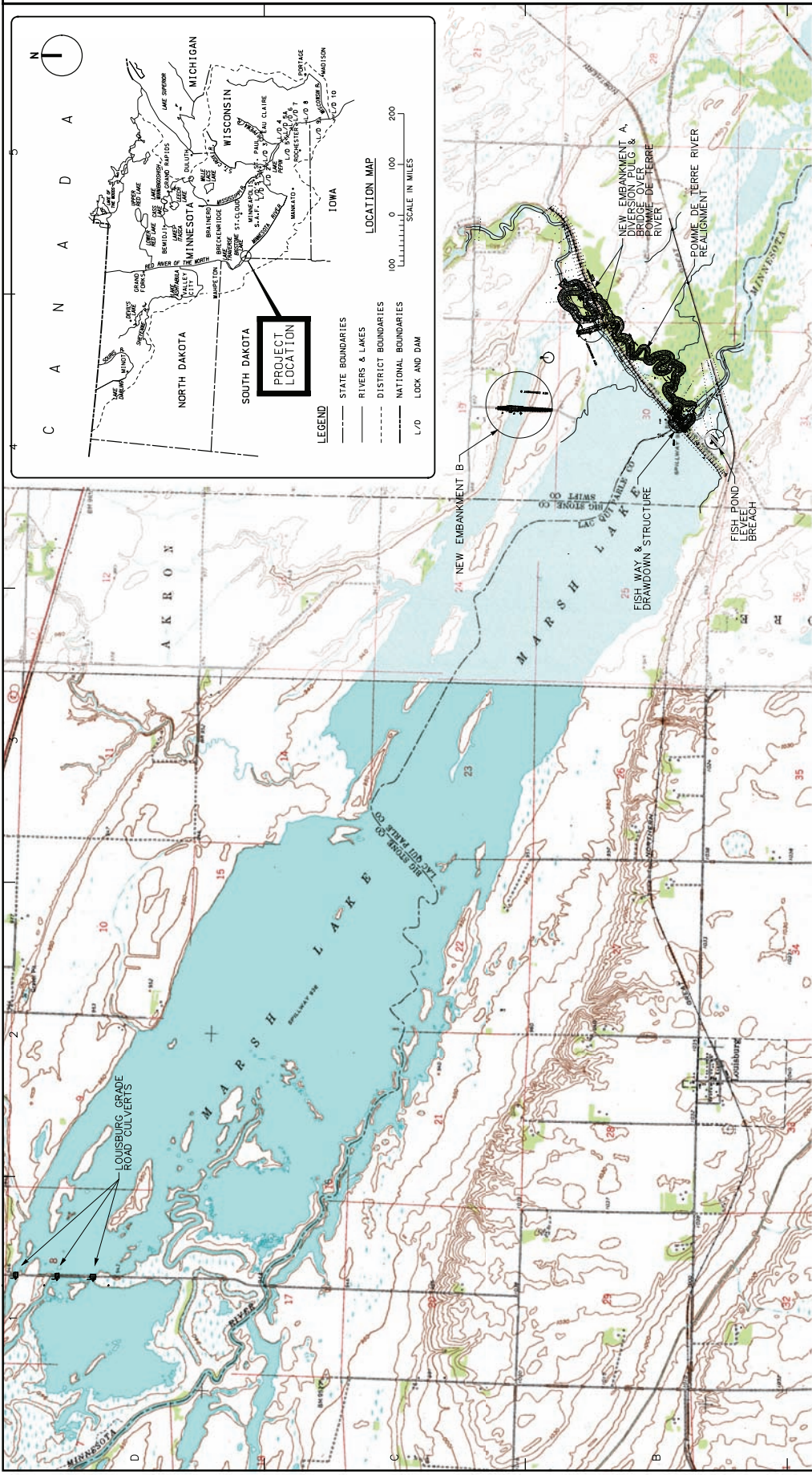
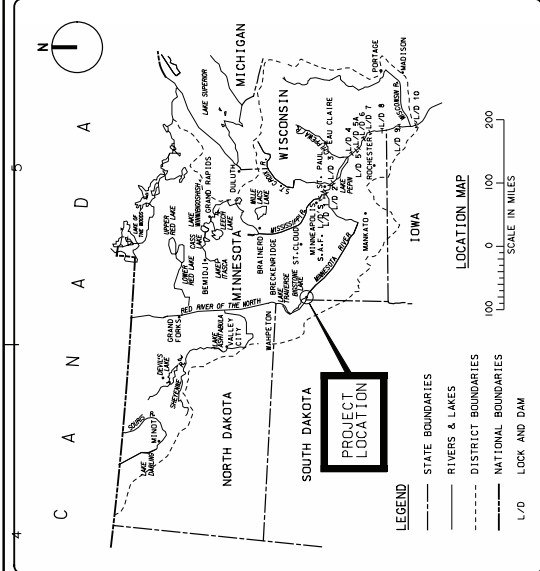


Appendix N - Plates



MARSH LAKE DAM
VICINITY MAP
1200 0 1200 2400
SCALE IN FEET



Symbol	Description	Date	Appr.

Revised by:	DATE:	NOV 2011
Checked by:	DATE:	APR 2011
Author(s):	Section No.:	DAE337-18-0-000
Drawn by:	Scale:	AS SHOWN
Project Name:	Project No.:	MSH-K0001000-0000-00000.DGN

DEPARTMENT OF THE ARMY
CORPS OF ENGINEERS
ST. PAUL, MINNESOTA
MARSH LAKE AQUATIC ECOSYSTEM RESTORATION
APLETON, MINNESOTA RIVER
MINNESOTA RIVER
FEASIBILITY STUDY
MARSH LAKE AQUATIC ECOSYSTEM RESTORATION
COVER SHEET, LOCATION & VICINITY MAP

Sheet reference number:
G-001
Sheet 1 of 52



US Army Corps of Engineers
St. Paul District

Symbol	Description	Date	Appr.

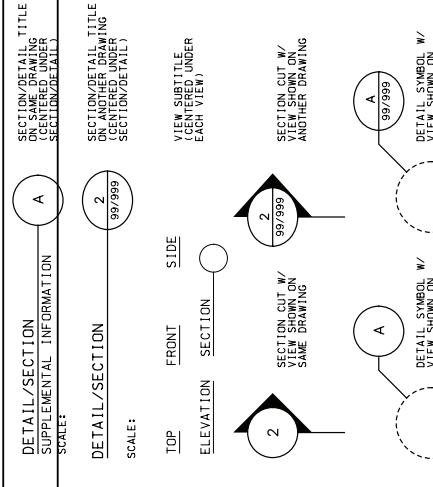
Date	Drawn by	Checked by	Appr.

DEPARTMENT OF THE ARMY
CORPS OF ENGINEERS
ST. PAUL, MINNESOTA
MARSH LAKE AQUIFER RESTORATION
FEASIBILITY STUDY
MARSH LAKE AQUIFER RESTORATION
DRAWING INDEX & LEGEND
ECONYSTEM RESTORATION

Sheet
reference
number:
G-002
Sheet 2 of 32

1 2 3 4 5

GENERAL CROSS-REFERENCING SYMBOLS



ABBREVIATIONS

* UNLESS OTHERWISE NOTED ON EACH SHEET

APPROX	APPROXIMATE	HT	HEIGHT
ALT W/	ALTERNATE WITH	IF	INSIDE FACE
ALUM	ALUMINUM	LG	LONG
BTM	BOTTOM	LW	LOW
BLDG	BUILDING	MAX	MAXIMUM
C/L	CENTER LINE	MIN	MINIMUM
C&G	CURB & GUTTER	MIR	MIRRORED
CLR	CLEAR	MISC	MISCELLANEOUS
CJ	CONSTRUCTION JOINT	NF	NEAR FACE
CONC	CONCRETE	NO	NUMBER
CONC	CORRUGATED METAL PIPE	OF	OUTSIDE FACE
DIA	DIAMETER	OC	ON CENTER
DWG	DRAWING	OC	ON CENTER
EF	EACH FACE	SPAN	SPAN
EJ	EXPANSION JOINT	SPEC	SPECIFICATIONS
EL	ELEVATION	SST	STAINLESS STEEL
EW	EACH WAY	TAB	TYPICAL
EXIST	EXISTING	TYP	TYPICAL
EXST	EXISTING	UND	UNDERGROUND
FES	FLARED END SECTION	UND	UNDERGROUND
GALV	GALVANIZED	WM	WATER MAIN

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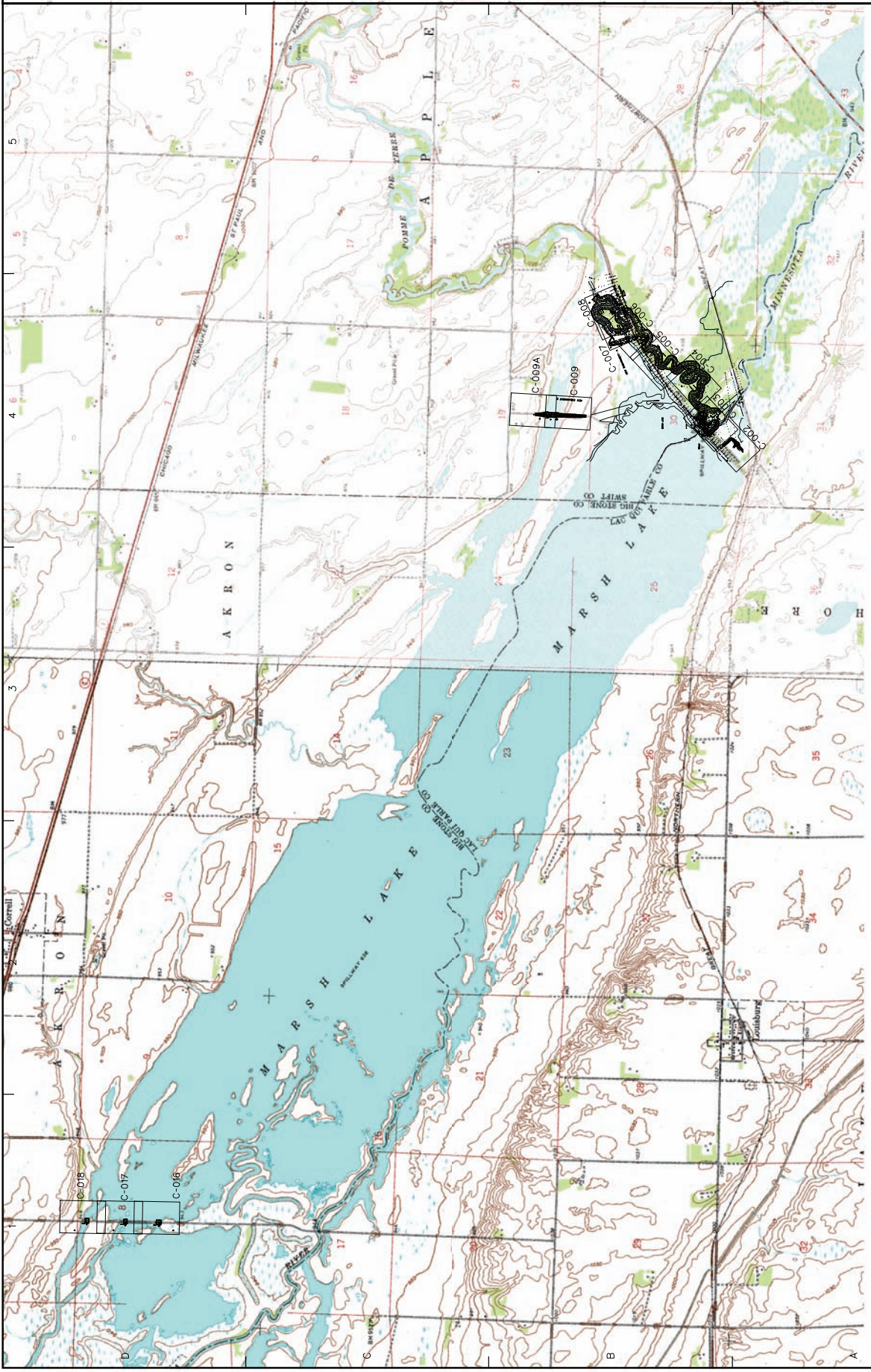


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DEPARTMENT OF THE ARMY
 CORPS OF ENGINEERS
 ST. PAUL DISTRICT
 ST. PAUL, MINNESOTA
 MARSH LAKE AQUATIC ECOSYSTEM RESTORATION
 FEASIBILITY STUDY
 GENERAL PLAN

Sheet
 reference
 number:
C-001
 Sheet 5 of 52



GENERAL PLAN
 MARSH LAKE DAM
 1500 0 1500 3000
 SCALE IN FEET



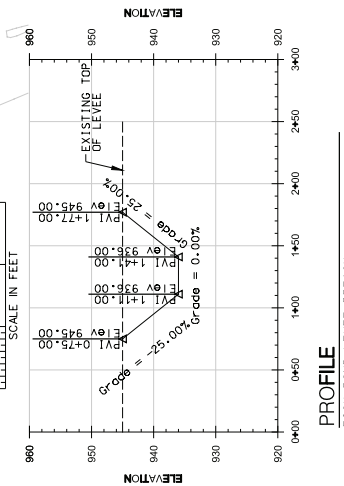
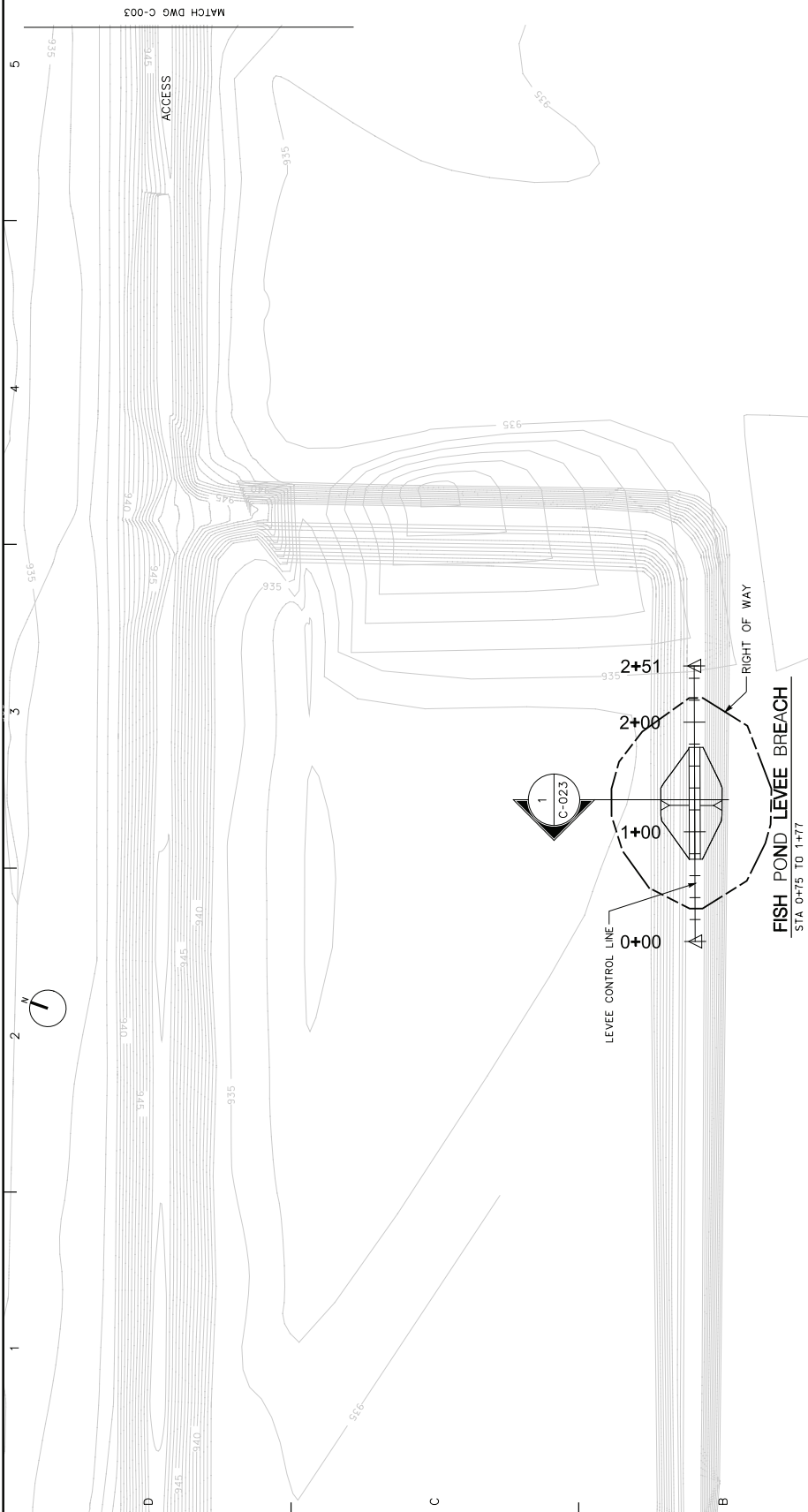
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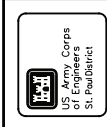
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 CORPS OF ENGINEERS
 ST. PAUL, MINNESOTA
 MARSH LAKE AQUATIC ECOSYSTEM RESTORATION
 FEASIBILITY STUDY
 MINNESOTA RIVER
 APLETON, MINNESOTA
 ECOSYSTEM RESTORATION
 PLAN & PROFILE - FISH POND
 LEVEE BREACH STA 0+75 TO 1+77

Sheet number:
 C-002
 Sheet 4 of 52



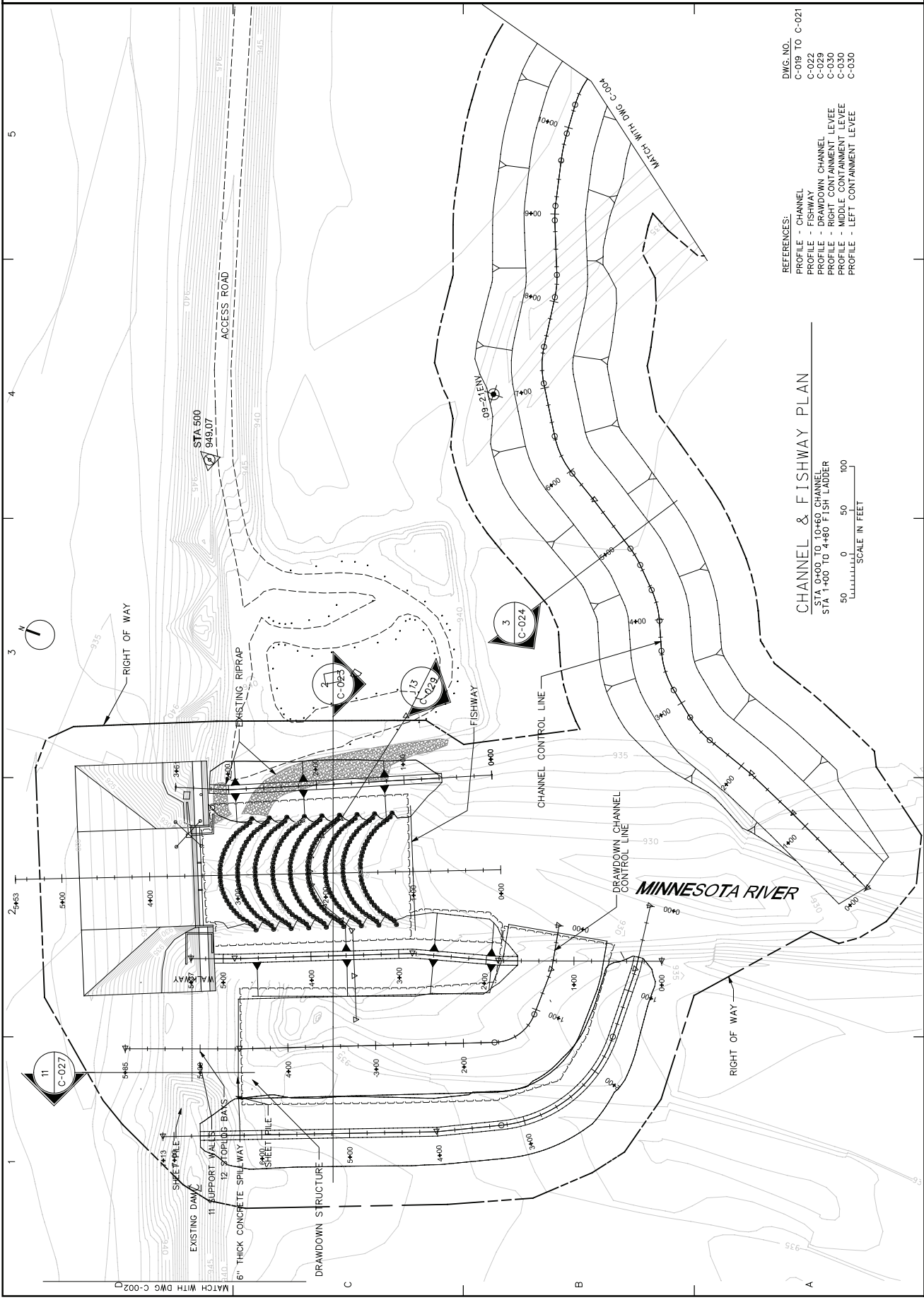


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Sheet No: _____	Proj. Date: _____
Rev: _____	Proj. Status: _____

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 MARSH LAKE AQUATIC ECOSYSTEM RESTORATION
 FEASIBILITY STUDY
 MINNESOTA RIVER
 ECOSYSTEM RESTORATION
 CHANNEL STA 0+00 TO 10+60
 FISHWAY, DRAWDOWN STRUCTURE

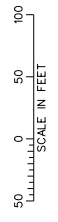
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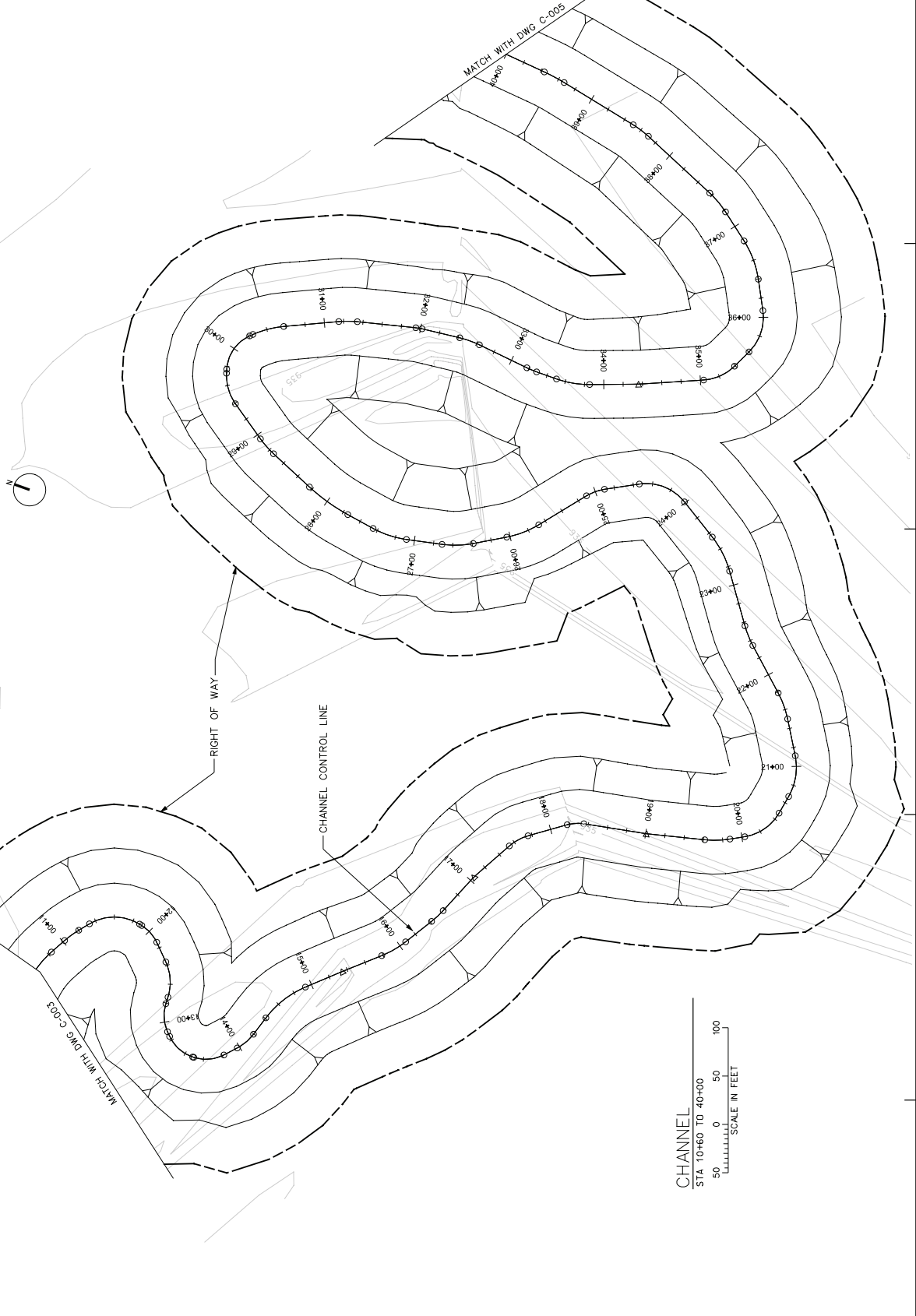
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 - PROFILE - RIGHT CONTAINMENT LEVEE C-030
 - PROFILE - MIDDLE CONTAINMENT LEVEE C-030
 - PROFILE - LEFT CONTAINMENT LEVEE C-030

CHANNEL & FISHWAY PLAN

STA 0+00 TO 10+60 CHANNEL
 STA 1+00 TO 4+60 FISH LADDER



5
4
3
2
1



CHANNEL
 STA 10+60 TO 40+00
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D C B A

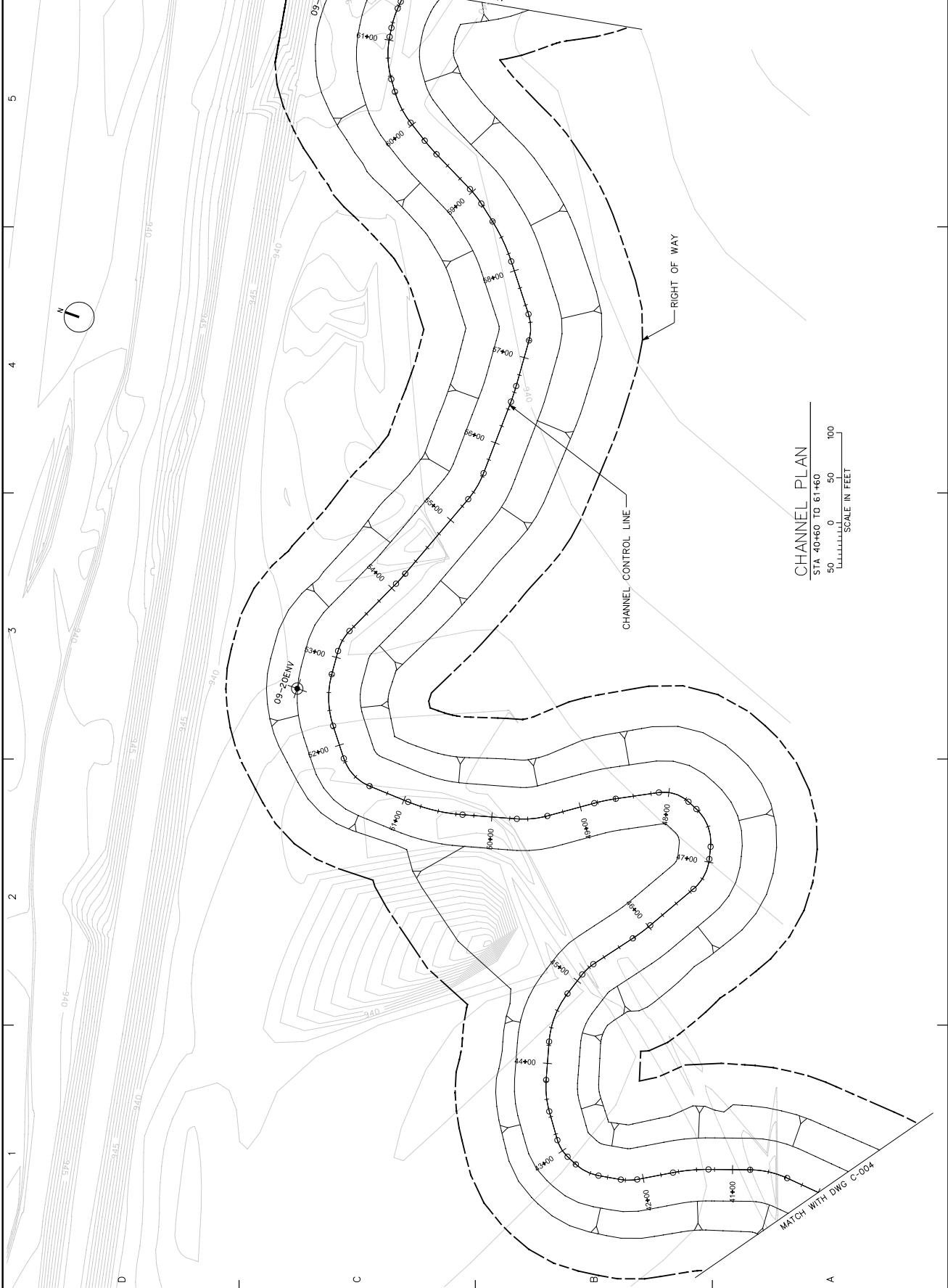


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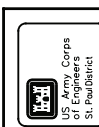
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 CORPS OF ENGINEERS
 ST. PAUL DISTRICT
 ST. PAUL, MINNESOTA
 MARSH LAKE AQUATIC ECOSYSTEM RESTORATION
 APPLANT, MINNESOTA
 ECOSYSTEM RESTORATION
 PLAN - CHANNEL
 STA 10+60 TO 40+00

Sheet
 reference
 number:
C-004
 Sheet 6 of 52



CHANNEL PLAN
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Symbol	Description	Date	Appr.

Revised by:	Date:	Revised by:	Date:

DEPARTMENT OF THE ARMY
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 ST. PAUL DISTRICT
 ST. PAUL, MINNESOTA
 FEDERAL PROJECT NO. 187-1-01
 MARSH LAKE AQUATIC ECOSYSTEM RESTORATION
 PLAN - CHANNEL
 STA 40+00 TO 61+60

Sheet
 number:
 C-005
 Sheet 7 of 52

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St. Paul District

Description	Date	Appr.

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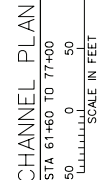
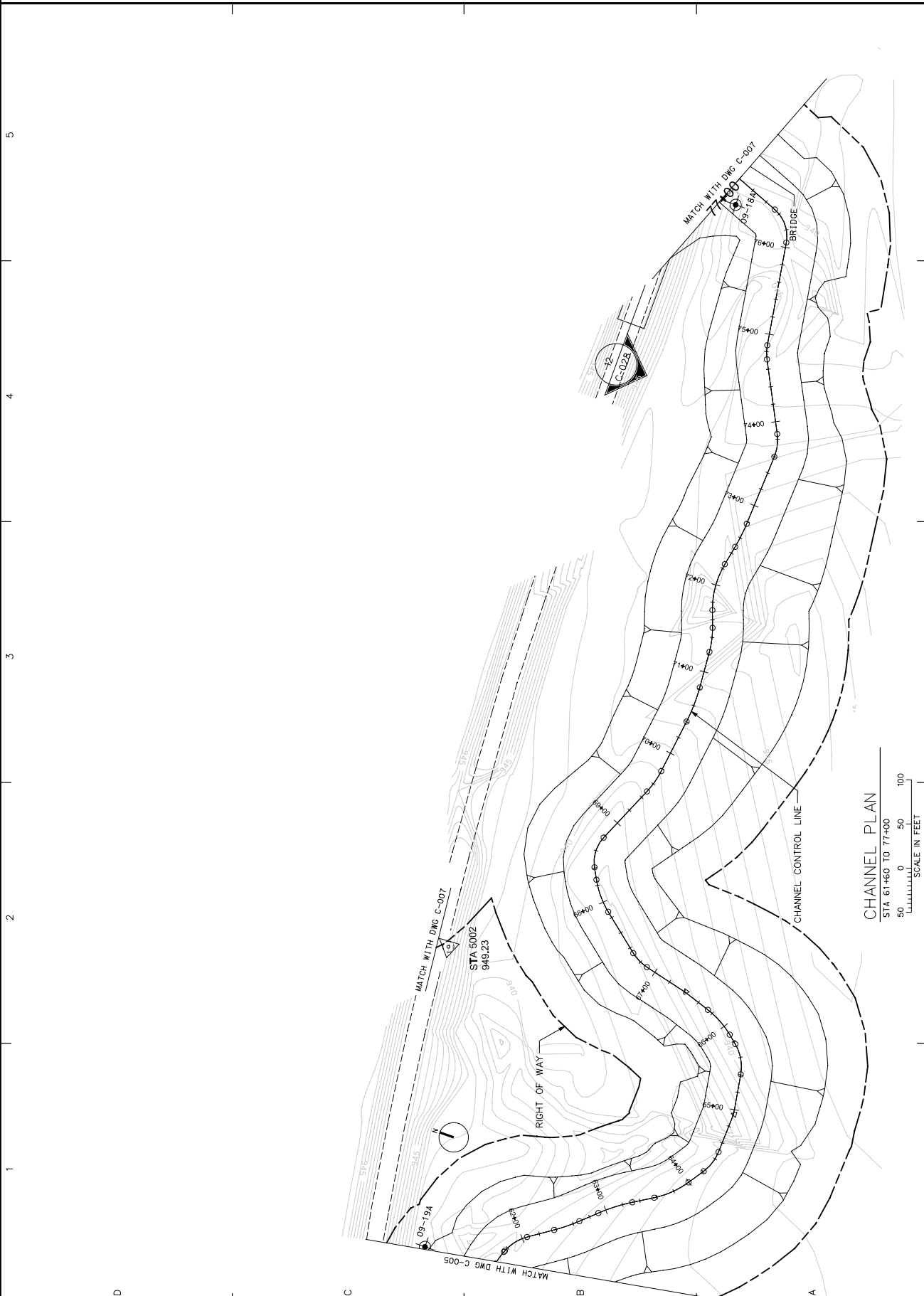
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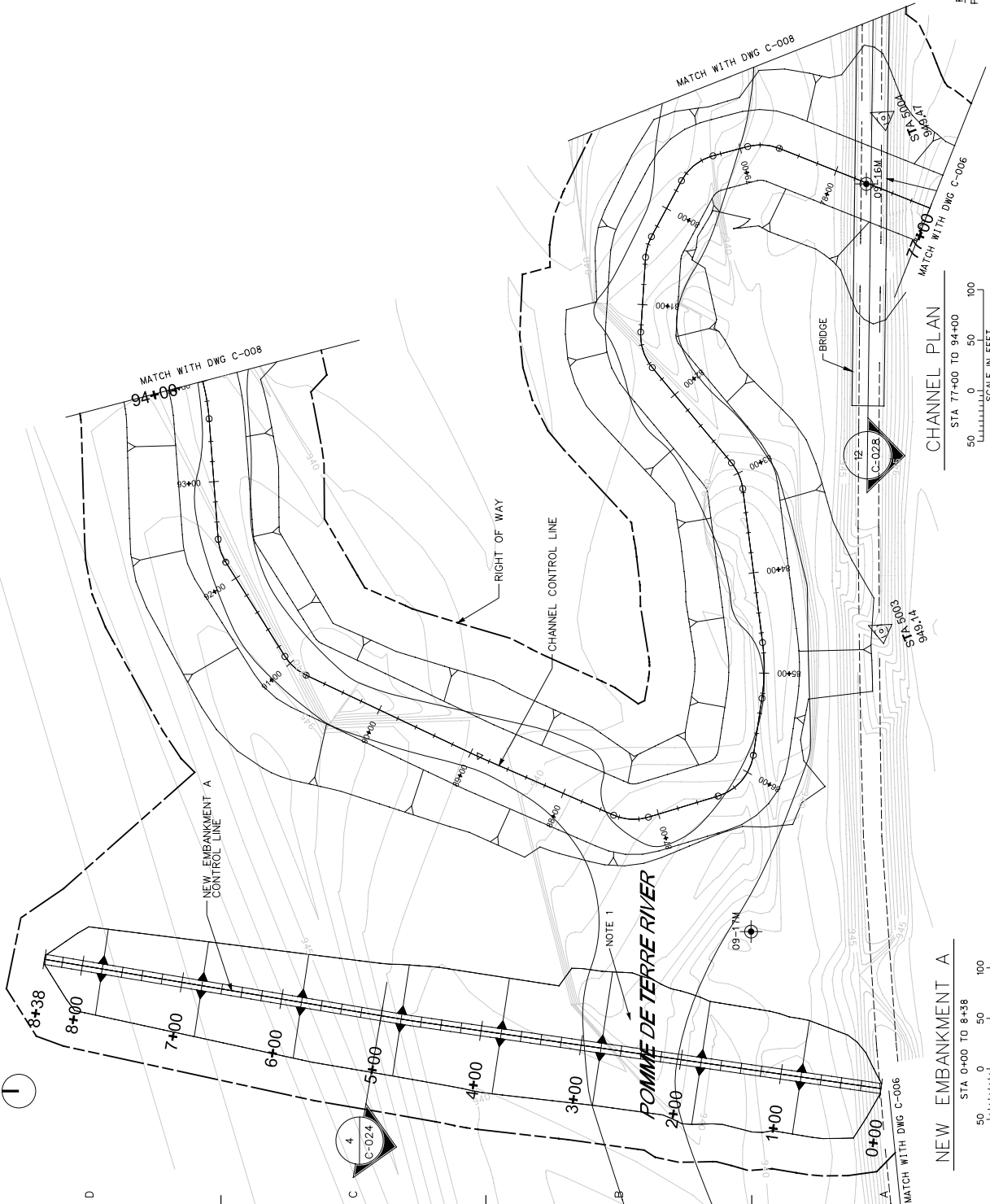
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 ST. PAUL DISTRICT
 CORPS OF ENGINEERS
 ST. PAUL, MINNESOTA
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 NAD 1983
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Feasibility Study
 Aquatic Ecosystem
 Marsh Lake
 Restoration
 Apleton, Minnesota

Sheet reference number: **C-006**
 Sheet 6 of 52



1 2 3 4 5



NEW EMBANKMENT A
 STA 0+00 TO 8+38
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 SCALE IN FEET

CHANNEL PLAN
 STA 77+00 TO 94+00
 0 50 100
 SCALE IN FEET

REFERENCES:
 PROFILE - NEW EMBANKMENT A

DWG. NO.
 C-022

Sheet
 reference
 number:
C-007
 Sheet 9 of 52

MARSH LAKE AGRICULTURAL ECOSYSTEM RESTORATION
 FEASIBILITY STUDY
 MINNESOTA RIVER
 APLETON, MINNESOTA
 ECOSYSTEM RESTORATION
 PLAN-CHANNEL STA 77+00 TO 94+00
 NEW EMBANKMENT A STA 0+00 TO 8+38

DEPARTMENT OF THE ARMY
 CORPS OF ENGINEERS
 ST. PAUL DISTRICT
 ST. PAUL, MINNESOTA
 1400 COMMERCIAL STREET
 MINNEAPOLIS, MINNESOTA 55402
 MAP STATE PLANE SOUTH ZONE
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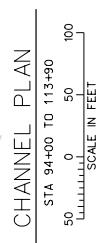
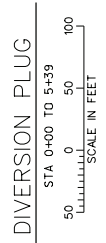
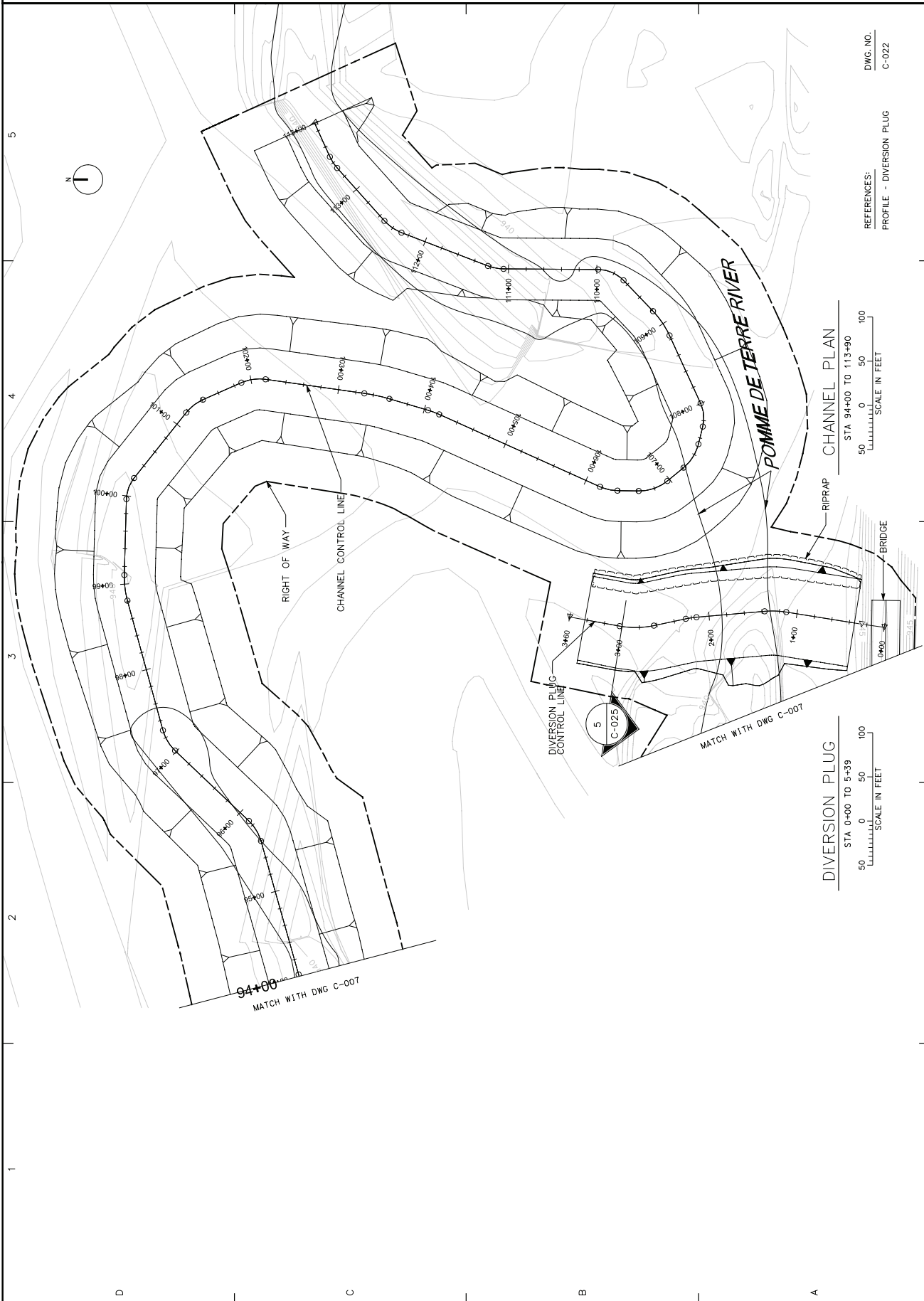


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 MARSH LAKE AQUATIC ECOSYSTEM RESTORATION
 FEASIBILITY STUDY
 APPLINGTON, MINNESOTA
 ECOSYSTEM RESTORATION
 PLAN-CHANNEL STA 94+00 TO 113+90
 DIVERSION PLUG-STA 0+00 TO 5+39

Sheet reference number: **C-008**
 Sheet 10 of 52



REFERENCES:
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D C B A

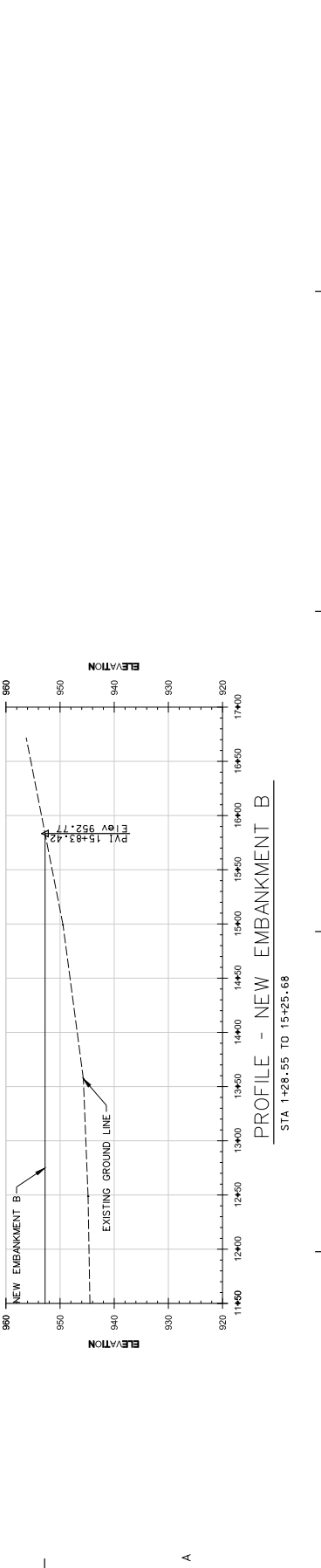
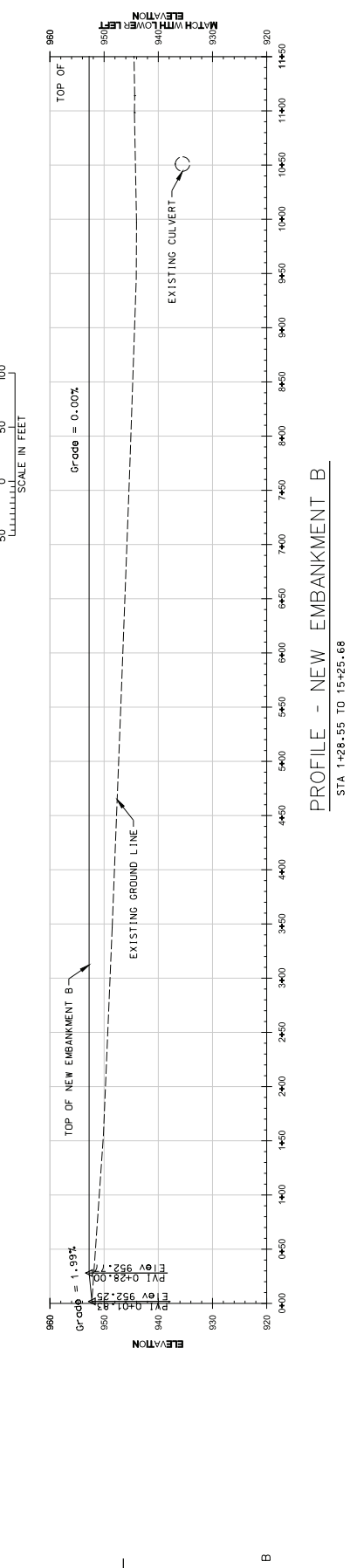
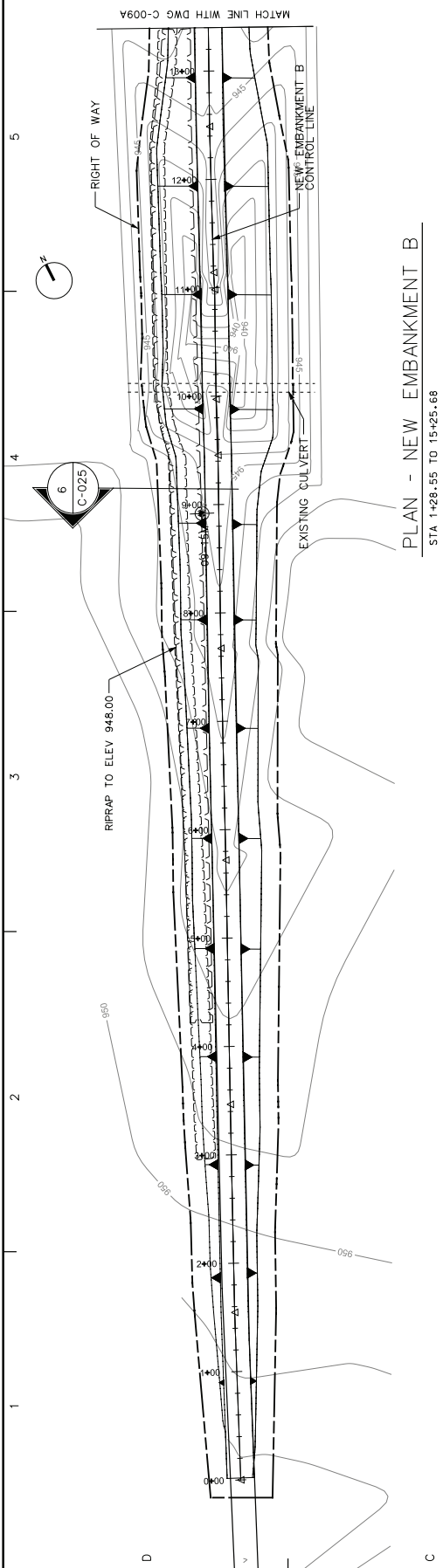


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By	
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Date	
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Job Name	
Drawn by	
Checked by	
Date	

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 CORPS OF ENGINEERS
 ST. PAUL DISTRICT
 MINNESOTA
 MARSH LAKE AQUATIC ECOSYSTEM RESTORATION
 FEASIBILITY STUDY
 MINNESOTA RIVER
 APPELTON, MINNESOTA
 ECOSYSTEM RESTORATION
 PLAN & PROFILE - NEW EMBANK B
 STA 0+00 TO 13+40

Sheet
 reference
 number:
C-009
 Sheet II of 32





U.S. Army Corps of Engineers
St. Paul District

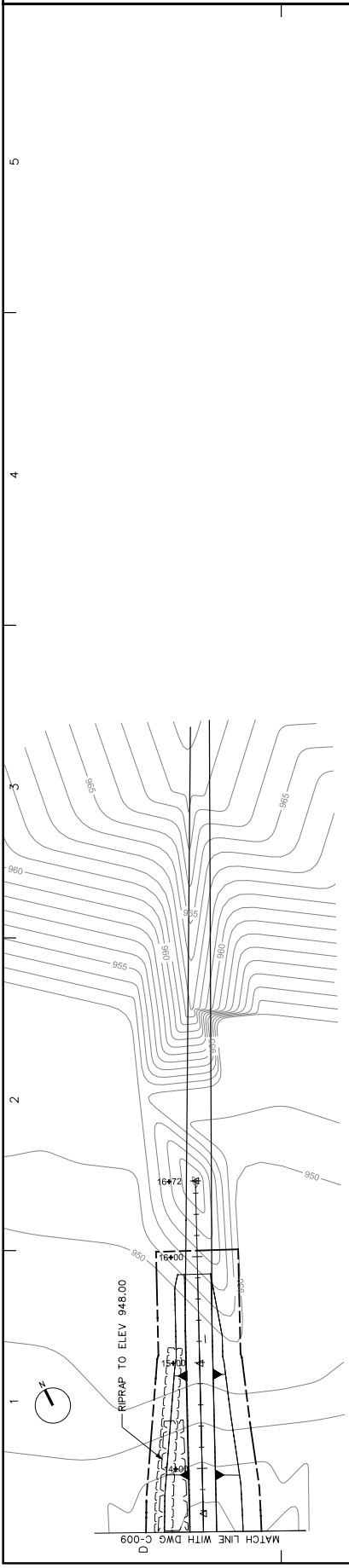
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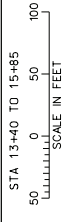
DEPARTMENT OF THE ARMY
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ST. PAUL, MINNESOTA

MARSH LAKE AQUATIC ECOSYSTEM RESTORATION
FEASIBILITY STUDY
MINNESOTA RIVER
APLETON, MINNESOTA
ECOSYSTEM RESTORATION
PLAN & PROFILE - NEW EMBANK B
STA 13+40 TO 15+85.0

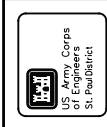
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C-009A
Sheet 11a of 52



PLAN - NEW EMBANKMENT B



STA 13+40 TO 15+85

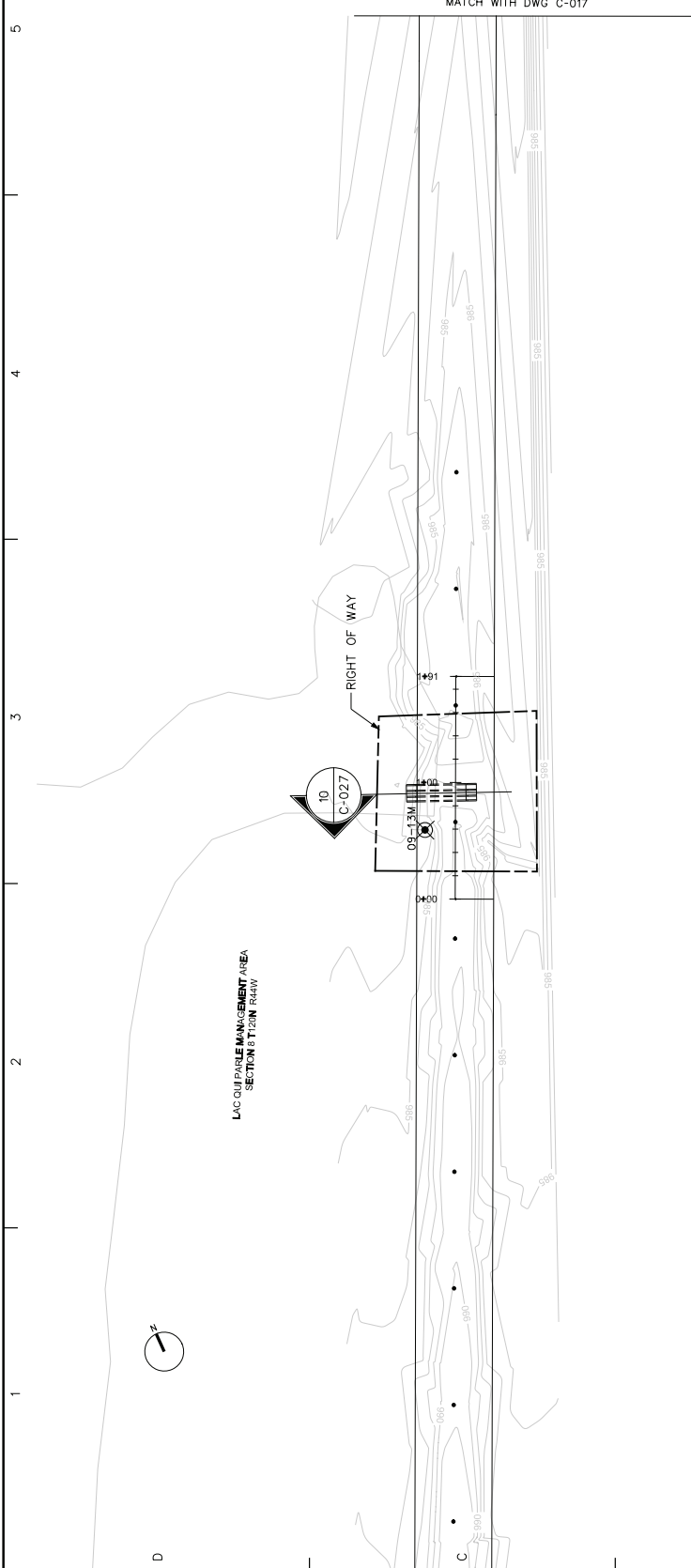


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MARSH LAKE AQUATIC ECOSYSTEM RESTORATION
 FEASIBILITY STUDY
 MINNESOTA RIVER
 APLETON, MINNESOTA
 ECOSYSTEM RESTORATION
 PLAN - LOUISBURG
 ROAD CULVERT A

Sheet
 number:
C-016
 Sheet 18 of 52



LOUISBURG ROAD CULVERT A
 N.A.
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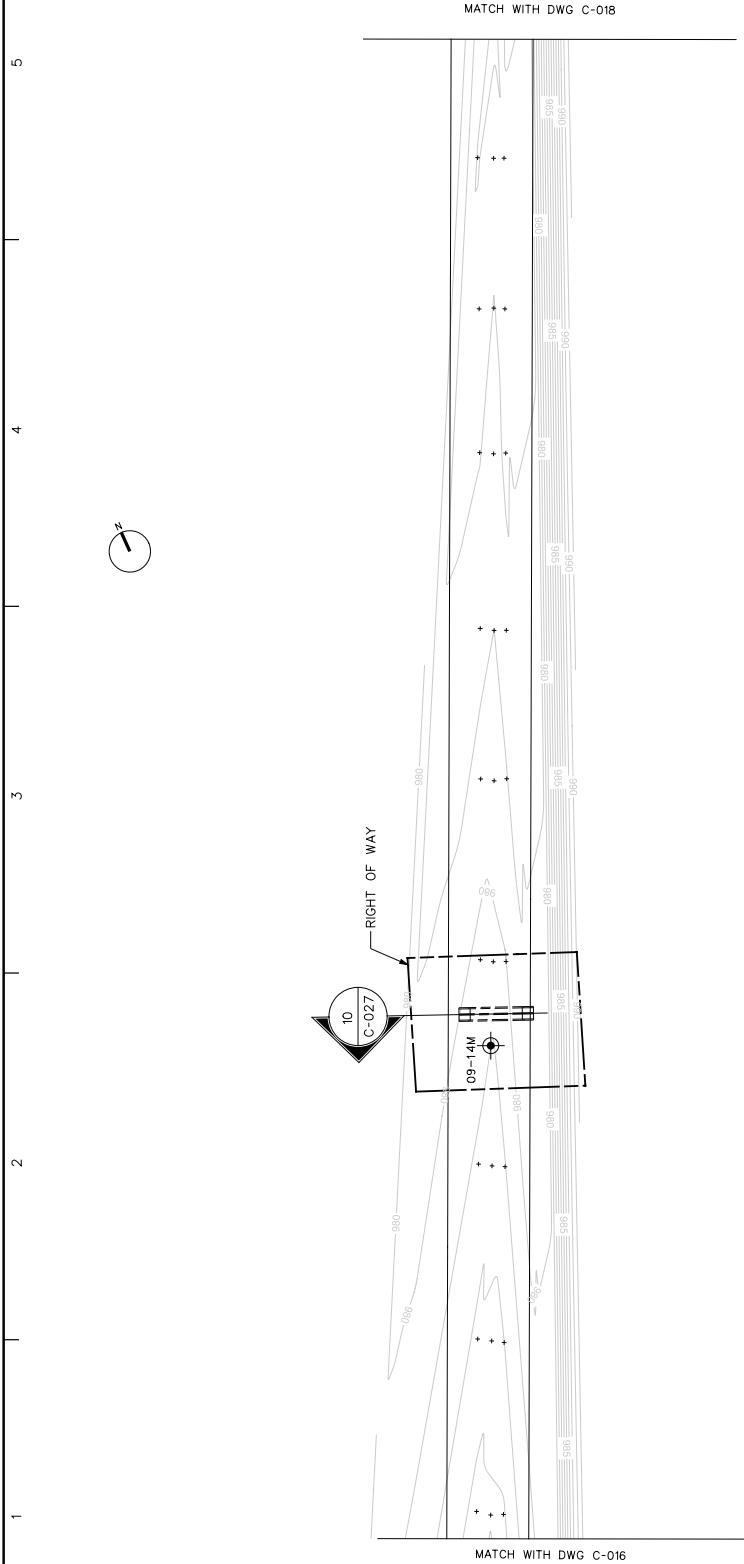
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CONTRACT NO. D-11487-81
C-017

FEASIBILITY STUDY
MARSH LAKE AQUATIC ECOSYSTEM RESTORATION
APPLETON, MINNESOTA RIVER
ECOSYSTEM RESTORATION
PLAN - LOUISBURG
ROAD CULVERT B

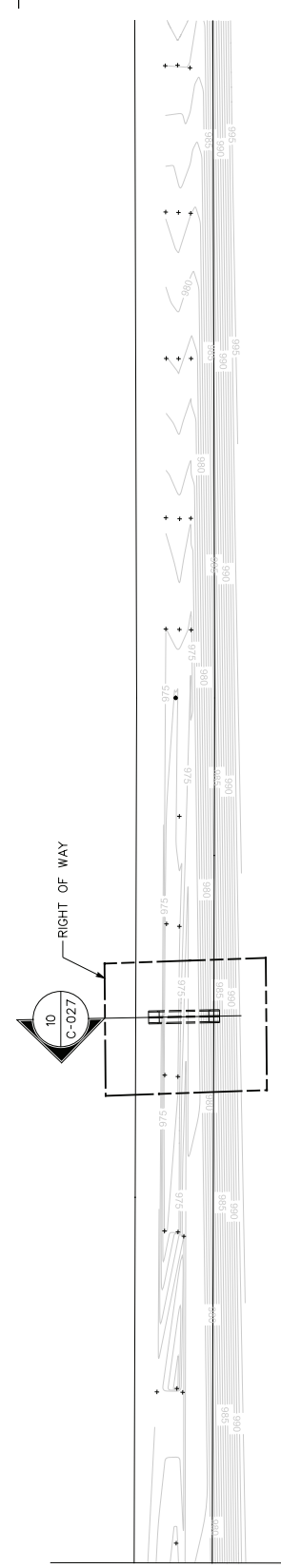
Sheet number: **C-017**
Sheet 19 of 52



LOUISBURG ROAD CULVERT B
N.A.
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SCALE IN FEET

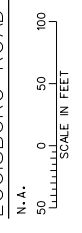
D C B A

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MATCH WITH DWG C-017

LOUISBURG ROAD CULVERT C



N.A.

U.S. Army Corps of Engineers
St. Paul District

Symbol	Description	Date	Appr.

Drawn by: _____	Date: _____
Checked by: _____	Date: _____
Designation: _____	Date: _____
Scale: _____	Date: _____
Project Name: _____	Date: _____
Project Number: _____	Date: _____
Project Name: _____	Date: _____
Project Number: _____	Date: _____
Project Name: _____	Date: _____
Project Number: _____	Date: _____

DEPARTMENT OF THE ARMY
CORPS OF ENGINEERS
ST. PAUL DISTRICT
ST. PAUL, MINNESOTA

FEASIBILITY STUDY
MARSH LAKE AQUATIC ECOSYSTEM RESTORATION
MINNESOTA RIVER
APPLETON, MINNESOTA
ECOSYSTEM RESTORATION
PLAN - LOUISBURG
ROAD CULVERT C

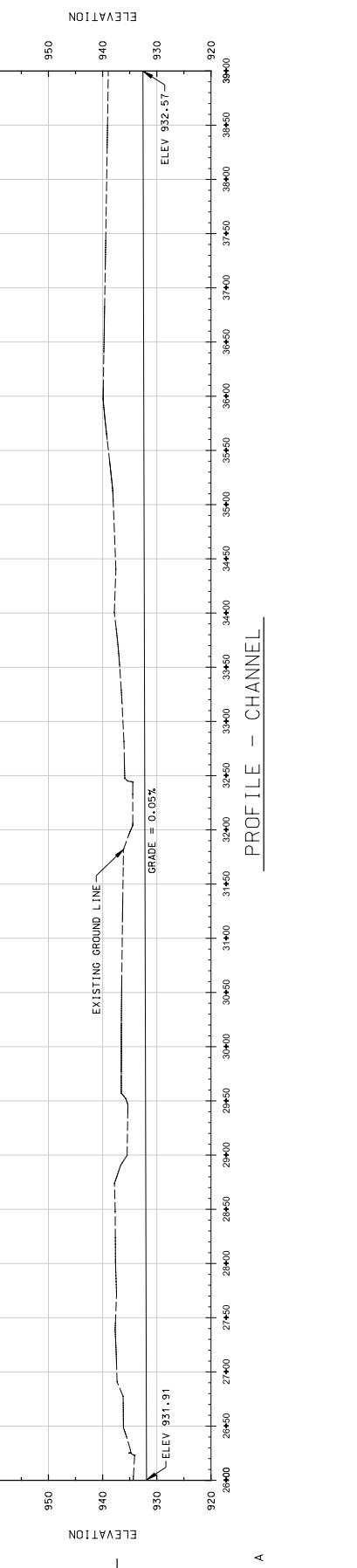
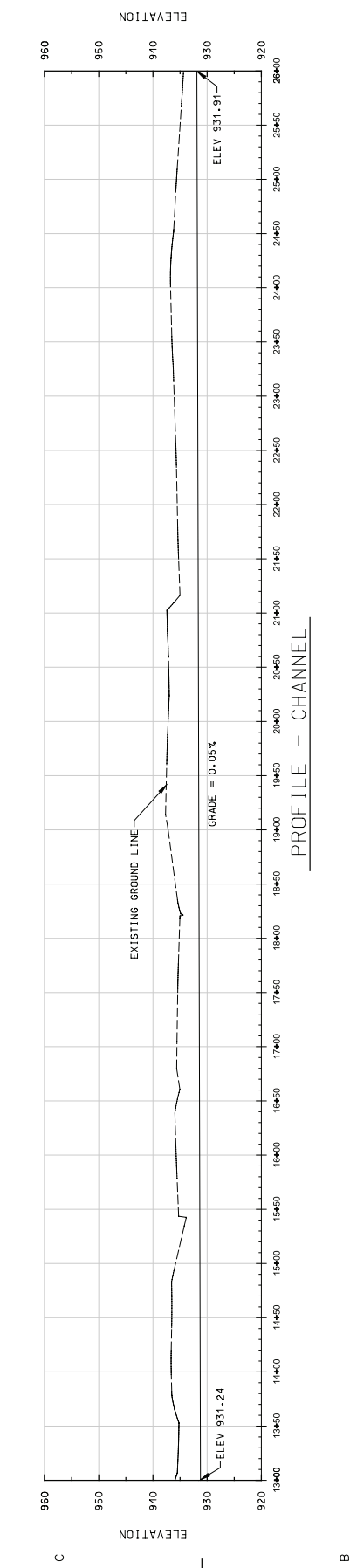
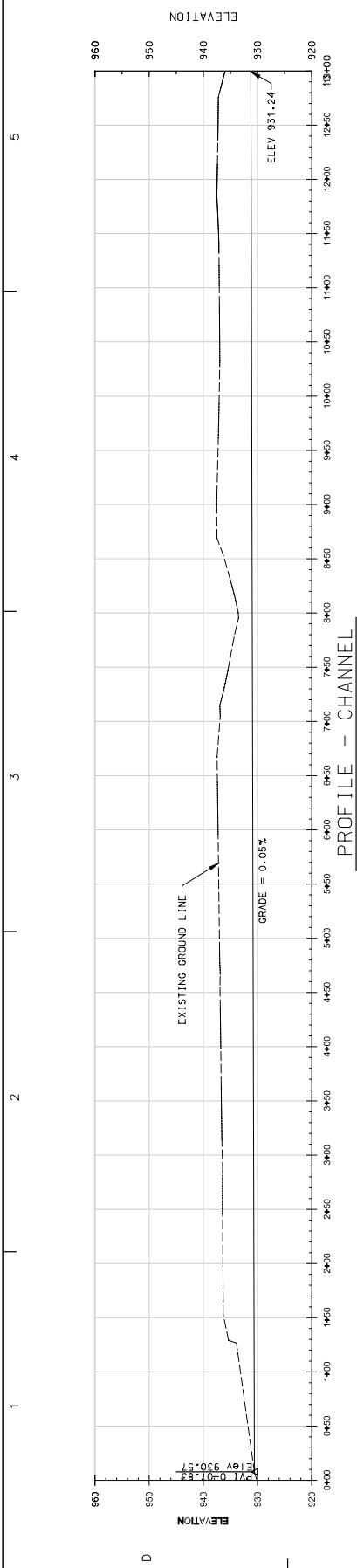
Sheet number:
C-018
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FEASIBILITY STUDY
MARSH LAKE AQUATIC ECOSYSTEM
RESTORATION
APPLETON, MINNESOTA
ECOSYSTEM RESTORATION
PROFILE - CHANNEL
STA 0+00 TO 39+00

DEPARTMENT OF THE ARMY
CORPS OF ENGINEERS
ST. PAUL DISTRICT
ST. PAUL, MINNESOTA
NATIONAL COORDINATE SYSTEM
MINN STATE PLANE SOUTH ZONE
NAD 1983 (1996 ADJUSTED) SURVEY FT
MVD 1929 (ADJ)
Proj Scale: 1"=50'

Drawn by:	Checked by:	Date:
AM/BJ	AM/BJ	08/20/11
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Symbol	Description	Date	Appr.





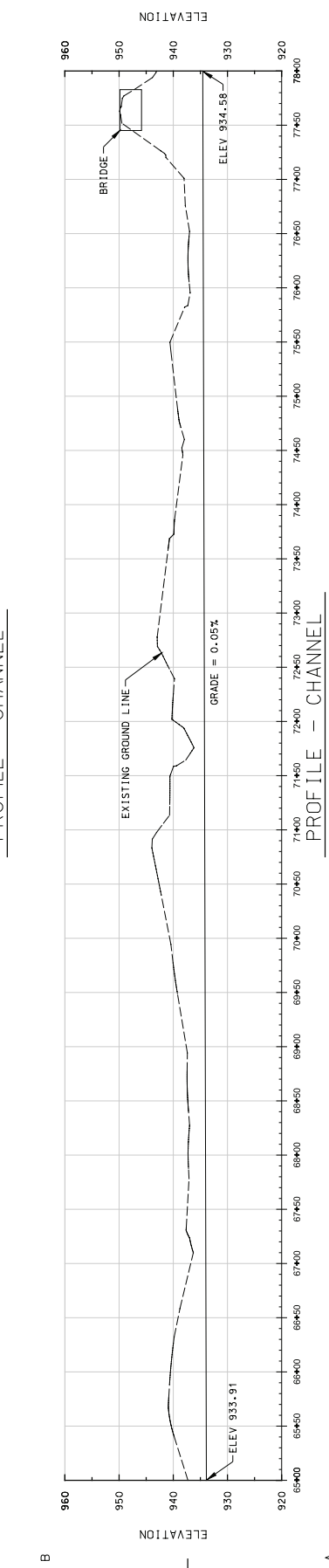
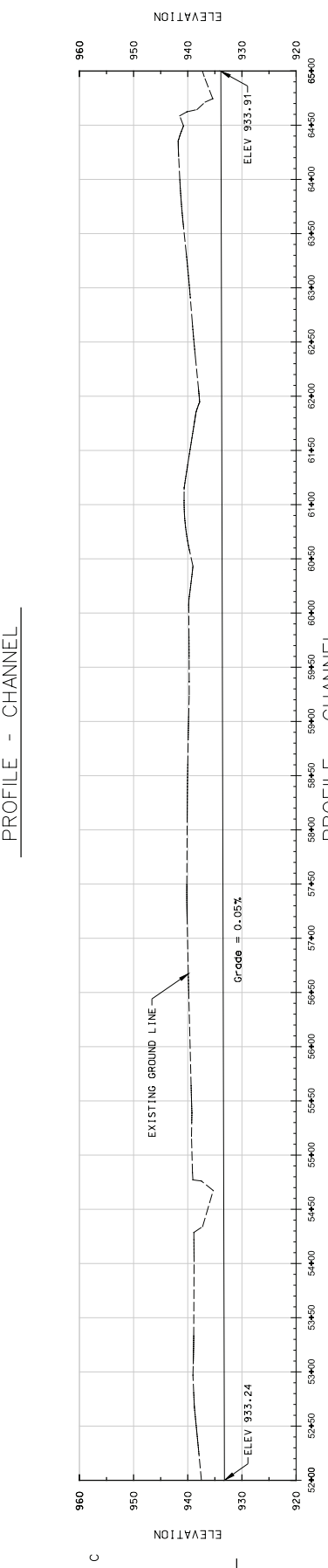
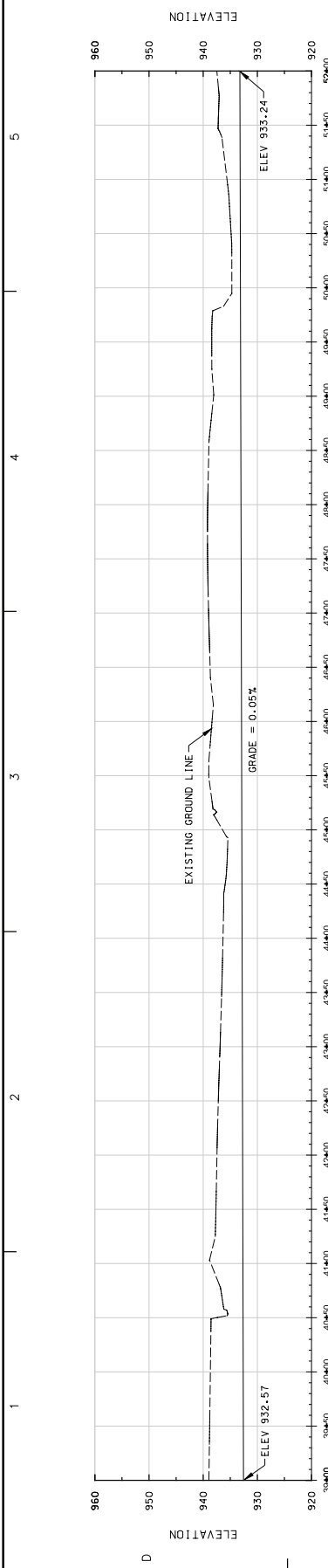
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Section No: [Number]	Drawn Date: [Date]

DEPARTMENT OF THE ARMY
 CORPS OF ENGINEERS
 ST. PAUL DISTRICT
 ST. PAUL, MINNESOTA

Feasibility Study
 Marsh Lake Aquatic Ecosystem Restoration
 Afton, Minnesota
 Minnesota River
 Ecosystem Restoration
 Profile - Channel
 STA 39+00 TO 78+00

Sheet reference number:
C-020
 Sheet 22 of 32



D

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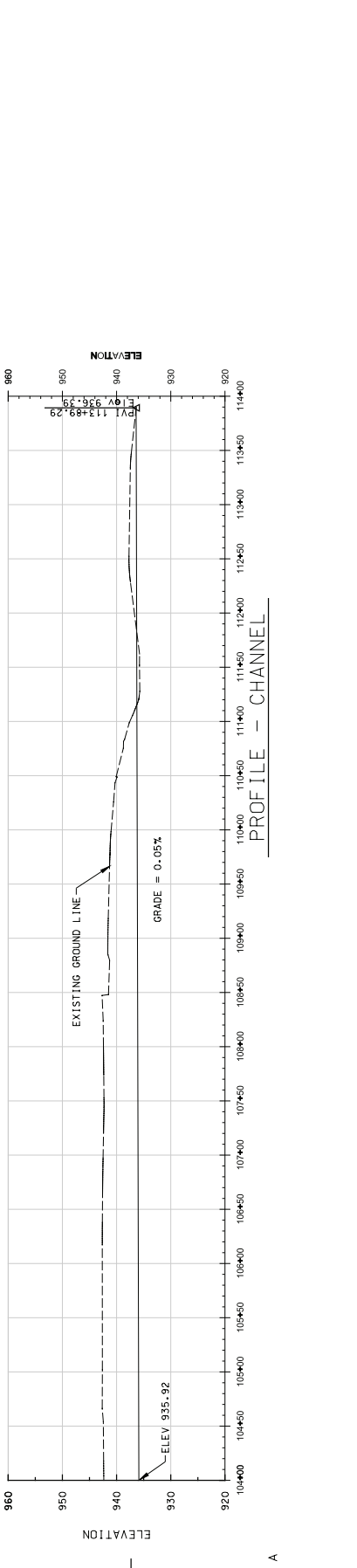
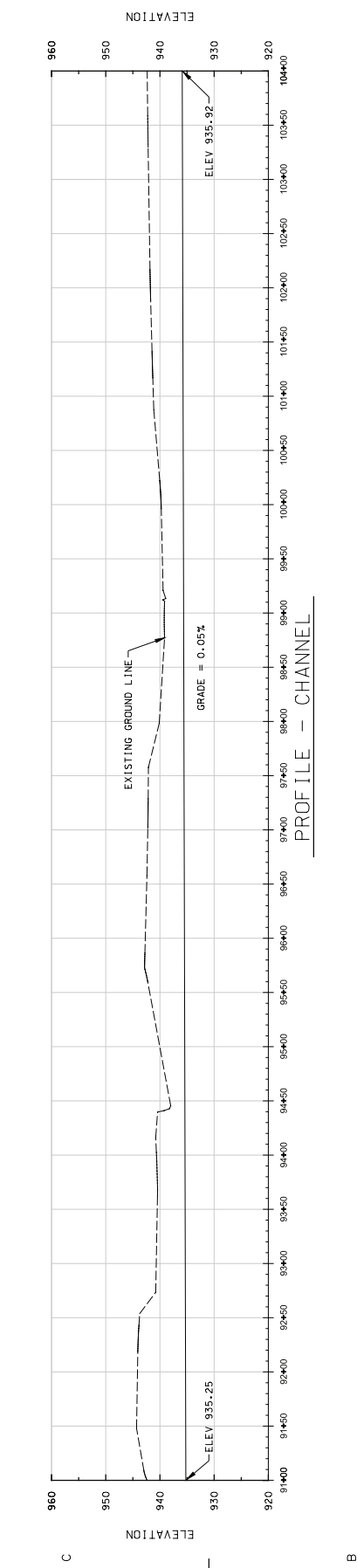
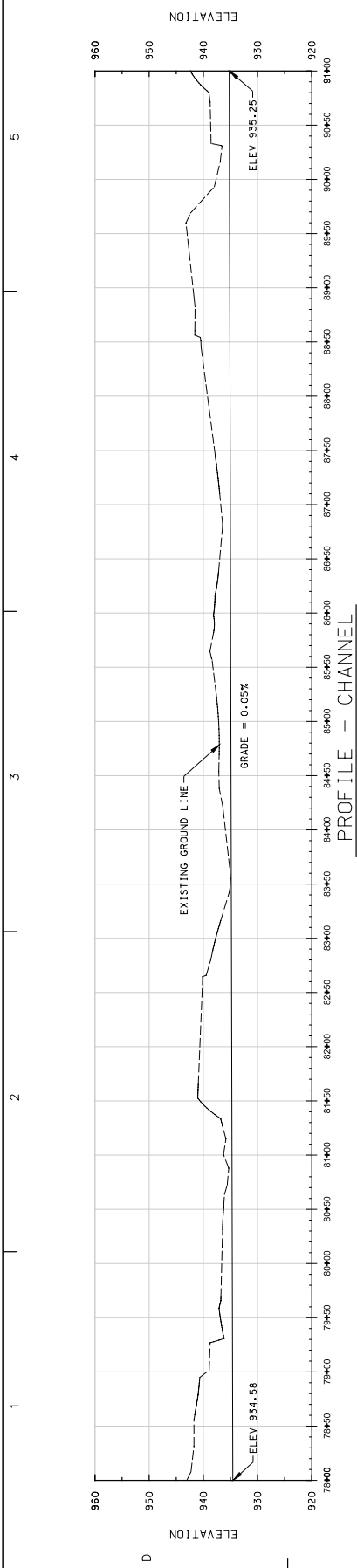


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Section No.: [Number]	Section Title: [Title]

DEPARTMENT OF THE ARMY
 CORPS OF ENGINEERS
 ST. PAUL DISTRICT
 MARSH LAKE AQUATIC ECOSYSTEM RESTORATION
 FEASIBILITY STUDY
 APLETON MINNESOTA
 ANNESTONIA RIVER
 ECOSYSTEM RESTORATION
 PROFILE - CHANNEL
 STA 78+00 TO 114+10

Sheet
 reference
 number:
C-021
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D

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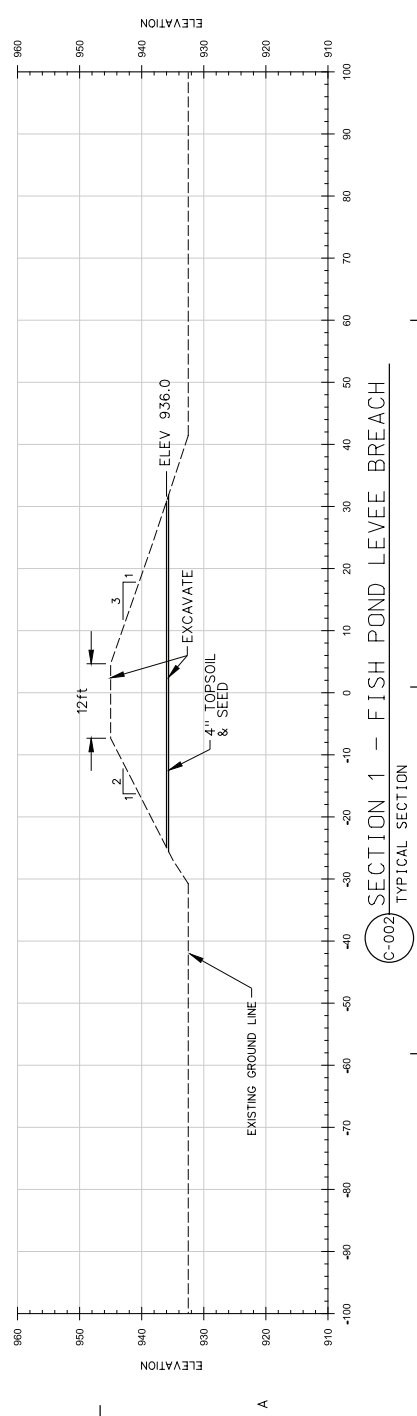
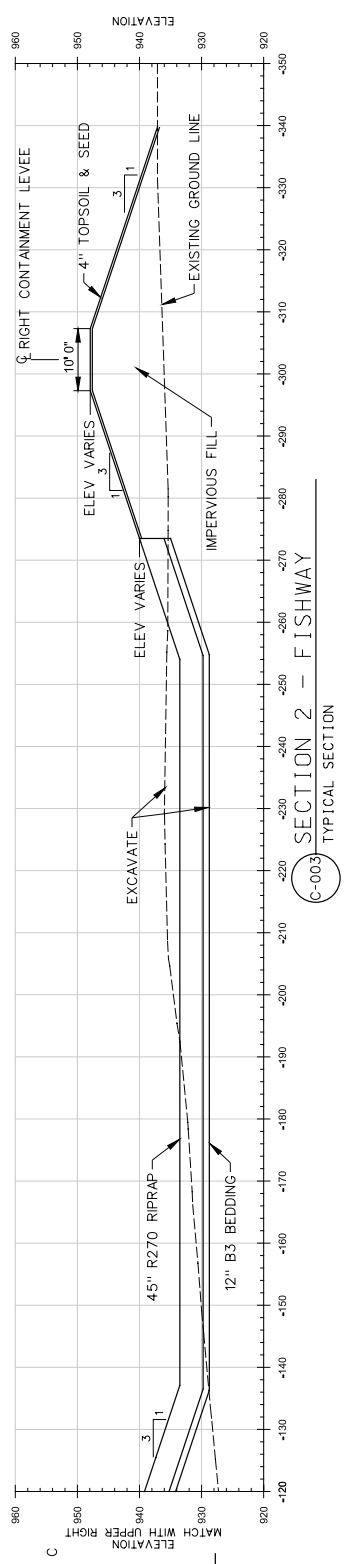
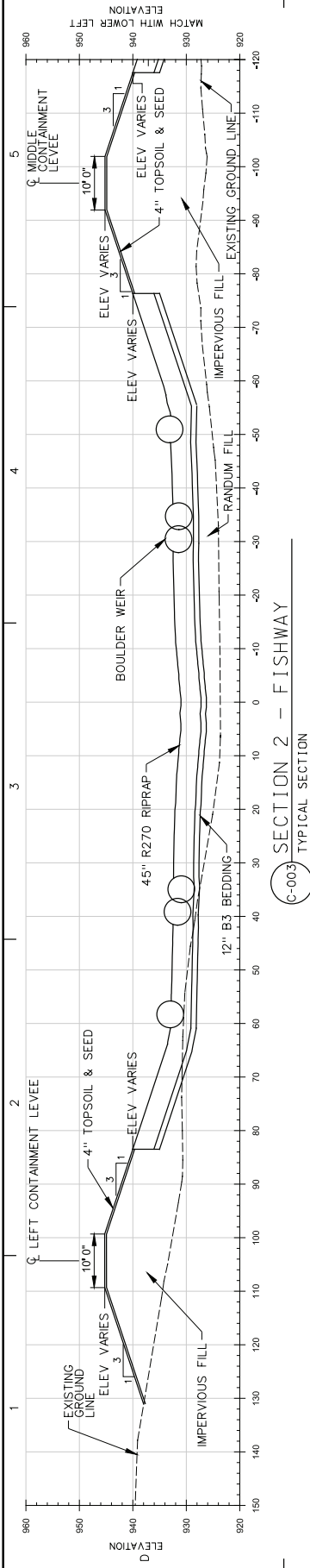


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Project Name	Marshall Lake Aquatic Ecosystem Restoration
Drawn by	
Checked by	
Date	
Scale	
Sheet No.	
Section No.	
Project No.	
Project Name	
Drawn by	
Checked by	
Date	
Scale	
Sheet No.	
Section No.	

DEPARTMENT OF THE ARMY
 CORPS OF ENGINEERS
 ST. PAUL, MINNESOTA
 MARSH LAKE AQUATIC ECOSYSTEM RESTORATION
 APPELTON, MINNESOTA
 FEASIBILITY STUDY
 SECTION 1 & 2
 ECOSYSTEM RESTORATION

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C-023
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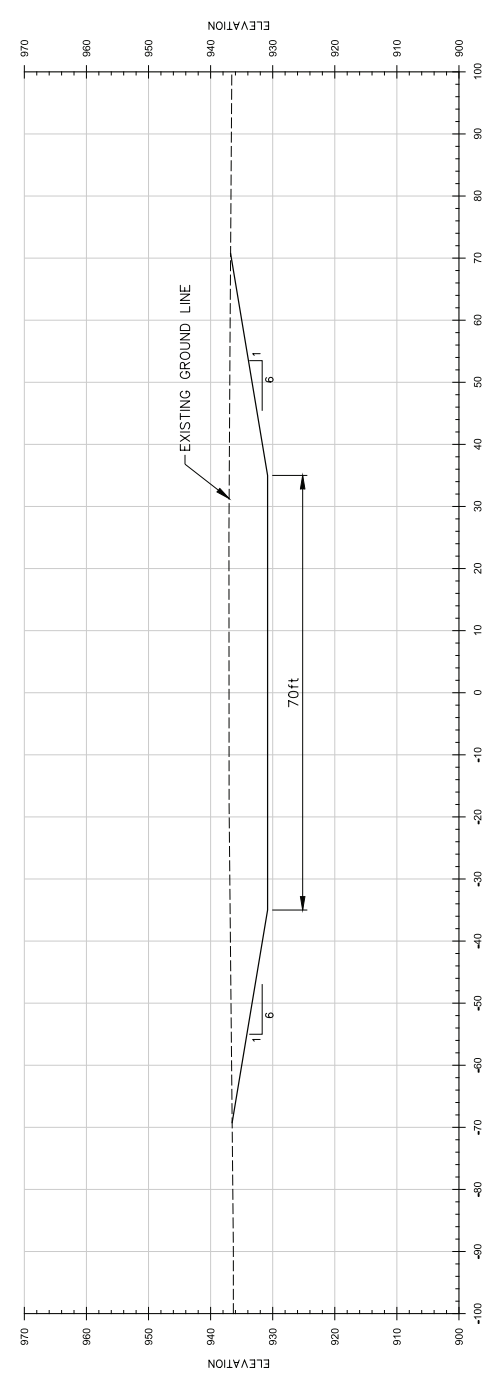
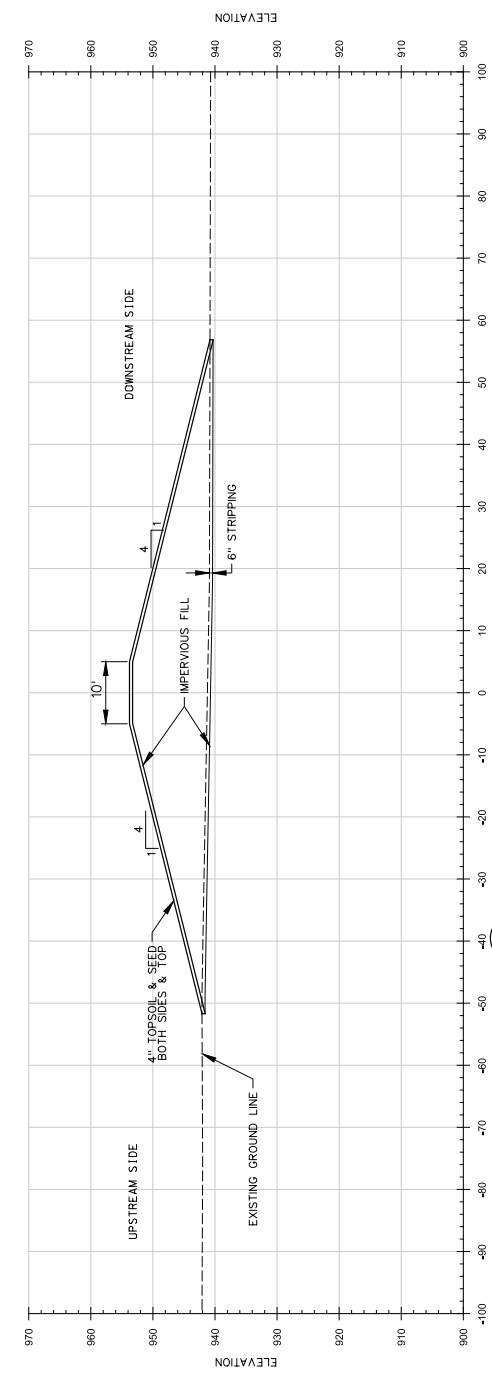
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Project No.	1929 (ADU)
Project Name	MSH&K005020100C-122010DN
Drawn by	JAM
Checked by	
Date	

DEPARTMENT OF THE ARMY
 ST. PAUL DISTRICT
 ST. PAUL, MINNESOTA
 CORPS OF ENGINEERS
 FEDERAL CONTRACT SYSTEM
 MN STATE PLANE SOUTH ZONE
 NAD 1983 (1996 ADJUSTED) SURVEY FT
 NAD 1929 (ADU)

FEASIBILITY STUDY
 MINNESOTA RIVER
 APLETON, MINNESOTA
 ECOSYSTEM RESTORATION
 SECTIONS 3 & 4

Sheet
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U.S. Army Corps of Engineers
St. Paul District

Symbol	Description	Date	Appr.

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Drawn by: AM	Checked by:
Scale: 1" = 40'	Date:
Section No.:	Revised:

DEPARTMENT OF THE ARMY
CORPS OF ENGINEERS
ST. PAUL, MINNESOTA
MARSH LAKE AQUATIC ECOSYSTEM RESTORATION
FEASIBILITY STUDY
MINNESOTA RIVER
APLETON, MINNESOTA

ECOSYSTEM RESTORATION
SECTIONS 5 & 6

Sheet number:
C-025
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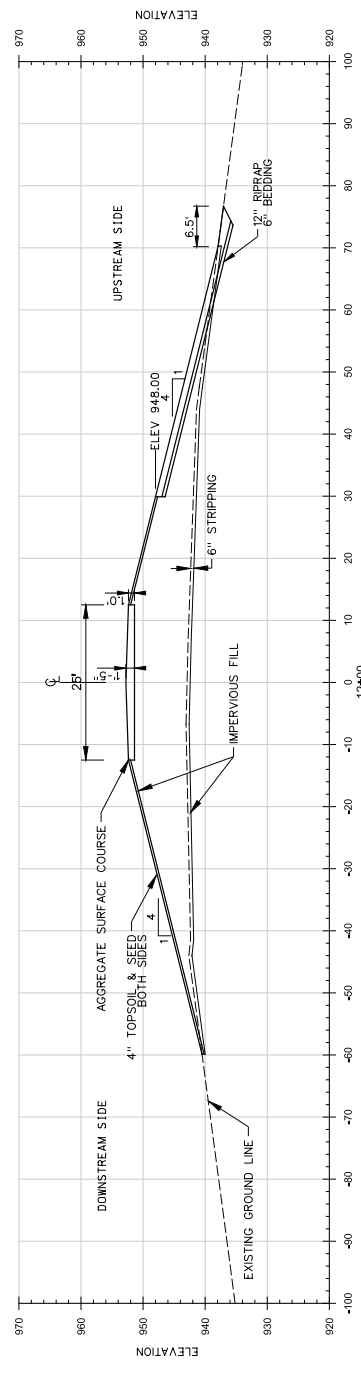
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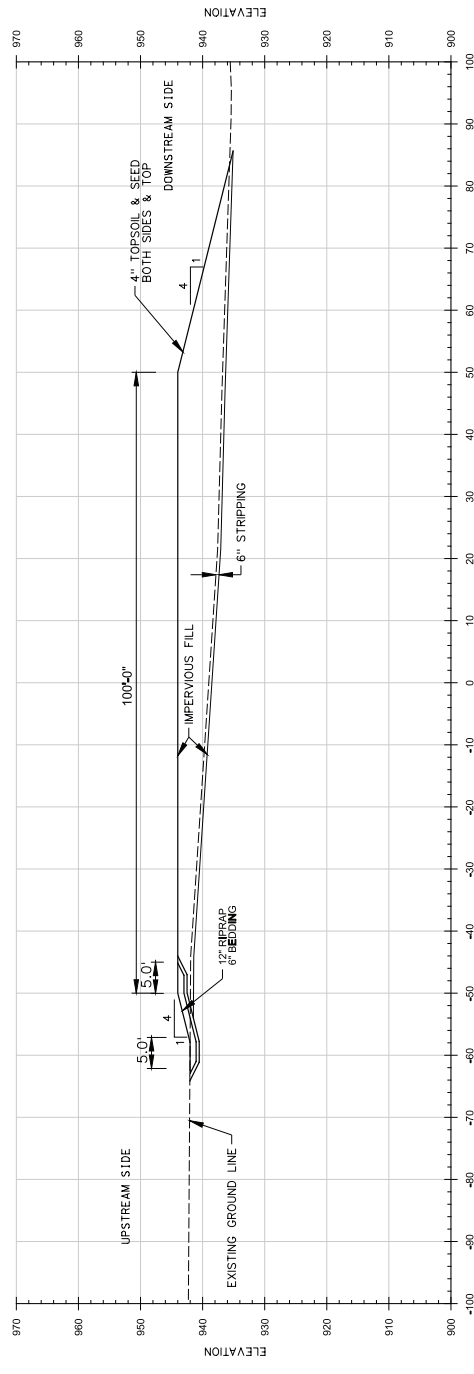
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C-009 SECTION 6 - NEW EMBANKMENT B
TYPICAL SECTION



C-008 SECTION 5 - DIVERSION PLUG
TYPICAL SECTION

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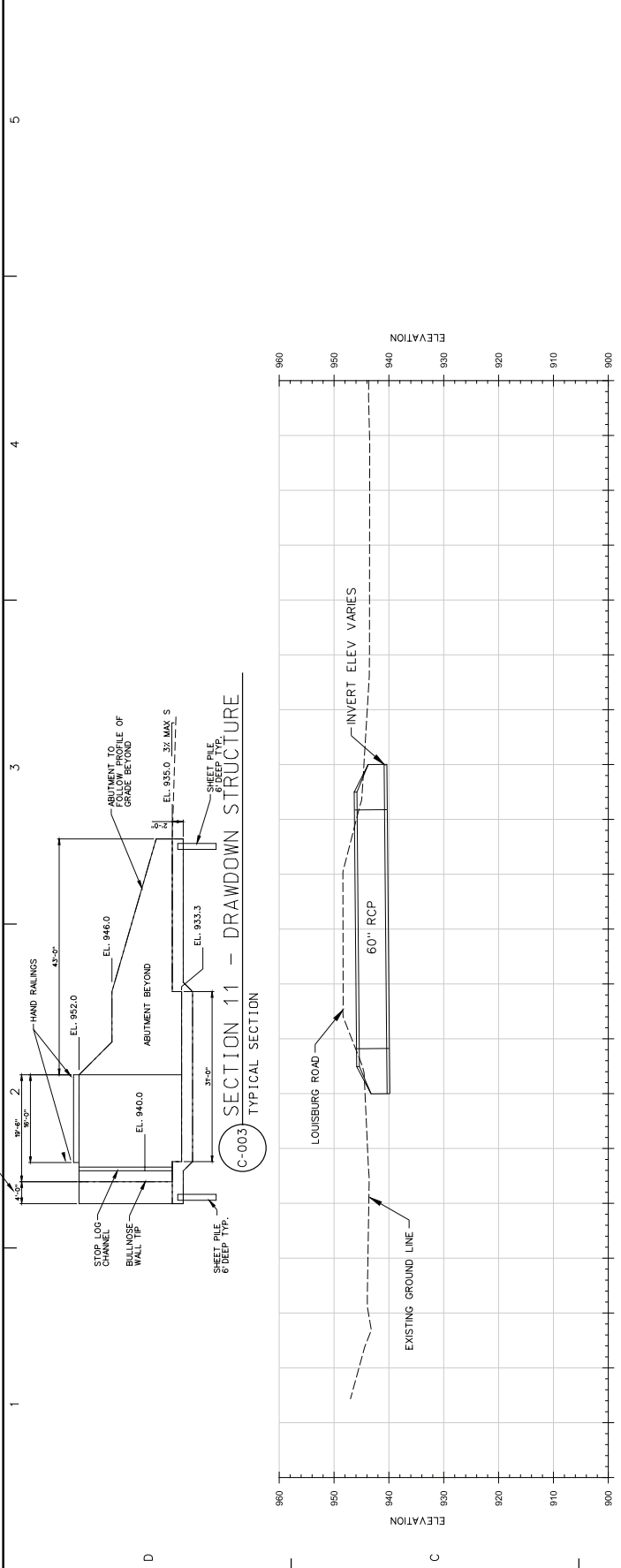
U.S. Army Corps of Engineers
St. Paul District

Symbol	Description	Date	Appr.

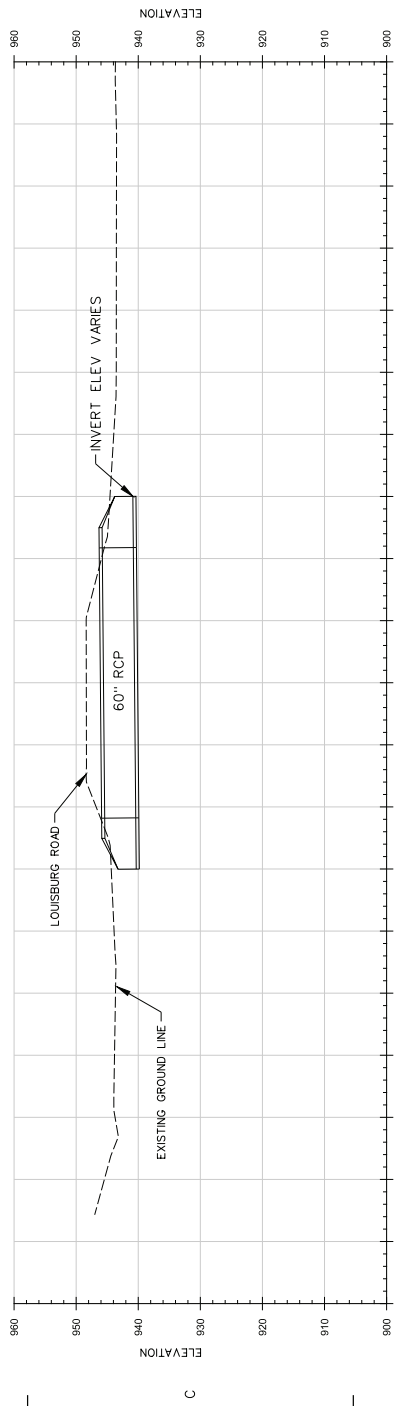
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Section No.: 10	Rev.:

DEPARTMENT OF THE ARMY
CORPS OF ENGINEERS
ST. PAUL DISTRICT
MARSH LAKE AQUATIC ECOSYSTEM RESTORATION
FEASIBILITY STUDY
MINNESOTA RIVER
APLETON, MINNESOTA
ECOSYSTEM RESTORATION
SECTIONS 10 - 11

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C-003 TYPICAL SECTION
SECTION 11 - DRAWDOWN STRUCTURE



C-016 TYPICAL SECTION
SECTION 10 - LOUISBURG ROAD CULVERTS

D 5 4 3 2 1 C B A



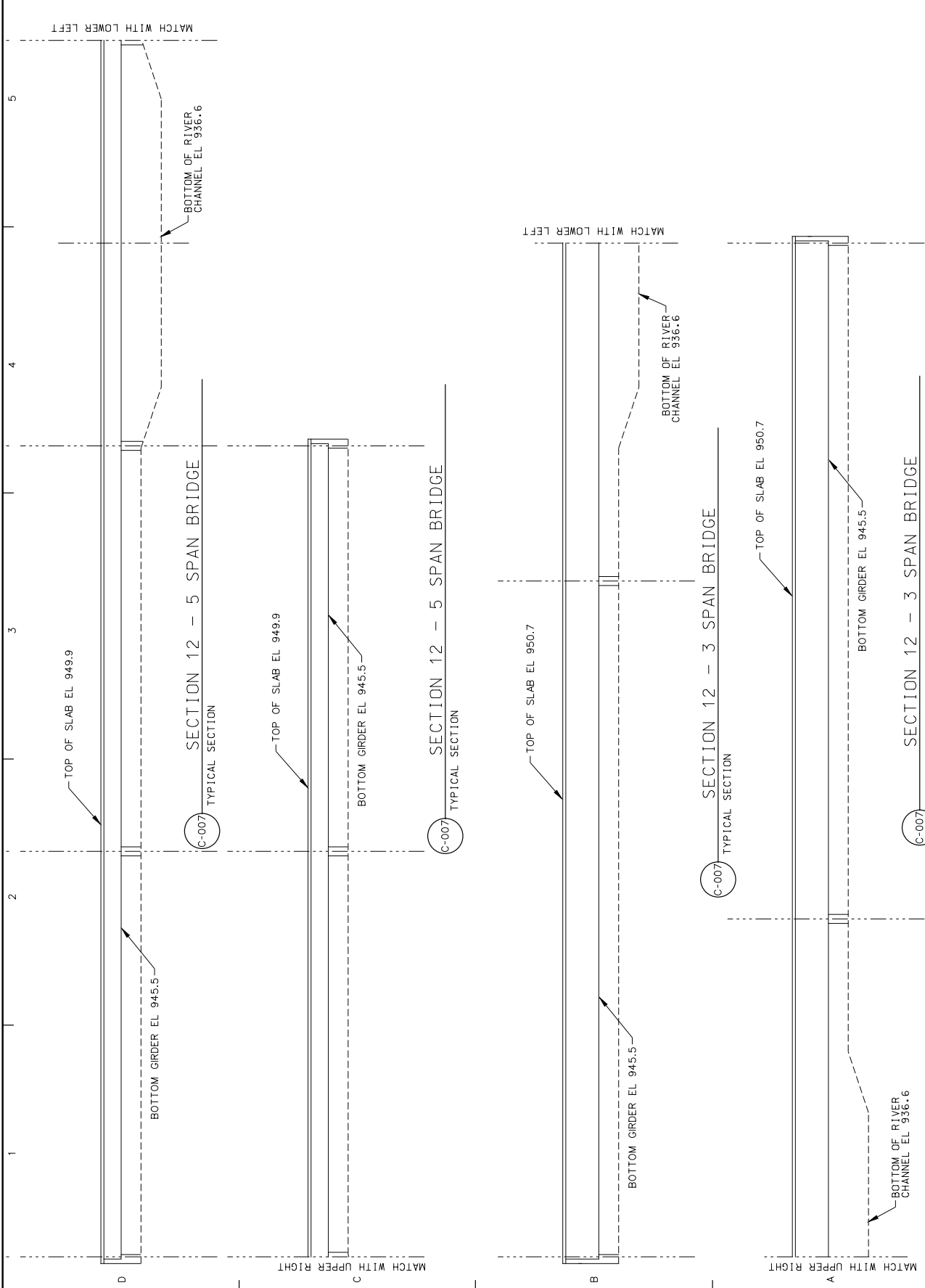
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Date:	Rev:

DEPARTMENT OF THE ARMY
CORPS OF ENGINEERS
ST. PAUL DISTRICT
MARSH LAKE AQUATIC ECOSYSTEM RESTORATION
FEASIBILITY STUDY
MINNESOTA RIVER
APLETON, MINNESOTA

ECOSYSTEM RESTORATION
SECTION 12
MARSH LAKE AQUATIC ECOSYSTEM RESTORATION
FEASIBILITY STUDY
MINNESOTA RIVER
APLETON, MINNESOTA

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Drawn by:	Checked by:	Date:

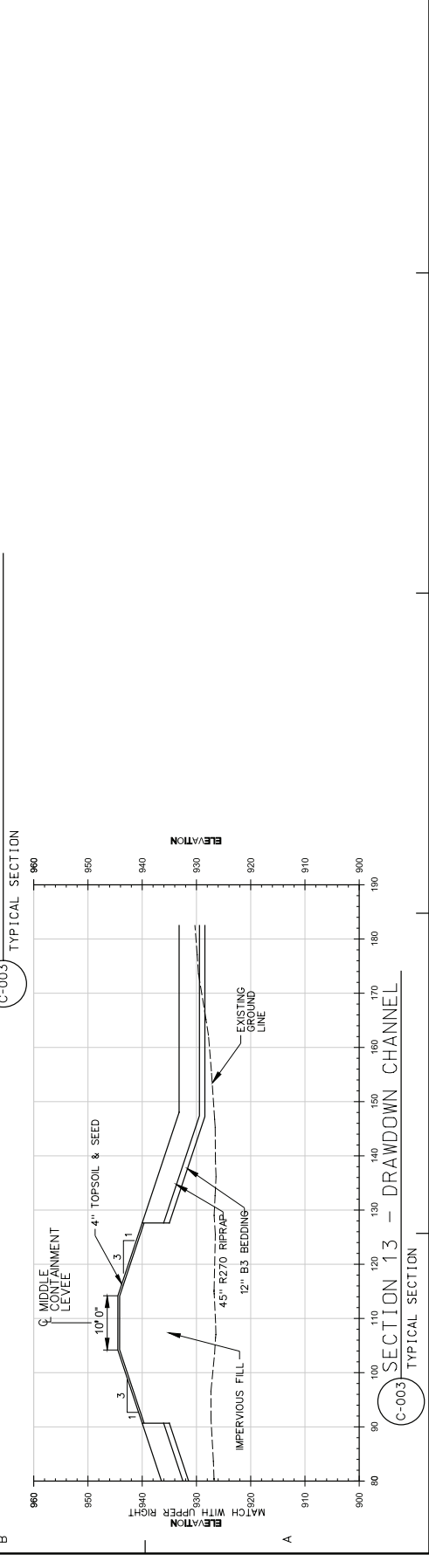
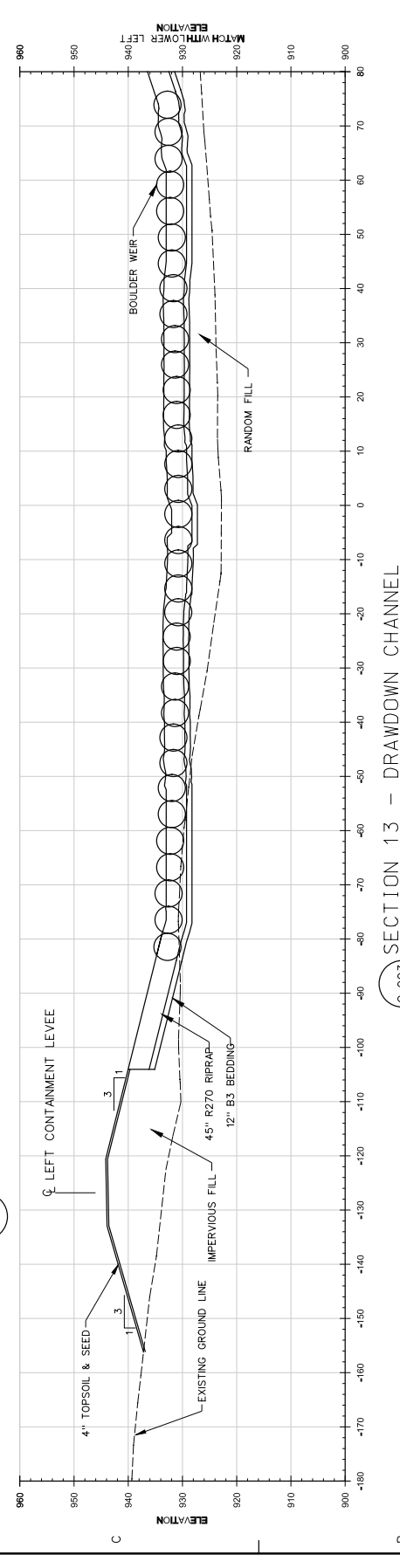
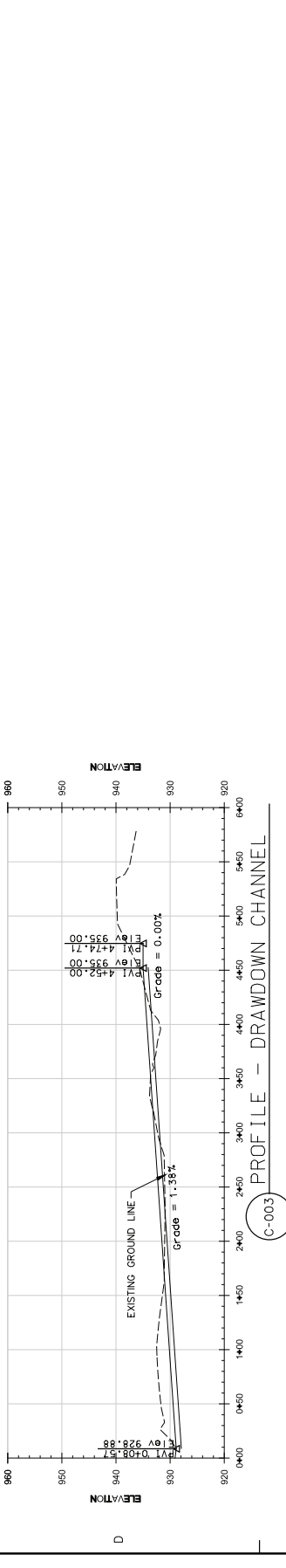
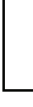
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Section No.:	Date:
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Sheet number:	Sheet of:
C-029	52

Description	Symbol	Date	Appr.



Match with Lower Left

Match with Upper Right

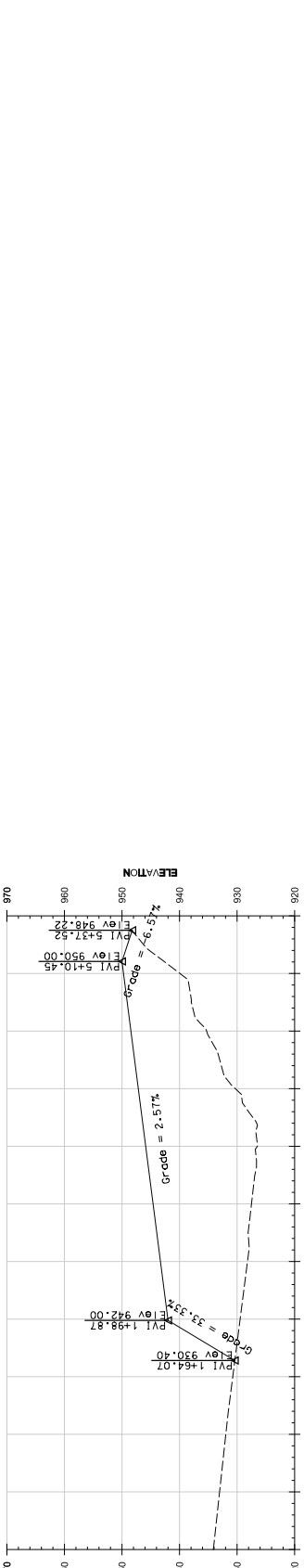
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0+00 0+50 1+00 1+50 2+00 2+50 3+00 3+50 4+00 4+50 5+00 5+50 6+00 6+50 7+00 7+50 8+00 8+50 9+00 9+50 10+00



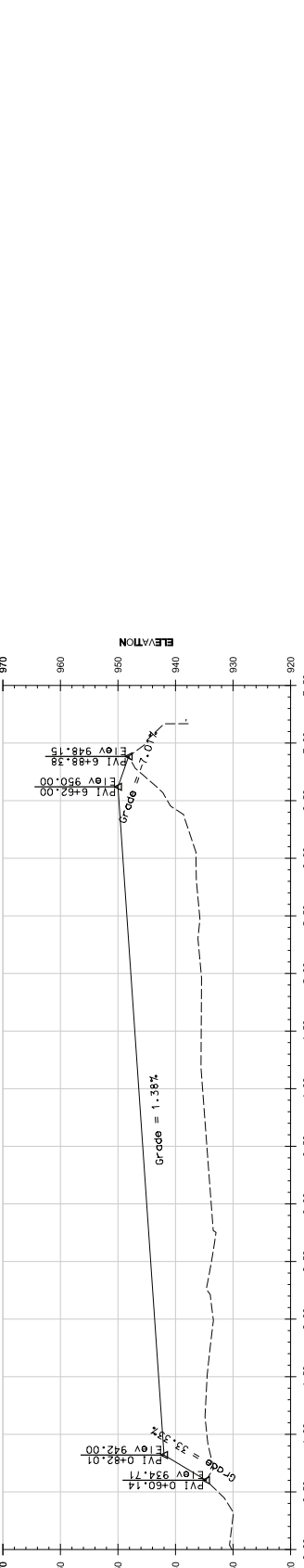
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C-003



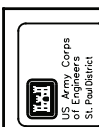
PROFILE - MIDDLE CONTAINMENT LEVEL

C-003



PROFILE - RIGHT CONTAINMENT LEVEL

C-003



U.S. Army Corps of Engineers
St. Paul District

Symbol	Description	Date	Appr.

Revised	Date	By	Checked	Date	By

Project No.	Project Name	Project Date

DEPARTMENT OF THE ARMY
CORPS OF ENGINEERS
ST. PAUL DISTRICT
ST. PAUL, MINNESOTA

FEASIBILITY STUDY
MARSH LAKE AQUATIC ECOSYSTEM RESTORATION
APLETON, MINNESOTA
ECOSYSTEM RESTORATION
PROFILE - LEFT, MIDDLE,
& RIGHT CONTAINMENT LEVEL

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