A F 7600

243

DATE REVISED	DATE FILMED	DATE REVISED	DATE FILMED	FED. ROAD NO.	STATE	FED. AID PROJ. NO.	SHEET NO.	TOTAL SHEETS
1-20-84	6/8/1-24-84			6	ARK.			
				JOB NO.		10937	9	57

(1) 6012- QUANTITIES - 25898

SCHEDULE OF BRIDGE QUANTITIES FOR JOB NO. 10937

Bridge No.	Code No.	Name Plate Title	Item No. / Item / Unit Of Structure	SP & 802	*SP & 802	803	804	**SP & 805	**SP & 805	812	SP & 816	SP & 816	SP & 603	205	801	***SP & 805	***SP & 805
			Item	Class S Concrete	Class S(AE) Concrete	Boiled Linseed Oil	Reinforcing Steel (Grade 60)	Precast Concrete Piling (16" Oct. or 14" Sq.)	Precast Concrete Piling (18" Oct. or 18" Sq.)	Bridge Name Plate (Type "C")	Dumped Riprap	Filter Blanket	Temporary Bridge Structures	Removal Of Existing Bridge Structures	Unclassified Excavation For Structures-Bridges	TEST PILES (16" OCT. OR 14" SQ.)	TEST PILES (18" OCT. OR 18" SQ.)
			Unit	Cu. Yd.	Cu. Yd.	Gal.	Lb.	Lin. Ft.	Lin. Ft.	Ea.	Cu. Yd.	Sq. Yd.	Lump Sum	Lump Sum	Cu Yd.	LIN. FT.	LIN. FT.
6012	X020	Black Fork Creek	End Bents 1 & 4	23.06			2722	270			320	639			75	35	
			Int. Bents 2 & 3	19.14			2398		440								45
			Three 25'-0" R.C. Slab Spans		164.40	7.8	24660			1							
Totals For Job No. 10937				42.20	164.40	7.8	29780	270	440	1	320	639	1.0	0.42	75	35	45

*Refer to SP 807-10 for Painting
**Refers to SP 802-5
***Refers to SP 802-5 & SP 805-2.

JOHN SAGE
DESIGN SECTION SUPERVISOR

SCHEDULE OF BRIDGE QUANTITIES
BRIDGE OVER BLACK FORK CREEK
POINSETT CO. LINE – HWY. 63 BRS. & APPRS.
CRAIGHEAD COUNTY

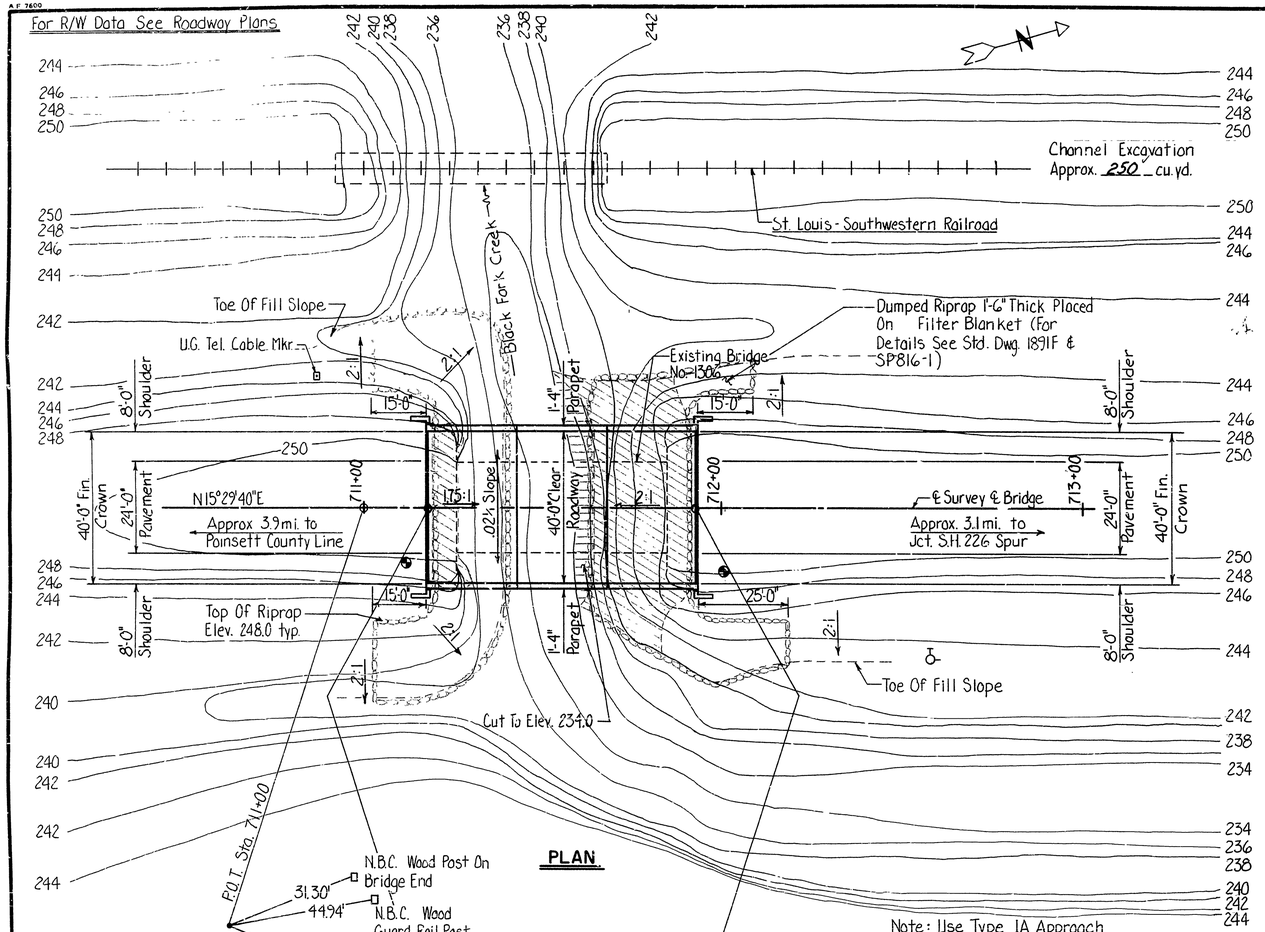
ROUTE 49 SEC. 4
ARKANSAS STATE HIGHWAY COMMISSION
LITTLE ROCK, ARK.

DESIGN BY: JSB DATE: APRIL 83
CHECKED BY: A.T.D. DATE: 5-2-83 SCALE:
DESIGNED BY: — DATE: —

Russel Pinkerton
BRIDGE ENGINEER

BRIDGE NO. 6012 DRAWING NO. 25898

DATE REVISED	DATE FILMED	DATE REVISED	DATE FILMED	FED. ROAD NO.	STATE	FED. AID PROJ. NO.	SHEET NO.	TOTAL SHEETS
				6	ARK.			
				JOB NO.		10937	16	57
				(1) 6012		—LAYOUT— 25899		



GENERAL NOTES

BENCH MARK: COTTON PICKER SPIKE IN P.P. 47' RT. STA. 715+81, ELEV. 245.58.

DESIGN SPECIFICATIONS: AASHTO STANDARD SPECIFICATIONS FOR HIGHWAY BRIDGES, 1977 EDITION WITH CURRENT INTERIMS.

CONSTRUCTION SPECIFICATIONS: ARKANSAS STATE HIGHWAY COMMISSION STANDARD SPECIFICATIONS FOR HIGHWAY CONSTRUCTION EDITION OF 1978 AND APPLICABLE SPECIAL PROVISIONS.

DESIGN LIVE LOAD: HS 20-44 DESIGN METHOD: LOAD FACTOR

CONCRETE: CONCRETE IN THE SUBSTRUCTURE SHALL BE CLASS "S". CONCRETE IN THE SUPERSTRUCTURE SHALL BE CLASS S(AE). ALL CONCRETE SHALL HAVE A MINIMUM 28 DAY COMPRESSIVE STRENGTH, f'c = 3500 PSI, AND SHALL BE POURED IN THE DRY; EXPOSED CORNERS TO BE CHAMFERED 3/4" UNLESS OTHERWISE NOTED.

REINFORCING STEEL: REINFORCING STEEL SHALL CONFORM TO ASTM A615 OR A617, GRADE 60 (fy = 60,000 PSI).

PILING: PILING IN BENTS 1 AND 4 SHALL BE 16" OCT. OR 14" SQ. AND SHALL BE DRIVEN TO A MINIMUM BEARING CAPACITY OF 44 TONS PER PILE. PILING IN BENTS 2 AND 3 SHALL BE 18" OCT. OR 18" SQ. AND SHALL BE DRIVEN TO A MINIMUM BEARING CAPACITY OF 55 TONS PER PILE. PILING IN ALL BENTS SHALL HAVE A MINIMUM PENETRATION OF 20 FT. BELOW THE GROUND LINE. ALL PILING SHALL BE DRIVEN WITH AN APPROVED AIR, STEAM, OR DIESEL HAMMER. PILES IN END BENTS SHALL BE DRIVEN AFTER EMBANKMENT TO BOTTOM OF CAP IS IN PLACE. LENGTHS OF PILING SHOWN ARE ASSUMED FOR ESTIMATING QUANTITIES FOR BID COMPARISON PURPOSES ONLY. ACTUAL LENGTHS TO BE DETERMINED IN THE FIELD. PILE SHAPES IN BENTS 2 AND 3 SHALL NOT BE MIXED. DRIVE ONE 35FT. TEST PILE IN BENT NO. 1 AND ONE 45FT. TEST PILE IN BENT NO. 3.

DECK FINISH: THE ROADWAY SURFACE OF THE CONCRETE BRIDGE DECK SHALL BE GIVEN A TINE FINISH AS SPECIFIED FOR FINAL FINISHING IN SUBSECTION 802.23 FOR A CLASS 6, ROADWAY SURFACE FINISH.

FOR DETAILS OF END BENTS, SEE DWG. NO. 25900
FOR DETAILS OF INT. BENTS, SEE DWG. NO. 25900
FOR DETAILS OF 25'-0" R.C. SLAB SPANS, SEE DWG. NO. 25901
FOR DETAILS OF CONCRETE PILING, SEE DWG. NO. 2383
FOR DETAILS OF APPROACH GUTTERS, SEE DWG. NO. 1898U-1 & 1898U-2

DETOUR BRIDGE: CONSTRUCT A 60' DETOUR BRIDGE APPROXIMATELY 40 FT. DOWNSTREAM WITH A MINIMUM DECK ELEVATION OF 250.0. DETOUR BRIDGE SHALL HAVE A MINIMUM ROADWAY WIDTH OF 20 FT. AND BE DESIGNED FOR H15 LIVE LOADING. SEE SECTION 603 OF THE STANDARD SPECIFICATIONS AND SP 603-3.

EXISTING BRIDGE: THE CONTRACTOR SHALL REMOVE THE EXISTING BRIDGE (BR. NO. 1306) IN ACCORDANCE WITH SECTION 205 OF THE STANDARD SPECIFICATIONS. THE EXISTING 24' X 59' BRIDGE CONSISTS OF THREE TIMBER SPANS AND SUBSTRUCTURE WITH A CONCRETE DECK. BRIDGE IS AT LOG MILE 7.98. ALL MATERIAL SHALL BECOME THE PROPERTY OF THE CONTRACTOR WITH THE EXCEPTION OF THE FOLLOWING WHICH SHALL BE RETAINED BY THE STATE.

36 - 6" X 14" X 20' TREATED TIMBER STRINGERS
4 - 3" X 10" X 30' TREATED TIMBER SWAY BRACES
4 - 12" X 12" X 28' TREATED TIMBER CAPS
ALL HEADWALL BOARDS THAT ARE SALVAGEABLE.

BORING LEGEND

A - Moist, Loose Sand & Gravel
B - Moist, Medium Stiff Silty Clay with Some Gravel
C - Moist, Soft Silty Clay
D - Moist, Very Stiff Silty Clay
E - Moist, Medium Dense Clayey Sand
F - Moist, Dense Sand
G - Wet, Dense Sand
H - Moist to Wet, Loose Silty Gravel
I - Moist, Very Stiff Silty Clay
J - Wet, Medium Dense Silty Sand
K - Wet, Very Dense Sand

HYDRAULIC DATA	Discharge (cfs)	Normal Water Surface Elev.	N.W.S. Elev. With Backwater
Base Flood (Q_{100})	2,727	247.7	——
Design Flood (Q_{50})	2,476	247.4	249.1

Drainage Area = 15.7 mi²
Historical High Water = Elev. 247.4

LAYOUT OF BRIDGE OVER
BLACK FORK CREEK
POINSETT CO. LINE - HWY. 63 BRS. & APPRS.
CRAIGHEAD COUNTY
ROUTE 49 SEC. 4

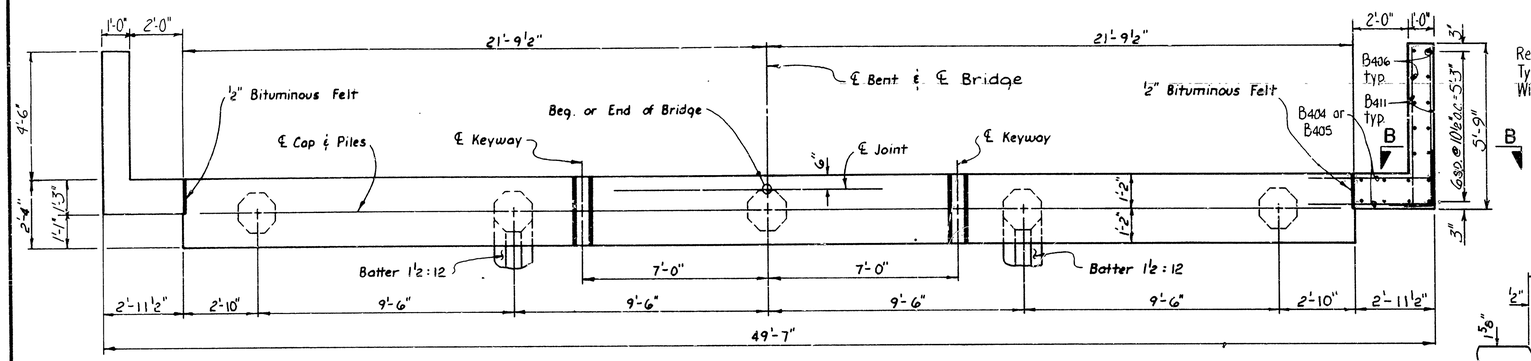
ARKANSAS STATE HIGHWAY COMMISSION
LITTLE ROCK, ARK.

DRAWN BY: DHM DATE: —
CHECKED BY: WSB DATE: Aug. 83
DESIGNED BY: MAS DATE: —
SCALE: 1" = 20'-0"

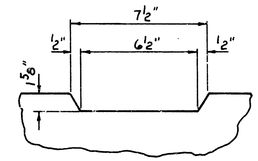
Earl Pinkerton
BRIDGE ENGINEER

BRIDGE NO. 6012 DRAWING NO. 25899

DATE REVISED	DATE FILMED	DATE REVISED	DATE FILMED	FED. ROAD NO.	STATE	FED. AID PROJ. NO.	SHEET NO.	TOTAL SHEETS
					ARK.			
				JOB NO.		10937	17	57
				(1) 6012		STD. BENTS 25900		

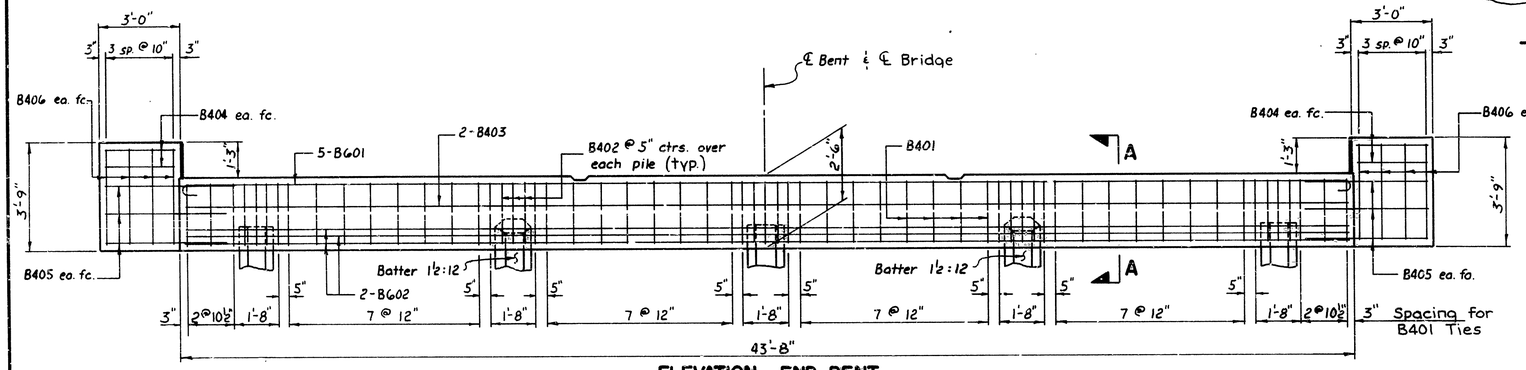


PLAN - END BENT

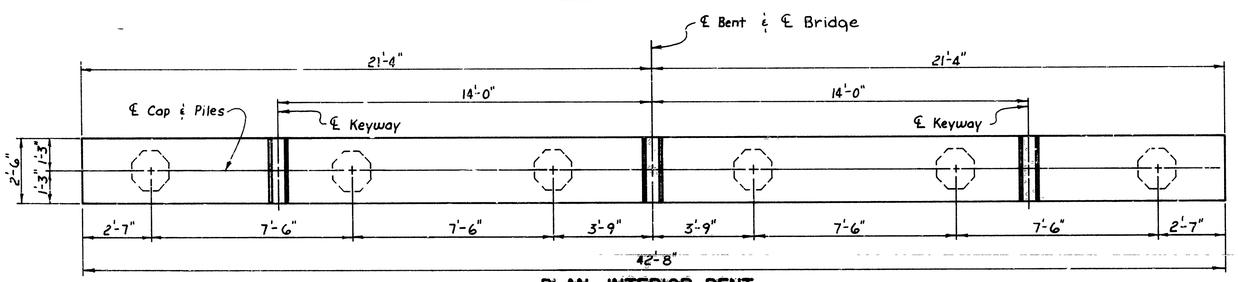


KEYWAY DETAIL

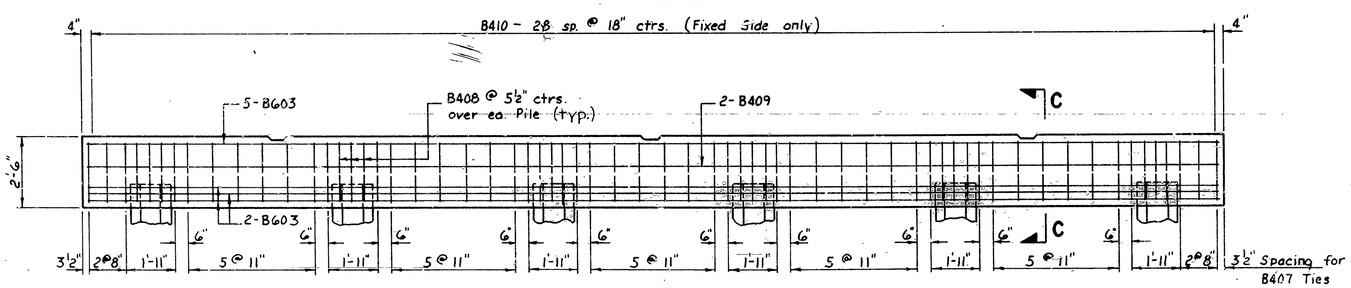
Scale: 3" = 1'-0"



ELEVATION - END BENT



PLAN - INTERIOR BENT



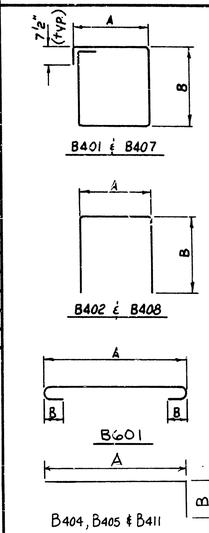
ELEVATION - INTERIOR BENT

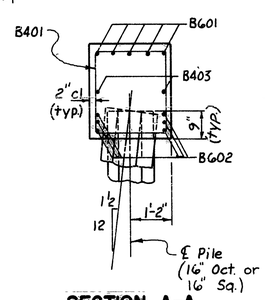
BAR LIST - PER BENT

MARK	NO. REQ'D. END BT.	NO. REQ'D. INT. BT.	LENGTH	A	B	PIN. DIA.
B401	46	–	9'-2"	2'-0"	2'-2"	2"
B402	15	–	6'-2"	2'-0"	2'-2"	2"
B403	4	–	22'-6"	–	–	Str.
B404	8	–	3'-8"	2'-8"	1'-0"	2"
B405	12	–	5'-6"	4'-6"	1'-0"	2"
B406	36	–	3'-5"	–	–	Str.
B407	–	46	9'-6"	2'-2"	2'-2"	2"
B408	–	18	6'-4"	2'-2"	2'-2"	2"
B409	–	4	22'-0"	–	–	Str.
B410	–	*	2'-6"	–	–	Str.
B411	20		6'-5"	5'-5"	1'-0"	2"
B601	5	–	44'-8"	43'-4"	6"	4½"
B602	6	–	43'-4"	–	–	Str.
B603	–	11	42'-4"	–	–	Str.

* 29 REQ'D. AT FIX. - EXP. BENT
58 REQ'D. AT FIX. - FIX. BENT

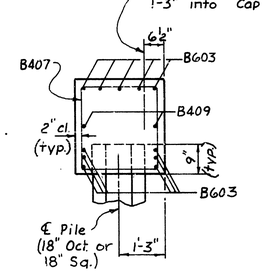
BENDING DIAGRAMS





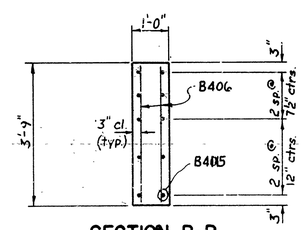
SECTION A-A

Scale: ½" = 1'-0"



SECTION C-C

Scale: ½" = 1'-0"



SECTION B-B

Scale: ½" = 1'-0"

GENERAL NOTES

ALL CONCRETE SHALL BE CLASS "S" WITH A MINIMUM 28 DAY COMPRESSIVE STRENGTH f'c = 3500 PSI. CONCRETE SHALL BE POURED IN THE DRY AND ALL EXPOSED CORNERS SHALL BE CHAMFERED 3/4" UNLESS OTHERWISE NOTED.

PILING: PILES IN END BENTS SHALL BE 16" OCTAGONAL OR 14" SQUARE PRECAST CONCRETE AND SHALL BE DRIVEN TO A MINIMUM BEARING CAPACITY OF 44 TONS PER PILE. THEY SHALL BE DRIVEN AFTER EMBANKMENT TO BOTTOM OF CAP IS IN PLACE. PILES IN INTERIOR BENTS SHALL BE 18" OCTAGONAL OR 18" SQUARE PRECAST CONCRETE AND SHALL BE DRIVEN TO A MINIMUM BEARING CAPACITY OF 55 TONS PER PILE.

REINFORCING STEEL SHALL BE ASTM A615 OR A617, GRADE 60, (YIELD STRENGTH = 60,000 PSI).

DESIGN SPECIFICATIONS: AASHTO STANDARD SPECIFICATIONS FOR HIGHWAY BRIDGES, 1977 EDITION WITH CURRENT INTERIMS.

LIVE LOAD: HS20

METHOD OF DESIGN: LOAD FACTOR

QUANTITIES

UNIT OF STRUCTURE	ITEM: CLASS S CONC	ITEM: REINFORCING STEEL
END BENT	11.51 cu. yds.	1361 LBS.
INT. Bt. (FIX.-EXP.)	9.57 cu. yds.	1175 LBS.
INT. Bt. (FIX-FIX.)	9.57 cu. yds.	1223 LBS.

DETAILS OF STANDARD PILE BENTS FOR 25'-0" R.C. SLAB SPANS 40'-0" CLEAR ROADWAY CONCRETE PARAPET RAIL

ROUTE 49 SEC. 4

ARKANSAS STATE HIGHWAY COMMISSION

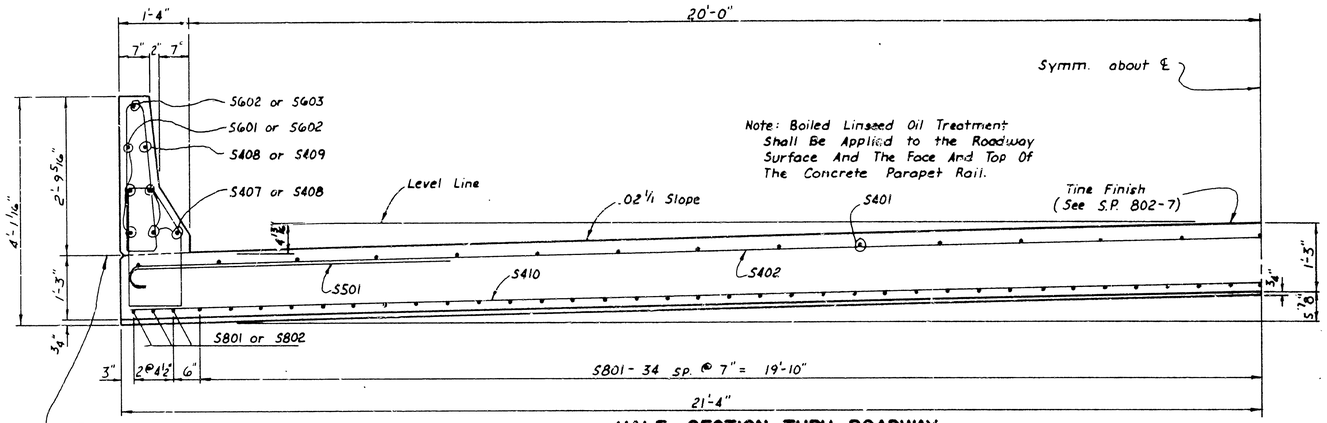
LITTLE ROCK, ARK.

DRAWN BY: TEB DATE: 6-13-77
CHECKED BY: JCK DATE: 6-22-77
DESIGNED BY: CES DATE: 4-20-77
SCALE: 3/8" = 1'-0" or as noted

BRIDGE ENGINEER

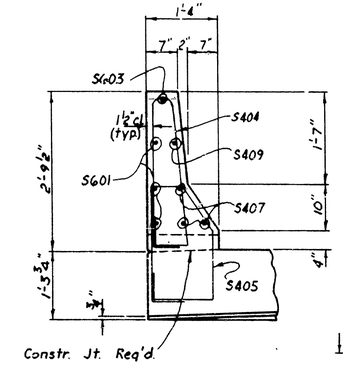
BRIDGE NO. 6012 DRAWING NO. 25900

DATE REVISED	DATE FILMED	DATE REVISED	DATE FILMED	FED. ROAD NO.	STATE	FED. AID PROJ. NO.	SHEET NO.	TOTAL SHEETS
				6	ARK.			
				JOB NO.		10937	18	57
				① 6012	SLAB SPAN	25901		



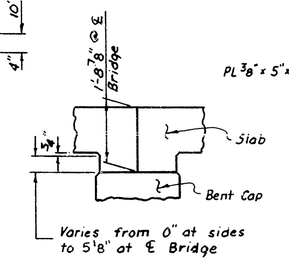
HALF-SECTION THRU ROADWAY

Scale: 3/4" = 1'-0"

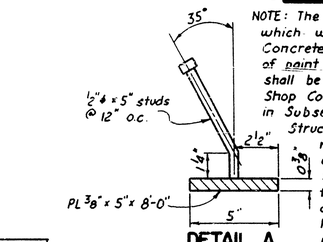


SECTION B-B

Scale: 3/4" = 1'-0"



RISER DETAIL



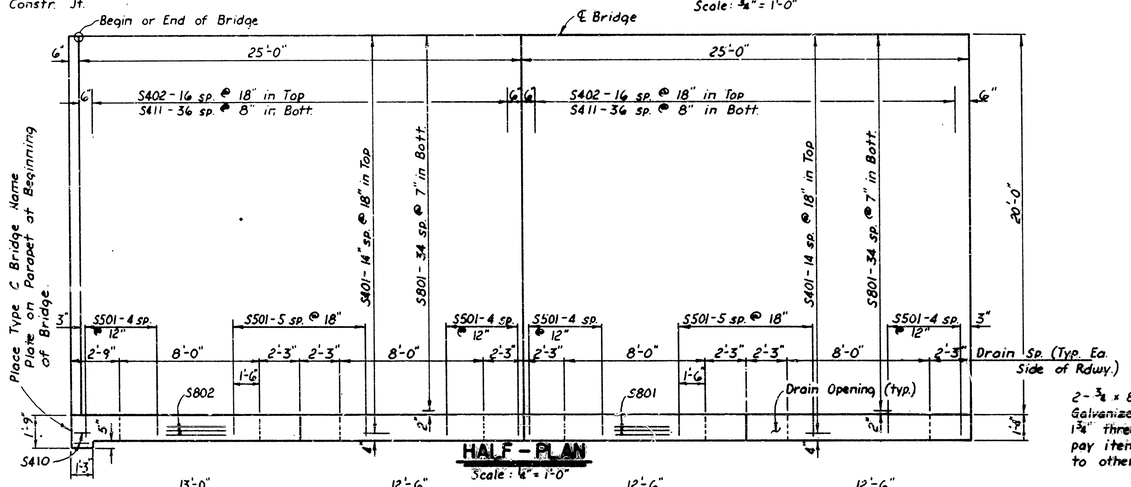
DETAIL A

No Scale

NOTE: The surfaces of the 3/8" Plates which will not be in contact with Concrete shall receive two coats of paint in the Shop. These coats shall be those specified as First Shop Coat and Second Field Coat in Subsection 807.59 (a) and 807.59 (c) Structural Steel shall meet the requirements of Section 807 except as noted. Studs shall be 5" long, granular flux filled, solid fluxed or equal and automatically welded to Plate. Studs and plate to be measured and paid for as Class S (AE) Concrete. FOR ALTERNATE PAINT SYSTEM SEE SP-807-10.

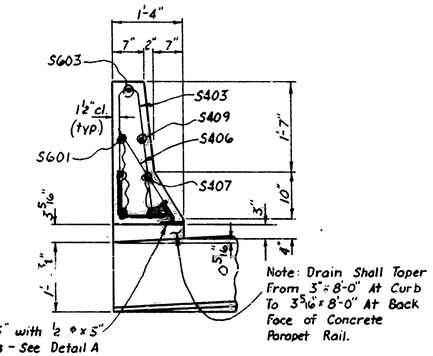
QUANTITY	END SPAN	INTERIOR SPAN
CONCRETE	54.97 CU. YDS.	54.43 CU. YDS.
REINFORCING STEEL	8250 LBS.	8162 LBS.
STRUCTURAL STEEL*	215 LBS.	215 LBS.

* Not Paid For Directly, Subsidiary to the ITEM "Class S (AE) Concrete."



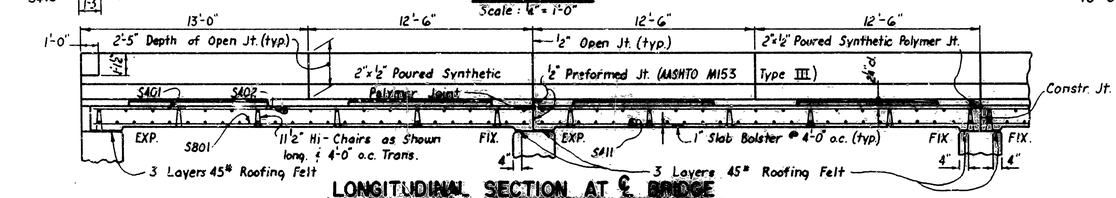
HALF-PLAN

Scale: 1/4" = 1'-0"



SECTION C-C

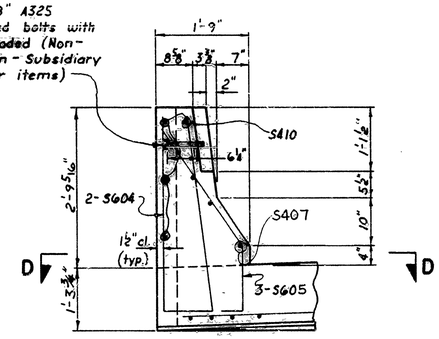
Scale: 3/4" = 1'-0"



LONGITUDINAL SECTION AT ℄ BRIDGE

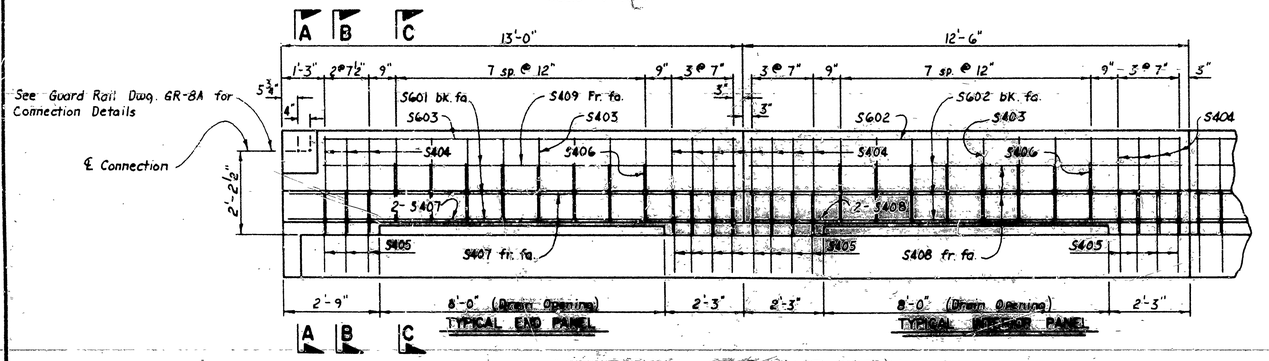
Scale: 1/4" = 1'-0"

2-3/4" x 8" A325 Galvanized bolts with 1 3/4" threaded (Non-pay item - Subsidiary to other items)



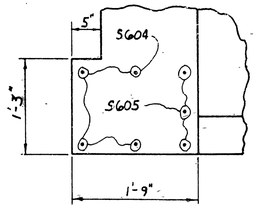
SECTION A-A

Scale: 3/4" = 1'-0"



LONGITUDINAL SECTION AT CURB

Scale: 1/4" = 1'-0"



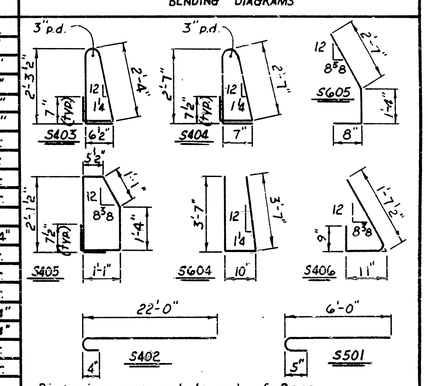
SECTION D-D

Scale: 1" = 1'-0"

BAR LIST (EACH SPAN)

MARK	NO. REQ'D. END	NO. REQ'D. INT.	LENGTH	PIN DIA.
S401	29	29	24'-8"	Str.
S402	34	34	22'-6"	3"
S403	32	32	6'-4"	2"
S404	30	32	7'-1"	2"
S405	30	32	6'-11"	2"
S406	32	32	3'-3"	2"
S407	6	–	12'-8"	Str.
S408	8	16	12'-2"	Str.
S409	2	–	12'-8"	Str.
S410	10	–	11"	Str.
S411	74	74	22'-0"	Str.
S501	32	52	6'-7"	3 3/4"
S601	6	–	12'-8"	Str.
S602	8	16	12'-2"	Str.
S603	2	–	11'-8"	Str.
S604	4	–	7'-9"	3 3/4"
S605	6	–	4'-5"	3 3/4"
S801	69	75	24'-8"	Str.
S802	6	–	25'-2"	Str.

BENDING DIAGRAMS



GENERAL NOTES

ALL EXPOSED CORNERS TO BE CHAMFERED 3/4" UNLESS OTHERWISE NOTED.

BAR SUPPORTS FOR REINFORCING BARS WILL NOT BE PAID FOR DIRECTLY, BUT WILL BE CONSIDERED SUBSIDIARY TO THE ITEM "REINFORCING STEEL."

ROOFING FELT, BITUMINOUS FELT, PREFORMED JOINT, AND SYNTHETIC POLYMER SHALL BE MEASURED AND PAID FOR AS CLASS S(AE) CONCRETE.

SPECIFICATIONS: ARKANSAS STATE HIGHWAY COMMISSION STANDARD SPECIFICATIONS FOR HIGHWAY CONSTRUCTION, EDITION OF 1978, AND APPLICABLE SPECIAL PROVISIONS.

DESIGN SPECIFICATIONS: AASHTO STANDARD SPECIFICATIONS FOR HIGHWAY BRIDGES, 1977 EDITION WITH CURRENT INTERIMS

LIVE LOAD: HS20-44
METHOD OF DESIGN: LOAD FACTOR

LOAD DISTRIBUTION TO SLAB: DEAD LOAD: 227 PSF
LIVE LOAD: 0.184 WHEELS/FT. OF WIDTH PLUS 30% IMPACT

CONCRETE: ALL CONCRETE SHALL BE CLASS S(AE) WITH A MINIMUM 28 DAY COMPRESSIVE STRENGTH f'c = 3500 PSI.

REINFORCING STEEL: REINFORCING STEEL SHALL CONFORM TO ASTM A615 OR A617, GRADE 60 (YIELD STRENGTH = 60,000 PSI).

DETAILS OF STANDARD 25'-0" R.C. SLAB SPANS CONC. PARAPET RAIL - 40'-0" CL. RDWY.

ROUTE 49 SEC. 4

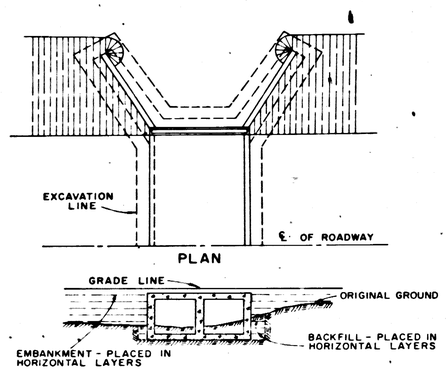
ARKANSAS STATE HIGHWAY COMMISSION

LITTLE ROCK, ARK.

DRAWN BY: TEB DATE: 5-16-77
CHECKED BY: TCK DATE: 6-21-77
DESIGNED BY: CES DATE: Std.
SCALE: As Noted

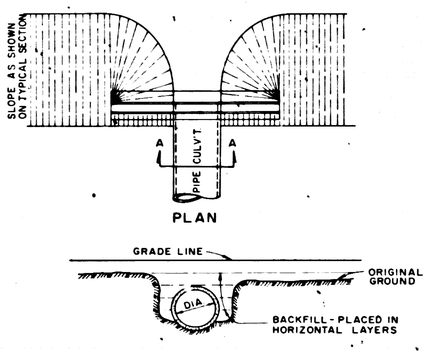
BRIDGE ENGINEER

BRIDGE NO. 6012 DRAWING NO. 25901



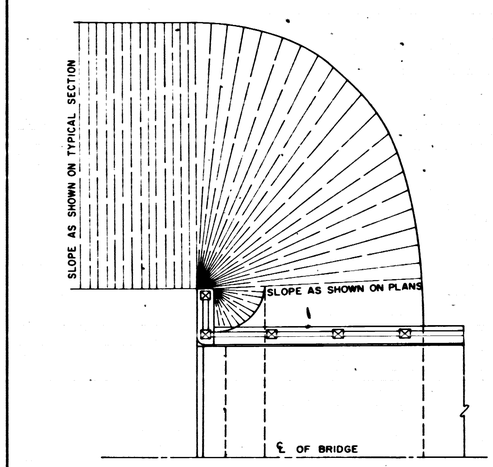
LONGITUDINAL SECTION

BOX CULVERT

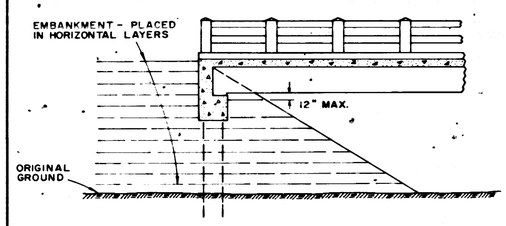


SECTION A-A

PIPE CULVERT



HALF PLAN



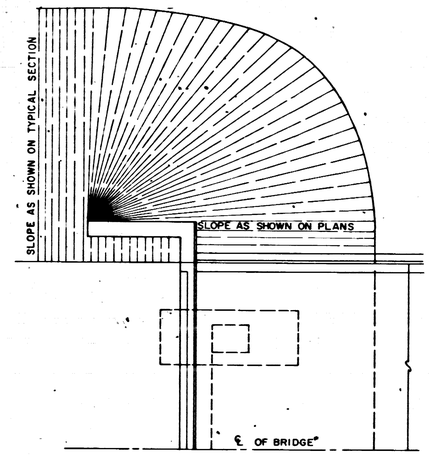
LONGITUDINAL SECTION

OPEN END ABUTMENT

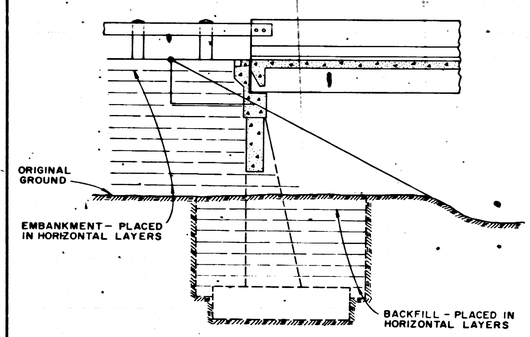
CONSTRUCTION OF THE BRIDGE END EMBANKMENT

THE BRIDGE END EMBANKMENT SHALL BE DEFINED AS NOT LESS THAN 20 FEET OF EMBANKMENT ADJACENT TO THE END OF THE BRIDGE TOGETHER WITH THE SIDE SLOPES AND SLOPES UNDER THE BRIDGE END AND AROUND THE END OF WINGWALLS.

REFER TO SUB-SECTIONS 210.08 AND 210.09 OF THE SPECIFICATIONS FOR CONSTRUCTION REQUIREMENTS.



HALF PLAN



LONGITUDINAL SECTION

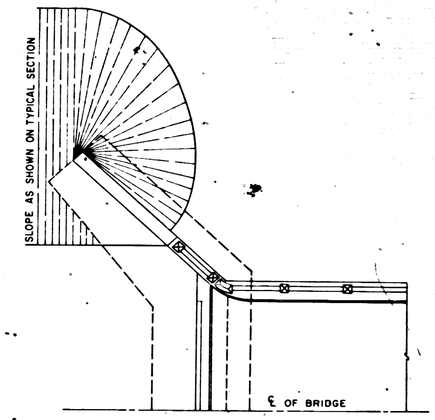
SEMI-STUB ABUTMENT AND TURN BACK WING PILE BENT

BACKFILLING EXCAVATION

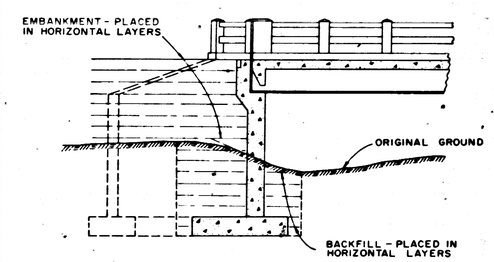
IN SO FAR AS PRACTICABLE, ABUTMENT EXCAVATIONS SHALL BE CUT TO THE SIZE SHOWN ON THE PLANS WITH ALLOWANCE OF 3 FEET ON ALL SIDES.

OVERSIZED AND FLARED CUTS TO AVOID THE USE OF SHEETING SHALL NOT BE PERMITTED.

BACKFILL AROUND THE WALL OR COLUMNS SHALL BE COMPACTED IN ACCORDANCE WITH SUB-SECTION 801.08 OF THE SPECIFICATIONS.



HALF PLAN



LONGITUDINAL SECTION

WINGWALL ABUTMENT

GENERAL NOTE

BACKFILL AND EMBANKMENT ADJACENT TO STRUCTURES TO BE CONSTRUCTED IN 4 INCH HORIZONTAL LAYERS (LOOSE MEASURE) AND COMPACTED TO THE SATISFACTION OF THE ENGINEER BY USE OF MECHANICAL EQUIPMENT.

DATE	REVISION	DATE FILMED
7-15-78	Redraw — — —	5241-9-22-78
9-15-78	SECTION 202 TO 210	871-9-15-78
10-2-72	REVISED & REDRAWN	820-10-2-72

ARKANSAS STATE HIGHWAY COMMISSION

EMBANKMENT CONSTRUCTION AT BRIDGE ENDS AND BACKFILL FOR STRUCTURES

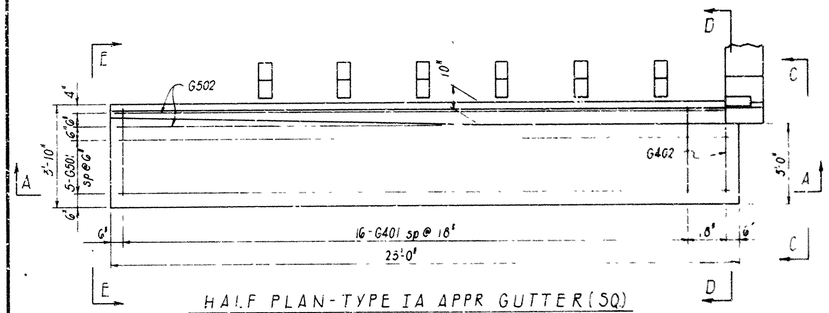
STANDARD DRAWING

1888A

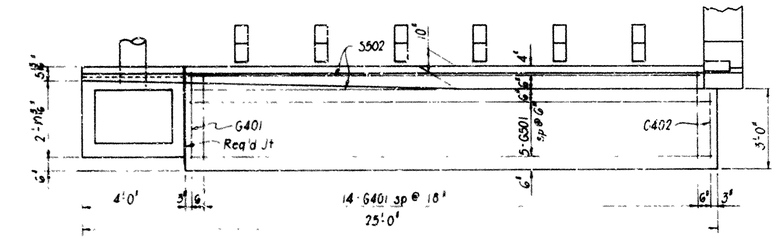
358

DATE REVISED	DATE REVISED	DATE REVISED	DATE REVISED	FED. ROAD DIST. NO.	STATE	FED. AID PROJ. NO.	SHEET NO.	TOTAL SHEETS
				6	ARK.			
				JOB NO.				

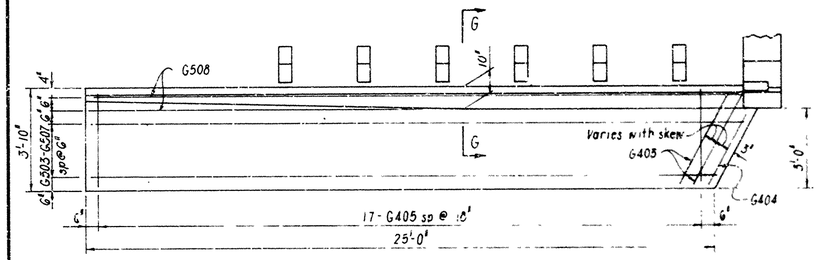
(1) Sheet 1 APPR. GUT. 1898 U-1



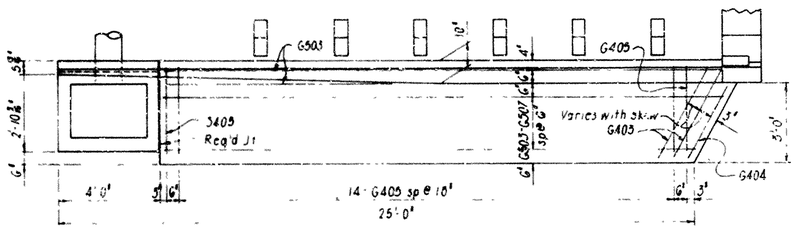
HALF PLAN-TYPE IA APPR GUTTER (SQ)



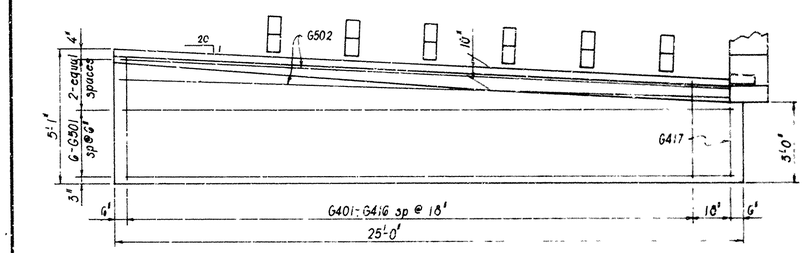
HALF PLAN-TYPE IB APPR GUTTER (SQ)



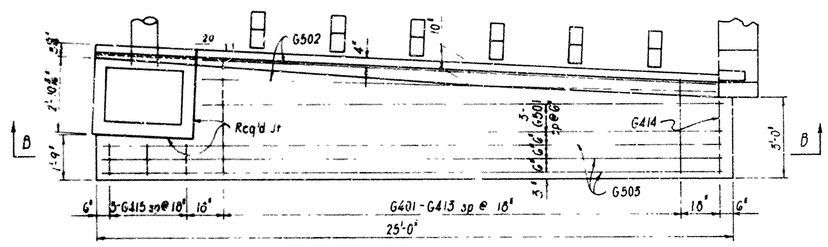
HALF PLAN-TYPE IA APPR. GUTTER (SKEWED)



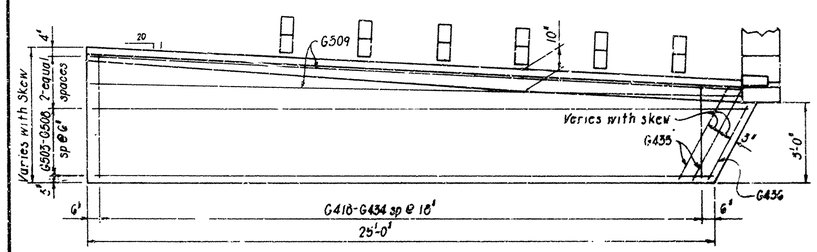
HALF PLAN-TYPE IB APPR. GUTTER (SKEWED)



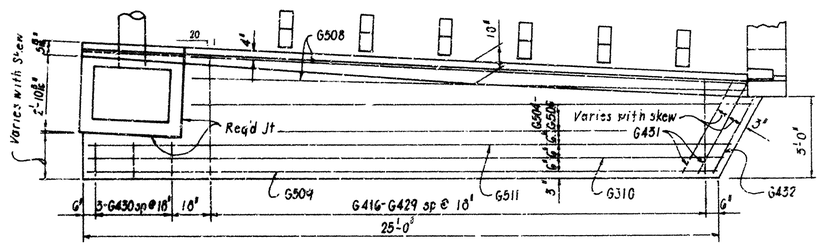
HALF PLAN-TYPE IIA APPR. GUTTER (SQ)



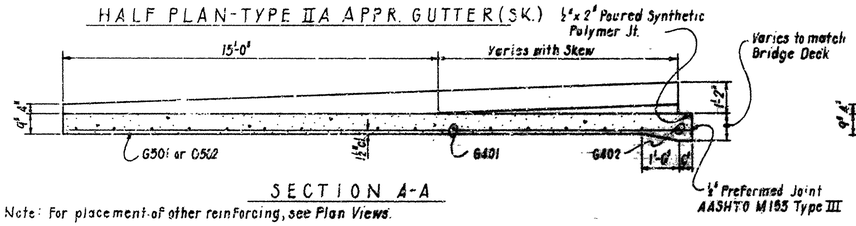
HALF PLAN-TYPE IIB APPR. GUTTER (SQ)



HALF PLAN-TYPE IIA APPR. GUTTER (SK.)

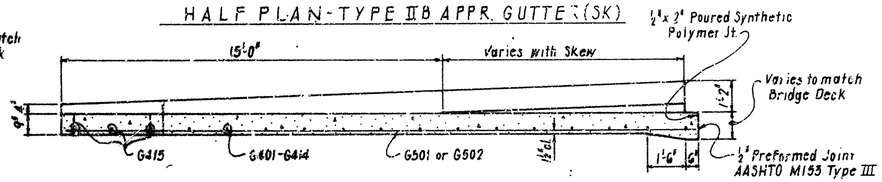


HALF PLAN-TYPE IIB APPR. GUTTER (SK)



SECTION A-A

Note: For placement of other reinforcing, see Plan Views.



SECTION B-B

Note: For placement of other reinforcing, see Plan Views.

ALL BAR LIST - ONE GUTTER

TYPE IA GUTTER

Mark	No Req'd	Length	Skewed or Sq.
G401	16	3'-6"	Sq.
G402	1	2'-8"	Sq.
G403	2	*	Skew
G404	1	*	Skew
G405	17	3'-6"	Skew
G501	5	24'-8"	Sq.
G502	2	24'-2"	Sq.
G503 to G507	1 ea	*	Skew
G508	2	*	Skew

TYPE IB GUTTER

Mark	No Req'd	Length	Skewed or Sq
G401	15	3'-6"	Sq
G402	1	2'-8"	Sq
G403	2	*	Skew
G404	1	*	Skew
G405	16	3'-6"	Skew
G501	5	20'-8"	Sq
G502	2	20'-2"	Sq
G503 to G507	1 ea.	*	Skew
G508	2	*	Skew

TYPE IIA GUTTER

Mark	No Req'd	Length	Skewed or Sq
G401 to G416	1 ea	3'-7" to 4'-8"	Sq
G417	1	2'-8"	Sq.
G418 to G434	1 ea	3'-6" to 4'-8"	Skew
G435	2	*	Skew
G436	1	*	Skew
G501	6	24'-8"	Sq.
G502	2	24'-2"	Sq
G503 to G508	1 ea.	*	Skew
G509	2	*	Skew

* Find Length according to skew angle

TYPE IIB GUTTER

Mark	No Req'd	Length	Skewed or Sq
G401 to G413	1 ea.	3'-7" to 4'-5"	Sq
G414	1	2'-8"	Sq
G415	3	1'-2"	Sq
G416 to G429	1 ea	3'-6" to 4'-5"	Skew
G430	3	1'-2"	Skew
G431	2	*	Skew
G432	1	*	Skew
G501	3	20'-8"	Sq
G502	2	20'-2"	Sq
G503	3	24'-8"	Sq
G504 to G506	1 ea.	*	Skew
G508	2	*	Skew
G509	1	*	Skew
G510	1	*	Skew
G511	1	*	Skew

TYPE IC, IIC BRIDGE APPROACH

Type IC Approach consist of one half of Type IA and one half of Type IB. Type IIC Approach consist of one half of Type IIA and one half of Type IIB. Use whenever called for on the bridge Layout.

TABLE OF QUANTITIES (ONE GUTTER)

Type	Concrete	Reinf Steel
IA	3.03 yd³	218 lb.
IB	4.97 yd³	411 lb.
IIA	3.46 yd³	251 lb.
IIB	5.42 yd³	450 lb.

Note All Quantities are Approx

Note: For Details of Guard Rail Fence, see Std. Drawing. GR-8A
For Details of Guard Rail Connection, see Sheet 2 - Dwg. 1898 U
For Details of Drop Inlet & Spillway, see Sheet 2 - Dwg. 1898 U

SHEET 1 OF 2

DETAILS OF STANDARD TYPE IA, IB, IIA, IIB, IC & IIC APPROACH GUTTERS

ROUTE SEC.

ARKANSAS STATE HIGHWAY COMMISSION
LITTLE ROCK, ARK.

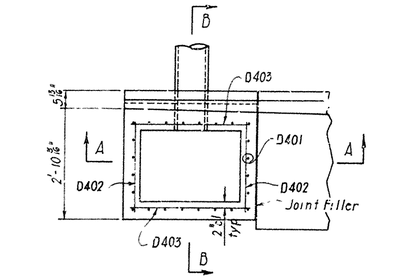
DRAWN BY: L.M. DATE: 6-24-82
CHECKED BY: D.H.P. DATE: 7-14-82
DESIGNED BY: D.F.L. DATE: 6-24-82
SCALE: 3/8" = 1'-0"

BRIDGE ENGINEER

BRIDGE NO. DRAWING NO. 1898 U-1

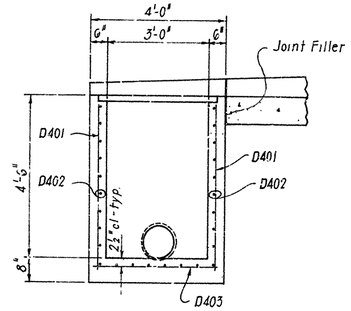
DATE REVISED	DATE FILMED	DATE REVISED	DATE FILMED	FED. ROAD NO.	STATE	FED. AID PROJ. NO.	SHEET NO.	TOTAL SHEETS
2-28-83	205-3-82			6	ARK.			
				JOB NO.				

(1) Sheet 2 GUT DTLS. 1898 U 2

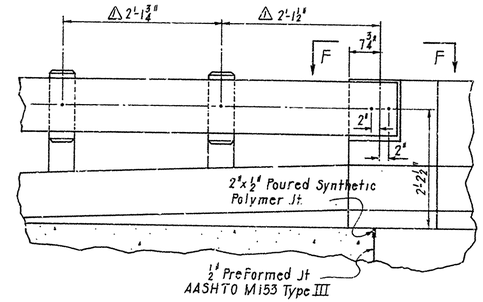


Note Joint Filler around Drop Inlet to be non-extruding preformed Joint Filler (AASHTO M153 Type III).

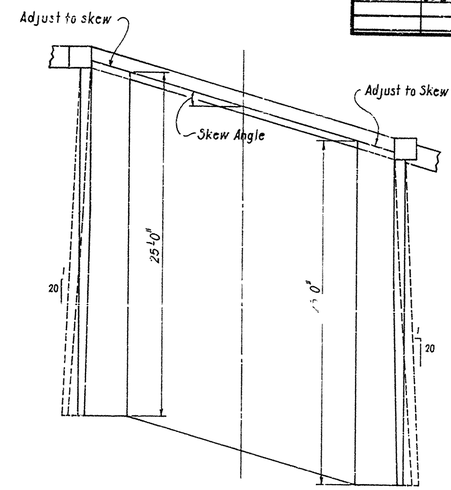
PLAN OF DROP INLET



SECTION A-A



TYPICAL RAIL CONNECTION
5/4"=1'-0"



SKETCH SHOWING APPROACH FOR SKEWED BRIDGE
3/16"=1'-0"

GENERAL NOTES

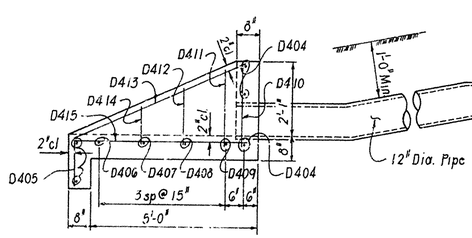
CONCRETE SHALL BE CLASS S OR CLASS S(AE) OR MIXTURE USED FOR PORTLAND CEMENT CONCRETE PAVEMENT.

REINFORCEMENT STEEL SHALL CONFORM TO ASTM A615 OR A617.

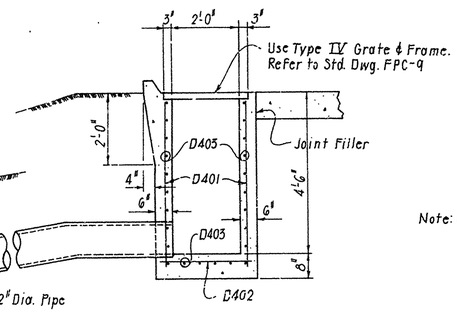
APPROACH GUTTERS FOR STRUCTURES SHALL BE PAID FOR AT THE CONTRACT UNIT PRICE EACH BID FOR "APPROACH GUTTERS" OF THE TYPE DESIGNATED, WHICH PRICE SHALL BE FULL COMPENSATION FOR FURNISHING MATERIALS, INCLUDING CONCRETE, REINFORCING STEEL AND JOINT FILLER, PLACEMENT AND COMPACTION OF BASE MATERIAL FOR FORMS, MIXING, PLACING, CURING AND FINISHING, FOR EXCAVATION AND BACKFILL, AND FOR ALL LABOR, TOOLS, EQUIPMENT AND INCIDENTALS NECESSARY TO COMPLETE THE WORK.

CORRUGATED METAL PIPE FOR SPILLWAYS, COMPLETED AND ACCEPTED, WILL BE MEASURED AS PROVIDED IN SECTION 606 OF THE STANDARD SPECIFICATIONS, EDITION OF 1978.

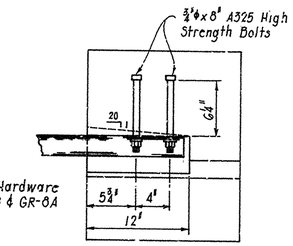
Note: Payment For Drop Inlet & Spillway to be included in Unit Price Bid For Type IB, IIB, IC, & IIC Approach Gutters



SIDE ELEVATION
SPILLWAY OUTLET



SECTION B-B

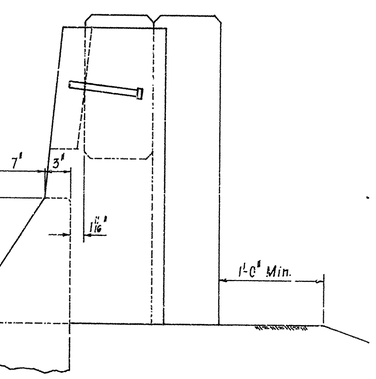


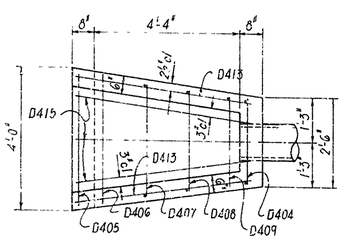
Note: For Details of Hardware See Dwgs. GR-8 & GR-8A

VIEW F-F
1½"=1'-0"

BAR LIST

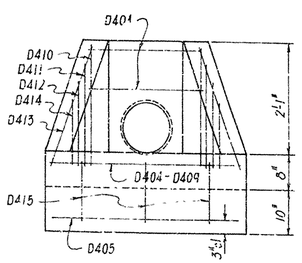
Mark	No. Req'd.	Length	Bending Diagram
D401	24	4'-6"	
D402	26	2'-8"	
D403	24	3'-8"	
D404	3	2'-2"	
D405	2	3'-8"	
D406	1	3'-5"	
D407	1	3'-1"	
D408	1	2'-9"	
D409	1	2'-5"	
D410	2	2'-5"	
D411	2	2'-2"	
D412	2	1'-9"	
D413	2	5'-6"	
D414	2	1'-2"	
D415	3	6'-5"	



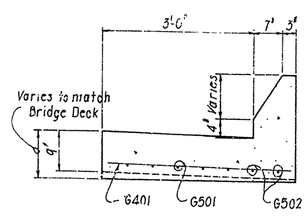


PLAN

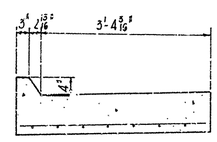
VIEW C-C
1½"=1'-0"



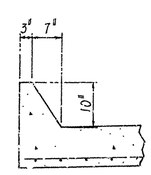
FRONT ELEVATION
3/4"=1'-0"



SECTION D-D
3/4"=1'-0"



VIEW E-E
3/4"=1'-0"



SECTION G-G
3/4"=1'-0"

⚠ Revised Post Spacing 2-28-83, L.M.

SHEET 2 OF 2

DETAILS OF STANDARD TYPE IA, IB, IIA, IIB, IC & IIC APPROACH GUTTERS

ROUTE SEC.

ARKANSAS STATE HIGHWAY COMMISSION

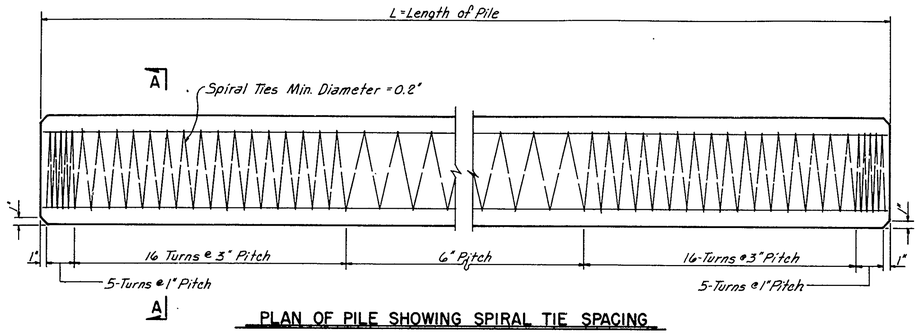
LITTLE ROCK, ARK.

DRAWN BY: L.M. DATE: 6-30-82
CHECKED BY: D.H.P. DATE: 7-12-82
DESIGNED BY: D.E.L. DATE: 6-30-82
SCALE: 1/2"=1'-0" or as shown

BRIDGE ENGINEER

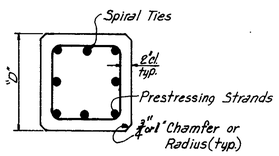
BRIDGE NO. DRAWING NO. 1898U2

DATE REVISED	DATE FILMED	DATE REVISED	DATE FILMED	FED. ROAD NO.	STATE	FED. AID PROJ. NO.	SHEET NO.	TOTAL SHEETS
7-24-75	687-8-4-75	9-15-78	882-9-15-78	6	ARK.			
12-2-77	501-12-577			JOB NO.			20	

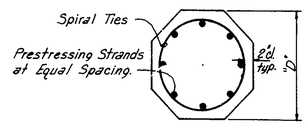


PLAN OF PILE SHOWING SPIRAL TIE SPACING

NOTE: Strand location shall be symmetrical about the Axis of the pile with no more than one strand difference between any two adjacent sides.



SECTION A-A
SQUARE PILE



SECTION A-A
OCTAGONAL PILE

PRESTRESSED CONCRETE PILES

PRESTRESSED PILE PROPERTIES

GRADE	STRAND DIAMETER	*NUMBER OF STRANDS PER PILE SIZE "D" 16" OCT.	18" OCT.	14" SQ.	16" SQ.	18" SQ.	MINIMUM ULTIMATE TENSILE STRENGTH PER STRAND (LBS)	INITIAL PRESTRESSING FORCE PER STRAND (LBS)
250	3/8"	14	18	14	16	22	20,000	14,000
	7/16"	11	13	10	12	16	27,000	18,900
	1/2"	8	10	8	10	12	36,000	25,200
270	3/8"	12	15	12	14	18	23,000	16,100
	7/16"	9	11	8	12	14	31,000	21,700
	1/2"	7	9	6	8	10	41,300	28,900

*Number Based on initial Prestress Force of 0.7 x Ultimate Tensile Stress, Prestress Losses, and Min. 700 psi. Unit Prestress on concrete after Losses.

GENERAL NOTES

CONSTRUCTION SPECIFICATIONS: ARKANSAS STATE HIGHWAY COMMISSION STANDARD SPECIFICATIONS FOR HIGHWAY CONSTRUCTION, EDITION OF 1978, AND APPLICABLE SPECIAL PROVISIONS.

DESIGN SPECIFICATIONS: AASHTO 1977 WITH 1978 INTERIMS

CONCRETE: CONCRETE IN THE PRECAST PRESTRESSED PILES SHALL BE CLASS S(AE) AND SHALL HAVE A MINIMUM COMPRESSIVE CYLINDER STRENGTH (f'c) OF 5000 PSI AT 28 DAYS. COMPRESSIVE CYLINDER STRENGTH AT TRANSFER OF THE PRESTRESSING FORCE SHALL BE NOT LESS THAN 4000 PSI.

CONCRETE IN BUILD-UPS SHALL HAVE A MINIMUM COMPRESSIVE CYLINDER STRENGTH (f'c) OF 3500 PSI.

PRESTRESSING REINFORCEMENT: SEVEN WIRE STRESS RELIEVED STRAND SHALL CONFORM TO THE GENERAL REQUIREMENTS OF ASTM A416. BROKEN WIRES WITHIN INDIVIDUAL STRANDS WILL BE PERMITTED UP TO 2% OF THE TOTAL NUMBER OF WIRES IN EACH PILE, PROVIDING THAT THERE IS NOT MORE THAN ONE BROKEN WIRE PER STRAND. TWO OR MORE BROKEN WIRES PER STRAND WILL BE CAUSE FOR REPLACEMENT OF THE STRAND, EVEN THOUGH THE TWO BROKEN WIRES ARE WITHIN THE 2% LIMITATION.

BUILD-UPS: TO PROVIDE FOR BUILD-UPS OF PILES WHERE AUTHORIZED BY THE ENGINEER, CONCRETE SHALL BE CUT BACK TO EXPOSE THE STRANDS FOR A DISTANCE SUFFICIENT TO PROVIDE A LAP OF 40 DIAMETERS OF THE REINFORCING BARS REQUIRED FOR BUILD-UP. REINFORCING FOR BUILD-UPS SHALL HAVE A MINIMUM AREA EQUAL TO 1-1/2% OF THE GROSS SECTION OF PILE. PLACEMENT OF BARS SHALL BE IN A SYMMETRICAL PATTERN OF NOT LESS THAN FOUR BARS. SEE SECTION 805.14 OF THE STANDARD SPECIFICATIONS.

FORMS: FOR FORMING EXTERIOR OF PILES, THE USE OF STEEL FORMS ON CONCRETE FOUNDED CASTING BEDS IS REQUIRED, UNLESS OTHERWISE APPROVED BY THE ENGINEER. SIDE FORMS MAY HAVE A MAXIMUM DRAFT ON EACH SIDE NOT EXCEEDING 1/4" PER FOOT.

TOLERANCES: PILE ENDS SHALL BE PLANE SURFACES AND PERPENDICULAR TO AXIS OF PILE WITH A MAXIMUM TOLERANCE OF 1/8" PER FOOT TRANSVERSELY.

THE MAXIMUM SWEEP (DEVIATION FROM STRAIGHTNESS MEASURED ALONG TWO PERPENDICULAR FACES OF THE PILE, WHILE NOT SUBJECT TO BENDING FORCES) SHALL NOT EXCEED 1/8" IN 10' OF ITS LENGTH.

GENERAL: SHIPMENT OF PILES FROM THE PLANT SITE OR PILE DRIVING WILL NOT BE PERMITTED UNTIL THE REQUIRED MINIMUM CYLINDER STRENGTH IS REACHED, AND IN NO CASE LESS THAN 10 DAYS AFTER POURING THE CONCRETE. PILES MAY BE REMOVED FROM CASTING BED TO A NEARBY STORAGE ANY TIME AFTER TRANSFER OF STRESS.

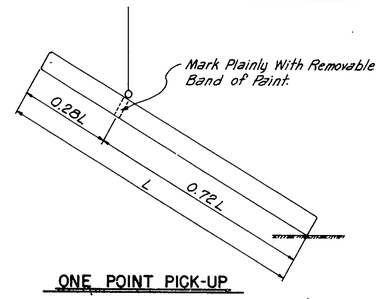
SPIRAL REINFORCING: SPIRAL REINFORCING SHALL BE STEEL WIRE MEETING THE REQUIREMENTS OF ASTM A82 WITH A MINIMUM DIAMETER OF 0.2" OR SHALL BE PLAIN ROUND STEEL BARS MEETING THE REQUIREMENTS OF ASTM A615, WITH A MINIMUM DIAMETER OF 0.25".

MANUFACTURE, TRANSPORTATION AND STORAGE: SEE SECTION 802 "CONCRETE FOR STRUCTURES" OF THE STANDARD SPECIFICATIONS.

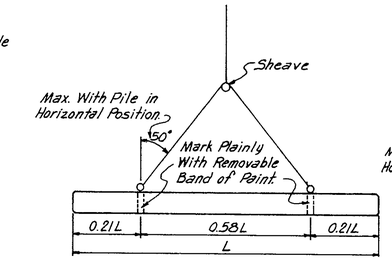
INSTALLATION, MEASUREMENT AND PAYMENT: SEE SECTION 805 "BEARING PILING" OF THE STANDARD SPECIFICATIONS. PRECAST PRESTRESSED CONCRETE PILING WILL BE PAID FOR AT THE CONTRACT UNIT PRICE PER LINEAR FOOT BID FOR "PRECAST CONCRETE PILING".

MAXIMUM PICKUP LENGTHS L

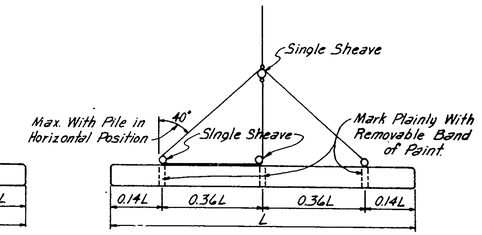
TYPE OF PICK-UP	PRESTRESSED 16" OCT.	18" OCT.	PRECAST 16" or 18" OCT.	PRESTRESSED 14" SQ.	16" SQ.	18" SQ.	PRECAST 14" SQ.	16" SQ.	18" SQ.
ONE-POINT	52'	55'	46'	55'	59'	63'	52'	51	55
TWO-POINT	75'	80'	67'	79'	84'	90'	75'	74	79
THREE-POINT	105'	112'	93'	110'	117	126'	104'	103	111



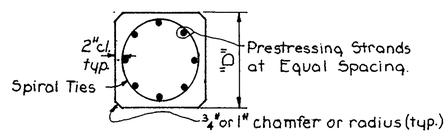
ONE POINT PICK-UP



TWO POINT PICK-UP



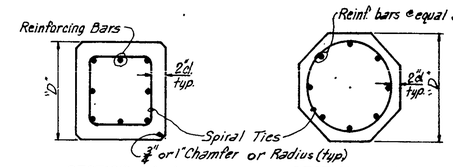
THREE POINT PICK-UP



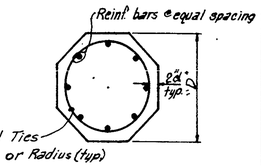
SECTION A-A
SQUARE PILE

PRECAST PILE REINFORCING

PILE SIZE	NO. REQ'D.	BAR SIZE
16" OCT.	8	#7
18" OCT.	8	#7
14" SQ.	8	#7
16" SQ.	8	#7
18" SQ.	8	#8

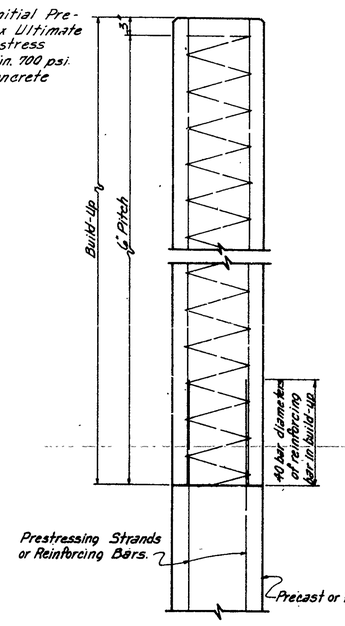


SECTION A-A
SQUARE PILE

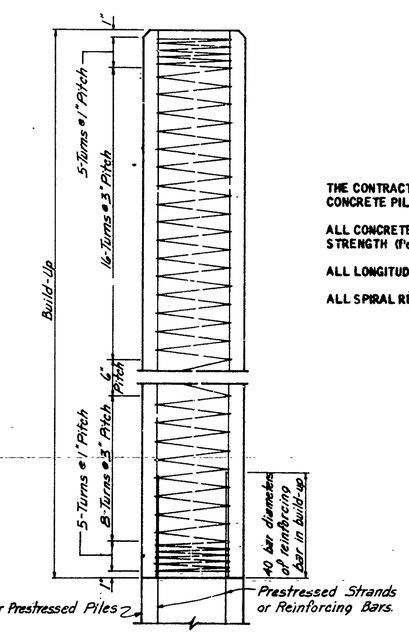


SECTION A-A
OCTAGONAL PILE

PRECAST CONCRETE PILES



BUILD-UP
WITHOUT DRIVING



BUILD-UP
WITH DRIVING

ALTERNATE PRECAST CONCRETE PILES

THE CONTRACTOR MAY ELECT TO USE A PRECAST CONCRETE PILE IN LIEU OF THE PRESTRESSED CONCRETE PILE. THE FOLLOWING NOTES APPLY TO PRECAST CONCRETE PILES.

ALL CONCRETE SHALL BE CLASS S(AE) AND SHALL HAVE A MINIMUM COMPRESSIVE CYLINDER STRENGTH (f'c) OF 3500 PSI AT 28 DAYS.

ALL LONGITUDINAL REINFORCING BARS SHALL BE DEFORMED BARS OF ASTM A615 OR A617.

ALL SPIRAL REINFORCING SHALL BE THE SAME AS THAT SHOWN FOR PRESTRESSED CONCRETE.

Revised 12-2-77, Added 3/4" Chamfer. Removed time before prestressing.

Revised 7-24-75: Redrawn to include Square Piles.

Revised for 1978 Specs. 9-15-78 K.D.N.

BRIDGE ENGINEER

DETAILS OF STANDARD
CONCRETE PILES

ROUTE SEC.

ARKANSAS STATE HIGHWAY COMMISSION
LITTLE ROCK, ARK.

DRAWN BY: W.W.W. DATE: 7-24-75
CHECKED BY: CAJ DATE: 7-31-75
DESIGNED BY: OFL DATE: 7-24-75
SCALE: 1" = 1'-0"

BRIDGE NO. DRAWING NO. 2383