

12

GURNEE  
044-0002

STATE OF ILLINOIS  
DEPARTMENT OF TRANSPORTATION

DIVISION OF HIGHWAYS

PLANS FOR PROPOSED  
FEDERAL AID HIGHWAY

FOR INDEX OF SHEETS, SEE SHEET NO. 2

MAP NO.	SECTION	COUNTY	SHEET NO.	TOTAL SHEETS
541	X-6-B-R	LAKE	30	1

D-91-331-92

PLAN 1"=50'  
 PROFILE HORIZ. 1"=50'  
 PROFILE VERT. 1"=5'  
 CROSS SECTION HORIZ. 1"=10'  
 CROSS SECTION VERT. 1"=5'

F.A.P. RTE. 541 (IL RTE. 132 - GRAND AVE.)

SECTION: X-6-B-R

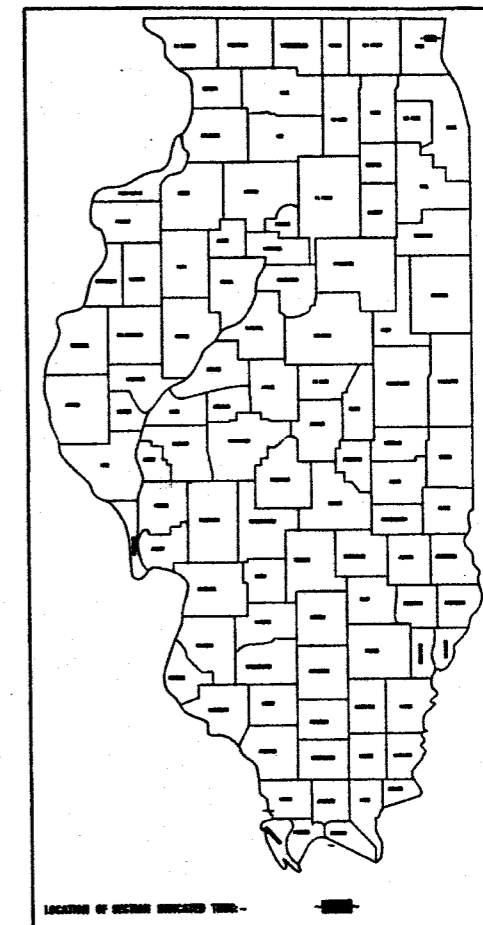
OVER THE DES PLAINES RIVER  
BRIDGE SUPERSTRUCTURE REMOVAL  
AND REPLACEMENT

PROJECT: ACBHF-541(9) 36 (PL)

LAKE COUNTY

C-91-087-93

Gurnee T.S.

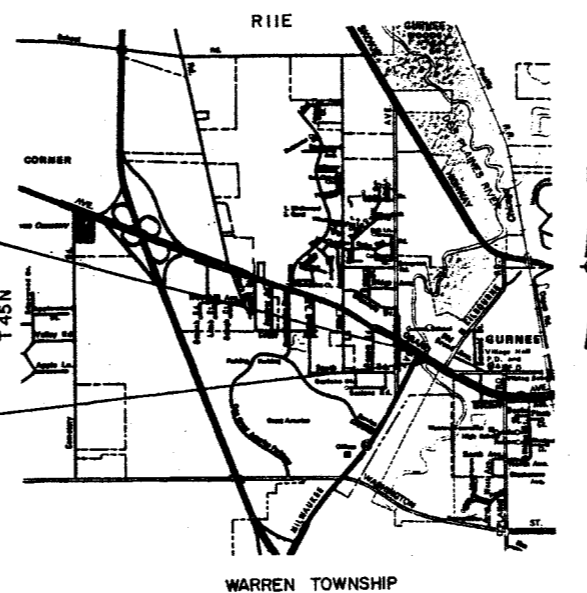


PROJECT LOCATED IN  
VILLAGE OF GURNEE

PRINTED BY AUTHORITY OF THE  
STATE OF ILLINOIS

PROJECT BEGINS  
STA. 61+21

PROJECT ENDS  
STA. 67+35



IL RTE 132 OVER THE DES PLAINES RIVER

STRUCTURE NO. 049-0062 (STA. 64+40.04)  
REMOVE EXISTING 3-SPAN PPC DECK BEAM  
SUPERSTRUCTURE AND CONSTRUCT 3- SIMPLE  
SPAN PPC DECK BEAM BRIDGE ON EXISTING  
CONCRETE ABUTMENTS AND PIERS.  
CONSTRUCTION OF BIKE TRAIL UNDER  
SUPERSTRUCTURE AT THE EAST  
ABUTMENT.



TRAFFIC DATA

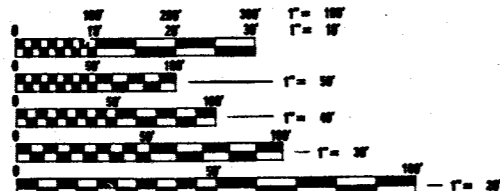
1988 ADT = 25,300  
SPEED LIMIT = 40 MPH

JUN 14 1995

Teresa Mesia Rubin

STATE OF ILLINOIS  
DEPARTMENT OF TRANSPORTATION  
DIVISION OF HIGHWAYS

DATE: June 15 1995  
 DESIGNED BY: Teresa Mesia Rubin  
 CHECKED BY: \_\_\_\_\_  
 DRAWN BY: \_\_\_\_\_  
 APPROVED BY: \_\_\_\_\_



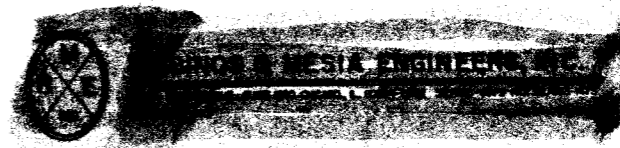
FULL SIZE PLANS HAVE BEEN PREPARED USING STANDARD  
ENGINEERING SCALES. REDUCED SIZE PLANS WILL NOT  
CONFORM TO STANDARD SCALES. IN MAKING MEASUREMENTS  
ON REDUCED PLANS, THE ABOVE SCALES MAY BE USED.

MAP SCALE 0.5 MILE

GROSS LENGTH OF PROJECT = 614.00 LIN. FT. = 0.116 MILE  
NET LENGTH OF PROJECT = 614.00 LIN. FT. = 0.116 MILE

CONTRACT NO. 82317

J.U.L.I.E. (800) 892-0123



JUN 14 1995

Teresa Mesia Rubin

CONSULTANT PROJECT ENGINEER: ART ABBAS (708) 705-4237, SCHAMBURG, ILLINOIS

FILE	SECTION	COUNTY	DATE	SHEET
FAP 04	F-04-04	LAKE	30	2
DATE	PROJECT NO.		SHEET NO.	
	FAP 54		30	
PREPARED BY: JLT	SCALE	FED. RD. PROJECT 54-040-62		

GENERAL NOTES

ALL WORK TO BE CONSTRUCTED IN ACCORDANCE WITH THE STANDARD SPECIFICATIONS FOR ROAD AND BRIDGE CONSTRUCTION ADOPTED JULY 1, 1994 BY THE ILLINOIS DEPT. OF TRANSPORTATION

THE CONTRACTOR SHALL INSPECT THE SITE OF THE PROJECT AND FAMILIARIZE HIMSELF WITH ALL EXISTING CONDITIONS, TRAFFIC, AND OTHER ITEMS THAT EFFECT THE CONTRACT AND THE DETAILED REQUIREMENTS OF CONSTRUCTION.

ALL SAWCUTTING ON THE ROADWAY SHALL BE CONSIDERED AS INCIDENTAL TO THE REMOVAL ITEM INVOLVED.

ALL BARRICADES AND TRAFFIC CONTROL DEVICES NOTED IN THE CONTRACT DOCUMENTS AND DEEMED NECESSARY BY THE ENGINEER SHALL BE PLACED PRIOR TO THE START OF CONSTRUCTION.

THE CONTRACTOR WILL NOT REMOVE ANY UTILITY LINE, CONDUIT, OR VAULT WITHIN THE LIMITS OF THE PROJECT UNTIL AFTER RECEIVING WRITTEN PERMISSION FROM THE UTILITY COMPANY OR AGENCY INVOLVED AND PERMISSION FROM THE ENGINEER.

THE CONTRACTOR SHALL PROTECT EXISTING UTILITIES WHEN CONSIDERED NECESSARY BY THE ENGINEER, BY METHODS APPROVED BY THE ENGINEER, AND HE SHALL BRACE AND SUPPORT THE UTILITIES PROPERLY TO PREVENT SETTLEMENT, DISPLACEMENT, OR DAMAGE TO THE UTILITIES. THE PROTECTION OF THE UTILITIES WILL NOT BE PAID FOR SEPARATELY BUT THE COST THEREOF SHALL BE CONSIDERED AS INCIDENTAL TO THE CONTRACT.

ALL AREAS DAMAGED OR DISTURBED IN THE COURSE OF THE CONTRACTORS OPERATIONS OF THIS IMPROVEMENT, SHALL BE RESTORED TO THEIR ORIGINAL CONDITION BY THE CONTRACTOR AT NO ADDITIONAL COST TO THE CONTRACT.

THE FINAL TOP FOUR INCHES OF SOIL IN AREA DISTURBED BY THE CONTRACTOR MUST BE REPLACED WITH A COHESIVE SOIL CAPABLE OF SUPPORTING VEGETATION, AT NO ADDITIONAL COST TO THE CONTRACT.

THE ELEVATIONS SHOWN ON THE PLANS ARE FINISHED GRADES OF PROPOSED PAVEMENT OR SURFACE COURSES, UNLESS OTHERWISE INDICATED.

CONCRETE BREAKER: WHEN REMOVING PAVEMENT, CURB, AND GUTTER, OR ANY OTHER STRUCTURES, THE USE OF ANY TYPE OF CONCRETE BREAKERS WHICH MIGHT DAMAGE THE UNDERGROUND PUBLIC OR PRIVATE UTILITIES WILL NOT BE PERMITTED. UNDER NO CIRCUMSTANCES WILL THE USE OF A FROST BALL BE PERMITTED.

WHEREVER THE PLANS CALL FOR THE REMOVAL OF EXISTING CONCRETE PAVEMENT, THE CONTRACTOR WILL BE REQUIRED TO PROVIDE A FULL DEPTH SAWCUT OF THE PAVEMENT AT THE LIMIT OF REMOVAL.

BEFORE STARTING ANY EXCAVATION THE CONTRACTOR SHALL CALL "JULIE" AT 800-892-0123 FOR FIELD LOCATIONS OF BURIED ELECTRICAL, TELEPHONE, AND GAS FACILITIES. (48 HOURS NOTIFICATION IS REQUIRED)

ALL COMMONWEALTH EDISON, NORTHERN ILLINOIS GAS AND ILLINOIS BELL TELEPHONE LINES WHICH WILL REQUIRE VERTICAL ADJUSTMENTS OR RELOCATION WILL BE ADJUSTED OR RELOCATED BY THE UTILITY COMPANY INVOLVED.

DO NOT SCALE PLANS FOR CONSTRUCTION DIMENSIONS.

ANY DAMAGE TO THE REINFORCEMENT BARS AS A RESULT OF THE CONTRACTORS SAWING AND/OR CONCRETE REMOVAL OPERATION SHALL BE CORRECTED BY THE CONTRACTOR AT NO ADDITIONAL COST TO THE CONTRACT.

EXCAVATED RIVER SEDIMENTS SHALL NOT BE PLACED BACK INTO THE RIVER. EXCAVATED RIVER AREAS SHALL BE BACKFILLED WITH CA-6 MATERIAL. EXCAVATED RIVER SEDIMENTS MAY BE PLACED AT A LOCATION WITHIN THE PROJECT RIGHT OF WAY LIMITS WHERE THE SEDIMENTS OR RUNOFF FROM THE SEDIMENTS CANNOT ENTER THE RIVER

STATE STANDARDS

- 2113-4 DETAIL OF NAME PLATE FOR BRIDGES
- 2130-15 CONCRETE CURB AND COMBINATION CONCRETE CURB AND GUTTER
- 2298-11 TRAFFIC CONTROL DEVICES
- 2318-9 TYPICAL APPLICATION OF TRAFFIC CONTROL DEVICES MULTILANE, TWO WAY, UNDIV., RURAL, DAY OR NIGHT.
- 2323-14 PAVEMENT JOINTS
- 2336-5 TRAFFIC BARRIER TERMINAL, TYPE 1
- 2340-6 TRAFFIC BARRIER TERMINAL, TYPE 5
- 2383-4 TEMPORARY CONCRETE BARRIER
- 2396-1 TYPICAL PAVEMENT MARKINGS
- ~~DISTRICT I TYPICAL APPLICATIONS OF DUAL DIRECTIONAL SNOWPLOWABLE RAISED PAVEMENT MARKERS~~
- 2442-3 BRIDGE APPROACH PAVEMENT
- 2364-3 GRATING FOR CONCRETE FLARED END SECTION (FOR 600 mm (24"), 750 mm (30") AND 900 mm (36") PIPE)

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- 4. TYPICAL SECTIONS
- 5. SUMMARY OF QUANTITIES
- 6. TRAFFIC MAINTENANCE, STAGE I
- 7. TRAFFIC MAINTENANCE, STAGE II
- 8. TRAFFIC MAINTENANCE, STAGE III
- 9. PLAN AND PROFILE
- 10. UTILITY PLAN
- 11. PAVEMENT MARKING PLAN
- 12. GENERAL PLAN AND ELEVATION
- 13. STAGE CONSTRUCTION
- 14. TEMPORARY BRIDGE RAIL
- 15. SUPERSTRUCTURE
- 16. SUPERSTRUCTURE DETAILS
- 17. SUPERSTRUCTURE DETAILS
- 18. APPROACH DETAILS
- 19. PARAPET AND RAILING ELEVATION
- 20. BICYCLE RAILING
- 21. WEST ABUTMENT
- 22. EAST ABUTMENT
- 23. ABUTMENT DETAILS
- 24. PIERS
- 25. BIKE TRAIL PLAN AND SECTION
- 26. BIKE TRAIL MISCELLANEOUS STRUCTURAL DETAILS
- 27. BIKE TRAIL HARDWOOD RAILING DETAIL
- 28. BIKE TRAIL GRADING AND DRAINAGE PLAN
- 29. CROSS SECTIONS
- 30. CROSS SECTIONS
- 30A. DIST. I STANDARD FOR SNOWPLOWABLE RAISED PAVEMENT MARKERS



REVISIONS	
NAME	DATE

ILLINOIS DEPARTMENT OF TRANSPORTATION

**GENERAL NOTES**

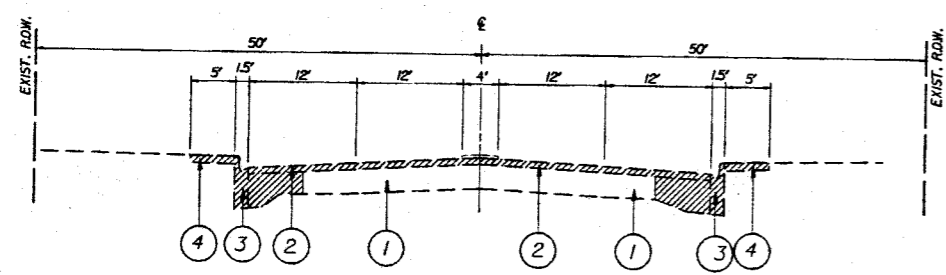
FAP ROUTE 54 ILLINOIS ROUTE 132  
OVER DES PLAINES RIVER  
LAKE COUNTY

SCALE: VERT. \_\_\_\_\_  
HORIZ. \_\_\_\_\_

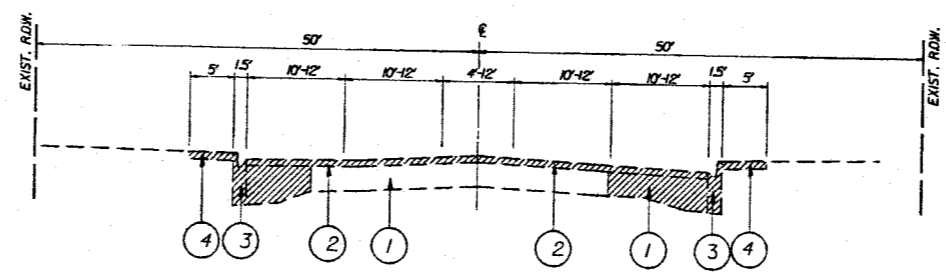
DATE: JUNE-12-1995

DRAWN BY: M.S.  
CHECKED BY: M.R.

REV.	NO.	DATE	BY	CHECKED
1	1			
2	2			
3	3			
4	4			
5	5			
6	6			
7	7			
8	8			
9	9			
10	10			



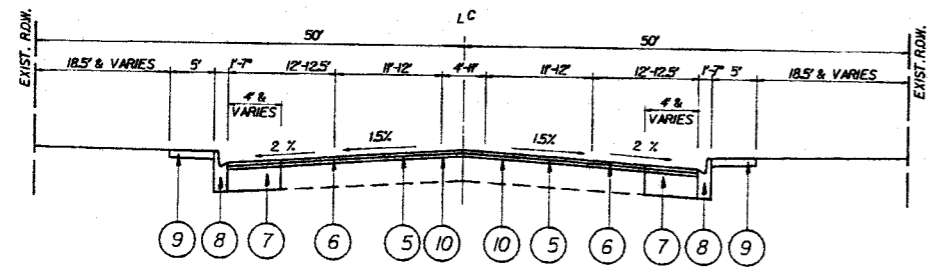
Typical Existing Cross Section  
STA.65+51 TO STA.67+35



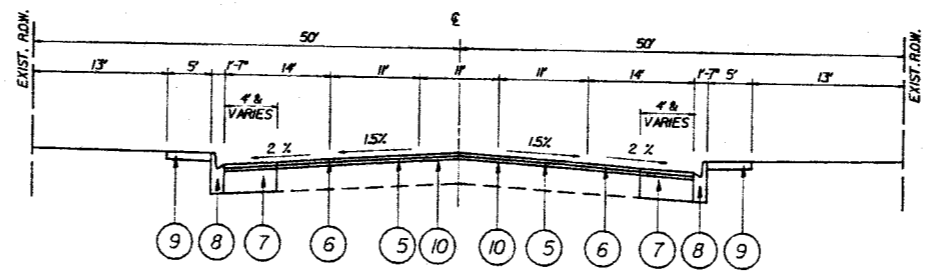
Typical Existing Cross Section  
STA.63+29 TO STA.63+75 AND  
STA.65+05 TO STA.65+51

**LEGEND**

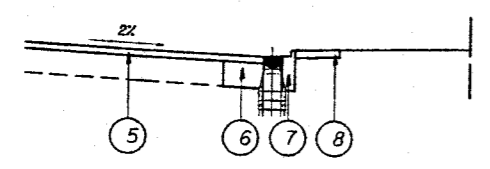
- ① EXIST. P.C.C. PAVEMENT, 9"
- ② EXIST. 3" BITUMINOUS SURFACE COURSE TO BE REMOVED
- ③ EXIST. COMB. CONC. CURB & GUTTER TO BE REMOVED
- ④ EXIST. CONC. SIDEWALK, 5', TO BE REMOVED
- ⑤ BITUMINOUS CONC. SURFACE COURSE, MIXTURE D, CLASS I, TYPE 2, (1 1/2")
- ⑥ BITUMINOUS CONC. BINDER COURSE, MIXTURE B, CLASS I, TYPE 2, (1 1/2")
- ⑦ P.C.C. BASE COURSE WIDENING, 9" (VARIES TO 4')
- ⑧ COMB. CURB & GUTTER TYPE B-6.24 - STD. 2130
- ⑨ P.C.C. SIDEWALK, 5'
- ⑩ BITUMINOUS MATERIAL PRIME COAT



Typical Proposed Cross Section  
STA.65+51 TO STA.67+35



Typical Proposed Cross Section  
STA.63+29 TO STA.63+45 AND  
STA.65+35 TO STA.65+51



Typical Proposed Cross Section  
at Existing Inlet or Existing Catch Basin

\* THE TYPICAL CROSS SECTION FOR THIS PORTION OF THE ROADWAY EXCLUDES 30' OF APPROACH SLAB (STD. 2442) ON EACH END OF THE BRIDGE.



REVISIONS	
NAME	DATE

ILLINOIS DEPARTMENT OF TRANSPORTATION

**TYPICAL SECTIONS**

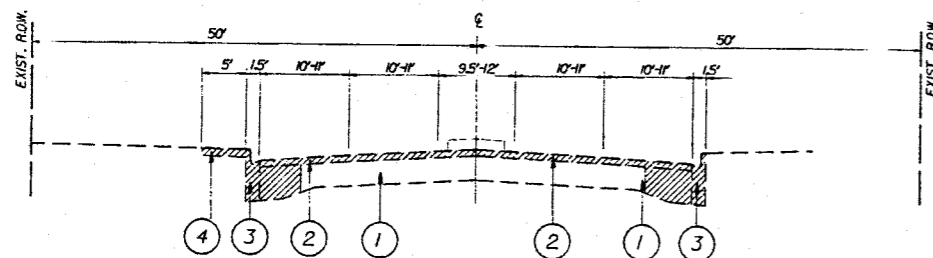
FAP ROUTE 541 ILLINOIS ROUTE 132J  
OVER DES PLAINES RIVER  
LAKE COUNTY

SCALE: VERT. 1"=10'  
HORIZ. 1"=40'

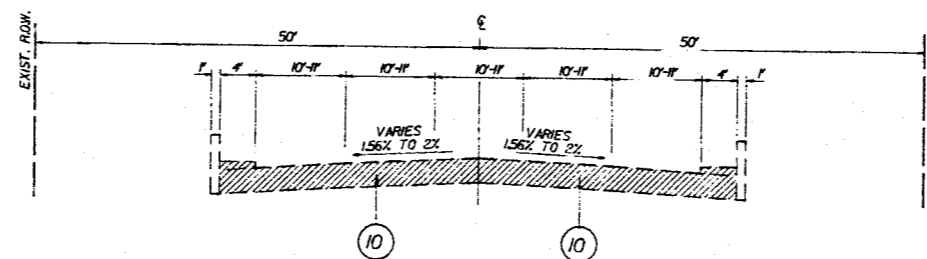
DATE: JUNE-12-1995

DRAWN BY: M.S.  
CHECKED BY: M.R.

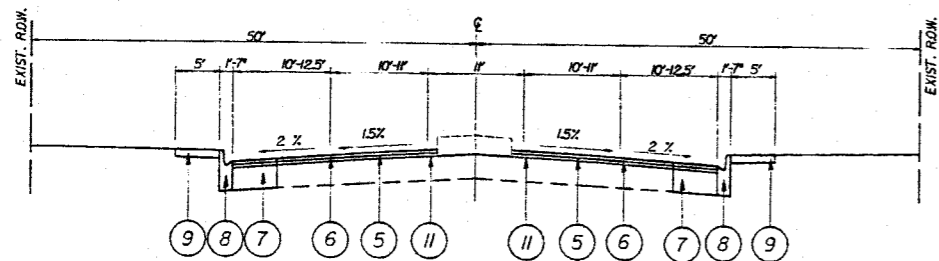
DATE	REVISION	COUNTY	SCALE	SHEET
FAP 94	F-4-B	LAKE	30	4
STA.	PROJECT		SHEET	
FEEDING DIST. ADJ.	LANDS	FED. RD. PROJECT	541 049-62	



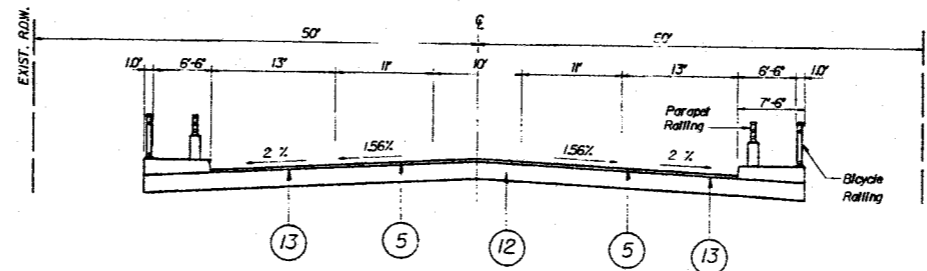
Typical Existing Cross Section  
STA.61+21 TO STA.63+29



Existing Bridge  
STA.63+75 TO STA.65+05



Typical Proposed Cross Section  
STA.61+21 TO STA.63+29



Typical Bridge Cross Section  
STA.63+75 TO STA.65+05

LEGEND

- ① EXIST. P.C.C. PAVEMENT , 9"
- ② EXIST. 3" BITUMINOUS SURFACE COURSE TO BE REMOVED
- ③ EXIST. COMB. CONC. CURB & GUTTER TO BE REMOVED
- ④ EXIST. CONC. SIDEWALK, 5', TO BE REMOVED
- ⑤ BITUMINOUS CONC. SURFACE COURSE, MIXTURE D , CLASS 1, TYPE 2 , (1 1/2")
- ⑥ BITUMINOUS CONC. BINDER COURSE, MIXTURE B , CLASS 1, TYPE 2 , (1 1/2")
- ⑦ P.C.C. BASE COURSE WIDENING, 9" (VARIES TO 4')
- ⑧ COMB. CURB & GUTTER TYPE B-6J2 - STD. 2130
- ⑨ P.C.C. SIDEWALK , 5'
- ⑩ EXISTING BRIDGE DECK TO BE REMOVED
- ⑪ BITUMINOUS MATERIAL PRIME COAT
- ⑫ PROPOSED BRIDGE DECK
- ⑬ WATERPROOFING MEMBRANE SYSTEM, (1/4")



REVISIONS	
NAME	DATE

ILLINOIS DEPARTMENT OF TRANSPORTATION

**TYPICAL SECTIONS**

FAP ROUTE 54 (ILLINOIS ROUTE 132)  
OVER DES PLAINES RIVER  
LAKE COUNTY

SCALE: VERT. \_\_\_\_\_  
HORZ. \_\_\_\_\_

DATE: JUNE-12-1995

DRAWN BY: M.S.  
CHECKED BY: M.R.

DATE	ISSUED	COUNTY	SCALE	SHEET NO.
			30	5
FAP NO.		LAW		TO SHEET
FAP NO.		LAW		TO SHEET
FAP NO.		LAW		TO SHEET

SUMMARY OF QUANTITIES				80% FEDERAL 20% STATE		
				CONSTRUCTION TYPE CODE		
				X981-2A		
CODE NO.	ITEM	UNIT	TOTAL QTY.	BRIDGE	ROADWAY	BIKE TRAIL * SFTY-1B
20100110	TREE REMOVAL (6 TO 15 UNITS DIAMETER)	UNIT	66		66	
20200500	EARTH EXCAVATION (WIDENING)	CU YD	2.854		2.854	
20500150	EMBANKMENT	CU YD	55			55
21101300	FURNISHING AND PLACING TOPSOIL, 4 INCH	SQ YD	140			140
25001100	SEEDING, CLASS 3 (SPECIAL)	ACRE	0.03			0.03
28100107	STONE RIPRAP, CLASS A4	SQ YD	1,021	271		750
28200100	FILTER FABRIC FOR USE WITH RIPRAP	SQ YD	1,061	271		790
35400400	PORTLAND CEMENT CONC. BASE COURSE WIDENING 9"	SQ YD	105		105	
40600200	BITUMINOUS MATERIALS (PRIME COAT)	TON	1.3		1.3	
40600760	BITUMINOUS CONC. BINDER COURSE, MIXTURE B, TYPE 2	TON	270		270	
40600850	BITUMINOUS CONC. SURFACE COURSE, MIX. D. CL I, TYPE 2	TON	355	85	270	
42000500	PORTLAND CEMENT CONCRETE PAVEMENT 10"	SQ YD	29	29		
42001165	BRIDGE APPROACH PAVEMENT	SQ YD	480		480	
42001200	PAVEMENT FABRIC	SQ YD	29	29		
42400200	PORTLAND CEMENT CONC. SIDEWALK 5 INCH	SQ FT	3,087		3,087	
42400440	PORTLAND CEMENT CONC. SIDEWALK 6 INCH, SPECIAL	SQ FT	2,525			2,525
44000009	BITUMINOUS SURFACE REMOVAL 3"	SQ YD	3,258		3,258	
44000500	COMBINATION CURB AND GUTTER REMOVAL	FOOT	1,118		1,118	
44000600	SIDEWALK REMOVAL	SQ FT	2,424		2,424	
44000700	APPROACH SLAB REMOVAL	SQ YD	186		186	
44002805	ISLAND REMOVAL	SQ FT	75		75	
44003100	MEDIAN REMOVAL	SQ FT	920		920	
50101500	REMOVAL OF EXISTING SUPERSTRUCTURES	EACH	1	1		
50102400	CONCRETE REMOVAL	CU YD	140.9	140.9		
50200100	STRUCTURE EXCAVATION	CU YD	618	188		430
50300120	PREFORMED JOINT SEAL 2 1/2"	FOOT	83	83		
50300130	PREFORMED JOINT SEAL 4"	FOOT	83	83		

SUMMARY OF QUANTITIES				80% FEDERAL 20% STATE		
				CONSTRUCTION TYPE CODE		
				X981-2A		
CODE NO.	ITEM	UNIT	TOTAL QTY.	BRIDGE	ROADWAY	BIKE TRAIL * SFTY-1B
50300225	CONCRETE STRUCTURES	CU YD	157.6	157.6		
50300255	CONCRETE SUPERSTRUCTURE	CU YD	141.9	141.9		
50300300	PROTECTIVE COAT	SQ YD	480	480		
50400105	PRECAST CONCRETE BRIDGE SLAB	SQ FT	299	299		
50400505	PRECAST PRESTRESSED CONC DECK BEAMS (27" DEPTH)	SQ FT	9,388	9,388		
50500405	FURNISHING AND ERECTING STRUCTURAL STEEL	POUND	11,610	11,610		
50800205	REINFORCEMENT BARS, EPOXY COATED	POUND	32,470	28,070		4,400
51205200	TEMPORARY SHEET PILING	SQ FT	720	720		
51401600	TEMPORARY BRIDGE RAIL	FOOT	193	193		
51500100	NAME PLATES	EACH	1	1		
58100200	WATERPROOFING MEMBRANE SYSTEM	SQ YD	841	841		
58300100	PORTLAND CEMENT MORTAR FAIRING COURSE	FOOT	2,477	2,477		
60600605	CONCRETE CURB, TYPE B	FOOT	94	94		
60603800	COMBINATION CONC. CURB & GUTTER, TYPE B-6.12	FOOT	964	964		
61100600	CLASS SI CONCRETE (MISCELLANEOUS)	CU YD	40			40
63100035	TRAFFIC BARRIER TERMINAL, TYPE 1	EACH	2	2		
66000305	EXPANSION TIE ANCHORS 3/4"	EACH	50	50		
67000401	ENGINEER'S FIELD OFFICE, TYPE A-1	CAL MO	7	7		
90100500	TRAFFIC CONTROL AND PROTECTION	L SUM	1	1		
90400100	TEMPORARY CONCRETE BARRIER	FOOT	1,045	1,045		
90400200	RELOCATE TEMPORARY CONCRETE BARRIER	FOOT	724	724		
** T5010100	THERMOPLASTIC PAVEMENT MARKING LETTERS AND SYMBOLS	SQ FT	36.4	36.4		
** T5010200	THERMOPLASTIC PAVEMENT MARKING LINE 4"	FOOT	1,967	1,967		
△ Z0018500	DRAINAGE STRUCTURES TO BE CLEANED	EACH	7	7		

SUMMARY OF QUANTITIES				80% FEDERAL 20% STATE		
				CONSTRUCTION TYPE CODE		
				X981-2A		
CODE NO.	ITEM	UNIT	TOTAL QTY.	BRIDGE	ROADWAY	BIKE TRAIL * SFTY-1B
** T5010400	THERMOPLASTIC PAVEMENT MARKING LINE 6"	FOOT	100		100	
** T5010600	THERMOPLASTIC PAVEMENT MARKING LINE 12"	FOOT	70		70	
** T5010700	THERMOPLASTIC PAVEMENT MARKING LINE 24"	FOOT	20		20	
** T5020200	PAINT PAVEMENT MARKING LINE 4"	FOOT	230			230
** T5040100	RAISED REFLECTIVE PAVEMENT MARKER	EACH	54		54	
Z0003900	BICYCLE RAILING	FOOT	334	334		
Z0037400	PAVEMENT MARKING REMOVAL	FOOT	4,235		4,235	
Z0070800	TEMPORARY PAINT PAVEMENT MARKING LINE 4"	FOOT	4,235		4,235	
XX001517	HARDWOOD RAILING	FOOT	280			280
XS423000	BITUMINOUS COATED CORRUGATED STEEL PIPE CULVERT 12"	FOOT	48			48
54213867	STEEL END SECTION 12"	EACH	3			3
XX000613	MODULAR BLOCK RETAINING WALL	SQ FT	492			492
44000100	PAVEMENT REMOVAL	SQ YD	218		218	
54200439	PIPE CULVERTS, TY. I RCCP 24"	FOOT			84	
54213669	PRECAST REINFORCED CONCRETE FLARED END SECTION 24"	EACH	2		2	
54247130	GRATING FOR CONCRETE FLARED END SECTION 24"	EACH	2		2	
63100005	TRAFFIC BARRIER TERMINAL, TYPE 6	EACH	2		2	

\* COST OF BIKE TRAIL TO BE PAID FOR BY LAKE COUNTY FOREST PRESERVE DISTRICT  
 △ NON-PARTICIPATING

\*\* SPECIALTY ITEMS



REVISIONS	
NAME	DATE

ILLINOIS DEPARTMENT OF TRANSPORTATION

**SUMMARY OF QUANTITIES**

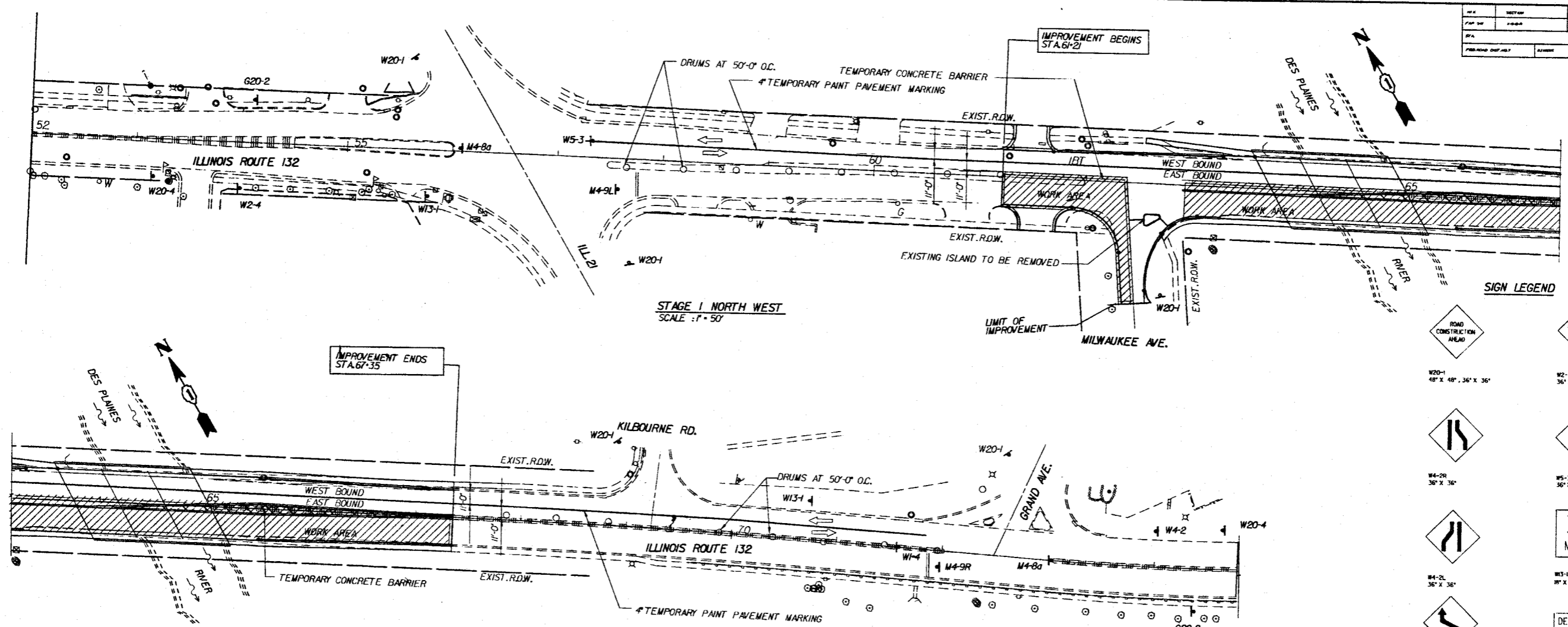
FAP ROUTE 54 ILLINOIS ROUTE 132  
 OVER DES PLAINES RIVER  
 LAKE COUNTY

SCALE: VERT. 1"=20'  
 HORIZ. 1"=40'

DATE: JUNE-12-1995

DRAWN BY: M.S.  
 CHECKED BY: M.R.

DATE	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
FAP 30	1-0-00	LAKE	30	5
DATE	TO DATE			
FILE NO. PROJECT	5-41 049-02			



**SIGN LEGEND**

- ROAD CONSTRUCTION AHEAD
- T
- W20-1  
48" X 48", 36" X 36"
- W2-4  
36" X 36"
- ONE LANE BRIDGE
- W4-2R  
36" X 36"
- W3-3  
36" X 36"
- 35 M.P.H.
- W3-1  
18" X 18", 24" X 24"
- W4-2L  
36" X 36"
- DETOUR
- M4-9L
- DETOUR
- W4-9R
- 35 M.P.H.  
SUPPLEMENTAL PLATE 24" X 24"
- END DETOUR
- M4-9A
- 35 M.P.H.  
SUPPLEMENTAL PLATE 24" X 24"
- END CONSTRUCTION
- SINGLE LANE AHEAD
- W20-4  
48" X 48", 36" X 36"
- G20-2  
60" X 24", 48" X 24"

**STAGE I**

1. Close south side of roadway and bridge to traffic and shift traffic to north side of pavement and bridge structure. Provide 1/2 lane width.
2. Perform pavement removal, pavement replacement, bridge superstructure removal and replacement and work as indicated on plans along south side of route.

**LEGEND**

- Sign
- Barricade Type II
- Drum
- Temporary Concrete Barrier
- W20-1 Sign Type

**STAGE I**

**General Notes:**

1. The Contractor shall maintain one lane of traffic flow in each direction throughout the duration to the contract.
2. The Contractor shall maintain traffic in accordance with the special provision and as directed by the Engineer.
3. The Engineer shall be informed 48 hours in advance of any change in construction staging.
4. Barricades or drums shall be equipped with mono-directional steady burn lights and shall be placed at a maximum of 50 foot intervals along the proposed work zone as indicated on the plans or as directed by the Engineer.
5. The Contractor shall be required to remove all pavement markings which conflict with the designated traffic control plan. This work shall be paid for as pavement marking removal.
6. The Contractor shall make a solid edge line during Stage I, II and III traffic operations. This work shall be paid for at the contract unit price for pavement marking tape, Type III, or paint pavement markings - line #, as noted.
7. The furnishing, installing and relocation of all traffic signs shall be in accordance with the manual on uniform traffic control devices and the standard specifications. This work shall be included in the cost for traffic control and protection.
8. All conflicting traffic signs shall be covered as directed by the Engineer. This shall be incidental to the cost of traffic control and protection.
9. Temporary concrete barrier shall have the base of the wall painted with reflective yellow or white paint as noted. This work shall not be paid for separately but shall be included in the contract unit price for install and remove temporary concrete barrier.



REVISIONS	
NAME	DATE

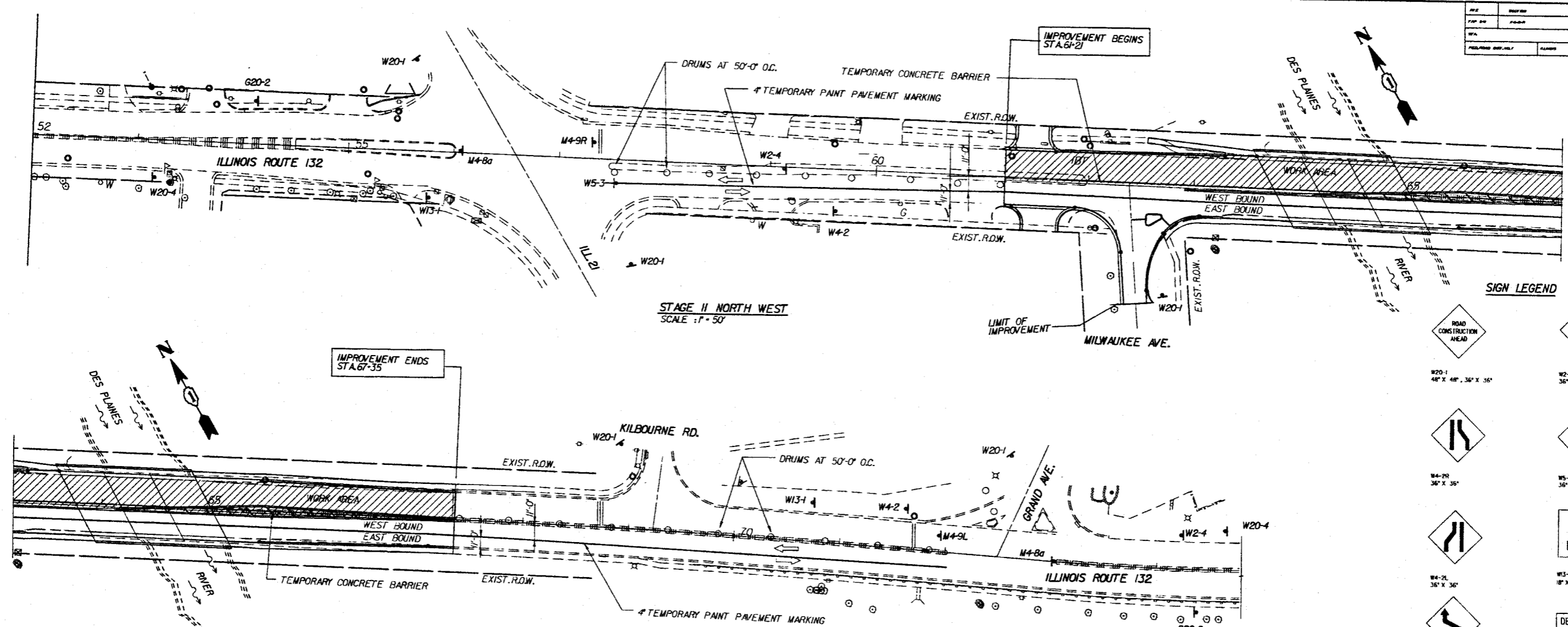
ILLINOIS DEPARTMENT OF TRANSPORTATION  
**TRAFFIC MAINTENANCE**  
**STAGE I**

FAP ROUTE 541 ILLINOIS ROUTE 132  
OVER DES PLAINES RIVER  
LAKE COUNTY

SCALE: VERT: 1" = 20'  
HORIZ: 1" = 50'  
DATE: JUNE-12-1995

DRAWN BY: M.S.  
CHECKED BY: M.R.

DATE	DESIGN	CHECKED	PROJECT	SHEET
FAP 54	FAP 54	LAKE	30	7
DATE	TO DATE			
PROJECT NO.	ALUMS	PER NO. PROJECT	548 CHS-62	



**SIGN LEGEND**

- ROAD CONSTRUCTION AHEAD
- T
- W20-1  
48" X 48", 36" X 36"
- W2-4  
36" X 36"
- ONE LANE BRIDGE
- W4-9R  
36" X 36"
- W5-3  
36" X 36"
- 35  
M.P.H.
- W3-1  
18" X 18", 24" X 24"
- DETOUR
- W4-9L
- DETOUR
- W4-9R
- 35  
M.P.H.  
SUPPLEMENTAL PLATE 24" X 24"
- W4-9L  
48" X 48"  
SUPPLEMENTAL PLATE 24" X 24"
- DETOUR
- W4-9R
- 35  
M.P.H.  
SUPPLEMENTAL PLATE 24" X 24"
- W4-9L  
48" X 48"  
SUPPLEMENTAL PLATE 24" X 24"
- END DETOUR
- W4-8A
- END CONSTRUCTION
- SINGLE LANE AHEAD
- W20-4  
48" X 48", 36" X 36"
- G20-2  
60" X 24", 48" X 24"

**STAGE II**

1. Close north side of roadway and bridge to traffic and shift traffic to south side of pavement and bridge structure. Provide 11 foot lane width.
2. Perform pavement removal, pavement replacement, bridge superstructure removal and replacement and work as indicated on plans along north side of route.

- LEGEND**
- Sign
  - Barricade Type II
  - Barricade Type III
  - Drum
  - Temporary Concrete Barrier
  - W20-1 Sign Type

**STAGE II**  
General Notes:

1. The Contractor shall maintain one lane of traffic flow in each direction throughout the duration to the contract.
2. The Contractor shall maintain traffic in accordance with the special provision and as directed by the Engineer.
3. The Engineer shall be informed 48 hours in advance of any change in construction staging.
4. Barricades or drums shall be equipped with mono-directional steady burn lights and shall be placed at a maximum of 50 foot intervals along the proposed work zone as indicated on the plans or as directed by the Engineer.
5. The Contractor shall be required to remove all pavement markings which conflict with the designated traffic control plan. This work shall be paid for as pavement marking removal.
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9. Temporary concrete barrier shall have the base of the wall painted with reflective yellow or white paint as noted. This work shall not be paid for separately but shall be included in the contract unit price for install and remove temporary concrete barrier.

**RUBINOS & MESIA ENGINEERS, INC.**  
200 South Michigan Ave., Chicago, Illinois 60604 Phone: (312) 543-9975 Fax: (312) 543-9122

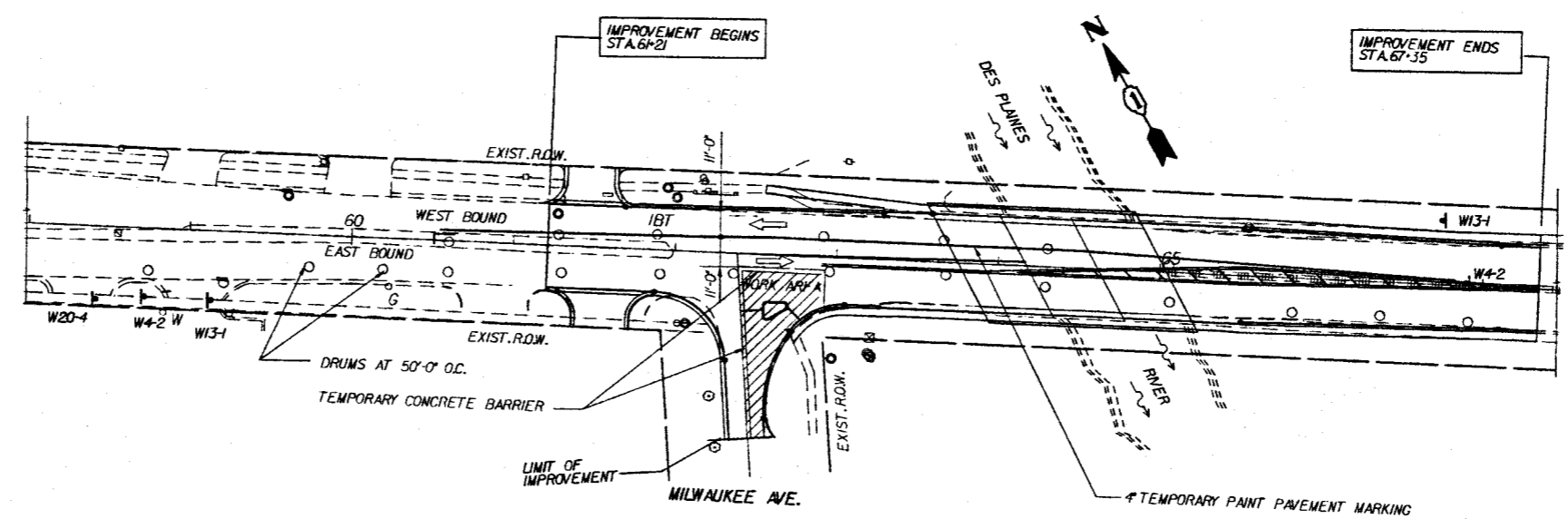
REVISIONS	
NAME	DATE

ILLINOIS DEPARTMENT OF TRANSPORTATION  
**TRAFFIC MAINTENANCE**  
**STAGE II**  
FAP ROUTE 54 ILLINOIS ROUTE 132  
OVER DES PLAINES RIVER  
LAKE COUNTY

SCALE: VERT. 1" = 50'  
HORIZ. 1" = 50'  
DATE: JUNE-12-1995

DRAWN BY: M.S.  
CHECKED BY: M.R.

PROJECT	SECTION	COUNTY	SHEET NO.	TOTAL SHEETS
FAP 54	10-04	LAKE	30	8
DATE	TO STA.			
FEBRUARY 1995	67+21			
DESIGNED BY	DATE	FOR PROJECT 541 049-62		



STAGE III  
SCALE: 1" = 50'

**SIGN LEGEND**

W20-1 48" X 48", 36" X 36"	W2-4 36" X 36"
W4-2R 36" X 36"	W5-3 36" X 36"
W4-2L 36" X 36"	W3-1 48" X 18", 24" X 24"
W4-5L 48" X 48" SUPPLEMENTAL PLATE 24" X 24"	W4-5R
W4-5R 48" X 48" SUPPLEMENTAL PLATE 24" X 24"	W4-5A
W20-4 48" X 48", 36" X 36"	W20-4 48" X 48", 36" X 36"
C20-7 60" X 24", 48" X 24"	C20-7 60" X 24", 48" X 24"

STAGE III

1. Close partially Milwaukee Ave. and Illinois 132 to traffic and shift traffic to north side of pavement and bridge structure. Provide 11 foot lane width.
2. Perform pavement removal, pavement replacement, and work as indicated on plans along south side of route.

**LEGEND**

4 Sign

o Drum

— Temporary Concrete Barrier

W20-1 Sign Type

STAGE III  
General Notes:

1. The Contractor shall maintain one lane of traffic flow in each direction throughout the duration to the contract.
2. The Contractor shall maintain traffic in accordance with the special provision and as directed by the Engineer.
3. The Engineer shall be informed 48 hours in advance of any change in construction staging.
4. Barricades or drums shall be equipped with mono-directional steady burn lights and shall be placed at a maximum of 50 foot intervals along the proposed work zone as indicated on the plans or as directed by the Engineer.
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**RUBINOS & MESIA ENGINEERS, INC.**  
300 South Michigan Ave., Chicago, Illinois 60604 Phone: (312) 462-1400 Fax: (312) 462-1405

REVISIONS	
NAME	DATE

ILLINOIS DEPARTMENT OF TRANSPORTATION  
**TRAFFIC MAINTENANCE  
STAGE III**

FAP ROUTE 54 ILLINOIS ROUTE 132  
OVER DES PLAINES RIVER  
LAKE COUNTY

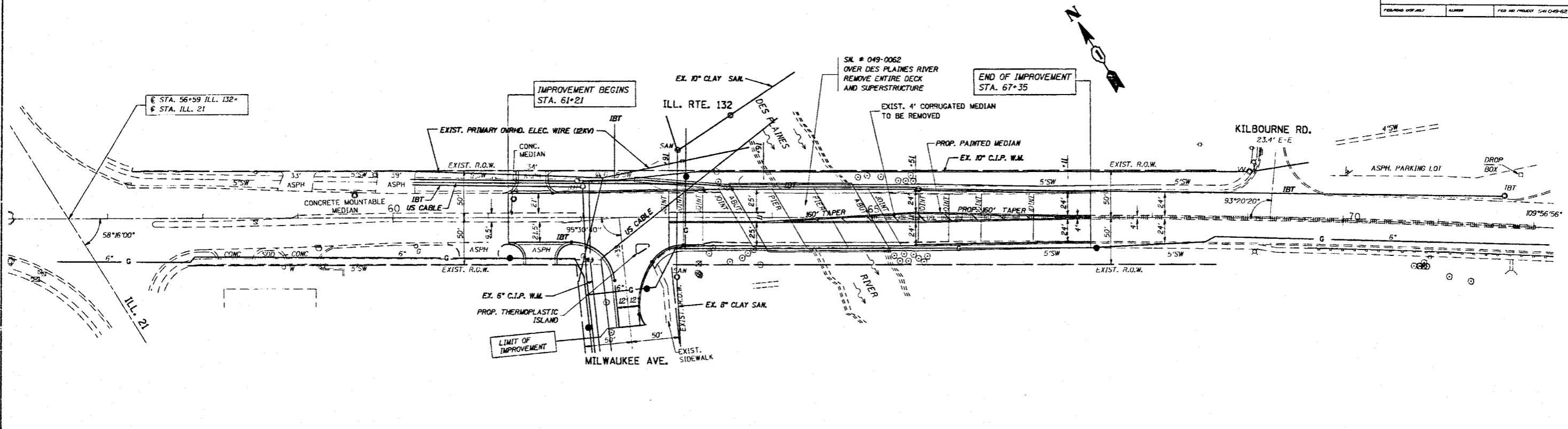
SCALE: VERT: 1" = 20'  
HORIZ: 1" = 50'  
DATE: JUNE-12-1995

DRAWN BY: M.S.  
CHECKED BY: M.R.





DATE	SECTION	DATE	DATE	DATE
F.P. 54	F.P. 54	LAKE	30	10
54A		10	54A	
FED. PROJECT 541 049-62				



UTILITY PLAN

TREE REMOVAL TABLE

STATION	OFFSET	SIZE TYPE
63+56	45'-L	8" Box Elder
63+59	40'-L	8" Box Elder
63+65	48'-R	10" Black Willow
63+80	39'-R	8" Siberian Elm
63+88	32'-R	14" Siberian Elm
63+93	39'-R	10"
64+06	47'-R	13" Stump
64+88	41'-L	10" Box Elder
64+99	45'-L	8" Box Elder
65+17	42'-L	8" Green Ash
65+20	45'-R	10" Box Elder
65+24	40'-R	1-10", 1-7" Silver Maple
65+27	42'-R	6" Box Elder
65+28	45'-R	7" Silver Maple
65+30	47'-R	8" Silver Maple
65+31	40'-L	12" Box Elder
65+44	39'-L	1-9", 1-12", 1-13" Silver Maple
65+46	47'-R	10" Silver Maple
65+56	44'-R	White Mulberry

**RUBINOS & MESIA ENGINEERS, INC.**  
 700 South Michigan Ave., Chicago, Illinois 60605 Phone: (312) 643-9070 Fax: (312) 643-9072

REVISIONS	
NAME	DATE

ILLINOIS DEPARTMENT OF TRANSPORTATION

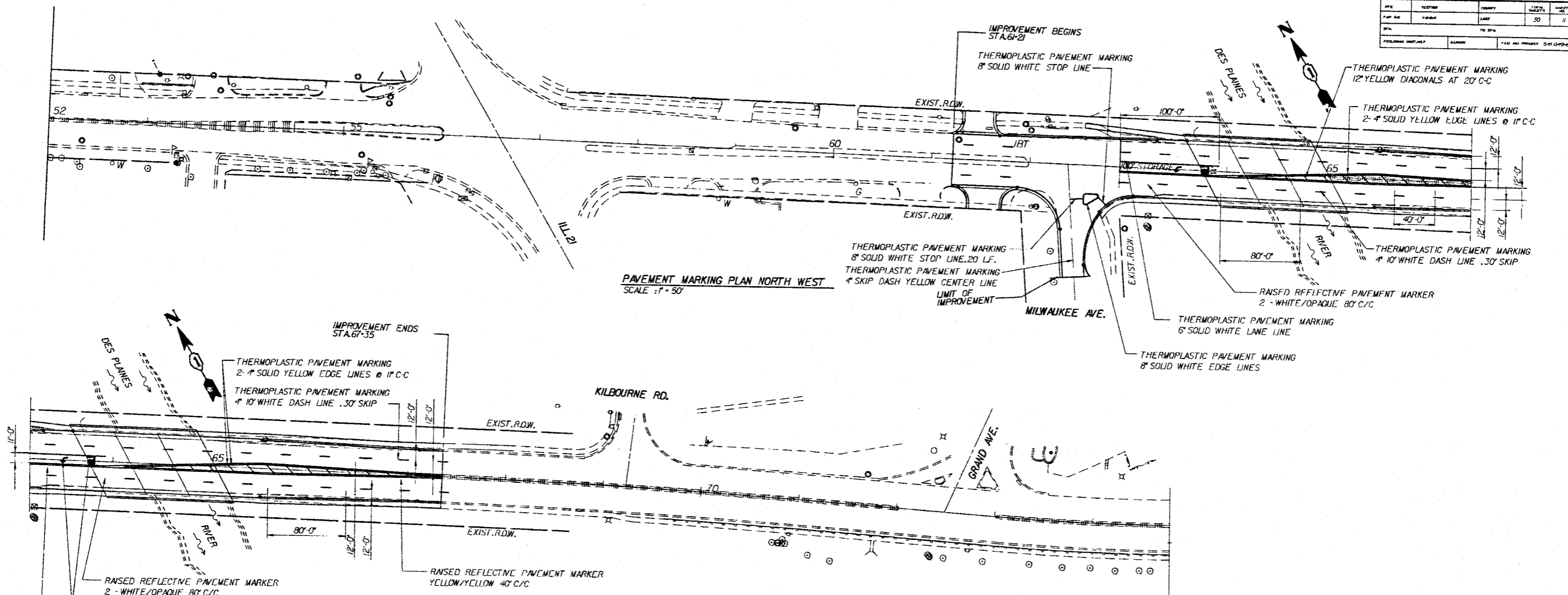
**UTILITY PLAN**

FAP ROUTE 54 ILLINOIS ROUTE 132  
 OVER DES PLAINES RIVER  
 LAKE COUNTY

SCALE: VERT. 1"=50'  
 HORIZ. 1"=50'  
 DATE: JUNE-12-1995

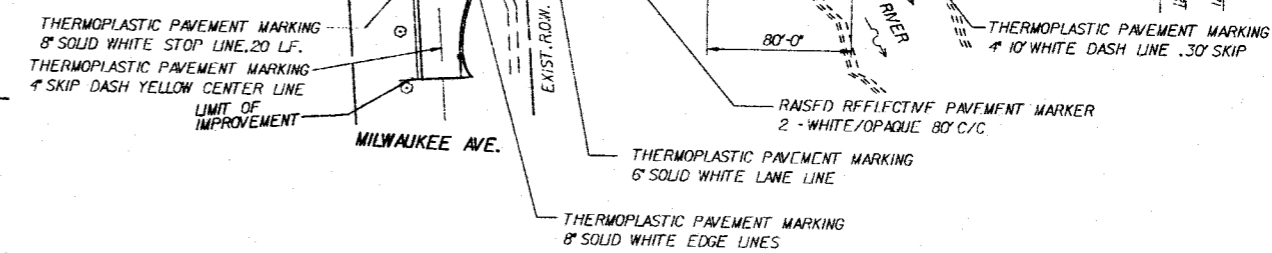
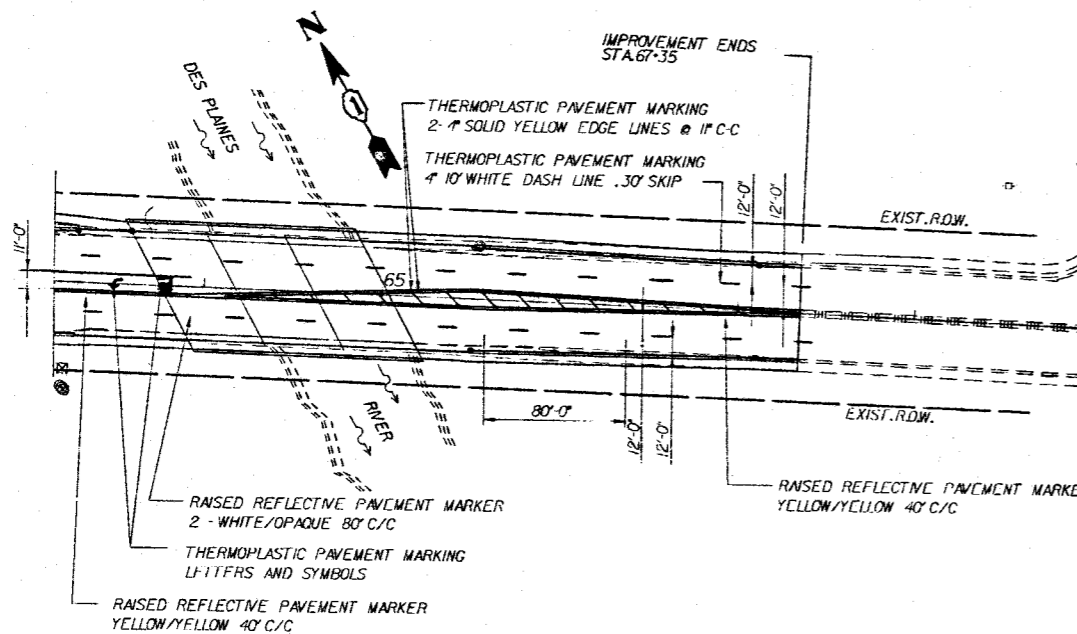
DRAWN BY: M.S.  
 CHECKED BY: M.R.

DATE	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
			30	11
FAP NO.	PROJECT	LAKE		
STA.	TO STA.			
DESIGNED BY: J.M.		FAP NO. PROJECT 541 OVER RIVER		



PAVEMENT MARKING PLAN NORTH WEST  
SCALE: 1" = 50'

PAVEMENT MARKING PLAN SOUTH EAST  
SCALE: 1" = 50'



01



REVISIONS	
NAME	DATE

ILLINOIS DEPARTMENT OF TRANSPORTATION

### PAVEMENT MARKING PLAN

FAP ROUTE 541 (ILLINOIS ROUTE 132)  
OVER DES PLAINES RIVER  
LAKE COUNTY

SCALE: VERT: 1" = 20'  
HORIZ: 1" = 40'

DATE: JUNE-12-1995

DRAWN BY: M.S.  
CHECKED BY: M.R.

BM \* X Chiseled '□' in Northwest Corner of ILL. Rte. 132  
 Bridge Over Des Plaines River Elev. 668.53

Existing Structure: Sta. 7+80.60, ILL. Rte. 132, Sec X-6B  
 Built in 1922, Rehabilitated in 1957. Structure Number 049-0062.  
 Superstructure Simple Span PPC Deck Beams. Substructure R. C.  
 Closed Abutments, R. C. Piers. Existing Out to Out - 62'-0".  
 Existing Back to Back Approach Bents = 159'-2 3/4".  
 Superstructure to Be Removed and Structure Widened.  
 Traffic to be Maintained Utilizing Stage Construction.

No Salvage

STATE OF ILLINOIS  
 DEPARTMENT OF TRANSPORTATION

PROJECT NO.	SECTION	DATE	SHEET NO.
541 X-6-B-R	LAKE	30 12	12
OF 13 SHEETS			

GENERAL NOTES

Reinforcement bars shall conform to the requirements of AASHTO M-31, M-42 or M-53, Grade 60.

Expansion guards which are not cast in the precast unit shall be fabricated and erected in accordance with Article 503.10(c) of the Standard Specifications and are included in quantity of structural steel.

All structural steel shall be shop painted with the zinc-silicate/acrylic/acrylic paint system. The color of the acrylic finish coats shall be Munsell No. 2.5 YR 3/4 reddish brown.

Layout of Stone Riprap may be varied in the field to suit ground conditions as directed by the Engineer.

The top surface of the beams shall be finished in accordance with Article 504.06 of the Standard Specifications except that the surface shall not be roughened by brooming. The finished surface shall be free of depressions or high spots with sharp corners, and the top edge of keys shall be rounded or chamfered a minimum of 1/4".

A Calcium Nitrite Corrosion Inhibitor, as covered in the Special Provisions, shall be used in the concrete for precast prestressed concrete deck beams.

Protective Coat shall not be applied to surfaces to which Waterproofing Membrane System is applied.

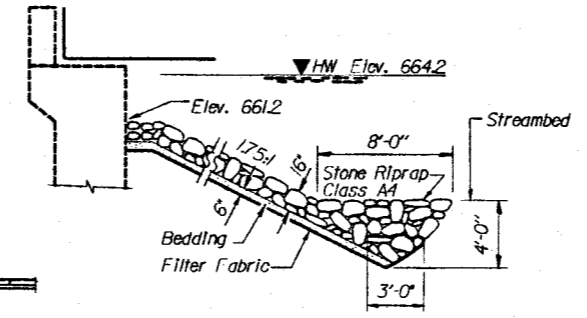
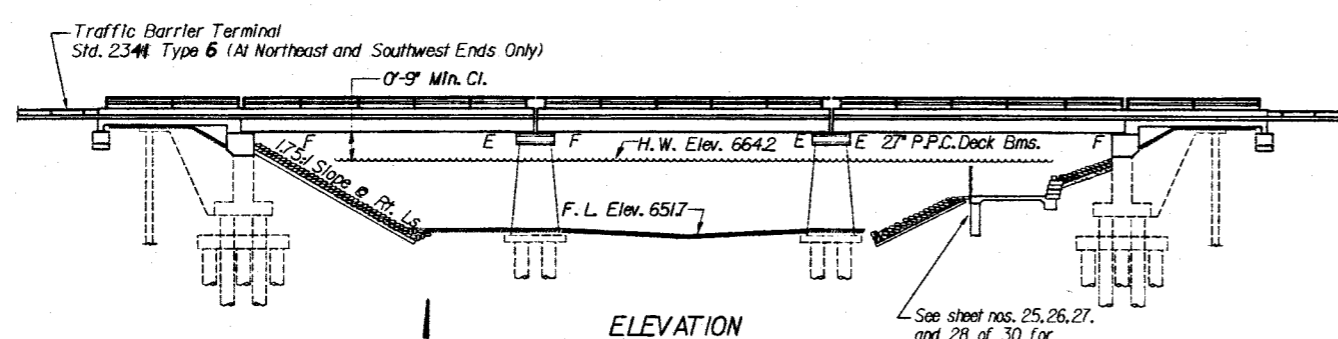
Limits of Waterproofing Membrane System shall be from end to end of deck and face to face of sidewalks.

Plan dimensions and details relative to existing structure have been taken from existing plans and are subject to nominal construction variations. It shall be the Contractor's responsibility to verify such dimensions and details in the field and make necessary approved adjustments prior to construction or ordering of materials. Such variations shall not be cause for additional compensation for a change in the scope of the work, however, the Contractor will be paid for the quantity actually furnished at the unit price bid for the work.

Shoulder transition to wingwall shall be shaped with broken concrete. Cost incidental.

TOTAL BILL OF MATERIAL

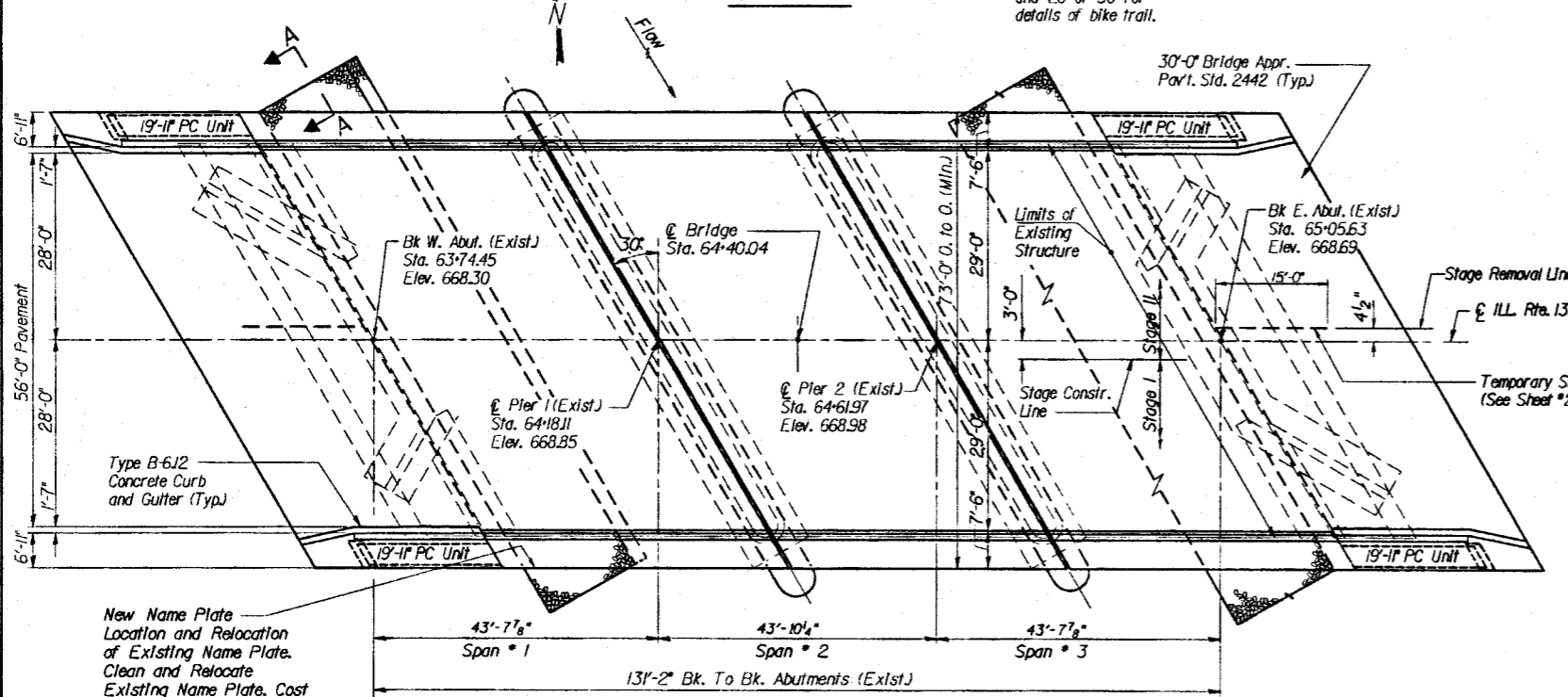
ITEM	UNIT	SUPER	SUB	TOTAL
Structure Excavation	Cu.Yd.		188	188
Removal of Existing Superstructures	Each	1		1
Concrete Superstructure	Cu.Yd.	141.9		141.9
Concrete Structures	Cu.Yd.		157.6	157.6
Protective Coat	Sq.Yd.	480		480
Precast Prestressed Concrete Deck Beams (27" Depth)	Sq.Ft.	9388		9388
Reinforcement Bars, Epoxy Coated	Lbs.	12650	15420	28070
Name Plates	Each	1		1
Bituminous Concrete Surface Course, Class I	Ton	85		85
Furnishing and Erecting Structural Steel	Pound	11610		11610
Bicycle Railing	Foot	334		334
Stone Riprap, Class A4	Sq.Yd.		271	271
Temporary Bridge Rail	Foot	193		193
Portland Cement Mortar Fairing Course	Foot	2477		2477
Preformed Joint Seal 2 1/2"	Foot	85		85
Preformed Joint Seal 4"	Foot	85		85
Waterproofing Membrane System	Sq.Yd.	841		841
Filter Fabric For Use With Riprap	Sq.Yd.		271	271
Concrete Removal	Cu.Yd.		140.9	140.9
Precast Concrete Bridge Slab	Sq.Ft.	299		299
Portland Cement Concrete Pavement 10"	Sq.Yd.	29		29
Pavement Fabric	Sq.Yd.	29		29
Temporary Sheet Piling	Sq.Ft.		720	720



STONE RIPRAP TREATMENT AT WEST ABUTMENT

STATION 64+40.04  
 REBUILT BY  
 STATE OF ILLINOIS  
 F.A.P. RT. 541 SEC. X-6-B-R  
 F.A. PROJ. ACBHF-541(9)  
 LOADING HS20  
 STR. NO. 049-0062

NAME PLATE  
 See Std. 2113



SEISMIC DATA

S.P.C. - A  
 A - 0.04  
 S - 10

DESIGN SPECIFICATIONS

AASHTO 1992 & 1993 Interim

LOADING HS20-44

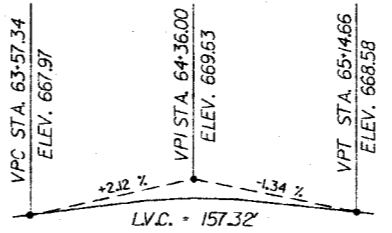
DESIGN STRESSES

FIELD UNITS

f'c = 3,500 psi  
 fy = 60,000 psi (Reinf.)  
 fy = 36,000 psi (Struct.) (M270, Gr. 36)

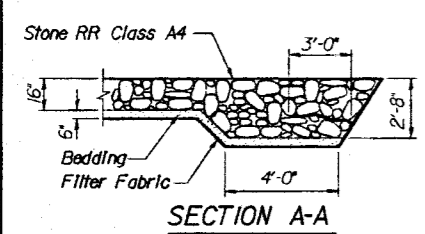
PRECAST PRESTRESSED UNITS

f'c = 5,000 psi  
 f'cl = 4,000 psi  
 f's = 270,000 psi (1/2" φ strands)  
 f'sl = 189,000 psi (1/2" φ strands)



PROFILE GRADE

ILL RTE 132  
 (Along & Roadway)



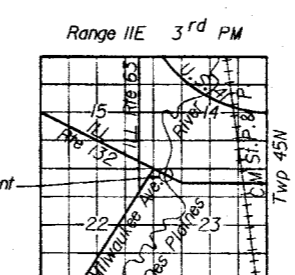
SECTION A-A

WATERWAY INFORMATION

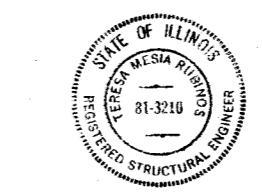
(Elevations Shown on This Table are According to F.I.S. Datum. To Convert to Highway Datum Subtract 0.11 Feet)

Drainage Area = 225 Sq.Mi.		Low Grade Elev. = 663.0		At Station 73+59.44			
Flood	Freq. Yr.	Q C.F.S.	Opening Sq.Ft.	Nat. H.W.E.	Head (ft)	Headwater Elev.	
			Exist.	Prop.	Exist.	Prop.	
Design	10	2580	851	851	662.8	0.1	662.9
Base	50	3760	995	995	664.2	0.3	664.5
Overtopping		4260	1057	1057	664.8	0.3	665.1
Max. Calc.		2580	851	851	662.8	0.1	662.9

DESIGNED	MR
CHECKED	MF
DRAWN	MS
CHECKED	MR



LOCATION SKETCH



Teresa Maria Rubinos

JUN 16 1995



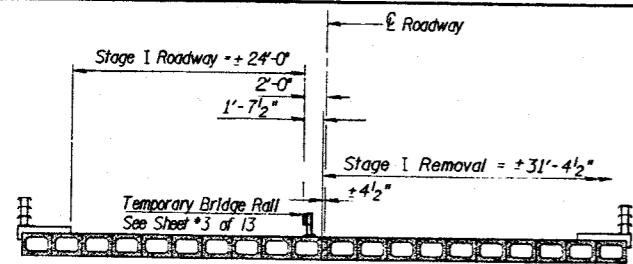
GENERAL PLAN & ELEVATION  
 F.A.P. RTE. 541 SECTION X-6-B-R

LAKE COUNTY

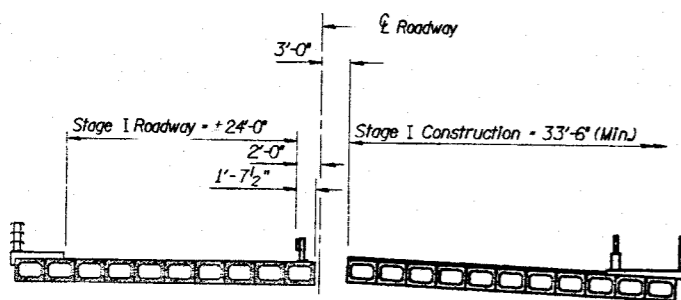
STA. 64+40.04  
 S.N. 049-0062

STATE OF ILLINOIS  
DEPARTMENT OF TRANSPORTATION

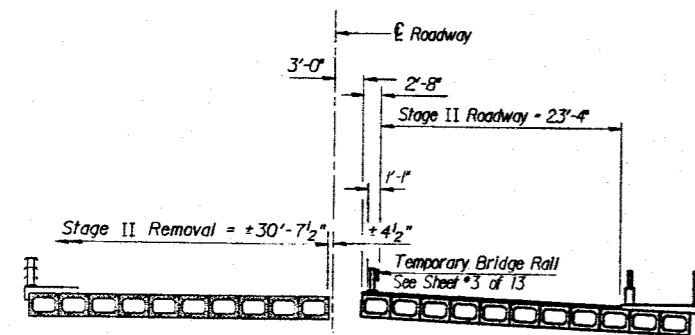
PROJECT NO.	SECTION	COUNTY	LAKE	SHEET NO.
541	X-6-B-R		30	13
SHEET NO. 2 OF 13 SHEETS				
FED. ROAD DIST. NO.	NAME	FED. AID PROJECT	541 019-62	



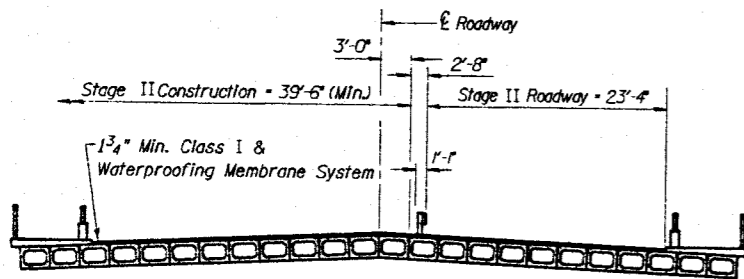
\*STAGE I REMOVAL



\*STAGE I CONSTRUCTION



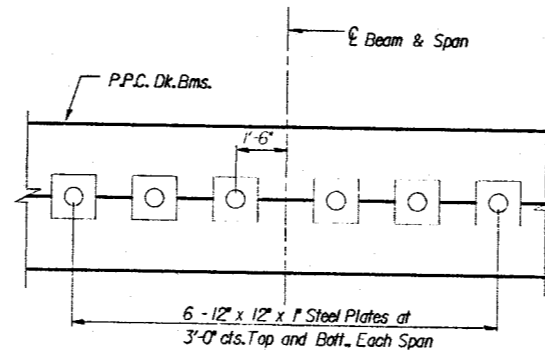
\*STAGE II REMOVAL



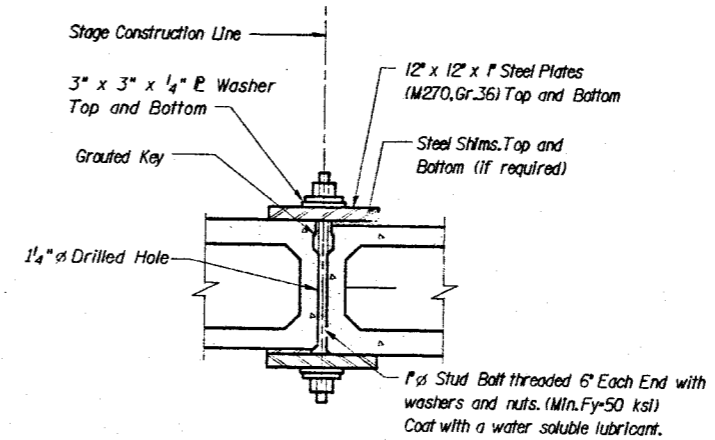
\*STAGE II CONSTRUCTION

Looking East

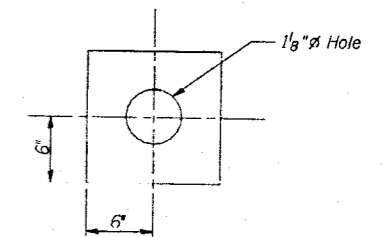
DESIGNED	MR
CHECKED	MF
DRAWN	MW
CHECKED	MF



PLAN



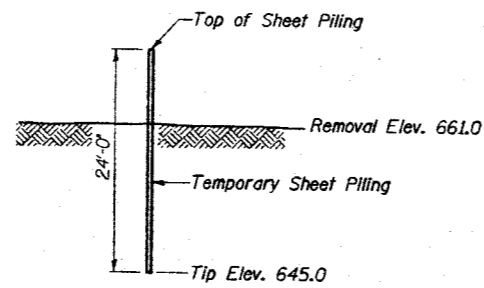
SECTION



CLAMPING PLATE

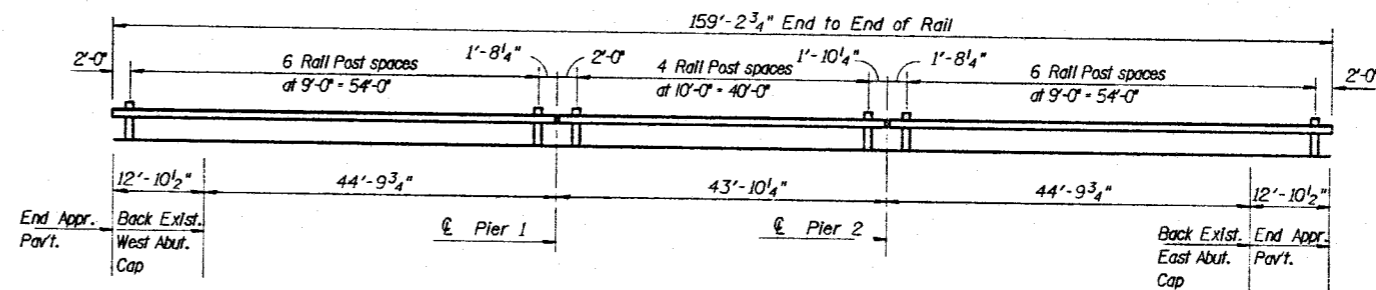
SHEAR KEY CLAMPING DETAILS AT STAGE CONST. JT.

See Special Provision. Cost incidental to Precast Prestressed Concrete Deck Beams.



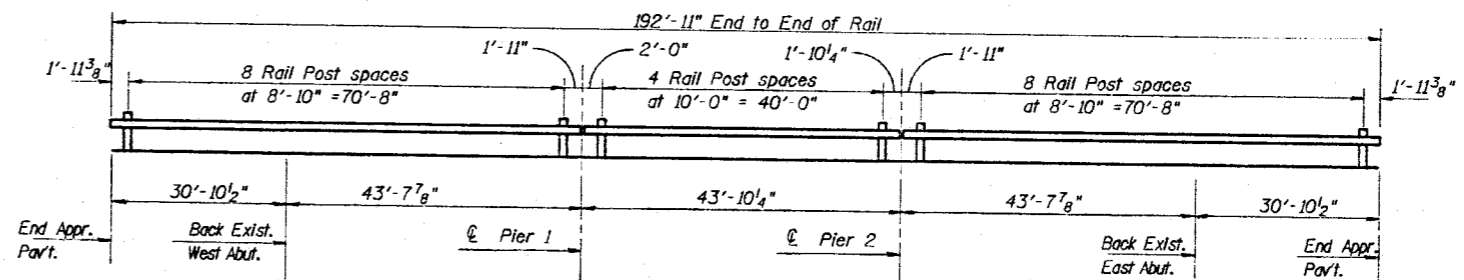
TEMPORARY SHEET PILING DETAILS

NOTE:  
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 approval of the Engineer.



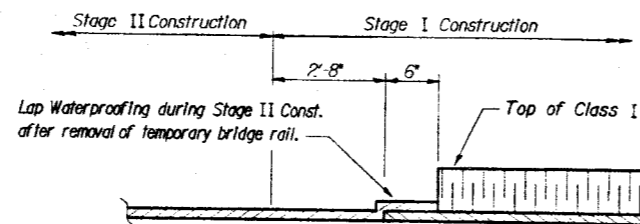
ELEVATION

Looking North showing temporary rail post spacing on existing deck.



ELEVATION

Looking North showing temporary rail post spacing on new deck.



WATERPROOFING TREATMENT

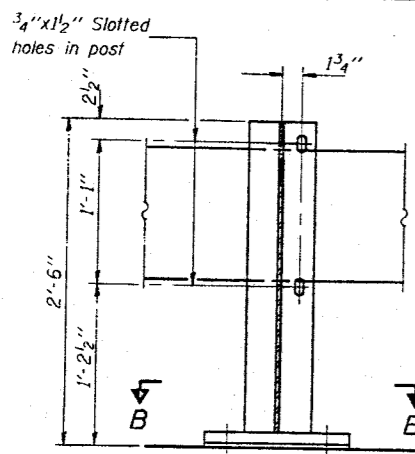
STAGE CONSTRUCTION  
F.A.P. RTE. 541 SECTION X-6-B-R  
LAKE COUNTY  
STA. 64+40.04





STATE OF ILLINOIS  
DEPARTMENT OF TRANSPORTATION

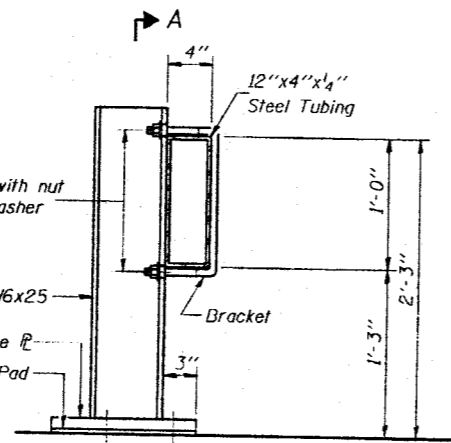
PROJECT NO.	SECTION	COUNTY	SCALE	SHEET NO.
541	X-6-B-R	LAKE	30	14
SHEET NO. 3 OF 13 SHEETS				



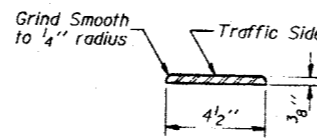
SECTION A-A

2 5/8" H.S. Studs with nut and flat hardened washer

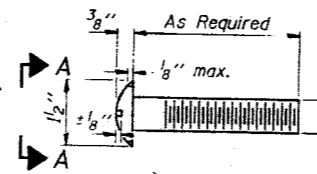
W6x25  
1/4" Base Pl  
1/8" Fabric Pad



SECTION AT RAIL POST

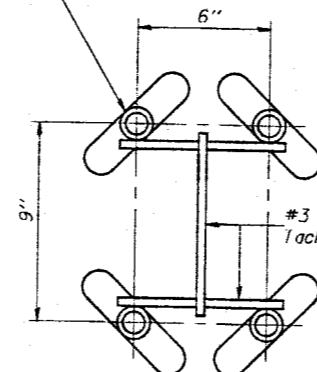


DETAIL A

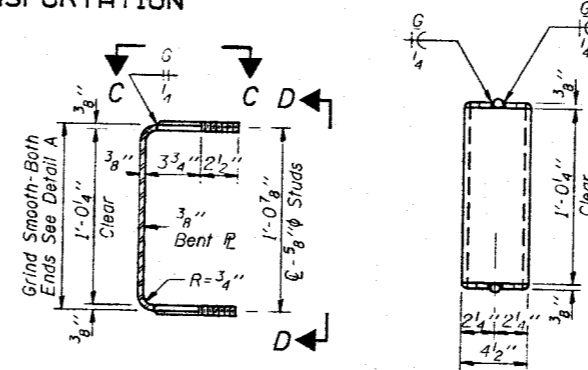


VIEW A-A  
ROUND HEAD BOLT

Wing type threaded inserts lapped for 1" H.S. bolts. (Insert Load Capacity = 14k min./bolt)

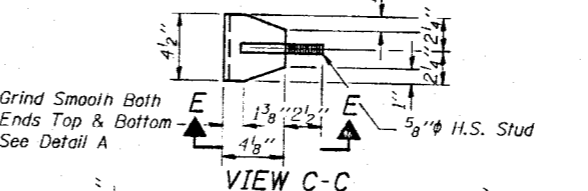


INSERT DETAIL

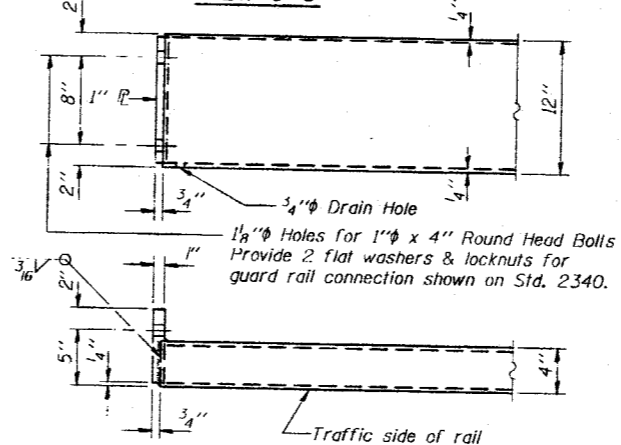


SECTION THRU BRACKET

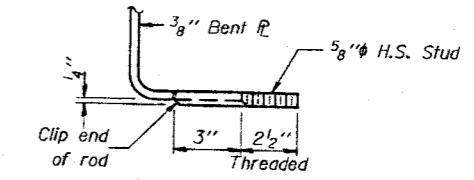
VIEW D-D



VIEW C-C



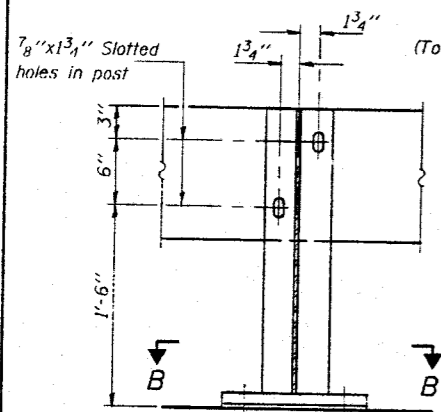
END OF RAIL DETAILS



VIEW E-E

NOTES

Follow structural steel tubing shall conform to the requirements of ASTM designation A-500 Grade B Structural Steel Tubing.  
All other steel shapes and plates shall conform to the requirements of AASHTO M-270 Grade 36 except posts and brackets shall conform to AASHTO M-270, Grade 50.  
Bolts, cap screws, and nuts shall conform to the requirement of ASTM designation A-307 except for high strength bolts, threaded rods, studs, nuts and washers noted which shall conform to AASHTO M-164.  
The bridge rail shall receive one shop coat of a steel prime paint.  
The 1" high strength bolts or threaded rods used to connect the railposts shall be lightened in accordance with Article 505.04(F)(3) of the Standard Specifications.  
Temporary Bridge Rail shall be in accordance with Section 514 of the Standard Specifications, except as noted, and will be paid for at the contract unit price per foot for Temporary Bridge Rail.  
See sheet #2 of 13 for Rail Post spacing.  
The contact surfaces between post flange, rail and inside face of bracket for Alternate I shall be free of all lubricants.  
The nut for 5/8" high strength studs used in Alternate I to connect bracket to post shall be tightened to a snug fit and given an additional one half turn.

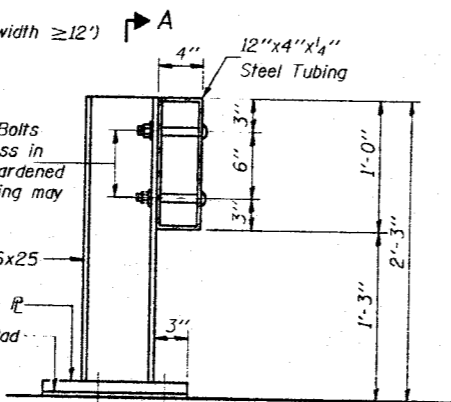


SECTION A-A

ALTERNATE I  
(To be used only for Roadway width ≥ 12')

2-3/4" x 6" Round Head Bolts (With slot or approved recess in head) with locknut & flat hardened washer. 1/8" holes in tubing may be drilled in the field.

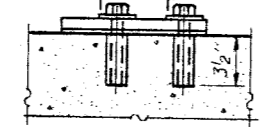
W6x25  
1/4" Base Pl  
1/8" Fabric Pad



SECTION AT RAIL POST

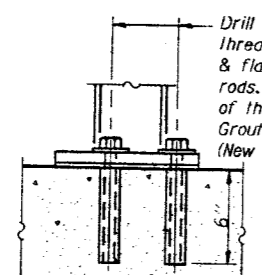
ALTERNATE II

Drill 1-1/4" holes for 1" threaded rods with hex nut & flat washer. Epoxy grout rods. See Section 584 of the Standard Specifications.



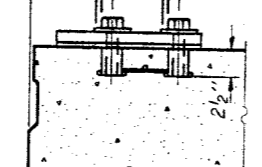
EXIST. P.P.C. DECK BEAMS

Drill 1-1/4" holes for 1" threaded rods with hex nut & flat washer. Epoxy grout rods. See Section 584 of the Standard Specifications. Grout holes after removal (New Appr. Pav't.).



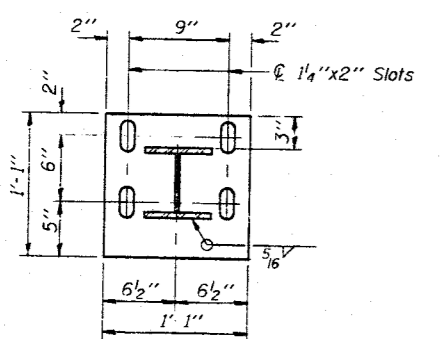
EXIST. & NEW APPR. PAVT

4 - Wing type threaded inserts for 1" H.S. bolts with flat hardened washer. Grout holes after removal. See sheet #2 of 13 for insert spacing.



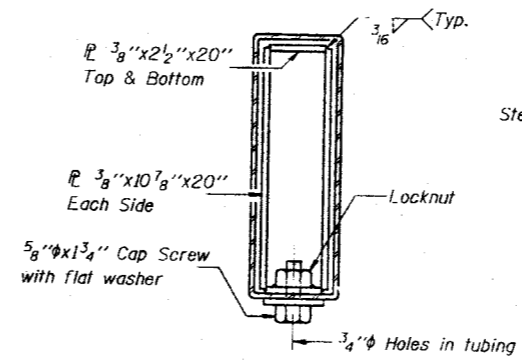
NEW P.P.C. DECK BEAMS

ANCHORAGE DETAILS

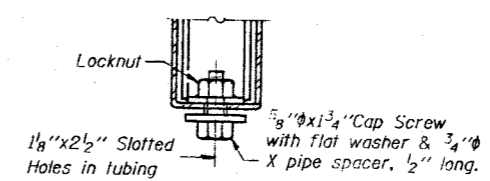


SECTION B-B

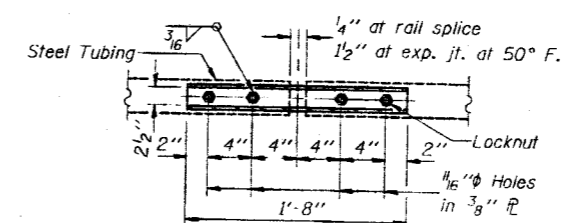
DESIGNED	MR
CHECKED	MF
DRAWN	MW
CHECKED	MF



SECTION AT RAIL SPLICE



RAIL SPLICE CONNECTION AT EXPANSION JT.



PLAN-BOTT. SPLICE TYPICAL

BILL OF MATERIAL

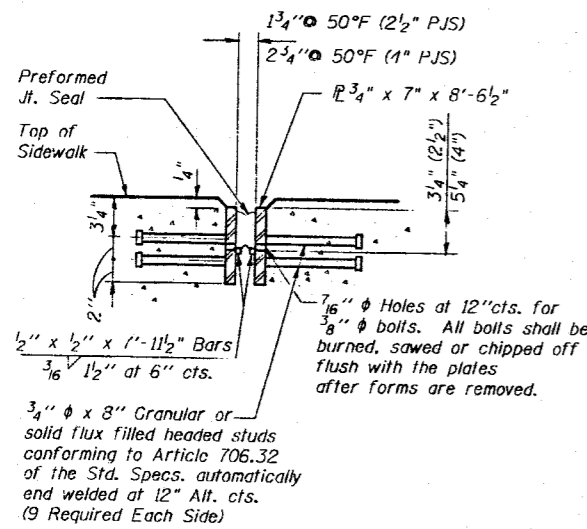
Item	Unit	Quantity
Temporary Bridge Rail	Foot	193

TEMPORARY BRIDGE RAIL  
F.A.P. RTE. 541 SECTION X-6-B-R  
LAKE COUNTY  
STA. 64+40.04

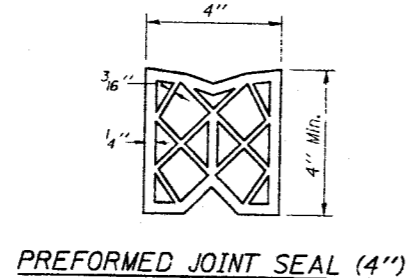


STATE OF ILLINOIS  
DEPARTMENT OF TRANSPORTATION

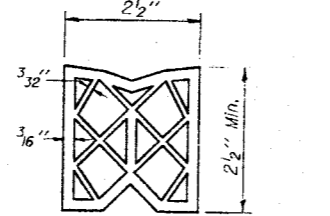
PROJECT NO.	541 X-6-B-R	COUNTY	LAKE	SHEET NO.	16
SHEET NO. 5					OF 13 SHEETS
DATE	5/1/62	DESIGNED BY	MR	CHECKED BY	MF
DRAWN BY	MW	APPROVED BY			



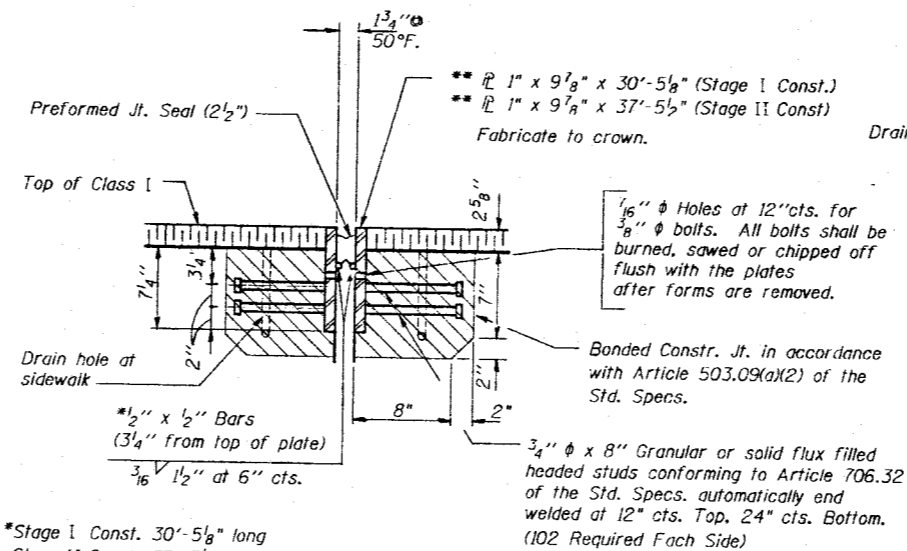
SECTION A-A



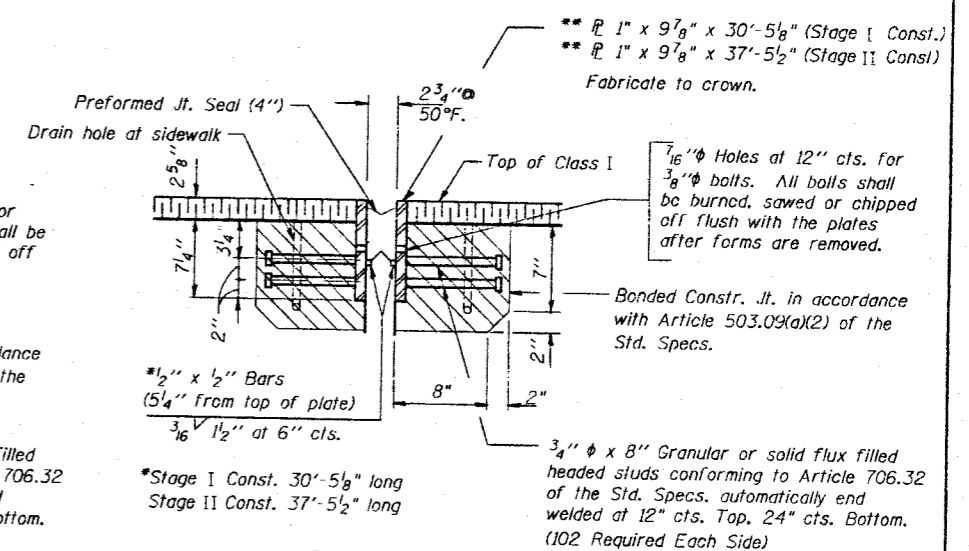
PREFORMED JOINT SEAL (4")



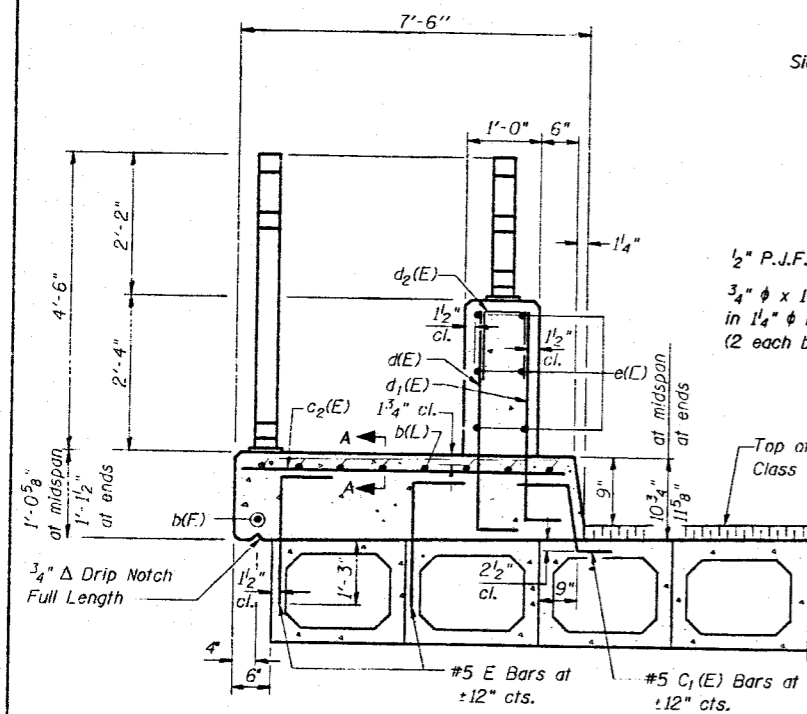
PREFORMED JOINT SEAL (2 1/2")



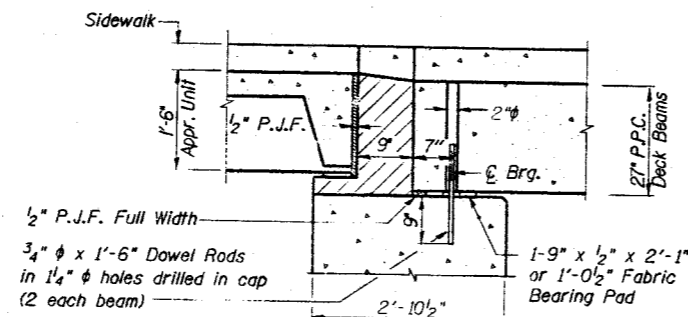
DETAIL "A"



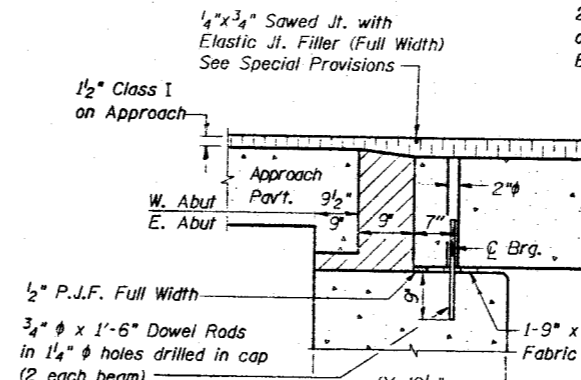
DETAIL "B"



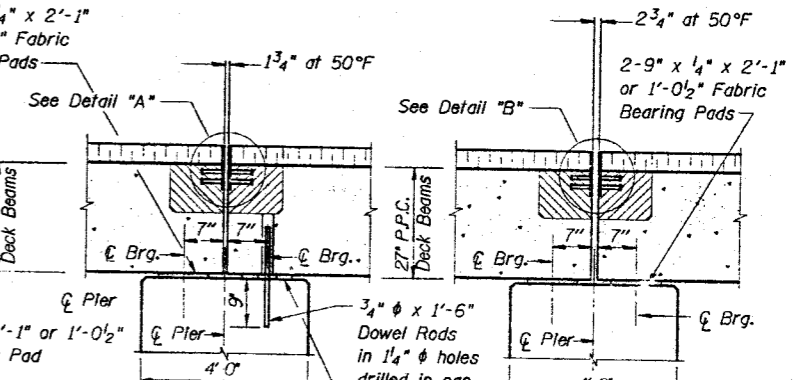
SECTION THRU PARAPET AND SIDEWALK



SEC. THRU ABUTMENTS  
AT APPROACH UNITS

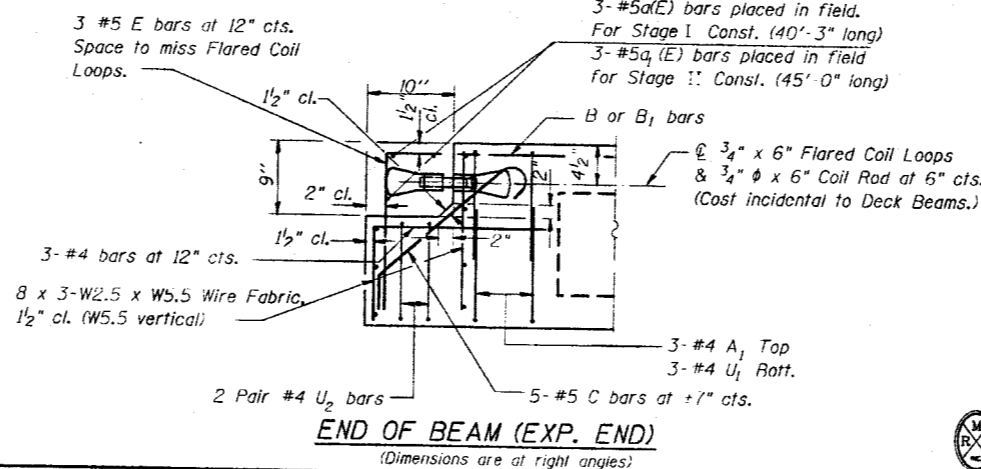


SEC. THRU ABUTMENTS  
AT ROADWAY



SEC. THRU PIER 1

SEC. THRU PIER 2



END OF BEAM (EXP. END)

(Dimensions are at right angles)

Note: All horizontal dimensions are at right angles to beam ends. Ends of beams shall be aligned at the expansion joints. Any linear variation in the beam lengths shall be placed at the fixed joint. See End of Beam Detail for reinforcement. Dowel Rods to be grouted after beams are in place and allowed to cure (minimum 24 hours) prior to grouting the shear keys. Hatched areas to be poured after beams have been erected and joints grouted.

SUPERSTRUCTURE DETAILS  
F.A.P. RTE. 541 SECTION X-6-B-R  
LAKE COUNTY  
STA. 64+40.04

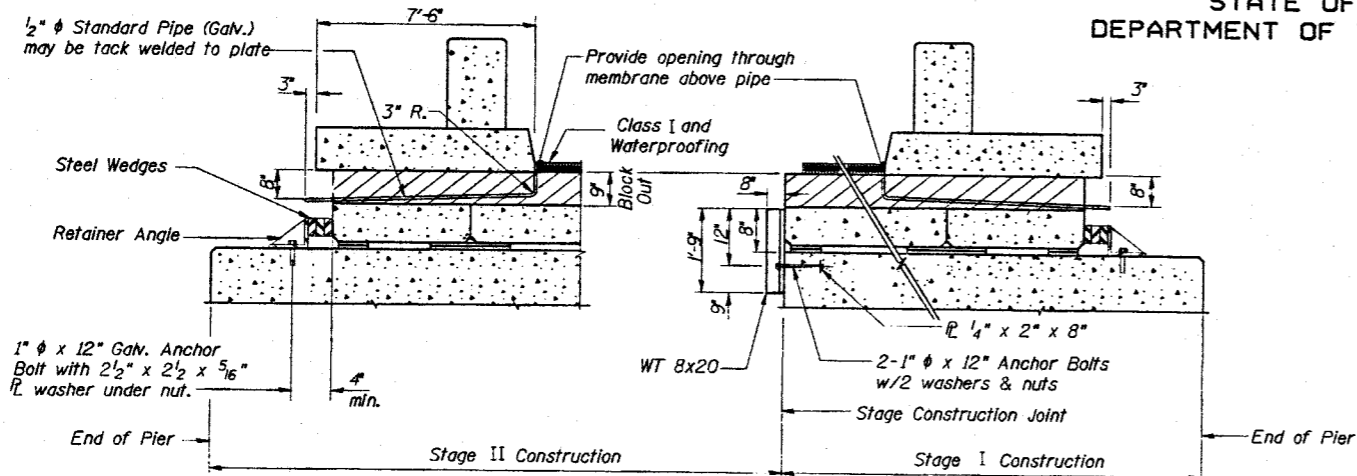
RUBINOS & MESIA ENGINEERS, INC.  
700 South Michigan Ave., Chicago, Illinois 60605 Phone: (312) 642-1875 Fax: (312) 642-1873

DESIGNED	MR
CHECKED	MF
DRAWN	MW
CHECKED	MF



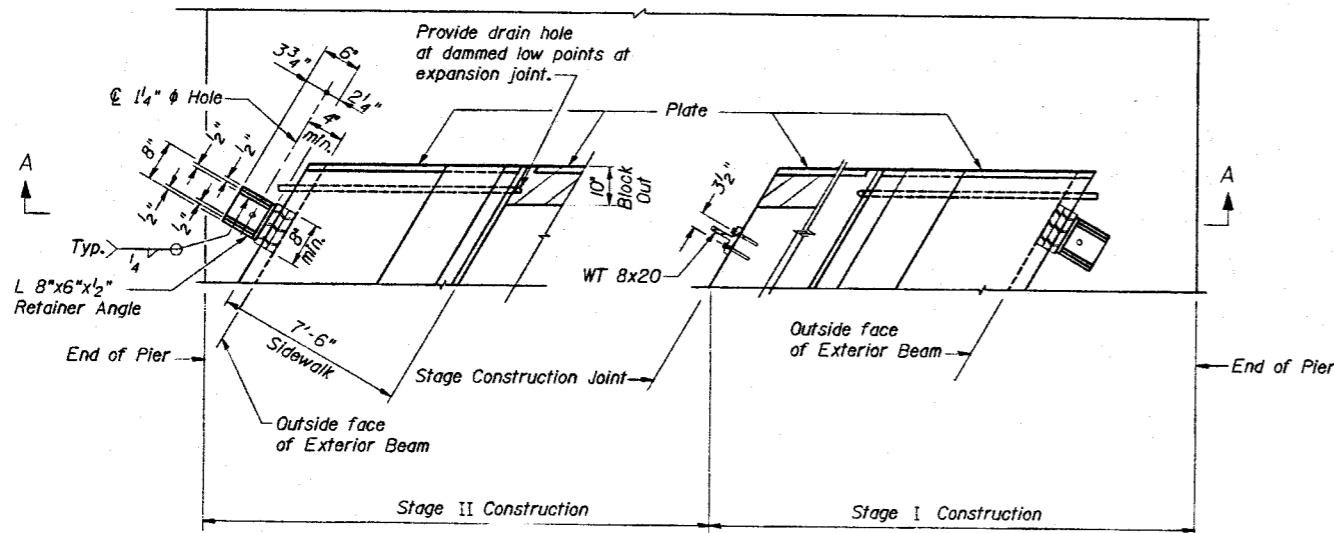
STATE OF ILLINOIS  
DEPARTMENT OF TRANSPORTATION

SHEET NO.	SECTION	COUNTY	ROUTE	SHEET NO.	SHEET NO. 6
S.A.A.	541 X-6-B-R	LAKE	30	17	OF 13 SHEETS
FED. ROAD DIST. DIST.	NAME	FED. RD. PROJECT	541 049-62		



SECTION A-A

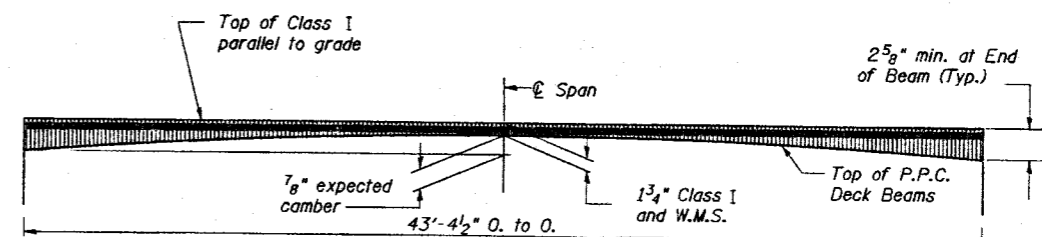
Anchor bolts may be cast into the masonry or approved threaded rod may be placed in drilled holes and grouted in place. Drilled hole  $\phi$  = bolt  $\phi$  +  $\frac{1}{4}$ ". Cost including Retainer and Accessories incidental to Beams.



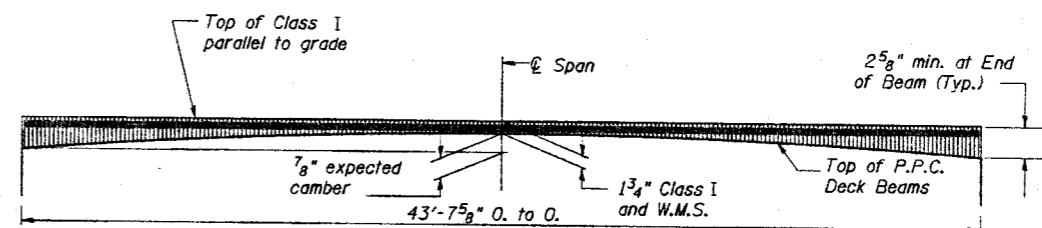
PLAN

Note: After block-outs are poured and cured, the retainers shall be removed. Anchor bolts shall be removed flush with the concrete surface.

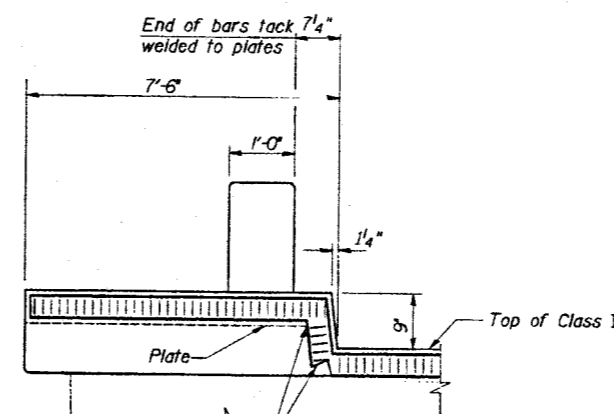
DRAIN HOLES AND RETAINERS AT EXPANSION JOINTS



BITUMINOUS PROFILE  
Showing camber diagram for Spans 1 and 3

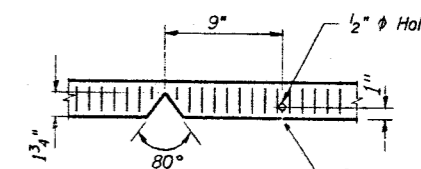


BITUMINOUS PROFILE  
Showing camber diagram for Span 2

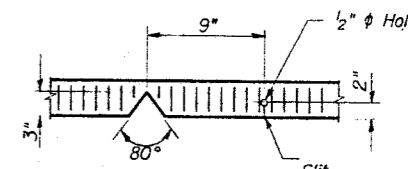


END OF SEAL TREATMENT

Cut P.J.S. and bend as shown. See 2 1/2 inch and 4 inch Seal Cut-Out Details.



2 1/2" SEAL CUT-OUT DETAIL

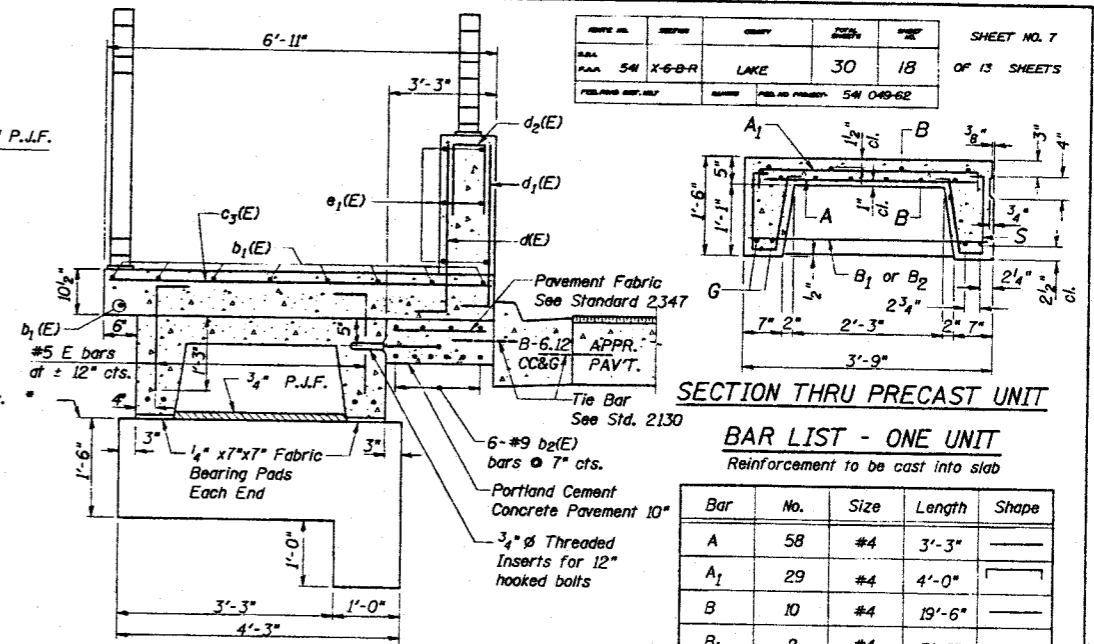
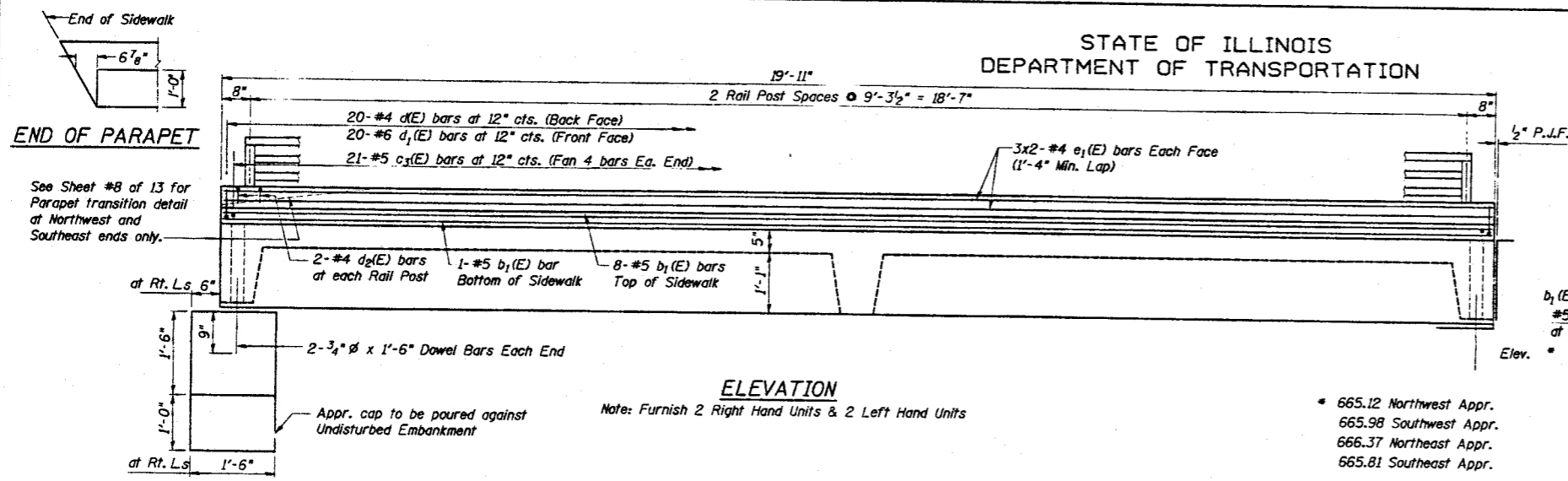


4" SEAL CUT-OUT DETAIL

DESIGNED	MR
CHECKED	MF
DRAWN	MW
CHECKED	MF

STATE OF ILLINOIS  
DEPARTMENT OF TRANSPORTATION

PROJECT NO.	541 X-6-B-R	COUNTY	LAKE	SECTION	30	POST	18
SHEET NO. 7 OF 13 SHEETS							
DESIGNED BY	MR	CHECKED BY	MF	DRAWN BY	MS	CHECKED BY	MF



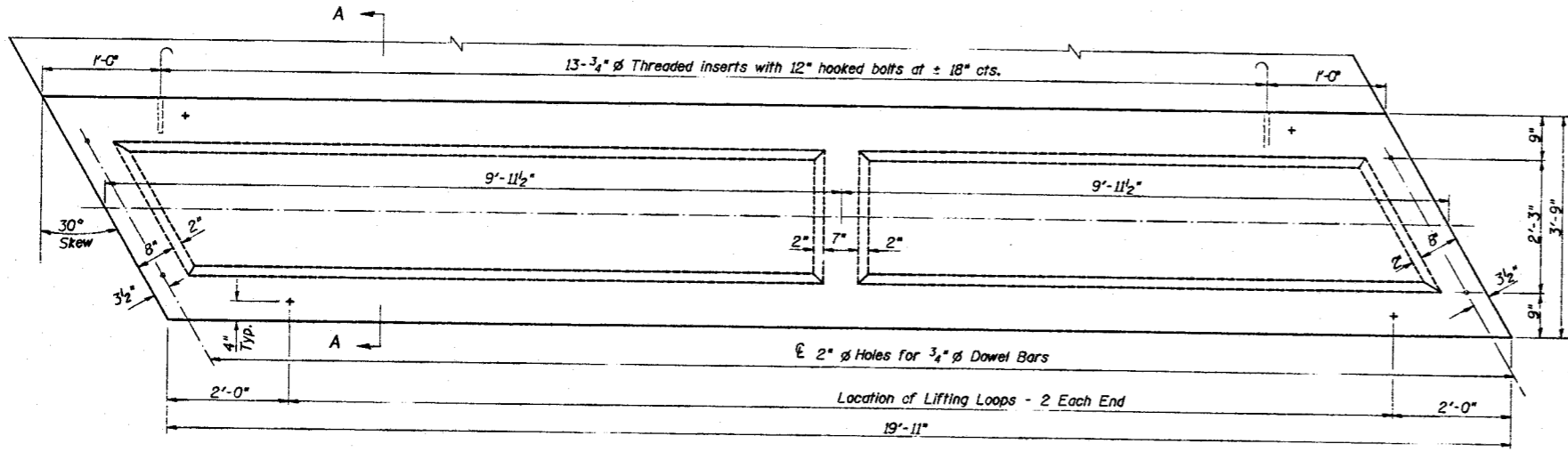
SECTION THRU PRECAST UNIT

BAR LIST - ONE UNIT

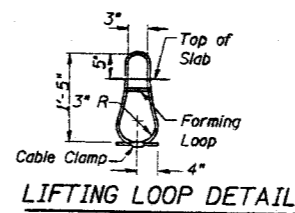
Bar	No.	Size	Length	Shape
A	58	#4	3'-3"	—
A <sub>1</sub>	29	#4	4'-0"	┌
B	10	#4	19'-6"	—
B <sub>1</sub>	2	#4	3'-6"	—
B <sub>2</sub>	4	#4	4'-0"	—
E	42	#5	2'-6"	—
G	4	#10	19'-6"	—
S	42	#3	3'-4"	└

BILL OF MATERIAL

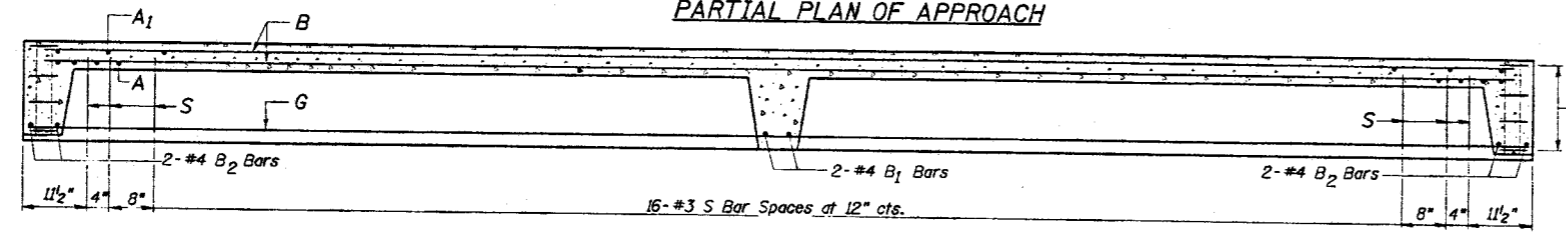
Item	Unit	Quantity
Precast Concrete Bridge Slab	Sq. Ft.	299
Concrete Structures	Cu. Yd.	1.9
Portland Cement Concrete Pavement 10"	Sq. Yd.	29
Pavement Fabric	Sq. Yd.	29



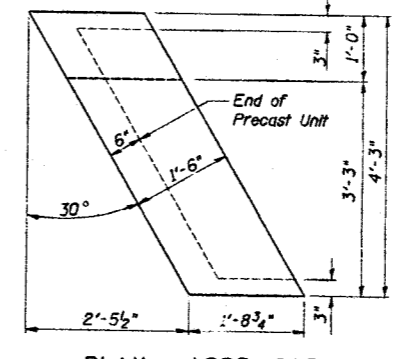
PARTIAL PLAN OF APPROACH



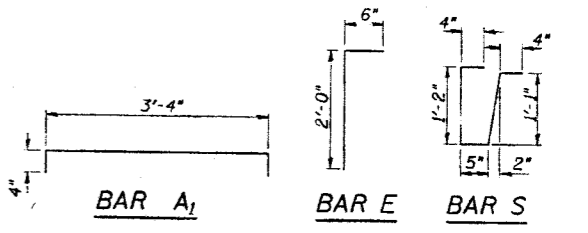
LIFTING LOOP DETAIL



LONGITUDINAL SECTION



PLAN - APPR. CAP



NOTES

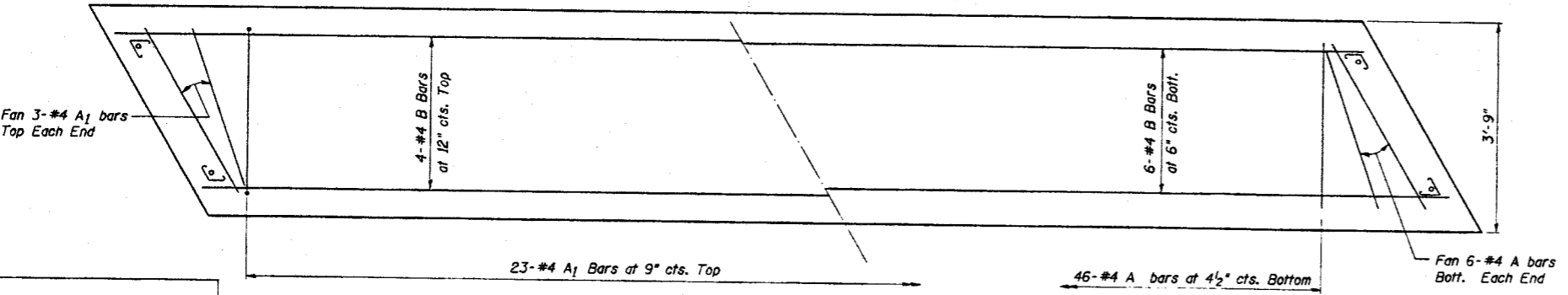
Unless otherwise approved by the Engineer, lifting loops shall be 1/2 inch diameter, 6x25 class wire rope with fiber core and shall have a minimum ultimate strength of 21,000 lbs. Loops shall be burned off after slab has been erected.  
Holes shall be drilled and anchor dowels grouted in place. Cost of reinforcement and accessories cast into the slab unit, bearing pads, furnishing, drilling for, placing and grouting anchor dowels and 3/4 inch diameter hooked bolts is included in Unit bid price for "Precast Concrete Bridge Slab".  
The Precast Concrete Bridge Slab shall be erected and aligned with the exterior face of the exterior Deck Beam after Deck Beams are in final position.

APPROACH DETAILS

F.A.P. RTE. 541 SECTION X-6-B-R

LAKE COUNTY

STA. 64+40.04



SLAB REINFORCEMENT

STRESSES  
f'c = 4,500 psi  
f'c = 1,800 psi  
f's = 20,000 psi  
n = 8  
LOADING HS-20

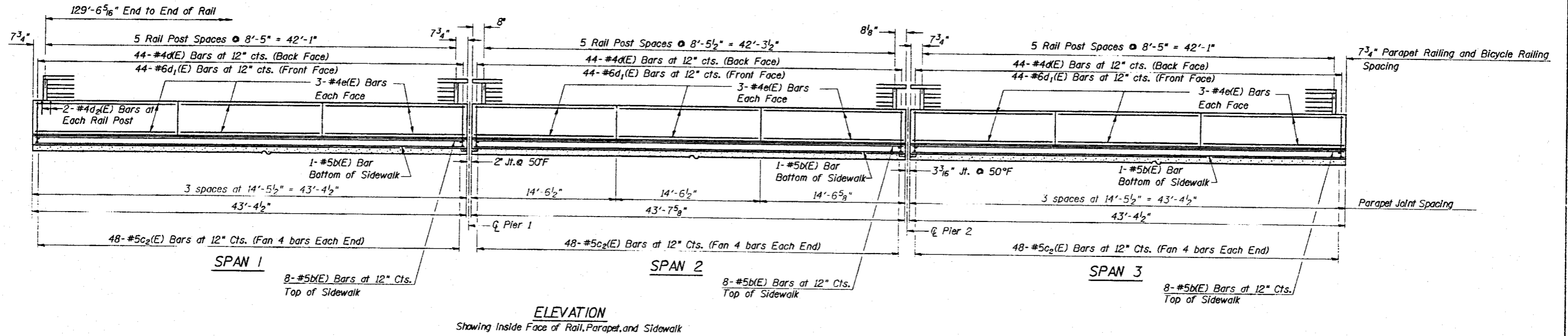
FABRIC BRG. PAD

RUBINOS & MESIA ENGINEERS, INC.  
100 SOUTH WASHINGTON ROAD, CHICAGO, ILLINOIS 60606 PHONE 1-312-643-5400 FAX 1-312-643-5401

DESIGNED	MR
CHECKED	MF
DRAWN	MS
CHECKED	MF

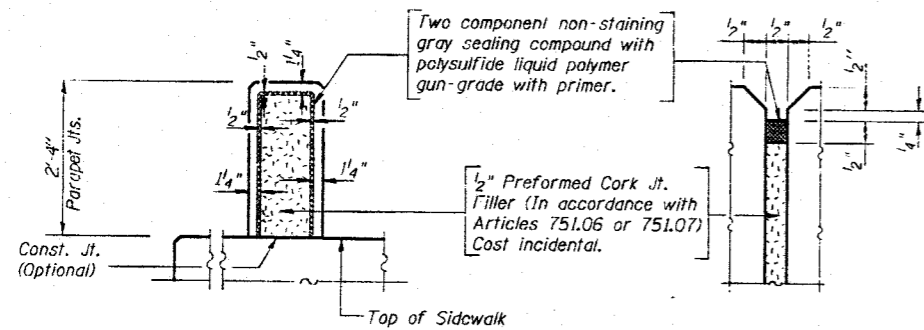
STATE OF ILLINOIS  
DEPARTMENT OF TRANSPORTATION

ROUTE NO.	SECTION	LIBRARY	DATE	SHEET NO.
541	X-6-B-R	LAKE	30	19
SHEET NO. 8 OF 13 SHEETS				
FILED NO.	DATE	PROJECT NO.		
541	04-9-62			

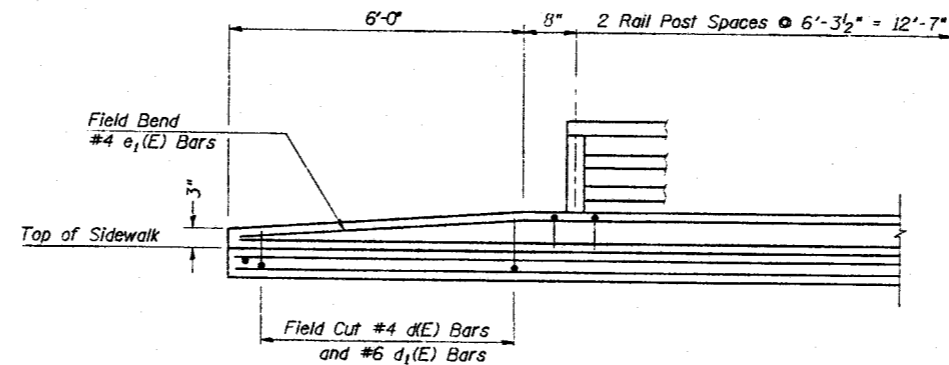


NOTES

- See sheet \*4 of 13 for parapet and sidewalk reinforcement bar details and Bill of Material.
- See sheet \*7 of 13 for Approach Parapet and Railing Elevation.



PARAPET JOINT DETAILS



PARAPET TRANSITION AT END OF NORTHWEST  
AND SOUTHEAST APPROACHES

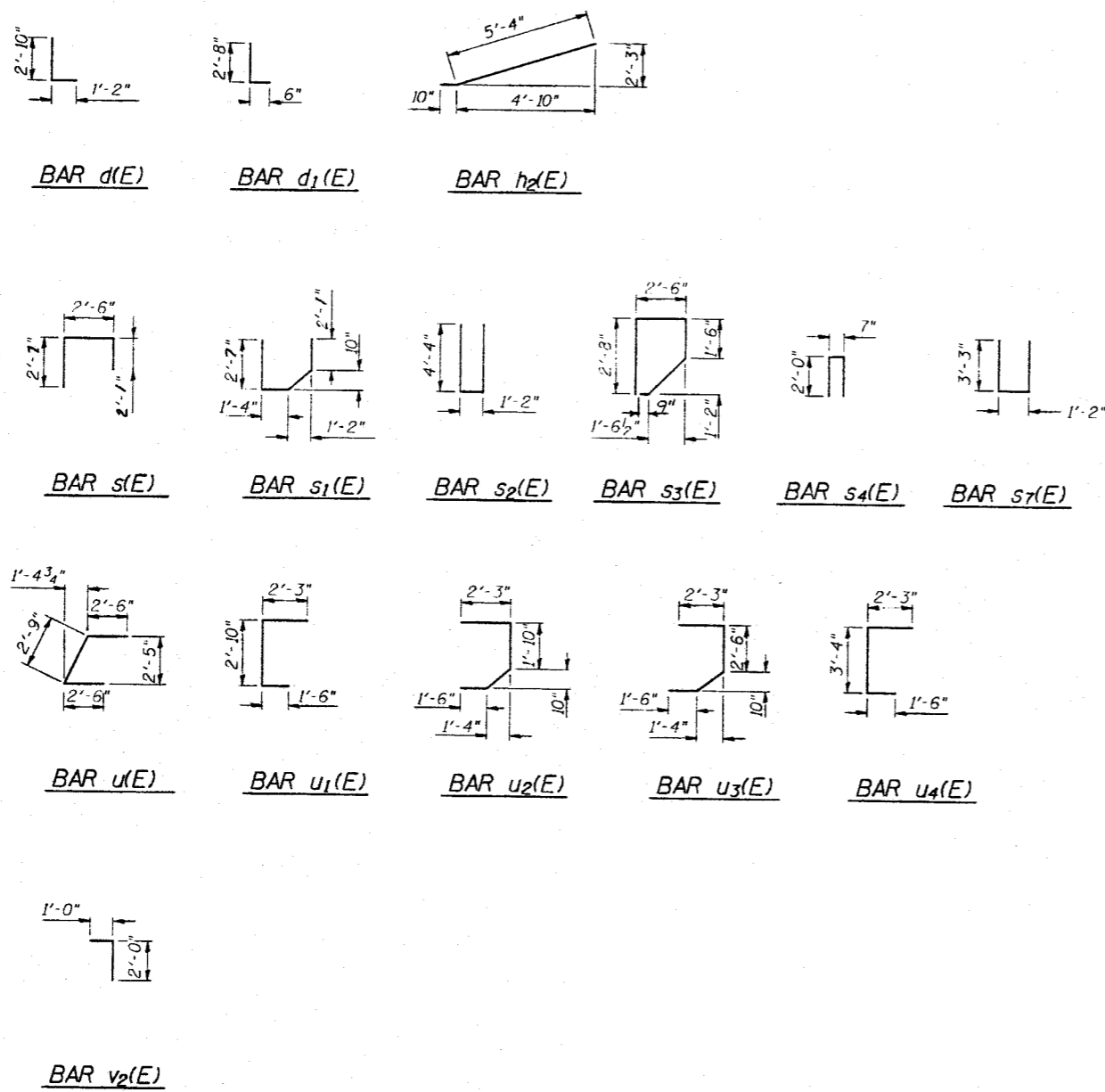
DESIGNED	MR
CHECKED	MF
DRAWN	MS
CHECKED	MF



PARAPET AND RAILING ELEVATION  
F.A.P. RTE. 541 SECTION X-6-B-R  
LAKE COUNTY  
STA. 64+40.04

STATE OF ILLINOIS  
DEPARTMENT OF TRANSPORTATION

PROJECT NO.	SECTION	COUNTY	LENGTH	SHEET NO.
F.A.P. 541	X-6-B-R	LAKE	30	23
SHEET NO. 12 OF 13 SHEETS				
FEB. 1968 (REV. 1967) 541 049-62				



**BILL OF MATERIAL  
WEST ABUTMENT**

Bar	No.	Size	Length	Shape
d(E)	4	#4	4'-0"	┌
d1(E)	4	#6	3'-2"	┌
h(E)	28	#5	21'-3"	—
h1(E)	28	#5	23'-8"	—
h2(E)	4	#5	6'-2"	└
h3(E)	4	#5	8'-3"	└
h4(E)	8	#4	7'-6"	—
p(E)	18	#7	15'-0"	—
p1(E)	5	#6	29'-3"	—
p2(E)	5	#6	34'-3"	—
s(F)	7	#4	7'-2"	┐
s1(F)	7	#4	7'-5"	┐
s2(E)	10	#4	9'-10"	┐
s3(E)	18	#4	9'-4"	┐
s4(E)	14	#4	4'-7"	┐
s7(E)	8	#4	7'-8"	┐
u(E)	6	#6	7'-9"	└
u1(E)	4	#4	6'-7"	└
u2(E)	4	#4	7'-2"	└
u3(E)	4	#4	7'-10"	└
u4(E)	4	#4	7'-1"	└
v(E)	174	#4	3'-9"	—
v1(E)	69	#5	2'-6"	—
v2(E)	85	#4	3'-0"	└
v3(E)	50	#6	2'-9"	—
Concrete Structures		Cu. Yd.	30.4	
Reinforcement Bars, Epoxy Coated		Pound	3930	
Concrete Removal		Cu. Yd.	30.0	
Structure Excavation		Cu. Yd.	91	

**BILL OF MATERIAL  
EAST ABUTMENT**

Bar	No.	Size	Length	Shape
d(L)	4	#4	4'-0"	┌
d1(E)	4	#6	3'-2"	┌
h(E)	28	#5	21'-3"	—
h1(E)	28	#5	23'-8"	—
h2(E)	4	#5	6'-2"	└
h3(E)	4	#5	8'-3"	└
h4(E)	8	#4	7'-6"	—
p(E)	18	#7	15'-0"	—
p1(E)	5	#6	29'-3"	—
p2(E)	5	#6	34'-3"	—
s(E)	7	#4	7'-2"	┐
s1(E)	7	#4	7'-5"	┐
s2(E)	10	#4	9'-10"	┐
s3(E)	18	#4	9'-4"	┐
s4(E)	14	#4	4'-7"	┐
s7(E)	8	#4	7'-8"	┐
u(E)	6	#6	7'-9"	└
u1(E)	4	#4	6'-7"	└
u2(E)	4	#4	7'-2"	└
u3(F)	4	#4	7'-10"	└
u4(E)	4	#4	7'-1"	└
v(E)	174	#4	3'-9"	—
v1(E)	69	#5	2'-6"	—
v2(E)	85	#4	3'-0"	└
v3(E)	50	#6	2'-9"	—
Concrete Structures		Cu. Yd.	29.7	
Reinforcement Bars, Epoxy Coated		Pound	3930	
Concrete Removal		Cu. Yd.	30.0	
Structure Excavation		Cu. Yd.	94	

Reinforcement Bars designated (E) shall be Epoxy Coated

Reinforcement Bars designated (E) shall be Epoxy Coated

DESIGNED	MMF
CHECKED	MR
DRAWN	MW
CHECKED	MR

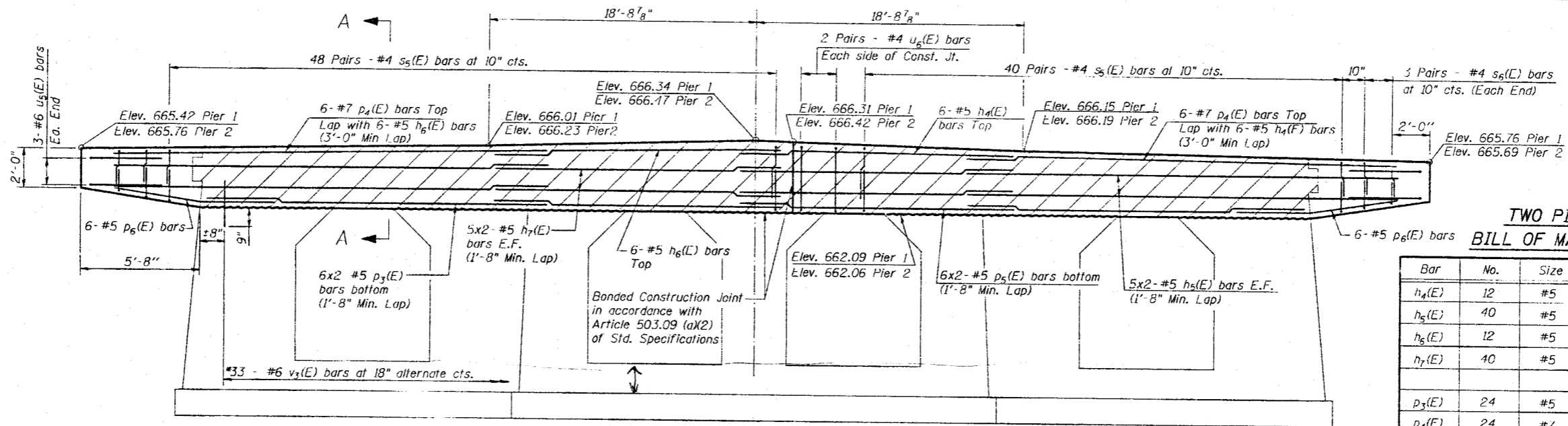
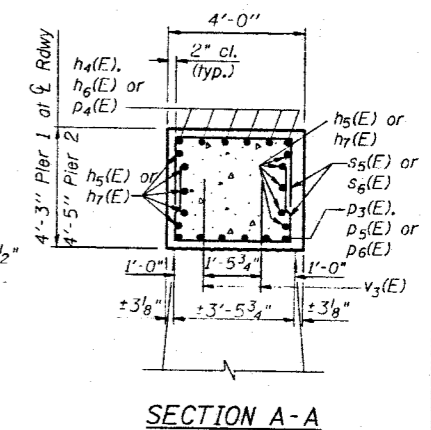
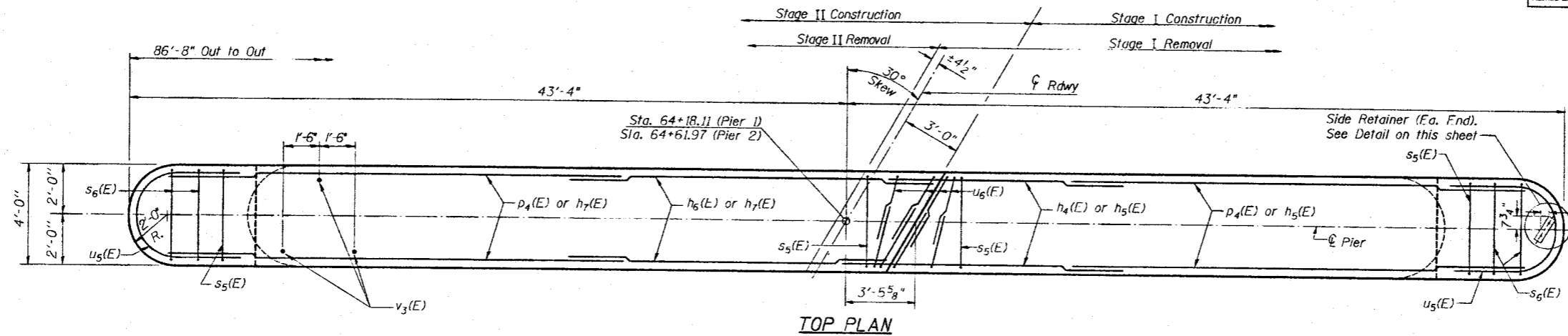
ABUTMENT DETAILS  
F.A.P. RTE. 541 SECTION X-6-B-R  
LAKE COUNTY  
STA. 64+00.4



STATE OF ILLINOIS  
DEPARTMENT OF TRANSPORTATION

PROJECT NO.	SECTION	DATE	SHEET NO.
541 X-6-B-R	LAKE	30 24	13
FED. ROAD DIST. NO.		ALIAS	FED. PROJ. NO.
			541 049-62

SHEET NO. 13  
OF 13 SHEETS

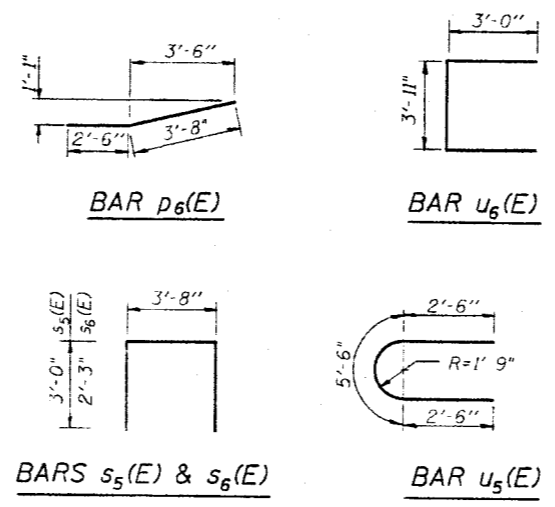
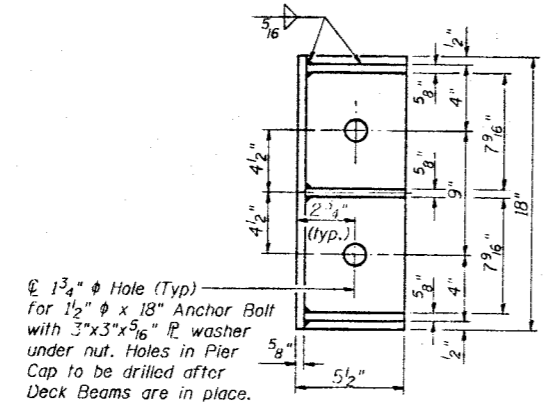
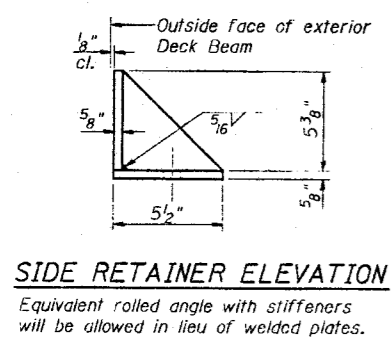
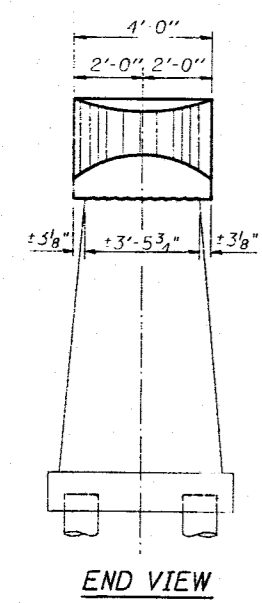


TWO PIERS  
BILL OF MATERIAL

Bar	No.	Size	Length	Shape
h <sub>4</sub> (E)	12	#5	25'-0"	—
h <sub>5</sub> (E)	40	#5	21'-0"	—
h <sub>6</sub> (E)	12	#5	30'-0"	—
h <sub>7</sub> (E)	40	#5	23'-6"	—
p <sub>3</sub> (E)	24	#5	21'-4"	—
p <sub>4</sub> (E)	24	#7	18'-0"	—
p <sub>5</sub> (E)	24	#5	19'-0"	—
p <sub>6</sub> (E)	24	#5	6'-2"	—
s <sub>5</sub> (E)	352	#4	9'-8"	□
s <sub>6</sub> (E)	24	#4	8'-2"	□
u <sub>5</sub> (E)	12	#6	10'-6"	U
u <sub>6</sub> (E)	16	#4	9'-11"	U
v <sub>3</sub> (E)	66	#6	2'-9"	—
Concrete Structures			Cu. Yd.	97.5
Reinforcement Bars, Epoxy Coated			Pound	7560
Concrete Removal			Cu. Yd.	80.9

\* Epoxy grout bars in 1" φ x 9" min. drilled holes. The grout and method of application shall be approved by the Department. See Section 584 of Std. Specifications.

- Notes:
- Hatched area indicates Concrete Removal. Reinforcement extending into removed area shall be cleaned and incorporated into the new construction. Cost incidental.
  - All edges shall have standard 3/4" chamfers.
  - Bars indicated thus 6x2- #4 etc. indicates 6 lines of bars with 2 lengths per line.
  - Reinforcement Bars designated (E) shall be Epoxy Coated.

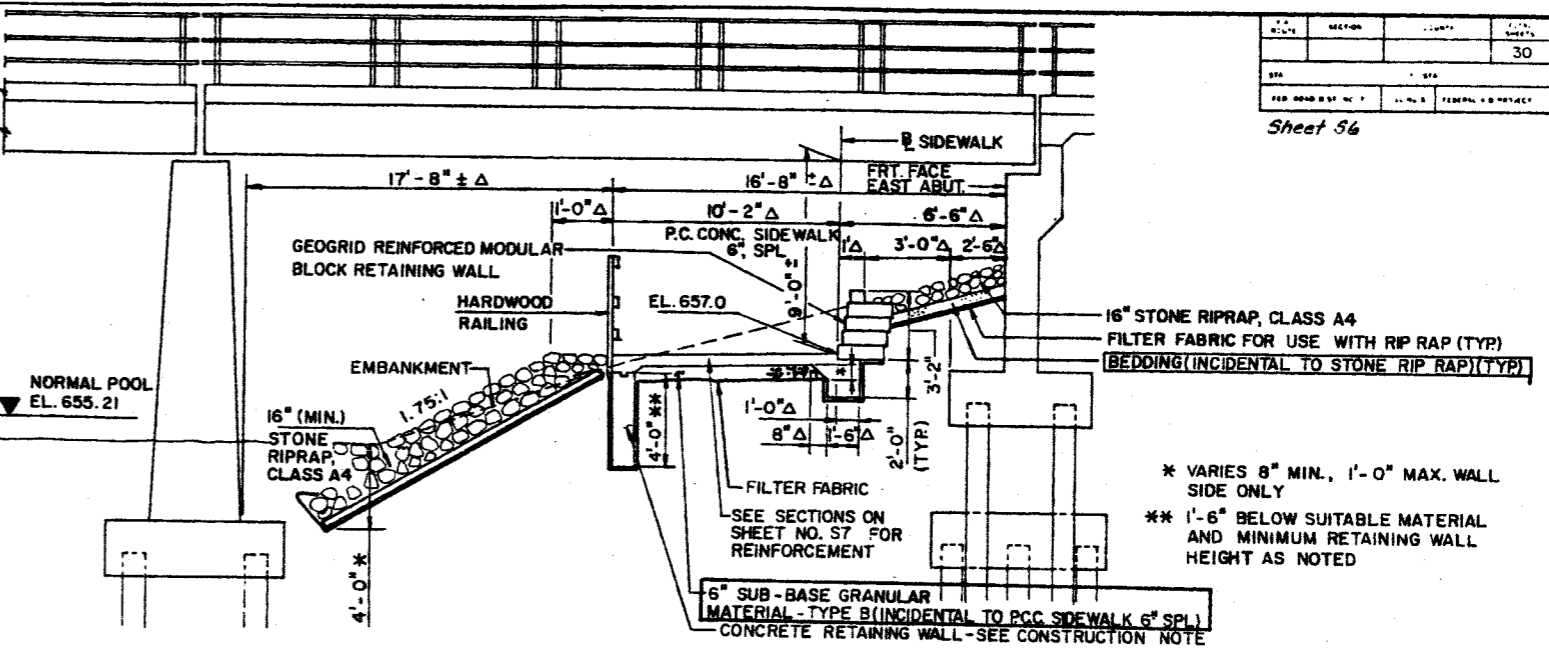
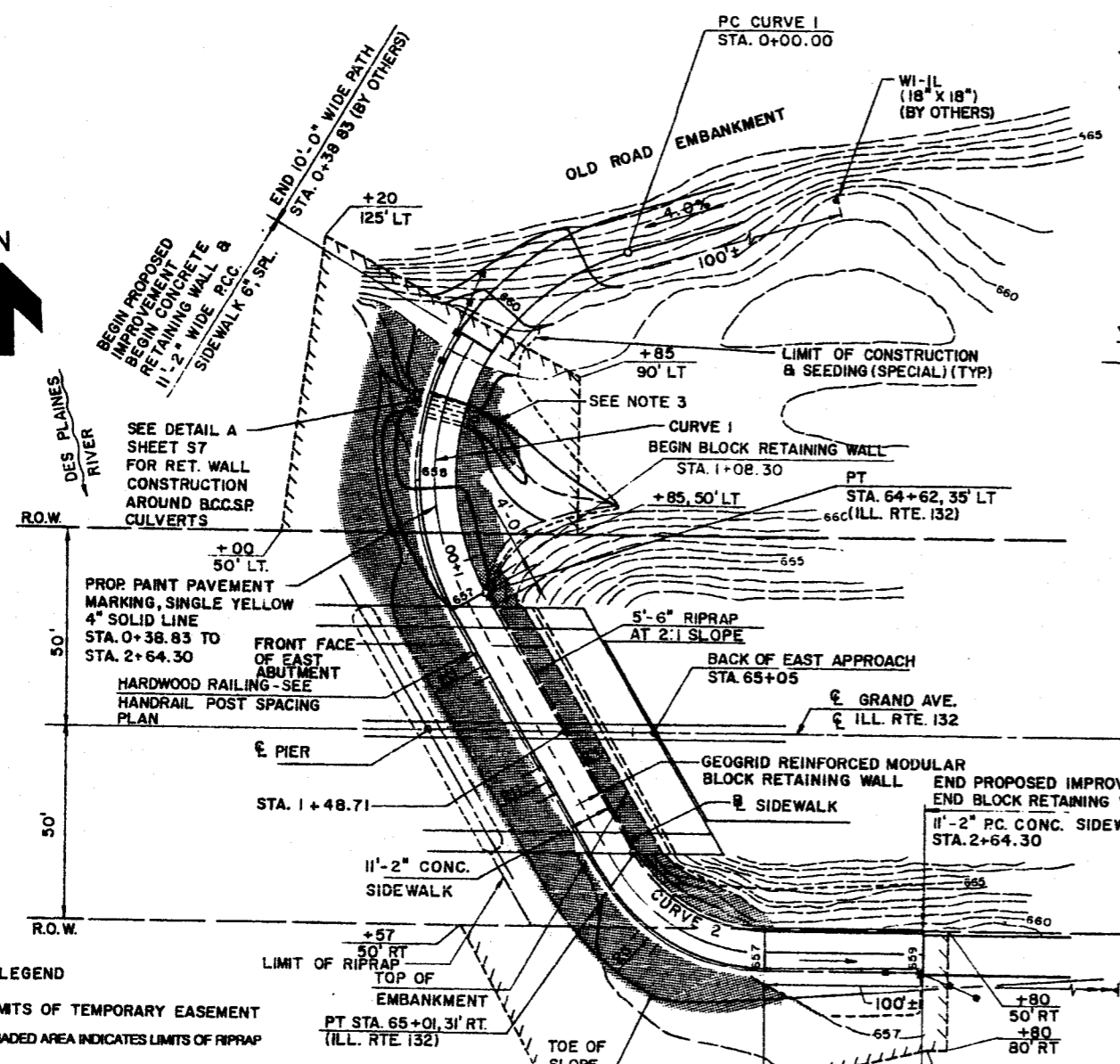


DESIGNED	MF
CHECKED	MR
DRAWN	MW
CHECKED	MR

PIERS  
F.A.P. RTE. 541 SECTION X-6-B-R  
LAKE COUNTY  
STA. 64+0.04

DATE	SECTION	SCALE	SHEET NO.	TOTAL SHEETS
			30	25
SHEET NO. 30				
PROJECT NO. 049-0062				
SHEET TITLE				

Sheet 36



**FLOOD DATA**  
 10 YR. EL. 662.76  
 100 YR. EL. 664.81

**SECTION THROUGH  $\bar{C}$  ROUTE 132**  
 LOOKING NORTH  
 $\Delta$  DIMENSIONS SHOWN ARE PERPENDICULAR TO THE TRAIL CENTERLINE  
 CONSTRUCTION NOTE: PLACE EMBANKMENT MATERIAL SIMULTANEOUSLY ON EACH SIDE OF WALL

\* VARIES 8" MIN., 1'-0" MAX. WALL SIDE ONLY  
 \*\* 1'-6" BELOW SUITABLE MATERIAL AND MINIMUM RETAINING WALL HEIGHT AS NOTED

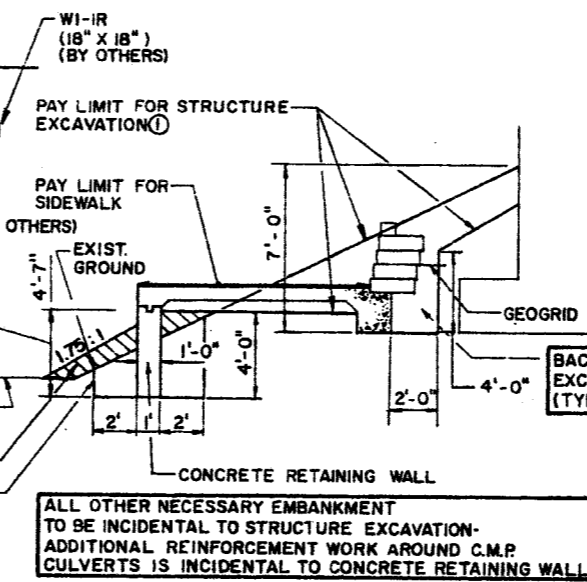
- LEGEND**
- LIMITS OF TEMPORARY EASEMENT
  - SHADED AREA INDICATES LIMITS OF RIPRAP
- NOTES:**
- PROVIDE 3/4" EXPANSION JOINT WITH PREMOLDED JOINT FILLER IN SIDEWALK AND GRADE BEAMS AT STA. 1+08.38 & STA. 1+88.46
  - SEE SPECIFICATIONS FOR SIDEWALK CONSTRUCTION REQUIREMENTS
  - SEE SHEET 9 FOR GRADING PLAN ON NORTH SIDE OF BRIDGE AND DRAINAGE REQUIREMENTS
  - THE 4x6" WOOD SIGN SUPPORTS SHALL BE INSTALLED FOR GROUND-MOUNTED SIGNS, UTILIZING DIRECT BURIAL OR PLACED IN THE CONCRETE FOUNDATION. THE INSTALLATION SHALL MEET THE IDOT STANDARDS 2319 AND 2320 AND ALSO IN ACCORDANCE WITH "STANDARD SPECIFICATIONS FOR TRAFFIC CONTROL ITEMS" DATED APRIL 1, 1989. (BY OTHERS)
  - THE CONTRACTOR SHALL INSTALL THE ENTIRE HANDRAIL AS SHOWN IN THE PLANS.

**PLAN**  
 STATIONING IS ALONG INSIDE EDGE OF SIDEWALK

**CURVE 1**  
 PC STA. 0+00  
 PT STA. 1+08.91  
 T = 76.80'  
 L = 108.91'  
 $\Delta = 104^\circ$   
 R = 60'  
 PI STA. 0+76.80

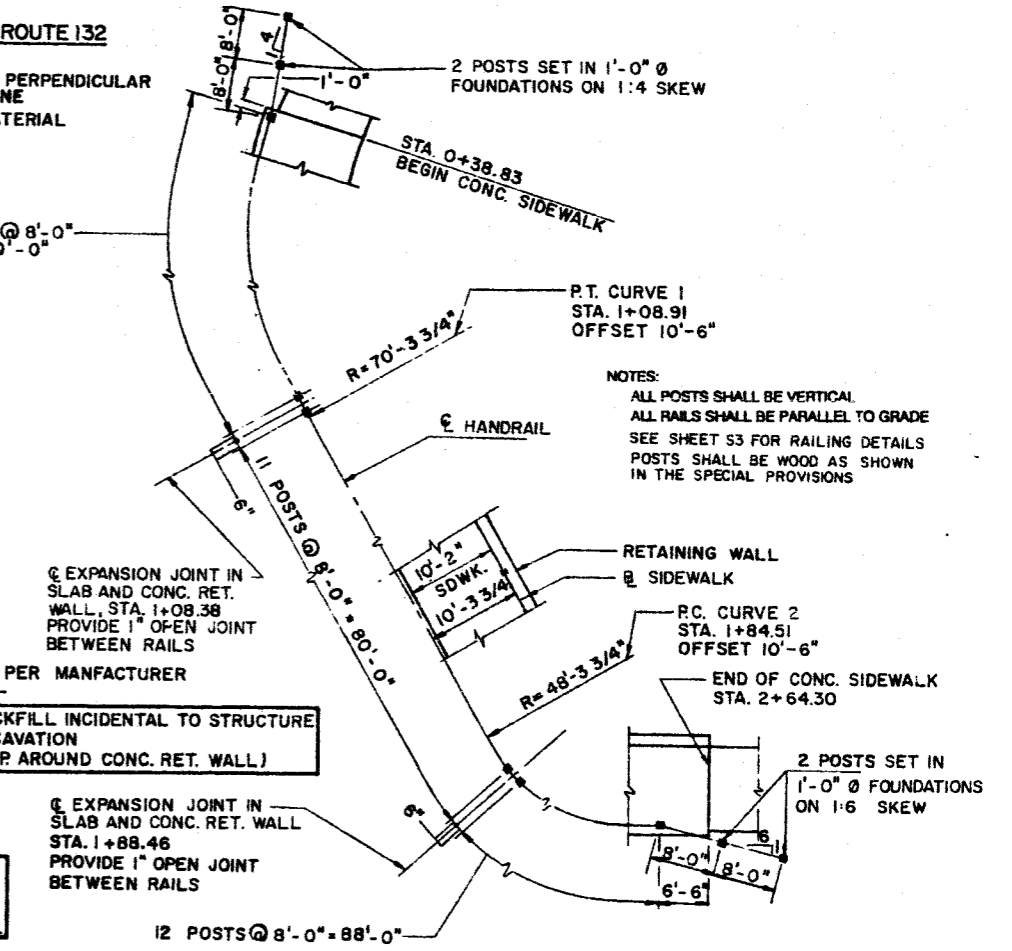
**CURVE 2**  
 PC STA. 1+84.51  
 PT STA. 2+24.30  
 T = 21.94'  
 L = 39.79'  
 $\Delta = 60^\circ$   
 R = 38'  
 PI STA. 2+06.45

NOTE A: LAYOUT OF SLOPE PROTECTION SYSTEM MAY BE VARIED TO SUIT GROUND CONDITIONS IN FIELD AS DIRECTED BY THE ENGINEER.



**PAY LIMITS FOR EMBANKMENT AND EXCAVATION**

① ADDITIONAL EXCAVATION NECESSARY FOR RETAINING WALL SHALL BE INCIDENTAL TO GEOGRID REINFORCED MODULAR BLOCK RETAINING WALL



**PLAN**  
 HANDRAIL POST SPACING

EXPANSION JOINT IN SLAB AND CONC. RET. WALL, STA. 1+88.46 PROVIDE 1" OPEN JOINT BETWEEN RAILS

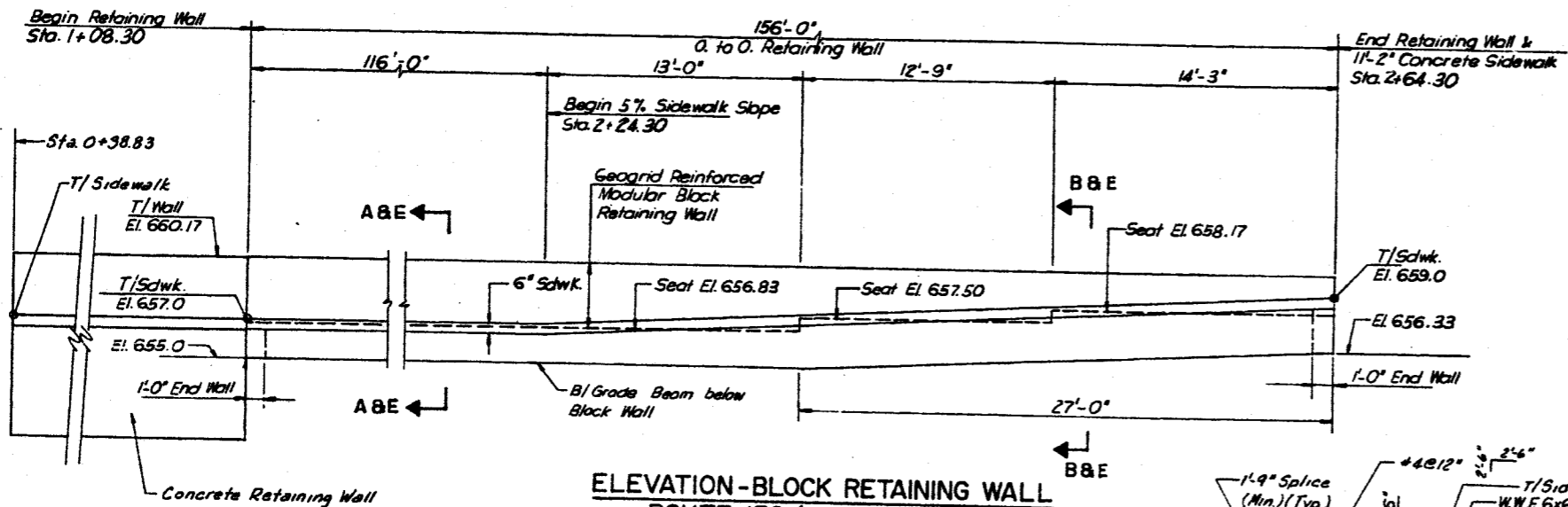
STATE OF ILLINOIS  
 DEPARTMENT OF TRANSPORTATION  
 ROUTE 132 OVER THE DES PLAINES RIVER

**PLAN AND SECTION**

LAKE COUNTY  
 S.N. 049-0062  
 DRAWN BY MGT  
 SCALE NTS  
 DATE JANUARY 1994  
 CHECKED BY KLS

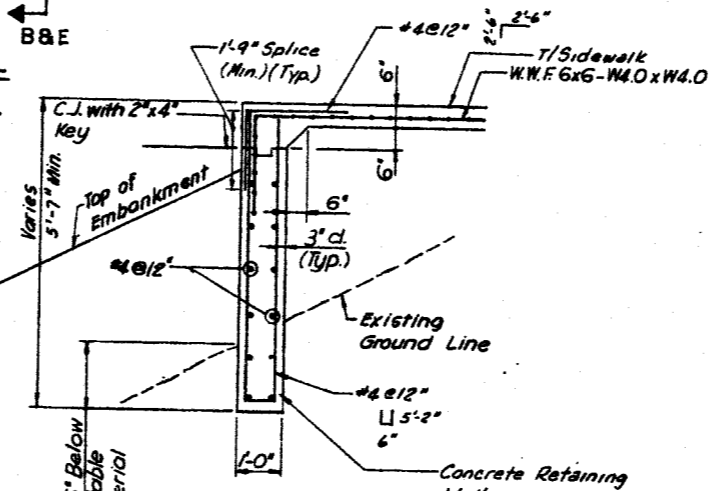
*James G. ...*  
 Exp. Date 11/30/96

DATE	BY	CHECKED	DATE
SHEET NO.		TOTAL SHEETS	
30		26	
PROJECT NO. & TITLE			
SHEET 37			

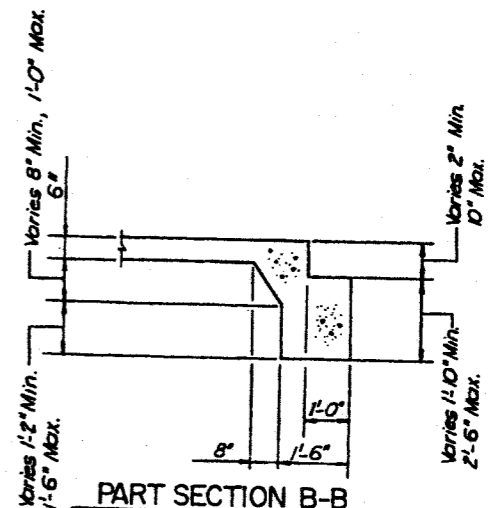


**ELEVATION - BLOCK RETAINING WALL  
ROUTE 132 (GRAND AVENUE)  
LOOKING EAST**

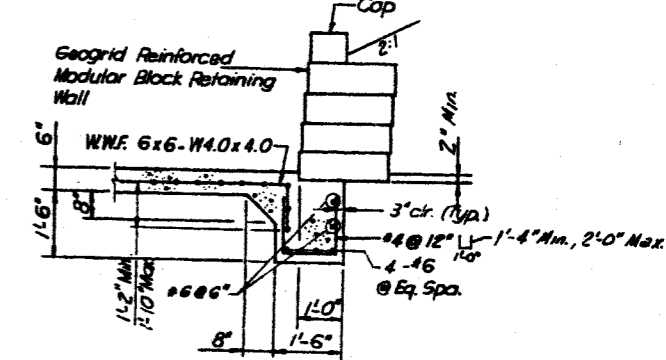
NOTE:  
 PROVIDE 3/4" EXPANSION JOINT WITH PREMOLDED JOINT FILLER IN SIDEWALK AND GRADE BEAMS AT STA. 1+08.27 & 1+88.35  
 DIMENSIONS ARE MEASURED ALONG INSIDE EDGE OF SIDEWALK (SIDEWALK)  
 FOR LIMITS OF CONCRETE RETAINING WALL SEE PLAN, SHEET 36.



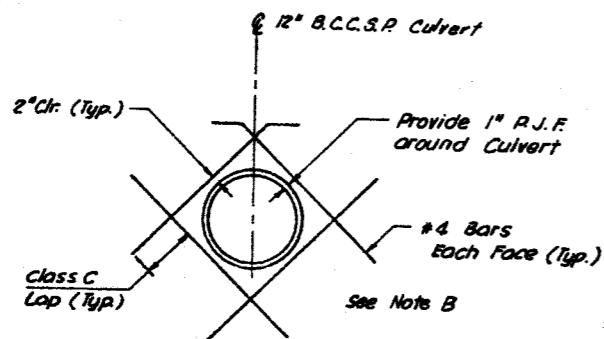
**PART SECTION E-E**  
 Note: From Sta. 0+38.83 to Sta. 2+64.30



**PART SECTION B-B**  
 For Reint. and Block Wall, See Part Sect. A-A



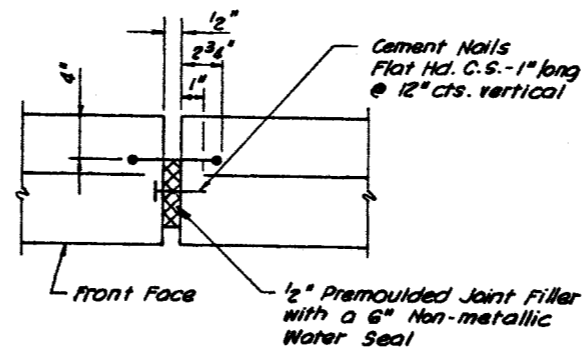
**PART SECTION A-A**



**DETAIL A (TYP)**

SHOWING ADDITIONAL REINFORCEMENT FOR PIPE CULVERT (3 REQ'D)

Note B:  
 Extend B.C.C.S.P. Culverts 12" through concrete retaining walls.  
 Bend or cut reinforcement as required to clear pipe culvert.  
 Place culverts a minimum of 3'-2" c.t.c.

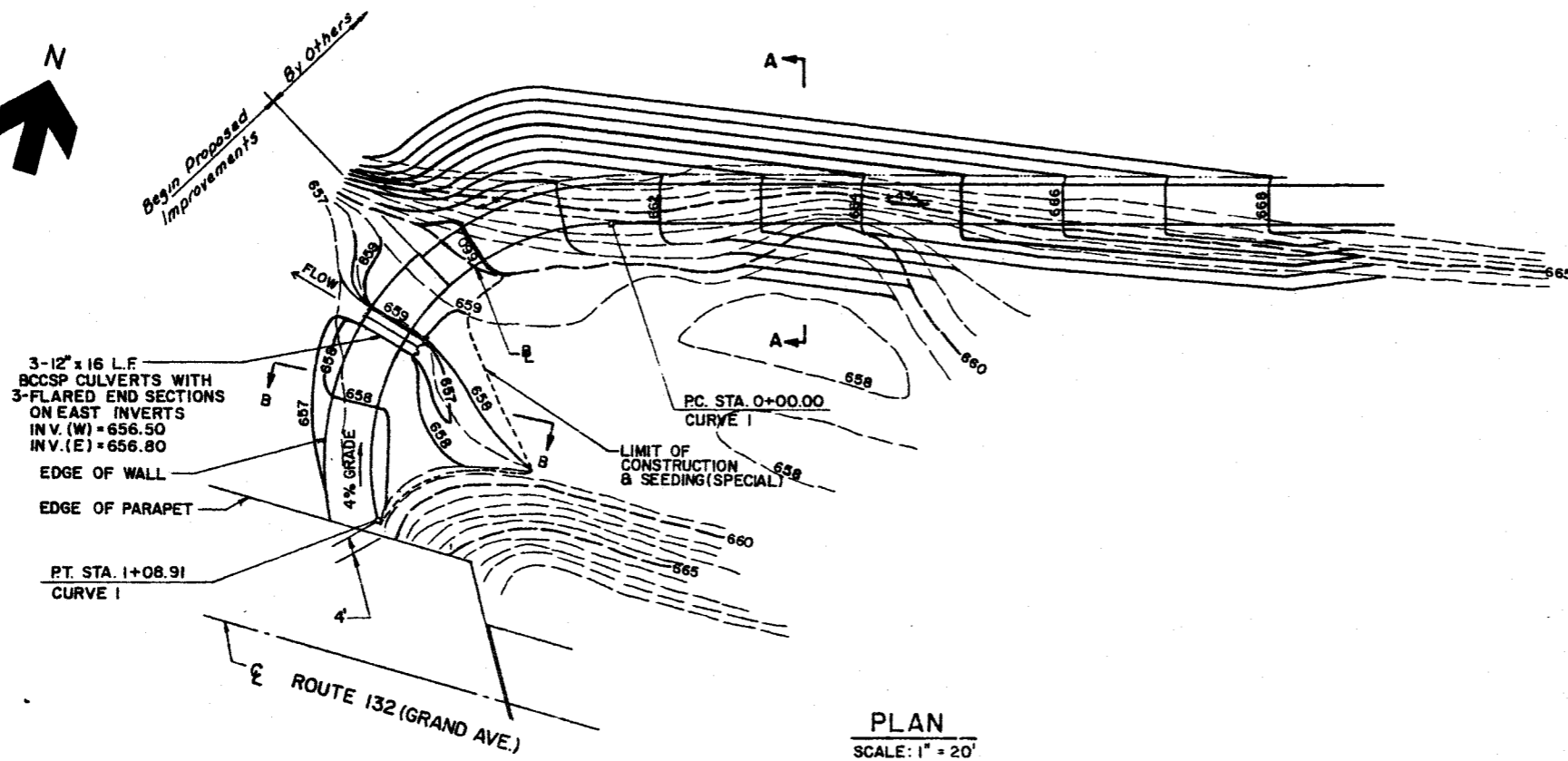


**WALL EXPANSION JOINT DETAIL**

STATE OF ILLINOIS  
 DEPARTMENT OF TRANSPORTATION  
 ROUTE 132 OVER THE DES PLAINES RIVER  
 MISCELLANEOUS  
 STRUCTURAL DETAILS  
 LAKE COUNTY  
 S.N. 049-0082  
 DRAWN BY MGT  
 SCALE NTS  
 DATE JANUARY  
 CHECKED BY KLS

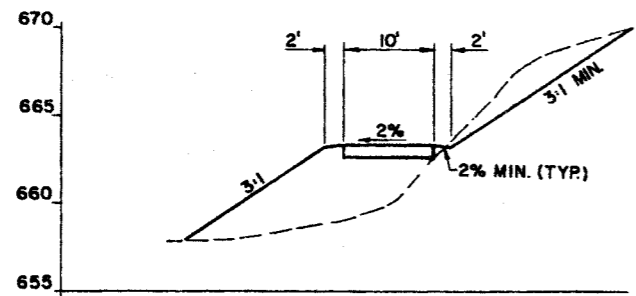


DATE	SCALE	COUNTY	PROJECT	SHEET
				28
SHEET 9				

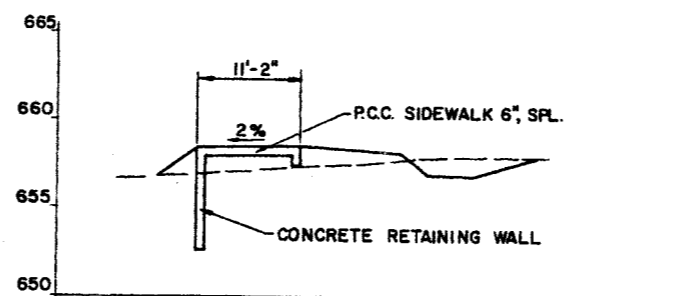


**PLAN**  
SCALE: 1" = 20'

- NOTES**
1. FOR CURVE 1 DATA SEE SHT. NO. S6.
  2. FOR LIMITS OF RIPRAP SEE SHT. NO. S6.
  3. FOR LOCATION OF HARDWOOD RAILING SEE SHT. NO. S6.



**SECTION A-A**  
SCALE: 1" = 10' HORIZ.  
1" = 5' VERT.



**SECTION B-B**  
SCALE: 1" = 10' HORIZ.  
1" = 5' VERT.

STATE OF ILLINOIS  
DEPARTMENT OF TRANSPORTATION  
ROUTE 132 OVER THE DES PLAINES RIVER

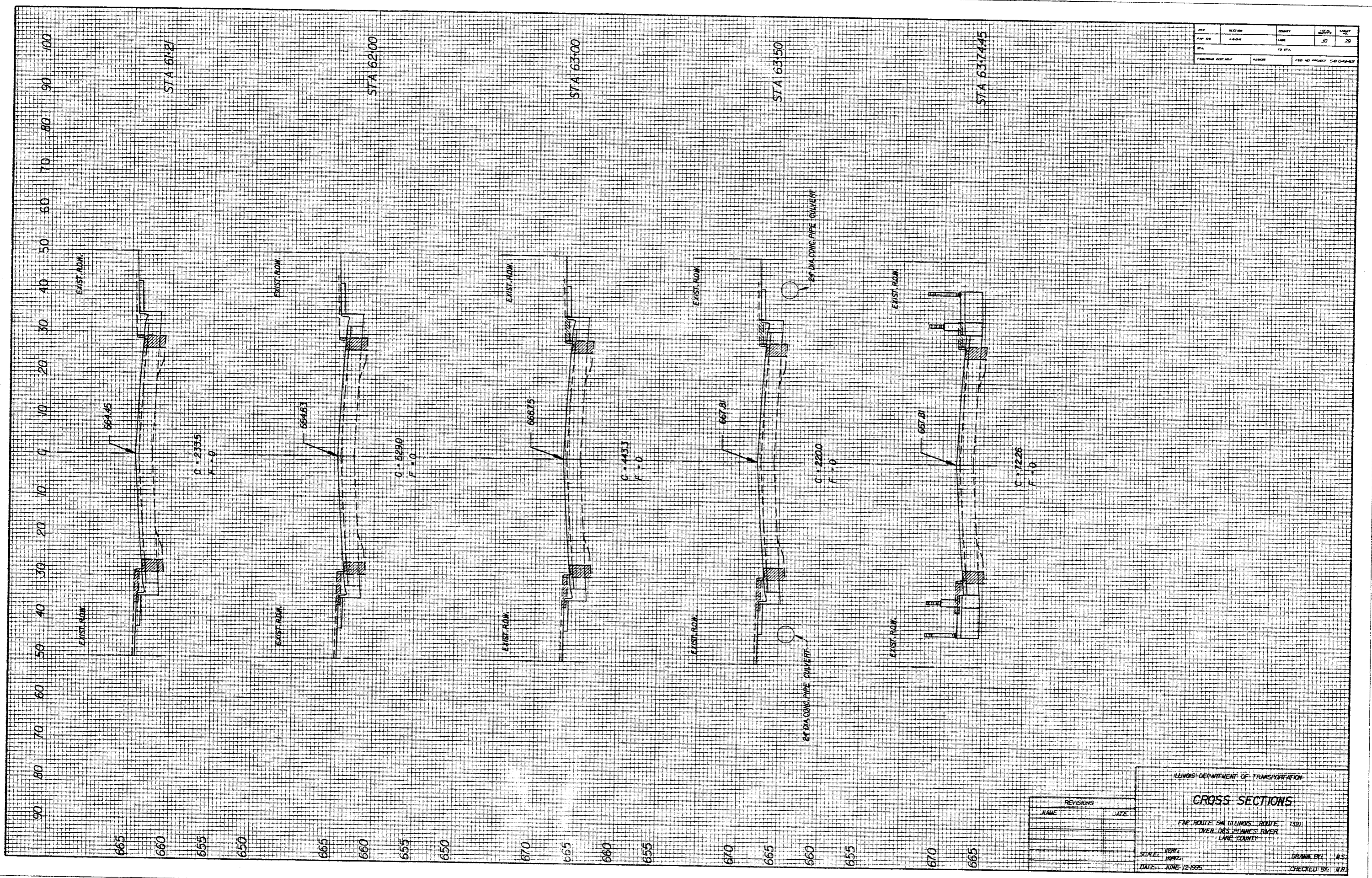
**GRADING AND DRAINAGE PLAN**

LAKE COUNTY  
S.N. 049-0062  
DRAWN BY DWV  
CHECKED BY KLS

SCALE As Noted  
DATE JANUARY 1994



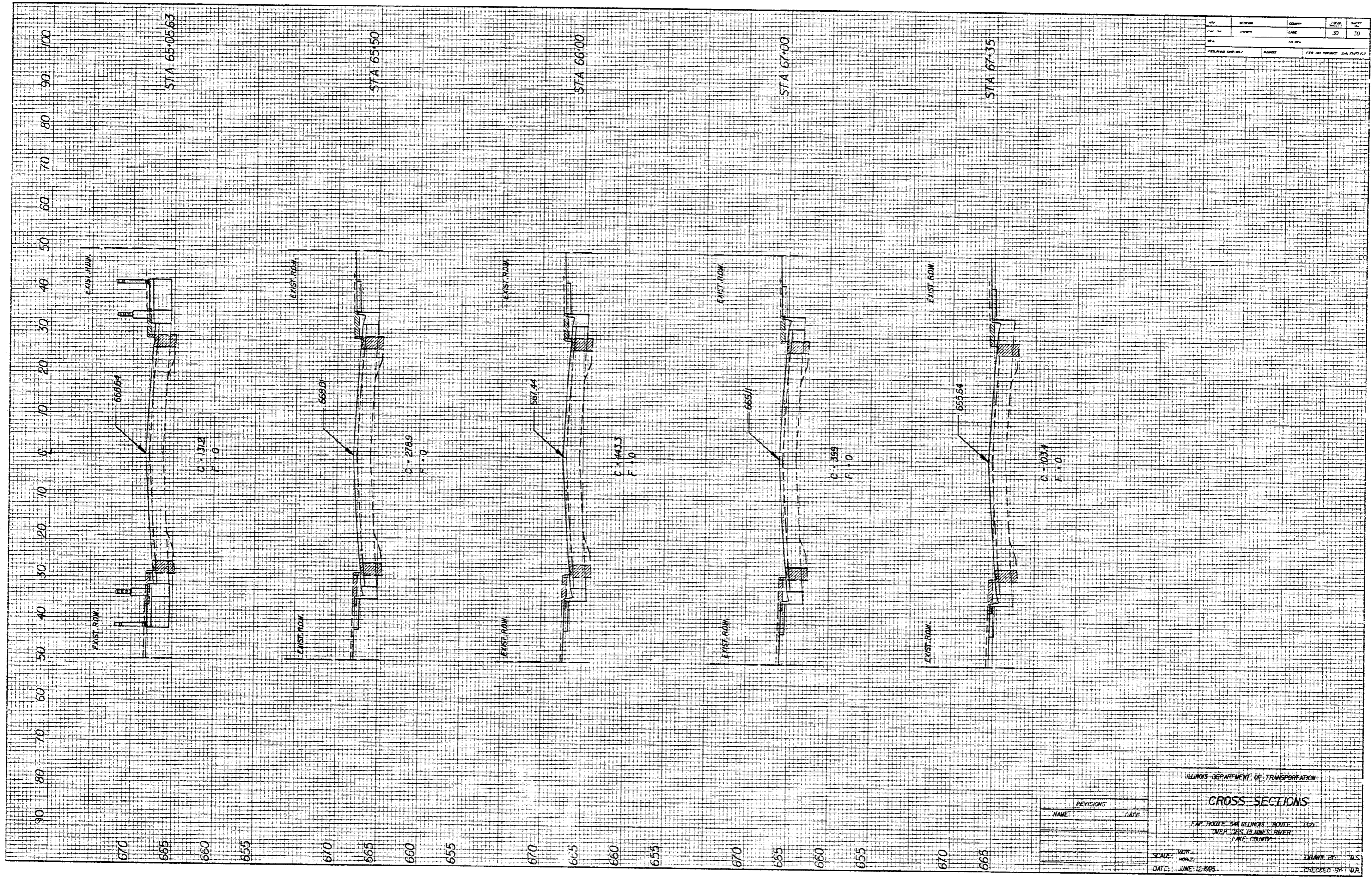
FILE	SECTION	COUNTY	DATE	UNIT
PLAN NO.	SECTION	LAKE	30	29
STA.	TO STA.			
FEIGNED OUT BY	NUMBER	FEED NO. PROJECT	S&C CHANGES	



REVISIONS	
NAME	DATE

ILLINOIS DEPARTMENT OF TRANSPORTATION  
**CROSS SECTIONS**  
 FWP ROUTE 58 ILLINOIS ROUTE 1321  
 OVER DAVIS PLAINS RIVER  
 LAKE COUNTY  
 SCALE: VERT. 1"=20'  
 DATE: JUNE 12, 1995  
 DRAWN BY: W.S.  
 CHECKED BY: N.R.





DATE	SECTION	QUANTITY	SCALE	SHEET
STA	FROM	TO	30	30
FILED AND PROJECT		DATE	FOR STA.	

REVISIONS	
NAME	DATE

ILLINOIS DEPARTMENT OF TRANSPORTATION

**CROSS SECTIONS**

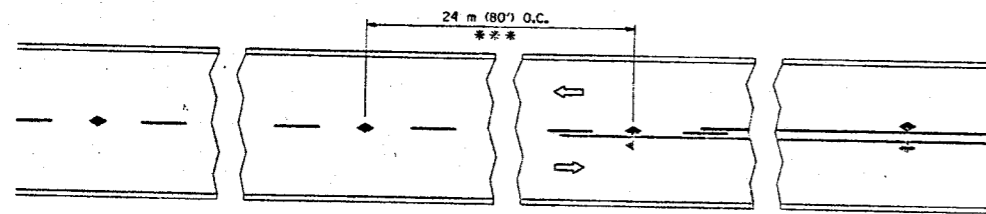
STATE ROUTE 54 BELLEVILLE ROUTE 132  
 OVER DES PLAINES RIVER  
 LAKE COUNTY

SCALE: VERT. 1" = 10'  
 HORIZ. 1" = 20'

DATE: JUNE 12, 1995

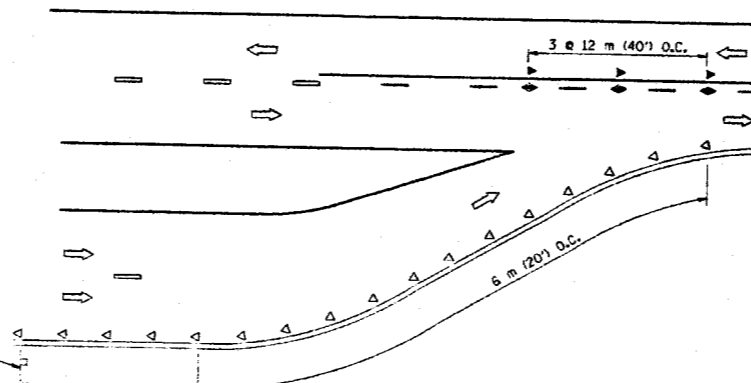
DRAWN BY: M.S.  
 CHECKED BY: M.R.

P.A. NO.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
541	X-6-B-R	Lake	30	30A
STA.	TO STA.			
FED. ROAD DIST. NO.	ILLINOIS	FED. AID PROJECT		

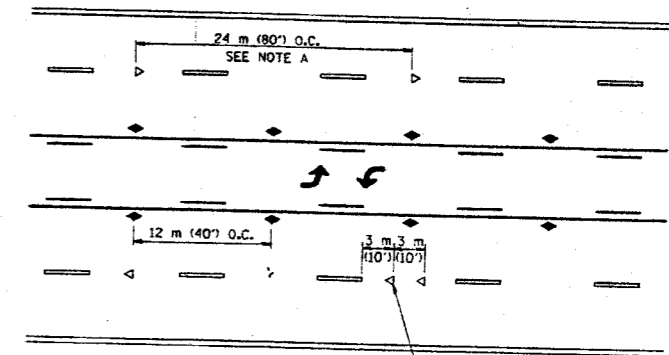


\*\*\* REDUCE TO 12 m (40') O.C. ON CURVES WITH POSTED OR ADVISORY SPEED 70 km/h (45 M.P.H.) OR LESS.

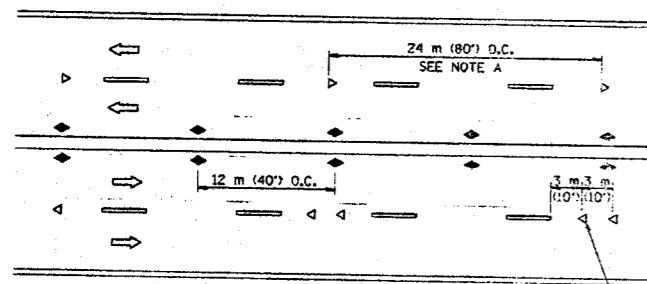
TWO-LANE/TWO-WAY



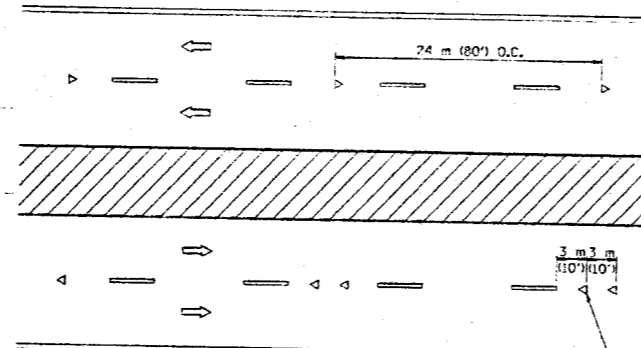
LANE REDUCTION TRANSITION



TWO-WAY LEFT TURN



MULTI-LANE/UNDIVIDED



MULTI-LANE/DIVIDED

GENERAL NOTES

1. MARKERS USED WITH DASHED LINES SHALL BE CENTERED IN THE GAP BETWEEN SEGMENTS.
2. MARKERS USED ADJACENT TO SOLID LINES SHALL BE OFFSET 50 TO 75 (2 TO 3) TOWARD TRAFFIC AS SHOWN.
3. MARKERS THROUGH TANGENTS LESS THAN 150 m (500') IN LENGTH BETWEEN CURVES SHALL BE INSTALLED AT THE LESSER OF THE TWO CURVE SPACINGS.

SYMBOLS

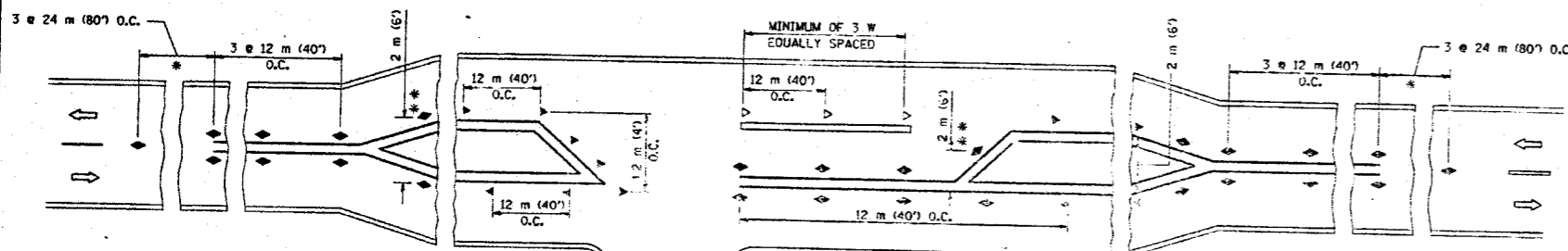
- YELLOW STRIPE
- WHITE STRIPE
- ◀ ONE-WAY AMBER MARKER
- ◁ ONE-WAY CRYSTAL MARKER (W/O)
- ◆ TWO-WAY AMBER MARKER

LANE MARKER NOTES

- A. REDUCE TO 12 m (40') O.C. ON CURVES WHERE ADVISORY SPEEDS ARE 20 km/h (10 M.P.H.) LOWER THAN POSTED SPEEDS.
- B. WHERE DOUBLE LANE LINE MARKERS ARE SPECIFIED, THEY SHALL BE SPACED AS SHOWN.

DESIGN NOTES

1. DOUBLE LANE LINE MARKERS MAY BE SPECIFIED ON HIGH VOLUME ROADS.
2. EXCEPT AS SHOWN ON THE LANE REDUCTION TRANSITION AND FREEWAY EXIT RAMP DETAIL, MARKERS ARE NOT TO BE SPECIFIED ON RIGHT EDGE LINES.
3. THE EXACT MARKER LIMITS, SPACING, AND COLOR SHOULD BE INCLUDED IN THE PLANS.
4. MARKERS SHOULD NOT BE USED ALONGSIDE CURBS EXCEPT FOR EXTREMELY SHORT SECTIONS OF CURBS WHERE NOT MORE THAN TWO MARKERS WOULD BE INVOLVED. CURBED SECTIONS SHOULD BE DELINEATED WITH CURB TOP MARKERS.



RURAL LEFT TURN

\* SEE TWO-LANE/TWO-WAY WHERE MARKERS CONTINUE  
 \*\* WHERE THE MEDIAN WIDTH IS 2 m (6') OR LESS USE TWO-WAY MARKERS.

All dimensions are in millimeters (Inches) unless otherwise shown.

ILLINOIS DEPARTMENT OF TRANSPORTATION  
 TYPICAL APPLICATIONS  
 RAISED REFLECTIVE PAVEMENT MARKERS  
 (SNOW-PLOW RESISTANT)

REVISIONS	
NAME	DATE
T. RAMMACHER	09-19-94

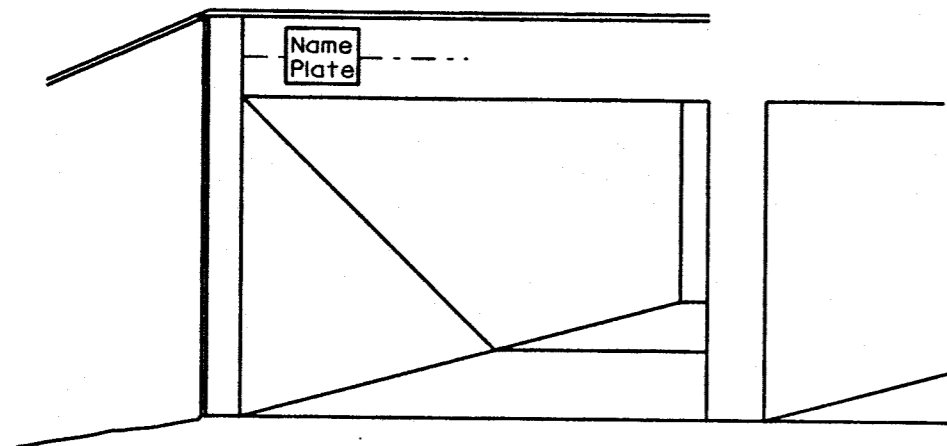
SCALE: NONE  
 DATE: 07/11/95

DRAWN BY CADD  
 CHECKED BY

TC-11

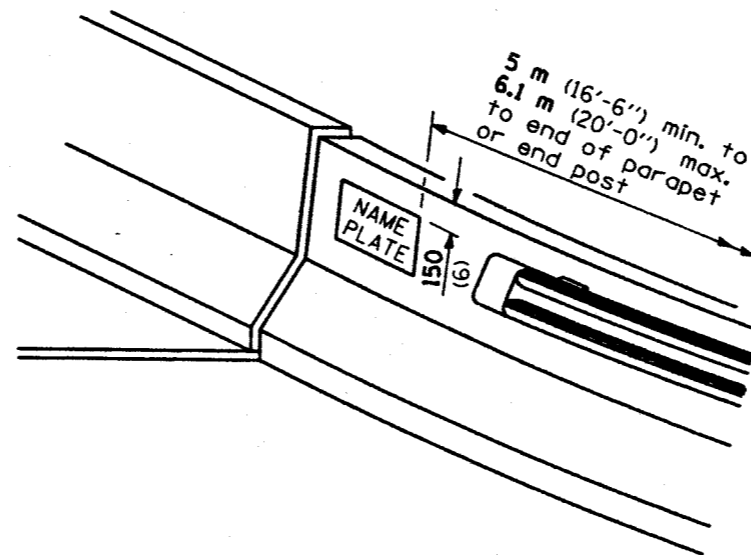
07/11/95 ZF:MHC:001ZIDISTD2.DGN LEVELS = 35

VI-TC11

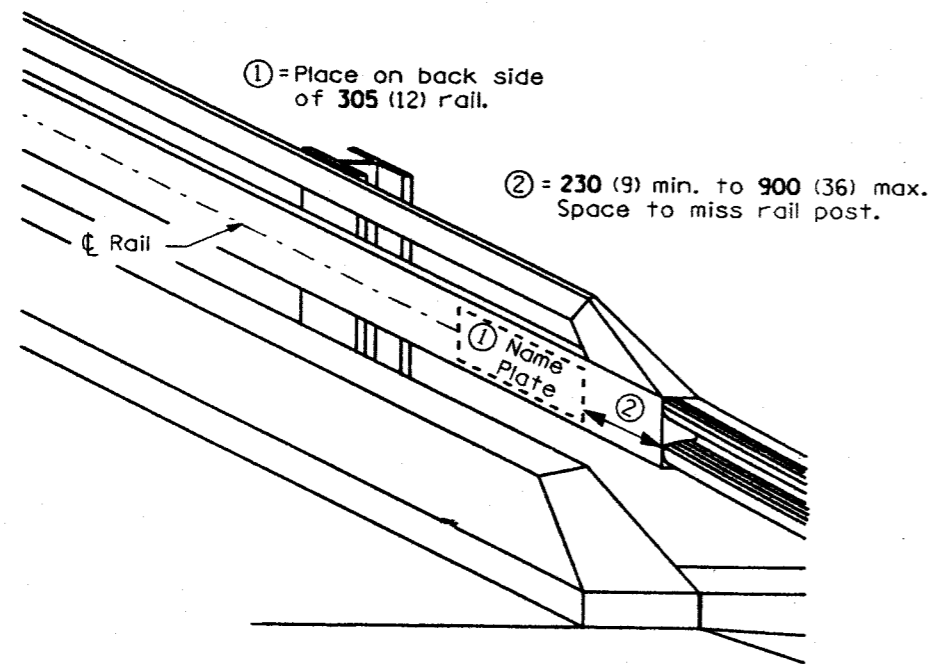
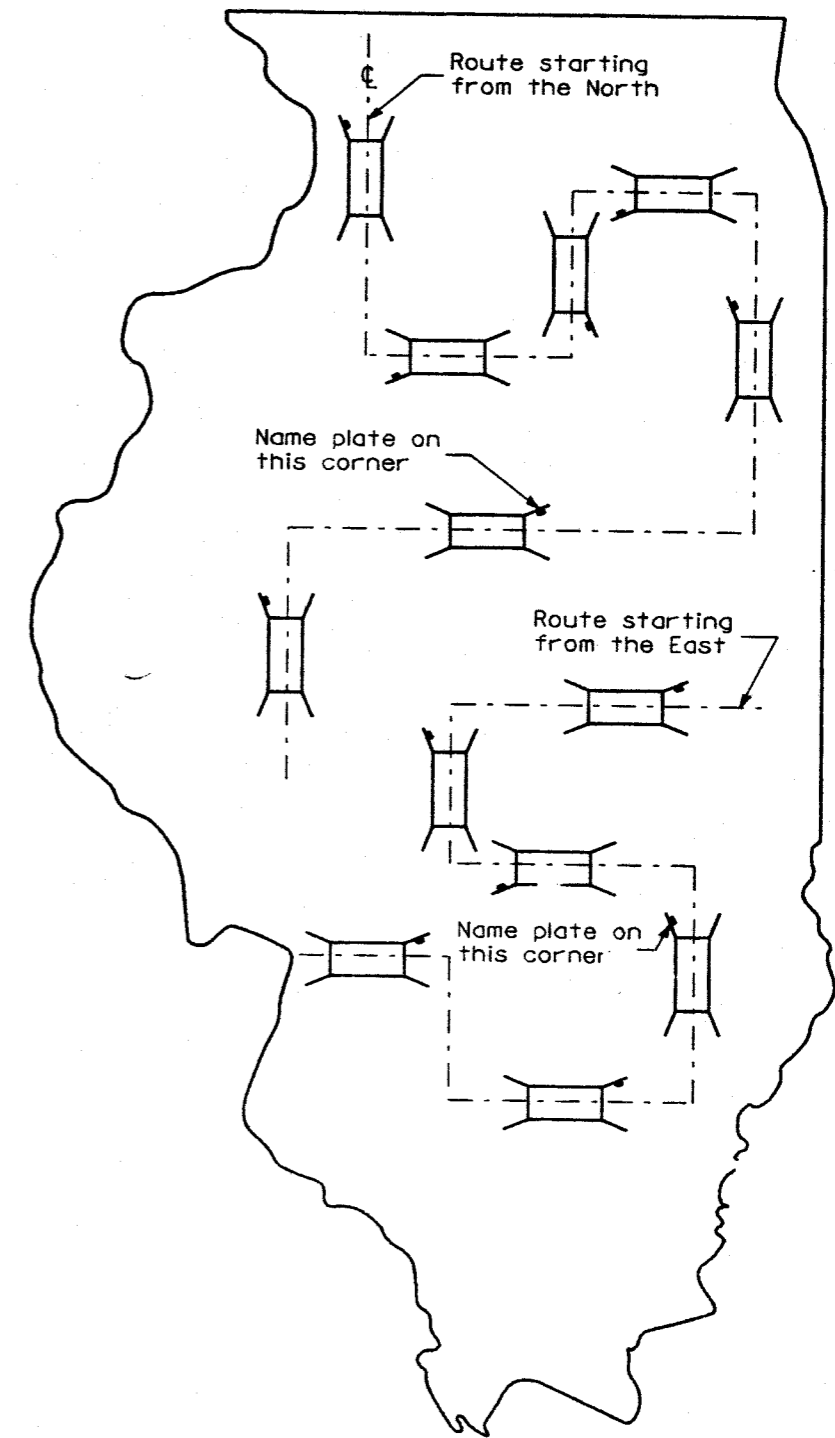


**FOR MULTI-SPAN CULVERTS**

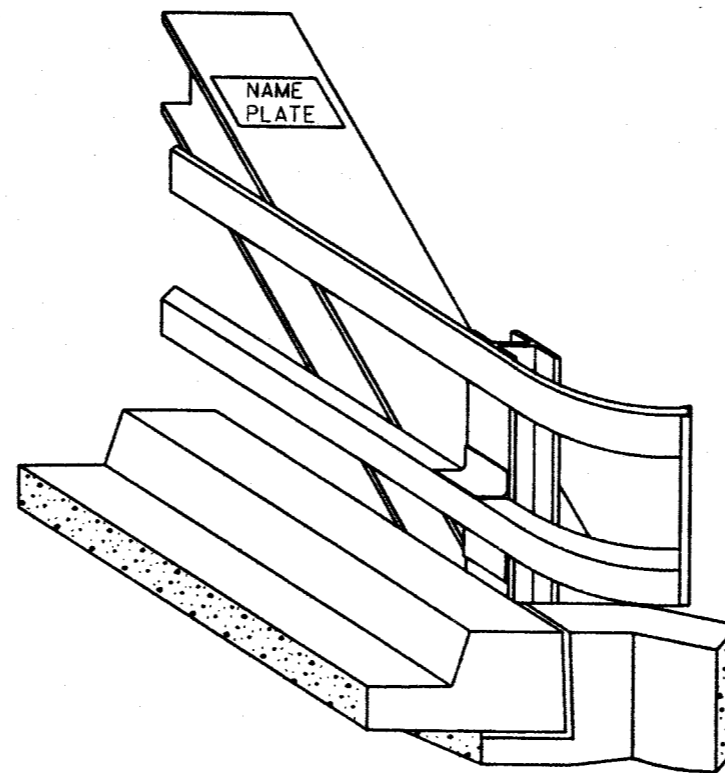
(Unless otherwise noted on the plans, name plates are not required for single box culverts.)



**FOR PARAPET AND END POST MOUNTED**



**FOR STEEL RAILS**



**FOR TRUSSES**

All dimensions are in millimeters (inches) unless otherwise shown.

Illinois Department of Transportation

APPROVED November 1, 1994  
*Ralph E. Anderson*  
 ENGINEER OF BRIDGES AND STRUCTURES

APPROVED November 1, 1994  
*Tom Fiedel*  
 ENGINEER OF DESIGN AND ENVIRONMENT

ISSUED 11-15-94

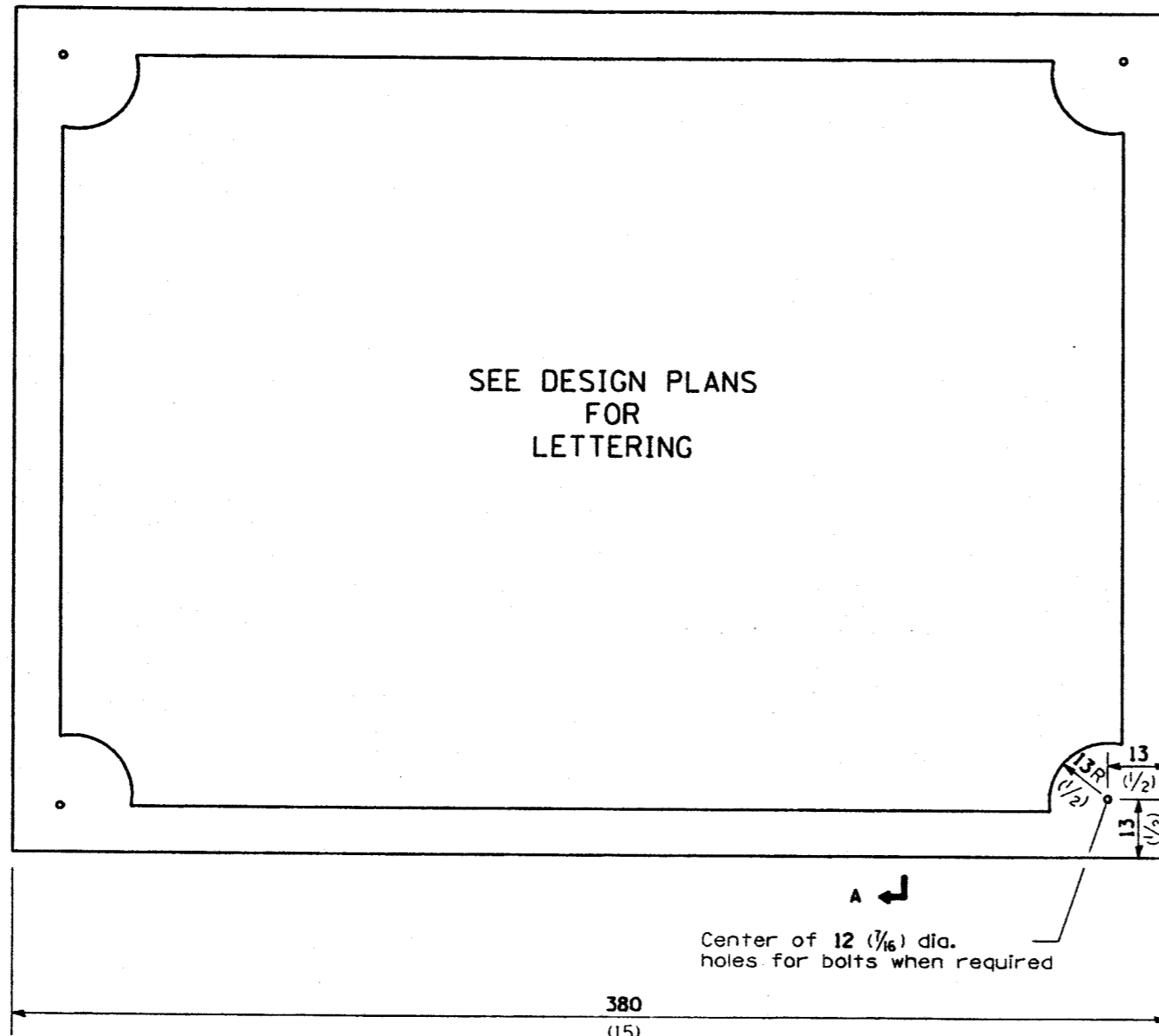
DATE	REVISIONS
11-1-94	Revised plan of plate.
6-15-94	Moved G.N. to Specs. Added metric.

**NAME PLATE FOR BRIDGES**

(Sheet 1 of 2)

**STANDARD 2113-4**

H-4.00

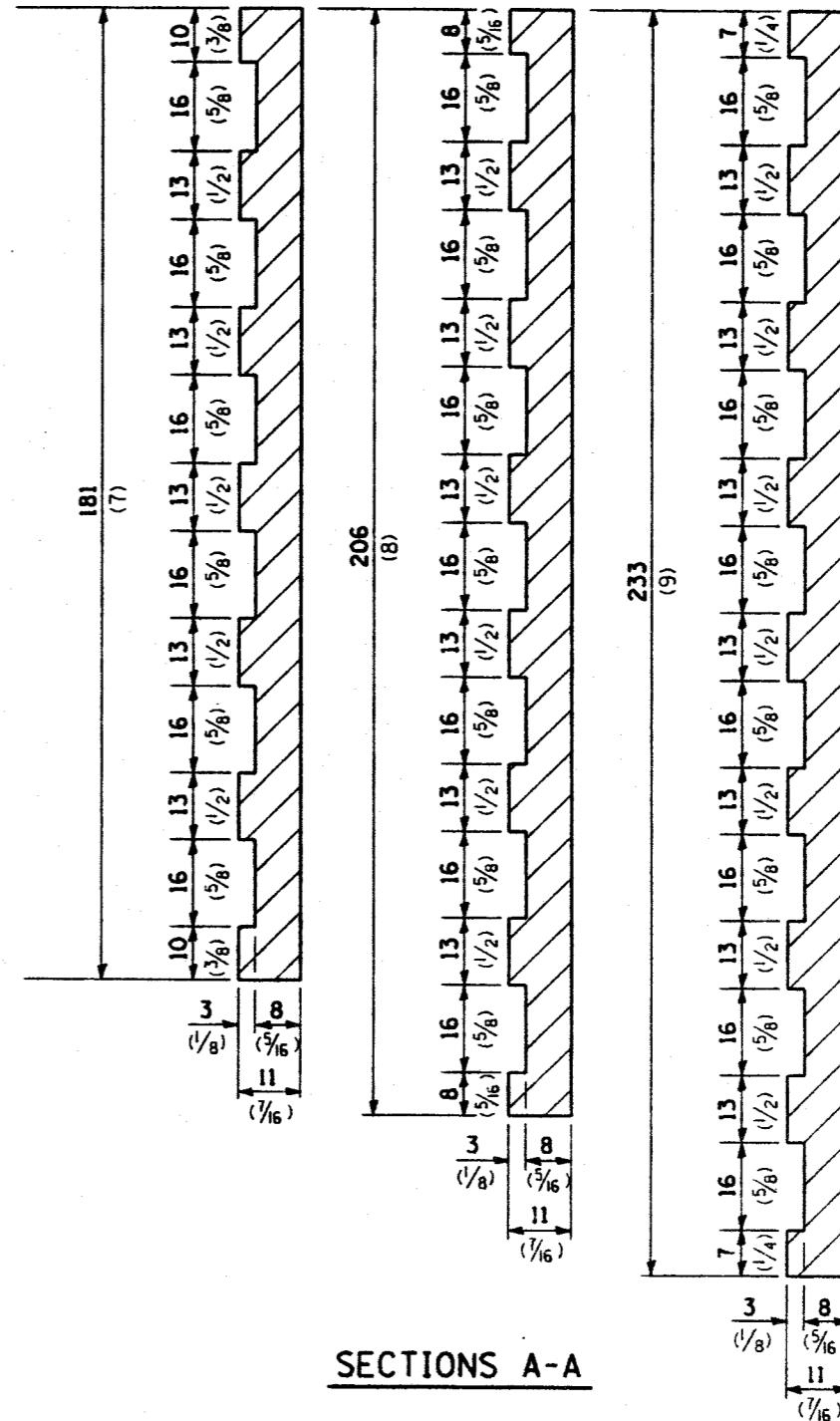


Lettering for

5 Lines

6 Lines

7 Lines



**NOTE**

Border and lettering:  
Raised 4 (1/8), square cut and not tapered.

Placing:  
For concrete parapets ----- Plates to be placed 5 m (16'-6") min. to 6.1 m (20'-0") max. to end of parapet.  
For steel truss span ----- Braze to end post about 1.5 m (5'-0") above roadway.  
For steel rails ----- Place on back side of 305 (12) rail.  
For subways ----- See design plans for location.

All dimensions are in millimeters (inches) unless otherwise shown.

Illinois Department of Transportation

APPROVED November 1, 1994  
*Ralph E. Anderson*  
ENGINEER OF BRIDGES AND STRUCTURES

APPROVED November 1, 1994  
*Raymond J. Hald*  
ENGINEER OF DESIGN AND ENVIRONMENT

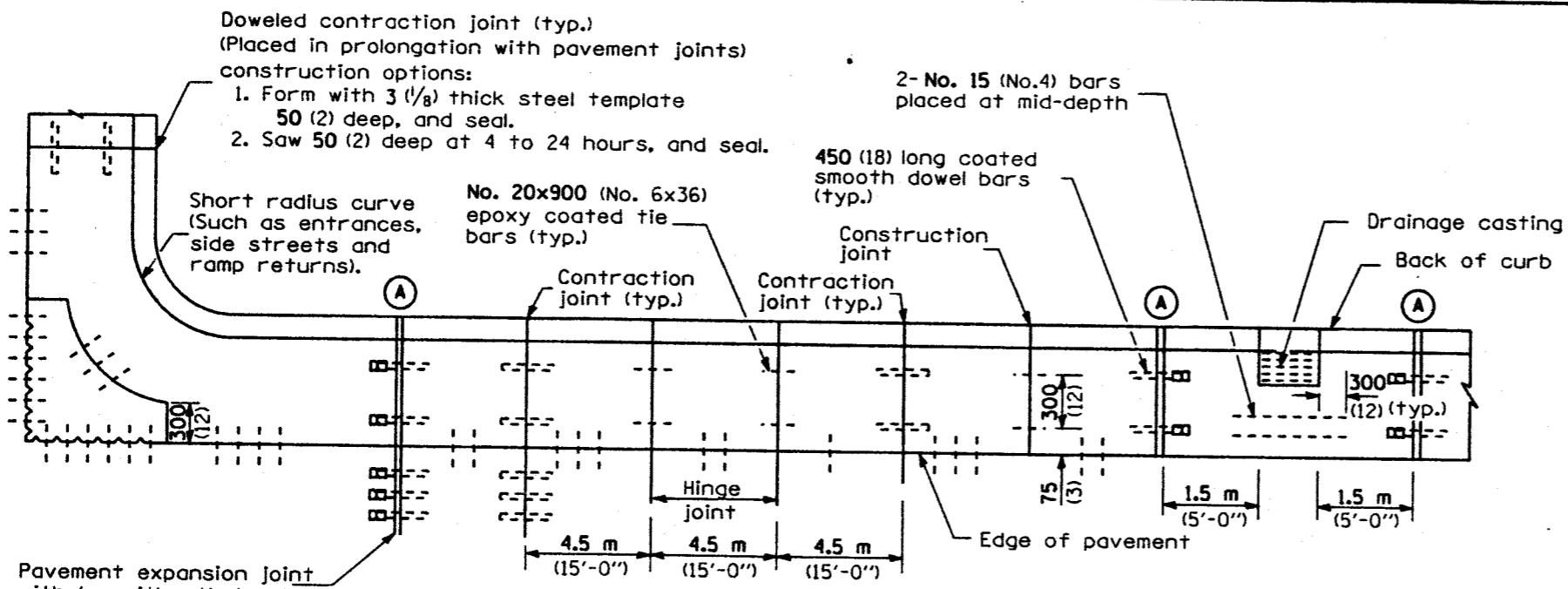
ISSUED 11-15-93

**NAME PLATE  
FOR BRIDGES**  
(Sheet 2 of 2)

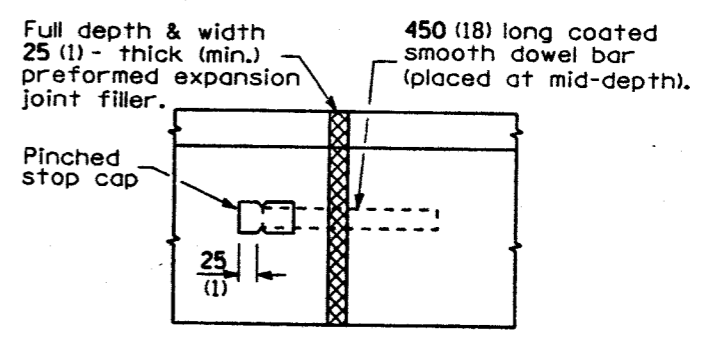
**STANDARD 2113-4**

**H-4.01**

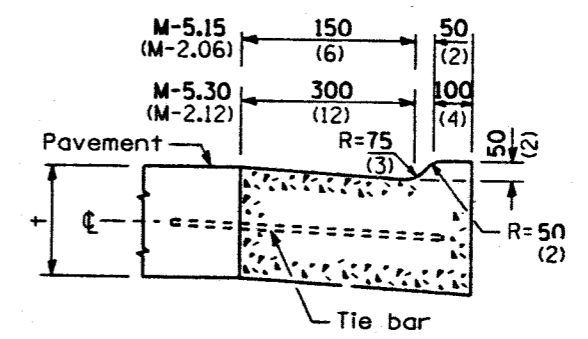




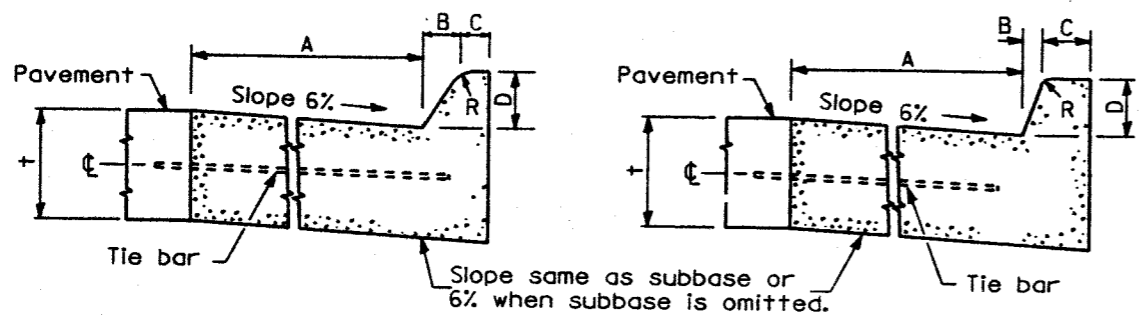
**PLAN**  
**COMBINATION CONCRETE CURB AND GUTTER**  
**ADJACENT TO PCC PAVEMENT OR PCC BASE COURSE**



**DETAIL A**  
**EXPANSION JOINT**

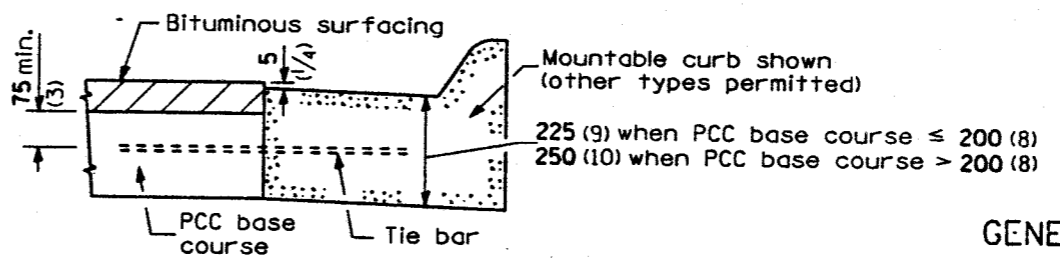


**TYPE M-5.15 (M-2.06) or**  
**M-5.30 (M-2.12)**



**MOUNTABLE CURB**

**BARRIER CURB**



**ADJACENT TO PCC BASE COURSE**  
**AND BITUMINOUS SURFACING**

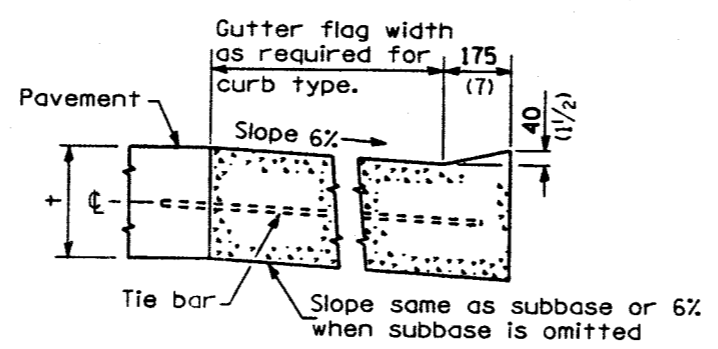
**GENERALS NOTES**

THICKNESS - "+" = Thickness of pavement.  
 DEPRESSED CURBS - The 40 mm (1 1/2") rise shall be reduced to 13 mm (1/2") when curb is placed adjacent to curb ramp accessible to the disabled (see Standard 2356).  
 TIE BARS - Longitudinal joint tie bars shall be No. 20 (No. 6) at 600 mm (24") centers in accordance with details for longitudinal construction joint shown on Standard 2323.  
 A minimum clearance of 50 mm (2") between the end of the tie bar and the back of the curb shall be maintained.

All dimensions are in millimeters (inches) unless otherwise shown.

BARRIER CURB TABLE					
TYPE	A	B	C	D	R
B-15.30 (B-6.12)	300 (12)	25 (1)	150 (6)	150 (6)	25 (1)
B-22.30 (B-9.12)	300 (12)	50 (2)	125 (5)	225 (9)	25 (1)
B-15.45 (B-6.18)	450 (18)	25 (1)	150 (6)	150 (6)	25 (1)
B-22.45 (B-9.18)	450 (18)	50 (2)	125 (5)	225 (9)	25 (1)
B-15.60 (B-6.24)	600 (24)	25 (1)	150 (6)	150 (6)	25 (1)
B-22.60 (B-9.24)	600 (24)	51 (2)	125 (5)	225 (9)	25 (1)

MOUNTABLE CURB TABLE					
TYPE	A	B	C	D	R
M-10.15 (M-4.06)	150 (6)	100 (4)	75 (3)	100 (4)	75 (3)
M-15.15 (M-6.06)	150 (6)	150 (6)	50 (2)	150 (6)	50 (2)
M-10.30 (M-4.12)	300 (12)	100 (4)	75 (3)	100 (4)	75 (3)
M-15.30 (M-6.12)	300 (12)	150 (6)	50 (2)	150 (6)	50 (2)
M-10.45 (M-4.18)	450 (18)	100 (4)	75 (3)	100 (4)	75 (3)
M-15.45 (M-6.18)	450 (18)	150 (6)	50 (2)	150 (6)	50 (2)
M-10.60 (M-4.24)	600 (24)	100 (4)	75 (3)	100 (4)	75 (3)
M-15.60 (M-6.24)	600 (24)	150 (6)	50 (2)	150 (6)	50 (2)



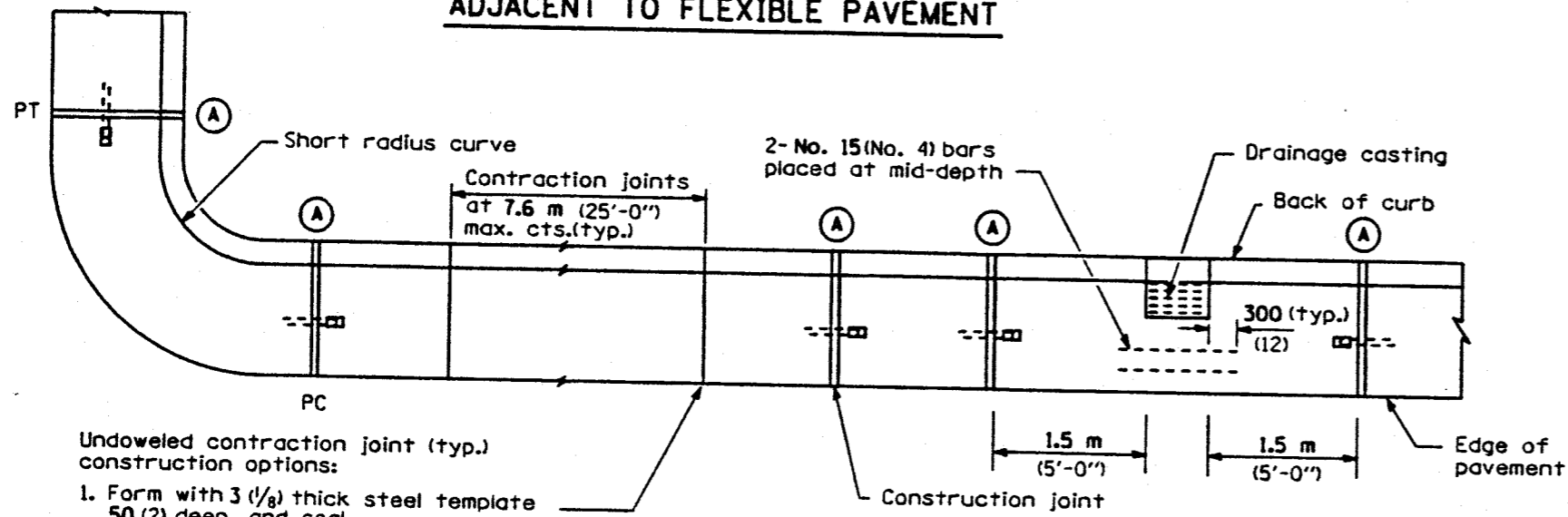
**DEPRESSED CURB**

Illinois Department of Transportation  
 PASSED June 15, 1994  
 ENGINEER OF POLICY AND PROCEDURES  
 APPROVED June 15, 1994  
 ENGINEER OF DESIGN AND ENVIRONMENT  
 ISSUED 11-27-91

DATE	REVISIONS
6-15-94	Revised tie bars and 3rd G.N.
11-1-93	Revised the gutter depth on undisturbed subgrade.

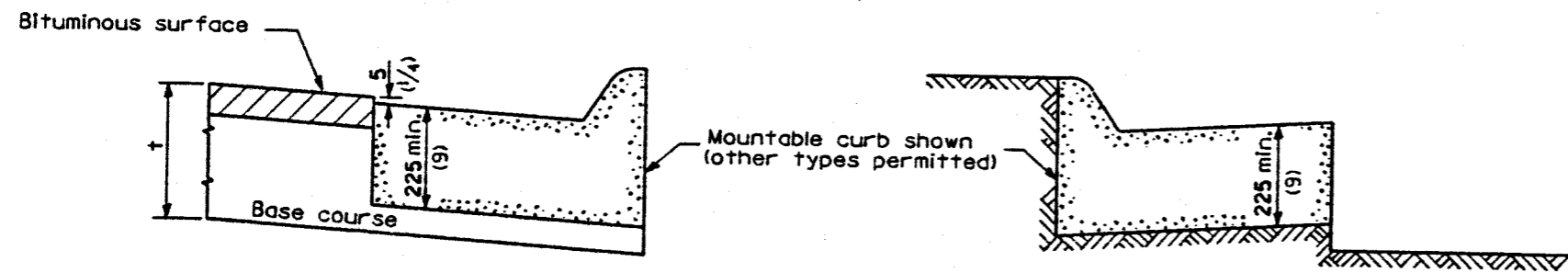
**CONCRETE CURB AND COMBINATION CONCRETE CURB AND GUTTER**  
 (Sheet 1 of 2)  
**STANDARD 2130-15**

**COMBINATION CONCRETE CURB AND GUTTER  
ADJACENT TO FLEXIBLE PAVEMENT**



- Undoweled contraction joint (typ.) construction options:
1. Form with 3 (1/8) thick steel template 50 (2) deep, and seal.
  2. Saw 50 (2) deep at 4 to 24 hours, and seal.
  3. Insert 20 (3/4) thick preformed joint filler full depth and width.

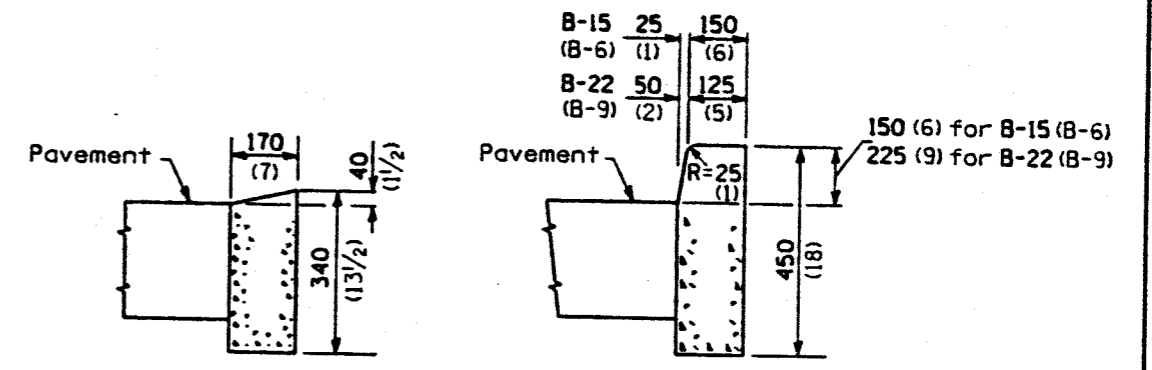
**PLAN**



**ON DISTURBED SUBGRADE**

**ON UNDISTURBED SUBGRADE**

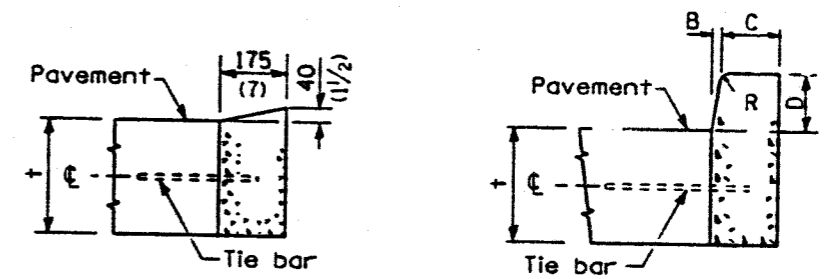
**CONCRETE CURB TYPE B**



**DEPRESSED CURB**

**BARRIER CURB**

**ADJACENT TO FLEXIBLE PAVEMENT**



**DEPRESSED CURB**

**BARRIER CURB**

**ADJACENT TO PCC PAVEMENT OR PCC BASE COURSE**

All dimensions are in millimeters (inches) unless otherwise shown.

Illinois Department of Transportation

PASSED June 15, 1994  
 ENGINEER OF POLICY AND PROCEDURES

APPROVED June 15, 1994  
 ENGINEER OF DESIGN AND ENVIRONMENT

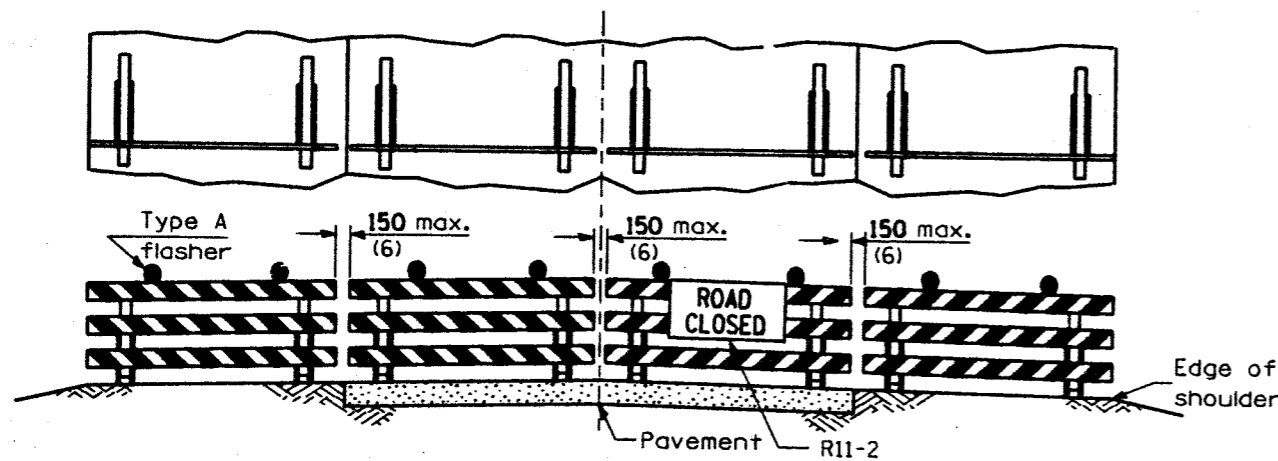
ISSUED 11-27-61

**CONCRETE CURB AND  
COMBINATION  
CONCRETE CURB AND GUTTER**

(Sheet 2 of 2)

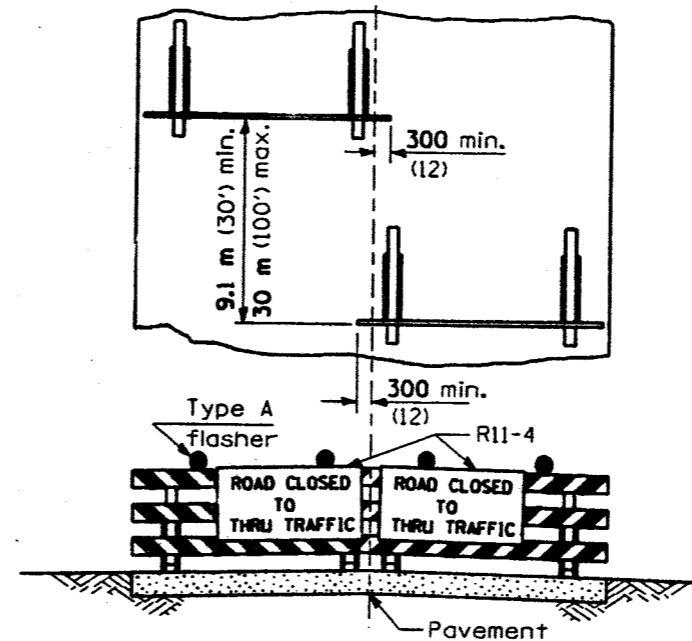
**STANDARD 2130-15**

**A-7.04**



**ROAD CLOSED TO ALL TRAFFIC**

Reflectorized striping may be omitted on the back side of the barricades. The barricades shall be to the edge of the shoulders except when otherwise directed by the Engineer or shown on the detailed construction plans.



**ROAD CLOSED TO ALL THRU TRAFFIC**

Reflectorized striping shall appear on both sides of the barricades. The barricades shall be to the edge of the pavement except when otherwise directed by the Engineer or shown on the detailed construction plans.

**ROAD  
CONSTRUCTION  
NEXT X MILES**

**END  
CONSTRUCTION**

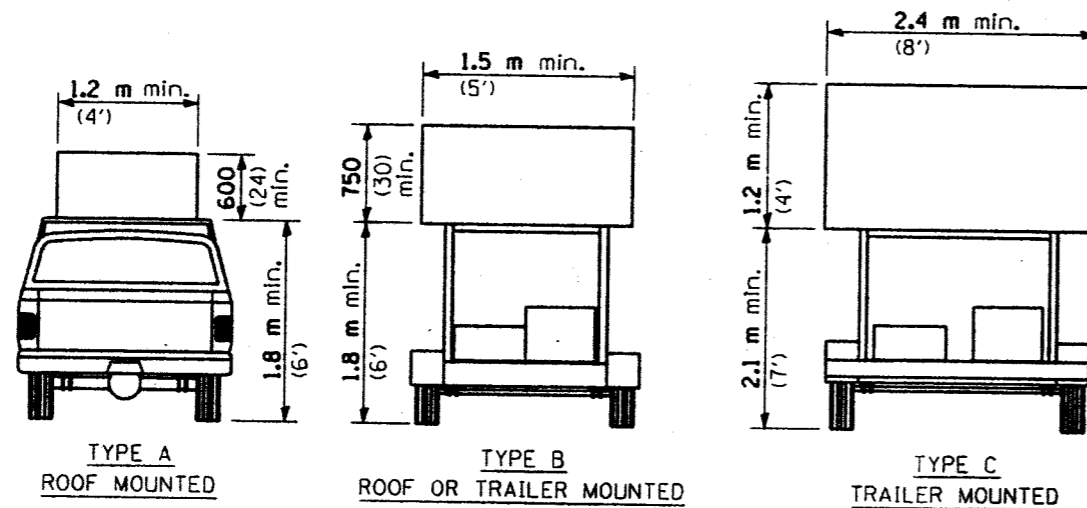
G20-1(10)-6036 G20-2(10)-6024

X = Distance to END CONSTRUCTION sign.

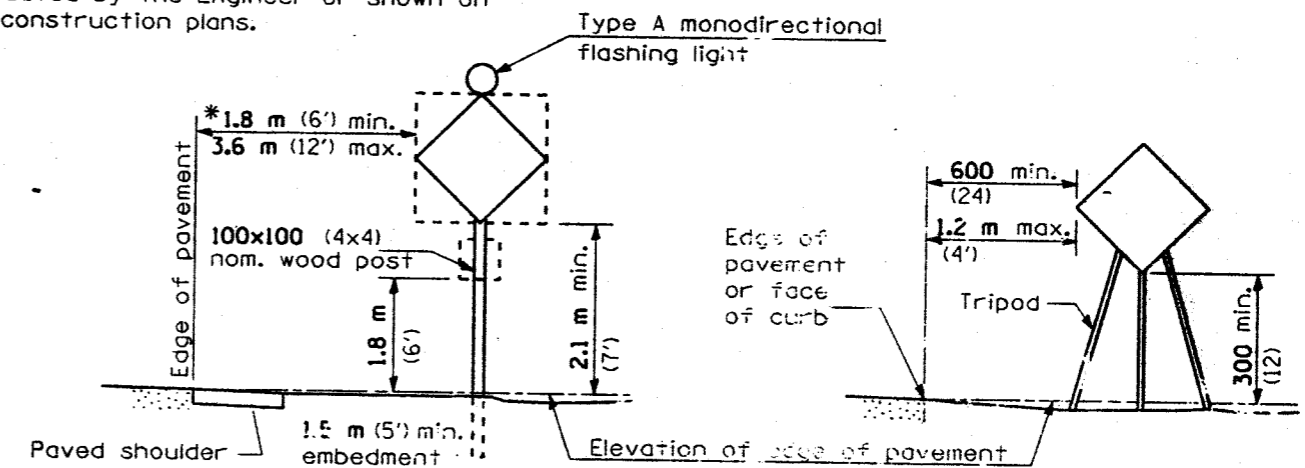
ROAD CONSTRUCTION NEXT X MILES sign shall be installed in advance of the first work area at each end of projects over 3200 m (2 miles) in length. The END CONSTRUCTION sign shall be erected near the end of these projects, unless another project is within 3200 m (2 miles) beyond the end of the job.

**WORK LIMIT SIGNING**

**TYPICAL APPLICATIONS OF  
TYPE III BARRICADES CLOSING A ROAD**



**ARROW BOARDS**



**TYPICAL SIGN INSTALLATIONS**

**GENERAL NOTES**

\* When curb or paved shoulder are present this dimension shall be 600 (24) to the face of curb or 1.8 m (6') to the outside edge of the paved shoulder.

All heights shown shall be measured above the pavement surface.

All dimensions are in millimeters (inches) unless otherwise shown.

Illinois Department of Transportation  
 APPROVED February 1, 1995  
 ENGINEER OF OPERATIONS  
 APPROVED February 1, 1995  
 ENGINEER OF DESIGN AND ENVIRONMENT

ISSUED 4-3-69

DATE	REVISIONS
3-1-95	Combined 2298, 2299 & 2300. Moved G.N. 10
	Specs. Revised title.
6-15-94	Added lights on Ty. III
	Bar. Rev. ROAD
	CONSTRUCTION AHEAD sign.

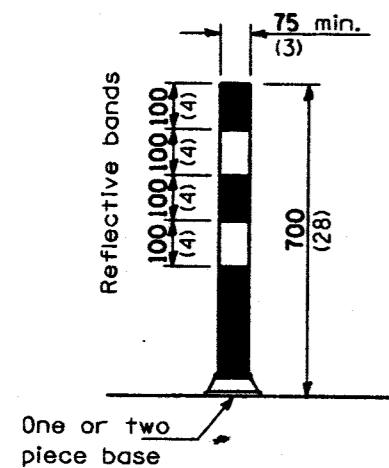
**TRAFFIC CONTROL  
DEVICES**

(Sheet 1 of 3)

**STANDARD 2298-11**

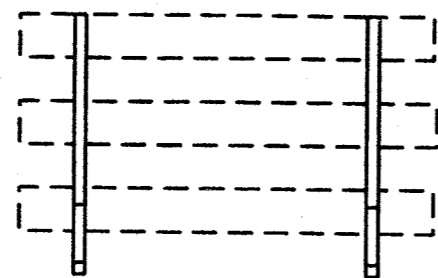
1-6-00



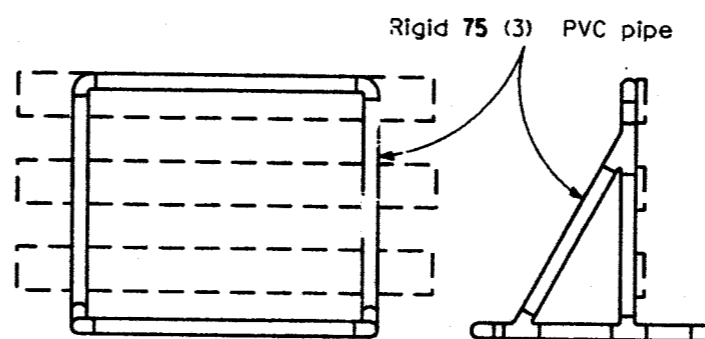
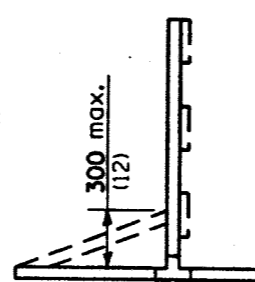


**FLEXIBLE DELINEATORS**

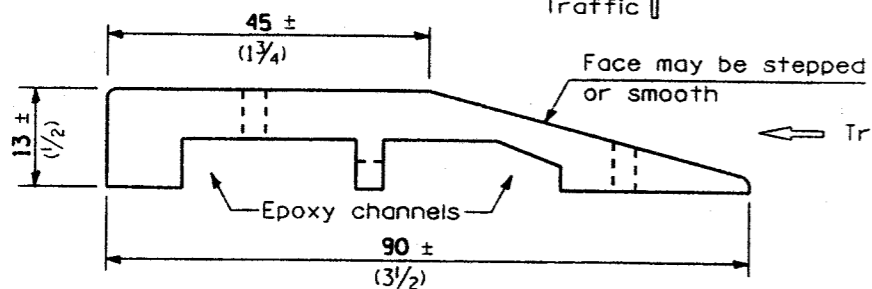
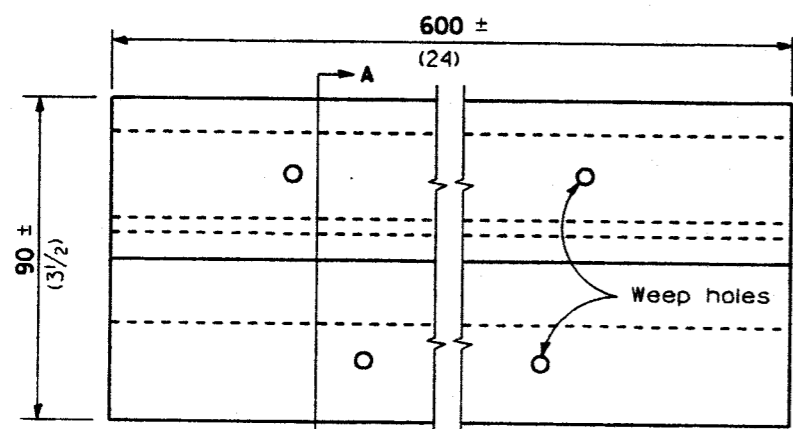
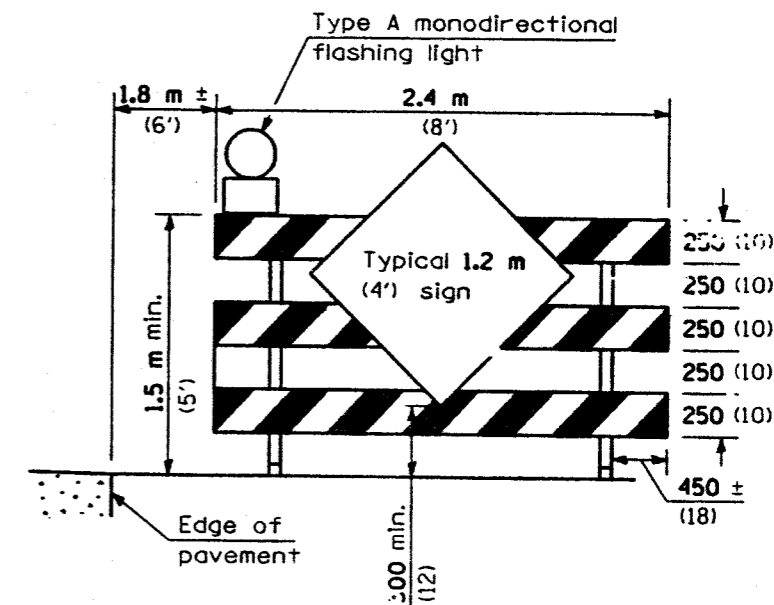
Frames shall be no heavier than:  
**100x100** (4x4) (nom. dim.) wood or  
**50x50x3** (2x2x<sup>3</sup>/<sub>8</sub>) steel tubing or  
**50x50x5** (2x2x<sup>5</sup>/<sub>16</sub>) steel angles



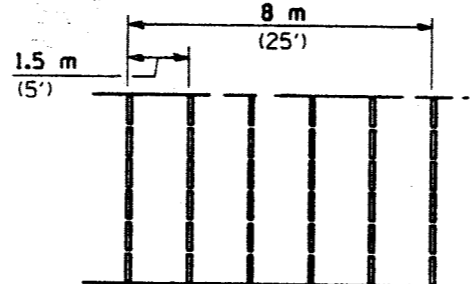
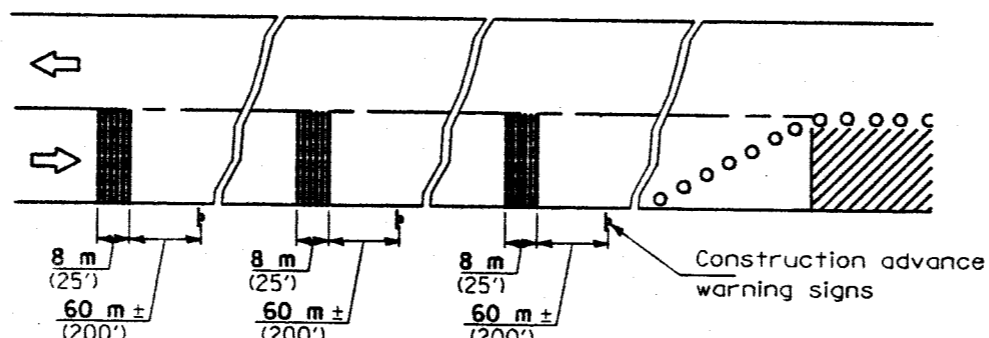
**WOOD OR METAL SUPPORTS**



**PVC PIPE SUPPORTS**  
**WING BARRICADES**

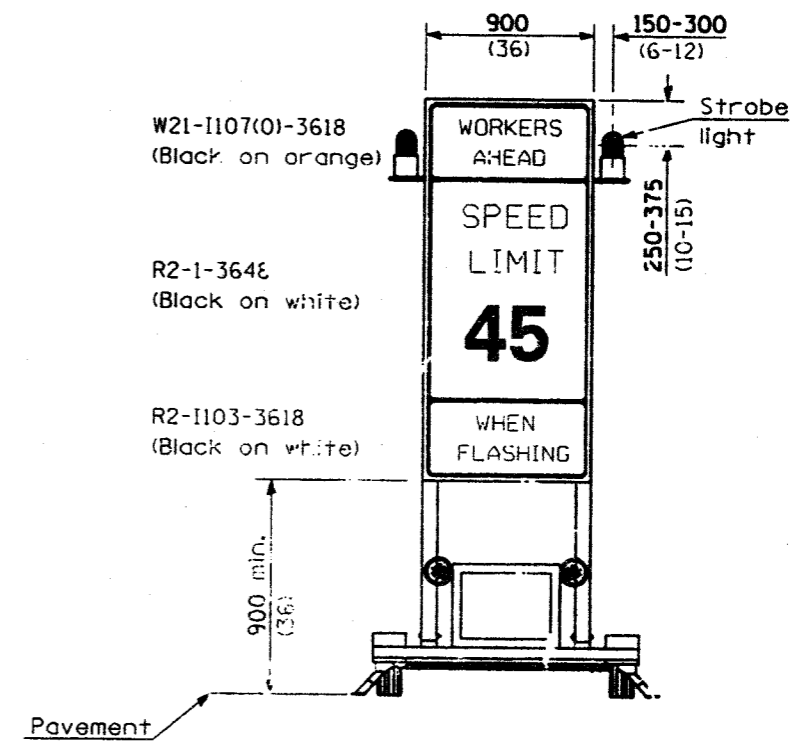


**SECTION A - A**  
**DETAIL OF RUMBLE STRIPS**



**TYPICAL INSTALLATION**

**TEMPORARY RUMBLE STRIPS**



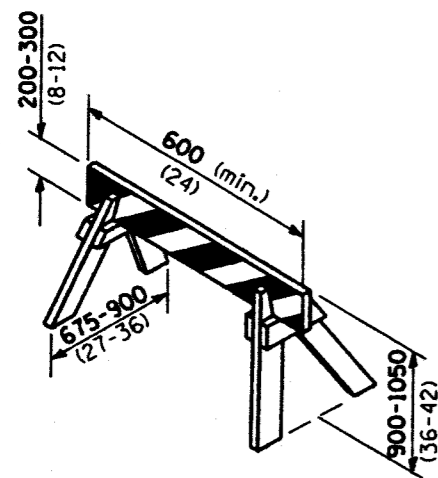
**CONSTRUCTION SPEED LIMIT SIGN**

All dimensions are in millimeters (inches) unless otherwise shown.

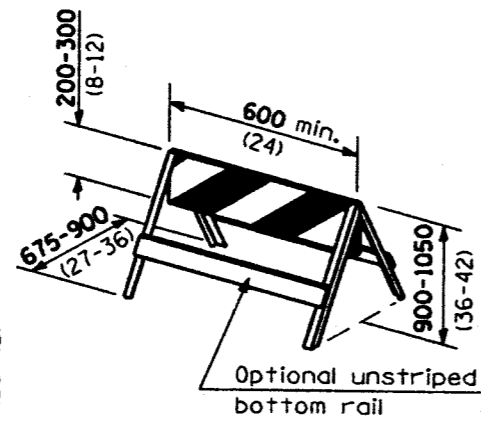
Illinois Department of Transportation  
 APPROVED February 1, 1995  
 ENGINEER OF OPERATIONS  
 APPROVED February 1, 1995  
 ENGINEER OF DESIGN AND ENVIRONMENT

**TRAFFIC CONTROL DEVICES**  
 (Sheet 2 of 3)  
**STANDARD 2298-11**

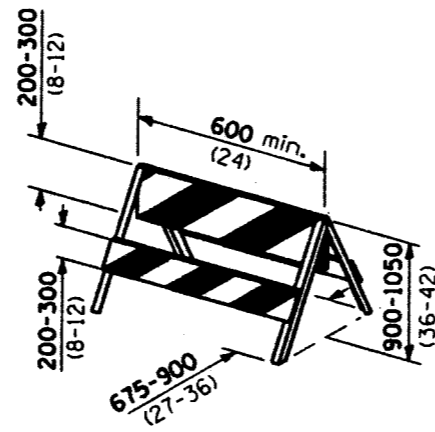
F-6.01



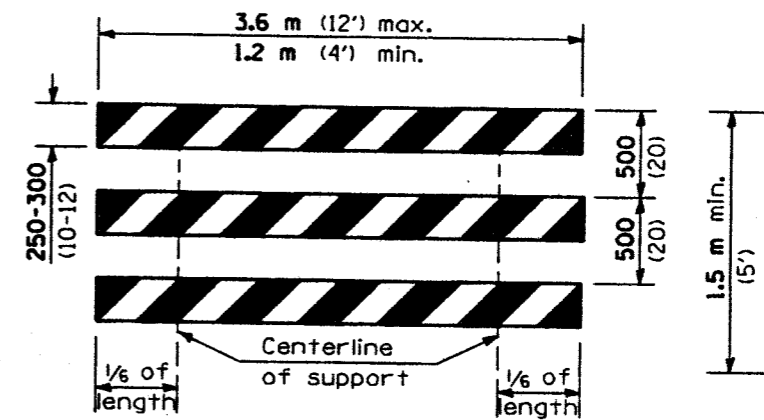
**TYPE 1A BARRICADE**



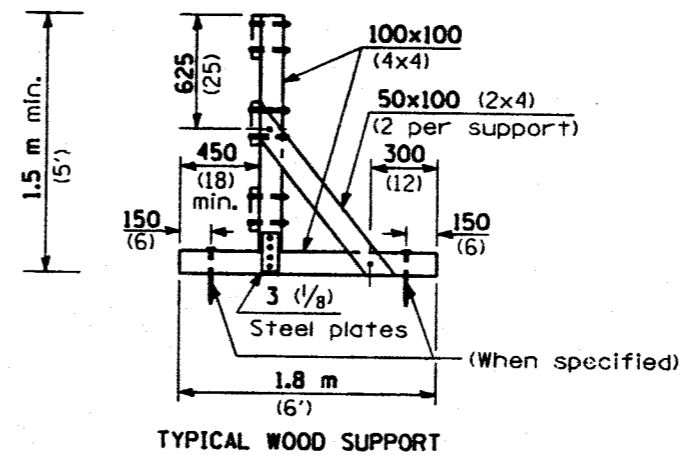
**TYPE I BARRICADE**



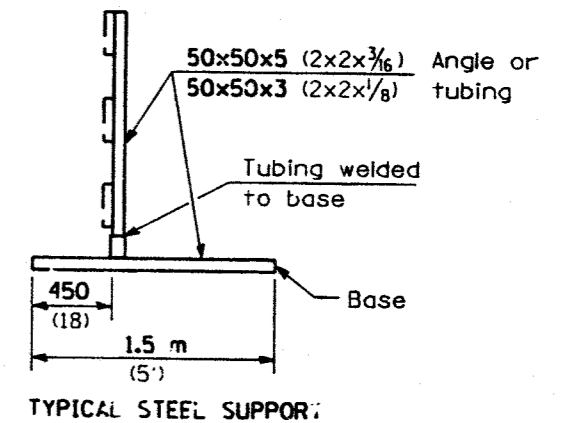
**TYPE II BARRICADE**



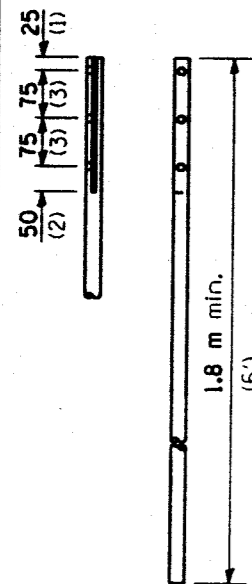
**TYPE III BARRICADES**



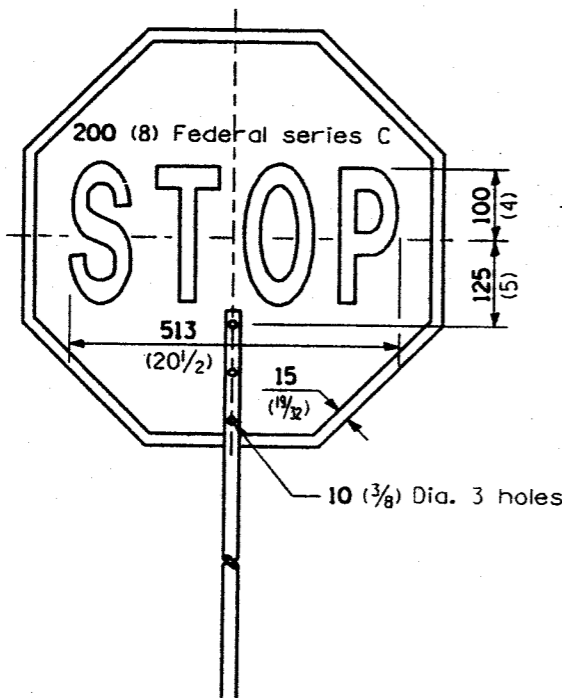
**TYPICAL WOOD SUPPORT**



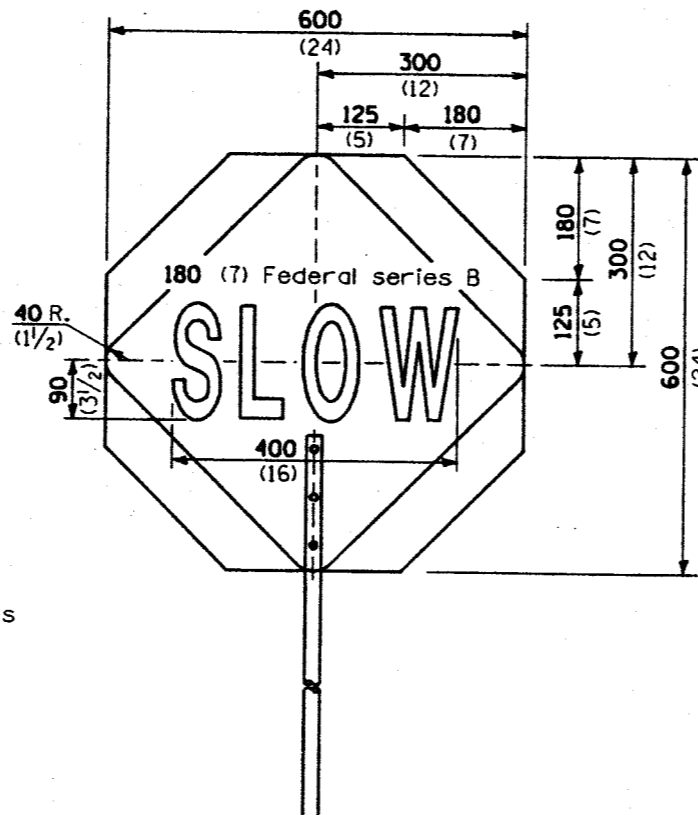
**TYPICAL STEEL SUPPORT**



**STAFF**

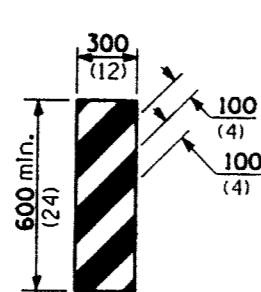


**FRONT SIDE**

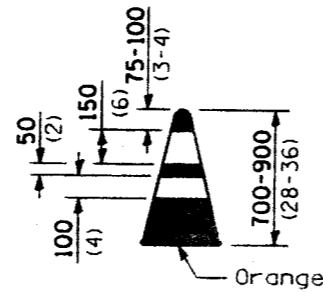


**REVERSE SIDE**

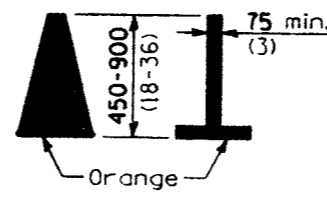
**FLAGGER TRAFFIC CONTROL SIGN**



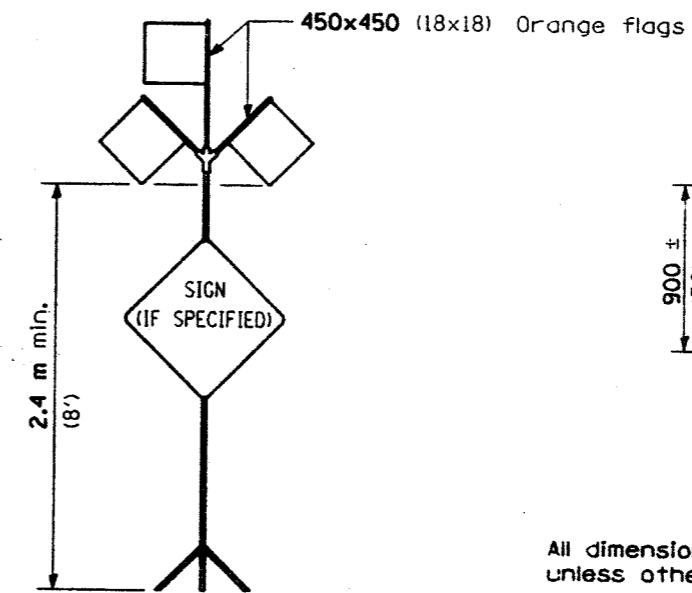
**VERTICAL PANELS**



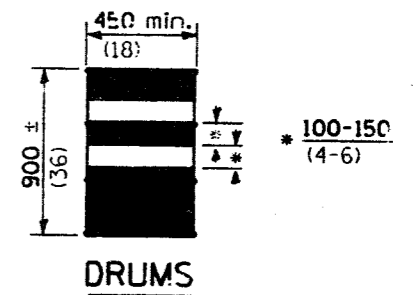
**REFLECTORIZED CONES**



**CONES**



**HIGH LEVEL WARNING DEVICE**



**DRUMS**

All dimensions are in millimeters (inches) unless otherwise shown.

Illinois Department of Transportation  
 APPROVED February 1, 1995  
 ENGINEER OF OPERATIONS  
 APPROVED February 1, 1995  
 ENGINEER OF DESIGN AND ENVIRONMENT

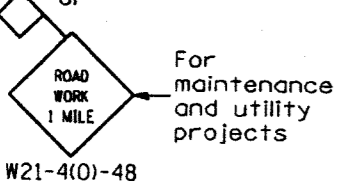
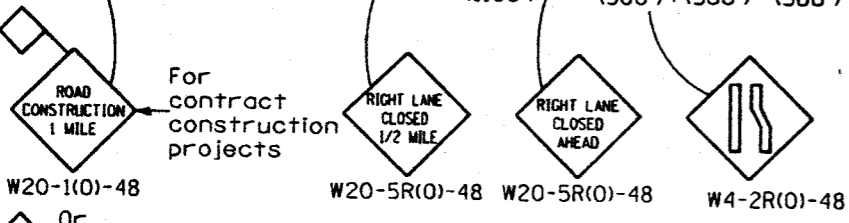
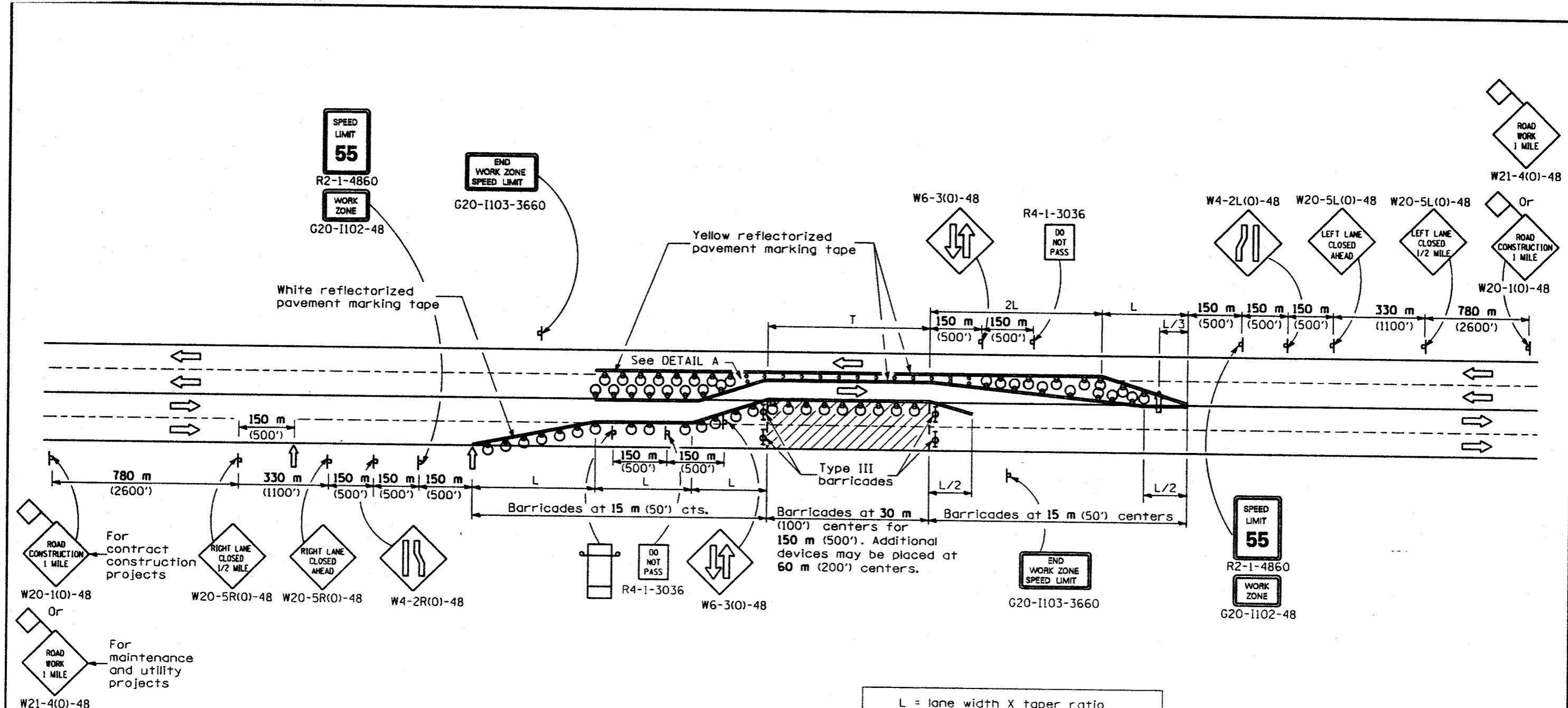
ISSUED 4-3-69

**TRAFFIC CONTROL DEVICES**

(Sheet 3 of 3)

**STANDARD 2298-11**

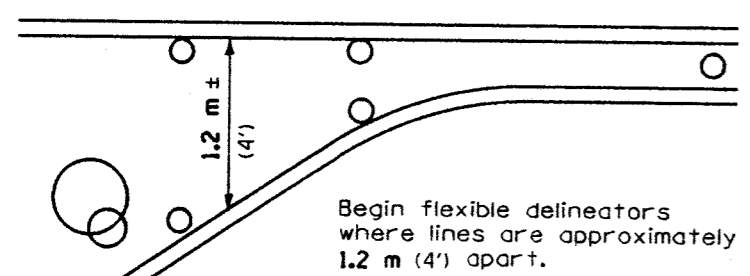
E-6.02



L = lane width X taper ratio		
Normal Posted Speed	Taper Ratio	
km/h	mph	
90	55	55/1
80 or less	45 or less	45/1

**SYMBOLS**

- Arrow board
- Work area
- Sign
- 450x450 (18x18) minimum orange flag
- Barricade or drum with steady burning monodirectional light
- Construction speed limit sign
- Flexible delineator
- Type III barricade with flashing light (monodirectional)



**DETAIL A**

**GENERAL NOTES**

This Standard is used where at any time, any vehicle, equipment, workers or their activities require the closure of two adjacent lanes and a temporary crossover is provided by making use of one lane of pavement normally used by opposing flow of traffic and positive barrier is not used to separate the opposing traffic.

All dimensions are in millimeters (inches) unless otherwise shown.

Illinois Department of Transportation

APPROVED February 1, 1995  
 ENGINEER OF OPERATIONS  
 APPROVED February 1, 1995  
 ENGINEER OF DESIGN AND ENVIRONMENT

ISSUED 4-1-89

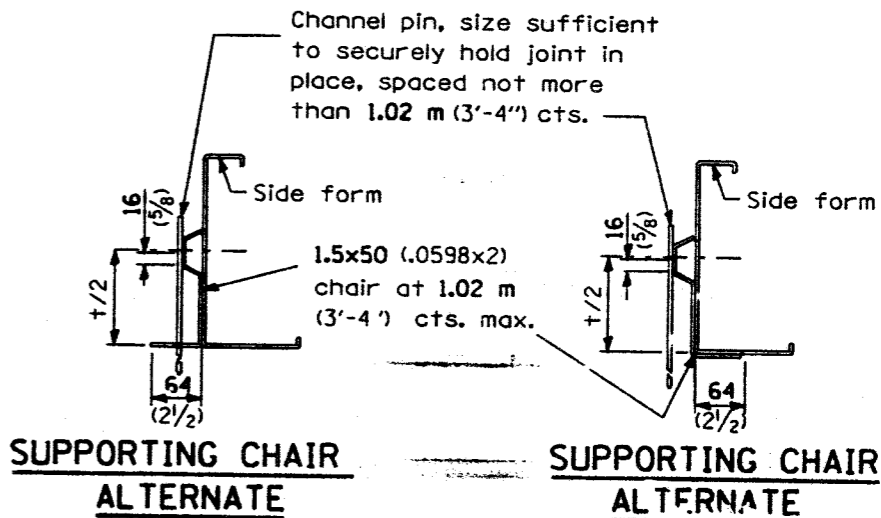
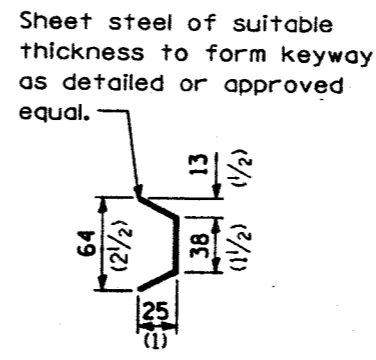
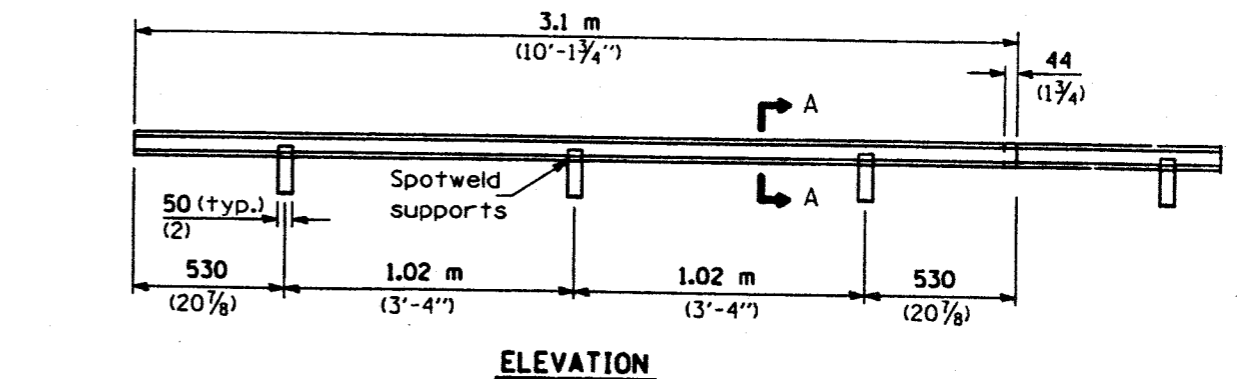
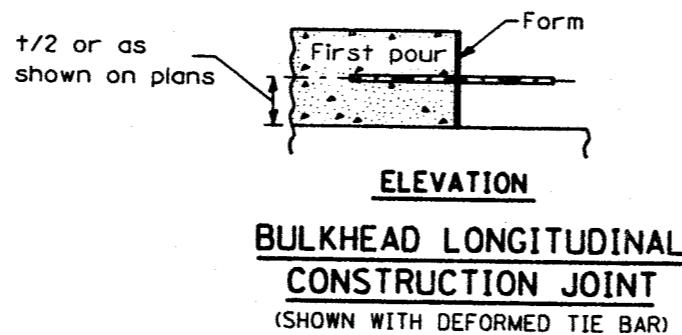
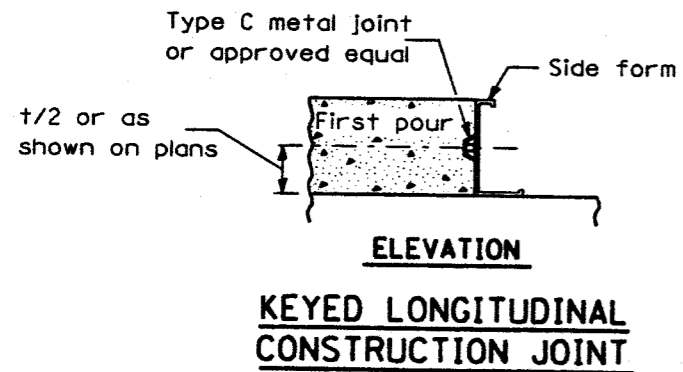
DATE	REVISIONS
2-1-95	Moved G.N. to Specs.
	Revised title.
	Added metric.

**RURAL LANE CLOSURE  
 MULTILANE, 2-WAY, UNDIVIDED  
 WITH CROSSOVER**

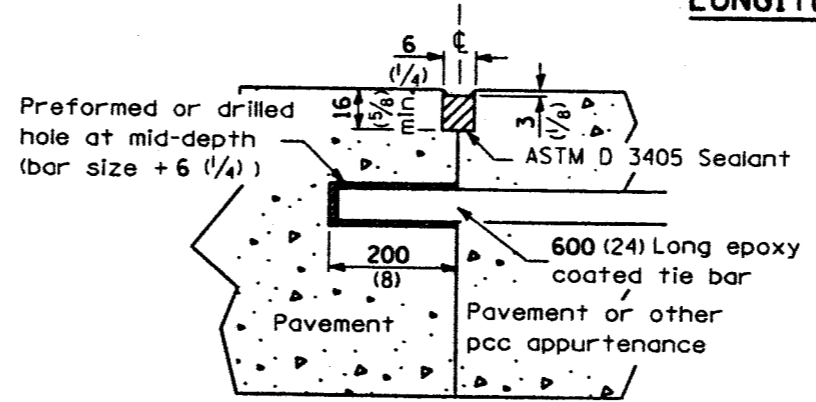
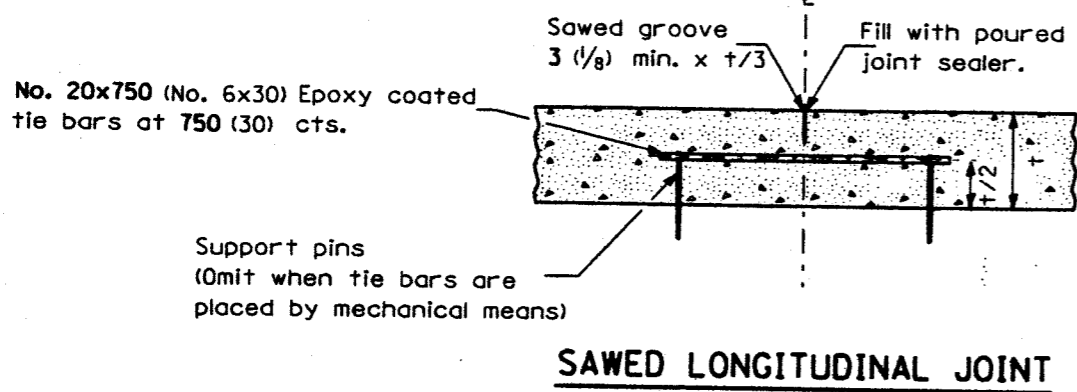
**STANDARD 2318-9**

(DN)

1-6.23



**LONGITUDINAL METAL JOINT TYPE C**



**GENERAL NOTES**

All slope ratios are expressed as units of vertical displacement to units of horizontal displacement (V:H).

All dimensions are in millimeters (Inches) unless otherwise shown.

Illinois Department of Transportation

PASSED June 15, 1994

ENGINEER OF POLICY AND PROCEDURES

APPROVED June 15, 1994

ENGINEER OF DESIGN AND ENVIRONMENT

ISSUED 10-15-89

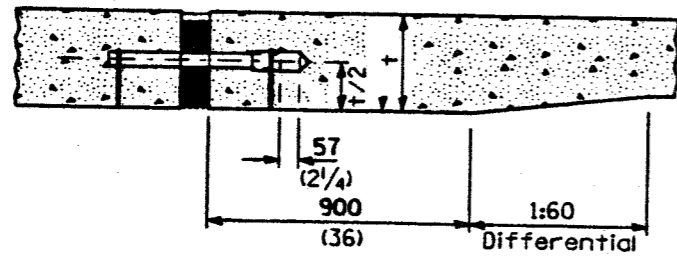
DATE	REVISIONS
6-15-94	Deleted keyway with tie bar.
11-1-93	Moved G.N. to Specs.
	Added long. joint detail.
	Deleted hooked bars.

**PAVEMENT JOINTS**

(Sheet 1 of 2)

**STANDARD 2323-14**

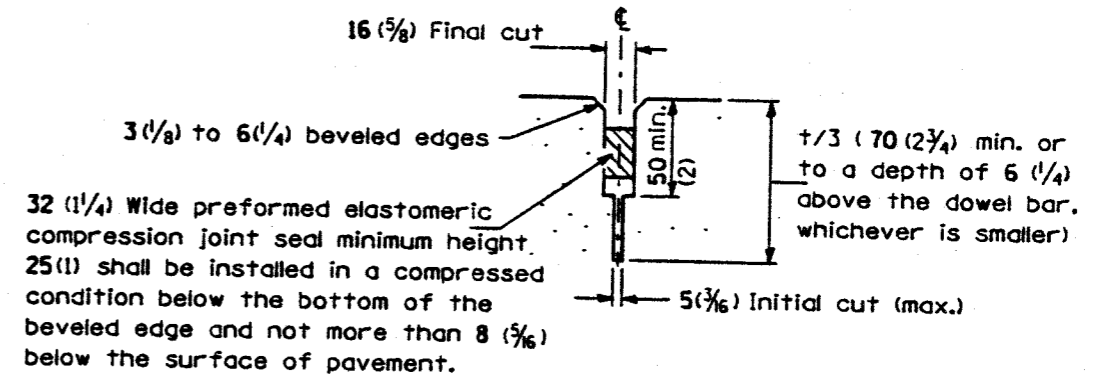
C-23.40



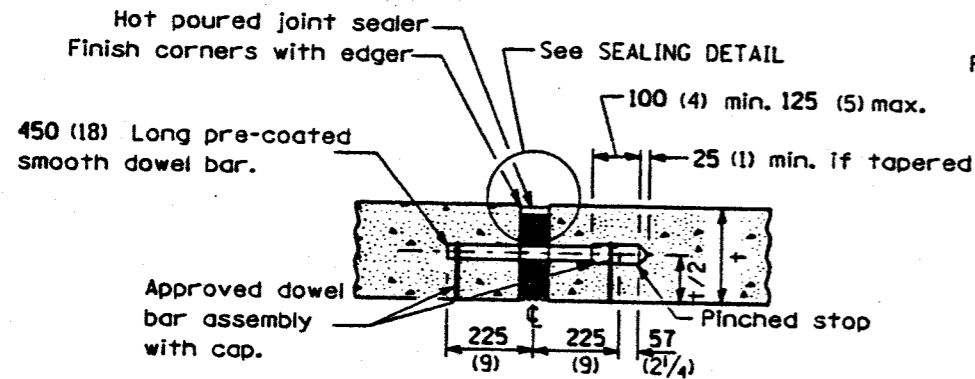
**EXPANSION JOINT**

(For pavements with unequal thickness)  
See DETAIL OF EXPANSION JOINT below  
for notes and dimensions not shown.

CONCRETE THICKNESS	DOWEL BAR DIAMETER
200(8) or greater	38 (1 1/2)
175 (7) thru 199 (7.99)	32 (1 1/4)
Less than 175(7)	25 (1)

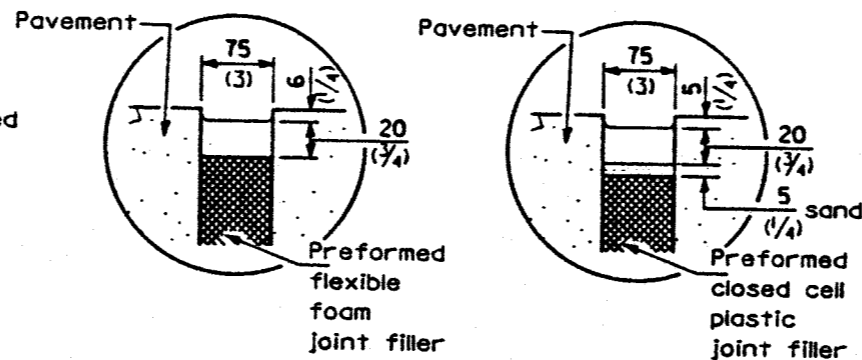


**SAWED GROOVE DETAIL**

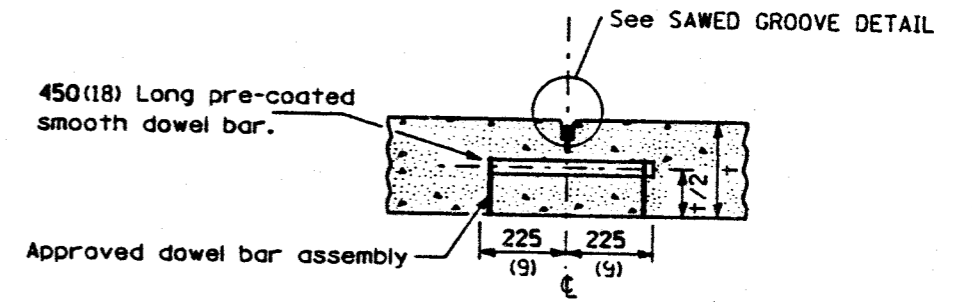


**EXPANSION JOINT**

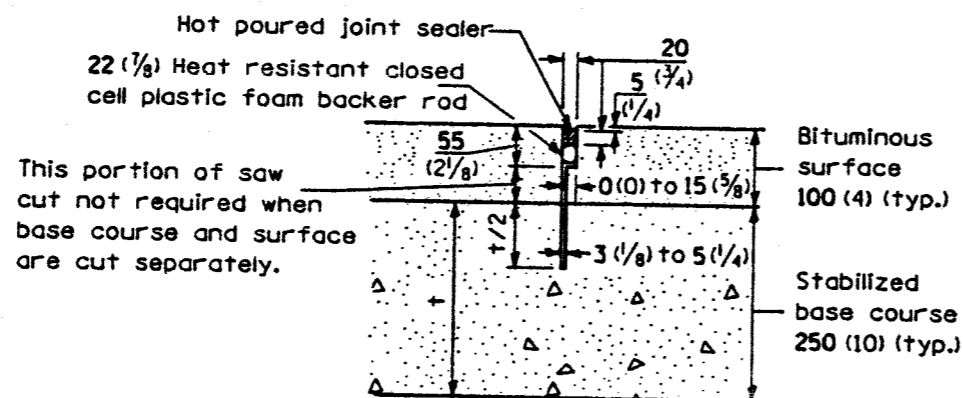
(For pavements with equal thickness)



**EXPANSION JOINT SEALING DETAIL**

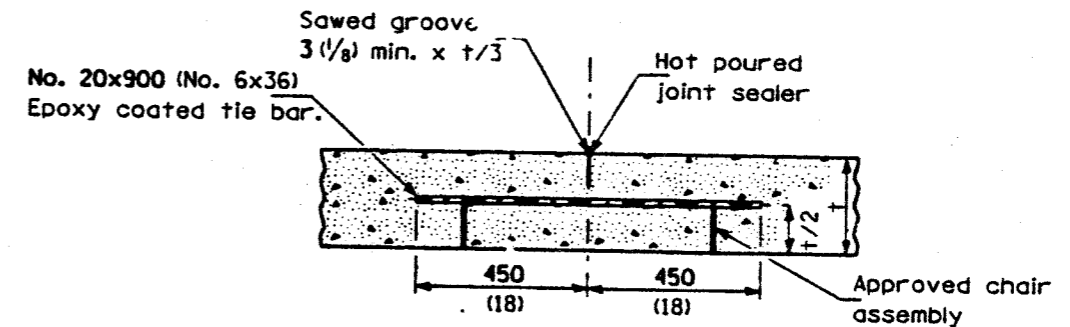


**SAWED CONTRACTION JOINT**



**TRANSVERSE CONTRACTION JOINT**

(For CAM, CFA and LFA Base Course Mixtures)



**HINGE JOINT**

Illinois Department of Transportation  
 PASSED APR 15 1994  
 ENGINEER OF POLICY AND PROCEDURES  
 APPROVED APR 15 1994  
 ENGINEER OF DESIGN AND ENVIRONMENT  
 ISSUED 10-15-69

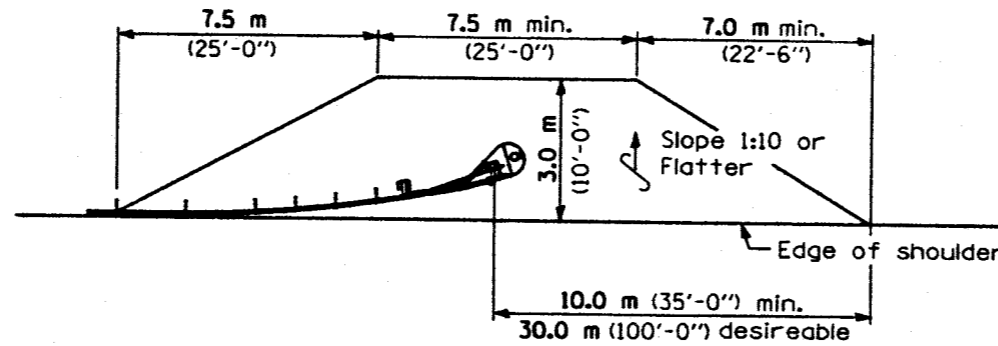
**PAVEMENT JOINTS**

(Sheet 2 of 2)

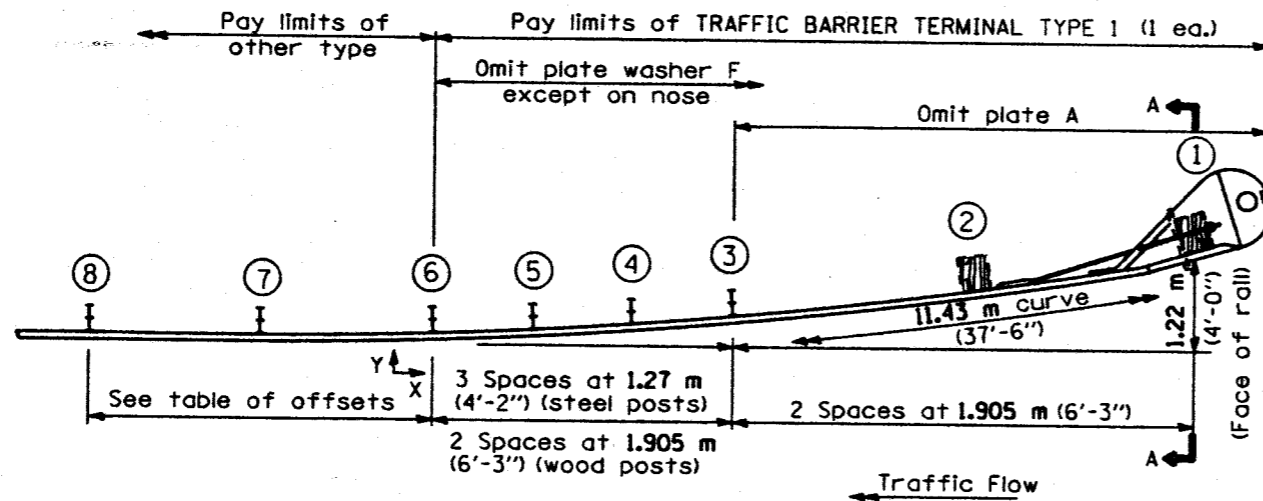
**STANDARD 2323-14**

C-23.41

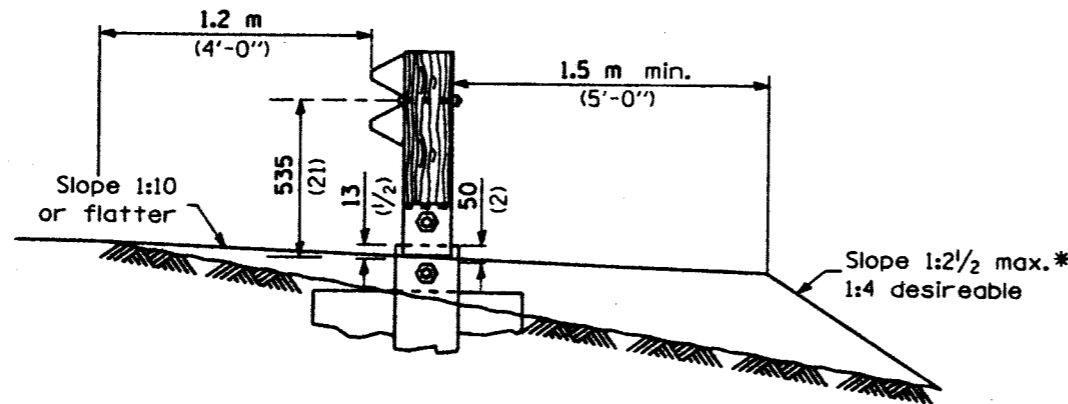
OFFSETS TO FACE OF RAIL		
Post	X <sup>m</sup> (ft)	Y <sup>m</sup> (ft)
①	11.345 (37.22)	1.22 (4.0)
②	9.475 (31.09)	0.850 (2.79)
③	7.595 (24.92)	0.545 (1.79)
④	6.335 (20.79)	0.380 (1.25)
⑤	5.070 (16.64)	0.245 (0.80)
⑥	3.805 (12.49)	0.135 (0.45)
⑦	1.905 (6.25)	0.035 (0.11)
⑧	0 (0.00)	0 (0.00)



**SHOULDER WIDENING TRANSITION**

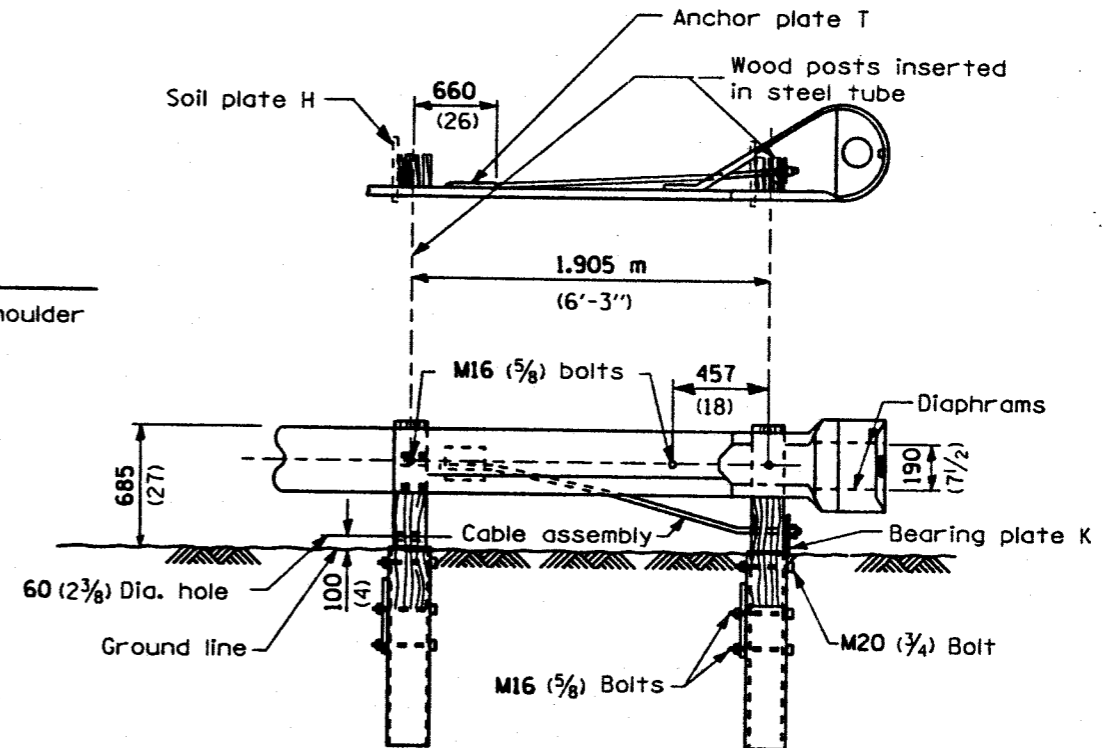


**PLAN**



**SECTION A-A**

\* If fill height exceeds 1.5 m (5'-0") use 1:3 max.



**WOOD BREAKAWAY POSTS  
TUBULAR STEEL FOUNDATIONS**

**GENERAL NOTES**

See Standard 2230 for details of guardrail not shown.

Posts at location 1 & 2 shall be wood breakaway posts. Posts other than 1 & 2 may be either standard wood posts or steel posts, at the option of the Contractor. If standard wood posts are used, one post shall be located midway between and in lieu of posts 4 & 5. The offset (Y) for this post shall be 300 mm (12 inches).

A two-piece assembly may be substituted for the one piece nose shown above.

The bearing plate K shall be held in position by (2) two eightpenny nails driven into the post and bent over the top of the plate.

All slope ratios are expressed as units of vertical displacement to units of horizontal displacement (V:H).

All dimensions are in millimeters (inches) unless otherwise shown.

DN

Illinois Department of Transportation

PASSED June 15, 1994

ENGINEER OF POLICY AND PROCEDURES

APPROVED June 15, 1994

ENGINEER OF DESIGN AND ENVIRONMENT

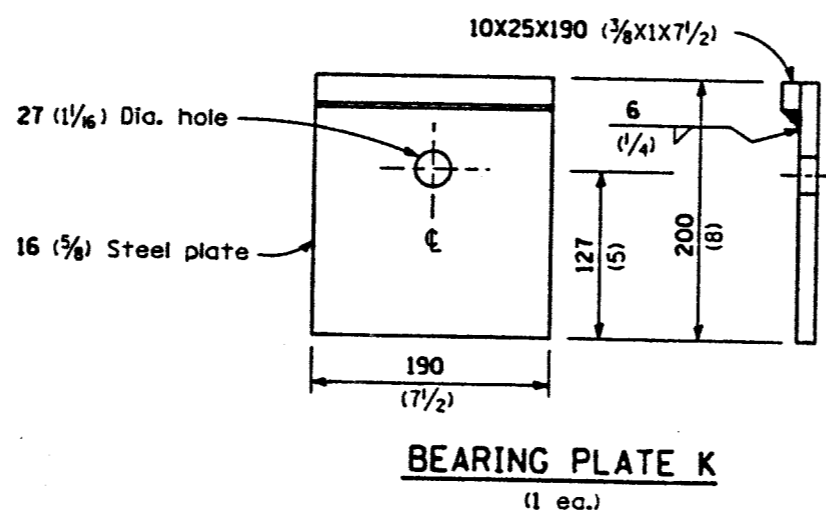
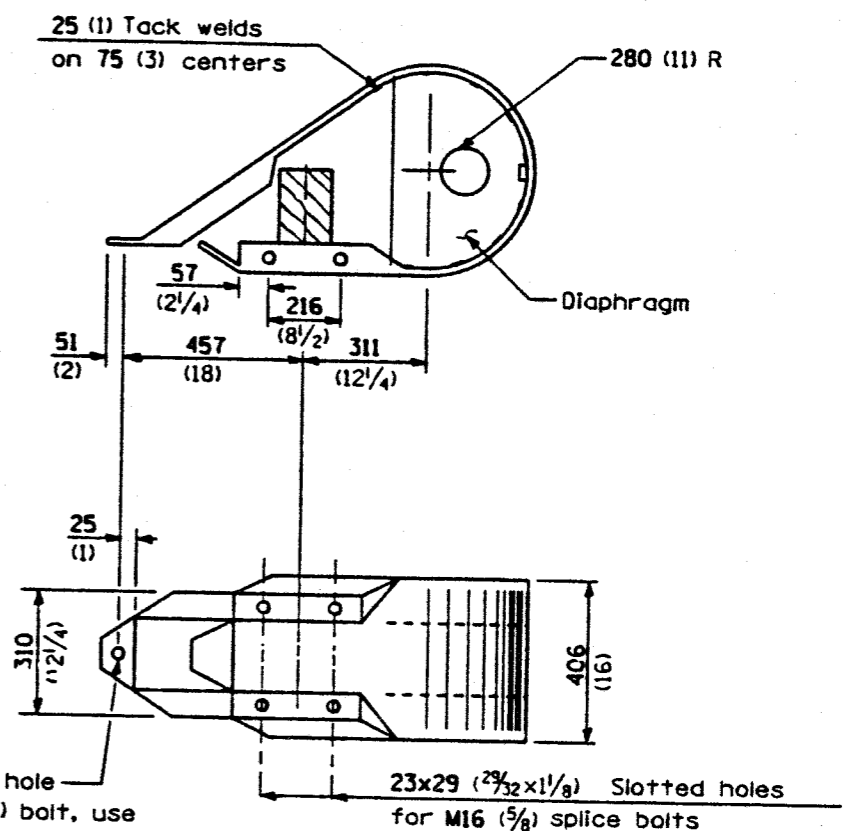
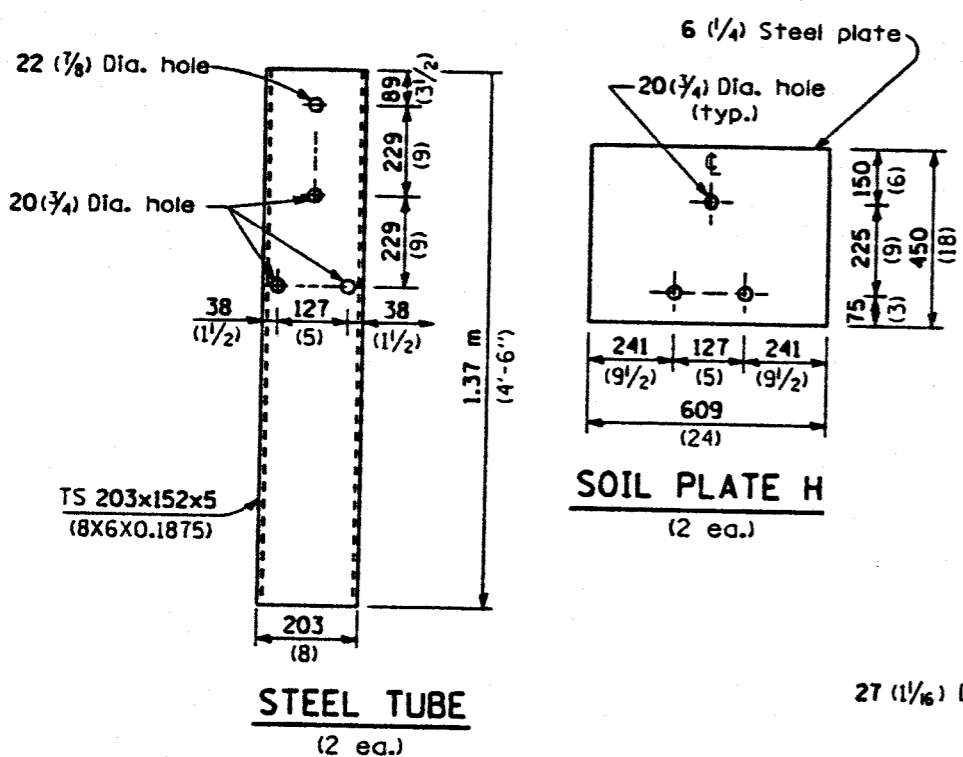
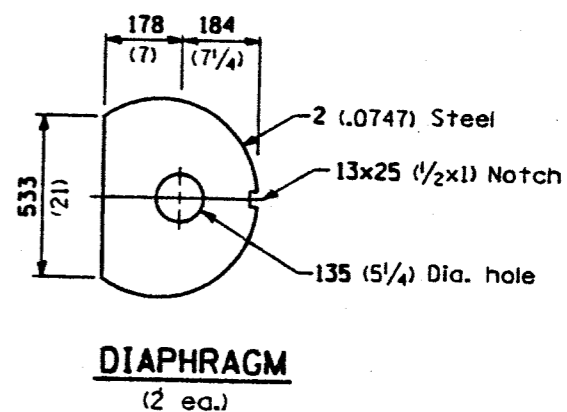
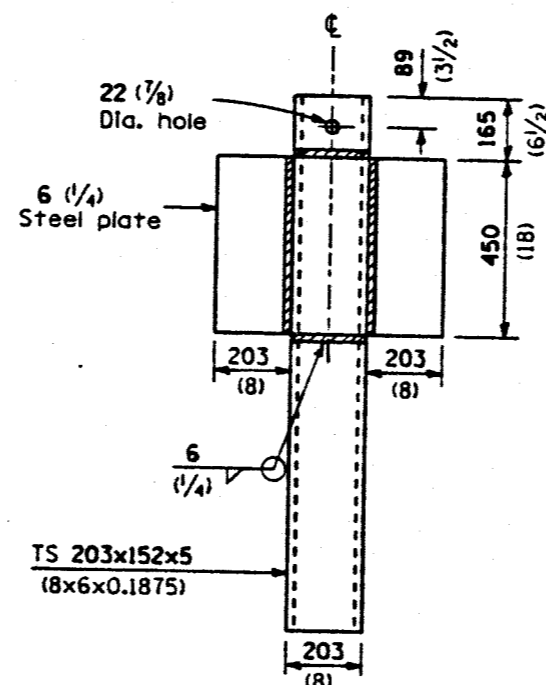
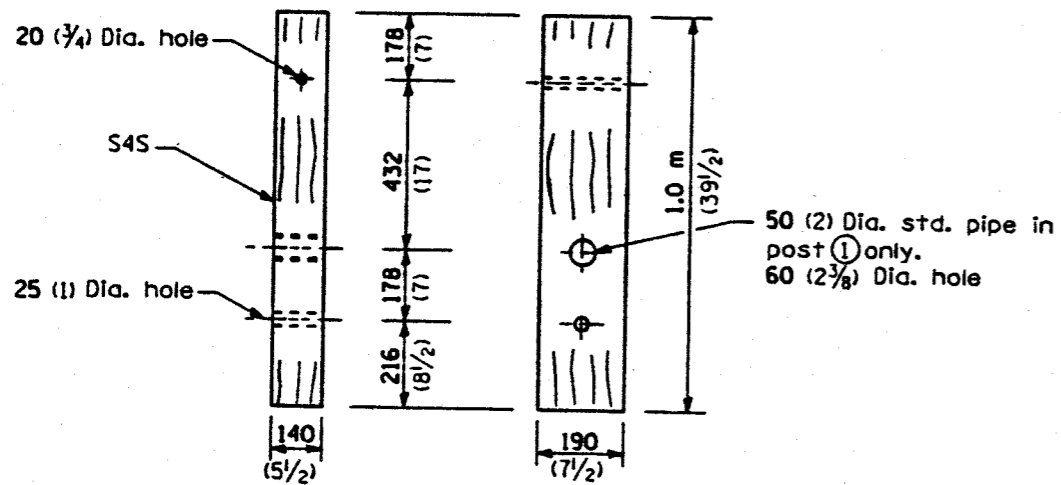
ISSUED 4-3-78

DATE	REVISIONS
6-15-94	Del. Type 1A. Inc. area behind posts. Added slope note. Moved D.N.

**TRAFFIC BARRIER  
TERMINAL TYPE 1**  
(Sheet 1 of 2)

**STANDARD 2336-5**

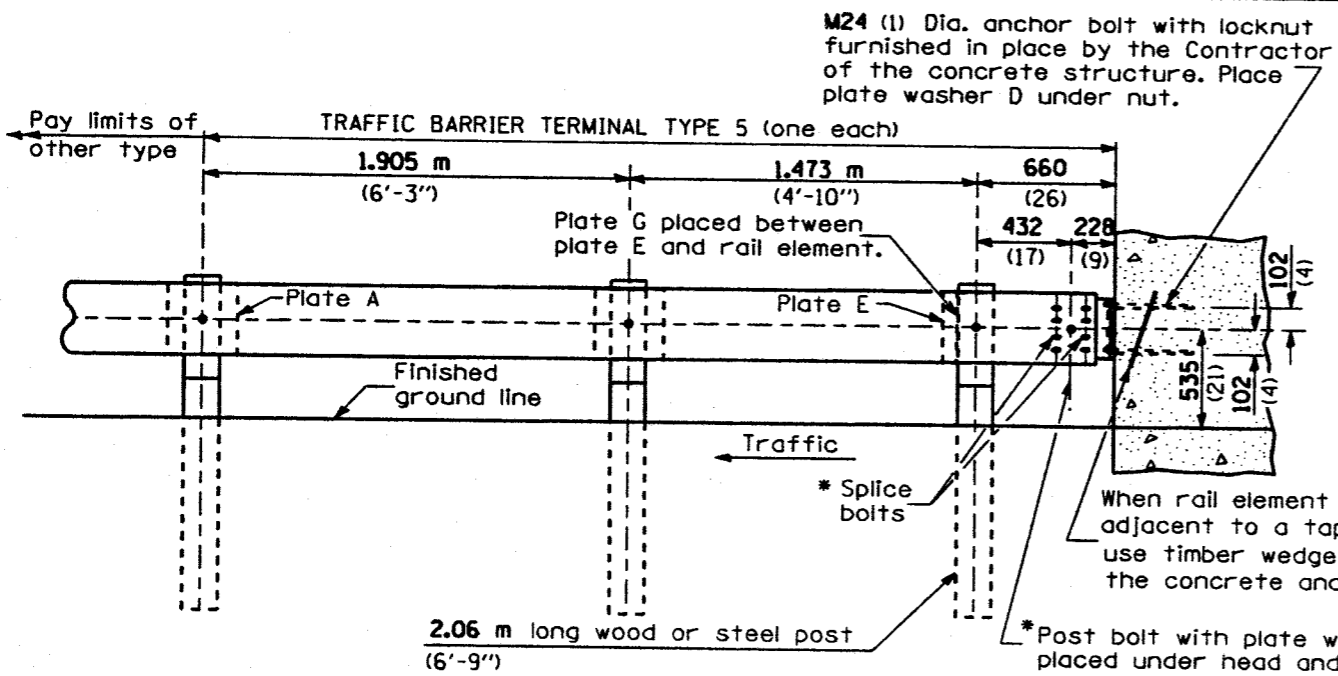
F-3.24



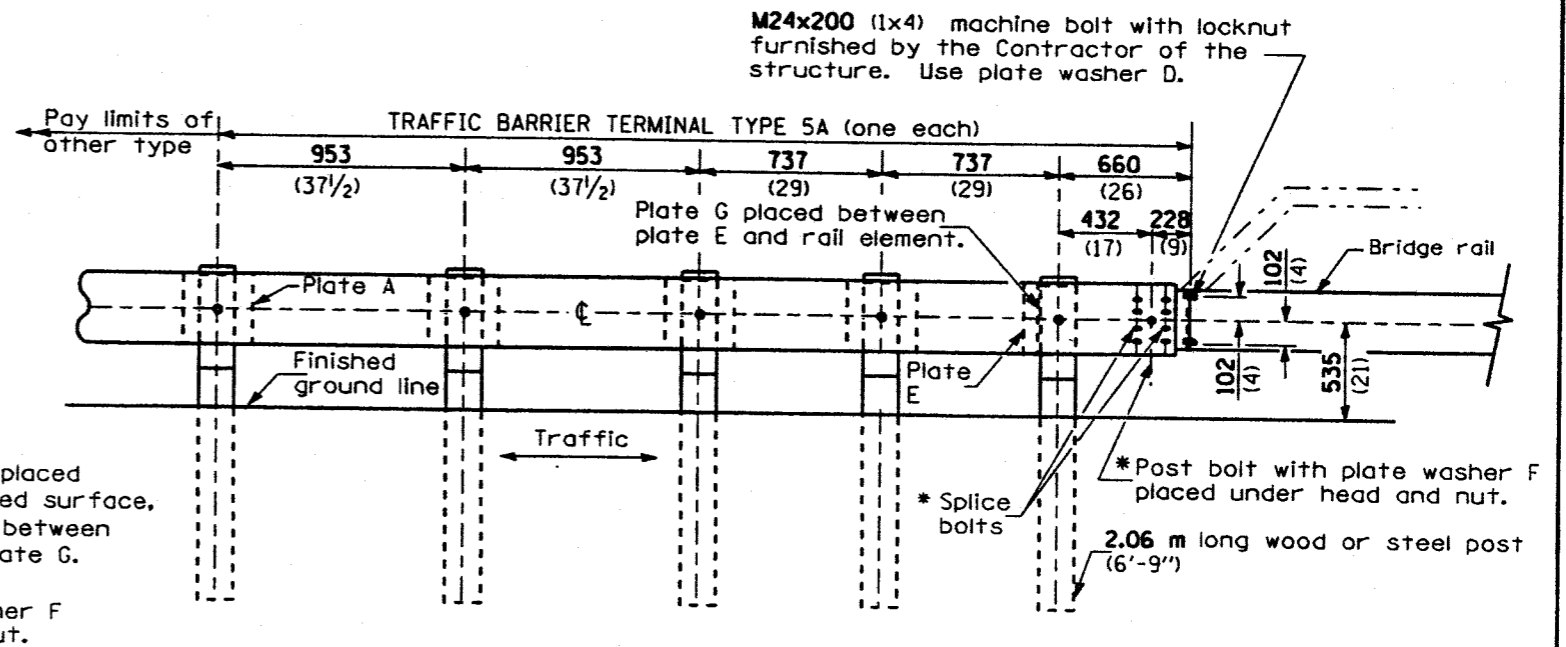
All dimensions are in millimeters (inches) unless otherwise shown.

Illinois Department of Transportation  
PASSED June 15, 1994  
ENGINEER OF POLICY AND PROCEDURES  
APPROVED June 15, 1994  
ENGINEER OF DESIGN AND ENVIRONMENT

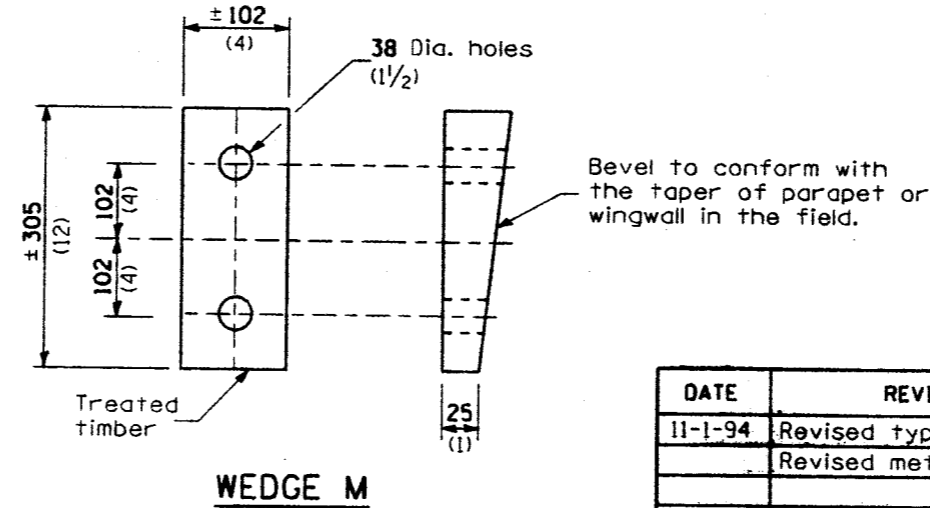
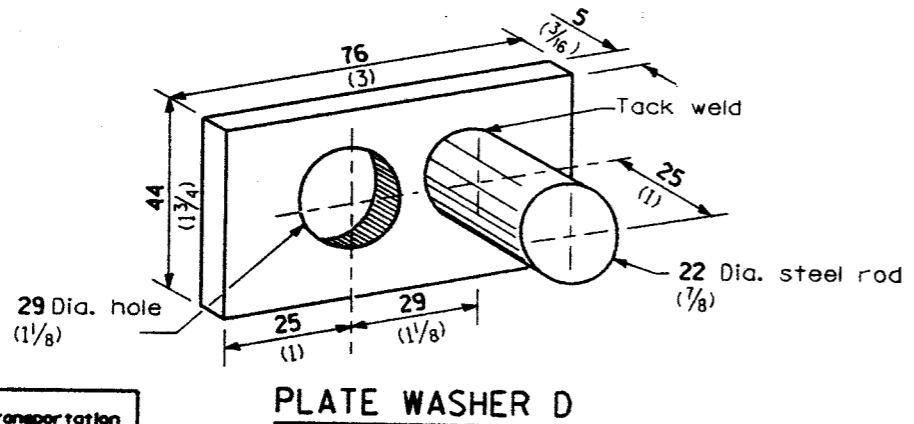
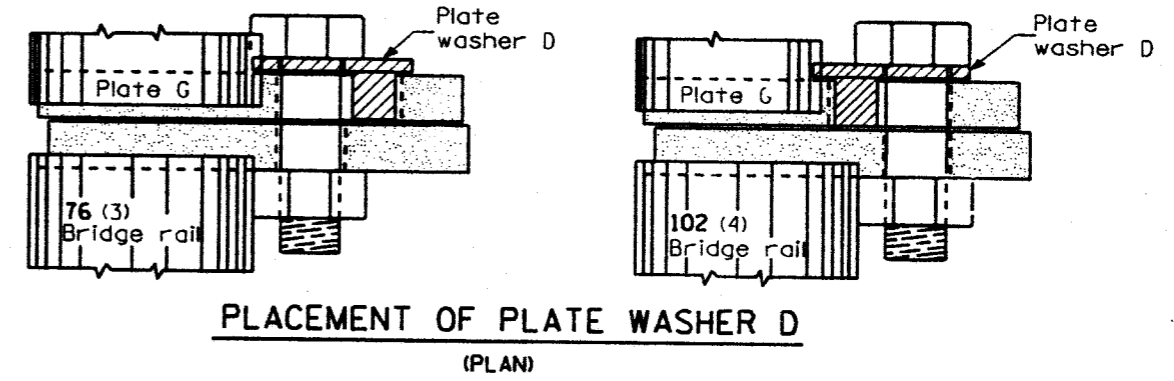
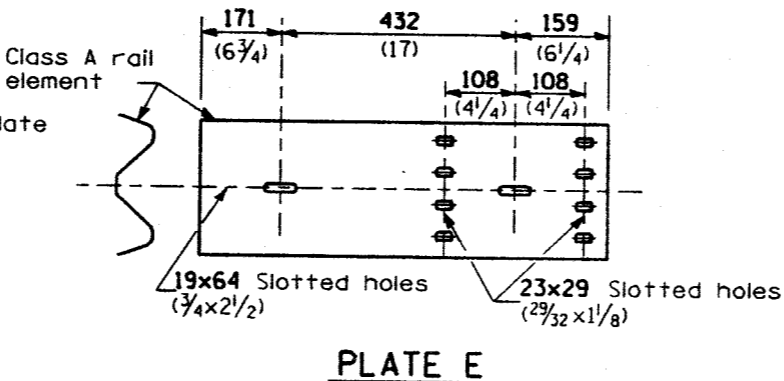
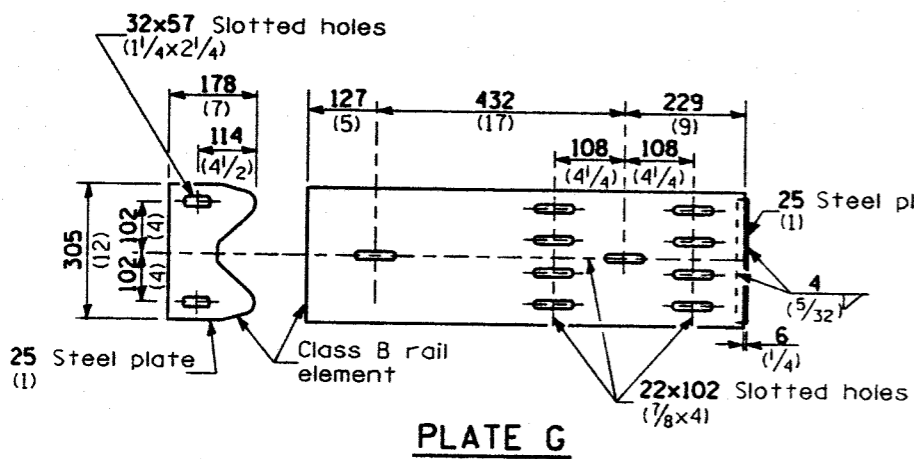
TRAFFIC BARRIER  
TERMINAL TYPE 1  
(Sheet 2 of 2)  
STANDARD 2336-5  
E-3.25



**TYPE 5 - CONCRETE BRIDGE PARAPET**



**TYPE 5A - STEEL BRIDGE RAIL**



**GENERAL NOTES**

Install plate washer D so that the 25 mm (1") projection fills the remainder of the slotted holes in the 25 mm (1") end plate on plate G after the M24 (1") dia. bolts are in place.

\* Bolts shall be provided with locknut or double nut and shall be tightened only to a point that will allow plate G to be free to move when an expansion joint exists below the connector.

See Standard 2230 for details of guardrail not shown.

All dimensions are in millimeters (inches) unless otherwise shown.

Illinois Department of Transportation

PASSED November 1, 1994

ENGINEER OF POLICY AND PROCEDURES

APPROVED November 1, 1994

ENGINEER OF DESIGN AND ENVIRONMENT

ISSUED 9-30-77

DATE	REVISIONS
11-1-94	Revised type 5A usage.
	Revised metric.
6-15-94	Moved G.N. to Specs.
	Moved DESIGN NOTES.
	Added metric

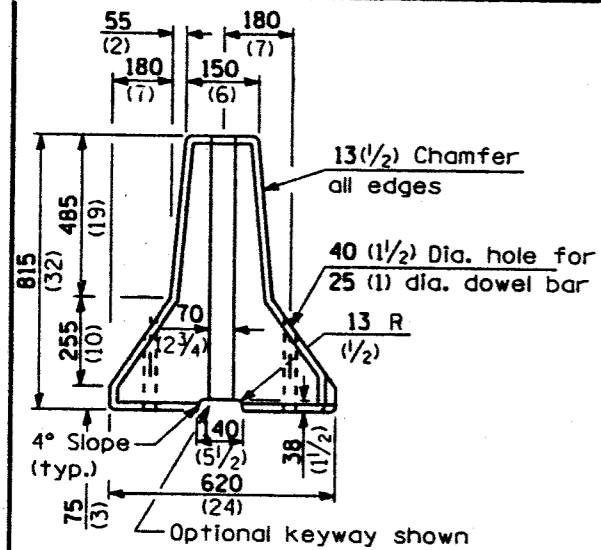
**TRAFFIC BARRIER TERMINAL TYPE 5 & 5A**

**STANDARD 2340-6**

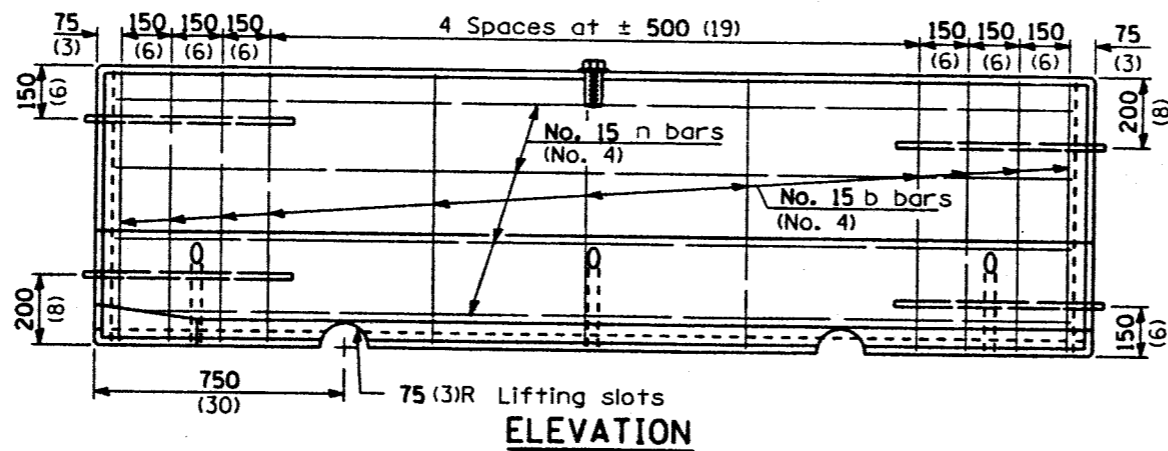
(DN)

**F-3.29**

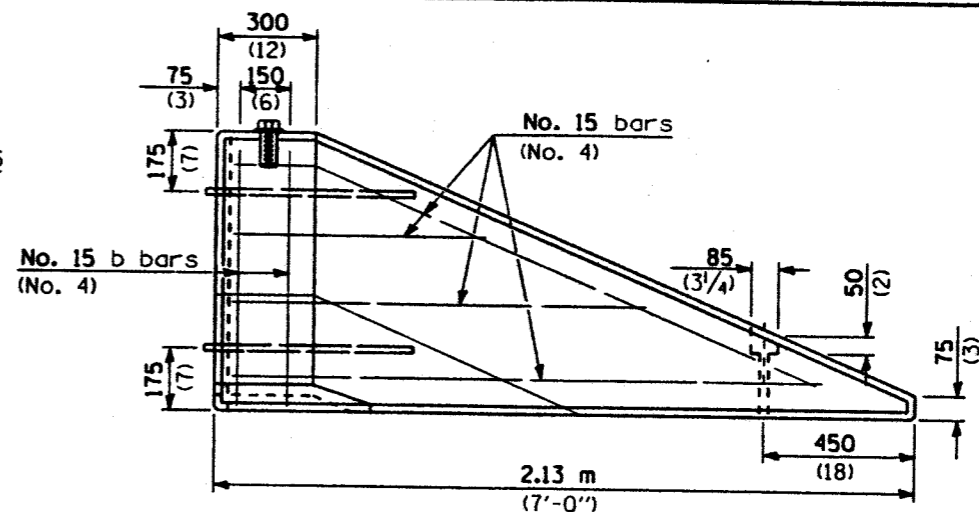




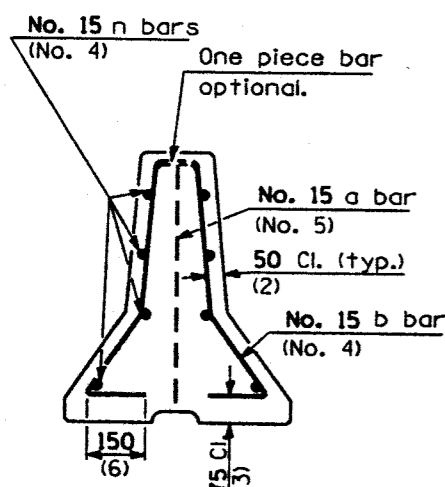
**END VIEW**



**ELEVATION**

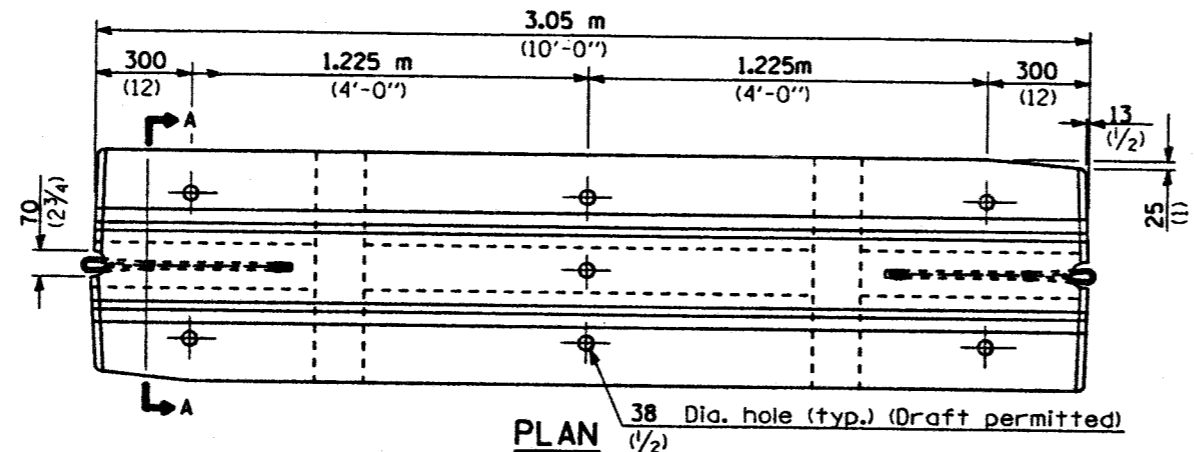


**TERMINAL SECTION**



**SECTION A-A**

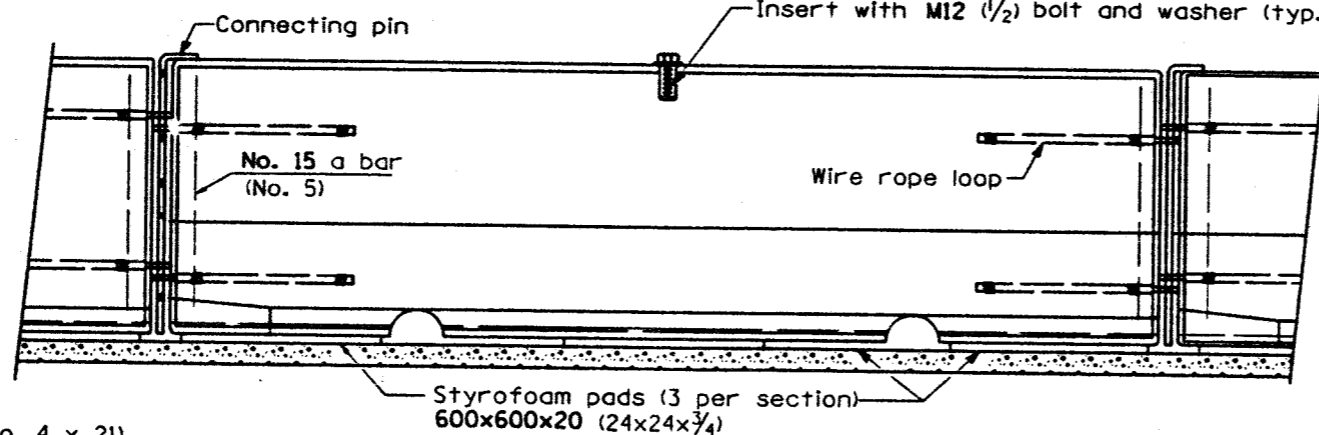
(Showing bar reinforcement)



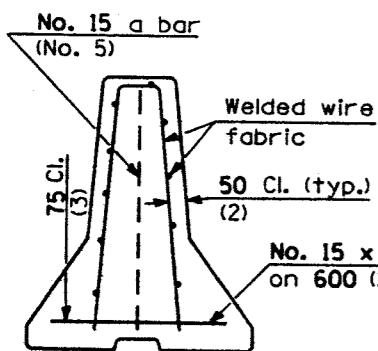
**PLAN**

38 Dia. hole (typ.) (Draft permitted)

Insert with M12 (1/2) bolt and washer (typ.)

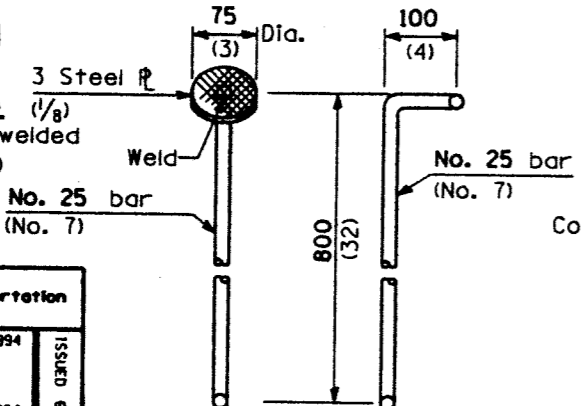


**TYPICAL INSTALLATION WITH STYROFOAM PADS**

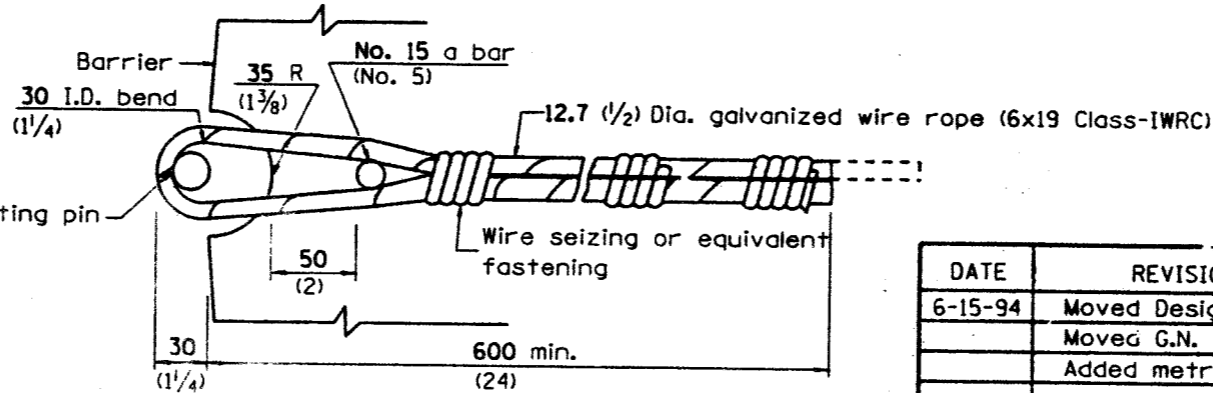


**SECTION A-A**

(Showing alternate welded wire reinforcement)

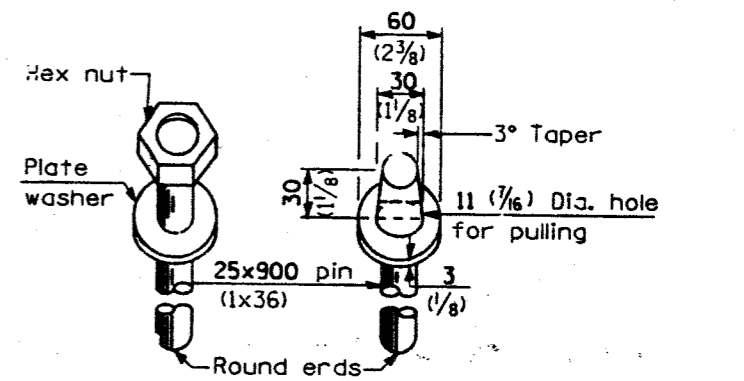


**ALTERNATE CONNECTING PINS**



**WIRE ROPE LOOP DETAIL**

9000 kg (20,000 lbs.) min. breaking strength



**ALTERNATE DRIFT PINS**

All dimensions are in millimeters (inches) unless otherwise shown.

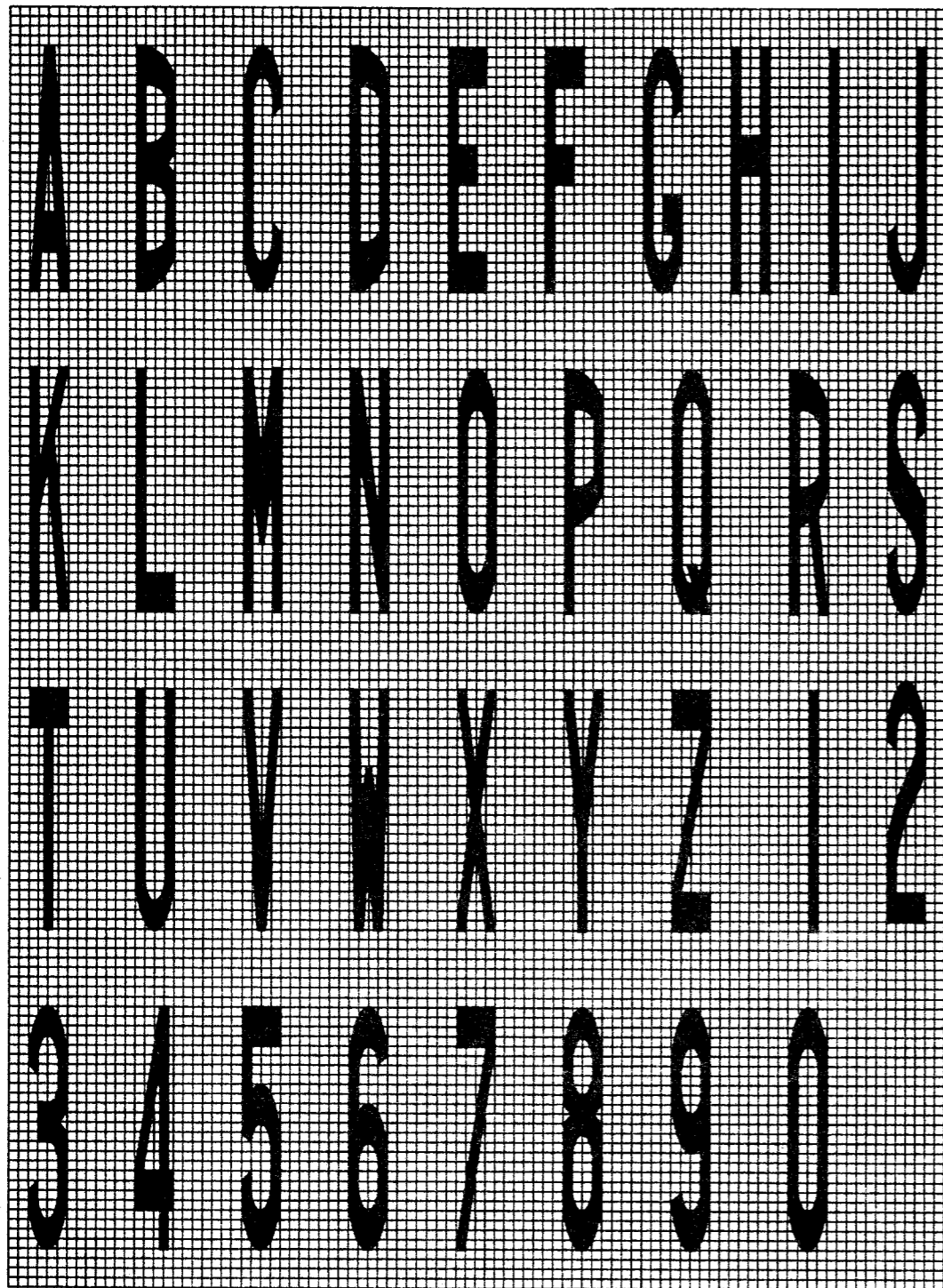
Illinois Department of Transportation  
 PASSED June 15, 1994  
 ENGINEER OF POLICY AND PROCEDURES  
 APPROVED June 15, 1994  
 ENGINEER OF DESIGN AND ENVIRONMENT

DATE	REVISIONS
6-15-94	Moved Design Note
	Moved G.N. to Specs.
	Added metric

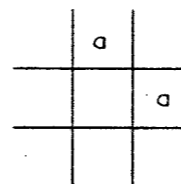
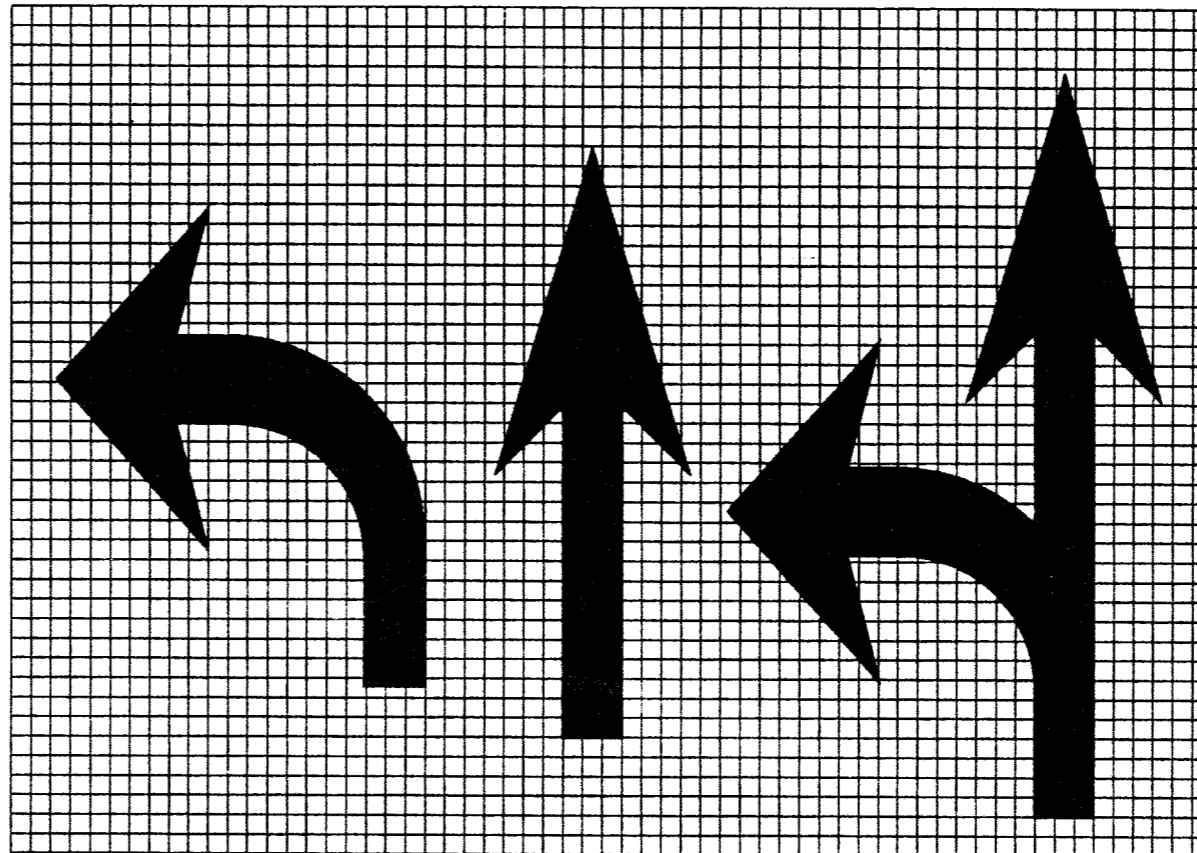
**TEMPORARY CONCRETE BARRIER**

**STANDARD 2383-4**

DN  
E-7.05

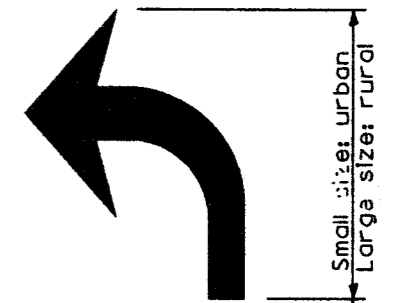


LETTER AND ARROW GRID SCALE

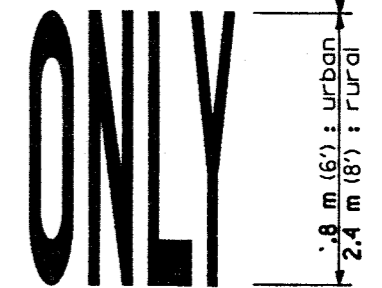


Legend Height	Arrow Size	a
1.8 m (6')	Small	74 (2.9)
2.4 m (8')	Large	96 (3.8)

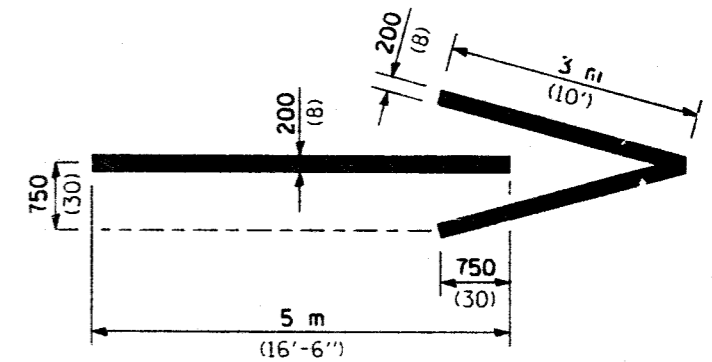
The space between adjacent letters or numerals should be approximately 75 (3) for 1.8 m (6') legend and 100 (4) for 2.4 m (8') legend.



6 m (20') : urban  
15 m (50') : rural  
(Between arrow and word or between words)



WORD AND ARROW LAYOUT



FREEWAY ARROW

All dimensions are in millimeters (inches) unless otherwise shown.

Illinois Department of Transportation

APPROVED February 1, 1995  
*R. W. Jones*  
ENGINEER OF OPERATIONS

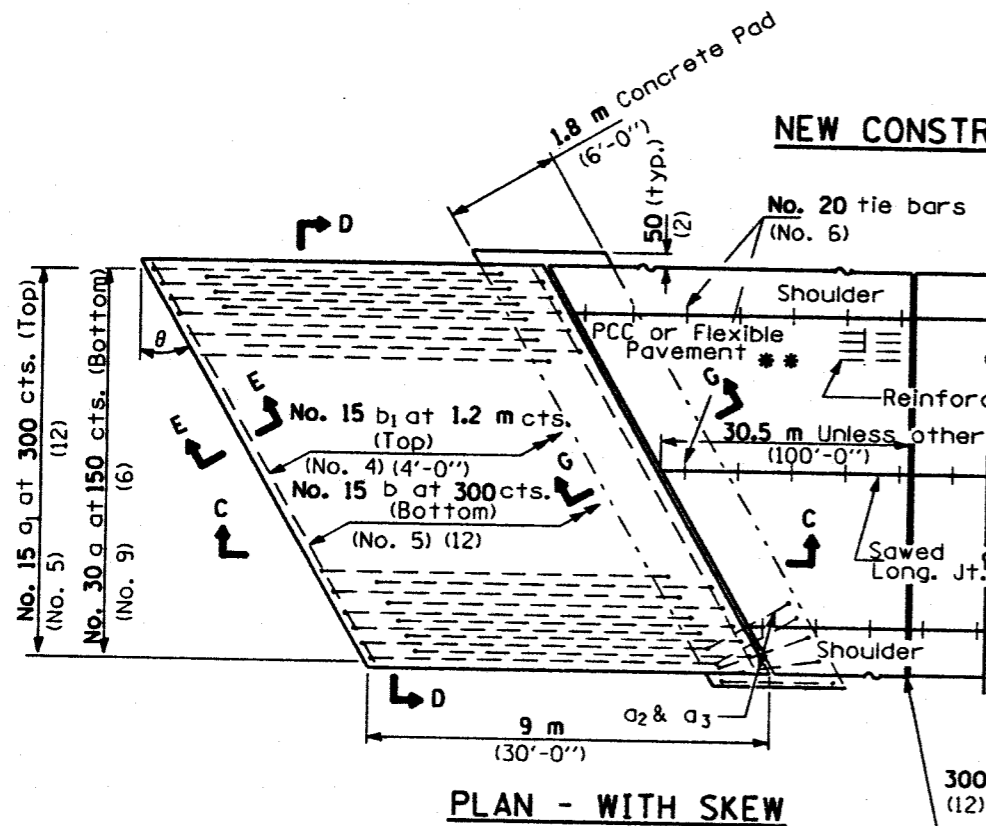
APPROVED February 1, 1995  
*James Stuedel*  
ENGINEER OF DESIGN AND ENVIRONMENT

ISSUED 4-3-85

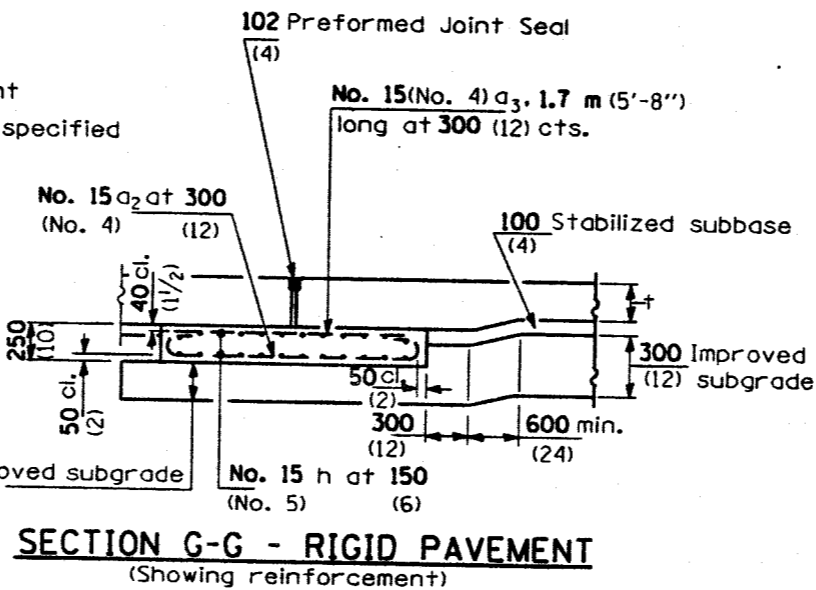
TYPICAL PAVEMENT MARKINGS  
(Sheet 2 of 2)

**STANDARD 2396-1**

F-6.04



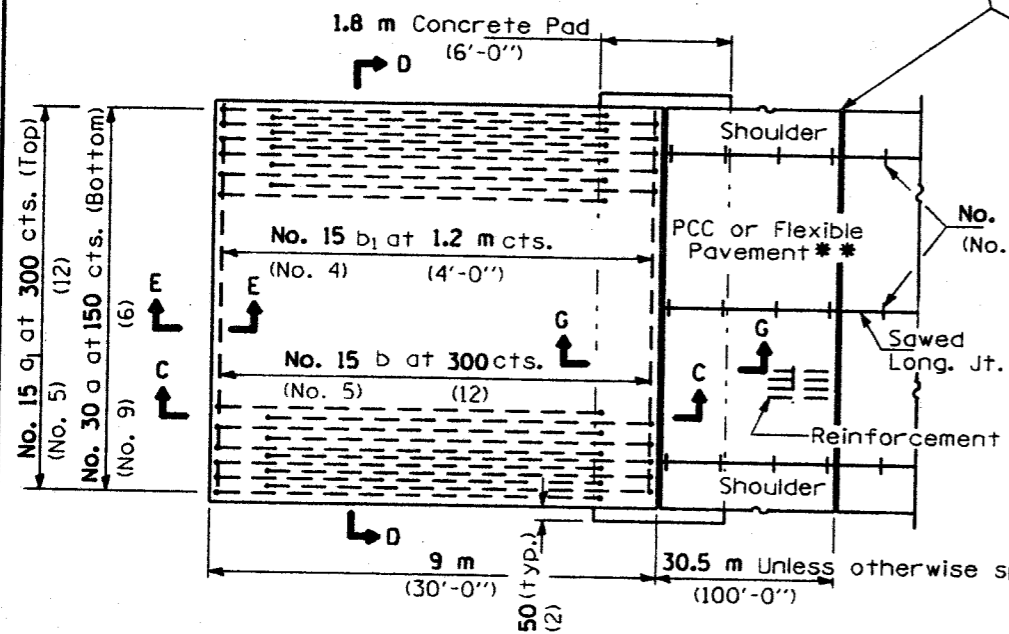
PLAN - WITH SKEW



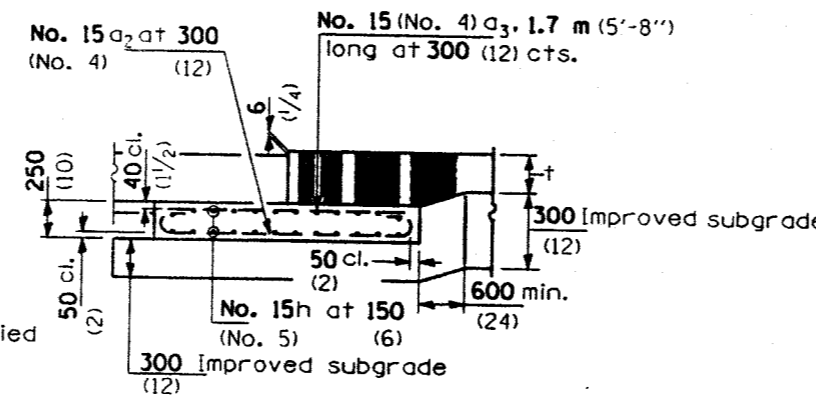
SECTION G-G - RIGID PAVEMENT  
(Showing reinforcement)

PCC Pavement only:

Wide Flange Beam Terminal Joint (See DETAIL AT BEAM-Standard 2224 or 2233) or 76 (3) Exp. Joint as detailed on Standard 2323.



PLAN - WITHOUT SKEW

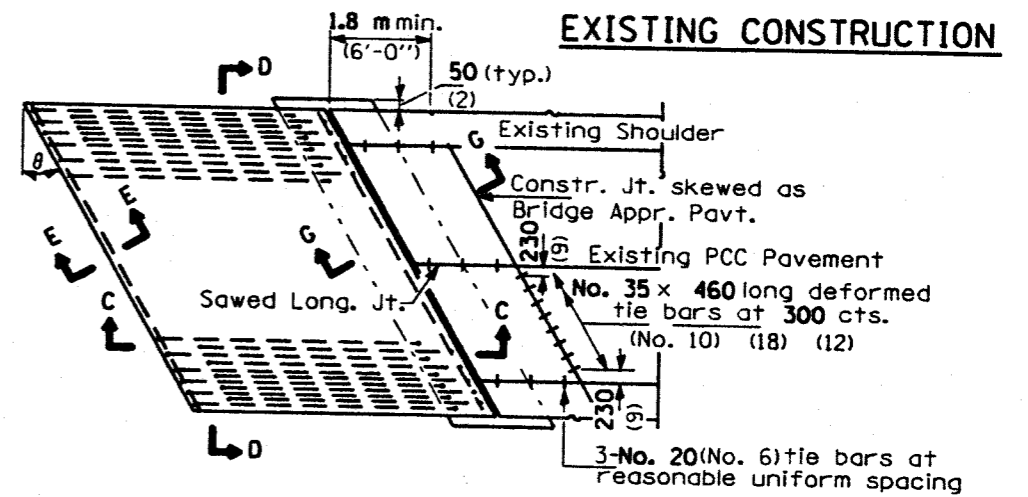


SECTION G-G - FLEXIBLE PAVEMENT  
(Showing reinforcement)

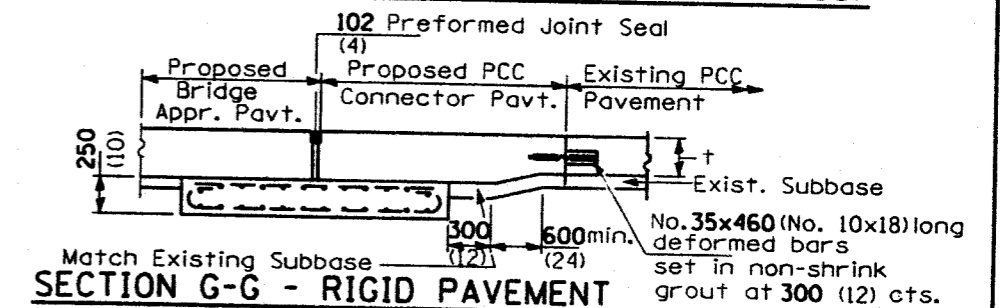
\*\*Omit Reinforcement, tie bars and sawed Long. Jt. for Flexible Pavement.

GENERAL NOTES

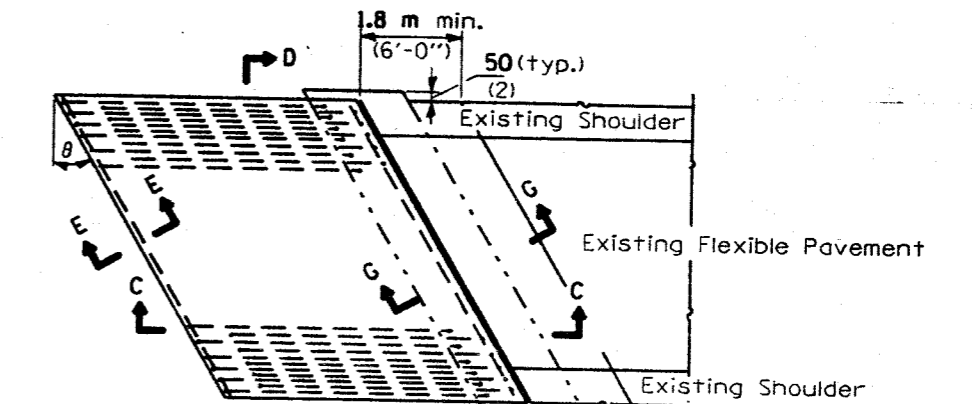
THICKNESS-"t"=Thickness of Pavement.  
See Standard 2225 for reinforcement details not shown.  
See Standard 2323 for details of joints not shown.



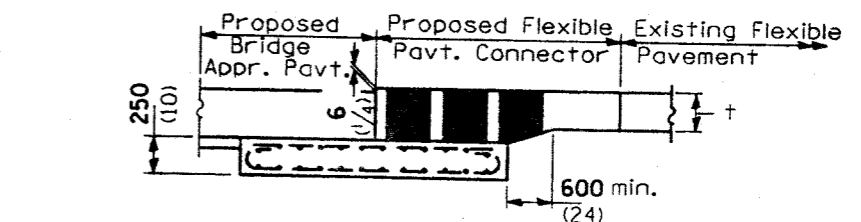
BRIDGE APPROACH PAVEMENT CONNECTOR (PCC)



SECTION G-G - RIGID PAVEMENT



BRIDGE APPROACH PAVEMENT CONNECTOR (FLEXIBLE)



SECTION G-G - FLEXIBLE PAVEMENT

All dimensions are in millimeters (inches) unless otherwise shown.

Illinois Department of Transportation	
APPROVED February 1, 1995	ISSUED 1-2-92
<i>Ralph E. Anderson</i> ENGINEER OF BRIDGES AND STRUCTURES	
APPROVED February 1, 1995	
<i>Steve Stuel</i> ENGINEER OF DESIGN AND ENVIRONMENT	

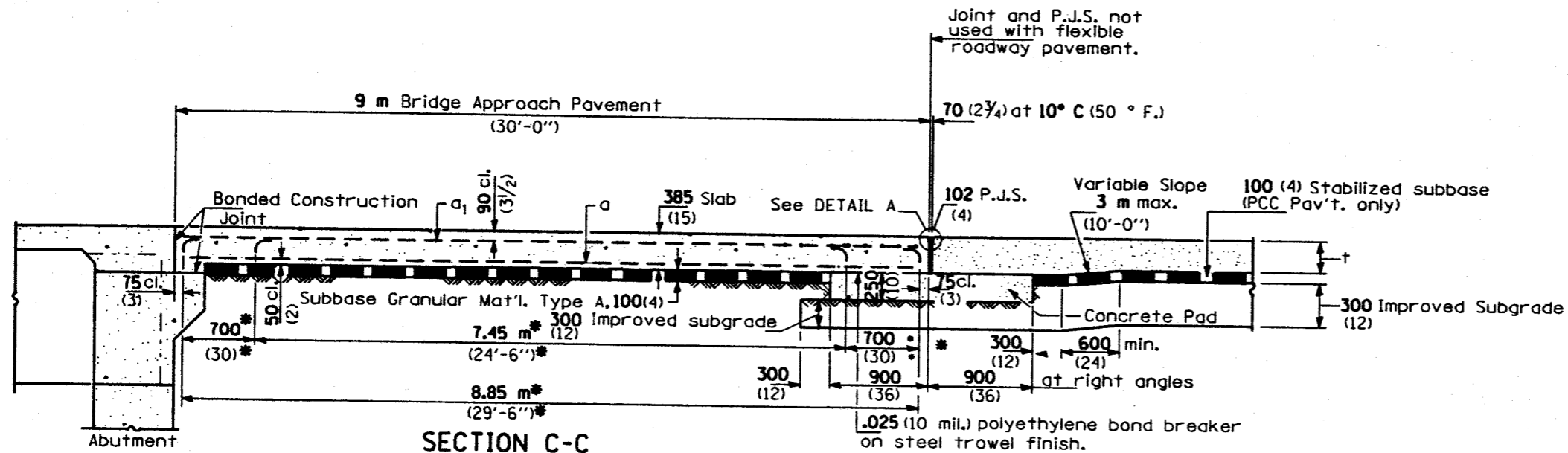
DATE	REVISIONS
2-1-95	Rev. top bar reinforcement.
6-15-94	Removed keyway. Revised tie bar size. Added Metric.

BRIDGE APPROACH PAVEMENT

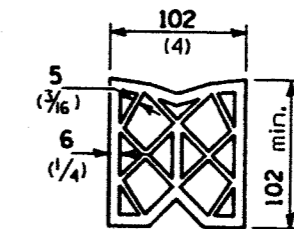
(Sheet 1 of 2)

STANDARD 2442-3

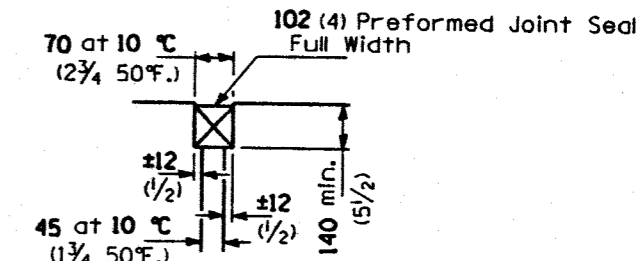
H-1.05



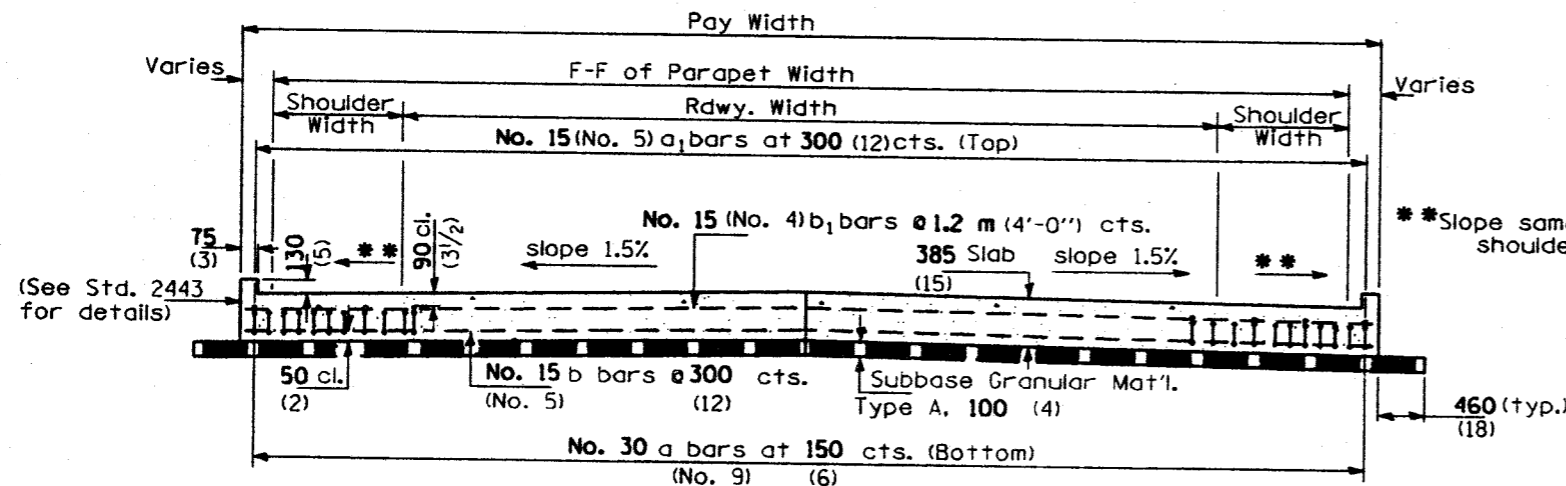
**SECTION C-C**  
\* Stagger No. 30 a bars as shown on plan - full width (No. 9)



**PREFORMED JOINT SEAL**

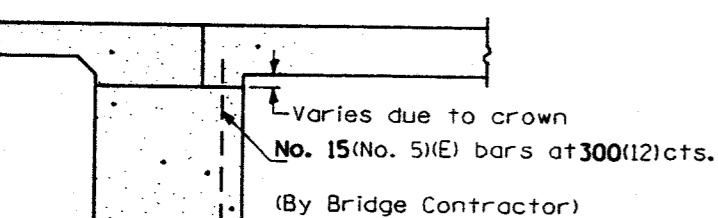


**DETAIL A**

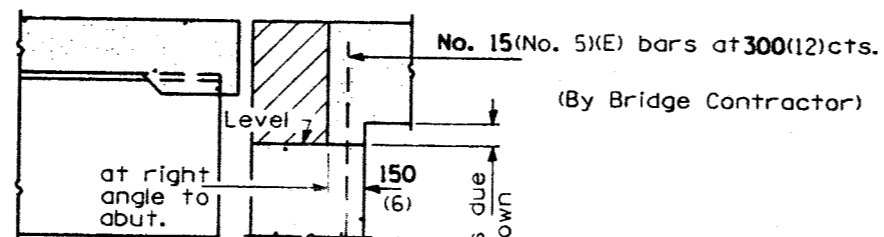


**SECTION D-D**

(See Plan for Dimensions not shown)  
All reinforcement bars shall be epoxy coated.

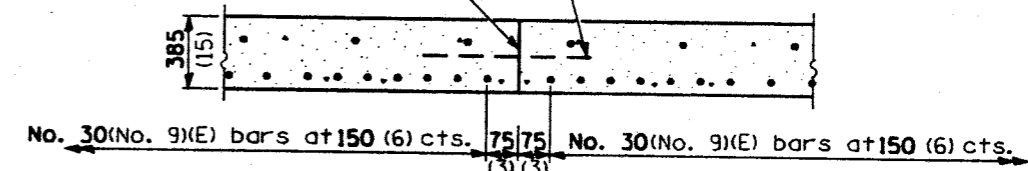


**SECTION E-E**  
(Integral Abutments)



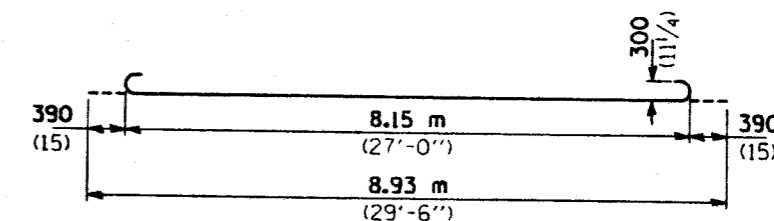
**SECTION E-E**  
(Jointed Abutments)

Longitudinal Construction Joint in accordance with details shown on Standard 2323.

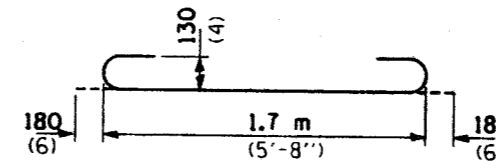


**OPTIONAL LONGITUDINAL CONSTRUCTION JOINT**

As approved by the Engineer, the Contractor may elect to reduce the widths of pour by use of the Optional Longitudinal Construction Joint shown. Joints shall be located at the edge of a traffic lane.



**No. 30 a BARS**  
(No. 9)



**BAR a2**

**DESIGN STRESSES**

$f_y = 400 \text{ MPa (60,000 p.s.i.)}$   
 $f'_c = 24 \text{ MPa (3,500 p.s.i.)}$   
 $n = 8.5$

**BRIDGE APPROACH PAVEMENT**

(Sheet 2 of 2)

**STANDARD 2442-3**

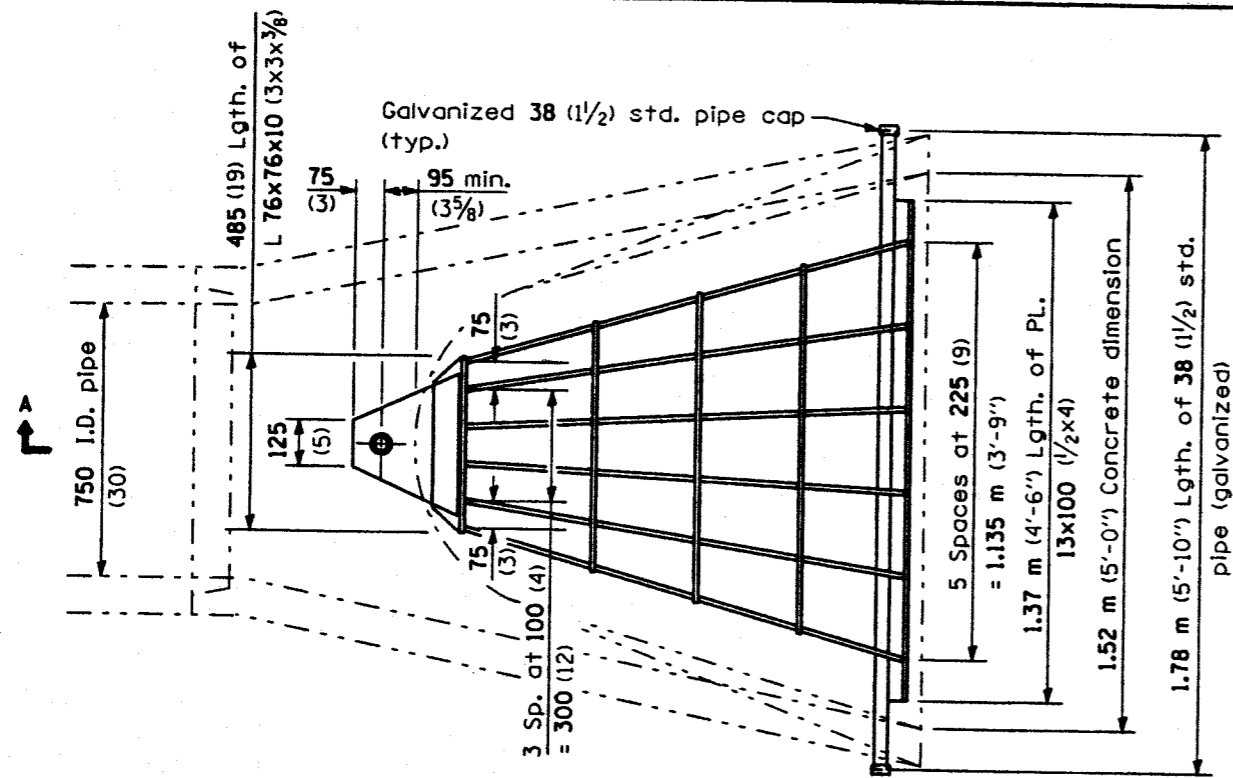
H-1.06

Illinois Department of Transportation

APPROVED February 1, 1995  
*Robert E. Anderson*  
 ENGINEER OF BRIDGES AND STRUCTURES

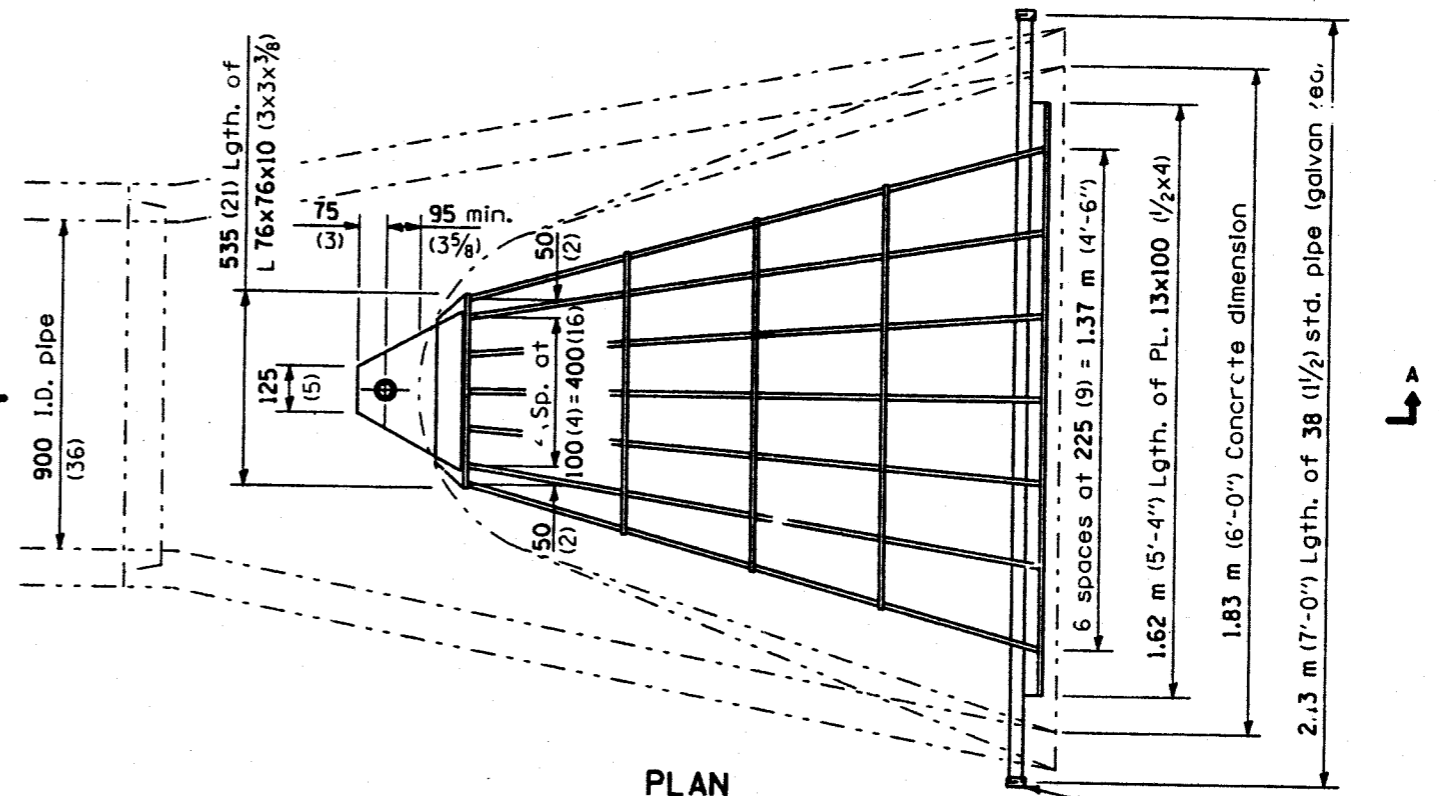
APPROVED February 1, 1995  
*John Stodd*  
 ENGINEER OF DESIGN AND ENVIRONMENT

ISSUED 1-2-92



**PLAN**

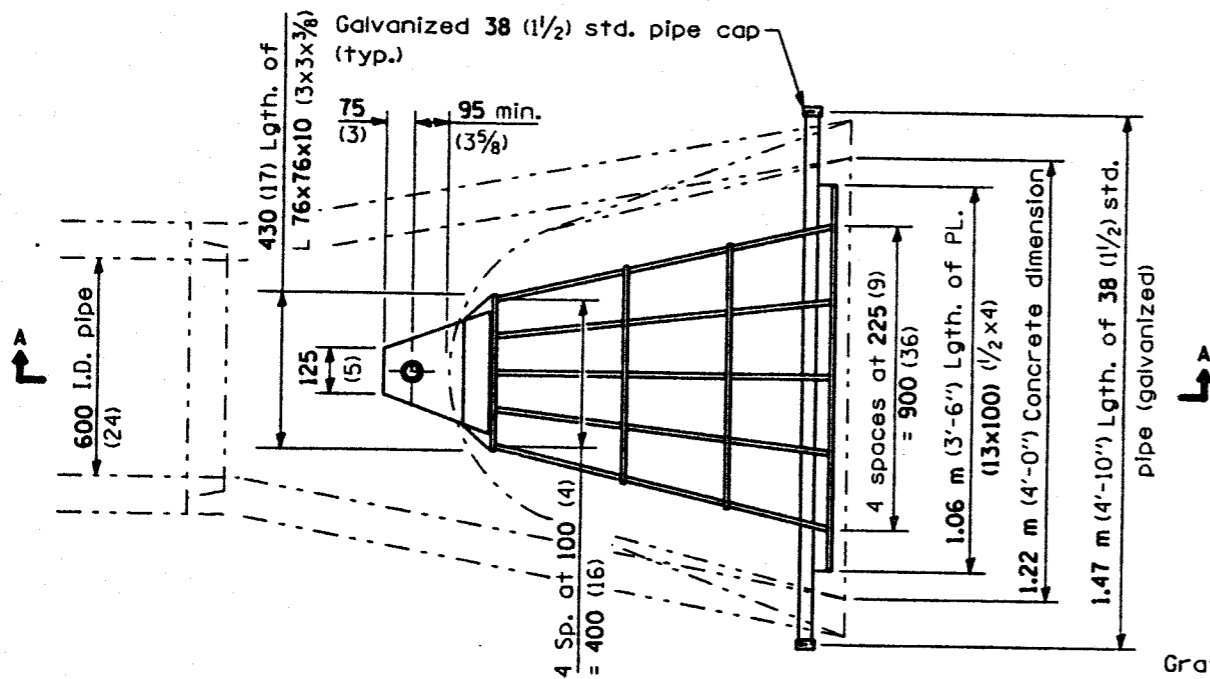
Quantity of steel = 95 kg (210 lbs.)



**PLAN**

Quantity of steel = 127 kg (280 lbs.)

Galvanized 38 (1 1/2) std. pipe cap (typ.)



**PLAN**

Quantity of steel = 68 kg (150 lbs.)

28 (1/8) Dia. hole thru 10 (3/8) plate  
30 (1/4) Dia. hole thru concrete

10 (3/8) Plate shall conform to surface shape of concrete flared end section.

76x76x10 (1/4x4x4) Plate washer  
27 (1/16) dia. hole

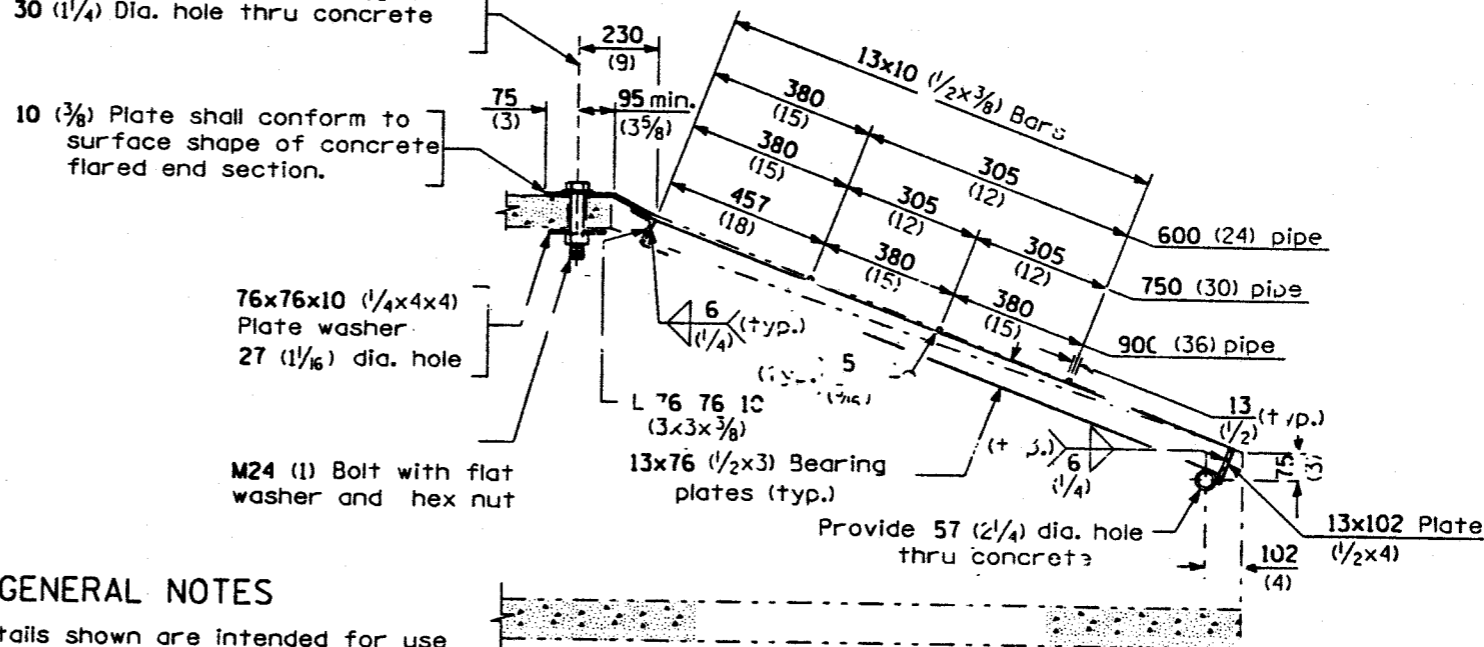
M24 (1) Bolt with flat washer and hex nut

**GENERAL NOTES**

Grating details shown are intended for use with particular sizes of precast reinforced concrete flared end sections as shown on standard 2262 and 2440.

Approximate quantity of steel shown includes total quantity of grating, bolts, nuts, washers, and steel pipe.

Holes in the precast concrete flared end sections shall be cored to the diameters noted. If cone-out on the other end of the hole occurs, the hole shall be filled with grout to correct the diameter of the hole.



**SECTION A-A**

All dimensions are in millimeters (inches) unless otherwise shown.

DATE	REVISION
6-15-94	Moved G.N. to Specs Added Metric.

**GRATING for CONCRETE  
FLARED END SECTION  
(FOR 600 mm (24"), 750 mm  
(30") and 900 mm (36") PIPE)**

**STANDARD 2364-3**

**B-10.80**

Illinois Department of Transportation

PASSED June 15, 1994

ENGINEER OF POLICY AND PROCEDURES

APPROVED June 15, 1994

ENGINEER OF DESIGN AND ENVIRONMENT

ISSUED 4-18-77