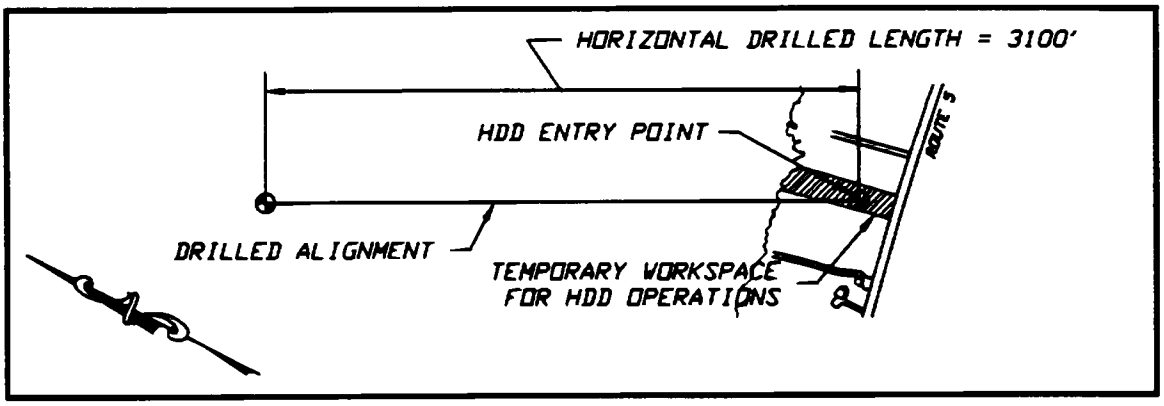
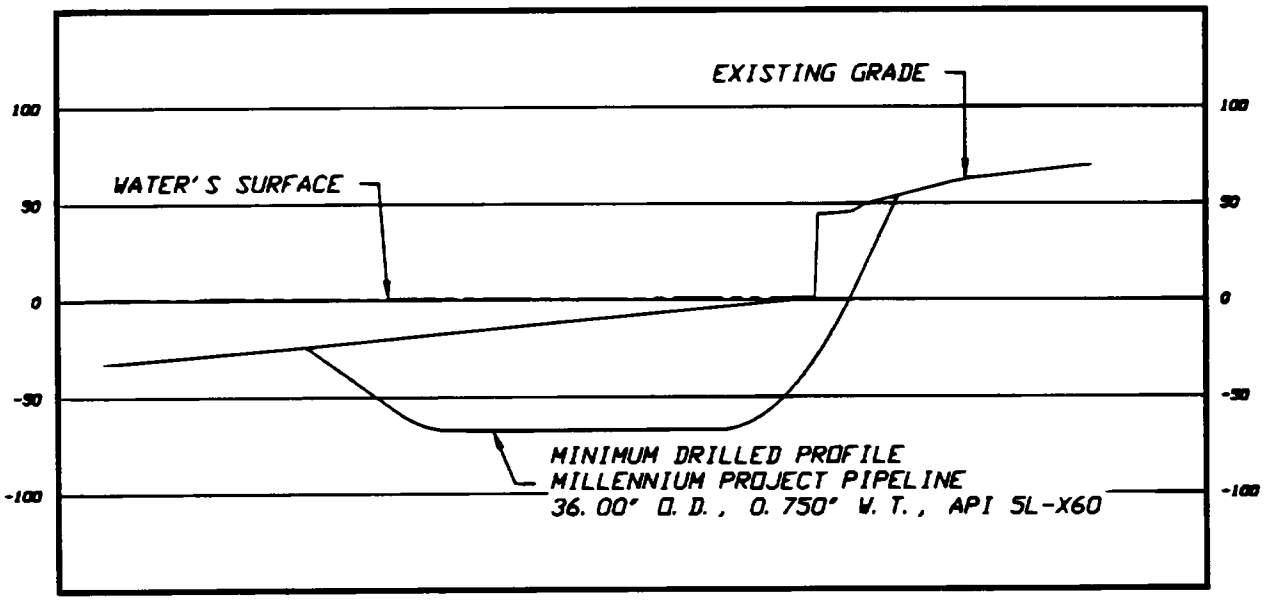
NOTES:

1. PIPELINE TO BE INSTALLED BY HORIZONTAL DIRECTIONAL DRILLING.
2. ELEVATIONS ARE IN FEET REFERENCED TO INTERNATIONAL GREAT LAKES DATUM.



PLAN

SCALE: 1"=1000'



PROFILE

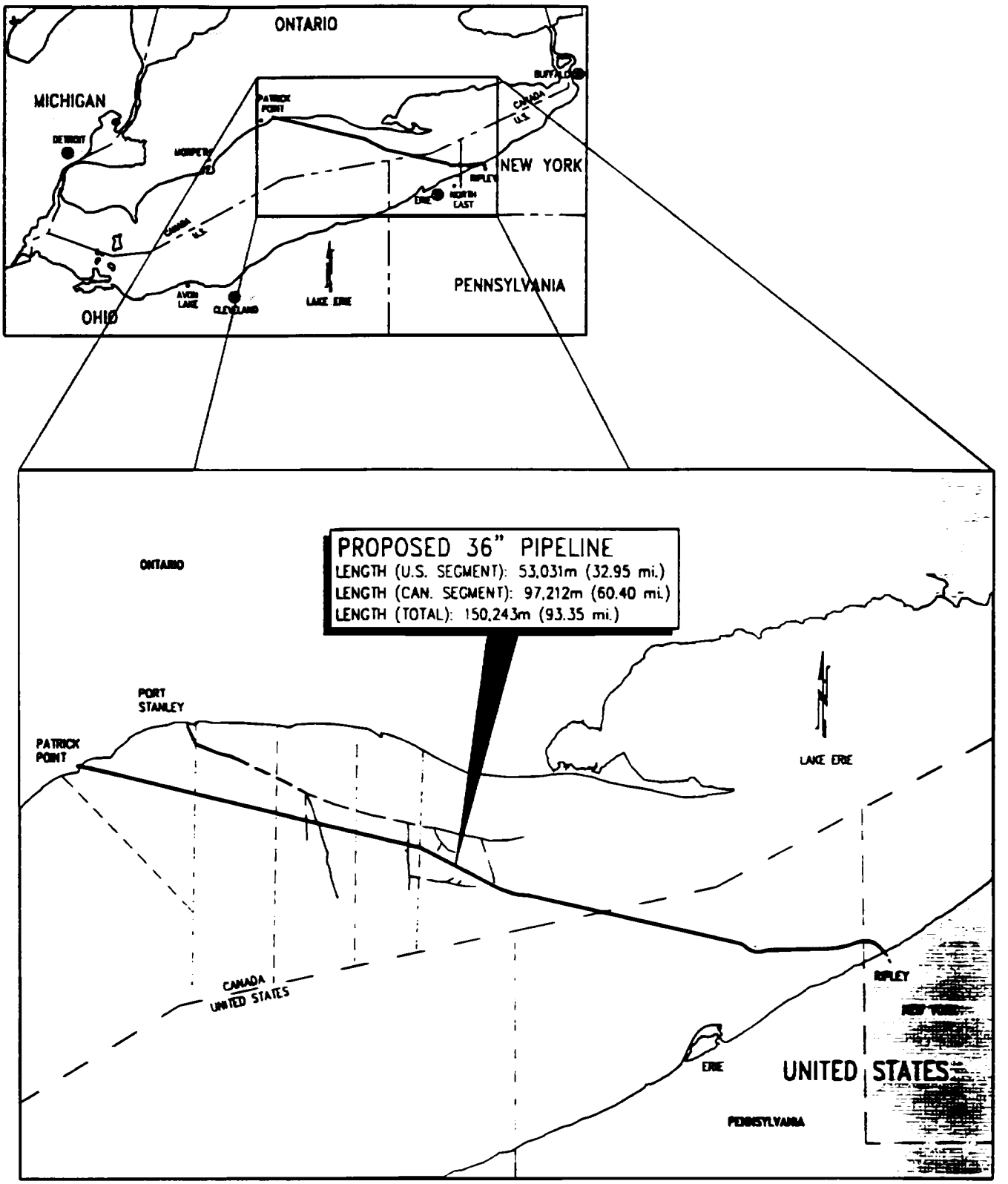
SCALE: 1"=1000' HORIZONTAL
1"=100' VERTICAL

SHEET 2 of 2

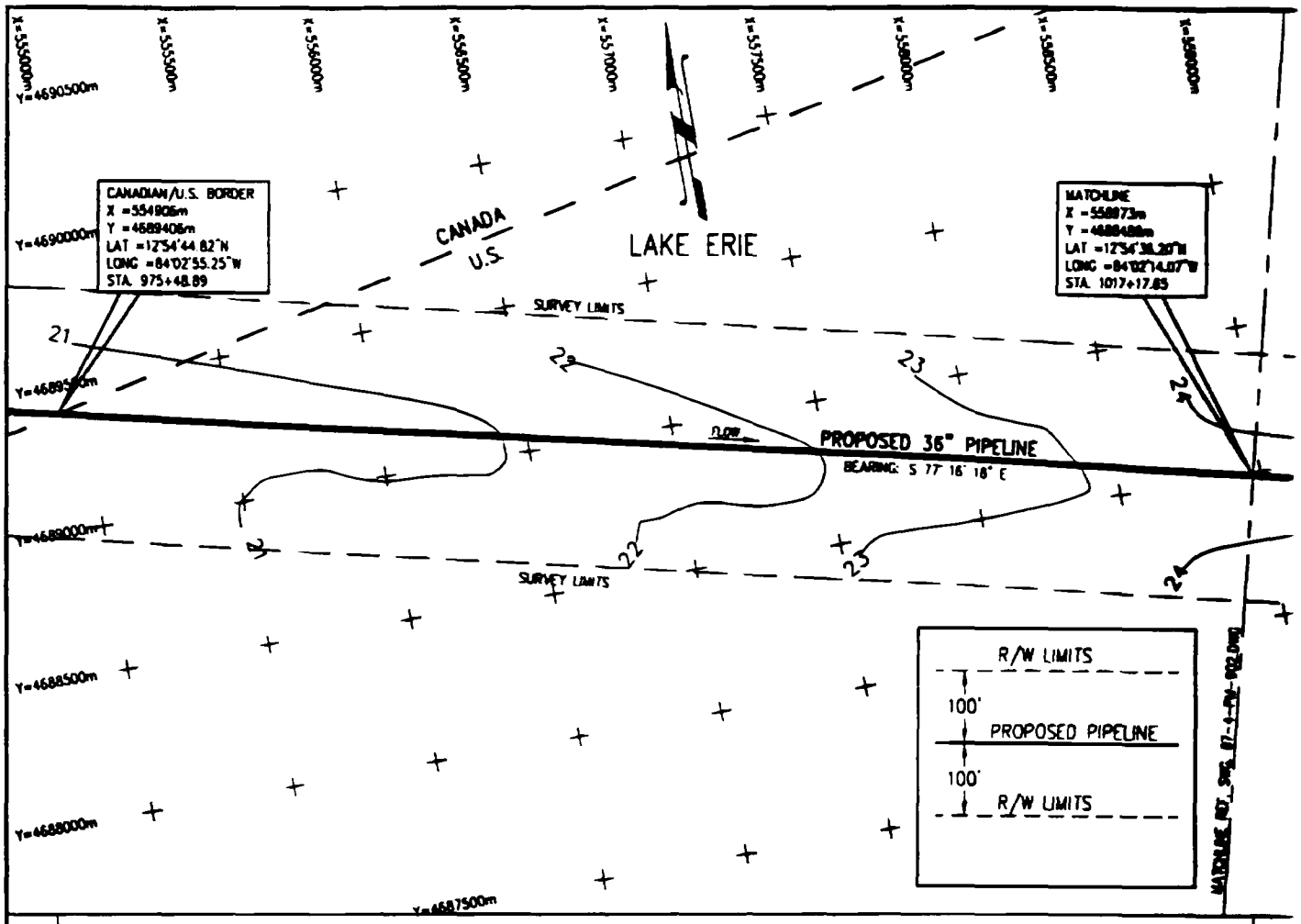
J.D.Hair&Associates,Inc.
Consulting Engineers

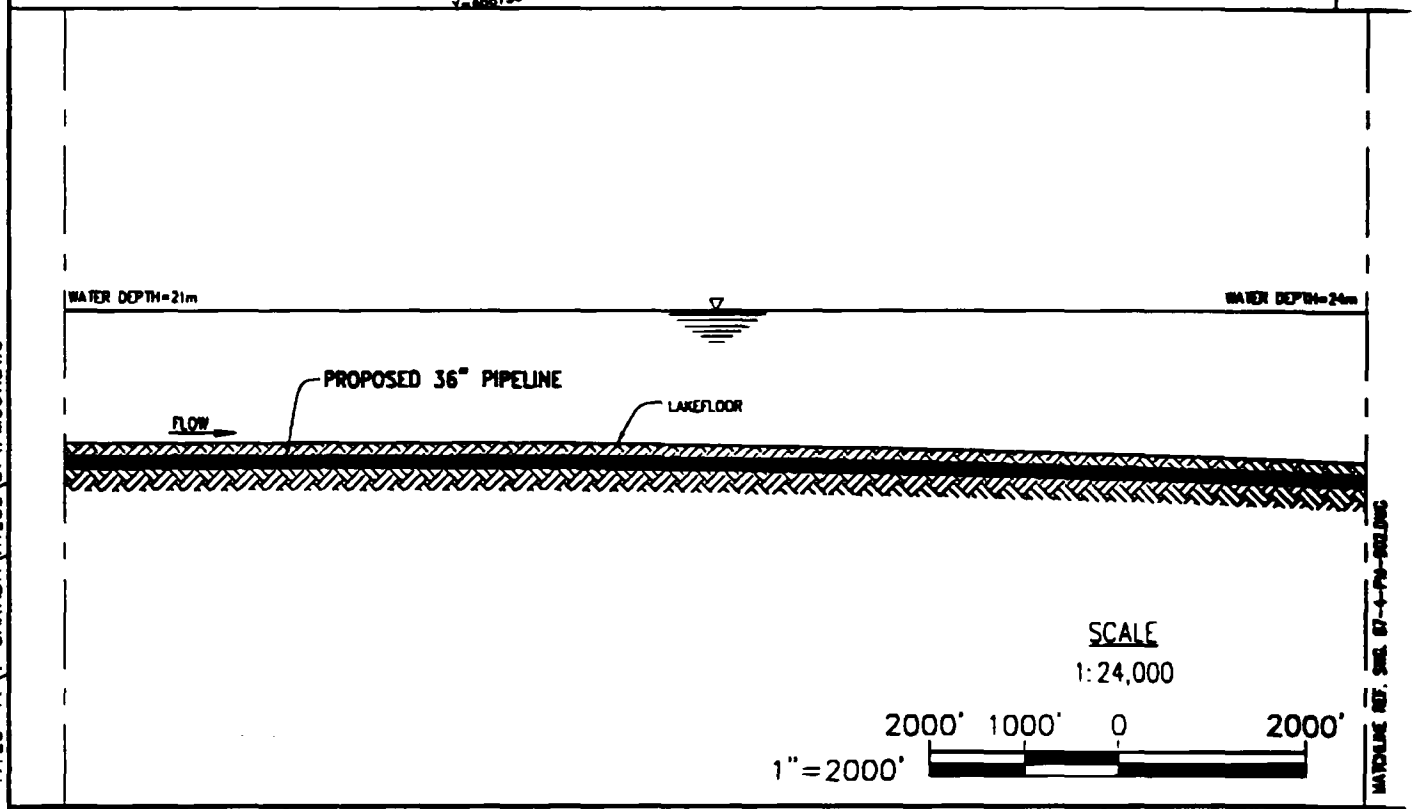
MILLENNIUM PIPELINE PROJECT
PLAN AND PROFILE
PROPOSED 36 INCH PIPELINE LAKE ERIE CROSSING
US LANDFALL HORIZONTAL DIRECTIONAL DRILL
CHAUTAUQUA COUNTY, NEW YORK

DATE	DRAWN BY
11/09/98	JDH&A
SCALE	CHECKED BY
NOTED	
DWG. NO.	
USL_R3_A	



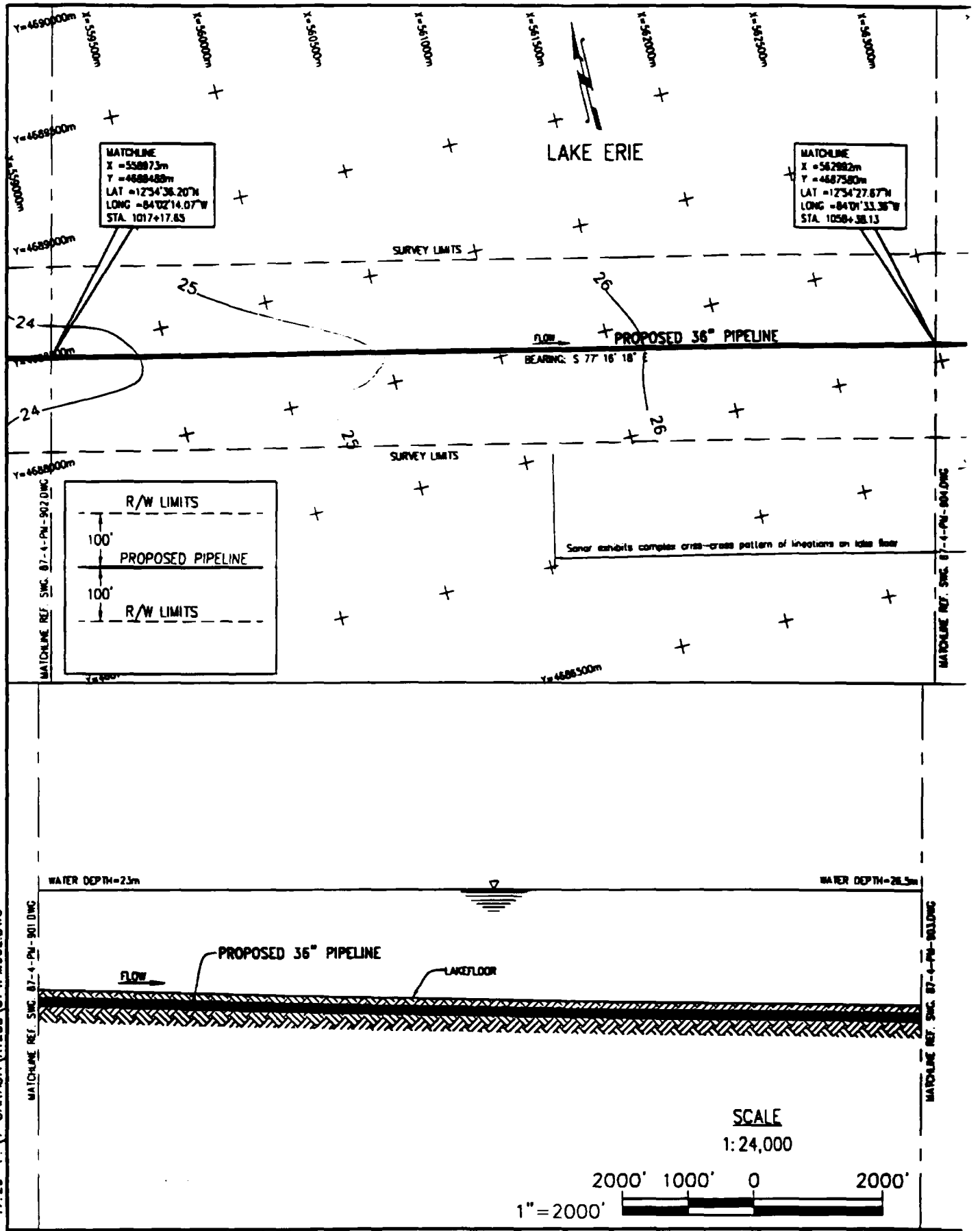
MPC INTERNATIONAL, Inc.	MILLENNIUM PIPELINE PROJECT PROPOSED LAKE ERIE CROSSING 36" PIPELINE	DWG. FIG: 87-4-PM-90
		ORIGIN. DATE: 10/27/98 · REV. DATE: · RI
	VICINITY MAP	SCALE: N.T.S. · JOB NO. H-1203





MPC INTERNATIONAL, Inc.	MILLENNIUM PIPELINE PROJECT PROPOSED LAKE ERIE CROSSING 36" PIPELINE PLAN & PROFILE SHT. 1 OF 13	DWG./FIG: 87-4-PM-90 ORIGIN. DATE: 10/27/98 REV. DATE: REV C SCALE: AS NOTED JOB NO. H-1203

JUAN 11/02/98 17:28 F:\T-CANADA\H1203\874PM901.DWG



MPC INTERNATIONAL, Inc.

MILLENNIUM PIPELINE PROJECT

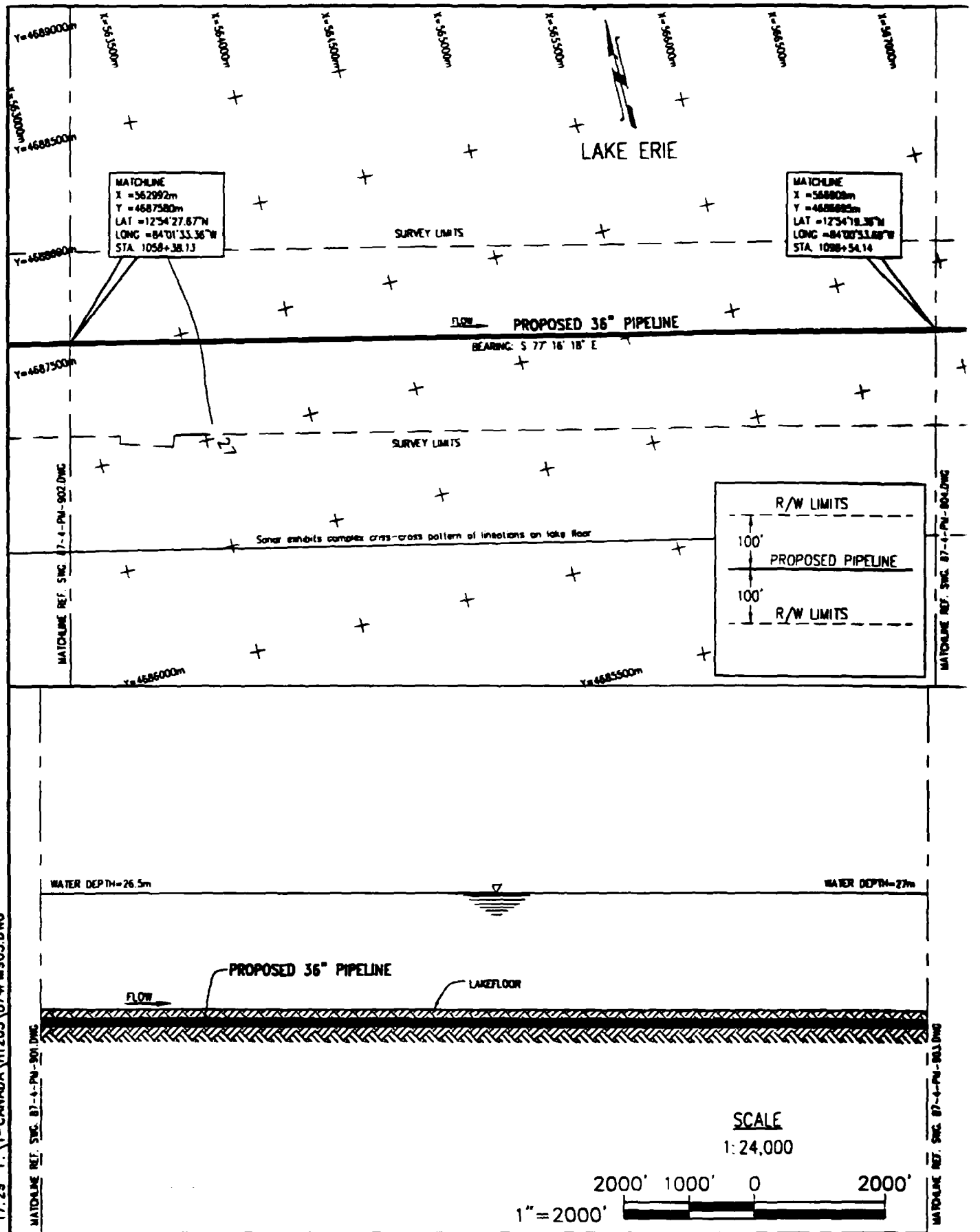
PROPOSED LAKE ERIE CROSSING 36" PIPELINE

PLAN & PROFILE

SHT. 2 OF 13

DWG. FIG: 87-4-PM-90		
ORIGIN. DATE: 10/27/98	REV. DATE:	RE
SCALE: AS NOTED	JOB NO. H-1203	

JUAN 11/02/98 17:29 F:\T-CANADA\H1203\874PM902.DWG



MPC INTERNATIONAL, Inc.

MILLENNIUM PIPELINE PROJECT

PROPOSED LAKE ERIE CROSSING 36" PIPELINE

PLAN & PROFILE

SHT. 3 OF 13

DWG. FIG: 87-4-PM-90

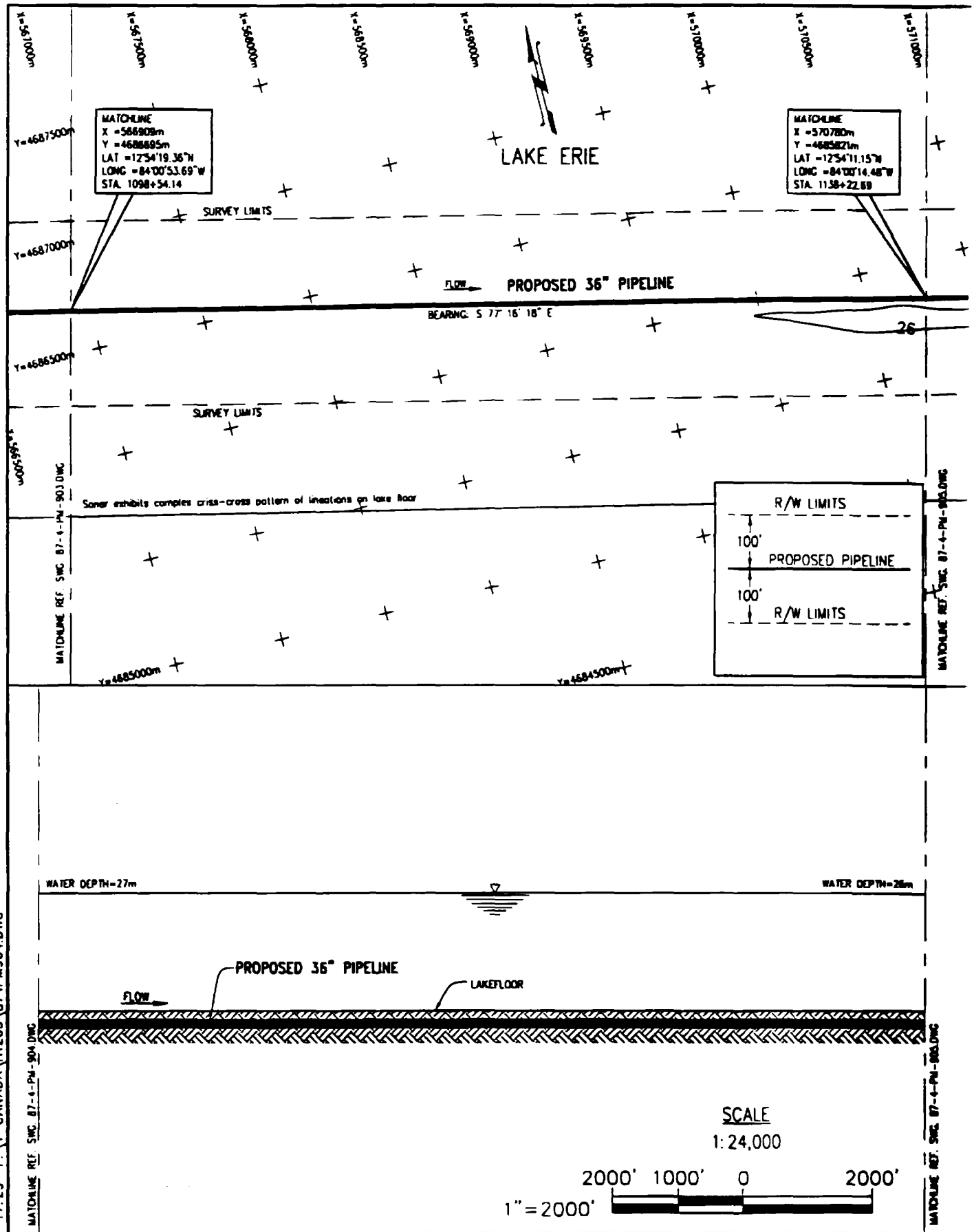
ORIGIN. DATE: 10/27/98

REV. DATE:

SCALE: AS NOTED

JOB NO. H-1203

JUAN 11/02/98 17:29 F:\T-CANADA\H1203\874PM903.DWG



JUAN 11/02/98 17:29 F:\T-CANADA\H1203\874PM904.DWG

MPC INTERNATIONAL, Inc.

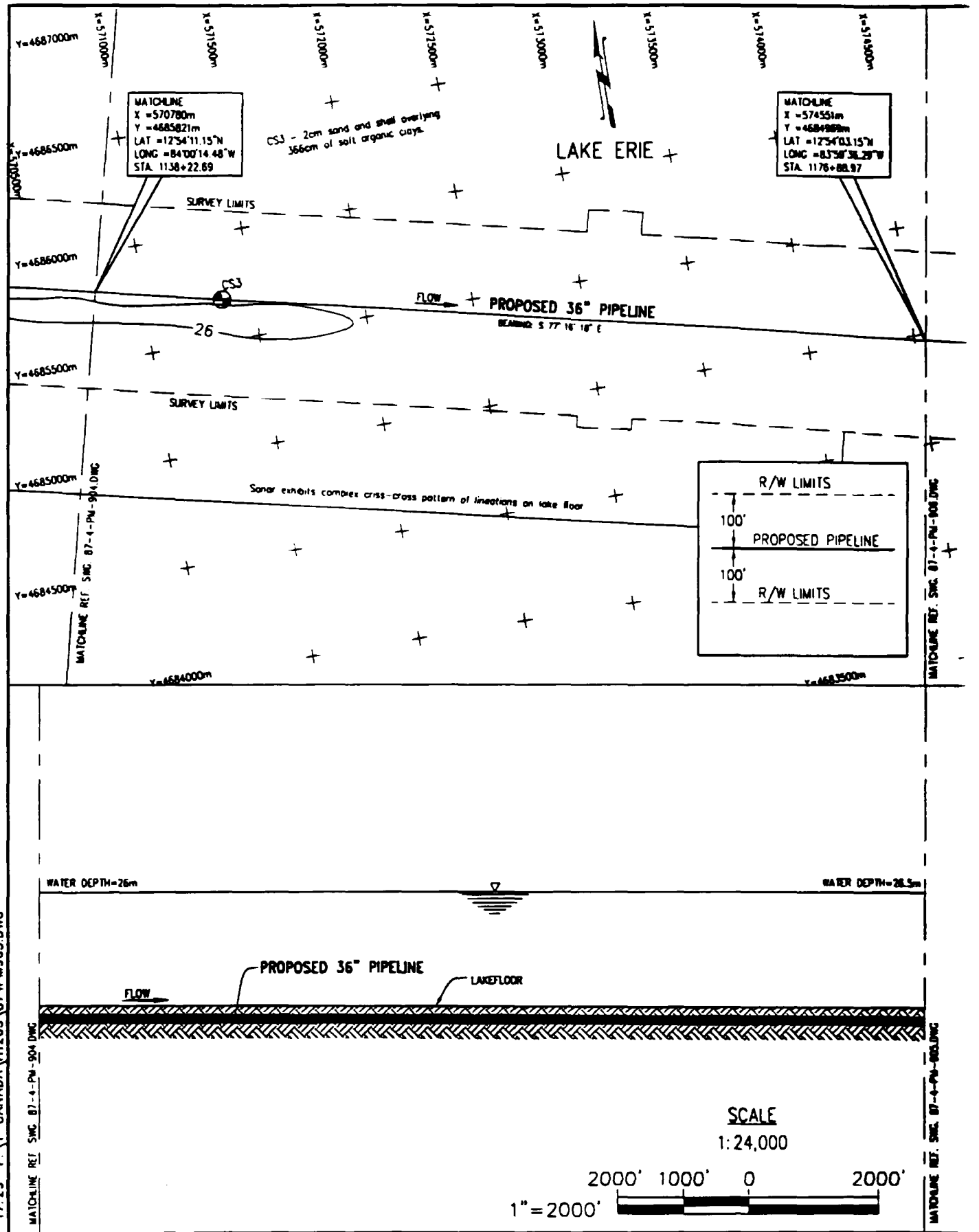
MILLENNIUM PIPELINE PROJECT

PROPOSED LAKE ERIE CROSSING 36" PIPELINE

PLAN & PROFILE

SHT. 4 OF 13

DWG FIG. 87-4-PM-90		
ORIGIN. DATE: 10/27/98	REV. DATE:	RI
SCALE: AS NOTED	JOB NO. H-1203	



JUAN 11/02/98 17:29 F:\T-CANADA\H1203\874PM905.DWG

MPC INTERNATIONAL, Inc.

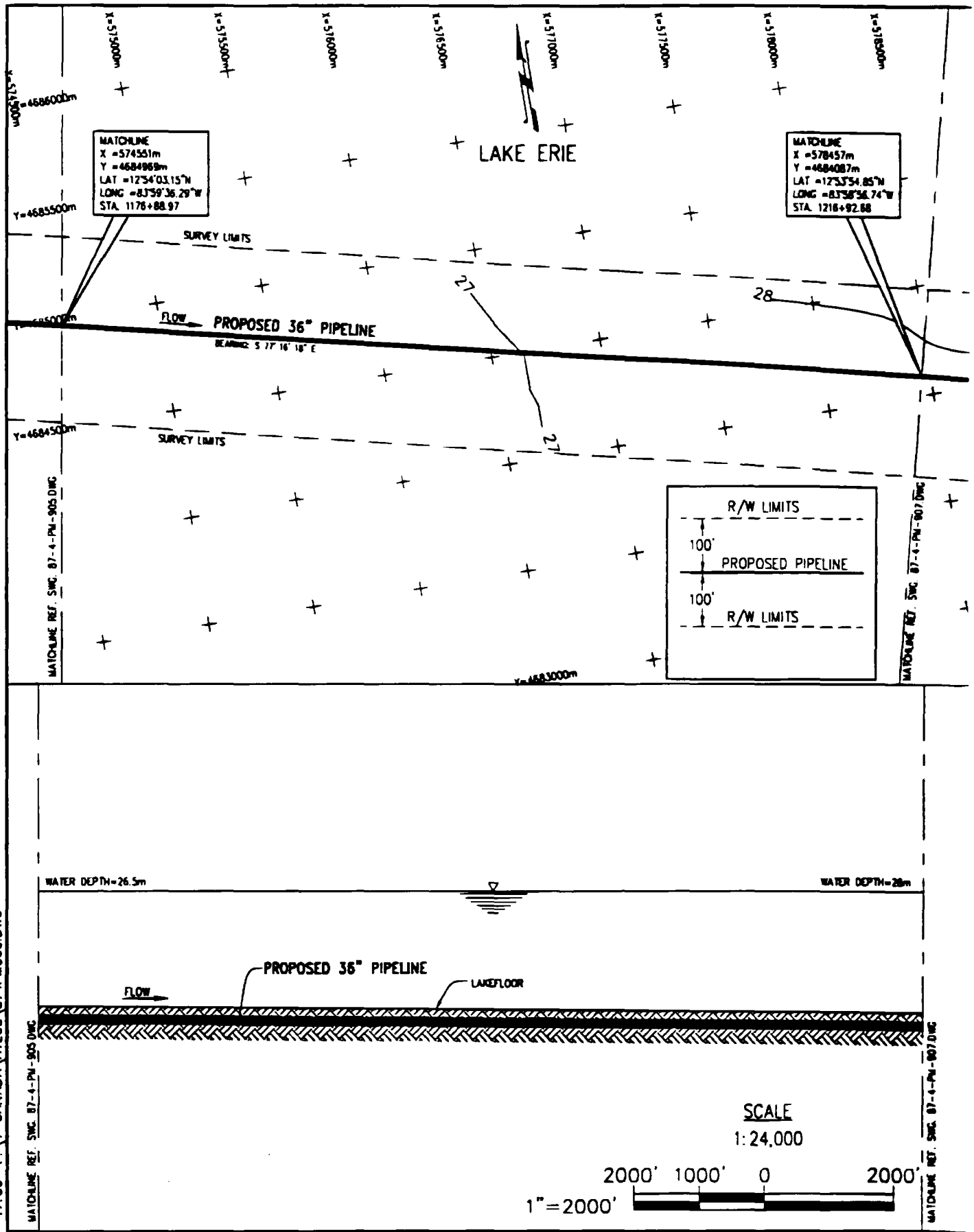
MILLENNIUM PIPELINE PROJECT

PROPOSED LAKE ERIE CROSSING 36" PIPELINE

PLAN & PROFILE

SHT. 5 OF 13

DWG. FIG: 87-4-PM-90		
ORIGIN. DATE: 10/27/98	REV. DATE:	R
SCALE: AS NOTED	JOB NO. H-1203	



MPC INTERNATIONAL, Inc.

MILLENNIUM PIPELINE PROJECT

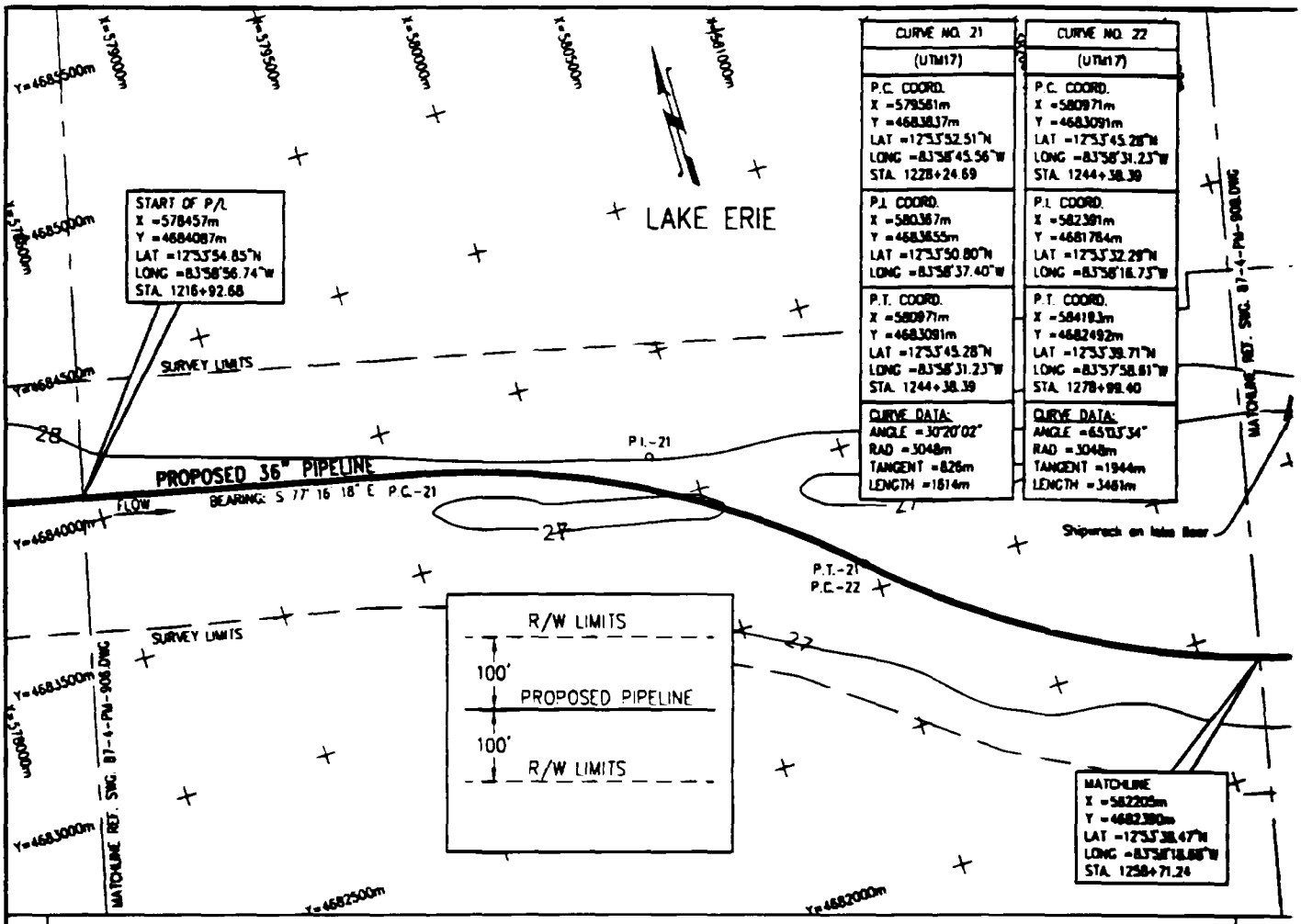
PROPOSED LAKE ERIE CROSSING 36" PIPELINE

PLAN & PROFILE

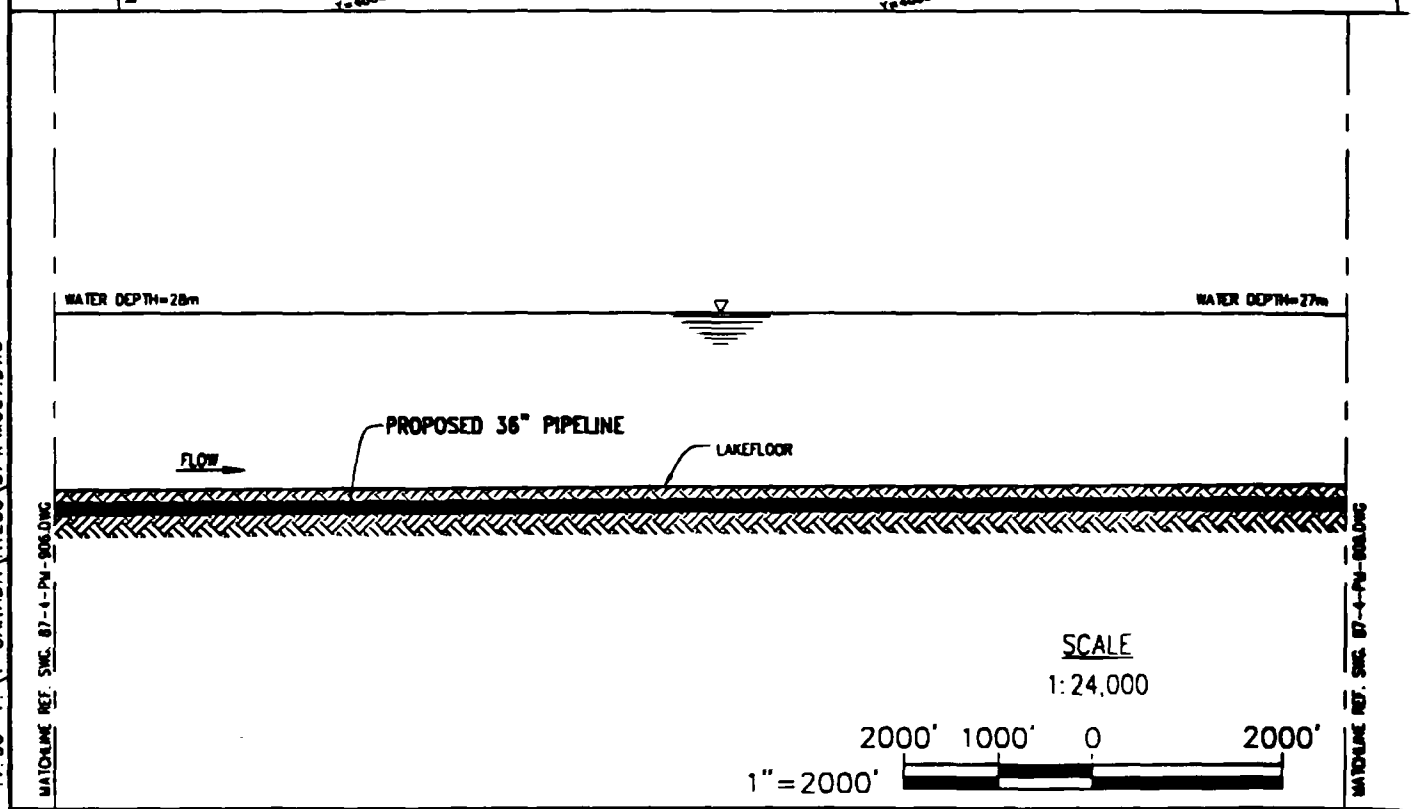
SHT. 6 OF 13

DWG. FIG: 87-4-PM-906		
ORIGIN. DATE: 10/27/98	REV. DATE:	REV. C
SCALE: AS NOTED	JOB NO. H-1203	

JUAN 11/02/98 17:30 F:\T-CANADA\H1203\874PM906.DWG



CURVE NO. 21 (UTM17)	CURVE NO. 22 (UTM17)
P.C. COORD. X =579561m Y =4683837m LAT =12°53'52.51"N LONG =83°58'45.56"W STA. 1228+24.69	P.C. COORD. X =580971m Y =4683091m LAT =12°53'45.28"N LONG =83°58'31.23"W STA. 1244+38.39
P.I. COORD. X =580367m Y =4683655m LAT =12°53'50.80"N LONG =83°58'37.40"W	P.I. COORD. X =582391m Y =4681784m LAT =12°53'32.29"N LONG =83°58'16.73"W
P.T. COORD. X =580971m Y =4683091m LAT =12°53'45.28"N LONG =83°58'31.23"W STA. 1244+38.39	P.T. COORD. X =584183m Y =4682492m LAT =12°53'39.71"N LONG =83°57'58.81"W STA. 1278+99.40
CURVE DATA: ANGLE =30°20'02" RAD =3048m TANGENT =826m LENGTH =1814m	CURVE DATA: ANGLE =65°03'34" RAD =3048m TANGENT =1944m LENGTH =3481m



JUAN 11/02/98 17:30 F:\T-CANADA\H1203\874PM907.DWG

MPC INTERNATIONAL, Inc.

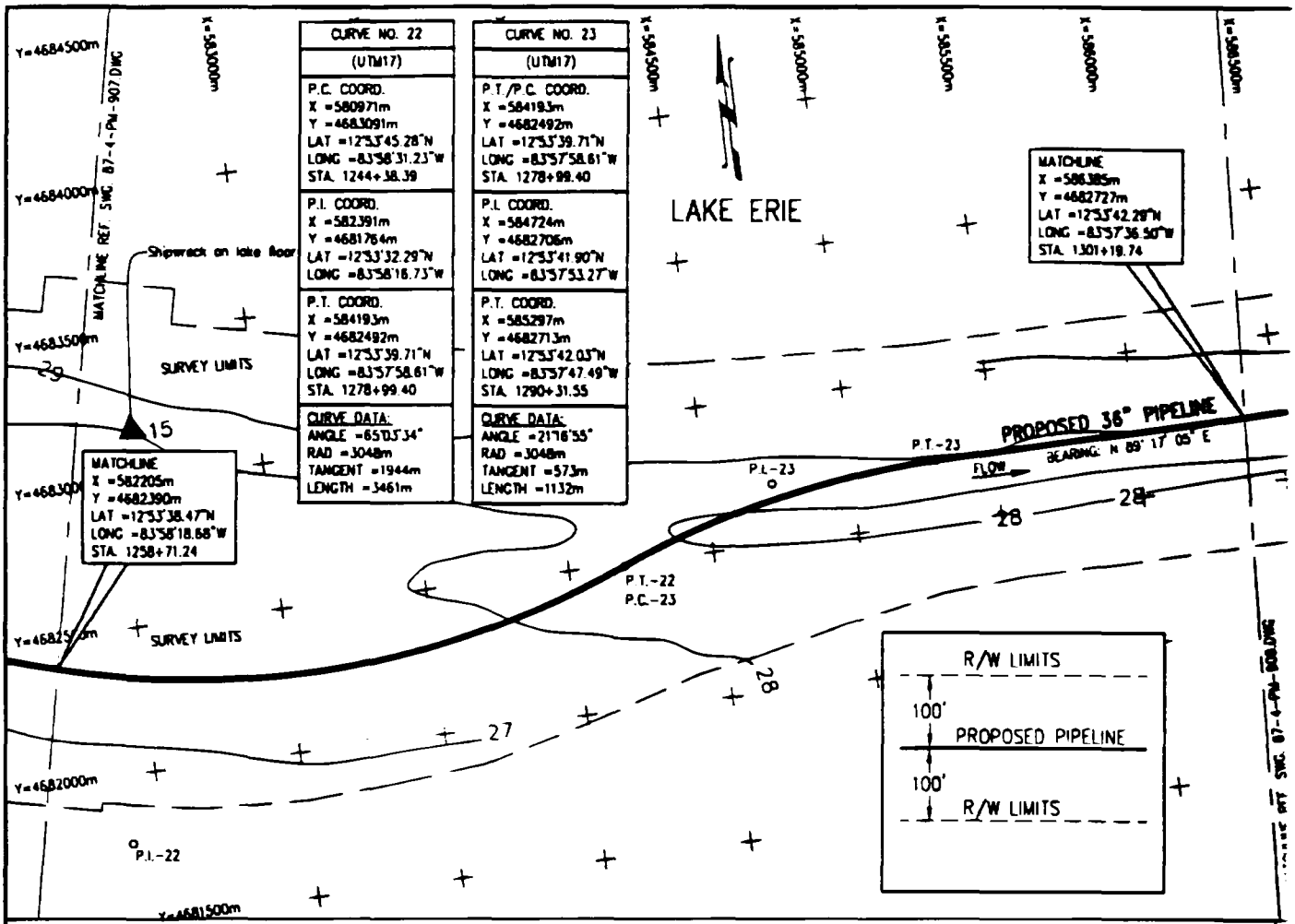
MILLENNIUM PIPELINE PROJECT

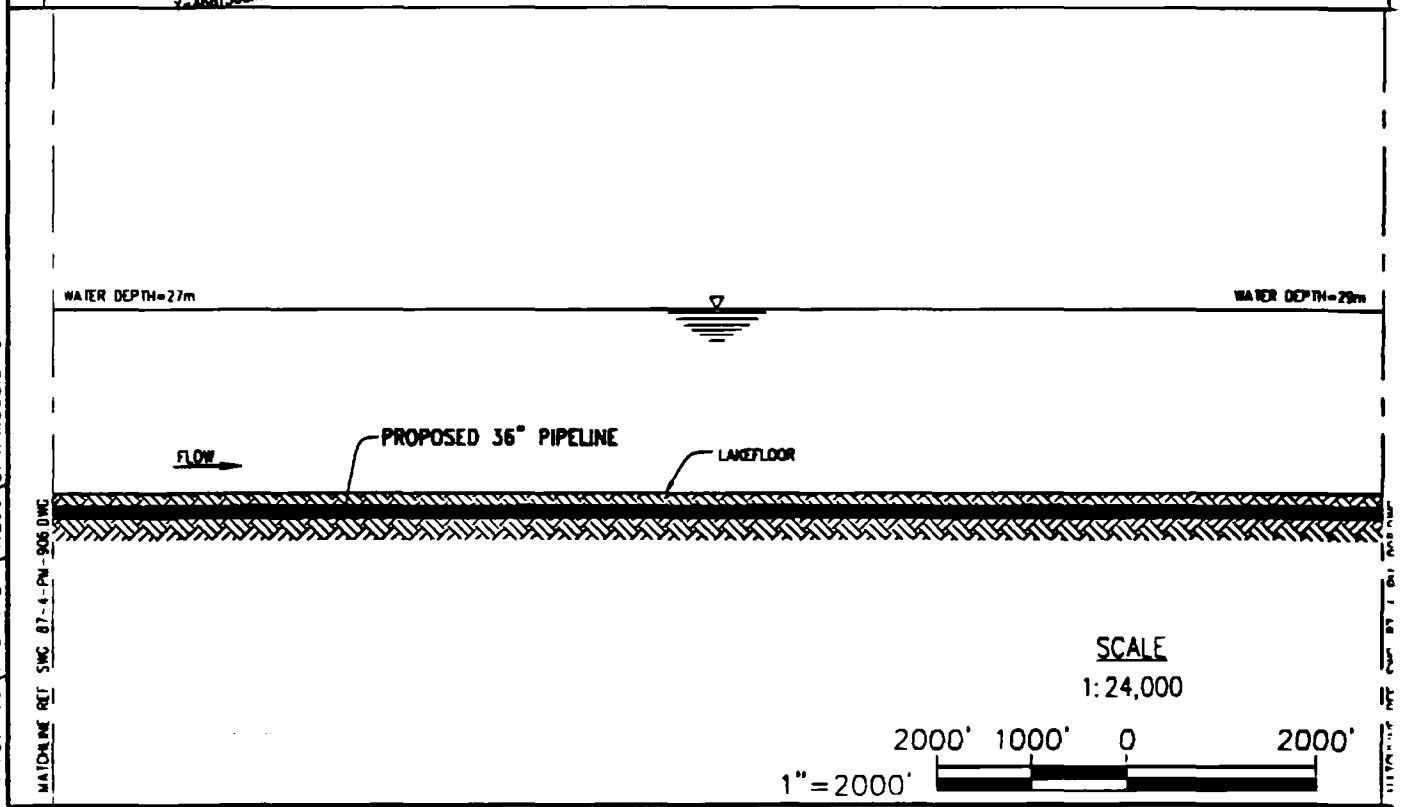
PROPOSED LAKE ERIE CROSSING 36" PIPELINE

PLAN & PROFILE

SHT. 7 OF 13

DWG. FIG:	87-4-PM-907
ORIGIN. DATE: 10/27/98	REV. DATE:
SCALE: AS NOTED	JOB NO. H-1203





MPC INTERNATIONAL, Inc.

MILLENNIUM PIPELINE PROJECT

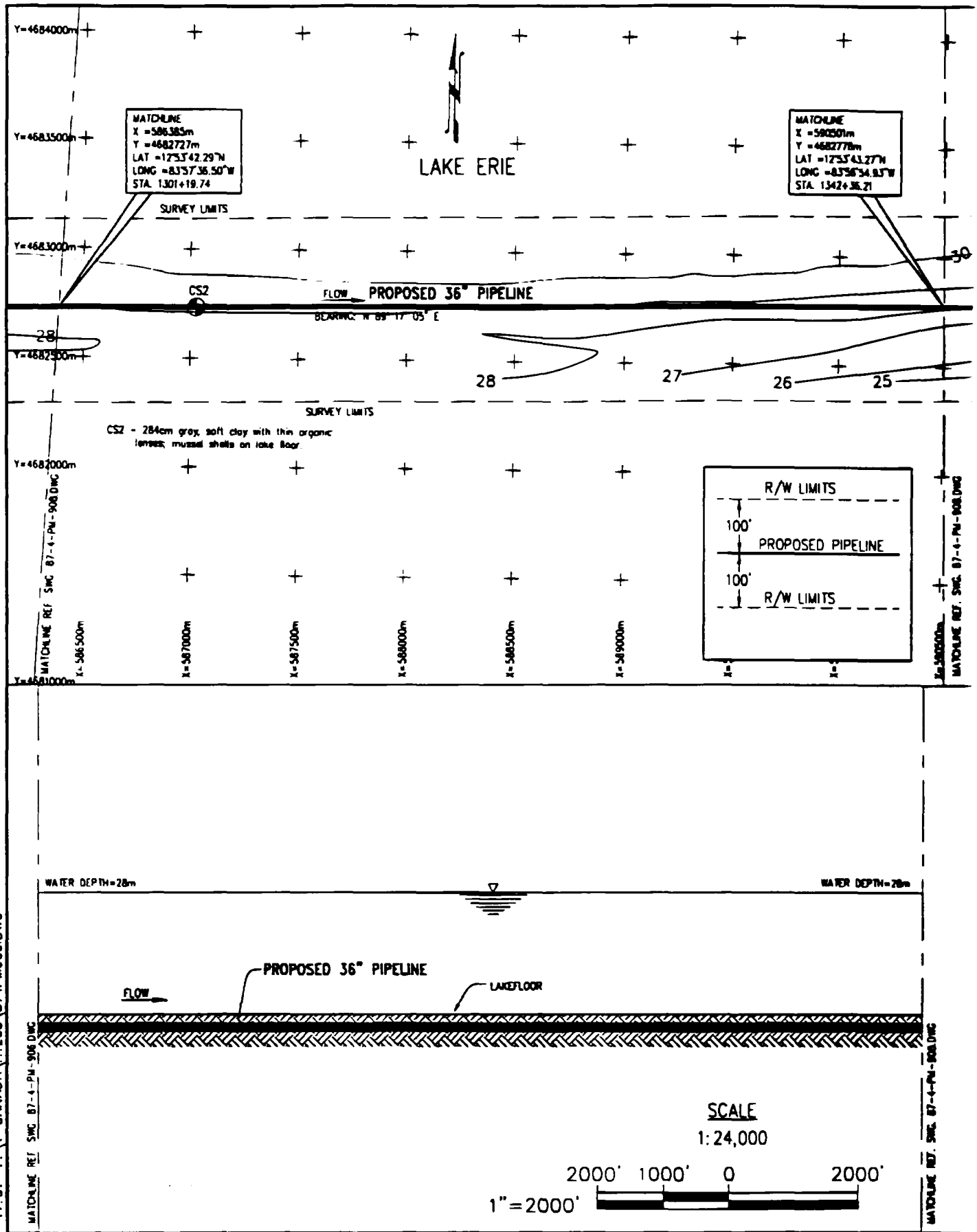
PROPOSED LAKE ERIE CROSSING 36" PIPELINE

PLAN & PROFILE

SHT. 8 OF 13

DWG. FIG: 87-4-PM-90		
ORIGIN. DATE: 10/27/98	REV. DATE:	R
SCALE: AS NOTED	JOB NO. H-120	

JUAN 11/02/98 17:31 F:\T-CANADA\H1203\874PM908.DWG



JUAN 11/02/98 17:31 F:\T-CANADA\H1203\874PM909.DWG

MPC INTERNATIONAL, Inc.

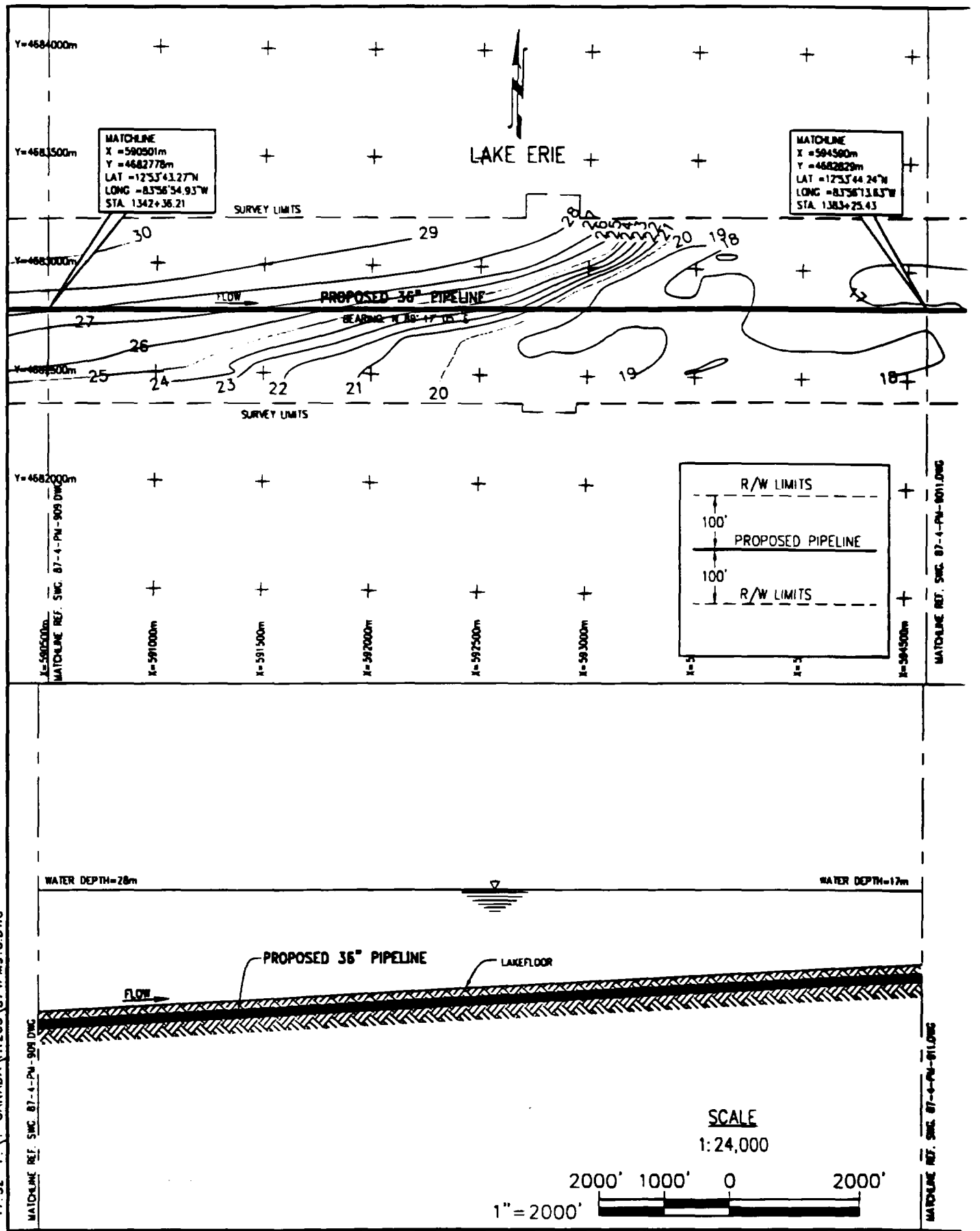
MILLENNIUM PIPELINE PROJECT

PROPOSED LAKE ERIE CROSSING 36" PIPELINE

PLAN & PROFILE

SHT. 9 OF 13

DWG. FIG: 87-4-PM-909		
ORIGIN. DATE: 10/27/98	REV. DATE:	REV 0
SCALE: AS NOTED	JOB NO. H-1203	



MPC INTERNATIONAL, Inc.

MILLENNIUM PIPELINE PROJECT

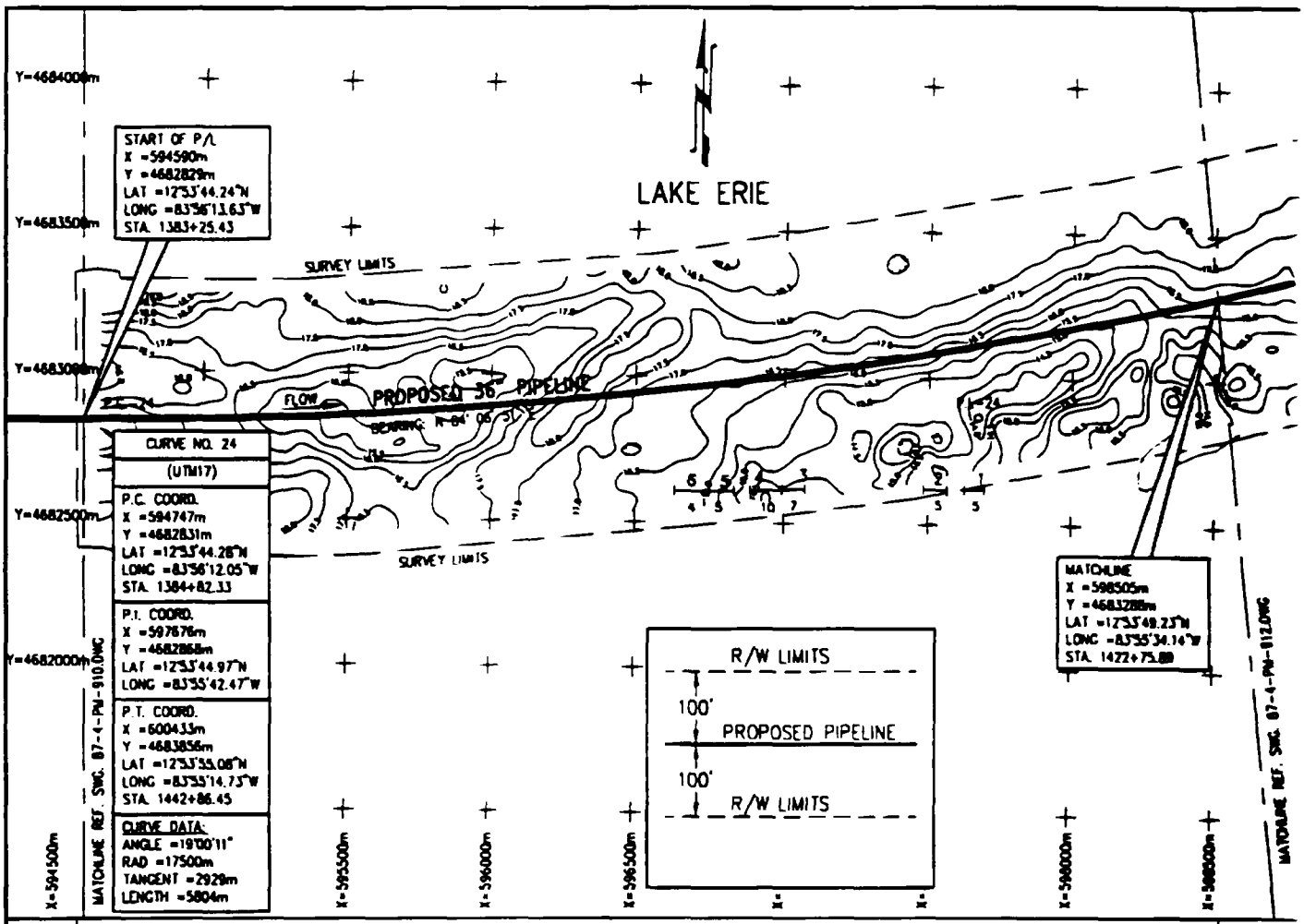
PROPOSED LAKE ERIE CROSSING 36" PIPELINE

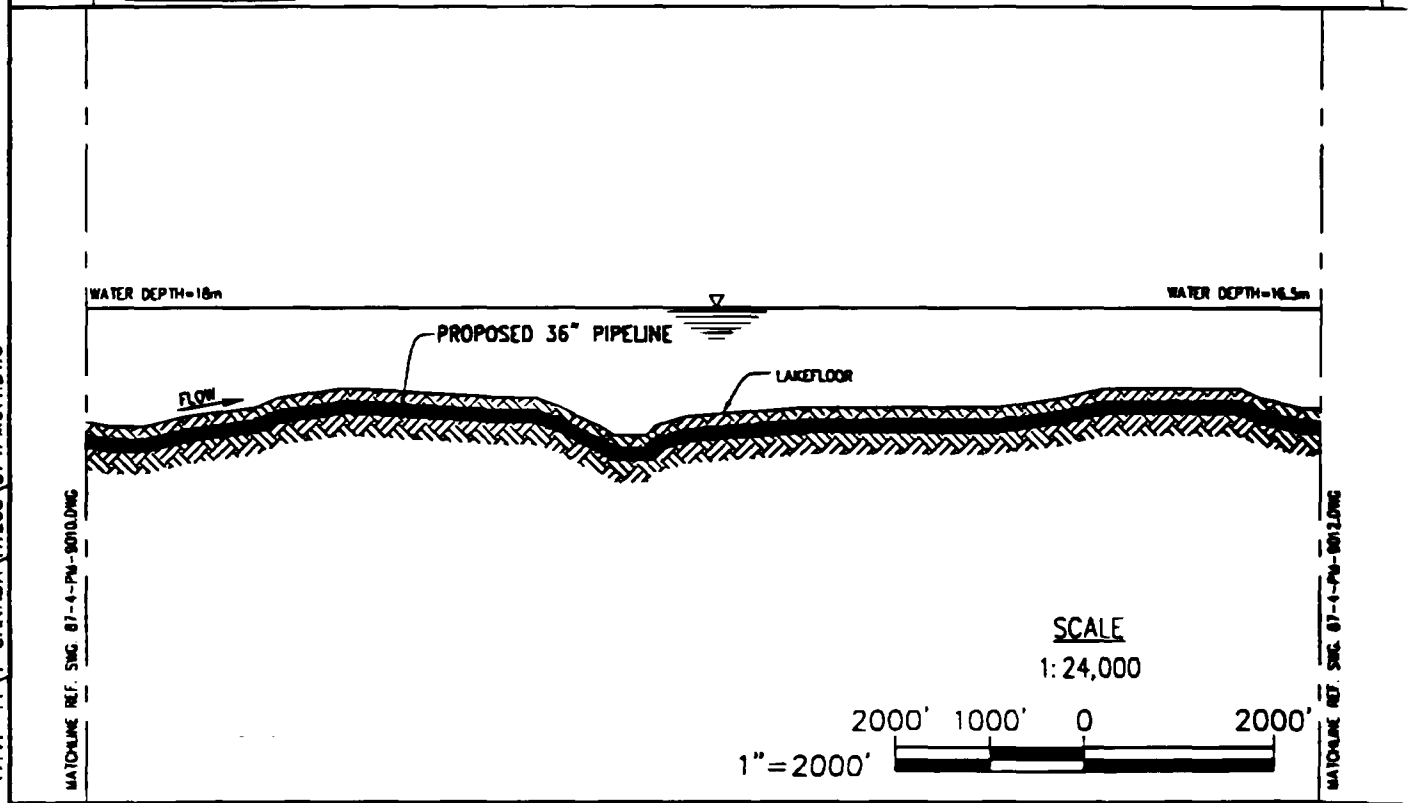
PLAN & PROFILE

SHT. 10 OF 13

DWG. / FIG: 87-4-PM-91(		
ORIGIN. DATE: 10/27/98	REV. DATE:	RE
SCALE: AS NOTED	JOB NO. H-1203	

JUAN 11/02/98 17:32 F:\T-CANADA\H1203\874PM910.DWG





JUAN 11/02/98 17:11 F:\T-CANADA\H1203\874PM911.DWG

MPC INTERNATIONAL, Inc.

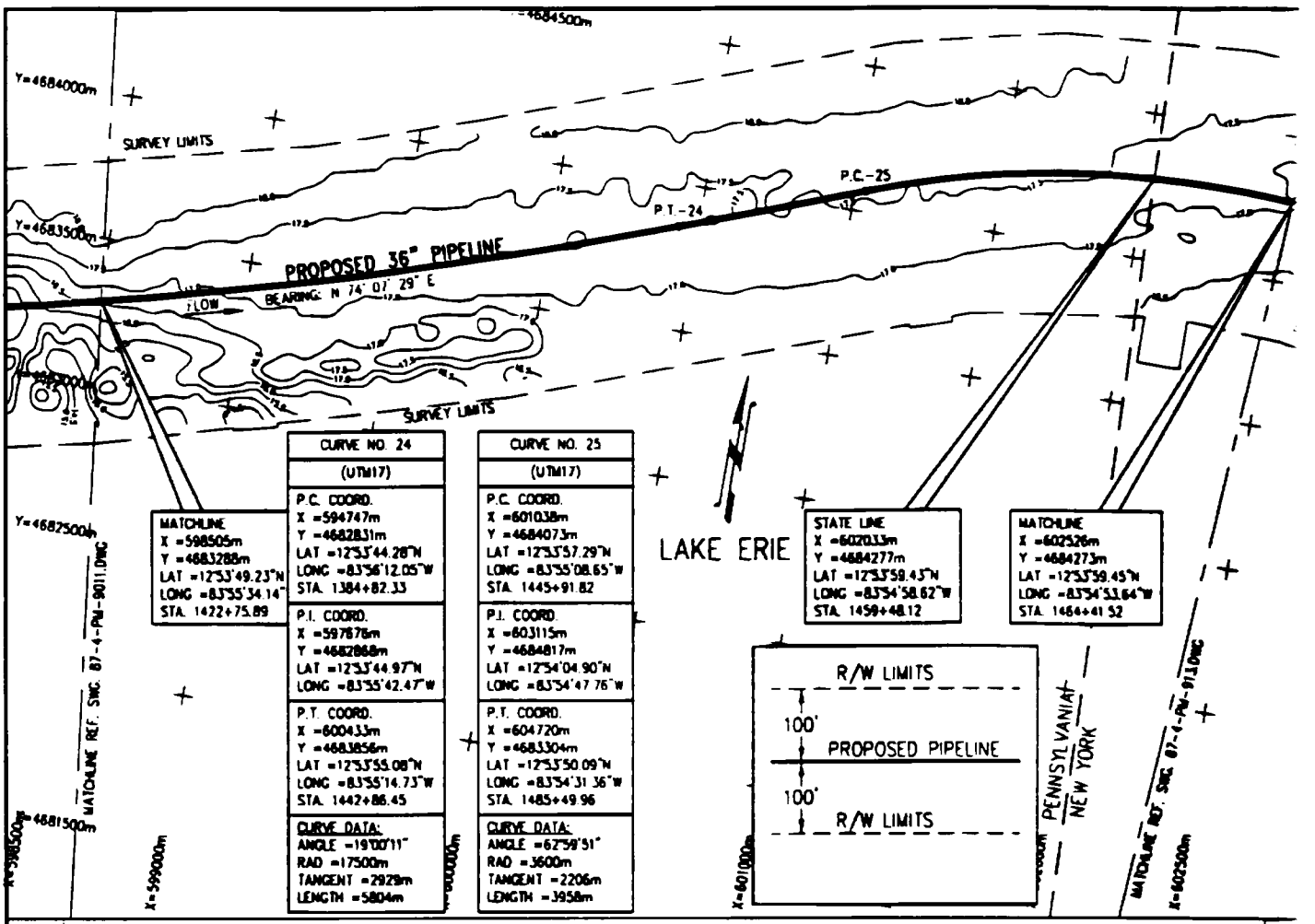
MILLENNIUM PIPELINE PROJECT

PROPOSED LAKE ERIE CROSSING 36" PIPELINE

PLAN & PROFILE

SHT. 11 OF 13

DWG./FIG:	87-4-PM-91
ORIGIN. DATE: 10/27/98	REV. DATE:
SCALE: AS NOTED	JOB NO. H-1203



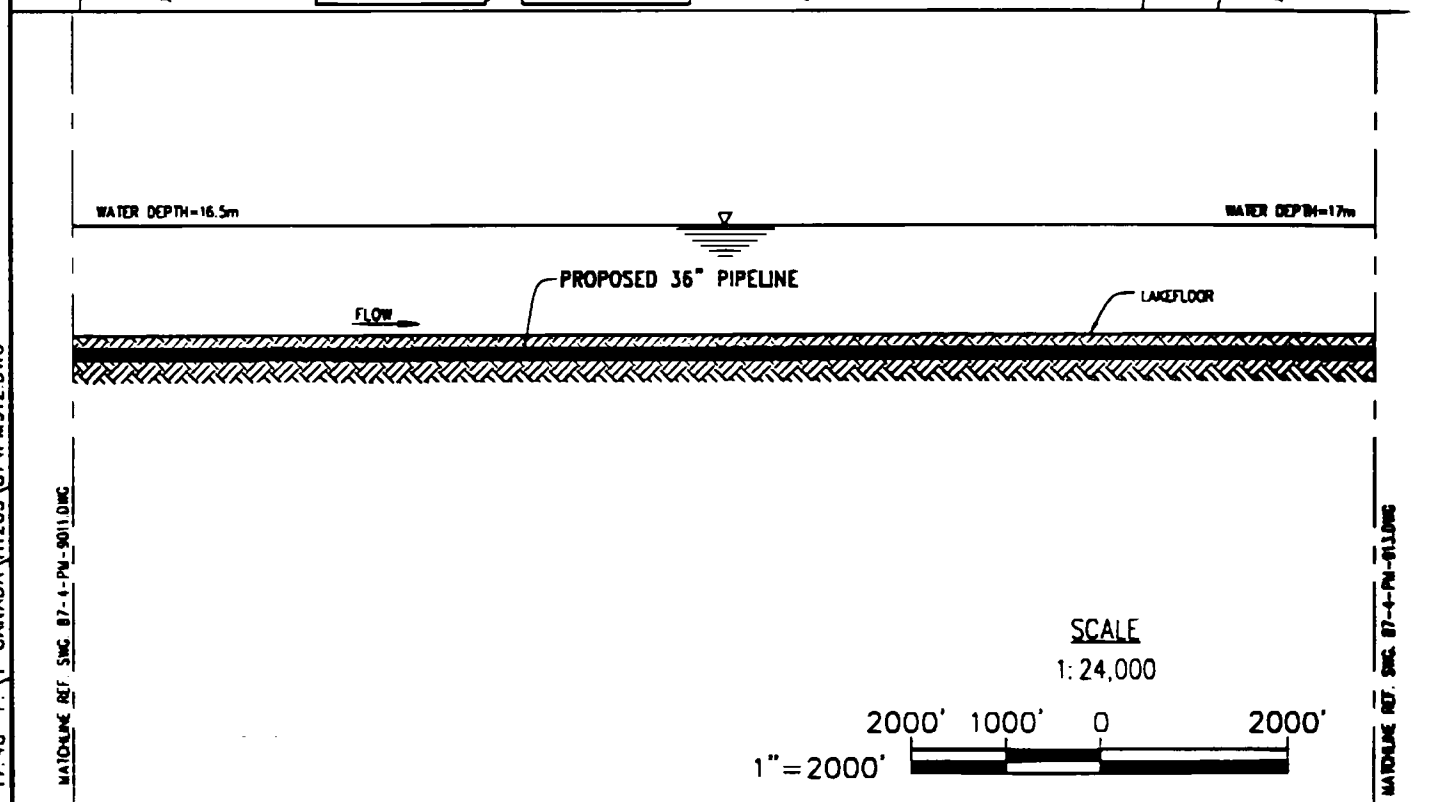
MATCHLINE
X =598505m
Y =4683288m
LAT =12°53'49.23"N
LONG =83°55'34.14"
STA. 1422+75.89

CURVE NO. 24 (UTM17)
P.C. COORD.
X =594747m
Y =4682831m
LAT =12°53'44.28"N
LONG =83°56'12.05"W
STA. 1384+82.33
P.I. COORD.
X =597676m
Y =4682868m
LAT =12°53'44.97"N
LONG =83°55'42.47"W
P.T. COORD.
X =600433m
Y =4683856m
LAT =12°53'55.08"N
LONG =83°55'14.73"W
STA. 1442+86.45
CURVE DATA:
ANGLE =19°00'11"
RAD =17500m
TANGENT =2929m
LENGTH =5804m

CURVE NO. 25 (UTM17)
P.C. COORD.
X =601038m
Y =4684073m
LAT =12°53'57.29"N
LONG =83°55'08.65"W
STA. 1445+91.82
P.I. COORD.
X =603115m
Y =4684817m
LAT =12°54'04.90"N
LONG =83°54'47.76"W
P.T. COORD.
X =604720m
Y =4683304m
LAT =12°53'50.09"N
LONG =83°54'31.36"W
STA. 1485+49.96
CURVE DATA:
ANGLE =62°59'51"
RAD =3600m
TANGENT =2206m
LENGTH =3958m

STATE LINE
X =602033m
Y =4684277m
LAT =12°53'59.43"N
LONG =83°54'58.62"W
STA. 1459+48.12

MATCHLINE
X =602526m
Y =4684273m
LAT =12°53'59.45"N
LONG =83°54'53.64"W
STA. 1484+41.52



JUAN 11/02/98 17:48 F:\T-CANADA\H1203\874PM912.DWG

MPC INTERNATIONAL, Inc.

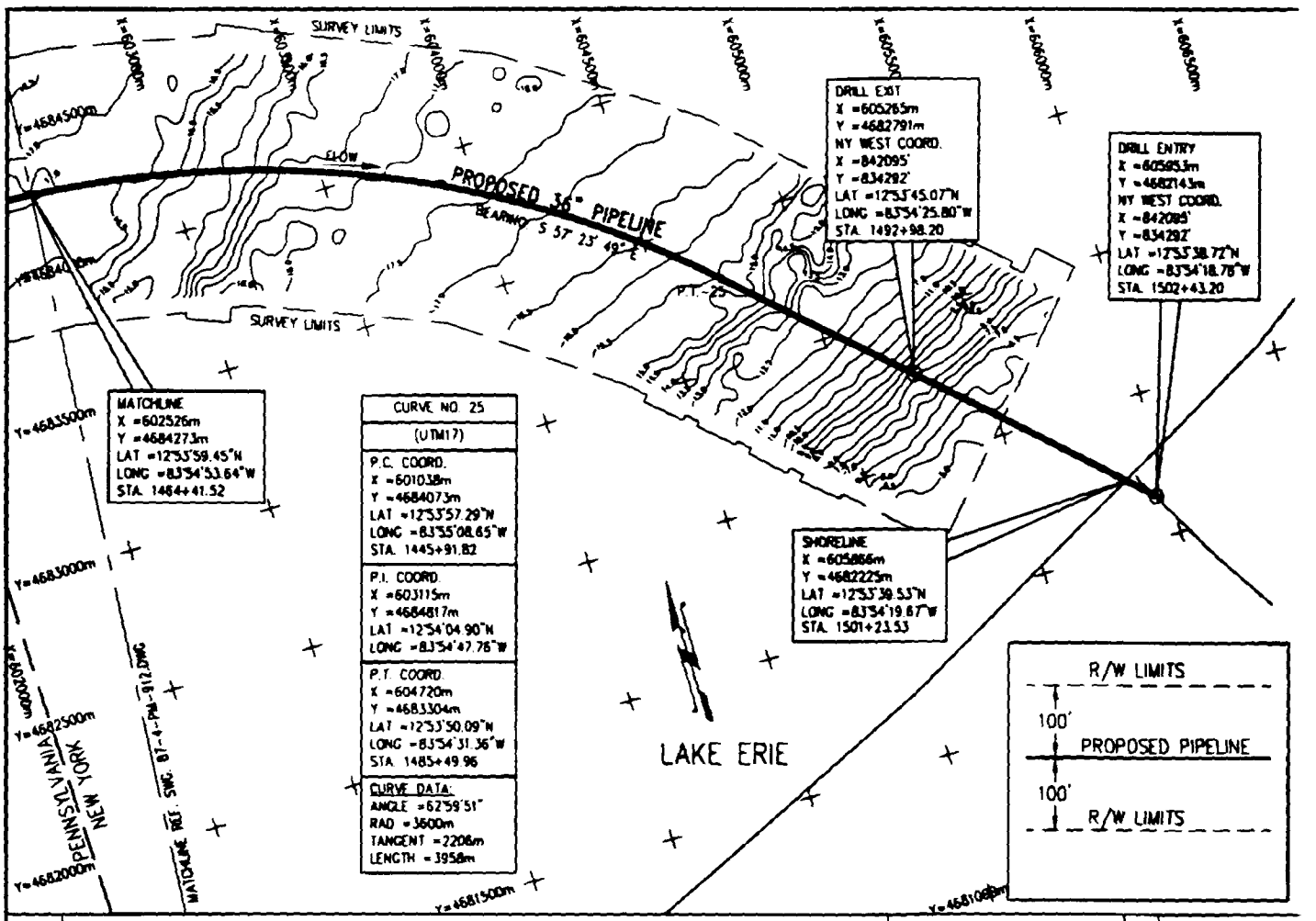
MILLENNIUM PIPELINE PROJECT

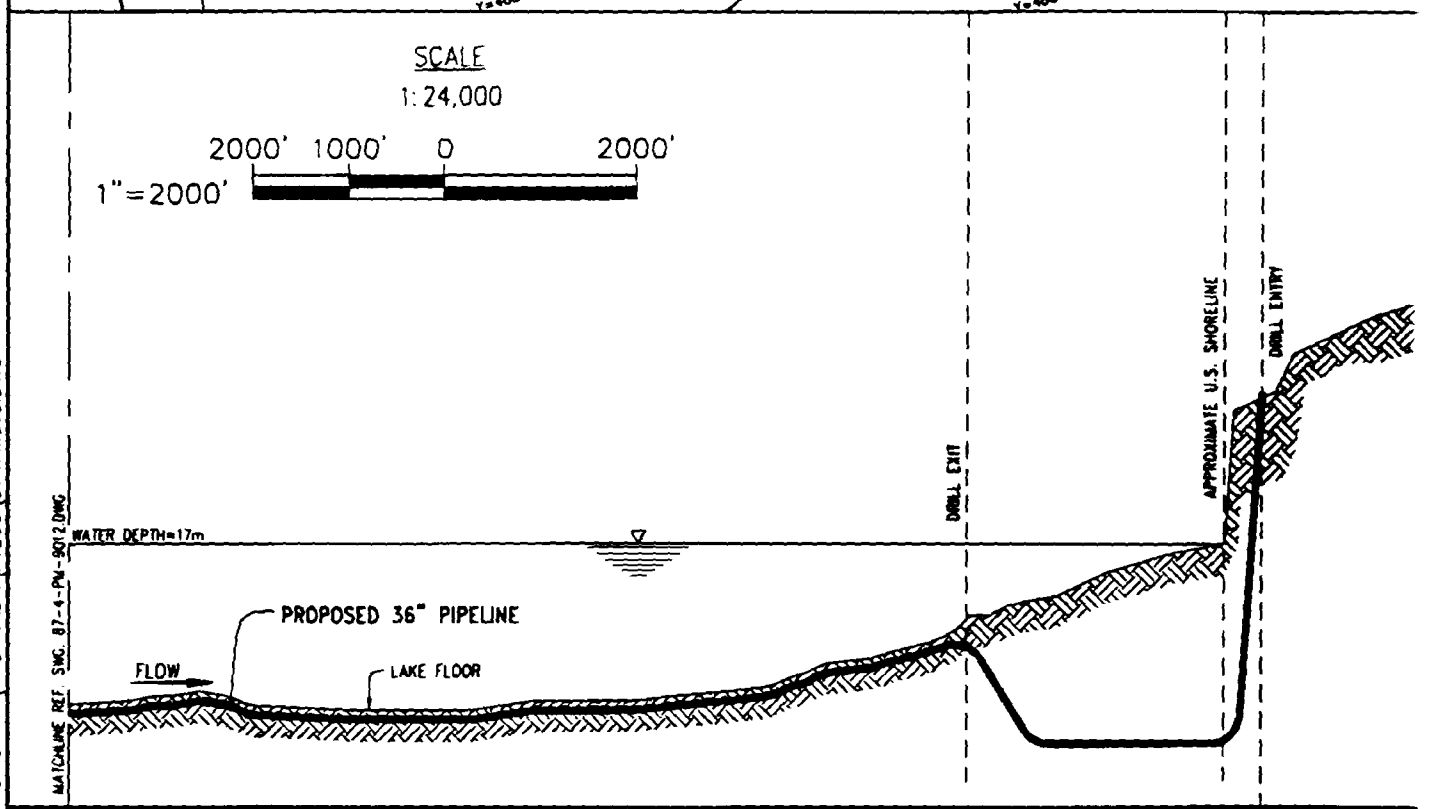
PROPOSED LAKE ERIE CROSSING 36" PIPELINE

PLAN & PROFILE

SHT. 12 OF 13

DWG./FIG. 87-4-PM-912		
ORIGIN. DATE: 10/27/98	REV. DATE:	REV. C
SCALE: AS NOTED	JOB NO. H-1203	





CAL 11/09/98 13:19 F:\T-CANADA\H1203\874PM913.DWG

MPC INTERNATIONAL, Inc.

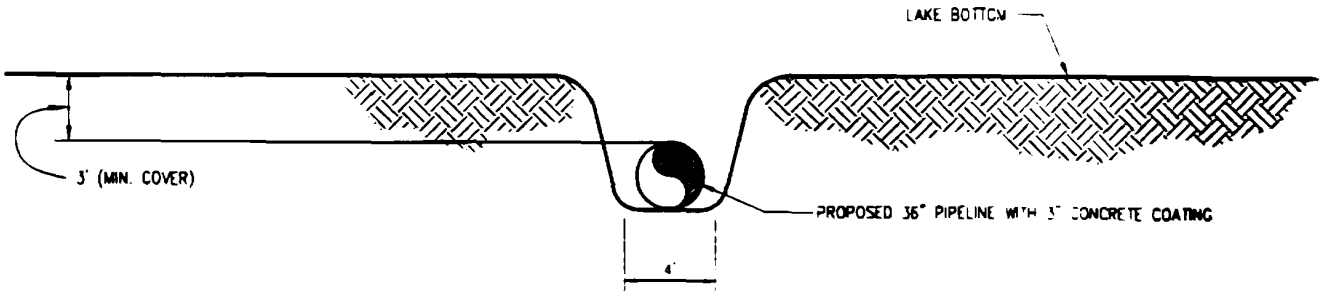
MILLENNIUM PIPELINE PROJECT

PROPOSED LAKE ERIE CROSSING 36" PIPELINE

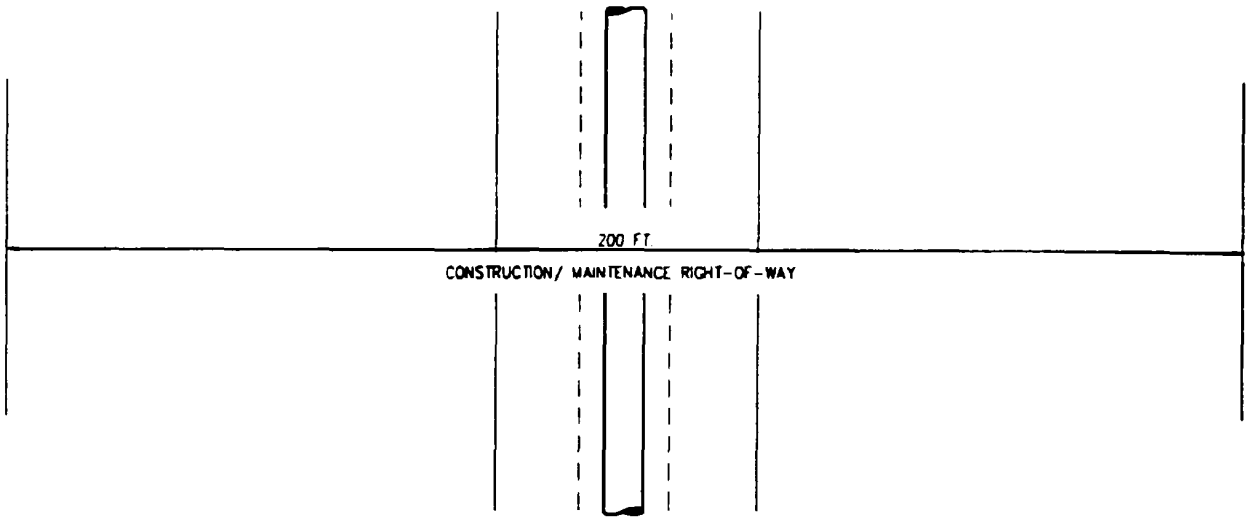
PLAN & PROFILE

SHT. 13 OF 13

DWG./FIG. 87-4-PM-913		
ORIGIN. DATE: 10/27/98	REV. DATE:	REV 1
SCALE: AS NOTED	JOB NO. H-1203	



PROFILE



PLAN

CAL 11/02/98 14:57 F:\T-CANADA\H1203\874PM914.DWG

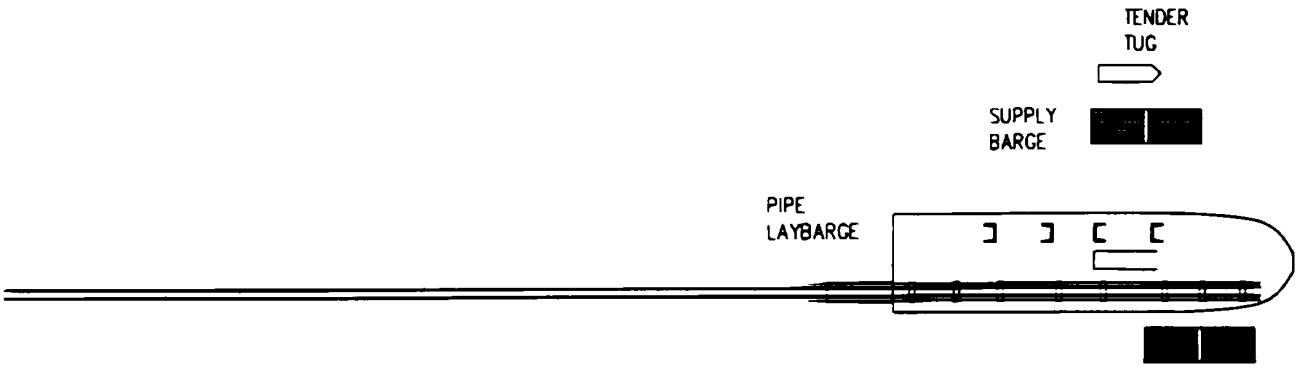
MPC INTERNATIONAL, Inc.

MILLENNIUM PIPELINE PROJECT

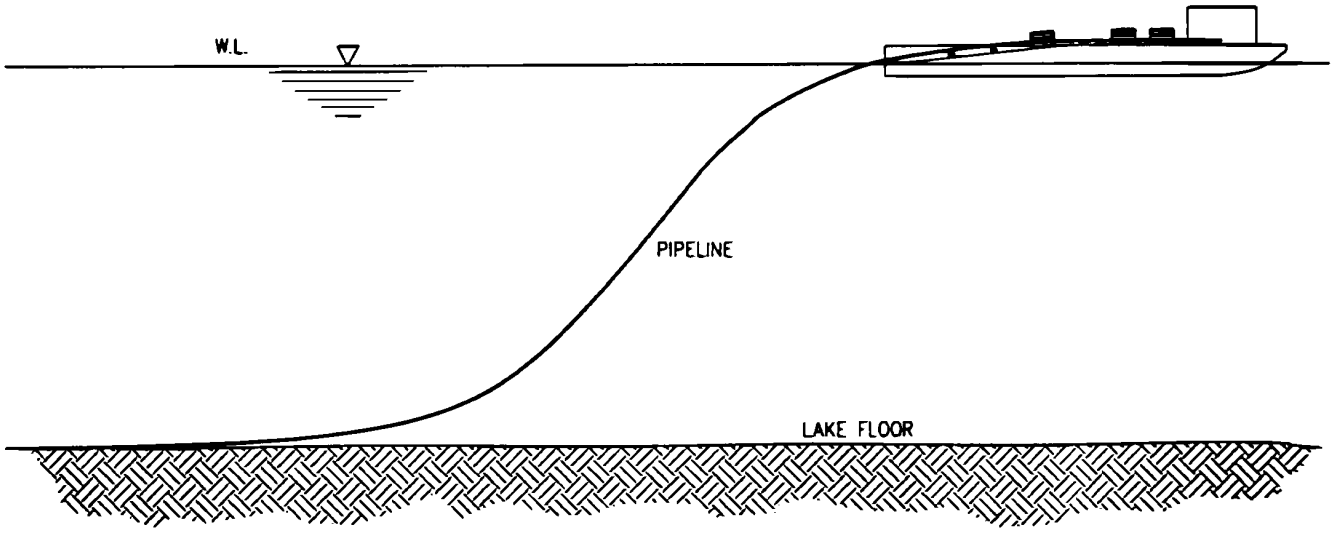
PROPOSED LAKE ERIE CROSSING 36" PIPELINE

TYPICAL OFFSHORE PIPELINE TRENCH

DWG FIG 87-4-PM-91		
ORIGIN DATE: 10/27/98	REV. DATE:	R
SCALE N.T.S.	JOB NO. H-1203	



PLAN



PROFILE

MPC INTERNATIONAL, Inc.

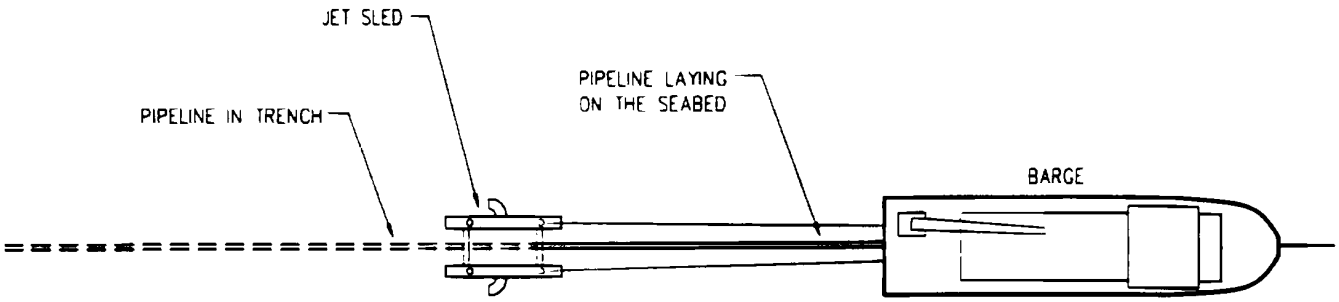
MILLENNIUM PIPELINE PROJECT

PROPOSED LAKE ERIE CROSSING 36" PIPELINE

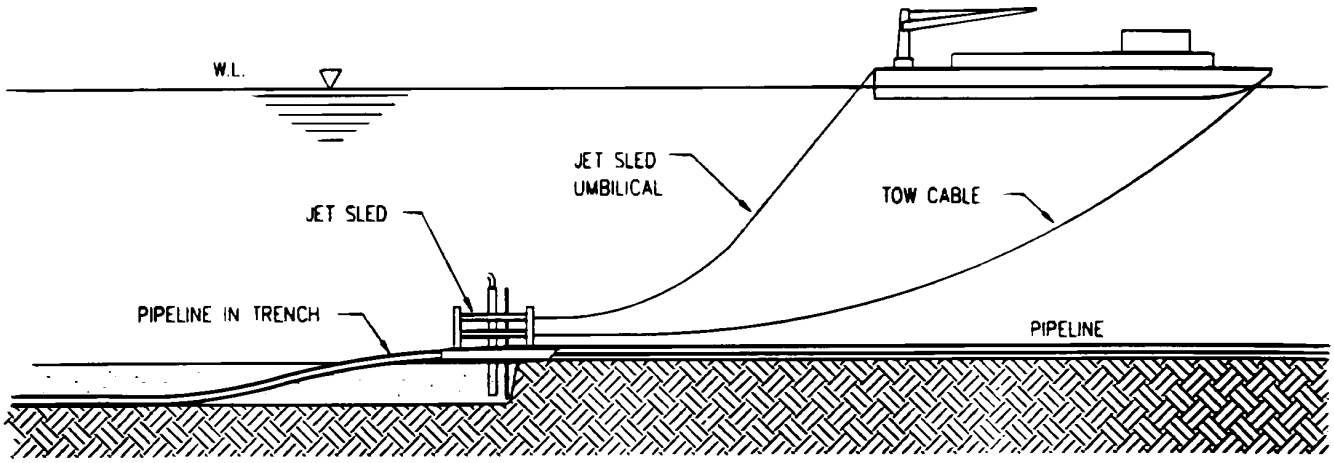
TYPICAL OFFSHORE SPREAD FOR PIPELINE CONSTRUCTION

DWG./FIG: 87-4-PM-915		
ORIGIN. DATE: 10/31/96	REV. DATE:	REV 1
SCALE: N.T.S.	JOB NO. H-1203	

CAL 11/09/98 15:24 F:\T-CANADA\H1203\874PM915.DWG



PLAN



PROFILE

MPC INTERNATIONAL, Inc.

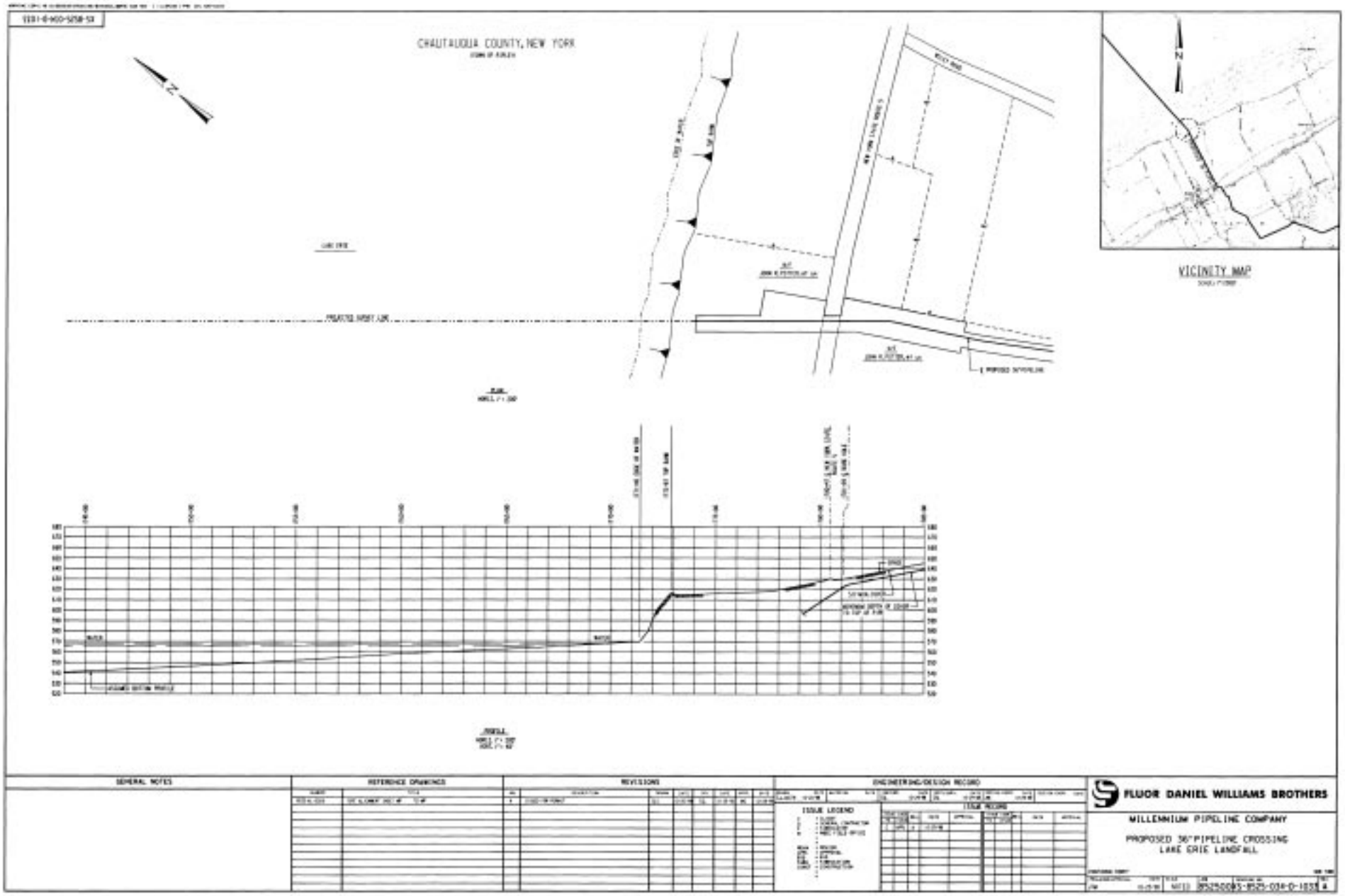
MILLENNIUM PIPELINE PROJECT

PROPOSED LAKE ERIE CROSSING 36" PIPELINE

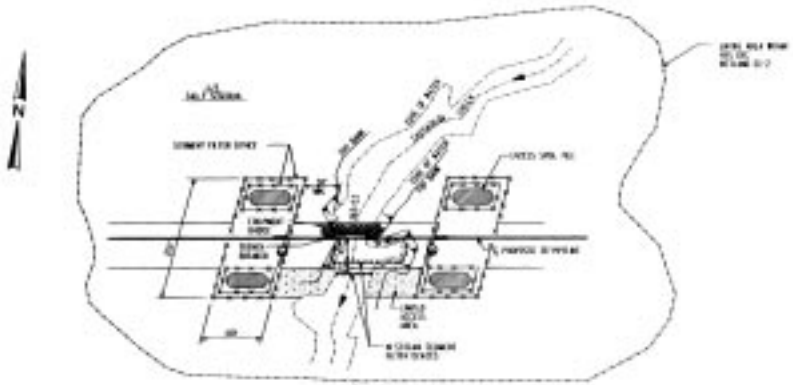
TYPICAL JET BARGE OPERATION

DWG / FIG: 87-4-PM-91(		
ORIGN. DATE: 10/31/96	REV. DATE:	RE
SCALE: N.T.S.	JOB NO. H-1203	

CAL 11/02/98 15:06 F:\T-CANADA\H1203\874PM916.DWG

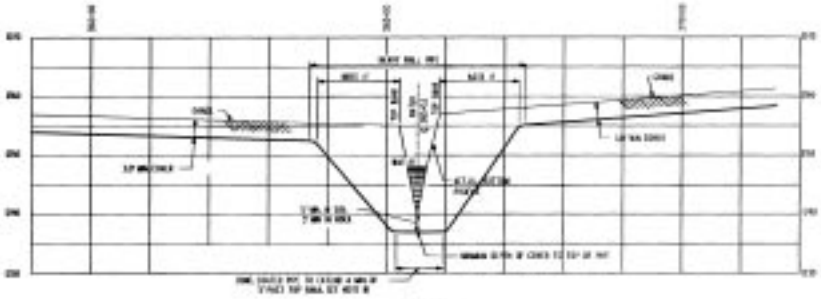

CHAUTAUQUA COUNTY, NEW YORK
VICINITY MAP
N
SEMINAL NOTES
REFERENCE DRAWINGS
REVISIONS
ENGINEERING/DESIGN RECORD
ISSUE LEGEND
ISSUE RECORD
FLUOR DANIEL WILLIAMS BROTHERS
MILLENNIUM PIPELINE COMPANY
PROPOSED 36" PIPELINE CROSSING
LAKE ERIE LANDFALL

CHAUTAUQUA COUNTY, NEW YORK



PLAN

VICINITY MAP



PROFILE

GENERAL NOTES

REFERENCE DRAWINGS

REVISIONS

ENGINEERING/DESIGN RECORD

ISSUE LEGEND

ISSUE RECORD

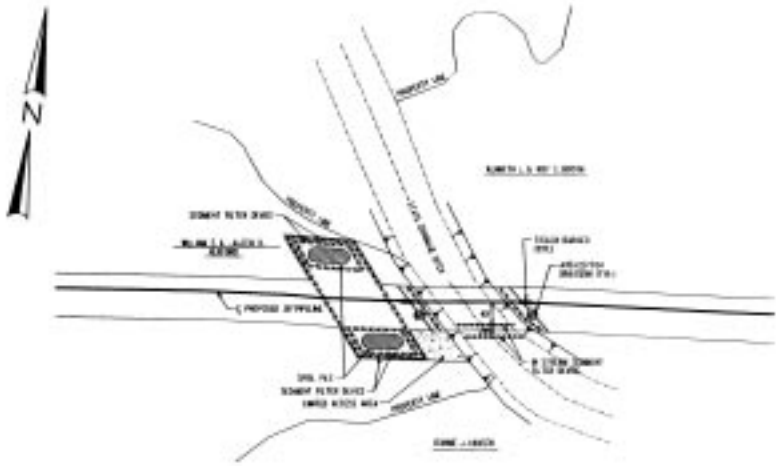
FLUOR DANIEL WILLIAMS BROTHERS

gai

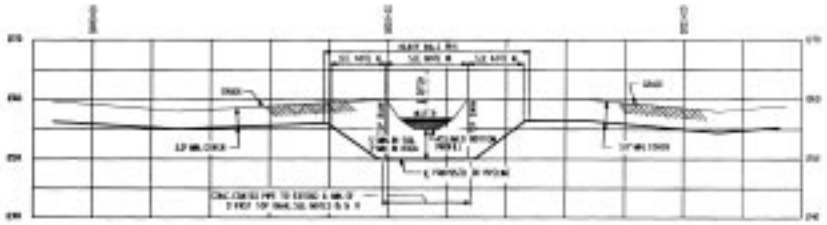
MILLENNIUM PIPELINE

PROPOSED 36" PIPELINE CROSSING
CASSADAGA CREEK

CATTARAUGUS COUNTY, NEW YORK



PLAN



PROFILE

VICINITY MAP

GENERAL NOTES

1. ALL CONSTRUCTION AND MAINTENANCE ACTIVITIES WILL BE PERFORMED IN ACCORDANCE WITH THE FOLLOWING SPECS.

2. LEAVE EXISTING WORK AREAS AT LEAST 50 FEET FROM EDGE OF WATER.

3. SAND AND GRAVEL BEDS WILL BE STOCKPILED AT LEAST 10 FEET FROM THE EDGE OF WATER, TOMORROW WITH MATERIAL.

4. EXISTING ACCESS ROAD SHALL BE USED ONLY TO REMOVE ON STREAM EQUIPMENT.

5. LOCATION OF EQUIPMENT CROSSING DEVICES ARE APPROXIMATE. ADJUST TO FIELD CONDITIONS.

6. OPEN CUT CONSTRUCTION METHODS SHALL BE USED TO CROSS WATERWAY. TRENCH WILL BE PUMPED DURING WATER OR DRAINED FROM CROSSING TO EDGE OF WATERWAY.

7. ON-STREAM EQUIPMENT FLOOD DEVICES SHALL BE USED DOWN STREAM OF TRENCH TO MINIMIZE TURBIDITY AND SEDIMENTATION IMPACTS. DATE EFFECTS WILL BE CHECKED PRIOR TO ANY IN-STREAM ACTIVITIES AND WILL BE PLACED APPROXIMATELY 50 FEET AND 50 FEET DOWN STREAM OF TRENCH.

8. PIPELINE WILL BE PULLED ACROSS THE WATERWAY WITHIN 1 DAY.

9. TRENCH WILL BE BACKFILLED USING MECHANICAL PLACEMENT.

10. TRENCH EDGE WILL BE UP TO 50 FEET AT THE TOP AND UP TO 10 FEET AT THE BOTTOM.

11. THE FOLLOWING TIME FRAMES ARE ALLOCATED FOR EACH PHASE OF CONSTRUCTION: 1 DAY TO PREPARE THE TRENCH, 1 DAY TO INSTALL THE PIPE, AND 1 DAY TO BACKFILL THE TRENCH.

12. RESTORATION SHALL COMMENCE IMMEDIATELY AFTER THE TRENCH IS BACKFILLED.

13. WETLAND BOUNDARIES AND OTHER AREAS OF ENVIRONMENTAL CONCERN WILL BE FIELD MARKED BY THE ENVIRONMENTAL INSPECTOR PRIOR TO CONSTRUCTION. FIELD MARKED BOUNDARIES SUPERSEDE THOSE DESCRIBED ON PLAN AND PROFILE SHEETS.

14. TRENCH AND STOCKPILE TOP 12 INCHES OF TOPSOIL FOR SPOIL PILE AREAS LOCATED IN WETLANDS.

15. FULL LENGTHS OF PIPE SHALL BE USED UNLESS OTHERWISE DIRECTED BY THE CONSTRUCTION ENGINEER.

16. PIPE SHALL BE LAID TO EXTRA DEPTH AT FIELD LOCATIONS TO PREVENT EXCESSIVE BENDING.

17. CONCRETE COATED PIPE SHALL BE LAIDED ON STREAM FOR A MINIMUM OF 5 FEET PRIOR TO PUSH TO TOP BANK.

18. PIPE SHALL BE INSTALLED LOW UNDER THE STREAM TO A MINIMUM OF THE DEPTH SHOWN EXCEPT IN ROCK FORMATIONS WHERE TOP OF PIPE MAY BE LAID TO A MINIMUM OF 3 FEET BELOW STREAM.

19. CROSSING INSTALLATION SHALL BE IN ACCORDANCE WITH APPLICABLE PERMITS AND REGULATIONS.

20. ALL DITCH AREAS SHALL BE SEED, MULCHED AND FERTILIZED.

21. EXTENSION DEVICE APPROXIMATES FROM EDGE GUARD.

GENERAL NOTES	REFERENCE DRAWINGS	REVISIONS	ENGINEERING/DESIGN RECORD

ISSUE LEGEND

ISSUE HISTORY

PLAINE DANIEL WILLIAMS BROTHERS

gai

MILLENNIUM PIPELINE

PROPOSED 36" PIPELINE CROSSING
STATE DRAINAGE DITCH

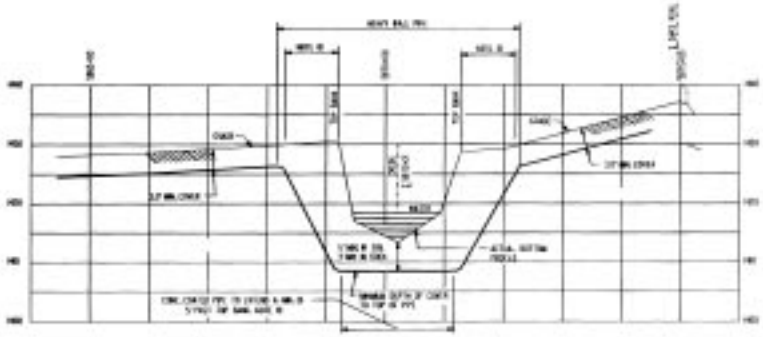
CATTARAUGUS COUNTY

PROJECT/DISCIPLINE | DATE | SCALE | DRAWING NO. | REV

NONE | 07/17/00 | 01-8-275-013-E-0001 | 0

CATTARAUGUS COUNTY, NEW YORK

PLAN



PROFILE

VICINITY MAP

GENERAL NOTES

REFERENCE DRAWINGS

REVISIONS

ENGINEERING/DESIGN RECORD

ISSUE LEGEND

ISSUE RECORD

FLUOR DANIEL WILLIAMS BROTHERS

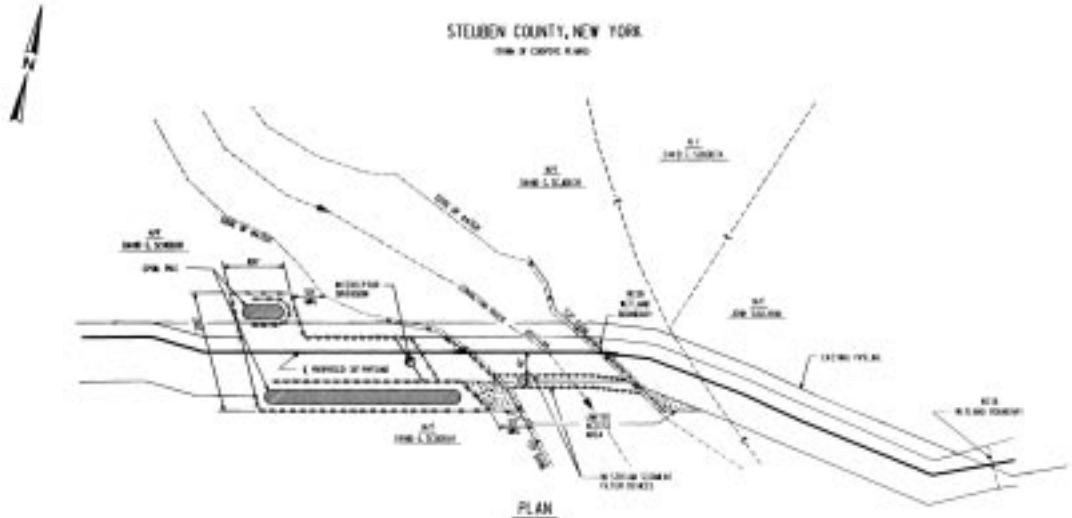
gai

MILLENNIUM PIPELINE

PROPOSED 36" PIPELINE CROSSING
OLEAN CREEK

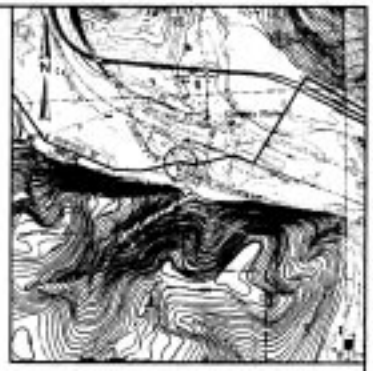
2001-0-08-6258-SK

STEUBEN COUNTY, NEW YORK



PLAN

PROFILE



VICINITY MAP

GENERAL NOTES

REFERENCE DRAWINGS

REVISIONS

ENGINEERING/DESIGN RECORD

ISSUE LEGEND

ISSUE RECORD

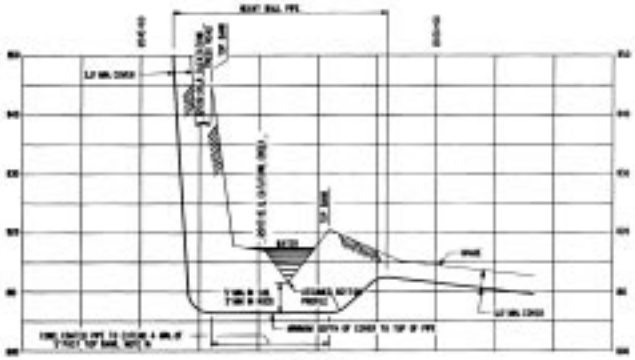
PLAYER DANIEL WILLIAMS BROTHERS

gai

MILLENNIUM PIPELINE

PROPOSED 36" PIPELINE CROSSING
CONOCTON RIVER

PLAN



PROFILE

VICINITY MAP

GENERAL NOTES

1. ALL CONSTRUCTION AND MAINTENANCE ACTIVITIES WILL BE PERFORMED IN ACCORDANCE WITH WILLIAMSPORT CCS.

2. CONSTRUCTION LIMITED TO ZONE 1 THROUGH NOVEMBER 30.

3. LEAVE CLEAR WORK AREAS AT LEAST 50 FEET FROM EDGE OF WATER.

4. BORE AND TRENCH EXIT WILL BE DISCONTINUED AT LEAST 50 FEET FROM THE EDGE OF WATER, EXCEPTIONAL CIRCUMSTANCE.

5. LIMITED ACCESS AREA SHALL BE USED ONLY TO INSTALL AND REMOVE IN STREAM SEDIMENT FILTER DEVICES.

6. LOCATION OF SEDIMENT CONTROL DEVICES ARE APPROXIMATE. ADJUST TO FIELD CONDITIONS.

7. OPEN CUT CONSTRUCTION METHOD SHALL BE USED TO CROSS WATERWAY. TRENCH WILL BE EXCAVATED USING A DRAGLINE OR DRAGLINE. PRIOR TO ANY TRENCHING, SPOILS BARRIERS WILL BE INSTALLED AT LOCATIONS AS S.O.S.P.P. THE WIDTH TO THE WEST SIDE OF THE CHANNEL. THE EASTERN PORTION OF THE CHANNEL WILL TAKE OF TRENCHES. THE SPOILS BARRIERS AT LOCATIONS A AND B, FROM AS MANY TO CONTAIN AND TO DIVERT WATER TO THE EASTERN SIDE OF THE CHANNEL. THE TEMPORARY PORTION OF THE CHANNEL WILL TAKE OF TRENCHES. BACKFILLING WILL OCCUR IN A SUPERVISED FASHION.

8. PIPELINE WILL BE PLACED ABOVE THE WATERWAY WITHIN ONE DAY.

9. TRENCH WILL BE BACKFILLED USING MECHANICAL PLACEMENT.

10. TRENCH CLOSE WILL BE UP TO 50 FEET AT THE TOP AND UP TO 30 FEET AT THE BOTTOM.

11. THE FOLLOWING TIME FRAMES ARE ALLOTTED FOR EACH PHASE OF CONSTRUCTION. 2 DAYS TO EXCAVATE THE TRENCH, 1 DAY TO INSTALL THE PIPE, AND 1 DAY TO BACKFILL THE TRENCH.

12. RESTORATION SHALL COMMENCE IMMEDIATELY WITHIN THE TRENCH LOCATIONS.

13. BERMS AND SEDIMENTS AND OTHER AREAS OF ENVIRONMENTAL CONCERN WILL BE FLAGGED AREAS OF THE ENVIRONMENTAL INSPECTOR PRIOR TO CONSTRUCTION. FLAGGED AREAS SUPERVISED TASKS INDICATED ON PLAN AND PROFILE SHEETS.

14. REMOVE AND STOCKPILE TOP 12 INCHES OF TOPSOIL FOR SPOIL PILE AREAS LOCATED IN WETLANDS.

15. CONSTRUCTION ACCESS WILL NOT BE PERMITTED ALONG WATERWAY. EQUIPMENT BRIDGE SHALL NOT BE CONTINUED. EQUIPMENT CROSSING OF WATERWAY SHALL BE LIMITED TO SINGLE PASS OF BACKHOE TO EXCAVATE TRENCH, SINGLE PASS OF DOZER TO INSTALL PIPE, AND SINGLE PASS OF BACKHOE TO BACKFILL TRENCH.

16. CONCRETE COATED PIPE SHALL BE LAIDED THE STREAM FROM A MINIMUM OF 3.0 FEET PAST TOP BANK TO TOP BANK.

17. PIPE SHALL BE INSTALLED LEVEL UNDER THE STREAM TO A MINIMUM OF THE DEPTH SHOWN EXCEPT IN ROCK CONDITIONS WHERE TOP OF PIPE MAY BE LAID TO A MINIMUM OF 2.0 FEET BELOW STREAM.

18. FULL DEPTH OF PIPES SHALL BE LAIDED UNLESS OTHERWISE DIRECTED BY THE CONSTRUCTION ENGINEER.

19. ELEVATION SHOWN APPROXIMATE FROM USGS MAPS.

20. IN STREAM SEDIMENT FILTER DEVICES SHALL BE PLACED DOWNSTREAM OF TRENCH TO MINIMIZE TURBIDITY AND SEDIMENTATION IMPACTS. THESE DEVICES WILL BE INSTALLED PRIOR TO ANY IN STREAM ACTIVITIES AND WILL BE PLACED APPROXIMATELY 40 FEET AND OFFSET DOWNSTREAM OF TRENCH.

21. CROSSING INSTALLATION SHALL BE IN ACCORDANCE WITH APPLICABLE PERMITS AND REGULATIONS.

22. ALL STREAM WORK SHALL BE LIMITED BASED ON FISHERIES INSPECTOR.

23. ELEVATION SHOWN APPROXIMATE FROM USGS MAPS.

REFERENCE DRAWINGS

NUMBER	TITLE
[illegible]	[illegible]

REVISIONS

NO.	DESCRIPTION	DRAWN	DATE	CHK	DATE	APPR	DATE
1	[illegible]	[illegible]	[illegible]				
2	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]

ENGINEERING/DESIGN RECORD

DRAWN BY	DATE	REVIEWED BY	DATE	CHECKED BY	DATE	APPROVED BY	DATE	REVIEW DATE	DATE	REVIEW DATE	DATE
[illegible]	[illegible]										

ISSUE LEGEND

[illegible]	[illegible]

ISSUE RECORD

ISSUE TYPE	DRAWN BY	DATE	APPROVED BY	REVIEW TYPE	DRAWN BY	DATE	APPROVED BY
[illegible]	[illegible]	[illegible]	[illegible]				

PLUGE DANIEL WILLIAMS BROTHERS

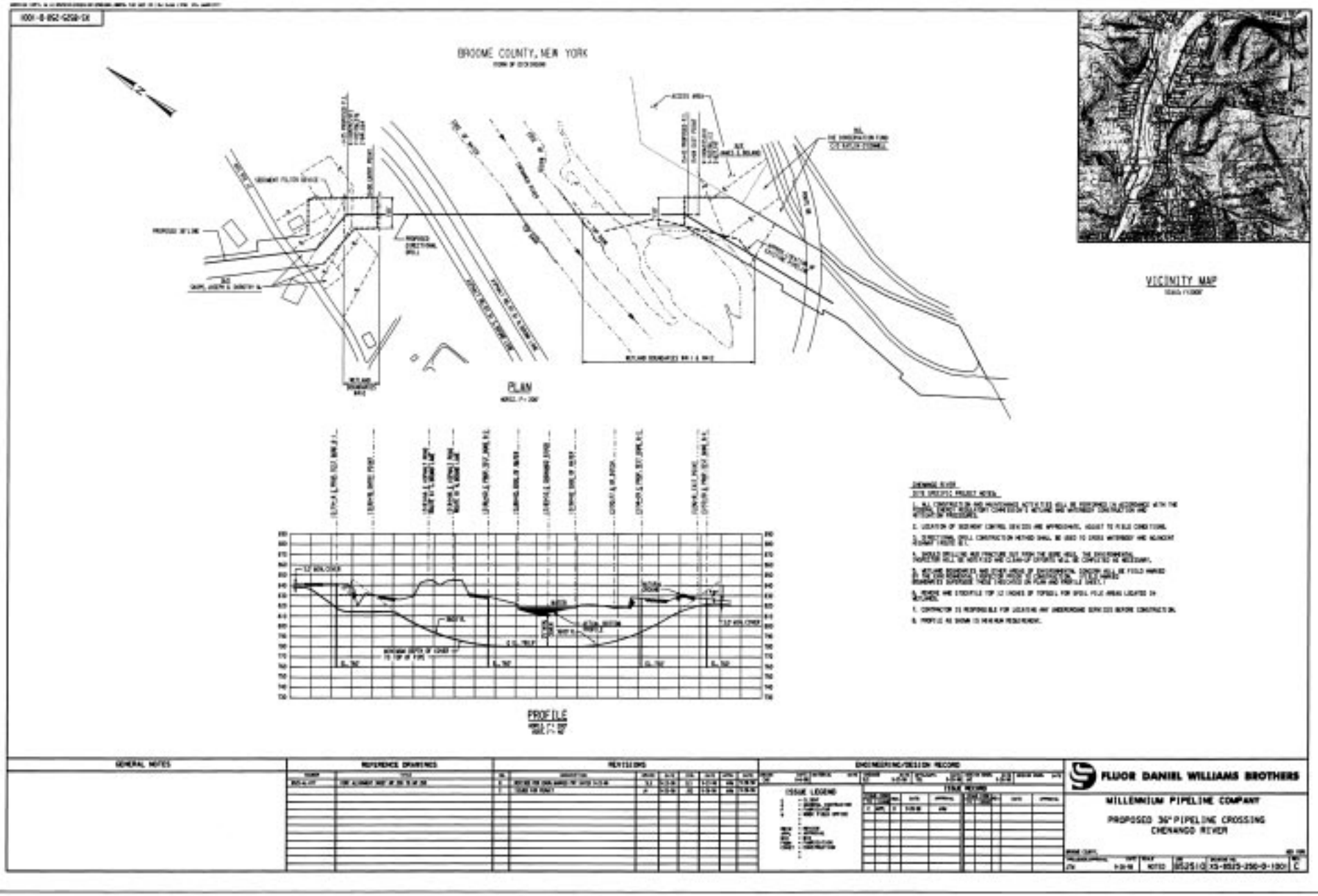
gai consultants

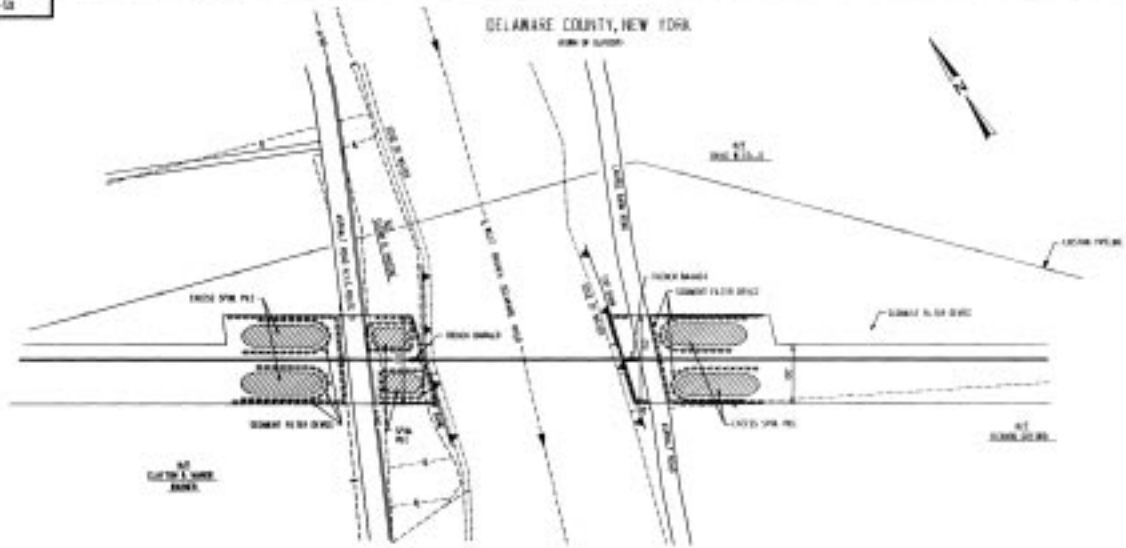
MILLENNIUM PIPELINE

PROPOSED 36" PIPELINE CROSSING
CATATONK CREEK

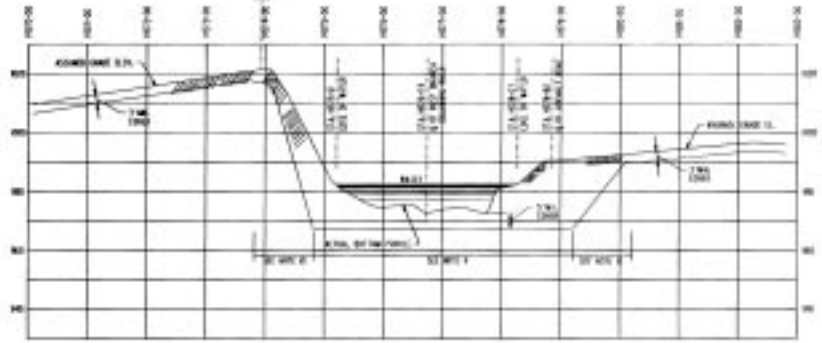
TIOGA COUNTY

PROJECT/APPROVAL	DATE	TITLE	CAD	DRAWING NO.	REV.
			[illegible]	[illegible]	[illegible]


BROOME COUNTY, NEW YORK
PLAN
PROFILE
VICINITY MAP
GENERAL NOTES
REFERENCE DRAWINGS
REVISIONS
ENGINEERING/DESIGN RECORD
ISSUE LEGEND
ISSUE RECORD
FLUOR DANIEL WILLIAMS BROTHERS
MILLENNIUM PIPELINE COMPANY
PROPOSED 36" PIPELINE CROSSING
CHENANGO RIVER
NOTED
852510
X5-8525-250-0-1001
C



PLAN



PROFILE

VICINITY MAP

GENERAL NOTES

REFERENCE DRAWINGS

REVISIONS

ENGINEERING/DESIGN RECORD

ISSUE LEGEND

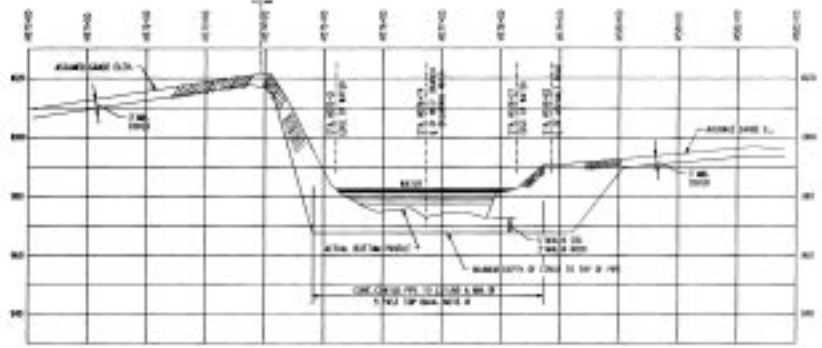
ISSUE RECORD

MILLENNIUM PIPELINE

PROPOSED 36" PIPELINE CROSSING
WEST BRANCH DELAWARE RIVER
HORIZONTAL BORE

DELAWARE COUNTY, NEW YORK

PLAN



PROFILE

VICINITY MAP

WEST BRANCH DELAWARE RIVER CONTINGENCY PLAN
SITE SPECIFIC PROJECT NOTES

1. ALL CONSTRUCTION AND MAINTENANCE ACTIVITIES WILL BE PERFORMED IN ACCORDANCE WITH MILLENNIUM'S SITE.
2. CONSTRUCTION LIMITED TO JUNE 1 THROUGH SEPTEMBER 15.
3. LEAVE STRIP WORK AREAS AT LEAST 50 FEET FROM EDGE OF WATER.
4. BRUSH AND TIMBER SHALL NOT BE DISCARDED AT LEAST 100 FEET FROM THE EDGE OF WATER, TEMPORARY WORK SITE.
5. LIMITED ACCESS AREA SHALL BE USED ONLY TO INSTALL AND REMOVE THE STREAM CROSSING AND FLOOD GATES.
6. LOCATION OF SEDIMENT CONTROL DEVICES ARE APPROXIMATE, ADJUST TO FIELD CONDITIONS.
7. OPEN CUT CONSTRUCTION METHOD SHALL BE USED TO CROSS WATERWAY. A TRENCH WILL BE EXCAVATED USING A BACKHOE OR DRAGLINE.
8. PIPELINE WILL BE PLACED ABOVE THE WATERWAY WITHIN 1 DAY.
9. TRENCH WILL BE BACKFILLED USING MECHANICAL PLACEMENT.
10. TRENCH SIDE WALLS SHALL BE CUT TO THE FEET AT THE TOP AND CUT TO 1 FOOT AT THE BOTTOM.
11. THE FOLLOWING SITE TRAPPED ARE ALLOTTED FOR EACH PHASE OF CONSTRUCTION. 2 DAYS TO EXCAVATE THE TRENCH, 1 DAY TO INSTALL THE PIPE, AND 1 DAY TO BACKFILL THE TRENCH.
12. RESTORATION SHALL COMMENCE IMMEDIATELY AFTER THE TRENCH IS BACKFILLED.
13. CONSTRUCTION ACTIVITY NOT PERMITTED ABOVE WATERWAY. EQUIPMENT BRIDGE SHALL NOT BE INSTALLED.
14. CONCRETE COATED PIPE SHALL BE UNDER THE STREAM FROM A MINIMUM OF 3.5 FEET FROM TOP BANK TO TOP BANK.
15. PIPE SHALL BE INSTALLED EVEN UNDER THE STREAM FROM A MINIMUM OF THE DEPTH SCOUR FOUND IN NEW TOWNSHIPS WHERE TOP OF PIPE MAY BE LAID TO A MINIMUM OF 3.0 FEET BELOW STREAM.
16. FULL JOINT OF PIPES SHALL BE USED WITH STRAINER SECTIONS IN THE CONSTRUCTION AREA.
17. EXCAVATION SOURCE APPROXIMATED FROM SOIL SURVEY.
18. AN STREAM SCOUR PROTECTION DEVICES SHALL BE PLACED DOWN STREAM OF TRENCH TO MINIMIZE TURBIDITY AND SEDIMENTATION IMPACTS. THESE DEVICES WILL BE INSTALLED PRIOR TO AND AT STREAM ACTIVITIES AND WILL BE PLACED APPROXIMATELY 40 FEET AND 80 FEET DOWN STREAM OF TRENCH.
19. DEVICE INSTALLATION SHALL BE IN ACCORDANCE WITH APPLICABLE PERMITS AND REGULATIONS.
20. ALL STRIP WORK SHALL BE TIMED PRECEDING DAILY ACTIVITIES.

GENERAL NOTES	REFERENCE DRAWINGS	REVISIONS	ENGINEERING/DESIGN RECORD

ISSUE LEGEND

ISSUE RECORD

PARSONS BRINCKERHOFF WILLIAMS BROTHERS

gai consultants

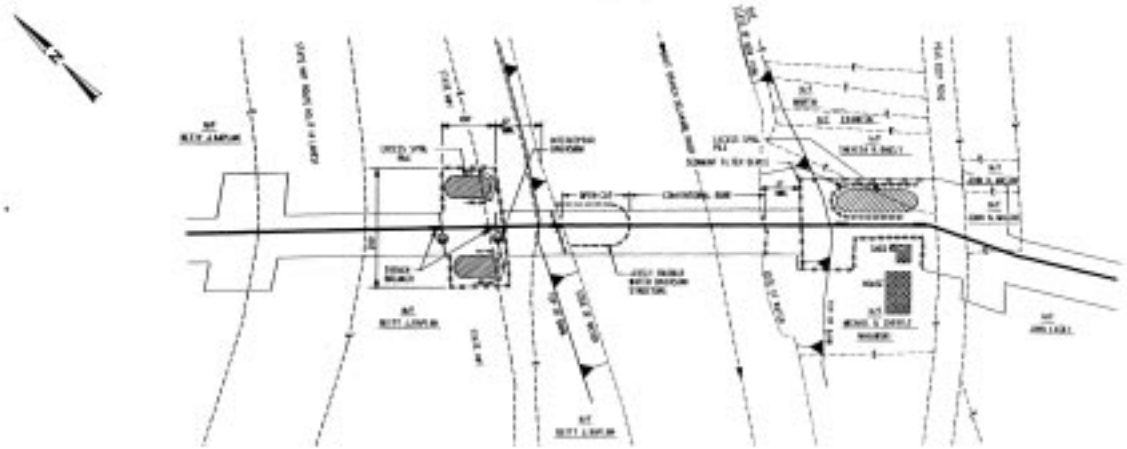
MILLENNIUM PIPELINE

PROPOSED 36" PIPELINE CROSSING
WEST BRANCH DELAWARE RIVER
CONTINGENCY PLAN

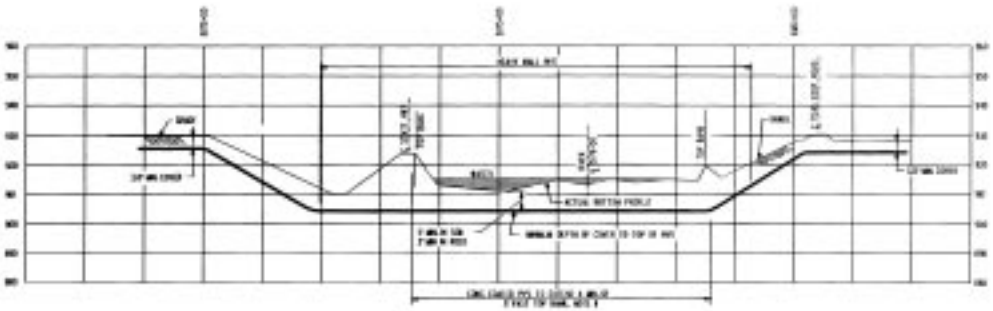
DELAWARE COUNTY

PRELIMINARY | DATE 8/25/06 | DRAWING No. 43-276-0-1000 | REV. 2

DELAWARE COUNTY, NEW YORK



PLAN



PROFILE

VICINITY MAP

EAST BRANCH DELAWARE
GAS PIPELINE PROJECT NOTES

1. ALL CONSTRUCTION AND MAINTENANCE ACTIVITIES WILL BE PERFORMED IN ACCORDANCE WITH MILLENNIUM'S ESCP.
2. CONSTRUCTION LIMITED TO JUNE 1 THROUGH SEPTEMBER 15.
3. LOCATE SEPTIC WORK AREAS AT LEAST 50 FEET FROM EDGE OF WATER.
4. SHADE TREES WILL BE TRANSPLANTED AT LEAST 100 FEET FROM THE EDGE OF WATER, TEMPORARY PERMITTING.
5. LOCATION OF SEDIMENT CONTROL DEVICES ARE APPROXIMATE, ADJUST TO FIELD CONDITIONS.
6. THE CONVENTIONAL BORE AND OPEN CUT CONSTRUCTION METHODS WILL BE USED TO CROSS WATERWAYS. THE CONTROL DEPTH FEET (+ OR -) OF THE CROSSING WILL BE ADJUSTABLE. THE HORIZONTAL MOTION PORTION WILL BE TRENCHED USING OPEN CUT METHODS. SHORT MOTION FOR WATER SEGMENTS FROM THE CONSTRUCTION AREA. CROSSING TO BE REMOVED.
7. SUMPS WITH BERM OF 12 FEET EXIT IN STREAM AS DETERMINED NECESSARY BY THE ENVIRONMENTAL INSPECTOR. SUMPS WILL BE 50 FEET OR LARGER.
8. OPEN CUT PORTION OF THE TRENCH WILL BE BACKFILLED USING MECHANICAL PLACEMENT. THE TOP 1 FOOT OF TRENCH BACKFILL WILL BE CLEAN GRAVEL OR WATER COBBLE.
9. OPEN CUT PORTION OF THE TRENCH WILL BE UP TO 50 FEET (+) AT THE TOP AND UP TO 10 (+) AT THE BOTTOM.
10. RESTORATION SHALL COMMENCE IMMEDIATELY AFTER THE TRENCH IS BACKFILLED.
11. CONCRETE COATED PIPE SHALL BE LAID ON THE STREAM BOTTOM A MINIMUM OF 3.0 FT BELOW TOP BANK TO TOP BANK.
12. PIPE SHALL BE INSTALLED LEVEL UNDER THE STREAM TO A MINIMUM OF THE DEPTH SHOWN EXCEPT IN AREAS FORMING WATER TOP OF PIPE MAY BE LAID TO A MINIMUM OF 1.0 FT BELOW STREAM.
13. FILL DEPTH OF PIPE SHALL BE 3.0 FEET UNLESS OTHERWISE DIRECTED BY THE CONSTRUCTION ENGINEER.
14. CROSSING INSTALLATION SHALL BE IN ACCORDANCE WITH APPLICABLE PERMITS AND REGULATIONS.
15. ALL SUMPS WILLBE SHALL BE SUBJECT PROCEDURALLY INSPECTED.

GENERAL NOTES	REFERENCE DRAWINGS	REVISIONS	ENGINEERING/DESIGN RECORD
			ISSUE LEGEND

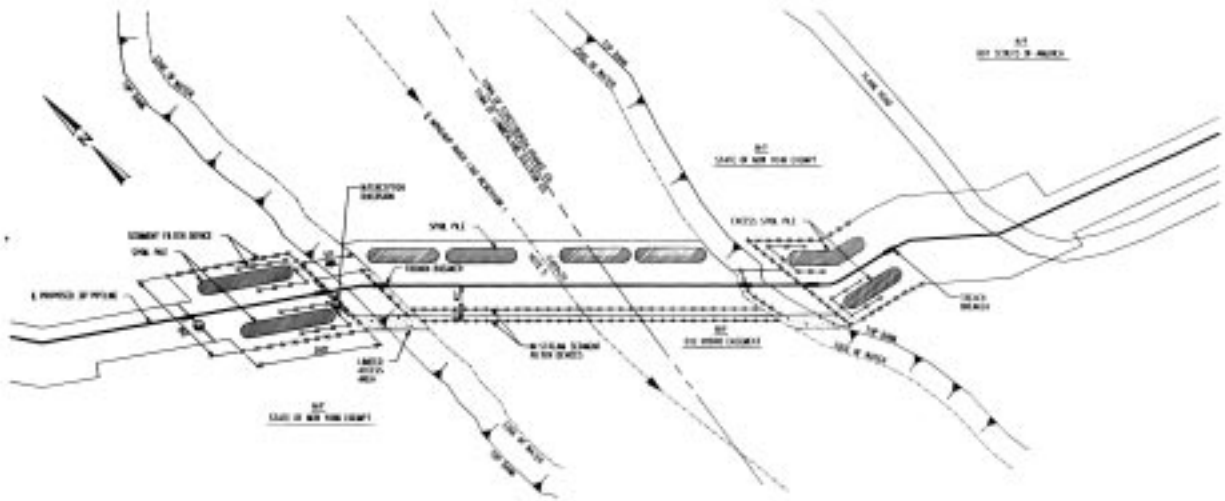
gai

MILLENNIUM PIPELINE

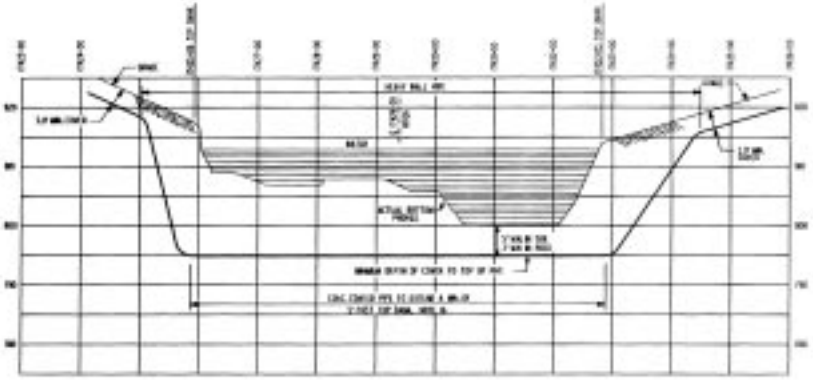
PROPOSED 36" PIPELINE CROSSING
EAST BRANCH DELAWARE RIVER

	NOTES	06-21-03	X1-781-01-0152

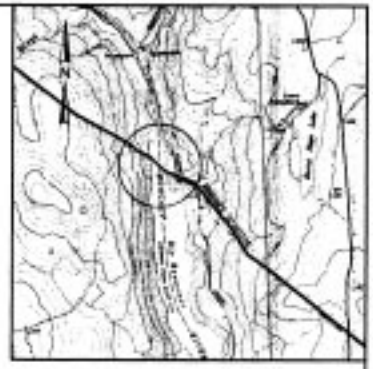
SULLIVAN COUNTY / ORANGE COUNTY, NEW YORK



PLAN



PROFILE



VICINITY MAP

GENERAL NOTES

REFERENCE DRAWINGS

REVISIONS

ENGINEERING/DESIGN RECORD

ISSUE LEGEND

ISSUE RECORD

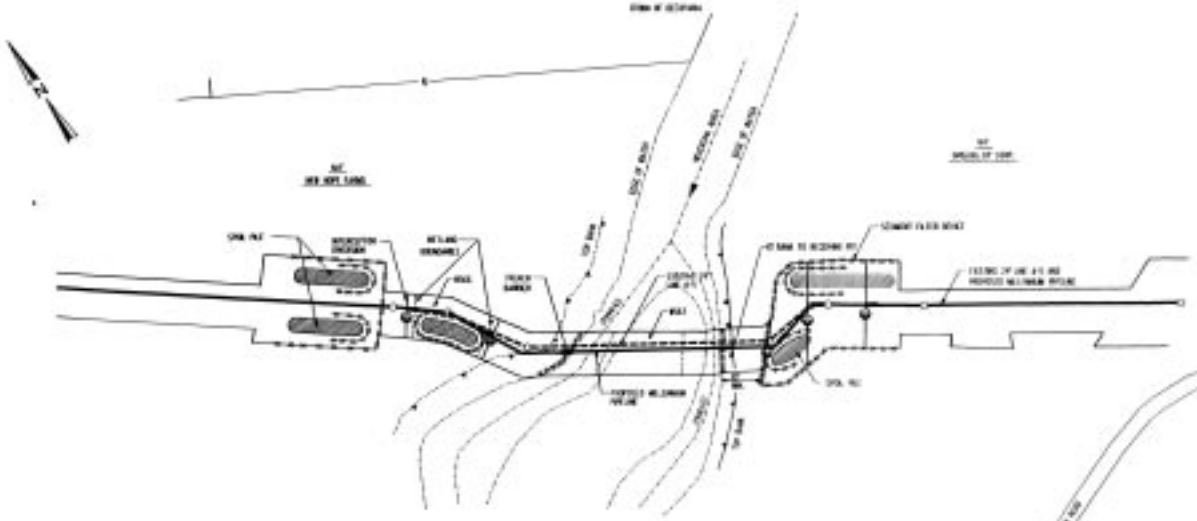
FLUOR DANIEL WILLIAMS BROTHERS

gai

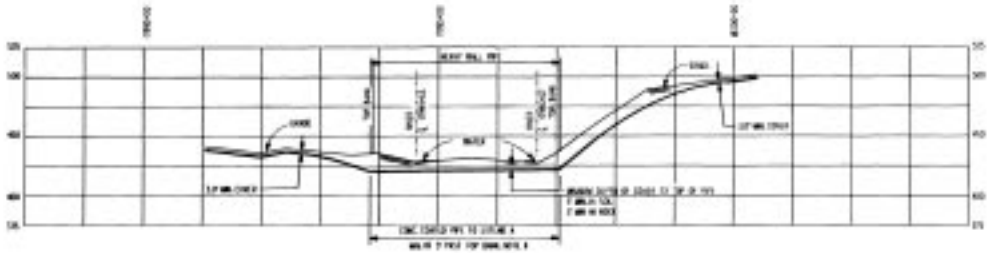
MILLENNIUM PIPELINE

PROPOSED 36" PIPELINE CROSSING
MONGAUP RIVER (RID RESERVOIR)

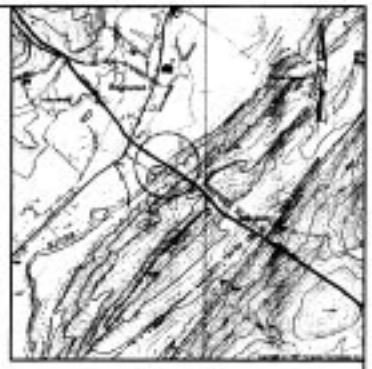
ORANGE COUNTY, NEW YORK



PLAN



PROFILE



VICINITY MAP

NOTES:

1. ALL CONSTRUCTION AND MAINTENANCE ACTIVITIES WILL BE PERFORMED IN ACCORDANCE WITH MILLENNIUM'S ECS.
2. CONSTRUCTION LIMITED TO JUNE 1 THROUGH SEPTEMBER 15.
3. LOCATE FUTURE WORK AREAS AT LEAST 50 FEET FROM EDGE OF WATER.
4. SHADE AND BREAKS SPOIL WILL BE STOCKPILED AT LEAST 100 FEET FROM THE EDGE OF WATER, TOPOGRAPHY PERMITTING.
5. LOCATION OF SECONDARY CHANNEL EFFECTS ARE APPROXIMATE, ADJUST TO FIELD CONDITIONS.
6. CONVENTIONAL WORK CONSTRUCTION METHOD WILL BE USED TO CROSS THE WATERWAY. THE PIPE WILL BE LIFT IN PLACE BY IT CANNOT BE REMOVED WITHOUT EQUIPMENT CROSSING THE WATER. THE WORK AREA NEEDED AND PITS WILL BE LOCATED APPROXIMATELY 50 FEET FROM THE EDGE OF WATER.
7. RESTORATION SHALL COMMENCE IMMEDIATELY AFTER THE CROSSING IS COMPLETED.
8. WETLAND BOUNDARIES AND STAKE AREAS OF ENVIRONMENTAL CONCERN WILL BE FIELD MARKED BY THE ENVIRONMENTAL INSPECTOR PRIOR TO CONSTRUCTION. FIELD MARKED BOUNDARIES SUPERSEDE THOSE DESCRIBED ON PLAN AND PROFILE SHEETS.
9. REMOVE AND STOCKPILE TOP 12 INCHES OF TOPSOIL FOR SPOIL PILE AREAS LOCATED IN WETLANDS.
10. CONSTRUCTION ACCESS FOR THE RIVER CROSSING WILL NOT BE PERMITTED ACROSS WATERWAY. EQUIPMENT BRIDGE SHALL NOT BE INSTALLED. NO FILL MAY BE PLACED IN THE FLOWING WATER.
11. CONCRETE COATED PIPE SHALL BE UNDER THE STREAM FOR A MINIMUM OF 5 FEET FROM TOP BANK TO TOP BANK.
12. PIPE SHALL BE INSTALLED LEVEL UNDER THE STREAM TO A MINIMUM OF THE DEPTH SHOWN EXCEPT IN ROCK FORMATIONS WHERE TOP OF PIPE MAY BE LAID TO A MINIMUM OF 3.0 FT BELOW STREAM.
13. FULL JOINTS OF PIPE SHALL BE USED UNLESS OTHERWISE DIRECTED BY THE CONSTRUCTION MANAGER.
14. CROSSING INSTALLATION SHALL BE IN ACCORDANCE WITH APPLICABLE PERMITS AND REGULATIONS.
15. ALL JOINTS WELDS SHALL BE 100% RADIOGRAPHICALLY INSPECTED.

GENERAL NOTES	REFERENCE DRAWINGS	REVISIONS	ENGINEERING/DESIGN RECORD

PLANS DANIEL WILLIAMS BROTHERS

gai CONSULTANTS

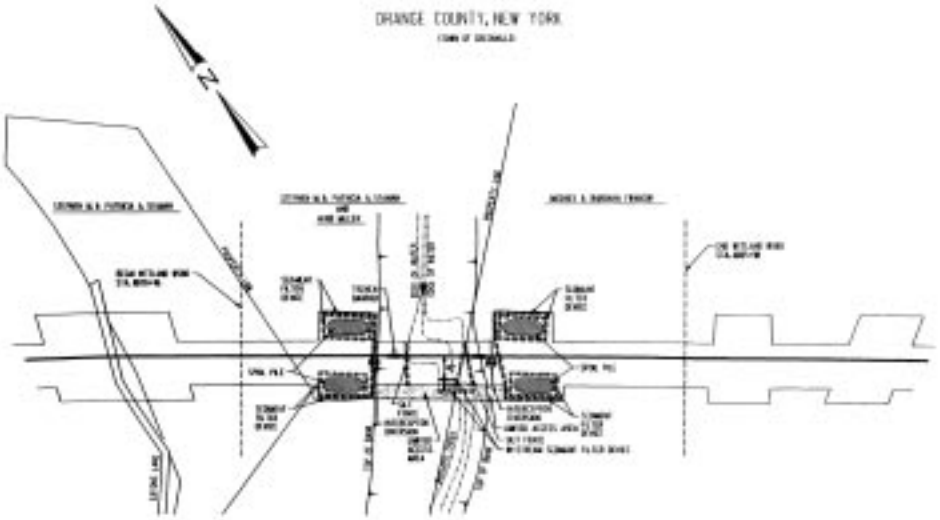
MILLENNIUM PIPELINE

PROPOSED 36" PIPELINE CROSSING
NEVERSINK RIVER

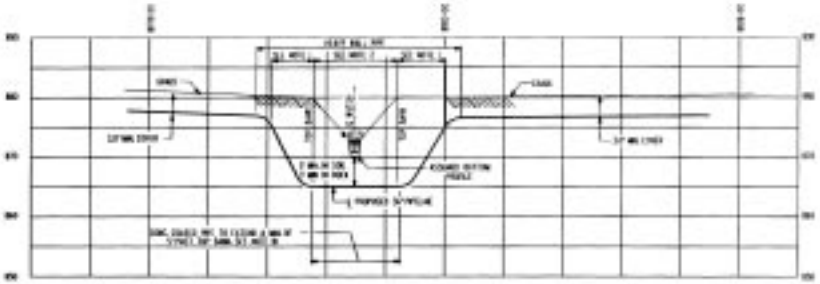
ORANGE COUNTY

DATE	07/25/0	DRAWING NO.	05-0025-SW-0-0018

ORANGE COUNTY, NEW YORK



PLAN



PROFILE

VICINITY MAP

NOTES:

1. ALL CONSTRUCTION AND IMPLEMENTATION ACTIVITIES WILL BE PERFORMED IN ACCORDANCE WITH THE MILLENNIUM'S EPCM.
2. CONSTRUCTION LIMITED TO JUNE 1 THROUGH NOVEMBER 30.
3. LOCATE CHRONA WORK AREAS AT LEAST 50 FEET FROM EDGE OF WATER.
4. DRAIN AND TRENCH SPOIL WILL BE STOCKPILED AT LEAST 50 FEET FROM THE EDGE OF WATER, EXPOSURE PERIOD 5 DAYS.
5. LIMITED ACCESS AREA SHALL BE USED DAILY TO REMOVE IN-STREAM EQUIPMENT [illegible].
6. LOCATION OF STORMWATER CHANNEL DEVICES ARE APPROXIMATE, ADJUST TO FIELD CONDITIONS.
7. OPEN CUT CONSTRUCTION METHOD SHALL BE USED TO CROSS WATERWAY. TRENCH WILL BE TEMPORARY USING GRAVEL OR SANDBAGS.
8. IN-STREAM EQUIPMENT FILTER DEVICES SHALL BE USED DOWN STREAM OF TRENCH TO REMOVE SUSPENDED SOIL AND SEDIMENTATION CAPACITY. THESE DEVICES WILL BE INSTALLED PRIOR TO WORK IN STREAM AND DEVICES WILL BE PLACED APPROXIMATELY 40 FEET AND 80 FEET DOWN STREAM OF TRENCH.
9. PIPELINE WILL BE PULLED HOMES THE WATERWAY WITHIN 1 DAY.
10. TRENCH WILL BE BACKFILLED USING MECHANICAL PLACEMENT.
11. TRENCH SIDE WILL BE UP TO 30 FEET AT THE TOP AND UP TO 10 FEET AT THE BOTTOM.
12. THE FOLLOWING SIDE CHANNELS ARE ALLOWED FOR EACH PHASE OF CONSTRUCTION: 1 DAYS TO FLUMPER THE TRENCH, 1 DAY TO INSTALL THE PIPE, AND 1 DAY TO BACKFILL THE TRENCH.
13. RESTORATION SHALL COMMENCE IMMEDIATELY AFTER THE TRENCH IS BACKFILLED.
14. WETLAND BOUNDARIES AND OTHER AREAS OF ENVIRONMENTAL CONCERN WILL BE FIELD MARKED BY THE ENVIRONMENTAL INSPECTOR PRIOR TO CONSTRUCTION. [illegible] MARKED BOUNDARIES SUPERSEDE THOSE INDICATED ON PLAN AND PROFILE DRAWINGS.
15. REMOVE AND STOCKPILE TOP 12 INCHES OF TOPSOIL FOR SPOIL FIELD AREAS LOCATED IN WETLANDS.
16. FULL COPIES OF PERMITS SHALL BE KEPT ONSITE DURING ACTIVITIES BY THE CONSTRUCTION CONTRACTOR.
17. PIPE SHALL BE LAID IN STREAM BOTTOM WITH PROPER CLEARANCE TO PROVIDE EXISTING BEDDING.
18. CONCRETE COATED PIPE SHALL BE LAIDED THE STREAM FROM A MINIMUM OF 1 FOOT PAST TOP BANK TO TOP BANK.
19. PIPE SHALL BE INSTALLED LESS UNDER THE STREAM TO A MINIMUM OF THE DEPTH SHOWN EXCEPT IN ROCK TERRAINS WHERE TOP OF PIPE MAY BE LESS TO A MINIMUM OF 3 FEET BELOW STREAM.
20. CROSSING INSTALLATION SHALL BE IN ACCORDANCE WITH APPLICABLE PERMITS AND REGULATIONS.
21. ALL STREAM WORK SHALL BE LIMITED BASED ON DAILY INSPECTIONS.
22. EXCAVATION SHALL APPROXIMATELY FROM 2010 GUIDES.

GENERAL NOTES	REFERENCE DRAWINGS	REVISIONS	ENGINEERING/DESIGN RECORD

ISSUE LEGEND

ISSUE RECORD

FLUOR DANIEL WILLIAMS BROTHERS

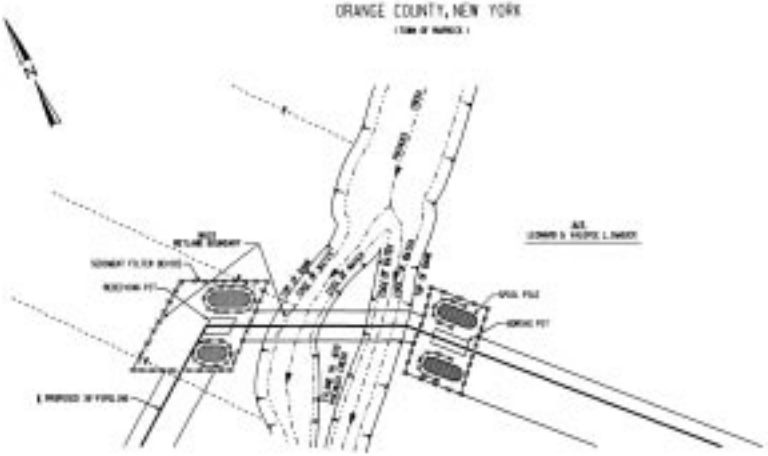
gai

MILLENNIUM PIPELINE

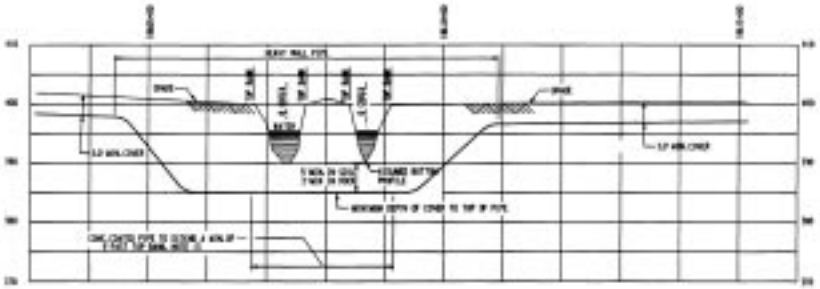
PROPOSED 36" PIPELINE CROSSING
RUTGERS CREEK

PROCEDURE NO. | DATE | SCALE: NOTED | DWG. NO. MP-2940 | REV. 0

ORANGE COUNTY, NEW YORK



PLAN



PROFILE

VICINITY MAP

GENERAL NOTES

REFERENCE DRAWINGS

REVISIONS

ENGINEERING/DESIGN RECORD

ISSUE LEGEND

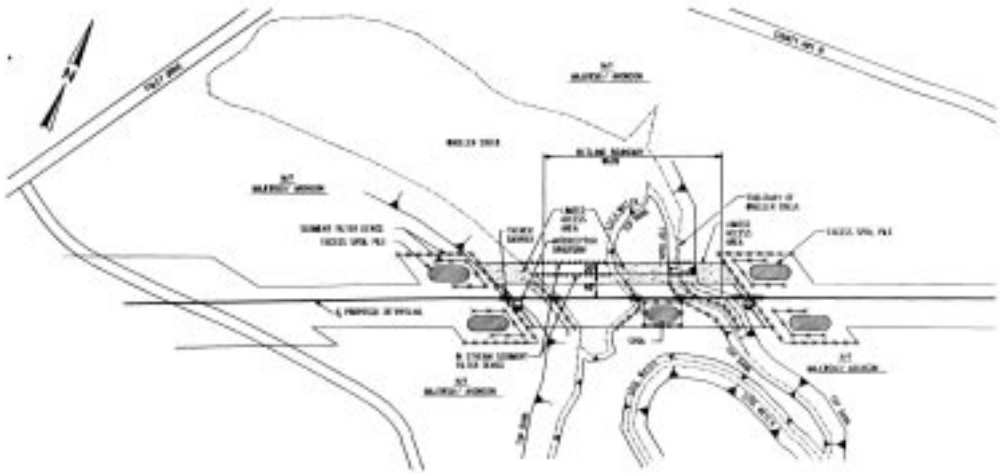
FLUOR DANIEL WILLIAMS BROTHERS

MILLENNIUM PIPELINE COMPANY

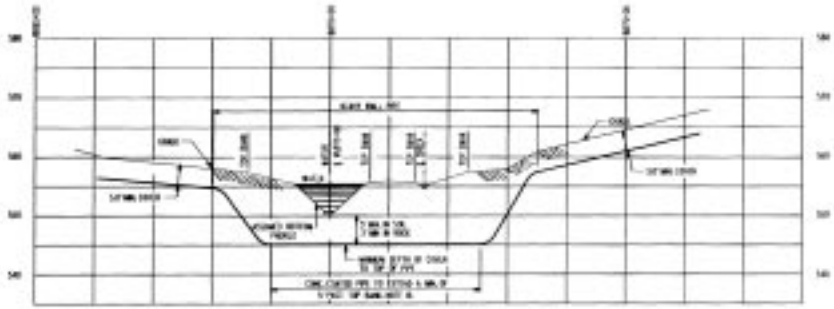
PROPOSED 36" PIPELINE CROSSING
POCHUCK CREEK

NOTED 8525-10 XS-8525-352-0-1024 C

ORANGE COUNTY, NEW YORK



PLAN



PROFILE

VICINITY MAP

WHEELER CREEK
TRENCHLESS PROJECT NOTES

1. ALL CONSTRUCTION AND MAINTENANCE ACTIVITIES WILL BE PERFORMED IN ACCORDANCE WITH MILLENNIUM'S ECS.
2. CONSTRUCTION LIMITED TO JUNE 1 THROUGH NOVEMBER 30.
3. LEAVE STRIP WORK AREAS AT LEAST 30 FEET FROM EDGE OF WATER.
4. SPOIL AND TRENCH SPOIL WILL BE STOCKPILED AT LEAST 50 FEET FROM THE EDGE OF WATER, TEMPORARY PARKING.
5. LIMITED ACCESS AREA SHALL BE USED ONLY TO INSTALL AND REMOVE IN STREAM SEDIMENT FILTER DEVICES.
6. LOCATION OF SEDIMENT CONTROL DEVICES ARE APPROXIMATE, ALTER TO FIELD CONDITIONS.
7. OPEN CUT CONSTRUCTION METHOD SHALL BE USED TO CROSS WATERWAYS. TRENCH WILL BE EXCAVATED USING A BACKHOE OR DRAGLINE.
8. PIPELINE WILL BE PULLED ACROSS THE WATERWAY WITHIN 1 DAY.
9. TRENCH WILL BE BACKFILLED USING MECHANICAL PLACEMENT.
10. TRENCH TOP WILL BE UP TO 50 FEET AT THE TOP AND UP TO 20 FEET AT THE BOTTOM.
11. THE FOLLOWING TIME FRAMES ARE ALLOTTED FOR EACH PHASE OF CONSTRUCTION: 2 DAYS TO EXCAVATE THE TRENCH, 1 DAY TO INSTALL THE PIPE, AND 1 DAY TO BACKFILL THE TRENCH.
12. RESTORATION SHALL COMMENCE IMMEDIATELY AFTER THE TRENCH IS BACKFILLED.
13. WETLAND BOUNDARIES AND OTHER AREAS OF ENVIRONMENTAL CONCERN WILL BE FIELD MARKED BY THE ENVIRONMENTAL INSPECTOR PRIOR TO CONSTRUCTION. WETLAND MARKER BOUNDARIES SUPERSEDE THOSE INDICATED ON PLAN AND PROFILE SHEETS.
14. REMOVE AND DISPOSE TOP 12 INCHES OF TOPSOIL FOR SPOIL PILE AREAS LOCATED IN WETLANDS.
15. CONSTRUCTION ACCESS NOT PERMITTED ACROSS WATERWAYS. EQUIPMENT BRIDGE SHALL NOT BE INSTALLED.
16. CONCRETE COATED PIPE SHALL BE UNDER THE STREAM FROM A MINIMUM OF 5.0 FT FEET TOP DAME TO TOP DAME.
17. PIPE SHALL BE INSTALLED LEVEL UNDER THE STREAM TO A MINIMUM OF THE DEPTH INDICATED IN PROFILE DRAWINGS. WHEN TOP OF PIPE MAY BE LESS TO A MINIMUM OF 3.0 FT BELOW STREAM.
18. FULL JOINTS OF PIPE SHALL BE USED UNLESS OTHERWISE DIRECTED BY THE CONSTRUCTION FOREMAN.
19. EQUIPMENT SHALL BE APPROPRIATE FOR LOCAL GUARD.
20. CROSSING INSTALLATION SHALL BE IN ACCORDANCE WITH APPLICABLE PERMITS AND REGULATIONS.
21. ALL STRIPPED WELDS SHALL BE 100% RADIOGRAPHICALLY INSPECTED.

GENERAL NOTES	REFERENCE DRAWINGS	REVISIONS	ENGINEERING/DESIGN RECORD

ISSUE LEGEND

ISSUE RECORD

PLAYER DANIEL WILLIAMS BROTHERS

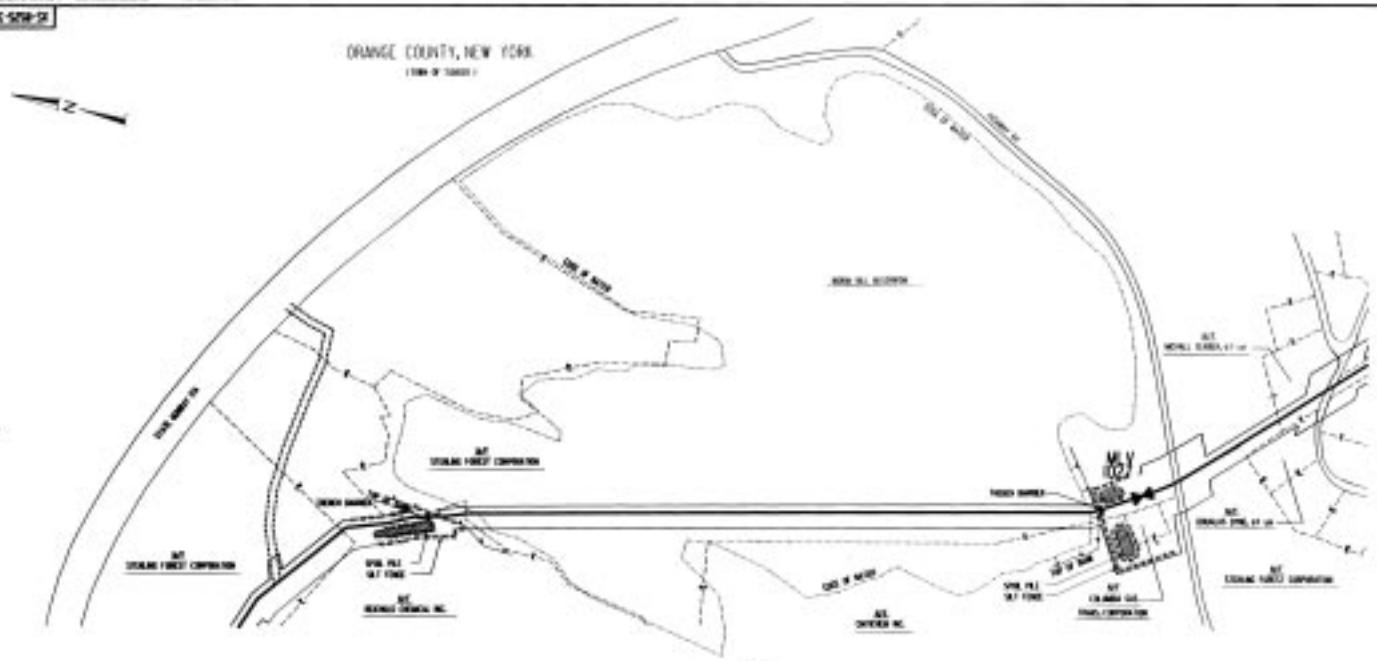
gai

MILLENNIUM PIPELINE

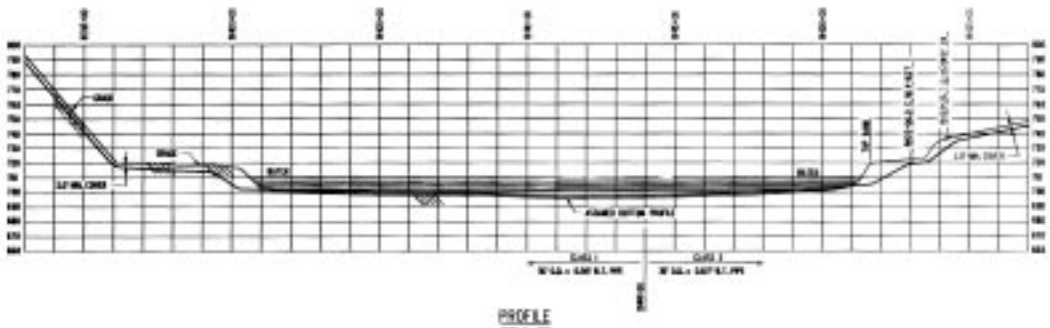
PROPOSED 36" PIPELINE CROSSING
WHEELER CREEK

PROJECT NUMBER	DATE	DRAWING NO.	REV.
06030	09/27/07	03 0025 551 0 0025	C

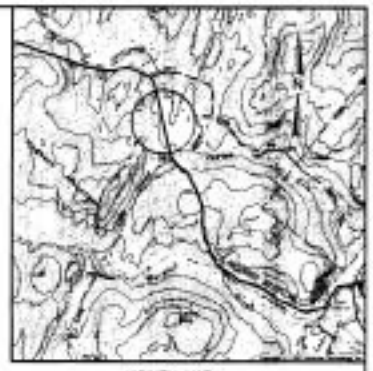
ORANGE COUNTY, NEW YORK



PLAN



PROFILE



VICINITY MAP

GENERAL NOTES

REFERENCE DRAWINGS

REVISIONS

ENGINEERING/DESIGN RECORD

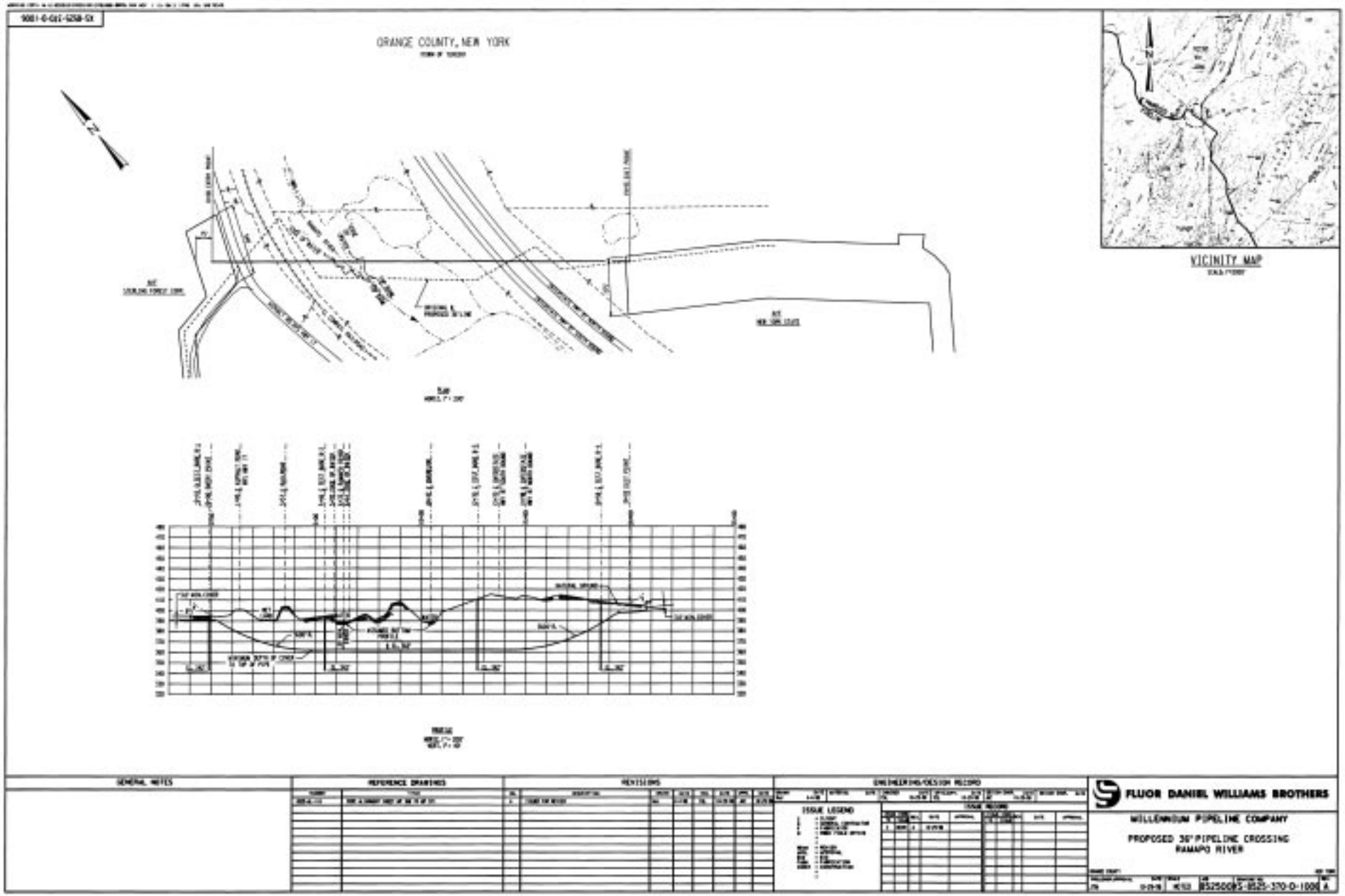
ISSUE LEGEND

ISSUE RECORD

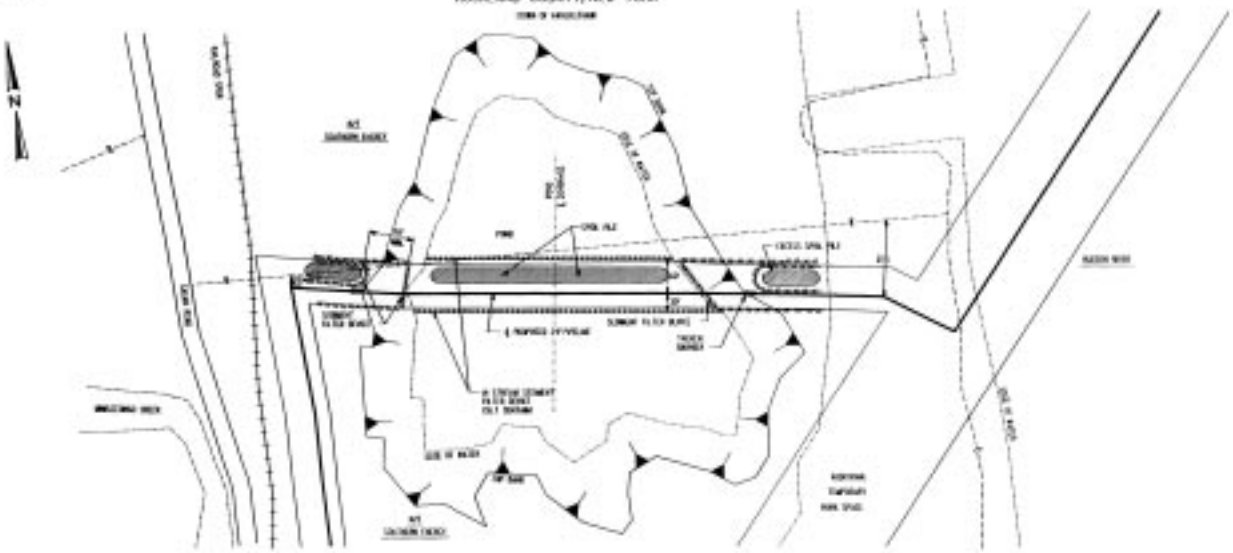
FLUOR DANIEL WILLIAMS BROTHERS

MILLENNIUM PIPELINE

PROPOSED 36" PIPELINE CROSSING
INDIAN KILL RESERVOIR


ORANGE COUNTY, NEW YORK
VICINITY MAP
GENERAL NOTES
REFERENCE DRAWINGS
REVISIONS
ENGINEERING/DESIGN RECORD
ISSUE LEGEND
FLUOR DANIEL WILLIAMS BROTHERS
WILLENNIUM PIPELINE COMPANY
PROPOSED 36" PIPELINE CROSSING
RAMAPO RIVER

ROCKLAND COUNTY, NEW YORK



PLAN

PROFILE

VICINITY MAP

NOTES

1. ALL CONSTRUCTION AND MAINTENANCE ACTIVITIES WILL BE PERFORMED IN ACCORDANCE WITH MILLENNIUM'S ECS.
2. WORK SPACE WILL BE CONSTRUCTED AT LEAST 50 FEET FROM THE EDGE OF WATER, TOPOGRAPHY PERMITTING.
3. TRENCH SPOIL WILL BE CONTAINED IN THE WORK.
4. LOCATION OF TEMPORARY SERVICES ARE APPROXIMATE, ACTUAL LOCATIONS TO BE DETERMINED.
5. OPEN-CUT CONSTRUCTION METHOD SHALL BE USED TO CROSS WATERWAYS. TRENCH WILL BE DEWATERED USING DIVERSION OR DAMMING.
6. PIPELINE WILL BE PULLED BEHIND THE WATERWAY WITHIN 1 DAY.
7. TRENCH WILL BE BACKFILLED USING MECHANICAL PLACEMENT.
8. TRENCH PLUG WILL BE UP TO BE TIED AT THE TOP AND UP TO BE TIED AT THE BOTTOM.
9. THE FOLLOWING SAFE PRACTICES ARE ALLOWED FOR TRENCH PLUGS OR CONTINGENCIES: 2 DAYS TO DEWATER THE TRENCH, 1 DAY TO INSTALL THE PIPE, AND 1 DAY TO BACKFILL THE TRENCH.
10. RESTORATION SHALL COMMENCE IMMEDIATELY AFTER THE TRENCH IS BACKFILLED.
11. CONSTRUCTION ACCESS WILL NOT BE PERMITTED ACROSS WATERWAYS. EQUIPMENT CROSSING SHALL NOT BE PERMITTED. EQUIPMENT CROSSING OF WATERWAYS SHALL BE LIMITED TO A SINGLE PASS OF EACH VEHICLE TO TRANSVERSE TRENCH AND A SINGLE PASS OF VEHICLE TO BACKFILL TRENCH.
12. CONCRETE COATED PIPE SHALL BE LAID TO THE FOLLOWING FOR A MINIMUM OF 5.0 FT FROM TOP BANK TO TOP BANK.
13. PIPE SHALL BE INSTALLED LEVEL UNDER THE STREAM TO A MINIMUM OF THE DEPTH SHOWN EXCEPT IN ROCK TERRAIN, WHERE CUT OF PIPE MAY BE LAID TO A MINIMUM OF 3.0 FT BELOW STREAM.
14. FINAL DEPTH OF PIPE SHALL BE FIXED UNLESS OTHERWISE DIRECTED BY THE CONSTRUCTION ENGINEER.
15. CROSSING RESTORATION SHALL BE IN ACCORDANCE WITH APPLICABLE PERMITS AND REGULATIONS.
16. ALL EXISTING WETLANDS SHALL BE RESTORED TO EXISTING CONDITIONS.
17. EXPIRATION DATES APPROXIMATED FROM ECS GUIDE.

GENERAL NOTES	REFERENCE DRAWINGS	REVISIONS	ENGINEERING/DESIGN RECORD

ISSUE LEGEND

ISSUE RECORD

PLATTE DANIEL WILLIAMS BROTHERS

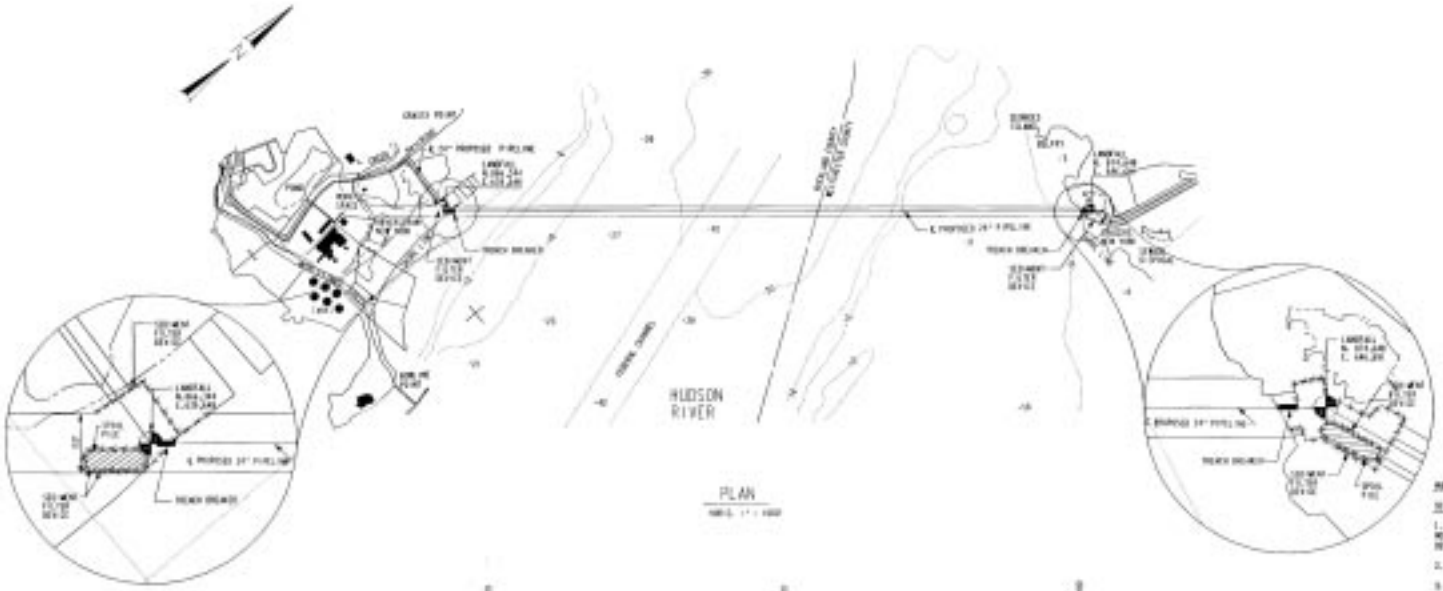
gai

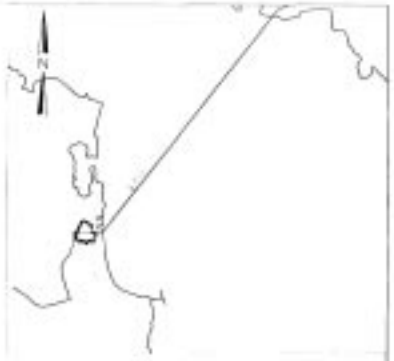
MILLENNIUM PIPELINE

PROPOSED 24" PIPELINE CROSSING
POND

85250	01-PDS-387-0-4014		

ROCKLAND & WESTCHESTER COUNTIES, NEW YORK





HUDSON RIVER

SITE SPECIFIC PROJECT NOTES:

1. ALL CONSTRUCTION AND MAINTENANCE ACTIVITIES WILL BE PERFORMED IN ACCORDANCE WITH MILLENNIUM'S ENVIRONMENTAL CONSTRUCTION STANDARDS AND THE MONITORING PLAN DEVELOPED SPECIFICALLY FOR THIS CROSSING.

2. CONSTRUCTION LIMITED TO JULY 1 THROUGH SEPTEMBER 30.

3. LEAVE OPEN WORK AREAS AT LEAST 50 FEET FROM EDGE OF WATER.

4. SPOIL PILES WILL BE STOCKPILED AT LEAST 50 FEET FROM THE EDGE OF WATER, TOPOGRAPHY PERMITTING. TRENCH SPOIL WILL BE STOCKPILED WITHIN THE DESIGNATED STAGING AREAS ON THE BOTTOM-DAMP BANKS. THE SHIPPING CHANNEL WILL REMAIN OPEN AT ALL TIMES.

5. LOCATION OF SEDIMENT CONTROL DEVICES ARE APPROXIMATE, ADJUST TO FIELD CONDITIONS.

6. OPEN-CUT DRY LANE CONSTRUCTION METHOD SHALL BE USED TO CROSS WATERWAYS. TRENCH WILL BE EXCAVATED FROM A SMALL (TYPICALLY 10-15 FT) ENVIRONMENTAL BUDGET IN NEAR-SHORE FLOWING AREAS AND LARGE (TYPICALLY 100-150 FT) ENVIRONMENTAL BUDGET ELSEWHERE.

7. TRENCH WILL BE BACKFILLED USING MECHANICAL PLACEMENT IN NEAR-SHORE AREAS AND BOTTOM-DAMPED FROM BARGES ELSEWHERE.

8. TRENCH SIZE WILL BE UP TO 130 FEET AT THE TOP AND UP TO 16 FEET AT THE BOTTOM WITHIN THE SHIPPING CHANNEL. ELSEWHERE, TRENCH SIZE WILL BE UP TO 70 FEET AT THE TOP AND UP TO 10 FEET AT THE BOTTOM.

9. TEMPORARY PIPE INSTALLATION AND BACKFILLING WILL PROCEED SEQUENTIALLY ALONG THE RIVER. THE TRENCH WILL NOT REMAIN OPEN FOR MORE THAN 3 WEEKS IN ANY GIVEN LOCATION, NOR WILL IT EXCEED MORE THAN APPROXIMATELY 1,200 FEET AT ANY GIVEN TIME.

10. RESTORATION SHALL COMMENCE IMMEDIATELY AFTER THE TRENCH IS BACKFILLED.

11. THE BARGES WILL HAVE A SUPPLY OF ABSORBENT MATERIALS ON BOARD, BEFORE BEGINNING PROJECT. A CONTAINMENT BOOM WILL ENCIRCLE THE BARGE. THIS BOOM WILL ALSO BE STORED ON THE BARGES FOR USE SHOULD A SPILL OCCUR WHILE ON THE RIVER.

12. THE STORAGE TANK ON THE BARGES WILL BE PROVIDED WITH A METAL CONTAINMENT AREA. THE METAL CONTAINMENT AREA WILL BE HIGH ENOUGH TO CONTAIN ANY OIL IN ALL FUELING TANK SHOULD SPILL FROM THE STORAGE TANK. THE ACCUMULATED FLUID WILL IMMEDIATELY BE STORED IN CONTAINERS FOR DISPOSAL AT AN APPROVED SITE.

13. ENVIRONMENTAL INSPECTOR WILL VISUALLY INSPECT EQUIPMENT PARKED WITHIN 100 FEET OF WATER'S EDGE FOR EVIDENCE OF LEAKS. CONTRACTOR WILL TAKE ACTION THE SAME DAY LEAK IS DISCOVERED.

14. CONCRETE COATED PIPE SHALL BE INSTALLED UNDER THE RIVER TO EXTEND A MINIMUM OF 5 FEET PAST SHORE LINE.

GENERAL NOTES

1. LATITUDE SYSTEM IS NAD83 AND IS THE NEW YORK STATE PLANE COORDINATE SYSTEM, ZONE 3.01 NAD 83.

2. SECTIONS MAY BE NOTED AND ARE REFERENCED TO MEAN SEA LEVEL. WELL BASED ON MEASUREMENT FROM SECTION CHECK POINT WELLS AND AN ELEVATION OF 4,217.4 FT AS PROVIDED BY TOWNSEND ENGINEERING ASSOCIATES, INC.

REFERENCE DRAWINGS

SHEET	TITLE
[illegible]	[illegible]
[illegible]	[illegible]
[illegible]	[illegible]
[illegible]	[illegible]
[illegible]	[illegible]

REVISIONS

NO.	DESCRIPTION	DRAWN	DATE	CHK	DATE	APPR	DATE
0	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]
1	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]
2	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]

ENGINEERING/DESIGN RECORD

DRAWN	DATE	MATERIAL	DATE	CHECKED	DATE	CONTROL CHECK	DATE	MATERIAL CHECK	DATE	MATERIAL CHECK	DATE

ISSUE LEGEND

[illegible]

ISSUE RECORD

ISSUE CODE	NO.	DATE	APPROVAL	ISSUE CODE	NO.	DATE	APPROVAL
[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]
[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]

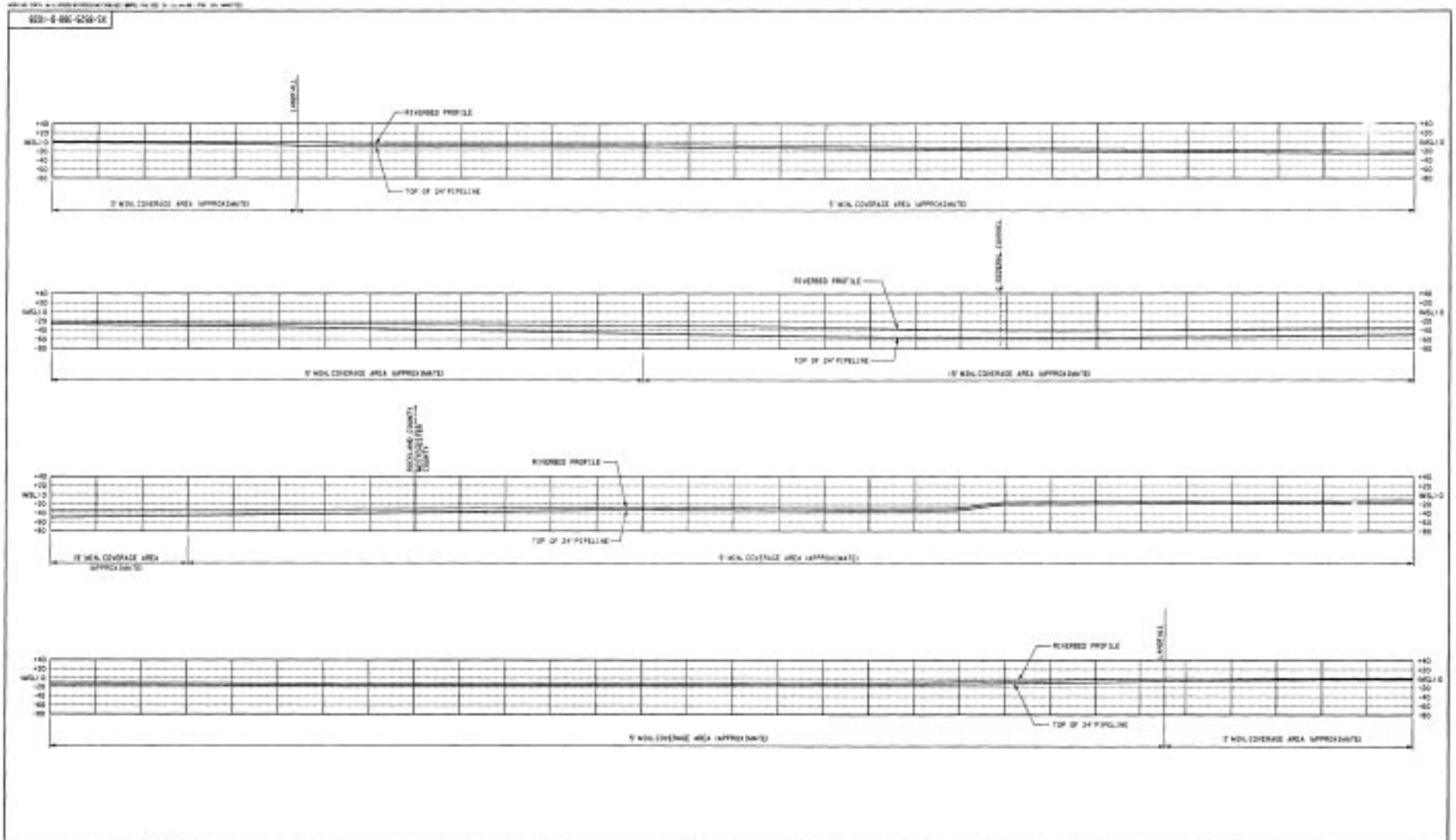
FLUOR DANIEL WILLIAMS BROTHERS

MILLENNIUM PIPELINE COMPANY

PROPOSED 24" PIPELINE CROSSING
HUDSON RIVER

ROCKLAND & WESTCHESTER COUNTIES

DATE	SCALE	DRAWN BY	DRAWING NO.	REV.
10/00	[illegible]	[illegible]	15-0525-388-0-1007	0



GENERAL NOTES

REFERENCE DRAWINGS

REVISIONS

ENGINEERING/DESIGN RECORD

ISSUE LEGEND

ISSUE RECORD

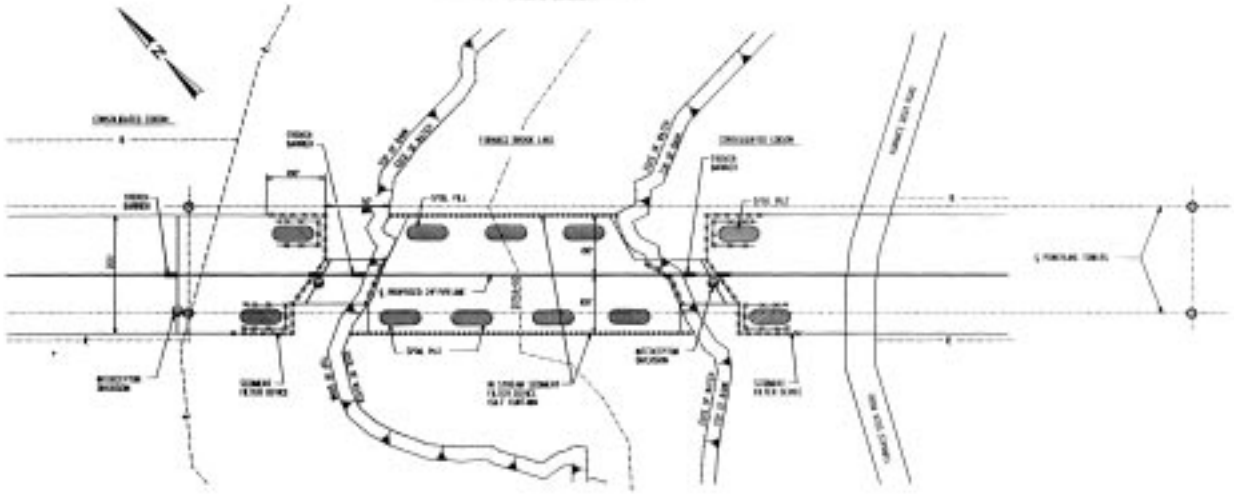
FLUOR DANIEL WILLIAMS BROTHERS

MILLENNIUM PIPELINE COMPANY

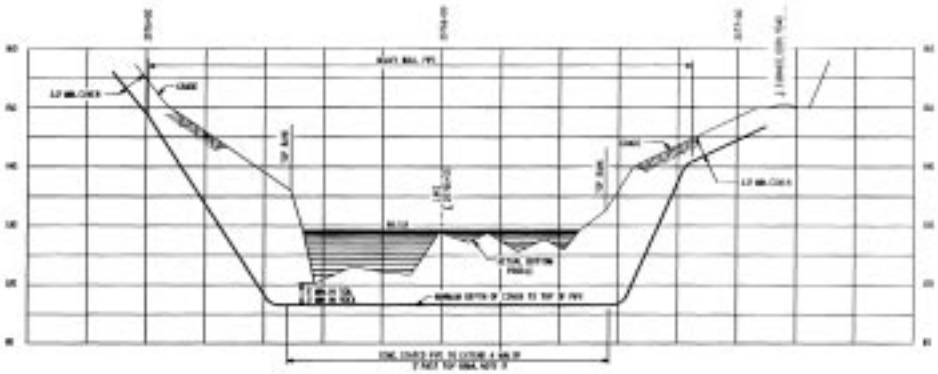
TRUE PROFILE
PROPOSED HUDSON RIVER PIPELINE CROSSING

REV. A

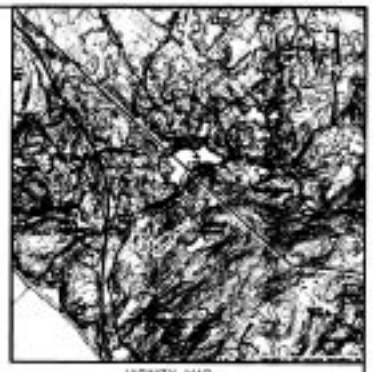
WESTCHESTER COUNTY, NEW YORK



PLAN



PROFILE



VICINITY MAP

FURNACE BROOK LAKE
SITE SPECIFIC PROJECT NOTES

1. ALL CONSTRUCTION AND MAINTENANCE ACTIVITIES WILL BE PERFORMED IN ACCORDANCE WITH MILLENNIUM'S ESCP.
2. CONSTRUCTION LIMITS TO BE SHAR I THROUGH MONITORS ON
3. ESCHS, EROSION WORK AREAS AT LEAST 50 FEET FROM EDGE OF WATER.
4. SHADE TREES WILL BE TRANSPLANTED AS CLOSE TO THE POST FROM THE EDGE OF WATER, FOREGROUND VEGETATION.
5. TRENCH SPOILS WILL BE STOCKPILED ON THE WATER.
6. LOCATION OF TEMPORARY CHANNEL CROSSINGS WAS APPROXIMATE, ADJUST TO FIELD CONDITIONS.
7. OPEN CUT CONSTRUCTION METHOD SHALL BE USED TO CROSS WATERWAY. TRENCH WILL BE EXCAVATED USING A HARD MOUNTED BACKHOE OR DRAGLINE.
8. PIPELINE WILL BE PULLED ACROSS THE WATERWAY BETWEEN 1 DAY.
9. TRENCH WILL BE BACKFILLED USING MECHANICAL PLACEMENT.
10. TRENCH PLUG WILL BE CUT TO DEPTH FLUSH WITH THE TOP PIPE OF TO BE FLUSH WITH THE BOTTOM.
11. THE FOLLOWING TIME FRAMES ARE ALLOTTED FOR EACH PHASE OF CONSTRUCTION: 1 DAYS TO EXCAVATE THE TRENCH, 1 DAY TO INSTALL THE PIPE, AND 1 DAY TO BACKFILL THE TRENCH.
12. RESTORATION SHALL COMMENCE IMMEDIATELY AFTER THE TRENCH IS BACKFILLED.
13. CONSTRUCTION ACTIVITIES NOT PERMITTED ACROSS WATERWAY. TELEPHONE WIRING SHALL NOT BE INSTALLED.
14. ONLY EQUIPMENT ACCESS ON BANKS WILL BE REMOVED WITHIN 100 FEET OF WATER'S EDGE.
15. BANK WILL BE PULLED TO THE BANK FOR REGRADING AND ADDITIONAL SOIL MATERIAL WILL BE READILY AVAILABLE.
16. ENVIRONMENTAL INSPECTOR WILL MONITOR / INSPECT EQUIPMENT PARKED WITHIN 100 FEET OF WATER'S EDGE FOR EVIDENCE OF LEAKS. CONTRACTOR WILL TAKE ACTION THE SAME DAY LEAK IS IDENTIFIED.
17. CONCRETE COATED PIPE SHALL BE UNDER THE LAKE FROM A MINIMUM OF 5.0 FT FEET TO BANK TO TOP BANK.
18. PIPE SHALL BE INSTALLED LEVEL UNDER THE LAKE TO A MINIMUM OF THE DEPTH SHOWN EXCEPT IN ROCK FORMATIONS WHERE TOP OF PIPE MAY BE LAID TO A MINIMUM OF 3.0 FT BELOW LAKE.
19. ALL JOINTS OF PIPE SHALL BE WELD UNLESS OTHERWISE DIRECTED BY THE CONSTRUCTION ENGINEER.
20. DIVERSION INSTALLATION SHALL BE IN ACCORDANCE WITH APPLICABLE PERMITS AND REGULATIONS.
21. ALL DEPTH WELDS SHALL BE VIDEO AND DYNAMICALLY INSPECTED.

GENERAL NOTES	REFERENCE DRAWINGS	REVISIONS	ENGINEERING/DESIGN RECORD

ISSUE LEGEND

ISSUE METHOD

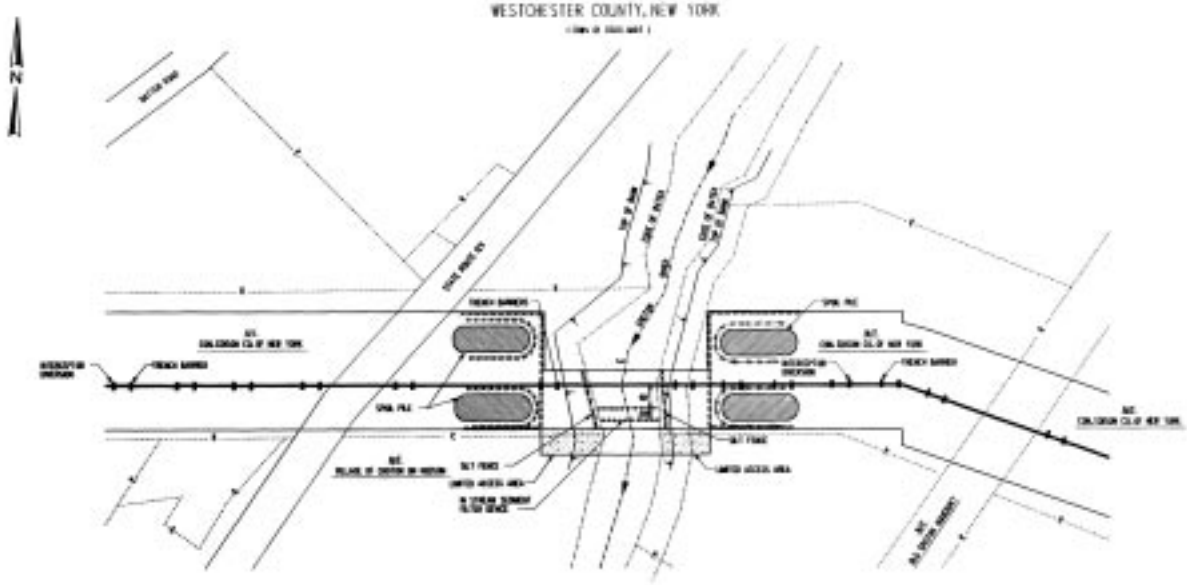
PLATT DANIEL WILLIAMS BROTHERS

gai

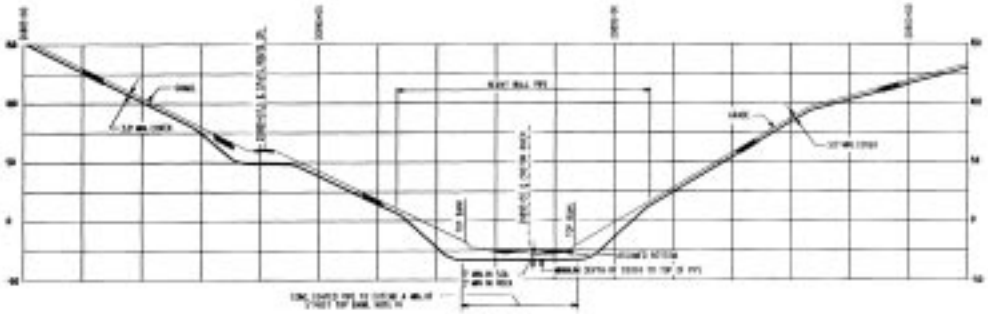
MILLENNIUM PIPELINE

PROPOSED 24" PIPELINE CROSSING
FURNACE BROOK LAKE

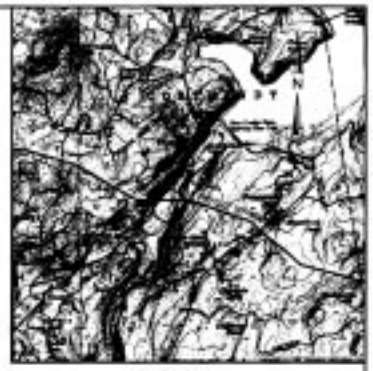
WESTCHESTER COUNTY, NEW YORK



PLAN



PROFILE



VICINITY MAP

CROSSING NOTES:
SEE SPECIFIC PROJECT NOTES

1. ALL CONSTRUCTION AND MAINTENANCE ACTIVITIES WILL BE PERFORMED IN ACCORDANCE WITH MILLENNIUM'S ECL.
2. CONSTRUCTION LIMITED TO JUNE 1 THROUGH NOVEMBER 30.
3. LEAVE 1-2 FOOT NOTE AREAS AT LEAST 50 FEET FROM EDGE OF WATER.
4. CURBS AND FRENCH DRAIN WILL BE STABILIZED AT LEAST 50 FEET FROM THE EDGE OF WATER, TEMPORARY MATERIAL.
5. LIMITED ACCESS AREA SHALL BE USED ONLY TO INSTALL AND REMOVE IN STREAM EQUIPMENT AND FILTER DEVICES.
6. LOCATION OF SEDIMENT CONTROL DEVICES ARE APPROXIMATE, ADJUST TO FIELD CONDITIONS.
7. OPEN CUT CONSTRUCTION METHOD SHALL BE USED TO CROSS WATERWAYS. A TRENCH WILL BE EXCAVATED USING A MINIMUM OF STRIPPING.
8. PIPELINE WILL BE PLACED WITHIN THE WATERWAY WITHIN 1 DAY.
9. TRENCH WILL BE BACKFILLED USING MECHANICAL PLACEMENT.
10. TRENCH SILT WILL BE UP TO 10 FEET AT THE TOP AND UP TO 10 FEET AT THE BOTTOM.
11. THE FOLLOWING TIME FRAMES ARE ALLOTTED FOR EACH PHASE OF CONSTRUCTION: 1 DAY TO PREPARE THE TRENCH, 1 DAY TO INSTALL THE PIPE, AND 1 DAY TO BACKFILL THE TRENCH.
12. RESTORATION SHALL COMMENCE IMMEDIATELY AFTER THE TRENCH IS BACKFILLED.
13. CONSTRUCTION ACCESS WILL BE PERMITTED ALONG WATERWAYS. EQUIPMENT BRIDGE SHALL NOT BE CONSTRUCTED.
14. CONCRETE COATED PIPE SHALL BE LAYED IN THE STREAM FROM A MINIMUM OF 1.5 FEET FROM TOP BANK TO TOP BANK.
15. PIPE SHALL BE INSTALLED LEVEL UNDER THE STREAM FROM A MINIMUM OF THE DEPTH FROM EXCEPT IN ROCK FORMATION WHERE TOP OF PIPE MAY BE LAID TO A MINIMUM OF 2.0 FEET BELOW STREAM.
16. FULL JOINTS OF PIPE SHALL BE LAID AS FAR OVERHEAD DIRECTIONAL IN THE CONSTRUCTION PROCESS.
17. ELEVATION SHOWN APPROXIMATED FROM USGS MAPS.
18. IN STREAM EQUIPMENT FOR THE PROJECT SHALL BE PLACED FROM STREAM OF TRENCH TO MINIMIZE SUBSIDITY AND DISTURBANCE IN STREAMS. NO EQUIPMENT WILL BE INSTALLED PRIOR TO AND IN STREAM ACTIVITIES AND WILL BE PLACED APPROXIMATELY 50 FEET AND 100 FEET DOWN STREAM OF TRENCH.
19. DESIGNS INSTALLATION SHALL BE IN ACCORDANCE WITH APPLICABLE PERMITS AND REGULATIONS.
20. ALL STATIC WELDS SHALL BE CHECKED WITH MAGNETIC PARTICLES.
21. ELEVATION SHOWN APPROXIMATED FROM USGS MAPS.

GENERAL NOTES	REFERENCE DRAWINGS	REVISIONS	ENGINEERING/DESIGN RECORD

ISSUE LEGEND

ISSUE RECORD

FLUOR DANIEL WILLIAMS BROTHERS

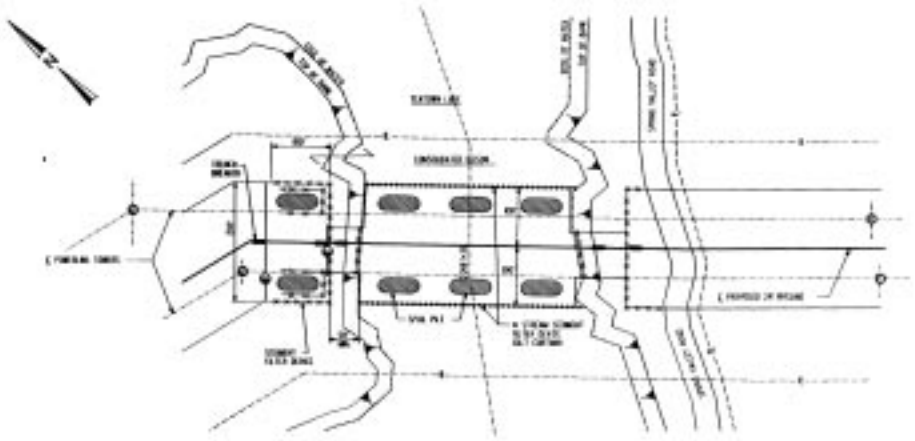
gai

MILLENNIUM PIPELINE

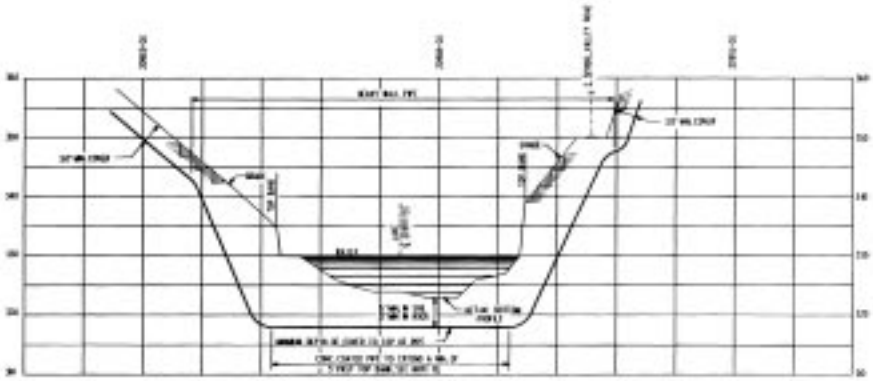
PROPOSED 36" PIPELINE CROSSING
CROTON RIVER

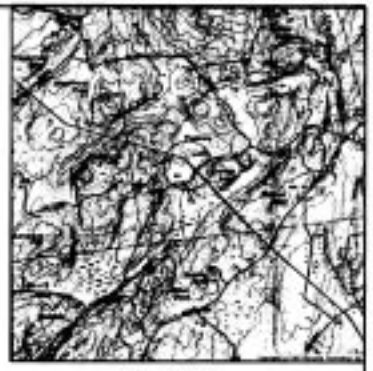
NOTES	MP-2140	XS-8575-T96-D-0138	1

WESTCHESTER COUNTY, NEW YORK



PLAN





VICINITY MAP

TEATOWN LAKE
CITY OF MOUNT KISCO, PROJECT NOTES

1. ALL CONSTRUCTION AND MAINTENANCE ACTIVITIES WILL BE PERFORMED IN ACCORDANCE WITH PROJECT SPECS.
2. CONSTRUCTION [illegible] TO TAKE [illegible] THROUGH NOVEMBER [illegible].
3. LEAVE [illegible] AREA AT LEAST [illegible] FEET FROM EDGE OF WATER.
4. CHOKE CHECK WILL BE CONSTRUCTED AT LEAST [illegible] FEET FROM THE EDGE OF WATER, [illegible] PLANTS ETC.
5. TRENCH SPOIL WILL BE CONSTRUCTED ON THE WATER.
6. LOCATION OF TREMIE CONTROL DEVICES ARE APPROXIMATE, ADJUST TO FIELD CONDITIONS.
7. [illegible] CONTRACTOR [illegible] SHALL BE [illegible] TO CROSS WATERWAY. TRENCH WILL BE [illegible] USING A SINGLE PASSING BACKHOE OR DRAGLINE.
8. PIPELINE WILL BE FILLED WITH THE WATERWAY WITHIN 1 DAY.
9. TRENCH WILL BE BACKFILLED USING MECHANICAL PLACEMENT.
10. TRENCH [illegible] WILL BE UP TO [illegible] FEET AT THE TOP AND UP TO [illegible] FEET AT THE BOTTOM.
11. THE FOLLOWING TIME FRAMES ARE ALLOTTED FOR EACH PHASE OF CONSTRUCTION. 1 DAYS TO FLOODED THE TRENCH, 1 DAY TO INSTALL THE PIPE, AND 1 DAY TO BACKFILL THE TRENCH.
12. RESTORATION SHALL COMMENCE IMMEDIATELY AFTER THE TRENCH IS BACKFILLED.
13. CONSTRUCTION ACCESS NOT PERMITTED ACROSS WATERWAY. EQUIPMENT BRIDGE SHALL NOT BE [illegible].
14. THE CONSTRUCTION WORK AREA ON THE EAST BANK WILL BE RESTRICTED TO BETWEEN THE [illegible] LEGS.
15. MILLENNIUM WILL COORDINATE WITH THE TEATOWN RECREATION AUTHORITY AND PROJECT [illegible] MANAGERS TO BE TAKEN WHILE CONSTRUCTION ACTIVITIES ARE OCCURRING NEAR THE [illegible] SHALL [illegible] BOTH SUMMIT OF THE LAKE.
16. ONLY EQUIPMENT LOCATED ON BARGES WILL BE [illegible] WITHIN [illegible] FEET OF WATER'S EDGE.
17. BARGE WILL BE MOORED TO THE BANK FOR [illegible] AND ADDITIONAL SPOIL MATERIAL WILL BE READILY AVAILABLE.
18. ENVIRONMENTAL INSPECTOR WILL MONITOR [illegible] EQUIPMENT PARKED WITHIN 100 FEET OF WATER'S EDGE FOR [illegible] OF FUEL. [illegible] WILL TAKE ACTION THE SAME DAY [illegible] IS DISCOVERED.
19. CONCRETE COATED PIPE SHALL BE UNDER THE LAKE FROM A MINIMUM OF [illegible] FEET BELOW TOP BANK TO TOP BANK.
20. PIPE SHALL BE INSTALLED [illegible] UNDER THE LAKE TO A MINIMUM OF [illegible] FEET FROM [illegible] IN ROCK TERRAIN [illegible] WHERE TOP OF PIPE MAY BE [illegible] TO A MINIMUM OF [illegible] FEET [illegible] LAKE.
21. ALL [illegible] OF PIPE SHALL BE [illegible] UNLESS OTHERWISE DIRECTED BY THE CONSTRUCTION ENGINEER.
22. CROSSING INSTALLATION SHALL BE IN ACCORDANCE WITH APPLICABLE PERMITS AND REGULATIONS.
23. ALL [illegible] SHALL BE [illegible] MECHANICALLY [illegible].

GENERAL NOTES	REFERENCE DRAWINGS	REVISIONS	ENGINEERING/DESIGN RECORD

REFERENCE DRAWINGS	
[illegible]	[illegible]

REVISIONS							
[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]

RULE LEGEND

RULE RECORD

[illegible]	[illegible]	[illegible]	[illegible]	[illegible]
[illegible]	[illegible]	[illegible]	[illegible]	[illegible]

RAGAN DANIEL WILLIAMS BROTHERS

gai

MILLENNIUM PIPELINE

PROPOSED 24" PIPELINE CROSSING
TEATOWN LAKE

[illegible]	[illegible]	[illegible]	[illegible]
[illegible]	[illegible]	[illegible]	[illegible]