PROJECT ENGINEER: BRIAN TRYGG (217) 465-4181

DESIGNER: LIN ENGINEERING, LTD (217) 483-4168

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701096-1	TYPICAL APPLICATION OF TRAFFIC CONTROL DEVICES
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701301	TYPICAL APPLICATION OF TRAFFIC CONTROL DEVICES
703101	TYPICAL APPLICATION OF TRAFFIC CONTROL DEVICES
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420401-01	BRIDGE APPROACH PAVEMENT
701411	TYPICAL APPLICATION OF TRAFFIC CONTROL DEVICES
701106	TYPICAL APPLICATION OF TRAFFIC CONTROL DEVICES
603061	CONCRETE PARAPET SLIP-FORMING OPTION
631011	TRAFFIC BARRIER TERMINAL, TYPE 2

I HEREBY CERTIFY THAT THESE PLANS WERE PREPARED BY ME OR UNDER MY DIRECT PERSONAL SUPERVISION AND THAT I AM A DULY REGISTERED PROFESSIONAL ENGINEER UNDER THE LAWS OF THE STATE OF ILLINOIS.

Ted M. Montrey DATE 2/13/96

TED M. MONTREY
LICENSE EXPIRES 11-30-97 P.E. NO. 49591

TED M. MONTREY 49591 REGISTERED PROFESSIONAL ENGINEER OF ILLINOIS

CONTRACT NO. 90409

COUNTY: CHAMPAIGN SECTION: (10-34HB)BR ROUTE: U.S. 150

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

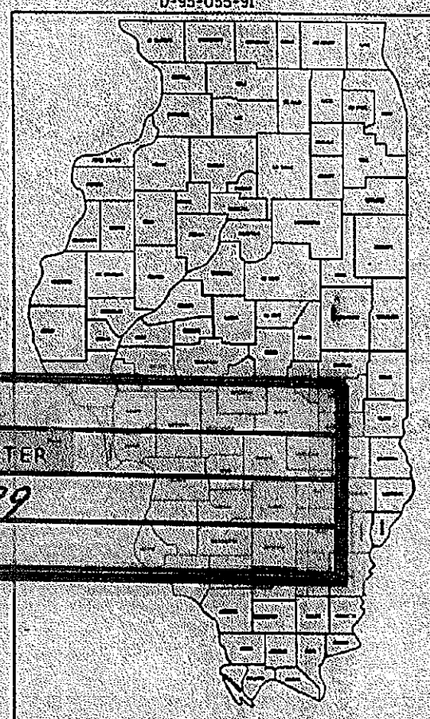
F.A.I. 57	(10-34HB)BR	CHAMPAIGN	47

D-95-055-91

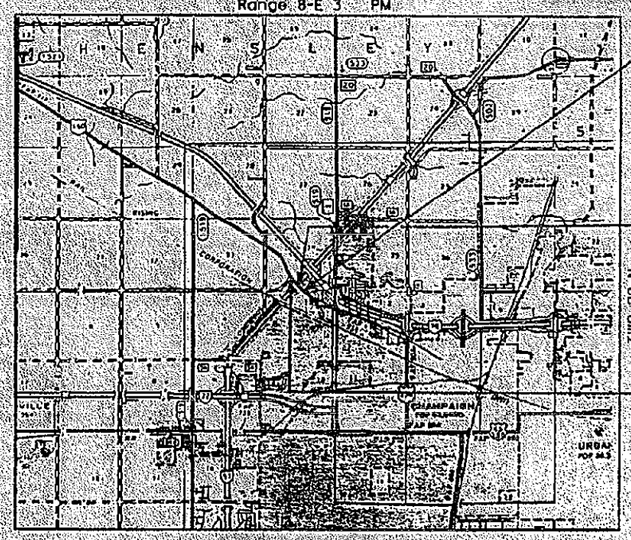
SCALES: PLAN 1:500; PROFILE HORIZ. 1:500; PROFILE VERT. 1:50; CROSS SECTIONS HORIZ. 1:200; CROSS SECTIONS VERT. 1:100

F.A.I. ROUTE 57 (I-57)
SECTION (10-34HB)BR
CHAMPAIGN COUNTY
PROJECT NO. IM-57-5(178)237
C-95-153-91
DECK REPLACEMENT

CONTRACTOR	Freesen, Inc. P.O. Box 13420 Springfield, IL 62791
RESIDENT ENGINEER	S. T. MCMASTER
START DATE	9-21-99
COMPLETION DATE	6-22-01



LOCATION OF SECTION INDICATED THUS: -



PROJECT IM-57-5(178)237 ENDS STA. 5+045.000

SECTION (10-34HB)BR INCLUDES THE CONSTRUCTION OF A FOUR (4) SPAN SLAB DECK ON EXISTING 36WF135 STEEL BEAMS AND PROPOSED W920 x 201 BEAMS (WIDENED STRUCTURE) 78.79 M BK. TO BK. OF ABUTMENTS, 0° SKEW, AND ALL COLLATERAL WORK IN CONJUNCTION WITH THEM, AT STA. 4+794.32 ON ℄ U.S. RTE. 150.

PROJECT IM-57-5(178)237 BEGINS STA. 4+602.48

LOCATION MAP

0 1 2 3 4 5 6 7 8
SCALE IN KILOMETERS

NET LENGTH OF SECTION & PROJECT IM-57-5( )237 = 442.52 METERS = 0.443 Km

STATE OF ILLINOIS
DEPARTMENT OF TRANSPORTATION
DIVISION OF HIGHWAYS

SUBMITTED 9/10 1999
K E Bl
DISTRICT ENGINEER

EXAMINED _____ 19____
ENGINEER OF PLANS AND CONTRACTS

PASSED May 7 1999
ENGINEER OF DESIGN

APPROVED May 7 1999
DIRECTOR, DIVISION OF HIGHWAYS

JOINT UTILITY LOCATING INFORMATION FOR EXCAVATIONS J.U.L.I.E. PHONE: 800-892-0123

(HENSLY TOWNSHIPS)

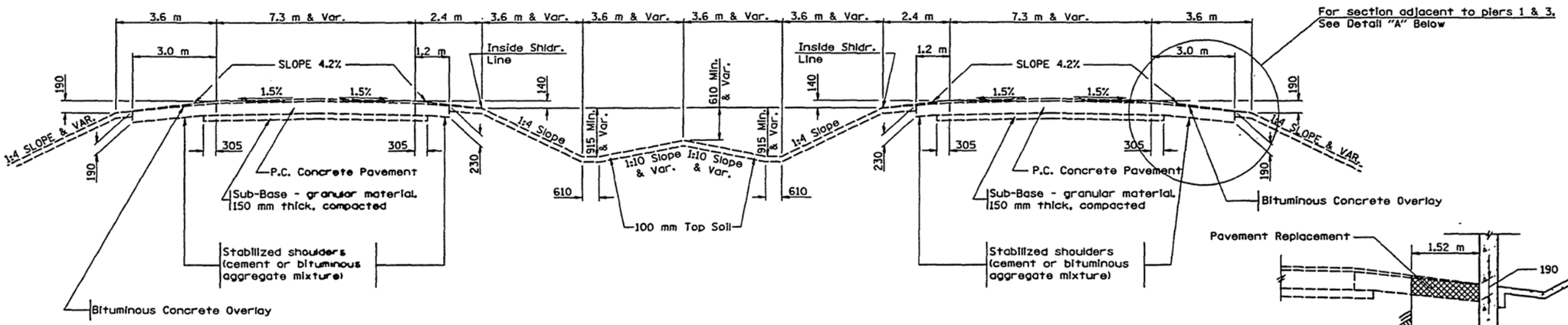
REVISIONS	
NAME	DATE
B. BLAND	2-27-97

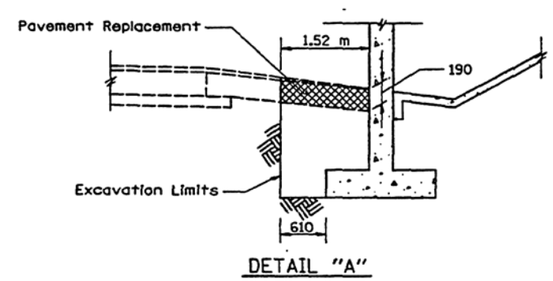
LIN ENGINEERING, LTD
DESIGNED: R.P. CHECKED: T.M.M.
DRAWN: R.P. DATE: 2/96

AS BUILT PLANS

F.A.I. 57	(10-34HB)BR	CHAMPAIGN	47	2

EXISTING TYPICAL CROSS SECTION F.A.I. RTE. 57

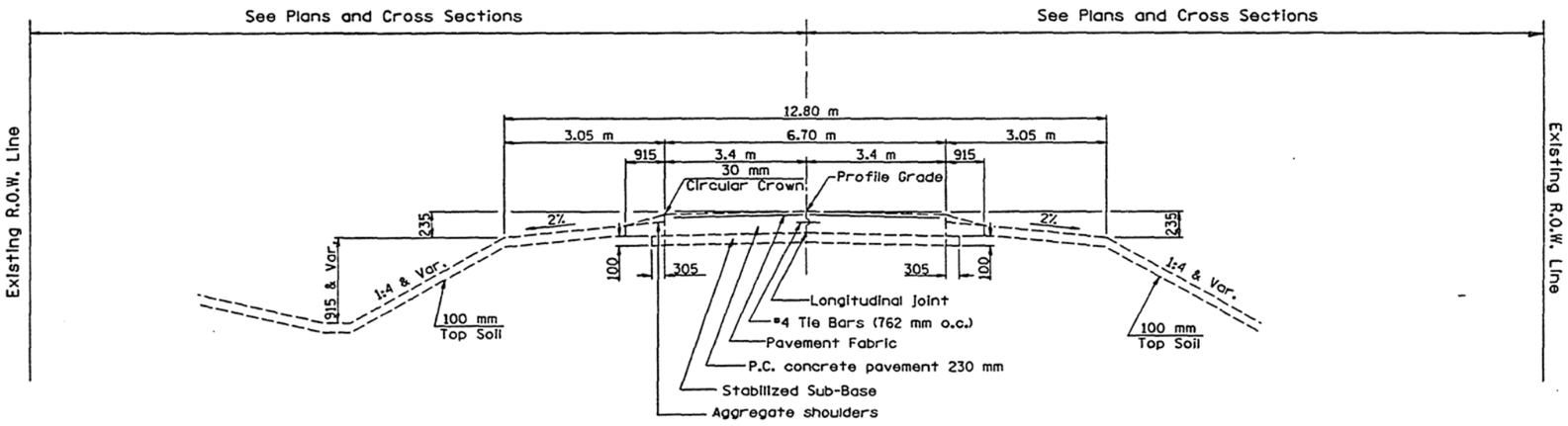




DETAIL "A"

NOTE:
All dimensions are in Millimeters (mm) except as noted.

EXISTING TYPICAL ROADWAY CROSS SECTION U.S. RTE. 150



1997 ADT =6,000
2017 ADT =10,000

NOTE:
All dimensions are in Millimeters (mm) except as noted.

STATE OF ILLINOIS
DEPARTMENT OF TRANSPORTATION
DISTRICT FIVE

REVIEWED BY: Daniel Markwell
ENGINEER OF PROGRAM DEVELOPMENT
DATE: 3/19/99
EXAMINED BY: Jerry W. Cearlock
ENGINEER OF PROJECT IMPLEMENTATION
Phillip A Beasley
ENGINEER OF OPERATIONS

TYPICAL SECTIONS

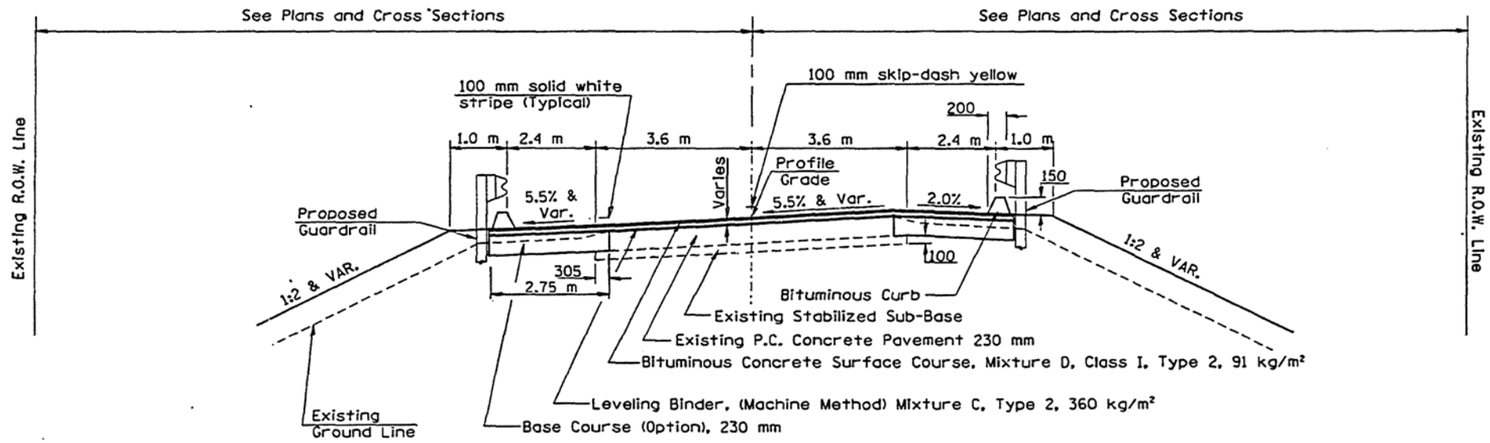
LIN ENGINEERING, LTD.

DESIGNED: R.P. CHECKED: T.M.M.
DRAWN: R.P. DATE: 2/96

F.A.I. 57	(10-34HB)BR	CHAMPAIGN	47	3

PROPOSED SUPERELEVATED TYPICAL ROADWAY CROSS SECTION U.S. RTE. 150

STA. 4+602.48 TO STA. 4+746.14

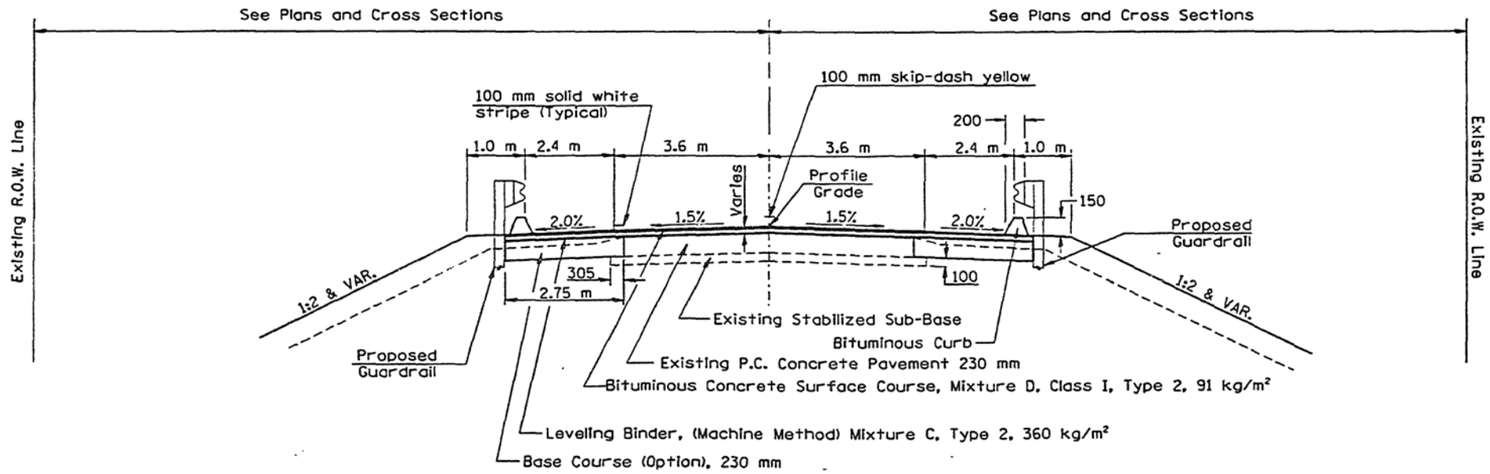


USED BITUMINOUS BASE COURSE

NOTE:
All dimensions are in Millimeters (mm) except as noted.

PROPOSED TYPICAL ROADWAY CROSS SECTION U.S. RTE. 150

STA. 4+842.93 TO STA. 5+045.000



NOTE:
All dimensions are in Millimeters (mm) except as noted.

TYPICAL SECTIONS

LIN ENGINEERING, LTD.

DESIGNED: R.P. CHECKED: T.M.M.
DRAWN: R.P. DATE: 2/96

F.A.I. RTE.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
57	(10-34HB)BR	CHAMPAIGN	47	4

GENERAL NOTES

1. G.N.-105.04
THE METRIC DIMENSIONS AND SPECIFICATIONS GIVEN HEREIN ARE INTENDED TO MEET METRIC DESIGN CRITERIA. HOWEVER, THE EXISTING FACILITIES WERE CONSTRUCTED USING ENGLISH DIMENSIONS. WHERE THE METRIC DIMENSIONS DIFFER FROM THE PHYSICAL DIMENSIONS OF EXISTING FEATURES TO REMAIN IN PLACE, THE EXISTING DIMENSIONS SHALL CONTROL. (FOR EXAMPLE, PAVEMENT WIDTH FOR RESURFACING.) THE EXISTING DIMENSIONS HAVE BEEN ACCOUNTED FOR IN THE PLAN QUANTITIES.

2. G.N.-105.07A
THE FOLLOWING IS A LIST OF UTILITY COMPANIES THAT HAVE UTILITIES LOCATED ALONG THIS SECTION.
THE UTILITY OWNERS MARKED WITH AN '*' BELONG TO J.U.L.I.E.

- ILLINOIS POWER COMPANY
- NORTHERN ILLINOIS WATER COMPANY
- AMERITECH
- MARATHON PIPELINE COMPANY
- URBANA - CHAMPAIGN SANITARY DISTRICT

3. G.N.-107.09
THE VERTICAL CLEARANCE SHALL NOT BE REDUCED WHEN PROTECTING TRAFFIC FROM FALLING OBJECTS AND/OR MATERIALS.

4. G.N.-205
BENCHING PROCEDURES SHALL BE USED IN AREAS WHERE EXISTING EMBANKMENTS ARE WIDENED FOR THE PROPOSED PAVEMENT. STEPS SHALL BE CUT INTO THE EXISTING EMBANKMENT SLOPES IN ACCORDANCE WITH THE DETAIL SHOWN ON SHEET NO. 13.

5. G.N.-250
SHOULDERS, DITCHES, FORE-SLOPES, BACK-SLOPES AND OTHER PORTIONS OF THE RIGHT-OF-WAY HAVING INSUFFICIENT VEGETATION SHALL BE SEEDED AS LISTED ELSEWHERE IN THE PLANS. MEASUREMENT FOR PAYMENT SHALL NOT BE GREATER THAN THAT SHOWN IN THE PLANS.

6. G.N.-250A
THE FOLLOWING APPLICATION RATES HAVE BEEN USED TO CALCULATE THE VARIOUS ITEMS NECESSARY FOR SEEDING AND SODDING:
FERTILIZER NUTRIENTS CLASS 2 & 3 SEEDING
NITROGEN 67 kg/ha (60 LBS. PER ACRE)

PHOSPHOROUS 225 kg/ha (200 LBS. PER ACRE)

POTASSIUM 67 kg/ha (60 LBS. PER ACRE)

7. G.N.-281
THE RIPRAP GRADATION SHALL BE IN ACCORDANCE WITH THE GRADATION SPECIFIED IN THE PLANS OR, WITH APPROVAL OF THE ENGINEER, A RIPRAP GRADATION MEETING A D50 GREATER THAN OR EQUAL TO 150 mm. D50 IS DEFINED AS THE MEAN ROCK SIZE AS DESCRIBED IN THE FHWA HYDRAULIC ENGINEERING CIRCULARS (HEC 11, HEC 14 AND HEC 15).

IF GRAVEL IS USED FOR THE BEDDING MATERIAL UNDER RIPRAP, THE GRAVEL SHALL BE CRUSHED AS ALLOWED UNDER ARTICLE 705.01.

8. G.N.-355 (SPECIAL)
BITUMINOUS BASE COURSE AND BITUMINOUS BASE COURSE WIDENING:
- THE MATERIALS FOR THE BITUMINOUS CONCRETE MIXTURE SHALL BE BINDER MIXTURE A OR B, OF THE SAME 'TYPE' USED FOR RESURFACING ON THIS JOB, AND SHALL MEET THE REQUIREMENTS SPECIFIED IN ARTICLE 406.12 OF THE STANDARD SPECIFICATIONS. IT SHALL BE TRANSPORTED IN ACCORDANCE WITH ARTICLE 406.14 OF THE STANDARD SPECIFICATIONS.

9. G.N.-406
THE QUANTITIES INCLUDED IN THE PLANS FOR BITUMINOUS CONCRETE RESURFACING ARE INTENDED TO GIVE THE COVERAGE SHOWN ON THE TYPICAL CROSS SECTIONS. IT IS NOT INTENDED TO INCREASE THE THICKNESS OF THE BITUMINOUS MIXTURE IN ORDER TO USE ALL OF THE QUANTITIES INCLUDED IN THE CONTRACT. DESIGN THICKNESS CAN BE BACK CALCULATED USING THE CONVERSION FACTOR OF 1 mm THICKNESS = 2.39 KILOGRAMS PER SQUARE METER.

10. G.N.-406A
THE TOTAL AREA TO BE RESURFACED IS 5360 SQUARE METERS OF WHICH 0 SQUARE METERS ARE VARIABLE WIDTH.

ESTIMATED QUANTITIES:

1595.0 LITERS		BITUMINOUS MATERIALS (PRIME COAT)
1575.0	METRIC TONS	LEVELING BINDER (MACHINE METHOD), MIXTURE C, TYPE 2
435.5	METRIC TONS	BITUMINOUS CONCRETE SURFACE COURSE, MIXTURE D, CLASS I, TYPE 2

11. G.N.-406C
FOR ALL LIFTS OF BITUMINOUS CONCRETE, CLASS I, WHICH ARE PLACED AT A RATE OF 75 METRIC TONS PER HOUR OR MORE, A PNEUMATIC TIRED ROLLER SHALL BE USED AS AN INTERMEDIATE ROLLER.

12. G.N.-406D
ALL LEVELING BINDER OR BINDER SHALL BE GIVEN A FOG COAT OF PRIME BEFORE THE SURFACE COURSE IS PLACED WHEN DIRECTED BY THE ENGINEER.

THE FOG COAT WILL BE PAID FOR AT THE CONTRACT UNIT PRICE PER LITER FOR BITUMINOUS MATERIAL (PRIME COAT) AND NO ADDITIONAL COMPENSATION WILL BE ALLOWED.

13. G.N.-406F
THIS JOB INCLUDES LEVELING BINDER OF 40 mm OR GREATER THICKNESS. LOCATIONS OF LEVELING BINDER EQUAL TO OR GREATER THAN 40 mm IN THICKNESS ARE AS FOLLOWS:

THE ENTIRE LENGTH OF THE PROJECT

THE ABOVE LIST MAY NOT BE ALL INCLUSIVE DUE TO CONSTRUCTION VARIATIONS, VARIATIONS BETWEEN PLOTTED CROSS-SECTIONS, OR OTHER REASONS. ALL APPLICABLE REQUIREMENTS OF SECTION 406 OF THE STANDARD SPECIFICATIONS WILL BE ENFORCED FOR ALL LEVELING BINDER CONSTRUCTED 40 mm OR THICKER.

14. G.N.-406 (SPECIAL)
THE TEMPORARY BITUMINOUS RAMPS SHOWN AT THE ENDS OF THE PROPOSED BRIDGE APPROACH PAVEMENTS SHALL BE CONSIDERED INCIDENTAL TO THE CONTRACT AND NO ADDITIONAL COMPENSATION SHALL BE ALLOWED.

15. G.N.-420.21
WHEN REQUIRED BY ARTICLE 420.21, A PROTECTIVE COAT SHALL BE APPLIED TO CONCRETE PAVEMENT, GUTTER FLAGS, CURB SURFACES AND OTHER CONCRETE APPURTENANCES ADJACENT TO THE PAVEMENT.

ESTIMATED QUANTITIES:

BRIDGE APPROACH	222.5 SQ M
BRIDGE SUPERSTRUCTURE	178.6 SQ M

16. G.N.-506
ALL FINAL SURFACES OF THE BEAMS SHALL BE PAINTED WITH LIGHT GREY (MUNSELL COLOR STANDARD - 10Y 7/1) EXCEPT THE EXTERIOR SURFACES OF THE EXTERIOR BEAMS WHICH SHALL BE PAINTED WITH INTERSTATE GREEN (MUNSELL COLOR STANDARD 7.5G 4/8).

17. G.N.-630
GUARD RAIL DESIGN IN THESE PLANS WERE BASED ON THE FOLLOWING INFORMATION:
CLEAR ZONE WIDTH = 7 m (FROM EDGE OF PAVEMENT).
OPERATING SPEED = 88 km/h (POSTED SPEED LIMIT).
A.D.T. = 3600 (2018).

18. G.N.-631
IF THE CONTRACTOR ELECTS TO USE THE ALTERNATE MOUNTING METHOD OF THROUGH DRILLING THE MOUNTING HOLES FOR THE TRAFFIC BARRIER TERMINALS, TYPE 6, THE HOLES SHALL BE DRILLED USING A CORE DRILL. A HAMMER DRILL WILL NOT BE ALLOWED.

19. G.N.-703
THE FOLLOWING QUANTITIES ARE ALLOWED FOR PLACING STANDARD PAVEMENT MARKINGS IN ACCORDANCE WITH SECTION 703 ON THE MILLED SURFACE OR INTERMEDIATE LIFTS AND TO DELINEATE NO-PASSING ZONES DURING CONSTRUCTION. QUANTITIES FOR THE FINAL PAVEMENT MARKING ARE INCLUDED ELSEWHERE HEREIN.

ESTIMATED QUANTITIES:
YELLOW:
89.0 METER TEMPORARY PAVEMENT MARKING - LINE 100 mm

WHITE:
885.0 METER TEMPORARY PAVEMENT MARKING - LINE 100 mm

TOTALS:
974.0 METER TEMPORARY PAVEMENT MARKING - LINE 100 mm

20. G.N.-703A
SHORT TERM PAVEMENT MARKING SHALL BE APPLIED TO THE PAVEMENT AFTER ANY OF THE FOLLOWING: COLD MILLING AND/OR PLACING BITUMINOUS MATERIALS (PRIME COAT), LEVELING BINDER (MACHINE METHOD), BINDER AND SURFACE COURSES. SHORT TERM PAVEMENT MARKING PLACED ON THE SURFACE, SHALL COINCIDE WITH THE FINAL PAVEMENT STRIPING. SHORT TERM PAVEMENT MARKING PLACED PRIOR TO THE SURFACE SHALL COINCIDE WITH THE EXISTING PAVEMENT MARKINGS. USE 1.2 m/12m (OR 10% PER STATION).
ESTIMATED QUANTITY:
399.0 METERS SHORT TERM PAVEMENT MARKING
(133.0 METERS YELLOW AND 266.0 METERS WHITE)

21. G.N.-704
TEMPORARY CONCRETE BARRIER, STATE OWNED AND TEMPORARY CONCRETE BARRIER TERMINAL SECTION, STATE OWNED ARE LOCATED AT THE ILLINOIS DEPARTMENT OF TRANSPORTATION'S MAINTENANCE STORAGE AT RANTOUL, ILLINOIS WHICH IS LOCATED 1 MILE NORTH OF RANTOUL ON THE WEST SIDE OF U.S. 45. CONNECTING PINS, DOWEL BARS, STYROFOAM PADS, AND DRIFT PINS USED WITH THE BARRIERS AND TERMINAL SECTIONS SHALL BE FURNISHED BY THE CONTRACTOR.

THE COST OF NECESSARY CONNECTING PINS, DOWEL BARS AND STYROFOAM PADS SHALL BE INCLUDED IN THE CONTRACT UNIT PRICE PER METER FOR TEMPORARY CONCRETE BARRIER, STATE OWNED. THE COST OF NECESSARY STYROFOAM PADS AND DRIFT PINS SHALL BE INCLUDED IN THE COST EACH FOR TEMPORARY CONCRETE BARRIER TERMINAL SECTION, STATE OWNED.

22. G.N.-780.06
PAINT PAVEMENT MARKINGS SHALL BE APPLIED TO THE FINAL CONCRETE PAVEMENT SURFACE.

ESTIMATED QUANTITIES:
YELLOW:
221.0 METER PAINT PAVEMENT MARKING - LINE 100 mm

WHITE:
885.0 METER PAINT PAVEMENT MARKING - LINE 100 mm

TOTALS:
1106.0 METER PAINT PAVEMENT MARKING - LINE 100 mm

23. G.N.-1004.01
COARSE AGGREGATE GRADATION CA-10 MAY BE USED WHENEVER COARSE AGGREGATE CA-6 IS SPECIFIED IN THE STANDARD SPECIFICATIONS.

24. G.N.-1004.03
REVISE ARTICLE 1004.03 (c) NOTE 5/ OF THE STANDARD SPECIFICATIONS TO READ:

'5/ GRADATION CA-16 SHALL BE USED IN LIEU OF CA-13 WHEN THE SURFACE COURSE IS LESS THAN 45 mm IN THICKNESS. CA-13 OR CA-16 MAY BE USED WHEN THE SURFACE COURSE IS 45 mm OR MORE IN THICKNESS.'

25. G.N.-Z0038
A BRONZE TABLET OF THE TYPE SHOWN ON STANDARD 667101 SHALL BE PLACED ON THE PROPOSED STRUCTURE AS DIRECTED BY THE ENGINEER. THE BENCH MARK ELEVATION WILL BE ESTABLISHED AND MARKED BY THE STATE.
ESTIMATED QUANTITY:
1.0 EACH PERMANENT BENCH MARK

FORCE ACCOUNTS AND ADDED ITEMS

F.A.I. RTE.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
	NUMBER	CHAMPAIGN	47	4

CODE No.	DESCRIPTION	Pay Item Key	Pay Item Description	Units	Awarded	Added	Deducted	Adjusted Quantity	Qty Posted	FINAL QUANTITY
		FRC00300-Q01J01-019X7712A-A	LAYOUT ERROR	DOLLAR	0.000	3,000.000	0.000	3,000.000	3,596.990	3596.99
		FRC00600-Q01J01-019X7712A-A	UNDERCUT UNSTABLE MAT	DOLLAR	0.000	1,844.630	0.000	1,844.630	1,844.630	1844.63
		FRC00601-Q01J01-019X7712A-A	PAV,T. MAINTENANCE	DOLLAR	0.000	419.720	0.000	419.720	419.720	419.72
		FRC00602-Q01J01-019X7712A-A	PICK UP TERM. SECTION DA	DOLLAR	0.000	231.960	0.000	231.960	231.960	231.96
		FRC00603-Q01J01-019X7712A-A	SET-UP & REMOVE TRAF. C	DOLLAR	0.000	443.830	0.000	443.830	443.830	443.83
		FRC00604-Q01J01-019X7712A-A	ADD BLACK TAPE OVER CO	DOLLAR	0.000	5,644.720	0.000	5,644.720	5,644.720	5644.72
		FRC00605-Q01J01-019X7712A-A	ADD RT. SHLDR. CLOSED SI	DOLLAR	0.000	1,568.360	0.000	1,568.360	1,568.360	1568.36
		FRC00800-Q01J01-019X7712A-A	REMOBILIZE TRAF.CONT.I-5	DOLLAR	0.000	2,500.000	0.000	2,500.000	2,494.200	2494.20
		FRC00801-Q01J01-019X7712A-A	USE WETTED BURLAP	DOLLAR	0.000	3,000.000	0.000	3,000.000	3,478.830	3478.83
		FRC00802-Q01J01-019X7712A-A	CORRECT DESIGN ERROR	DOLLAR	0.000	300.000	0.000	300.000	0.000	220.94
		FRC00803-Q01J01-019X7712A-A	RELOCATE LIGHT CABLE	DOLLAR	0.000	2,500.000	0.000	2,500.000	1,560.250	1560.25
		FRC01000-Q01J01-019X7712A-A	ADD SHLDR STONE	DOLLAR	0.000	0.000	0.000	0.000	0.000	3176.15
	70103815		TR CONT. SURVEILLANCE							1.98
	78100100		RAISED REF. PVT. MKR							18.00
	78201000		TERM. MKR. DIRECT APPLIED							1.00
	78300200		RAISED REF. PVT. MK REM							146.50
	M2010110		TREE REMOVAL 6-15							32.50
	M2010210		TREE REMOVAL OVER 15							2.10
	X9500700		NIGHT WORK STR STEEL							0.0
	X9501000		CONC. CURB DOWELED							6,0[illegible]
	XXX03200		ANTISTRIP ADDITIVE							0.0
	XXX16000		TRAFFIC CONTROL DEFICIENCY							1555.21
	Z0077800		WOOD POSTS							3,168.76
	FRC01200		INSTALL WOOD BLOCKOUT							
	FRC01300		EROSION CONTROL							

F.A.I. RTE.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
57	(10-34HB)BR	CHAMPAIGN	47	5

SUMMARY OF QUANTITIES

LOCATION OF WORK:

2 LANE
URBAN
U. S. 150 OVER
F. A. I. 57
90% FEDERAL
10% STATE
STATION 4+602.48
TO
STATION 5+045

CONSTRUCTION TYPE CODE:

X771/2A

CODE NO	ITEM	UNIT	TOTAL QUANTITY	TOTAL QUANTITY	FINAL QTY
50104800	REMOVAL OF EXISTING CONCRETE DECK	L SUM	1.0	1.0	1.0
50300100	FLOOR DRAINS	EACH	8.0	8.0	6.0
50300310	ELASTOMERIC BEARING ASSEMBLY, TYPE I	EACH	16.0	16.0	16.0
50300320	ELASTOMERIC BEARING ASSEMBLY, TYPE II	EACH	16.0	16.0	16.0
50500505	STUD SHEAR CONNECTORS	EACH	4856.0	4856.0	4860.0
50500715	JACK AND REMOVE EXISTING BEARINGS	EACH	30.0	30.0	30.0
50600300	CLEANING AND PAINTING STEEL BRIDGE	L SUM	1.0	1.0	1.0
50606200	BLASTING RESIDUE CONTAINMENT AND DISPOSAL	L SUM	1.0	1.0	1.0
50606300	POWER TOOL CLEANING RESIDUE CONTAINMENT AND DISPOSAL	L SUM	1.0	1.0	1.0
51204200	TEST PILE CONCRETE	EACH	1.0	1.0	1.0
51500100	NAME PLATES	EACH	2.0	2.0	2.0
60900515	CONCRETE THRUST BLOCKS	EACH	10.0	10.0	8.0
61000115	TYPE E INLET BOX, STANDARD 610001	EACH	10.0	10.0	10.0
63100045	TRAFFIC BARRIER TERMINAL, TYPE 2	EACH	2.0	2.0	2.0
63100085	TRAFFIC BARRIER TERMINAL, TYPE 6	EACH	4.0	4.0	4.0
63100165	TRAFFIC BARRIER TERMINAL, TYPE 1 (SPECIAL)	EACH	1.0	1.0	1.0
67000400	ENGINEER'S FIELD OFFICE, TYPE A	CAL MO	12.0	12.0	12.0
67100100	MOBILIZATION	L SUM	1.0	1.0	1.0
70100405	TRAFFIC CONTROL AND PROTECTION, STANDARD 701321	EACH	1.0	1.0	1.0
70100450	TRAFFIC CONTROL AND PROTECTION, STANDARD 701201	L SUM	1.0	1.0	1.0
70100700	TRAFFIC CONTROL AND PROTECTION, STANDARD 701406	L SUM	1.0	1.0	1.0
70101220	TRAFFIC CONTROL AND PROTECTION, STANDARD 701411 (SPECIAL)	EACH	2.0	2.0	2.0
70400700	TEMPORARY CONCRETE BARRIER, TERMINAL SECTION (STATE OWNED)	EACH	2.0	2.0	2.0
70500625	TEMPORARY TRAFFIC BARRIER TERMINAL, TYPE 2	EACH	2.0	2.0	2.0
78200405	GUARDRAIL MARKERS	EACH	40.0	40.0	43.0
78200500	BARRIER WALL MARKERS	EACH	8.0	8.0	8.0
M2020010	EARTH EXCAVATION	CU M	302.0	302.0	450.1
M2050150	EMBANKMENT	CU M	3960.0	3960.0	3622.42
M2500200	SEEDING, CLASS 2	HA	0.1	0.1	0.20
M2500300	SEEDING, CLASS 3	HA	0.7	0.7	1.10
M2500350	SEEDING, CLASS 7	HA	0.8	0.8	0.60
M2500400	NITROGEN FERTILIZER NUTRIENT	KG	51.0	51.0	89.7
M2500500	PHOSPHORUS FERTILIZER NUTRIENT	KG	171.0	171.0	142.8
M2500600	POTASSIUM FERTILIZER NUTRIENT	KG	51.0	51.0	89.7
M2500700	AGRICULTURAL GROUND LIMESTONE	M TON	3.4	3.4	0.10
M2510115	MULCH, METHOD 2	HA	0.8	0.8	1.90
M2800900	FENCE (EROSION CONTROL)	METER	692.0	692.0	825.0
M2810105	STONE RIPRAP, CLASS A3	SQ M	14.0	14.0	17.0
M2820100	FILTER FABRIC FOR USE WITH RIPRAP	SQ M	14.0	14.0	14.0
M4060100	BITUMINOUS MATERIALS (PRIME COAT)	LITER	1595.0	1595.0	1674.75
M4060300	AGGREGATE (PRIME COAT)	M TON	12.0	12.0	9.53
M4060560	LEVELING BINDER (MACHINE METHOD), MIXTURE B, TYPE 2	M TON	1575.0	1575.0	1203.07
M4060850	BITUMINOUS CONCRETE SURFACE COURSE, MIXTURE D, CLASS I, TYPE 2	M TON	436.0	436.0	732.13
M4205000	BRIDGE APPROACH PAVEMENT	SQ M	223.0	223.0	225.00
M4205200	PROTECTIVE COAT	SQ M	223.0	223.0	0.00

03/02/99

F.A.I. RTE.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
57	110-34HBIBR	CHAMPAIGN	47	5A

SUMMARY OF QUANTITIES (Cont'd)

LOCATION OF WORK:

2 LANE
URBAN
U.S. 150 OVER
F.A.I. 57
90% FEDERAL
10% STATE
STATION 4+602.48
TO
STATION 5+045
X771/2A

CONSTRUCTION TYPE CODE:

CODE NO	ITEM	UNIT	TOTAL QUANTITY	TOTAL QUANTITY		FINAL QTY
M4206200	BRIDGE APPROACH PAVEMENT CONNECTOR (FLEXIBLE)	SQ M	99.0	99.0		98.18
M4402000	PAVEMENT REMOVAL	SQ M	202.0	202.0		158.74
M4402060	APPROACH SLAB REMOVAL	SQ M	80.0	80.0		80.0
M4410100	PAVEMENT REPLACEMENT	SQ M	44.0	44.0		42.67
M5010240	CONCRETE REMOVAL	CU M	20.7	20.7		21.43
M5020100	STRUCTURE EXCAVATION	CU M	210.0	210.0		269.507
M5030350	CONCRETE STRUCTURES	CU M	177.4	177.4		178.791
M5030360	CONCRETE SUPER STRUCTURES	CU M	252.5	252.5		252.50
M5030390	BRIDGE DECK GROOVING	SQ M	936.0	936.0		1152.40
M5030450	PROTECTIVE COAT	SQ M	1115.0	1115.0		0.00
M5050105	FURNISHING AND ERECTING STRUCTURAL STEEL	L SUM	1.0	1.0		1.0
M5050410	STRUCTURAL STEEL REMOVAL	KG	450.0	450.0		450.0
M5080205	REINFORCEMENT BARS, EPOXY COATED	KG	47580.0	47580.0		47580.0
M5110100	SLOPE WALL 100 MM	SQ M	135.0	135.0		163.40
M5120300	FURNISHING CONCRETE PILES	METER	73.0	73.0		85.344
M5120305	DRIVING CONCRETE PILES	METER	73.0	73.0		47.884
M5120900	TEMPORARY SHEET PILING	SQ M	16.5	16.5		12.703
M542F012	METAL END SECTIONS 300MM	EACH	10.0	10.0		10.0
M5870020	BRIDGE SEAT SEALER	SQ M	14.0	14.0		17.13
M6010125	PIPE DRAINS 300MM	METER	151.0	151.0		166.20
M6100010	PORTLAND CEMENT CONCRETE SHOULDERS	SQ M	108.0	108.0		59.46
M6300100	STEEL PLATE BEAM GUARD RAIL, TYPE A	METER	823.4	823.4		825.60
M6300110	STEEL PLATE BEAM GUARD RAIL, TYPE B	METER	7.6	7.6		13.60
M6300120	STEEL PLATE BEAM GUARD RAIL, TYPE C	METER	22.9	22.9		25.80
M6320030	GUARD RAIL REMOVAL	METER	942.0	942.0		954.00
M6610300	BITUMINOUS SHOULDER CURB	METER	692.0	692.0		689.70
M7030100	SHORT-TERM PAVEMENT MARKING	METER	399.0	399.0		227.20
M7030200	TEMPORARY PAVEMENT MARKING	METER	974.0	974.0		0.00
M7031000	WORK ZONE PAVEMENT MARKING REMOVAL	SQ M	290.0	290.0		7.36
M7040300	RELOCATE TEMPORARY CONCRETE BARRIER (STATE OWNED)	METER	230.0	230.0		230.35
M7040400	TEMPORARY CONCRETE BARRIER (STATE OWNED)	METER	235.0	235.0		238.63
M7050100	TEMPORARY STEEL PLATE BEAM GUARD RAIL, TYPE A	METER	884.3	884.3		926.90
M7800205	PAINT PAVEMENT MARKING - LINE 100MM	METER	1106.0	1106.0		1920.00
MX032081	BONDED PREFORMED JOINT SEAL 102 MM	METER	25.6	25.6		26.0
MX406900	QCQA BITUMINOUS	M TON	2011.0	2011.0		3338.42
MX420900	QCQA CONCRETE	CU M	1031.4	1031.4		560.446
MZ002000	ATTENUATOR BASE	SQ M	25.2	25.2		25.20
MZ002900	BASE COURSE (OPTION)	SQ M	1935.0	1935.0		1957.00
MZ047300	PROTECTIVE SHIELD	SQ M	714.0	714.0		514.776
X7050165	TEMPORARY TRAFFIC BARRIER TERMINAL, TYPE 1 (SPECIAL)	EACH	3.0	3.0		1.0
Z0002600	BAR SPLICERS	EACH	750.0	750.0		730.0
Z0017900	DRAINAGE SCUPPERS	EACH	2.0	2.0	REVISED	2.0
Z0030200	INERTIAL BARRIER INSTALLATION	EACH	1.0	1.0	PLAN SHEETS	1.0
Z0038700	PERMANENT BENCH MARKS	EACH	1.0	1.0		1.0
Z0070100	SURVEY MONUMENT COVER ASSEMBLY	EACH	1.0	1.0		1.0

SFTY-3N

Rev 5-24-99

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F.A.I. 57	(10-34HB)BR	CHAMPAIGN	47	6

SEEDING SCHEDULE

OPERATION AND LOCATION	SEEDING CLASS 2	SEEDING CLASS 3	FERTILIZER NUTRIENTS NITROGEN	PHOSPHOROUS	POTASSIUM	AGRICULTURAL GROUND LIMESTONE 4.5 M TON/Ha	MULCH, METHOD 2
US 150 FINAL STAGE CONSTRUCTION	Ha	Ha	Kg	Kg	Kg	M TON	Ha
STA 4+602.48 TO STA 4+755	0.17	0.03	13.4	45	13.4	0.90	0.20
STA 4+834 TO STA 5+045	0.52	0.04	37.5	126	37.5	2.52	0.52
TOTAL	0.69	0.07	50.9	171	50.9	3.42	0.72

RIPRAP SCHEDULE

OPERATION AND LOCATION	STONE RIPRAP CLASS A3 Sq. M	FILTER FABRIC FOR USE W/RIPRAP Sq. M
US 150 STAGE II CONSTRUCTION		
LT STA 4+650.00	1.4	1.4
RT STA 4+650.00	1.4	1.4
LT STA 4+682.99	1.4	1.4
RT STA 4+682.99	1.4	1.4
LT STA 4+883.73	1.4	1.4
RT STA 4+883.73	1.4	1.4
LT STA 4+959.93	1.4	1.4
RT STA 4+959.93	1.4	1.4
LT STA 5+036.13	1.4	1.4
RT STA 5+036.13	1.4	1.4
TOTAL	14	14

BITUMINOUS CURB

OPERATION AND LOCATION	QUANTITY M
US 150 FINAL STAGE	
LT. & RT. STA 4+602.48 TO STA 4+746.14	287.32
LT. & RT. STA 4+842.93 TO STA 5+045	404.14
TOTAL	691.46

INERTIAL BARRIER INSTALLATION

OPERATION AND LOCATION	QUANTITY EACH
FAI 57 PRELIMINARY STAGE	
LT. STA 17+759.55 TO STA 17+770.68	1
TOTAL	1

ATTENUATOR BASE

OPERATION AND LOCATION	QUANTITY Sq. M
FAI 57 PRELIMINARY STAGE	
LT. STA 17+759.55 TO STA 17+770.68	25.2
TOTAL	25.2

EARTHWORK SCHEDULE

OPERATION AND LOCATION	EARTH EXCAVATION Cu. M	EMBANKMENT Cu. M
US 150 PRELIM. & FINAL STAGE		
STA 4+602.48 TO STA 4+755	129.3	708.8
STA 4+834 TO STA 5+045	172.8	3248.9
TOTAL	302.1	3957.7

PAVEMENT REPLACEMENT SCHEDULE

LOCATION	WIDTH (m)	LENGTH (m)	AREA (m)
PIER 1	1.52	14.5	22.04
PIER 3	1.52	14.5	22.04
TOTAL			44.08

PAVEMENT REMOVAL

OPERATION & LOCATION (PRIOR TO PLACING P.C. CONCRETE SHOULDERS)	QUANTITY SQ M
U.S. 150 STAGE II CONSTRUCTION	
LT STA 4+650.00	10.8
RT STA 4+650.00	10.8
LT STA 4+682.99	10.8
RT STA 4+682.99	10.8
LT STA 4+883.73	10.8
RT STA 4+883.73	10.8
LT STA 4+959.93	10.8
RT STA 4+959.93	10.8
LT STA 5+036.13	10.8
RT STA 5+036.13	10.8
TOTAL	108.0 SQ M

PORTLAND CEMENT CONCRETE SHOULDERS

OPERATION & LOCATION	QUANTITY SQ. M
US 150 STAGE II CONSTRUCTION	
LT STA 4+650.00	10.8
RT STA 4+650.00	10.8
LT STA 4+682.99	10.8
RT STA 4+682.99	10.8
LT STA 4+883.73	10.8
RT STA 4+883.73	10.8
LT STA 4+959.93	10.8
RT STA 4+959.93	10.8
LT STA 5+036.13	10.8
RT STA 5+036.13	10.8
TOTAL	108.0

FENCE (EROSION CONTROL)

OPERATION AND LOCATION	QUANTITY M
US 150 PRELIMINARY STAGE	
LT. & RT. STA 4+625 TO STA 4+755	260
LT. & RT. STA 4+834 TO STA 5+045	422
TOTAL	682

TERMINAL MARKER - DIRECT APPLIED

LOCATION	QUANTITY EACH
RT. STA. 4+585	1
RT. STA. 5+156	1
LT. STA. 5+080	1
TOTAL	3

GUARDRAIL MARKERS

LOCATION	QUANTITY EACH
RT. STA. 4+602.48 TO STA. 5+080	18
LT. STA. 4+585 TO STA. 5+156	22
TOTAL	40

BARRIER WALL MARKERS

LOCATION	QUANTITY EACH
RT. STA. 4+756 TO STA. 4+833	4
LT. STA. 4+756 TO STA. 4+833	4
TOTAL	8

OCQA BITUMINOUS:

ITEM	QUANTITY	UNIT	CONVERSION FACTOR	M. TONS
LEVELING BINDER (MACHINE METHOD), MIX B, TYPE 2	1575.0	MTON		1575.0
BITUMINOUS SURFACE COURSE, MIX D, CLASS I, TYPE 2	436.0	MTON		436.0

TOTAL = 2011.0 M. TONS

OCQA CONCRETE:

ITEM	QUANTITY	UNIT	CONVERSION FACTOR	CU M
CONCRETE STRUCTURES	177.4	CU. M		177.4
CONCRETE SUPERSTRUCTURES	252.5	CU. M		252.5
APPROACH PAVEMENT FLEXIBLE CONNECTOR	98.9	SQ. M	.250M	24.7
BRIDGE APPROACH PAVEMENT	222.5	SQ. M	.385M	85.7
BASE COURSE OPTION, 230mm	1934.5	SQ. M	.230M	444.9
P.C.C. SHOULDERS, 230mm	108.0	SQ. M	.230M	24.8
SLOPEWALL, 100mm	135.1	SQ. M	.100M	13.5
PAVEMENT REPLACEMENT	44.1	SQ. M	.178M	7.9

TOTAL = 1031.4 CU M

SCHEDULE OF QUANTITIES

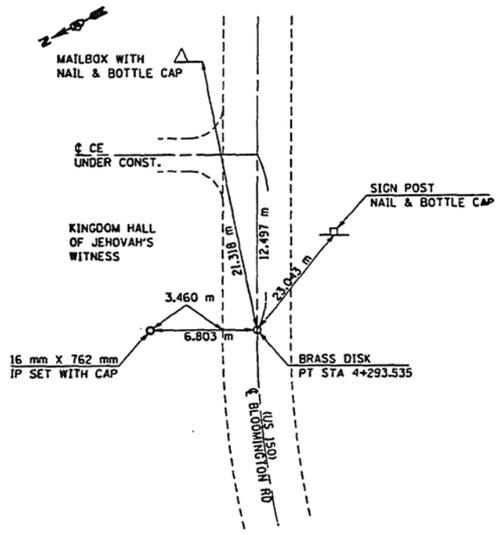
LIN ENGINEERING, LTD.

DESIGNED: R.P. CHECKED: T.M.M.
DRAWN: R.P. DATE: 2/96

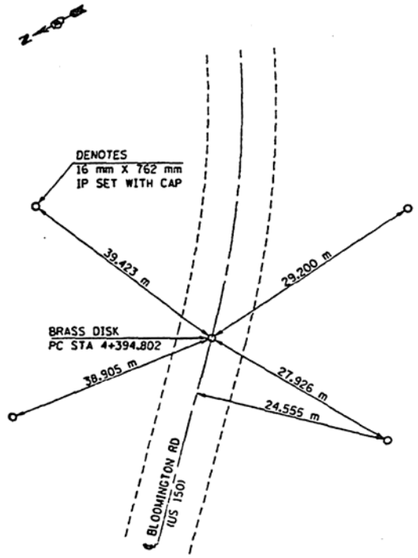
F.A.I. RTE.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
57	(10-34HB)BR	CHAMPAIGN	47	6A

TIE POINTS

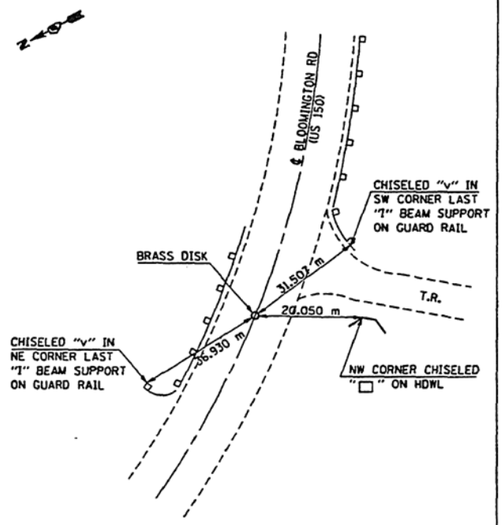
PT STA 4+293.535



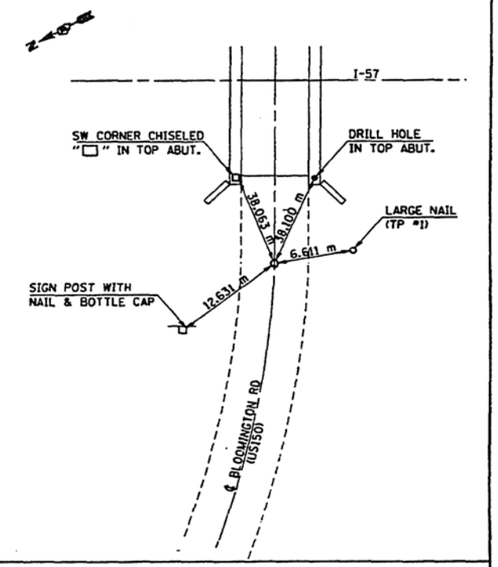
PC STA 4+394.802



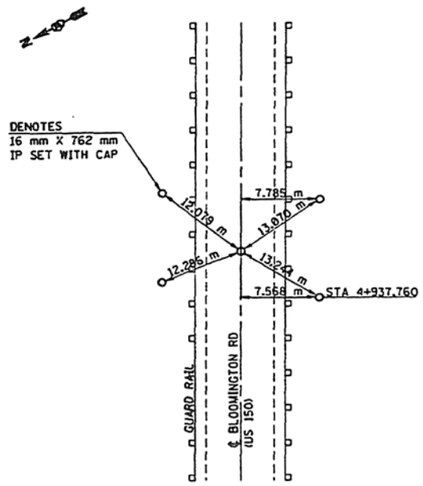
STA 4+555.693



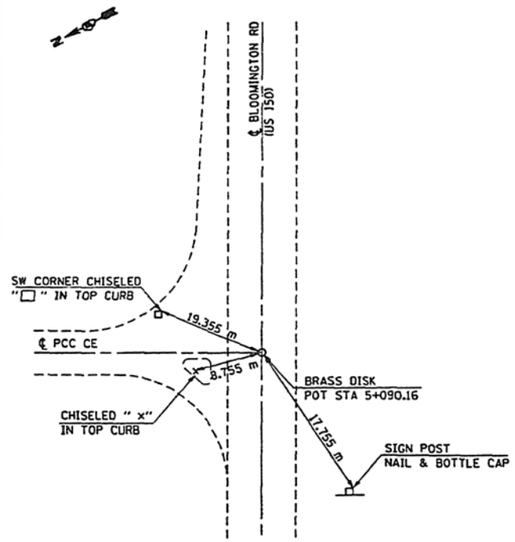
PT STA 4+717.34



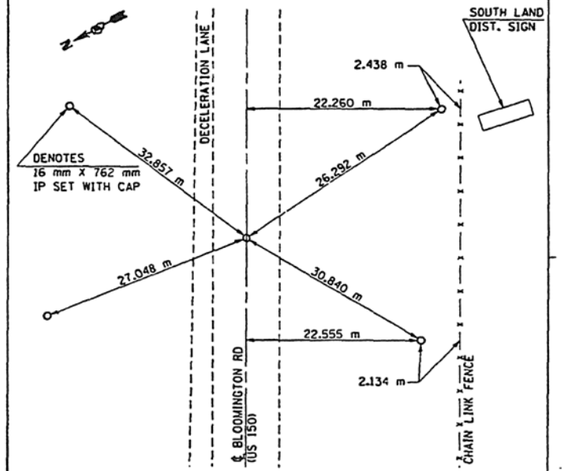
POT STA 4+948.684

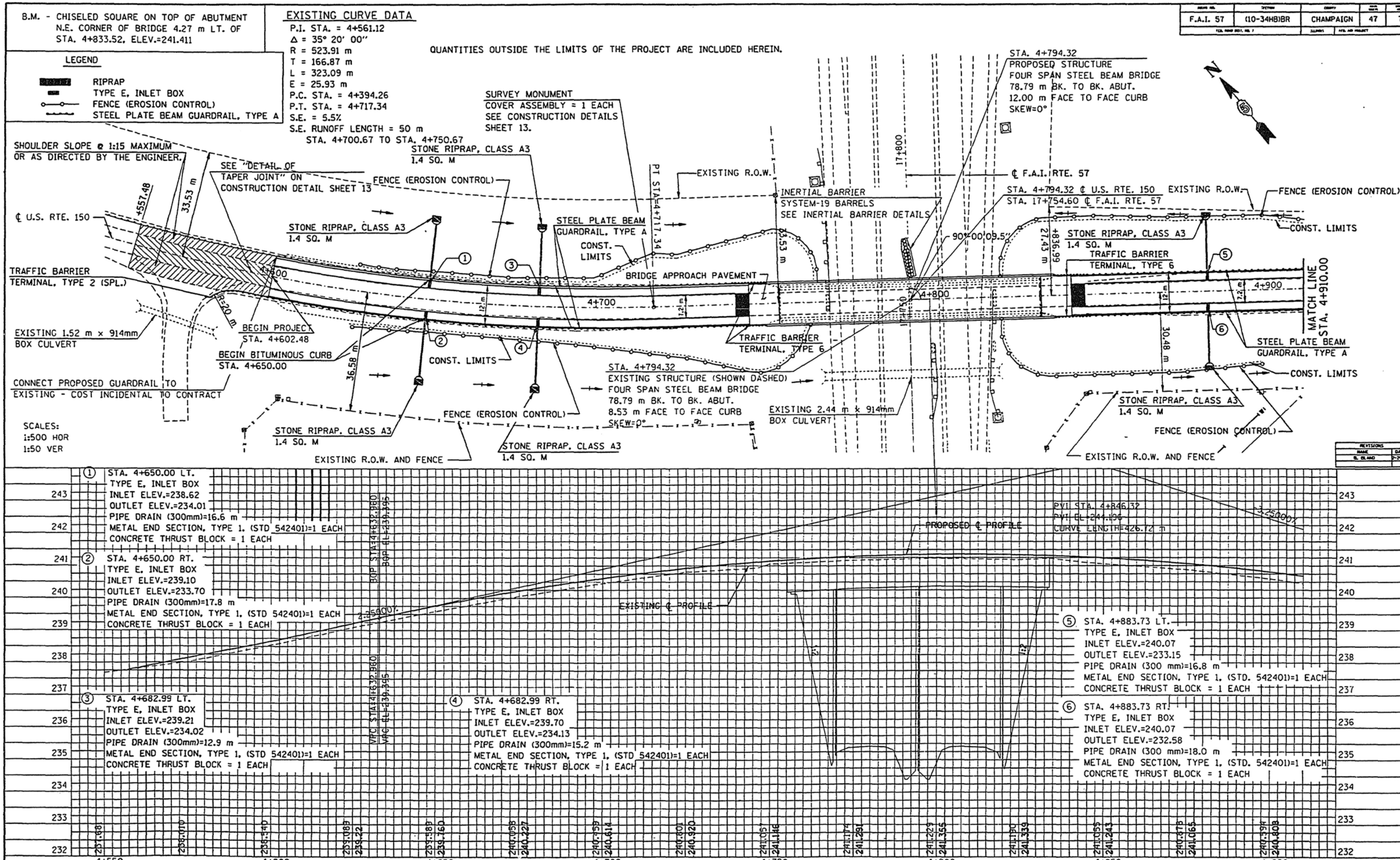


POT STA 5+090.16



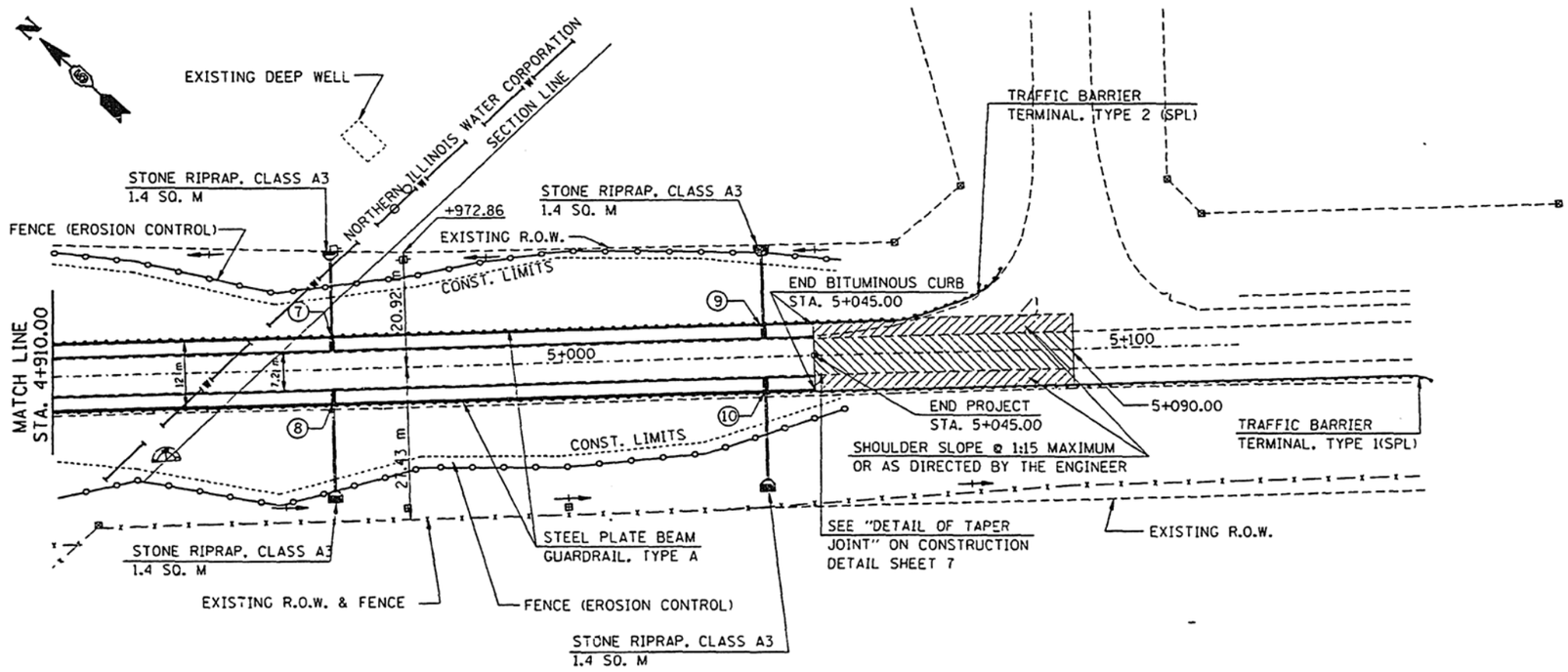
POT STA 5+177.851




F.A.I. 57
(10-34HB)BR
CHAMPAIGN
47
7
B.M. - CHISELED SQUARE ON TOP OF ABUTMENT N.E. CORNER OF BRIDGE 4.27 m LT. OF STA. 4+833.52, ELEV.=241.411
LEGEND
RIPRAP
TYPE E, INLET BOX
FENCE (EROSION CONTROL)
STEEL PLATE BEAM GUARDRAIL, TYPE A
EXISTING CURVE DATA
P.I. STA. = 4+561.12
Δ = 35° 20' 00"
R = 523.91 m
T = 166.87 m
L = 323.09 m
E = 25.93 m
P.C. STA. = 4+394.26
P.T. STA. = 4+717.34
S.E. = 5.5%
S.E. RUNOFF LENGTH = 50 m
STA. 4+700.67 TO STA. 4+750.67
QUANTITIES OUTSIDE THE LIMITS OF THE PROJECT ARE INCLUDED HEREIN.
SURVEY MONUMENT
COVER ASSEMBLY = 1 EACH
SEE CONSTRUCTION DETAILS
SHEET 13.
STA. 4+794.32
PROPOSED STRUCTURE
FOUR SPAN STEEL BEAM BRIDGE
78.79 m BK. TO BK. ABUT.
12.00 m FACE TO FACE CURB
SKEW=0°
SHOULDER SLOPE @ 1:15 MAXIMUM OR AS DIRECTED BY THE ENGINEER.
SEE "DETAIL OF TAPER JOINT" ON CONSTRUCTION DETAIL SHEET 13
STONE RIPRAP, CLASS A3
1.4 SQ. M
FENCE (EROSION CONTROL)
EXISTING R.O.W.
PT STA.=4+717.34
17+800
℄ F.A.I. RTE. 57
INERTIAL BARRIER
SYSTEM-19 BARRELS
SEE INERTIAL BARRIER DETAILS
STA. 4+794.32 ℄ U.S. RTE. 150
STA. 17+754.60 ℄ F.A.I. RTE. 57
EXISTING R.O.W.
FENCE (EROSION CONTROL)
CONST. LIMITS
℄ U.S. RTE. 150
+557.48
33.53 m
STEEL PLATE BEAM GUARDRAIL, TYPE A
CONST. LIMITS
90°00'09.5"
27.43 m
+836.99
TRAFFIC BARRIER TERMINAL, TYPE 6
TRAFFIC BARRIER TERMINAL, TYPE 2 (SPL.)
4+600
BRIDGE APPROACH PAVEMENT
4+700
4+800
4+900
MATCH LINE STA. 4+910.00
R=20 m
EXISTING 1.52 m x 914mm BOX CULVERT
BEGIN PROJECT
STA. 4+602.48
BEGIN BITUMINOUS CURB
STA. 4+650.00
TRAFFIC BARRIER TERMINAL, TYPE 6
36.58 m
30.48 m
STEEL PLATE BEAM GUARDRAIL, TYPE A
CONNECT PROPOSED GUARDRAIL TO EXISTING - COST INCIDENTAL TO CONTRACT
STA. 4+794.32
EXISTING STRUCTURE (SHOWN DASHED)
FOUR SPAN STEEL BEAM BRIDGE
78.79 m BK. TO BK. ABUT.
8.53 m FACE TO FACE CURB
SKEW=0°
EXISTING 2.44 m x 914mm BOX CULVERT
SCALES:
1:500 HOR
1:50 VER
EXISTING R.O.W. AND FENCE
REVISIONS
① STA. 4+650.00 LT.
TYPE E, INLET BOX
INLET ELEV.=238.62
OUTLET ELEV.=234.01
PIPE DRAIN (300mm)=16.6 m
METAL END SECTION, TYPE 1, (STD 542401)=1 EACH
CONCRETE THRUST BLOCK = 1 EACH
② STA. 4+650.00 RT.
TYPE E, INLET BOX
INLET ELEV.=239.10
OUTLET ELEV.=233.70
PIPE DRAIN (300mm)=17.8 m
METAL END SECTION, TYPE 1, (STD 542401)=1 EACH
CONCRETE THRUST BLOCK = 1 EACH
③ STA. 4+682.99 LT.
TYPE E, INLET BOX
INLET ELEV.=239.21
OUTLET ELEV.=234.02
PIPE DRAIN (300mm)=12.9 m
METAL END SECTION, TYPE 1, (STD 542401)=1 EACH
CONCRETE THRUST BLOCK = 1 EACH
④ STA. 4+682.99 RT.
TYPE E, INLET BOX
INLET ELEV.=239.70
OUTLET ELEV.=234.13
PIPE DRAIN (300mm)=15.2 m
METAL END SECTION, TYPE 1, (STD 542401)=1 EACH
CONCRETE THRUST BLOCK = 1 EACH
⑤ STA. 4+883.73 LT.
TYPE E, INLET BOX
INLET ELEV.=240.07
OUTLET ELEV.=233.15
PIPE DRAIN (300 mm)=16.8 m
METAL END SECTION, TYPE 1, (STD. 542401)=1 EACH
CONCRETE THRUST BLOCK = 1 EACH
⑥ STA. 4+883.73 RT.
TYPE E, INLET BOX
INLET ELEV.=240.07
OUTLET ELEV.=232.58
PIPE DRAIN (300 mm)=18.0 m
METAL END SECTION, TYPE 1, (STD. 542401)=1 EACH
CONCRETE THRUST BLOCK = 1 EACH
PVI STA. 4+846.32
PVI EL=244.196
CURVE LENGTH=426.72 m
-3.25000%
PROPOSED ℄ PROFILE
EXISTING ℄ PROFILE
4.25000%
BOP STA=4+632.960
BOP EL=239.395
VPC STA=4+632.960
VPC EL=239.395
243
242
241
240
239
238
237
236
235
234
233
232
4+550
4+600
4+650
4+700
4+750
4+800
4+850
4+900

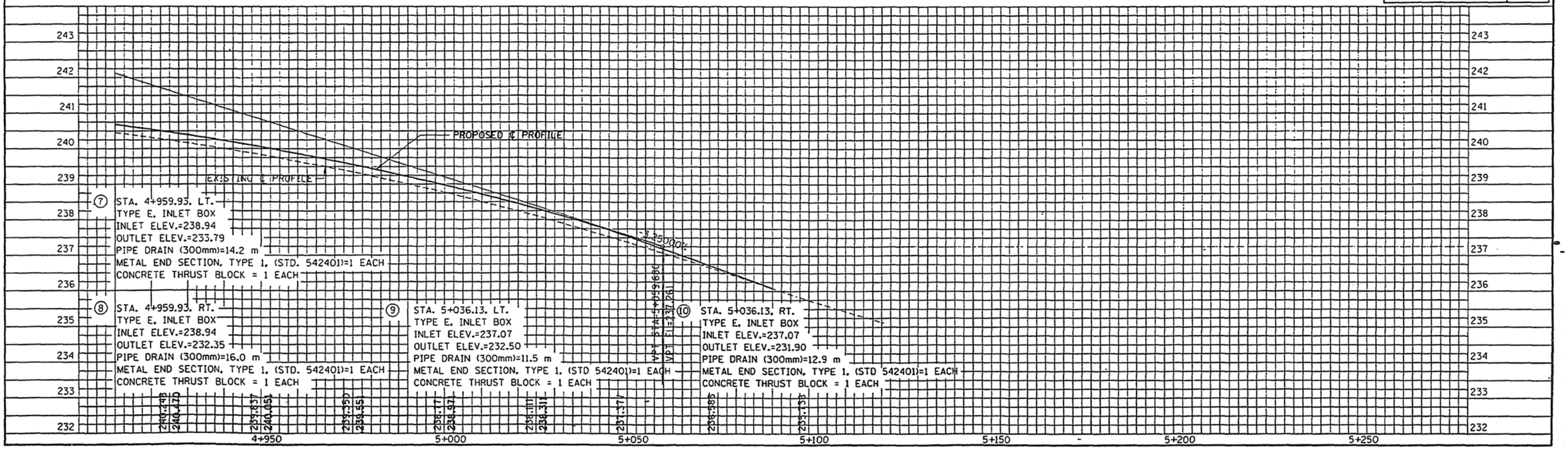
U.S. RTE. 150

ROUTE NO.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
F.A.I. 57	(10-34HB)BR	CHAMPAIGN	47	8
FED. ROAD DIST. NO. 7	ILLINOIS	FED. AID PROJECT		



- SCALES:
1:500 HOR
1:50 VER

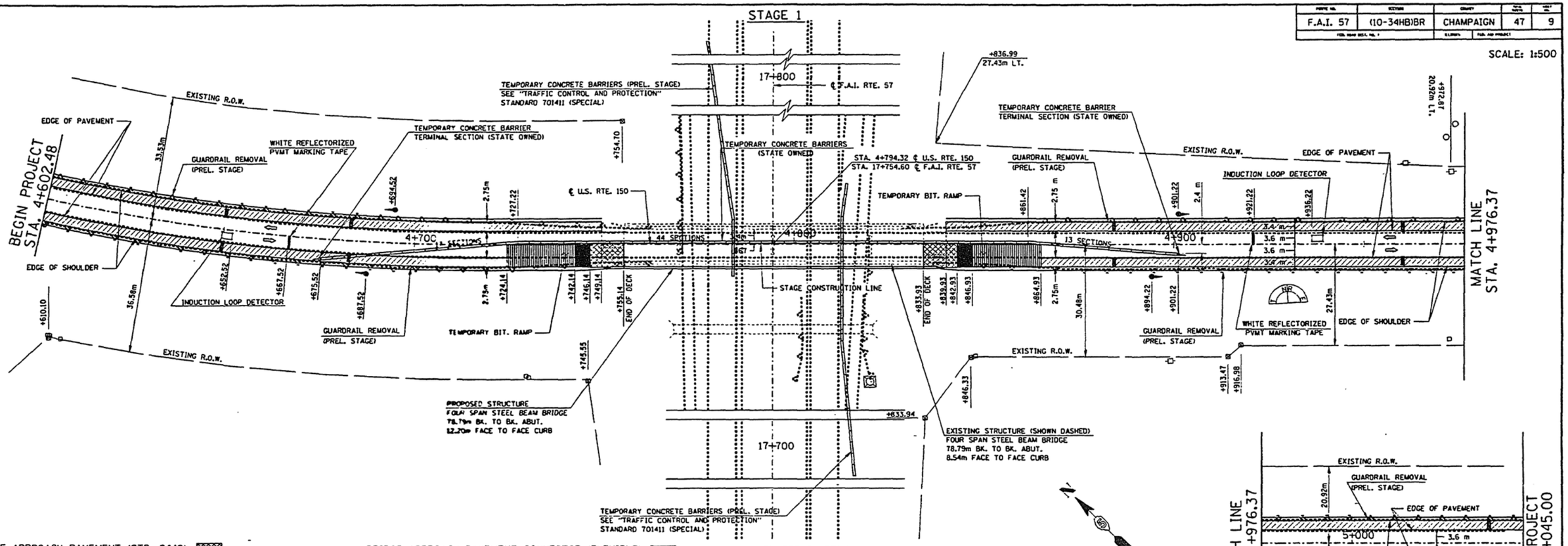
REVISIONS	
NAME	DATE
B. BLAND	2-22-97



U.S. RTE. 150

F.A.I. 57	(10-34HB)BR	CHAMPAIGN	47	9

SCALE: 1:500



BRIDGE APPROACH PAVEMENT (STD. 2442)
RT. STA. 4+746.14 TO STA. 4+755.14 = 55.62
RT. STA. 4+833.93 TO STA. 4+842.93 = 55.62
TOTAL = 111.24 Sq. m

PAVEMENT REMOVAL
RT. STA. 4+742.14 TO STA. 4+749.14 = 26.6
RT. STA. 4+839.93 TO STA. 4+846.93 = 26.6
TOTAL = 53.2 Sq. m

APPROACH SLAB REMOVAL
RT. STA. 4+749.14 TO STA. 4+755.14 = 22.8
RT. STA. 4+833.93 TO STA. 4+839.93 = 22.8
TOTAL = 45.6 Sq. m

•• BASE COURSE (OPTION)
RT. STA. 4+602.48 TO STA. 4+749.14 = 146.66
RT. STA. 4+839.93 TO STA. 5+045.00 = 205.07
LT. STA. 4+602.48 TO STA. 4+749.14 = 146.66
LT. STA. 4+839.93 TO STA. 5+045.00 = 205.07
TOTAL = 1934.50 Sq. m

BRIDGE APPROACH PAVEMENT CONNECTOR (FLEXIBLE)
RT. STA. 4+742.14 TO STA. 4+746.14 = 26.52
RT. STA. 4+842.93 TO STA. 4+846.93 = 26.52
TOTAL = 53.04 Sq. m

INSTALL TEMPORARY CONCRETE BARRIER (STATE OWNED)
STA. 4+675.52 TO STA. 4+901.22 = 225.7 m

INSTALL TEMPORARY CONCRETE BARRIER TERMINAL SECTION (STATE OWNED)
STA. 4+673.39 TO STA. 4+675.52 = 1
STA. 4+901.22 TO STA. 4+903.35 = 1
TOTAL = 2 EACH

••• STEEL PLATE BEAM GUARDRAIL, TYPE A
RT. STA. 4+589.904 TO STA. 4+742.304 = 152.40
RT. STA. 4+846.771 TO STA. 5+148.38 = 301.609
TOTAL = 455.009

••• GUARDRAIL REMOVAL •
RT. STA. 4+585 TO STA. 4+762 = 177
RT. STA. 4+827 TO STA. 5+156 = 329
TOTAL = 506

••• TRAFFIC BARRIER TERMINAL, TYPE 6
RT. STA. 4+742.304 TO STA. 4+752.407 = 1 EACH
RT. STA. 4+836.668 TO STA. 4+846.771 = 1 EACH
TOTAL = 2 EACH

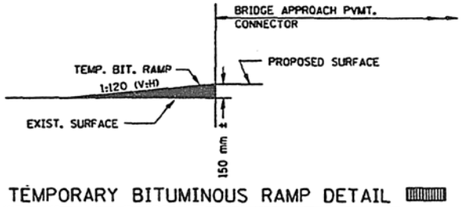
••• TRAFFIC BARRIER TERMINAL, TYPE 1 (SPECIAL)
RT. STA. 5+148.38 TO STA. 5+156 = 1 EACH

••• TRAFFIC BARRIER TERMINAL, TYPE 2
RT. STA. 4+586.094 TO STA. 4+587.904 = 1 EACH

•• TEMPORARY STEEL PLATE BEAM GUARDRAIL, TYPE A
RT. STA. 4+587.904 TO STA. 4+755 = 176.096
RT. STA. 4+834 TO STA. 5+148.38 = 314.38
TOTAL = 490.476

•• TEMPORARY TRAFFIC BARRIER TERMINAL, TYPE 1(SPL.)
RT. STA. 5+148.38 TO STA. 5+156 = 1 EACH

•• TEMPORARY TRAFFIC BARRIER TERMINAL, TYPE 2
RT. STA. 4+585.040 TO STA. 4+587.904 = 1 EACH



TEMPORARY BITUMINOUS RAMP DETAIL

STAGE I CONSTRUCTION
TRAFFIC CONTROL PLAN

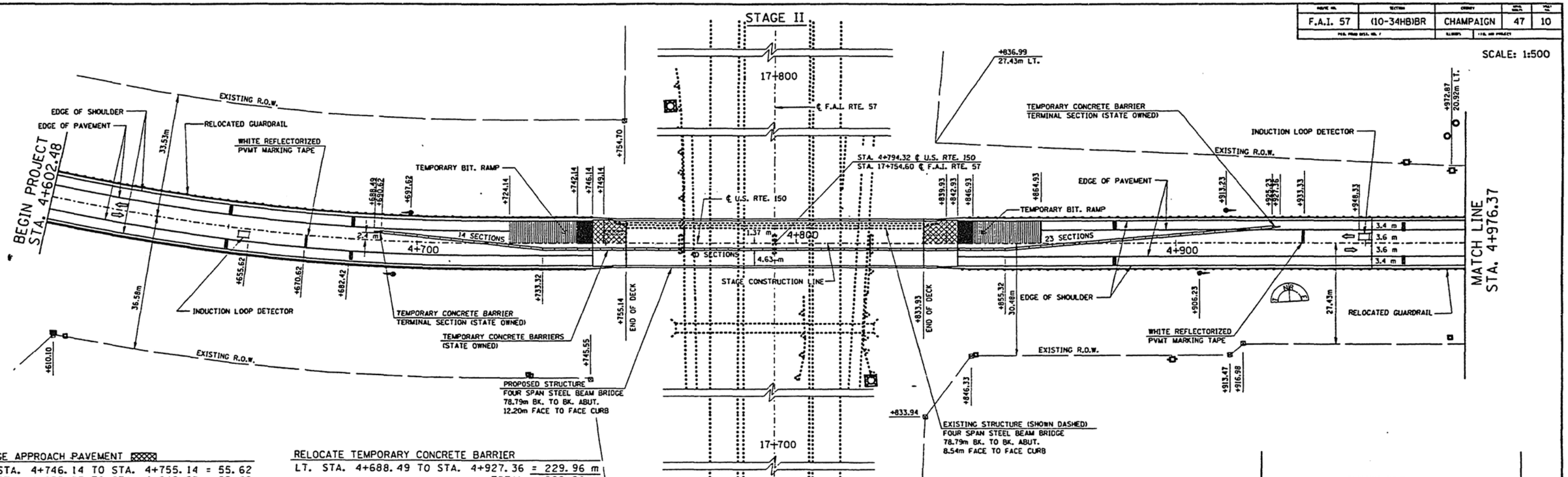
• THE GUARDRAIL REMOVAL LENGTH INCLUDES THE TERMINAL SECTIONS
•• TO BE ACCOMPLISHED DURING PRELIMINARY STAGE
••• TO BE ACCOMPLISHED DURING FINAL STAGE

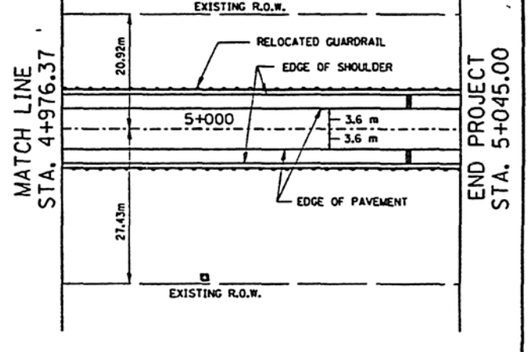
NOTE:
ALL DIMENSIONS ARE IN MILLIMETERS (mm) EXCEPT AS NOTED.
SEE STAGE CONSTRUCTION DETAILS FOR MORE INFORMATION.

LIN ENGINEERING, LTD	
DESIGNED: R.J.P.	CHECKED: T.M.M.
DRAWN: R.J.P.	DATE: 2/96

F.A.I. 57	(10-34HB)BR	CHAMPAIGN	47	10

SCALE: 1:500





BRIDGE APPROACH PAVEMENT
LT. STA. 4+746.14 TO STA. 4+755.14 = 55.62
LT. STA. 4+833.93 TO STA. 4+842.93 = 55.62

TOTAL = 111.24 Sq. m

PAVEMENT REMOVAL
LT. STA. 4+742.14 TO STA. 4+749.14 = 20.3
LT. STA. 4+839.93 TO STA. 4+846.93 = 20.3

TOTAL = 40.6 Sq. m

APPROACH SLAB REMOVAL
LT. STA. 4+749.14 TO STA. 4+755.14 = 17.4
LT. STA. 4+833.93 TO STA. 4+839.93 = 17.4

TOTAL = 34.8 Sq. m

BRIDGE APPROACH PAVEMENT CONNECTOR
LT. STA. 4+742.14 TO STA. 4+746.14 = 22.92
LT. STA. 4+842.93 TO STA. 4+846.93 = 22.92

TOTAL = 45.84 Sq. m

RELOCATE TEMPORARY CONCRETE BARRIER
LT. STA. 4+688.49 TO STA. 4+927.36 = 229.96 m
TOTAL = 229.96 m

•••• INSTALL TEMPORARY CONCRETE BARRIER (STATE OWNED)
LT. STA. 4+688.49 TO STA. 4+927.36 = 9.15 m
TOTAL = 9.15 m

••• STEEL PLATE BEAM GUARDRAIL, TYPE A
LT. STA. 4+602.48 TO STA. 4+742.304 = 139.824
LT. STA. 4+846.771 TO STA. 5+075.371 = 228.600

TOTAL = 368.424

••• GUARDRAIL REMOVAL •
LT. STA. 4+602.48 TO STA. 4+762 = 159.52
LT. STA. 4+828 TO STA. 5+080 = 252

TOTAL = 411.52

••• TRAFFIC BARRIER TERMINAL, TYPE 6
LT. STA. 4+742.304 TO STA. 4+752.407 = 1 EACH
LT. STA. 4+836.668 TO STA. 4+846.771 = 1 EACH

TOTAL = 2 EACH

TRAFFIC BARRIER TERMINAL, TYPE 2
LT. STA. 5+075.371 TO STA. 5+079.18 = 1 EACH

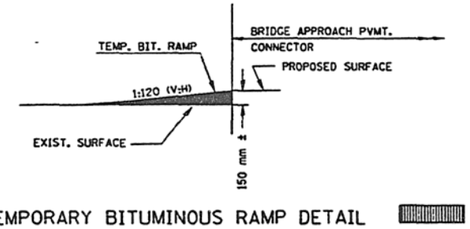
TOTAL = 1 EACH

•• TEMPORARY STEEL PLATE BEAM GUARDRAIL, TYPE A
LT. STA. 4+602.48 TO STA. 4+755 = 152.50
LT. STA. 4+834 TO STA. 5+075.371 = 231.371

TOTAL = 393.871

•• TEMPORARY TRAFFIC BARRIER TERMINAL, TYPE 2
LT. STA. 5+075.371 TO STA. 5+079.180 = 1 EACH

TOTAL = 1 EACH



TEMPORARY BITUMINOUS RAMP DETAIL

- • THE GUARDRAIL REMOVAL LENGTH INCLUDES THE TERMINAL SECTIONS
- •• TO BE ACCOMPLISHED DURING PRELIMINARY STAGE
- ••• TO BE ACCOMPLISHED DURING FINAL STAGE
- •••• THREE (3) ADDITIONAL TEMPORARY CONCRETE BARRIERS ARE REQUIRED FOR STAGE II

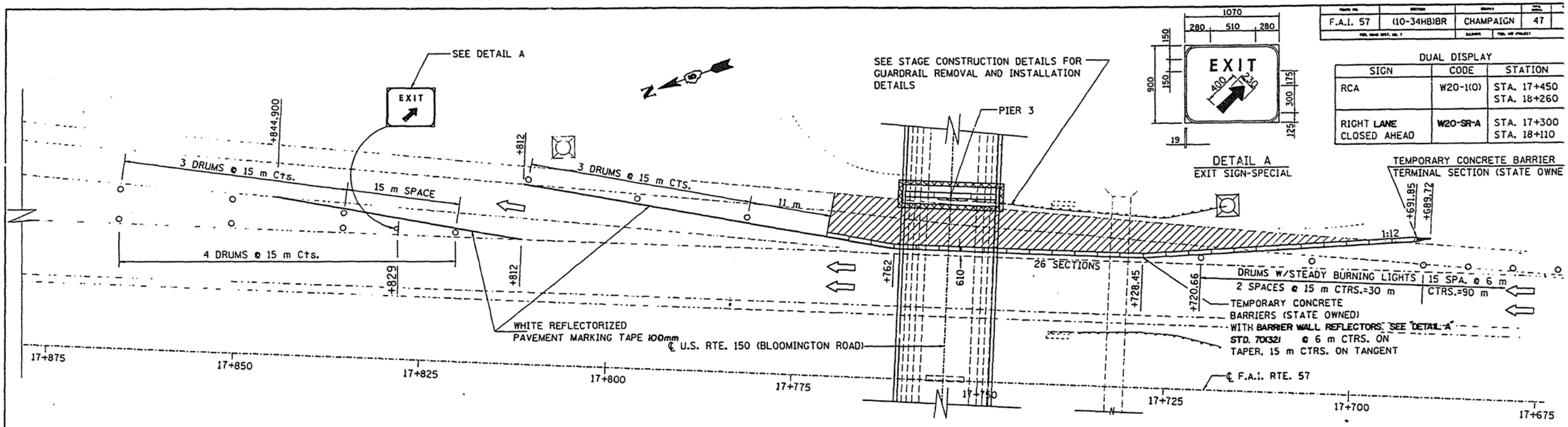
NOTE:
ALL DIMENSIONS ARE IN MILLIMETERS (mm) EXCEPT AS NOTED.
SEE STAGE CONSTRUCTION DETAILS FOR MORE INFORMATION.

STAGE II CONSTRUCTION TRAFFIC CONTROL PLAN

LIN ENGINEERING, LTD

DESIGNED: R.J.P. CHECKED: T.M.M.
DRAWN: R.J.P. DATE: 2/96

F.A.I. 57	(10-34HB)BR	CHAMPAIGN	47



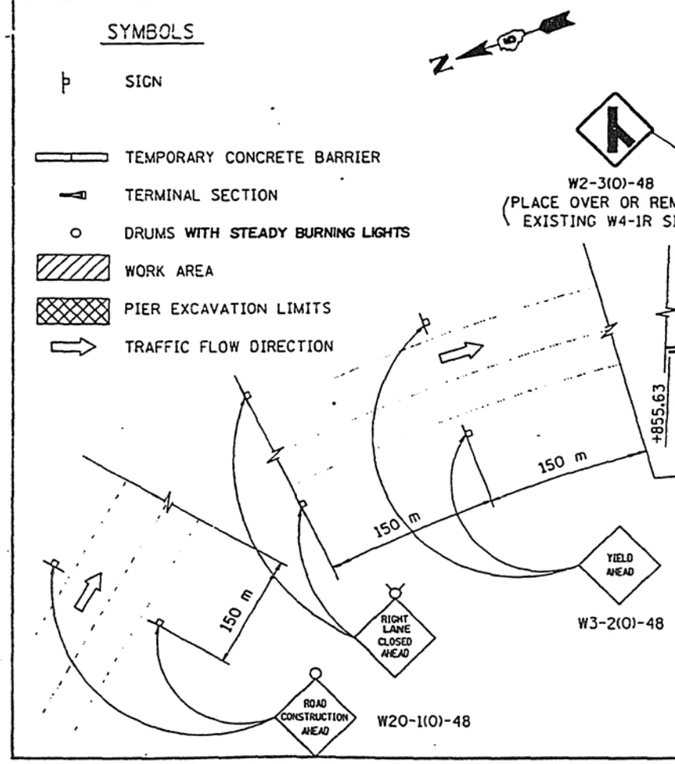
DETAIL A
EXIT SIGN-SPECIAL

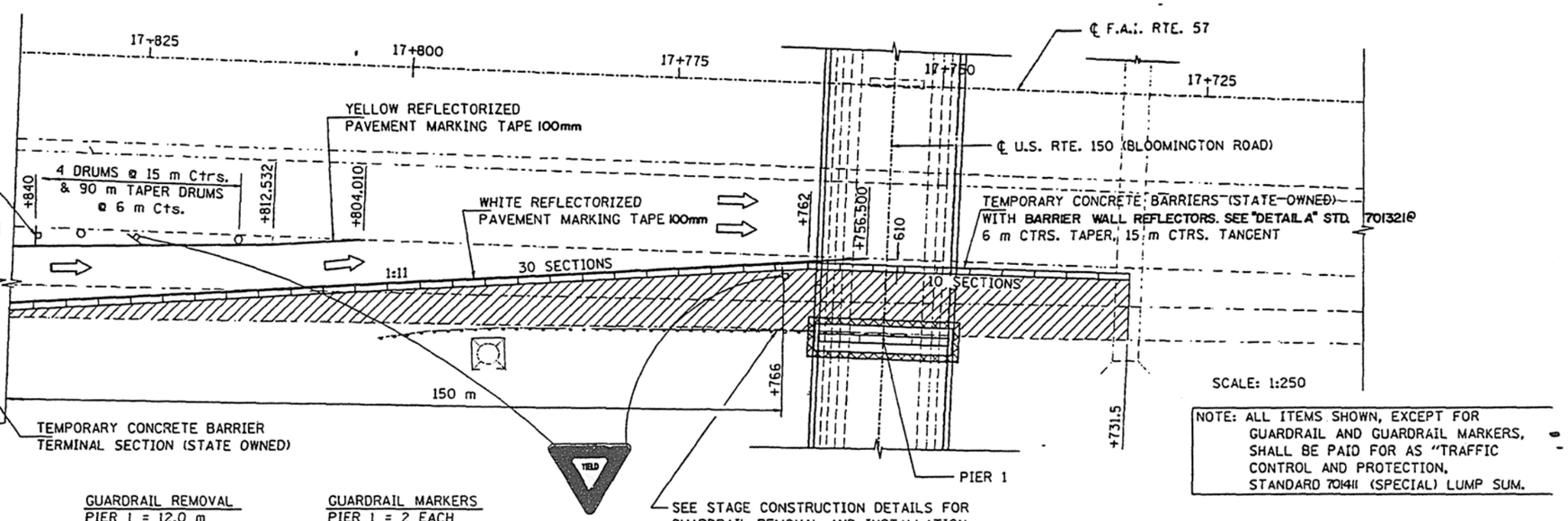
DUAL DISPLAY

SIGN	CODE	STATION
RCA	W20-1(O)	STA. 17+450 STA. 18+260
RIGHT LANE CLOSED AHEAD	W20-5R-A	STA. 17+300 STA. 18+110

SYMBOLS

- SIGN
- TEMPORARY CONCRETE BARRIER
- TERMINAL SECTION
- DRUMS WITH STEADY BURNING LIGHTS
- WORK AREA
- PIER EXCAVATION LIMITS
- TRAFFIC FLOW DIRECTION





SCALE: 1:250

NOTE: ALL ITEMS SHOWN, EXCEPT FOR GUARDRAIL AND GUARDRAIL MARKERS, SHALL BE PAID FOR AS "TRAFFIC CONTROL AND PROTECTION, STANDARD 701411 (SPECIAL) LUMP SUM.

GUARDRAIL REMOVAL
PIER 1 = 12.0 m
PIER 3 = 12.0 m
TOTAL = 24.0 m

GUARDRAIL MARKERS
PIER 1 = 2 EACH
PIER 3 = 2 EACH
TOTAL = 4 EACH

STEEL PLATE BEAM GUARDRAIL, TYPE C
PIER 1 = 11.333 m
PIER 3 = 11.333 m
TOTAL = 22.666 m

STEEL PLATE BEAM GUARDRAIL, TYPE B
PIER 1 = 3.81 m
PIER 2 = 3.81 m
TOTAL = 7.62 m

ALL DIMENSIONS ARE IN MILLIMETERS UNLESS OTHERWISE SHOWN

TRAFFIC CONTROL AND PROTECTIOI
STANDARD 701411 (SPECIAL)

LIN ENGINEERING, LTD.

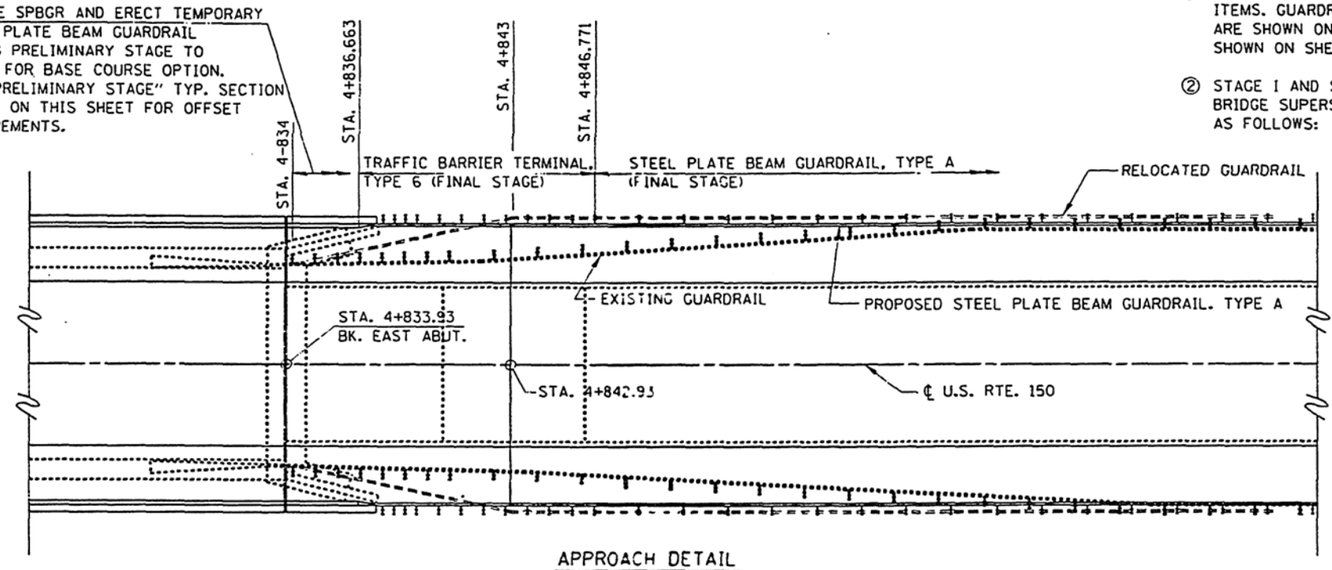
DESIGNED: R.J.P. CHECKED: T.M.M.
DRAWN: R.J.P. DATE: 2/1/96
REVISIONS: B. BLAND 3-12-97

F.A.I. 57	(10-34HB)BR	CHAMPAIGN	47	12

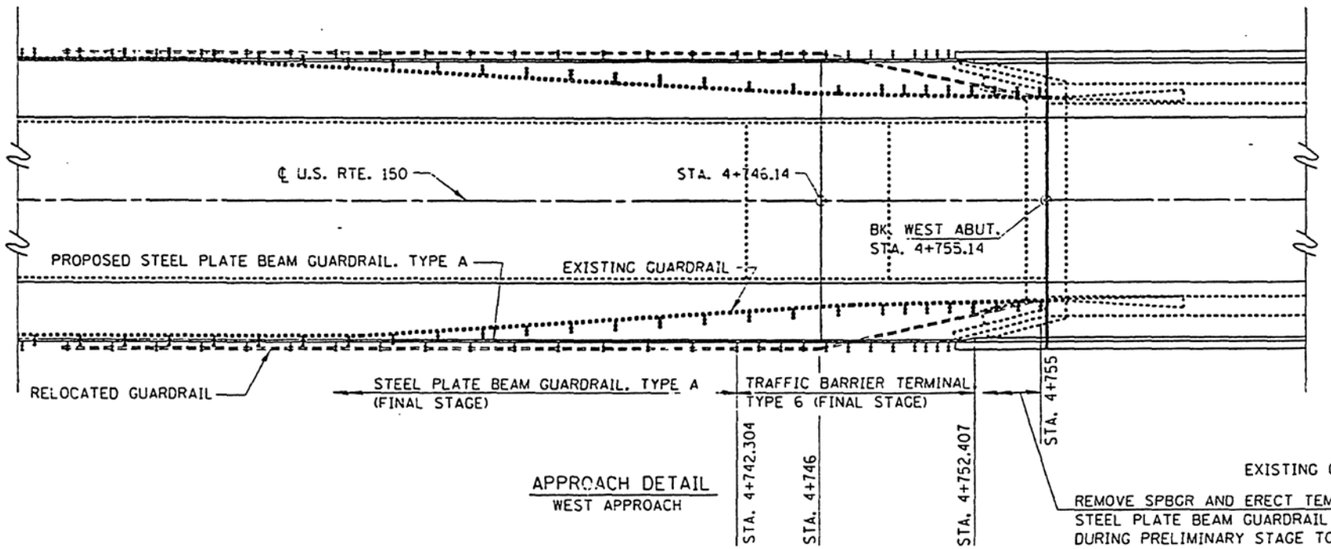
NOTE: ① SEE SHEETS 11 AND 12 FOR SCHEDULE OF GUARDRAIL ITEMS. GUARDRAIL ITEMS TO THE RIGHT OF ℄ U.S. RTE. 150 ARE SHOWN ON SHEET 11 AND ITEMS TO THE LEFT OF ℄ ARE SHOWN ON SHEET 12.

② STAGE I AND STAGE II ARE FOR CONSTRUCTION OF BRIDGE SUPERSTRUCTURE. SEQUENCE OF STAGES ARE AS FOLLOWS:

①PRELIMINARY STAGE
②STAGE I
③STAGE II
④FINAL STAGE

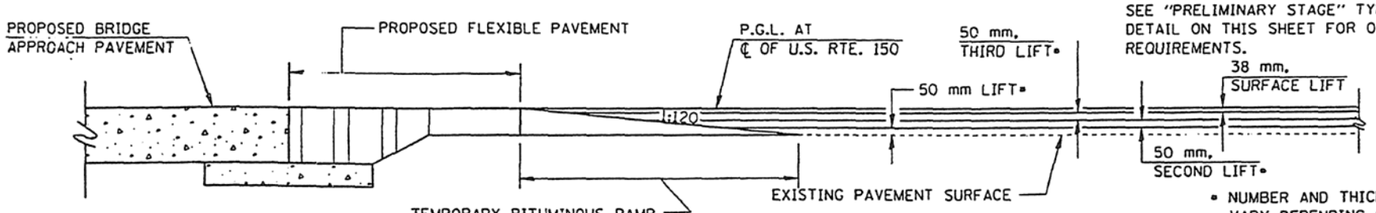


APPROACH DETAIL
EAST APPROACH



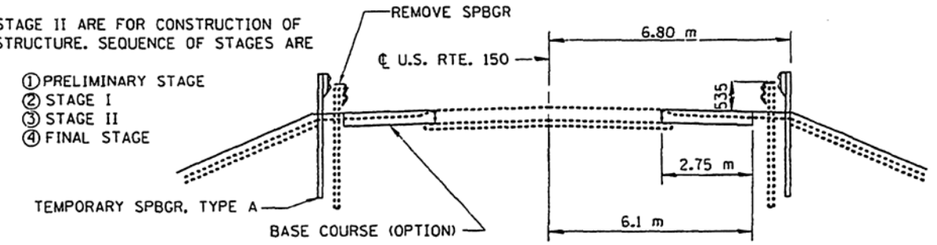
APPROACH DETAIL
WEST APPROACH

REMOVE SPBGR AND ERECT TEMPORARY STEEL PLATE BEAM GUARDRAIL DURING PRELIMINARY STAGE TO ALLOW FOR BASE COURSE OPTION. SEE "PRELIMINARY STAGE" TYP. SECTION DETAIL ON THIS SHEET FOR OFFSET REQUIREMENTS.

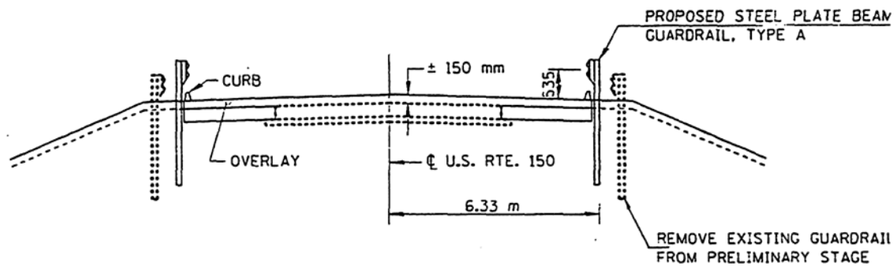


LIFT DETAIL

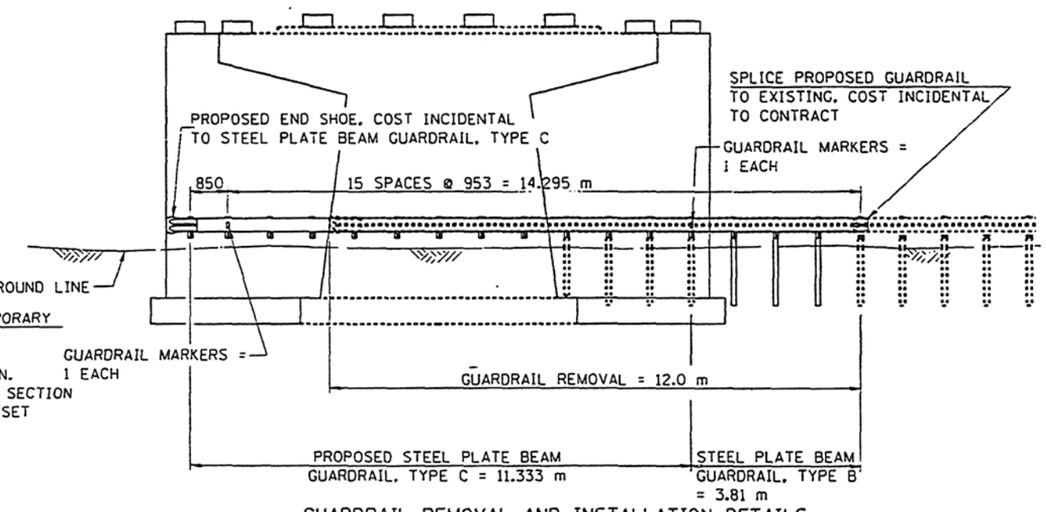
REVISIONS	
NAME	DATE
B. BLAND	2-22-97



PRELIMINARY STAGE (TYP. SECTION)
(TO BE CONSTRUCTED USING STD. 701201)



FINAL STAGE (TYP. SECTION)
(TO BE CONSTRUCTED USING STD. 701201)



GUARDRAIL REMOVAL AND INSTALLATION DETAILS
PIER 1 & 3

• NUMBER AND THICKNESS OF LIFTS MAY VARY DEPENDING ON THEIR LOCATION. THE THICKNESS OF THE LIFTS WILL VARY TRANSVERSELY ALONG ROADWAY CROSS SECTION DUE TO THE EXISTING CIRCULAR CROWN AND SUPERELEVATED AREA WEST OF THE BRIDGE.

STAGE CONSTRUCTION DETAILS

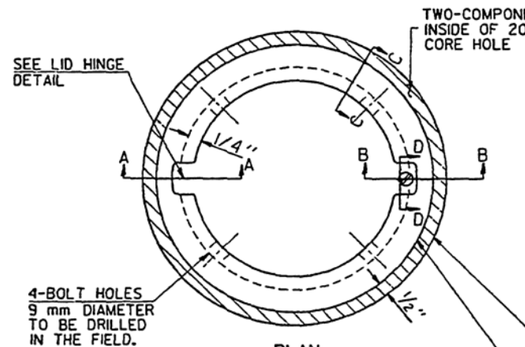
LIN ENGINEERING, LTD.

DESIGNED: R.J.P. CHECKED: T.M.M.
DRAWN: R.J.P. DATE: 2/1/96

ROUTE NO.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
F.A.I. 57	(10-34HB)BR	CHAMPAIGN	47	13
FED. ROAD DIST. NO. 7		ILLINOIS	FED. AID PROJECT	

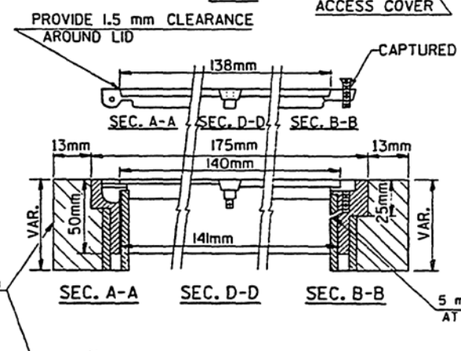
DETAIL OF SURVEY MONUMENT COVER ASSEMBLY

TO BE INSTALLED OVER EXISTING MARKERS FOR LAND SURVEY MONUMENT, P.C.'S , P.I.'S AND P.T.'S AT LOCATIONS SHOWN ON PLANS

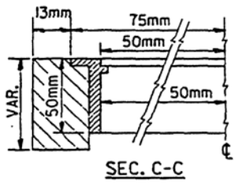


PLAN

SPECIFICATIONS FOR ACCESS COVER FOR USE WITH SURVEY MARKER VAULT(S) AND SURVEY MARKER COVER ASSEMBLY(S): THE ACCESS COVER WILL BE CAST FROM A SPECIAL ALUMINUM ALLOY THAT IS COMPARABLE TO BRONZE IN HARDNESS. THE ACCESS COVER SHALL BE SPECIALLY ENGINEERED AND DESIGNED TO PROVIDE A SNUG FIT, INCORPORATING EQUIDISTANT LOCKING RIDGES. INSIDE A STANDARD 150 mm DIAMETER, OR OUTSIDE A STANDARD 125 mm DIAMETER, SCHEDULE 40 PVC PIPE. THE ACCESS COVER SHALL HAVE SPECIAL UNIFORM 1-INCH THICK TOP SURFACE TO PERMIT INFORMATION TO BE EASILY MACHINED-STAMPED INTO IT. THE ACCESS COVER SHALL INCLUDE A STAINLESS CAPTURED SCREW AND AN OPPOSING RECESSED HINGE ASSEMBLY AS ITS LOCKING MECHANISM. THE ACCESS COVER SHALL INCORPORATE A SPECIAL ACCESS HOLE FOR CLEANING AND DRAINAGE, DRILLED AT 30° INSIDE THE RING OF THE ACCESS COVER, TO THE DRILLED AND TAPPED HOLE PROVIDED FOR THE STAINLESS CAPTURED SCREW. COMPOSITION: ALUMINUM 92-93%; MAGNESIUM 6.5-7.5%. STRENGTH: YIELD - 131 MPa-145 MPa; TENSILE - 262 MPa-303 MPa; ELONGATION - 10-15% (IN FIFTY MILLIMETERS). SPECIFICATIONS: ALLOY 535.0; QQ-A-601ES. NO EXCEPTIONS.



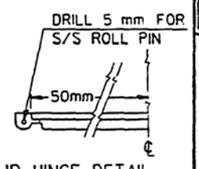
ELEVATION



SEC. C-C

LEGEND

- ALUMINUM CASTING
- 125 mm OR 125 mm P.V.C. PIPE
- TWO-COMPONENT EPOXY



LID HINGE DETAIL

GENERAL NOTES

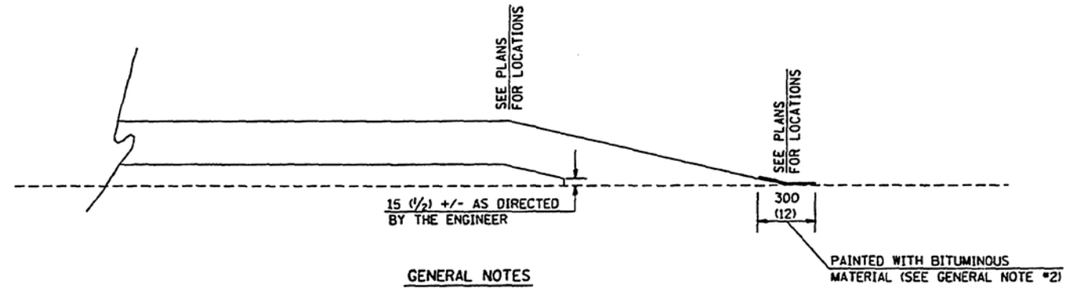
1. WORK SHALL NOT START ON THIS ITEM UNTIL THE FINAL LIFT OF CLASS I HAS BEEN COMPLETED.
2. THE SURVEY MONUMENT COVER ASSEMBLY SHALL BE CENTERED ABOVE THE SURVEY MONUMENT TO BE PROTECTED.
3. MODIFICATION OF THE ALUMINUM CASTING SHALL BE DONE BY GRINDING OR SAWING WHEN HEIGHT REDUCTION IS REQUIRED.
4. ALL SURVEY MONUMENT COVER ASSEMBLIES SHALL BE PLACED 6 mm(±) BELOW THE FINAL SURFACE.
5. ALUMINUM CASTING SHALL BE PLACED OVER A 125 mm P.V.C. PIPE OR INSIDE OF A 150 mm P.V.C. PIPE WHEN AN INCREASE IN HEIGHT IS REQUIRED.
6. THE CASTING SHALL BE ANCHORED IN THE 200 mm DIAMETER CORE HOLE WITH TWO-COMPONENT EPOXY CONFORMING TO APPLICABLE PORTIONS OF ARTICLE 1025.01 OF THE STANDARD SPECIFICATIONS.
7. THIS WORK WILL BE PAID FOR AT THE CONTRACT UNIT PRICE EACH FOR SURVEY MONUMENT COVER ASSEMBLY WHICH PRICE SHALL INCLUDE ALL LABOR AND MATERIAL AS SPECIFIED INCLUDING CORING THE NEW PAVEMENT SURFACE AND EPOXY. NO ADDITIONAL COMPENSATION WILL BE ALLOWED.
8. THE 200 mm DIAMETER CORE HOLE SHALL BE SUBJECT TO THE APPROVAL OF THE ENGINEER.

	NAME	DATE
DESIGNED	A.W.H.	2-28-91
CHECKED	J.H.M.	2-28-91
CADD NO.	D-L04	

REVISIONS	
NAME	DATE
A.W. HAYES	8-22-91

BILL OF MATERIAL
ALUMINUM CASTING OF THE DIMENSIONS AND SPECIFICATIONS SHOWN OR OTHER SUBJECT TO ENGINEER'S APPROVAL OF SHOP DRAWINGS. 4 EACH -8 mm x 50 mm BOLTS WITH NUTS, EPOXY. 125 mm OR 150 mm Ø P.V.C. PIPE, SCHEDULE 40 (WHEN REQUIRED).

FEATHEREDGE RUNDOWN DETAIL



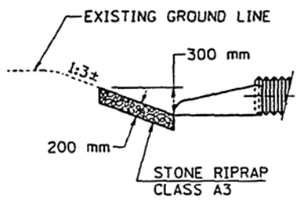
GENERAL NOTES

1. ALL PROPOSED RUNDOWNS SHALL BE UNIFORMLY CONSTRUCTED AS FOLLOWS:
   1:240 (20 FEET PER INCH) OF THICKNESS FOR NON-INTERSTATE IMPROVEMENTS (SEE ARTICLE 406.19)
   1:360 (30 FEET PER INCH) OF THICKNESS FOR INTERSTATE IMPROVEMENTS
2. ON RESURFACING RUNDOWNS THAT ARE TO REMAIN IN PLACE AFTER COMPLETION OF THE SECTION, THE END OF THE FEATHEREDGE SHALL BE PAINTED WITH A UNIFORM COATING OF AC OR HFE BITUMINOUS MATERIAL APPROVED BY THE ENGINEER AFTER THE RUNDOWN IS COMPLETED. THE BITUMINOUS MATERIAL SHALL BE PAINTED ACROSS THE END OF THE RUNDOWN APPROXIMATELY 300 mm (12 INCHES) WIDE, 150 mm (6 INCHES) ON THE RUNDOWN AND 150 mm (6 INCHES) ON THE PAVEMENT. THE PAINTED STRIP SHALL BE COVERED WITH SAND. THIS WORK WILL NOT BE PAID FOR SEPARATELY, BUT SHALL BE CONSIDERED INCIDENTAL TO THE CONTRACT AND NO ADDITIONAL COMPENSATION WILL BE ALLOWED.

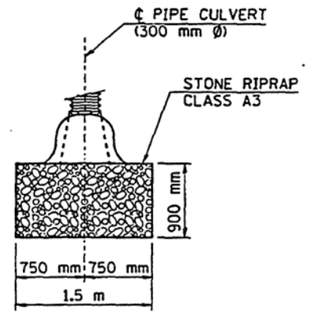
All dimensions are in millimeters (inches) unless otherwise shown.

	NAME	DATE
DESIGNED	J.M.H.	1-92
CHECKED	D.L.P.	1-92
CADD NO.	X-4.02	

REVISIONS	
NAME	DATE
J.M.H.	1-92
D.L.P.	11-94
C.A.M.	11-95

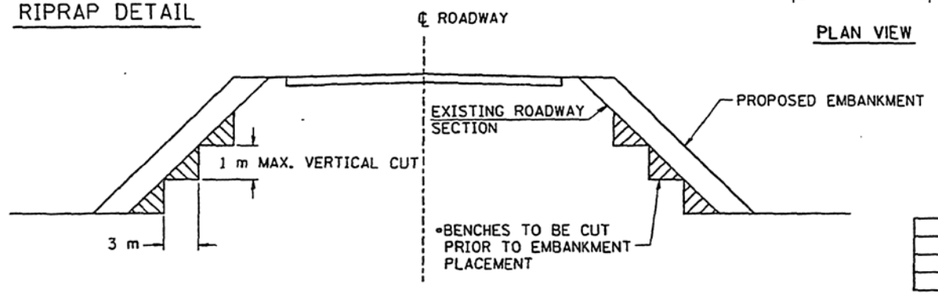


SIDE VIEW



PLAN VIEW

RIPRAP DETAIL



•COST INCIDENTAL TO CONTRACT

EXISTING SLOPE BENCHING DETAIL

REVISIONS	
NAME	DATE
B. BLAND	3-7-97

CONSTRUCTION DETAILS

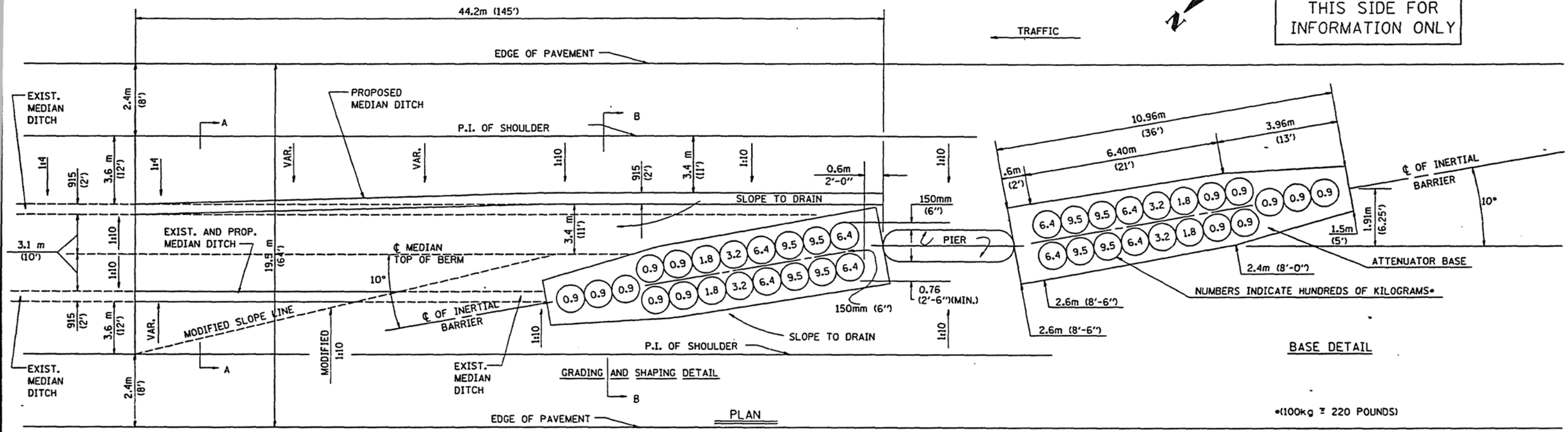
LIN ENGINEERING, LTD.

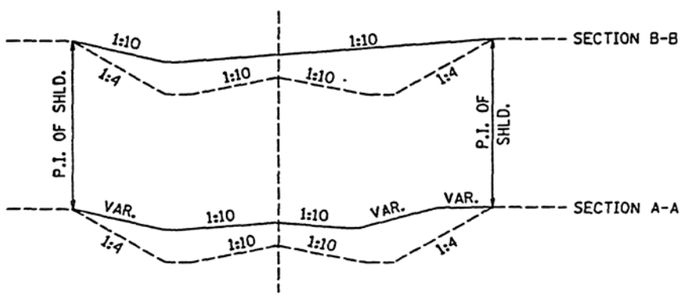
DESIGNED: R.P. CHECKED: T.M.M.
DRAWN: R.P. DATE: 2/96

F.A.I. 57	(10-34HB)BR	CHAMPAIGN	47	14
FED. ROAD DIST. NO. 7		ILLINOIS	FED. AID PROJECT	

DETAIL OF INERTIAL BARRIERS

(110km/h (70 MPH) DESIGN - 19.5m (64') MEDIAN)





THIS SIDE FOR INFORMATION ONLY

GENERAL NOTES

1. ALL 1:10 SLOPES SHOWN ON THIS DETAIL SHALL BE CONSTRUCTED 1:10 OR FLATTER.
2. ANY EXISTING DRAINAGE STRUCTURES LOCATED WITHIN THE 44.2 m (145') WORKING AREA SHALL BE MODIFIED OR LEFT IN PLACE AS SHOWN ON THE PLANS. WHERE THE EXISTING DRAINAGE STRUCTURES ARE TO REMAIN IN PLACE, THE SLOPES ARE TO BE CONSTRUCTED AS SHOWN AS MODIFIED SLOPES ON THIS DETAIL AND AS DIRECTED BY THE ENGINEER.
3. THE SLOPES AS SHOWN ON THIS DETAIL SHALL APPLY TO BOTH ENDS OF THE BRIDGE PIER.
4. 19 MODULES-MASS 7990 kg (17600 LBS.)
5. IN AREAS OF 1:10 SLOPES PRECEDING THE ATTENUATOR IN THE MEDIAN INSTALLATION, 4 WOOD POSTS SHALL BE PLACED AT 1.5 m (15') INTERVALS IN THE MEDIAN ℄, SEE SPECIAL PROVISIONS.

	NAME	DATE
DESIGNED	D.L.P.	3-91
CHECKED	F.M.S.	3-91
CADD NO.	F-1.51A	

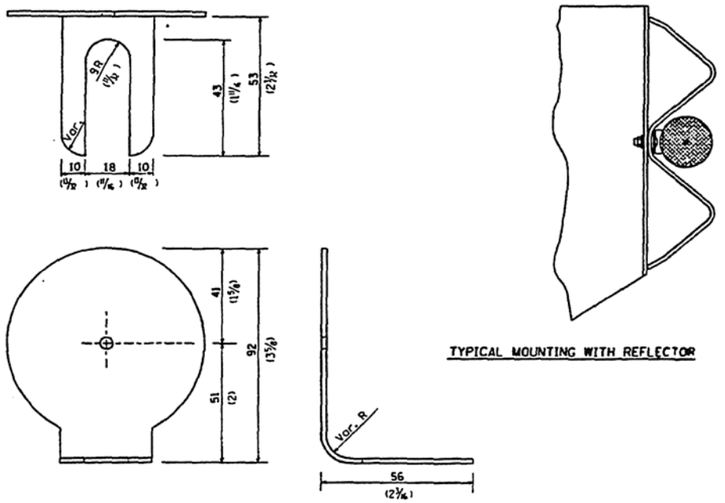
REVISIONS	
NAME	DATE
D.L.P.	6/94

INERTIAL BARRIER DETAILS

LIN ENGINEERING, LTD.

DESIGNED: S.M.W. CHECKED: A.W.W.
DRAWN: R.K.A. DATE: 12/95

F.A.I. 57	(10-34HB)BR	CHAMPAIGN	47	15

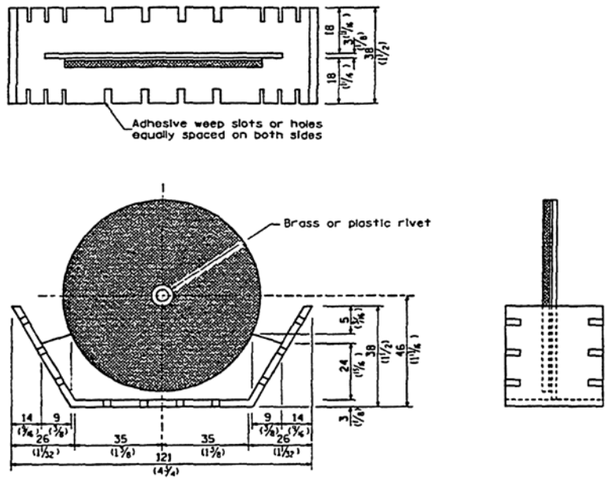


TYPICAL MOUNTING WITH REFLECTOR

GENERAL NOTES

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

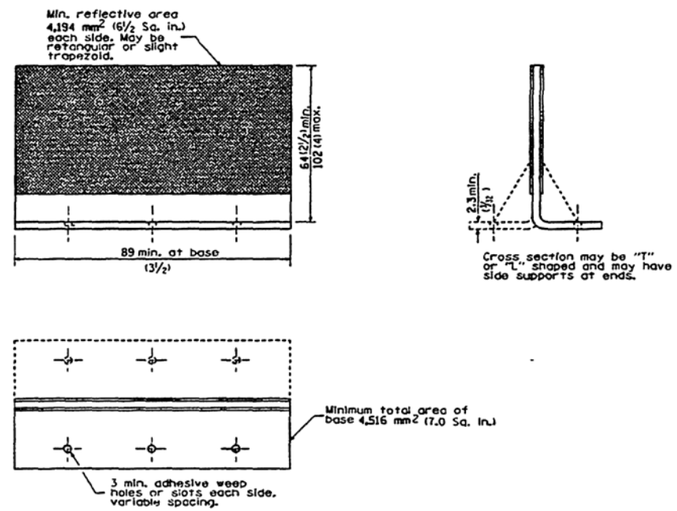
REFLECTOR MARKER TYPE A



GENERAL NOTES

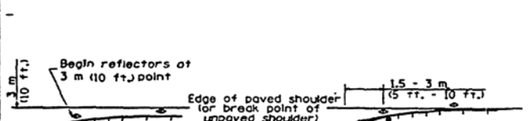
All dimensions shown are minimum.
All dimensions are in millimeters (inches) unless otherwise shown.

REFLECTOR MARKER TYPE B



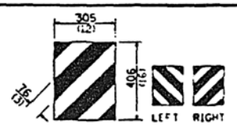
All dimensions are in millimeters (inches) unless otherwise shown.

REFLECTOR MARKER TYPE C



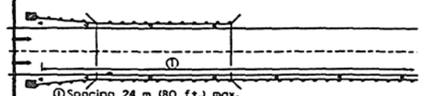
Omit terminal marker when terminal over 3 m (10 ft.) from edge of paved shoulder or break point of unpaved shoulder, or when terminal buried in backslope.

TERMINAL MARKER PLACEMENT

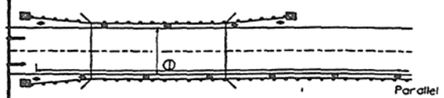


TERMINAL MARKER DETAILS

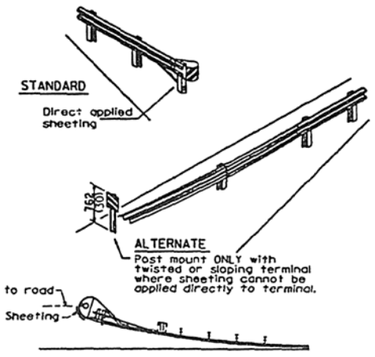
Color: Black / Yellow retroreflorized
OM - 1100 (L or R) Direct applied retroflective sheeting
OM - 1200 (L or R) Post mounted



ONE-WAY TRAFFIC



TWO-WAY TRAFFIC



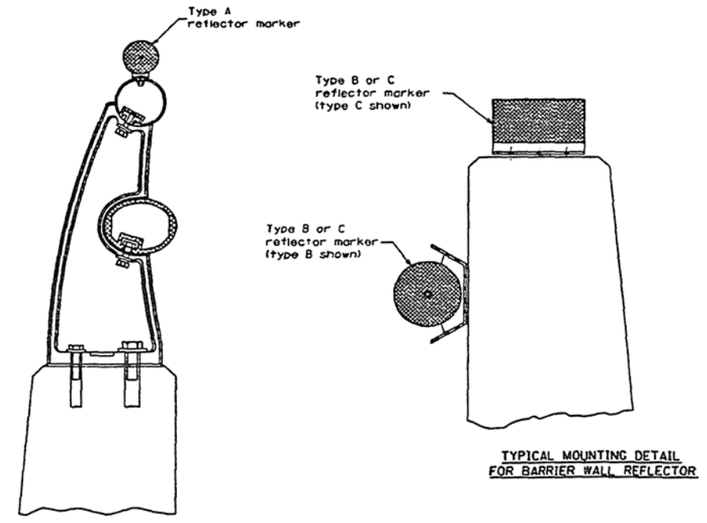
SHEETING POSITION

GUARDRAIL / BARRIER WALL / BRIDGE RAIL REFLECTIONS

- ◇ Bidirectional crystal
- ◁ Monodirectional crystal
- ◀ Monodirectional amber
- Terminal Marker - Black/Yellow Left or Right as appropriate

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

REFLECTOR AND TERMINAL MARKER PLACEMENT



TYPICAL MOUNTING DETAIL FOR BARRIER WALL REFLECTOR

TYPICAL MOUNTING DETAIL FOR BRIDGE RAIL REFLECTOR

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

REFLECTOR MOUNTING

LIN ENGINEERING, LTD.

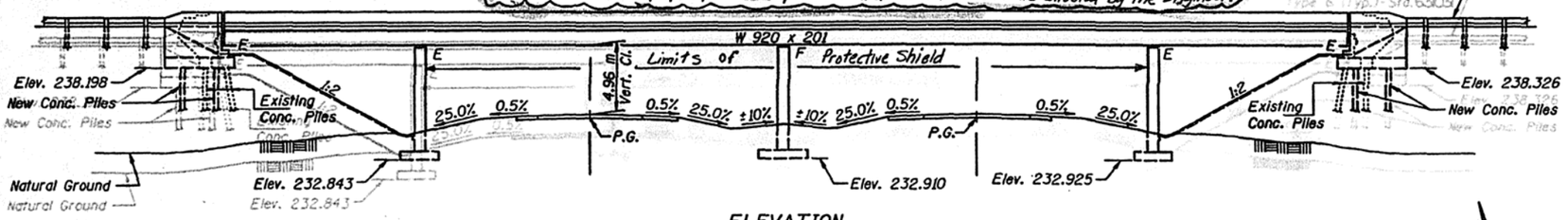
DESIGNED: R.J.P. CHECKED: T.M.M.
DRAWN: R.J.P. DATE: 2/96

ROUTE NO.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
F.A.I. 57	(10-34HB)BR	CHAMPAIGN	47	16
F.A.I. RTE. NO. 57	ILLINOIS	FED. AID PROJECT-		

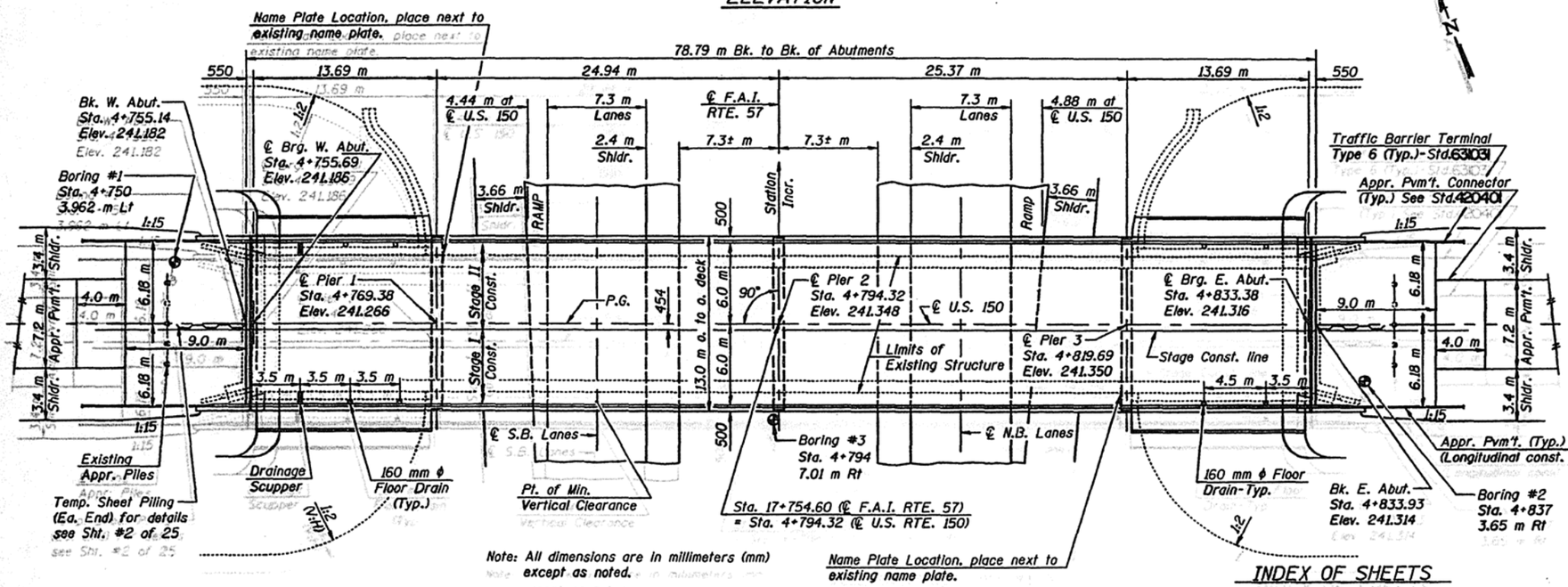
Sheet #1 of 25

B.M. Chisled square on top of abutment N.E. corner of bridge, 4.27 m left of Sta. 4+833.52 Elev.=241.411

EXISTING STRUCTURE: The superstructure consists of a R.C. deck 78.11 m long by 10.26 m wide supported on a four span 36 WF 135 girder. Traffic shall be maintained during the rehabilitation of the structure by stage construction. S.N. 010-0050 built as Section (10-34HB)BR in 1964. The Removed pipe hand'rail shall be salvaged and shall remain the property of the Department and stored on site as directed by the Engineer.



ELEVATION



Note: All dimensions are in millimeters (mm) except as noted.

PLAN

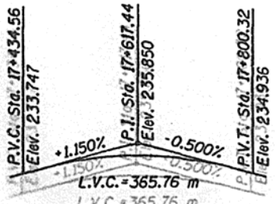
TOTAL BILL OF MATERIAL

ITEM	UNIT	SUPER	SUB	TOTAL
Concrete Removal	m3		20.7	20.7
Removal of Existing Concrete Deck	Each	1		1
Structure Excavation	m3		209.8	209.8
Preformed Joint Seal 102 mm	m	25.6		25.6
Concrete Structures	m3		177.4	177.4
Concrete Superstructure	m3	252.5		252.5
Bridge Deck Grooving	m2	936.0		936.0
Protective Coat	m2	1175		1175
Elastomeric Bearing Assembly, Type I	Each	16		16
Elastomeric Bearing Assembly, Type II	Each	16		16
Furnishing and Erecting Structural Steel	L. Sum	1		1
Stud Shear Connectors	Each	4856		4856
Jack and Remove Existing Bearings	Each	30		30
Structural Steel Removal	kg	450		450
Cleaning and Painting Steel Bridge	L. Sum	1		1
Reinforcement Bars, Epoxy Coated	kg	35,890	11,690	47,580
Slope Wall 100 mm	m2		135.1	135.1
Name Plates	Each	2		2
Bridge Seat Sealer	m2		13.9	13.9
Bar Splicers	Each	724	26	750
Power Tool Cleaning Residue Containment and Disposal	L. Sum	1		1
Blasting Residue Containment and Disposal	L. Sum	1		1
Drainage Scupper	Each	2		2
Floor Drains	Each	8		8
Furnishing Concrete Piles	m		73.0	73.0
Driving Concrete Piles	m		73.0	73.0
Test Piles - Concrete	Each		1	1
Temporary Sheet Piling	m2		16.3	16.3
Protective Shield	m2		714	714

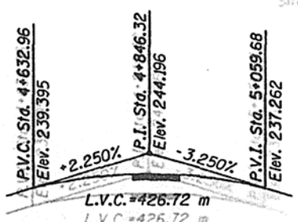
STATION 4+794.32
REBUILT IN BY
STATE OF ILLINOIS
F.A.I. 57 SEC. (10-34HB)BR
F.A. PROJ. IM-57-5( )257
LOADING MS18
STR. NO. 010-0050

NAME PLATE
See Std.515001

REVISIONS	
NAME OF REVISIONS	DATE
B. BLAND	2-20-97
B. BLAND	3-20-97



PROFILE GRADE
F.A.I. RTE. 57
Along ℄ Roadway



PROFILE GRADE
U.S. RTE. 150
Along ℄ Roadway

SEISMIC DATA

Seismic Performance Category (SPC) = A
Bedrock Acceleration Coefficient (A) = 0.05
Site Coefficient (S) = 1.0

DESIGN SPECIFICATIONS

1992 AASHTO & 1993 Interim & 1994 Interim
1983 Seismic Retrofitting
Guidelines for Highway Bridges
F.H.W.A./RD-83/007

LOADING MS18

Allow 1.2 kN/m² for future wearing surface.

DESIGN STRESSES

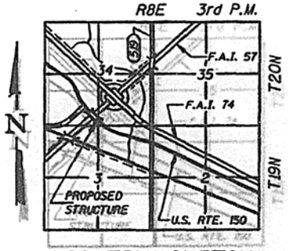
NEW CONSTRUCTION	OLD CONSTRUCTION
f'c = 24 MPa	fs = 138 MPa (struct. steel)
fs = 138 MPa (struct. steel)	fs = 138 MPa (reinf.)
fy = 400 MPa (reinf.)	f'c = 9.65 MPa

INDEX OF SHEETS

REVISED PLAN SHEETS

APPROVED
FOR STRUCTURAL ADEQUACY ONLY
Ralph E. Anderson
ENGINEER OF BRIDGES AND STRUCTURES

Paul B. Lin 3-12-96
ILLINOIS STRUCTURAL NO. 4419 DATE



LOCATION SKETCH

GENERAL PLAN & ELEVATION
U.S. RTE. 150 (BLOOMINGTON RD.)
OVER F.A.I. RTE. 57
SECTION (10-34HB)BR
STA. 4+794.32 (U.S. RTE. 150)
STA. 17+754.60 (F.A.I. RTE. 57)
CHAMPAIGN COUNTY
S.N. 010-0050

LIN ENGINEERING, LTD.
DESIGN: T.M.M. CHECKED: J.W.
DRAWN: N.C. DATE: 12/95

AS REVISED THIS 5-22-97

ROUTE NO.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
F.A.I.-57	(10-34HB)BR	CHAMPAIGN	47	17
F.A.I. "FED. ROAD DIST. NO. 7"		ILLINOIS	FED. AID PROJECT-	

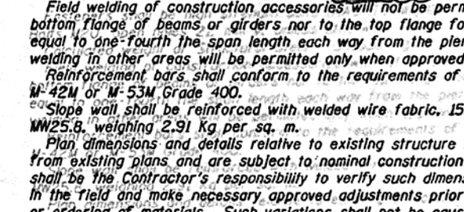
GENERAL NOTES

Fasteners shall be high strength bolts (AASHTO M164M).
Bolts M20, open holes 22 mm ϕ, unless otherwise noted.
Calculated weight of Structural Steel = 52320 Kg
Field welding of construction accessories will not be permitted to the bottom flange of beams or girders nor to the top flange for a distance equal to one-fourth the span length each way from the pier supports. Field welding in other areas will be permitted only when approved by the Engineer.
Reinforcement bars shall conform to the requirements of AASHTO M-31M, M-42M or M-53M Grade 400.
Slope wall shall be reinforced with welded wire fabric, 152 x 152 - MW25.8 x MW25.8, weighing 2.91 Kg per sq. m.
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.
Bearing pad surfaces shall be constructed or adjusted to the designated elevations within a tolerance of 3 mm. Adjustment shall be made either by grinding the surface or by shimming the bearing. Two 3 mm adjusting shims, of the dimension of the bottom bearing plate, shall be provided for each bearing in addition to all other plates or shims. (For Type I Elastomeric Bearings, shims of the dimensions of top plate shall be provided and placed as detailed.)
Bridge Seat Sealer shall be applied to the new concrete pedestals only.

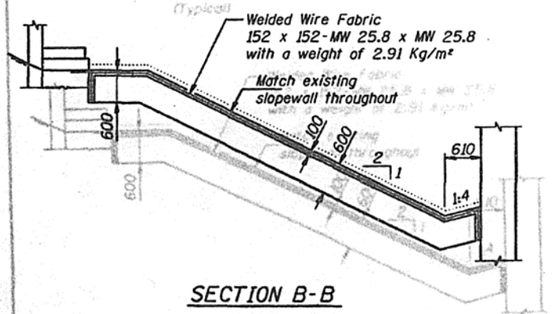
Cleaning and painting of the existing structural steel shall be as specified in the Special Provision for "Cleaning and Painting Existing Steel Structures". All existing structural steel within 1.5 m of either side of expansion joints shall be cleaned by Method 1. The exterior and the bottom flange of the fascia beams shall be cleaned by Method 3. All remaining existing structural steel shall be cleaned by Method 2. The aluminum epoxy mastic / acrylic paint system shall be used for painting of the existing structural steel. The color of the final finish coat for all interior steel surfaces shall be light gray, Munsell No. 5B 7/1.

The inorganic zinc rich primer / Acrylic / Acrylic Paint System shall be used for shop and field painting of new structural steel except where otherwise noted. The color of the final finish coat for all interior steel surfaces shall be light gray, Munsell No. 5B 7/1. The color of the final finish coat for the exterior and bottom flange of the fascia beams shall be Interstate Green, Munsell No. 7.5G 4/8. See Special Provision for "Cleaning and Painting New Metal Structures."

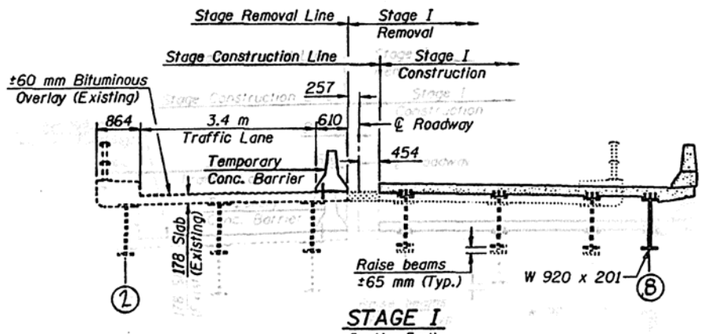
The main load carrying member components subject to tensile stress shall conform to the Supplemental Requirements for Notch Toughness Zone 2. These components are the wide flange beams, cover plates, and all splice plate material except fill plates (New Beams).
The contractor shall drive one test pile in a permanent location at west abutment as directed by the Engineer before ordering the remainder of piles.
All dimensions are in millimeters (mm) except as noted.
Anchor Bolts shall be set before bolting Diaphragms over the supports.
The pay width of the Protective Shield shall be 0.6 m beyond the outside edges of the existing deck.



SECTION A-A
(Typical)



SECTION B-B



STAGE I
(Looking East)

NOTE: For pay item "Temporary Concrete Barrier" see traffic control plans.

Work this sheet with sheet # 11 of 25.

STAGE I CONSTRUCTION

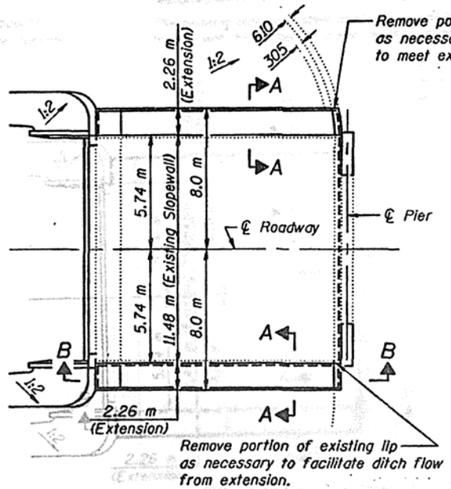
1. Place temporary concrete barrier and shift traffic to locations as shown above.
2. Remove deck, parapet and rails as shown above. Remove existing approach pavement as is shown on the traffic control plans and drive temporary sheet piling.

2a. Disconnect diaphragms between beams 4 & 5. See Step 3.

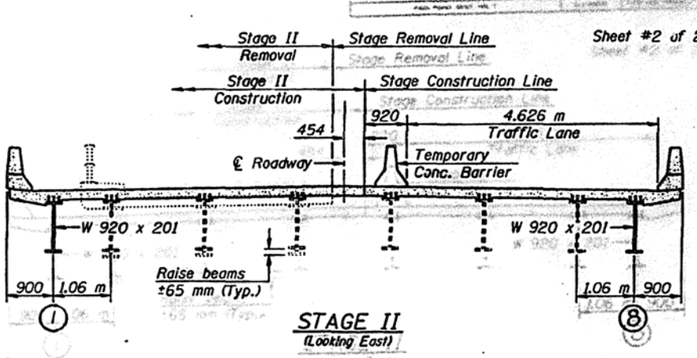
4. Jack existing beams (150 mm max.), in accordance with instructions on Sht. #11 of 25, and remove existing bearings.
5. Remove abutment backwall and wings.
6. Build abutment and pier extensions, including concrete pads.
7. Allow concrete pads to cure.
8. Widen existing slopewalls.
9. Install new bearings for existing beams at abutments and piers and lower beams onto new bearings.
10. Erect new beam and bearings at abutment and piers.
11. Construct stage I bridge deck, parapet and approach pavement.

Prior to pouring the new concrete for the deck, all loose rust, loose mill scale, and all other loose, detrimental foreign material shall be removed from the portions of the flanges of stringers in contact with concrete. The removal shall be accomplished in accordance with the requirements of the SSPC Surface Preparation Specifications SP-3 for power tool cleaning or SP-2 for hand tool cleaning. Cost shall be included with "Removal of Existing Concrete Deck".

The existing structural steel coating contains lead. The Contractor should take appropriate precautions to deal with the presence of lead on this project.



SLOPEWALL EXTENSION
West Abutment Shown
East Abutment - Opposite Hand



STAGE II
(Looking East)

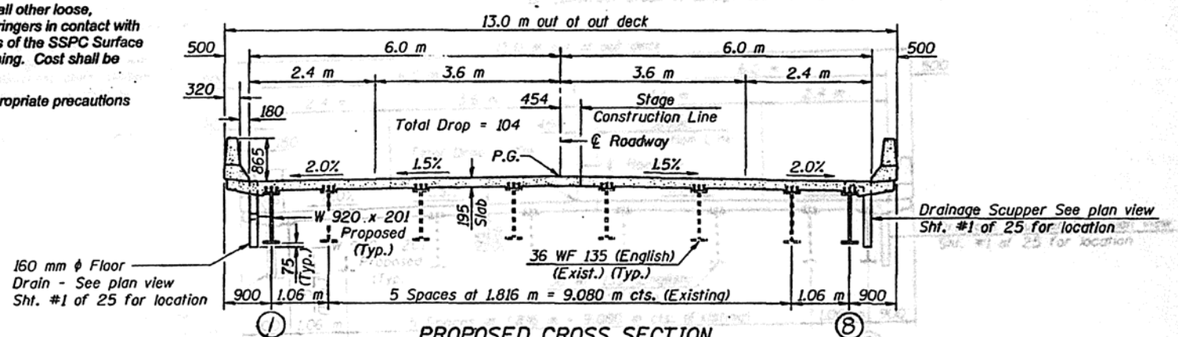
STAGE II CONSTRUCTION

1. Place temporary concrete barrier and shift traffic to locations as shown above.
2. Remove remainder of existing deck, parapet, rails and approach pavements. See Step 3.

3a. Jack existing beams (150 mm max.), in accordance with instructions on Sht. #11 of 25, and remove existing bearings.

4. Remove abutment backwall and wings.
5. Build abutment and pier extensions, including concrete pads.
6. Allow concrete pads to cure.
7. Widen existing slopewalls.
8. Install new bearings for existing beams at abutments and piers and lower beams onto new bearings.
9. Reconnect existing diaphragms between beams 4 & 5.
10. Erect new beam and bearings at abutments and piers.
11. Construct stage II bridge deck, parapet and approach pavement.

3. Prior to jacking of existing diaphragms, the following shall be done:
a) Remove existing rivets connecting angle A to the existing beams.
b) Reconnect angle A to the existing beams with new M20 H.S. bolts.
c) Cost included with "Jack and Remove Existing Bearings"

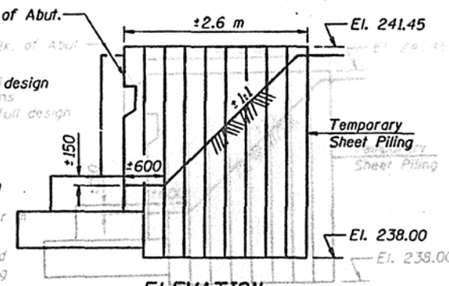


PROPOSED CROSS SECTION
(Looking East)

NOTE: If the Contractor chooses to alter the temporary cantilevered sheet piling design requirements shown on the plans for lesser design requirements, then full design submittals with the required seals will be expected by the Department for review and approval.

Req'd. Embedment = 1.4 m
Req'd. Sec. Mod. = 80.659 mm³ per m

NOTE: Any sheets not reaching their required embedment due to the abutment footing must be restrained by developing an attachment to the existing abutment backwall. This attachment shall be approved by the Engineer.



ELEVATION
TEMPORARY SHEET PILING - EA. ABUT.

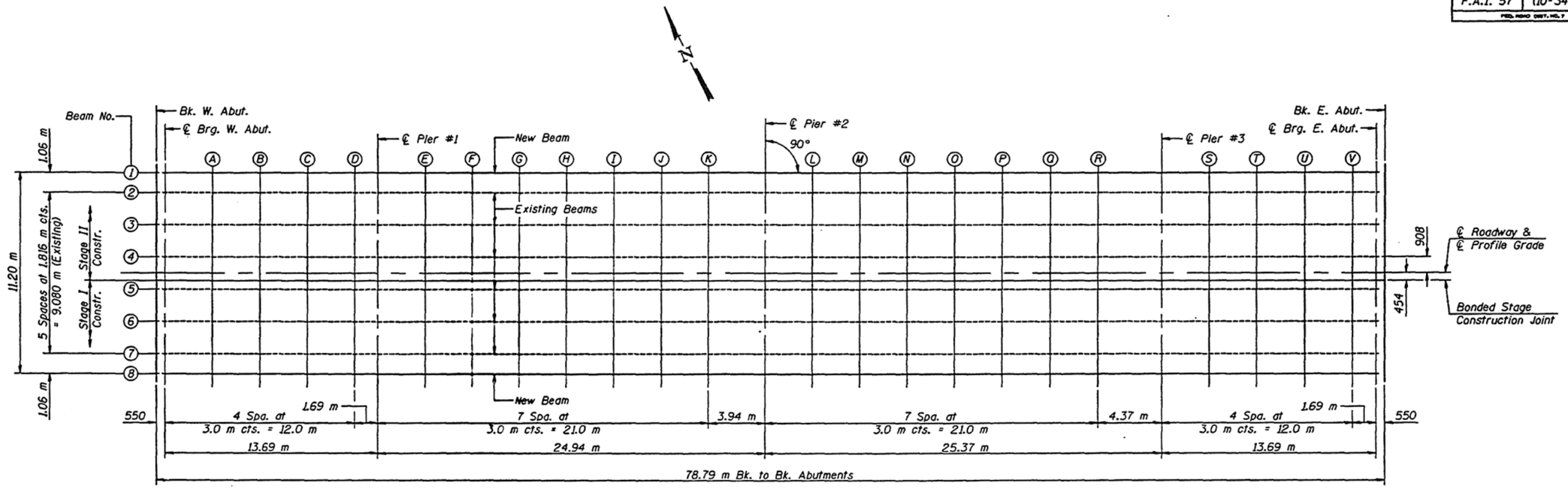
STAGE CONSTRUCTION AND SLOPEWALL DETAILS
U.S. RTE. 150 (BLOOMINGTON RD.) OVER F.A.I. RTE. 57
SECTION (10-34HB)BR
STA. 4+794.32 (U.S. RTE. 150)
STA. 17+754.60 (F.A.I. RTE. 57)
CHAMPAIGN COUNTY
S.N. 010-0050

LIN ENGINEERING, LTD.
DESIGN: J.W. CHECKED: T.M.M.
DRAWN: N.C. DATE: 12/95

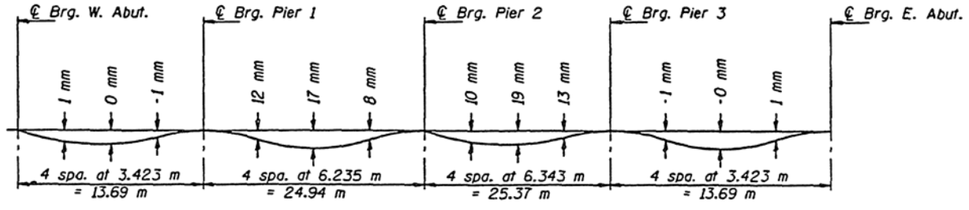
AS REVISED PMR 5-27-99

ROUTE NO.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
F.A.I. 57	(10-34HB)BR	CHAMPAIGN	47	18
FED. ROAD DIST. NO. 7		ILLINOIS	FED. AID PROJECT=	

Sht. #3 of 25



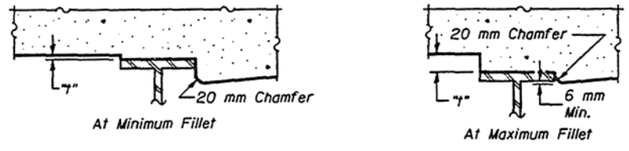
PLAN



DEAD LOAD DEFLECTION DIAGRAM

(Includes weight of concrete only)

Note: The above deflections are not to be used in the field if the engineer is working from the grade elevations adjusted for dead load deflections as shown on Sheet #4 & #5 of 25.



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

FILLET HEIGHTS

DECK ELEVATIONS
U.S. ROUTE 150 (BLOOMINGTON RD.)
OVER F.A.I. RTE. 57
SECTION (10-34HB)BR
STA. 4+794.32 (U.S. RTE. 150)
STA. 17+754.60 (F.A.I. RTE. 57)
CHAMPAIGN COUNTY
S.N. 010-0050

LIN ENGINEERING, LTD.

DESIGN: T.M.M. CHECKED: J.W.
DRAWN: N.C. DATE: 12/95

ROUTE NO.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
F.A.I. 57	(10-34HB)BR	CHAMPAIGN	47	19
FED. ROAD DIST. NO. 7	ILLINOIS	FED. AID PROJECT-		

Sht. #4 of 25

BEAM #1

Location	Station	Offset (m)	Theoretical Grade Elevations	Theoretical Grade Elevations Adjusted For Dead Load Deflection
Bk. West Abut.	4+755.140	-5.600	241.088	241.088
℄ Brg. West Abut.	4+755.690	-5.600	241.092	241.092
A	4+758.690	-5.600	241.112	241.112
B	4+761.690	-5.600	241.130	241.130
C	4+764.690	-5.600	241.147	241.147
D	4+767.690	-5.600	241.163	241.162
℄ Pier 1	4+769.380	-5.600	241.172	241.172
E	4+772.380	-5.600	241.186	241.191
F	4+775.380	-5.600	241.199	241.210
G	4+778.380	-5.600	241.211	241.226
H	4+781.380	-5.600	241.221	241.238
I	4+784.380	-5.600	241.231	241.246
J	4+787.380	-5.600	241.239	241.249
K	4+790.380	-5.600	241.246	241.250
℄ Pier 2	4+794.320	-5.600	241.254	241.254
L	4+797.320	-5.600	241.259	241.261
M	4+800.320	-5.600	241.262	241.271
N	4+803.320	-5.600	241.264	241.279
O	4+806.320	-5.600	241.265	241.284
P	4+809.320	-5.600	241.265	241.284
Q	4+812.320	-5.600	241.264	241.279
R	4+815.320	-5.600	241.261	241.270
℄ Pier 3	4+819.690	-5.600	241.256	241.256
S	4+822.690	-5.600	241.250	241.249
T	4+825.690	-5.600	241.244	241.244
U	4+828.690	-5.600	241.236	241.237
V	4+831.690	-5.600	241.228	241.228
℄ Brg. East Abut.	4+833.380	-5.600	241.222	241.222
Bk. East Abut.	4+833.930	-5.600	241.220	241.220

BEAM #2

Location	Station	Offset (m)	Theoretical Grade Elevations	Theoretical Grade Elevations Adjusted For Dead Load Deflection
Bk. West Abut.	4+755.140	-4.540	241.110	241.110
℄ Brg. West Abut.	4+755.690	-4.540	241.113	241.113
A	4+758.690	-4.540	241.133	241.133
B	4+761.690	-4.540	241.151	241.152
C	4+764.690	-4.540	241.168	241.168
D	4+767.690	-4.540	241.184	241.183
℄ Pier 1	4+769.380	-4.540	241.193	241.193
E	4+772.380	-4.540	241.207	241.212
F	4+775.380	-4.540	241.220	241.231
G	4+778.380	-4.540	241.232	241.248
H	4+781.380	-4.540	241.242	241.260
I	4+784.380	-4.540	241.252	241.267
J	4+787.380	-4.540	241.260	241.270
K	4+790.380	-4.540	241.268	241.271
℄ Pier 2	4+794.320	-4.540	241.275	241.275
L	4+797.320	-4.540	241.280	241.282
M	4+800.320	-4.540	241.283	241.292
N	4+803.320	-4.540	241.285	241.301
O	4+806.320	-4.540	241.286	241.305
P	4+809.320	-4.540	241.286	241.305
Q	4+812.320	-4.540	241.285	241.300
R	4+815.320	-4.540	241.283	241.291
℄ Pier 3	4+819.690	-4.540	241.277	241.277
S	4+822.690	-4.540	241.272	241.270
T	4+825.690	-4.540	241.265	241.265
U	4+828.690	-4.540	241.258	241.258
V	4+831.690	-4.540	241.249	241.249
℄ Brg. East Abut.	4+833.380	-4.540	241.243	241.243
Bk. East Abut.	4+833.930	-4.540	241.242	241.242

BEAM #3

Location	Station	Offset (m)	Theoretical Grade Elevations	Theoretical Grade Elevations Adjusted For Dead Load Deflection
Bk. West Abut.	4+755.140	-2.724	241.142	241.142
℄ Brg. West Abut.	4+755.690	-2.724	241.145	241.145
A	4+758.690	-2.724	241.165	241.165
B	4+761.690	-2.724	241.183	241.184
C	4+764.690	-2.724	241.200	241.200
D	4+767.690	-2.724	241.216	241.215
℄ Pier 1	4+769.380	-2.724	241.225	241.225
E	4+772.380	-2.724	241.239	241.244
F	4+775.380	-2.724	241.252	241.263
G	4+778.380	-2.724	241.264	241.279
H	4+781.380	-2.724	241.274	241.292
I	4+784.380	-2.724	241.284	241.299
J	4+787.380	-2.724	241.292	241.302
K	4+790.380	-2.724	241.299	241.303
℄ Pier 2	4+794.320	-2.724	241.307	241.307
L	4+797.320	-2.724	241.312	241.314
M	4+800.320	-2.724	241.315	241.324
N	4+803.320	-2.724	241.317	241.333
O	4+806.320	-2.724	241.318	241.337
P	4+809.320	-2.724	241.318	241.337
Q	4+812.320	-2.724	241.317	241.332
R	4+815.320	-2.724	241.315	241.323
℄ Pier 3	4+819.690	-2.724	241.309	241.309
S	4+822.690	-2.724	241.304	241.302
T	4+825.690	-2.724	241.297	241.297
U	4+828.690	-2.724	241.290	241.290
V	4+831.690	-2.724	241.281	241.281
℄ Brg. East Abut.	4+833.380	-2.724	241.275	241.275
Bk. East Abut.	4+833.930	-2.724	241.273	241.273

BEAM #4

Location	Station	Offset (m)	Theoretical Grade Elevations	Theoretical Grade Elevations Adjusted For Dead Load Deflection
Bk. West Abut.	4+755.140	-0.908	241.169	241.169
℄ Brg. West Abut.	4+755.690	-0.908	241.172	241.172
A	4+758.690	-0.908	241.192	241.193
B	4+761.690	-0.908	241.210	241.211
C	4+764.690	-0.908	241.227	241.227
D	4+767.690	-0.908	241.243	241.242
℄ Pier 1	4+769.380	-0.908	241.252	241.252
E	4+772.380	-0.908	241.266	241.271
F	4+775.380	-0.908	241.279	241.290
G	4+778.380	-0.908	241.291	241.307
H	4+781.380	-0.908	241.302	241.319
I	4+784.380	-0.908	241.311	241.326
J	4+787.380	-0.908	241.320	241.329
K	4+790.380	-0.908	241.327	241.330
℄ Pier 2	4+794.320	-0.908	241.334	241.334
L	4+797.320	-0.908	241.339	241.342
M	4+800.320	-0.908	241.342	241.351
N	4+803.320	-0.908	241.345	241.360
O	4+806.320	-0.908	241.346	241.365
P	4+809.320	-0.908	241.345	241.364
Q	4+812.320	-0.908	241.344	241.359
R	4+815.320	-0.908	241.342	241.350
℄ Pier 3	4+819.690	-0.908	241.336	241.336
S	4+822.690	-0.908	241.331	241.330
T	4+825.690	-0.908	241.324	241.324
U	4+828.690	-0.908	241.317	241.317
V	4+831.690	-0.908	241.308	241.308
℄ Brg. East Abut.	4+833.380	-0.908	241.303	241.303
Bk. East Abut.	4+833.930	-0.908	241.301	241.301

℄ ROADWAY & PROFILE GRADE

Location	Station	Offset (m)	Theoretical Grade Elevations	Theoretical Grade Elevations Adjusted For Dead Load Deflection
Bk. West Abut.	4+755.140	0.000	241.182	241.182
℄ Brg. West Abut.	4+755.690	0.000	241.186	241.186
A	4+758.690	0.000	241.206	241.206
B	4+761.690	0.000	241.224	241.224
C	4+764.690	0.000	241.241	241.241
D	4+767.690	0.000	241.257	241.256
℄ Pier 1	4+769.380	0.000	241.266	241.266
E	4+772.380	0.000	241.280	241.285
F	4+775.380	0.000	241.293	241.304
G	4+778.380	0.000	241.305	241.320
H	4+781.380	0.000	241.315	241.332
I	4+784.380	0.000	241.325	241.340
J	4+787.380	0.000	241.333	241.343
K	4+790.380	0.000	241.340	241.344
℄ Pier 2	4+794.320	0.000	241.348	241.348
L	4+797.320	0.000	241.353	241.355
M	4+800.320	0.000	241.356	241.365
N	4+803.320	0.000	241.358	241.373
O	4+806.320	0.000	241.359	241.378
P	4+809.320	0.000	241.359	241.378
Q	4+812.320	0.000	241.358	241.373
R	4+815.320	0.000	241.355	241.364
℄ Pier 3	4+819.690	0.000	241.350	241.350
S	4+822.690	0.000	241.344	241.343
T	4+825.690	0.000	241.338	241.338
U	4+828.690	0.000	241.330	241.331
V	4+831.690	0.000	241.322	241.322
℄ Brg. East Abut.	4+833.380	0.000	241.316	241.316
Bk. East Abut.	4+833.930	0.000	241.314	241.314

DECK ELEVATIONS
U.S. ROUTE 150 (BLOOMINGTON RD.)
OVER F.A.I. RTE. 57
SECTION (10-34HB)BR
STA. 4+794.32 (U.S. RTE. 150)
STA. 17+754.60 (F.A.I. RTE. 57)
CHAMPAIGN COUNTY
S.N. 010-0050

LIN ENGINEERING, LTD.

DESIGN: T.M.M. CHECKED: J.W.
DRAWN: N.C. DATE: 12/95

ROUTE NO.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
F.A.I. 57	(10-34HB)BR	CHAMPAIGN	47	20
FED. ROAD DIST. NO. 7		ILLINOIS	FED. AID PROJECT-	

℄ STAGE CONSTRUCTION

Location	Station	Offset (m)	Theoretical Grade Elevations	Theoretical Grade Elevations Adjusted For Dead Load Deflection
Bk. West Abut.	4+755.140	0.454	241.176	241.176
℄ Brg. West Abut.	4+755.690	0.454	241.179	241.179
A	4+758.690	0.454	241.199	241.199
B	4+761.690	0.454	241.217	241.218
C	4+764.690	0.454	241.234	241.234
D	4+767.690	0.454	241.250	241.249
℄ Pier 1	4+769.380	0.454	241.259	241.259
E	4+772.380	0.454	241.273	241.278
F	4+775.380	0.454	241.286	241.297
G	4+778.380	0.454	241.298	241.314
H	4+781.380	0.454	241.308	241.326
I	4+784.380	0.454	241.318	241.333
J	4+787.380	0.454	241.326	241.336
K	4+790.380	0.454	241.334	241.337
℄ Pier 2	4+794.320	0.454	241.341	241.341
L	4+797.320	0.454	241.346	241.348
M	4+800.320	0.454	241.349	241.358
N	4+803.320	0.454	241.351	241.367
O	4+806.320	0.454	241.352	241.371
P	4+809.320	0.454	241.352	241.371
Q	4+812.320	0.454	241.351	241.366
R	4+815.320	0.454	241.349	241.357
℄ Pier 3	4+819.690	0.454	241.343	241.343
S	4+822.690	0.454	241.338	241.336
T	4+825.690	0.454	241.331	241.331
U	4+828.690	0.454	241.324	241.324
V	4+831.690	0.454	241.315	241.315
℄ Brg. East Abut.	4+833.380	0.454	241.309	241.309
Bk. East Abut.	4+833.930	0.454	241.308	241.308

BEAM #5

Location	Station	Offset (m)	Theoretical Grade Elevations	Theoretical Grade Elevations Adjusted For Dead Load Deflection
Bk. West Abut.	4+755.140	0.908	241.169	241.169
℄ Brg. West Abut.	4+755.690	0.908	241.172	241.172
A	4+758.690	0.908	241.192	241.193
B	4+761.690	0.908	241.210	241.211
C	4+764.690	0.908	241.227	241.227
D	4+767.690	0.908	241.243	241.242
℄ Pier 1	4+769.380	0.908	241.252	241.252
E	4+772.380	0.908	241.266	241.271
F	4+775.380	0.908	241.279	241.290
G	4+778.380	0.908	241.291	241.307
H	4+781.380	0.908	241.302	241.319
I	4+784.380	0.908	241.311	241.326
J	4+787.380	0.908	241.320	241.329
K	4+790.380	0.908	241.327	241.330
℄ Pier 2	4+794.320	0.908	241.334	241.334
L	4+797.320	0.908	241.339	241.342
M	4+800.320	0.908	241.342	241.351
N	4+803.320	0.908	241.345	241.360
O	4+806.320	0.908	241.346	241.365
P	4+809.320	0.908	241.345	241.364
Q	4+812.320	0.908	241.344	241.359
R	4+815.320	0.908	241.342	241.350
℄ Pier 3	4+819.690	0.908	241.336	241.336
S	4+822.690	0.908	241.331	241.330
T	4+825.690	0.908	241.324	241.324
U	4+828.690	0.908	241.317	241.317
V	4+831.690	0.908	241.308	241.308
℄ Brg. East Abut.	4+833.380	0.908	241.303	241.303
Bk. East Abut.	4+833.930	0.908	241.301	241.301

BEAM #6

Location	Station	Offset (m)	Theoretical Grade Elevations	Theoretical Grade Elevations Adjusted For Dead Load Deflection
Bk. West Abut.	4+755.140	2.724	241.142	241.142
℄ Brg. West Abut.	4+755.690	2.724	241.145	241.145
A	4+758.690	2.724	241.165	241.165
B	4+761.690	2.724	241.183	241.184
C	4+764.690	2.724	241.200	241.200
D	4+767.690	2.724	241.216	241.215
℄ Pier 1	4+769.380	2.724	241.225	241.225
E	4+772.380	2.724	241.239	241.244
F	4+775.380	2.724	241.252	241.263
G	4+778.380	2.724	241.264	241.279
H	4+781.380	2.724	241.274	241.292
I	4+784.380	2.724	241.284	241.299
J	4+787.380	2.724	241.292	241.302
K	4+790.380	2.724	241.299	241.303
℄ Pier 2	4+794.320	2.724	241.307	241.307
L	4+797.320	2.724	241.312	241.314
M	4+800.320	2.724	241.315	241.324
N	4+803.320	2.724	241.317	241.333
O	4+806.320	2.724	241.318	241.337
P	4+809.320	2.724	241.318	241.337
Q	4+812.320	2.724	241.317	241.332
R	4+815.320	2.724	241.315	241.323
℄ Pier 3	4+819.690	2.724	241.309	241.309
S	4+822.690	2.724	241.304	241.302
T	4+825.690	2.724	241.297	241.297
U	4+828.690	2.724	241.290	241.290
V	4+831.690	2.724	241.281	241.281
℄ Brg. East Abut.	4+833.380	2.724	241.275	241.275
Bk. East Abut.	4+833.930	2.724	241.273	241.273

BEAM #7

Location	Station	Offset (m)	Theoretical Grade Elevations	Theoretical Grade Elevations Adjusted For Dead Load Deflection
Bk. West Abut.	4+755.140	4.540	241.110	241.110
℄ Brg. West Abut.	4+755.690	4.540	241.113	241.113
A	4+758.690	4.540	241.133	241.133
B	4+761.690	4.540	241.151	241.152
C	4+764.690	4.540	241.168	241.168
D	4+767.690	4.540	241.184	241.183
℄ Pier 1	4+769.380	4.540	241.193	241.193
E	4+772.380	4.540	241.207	241.212
F	4+775.380	4.540	241.220	241.231
G	4+778.380	4.540	241.232	241.248
H	4+781.380	4.540	241.242	241.260
I	4+784.380	4.540	241.252	241.267
J	4+787.380	4.540	241.260	241.270
K	4+790.380	4.540	241.268	241.271
℄ Pier 2	4+794.320	4.540	241.275	241.275
L	4+797.320	4.540	241.280	241.282
M	4+800.320	4.540	241.283	241.292
N	4+803.320	4.540	241.285	241.301
O	4+806.320	4.540	241.286	241.305
P	4+809.320	4.540	241.286	241.305
Q	4+812.320	4.540	241.285	241.300
R	4+815.320	4.540	241.283	241.291
℄ Pier 3	4+819.690	4.540	241.277	241.277
S	4+822.690	4.540	241.272	241.270
T	4+825.690	4.540	241.265	241.265
U	4+828.690	4.540	241.258	241.258
V	4+831.690	4.540	241.249	241.249
℄ Brg. East Abut.	4+833.380	4.540	241.243	241.243
Bk. East Abut.	4+833.930	4.540	241.242	241.242

BEAM #8

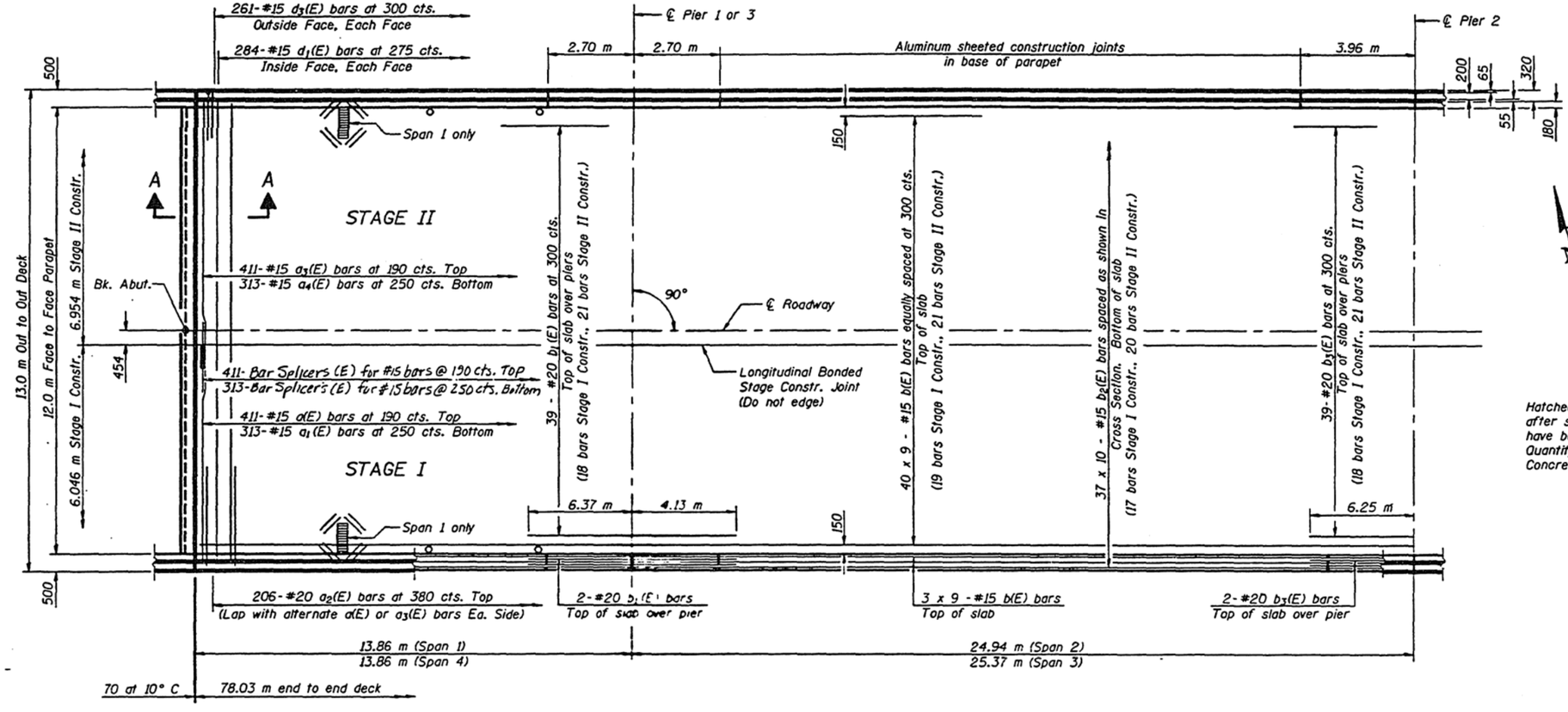
Location	Station	Offset (m)	Theoretical Grade Elevations	Theoretical Grade Elevations Adjusted For Dead Load Deflection
Bk. West Abut.	4+755.140	5.600	241.088	241.088
℄ Brg. West Abut.	4+755.690	5.600	241.092	241.092
A	4+758.690	5.600	241.112	241.112
B	4+761.690	5.600	241.130	241.130
C	4+764.690	5.600	241.147	241.147
D	4+767.690	5.600	241.163	241.162
℄ Pier 1	4+769.380	5.600	241.172	241.172
E	4+772.380	5.600	241.186	241.191
F	4+775.380	5.600	241.199	241.210
G	4+778.380	5.600	241.211	241.226
H	4+781.380	5.600	241.221	241.238
I	4+784.380	5.600	241.231	241.246
J	4+787.380	5.600	241.239	241.249
K	4+790.380	5.600	241.246	241.250
℄ Pier 2	4+794.320	5.600	241.254	241.254
L	4+797.320	5.600	241.259	241.261
M	4+800.320	5.600	241.262	241.271
N	4+803.320	5.600	241.264	241.279
O	4+806.320	5.600	241.265	241.284
P	4+809.320	5.600	241.265	241.284
Q	4+812.320	5.600	241.264	241.279
R	4+815.320	5.600	241.261	241.270
℄ Pier 3	4+819.690	5.600	241.256	241.256
S	4+822.690	5.600	241.250	241.249
T	4+825.690	5.600	241.244	241.244
U	4+828.690	5.600	241.236	241.237
V	4+831.690	5.600	241.228	241.228
℄ Brg. East Abut.	4+833.380	5.600	241.222	241.222
Bk. East Abut.	4+833.930	5.600	241.220	241.220

DECK ELEVATIONS
U.S. ROUTE 150 (BLOOMINGTON RD.)
OVER F.A.I. RTE. 57
SECTION (10-34HB)BR
STA. 4+794.32 (U.S. RTE. 150)
STA. 17+754.60 (F.A.I. RTE. 57)
CHAMPAIGN COUNTY
S.N. 010-0050

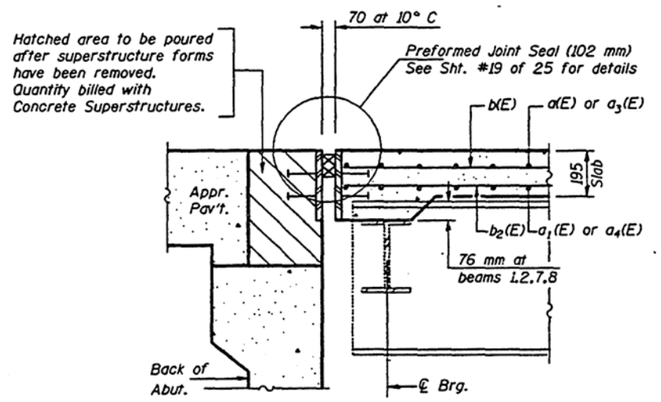
LIN ENGINEERING, LTD.	
DESIGN: T.L.L.	CHECKED: J.W.
DRAWN: N.C.	DATE: 12/95

ROUTE NO.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
F.A.I. 57	(10-34HB)BR	CHAMPAIGN	47	21
FED. ROAD DIST. NO. 7		ILLINOIS	FED. AID PROJECT-	

Sht. #6 of 25



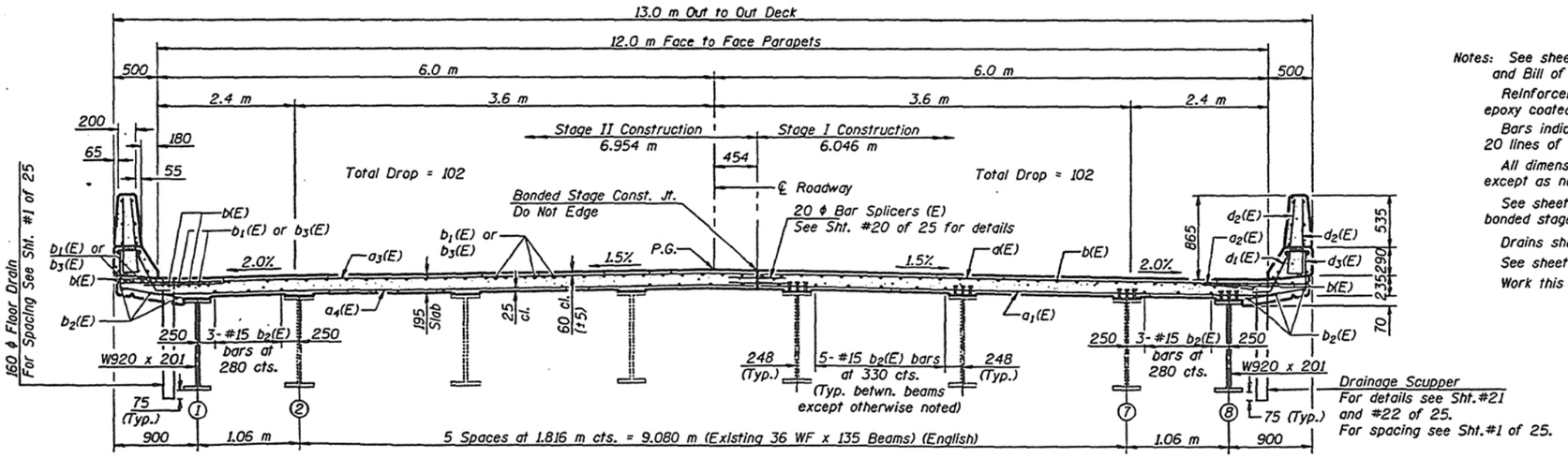
HALF PLAN



SECTION A-A

MIN. BAR LAP

#15 bars 640 mm



NEAR PIERS

CROSS SECTION
(Looking East)

NEAR MIDSPAN

Drainage Scupper
For details see Sht.#21 and #22 of 25.
For spacing see Sht.#1 of 25.

Notes: See sheet #7 of 25 for superstructure details and Bill of Material.

Reinforcement bars designated (E) shall be epoxy coated.

Bars indicated thus 20 x 3-#15 etc. indicates 20 lines of bars with 3 lengths per line.

All dimensions are in millimeters (mm) except as noted.

See sheet #20 of 25 for Bar Splicer details at bonded stage construction joint.

Drains shall be located clear of all diaphragms.

See sheet #7 of 25 for parapet reinforcement.

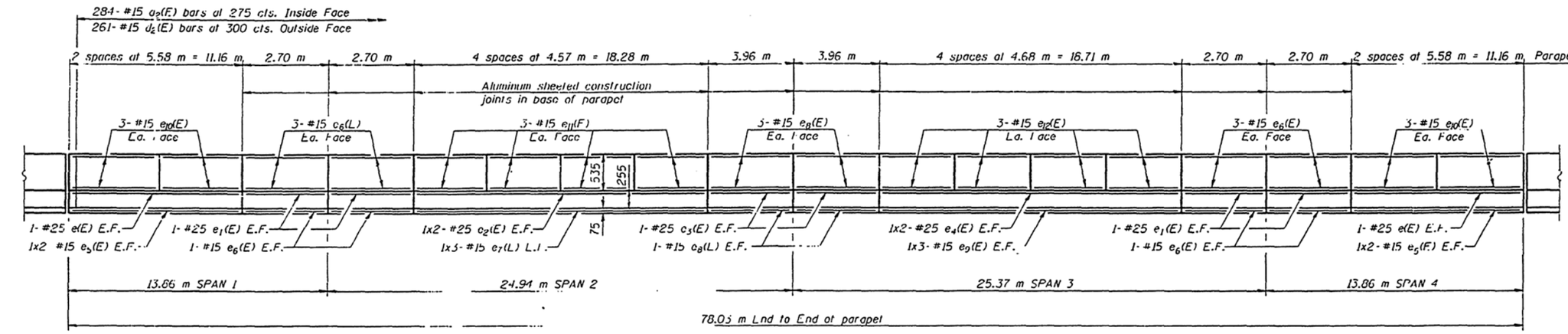
Work this sheet with sht. #7 of 25.

SUPERSTRUCTURE
U.S. RTE. 150 (BLOOMINGTON RD.)
OVER F.A.I. RTE. 57
SECTION (10-34HB)BR
STA. 4+794.32 (U.S. RTE. 150)
STA. 17+754.60 (F.A.I. RTE. 57)
CHAMPAIGN COUNTY
S.N. 010-0050

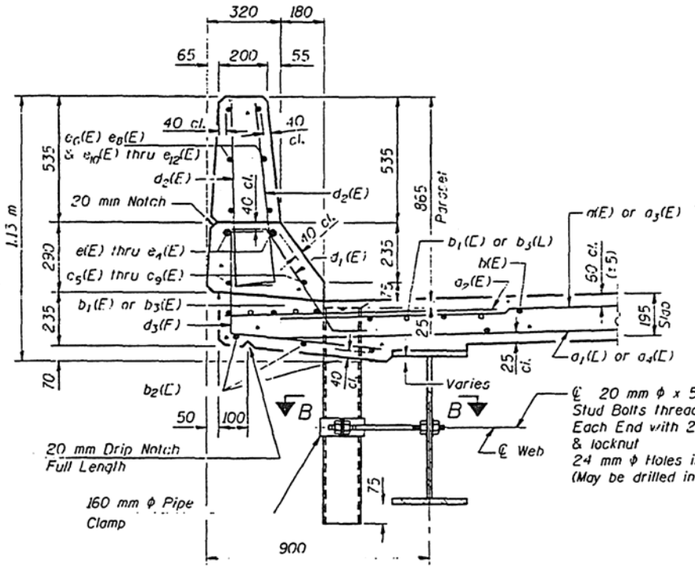
LIN ENGINEERING, LTD.	
DESIGN: T.M.M.	CHECKED: J.W.
DRAWN: N.C.	DATE: 12/95

ROUTE NO.	SECTION	COUNTY		
F.A.I. 57	(10-34HB)BR	CHAMPAIGN	47	2
FED. ROAD DIST. NO. 7		ILLINOIS	FED. AID PROJECT.	

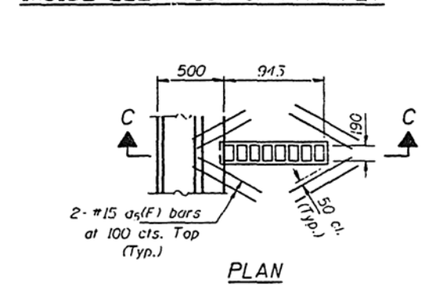
Sht. #7 of 25



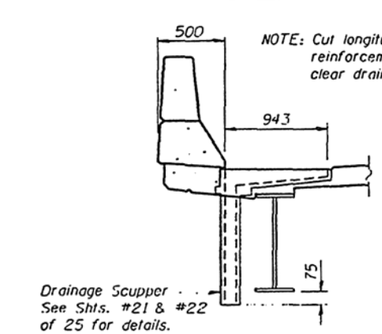
INSIDE ELEVATION OF PARAPET



SECTION THRU PARAPET

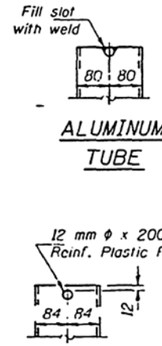


PLAN



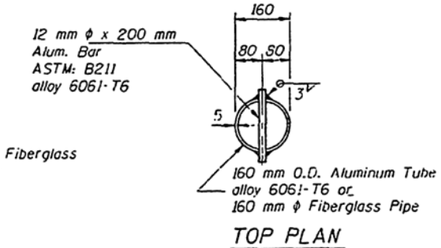
SECTION C-C

(Section thru parapet showing Drainage Scupper)



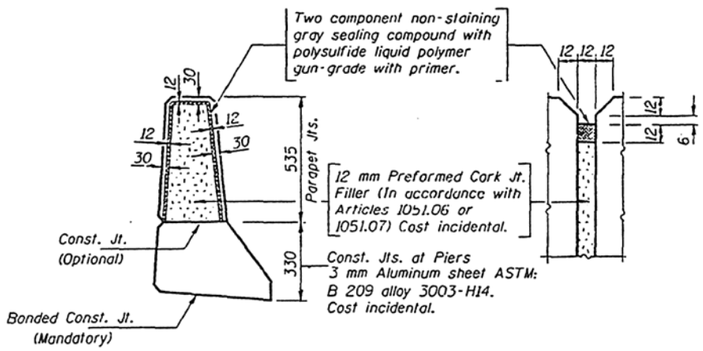
ALUMINUM TUBE

FIBERGLASS PIPE



TOP PLAN

(Showing Aluminum Tube)



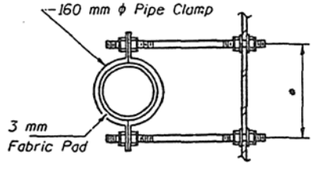
PARAPET JOINT DETAILS

Notes:

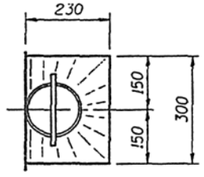
The exterior surfaces of the Floor Drain shall be painted with the finish coat of paint system specified for Structural Steel. The exterior surfaces of the drain shall be cleaned and given a washcoat pretreatment in accordance with Steel Structures Painting Council's Spec. SSPC-SP1 & SSPC-Paint 27 prior to painting.

Fiberglass pipe shall conform to ASTM: D2996, with short-time rupture strength hoop tensile stress of 200 Mpa minimum. The surface of the Fiberglass pipe shall be free of bond inhibiting agents.

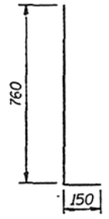
* Dimension as required by Pipe Clamp



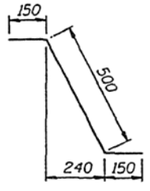
SECTION B-B



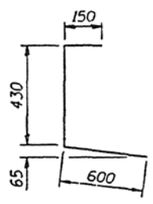
TOP PLAN



BARS d_2(E)



BAR d_1(E)



BAR d_3(E)

MIN. BAR LAP

#15 bars 640
#25 bars 1.52 m

SUPERSTRUCTURE BILL OF MATERIAL

Bar	No.	Size	Length (m)	Shape
d(E)	411	#15	5.80	
d_1(E)	313	#15	5.60	
d_2(E)	412	#20	1.20	
d_3(E)	411	#15	6.70	
d_4(E)	313	#15	6.50	
d_5(E)	16	#15	0.60	
h(F)	414	#15	9.23	
b_1(L)	86	#20	10.50	
b_2(L)	370	#15	8.37	
b_3(L)	43	#20	12.5	
d_1(E)	568	#15	0.80	
d_2(E)	1090	#15	0.91	
d_3(E)	522	#15	1.18	
e(E)	8	#25	11.08	
e_1(E)	16	#25	2.62	
e_2(E)	8	#25	9.76	
e_3(E)	8	#25	3.87	
e_4(E)	8	#25	9.98	
e_5(E)	16	#15	5.86	
c_6(E)	64	#15	2.62	
e_7(E)	12	#15	6.49	
e_8(E)	32	#15	3.87	
e_9(E)	12	#15	6.64	
e_{10}(E)	48	#15	5.50	
e_{11}(E)	48	#15	4.49	
e_{12}(E)	48	#15	4.60	
Reinforcement Bars, Epoxy Coated		kg	35.890	
Concrete Superstructures		Cu. m	252.5	
Removal of Existing Structure		Each	1	

Reinforcement bars designated (E) shall be epoxy coated.

Bars indicated thus 1 x 3- #15 etc. indicates 1 line of bars with 3 lengths per line.

All dimensions are in millimeters (mm) excepts as noted.

REVISIONS	
NAME	DATE
B. BLAND	2-26-

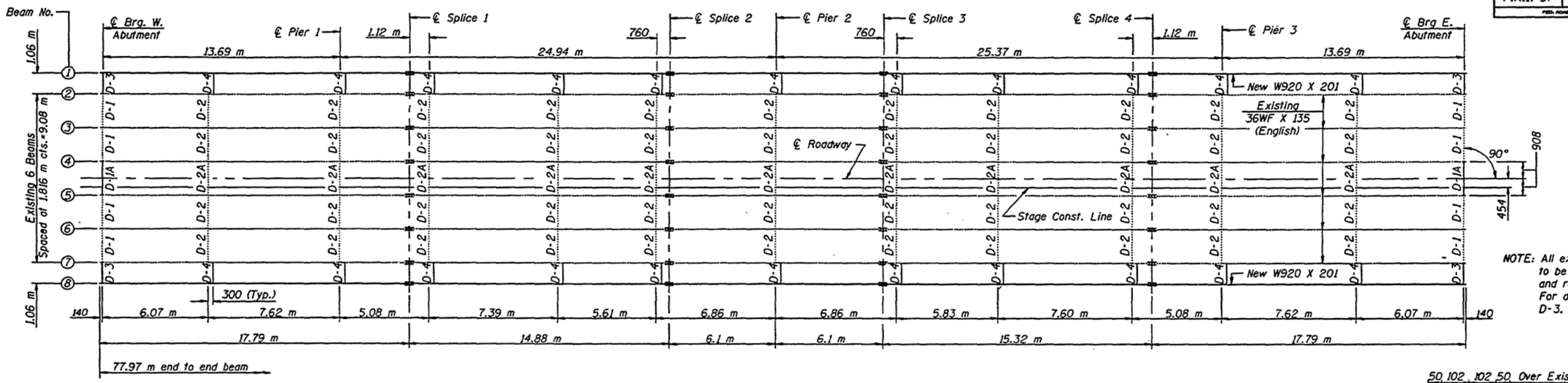
SUPERSTRUCTURE DETAILS
U.S. RTE. 150 (BLOOMINGTON RD.)
OVER F.A.I. ROUTE 57
SECTION (10-34HB)BR
STA. 4+794.32 (U.S. RTE. 150)
STA. 17+754.60 (F.A.I. RTE. 57)
CHAMPAIGN COUNTY
S.N. 010-0050

LIN ENGINEERING, LTD.

DESIGN: T.M.M. CHECKED: J.W.
DRAWN: N.C. DATE: 12/95

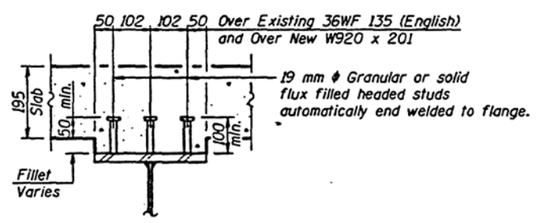
ROUTE NO.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
F.A.I. 57	(10-34HB)BR	CHAMPAIGN	47	23
FED. ROAD DIST. NO. 7		ILLINOIS	FED. AID PROJECT-	

Sht. #8 of 25

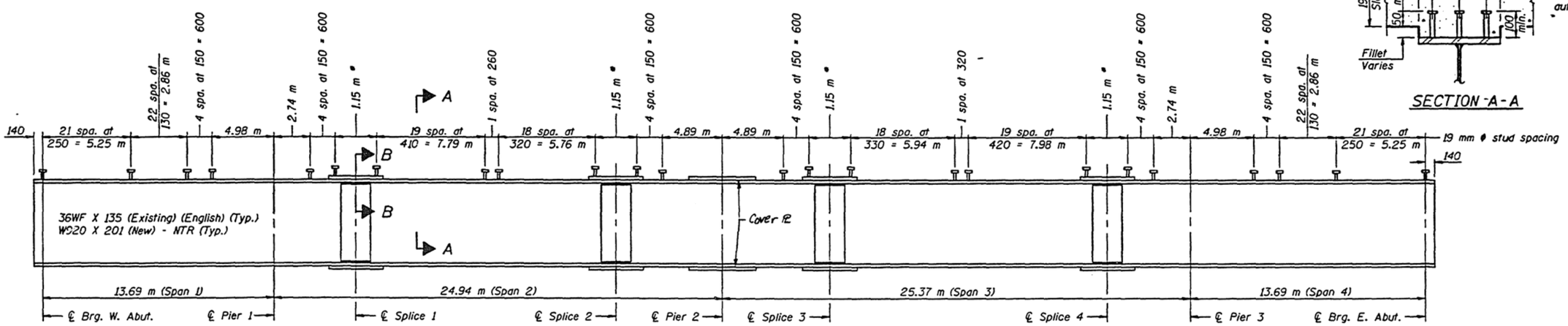


FRAMING PLAN

NOTE: All existing D2-A diaphragms are to be removed during Stage Construction and reconnected after Stage Construction. For details of diaphragm D1-A, D2-A, D-3, and D-4 see sheet #9 of 25.



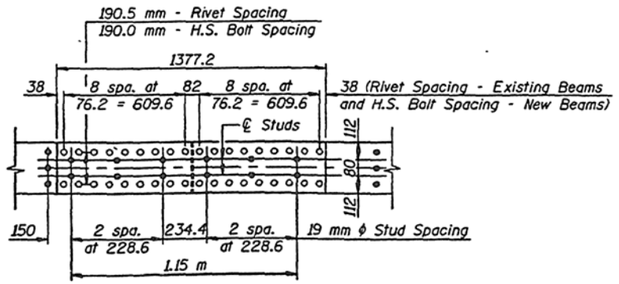
SECTION A-A



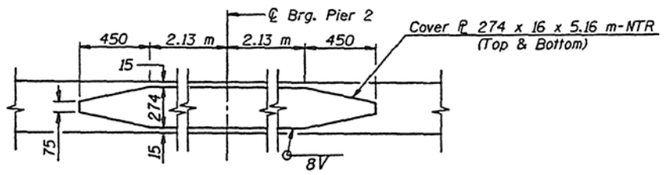
BEAM ELEVATION
(Stud Spacing)
(No. Req'd. = 4852)

NOTE: "NTR" denotes Notch Toughness Requirements - Zone 2
* For spacing of studs on top splice plate see "Stud Spacing at Splice Locations".

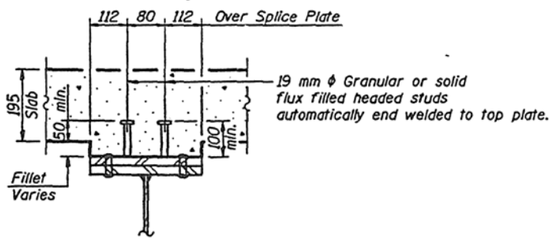
All dimensions are in millimeters (mm) except as noted.



STUD SPACING AT SPLICE LOCATIONS
Splice 1 & 3 Shown
Splice 2 & 4 (Rotate 180°)



COVER PLATE DETAIL
4 Req'd

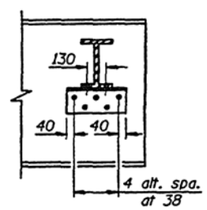


SECTION B-B

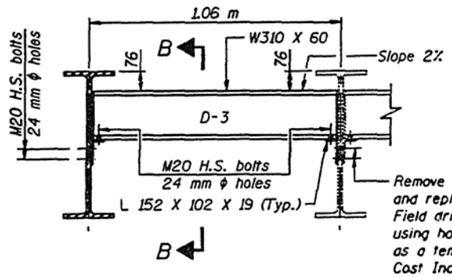
STRUCTURAL STEEL DETAILS
U.S. RTE. 150 (BLOOMINGTON RD.)
OVER F.A.I. RTE. 57
SECTION (10-34HB)BR
STA. 4+794.32 (U.S. RTE. 150)
STA. 17+754.60 (F.A.I. RTE. 57)
CHAMPAIGN COUNTY
S.N. 010-0050

LIN ENGINEERING, LTD.	
DESIGN: J.W.	CHECKED: T.J.L.M.
DRAWN: N.C.	DATE: 12/95

ROUTE NO.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
F.A.I. 57	(10-34HB)BR	CHAMPAIGN	47	24
FED. ROAD DIST. NO. 7		RAILROAD	FED. AID PROJECT-	



SECTION B-B



Remove existing 19 mm ϕ rivets and replace with M20 H.S. bolts. Field drill 24 mm ϕ holes in angle using holes in existing beams 2 & 7 as a template.
Cost Incidental to "Structural Steel".

DIAPHRAGM D-3
4 Req'd

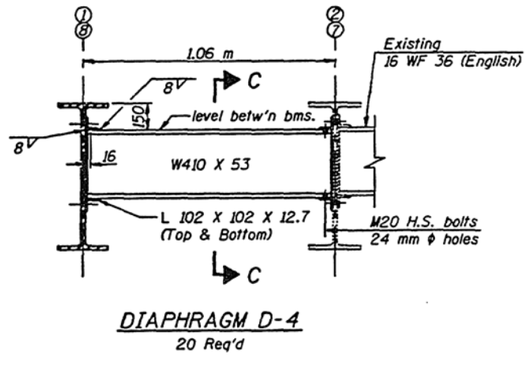
INTERIOR GIRDER MOMENT TABLE								
		0.4 Sp. (1)	Pier 1	0.5 Sp. (2)	Pier 2	0.5 Sp. (3)	Pier 3	0.6 Sp. (4)
Is	(10^6 mm⁴)	3246.6	3246.6	3246.6	5119.2	3246.6	3246.6	3246.6
Ic (n)	(10^6 mm⁴)	7957.6	———	7957.6	———	7957.6	———	7957.6
Ic (3n)	(10^6 mm⁴)	5838.3	———	5838.3	———	5838.3	———	5838.3
Ss	(10^3 mm³)	7193.9	7193.9	7193.9	10953.4	7193.9	7193.9	7193.9
Sc (n)	(10^3 mm³)	10207.5	———	10207.5	———	10207.5	———	10207.5
Sc (3n)	(10^3 mm³)	9211.7	———	9211.7	———	9211.7	———	9211.7
D	(kN/m)	10.6	10.65	10.70	10.65	10.70	10.65	10.6
MR	(kN-m)	78.6	399.3	289.9	684.4	309.2	418.9	70.7
fsR non-comp	(MPa)	11.0	55.6	40.3	62.5	43.0	58.2	9.8
SR	(kN/m)	3.68	3.68	3.68	3.68	3.68	3.68	3.68
MsR	(kN-m)	38.1	113.1	132.1	195.9	140.1	115.9	36.4
fsR (comp)	(MPa)	4.2	15.7	14.3	17.9	15.2	16.1	4.0
ML	(kN-m)	326.7	311.7	619.5	449.3	627.1	316.2	329.6
M (Imp)	(kN-m)	96.1	82.6	148.6	107.8	150.5	83.8	96.9
fs (ML+MImp)	(MPa)	41.4	54.8	75.1	50.9	76.1	55.6	41.8
fs (Total)	(MPa)	56.6	126.1	129.7	131.3	134.3	129.9	55.6
VR	(kN)	196.0		211.1		211.7		197.8

Is and Ss are the moment of inertia and section modulus of the steel section used in computing fs (Total).
VR is the maximum Live Load + Impact shear range in span.
Ic(n), Ic(3n), and Sc(n), Sc(3n) are the moment of inertia and section modulus of the composite section used in computing fs (Total).

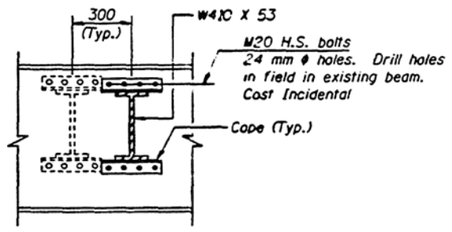
TOP OF BEAM ELEVATION

Location	Bms. 1 & 8	Bms. 2 & 7	Bms. 3 & 6	Bms. 4 & 5
West Abut.	240.859	240.880	240.914	240.932
℄ Pier 1	240.938	240.959	240.993	241.011
℄ Splice 1	240.963	240.984	241.018	241.036
℄ Splice 2	241.005	241.026	241.060	241.078
℄ Pier 2	241.021	241.042	241.076	241.094
℄ Splice 3	241.039	241.060	241.094	241.112
℄ Splice 4	241.033	241.054	241.088	241.106
℄ Pier 3	241.024	241.045	241.079	241.097
East Abut.	240.987	241.008	241.042	241.060

NOTE: Elevations are to top of beam flange including splice plate and cover plate locations.



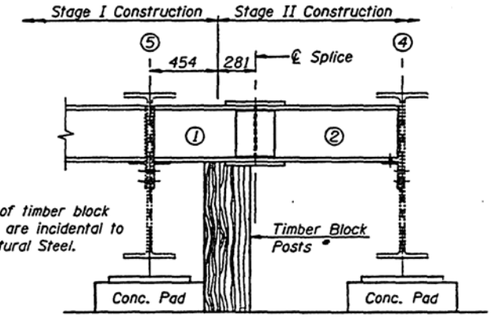
DIAPHRAGM D-4
20 Req'd



SECTION C-C

INTERIOR GIRDER REACTION TABLE						
		West Abut.	Pier 1	Pier 2	Pier 3	East Abut.
RR	(kN)	60.0	299.4	390.1	305.1	58.7
RL	(kN)	131.7	177.0	204.6	177.9	132.1
R Imp.	(kN)	38.7	47.0	49.1	47.0	38.8
R (Total)	(kN)	230.4	523.4	643.8	530.0	229.6

NOTE: Use 22 mm x 40 mm slotted holes in connection angles Ⓐ & Ⓑ at beam #4 only. Provide 50 x 50 x 8 mm plate washers for slotted holes. Bolts shall be finger tightened prior to the deck pour for Stage II Construction and then be fully tightened after completion of the deck pour for Stage II Construction.

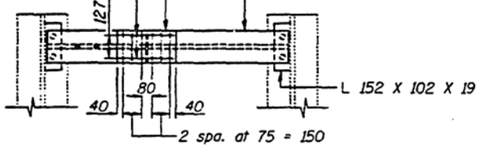


* Cost of timber block posts are incidental to Structural Steel.

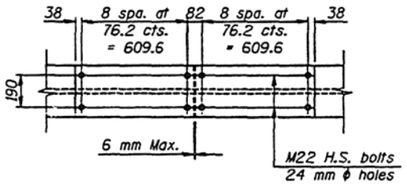
DIAPHRAGM D-1A CONSTRUCTION SEQUENCE

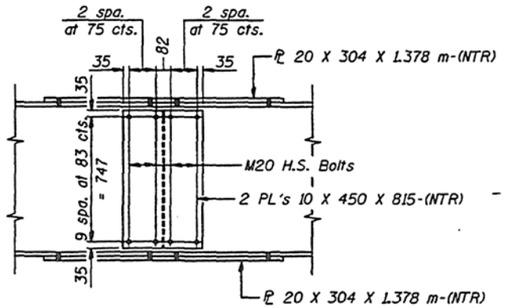
(Each Abutment)

1) Order diaphragm D-1A in two sections with lengths of 719 mm and 1.065 m.
2) Remove existing deck (Stage I) and connect seat L for diaphragm to beam #5 and connect section ① to seat L with M20 bolts.
3) Place timber block posts between section ① of diaphragm and abutment bearing seat. Run section ① level.
4) After Stage I deck has been poured, remove Stage II deck and raise Stage II beams to Stage II level.
5) Connect seat L for diaphragm to beam #4 and connect section ② to seat L with M20 bolts.
6) Connect top flange splice plate and web splice plates to diaphragm sections ① and ②.
7) Remove timber block posts and connect bottom flange splice plate to diaphragm sections ① and ②.
8) Place Stage II deck.



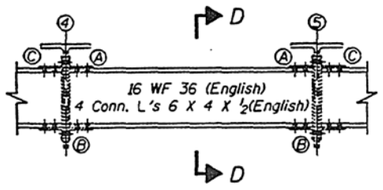
NOTE: All existing rivets to be removed by chipping or sawing.



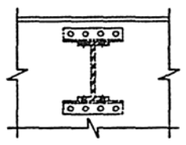


SPLICE DETAIL
(W920 x 201 Beams)
8 Req'd.

NOTE: All existing connections contain 19 mm ϕ rivets



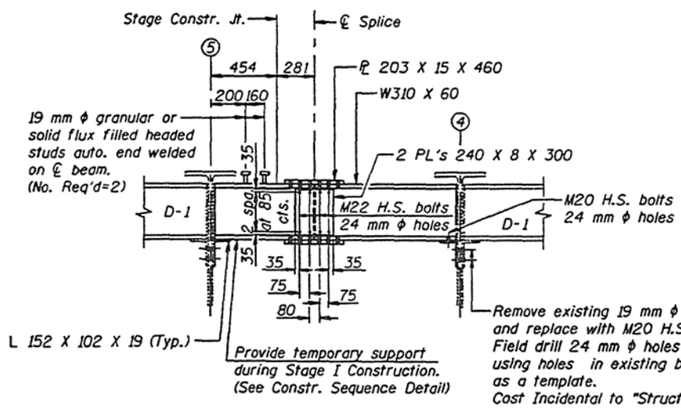
DIAPHRAGM D-2A
(11 Thus)



SECTION D-D

REMOVAL & RECONNECTION PROCEDURE OF DIAPHRAGM D-2A

1) Prior to raising existing beams for Stage I Const. the following shall be done.
   a) Disconnect LA from both existing beam and diaphragm. (Provide new L's for reconnection)
   b) Disconnect diaphragm from LB
   c) Let diaphragm remain disconnected while beams of Stage I are being raised to new positions.
   d) Temporarily reconnect LC to beam before raising Stage I beams.
2) Raise beams of Stage I to proper position.
3) After Stage I Construction is complete, raise Stage II beams into position.
4) Replace existing diaphragm back onto LB and connect with M20 H.S. bolts. (Note: If LB had been damaged during removal they shall be replaced.)
5) Remove temporary bolts in LC.
6) Provide new L's (152 X 102 X 12.7) for LA.
7) Reconnect LA to both beam and diaphragm with M20 ϕ bolts.
8) Complete Stage II Constr.



Remove existing 19 mm ϕ rivets and replace with M20 H.S. bolts. Field drill 24 mm ϕ holes in angles using holes in existing beams 4 & 5 as a template.
Cost Incidental to "Structural Steel".

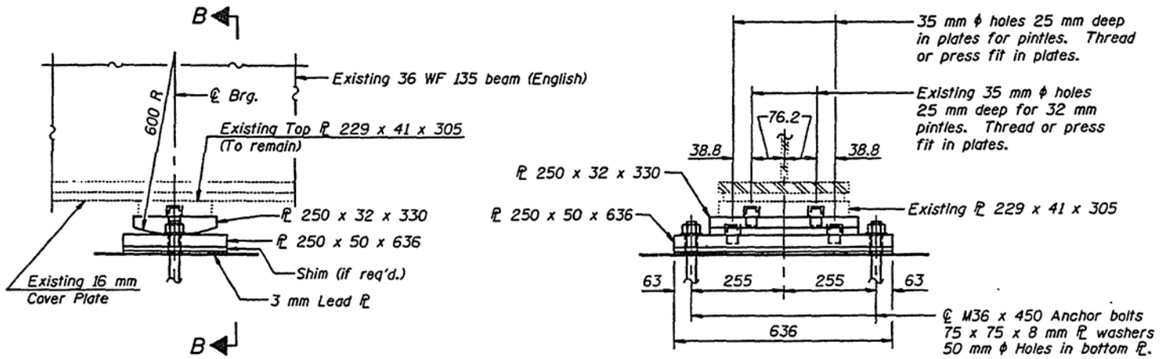
DIAPHRAGM D-1A
West Abut.-Shown
East Abut.-Opposite Hand

Note: All dimensions are in millimeters (mm) except as noted.
"NTR" denotes Notch Toughness Requirements - Zone 2.
Two hardened washers shall be required over all 24 mm ϕ holes for diaphragm connections.
All contact surfaces of joints shall be free of paint or lacquer.

STRUCTURAL STEEL DETAILS
U.S. RTE. 150 (BLOOMINGTON RD.)
OVER F.A.I. RTE. 57
SECTION (10-34HB)BR
STA. 4+794.32 (U.S. RTE. 150)
STA. 17+754.60 (F.A.I. RTE. 57)
CHAMPAIGN COUNTY
S.N. 010-0050

LIN ENGINEERING, LTD.
DESIGN: J.W. CHECKED: T.M.M.
DRAWN: K.C. DATE: 12/95

ROUTE NO.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
F.A.I. 57	(10-34HB)BR	CHAMPAIGN	47	25
FED. ROAD DIST. NO. 7		ILLINOIS	FED. AID PROJECT-	

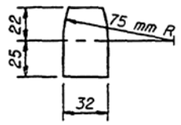


ELEVATION AT PIER

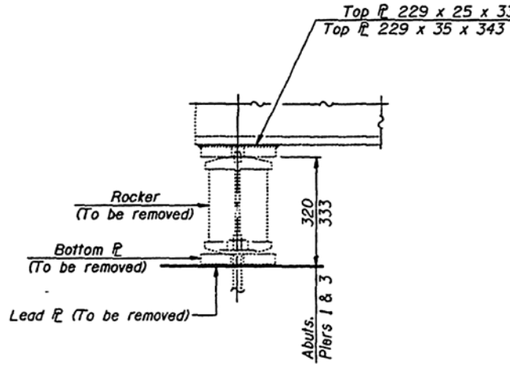
SECTION B-B

FIXED BEARING AT PIER 2

(Beams #2 Thru #7)

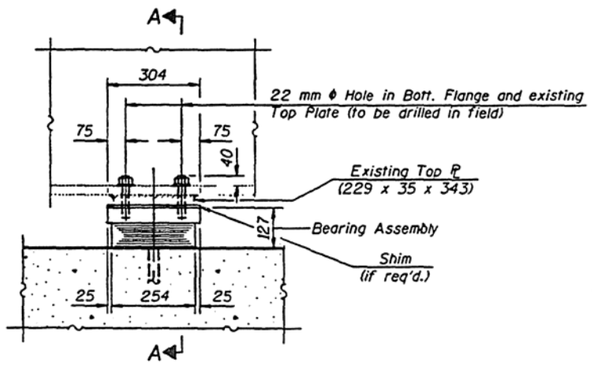


PINTLE

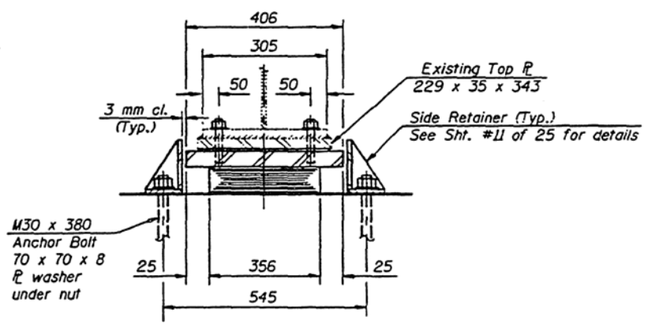


EXISTING EXPANSION BEARING

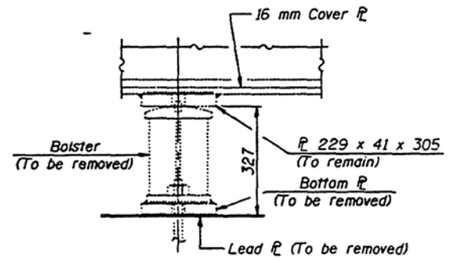
(Abuts. & Piers 1 & 3)
Beams #2 Thru #7



ELEVATION



SECTION A-A

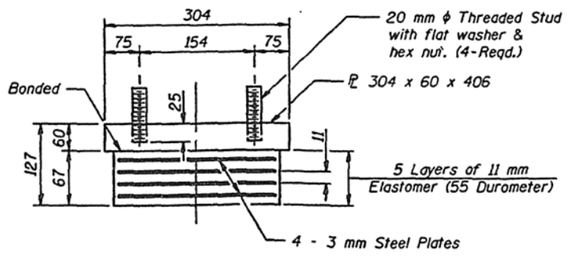


EXISTING FIXED BEARING

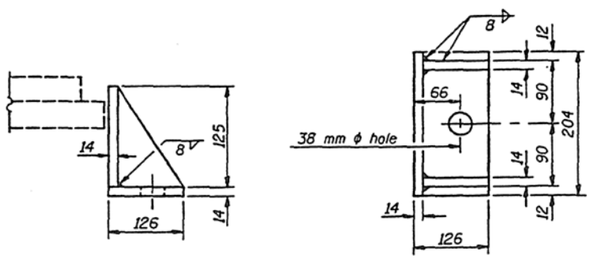
(Pier 2)
(Beams #2 Thru #7)

TYPE I ELASTOMERIC EXP. BRG. AT PIERS 1 & 3

(Beams #2 Thru #7)



BEARING ASSEMBLY



SIDE RETAINER - PIERS 1 & 3

(32 Req'd)

Notes: All dimensions are in millimeters (mm) except as noted.
See sheet #24 of 25 for Anchor Bolt installation.

BILL OF MATERIAL

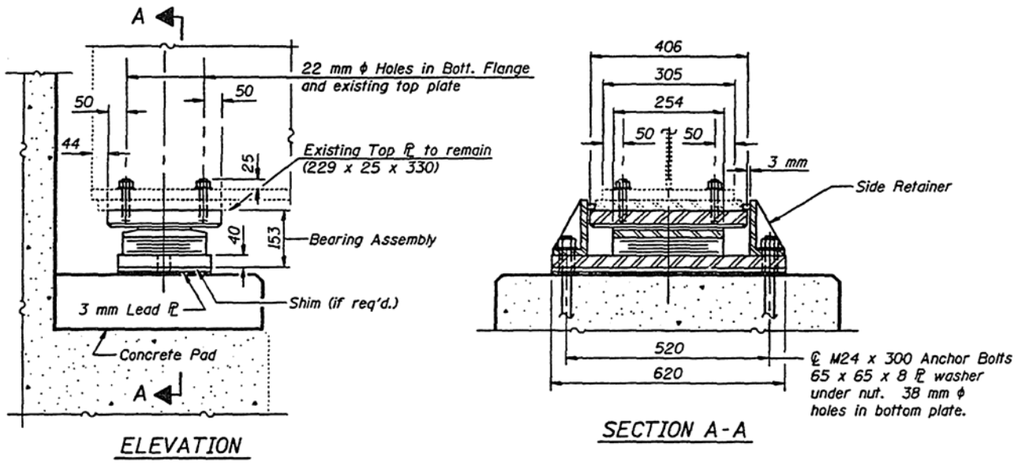
Item	Unit	Total
Elastomeric Bearing Assembly, Type I	Each	16
Elastomeric Bearing Assembly, Type II	Each	16
Jack & Remove Existing Bearings	Each	30

BEARING DETAILS-EXISTING BEAMS
U.S. RTE. 150 (BLOOMINGTON RD.)
OVER F.A.I. RTE. 57
SECTION (10-34HB)BR
STA 4+794.32 (U.S. RTE. 150)
STA. 17+754.60 (F.A.I. RTE. 57)
CHAMPAIGN COUNTY
S.N. 010-0050

LIN ENGINEERING, LTD.

DESIGN: J.W. CHECKED: S.F.M.
DRAWN: M.C. DATE: 12/95

ROUTE NO.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
F.A.I. 57	(10-34HB)BR	CHAMPAIGN	47	26
FED. ROAD DIST. NO. 7		ILLINOIS	FED. AID PROJECT-	



ELEVATION

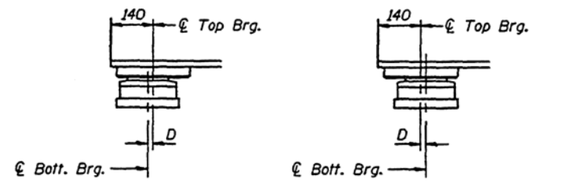
SECTION A-A

TYPE II TFE ELASTOMERIC EXP. BRG. (ABUTS.)

(Beams #2 Thru #7)

Note: The 3 mm TFE sheet shall be bonded directly to the top steel plate with a two-component, medium viscosity epoxy resin, conforming to the requirements of the Federal Specification MMM-A-134, Type I. The bond agent shall be applied on the full area of the contact surfaces.

Bonding of 3 mm TFE sheet during vulcanizing process will be permitted provided the process and method of adjusting assembly height is approved by the Engineer.



SETTING ANCHOR BOLTS AT EXP. BRG'S.

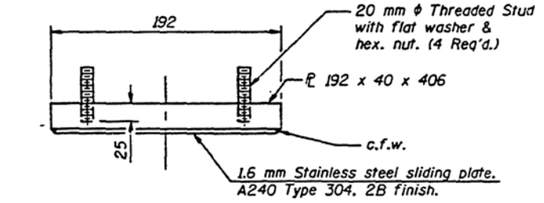
D = 1 mm per each 10 m of expansion for every 8°C temp. change from the normal temp. of 10°C.

JACK AND REMOVAL PROCEDURE OF EXISTING BEARINGS

1. The Contractor shall submit for approval by the Engineer, plans for jacking prior to commencing any work at the bearings.

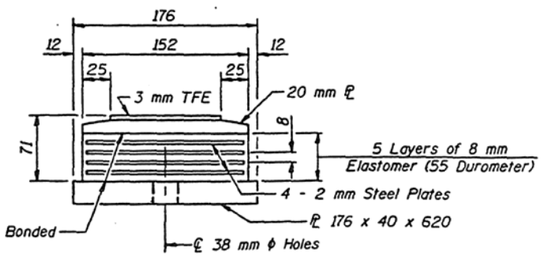
   Dead Load = Abut. = 9.5 kN
   Piers 1 & 3 = 50.0 kN
   Pier 2 = 64.0 kN
   Min. Jack Capacity = 150 kN.
   } Each Beam

2. Jacking and removing existing bearings and raising of beams to proper elevation and placement of new bearings shall be done after removal of the deck and before the new deck has been poured.
3. All beams at each abutment or pier during each separate stage shall be lifted (or lowered) simultaneously. In addition, the lifting or lowering differential at any time between abutments and piers shall not exceed 7 mm.
4. The nuts and washer of the existing anchor bolts shall be removed prior to placing the concrete pad.
5. The new bearings shall be placed on the concrete pad and the jacks shall be lowered before the new deck is poured. However, placement of the bearing on the concrete pad shall not be done prior to 72 hours after pouring the pad.



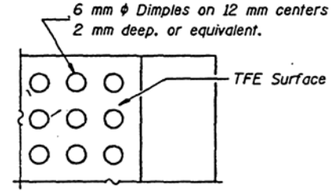
TOP BEARING ASSEMBLY

(Abutments)

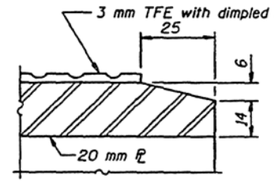


BOTTOM BEARING ASSEMBLY

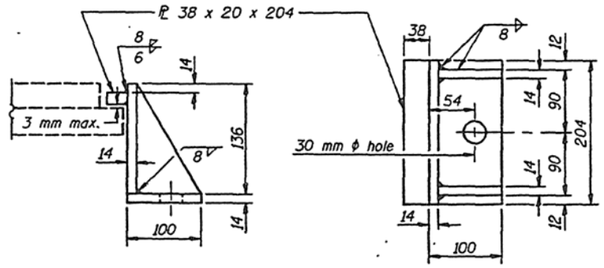
(Abutments)



PLAN-TFE SURFACE

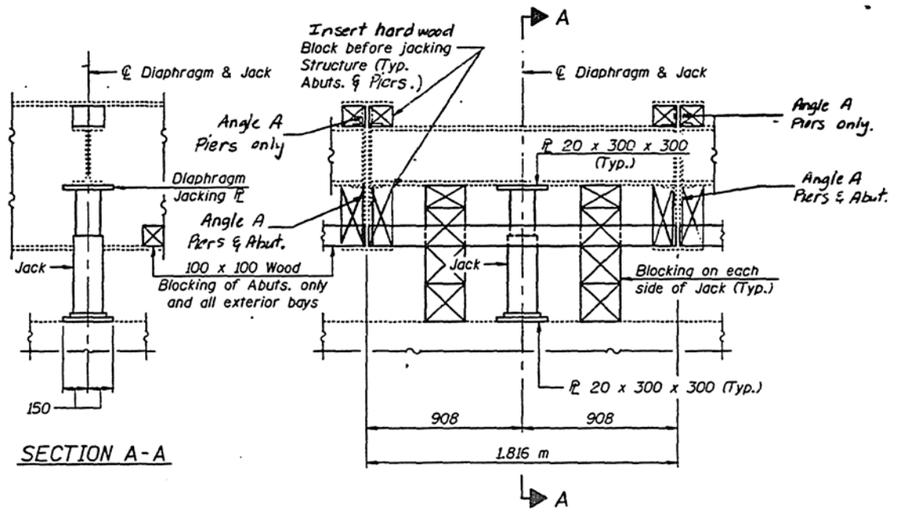


SECTION THRU TFE



ABUTMENT SIDE RETAINER

(32 Req'd)



SECTION A-A

JACKING DETAILS

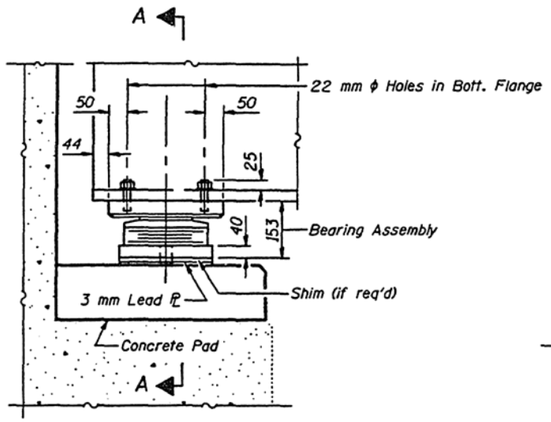
(Typical between Beams #2 & #3, #3 & #4, #5 & #6, #6 & #7)
Work this sheet with Sheet #2 of 25.

NOTE: For Existing Bearing details & Bill of Material
See Sht. #10 of 25.
See Sht. #24 of 25 for Anchor Bolt Installation.
All dimensions are in millimeters (mm) except as noted.

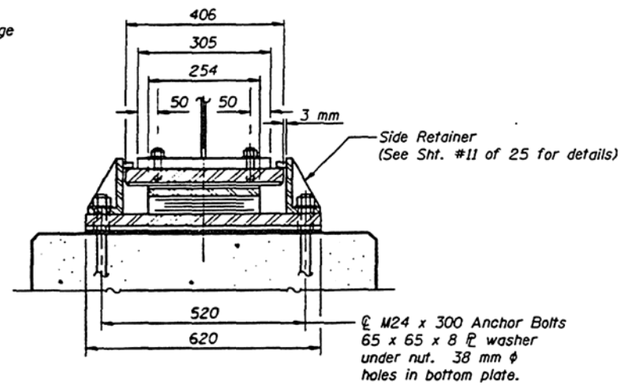
BEARING DETAILS-EXISTING BEAMS
U.S. RTE. 150 (BLOOMINGTON RD.)
OVER F.A.I. RTE. 57
SECTION (10-34HB)BR
STA 4+794.32 (U.S. RTE. 150)
STA. 17+754.60 (F.A.I. RTE. 57)
CHAMPAIGN COUNTY
S.N. 010-0050

LIN ENGINEERING, LTD.	
DESIGN: J.W.	CHECKED: S.F.M.
DRAWN: M.C.	DATE: 12/95

ROUTE NO.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
F.A.I. 57	(10-34HB)BR	CHAMPAIGN	47	27
FED. ROAD DIST. NO. 7	S.N. 010-0050	FED. AID PROJECT-		



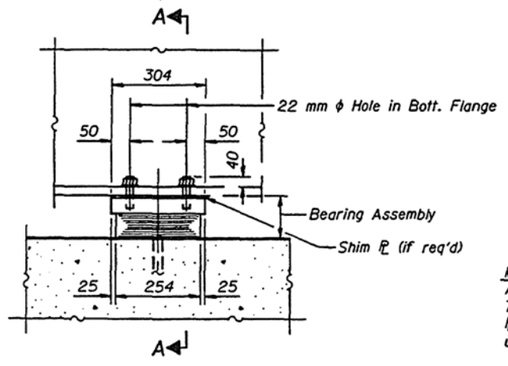
ELEVATION



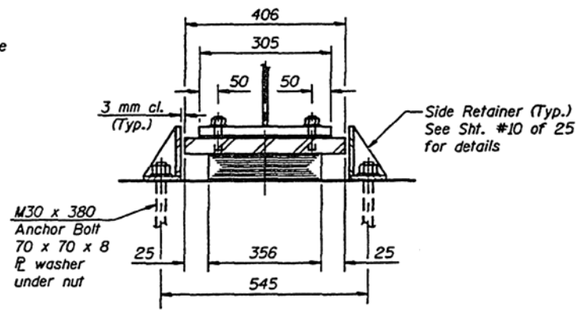
SECTION A-A

TYPE II TFE ELASTOMERIC EXP. BRG. (ABUTS.)

(Beams #1 & #8)



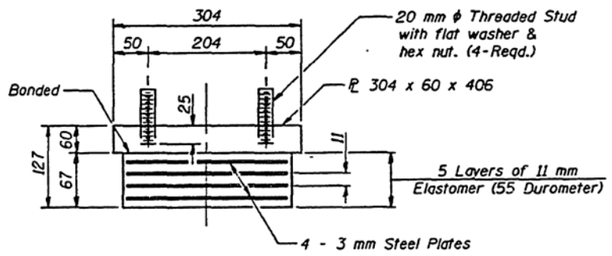
ELEVATION



SECTION A-A

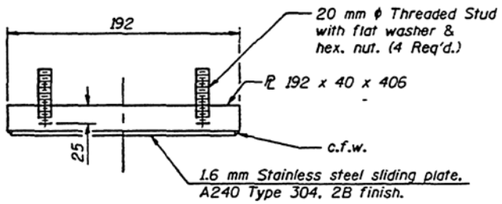
TYPE I ELASTOMERIC EXP. BRG. AT PIERS 1 & 3

(Beams #1 & #8)



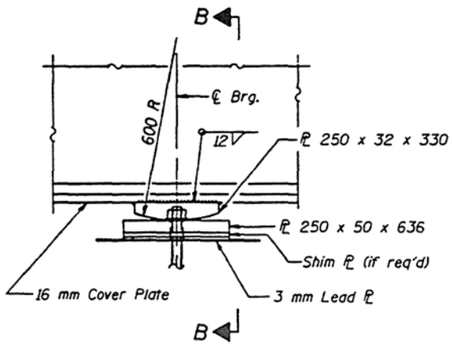
BEARING ASSEMBLY

(Piers 1 & 3)

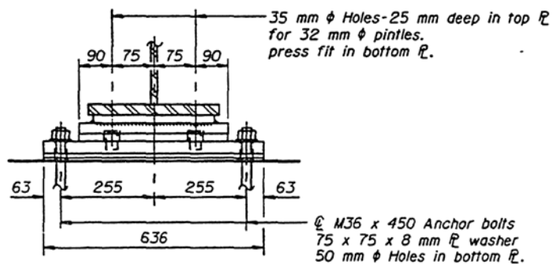


TOP BEARING ASSEMBLY

(Abutments)



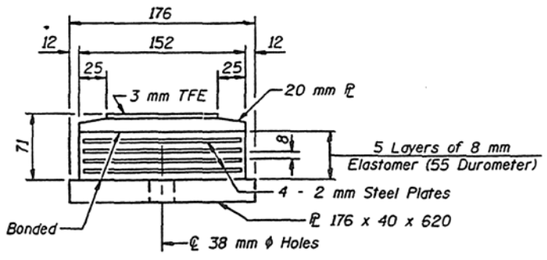
ELEVATION



SECTION B-B

FIXED BEARING AT PIER 2

(Beams #1 & #8)



BOTTOM BEARING ASSEMBLY

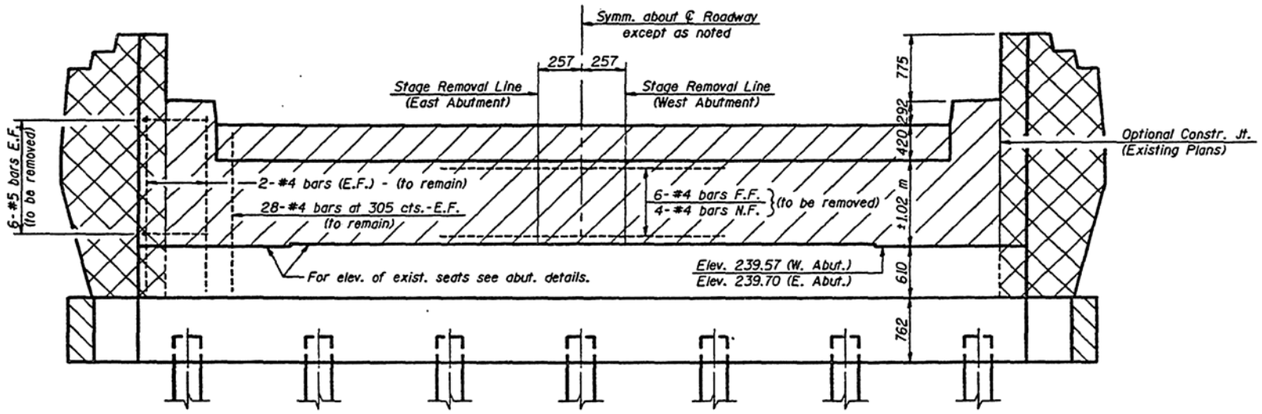
(Abutments)

NOTE: See Sht. #24 of 25 for Anchor Bolt installation.
For Bill of Material See Sht. #10 of 25.
All dimensions are in millimeters (mm) except as noted.

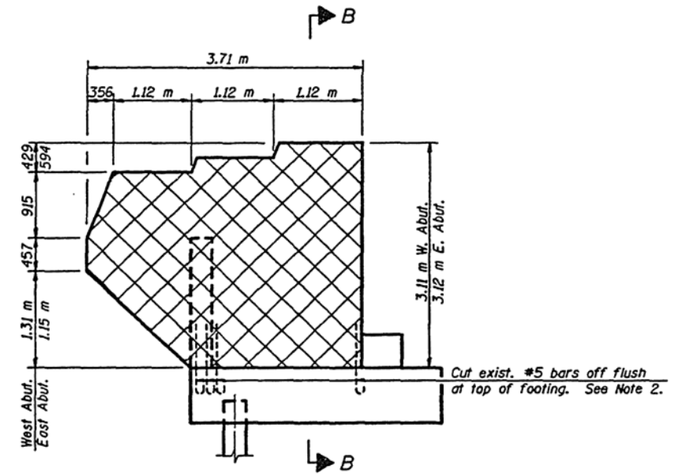
BEARING DETAILS-NEW BEAMS
U.S. RTE. 150 (BLOOMINGTON RD.)
OVER F.A.I. RTE. 57
SECTION (10-34HB)BR
STA 4+794.32 (U.S. RTE. 150)
STA. 17+754.60 (F.A.I. RTE. 57)
CHAMPAIGN COUNTY
S.N. 010-0050

LIN ENGINEERING, LTD.	
DESIGN: J.W.	CHECKED: S.F.M
DRAWN: K.C.	DATE: 12/95

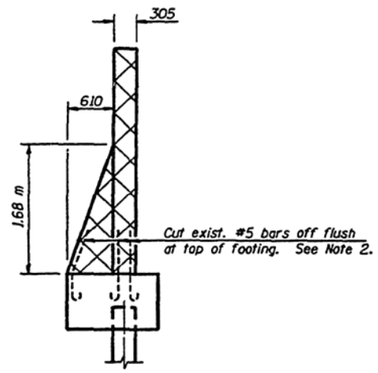
F.A.I. 57	(10-34HB)BR	CHAMPAIGN	47	28



ELEVATION
(Typ. Each Abut.)



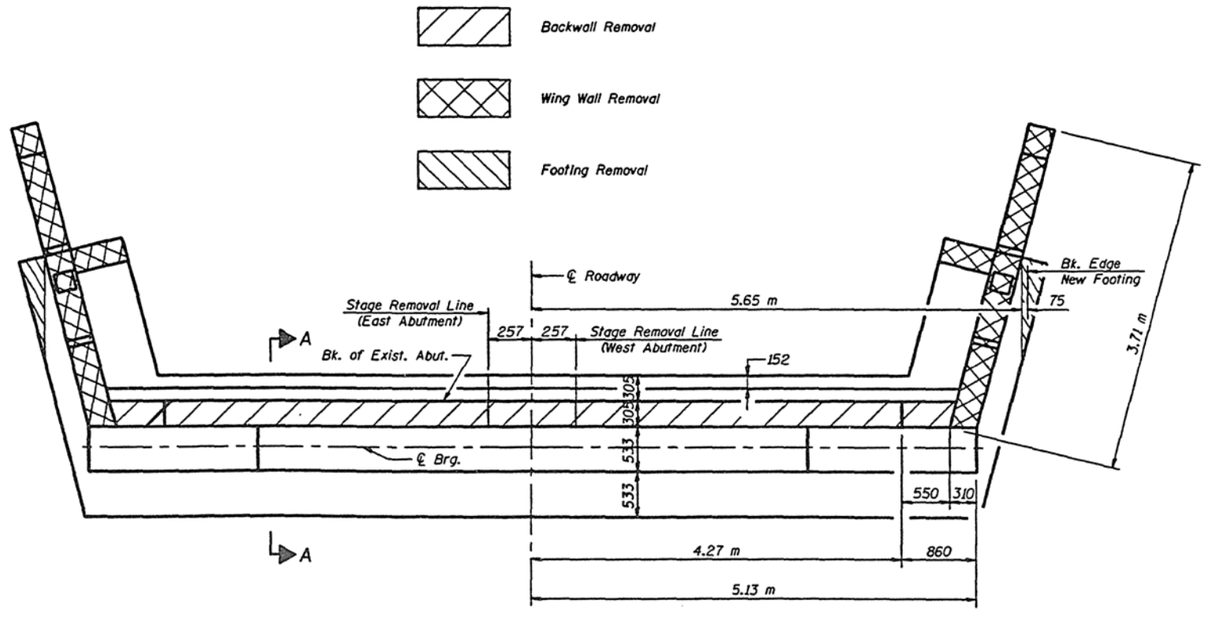
WINGWALL ELEVATION



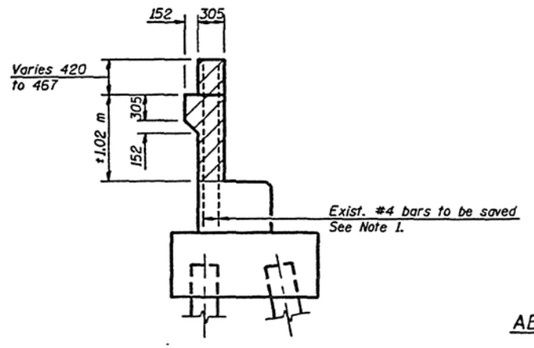
SECTION B-B

NOTE: 1
Existing reinforcement bars to be saved shall be cleaned to grey metal by sandblasting in place. The Contractor shall exercise care during Concrete Removal so as not to damage rebar to be reused. Rebars which have been cut or corroded and have lost more than 20% of their Cross Sectional area shall be supplemented by new bars of the same size Spliced in place. The Cost of the above noted work shall not be paid for separately but shall be incidental to Concrete Removal.

NOTE: 2
All Existing Reinforcement Exposed by Concrete Removal which is not being incorporated into New Construction shall be Cut Off Flush with the Remaining Concrete Surfaces and a Layer of 51 mm Cement Mortar shall be Applied to these Surfaces. Cost shall be incidental to Concrete Removal.



PLAN



SECTION A-A

BILL OF MATERIAL
TWO ABUTMENTS

Item	Unit	Total
Concrete Removal	m3	20.7

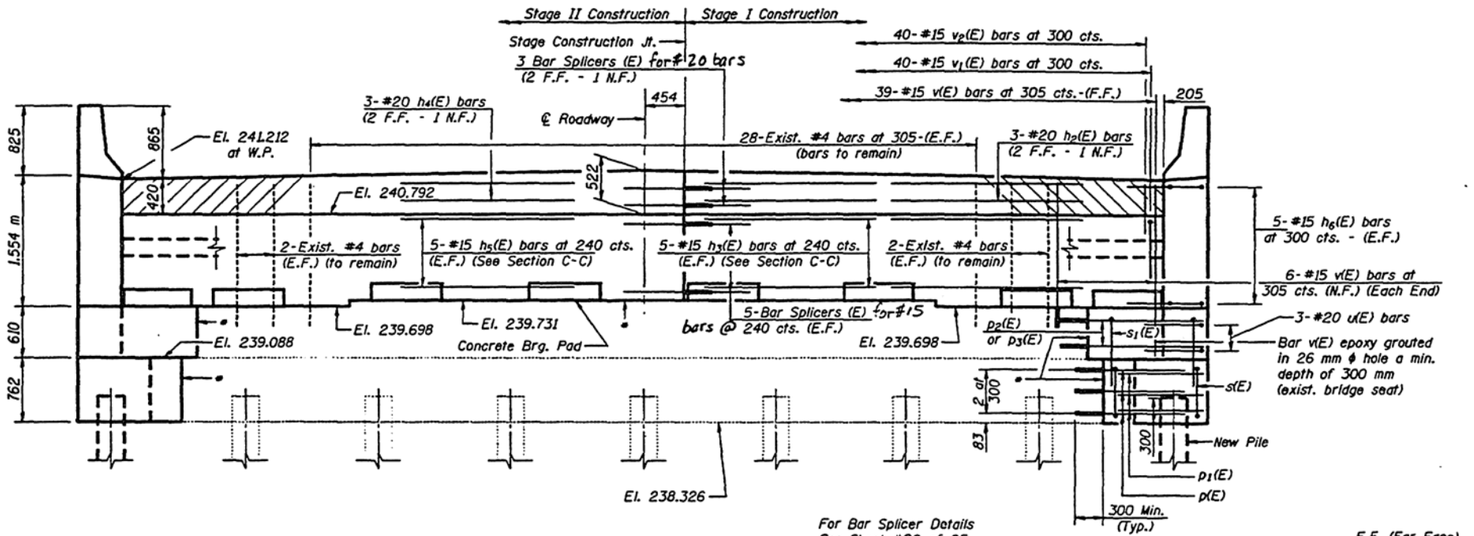
ABUTMENT CONCRETE REMOVAL DETAILS
U.S. RTE. 150 (BLOOMINGTON RD.)
OVER F.A.I. RTE. 57
SECTION (10-34HB)BR
STA. 4+794.32 (U.S. RTE. 150)
STA. 17+754.60 (F.A.I. RTE. 57)
CHAMPAIGN COUNTY
S.N. 010-0050

All dimensions are in millimeters (mm) except as noted.
All existing reinforcement bar sizes shown on this sheet are in English.

LIN ENGINEERING, LTD.
DESIGNED: J.W. CHECKED: T.M.M.
DRAWN: M.C. DATE: 12/95

ROUTE NO.	SECTION	COUNTY	TOTAL SHEETS	SHT. NO.
F.A.I. 57	(10-34HB)BR	CHAMPAIGN	47	29
FED. ROAD DIST. NO. 7		ILLINOIS	FED. AID PROJECT	

Sht. #14 of 25



For Bar Splicer Details
See Sheet #20 of 25

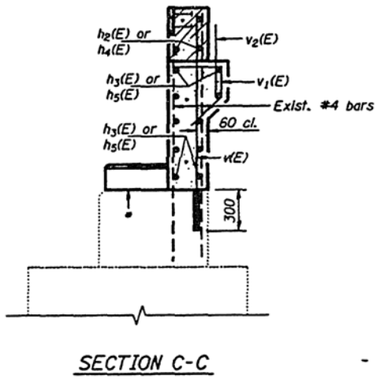
ELEVATION

F.F. (Far Face)
N.F. (Near Face)
E.F. (Each Face)

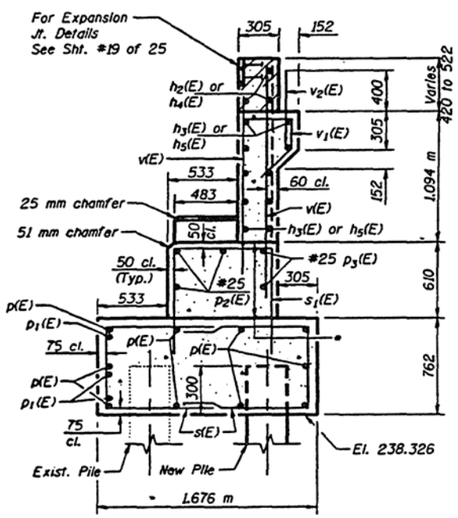
NOTE: Epoxy grouting of bars shall be done in accordance with Section 584 of the Standard Specifications.
Provide 26 mm ϕ holes for #20 bars and 21 mm ϕ holes for #15 bars.
The grout and method of application shall be approved by the Engineer.

• Bonded construction joint

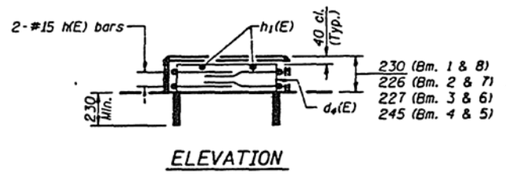
NOTE: Hatched area to be poured after superstructure falsework has been removed. Quantity of concrete included with Concrete Superstructure.



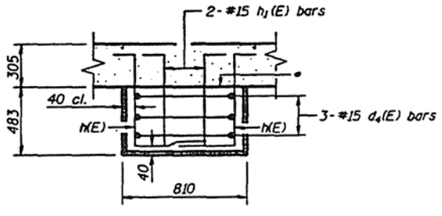
SECTION C-C



SECTION B-B



ELEVATION



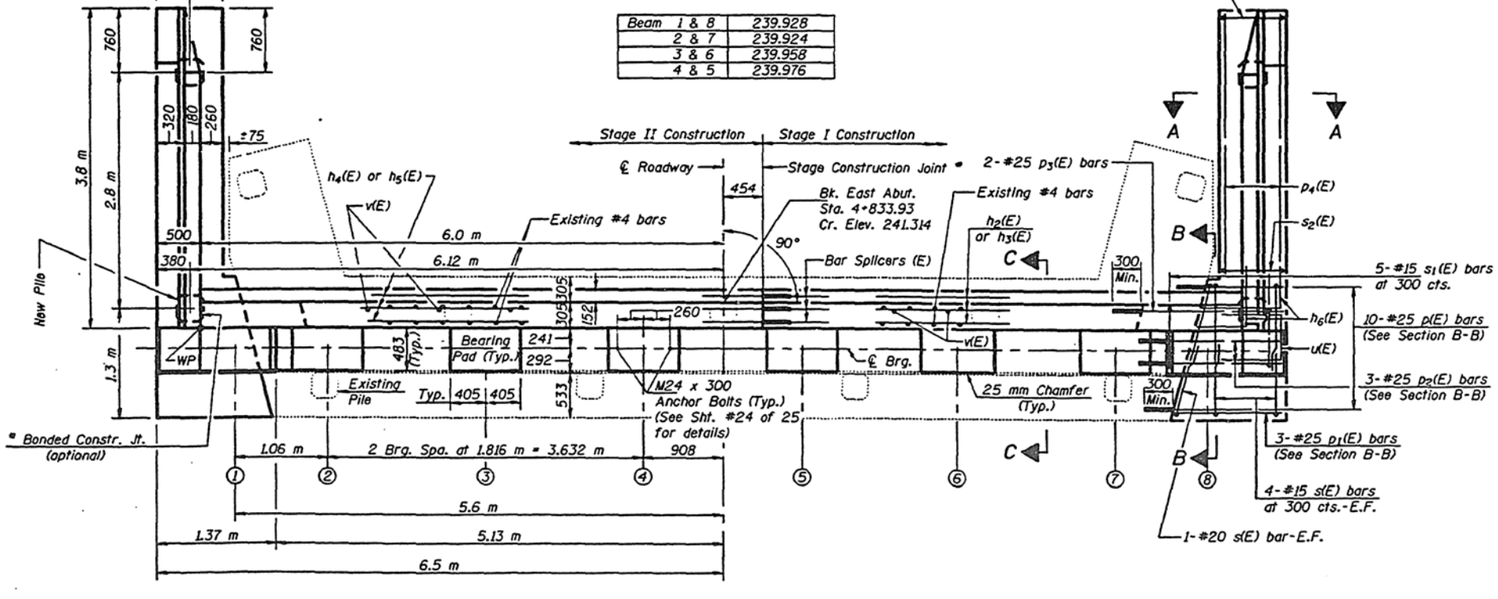
PLAN

BEARING PAD DETAILS
(8 Thus)

Notes: Space reinforcement in concrete pads to miss anchor bolts.
Reinforcement bars designated (E) shall be epoxy coated.
All dimensions are in millimeters (mm) except as noted.
For Section A-A, Wing Details and Bill of Materials, See Sht. #16 of 25.
All existing reinforcement bar sizes shown on this sheet are in English.

TOP OF BRG. PAD ELEVATIONS

Beam 1 & 8	239.928
2 & 7	239.924
3 & 6	239.958
4 & 5	239.976



DIMENSIONS

REINFORCEMENT

PLAN

PILE DATA

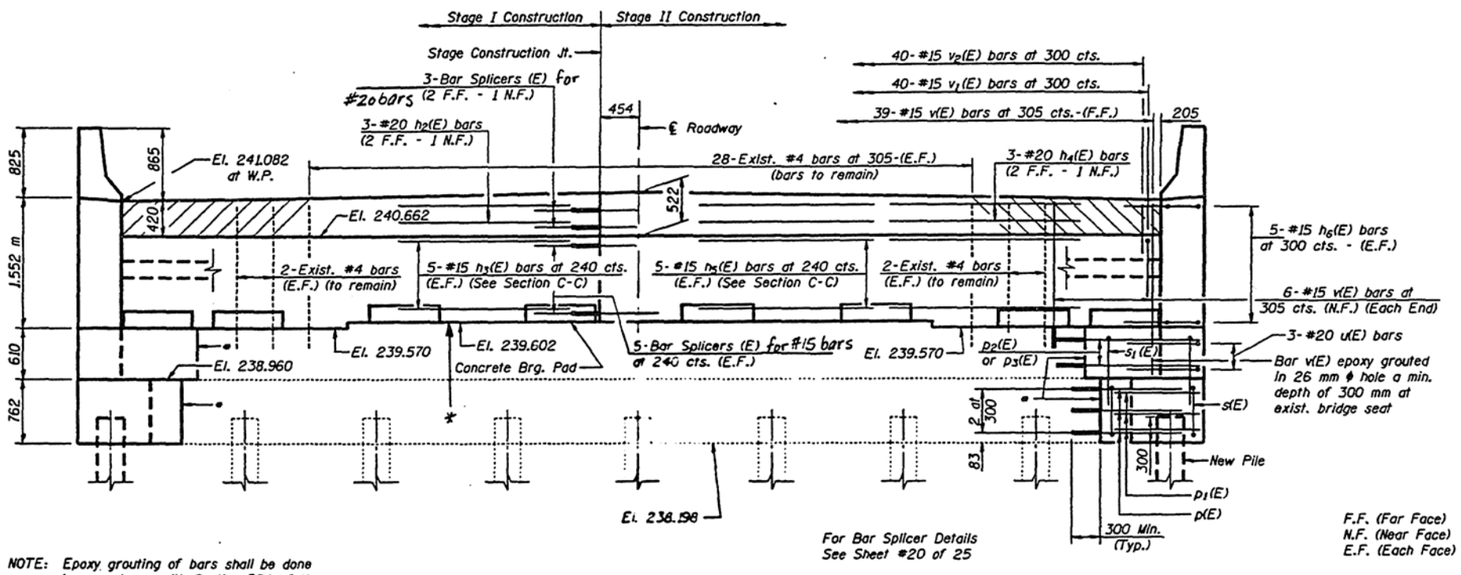
Type - Concrete
Capacity - 270 kN
No. Req'd. - 4
Est. Length - 10.0 m

EAST ABUTMENT DETAILS
U.S. RTE. 150 (BLOOMINGTON RD.)
OVER F.A.I. RTE. 57
SECTION (10-34HB)BR
STA. 4+794.32 (U.S. RTE. 150)
STA. 17+754.60 (F.A.I. RTE. 57)
CHAMPAIGN COUNTY
S.N. 010-0050

LIN ENGINEERING, LTD.	
DESIGNED: J.W.	CHECKED: S.F.M.
DRAWN: N.C.	DATE: 12/95

ROUTE NO.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
F.A.I. 57	(10-34HB)BR	CHAMPAIGN	47	30
FED. ROAD DIST. NO. 7	ILLINOIS	FED. AID PROJECT		

Sht. #15 of 25



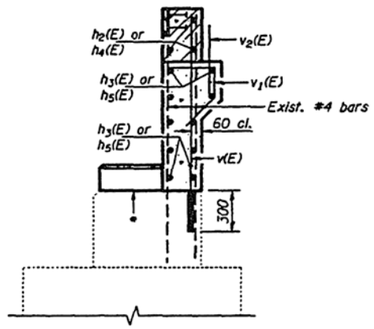
ELEVATION

F.F. (Far Face)
N.F. (Near Face)
E.F. (Each Face)

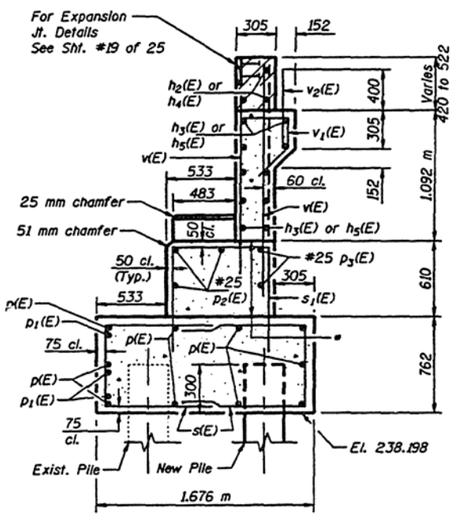
NOTE: Epoxy grouting of bars shall be done in accordance with Section 584 of the Standard Specifications. Provide 26 mm ϕ holes for #20 bars and 21 mm ϕ holes for #15 bars. The grout and method of application shall be approved by the Engineer.

* Bonded construction joint

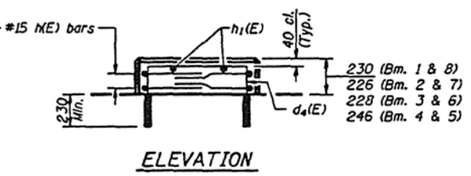
NOTE: Hatched area to be poured after superstructure falsework has been removed. Quantity of concrete included with Concrete Superstructure.



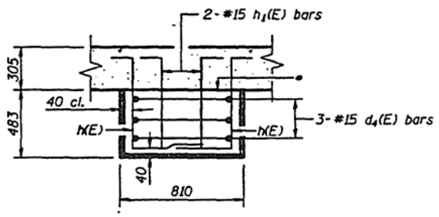
SECTION C-C



SECTION B-B



ELEVATION



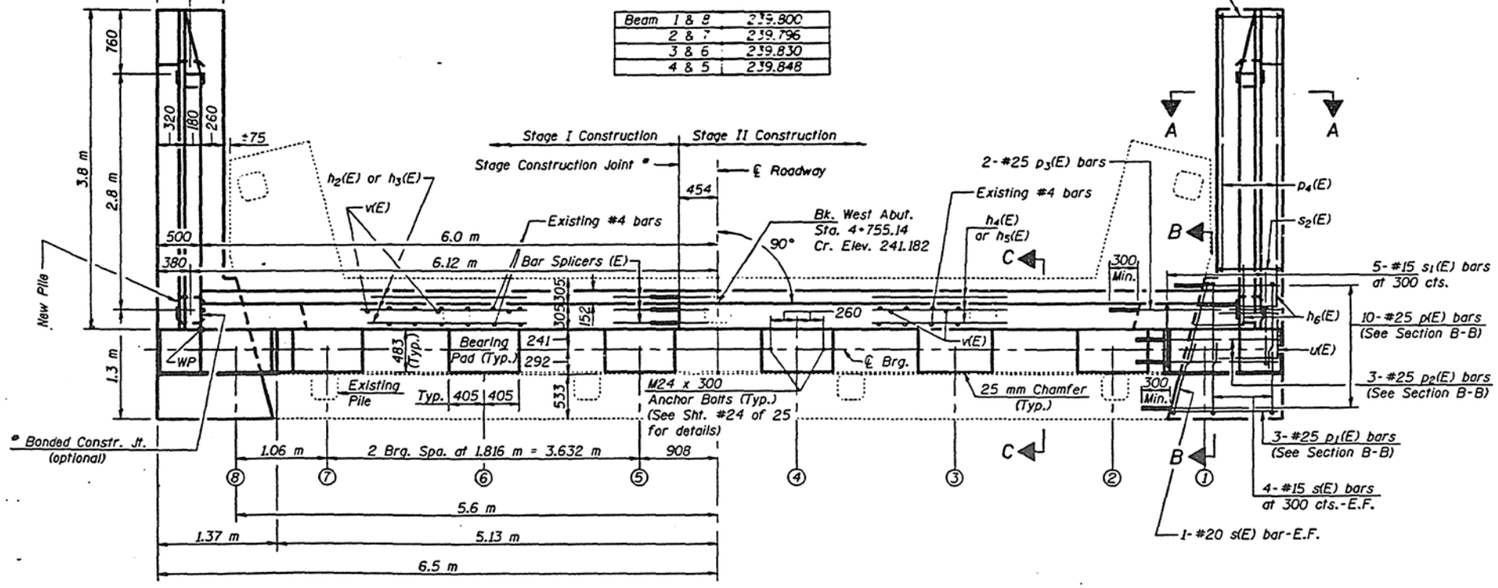
PLAN

BEARING PAD DETAILS

(8 Thus)

TOP OF BRG. PAD ELEVATIONS

Beam 1 & 8	239.800
2 & 7	239.796
3 & 6	239.830
4 & 5	239.848



DIMENSIONS

REINFORCEMENT

PLAN

PILE DATA

Type - Concrete
Capacity - 270 kN
No. Req'd. - 4 (including 1 test pile)
Est. Length - 11.0 m

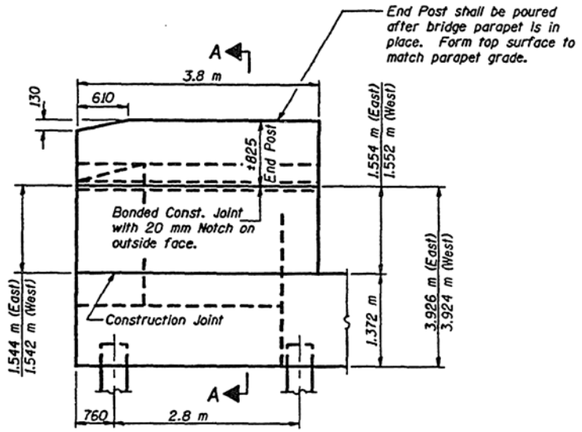
Notes: Space reinforcement in concrete pads to miss anchor bolts.
Reinforcement bars designated (E) shall be epoxy coated.
All dimensions are in millimeters (mm) except as noted.
For Section A-A, Wing details and Bill of Materials, See sheet #16 of 25.
All existing reinforcement bar sizes shown on this sheet are in English.

WEST ABUTMENT DETAILS
U.S. RTE. 150 (BLOOMINGTON RD.)
OVER F.A.I. RTE. 57
SECTION (10-34HB)BR
STA. 4+794.32 (U.S. RTE. 150)
STA. 17+754.60 (F.A.I. RTE. 57)
CHAMPAIGN COUNTY
S.N. 010-0050

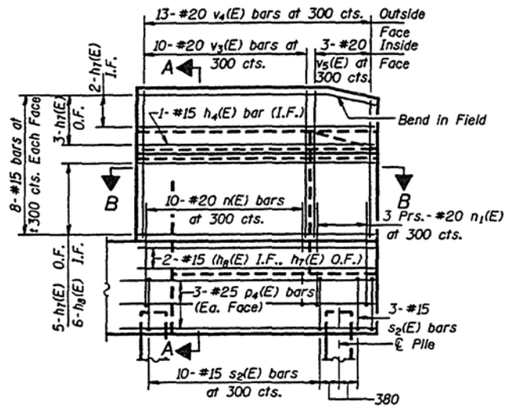
LIN ENGINEERING, LTD.	
DESIGNED: J.W.	CHECKED: S.F.M.
DRAWN: M.C.	DATE: 12/95

ROUTE NO.	SECTION	COUNTY	SHT. NO.	TOT. SHTS.
F.A.I. 57	(10-34HB)BR	CHAMPAIGN	47	31
FED. ROAD DIST. NO. 7		ILLINOIS	FED. AID PROJECT	

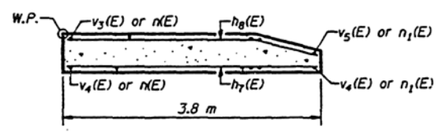
Sht. #16 of 25



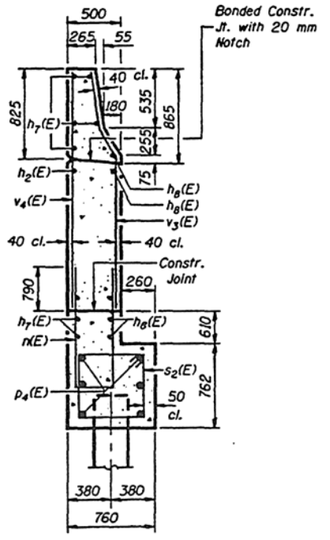
WING WALL ELEVATION
(4 thus)



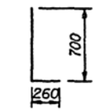
WING WALL ELEVATION
Reinforcement



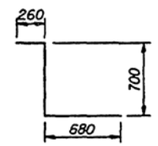
SECTION B-B



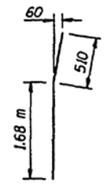
SECTION A-A



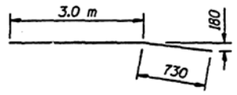
BAR $h_1(E)$



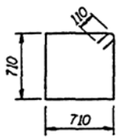
BAR h(E)



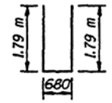
BAR $v_5(E)$



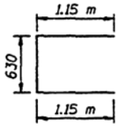
BAR $h_8(E)$



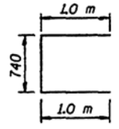
BAR $s_2(E)$



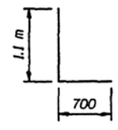
BAR n(E)



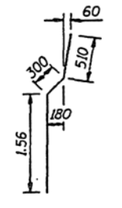
BAR s(E)



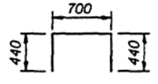
BAR $s_1(E)$



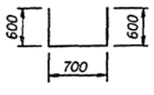
BAR $h_6(E)$



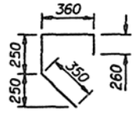
BAR $v_3(E)$



BAR $d_4(E)$

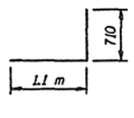


BAR u(E)



BAR $v_1(E)$

BAR $n_1(E)$



BAR $h_6(E)$

2 ABUTMENTS
BILL OF MATERIAL

Bar	No.	Size	Length (m)	Shape
$d_4(E)$	48	#15	1.58	
h(E)	64	#15	1.64	
$h_1(E)$	32	#15	0.96	
$h_2(E)$	8	#20	5.45	
$h_3(E)$	20	#15	5.45	
$h_4(E)$	8	#20	6.35	
$h_5(E)$	20	#15	6.35	
$h_6(E)$	40	#15	1.81	
$h_7(E)$	48	#15	3.70	
$h_8(E)$	32	#15	3.73	
n(E)	40	#20	4.26	
$n_1(E)$	24	#20	2.01	
p(E)	40	#25	1.23	
$p_1(E)$	12	#25	1.29	
$p_2(E)$	12	#25	1.63	
$p_3(E)$	8	#25	1.86	
$p_4(E)$	24	#25	3.70	
s(E)	40	#15	2.93	
$s_1(E)$	20	#15	2.74	
$s_2(E)$	52	#15	3.06	
u(E)	12	#20	1.90	
v(E)	102	#15	1.78	
$v_1(E)$	80	#15	1.22	
$v_2(E)$	80	#15	0.80	
$v_3(E)$	40	#20	2.37	
$v_4(E)$	52	#20	2.33	
$v_5(E)$	12	#20	2.19	
Structure Excavation		Cu. m	82.6	
Concrete Structures		Cu. m	45.5	
Reinforcement Bars (Epoxy Coated)		kg	4.320	
Test Piles		Each	1	
Furnishing Conc. Piles		Lin. m	73.0	
Driving Conc. Piles		Lin. m	73.0	

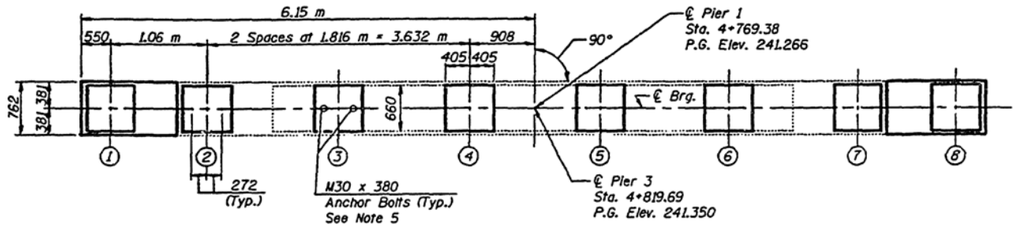
Reinforcement bars designated (E) shall be epoxy coated.
All dimensions are in millimeters (mm) except as noted.

ABUTMENT DETAILS
U.S. RTE. 150 (BLOOMINGTON RD.)
OVER F.A.I. RTE. 57
SECTION (10-34HB)BR
STA. 4+794.32 (U.S. RTE. 150)
STA. 17+754.60 (F.A.I. RTE. 57)
CHAMPAIGN COUNTY
S.N. 010-0050

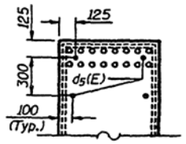
LIN ENGINEERING, LTD.	
DESIGNED: J.W.	CHECKED: S.F.M.
DRAWN: M.C.	DATE: 12/95

ROUTE NO.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
F.A.I. 57	(10-34HB)BR	CHAMPAIGN	47	32
FED. ROAD DIST. NO. 7		ILLINOIS	FED. AID PROJECT	

Sht. #17 of 25



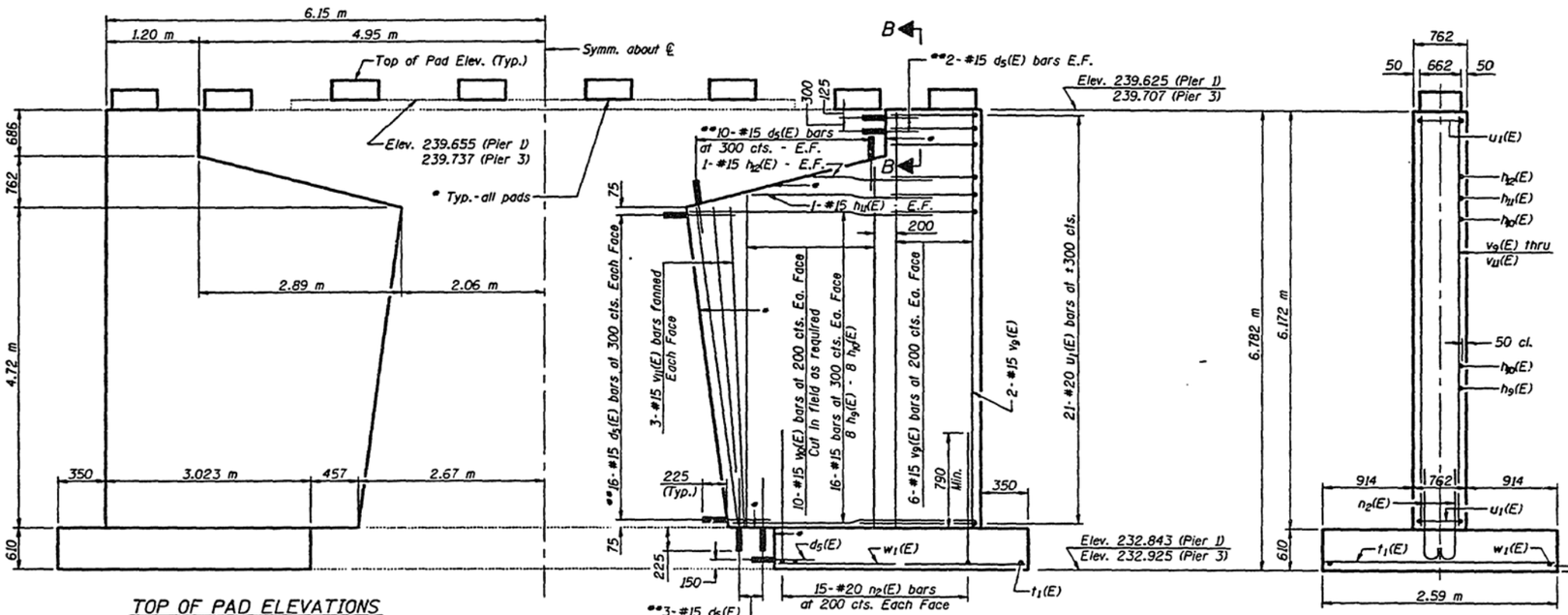
TOP PLAN



SECTION B-B

NOTES

1) Epoxy grouted bars shall be done in accordance with Section 584 of the Standard Specifications. Provide 21 mm ϕ holes to depth indicated for #15 bars and 26 mm ϕ holes for #20 bars. The grout and method of application shall be approved by the Department.
2) Space reinforcement in conc. pad to miss anchor bolts and exist. reinforcement.
3) All edges shall have standard 20 mm chamfers except as noted.
4) All dimensions are in millimeters (mm) except as noted.
5) For Anchor Bolt Installation See Sht. #24 of 25.
6) Bonded construction joint.

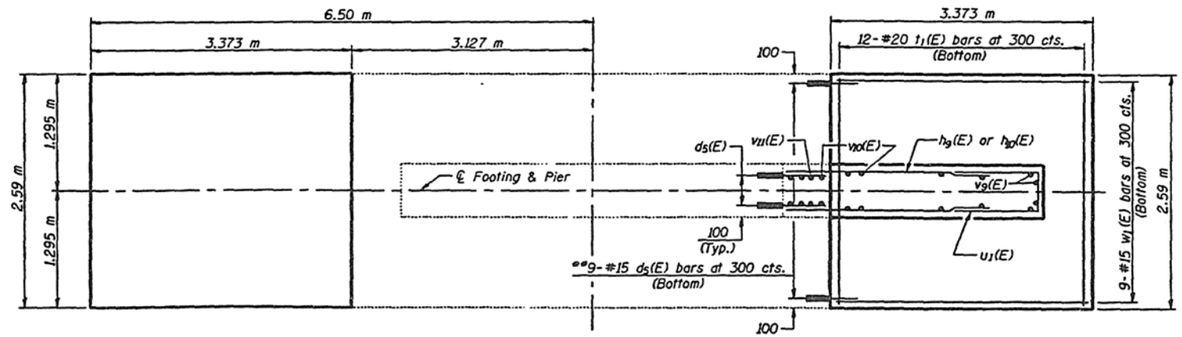


TOP OF PAD ELEVATIONS

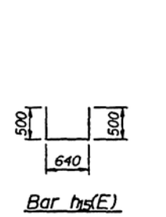
BEAM	PIER 1	PIER 3
1 & 8	239.908	239.994
2 & 7	239.894	239.980
3 & 6	239.928	240.014
4 & 5	239.946	240.032

ELEVATION

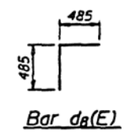
END VIEW



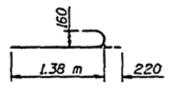
FOOTING PLAN



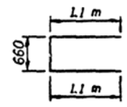
Bar $h_{15}(E)$



Bar $d_8(E)$



Bar $n_2(E)$

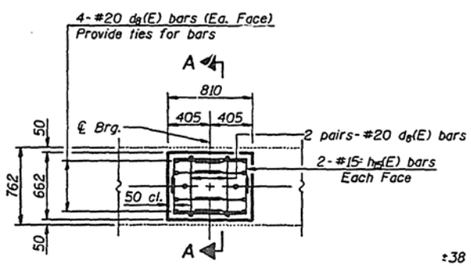


Bar $u_1(E)$

BILL OF MATERIAL-EACH PIER

Bar	No.	Size	Length (m)	Shape
$d_5(E)$	142	#15	0.90	
$d_8(E)$	96	#20	0.97	
$h_9(E)$	32	#15	3.27	
$h_{10}(E)$	32	#15	3.55	
$h_{11}(E)$	4	#15	2.74	
$h_{12}(E)$	4	#15	1.45	
$h_{15}(E)$	32	#15	1.69	
$n_2(E)$	60	#20	1.60	
$t_1(E)$	24	#20	2.50	
$u_1(E)$	42	#20	2.86	
$v_9(E)$	28	#15	6.10	
$v_{10}(E)$	40	#15	5.41	
$v_{11}(E)$	12	#15	4.72	
$w_1(E)$	18	#15	3.30	
Structure Excavation			Cu. m	41.0
Concrete Structures			Cu. m	43.1
Reinforcement Bars, Epoxy Coated			kg	2.250

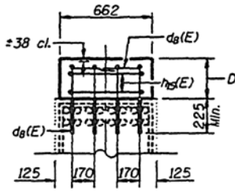
Reinforcement bars designated (E) shall be epoxy coated.



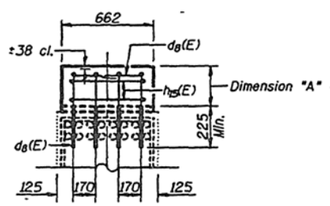
PLAN-CONC. BRG. PAD

DIMENSION "A"

	Pier 1	Pier 3
Bm. 1 & 8	283	287
2 & 7	269	273
3 & 6	273	277
4 & 5	291	295



SECTION A-A
(Beams #1,2,7,8)



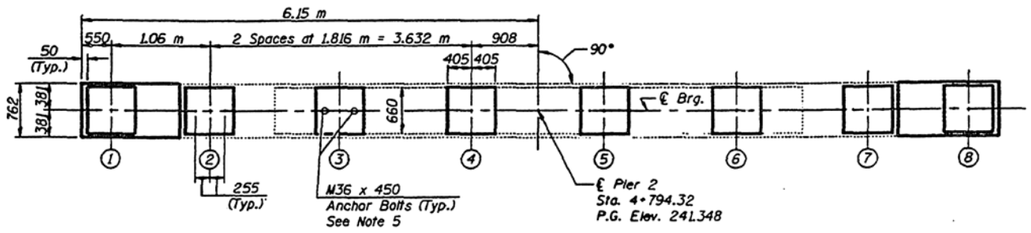
SECTION A-A
(Beams #3 thru #6)

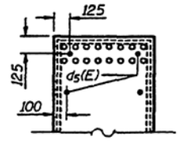
PIER EXTENSION - PIERS 1 & 3
U.S. RTE. 150 OVER
F.A.I. RTE. 57
SECTION (10-34HB)BR
STA. 4+794.32 (U.S. RTE. 150)
STA. 17+754.60 (F.A.I. RTE. 57)
CHAMPAIGN COUNTY
S.N. 010-0050

LIN ENGINEERING, LTD.

DESIGNED: T.M.M. CHECKED: J.W.
DRAWN: N.C. DATE: 12/95

F.A.I. 57	(10-34HB)BR	CHAMPAIGN	47	33
FED. ROAD DIST. NO. 7		ILLINOIS	FED. AID PROJECT	



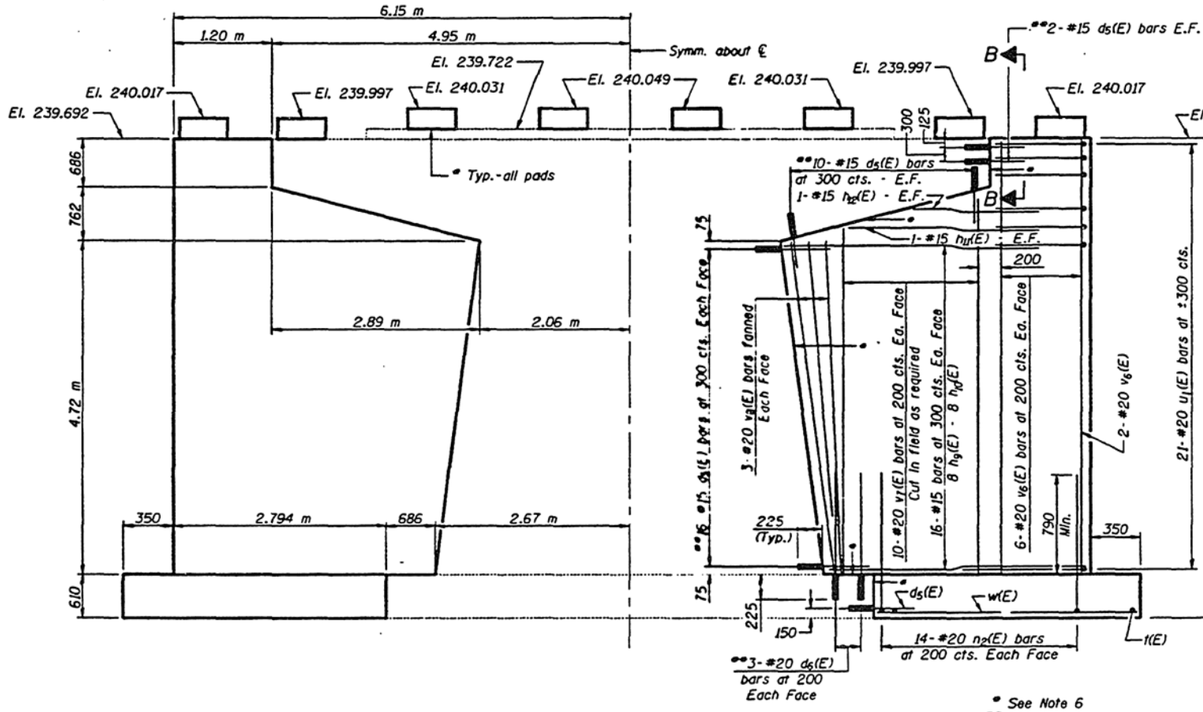


SECTION B-B

NOTES

1) Epoxy grouted bars shall be done in accordance with Section 584 of the Standard Specifications. Provide 21 mm ϕ holes to depth indicated for #15 bars and 26 mm ϕ holes for #20 bars. The grout and method of application shall be approved by the Department.
2) Space reinforcement in conc. pad to miss anchor bolts and exist. reinforcement
3) All edges shall have standard 20 mm chamfers except as noted.
4) All dimensions are in millimeters (mm) except as noted.
5) For Anchor Bolt Installation See Sht. #24 of 25.
6) Bonded construction joint standard specifications.

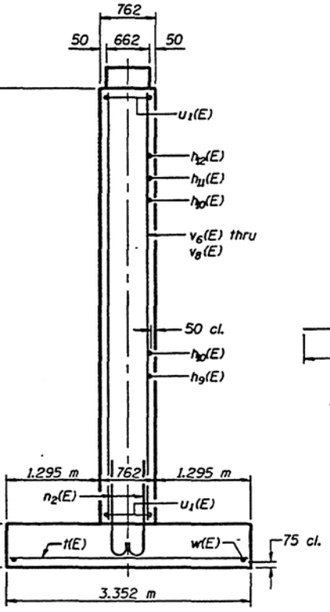
TOP PLAN



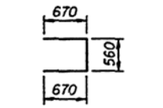
• See Note 6
•• See Note 1

Maximum Pressure = 143.6 KPa

ELEVATION

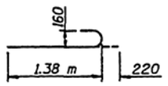


END VIEW

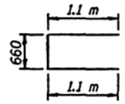


Bar h_{13}(E)

Bar d_7(E)



Bar n_2(E)

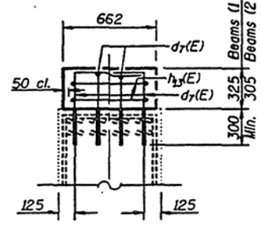


Bar u_1(E)

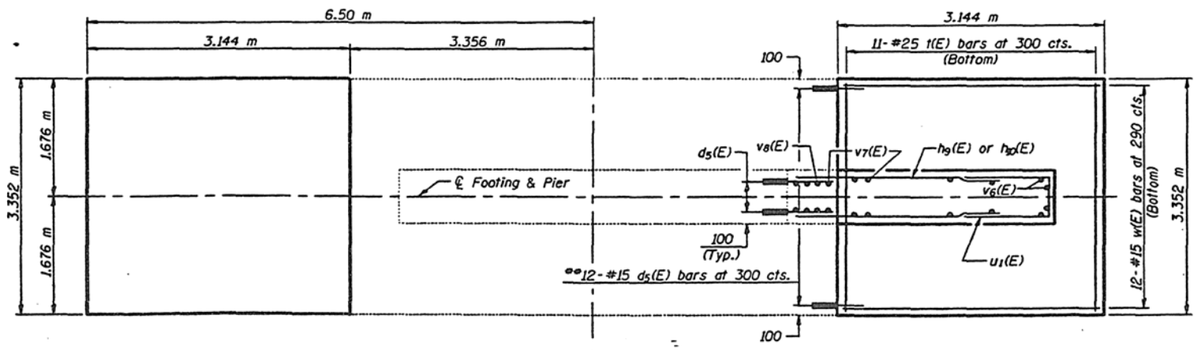
BILL OF MATERIAL

Bar	No.	Size	Length (m)	Shape
d_5(E)	136	#15	0.90	
d_6(E)	12	#20	1.06	
d_7(E)	96	#20	1.14	
h_9(E)	32	#15	3.27	
h_{10}(E)	32	#15	3.55	
h_{11}(E)	4	#15	2.74	
h_{12}(E)	4	#15	1.45	
h_{13}(E)	32	#15	1.90	
n_2(E)	56	#20	1.60	
t(E)	22	#25	3.25	
u_1(E)	42	#20	2.86	
v_6(E)	28	#20	6.10	
v_7(E)	40	#20	5.41	
v_8(E)	12	#20	4.72	
w(E)	24	#15	3.05	
Structure Excavation			Cu. m	45.2
Concrete Structures			Cu. m	45.7
Reinforcement Bars, Epoxy Coated			kg	2.880

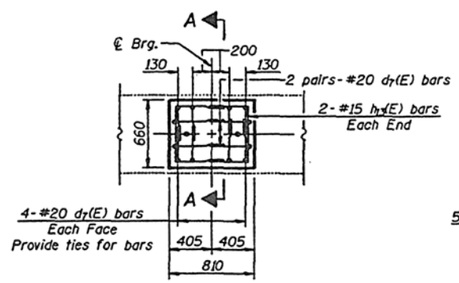
Reinforcement bars designated (E) shall be epoxy coated.



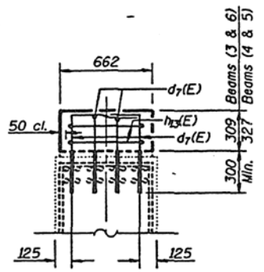
SECTION A-A
(Beams #1,2,7,8)



FOOTING PLAN



PLAN-CONC. BRG. PAD

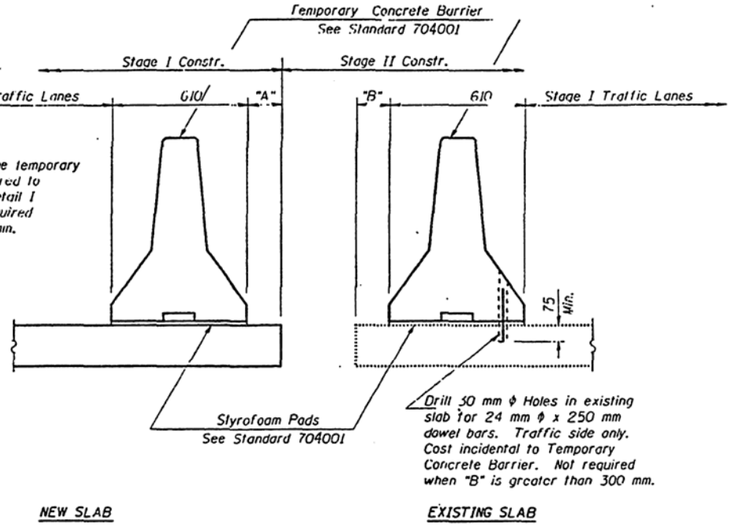


SECTION A-A
(Beams #3 thru #6)

PIER EXTENSION - PIER 2
U.S. RTE. 150 OVER
F.A.I. RTE. 57
SECTION (10-34HB)BR
STA. 4+794.32 (U.S. RTE. 150)
STA. 17+754.60 (F.A.I. RTE. 57)
CHAMPAIGN COUNTY
S.N. 010-0050

LIN ENGINEERING, LTD.
DESIGNED: T.M.M. CHECKED: J.W.
DRAWN: M.C. DATE: 12/95

F.A.I. 57	(10-34HB)BR	CHAMPAIGN	17	3
FED. ROAD DIST. NO. 7		ILLINOIS	PED. AID PROJECT	



SECTIONS THRU SLAB

NOTES

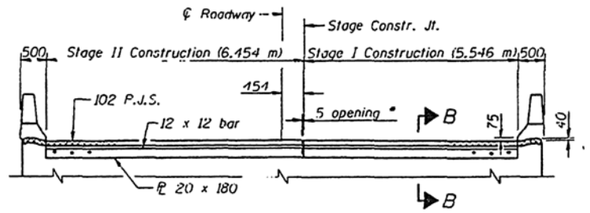
Detail I - With Bar Splicer or Couplers:
Connect one (1) 25x180x250 steel ℄ to the top layer of couplers with 2 16 mm ϕ bolts screwed to coupler at approximate ℄ of each 3 m barrier panel.

Detail II - With Extended Reinforcement Bars:
Connect one (1) 25x180x250 steel ℄ to the concrete slab with 2-16 mm ϕ Expansion Anchors or cast in place inserts spaced between the top layer of reinforcement at approximate ℄ of each 3 m barrier panel.

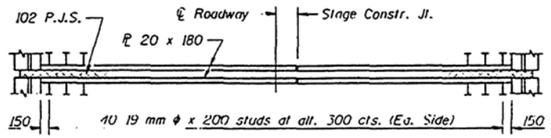
Cost of anchorage is incidental to Temporary Concrete Barrier.

All dimensions are in millimeters (mm) except as noted.

* Seal opening with silicone sealant suitable for structural steel



ELEVATION



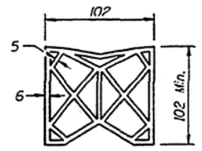
PLAN

EXPANSION JOINT"

East Abut. shown
West Abut. - Opposite Hand

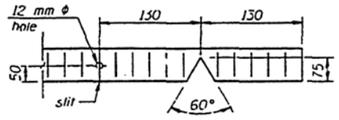
NOTE: After fabrication, all surfaces of the steel plates shall be given one Shop coat of paint Specified for Structural Steel.
Cost of structural steel included in pay item for Structural Steel.

** Furnish in segments of 6 m maximum length Maximum space between installed segments shall be 5 mm. Seal space with silicone sealant suitable for structural steel.



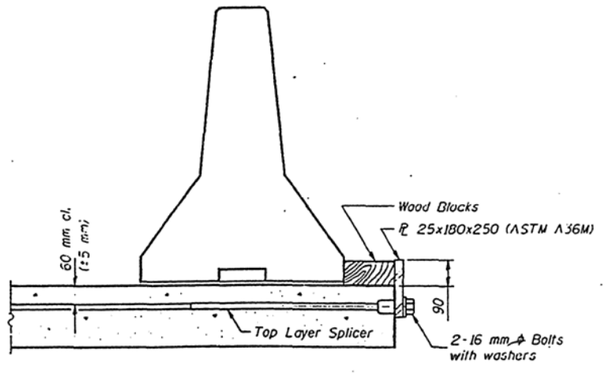
PREFORMED JOINT SEAL 102 mm

SECTION B-B



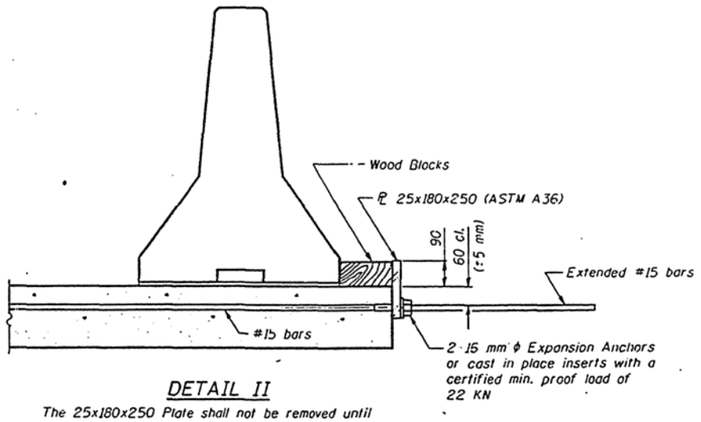
SEAL CUT-OUT (102 mm)

PREFORMED JOINT SEAL DETAILS



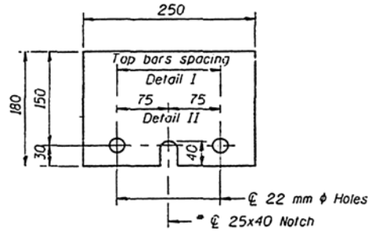
DETAIL I

The 25x180x250 Plate shall not be removed until Stage II Construction forms and reinforcement bars are in place.



DETAIL II

The 25x180x250 Plate shall not be removed until Stage II Construction forms and all reinforcement bars are in place and the concrete is ready to be placed.



℄ 25x180x250

* Required only with Detail II

TEMPORARY CONCRETE BARRIER AND PREFORMED JOINT SEAL DETAILS
U.S. RTE. 150 (BLOOMINGTON RD.)
OVER F.A.I. RTE. 57
SECTION (10-34HB)BR
STA. 4+794.32 (U.S. RTE. 150)
STA. 17+754.60 (F.A.I. RTE. 57)
CHAMPAIGN COUNTY
S.N. 010-0050

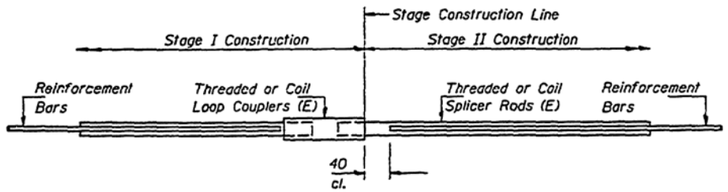
REVISIONS	
NAME	DATE
B. BLAND	3-7-97

LIN ENGINEERING, LTD.

DESIGNED: J.W. CHECKED: T.M.M.
DRAWN: K.C. DATE: 12/96

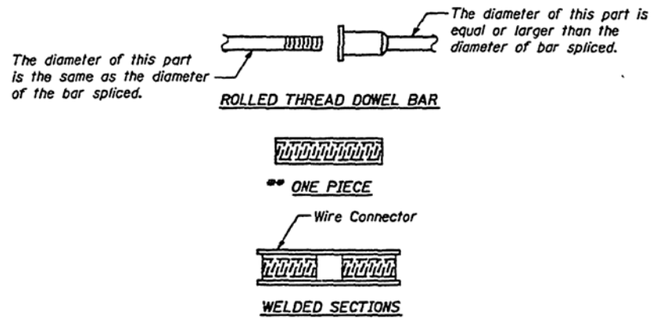
STATE OF ILLINOIS
DEPARTMENT OF TRANSPORTATION

			47	35	SHEET NO. 20
					25 SHEETS



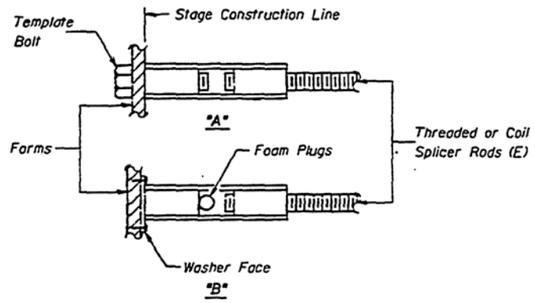
BAR SPLICER ASSEMBLY DETAIL

Bar Size	No. Assemblies Required	Location
20	3	E. Abut.
15	10	E. Abut.
20	3	W. Abut.
15	10	W. Abut.
15	724	Superstructure



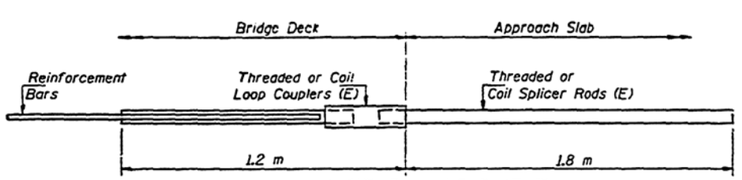
BAR SPLICER ASSEMBLY ALTERNATIVES

** Heavy Hex Nuts conforming to ASTM A 563M, Grade C, D or DH may be used.



INSTALLATION AND SETTING METHODS

"A" : Set bar splicer assembly by means of a template bolt.
"B" : Set bar splicer assembly by nailing to wood forms or cementing to steel forms.
(E) : Indicates epoxy coating.



INTEGRAL ABUTMENT BAR SPLICER ASSEMBLY DETAIL FOR #15 BAR

Min. Capacity = 100 kN - tension
Min. Pull-out Strength = 40 kN - tension
No. Required =

NOTES

Bar splicer assemblies shall be of an approved type and shall develop in tension at least 125 percent of the yield strength of the lapped reinforcement bars.

Splicer rods shall be of minimum 400 MPa yield strength, threaded or coiled full length.

All reinforcement bars shall be lapped and tied to the splicer rods or dowel bars.

Bar splicer assemblies shall be epoxy coated according to the requirements for reinforcement bars.

Other systems of similar design may be submitted to the Engineer for approval. Approval shall be based on certified test results from an approved testing laboratory that the proposed bar splicer assembly satisfies the following requirements:

① Minimum Capacity (Tension in kN) = $1.25 \times 10^{-3} \times f_y \times A_t$

② Minimum *Pull-out Strength (Tension in kN) = $1.25 \times 10^{-3} \times fs_{allow} \times A_t$

Where f_y = Yield strength of lapped reinforcement bars in MPa.
fs_{allow} = Allowable tensile stress in lapped reinforcement bars in MPa (Service Load)
A_t = Tensile stress area of lapped reinforcement bars (mm^2).
* = 28 day concrete

BAR SPLICER ASSEMBLIES			
Bar Size to be Spliced	Splicer Rod or Dowel Bar Length	Strength Requirements	
		Min. Capacity kN - tension	Min. Pull-Out Strength kN - tension
#15	610 mm	100	40
#20	790 mm	150	60
#25	1.04 m	250	100
#30	1.37 m	350	140

Bar splicer assemblies shall be according to Section 508 of the Standard Specifications, except as noted. The furnishing and installation of bar splicer assemblies will be measured and paid for at the contract unit price each for "BAR SPLICERS."

All dimensions are in millimeters (mm) except as noted.

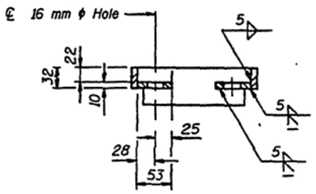
DESIGNED
CHECKED
DRAWN
CHECKED

BSD-1 (M) 4-30-97

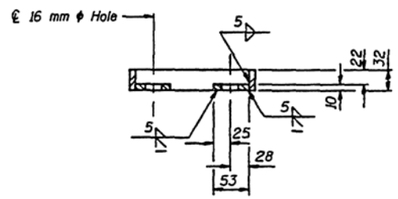
BAR SPLICER ASSEMBLY DETAILS
SECTION (10-34HB)BR
STA. 4+794.32
CHAMPAIGN COUNTY

ISSUE NO.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
F.A.I. 57	(10-34HB)BR	CHAMPAIGN	47	36
FED. ROAD DIST. NO. 7	ILLINOIS	FED. AID PROJECT		

Sht. #21 of 25

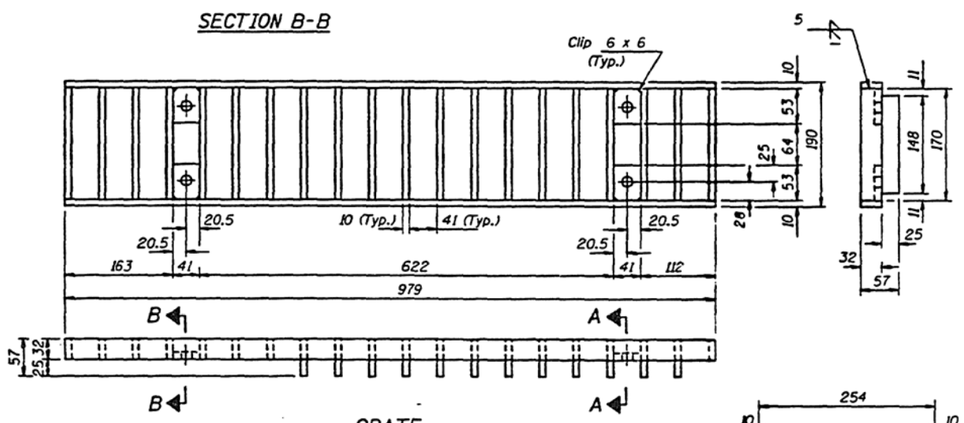


SECTION A-A

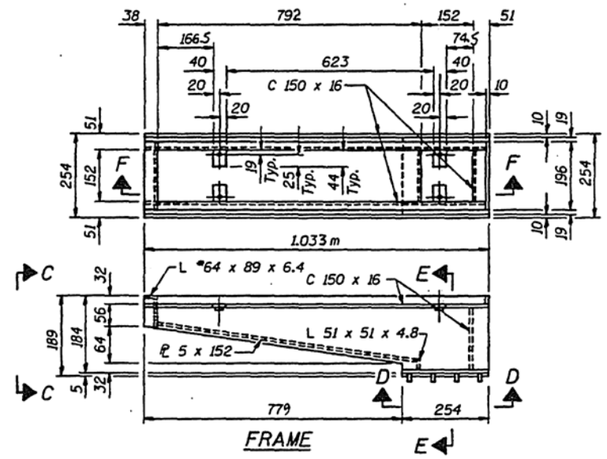


SECTION B-B

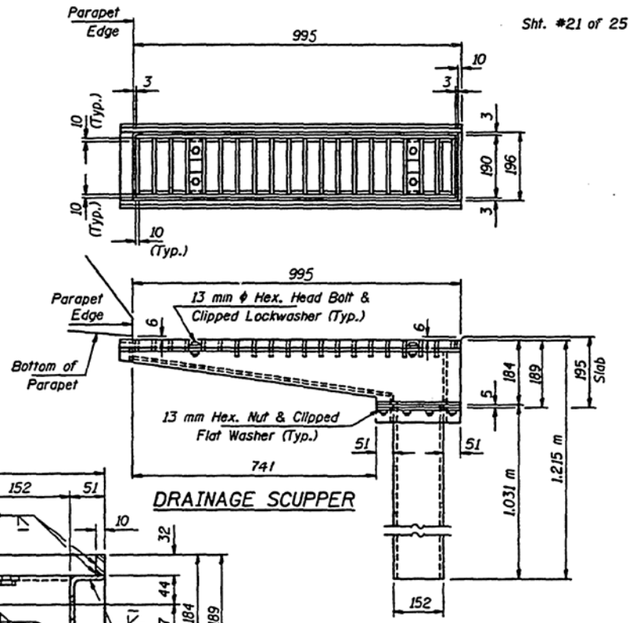
*Cut to 38 mm as shown in Section F-F.



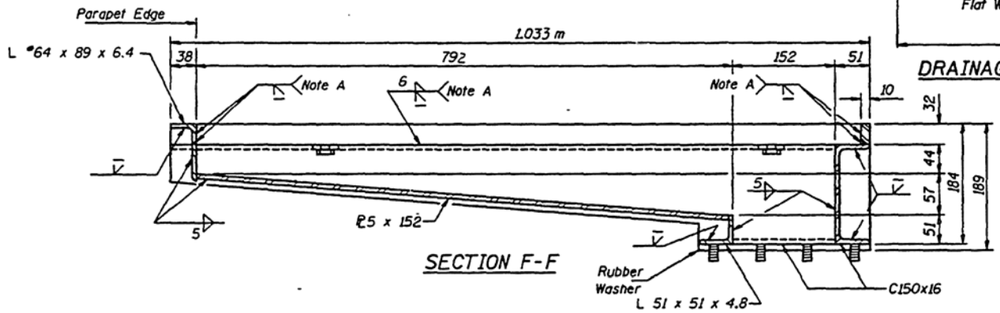
GRATE



FRAME

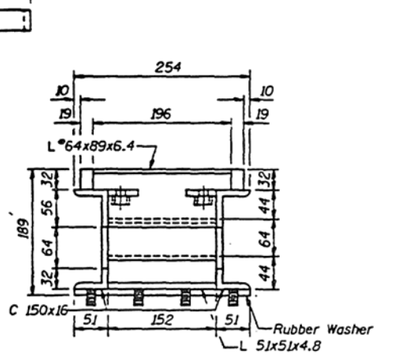


DRAINAGE SCUPPER

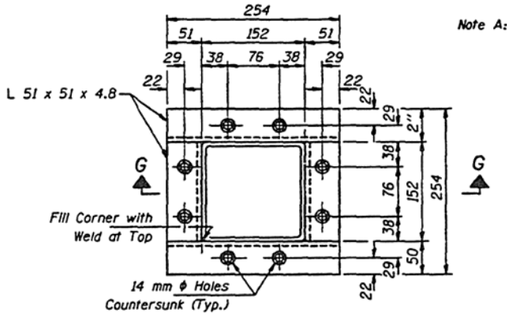


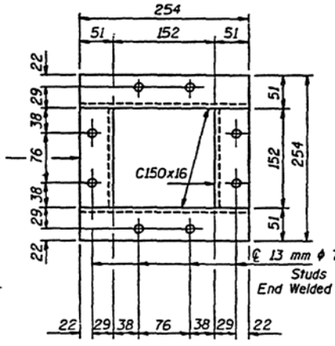
SECTION F-F

Note A: Surface of welds shall be recessed 2 mm Max. or placed flush with inside face of bars to provide clearance for Grate.

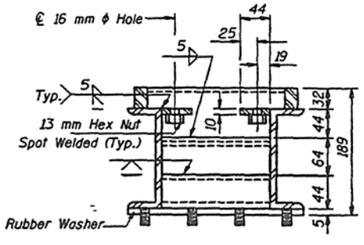


VIEW C-C

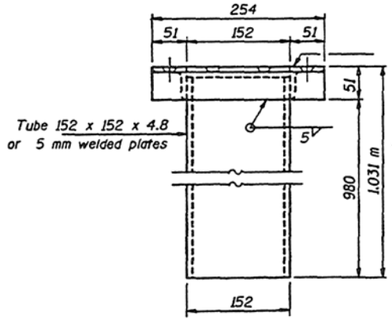




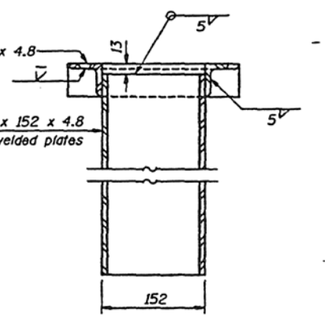
VIEW D-D



SECTION E-E



DOWNSPOUT



SECTION G-G

Notes: Hollow structural steel tubing shall conform to the requirements of ASTM designation A500 Grade B, or A501 Structural Steel Tubing.
All other shapes, plates and bars shall conform to the requirements of AASHTO M270 - (Fy = 250 MPa).
Bolts, studs, washers and nuts shall conform to the requirements of ASTM A307.
The Grate, Frame and Downspout shall be galvanized after shop fabrication in accordance with AASHTO M111 & ASTM A385.
All bolts, washers and nuts shall be galvanized in accordance with AASHTO M232.
Cost of the Grate, Frame, Downspout, Bolts, Washers and Nuts including complete installation of Scupper will be paid for at the unit bid price each for "DRAINAGE SCUPPERS."
All dimensions are in millimeters (mm) except as noted.

BILL OF MATERIAL

ITEM	UNIT	QUANTITY
Drainage Scupper	Each	2

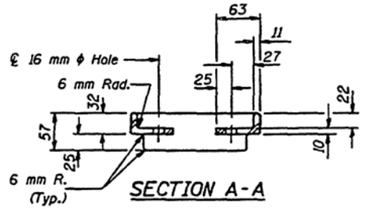
STEEL DRAINAGE SCUPPER
U.S. RTE. 150 (BLOOMINGTON RD.)
OVER F.A.I. RTE. 57
SECTION (10-34HB)BR
STA. 4+794.32 (U.S. RTE. 150)
STA. 17+754.60 (F.A.I. RTE. 57)
CHAMPAIGN COUNTY
S.N. 010-0050

LIN ENGINEERING, LTD.

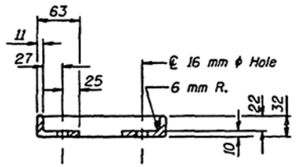
DESIGNED: S.F.M. CHECKED: T.M.M.
DRAWN: K.C. DATE: 12/95

F.A.I. 57	(10-34HB)BR	CHAMPAIGN	47	37

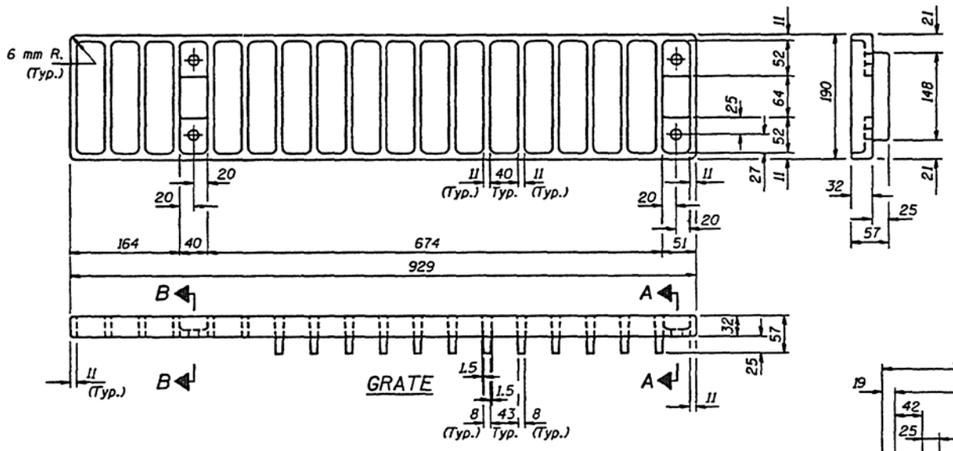
Sht. #22 of 25



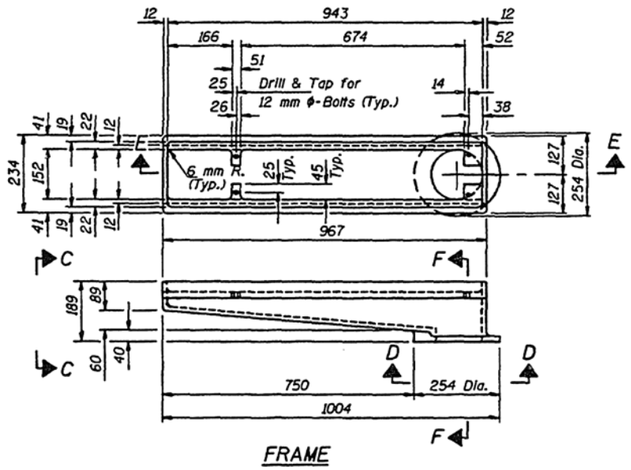
SECTION A-A



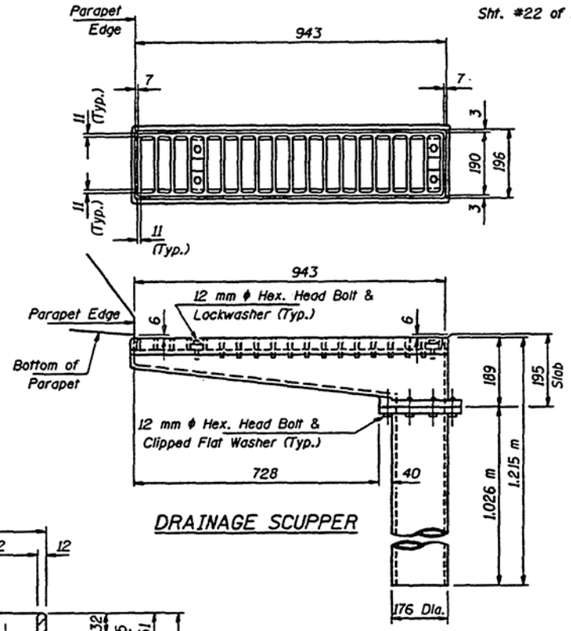
SECTION B-B



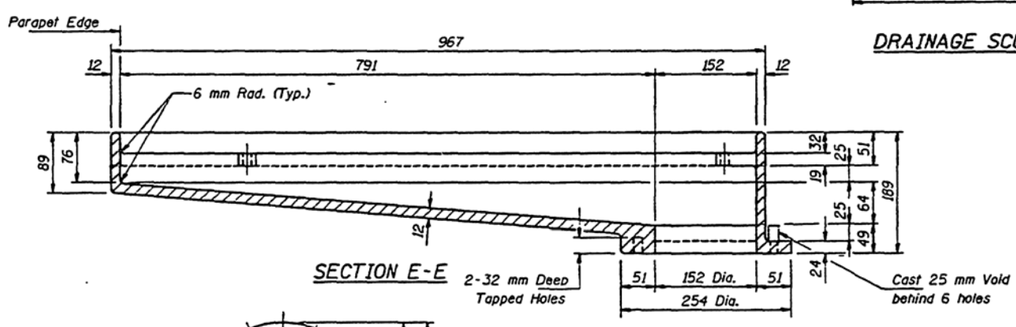
GRATE



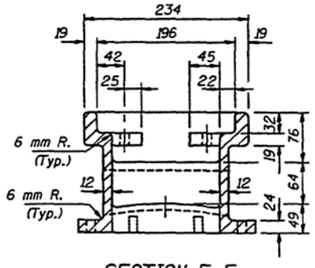
FRAME



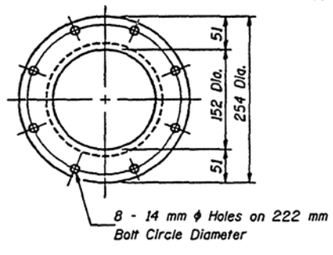
DRAINAGE SCUPPER

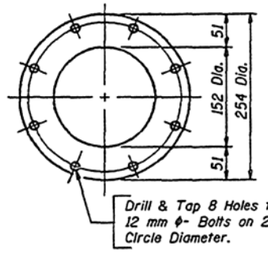


SECTION E-E

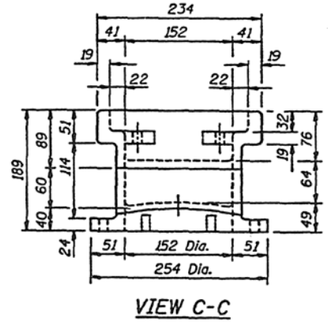


SECTION F-F

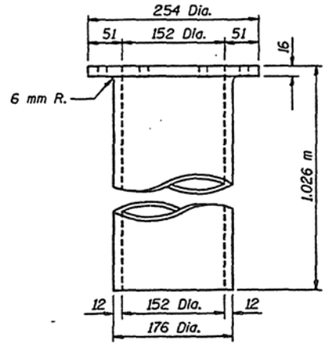




VIEW D-D



VIEW C-C



DOWNSPOUT

Notes: All cast iron parts shall be gray iron conforming to the requirements of AASHTO M105, Class 30.
Bolts and washers shall conform to the requirements of ASTM A307.
All bolts and washers shall be galvanized in accordance with AASHTO M232.
As an alternate bolts and washers may be stainless steel conforming to the requirements of ASTM A193M, Type 304.
Cost of the Grate, Frame, Downspout, bolts and washers including complete installation of Scupper will be paid for at the unit bid price each for "DRAINAGE SCUPPERS."
The Contractor may use at his option steel drainage scuppers or cast iron drainage scuppers.
All dimensions are in millimeters (mm) except as noted.

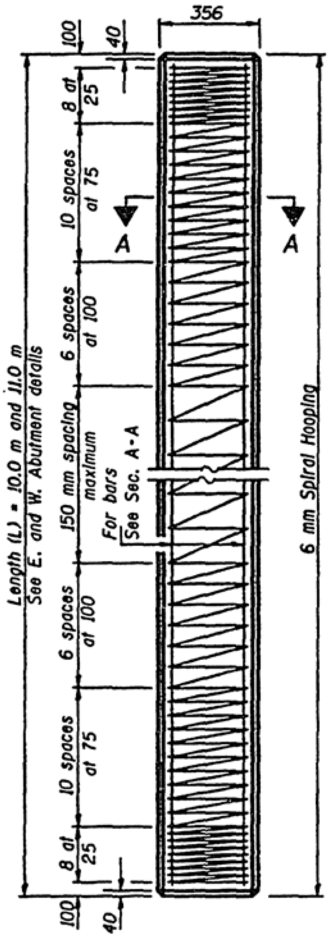
(W.T. to inside of exterior stringer flange shall not be > 12 m)

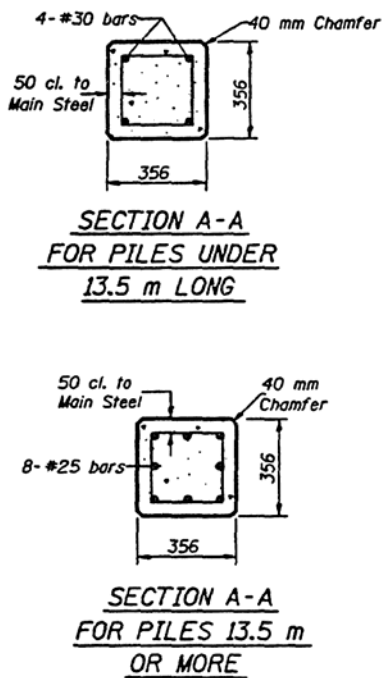
ALTERNATE
CAST IRON DRAINAGE SCUPPER DETAILS
U.S. RTE. 150 (BLOOMINGTON RD.)
OVER F.A.I. RTE. 57
SECTION (10-34HB)BR
STA. 4+794.32 (U.S. RTE. 150)
STA. 17+754.60 (F.A.I. RTE. 57)
CHAMPAIGN COUNTY
S.N. 010-0050

LIN ENGINEERING, LTD.

DESIGNED: S.F.M. CHECKED: T.M.M.
DRAWN: K.C. DATE: 12/95

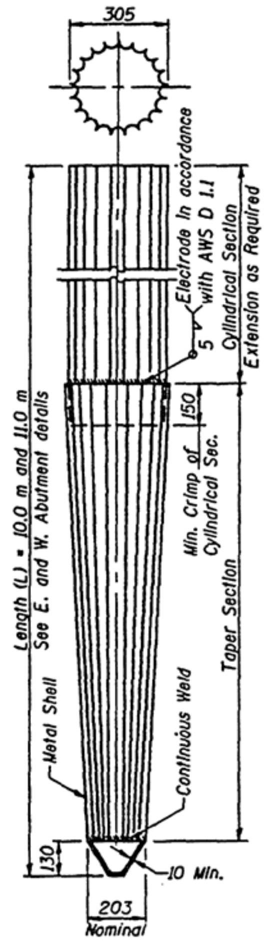
F.A.I. 57	(10-34HB)BR	CHAMPAIGN	47	38

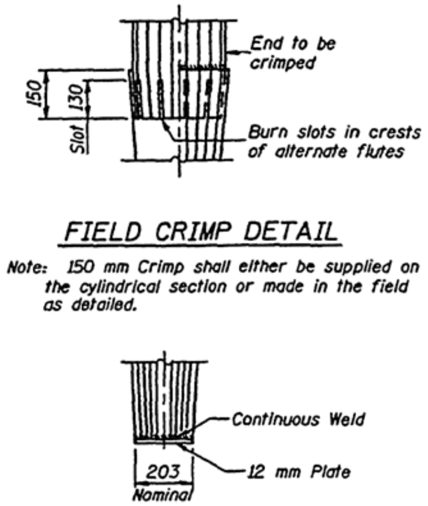




Handling: For Pile lengths up to 13.5 m use two slings placed at a distance of 0.21L from each end. For Piles longer than 13.5 m. use three slings placed at a distance of 0.12L from each end and at mid point of pile.

DETAIL OF PRECAST CONCRETE PILES





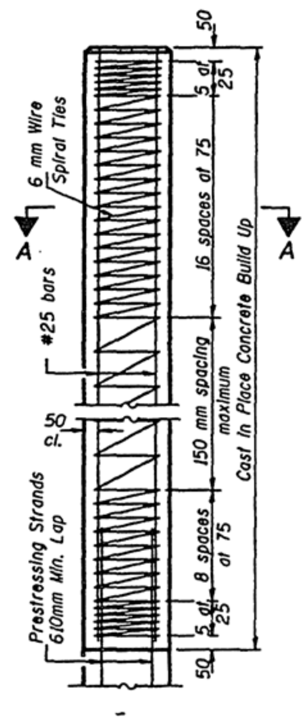
Note: 150 mm Crimp shall either be supplied on the cylindrical section or made in the field as detailed.

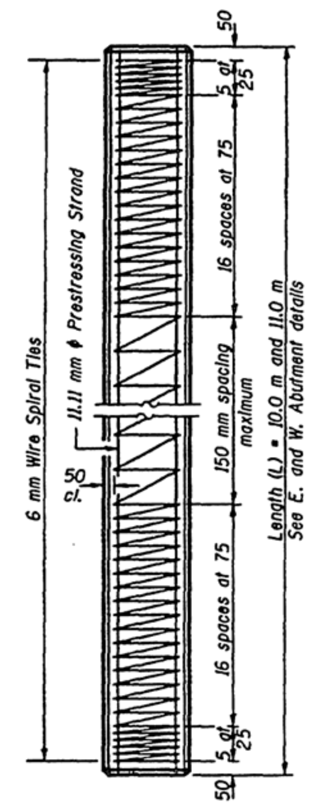
ALLOWABLE TAPER SECTIONS

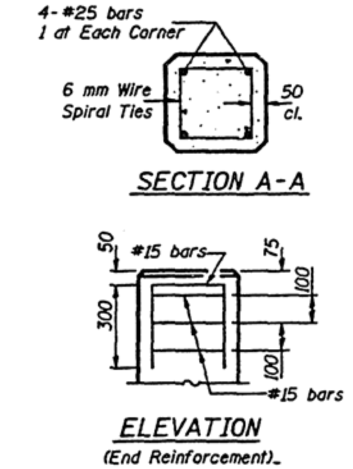
3.0 m Length-Taper 25 mm in 0.75 m
5.0 m Length-Taper 25 mm in 1.2 m
7.5 m Length-Taper 25 mm in 2.0 m
9.0 m Length-Taper 25 mm in 2.0 m

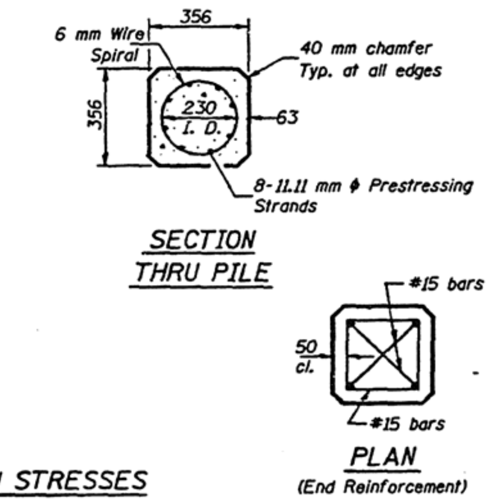
Note: The thickness of the shell shall be 3.80 mm with a tolerance of 5%. The shell shall be in accordance with Article 706.05 (a) of the Standard Specification except that minimum yield strength for the steel after cold working shall be 345 MPa

DETAIL OF TAPERED METAL SHELLS FOR CAST IN PLACE CONCRETE PILES









DESIGN STRESSES

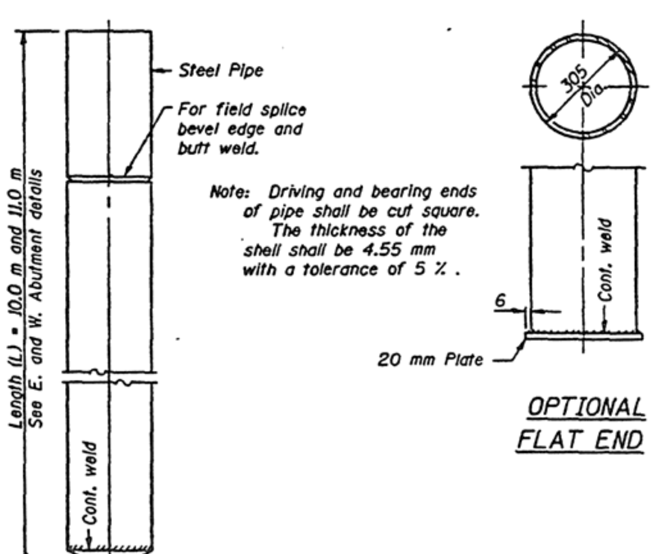
f'_c = 35 MPa
f'_{ci} = 28 MPa
f'_s = 1860 MPa (138,000 N - 11.11 mm ϕ or 183,600 N - 12.70 mm ϕ)
f'_{si} = 1395 MPa (103,500 N - 11.11 mm ϕ or 137,700 N - 12.70 mm ϕ)

NOTES

Prestressing steel shall be uncoated high strength Low-relaxation 7-wire strand. The nominal diameter shall be 11.11 mm and the minimum nominal cross-sectional area shall be 74.19 mm² or the equivalent 6-12.70 mm ϕ strands with a cross-sectional area of 98.71 mm².

For Pile lengths up to 20 m, use two slings placed at a distance of 0.21 L* from each end. For Piles longer than 20 m, use three slings placed at a distance of 0.12 L* from each end and at midpoint of pile. *L= Overall length of pile to be handled.

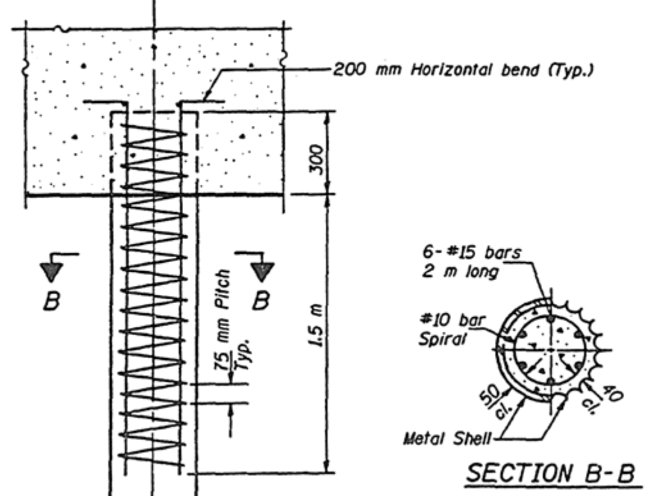
PRECAST PRESTRESSED CONCRETE PILE



Note: Driving and bearing ends of pipe shall be cut square. The thickness of the shell shall be 4.55 mm with a tolerance of 5 %.

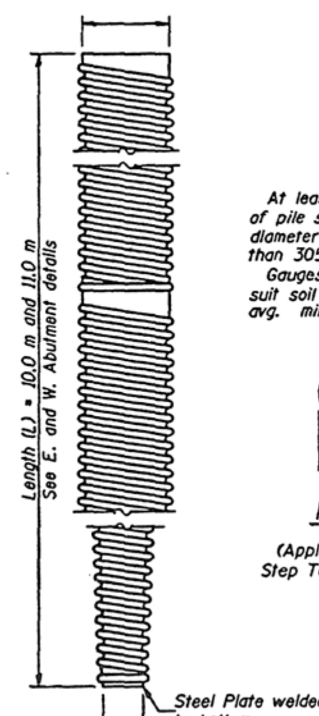
DETAIL OF CYLINDRICAL STEEL SHELL FOR CAST IN PLACE CONCRETE PILES

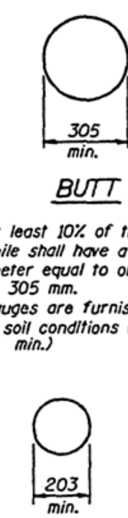
The cost of Reinforcement is incidental to the cost of furnishing piles.



Reinforcement in top of pile shall be omitted under pier footings when placed in natural ground.

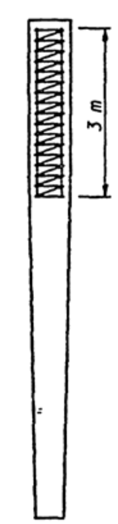
DETAIL OF REINFORCEMENT FOR METAL SHELLS



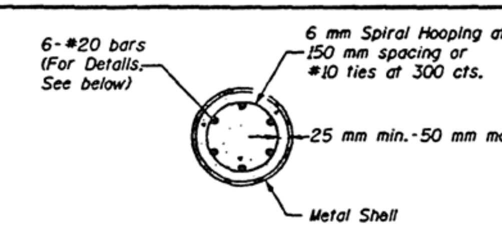


At least 10% of the length of pile shall have a Butt diameter equal to or greater than 305 mm.
Gauges are furnished to suit soil conditions (16 Gauge (1.519 mm) avg. min.)

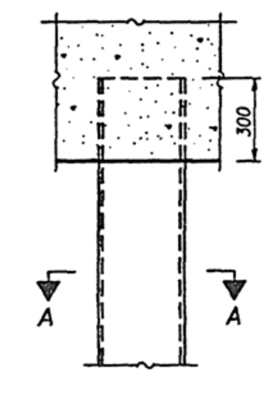
(Applies only to Step Taper type pile)



PILE REINFORCEMENT



Reinforcement is incidental to the cost of furnishing piles.



DETAIL OF MANDREL DRIVEN STRAIGHT OR STEP-TAPER PILES FOR CAST IN PLACE CONCRETE PILES

(All dimensions are in millimeters (mm) except as noted.)

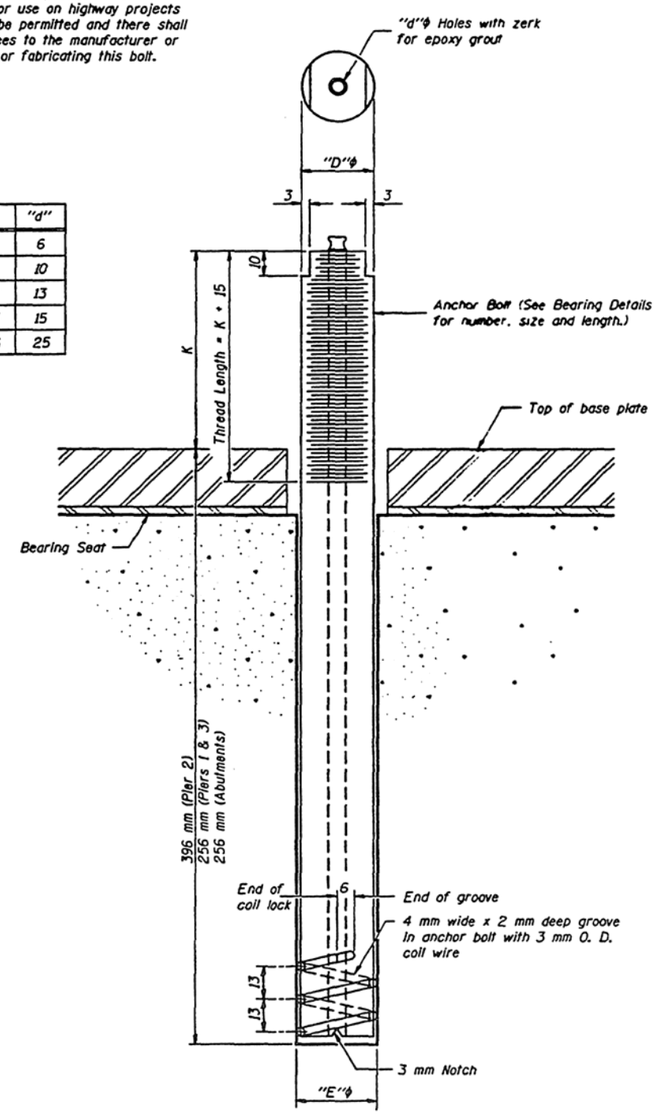
PILE DETAILS
U.S. RTE. 150 (BLOOMINGTON RD.)
OVER F.A.I. RTE. 57
SECTION (10-34HB)BR
STA. 4+794.32 (U.S. RTE. 150)
STA. 17+754.60 (F.A.I. RTE. 57)
CHAMPAIGN COUNTY
S.N. 010-0050

LIN ENGINEERING, LTD.

DESIGNED: T.M.M.	CHECKED: J.W.
DRAWN: N.A.C.	DATE: 12/95

SHEET NO.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
F.A.I. 57	(10-34HB)BR	CHAMPAIGN	47	39
FED. ROAD DIST. NO. 7		ILLINOIS	FED. AID PROJECT	

D	E	H	K	"d"
25	28	21	44	6
32	35	28	51	10
38	41	34	54	13
50	53	46	73	15
65	68	61	86	25



ILLINOIS COIL-LOCK ANCHOR BOLT

MATERIALS FOR ILLINOIS COIL-LOCK ANCHOR BOLT

The anchor bolt shall be fabricated from cold drawn or hot finished seamless carbon steel mechanical tubing conforming to ASTM A519, Grade 1026 and supplied with hexagonal nuts and cut washers.

The coil wire shall be made of any suitable soft steel wire.

The finished anchor bolt shall be cleaned of rust and other foreign materials and wrapped or packaged to prevent contamination until they are installed.

The epoxy grout shall be a two-component, epoxy resin bonding system comforming to ASTM C881, Type I, Grade 1 and of a Class suitable for the temperature at installation.

INSTALLATION PROCEDURE for the ILLINOIS COIL-LOCK ANCHOR BOLT

1. With the coil wire in place, the bolt shall be inserted into the hole and turned clockwise to a snug fit in the hole. Nut and washer shall be placed on the bolt. The nut shall be tensioned until the steel base plates are held securely to the concrete bearing seat.

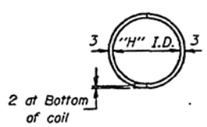
2. Epoxy grout shall be pumped through the zerk fitting with a pressure gun. Pumping shall continue until the epoxy overflows the hole around the bolt shank. After pumping is discontinued, excess epoxy shall be immediately wiped off.

ALTERNATE ANCHOR BOLTS

The Contractor may use, at his option, the capsule or the adhesive cartridge type anchor rods that have been previously tested and given a prior approval by the Department. The Contractor shall install these anchor rods in pre-drilled holes in accordance with the manufacturer's recommendations and procedures.

The capsule or the adhesive cartridge type anchor rods shall be a two part system composed of:

1. *A threaded rod stud with nut and washer conforming to ASTM A307.*
2. *A sealed glass capsule or a sealed glass adhesive cartridge containing premeasured amounts of the adhesive chemical.*



PLAN-COIL WIRE

GENERAL NOTES

Holes in the masonry for anchor bolts shall be drilled through the base plates to the diameter and depth shown or in accordance with the manufacturer's recommendation after beams or girders have been erected and adjusted.

Prior to setting the bolts, the holes shall be dry and all dust and loose particles shall be removed by the use of compressed air or vacuuming.

The anchor bolts, furnished and installed and including the epoxy grout or capsules shall not be paid for separately but shall be included in the unit bid price for "Furnishing and Erecting Structural Steel".

All dimensions are in millimeters (mm) except as noted.

ANCHOR BOLT DETAILS
U.S. RTE. 150 (BLOOMINGTON RD.)
OVER F.A.I. RTE. 57
SECTION (10-34HB)BR
STA. 4+794.32 (U.S. RTE. 150)
STA. 17+754.60 (F.A.I. RTE. 57)
CHAMPAIGN COUNTY
S.N. 010-0050

LIN ENGINEERING, LTD.	
DESIGNED: J.W.	CHECKED: P.L.
DRAWN: M.C.	DATE: 12/95

ROUTE NO.	SECTION	COUNTY	SHEET NO.	TOTAL SHTS.
F.A.I. 57	(10-34HB)BR	CHAMPAIGN	47	40
FED. ROAD DIST. NO. 7	ILLINOIS	FED. AID PROJECT		

Sht. #25 of 25

I.D.O.T. - District Five Materials — Bridge Foundation METRIC Boring Log — Sh. 1 of 6

SW 1/4 SEC 34 T20N R8E 3RD PM
PROJECT ____ BRIDGE 010-0050 Date 06/30/94
ROUTE FAI 57 US RT 150 OVER FAI-57 Bored By Winschief
SEC. (10-34HB)BR STA. 4.7942 (157+29.08) Checked By T.G.B.

COUNTY Champaign
Boring No. 1WABT
Sta 4.750
O/S 3.962 m LT

Surf. Water Elev. ____
Grndwater Elev. at Compl WASH B
At ____ Hrs ____

DEPTH	N	Qu 100 kN/m2	W %	DEPTH	N	Qu 100 kN/m2	W %
Gr. Surf. 241.09 0				MIXED BROWN SILTY CLAY - CLAY LOAM EMBANKMENT 233.78			
				-25(7.62)			
MIXED BLACK & BROWN SILTY CLAY EMBANKMENT				BROWN GRAY MOTTLED SANDY CLAY LOAM TILL	7	2.208	15
-5(1.52)							
	10	2.018	26		16	3.548	15
				-30(9.14)			
	8	1.728	24		23	4.698	14
				231.49			
-10(3.05)							
	11	3.168	24		13	2.988	12
237.74							
				-35(10.67)			
	13	2.788	21		11	2.598	12
-15(4.57)				GRAY SANDY CLAY LOAM TILL			
	12	2.018	23		12	2.788	12
MIXED BROWN SILTY CLAY - CLAY LOAM EMBANKMENT				-40(12.19)			
	11	2.788	27		10	1.728	13
-20(6.10)							
	10	1.828	27				
	8	1.538	25	-45(13.72)	8	1.538	13

N - Standard Penetrometer Test: 2" (50.8 mm) OD Sampler, N = # of blows/foot
140# (63.5 kg) hammer falling 30" (0.76 m)
(Type of failure: B-Bulge S-Shear E-Estimated P-Penetrometer)

Project
Route FAI 57
Sec. (10-34HB)BR
County Champaign
Sh. 2 of 6

Boring No. 1 CONT
Sta 4.750
O/S 3.962 m LT

DEPTH	N	Qu 100 kN/m2	W %	DEPTH	N	Qu 100 kN/m2	W %
-45(13.72)	8	1.538	13	-70(21.34)			
GRAY SANDY CLAY LOAM TILL -50(15.24)	10	1.728	11	-75(22.86)			
-55(16.76)	22	6.708	11	-80(24.38)			
223.41							
GRAY SANDY CLAY LOAM SAND LOAM TILL -60(18.29)	40	3.935	8.6	-85(25.91)			
221.89							
-65(19.81)	15			-90(27.43)			
COURSE GRAY SAND							
-70(21.34)	35			-95(28.96)			
219.60							

I.D.O.T. - District Five Materials — Bridge Foundation METRIC Boring Log — Sh. 3 of 6

PROJECT ____ BRIDGE 010-0050 Date 07/28/93
ROUTE FAI 57 US RT 150 OVER FAI-57 Bored By Winschief
SEC. (10-34HB)BR STA. 4.7942 (157+29.08) Checked By T.G.B.

COUNTY Champaign
Boring No. 2 E ABT
Sta 4.837
O/S 3.65 m RT

Surf. Water Elev. ____
Grndwater Elev. at Compl ____
At ____ Hrs ____

DEPTH	N	Qu 100 kN/m2	W %	DEPTH	N	Qu 100 kN/m2	W %
Gr. Surf. 241.09 0				MIXED BLACK & BROWN SILTY CLAY - CLAY LOAM EMBANKMENT			
				-25(7.62)			
				233.17	11	3.358	25
-5(1.52)				BROWN GRAY MOTTLED SILTY CLAY LOAM FREE WATER			
MIXED BROWN - BLACK SILTY CLAY EMBANKMENT	11	1.538	24	232.26			
				-30(9.14)			
	10	1.728	20		9	2.598	14
-10(3.05)				BROWN CLAY LOAM TILL			
	12	2.598	26		13	3.168	15
237.74							
MIXED BROWN CLAY LOAM EMBANKMENT				-35(10.67)			
	13	3.938	18		15	3.938	16
236.83				229.97			
-15(4.57)							
	15	4.318	20		16	3.548	11
MIXED BLACK & BROWN SILTY CLAY - CLAY LOAM EMBANKMENT				-40(12.19)			
	12	3.548	25	SAND LENS GRAY SANDY CLAY LOAM TILL	18	3.548	11
-20(6.10)							
	10	2.018	27				
	12	3.548	19	-45(13.72)	10	2.398	12

N - Standard Penetrometer Test: 2" (50.8 mm) OD Sampler, N = # of blows/foot
140# (63.5 kg) hammer falling 30" (0.76 m)
(Type of failure: B-Bulge S-Shear E-Estimated P-Penetrometer)

Project
Route FAI 57
Sec. (10-34HB)BR
County Champaign
Sh. 4 of 6

Boring No. 2 CONT
Sta 4.837
O/S 3.65 m RT

DEPTH	N	Qu 100 kN/m2	W %	DEPTH	N	Qu 100 kN/m2	W %
-45(13.72)	10	2.398	12	-70(21.34)			
-50(15.24) GRAY SANDY CLAY LOAM TILL	12	2.018	12	-75(22.86)			
-55(16.76)	11	2.018	12	-80(24.38)			
-60(18.29)	14	2.788	11	-85(25.91)			
222.65 LIMIT OF BORING							
-65(19.81)				-90(27.43)			
-70(21.34)				-95(28.96)			

I.D.O.T. - District Five Materials — Bridge Foundation METRIC Boring Log — Sh. 5 of 6

PROJECT ____ BRIDGE 010-0050 Date 08/03/93
ROUTE FAI 57 US RT 150 OVER FAI-57 Bored By Winschief
SEC. (10-34HB)BR STA. 4.7942 (157+29.08) Checked By T.G.B.

COUNTY Champaign
Boring No. 3 C PIER
Sta 4.794
O/S 7.01 m RT

Surf. Water Elev. ____
Grndwater Elev. at Compl WASH B
At ____ Hrs ____

DEPTH	N	Qu 100 kN/m2	W %	DEPTH	N	Qu 100 kN/m2	W %
Gr. Surf. 234.11 0							
				-25(7.62)			
					9	2.018	12
BROWN SANDY CLAY LOAM TILL -5(1.52)							
	9	3.548	15				
					11	2.018	12
	19	2.39E	38	-30(9.14)			
				SILT LENS	12	2.018	12
-10(3.05)				GRAY SANDY CLAY LOAM TILL			
	11	2.208	18				
230.61							
				-35(10.67)			
	15	3.168	12	SAND LENS	7	1.538	13
-15(4.57)							
	11	2.398	12				
				-40(12.19)			
GRAY SANDY CLAY LOAM TILL	10	2.598	9.5		44	4.318	9.9
-20(6.10)							
	9	2.398	12	221.01			
				COURSE GRAY SAND (FREE WATER)			
	10	2.018	13	-45(13.72)	18		

N - Standard Penetrometer Test: 2" (50.8 mm) OD Sampler, N = # of blows/foot
140# (63.5 kg) hammer falling 30" (0.76 m)
(Type of failure: B-Bulge S-Shear E-Estimated P-Penetrometer)

Project
Route FAI 57
Sec. (10-34HB)BR
County Champaign
Sh. 6 of 6

Boring No. 3 CONT
Sta 4.794
O/S 7.01 m RT

DEPTH	N	Qu 100 kN/m2	W %	DEPTH	N	Qu 100 kN/m2	W %
-45(13.72)	18			-70(21.34)			
COURSE GRAY SAND							
-50(15.24)	36			-75(22.86)			
217.65							
-55(16.76)	55	7.66E	12	-80(24.38)			
GRAY SANDY CLAY LOAM TILL							
-60(18.29)	26	5.558	11	-85(25.91)			
-65(19.81) 214.15 LIMIT OF BORING	18	2.978	12	-90(27.43)			
-70(21.34)				-95(28.96)			

SOIL BORING DATA
U.S. RTE. 150 (BLOOMINGTON RD.)
OVER F.A.I. RTE. 57
SECTION (10-34HB)BR
STA. 4+794.32 (U.S. RTE. 150)
STA. 17+754.60 (F.A.I. RTE. 57)
CHAMPAIGN COUNTY
S.N. 010-0050

LIN ENGINEERING, LTD.
DESIGNED: T.M.M. CHECKED: P.L.
DRAWN: K.C. DATE: 12/95

F.A.I. 57	(10-34HB)8R	CHAMPAIGN	47	41
FED. ROAD DIST. NO. 7		ILLINOIS	FED. AID PROJECT	

STA 4+675
FILL AREA = 3.5 (M^2)
CUT AREA = 0.9 (M^2)
VF = 100.7 (M^3)
VC = 21.3 (M^3)

STA 4+650
FILL AREA = 4.5 (M^2)
CUT AREA = 0.8 (M^2)
VF = 88.0 (M^3)
VC = 21.3 (M^3)

STA 4+625
FILL AREA = 2.5 (M^2)
CUT AREA = 0.9 (M^2)
VF = 38.4 (M^3)
VC = 22.1 (M^3)

STA 4+602.48
FILL AREA = 0.9 (M^2)
CUT AREA = 1.1 (M^2)
VF = 0.0 (M^3)
VC = 0.0 (M^3)

SCALE:
1:100 HOR.
1:50 VER.

U.S. RTE. 150

F.A.I. 57	(10-34HB)BR	CHAMPAIGN	47	42
		ILLINOIS		

STA 4+725
FILL AREA = 6.3 (M^2)
CUT AREA = 0.9 (M^2)
VF = 116.0 (M^3)
VC = 22.5 (M^3)

240.801
240.920

FENCE (EROSION CONTROL)

EXISTING R.O.W.

EL. 233.92

EL. 233.67

STA 4+700
FILL AREA = 3.0 (M^2)
CUT AREA = 0.9 (M^2)
VF = 81.9 (M^3)
VC = 22.5 (M^3)

240.459
240.614

EL. 234.15

EL. 233.84

SCALE:
1:100 HOR.
1:50 VER.

F.A.I. 57	(10-34HB)BR	CHAMPAIGN	47	43

STA 4+842.93
FILL AREA = 16.5 (M^2)
CUT AREA = 1.1 (M^2)
VF = 0.0 (M^3)
VC = 0.0 (M^3)

241.118
241.278

EXISTING R.O.W.

FENCE (EROSION CONTROL)

EL. 233.03

EXISTING R.O.W.

FENCE (EROSION CONTROL)

EL. 232.66

STA 4+746.14
FILL AREA = 20.6 (M^2)
CUT AREA = 1.0 (M^2)
VF = 284.0 (M^3)
VC = 19.8 (M^3)

240.932
241.16

EXISTING R.O.W.

FENCE (EROSION CONTROL)

EL. 233.81

FENCE (EROSION CONTROL)

EL. 232.94

SCALE:
1:100 HOR.
1:50 VER.

U.S. RTE. 150

ROUTE NO.	SECTION	COUNTY	TOTAL SHEETS	SHEET NO.
F.A.I. 57	(10-34HB)BR	CHAMPAIGN	47	44
FED. ROAD DIST. NO. 7		ILLINOIS	FED. AID PROJECT	

STA 4+875
FILL AREA = 21.9 (M^2)
CUT AREA = 0.9 (M^2)
VF = 573.5 (M^3)
VC = 25.0 (M^3)

240.878
241.065

STA 4+850
FILL AREA = 23.9 (M^2)
CUT AREA = 1.1 (M^2)
VF = 143.2 (M^3)
VC = 7.8 (M^3)

241.065
241.213

EXISTING R.O.W.

FENCE (EROSION CONTROL)

EL. 233.12

EL. 232.92

EL. 232.399

EL. 232.78

SCALE
1:100 HOR.
1:50 VER.

U.S. RTE. 150

F.A.I. 57	(10-34HB)BR	CHAMPAIGN	47	45
FED. ROAD DIST. NO. 7		ILLINOIS	FED. AID PROJECT	

STA 4+950
FILL AREA = 14.5 (M^2)
CUT AREA = 0.9 (M^2)
VF = 338.4 (M^3)
VC = 20.9 (M^3)

239.837
240.051

1:2.25

1:2

FENCE (EROSION CONTROL)

EXISTING R.O.W.

EL. 233.66

EXISTING R.O.W.

EL. 232.18

FENCE (EROSION CONTROL)

4 950

STA 4+925
FILL AREA = 12.5 (M^2)
CUT AREA = 0.8 (M^2)
VF = 376.5 (M^3)
VC = 20.0 (M^3)

240.248
240.470

1:2

1:2

4 925

FENCE (EROSION CONTROL)

EXISTING R.O.W.

EL. 233.56

FENCE (EROSION CONTROL)

EXISTING R.O.W.

EL. 233.20

240.594
240.808

STA 4+900
FILL AREA = 17.6 (M^2)
CUT AREA = 0.8 (M^2)
VF = 362.2 (M^3)
VC = 21.3 (M^3)

1:2

1:2

4 900

FENCE (EROSION CONTROL)

EXISTING R.O.W.

EL. 233.20

FENCE (EROSION CONTROL)

EXISTING R.O.W.

EL. 232.93

SCALE:
1:100 HOR. 0 1 2 3 4 5
1:50 VER. 0 1 2

U.S. RTE. 150

F.A.I. 57	(10-34HB)BR	CHAMPAIGN	47	46

STA 5+025
FILL AREA = 14.8 (M^2)
CUT AREA = 0.8 (M^2)
VF = 401.3 (M^3)
VC = 20.0 (M^3)

238.111
238.311

EXISTING R.O.W.
FENCE (EROSION CONTROL)
EL. 232.58
FENCE (EROSION CONTROL)
EXISTING R.O.W.
EL. 232.10

STA 5+000
FILL AREA = 17.3 (M^2)
CUT AREA = 0.8 (M^2)
VF = 371.3 (M^3)
VC = 20.0 (M^3)

236.771
238.971

EXISTING R.O.W.
FENCE (EROSION CONTROL)
EL. 232.85
FENCE (EROSION CONTROL)
EXISTING R.O.W.
EL. 231.92

STA 4+975
FILL AREA = 12.4 (M^2)
CUT AREA = 0.8 (M^2)
VF = 336.6 (M^3)
VC = 20.9 (M^3)

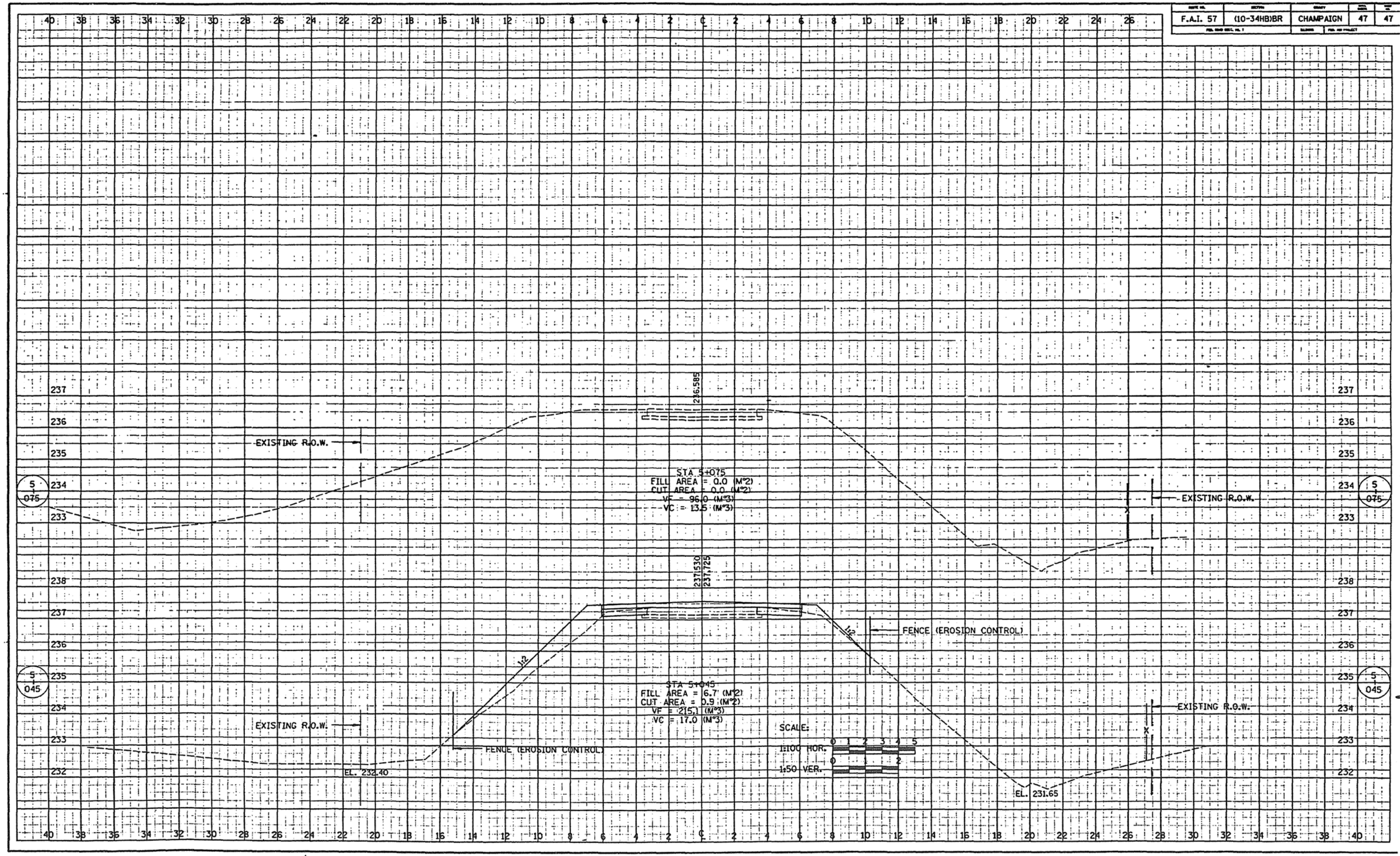
236.350
239.550

EXISTING R.O.W.
FENCE (EROSION CONTROL)
EL. 233.99
FENCE (EROSION CONTROL)
EXISTING R.O.W.
EL. 232.61

SCALE:
1:100 HOR.
1:50 VER.

U.S. RTE. 150

F.A.I. 57	(10-34HB)BR	CHAMPAIGN	47	47



U.S. RTE. 150

ABV	ABOVE
A/C	ACCESS CONTROL
AC	ACRE
ADJ	ADJUST
AS	AERIAL SURVEYS
AGG	AGGREGATE
AH	AHEAD
APT	APARTMENT
ASPH	ASPHALT
AGS	AUXILIARY GAS VALVE (SERVICE)
AX	AXIS OF ROTATION
BK	BACK
B-B	BACK TO BACK
BKPL	BACKPLATE
BARR	BARRICADE
BGN	BEGIN
BM	BENCHMARK
BIND	BINDER
BIT	BITUMINOUS
BTM	BOTTOM
BLVD	BOULEVARD
BRK	BRICK
BBOX	BUFFALO BOX
BLDG	BUILDING
CIP	CAST IRON PIPE
CB	CATCH BASIN
C-C	CENTER TO CENTER
CL	CENTERLINE
CL-E	CENTERLINE TO EDGE
CL-F	CENTERLINE TO FACE
CERT	CERTIFIED
CHSLD	CHISELED
CP	CLAY PIPE
CLSD	CLOSED
CLID	CLOSED LID
CS	CITY STREET
CT	COAT
COMB	COMBINATION
CE	COMMERCIAL ENTRANCE
CONC	CONCRETE
CONST	CONSTRUCT
CONTD	CONTINUED
CONT	CONTINUOUS
COR	CORNER
CORR	CORRUGATED
CMP	CORRUGATED METAL PIPE
CNTY	COUNTY
CH	COUNTY HIGHWAY
CSE	COURSE
XSECT	CROSS SECTION
m	CUBIC METER
mm	CUBIC MILLIMETER
CU YD	CUBIC YARD
CULV	CULVERT
C&G	CURB & GUTTER
D	DEGREE OF CURVE
DC	DEPRESSED CURB
DET	DETECTOR
DIA	DIAMETER
DIST	DISTRICT
DOM	DOMESTIC
DBL	DOUBLE
DSEL	DOWNSTREAM ELEVATION
DSFL	DOWNSTREAM FLOWLINE
DR	DRAINAGE
DI	DRAINAGE INLET OR DROP INLET
DRV	DRIVEWAY
DCT	DUCT
EA	EACH
EB	EASTBOUND
EOP	EDGE OF PAVEMENT
E-CL	EDGE TO CENTERLINE
E-E	EDGE TO EDGE
EL	ELEVATION
ENTR	ENTRANCE
EXC	EXCAVATION
EX	EXISTING
EXPWAY	EXPRESSWAY
E	OFFSET DISTANCE TO VERTICAL CURVE
E	EXTERNAL DISTANCE OF HORIZONTAL CURVE
F-F	FACE TO FACE
FA	FEDERAL AID
FAI	FEDERAL AID INTERSTATE
FAP	FEDERAL AID PRIMARY
FAS	FEDERAL AID SECONDARY
FAUS	FEDERAL AID URBAN SECONDARY
FP	FENCE POST
FE	FIELD ENTRANCE
FH	FIRE HYDRANT
FL	FLOW LINE
FB	FOOT BRIDGE
FDN	FOUNDATION
FR	FRAME
F&G	FRAME & GRATE
FRWAY	FREEWAY
GAL	GALLON
GALV	GALVANIZED
GM	GAS METER
GV	GAS VALVE
GRAN	GRANULAR
GR	GRATE
GRVL	GRAVEL
GND	GROUND
GUT	GUTTER
HH	HANDHOLE
HATCH	HATCHING
HD	HEAD
HDW	HEADWALL
HDUTY	HEAVY DUTY
ha	HECTARE
HWY	HIGHWAY
HORIZ	HORIZONTAL
HSE	HOUSE
IL	ILLINOIS
IMP	IMPROVEMENT
IN DIA	INCH DIAMETER
INL	INLET
INST	INSTALLATION
IDS	INTERSECTION DESIGN STUDIES
INV	INVERT
IP	IRON PIPE
IR	IRON ROD
JT	JOINT
kg	KILOGRAM
km	KILOMETER
LS	LANDSCAPING
LN	LANE
LT	LEFT
LP	LIGHT POLE
LGT	LIGHTING
LF	LINEAL FEET OR LINEAR FEET
L	LITER OR CURVE LENGTH
LC	LONG CHORD
LNG	LONGITUDINAL
L SUM	LUMP SUM
MACH	MACHINE
MB	MAIL BOX
MH	MANHOLE
MATL	MATERIAL
MED	MEDIAN
m	METER
METH	METHOD
MBH	MOBILE HOME
M	MID-ORDINATE
mm	MILLIMETER
mm DIA	MILLIMETER DIAMETER
MIX	MIXTURE
MFT	MOTOR FUEL TAX
MOD	MODIFIED
N & BC	NAIL & BOTTLE CAP
N & C	NAIL & CAP
N & W	NAIL & WASHER
NB	NORTHBOUND
NE	NORTHEAST
NC	NORMAL CROWN
NOAA	NATIONAL OCEANIC ATMOSPHERIC ADMINISTRATION
NW	NORTHWEST
OLID	OPEN LID
PAT	PATTERN
PVD	PAVED
PVMT	PAVEMENT
PM	PAVEMENT MARKING
PED	PEDESTAL
PNT	POINT
PC	POINT OF CURVATURE
PI	POINT OF INTERSECTION OF HORIZONTAL CURVE
PRC	POINT OF REVERSE CURVATURE
PT	POINT OF TANGENCY
POT	POINT ON TANGENT
POLYETH	POLYETHYLENE
PCC	PORTLAND CEMENT CONCRETE
PP	POWER POLE OR PRINCIPAL POINT
PRM	PRIME
PE	PRIVATE ENTRANCE
PROF	PROFILE GRADELINE
PROJ	PROJECT
P.C.	PROPERTY CORNER
PL	PROPERTY LINE
PR	PROPOSED
R	RADIUS
R	RADIUS
RR	RAILROAD
RC	REMOVE CROWN
RPS	REFERENCE POINT STAKE
RRS	RAILROAD SPIKE
REF	REFLECTIVE
RCCP	REINFORCED CONCRETE CULVERT PIPE
REINF	REINFORCEMENT
RET	RETAINING
REM	REMOVAL
REP	REPLACEMENT
REST	RESTAURANT
RESURF	RESURFACING
RT	RIGHT
ROW	RIGHT-OF-WAY
RD	ROAD
RDWY	ROADWAY
RTE	ROUTE
SAN	SANITARY
SANS	SANITARY SEWER
SEC	SECTION
SEED	SEEDING
SHAP	SHAPING
SH	SHEET
SHLD	SHOULDER
SW	SIDEWALK
SIG	SIGNAL
SOD	SODDING
SM	SOLID MEDIAN
SB	SOUTHBOUND
SE	SOUTHEAST
SW	SOUTHWEST
SPL	SPECIAL
SD	SPECIAL DITCH
SQ FT	SQUARE FEET
m^2	SQUARE METER
mm^2	SQUARE MILLIMETER
SQ YD	SQUARE YARD
STB	STABILIZED
STD	STANDARD
SBI	STATE BOND ISSUE
SM	STATE OF ILLINOIS SURVEY MARKER
SR	STATE ROUTE
STA	STATION
SPBGR	STEEL PLATE BEAM GUARDRAIL
SS	STORM SEWER
STY	STORY
ST	STREET
STR	STRUCTURE
e	SUPERELEVATION RATE
S.E. RUN.	SUPERELEVATION RUNOFF LENGTH
SURF	SURFACE
SMK	SURVEY MARKER
T	TANGENT DISTANCE
T.R.	TANGENT RUNOUT DISTANCE
TEL	TELEPHONE
TB	TELEPHONE BOX
TP	TELEPHONE POLE
TEMP	TEMPORARY
TBM	TEMPORARY BENCH MARK
TD	TILE DRAIN
TBE	TO BE EXTENDED
TBR	TO BE REMOVED
TBS	TO BE SAVED
TWP	TOWNSHIP
TR	TOWNSHIP ROAD
TS	TRAFFIC SIGNAL
TSCB	TRAFFIC SIGNAL CONTROL BOX
TSC	TRAFFIC SYSTEMS CENTER
TRVS	TRANSVERSE
TRVL	TRAVEL
TRN	TURN
TY	TYPE
T-A	TYPE A
UNDGND	UNDERGROUND
USGS	U.S. GEOLOGICAL SURVEY
USEL	UPSTREAM ELEVATION
USFL	UPSTREAM FLOWLINE
UTIL	UTILITY
VBOX	VALVE BOX
VV	VALVE VAULT
VLT	VAULT
VEH	VEHICLE
VP	VENT PIPE
VERT	VERTICAL
VC	VERTICAL CURVE
VPC	VERTICAL POINT OF CURVATURE
VPI	VERTICAL POINT OF INTERSECTION
VPT	VERTICAL POINT OF TANGENCY
WM	WATER MAIN
WV	WATER VALVE
WMAIN	WATERMAIN
WB	WESTBOUND
WILDFL	WILDFLOWERS
W	WITH
WO	WITHOUT

Illinois Department of Transportation

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ENGINEER OF POLICY AND PROCEDURES
APPROVED January 1, 1999
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DATE	REVISIONS
1-1-99	Updated abbreviations and symbols.
1-1-98	Added and revised abbreviations.

STANDARD SYMBOLS, ABBREVIATIONS AND PATTERNS

STANDARD 000001-02

ADJUSTMENT ITEMS

	EX	PR
Domestic Service Box To Be Adjusted		A
Frame and Grate To Be Adjusted		A
Frame and Lid To Be Adjusted		A
Item To Be Abandoned		AB
Item To Be Moved		M
Item To Be Relocated		REL
Pavement Removal & Replacement		
Special Adjustment		SP
Structure To Be Adjusted		ADJ
Structure To Be Cleaned		C
Structure To Be Filled		F
Structure To Be Reconstructed		REC
Structure To Be Removed		R
Valve Vault To Be Adjusted		A

ALIGNMENT ITEMS

	EX	PR
Baseline		
Baseline Symbol	℄	℄
Centerline		
Centerline Break Circle		⊙
Centerline Symbol	℄	℄
Horiz Ccurve Data	CURVE P.I. STA= Δ= R= T= L= E= e= T.R.= S.E. RUN= P.C. STA= P.T. STA=	CURVE P.I. STA= Δ= R= T= L= E= e= T.R.= S.E. RUN= P.C. STA= P.T. STA=
PI Indicator	△	▲
Point Indicator	○	●

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Charles Kellfleisch
ENGINEER OF POLICY AND PROCEDURES
APPROVED January 1, 1999
Bill Stanley
ENGINEER OF DESIGN AND ENVIRONMENT

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BOUNDARIES ITEMS

	EX	PR
County/Township Line		
Dashed Property Line		
Iron Pipe Found		
Iron Pipe Set		
Northwest Quarter Corner		
Property Line Symbol	ℙ	
Same Ownership Symbol		
Section Corner		
Section/Grant Line		
Solid Property/Lot Line		
Southeast Quarter Corner		
State Line		
Survey Marker		

CONTOUR ITEMS

	EX	PR
Approx. Indes Line		
Approx. Intermediate Line		
Index Contour		
Intermediate Contour		
Slope Limit Line		

DRAINAGE ITEMS

	EX	PR
Aggregate Ditch		
Catch Basin		
Culvert End Section		
Culvert Line		
Ditch Check		
Ditch Profile Line		
Drainage Boundary Line		
Flowline		
Grading & Shaping Ditches		
Headwall		
Inlet		
Manhole		
Paved Ditch		
Roadway Ditch Flow		
Riprap		

DRAINAGE ITEMS CONT.

	EX	PR
Summit		
Swale		
Water Surface Indicator,		

EROSION & SEDIMENT CONTROL ITEMS

	EX	PR
Cleaning & Grading Limits		
Dike		
Ditch Check Temporary		
Erosion Control Blanket		
Erosion Control Fence		
Fabric Formed Concrete Revetment Mat		
Fiber Mat		
Inlet & Pipe Protection		
Mulch Method 1		
Mulch Method 2 Stabilized		
Mulch Method 3 Hydraulic		
Mulch Temporary		
Perimeter Erosion Barrier		
Sediment Basin		
Temporary Fence		

EXISTING IMPROVEMENT ITEMS

	EX	PR
Advertising Sign		
Base of Levee		
Fence		
Mailbox		
Noise Attn./Levee		

STANDARD SYMBOLS, ABBREVIATIONS AND PATTERNS

(Sheet 2 of 6)

STANDARD 000001-02

LANDSCAPING ITEMS

	EX	PR
Contour Mounding Line		
Evergreen Tree		
Deciduous Tree		
Intermediate Tree	E	
Shade Tree Code A	E	
Mowline		
Perennial Plants		
Seeding Class 2		
Seeding Class 3		
Seeding Class 4		
Seeding Class 5		
Seeding Class 7		
Seeding Type 1		
Seeding Type 2		
Shade Tree Code B (Interm)		
Shrubs Code C&D		
Sodding		
Tree Trunk Protection		

LIGHTING

	EX	PR
Cable In Duct w/o Ground		
Cable In Duct w/Ground	G	G
Conduit w/Ground		
Controller		
Electrical Aerial Cable	A	A
Electrical Buried Cable	O	O
Electrical Ground		
Foundation Code A or C	A	C
Handhole		
Heavyduty Handhole	H	H
High Mast Pole		
Junction Box	J	J
Light Unit Comb.		
Light Unit-1		
Power Pole		
Pull Point	P	P
Traffic Flow Arrow		
Underpass Luminaire		

PAVEMENT (MISC.)

	EX	PR
Bituminous Shoulder		
Bituminous Taper		
Keyed Long. Joint		
Keyed Long. Joint w/Tie Bars		
Sawed Long. Joint w/Tie Bars		
Stabilized Driveway		
Widening		

PAVEMENT MARKINGS

	EX	PR
CL 2Ln 2Way 12.2		
CL 2Ln 2Way 24.4		
CL Multilane Div. 12.2		
CL Multilane Div. 24.4		
CL Multilane Div. Dbl. 24.4		
CL Multilane Undiv.		
Dotted Lines		
Double Centerline		
Solid Line		
RR Crossing		
Raised Marker Amber 1 Way		
Raised Marker Amber 2 Way		
Raised Marker Crystal 1 Way		
Rural Combination Left Only		
Rural Combination Right Only		
Rural Left Turn Arrow		
Rural Left Turn Only		
Rural Right Turn Arrow		
Rural Right Turn Only		
Rural Thru Only		

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Charles Kellfleisch
ENGINEER OF POLICY AND PROCEDURES

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Bill Sunley
ENGINEER OF DESIGN AND ENVIRONMENT

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STANDARD SYMBOLS, ABBREVIATIONS AND PATTERNS

STANDARD 000001-02

PAVEMENT MARKINGS CONT.

	EX	PR
Shoulder Diag. Patern		
Skip-Dash		
Skip-Dash White		
Skip-Dash Yellow		
Stop Lines		
Two Way Turn Left		
Two Way Turn Left Line		
Urban Combination Left Only		
Urban Combination Right Only		
Urban Left Turn Arrow		
Urban Right Turn Arrow		
Urban Left Turn Only		
Urban Thru Only		
Urban Right Turn Only		

RAILROAD ITEMS

	EX	PR
Abandoned Railroad		
Control Box		
Crossing Gate		
Flashing Signal		
Railroad Cont. Mast Arm		
Railroad		
Railroad Point		

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Charles Kellfleisch
ENGINEER OF POLICY AND PROCEDURES

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Bill Gunlen
ENGINEER OF DESIGN AND ENVIRONMENT

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REMOVAL ITEMS

	EX	PR
Bituminous Removal		
Hatch Pattern		
Removal Tic		

RIGHT OF WAY ITEMS

	EX	PR
Easement		
Future ROW Corner Monument		
ROW Line		
ROW Marker		
Temporary Easement		

ROADWAY PLAN ITEMS

	EX	PR
Corrugated Median		
Edge of Pavement		
Guardrail		
Guardrail Post		
Medians, C&G Line		
Traffic Sign		

ROADWAY PROFILE

	EX	PR
Earthworks Balance Point		
Begin Point		
P.I. Indicator		
Point Indicator		
Profile Line		
Vert. Curve Data	VPI = ELEV = L = E =	VPI = ELEV = L = E =

SIGNING ITEMS

	EX	PR
Barricade Type 1 or 2		
Barricade Type II		
Barricade Type III		
Barricade With Edge Line		
Detour Ahead W20-2		DETOUR AHEAD
Detour M4-10L-(0)		DETOUR
Detour M4-10R-(0)		DETOUR
Direction of Traffic		
Flashing Light Sign		
Keep Left R4-7AL		KEEP LEFT
Keep Left R4-7BL		KEEP LEFT
Keep Right R4-7AR		KEEP RIGHT
Keep Right R4-7BR		KEEP RIGHT
Left Lane Closed Ahead		LEFT LANE CLOSED AHEAD
Left Turn Lane R3-1100L		LEFT TURN LANE
No Left Turn R3-2		

STANDARD SYMBOLS, ABBREVIATIONS AND PATTERNS

STANDARD 000001-02

SIGNING ITEMS CONT.	EX	PR
No Right Turn R3-1		
One Way Arrow Lrg. W1-6-(0)		
One Way Left R6-1L		
One Way Right R6-1R		
Panels I		
Panels II		
Reverse Left W1-4L		
Reverse Right W1-4R		
Road Closed Ahead W20-R-(0)		
Road Closed Ahead W20-3-(0)		
Road Closed R11-2		
Road Closed Thru Traffic R11-2		

SIGNING ITEMS CONT.	EX	PR
Road Construct Ahead W20-1-(0)		
Sign Flag		
Single Lane Ahead		
Stop Here On Red R10-6-AL		
Stop Here On Red R10-6-AR		
Transition Left W4-2L		
Transition Right W4-2R		
Two Way Arrow Large W1-7-(0)		
Two Way Traffic Sign W6-3		

TRAFFIC SHEET ITEMS	EX	PR
Cable Number		
Left Turn Green		
Left Turn Yellow		
Signal Backplate		
Signal Section 200 mm		
Signal Section 300 mm		
Walk/Don't Walk Letters		
Walk/Don't Walk Symbols		

TRAFFIC SIGNAL ITEMS	EX	PR
Aluminum Mast Arm		
Conduit Splice		
Coutroller		
Detector Loop Larger		
Detector Loop Line		
Detector Loop Quadrapole		

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STANDARD SYMBOLS, ABBREVIATIONS AND PATTERNS

(Sheet 5 of 6)

STANDARD 000001-02

TRAFFIC SIGNAL ITEMS CONT.

	EX	PR
Detector Loop Small		
Detector Raceway		
Galv. Steel Conduit		
Gulfbox Junction		
Handhole		
Heavy Duty Handhole		
Junction Box		
Ped. Pushbutton Detector		
Ped. Signal Head		
Power Pole Service		
Priority Veh. Detector		
Signal Head		
Signal Head w/Backplate		
Signal Post		
Steel Mast Arm		
Temp. Signal Head		
Undground Cable		
Veh. Detector Magnetic		
Wood Pole		

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Charles Kellfleisch
ENGINEER OF POLICY AND PROCEDURES

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Bill Lumley
ENGINEER OF DESIGN AND ENVIRONMENT

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UNDERGROUND UTIL. ITEMS

	EX	PR
Cable TV	CTV	CTV
Electric Cable	E	E
Fiber Optic	FO	FO
Gas Pipe	G	G
Oil Pipe	O	O
Pipe Undredrain		
Sanitary Sewer		
Storm Sewer		
Telephone Cable	T	T
Water Pipe	W	W

UTILITIES ITEMS

	EX	PR
Controller		
Double Handhole		
Fire Hydrant		
Handhole		
Heavy Duty Handhole		
Junction Box		
Light Pole		
Manhole		
Power Pole		
Splice Box Above Ground		
Telephone Splice Box Above Ground		
Telephone Pole		
Traffic Signal		
Water Meter Valve Box		

VEGETATION ITEMS

	EX	PR
Deciduous Tree		
Evergreen Tree		
Stump		
Vegetation Line		
Woods & Bush Line		

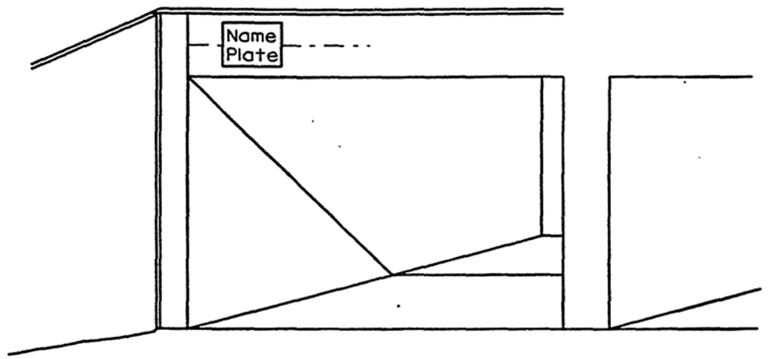
WATER FEATURE ITEMS

	EX	PR
Disappearing Ditch		
Marsh		
Stream or Drainage Ditch		
Water Point		
Water Edge		

STANDARD SYMBOLS, ABBREVIATIONS AND PATTERNS

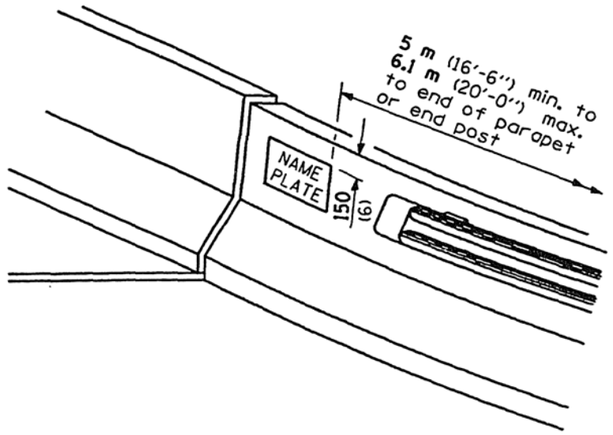
(Sheet 6 of 6)

STANDARD 000001-02



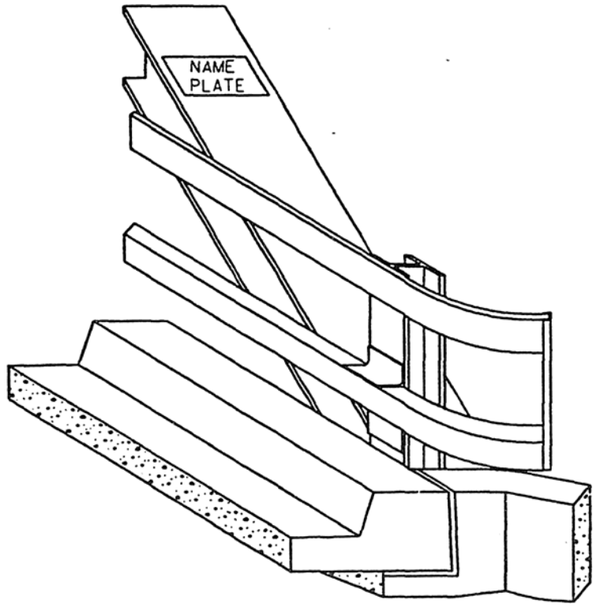
FOR MULTI-SPAN CULVERTS

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

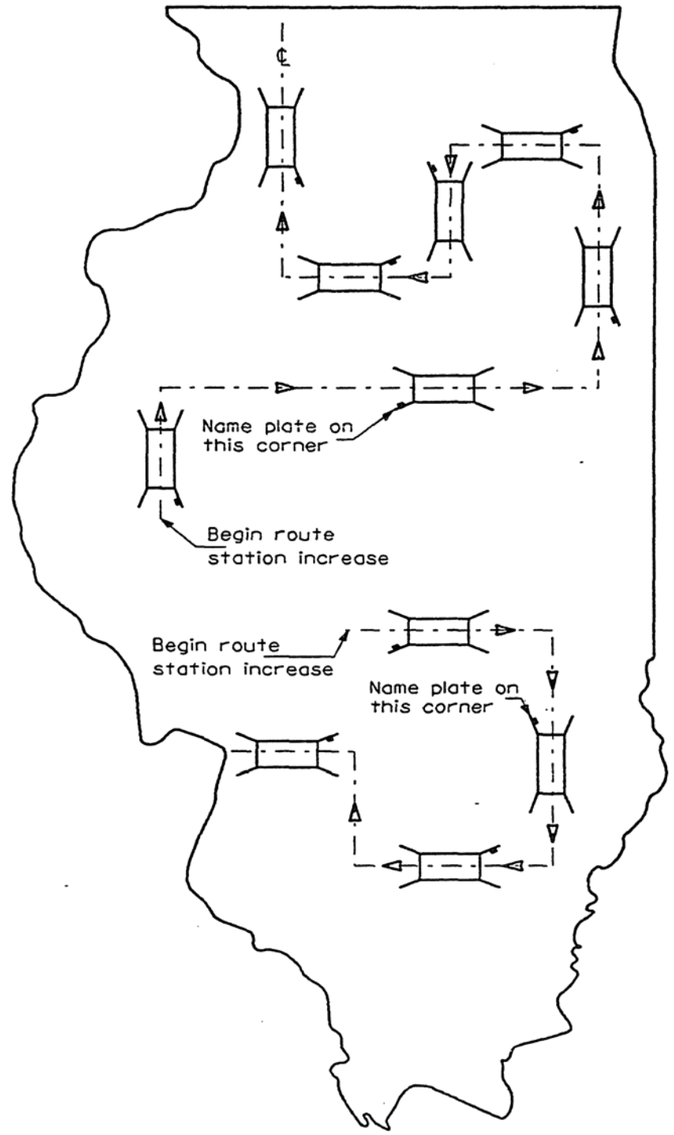


FOR PARAPET AND END POST MOUNTED

FOR STEEL RAILS



FOR TRUSSES



TYPICAL EXAMPLES

The name plate shall be located on the approach traffic end of a structure based on the direction of increasing stationing.

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

Illinois Department of Transportation

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Ralph E. Anderson
ENGINEER OF BRIDGES AND STRUCTURES

APPROVED January 1, 1997
Dan Hudel
ENGINEER OF DESIGN AND ENVIRONMENT

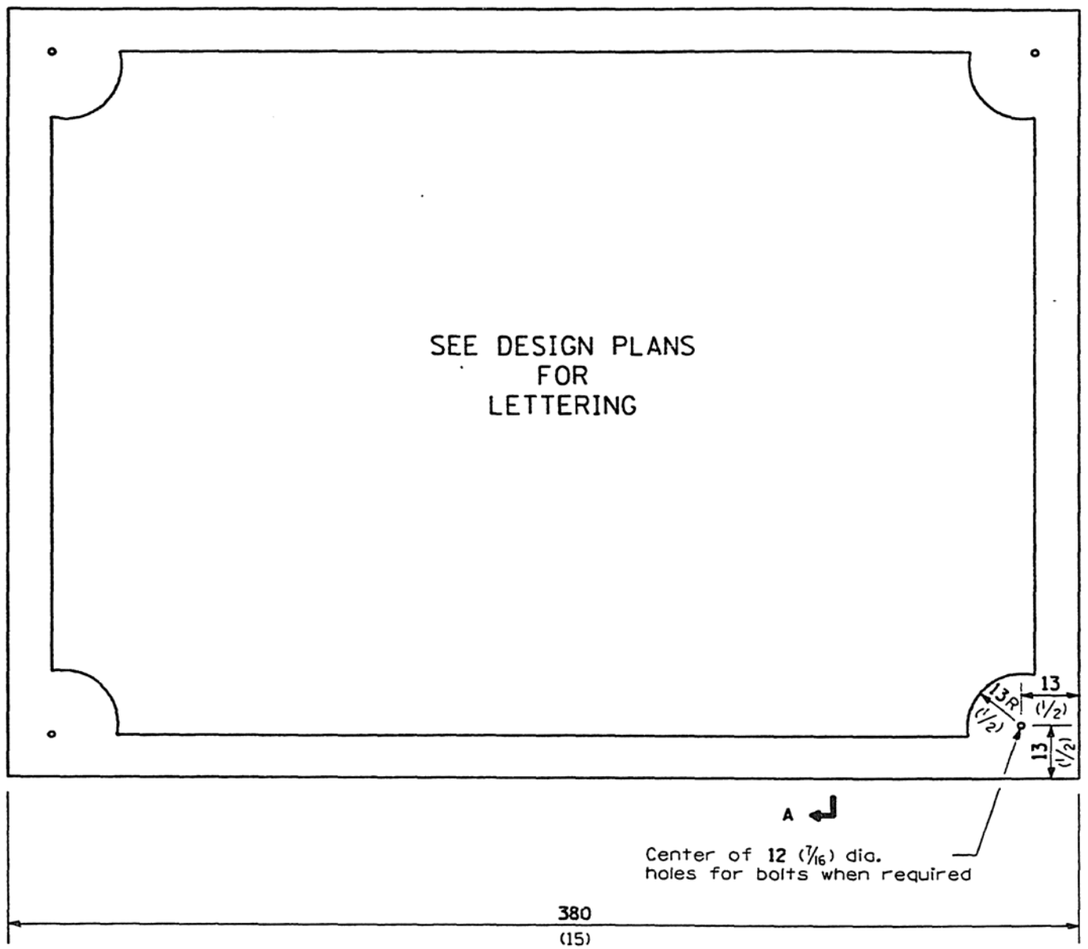
ISSUED 1-1-97

DATE	REVISIONS
1-1-97	Renum. Standard 2113-4.
	Rev. metric value of
	raised letter height.
11-1-94	Revised plan of plate.

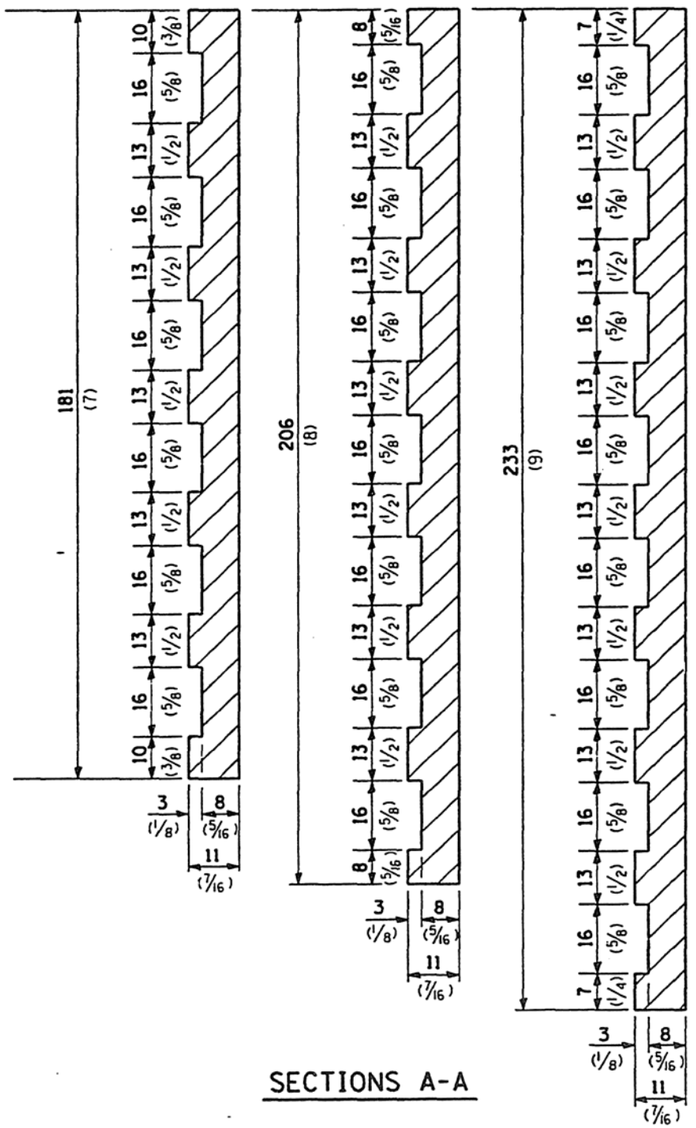
NAME PLATE FOR BRIDGES

(Sheet 1 of 2)

STANDARD 515001



Lettering for



SECTIONS A-A

NOTE

Border and lettering:
Raised 3 (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 parpet.
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

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Ralph E. Anderson
ENGINEER OF BRIDGES AND STRUCTURES

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ENGINEER OF DESIGN AND ENVIRONMENT

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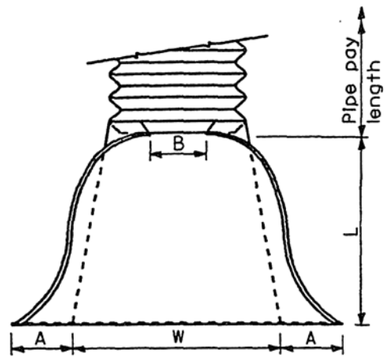
NAME PLATE FOR BRIDGES

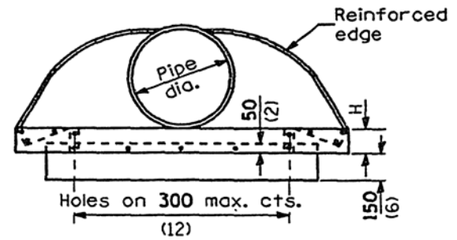
(Sheet 2 of 2)

STANDARD 515001

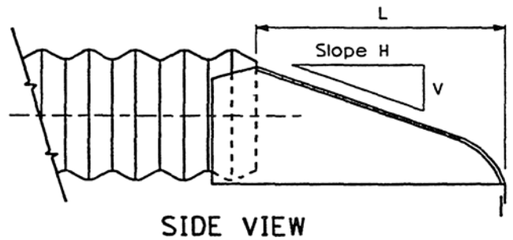
PIPE DIA.	THICK-NESS	DIMENSIONS					SLOPE (Approx.) (V:H)	BODY
		A	B	H	L	W		
		25± (1)	(max.)	25± (1)	38± (1½)	50± (2)		
300 (12)	1.63 (0.064)	150 (6)	150 (6)	150 (6)	535 (21)	610 (24)	1:2½	1 Pc.
375 (15)	1.63 (0.064)	180 (7)	205 (8)	150 (6)	660 (26)	760 (30)	1:2½	1 Pc.
450 (18)	1.63 (0.064)	205 (8)	255 (10)	150 (6)	785 (31)	915 (36)	1:2½	1 Pc.
525 (21)	1.63 (0.064)	230 (9)	305 (12)	150 (6)	915 (36)	1.065 m (42")	1:2½	1 Pc.
600 (24)	1.63 (0.064)	255 (10)	330 (13)	150 (6)	1.040 m (41")	1.220 m (48")	1:2½	1 Pc.
750 (30)	2.01 (0.079)	305 (12)	405 (16)	205 (8)	1.295 m (51")	1.525 m (60")	1:2½	1 Pc.
900 (36)	2.01 (0.079)	355 (14)	480 (19)	230 (9)	1.525 m (60")	1.830 m (72")	1:2½	2 Pc.
1050 (42)	2.77 (0.109)	405 (16)	560 (22)	280 (11)	1.750 m (69")	2.135 m (84")	1:2½	2 Pc.
1200 (48)	2.77 (0.109)	455 (18)	685 (27)	305 (12)	1.980 m (78")	2.285 m (90")	1:2¼	2 Pc.
1350 (54)	2.77 (0.109)	455 (18)	760 (30)	305 (12)	2.135 m (84")	2.590 m (102")	1:2	2 Pc.
1500 (60)	2.77 (0.109)	455 (18)	840 (33)	305 (12)	2.210 m (87")	2.895 m (114")	1:1¾	3 Pc.
1650 (66)	2.77 (0.109)	455 (18)	915 (36)	305 (12)	2.210 m (87")	3.050 m (120")	1:1½	3 Pc.
1800 (72)	2.77 (0.109)	455 (18)	990 (39)	305 (12)	2.210 m (87")	3.200 m (126")	1:1⅓	3 Pc.
1950 (78)	2.77 (0.109)	455 (18)	1.065 m (42")	305 (12)	2.210 m (87")	3.355 m (132")	1:1¼	3 Pc.
2250 (84)	2.77 (0.109)	455 (18)	1.145 m (45")	305 (12)	2.210 m (87")	3.505 m (138")	1:1⅙	3 Pc.



PLAN



END VIEW



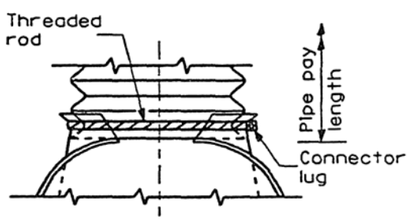
SIDE VIEW

END SECTION

NOTES

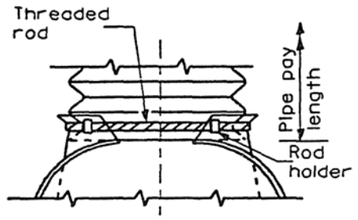
For 1500 mm (60") thru 2250 mm (84") sizes, reinforced edges shall be supplemented with stiffener angles. The angles shall be 51x51x6.4 mm (2x2x¼") for 1500 mm (60") thru 1800 mm (72") diameter and 64x64x6.4 mm (2½x2½x¼") for 1950 mm (78") thru 2250 mm (84") diameter. The angles shall be attached by M10 (⅜") rivets or bolts.

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



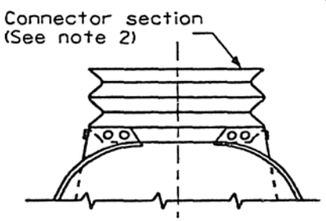
TYPE 1

For **300** (12) thru **600** (24) only (See Note 1)



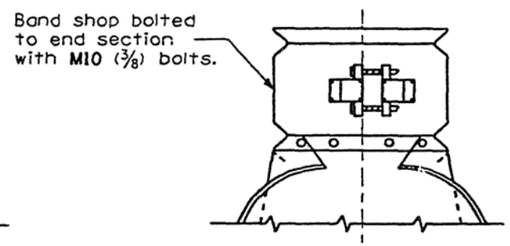
TYPE 2

For **750** (30) and **900** (36) only (See Note 1)



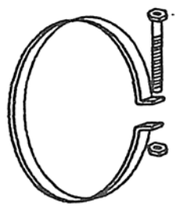
TYPE 3

(See Note 2)



TYPE 4

(See Note 3)



29 (1) Wide, **2.77** (0.109) thick strap with standard **M12x150** (½x6) band bolt and nut.

ALTERNATE STRAP CONNECTOR

(For Type 1 only)

NOTES

1. Types 1 and 2 for pipes with annular ends only.
2. Type 3 connection can be used for all pipe sizes and includes 300 mm (12") of the pipe length. The connector section shall be attached to the end section by rivets or bolts and shall be the same metal thickness as the end section. Stub shall be either 68 mm (2 ⅔") pitch x 13 mm (½") depth or 75 mm (3") pitch x 25 mm (1") depth annular corrugated pipe.
3. Type 4 connection can be used for all pipe sizes. Coupler shall be 68 mm x 13 mm (2 ⅔"x½") dimple, hugger, or annular band of 75 mm x 25 mm (3"x1"). The dimple, hugger, or annular band may be used with corrugated metal pipes having annular ends. For corrugated metal pipes having helical ends, only the dimple band will be allowed.

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

CONNECTIONS OF END SECTIONS

Illinois Department of Transportation

PASSED January 1, 1997
ENGINEER OF POLICY AND PROCEDURES

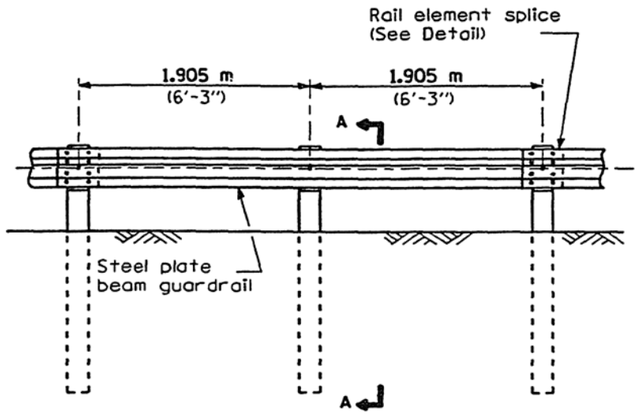
APPROVED January 1, 1997
ENGINEER OF DESIGN AND ENVIRONMENT

ISSUED 1-1-97

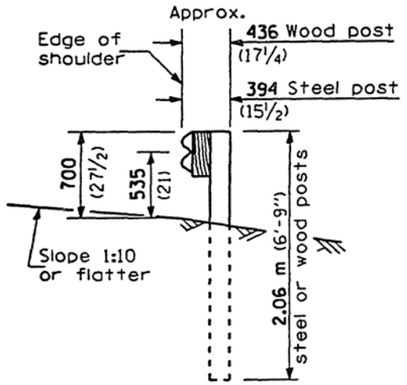
DATE	REVISIONS
1-1-97	Renum. Standard 2228-5.
6-15-94	Moved 3 Notes to specs.
	Added Metric.

METAL END SECTION FOR PIPE CULVERTS

STANDARD 542401



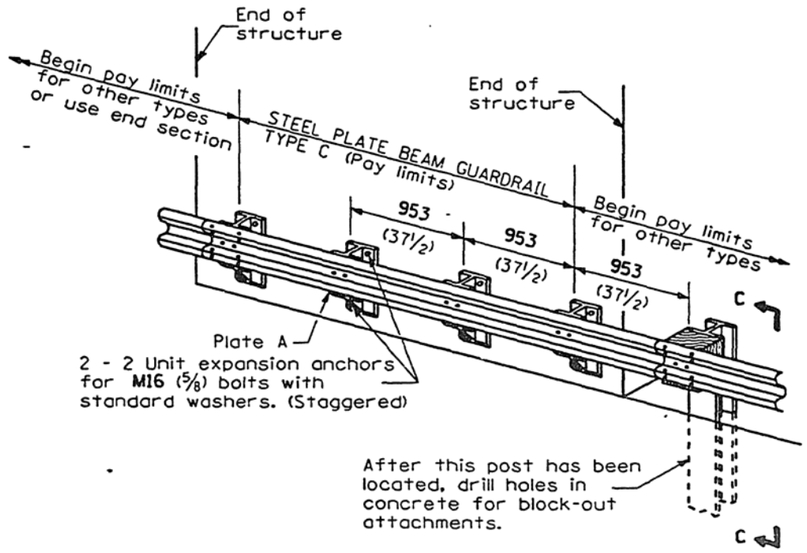
ELEVATION



SECTION A-A

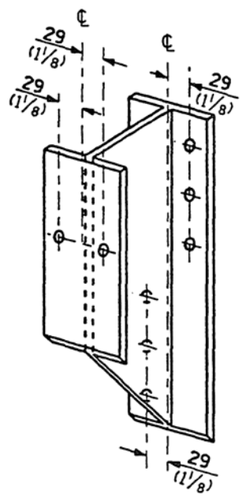
TYPE A

1.905 m (6'-3") Typical post spacing

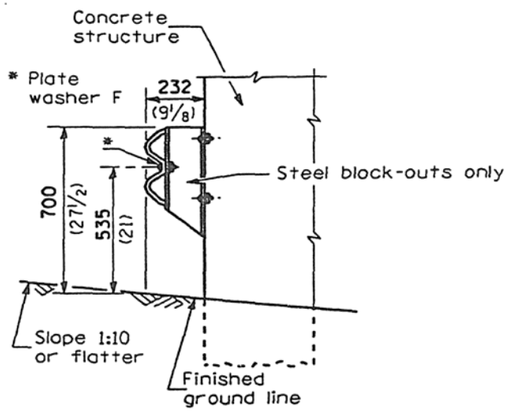


TYPE C

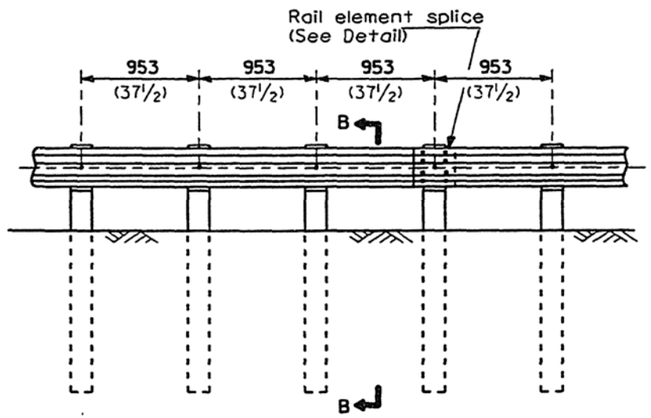
953 (37½) Block-out spacing



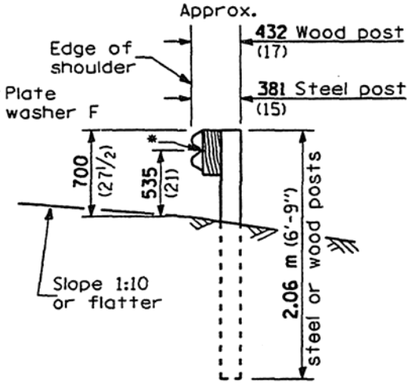
STEEL BLOCK-OUT DETAIL



SECTION C-C



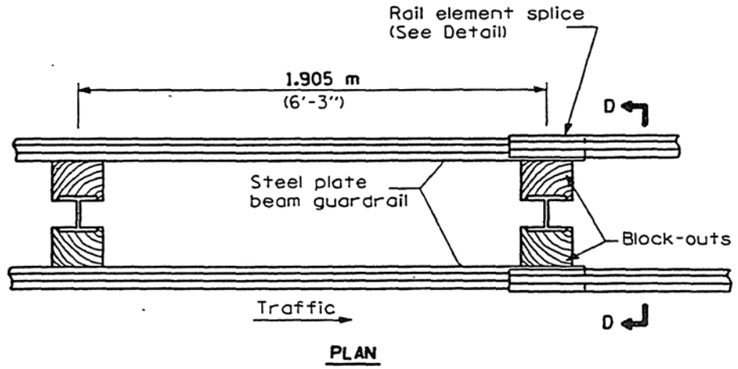
ELEVATION



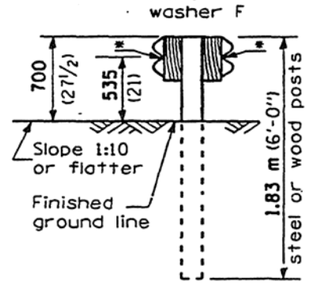
SECTION B-B

TYPE B

953 (37½) Closed post spacing



PLAN



SECTION D-D

TYPE D

Double steel plate beam guardrail
1.905 m (6'-3") typical post spacing

GENERAL NOTE

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 October 1, 1998
ENGINEER OF POLICY AND PROCEDURES
APPROVED October 1, 1998
ENGINEER OF DESIGN AND ENVIRONMENT

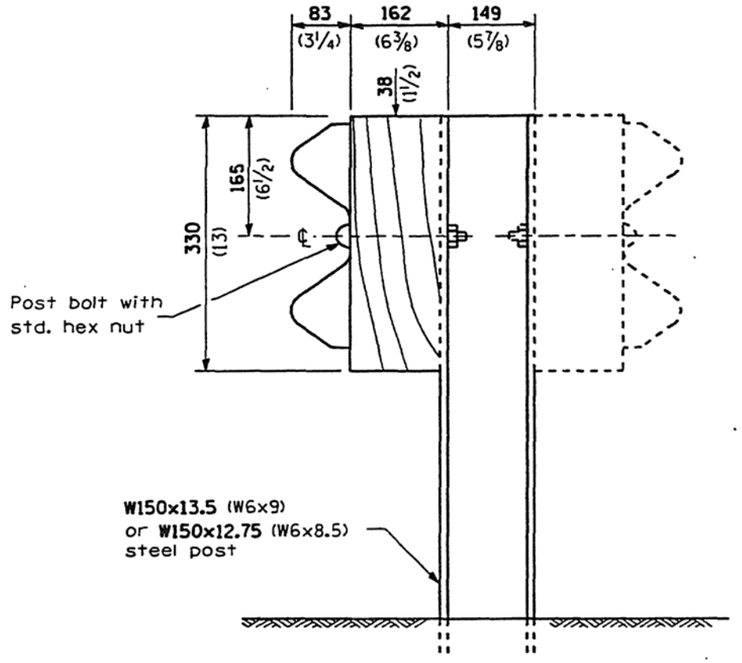
ISSUED 1-1-97

DATE	REVISIONS
10-1-98	Revised block-outs
	to wood.
1-1-97	Renum. Standard 2230-18.
	Added opt. wood block-
	out details & notes.

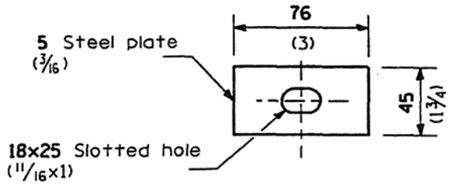
STEEL PLATE BEAM GUARDRAIL

(Sheet 1 of 4)

STANDARD 630001-01



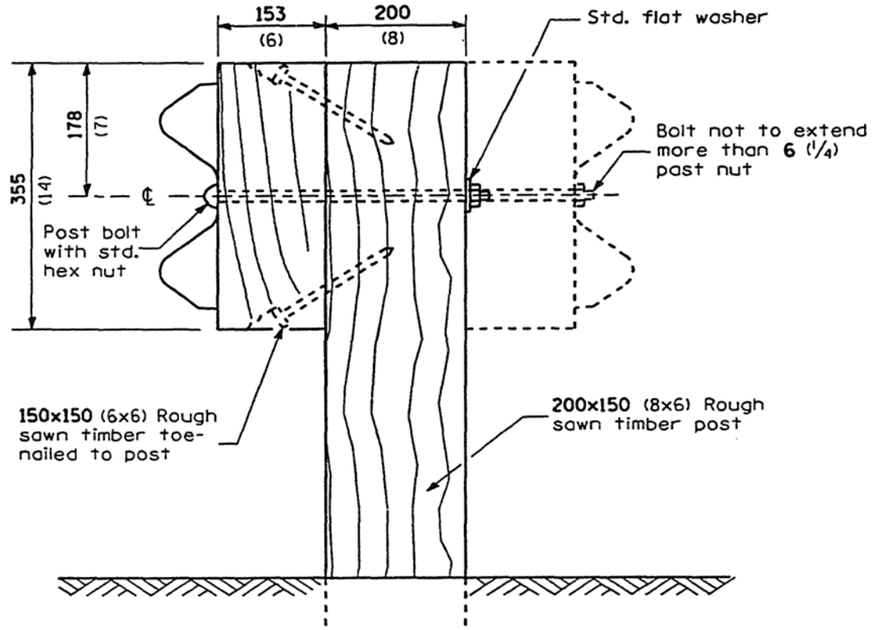
STEEL POST CONSTRUCTION



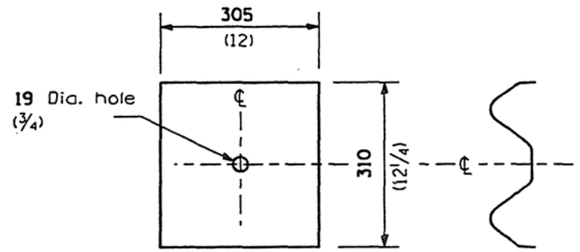
NOTE

Plate washer F shall be used on type A guardrail only where specified. Plate washer F shall be used at all other locations where rail element is bolted to a block-out unless otherwise noted.

PLATE WASHER F



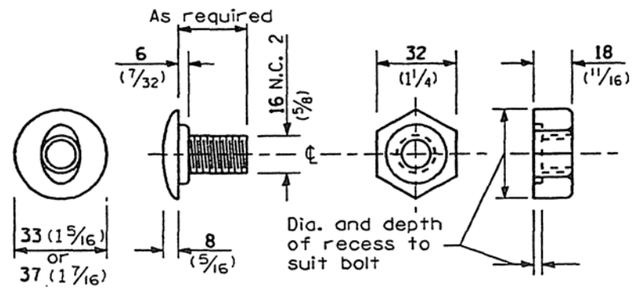
WOOD POST CONSTRUCTION



NOTE

Plate A shall be placed between rail element and block-out at non-splice mounting points only when steel block-outs are used.

PLATE A



POST OR SPLICE BOLT & NUT

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

Illinois Department of Transportation

PASSED October 1, 1998
ENGINEER OF POLICY AND PROCEDURES

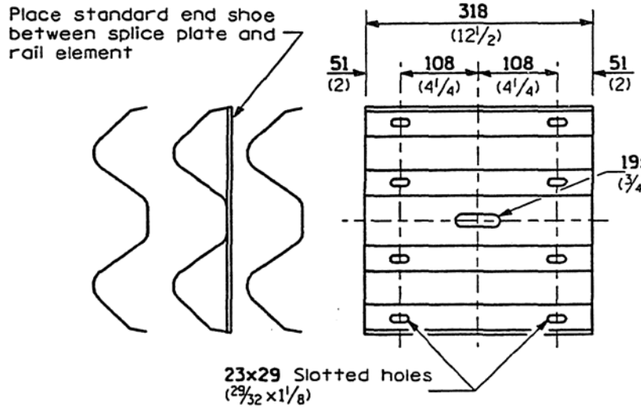
APPROVED October 1, 1998
ENGINEER OF DESIGN AND ENVIRONMENT

ISSUED 1-1-97

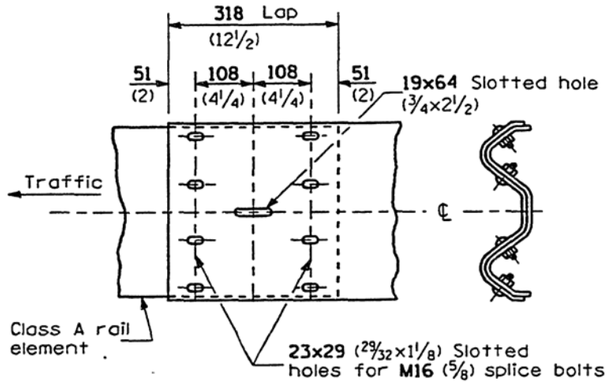
STEEL PLATE BEAM GUARDRAIL

(Sheet 2 of 4)

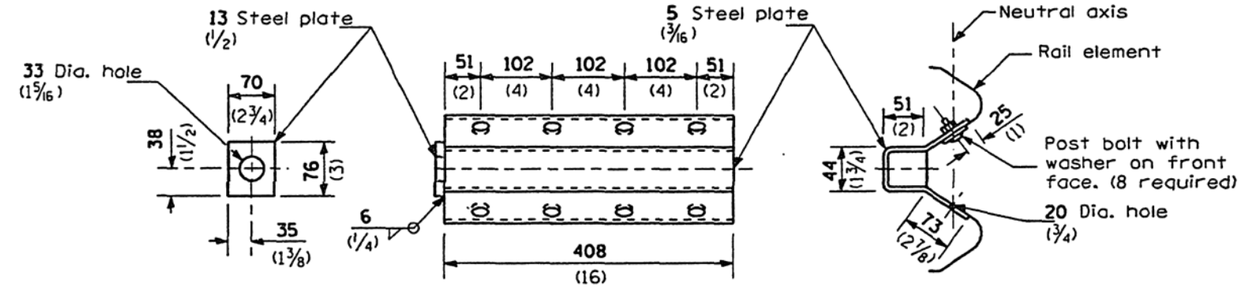
STANDARD 630001-01



SPLICE PLATE



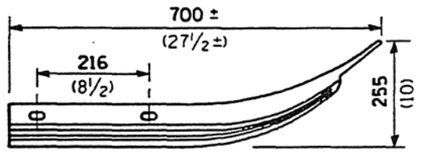
RAIL ELEMENT SPLICE

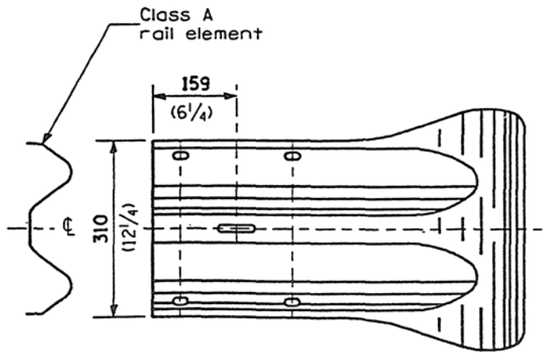


NOTE

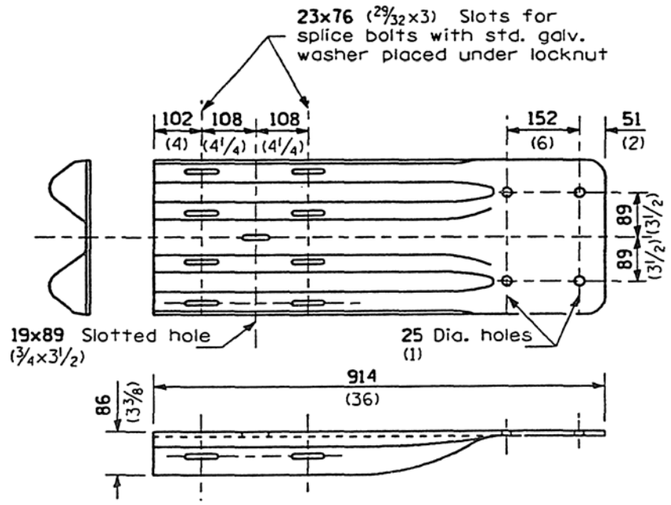
Anchor plate T shall be used to attach cable assembly to guardrail when required on traffic barrier terminals.

ANCHOR PLATE T DETAILS





END SECTION



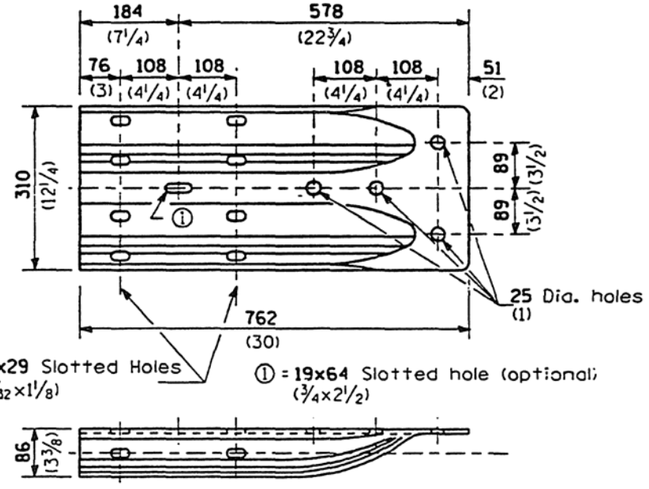
NOTE

When end shoe is attached to a bridge parapet which has an expansion joint, the bolts shall be provided with a locknut or double nut and shall be tightened only to a point that will allow guardrail movement.

The standard end shoe shall be attached to the concrete with pre-drilled or self-drilling anchor bolts. The anchor cone shall be set flush with the surface of the concrete.

Externally threaded studs protruding from the surface of the concrete will not be permitted.

END SHOE



ALTERNATE END SHOE

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

Illinois Department of Transportation

PASSED October 1, 1998
Charles Kallfelz
ENGINEER OF POLICY AND PROCEDURES

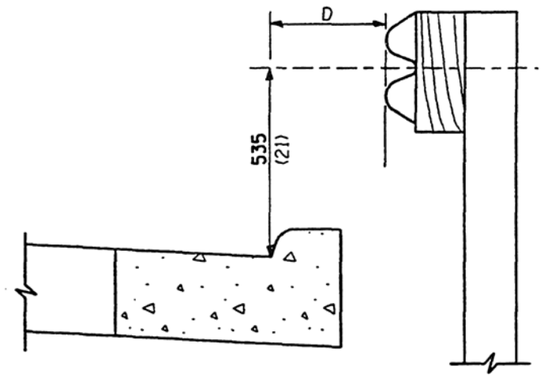
APPROVED October 1, 1998
Bill Gunlen
ENGINEER OF DESIGN AND ENVIRONMENT

ISSUED 1-1-97

STEEL PLATE BEAM GUARDRAIL

(Sheet 3 of 4)

STANDARD 630001-01

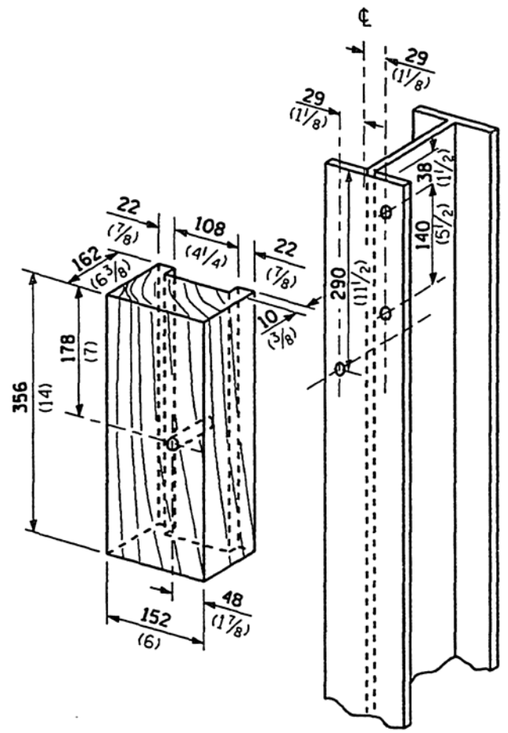


NOTE

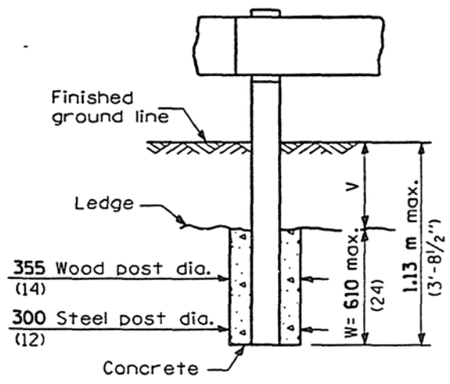
If it is necessary for D to be more than **300** (12) and less than **3.0 m** (10'-0") type **M-5** (M-2) curb and gutter (Std. 606001) shall be used in front of and in advance of the guardrail.

GUARDRAIL PLACED BEHIND CURB

(D = 0 desirable to **300** (12) maximum)



WOOD BLOCK-OUT AND STEEL POST DETAILS

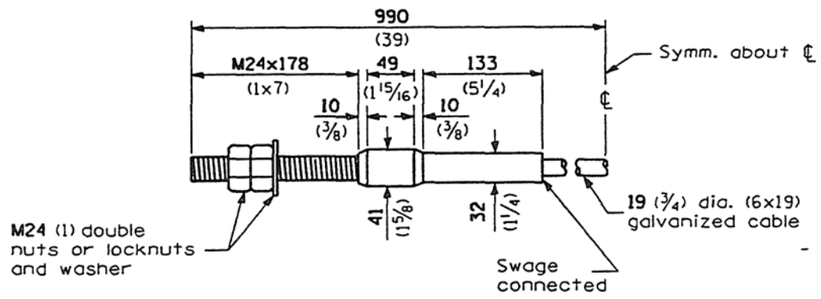


NOTE

When V is 0 to **520** (20½), W= **600** (24). When V is greater than **520** (20½), W= **1.13 m** (3'-8½") -V. When V is **150** (6) or less, post hole shall be filled to ground line with concrete.

Ledge line is top of rock ledge or hard slag fill.

FOOTING FOR POST WHEN IMPERVIOUS MATERIAL IS ENCOUNTERED



CABLE ASSEMBLY

(**18,100 kg** (40,000 lbs.) min. breaking strength)
Tighten to taut tension.

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

Illinois Department of Transportation

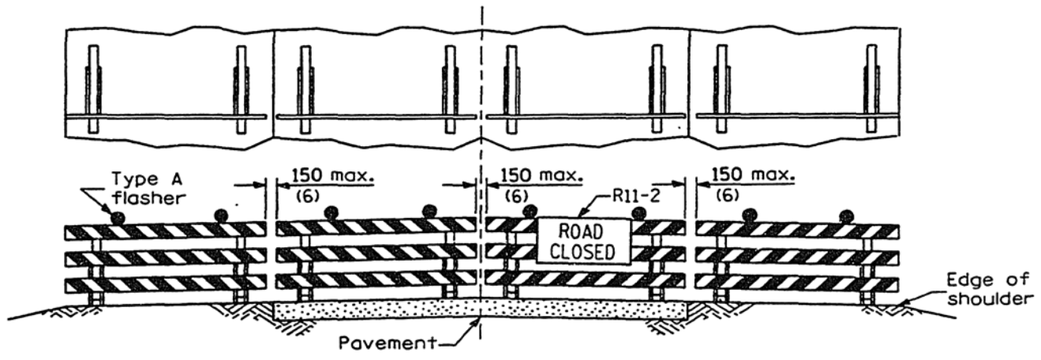
PASSED October 1, 1998
Charles Kabbfleisch
ENGINEER OF POLICY AND PROCEDURES
APPROVED October 1, 1998
Bill Kumley
ENGINEER OF DESIGN AND ENVIRONMENT

ISSUED 1-1-97

STEEL PLATE BEAM GUARDRAIL

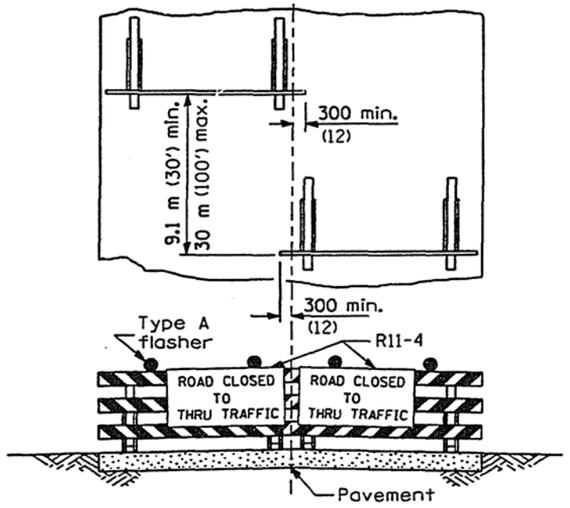
(Sheet 4 of 4)

STANDARD 630001-01



ROAD CLOSED TO ALL TRAFFIC

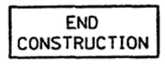
Reflectorized striping may be omitted on the back side of the barricades. The barricades shall be to the edge of the shoulders except when otherwise directed by the Engineer or shown on the detailed construction plans.



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.

G20-1(0)-6036



G20-2a(0)-6024

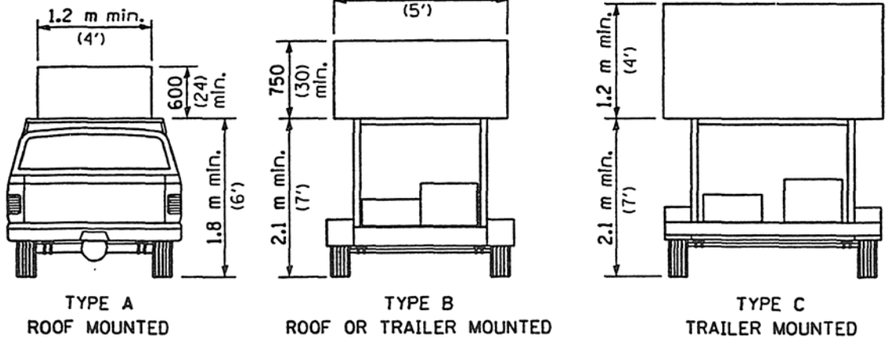
This signing is required for all projects over 3200 m (2 miles) or more in length.

ROAD CONSTRUCTION NEXT X MILES sign shall be placed 150 m (500') in advance of project.

END CONSTRUCTION sign shall be erected at the of the job unless another job is within 3200 m (2 miles).

WORK LIMIT SIGNING

TYPICAL APPLICATIONS OF TYPE III BARRICADES CLOSING A ROAD

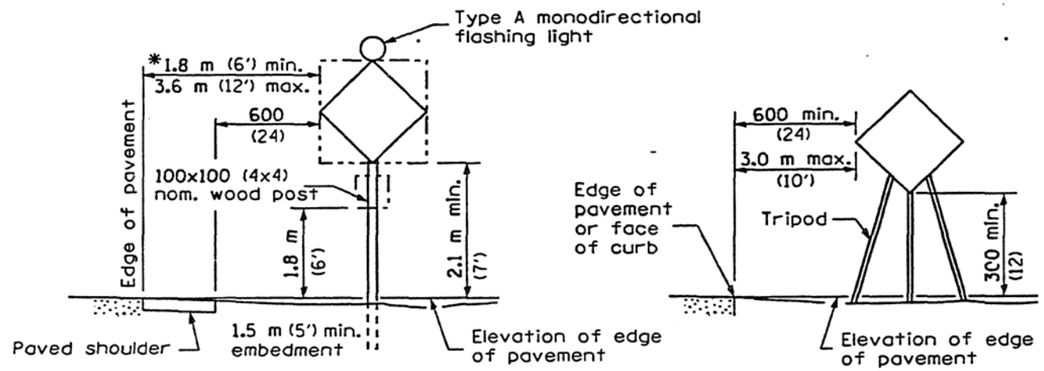


TYPE A
ROOF MOUNTED

TYPE B
ROOF OR TRAILER MOUNTED

TYPE C
TRAILER MOUNTED

ARROW BOARDS



TYPICAL SIGN INSTALLATIONS

GENERAL NOTES

* When curb or paved shoulder are present this dimension shall be 600 mm (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 January 1, 2000
ENGINEER OF OPERATIONS

APPROVED January 1, 2000
ENGINEER OF DESIGN AND ENVIRONMENT

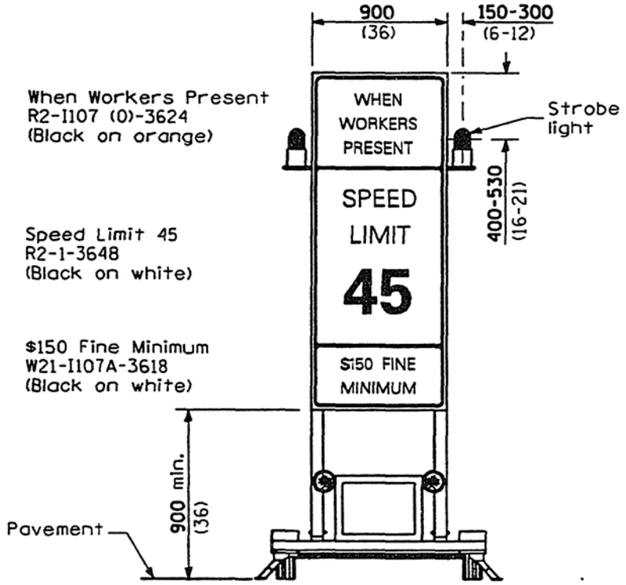
ISSUED 1-1-97

DATE	REVISIONS
1-1-00	Rev. max. tripod sign
	height & END CONST.
	sign number.
10-1-97	Renum. Standard 2298-12.
	Revised construction
	speed limit sign.

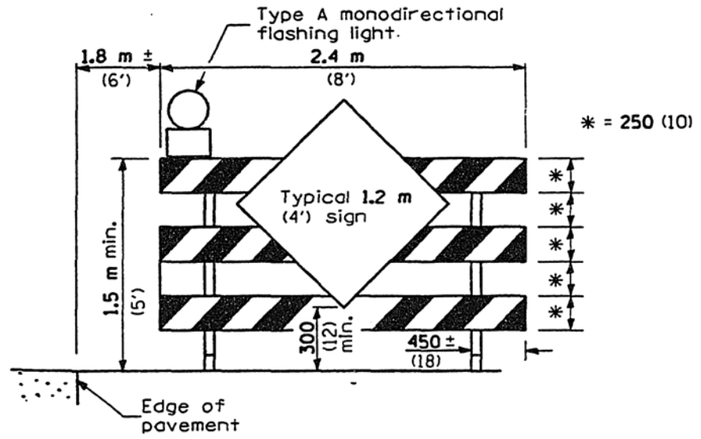
TRAFFIC CONTROL DEVICES

(Sheet 1 of 3)

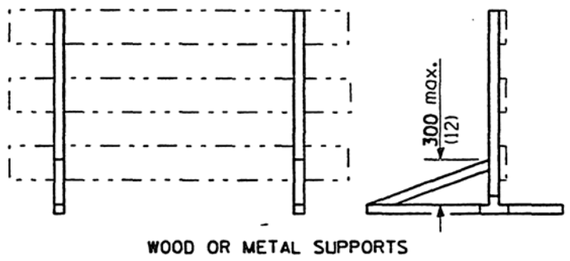
STANDARD 702001-01



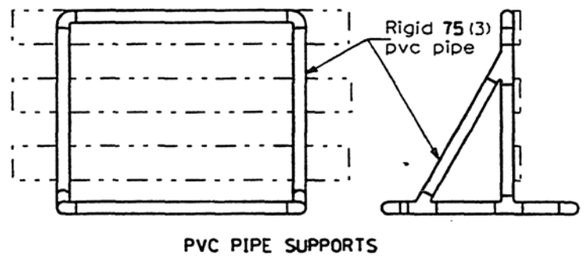
CONSTRUCTION SPEED LIMIT SIGN



Frames shall be no heavier than:
100x100 (4x4) (nom. dim.) wood or
50x50x3 (2x2x1/8) steel tubing or
50x50x5 (2x2x3/16) steel angles

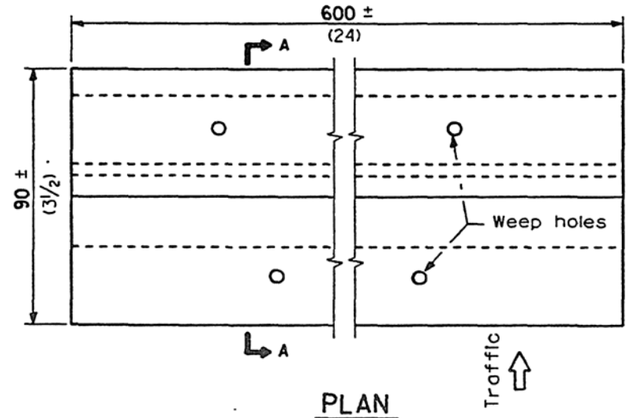


WOOD OR METAL SUPPORTS

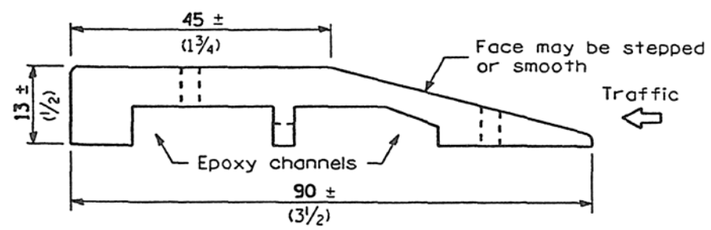


PVC PIPE SUPPORTS

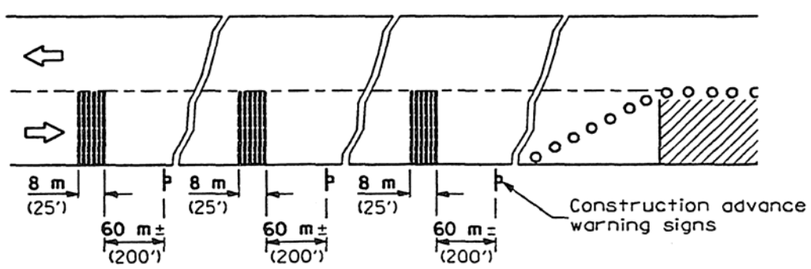
WING BARRICADES

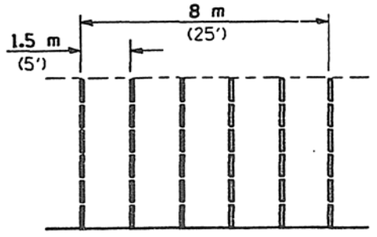


PLAN



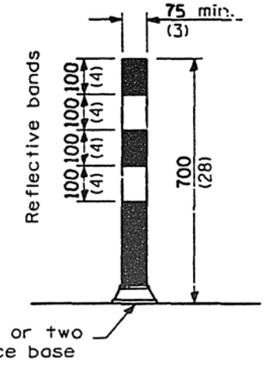
SECTION A-A





TYPICAL INSTALLATION

TEMPORARY RUMBLE STRIPS



FLEXIBLE DELINEATORS

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

Illinois Department of Transportation

APPROVED January 1, 1997
ENGINEER OF OPERATIONS

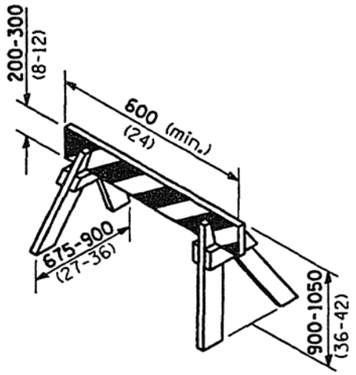
APPROVED January 1, 1997
ENGINEER OF DESIGN AND ENVIRONMENT

ISSUED 1-1-97

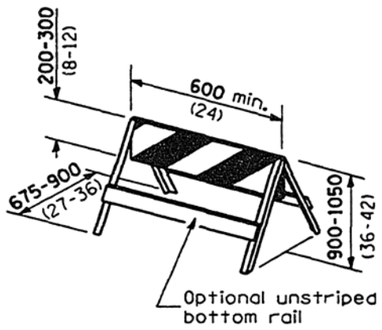
TRAFFIC CONTROL DEVICES

(Sheet 2 of 3)

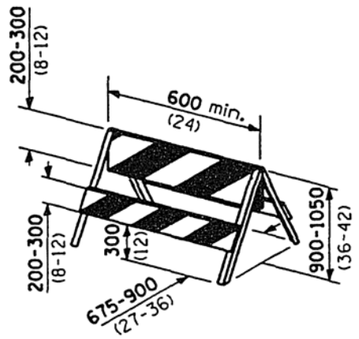
STANDARD 702001



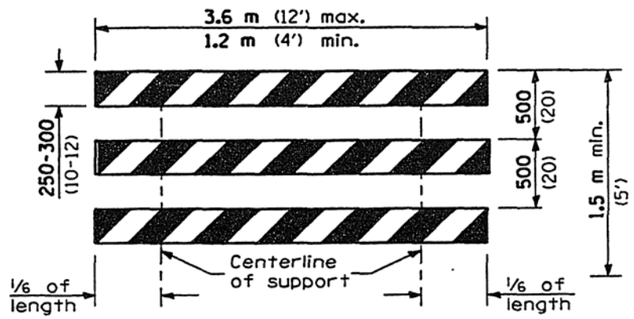
TYPE 1A BARRICADE

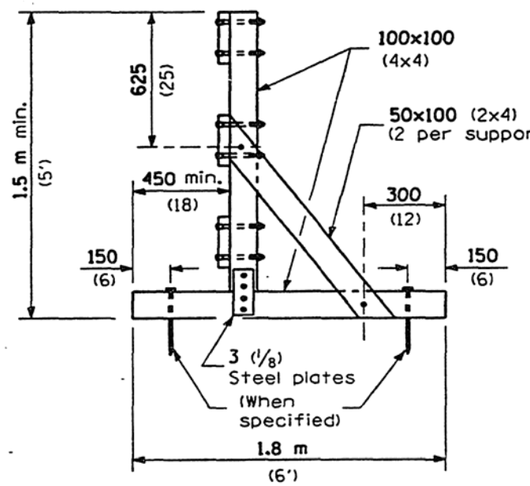


TYPE 1 BARRICADE

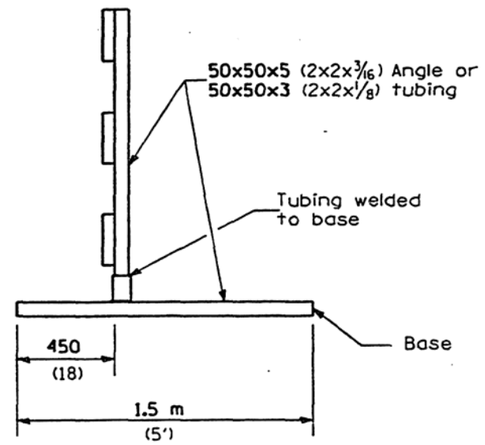


TYPE II BARRICADE



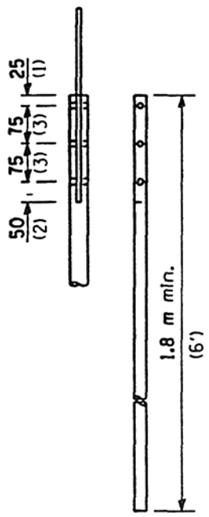


TYPICAL WOOD SUPPORT

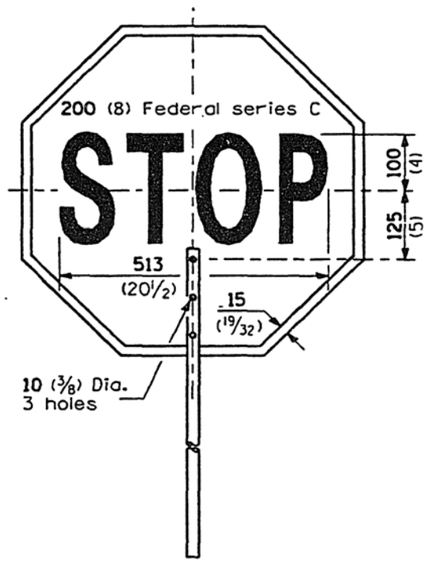


TYPICAL STEEL SUPPORT

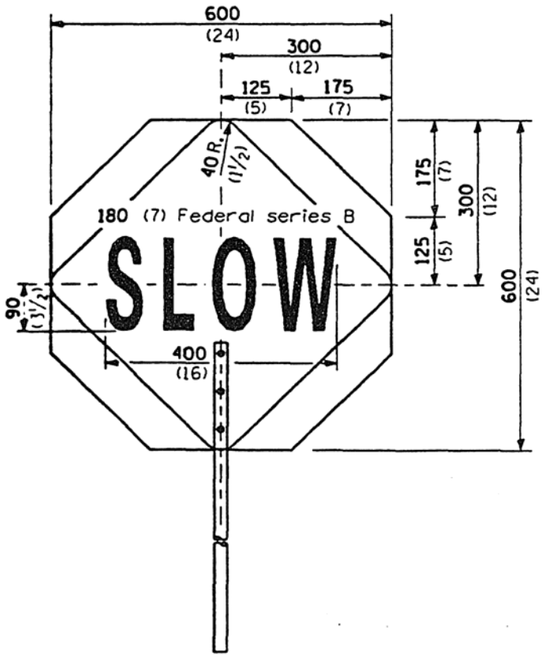
TYPE III BARRICADES



STAFF

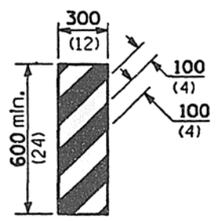


FRONT SIDE

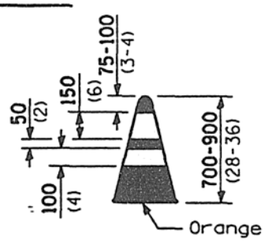


REVERSE SIDE

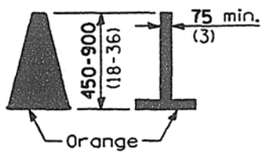
FLAGGER TRAFFIC CONTROL SIGN



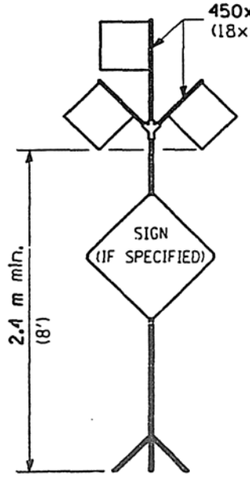
VERTICAL PANELS



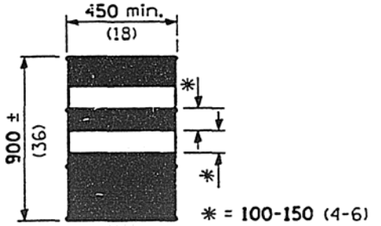
REFLECTORIZED CONES



CONES



HIGH LEVEL WARNING DEVICE



DRUMS AND SAND MODULE
IMPACT ATTENUATORS

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

Illinois Department of Transportation

APPROVED January 1, 1997
ENGINEER OF OPERATIONS

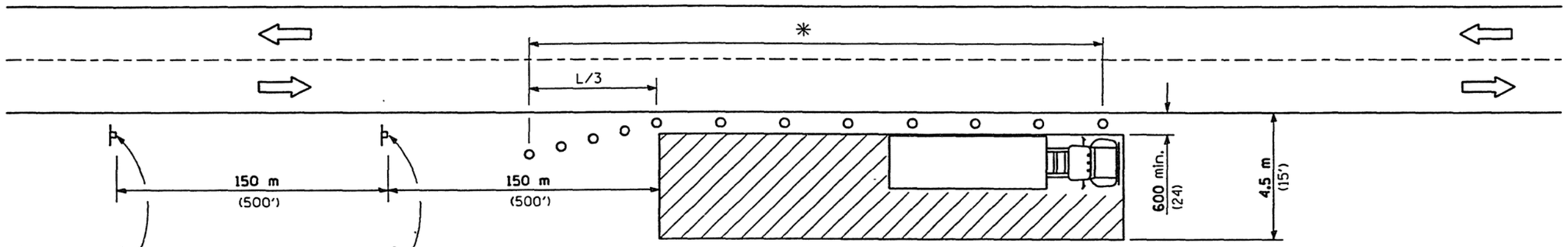
APPROVED January 1, 1997
ENGINEER OF DESIGN AND ENVIRONMENT

ISSUED 1-1-97

TRAFFIC CONTROL DEVICES

(Sheet 3 of 3)

STANDARD 702001



For contract construction projects

W20-1(0)-48

W21-1a(0)-48
OR

For maintenance and utility projects

W21-4(0)-48

W21-1110(0)-48

GENERAL NOTES

This Standard is used where at all time, any vehicles, equipment, worker or their activities will encroach in the area from 4.5 m (15') to the edge of pavement, except where activities will result in a dropoff greater than 75 mm (3") within 600 mm (24") of pavement.

If the operation is 4.5 m (15') or more off the pavement edge, no signing or cones will be required, unless two or more vehicles cross the 4.5 m (15') clear zone in one hour.

* When working within 600 mm (24") of the pavement edge, cones, drums or barricades shall be placed at 8 m (25') centers for L/3 distance, 15 m (50') centers through remainder of work area.

Shoulder tapers should have a minimum length of L/3.

Where L is:

SPEED LIMIT	FORMULAS	
	Metric	(English)
70 km/h (40 mph) or less:	$L = \frac{WS^2}{150}$	$L = \frac{WS^2}{60}$
80 km/h (45 mph) or greater:	L=0.65(W)(S)	L=(W)(S)

W = Width of offset in meters (feet).

S = Normal posted speed km/h (mph).

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

TYPICAL APPLICATIONS

Utility operations
Culvert extensions
Side slope changes
Guardrail installation and maintenance
Delineator installation
Landscaping operations
Shoulder repair
Sign installation and maintenance

SYMBOLS

Work area

Sign

Cone, drum or barricade

Illinois Department of Transportation

APPROVED January 1, 1998
ENGINEER OF OPERATIONS

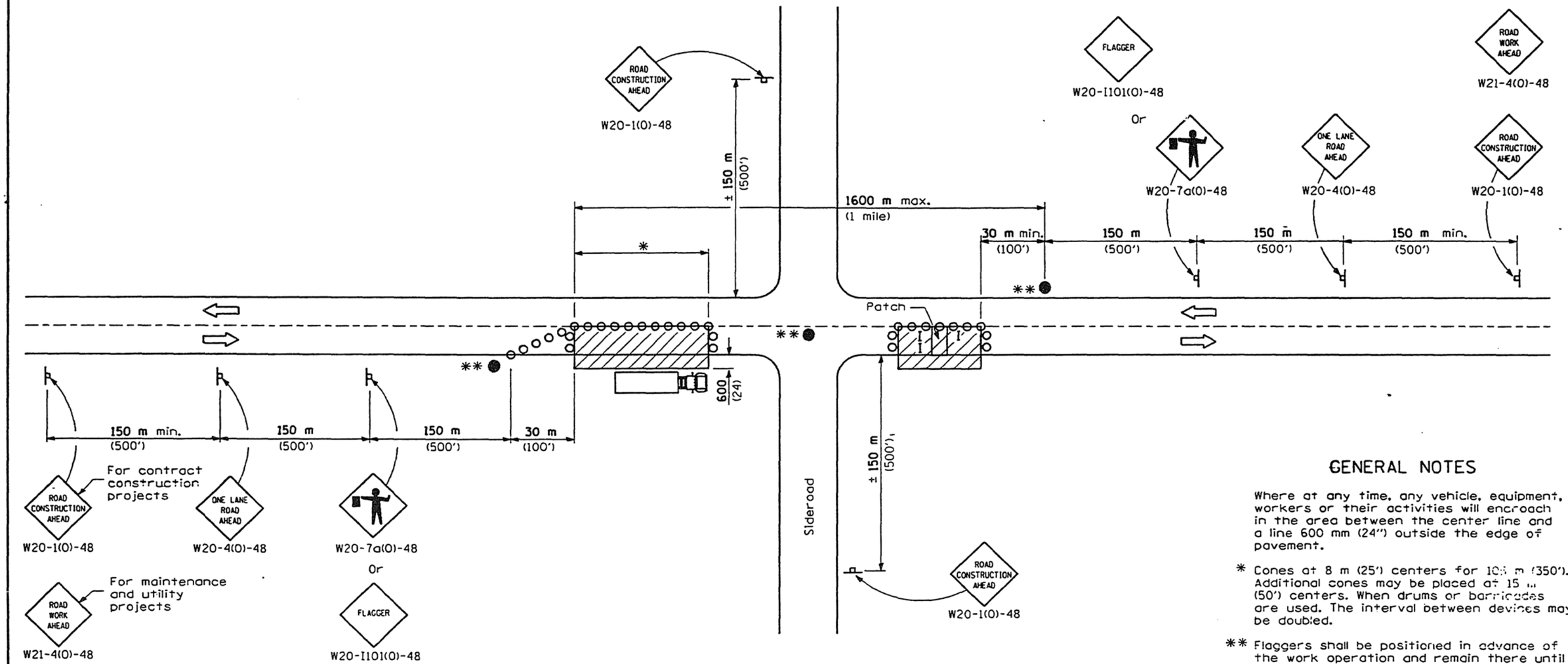
APPROVED January 1, 1998
ENGINEER OF DESIGN AND ENVIRONMENT

ISSUED 1-1-97

DATE	REVISIONS
1-1-98	Rev. 1st GEN. NOTE.
	Rev. (24') to (24") in 3rd GEN. NOTE.
1-1-97	Renum. Standard 2302-9.

OFF-RD OPERATIONS 2L, 2W 4.5 m (15') TO PAVEMENT EDGE FOR SPEEDS ≥ 45 MPH

STANDARD 701006-01



TYPICAL APPLICATIONS

Pavement patching
Utility operations
Storm sewer
Culvert
Cable placement

SYMBOLS

- Work area
- Sign
- Barricade or drum
- Cone, drum or barricade
- Flagger with traffic control sign

GENERAL NOTES

Where at any time, any vehicle, equipment, workers or their activities will encroach in the area between the center line and a line 600 mm (24") outside the edge of pavement.

* Cones at 8 m (25') centers for 105 m (350'). Additional cones may be placed at 15 m (50') centers. When drums or barricades are used. The interval between devices may be doubled.

** Flaggers shall be positioned in advance of the work operation and remain there until the lane is open to traffic.

When the distance between successive patches is less than 450 m (1500'), the entire operation may be considered as one work area for flagging and signing purposes. When the distance between successive patches exceeds 450 m (1500'), additional warning signs, flaggers, and taper shall be used.

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

Illinois Department of Transportation

APPROVED January 1, 1997
ENGINEER OF OPERATIONS

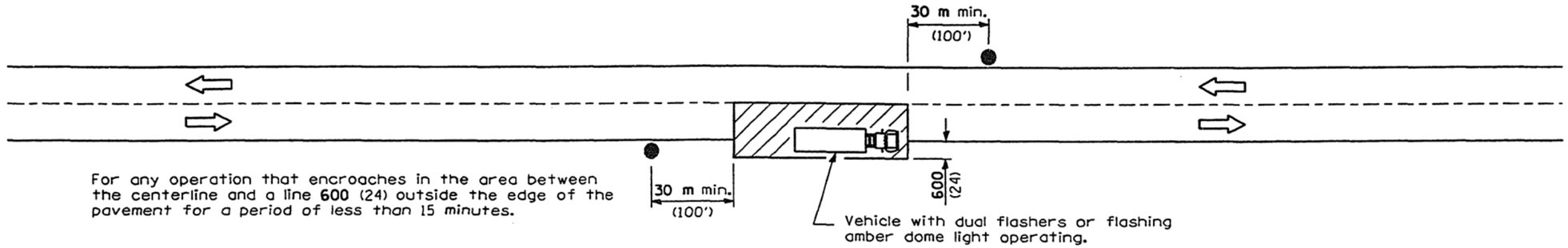
APPROVED January 1, 1997
ENGINEER OF DESIGN AND ENVIRONMENT

ISSUED 1-1-97

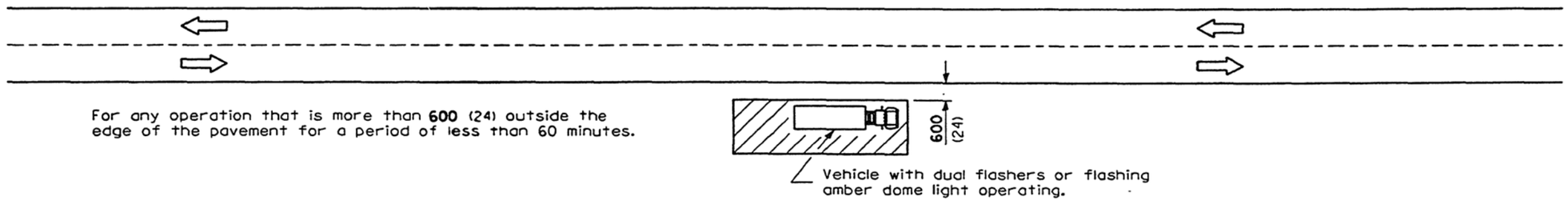
DATE	REVISIONS
1-1-97	Renum. Standard 2303-10.
	Deleted orange flags.
	Revised 2nd GN.
5-1-95	Rev. FLAGGER sign and
	flagger symbols to be
	filled in.

LANE CLOSURE, 2L, 2W, DAY ONLY ON-RD TO 600 mm (24") OFF-RD FOR SPEEDS ≥ 45 MPH

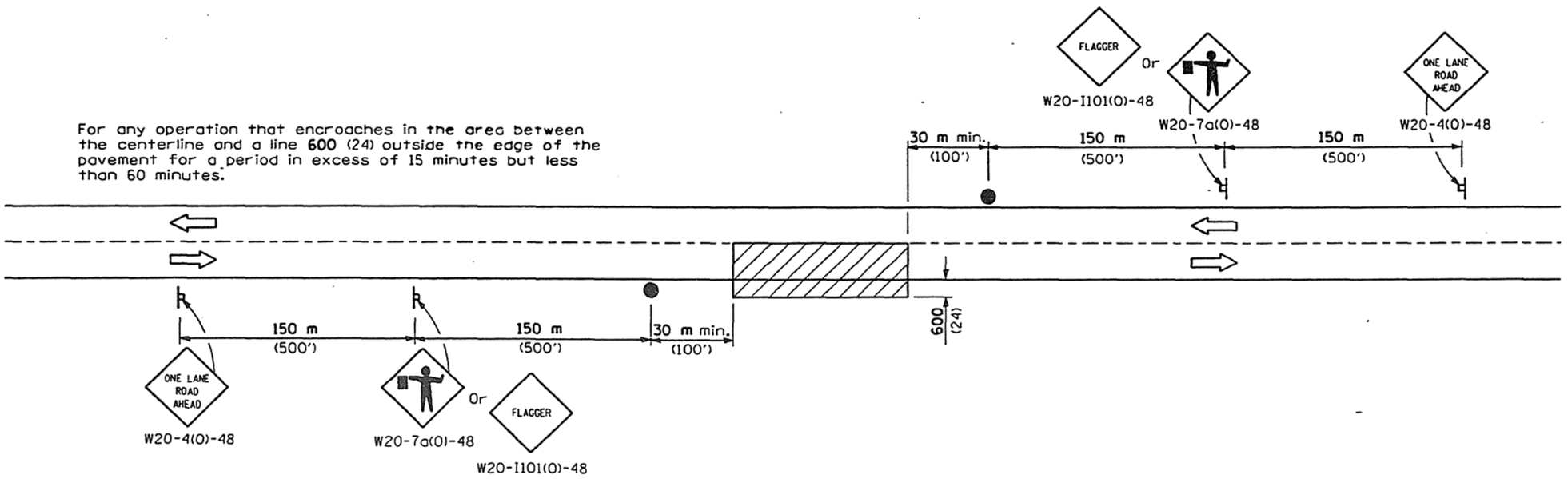
STANDARD 701201



For any operation that encroaches in the area between the centerline and a line **600** (24) outside the edge of the pavement for a period of less than 15 minutes.



For any operation that is more than **600** (24) outside the edge of the pavement for a period of less than 60 minutes.



For any operation that encroaches in the area between the centerline and a line **600** (24) outside the edge of the pavement for a period in excess of 15 minutes but less than 60 minutes.

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

TYPICAL APPLICATIONS

Marking patches
Field survey
String line
Utility operations
Cleaning up debris on pavement

SYMBOLS

Work area

Sign on portable or permanent support

Flagger with traffic control sign

Illinois Department of Transportation

APPROVED January 1, 1997
ENGINEER OF OPERATIONS

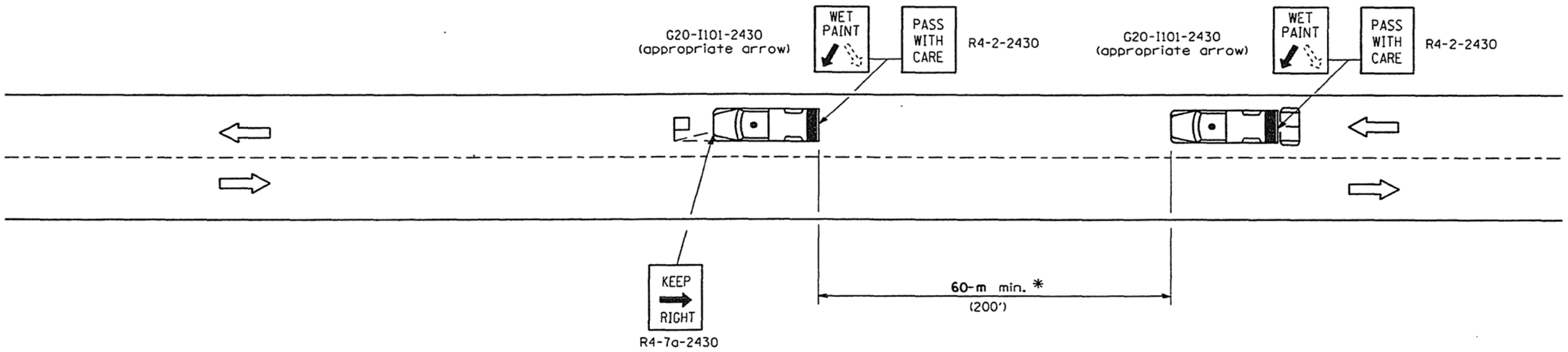
APPROVED January 1, 1997
ENGINEER OF DESIGN AND ENVIRONMENT

ISSUED 1-1-97

DATE	REVISIONS
1-1-97	Renum. Standard 2307-10.
	Deleted orange flags.
5-1-95	Rev. FLAGGER sign and
	flagger symbols to be
	filled in.

LANE CLOSURE 2L, 2W SHORT TIME OPERATIONS FOR SPEEDS ≥ 45 MPH

STANDARD 701301



TYPICAL APPLICATIONS

Landscaping work

Utility work

Pavement marking

Weed spraying

Roadometer measurements

Debris cleanup

Crack pouring

SYMBOLS

Arrow board (Hazard Mode only)

Truck with headlights, emergency flashers and flashing amber light. (visible from all directions)

450x450 (18x18) min. orange flag (use when guide wheel is used)

Truck mounted attenuator

GENERAL NOTES

This Standard is used where any vehicle, equipment, workers or their activities will require a continuous moving operation where the average speed is greater than 5 km/h (3 mph).

* Distance varies depending on terrain and susceptibility of pavement marking or crack sealant to wheel tracking.

For shoulder operations not encroaching on the pavement, use DETAIL A, Standard 701426.

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

Illinois Department of Transportation

APPROVED January 1, 1999
ENGINEER OF OPERATIONS

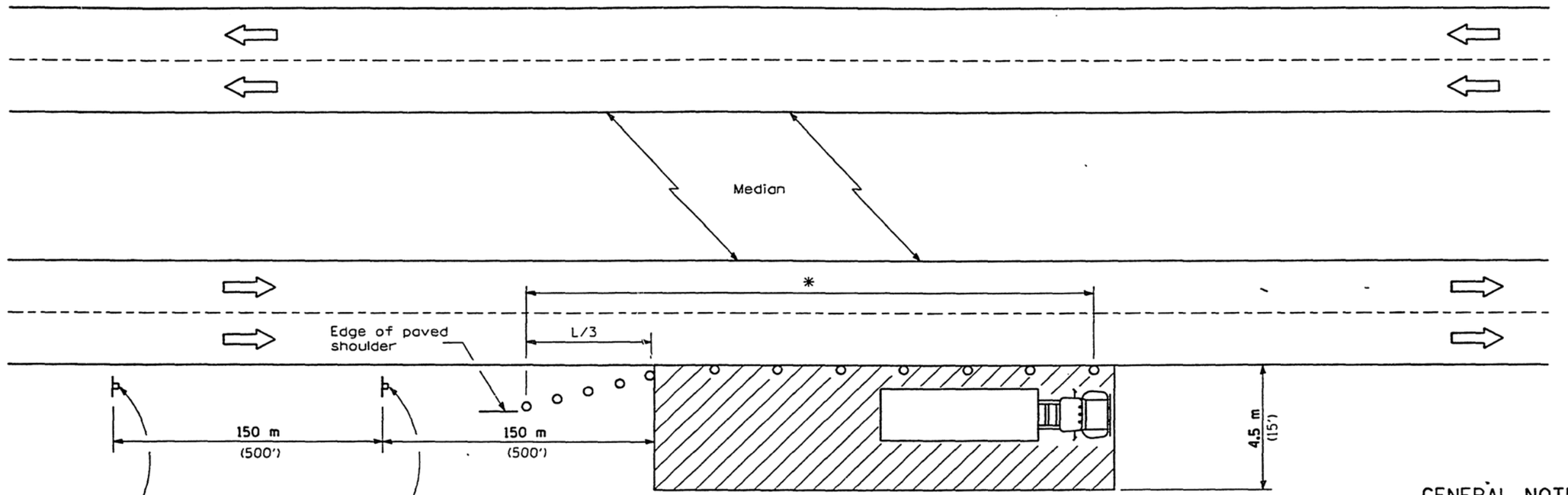
APPROVED January 1, 1999
ENGINEER OF DESIGN AND ENVIRONMENT

ISSUED 1-1-97

DATE	REVISIONS
1-1-99	Removed front truck
	TMA.
1-1-97	Renum. Standard 2308-8.
	Revised text for truck
	symbol.

LANE CLOSURE 2L, 2W MOVING OPERATIONS-DAY ONLY FOR SPEEDS ≥ 45 MPH

STANDARD 701311-01



For contract construction projects

W20-1(0)-48

W21-1a(0)-48

Or

For maintenance and utility projects

W21-4(0)-48

W21-1110(0)-48

TYPICAL APPLICATIONS

Utility operations
Culvert extensions
Side slope changes
Guardrail installation and maintenance
Delineator installation
Landscaping operations
Shoulder repair
Sign installation and maintenance

SYMBOLS

Work area

Sign

Cone, drum or barricade

GENERAL NOTES

This Standard is used where at any time, any vehicles, equipment, worker or their activities will encroach in the area closer than 4.5 m (15') up to the edge of pavement.

* Cones, drums or barricades at 8 m (25') centers for L/3 distance, 15 m (50') centers through remainder of work area when work occurs within 600 mm (24") of the edge of pavement.

Shoulder tapers should have a minimum length of L/3.

Where L is:

SPEED LIMIT	FORMULAS	
	Metric	(English)
70 km/h (40 mph) or less:	$L = \frac{WS^2}{150}$	$L = \frac{WS^2}{60}$
80 km/h (45 mph) or greater:	$L = 0.65(W)(S)$	$L = (W)(S)$

W = Width of offset in meters (feet).

S = Normal posted speed km/h (mph).

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

Illinois Department of Transportation

APPROVED January 1, 1997
ENGINEER OF OPERATIONS

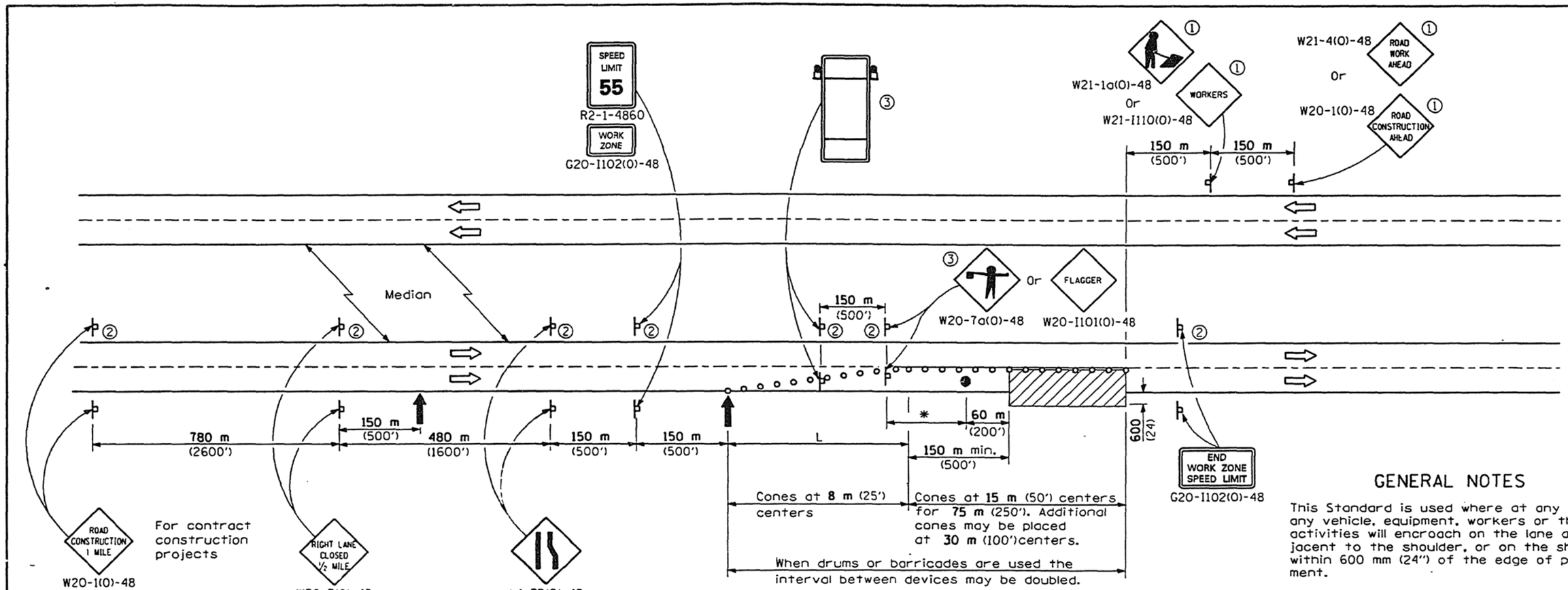
APPROVED January 1, 1997
ENGINEER OF DESIGN AND ENVIRONMENT

ISSUED 1-1-97

DATE	REVISIONS
1-1-97	Renum. Standard 2314-9.
	Deleted orange flags.
10-1-95	Revised 1st and 2nd G.N.
	and work area.

OFF-RD OPERATIONS, MULTILANE LESS THAN 4.5 M (15') AWAY FOR SPEEDS ≥ 45 MPH

STANDARD 701101



* **150 m** to **750 m**
(500') (2500')

TYPICAL APPLICATIONS

Pavement patch

Utility operations

Bituminous resurfacing

L = lane width X taper ratio		
Normal Posted Speed		Taper Ratio
km/h	mph	
110	65	65/1
100	60	60/1
90	55	55/1
80	45	45/1

SYMBOLS

- Arrow board
- Work area
- Sign
- Cone, drum or barricade
- Flagger with traffic control sign
- Construction speed limit sign

GENERAL NOTES

This Standard is used where at any time, any vehicle, equipment, workers or their activities will encroach on the lane adjacent to the shoulder, or on the shoulder within 600 mm (24") of the edge of pavement.

This Standard also applies when work is being performed in the left lane. Under these conditions, LEFT LANE CLOSED signs shall be substituted for RIGHT LANE CLOSED signs. On undivided highways, signs shall be added in the opposite direction as shown. On left lane closures with narrow medians, the arrow board at the beginning of the lane closure shall be relocated behind the taper as necessary so that a clearance of at least 1.2 m (4') can be maintained from the opposing traffic.

① Undivided roadway only with left lane closure in opposite direction.

② Omitted when median is less 3 m (10').

③ Construction speed limit signs and FLAGGER signs shall be moved as necessary to maintain a spacing of 150 m (500') to 750 m (2500') between the FLAGGER sign and each separate work activity.

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

Illinois Department of Transportation

APPROVED January 1, 1999
ENGINEER OF OPERATIONS

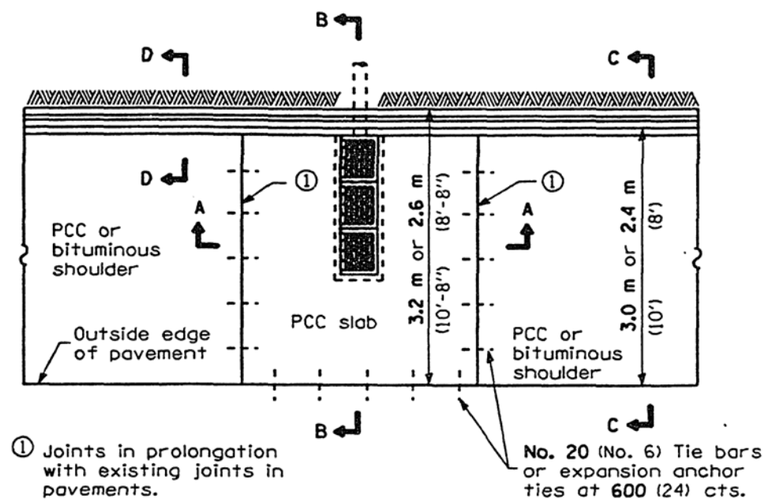
APPROVED January 1, 1999
ENGINEER OF DESIGN AND ENVIRONMENT

ISSUED 1-1-97

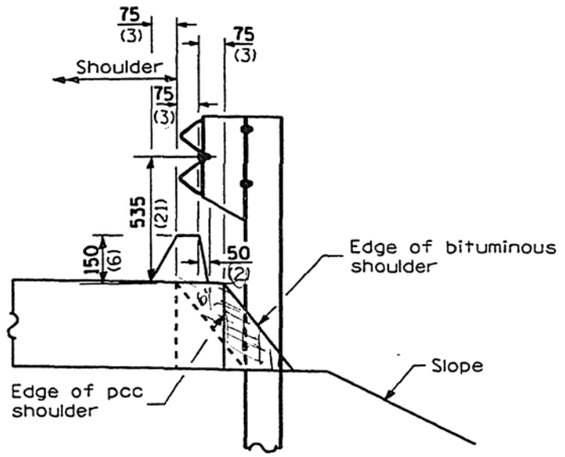
DATE	REVISIONS
1-1-99	Revised spelling in 2nd
	paragraph of GN.
1-1-97	Renum Standard 2315-11.
	Del. orange flags. Added
	GN & dim. for flagger.

LANE CLOSURE MULTILANE DAY OPERATIONS ONLY FOR SPEEDS ≥ 45 MPH

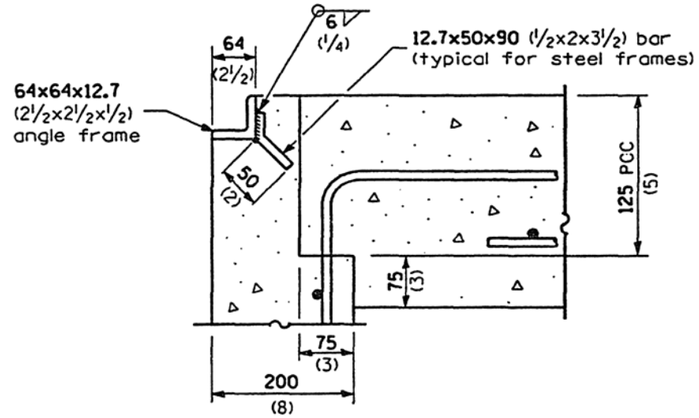
STANDARD 701406-01



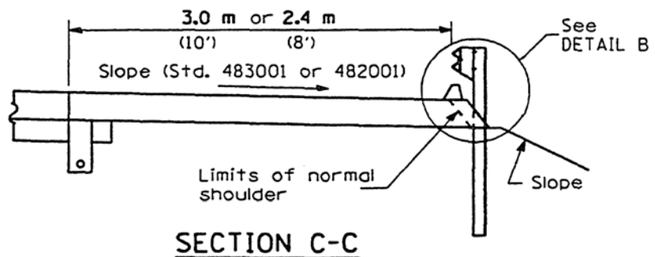
PLAN



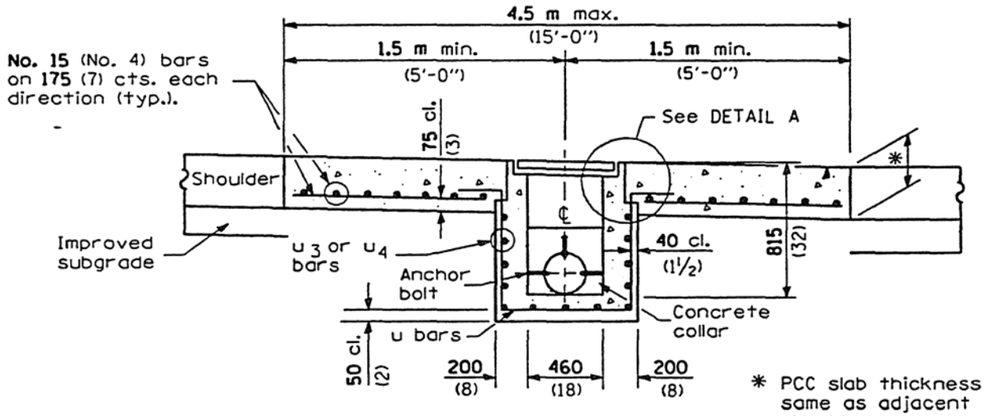
DETAIL B



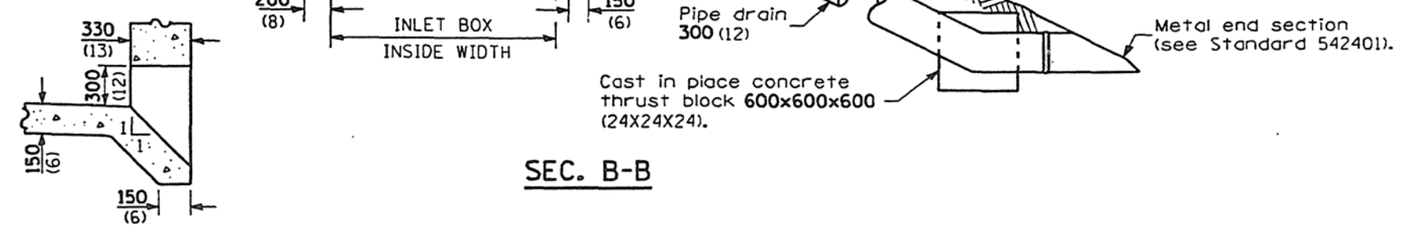
DETAIL A



SECTION C-C

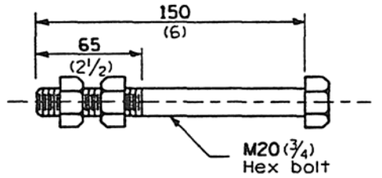


SEC. A-A



SEC. B-B

BOX OUTLET WHEN PRECAST



ANCHOR BOLT

(Used to tie pipe to concrete collar)

INLET TYPE	SHOULDER WIDTH	0-0 GRATING FRAME	INLET BOX INSIDE WIDTH	INLET BOX INSIDE LENGTH
Type E	**2.4 m** (8')	**1.325 m** (4'-4")	**1.195 m** (3'-11")	**460** (18)
Type F	**3.0 m** (10')	**1.960 m** (6'-5")	**1.830 m** (6'-0")	**460** (18)

GENERAL NOTES

See Standard 420001 for joint details not shown.

All exposed edges of the inlet, except the upper perimeter, shall be beveled 20 mm (¾").

For placement of drainage elements on existing construction with existing rigid pavement, substitute expansion anchor ties for tie bars. For nonrigid pavements or monolithic construction of pcc slab and shoulder, omit tie bars.

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

Illinois Department of Transportation

PASSED January 1, 1998
ENGINEER OF POLICY AND PROCEDURES

APPROVED January 1, 1998
ENGINEER OF DESIGN AND ENVIRONMENT

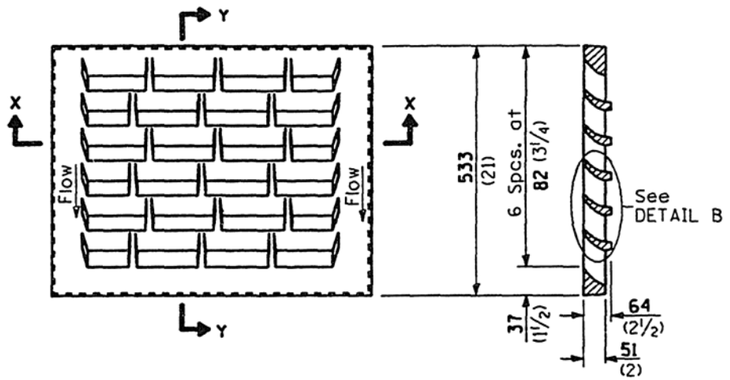
ISSUED 1-1-97

DATE	REVISIONS
1-1-98	Rev. ref. to "542101"
	to read "542401".
1-1-97	Renum. Standard 2322-6.

SHOULDER INLET WITH CURB

(Sheet 1 of 2)

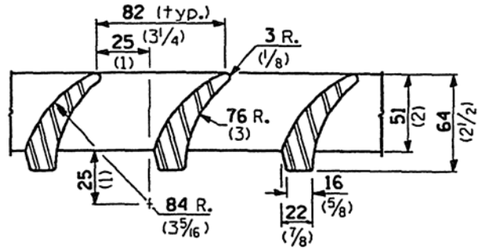
STANDARD 610001-01



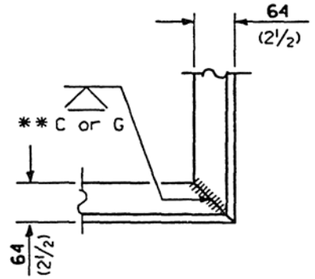
DETAIL OF CAST GRATE

Type E requires 2 grates
Type F requires 3 grates

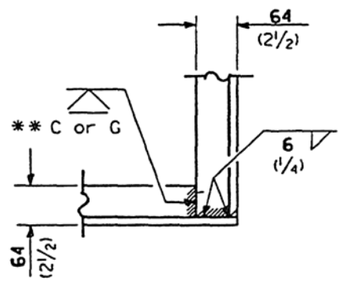
SECTION Y-Y



DETAIL B



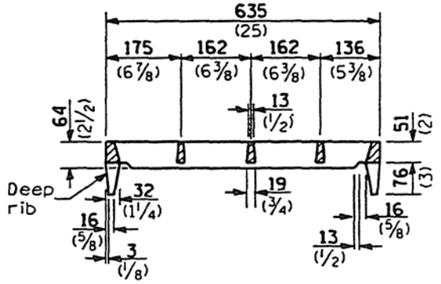
ALT. 1



ALT. 2

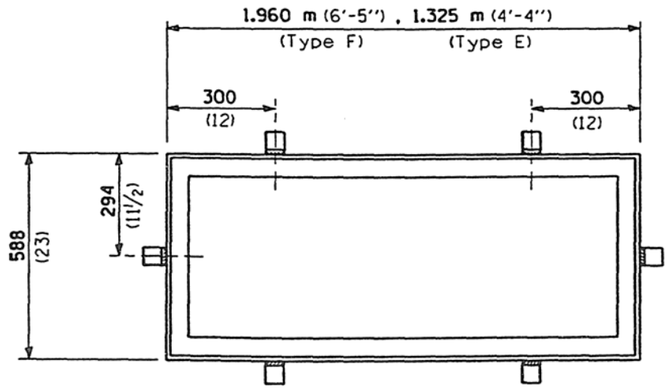
TYPICAL CORNER of STEEL GRATING FRAME

** Cut or Grind flush



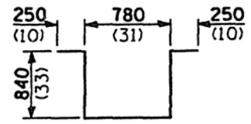
SECTION X-X

(Deep rib shall be omitted for end(s) resting on frame perimeter)

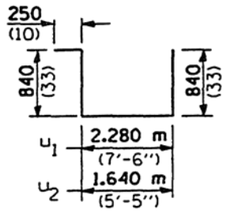


DETAIL OF STEEL FRAME

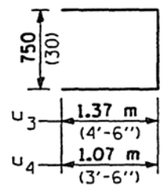
Cast frame to have same basic dimensions.



BAR u



BARS u_1, u_2



Bars u_3, u_4

INLET BOX

REQUIRED MATERIAL			
TYPE F			
Bar	Qty.	Size	Length
u	8	No. 15 (No. 4)	2.96 m (9'-9")
u_1	3	No. 15 (No. 4)	4.21 m (13'-10")
u_3	6	No. 15 (No. 4)	3.49 m (11'-6")
Concrete		m^3 (cu. yds.)	1.3 (1.7)
Reinf. bars		kg (lbs.)	89.9 (126)
Grating		m^2 (sq. ft.)	1.02 (10.9)
TYPE E			
Bar	Qty.	Size	Length
u	6	No. 15 (No. 4)	2.96 m (9'-9")
u_2	3	No. 15 (No. 4)	3.57 m (11'-9")
u_4	6	No. 15 (No. 4)	2.89 m (9'-6")
Concrete		m^3 (cu. yds.)	1.0 (1.3)
Reinf. bars		kg (lbs.)	71.9 (101)
Grating		m^2 (sq. ft.)	0.68 (7.3)

Illinois Department of Transportation

PASSED January 1, 1998
ENGINEER OF POLICY AND PROCEDURES
APPROVED January 1, 1998
ENGINEER OF DESIGN AND ENVIRONMENT

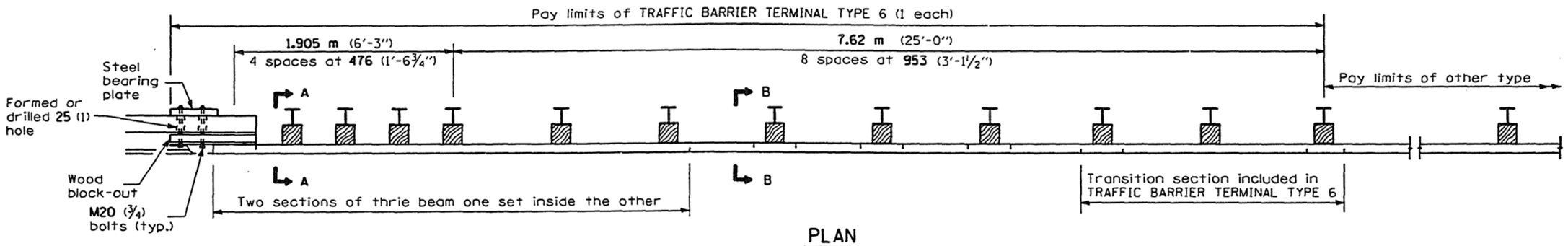
ISSUED 1-1-98

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

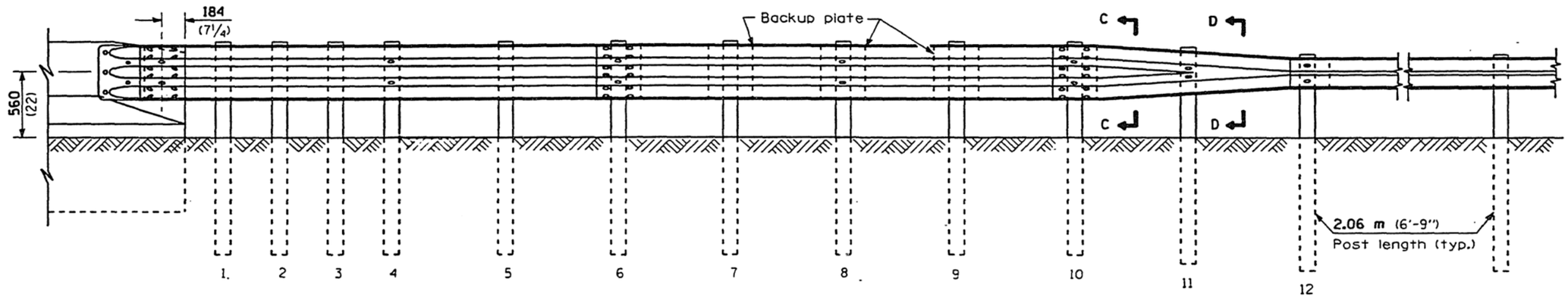
SHOULDER INLET WITH CURB

(Sheet 2 of 2)

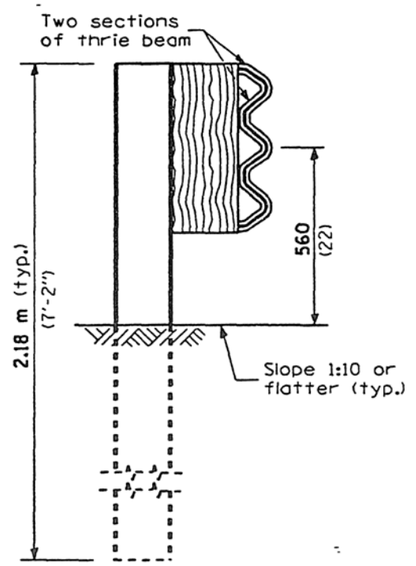
STANDARD 610001-01



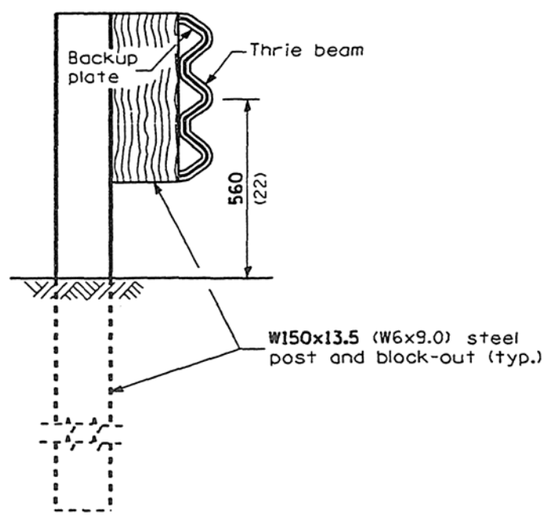
PLAN



ELEVATION



SECTION A-A



SECTION B-B

GENERAL NOTES

See Standard 630001 for details of guardrail not shown.

Thrie beam rail shall be bolted to block-out at posts 4, 6, 8 and 10.

Back-up plate shall be bolted to block-out only at posts 7 and 9.

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 October 1, 1998
Charles Kollfleisch
ENGINEER OF POLICY AND PROCEDURES
APPROVED October 1, 1998
Bill Sunley
ENGINEER OF DESIGN AND ENVIRONMENT

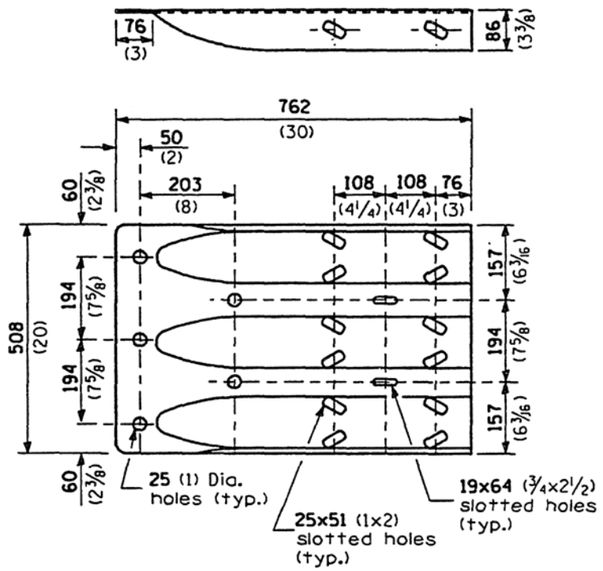
ISSUED 10-1-98

DATE	REVISIONS
10-1-98	Revised to wooden
	block-out.
1-1-97	Renum. Standard 2341-10.

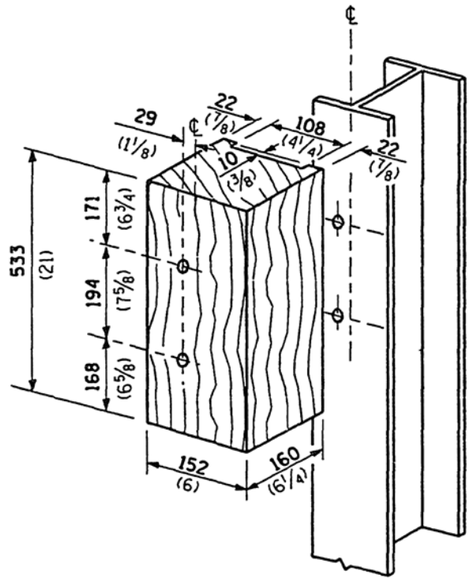
TRAFFIC BARRIER TERMINAL TYPE 6

(Sheet 1 of 2)

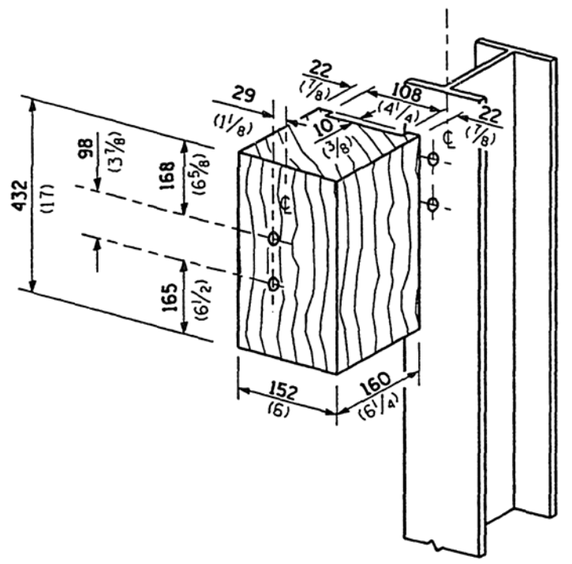
STANDARD 631031-01



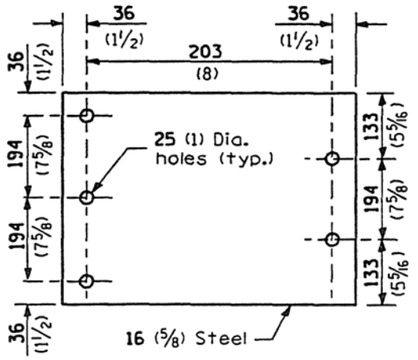
THRIE BEAM END SHOE



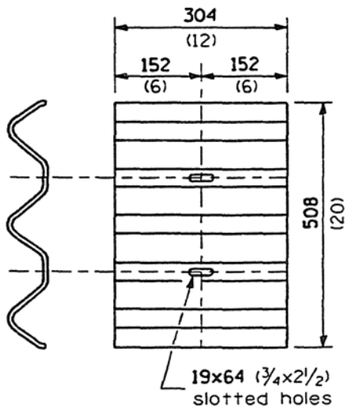
SECTION C-C



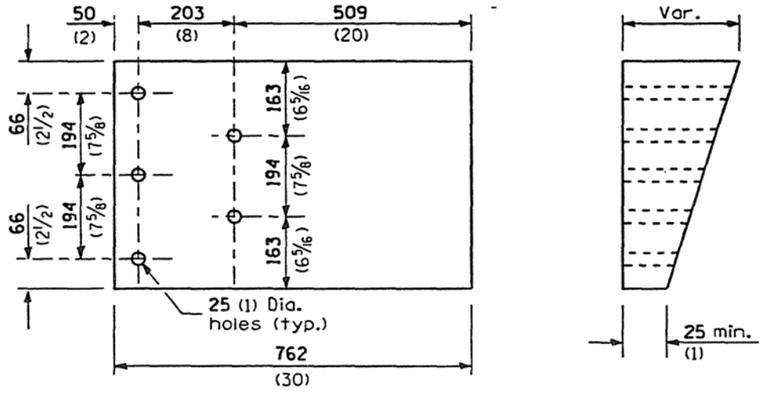
SECTION D-D



STEEL BEARING PLATE



BACK UP PLATE



WOOD BLOCK-OUT

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

Illinois Department of Transportation

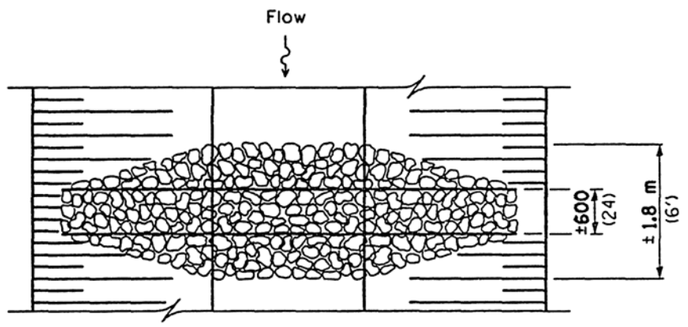
PASSED October 1, 1998
ENGINEER OF POLICY AND PROCEDURES
APPROVED October 1. 1998
ENGINEER OF DESIGN AND ENVIRONMENT

ISSUED 1-1-97

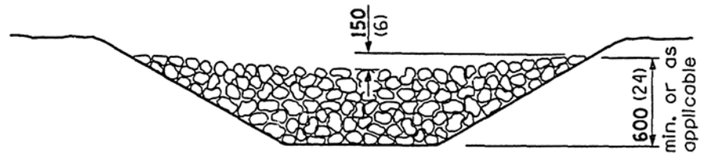
TRAFFIC BARRIER TERMINAL TYPE 6

(Sheet 2 of 2)

STANDARD 631031-01

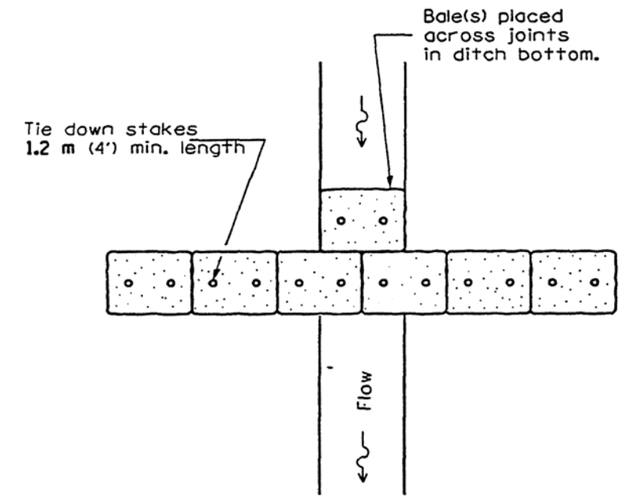


PLAN

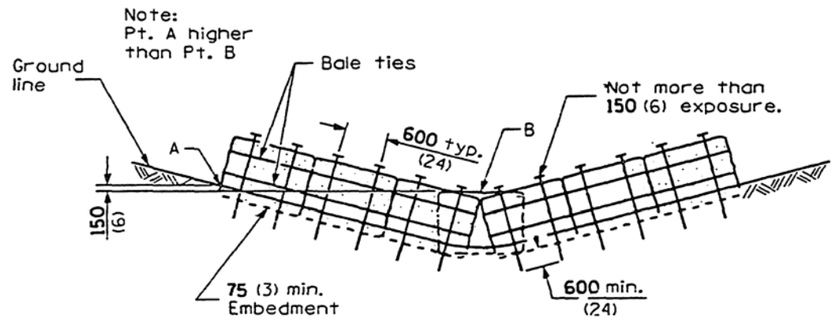


ELEVATION

AGGREGATE DITCH CHECK

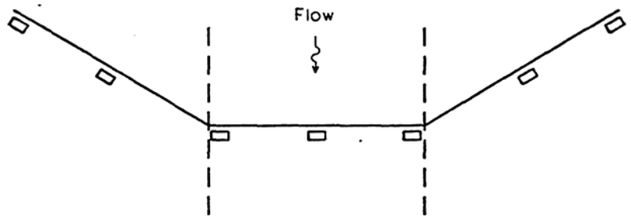


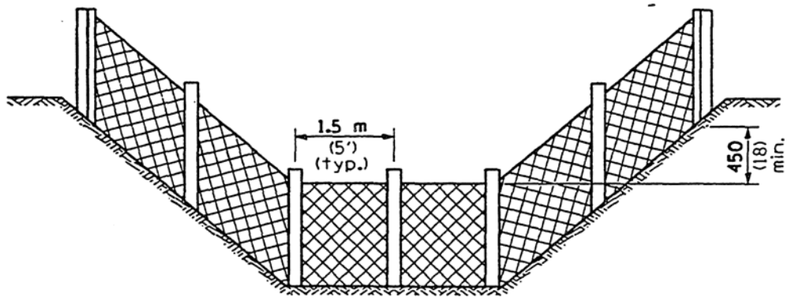
PLAN

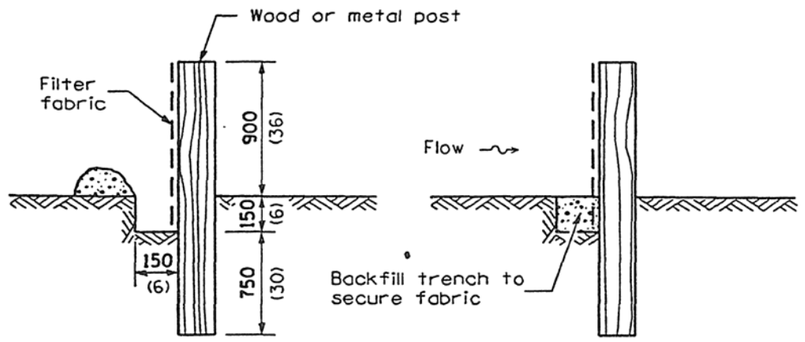


ELEVATION

ROLLED EXCELSIOR OR STRAW BALES FOR DITCH CHECK







SILT FILTER FENCE DITCH CHECK

GENERAL NOTES

The dimensions and installation methods for ditch checks shall be the same for perimeter erosion barriers and inlet and outlet protection unless otherwise specified.

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

Illinois Department of Transportation

PASSED January 1, 1999
ENGINEER OF POLICY AND PROCEDURES

APPROVED January 1, 1999
ENGINEER OF DESIGN AND ENVIRONMENT

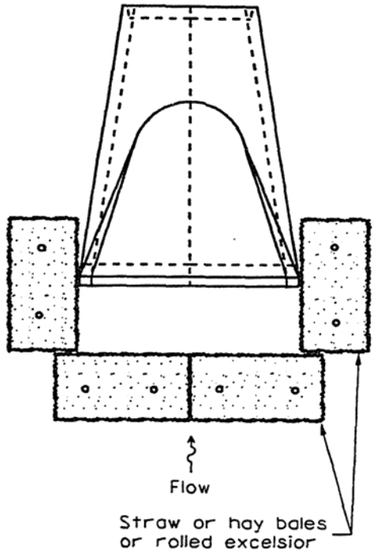
ISSUED 1-1-97

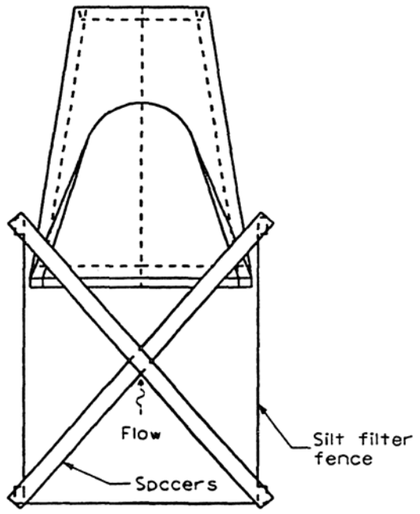
DATE	REVISIONS
1-1-99	Clar. ditch check dimen.
	Rev. filter fence sym.
	inlet & pipe prot. detail.
1-1-97	Renum. Standard 2381-2.
	Deleted DN Symbol. Decr.
	length of filter fabric.

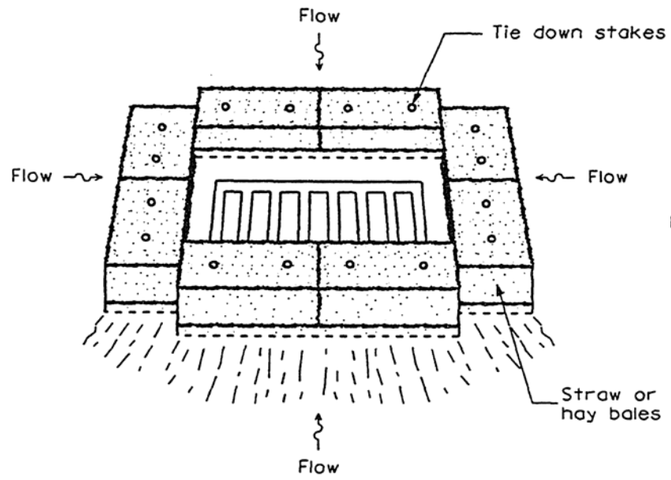
TEMPORARY EROSION CONTROL SYSTEMS

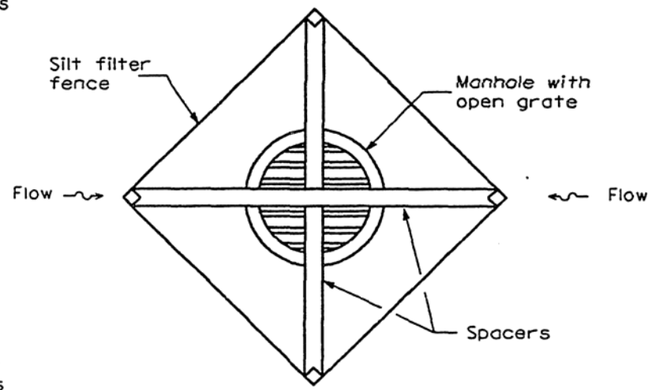
(Sheet 1 of 2)

STANDARD 280001-01

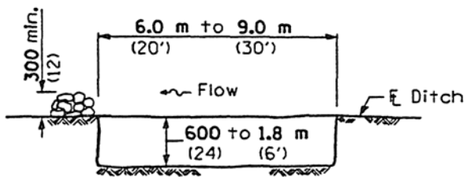






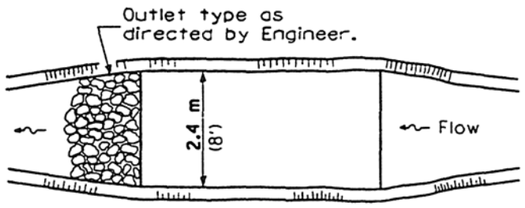


INLET AND PIPE PROTECTION



The performance of the basin will improve if put into a series.

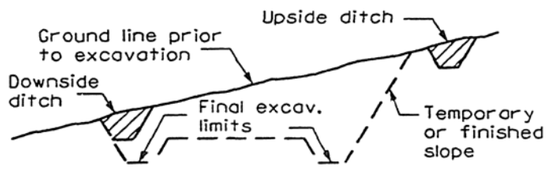
ELEVATION



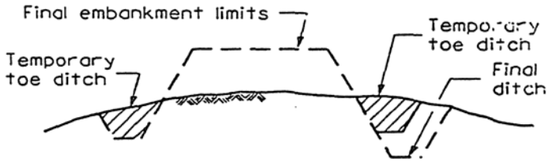
The long dimension should be parallel with the direction of the flow. Accumulated silt shall be removed anytime the basins become 75% filled.

PLAN

SEDIMENT BASIN



TYPICAL CUT CROSS SECTION



TYPICAL FILL CROSS SECTION

TEMPORARY DITCHES FOR CUT & FILL SECTIONS

Illinois Department of Transportation

PASSED January 1, 1999
ENGINEER OF POLICY AND PROCEDURES

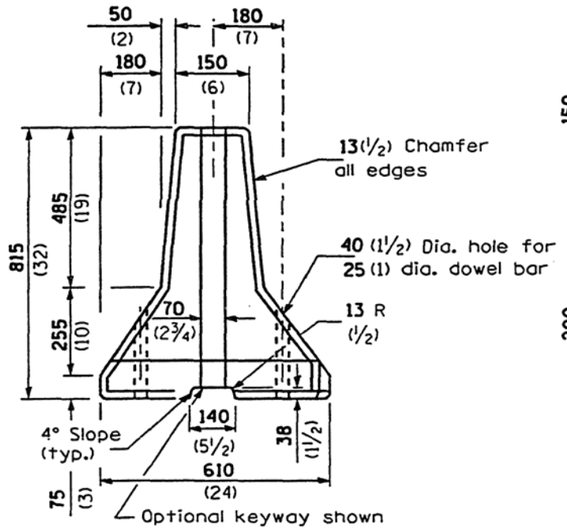
APPROVED January 1, 1999
ENGINEER OF DESIGN AND ENVIRONMENT

ISSUED 1-1-97

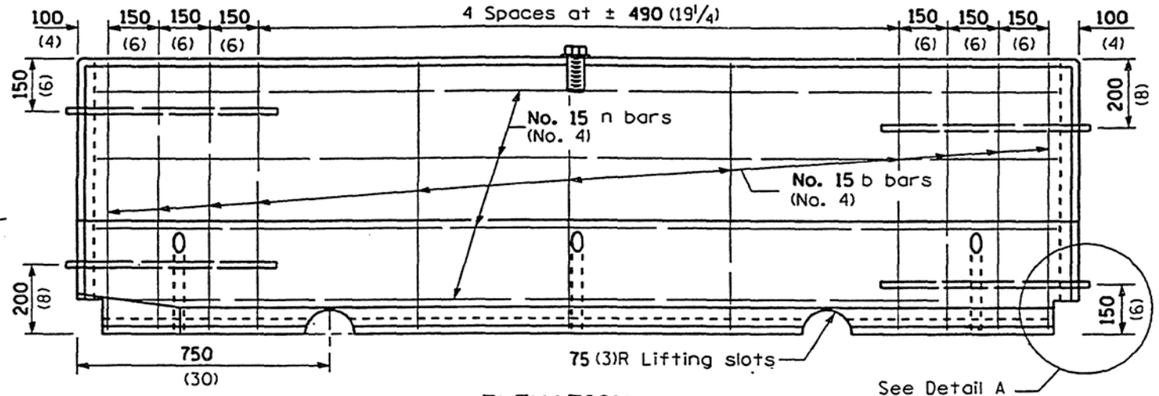
TEMPORARY EROSION CONTROL SYSTEMS

(Sheet 2 of 2)

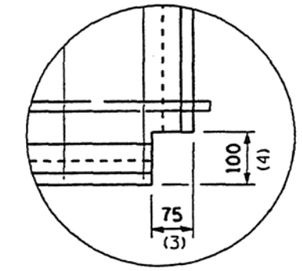
STANDARD 280001-01



END VIEW

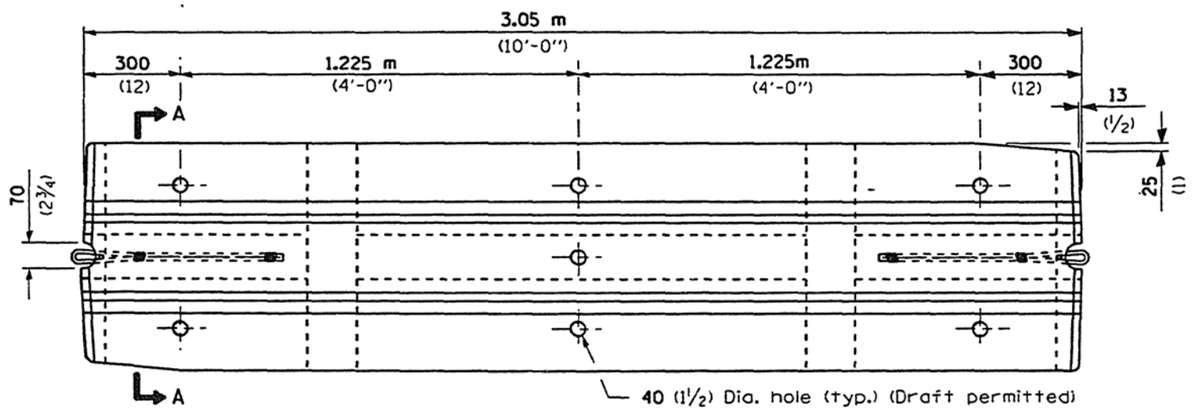


ELEVATION

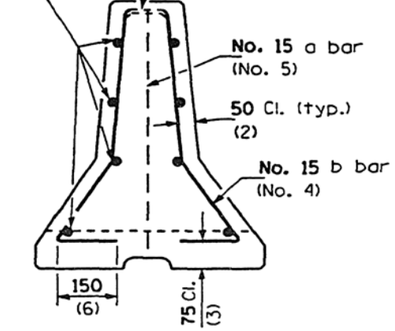


DETAIL A

(Typical for both ends of the barrier and the terminal section)

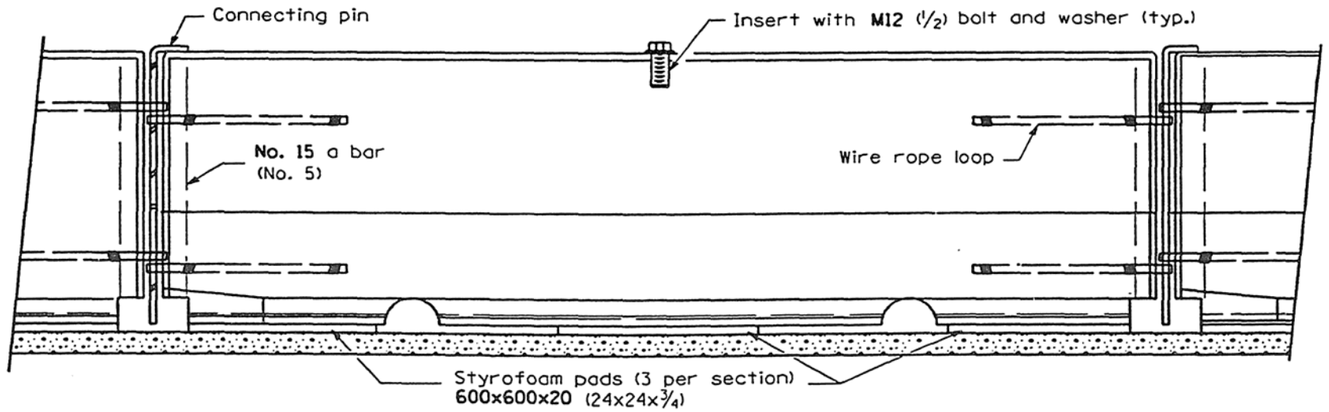


PLAN

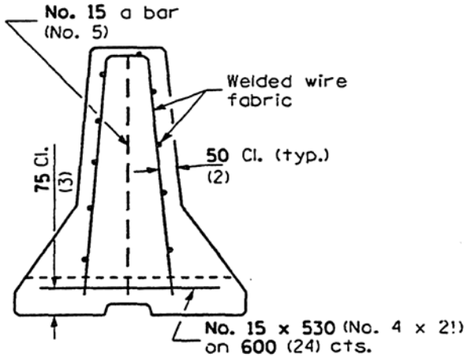


SECTION A-A

(Showing bar reinforcement)



TYPICAL INSTALLATION WITH STYROFOAM PADS



SECTION A-A

(Showing alternate welded wire reinforcement)

GENERAL NOTES

Barriers manufactured before 1-1-98 according to IDOT standards 705001 and 2383 may be used.

Alternate lifting devices meeting the approval of the Engineer may be substituted for the lifting slots shown.

The #15 (#5) bar may be omitted if two continuous wire ropes are substituted for the four wire rope loops shown. The continuous ropes shall be looped and fastened on each end as shown in the WIRE ROPE LOOP DETAIL.

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

Illinois Department of Transportation

PASSED January 1. 1998
ENGINEER OF POLICY AND PROCEDURES

APPROVED January 1. 1998
ENGINEER OF DESIGN AND ENVIRONMENT

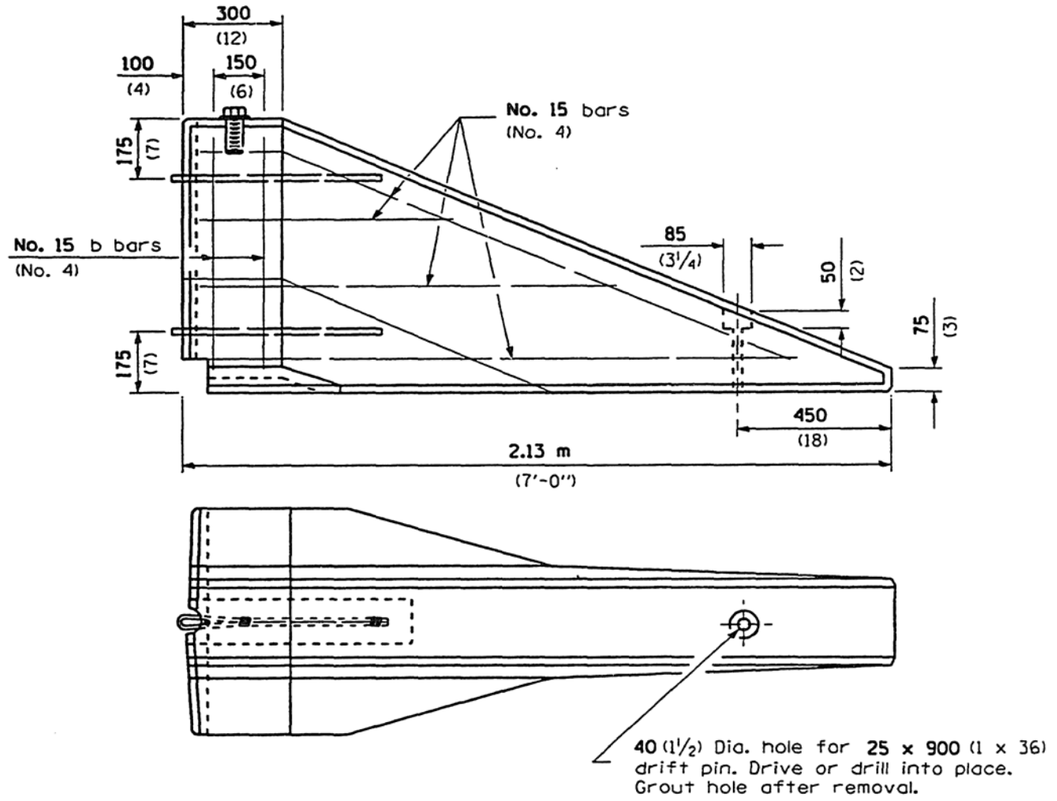
ISSUED 01-1-98

DATE	REVISIONS
1-1-98	Renum. Standard 705001.
	Added block out.
1-1-97	Renum. Standard 2383-4.
	Deleted DN Symbol.
	Rev. hole dia. in PLAN.

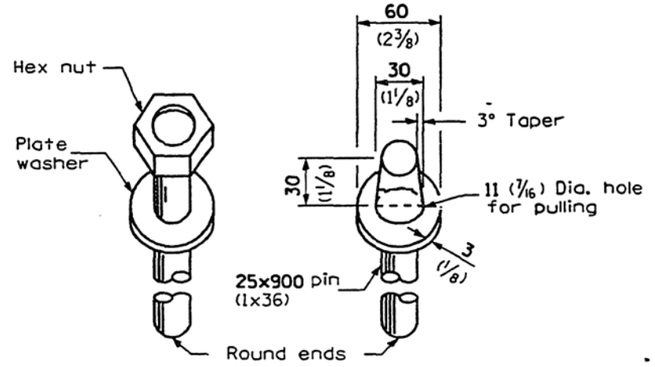
TEMPORARY CONCRETE BARRIER

(Sheet 1 of 2)

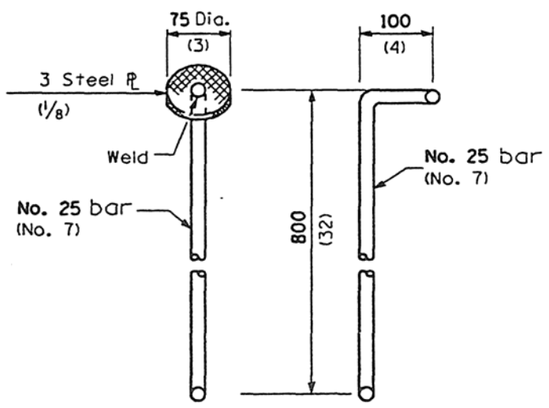
STANDARD 704001



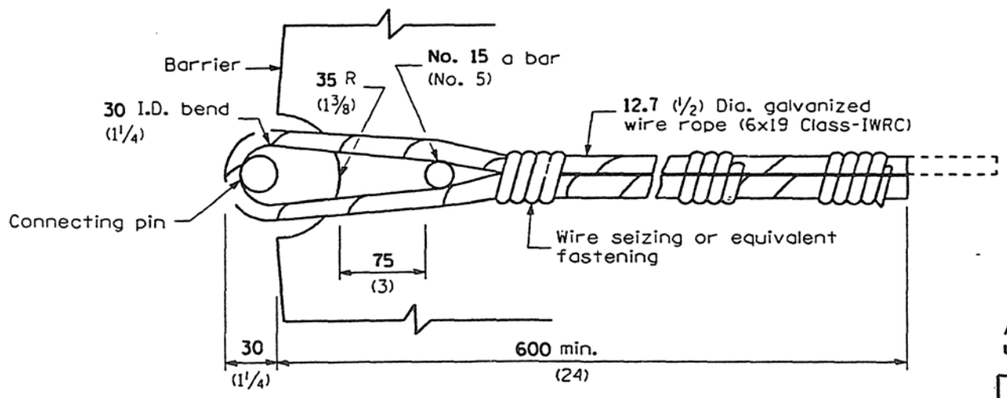
TERMINAL SECTION



ALTERNATE DRIFT PINS



ALTERNATE CONNECTING PINS



WIRE ROPE LOOP DETAIL

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

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

Illinois Department of Transportation

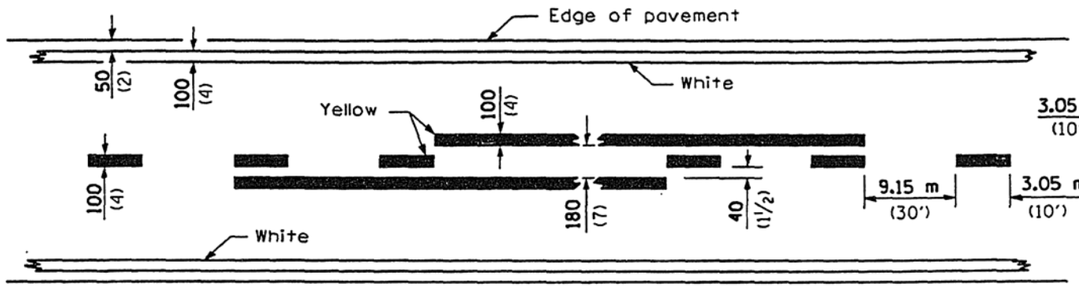
PASSED January 1. 1998
ENGINEER OF POLICY AND PROCEDURES
APPROVED January 1. 1998
ENGINEER OF DESIGN AND ENVIRONMENT

ISSUED 1-1-98

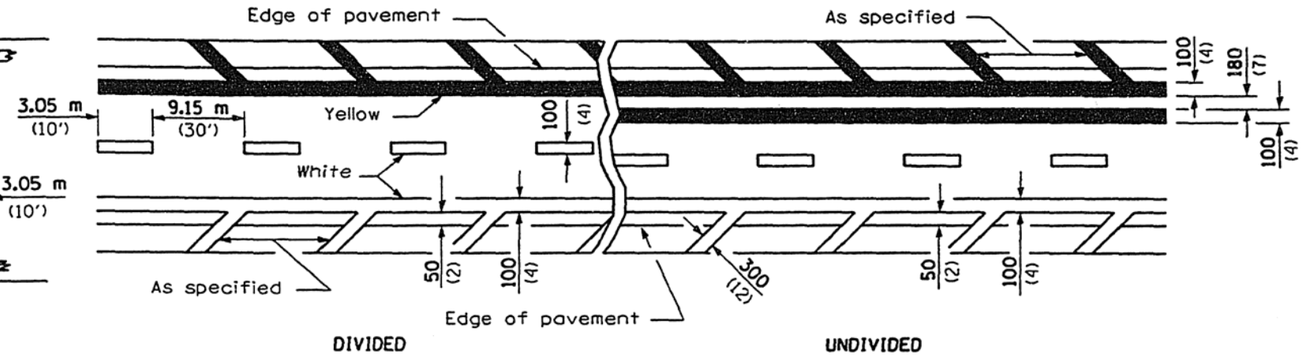
TEMPORARY CONCRETE BARRIER

(Sheet 2 of 2)

STANDARD 704001

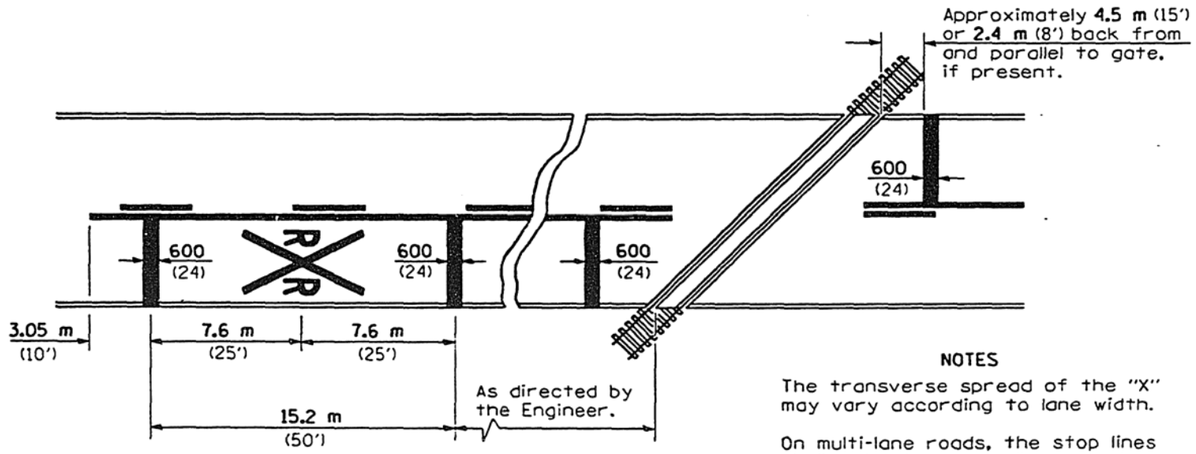


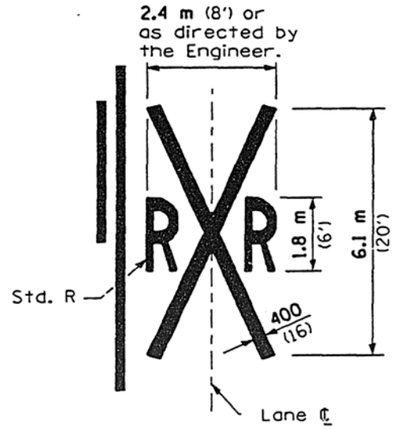
2 LANE



MULTI LANE

LANE AND EDGE LINES





NOTES

The transverse spread of the "X" may vary according to lane width.

On multi-lane roads, the stop lines shall extend across all approach lanes and separate RXR symbols shall be placed adjacent to each other in each lane.

When the pavement marking symbol is used, a portion of the symbol should be located directly adjacent to the Advance Warning Sign (W10-1) as placed by Table II-1, condition B of the MUTCD.

PAVEMENT MARKINGS AT RAILROAD-HIGHWAY GRADE CROSSING

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

Illinois Department of Transportation

APPROVED January 1. 1999
ENGINEER OF OPERATIONS

APPROVED January 1. 1999
ENGINEER OF DESIGN AND ENVIRONMENT

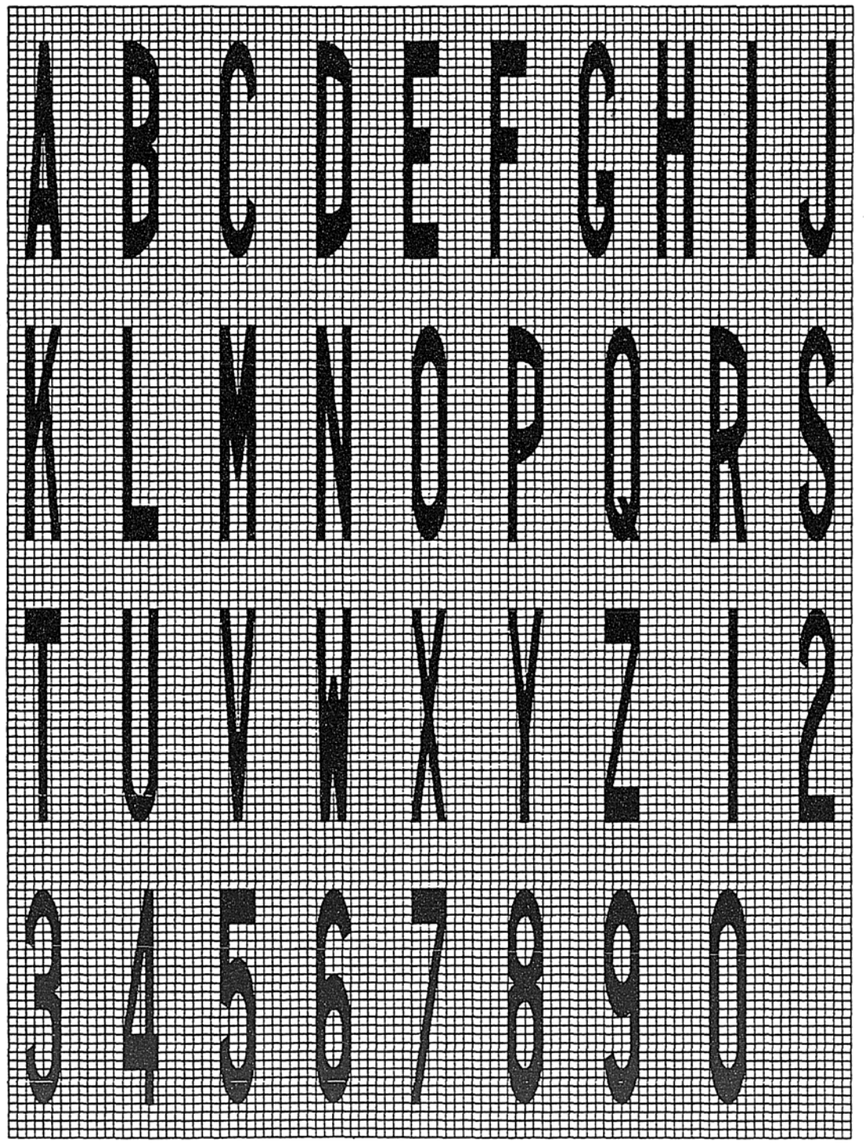
ISSUED 1-1-97

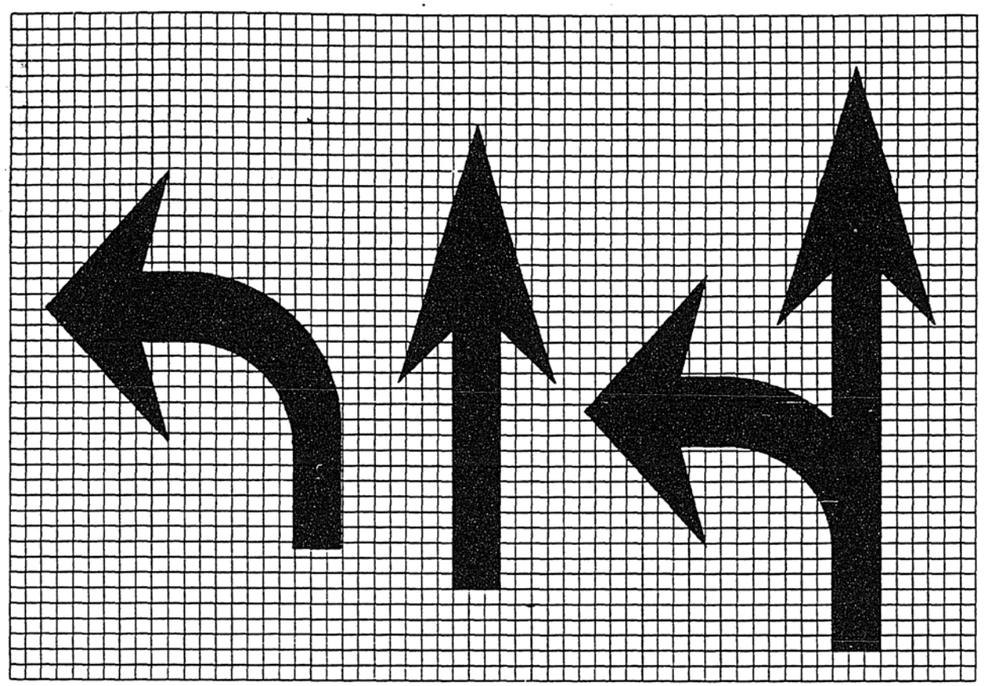
DATE	REVISIONS
1-1-99	Rev. dimen. & added 3rd
	note to pav't markings
	@ RR-Hwy grade Xing.
1-1-97	Renum. Standard 2396-1.
	Revised metric values.

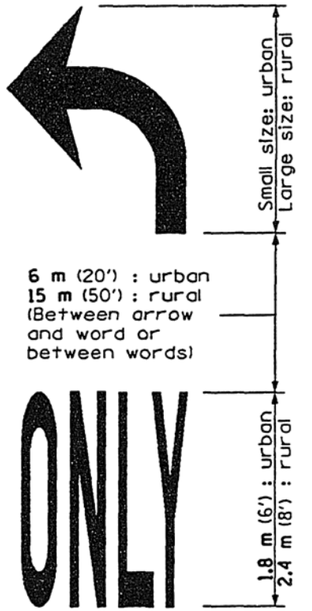
TYPICAL PAVEMENT MARKINGS

(Sheet 1 of 2)

STANDARD 780001-01





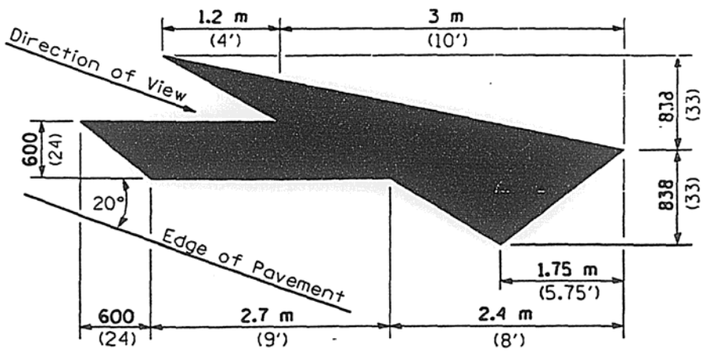


WORD AND ARROW LAYOUT

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

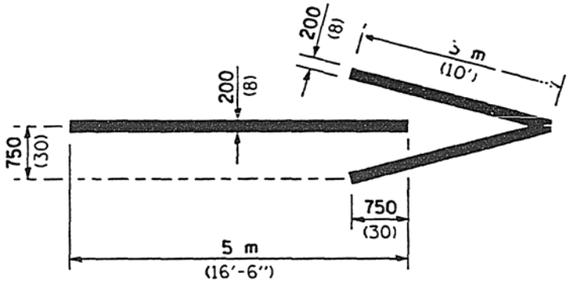
The space between adjacent letters or numerals should be approximately **75** (3) for **1.8 m** (6') legend and **100** (4') for **2.4 m** (8') legend.

LETTER AND ARROW GRID SCALE



LANE DROP ARROW

Right lane drop arrow shown.
Use mirrow image for left lane.



WRONG WAY ARROW

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

Illinois Department of Transportation

APPROVED January 1. 1999
ENGINEER OF OPERATIONS

APPROVED January 1. 1999
ENGINEER OF DESIGN AND ENVIRONMENT

ISSUED 98-1-1

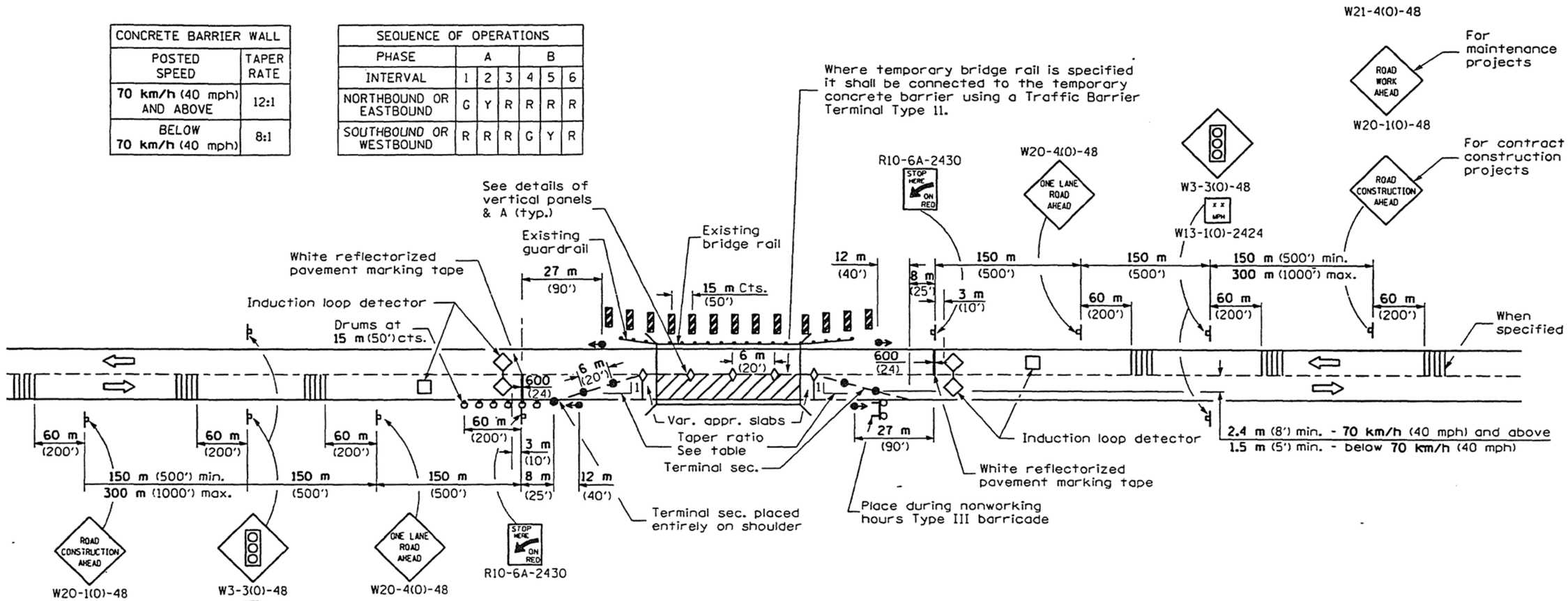
TYPICAL PAVEMENT MARKINGS

(Sheet 2 of 2)

STANDARD 780001-01

CONCRETE BARRIER WALL	
POSTED SPEED	TAPER RATE
70 km/h (40 mph) AND ABOVE	12:1
BELOW **70 km/h** (40 mph)	8:1

SEQUENCE OF OPERATIONS						
PHASE	A			B		
INTERVAL	1	2	3	4	5	6
NORTHBOUND OR EASTBOUND	G	Y	R	R	R	R
SOUTHBOUND OR WESTBOUND	R	R	R	G	Y	R



SYMBOLS

- Work area
- Sign
- Drum with steady burning light
- Type III barricade with flashing lights
- Traffic signal
- Temporary rumble strip (when specified)
- Induction loop detector
- Double vertical panel
- Type C Bidirectional reflector
- Temporary concrete barrier
- Sand module impact attenuator
- Steady burning lights and double vertical panels

GENERAL NOTES

This Standard is used where, at any time any vehicle, equipment, workers, or their activities will encroach on one lane of a bridge, traffic signals, and a positive barrier are required.

If flaggers are used instead of traffic signals, the traffic control devices shall conform to Standard 701201 or 701206.

Temporary concrete barrier shall be placed according to Standard 704001.

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

Illinois Department of Transportation

APPROVED January 1, 1999
ENGINEER OF OPERATIONS

APPROVED January 1, 1999
ENGINEER OF DESIGN AND ENVIRONMENT

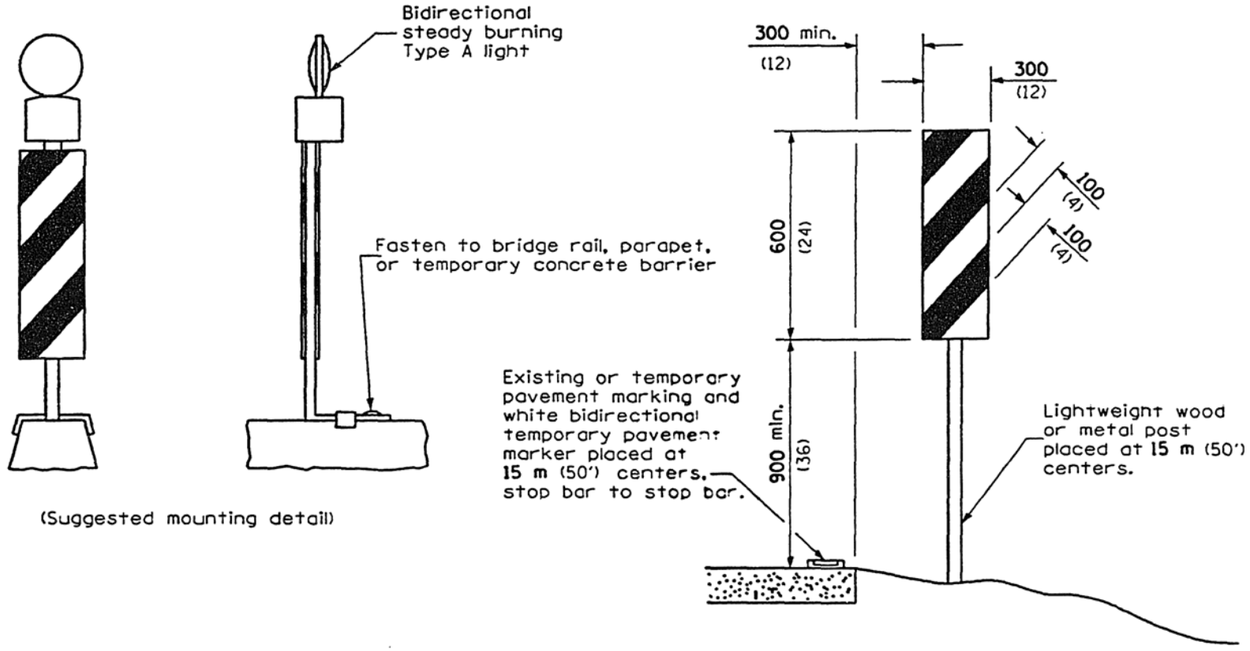
ISSUED 1-1-99

DATE	REVISIONS
1-1-99	Rev. Type III barr. symb.
	remvd. dbl. panels on
	tan., added 6 m spacing.
1-1-98	Clarified dimen. between
	rt. loop det. & traf. sig.
	Rev. 3rd GEN. NOTE.

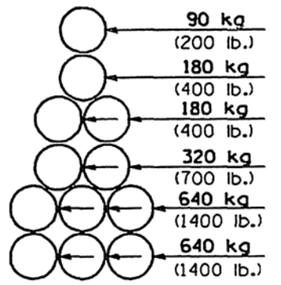
LANE CLOSURE 2L, 2W BRIDGE REPAIR WITH BARRIER

(Sheet 1 of 2)

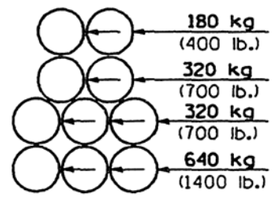
STANDARD 701321-02



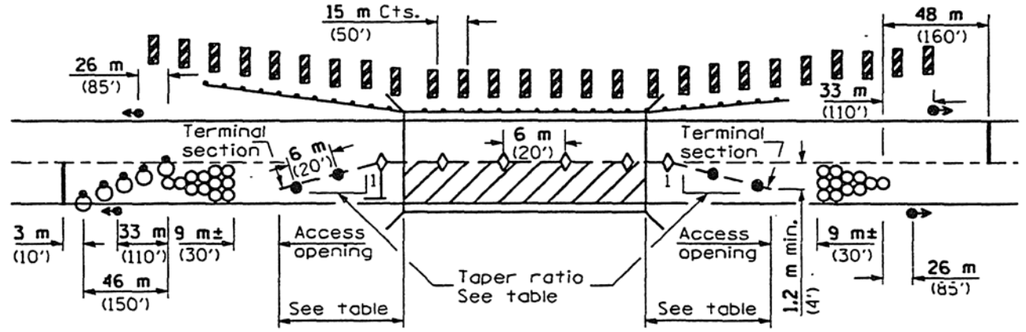
PAVEMENT MARKERS AND VERTICAL PANELS



POSTED SPEED **70 km/h** (40 mph) OR MORE



POSTED SPEED LESS THAN **70 km/h** (40 mph)



NOTES

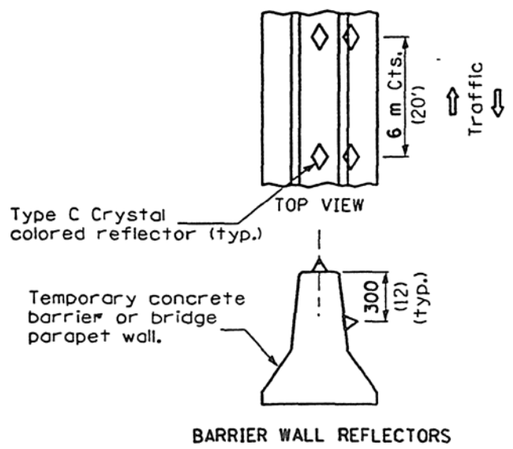
The Contractor may use the details shown on this sheet for either or both approaches in lieu of details shown on sheet 1 of this Standard where greater access to the work are is needed.

The impact attenuators may be placed directly on the pavement or on pallets or skids. (Max pallet/skid height 60 (2¼))

The impact attenuators shall be striped in accordance with the requirements for drums in Standard 702001.

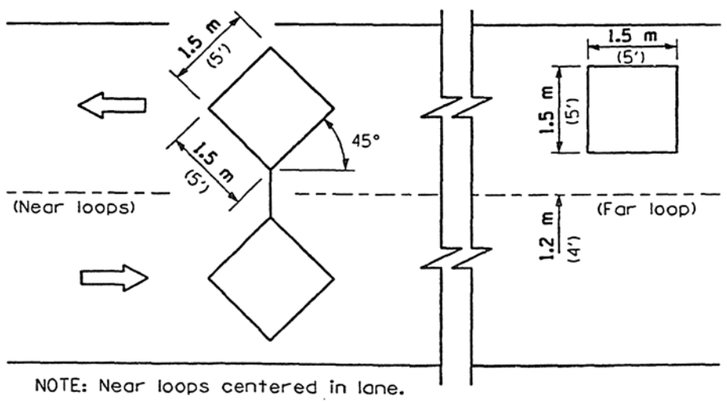
A minimum of 3 barricades or drums with bidirectional steady burning lights delineating the closed lane shall be placed in the access opening during nonworking hours.

SAND MODULE IMPACT ATTENUATOR CONFIGURATION



BARRIER WALL REFLECTORS

DETAIL A



NOTE: Near loops centered in lane.

INDUCTION LOOP DETECTOR (TYPICAL)

(See traffic control plan for placement)

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

Illinois Department of Transportation

APPROVED January 1. 1999
ENGINEER OF OPERATIONS

APPROVED January 1. 1999
ENGINEER OF DESIGN AND ENVIRONMENT

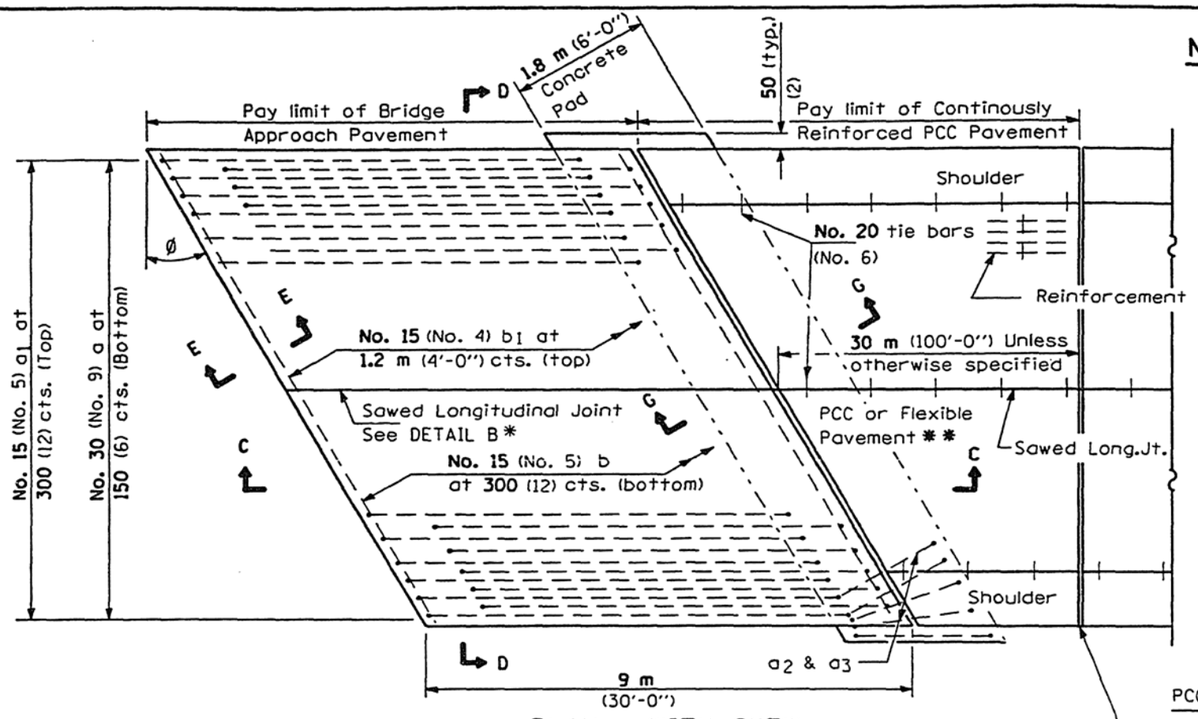
ISSUED 1-1-97

LANE CLOSURE 2L, 2W
BRIDGE REPAIR WITH BARRIER

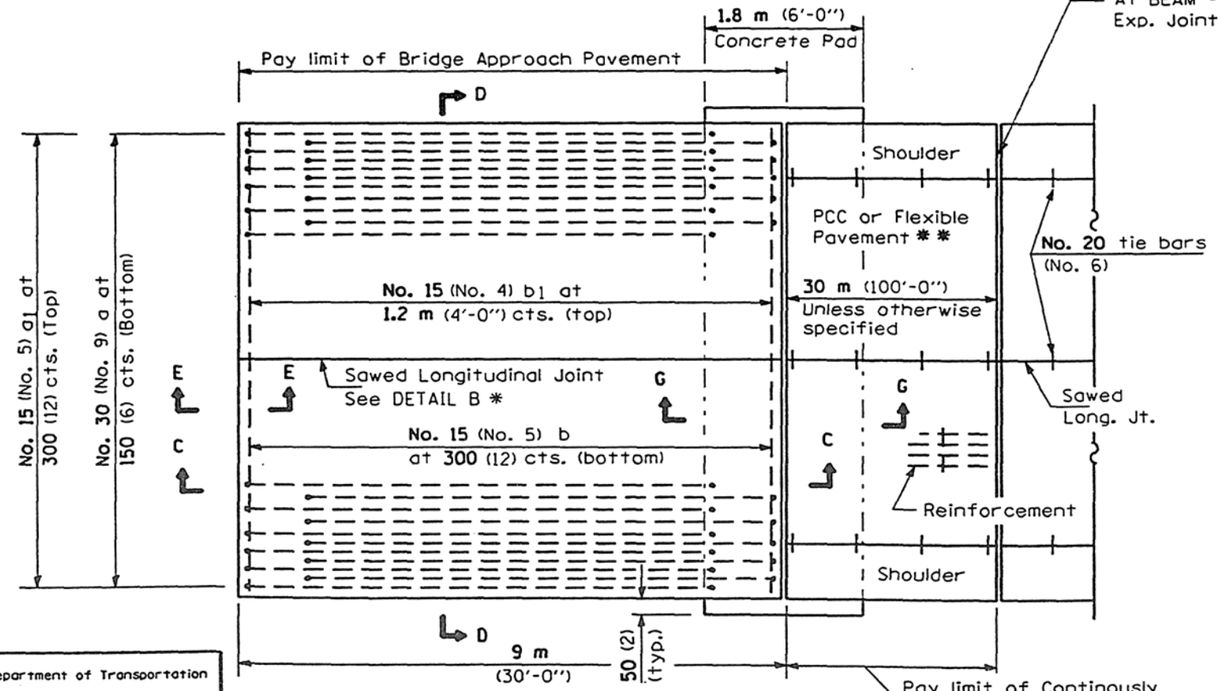
(Sheet 2 of 2)

STANDARD 701321-02

NEW CONSTRUCTION



PLAN - WITH SKEW

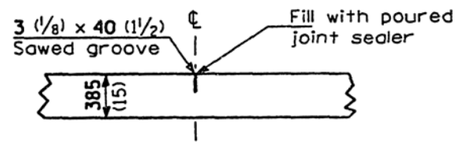


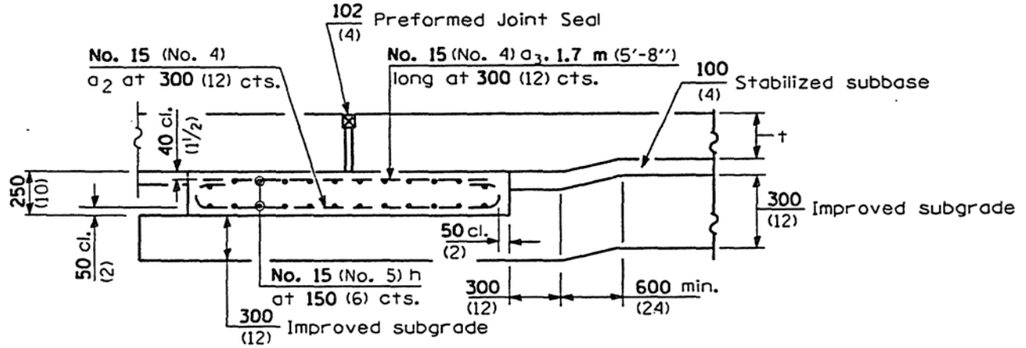
PLAN - WITHOUT SKEW

* Saw ℄ or lane edge if poured two or more lane widths at a time.

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

DETAIL B *



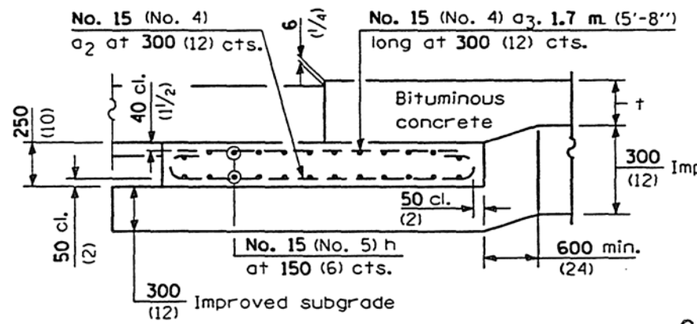


SECTION G-G - RIGID PAVEMENT

(Showing reinforcement)

PCC Pavement only:

Wide Flange Beam Terminal Joint (See DETAIL AT BEAM - Standard 421101 or 421106) or 75 (3) Exp. Joint as detailed on Standard 420001.



SECTION G-G - FLEXIBLE PAVEMENT

(Showing reinforcement)

GENERAL NOTES

THICKNESS-"t"=Thickness of Pavement.

See Standard 421001 for reinforcement details not shown.

See Standard 420001 for details of joints not shown.

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

Illinois Department of Transportation

APPROVED January 1, 1998
Ralph E. Anderson
ENGINEER OF BRIDGES AND STRUCTURES

APPROVED January 1, 1998
Bill Sunley
ENGINEER OF DESIGN AND ENVIRONMENT

ISSUED 1-1-97

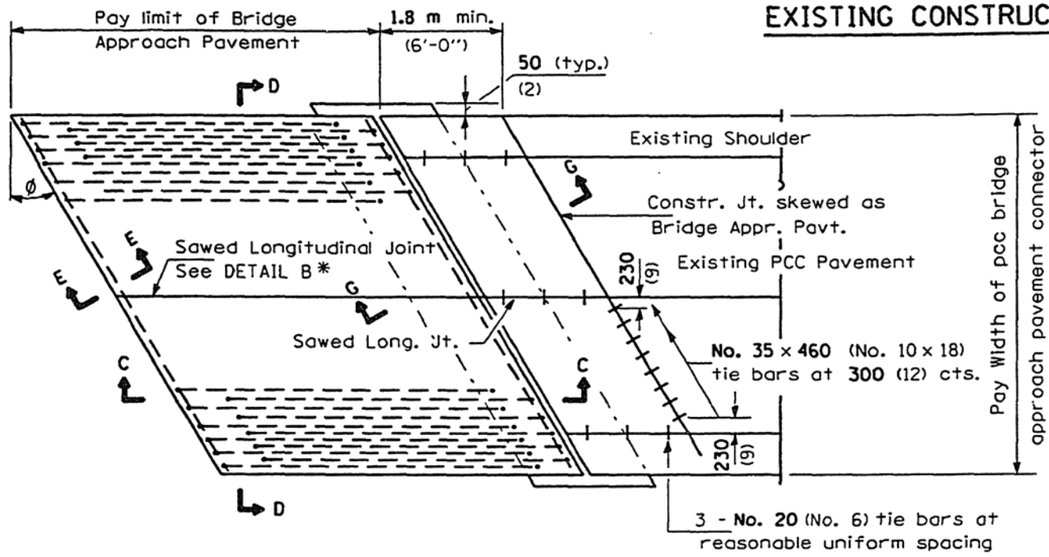
DATE	REVISIONS
1-1-98	Rev. ref. to Std 2443 to 609006. Added "(top)" & "(bottom)" to pg. 1
1-1-97	Renum. Standard 2442-4.

BRIDGE APPROACH PAVEMENT

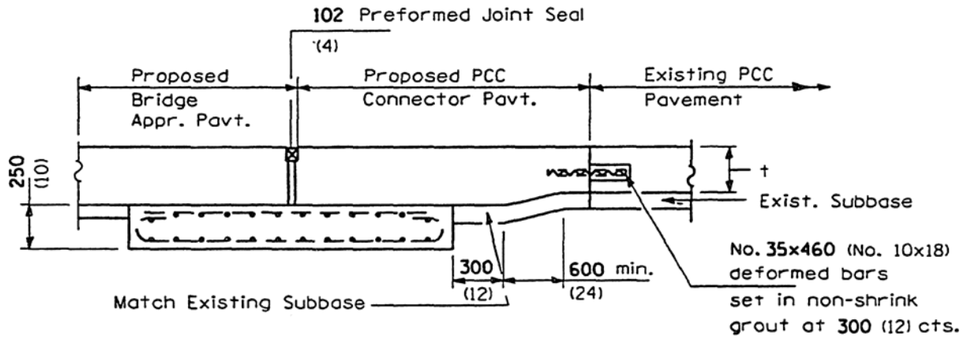
(Sheet 1 of 3)

STANDARD 420401-01

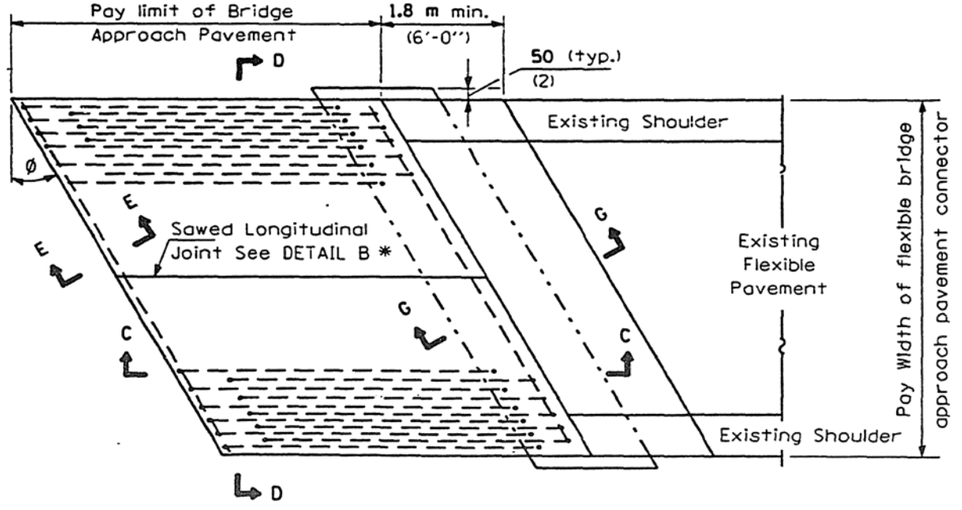
EXISTING CONSTRUCTION



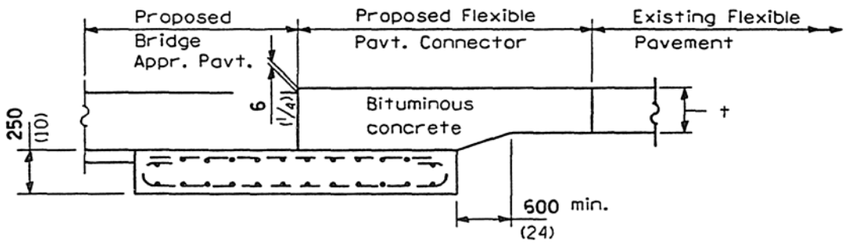
BRIDGE APPROACH PAVEMENT CONNECTOR (PCC)



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 January 1. 1998
Ralph E. Anderson
ENGINEER OF BRIDGES AND STRUCTURES

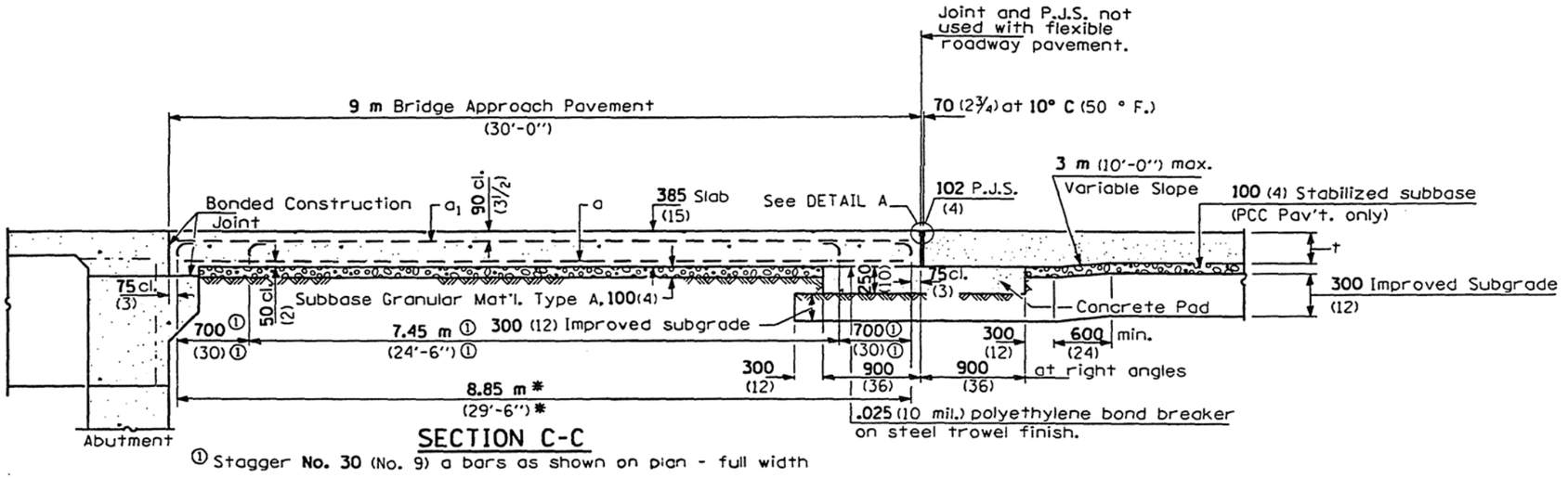
APPROVED January 1. 1998
Bill Sunley
ENGINEER OF DESIGN AND ENVIRONMENT

ISSUED 1-1-97

BRIDGE APPROACH PAVEMENT

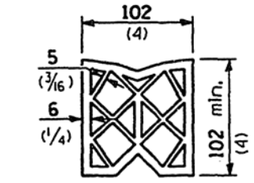
(Sheet 2 of 3)

STANDARD 420401-01

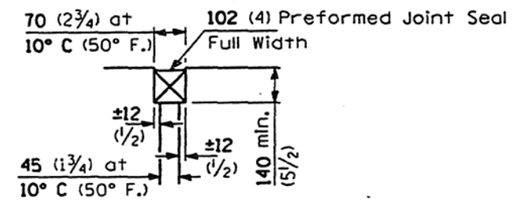


SECTION C-C

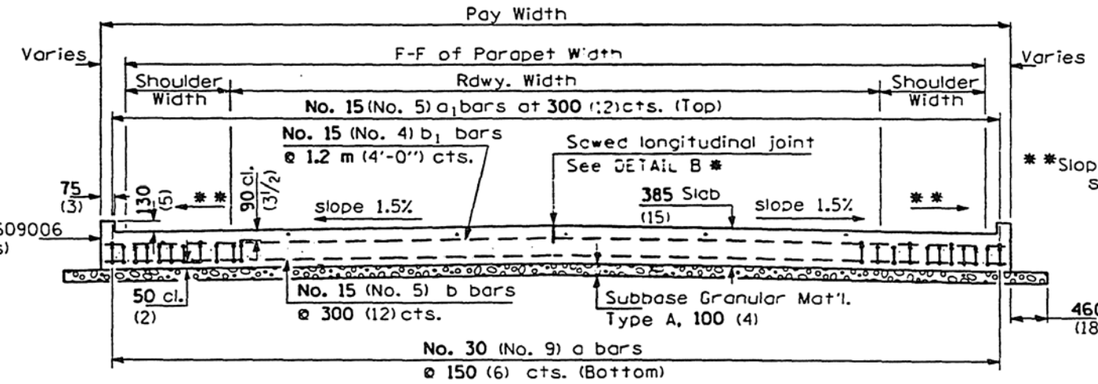
① Stagger **No. 30** (No. 9) a bars as shown on plan - full width



PREFORMED JOINT SEAL



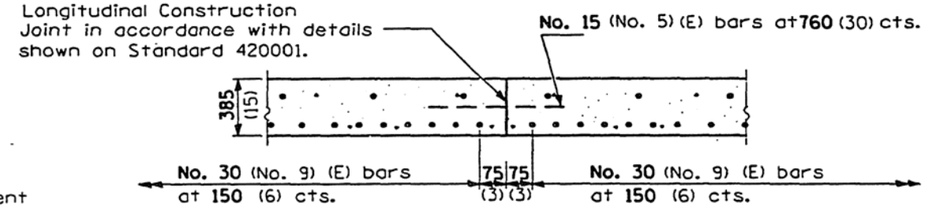
DETAIL A



** Slope same as adjacent shoulder slope.

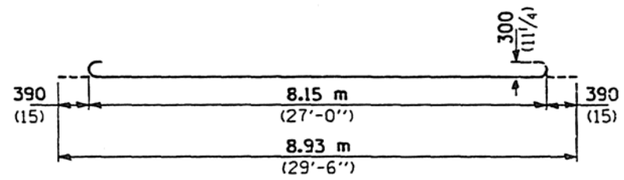
SECTION D-D

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

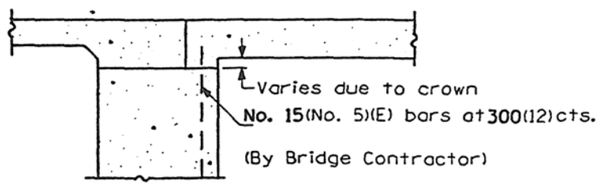


OPTIONAL LONGITUDINAL CONSTRUCTION JOINT

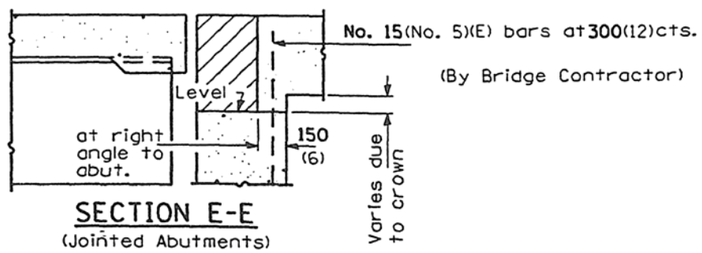
As approved by the Engineer, the Contractor may elect to reduce the widths of pour by use of the Optional Longitudinal Construction Joint shown. Joints shall be located at the edge of a traffic lane.



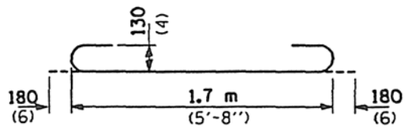
No. 30 a BARS (No. 9)



SECTION E-E (Integral Abutments)



SECTION E-E (Jointed Abutments)



BAR a_2

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

DESIGN STRESSES

fy = 400 MPa (60,000 p.s.i.)
f'c = 24 MPa (3,500 p.s.i.)
n = 8.5

Illinois Department of Transportation

APPROVED January 1, 1998
Ralph E. Anderson
ENGINEER OF BRIDGES AND STRUCTURES

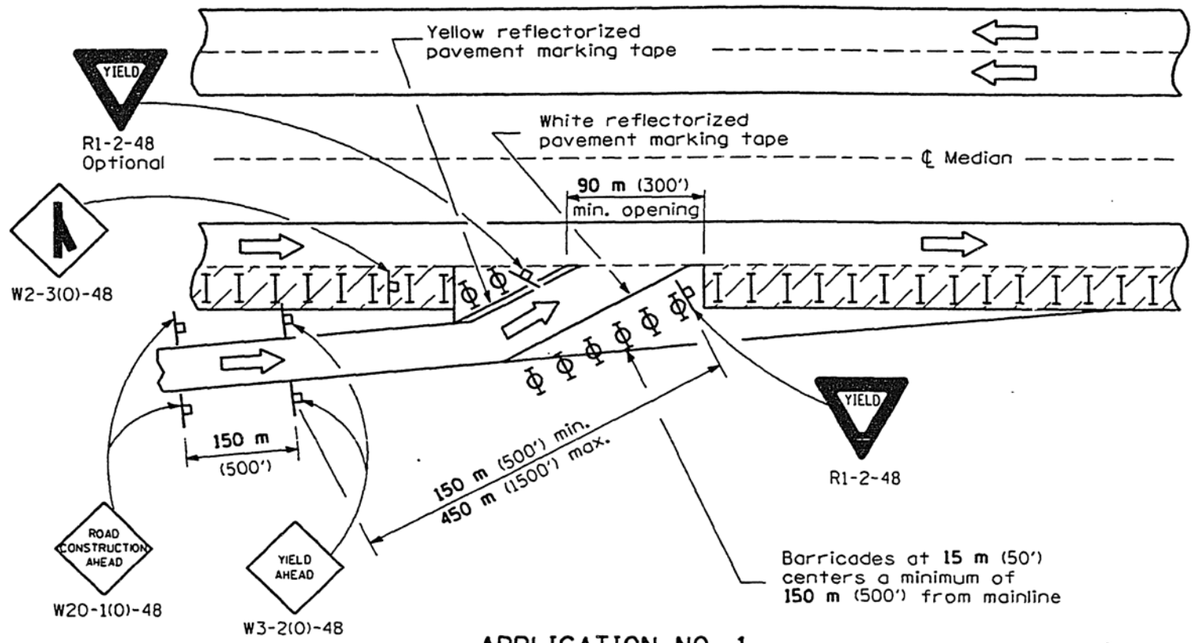
APPROVED January 1, 1998
Bill Sumlin
ENGINEER OF DESIGN AND ENVIRONMENT

ISSUED 1-1-97

BRIDGE APPROACH PAVEMENT

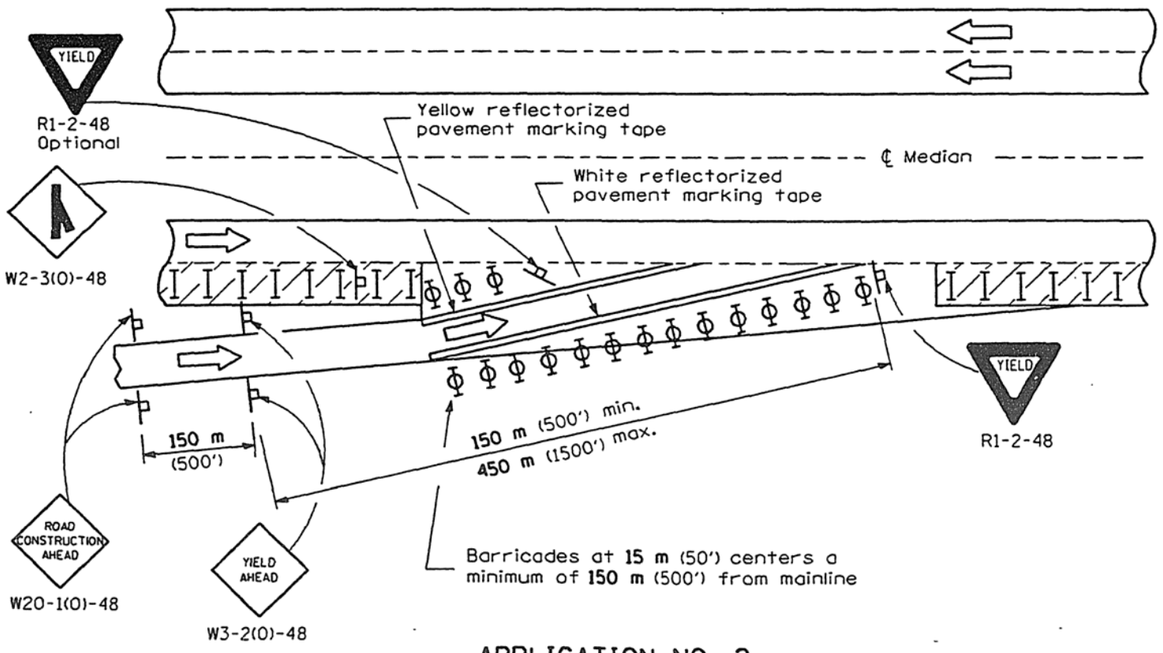
(Sheet 3 of 3)

STANDARD 420401-01



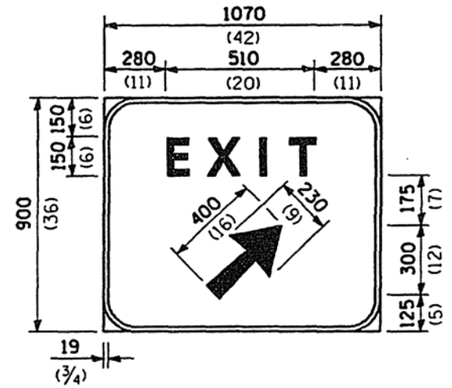
APPLICATION NO. 1

Application No. 1 depicts a modified entrance ramp. This method shall be utilized whenever existing entrance tapers cannot be retained due to the close proximity of the work zone. The entrance location may be shifted, with the approval of the Engineer, to perform work in the entrance area. Application No. 2 shall be put into effect as soon as possible.



APPLICATION NO. 2

Application No. 2 depicts a shortening of the normal entrance ramp. This method shall be used whenever the existing geometric scan be retained. Consideration should be given to the entering motorists' line of sight, through, between, or over the delineation devices.



Background - Green
Border and legend - White
"D" size letters

EXIT SIGN - SPECIAL

DETAIL A

(To be utilized where distance between the two rows of channelizing devices is 1.8 m (6') in width.)

SYMBOLS

- Work area
- Sign
- Barricade, or drum with steady burning monodirectional light
- Barricade or drums
- Drums with steady burning monodirectional light

GENERAL NOTES

This Standard is used where, at any time any vehicle, equipment, workers or their activities require a lane closure in close proximity of an exit or entrance ramp and supplements other traffic control Standards for lane closures.

These applications also apply when work is being performed in the left lanes and the ramps enter and exit on the left. Under these conditions, the Exit sign arrow and the Side road symbol sign shall be changed.

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

Illinois Department of Transportation

APPROVED January 1, 1999
ENGINEER OF OPERATIONS

APPROVED January 1, 1999
ENGINEER OF DESIGN AND ENVIRONMENT

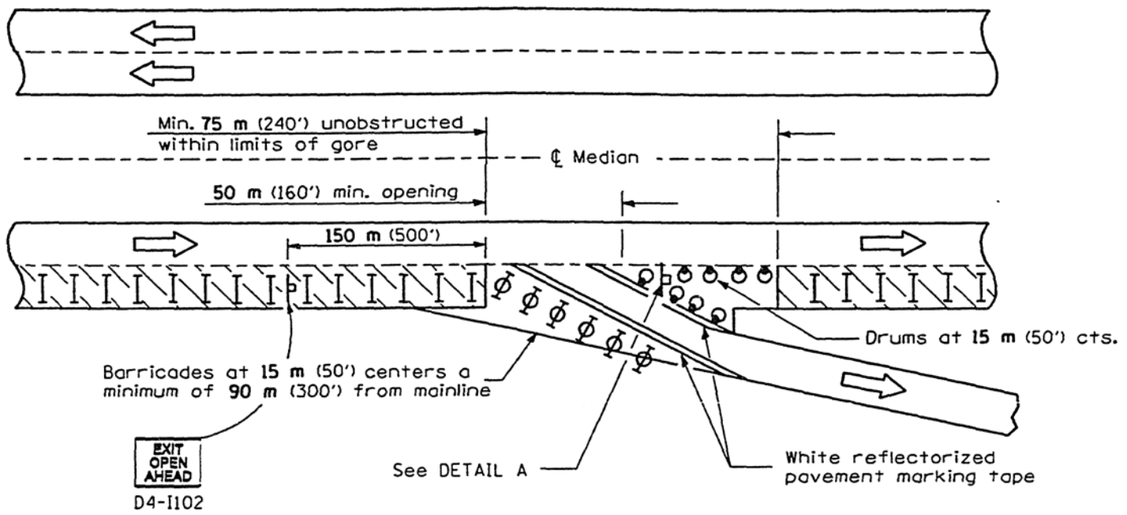
ISSUED 1-1-97

DATE	REVISIONS
1-1-99	Revised barricade, or
	drum symbols, added exit
	sign.
1-1-97	Renum. Standard 2419-2.
	Deleted orange flags.
	Added optn. YIELD sign.

LANE CLOSURE MULTILANE AT ENTRANCE OR EXIT RAMP FOR SPEEDS ≥ 45 MPH

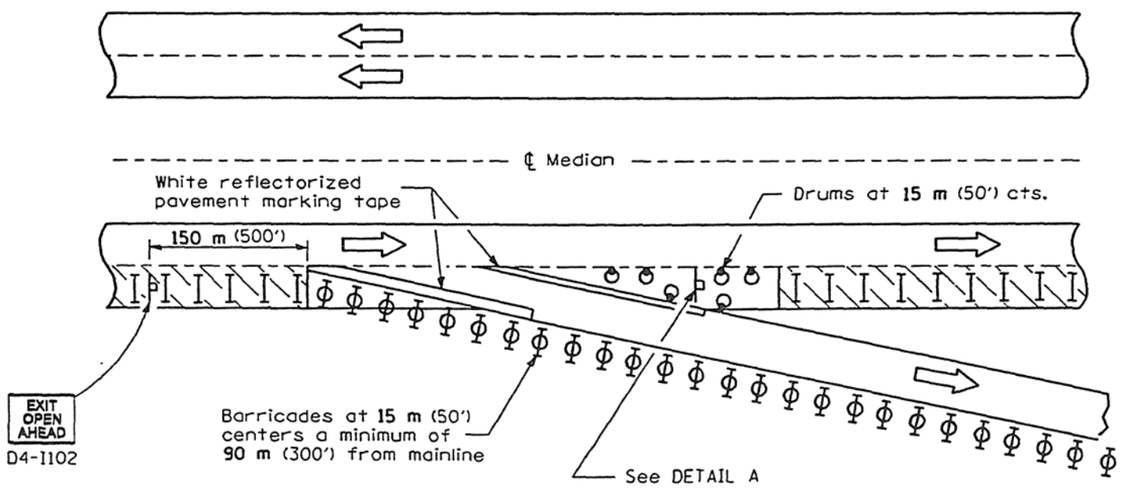
(Sheet 1 of 2)

STANDARD 701411-01



APPLICATION NO. 3

Application No. 3 depicts a modified exit ramp. The channelizing devices shall provide a clearly defined path for the exiting motorists. The minimum dimensions shown shall be increased as soon as the progress of the work will permit. The open portion of the ramp may be shifted, with the approval of the Engineer, to perform work in stages on the area adjacent to the ramp exit. Application No. 4 shall be put into effect as soon as possible.



APPLICATION NO. 4

Application No. 4 depicts an extension of the normal exit ramp. This method shall be used whenever existing geometrics can be retained. Consideration should be given to the exiting motorist's line of sight through, between or over the delineation devices.

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

Illinois Department of Transportation

APPROVED January 1, 1999
ENGINEER OF OPERATIONS

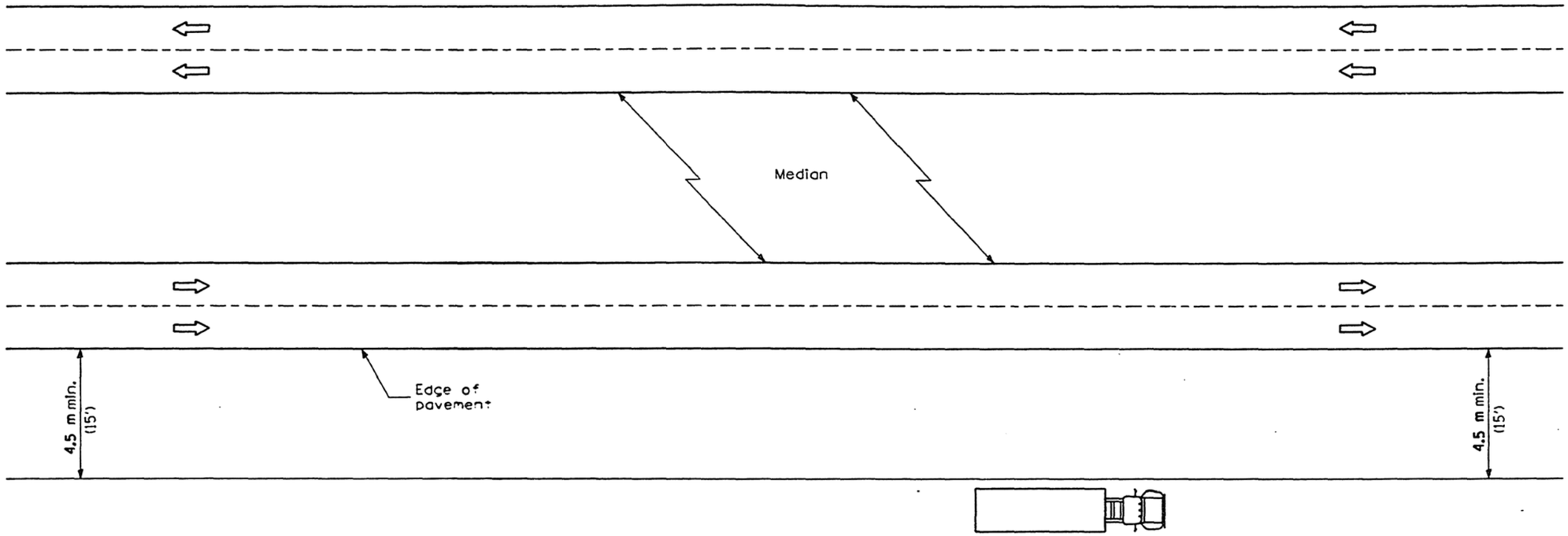
APPROVED January 1, 1999
ENGINEER OF DESIGN AND ENVIRONMENT

ISSUED 1-1-97

LANE CLOSURE MULTILANE AT ENTRANCE OR EXIT RAMP FOR SPEEDS ≥ 45 MPH

(Sheet 2 of 2)

STANDARD 701411-01



TYPICAL APPLICATIONS

Landscaping work
Utility work
Fencing contracts

GENERAL NOTES

This Standard is used where at all times all vehicles, equipment, workers or their activities are more than 4.5 m (15') from the edge of pavement.

If the work operation requires that two or more work vehicles cross the 4.5 m (15') clear zone in any one hour, traffic control will be in conformance with Standard 701101.

This Standard also applies to work performed in the median more than 4.5 m (15') from either pavement.

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

Illinois Department of Transportation

APPROVED January 1, 1997
ENGINEER OF OPERATIONS

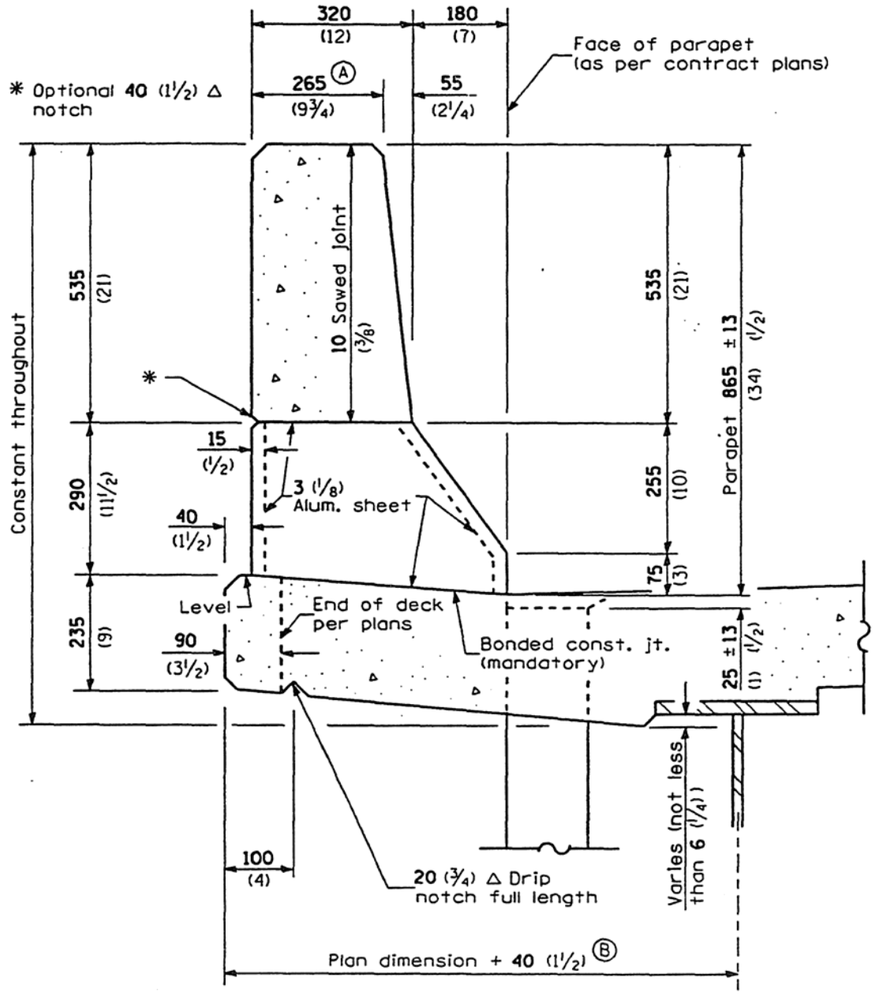
APPROVED January 1, 1997
ENGINEER OF DESIGN AND ENVIRONMENT

ISSUED 1-1-97

DATE	REVISIONS
1-1-97	Renum. Standard 2313-6.
2-1-95	Revised title.
	Deleted G.N. #1.
	Added metric.

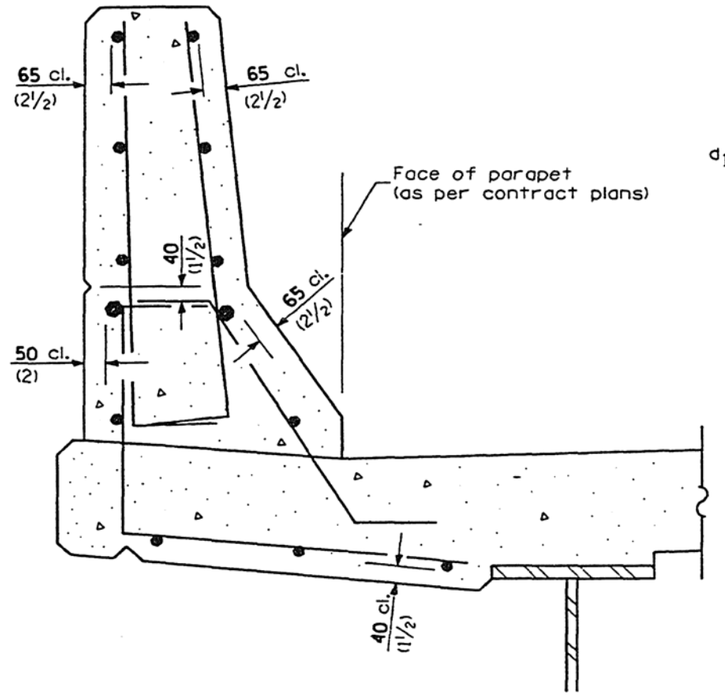
OFF-RD OPERATIONS, MULTILANE MORE THAN 4.5 m (15') AWAY FOR SPEEDS ≥ 45 MPH

STANDARD 701106



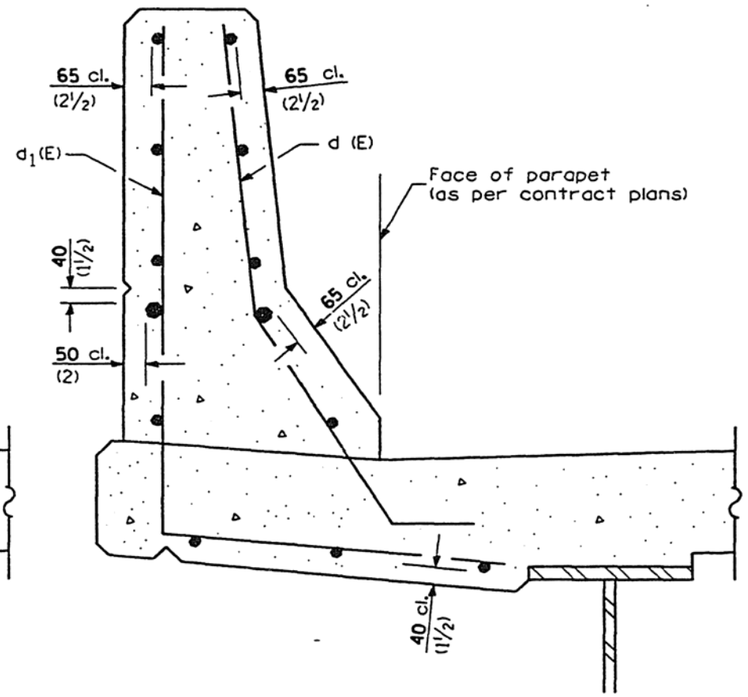
SECTION

(Showing dimensions)



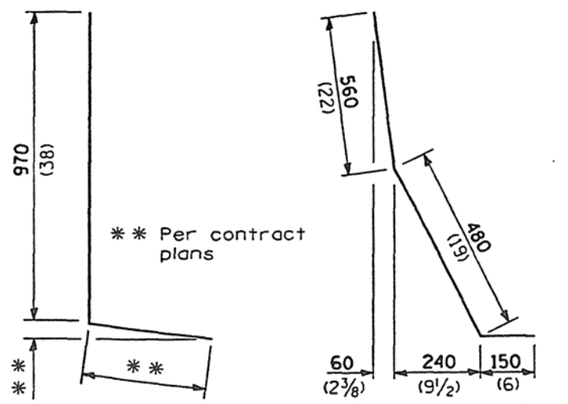
SECTION

(Showing contract reinforcement)



SECTION

(Showing alternate reinforcement)



BAR d1(E) **BAR d (E)**

(Alternate reinforcement details)

GENERAL NOTES

All bars sizes, spacings, clearances and details are as per contract plans except for clearances in parapet.

All dimensions shall remain the same as shown on contract plans, except dimensions A and B which are to be revised as shown to allow for the 65 mm (2½") bar clearance. Additional concrete needed to revise dimension A and B = 0.0480 m3/m (.0165 cu. yds./ft.) of parapet.

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

Illinois Department of Transportation

APPROVED January 1, 1997
Ralph E. Anderson
ENGINEER OF BRIDGES AND STRUCTURES

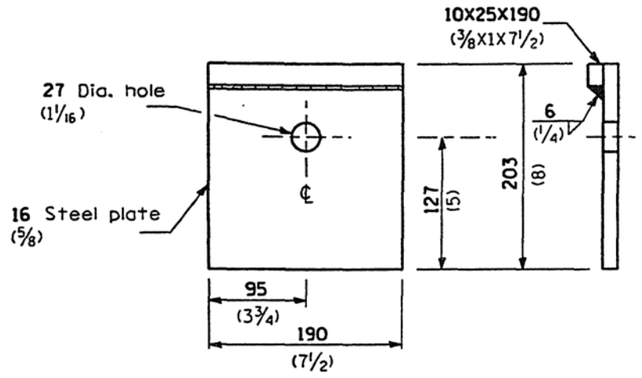
APPROVED January 1, 1997
Gary Gould
ENGINEER OF DESIGN AND ENVIRONMENT

ISSUED 1-1-97

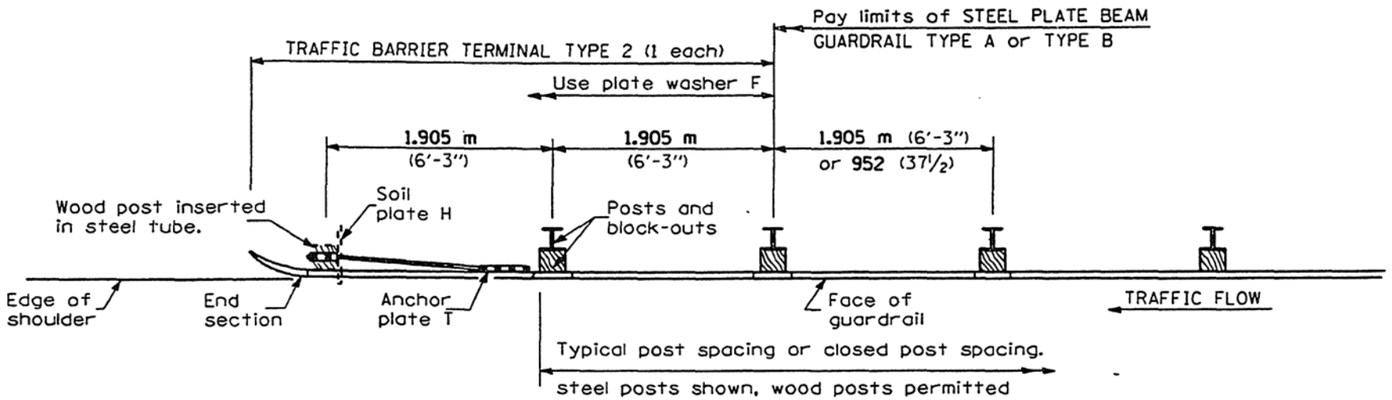
DATE	REVISIONS
1-1-97	Renum. Standard 2452.
	Deleted DN Symbol.
11-1-94	New Standard.

CONCRETE PARAPET SLIP-FORMING OPTION

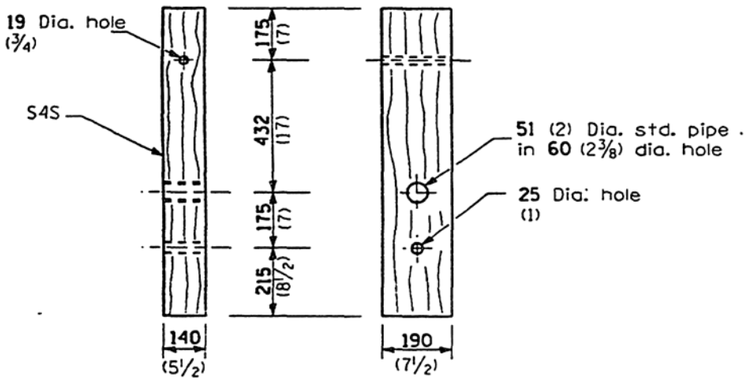
STANDARD 503001



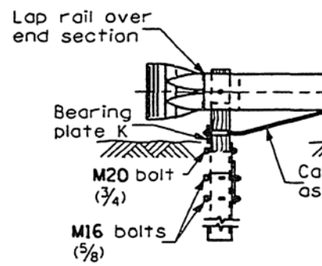
BEARING PLATE K



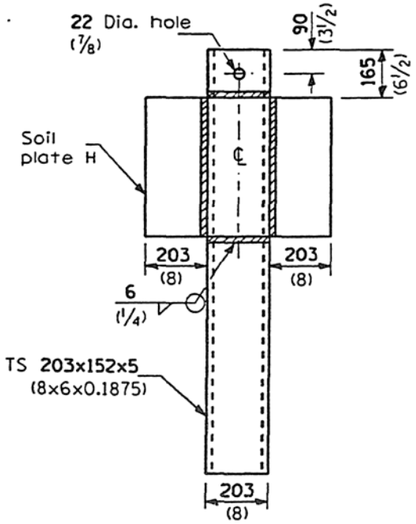
PLAN



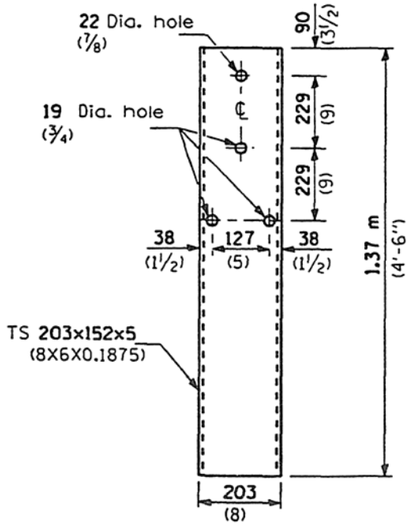
WOOD POST



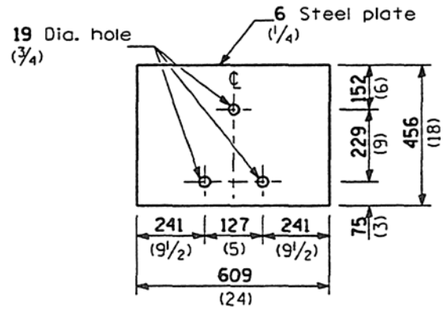
ELEVATION



ALTERNATE SOIL PLATE CONNECTION



STEEL TUBE



SOIL PLATE H

GENERAL NOTES

See Standard 630001 for details of guardrail not shown.

Use plate washer F at all posts.

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

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

Illinois Department of Transportation

PASSED October 1, 1998
Charles Kallfelz
ENGINEER OF POLICY AND PROCEDURES
APPROVED October 1, 1998
Bill Dunkley
ENGINEER OF DESIGN AND ENVIRONMENT

ISSUED 1-1-97

DATE	REVISIONS
10-1-98	Revised to wooden block-out.
1-1-97	Renum. Standard 2337-3. Deleted DN Symbol.

TRAFFIC BARRIER TERMINAL TYPE 2

STANDARD 631011-01