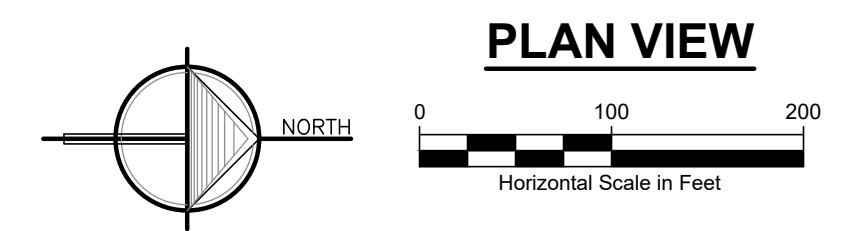


- NOTES:**
- CONTRACTOR TO FIELD VERIFY HORIZONTAL & VERTICAL LOCATION OF ALL EXISTING UTILITIES PRIOR TO CONSTRUCTION AND MUST NOTIFY ENGINEER IMMEDIATELY OF ANY DISCREPANCIES.
 - PROPOSED EARTH CHANGE SHALL BE LIMITED TO EASEMENT AREA
 - CONTRACTOR SHALL USE CRANE MATS WHILE WORKING IN WETLANDS IDENTIFIED IN THE USFWS NWI TO REDUCE DISTURBANCE.
 - MULCH BLANKET BANKS AS DIRECTED BY ENGINEER.
 - IF DRAIN IS ACCESSED ACROSS PROPERTY OUTSIDE OF DRAIN EASEMENT, A LANDOWNER'S AGREEMENT FORM MUST BE EXECUTED.
 - QUANTITIES WILL NOT BE PAID ABOVE CONTRACT AMOUNT UNLESS APPROVED BY ENGINEER.
 - CONTRACTOR SHALL ADHERE TO ALL LOCAL, STATE AND FEDERAL LAWS INCLUDING CONDITIONS OF EGLE PERMIT #: WRP040908V1.0
 - REMOVE, SALVAGE AND REPAIR FENCES, STRUCTURES AND OTHER ITEMS THAT INTERFERE WITH CONSTRUCTION, PAID FOR AS 1 LS SITE RESTORATION.
 - CONTRACTOR TO DISPOSE OF REMOVED CULVERTS.
 - DRAINAGE EASEMENT: 66', 33' EACH SIDE OF DRAIN CENTERLINE UNLESS SHOWN OTHERWISE.

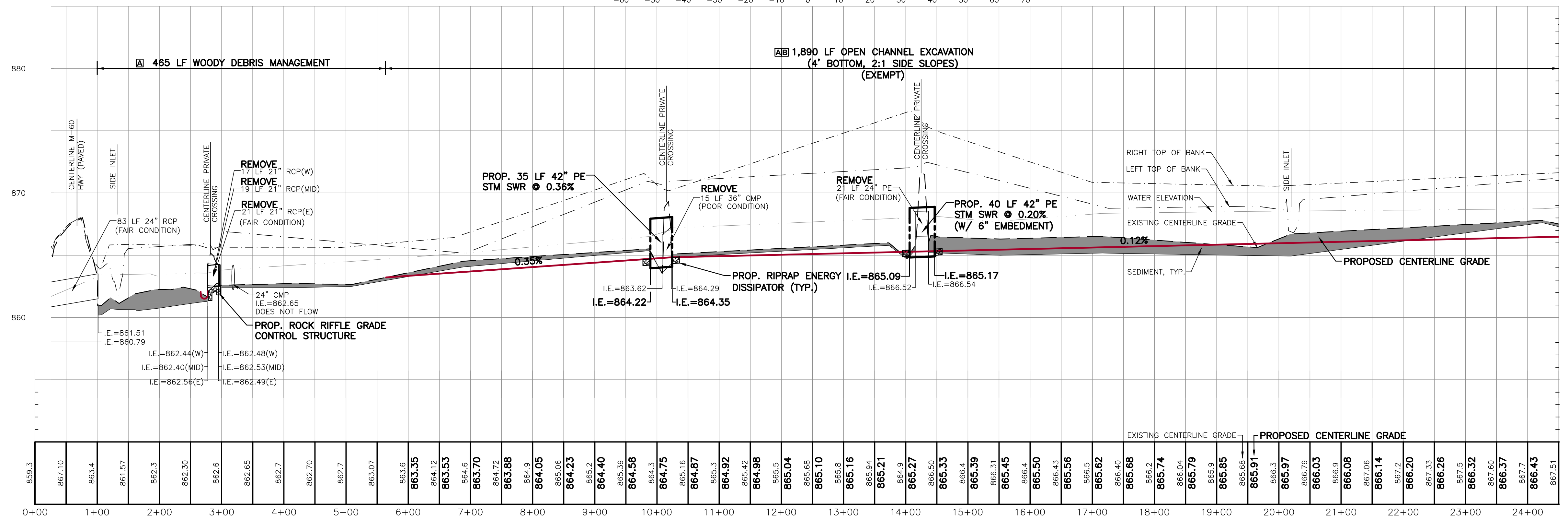
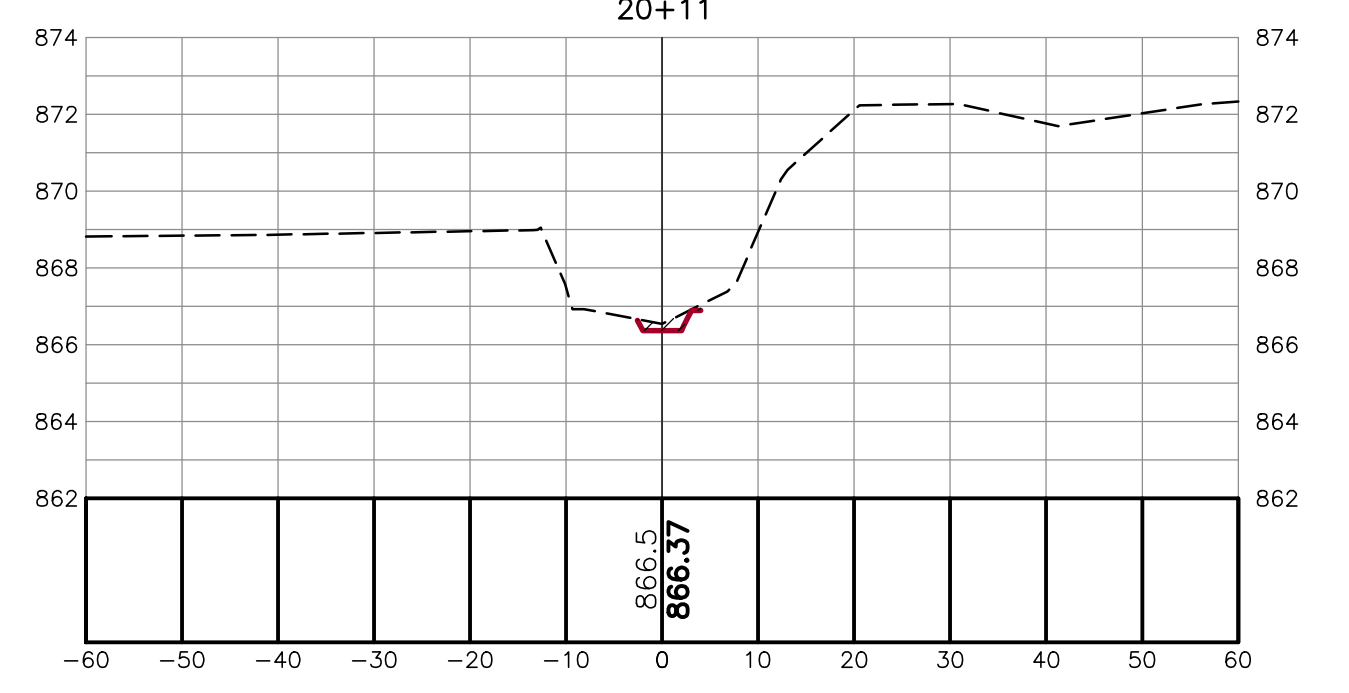
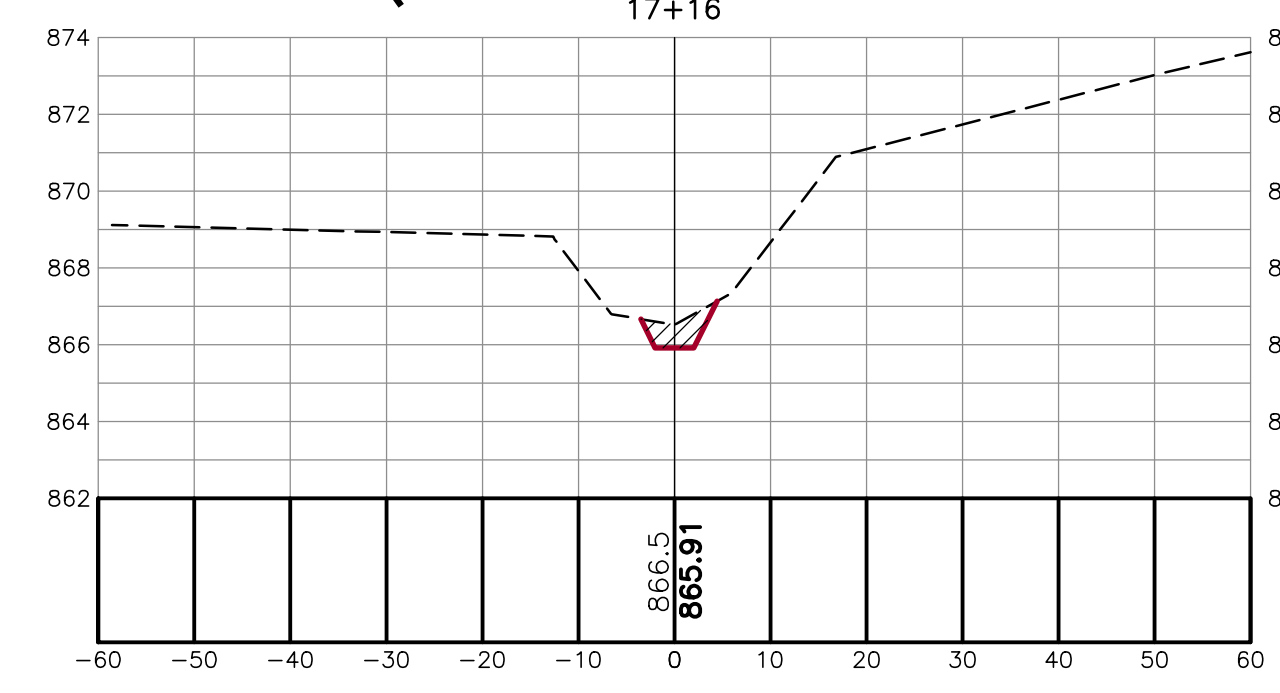
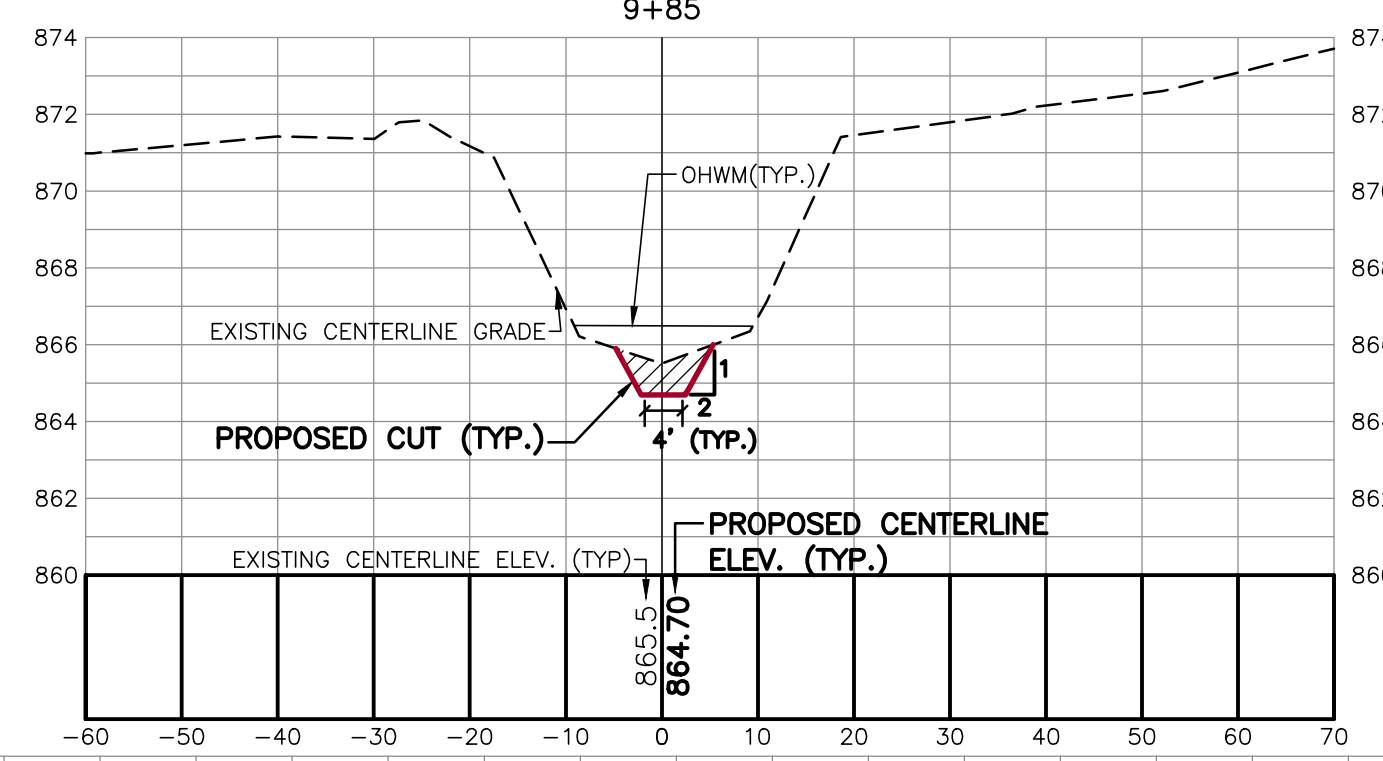
LEGEND

- WETLAND (USFWS NATIONAL WETLAND INVENTORY)
- SOIL TYPE (USDA NRCS WEBSOIL SURVEY)



CROSS SECTIONS
SCALE: HORIZONTAL: 1" = 20'
VERTICAL: 1" = 5'

- MISCELLANEOUS QUANTITIES:**
- M-60 CULVERT CLEANOUT 1 LS
 - OPEN CHANNEL SEEDING 1,890 LF
 - MULCH BLANKET 750 SY



NOTE:
ELEVATIONS ARE BASED ON NGVD 29

3 WORKING DAYS
BEFORE YOU DIG
CALL MISS DIG
1-800-482-7171

CENTERLINE PROFILE
SCALE: HORIZONTAL: 1" = 100'
VERTICAL: 1" = 5'

ALL UTILITIES AS SHOWN ARE APPROXIMATE LOCATIONS DERIVED FROM ACTUAL MEASUREMENTS AND AVAILABLE RECORDS. THEY SHOULD NOT BE INTERPRETED TO BE EXACT LOCATION NOR SHOULD IT BE ASSUMED THAT THEY ARE THE ONLY UTILITIES IN THE AREA.

2121 3 Mile Rd. NW
Walker, MI 49544
Ph: 616-301-7888
www.LREMI.com

LRE
ENGINEERS & SURVEYORS

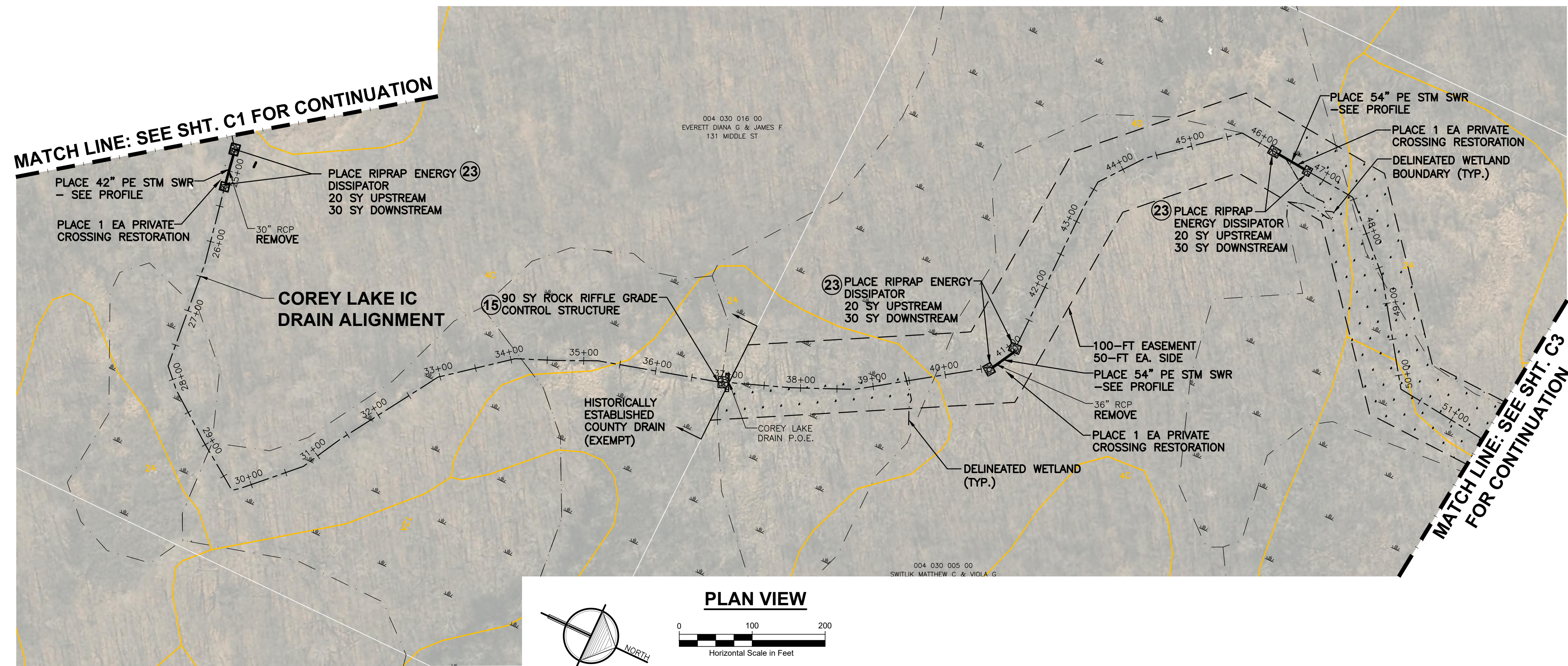
REVISIONS:	NO.	DATE	ISSUED FOR
	1.	11/27/19	DRAFT REVIEW
	2.	04/23/2025	BIDS & CONSTRUCTION

CLIENT: COREY LAKE INTERCOUNTY DRAIN DRAINAGE BOARD
MIDARD 528 W. ALLEGAN STREET, LANSING, MICHIGAN 48933
PROJECT: COREY LAKE INTERCOUNTY DRAIN
CASS AND ST. JOSEPH COUNTIES, MICHIGAN

PROJECT NUMBER:	19078
DATE:	11/2019
SURVEYED BY:	CPV/ADK
DESIGNED BY:	AW/S
DRAFTED BY:	RAG
DATE:	06/2022
DATE:	11/2019
DATE:	03/2025

PLAN & PROFILE
STA: 0+00 - 24+50

SHEET NUMBER
C1



NOTES:

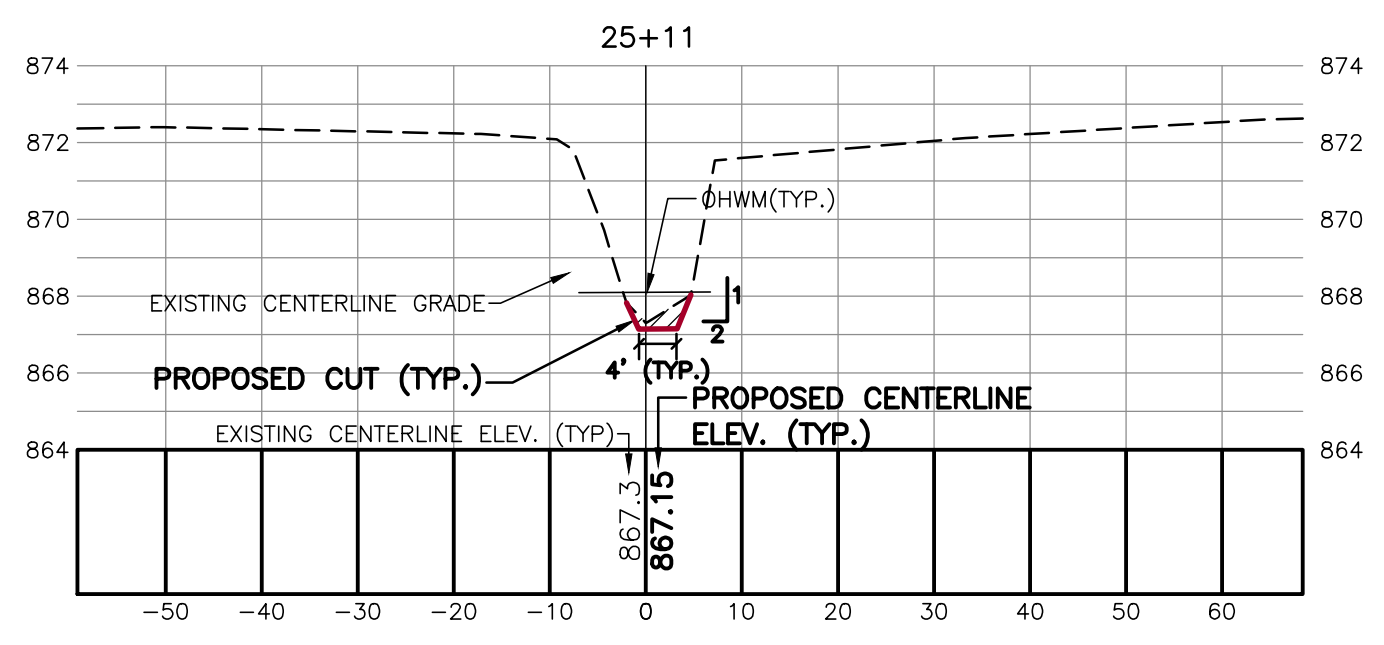
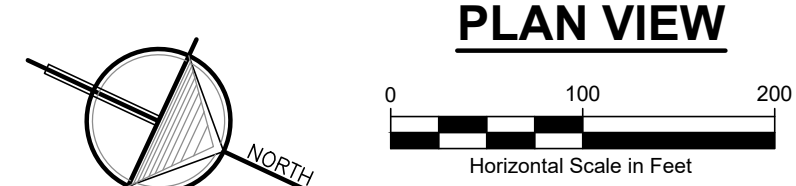
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3. CONTRACTOR SHALL USE CRANE MATS WHILE WORKING IN WETLANDS IDENTIFIED IN THE USFWS NWI TO REDUCE DISTURBANCE.
4. MULCH BLANKET BANKS AS DIRECTED BY ENGINEER.
5. IF DRAIN IS ACCESSED ACROSS PROPERTY OUTSIDE OF DRAIN EASEMENT, A LANDOWNER'S AGREEMENT FORM MUST BE EXECUTED.
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9. CONTRACTOR TO DISPOSE OF REMOVED CULVERTS.
10. DRAINAGE EASEMENT: 66', 33' EACH SIDE OF DRAIN CENTERLINE UNLESS SHOWN OTHERWISE.

LEGEND

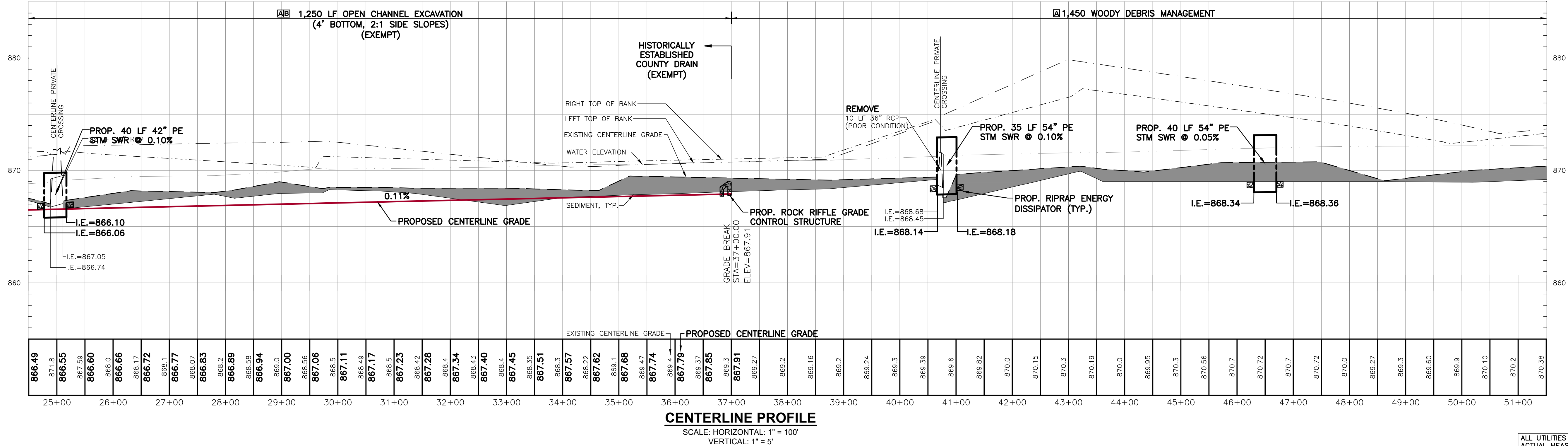
- WETLAND (USFWS NATIONAL WETLAND INVENTORY)
- SOIL TYPE (USDA NRCS WEBSOIL SURVEY)

MISCELLANEOUS QUANTITIES:

- 1 OPEN CHANNEL SEEDING 1,250 LF
- 2 MULCH BLANKET 500 SY



CROSS SECTIONS
SCALE: HORIZONTAL: 1" = 20'
VERTICAL: 1" = 5'



CENTERLINE PROFILE
SCALE: HORIZONTAL: 1" = 100'
VERTICAL: 1" = 5'



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2121 3 Mile Rd. NW
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Ph: 616-301-7888
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LRE
ENGINEERS & SURVEYORS

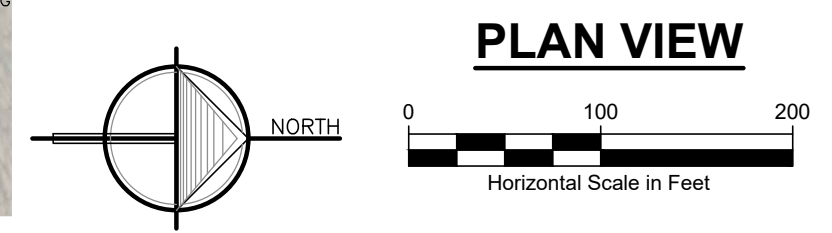
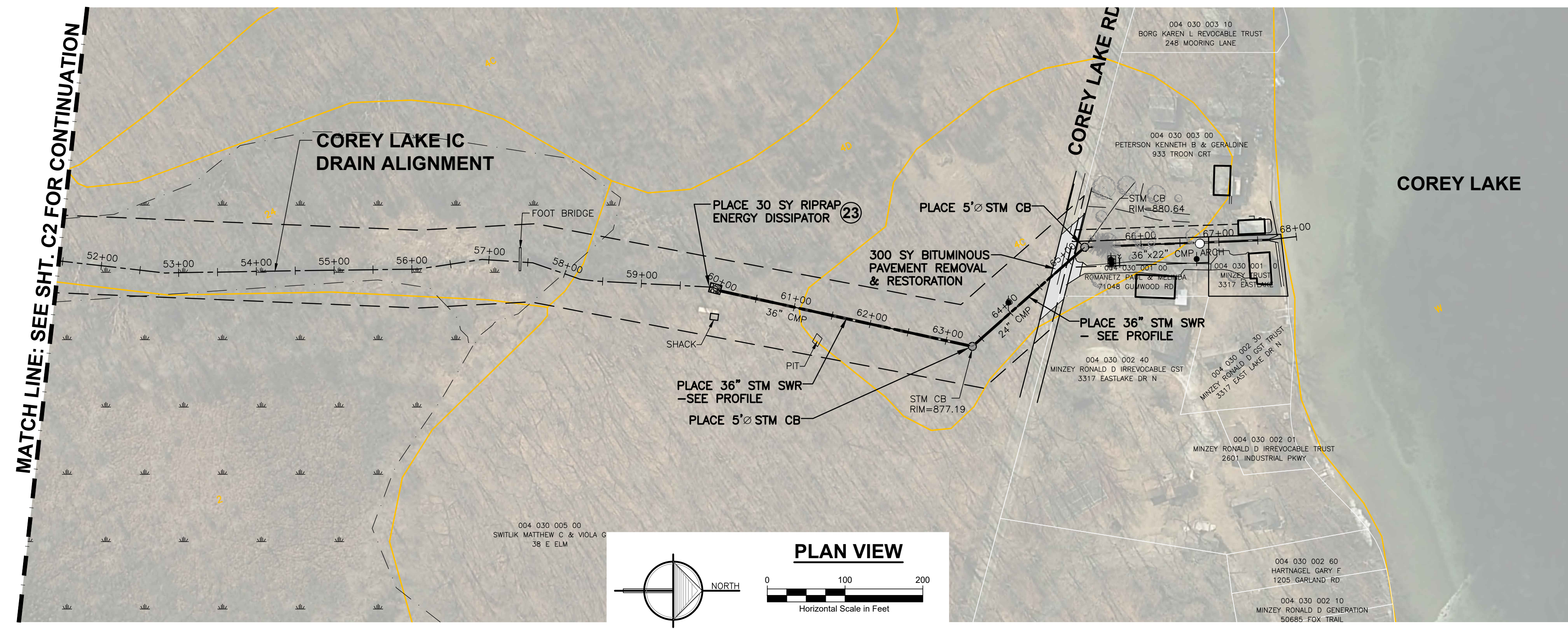
REVISIONS:	NO.	ISSUED FOR	DATE
	1.	DRAFT REVIEW	11/27/19
	2.	BIDS & CONSTRUCTION	04/23/2025

CLIENT: COREY LAKE INTERCOUNTY DRAIN DRAINAGE BOARD
MIDARD 528 W. ALLEGAN STREET, LANSING, MICHIGAN 48933
PROJECT: COREY LAKE INTERCOUNTY DRAIN
CASS AND ST. JOSEPH COUNTIES, MICHIGAN

PROJECT NUMBER:	DATE
19478	11/2019
SURVEYED BY:	DESIGNED BY:
CPV/AOK	AW
DRAFTED BY:	CHECKED BY:
RAG	DJF

PLAN & PROFILE
STA: 24+50 - 51+50

C2



NOTES:

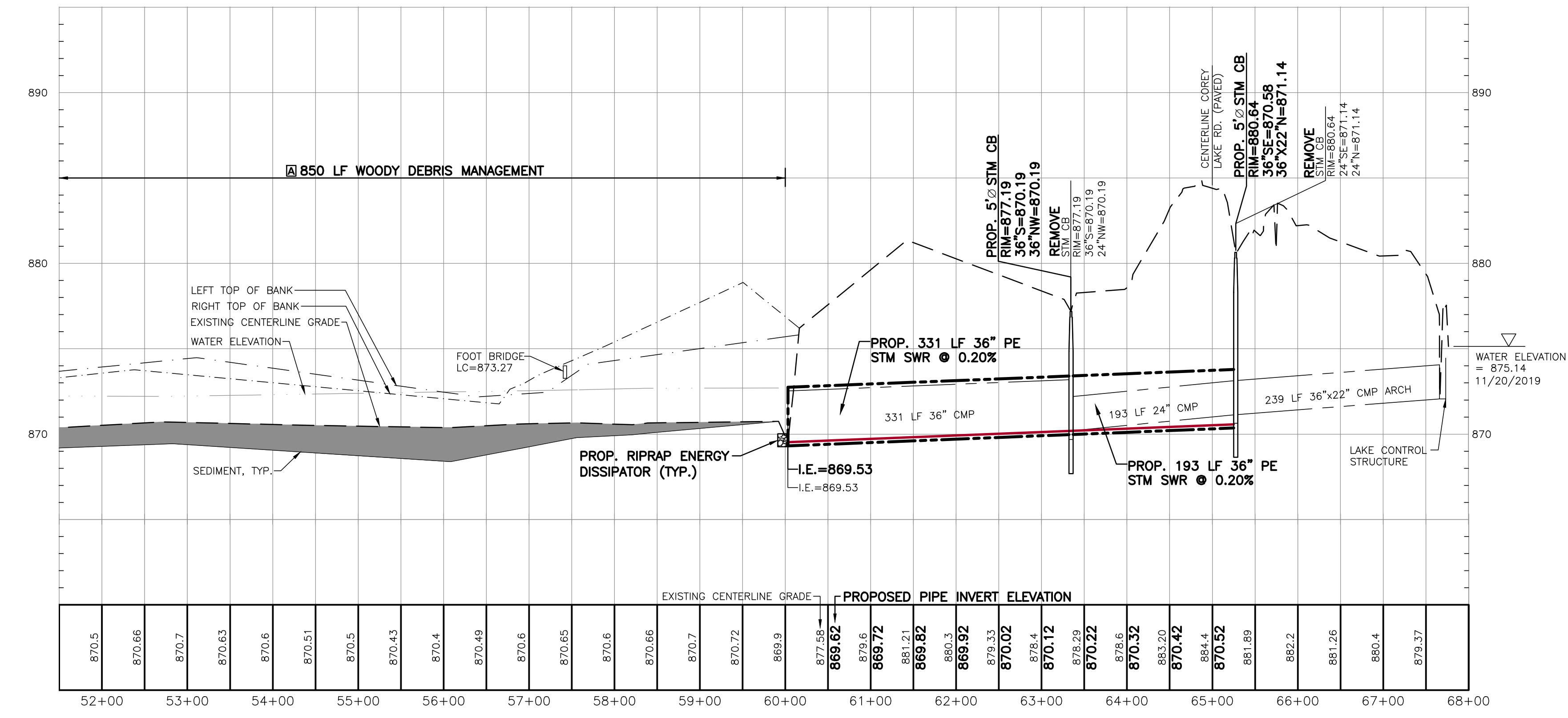
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12. REMOVE, SALVAGE AND REPAIR FENCES, STRUCTURES AND OTHER ITEMS THAT INTERFERE WITH CONSTRUCTION, PAID FOR AS 1 LS SITE RESTORATION.

LEGEND

- WETLAND (USFWS NATIONAL WETLAND INVENTORY)
- BITUMINOUS PAVEMENT REMOVAL
- SOIL TYPE (USDA NRCS WEBSOIL SURVEY)

MISCELLANEOUS QUANTITIES

- COREY LAKE OUTLET DEWATERING 1 LS
- ① SURFACE RESTORATION 524 LF



CENTERLINE PROFILE

SCALE: HORIZONTAL: 1" = 100'
VERTICAL: 1" = 5'

2121 3 Mile Rd NW
Walker, MI 49544
Ph: 616-301-7888
www.LREM.com



REVISIONS:	NO.	ISSUED FOR	DATE
	1.	DRAFT REVIEW	11/27/19
	2.	BIDS & CONSTRUCTION	04/23/2025

CLIENT: COREY LAKE INTERCOUNTY DRAIN DRAINAGE BOARD
MIDARD 525 W. ALLEGAN STREET, LANSING, MICHIGAN 48933
PROJECT: COREY LAKE INTERCOUNTY DRAIN
CASS AND ST. JOSEPH COUNTIES, MICHIGAN

PROJECT NUMBER:	DATE
19078	11/2019
SURVEYED BY: CRY/ADK	06/2022
DESIGNED BY: AWS	11/2019
DRAFTED BY: RAG	03/2025
CAD/C: DJF	

PLAN & PROFILE
STA: 51+50 - 68+000

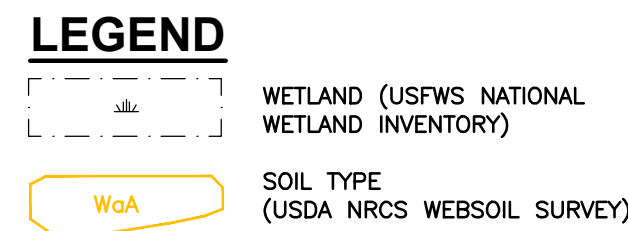
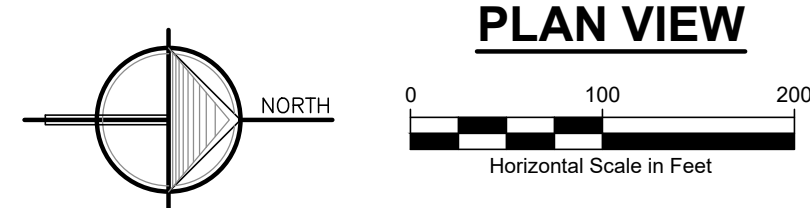
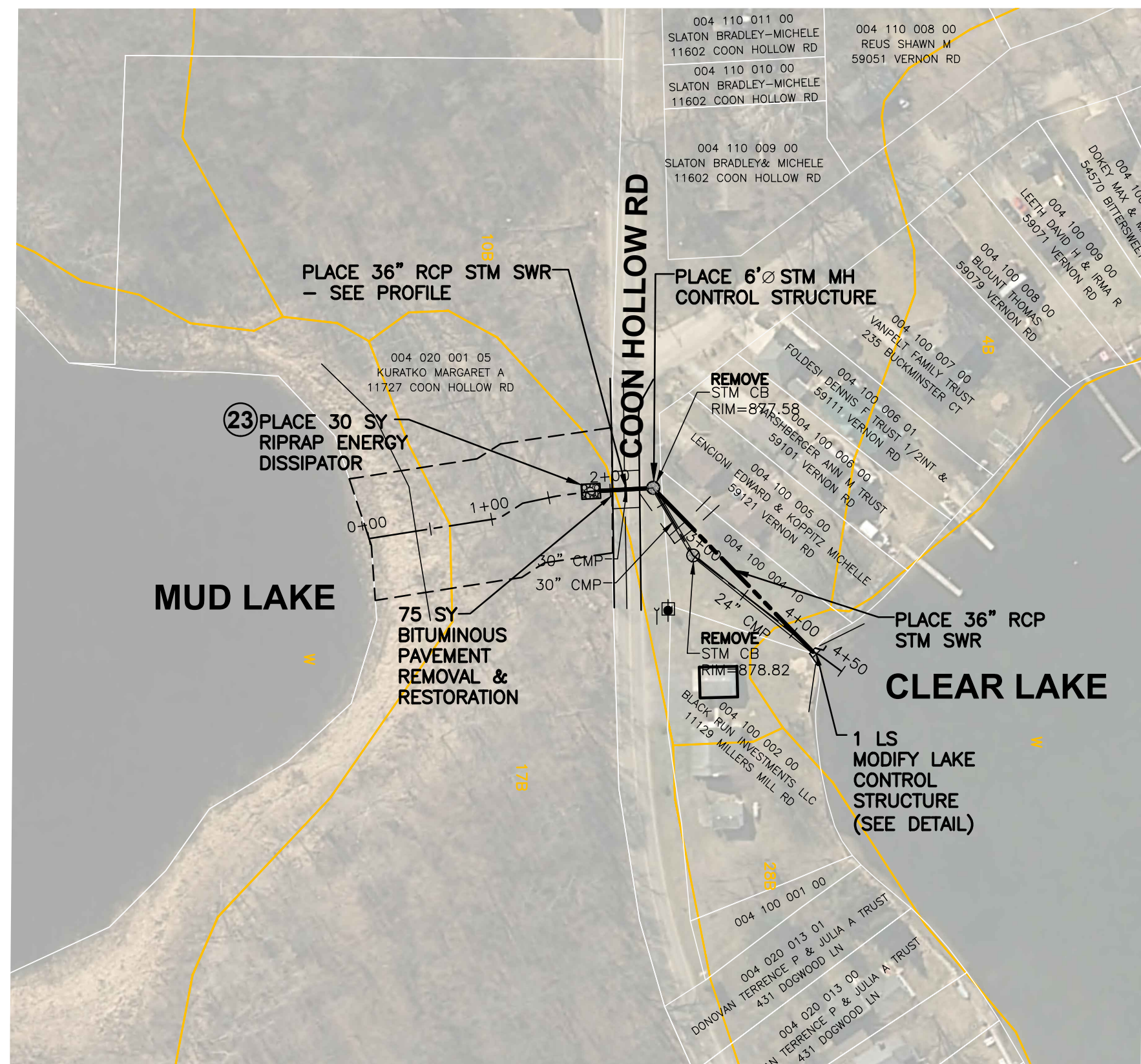
SHEET NUMBER

C3

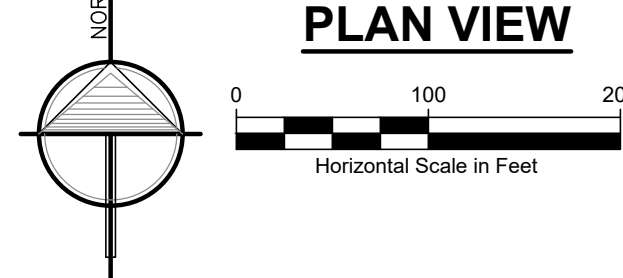
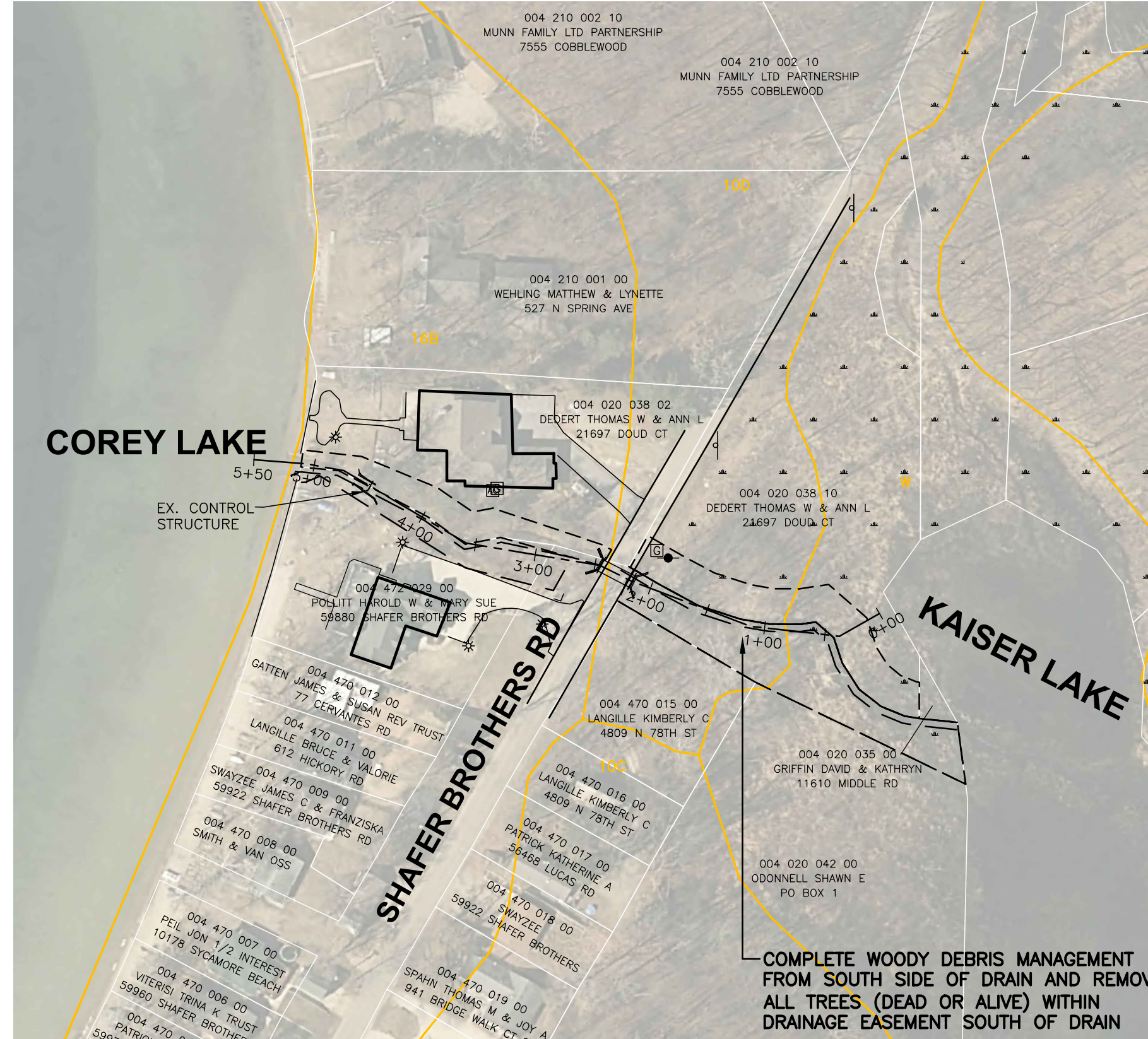


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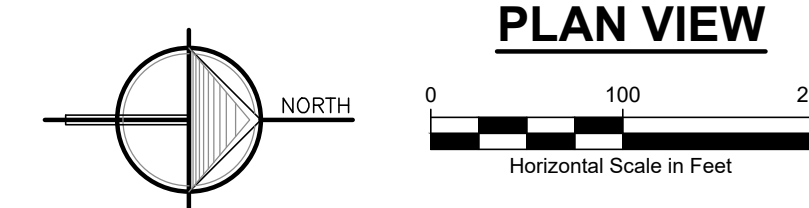
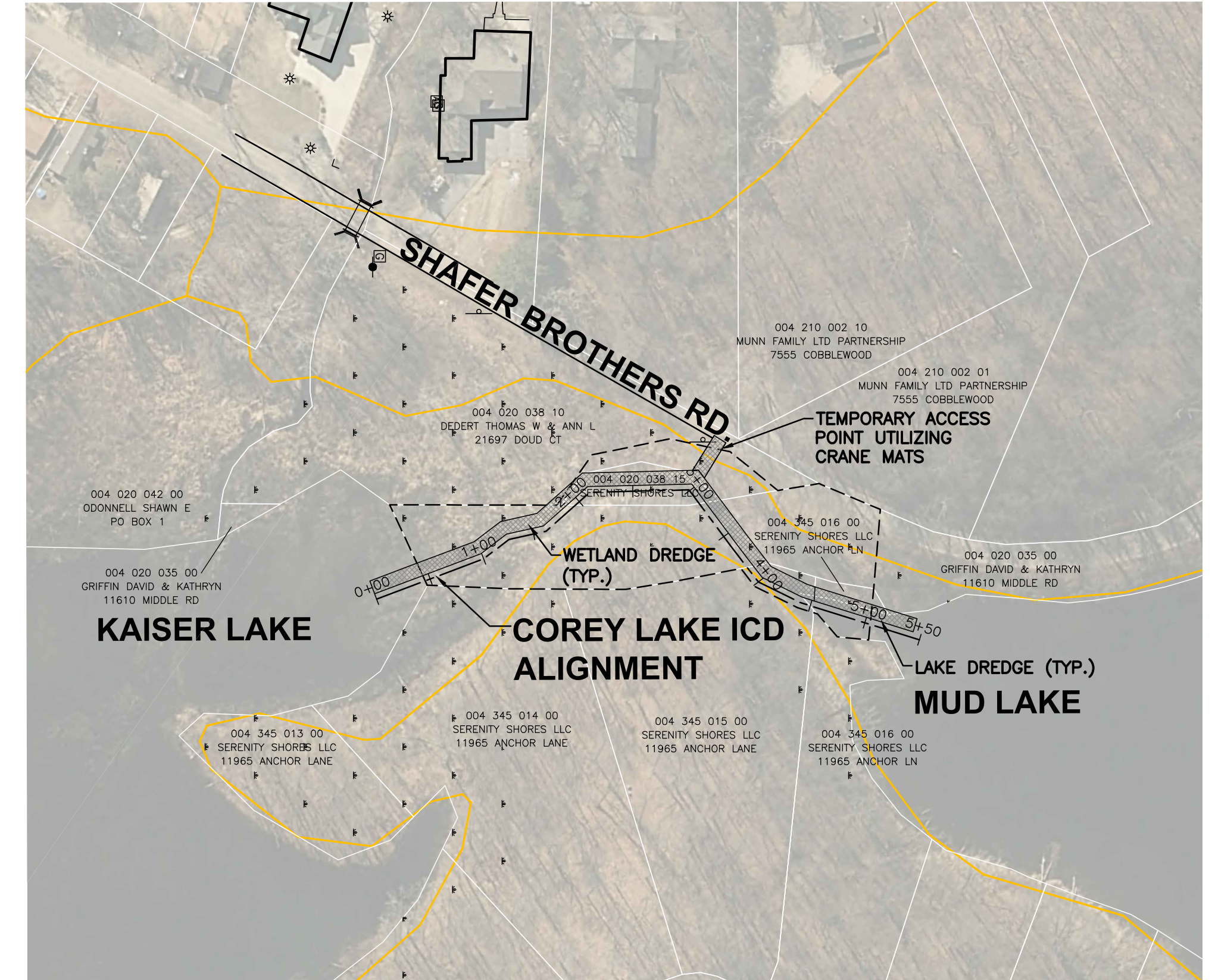
MUD LAKE - CLEAR LAKE



COREY LAKE - KAISER LAKE

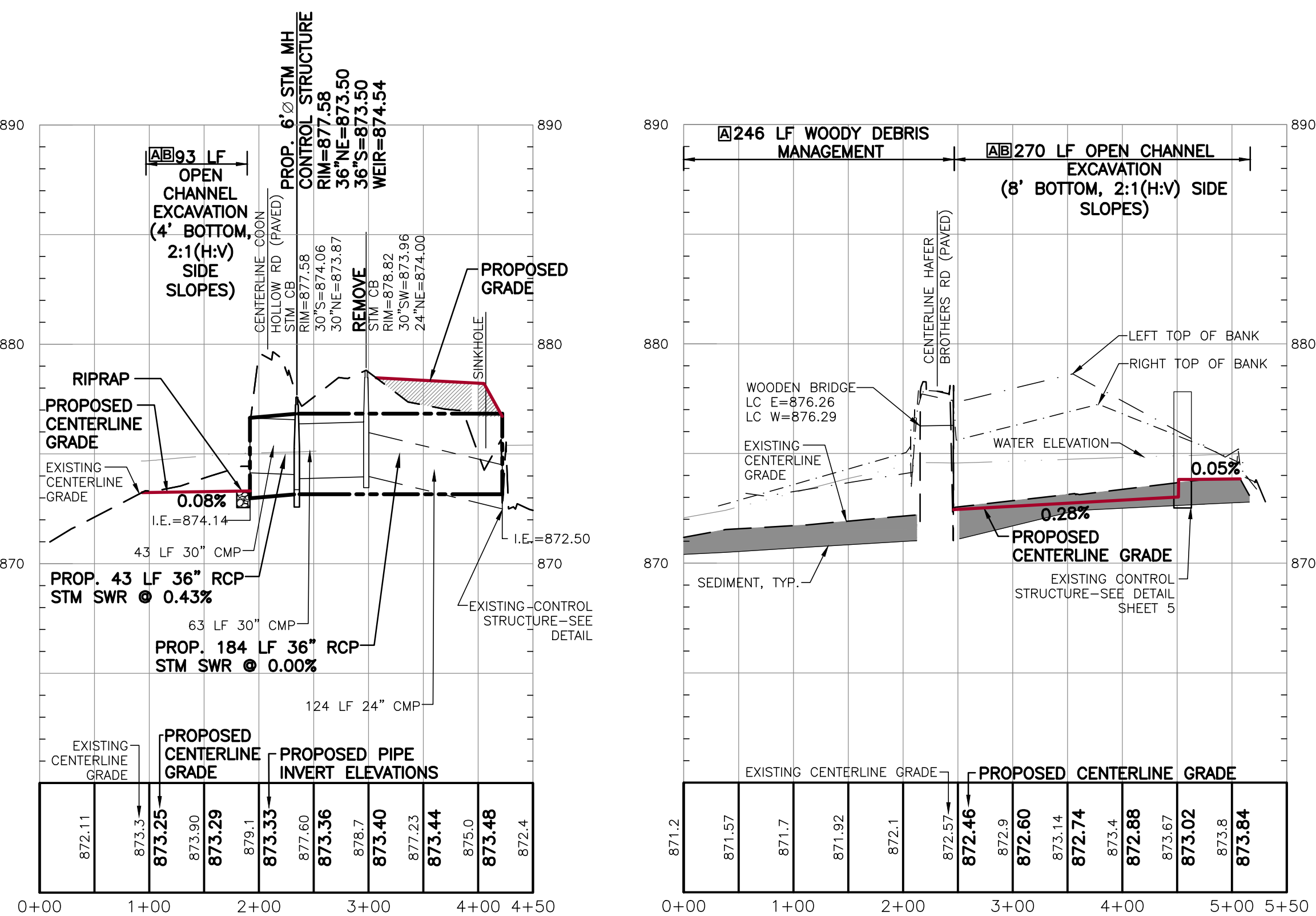


KAISER LAKE - MUD LAKE



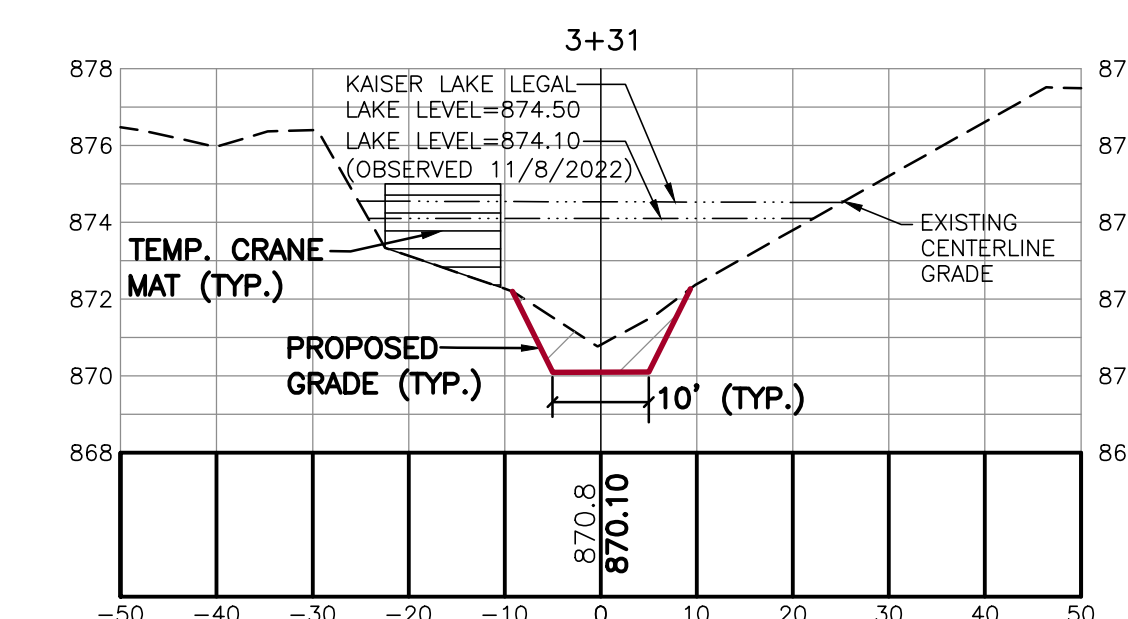
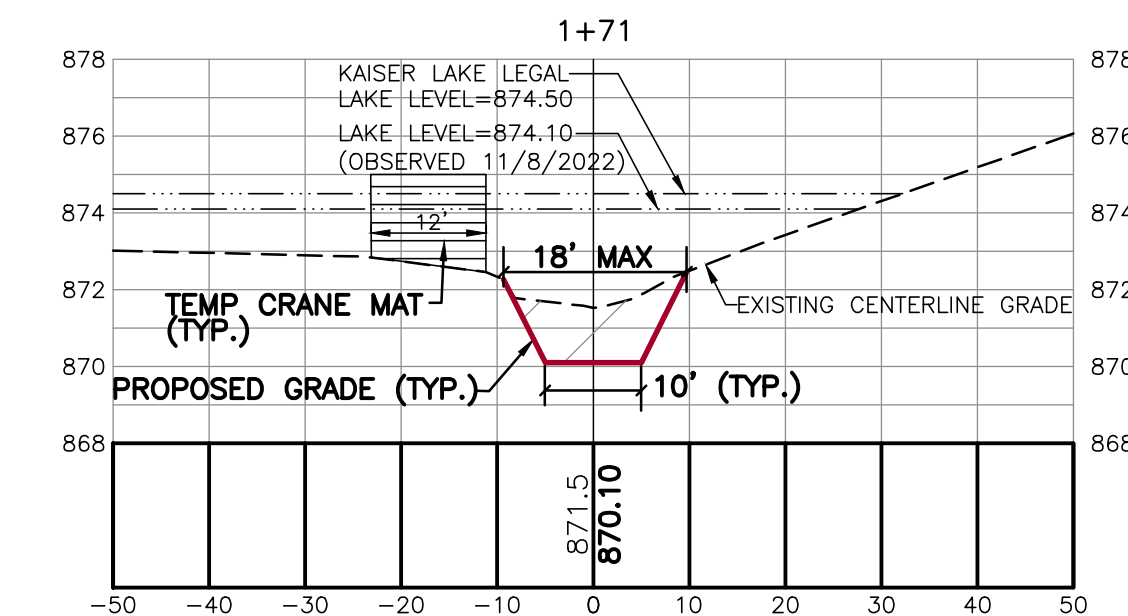
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10. CONTRACTOR TO DISPOSE OF CULVERTS AND STORM SEWER.
11. CONTRACTOR TO MAINTAIN ACCESS TO ALL DRIVEWAYS WITHIN PROJECT LOCATION.
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CENTERLINE PROFILE
SCALE: HORIZONTAL: 1" = 100'
VERTICAL: 1" = 5'

KAISER LAKE - MUD LAKE



CROSS SECTIONS
SCALE: HORIZONTAL: 1" = 20'
VERTICAL: 1" = 5'

NOTE:
ELEVATIONS ARE BASED ON NGVD 29

MISCELLANEOUS QUANTITIES:

- ① SURFACE RESTORATION 227 LF
- ① OPEN CHANNEL SEEDING 913 LF
- CLEAR LAKE OUTLET DEWATERING 1 LS

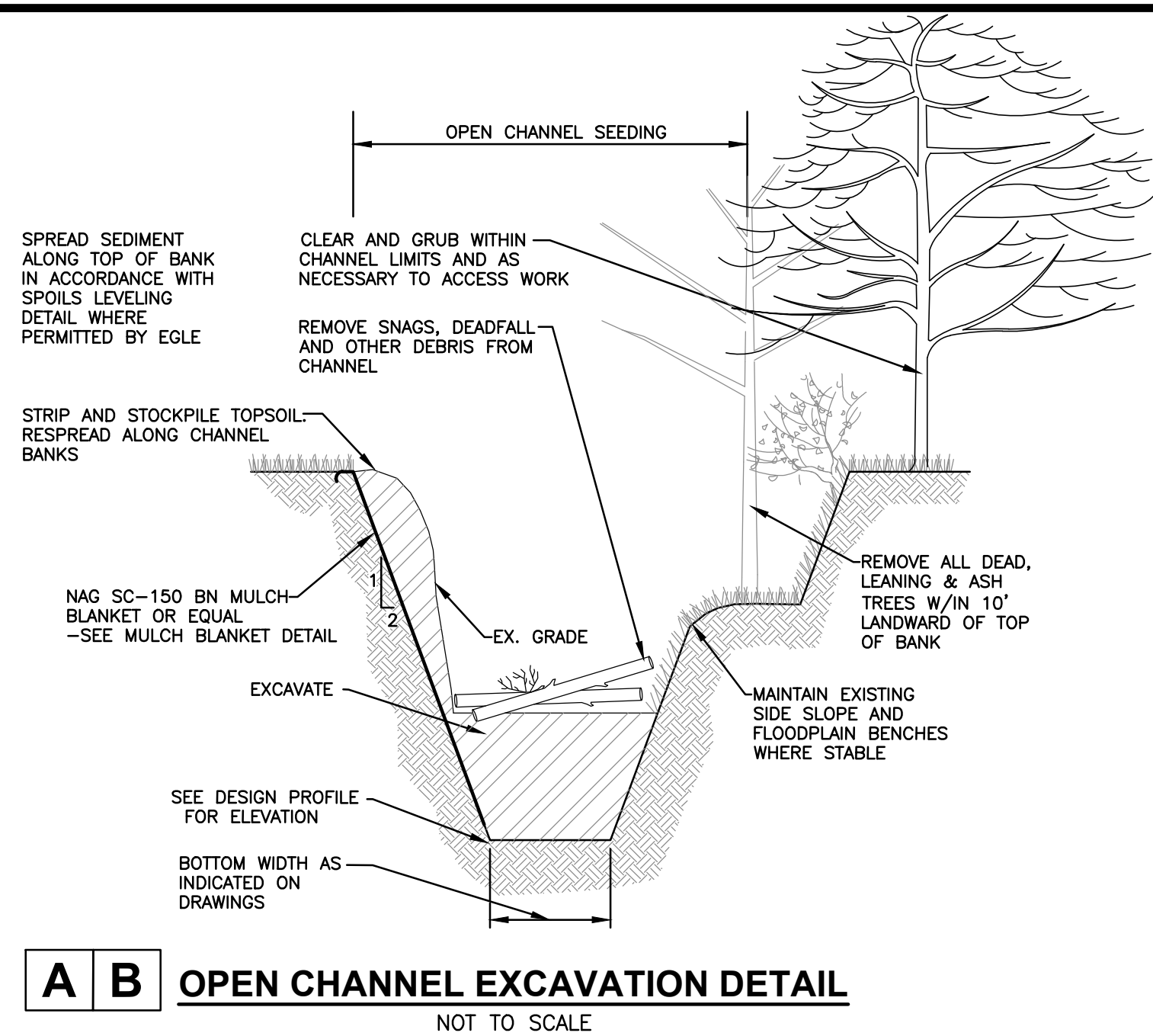


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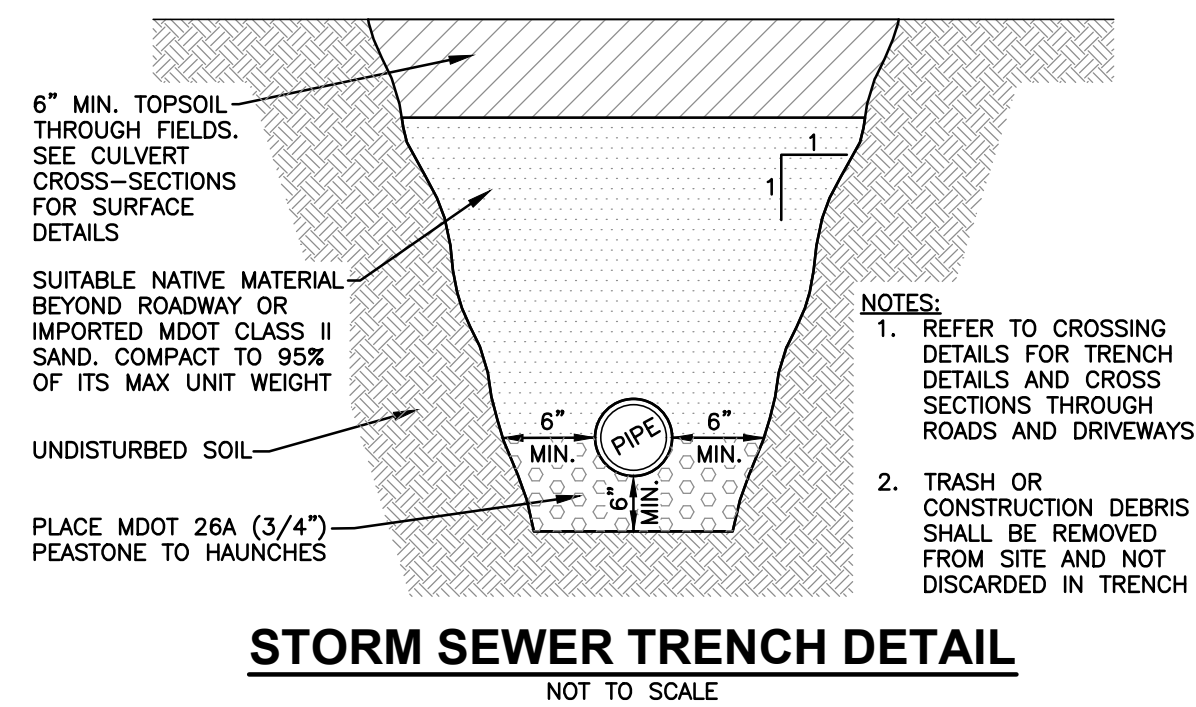
NO.	ISSUED FOR	DATE
1.	DRAFT REVIEW	11/27/19
2.	BIDS & CONSTRUCTION	04/23/2025

DATE	BY
11/20/19	GPV/AOK
06/20/22	DESIGNED BY: AWS
11/20/19	DRAFTED BY: RAG
03/20/25	CACG/DJF

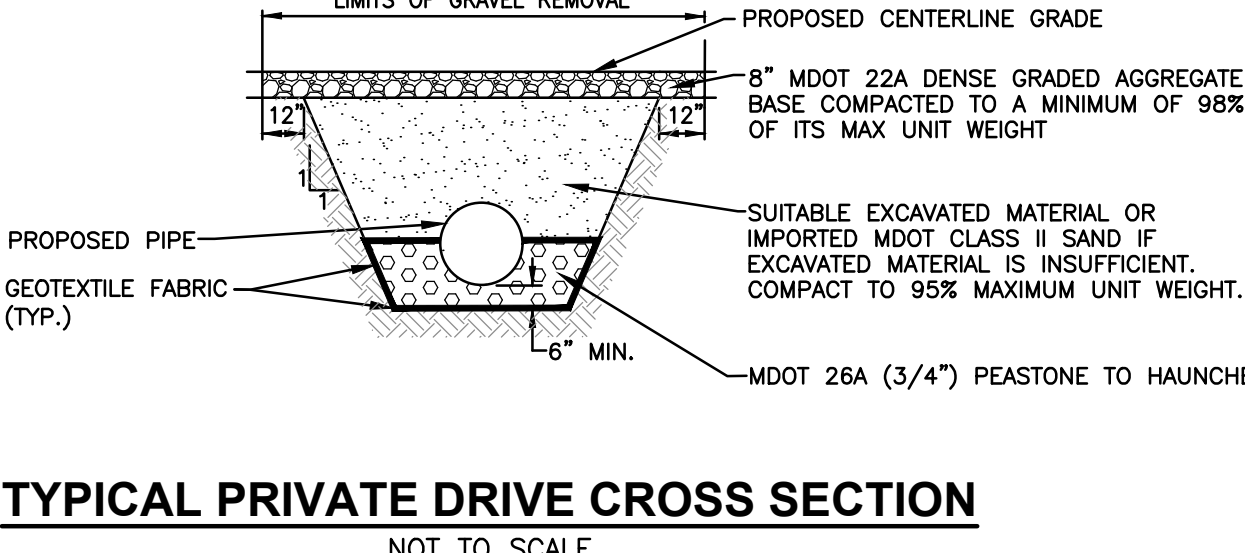
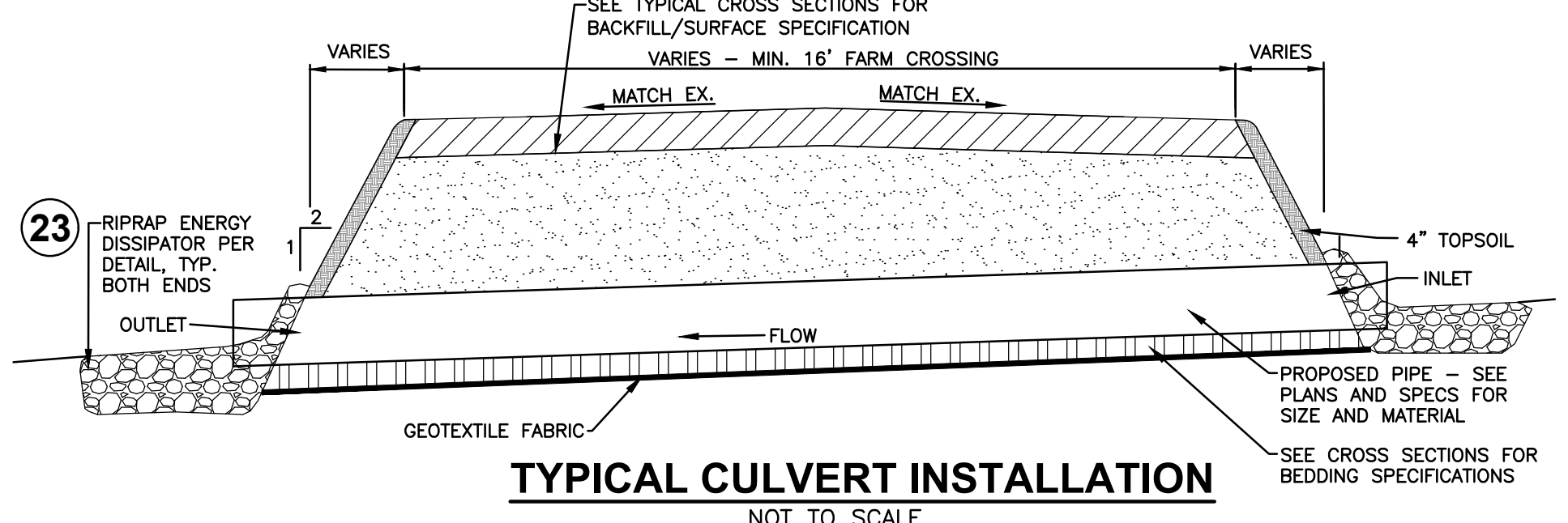
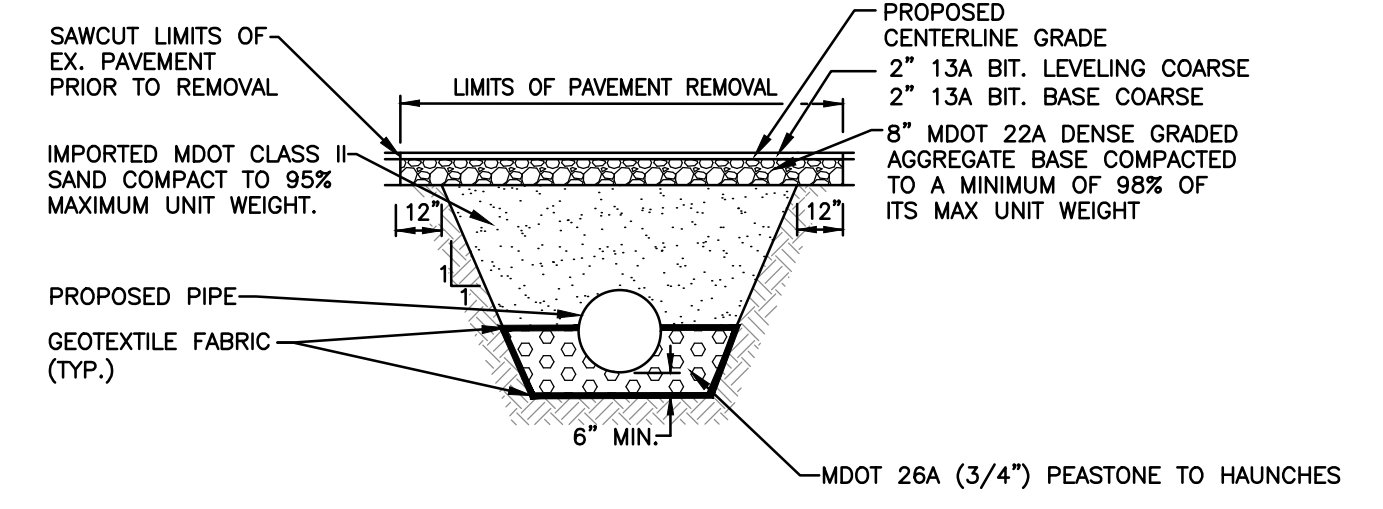
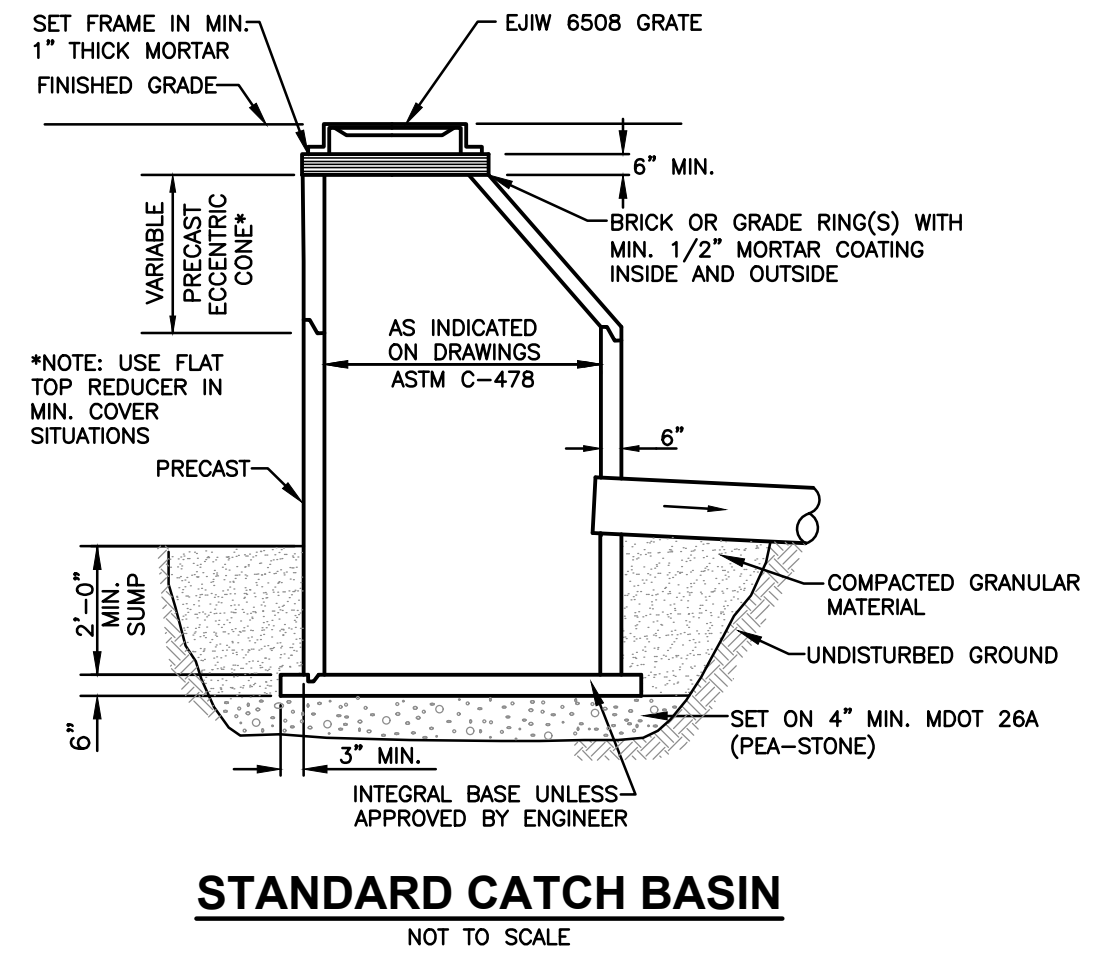
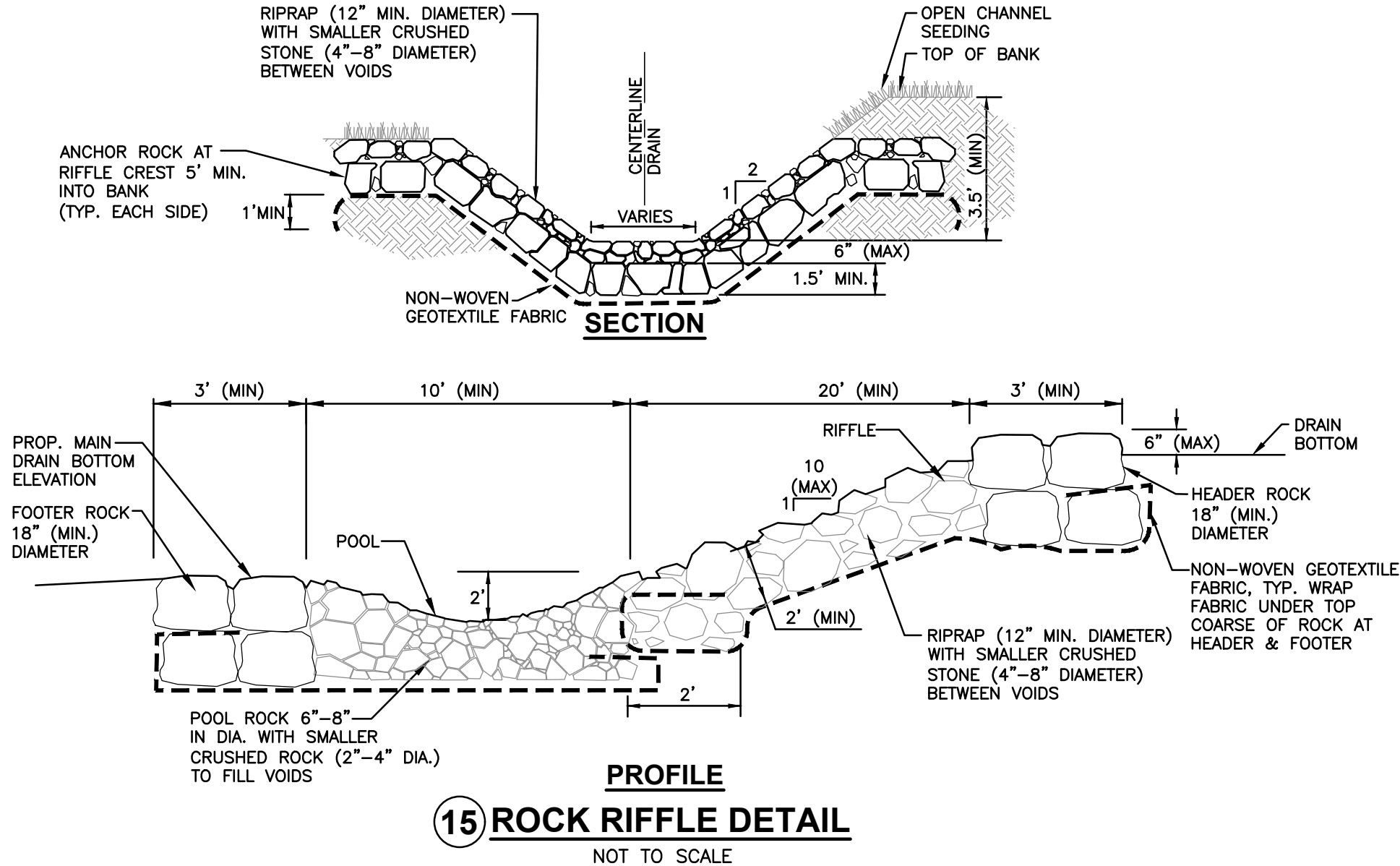
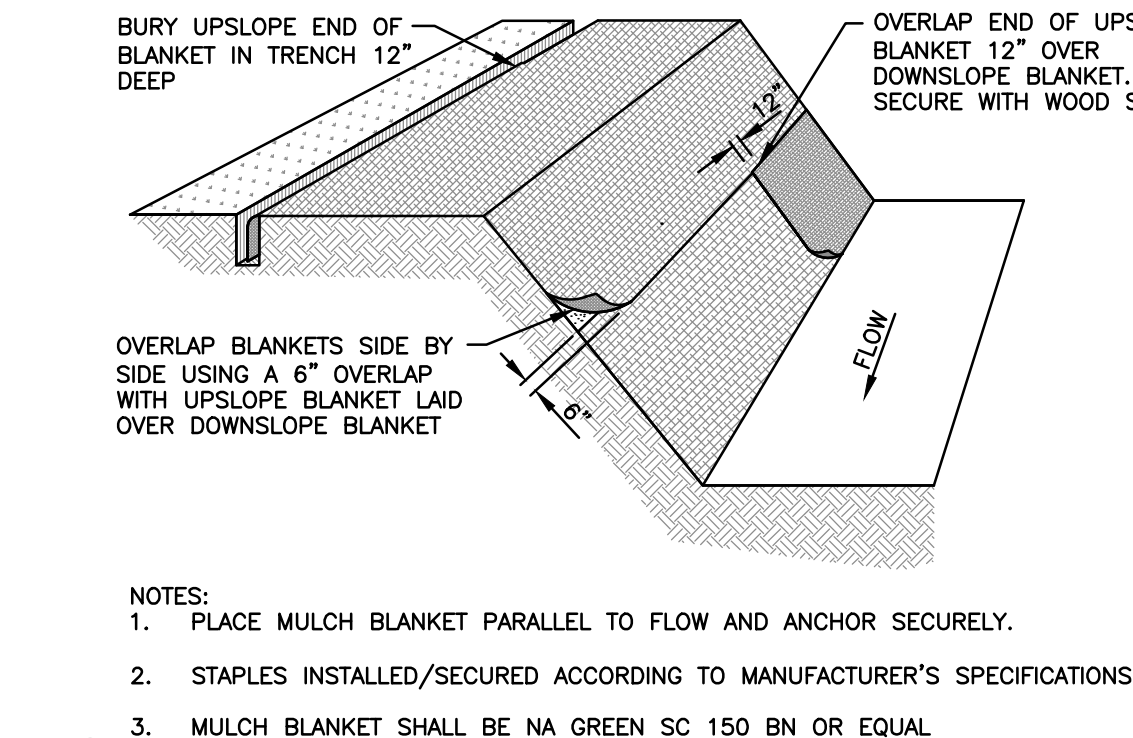
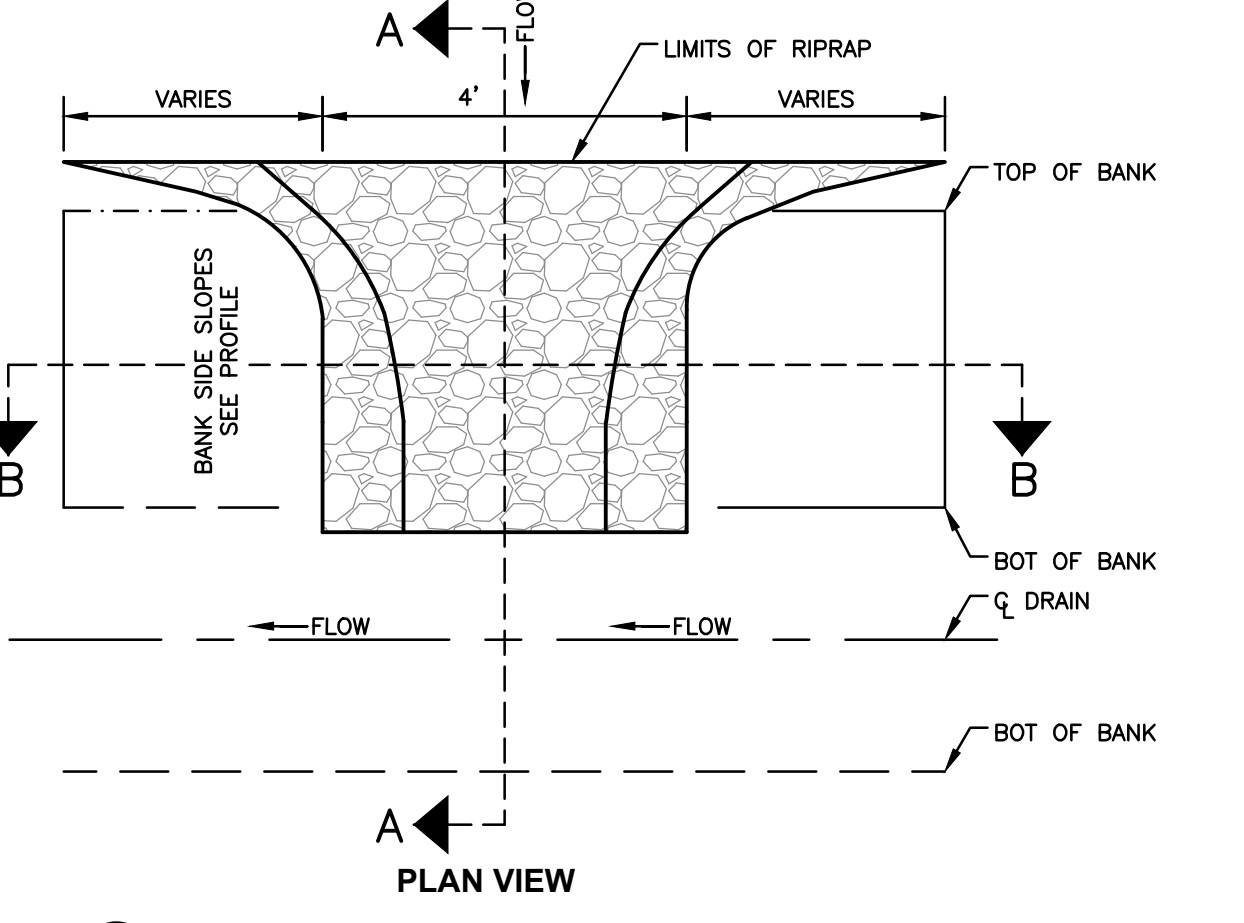
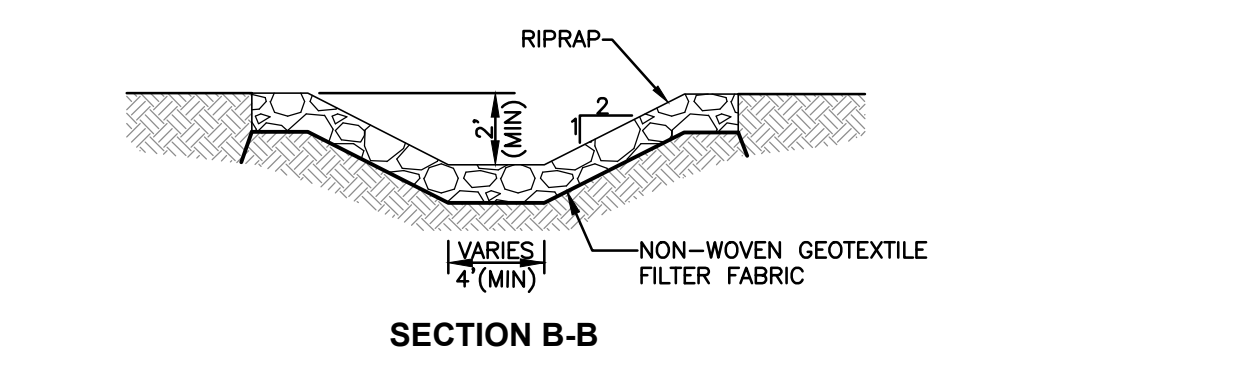
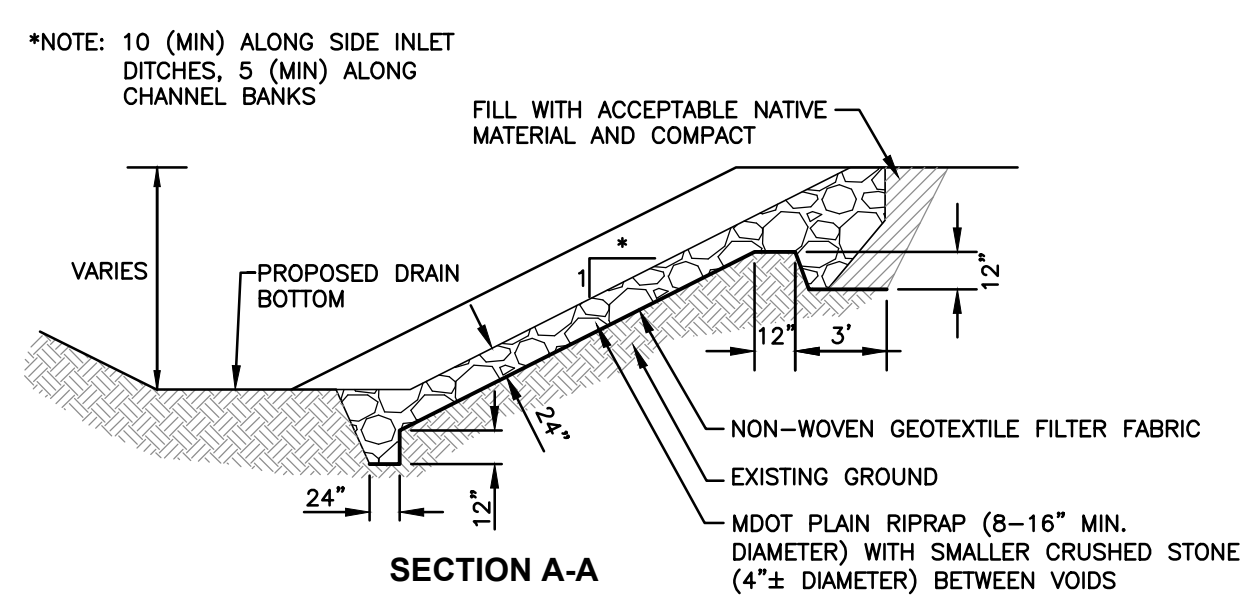
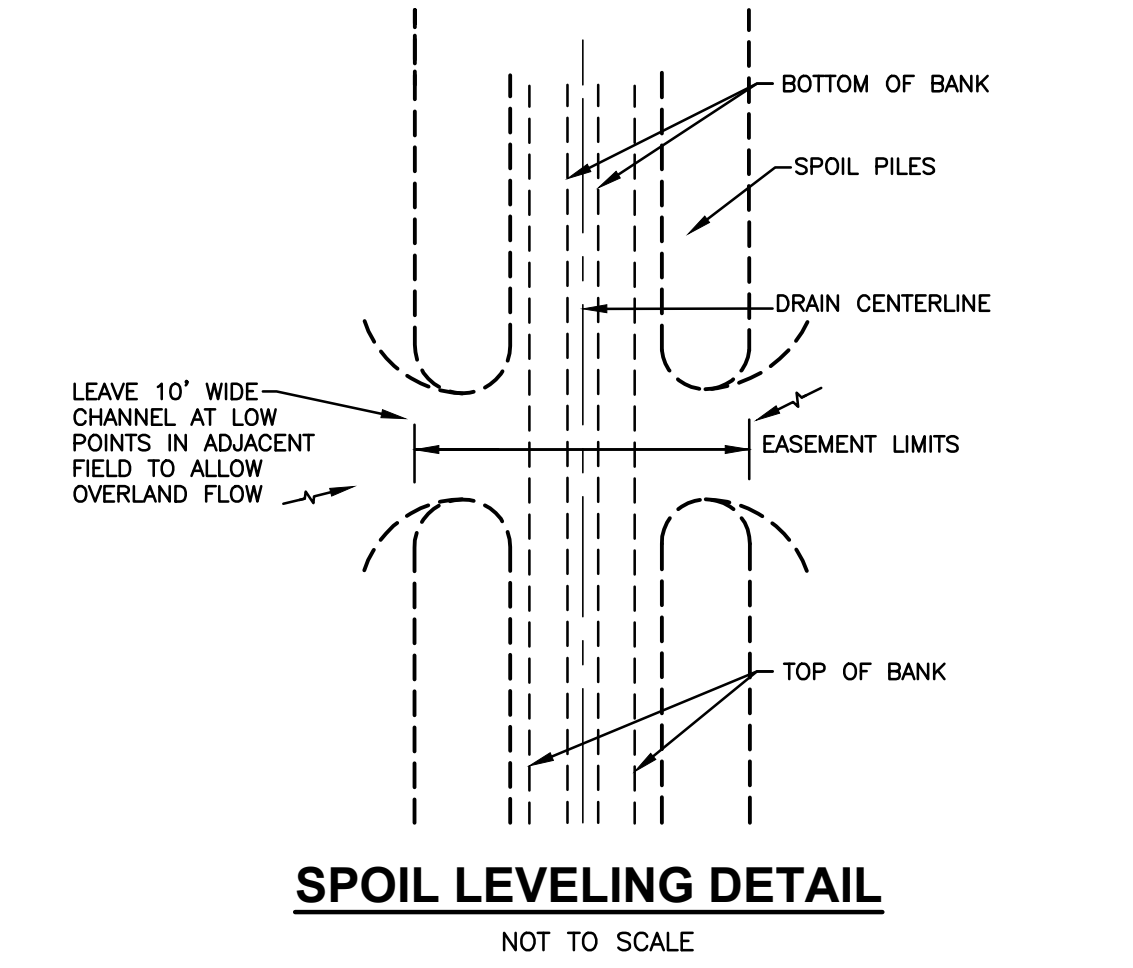
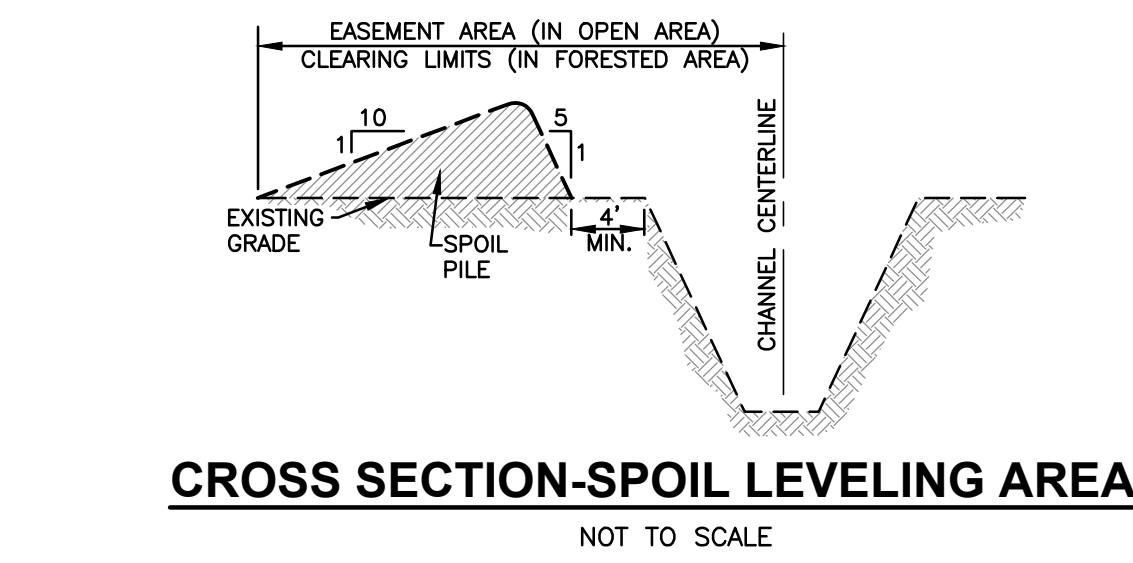
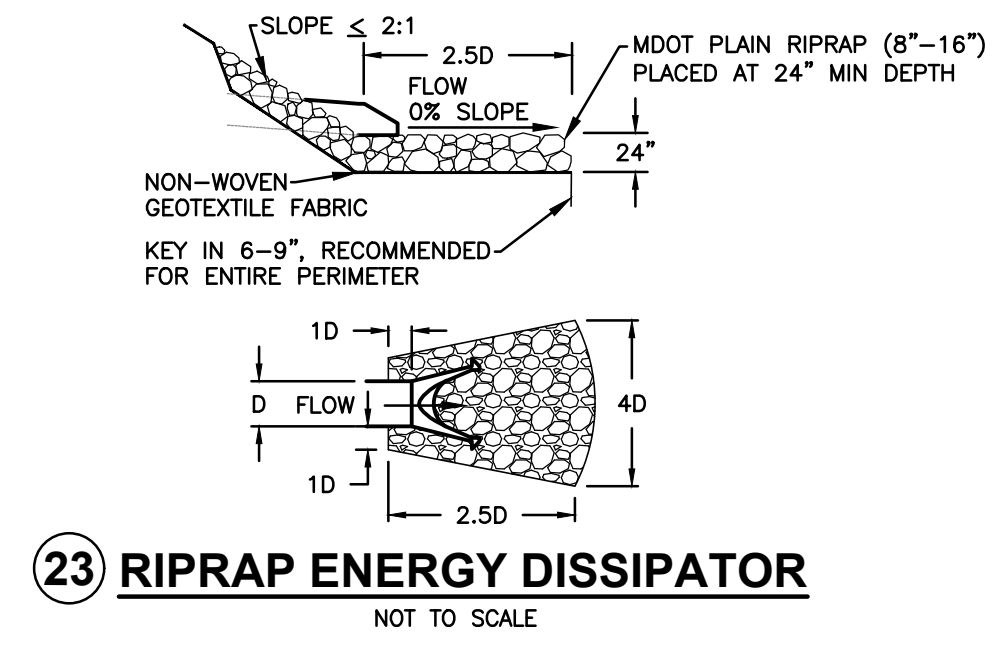
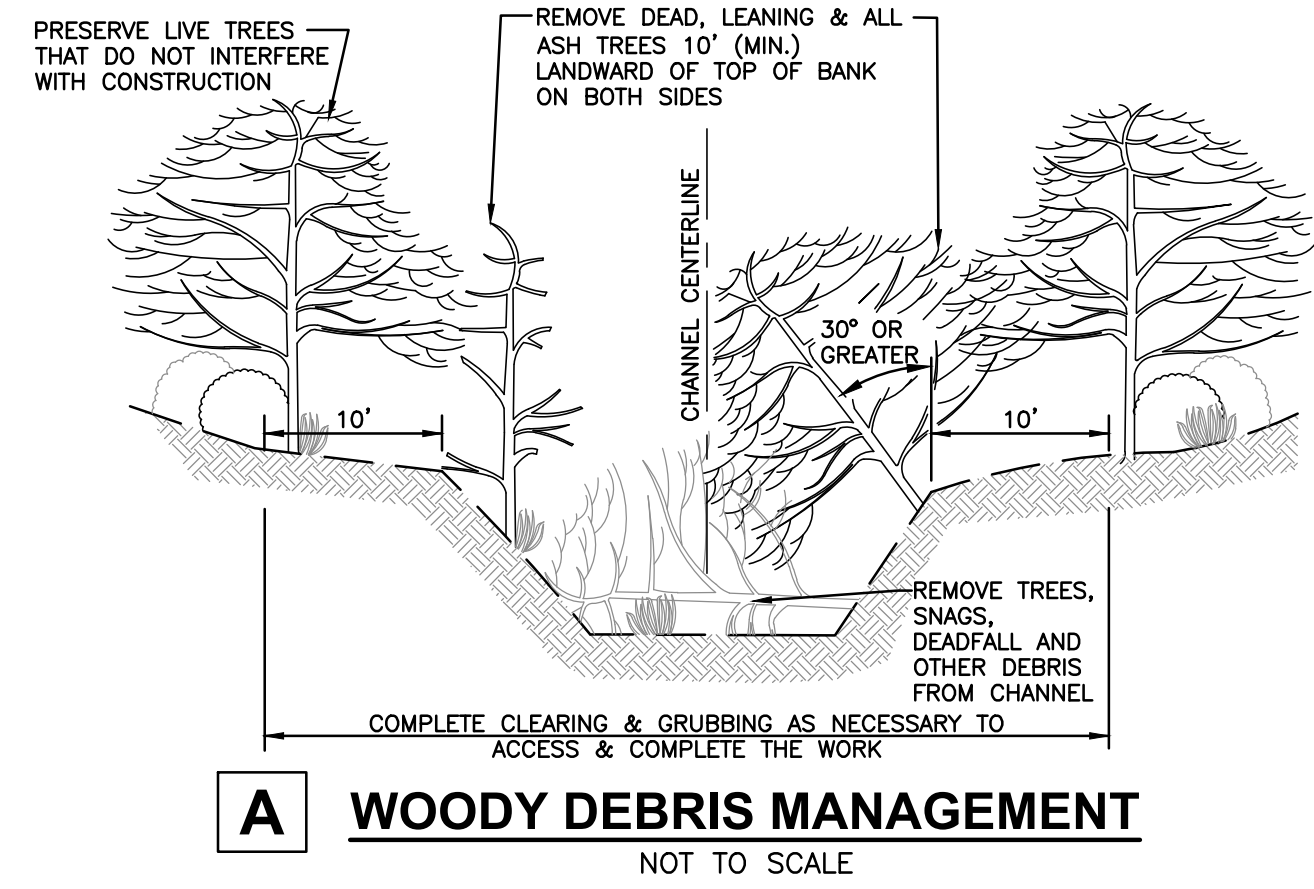


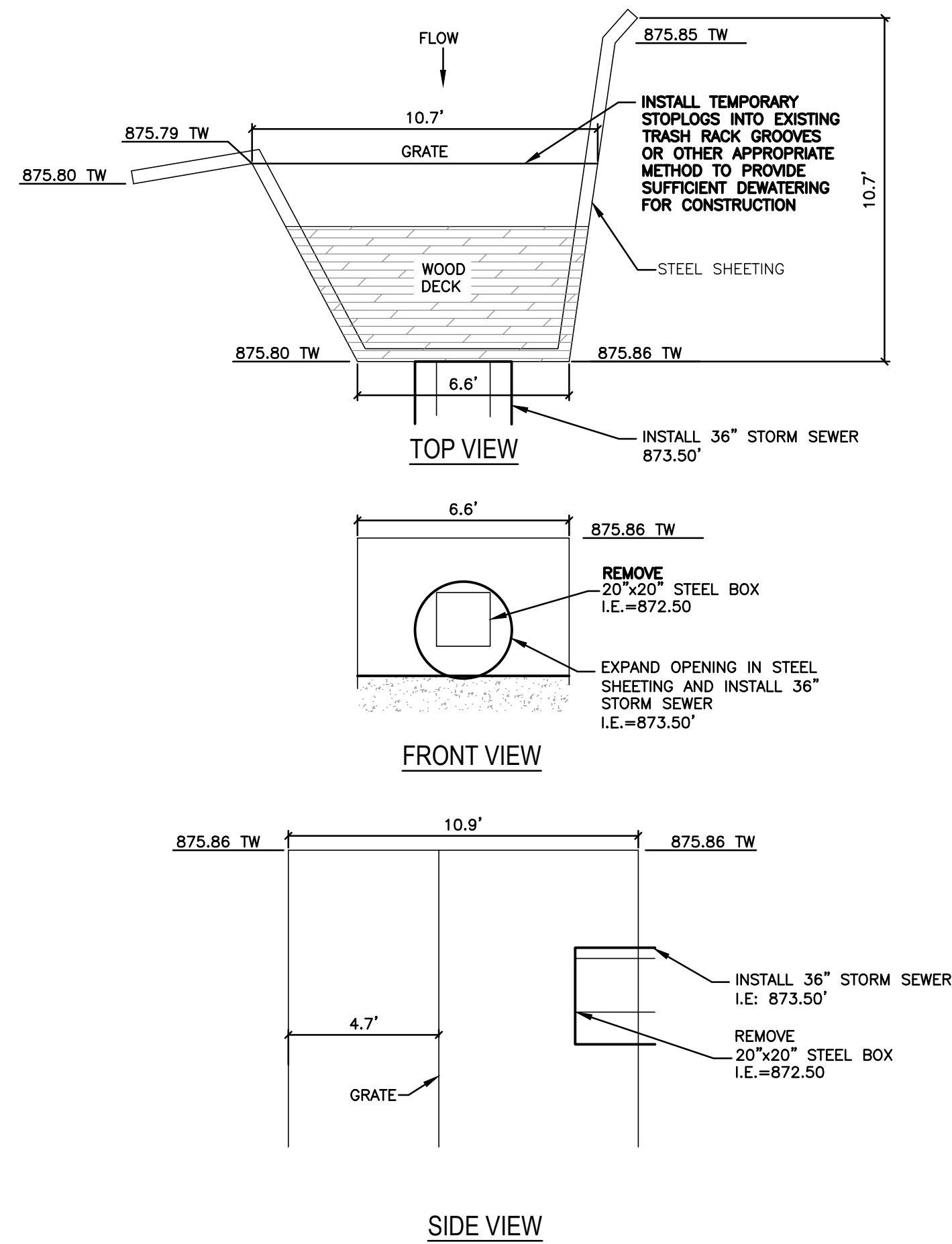
TRENCH WIDTH TABLE
MINIMUM TRENCH WIDTH FOR N-12 PLASTIC PIPE (PER ADS STANDARD DRAWING STD-101)

PIPE DIAMETER	TRENCH WIDTH
4"	21"
6"	23"
8"	26"
10"	28"
12"	30"
15"	34"
18"	39"
24"	48"
30"	56"
36"	64"
42"	72"
48"	80"
60"	96"

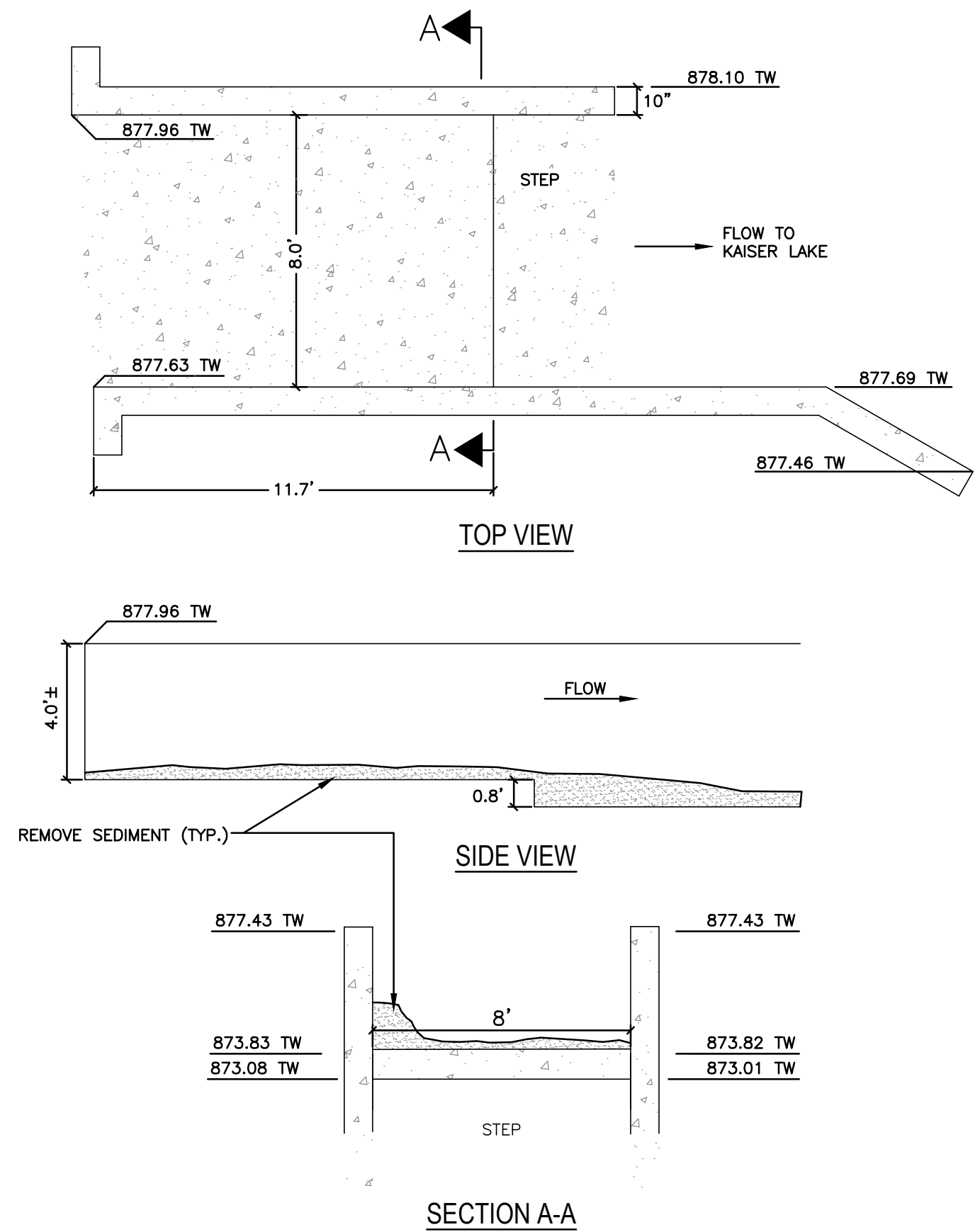


NOTES:
1. CUT STUMPS FLUSH WITH GROUND SURFACE.
2. LEAVE EMBEDDED MATERIAL WITHIN THE CHANNEL BOTTOM.

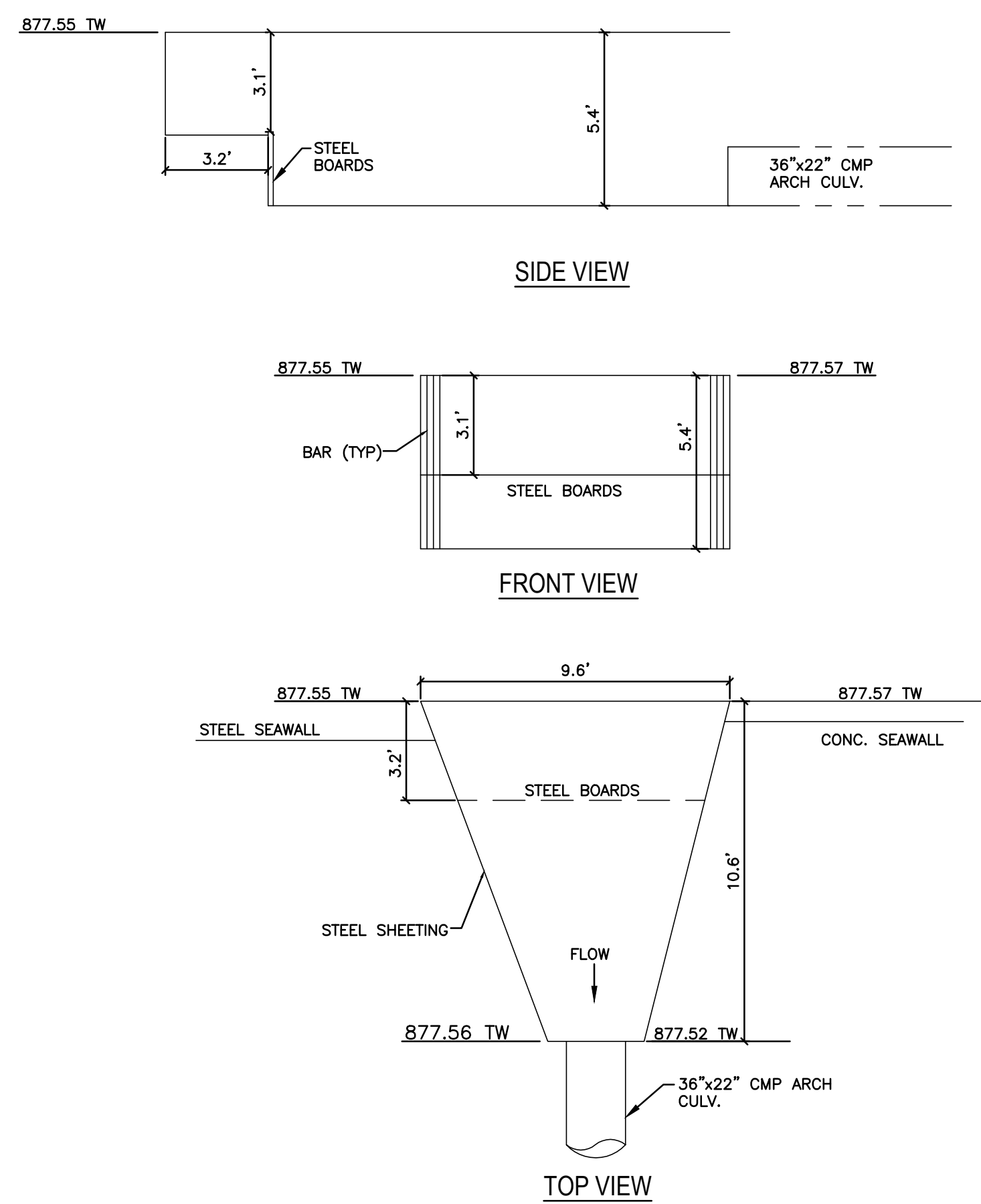




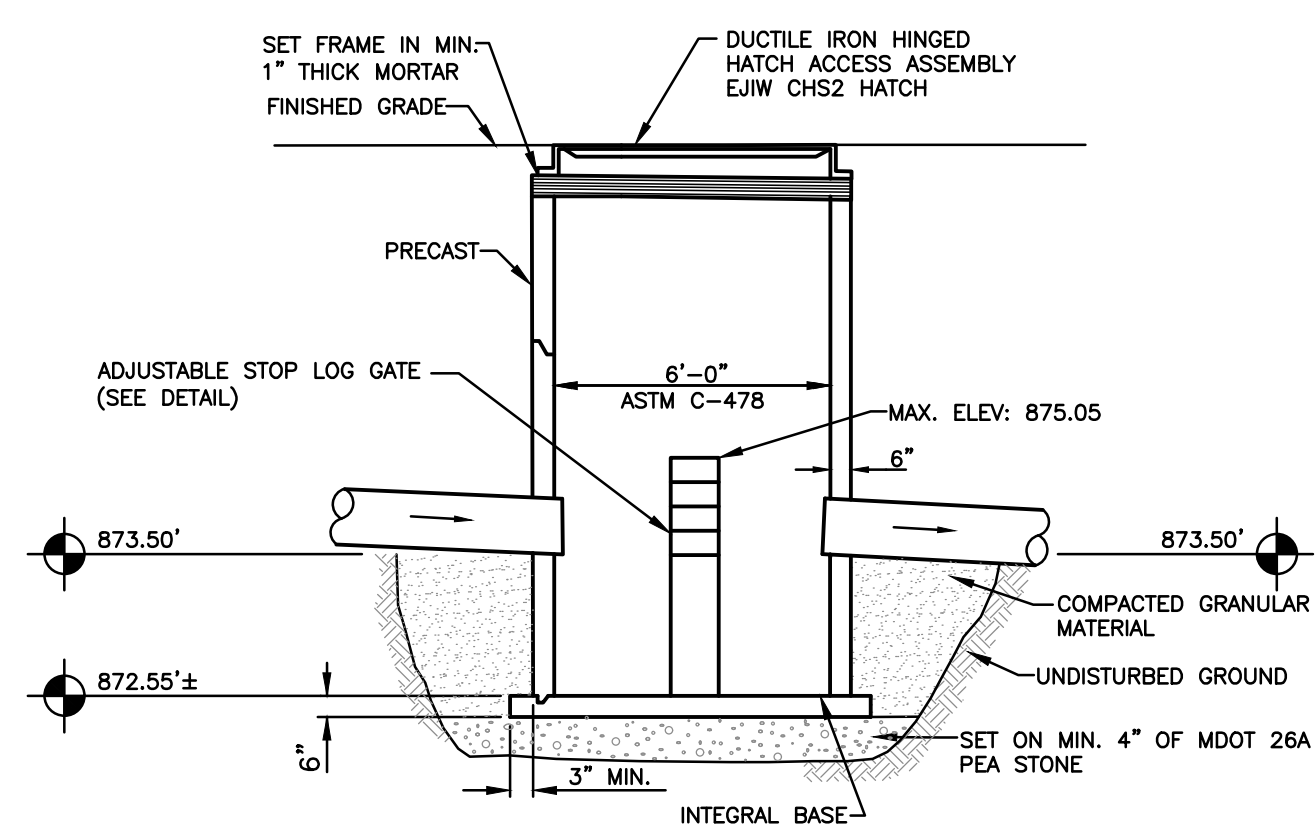
EXISTING CONTROL STRUCTURE CLEAR LAKE
 SCALE: 1"=4"
 ELEVATIONS ARE BASED ON NGVD 29



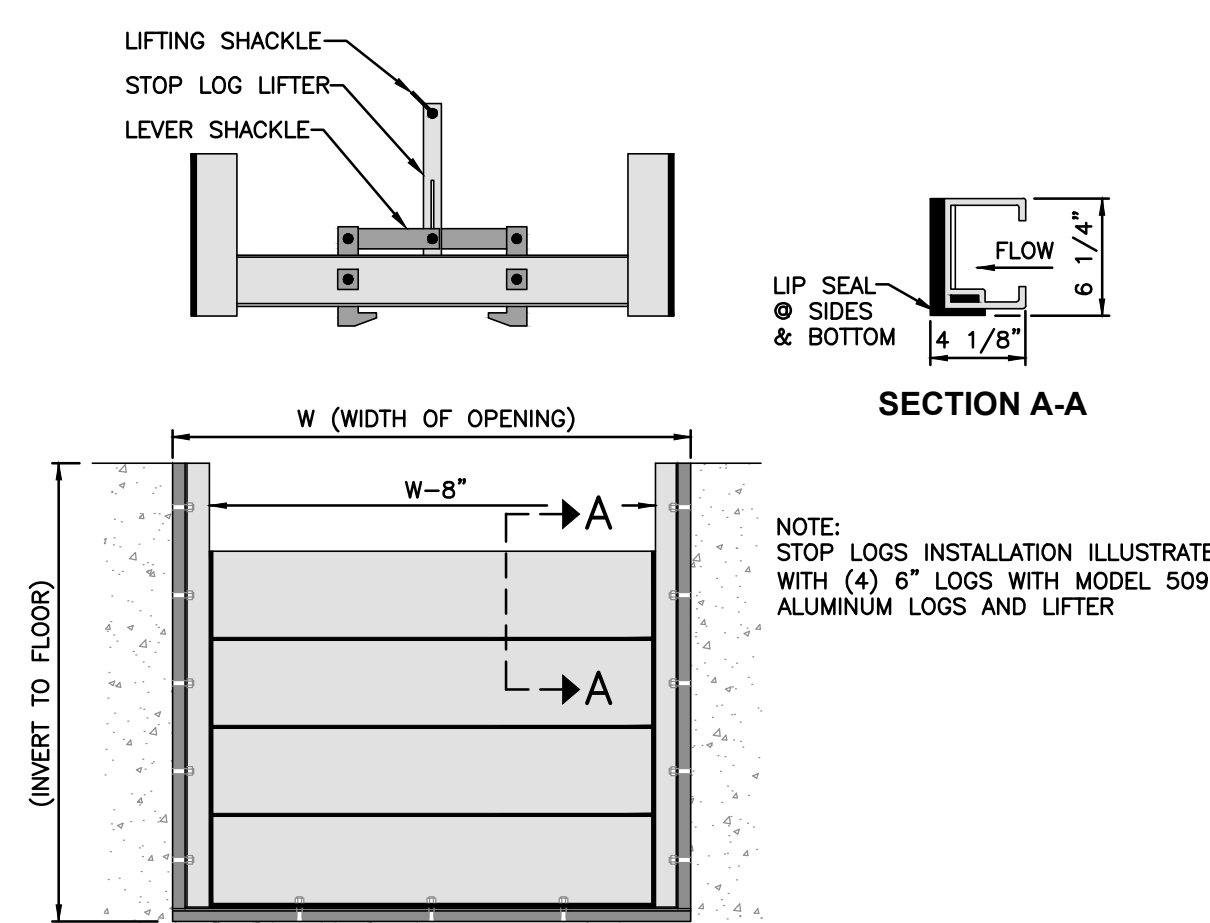
EXISTING CONTROL STRUCTURE KAISER LAKE TO COREY LAKE
 SCALE: 1"=4"
 ELEVATIONS ARE BASED ON NGVD 29



EXISTING CONTROL STRUCTURE COREY LAKE
 SCALE: 1"=4"
 ELEVATIONS ARE BASED ON NGVD 29



PROPOSED CLEAR LAKE CONTROL STRUCTURE
 NOT TO SCALE



STOP LOG GATE
 NOT TO SCALE

MACDC UNIFIED KEYING SYSTEM EROSION CONTROL MEASURES (SESC)

KEY	SESC MEASURE	SYMBOL	WHERE USED
1	Seeding		When bare soil is exposed, temporarily or permanently, to erode forces from wind and or water on flat areas, mild slopes, grassed waterways and spillways, diversion ditches and dikes, borrow and stockpile areas, and spoil piles.
2	Mulch		On flat areas, slopes, grassed waterways and spillways, diversion ditches & dikes, borrow & stockpile areas, & spoil piles when areas are subject to raindrop impact, & erosive forces from wind or water.
9	Vegetation Removal without Grubbing	 Grubbing Omitted	Retains existing root mat which assists in stabilizing slopes. Assists in the revegetation process by providing sprout growth. Reduces sheet flow velocities preventing rilling and gullying. Discourages off-road vehicle use.
13	Slope Stabilization		Slope stabilizing measures provide an immediate and effective cover over raw erodible slopes affording excellent protection against rain and wind erosion.
15	Riprap		Along drain banks, shorelines, or where concentrated flows occur. slows velocity, reduces erosion and sedimentation.
16	Riprap Toe of Slope		Riprap toe of slope protection is used in areas where velocities are causing drain bank erosion and are too high to stabilize using other methods.
19	Armored Spillway		When concentrated flow must be conveyed down a drain bank or slope of discharge into another drain. Where slope failure or channel scour is observed or is likely to occur, or when runoff must be redirected around work in the drain.
23	Outfall Stabilization		In the stream or drain bank usually above the ordinary high water mark where an enclosed drain or tile discharges to an open drain.

MACDC UNIFIED KEYING SYSTEM - ROUTINE MAINTENANCE ACTIVITIES

KEY	BEST MANAGEMENT PRACTICE	SESC PLAN
A	Debris Removal	NO
B	Sediment Removal	> 100 FEET

2121 3 Mile Rd. NW
 Walker, MI 49544
 Ph: 616-301-7888
 www.LREM.com



REVISIONS:

NO.	DATE	ISSUED FOR
1.	11/27/19	DRAFT REVIEW
2.	04/23/2025	BIDS & CONSTRUCTION

CLIENT: COREY LAKE INTERCOUNTY DRAIN DRAINAGE BOARD
 MIDARD 528 W. ALLEGAN STREET, LANSING, MICHIGAN 48933
 PROJECT: COREY LAKE INTERCOUNTY DRAIN
 CASS AND ST. JOSEPH COUNTIES, MICHIGAN

PROJECT NUMBER: 19078

DATE	DESIGNED BY	DRAFTED BY
11/2019	CPV/AOK	RAJ
06/2022	AWIS	RAJ
11/2019		RAJ
03/2025		DJF

LAKE LEVEL STRUCTURE DETAILS
 SHEET NUMBER
C6

3 WORKING DAYS
BEFORE YOU DIG
 CALL MISS DIG
 1-800-482-7171

ALL UTILITIES AS SHOWN ARE APPROXIMATE LOCATIONS DERIVED FROM ACTUAL MEASUREMENTS AND AVAILABLE RECORDS. THEY SHOULD NOT BE INTERPRETED TO BE EXACT LOCATION NOR SHOULD IT BE ASSUMED THAT THEY ARE THE ONLY UTILITIES IN THE AREA.

ELEVATIONS ARE BASED ON NGVD 29