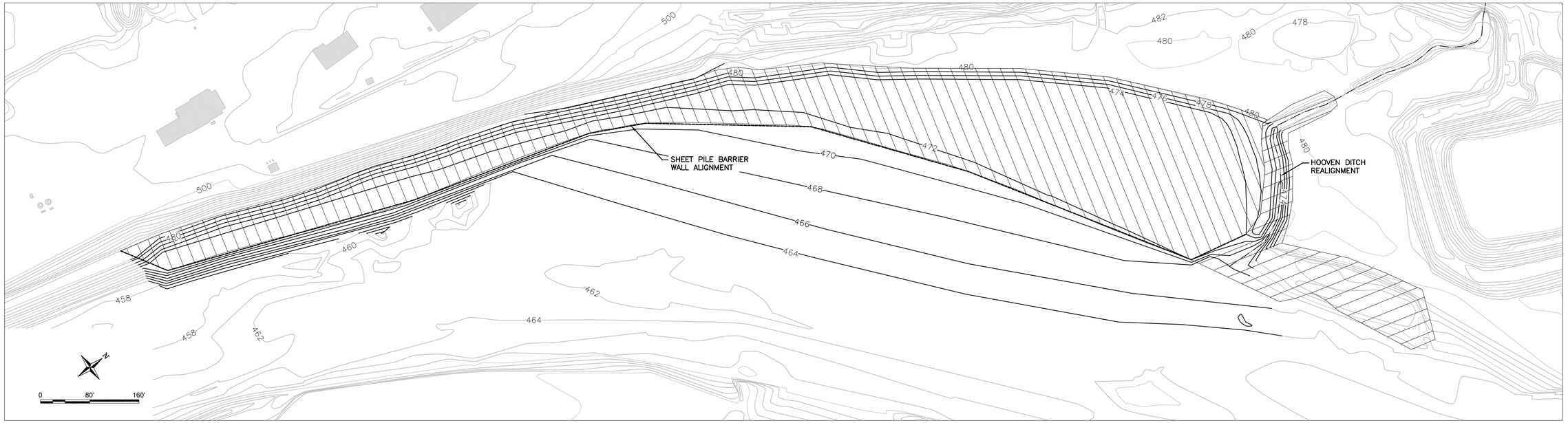
SHEET PILE BARRIER PLAN, PROFILE, AND DETAILS

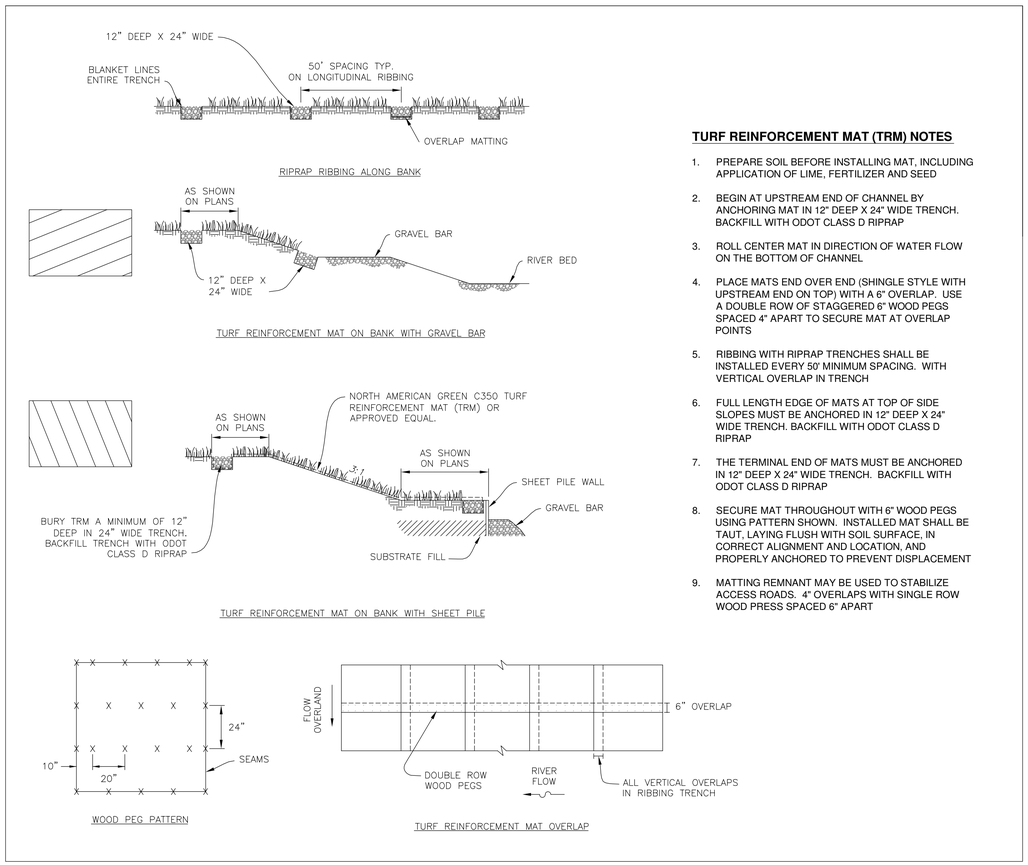
SHEET PILE BARRIER AND RIVER BANK STABILIZATION PROJECT
CHEVRON CINCINNATI FACILITY, OHIO

SHEET 5 5 OF 8

REV: A



1 FLOOD-TOLERANT VEGETATION PLANTING AREA
SCALE: 1" = 80'



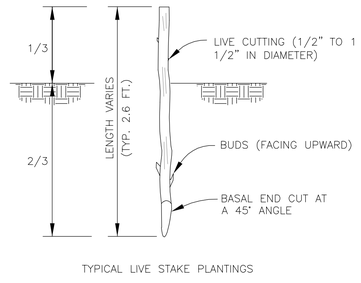
TURF REINFORCEMENT MAT (TRM) NOTES

1. PREPARE SOIL BEFORE INSTALLING MAT, INCLUDING APPLICATION OF LIME, FERTILIZER AND SEED
2. BEGIN AT UPSTREAM END OF CHANNEL BY ANCHORING MAT IN 12" DEEP X 24" WIDE TRENCH. BACKFILL WITH ODOT CLASS D RIPRAP
3. ROLL CENTER MAT IN DIRECTION OF WATER FLOW ON THE BOTTOM OF CHANNEL
4. PLACE MATS END OVER END (SHINGLE STYLE WITH UPSTREAM END ON TOP) WITH A 6" OVERLAP. USE A DOUBLE ROW OF STAGGERED 6" WOOD PEGS SPACED 4" APART TO SECURE MAT AT OVERLAP POINTS
5. RIBBING WITH RIPRAP TRENCHES SHALL BE INSTALLED EVERY 50' MINIMUM SPACING. WITH VERTICAL OVERLAP IN TRENCH
6. FULL LENGTH EDGE OF MATS AT TOP OF SIDE SLOPES MUST BE ANCHORED IN 12" DEEP X 24" WIDE TRENCH. BACKFILL WITH ODOT CLASS D RIPRAP
7. THE TERMINAL END OF MATS MUST BE ANCHORED IN 12" DEEP X 24" WIDE TRENCH. BACKFILL WITH ODOT CLASS D RIPRAP
8. SECURE MAT THROUGHOUT WITH 6" WOOD PEGS USING PATTERN SHOWN. INSTALLED MAT SHALL BE TAUT, LAYING FLUSH WITH SOIL SURFACE, IN CORRECT ALIGNMENT AND LOCATION, AND PROPERLY ANCHORED TO PREVENT DISPLACEMENT
9. MATTING REMNANT MAY BE USED TO STABILIZE ACCESS ROADS. 4" OVERLAPS WITH SINGLE ROW WOOD PRESS SPACED 6" APART

2 EARTHEN TURF REINFORCEMENT MAT CHANNEL
SCALE: NONE

EXPLANATION

480	PROPOSED GROUND SURFACE (INTERVAL: 2 FT, EL: FT AMSL)
480	EXISTING GROUND SURFACE (INTERVAL: 2 FT, EL: FT AMSL)
FT AMSL	FEET ABOVE MEAN SEA LEVEL
WSEL	WATER SURFACE ELEVATION



TYPICAL LIVE STAKE PLANTINGS

NOTES:

1. INSTALL LIVE STAKES ALONG OUTSIDE OF MEANDER BEND AND ALONG BOTH BANKS OF RIFFLES
2. INSTALL 2 TO 4 LIVE STAKES PER SQUARE YARD IN A RANDOM PATTERN FROM EDGE OF WATER AT LOW FLOW TO 3 FEET BEYOND TOP OF BANK IN AREAS SHOWN

3 TYPICAL STAKE
SCALE: NONE

REV.	DATE	DESCRIPTION	BY	CHK'D
A	12/28/2007	WORK PLAN SUBMITTAL TO EPA	SV	JGP
0	07/17/2007	PEER ASSIST	REP	JGP

REVISIONS

WARNING
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DATE: 12/28/07
SCALE: AS SHOWN
FILE: 500VEGETATION_S6

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FLOOD-TOLERANT VEGETATION PLAN AND DETAILS

SHEET PILE BARRIER AND RIVER BANK STABILIZATION PROJECT CHEVRON CINCINNATI FACILITY, OHIO

SHEET 6
6 OF 8

REV: A

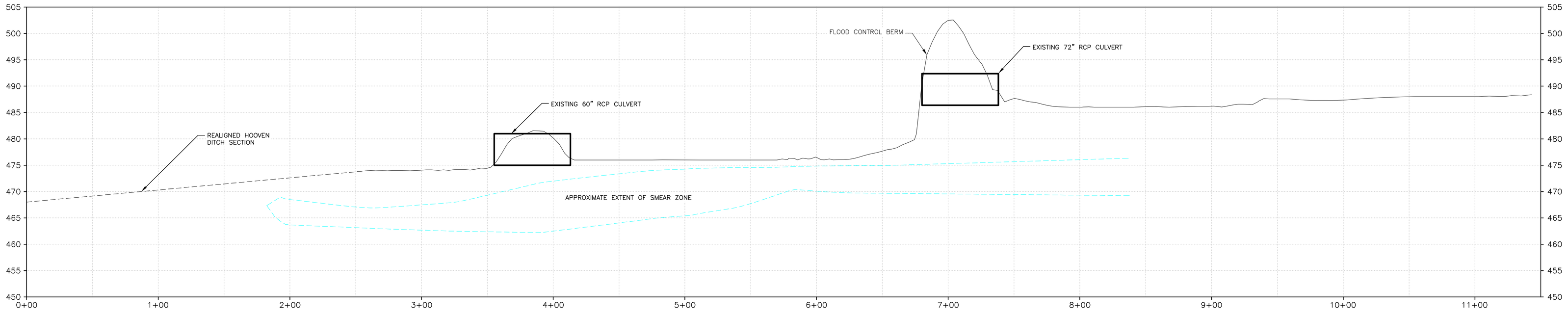
1 TYPICAL HOOVEN DITCH PLAN VIEW
SCALE: 1" = 40'

EXPLANATION

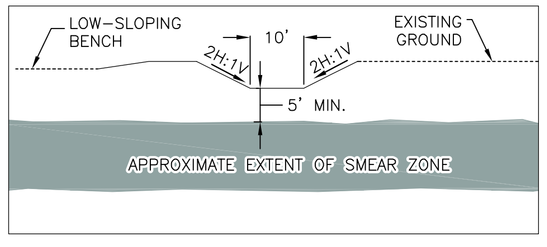
480 — PROPOSED GROUND SURFACE (INTERVAL: 2 FT, EL: FT AMSL)

480 — EXISTING GROUND SURFACE (INTERVAL: 2 FT, EL: FT AMSL)

FT AMSL FEET ABOVE MEAN SEA LEVEL



A TYPICAL HOOVEN DITCH PROFILE
SCALE H: 1" = 40' V: 1" = 10'



B TYPICAL HOOVEN DITCH CROSS SECTION FOR REALIGNED SECTION
SCALE: 1" = 20'

0 20' 40'

REV.	DATE	DESCRIPTION
A	12/28/2007	WORK PLAN SUBMITTAL TO EPA
0	07/17/2007	PEER ASSIST

REVISIONS

	REP	JGP
	SV	JGP
	BY	CHK'D

WARNING
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CHECKED BY: JGP
DATE: 12/28/07
SCALE: AS SHOWN
FILE: 500HD_REALIGN_S7

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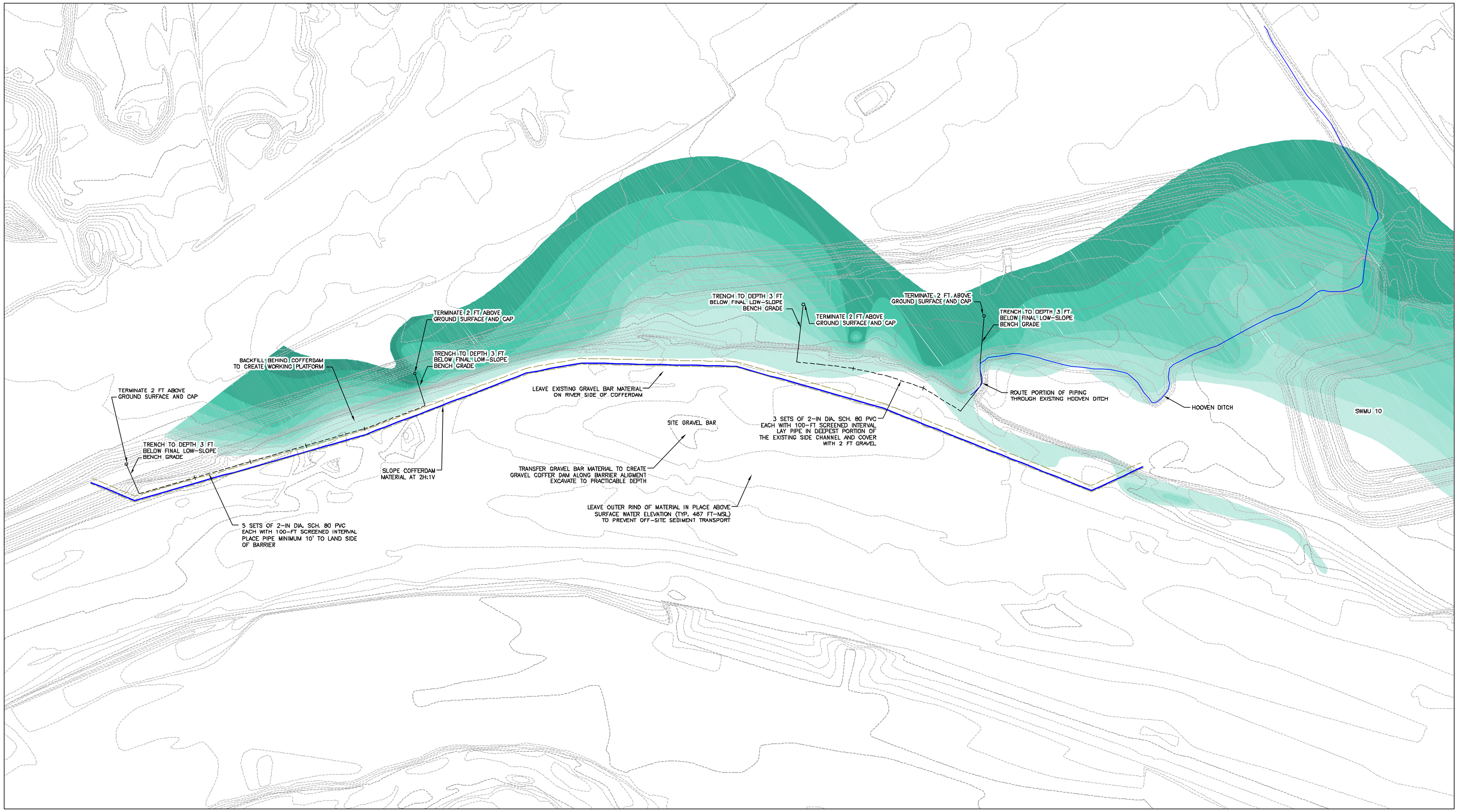
HOOVEN DITCH REALIGNMENT PLAN, PROFILE AND TYPICAL CROSS SECTION

SHEET PILE BARRIER AND RIVER BANK STABILIZATION PROJECT

CHEVRON CINCINNATI FACILITY, OHIO

SHEET 7
7 OF 8

REV: A



EXPLANATION

- SHEET PILE BARRIER WALL ALIGNMENT
- HORIZONTAL AIR SPARGE PIPING
- HORIZONTAL AIR SPARGE PIPING, SCREENED
- GRAVEL COFFER DAM BOUNDARY
- EXISTING GROUND SURFACE (INTERVAL: 2 FT, EL: FT AMSL)
- FT AMSL — FEET ABOVE MEAN SEA LEVEL

APPROXIMATE **SMEAR ZONE THICKNESS IN FEET**

- 0-2 FT
- 2-4 FT
- 4-6 FT
- 6-8 FT
- 8-10 FT
- 10-12 FT
- 12-14 FT
- 14-16 FT

N

0 80' 160'

REV.	DATE	DESCRIPTION	BY	CHK'D
A	12/28/2007	WORK PLAN SUBMITTAL TO EPA	REP	JGP
0	07/17/2007	PEER ASSIST	SV	JGP

REVISIONS

WARNING
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DATE: 12/28/07
SCALE: 1" = 80'
FILE: 500AIRSPARGE_S8

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HORIZONTAL AIR SPARGE PIPING AND COFFER DAM LAYOUT

SHEET PILE BARRIER AND RIVER BANK STABILIZATION PROJECT

CHEVRON CINCINNATI FACILITY, OHIO

SHEET 8 8 OF 8

REV: A