

DESIGN DESIGNATION

CURRENT A.D.T. (1990) 8929
 DESIGN YEAR A.D.T. (2010) 10,714
 D.H.V. 1071
 D (DIRECTIONAL DISTRIBUTION) 51%
 T (PERCENT B & C TRUCKS) 7%
 V (DESIGN SPEED) 35 M.P.H.
 LEGAL SPEED 35 M.P.H.
 FUNCTIONAL CLASSIFICATION PRINCIPAL ARTERIAL (URBAN)

DESIGN EXCEPTIONS

DESIGN EXCEPTIONS	APPROVAL DATE
STOPPING SIGHT DISTANCE	12-2-88
CROSS SLOPES & SUPERELEVATION	12-2-88 (SEE TABLE ON SHEET No. 2)

CONVENTIONAL SIGNS

COUNTY LINE	LIMITED ACCESS (only) LA
TOWNSHIP LINE	RIGHT OF WAY (only) R/W
SECTION LINE	FIBER OPTIC CABLE F.O.
CORPORATION LINE	EXISTING RIGHT OF WAY
FENCE LINE (EXISTING) X X (PROPOSED) X X	PROPERTY LINE (IN EXISTING FENCE) X X
CENTER LINE	RAILROAD
TREES STUMPS (TO BE REMOVED)	GUARDRAIL (EXISTING) (PROPOSED)
UTILITY POLES: TELEPHONE POWER LIGHT	CONSTRUCTION LIMITS
SIGNS (EXISTING) P P (PROPOSED) + +	TEMPORARY RIGHT OF WAY TEMP. R/W

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STATE OF OHIO

DEPARTMENT OF TRANSPORTATION NON-FEDERAL

RIC-13-15.81

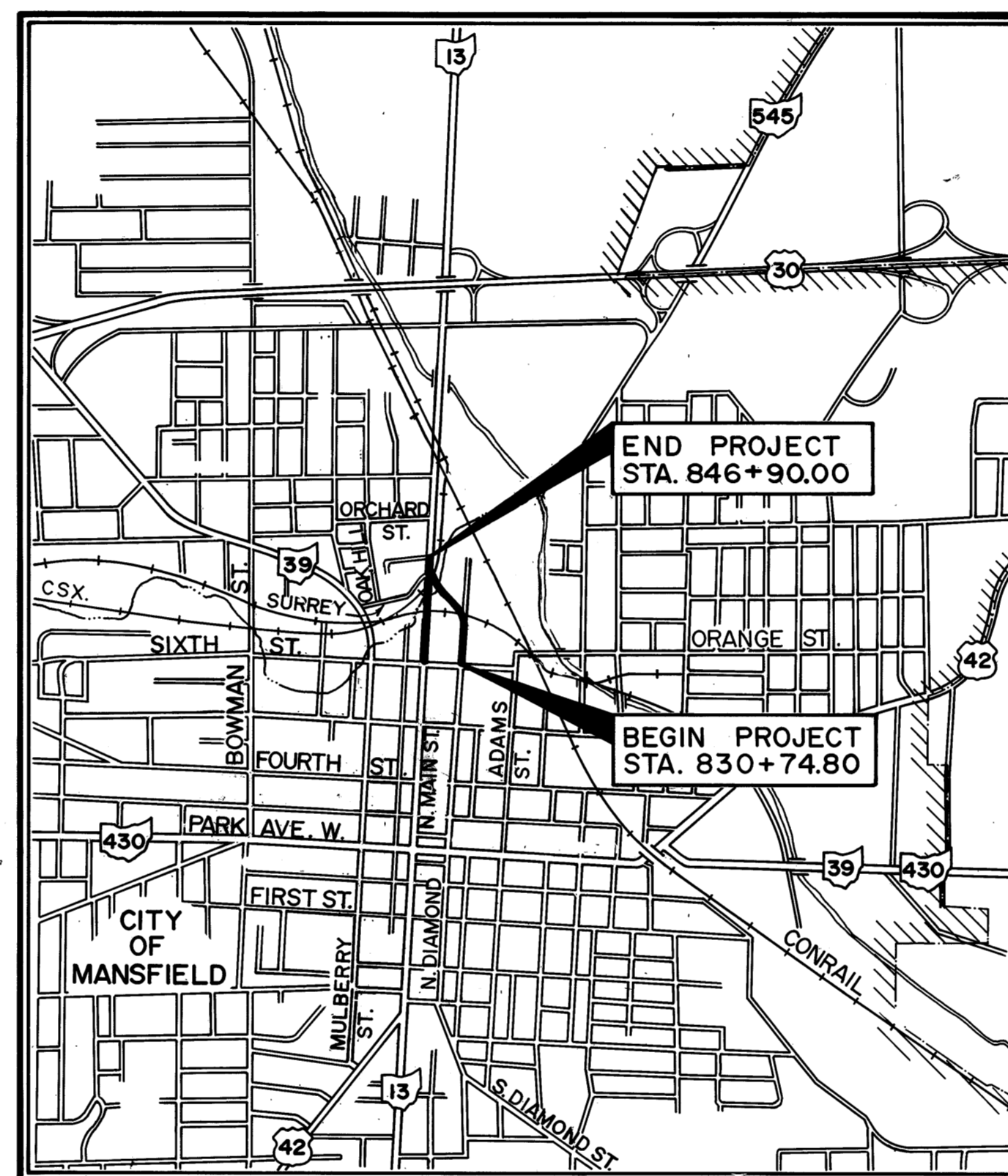
CITY OF MANSFIELD

RICHLAND COUNTY

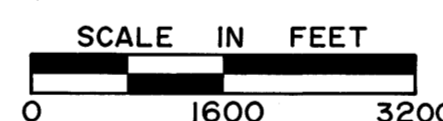
FHWA REGION	STATE	PROJECT
5	OHIO	

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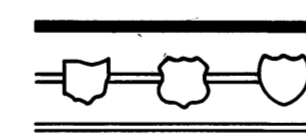
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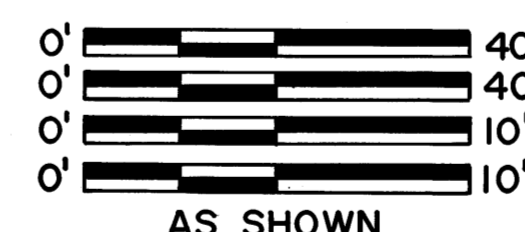
LOCATION MAP



PORTION TO BE IMPROVED
FEDERAL AND STATE HIGHWAYS
OTHER STREETS



PLAN
PROFILE - HORIZONTAL
PROFILE - VERTICAL
CROSS SECTIONS
OTHERS



UNDERGROUND UTILITIES
2 WORKING DAYS BEFORE YOU DIG
CALL 1-800-362-2764 (TOLL FREE)
OHIO UTILITIES PROTECTION SERVICE
NON-MEMBERS MUST BE CALLED DIRECTLY

LINE DATA					
PROJECT	BEGIN STATION	SUSPEND STATION	RESUME STATION	END STATION	LENGTH
					LIN. FT. MILE
	830+74.80	839+63.41	839+74.76	846+90.00	1582.55
		844+20.20	844+41.50		
TOTAL LENGTH OF PROJECT					1582.55 0.300
WORK	BEGIN STATION		END STATION		
NORTH DIAMOND STREET	825+70.00		845+42.91		1972.91
NORTH MAIN STREET	131+50.00				1399.51
STATION EQUATION	145+49.51/BK = 845+42.91/AH				
OLIVE STREET	5+97.21		9+15.19	847+00	157.09 317.98
TOTAL LENGTH OF WORK					3847.49 0.729

SUPPLEMENTAL PRINTS OF STANDARD CONSTRUCTION DRAWINGS							
BP-2	I-II-85	F-1	II-10-83	MT-97.10	4-29-88	AS-1-81	II-27-81
BP-4	10-1-87	I-2A	12-18-84	MT-99.10	11-14-86	PSBD-1-81	6-20-89
BP-5	10-1-87	HW-4B	4-1-80	MT-99.20	4-29-88	BR-2-82	11-1-82
BP-6	10-1-87			TC-41.20	3-26-79	EXJ-3-82	8-1-84
BP-7	10-1-87	MC-1	6-13-69	TC-41.40	6-18-79	BR-1	5-29-79
BP-12	10-1-87	MC-4	7-26-76	TC-41.50	3-26-79	DBR-2-73	4-10-73
		MC-II	8-1-78	TC-42.20	3-26-79		
CB2-2A & B	5-1-79			TC-52.10	4-3-79		
CB2-3 & 2-4	5-1-79	MH-1	12-18-84	TC-52.20	4-3-79		
CB-3	5-1-79	MT-3	12-18-84				
CB-3A	5-1-79	MT-3	6-12-75				
CB-6	5-1-79						

SUPPLEMENTAL SPECIFICATIONS	
802	4-13-90
814	1-21-88
836	11-12-85
847	10-17-83
849	12-24-85
915	1-21-88
947	10-17-83
949	9-26-86

1989 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 REQUIRE THE CLOSING TO TRAFFIC OF THE HIGHWAY AND THAT DETOURS WILL BE PROVIDED AS INDICATED ON THE PLANS.

APPROVED DATE 6/28/90 *Jerry M. Long* DISTRICT DEPUTY DIRECTOR OF TRANSPORTATION

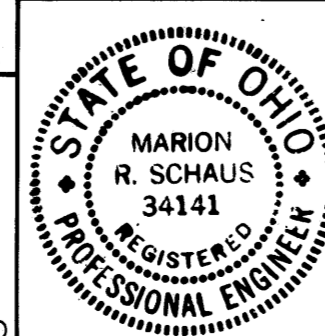
APPROVED DATE 8/20/90 *B.D. Halverson/WTC* ENGINEER, BUREAU OF BRIDGES AND STRUCTURAL DESIGN

APPROVED DATE 9/14/90 *Chadwick J. Fitt* CHIEF ENGINEER, PLANNING AND DESIGN

APPROVED DATE 9/14/90 *Bernard B. Hurst* DIRECTOR, DEPARTMENT OF TRANSPORTATION

PROJECT RIC-13-15.81 RICHLAND COUNTY
DATE OF LETTING 19 CONTRACT NO.

PREPARED AND RECOMMENDED BY
K.M. K.E. MCCARTNEY & ASSOCIATES
CONSULTING ENGINEERS MANSFIELD, OHIO



SCHEMATIC PLAN

QUANTITIES		F.H.W.A. REGION	STATE	PROJECT	2 133
CALCULATED	M.R.S. 11-21-89	5	OHIO		
CHECKED	T.L.L. 6-90				

DESIGN DESIGNATION

CURRENT A.D.T. (1990)	8929
DESIGN YEAR A.D.T. (2010)	10,714
D.H.V.	1071
D (Directional Distribution)	51%
T (Percent B & C Trucks)	7%
V (Design Speed)	35 M.P.H.
LEGAL SPEED	35 M.P.H. (Sideroads 25 M.P.H.)
FUNCTIONAL CLASSIFICATION	Principal Arterial (Urban)

DESIGN EXCEPTIONS			
Date Approved: 12-2-88			
ITEM	DESIGN SPEED	PROPOSED	REQUIRED
Vertical Alignment			
P.V.I. Sta. 140+00 (Crest)	35 M.P.H.	S.S.D. 205'	S.S.D. 225'
P.V.I. Sta. 141+25 (Sag)	35 M.P.H.	S.S.D. 215'	S.S.D. 225'
Superelevation			
Sta. 839+70±	35 M.P.H.	0 - R.R. Tracks	0.027 Ft./Ft.
Sta. 844+25±	35 M.P.H.	0 - R.R. Tracks	0.027 Ft./Ft.
Surrey Rd. Sta. 7+75 to Sta. 9+27.79	25 M.P.H.	0.0208 Ft./Ft. - 0 R.R. Tracks	0.04 Ft./Ft.
Surrey Rd. Sta. 10+02.54 to Sta. 11+41.04	25 M.P.H.	0	0.025 Ft./Ft.
Ohio Brass Rd. Sta. 10+44.92 to Sta. 11+42.09	25 M.P.H.	0	0.025 Ft./Ft.
Cross Slopes			
Sta. 139+50±	35 M.P.H.	0 - R.R. Tracks	0.0156 Ft./Ft.
Sta. 144+00±	35 M.P.H.	0 - R.R. Tracks	0.0156 Ft./Ft.

UTILITY OWNERSHIP

Sanitary Sewers:

Water Lines:

Overhead Fire Alarm Signal Cable:

City of Mansfield
30 North Diamond St.
Mansfield, Ohio 44902

Overhead & Underground Telephone Cables:

United Telephone Company of Ohio
25 South Mulberry St.
Mansfield, Ohio 44902

Overhead Electric:

Ohio Edison Company
76 South Main St.
Akron, Ohio 44308

Underground Fiber Optic Cable:

A.T. & T. Interstate Division
Central Region
1 Wacker Drive
Chicago, Illinois 60606

Underground Gas Lines:

Columbia Gas of Ohio
1120 West Fourth St.
P.O. Box 1328
Mansfield, Ohio 44901

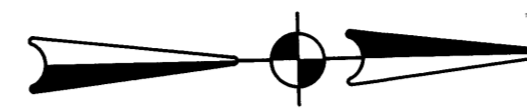
Underground Telegraph Cable:

MCI COMMUNICATIONS CORP.
2400 LAKESIDE BLVD.
SUITE 480
RICHARDSON, TEXAS 75085
(214) 918-4129

Overhead Cable Television:

Adelphia Cable Communications, Inc.
1575 Lexington Ave.
Mansfield, Ohio 44907

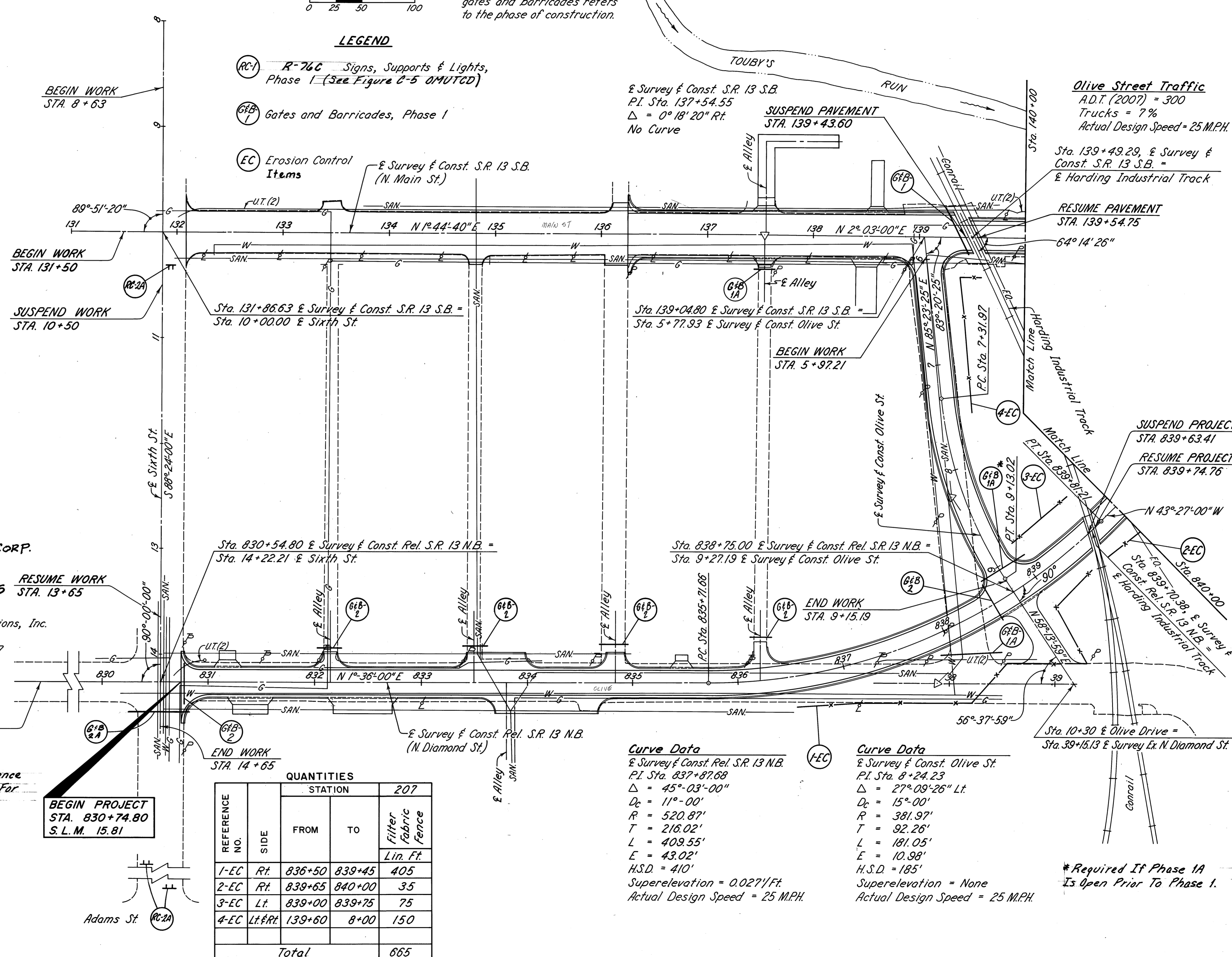
For Additional Maintenance Of Traffic Requirements For Phase 2A See Street 13.



NOTE: Numerical designation beside R-76C sign or gates and barricades refers to the phase of construction.

LEGEND

- (RC-1) R-76C Signs, Supports & Lights, Phase 1 (See Figure 2-5 OMTUCD)
- (GB) Gates and Barricades, Phase 1
- (EC) Erosion Control Items



REFERENCE NO.	SIDE	STATION		Filter fabric Fence Lin. Ft.
		FROM	TO	
1-EC	Rt.	836+50	839+45	405
2-EC	Rt.	839+65	840+00	35
3-EC	Lt.	839+00	839+75	75
4-EC	Lt. & Rt.	139+60	8+00	150
Total				665

Curve Data

& Survey & Const. Rel. S.R. 13 N.B.
P.I. Sta. 837+87.68
Δ = 45°-03'-00"
D_c = 11°-00'
R = 520.87'
T = 216.02'
L = 409.55'
E = 43.02'
H.S.D. = 410'
Superelevation = 0.027'/Ft.
Actual Design Speed = 25 M.P.H.

Curve Data

& Survey & Const. Olive St.
P.I. Sta. 8+24.23
Δ = 27°-09'-26" Lt.
D_c = 15°-00'
R = 381.97'
T = 92.26'
L = 181.05'
E = 10.98'
H.S.D. = 185'
Superelevation = None
Actual Design Speed = 25 M.P.H.

* Required If Phase 1A Is Open Prior To Phase 1.

SCHEMATIC PLAN

QUANTITIES	
CALCULATED	M.R.S. 11-21-89
CHECKED	T.L.L. 6-90

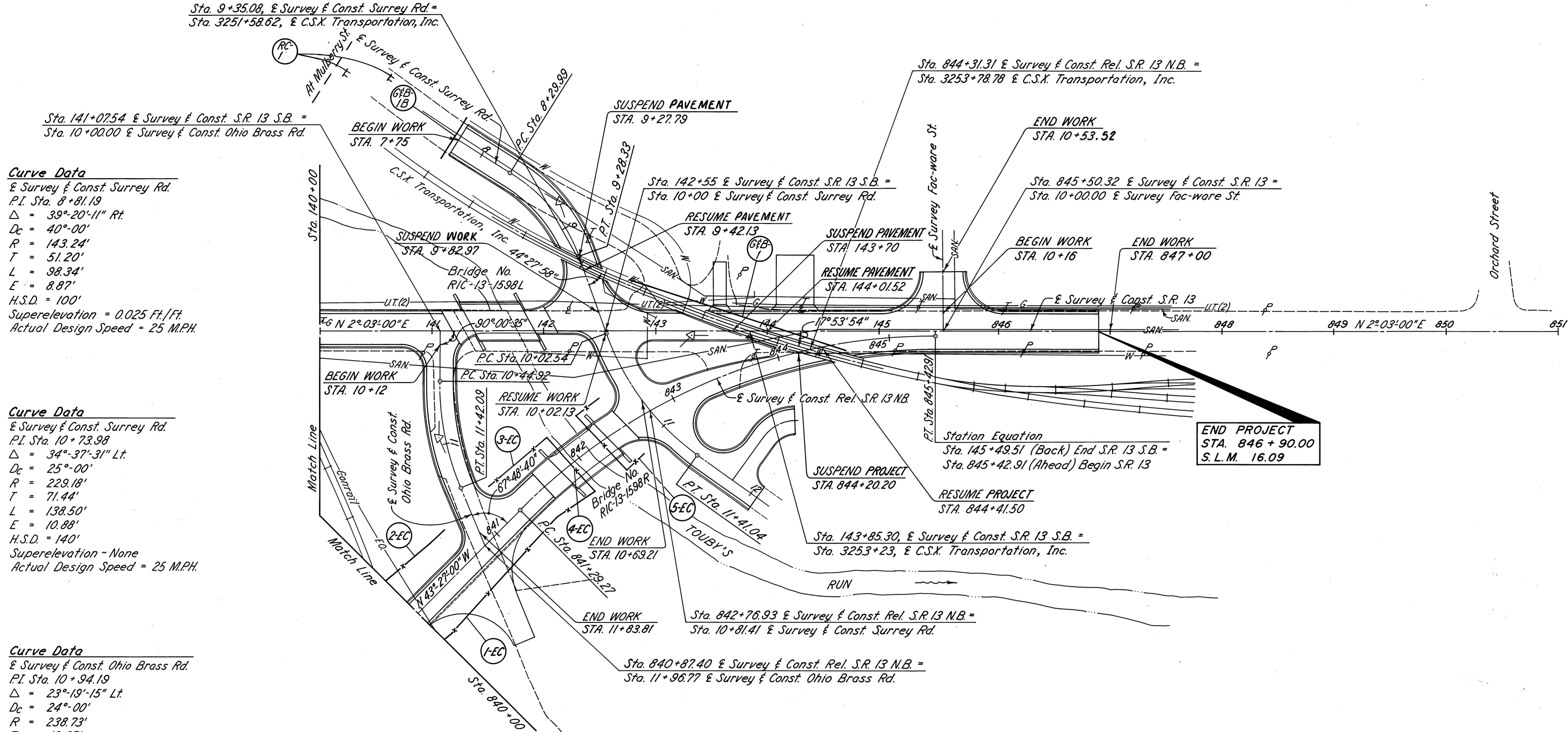
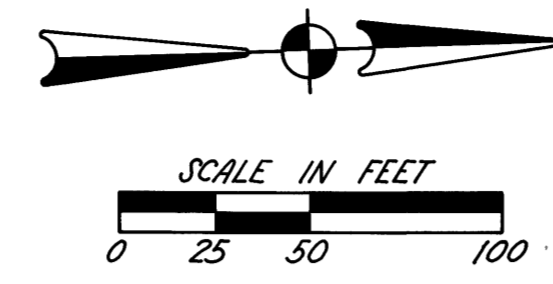
F.H.W.A. REGION	STATE	PROJECT
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RIC-13-15.81
CITY OF MANSFIELD
RICHLAND COUNTY

Ohio Brass Road Traffic
A.D.T. (2007) = 790
Trucks = 7 %
Actual Design Speed = 25 M.P.H.

Surrey Road Traffic
A.D.T. (2007) = 1230
Trucks = 7 %
Actual Design Speed = 25 M.P.H.



Curve Data
E Survey & Const. Surrey Rd.
P.I. Sta. 8+81.19
 $\Delta = 39^{\circ}20'11''$ Rt.
 $D_c = 40^{\circ}00'$
 $R = 143.24'$
 $T = 51.20'$
 $L = 98.34'$
 $E = 8.87'$
 $H.S.D. = 100'$
Superelevation = 0.025 Ft./Ft.
Actual Design Speed = 25 M.P.H.

Curve Data
E Survey & Const. Surrey Rd.
P.I. Sta. 10+73.98
 $\Delta = 34^{\circ}37'31''$ Lt.
 $D_c = 25^{\circ}00'$
 $R = 229.18'$
 $T = 71.44'$
 $L = 138.50'$
 $E = 10.88'$
 $H.S.D. = 140'$
Superelevation - None
Actual Design Speed = 25 M.P.H.

Curve Data
E Survey & Const. Ohio Brass Rd.
P.I. Sta. 10+94.19
 $\Delta = 23^{\circ}19'15''$ Lt.
 $D_c = 24^{\circ}00'$
 $R = 238.73'$
 $T = 49.27'$
 $L = 97.17'$
 $E = 5.03'$
 $H.S.D. = 100'$
Superelevation - None
Actual Design Speed = 25 M.P.H.

Curve Data
E Survey & Const. Rel. S.R. 13 N.B.
P.I. Sta. 843+47.69
 $\Delta = 45^{\circ}30'$ Rt.
 $D_c = 11^{\circ}00'$
 $R = 520.87'$
 $T = 218.42'$
 $L = 413.64'$
 $E = 43.94'$
 $H.S.D. = 415'$
Superelevation = 0.027 Ft./Ft.
Actual Design Speed = 35 M.P.H.

END PROJECT
STA. 846 + 90.00
S. L. M. 16.09

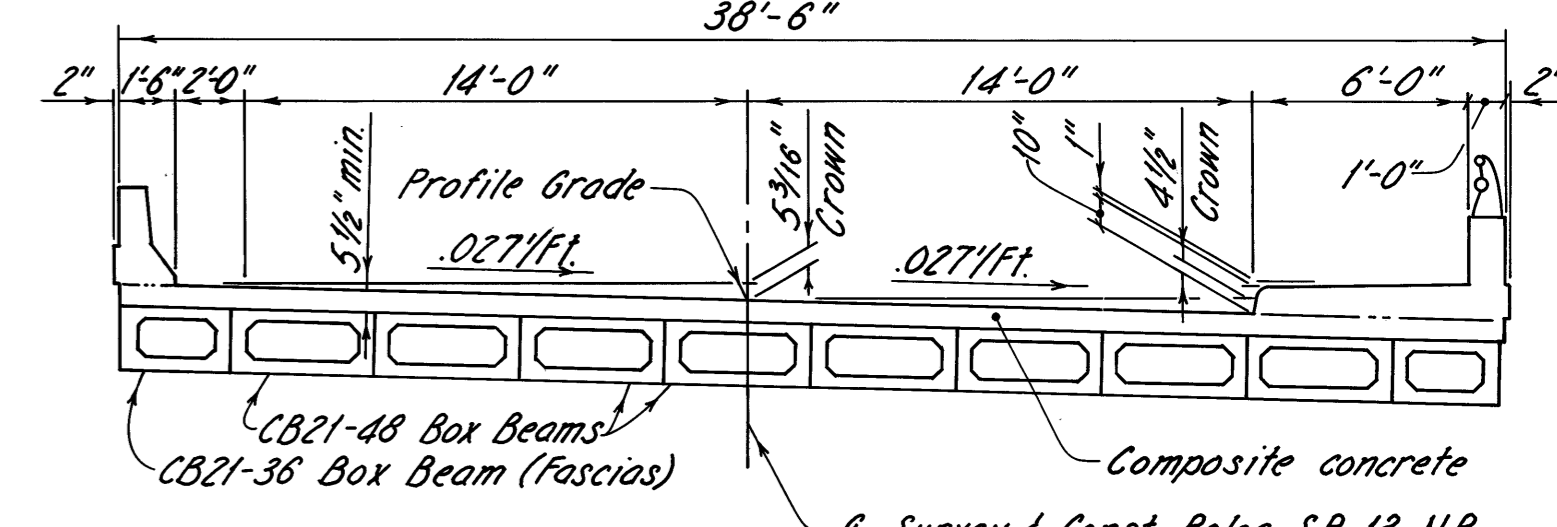
QUANTITIES				
REFERENCE NO.	SIDE	STATION		Filter Fabric Fence Lin. Ft.
		FROM	TO	
1-EC	Rt.	840+00	841+85	185
2-EC	Lt.	840+00	840+70	70
3-EC	Lt.	841+25	841+90	65
4-EC	Lt.	841+90		65
5-EC	Lt.	842+20	842+45	115
Total				500

For legend see sheet no. 2.

B.M. - N.E. corner of concrete base of Brick Marquee.
Sta. 9+00, 72' Lt. & Surrey Rd.
Elev. = 1157.46

F.H.W.A. REGION	STATE	PROJECT	114
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RIC-13-15.81
CITY OF MANSFIELD
RICHLAND COUNTY



TRANSVERSE SECTION

LOCATION:
Mansfield North Quadrangle, Madison Township,
Richland County, City of Mansfield
N. 40° 46' 11.56" W. 82° 31' 05.0"

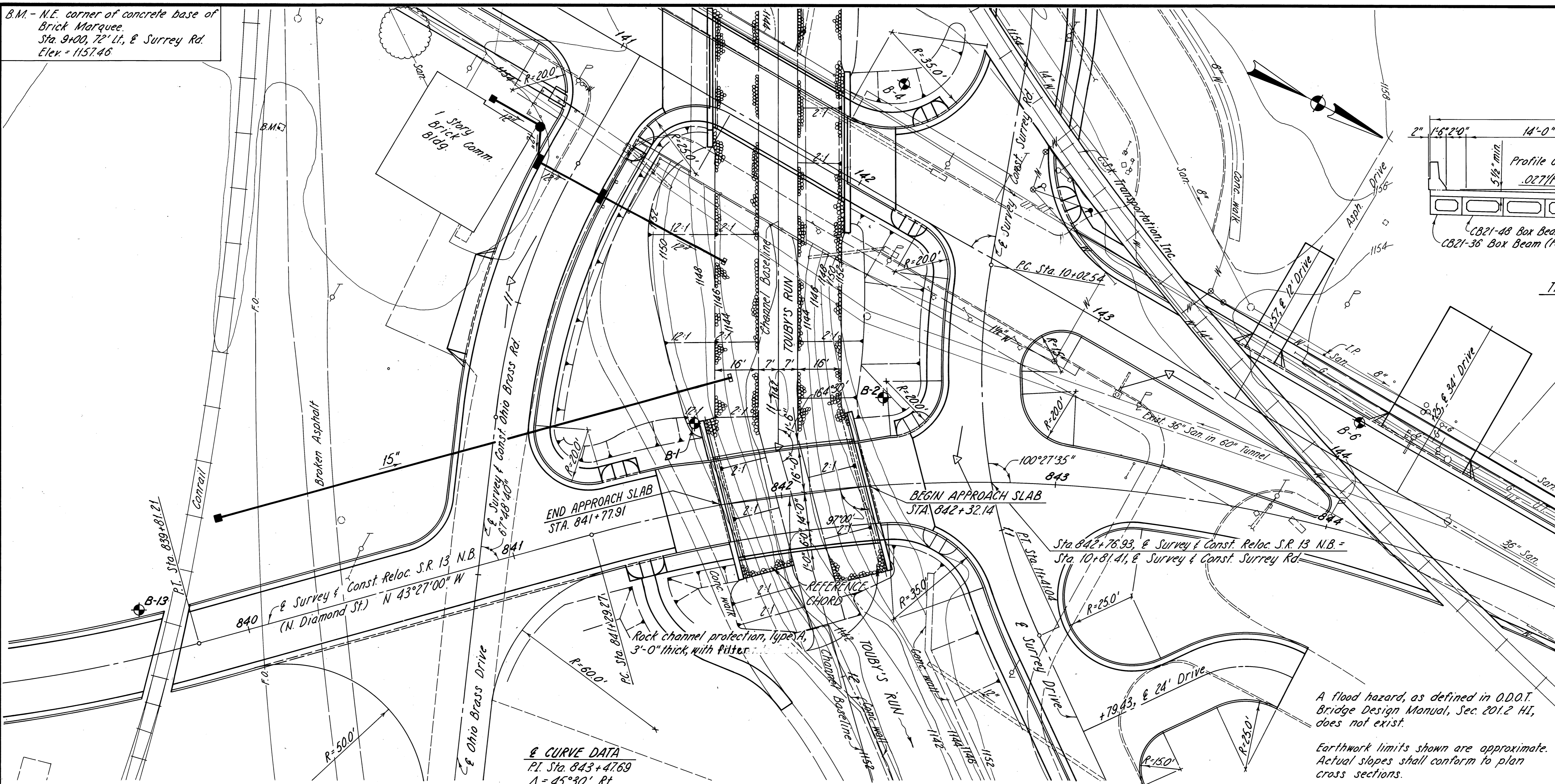
HYDRAULICS:
Drainage area: 9.15 Sq. Miles
Slope (0.01 to 0.85) = 0.0075 F³/ft = 39.54 F³/mile
Local slope: 0.0036 F³/ft = 19.01 F³/mile
Q₂₅ = 1625 C.F.S. Q₁₀₀ = 2400 C.F.S.
V₂₅ = 6.43 F³/sec. V₁₀₀ = 7.37 F³/sec.
A₂₅ = 252.9 Sq. Ft. A₁₀₀ = 325.8 Sq. Ft.
BW₂₅ = 0.18 Ft. BW₁₀₀ = 0.32 Ft.

NEAREST EXISTING STRUCTURE

LOCATION: 130' west (Upstream) at S.R. 13 S.B. (N. Main Street)
TYPE: Temporary timber trestle, treated timber deck, treated timber pile substructure
SPANS: 3 @ 18' 6"; 48'-4" % deck
ROADWAY: 36'-0" ft of 10'-9" sidewalks; 58'-0" % deck
LOADING: H-15
SKEW: 30° 00' R.F.
WEARING SURFACE: Asphalt concrete
APPROACH SLABS: None known
ALIGNMENT: Tangent
HEIGHT - GRADE TO STREAM BED: 10' ±
HEIGHT - GRADE TO HIGH WATER: 1.0' ±
APPROX. WIDTH BETWEEN BANKS: 40'
CHANNEL DEPTH: 10' ±
NATURE OF BOTTOM: Sand and gravel
CONDITION: Poor (Built in 1942)
STR. FILE NO. 7000545

PROPOSED STRUCTURE

TYPE: Prestressed concrete box beams with 5/8" composite deck on capped pile abutments
SPAN: 50'-0" % bearings
ROADWAY: 30' toe of deflector parapet (Lt) to face of 6' sidewalk (Rt.)
LOADING: HS20-44 and the Alternate Military Loading
SKEW: 7° 00' R.F. to reference chord
WEARING SURFACE: Monolithic concrete
APPROACH SLABS: AS-1-81 (20' long)
ALIGNMENT: 11° 00' curve to right
SUPERELEVATION: 0.027 F³/ft
AVERAGE DAILY TRAFFIC: P-A-4982, B-C-375
Total = 5357 (2009)



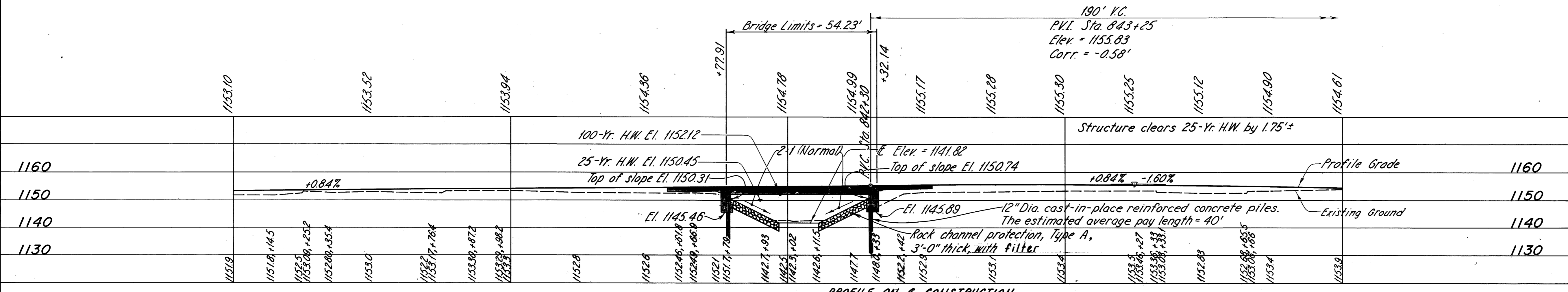
PLAN

CURVE DATA
P.I. Sta. 843+47.69
Δ = 45° 30' Rt.
D_c = 11° 00'
R = 520.87'
T = 218.42'
L = 413.64'
E = 43.94'

A flood hazard, as defined in O.D.O.T. Bridge Design Manual, Sec. 201.2 HI, does not exist.

Earthwork limits shown are approximate. Actual slopes shall conform to plan cross sections.

B-1: Indicates core boring location

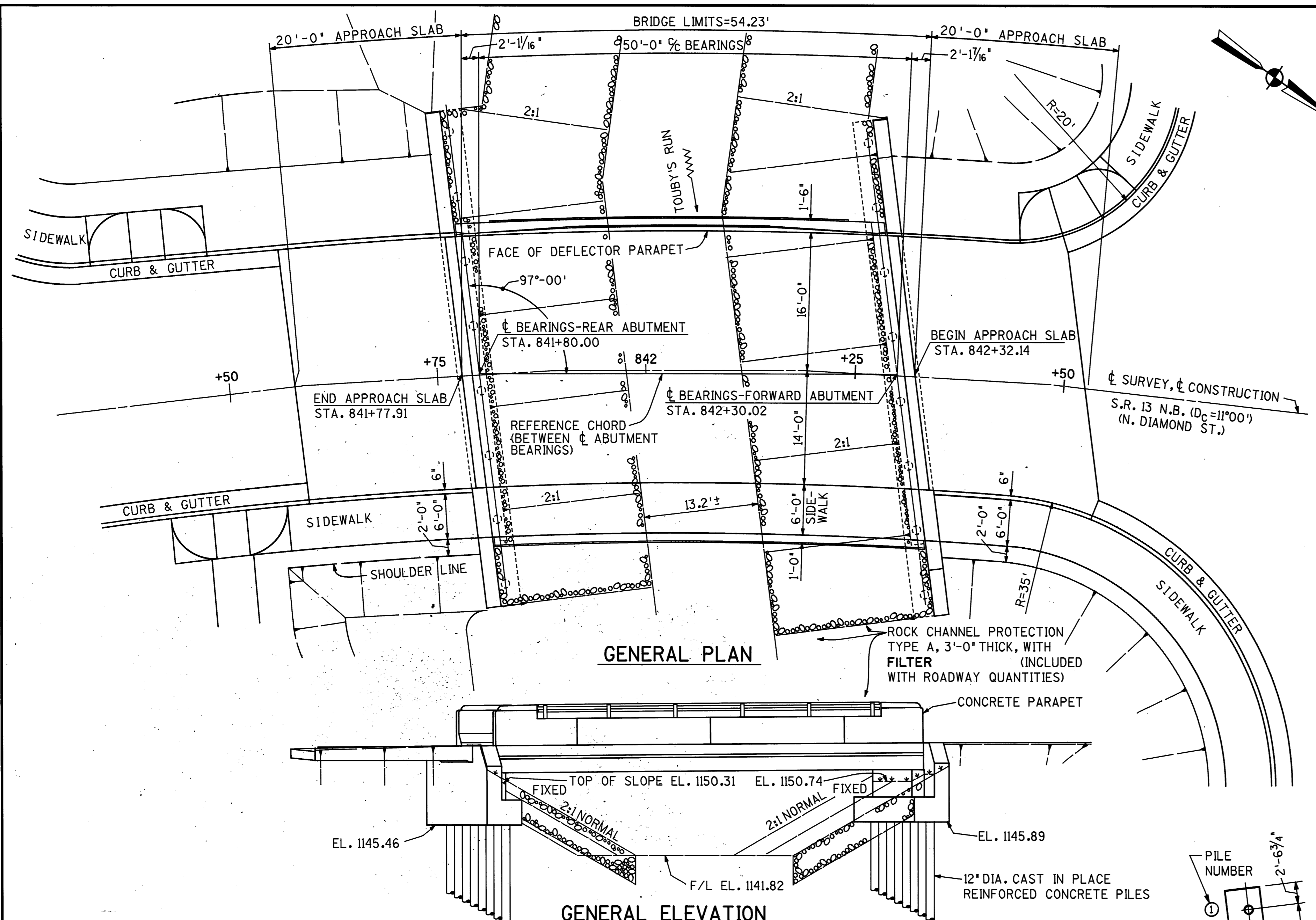


PROFILE ON & CONSTRUCTION

KEM K.E. MCCARTNEY & ASSOCIATES
MANSFIELD, OHIO

SITE PLAN
BRIDGE NO. RIC-13-1598R
OVER TOUBY'S RUN
RICHLAND COUNTY STA. 841+77.91
TO
CITY OF MANSFIELD STA. 842+32.14

PRESENT	TOPOGRAPHY	PROPOSED	WORK
SURVEYED K.E.M. A.S.S.O.C.	DRAWN K.S.M.	DESIGNED R.A.K.	CHECKED L.J.S. REVIEWED M.R.S. 8-17-89



GENERAL NOTES

F.H.W.A. REGION	STATE	PROJECT	
5	OHIO		

RIC-13-15.81
CITY OF MANSFIELD
RICHLAND COUNTY

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REFERENCE SHALL BE MADE TO STANDARD DRAWINGS:
AS-1-81 (DATED 11-27-81)
PSBD-1-81, SHEETS 1-4 (REVISED 6-20-89)
BR-1 (DATED 5-29-79)
BR-2-82 (DATED 11-1-82)
EXJ-3-82 (REVISED 8-1-84)
DBR-2-73 (DATED 4-10-73)

AND TO SUPPLEMENTAL SPECIFICATIONS:
836 (DATED 11-12-85) 849 (DATED 12-24-85)
949 (DATED 9-26-86)

DESIGN SPECIFICATIONS: THIS STRUCTURE CONFORMS TO "STANDARD SPECIFICATIONS FOR HIGHWAY BRIDGES" ADOPTED BY THE AMERICAN ASSOCIATION OF STATE HIGHWAY AND TRANSPORTATION OFFICIALS, 1989 AND THE OHIO "SUPPLEMENT" TO THESE SPECIFICATIONS.

DESIGN DATA
DESIGN LOADING - HS20-44 AND THE ALTERNATE MILITARY LOADING
CONCRETE, CLASS "S" - COMPRESSIVE STRENGTH 4500 P.S.I. FOR SUPERSTRUCTURE EXCEPT BOX BEAMS
CONCRETE, CLASS "C" - COMPRESSIVE STRENGTH 4000 P.S.I. FOR SUBSTRUCTURE
REINFORCING STEEL - ASTM A615, A616 OR A617 - GRADE 60, MINIMUM YIELD STRENGTH 60,000 P.S.I., GRADE 40, MINIMUM YIELD STRENGTH 40,000 P.S.I. PERMITTED FOR BOX BEAMS ONLY.
CONCRETE FOR PRESTRESSED CONCRETE BEAMS-UNIT STRESS 2200 P.S.I. COMPRESSION, 444 P.S.I. TENSION.
STRESS-RELIEVED PRESTRESSING STRAND-ASTM A416-f's = 270,000 P.S.I., INITIAL STRESS = 0.70 f's, 7-WIRE, A_s = .153 in²

DECK PROTECTION METHOD: CLASS "S" CONCRETE, EPOXY COATED REINFORCING STEEL, AND SEALING OF CONCRETE SURFACES.

REMOVAL OF EXISTING STRUCTURE: WHEN NO LONGER NEEDED TO MAINTAIN TRAFFIC, THE EXISTING STRUCTURE SHALL BE REMOVED IN STAGES ACCORDING TO THE PLANS AND TO THE LIMITS DESCRIBED IN THE CMS, SECTION 202.03. SUITABLE WASTE MASONRY MAY BE PLACED AS BANK PROTECTION AS DIRECTED BY THE ENGINEER.

UTILITY LINES: ALL EXPENSE INVOLVED IN RELOCATING THE AFFECTED UTILITY LINES SHALL BE BORNE BY THE OWNERS. THE CONTRACTOR AND THE OWNERS ARE REQUESTED TO COOPERATE BY ARRANGING THEIR WORK IN SUCH A MANNER THAT INCONVENIENCE TO EITHER WILL BE HELD TO A MINIMUM.

ITEM SPECIAL, SEALING OF CONCRETE SURFACES: A CONCRETE SEALER SHALL BE APPLIED TO THE SURFACES SHOWN ON SHEETS 377, 477 AND 577. SEE THE PROPOSAL FOR SURFACE PREPARATION REQUIREMENTS, APPLICATION RATES, MATERIAL REQUIREMENTS AND APPLICATION PROCEDURES.

EMBANKMENT CONSTRUCTION: THE EMBANKMENTS SHALL BE CONSTRUCTED TO THE LEVEL OF THE SUBGRADE. EXCAVATION MAY THEN BE MADE FOR THE ABUTMENTS AND PILES DRIVEN.

MONOLITHIC WEARING SURFACE IS ASSUMED, FOR DESIGN PURPOSES, TO BE 1" THICK.

ABUTMENT PILING: ABUTMENT PILING BENDING STRESS MAY APPROACH, REACH OR EXCEED YIELD STRESS.

REINFORCING STEEL LIST: SEE SHEET 777.

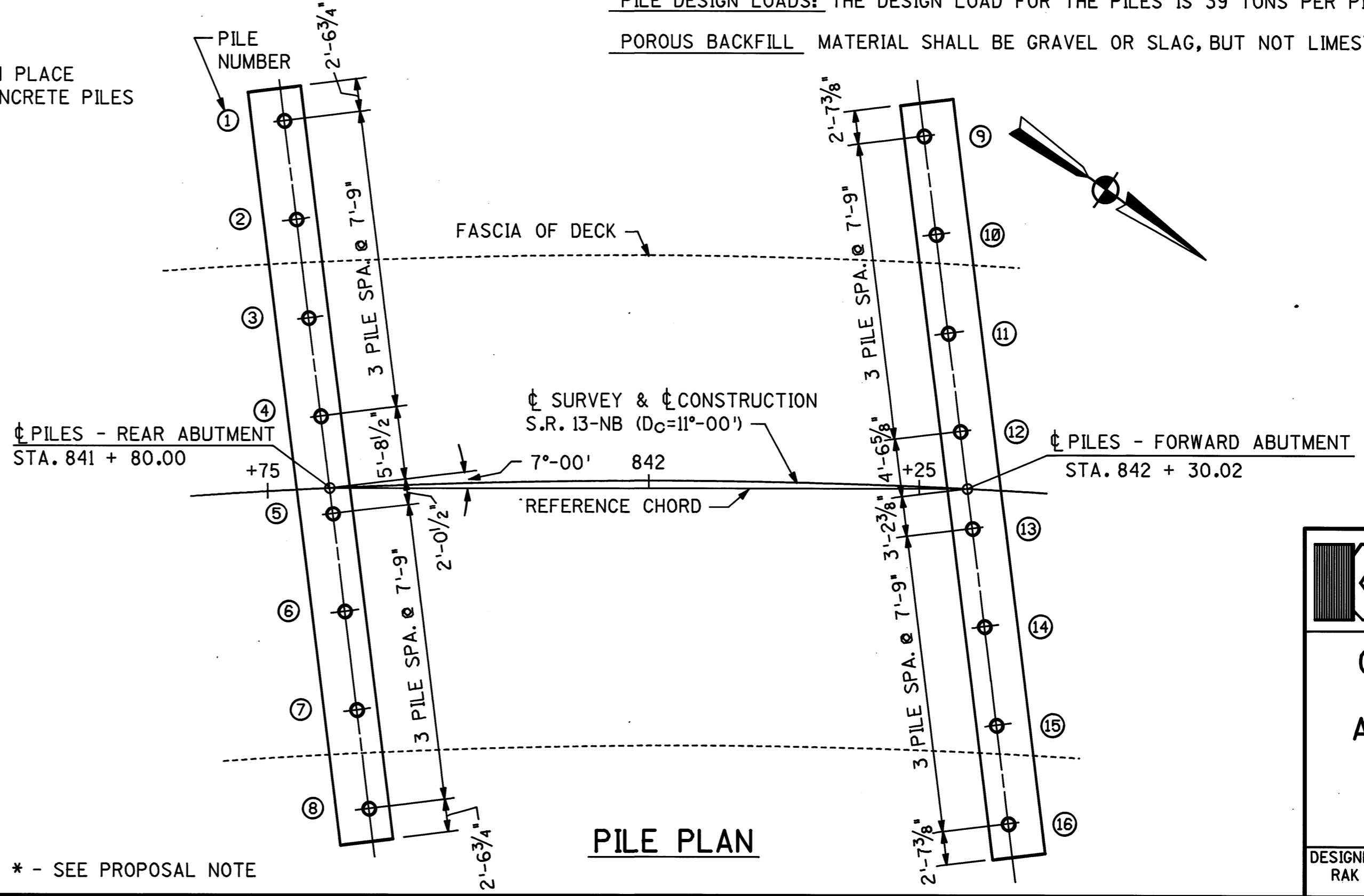
1/8" PREFORMED BEARING PAD SHIMS, 8" X 8" IN PLAN AREA, SHALL BE PLACED ON TOP OF BEARINGS WHERE REQUIRED FOR PROPER BEARING, 2 SHIMS PER BEAM. SHIMS NOT USED SHALL BECOME PROPERTY OF THE STATE.

PILE DESIGN LOADS: THE DESIGN LOAD FOR THE PILES IS 39 TONS PER PILE

POROUS BACKFILL MATERIAL SHALL BE GRAVEL OR SLAG, BUT NOT LIMESTONE

ESTIMATED QUANTITIES CALC'D. BY RAK 2-25-90 CHK'D. BY MRS 3-22-90

ITEM	ITEM EXT.	TOTAL	UNIT	DESCRIPTION	SUPER.	ABUTS.	GEN'L
202	11002	LUMP		STRUCTURES REMOVED			LUMP
503	11100	LUMP		COFFERDAMS, CRIBS AND SHEETING			LUMP
503	21100	LUMP		UNCLASSIFIED EXCAVATION		LUMP	
505	11100	LUMP		PILE DRIVING EQUIPMENT MOBILIZATION		LUMP	
507	22200	640	LIN. FT.	12" DIA. CAST-IN-PLACE REINFORCED CONCRETE PILES		640	
509	12400	5764	LB.	REINFORCING STEEL, GRADE 60		5764	
509	15800	8202	LB.	EPOXY COATED REINFORCING STEEL, GRADE 60	4684	3518	
511	45100	120	CU. YD.	CLASS C CONCRETE, ABUTMENTS		120	
511	31600	55	CU. YD.	CLASS S CONCRETE, SUPERSTRUCTURE	55		
515	52500	2	EACH	PRESTRESSED CONCRETE BRIDGE MEMBERS, CB21-36, 51'-0 1/16" LENGTH *	2		
515	54100	8	EACH	PRESTRESSED CONCRETE BRIDGE MEMBERS, CB21-48, 51'-0 1/16" LENGTH *	8		
516	10500	74	LIN. FT.	STRUCTURAL EXPANSION JOINTS INCLUDING ELASTOMERIC COMPRESSION SEALS		74	
516	41200	9	SQ. FT.	1/8" PREFORMED BEARING PADS, 711.21			9
516	43100	40	EACH	LAMINATED ELASTOMERIC BEARINGS (1" X 8" X 8" ELASTOMERIC PADS), 50 DUROMETER			40
517	71500	51.17	LIN. FT.	RAILING (CONCRETE PARAPET WITH DOUBLE PIPE RAIL)	51.17		
518	21101	41	CU. YD.	POROUS BACKFILL, AS PER PLAN		41	
SPEC.	51261500	149	SQ. YD.	SEALING OF CONCRETE SURFACES *	146	3	
SPEC.	51261502	20	SQ. YD.	SEALING OF CONCRETE SURFACES (EPOXY) *		20	



K.E. McCARTNEY & ASSOCIATES
MANSFIELD, OHIO

GENERAL PLAN, ELEVATION, NOTES AND ESTIMATED QUANTITIES

BRIDGE NO. RIC-13-1598 R
OVER TOUBY'S RUN

DESIGNED: RAK DRAWN: RAK TRACED: DDD CHECKED: HGS REVIEWED: MRS DATE: 03-90 REVISED:

* - SEE PROPOSAL NOTE

RIC-13-15.81
CITY OF MANSFIELD
RICHLAND COUNTY

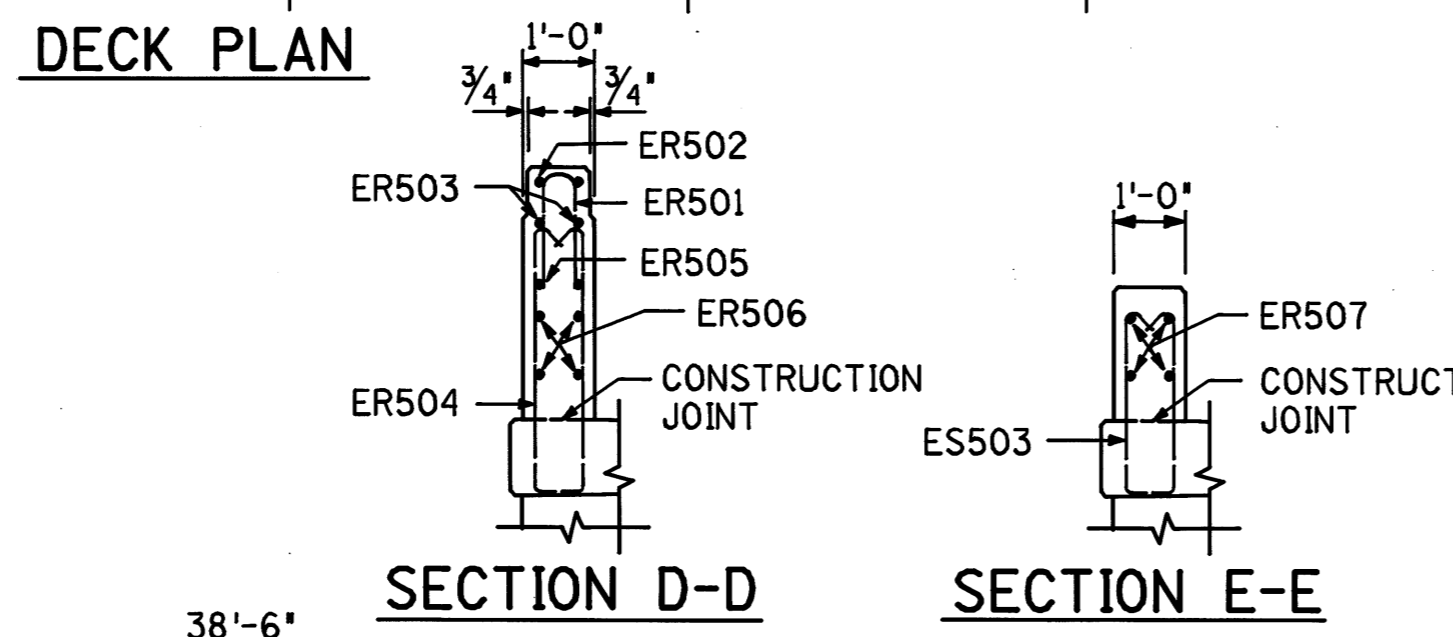
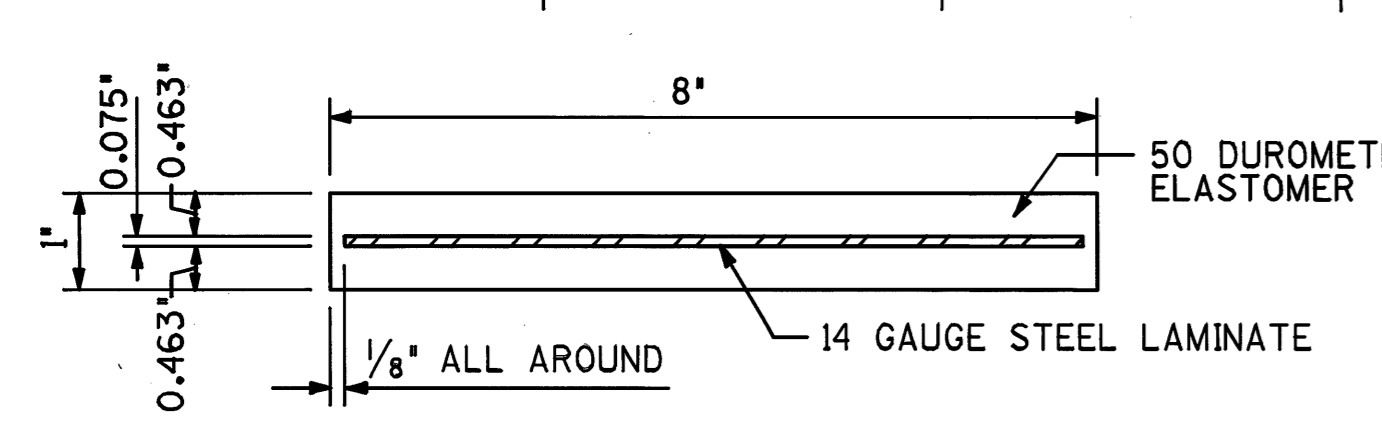
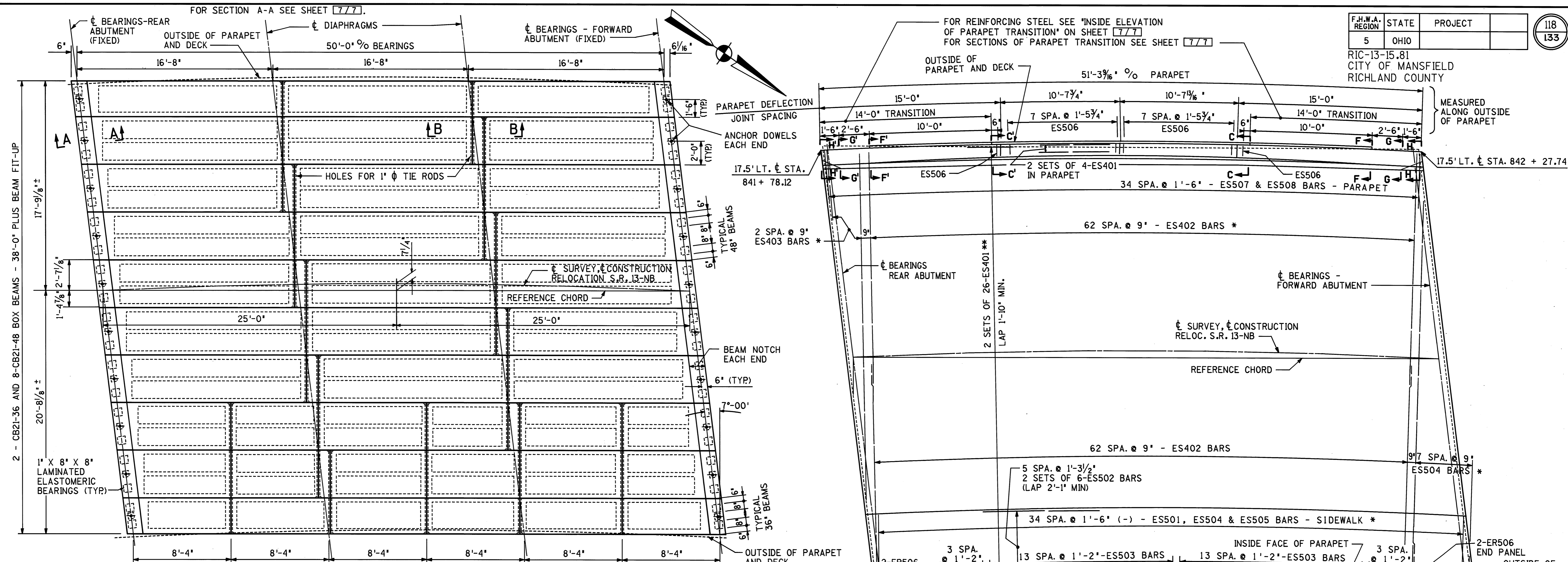
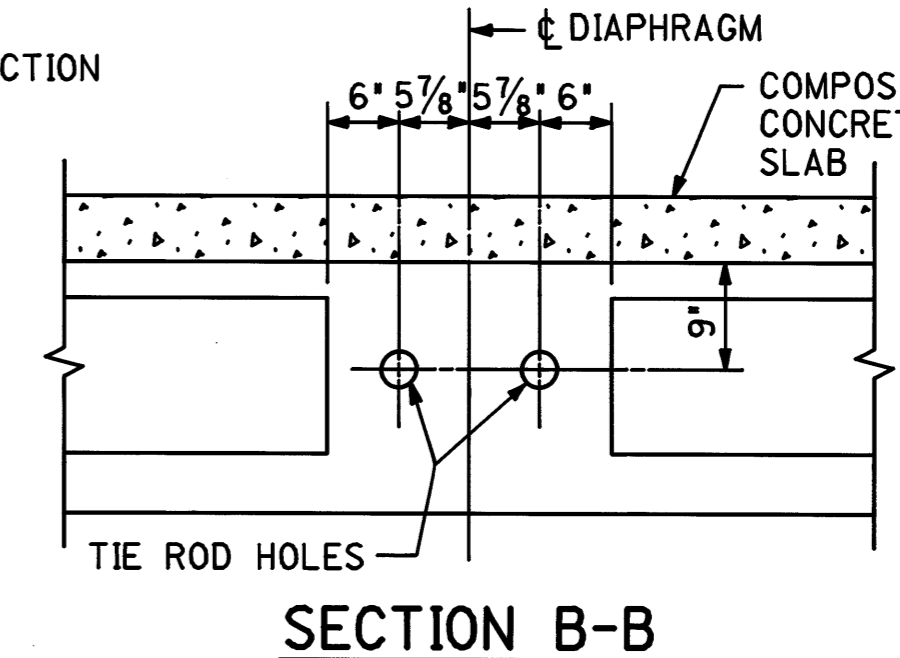
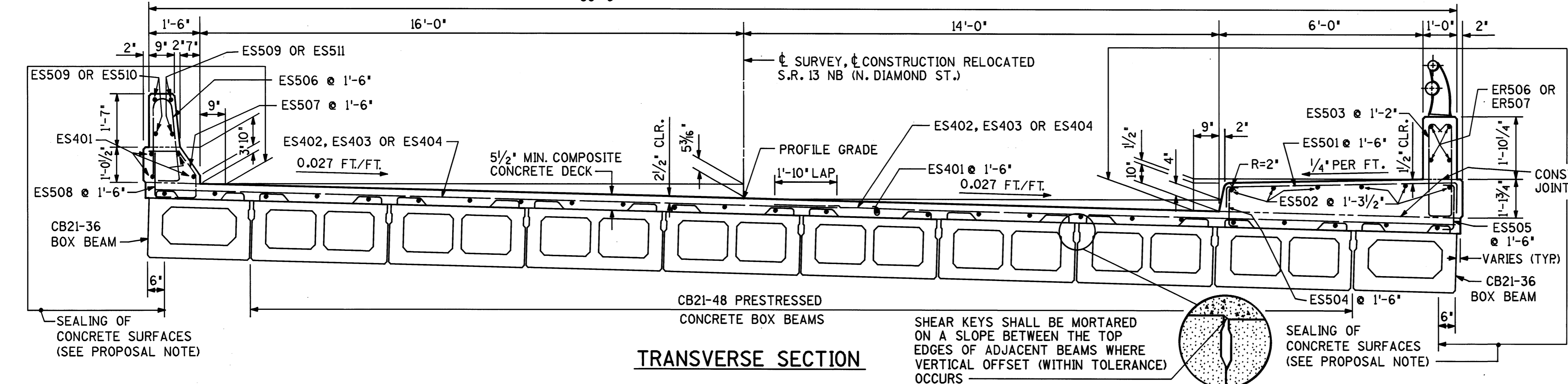


TABLE OF DECK ELEVATIONS

	STATION	LEFT CURB LINE	PROFILE GRADE	RIGHT CURB LINE
BEARING - REAR ABUTMENT	841 + 78.85	841 + 80.00	841 + 81.07	841 + 81.07
1/4 SPAN	841 + 90.97	841 + 92.50	841 + 93.92	841 + 93.92
MIDSPAN	842 + 03.10	842 + 05.01	842 + 06.78	842 + 06.78
3/4 SPAN	842 + 15.23	842 + 17.51	842 + 19.64	842 + 19.64
BEARING - FORWARD ABUTMENT	842 + 27.35	842 + 30.02	842 + 32.49	842 + 32.49



5/7
K.E. McCARTNEY & ASSOCIATES
MANSFIELD, OHIO

SUPERSTRUCTURE - 1
BRIDGE NO. RIC-13-1598 R
OVER TOUBY'S RUN

DESIGNED	DRAWN	TRACED	CHECKED	REVIEWED	DATE	REVISED
RAK	RAK	DDD	HGS	MRS	03-90	

SUPERSTRUCTURE NOTES

RAILING AND PARAPETS: SEE STANDARD DRAWINGS BR-1 AND BR-2-82

CAMBER
CALCULATED CAMBER AT TIME OF PAVING, INCLUDING ALLOWANCE FOR CAMBER GROWTH DUE TO CREEP IS 1/16" FOR 36" BEAMS AND 1/8" FOR 48" BEAMS. CALCULATED DEFLECTION DUE TO WEIGHT OF COMPOSITE CONCRETE, SIDEWALKS AND PARAPETS IS 1/2" FOR 36" AND 48" BEAMS. THIS IS 3/16" FOR 36" BEAMS AND 3/8" FOR 48" BEAMS IN EXCESS OF THE AMOUNT REQUIRED TO PLACE THE TOP OF THE BEAM PARALLEL TO PROFILE GRADE. THIS EXCESS SHALL BE COMPENSATED FOR BY THICKENING THE COMPOSITE CONCRETE DECK FROM 5/2" TO 6/16" FOR 36" BEAMS AND 6/8" FOR 48" BEAMS AT THE ENDS.

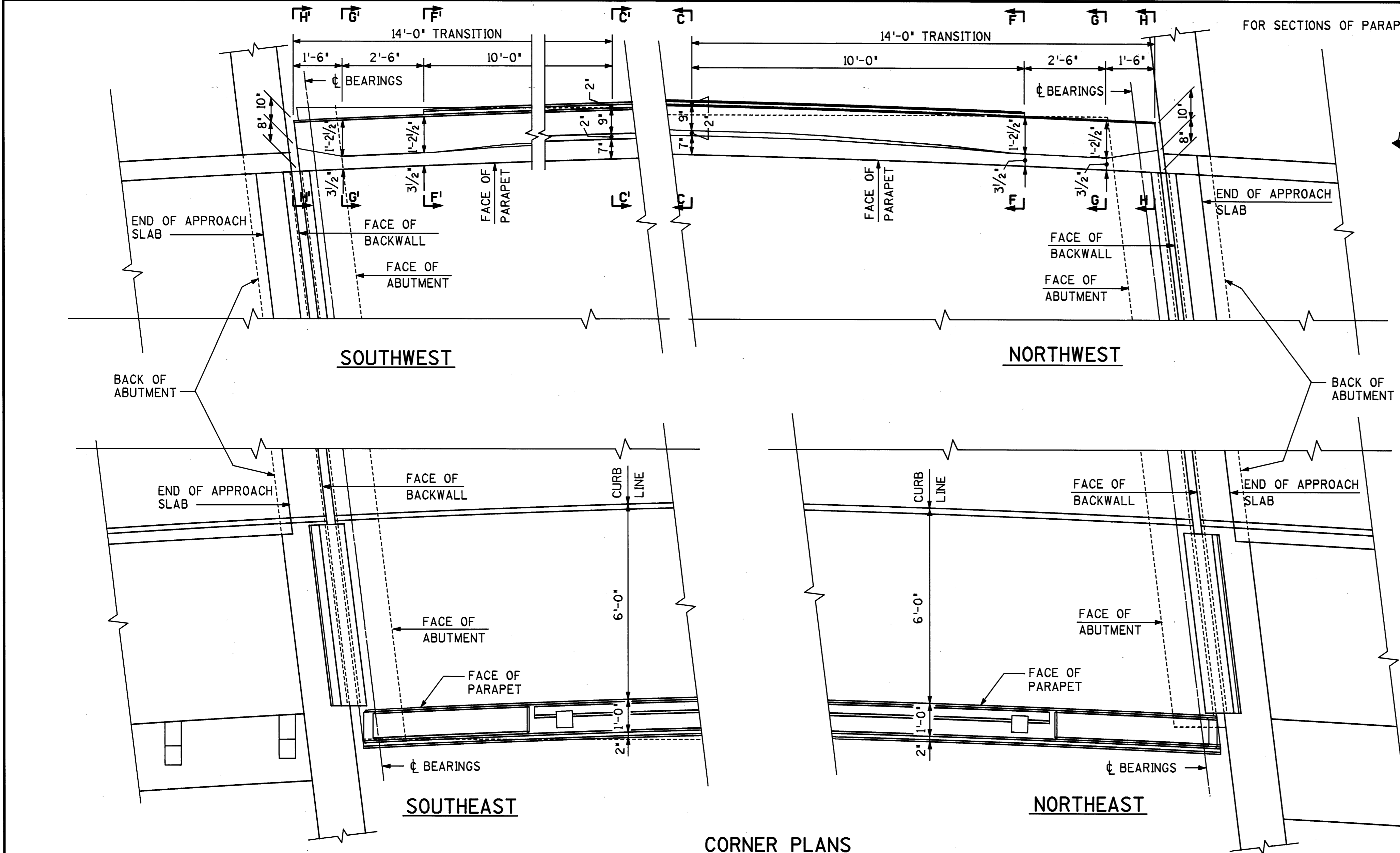
PRESTRESSED CONCRETE BOX BEAM DETAILS: THE FOLLOWING DETAILS FROM PSBD -I-81 APPLY TO THIS PROJECT:
SHEET 1 OF 4: BEAM LIFTING INSERTS, ANCHOR DOWELS, DETAILS AND REINFORCEMENT OF BEAM ENDS.
SHEET 2 OF 4: TYPICAL PLANS OF DIAPHRAGMS AND TRANSVERSE TIE RODS, BEAM DIMENSIONAL TOLERANCES, AND END DETAILS OF TRANSVERSE TIE ROD ANCHORAGE.
SHEET 3 OF 4: 48-INCH WIDE COMPOSITE BEAMS (CB21-48)
SHEET 4 OF 4: 48-INCH AND 36-INCH WIDE COMPOSITE BEAMS WITH SLAB (21" DEEP)

THE FOLLOWING NOTES FROM PSBD -I-81 APPLY TO THIS PROJECT:
SHEET 1 OF 4: TRANSVERSE TIE RODS, GALVANIZING, ANCHOR DOWELS, END OF BEAMS, CLEANING PRIOR TO PLACEMENT OF COMPOSITE SLAB, NON-SHRINKING MORTAR, PREPARATION OF CONCRETE SURFACES IN CONTACT WITH NON-SHRINKING MORTAR, AND AS REQUIRED TO SUPPLEMENT APPLICABLE DETAILS.
SHEET 2 AND 3 OF 4: AS REQUIRED TO SUPPLEMENT APPLICABLE DETAILS.

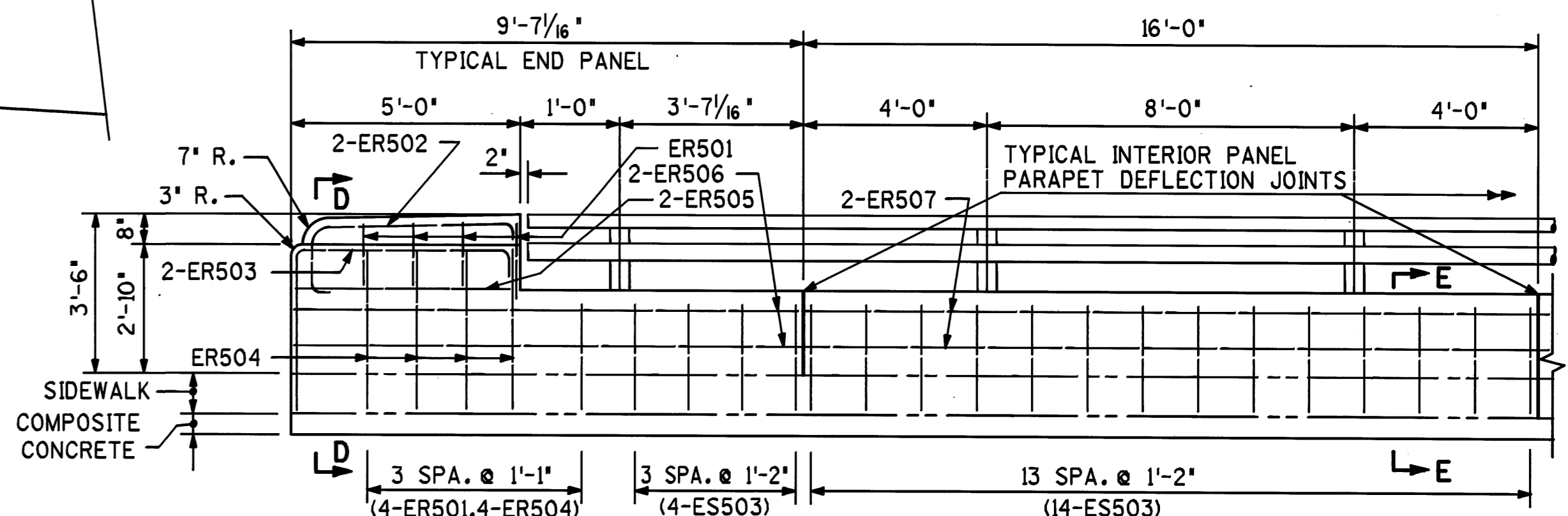
1/8" THICK PREFORMED BEARING PAD SHIMS, PLAN AREA, SHALL BE PLACED ON TOP OF BEARINGS WHERE REQUIRED FOR PROPER BEARING. THE NUMBER SUPPLIED SHALL BE 2 SHIMS PER BEAM. SHIMS NOT USED SHALL BECOME THE PROPERTY OF THE STATE.

COMPRESSION SEALS: SEE STANDARD DRAWING EXJ-3-82, SHEETS 1,2 AND 3. DIMENSION "D" = 8 3/4"

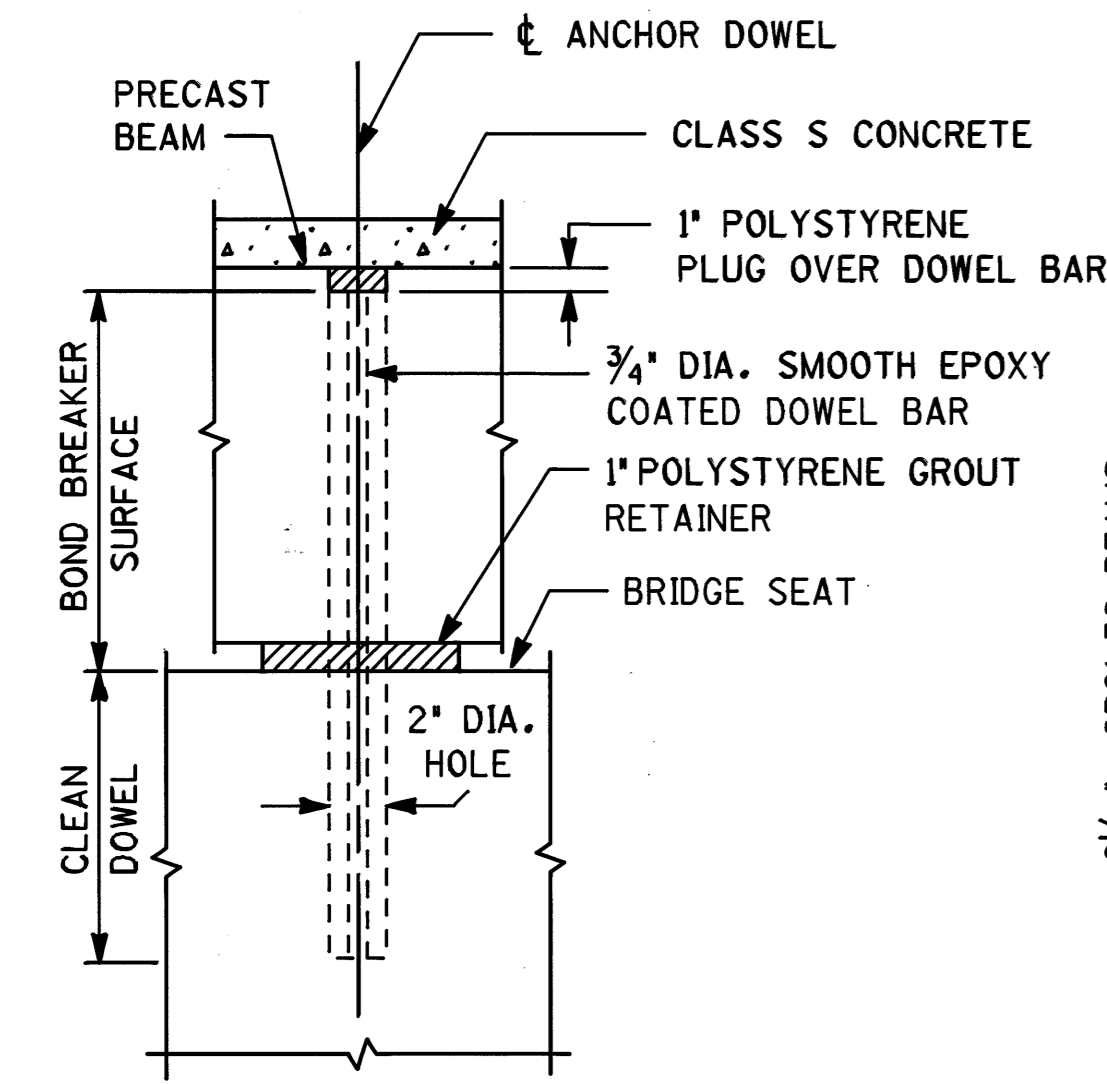
BEARINGS PADS: 50 DUROMETER LAMINATED ELASTOMERIC BEARINGS, 1' X 8' X 8' 2 EACH END OF EACH BEAM. SEE SHEET [5/7] FOR DETAILS.



CORNER PLANS

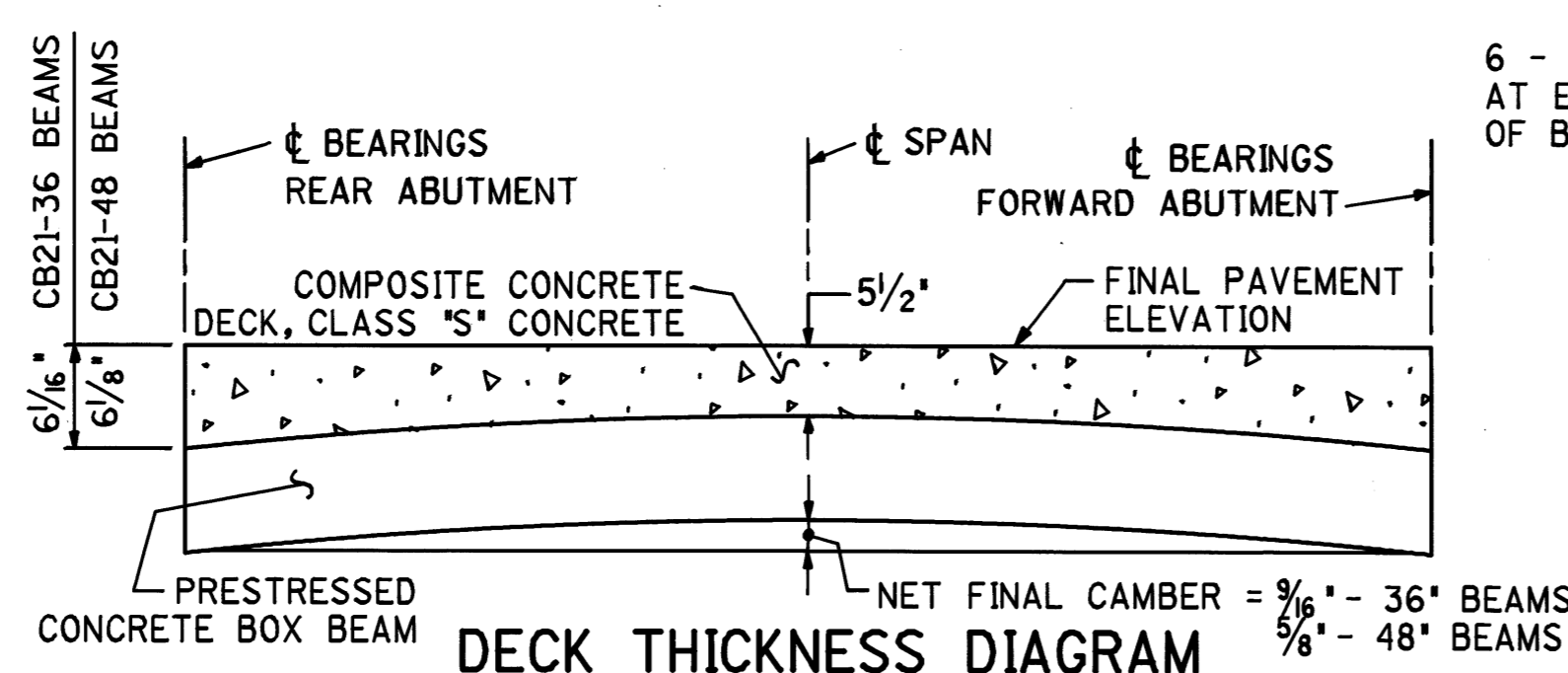


RAILING AND PARAPET ELEVATION

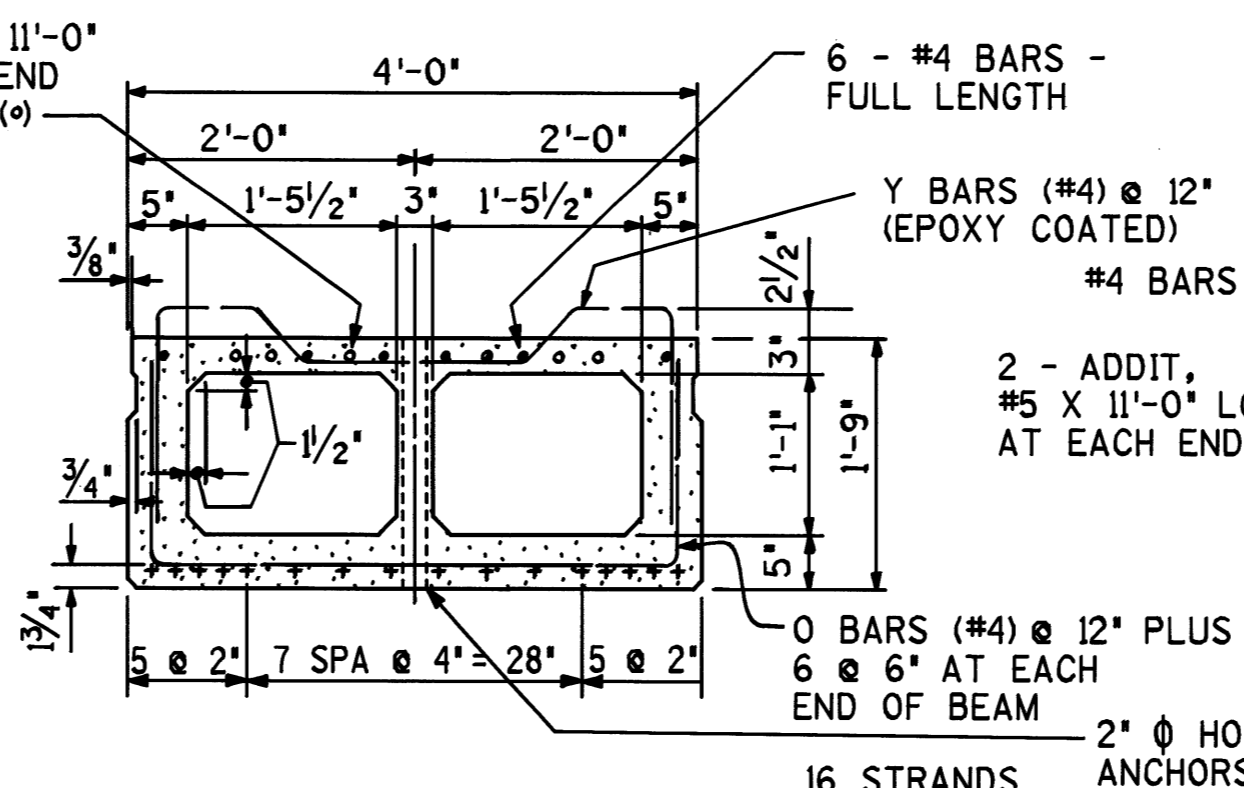


FIXED ANCHOR DOWEL

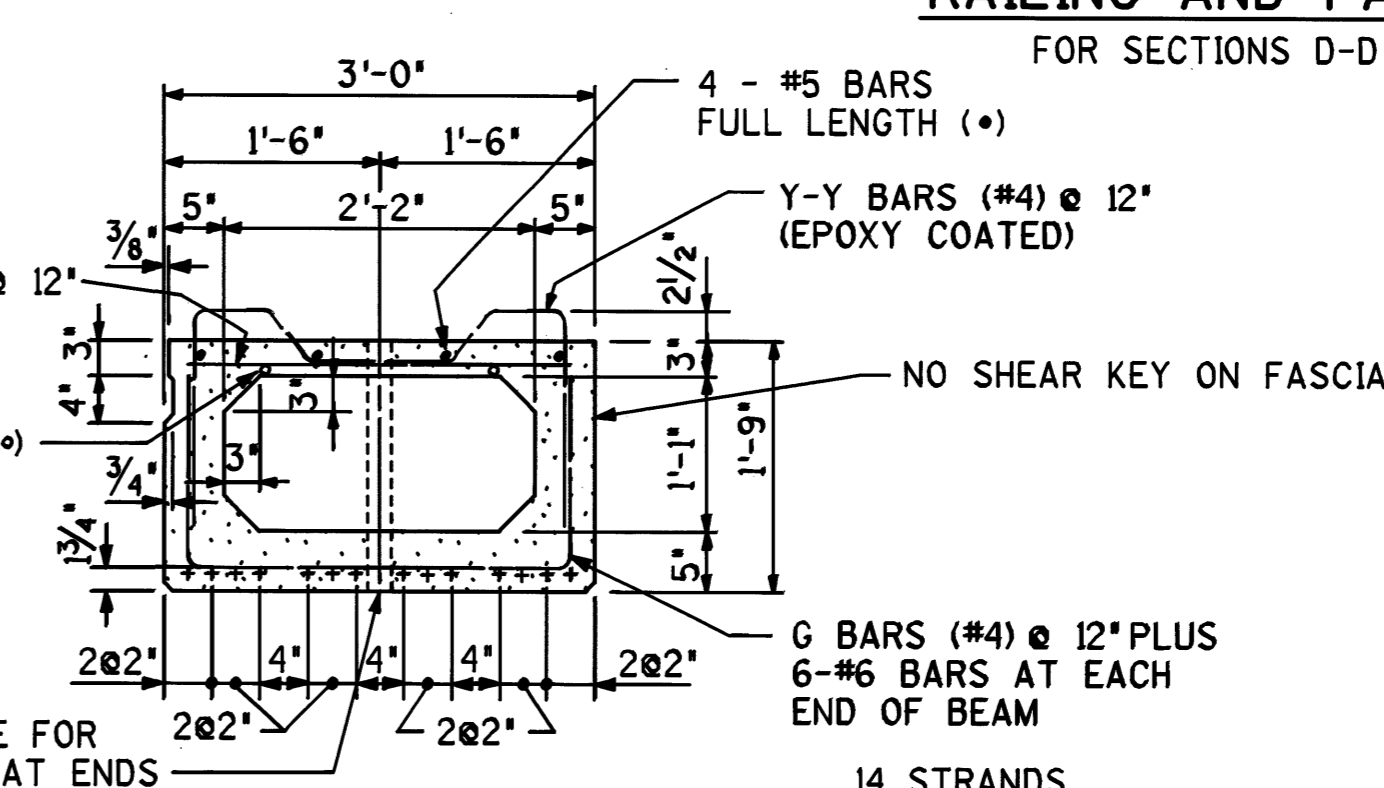
PROCEDURE: PLACE POLYSTYRENE GROUT RETAINER. DRILL AND CLEAN HOLES. THEN PLACE NON-SHRINKING GROUT, DOWEL AND 1-INCH MINIMUM THICKNESS POLYSTYRENE PLUG.



DECK THICKNESS DIAGRAM



CB21-48 BEAM DETAIL



CB21-36 BEAM DETAIL

KEM K.E. MCCARTNEY & ASSOCIATES
MANSFIELD, OHIO

SUPERSTRUCTURE - 2

BRIDGE NO. RIC-13-1598 R
OVER TOUBY'S RUN

DESIGNED	DRAWN	TRACED	CHECKED	REVIEWED	DATE	REVISED
RAK	RAK	DDD	HGS	MRS	03-90	

QUANTITIES	INITIAL	DATE
CALCULATED	RAK	02-25-90
CHECKED	MRS	03-22-90
REVISED		

F.H.W.A. REGION	STATE	PROJECT
5	OHIO	

120
133

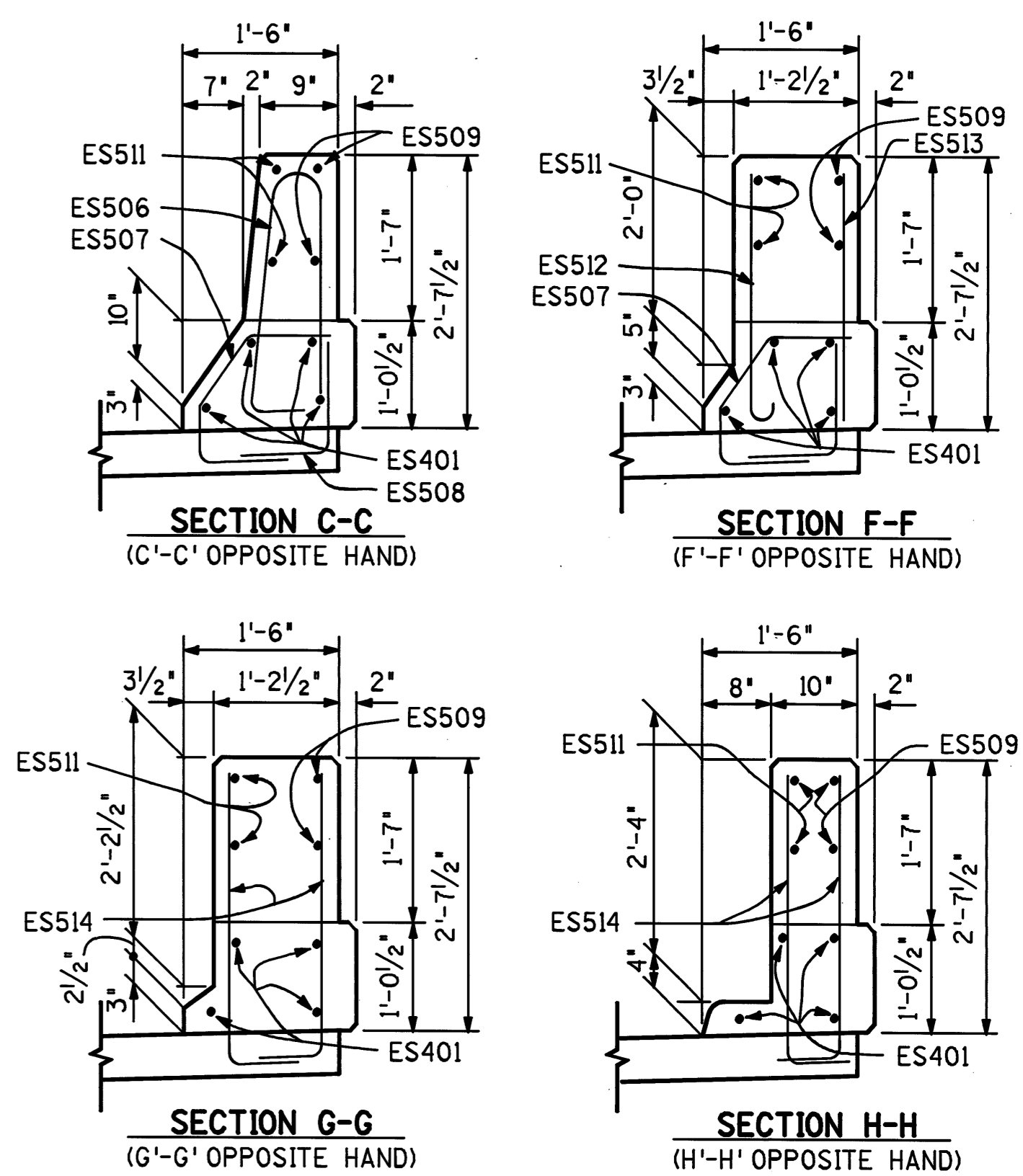
RIC-13-15.81
CITY OF MANSFIELD
RICHLAND COUNTY

REINFORCING STEEL, GRADE 60 - ABUTMENTS

MARK	NO	LENGTH	WEIGHT	SHP	NUMBER		BENDING DIAGRAMS
					RA	FA	
A501	84	12'-10"	1124	BT	5+27+10	6+27+9	
A502	65	6'-7"	446	BT	5+27	6+27	
A504	16	20'-0"	334	S	8	8	
A507	4	25'-6"	106	S	2	2	
A513	2	14'-3"	30	S	2	-	
A514	6	8'-10"	55	S	6	-	
A515	6	15'-6"	97	S	6	-	
A517	18	7'-8"	144	BT	9	9	
A518	1	7'-0"	7	BT	1	-	
A601	65	6'-8"	651	BT	5+27	6+27	
A606	18	7'-9"	145	BT	9	9	
A607	1	7'-1"	11	BT	1	-	
A802	24	30'-6"	1954	S	12	12	
A803	8	30'-11"	660	S	4	4	
TOTAL WEIGHT			5764				

EPOXY COATED REINFORCING STEEL, GRADE 60 - SUPERSTRUCTURE

MARK	NO	LENGTH	WEIGHT	SHP	BENDING DIAGRAMS
ES402	126	19'-11"	1676	S	
ES403	1 SERIES	①	35	S	
ES404	1 SERIES	②	99	S	
ES501	35	8'-1"	295	BT	
ES502	12	26'-9"	335	S	
ES503	36	6'-4"	238	BT	
ES504	35	2'-7"	94	BT	
ES505	35	3'-0"	110	BT	
ES506	18	5'-3"	99	BT	
ES507	35	2'-11"	106	BT	
ES508	35	2'-1"	76	BT	
ES509	4	14'-6"	76	S	
ES510	8	10'-2"	76	S	
ES511	4	14'-8"	76	BT	
ES512	16	3'-0"	76	BT	
ES513	16	2'-5"	76	S	
ES514	8	3'-2"	76	BT	
ER501	8	3'-3"	≠	BT	
ER502	4	6'-7"	≠	BT	
ER503	4	8'-9"	≠	BT	
ER504	8	8'-4"	≠	BT	
ER505	4	4'-8"	≠	S	
ER506	8	9'-3"	≠	S	
ER507	8	15'-8"	≠	S	
TOTAL WEIGHT			4684		

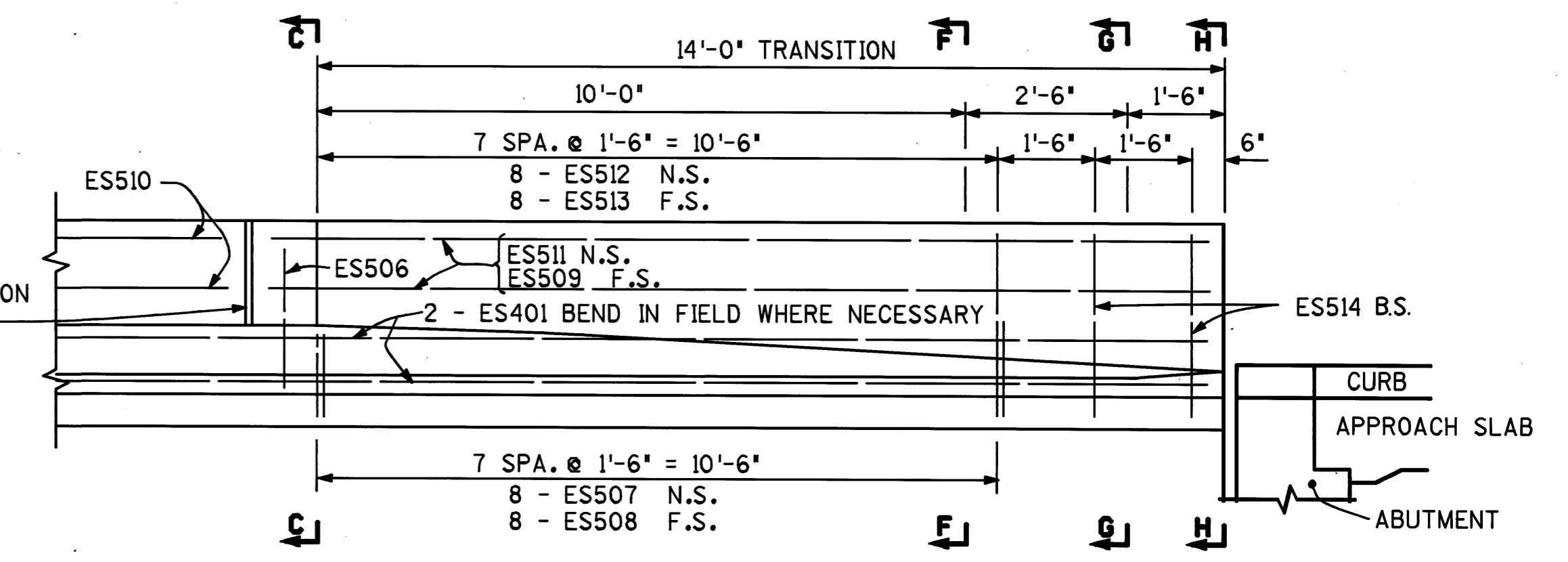
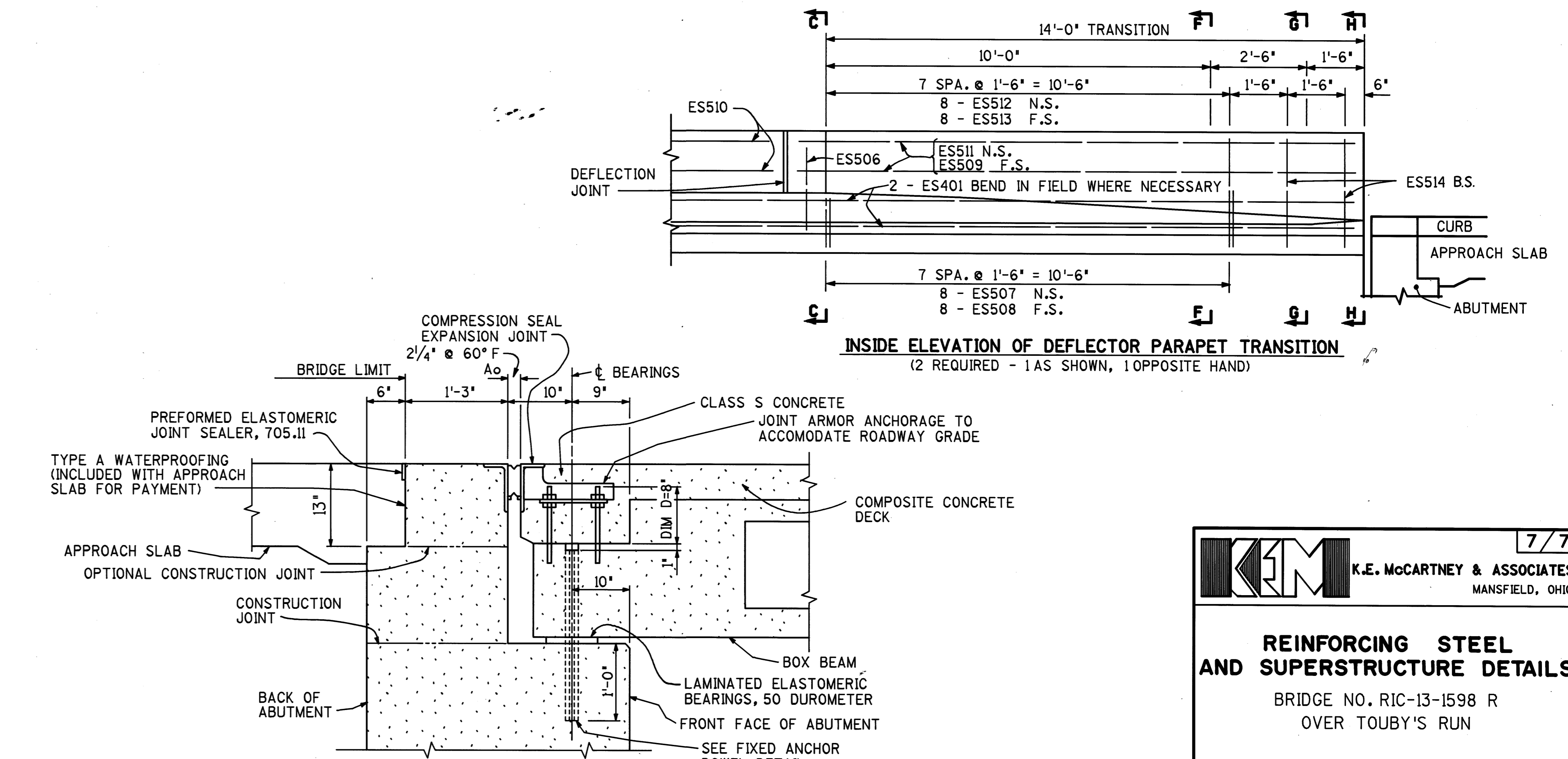


EPOXY COATED REINFORCING STEEL, GRADE 60 - ABUTMENTS

MARK	NO	LENGTH	WEIGHT	SHP	NUMBER		BENDING DIAGRAMS & NOTES
					RA	FA	
EA503	54	8'-0"	451	BT	27	27	
EA506	16	20'-0"	334	S	8	8	
EA508	4	28'-2"	118	S	4	-	
EA509	1	33'-7"	35	S	1	-	
EA510	4	9'-3"	39	S	2	2	
EA511	2	8'-1"	17	S	2	-	
EA512	2	5'-9"	12	S	2	-	
EA516	2	6'-6"	14	S	2	-	
EA519	1 SERIES	③	37	BT	1 SERIES	-	
EA520	1 SERIES	④	24	BT	1 SERIES	-	
EA521	8	1'-5"	12	S	4	4	
EA525	4	28'-6"	119	S	-	4	
EA526	1	34'-1"	36	S	-	1	
EA527	8	14'-0"	117	S	-	8	
EA528	6	9'-9"	61	S	-	6	
EA529	2	8'-8"	18	S	-	2	
EA530	2	5'-6"	11	S	-	2	
EA531	2	5'-11"	12	S	-	2	
EA532	2	11'-0"	23	S	-	2	
EA533	1 SERIES	⑦	27	BT	1 SERIES	-	
EA534	1 SERIES	⑧	35	BT	1 SERIES	-	
EA535	2	10'-5"	22	S	2	-	
EA602	42	9'-0"	568	BT	21	21	
EA603	42	4'-2"	263	BT	21	21	
EA604	13	13'-8"	267	BT	6	7	
EA605	12	11'-2"	201	BT	7	5	
EA801	42	5'-9"	645	BT	21	21	
TOTAL WEIGHT			3518				

NOTE	VARIES		INCREMENT
	FROM	TO	
①	2'-10"	4'-10"	8"
②	1'-7"	3'-1"	6"
③	6'-10"	10'-10"	1'-4"
④	4'-4"	7'-4"	1'-0"
⑤	1'-7"	3'-8"	8 1/4"
⑥	2'-6"	4'-7"	8 1/4"
⑦	4'-4"	8'-7"	1'-5"
⑧	6'-3"	10'-5"	1'-5"

≠ - INCLUDED IN ITEM 517, RAILING (CONCRETE PARAPET WITH DOUBLE PIPE RAIL) FOR PAYMENT.



K.E. McCARTNEY & ASSOCIATES
MANSFIELD, OHIO

REINFORCING STEEL AND SUPERSTRUCTURE DETAILS
BRIDGE NO. RIC-13-1598 R
OVER TOUBY'S RUN

DESIGNED	DRAWN	TRACED	CHECKED	REVIEWED	DATE	REVISED
RAK	RAK	DDD	HGS	MRS	03-90	

DINGS DESIGN & DRAFTING INCORPORATED

GENERAL INFORMATION

INTRODUCTION

THIS REPORT CONSISTS OF THE SOILS INVESTIGATION OF 0.4 MILES OF NEW ROADWAY ALIGNMENT FOR THE NORTHBOUND STATE ROUTE 13, BEGINNING AT EAST 6TH STREET AND EXTENDING NORTH TO ORCHARD STREET AND 0.3 MILES OF ROADWAY RENOVATION FOR THE SOUTHBOUND STATE ROUTE 13, BEGINNING AT SURREY ROAD AND EXTENDING SOUTH TO 6TH STREET.

MAXIMUM PROPOSED CUT AND FILL EMBANKMENTS ARE SHOWN IN THE PROJECT INDEX ON THIS SHEET.

GEOLOGY OF SITE

THE PROJECT IS LOCATED IN A GLACIAL GROUND MORAIN AREA OF NORTH-CENTRAL OHIO, WITH THE ALIGNMENT TRANSVERSING THE FLOODPLAIN OF TOUBY'S RUN CREEK. SOILS CONSIST OF MOSTLY UNDIFFERENTIATED GLACIAL DRIFT OVERLYING WAVERLY AND MAXVILLE SHALE AND LIMESTONE BEDROCK DEPOSITS ASSOCIATED WITH THE MISSISSIPPIAN AGE. FILL DEPOSITS WERE OBSERVED OVER THE MAJORITY OF THE PROJECT.

EXPLORATION

FIFTEEN EXPLORATORY BORINGS WERE MADE BY MEANS OF A TRUCK-MOUNTED DRILLING RIG UTILIZING 6 INCH OUTSIDE DIAMETER HOLLOW STEM AUGERS (BORES #1-#4), AND 4 INCH DIAMETER SOLID STEM AUGERS (BORES #5-#15). THE BORINGS WERE DRILLED BETWEEN NOVEMBER 3 AND NOVEMBER 20, 1987.

INCLUDED IN THIS REPORT ARE THE LOGS OF FOUR BORINGS MADE FOR THE TWO BRIDGE STRUCTURES AT THE SITE.

INVESTIGATIONAL FINDINGS

MATERIALS ENCOUNTERED ON THE PROJECT PREDOMINANTLY COMPRISE OF COARSE TO FINE SAND OR GRAVEL AND SAND, (A-3A) (A-1-B) (A-3) AND (A-1-A), WITH SOME SANDY SILT TO SILT, (A-4A) AND (A-4B). THE SANDY SILT TO SILT SOILS GENERALLY HAVE HIGH MOISTURE CONTENTS IN THE UPPER PORTIONS OF THE PLASTIC RANGE.

SOFT TO MEDIUM STIFF SUBGRADE SOILS WERE ENCOUNTERED IN THE VICINITY OF STATION 140+00 AND STATION 839+50.

FROST SUSCEPTIBLE SILT WAS ENCOUNTERED WITHIN THREE FEET BELOW PROPOSED GRADE ALONG NORTH MAIN STREET BETWEEN 6TH STREET AND ORCHARD STREET AND ALONG DIAMOND STREET BETWEEN EAST 6TH STREET AND OLIVE STREET.

LEGEND

	GRAVEL											
	GRAVEL WITH SAND											
	FINE SAND											
	COARSE AND FINE SAND											
	SANDY SILT											
	SILT											
	BRICK											
	CONCRETE											
	ASPHALT, X' = APPROX. DEPTH											
	SANDY CLAY											
	CLAYEY SILT WITH SAND AND GRAVEL											
	TOPSOIL, X' = APPROX. DEPTH											
	SAND, GRAVEL, AND CLAY											
	ROCK SLAB											
	SAND AND CINDERS											
	RANDOM FILL											14
	VARIOUS OTHER MATERIALS											62
	AUGER BORING-PLAN VIEW											
	DRIVE SAMPLE AND/OR CORE BORING-PLAN VIEW											
	AUGER BORING PLOTTED TO VERTICAL SCALE ONLY											
	DRIVE SAMPLE AND/OR CORE BORING PLOTTED TO VERTICAL SCALE ONLY											

AVERAGE RESULTS OF TESTS - 124 SAMPLES TESTED

HRB CLASS	OHIO CLASS	% AGG.	% C. SAND	% F. SAND	% SILT	% CLAY	LIQUID LIMIT	PLAST. INDEX	WATER CONTENT	SAMPLES TESTED
A-1-A(O)	A-1-A	53	20	20	7	7	N.P.	N.P.	10.6	4
A-1-B(O)	A-1-B	38	24	25	13	13	N.P.	N.P.	12.6	12
A-3(O)	A-3	13	10	70	7	7	N.P.	N.P.	12.0	7
A-3A(O)	A-3A	22	12	42	16	8	N.P.	N.P.	14.5	10
A-4(6)	A-4A	6	3	26	39	26	21	6	23.6	8
A-4(8)	A-4B	1	1	11	60	27	26	7	23.9	7

VISUAL CLASSIFICATION

VISUAL CLASSIFICATION

VISUAL CLASSIFICATION

VISUAL CLASSIFICATION

VISUAL CLASSIFICATION

VISUAL CLASSIFICATION

VISUAL CLASSIFICATION

VISUAL CLASSIFICATION

VISUAL CLASSIFICATION

VISUAL CLASSIFICATION

VISUAL CLASSIFICATION

VISUAL CLASSIFICATION

VISUAL CLASSIFICATION

● WATER CONTENT NEARLY EQUAL TO OR GREATER THAN LIQUID LIMIT

⊖ INDICATES A NON-PLASTIC MATERIAL WITH A HIGH WATER CONTENT

— W FREE WATER

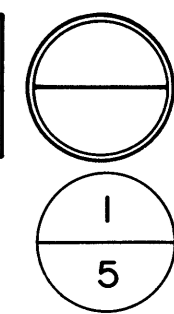
⊙ NUMBER OF BLOWS FOR "STANDARD PENETRATION" TEST
 X = NO. OF BLOWS FOR FIRST 6 INCHES
 Y = NO. OF BLOWS FOR SECOND 6 INCHES
 Z = NO. OF BLOWS FOR THIRD 6 INCHES

NOTE: FIGURES BESIDE BORINGS INDICATE WATER CONTENT IN PERCENT. e.g. 15

NON-FEDERAL

F.H.W.A. REGION	STATE	PROJECT
5	OHIO	

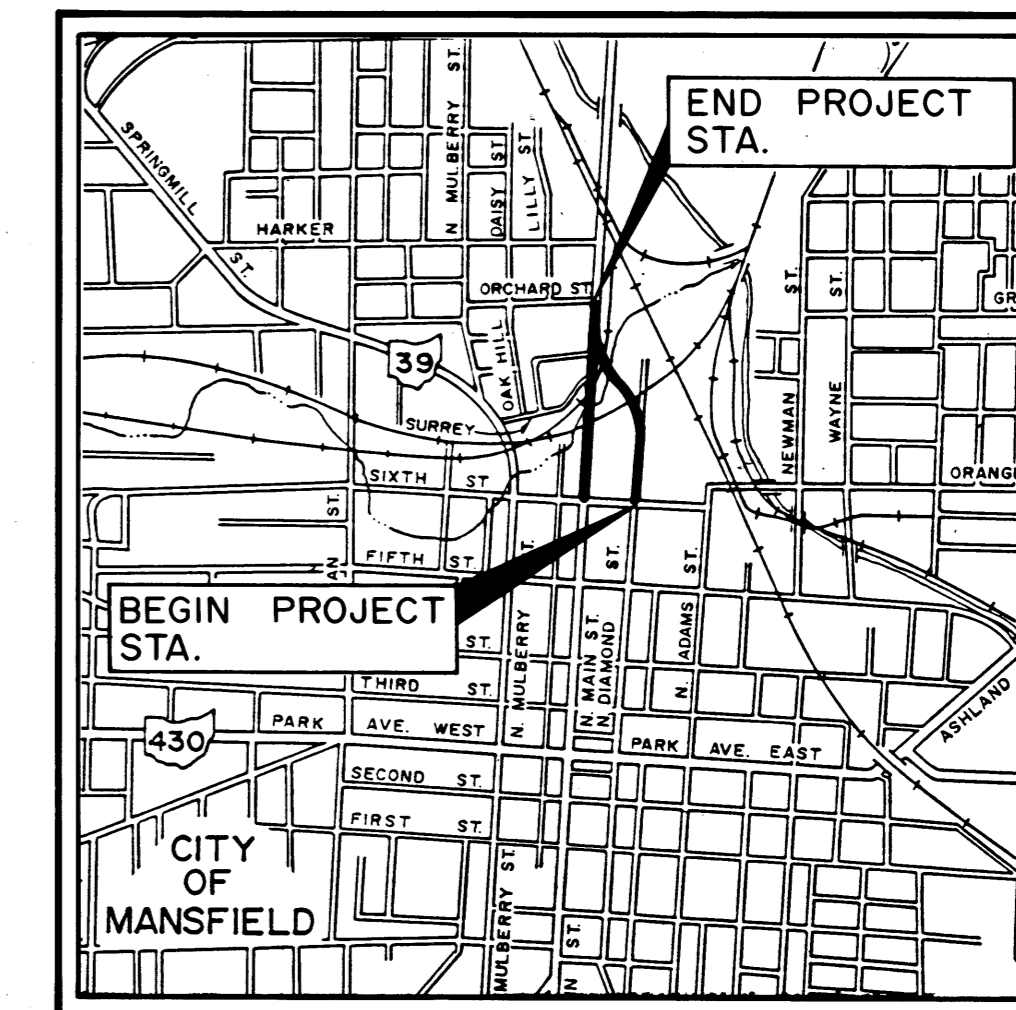
RIC-13-15.81
 CITY OF MANSFIELD
 RICHLAND COUNTY
 SOIL PROFILE



NOTE: INFORMATION SHOWN BY THIS SUBGRADE PROFILE WAS OBTAINED SOLELY FOR USE IN ESTABLISHING DESIGN CONTROLS FOR THE PROJECT. THE STATE OF OHIO DOES NOT GUARANTEE THE ACCURACY OF THIS DATA AND IT IS NOT TO BE CONSTRUED AS A PART OF THE PLANS GOVERNING CONSTRUCTION OF THE PROJECT.

ALL AVAILABLE SOIL AND BEDROCK INFORMATION WHICH CAN BE CONVENIENTLY SHOWN ON THE SOIL PROFILE FOUNDATION INVESTIGATION SHEETS HAS BEEN SO REPORTED. ADDITIONAL SUBSURFACE INVESTIGATION, SOIL TESTS, AND BEDROCK BORINGS MAY HAVE BEEN MADE TO STUDY SOME SPECIAL ASPECT OF THE PROJECT. COPIES OF THIS DATA, IF ANY, MAY BE INSPECTED IN THE DISTRICT DEPUTY DIRECTOR'S OFFICE, THE BUREAU OF TESTS AT 1600 WEST BROAD STREET, THE PAVEMENT AND SOILS SECTION OF THE BUREAU OF LOCATION AND DESIGN OR IN THE BRIDGE BUREAU AT 25 SOUTH FRONT STREET, COLUMBUS, OHIO.

FROM STATIONS	TO	PROJECT INDEX		CUT MAX.	FILL EMB. MAX.
		PLAN VIEW SHEET	PROFILE SHEET		
<u>S.R. 13 SOUTHBOUND (N. MAIN ST.)</u>					
132+00	145+00	4	4	0.75'	2.5'
<u>RELOCATED S.R. 13 NORTHBOUND</u>					
843+40 (C)	300' RT.	4	4	NEGLIGIBLE	NEGLIGIBLE
830+00	845+42.91	5	5	0.8'	2.3'
<u>C CONSTRUCTION S.R. 13</u>					
845+42.91	850+00	5	5	-	0.5'
<u>C CONSTRUCTION OHIO BRASS RD.</u>					
10+00	15+00	4	4	-	0.5'



LOCATION MAP

DRILLING CORE - N.W. AND R.D., 11-3-87 TO 11-5-87
 AUGER-N.W. AND R.D., 11-20-87

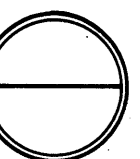
DRAFTING: K.S.M., 9-88

SCHEMATIC PLAN

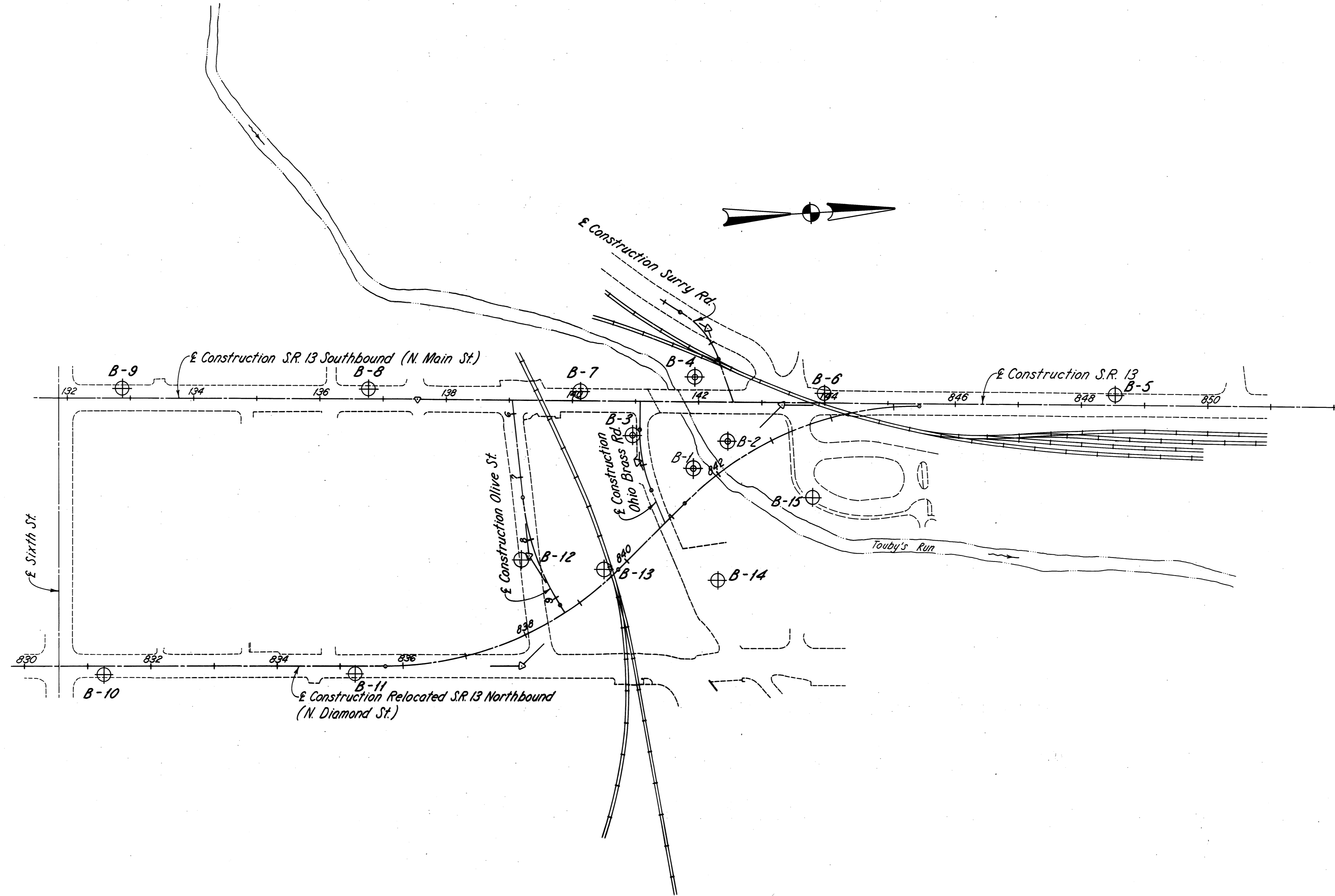
SOIL BORING LOCATIONS

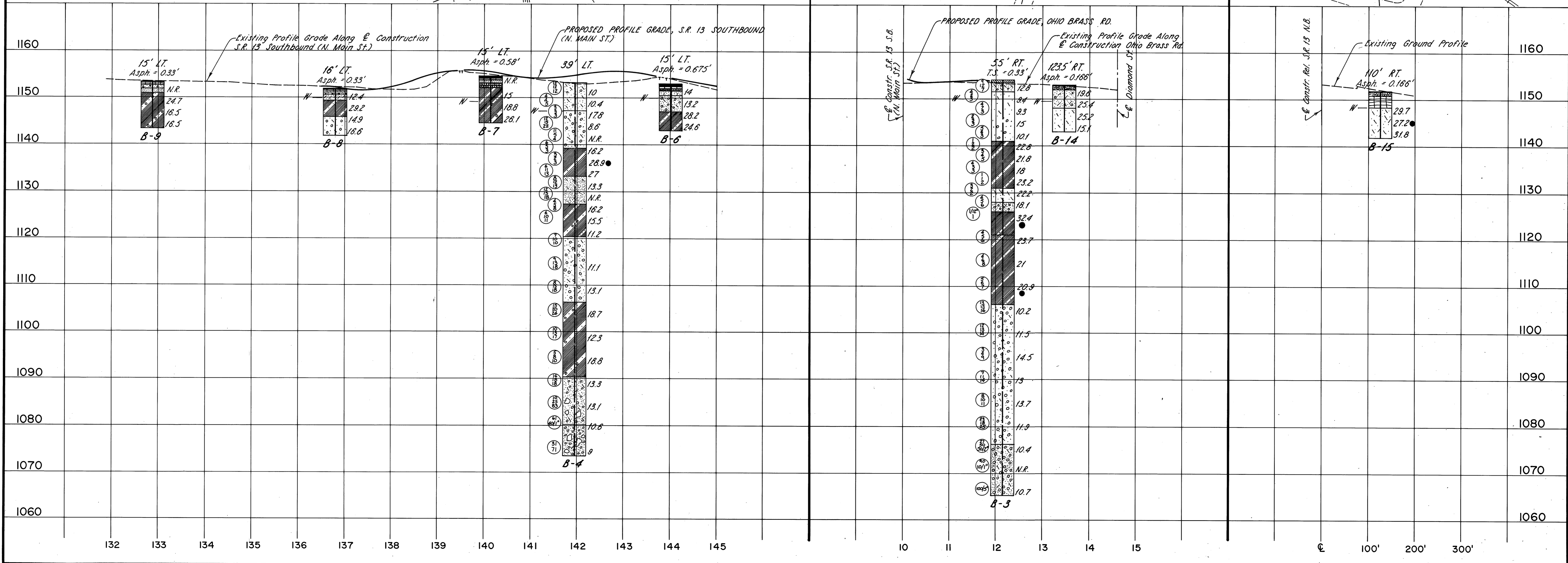
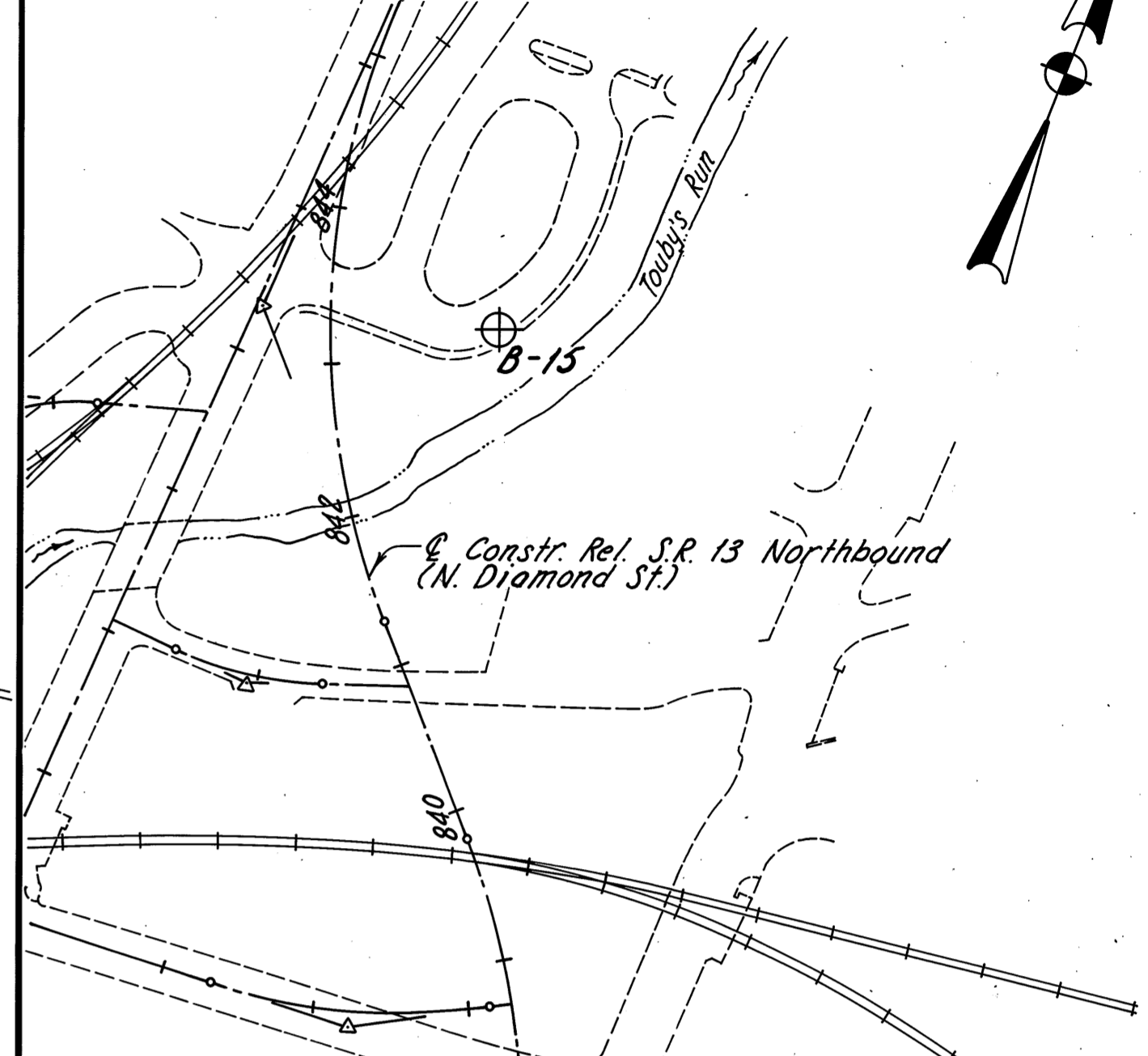
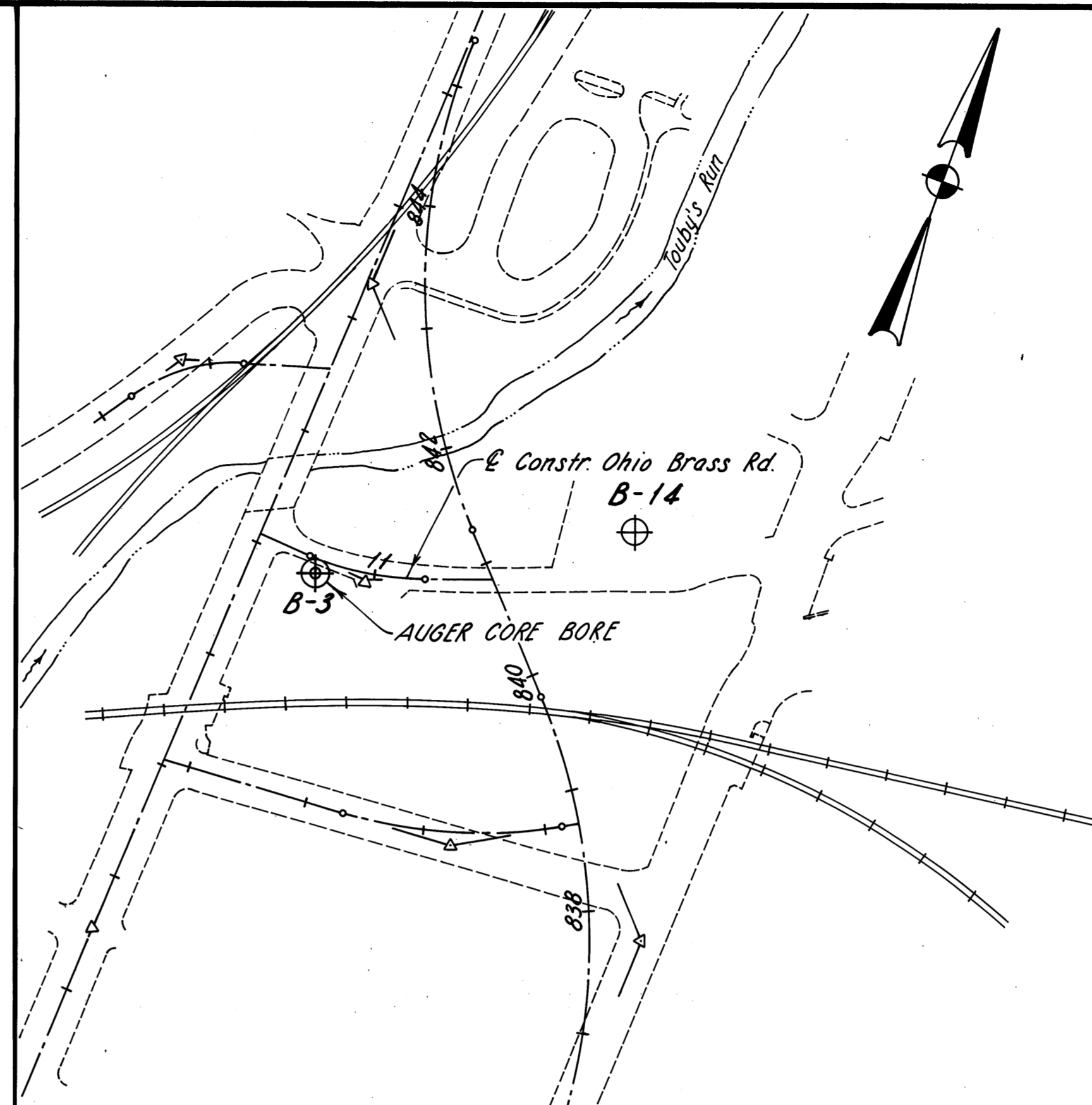
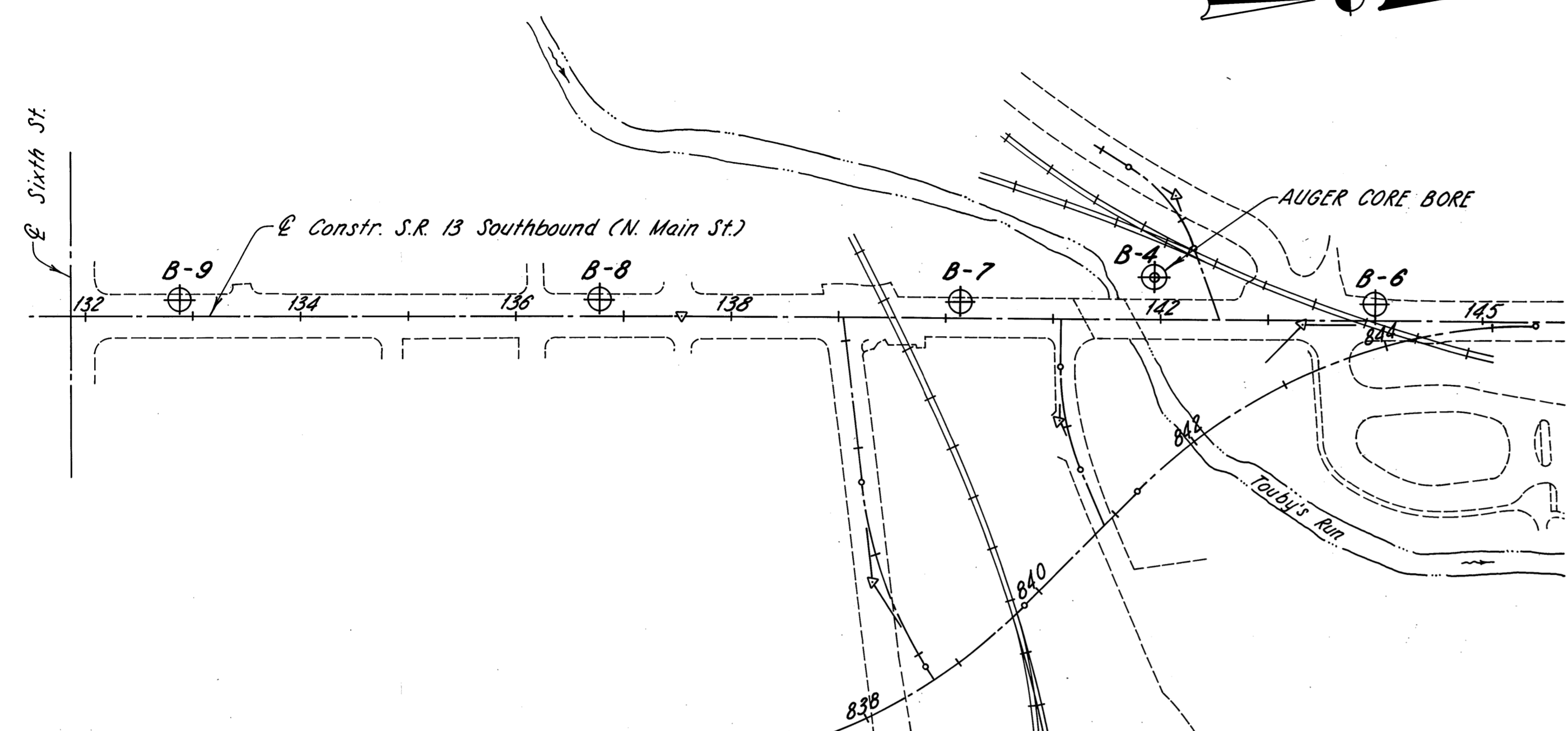
F.H.W.A. REGION	STATE	PROJECT
5	OHIO	

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CITY OF MANSFIELD
RICHLAND COUNTY
SOIL PROFILE



2
5





FHWA REGION	STATE	PROJECT
5	OHIO	

RIC-13-15.81
 CITY OF MANSFIELD
 RICHLAND COUNTY
 SOIL PROFILE

