ROUTE NO.	SEC.	COUNTY	TOTAL SHEETS	SHEET NO.
F.A. RTE. 786	97BR-2	LIVINGSTON	10	37
FED. ROAD DIST. NO. 7	ILLINOIS	PROJ.		

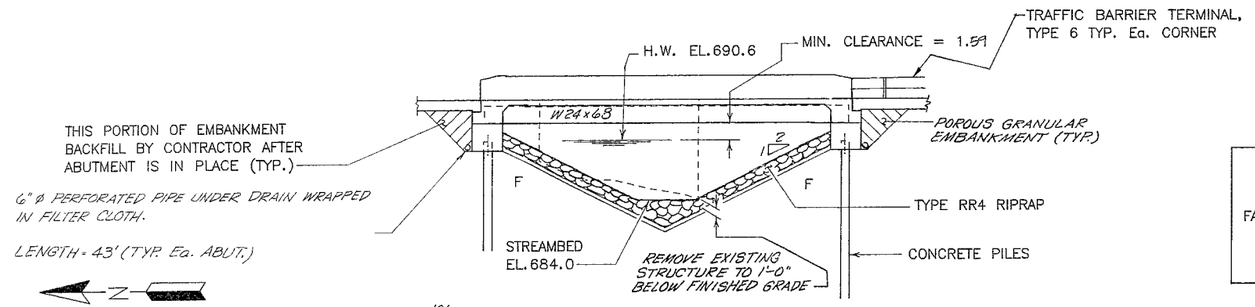
SHEET NO. 1
10 SHEETS

EXISTING STRUCTURE

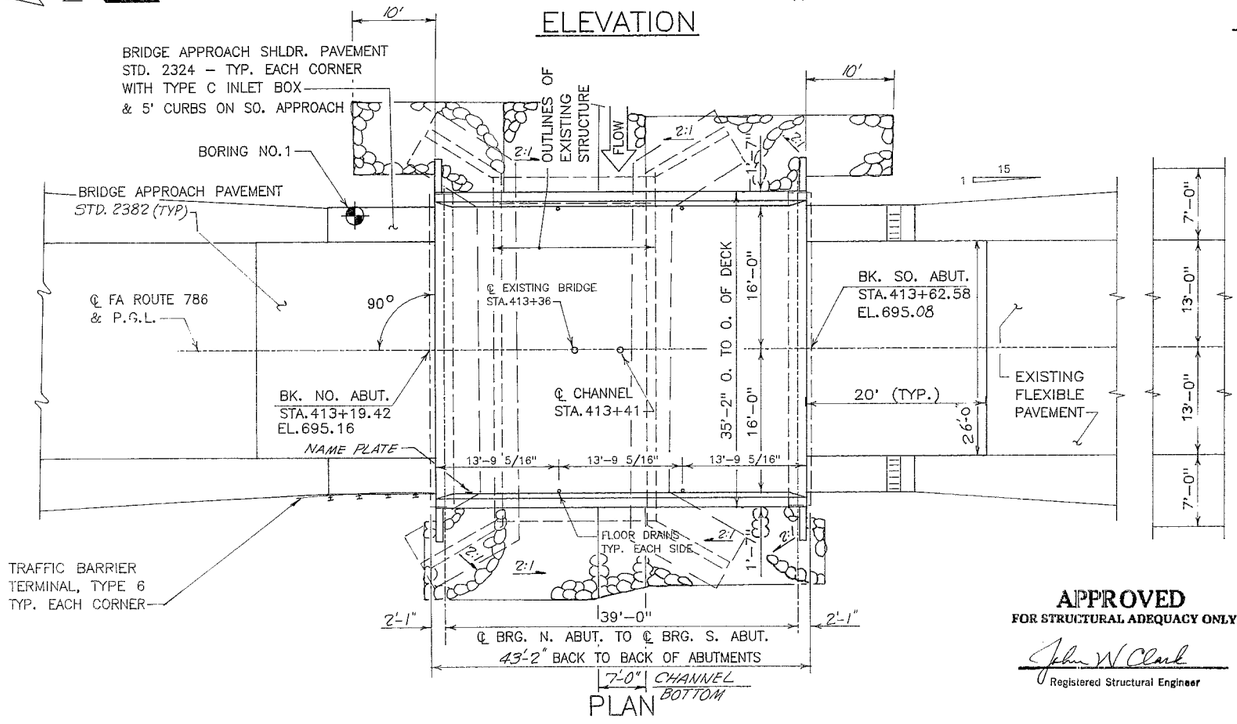
STRUCTURE NUMBER 053-0101 BUILT IN 1934 IS A SINGLE SPAN REINFORCED CONCRETE STRUCTURE CARRYING F.A.P. ROUTE 786 OVER A DRAINAGE DITCH. THE STRUCTURE IS 18' BACK TO BACK AND 36' FACE TO FACE OF RAILS. STRUCTURE HAS NO SKEW.
SUBSTRUCTURE CONSISTS OF CONCRETE FULL RETAINING ABUTMENTS. KATYDID ROAD WILL BE CLOSED AND TRAFFIC WILL BE DIRECTED TO A MARKED DETOUR ROUTE. NO SALVAGE.

BENCH MARK

CHISELED "X" IN N.E. WINGWALL OF BRIDGE – STA.413+27, ELEV.693.63



ELEVATION



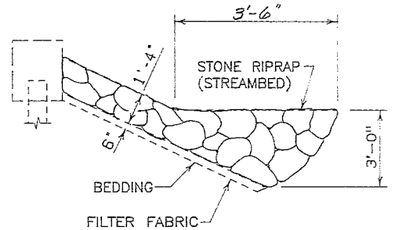
PLAN

STATION 413+41
BUILT 19 BY
STATE OF ILLINOIS
FAP ROUTE 786 SECTION 97BR-2

LOADING HS20
STRUTURE NO. 053-0101

NAMEPLATE

SEE STD. 2113



STONE RIPRAP ANCHOR DETAIL

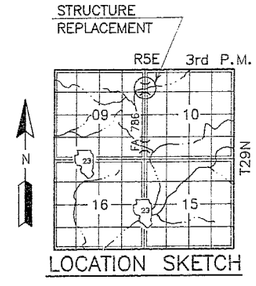
APPROVED
FOR STRUCTURAL ADEQUACY ONLY
John W Clark
Registered Structural Engineer

DESIGNED	
CHECKED	
DRAWN	
CHECKED	

WATERWAY INFORMATION

DRAINAGE AREA 1.0 SQ. MI. LOW GRADE ELEV.694.57 @ STA.413+27

FLOOD	FREQ. YR.	Q C.F.S.	OPENING SQ. FT. EXIST.	OPENING SQ. FT. PROP.	NAT. H.W.E.	HEAD – FT. EXIST.	HEAD – FT. PROP.	HEADWATER EL. EXIST.	HEADWATER EL. PROP.
DESIGN	50	452	91	102	690.6	0.6	0.5	691.2	692.1
BASE	100	521	94	108	690.8	0.8	0.7	691.6	691.5
OVERTOPPING									
MAX. CALC.	500	685	101	122	691.2	1.3	0.9	692.5	692.1



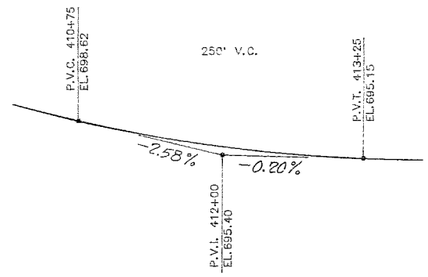
LOCATION SKETCH

DESIGN STRESSES

FIELD UNITS
f'c = 3,500 P.S.I.
fy = 60,000 P.S.I.(REINFORCEMENT)
fy = 50,000 P.S.I. (M223) *fy=36,000(M183)*

LOADING HS 20-44

ALLOW 25 LBS./ SQ. FT. FOR FUTURE WEARING SURFACE.
DESIGN SPECIFICATIONS 1983 A.A.S.H.T.O.
1984 THRU 1988 INTERIM SPECIFICATIONS

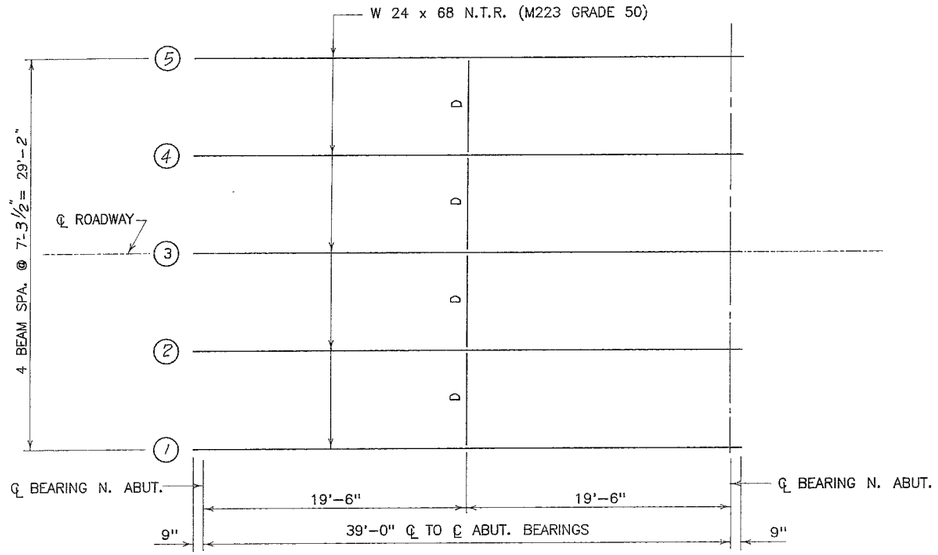


PROFILE GRADE LINE

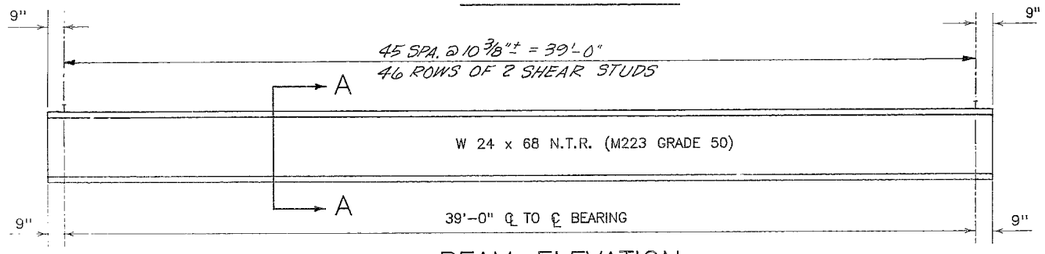
GENERAL PLAN
FA ROUTE 786 (KATYDID ROAD) OVER DRAINAGE DITCH (BRANCH BAKER RUN)
SECTION 97BR-2 LIVINGSTON, COUNTY
STA.413+41.00
STRUCTURE NO.053-0164

ROUTE NO.	SEC.	COUNTY	TOTAL SHEETS	SHEET NO.
F.A. RTE. 786	97BR-2	LIVINGSTON	10	4C
FED. ROAD DIST. NO. 7	ILLINOIS	PROJECT		

SHEET NO. 4
10 SHEETS



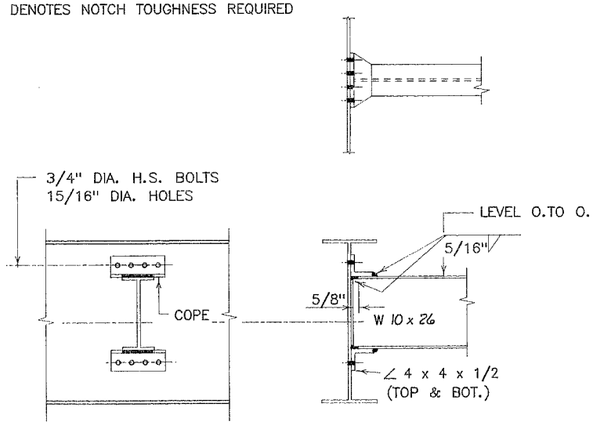
FRAMING PLAN



BEAM ELEVATION

N.T.R. DENOTES NOTCH TOUGHNESS REQUIRED

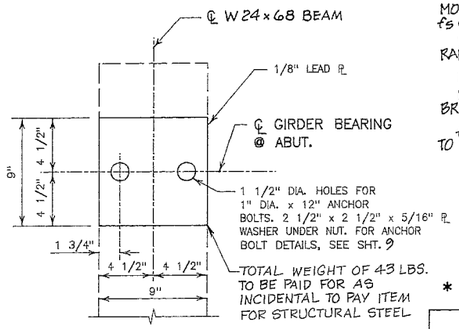
NOTE: TWO HARDENED WASHERS SHALL BE REQUIRED FOR ALL 15/16" DIA. HOLES @ DIAPHRAGMS.



DIAPHRAGM D

4 REQUIRED

INTERIOR GIRDER MOMENT TABLE	
	MIDSPAN
Is (in.4)	1830
Ic (in.4)	6056
Ss (in.3)	154
Sc (in.3)	250
DL (K/ft.)	0.76
MDL ('K)	146
SDL (K/ft.)	.34
MSDL ('K)	65
MLL ('K)	285
Mimp. ('K)	85
5/3(MLL+I) ('K)	617
Ma ('K)	1076
Mu ('K)	1459
fsDL non-comp (k.s.i.)	11.4
fs (comp) (k.s.i.)	3.1
fs 5/3 (LL+I) (k.s.i.)	29.6
fs (overload) (k.s.i.)	44.1
VR (K)	23.5



BEARING PAD DETAIL

INTERIOR GIRDER REACTION TABLE	
	ABUT.
RDL (K)	21.6
RLL (K)	36.1
Imp. (K)	10.8
^{R}Total (K)	68.5

Is AND Ss ARE THE MOMENT OF INERTIA AND SECTION MODULUS OF THE STEEL SECTION USED IN COMPUTING fs (TOTAL & OVERLOAD)

Ic AND Sc ARE THE MOMENT OF INERTIA AND SECTION MODULUS OF THE COMPOSITE SECTION USED IN COMPUTING fs (TOTAL & OVERLOAD)

VR IS THE MAXIMUM LIVE LOAD & IMPACT SHEAR RANGE IN SPAN.

Ma (APPLIED MOMENT) = 1.3[MDL+MSDL+5/3(MLL+I)].

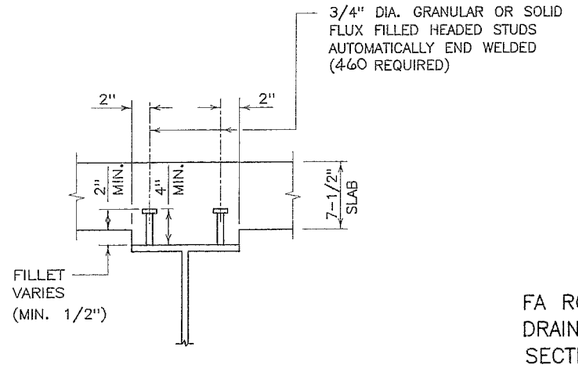
Mu IS THE FULL PLASTIC MOMENT CAPACITY FOR COMPACT, BRACED SECTION.

fs (OVERLOAD) IS THE SUM OF THE STRESSES DUE TO MDL+MSDL+5/3(MLL+I)].

* TOP OF W 24 x 68 BEAM ELEV.

	℄ BRG. N. ABUT.	℄ BRG. S. ABUT.
BEAM 1	694.250	694.171
BEAM 2	694.377	694.298
BEAM 3	694.491	694.412
BEAM 4	694.377	694.298
BEAM 5	694.250	694.171

* ELEVATIONS ARE FOR FABRICATION ONLY.

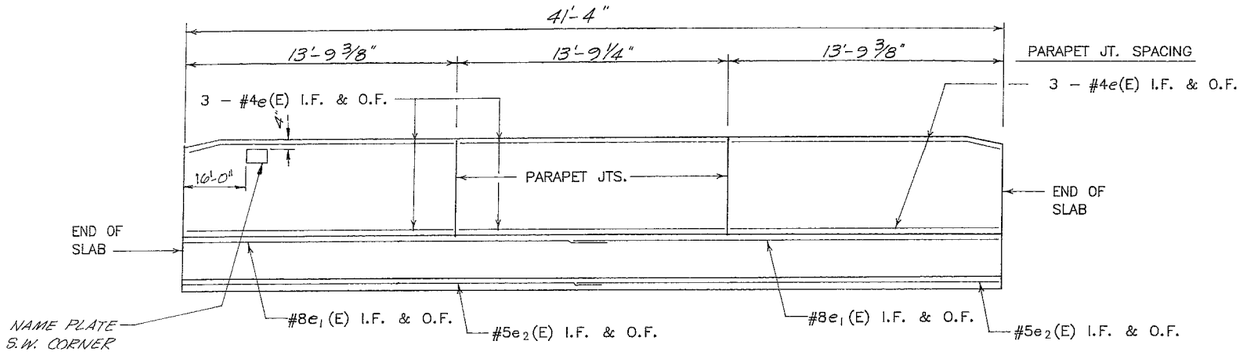


SECTION A–A

24" I–BEAM DETAILS
FA ROUTE 786 (KATYDID ROAD) OVER DRAINAGE DITCH (BRANCH MUD CREEK)
SECTION 97BR–2 LIVINGSTON, COUNTY
STA. 413+41.00
STRUCTURE NO. 053–0164

ROUTE NO.	SEC.	COUNTY	TOTAL SHEETS	SHEET NO.
F.A. RTE. 786	97BR-2	LIVINGSTON	10	5
FED. ROAD DIST. NO. 7	ILLINOIS	PROJ.		

SHEET NO. 5
10 SHEETS

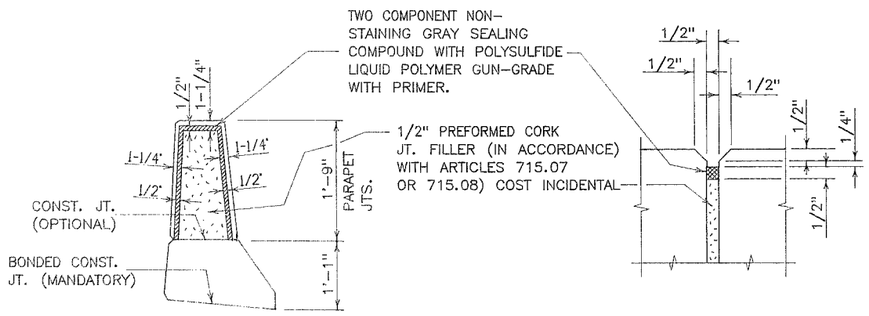


INSIDE ELEVATION OF PARAPET

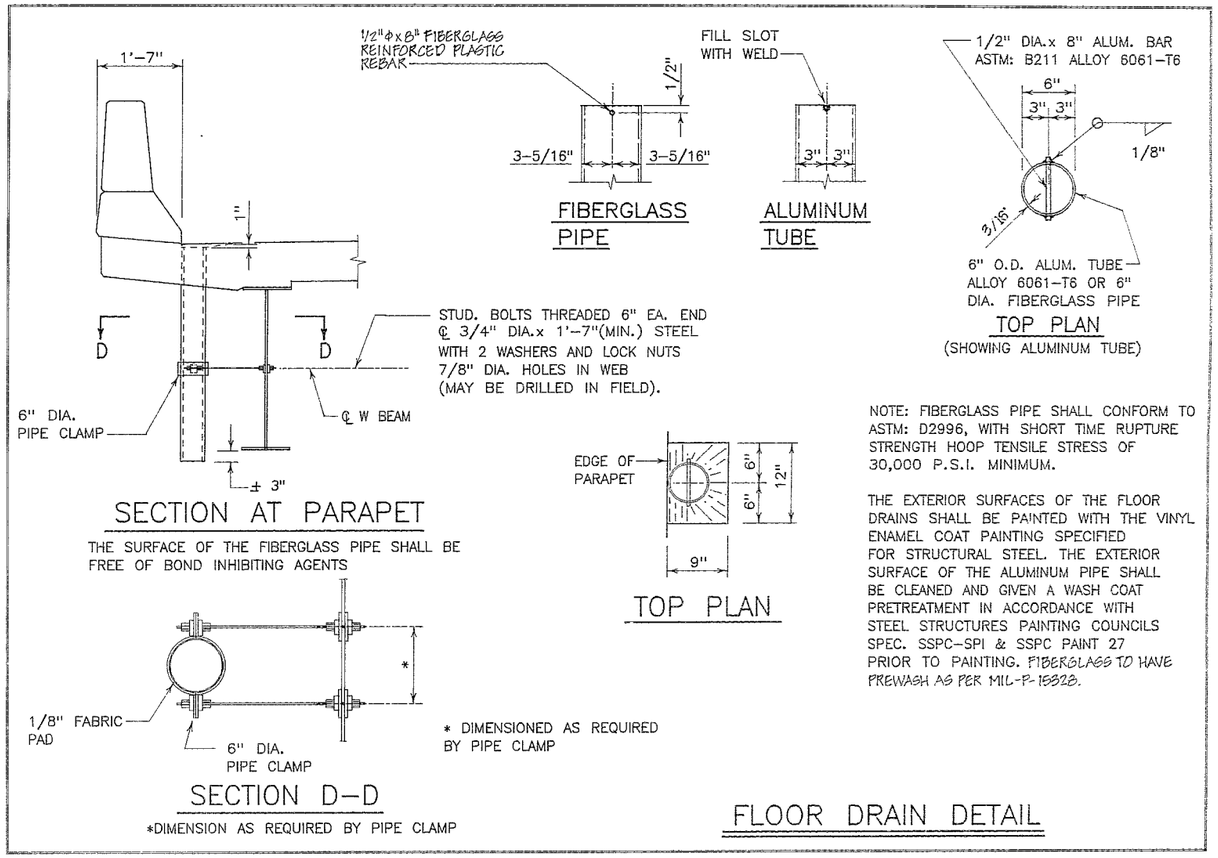
TYPICAL EACH SIDE OF STRUCTURE

NOTES: REINFORCEMENT BARS DESIGNATED (E) SHALL BE EPOXY COATED.

MIN LAP:
#5 BAR = 2'-2"
#8 BAR = 4'-6"



PARAPET JOINT DETAILS



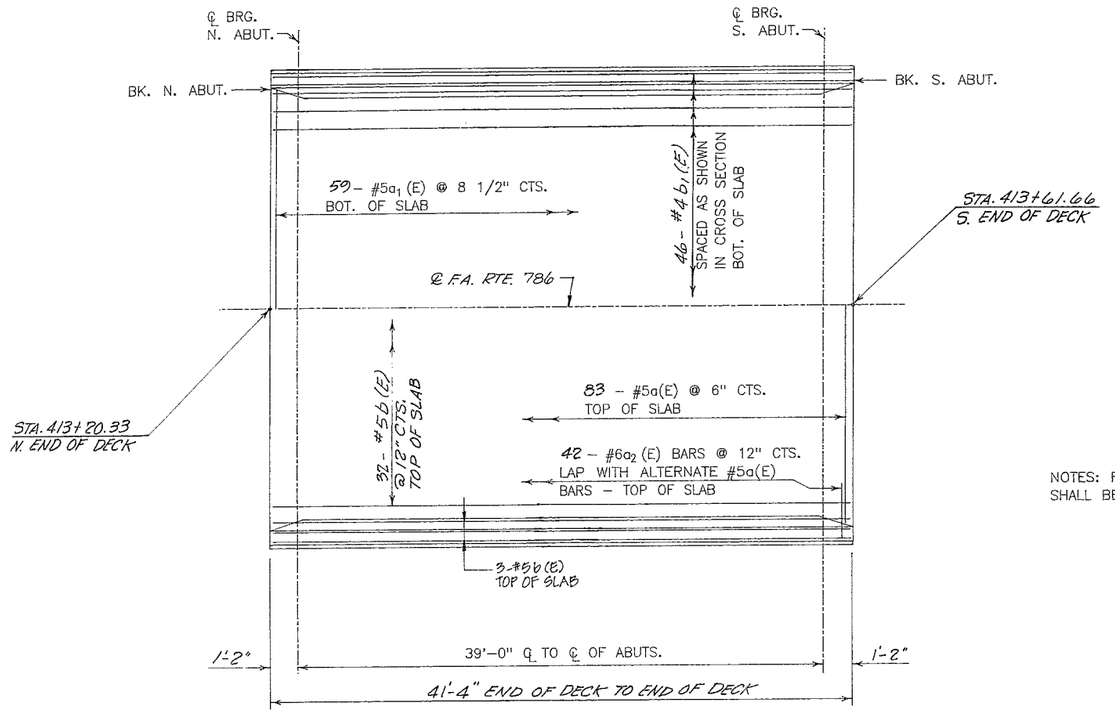
SECTION AT PARAPET

FLOOR DRAIN DETAIL

PARAPET & FLOOR DRAIN DETAILS
FA ROUTE 786 (KATYDID ROAD) OVER
DRAINAGE DITCH (BRANCH MUD CREEK)
SECTION 97BR-2 LIVINGSTON, COUNTY
STA. 413+41.00
STRUCTURE NO. 053-0164

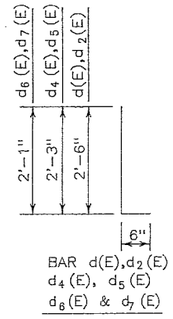
ROUTE NO.	SEC.	COUNTY	TOTAL SHEETS	SHEET NO.
F.A. RTE. 786	97BR-2	LIVINGSTON	10	43
FED. ROAD DIST. NO. 7	ILLINOIS	PROJECT		

SHEET NO. 7
10 SHEETS



PLAN

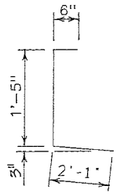
NOTES: REINFORCEMENT BARS DESIGNATED (E) SHALL BE EPOXY COATED.



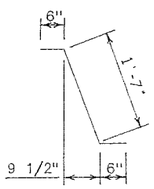
BAR d(E),d_2(E)
d_4(E), d_5(E)
d_6(E) & d_7(E)

BILL OF MATERIAL (SUPERSTRUCTURE)

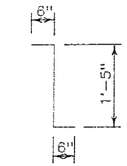
BAR	NO.	SIZE	LENGTH	SHAPE
a(E)	83	#5	33'-0"	——
a_1(E)	59	#5	33'-0"	——
a_2(E)	84	#6	4'-0"	——
b(E)	32	#5	41'-0"	——
b_1(E)	46	#4	41'-0"	——
d(E)	90	#5	3'-0"	⌐¬
d_1(E)	82	#5	2'-7"	⌐¬
d_2(E)	76	#4	3'-0"	⌐¬
d_3(E)	84	#4	4'-0"	⌐¬
d_4(E)	4	#4	2'-9"	⌐¬
d_5(E)	4	#5	2'-9"	⌐¬
d_6(E)	4	#4	2'-7"	⌐¬
d_7(E)	4	#5	2'-7"	⌐¬
d_8(E)	8	#5	2'-5"	⌐¬
e(E)	36	#4	13'-5"	——
e_1(E)	8	#8	22'-9"	——
e_2(E)	8	#5	21'-7"	——
CLASS X CONCRETE SUPERSTRUCTURE		CU. YD.	56.0	
REINF. BARS (EPOXY COATED)		LB.	10,200	



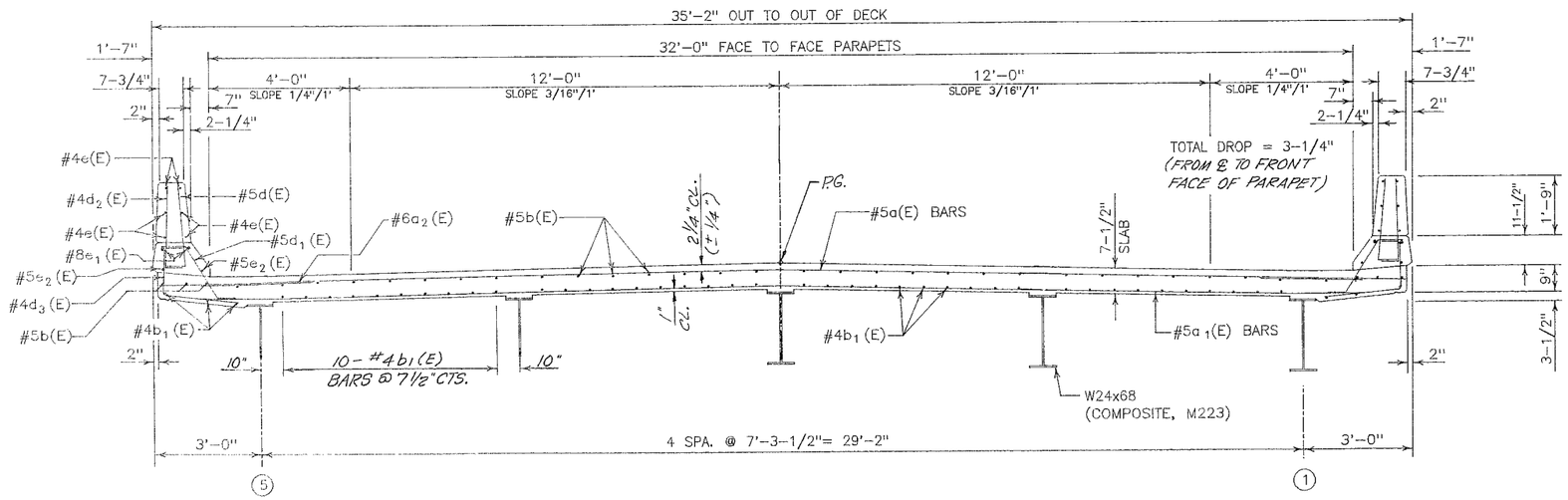
BAR d_3 (E)



BAR d_1 (E)



BAR d_8 (E)



CROSS SECTION
(LOOKING SOUTH)

SUPERSTRUCTURE
FA ROUTE 786 (KATYDID ROAD) OVER
DRAINAGE DITCH (BRANCH MUD CREEK)
SECTION 97BR-2 LIVINGSTON, COUNTY
STA. 413+41.00
STRUCTURE NO. 053-0164

REV. 9-6-89 BY HLC CLASS X CONC SUPER CHANGED FROM 87.5 CU. YD. TO 56.0 CU. YD
REINF BARS (EPOXY COATED) CHANGED FROM 10,160 LB. TO 10,200 LB.