

Information for File # MVP-2008-00163-ACM

Applicant: City of Anoka
Corps Contact: Alex Meincke
Address: 1114 South Oak Street, La Crescent, MN 55947
E-Mail: alexander.c.meincke@usace.army.mil
Phone: (651) 290-5485
Primary County: Anoka County, Minnesota
Sections: 1 and 12
Township: 31 North
Range: 25 West

Information Complete On: September 20, 2023

Posting Expires On: September 30, 2023

Authorization Type: Section 10 LOP

This application is being reviewed in accordance with the practices for documenting Corps jurisdiction under Sections 9 & 10 of the Rivers and Harbors Act of 1899 and Section 404 of the Clean Water Act identified in Regulatory Guidance Letter 08-02. If an approved jurisdictional determination is completed as part of the review process for this application, a copy will be posted on the St. Paul District web page at the following link:
<http://www.mvp.usace.army.mil/Missions/Regulatory.aspx>.

Project

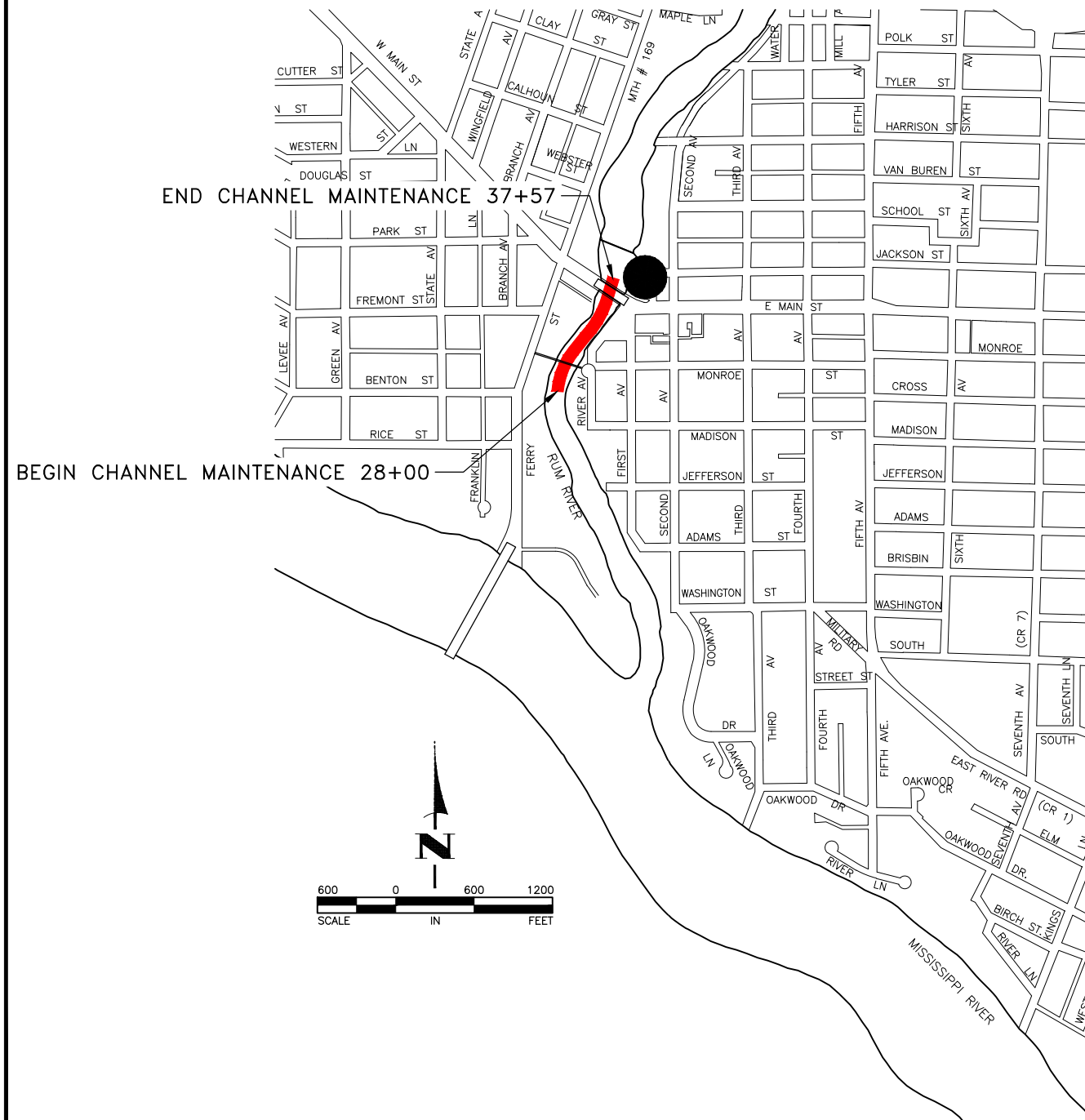
PROJECT DESCRIPTION AND PURPOSE: This project is split into two phases. The first phase of the project, known as the "Rum River Channel Maintenance Project," includes removing sediment from the channel that was excavated in 2008. This project includes a 40-foot-wide channel with a bottom elevation of 826.0+ and 3H:1V side slopes is proposed. The construction would restore a water depth of 2 to 4 feet for boat traffic. Dredged sediment materials would be hauled and disposed of off-site. The length of excavation will be 800 linear feet (40,257 square feet) and the approximate amount of sediment being removed from the river will be 3,880 cubic yards. The second phase of project, known as the "Rum River Channel Restoration Project," includes permitting and removing sediment from the channel on the remaining Rum River segment from the channel excavated in 2008 and continuing south to the mouth of the Mississippi River. This project includes a 40-foot-wide channel with a bottom elevation of 826.0+ and 3H:1V side slopes is proposed. The construction would restore a water depth of 2 to 4 feet for boat traffic. Dredged sediment materials would be hauled and disposed of offsite. The length of excavation will be approximately 2,950 linear feet (122,000 square feet) and the approximate amount of sediment being removed from the river will be 4,500 cubic yards.

NAME, AREA AND TYPES OF WATERS (INCLUDING WETLANDS) SUBJECT TO LOSS: The project would result in the excavation of 3,750 linear feet (162,257 square feet) of sediment from the Rum River to excavate the channel to historic navigation depths and conditions. The dredging operations being proposed would be either mechanical dredging by backhoe or hydraulic dredge by a suction method. The excavated material will be hauled offsite and disposed of in uplands.

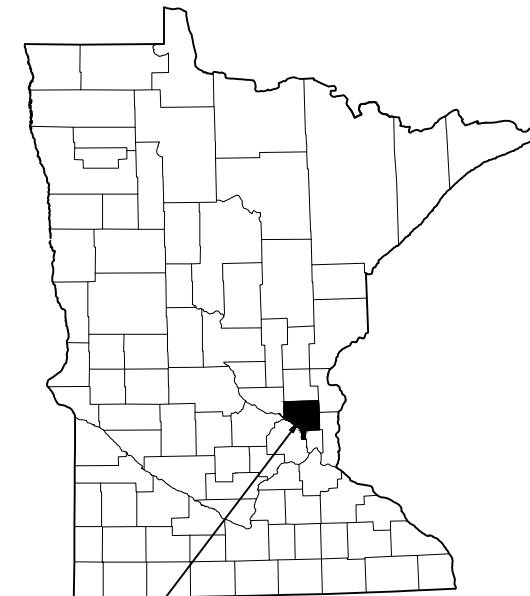
COMPENSATORY MITIGATION: The applicant has not proposed compensatory mitigation.

Drawings MVP-2008-00163-ACM LOP Attachments, Pages 1-31 of 31.

PRELIMINARY PLANS
RUM RIVER CHANNEL MAINTENANCE PROJECT
CITY OF ANOKA, MINNESOTA



 CHANNEL MAINTENANCE LOCATION



CITY OF ANOKA,
ANOKA COUNTY,
MINNESOTA

GOVERNING SPECIFICATIONS

THE 2020 EDITION OF THE MINNESOTA DEPARTMENT OF TRANSPORTATION
"STANDARD SPECIFICATIONS FOR CONSTRUCTION" AND THE
"SUPPLEMENTAL SPECIFICATIONS" DATED SEPTEMBER 2022 SHALL
GOVERN.

ALL FEDERAL, STATE AND LOCAL LAWS, REGULATIONS, AND ORDINANCES SHALL BE COMPLIED WITH IN THE CONSTRUCTION OF THIS PROJECT.

ALL TRAFFIC CONTROL DEVICES AND SIGNING SHALL CONFORM TO THE LATEST EDITION OF THE MINNESOTA MANUAL ON UNIFORM TRAFFIC CONTROL DEVICES, INCLUDING THE LATEST FIELD MANUAL FOR TEMPORARY TRAFFIC CONTROL ZONE LAYOUTS.

ALL REQUIREMENTS OF THE PROJECT MANUAL FOR THE PRELIMINARY
PLANS - RUM RIVER CHANNEL MAINTENANCE PROJECT.

SHEET INDEX

THIS PLAN CONTAINS 12 SHEETS

<u>SHEET NO.</u>	<u>DESCRIPTION</u>
1	TITLE SHEET
2	ESTIMATED QUANTITIES AND CONSTRUCTION NOTES
3	EARTHWORK CALCULATIONS AND EROSION CONTROL NOTES
4	DETAILS
5-6	CHANNEL EXCAVATION PLANS
7	TRAFFIC CONTROL AND SIGNAGE PLAN
8	TRANSPORT AND LOADING AREAS
9	SEDIMENT AND EROSION CONTROL PLAN
X1-X3	CROSS SECTIONS

APPROVED: BEN NELSON
ASSISTANT CITY ENGINEER

I hereby certify that this plan, specification, or report was prepared by me or under my direct supervision and that I am a duly Licensed Professional Engineer under the laws of the State of Minnesota.

Professional Engineer under the laws of the State of Minnesota.

 _____ 23461 DATE 8/23/23
 CRAIG J. JOCHUM, P.E. LIC. NO.
 HAKANSON ANDERSON
 DESIGN ENGINEER

[illegible]

SHEET 1 OF 9 SHEETS

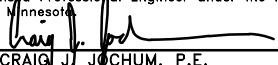
AN933-2023



THE SUBSURFACE UTILITY INFORMATION
IN THIS PLAN IS UTILITY QUALITY LEVEL
D. THIS QUALITY LEVEL WAS DETERMINED
ACCORDING TO THE GUIDELINES OF
CI/ASCE 38-2, ENTITLED "STANDARD
GUIDELINES FOR THE COLLECTION AND
DEPICTION OF EXISTING SUBSURFACE
UTILITY DATA."

- CONSTRUCTION NOTES:
1. CONTRACTOR MUST CONTACT "GOPHER STATE ONE CALL" AT (651) 454-0002 FOR LOCATIONS OF EXISTING UTILITIES BEFORE START OF CONSTRUCTION.
 2. A COPY OF THESE PLANS AND THE STORM WATER POLLUTION PREVENTION PLAN (SWPPP) MUST BE ON THE JOB SITE WHENEVER CONSTRUCTION IS IN PROGRESS.
 3. ALL WORK AND MATERIALS SHALL BE CONSTRUCTED ACCORDING TO THE APPROVED PLANS. IF A CHANGE IN THE PLANS IS REQUIRED, THE CONTRACTOR SHALL IMMEDIATELY NOTIFY THE ENGINEER.
 4. ALL EROSION AND SEDIMENT CONTROL MEASURES SHALL BE PROPERLY DISPOSED OF WITHIN THIRTY (30) DAYS AFTER FINAL SITE STABILIZATION IS APPROVED BY THE ENGINEER.
 5. BOULDERS LARGER THAN 10" SHALL BE RELOCATED ALONG RIVER BANK AS DIRECTED BY THE ENGINEER.
 6. THE CONTRACTOR SHALL SUBMIT AN EXCAVATION, SEDIMENT CONTROL AND TRANSPORT PLAN FOR APPROVAL PRIOR TO STARTING.
 7. CHANNEL EXCAVATION BY METHODS OTHER THAN BUCKET DREDGE AND TRANSPORT MUST BE APPROVED BY THE ENGINEER.
 8. MATERIAL TRANSPORTED OUT OF RIVER CHANNEL BY METHODS OTHER THAN CONVEYOR, BARGE OR LOW IMPACT TRUCKS MUST BE APPROVED BY THE ENGINEER.

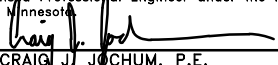
Aug 24, 2023 -- 3:57pm
K:\MUNICIPAL\AN933-2023\ENGINEERING\PLAN DWG -- PRELIMINARY\AN933-2023_DETAILS_PRELIM.dwg

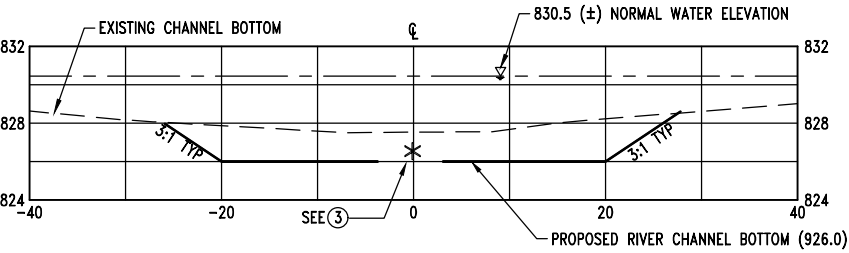
DATE	REVISION	I hereby certify that this plan, specification, or report was prepared by me or under my direct supervision and that I am a duly Licensed Professional Engineer under the laws of the State of Minnesota.  CRAIG J. JOCHUM, P.E. Date 8/23/23 Lic. No. 23461	DESIGNED BY: CJJ	 Hakanson Anderson Civil Engineers and Land Surveyors 3601 Thurston Ave., Anoka, Minnesota 55303 763-427-5860 FAX 763-427-0520 www.hakanson-anderson.com	PRELIMINARY PLANS – RUM RIVER CHANNEL MAINTENANCE PROJECT	ESTIMATED QUANTITIES AND CONSTRUCTION NOTES CITY OF ANOKA, MINNESOTA	SHEET 2 OF 9 SHEETS
			DRAWN BY: SGJ				
			CHECKED BY: TAE				

- EROSION CONTROL NOTES:
1. ALL PUBLIC OR HAUL ROADS USED DURING CONSTRUCTION OF THE PROJECT SHALL BE TREATED WITH WATER OR OTHER ENGINEER APPROVED METHODS AS NECESSARY TO SUPPRESS DUST.
 2. THE CONTRACTOR SHALL CONTINUOUSLY CLEAN AND SWEEP ANY CONSTRUCTION MATERIAL AND DEBRIS THAT MAY BE TRACKED OR DEPOSITED ONTO STREETS LEADING TO OR ADJACENT TO THE PROJECT AREA. IF, UPON 6 HOURS NOTICE FROM THE ENGINEER, STREETS HAVE NOT BEEN CLEANED, THE ENGINEER MAY ORDER SUCH CLEANING BY OTHERS WITH THE COSTS OF SUCH SWEEPING OR CLEANING DEDUCTED FROM CONTRACT PAYMENTS.
 3. ALL MEASURES AND WORK SHALL BE ADEQUATELY MAINTAINED IN A FUNCTIONAL CONDITION AS LONG AS NEEDED DURING THE CONSTRUCTION OPERATION. ALL TEMPORARY MEASURES SHALL BE REMOVED AND THE SITE RESTORED TO AS NEARLY ORIGINAL CONDITION AS PRACTICABLE AS DIRECTED BY THE ENGINEER. SEDIMENTS OR MATERIALS DEPOSITED INTO WATERS OF THE STATE MUST BE REMOVED COMPLETELY WITHIN SEVEN DAYS.

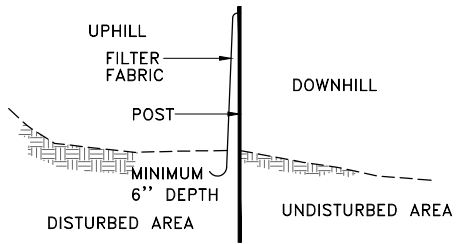
TOTAL VOLUME TABLE					
Station	Cut Area (SQ FT)	Fill Area (SQ FT)	Cut Vol (CY)	Fill Vol (CY)	Cum Cut Vol (CY)
28+00	55.61	0.00	0.00	0.00	0.00
28+50	55.00	0.00	102.42	0.00	102.42
29+00	131.67	0.00	172.84	0.00	275.26
29+50	151.84	0.00	262.51	0.00	537.77
30+00	129.31	0.00	260.32	0.00	798.09
30+50	145.90	0.00	254.82	0.00	1052.92
31+00	142.08	0.00	266.65	0.00	1319.56
31+50	134.54	0.00	256.13	0.00	1575.69
32+00	119.24	0.00	234.98	0.00	1810.68
32+50	90.54	0.00	194.24	0.00	2004.92
33+00	76.11	0.00	154.31	0.00	2159.22
33+50	70.86	0.00	136.08	0.00	2295.31
34+00	82.51	0.00	142.01	0.00	2437.31
34+50	57.47	0.00	129.61	0.00	2566.93
35+00	96.93	0.00	142.96	0.00	2709.89
35+50	103.69	0.00	185.76	0.00	2895.65
36+00	97.70	0.00	186.47	0.00	3082.12
36+50	131.12	0.00	211.87	0.00	3293.99
37+00	144.07	0.00	254.81	0.00	3548.80
37+50	107.08	0.00	232.55	0.00	3781.34
37+57.30	0.00	0.00	99.15	0.00	3880.49

Aug 24, 2023 -- 4:55pm
K:\MUNICIPAL\AN933-2023\ENGINEERING\PLAN DWG -- PRELIMINARY\AN933-2023_DETAILS_PRELIM.dwg

DATE	REVISION	I hereby certify that this plan, specification, or report was prepared by me or under my direct supervision and that I am a duly Licensed Professional Engineer under the laws of the State of Minnesota.  CRAIG J. JOCHUM, P.E. Date 8/23/23 Lic. No. 23461	DESIGNED BY: CJJ		Hakanson Anderson Civil Engineers and Land Surveyors 3601 Thurston Ave., Anoka, Minnesota 55303 763-427-5860 FAX 763-427-0520 www.hakanson-anderson.com	PRELIMINARY PLANS – RUM RIVER CHANNEL MAINTENANCE PROJECT	EARTHWORK CALCULATIONS AND EROSION CONTROL NOTES CITY OF ANOKA, MINNESOTA	SHEET 3 OF 9 SHEETS
			DRAWN BY: SGJ					
			CHECKED BY: TAE					

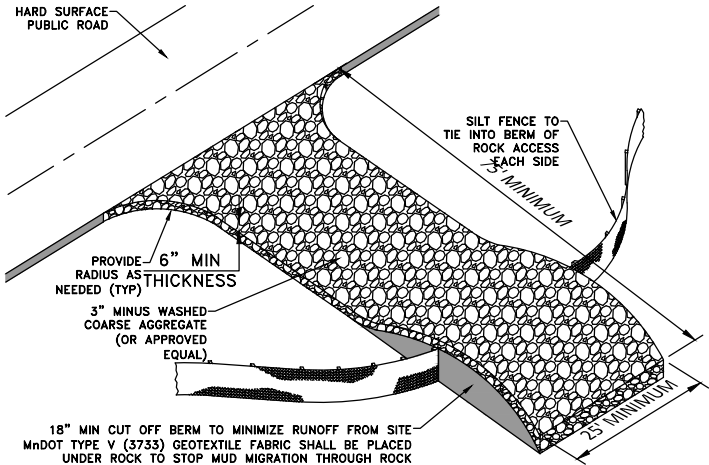


1
4
TYPICAL CHANNEL SECTION

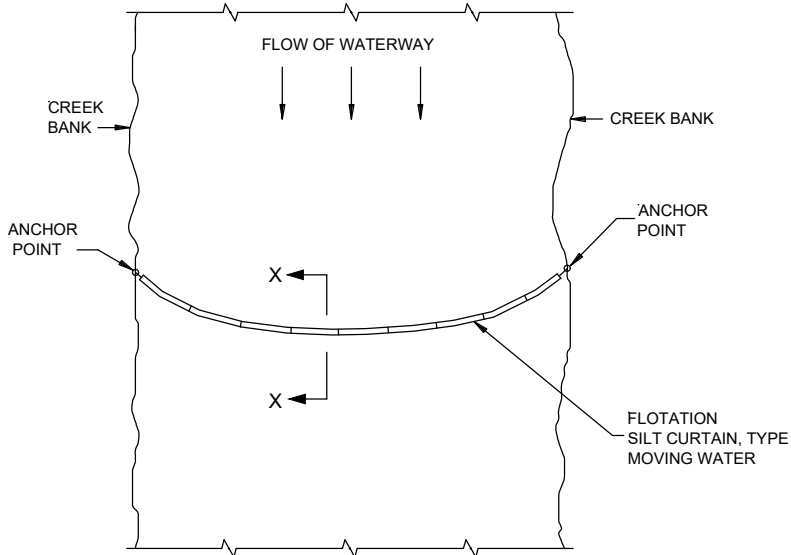


INSTALL AS PER Mn/DOT SPECIFICATION 2573

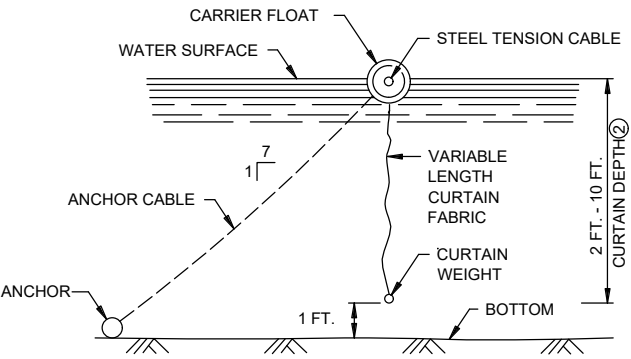
2
4
SILT FENCE DETAIL



3
4
ROCK CONSTRUCTION ENTRANCE



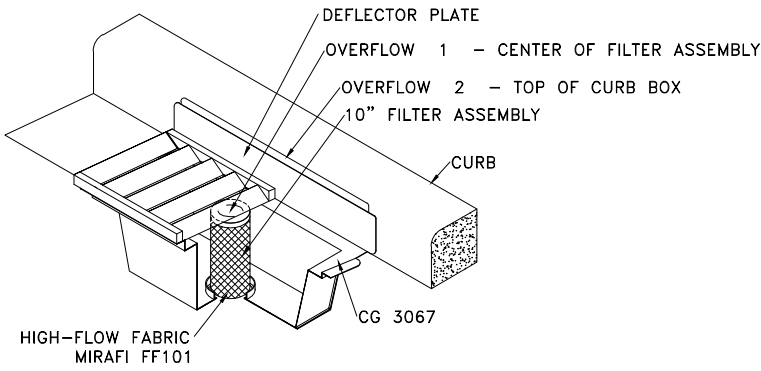
PLAN VIEW



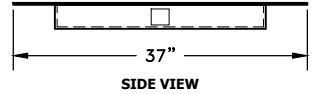
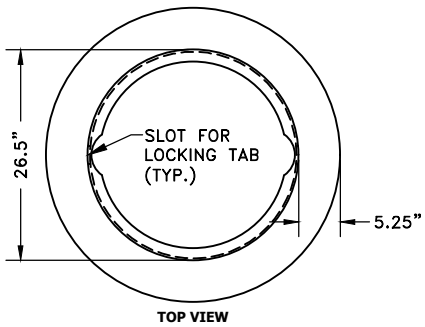
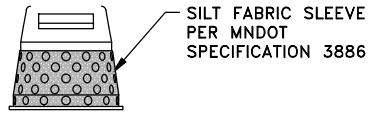
SECTION X-X

FLOATATION SILT CURTAIN TYPE MOVING WATER ①

4
4

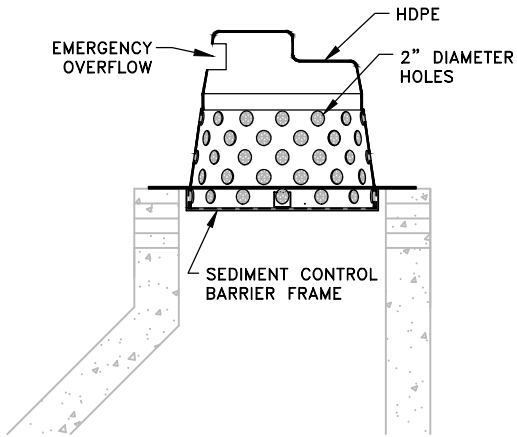


5
4
STORM DRAIN INLET PROTECTION TYPE 1



SEDIMENT CONTROL BARRIER FRAME (27" SHOWN)

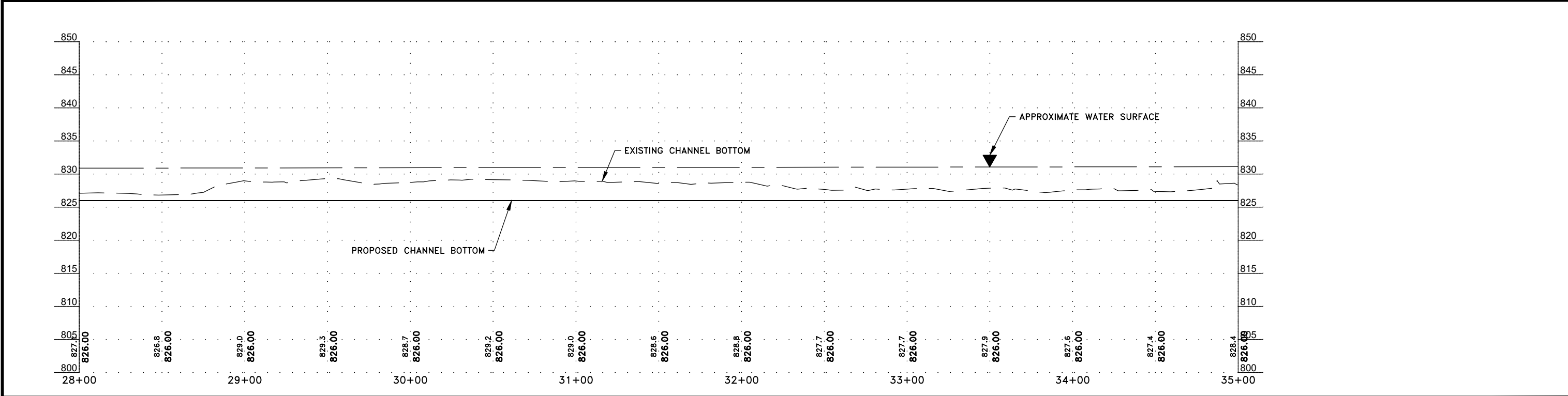
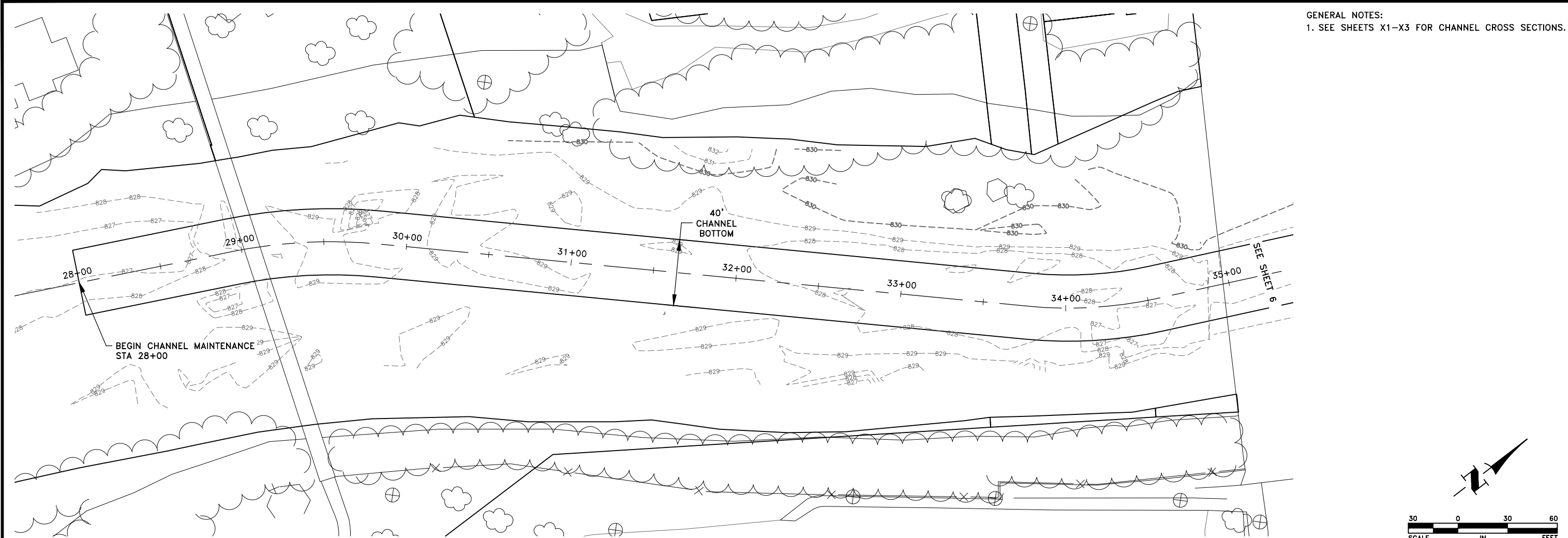
6
4
STORM DRAIN INLET PROTECTION TYPE 2



- REFERENCE NOTES:
- ① SILT CURTAIN SHALL BE REMOVED WHEN THE AREA CONTRIBUTING DIRECT RUNOFF TO THE CREEK HAS BEEN PERMANENTLY STABILIZED. SILT CURTAIN SHALL ALSO BE REMOVED BEFORE WINTER IF ICE UP OR ICE FLOW IS ANTICIPATED.
 - ② MINIMUM WATER DEPTH APPLIES TO THE DEEPEST POINT ALONG THE FLOATATION SILT CURTAIN FOR DETERMINING APPLICABILITY OF FLOATATION SILT CURTAIN.
 - ③ CONTRACTOR SHALL NOT FILL THE RIVER CHANNEL IN ANY LOCATIONS.

Aug 24, 2023 - 3:57pm
K:\MUNICIPAL\AN933-2023\ENGINEERING\PLAN DWG - PRELIMINARY\AN933-2023_DETAILS_PRELIM.dwg

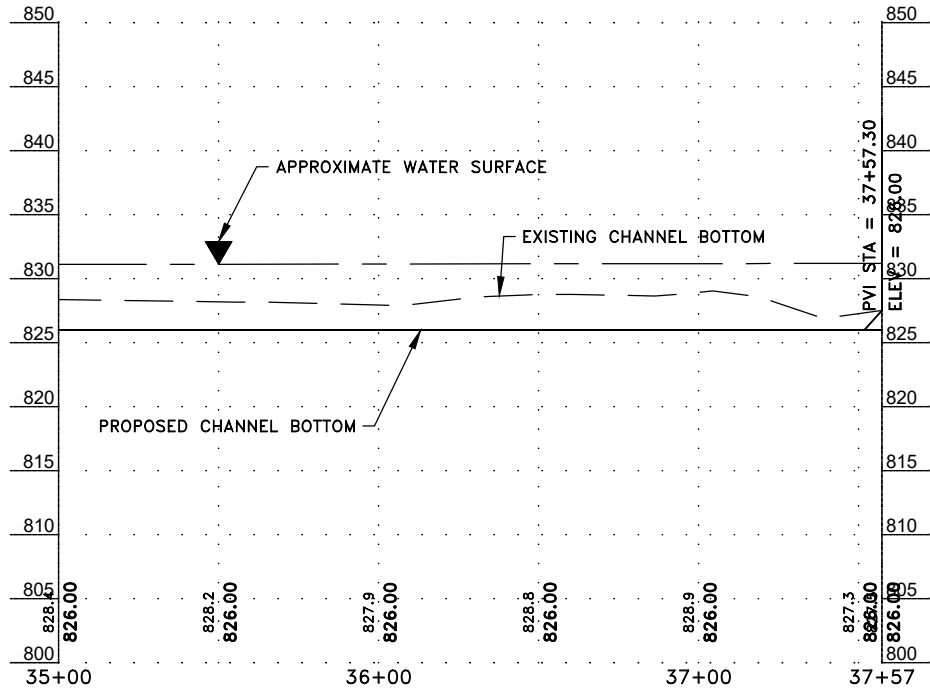
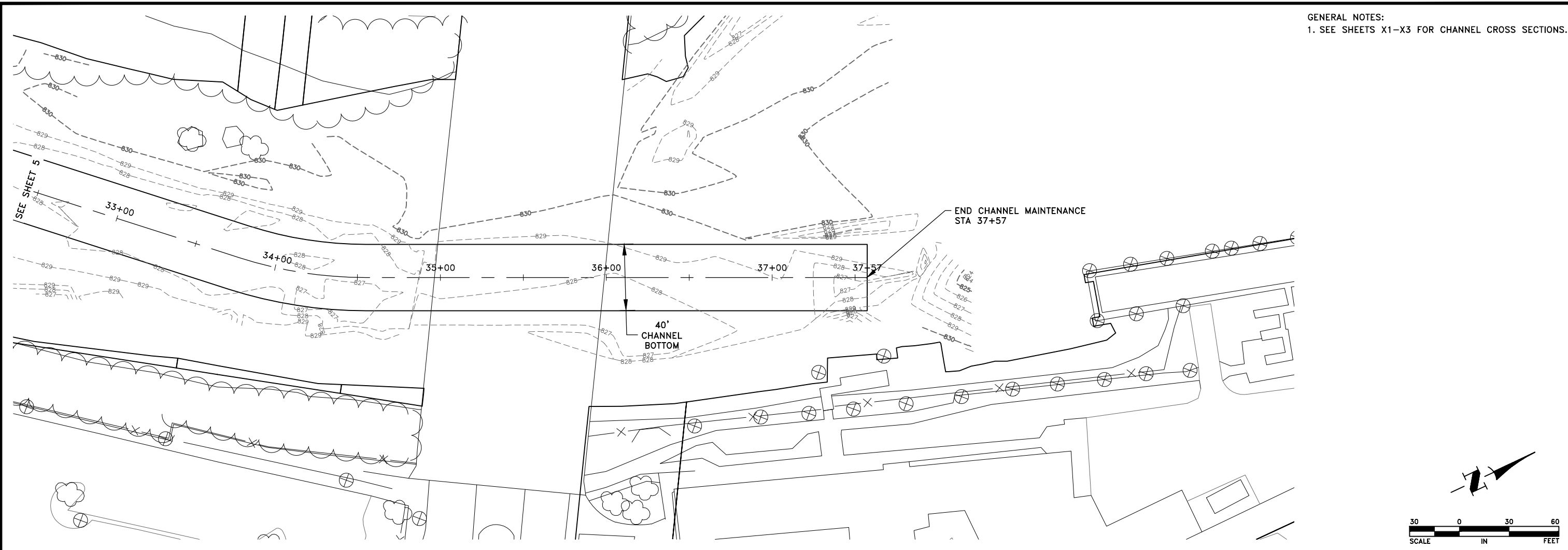
DATE	REVISION	DESIGNED BY:	CJJ	DRAWN BY:	SGJ	CHECKED BY:	TAE	Hakanson Anderson	Civil Engineers and Land Surveyors	3601 Thurston Ave., Anoka, Minnesota 55303	763-427-5860 FAX 763-427-0520	www.hakanson-anderson.com	PRELIMINARY PLANS - RUM RIVER CHANNEL MAINTENANCE PROJECT	DETAILS	CITY OF ANOKA, MINNESOTA	SHEET 4 OF 9 SHEETS



Aug 24, 2023 - 3:58pm
K:\MUNICIPAL\AN933-2023\ENGINEERING\PLAN DWG - PRELIMINARY\AN933-2023_PP_PRELIM.dwg

DATE	REVISION	I hereby certify that this plan, specification, or report was prepared by me or under my direct supervision and that I am a duly Licensed Professional Engineer under the laws of the State of Minnesota. CRAIG J. JOCHUM, P.E. Date 8/23/23 Lic. No. 23461	DESIGNED BY: CJJ DRAWN BY: SGJ CHECKED BY: TAE	 Hakanson Anderson Civil Engineers and Land Surveyors 3601 Thurston Ave., Anoka, Minnesota 55303 763-427-5860 FAX 763-427-0520 www.hakanson-anderson.com	PRELIMINARY PLANS - RUM RIVER CHANNEL MAINTENANCE PROJECT	CHANNEL EXCAVATION PLANS CITY OF ANOKA, MINNESOTA	SHEET 5 OF 9 SHEETS
------	----------	---	---	--	--	--	---------------------------------

GENERAL NOTES:
1. SEE SHEETS X1-X3 FOR CHANNEL CROSS SECTIONS.



Aug 24, 2023 - 3:59pm
K:\MUNICIPAL\AN933-2023\ENGINEERING\PLAN DWG - PRELIMINARY\AN933-2023_PP_PRELIM.dwg

DATE	REVISION

I hereby certify that this plan, specification, or report was prepared by me or under my direct supervision and that I am a duly Licensed Professional Engineer under the laws of the State of Minnesota.


CRAIG J. JOCHUM, P.E.
Date 8/23/23 Lic. No. 23461

DESIGNED BY:
CJJ
DRAWN BY:
SGJ
CHECKED BY:
TAE



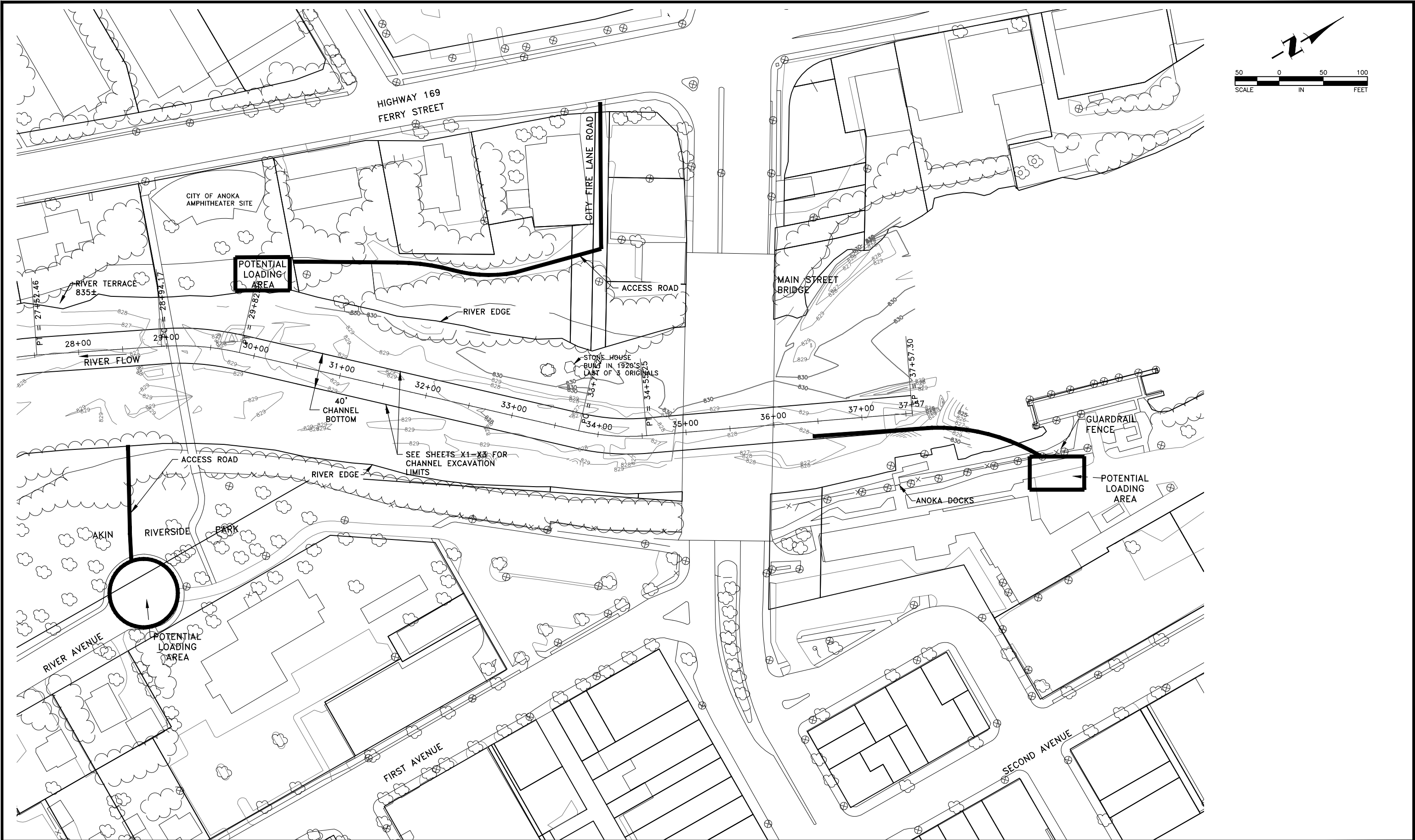
Hakanson Anderson
Civil Engineers and Land Surveyors
3601 Thurston Ave., Anoka, Minnesota 55303
763-427-5860 FAX 763-427-0520
www.hakanson-anderson.com

PRELIMINARY PLANS - RUM
RIVER CHANNEL MAINTENANCE
PROJECT

CHANNEL EXCAVATION PLANS

CITY OF ANOKA, MINNESOTA

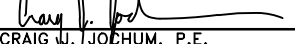
SHEET
6
OF
9
SHEETS



Aug 24, 2023 - 3:59pm
K:\MUNICIPAL\AN933-2023\ENGINEERING\PLAN DWG - PRELIMINARY\AN933-2023_TRANSPORT_PRELIM.dwg

DATE	REVISION

I hereby certify that this plan, specification, or report was prepared by me or under my direct supervision and that I am a duly Licensed Professional Engineer under the laws of the State of Minnesota.


CRAIG W. JOCHUM, P.E.
Date 8/23/23 Lic. No. 23461

DESIGNED BY: CJJ
DRAWN BY: SGJ
CHECKED BY: TAE



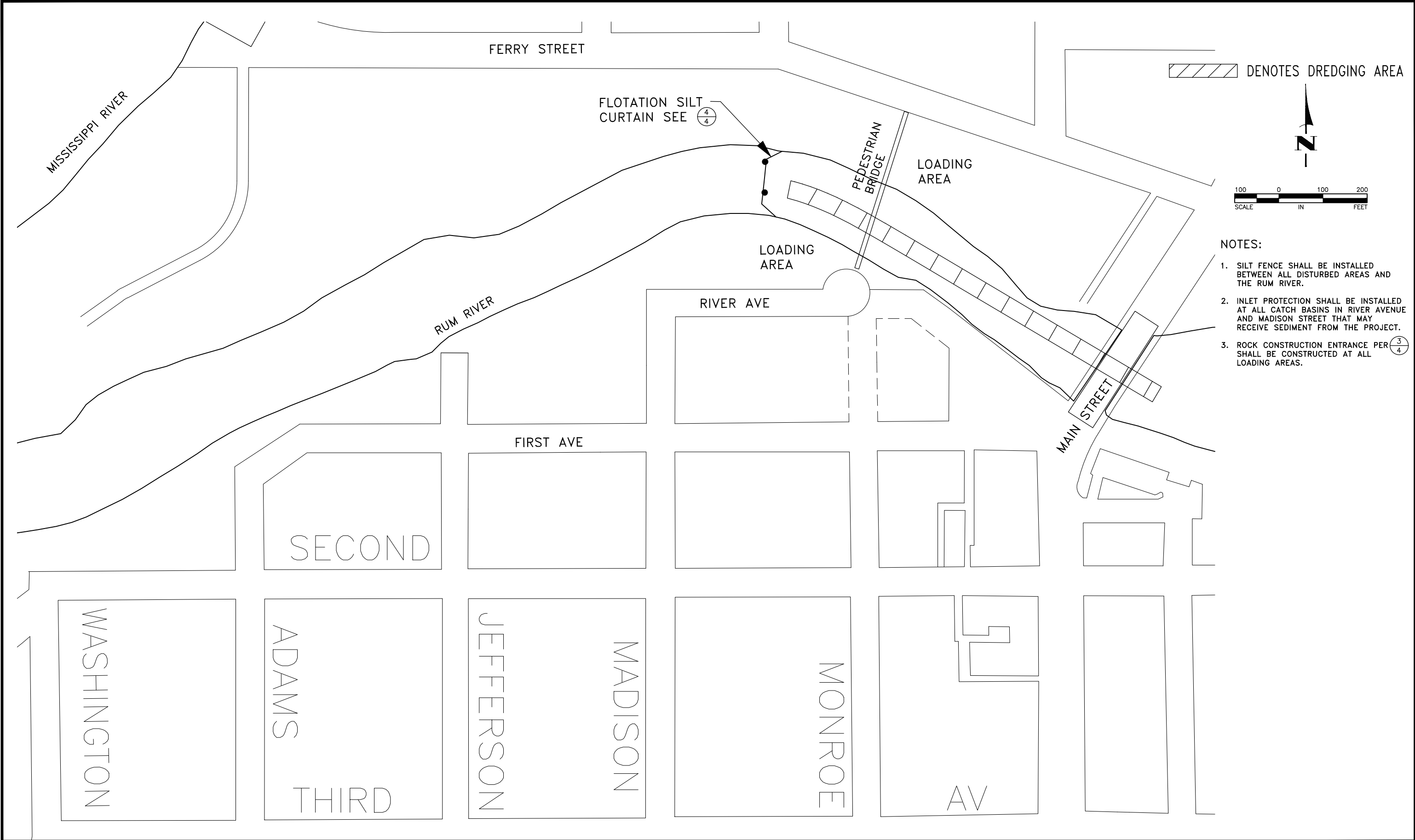
Hakanson Anderson
Civil Engineers and Land Surveyors
3601 Thurston Ave., Anoka, Minnesota 55303
763-427-5860 FAX 763-427-0520
www.hakanson-anderson.com

PRELIMINARY PLANS - RUM RIVER CHANNEL
MAINTENANCE PROJECT

TRANSPORT AND LOADING AREAS

CITY OF ANOKA, MINNESOTA

SHEET 8	OF 9
SHEETS	



- NOTES:
1. SILT FENCE SHALL BE INSTALLED BETWEEN ALL DISTURBED AREAS AND THE RUM RIVER.
 2. INLET PROTECTION SHALL BE INSTALLED AT ALL CATCH BASINS IN RIVER AVENUE AND MADISON STREET THAT MAY RECEIVE SEDIMENT FROM THE PROJECT.
 3. ROCK CONSTRUCTION ENTRANCE PER $\frac{3}{4}$ SHALL BE CONSTRUCTED AT ALL LOADING AREAS.

Aug 24, 2023 - 3:59pm
K:\MUNICIPAL\AN933-2023\ENGINEERING\PLAN DWG - PRELIMINARY\AN933-2023_EROSION CONTROL_PRELIM.dwg

DATE	REVISION

I hereby certify that this plan, specification, or report was prepared by me or under my direct supervision and that I am a duly Licensed Professional Engineer under the laws of the State of Minnesota.

Craig J. Jochum
CRAIG J. JOCHUM, P.E.
 Date 8/23/23 Lic. No. 23461

DESIGNED BY:
CJJ
DRAWN BY:
SGJ
CHECKED BY:
TAE



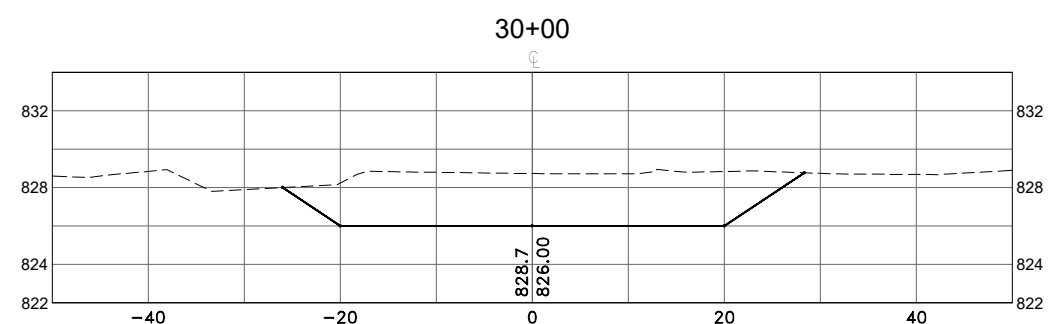
Hakanson Anderson
 Civil Engineers and Land Surveyors
 3601 Thurston Ave., Anoka, Minnesota 55303
 763-427-5860 FAX 763-427-0520
 www.hakanson-anderson.com

**PRELIMINARY PLANS - RUM RIVER CHANNEL
 MAINTENANCE PROJECT**

SEDIMENT AND EROSION CONTROL PLAN

CITY OF ANOKA, MINNESOTA

SHEET
9
OF
9
SHEETS

[illegible]

DESIGNED BY:	CJJ
DRAWN BY:	SGJ
CHECKED BY:	TAE



Hakanson Anderson
Civil Engineers and Land Surveyors
3601 Thurston Ave., Anoka, Minnesota 55303
763-427-5860 FAX 763-427-0520
www.hakanson-anderson.com

PRELIMINARY PLANS – RUM RIVER CHANNEL
MAINTENANCE PROJECT

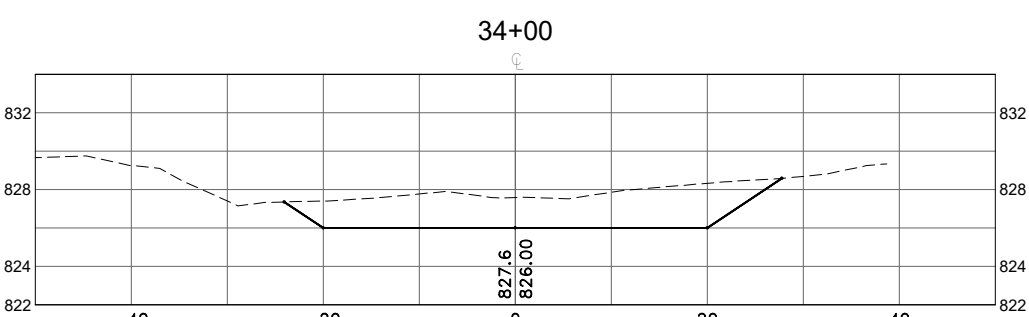
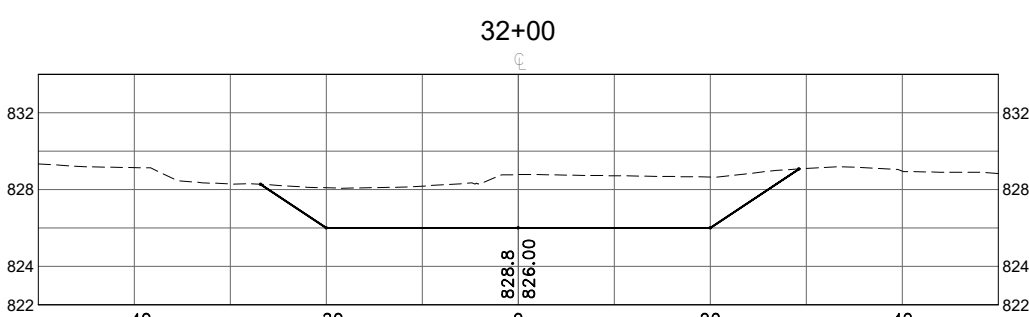
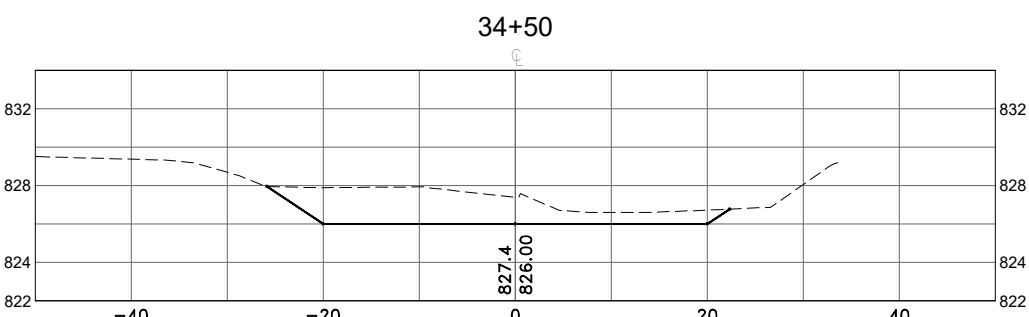
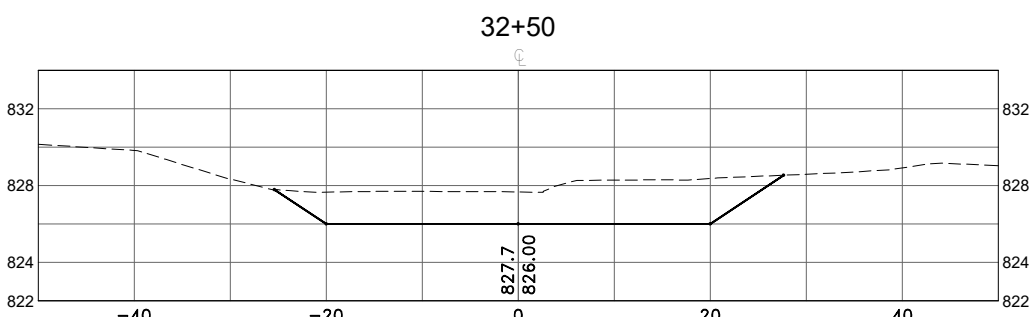
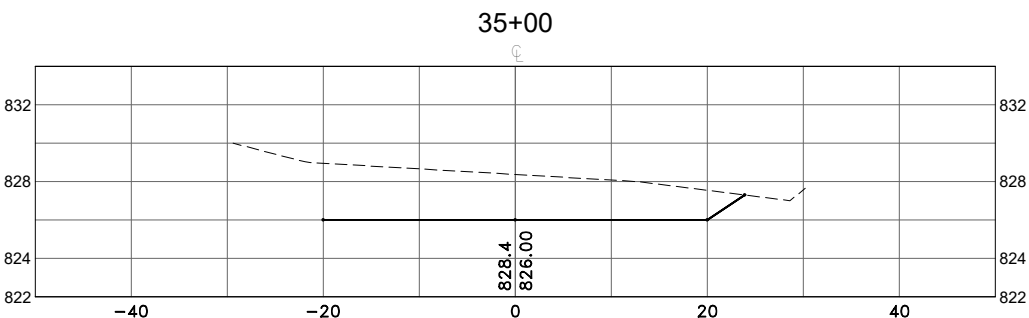
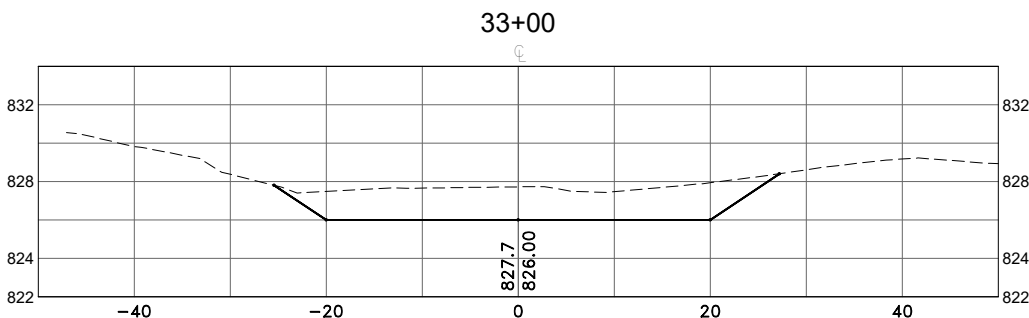
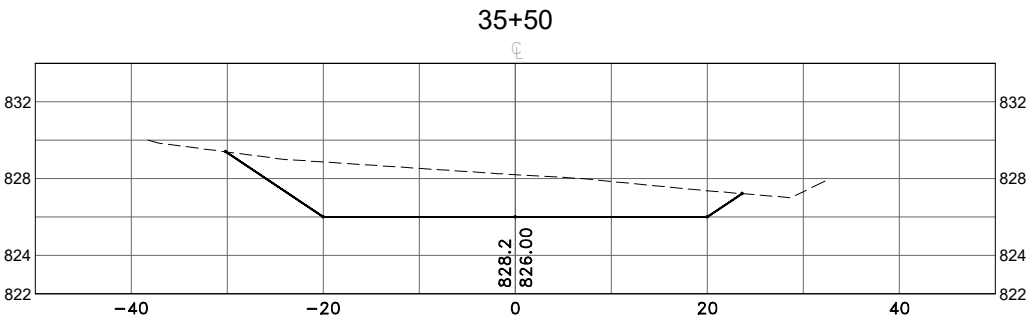
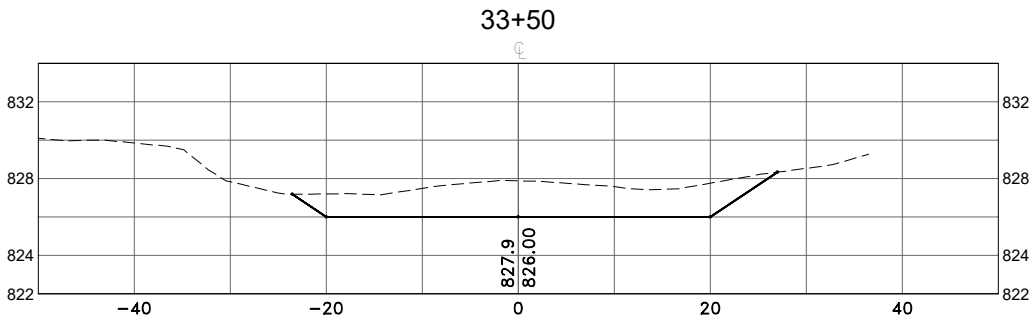
CROSS SECTIONS

CITY OF ANOKA, MINNESOTA

SHEET
X1

OF

X3
SHEETS



Aug 24, 2023 - 4:00pm
K:\MUNICIPAL\AN933-2023\ENGINEERING\PLAN DWG - PRELIMINARY\AN933-2023_XS_PRELIM.dwg

DATE	REVISION

DESIGNED BY: CJJ
DRAWN BY: SGJ
CHECKED BY: TAE



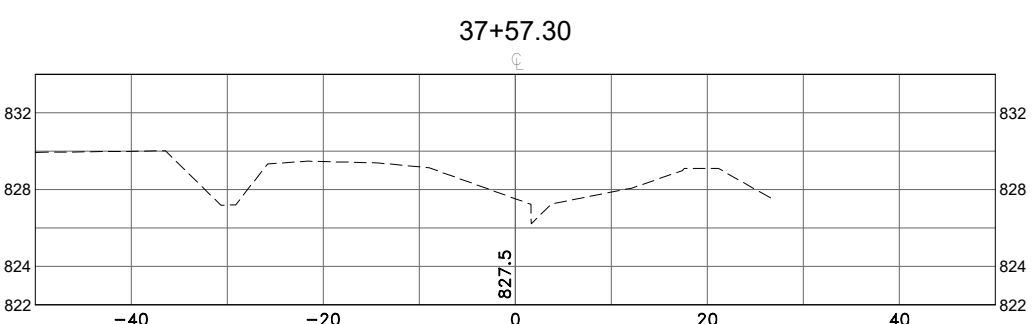
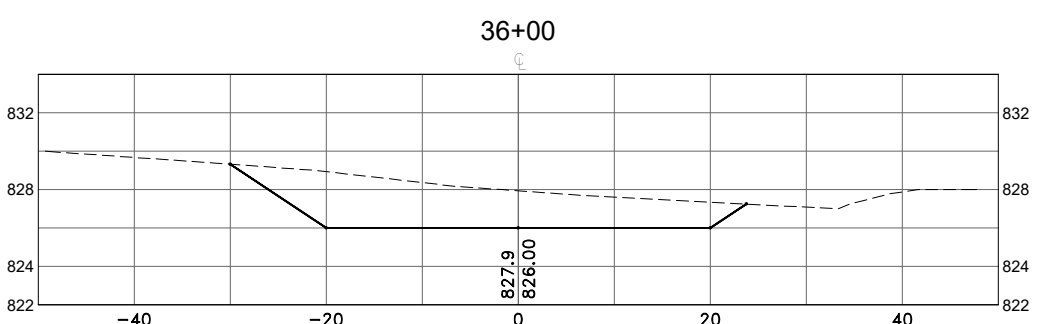
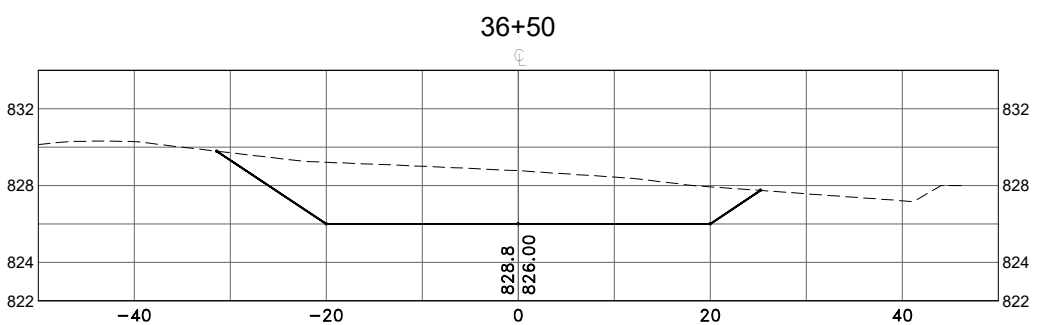
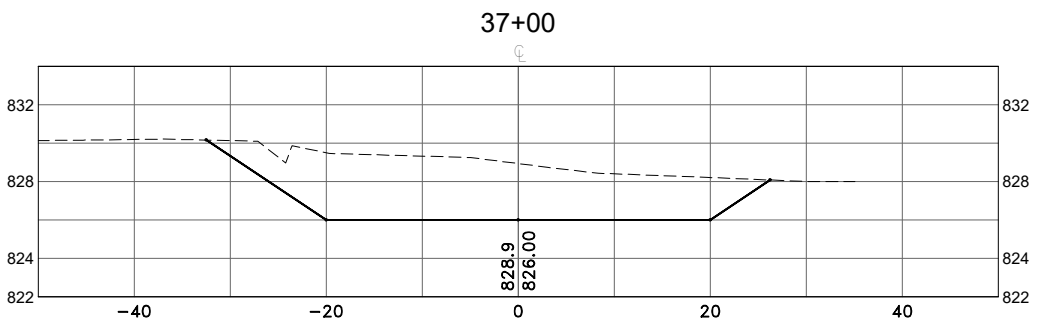
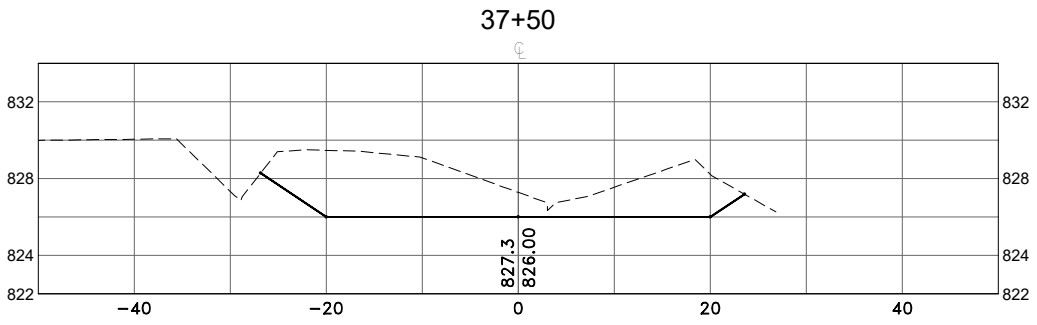
Hakanson Anderson
Civil Engineers and Land Surveyors
3601 Thurston Ave., Anoka, Minnesota 55303
763-427-5860 FAX 763-427-0520
www.hakanson-anderson.com

PRELIMINARY PLANS - RUM RIVER CHANNEL
MAINTENANCE PROJECT

CROSS SECTIONS

CITY OF ANOKA, MINNESOTA

SHEET
X2
OF
X3
SHEETS



Aug 24, 2023 - 4:00pm
K:\MUNICIPAL\AN933-2023\ENGINEERING\PLAN DWG - PRELIMINARY\AN933-2023_XS_PRELIM.dwg

DATE	REVISION

DESIGNED BY: CJJ
DRAWN BY: SGJ
CHECKED BY: TAE



Hakanson Anderson
Civil Engineers and Land Surveyors
3601 Thurston Ave., Anoka, Minnesota 55303
763-427-5860 FAX 763-427-0520
www.hakanson-anderson.com

PRELIMINARY PLANS – RUM RIVER CHANNEL
MAINTENANCE PROJECT

CROSS SECTIONS

CITY OF ANOKA, MINNESOTA

SHEET
X3
OF
X3
SHEETS

PERMIT DRAWINGS
RUM RIVER CHANNEL RESTORATION PROJECT
CITY OF ANOKA, MINNESOTA

GOVERNING SPECIFICATIONS

THE 2020 EDITION OF THE MINNESOTA DEPARTMENT OF TRANSPORTATION "STANDARD SPECIFICATIONS FOR CONSTRUCTION" AND THE "SUPPLEMENTAL SPECIFICATIONS" DATED SEPTEMBER 2022 SHALL GOVERN.

ALL FEDERAL, STATE AND LOCAL LAWS, REGULATIONS, AND ORDINANCES SHALL BE COMPLIED WITH IN THE CONSTRUCTION OF THIS PROJECT.

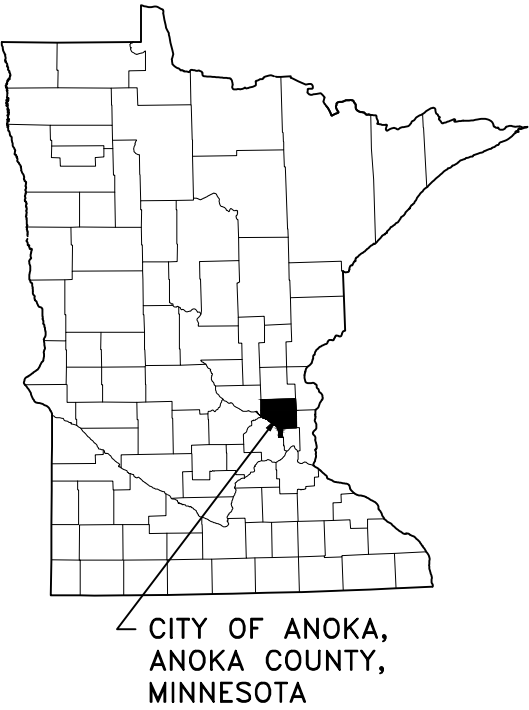
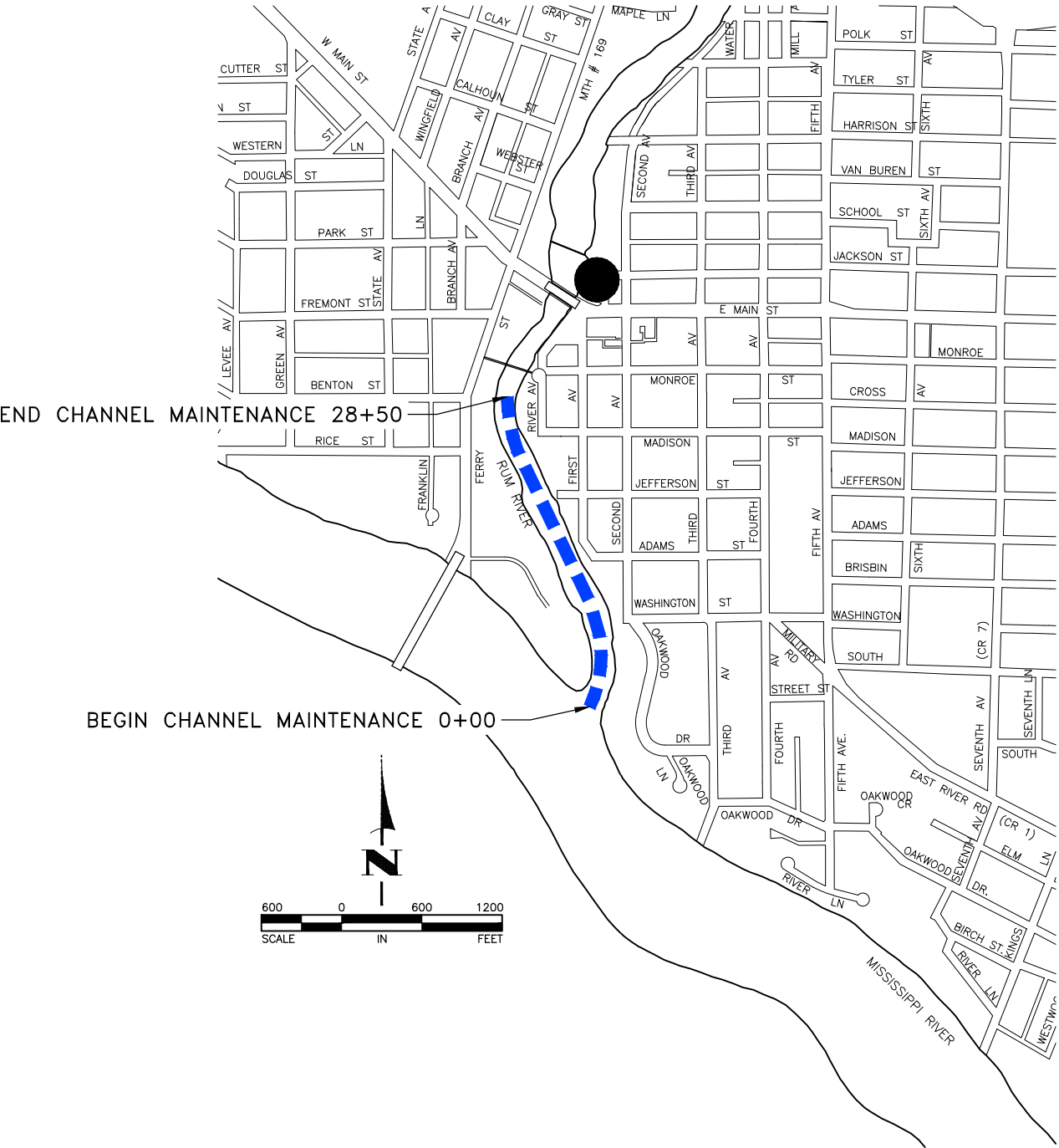
ALL TRAFFIC CONTROL DEVICES AND SIGNING SHALL CONFORM TO THE LATEST EDITION OF THE MINNESOTA MANUAL ON UNIFORM TRAFFIC CONTROL DEVICES, INCLUDING THE LATEST FIELD MANUAL FOR TEMPORARY TRAFFIC CONTROL ZONE LAYOUTS.

ALL REQUIREMENTS OF THE PROJECT MANUAL FOR THE PERMIT DRAWINGS – RUM RIVER CHANNEL RESTORATION PROJECT.

SHEET INDEX

THIS PLAN CONTAINS 19 SHEETS

SHEET NO.	DESCRIPTION
1	TITLE SHEET
2	ESTIMATED QUANTITIES AND CONSTRUCTION NOTES
3	EARTHWORK CALCULATIONS AND EROSION CONTROL NOTES
4	DETAILS
5-8	CHANNEL EXCAVATION PLANS
9-10	TRANSPORT AND LOADING AREAS
11	TRAFFIC CONTROL AND SIGNAGE PLAN
12	SEDIMENT AND EROSION CONTROL PLAN
X1-X7	CROSS SECTIONS



THE SUBSURFACE UTILITY INFORMATION IN THIS PLAN IS UTILITY QUALITY LEVEL D. THIS QUALITY LEVEL WAS DETERMINED ACCORDING TO THE GUIDELINES OF CI/ASCE 38-2, ENTITLED "STANDARD GUIDELINES FOR THE COLLECTION AND DEPICTION OF EXISTING SUBSURFACE UTILITY DATA."

APPROVED: BEN NELSON
ASSISTANT CITY ENGINEER
DATE 8-24-2023

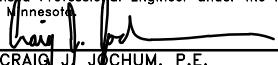
I hereby certify that this plan, specification, or report was prepared by me or under my direct supervision and that I am a duly Licensed Professional Engineer under the laws of the State of Minnesota.

CRAIG J. JOCHUM, P.E.
HAKANSON ANDERSON
DESIGN ENGINEER
23461 LIC. NO.
DATE 7/11/23

DATE	REVISION

- CONSTRUCTION NOTES:
- 1. CONTRACTOR MUST CONTACT "GOPHER STATE ONE CALL" AT (651) 454-0002 FOR LOCATIONS OF EXISTING UTILITIES BEFORE START OF CONSTRUCTION.
 - 2. A COPY OF THESE PLANS AND THE STORM WATER POLLUTION PREVENTION PLAN (SWPPP) MUST BE ON THE JOB SITE WHENEVER CONSTRUCTION IS IN PROGRESS.
 - 3. ALL WORK AND MATERIALS SHALL BE CONSTRUCTED ACCORDING TO THE APPROVED PLANS. IF A CHANGE IN THE PLANS IS REQUIRED, THE CONTRACTOR SHALL IMMEDIATELY NOTIFY THE ENGINEER.
 - 4. ALL EROSION AND SEDIMENT CONTROL MEASURES SHALL BE PROPERLY DISPOSED OF WITHIN THIRTY (30) DAYS AFTER FINAL SITE STABILIZATION IS APPROVED BY THE ENGINEER.
 - 5. BOULDERS LARGER THAN 10" SHALL BE RELOCATED ALONG RIVER BANK AS DIRECTED BY THE ENGINEER.
 - 6. THE CONTRACTOR SHALL SUBMIT AN EXCAVATION, SEDIMENT CONTROL AND TRANSPORT PLAN FOR APPROVAL PRIOR TO STARTING.
 - 7. CHANNEL EXCAVATION BY METHODS OTHER THAN BUCKET DREDGE AND TRANSPORT MUST BE APPROVED BY THE ENGINEER.
 - 8. MATERIAL TRANSPORTED OUT OF RIVER CHANNEL BY METHODS OTHER THAN CONVEYOR, BARGE OR LOW IMPACT TRUCKS MUST BE APPROVED BY THE ENGINEER.

Aug 24, 2023 -- 4:15pm
K:\MUNICIPAL\AN933-2023\ENGINEERING\PLAN DWG\AN933-2023_DETAILS.dwg

DATE	REVISION	I hereby certify that this plan, specification, or report was prepared by me or under my direct supervision and that I am a duly Licensed Professional Engineer under the laws of the State of Minnesota.  CRAIG J. JOCHUM, P.E. Date 7/11/23 Lic. No. 23461	DESIGNED BY: CJJ		Hakanson Anderson Civil Engineers and Land Surveyors 3601 Thurston Ave., Anoka, Minnesota 55303 763-427-5860 FAX 763-427-0520 www.hakanson-anderson.com	PERMIT DRAWINGS – RUM RIVER CHANNEL RESTORATION PROJECT	ESTIMATED QUANTITIES AND CONSTRUCTION NOTES CITY OF ANOKA, MINNESOTA	SHEET 2 OF 12 SHEETS
			DRAWN BY: SGJ					
			CHECKED BY: TAE					

Aug 24, 2023 -- 4:53pm
K:\MUNICIPAL\AN933--2023\ENGINEERING\BASE DWG\AN933--2023_BA.dwg

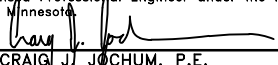
Total Volume Table						
Station	Cut Area	Fill Area	Cut Vol	Fill Vol	Cum Cut Vol	Cum Fill Vol
0+00	0.00	0.00	0.00	0.00	0.00	0.00
0+50	0.00	0.00	0.00	0.00	0.00	0.00
1+00	0.00	0.00	0.00	0.00	0.00	0.00
1+50	0.00	0.00	0.00	0.00	0.00	0.00
2+00	0.00	0.00	0.00	0.00	0.00	0.00
2+50	0.00	0.00	0.00	0.00	0.00	0.00
3+00	0.00	0.00	0.00	0.00	0.00	0.00
3+50	0.00	0.00	0.00	0.00	0.00	0.00
4+00	0.00	0.00	0.00	0.00	0.00	0.00
4+50	0.00	0.00	0.00	0.00	0.00	0.00
5+00	0.00	0.00	0.00	0.00	0.00	0.00
5+50	0.00	0.00	0.00	0.00	0.00	0.00
6+00	0.00	0.00	0.00	0.00	0.00	0.00
6+50	7.69	0.00	7.10	0.00	7.10	0.00
7+00	14.30	0.00	20.56	0.00	27.66	0.00
7+50	39.35	0.00	49.56	0.00	77.22	0.00
8+00	83.43	0.00	113.45	0.00	190.67	0.00
8+50	86.29	0.00	157.75	0.00	348.42	0.00
9+00	81.16	0.00	154.43	0.00	502.85	0.00
9+50	101.57	0.00	169.19	0.00	672.04	0.00
10+00	105.87	0.00	192.07	0.00	864.11	0.00
10+50	104.53	0.00	194.81	0.00	1058.92	0.00
11+00	87.65	0.00	177.94	0.00	1236.87	0.00
11+50	86.95	0.00	161.67	0.00	1398.54	0.00
12+00	74.21	0.00	149.22	0.00	1547.76	0.00
12+50	69.90	0.00	133.44	0.00	1681.20	0.00
13+00	64.15	0.00	124.12	0.00	1805.32	0.00
13+50	53.00	0.00	108.47	0.00	1913.79	0.00
14+00	63.10	0.00	107.50	0.00	2021.30	0.00
14+50	68.83	0.00	122.16	0.00	2143.45	0.00
15+00	91.45	0.00	148.41	0.00	2291.86	0.00
15+50	104.16	0.00	181.12	0.00	2472.99	0.00
16+00	104.35	0.00	193.07	0.00	2666.06	0.00
16+50	87.49	0.00	177.63	0.00	2843.69	0.00
17+00	79.76	0.00	154.86	0.00	2998.55	0.00
17+50	66.10	0.00	135.06	0.00	3133.61	0.00
18+00	75.66	0.00	131.26	0.00	3264.87	0.00
18+50	79.97	0.00	144.10	0.00	3408.97	0.00
19+00	67.10	0.00	136.17	0.00	3545.15	0.00
19+50	64.70	0.00	122.04	0.00	3667.18	0.00
20+00	64.18	0.00	119.33	0.00	3786.51	0.00
20+50	42.07	0.00	98.38	0.00	3884.89	0.00
21+00	26.40	0.00	63.40	0.00	3948.30	0.00
21+50	25.90	0.00	48.43	0.00	3996.73	0.00
22+00	23.04	0.00	45.32	0.00	4042.04	0.00
22+50	20.48	0.00	40.30	0.00	4082.34	0.00
23+00	30.44	0.00	47.15	0.00	4129.49	0.00
23+50	26.18	0.00	52.43	0.00	4181.92	0.00

Total Volume Table						
Station	Cut Area	Fill Area	Cut Vol	Fill Vol	Cum Cut Vol	Cum Fill Vol
24+00	40.47	0.00	61.72	0.00	4243.64	0.00
24+50	11.51	0.00	48.13	0.00	4291.77	0.00
25+00	1.53	9.45	11.99	8.70	4303.76	8.70
25+50	10.18	12.97	11.22	20.54	4314.98	29.24
26+00	10.10	17.21	19.55	27.56	4334.53	56.79
26+50	6.59	19.57	15.67	34.01	4350.20	90.80
27+00	32.62	0.00	34.99	18.34	4385.18	109.15
27+50	45.71	0.00	70.67	0.00	4455.85	109.15

- EROSION CONTROL NOTES:
- ALL PUBLIC OR HAUL ROADS USED DURING CONSTRUCTION OF THE PROJECT SHALL BE TREATED WITH WATER OR OTHER ENGINEER APPROVED METHODS AS NECESSARY TO SUPPRESS DUST.
 - THE CONTRACTOR SHALL CONTINUOUSLY CLEAN AND SWEEP ANY CONSTRUCTION MATERIAL AND DEBRIS THAT MAY BE TRACKED OR DEPOSITED ONTO STREETS LEADING TO OR ADJACENT TO THE PROJECT AREA. IF, UPON 6 HOURS NOTICE FROM THE ENGINEER, STREETS HAVE NOT BEEN CLEANED, THE ENGINEER MAY ORDER SUCH CLEANING BY OTHERS WITH THE COSTS OF SUCH SWEEPING OR CLEANING DEDUCTED FROM CONTRACT PAYMENTS.
 - ALL MEASURES AND WORK SHALL BE ADEQUATELY MAINTAINED IN A FUNCTIONAL CONDITION AS LONG AS NEEDED DURING THE CONSTRUCTION OPERATION. ALL TEMPORARY MEASURES SHALL BE REMOVED AND THE SITE RESTORED TO AS NEARLY ORIGINAL CONDITION AS PRACTICABLE AS DIRECTED BY THE ENGINEER. SEDIMENTS OR MATERIALS DEPOSITED INTO WATERS OF THE STATE MUST BE REMOVED COMPLETELY WITHIN SEVEN DAYS.

DATE	REVISION

I hereby certify that this plan, specification, or report was prepared by me or under my direct supervision and that I am a duly Licensed Professional Engineer under the laws of the State of Minnesota.


CRAIG J. JOCHUM, P.E.
Date 7/11/23 Lic. No. 23461

DESIGNED BY: CJJ
DRAWN BY: SGJ
CHECKED BY: TAE



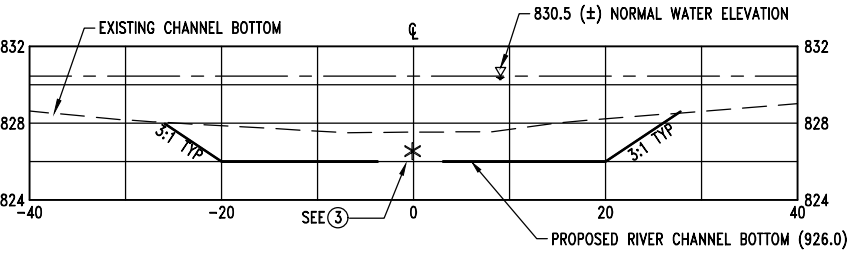
Hakanson Anderson
Civil Engineers and Land Surveyors
3601 Thurston Ave., Anoka, Minnesota 55303
763-427-5860 FAX 763-427-0520
www.hakanson-anderson.com

PERMIT DRAWINGS – RUM RIVER CHANNEL
RESTORATION PROJECT

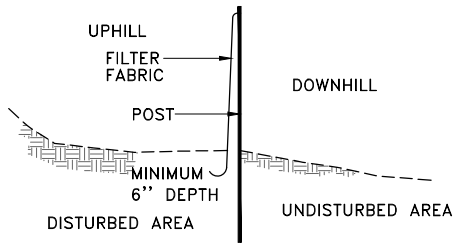
EARTHWORK CALCULATIONS AND EROSION
CONTROL NOTES

CITY OF ANOKA, MINNESOTA

SHEET
3
OF
12
SHEETS

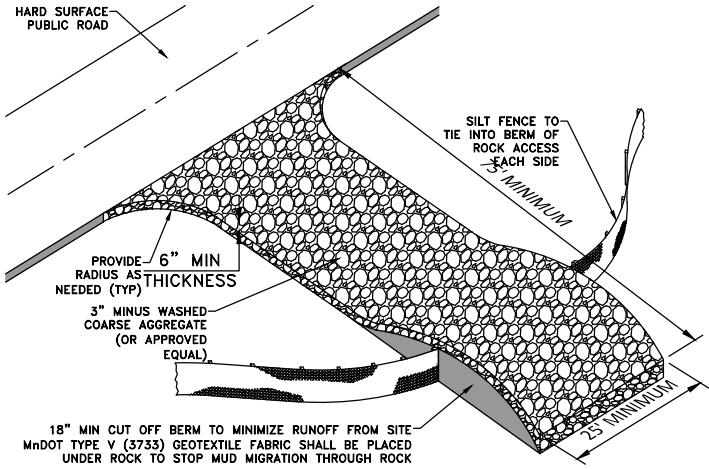


1
4
TYPICAL CHANNEL SECTION

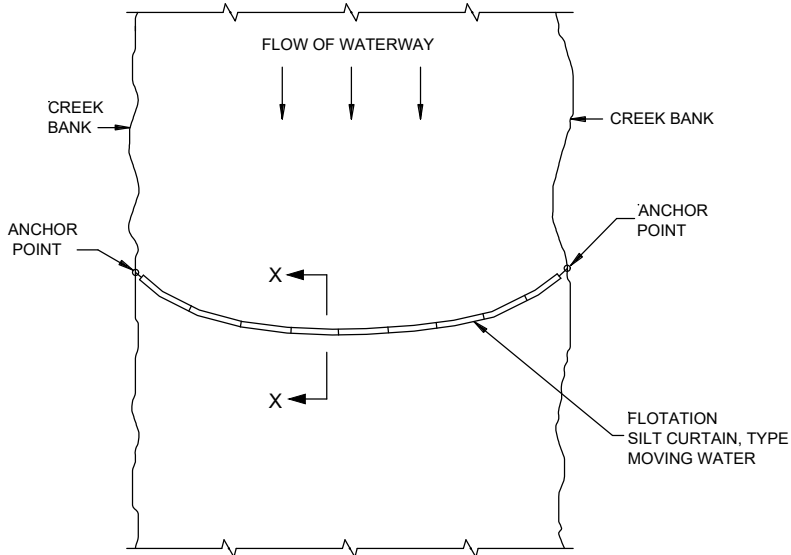


INSTALL AS PER Mn/DOT
SPECIFICATION 2573

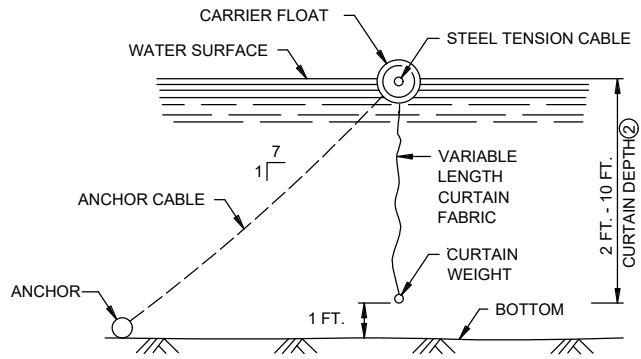
2
4
SILT FENCE DETAIL



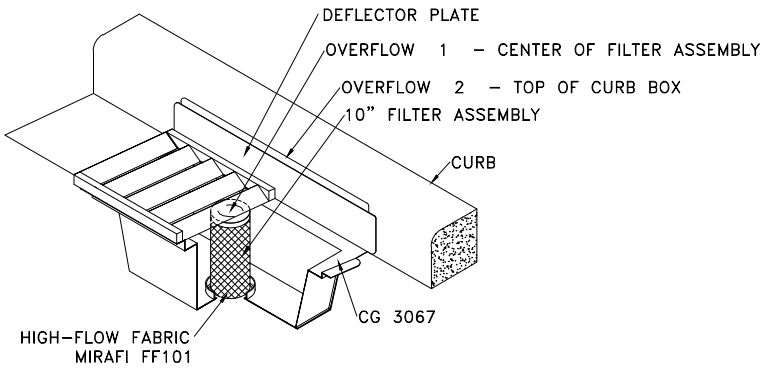
3
4
ROCK CONSTRUCTION ENTRANCE



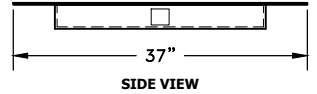
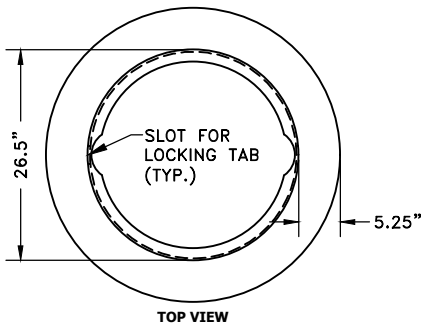
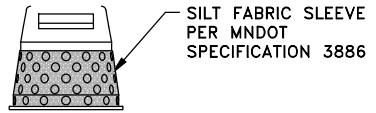
PLAN VIEW



4
4
FLOTATION SILT CURTAIN
TYPE MOVING WATER ①

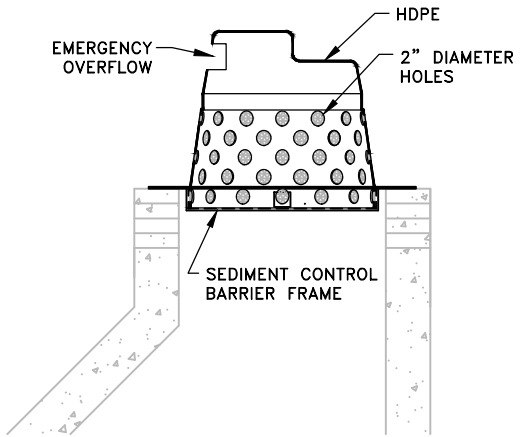


5
4
STORM DRAIN INLET PROTECTION TYPE 1



SEDIMENT CONTROL BARRIER FRAME
(27" SHOWN)

6
4
STORM DRAIN INLET PROTECTION TYPE 2



Aug 24, 2023 - 4:15pm
K:\MUNICIPAL\AN933-2023\ENGINEERING\PLAN DWG\AN933-2023_DETAILS.dwg

DATE	REVISION

I hereby certify that this plan, specification, or report was prepared by me or under my direct supervision and that I am a duly Licensed Professional Engineer under the laws of the State of Minnesota.

CRAIG J. JOCHUM, P.E.
Date 7/11/23 Lic. No. 23461

DESIGNED BY:
CJJ
DRAWN BY:
SGJ
CHECKED BY:
TAE



Hakanson Anderson
Civil Engineers and Land Surveyors
3601 Thurston Ave., Anoka, Minnesota 55303
763-427-5860 FAX 763-427-0520
www.hakanson-anderson.com

PERMIT DRAWINGS - RUM
RIVER CHANNEL
RESTORATION PROJECT

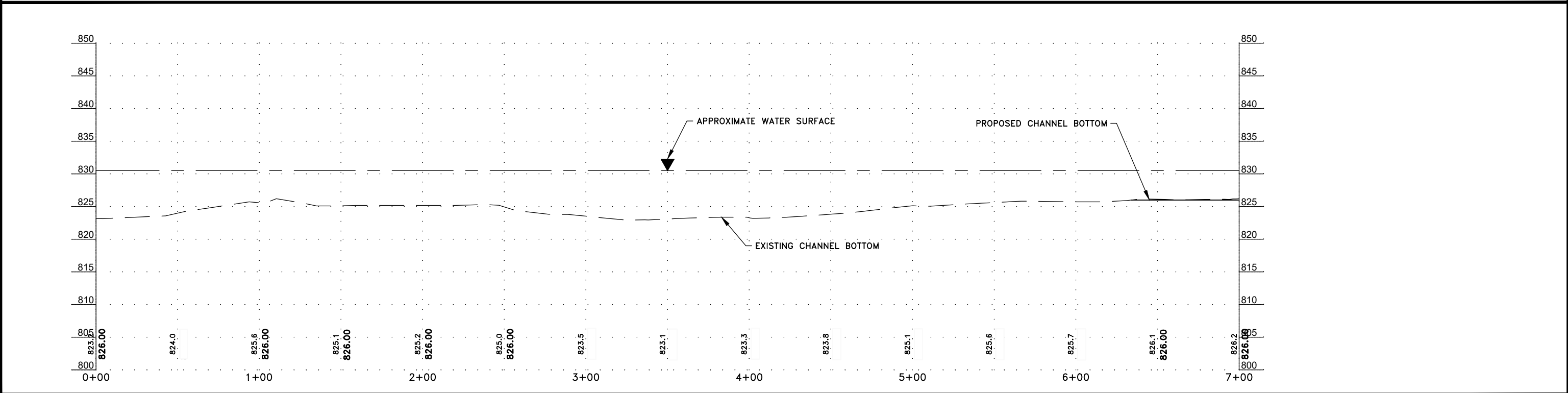
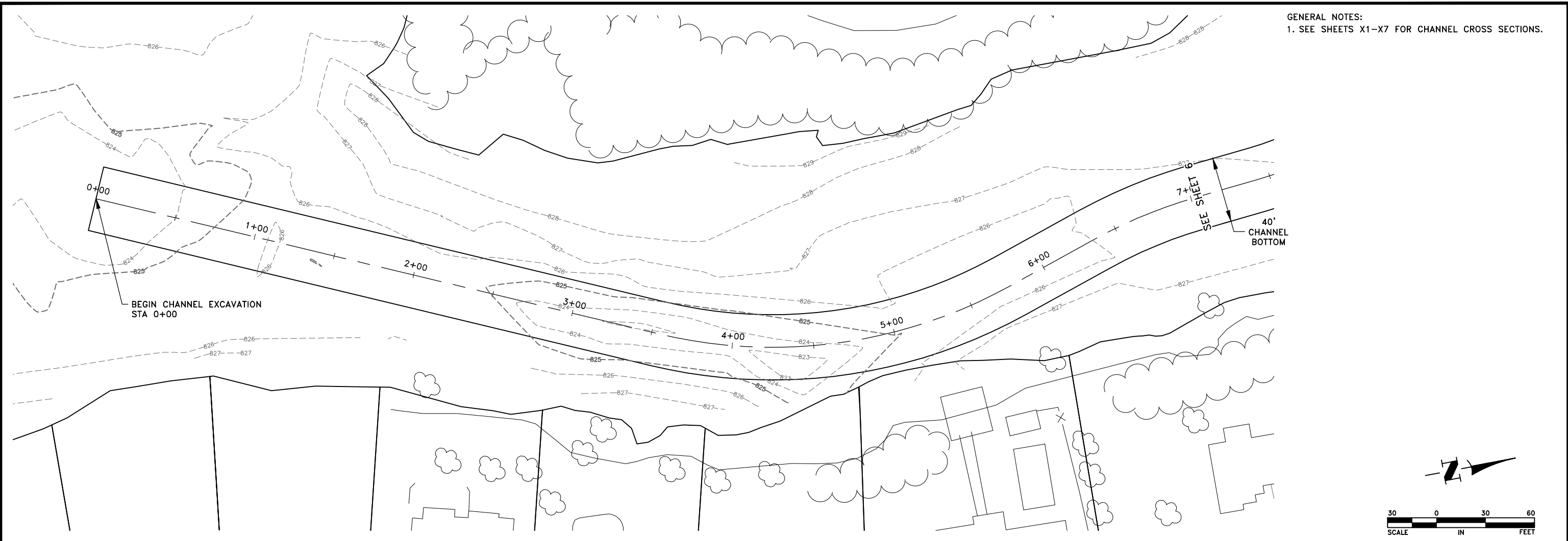
DETAILS

CITY OF ANOKA, MINNESOTA

SHEET
4
OF
12
SHEETS

AN933-2023

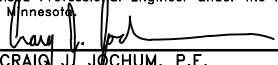
GENERAL NOTES:
1. SEE SHEETS X1-X7 FOR CHANNEL CROSS SECTIONS.



Aug 24, 2023 - 4:16pm
K:\MUNICIPAL\AN933-2023\ENGINEERING\PLAN DWG\AN933-2023_PP.dwg

DATE	REVISION

I hereby certify that this plan, specification, or report was prepared by me or under my direct supervision and that I am a duly Licensed Professional Engineer under the laws of the State of Minnesota.


CRAIG J. JOCHUM, P.E.
Date 7/11/23 Lic. No. 23461

DESIGNED BY: CJJ
DRAWN BY: SGJ
CHECKED BY: TAE



Hakanson Anderson
Civil Engineers and Land Surveyors
3601 Thurston Ave., Anoka, Minnesota 55303
763-427-5860 FAX 763-427-0520
www.hakanson-anderson.com

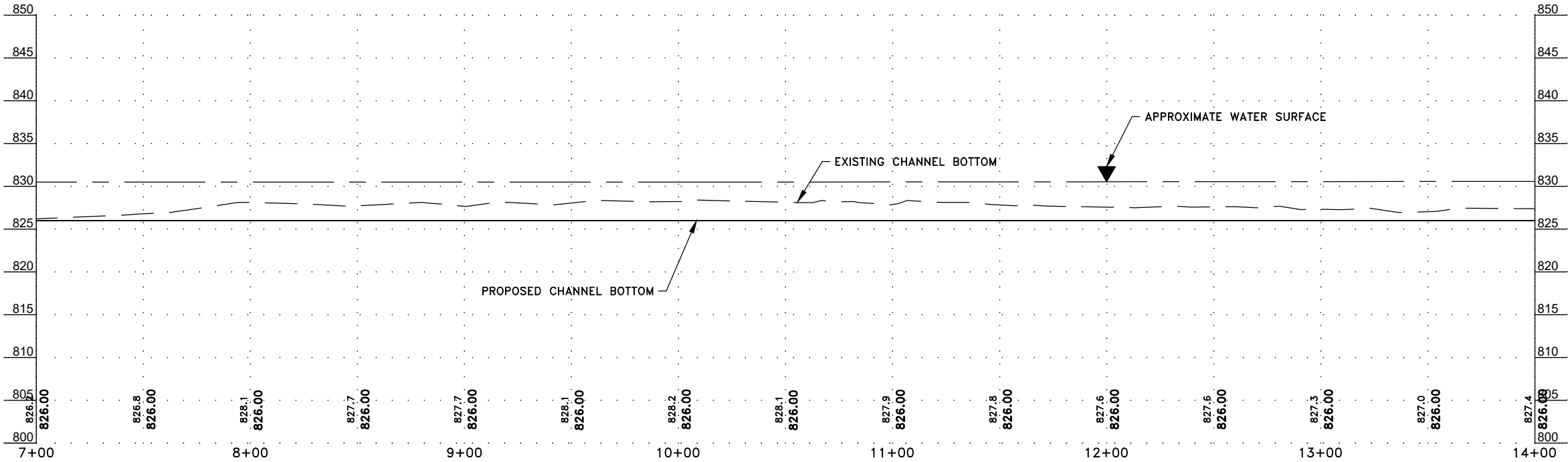
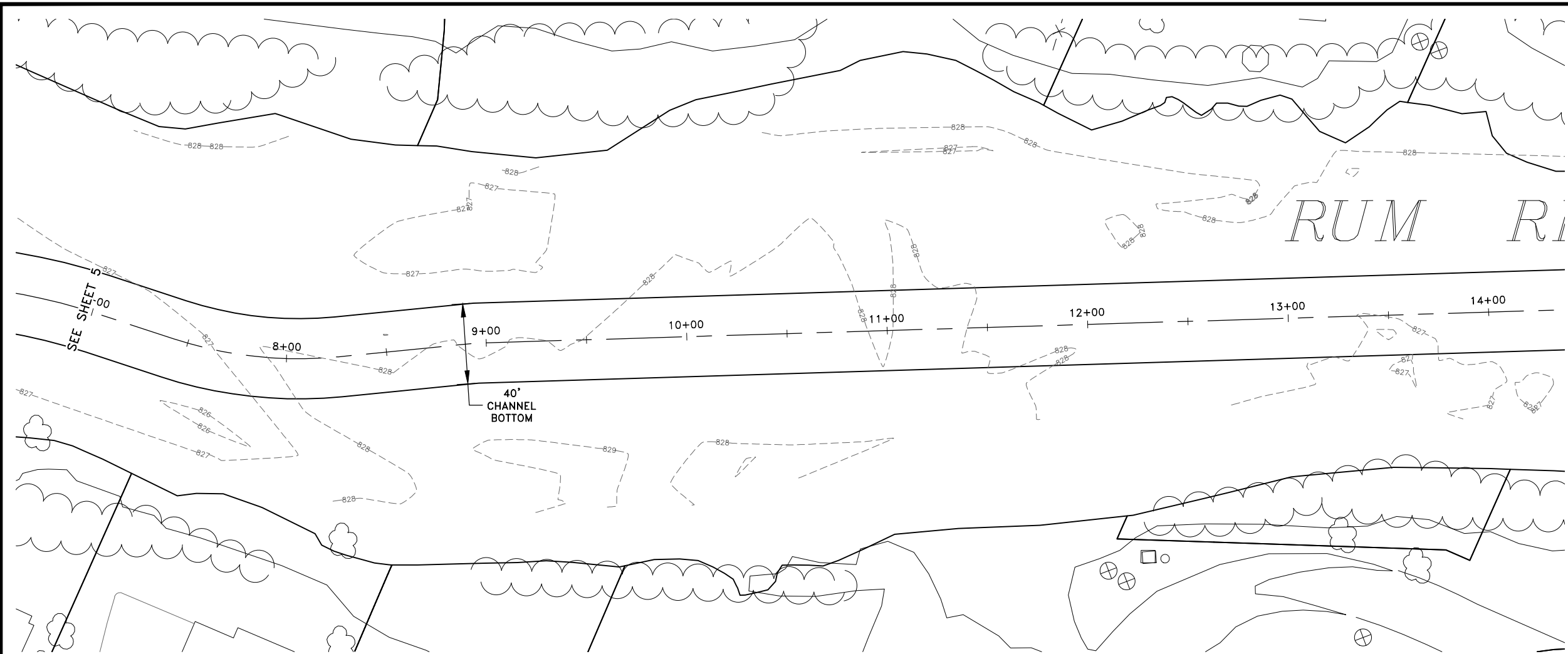
**PERMIT DRAWINGS - RUM
RIVER CHANNEL
RESTORATION PROJECT**

CHANNEL EXCAVATION PLANS

CITY OF ANOKA, MINNESOTA

SHEET
5
OF
12
SHEETS

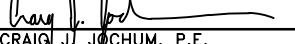
GENERAL NOTES:
1. SEE SHEETS X1-X7 FOR CHANNEL CROSS SECTIONS.



Aug 24, 2023 - 4:17pm
K:\MUNICIPAL\AN933-2023\ENGINEERING\PLAN DWG\AN933-2023_PP.dwg

DATE	REVISION

I hereby certify that this plan, specification, or report was prepared by me or under my direct supervision and that I am a duly Licensed Professional Engineer under the laws of the State of Minnesota.


CRAIG J. JOCHUM, P.E.
Date 7/11/23 Lic. No. 23461

DESIGNED BY: CJJ
DRAWN BY: SGJ
CHECKED BY: TAE



Hakanson Anderson
Civil Engineers and Land Surveyors
3601 Thurston Ave., Anoka, Minnesota 55303
763-427-5860 FAX 763-427-0520
www.hakanson-anderson.com

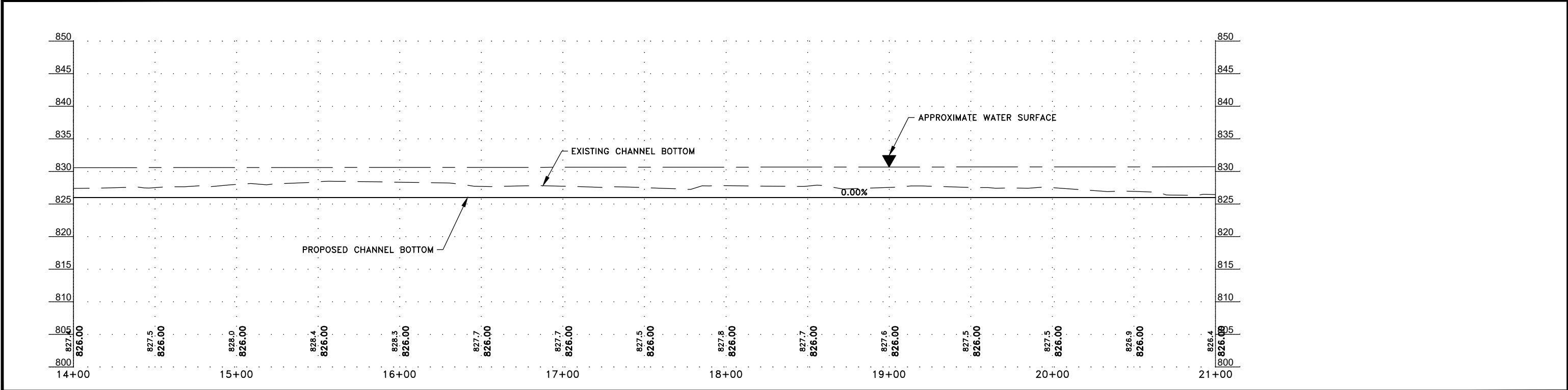
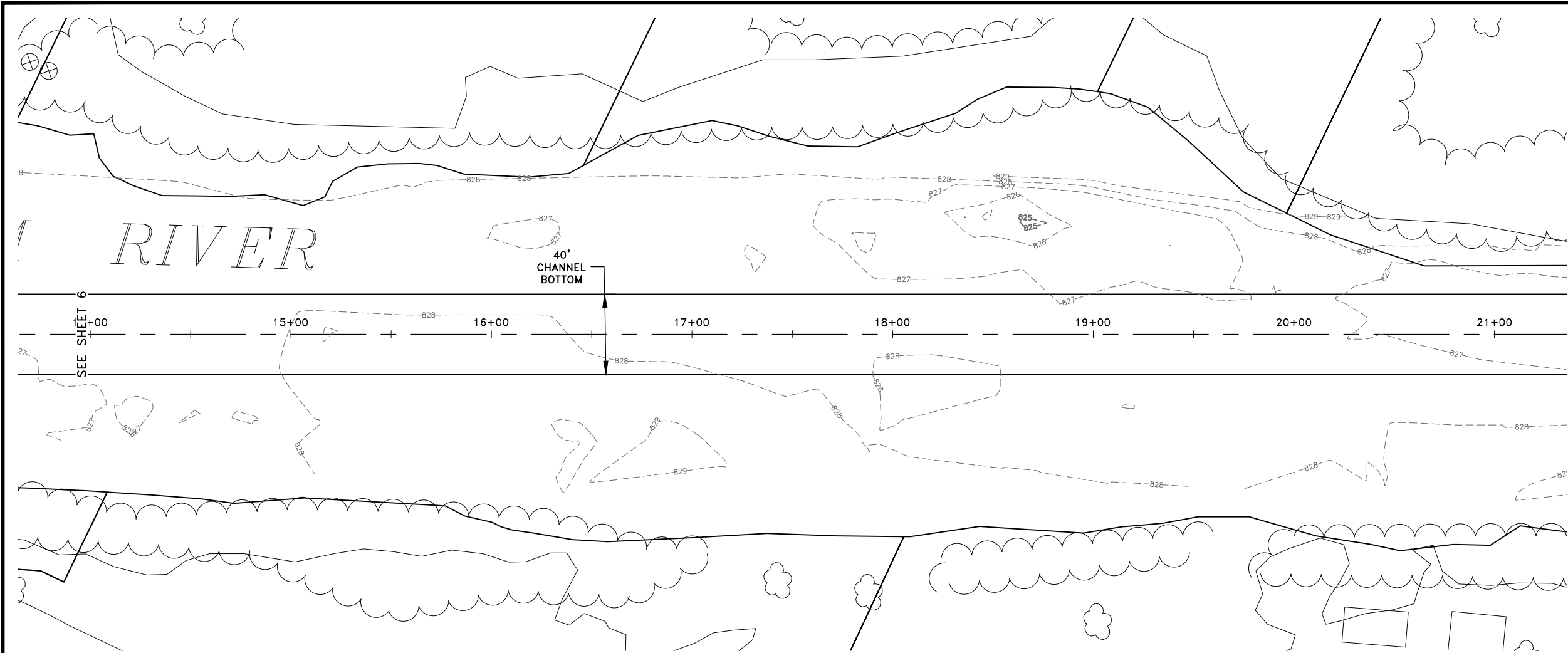
PERMIT DRAWINGS - RUM
RIVER CHANNEL
RESTORATION PROJECT

CHANNEL EXCAVATION PLANS

CITY OF ANOKA, MINNESOTA

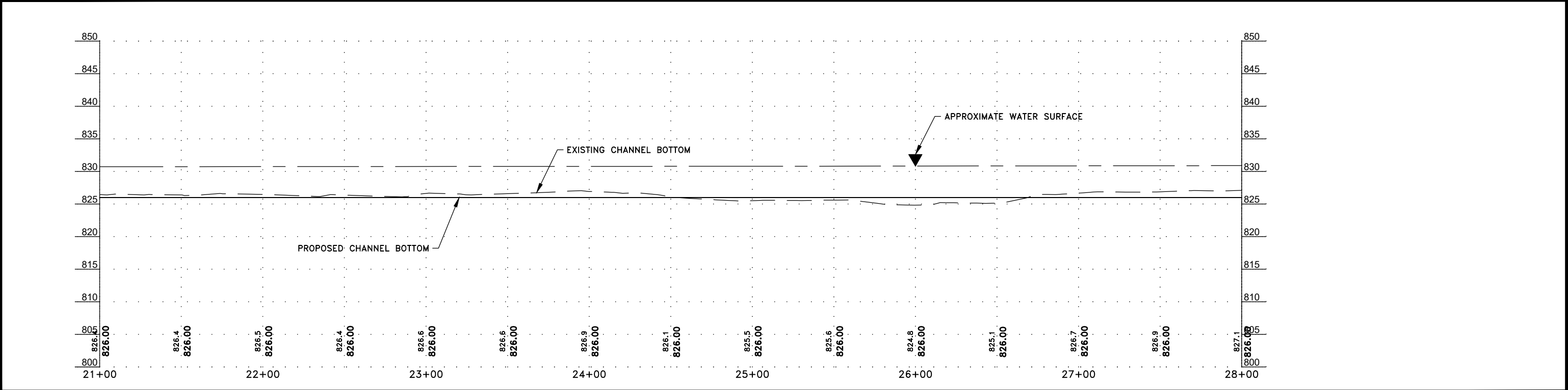
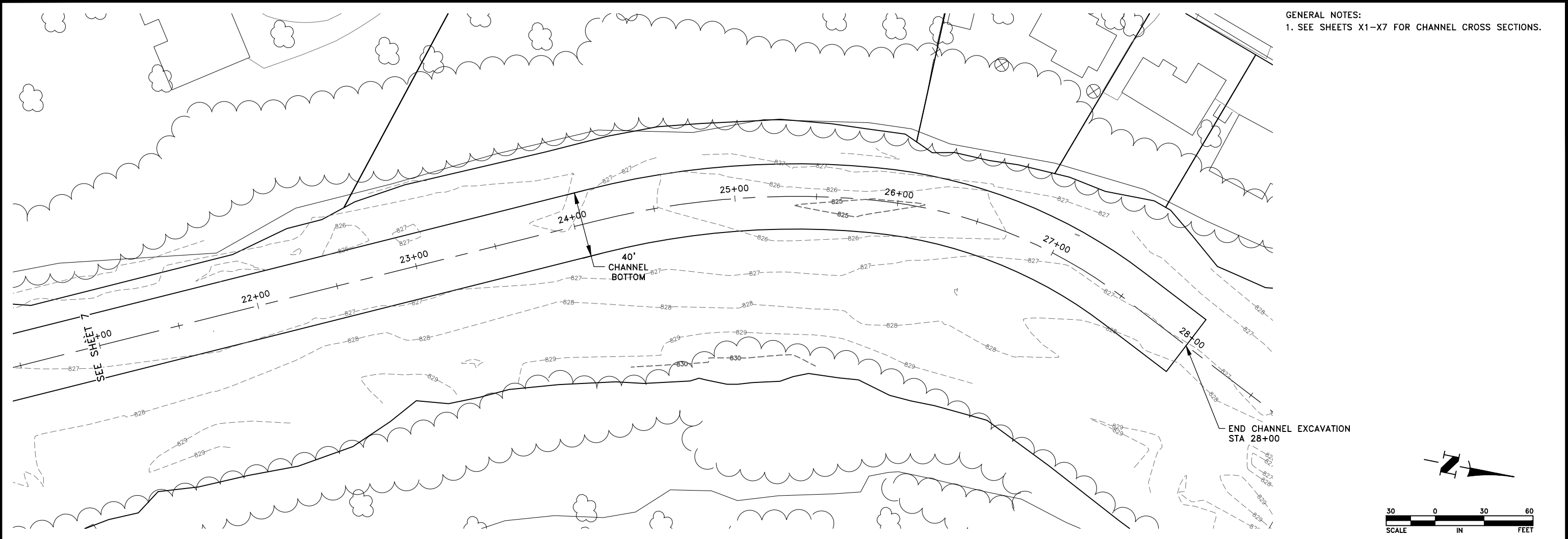
SHEET
6
OF
12
SHEETS

GENERAL NOTES:
1. SEE SHEETS X1-X7 FOR CHANNEL CROSS SECTIONS.

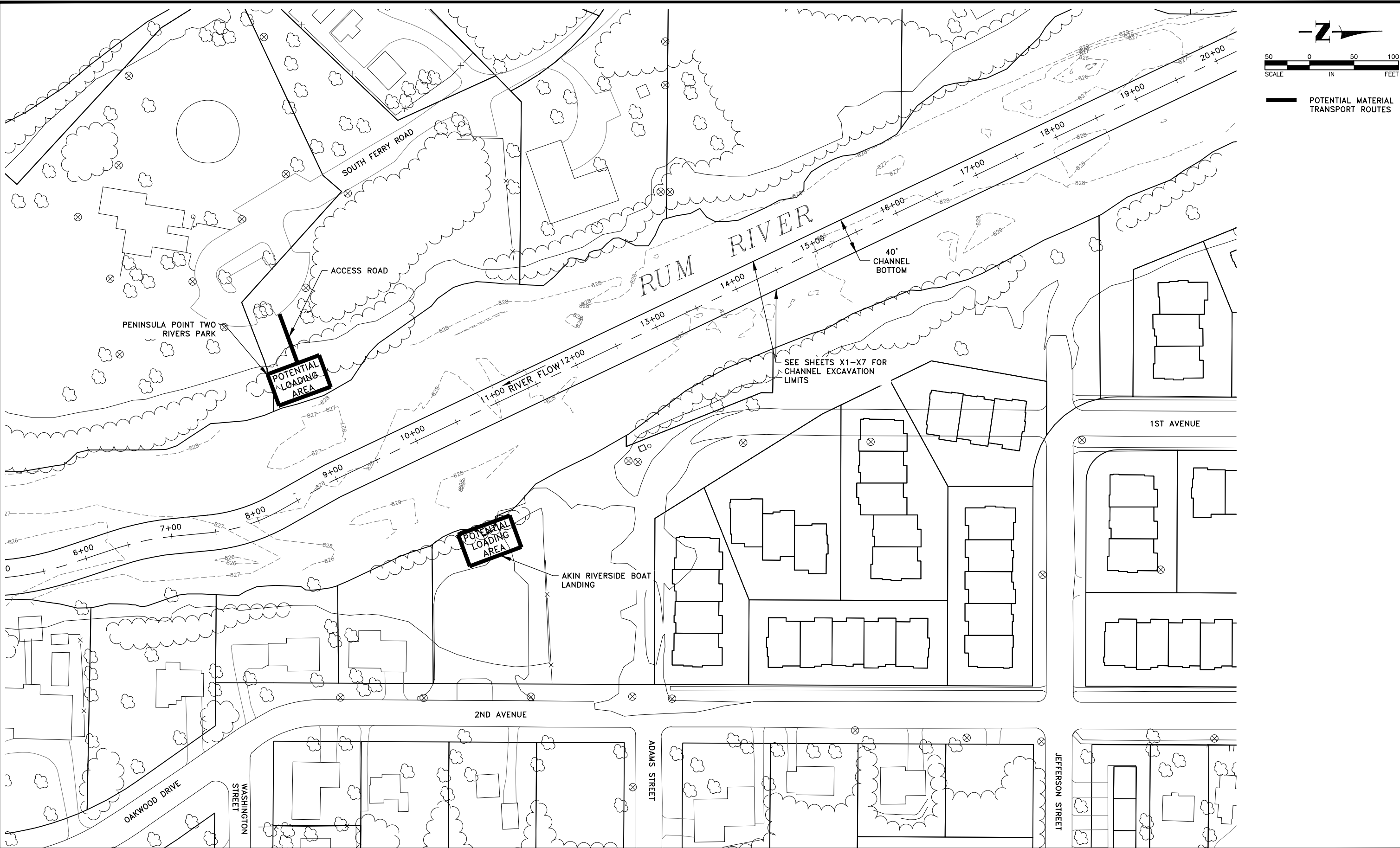


DATE	REVISION	I hereby certify that this plan, specification, or report was prepared by me or under my direct supervision and that I am a duly Licensed Professional Engineer under the laws of the State of Minnesota.		DESIGNED BY: CJJ		Hakanson Anderson Civil Engineers and Land Surveyors 3601 Thurston Ave., Anoka, Minnesota 55303 763-427-5860 FAX 763-427-0520 www.hakanson-anderson.com	PERMIT DRAWINGS – RUM RIVER CHANNEL RESTORATION PROJECT	CHANNEL EXCAVATION PLANS CITY OF ANOKA, MINNESOTA	SHEET 7 OF 12 SHEETS
		CRAIG J. JOCHUM, P.E. Date 7/11/23 Lic. No. 23461		DRAWN BY: SGJ					
				CHECKED BY: TAE					

Aug 24, 2023 - 4:18pm
K:\MUNICIPAL\AN933-2023\ENGINEERING\PLAN DWG\AN933-2023_PP.dwg



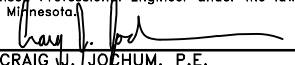
DATE	REVISION	I hereby certify that this plan, specification, or report was prepared by me or under my direct supervision and that I am a duly Licensed Professional Engineer under the laws of the State of Minnesota.		DESIGNED BY: CJJ		Hakanson Anderson Civil Engineers and Land Surveyors 3601 Thurston Ave., Anoka, Minnesota 55303 763-427-5860 FAX 763-427-0520 www.hakanson-anderson.com	PERMIT DRAWINGS – RUM RIVER CHANNEL RESTORATION PROJECT	CHANNEL EXCAVATION PLANS CITY OF ANOKA, MINNESOTA	SHEET 8 OF 12 SHEETS
		CRAIG J. JOCHUM, P.E.		DRAWN BY: SGJ					
		Date 7/11/23 Lic. No. 23461		CHECKED BY: TAE					



Aug 24, 2023 - 4:20pm
K:\MUNICIPAL\AN933-2023\ENGINEERING\PLAN DWG\AN933-2023_TRANSPORT AND LOADING.dwg

DATE	REVISION

I hereby certify that this plan, specification, or report was prepared by me or under my direct supervision and that I am a duly Licensed Professional Engineer under the laws of the State of Minnesota.


CRAIG W. JOCHUM, P.E.
Date 7/11/23 Lic. No. 23461

DESIGNED BY: CJJ
DRAWN BY: SGJ
CHECKED BY: TAE



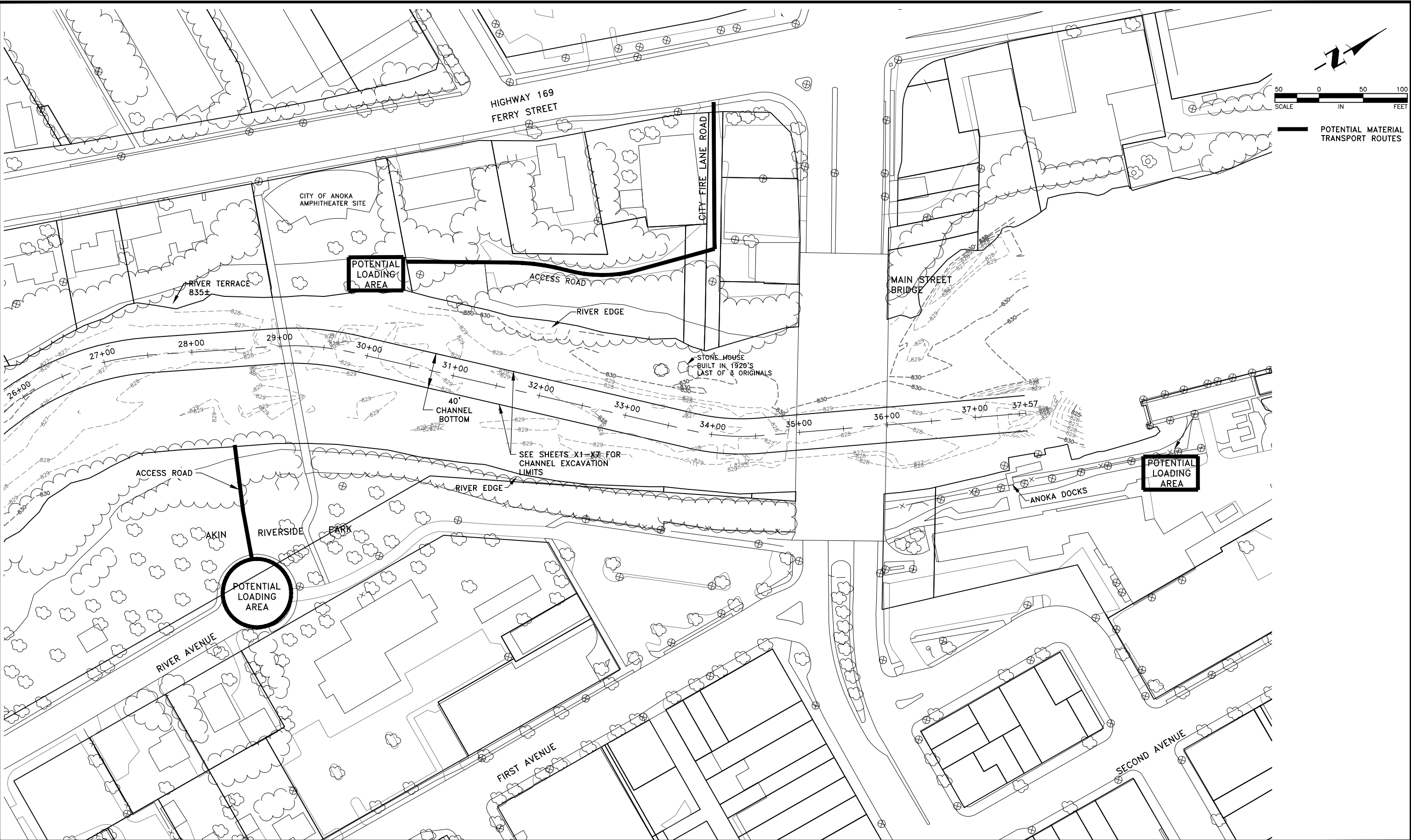
Hakanson Anderson
Civil Engineers and Land Surveyors
3601 Thurston Ave., Anoka, Minnesota 55303
763-427-5860 FAX 763-427-0520
www.hakanson-anderson.com

PERMIT DRAWINGS - RUM RIVER CHANNEL RESTORATION PROJECT

TRANSPORT AND LOADING AREAS

CITY OF ANOKA, MINNESOTA

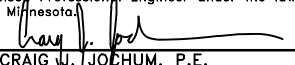
SHEET 9	OF 12 SHEETS
------------	--------------------



Aug 24, 2023 - 4:20pm
K:\MUNICIPAL\AN933-2023\ENGINEERING\PLAN DWG\AN933-2023_TRANSPORT AND LOADING.dwg

DATE	REVISION

I hereby certify that this plan, specification, or report was prepared by me or under my direct supervision and that I am a duly Licensed Professional Engineer under the laws of the State of Minnesota.


CRAIG W. JOCHUM, P.E.
Date 7/11/23 Lic. No. 23461

DESIGNED BY: CJJ
DRAWN BY: SGJ
CHECKED BY: TAE



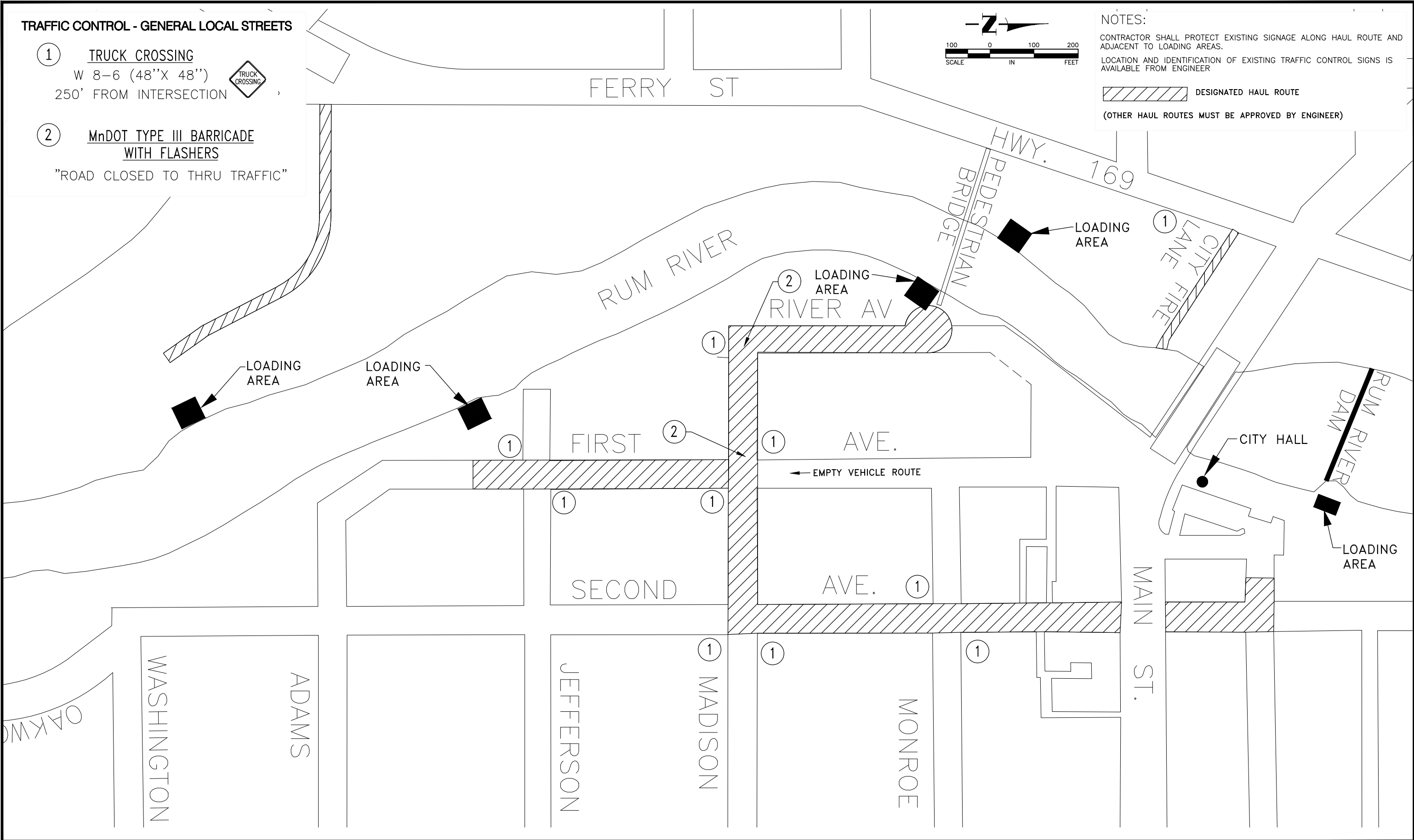
Hakanson Anderson
Civil Engineers and Land Surveyors
3601 Thurston Ave., Anoka, Minnesota 55303
763-427-5860 FAX 763-427-0520
www.hakanson-anderson.com

PERMIT DRAWINGS – RUM RIVER CHANNEL
RESTORATION PROJECT

TRANSPORT AND LOADING AREAS

CITY OF ANOKA, MINNESOTA

SHEET 10	OF	12 SHEETS
-------------	----	--------------



Aug 24, 2023 - 4:21pm
K:\MUNICIPAL\AN933-2023\ENGINEERING\PLAN DWG\AN933-2023-TRAFFIC.dwg

DATE	REVISION

I hereby certify that this plan, specification, or report was prepared by me or under my direct supervision and that I am a duly Licensed Professional Engineer under the laws of the State of Minnesota.

Craig J. Jochum
CRAIG J. JOCHUM, P.E.
Date 7/11/23 Lic. No. 23461

DESIGNED BY:
CJJ

DRAWN BY:
SGJ

CHECKED BY:
TAE



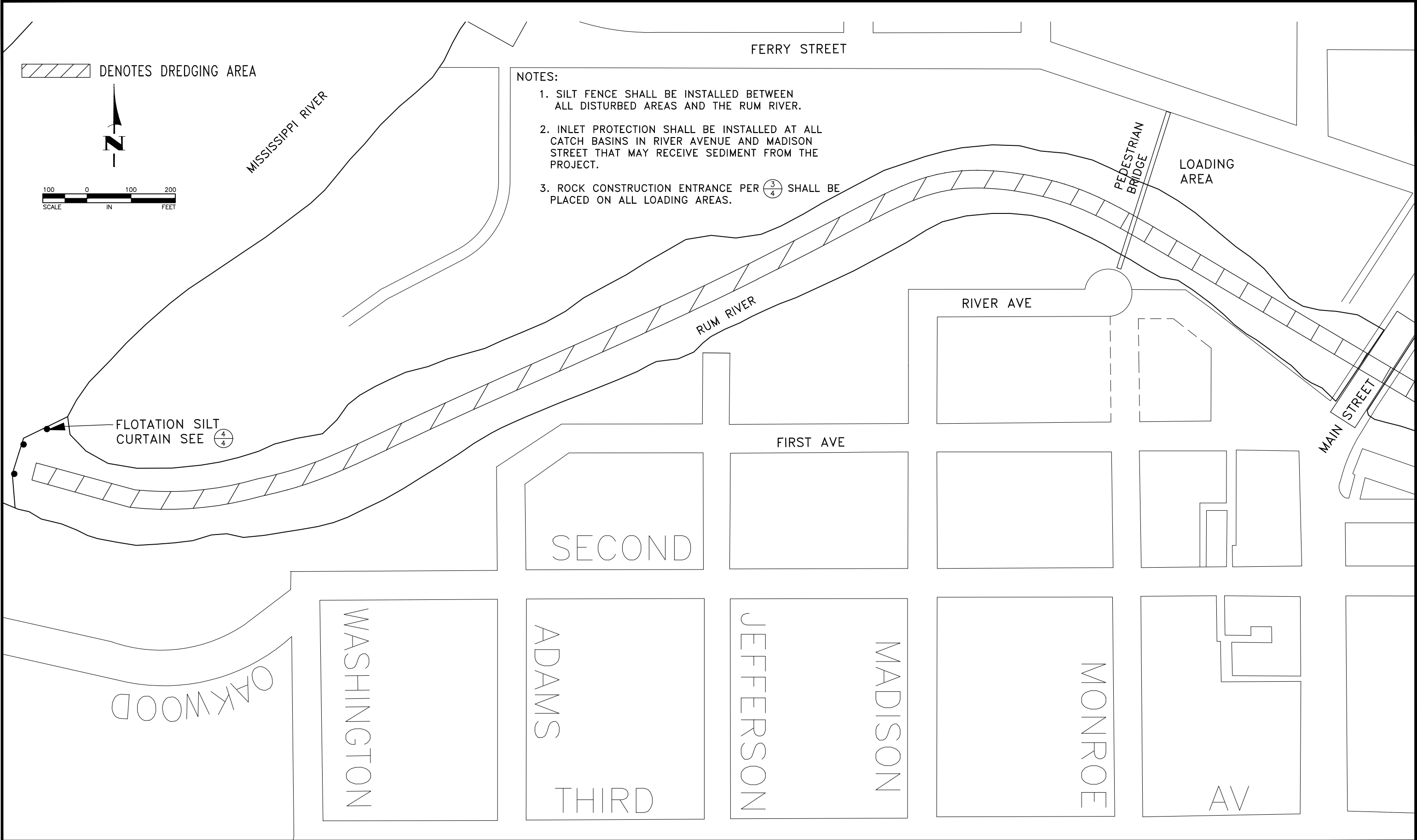
Hakanson Anderson
Civil Engineers and Land Surveyors
3601 Thurston Ave., Anoka, Minnesota 55303
763-427-5860 FAX 763-427-0520
www.hakanson-anderson.com

PERMIT DRAWINGS - RUM RIVER CHANNEL RESTORATION PROJECT

TRAFFIC CONTROL AND SIGNAGE PLAN

CITY OF ANOKA, MINNESOTA

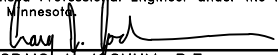
SHEET 11 OF 12 SHEETS



Aug 24, 2023 - 4:21pm
K:\MUNICIPAL\AN933-2023\ENGINEERING\PLAN DWG\AN933-2023_EROSION CONTROL.dwg

DATE	REVISION

I hereby certify that this plan, specification, or report was prepared by me or under my direct supervision and that I am a duly Licensed Professional Engineer under the laws of the State of Minnesota.


CRAIG J. JOCHUM, P.E.
Date 7/11/23 Lic. No. 23461

DESIGNED BY: CJJ
DRAWN BY: SGJ
CHECKED BY: TAE



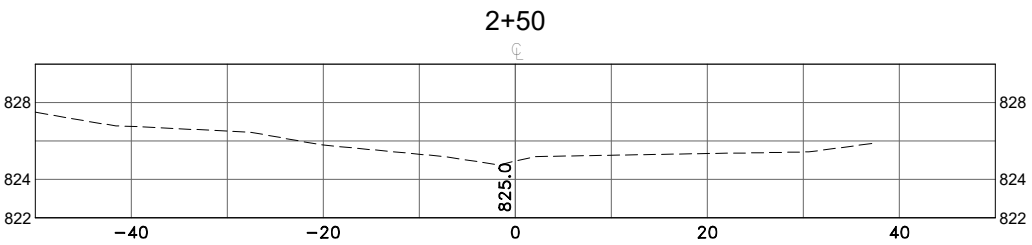
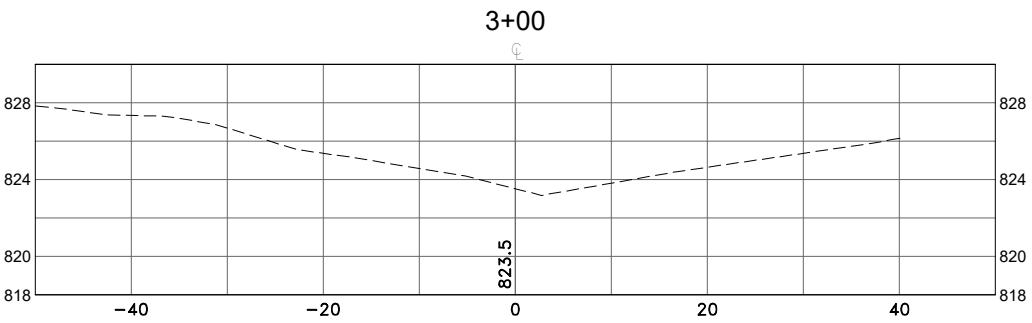
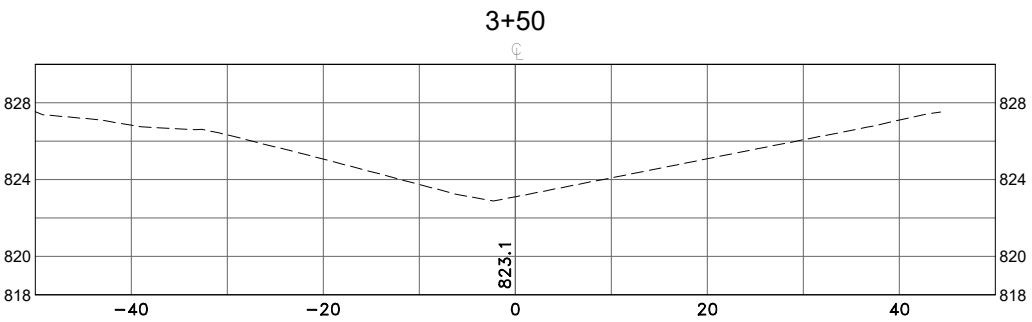
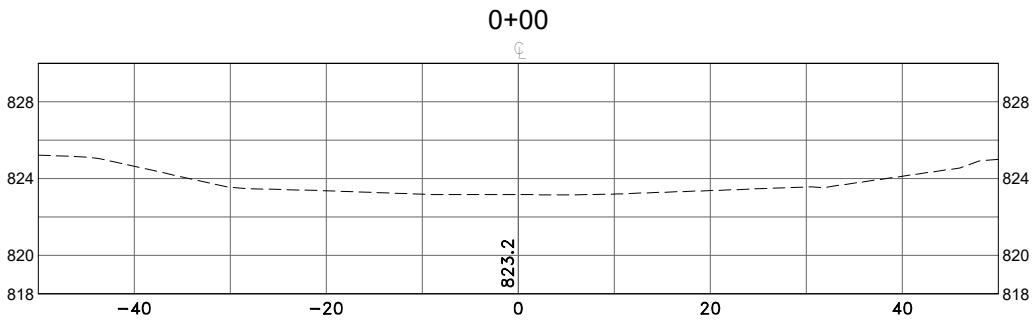
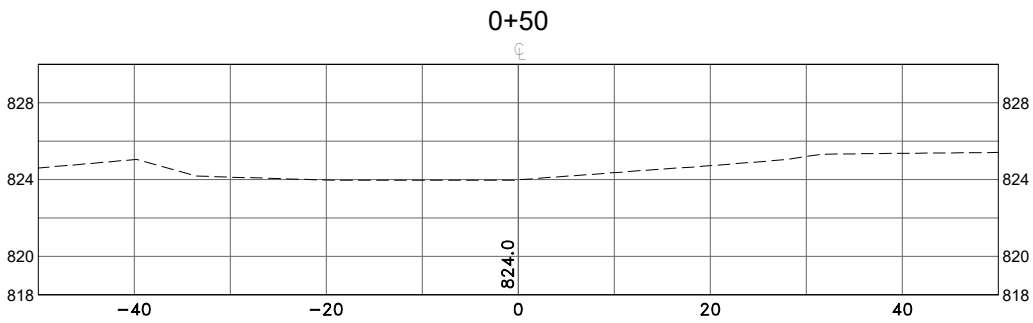
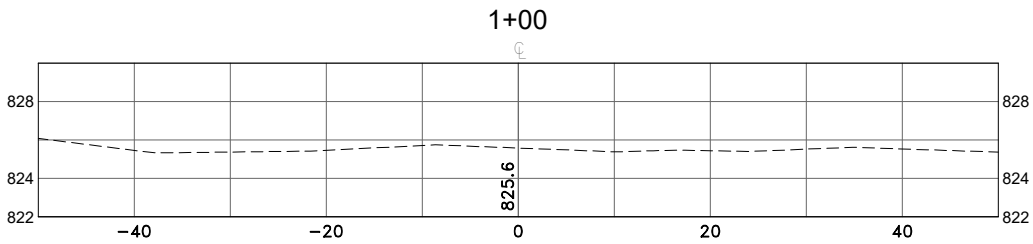
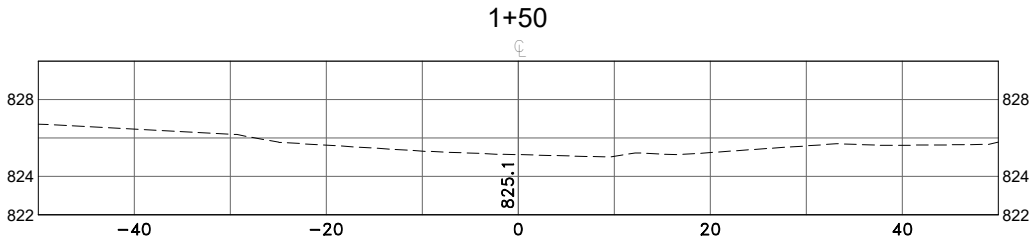
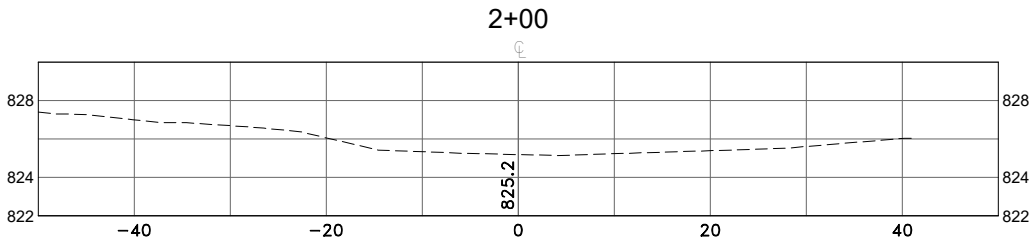
Hakanson Anderson
Civil Engineers and Land Surveyors
3601 Thurston Ave., Anoka, Minnesota 55303
763-427-5860 FAX 763-427-0520
www.hakanson-anderson.com

PERMIT DRAWINGS – RUM RIVER CHANNEL
RESTORATION PROJECT

SEDIMENT AND EROSION CONTROL PLAN

CITY OF ANOKA, MINNESOTA

SHEET 12	OF	12 SHEETS
-------------	----	--------------



Aug 24, 2023 - 4:21pm
K:\MUNICIPAL\AN933-2023\ENGINEERING\BASE DWG\AN933-2023_BA.dwg

DATE	REVISION

DESIGNED BY: CJJ
DRAWN BY: SGJ
CHECKED BY: TAE



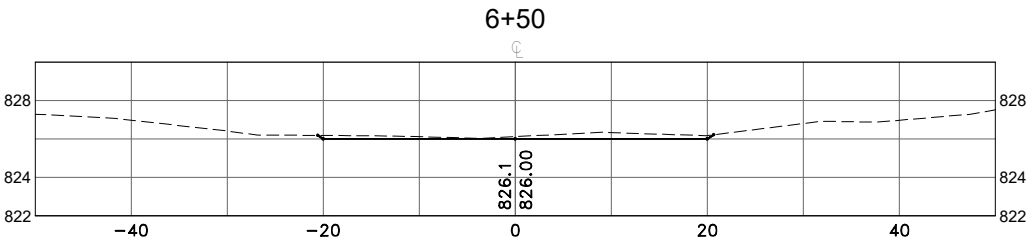
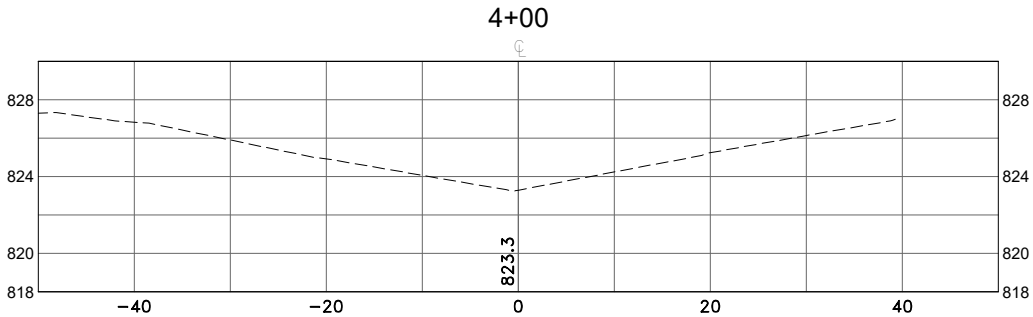
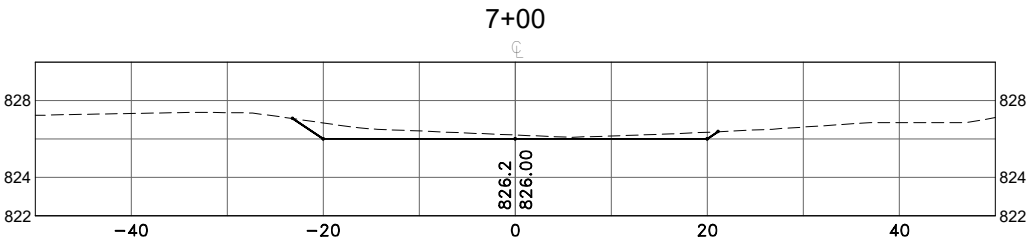
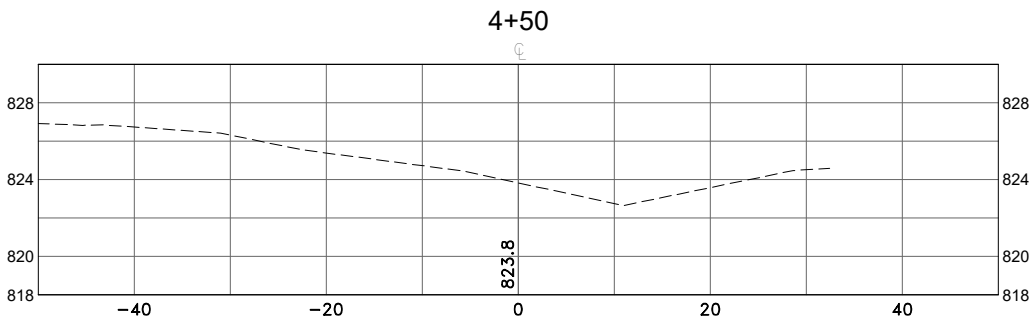
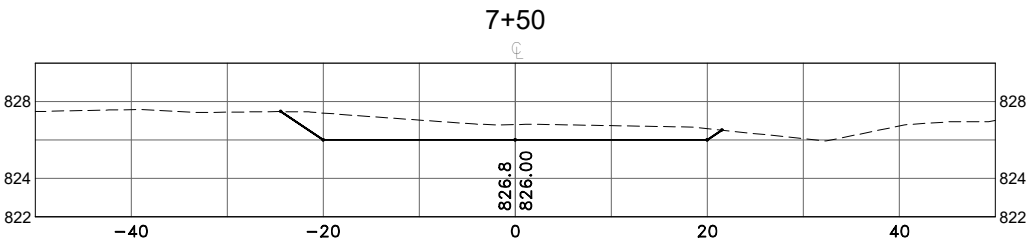
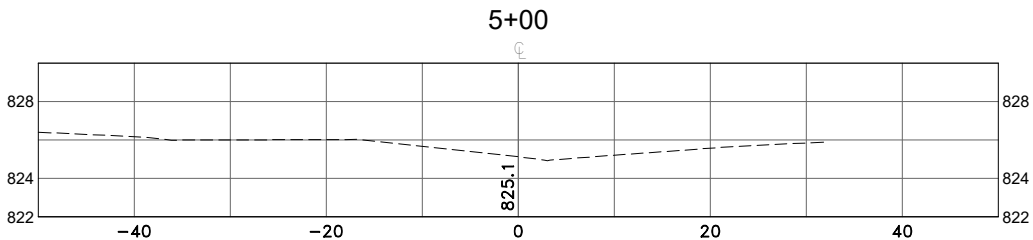
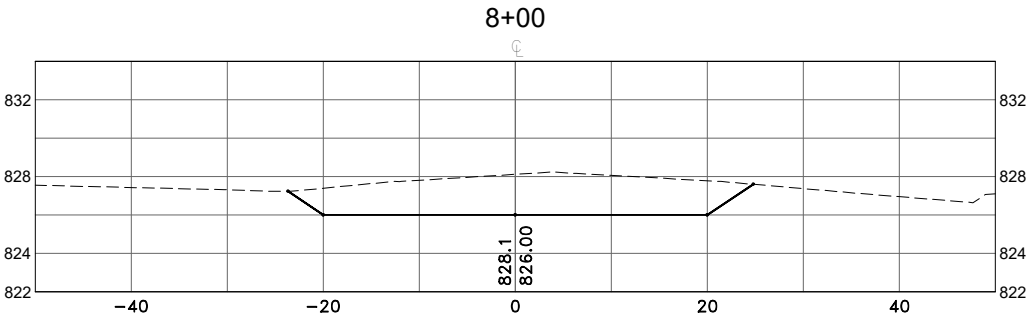
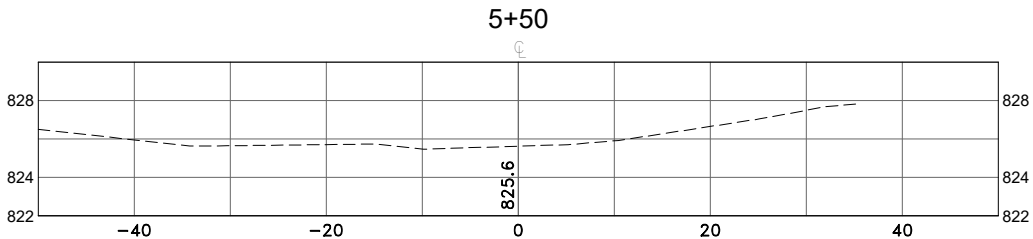
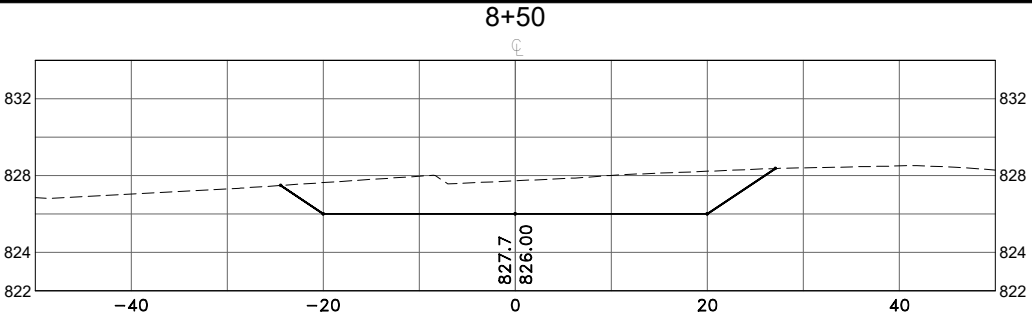
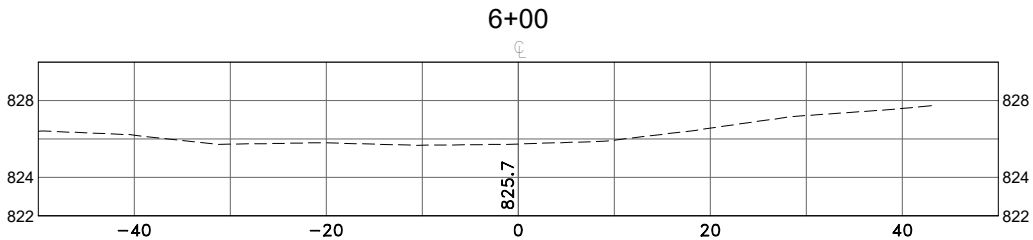
Hakanson Anderson
Civil Engineers and Land Surveyors
3601 Thurston Ave., Anoka, Minnesota 55303
763-427-5860 FAX 763-427-0520
www.hakanson-anderson.com

PERMIT DRAWINGS – RUM
RIVER CHANNEL
RESTORATION PROJECT

CROSS SECTIONS

CITY OF ANOKA, MINNESOTA

SHEET
X1
OF
X7
SHEETS



Aug 24, 2023 - 4:21pm
K:\MUNICIPAL\AN933-2023\ENGINEERING\BASE DWG\AN933-2023_BA.dwg

DATE	REVISION

DESIGNED BY: CJJ
DRAWN BY: SGJ
CHECKED BY: TAE



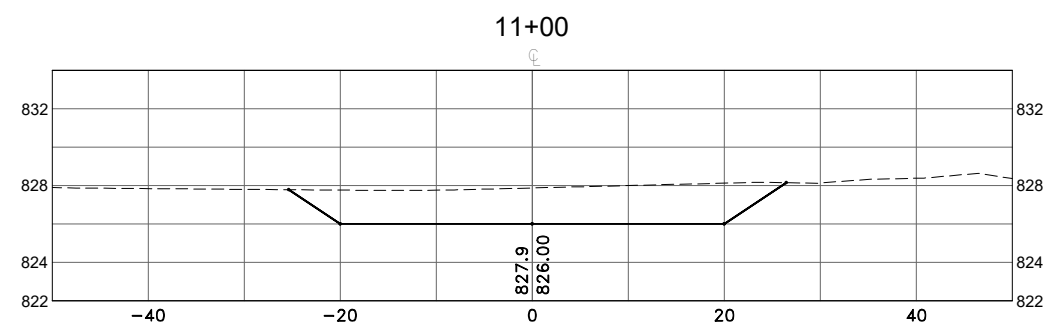
Hakanson Anderson
Civil Engineers and Land Surveyors
3601 Thurston Ave., Anoka, Minnesota 55303
763-427-5860 FAX 763-427-0520
www.hakanson-anderson.com

PERMIT DRAWINGS –
RUM RIVER CHANNEL
RESTORATION PROJECT

CROSS SECTIONS

CITY OF ANOKA, MINNESOTA

SHEET
X2
OF
X7
SHEETS

[illegible]

DESIGNED BY:	CJJ
DRAWN BY:	SGJ
CHECKED BY:	TAE



Hakanson Anderson
Civil Engineers and Land Surveyors
3601 Thurston Ave., Anoka, Minnesota 55303
763-427-5860 FAX 763-427-0520
www.hakanson-anderson.com

PERMIT DRAWINGS – RUM
RIVER CHANNEL RESTORATION
PROJECT

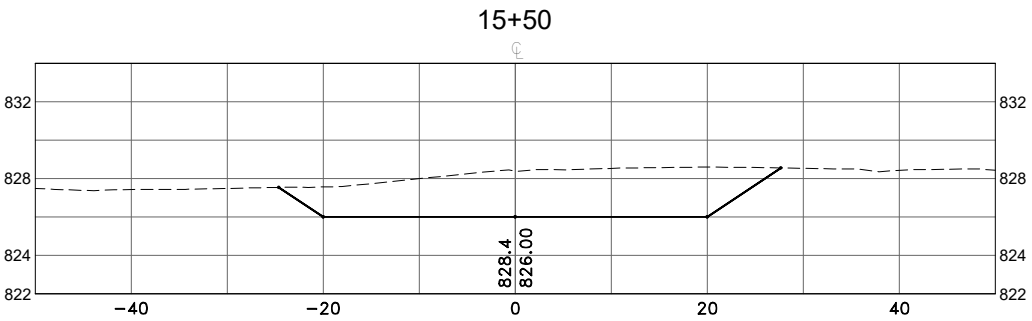
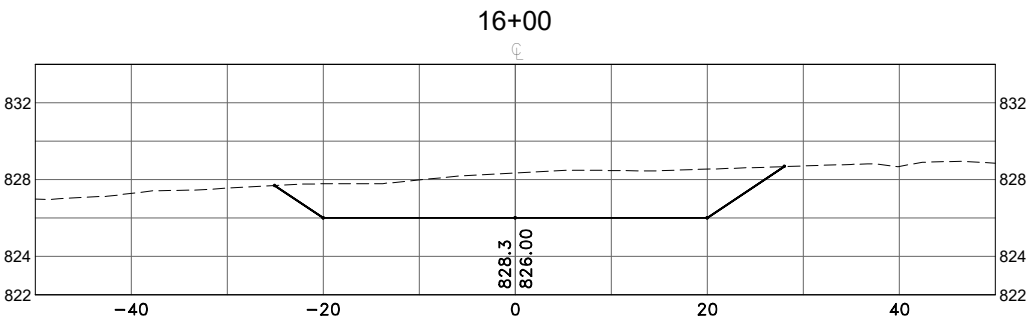
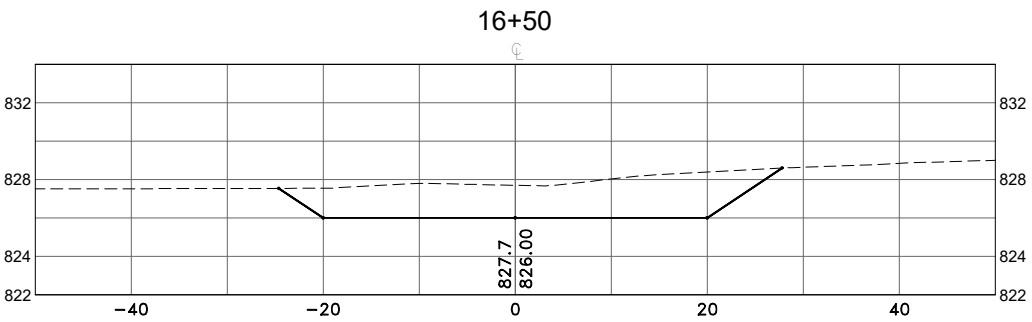
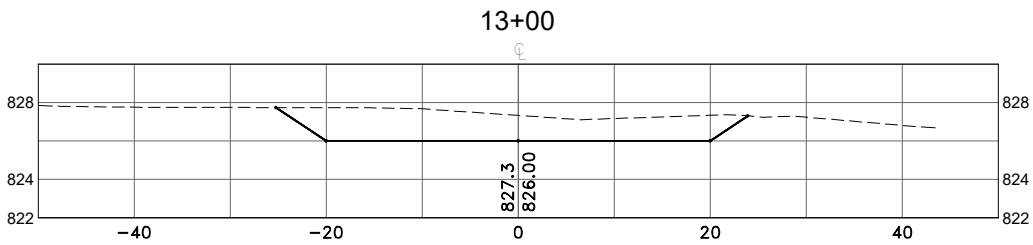
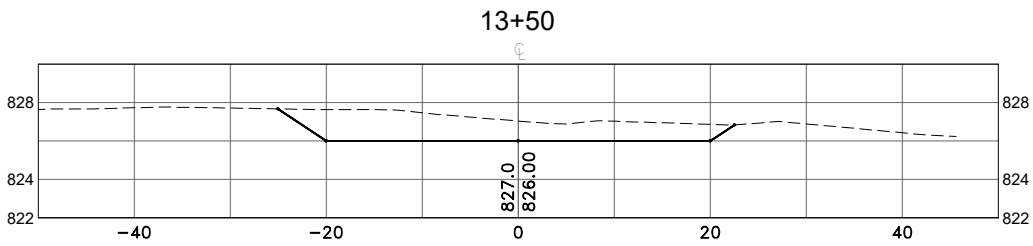
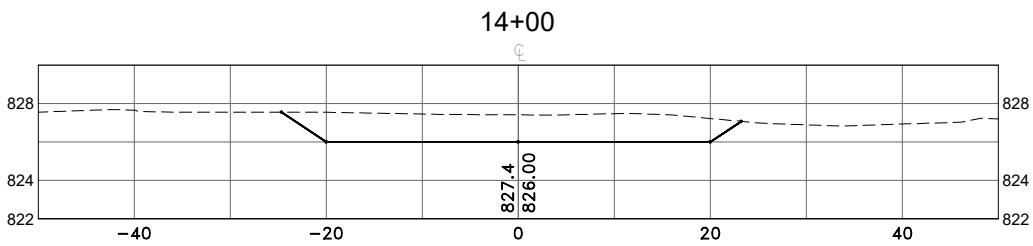
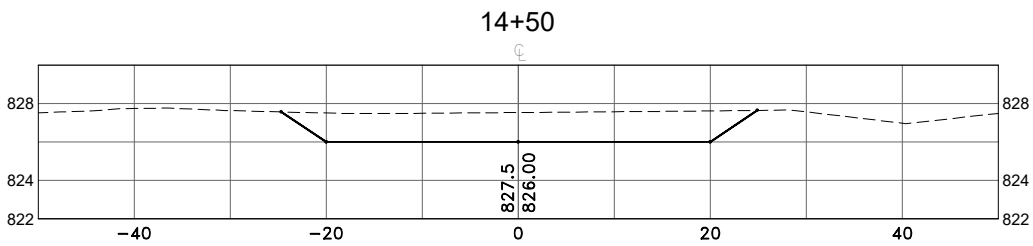
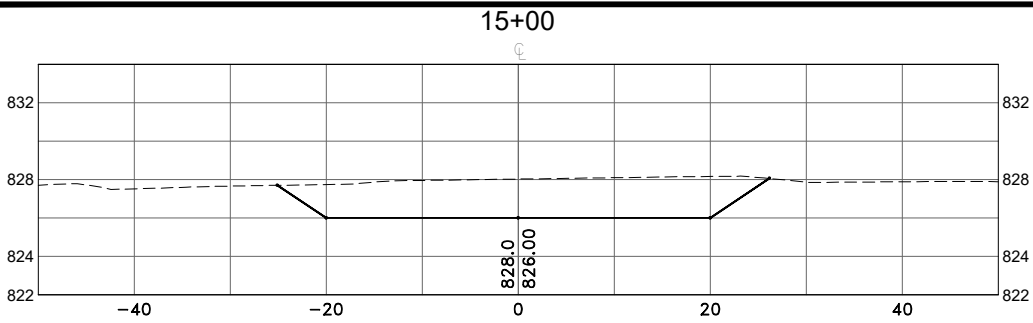
CROSS SECTIONS

CITY OF ANOKA, MINNESOTA

SHEET
X3

OF

X7
SHEETS



Aug 24, 2023 - 4:21pm
K:\MUNICIPAL\AN933-2023\ENGINEERING\BASE DWG\AN933-2023_BA.dwg

DATE	REVISION

DESIGNED BY: CJJ
DRAWN BY: SGJ
CHECKED BY: TAE



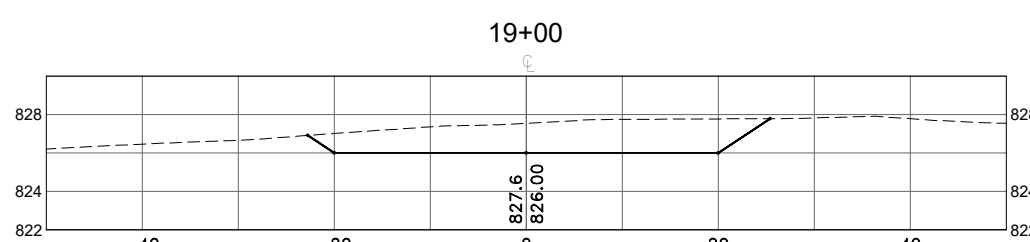
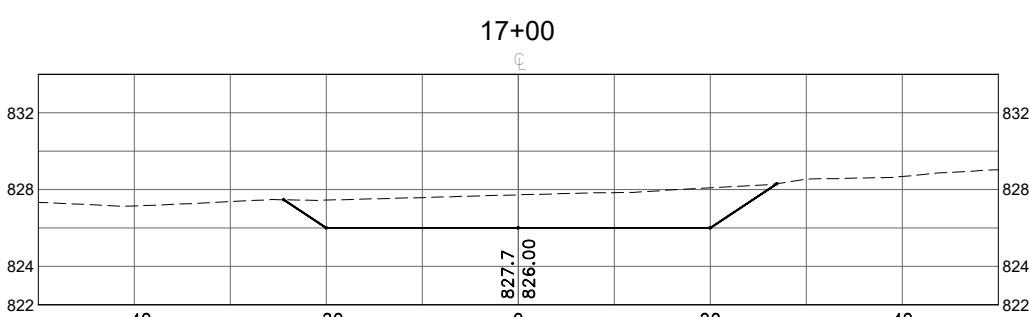
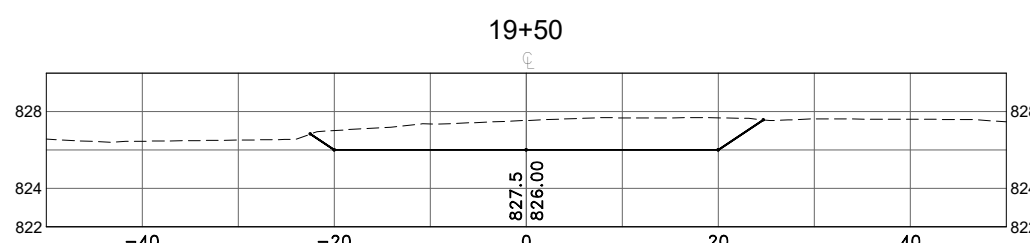
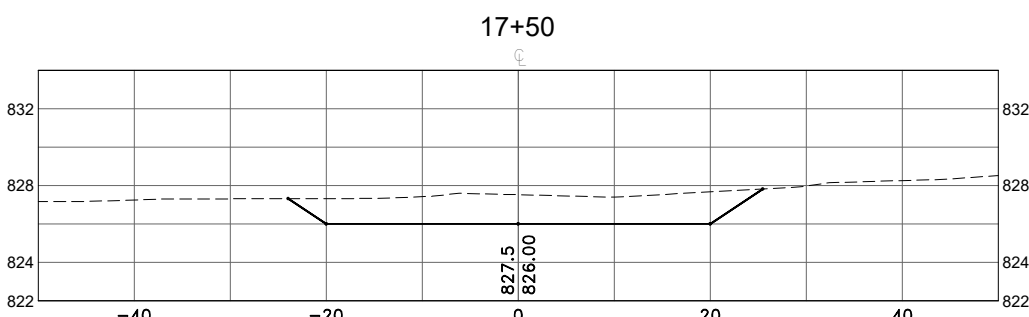
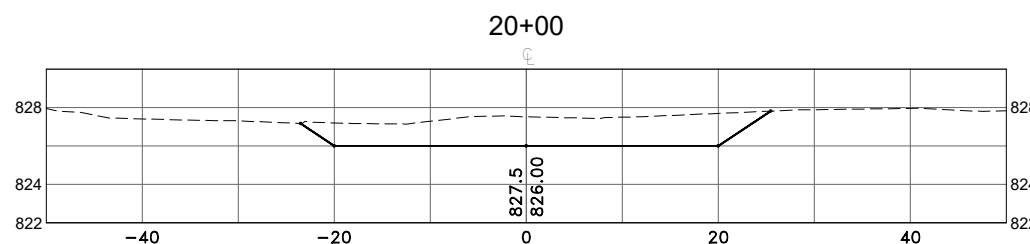
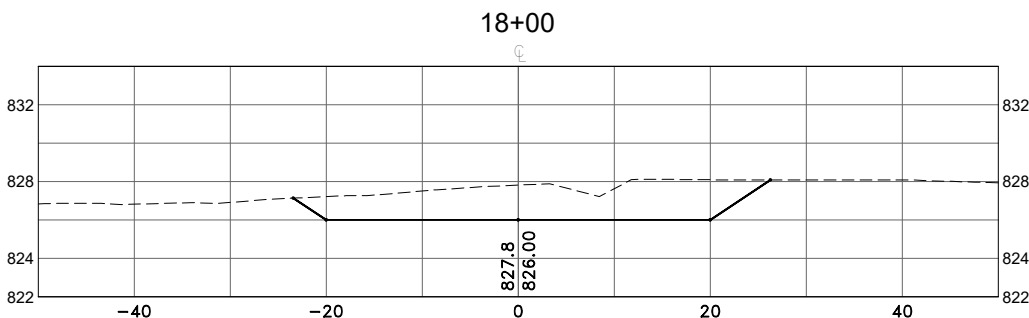
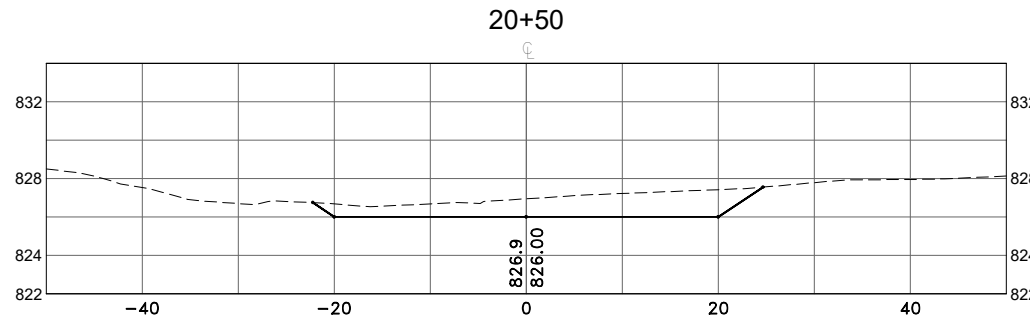
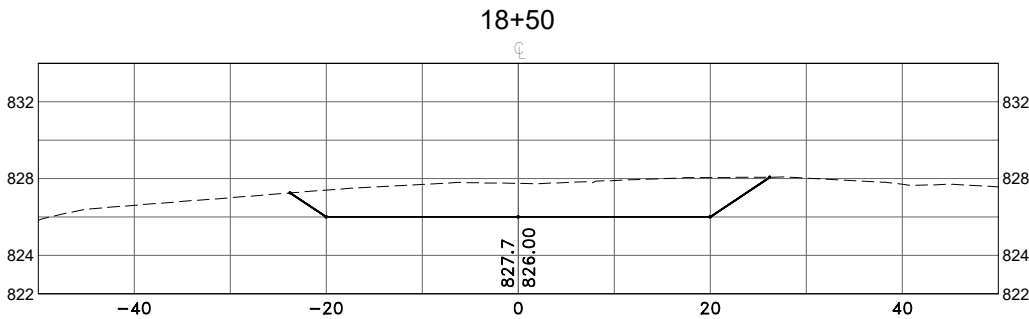
Hakanson Anderson
Civil Engineers and Land Surveyors
3601 Thurston Ave., Anoka, Minnesota 55303
763-427-5860 FAX 763-427-0520
www.hakanson-anderson.com

PERMIT DRAWINGS - RUM
RIVER CHANNEL
RESTORATION PROJECT

CROSS SECTIONS

CITY OF ANOKA, MINNESOTA

SHEET
X4
OF
X7
SHEETS



Aug 24, 2023 - 4:21pm
K:\MUNICIPAL\AN933-2023\ENGINEERING\BASE DWG\AN933-2023_BA.dwg

DATE	REVISION

DESIGNED BY: CJJ
DRAWN BY: SGJ
CHECKED BY: TAE



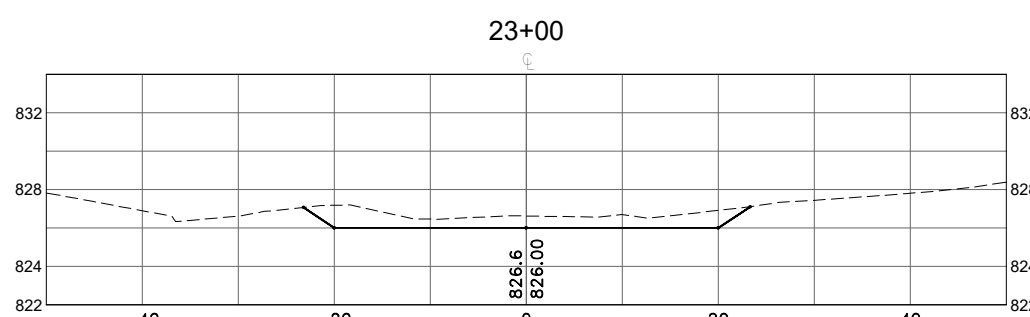
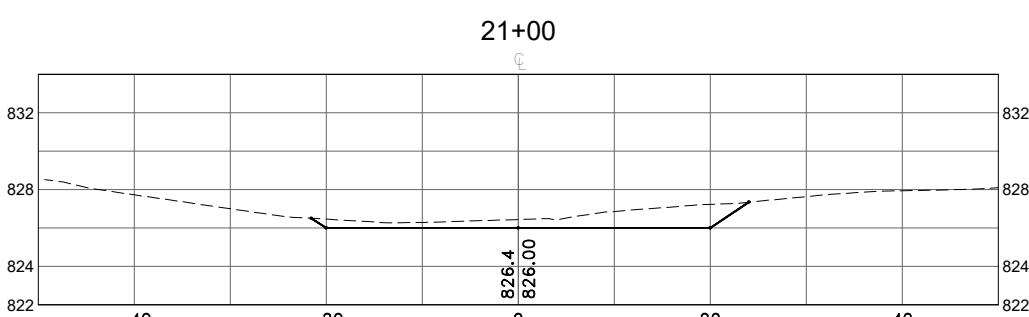
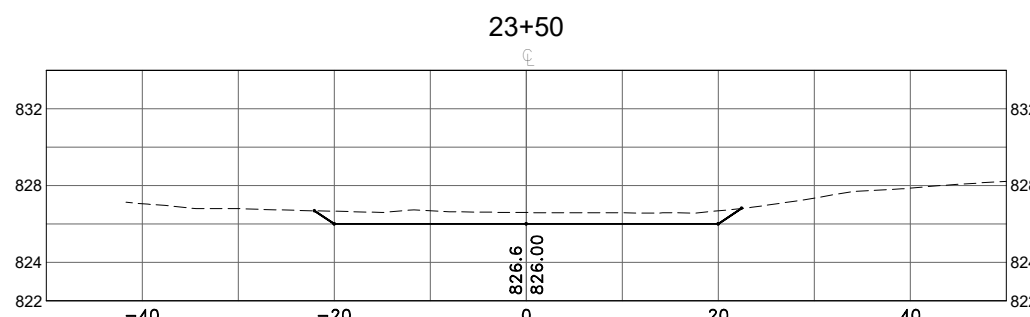
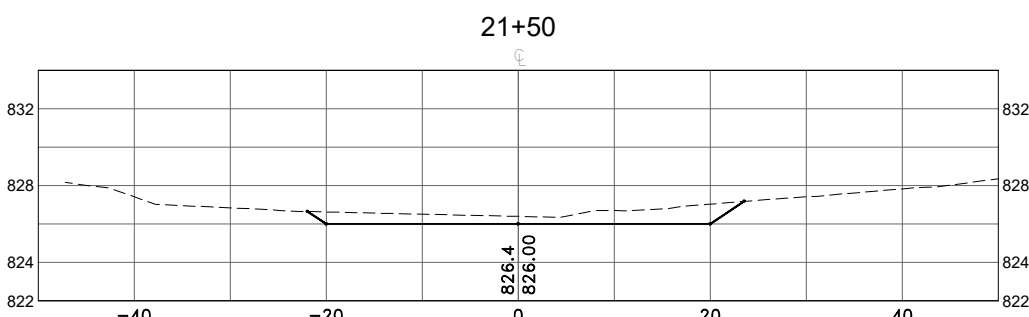
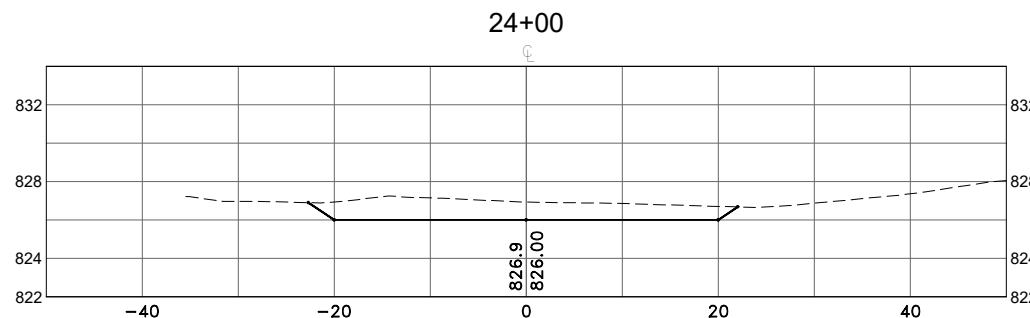
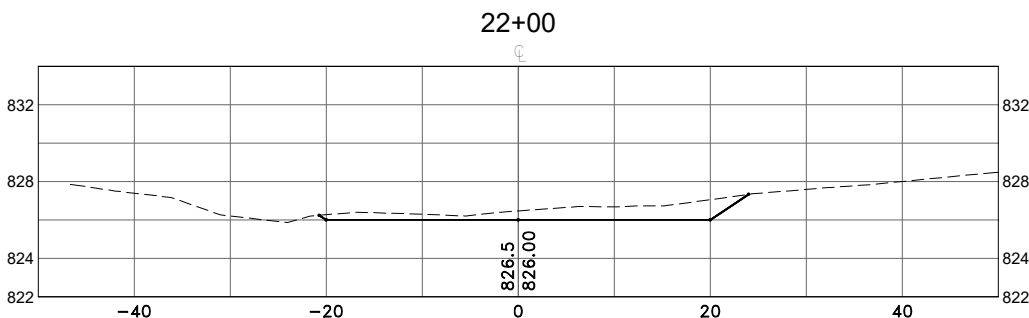
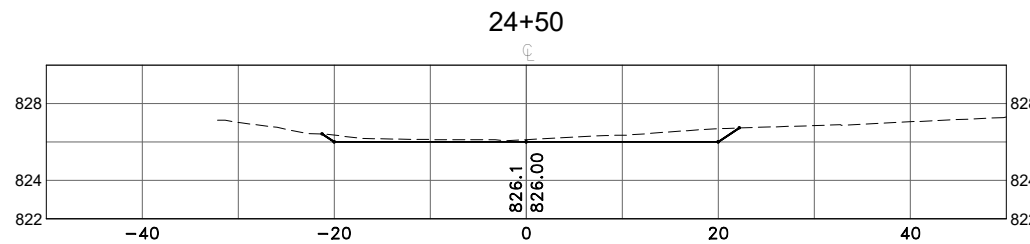
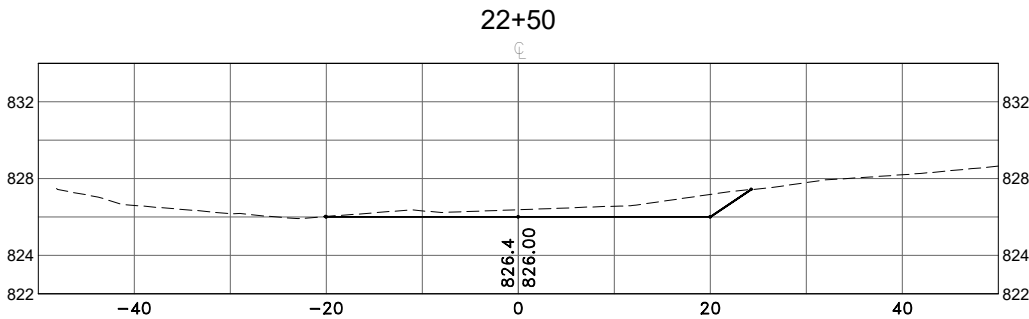
Hakanson Anderson
Civil Engineers and Land Surveyors
3601 Thurston Ave., Anoka, Minnesota 55303
763-427-5860 FAX 763-427-0520
www.hakanson-anderson.com

PERMIT DRAWINGS - RUM
RIVER CHANNEL
RESTORATION PROJECT

CROSS SECTIONS

CITY OF ANOKA, MINNESOTA

SHEET
X5
OF
X7
SHEETS



Aug 24, 2023 - 4:21pm
K:\MUNICIPAL\AN933-2023\ENGINEERING\BASE DWG\AN933-2023_BA.dwg

DATE	REVISION

DESIGNED BY: CJJ
DRAWN BY: SGJ
CHECKED BY: TAE



Hakanson Anderson
Civil Engineers and Land Surveyors
3601 Thurston Ave., Anoka, Minnesota 55303
763-427-5860 FAX 763-427-0520
www.hakanson-anderson.com

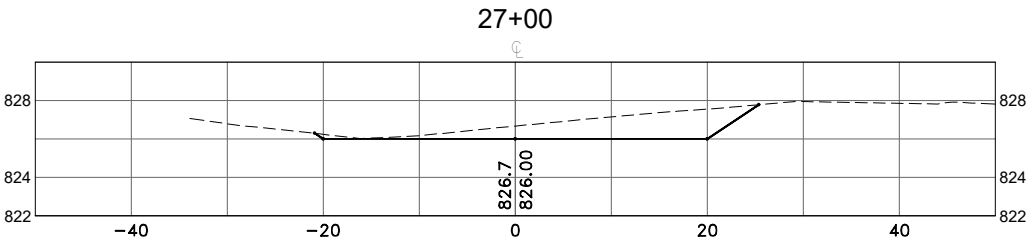
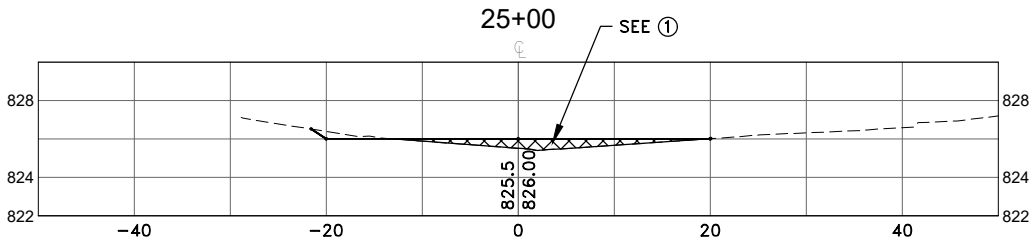
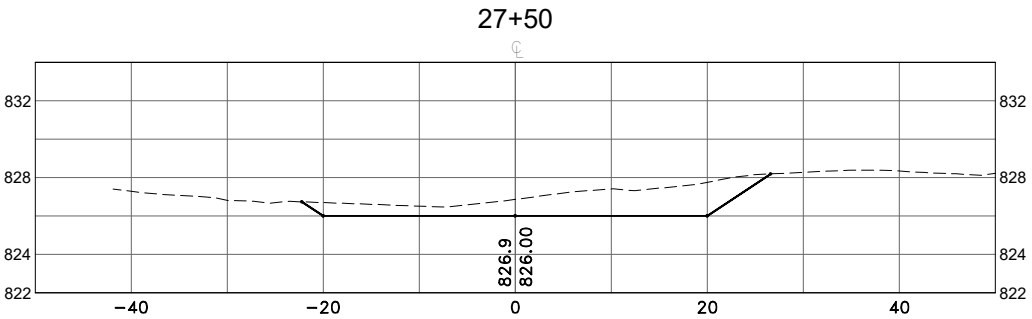
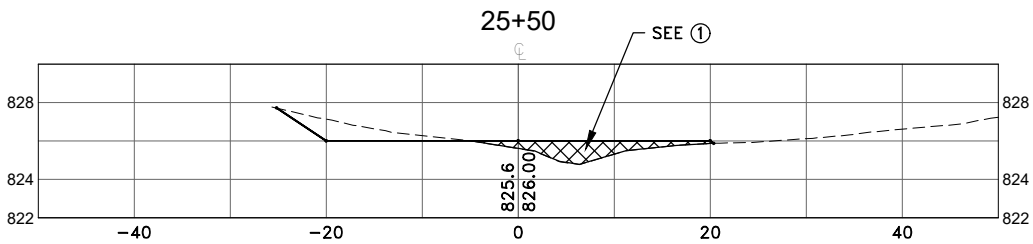
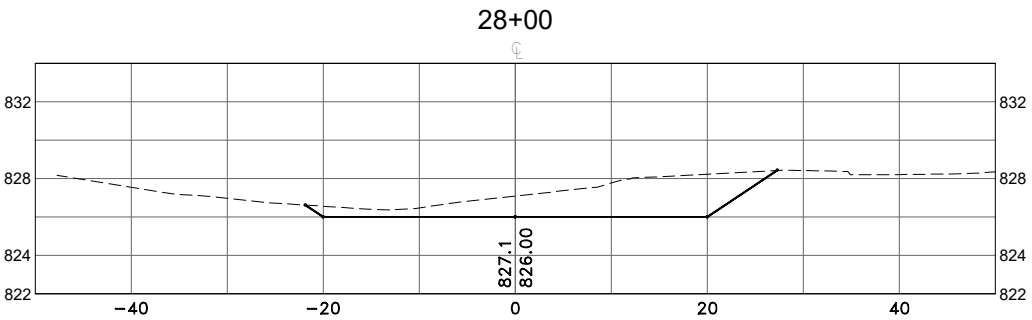
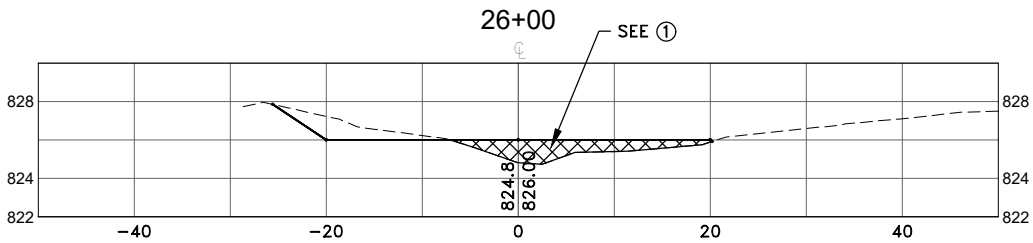
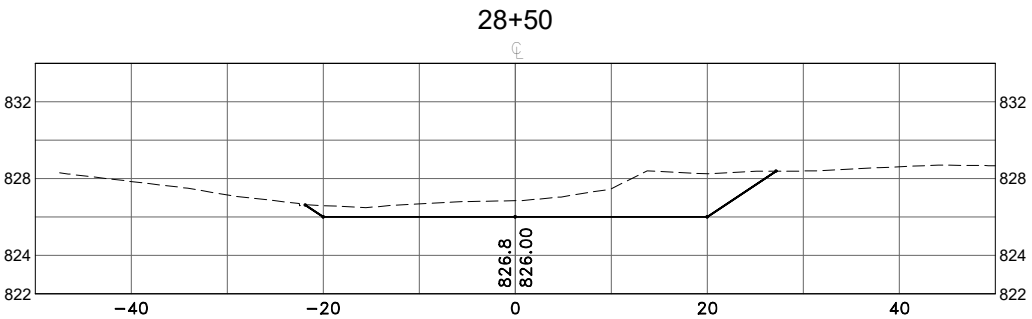
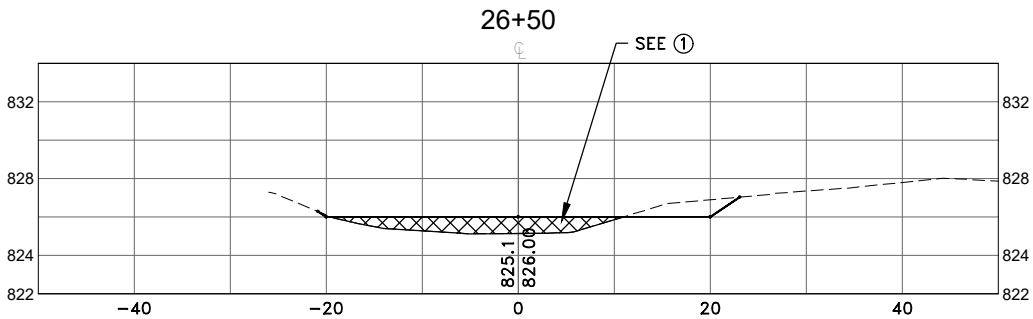
**PERMIT DRAWINGS – RUM
RIVER CHANNEL RESTORATION
PROJECT**

CROSS SECTIONS

CITY OF ANOKA, MINNESOTA

SHEET
X6
OF
X7
SHEETS

REFERENCE NOTES:
① PROPOSED TYPICAL CHANNEL BOTTOM IS SHOWN FOR ILLUSTRATIVE PURPOSES ONLY. CONTRACTOR SHALL NOT FILL IN THE CHANNEL BELOW ELEVATION 926.0.



Aug 24, 2023 - 4:21pm
K:\MUNICIPAL\AN933-2023\ENGINEERING\BASE DWG\AN933-2023_BA.dwg

DATE	REVISION

DESIGNED BY: CJJ
DRAWN BY: SGJ
CHECKED BY: TAE



Hakanson Anderson
Civil Engineers and Land Surveyors
3601 Thurston Ave., Anoka, Minnesota 55303
763-427-5860 FAX 763-427-0520
www.hakanson-anderson.com

PERMIT DRAWINGS – RUM
RIVER CHANNEL RESTORATION
PROJECT

CROSS SECTIONS

CITY OF ANOKA, MINNESOTA

SHEET
X7
OF
X7
SHEETS