

STATE OF ILLINOIS
DEPARTMENT OF TRANSPORTATION
DIVISION OF HIGHWAYS
PLANS FOR PROPOSED
FEDERAL AID HIGHWAY

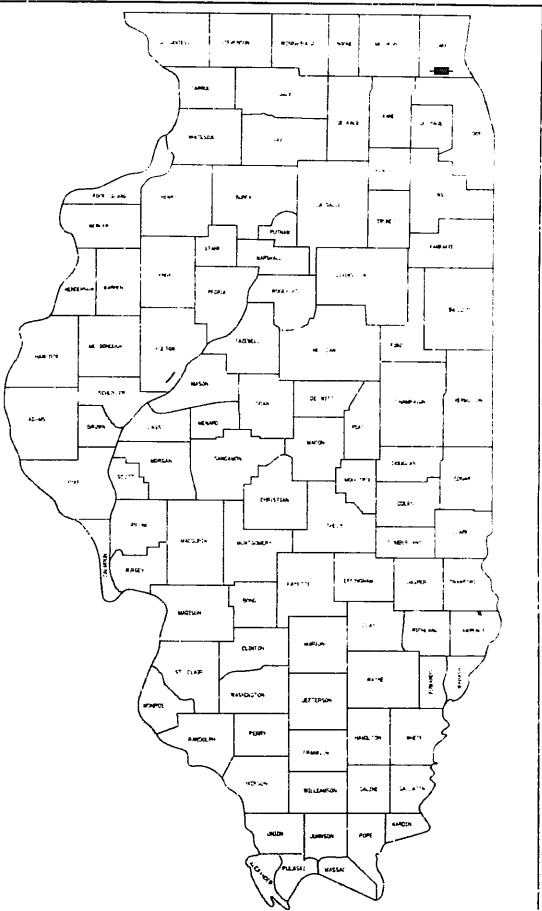
FOR INDEX OF SHEETS, SEE SHEET NO. 2

PLAN 1"=20'
PROFILE HORIZ. 1"=20'
PROFILE VERT. 1"=5'
CROSS SECTIONS 1"=10' HORIZ. , 1"=5' VERTICAL

F.A.U. 1257 (DEERFIELD ROAD)
SECTION: 38B-R(89)
PROJECT NO. : BRM-6003(984)
OVER DESPLAINES RIVER
STRUCTURE REMOVAL AND REPLACEMENT
LAKE COUNTY
C-91-521-89

FAU RTE	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
1257	38B-R	LAKE	39	1

* 38B-R (89)
D-91-521-89



LOCATION OF SECTION INDICATED THUS: -

Shah Engineering, Inc.

360 N. MICHIGAN AVE.
CHICAGO, IL 60601
TEL. 312/630-0006
Consulting Engineers



STATE OF ILLINOIS
DEPARTMENT OF TRANSPORTATION
DIVISION OF HIGHWAYS

SUBMITTED Sept 16 1992
EXAMINED 10
PASSED Oct 23 1992
APPROVED Oct 23 1992

PRINTED BY AUTHORITY OF THE
STATE OF ILLINOIS

DEPARTMENT OF TRANSPORTATION
FEDERAL HIGHWAY ADMINISTRATION

FOR UNDERGROUND UTILITY LOCATION
CALL J.U.L.I.E. TOLL FREE 1-800-892-0123

IMPROVEMENT LOCATED IN
VILLAGE OF RIVERWOODS

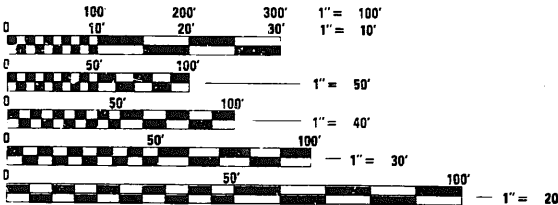
PROPOSED SPEED: 40 mph

TRAFFIC DATA

17,300 1988 A.D.T.
20,000 2010 A.D.T.

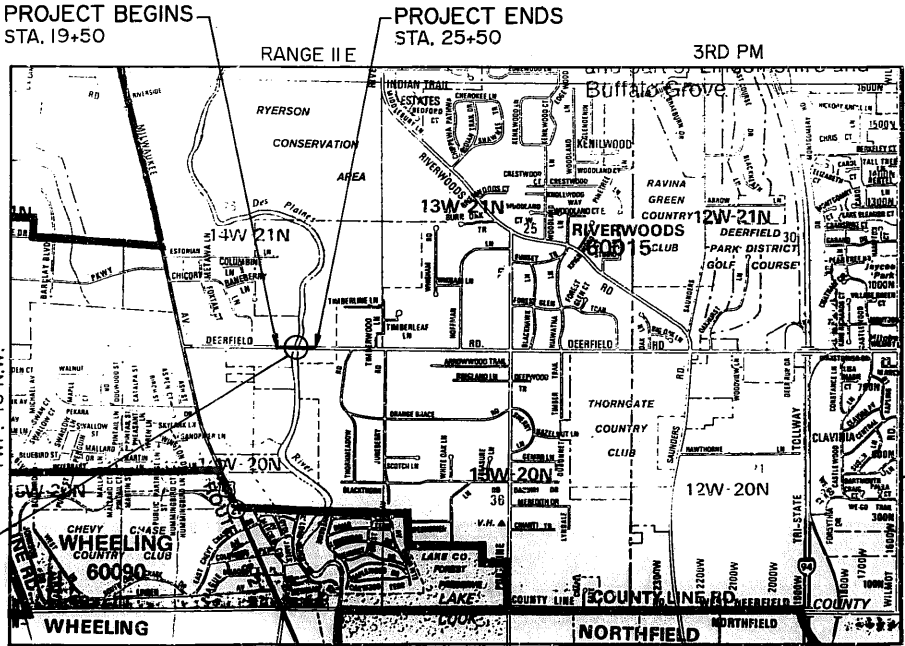
DESIGN DESIGNATION

20,000 (2010) URBAN MINOR ARTERIAL (B-20)



FULL SIZE PLANS HAVE BEEN PREPARED USING STANDARD
ENGINEERING SCALES, REDUCED SIZED PLANS WILL NOT
CONFORM TO STANDARD SCALES, IN MAKING MEASUREMENTS
ON REDUCED PLANS, THE ABOVE SCALES MAY BE USED.

CONTRACT NO. 80408



LOCATION MAP

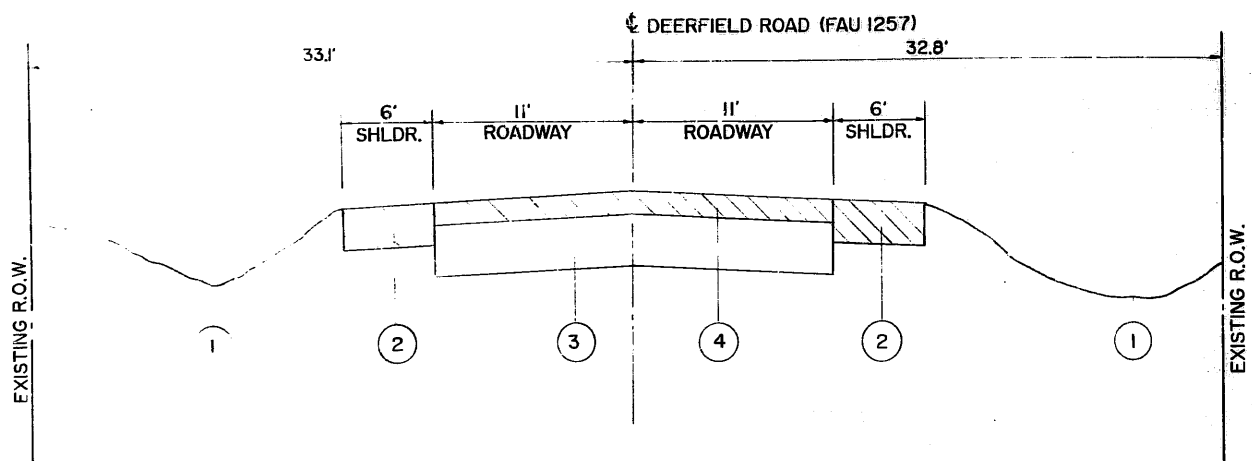
NET LENGTH OF PROJECT: 600 FEET
GROSS LENGTH OF PROJECT: 600 FEET

SCOPE OF PROPOSED IMPROVEMENT:

THE PROPOSED IMPROVEMENT INCLUDES
COMPLETE REMOVAL AND REPLACEMENT OF THE
EXISTING THREE SPAN REINFORCED CONCRETE
STRUCTURE WITH A THREE SPAN STEEL BEAM
STRUCTURE (70'-85'-70') AND OPEN PILE BENT
ABUTMENTS.

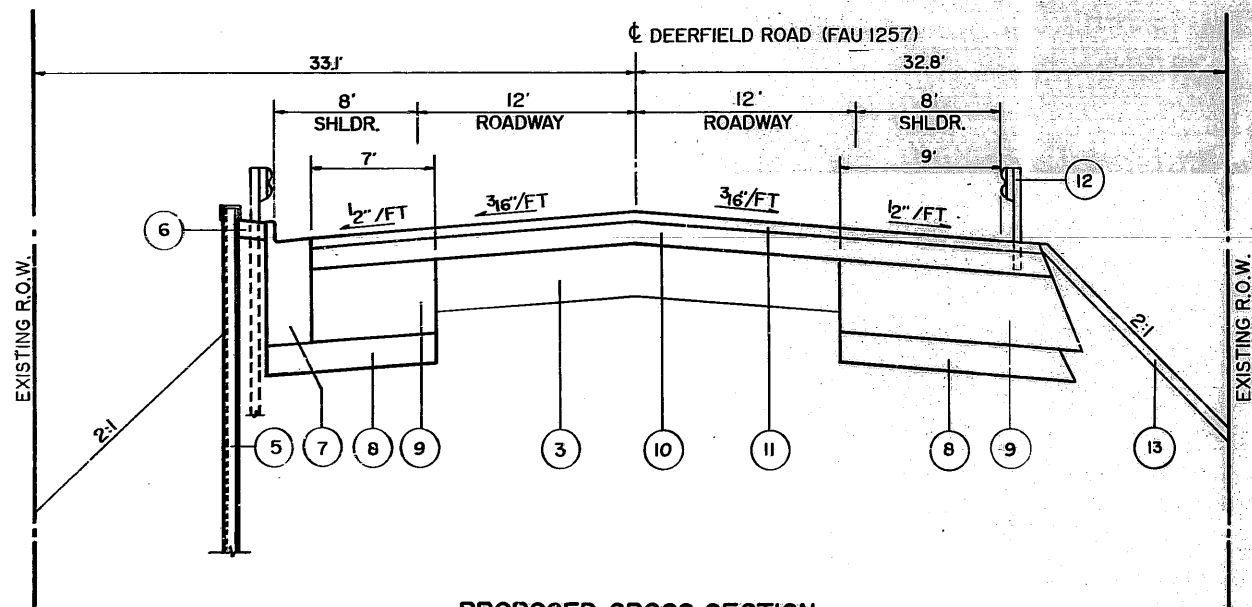


F.A.U.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
1257	38B-1-89	LAKE	39	4
STA		TO STA		
FED. ROAD DIST. NO. 1		ILL. NO. 8		FED. AID PROJECT



EXISTING CROSS SECTION
STA. 19+50 TO STA. 21+60 AND
STA. 23+85 TO STA. 25+50

- LEGEND**
- 1 EXISTING DRAINAGE DITCH
 - 2 EXISTING AGGREGATE SHOULDER TO BE REMOVED
 - 3 EXISTING PCC PAVEMENT, 6" TO 10 1/2"
 - 4 EXISTING BITUMINOUS SURFACE TO BE REMOVED 3" ± 1/4"
 - 5 PROPOSED SHEET PILE RETAINING WALL. SEE PLANS FOR LOCATIONS & DETAILS
 - 6 BITUMINOUS STABILIZATION 6" AT STEEL PLATE BEAM GUARDRAIL
 - 7 COMBINATION CONCRETE CURB & GUTTER TYPE B-6.12
 - 8 PROPOSED SUB-BASE GRANULAR MATERIAL, TYPE B 4"
 - 9 BITUMINOUS BASE COURSE 9"
 - 10 PROPOSED BITUMINOUS CONCRETE BINDER COURSE, MIXTURE B CLASS I, TYPE 2, 3" ± 1/4"
 - 11 PROPOSED BITUMINOUS CONCRETE SURFACE COURSE, AC-10, MIXTURE D, CLASS I, TYPE 2, 1.5"
 - 12 PROPOSED GUARDRAIL
 - 13 PROPOSED TOP SOIL PLACEMENT, 4" & SODDING, SALT TOLERANT (SPECIAL)



PROPOSED CROSS SECTION
STA. 19+50 TO STA. 21+07.45 AND
STA. 23+72.45 TO STA. 25+50

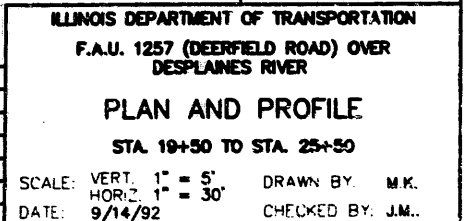
REVISIONS	
NAME	DATE

ILLINOIS DEPARTMENT OF TRANSPORTATION
F.A.U. 1257 (DEERFIELD ROAD) OVER
DES PLAINES RIVER

TYPICAL CROSS SECTIONS

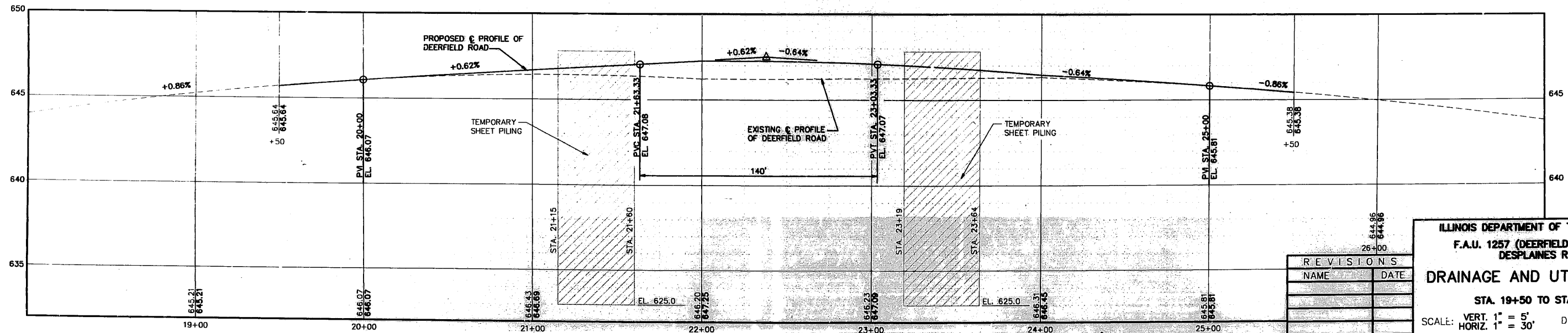
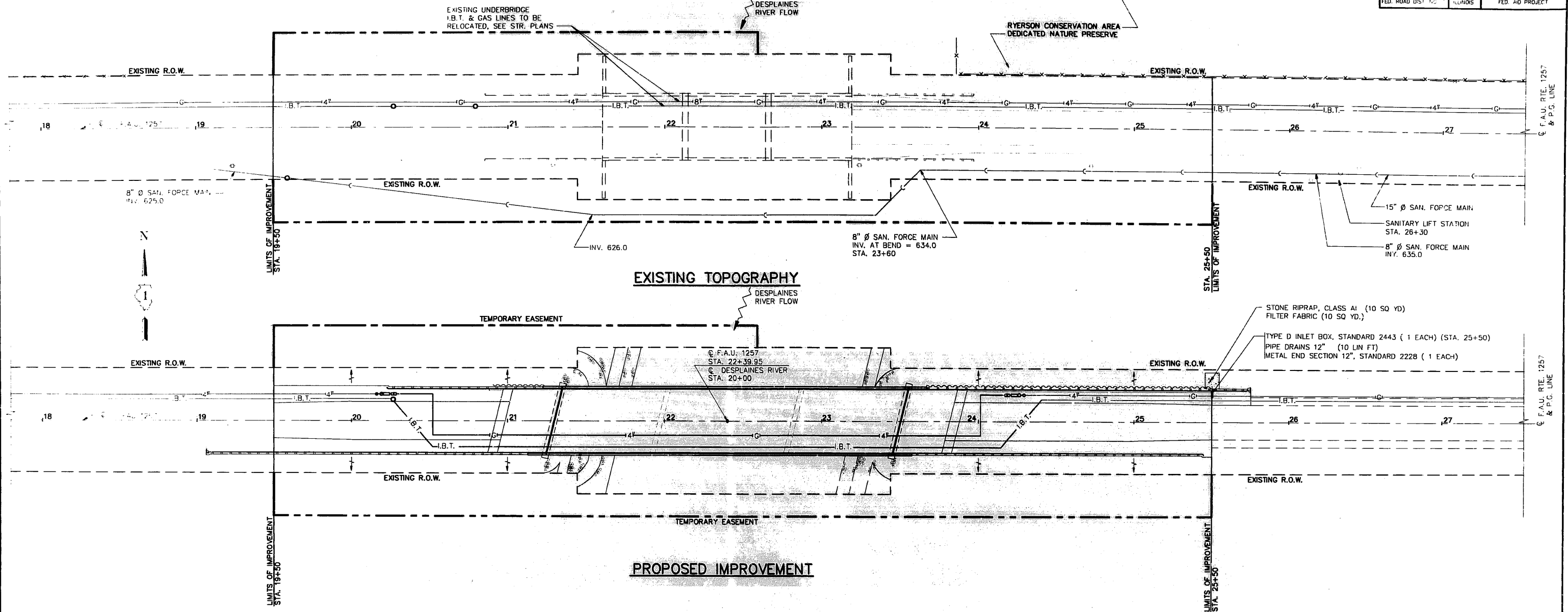
SCALE: VERT 1"=1'-0"
HORIZ 1"=5'

DRAWN BY
CHECKED BY
9-14-92



STATE OF ILLINOIS
DEPARTMENT OF TRANSPORTATION

F.A. RTE.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
1257	38E-P-89	LAKE	39	7
STA. 19+50		TO STA. 25+50		
FED. ROAD DIST. NO.		ILLINOIS		FED. AID PROJECT



REVISIONS	
NAME	DATE

ILLINOIS DEPARTMENT OF TRANSPORTATION
F.A.U. 1257 (DEERFIELD ROAD) OVER
DESPLAINES RIVER
DRAINAGE AND UTILITIES PLAN
STA. 19+50 TO STA. 25+50
SCALE: VERT. 1" = 5'
HORIZ. 1" = 30'
DATE: 9/14/92
DRAWN BY: M.K.
CHECKED BY: J.M.

B.M. "A" SQUARE CUT ON NORTHWEST WINGWALL OF DEERFIELD ROAD
BRIDGE OVER DES PLAINES RIVER. ELEV. = 645.96

STATE OF ILLINOIS
DEPARTMENT OF TRANSPORTATION

SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
38B-R(89)	LAKE	39	10
STA.	TO STA.		
FOR ROAD DIST. NO. 1	ALLIANCE	FOR AID PROJECT	

SHEET NO. 1
SHEETS 24

STEEL PLATE BEAM
GUARDRAIL (TYP.)
SEE ROADWAY
PLANS

EXISTING GRADE
EL. 644.9±

DESIGN WATER
EL. 635.8

POROUS GRANULAR
EMBANKMENT BACKFILL
TO BE PLACED BY BRIDGE
CONTRACTOR AFTER
ABUTMENTS ARE IN PLACE.

EXISTING GRADE
EL. 644.0±

E. ABUT. EL. 639.08

CONC. PILES

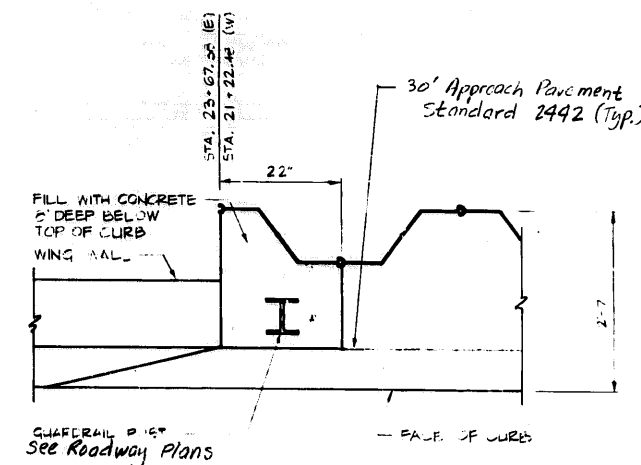
EL. 623.74

EXISTING
STRUCTURE
COFFER DAMS

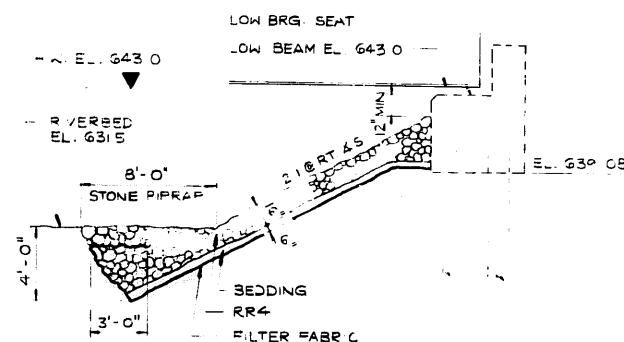
CONC. PILES
MIN. TIP EL. 616.00

CHANNEL EXCAVATION
SEE ROADWAY PLANS

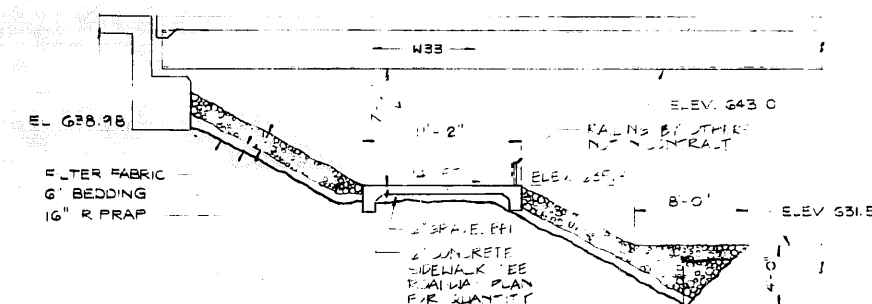
ELEVATION



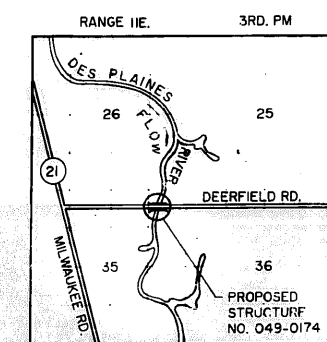
DETAIL - A



STONE RIPRAP TREATMENT
AT EAST ABUTMENT



STONE RIPRAP TREATMENT
AT WEST ABUTMENT



LOCATION SKETCH

PLAN

- LAYOUT OF THE SLOPE PROTECTION SYSTEM
MAY BE VARIED TO SUIT GROUND CONDITIONS
IN THE FIELD AS DIRECTED BY THE ENGINEER.
- DRAINS SHOULD BE LOCATED CLEAR OF ALL
DIAPHRAGMS.

DESIGN SPECIFICATIONS:

AMERICAN ASSOCIATION OF STATE HIGHWAY AND TRANSPORTATION
OFFICIALS STANDARD SPECIFICATIONS FOR HIGHWAY BRIDGES, 1989 WITH
1990 AND 1991 INTERIM

LOADING: HS-20-44

ALLOW 25 PSF FOR FUTURE WEARING SURFACE

DESIGN STRESSES:

$F_c = 3,500$ PSI
 $F_y = 60,000$ PSI (REINF.)
 $F_y = 50,000$ PSI (M 223 GRADE 50)
 $F_y = 36,000$ PSI (M 183)

APPROVED
FOR STRUCTURAL ADEQUACY ONLY

Ray E. (Hudson)
Engineer of Bridges and Structures

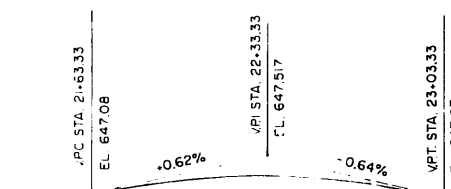


4/14/12

WATERWAY INFORMATION									
DRAINAGE AREA = 310 MI ² LOW GRADE ELEV. = 643.27 @ STATION 29+00									
FLOOD	FREQ. YR.	Q. C.F.S.	OPENING SQ.FT.		NAT. H.W.E.	HEAD-FT.		HEADWATER EL.	
			EXIST.	PROP.		EXIST.	PROP.	EXIST.	PROP.
DESIGN	10	3210	1540	1925	641.54	0	0	641.54	641.54
BASE	50	4310	1630	2030	642.90	0.30	0.10	643.20	643.00
OVERTOP	100								
MAX. CALC	500	4750	1630	2230	643.40	0.32	0.10	643.71	643.50

DESCRIPTION OF EXISTING STRUCTURE

DEERFIELD ROAD BRIDGE OVER THE DES PLAINES RIVER IS LOCATED IN
THE SUBURB OF RIVERWOODS IN LAKE COUNTY. THE STRUCTURE IS A
THREE SPAN, 150.2' BK. TO BK. ABUTMENT AND 42.6' OUT TO OUT
REINFORCED CONCRETE DECK GIRDER. THE EXISTING STRUCTURE NO. IS
049-0008. THE BRIDGE CARRIES TWO LANES OF DEERFIELD ROAD TRAFFIC
OVER THE DES PLAINES RIVER STRUCTURE WAS CONSTRUCTED IN 1930
AND NO MAJOR REHABILITATION HAS OCCURRED SINCE THE ORIGINAL
CONSTRUCTION. THE STRUCTURE CARRIES AN 11 FOOT THROUGH LANE
IN EACH DIRECTION WITH 6 FOOT GRAVEL SHOULDERS ON THE
APPROACH ROADWAY AND VARIABLE WIDTH (8 TO 9 FEET) BITUMINOUS
SHOULDER ON THE STRUCTURE. THE ENTIRE STRUCTURE WILL BE
REMOVED AND REPLACED. NO SALVAGE.



PROFILE GRADE

F.A.U. RTE. 1257 DEERFIELD RD.
(ALONG & ROADWAY)

TEMPORARY SHEET PILING DATA

EAST ABUTMENT		WEST ABUTMENT	
TOP ELEV.	648.00	TOP ELEV.	648.00
BOTTOM ELEV.	625.00	BOTTOM ELEV.	625.00
HORIZ. LENGTH	45'	HORIZ. LENGTH	45'

THE INFORMATION SHOWN FOR THE TEMPORARY SHEET PILING IS
ESTIMATED. IT IS THE CONTRACTOR'S RESPONSIBILITY TO PROVIDE A
DESIGN AND COMPUTATIONS OF THE TEMPORARY SHEET PILING AND
ASSOCIATED MEMBERS IF REQUIRED, SUBJECT TO THE APPROVAL OF THE
ENGINEER.

Shah Engineering, Inc.



360 N. MICHIGAN AVE.
CHICAGO, IL 60601
TE. 312/630-0006
Consulting Engineers

GENERAL PLAN
DEERFIELD ROAD OVER
DES PLAINES RIVER
F.A.U. RTE. 1257 SECTION 38B-R(89)
LAKE COUNTY
Sta. 22+39.95
STRUCTURE NUMBER 049-0174

STATE OF ILLINOIS
DEPARTMENT OF TRANSPORTATION

SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
308-R (89)	LAKE	34	1
BYA		TO BYA	
PER ROAD DIST NO. 1		PER A/B PROJECT	

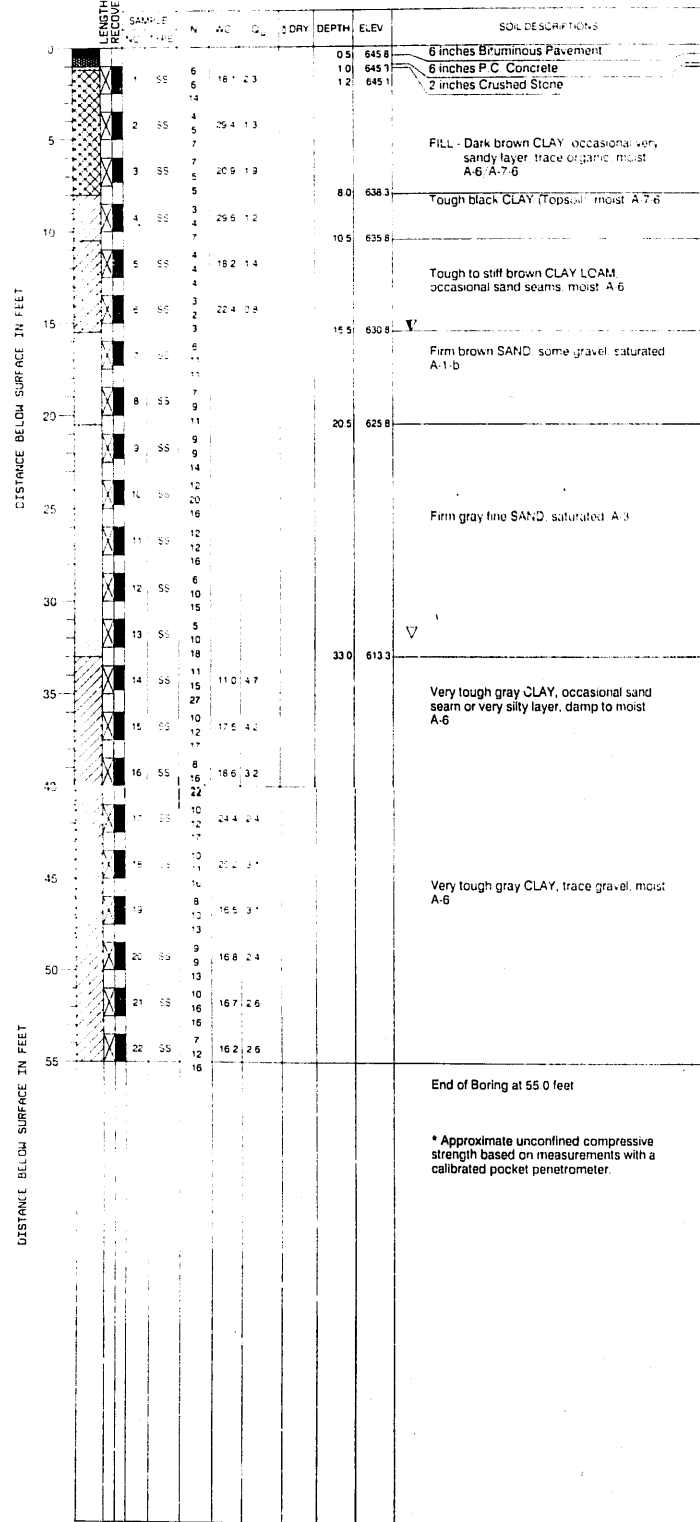
SHEET NO. 4
SHEETS 34

PROJECT: Deerfield Road over Des Plaines River, Lake Co., Job No. D-91-521-89
CLIENT: Illinois Department of Transportation, Schaumburg, Illinois



BORING 1 DATE STARTED 8-23-91 DATE COMPLETED 8-23-91 JOB L-30,535

ELEVATIONS
GROUND SURFACE 646.3
END OF BORING 591.3
WATER TABLE
WHILE DRILLING 15.5'
AT END OF BORING 32.0'
24 HOURS

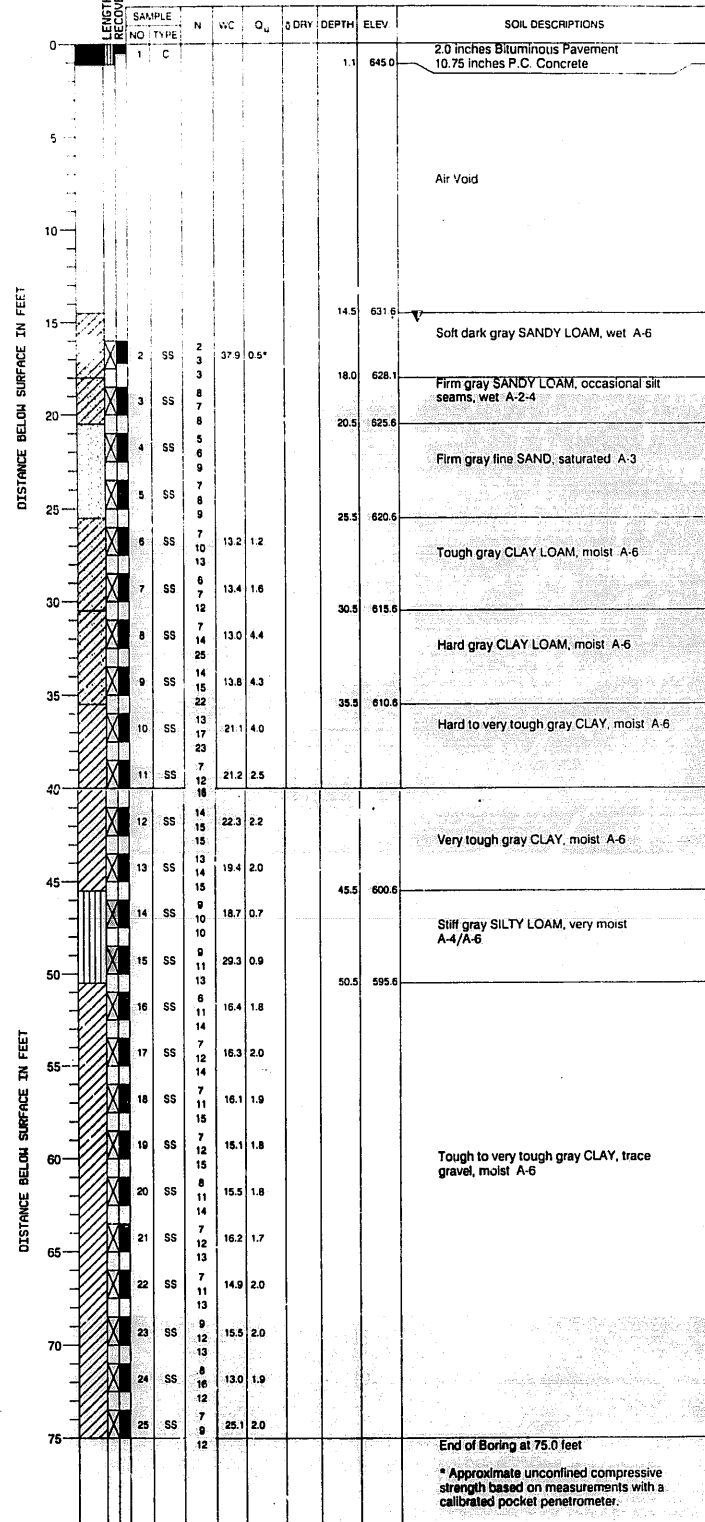


PROJECT: Deerfield Road over Des Plaines River, Lake Co., Job No. D-91-521-89
CLIENT: Illinois Department of Transportation, Schaumburg, Illinois



BORING 2 DATE STARTED 8-22-91 DATE COMPLETED 8-22-91 JOB L-30,535

ELEVATIONS
GROUND SURFACE 646.1
END OF BORING 571.1
WATER TABLE
WHILE DRILLING 15.0'
AT END OF BORING 15.0'
24 HOURS

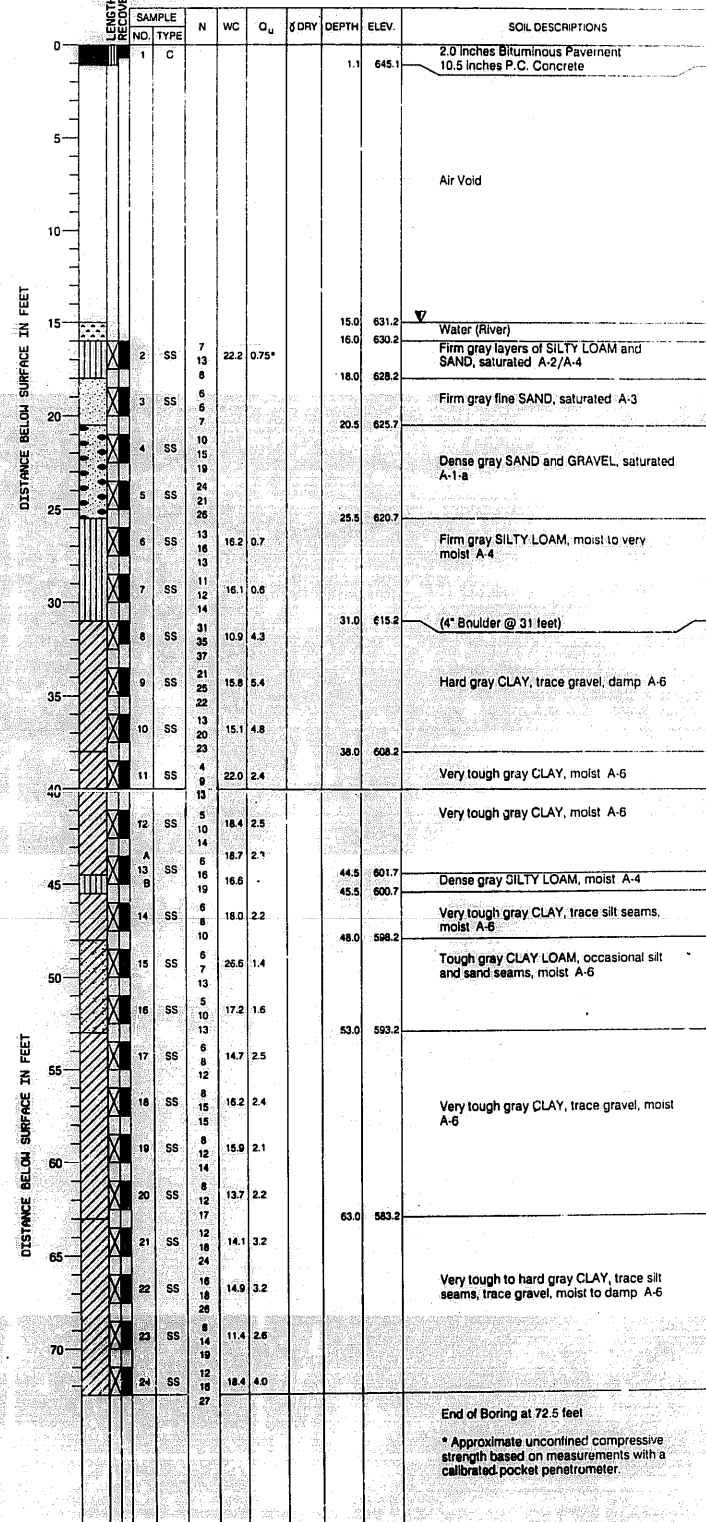


PROJECT: Deerfield Road over Des Plaines River, Lake Co., Job No. D-91-521-89
CLIENT: Illinois Department of Transportation, Schaumburg, Illinois



BORING 3 DATE STARTED 8-22-91 DATE COMPLETED 8-22-91 JOB L-30,535

ELEVATIONS
GROUND SURFACE 646.2
END OF BORING 573.7
WATER TABLE
WHILE DRILLING 15.0'
AT END OF BORING 15.0'
24 HOURS

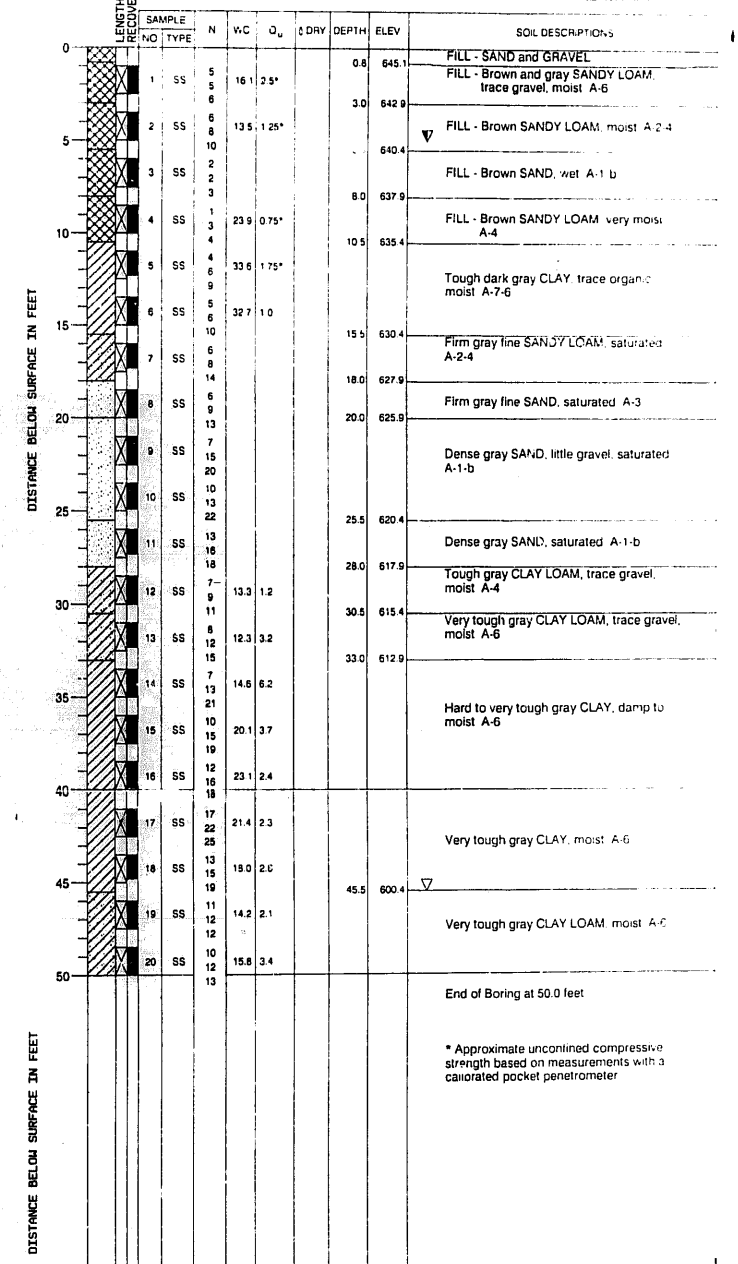


PROJECT: Deerfield Road over Des Plaines River, Lake Co., Job No. D-91-521-89
CLIENT: Illinois Department of Transportation, Schaumburg, Illinois



BORING 4 DATE STARTED 8-23-91 DATE COMPLETED 8-23-91 JOB L-30,535

ELEVATIONS
GROUND SURFACE 645.9
END OF BORING 595.9
WATER TABLE
WHILE DRILLING 5.0'
AT END OF BORING 45.5'
24 HOURS



ILLINOIS DEPARTMENT OF TRANSPORTATION
DEERFIELD ROAD OVER DES PLAINES RIVER
F.A.U. RTE. 1257
SECTION 38B-R(89) LAKE COUNTY
STRUCTURE NO. 049-0174

SOIL BORING LOGS

REVISIONS	
NAME	DATE

SCALE: VERT. HORIZ.
DATE
DRAWN BY
CHECKED BY

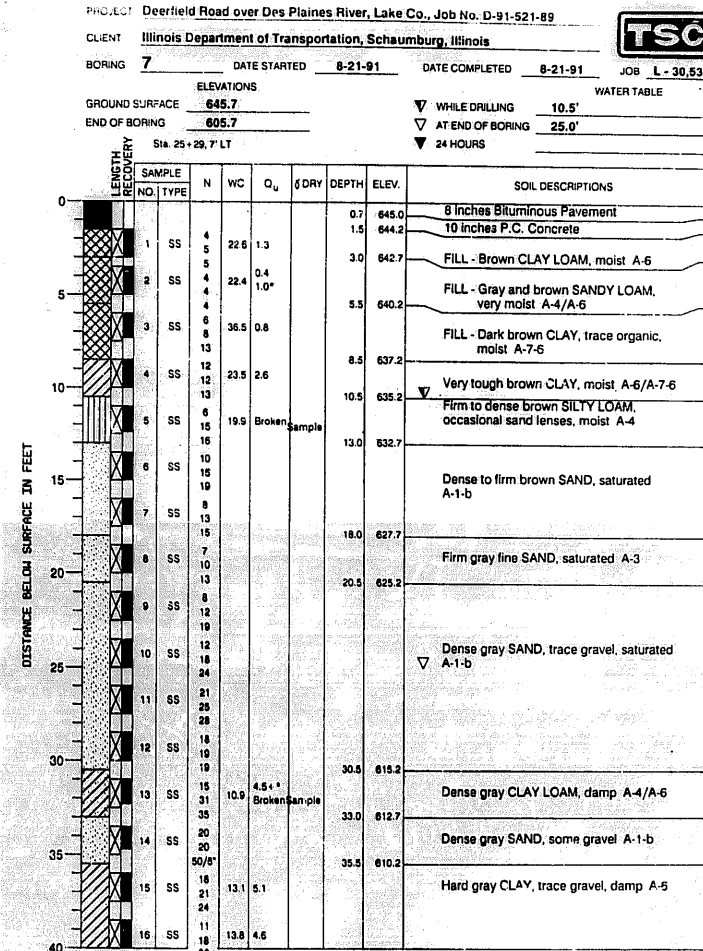
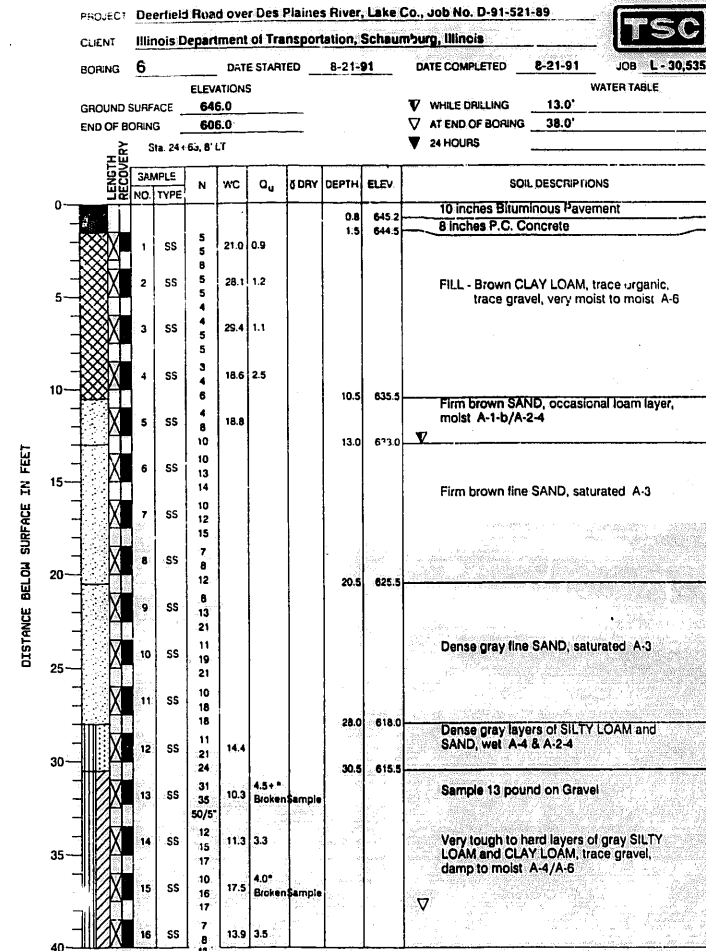
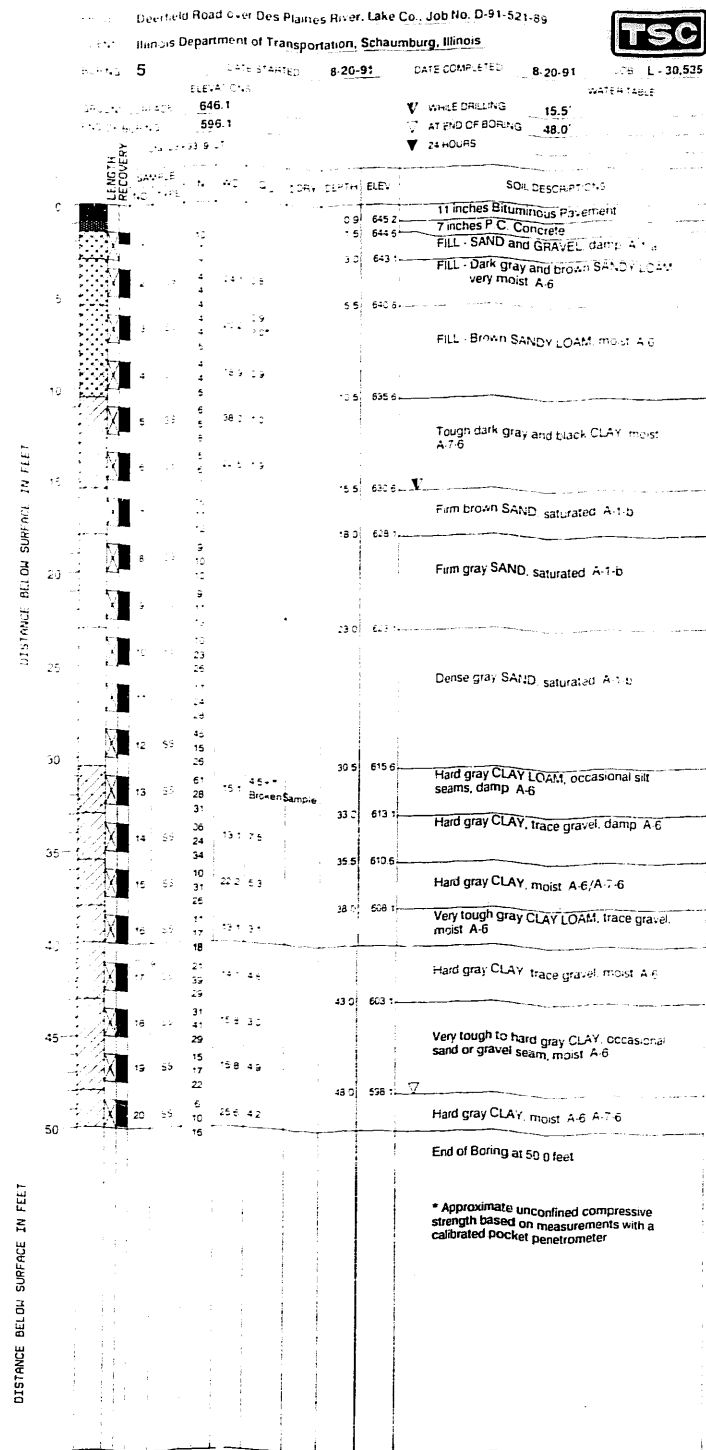
9-14-92

STATE OF ILLINOIS
DEPARTMENT OF TRANSPORTATION

F.A. RTE.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
1257	308-R(89)	LAKE	39	14
STA.		TO STA.		
FED. ROAD DIST. NO. 1		FED. AID PROJECT		

SHEET NO. 14

SHEETS 24



ILLINOIS DEPARTMENT OF TRANSPORTATION
DEERFIELD ROAD OVER DES PLAINES RIVER
F.A.U. RTE. 1257
SECTION 308-R(89) LAKE COUNTY
STRUCTURE NO. 049-0174

SOIL BORING LOGS

SCALE: VERT.
HORIZ.

DRAWN BY
CHECKED BY

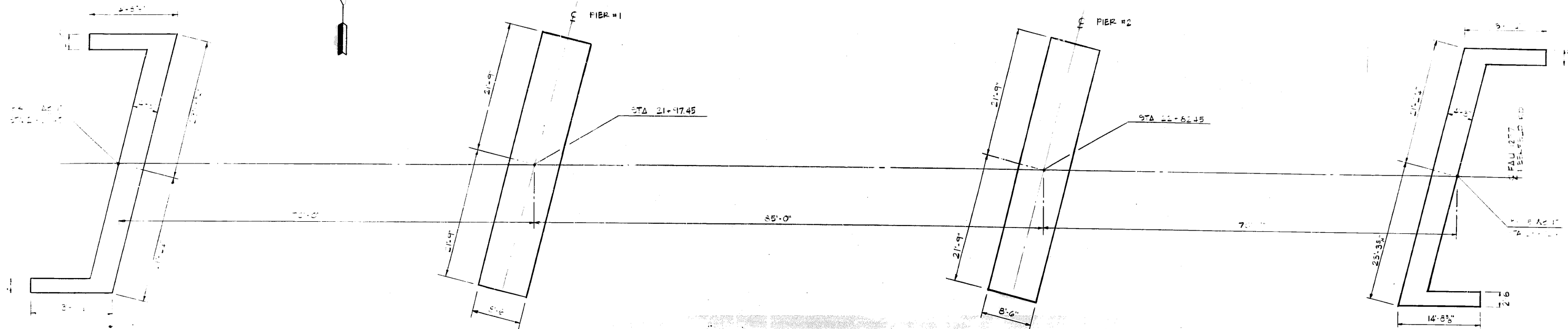
9-14-92

STATE OF ILLINOIS
DEPARTMENT OF TRANSPORTATION

FILE NO.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
1257	38B-R (89)	LAKE	39	15
STA		TO STA		
FED. ROAD DIST. NO. 1		FED. AID PROJECT		

SHEET NO. 6

SHEETS 24



FOOTING LAYOUT

REVISIONS	
NAME	DATE

ILLINOIS DEPARTMENT OF TRANSPORTATION
DEERFIELD ROAD OVER DES PLAINES RIVER
F.A.U. RTE. 1257
SECTION 38B-R(89) LAKE COUNTY
STRUCTURE NO. 049-0174

FOOTING LAYOUT

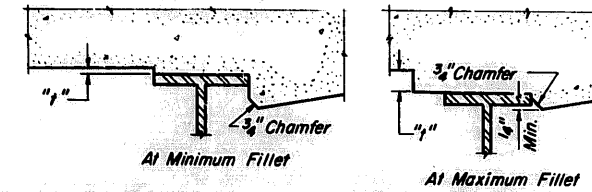
SCALE: VERT. 1/8"=1'-0"
HORIZ. 1/8"=1'-0"

DRAWN BY

CHECKED BY

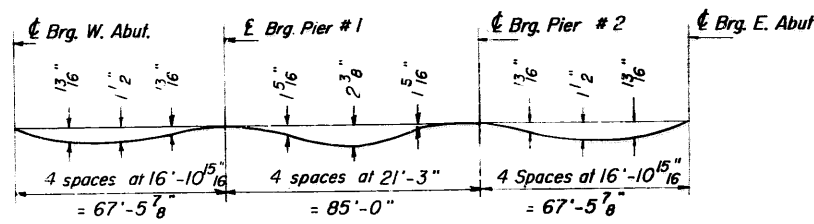
9-14-92

STATE OF ILLINOIS
DEPARTMENT OF TRANSPORTATION



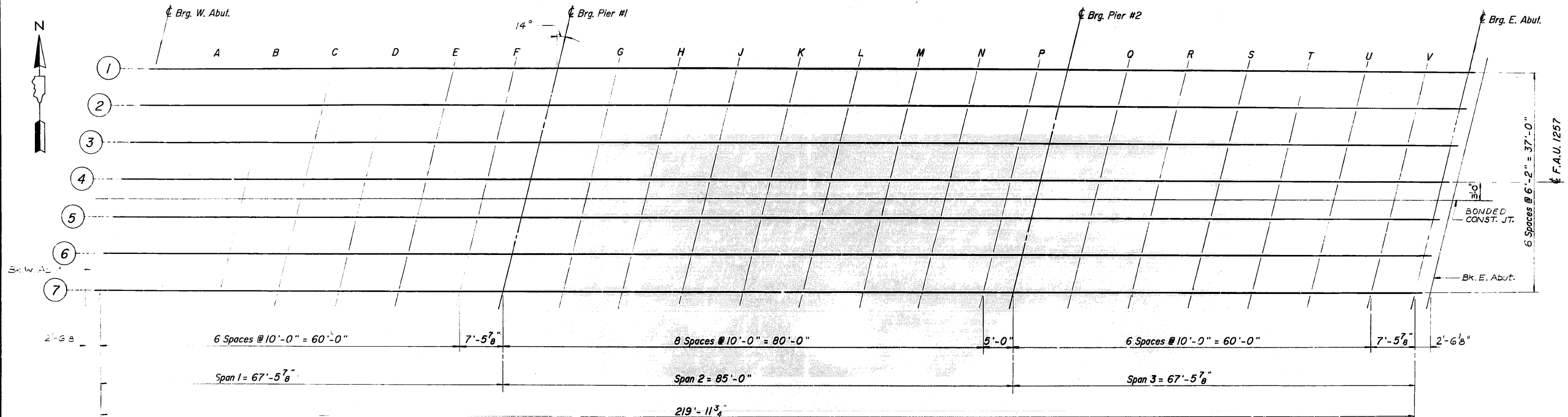
To determine "f": After all structural steel has been erected, elevations of the top flanges of the beams shall be taken at intervals shown below. These elevations subtracted from the "Theoretical Grade Elevations Adjusted for Dead Load Deflection" shown below, minus slab thickness, equals the fillet heights "f" above top flange of beams.

FILLET HEIGHTS



DEAD LOAD DEFLECTION DIAGRAM

(Includes weight of concrete only.)
Note: The above deflections are not to be used in the field if the engineer is working from the grade elevations adjusted for dead load deflections as shown below.



PLAN

DESIGNED
CHECKED
DRAWN
CHECKED

REVISIONS	
NAME	DATE

ILLINOIS DEPARTMENT OF TRANSPORTATION
DEERFIELD ROAD OVER DES PLAINES RIVER
F.A.U. RTE. 1257
SECTION 388-R(89) LAKE COUNTY
STRUCTURE NO. 049-0174

TOP OF SLAB ELEVATION

SCALE: VERT. 1"=10'
HORIZ. 1"=40'
DATE 9-14-92
DRAWN BY
CHECKED BY

F.A.U. RTE.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.	SHEET NO.
1257	38B-P(89)	LAKE	34	17	SHEETS
STA. 21+27.45		TO	STA. 21+27.45		
FED. ROAD DIST. NO. 7		ILLINOIS	FED. AID PROJECT		

BEAM NO. 4 @ C ROADWAY @ P.G.

LOCATION	STATION	OFFSET	THEORETICAL GRADE ELEVATION	ELEVATION ADJUSTED FOR DEAD LOAD DEFLECTION
BK. W. ABUT	2127.452	0.000	646.803	646.803
CL. BRG. W. ABUT	2129.964	0.000	646.826	646.826
A	2139.964	0.000	646.914	646.955
B	2149.964	0.000	646.992	647.073
C	2159.964	0.000	647.062	647.181
D	2169.964	0.000	647.122	647.237
E	2179.964	0.000	647.14	647.244
F	2189.964	0.000	647.216	647.245
CL. PIER 1	2197.452	0.000	647.242	647.242
G	2207.452	0.000	647.269	647.316
H	2217.452	0.000	647.287	647.375
J	2227.452	0.000	647.296	647.457
K	2237.452	0.000	647.295	647.487
L	2247.452	0.000	647.286	647.468
M	2257.452	0.000	647.268	647.401
N	2267.452	0.000	647.241	647.314
P	2277.452	0.000	647.204	647.217
CL. PIER 2	2282.452	0.000	647.183	647.183
Q	2292.452	0.000	647.133	647.170
R	2302.452	0.000	647.075	647.158
S	2312.452	0.000	647.007	647.129
T	2322.452	0.000	646.930	647.042
U	2332.452	0.000	646.844	646.915
V	2342.452	0.000	646.750	646.802
CL. BRG. E. ABUT	2349.940	0.000	646.673	646.673
BK. E. ABUT	2352.452	0.000	646.646	646.646

BEAM NO. 7

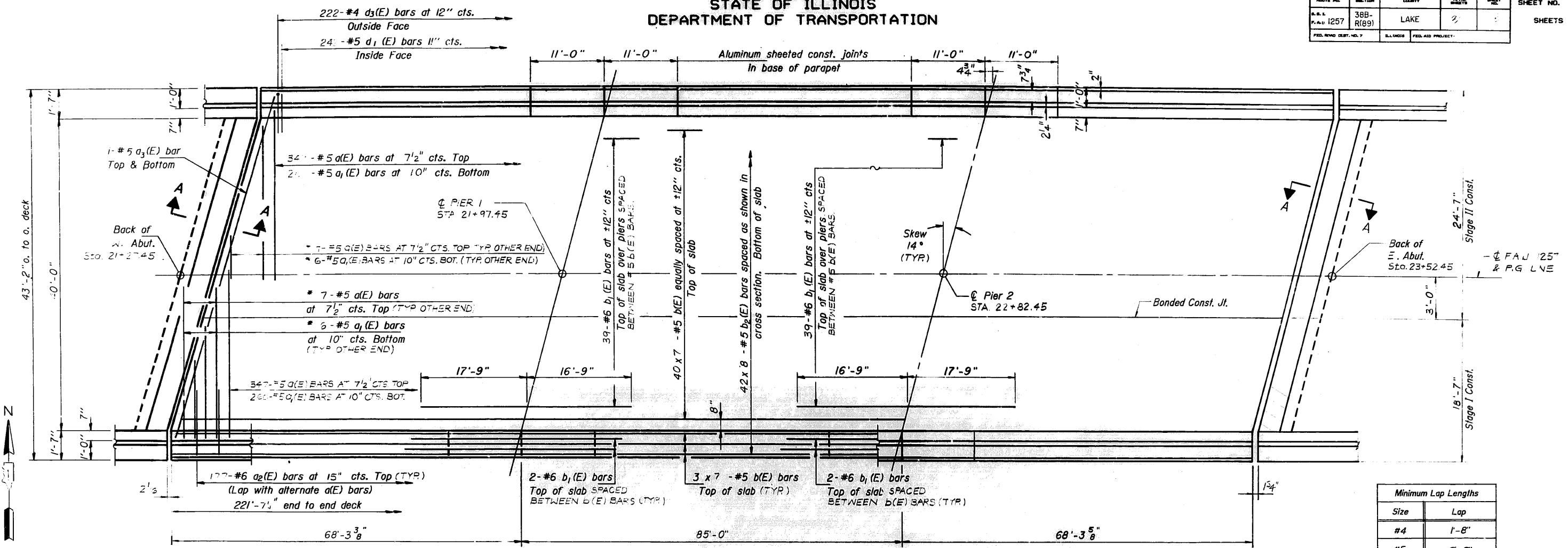
LOCATION	STATION	OFFSET	THEORETICAL GRADE ELEVATION	ELEVATION ADJUSTED FOR DEAD LOAD DEFLECTION
BK. W. ABUT	2122.841	18.500	646.435	646.435
CL. BRG. W. ABUT	2125.353	18.500	646.460	646.460
A	2135.353	18.500	646.551	646.593
B	2145.353	18.500	646.634	646.715
C	2155.353	18.500	646.708	646.827
D	2165.353	18.500	646.772	646.887
E	2175.353	18.500	646.828	646.898
F	2185.353	18.500	646.875	646.903
CL PIER 1	2192.841	18.500	646.904	646.904
G	2202.841	18.500	646.935	646.982
H	2212.841	18.500	646.957	647.045
J	2222.841	18.500	646.970	647.131
K	2232.841	18.500	646.974	647.166
L	2242.841	18.500	646.969	647.151
M	2252.841	18.500	646.955	647.087
N	2262.841	18.500	646.931	647.004
P	2272.841	18.500	646.899	646.912
CL PIER 2	2277.841	18.500	646.880	646.880
Q	2287.841	18.500	646.834	646.871
R	2297.841	18.500	646.780	646.863
S	2307.841	18.500	646.716	646.839
T	2317.841	18.500	646.644	646.756
U	2327.841	18.500	646.562	646.632
V	2337.841	18.500	646.472	646.524
CL. BRG. E. ABUT	2345.329	18.500	646.398	646.398
BK. E. ABUT	2347.841	18.500	646.372	646.372

SCALE: NONE
DATE: 9/14/1992

DRAWN BY: M.K.
CHECKED BY: J.M.

STATE OF ILLINOIS
DEPARTMENT OF TRANSPORTATION

ROUTE NO.	SECTION	COUNTY	POST MILE	SHEET NO.
38B-R(89)	LAKE	LAKE	2	1
SHEETS 11				

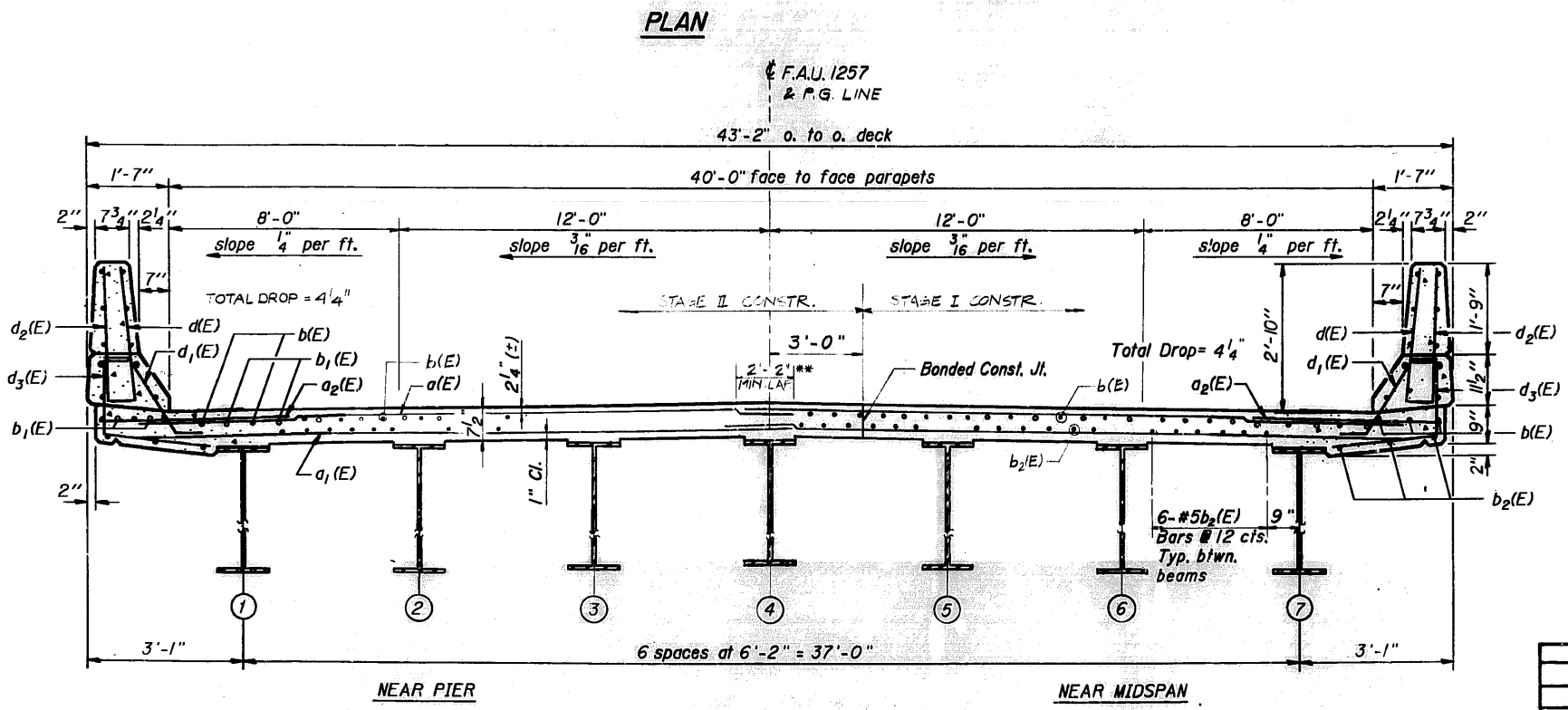


* Order a₁(E) & a₂(E) bars full length.
Cut to fit skew and use remainder
of bars at opposite end.

Minimum Lap Lengths	
Size	Lap
#4	1'-8"
#5	2'-2"
#6	2'-7"
#7	3'-5"
#8	4'-6"

Notes: See Sheet #10 of 24 for superstructure details
and Bill of Material.
Reinforcement bars designated (E) shall be
epoxy coated.
Bars indicated thus 20 x 3-#5 etc. indicates
20 lines of bars with 3 lengths per line.
See Sheet #10 of 24 for parapet reinforcement.
Hatched area to be poured after superstructure
has been removed.

* Lapped bars at this location shall be tied with
double the number of ties normally used.



CROSS SECTION
(Looking East)

DESIGNED
CHECKED
DRAWN
CHECKED

REVISIONS	
NAME	DATE

ILLINOIS DEPARTMENT OF TRANSPORTATION
DEERFIELD ROAD OVER DES PLAINES RIVER
F.A.U. RTE. 1257
SECTION 38B-R(89) LAKE COUNTY
STRUCTURE NO. 049-0174

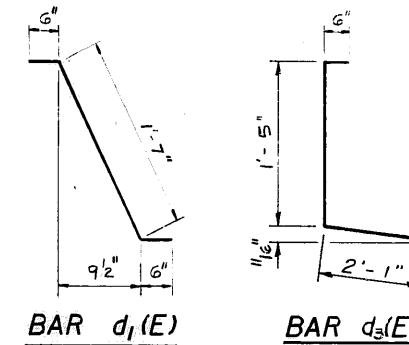
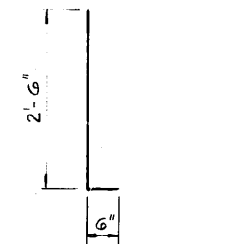
DECK PLAN

SCALE VERT
HORIZ

DATE

DRAWN BY
CHECKED BY
9-14-92

ROUTE NO.	RE-OPEN	COUNTY	TOTAL SHEETS	SHEET NO.
S. R. L. F. A. 1257	38B- R(89)	LAKE	3	SHEETS
FED. ROAD DIST. NO. 1	S. L. INCHES		FED. AID PROJECT NO.	

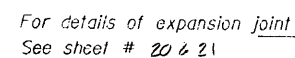

$$BAR \quad d_l(E)$$
$$BAR \quad d_3(E)$$


BAR $d(E)$ & $d_2(E)$

Notes:

The exterior surfaces of the Floor Drain shall be painted with the vinyl enamel coat painting specified for Structural Steel. The exterior surfaces of the Aluminum tube shall be cleaned and given a washcoat pretreatment in accordance with Steel Structures Painting Council's Spec. SSPC-SPI & SSPC-Paint 27 prior to painting.

Fiberglass pipe shall conform to ASTM: D2996, with short-time rupture strength hoop tensile stress of 30,000 p.s.i. minimum. The surface of the Fiberglass pipe shall be free of bond inhibiting agents.



Bar	No.	Size	Length	Shape
a ₁ (E)	70	#5	21'-4"	_____
a ₁ (E)	532	#5	20'-10"	_____
a ₂ (E)	354	#6	4'-0"	_____
i ₂ (E)	8	#5	22'-0"	_____
b(E)	322	#5	33'-6"	_____
b ₁ (E)	86	#6	34'-6"	_____
b ₂ (E)	336	#5	29'-7"	_____
d(E)	484	#5	3'-0"	_____
d ₁ (E)	484	#5	2'-7"	_____
d ₂ (E)	444	#4	3'-0"	_____
d ₃ (E)	444	#4	5'-9"	_____
e(E)	72	#4	18'-4"	_____
e ₁ (E)	48	#4	10'-8"	_____
e ₂ (E)	48	#4	15'-5"	_____
e ₃ (E)	16	#5	24'-3"	_____
e ₄ (E)	16	#8	3'-3"	_____
e ₅ (E)	16	#5	10'-8"	_____
e ₆ (E)	16	#8	10'-8"	_____
e ₇ (E)	12	#5	22'-0"	_____
e ₈ (E)	8	#8	33'-2"	_____
Reinforcement Bars (Epoxy Coated)	Lbs.	6621		
Class X Concrete Superstructure	Cu. Yds.	271		

Reinforcement bars designated (E) shall be epoxy coated.

[illegible]

ILLINOIS DEPARTMENT OF TRANSPORTATION
DEERFIELD ROAD OVER DES PLAINES RIVER
F.A.U. RTE. 1257
SECTION 38B-R(89) LAKE COUNTY
STRUCTURE NO. C49-0174

PARAPET DETAILS

SCALE: VERT. DRAWN BY
HORIZ. CHECKED BY
DATE

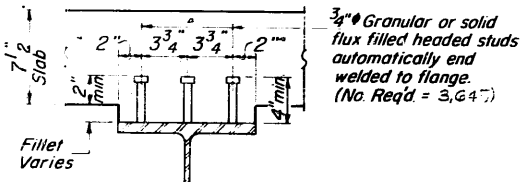
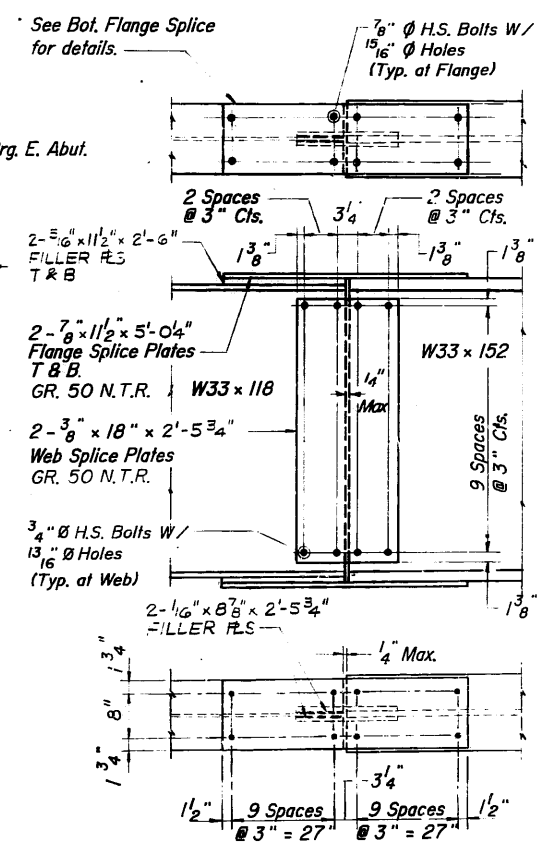
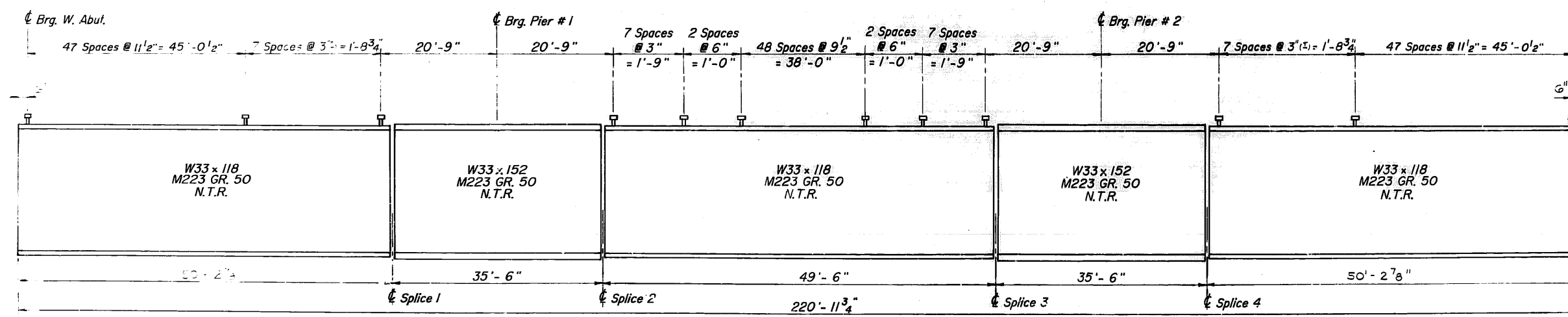
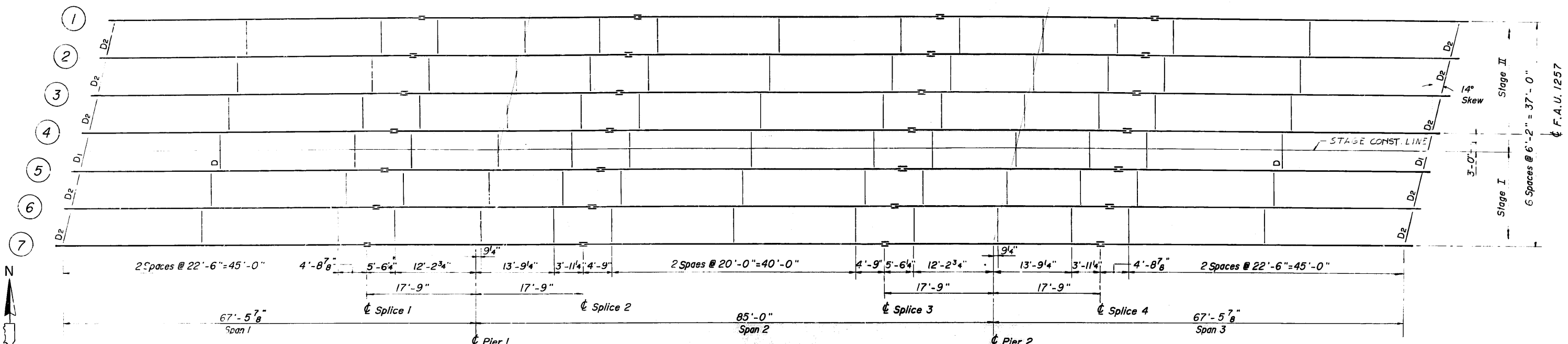
9-14-92

9-14-92

STATE OF ILLINOIS
DEPARTMENT OF TRANSPORTATION

ROUTE NO.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
U.1257	38B-3(89)	LAKE	3	1
FED. ROAD DIST. NO. 1 ILLINOIS FED. AID PROJECT				

SHEET NO. 1
SHEETS



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REVISIONS	
NAME	DATE

ILLINOIS DEPARTMENT OF TRANSPORTATION
DEERFIELD ROAD OVER DES PLAINES RIVER
F.A.U. RTE. 1257
SECTION 38B-R(89) LAKE COUNTY
STRUCTURE NO. 049-0174

FRAMING PLAN AND DETAILS

SCALE: VERT. HORIZ.
DATE

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9-14-92

STATE OF ILLINOIS
DEPARTMENT OF TRANSPORTATION

FILE NO.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
1257	38B-R(89)	LAKE	29	1
STA.		TO STA.		
FED. ROAD DIST. NO. 1		ILL. NO. 1	FED. AID PROJECT	

SHEET NO. 2
SHEETS 24

MOMENT TABLE

(COMPOSITE IN POSITIVE MOMENT AREA ONLY)

INTERIOR BEAM MOMENT TABLE				
		0.4 SP. 1 or SP. 3	Pier 1 or 2	0.5 SP. 2
I _s	(in ⁴)	5900	8160	5900
I _c	(in ⁴)	15232	-	15232
S _s	(in ³)	359	487	359
S _c	(in ³)	519	-	519
Z	(in ³)	-	559	-
DL	(K/ft)	0.732	1.046	0.732
M _{DL}	(ft K)	218	620	219
S _p	(K/ft)	0.28	-	0.28
M _{SDI}	(ft K)	87	-	88
M _{ILL}	(ft K)	427	379	479
M _{imp.}	(ft K)	111	94	104
5/3(M _L + I)	(ft K)	897	788	905
M _a	(ft K)	1563	1830	1576
M _u	(ft K)	-	2329	-
f _s DL non-comp.	(ksi)	7.3	15.3	7.3
f _s DL comp.	(ksi)	2.0	-	2.0
f _s 5/3 (LL + I)	(ksi)	20.7	19.4	20.9
f _s (overload)	(ksi)	30.0	34.7	30.2
* f _s (total)	(ksi)	39.0	45.1	39.3
VR	(K)	36.1	-	39.9

INTERIOR BEAM REACTION TABLE			
		ABUT.	PIERS
R _{DL}	(K)	25.3	86.1
R _{LL}	(K)	36.2	49.5
Imp.	(K)	9.4	12.3
R _{total}	(K)	70.9	147.9

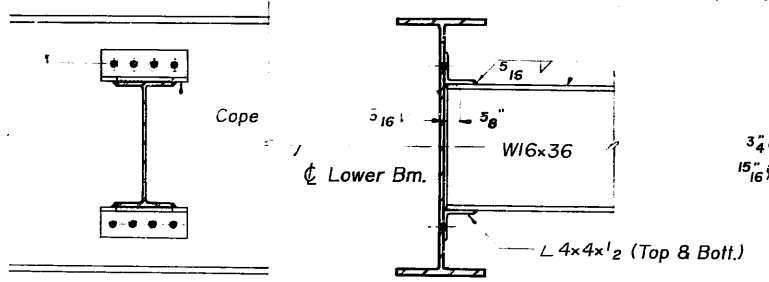
* Non-compact section M_a = 1.3 [M_{DL} + M_{SDI} + 5/3 (M_{LL} + I)]

Notes Two hardened washers shall be required over all oversized holes.

* 1/2" x 1/16" slotted holes in connection angles at beam #5 for diaphragms at Stage Construction Line.
One 5/16" structural plate washer shall be provided over all slotted holes.
Bolts shall be finger tightened prior to deck pour for Stage II Construction.

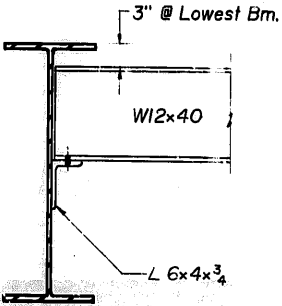
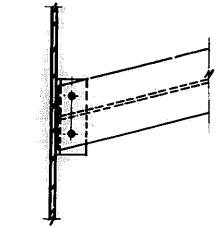
Temporary Sheet Piling for Stage I Constr. shall be notched to allow placement of top flange splice plate.

3/4" High Strength Bolts
15/16" Holes *



INTERIOR DIAPHRAGM D1

78 Required

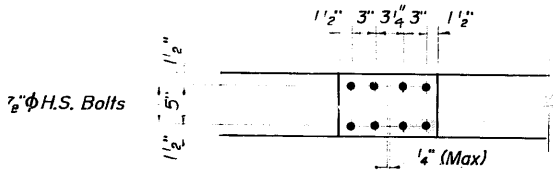


END DIAPHRAGM D2

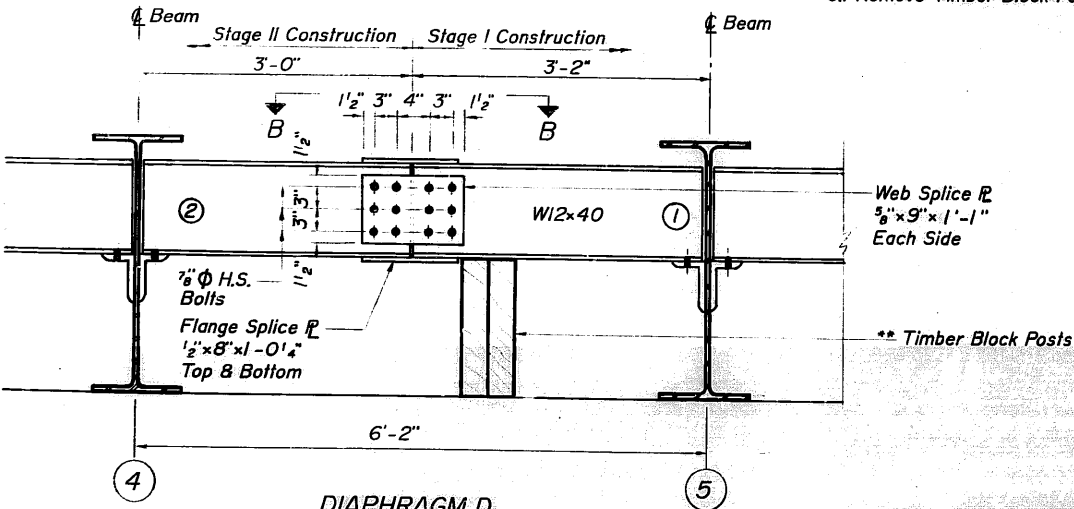
10 Required

DIAPHRAGM D2 CONSTRUCTION SEQUENCE

- 1.) Order Diaphragm D2 in two sections with lengths of 3'-1\" and 2'-11\".
- 2.) Attach section ① of Diaphragm to Beam #5 and top flange splice R during Stage I Construction.
- 3.) Place Timber Block Posts between section ① of diaphragm and abutment bearing seat.
- 4.) Attach section ② of diaphragm to both Beam #4 and section ① of diaphragm during Stage II Construction.
- 5.) Attach all remaining splice plates to sections ① and ② of diaphragms.
- 6.) Remove Timber Block Posts.



VIEW B-B



DIAPHRAGM D1

(2 Required)
Dimensions are along C diaphragm (Looking East)

For details of connections to beams see diaphragm D.

** Cost of Timber Block Posts is incidental to Structural Steel.

TOP OF BEAM ELEVATIONS *								
BEAM	E. BRG. V. ABUT.	SPLICE 1	E. BRG. PIER 1	SPLICE 2	SPLICE 3	E. BRG. PIER 2	SPLICE 4	E. BRG. E. ABUT.
B1	645.879	646.201	646.258	646.315	646.259	646.164	646.069	645.633
B2	645.994	646.323	646.361	646.400	646.393	646.300	646.208	645.778
B3	646.078	646.414	646.455	646.496	646.496	646.405	646.315	645.893
B4	646.160	646.503	646.546	646.590	646.597	646.509	646.421	646.006
B5	646.050	646.400	646.446	646.492	646.505	646.419	646.334	645.925
B6	645.937	646.294	646.342	646.391	646.411	646.328	646.245	645.843
B7	645.794	646.158	646.208	646.259	646.286	646.206	646.126	645.731

* FOR FABRICATION USE ONLY

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DRAWN
CHECKED

REVISIONS	
NAME	DATE

ILLINOIS DEPARTMENT OF TRANSPORTATION
DEERFIELD ROAD OVER DES PLAINES RIVER
F.A.U. RTE. 1257
SECTION 38B-R(89) LAKE COUNTY
STRUCTURE NO. 049-0174

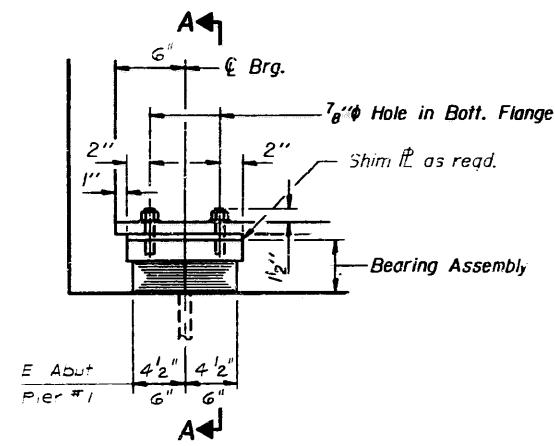
DIAPHRAGM DETAILS

SCALE: VERT. HORIZ.
DATE
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CHECKED BY

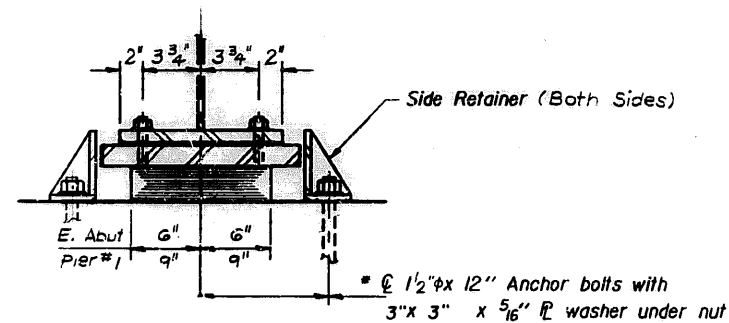
9-14-92

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DEPARTMENT OF TRANSPORTATION

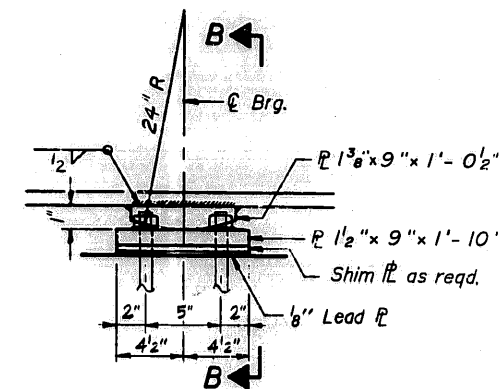
ROUTE NO.	SECTION	COUNTY	SHEET NO.	SHEETS
1257	388-R(89)	LAKE	24	26
FED. ROAD DIST. NO. 7				



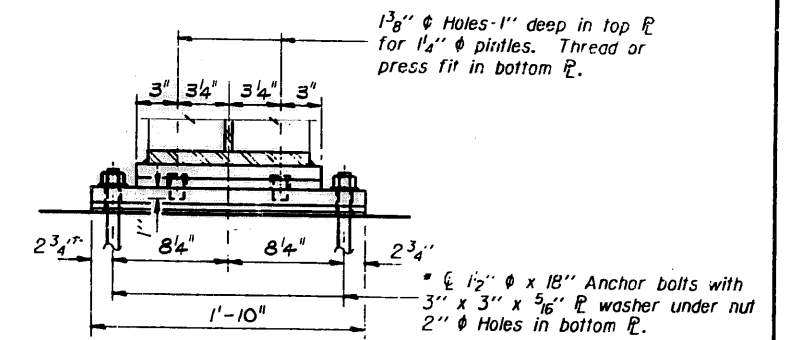
ELEVATION



SECTION A-A



ELEVATION AT PIER #2

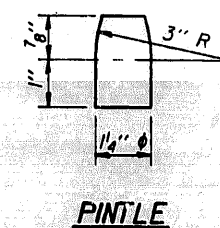


SECTION B-B

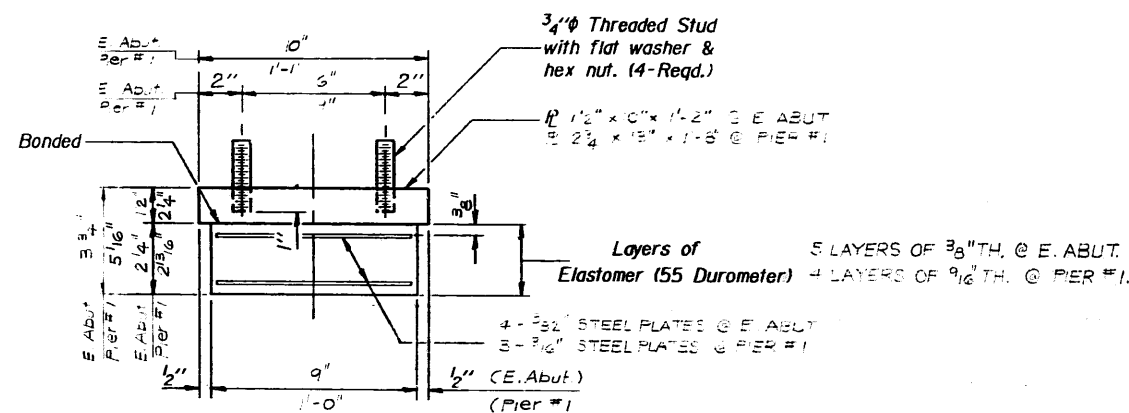
TYPE I ELASTOMERIC EXP. BRG.
AT EAST ABUT. AND PIER #1

* Notes: Anchor bolts at fixed bearings may be built into the masonry.
See sheet #24 for Anchor Bolt installation.

FIXED BEARING

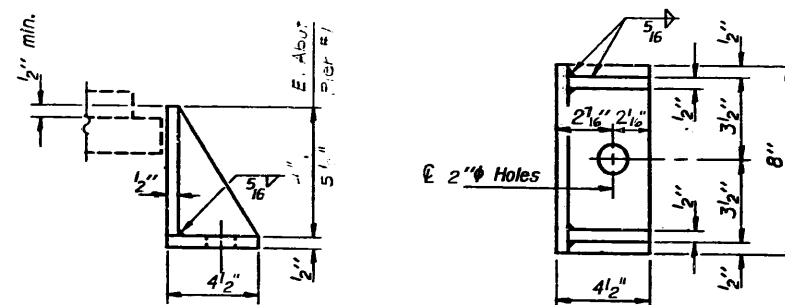


PINTLE



BEARING ASSEMBLY

Note: Shim plates shall not be placed under Bearing Assembly.



SIDE RETAINER

Equivalent rolled angle with stiffeners will be allowed in lieu of welded plates.

BILL OF MATERIAL

Item	Unit	Total
Install Elastomeric Bearing Assembly Type I	Each	14

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REVISIONS	
NAME	DATE

ILLINOIS DEPARTMENT OF TRANSPORTATION
DEERFIELD ROAD OVER DES PLAINES RIVER
F.A.U. RTE. 1257
SECTION 388-R(89) LAKE COUNTY
STRUCTURE NO. 049-0174

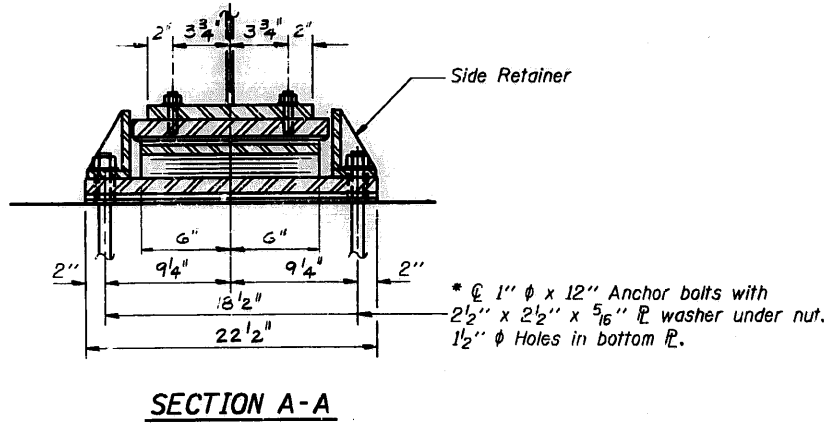
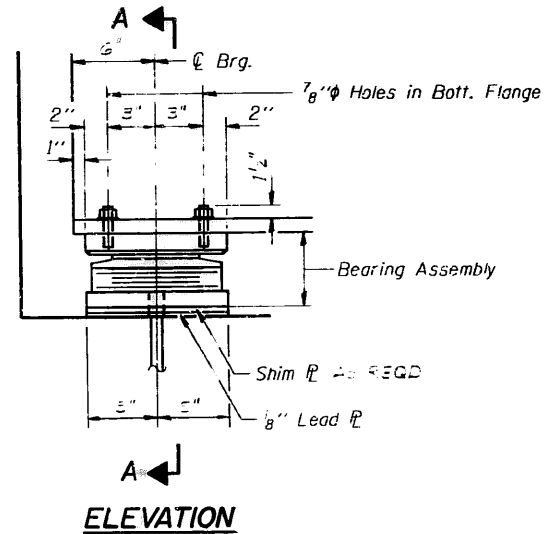
BEARING DETAILS

SCALE: VERT. HORIZ.
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STATE OF ILLINOIS
DEPARTMENT OF TRANSPORTATION

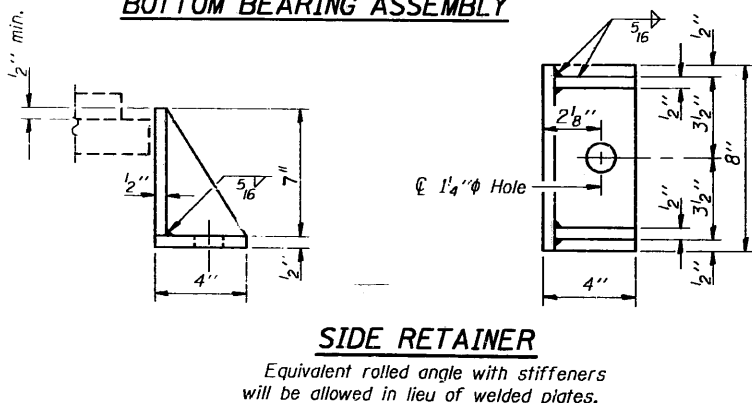
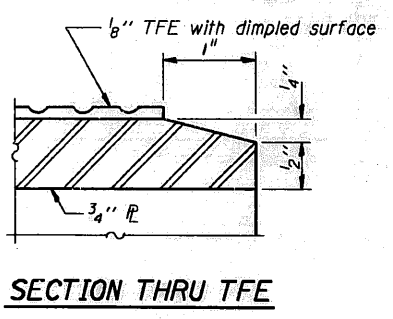
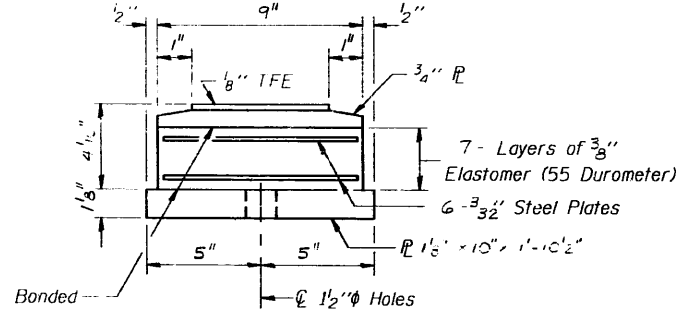
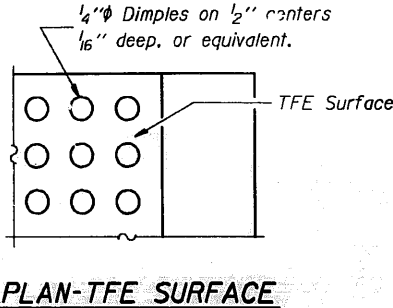
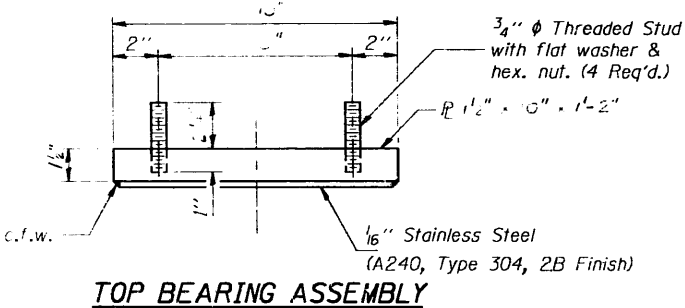
ROUTE NO.	LOCATION	COUNTY	SHEET NO.	SHEET TOTAL
388-R(89)	LAKE	39	23	
FED. ROAD DIST. NO. 7				

SHEET NO. 4
SHEETS 14



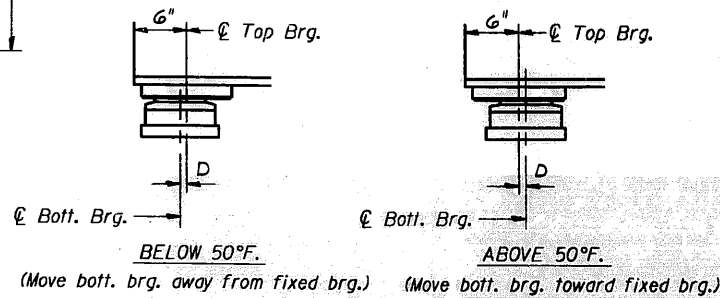
**TYPE II ELASTOMERIC EXP. BRG.
AT WEST ABUT.**

* Notes: Anchor bolts at fixed bearings may be built into the masonry.
See sheet #24 for Anchor Bolt installation.



Note: The 1/8" TFE sheet shall be bonded directly to the top steel plate with a two-component, medium viscosity epoxy resin, conforming to the requirements of the Federal Specification MMM-A-134, Type I. The bond agent shall be applied on the full area of the contact surfaces.

Bonding of 1/8" TFE sheet during vulcanizing process will be permitted provided the process and method of adjusting assembly height is approved by the Engineer.



D = 1/8" per each 100' of expansion for every 15° temp. change from the normal temp. of 50°F.

BILL OF MATERIAL

Item	Unit	Total
Install Elastomeric Bearing Assembly Type II	Each	7

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CHECKED

REVISIONS	
NAME	DATE

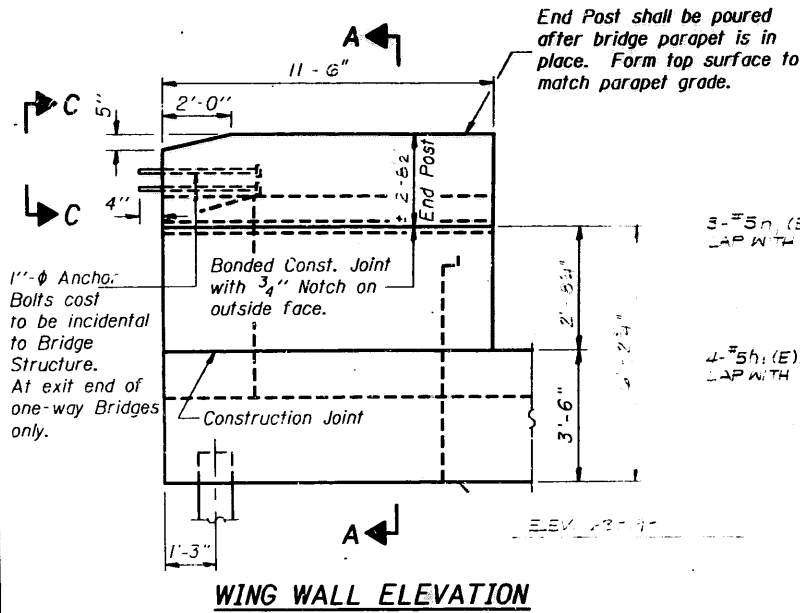
ILLINOIS DEPARTMENT OF TRANSPORTATION
DEERFIELD ROAD OVER DES PLAINES RIVER
F.A.U. RTE. 1257
SECTION 388-R(89) LAKE COUNTY
STRUCTURE NO. 049-0174
BEARING DETAILS
SCALE: VERT. HORIZ.
DATE
DRAWN BY
CHECKED BY
9-14-92

STATE OF ILLINOIS
DEPARTMENT OF TRANSPORTATION

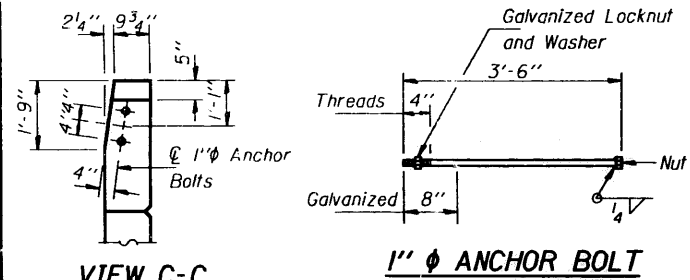
Notes: Space reinforcement in cap to miss anchor bolts.
Pour steps monolithically with cap.
Reinforcement bars designated (E) shall be epoxy coated.

ROUTE NO.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
G.S.L. F.A.U 1257	388- R(89)	LAKE	39	24
FED. ROAD DIST. NO. 7		ILLINOIS	FED. AID PROJECT-	

SHEET NO. 15
SHEETS 24

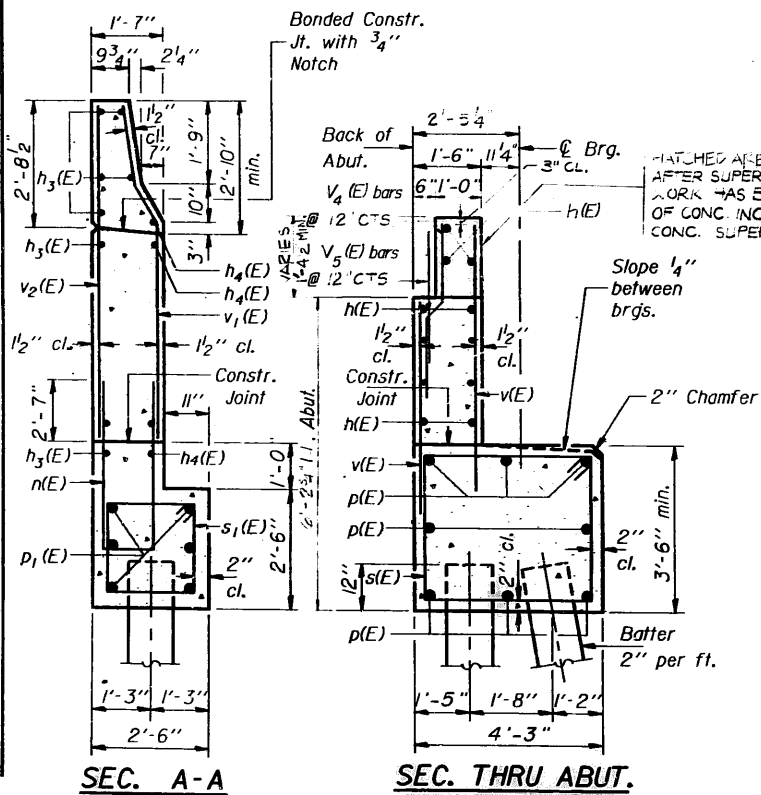


WING WALL ELEVATION



VIEW C-C

1" ϕ ANCHOR BOLT

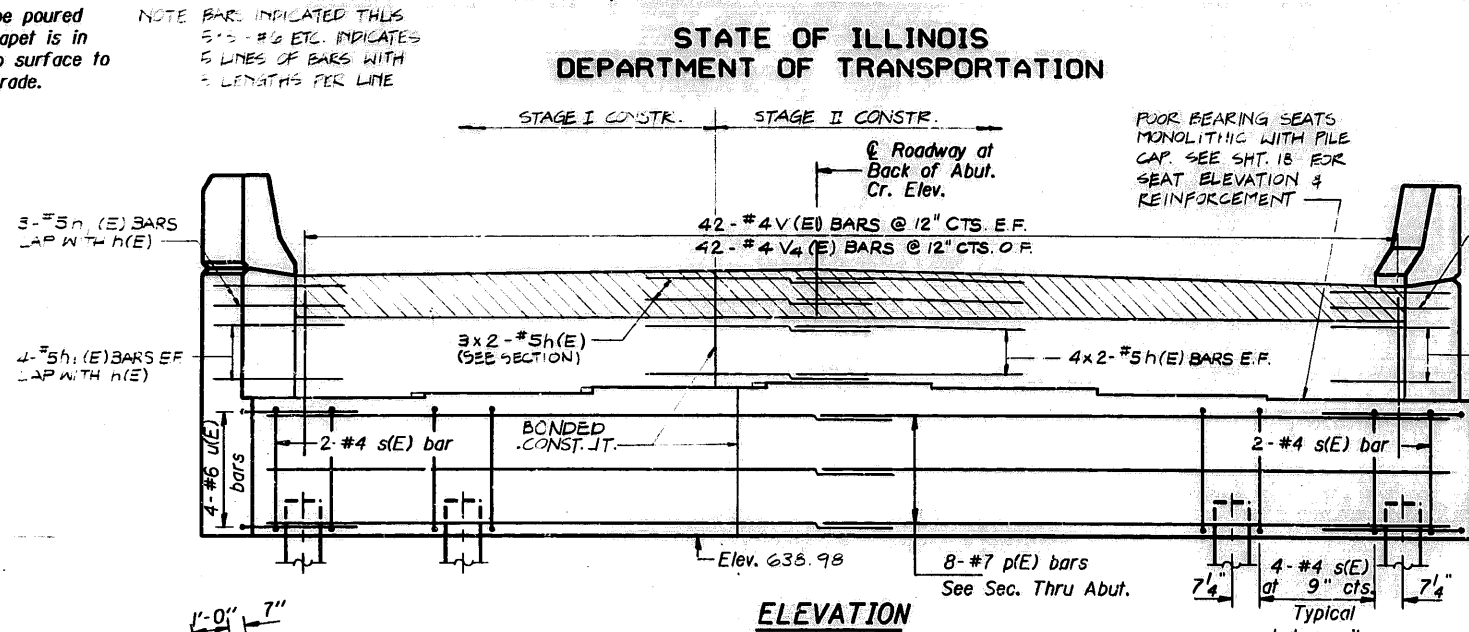


SEC. A-A

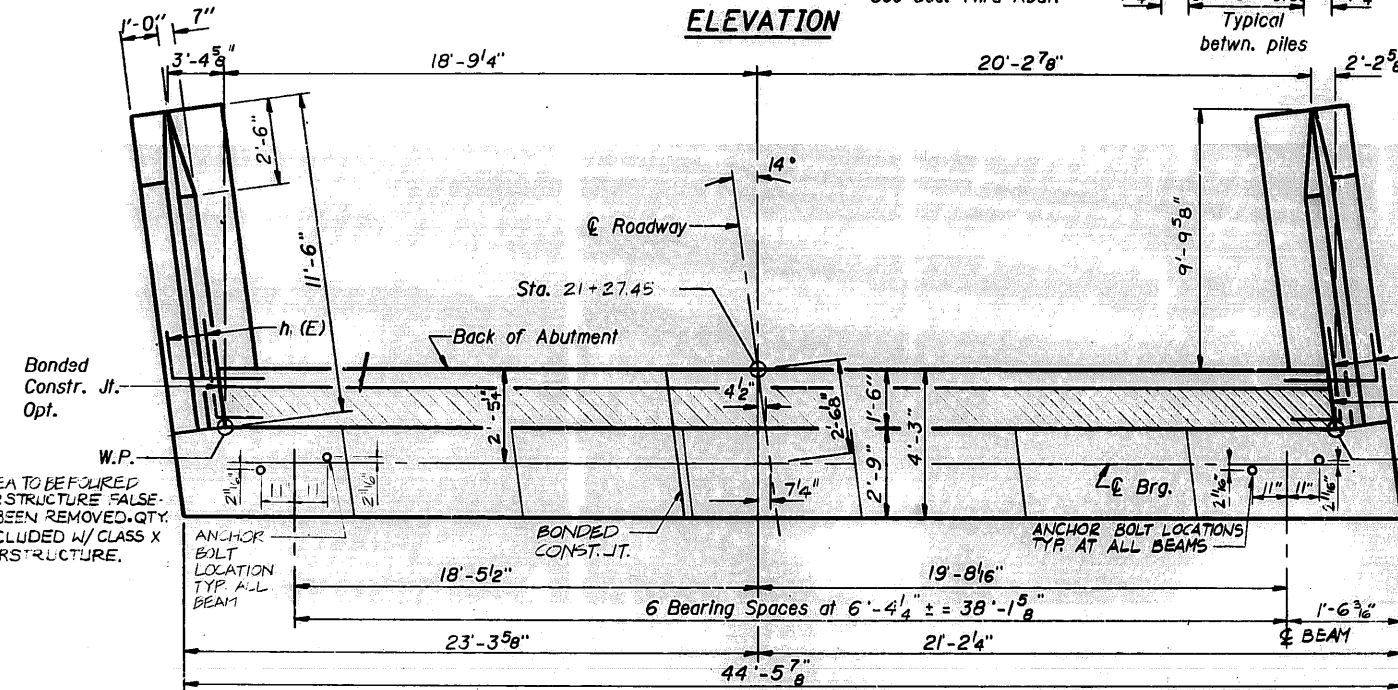
SEC. THRU ABUT.

DESIGNED
CHECKED
DRAWN
CHECKED

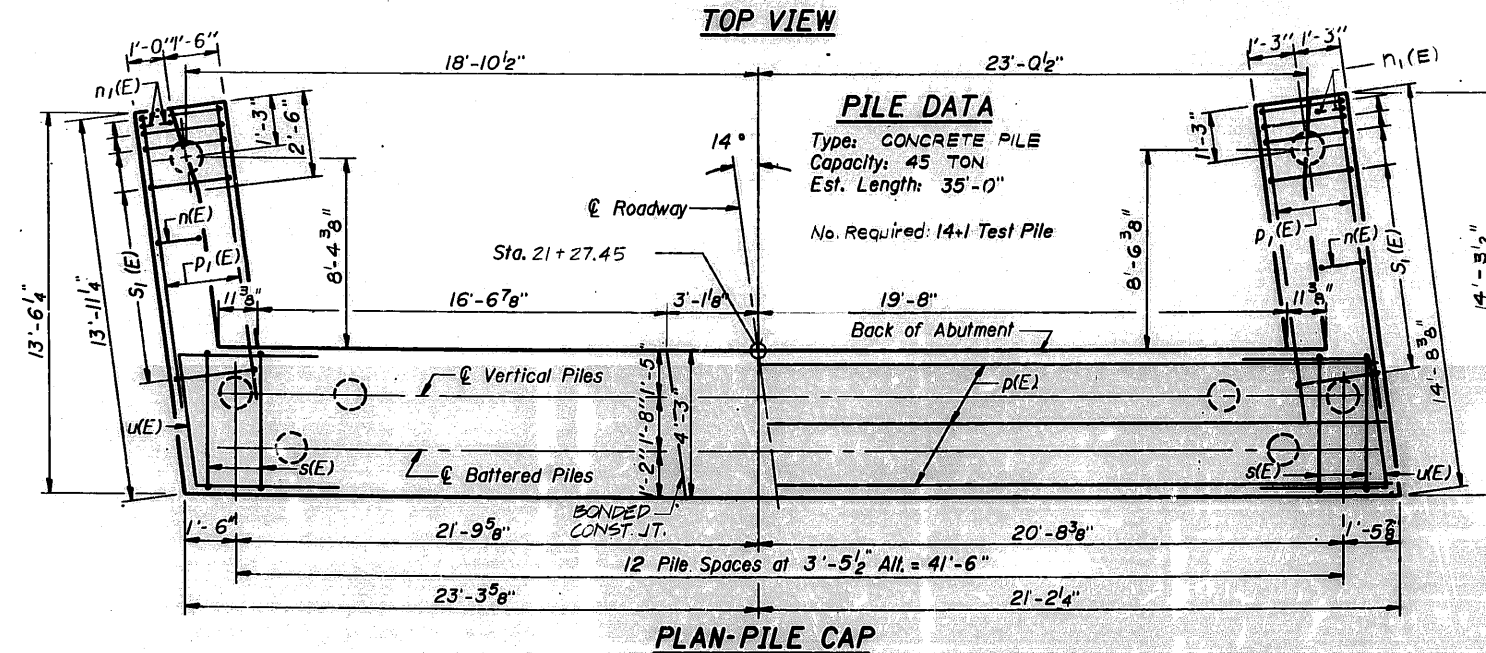
Size	Lap
#4	1'-8"
#5	2'-2"
#6	2'-7"
#7	3'-5"



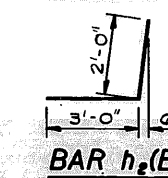
ELEVATION



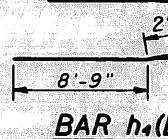
TOP VIEW



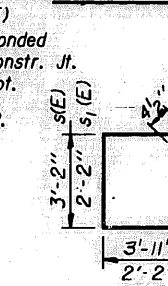
PLAN-PILE CAP



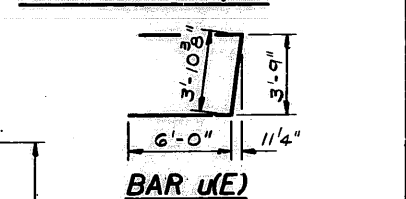
BAR $h_2(E$



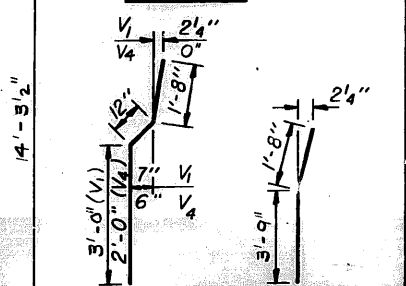
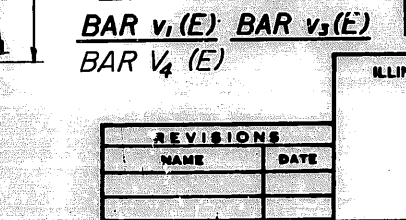
BAR $h_4(l)$



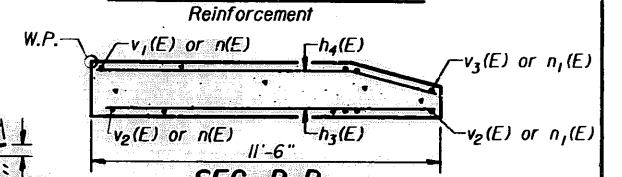
BARS $s(E)$ & $s_1(E)$ BAR $n(E)$



BAR KE)


$$\frac{BAR \ v_1(E)}{BAR \ v_4(E)} \cdot \frac{BAR \ v_3(E)}{BAR \ v_4(E)}$$


WING WALL ELEVATION



SEC. B-B

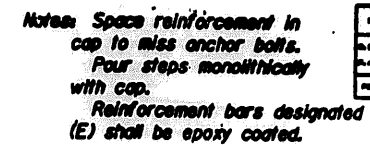
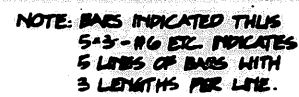
WEST ABUTMENT

Bar	No.	Size	Length	Shape
n(E)	22	#5	22'-11"	—
h ₁ (E)	11	#5	5'-0"	L
h ₂ (E)	11	#5	5'-0"	J
h ₃ (E)	20	#4	10'-9"	—
h ₄ (E)	12	#4	11'-2"	—
n(E)	18	#6	10'-10"	J
n ₁ (E)	12	#6	5'-5"	J
p(E)	16	#7	23'-5"	—
p ₁ (E)	12	#7	14'-2"	—
s(E)	52	#4	14'-11"	□
s ₁ (E)	26	#4	9'-5"	□
u(E)	8	#6	15'-11"	J
v(E)	84	#4	5'-2"	—
v ₁ (E)	18	#6	5'-8"	—
v ₂ (E)	24	#6	5'-3"	—
v ₃ (E)	6	#6	5'-5"	—
V ₄ (E)	42	#4	4'-8"	—
V ₅ (E)	42	#5	3'-0"	—
Structure Excavation			Cu. Yd.	157
Class X Concrete			Cu. Yd.	42.9
Reinforcement Bars (Epoxy Coated)			Lbs.	3080
Concrete Piles			Lin. Ft.	490
Test Piles (Concrete)			Each	1

ILLINOIS DEPARTMENT OF TRANSPORTATION
F.A.U. 1257 (DEERFIELD ROAD) OVER
DES PLAINES RIVER

WEST ABUTMENT

REVISIONS	
NAME	DATE



WEST ABUTMENT
BILL OF MATERIAL

Bar	No.	Size	Length	Shape
NE	22	#5	22'-11"	—
n ₁ (E)	11	#5	5'-0"	L
n ₂ (E)	11	#5	5'-0"	J
n ₃ (E)	20	#4	10'-9"	—
n ₄ (E)	12	#4	11'-2"	—
n(E)	18	#6	10'-10"	J
n ₁ (E)	12	#6	5'-5"	J
p(E)	16	#7	23'-5"	—
p ₁ (E)	12	#7	14'-2"	—
s(E)	52	#4	14'-11"	□
s ₁ (E)	26	#4	9'-5"	□
u(E)	8	#6	15'-11"	J
v(E)	84	#4	5'-2"	—
v ₁ (E)	18	#6	5'-8"	—
v ₂ (E)	24	#6	5'-3"	—
v ₃ (E)	6	#6	5'-5"	—
Vo(E)	42	#4	4'-8"	—
Vo ₂ (E)	42	#5	3'-0"	—
Structure Excavation			Cu. Yd.	157
Class X Concrete			Cu. Yd.	42.9
Reinforcement Bars (Epoxy Coated)		Lbs.		3080
Concrete Piles		Ltn. Ft.		490
Test Piles (Concrete)		Each		1

AS REVISED

DESIGNED _____
CHECKED _____
DRAWN _____
CHECKED _____

REVISIONS	
NAME	DATE

ILLINOIS DEPARTMENT OF TRANSPORTATION
F.A. 1257 (DEERFIELD ROAD) OVER
DES PLAINES RIVER

WEST ABUTMENT

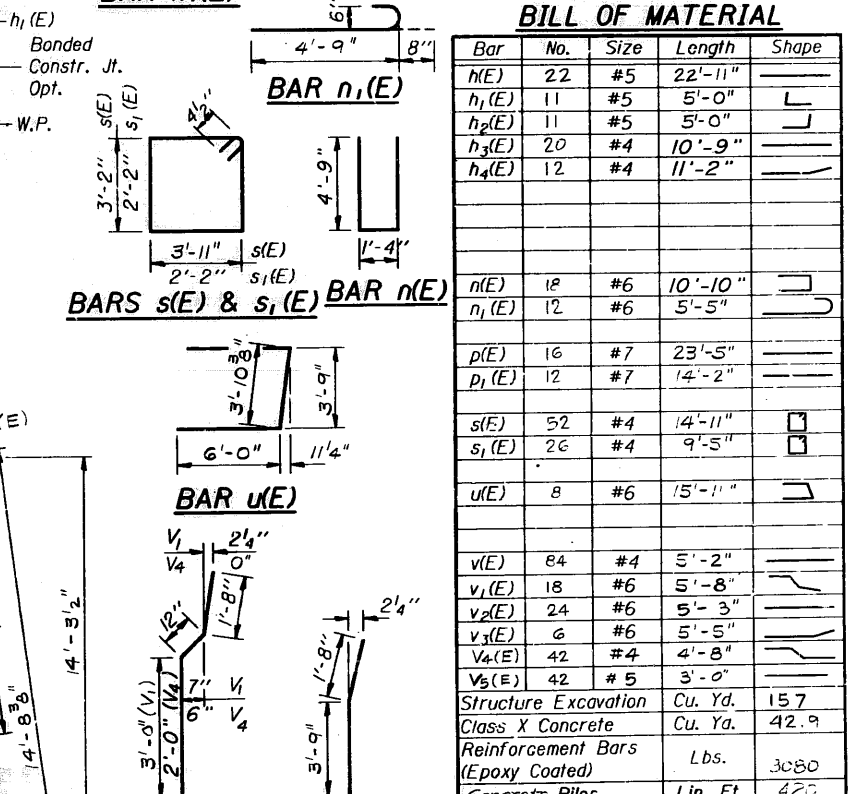
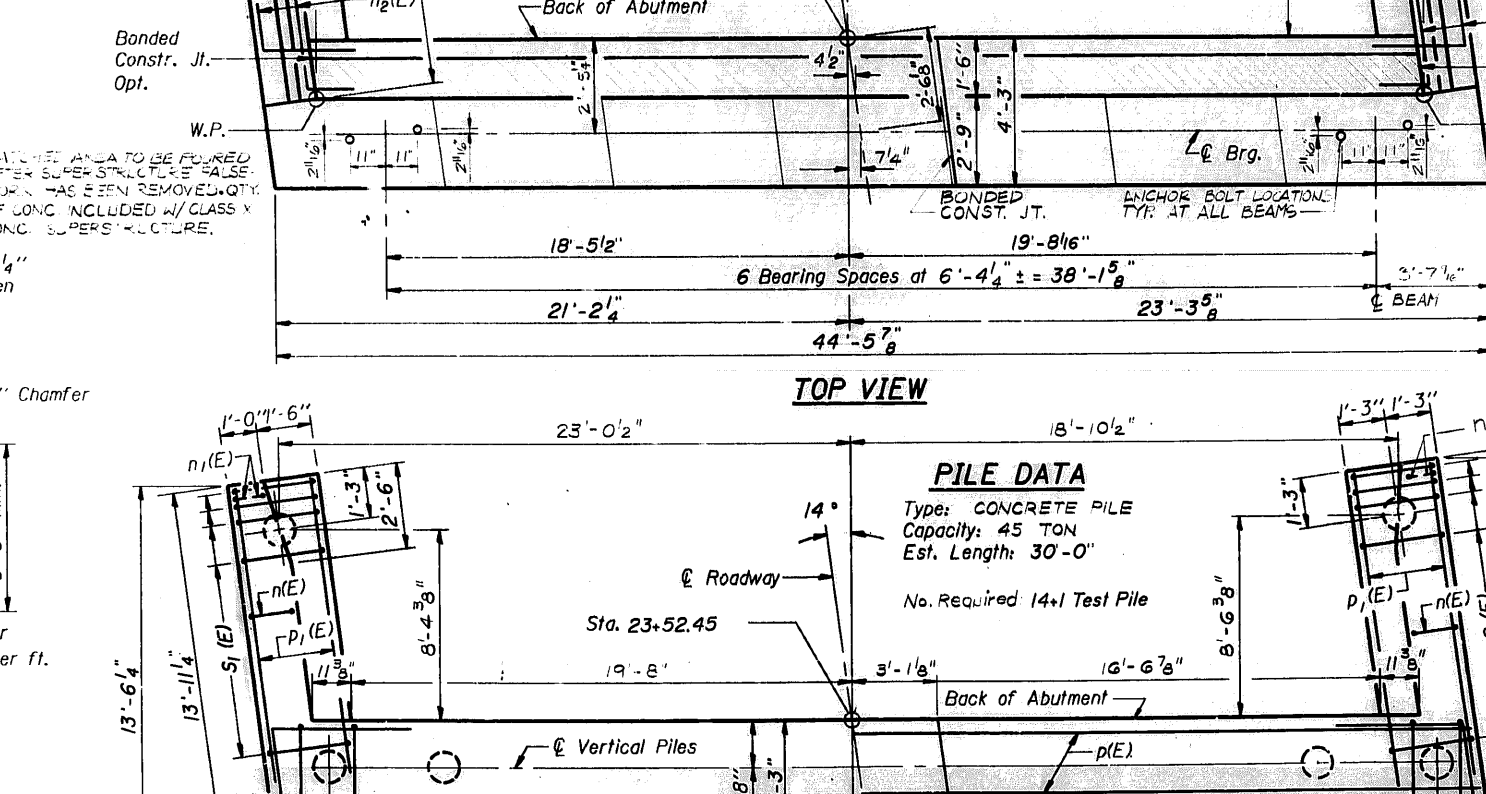
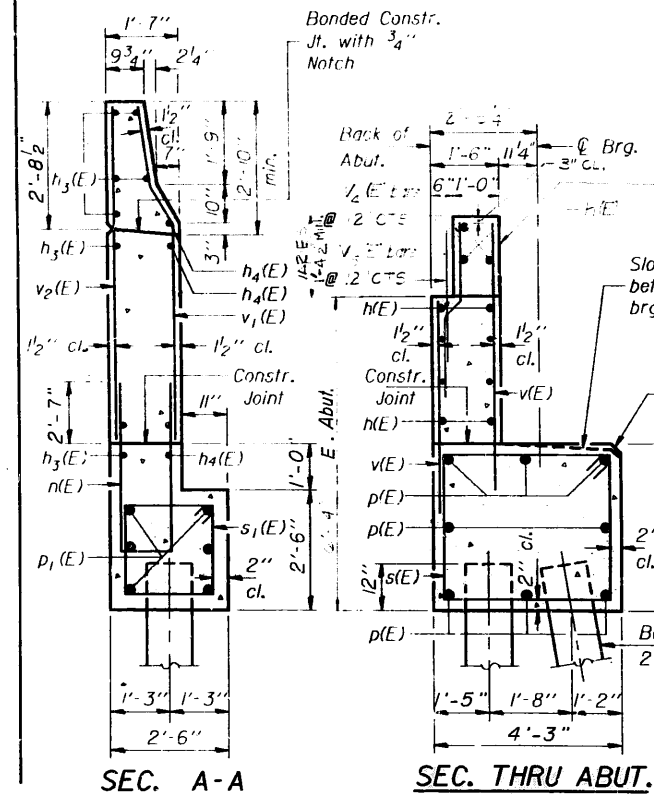
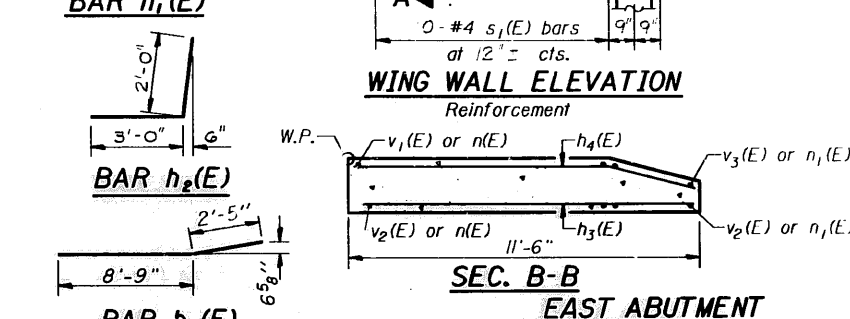
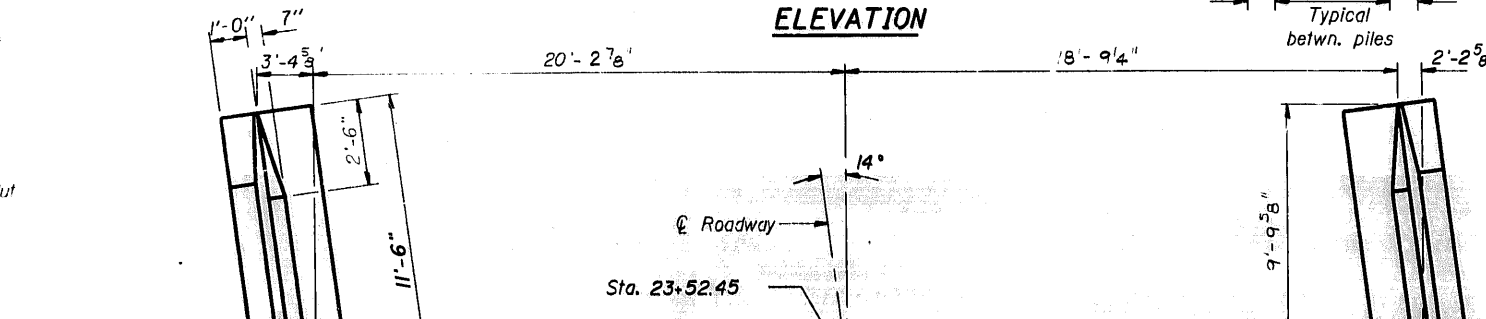
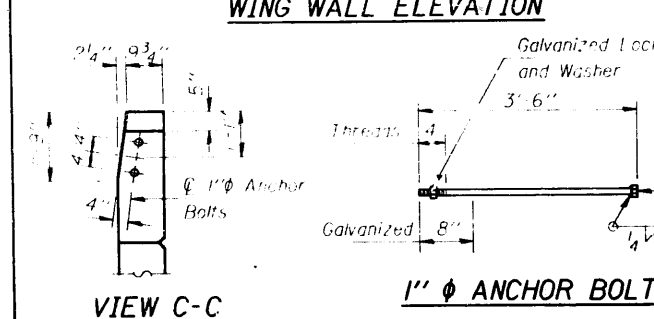
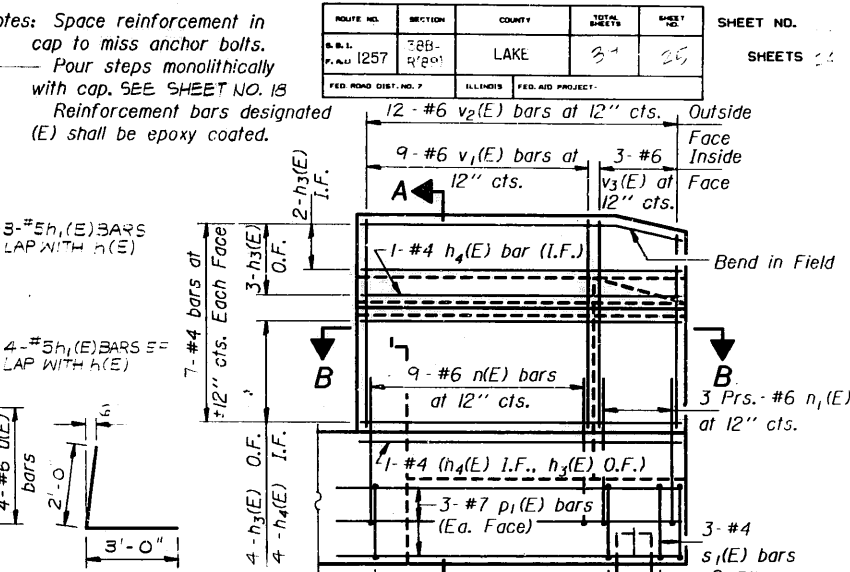
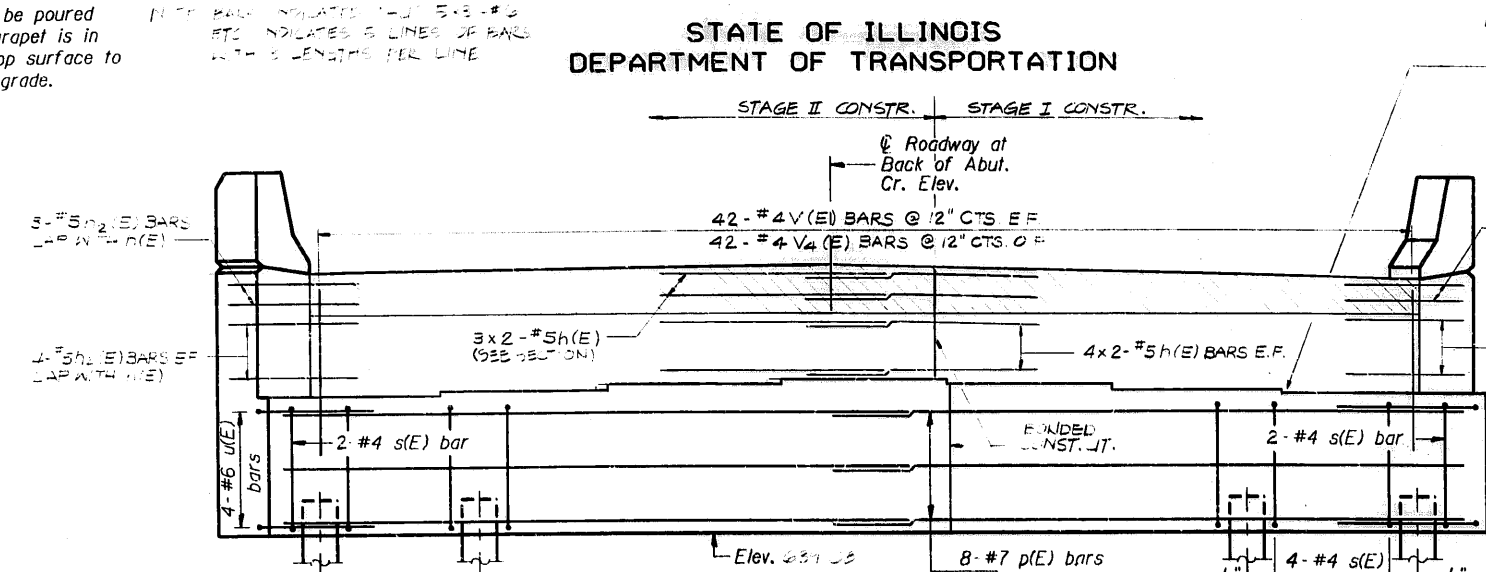
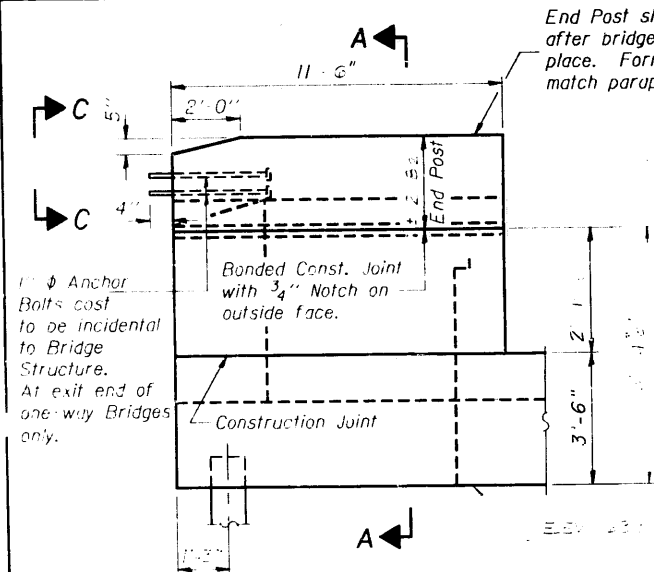
As Revised 3-17-93 PAP

9-14-92

STATE OF ILLINOIS DEPARTMENT OF TRANSPORTATION

ROUTE NO.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.	SHEET NO.
ILL. 1257	28B-2/201	LAKE	34	25	25
FED. ROAD DIST. NO. 7	ILLINOIS	FED. AID PROJECT			

Notes: Space reinforcement in cap to miss anchor bolts.
Pour steps monolithically with cap. SEE SHEET NO. 18
Reinforcement bars designated (E) shall be epoxy coated.



BILL OF MATERIAL

Bar	No.	Size	Length	Shape
n(E)	22	#5	22'-11"	
h ₁ (E)	11	#5	5'-0"	
h ₂ (E)	11	#5	5'-0"	
h ₃ (E)	20	#4	10'-9"	
h ₄ (E)	12	#4	11'-2"	
n(E)	18	#6	10'-10"	
n ₁ (E)	12	#6	5'-5"	
p(E)	16	#7	23'-5"	
p ₁ (E)	12	#7	14'-2"	
s(E)	52	#4	14'-11"	
s ₁ (E)	26	#4	9'-5"	
u(E)	8	#6	15'-1"	
v(E)	84	#4	5'-2"	
v ₁ (E)	18	#6	5'-8"	
v ₂ (E)	24	#6	5'-3"	
v ₃ (E)	6	#6	5'-5"	
v ₄ (E)	42	#4	4'-8"	
v ₅ (E)	42	#5	3'-0"	
Structure Excavation		Cu. Yd.	157	
Class X Concrete		Cu. Yd.	42.9	
Reinforcement Bars (Epoxy Coated)		Lbs.	3080	
Concrete Piles		Lin. Ft.	420	
Test Piles (Concrete)		Each	1	

DESIGNED	Size	Lap
CHECKED	#4	1'-8"
DRAWN	#5	2'-2"
CHECKED	#6	2'-7"
	#7	3'-5"

REVISIONS	
NAME	DATE

ILLINOIS DEPARTMENT OF TRANSPORTATION
F.A.U. 1257 (DEERFIELD ROAD) OVER
DES PLAINES RIVER
EAST ABUTMENT

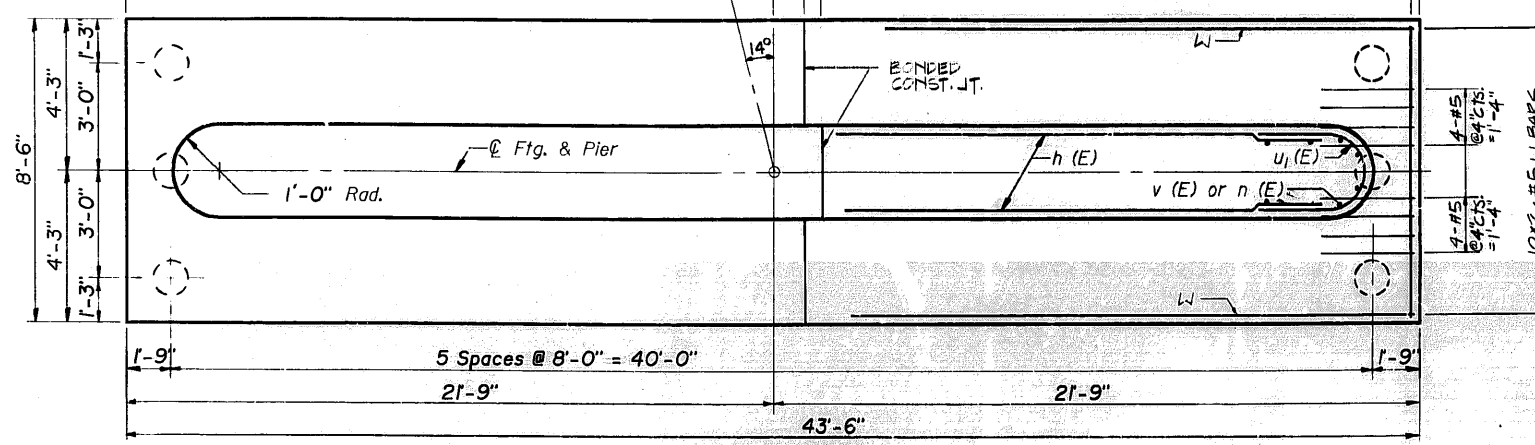
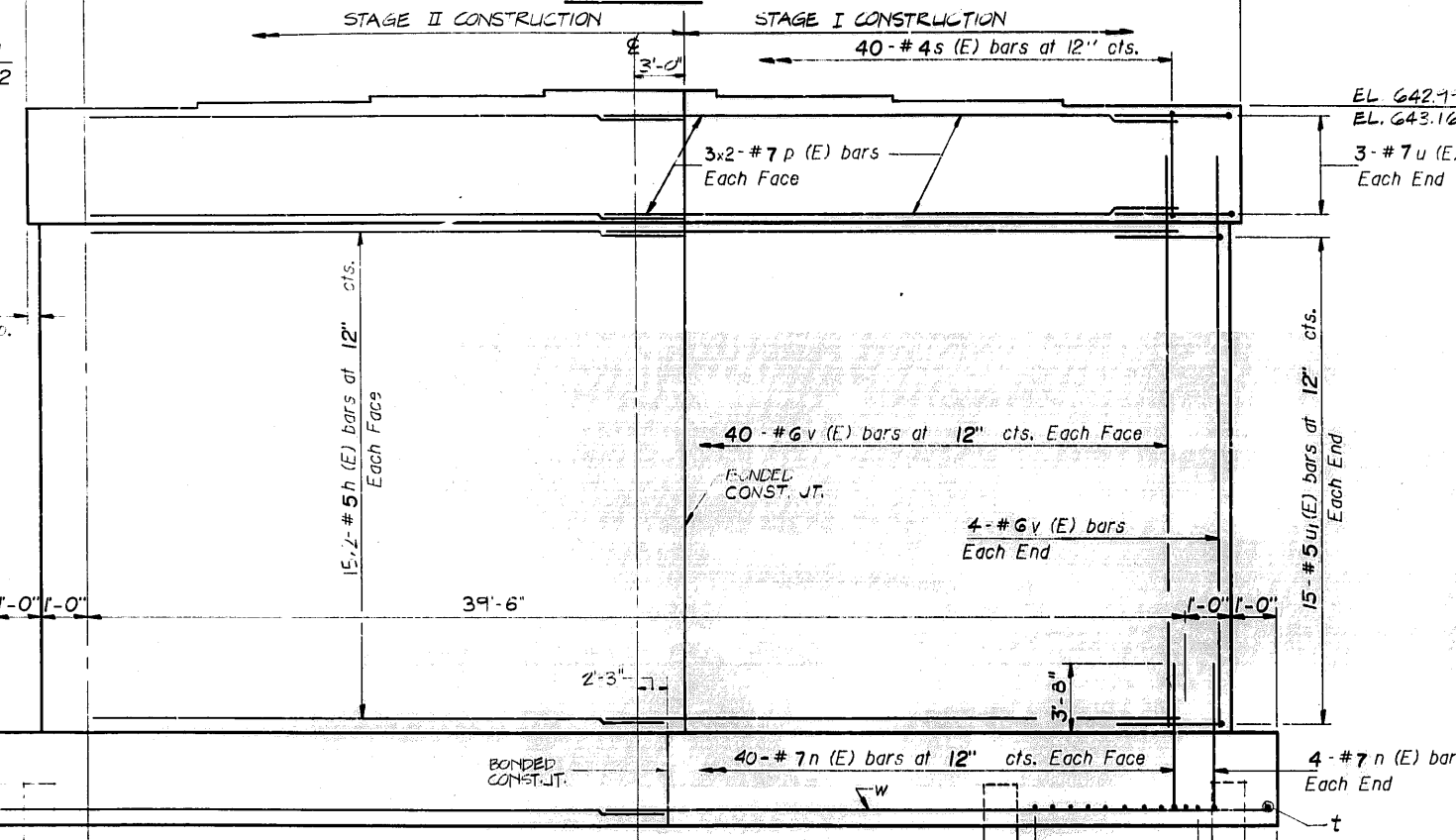
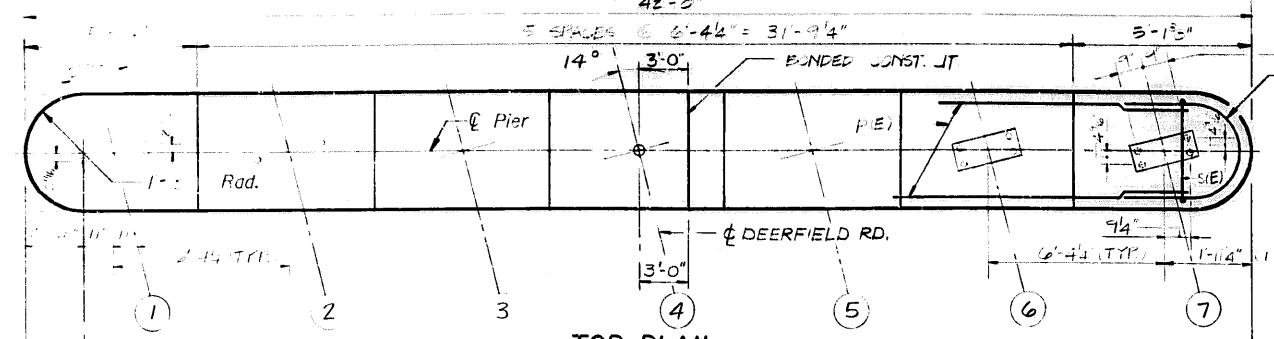
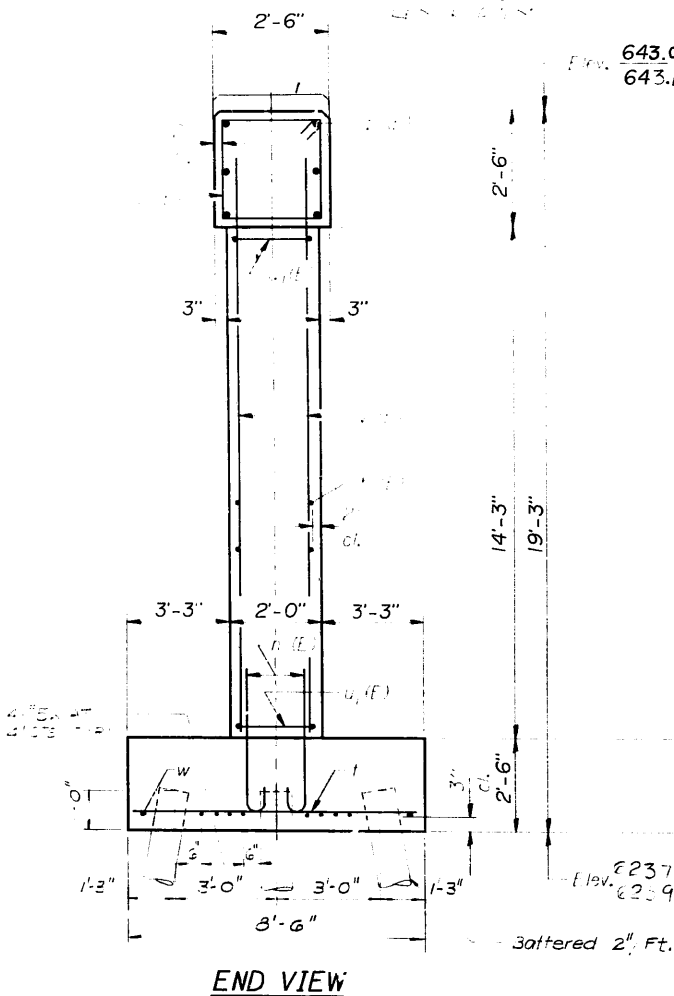
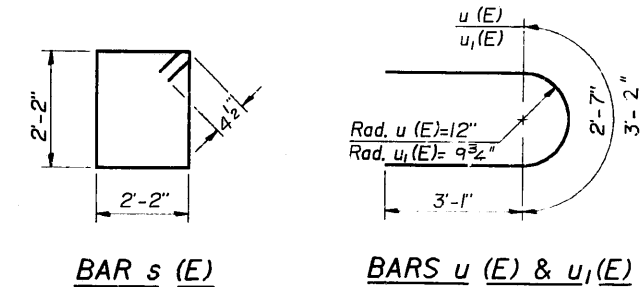
Notes: Space reinforcement in cap for piles and anchor bolts.
 Pile caps monolithic with pier.
 All caps and pile have tapered 1/4" ballers as indicated.

STATE OF ILLINOIS DEPARTMENT OF TRANSPORTATION

ROUTE NO.	SECTION	COUNTY	TOPOGRAPHY	SHEET NO.
S.R. 1257	388-R(89)	LAKE	3	50
FED. ROAD DIST. NO. 7	ILLINOIS	FED. AID PROJECT		

PILE DATA

Type: CONC PILE
 Capacity: 45 ton
 Spacing: 54' @ pier #1, 30' @ pier #2
 Length: 17' TEST PILE EL. PER



Minimum Lap Lengths	
Size	Lap
#4	1'-8"
#5	2'-2"
#6	2'-7"
#7	3'-5"

BILL OF MATERIAL (For one pier only)

Bar	No.	Size	Length	Shape
h (E)	60	#5	19'-1"	—
n (E)	88	#7	6'-11"	—
p (E)	12	#7	20'-10"	—
s (E)	40	#4	9'-5"	□
t	52	#7	8'-4"	—
u (E)	6	#7	9'-4"	—
u1 (E)	50	#5	8'-9"	—
v (E)	88	#6	16'-0"	—
w	20	#5	22'-5"	—
Class X Concrete		Cu. Yd.	87.8	
Reinforcement Bars		Lbs.	1350	
Reinforcement Bars, Epoxy Coated		Lbs.	5700	
COFFERDAMS		EA.	1	
COFFERDAM EXCAVATION		Cu. Yd.	84	
CONCRETE PILES		LIN. FT.	SEE NOTE 3	
TEST PILE CONCRETE		EACH	1	

Notes:

1. Reinforcement Bars designated (E) shall be epoxy coated
2. Bars indicated thus 5x3-#6 etc. indicates 5 lines of bars with 3 lengths per line.
3. 918 lin. ft. @ pier #1
510 lin. ft. @ pier #2

DESIGNED
CHECKED
DRAWN
CHECKED

REVISIONS	
NAME	DATE

ILLINOIS DEPARTMENT OF TRANSPORTATION
 DEERFIELD ROAD OVER DES PLAINES RIVER
 F.A.U. RTE. 1257
 SECTION 388-R(89) LAKE COUNTY
 STRUCTURE NO. 049-0174

PIERS

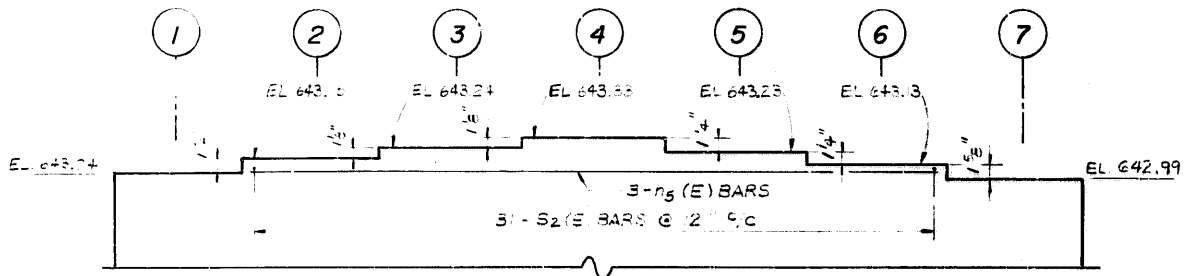
SCALE: VERT
HORIZ

DRAWN BY
 CHECKED BY
 9-14-92

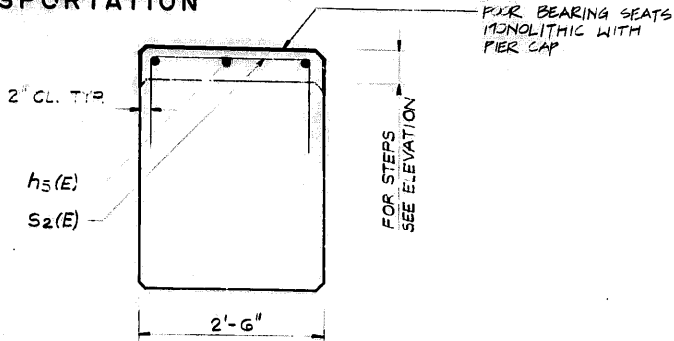
STATE OF ILLINOIS
DEPARTMENT OF TRANSPORTATION

F.A. DIST.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
1257	388-R(89)	LAKE	34	27
STA		TO STA		
FED. ROAD DIST. NO. 7		ILLINOIS		
		FED. AID PROJECT		

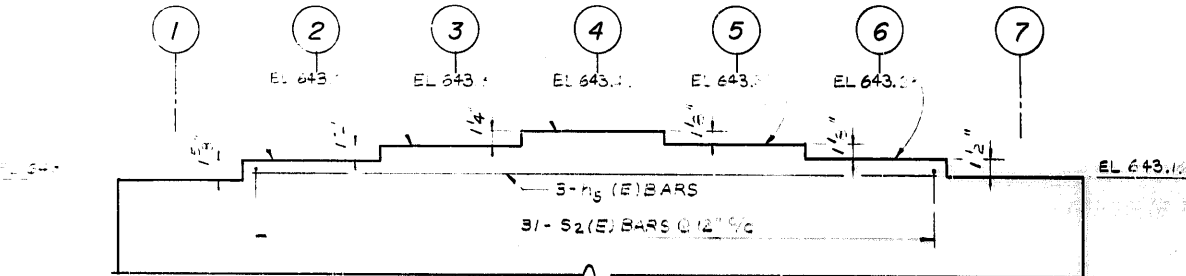
SHEET NO. 15
SHEETS 24



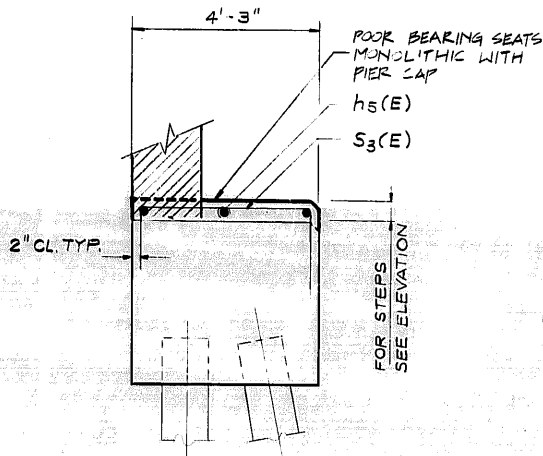
PIER 1



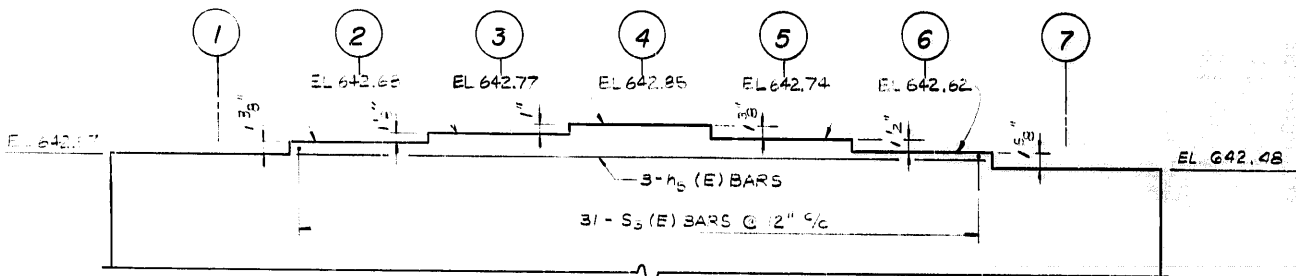
SECTION THRU PIER CAP



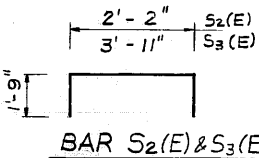
PIER 2



SECTION THRU ABUT.

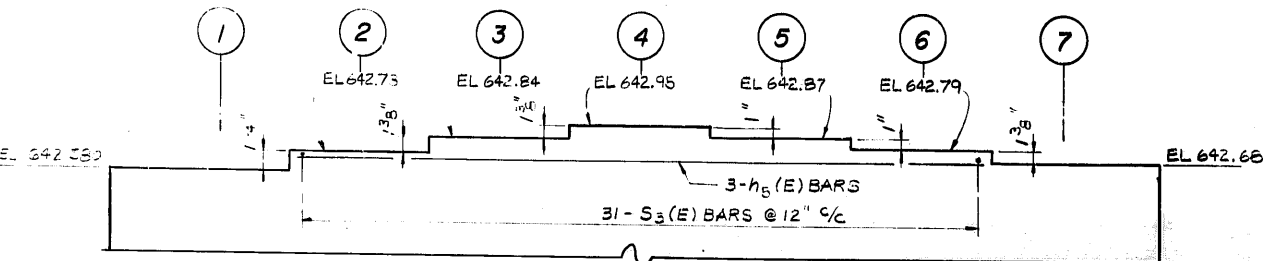


WEST ABUTMENT



BILL OF MATERIALS

BAR	NO	SIZE	LENGTH	SHAPE
h ₅ (E)	12	5	30'-6"	—
S ₂ (E)	62	4	5'-8"	□
S ₃ (E)	62	4	7'-5"	□
REINFORCEMENT BARS (EPOXY COATED)		Lbs.	920	



EAST ABUTMENT

REVISIONS	
NAME	DATE

ILLINOIS DEPARTMENT OF TRANSPORTATION
DEERFIELD ROAD OVER DES PLAINES RIVER
F.A.U. RTE. 1257
SECTION 388-R(89) LAKE COUNTY
STRUCTURE NO. 049-0174

BEARING SEAT ELEVATIONS

SCALE: VERT. 1"=4'
HORIZ. 1"=10'
DATE 9-14-92
DRAWN BY
CHECKED BY

SHEETS

Continuous Seal Neoprene Expansion Joint shall consist of molded anchor blocks of elastomer and steel, field assembled over continuous lengths of elastomeric membrane. See Special Provisions.

The steel reinforcement must extend up the back face of anchor blocks when asphalt surfaces are used but is optional in concrete blockout.

Joint openings shall be adjusted in accordance with Article 503.07(c) of the Standard Specifications when the deck is poured at an ambient temperature other than 50° F.

The parapet and sidewalk flaps may be furnished factory vulcanized to the roadway membrane provided the centerline of the convolution is maintained and the process and method meet the approval of the Engineer.

Diagram illustrating the effect of a horizontal force F applied at a height Y from the front face of the parapet or sidewalk. The diagram shows the wall profile and the resulting deflection. Key dimensions include Y (horizontal distance from the wall face to the point of application of force F), X (horizontal distance from the wall face to the center of gravity C), and X' (horizontal distance from the center of gravity C to the front face of the parapet). The formula for the deflection is given as $Y - X - \left(\frac{F \cdot C}{2}\right)$.

For dimension "F"
see sheet #

The diagram shows a cross-section of a concrete structure with a horizontal line representing the 'Asphalt surface'. Below this surface, a 'Back Face' of a concrete wall is shown. A 'Steel reinforcement' bar is embedded in the concrete, passing through the 'Back Face' and extending into the 'Asphalt surface'. A 'Sealant' is applied at the interface between the concrete and the asphalt. The entire diagram is crossed out with a large 'X'.

ANCHOR BLOCK REINFORCEMENT WITH ASPHALT SURFACE

For several months, the FBI has been working to identify and locate the individuals who are responsible for the distribution of the "Black Book" and the "Black Book" is a list of names of individuals who are known to be involved in the distribution of the "Black Book". The FBI is currently working to identify and locate the individuals who are responsible for the distribution of the "Black Book".

Three-Flange Anchor Plate With Washers

Notes:

- 6" (width of top flange)
- 2" (thickness of top flange)
- 8" (width of middle flange)
- 2" (thickness of middle flange)
- 2" (thickness of bottom flange)
- Std. Anchor Bolts Cast in place
- Hwy. Surf.

For skews greater than 50°

7"

12"

10"

Threaded Anchor Studs with Washers

Rdwy. Surf.

Std. Anchor Bolts Cast in place

Diagram illustrating the construction detail for a sidewalk or median, showing various components and notes:

- Note ①**: Points to the main concrete structure.
- Note ②**: Points to the premolded convolution on the top surface.
- Note ③**: Points to the roadway surface.
- Note ④**: Points to the fold flap on the side.
- Note A and Note ③**: Points to the roadway surface.
- Premolded convolution**: Labeled on the top surface.
- Fold flap this way**: Labeled on the side.
- Roadway**: Labeled on the bottom surface.
- Form flap this way**: Labeled on the side.
- 1'-0" Min.**: Dimension indicating the minimum length of the premolded convolution.

AT SIDEWALK OR MEDIAN

For skews greater than 50°

Sidewalk Surface or Median Surface

11 1/4"

9"

Rdwy. Surf.

Threaded Anchor Studs with Washers

Std. Anchor Bolts Cast in place

AT SIDEWALK OR MEDIAN
TYPICAL END TREATMENTS

Diagram illustrating the Form Wall Detail at Wall. The diagram shows a cross-section of a wall and a roadway. Key components and labels include:

- Note ②**: Points to the top edge of the wall.
- Roadway**: The horizontal surface below the wall.
- Form flap this way**: An arrow indicating the direction of the form flap.
- Premolded convolution**: A feature on the wall's surface.
- Note ④**: Points to a vertical component on the left.
- 1'-0" Min.**: A dimension indicating a minimum height of 1 foot.
- Note ①**: Points to a horizontal component at the bottom left.
- Note ③**: Points to a horizontal component at the bottom right.
- Note A and Note ③**: Points to a horizontal component at the bottom right.
- Note ④**: Points to a horizontal component on the right.

AT WALL

Consulting Engineers

NEOPRENE EXPANSION JOINT DETAILS

DRAWN BY

CHECKED BY

9-14-92