STATE OF OHIO
DEPARTMENT OF TRANSPORTATION

CUY-480-25.76
CITY OF BEDFORD HEIGHTS
VILLAGE OF OAKWOOD
CUYAHOGA COUNTY

CUY-480-25.76	OHIO
	FHWA REGION 5
IM - 480 - 4(78)	FEDERAL PROJECT

1 / 111

CUYAHOGA COUNTY
PID 10468

DESIGN DESIGNATION

		CUY-480-25.77/25.85	CUY-480-29.89
CURRENT ADT (1999)	=	44,510	36,900
DESIGN YEAR ADT (2019)	=	57,860	47,970
DHV	=	5,786	4,797
D	=	60%	60%
T24	=	15%	12%
TD	=	9%	7%
DESIGN SPEED	=	60 Mph	60 Mph
LEGAL SPEED	=	60 Mph	60 Mph
FUNCTIONAL CLASSIFICATION	=	Interstate	Interstate
DESIGN EXCEPTIONS	=	NONE	NONE

PROJECT DESCRIPTION: Deck replacement of bridges CUY-480-2577 L&R and deck replacement and widening of bridges CUY-480-2585L and CUY-480-2989R, including approach reconstruction.

CONVENTIONAL SIGNS

County Line
Township Line
Section Line
Corporation Line
Fence Line (existing) (proposed)
Center Line
Trees, Stumps, (to be removed)
Utility Poles: Telephone, Power, Light.
Water Line (existing) (proposed)
Fire Hydrant (existing) (proposed)
Gas Line (existing) (proposed)
Conduits: Electrical
Storm Sewer (existing) (proposed)
Sanitary Sewer (existing) (proposed)
Catch Basin or inlet: Existing Adjusted To Grade Proposed
Manhole: Existing Adjust To Grade Proposed Storm Sanitary
Utility Valve
Signs: Existing Proposed

Limited Access (only)
Right of Way (only)
Limited Access & Right of Way
Existing Right of Way
Property Line (in existing fence)
Railroad
Guardrail (existing) (proposed)
Telephone

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LINE DATA

I-480 EASTBOUND (LANE S-95)

PROJECT LIMITS = STA. 103+00.00 TO STA. 106+50.00 = 350.00 L.F. = 0.066 Mi
WORK LIMITS = STA. 95+42.00 TO STA. 113+10.00 = 1768.00 L.F. = 0.335 Mi

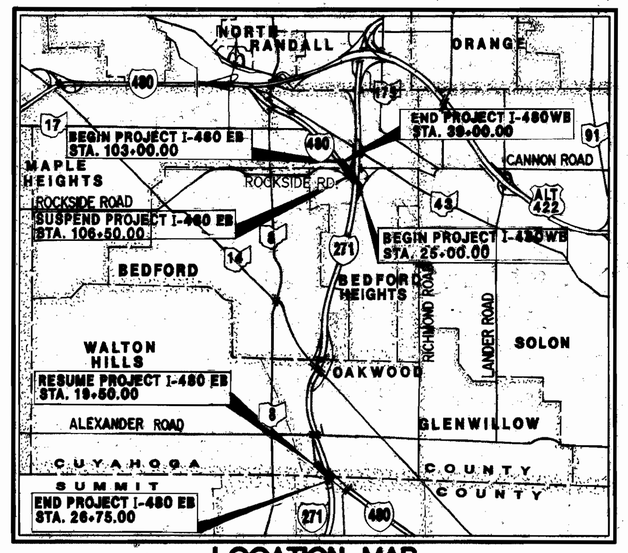
I-480 EASTBOUND (LANE N-14)

PROJECT LIMITS = STA. 19+50.00 TO STA. 26+75.00 = 725.00 L.F. = 0.137 Mi.
WORK LIMITS = STA. 19+25.00 TO STA. 30+10.00 = 1085.00 L.F. = 0.206 Mi.

I-480 WESTBOUND (LANE S-96)

PROJECT LIMITS = STA. 26+00.00 TO STA. 34+25.00 = 825.00 L.F.
STA. 35+35.00 TO STA. 39+00.00 = 365.00 L.F.
1190.00 L.F. = 0.225 Mi.
WORK LIMITS = STA. 22+65.00 TO STA. 46+58.00 = 2393.00 L.F. = 0.453 Mi.

TOTAL PROJECT LENGTH = 2265.00 L.F. = 0.429 Mi
TOTAL WORK LENGTH = 5246.00 L.F. = 0.994 Mi



LOCATION MAP

SCALE IN MILES
0 1 2 3 4

Portion to be improved
State & Federal Routes
Other roads

LATITUDE: N 41° 24' 30" N 41° 24' 25" N 41° 21' 0"
LONGITUDE: W 81° 30' 24" W 81° 30' 20" W 81° 30' 40"

LIMITED ACCESS

This improvement is especially designed for through traffic and has been declared a Limited Access Highway or Freeway by action of the Director in accordance with the provisions of Section 5511.02 of the Revised Code of Ohio.

1997 SPECIFICATIONS

The standard specifications of the State of Ohio, Department of Transportation, including changes and supplemental specifications listed in the proposal shall govern this improvement.

I hereby approve these plans and declare that the making of this improvement will not require the closing to traffic of the highway and that provisions for the maintenance and safety of traffic will be as set forth on the plans and estimates.

UNDER AUTHORITY OF SECTION 4511.21, DIVISION (1) OF THE REVISED CODE OF OHIO, THE REVISED PRIMA FACIE SPEED LIMITS AS INDICATED HEREIN ARE DETERMINED TO BE REASONABLE AND SAFE, AND ARE HEREBY ESTABLISHED FOR THE DURATION OF THIS PROJECT. THE PRIMA FACIE SPEED LIMIT OR LIMITS HEREBY ESTABLISHED SHALL BECOME EFFECTIVE WHEN APPROPRIATE SIGNS GIVING NOTICE THEREOF ARE ERECTED.

UNDERGROUND UTILITIES
TWO WORKING DAYS
BEFORE YOU DIG
Call---800-362-2764 (Toll Free)
OHIO UTILITIES PROTECTION SERVICE
NON-MEMBERS MUST BE CALLED DIRECTLY

SCALES

Plan 0 20' 40'
Profile: Horizontal 0 20' 40', Vertical 0 5' 10'
Cross Section: Horizontal 0 5' 10', Vertical 0 5' 10'

SUPPLEMENTAL SPECIFICATIONS			
NUMBER	DATE	NUMBER	DATE
806	9-9-97		
828	7-28-98		
830	10-21-98		
842	1-6-99		
843	5-5-98		
844	1-6-99		
846	9-9-97		
899	10-21-98		

Approved [signature]
Date 9/28/99 District Deputy Director Of Transportation

Approved Gordon Proctor [signature]
Date 2-18-99 Director, Department of Transportation

STATE OF OHIO EVA D. VARGAS E-51032 REGISTERED PROFESSIONAL ENGINEER

Plans Prepared By:
POLYTECH INC.
1744 PAYNE AVENUE
CLEVELAND, OHIO 44114
ENGINEERS • ARCHITECTS

SUPPLEMENTAL PRINTS OF STANDARD CONSTRUCTION DRAWINGS									
DRWG.	DATE	DRWG.	DATE	DRWG.	DATE	DRWG.	DATE	DRWG.	DATE
BP-1.1	2/21/92	GR-1.1M	10/21/97			TC-41.10	8/29/84	MT-95.40	10/01/92
BP-2.1M	10/21/97	GR-1.2M	1/3/96	MC-7	10/15/76	TC-41.20	6/21/94	MT-95.30	10/10/88
BP-2.2M	10/21/97	GR-1.3	2/21/92	MC-10	5/1/76	TC-52.10	4/3/79		
BP-2.3M	10/28/94	GR-2.1M	4/14/98			TC-52.20	4/3/79	MT-99.20	04/29/88
BP-2.5M	4/8/97	GR-3.1M	10/21/97			TC-21.20	9/1/92		
BP-3.1	2/21/92	GR-3.2M	10/21/97			TC-81.20	1/20/84		
BP-5.1	10/28/94	GR-4.2M	10/21/97	AS-1-81	9/15/94	TC 84.20	1/20/84	MT-101.60	07/01/92
BP-81.M	4/8/97			EXJ-4-87	2/14/97	TC-85.20	1/20/84		
CB-2.2M	7/12/95	HW-2.1M	7/12/95	PCB-91	4/24/92	HL-10.13	5/1/87	MT-105.10	07/01/92
				RB-1-55	2/2/59	HL-20.14	5/1/87	MT-105.11	07/01/92
DM-1.1M	10/21/97	RM-4.2M	6/30/95	BS-1-93	12/19/94	HL-30.11	5/1/87	MT-102.10	08/25/89
DM-1.2M	6/30/95	RM-4.3M	10/21/97	TC-35.10	8/29/84	HL-30.31	5/1/87		

DEPARTMENT OF TRANSPORTATION
FEDERAL HIGHWAY ADMINISTRATION

APPROVED:

DIVISION ADMINISTRATOR DATE

Project: CUY-480-25.76, PID 10468
Date of Letting _____ 19__ Contract No. _____

CUY-480-25.76
990281
DIST. 12
05-12-99
PID# 10468

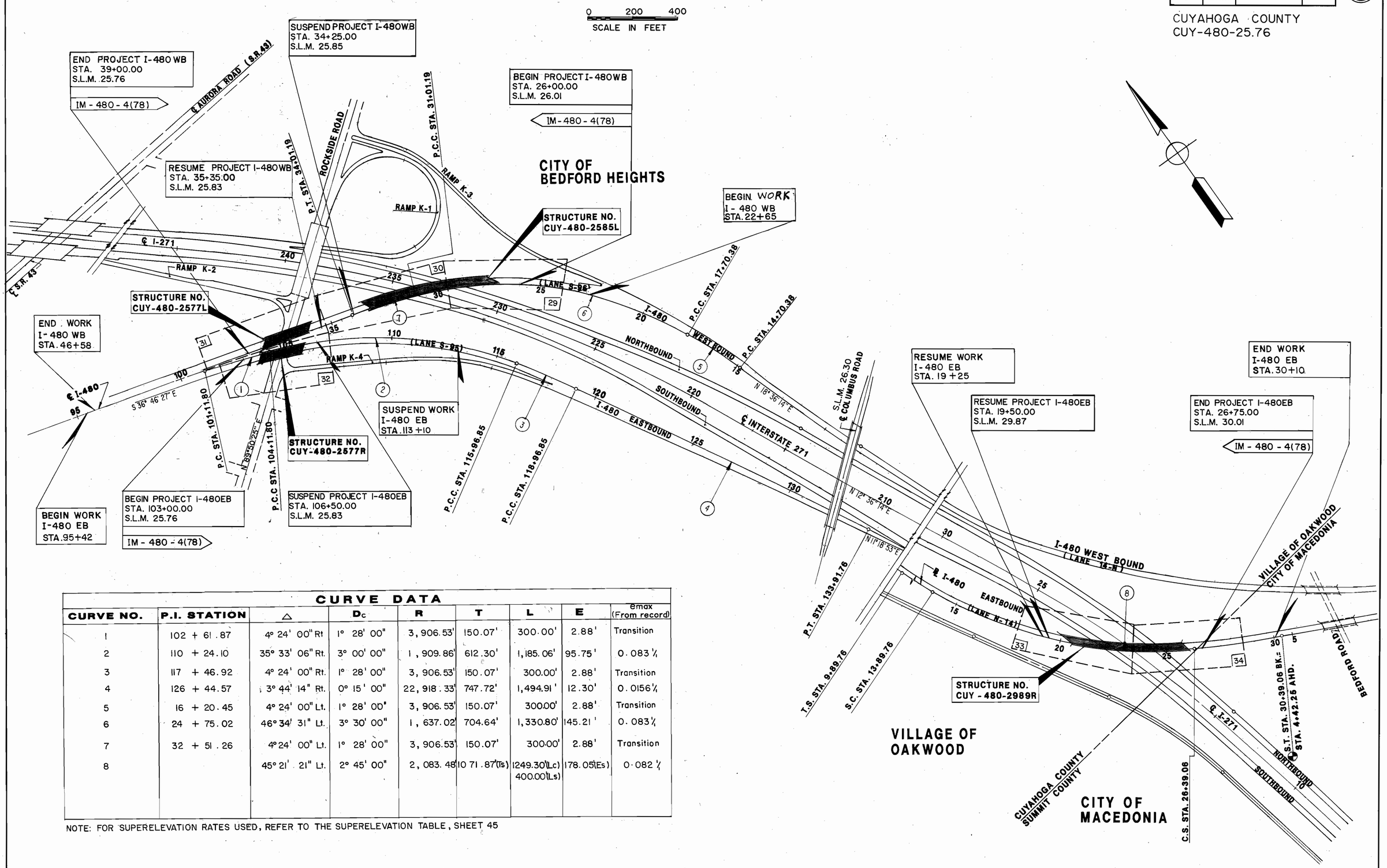
SCHEMATIC PLAN

FHWA REGION	STATE	PROJECT	
5	OHIO		

2 / 111

CUYAHOGA COUNTY
CUY-480-25.76

0 200 400
SCALE IN FEET



CURVE DATA

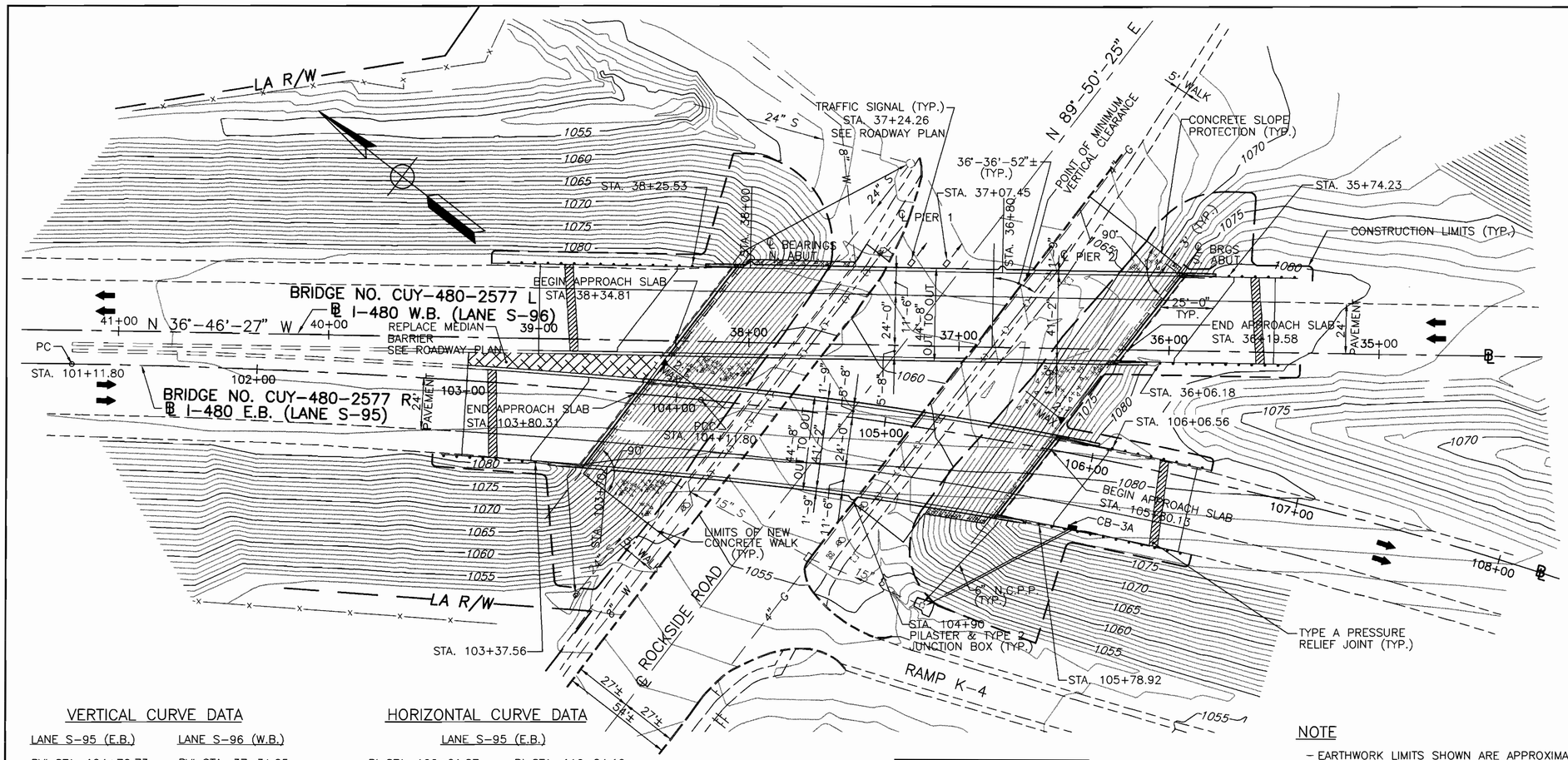
CURVE NO.	P.I. STATION	Δ	Dc	R	T	L	E	emax (From record)
1	102 + 61.87	4° 24' 00" Rt	1° 28' 00"	3,906.53'	150.07'	300.00'	2.88'	Transition
2	110 + 24.10	35° 33' 06" Rt.	3° 00' 00"	1,909.86'	612.30'	1,185.06'	95.75'	0.083 ft/ft
3	117 + 46.92	4° 24' 00" Rt.	1° 28' 00"	3,906.53'	150.07'	300.00'	2.88'	Transition
4	126 + 44.57	3° 44' 14" Rt.	0° 15' 00"	22,918.33'	747.72'	1,494.91'	12.30'	0.0156 ft/ft
5	16 + 20.45	4° 24' 00" Lt.	1° 28' 00"	3,906.53'	150.07'	300.00'	2.88'	Transition
6	24 + 75.02	46° 34' 31" Lt.	3° 30' 00"	1,637.02'	704.64'	1,330.80'	145.21'	0.083 ft/ft
7	32 + 51.26	4° 24' 00" Lt.	1° 28' 00"	3,906.53'	150.07'	300.00'	2.88'	Transition
8		45° 21' 21" Lt.	2° 45' 00"	2,083.48'	1071.87' (Ts)	1249.30' (Lc) 400.00' (Ls)	178.05' (Es)	0.082 ft/ft

NOTE: FOR SUPERELEVATION RATES USED, REFER TO THE SUPERELEVATION TABLE, SHEET 45

FHWA REGION	STATE	PROJECT	
5	OHIO		

56/111

CUYAHOGA COUNTY
CUY-480-25.76



PLAN

VERTICAL CURVE DATA

LANE S-95 (E.B.)

PVI STA. 104+72.73
PVI EL. 1082.1318
G1 = -0.08 %
G2 = -0.96 %
M = -0.308'
L = 280.00'

LANE S-96 (W.B.)

PVI STA. 37+31.25
PVI EL. 1082.2738
G1 = +1.10 %
G2 = +0.22 %
M = -0.308'
L = 280.00'

HORIZONTAL CURVE DATA

LANE S-95 (E.B.)

PI STA. 102+61.87
Δ = 4°-24'-00" RT.
D = 1°-28'-00"
R = 3906.53'
T = 150.07'
L = 300.00'
E = 2.88'

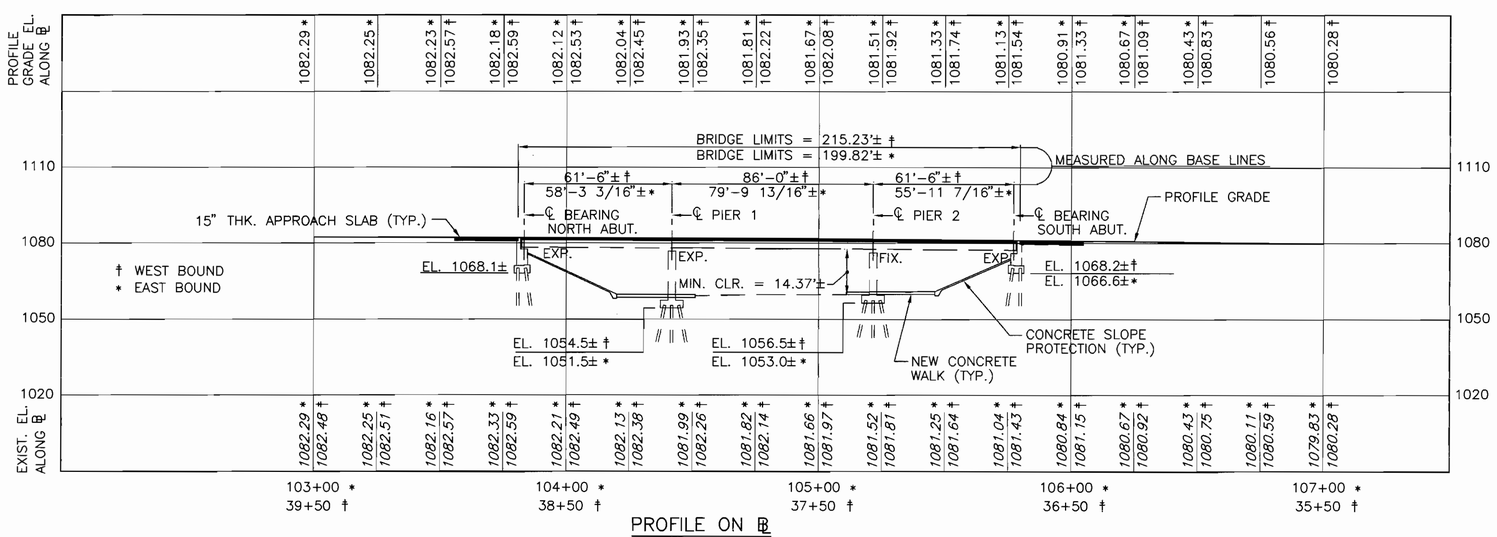
PI STA. 110+24.10
Δ = 35°-33'-06" RT.
D = 3°-00'-00"
R = 1909.86'
T = 612.30'
L = 1185.06'
E = 95.75'

BENCH MARK

T.B.M. ON IRON MONUMENT
℄ I-271 STA. 235+00.00
EL. 1042.63

NOTE

- EARTHWORK LIMITS SHOWN ARE APPROXIMATE ACTUAL SLOPES SHALL CONFORM TO PLAN CROSS SECTIONS
- THE MINIMUM REQUIRED VERTICAL CLEARANCE = 14.50'
  THE MINIMUM ACTUAL VERTICAL CLEARANCE = 14.37'



PROFILE ON ℄

EXISTING STRUCTURES

TYPE:	CONTINUOUS STEEL BEAM W/REINFORCED CONC. DECK AND SUBSTRUCTURE
SPANS:	CUY-480-2577 L : 61'-6"±, 86'-0"±, 61'-6"± CUY-480-2577 R : 58'-3 3/16"±, 79'-9 13/16"±, 55'-11 7/16"± C/C BRGS.
ROADWAY WIDTH:	39'-10" TOE/TOE PARAPETS
LOAD FREQUENCY:	CF2000(57)
SKEW:	CUY-480-2577 L : 36'-36'-52" CUY-480-2577 R : VARIES
ALIGNMENT:	CUY-480-2577 L : TANGENT CUY-480-2577 R : 1°-28'-00" RIGHT AND 3°-00'-00" RIGHT
WEARING SURFACE:	1" MONOLITHIC CONCRETE
APPROACH SLABS:	AS-1-54 (25'-0" LONG)
YEAR BUILT:	1963
STRUCTURE FILE NO.:	1812734 1812726

PROPOSED STRUCTURES

PROPOSED WORK:	REPLACE DECK, BACKWALLS AND APPROACH SLABS AND RESET BEARINGS
TYPE:	CONTINUOUS COMPOSITE STEEL BEAM W/REINFORCED CONC. DECK AND SUB-STRUCTURE
SPANS:	CUY-480-2577 L : 61'-6"±, 86'-0"±, 61'-6"± CUY-480-2577 R : 58'-3 3/16"±, 79'-9 13/16"±, 55'-11 7/16"± C/C BRGS.
ROADWAY WIDTH:	41'-2" TOE/TOE PARAPETS
DESIGN LOADING:	HS20-44 CASE I AND ALTERNATE MILITARY LOADING
SKEW:	CUY-480-2577 L : 36'-36'-52" CUY-480-2577 R : VARIES
ALIGNMENT:	CUY-480-2577 L : TANGENT CUY-480-2577 R : 1°-28'-00" RIGHT AND 3°-00'-00" RIGHT
WEARING SURFACE:	1" MONOLITHIC CONCRETE
APPROACH SLABS:	AS-1-81 (25'-0" LONG)
SUPERELEVATION:	CUY-480-2577 L: TRANSITION CUY-480-2577 R: TRANSITION
LATITUDE:	41°-24'-30" N
LONGITUDE:	81°-30'-24" W

TRAFFIC DATA

CURRENT ADT (1996)	= 44,510
DESIGN YEAR ADT (2016)	= 57,860
DESIGN YEAR ADTT (2016)	= 8,679

POLYTECH, INC.
1744 PAYNE AVENUE CLEVELAND, OHIO 44114

1/16

SITE PLAN
BRIDGE NO. CUY-480-2577 L&R
OVER ROCKSIDE ROAD
CUY-480-2577 L STA. 36+19.58 TO STA. 38+34.81
CUY-480-2577 R STA. 103+80.31 TO STA. 105+80.13

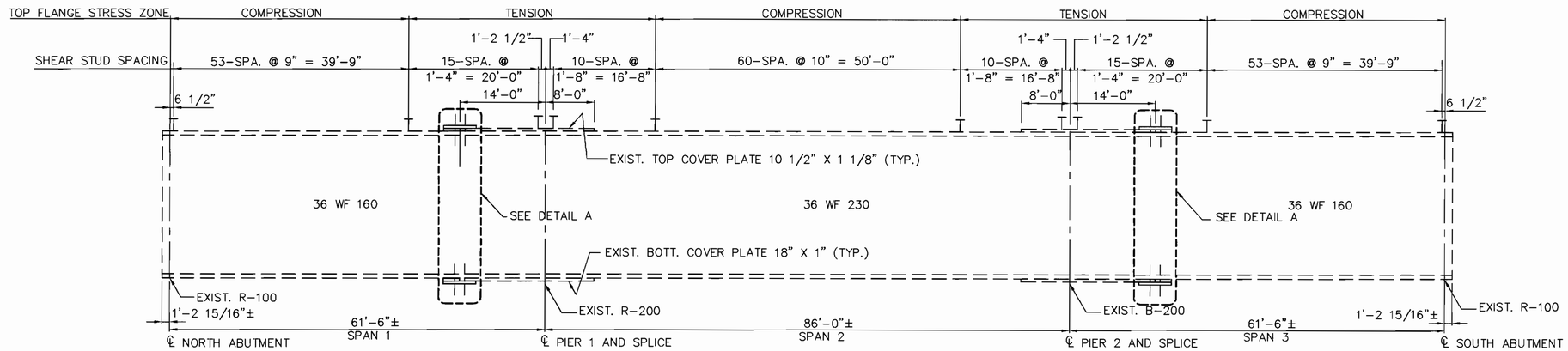
CUYAHOGA COUNTY OHIO

DESIGNED	DRAWN	TRACED	CHECKED	REVIEWED	DATE	REVISED
NK	NK	–	VKB	EDV	7/97	

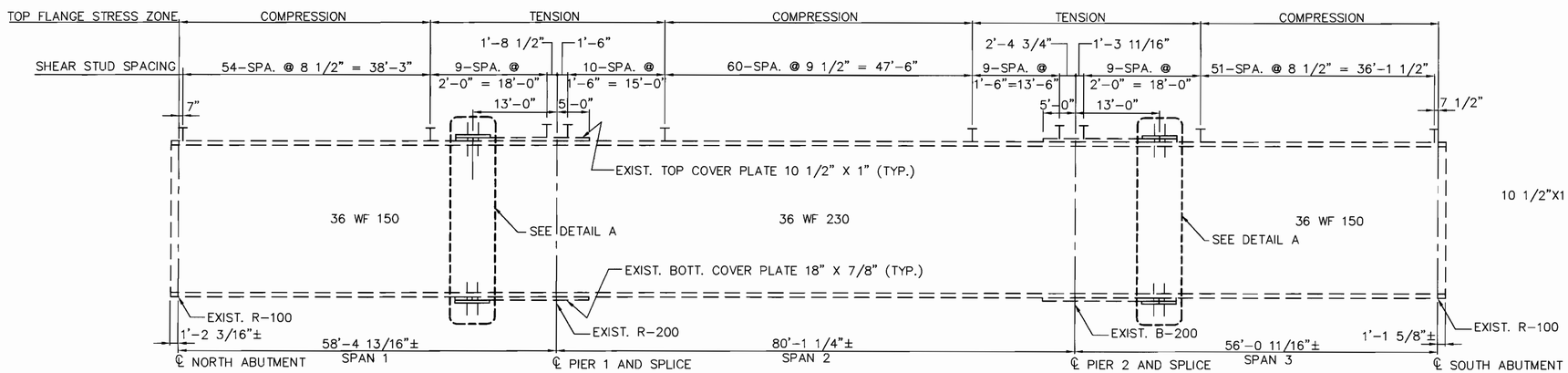
DRAWING = S-SITE2 DATE = JUNE 16, 1997

FHWA REGION	STATE	PROJECT	
5	OHIO		

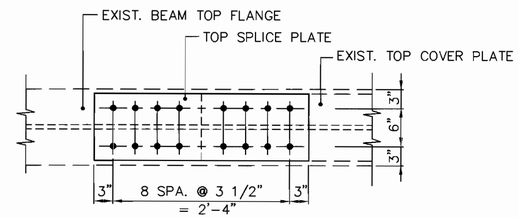
CUYAHOGA COUNTY
CUY-480-25.76



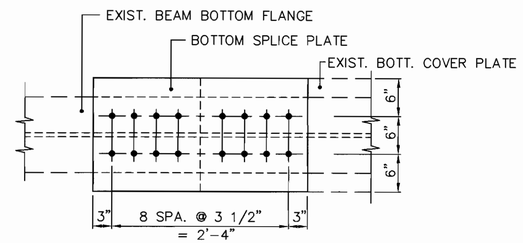
EXIST. BEAMS "A" THRU "F" ELEVATION (WEST BOUND)



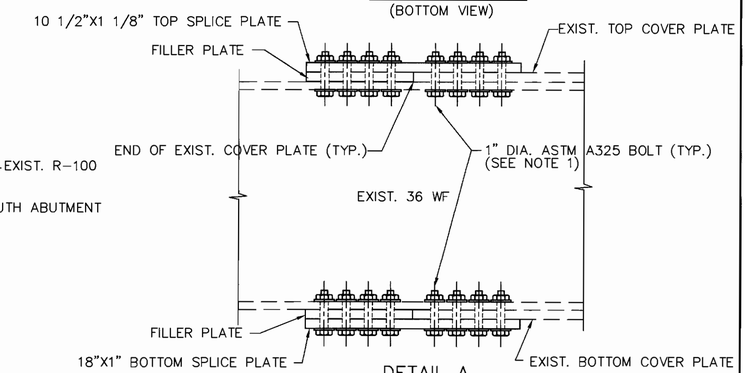
EXIST. BEAMS "G" THRU "M" ELEVATION (EAST BOUND)



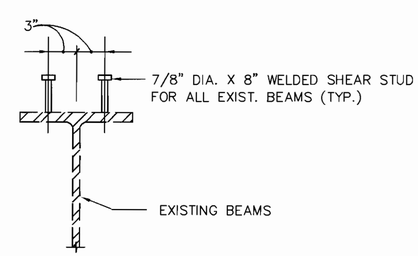
TOP FLANGE
(TOP VIEW)



BOTTOM FLANGE
(BOTTOM VIEW)



DETAIL A
(ELEVATION VIEW)



SHEAR STUD CONNECTOR DETAIL

NOTES:

1. HIGH STRENGTH BOLTS SHALL BE 1" DIAMETER A325, GALVANIZED, UNLESS OTHERWISE NOTED. THE BOLTS SHALL BE PLACED WITH THE HEADS ON THE BOTTOM OF ALL FLANGE PLATES.
2. WELDED ATTACHMENT OF SUPPORTS FOR CONCRETE DECK FINISHING MACHINE MAY BE MADE TO AREAS OF THE FASCIA STRINGER FLANGES DESIGNATED "COMPRESSION". ATTACHMENTS SHALL NOT BE MADE TO AREAS DESIGNATED "TENSION". FILLET WELDS TO COMPRESSION FLANGE SHALL NOT BE CLOSER THAN 1" FROM EDGE OF FLANGE, SHALL NOT BE MORE THAN 2" LONG, AND SHALL NOT BE SMALLER THAN THE MINIMUM SIZE REQUIRED BY AASHTO.
3. SCREED ELEVATION SHOWN ARE FOR THE DECK SLAB SURFACE PRIOR TO CONCRETE PLACEMENT. ALLOWANCE HAS BEEN MADE FOR ANTICIPATED CALCULATED DEAD LOAD DEFLECTION.

DECK SCREED ELEVATIONS FOR BRIDGE NO. CUY-480-2577 L (WEST BOUND)

LOCATION	SPAN 1				SPAN 2				SPAN 3				
	℄ BRG. NORTH ABUT.	1/4 SPAN	1/2 SPAN	3/4 SPAN	PIER 1	1/4 SPAN	1/2 SPAN	3/4 SPAN	PIER 2	1/4 SPAN	1/2 SPAN	3/4 SPAN	℄ BRG. SOUTH ABUT.
EAST SIDE GUTTER	1082.19	1082.14	1082.06	1081.96	1081.87	1081.75	1081.61	1081.42	1081.22	1081.15	1081.15	1081.13	1080.95
BEAM A	1082.21	1082.16	1082.08	1081.98	1081.89	1081.77	1081.63	1081.45	1081.24	1081.16	1081.16	1081.13	1080.96
BEAM B	1082.35	1082.31	1082.23	1082.14	1082.05	1081.93	1081.80	1081.61	1081.41	1081.29	1081.24	1081.17	1081.03
BEAM C	1082.50	1082.46	1082.38	1082.29	1082.20	1082.09	1081.96	1081.78	1081.59	1081.46	1081.35	1081.24	1081.11
℄ CONSTRUCTION	1082.63	1082.58	1082.52	1082.43	1082.34	1082.23	1082.10	1081.93	1081.74	1081.61	1081.48	1081.34	1081.16
BEAM D	1082.61	1082.57	1082.50	1082.42	1082.33	1082.22	1082.09	1081.92	1081.73	1081.60	1081.47	1081.33	1081.15
BEAM E	1082.51	1082.47	1082.41	1082.32	1082.24	1082.13	1082.01	1081.84	1081.65	1081.53	1081.40	1081.26	1081.09
BEAM F	1082.41	1082.37	1082.31	1082.23	1082.14	1082.05	1081.93	1081.76	1081.58	1081.46	1081.33	1081.19	1081.03
WEST SIDE GUTTER	1082.40	1082.36	1082.30	1082.22	1082.13	1082.04	1081.92	1081.75	1081.57	1081.45	1081.33	1081.19	1081.02

DECK SCREED ELEVATIONS FOR BRIDGE NO. CUY-480-2577 R (EAST BOUND)

LOCATION	SPAN 1				SPAN 2				SPAN 3				
	℄ BRG. NORTH ABUT.	1/4 SPAN	1/2 SPAN	3/4 SPAN	PIER 1	1/4 SPAN	1/2 SPAN	3/4 SPAN	PIER 2	1/4 SPAN	1/2 SPAN	3/4 SPAN	℄ BRG. SOUTH ABUT.
EAST SIDE GUTTER	1082.58	1082.57	1082.54	1082.49	1082.43	1082.35	1082.26	1082.13	1081.98	1081.89	1081.79	1081.68	1081.56
BEAM G	1082.47	1082.46	1082.42	1082.38	1082.34	1082.25	1082.16	1082.05	1081.94	1081.84	1081.75	1081.65	1081.53
BEAM H	1081.91	1081.88	1081.82	1081.76	1081.70	1081.61	1081.52	1081.41	1081.30	1081.20	1081.11	1081.00	1080.90
BEAM J	1081.37	1081.31	1081.24	1081.15	1081.07	1081.00	1080.89	1080.78	1080.67	1080.56	1080.46	1080.36	1080.25
BEAM K	1080.84	1080.76	1080.67	1080.56	1080.46	1080.34	1080.25	1080.14	1080.03	1079.92	1079.82	1079.72	1079.61
BEAM L	1080.32	1080.23	1080.11	1079.98	1079.86	1079.71	1079.62	1079.50	1079.39	1079.28	1079.18	1079.08	1078.96
BEAM M	1079.82	1079.71	1079.57	1079.42	1079.27	1079.08	1078.98	1078.87	1078.75	1078.65	1078.55	1078.44	1078.32
WEST SIDE GUTTER	1079.75	1079.64	1079.51	1079.35	1079.20	1079.04	1078.96	1078.84	1078.70	1078.62	1078.53	1078.43	1078.30

DRAWING = S-DECKEL DATE = JUNE 20, 1997

POLYTECH, INC. 14/16
1744 PAYNE AVENUE CLEVELAND, OHIO 44114

DECK SCREED ELEVATIONS
BRIDGE NO. CUY-480-2577 L&R
OVER ROCKSIDE ROAD

CUYAHOGA COUNTY OHIO

DESIGNED	DRAWN	TRACED	CHECKED	REVIEWED	DATE	REVISED
PSS	NK	–	VKB	BRS	7/97	