

UPDATE DATE
11-16-84
LETTING DATE

PLANS PREPARED BY
LYNCH MAINTENANCE
DESIGN SECTION

DEPARTMENT OF TRANSPORTATION
BUREAU OF HIGHWAYS

CLINTON COUNTY
CANNONS MILL ROAD
KY. 415 OVER SMITH CREEK

REFERENCE AND ESTIMATE OF QUANTITIES										
ITEM	SHEET NO.	CONCRETE CLASS "A" C.Y.	STEEL REINFORCEMENT LBS.	STRUCTURE EXCAV. COMMON C.Y.	STRUCTURE EXCAV. SOLID ROCK C.Y.	PRECAST P.C. BOX BEAM B 42 x 48 L.F.	GUARDRAIL STEEL "W" BEAM SING. FACE BR. L.F.	CYCLOPEAN STONE RIP RAP TONS	SELECT GRANULAR BACKFILL C.Y.	CONCRETE CLASS "AA" C.Y.
TITLE SHEET	1									
GENERAL NOTE	2									
LAYOUT	2									
SOUNDINGS	3 & 4									
SUBSTRUCTURE										
ABUTMENT 1	A 400	73.9	8302	167	11			10	220	
ABUTMENT 2	A 400	73.9	8302	137	20			10	220	
SUBSTRUCTURE TOTALS		147.8	16604	304	31			20	440	
SUPERSTRUCTURE										
PPC BOX BEAMS	6-17					511.0	146			13.4
SUPERSTRUCTURE TOTALS										
BRIDGE TOTALS		147.8	16604	304	31	511.0	146	20	440	13.4

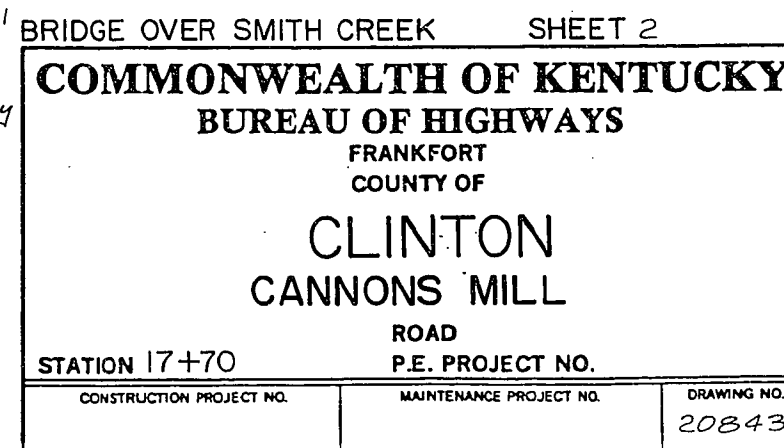
BILL OF INCIDENTAL MATERIAL			
ITEM	NO.	SIZE	LOCATION
PREF. CORK	2	1/4"x1'-6"x39'-3"	ABUTMENTS
PREF. CORK	4	1/2"x1'-6"x3'-6"	ABUTMENTS

REFERENCES LISTED BELOW ARE THE CURRENT EDITION AND ARE TO BE USED WITH THESE PLANS

STANDARD DRAWINGS

A-400, RBR-001-05, RBR-005-05, BGX-006-03, BBP-001-05, RBR-015-01, BHS-005-03, BHS-006-03
SPECIAL NOTES FOR NON-SHRINK GROUT

BRIDGE OVER SMITH CREEK		SHEET 1 OF 17
COMMONWEALTH OF KENTUCKY BUREAU OF HIGHWAYS FRANKFORT COUNTY OF CLINTON CANNONS MILL ROAD FSP 027 0415 006-007 002 D		
STATION 17+70		P. E. PROJECT NO.
CONSTRUCTION PROJECT NO. BRZ 0803 (59)	MAINTENANCE PROJECT NO.	DRAWING NO. 20843



SPECIFICATIONS

THE KENTUCKY BUREAU OF HIGHWAYS STANDARD SPECIFICATIONS FOR ROAD AND BRIDGE CONSTRUCTION, CURRENT EDITION WITH REVISIONS.

DESIGN LOAD

BEAM SECTIONS ARE DESIGNED FOR HS20-44 LOADING AS SPECIFIED IN 1977 AASHTO SPECIFICATIONS INCLUDING INTERIM SPECIFICATIONS.

MATERIALS DESIGN SPECIFICATIONS

FOR PRESTRESSED GIRDER CONCRETE	FOR PRESTRESSING REINFORCEMENT
F'C = 5,500 PSI	F'S = 270,000 PSI
F'CI = 4,400 PSI	
FOR CLASS "AA" CONCRETE	FOR STEEL REINFORCEMENT
F'C = 4,000 PSI	FY = 60,000 PSI

CONCRETE

CLASS "D" MODIFIED CONCRETE USING TYPE I OR TYPE III CEMENT SHALL BE USED IN ALL PRECAST BEAMS. CYLINDER STRENGTH SHALL BE 4,400 PSI BEFORE STRANDS ARE RELEASED.

DESIGN LENGTH

LENGTHS SHOWN IN THE TABLES ARE FOR TOTAL BEAM LENGTH. BEAMS ARE DESIGNED FOR SPANS FROM CENTERLINE OF BEARING TO CENTERLINE OF BEARING. USE THE NEXT GREATER DESIGNED SECTION FOR NON-STANDARD LENGTH.

LATERAL TENSIONING RODS

AFTER THE DECK UNITS ARE IN PLACE, AND PRIOR TO GROUTING ALL LONGITUDINAL SHEAR KEYS, THE LATERAL TENSIONING RODS SHALL BE GIVEN A PRELIMINARY TIGHTENING. FINAL TENSIONING SHALL BE 20,000 PSI AS DEVELOPED BY A TORQUE OF 200 FT.-LBS. LATERAL TENSIONING RODS SHALL CONFORM TO ASTM A36, CURRENT EDITION.

VOID DRAINS

ALL BEAMS 24 FOOT OR GREATER MUST HAVE VOID DRAINS OF A TYPE APPROVED BY THE DIVISION OF MATERIALS.

PREFORMED CORK EXPANSION JOINT MATERIAL

MATERIAL REQUIREMENTS SHALL BE IN ACCORDANCE WITH SUBSECTION 807.03.02 TYPE II. THE COST OF THE PREFORMED CORK EXPANSION JOINT MATERIAL SHALL BE INCLUDED IN THE PRICE PAID PER LINEAR FOOT OF BEAM.

METAL SHIMS

MULTIPLE SPAN BRIDGES MAY BE ALIGNED BY PLACING METAL SHIMS BETWEEN THE BEAMS.

JOINT SEALING

ALL TRANSVERSE JOINTS SHALL BE SEALED TO A DEPTH OF 1.5 INCHES FROM THE TOP OF BEAM WITH JOINT SEALER IN ACCORDANCE WITH SUBSECTION 807.02.01 OF THE SPECIFICATIONS.

ELASTOMERIC BEARING PADS

ELASTOMERIC BEARING PADS SHALL BE IN ACCORDANCE WITH THE REQUIREMENTS OF THE AASHTO STANDARD SPECIFICATIONS FOR HIGHWAY BRIDGES AS MODIFIED ON STANDARD DRAWING BBP-001, CURRENT EDITION. PAYMENT FOR THE COST OF ELASTOMERIC BEARING PADS IS TO BE INCLUDED IN THE PRICE PAID PER LINEAR FOOT OF BEAM.

REINFORCEMENT SPACING

DIMENSIONS FROM FACE OF CONCRETE TO BARS ARE CLEAR DISTANCES EXCEPT AS OTHERWISE SHOWN. ALL BAR SPACINGS ARE FROM CENTER TO CENTER.

BEVELED EDGES

ALL EXPOSED EDGES SHALL BE BEVELED 7/8 INCH UNLESS OTHERWISE SHOWN.

PRESTRESSING REINFORCEMENT: Prestressed reinforcement shall be 1/2" nominal diameter uncoated seven-wire stress-relieved strand conforming to the requirements of Grade 270, AASHTO designation, M203, Current Edition. Stabilized strand (1/2" nom. dia. 270 grade uncoated seven-wire strand in accordance with ASTM A416) may be used in the prestressed concrete beams instead of the 270 grade stress-relieved strand specified for this project. However, if the stabilized strand alternate is chosen, the prestressed beams must be redesigned at the contractor's expense. Design calculations shall be submitted to the Director, Division of Bridges for review. Cost of the prestressing strand is included in the cost of the prestressed beam. Shop plans shall show a sequence for detensioning all strands.

GUARDRAIL POSTS

~~GUARDRAIL POSTS AND OFFSET BRACKETS SHALL CONFORM TO ASTM A36. NUTS AND BOLTS CONNECTING GUARDRAIL POSTS TO BEAM SHALL CONFORM TO ASTM A325. ALL MATERIALS AND HARDWARE SHALL BE GALVANIZED IN ACCORDANCE WITH THE SPECIFICATIONS. INSERT MATERIALS FOR ANCHORING GUARDRAIL POSTS SHALL CONFORM TO ASTM A108, GRADES 1008, 1010, OR 1117 FOR THREADED FERRULE INSERTS AND ASTM A92, CURRENT EDITION, FOR THREADED FERRULE ANCHOR WIRE.~~

SURFACE FINISH

THE TOP SURFACES OF DECK UNITS, WHEN INTENDED FOR USE AS THE RIDING SURFACE, SHALL BE GIVEN A BROOMED FINISH. THE BROOMING SHALL BEGIN BEFORE THE CONCRETE HAS TAKEN ITS INITIAL SET AND AFTER ANY WATER OR LAITANCE HAS RISEN TO THE SURFACE. THE BROOM SHALL BE DRAWN TRANSVERSELY ACROSS THE SURFACE IN A SINGLE STROKE, WITH EACH STROKE SLIGHTLY OVERLAPPING THE ADJACENT. THE BROOM SHALL BE THOROUGHLY WASHED AT FREQUENT INTERVALS AND OTHERWISE MAINTAINED IN A CONDITION THAT WILL PROVIDE A UNIFORM FINISH WITH CLOSELY SPACED STRIATIONS BETWEEN 1/16 INCH AND 1/8 INCH IN DEPTH.

DEBONDING STRANDS

~~DEBONDING OF STRANDS SHALL BE PERFORMED ON BOTH ENDS OF BEAMS AS SHOWN IN TABLE ON SHEET BBP-001. PROPOSED METHOD OF DEBONDING SHALL BE APPROVED BY THE ENGINEER PRIOR TO CASTING BEAM. COST OF DEBONDING STRANDS SHALL BE INCLUDED IN THE UNIT PRICE BID PER LINEAR FOOT OF BEAM.~~

WELDED DEFORMED STEEL WIRE FABRIC

WELDED DEFORMED STEEL WIRE FABRIC MAY BE USED IN LIEU OF REINFORCING BAR STIRRUPS, SHALL PROVIDE AN EQUIVALENT AREA OF STEEL AND SHALL CONFORM TO ASTM SPECIFICATION A497 CURRENT EDITION.

BILL OF INCIDENTAL MATERIALS: The quantities shown in the bill of incidental materials are approximate only and the Contractor is responsible for furnishing enough material to complete the work in accordance with the plans and specifications. The cost of furnishing and placing these items shall be incidental to the unit price bid for Precast P.C. Beams.

GAS POCKET AT ABUTMENT NO 1: Refer to Sheet 4 for information concerning a flammable gas pocket which was encountered while obtaining subsurface information.

EPOXY COATED REINFORCING STEEL: All reinforcing bars designated by suffix (E) in the plans shall be epoxy coated in accordance with Section 811.10 of the standard specifications. Cost shall be included in price per lin. foot of beam.

Clinton Co
Sheet 3
Drwg. No. 20843

Work this Sheet with Sheets 2

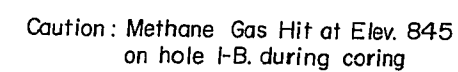
KENTUCKY
BUREAU OF HIGHWAYS
PRECAST PRESTRESSED
CONCRETE
DECK UNITS

GENERAL NOTES

DRAWN
CHECKED
RECOMMENDED

While coring Hole No. 1B, a pocket of methane gas was hit at Elevation 845. The Office of State Fire Marshall has determined that the gas was flammable.

The Contractor is urged to use precautionary steps during construction.



The allowable bearing capacity is estimated to be 20 TSF.

Clinton Co.
Sheet 4
Drwg. No. 4

COMMONWEALTH OF KENTUCKY
BUREAU OF HIGHWAYS
 FRANKFORT
 COUNTY OF
CLINTON
 KY 415

Description of Soil Compactness or Consistency

SOIL TYPE	COMPACTNESS OR CONSISTENCY	RANGE OF PENETRATION RESISTANCE	RANGE OF UNCONFINED COMPRESSIVE STRENGTH
Coarse grained soils (More than half of material is larger than No. 200 sieve size.)	Very loose Loose Medium compact Compact Very compact	Less than 4 blows per foot. 4 to 10 10 to 30 30 to 50 Greater than 50	Not applicable.
Fine grained soils (More than half of material is smaller than No. 200 sieve size.)	Very soft Soft Medium stiff Stiff Very stiff Hard	Not applicable	Less than 0.25 tsf 0.25 to 0.5 0.5 to 1.0 1.0 to 2.0 2.0 to 4.0 Greater than 4.0

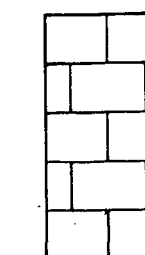
Unified Soil Classifications

MAJOR DIVISIONS		SYMBOL	NAME
COARSE-GRAINED SOILS	GRAVEL AND GRAVELLY SOILS	GW	Well-graded gravels or gravel-sand mixtures, little or no fines.
		GP	Poorly graded gravels or gravel-sand mixtures, little or no fines.
		GM	Silty gravels, gravel-sand-silt mixtures.
		GC	Clayey gravels, gravel-sand-clay mixtures.
	SAND AND SANDY SOILS	SW	Well-graded sands or gravelly sands, little or no fines.
		SP	Poorly graded sands or gravelly sands, little or no fines.
		SM	Silty sands, sand-silt mixture.
		SC	Clayey sands, sand-clay mixtures.
FINE-GRAINED SOILS	SILTS AND CLAYS LL IS LESS THAN 50	ML	Inorganic silts and very fine sands, rock flour, silty or clayey fine sands or clayey silts with slight plasticity.
		CL	Inorganic clays of low to medium plasticity, gravelly clays, sandy clays, silty clays, lean clays.
	SILTS AND CLAYS LL IS GREATER THAN 50	MH	Inorganic silts, micaceous or diatomaceous fine sandy or silty soils, elastic silts.
		CH	Inorganic clays of high plasticity, fat clays.
UNCLASSIFIED MATERIAL		NONE	Non-classified material (i.e. overburden, pavement, coal mine waste, slag, rubble, talus, etc.) Include visual description.

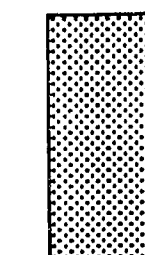
AI	Activity Index
LI	Liquidity Index
N	Penetration Resistance
S+C(%)	Material finer than No. 200 sieve
○	Rockline Sounding
⊕	Disturbed Sample Boring
⊙	Undisturbed Sample Boring
⊗	Undisturbed Sample Boring and Rock Core
●	Rock Core
⊗	Slope Inclinometer Installation
→	typical applications: ⊗ ⊕ ⊙ ⊗ ⊗
→	Approximate Footing Elevation
▽	Water Elevation
■	Thin-walled Tube Sample
<	Standard Penetration Test Sample
Q _u	Unconfined Compressive Strength
w(%)	Moisture Content
RQD(%)	Rock Quality Designation
SDI(%)	Slake Durability Index
Rec.(%)	Core Recovery
Φ	Angle of Internal Friction
Φ̄	Effective Angle of Internal Friction
c	Cohesion
c̄	Effective Cohesion
γ	Total Unit Weight
RDZ	Rock Disintegration Zone
OB	Overburden Bench
IB	Intermediate Bench
R	Refusal
NR	Refusal Not Encountered

Relation of RQD and in situ Rock Quality

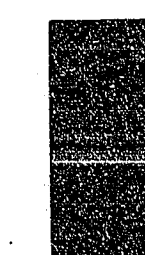
RQD(%)	Rock Quality
90-100	Excellent
75-90	Good
50-75	Fair
25-50	Poor
0-25	Very Poor



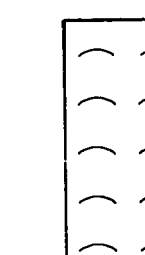
LIMESTONE



SANDSTONE



COAL

SHALE, SOIL-LIKE
(SDI ≤ 50)SHALE,
INTERMEDIATE
(50 < SDI < 95)SHALE, ROCK-LIKE
(SDI ≥ 95)Clinton Co.
Sheet 5
Drawg. No. 20843

COMMONWEALTH OF KENTUCKY		
BUREAU OF HIGHWAYS		
FRANKFORT		
COUNTY OF		
CLINTON		
KY.415		
ROAD		
P.E. PROJECT NO.		
STATION 17+70	CONSTRUCTION PROJECT NO.	MAINTENANCE PROJECT NO.
		DRAWING NO.

DRAWN
CHECKED
RECOMMENDED

Table of Design Data

Table of Design Data										
Beam Type	Beam Length	Design Span Length	Number of Strands	Strand Pattern	Number & Length of Strands Debonded	Beam Reinforcement Spacing			Minimum Camber (Inches)	
						End Spa.	C1 Bar Spacing	C2 Bar Spacing		
B12-48	12'-0"	11'-0"	6	6		1 1/2"	1 Spa. @ 3"/Spa. @ 9"	1 Spa. @ 3"/Spa. @ 9"	0.04	
	14'-0"	13'-0"	6	6		1 1/2"	1 Spa. @ 3"/Spa. @ 9"	1 Spa. @ 3"/Spa. @ 9"	0.06	
	16'-0"	15'-0"	8	8		1 1/2"	1 Spa. @ 3"/Spa. @ 9"	1 Spa. @ 3"/Spa. @ 9"	0.10	
	18'-0"	17'-0"	8	8		1 1/2"	1 Spa. @ 3"/Spa. @ 9"	1 Spa. @ 3"/Spa. @ 9"	0.12	
	20'-0"	19'-0"	10	10		1 1/2"	1 Spa. @ 3"/Spa. @ 9"	1 Spa. @ 3"/Spa. @ 9"	0.19	
	22'-0"	21'-0"	10	10		1 1/2"	1 Spa. @ 3"/Spa. @ 9"	1 Spa. @ 3"/Spa. @ 9"	0.21	
B17-48	24'-0"	23'-0"	12	12	2 @ 2'-0"	1 1/2"	1 Spa. @ 3"/Spa. @ 9"	1 Spa. @ 3"/Spa. @ 9"	0.30	
	26'-0"	25'-0"	8	8		1 1/2"	1 Spa. @ 3"/Spa. @ 10"	1 Spa. @ 3"/Spa. @ 5"	0.13	
	28'-0"	27'-0"	10	10		1 1/2"	1 Spa. @ 3"/Spa. @ 10"	1 Spa. @ 3"/Spa. @ 5"	0.20	
	30'-0"	29'-0"	10	10		1 1/2"	1 Spa. @ 3"/Spa. @ 10"	1 Spa. @ 3"/Spa. @ 5"	0.21	
	32'-0"	31'-0"	12	12		1 1/2"	1 Spa. @ 3"/Spa. @ 10"	1 Spa. @ 3"/Spa. @ 5"	0.29	
	34'-0"	33'-0"	14	14	2 @ 1'-5"	1 1/2"	1 Spa. @ 3"/Spa. @ 10"	1 Spa. @ 3"/Spa. @ 5"	0.40	
B21-48	36'-0"	35'-0"	16	16	4 @ 2'-8"	1 1/2"	1 Spa. @ 3"/Spa. @ 10"	1 Spa. @ 3"/Spa. @ 5"	0.51	
	38'-0"	37'-0"	12	12		1 1/2"	1 Spa. @ 3"/2 Spa. @ 7"/8 Spa. @ 10"/Spa. @ 1'-3"	1 Spa. @ 3"/4 Spa. @ 3 1/2"/Spa. @ 5"	0.27	
	40'-0"	39'-0"	14	14		1 1/2"	1 Spa. @ 3"/2 Spa. @ 7"/9 Spa. @ 10"/Spa. @ 1'-3"	1 Spa. @ 3"/4 Spa. @ 3 1/2"/Spa. @ 5"	0.37	
	42'-0"	41'-0"	16	16	2 @ 1'-4"	1 1/2"	1 Spa. @ 3"/2 Spa. @ 6"/11 Spa. @ 9"/Spa. @ 1'-3"	1 Spa. @ 3"/2 Spa. @ 6"/22 Spa. @ 4 1/2"/Spa. @ 5"	0.47	
	44'-0"	43'-0"	16	16	2 @ 1'-4"	1 1/2"	1 Spa. @ 3"/2 Spa. @ 6"/12 Spa. @ 9"/Spa. @ 1'-3"	1 Spa. @ 3"/2 Spa. @ 6"/24 Spa. @ 4 1/2"/Spa. @ 5"	0.49	
	46'-0"	45'-0"	18	18	4 @ 2'-6"	1 1/2"	1 Spa. @ 3"/2 Spa. @ 6"/10 Spa. @ 9"/3 Spa. @ 12"/Spa. @ 1'-3"	1 Spa. @ 3"/2 Spa. @ 6"/20 Spa. @ 4 1/2"/6 Spa. @ 6"/Spa. @ 5"	0.61	
B27-48	48'-0"	46'-0"	14	14		3"	1 Spa. @ 6"/2 Spa. @ 8"/9 Spa. @ 11"/2 Spa. @ 1'-4"/Spa. @ 1'-8"	1 Spa. @ 6"/2 Spa. @ 8"/18 Spa. @ 5 1/2"/4 Spa. @ 8"/Spa. @ 6 1/2" (+) (See Note)	0.34	
	50'-0"	51'-0"	16	16		3"	1 Spa. @ 6"/2 Spa. @ 8"/10 Spa. @ 11"/3 Spa. @ 1'-3"/Spa. @ 1'-8"	1 Spa. @ 6"/2 Spa. @ 8"/20 Spa. @ 5 1/2"/6 Spa. @ 7 1/2"/Spa. @ 6 1/2" (+) (See Note)	0.45	
	52'-0"	56'-0"	18	18		3"	1 Spa. @ 6"/2 Spa. @ 7"/12 Spa. @ 10"/4 Spa. @ 1'-2"/Spa. @ 1'-8"	1 Spa. @ 6"/2 Spa. @ 7"/24 Spa. @ 5"/8 Spa. @ 7"/Spa. @ 6 1/2" (+) (See Note)	0.57	
B33-48	60'-0"	61'-0"	16	16		3"	1 Spa. @ 6"/2 Spa. @ 9"/11 Spa. @ 1'-1"/Spa. @ 1'-8"	1 Spa. @ 6"/4 Spa. @ 4 1/2"/22 Spa. @ 6 1/2"/Spa. @ 6 1/2" (+) (See Note)	0.38	
	68'-0"	66'-0"	20	20		3"	1 Spa. @ 6"/2 Spa. @ 9"/12 Spa. @ 1'-1"/Spa. @ 1'-8"	1 Spa. @ 6"/4 Spa. @ 4 1/2"/24 Spa. @ 6 1/2"/Spa. @ 6 1/2" (+) (See Note)	0.60	
B42-48	70'-0"	71'-0"	16	16		3"	1 Spa. @ 6"/2 Spa. @ 12"/5 Spa. @ 1'-6"/Spa. @ 1'-8"	20 Spa. @ 6"/Spa. @ 6 1/2" (+) (See Note)	0.28	
	78'-0"	76'-0"	18	18		3"	1 Spa. @ 6"/2 Spa. @ 12"/6 Spa. @ 1'-5"/Spa. @ 1'-8"	5 Spa. @ 6"/18 Spa. @ 5 1/2" (+) /Spa. @ 6 1/2" (+) (See Note)	0.35	
	80'-0"	81'-0"	20	20		3"	1 Spa. @ 6"/2 Spa. @ 12"/8 Spa. @ 1'-4"/Spa. @ 1'-8"	5 Spa. @ 6"/16 Spa. @ 8"/Spa. @ 6 1/2" (+) (See Note)	0.42	

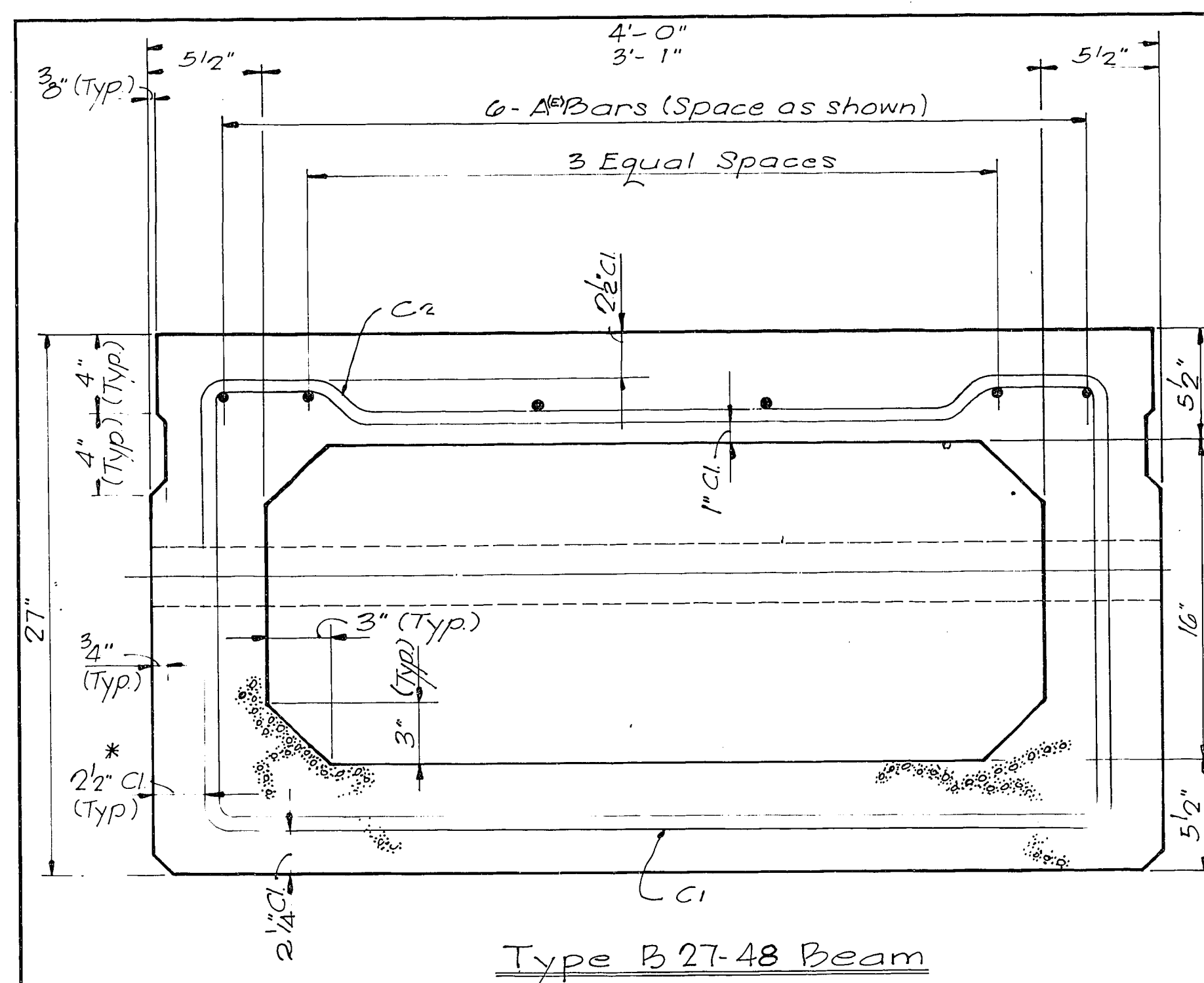
Note: C2 Bars are to be spaced with C1 Bars to form stirrups.
The remaining C2 Bars are to be spaced as indicated by chart.
The dimensions in chart marked (±) indicate C2 bars
equally spaced between stirrups. Bar spacing shown,
including "End Space", are measured from each end of beam.

Clinton Co
Sheet 6
Drugg. No. 20843

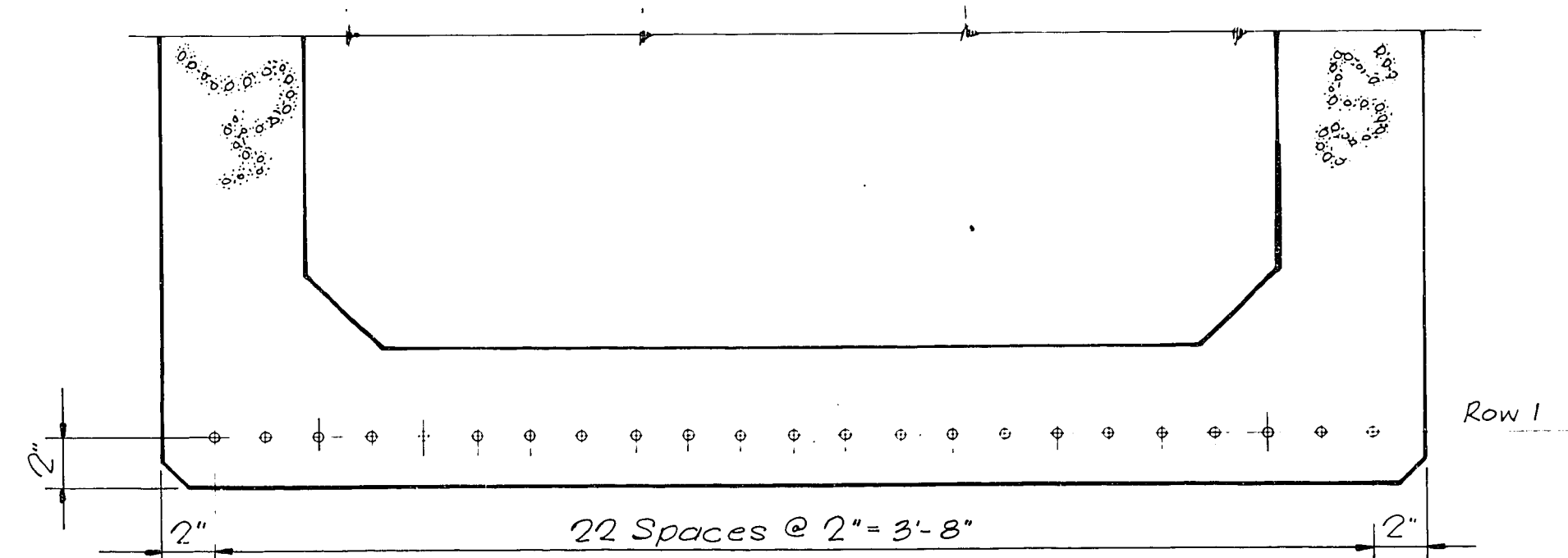
KENTUCKY
BUREAU OF HIGHWAYS

Precast Prestressed
Concrete
Deck Units

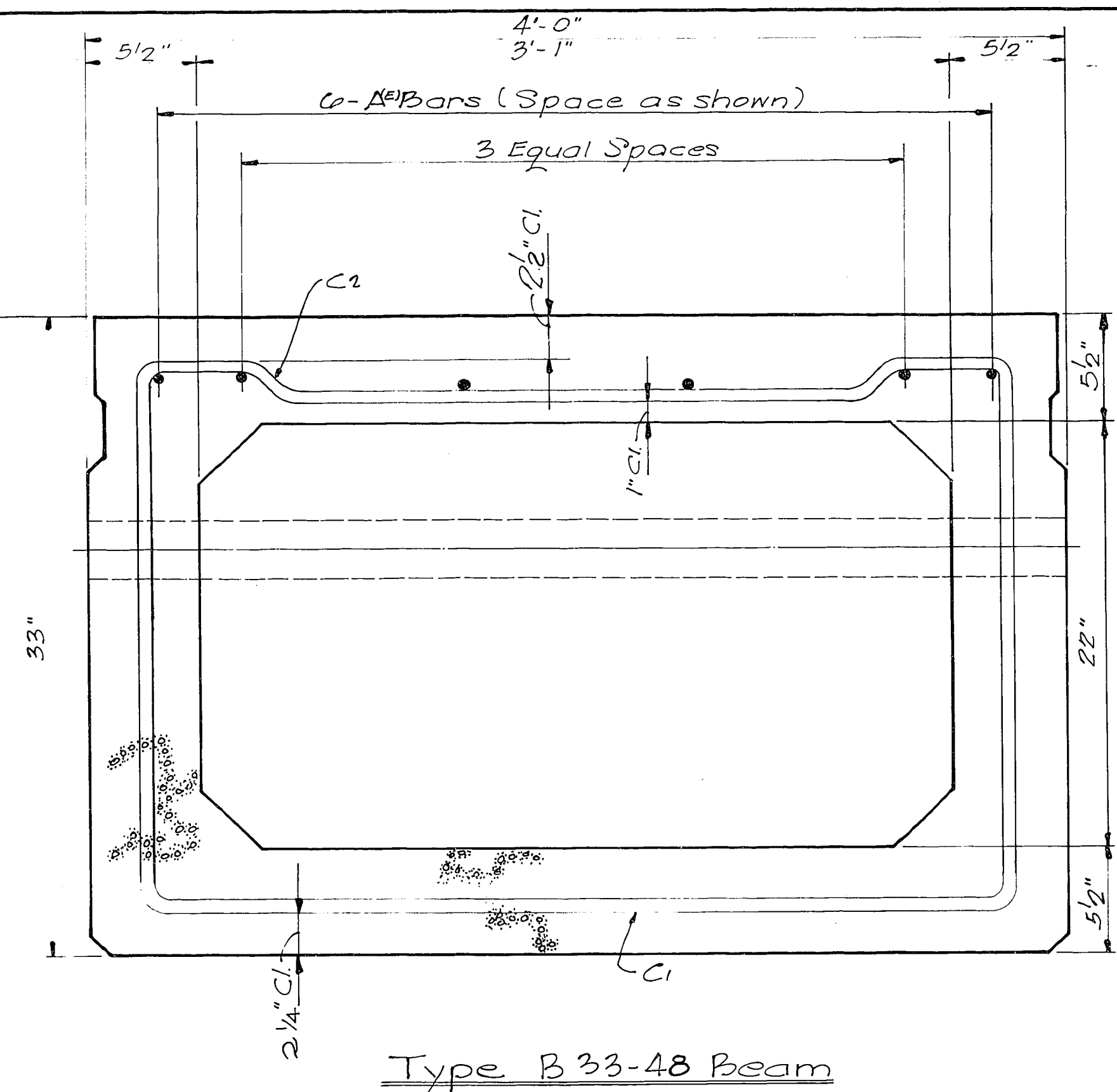
Table of Design Data - Beam Types:
B12-48, B17-48, B21-48
B27-48, B33-48, B42-48



*Except as shown



Template for Spacing Prestress Strands



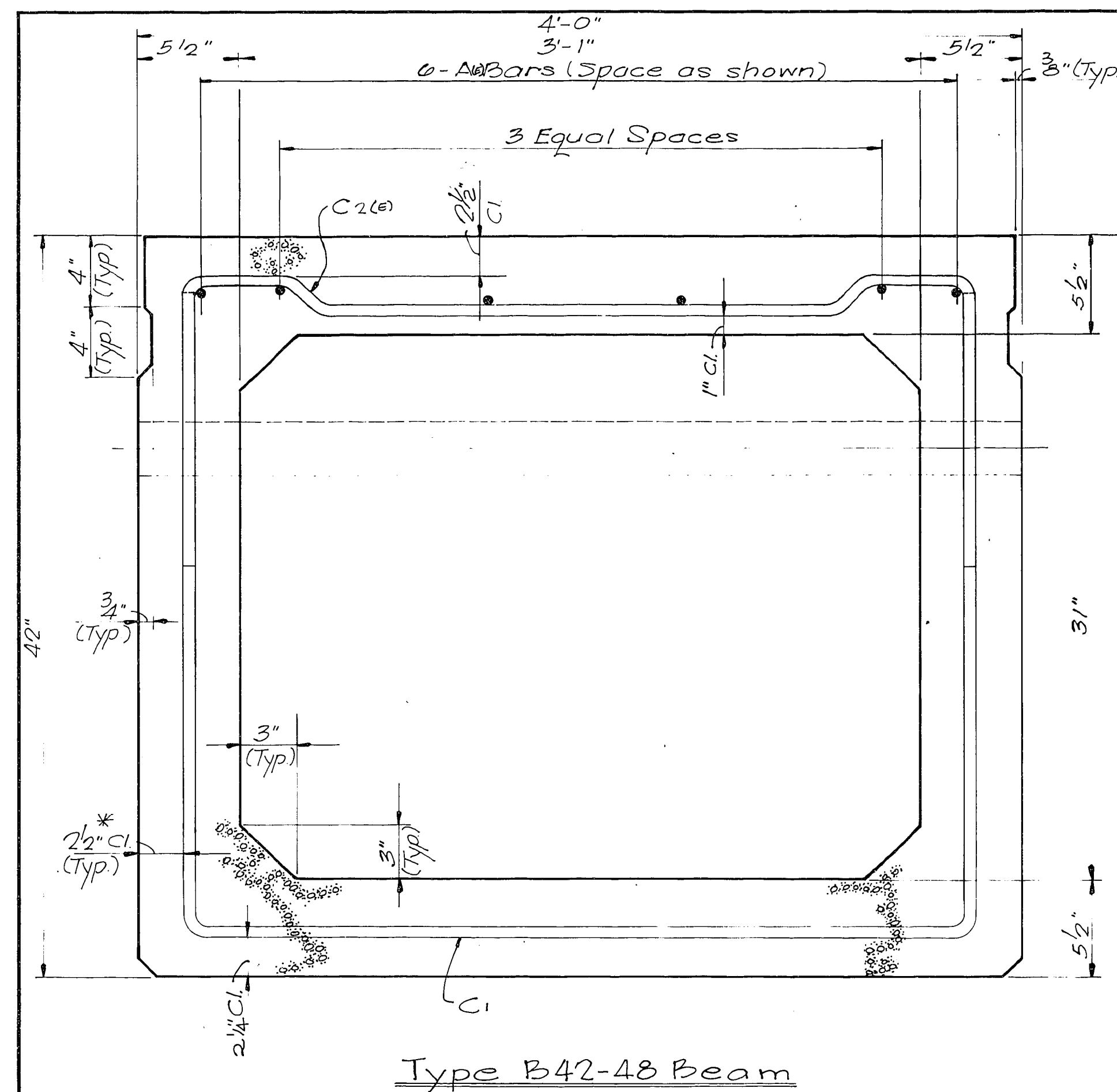
Clinton Co
Sheet 7
Drawg. No. 20843

KENTUCKY
BUREAU OF HIGHWAYS

Precast Prestressed
Concrete
Deck Units

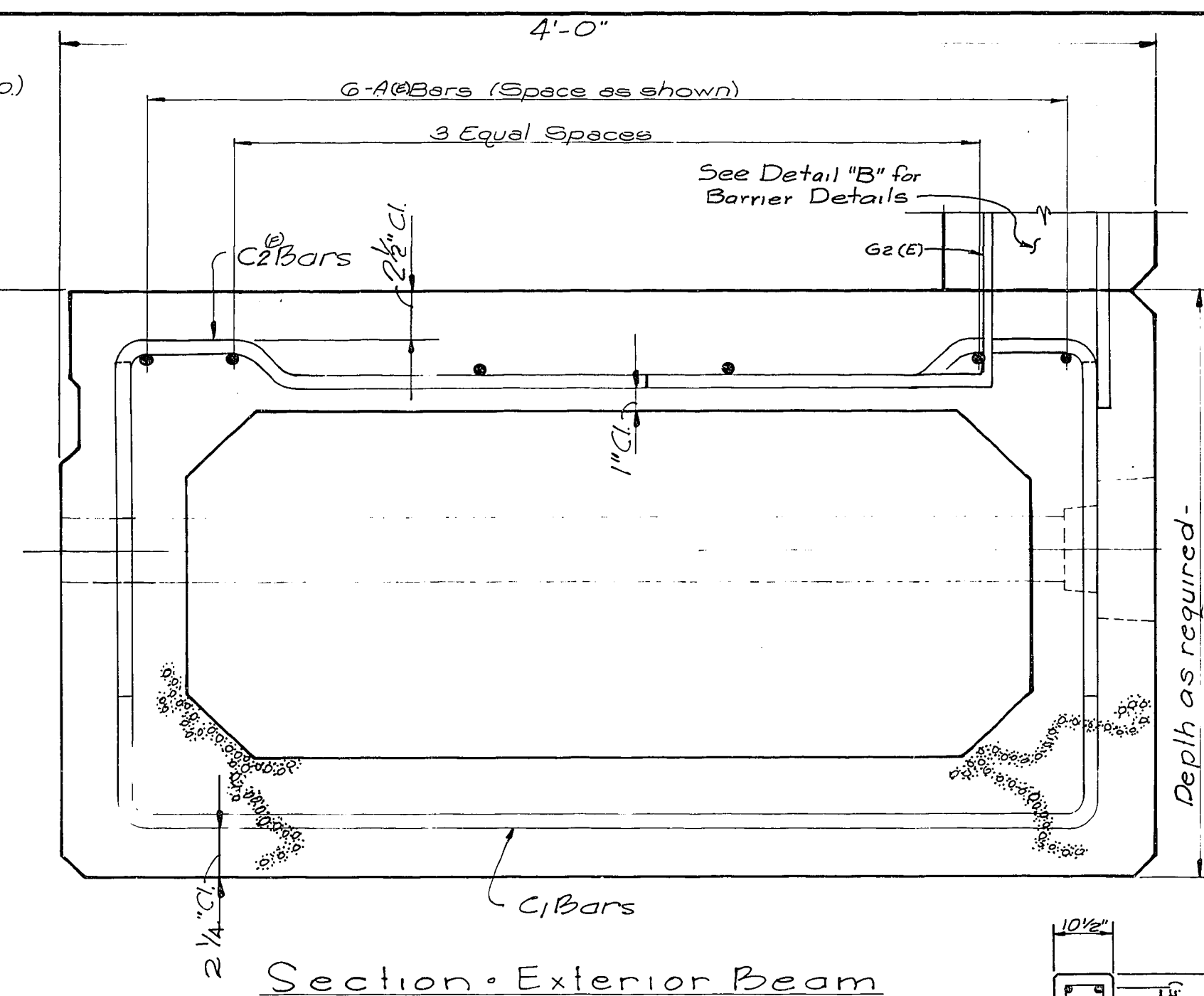
Beam Details - Types
B27-48, B33-48, B42-48

DRAWN _____
CHECKED _____
RECOMMENDED _____

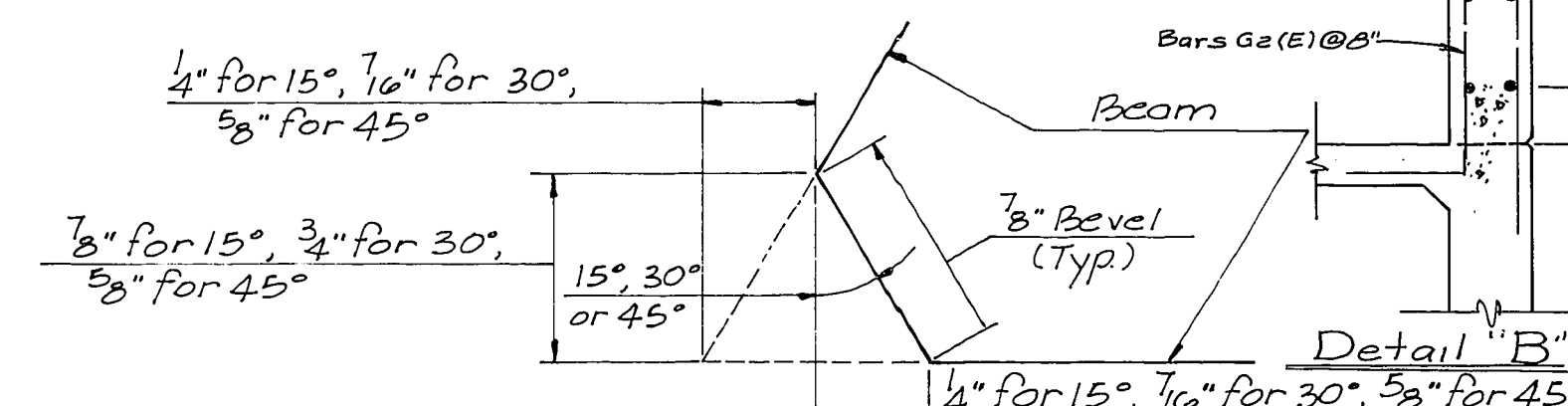


Type B42-48 Beam

*Except as shown



Section - Exterior Beam

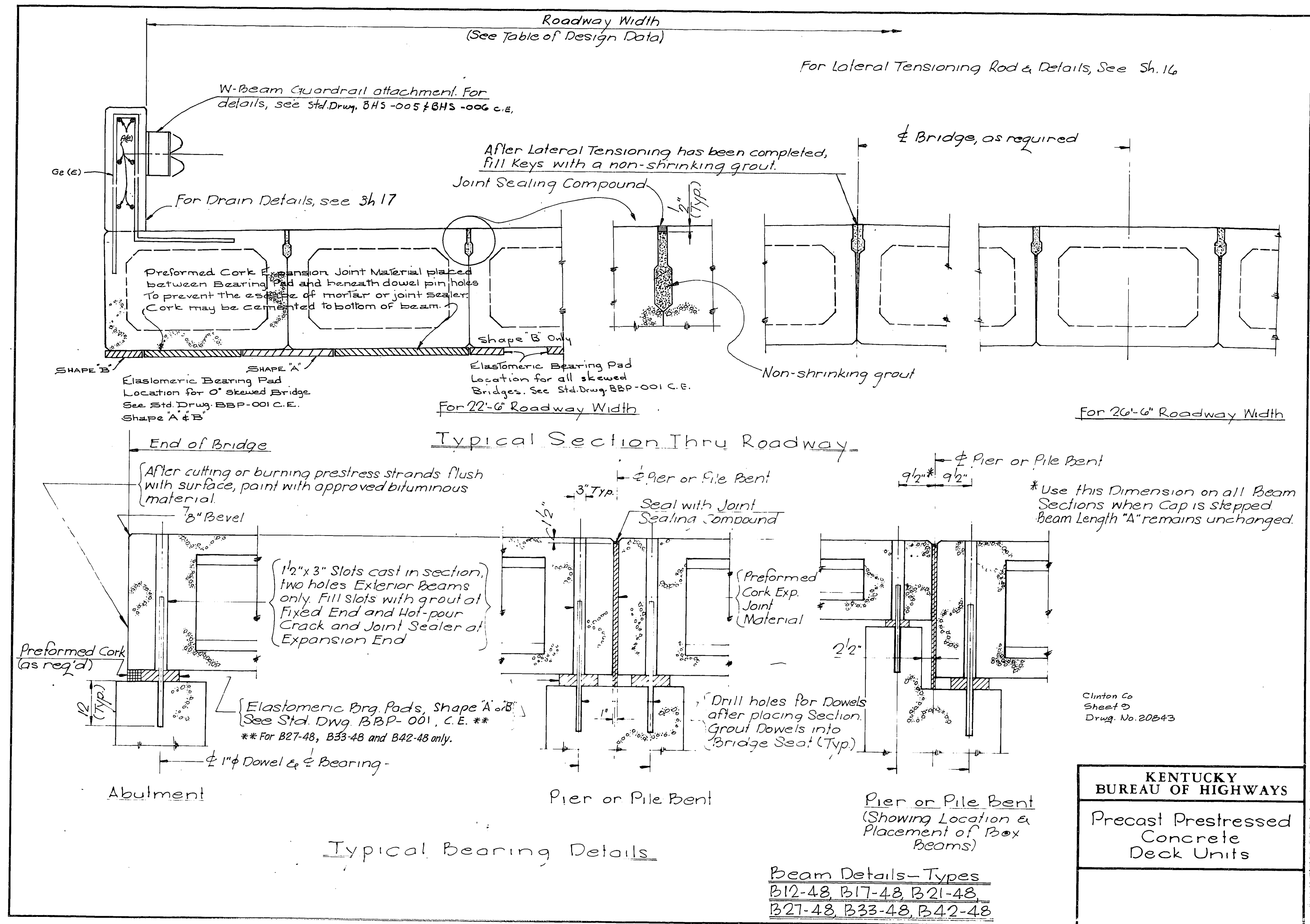


Detail "A"

Clinton Co
Sheet 8
Drawg No. 20843

KENTUCKY
BUREAU OF HIGHWAYS
Precast Prestressed
Concrete
Deck Units

Beam Details - Type
B12-48, B17-48, B21-48,
B27-48, B33-48, B42-48

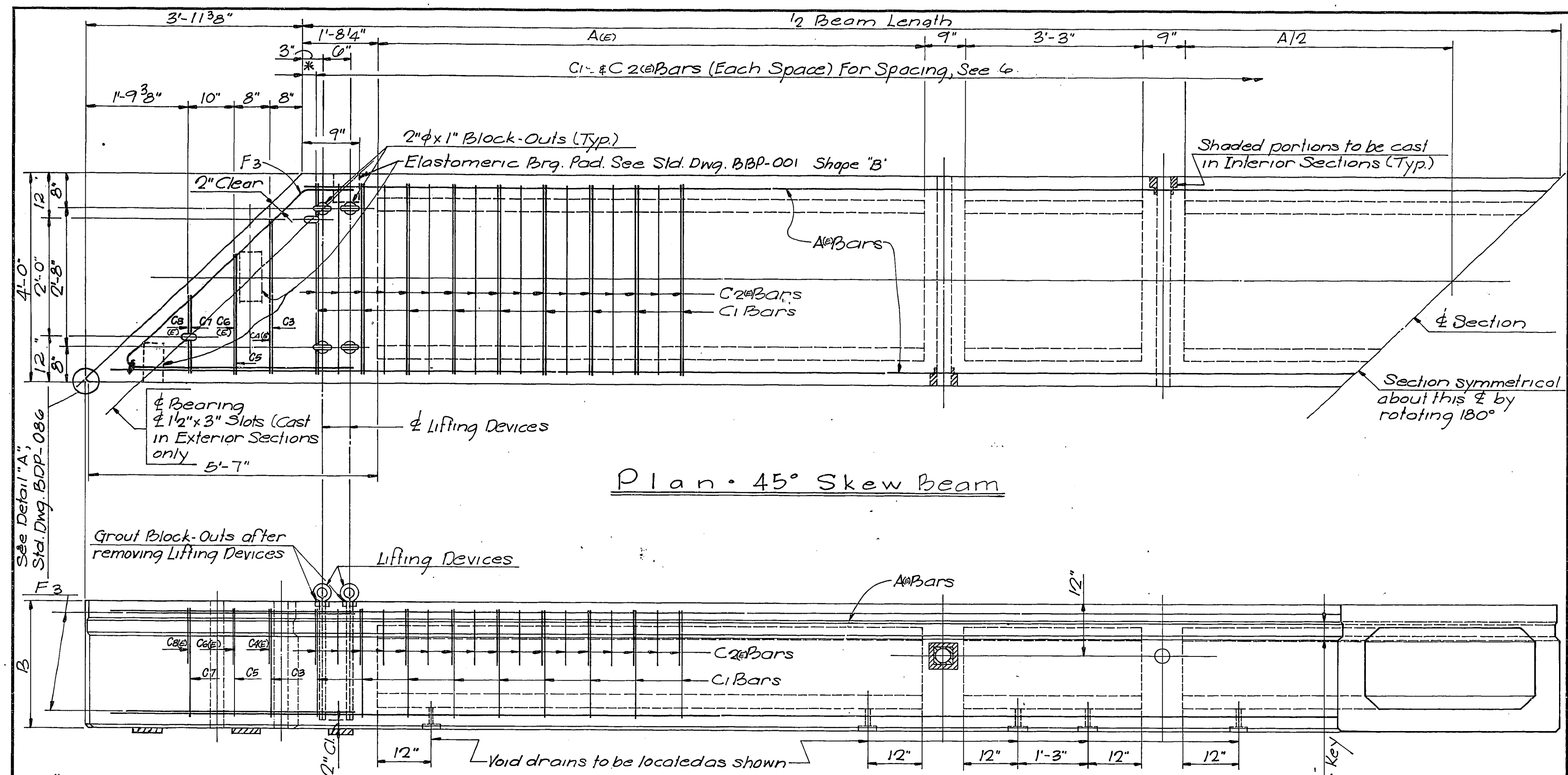


Clinton Co
Sheet 2
Drawg. No. 20843

KENTUCKY
BUREAU OF HIGHWAYS

Precast Prestressed
Concrete
Deck Units

DRAWN _____
CHECKED _____
RECOMMENDED _____



*End Spacing - See
Std. Dwg. BDP-082

Table • Beam Dimensions		
Beam Length	A	B
43'-0"	NOT	USED
48'-0"	10'-4 1/2"	27"
53'-0"	12'-0 1/2"	27"
58'-0"	13'-8 1/2"	27"
63'-0"	15'-4 1/2"	33"
68'-0"	17'-0 1/2"	33"
73'-0"	18'-8 1/2"	42"
78'-0"	20'-4 1/2"	42"
83'-0"	22'-0 1/2"	42"

Limits -
Shear Key
Clinton Co.
Sheet 10
Dwg. No. 20843

KENTUCKY
BUREAU OF HIGHWAYS
Precast Prestressed
Concrete
Deck Units

45° Skew Beam
Types: B27-48, B33-48, B42-48

DRAWN _____
CHECKED _____
RECOMMENDED _____

SAFETY
FORM NO. 19

DRAWN
CHECKED
RECOMMENDED

Quantities per Beam														Bar Types							
Beam Type	Exterior	Interior	Beam Length	Concrete Class "D" Modified (Cu. Yds.)	Prestress Steel (Lin. Ft.)	Reinforcement															
						Weight (Lbs.)		Dowels				A Bars									
						Epoxy Coated	Un-Coated	Mark	Type	No.	Size	Length Ft. In.	Mark	Type	No.			Size	Length Ft. In.		
B12-48			12'-0"	1.8	72		259.0		D	Str.	4	8	2 0	A1	Str.	6	4	11 9			
			14'-0"	2.1	84		297.0							A2			13 9				
			16'-0"	2.4	128		325.0							A3			15 9				
			18'-0"	2.7	144		362.0							A4			17 9				
			20'-0"	3.0	200		400.0							A5			19 9				
			22'-0"	3.3	220		428.0							A6			21 9				
			24'-0"	3.6	280		466.0		D	Str.	4	8	2 0	A7			23 9				
			12'-0"	1.8	72		238.0							A1			11 9				
			14'-0"	2.1	84		276.0							A2			13 9				
			16'-0"	2.4	128		303.0							A3			15 9				
			18'-0"	2.7	144		341.0							A4			17 9				
			20'-0"	3.0	200		379.0							A5			19 9				
			22'-0"	3.3	220		407.0							A6			21 9				
			24'-0"	3.6	280		444.0							A7	Str.	6	4	23 9			
B17-48			26'-0"	4.7	168		667.0		D	Str.	4	8	2 0	A8	Str.	6	4	25 9			
			28'-0"	5.0	280		709.0							A9			27 9				
			30'-0"	5.4	300		767.0							A10			29 9				
			32'-0"	5.7	384		809.0							A11			31 9				
			34'-0"	6.0	464		868.0							A12			33 9				
			36'-0"	6.4	493		910.0		D	Str.	4	8	2 0	A13			35 9				
			26'-0"	4.6	168		645.0							A8			25 9				
			28'-0"	5.0	280		687.0							A9			27 9				
			30'-0"	5.3	300		746.0							A10			29 9				
			32'-0"	5.6	384		788.0							A11			31 9				
			34'-0"	5.9	464		847.0							A12			33 9				
			36'-0"	6.2	493		889.0							A13	Str.	6	4	35 9			
	B21-48			38'-0"	7.6	456		1,045.0		D	Str.	4	8	2 0	A14	Str.	6	4	37 9		
				40'-0"	8.0	560		1,091.0							A15			39 9			
			42'-0"	8.4	670		1,150.0							A16			41 9				
			44'-0"	8.7	698		1,221.0							A17			43 9				
			46'-0"	9.1	808		1,242.0		D	Str.	4	8	2 0	A18			45 9				
			38'-0"	7.4	456		1,024.0							A14			37 9				
			40'-0"	7.8	560		1,070.0							A15			39 9				
			42'-0"	8.1	670		1,129.0							A16			41 9				
			44'-0"	8.5	698		1,200.0							A17			43 9				
			46'-0"	8.8	808		1,221.0							A18	Str.	6	4	45 9			
B27-48				48'-0"	11.5	672		1,172.0		D	Str.	4	8	2 0	A19	Str.	6	4	47 9		
				50'-0"	12.6	848		1,302.0		D	Str.	4	8	2 0	A20			52 9			
				52'-0"	13.5	1,044		1,473.0		D	Str.	4	8	2 0	A21			57 9			
				48'-0"	10.4	672		1,151.0							A19			47 9			
			50'-0"	11.4	848		1,281.0							A20			52 9				
			52'-0"	12.3	1,044		1,452.0							A21	Str.	6	4	57 9			
B33-48			63'-0"	16.7	1,008		1,533.0		D	Str.	4	8	2 0	A22	Str.	12	4	32 2			
			68'-0"	18.0	1,360		1,653.0		D	Str.	4	8	2 0	A23			34 8				
			63'-0"	14.9	1,008		1,512.0							A22			32 2				
			68'-0"	15.9	1,360		1,631.0							A23	Str.	12	4	34 8			
B42-48			73'-0"	22.9	1,168		2332.0		D	Str.	4	8	2 0	A24	Str.	16	4	37 2			
			78'-0"	24.3	1,404		1,883.0		D	Str.	4	8	2 0	A25			39 7				
			83'-0"	25.4	1,660		1,946.0		D	Str.	4	8	2 0	A26			42 2				
			73'-0"	19.7	1,168		566.0							A24		12	37 2				
			78'-0"	20.8	1,404		1,861.0							A25			39 8				
			83'-0"	21.9	1,660		1,925.0							A26	Str.	12	4	42 2			

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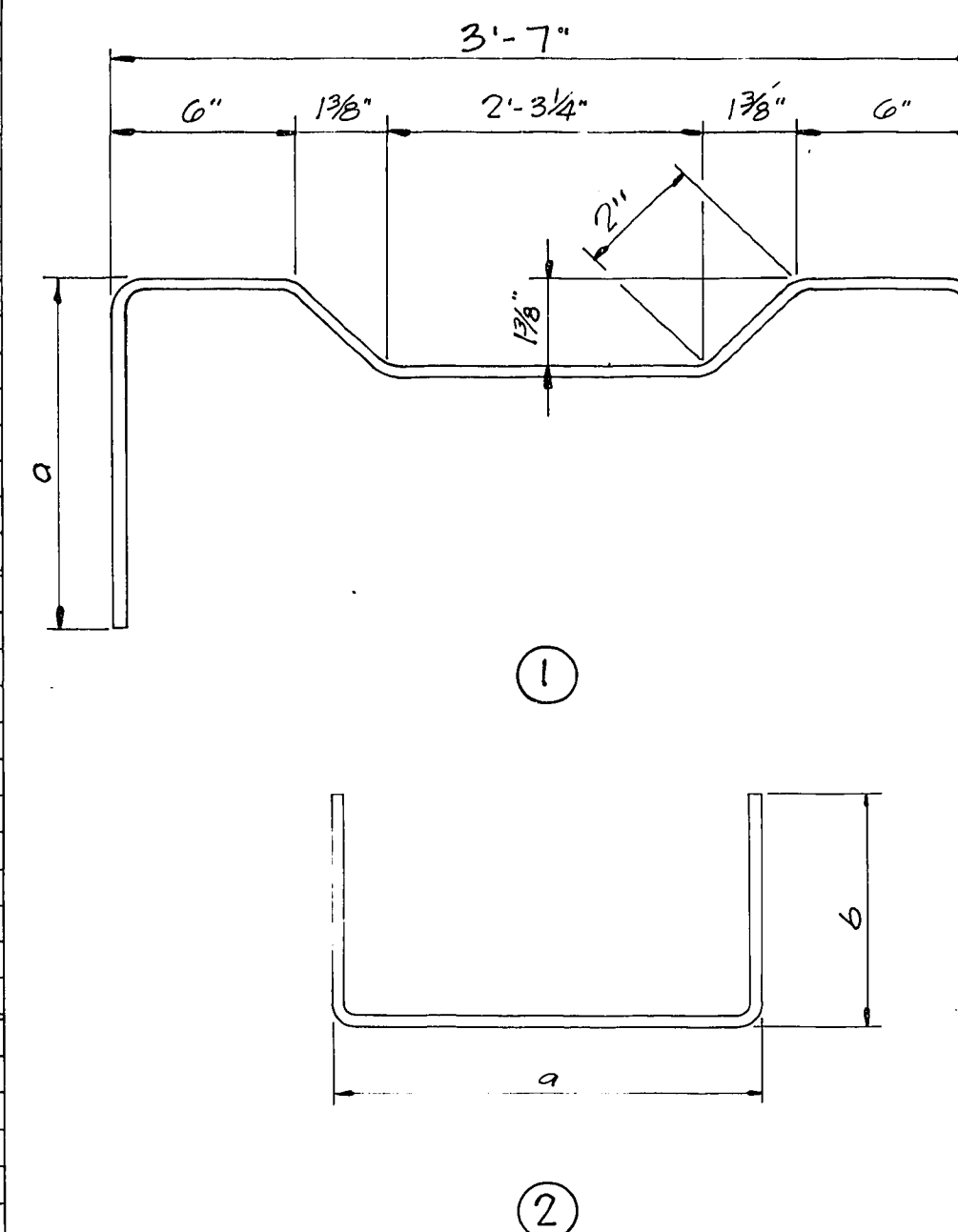
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Clinton Co
Sheet 11
Drawg. No. 20843

KENTUCKY
BUREAU OF HIGHWAYS

Precast Prestressed
Concrete
Deck Units

Quantities-45° Skew Beam
Types: B12-48, B17-48, B21-48,
B27-48, B33-48, B42-48



Clinton Co
Sheet 11
Drawg. No. 20843

KENTUCKY
BUREAU OF HIGHWAYS

Precast Prestressed
Concrete
Deck Units

Quantities—45° Skew Beam
Types: B12-48, B17-48, B21-48,
B27-48, B33-48, B42-48

DATE _____
 DRAWN _____
 CHECKED _____
 RECOMMENDED _____

Quantities per Beam																																			
Reinforcement																																			
Beam Type	Exterior	Interior	Beam Length	C Bars								C Bars								C Bars															
				Mark	Type	No.	Size	Length Ft.	In.	a Ft.	In.	b Ft.	In.	Mark	Type	No.	Size	Length Ft.	In.	a Ft.	In.	b Ft.	In.	Mark	Type	No.	Size	Length Ft.	In.	a Ft.	In.	b Ft.	In.		
B12-48			12'-0"	C1	(1)	17	5	4	9	3	7	0	7 1/2	C2	(2)	17	5	4	9	3	7	0	7 1/2												
			14'-0"			20									20																				
			16'-0"			22									22																				
			18'-0"			25									25																				
			20'-0"			28									28																				
			22'-0"			30									30																				
			24'-0"			33									33																				
			12'-0"			17									17																				
			14'-0"			20									20																				
			16'-0"			22									22																				
			18'-0"			25									25																				
			20'-0"			28									28																				
		22'-0"			30									30																					
		24'-0"	C1	(1)	33	5	4	9	3	7	0	7 1/2	C2	(2)	33	5	4	9	3	7	0	7 1/2													
B17-48			26'-0"	C1	(1)	33	5	5	5	3	7	0	11 1/2	C2	(2)	59	5	5	5	3	7	0	11 1/2												
			28'-0"			35									63																				
			30'-0"			38									69																				
			32'-0"			40									73																				
			34'-0"			43									79																				
			36'-0"			45									83																				
			26'-0"			33									59																				
			28'-0"			35									63																				
			30'-0"			38									69																				
			32'-0"			40									73																				
			34'-0"			43									79																				
			36'-0"	C1	(1)	45	5	5	5	3	7	0	11 1/2	C2	(2)	83	5	5	5	3	7	0	11 1/2												
B21-48			38'-0"	C1	(1)	42	5	6	1	3	7	1	3 1/2	C2	(2)	92	5	6	1	3	7	1	3 1/2												
			40'-0"			44									96																				
			42'-0"			48									100																				
			44'-0"			51									107																				
			46'-0"			52									108																				
			38'-0"			42									92																				
			40'-0"			44									96																				
			42'-0"			48									100																				
			44'-0"			51									107																				
			46'-0"	C1	(1)	52	5	6	1	3	7	1	3 1/2	C2	(2)	108	5	6	1	3	7	1	3 1/2												
	B27-48			48'-0"	C1	(1)	40	5	7	1	3	7	1	9 1/2	C2	(1)	84	5	6	4	1	4 3/8			C3	(2)	2	5	6	2	2	8	1	9 1/2	
				50'-0"			45									95																			
			52'-0"			52									110																				
			48'-0"			40									84																				
			50'-0"			45									95																				
			52'-0"	C1	(1)	52	5	7	1	3	7	1	9 1/2	C2	(1)	110	5	6	4	1	4 3/8			C3	(2)	2	5	6	2	2	8	1	9 1/2		
B33-48			60'-0"	C1	(1)	48	5	8	1	3	7	2	3 1/2	C2	(1)	112	5	6	4	1	4 3/8			C3	(2)	2	5	7	2	2	8	2	3 1/2		
			62'-0"			52									122																				
			64'-0"			48									112																				
			66'-0"	C1	(1)	52	5	8	1	3	7	2	3 1/2	C2	(1)	122	5	6	4	1	4 3/8			C3	(2)	2	5	7	2	2	8	2	3 1/2		
B42-48			70'-0"	C1	(2)	47	5	9	7	3	7	3	0 1/2	C2	(1)	131	5	6	4	1	4 3/8			C3	(2)	2	5	8	8	2	8	3	0 1/2		
			72'-0"			50									140																				
			74'-0"			55									139																				
			76'-0"			47									131																				
			78'-0"			50									140																				
			80'-0"	C1	(2)	55	5	9	7	3	7	3	0 1/2	C2	(1)	139	5	6	4	1	4 3/8			C3	(2)	2	5	8	8	2	8	3	0 1/2		

Quantities - 45° Skew Beam
 Types: B12-48, B17-48, B21-48,
 B27-48, B33-48, B42-48

Clinton Co.
 Sheet 12
 Drawg. No. 20843

KENTUCKY
 BUREAU OF HIGHWAYS
 Precast Prestressed
 Concrete
 Deck Units

204
FORM NO. 13

DRAWN _____
CHECKED _____
RECOMMENDED _____

Quantities per Beam																			
Beam Type	Exterior	Interior	Beam Length	Reinforcement															
				C Bars						C Bars						C Bars			
				Mark	Type	No.	Size	Length	a	b	Mark	Type	No.	Size	Length	a	b	Mark	Type
								Ft.	In.	Ft.	In.					Ft.	In.	Ft.	In.
B12-48			12'-0"																
			14'-0"																
			16'-0"																
			18'-0"																
			20'-0"																
			22'-0"																
			24'-0"																
			12'-0"																
			14'-0"																
			16'-0"																
			18'-0"																
			20'-0"																
B17-48			22'-0"																
			24'-0"																
			26'-0"																
			28'-0"																
			30'-0"																
			32'-0"																
			34'-0"																
			36'-0"																
			26'-0"																
			28'-0"																
			30'-0"																
			32'-0"																
B21-48			34'-0"																
			36'-0"																
			38'-0"																
			40'-0"																
			42'-0"																
			44'-0"																
			46'-0"																
			48'-0"																
B27-48			50'-0"																
			52'-0"																
			54'-0"																
			56'-0"																
B33-48			58'-0"																
			60'-0"																
			62'-0"																
			64'-0"																
B42-48			66'-0"																
			68'-0"																
			70'-0"																
			72'-0"																
			74'-0"																

Quantities—45° Skew Beam
Types: B12-48, B17-48, B21-48,
B27-48, B33-48, B42-48

Clinton Co
Sheet 13
Drawg. No. 20843

KENTUCKY
BUREAU OF HIGHWAYS
Precast Prestressed
Concrete
Deck Units

DATE _____
 DRAWN _____
 CHECKED _____
 RECOMMENDED _____

Quantities per Beam																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																								
Beam Type	Exterior	Interior	Beam Length	Reinforcement																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																				
				C Bars									E Bars																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																											
				Mark	Type	No.	Size	Length		a	b	Mark	Type	No.	Size	Length		a	b	Mark	Type	No.	Size	Length																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																
								Ft.	In.							Ft.	In.							Ft.	In.	Ft.	In.	Ft.	In.																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																											
B12-48			12'-0"																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																					

Quantities - 45° Skew Beam
 Types: B12-48, B17-48, B21-48,
 B27-48, B33-48, B42-48

Clinton Co
 Sheet 14
 Drawg. No. 20843

KENTUCKY
 BUREAU OF HIGHWAYS
 Precast Prestressed
 Concrete
 Deck Units

11/1/72

224
FORM NO. 15

DATE

DRAWN _____
CHECKED _____
RECOMMENDED _____

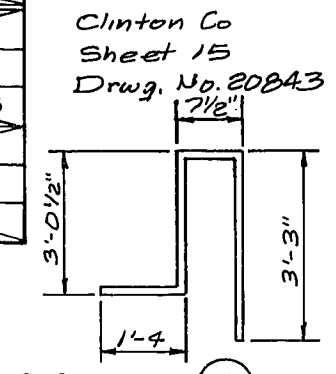
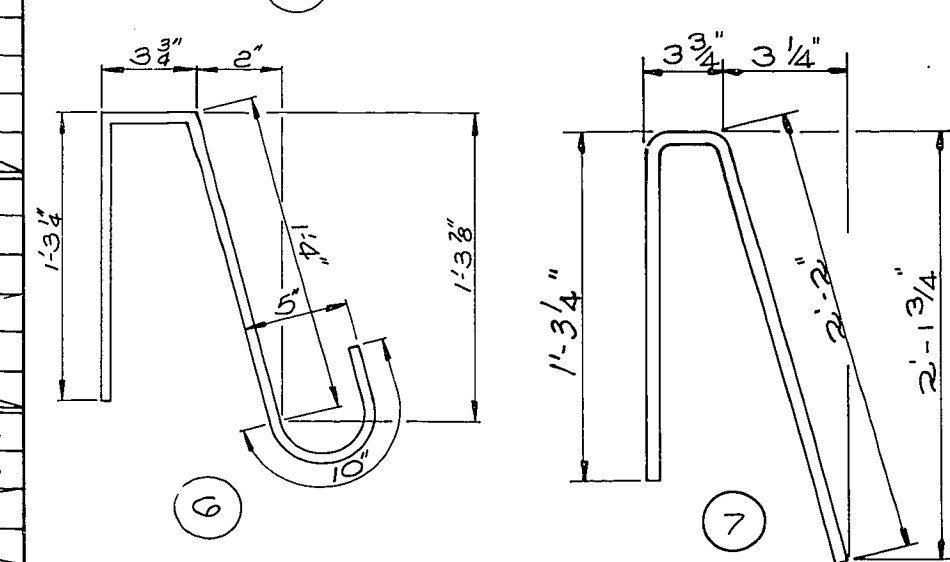
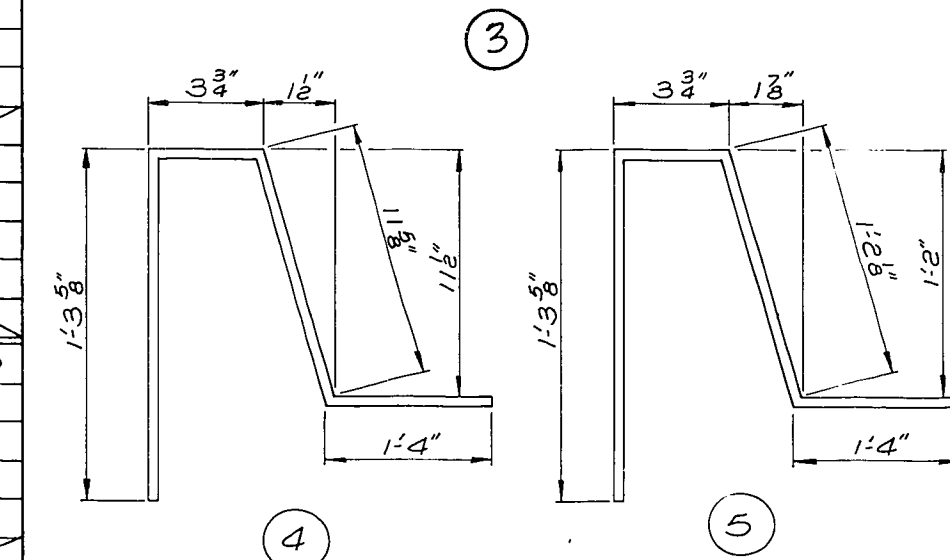
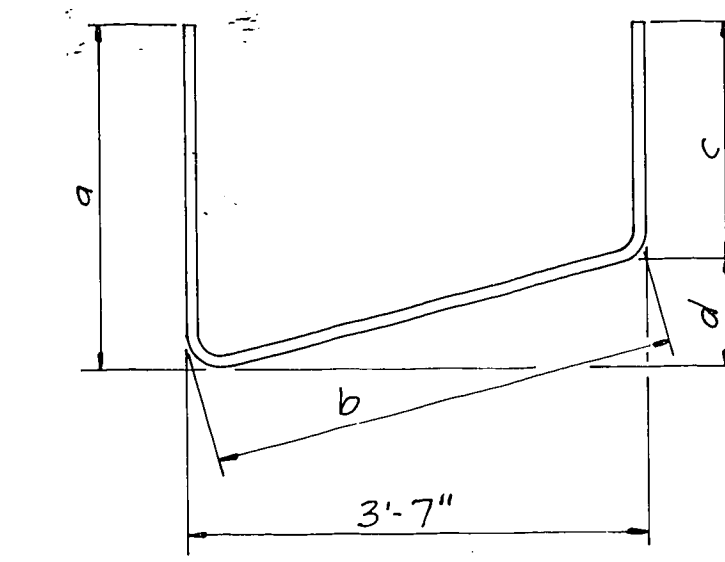
Quantities per Beam																								Bar Types				
Beam Type	Exterior	Interior	Beam Length	Reinforcement																J Bars								
				F Bars								G1 & G2																
				Mark	Type	No.	Size	Length Ft. In.	a Ft. In.	b Ft. In.	c Ft. In.	d Ft. In.	Mark	Type	No.	Size	Length Ft. In.			Mark	Type	No.	Size	Length Ft. In.				
B12-48			12'-0"										G1	④	12	5	3	10			J	⑥	5	3	9			
			14'-0"										G1		14													
			16'-0"										G1		16													
			18'-0"										G1		18													
			20'-0"										G1		20													
			22'-0"										G1		22													
			24'-0"										G1	④	24	5	3	10			J	⑥	5	3	9			
			12'-0"																									
			14'-0"																									
			16'-0"																									
B17-48			26'-0"										G1	④	26	5	3	10			J	⑥	5	3	9			
			28'-0"										G1		28													
			30'-0"										G1		30													
			32'-0"										G1		32													
			34'-0"										G1		34													
			36'-0"										G1	④	36	5	3	10			J	⑥	5	3	9			
			26'-0"																									
			28'-0"																									
			30'-0"																									
			32'-0"																									
B21-48			38'-0"										G1	④	38	5	3	10			J	⑥	5	3	9			
			40'-0"										G1		40													
			42'-0"										G1		42													
			44'-0"										G1		44													
			46'-0"										G1	④	46	5	3	10			J	⑥	5	3	9			
			38'-0"																									
			40'-0"																									
			42'-0"																									
			44'-0"																									
			46'-0"																									
B27-48			48'-0"	F3	③	4	5	11	3	4	11	5	0	2	1	4	3	7			J	⑦	5	3	8			
			53'-0"										G2	⑤	48	5	4	1			J	⑦	5	3	8			
			58'-0"										G2	⑤	53	5	4	1			J	⑦	5	3	8			
			48'-0"																									
			53'-0"																									
B33-48			58'-0"	F3	③	4	5	11	3	4	11	5	0	2	1	4	3	7			J	⑦	5	3	8			
			63'-0"										G2	⑤	63	5	4	1			J	⑦	5	3	8			
			68'-0"										G2	⑤	68	5	4	1			J	⑦	5	3	8			
			63'-0"																									
			68'-0"	F3	③	4	5	11	3	4	11	5	0	2	1	4	3	7			J	⑦	5	3	8			
B42-48			73'-0"	F3	③	4	5	11	3	4	11	5	0	2	1	4	3	7			J	⑦	5	3	8			
			78'-0"										G2	⑤	73	5	4	1			J	⑦	5	3	8			
			83'-0"										G2	⑤	78	5	4	1			J	⑦	5	3	8			
			73'-0"																									
			78'-0"																									
		83'-0"	F3	③	4	5	11	3	4	11	5	0	2	1	4	3	7			J	⑦	5	3	8				

Clinton Co
Sheet 15
Dwg. No. 20843
2 1/2\"/>

KENTUCKY
BUREAU OF HIGHWAYS

Precast Prestressed
Concrete
Deck Units

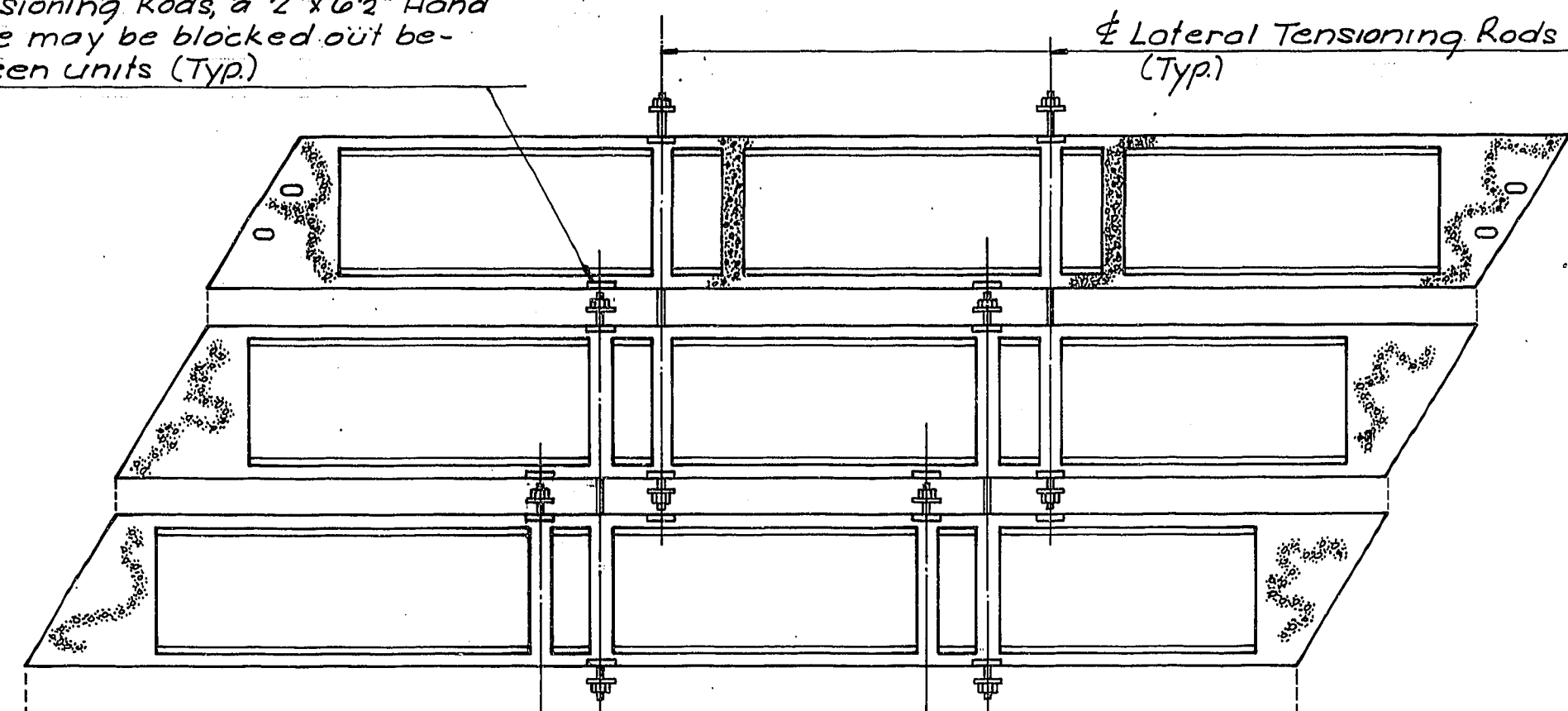
Quantities—45° Skew Beam
Types: B12-48, B17-48, B21-48,
B27-48, B33-48, B42-48



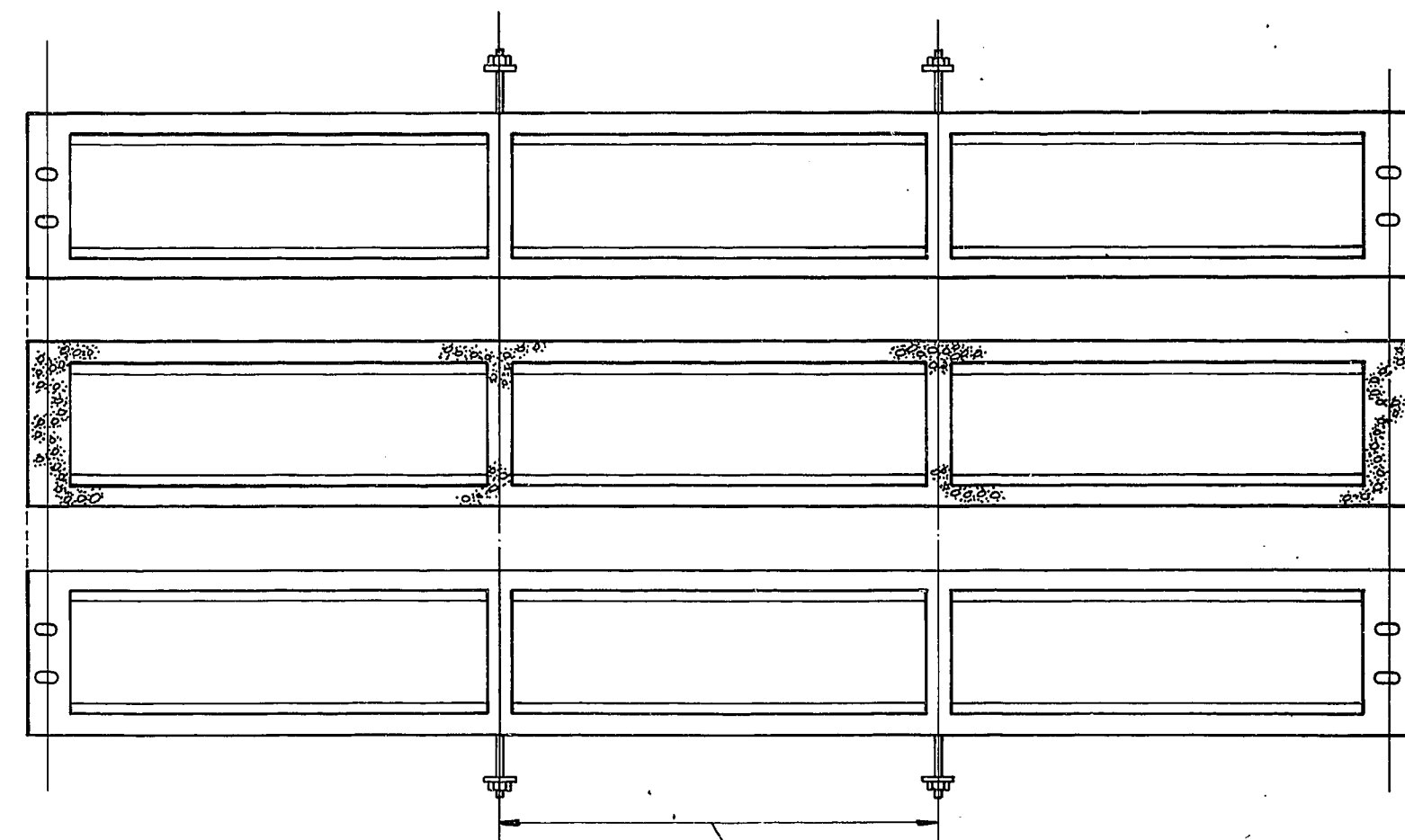
KENTUCKY
BUREAU OF HIGHWAYS
Precast Prestressed
Concrete
Deck Units

Quantities—45° Skew Beam
Types: B12-48, B17-48, B21-48,
B27-48, B33-48, B42-48

For ease of installing Lateral Tensioning Rods, a 2"x6"x2" Hand Hole may be blocked out between units (Typ)

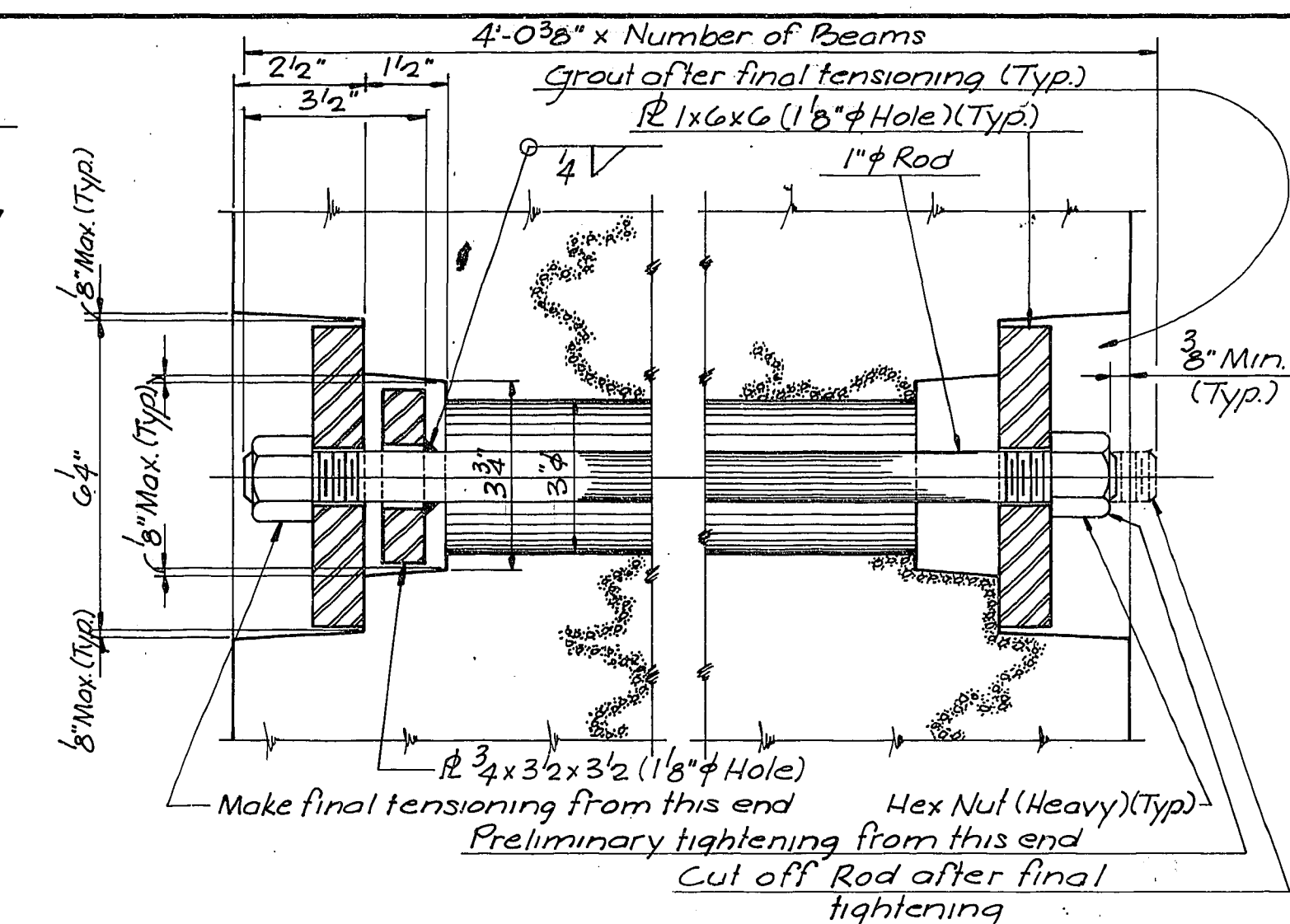


Sectional Plan Showing Lateral Tensioning Method for Skewed Spans

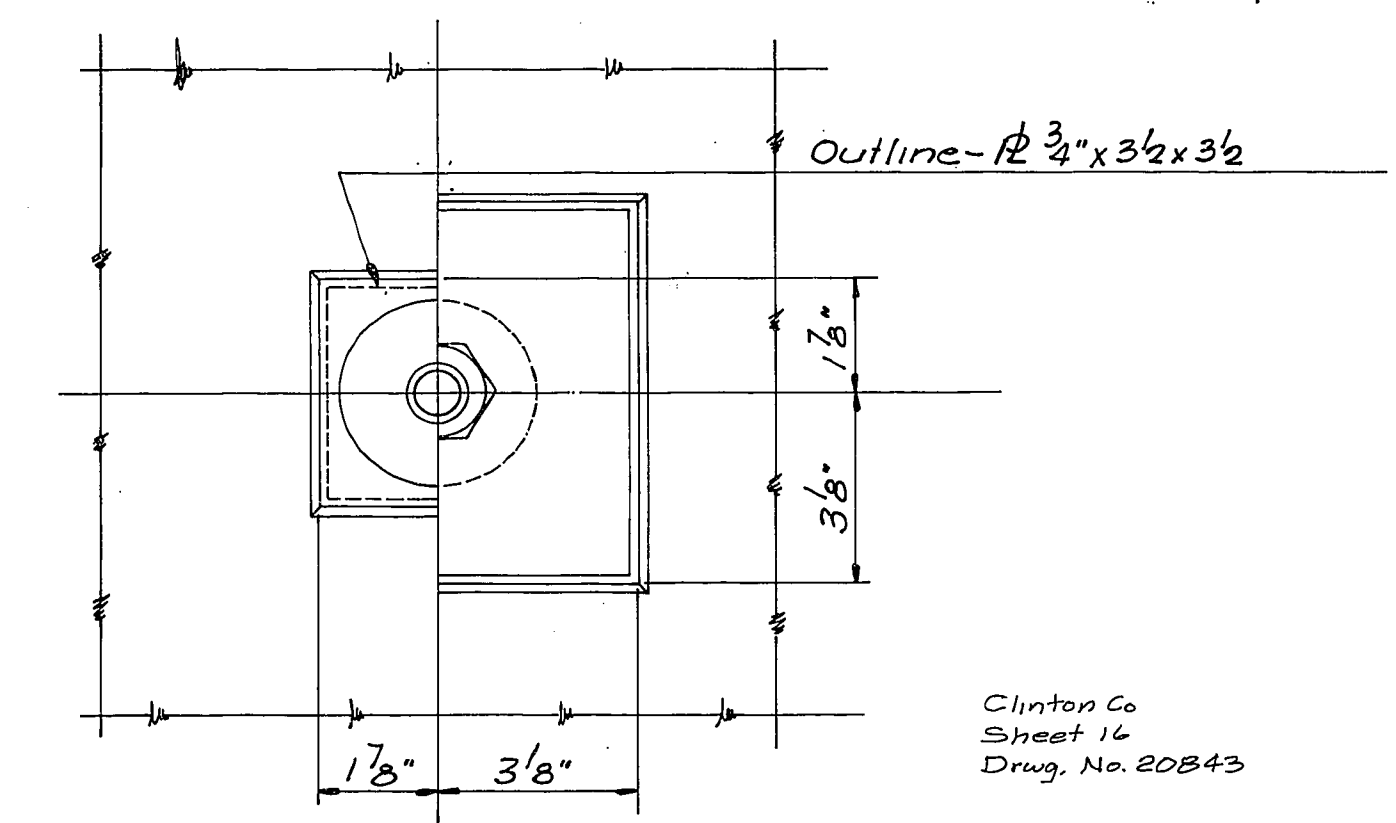


One Lateral Tensioning Rod per Beams 12'-0" thru 46'-0"
Two Lateral Tensioning Rods per Beams 48'-0" thru 83'-0"

Sectional Plan Showing Lateral Tensioning Method for Straight Spans
(The above arrangement is applicable from 0° Skews to and including 10° Skews)



Section Thru Lateral Tensioning Rod



Sectional End Plan Lateral Tension Rod Details

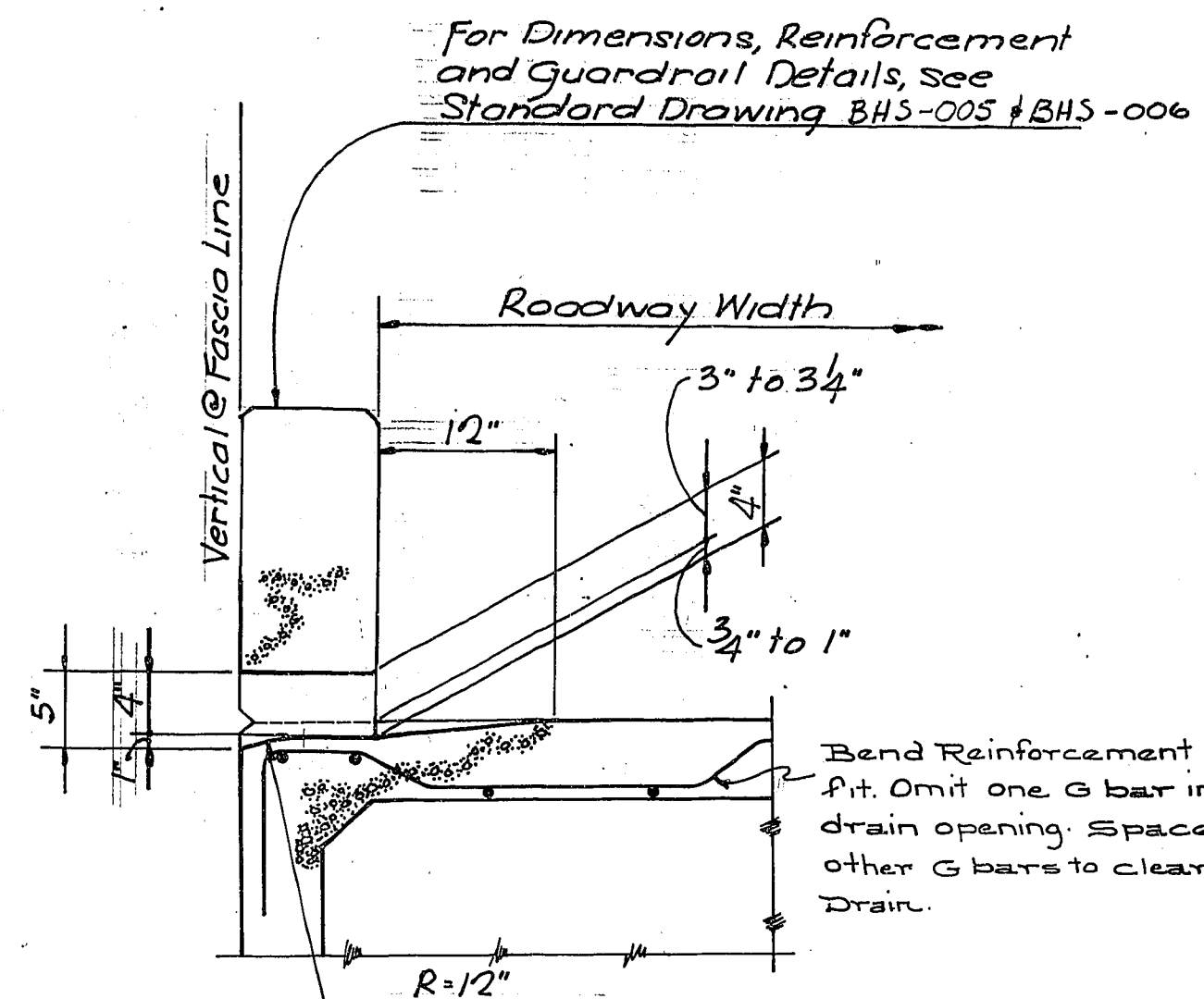
Clinton Co
Sheet 16
Drawg. No. 20843

KENTUCKY
BUREAU OF HIGHWAYS
Precast Prestressed
Concrete
Deck Units

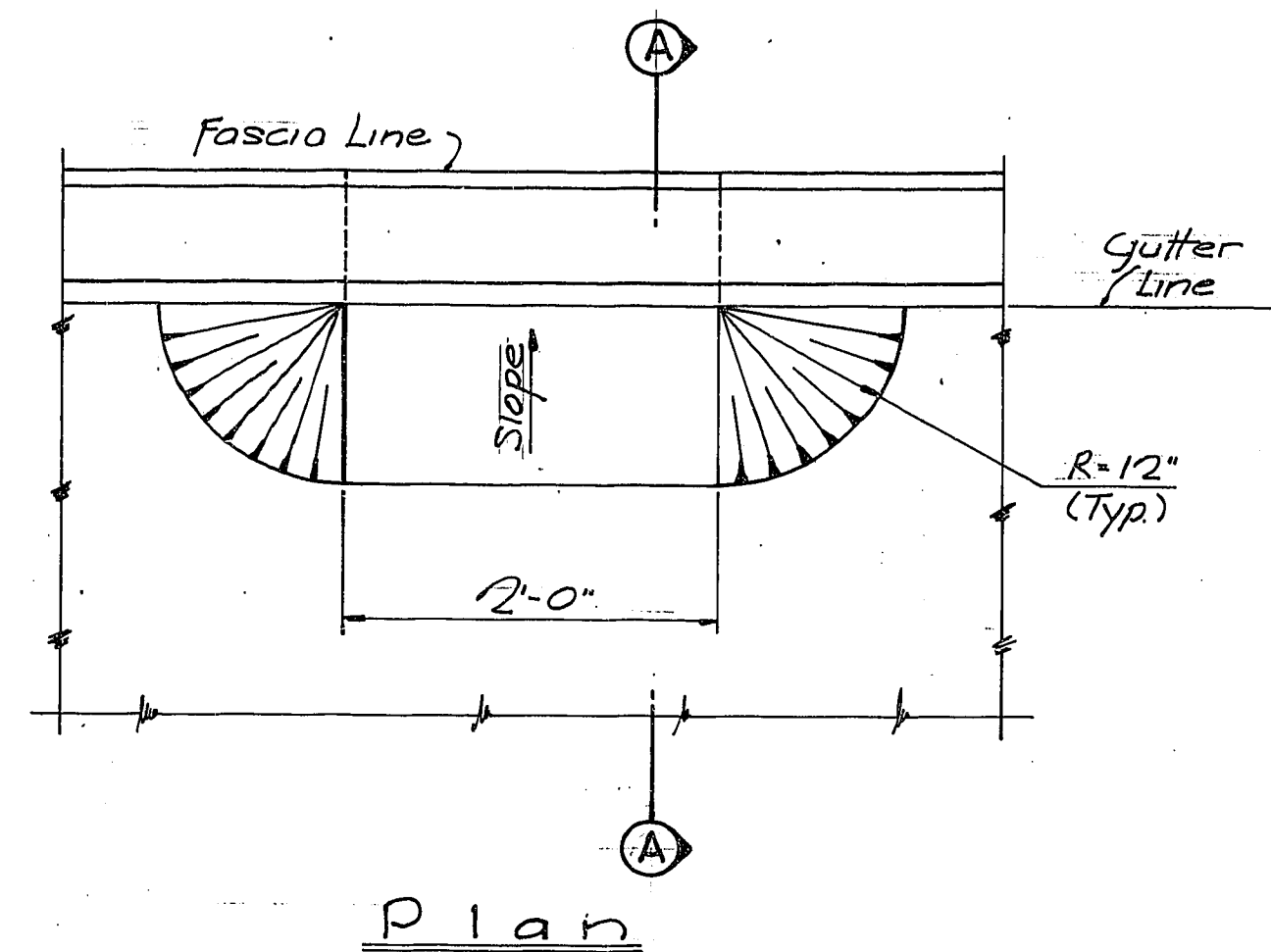
Lateral Tension Rod Details

DIETZEN
DATE 9-1-81
FORM NO. 10

DRAWN
CHECKED
RECOMMENDED
APPROVED FHWA



Section A-A
(Brush Curb Barrier)



NOTE:
Provide drains on both sides of Bridges with Normal Crown and on low side only for Superelevated Bridges. Space drains at approximately 20'-0" on centers with a minimum of one placed each gutter line per span. Omit drains when Bridge crosses over Highway or Railroad.

Clinton Co
Sheet 17
Drawg. No 20843

KENTUCKY
BUREAU OF HIGHWAYS
Precast Prestressed
Concrete
Deck Units

STANDARD DRAWING

Drain Details

DESIGN
DATE 9-1-81
FORM NO. 10

DATE

DRAWN _____
CHECKED _____
RECOMMENDED _____
APPROVED FHWA _____