

Letting Date MAY 13, 1997

IF ARCHAEOLOGICAL MATERIALS ARE ENCOUNTERED DURING THE CONSTRUCTION PHASE OF THIS PROJECT, THE ENGINEER MUST BE NOTIFIED IMMEDIATELY SO THE PROPER AUTHORITIES CAN BE NOTIFIED ACCORDING TO THE EXISTING FEDERAL REGULATIONS AND STATE PROCEDURES. ADDITIONALLY, IT SHOULD BE NOTED THAT FINDINGS AND RECOMMENDATIONS FOR CLEARANCE FOR FURTHER TESTING CANNOT BE CONSIDERED FINAL UNTIL CONCURRENCE IS RECEIVED FROM THE OFFICE OF THE STATE HISTORIC PRESERVATION OFFICER.

TRAFFIC CONTROL PLAN

THROUGH TRAFFIC WILL BE MAINTAINED AT ALL TIMES DURING CONSTRUCTION. LOCAL TRAFFIC TO ADJACENT PROPERTIES WILL BE MAINTAINED AS PROVIDED FOR IN ARTICLE 1107.08 OF THE CURRENT STANDARD SPECIFICATIONS. TRAFFIC CONTROL DEVICES, PROCEDURES AND LAYOUTS SHALL BE AS PER PART VI OF THE MANUAL OF UNIFORM TRAFFIC CONTROL DEVICES (MUTCD) REVISION 3, DATED SEPTEMBER 3, 1993.

THESE PROJECTS ARE COVERED BY THE CORPS OF ENGINEERS NATIONWIDE PERMIT NUMBERS 13 & 26.

IOWA DEPARTMENT OF TRANSPORTATION

Project Development Division
PLANS OF PROPOSED IMPROVEMENT ON THE

SECONDARY ROAD SYSTEM CRAWFORD COUNTY

JULY 1996 FLOOD REPAIR PROJECTS

PROJECT NO. ER-24(96)-2

The Standard Specifications, Series of 1997 of the Iowa Department of Transportation Shall Apply to Construction Work on this Project

Plus Current Special Provisions and Supplemental Specifications

Scales: As Noted

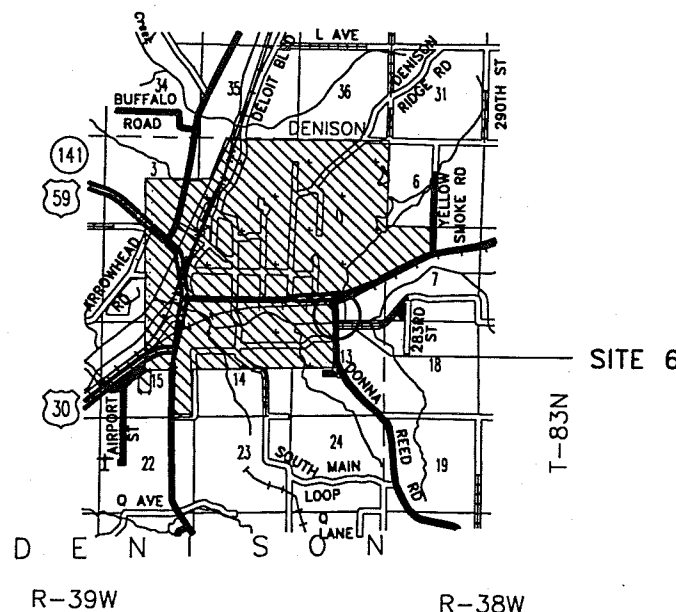
Proj. No. ER-24(96)-2

INDEX OF SHEETS

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W.01	CROSS SECTIONS - SITE 6

ROAD STANDARD PLANS

The following Standard Plans shall be considered applicable to construction work on this project.					
Identification	Date	Identification	Date	Identification	Date
RS-2	6-15-93	RS-3	2-23-93		



LOCATION MAP



Approved
Robert D. Lohrmann
Mark Segelbach
BOARD OF SUPERVISORS

Approved
Paul J. Assman
Crawford County Engineer Date 4-14-97

I HEREBY CERTIFY THAT THIS ENGINEERING DOCUMENT WAS PREPARED BY ME OR UNDER MY DIRECT PERSONAL SUPERVISION AND THAT I AM A DULY LICENSED PROFESSIONAL ENGINEER UNDER THE LAWS OF THE STATE OF IOWA.

PAUL J. ASSMAN, P.E. #11982 DATE 2/17/97

MY LICENSE RENEWAL DATE IS DECEMBER 31, 1998.

PAGES OR SHEETS COVERED BY THIS SEAL: ALL SHEETS

Iowa Department of Transportation
Accepted for Letting
SECONDARY ROADS ENGINEER Date

Design No.

File No.

Crawford County Proj. No. ER-24(96)-2

Sheet No. A.01

CONSTRUCTION SPECIFICATIONS

REMOVAL OF WATER

1. SCOPE

THE WORK SHALL CONSIST OF REMOVAL OF SURFACE WATER AND GROUND WATER AS NEEDED TO PERFORM THE REQUIRED CONSTRUCTION IN ACCORDANCE WITH THE SPECIFICATIONS. IT SHALL INCLUDE (1) BUILDING AND MAINTAINING ALL NECESSARY TEMPORARY IMPOUNDING WORKS, CHANNELS, AND DIVERSIONS, (2) FURNISHING, INSTALLING AND OPERATING ALL NECESSARY PUMPS, PIPING AND OTHER FACILITIES AND EQUIPMENT, AND (3) REMOVING ALL SUCH TEMPORARY WORKS AND EQUIPMENT AFTER THEY HAVE SERVED THEIR PURPOSES.

2. DIVERTING SURFACE WATER

THE CONTRACTOR SHALL BUILD, MAINTAIN AND OPERATE ALL COFFERDAMS, CHANNELS, FLUMES, SUMPS, AND OTHER TEMPORARY DIVERSION AND PROTECTIVE WORKS NEEDED TO DIVERT STREAMFLOW AND OTHER SURFACE WATER THROUGH OR AROUND THE CONSTRUCTION SITE AND AWAY FROM THE CONSTRUCTION WORK WHILE CONSTRUCTION IS IN PROGRESS. UNLESS OTHERWISE SPECIFIED, A DIVERSION MUST DISCHARGE INTO THE SAME NATURAL DRAINAGEWAY IN WHICH ITS HEADWORKS ARE LOCATED.

UNLESS OTHERWISE SPECIFIED, THE CONTRACTOR SHALL FURNISH TO THE CONTRACTING OFFICER, IN WRITING, HIS PLAN FOR DIVERTING SURFACE WATER BEFORE BEGINNING THE CONSTRUCTION WORK FOR WHICH THE DIVERSION IS REQUIRED. ACCEPTANCE OF THIS PLAN WILL NOT RELIEVE THE CONTRACTOR OF RESPONSIBILITY FOR COMPLETING THE WORK AS SPECIFIED.

3. DEWATERING THE CONSTRUCTION SITE

FOUNDATIONS, CUTOFF TRENCHES AND OTHER PARTS OF THE CONSTRUCTION SITE SHALL BE DEWATERED AND KEPT FREE OF STANDING WATER OR EXCESSIVELY MUDDY CONDITIONS AS NEEDED FOR PROPER EXECUTION OF THE CONSTRUCTION WORK. THE CONTRACTOR SHALL FURNISH, INSTALL, OPERATE AND MAINTAIN ALL DRAINS, SUMPS, PUMPS, CASING, WELLPOINTS, AND OTHER EQUIPMENT NEEDED TO PERFORM THE DEWATERING AS SPECIFIED. DEWATERING METHODS THAT CAUSE A LOSS OF FINES FROM FOUNDATION AREAS WILL NOT BE PERMITTED.

UNLESS OTHERWISE SPECIFIED, THE CONTRACTOR SHALL FURNISH TO THE CONTRACTING OFFICER, IN WRITING, HIS PLAN FOR DEWATERING BEFORE BEGINNING THE CONSTRUCTION WORK FOR WHICH THE DEWATERING IS REQUIRED. ACCEPTANCE OF THIS PLAN WILL NOT RELIEVE THE CONTRACTOR OF RESPONSIBILITY FOR COMPLETING THE WORK AS SPECIFIED.

4. EROSION AND POLLUTION CONTROL

REMOVAL OF WATER FROM THE CONSTRUCTION SITE SHALL BE ACCOMPLISHED IN SUCH A MANNER THAT EROSION AND THE TRANSMISSION OF SEDIMENT AND OTHER POLLUTANTS ARE MINIMIZED.

5. REMOVAL OF TEMPORARY WORKS

AFTER THE TEMPORARY WORKS HAVE SERVED THEIR PURPOSES, THE CONTRACTOR SHALL REMOVE THEM OR LEVEL AND GRADE THEM TO THE EXTENT REQUIRED TO PRESENT A SLIGHTLY APPEARANCE AND TO PREVENT ANY OBSTRUCTION OF THE FLOW OF WATER OR ANY OTHER INTERFERENCE WITH THE OPERATION OF OR ACCESS TO THE PERMANENT WORKS.

EXCEPT AS OTHERWISE SPECIFIED, PIPES AND CASINGS SHALL BE REMOVED FROM TEMPORARY WELLS AND THE WELLS SHALL BE FILLED TO GROUND LEVEL WITH GRAVEL OR OTHER MATERIAL APPROVED BY THE CONTRACTING OFFICER.

6. MEASUREMENT AND PAYMENT

PAYMENT FOR THIS ITEM WILL BE MADE AT THE CONTRACT LUMP SUM PRICE AND WILL CONSTITUTE FULL COMPENSATION FOR COMPLETION OF THE WORK.



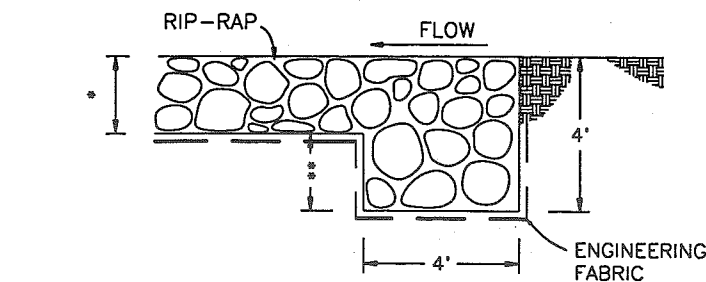
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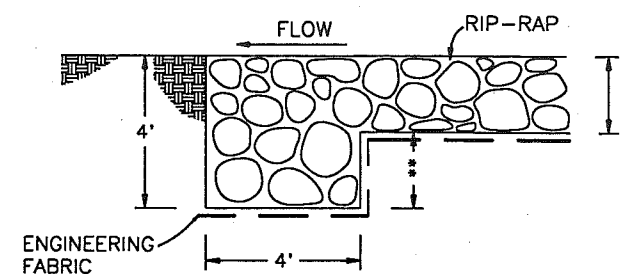
120 S. MAIN, P.O. BOX 220, DENISON, IOWA 51442

PHONE: (712)263-8118 FAX: (712)263-2181

PROJECT NO.:	0626	DATE:	2/97	REV:	
CLIENT:	CRAWFORD COUNTY, IOWA				
DRAWN BY:	TKK	REVIEWED BY:		APPROVED BY:	PJA
DESCRIPTION:	CONSTRUCTION SPECIFICATIONS				SHEET
	PROJ. NO. ER-24(96)-2				B.01



TYPICAL UPSTREAM



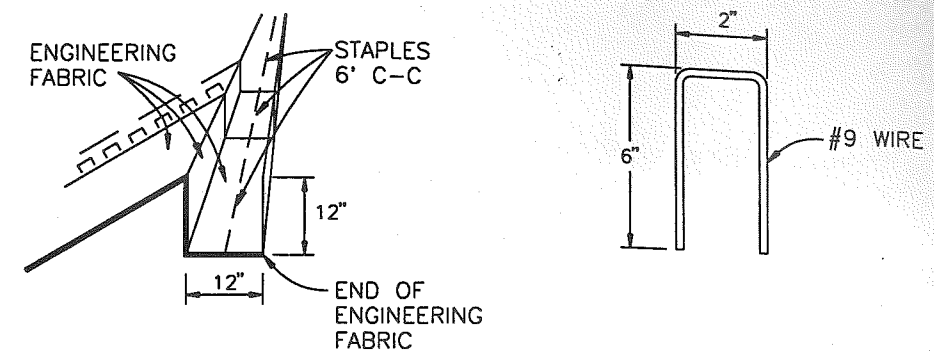
TYPICAL DOWNSTREAM

SECTION A-A

ROCK FILLED CUTOFF TRENCH DETAILS

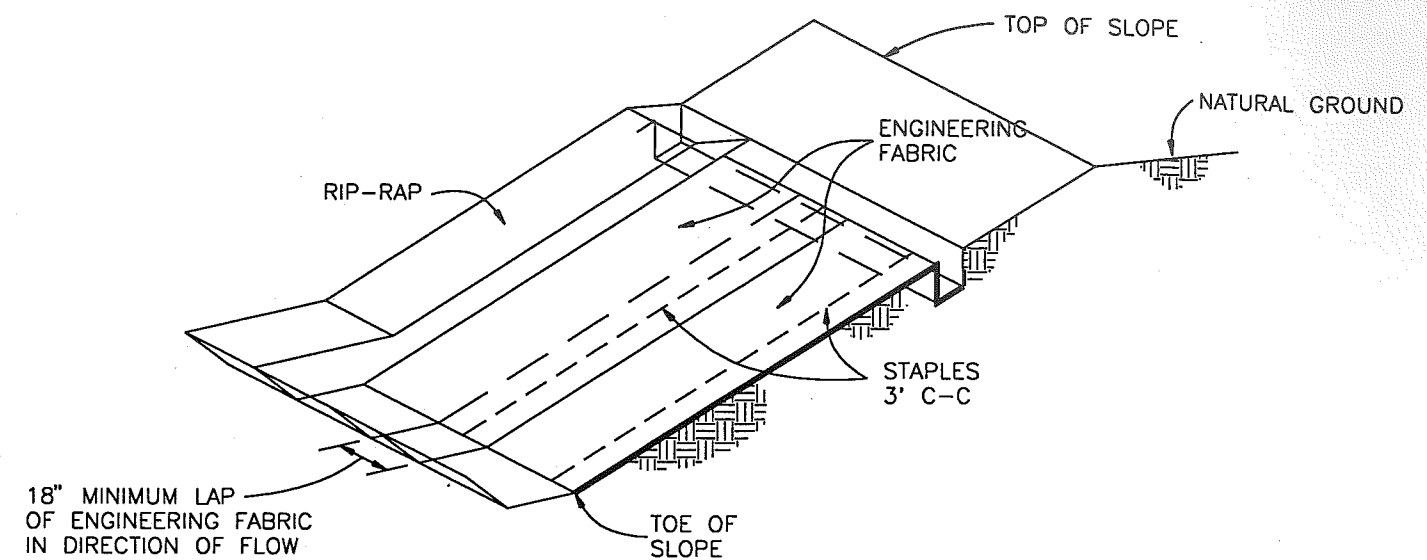
CONTINUOUS ACROSS BOTTOM WIDTH AND SIDE SLOPES.

- * 2.5' ACROSS CHANNEL BOTTOM
2.0' ON SIDE SLOPES
- ** 1.5' ACROSS CHANNEL BOTTOM
2.0' ON SIDE SLOPES



DETAIL OF TRENCH

STAPLE



EXCAVATE 12"x12" TRENCH ALONG TOP OF RIPRAP. PLACE END OF ENGINEERING FABRIC STRIPS INTO TRENCH WITH STAPLES AS SHOWN. BACKFILL WITH THE EXCAVATED MATERIAL AND COMPACT. THE ENGINEER MAY PERMIT THE USE OF THE WHEELS OF PNEUMATIC-TIRED EQUIPMENT FOR CONSOLIDATING THE TRENCH BACKFILL MATERIAL.

DETAILS OF PLACEMENT OF ENGINEERING FABRIC



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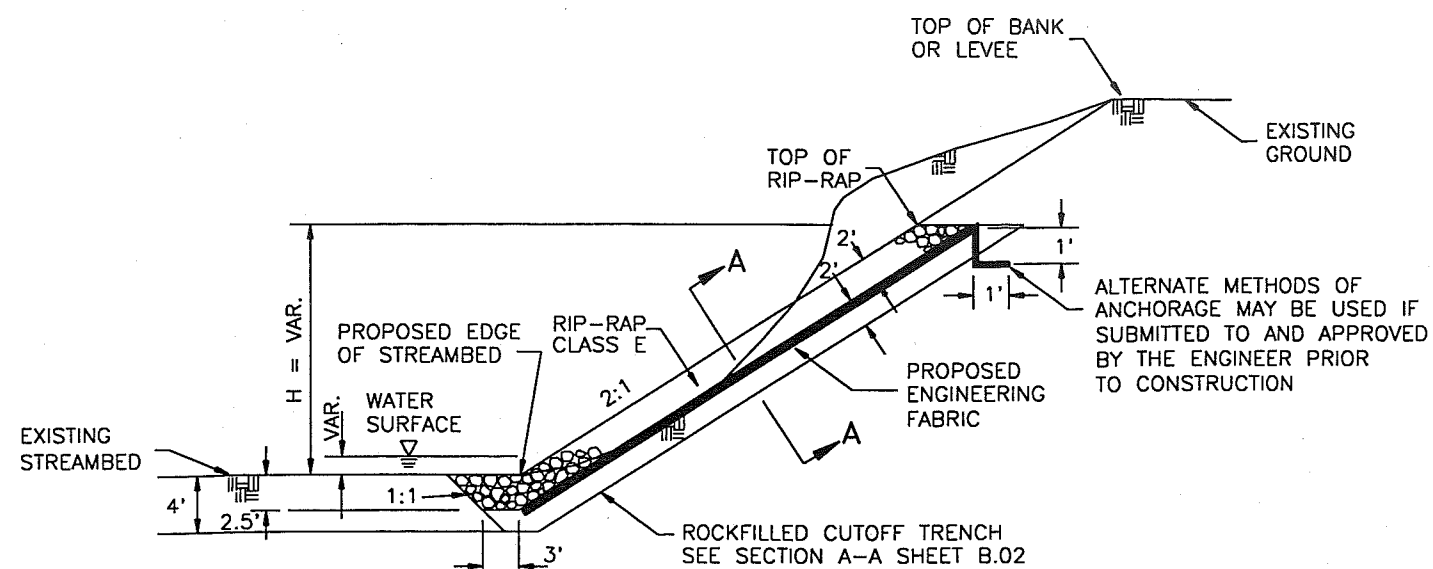
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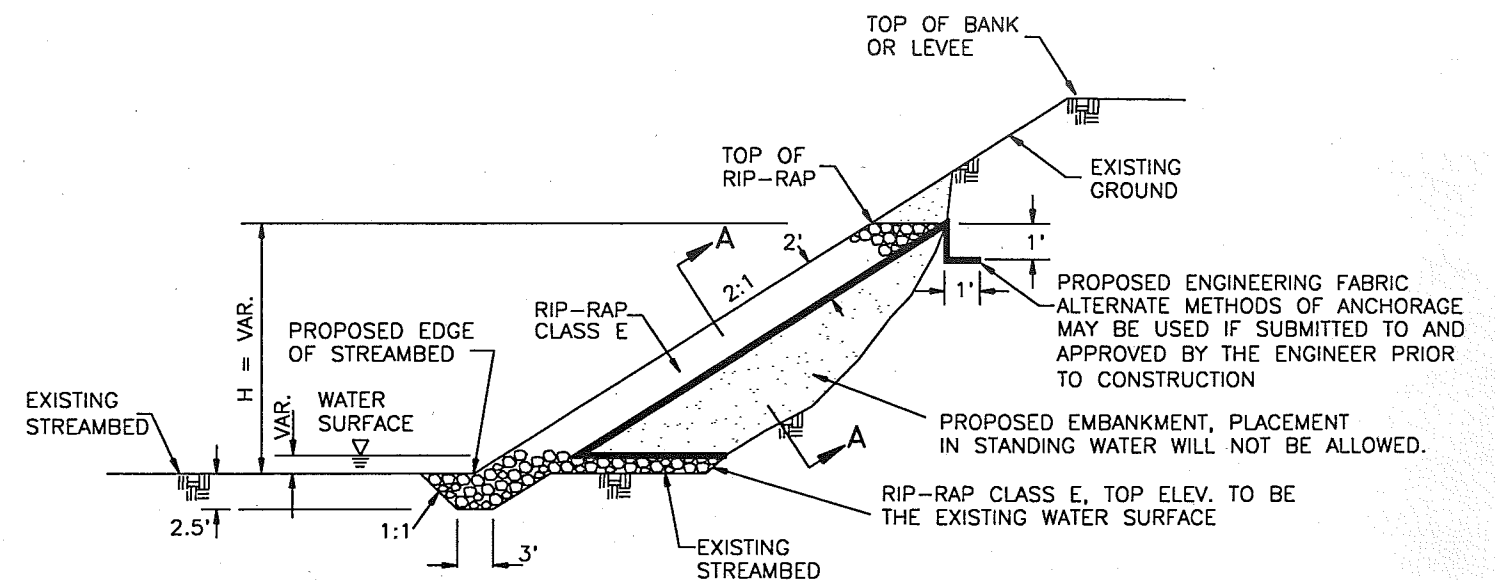
PROJECT NO.:	0626	DATE:	2/97	REV:	
CLIENT:	CRAWFORD COUNTY, IOWA				
DRAWN BY:	TKK	REVIEWED BY:		APPROVED BY:	PJA
DESCRIPTION:	TYPICAL SECTIONS				
	PROJ. NO. ER-24(96)-2				

SHEET

B.02



CHANNEL CUT
NO SCALE



CHANNEL FILL
NO SCALE

TYPICAL BANK STABILIZATION SECTION



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PROJECT NO.: 0626	DATE: 2/97	REV:
CLIENT: CRAWFORD COUNTY, IOWA		
DRAWN BY: TTK	REVIEWED BY:	APPROVED BY: PJA
DESCRIPTION: TYPICAL SECTIONS		SHEET
PROJ. NO. ER-24(96)-2		B.03

GENERAL NOTES

IT SHALL BE THE CONTRACTOR'S RESPONSIBILITY TO MAKE ALL NECESSARY ARRANGEMENTS WITH ADJACENT PROPERTY OCCUPANTS FOR RESTRAINING LIVESTOCK FROM ENTERING THE RIGHT OF WAY.

ROAD CONTRACTOR IS TO USE DUE CAUTION IN WORKING OVER AND AROUND ALL TILE LINES. BREAKS IN THE TILE LINE DUE TO THE CONTRACTOR'S CARELESSNESS ARE TO BE REPLACED AT HIS EXPENSE WITHOUT COST TO THE COUNTY. ANY TILE LINES BROKEN OR DISTURBED BY CUT LINES WILL BE REPLACED AS DIRECTED BY THE ENGINEER IN CHARGE OF CONSTRUCTION AND AT THE COUNTY'S EXPENSE.

ALL BORROW AREAS, STOCKPILE AREAS, HAUL ROADS AND AREAS FOR MANEUVERING EQUIPMENT ON THIS PROJECT WILL REQUIRE SUBSOIL TILLAGE TO AN AVERAGE DEPTH OF 18 TO 24 INCHES. SUCH TILLAGE SHALL BE ACCOMPLISHED ON MAXIMUM OF THREE FOOT CENTERS. SUCH AREAS SHALL BE DESIGNATED BY THE COUNTY ENGINEER.

202-1
THE CONTRACTOR'S ATTENTION IS DIRECTED TO THE FACT THAT ARCHAEOLOGICAL REMAINS MAY BE UNCOVERED ON THIS PROJECT. REFER TO SECTION 2102.10 OF THE STANDARD SPECIFICATIONS. THE ENGINEER SHALL NOTIFY BOTH THE OFFICE OF THE STATE ARCHAEOLOGIST IN IOWA CITY AND THE OFFICE OF PROJECT PLANNING, IOWA DOT A MINIMUM OF ONE WEEK PRIOR TO THE EXPECTED DATE OF THE START OF CONSTRUCTION ACTIVITIES.

213-1
IT SHALL BE THE CONTRACTOR'S RESPONSIBILITY TO PROVIDE WASTE AREAS OR DISPOSAL SITES FOR EXCESS MATERIAL (EXCAVATED MATERIAL OR BROKEN CONCRETE) WHICH IS NOT DESIRABLE TO BE INCORPORATED INTO THE WORK INVOLVED ON THIS PROJECT. NO PAYMENT FOR OVERHAUL WILL BE ALLOWED FOR MATERIAL HAULED TO THESE SITES. NO MATERIAL SHALL BE PLACED WITHIN THE RIGHT OF WAY, UNLESS SPECIFICALLY STATED IN THE PLANS OR APPROVED BY THE ENGINEER.

251-1
THE CONTRACTOR SHALL BE RESPONSIBLE TO MAINTAIN ACCESS TO INDIVIDUAL PROPERTIES DURING CONSTRUCTION.

RELOCATED ACCESS SHALL BE COMPLETED TO INDIVIDUAL PROPERTIES PRIOR TO REMOVAL OF EXISTING ACCESS.

IF THE PERMANENT ACCESS CANNOT BE COMPLETED PRIOR TO REMOVAL OF THE EXISTING ACCESS, THE CONTRACTOR SHALL PROVIDE AND MAINTAIN AN ALTERNATE ACCESS. TEMPORARY GRANULAR SURFACING WILL BE PAID FOR AS A CONTRACT ITEM OR BY EXTRA WORK.

261-1
WHERE PUBLIC UTILITY FIXTURES ARE SHOWN AS EXISTING ON THE PLANS OR ENCOUNTERED WITHIN THE CONSTRUCTION AREA, IT SHALL BE THE RESPONSIBILITY OF THE CONTRACTOR TO NOTIFY THE OWNERS OF THOSE UTILITIES PRIOR TO THE BEGINNING OF ANY CONSTRUCTION. THE CONTRACTOR SHALL AFFORD ACCESS TO THESE FACILITIES FOR NECESSARY MODIFICATION OF SERVICES. UNDERGROUND FACILITIES, STRUCTURES AND UTILITIES HAVE BEEN PLOTTED FROM AVAILABLE SURVEYS AND RECORDS, AND THEREFORE THEIR LOCATIONS MUST BE CONSIDERED APPROXIMATE ONLY. IT IS POSSIBLE THERE MAY BE OTHERS, THE EXISTENCE OF WHICH IS PRESENTLY NOT KNOWN OR SHOWN. IT IS THE CONTRACTOR'S RESPONSIBILITY TO DETERMINE THEIR EXISTENCE AND EXACT LOCATION AND TO AVOID DAMAGE THERETO. NO CLAIMS FOR ADDITIONAL COMPENSATION WILL BE ALLOWED TO THE CONTRACTOR FOR ANY INTERFERENCE OR DELAY CAUSED BY SUCH WORK.

ESTIMATE REFERENCE INFORMATION

DATA LISTED BELOW IS FOR INFORMATIONAL PURPOSES ONLY AND SHALL NOT CONSTITUTE A BASIS FOR ANY EXTRA WORK ORDERS.

1. INCLUDES THE FOLLOWING QUANTITIES AS ESTIMATED FROM THE CROSS SECTIONS:

SITE 6 = 135 C.Y. (100 x 1.35)

SUITABLE CLASS 10 CHANNEL EXCAVATION MAY BE USED FOR EMBANKMENT MATERIAL AS DIRECTED BY THE ENGINEER.

FILL MATERIALS SHALL CONTAIN NO SOD, BRUSH, ROOTS OR OTHER PERISHABLE MATERIALS. FILL SHALL NOT BE PLACED UPON A FROZEN SURFACE, NOR SHALL SNOW, ICE OR FROZEN MATERIAL BE INCORPORATED IN THE FILL.

PAYMENT SHALL BE BASED ON PLAN QUANTITY.

2. QUANTITY INCLUDES STRIPPING OF EXISTING VEGETATIVE COVER TO A DEPTH OF 6". THE STRIPPINGS AND ANY REMAINING CLASS 10 CHANNEL EXCAVATION NOT INCORPORATED IN THE EMBANKMENT FILL SHALL BE DISPOSED OF.

PAYMENT SHALL BE BASED ON PLAN QUANTITY.

3. INCLUDES REMOVAL OF EXISTING RIPRAP AND BROKEN CONCRETE FROM PROPOSED BANK REPAIR AREAS AND DISPOSAL ON SITE AS DIRECTED BY THE ENGINEER.

INCLUDES REMOVAL AND DISPOSAL OF TREES, DOWN TIMBER, LOGS, DRIFTS, DEBRIS AND OTHER OBSTRUCTIONS LYING WITHIN THE CONSTRUCTION LIMITS.

THE COST OF REMOVAL AND DISPOSAL OF DEBRIS FROM THE BRIDGE PIERS SHALL BE INCLUDED IN AND CONSIDERED INCIDENTAL TO THE PRICE BID FOR THIS ITEM.

4. SEE DRAWING SHEET B.02 DETAILS OF PLACEMENT OF ENGINEERING FABRIC, FOR INSTALLATION DETAILS, MATERIAL TO CONFORM TO IOWA DOT MATERIALS IM 496.01 APPENDIX A, EMBANKMENT EROSION CONTROL (SPECIFICATION 4196.01C).

5. THIS ITEM SHALL CONSIST OF FURNISHING AND PLACING REVETMENT STONE, COMPLETE IN PLACE AS SHOWN ON THE DRAWINGS.

INCLUDES FURNISHING AND PLACING CLASS E REVETMENT STONE IN ACCORDANCE WITH THE STANDARD SPECIFICATIONS EXCEPT THAT THE MAXIMUM STONE SIZE SHALL BE 400 POUNDS AND A MINIMUM OF 50% OF THE MATERIAL SHALL BE GREATER THAN 150 POUNDS.

REVTMENT STONE SHALL BE SCREENED PRIOR TO HAULING BY RUNNING THE STONE THROUGH A GRIZZLY OR PLATE SCREEN WITH A MINIMUM OPENING SIZE OF 8 INCHES. THIS OPERATION SHALL BE DONE AT THE QUARRY. THE PORTION OF THE STONE THAT IS REMOVED BY SCREENING WILL NOT BE ACCEPTABLE FOR USE AS REVETMENT STONE.

THE CONTRACTOR WILL BE RESPONSIBLE FOR REMOVAL OF ALL REMNANTS OF RIPRAP FROM FARM FIELDS SURROUNDING THE PROJECT AREA. THIS WORK WILL BE INCLUDED IN AND CONSIDERED INCIDENTAL TO THE PRICE BID FOR THIS ITEM.

8. THIS ITEM CONSIST OF DIVERTING SURFACE WATER AND DEWATERING THE SITE AS NEEDED FOR CONSTRUCTION. POLLUTION CONTROL SHALL BE INCLUDED IN AND CONSIDERED INCIDENTAL TO THIS ITEM.

ESTIMATED PROJECT QUANTITIES

ITEM NO.	ITEM	UNIT	SITE 6	AS BUILT QUANTITY
1	EMBANKMENT-IN-PLACE			
2	EXCAVATION, CLASS 10 CHANNEL	CY	135	
3	REMOVALS, AS PER PLAN	CY	205	
4	FABRIC, ENGINEERING	LS	LS	
5	REVTMENT, CLASS E, RIPRAP	SY	390	
6	TRAFFIC CONTROL	TON	450	
7	MOBILIZATION	LS	LS	
8	REMOVAL OF WATER	LS	LS	



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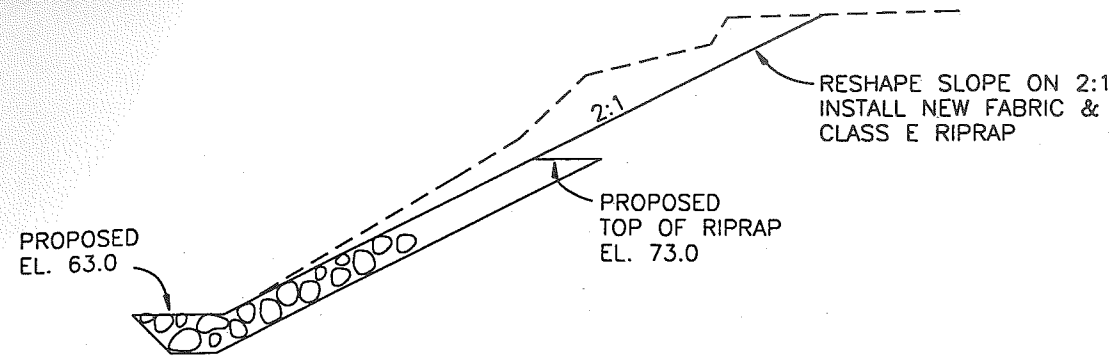
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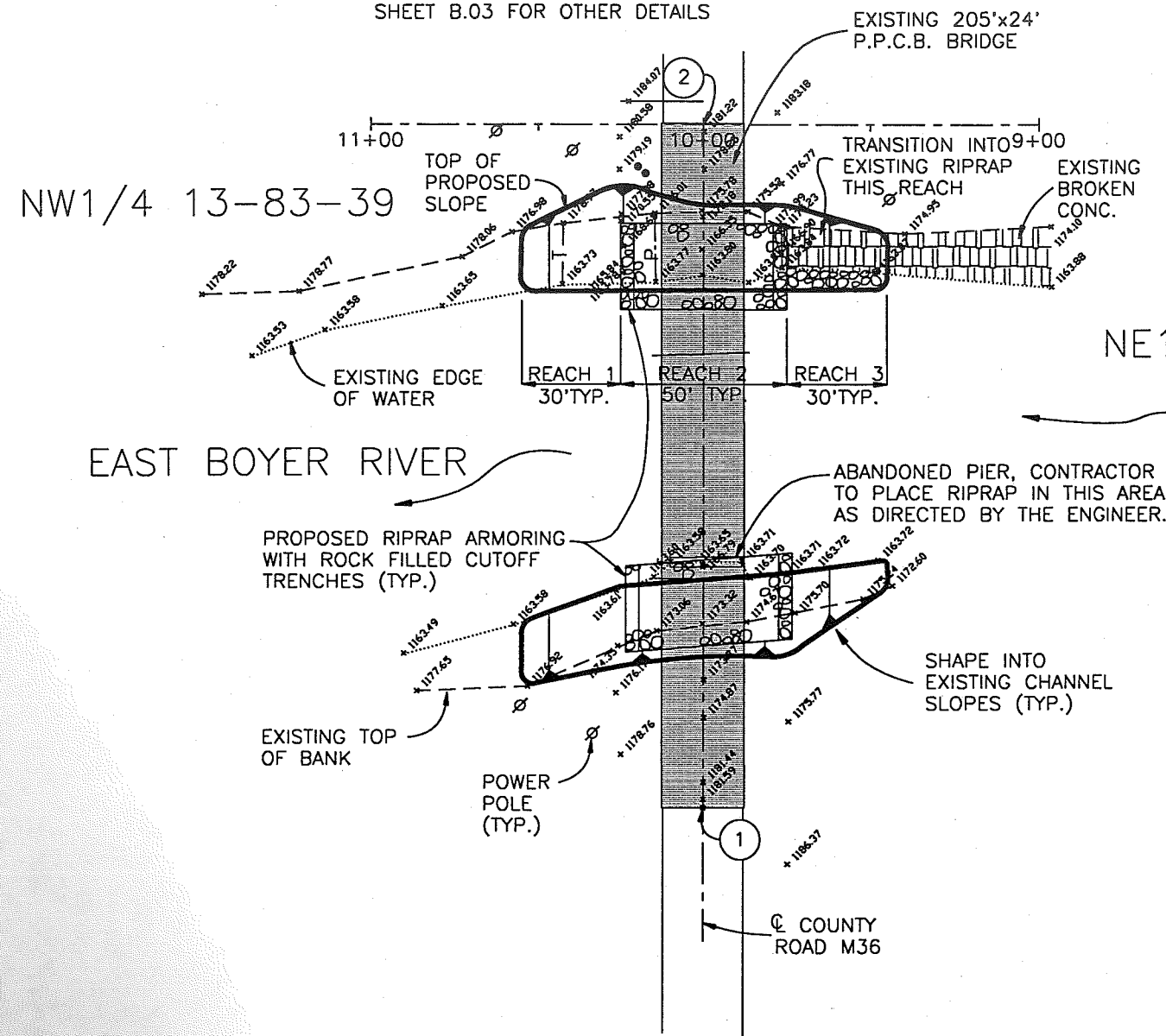
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PROJECT NO.:	0626	DATE:	2/97	REV:	
CLIENT:	CRAWFORD COUNTY, IOWA				
DRAWN BY:	TKK	REVIEWED BY:		APPROVED BY:	PJA
DESCRIPTION:	ESTIMATED PROJECT QUANTITIES & GENERAL INFORMATION				SHEET
	PROJ. NO. ER-24(96)-2				C.01

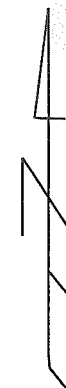


TYPICAL CROSS SECTION

REFER TO TYPICAL BANK STABILIZATION SECTION SHEET B.03 FOR OTHER DETAILS



PLAN VIEW - SITE 6



SCALE 1"=50'

LOCATION
CRAWFORD COUNTY
T-83N R-39W
SECTION 13
DENISON TWP.
OVER EAST BOYER RIVER
DRAINAGE AREA = 127 S.M.

ESTIMATED QUANTITIES - SITE 6

ITEM	UNIT	*DIV. I	*DIV. II	TOTAL
EMBANKMENT-IN-PLACE	CY	135	-	135
EXCAVATION, CLASS 10 CHANNEL	CY	205	-	205
REMOVALS, AS PER PLAN	LS	LS	-	LS
FABRIC, ENGINEERING	SY	390	-	390
REVTMENT, CLASS E, RIPRAP	TON	450	-	450
TRAFFIC CONTROL	LS	LS	-	LS
MOBILIZATION	LS	LS	-	LS
GROUT	CY	-	-	-
REMOVAL OF WATER	LS	LS	-	LS

*DIVISION I INCLUDES ALL WORK WITHIN THE R.O.W.
*DIVISION II INCLUDES ALL WORK OUTSIDE OF THE R.O.W.

POINT NO.	LOCATION	ELEV.
1	10+00, 206.88' RT.	1187.30
2	10+00, 0'	1187.24

HYDROLOGY AND HYDRAULICS DRAINAGE AREA = 127 SM

STORM	CFS	VELOCITY FT/SEC	STAGE* ELEV.
Q2	3100	5.31	68.9
Q5	5772	6.55	71.5
Q10	8184	7.35	73.4
Q25	11230	8.11	75.4
Q50	13293	8.57	76.7
Q100	16030	9.07	78.2

*AS MEASURED FROM ELEV. 63.0

BM#1 - 60D SPIKE IN SOUTH END OF
BRIDGE DECK EL. 1187.30

BANK REPAIR AREA NOTES:

FILL MATERIAL PLACED AROUND EXISTING PIER PILES IS TO REMAIN UNCOMPACTED FOR A MINIMUM 3' DIAMETER AROUND THE CENTER OF THE PILE.

REACH 1 - NORTH AND SOUTH ABUTMENTS, TRANSITION PROPOSED CHANNEL SLOPES INTO EXISTING SLOPES. NOTE THE EXISTING BURIED TELEPHONE AND POWER LINES IN THE N.W. CORNER.

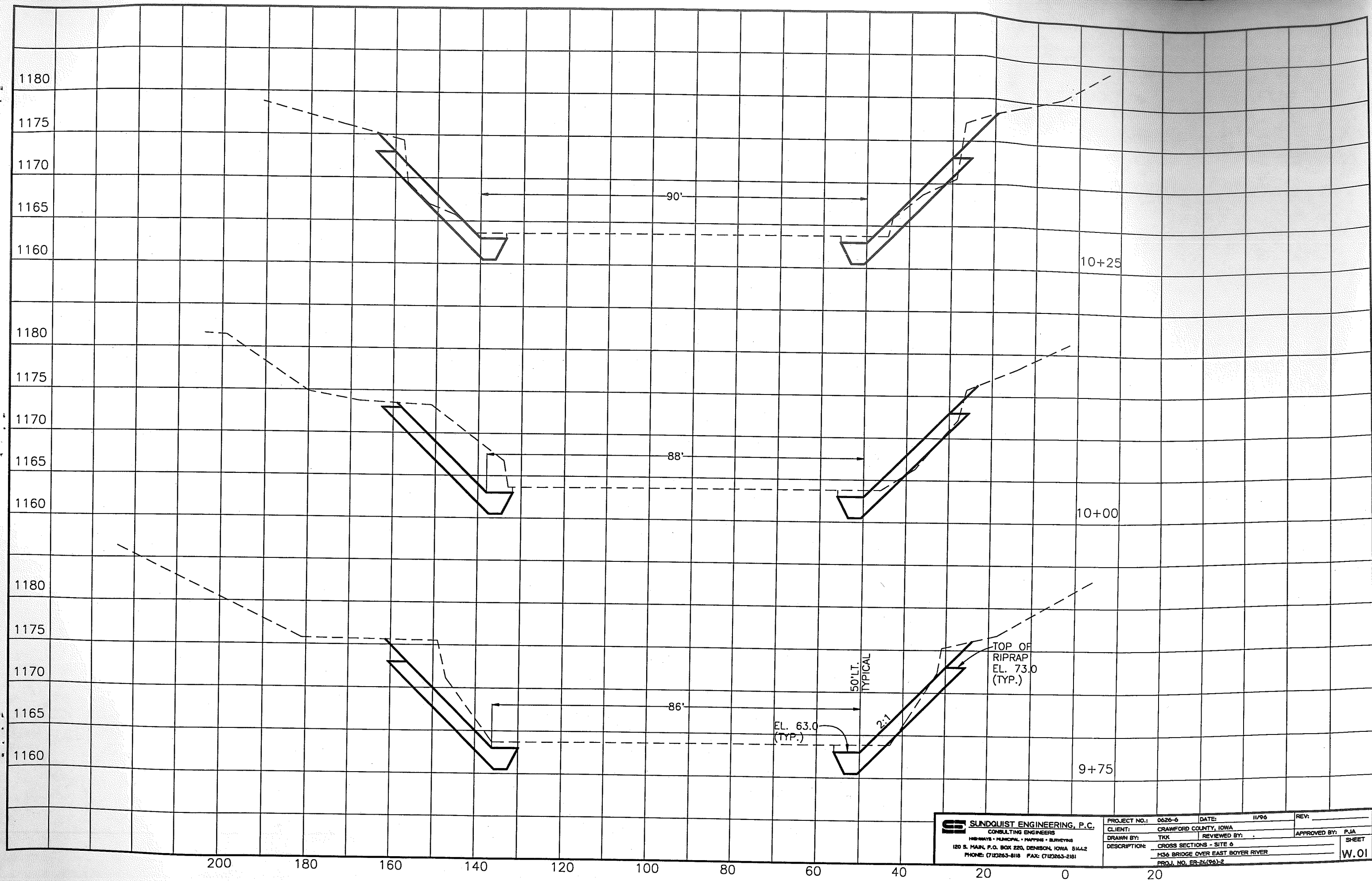
REACH 2 - NORTH AND SOUTH ABUTMENTS, SHAPE SLOPES AS SHOWN ON THE CROSS SECTIONS. PLACE NEW ENGINEERING FABRIC AND RIPRAP ON SHAPED SLOPES. REMOVE DEBRIS FROM NORTH PIER.

REACH 3 - NORTH SIDE ONLY, ADD RIPRAP TO EXISTING BROKEN CONCRETE TO TRANSITION PROPOSED CHANNEL SLOPES INTO EXISTING SLOPES. SOUTH SIDE ONLY, TRANSITION PROPOSED CHANNEL SLOPES INTO EXISTING SLOPES.



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PROJECT NO.:	0626	DATE:	2/97	REV:	
CLIENT:	CRAWFORD COUNTY, IOWA				
DRAWN BY:	TKK	REVIEWED BY:		APPROVED BY:	PJA
DESCRIPTION:	PLAN VIEW - SITE 6 M36 BRIDGE OVER EAST BOYER RIVER PROJ. NO. ER-24(96)-2				SHEET D.01



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PROJECT NO.: 0625-6	DATE: 11/96	REV:
CLIENT: CRAWFORD COUNTY, IOWA	DRAWN BY: TIK	REVIEWED BY: PJA
DESCRIPTION: CROSS SECTIONS - SITE 6	PROJECT NO. ER-24(36)-2	SHEET W.01