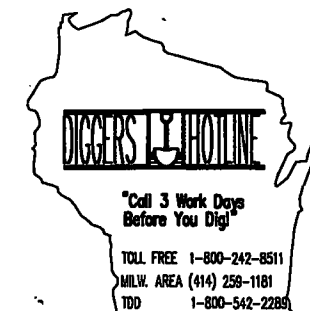
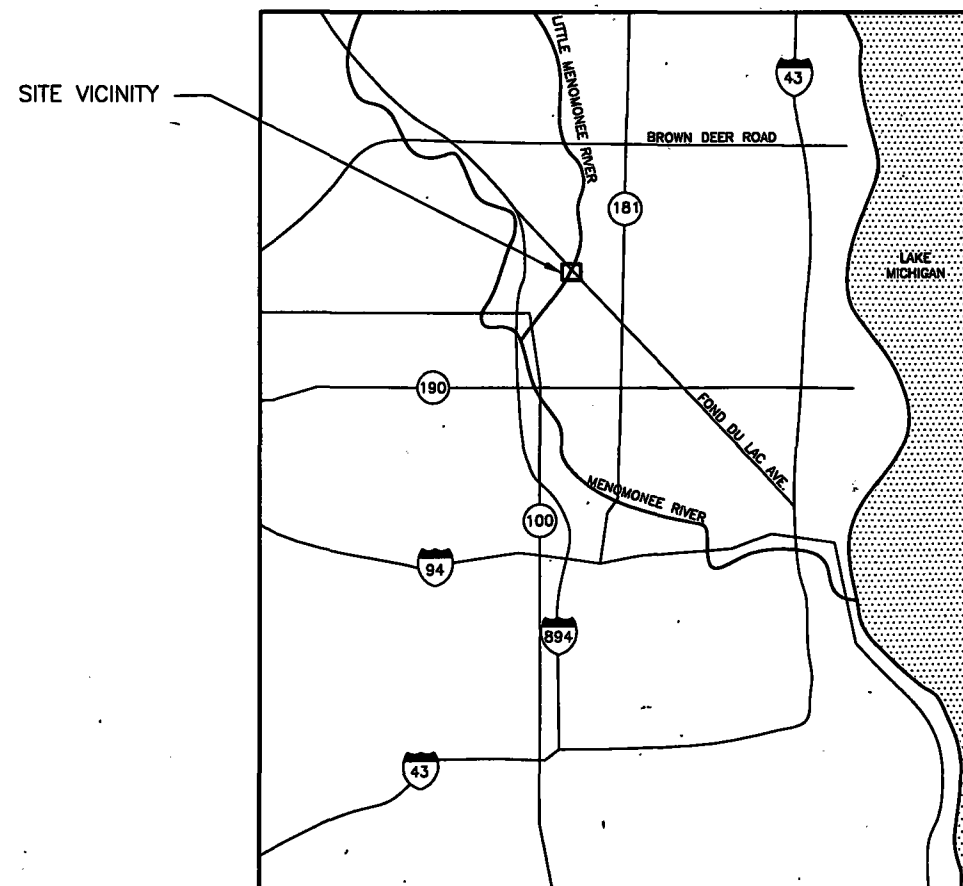


LITTLE MENOMONEE RIVER REROUTE REMEDY REACH 4 (FROM W. LEON TERRACE TO W. MILL ROAD) MOSS-AMERICAN SITE Milwaukee, Wisconsin

SEPTEMBER 2005

INDEX

TITLE SHEET
C-1 AERIAL LOCATION MAP
C-2 GENERAL NOTES, LEGEND AND GROSS QUANTITIES
C-3 EXISTING CONDITIONS PLAN
C-4 DEMOLITION PLAN
C-5 SITE PREPARATION PLAN
C-6 PLAN AND PROFILE
C-7 SITE AND GRADING PLAN
C-8 EROSION CONTROL AND STREAM STABILIZATION PLAN
C-9 PLANTING PLAN
C-10 OVERVIEW OF CROSS SECTION MAP
C-11 RIVER CROSS-SECTIONS
C-12 RIVER CROSS-SECTIONS
C-13 RIVER CROSS-SECTIONS
C-14 EROSION CONTROL AND STREAM STABILIZATION DETAILS PLAN AND SECTION
C-15 EROSION CONTROL AND STREAM STABILIZATION DETAILS PLAN AND SECTION
C-16 EROSION CONTROL AND STREAM STABILIZATION DETAILS PLAN AND SECTION
C-17 CONSTRUCTION DETAILS
C-18 CONSTRUCTION DETAILS
C-19 CONSTRUCTION DETAILS

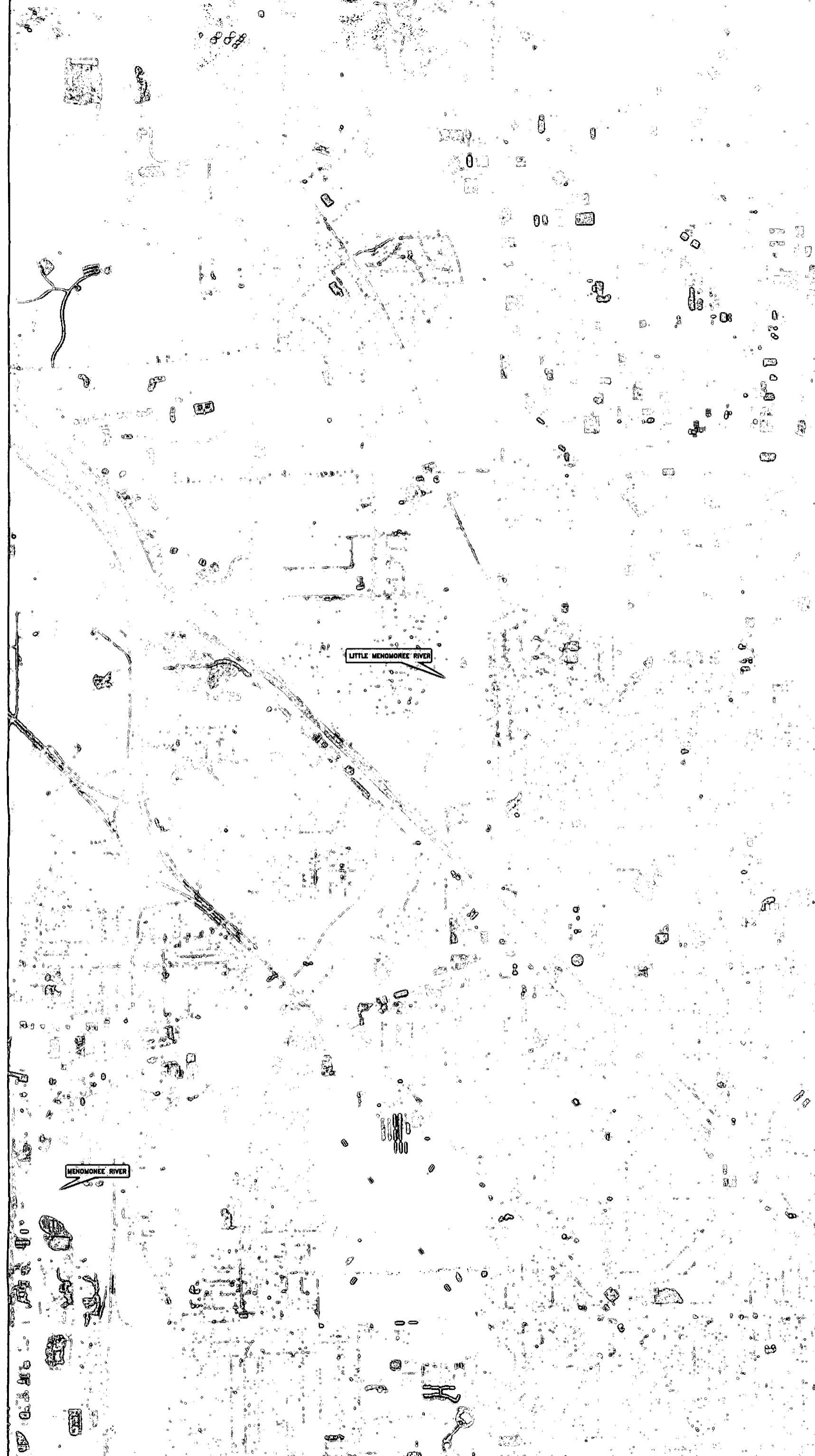


OTHER UTILITIES NOT INCLUDED IN DIGGERS HOTLINE AND LOCAL UTILITY DISTRICTS AND COMPANIES SHALL ALSO BE NOTIFIED.



FINAL DESIGN





BROWN DEER ROAD

BRADLEY ROAD

CALUMET ROAD

GOOD HOPE

MILL ROAD

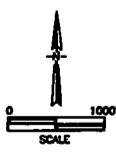
SILVER SPRINGS

ST. RT. 145

HAMPTON ROAD

LITTLE MENOMONEE RIVER

MENOMONEE RIVER



A	8/05	PREFINAL DESIGN
B	9/05	FINAL DESIGN
NO.	DATE	APPR.

KERR-McGEE
LITTLE MENOMONEE RIVER REROUTE
 Milwaukee Wisconsin

WESTON HILLS
ELKINS

CHECKED	R.A.S./B.J.B.	DATE	9/05	CLIENT APPROVALS	DATE
DES. ENG.	B.J.B.	DATE	9/05		
PROJ. ENG.	B.J.B.	DATE	9/05		
PROJ. MGR.	R.A.S.	DATE	9/05		
APPROVED					
APPROVED				ISSUED FOR	DATE

AERIAL LOCATION MAP			
REACH 4 (FROM W. LEON TERRACE TO W. MILL ROAD)			
DESIGNER	D.C.H.	DATE	SEPT. 2005
SCALE	1" = 1000'	W.P. NO.	026870070073005
SHEET	2	OF	20
REV. NO.	C-1	REV. NO.	B

GENERAL NOTES

1. CONTRACTOR SHALL CALL (800) 242-8511 SEVENTY-TWO HOURS PRIOR TO BEGINNING CONSTRUCTION ALONG WITH GIVING NOTIFICATION TO ALL JURISDICTIONAL GOVERNMENT AGENCIES AS NECESSARY ON ANY PORTION OF THE WORK.

2. UNDERGROUND UTILITIES

2.1 THE EXISTING UNDERGROUND UTILITIES OR FACILITIES AS SHOWN ON THE PLANS ARE TO FACILITATE THE CONTRACTOR'S WORK, AND ARE NOT INTENDED TO REPRESENT AN EXACT LOCATION OF THE UTILITY OR FACILITY. THE CONTRACTOR SHALL BE RESPONSIBLE FOR CHECKING WITH THE MUNICIPALITY AND ALL UTILITY COMPANIES TO CAREFULLY LOCATE THE EXISTING WATER MAINS, SEWERS, BURIED TELEPHONE CABLES, BURIED ELECTRIC CABLES, GAS MAINS, GAS SERVICES, TILES, AND OTHER BURIED STRUCTURES, THEN PROCEEDING WITH THE CONSTRUCTION OF THE PROPOSED IMPROVEMENTS WITH NO ADDITIONAL COMPENSATION BEING ALLOWED FOR VARIATIONS FROM THE PLANS. ANY DAMAGE TO THE UTILITIES AS A RESULT OF THIS CONSTRUCTION SHALL BE RESTORED TO AS NEAR ORIGINAL CONDITION AS POSSIBLE AT THE EXPENSE OF THE CONTRACTOR AND NO ADDITIONAL COMPENSATION SHALL BE ALLOWED.

2.2 ANY EXISTING STORM SEWER TILE DAMAGED SHALL BE REPAIRED WITH A FLEXIBLE NEOPRENE BOOT, SDR-35 PVC OF SIMILAR DIAMETER AND BACKFILL WITH WASHED STONE. THE PIPE SHALL BE INSTALLED WITH A MINIMUM OF 1 FOOT BEARING ON UNDISTURBED GROUND ON BOTH BANKS AND SHALL BE CONNECTED TO THE EXISTING PIPE IN A MANNER APPROVED BY THE ENGINEER. THE COST OF THESE REPAIRS ARE TO BE INCLUDED IN THE TOTAL BID COST FOR THE LITTLE MENOMONEE RIVER REROUTE (LMR REROUTE) PROJECT WITH NO ADDITIONAL COMPENSATION BEING ALLOWED. CONTRACTOR SHALL NOTE LOCATION AND PROTECT STRUCTURES, CLEANOUTS/DRAINAGE TILES.

3. THE CITY OF MILWAUKEE REQUIRES THAT THE CONTRACTOR COMPLY WITH ALL PERTINENT SAFETY REGULATIONS, INCLUDING LOCAL, STATE, AND FEDERAL REGULATIONS. THE OWNER RESERVES THE RIGHT TO ISSUE STOP WORK ORDERS WHEN (IN THE OWNER'S OPINION) THE CONTRACTOR IS NOT IN COMPLIANCE WITH THESE REGULATIONS. THE CONTRACTOR SHALL NOT BE ALLOWED TO RESUME CONSTRUCTION ACTIVITIES UNTIL THE SAFETY ISSUES ARE FULLY RESOLVED TO THE SATISFACTION OF THE OWNER. NO ADDITIONAL COMPENSATION WILL BE DUE THE CONTRACTOR FOR LOST TIME, PRODUCTION, OR PROFIT DUE TO THE SHUTDOWN.

4. WHERE REQUIRED, THE CONTRACTOR SHALL CAREFULLY REMOVE AND REPLACE CULVERTS, INLETS, STORM SEWERS, CATCH BASINS, AND OTHER STRUCTURES WHICH INTERFERE WITH THE CONSTRUCTION. THE COST OF THIS WHICH UNLESS SPECIFIED ELSEWHERE SHALL BE INCLUDED IN THE PRICE BID WITH NO ADDITIONAL COMPENSATION BEING ALLOWED.

5. CONTRACTOR SHALL PROVIDE TEMPORARY SUPPORT OF ALL UTILITIES AFFECTED BY CONSTRUCTION OF THE RIVER REROUTE.

6. ALL ROADWAYS OR PAVED SURFACES DISTURBED DURING LMR REROUTE CONSTRUCTION SHALL BE REPLACED IN KIND UNLESS DIRECTED OTHERWISE BY OWNER.

7. CONTRACTOR SHALL PROVIDE FOR ALL NECESSARY SAFETY DEVICES TO PROTECT THE PUBLIC DURING THE COURSE OF THE WORK. THE CONTRACTOR SHALL PROVIDE THE PROTECTIVE DEVICES TO PREVENT PEDESTRIAN AND VEHICULAR ACCESS ONTO THE WORK SITE UNTIL THE WORK IS COMPLETED TO THE SATISFACTION OF THE OWNER.

8. CONTRACTOR SHALL NOTIFY THE POLICE AND FIRE DEPARTMENTS OF AREAS OF WORK PRIOR TO THE START OF THE IMPROVEMENTS. THE CONTRACTOR SHALL ALSO SUBMIT A WORK SCHEDULE TO KERR-McGEE PRIOR TO THE START OF WORK.

9. CONTRACTOR SHALL PROTECT PRIVATE PROPERTY FROM DAMAGE DUE TO LMR REROUTE CONSTRUCTION DURING ALL PHASES OF THE IMPROVEMENTS.

10. ALL EXISTING MONITORING WELLS TO REMAIN AND TO BE PROTECTED UNLESS OTHERWISE NOTED ON DRAWINGS.

11. ALL ABANDONED MONITORING WELLS MUST BE DONE IN ACCORDANCE WITH STATE OF WISCONSIN CODE OF REGULATIONS.

12. CONTRACTOR SHALL SEPARATE AT THE STOCKPILE AREAS RELATIVELY IMPERMEABLE MATERIAL EXCAVATED FROM NEW CHANNEL. CONTRACTOR SHALL UTILIZE THE RELATIVELY IMPERMEABLE MATERIAL AS THE INITIAL SOIL COVER OVER THE EXISTING CHANNEL SEDIMENTS LEFT IN PLACE.

13. ALL CONSTRUCTION EROSION CONTROL MEASURES SHALL BE INSTALLED AND MAINTAINED IN ACCORDANCE WITH WDNR'S "WISCONSIN CONSTRUCTION SITE BEST MANAGEMENT PRACTICE HANDBOOK."

14. CONSTRUCTION EROSION CONTROL MEASURES SHALL BE INSTALLED ACCORDING TO THE PLANS AND PRIOR TO THE CONSTRUCTION COMMENCING. THE MEASURES SHALL BE MAINTAINED THROUGHOUT THE DURATION OF CONSTRUCTION.

15. SEDIMENT CONTROLS MUST MEET ALL APPLICABLE FEDERAL, STATE, AND LOCAL REGULATIONS INCLUDING WDNR'S "WISCONSIN CONSTRUCTION SITE BEST MANAGEMENT PRACTICES" HANDBOOK.

16. CONTRACTOR TO ESTABLISH EROSION CONTROLS AS SHOWN ON THE DRAWINGS. IF CONDITIONS WARRANT ADDITIONAL EROSION CONTROL MEASURES, THE CONTRACTOR SHALL INSTALL THESE AS NECESSARY.

17. CONTRACTOR SHALL MANAGE PONDED SURFACE WATER. DISCHARGE OF THE PONDED SURFACE WATER SHALL BE FREE OF SUSPENDED SOLIDS AND SEDIMENT. CONTRACTOR SHALL MAINTAIN VISUALLY CLEAR DISCHARGE INTO THE RIVER.

18. CONTRACTOR TO REPLACE ALL AREAS OF THE BIKE PATH DAMAGED DURING CONSTRUCTION AS DETERMINED BY KMC, WESTON OR THE AGENCIES WITH SECTION SIMILAR TO EXISTING BIKE PATH.

19. CONTRACTOR SHALL MAINTAIN PUBLIC USE OF BIKE PATH UNLESS PUBLIC SAFETY IS AT RISK. CONTRACTOR MAY DETOUR PUBLIC OFF PATH AROUND WORK AREAS USING APPROPRIATE FENCING MATERIAL. ALL POSSIBLE MEASURES SHALL BE TAKEN TO ENSURE PUBLIC SAFETY.

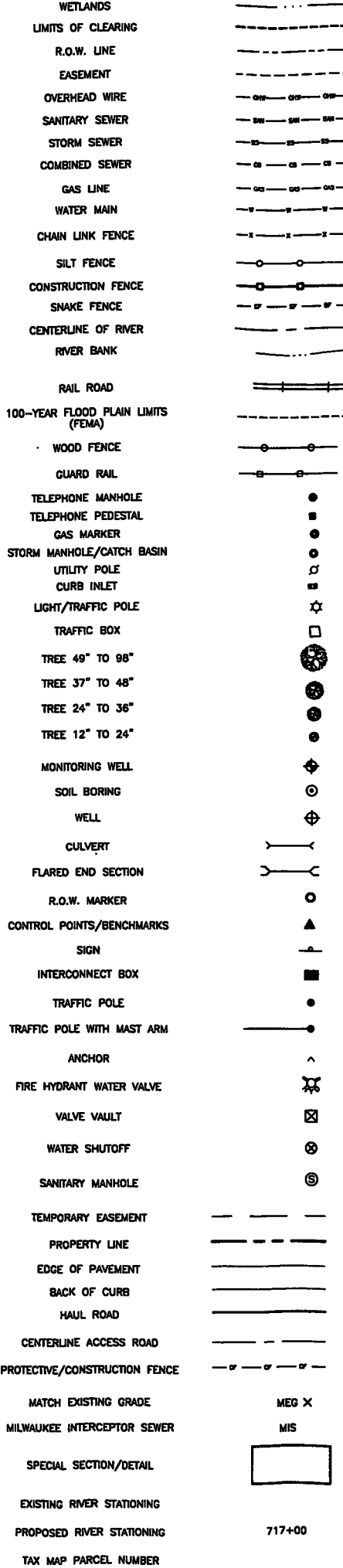
EXISTING SYMBOL LEGEND



137+00

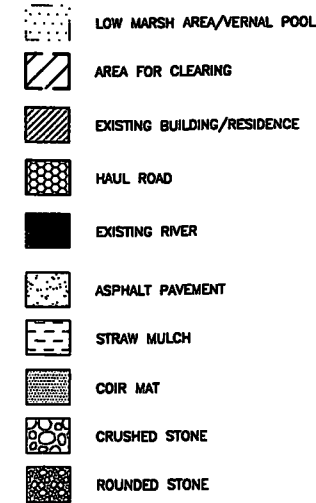
XXX-XXXX-XXX
MILWAUKEE COUNTY

PROPOSED SYMBOL LEGEND



717+00

HATCH LEGEND



GROSS QUANTITIES

ITEM		GROSS ESTIMATED QUANTITY	UNITS
1	CLEARING AND GRUBBING	1.81	ACRES
2	SEDIMENT EXCAVATION	2500	CY
3	SOIL MATERIAL CUT *	254	CY
4	SOIL MATERIAL FILL *	1045	CY
5	EXCESS SOIL *	791	CY
6	CONSTRUCTION FENCE	2389	LF
7	SNAKE FENCE	2159	LF
8	3-YEAR EROSION CONTROL MAT	2524	SY
9	STRAW MULCH	3045	SY
10	6" STONE	787	CY
11	1 1/2" MINUS GRANULAR GRAVEL	847	CY
12	GEOGRID	1794	SY
13	WETLAND DIVERSITY GRASSES	4.6	LBS
14	WETLAND DIVERSITY FORBS	1.84	LBS
15	UPLAND DIVERSITY GRASSES	6.70	LBS
16	UPLAND DIVERSITY FORBS	2.68	LBS
17	WETLAND PERMANENT SEED	9.20	LBS
18	UPLAND PERMANENT SEED	13.4	LBS

* DOES NOT INCLUDE SEDIMENTS

GENERAL NOTES, LEGEND, AND QUANTITIES
REACH 4 (FROM W. LEON TERRACE
TO W. MILL ROAD)

DATE	BY	APPROVAL
9/05	R.A.S./B.J.B.	
9/05	B.J.B.	
9/05	B.J.B.	
9/05	R.A.S.	
	APPROVED	
	APPROVED	

KERR-McGEE
LITTLE MENOMONEE RIVER REROUTE
Wisconsin
MILWAUKEE



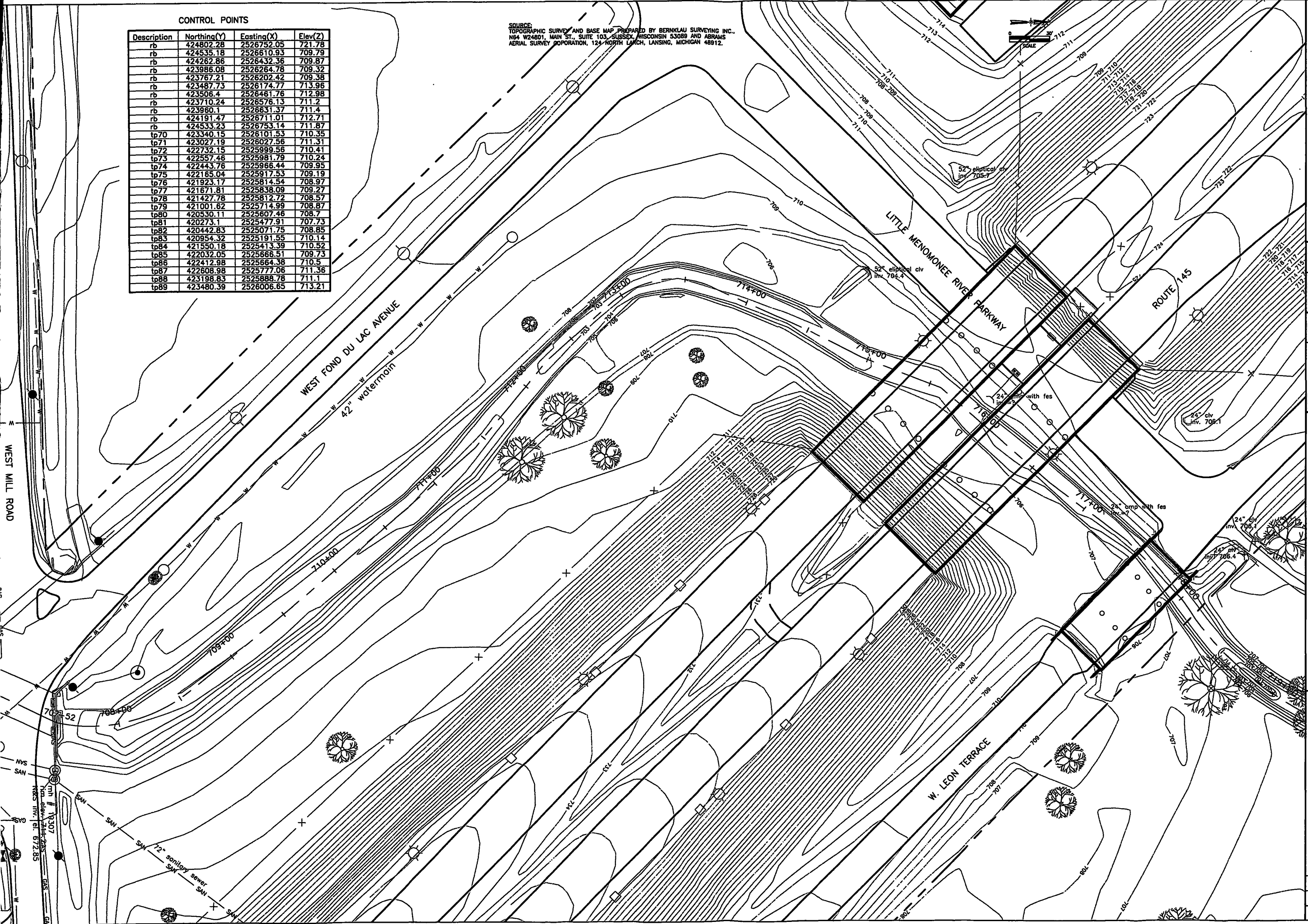
DATE	BY	APPROVAL
9/05	R.A.S./B.J.B.	
9/05	B.J.B.	
	APPROVED	
	APPROVED	

DATE: SEPT. 2005
SCALE: AS NOTED
SHEET NO: C-2
OF: 3
PROJECT NO: 026870070070005
DRAWN BY: D.C.H.
CHECKED BY: [blank]
DATE: [blank]
SCALE: [blank]
PROJECT NO: [blank]
SHEET NO: [blank]
OF: [blank]

CONTROL POINTS

Description	Northing(Y)	Easting(X)	Elev(Z)
rb	424802.28	2526752.05	721.78
rb	424535.18	2526610.93	709.79
rb	424262.86	2526432.36	709.87
rb	423986.08	2526264.78	709.32
rb	423767.21	2526202.42	709.38
rb	423487.73	2526174.77	713.96
rb	423506.4	2526461.76	712.98
rb	423710.24	2526576.13	711.2
rb	423960.1	2526631.37	711.4
rb	424191.47	2526711.01	712.71
rb	424533.23	2526753.14	711.87
tp70	423340.15	2526101.53	710.35
tp71	423027.19	2526027.56	711.31
tp72	422732.15	2525999.56	710.41
tp73	422557.46	2525981.79	710.24
tp74	422443.76	2525966.44	709.95
tp75	422165.04	2525917.53	709.19
tp76	421923.17	2525814.54	708.97
tp77	421671.81	2525838.09	709.27
tp78	421427.78	2525812.72	708.57
tp79	421001.62	2525714.99	708.87
tp80	420530.11	2525607.46	708.7
tp81	420273.1	2525477.91	707.73
tp82	420442.83	2525071.75	708.85
tp83	420954.32	2525191.55	710.14
tp84	421550.18	2525413.39	710.52
tp85	422032.05	2525666.51	709.73
tp86	422412.98	2525664.38	710.5
tp87	422608.98	2525777.06	711.36
tp88	423198.83	2525888.78	711.1
tp89	423480.39	2526006.65	713.21

SOURCE:
TOPOGRAPHIC SURVEY AND BASE MAP PREPARED BY BERKLAU SURVEYING INC.,
N64 W24801, MAIN ST., SUITE 103, SUSSEX, WISCONSIN 53089 AND ABRAMS
AERIAL SURVEY CORPORATION, 124 NORTH LARCH, LANSING, MICHIGAN 48912.



EXISTING CONDITIONS PLAN
REACH 4 (FROM W. LEON TERRACE
TO W. MILL ROAD)

D.C.H. DATE: SEPT. 2005
SCALE: 1"=30'

NO. 026870070005
SHEET 4 OF 20

DATE	BY	REVISION
9/05	R.A.S./B.J.B.	9/05
9/05	B.J.B.	9/05
9/05	B.J.B.	9/05
9/05	R.A.S.	9/05

DESIGNED BY: R.A.S./B.J.B.

DRAWN BY: B.J.B.

CHECKED BY: B.J.B.

APPROVED BY: R.A.S.

DATE: 9/05

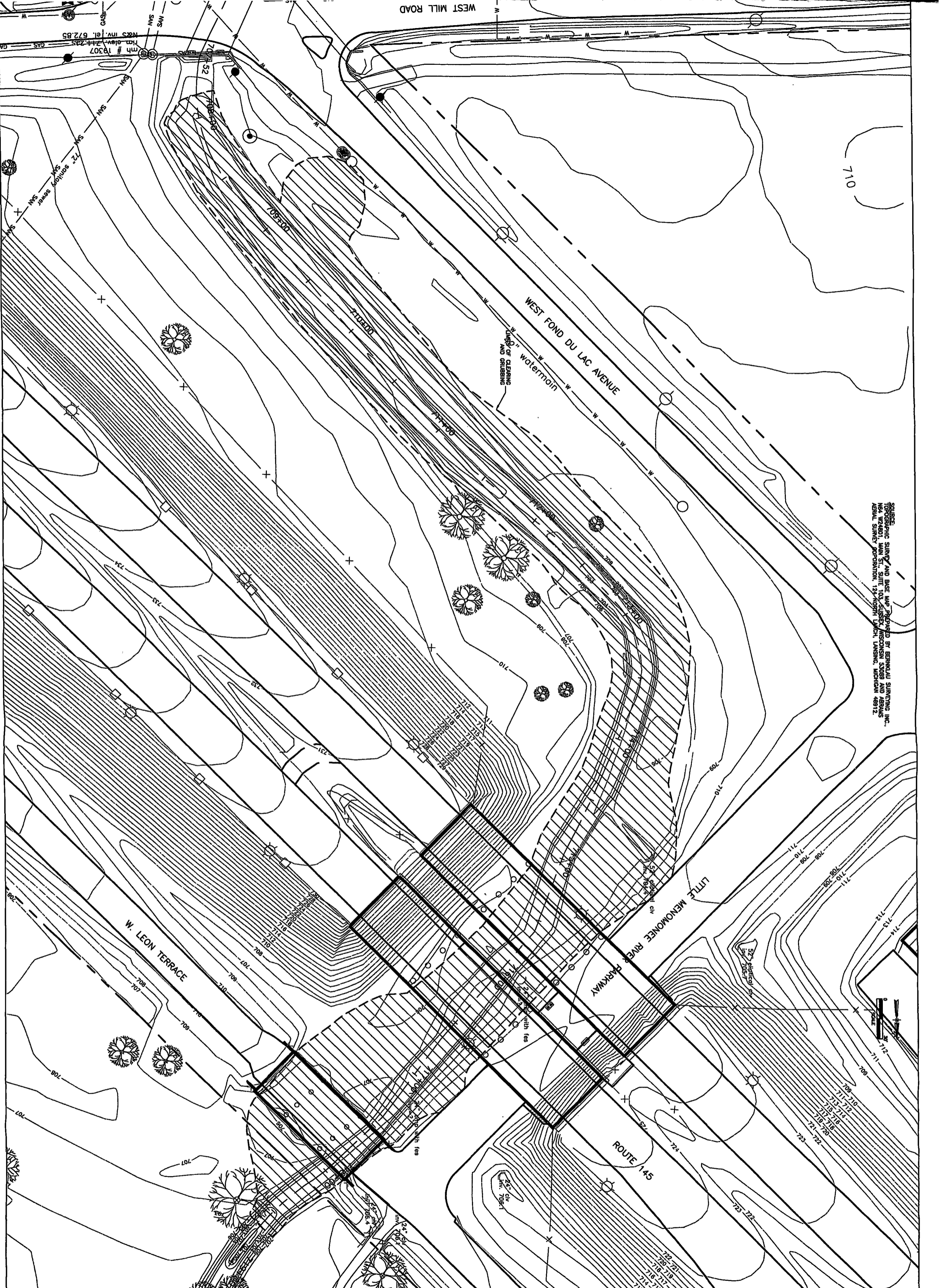
DATE: 9/05

DATE: 9/05

DATE: 9/05

PROJECT: KERR-MCGEE
LITTLE MENOMONEE RIVER REROUTE
Milwaukee Wisconsin

WESTON
ENGINEERS



SOURCE:
 TOPOGRAPHIC SURVEY AND BASE MAP PREPARED BY BERKHAU SURVEYING INC.,
 154 W. WABOY, MAIN ST., SUITE 103, SUDBURY, WISCONSIN 53087 AND AERIAL
 AERIAL SURVEY, PHOTOGRAPH, 124-NORTH LARCH, LANSING, MICHIGAN 48912.

SCALE
 1" = 30'

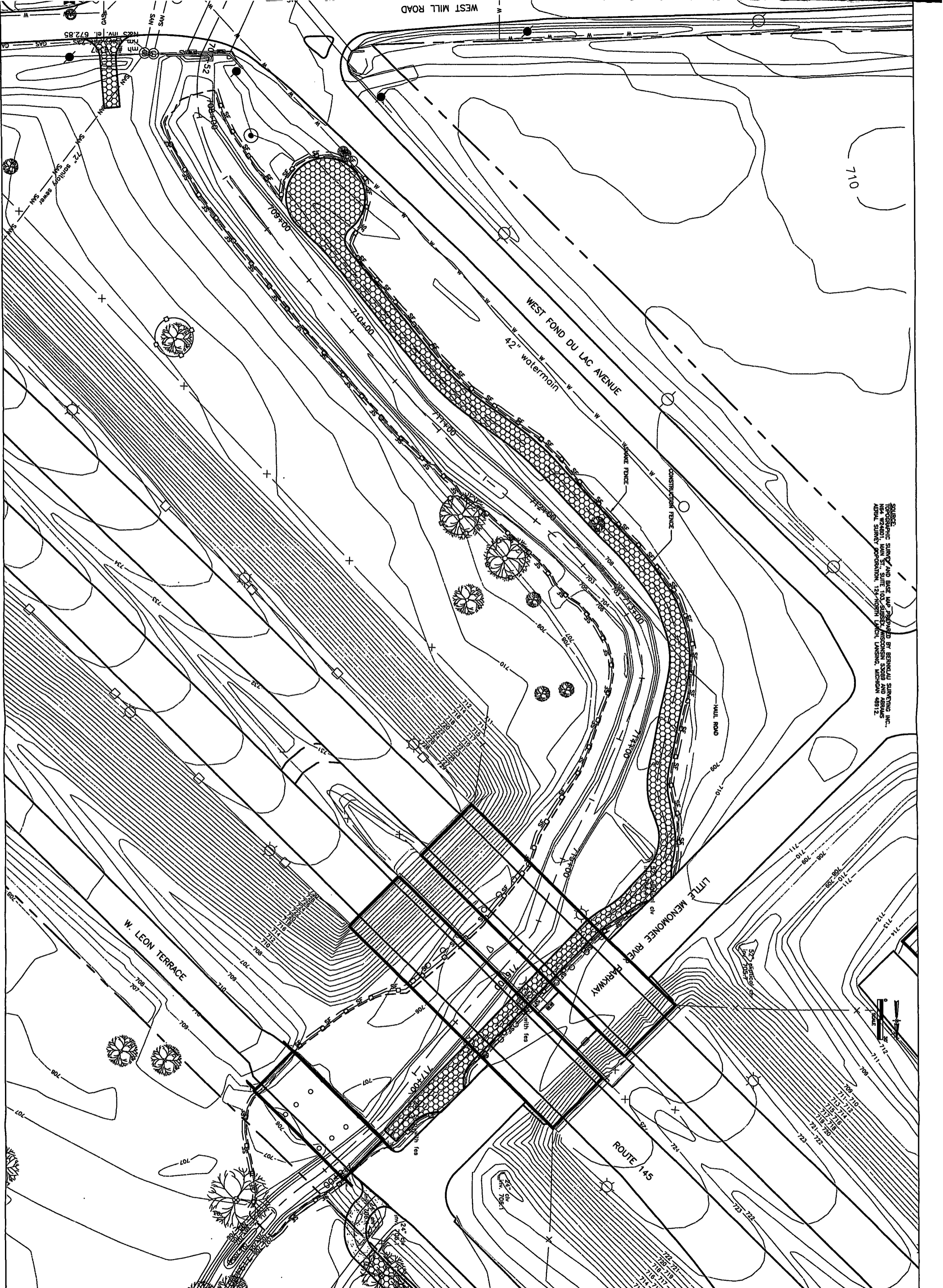
A	9/05	PREFINAL DESIGN
B	9/05	FINAL DESIGN
NO.	DATE	APPR.

KERR-McGEE
LITTLE MENOMONEE RIVER REROUTE
 Milwaukee Wisconsin



CHECKED	R.A.S./B.J.B.	DATE	9/05	CLIENT APPROVALS	DATE
DES. ENCL.	B.J.B.	DATE	9/05		
PRCL. ENCL.	B.J.B.	DATE	9/05		
PRCL. MGR.	R.A.S.	DATE	9/05		
APPROVED					

DEMOLITION PLAN			
REACH 4 (FROM W. LEON TERRACE TO W. MILL ROAD)			
DRAWN	D.C.H.	DATE	SEPT. 2005
SCALE	1"=30'	DWG. NO.	C-4
		REV. NO.	B



SOURCE:
 TOPOGRAPHIC SURVEY AND BASE MAP PREPARED BY BERKHAU SURVEYING INC.,
 NEA W4401, MAIN ST., SUITE 103, SUDBURY, WISCONSIN 53089 AND AERIALS
 AERIAL SURVEY CORPORATION, 124-NORTH LANSING, MICHIGAN 48912.

A	8/05	PRELIMINARY DESIGN
B	9/05	FINAL DESIGN
NO.	DATE	APPR.

KERR-McGEE
LITTLE MENOMONEE RIVER REROUTE
 Milwaukee Wisconsin

WESTON
 SOLUTIONS

VERNON HILLS ILLINOIS

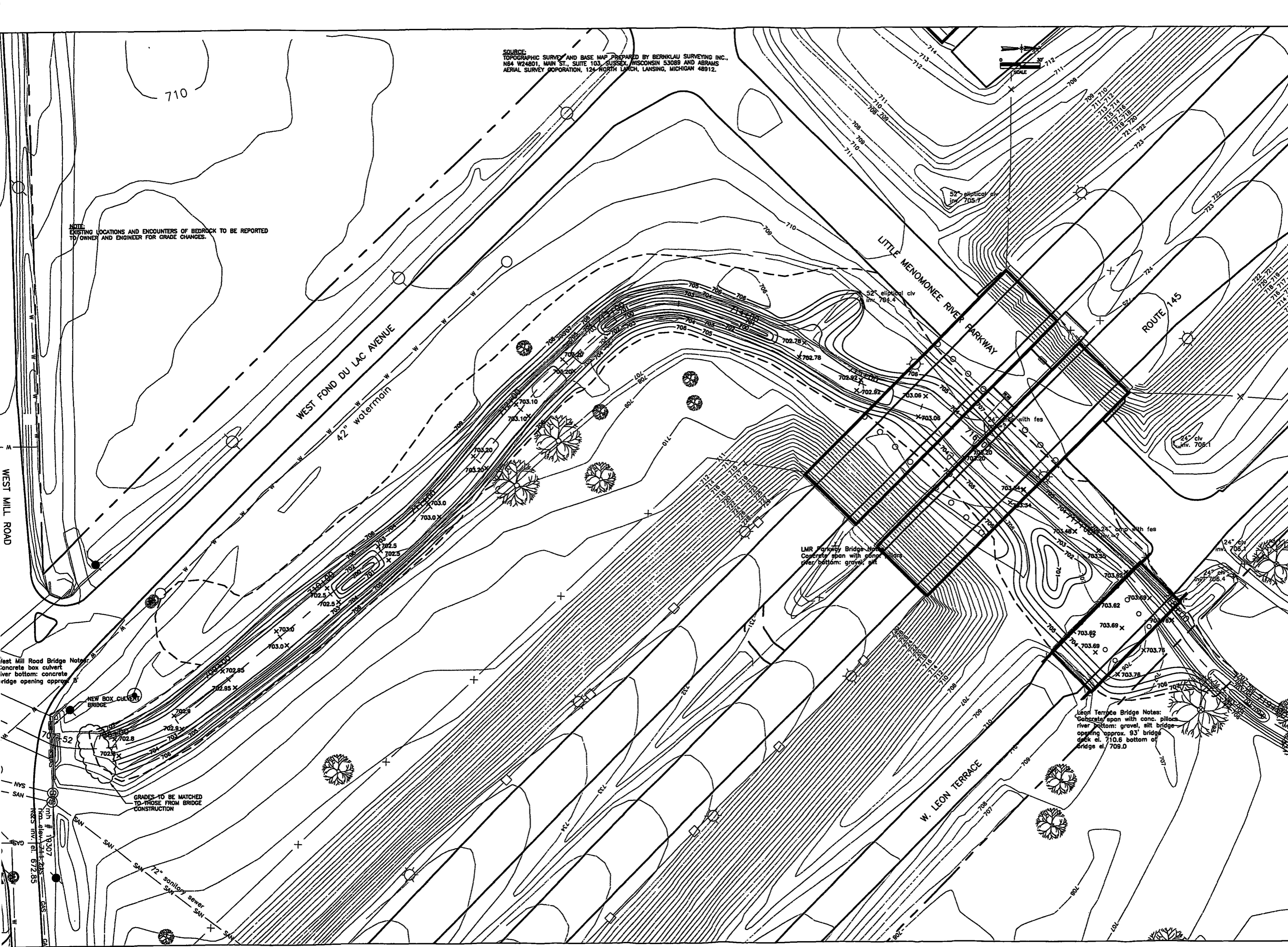
CHECKED	R.A.S./B.J.B.	DATE	9/05	CLIENT APPROVALS	DATE
DES. ENG.	B.J.B.	DATE	9/05		
PROJ. ENG.	B.J.B.	DATE	9/05		
PROJ. MGR.	R.A.S.	DATE	9/05		
APPROVED	-				
APPROVED	-			ISSUED FOR	DATE

SITE PREPARATION PLAN
REACH 4 (FROM W. LEON TERRACE
TO W. MILL ROAD)

DRAWN	D.C.H.	DATE	SEPT. 2005	DWG. NO.	C-5	REV. NO.	B
SCALE	1"=30'	NO. NO.	0268700700005	SHT.	6	OF	20

SOURCE:
 TOPOGRAPHIC SURVEY AND BASE MAP PREPARED BY BERNKLAU SURVEYING INC.,
 N64 W24801, MAIN ST., SUITE 103, SUDBURY, WISCONSIN 53089 AND ABRAMS
 AERIAL SURVEY CORPORATION, 124 NORTH LARCH, LANSING, MICHIGAN 48912.

NOTE:
 EXISTING LOCATIONS AND ENCOUNTERS OF BEDROCK TO BE REPORTED
 TO OWNER AND ENGINEER FOR GRADE CHANGES.



NO.	DATE	APPR.	REVISION
A	8/05		PREFINAL DESIGN
B	9/05		FINAL DESIGN

KERR-MCGEE
 LITTLE MENOMONEE RIVER REROUTE
 Wisconsin
 Milwaukee

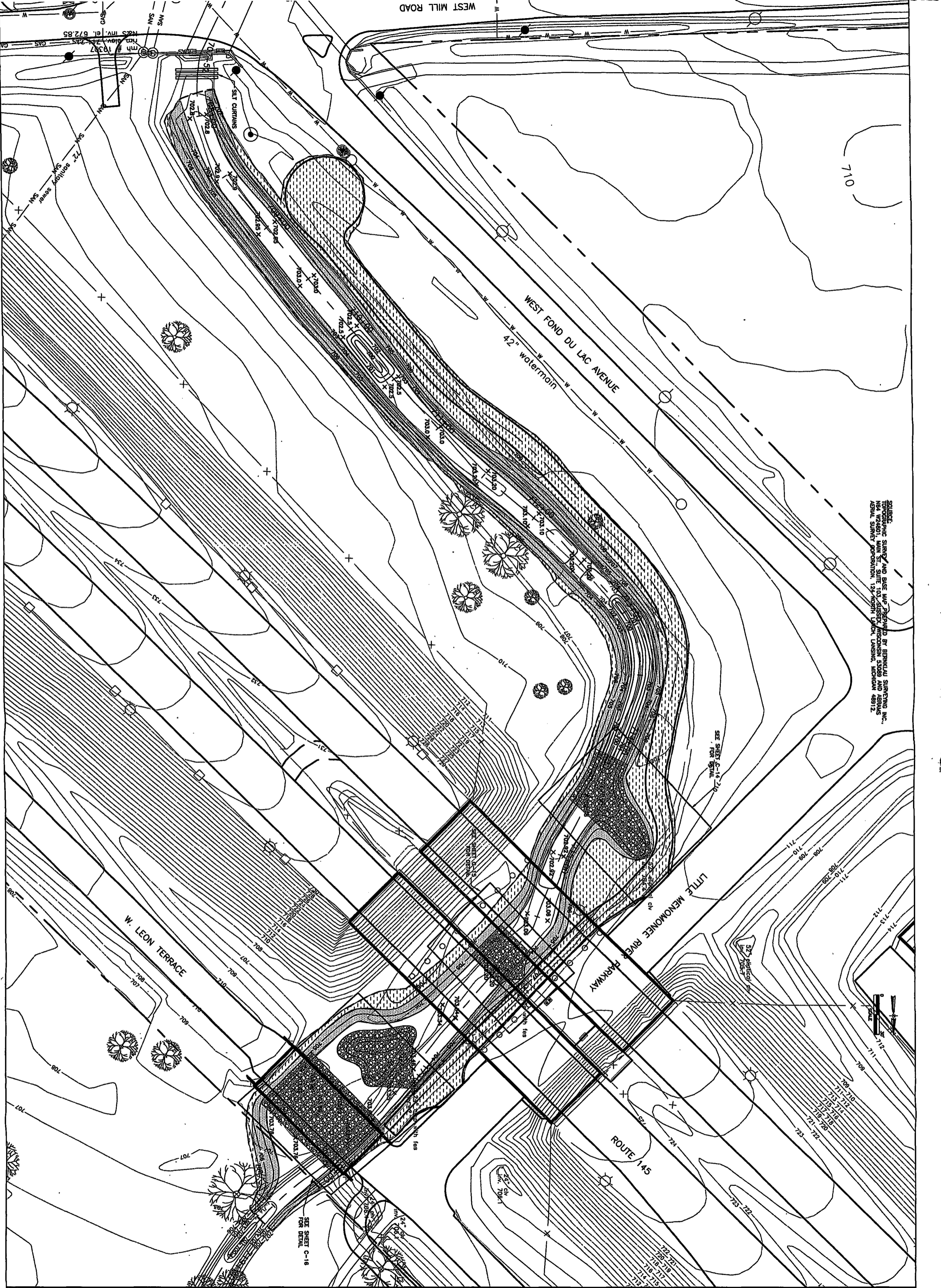
DESIGNED	CHECKED	DATE	DATE
R.A.S./B.J.B.	R.A.S.	9/05	9/05
B.J.B.	B.J.B.	9/05	9/05
B.J.B.	B.J.B.	9/05	9/05
R.A.S.	R.A.S.	9/05	9/05

SITE GRADING PLAN
REACH 4 (FROM W. LEON TERRACE
TO W. MILL ROAD)

DATE: SEPT. 2005
 DRAWN: D.C.H.
 SCALE: 1"=30'

PROJECT NO.: C-7
 SHEET NO.: 8 OF 20





SOURCE: SURVEY AND BASE MAP PREPARED BY BERKHAU SURVEYING INC., 104 W. 44th ST., SUITE 103, SUDBURY, WISCONSIN 53089 AND AERIAL SURVEY CORPORATION, 124 NORTH LARCH, LANSING, MICHIGAN 48912.

SEE SHEET C-11-210 FOR DETAIL

SEE SHEET C-16 FOR DETAIL

NO.	DATE	APPR.	REVISION
A	8/05		PRELIMINARY DESIGN
B	9/05		FINAL DESIGN




KERR-McGEE
LITTLE MENOMONEE RIVER REROUTE
 Milwaukee Wisconsin



CHECKED	DATE	CLIENT APPROVALS	DATE
R.A.S./B.J.B.	9/05		
DES. ENG.	B.J.B.		9/05
PROJ. ENG.	B.J.B.		9/05
PROJ. MGR.	R.A.S.		9/05
APPROVED			
APPROVED		ISSUED FOR	DATE

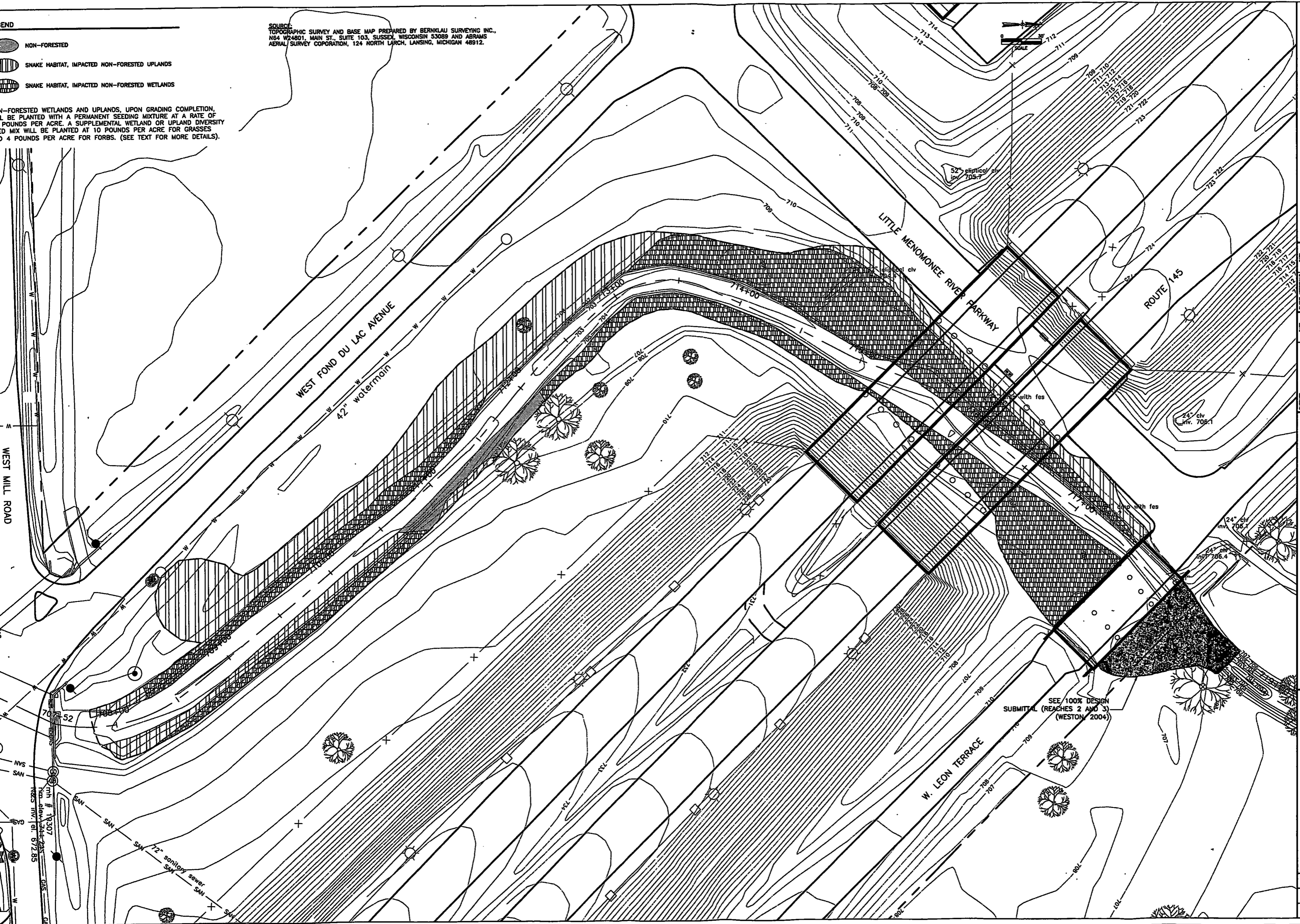
EROSION CONTROL AND STABILIZATION PLAN
REACH 4 (FROM W. LEON TERRACE
TO W. MILL ROAD)

DRWN	DATE	DWG. NO.	REV. NO.
D.C.H.	SEPT. 2005	C-8	B
SCALE	1"=30'	W.D. NO.	0268700700005
SHT.	9	OF	20

- LEGEND
-  NON-FORESTED
 -  SNAKE HABITAT, IMPACTED NON-FORESTED UPLANDS
 -  SNAKE HABITAT, IMPACTED NON-FORESTED WETLANDS

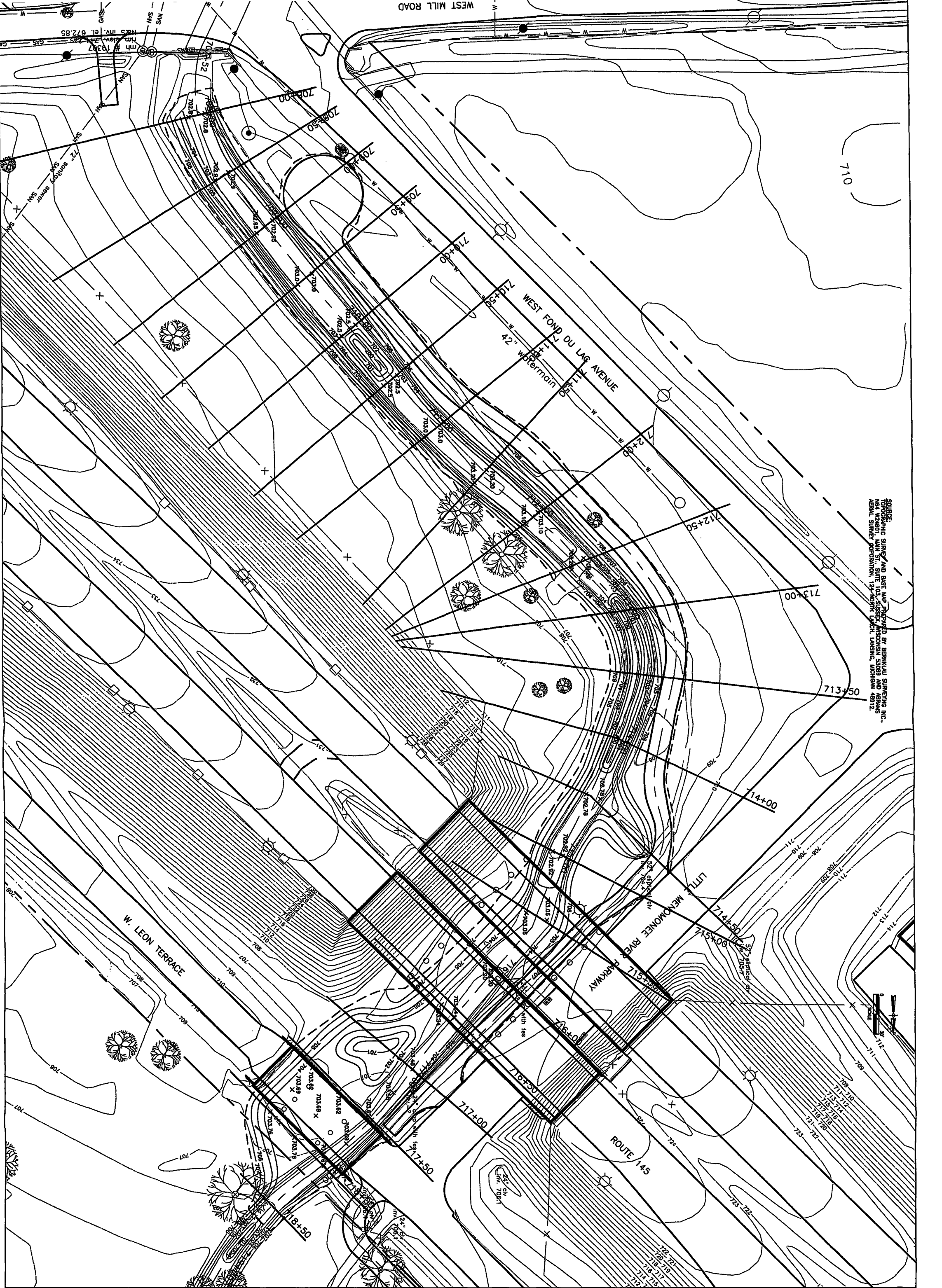
SOURCE:
 TOPOGRAPHIC SURVEY AND BASE MAP PREPARED BY BERKLAU SURVEYING INC.,
 N64 W24801, MAIN ST., SUITE 103, SUSSEX, WISCONSIN 53089 AND ABRAMS
 AERIAL SURVEY CORPORATION, 124 NORTH LARCH, LANSING, MICHIGAN 48912.

NON-FORESTED WETLANDS AND UPLANDS, UPON GRADING COMPLETION,
 SHALL BE PLANTED WITH A PERMANENT SEEDING MIXTURE AT A RATE OF
 10 POUNDS PER ACRE. A SUPPLEMENTAL WETLAND OR UPLAND DIVERSITY
 MIX WILL BE PLANTED AT 10 POUNDS PER ACRE FOR GRASSES
 AND 4 POUNDS PER ACRE FOR FORBS. (SEE TEXT FOR MORE DETAILS).



SEE 100% DESIGN
 SUBMITTAL (REACHES 2 AND 3)
 (WESTON, 2004)

KERR-MCGEE		LITTLE MENOMONEE RIVER REROUTE		PLANTING PLAN	
MILWAUKEE		WISCONSIN		REACH 4 (FROM W. LEON TERRACE	
				TO W. MILL ROAD)	
DATE	APP'D	DATE	APP'D	DATE	APP'D
9/05		9/05		9/05	
9/05		9/05		9/05	
9/05		9/05		9/05	
9/05		9/05		9/05	
WESTON SOLUTIONS		WESTON SOLUTIONS		WESTON SOLUTIONS	
VICTOR HALL		VICTOR HALL		VICTOR HALL	
DATE		DATE		DATE	
9/05		9/05		9/05	
9/05		9/05		9/05	
9/05		9/05		9/05	
9/05		9/05		9/05	
D.C.H.		D.C.H.		D.C.H.	
SCALE 1"=30'		SCALE 1"=30'		SCALE 1"=30'	
DATE SEPT. 2005		DATE SEPT. 2005		DATE SEPT. 2005	
DRAWN C-9		DRAWN C-9		DRAWN C-9	
REV. NO. B		REV. NO. B		REV. NO. B	
SHEET 10 OF 20		SHEET 10 OF 20		SHEET 10 OF 20	



SOURCE: TOPOGRAPHIC SURVEY AND BASE MAP PROVIDED BY GENIVALL SURVEYING INC., 1000 W. MILL ST., SUITE 103, SPOKES, WISCONSIN 54989 AND AERIAL AERIAL SURVEY INFORMATION, 124-NORTH LITCH, LANSING, MICHIGAN 48912



A	8/05	PREFINAL DESIGN
B	9/05	FINAL DESIGN
NO.	DATE	APPL.

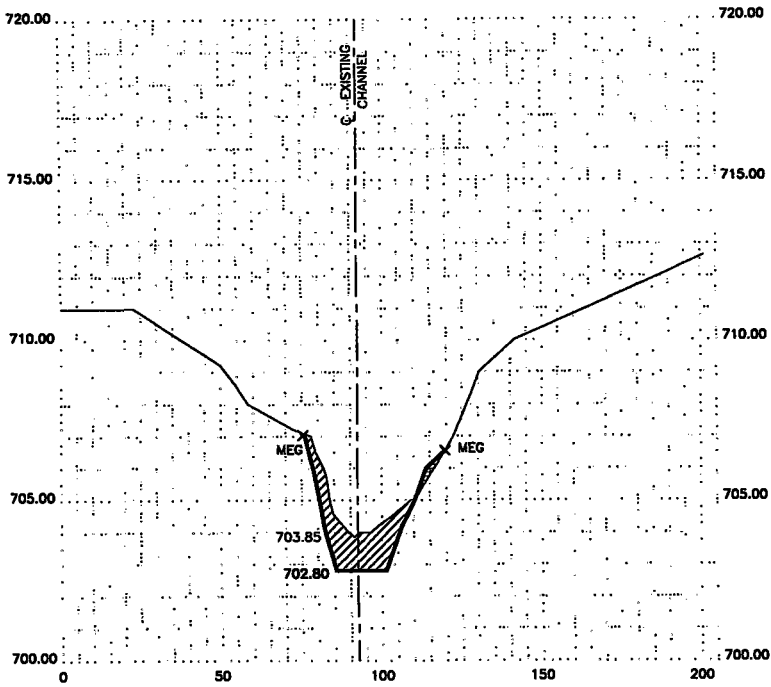
KERR-McGEE
LITTLE MEMONONIE RIVER REROUTE
 Wisconsin

WESTON SOLUTIONS

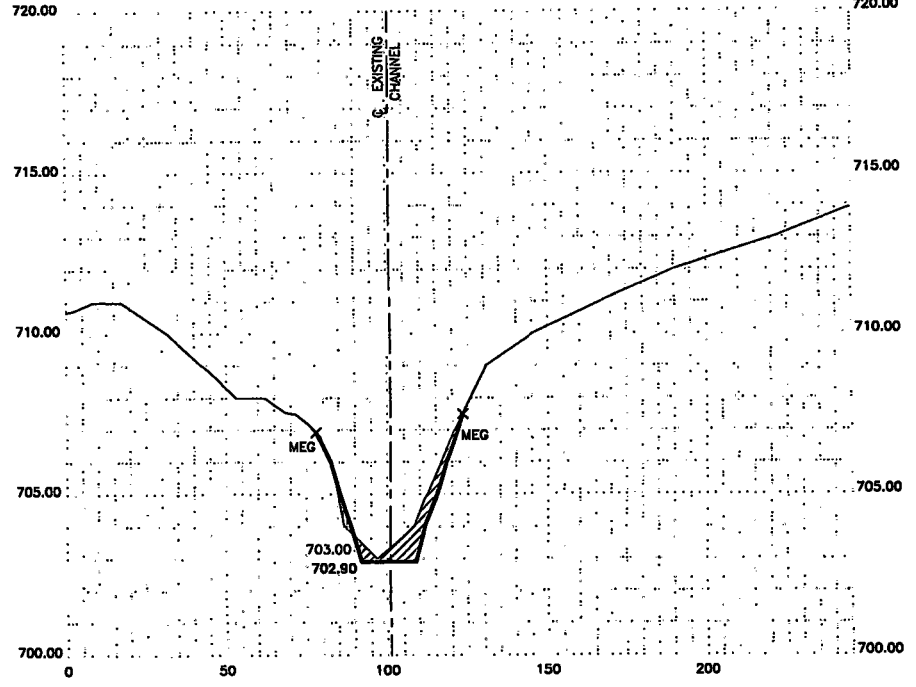
VERNON HILLS

CHECKED	R.A.S./B.J.B.	DATE	9/05	CLIENT APPROVALS	DATE
DES. ENR.	B.J.B.	DATE	9/05		
PRD. ENR.	B.J.B.	DATE	9/05		
PRD. MGR.	R.A.S.	DATE	9/05		
APPROVED					
APPROVED				ISSUED FOR	DATE

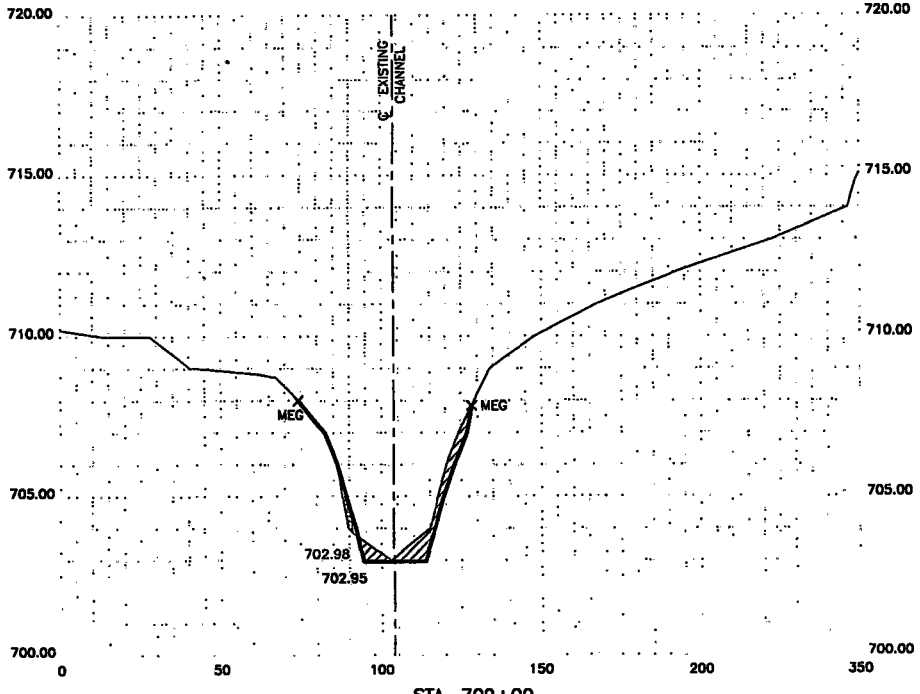
CROSS SECTION LOCATION MAP REACH 4 (FROM W. LEON TERRACE TO W. MILL ROAD)			
DESIGN	D.C.H.	DATE	SEPT. 2005
SCALE	1"=30'	W.G. NO.	026870070070005
DWG. NO.	C-10	REV. NO.	B
SHT.	11	OF	20



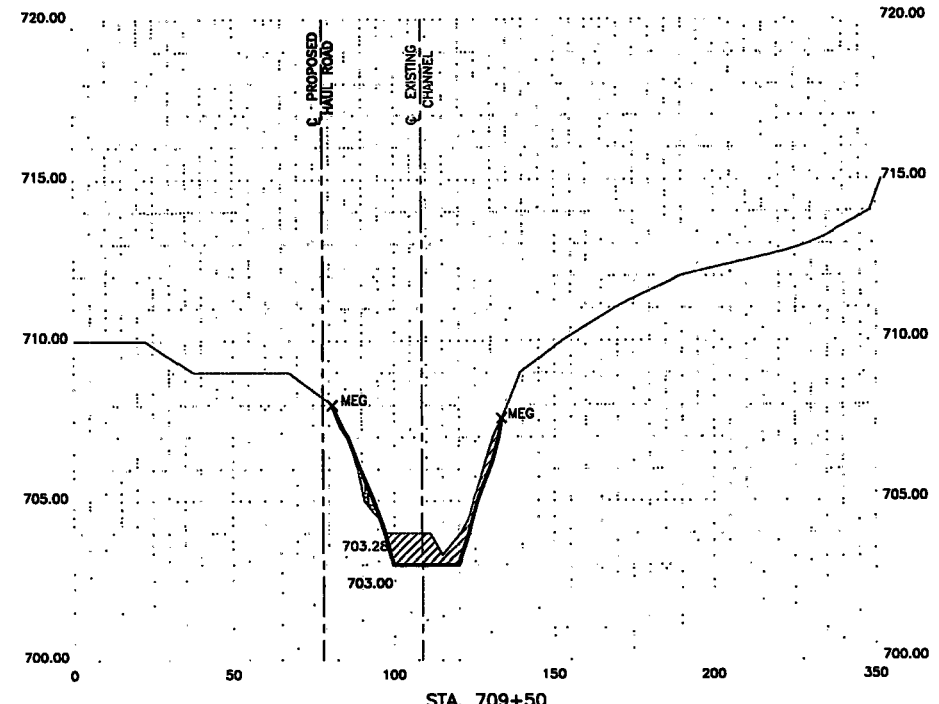
STA. 708+00



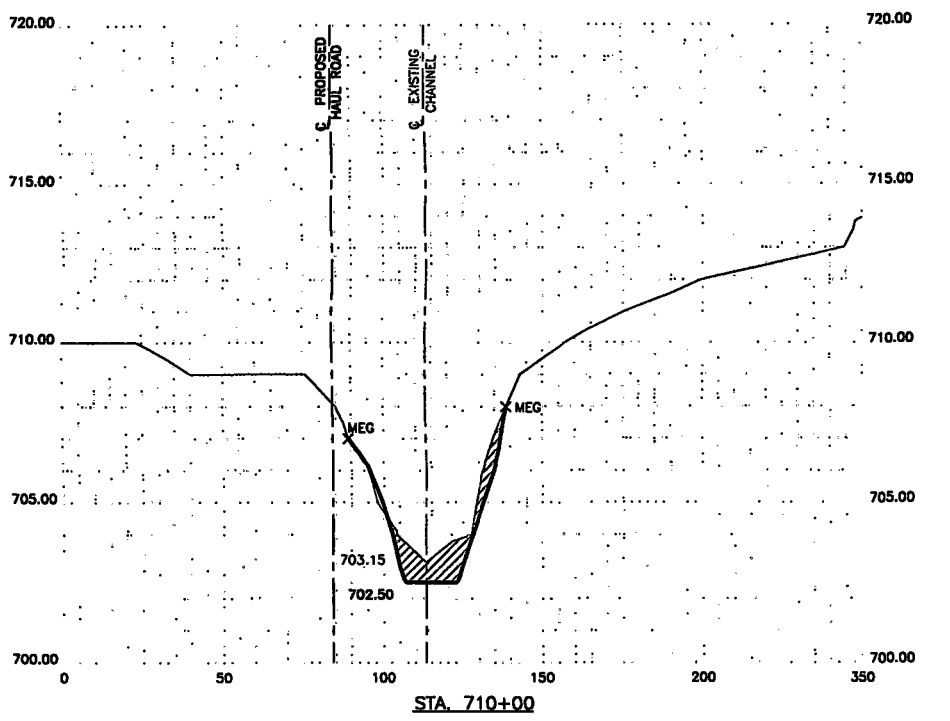
STA. 708+50



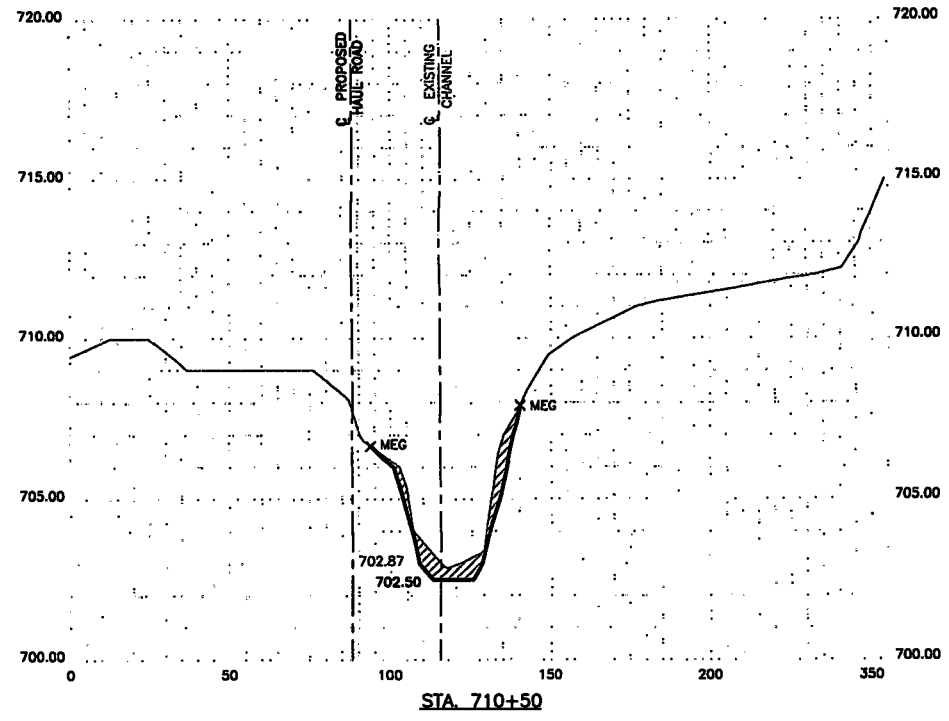
STA. 709+00



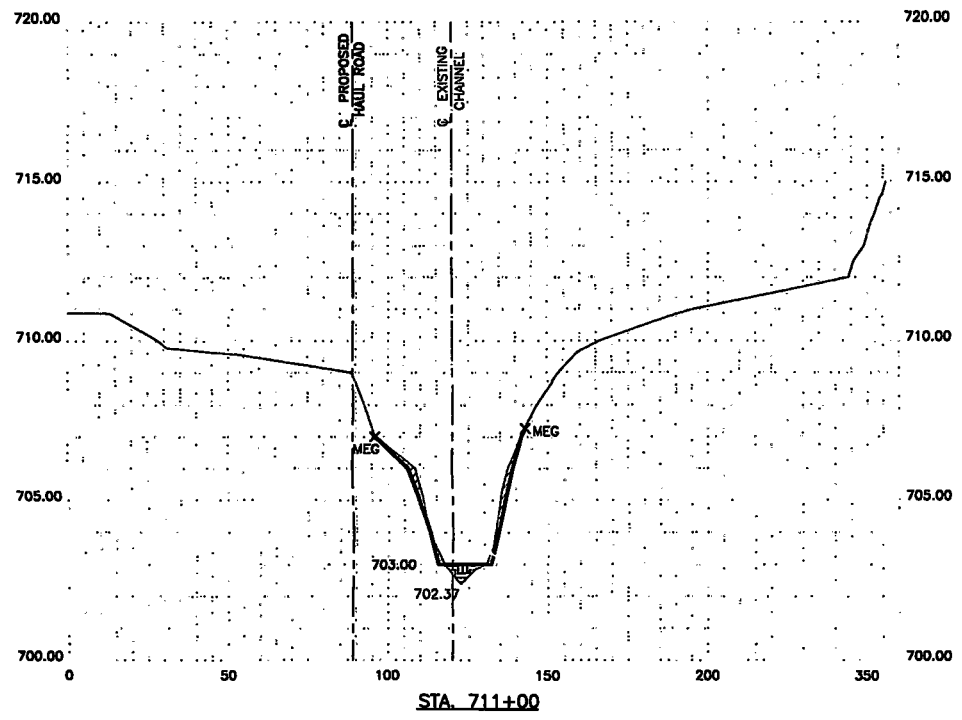
STA. 709+50



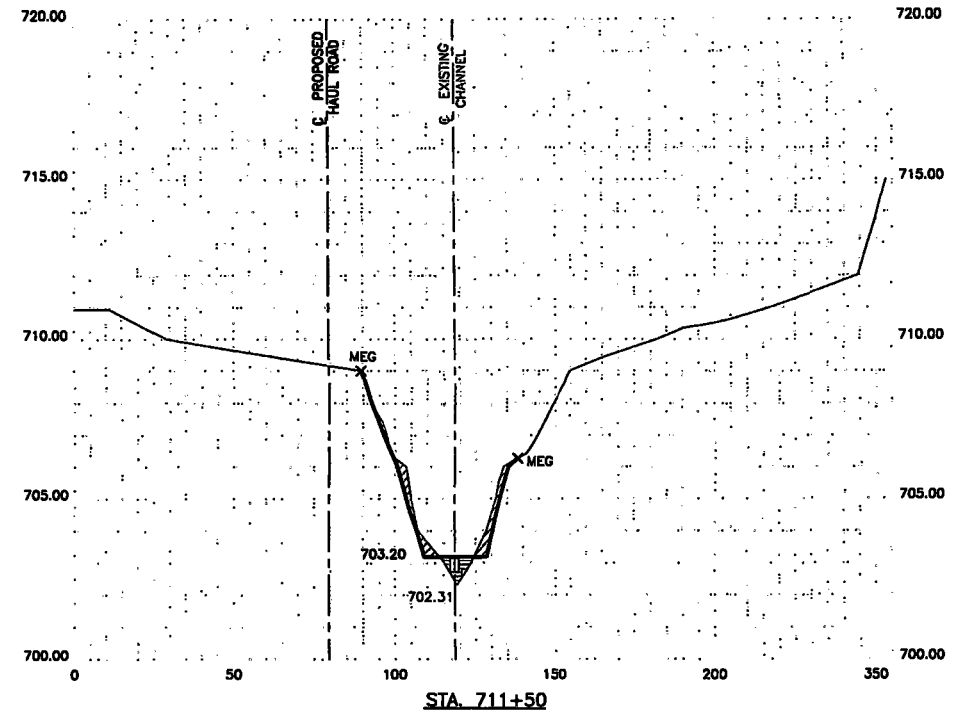
STA. 710+00



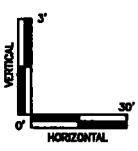
STA. 710+50



STA. 711+00



STA. 711+50



LEGEND
 [Hatched Box] FILL AREA
 [Cross-hatched Box] EXCAVATED AREA

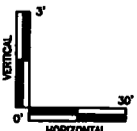
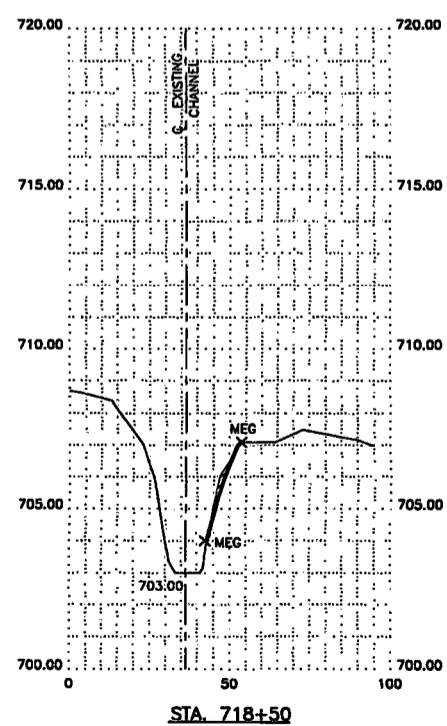
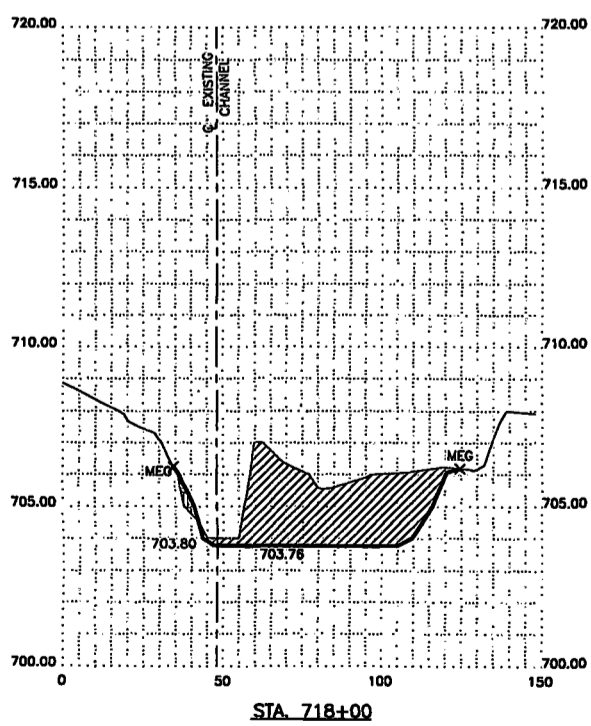
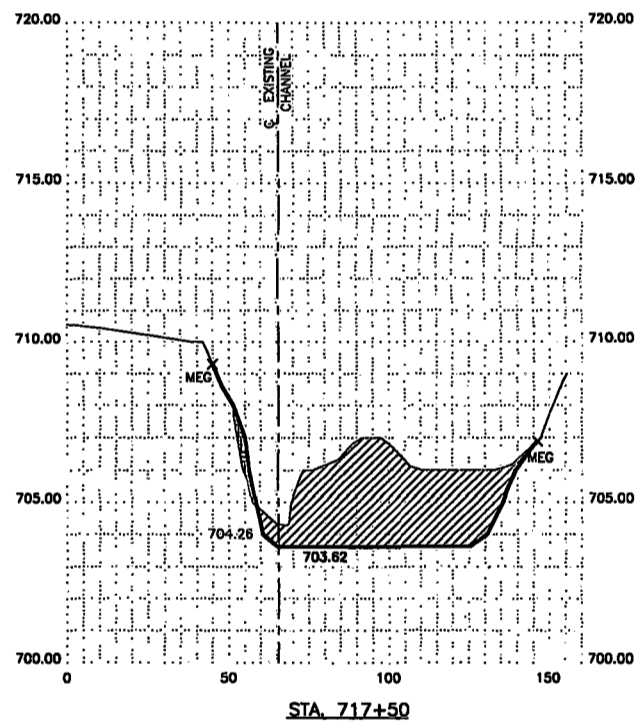
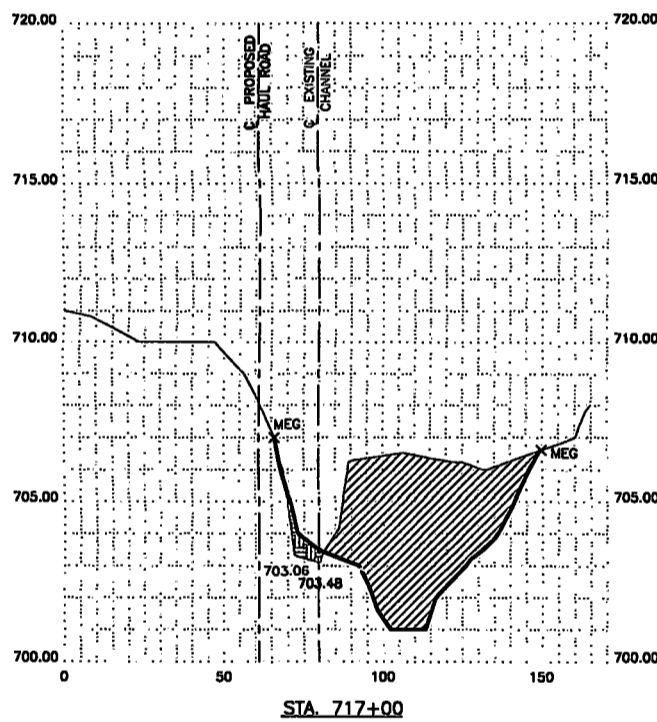
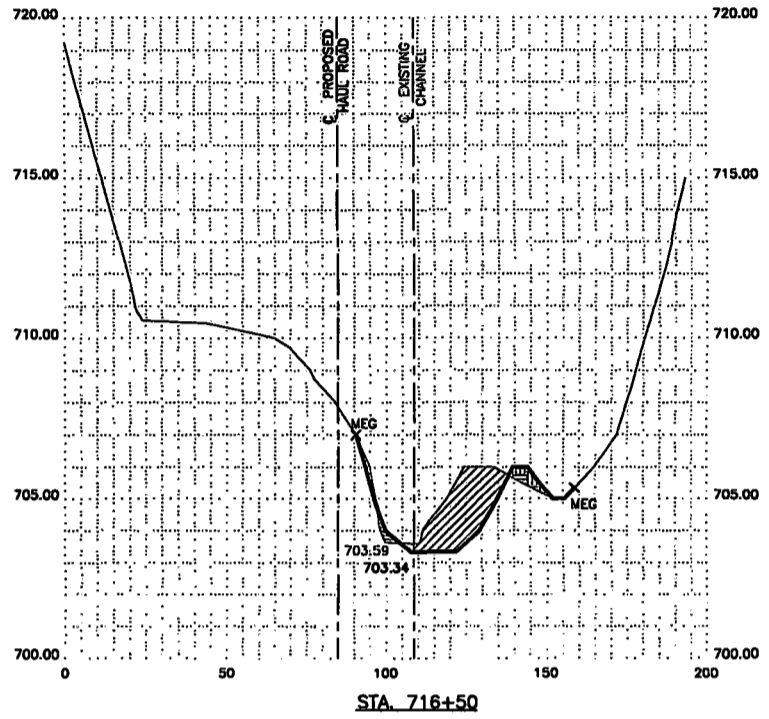
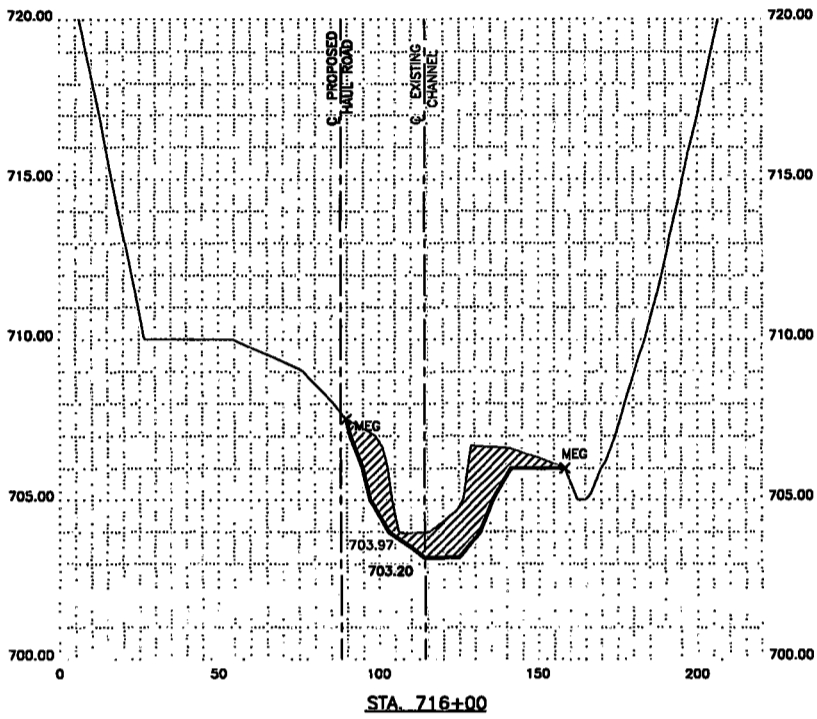
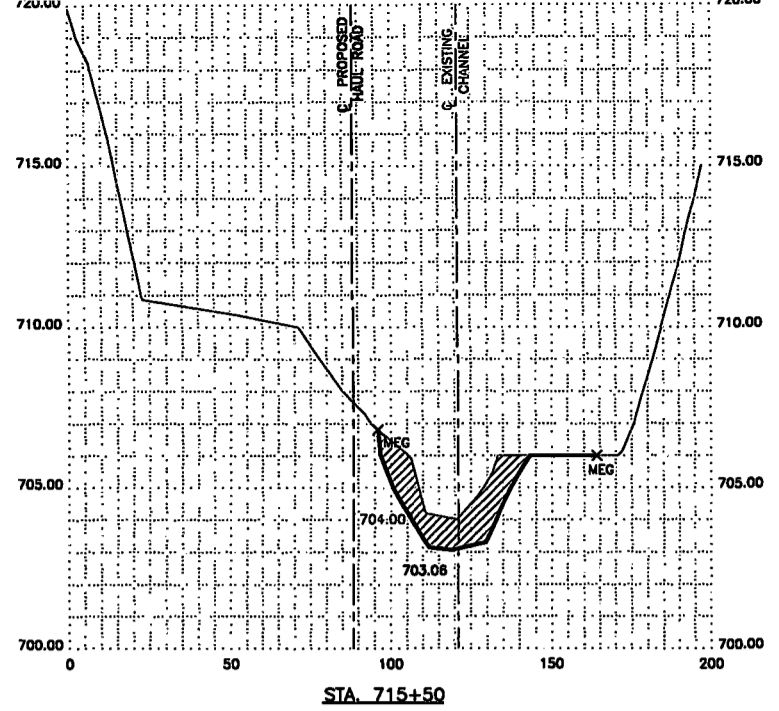
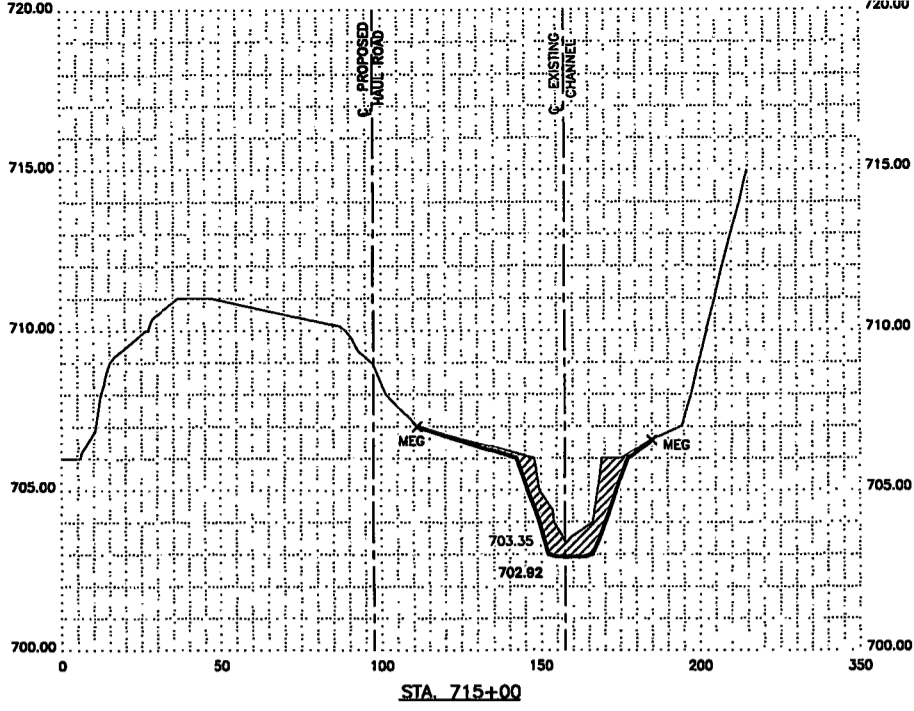
NO.	DATE	APPL.	REVISION
A	8/05		PREFINAL DESIGN
B	9/05		FINAL DESIGN

KERR-McGEE
LITTLE MENOMONEE RIVER REROUTE
 Milwaukee Wisconsin

WESTON SOLUTIONS

DES. ENG.	DATE	CLIENT APPROVALS	DATE
R.A.S./B.J.B.	9/05		
PROJ. ENG.	9/05		
PROJ. MGR.	9/05		
APPROVED			
ISSUED FOR			

RIVER CROSS SECTION STA. 708+00 TO 711+50			
DRAWN	D.C.H.	DATE	SEPT. 2005
SCALE	1/4" = 1'	REV. NO.	C-11 B
	026870070070005	SHT.	12 OF 20



LEGEND

- FILL AREA
- EXCAVATED AREA

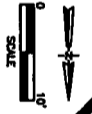
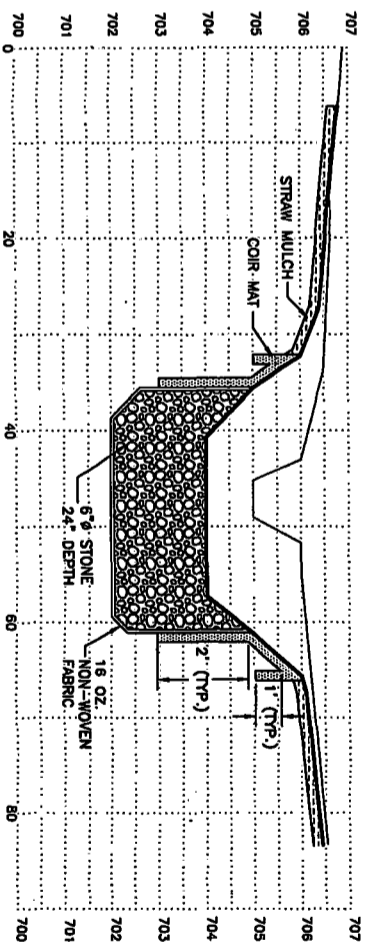
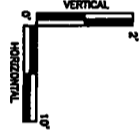
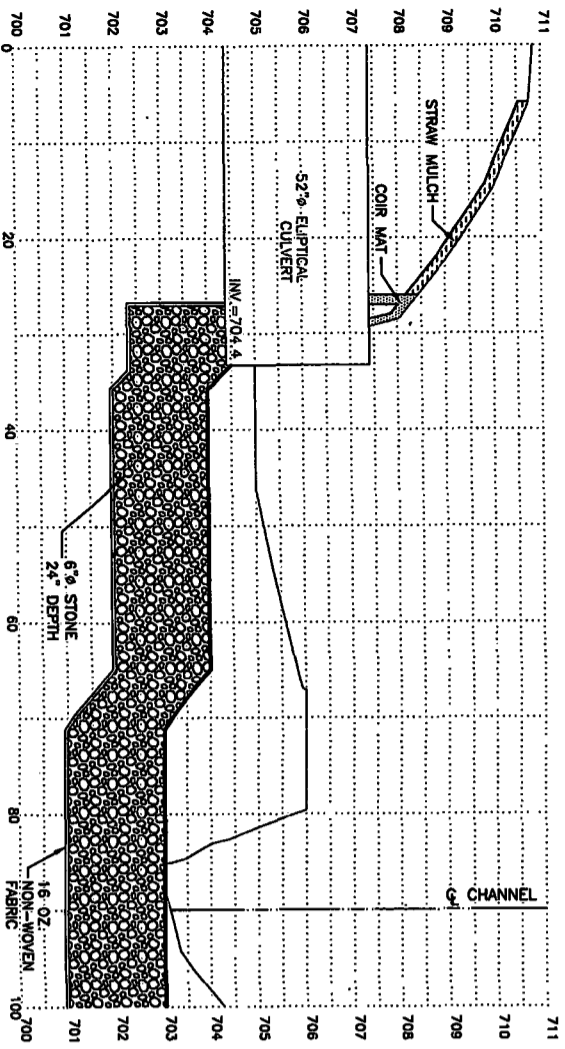
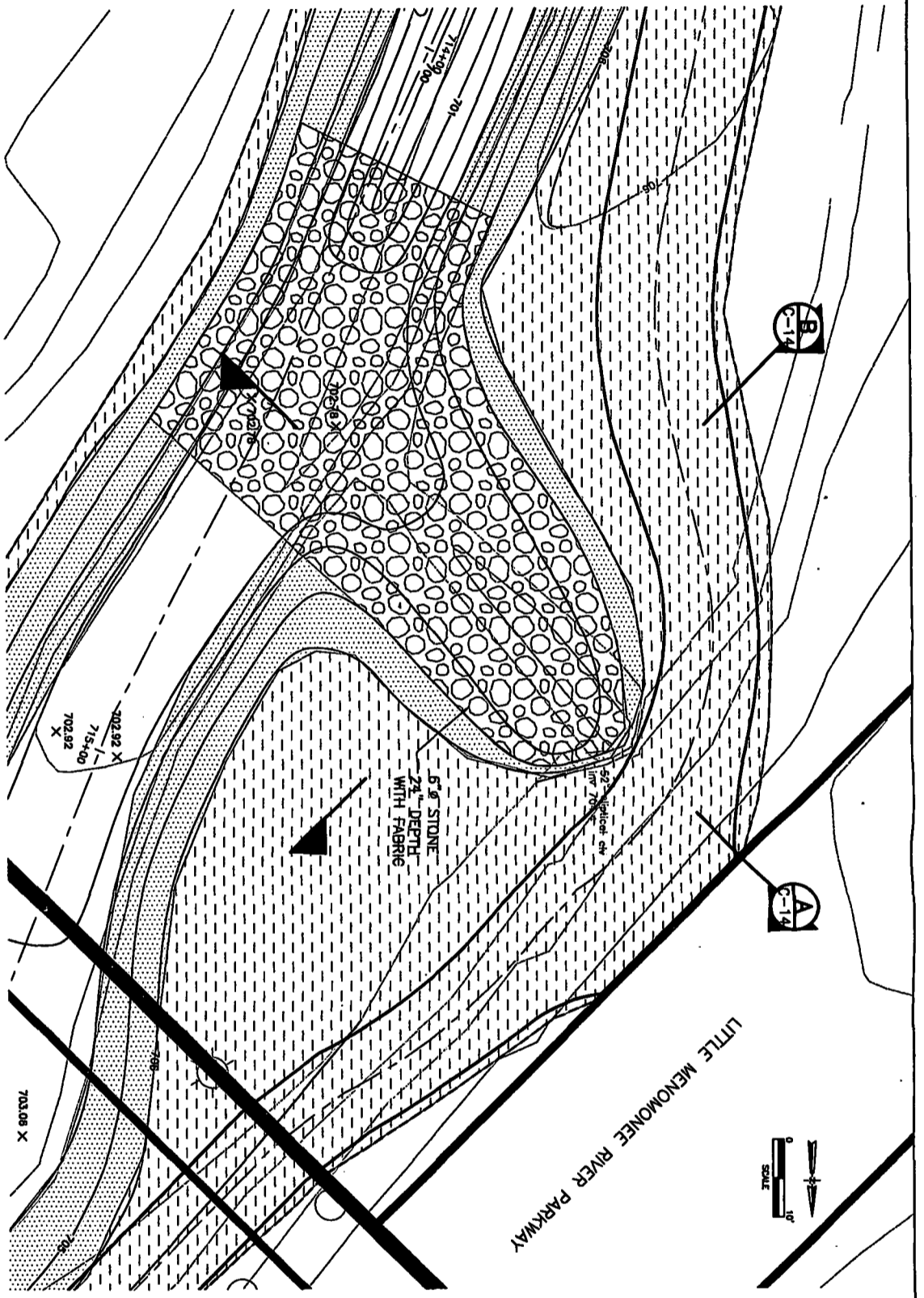
A	8/03	PREFINAL DESIGN	
B	9/05	FINAL DESIGN	
NO.	DATE	APPL.	REVISION

KERR-McGEE
LITTLE MENOMONEE RIVER REROUTE
 Milwaukee Wisconsin

WESTON SOLUTIONS

CHECKED	R.A.S./B.J.B.	DATE	9/05	CLIENT APPROVALS	DATE
DES. ENGR.	B.J.B.	DATE	9/05		
PROJ. ENGR.	B.J.B.	DATE	9/05		
PRDL. MGR.	R.A.S.	DATE	9/05		
APPROVED					
APPROVED					

RIVER CROSS SECTION STA. 716+00 TO 718+50			
DRWN	D.C.H.	DATE	SEPT. 2005
SCALE		DWG. NO.	C-13
		REV. NO.	B
			14 of 20



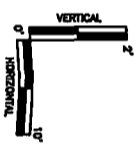
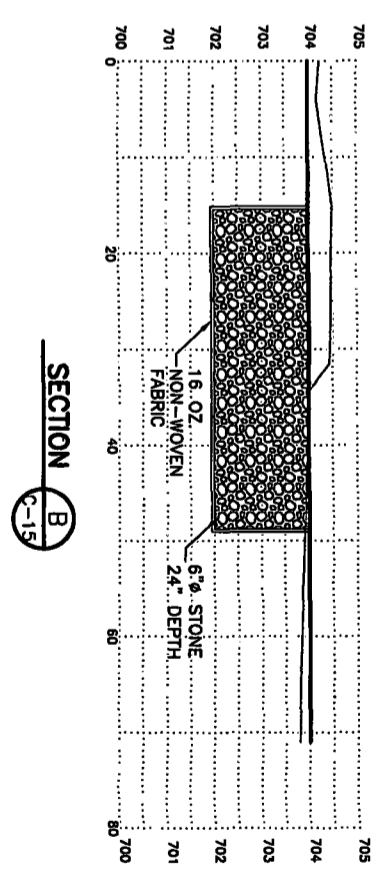
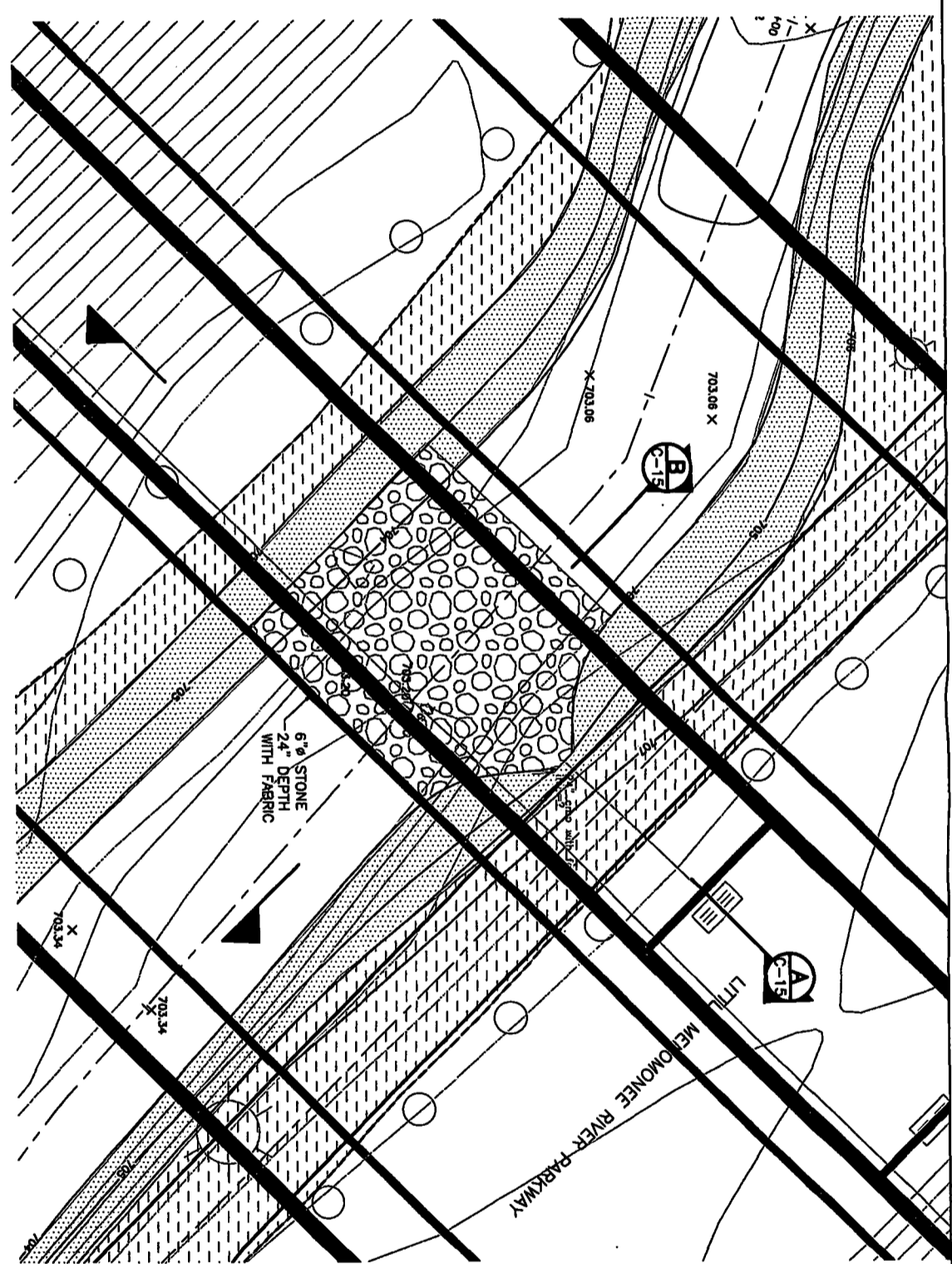
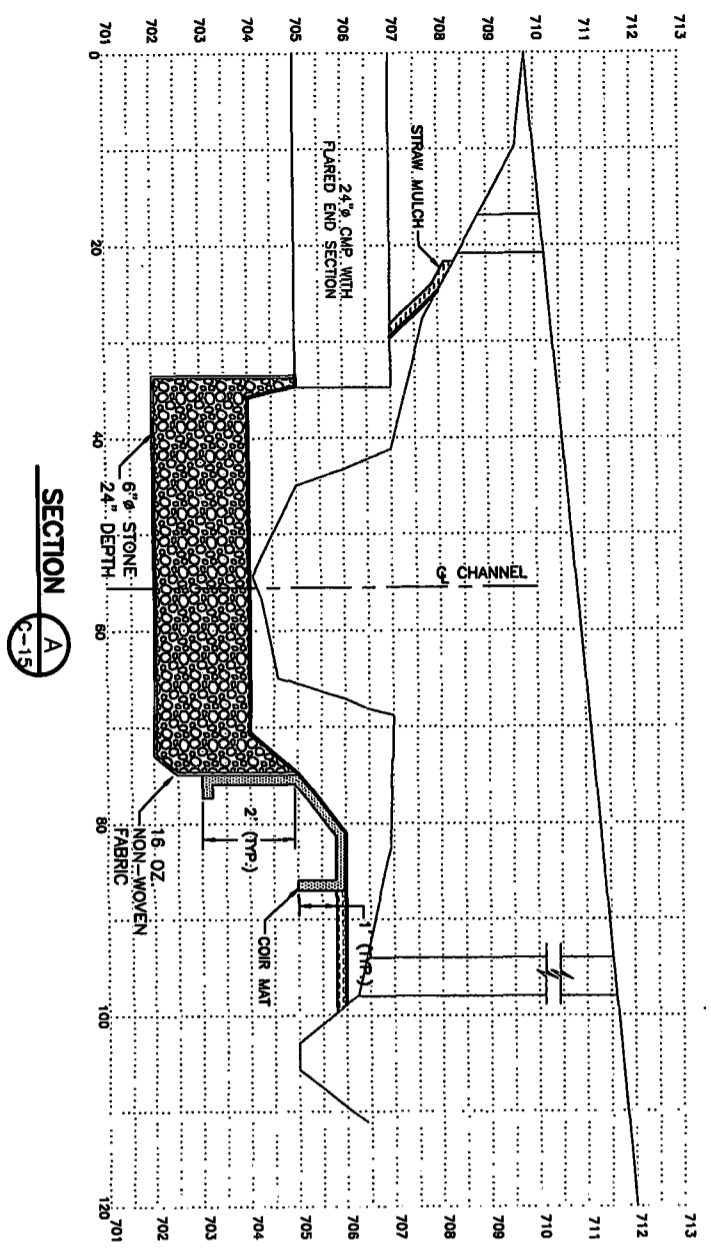
A	8/05	PREFINAL DESIGN
B	9/05	FINAL DESIGN
NO.	DATE	APPR.

KERR-McGEE
LITTLE MEMONONEE RIVER REROUTE
 Milwaukee Wisconsin



CHECKED	R.A.S./B.J.B.	DATE	9/05	CLIENT APPROVALS	DATE
DES. ENGR.	B.J.B.	DATE	9/05		
PROJ. ENGR.	B.J.B.	DATE	9/05		
PROJ. MGR.	R.A.S.	DATE	9/05		
APPROVED					
APPROVED				ISSUED FOR	DATE

EROSION CONTROL AND STREAM STABILIZATION DETAILS - PLAN AND SECTION REACH 4 (FROM W. LEON TERRACE TO W. MILL ROAD)							
DRGN	D.C.H.	DATE	SEPT. 2005	DWG. NO.	C-14	REV. NO.	B
SCALE	AS NOTED	W.O. NO.	026870070070005	SHT.	15	OF	20



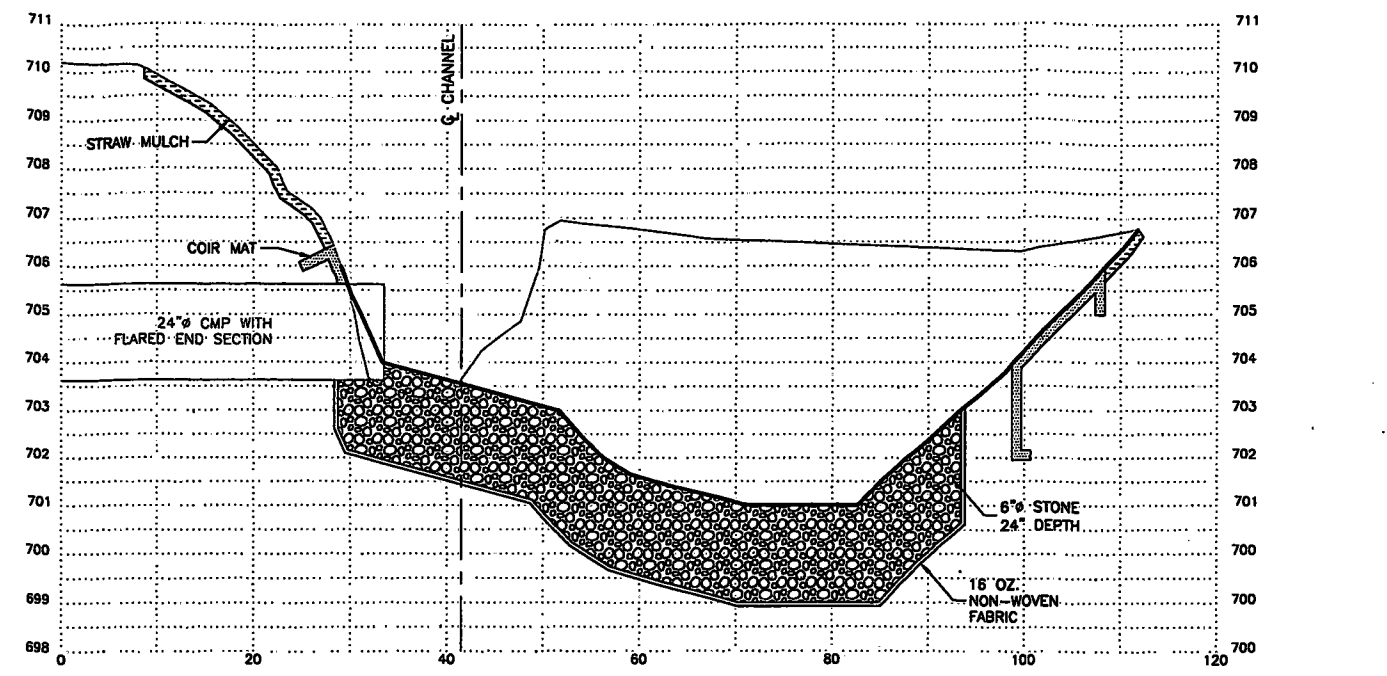
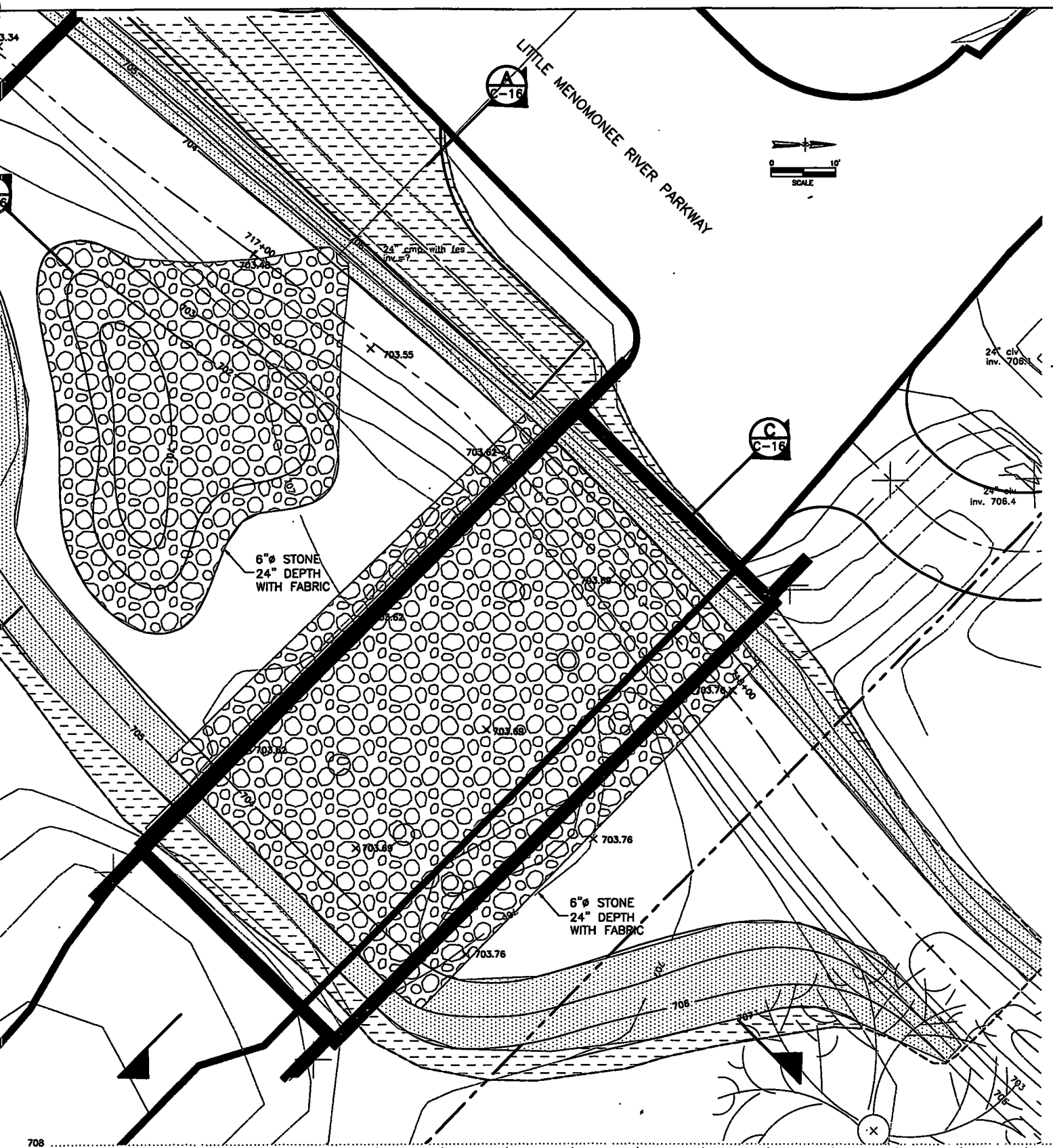
NO.	DATE	APPR.	REVISION
A	8/05		PRELIMINARY DESIGN
B	9/05		FINAL DESIGN

KERR-McGEE
LITTLE MENOMONEE RIVER REROUTE
 Milwaukee Wisconsin
WESTON SOLUTIONS

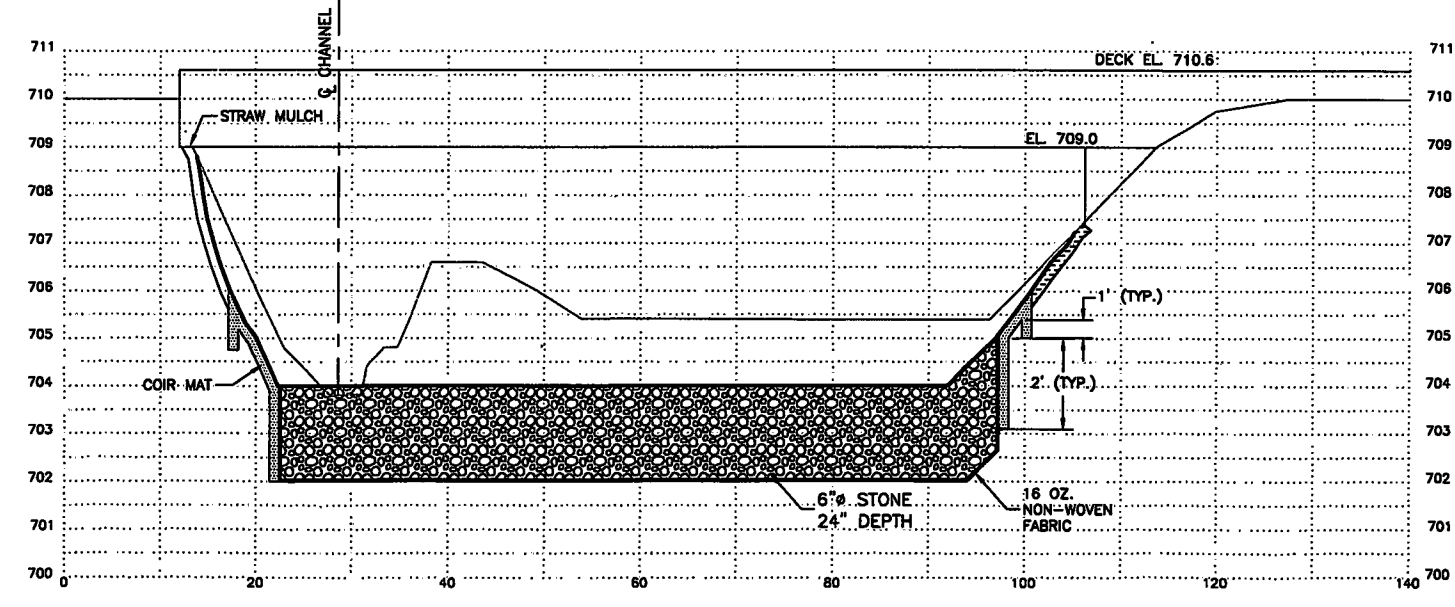
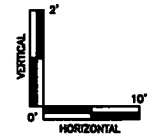
CHECKED	R.A.S./B.J.B.	DATE	9/05	CLIENT APPROVALS	DATE
DES. ENG.	B.J.B.	9/05			
PRDL. ENG.	B.J.B.	9/05			
PRDL. MGR.	R.A.S.	9/05			
APPROVED					
APPROVED				ISSUED FOR	DATE

EROSION CONTROL AND STREAM STABILIZATION
DETAILS - PLAN AND SECTION
REACH 4 (FROM W. LEON TERRACE
TO W. MILL ROAD)

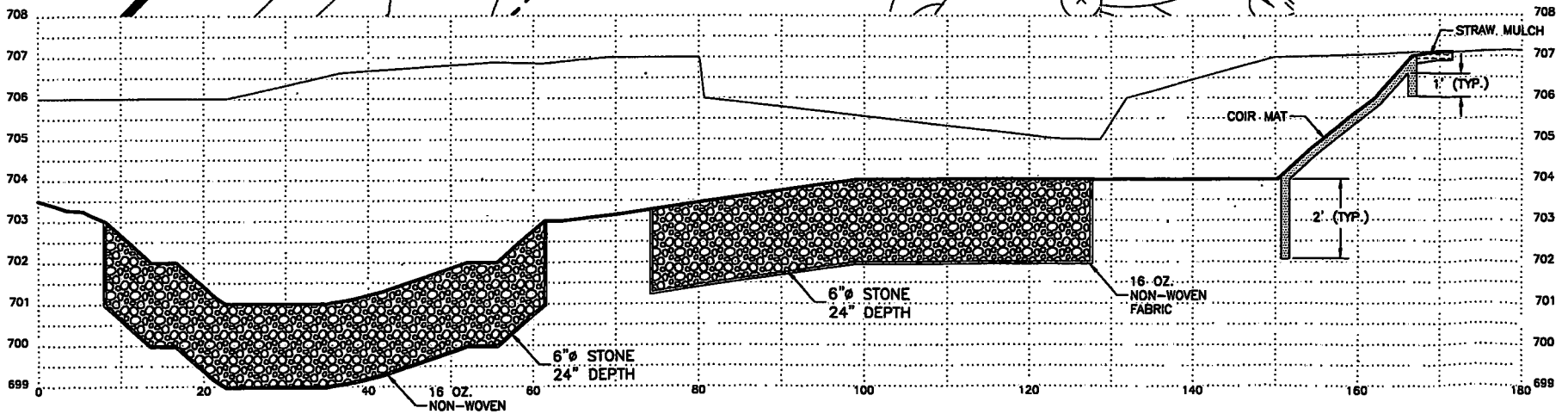
DRAWN: D.C.H. DATE: SEPT. 2005 DWG. NO. C-15 REV. NO. B
 SCALE: AS NOTED W.D. NO. 026870070070005 SHEET 16 OF 20



SECTION A
C-16



SECTION C
C-16



SECTION B
C-16

NO.	DATE	APPVL.	REVISION
A	9/05		PRELIM DESIGN
B	9/05		FINAL DESIGN

DESIGNED BY	R.A.S./B.J.B.	DATE	9/05
CHECKED BY	B.J.B.	DATE	9/05
PREPARED BY	B.J.B.	DATE	9/05
APPROVED BY	R.A.S.	DATE	9/05
APPROVED BY		DATE	

SCALE	AS NOTED
DRAWN BY	D.C.H.
DATE	SEPT. 2005
PROJECT NO.	026870070070005
SHEET NO.	17
TITLE	C-16
PROJECT	EROSION CONTROL AND STREAM STABILIZATION
LOCATION	DETAILS - PLAN AND SECTION
REACH	REACH 4 (FROM W. LEON TERRACE TO W. MILL ROAD)

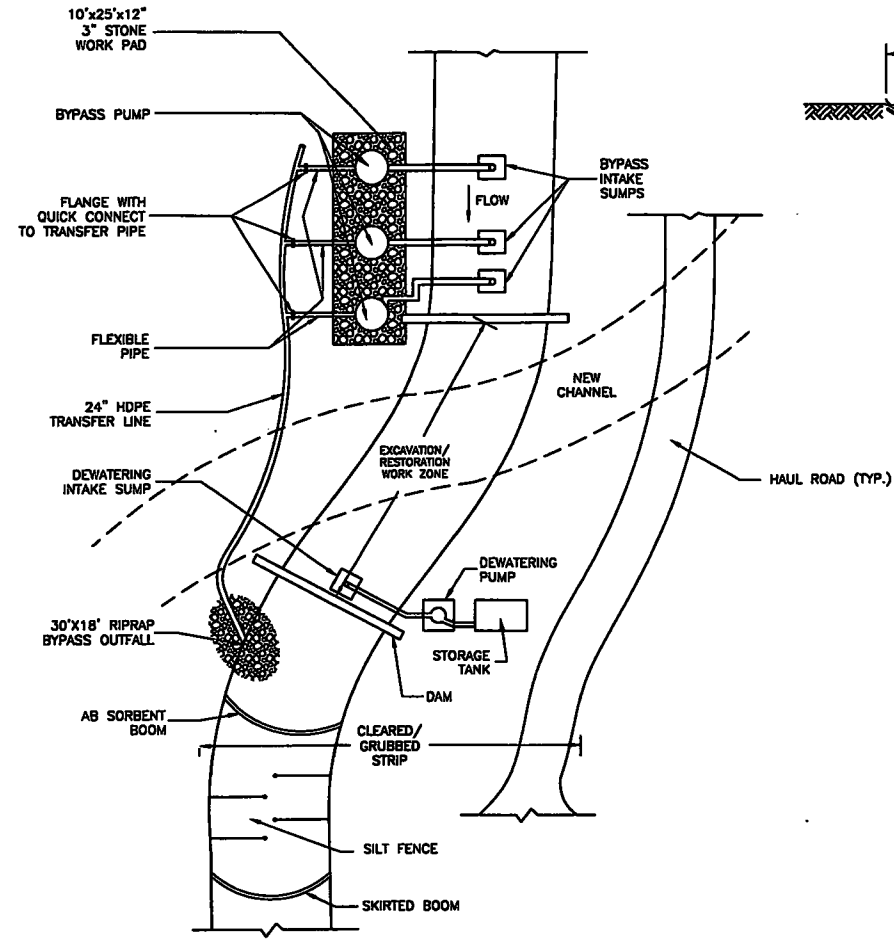
MILWAUKEE

KERR-McGEE

WISCONSIN

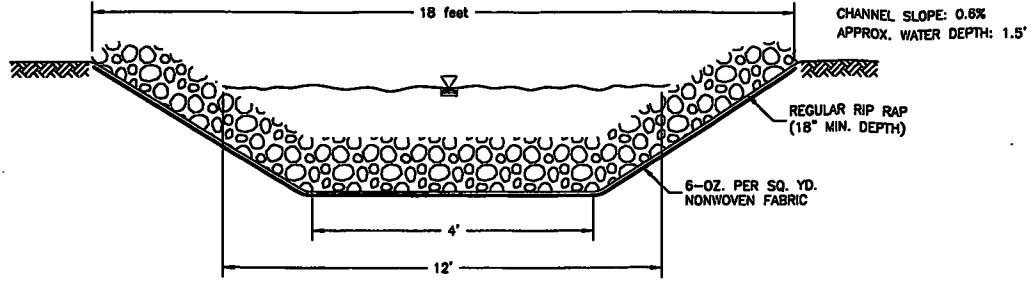
WESTON SOLUTIONS

VERNON HILLS

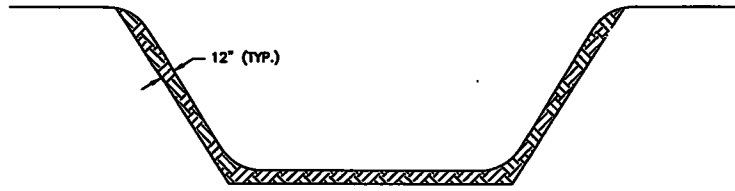


- NOTES:**
- TRANSFER PIPE & ASSOCIATED BYPASS EQUIPMENT WILL BE LOCATED BY CONTRACTOR TO MINIMIZE INTERFERENCE OF WORK.
 - CONTRACTOR MAY SUBMIT ALTERNATIVES FOR DIVERSION AND DRY EXCAVATION TO OWNER FOR APPROVAL PRIOR TO CONSTRUCTION.
 - DAMS SHALL BE CONSTRUCTED OF EARTHEN MATERIAL, SHEET PILING OR OTHER APPROVED METHOD.

DIVERSION AND DRY EXCAVATION WORKZONE (1)
N.T.S. C-17



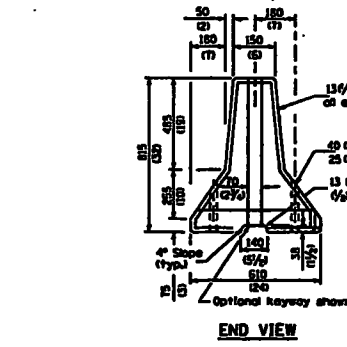
BYPASS OUTFALL DETAIL (2)
N.T.S. C-17



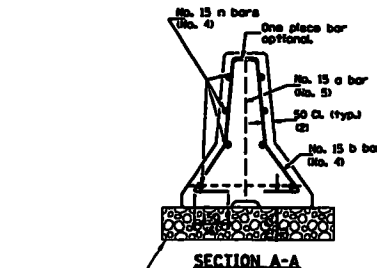
NEW CHANNEL CROSS SECTION WITHIN EXISTING CHANNEL (3)
N.T.S. C-17

AFTER EXCAVATION, KMC TO VERIFY WHETHER SEDIMENT IS VISIBLY CONTAMINATED AND HAS ACHIEVED 15 MG/KG TOTAL CPAP STANDARD

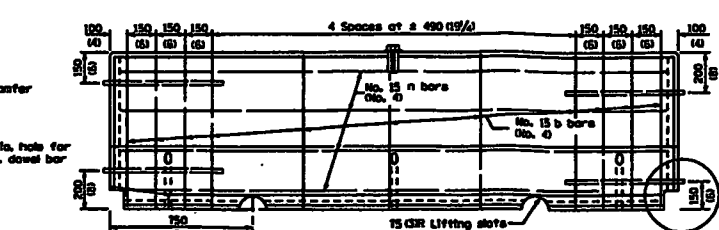
- NOTES:**
- CONTRACTOR SHALL REMOVE ALL VEGETATION FROM AREAS AROUND STOCKPILES FOR CONCRETE BARRIER PLACEMENT. CONTRACTOR SHALL LEVEL AREAS PRIOR TO PLACEMENT OF CRUSHED STONE.
 - BARRIERS SHALL BE IN PLACE PRIOR TO THE PLACEMENT OF STOCKPILE MATERIAL. ALL BARRIERS SHALL BE CONNECTED VIA MANUFACTURERS PROVIDED CONNECTION SYSTEM. PLACE FILTER FABRIC OVER HOLES TO ALLOW STORMWATER RUNOFF TO PASS THROUGH AND ELIMINATE SOIL MIGRATION.
 - CONTRACTOR MAY SUBMIT ALTERNATIVES FOR MATERIAL CONTAINMENT TO OWNER FOR APPROVAL PRIOR TO CONSTRUCTION.



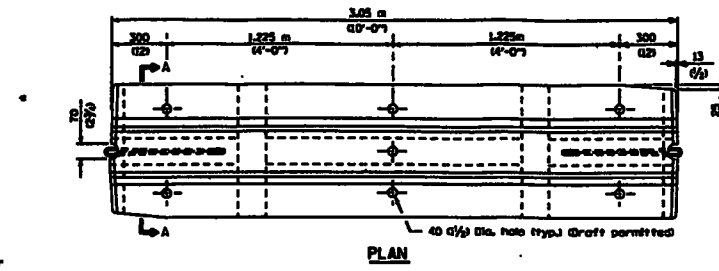
END VIEW



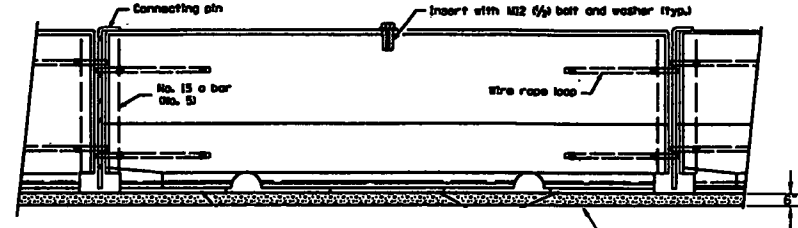
SECTION A-A (Showing bar reinforcement)



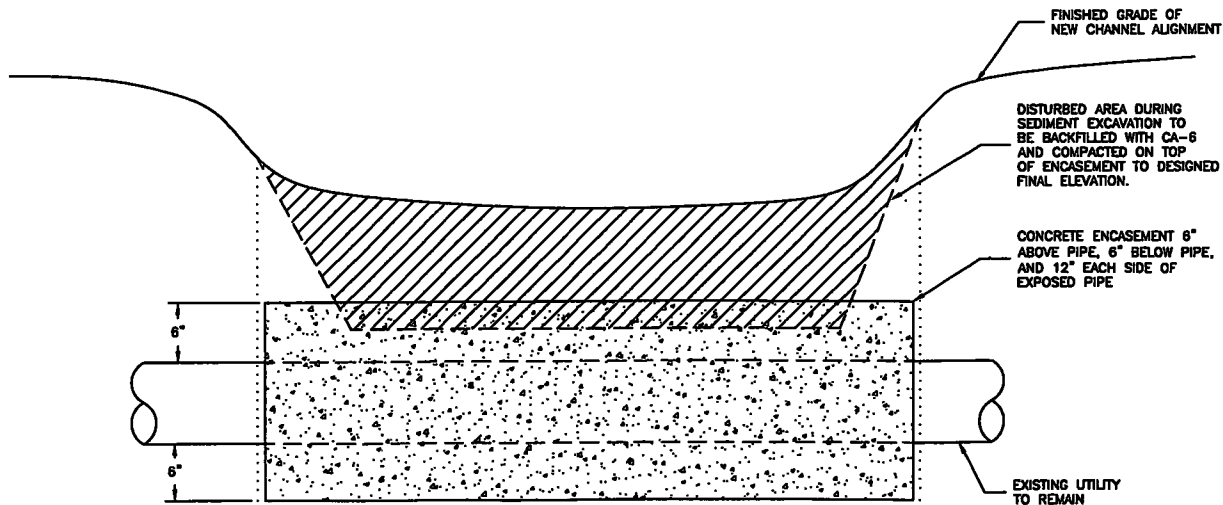
ELEVATION



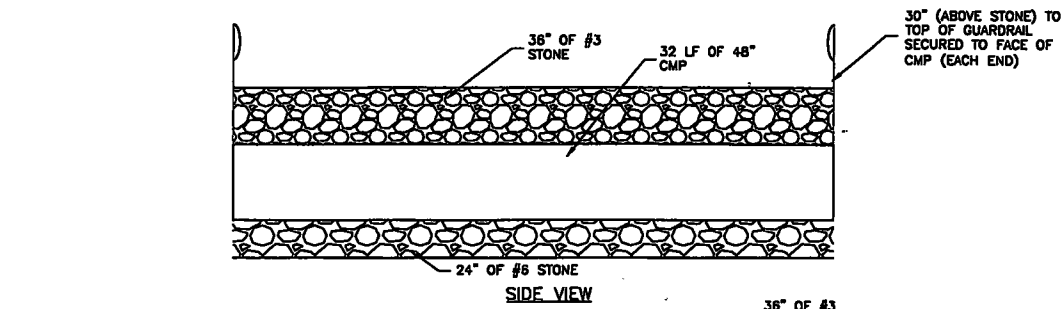
PLAN



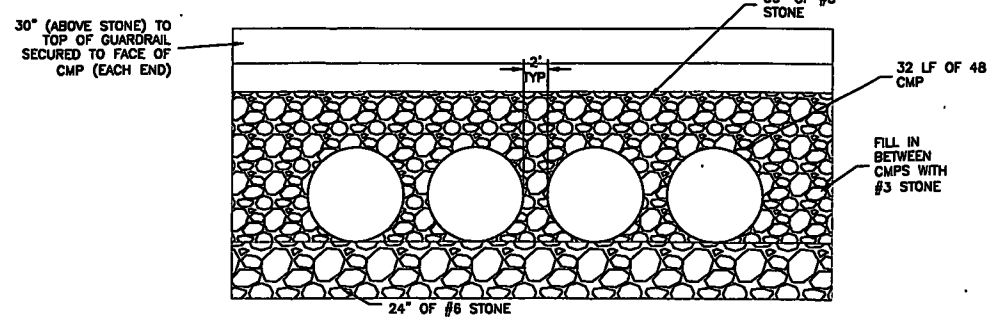
TYPICAL CONCRETE BARRIER (2)
N.T.S. C-17



ENCOUNTERED AND EXPOSED EXISTING UTILITY LINES (4)
N.T.S. C-17



SIDE VIEW



FRONT VIEW

TYPICAL RIVER CROSSING (5)
N.T.S. C-17

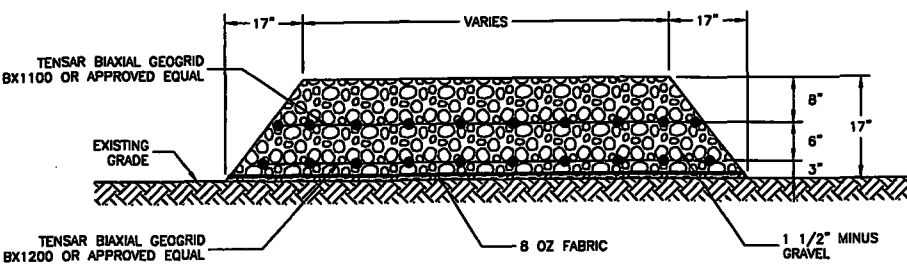
CONSTRUCTION DETAILS

NO.	DATE	BY	DATE	BY
DESIGNED	9/05	R.A.S./B.J.B.	9/05	R.A.S.
CHECKED	9/05	B.J.B.	9/05	B.J.B.
DATE	9/05	DATE	9/05	DATE
CLIENT APPROVAL		CLIENT APPROVAL		CLIENT APPROVAL

KERR-McGEE
LITTLE MENOMONEE RIVER REROUTE
Wisconsin
Milwaukee

WESTON SOLUTIONS
VERSION HELD

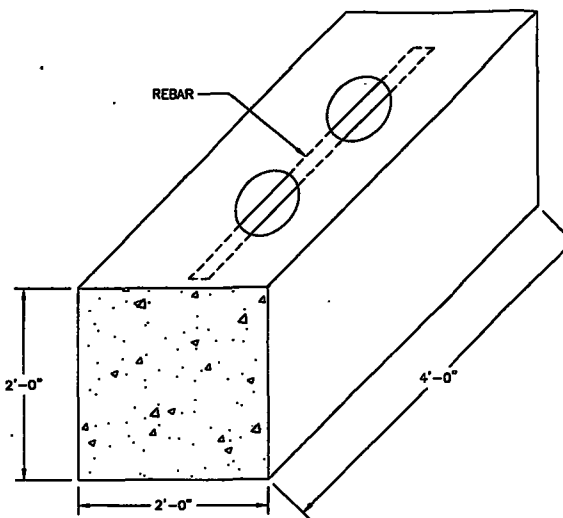
NO.	DATE	BY	DATE	BY
PREFINAL DESIGN				
FINAL DESIGN				
NO.	DATE	BY	DATE	BY



- NOTES:
1. CRUSHED GRAVEL SHALL BE PLACED IN A SINGLE LIFT AND GRADE TO DRAIN.
 2. THE CONTRACTOR SHALL MAINTAIN HAUL ROADS DURING THE PROJECT. MINIMUM MAINTENANCE SHALL INCLUDE BUT NOT BE LIMITED TO MAINTAINING HAUL ROAD SHAPE AND DRAINAGE.
 3. THE CONTRACTOR SHALL INSTALL CULVERTS ACROSS HAUL ROADS FOR DRAINAGE. CULVERTS SHALL BE PLACED AS NECESSARY TO ALLEVIATE PONDING OF SURFACE WATER. CULVERTS TO BE A MINIMUM OF 12" BELOW FINISH GRADE.
 4. CONTRACTOR MAY SUBMIT ALTERNATIVES FOR HAUL ROAD CONSTRUCTION TO OWNER FOR APPROVAL PRIOR TO CONSTRUCTION.

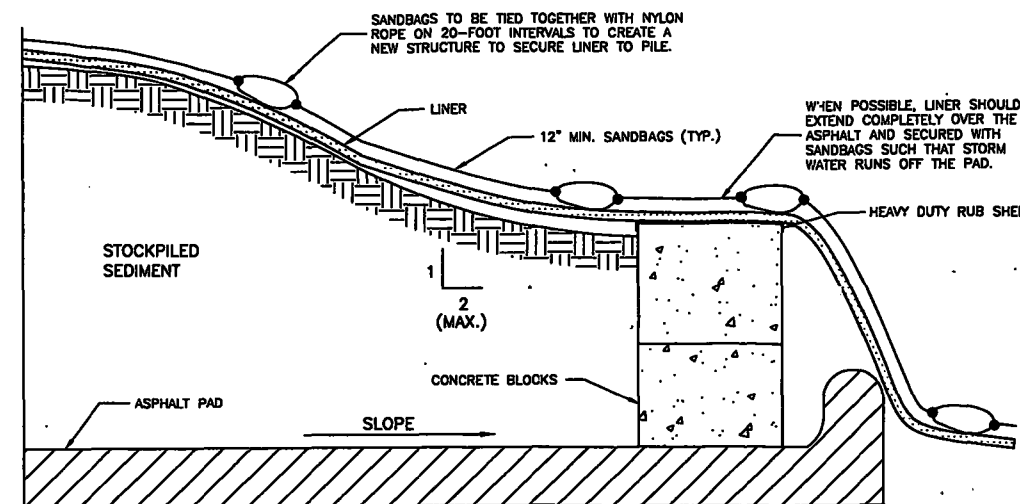
HAUL ROAD DETAIL (1) C-18

N.T.S.



PREFABRICATED CONCRETE BLOCK DETAIL (4) C-18

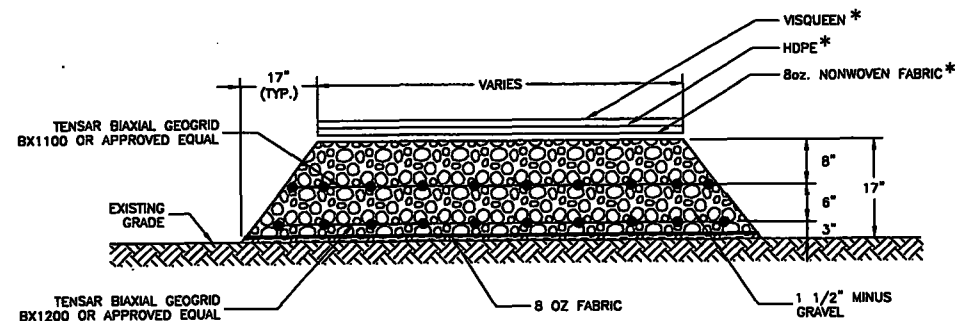
N.T.S.



NOTE: COVER SYSTEM SHALL BE PROVIDED FOR THE COVERING OF MATERIAL STOCKPILES FOR A DURATION OF 5-YEARS. CONTRACTOR(S) SHALL BE RESPONSIBLE FOR THE INTEGRITY OF THE SYSTEM FOR THE DURATION OF THE CONTRACT. CONTRACTOR MUST HAVE COVER SYSTEM APPROVAL BY OWNER.

SEDIMENT STOCKPILE SECTION (A) C-18

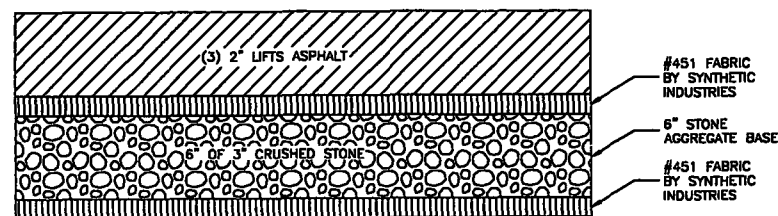
N.T.S.



HAUL ROAD WITH DECONTAMINATION PAD (2) C-18

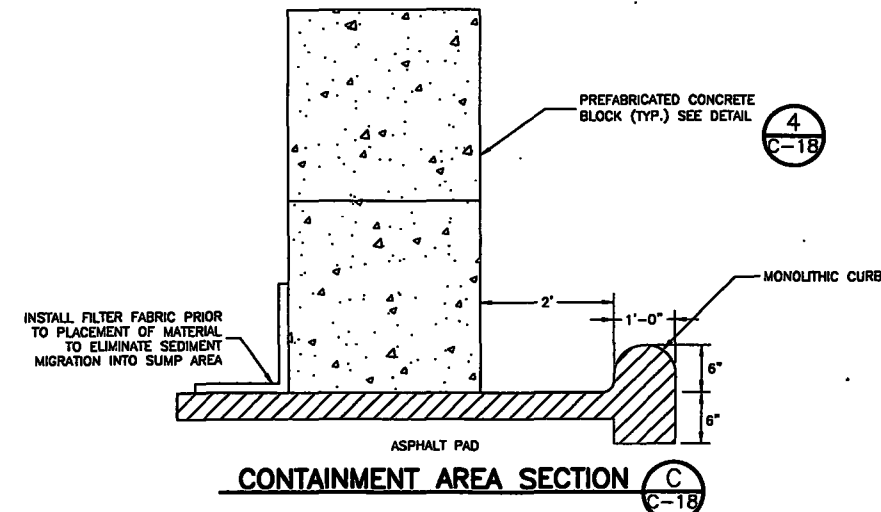
N.T.S.

* NOTE: CONTRACTOR MAY SUBMIT ALTERNATIVES TO OWNER FOR APPROVAL PRIOR TO CONSTRUCTION.



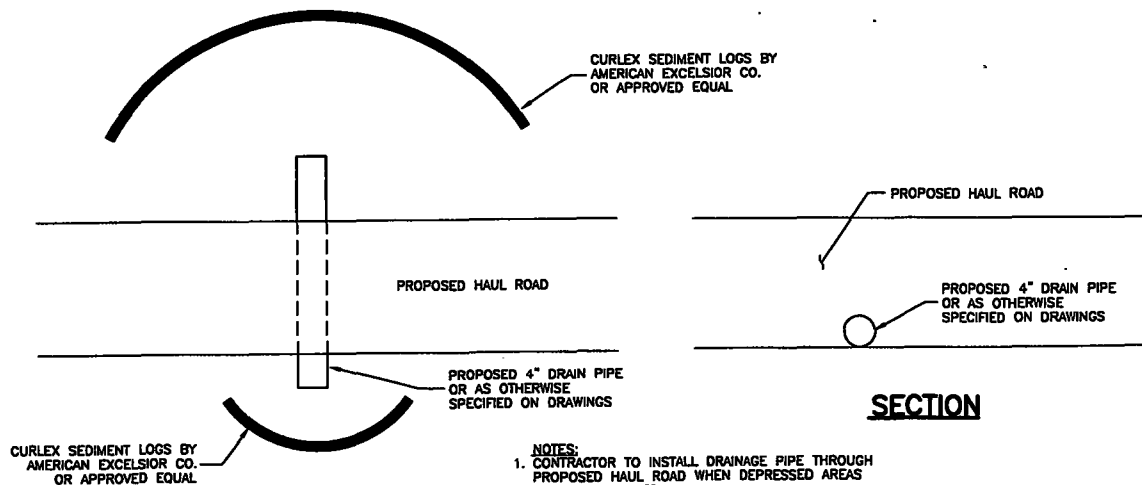
ASPHALT PAD CROSS SECTION (B) C-18

N.T.S.



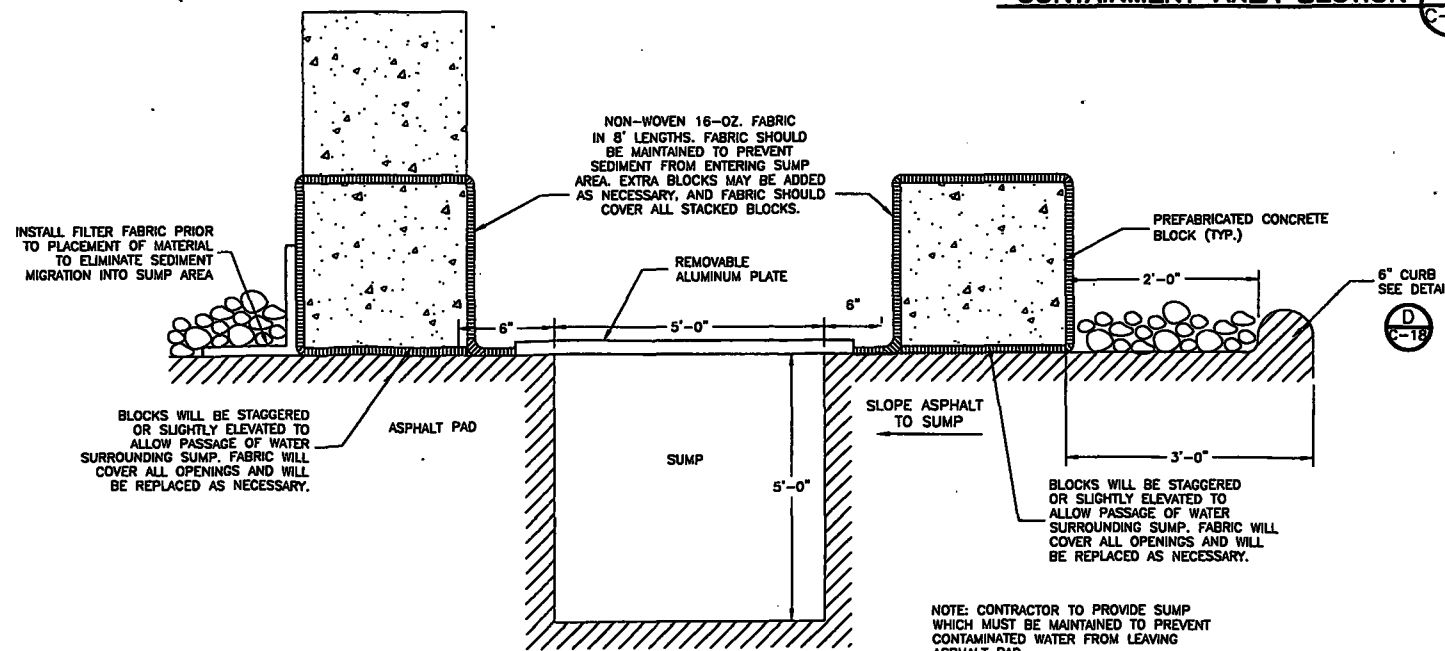
CONTAINMENT AREA SECTION (C) C-18

N.T.S.



EXAMPLE CULVERT DETAIL (3) C-18

N.T.S.

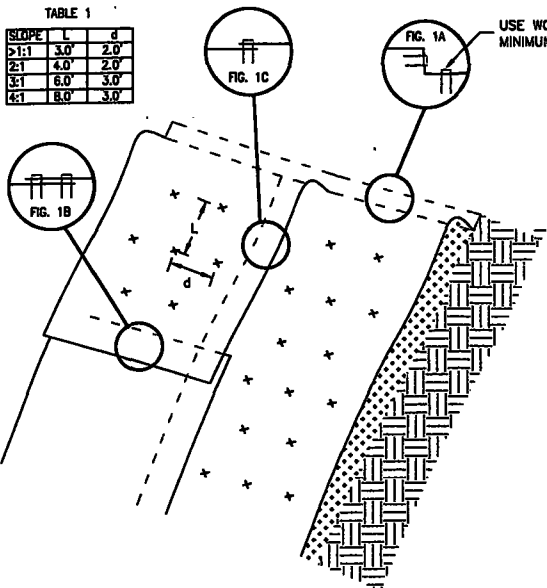


SEDIMENT PAD AND SUMP SECTION (D) C-18

N.T.S.

CONSTRUCTION DETAILS		DATE	SCALE	BY	CHKD	APPV	REV.
A	9/05						20
B	9/05						19
C	9/05						18
D	9/05						17
DESIGN		DATE	SCALE	BY	CHKD	APPV	REV.
PRELIM DESIGN							
FINAL DESIGN							
KERR-McGEE		DATE	SCALE	BY	CHKD	APPV	REV.
LITTLE MENOMONEE RIVER REROUTE							
Wisconsin							
Milwaukee							
WESTON							
CONSULTING ENGINEERS							
VERONA HILLS							

SLOPE	L	d
1:1	3.0'	2.0'
2:1	4.0'	2.0'
3:1	6.0'	3.0'
4:1	8.0'	3.0'



USE WOODEN STAKES WITH MINIMUM LENGTH OF 12"

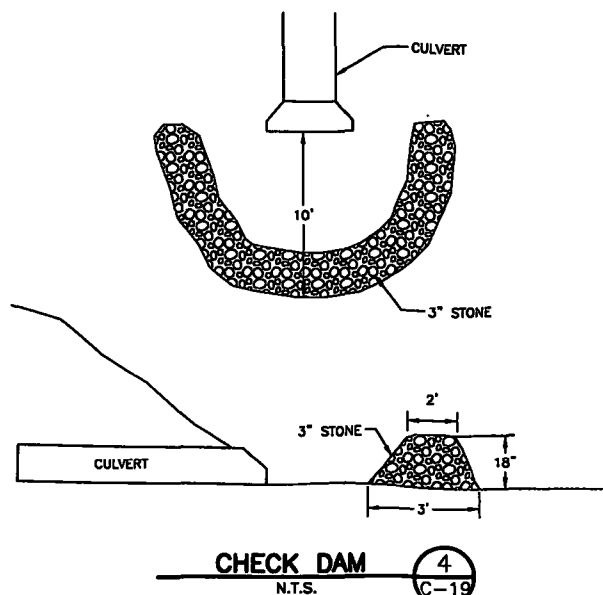
NOTES:

1. PREPARE SOIL INCLUDING GRADING AND SEEDING. THE SURFACE OF THE SOIL SHOULD BE SMOOTH AND FREE OF ROCKS, ROOTS AND OTHER OBSTRUCTIONS.
2. START AT THE TOP OF THE SLOPE BY ANCHORING BLANKETS IN A 6" DEEP AND 6" WIDE ANCHOR TRENCH. PLACE BLANKETS, STAKE BACKFILL AND COMPACT (FIG. 1A).
3. ROLL THE BLANKETS DOWN THE SLOPE OR ACROSS THE SLOPE. STAKE THE OPEN BLANKET EDGE USING ONE ROW OF STAKES AT 1.5-2 FEET INTERVALS. THE MIDDLE OF THE BLANKETS SHOULD BE STAKED USING A PREFERRED STAKING PATTERN (TABLE 1). BE SURE TO PLACE THE BLANKETS ON THE GROUND ALLOWING A GOOD CONTACT BETWEEN SOIL AND BLANKETS.
4. WHEN BLANKET SPLICING IS NECESSARY, USE AN EIGHT INCH OVERLAP. USE TWO ROWS OF STAKES TO ANCHOR BLANKETS. A TWELVE-INCH STAKE SPACING IS RECOMMENDED WITH A STAGGERED PATTERN. OVERLAP THE SIDES OF BLANKETS AT LEAST 6" AND USE STAKES ALONG THE OVERLAP AT 12" SPACING (FIG. 1C).
5. PROVIDE A 6" DEEP AND 6" WIDE ANCHOR TRENCH AT THE TOE OF THE SLOPE OR STREAMBANK OR SHORELINE.
6. USE WOODEN WEDGES WITH A MINIMUM LENGTH OF 12".
7. INSTALLATION TO BE COMPLETED IN ACCORDANCE WITH MANUFACTURER'S SPECIFICATIONS.
8. DO NOT SCALE DRAWINGS.

INSTALLATION OF COIR BLANKET FOR SLOPES

(BioD-Mesh 60 by Rolanka or approved equal)
N.T.S.

1
C-19



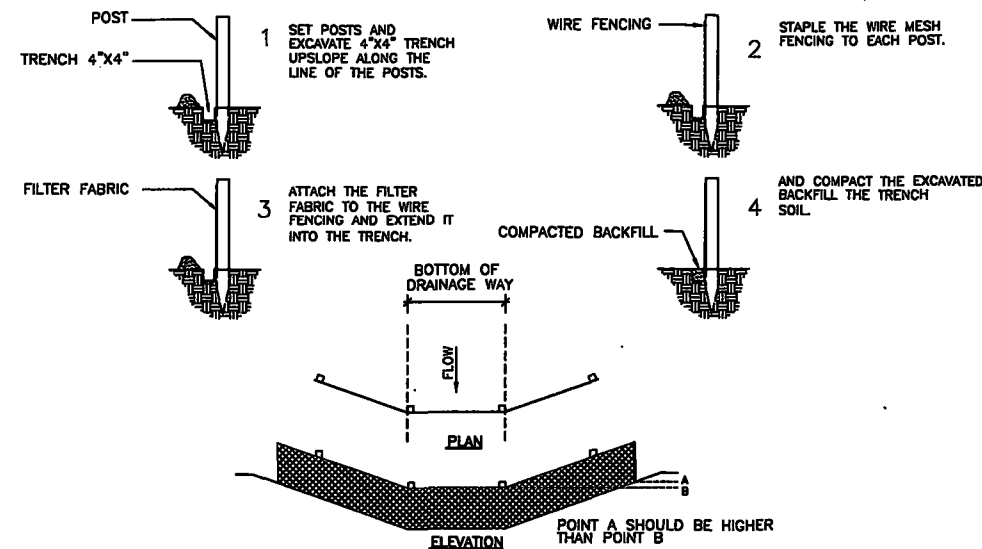
CHECK DAM

N.T.S.

4
C-19

MAINTENANCE

1. FILTER BARRIERS SHALL BE INSPECTED IMMEDIATELY AFTER EACH RAINFALL AND AT LEAST DAILY DURING PROLONGED RAINFALL. ANY REQUIRED REPAIRS SHALL BE MADE IMMEDIATELY.
2. SHOULD THE FABRIC DECOMPOSE OR BECOME INEFFECTIVE PRIOR TO THE END OF THE EXPECTED USABLE LIFE AND THE BARRIER STILL BE NECESSARY, THE FABRIC SHALL BE REPLACED PROMPTLY.
3. SEDIMENT DEPOSITS SHOULD BE REMOVED AFTER EACH STORM EVENT. THEY MUST BE REMOVED WHEN DEPOSITS REACH APPROXIMATELY HALF THE HEIGHT OF THE BARRIER.
4. ANY SEDIMENT DEPOSITS REMAINING IN PLACE AFTER THE SILT FENCE OR FILTER BARRIER IS NO LONGER REQUIRED SHALL BE DRESSED TO CONFORM WITH THE EXISTING GRADE, PREPARED AND SEEDED.



EXAMPLE SILT FENCE DETAIL

N.T.S.

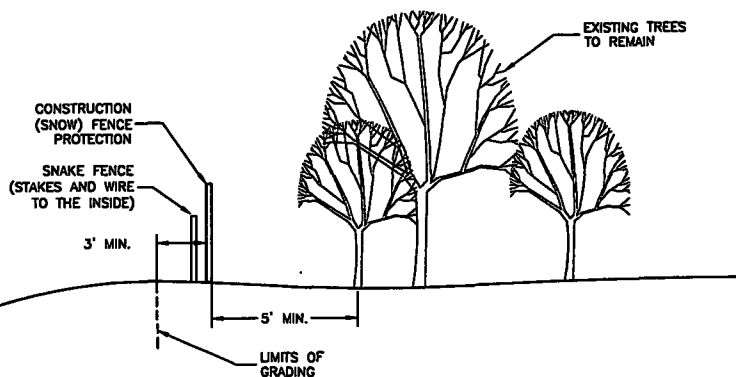
7
C-19



EXAMPLE STRAW BALE BARRIER IN DITCH

N.T.S.

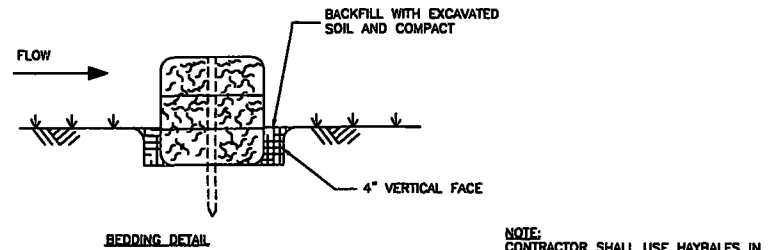
2
C-19



TYPICAL CONSTRUCTION FENCE PLACEMENT DETAIL

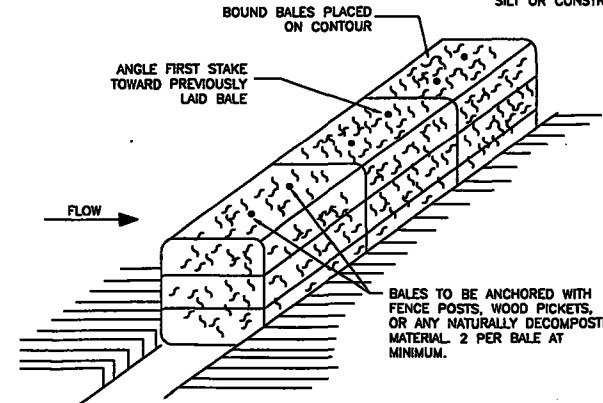
N.T.S.

3
C-19



BEDDING DETAIL

NOTE:
CONTRACTOR SHALL USE HAYBALES IN AREAS OF RUNOFF CHANNELS AS NECESSARY OR IN CONJUNCTION WITH SILT OR CONSTRUCTION FENCE.



EXAMPLE ANCHORING STRAW BALE BARRIER DETAIL

N.T.S.

5
C-19

KERR-McGEE		LITTLE MENOMONEE RIVER REROUTE		Wisconsin	
MILWAUKEE		MILWAUKEE		MILWAUKEE	
WESTON SOLUTIONS		WESTON SOLUTIONS		WESTON SOLUTIONS	
DESIGNED	R.A.S./B.J.B.	DATE	9/05	CLIENT APPROVALS	DATE
DRAWN	B.J.B.	DATE	9/05	DATE	9/05
CHECKED	B.J.B.	DATE	9/05	DATE	9/05
APPROVED	R.A.S.	DATE	9/05	DATE	9/05
SCALE	AS NOTED	DATE	9/05	DATE	9/05
REV. NO.	C-19	DATE	SEPT. 2005	DATE	20
REV. NO.	B	DATE	20	DATE	20
NO.	02687007007005	NO.	02687007007005	NO.	02687007007005