

RIVERSIDE AVE. INDEX OF SHEETS

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R5	FOOTING DETAILS
R6	MISCELLANEOUS DETAILS
R7	PRECAST CURVERT SPECIFICATIONS
R8	STEEL REINFORCEMENT AND QUANTITIES

ASHLAND AVE. INDEX OF SHEETS

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A4	GENERAL PLAN OF STRUCTURE
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ROOT STANDARD PLANS

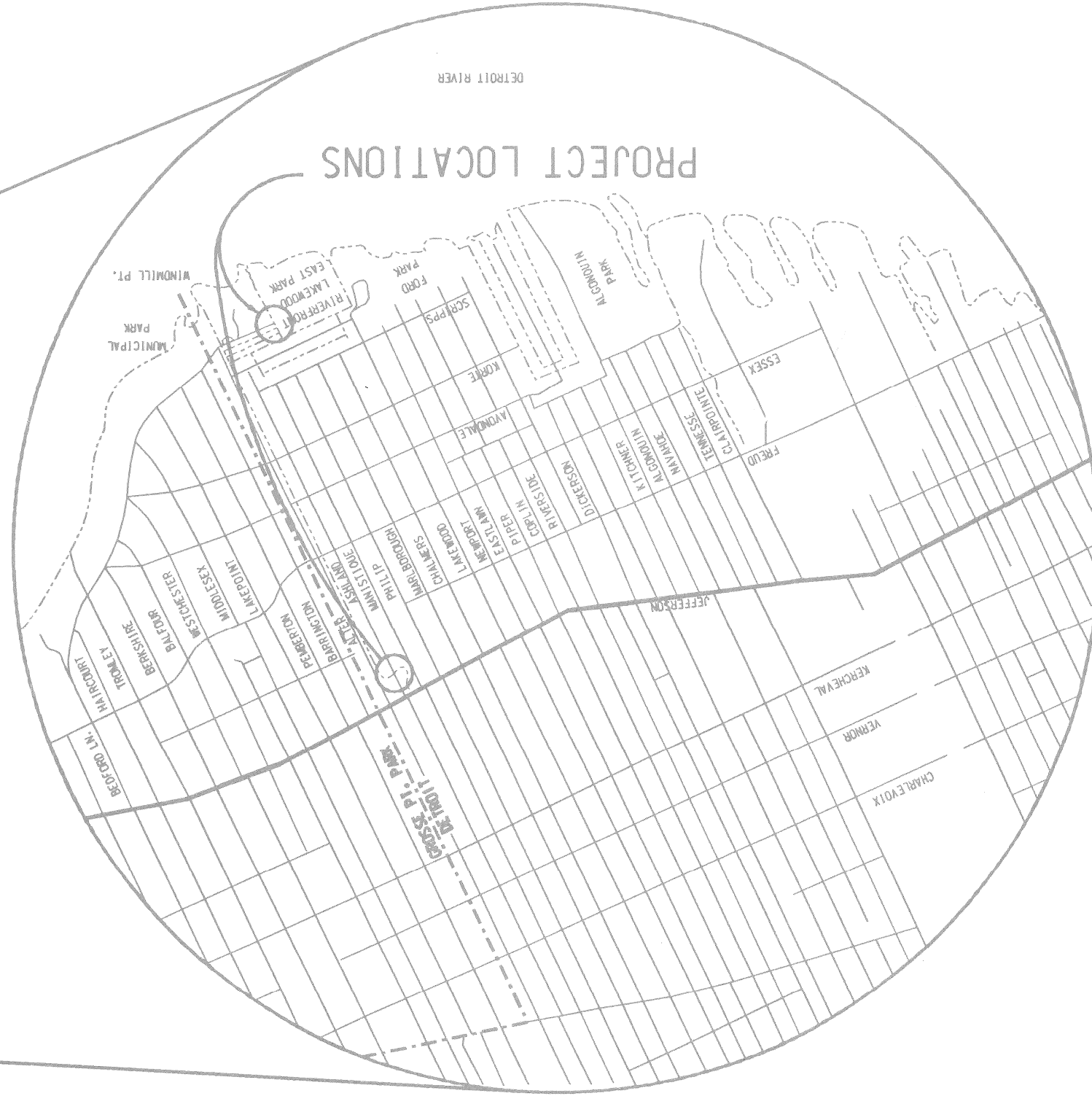
R-125A	LIGHTED ARROWS AND BARRICADES
R-96A	SOIL EROSION AND SEDIMENTATION CONTROL MEASURES
R-100B	SEEDING AND SODDING
B-103B	MODLING, BEVEL, LIGHT STANDARD ANCHOR BOLT ASSEMBLY AND NAME PLATE DETAILS
B-18B	BRIDGE RAILING, SOLID PARAPET TYPE
B-24A	BRIDGE RAILING, 1 TUBE

CITY OF DETROIT STANDARD PLANS (3-7-90)

C-4380	TYPE IIIR INTEGRAL CURB
C-4381	TYPICAL PAVEMENT CROSS SECTION

STATIONS ARE IN MILLIMETERS UNLESS OTHERWISE SHOWN. COORDINATES, CURVE AND ALIGNMENT DATA ARE IN METERS. STATIONS ARE IN KILOMETERS + METERS.

METRIC



CITY OF DETROIT
DENNIS W. ARCHER-MAYOR
CITY ENGINEERING DIVISION
DEPARTMENT OF PUBLIC WORKS
PLANS FOR PROPOSED
REPLACEMENT OF THE RIVERSIDE AVE. BRIDGE OVER CANAL
(BW-242), FEDERAL STRUCTURE NO. 0108300B02
REPLACEMENT OF THE ASHLAND AVE. BRIDGE OVER FOX CREEK
(BW-245), FEDERAL STRUCTURE NO. 0024400B01

THE DESIGN OF THIS STRUCTURE IS BASED ON CURRENT ASTM STANDARD SPECIFICATIONS FOR HIGHWAY BRIDGES WITH LIVE LOAD PLUS IMPACT DEFLECTION DOES NOT EXCEED 1/1000 OF THE SPAN LENGTH. THE LOAD FACTOR METHOD OF DESIGN WAS USED FOR THIS STRUCTURE. EXCEPT WHERE OTHERWISE INDICATED ON THESE PLANS, THE PROPOSAL AND SUPPLEMENTAL SPECIFICATIONS CONTAINED HEREIN, ALL MATERIALS AND WORKMANSHIP SHALL BE IN ACCORDANCE WITH THE MICHIGAN DEPARTMENT OF TRANSPORTATION STANDARD SPECIFICATIONS FOR CONSTRUCTION 1996 EDITION.

THE STATIONING AS SHOWN ON THESE PLANS FOR THE INTERSECTION OF THE CENTERLINE OF BRIDGE AND ROADWAY CENTERLINE IS BELIEVED TO BE CORRECT. IT SHALL, HOWEVER, BE CHECKED AT THE TIME OF STARTING CONSTRUCTION. AND IF THE STATIONING SHOWN ON THE PLANS IS INCORRECT IT SHALL BE REPORTED TO THE DESIGN OFFICE IN DETROIT, AND THE STRUCTURE SHALL BE STAKED OUT USING THE ACTUAL INTERSECTION OF THE CENTERLINE OF THE BRIDGE AND ROADWAY CENTERLINE AS THE CONTROL POINT.

ALL EXPOSED CONCRETE CORNERS SHOWN SQUARE ON THE PLANS SHALL BE BEVELED WITH 13 mm TRIANGULAR MOLDINGS EXCEPT AS OTHERWISE NOTED. THE DESIGN OF THE STRUCTURAL MEMBERS IS BASED ON MATERIAL OF THE FOLLOWING GRADES AND STRESSES.

CONCRETE: GRADE S2 f'c = 21 MPa
 f'c = 28 MPa
 CONCRETE: GRADE D fy = 400 MPa

ALL DIMENSIONS ON THESE PLANS ARE IN MILLIMETERS EXCEPT AS NOTED.

PROJECT: REMOVE AND REPLACEMENT OF THE CANAL AND ASHLAND AVE. OVER THE FOX CREEK IN THE CITY OF DETROIT.

CONTRACT NO.

PLANS PREPARED BY
 SNELL ENVIRONMENTAL GROUP, INC.
 FOR
 CITY ENGINEERING DIVISION

RECOMMENDED	FOR APPROVAL	STRUCTURAL ENGINEER	DATE
RECOMMENDED	FOR APPROVAL	BUILDINGS AND BRIDGES ENGINEER	DATE
APPROVED		HEAD ENGINEER	DATE
APPROVED		CITY ENGINEER	DATE

TITLE SHEET

SCALE NOT TO SCALE

PROJECT NO. 9641-5160-01

SHEET NO. 1 OF 19

REVISIONS

OSGN BY	M.A.M.	5-97
DR.N BY	R.J.D.	5-97
CK.D BY	R.G.W.	5-97
APP.D BY	M.D.W.	2-99

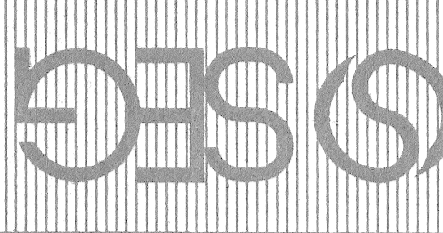
SNELL ENVIRONMENTAL GROUP, INC.
 151 W. CONGRESS, SUITE 308
 DETROIT, MICHIGAN 48226
 TELEPHONE (313) 961-0010

CITY OF DETROIT
 ASHLAND AVE. OVER FOX CREEK (BW-242)



72 HOURS
 BEFORE YOU DIG
 CALL MISS DIG
 800-482-7171

APP'D BY	C.D.P.	12-97
CHK'D BY	R.J.D.	5-97
DESIGNED BY	R.G.W.	5-97
FINAL CK'D BY	M.D.W.	2-99

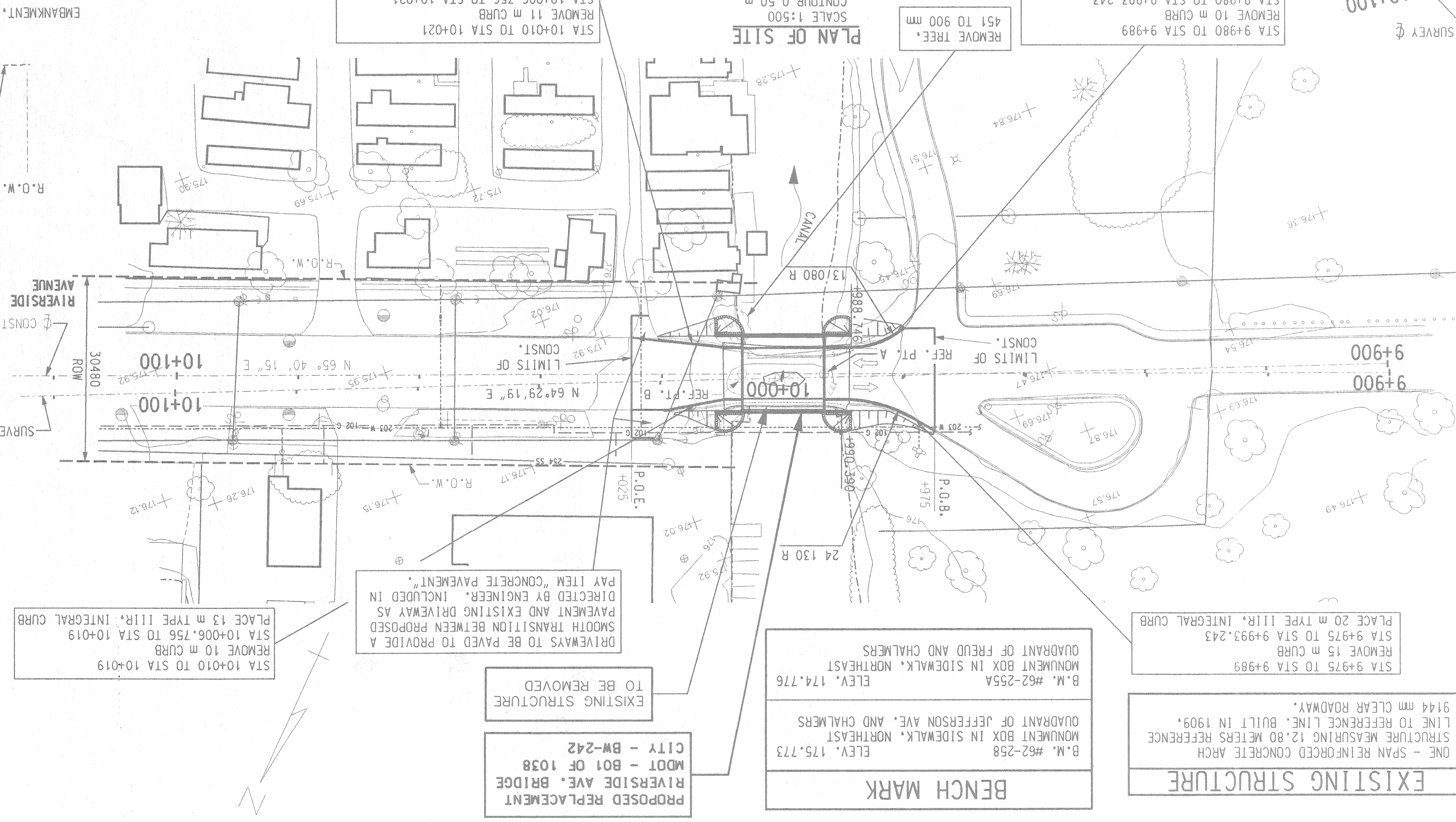
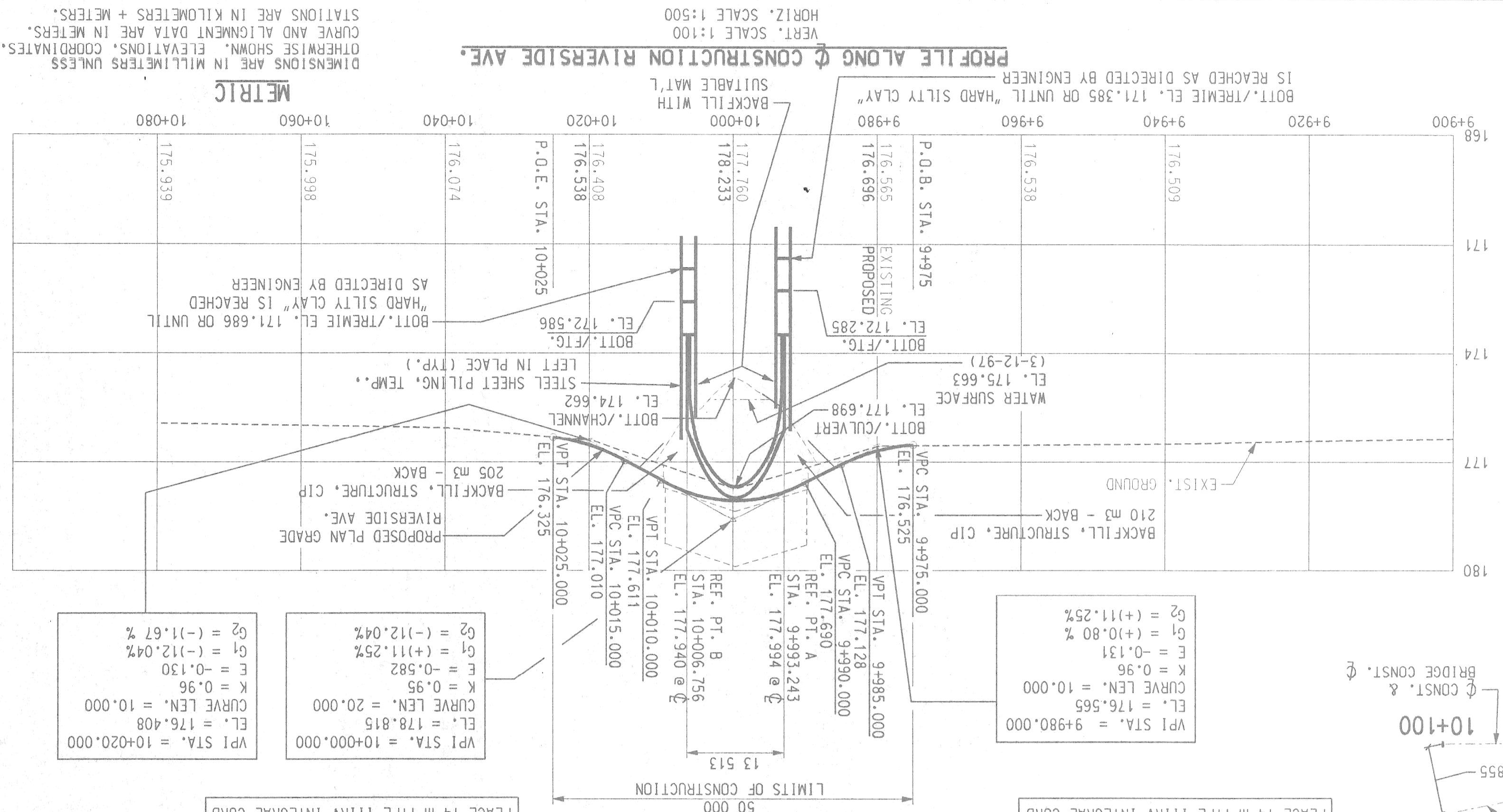
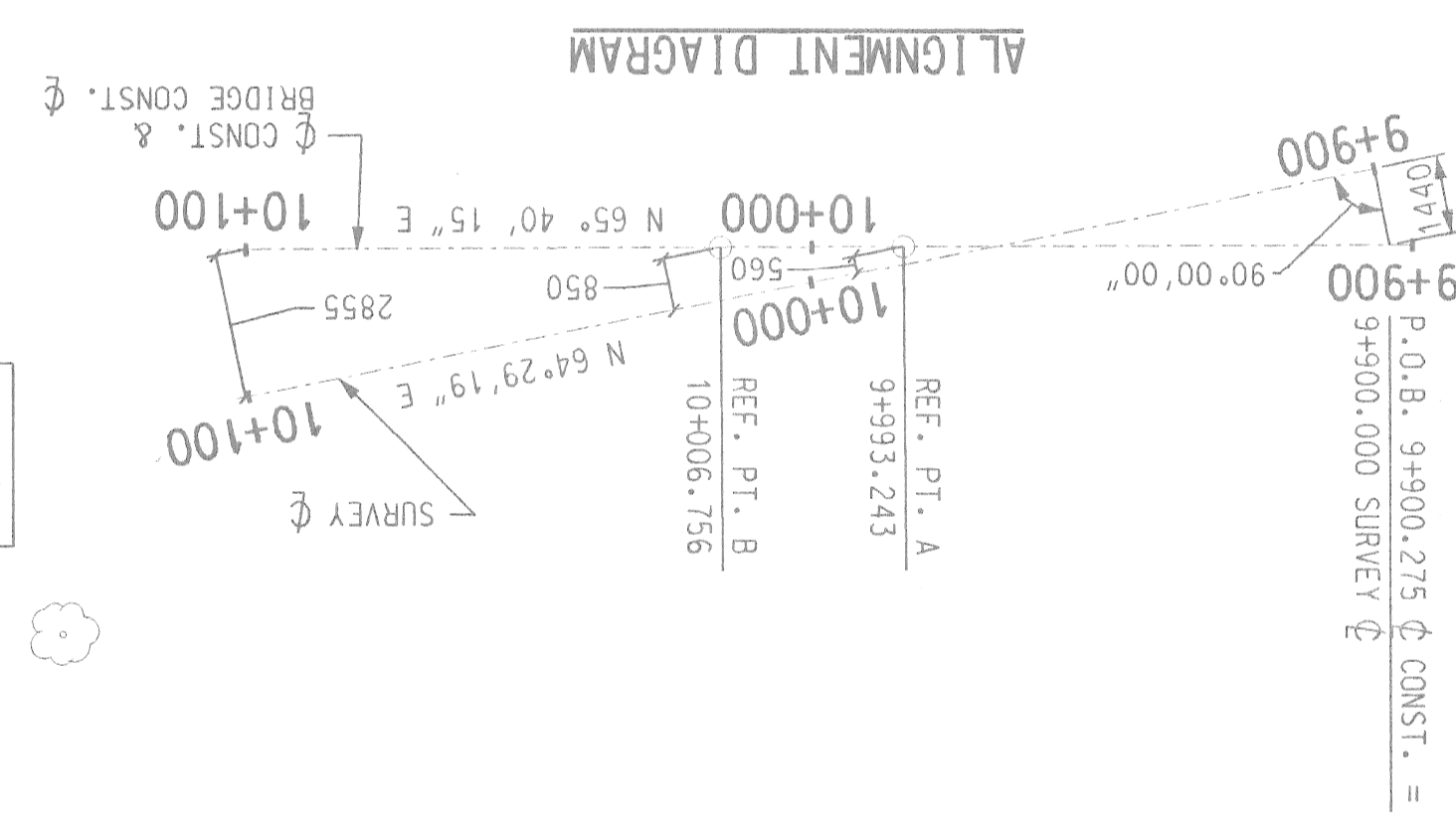
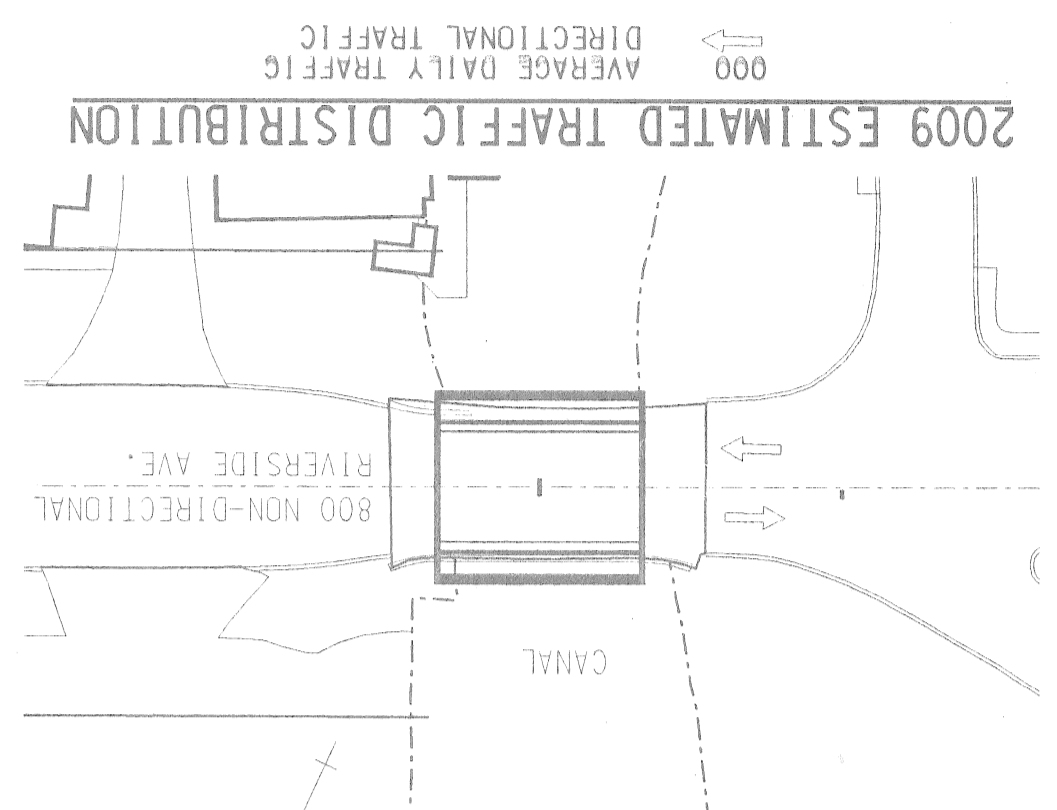


SNELL ENVIRONMENTAL GROUP, INC.
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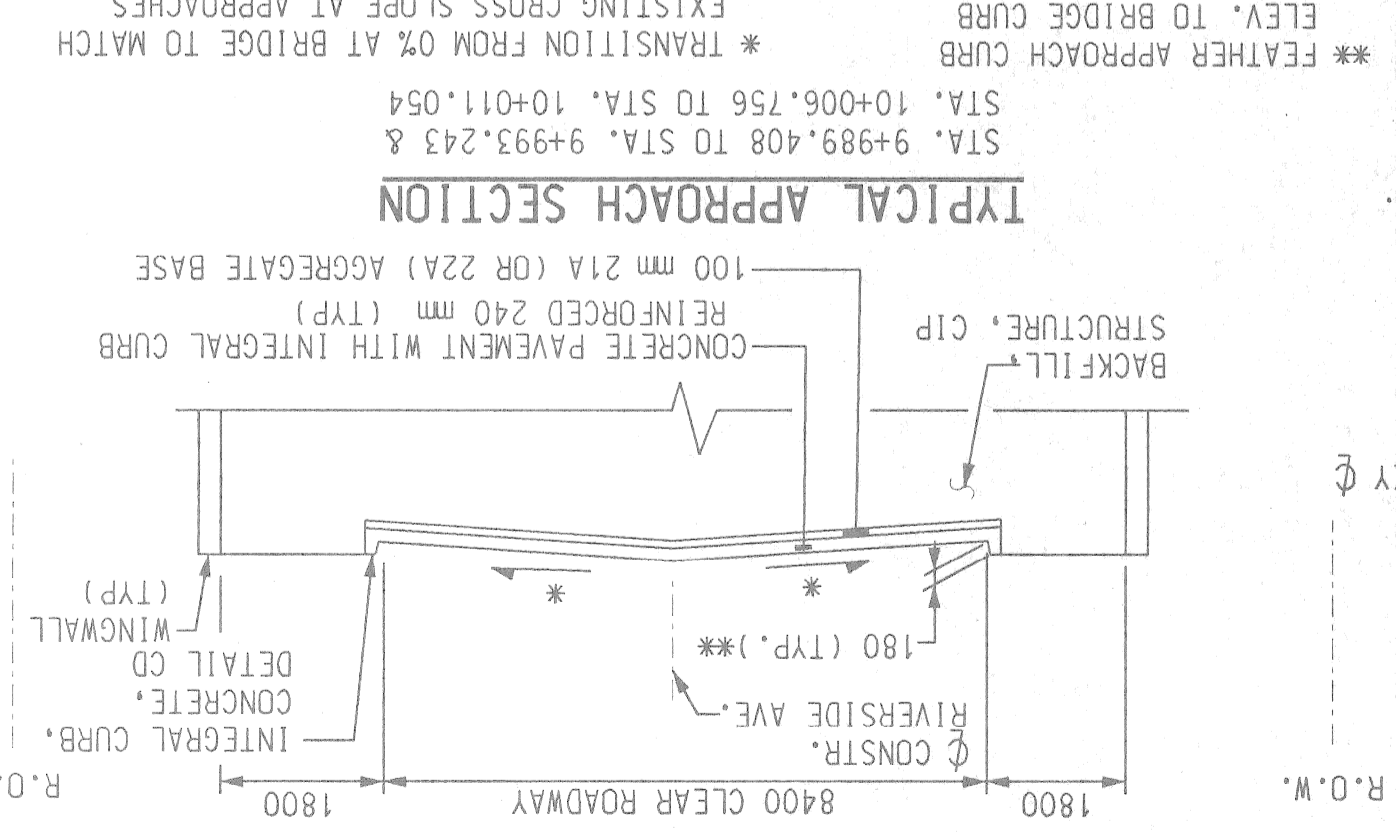
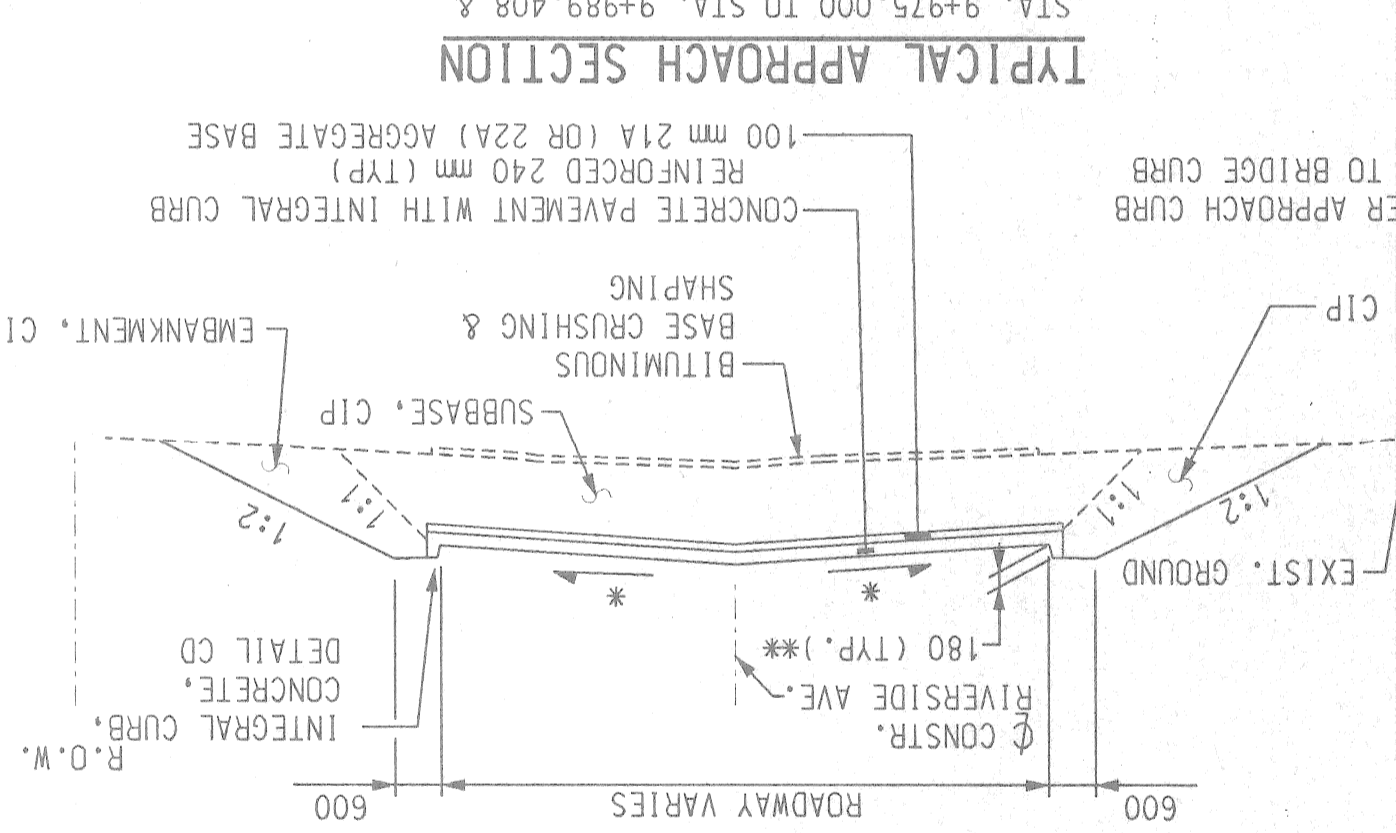
CITY OF DETROIT
MICHIGAN
RIVERSIDE AVE.
(BW-242)

GENERAL PLAN OF SITE

PROJECT NO. 9641-5160-01
SHEET NO. R2 OF 19
SCALE NOT TO SCALE



NOTES:
* TRANSITION FROM 0% AT BRIDGE TO MATCH EXISTING CROSS SLOPE AT APPROACHES
THE WORK COVERED BY THESE PLANS INCLUDES REMOVAL OF EXISTING BRIDGE, CONSTRUCTION OF THE PROPOSED BRIDGE, PLACING RIPRAP AND APPROACH WORK.
THE CONTRACTOR SHALL LOCATE ALL ACTIVE UNDERGROUND UTILITIES PRIOR TO STARTING WORK AND SHALL CONDUCT HIS OPERATIONS IN SUCH A MANNER AS TO ENSURE THAT THOSE UTILITIES NOT REQUIRING RELOCATION WILL NOT BE DISTURBED.
RIVERSIDE AVE. WILL BE CLOSED TO THRU TRAFFIC FOR THE PROJECT DURATION.
DATE REFERS TO N.A.V.D. DATUM.
WATER LEVEL IS SUBJECT TO CHANGE. THE CONTRACTOR IS RESPONSIBLE FOR MAKING HIS OWN DETERMINATION OF WATER LEVELS THAT WILL EXIST DURING CONSTRUCTION.
MEASURES SHALL BE TAKEN TO PREVENT DEBRIS FROM FALLING FROM THE STRUCTURE. IF DEBRIS FALLS INTO THE WATERWAY, IT SHALL BE REMOVED WITHIN 24 HOURS. THE PREVENTIVE MEASURES OF THE WATERWAY BOTTOM MAY BE AS HARMFUL AS THE DEBRIS ITSELF. THE PREVENTIVE MEASURES MUST BE MADE AS EFFECTIVE AS POSSIBLE. DEBRIS WHICH HAS PREVIOUSLY FALLEN FROM THE BRIDGE SHALL ALSO BE REMOVED AS DIRECTED BY THE ENGINEER.
TEMPORARILY STORED EXCAVATED MATERIAL SHALL NOT BE ALLOWED TO ERODE INTO THE WATERCOURSE. PRIOR TO PLACEMENT OF THE TREMIE SEAL, WATER PUMPED FROM THE "TEMPORARY STEEL SHEET PILING TEMP. LEFT IN PLACE" SHALL BE DISCHARGED INTO A GEOTEXTILE FILTER BAG. AFTER TREMIE SEAL PLACEMENT, AND WHERE PERMITTED BY THE ENGINEER, PUMPS MAY OUTLET DIRECTLY INTO THE RIVER. ALL DISTURBED EXISTING GROUND AND ANY NEW FILL SLOPES SHALL BE SEEDED, FERTILIZED, AND MULCHED AS DIRECTED BY THE ENGINEER. TO BE INCLUDED IN THE PAY ITEMS "SEEDING, MIXTURE TUF," "FERTILIZER, CHEMICAL NUTRIENT, CLASS A," AND "MULCH BLANKET."



WITNESSES

WITNESS TO SURVEY @ STA. 9+900	N 60° W	N 5 IN W. SIDE 254 mm LOCUST	10.766 m
	N 20° W	N 5 IN W. SIDE 203 mm LOCUST	9.372 m
	S 10° W	N 5 IN E. SIDE POWER POLE	16.278 m
(PK SET)	N 70° W	N 5 IN S. SIDE 762 mm MAPLE	11.950 m
	S 80° E	N 5 IN N. SIDE POWER POLE	33.000 m
	N 15° W	N 5 IN E. SIDE POWER POLE	18.530 m

UTILITIES

DETROIT EDISON ELECTRIC	2000 SECOND AVE. ROOM 607 G.O., DETROIT, MICHIGAN 48226	ATTN.: JOHN SOUIRES	PHONE NO.: (313) 235-6597
AMERITECH	4000 ALLEN RD., ROOM 101 ALLEN PARK, MICHIGAN 48101	ATTN.: DAVE BUCIENSKI	PHONE NO.: (313) 389-9819
MICHIGAN CONSOLIDATED GAS CO.			
DRAFTING CLERK MAIN REPLACEMENT TEAM	3200 HOBSON NOBLE SECOND FLOOR		
DETROIT, MICHIGAN 48201			
PHONE NO.: (313) 577-7236			
CITY OF DETROIT WATER & SEWERAGE DEPARTMENT	735 RANDOLPH ST. DETROIT, MICHIGAN 48226		PHONE NO.: (313) 224-4800
CITY OF DETROIT PUBLIC LIGHTING DEPARTMENT	9449 GRINELL DETROIT, MICHIGAN 48226		PHONE NO.: (313) 267-7336

REVISIONS

DSGN BY	C.D.P.	12-97
DR'N BY	R.J.D.	4-97
CR. D. BY	R.G.W.	5-97
APP. D. BY	M.D.W.	2-99

SNELL ENVIRONMENTAL GROUP, INC. A DLZ Company
 151 W. CONGRESS, SUITE 328
 DETROIT, MICHIGAN 48226
 TELEPHONE (313) 961-4040
 Making it better for you

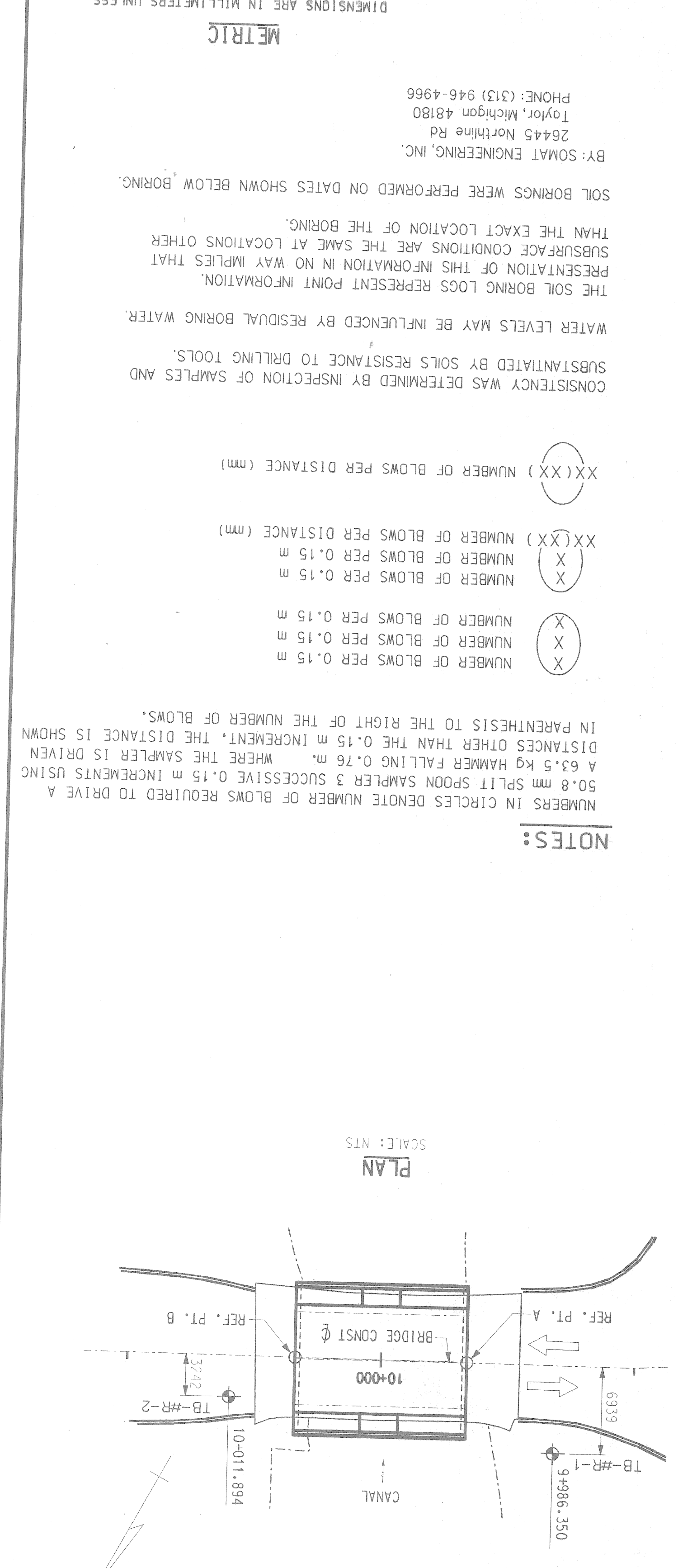
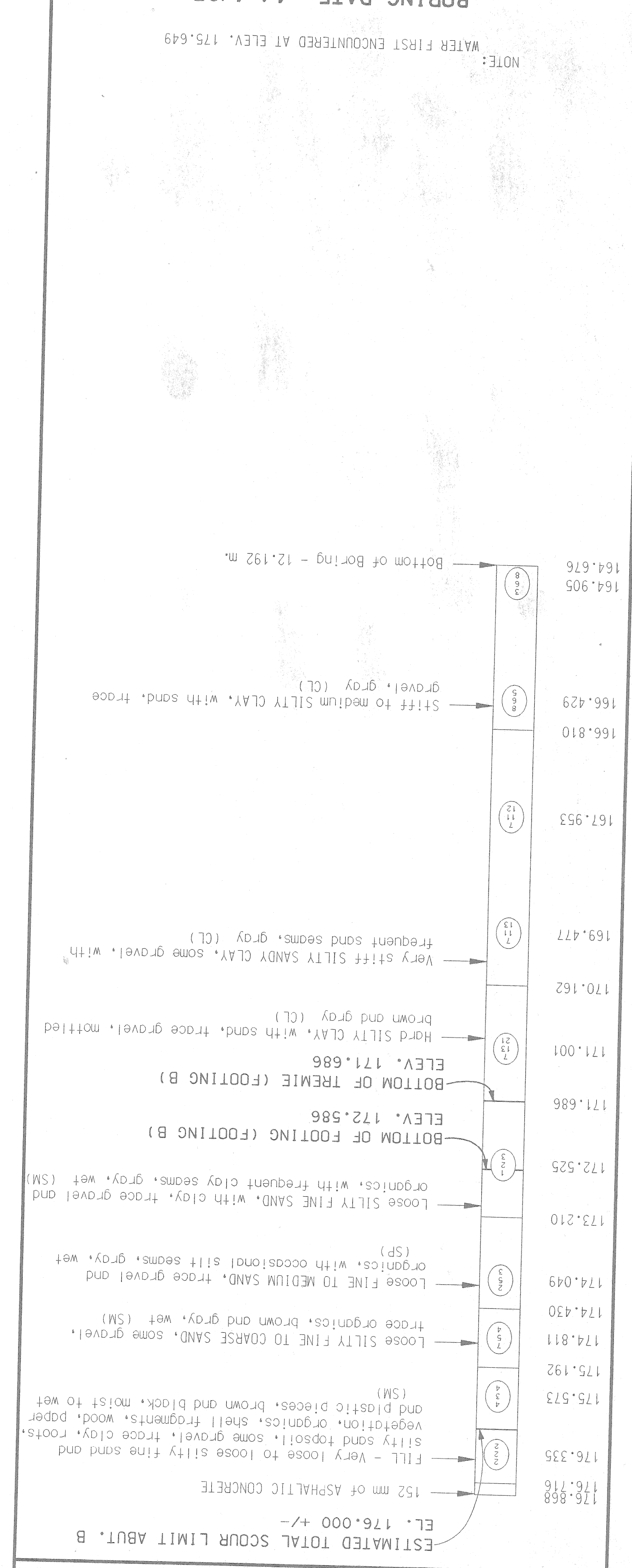
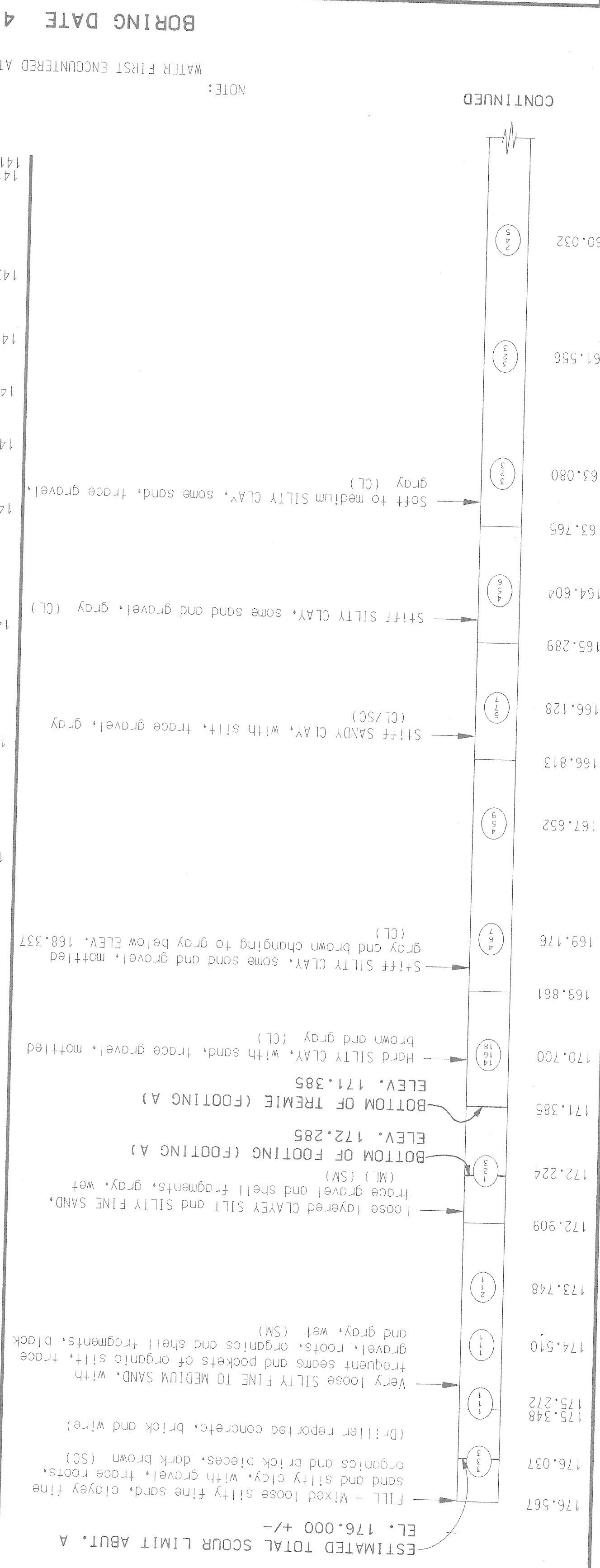
CITY OF DETROIT
MICHIGAN

RIVERSIDE AVE. OVER CANAL (BM-242)

LOG OF BORINGS

SCALE NOT TO SCALE
 PROJECT NO. 9641-5160-01
 SHEET NO. R3 OF 19

FILE NAME: 02BORING.DWG



NOTES:
 NUMBERS IN CIRCLES DENOTE NUMBER OF BLOWS REQUIRED TO DRIVE A 50.8 mm SPLIT SPOON SAMPLER 3 SUCCESSIVE 0.15 m INCREMENTS USING A 63.5 kg HAMMER FALLING 0.76 m. WHERE THE SAMPLER IS DRIVEN IN PARENTHESIS TO THE RIGHT OF THE NUMBER OF BLOWS.
 NUMBER OF BLOWS PER 0.15 m (X)
 NUMBER OF BLOWS PER 0.15 m (X)
 NUMBER OF BLOWS PER 0.15 m (X)
 NUMBER OF BLOWS PER 0.15 m (X)
 NUMBER OF BLOWS PER DISTANCE (mm) (XX)(XX)
 NUMBER OF BLOWS PER DISTANCE (mm) (XX)(XX)
 NUMBER OF BLOWS PER DISTANCE (mm) (XX)(XX)
 CONSISTENCY WAS DETERMINED BY INSPECTION OF SAMPLES AND SUBSTANTIATED BY SOILS RESISTANCE TO DRILLING TOOLS.
 WATER LEVELS MAY BE INFLUENCED BY RESIDUAL BORING WATER.
 THE SOIL BORING LOGS REPRESENT POINT INFORMATION. PRESENTATION OF THIS INFORMATION IN NO WAY IMPLIES THAT SUBSURFACE CONDITIONS ARE THE SAME AT LOCATIONS OTHER THAN THE EXACT LOCATION OF THE BORING.
 SOIL BORINGS WERE PERFORMED ON DATES SHOWN BELOW BORING.
 BY: SOMAT ENGINEERING, INC.
 26445 Northline Rd
 Taylor, Michigan 48180
 PHONE: (313) 946-4966
METRIC
 DIMENSIONS ARE IN MILLIMETERS UNLESS OTHERWISE SHOWN. ELEVATIONS, COORDINATES, CURVE AND ALIGNMENT DATA ARE IN METERS. STATIONS ARE IN KILOMETERS + METERS.

FILE NAME: 02BORING.DWG

ELEV. | GROUND SURFACE ELEVATION 176.567

LOCATION STATION 9+986.350 6939 LT. RIVERSIDE AVE. OVER CANAL

TEST HOLE TB-#R-1

ELEV. | GROUND SURFACE ELEVATION 176.868

LOCATION STATION 10+011.894 3242 LT. RIVERSIDE AVE. OVER CANAL

TEST HOLE TB-#R-2

CONTINUED

CONTINUED

BORING DATE 4/ 4/97

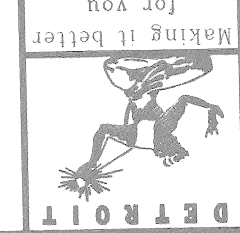
BORING DATE 4/ 4/97

NOTE: WATER FIRST ENCOUNTERED AT ELEV. 175.043

NOTE: WATER FIRST ENCOUNTERED AT ELEV. 175.649

DR. N. BY	R. J. D.	5-97
CK. D. BY	R. G. W.	5-97
APP. D. BY	M. D. W.	2-99
DSON BY	C. D. P.	12-97

SNELL ENVIRONMENTAL GROUP, INC.
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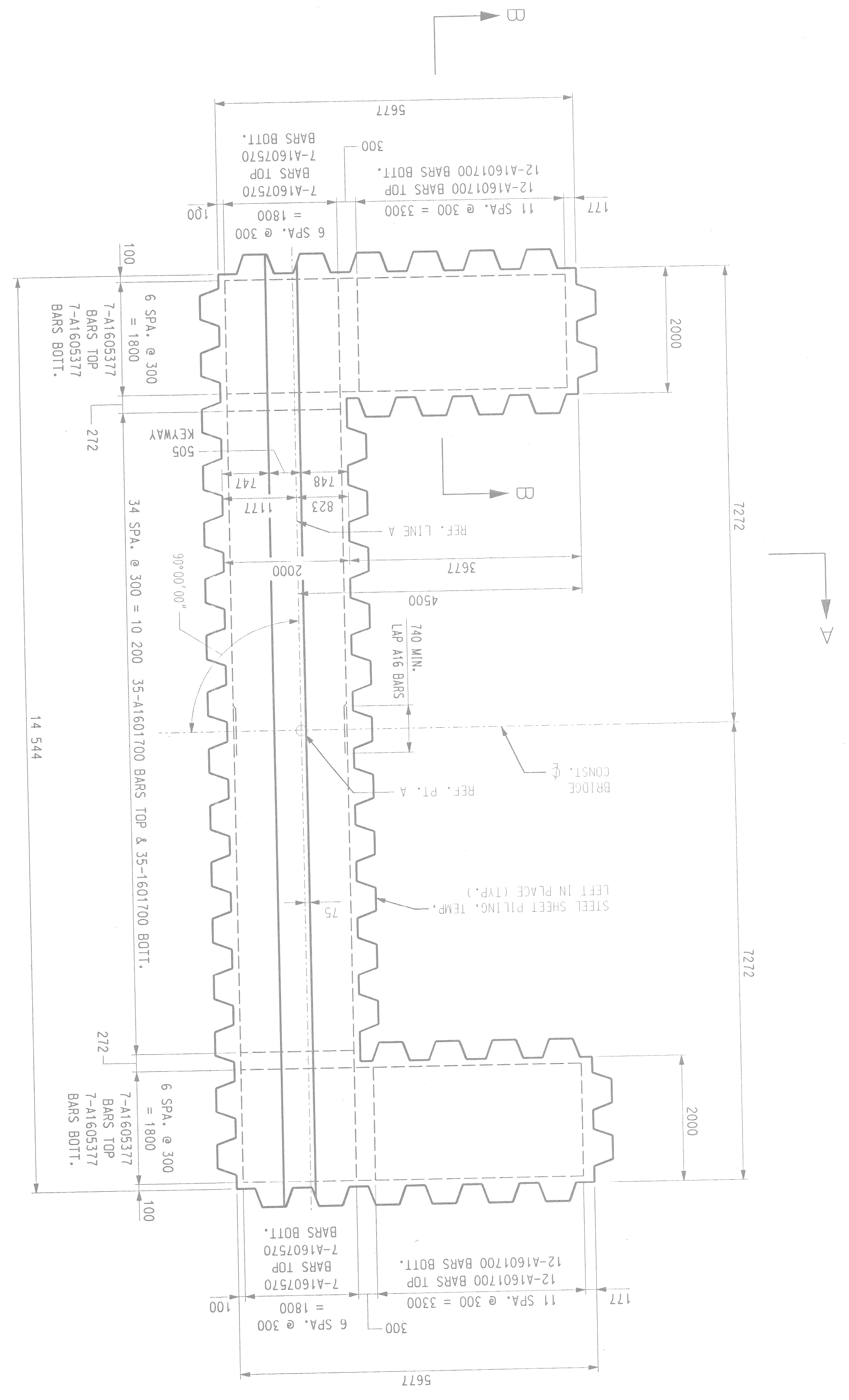
CITY OF DETROIT
 MICHIGAN

**RIVERSIDE AVE
 OVER CANAL
 (BW-242)**

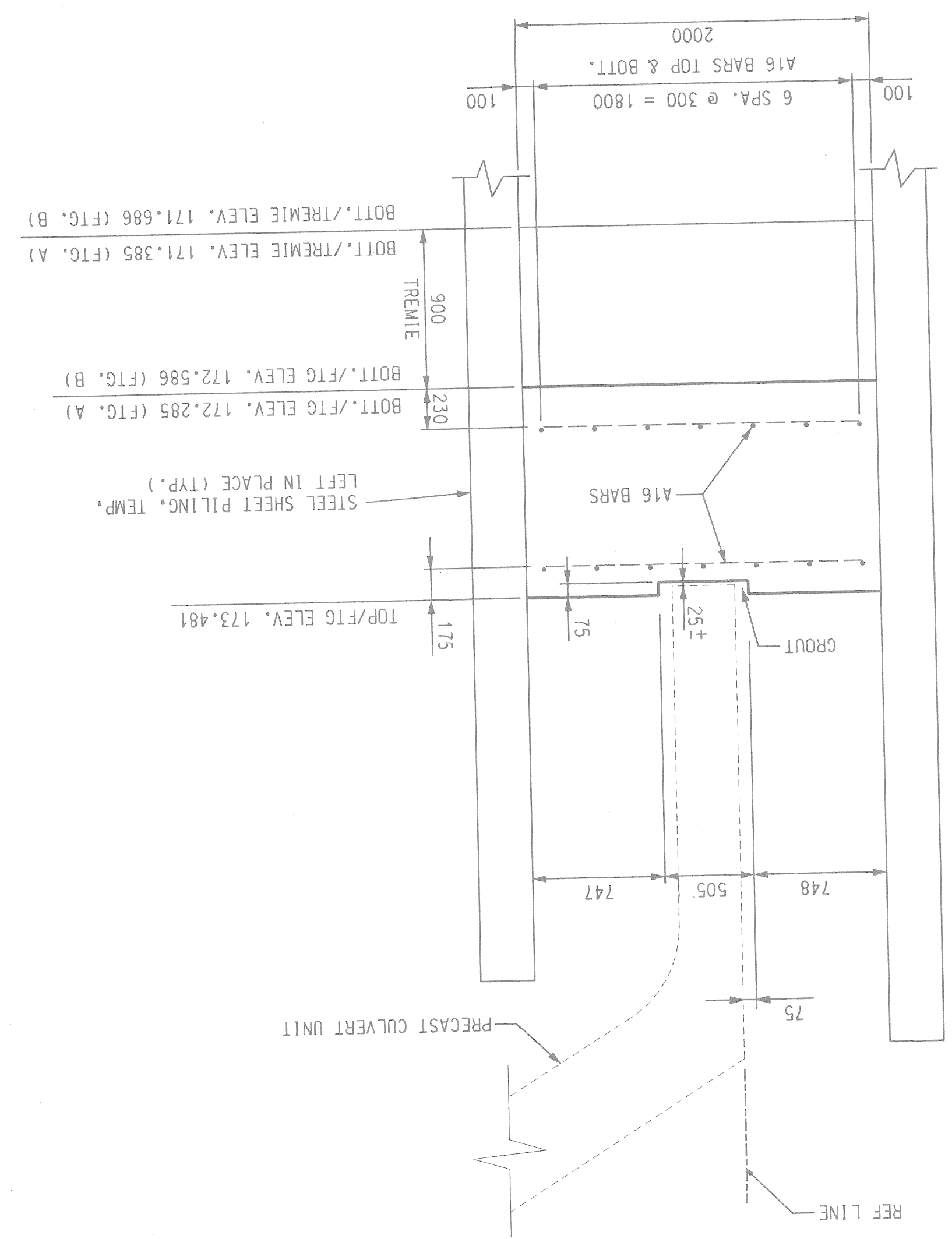
**FOOTING
 DETAILS**

SCALE NOT TO SCALE
 PROJECT NO. 9641-5160-01
 SHEET NO. RS OF 19

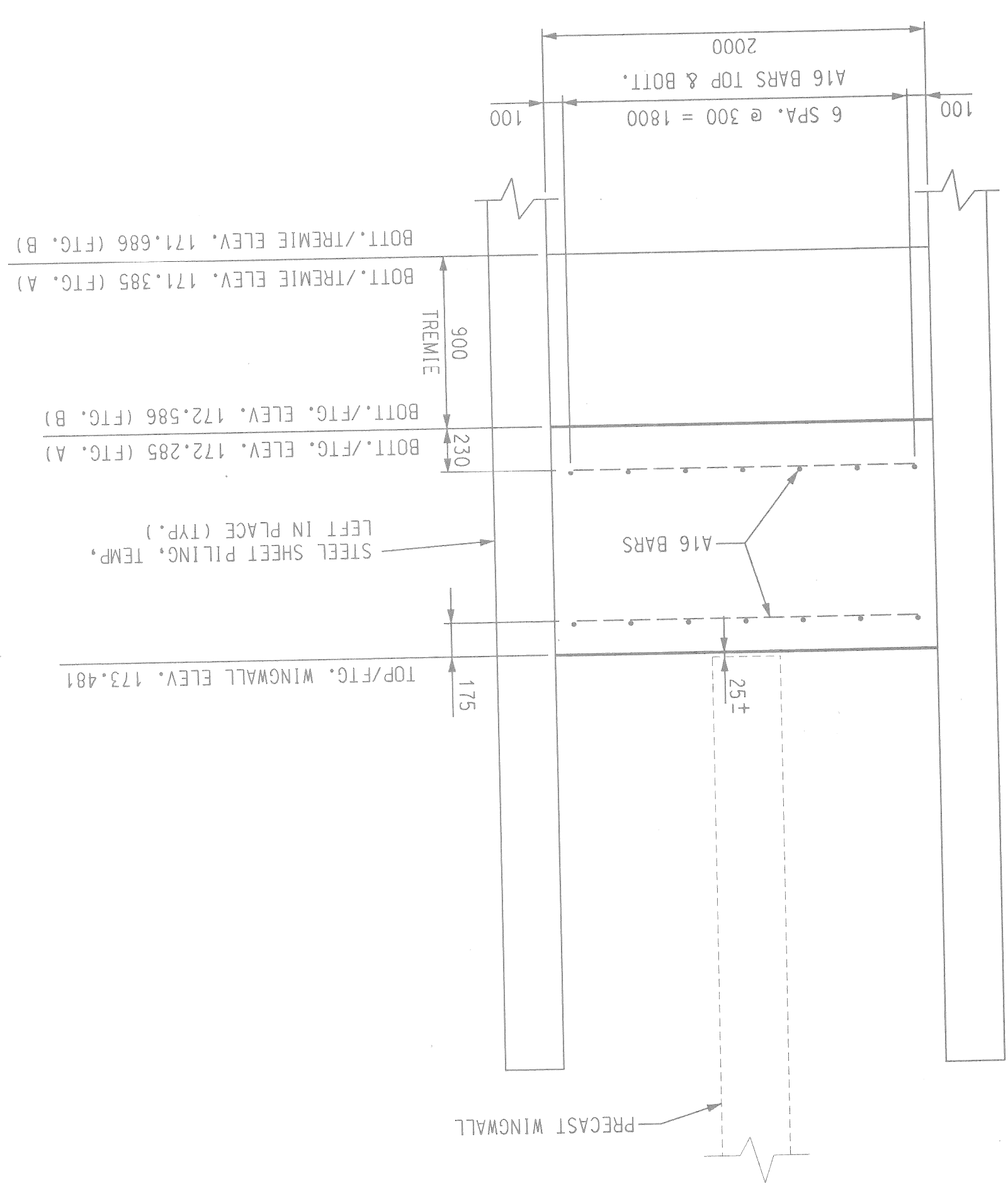
PLAN OF FOOTING LAYOUT
 (ABUTMENT A SHOWN ABUTMENT B OPPOSITE HAND)



SECTION A-A



SECTION B-B

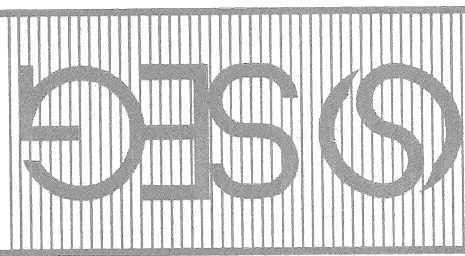


METRIC

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REVISIONS

DSGN BY	C.D.P.	12-97
DRN BY	R.J.D.	5-97
CK'D BY	R.G.W.	5-97
APP'D BY	M.D.W.	2-99



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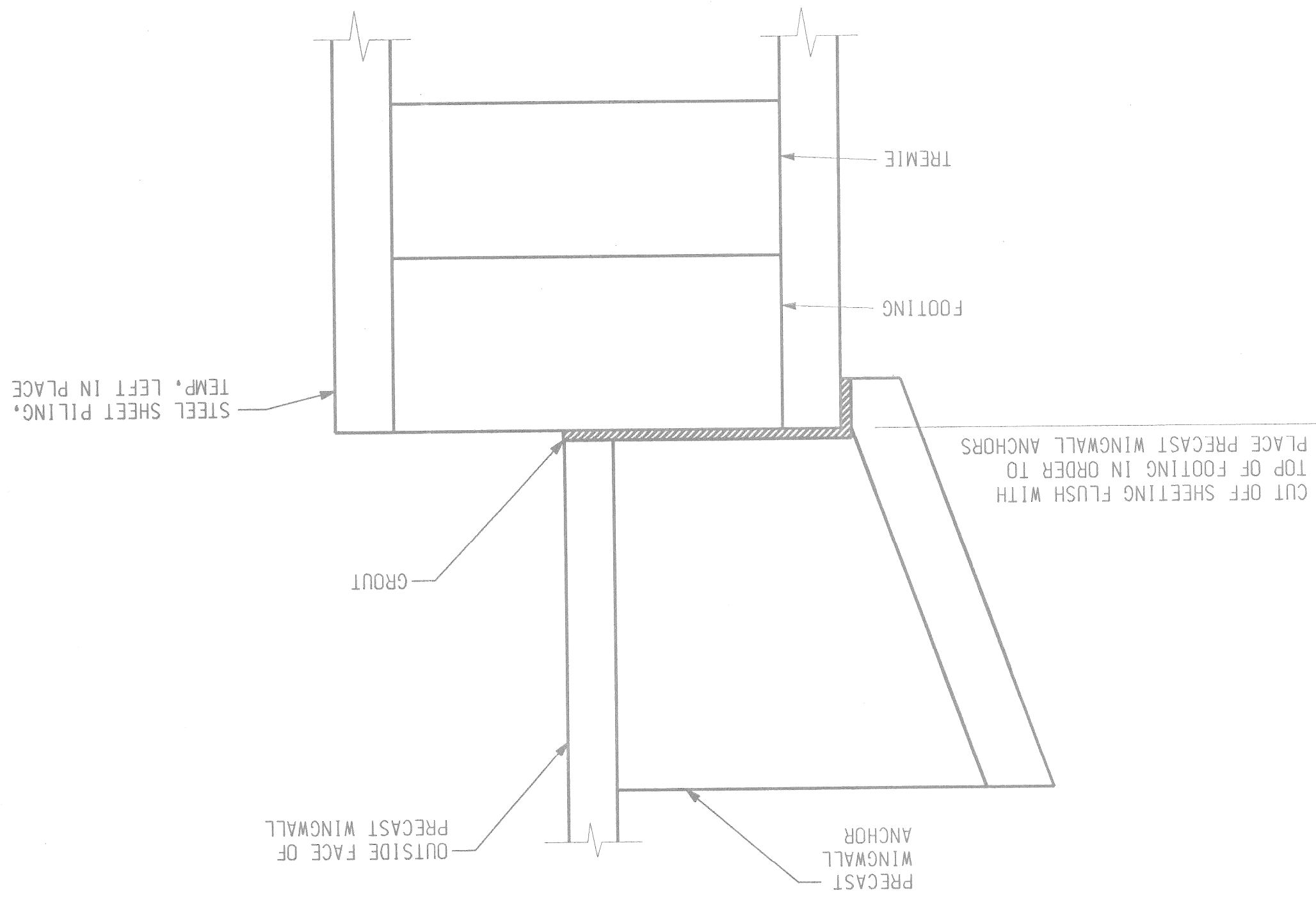
CITY OF DETROIT
 MICHIGAN

RIVERSIDE AVE.
 OVER CANAL
 (BW-242)

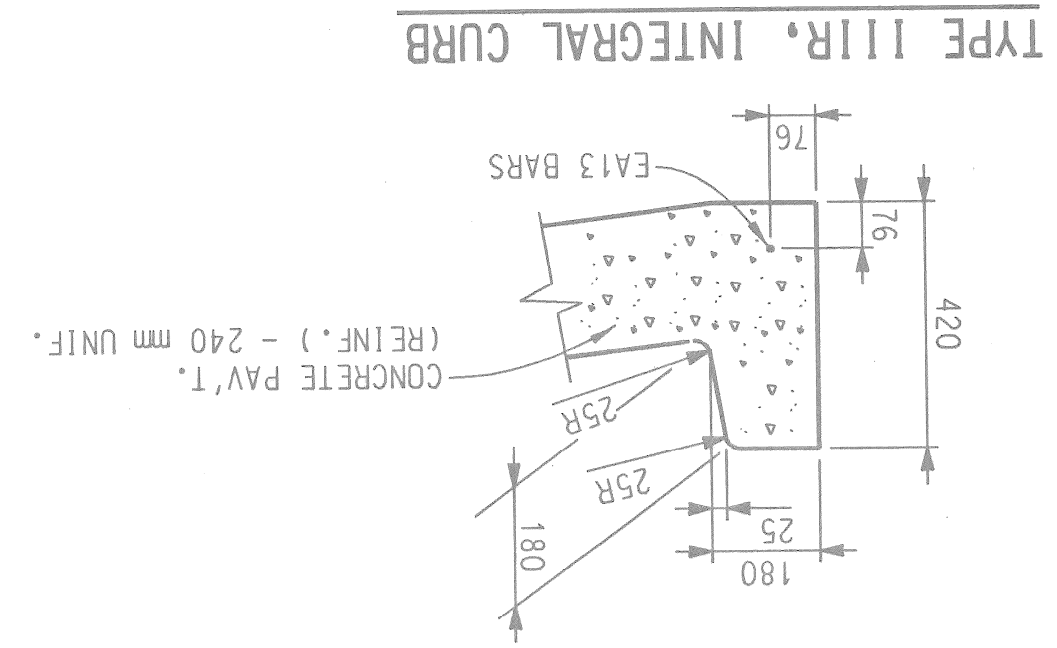
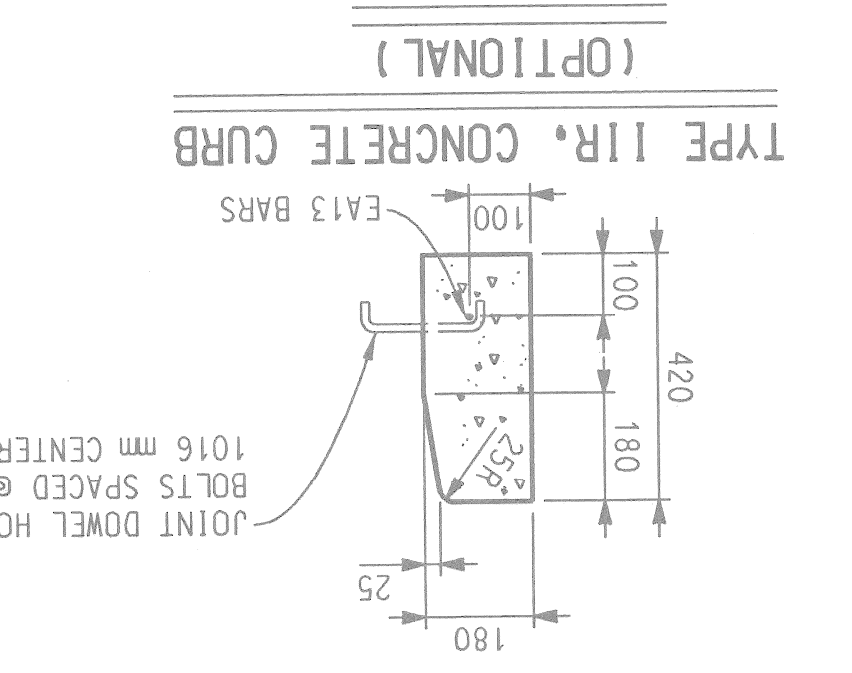
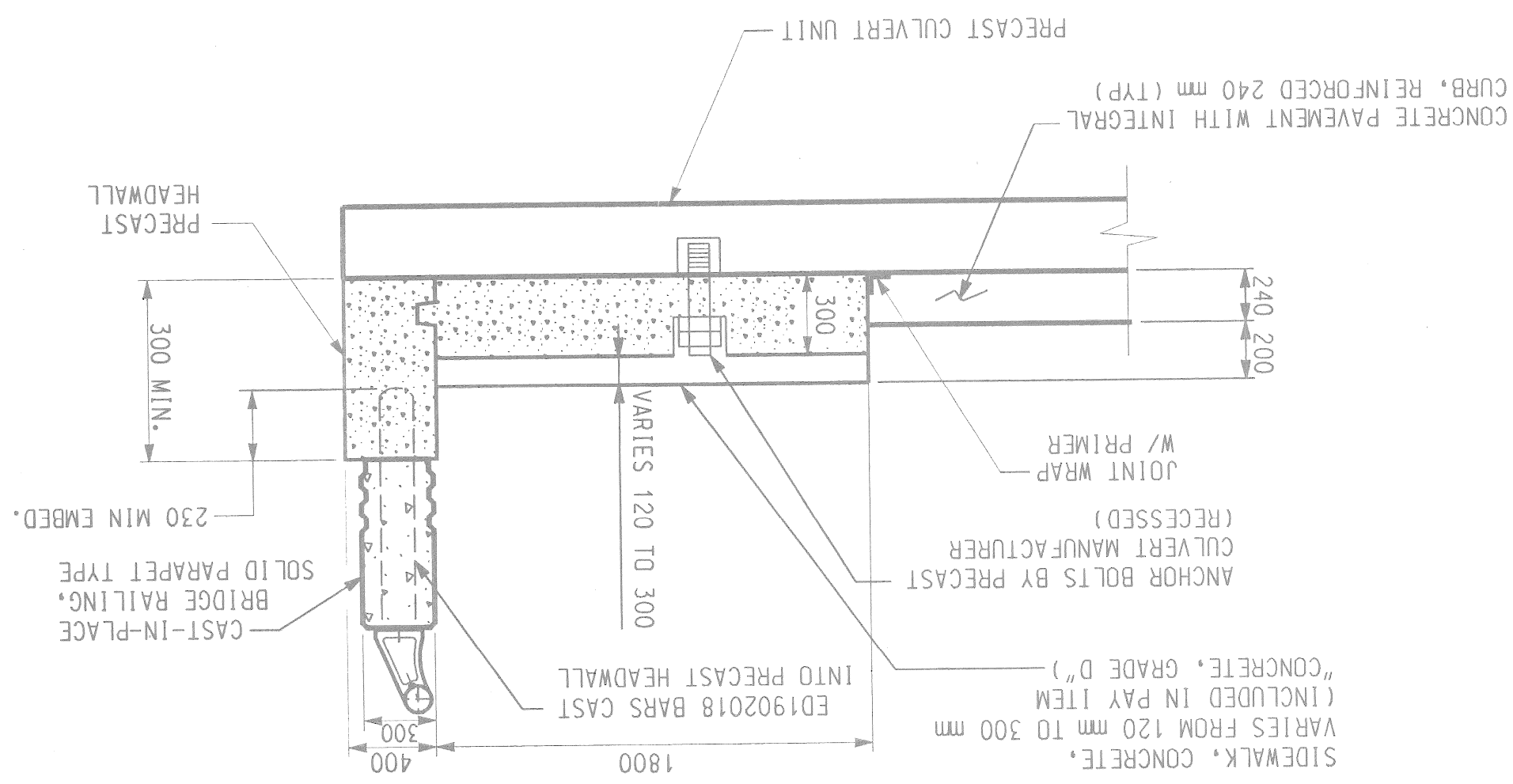
MISCELLANEOUS
 DETAILS

PROJECT NO. 9641-5160-01
 SHEET NO. R6 OF 19
 SCALE NOT TO SCALE

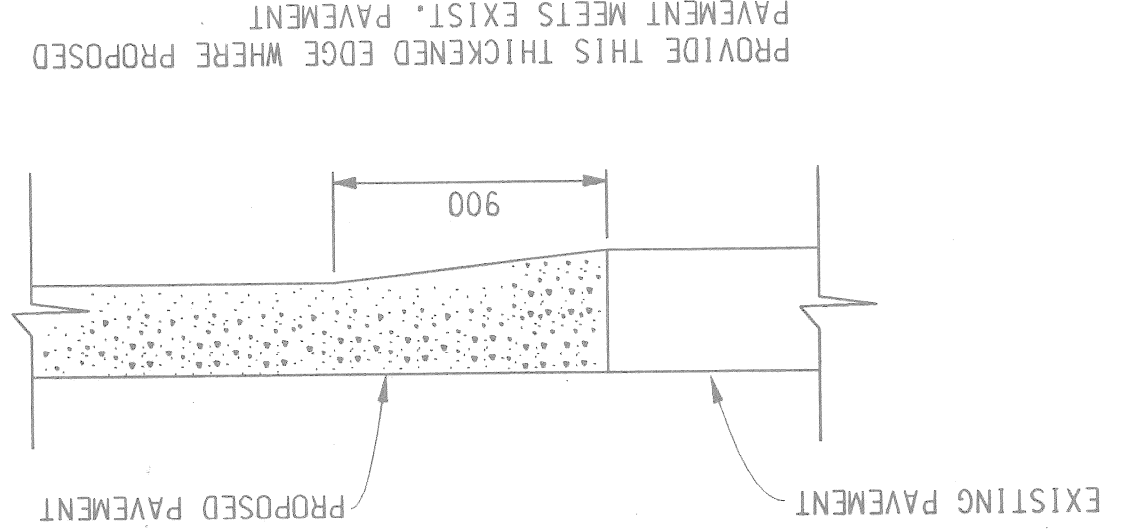
TYPICAL SECTION THRU PRECAST WINGWALL



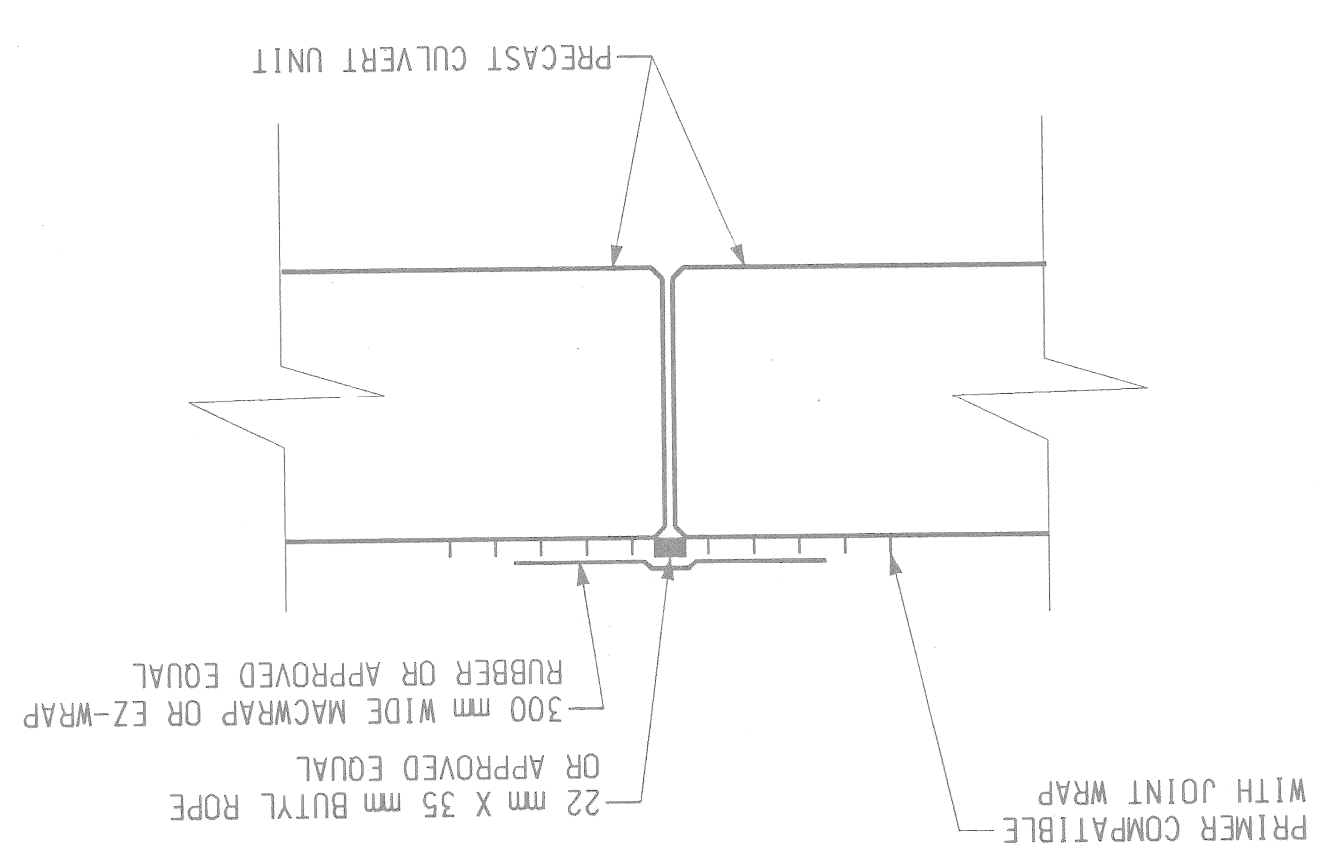
DETAIL A



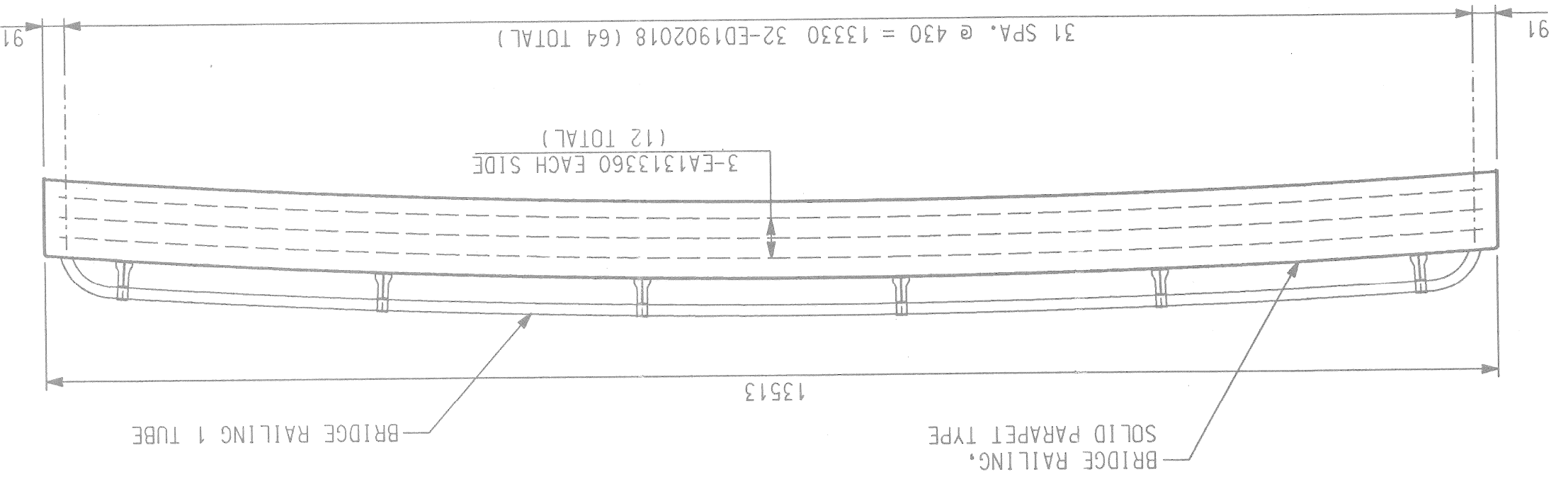
DETAIL OF THICKENED EDGE



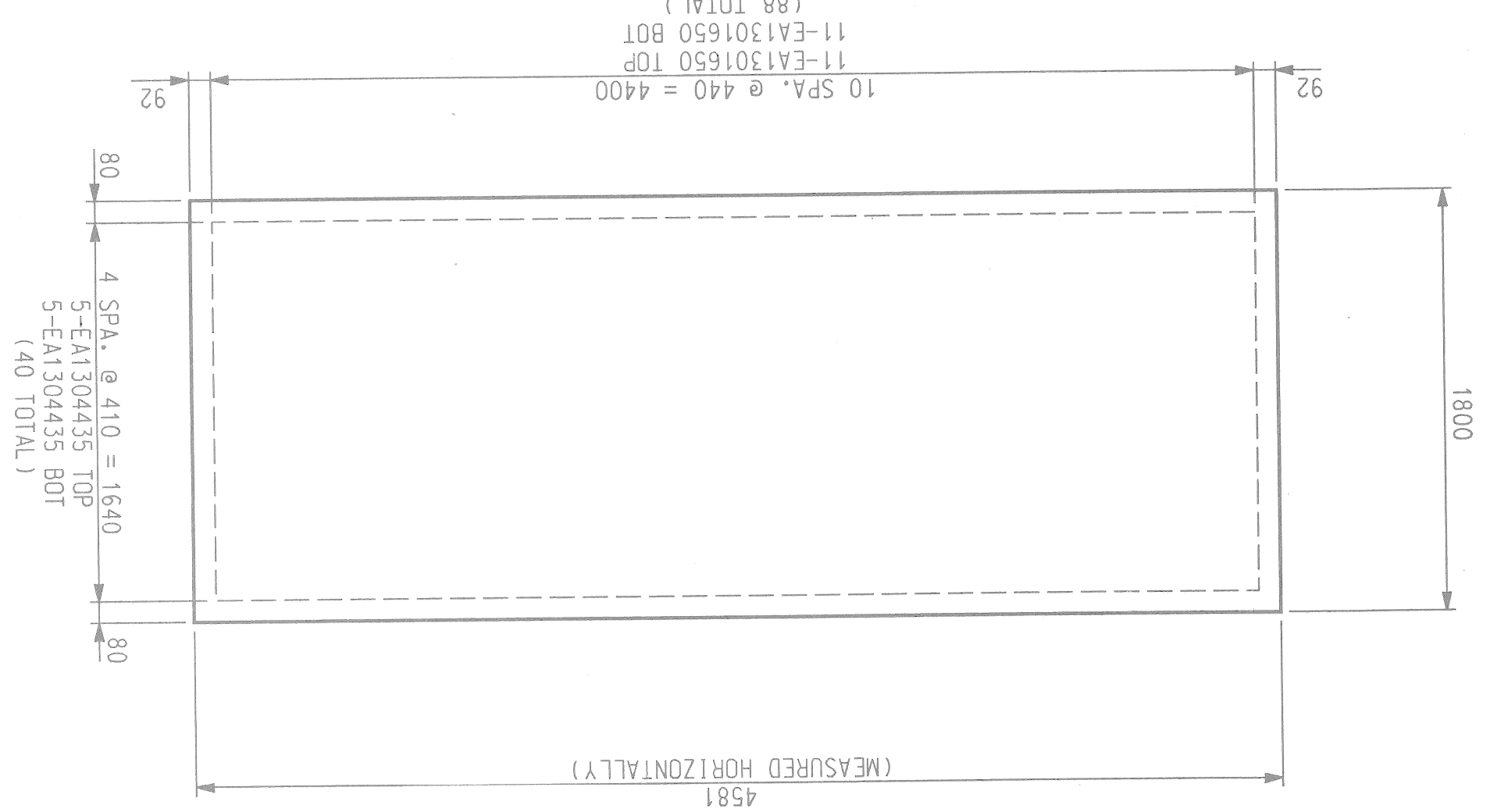
STANDARD JOINT DETAIL



BRIDGE RAILING ELEVATION



TYPICAL SIDEWALK, CONCRETE, 300 mm DETAIL



NOTE: DEMATERING SHALL BE INCLUDED IN PAY ITEM "STEEL SHEET PILING, TEMP, LEFT IN PLACE."

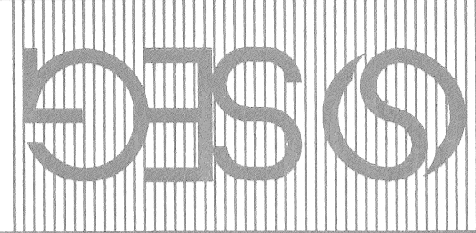
METRIC

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FILE NAME: 03021.DGN

REVISIONS

DR.N BY	RJD	5-97
CK.D BY	RGW	5-97
FINAL CK.D BY	MDW	2-99
App.D BY	GDP	12-97



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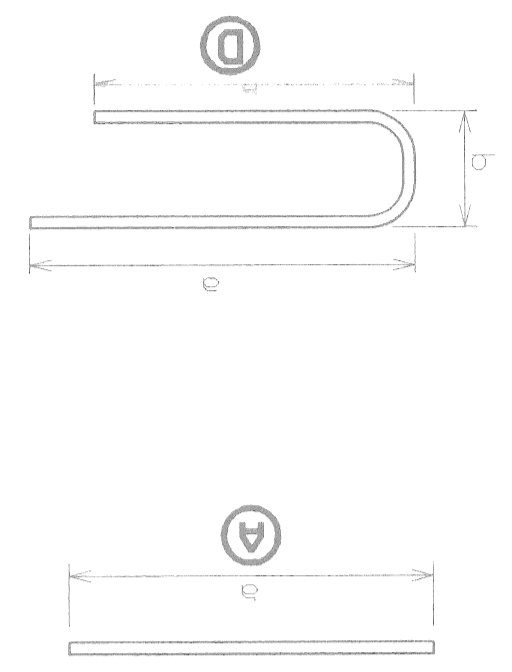


CITY OF DETROIT
 MICHIGAN

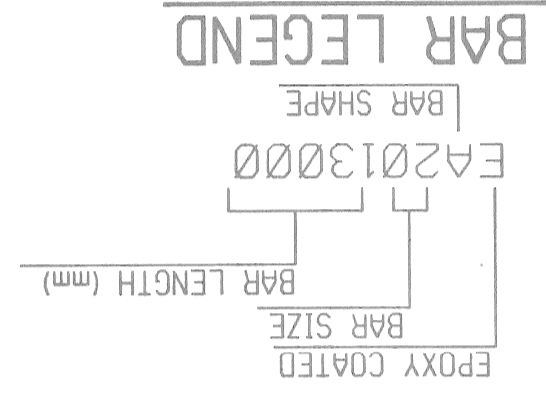
RIVERSIDE AVE.
 OVER CANAL
 (BW-242)

STEEL REINFORCEMENT
 AND
 QUANTITIES

SCALE NOT TO SCALE
 PROJECT NO. 9641-5160-01
 SHEET NO. R8 OF 19



* SHALL BE CAST IN PRECAST CULVERT HEADWALL.
 REINFORCEMENT SHALL BE BUNDLED AND TAGGED AS TO THE LOCATION AS SHOWN ON THIS SHEET.
 ALL BENDS IN REINFORCING STEEL TO BE MADE ABOUT A PIN OF THE MINIMUM DIAMETER ALLOWED BY THE STANDARD SPECIFICATIONS.
 TOLERANCES IN CUTTING AND BENDING BARS ARE AS ESTABLISHED IN THE MANUAL OF STANDARD PRACTICE OF THE CONCRETE REINFORCING STEEL INSTITUTE AND DETAILING MANUAL OF THE AMERICAN CONCRETE INSTITUTE.
 WHERE FIELD CUTTING OF EPOXY BARS IS REQUIRED, THE CONTRACTOR SHALL REPAIR THE EPOXY COATING AT THE CUT END AS PROVIDED FOR IN STANDARD SPECIFICATION 706.03.E-8.



BAR	DIMENSIONS										NO. TOTAL	REOD MASS	
	a	b	c	d	e	f	g	h	j	k			m
A1601700	1700	236	623									56	467
A1605377	5377	56	467									56	658
A1607570	7570	56	658									56	658
E1301650	1650	88	144									88	144
E1304435	4435	40	176									40	176
E1313360	13360	12	159									12	159
E1902018	940	138	289	940	64	289						64	289
SUBTOTAL =												1748	KG
EPOXY SUBTOTAL =												768	KG

ITEM NO.	ITEM DESCRIPTION	UNIT	QUANTITY
1500000	MOBILIZATION, MAX.	Lsum	1
2020002	TREE, REMOVE, 451 TO 900 mm	ea	1
2040005	CURB, REMOVE	m	46
2040020	STRUCTURES, REMOVE	Lsum	1
2050010	EMBANKMENT, CIP	m3	110
2060002	BACKFILL, STRUCTURE, CIP	m3	400
2060011	EXCAVATION, FOUNDATION	m3	500
2080025	EROSION CONTROL, SILT FENCE	m	210
3010002	SUBBASE, CIP	m3	42
3020010	AGGREGATE BASE, 100 mm	m2	556
3050001	BITUMINOUS BASE CRUSHING AND SHAPING	m2	345
4017102	12 802 X 4267 PRECAST CONC THREE-SIDED BOX CULVERT	m	13
4040030	UNDERDRAIN, FOUNDATION, 100 mm	m	55
4040110	UNDERDRAIN, OUTLET ENDING, 100 mm	ea	2
6020206	CONCRETE PAVEMENT WITH INTEGRAL CURB (TYPE IIIR), REINFORCED 240 mm	m2	573
7040003	STEEL SHEET PILING, TEMP., LEFT IN PLACE	m2	409
7060002	CONCRETE, GRADE 1	m3	92
7060007	CONCRETE, GRADE 0	m3	10
7060020	SUBSTRUCTURE CONCRETE	m3	107
7060030	REINFORCEMENT, STEEL	kg	1748
7060031	REINFORCEMENT, STEEL, EPOXY COATED	kg	768
7060040	CONCRETE, LOW TEMPERATURE PROTECTION	m3	117
7060250	STRUCTURE NAME PLATE	ea	2
7100004	BRIDGE RAILING, SOLID PARAPET TYPE	m	27
7100007	BRIDGE RAILING, ONE TUBE	m	27
8030002	SIDEWALK, CONCRETE, 100 mm	m2	33
8120036	BARRICADE, TYPE III, LIGHTED, FURN.	ea	4
8120037	BARRICADE, TYPE III, LIGHTED, OPER.	ea	3
8120041	CONCRETE BARRIER, TEMPORARY, FURNISHED	m	30.5
8120042	CONCRETE BARRIER, TEMPORARY, OPERATED	m	30.5
8120060	SIGN, TYPE B TEMPORARY, PRISMATIC RETRIFLEC SHEETING	m2	1
8130015	RIPRAP, HEAVY	m2	66
8160003	WATER	KL	5
8160007	SEEDING, MIXTURE TUF	kg	4
8160020	FERTILIZER, CHEMICAL NUTRIENT, CLASS A	kg	5
8160072	MULCH ANCHORING	m2	160
8160077	MULCH BLANKET	m2	160

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REVISIONS

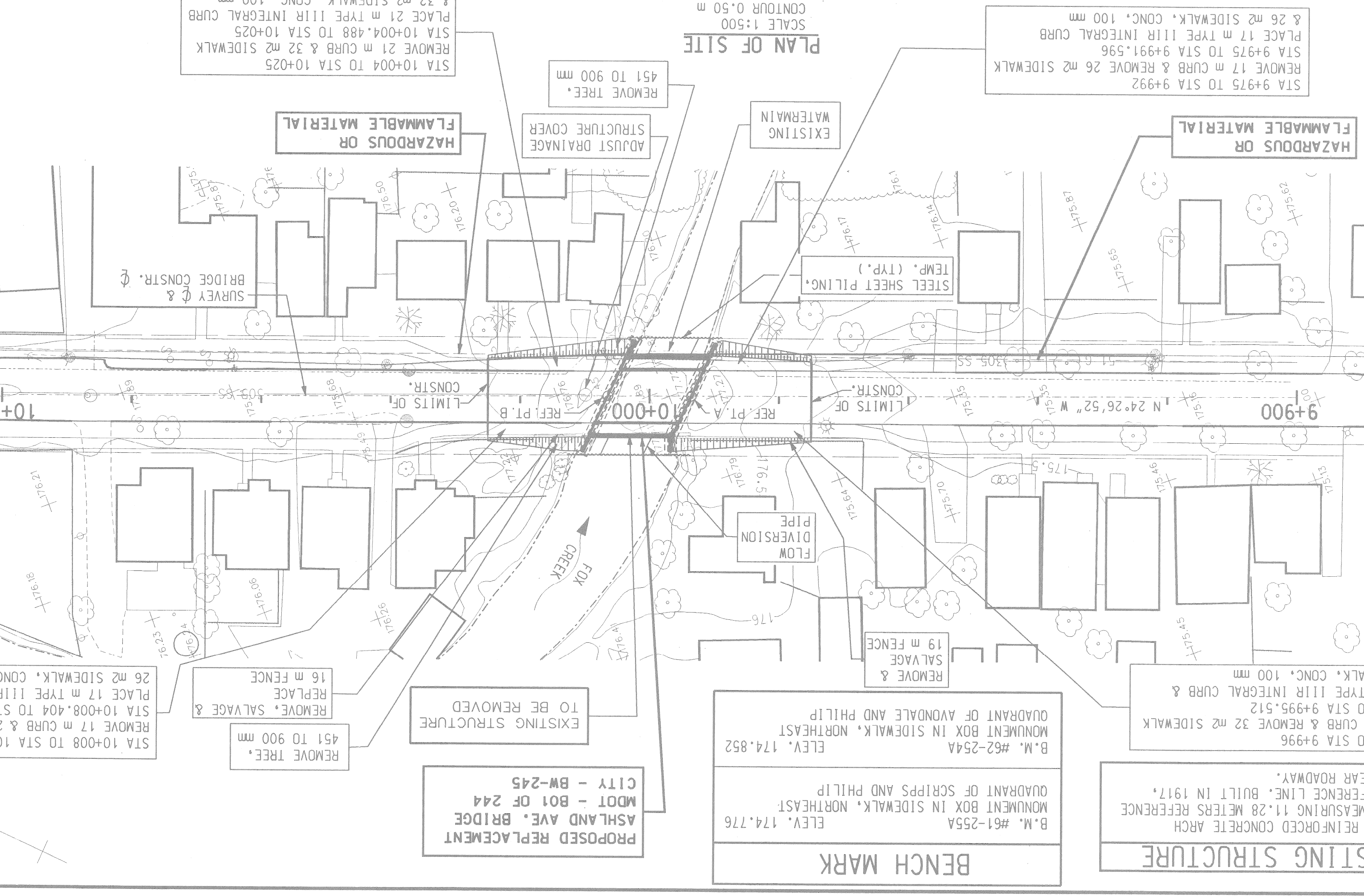
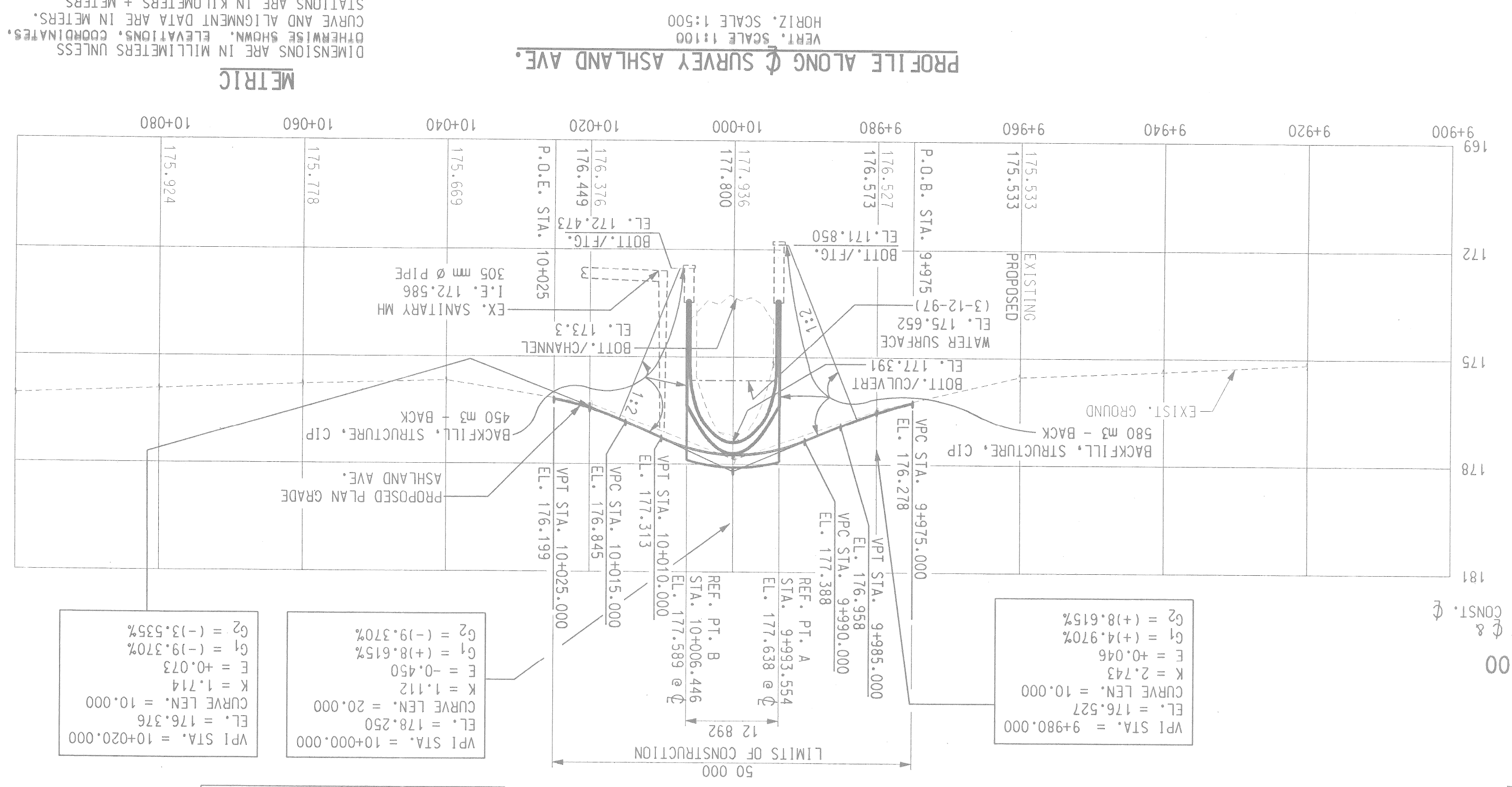
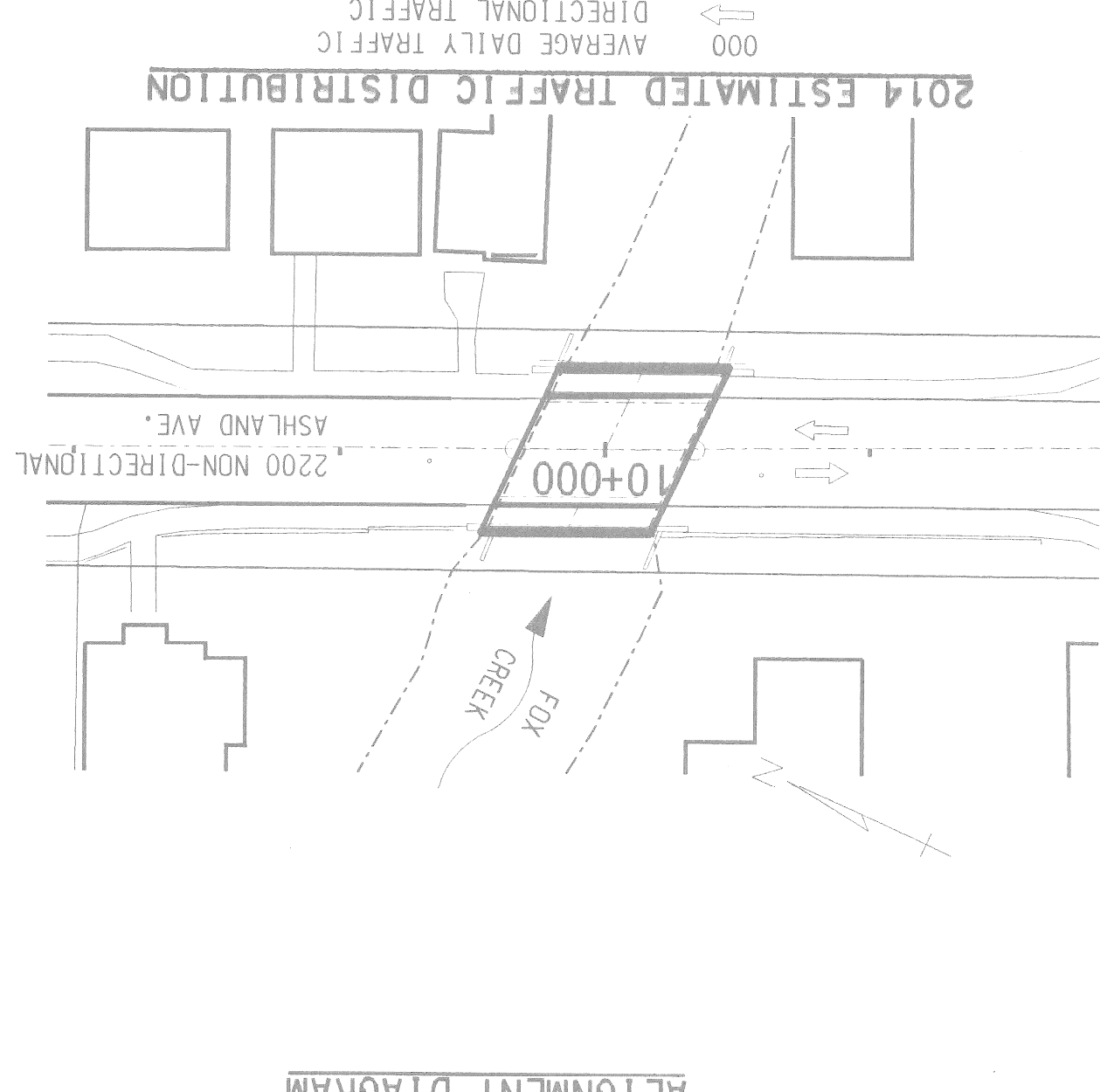
APP'D BY	M.A.M.	6-97
DR'N BY	R.J.D.	6-97
CK'D BY	R.G.W.	6-97
FINAL CK'D BY	M.D.W.	2-99

SNELL ENVIRONMENTAL GROUP, INC.
 151 W. CONGRESS, SUITE 328
 DETROIT, MICHIGAN 48226
 TELEPHONE (313) 961-4040
 FAX (313) 961-4040

CITY OF DETROIT
 ASHLAND AVE. OVER THE FOX CREEK (BW-245)

GENERAL PLAN OF SITE

PROJECT NO.	9641-5160-03
SHEET NO.	A2 OF 19
SCALE	NOT TO SCALE



CONTRACTOR IS ALERTED THAT AN ACTIVE WATERMAIN CURRENTLY EXISTS ON THE BRIDGE. IT IS CURRENTLY ATTACHED TO THE EAST FASCIA. THE WATERMAIN SHALL BE RELOCATED BY THE UTILITY COMPANY.

THE WORK COVERED BY THESE PLANS INCLUDES MAINTAINING TRAFFIC, REMOVAL OF EXISTING BRIDGE CONSTRUCTION OF THE PROPOSED BRIDGE AND APPROACH WORK.

THE CONTRACTOR SHALL LOCATE ALL ACTIVE UNDERGROUND UTILITIES PRIOR TO STARTING WORK AND SHALL CONDUCT HIS OPERATIONS IN SUCH A MANNER AS TO ENSURE THAT THOSE UTILITIES NOT REQUIRING RELOCATION WILL NOT BE DISTURBED.

ASHLAND AVE. TRAFFIC IS TO BE DETOURED OVER EXISTING ROADS.

DATUM REFERS TO N.A.V.D. DATUM.

WATER LEVEL IS SUBJECT TO CHANGE. THE CONTRACTOR IS RESPONSIBLE FOR MAKING HIS OWN DETERMINATION OF WATER LEVELS THAT WILL EXIST DURING CONSTRUCTION.

MEASURES SHALL BE TAKEN TO PREVENT DEBRIS FROM FALLING FROM THE STRUCTURE. IF DEBRIS FALLS INTO THE WATERWAY, IT SHALL BE REMOVED WITHIN 24 HOURS. SINCE DISTURBANCE OF THE WATERWAY BOTTOM MAY BE AS HARMFUL AS THE DEBRIS ITSELF, THE PREVENTIVE MEASURES SHALL ALSO BE REMOVED AS DIRECTED BY THE ENGINEER.

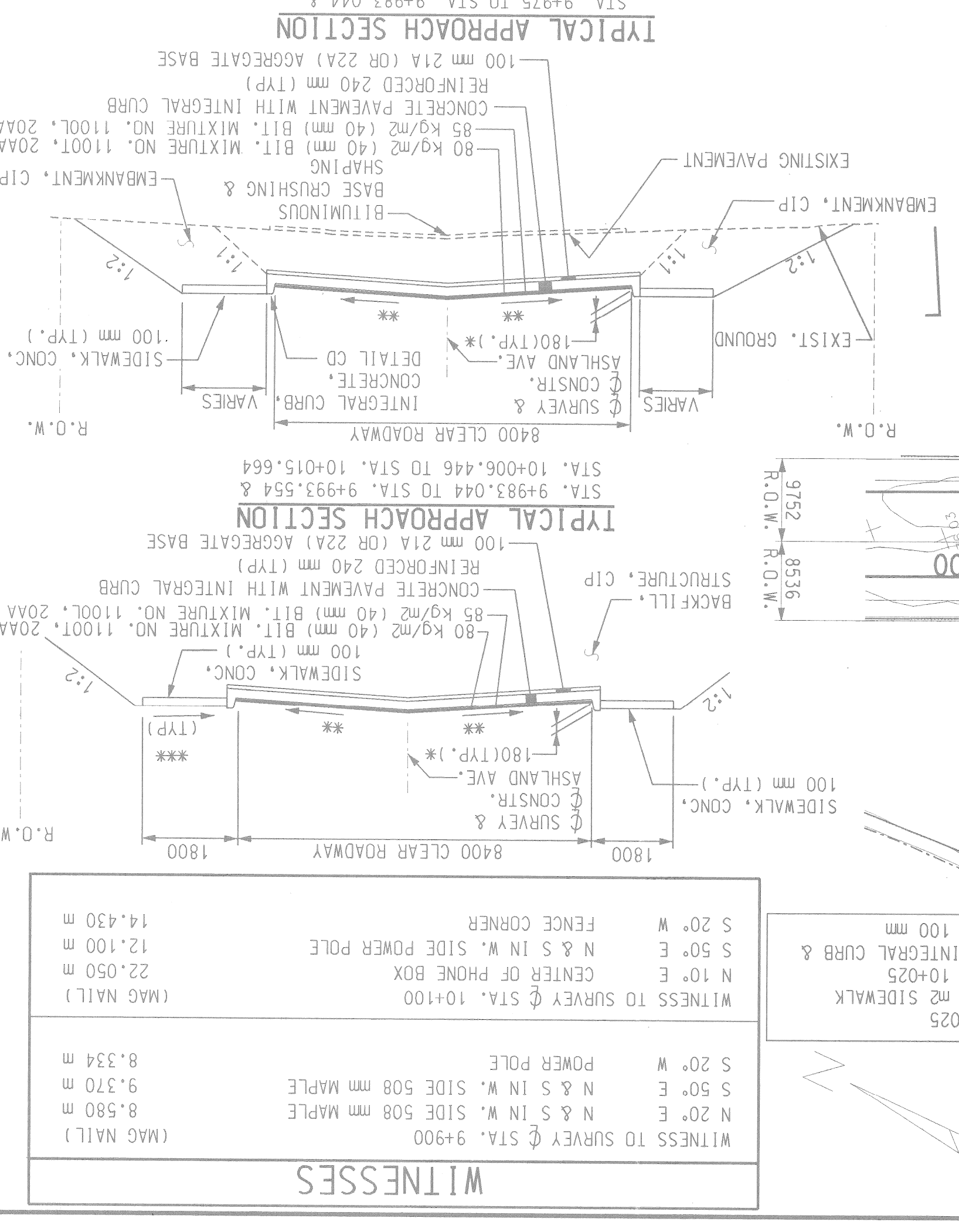
TEMPORARILY STORED EXCAVATED MATERIAL SHALL NOT BE ALLOWED TO ERODE INTO THE WATERCOURSE.

ALL DISTURBED EXISTING GROUND AND ANY NEW FILL SLOPES SHALL BE SEED, FERTILIZED, AND MULCHED AS DIRECTED BY THE ENGINEER. TO BE INCLUDED IN THE PAY ITEMS "SEEDING MIXTURE TYP." "FERTILIZER, CHEMICAL NUTRIENT, CLASS A" AND "MULCH BLANKET."

THE PAY ITEM "FLOW DIVERSION" SHALL INCLUDE DEWATERING, STEEL SHEET PILING, TEMPORARY, SANDBAGS AND FLOW DIVERSION PIPE.

NOTES:

- * FEATHER APPROACH CURB ELEV. TO BRIDGE CURB ELEV.
- ** TRANSITION FROM 0% AT BRIDGE TO MATCH EXISTING CROSS-SLOPE AT APPROACHES.
- *** 31 mm/m OR AS DIRECTED BY THE ENGINEER (21 mm/m MIN. 62 mm/m MAX).



UTILITIES

DETROIT EDISON	PHONE NO.: (313) 235-6597
ATTN.: JOHN SOJINES	
ROOM 607 G.O., DETROIT, MICHIGAN 48226	
AMRITTECH	PHONE NO.: (313) 577-7236
4000 ALLEN RD., ROOM 101	
ALLEN PARK, MICHIGAN 48101	
ATTN.: DAVE BUCIENSKI	
PHONE NO.: (313) 389-9819	
MICHIGAN CONSOLIDATED GAS CO.	PHONE NO.: (313) 577-7236
DRAFTING CLERK	
MAIN REPLACEMENT TEAM	
NOBLE SECOND FLOOR	
3200 HOBSON	
DETROIT, MICHIGAN 48201	
WATER & SEWAGE	PHONE NO.: (313) 224-4800
735 RANDOLPH ST.	
DETROIT, MICHIGAN 48226	
PHONE NO.: (313) 267-7336	
CITY OF DETROIT PUBLIC LIGHTING DEPARTMENT	
9449 GRINMILL	
DETROIT, MICHIGAN 48226	
PHONE NO.: (313) 267-7336	

EXISTING STRUCTURE

BENCH MARK

PROPOSED REPLACEMENT

WITNESSES

WITNESS TO SURVEY @ STA. 9+900	N 20° E	8.580 m
	N & S IN W. SIDE 508 mm MAPLE	
	S 50° E	9.370 m
	N & S IN W. SIDE 508 mm MAPLE	
	S 20° W	8.334 m
	POWER POLE	
WITNESS TO SURVEY @ STA. 10+100	N 10° E	22.050 m
	CENTER OF PHONE BOX	
	S 50° E	12.100 m
	N & S IN W. SIDE POWER POLE	
	S 20° W	14.430 m
	FENCE CORNER	

REVISIONS

DSGN BY	C.D.P.	6-97
DR'N BY	R.J.D.	6-97
CK'D BY	R.G.W.	6-97
APP'D BY	M.D.W.	2-99

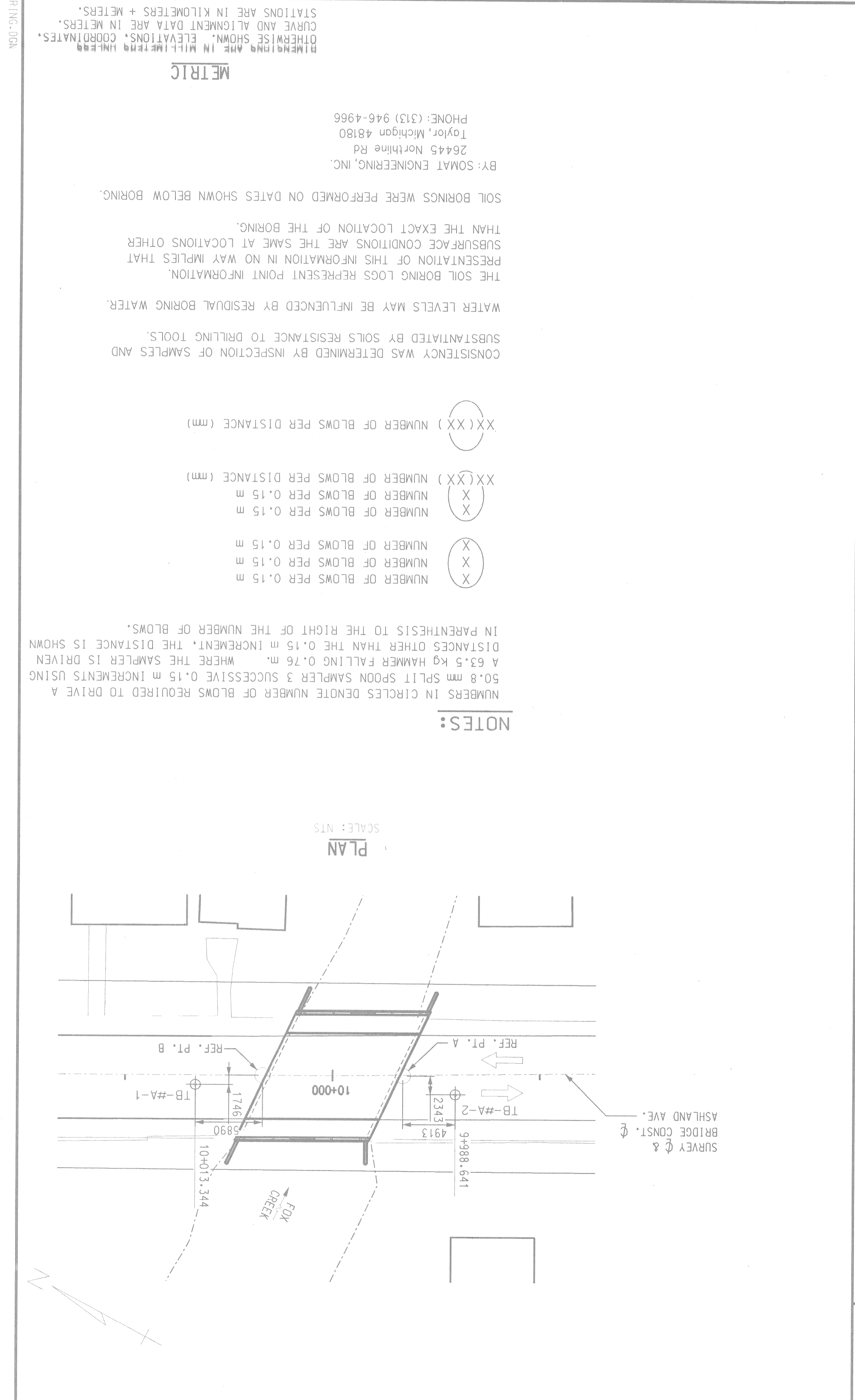
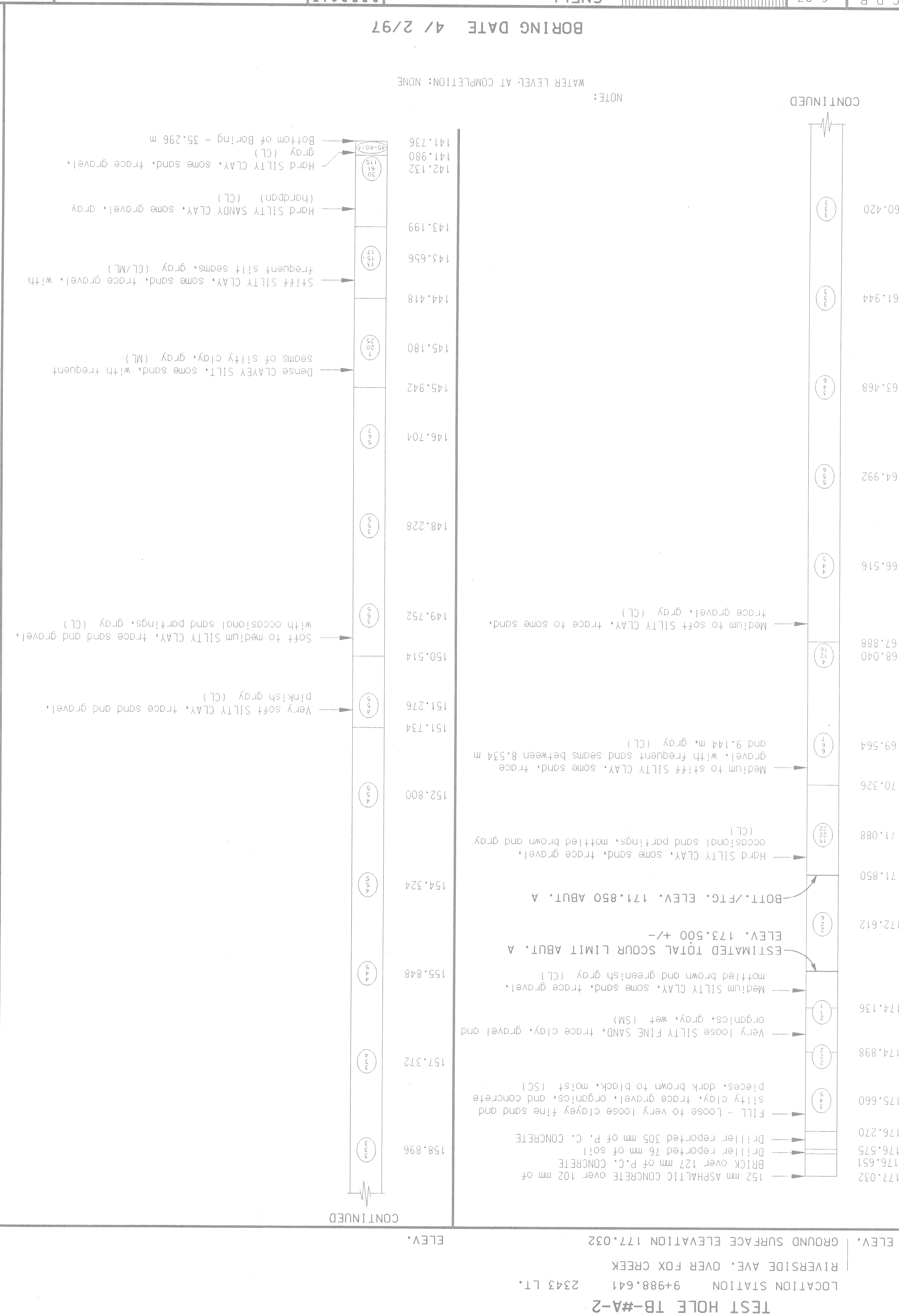
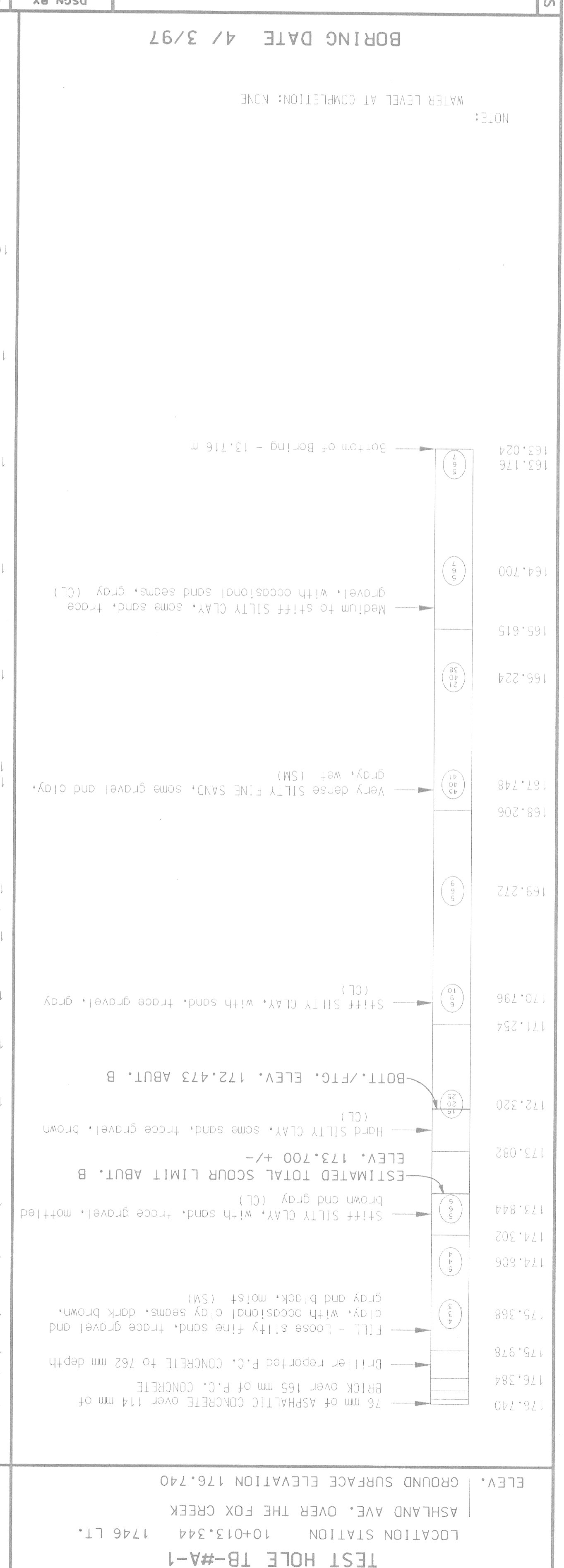
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 DETROIT, MICHIGAN 48226
 TELEPHONE (313) 961-4040
 Making it better for you

CITY OF DETROIT
 MICHIGAN

ASHLAND AVE. OVER THE FOX CREEK (BW-245)

LOG OF BORINGS

SCALE NOT TO SCALE
 PROJECT NO. 9641-5160-03
 SHEET NO. A3 OF 19



NO. 9641-5160-03
 PROJECT
 SCALE NOT TO SCALE

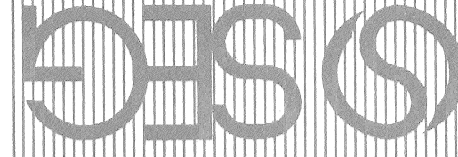
GENERAL
 PLAN OF
 STRUCTURE

ASHLAND AVE.
 OVER THE FOX CREEK
 (BW-245)

CITY OF DETROIT
 MICHIGAN



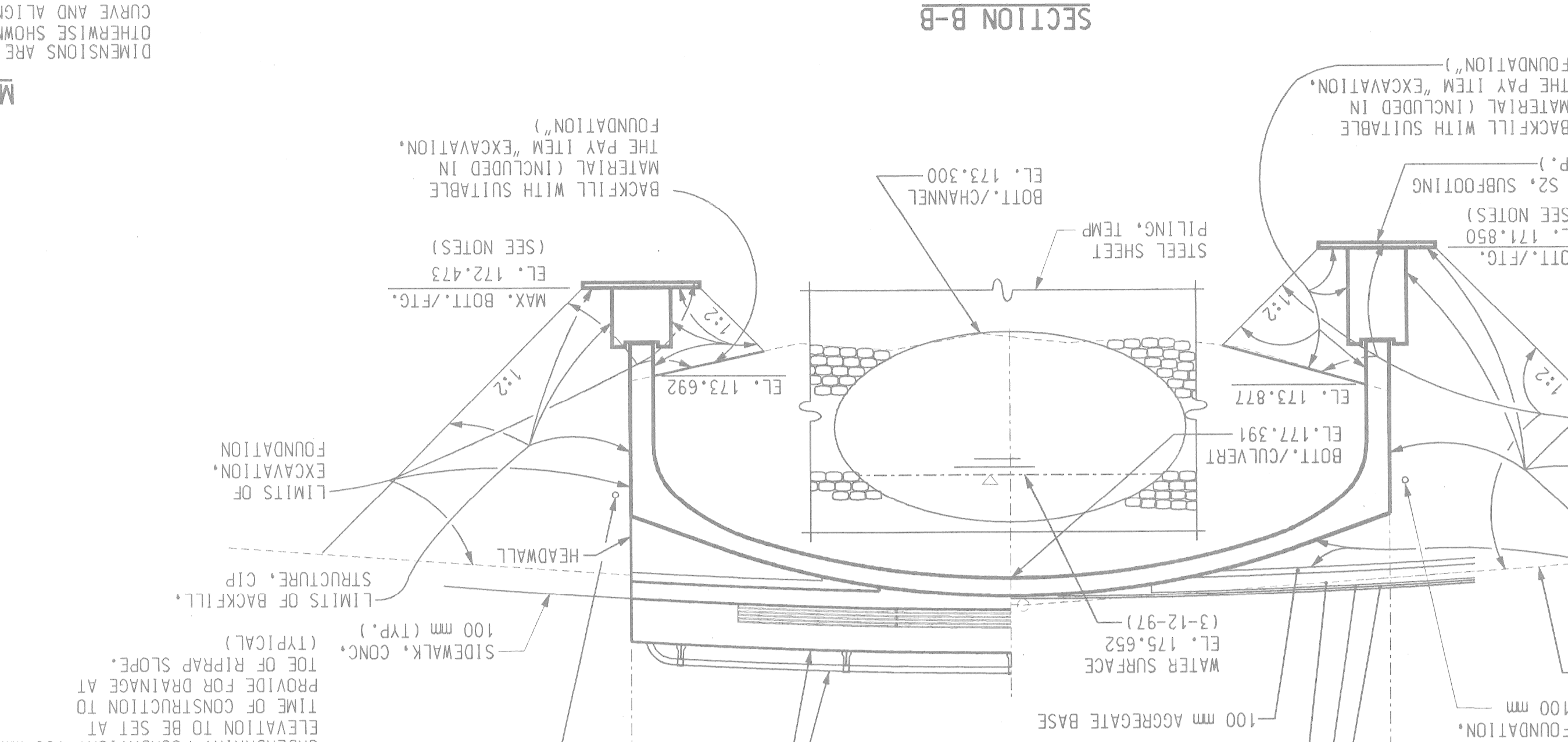
SNELL ENVIRONMENTAL GROUP, INC. A DGC Company
 151 W. CONGRESS, SUITE 328
 DETROIT, MICHIGAN 48226
 TELEPHONE (313) 961-4040



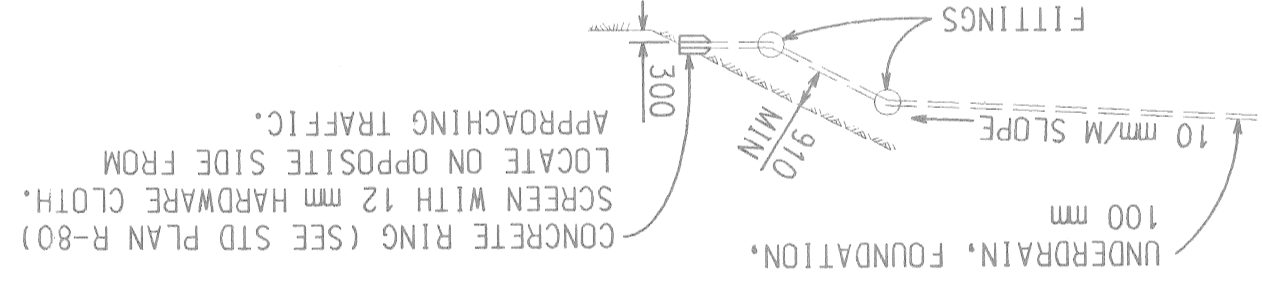
REV.	DATE	BY	APP'D BY
6-97		M.A.M.	
6-97		R.J.D.	
6-97		R.G.W.	
2-99		M.D.W.	

REVISIONS

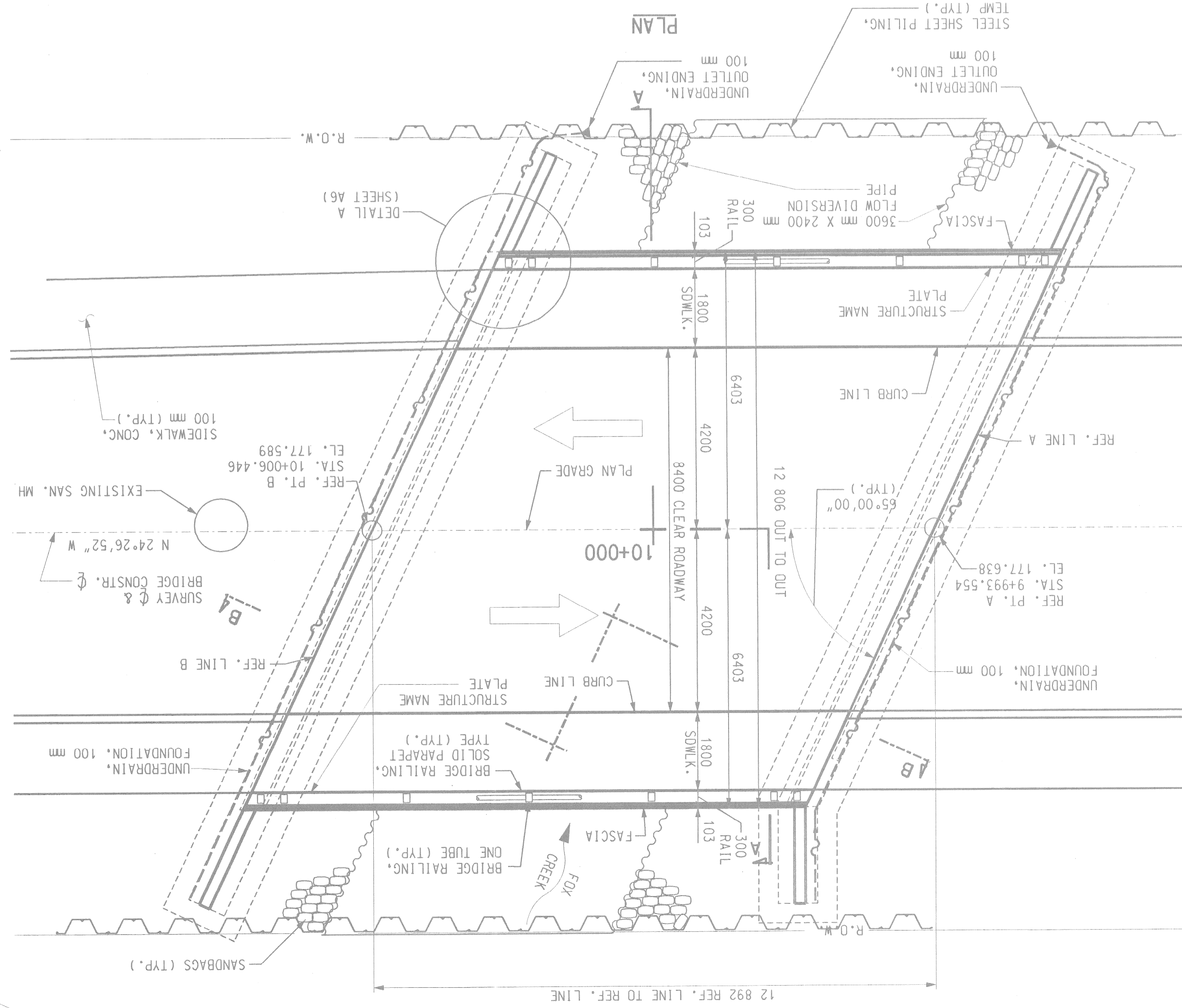
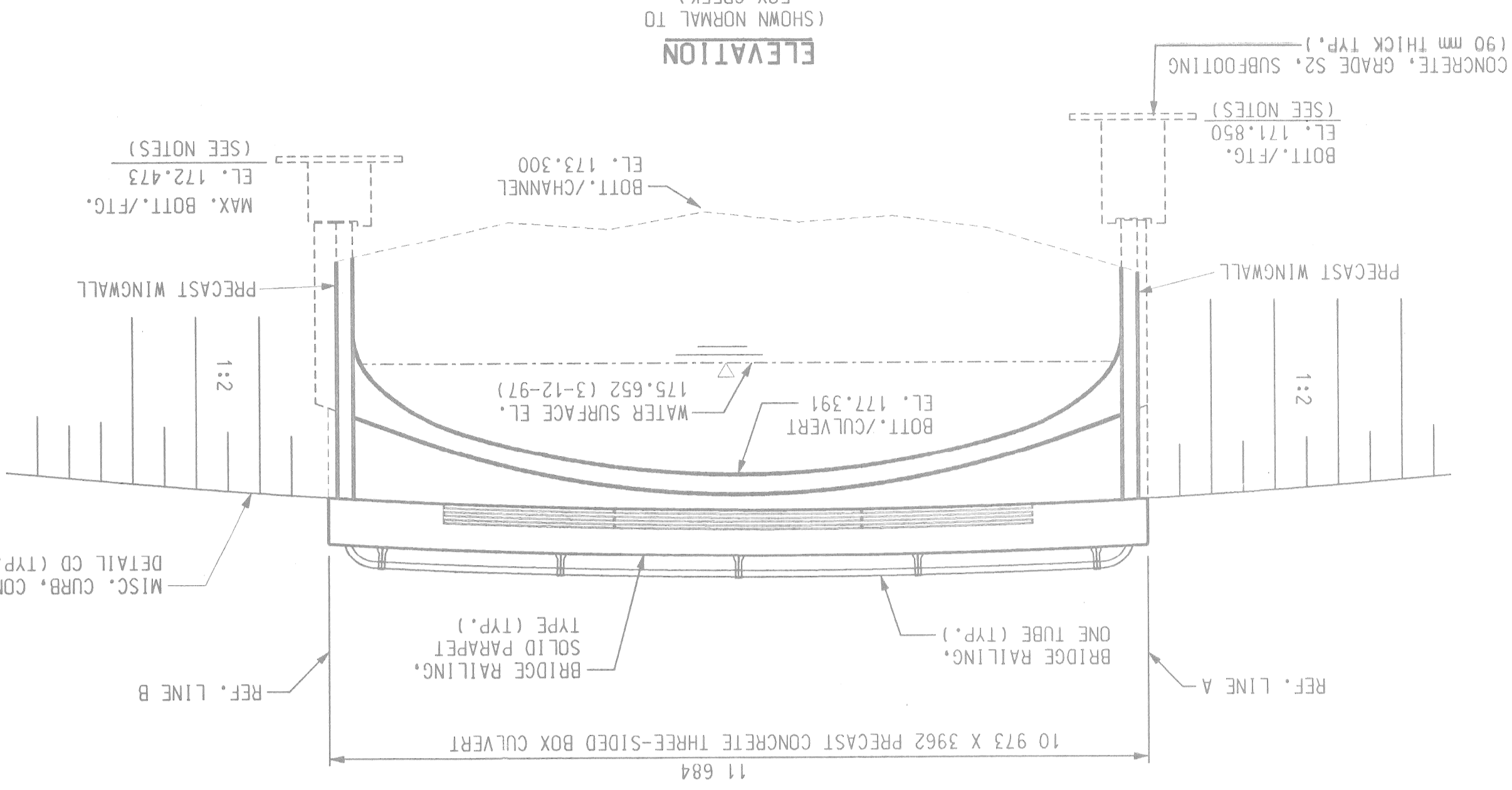
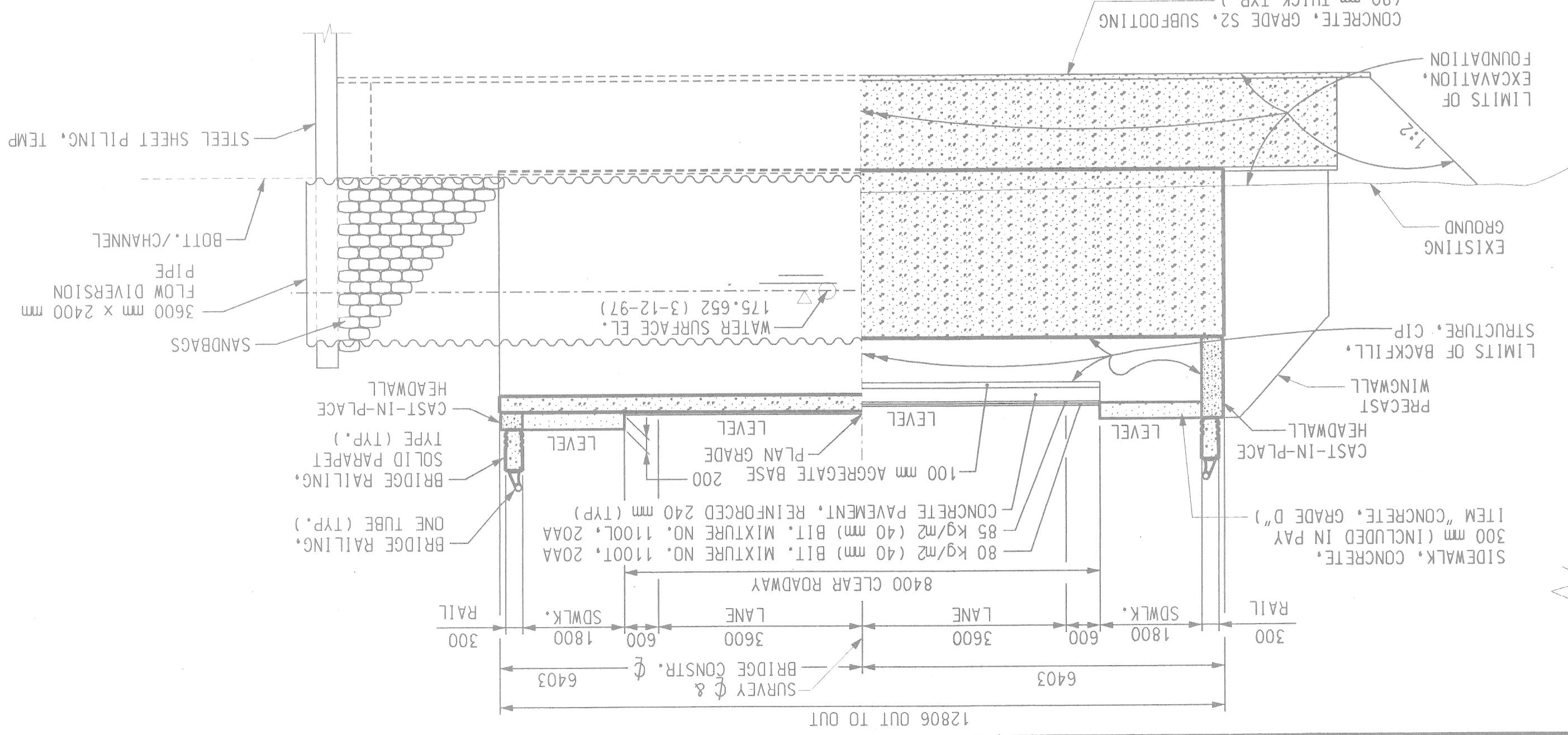
OTHERWISE SHOWN. ELEVATIONS, COORDINATES,
 DIMENSIONS ARE IN METERS UNLESS
 STATIONS ARE IN KILOMETERS + METERS.



DETAIL FOR UNDERDRAIN DRAINAGE



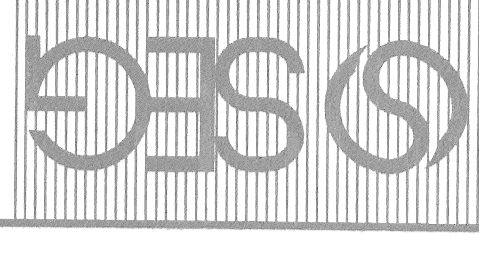
SECTION A-A



NOTES:
 THE DESIGN OF THIS STRUCTURE IS BASED ON CURRENT ASHTO STANDARD SPECIFICATIONS FOR HIGHWAY BRIDGES W/8 LADING. LIVE LOAD PLUS IMPACT DEFLECTION DOES NOT EXCEED 1/1000 OF SPAN LENGTH. THE TOP OF THE ROADWAY AND TOPS OF SIDEWALKS ARE PARALLEL TO THE VERTICAL CURVE.
 STEEL SHEET PILING, TEMP., FLOW DIVERSION PIPE, SANDBAGS, AND DEMATERING SHALL BE INCLUDED IN THE PAY ITEM "FLOW DIVERSION". FOOTINGS SHALL BE EMBEDDED IN "HARD SILTY CLAY" AS DIRECTED BY ENGINEER.
 REMOVAL OF STRUCTURE INCLUDES ANY DEBRIS IN CHANNEL THAT WAS PREVIOUSLY PART OF THE STRUCTURE. THIS WILL ALSO INCLUDE ANY PILING THAT CONFLICTS WITH PROPOSED STRUCTURE.

REVISIONS

APP'D BY	C.D.P.	6-97
DR N BY	R.J.D.	6-97
CK'D BY	R.G.W.	6-97
FINAL CK'D BY	M.D.W.	2-99



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ASHLAND AVE. OVER THE FOX CREEK (BW-245)

FOOTING DETAILS

PROJECT NO.	9641-5160-03
SCALE	NOT TO SCALE
SHEET NO.	A5 OF 19

FILE NAME: 05FT003.DGN

ALL DIMENSIONS ARE IN MILLIMETERS UNLESS OTHERWISE SHOWN. ELEVATIONS, COORDINATES, CURVE AND ALIGNMENT DATA ARE IN METERS. STATIONS ARE IN KILOMETERS + METERS.

METRIC

FOR ABUTMENTS A AND B THE MAXIMUM FOUNDATION PRESSURE IS CALCULATED TO BE 304 KPA AVERAGE DEAD LOAD PLUS LIVE LOAD PRESSURE.
 * ABUTMENT B BOTTOM OF FOOTING ELEVATION 172.473 IS A MAXIMUM. BOTTOM OF FOOTING IS EMBEDDED IN "HARD SILTY CLAY".
 * ABUTMENT A BOTTOM OF FOOTING MAY BE ADJUSTED AS DIRECTED BY THE ENGINEER TO ENSURE THAT THE FOOTING IS EMBEDDED IN "HARD SILTY CLAY".
 * ABUTMENT A BOTTOM OF FOOTING MAY BE ADJUSTED AS DIRECTED BY THE ENGINEER TO ENSURE THAT THE FOOTING IS EMBEDDED IN "HARD SILTY CLAY".

NOTES:

304 KPA AVERAGE DEAD LOAD PLUS LIVE LOAD PRESSURE IS CALCULATED TO BE

FOR ABUTMENTS A AND B THE MAXIMUM FOUNDATION PRESSURE IS CALCULATED TO BE

304 KPA AVERAGE DEAD LOAD PLUS LIVE LOAD PRESSURE.

* ABUTMENT B BOTTOM OF FOOTING ELEVATION 172.473 IS A MAXIMUM. BOTTOM OF FOOTING IS EMBEDDED IN "HARD SILTY CLAY".

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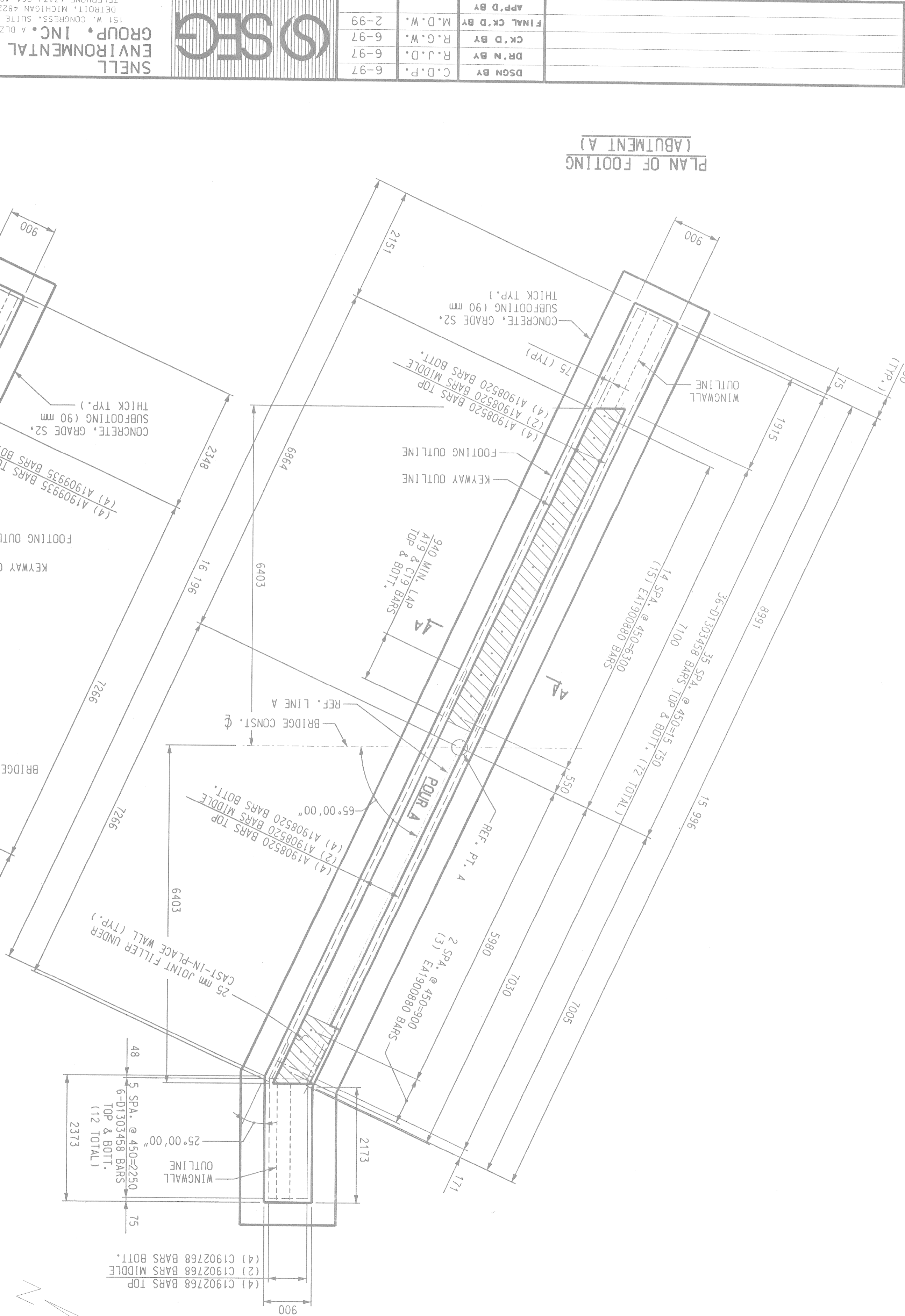
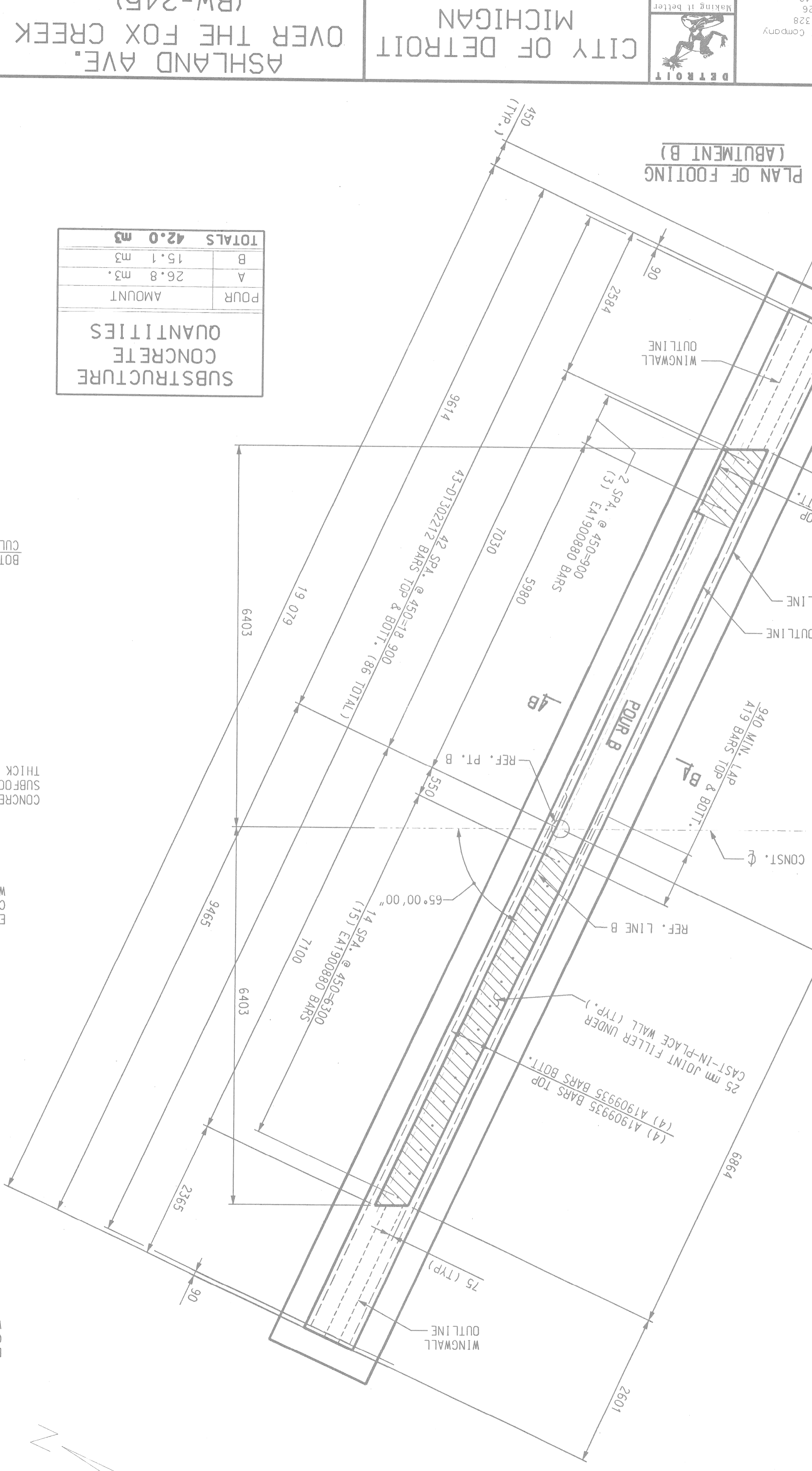
QUANTITIES

AMOUNT	POUR
26.8 m ³	A
15.1 m ³	B
42.0 m³	TOTALS

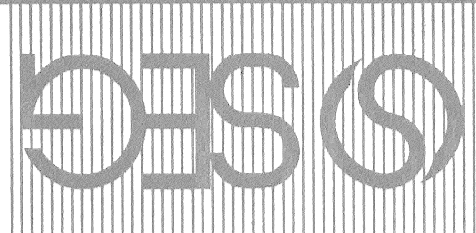
DETAIL AT KEYWAY

SECTION B-B

SECTION A-A



DSGN BY	C.D.P.	6-97
DRN BY	R.J.D.	6-97
CK'D BY	R.G.W.	6-97
FINAL CK'D BY	M.D.W.	2-99
APP'D BY		



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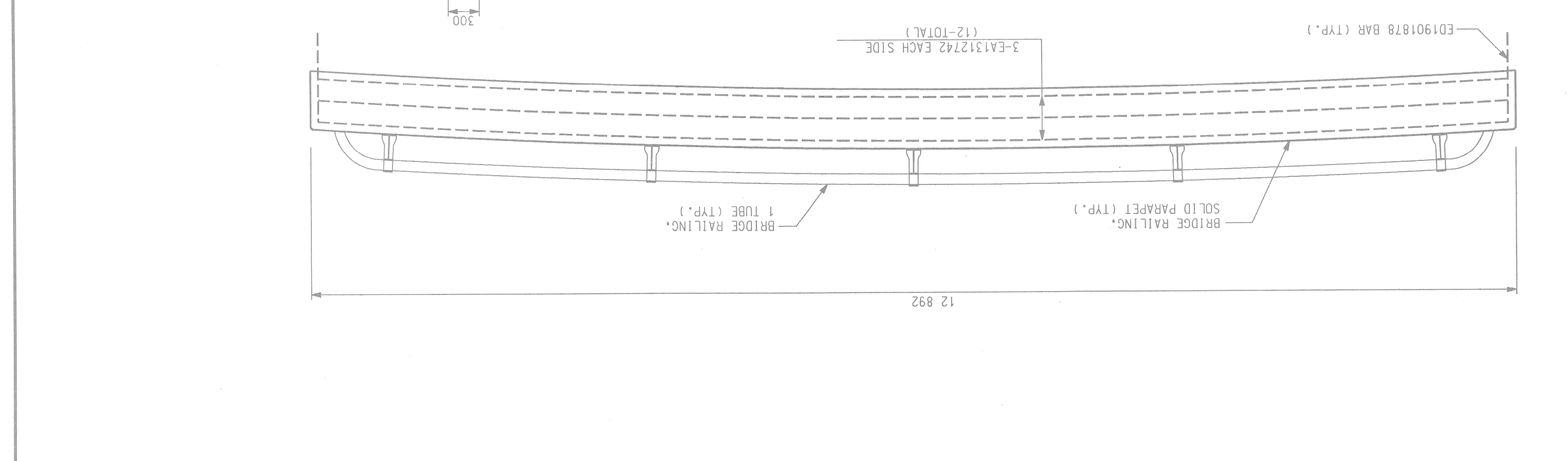
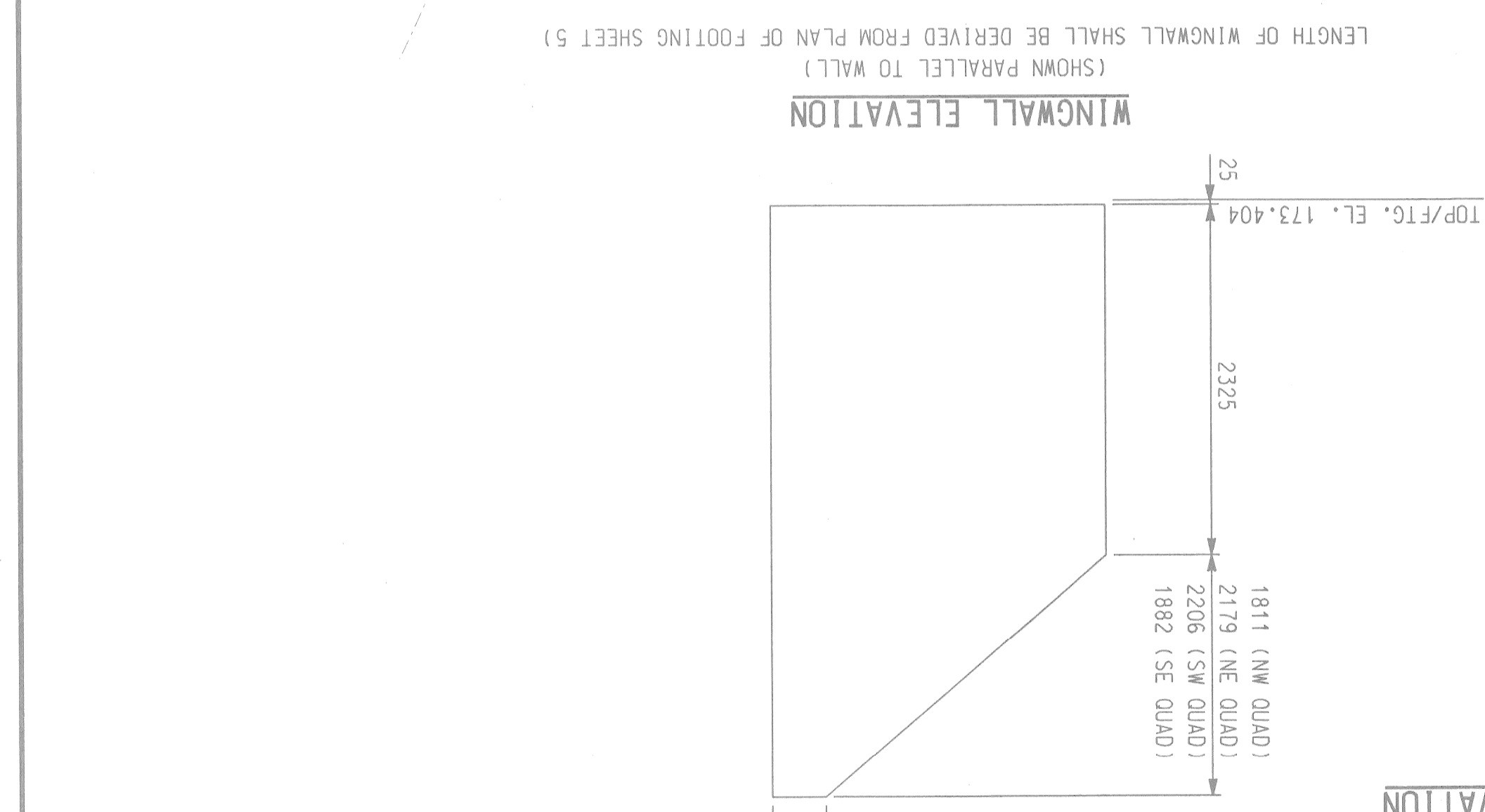
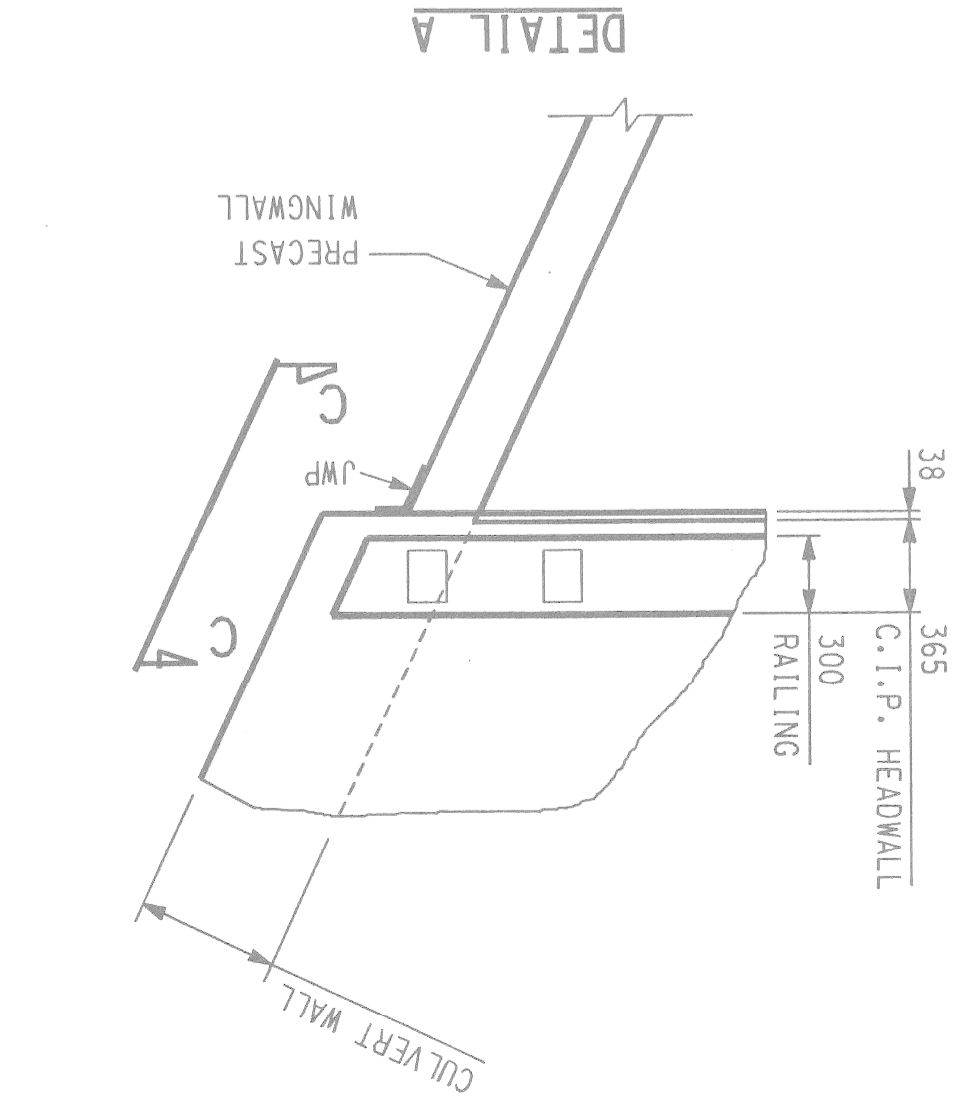
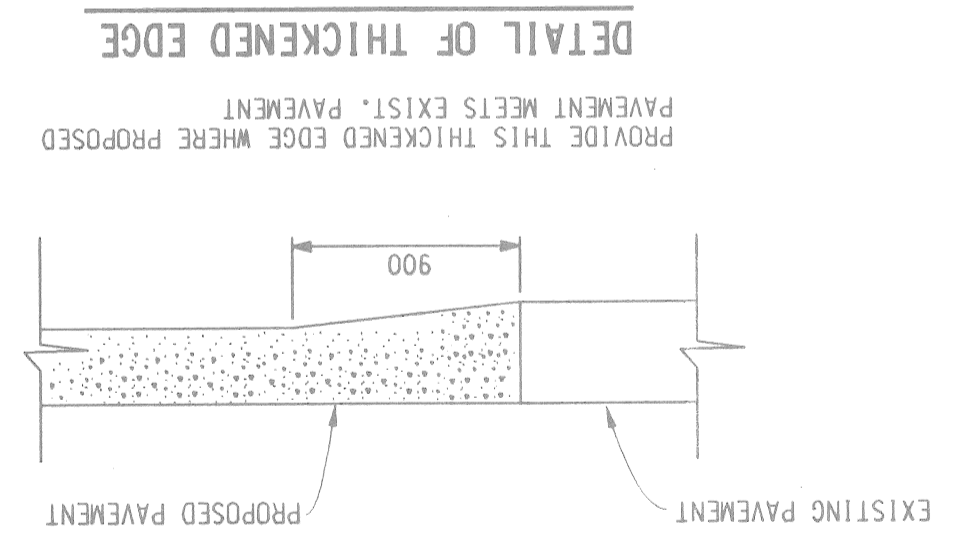
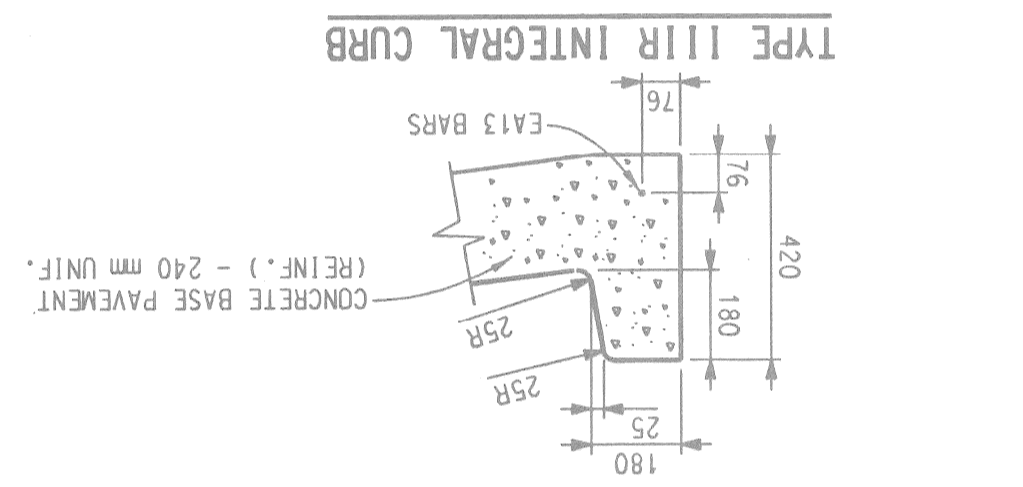
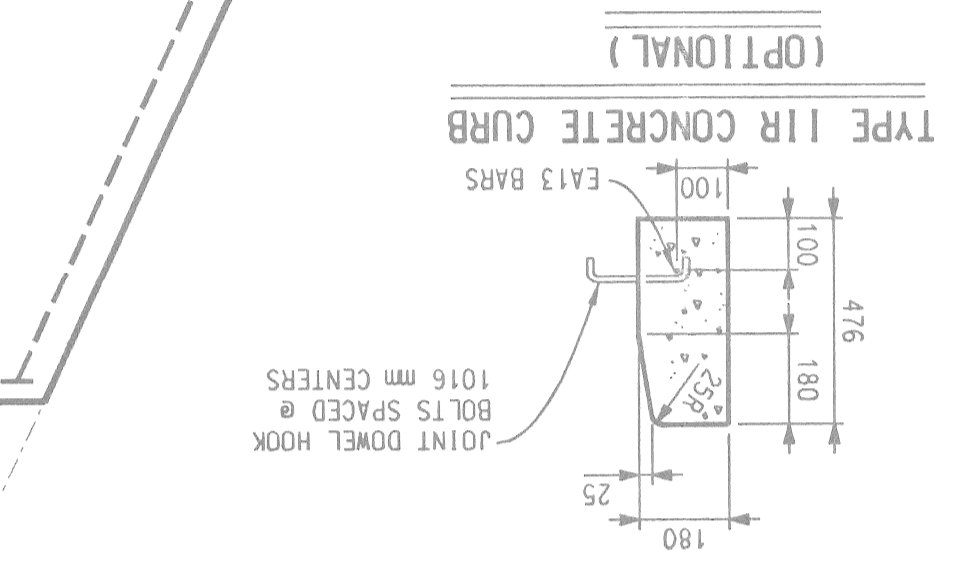
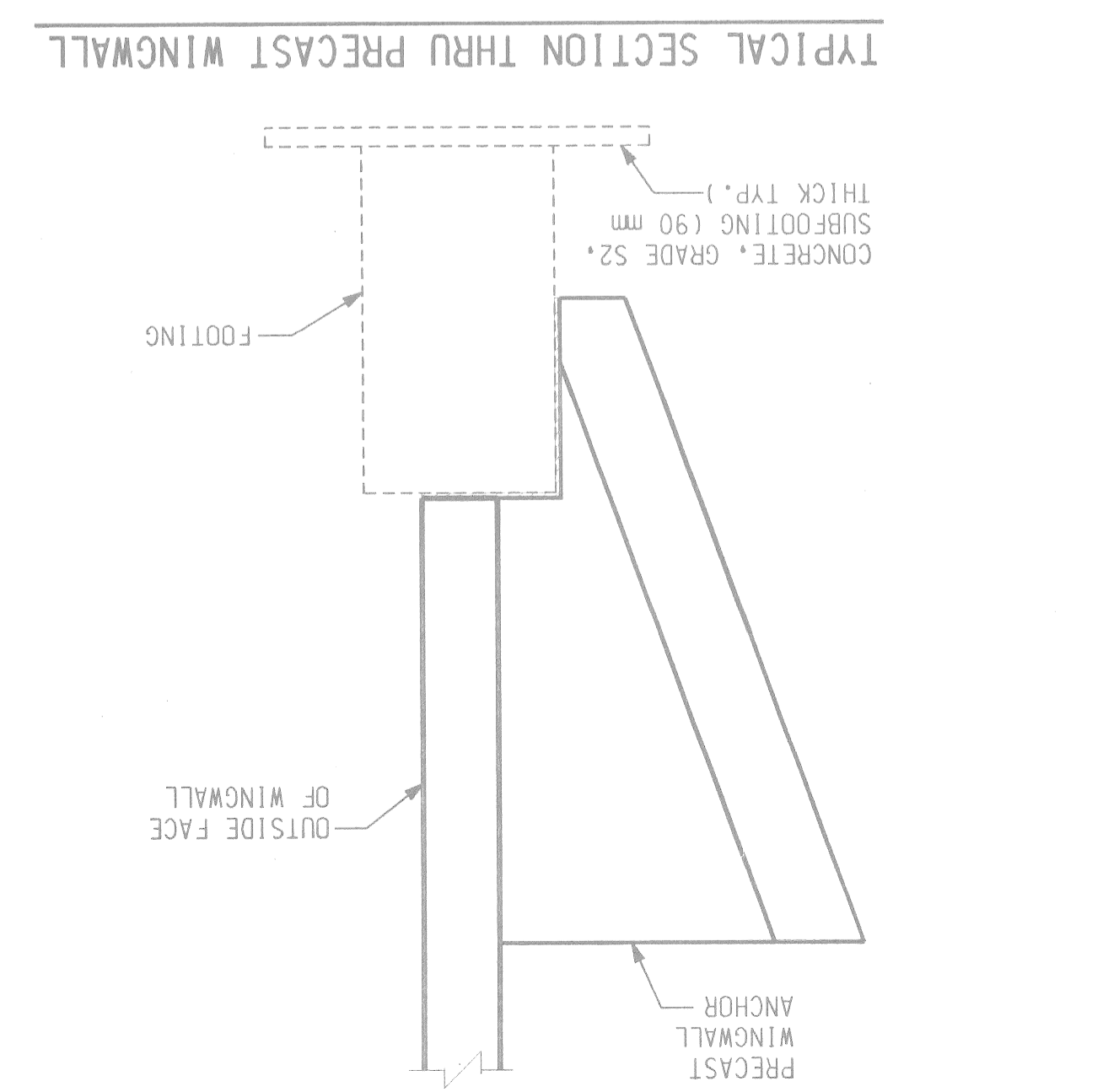
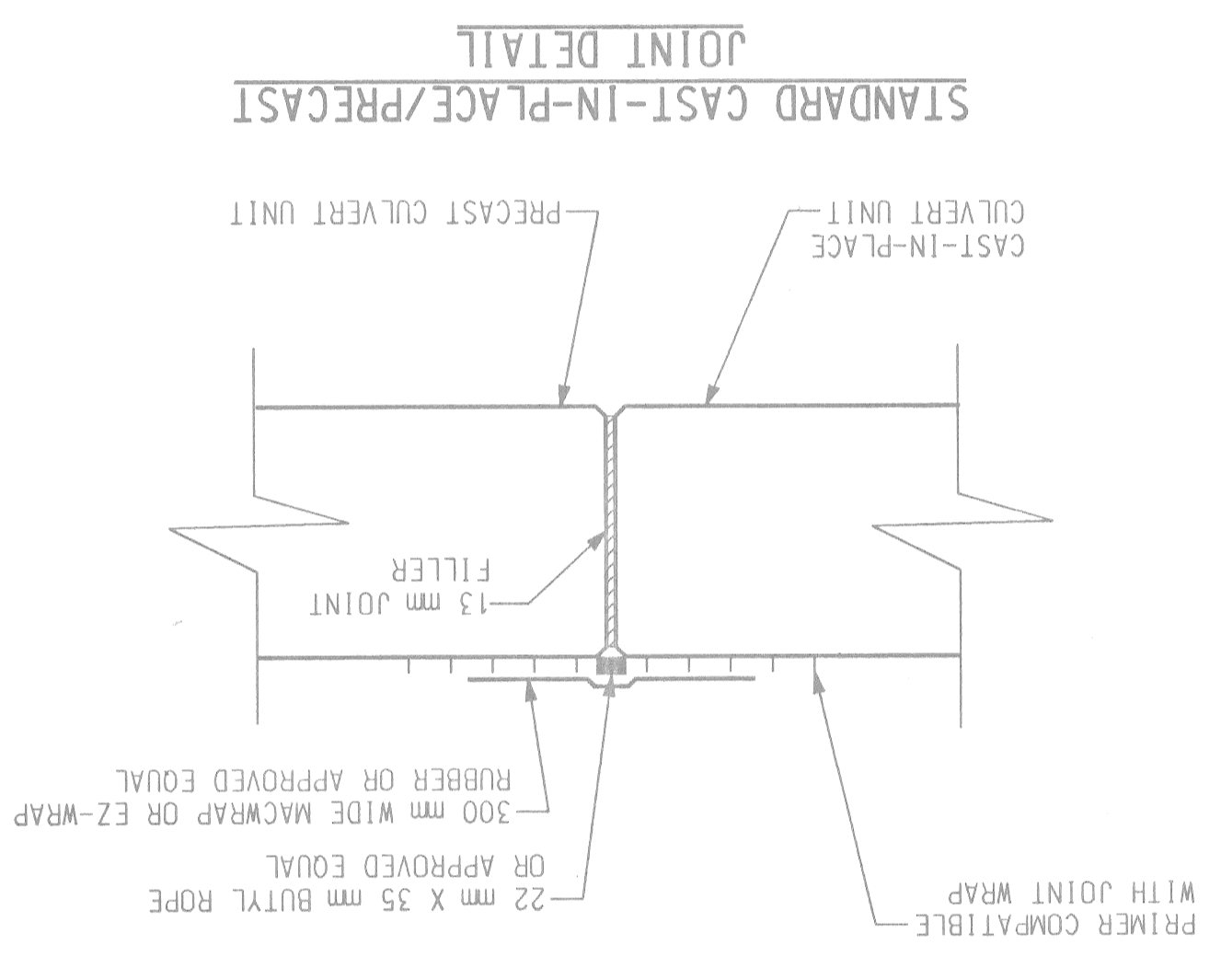
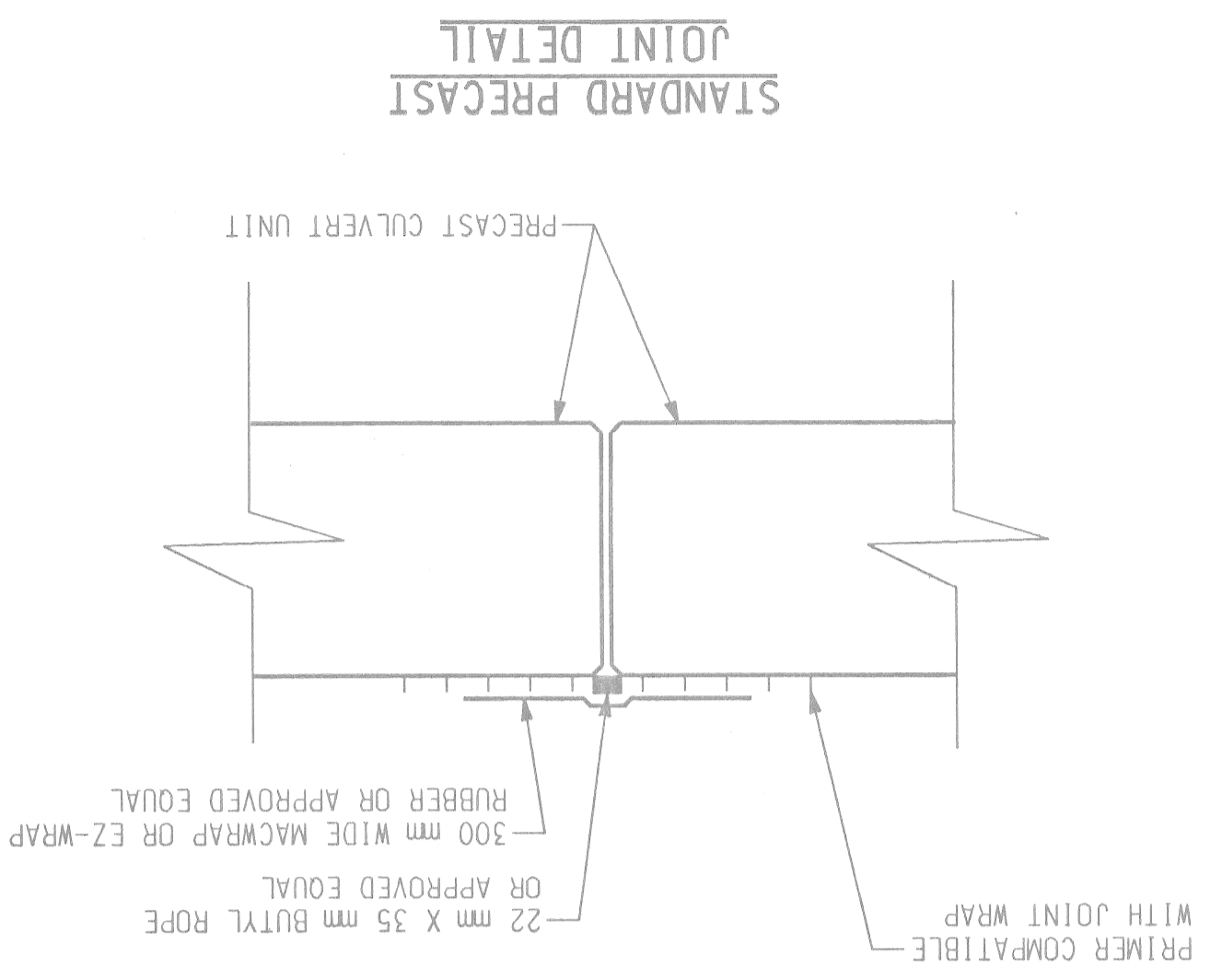


CITY OF DETROIT
 MICHIGAN

ASHLAND AVE. OVER THE FOX CREEK (BW-245)

MISCELLANEOUS DETAILS

PROJECT NO. 9641-5160-01
 SHEET NO. A6 OF 19
 SCALE NOT TO SCALE



METRIC
 DIMENSIONS ARE IN MILLIMETERS UNLESS OTHERWISE SHOWN. ELEVATIONS, COORDINATES, CURVE AND ALIGNMENT DATA ARE IN METERS. STATIONS ARE IN KILOMETERS + METERS.

NO.	DESCRIPTION	DATE	BY	APP'D BY
1	DSGN BY	6-97	C.D.P.	
2	DR' N BY	6-97	R.J.D.	
3	CK'D BY	6-97	R.G.W.	
4	FINAL CK'D BY	2-99	M.D.W.	



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TELEPHONE (313) 961-4040

CITY OF DETROIT MICHIGAN

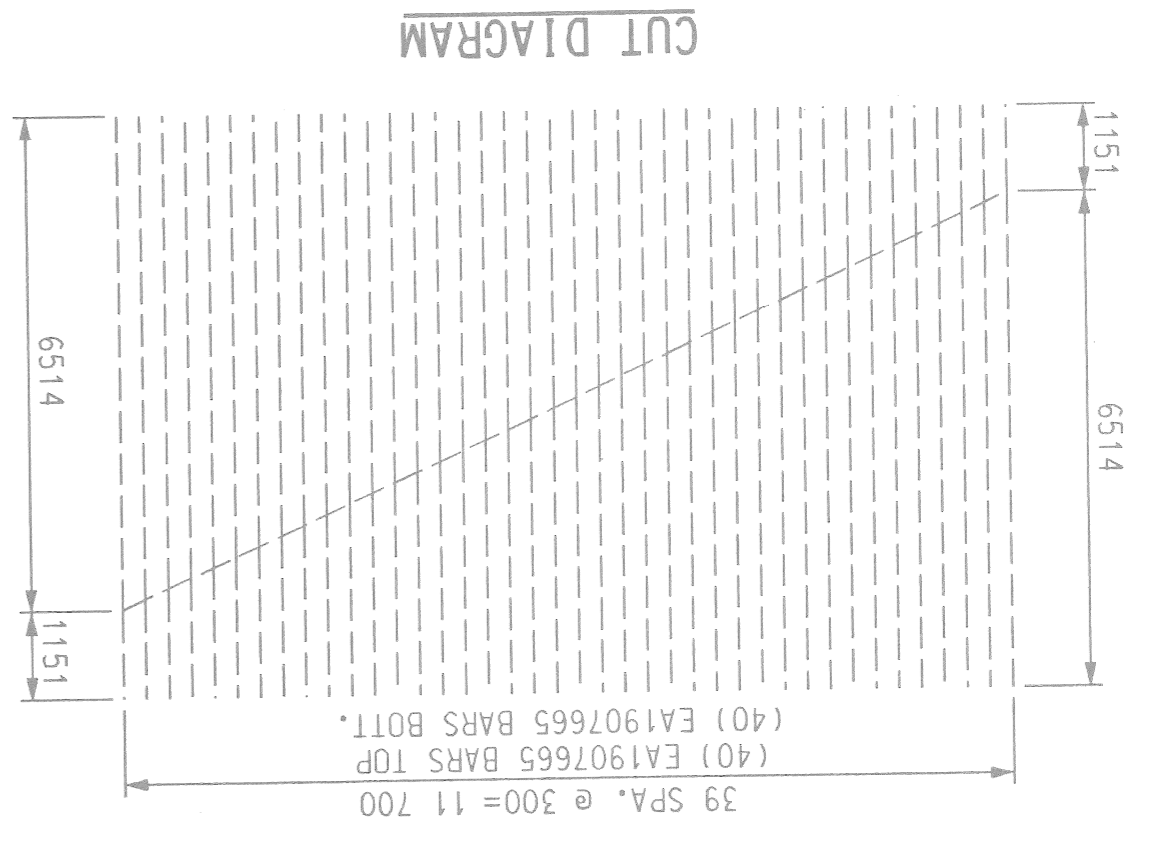
ASHLAND AVE.
OVER THE FOX CREEK
(BW-245)

SUPERSTRUCTURE
DETAILS

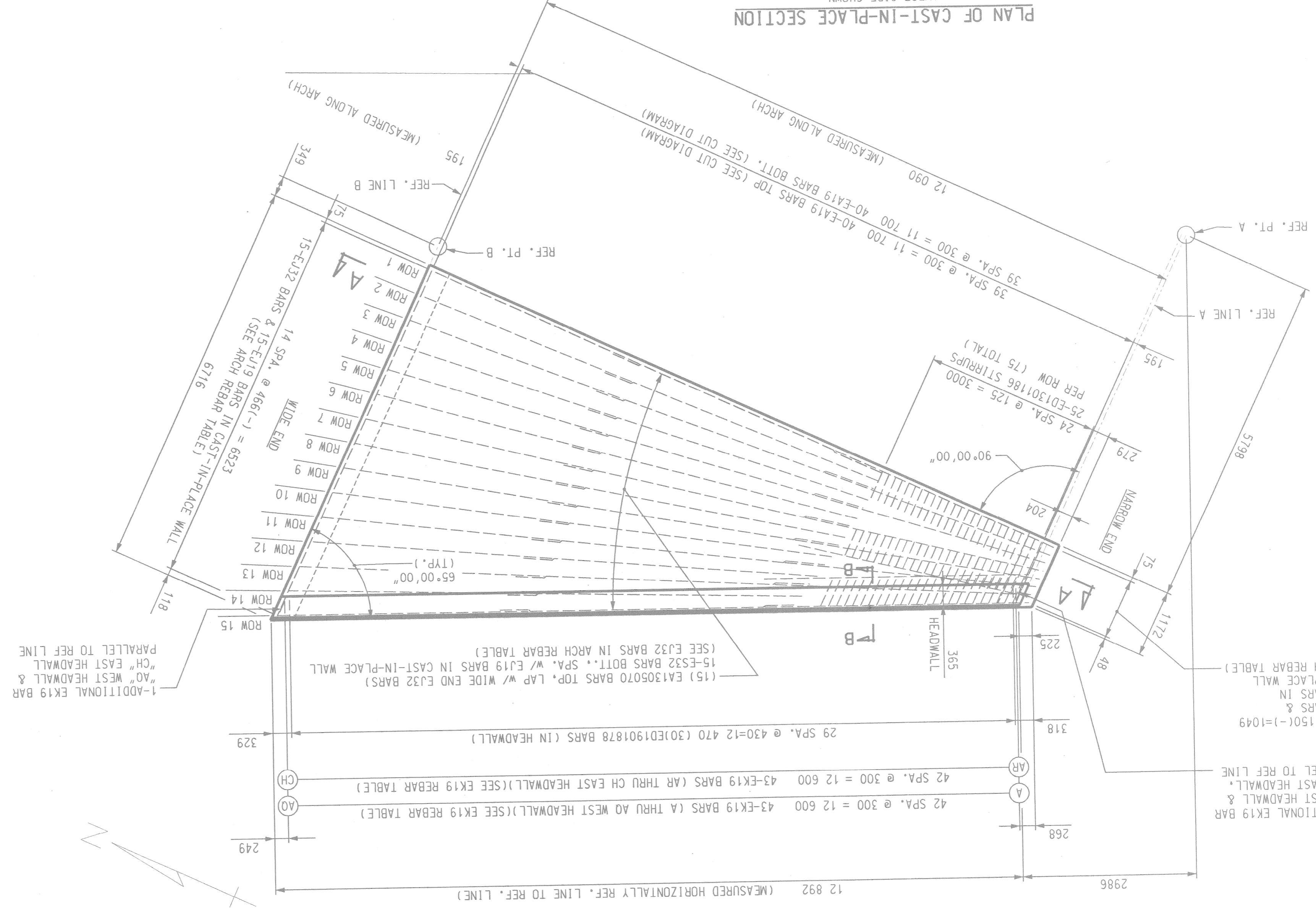
PROJECT NO. 9641-5160-03
SHEET NO. A7 OF 19
SCALE NOT TO SCALE

METRIC

DIMENSIONS ARE IN MILLIMETERS UNLESS OTHERWISE SHOWN. ELEVATIONS, COORDINATES, CURVE AND ALIGNMENT DATA ARE IN METERS. STATIONS ARE IN KILOMETERS + METERS.



PLAN OF CAST-IN-PLACE SECTION
(WEST SIDE SHOWN)
(EAST SIDE OPPOSITE HAND)



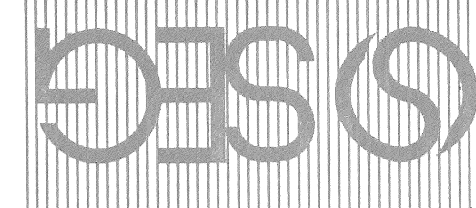
ARCH REBAR TABLE

ROW	BAR	MARKING	MARKING	MARKING
ROW 1	E332	E33211885	EJ1904097	EJ3207027
ROW 2	E332	E33202922	EJ1904098	-
ROW 3	E332	E33211910	EJ1904101	EJ3207036
ROW 4	E332	E33209343	EJ1904103	-
ROW 5	E332	E33211985	EJ1904108	EJ3207062
ROW 6	E332	E33209445	EJ1904116	-
ROW 7	E332	E33212108	EJ1904124	EJ3207105
ROW 8	E332	E33209595	EJ1904133	-
ROW 9	E332	E33212280	EJ1904144	EJ3207166
ROW 10	E332	E33209795	EJ1904156	-
ROW 11	E332	E33212499	EJ1904170	EJ3207241
ROW 12	E332	E33210037	EJ1904184	-
ROW 13	E332	E33212758	EJ1904199	EJ3207331
ROW 14	E332	E33210323	EJ1904216	-
ROW 15	E332	E33213059	EJ1904235	EJ3207433

EK19 REBAR TABLE

SECTION	BAR	MARKING	MARKING	MARKING
WEST CURVERT	AR	EK1904143	AR	EK1904089
SECTION	AS	EK1903943	AS	EK1903895
SECTION	AT	EK1903741	AT	EK1903697
SECTION	AU	EK1903539	AU	EK1903499
SECTION	AV	EK1903335	AV	EK1903299
SECTION	AM	EK1903129	AM	EK1903099
SECTION	AX	EK1902931	AX	EK1902907
SECTION	AY	EK1902749	AY	EK1902727
SECTION	AZ	EK1902577	AZ	EK1902561
SECTION	BA	EK1902419	BA	EK1902405
SECTION	BB	EK1902271	BB	EK1902263
SECTION	BC	EK1902137	BC	EK1902133
SECTION	BD	EK1902013	BD	EK1902113
SECTION	BE	EK1901901	BE	EK1901905
SECTION	BF	EK1901799	BF	EK1901809
SECTION	BG	EK1901709	BG	EK1901723
SECTION	BH	EK1901629	BH	EK1901647
SECTION	BI	EK1901559	BI	EK1901583
SECTION	BJ	EK1901501	BJ	EK1901529
SECTION	BK	EK1901453	BK	EK1901485
SECTION	BL	EK1901417	BL	EK1901453
SECTION	BM	EK1901389	BM	EK1901431
SECTION	BN	EK1901373	BN	EK1901419
SECTION	BO	EK1901367	BO	EK1901417
SECTION	BP	EK1901373	BP	EK1901427
SECTION	BQ	EK1901387	BQ	EK1901445
SECTION	BR	EK1901413	BR	EK1901477
SECTION	BS	EK1901449	BS	EK1901517
SECTION	BT	EK1901497	BT	EK1901569
SECTION	BU	EK1901555	BU	EK1901631
SECTION	BV	EK1901623	BV	EK1901705
SECTION	BW	EK1901705	BW	EK1901789
SECTION	BX	EK1901795	BX	EK1901885
SECTION	BY	EK1901899	BY	EK1901993
SECTION	BZ	EK1902013	BZ	EK1902113
SECTION	CA	EK1902141	CA	EK1902243
SECTION	CB	EK1902279	CB	EK1902387
SECTION	CC	EK1902431	CC	EK1902543
SECTION	CD	EK1902597	CD	EK1902713
SECTION	CE	EK1902765	CE	EK1902887
SECTION	CF	EK1902933	CF	EK1903059
SECTION	CG	EK1903101	CG	EK1903231
SECTION	CH	EK1903265	CH	EK1903399

DSGN BY	C.D.P.	6-97
DR N BY	R.J.D.	6-97
CK D BY	R.G.W.	6-97
FINAL CK'D BY	M.D.W.	2-99
APP'D BY		



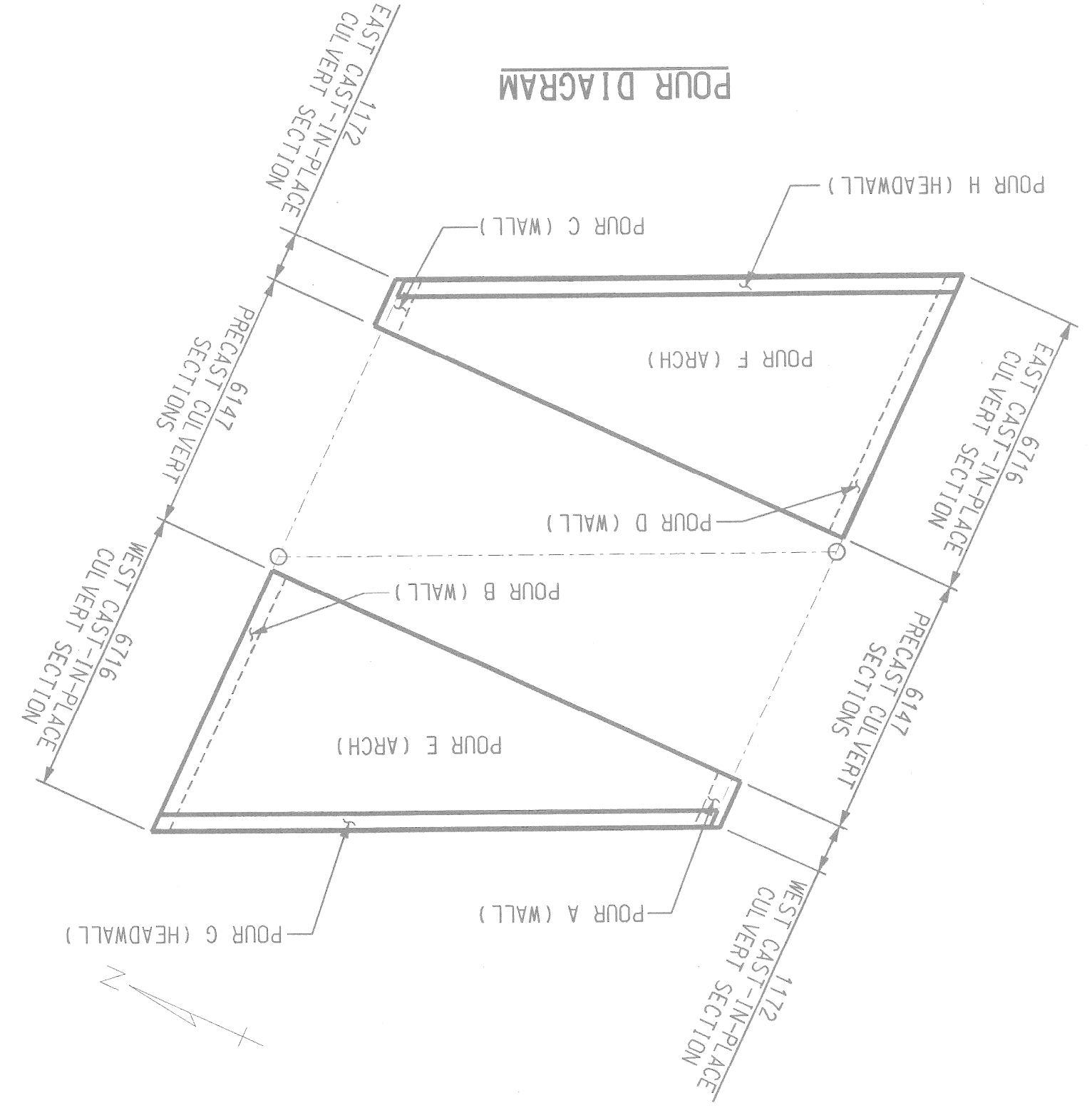
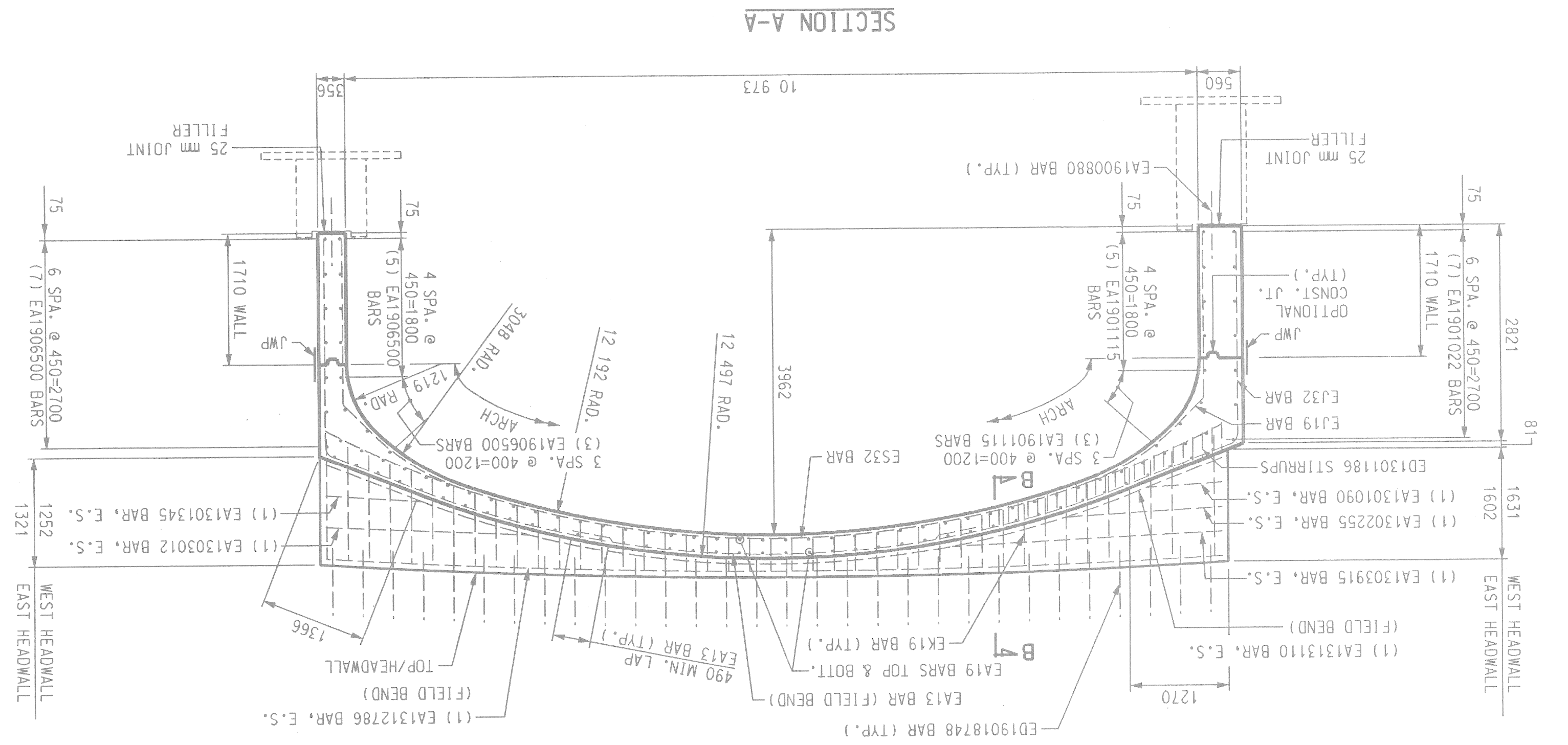
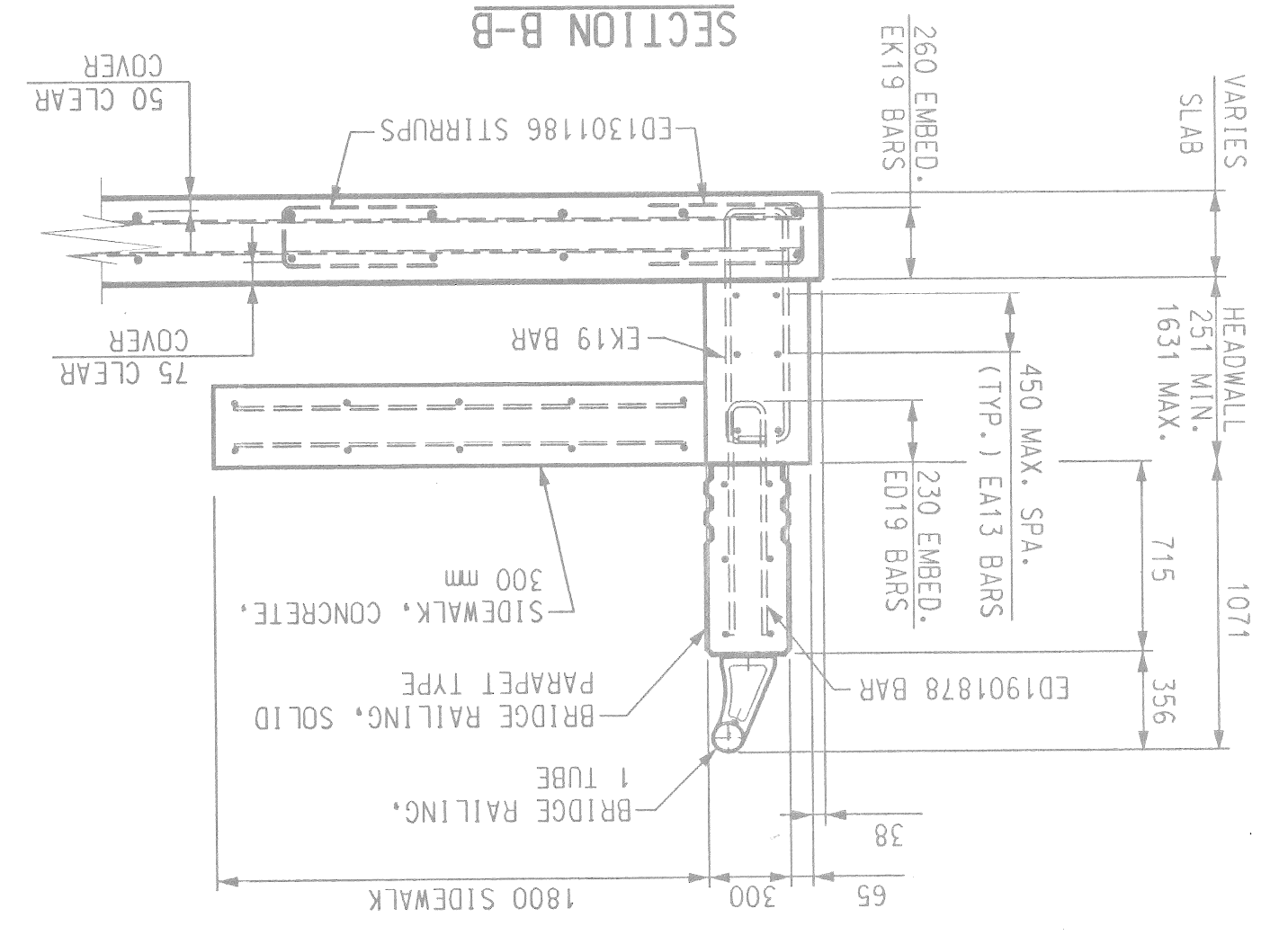
SNELL ENVIRONMENTAL GROUP, INC.
 151 W. CONGRESS, SUITE 328
 DETROIT, MICHIGAN 48226
 TELEPHONE (313) 961-4040



CITY OF DETROIT
 ASHLAND AVE.
 OVER THE FOX CREEK
 (BW-245)

SUPERSTRUCTURE
 DETAILS

PROJECT NO.	9641-5160-03
SHEET NO.	A8 OF 19
SCALE	NOT TO SCALE



POUR	AMOUNT	SUPERSTRUCTURE CONCRETE QUANTITIES
A	1.5 m3	
B	4.1 m3	
C	1.5 m3	
D	4.1 m3	
E	16.4 m3	
F	16.4 m3	
G	4.9 m3	
H	4.9 m3	
TOTALS	54.0 m3	

NOTES:
 FOR NAME PLATE MOUNTING, MOLDING AND BEVEL DETAILS, SEE STANDARD B-103-B, FOR BRIDGE RAILING, SOLID PARAPET TYPE, SEE STANDARD B-18-B, FOR BRIDGE RAILING ONE TUBE, SEE STANDARD B-24-A.
 FOR NAME PLATE LOCATION, SEE SHEET 4.
 A RUBBED SURFACE FINISH ON THE VERTICAL AND TOP CONCRETE SURFACES OF THE PARAPET RAILING IS REQUIRED ON THIS STRUCTURE.
 DUE TO THE "HINGED" CONNECTION BETWEEN THE CAST-IN-PLACE WALL AND THE FOOTING, THE CAST-IN-PLACE WALL SHALL BE SUPPORTED FROM BOTH FACES DURING ITS CONSTRUCTION AND DURING THE CONSTRUCTION OF THE "ARCH".
 BACKFILLING SHALL NOT BE PERMITTED PRIOR TO BOTH OF THE CAST-IN-PLACE "ARCHES" AND HEADWALLS ATTAINING THEIR RESPECTIVE MINIMUM 28 DAY COMPRESSIVE STRENGTHS.
 CAST-IN-PLACE CULVERT SECTIONS SHALL BE CONNECTED TO THE ADJACENT PRECAST CULVERT SECTIONS IN A MANNER THAT IS SIMILAR TO THE CONNECTION BETWEEN TWO ADJACENT PRECAST CULVERT SECTIONS. THE CONTRACTOR SHALL SUPPLY DETAILS OF SAID CONNECTION TO THE ENGINEER FOR APPROVAL.
 TOP OF HEADWALL IS PARALLEL TO THE VERTICAL CURVE.

METRIC
 DIMENSIONS ARE IN MILLIMETERS UNLESS OTHERWISE SHOWN. ELEVATIONS, COORDINATES, CURVE AND ALIGNMENT DATA ARE IN METERS. STATIONS ARE IN KILOMETERS + METERS.

SPECIFICATIONS FOR MANUFACTURE AND INSTALLATION OF PRECAST CULVERT BRIDGE SYSTEMS

1. DESCRIPTION	REVISIONS															
<p>This work shall consist of constructing a Con/Spun culvert or approved equal in accordance with these specifications and in reasonably close conformity with the lines, grades, design and dimensions shown on the plans or as established by the Engineer. The culverts are designed in accordance with the provisions of "Standard Specifications for Highway Bridges" adopted by the American Association of State Highway and Transportation Officials, 1996; and the American Institute of Steel Construction, Inc., 1989. The minimum concrete compressive strength shall be 28 MPa. The minimum steel yield strength shall be 400 MPa.</p> <p>The culverts are designed in accordance with the provisions of the American Association of State Highway and Transportation Officials, 1996; and the American Institute of Steel Construction, Inc., 1989. The minimum concrete compressive strength shall be 28 MPa. The minimum steel yield strength shall be 400 MPa.</p> <p>The culverts are designed in accordance with the provisions of the American Association of State Highway and Transportation Officials, 1996; and the American Institute of Steel Construction, Inc., 1989. The minimum concrete compressive strength shall be 28 MPa. The minimum steel yield strength shall be 400 MPa.</p>	<table border="1" style="width: 100%; border-collapse: collapse;"> <tr> <td style="width: 10%;">DR N BY</td> <td style="width: 10%;">R.J.D.</td> <td style="width: 10%;">6-97</td> <td style="width: 10%;">M.A.M.</td> <td style="width: 10%;">6-97</td> </tr> <tr> <td>CK D BY</td> <td>R.G.W.</td> <td>6-97</td> <td>M.D.W.</td> <td>2-99</td> </tr> <tr> <td>APP D BY</td> <td>M.D.W.</td> <td>2-99</td> <td></td> <td></td> </tr> </table>	DR N BY	R.J.D.	6-97	M.A.M.	6-97	CK D BY	R.G.W.	6-97	M.D.W.	2-99	APP D BY	M.D.W.	2-99		
DR N BY	R.J.D.	6-97	M.A.M.	6-97												
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<p>3. MATERIALS - CONCRETE</p> <p>The concrete for the culverts shall be air-entrained when included in areas subject to freeze-thaw conditions, composed of portland cement, fine and coarse aggregates, admixtures and water. admixture shall conform to ASTM M154.</p> <p>Concrete shall contain a minimum of 2 percent air. The air entraining admixture shall conform to ASTM M154.</p>																
<p>2. TYPES</p> <p>Equal reinforced concrete Con/Spun culverts or approved equal equipment located in the area designated by spon</p>																
<p>4. MATERIALS - STEEL REINFORCEMENT AND HARDWARE</p> <p>Reinforcing steel for the culverts shall be fabricated and bent in accordance with the detailed shop drawings submitted by the manufacturer.</p> <p>Steel Reinforcement - Reinforcement shall consist of ASTM Specification A 615, Grade 400. Longitudinal distribution reinforcement may consist of welded wire fabric or deformed billet-steelbars.</p> <p>Mixture - The aggregates, cement and water shall be proportioned and mixed in a batch mixer to produce a homogeneous concrete meeting the strength requirements of this specification. The proportion of portland cement in the mixture shall not be less than 256 kg (5) sacks per cubic meter of concrete.</p> <p>Curing - The precast concrete culvert units shall be cured for a sufficient length of time so that the concrete will develop the specified compressive strength in 28 days or less. Any one of the following methods of curing or combinations thereof shall be used:</p>																
<p>7. PERMISSIBLE VARIATIONS</p> <p>Internal Dimensions - The internal dimension shall vary not more than 1% from the design dimensions nor more than 40 mm whichever is less. The punch dimensions shall vary not more than 20 mm from the design dimension.</p> <p>Slab and Wall Thickness - The slab and wall thickness shall not be less than that shown in that required in the design, they will make a continuous one of culverts with a smooth interior free of obstructions, irregularities, or sharp interior corners. The ends of the culverts shall be finished to a smooth steel form finish.</p> <p>Slab and Wall Thickness - The slab and wall thickness shall not be less than that shown in that required in the design, they will make a continuous one of culverts with a smooth interior free of obstructions, irregularities, or sharp interior corners. The ends of the culverts shall be finished to a smooth steel form finish.</p>																
<p>8. TESTING AND INSPECTION</p> <p>Type of Test Specimen - Concrete compressive strength shall be determined from compression tests made on 4 cylinders or cores. For cylinder testing a minimum of 3 cylinders shall be taken during each production run. For core testing, one core shall be cut from a culvert section selected at random from each group of 15 culverts or less of a particular size and production run. For each continuous production run, each group of 15 culverts of a single size or fraction thereof shall be considered separately for the purpose of testing and acceptance. A production run shall be considered continuous if not interrupted for more than 3 consecutive days.</p> <p>Compression Testing - Cylinders shall be made and tested in accordance with the provisions of the ASTM C 497 Specification.</p> <p>Acceptability of Cylinder Tests - Failure of any of the 28 day test cylinders to meet 90 percent of the minimum compressive strength requirement can be cause for rejection.</p> <p>Acceptability of Core Tests - The Compressive strength of the concrete in that group of cylinders shall be equal to or greater than the design concrete strength. When the core test results are less than the design concrete strength, the core test results shall be rejected. When the core test results are equal to or greater than the design concrete strength, the core test results shall be accepted. When the core test results are less than the design concrete strength, the core test results shall be rejected. When the core test results are equal to or greater than the design concrete strength, the core test results shall be accepted.</p>																
<p>13. REJECTION</p> <p>Culverts shall be subject to rejection on account of any of the following requirements. Individual culverts may be rejected because of any of the following:</p> <p>13.1 Fractures or cracks passing through the wall, except for a single end crack that does not exceed one half the thickness of the wall.</p> <p>13.2 Defects that indicate proportioning, mixing, and curing problems in compliance with Section 5.</p> <p>13.3 Honeycombed or open texture, and</p> <p>13.4 Damaged ends, where such damage would prevent making a satisfactory joint.</p>																
<p>14. MARKING</p> <p>Each culvert shall be clearly marked by waterproof paint. The following shall be shown on the inside of the vertical leg of the culvert section:</p> <p>14.1 Acceptability of Core Tests - The Compressive strength of the concrete in that group of cylinders shall be equal to or greater than the design concrete strength. When the core test results are less than the design concrete strength, the core test results shall be rejected. When the core test results are equal to or greater than the design concrete strength, the core test results shall be accepted.</p> <p>14.2 Placement of the Culverts - The culverts shall be placed as shown on the Engineer's plan drawings. Special care shall be taken in setting the culverts to the line and grade. The culverts shall be set on 150 mm masonry or steel girders and sealed by the manufacturer in a manner such that the culvert will meet all of the requirements of this specification. Culverts so sealed shall be considered satisfactory for use.</p> <p>14.3 Test Equipment - Every manufacturer furnishing culverts under this specification shall furnish all test equipment and personnel necessary to carry out the test required.</p>																
<p>9. JOINTS</p> <p>The culverts shall be produced with flat butt ends. The ends of the culverts shall be finished to a smooth steel form finish. The joints shall be finished to a smooth steel form finish. The joints shall be finished to a smooth steel form finish. The joints shall be finished to a smooth steel form finish.</p>																
<p>10. WORKMANSHIP AND FINISH</p> <p>The culverts shall be finished to a smooth steel form finish. The joints shall be finished to a smooth steel form finish. The joints shall be finished to a smooth steel form finish. The joints shall be finished to a smooth steel form finish.</p>																
<p>11. REPAIRS</p> <p>Culverts may be repaired, if necessary, because of imperfections in the process of manufacture, and the finished culverts shall be subject to inspection by the purchaser. The quality of materials, the process of manufacture, and the finished culverts shall be subject to inspection by the purchaser. The quality of materials, the process of manufacture, and the finished culverts shall be subject to inspection by the purchaser.</p>																
<p>12. INSPECTION</p> <p>The quality of materials, the process of manufacture, and the finished culverts shall be subject to inspection by the purchaser. The quality of materials, the process of manufacture, and the finished culverts shall be subject to inspection by the purchaser. The quality of materials, the process of manufacture, and the finished culverts shall be subject to inspection by the purchaser.</p>																
<p>16. MEASUREMENT AND PAYMENT</p> <p>The completed work as measured for Precast Culvert contract item (pay item) will be paid for at the contract unit price for the following contract item (pay item).</p> <table border="1" style="width: 100%; border-collapse: collapse;"> <tr> <td style="width: 60%;">10 973 x 3962 Precast Concrete</td> <td style="width: 40%;">Meter</td> </tr> <tr> <td>Three - Sided Box Culvert</td> <td></td> </tr> </table>		10 973 x 3962 Precast Concrete	Meter	Three - Sided Box Culvert												
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Three - Sided Box Culvert																

SCALE NOT TO SCALE
PROJECT NO. 9641-5160-03
SHEET NO. A9 OF 19

PRECAST CULVERT SPECIFICATIONS

METRIC

DIMENSIONS ARE IN MILLIMETERS UNLESS OTHERWISE SHOWN. ELEVATIONS, COORDINATES, CURVE AND ALIGNMENT DATA ARE IN METERS. STATIONS ARE IN KILOMETERS + METERS.

FILE NAME: 08010703.TGA

REVISIONS

App. By	C.D.P.	6-97
Dr. N. By	R.J.D.	6-97
Ch. D. By	R.G.W.	6-97
Final Ch. D. By	M.D.W.	2-99

DSGN BY: C.D.P. 6-97
 DR. N. BY: R.J.D. 6-97
 CH. D. BY: R.G.W. 6-97
 APP. BY: M.D.W. 2-99

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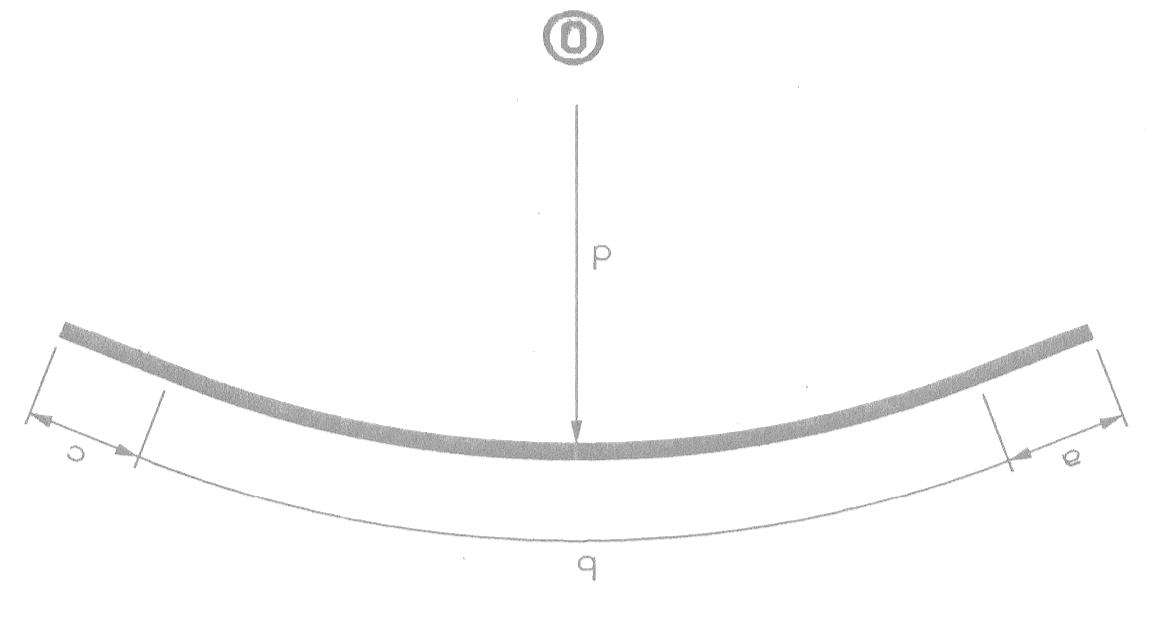
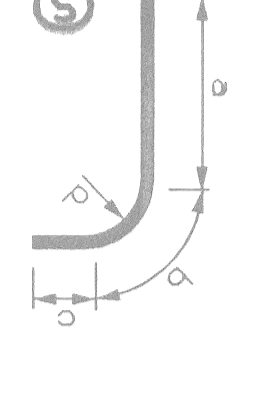
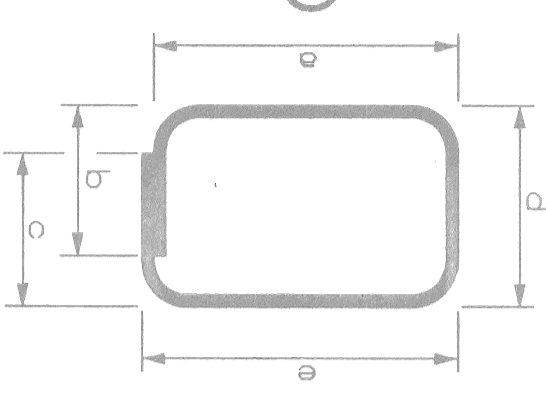
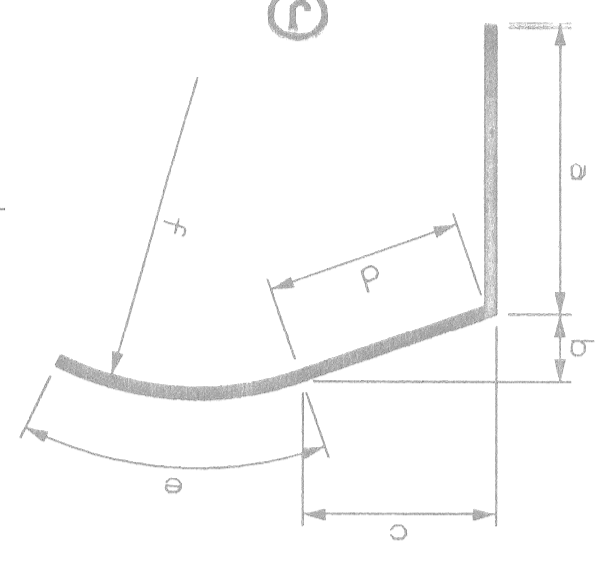
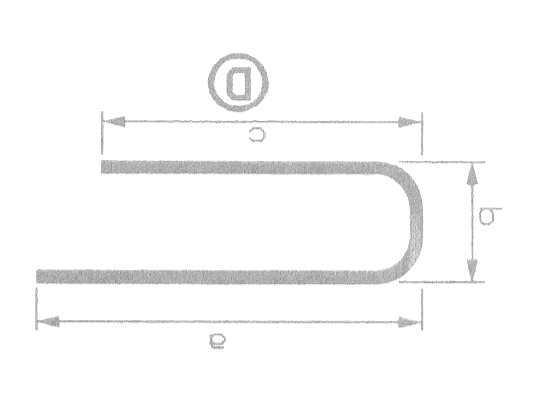
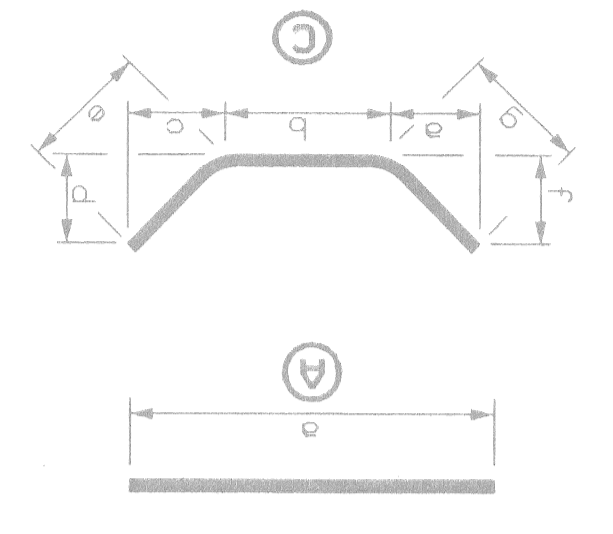


CITY OF DETROIT
 MICHIGAN

**ASHLAND AVE.
 OVER THE FOX CREEK
 (BW-245)**

STEEL REINFORCEMENT

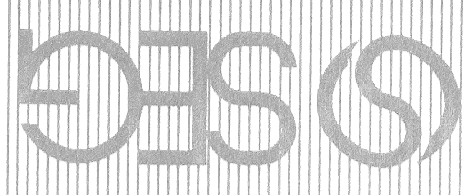
SCALE NOT TO SCALE
 PROJECT NO. 9641-5160-03
 SHEET NO. A10 OF 19



BAR	NO.	TOTAL REOD. MASS	e	f	g	h	j
EA1908520	8520	20	381	62	10	490	
EA1303458	1354	750	1354	84	289		
SUBTOTAL = 732 kg							
EA1900880	880	18	35				
EA1909335	935	16	189				
EA1302212	731	750	731				
SUBTOTAL = 544 kg							
EA1302727	277	18	35				
EA1302724	2696	18	35				
EA1302725	2777	18	35				
EA1302722	2777	18	35				
EA1302717	2777	18	35				
EA1302716	2696	18	35				
EA1302713	2777	18	35				
EA1302710	2696	18	35				
EA1302709	2776	18	35				
EA1302706	2695	18	35				
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REVISIONS

DSGN BY	C.D.P.	6-97
DR N BY	R.J.D.	6-97
CK D BY	R.G.W.	6-97
APP'D BY	M.D.W.	2-99



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CITY OF DETROIT
MICHIGAN

ASHLAND AVE.
OVER THE FOX CREEK
(BW-245)

STEEL REINFORCEMENT
AND
QUANTITIES

PROJECT NO. 9641-5160-03
SHEET NO. A11 OF 19
SCALE NOT TO SCALE

DIMENSIONS ARE IN MILLIMETERS UNLESS OTHERWISE SHOWN. ELEVATIONS, COORDINATES, CURVE AND ALIGNMENT DATA ARE IN METERS. STATIONS ARE IN KILOMETERS + METERS.

METRIC

ITEM NO.	ITEM DESCRIPTION	UNIT	QUANTITY
150000	MOBILIZATION, MAX.	Lsum	1
202002	TREE, REMOVE, 451 TO 900 mm	ea	2
204005	CURB, REMOVE	m	76
204013	SIDEWALK, REMOVE	m	116
204020	STRUCTURES, REMOVE	Lsum	1
204102	FENCE, REMOVAL, SALVAGE AND REPLACE	Lsum	35
205010	EMBANKMENT, CIP	m	110
206002	BACKFILL, STRUCTURE, CIP	m ³	1030
206011	EXCAVATION, FOUNDATION	m ³	1200
208025	EROSION CONTROL, SILT FENCE	m	63
3020014	AGGREGATE BASE, 100 mm	m ²	353
3050001	BITUMINOUS BASE CRUSHING AND SHAPING	m ²	146
4017102	10 973 X 3962 PRECAST CONC THREE-SIDED BOX CULVERT	m	6.2
4030043	DRAINAGE STRUCTURE COVER, ADJUST, ADDITIONAL DEPTH	m	1
4030045	DRAINAGE STRUCTURE COVER, ADJUST, CASE 1	m	1
4040030	UNDERDRAIN, FOUNDATION, 100 mm	ea	1
4040110	UNDERDRAIN, OUTLET ENDING, 100 mm	m	44
5020115	BIT. MIXTURE NO. 1100L, 20AA	ea	2
5020116	BIT. MIXTURE NO. 1100T, 20AA	+	34
5020116	BIT. MIXTURE NO. 1100T, 20AA	+	39
6020206	CONCRETE PAVEMENT WITH INTEGRAL CURB (TYPE IIR), REINFORCED 240 mm	m ²	450
7047051	FLOW DIVERSION	Lsum	1
7060007	CONCRETE, GRADE D	m ³	14
7060010	CONCRETE, GRADE S2, SUBFOOTING	m ³	7
7060020	SUBSTRUCTURE CONCRETE	m ³	42
7060022	SUPERSTRUCTURE CONCRETE	m ³	54
7060024	SUPERSTRUCTURE CONCRETE, FORM, FINISH, AND CURE	Ls	1
7060030	REINFORCEMENT, STEEL	kg	1276
7060031	REINFORCEMENT, STEEL, EPOXY COATED	kg	6556
7060250	STRUCTURE NAME PLATE	m ³	152
7100001	JOINT WATERPROOFING	ea	2
7110004	BRIDGE RAILING, SOLID PARAPET TYPE	m ²	27
7110007	BRIDGE RAILING, ONE TUBE	m	26
8030002	SIDEWALK, CONCRETE, 100 mm	m	26
8110241	PAVT MKKG, REGULAR DRY, 100 mm, WHITE	m ²	116
8110242	PAVT MKKG, REGULAR DRY, 100 mm, YELLOW	m	100
8120026	PLASTIC DRUM, LIGHTED, FURN	m	100
8120027	PLASTIC DRUM, LIGHTED, OPER	ea	20
8120036	BARRICADE, TYPE III, LIGHTED, FURN	ea	20
8120037	BARRICADE, TYPE III, LIGHTED, OPER	ea	8
8120041	CONCRETE BARRIER, TEMPORARY, FURNISHED	ea	8
8120042	CONCRETE BARRIER, TEMPORARY, OPERATED	m	36.5
8120054	MINOR TRAFFIC DEVICES	m	36.5
8120060	SIGN, TYPE B TEMPORARY, PRISMATIC RETRFLC SHEETING	Ls	1
8160003	WATER	m ²	26.8
8160007	SEEDING, MIXTURE TUF	KL	3
8160020	FERTILIZER, CHEMICAL NUTRIENT, CLASS A	kg	3
8160072	MULCH ANCHORING	m ²	100
8160077	MULCH BLANKET	m ²	100

BAR	DIMENSIONS										NO. TOTAL	REDD MASS
	a	b	c	d	e	f	g	h	i	j		
EK1903943	1724	140	140	215							1	
EK1904089	1797	140	140	215							2	
EK1904143	1824	140	140	215							2	
E53209292	0	7933	1359	12254							2	
E53209343	0	7919	1364	12358							2	
E53209445	0	8071	1374	12567							2	
E53209595	0	8207	1388	12879							2	
E53209795	0	8387	1408	13298							2	
E53210037	0	8606	1431	13819							2	
E53210323	0	8864	1459	14445							2	
E53211885	1358	9169	1358	12242							2	
E53211910	1361	9188	1361	12291							2	
E53211985	1368	9249	1368	12450							2	
E53212108	1380	9348	1380	12710							2	
E53212280	1397	9486	1397	13075							2	
E53212499	1419	9661	1419	13547							2	
E53212758	1445	9868	1445	14119							2	
E53213059	1475	10109	1475	14798							2	
E53213059	1475	10109	1475	14798							2	
E01301186	490	206	490								75	
E01901878	870	138	870								60	
EPOXY SUBTOTAL = 6486 kg												
252												

SUPERSTRUCTURE

