

Note: All new W-Beams and Cover Plates are considered main load carrying members and shall meet the "Charpy V-Notch Test" requirements of Special Provision 807-4.

Note: Holes for $\frac{3}{4}$ " Hi-Strength Bolts may be $\frac{15}{16}$ " if a Washer is supplied for use under both the Nut and the Head of the Bolt.

EXPANSION DEVICE
 115 x 32.9
 Prefabricated Joint Sealer
 8" x 8" Splice at 12" ctr. Top & Bot.
 Connection Angle 6" x 3/4" x 3/4" x 0.28"
 Detail Device 1/2" high and provide 1/2" Shims using
 1-1/2" PL and 2-1/2" PL's.
 1/2" square bar for Seal Support (See Dwg. /S-55)

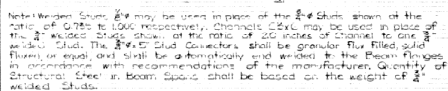
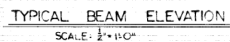


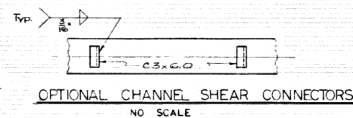
Diagram illustrating the Angle Connector Detail. The angle is labeled $L 3\frac{1}{2} \times 6 \times \frac{5}{8}$. The beam is labeled "Beam" and the joint is labeled "Joint". The angle is connected to the beam with two bolts. The angle is connected to the column with two bolts. The angle is labeled "ANGLE CONNECTOR DETAIL".

DETAIL "B"

LOAD DISTRIBUTION:	DEAD LOAD TO BEAM (INCLUDES APPROX 1.30 P/LF OF DECK SURFACE)	DEAD LOAD TO COMPOSITE BEAM (INCLUDES 15.0 P/LF FOR FUTURE SURFACE)	LIVE LOAD TO COMPOSITE BEAM (WHEELS - 5.5 - IMPACT)
OUTSIDE EXT. BEAMS	760 PLF	294 PLF	1.333
INSIDE EXT. BEAMS (UNDER MEDIAN)	608 PLF	294 PLF	1.333
NEW INT. BEAMS	846 PLF	294 PLF	1.455
EXIST. INT. BEAMS	1219 PLF	-	1.455



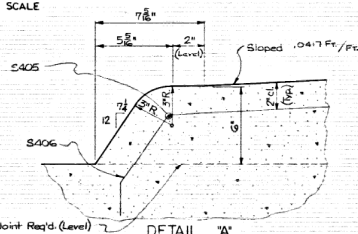
SEAL PLACEMENT IN
RAISED MEDIAN
NO SCALE



Const. Joint Req'd. (Level) 2

DETAIL "A"

NO SCALE



DETAIL "A"
NO SCALE

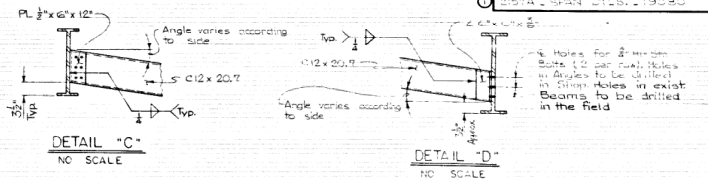
SHEET 1 OF 3
DETAILS FOR WIDENING 40' W-BEAM SPANS
FOR BRIDGE OVER LITTLE SUGAR CR.
BELLA VISTA ~ MO. LINE
BENTON COUNTY

ROUTE 71 SEC. 19
ARKANSAS STATE HIGHWAY COMMISSION
LITTLE ROCK, ARK.

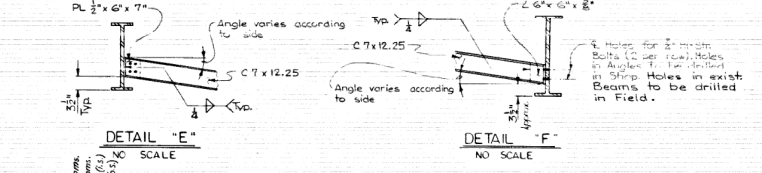
DRAWN BY: K.M.G. DATE: 22 March 74
CHECKED BY: E.T.F. DATE: 7-10-74 SCALE: 3"=10' except as noted
DESIGNED BY: E.T.F. DATE: 27 SEP 73
BRIDGE NO. 2157A DRAWING NO. 19079

DRAWN BY: K.M.G. DATE: 22 MAR 73
CHECKED BY: 212 DATE: 7-1-74 SCALE: 1"=10' except as noted
DESIGNED BY: E.I.F. DATE: 27 SEP 73

BRIDGE NO. 2157A DRAWING NO. 19079

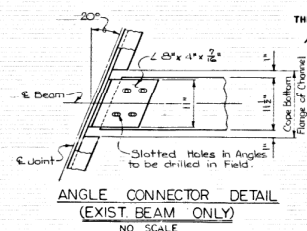


NOTE: For Details of Enhanced Parapet, see Dwg. No. 19081

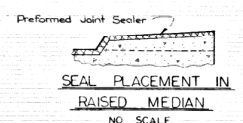


STRUCTURAL STEEL: ALL STRUCTURAL STEEL IN THE NEW BEAMS AND COVER PLATES SHALL CONFORM TO ASTM A572 GRADE 50. ALL OTHER STRUCTURAL STEEL SHALL CONFORM TO ASTM A36. STRUCTURAL STEEL SHALL BE PAID FOR AT THE CONTRACT UNIT PRICE PER POUND BID FOR "STRUCTURAL STEEL IN BEAM SPANS (A572-GRADE 50)".

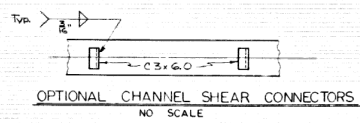
FOR PAINTING OF EXISTING STRUCTURAL STEEL see SP JOB 9579
FOR REMODELING OF EXISTING BRIDGE see SP JOB 9579



SCALE: $\frac{1}{2}" = 1'-0"$



SEAL PLACEMENT IN
RAISED MEDIAN
NO SCALE

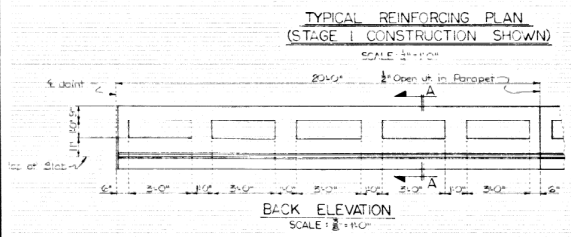
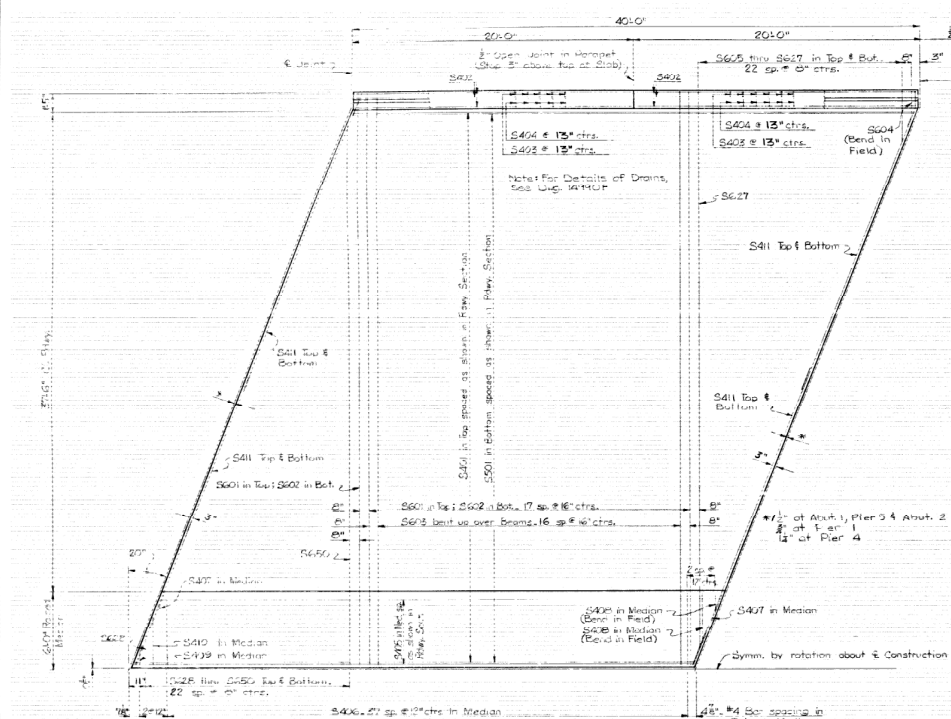


OPTIONAL CHANNEL SHEAR CONNECTORS
NO SCALE

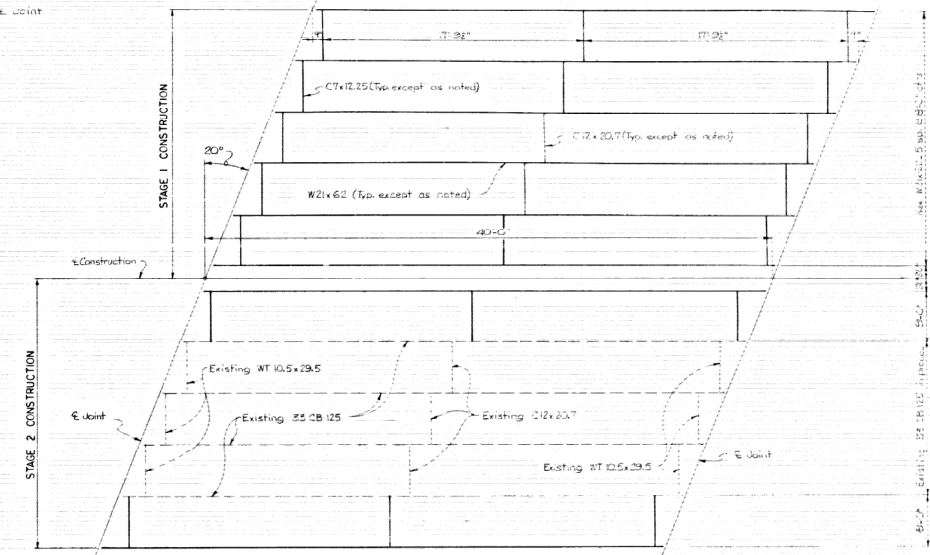
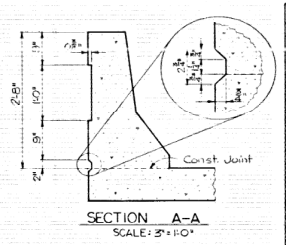
LITTLE ROCK, ARK.
DRAWN BY: KMG DATE: 26 MAY 74
DESIGNED BY: ETF DATE: 27 SEP 73 SCALE: 1/8" = 1' except as noted

DRAWING NO. 19080

DATE REVISED	DATE FILMED	DATE REVISED	DATE FILMED	REV. NO.	STATE	FED. AID PROJ. NO.	PROJ. NO.	TOTAL SHEETS
0		0		0	ARK.	FF-RFOH-3(28)	606	511
				JOB NO.	S157A, SPAN 17, 18, 19			

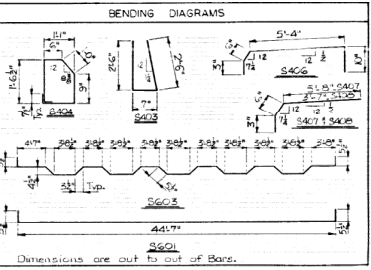


ENHANCED PARAPET DETAILS
(TYPICAL 20'-0" PANEL)



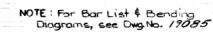
BAR LIST - EA STAGE

MARK	NO.	REQ'D	LENGTH	PIN DIA.
S401	34	39ft	3ft	
S402	12	19ft	3ft	
S403	37	31ft	2ft	
S404	37	31ft	2ft	
S405	6	39ft	3ft	
S406	35	61ft	2ft	
S407	2	11ft	2ft	
S408	2	4ft	2ft	
S409	1	2ft	3ft	
S410	1	40ft	3ft	
S411	2	24ft	3ft	
S412	51	39ft	3ft	
S401	19	45ft	3ft	
S402	19	45ft	3ft	
S403	17	40ft	3ft	
S404	2	21ft	3ft	
S405	2	45ft	3ft	
S406	2	45ft	3ft	
S407	2	45ft	3ft	
S408	2	45ft	3ft	
S409	2	45ft	3ft	
S410	2	45ft	3ft	
S411	2	45ft	3ft	
S412	2	45ft	3ft	

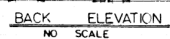


SHEET 3 OF 3
DETAILS FOR WIDENING 40' W-BEAM SPAN
FOR BRIDGE OVER LITTLE SUGAR CR.
BELLA VISTA ~ MO. LINE
BENTON COUNTY
ROUTE 71 SEC. 19
ARKANSAS STATE HIGHWAY COMMISSION
LITTLE ROCK, ARK.
DRAWN BY: K.M.S. DATE: 2/1/74
CHECKED BY: J.T.H. DATE: 2/7/74
DESIGNED BY: J.T.H. DATE: 2/7/74
SCALE: AS SHOWN
BRIDGE NO. 2157A DRAWING NO. 19081

76



SCALE: $\frac{1}{4}" = 1'-0"$

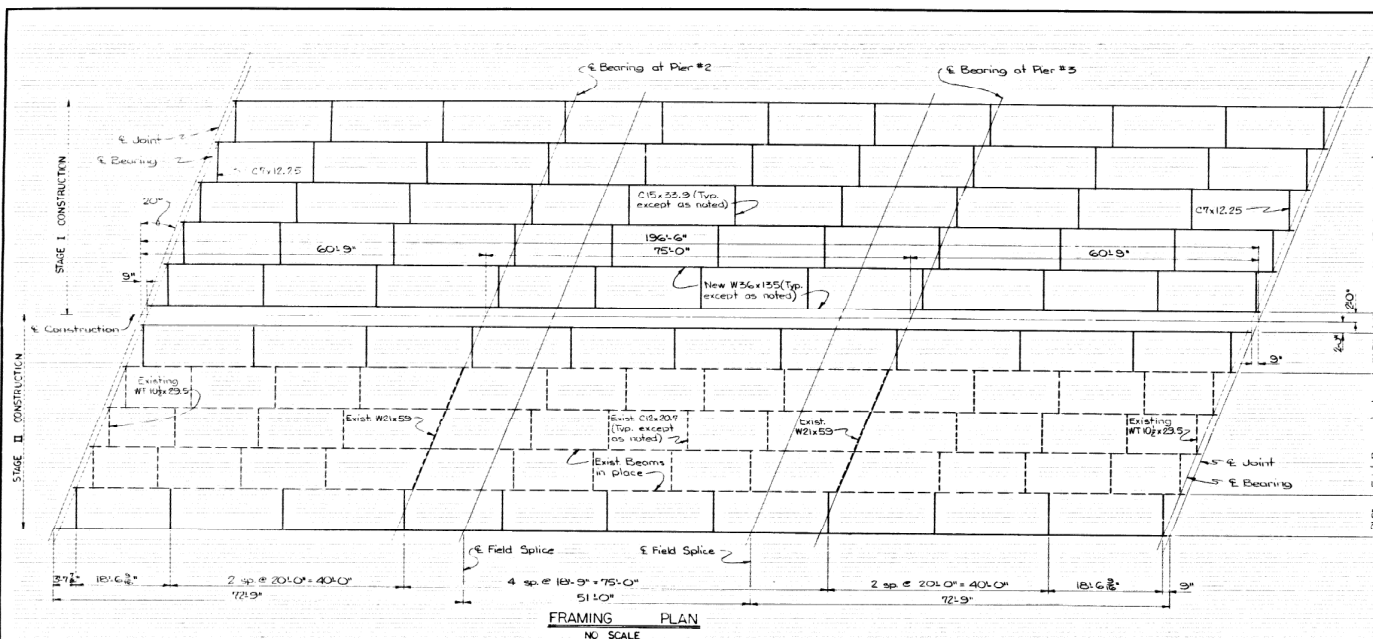


LITTLE ROCK, ARK.

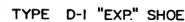
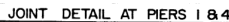
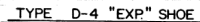
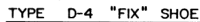
DRAWN BY: K.M.G. DATE: 7 JUNE 74
DESIGNED BY: E.T.F. DATE: 15 SEP 73 SCALE: AS SHOWN
CHECKED BY: A.Y.R. DATE: 10 OCT 74

BRIDGE NO. 2157A DRAWING NO. 19084

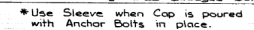
Suzal Pinkerton



NO.	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23	24	25	POINT ON BEAM																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																							
1	1.071	1.070	1.069	1.068	1.067	1.066	1.065	1.064	1.063	1.062	1.061	1.060	1.059	1.058	1.057	1.056	1.055	1.054	1.053	1.052	1.051	1.050	1.049	1.048	1.047	1.046	1.045	1.044	1.043	1.042	1.041	1.040	1.039	1.038	1.037	1.036	1.035	1.034	1.033	1.032	1.031	1.030	1.029	1.028	1.027	1.026	1.025	1.024	1.023	1.022	1.021	1.020	1.019	1.018	1.017	1.016	1.015	1.014	1.013	1.012	1.011	1.010	1.009	1.008	1.007	1.006	1.005	1.004	1.003	1.002	1.001	1.000	999	998	997	996	995	994	993	992	991	990	989	988	987	986	985	984	983	982	981	980	979	978	977	976	975	974	973	972	971	970	969	968	967	966	965	964	963	962	961	960	959	958	957	956	955	954	953	952	951	950	949	948	947	946	945	944	943	942	941	940	939	938	937	936	935	934	933	932	931	930	929	928	927	926	925	924	923	922	921	920	919	918	917	916	915	914	913	912	911	910	909	908	907	906	905	904	903	902	901	900	899	898	897	896	895	894	893	892	891	890	889	888	887	886	885	884	883	882	881	880	879	878	877	876	875	874	873	872	871	870	869	868	867	866	865	864	863	862	861	860	859	858	857	856	855	854	853	852	851	850	849	848	847	846	845	844	843	842	841	840	839	838	837	836	835	834	833	832	831	830	829	828	827	826	825	824	823	822	821	820	819	818	817	816	815	814	813	812	811	810	809	808	807	806	805	804	803	802	801	800	799	798	797	796	795	794	793	792	791	790	789	788	787	786	785	784	783	782	781	780	779	778	777	776	775	774	773	772	771	770	769	768	767	766	765	764	763	762	761	760	759	758	757	756	755	754	753	752	751	750	749	748	747	746	745	744	743	742	741	740	739	738	737	736	735	734	733	732	731	730	729	728	727	726	725	724	723	722	721	720	719	718	717	716	715	714	713	712	711	710	709	708	707	706	705	704	703	702	701	700	699	698	697	696	695	694	693	692	691	690	689	688	687	686	685	684	683	682	681	680	679	678	677	676	675	674	673	672	671	670	669	668	667	666	665	664	663	662	661	660	659	658	657	656	655	654	653	652	651	650	649	648	647	646	645	644	643	642	641	640	639	638	637	636	635	634	633	632	631	630	629	628	627	626	625	624	623	622	621	620	619	618	617	616	615	614	613	612	611	610	609	608	607	606	605	604	603	602	601	600	599	598	597	596	595	594	593	592	591	590	589	588	587	586	585	584	583	582	581	580	579	578	577	576	575	574	573	572	571	570	569	568	567	566	565	564	563	562	561	560	559	558	557	556	555	554	553	552	551	550	549	548	547	546	545	544	543	542	541	540	539	538	537	536	535	534	533	532	531	530	529	528	527	526	525	524	523	522	521	520	519	518	517	516	515	514	513	512	511	510	509	508	507	506	505	504	503	502	501	500	499	498	497	496	495	494	493	492	491	490	489	488	487	486	485	484	483	482	481	480	479	478	477	476	475	474	473	472	471	470	469	468	467	466	465	464	463	462	461	460	459	458	457	456	455	454	453	452	451	450	449	448	447	446	445	444	443	442	441	440	439	438	437	436	435	434	433	432	431	430	429	428	427	426	425	424	423	422	421	420	419	418	417	416	415	414	413	412	411	410	409	408	407	406	405	404	403	402	401	400	399	398	397	396	395	394	393	392	391	390	389	388	387	386	385	384	383	382	381	380	379	378	377	376	375	374	373	372	371	370	369	368	367	366	365	364	363	362	361	360	359	358	357	356	355	354	353	352	351	350	349	348	347	346	345	344	343	342	341	340	339	338	337	336	335	334	333	332	331	330	329	328	327	326	325	324	323	322	321	320	319	318	317	316	315	314	313	312	311	310	309	308	307	306	305	304	303	302	301	300	299	298	297	296	295	294	293	292	291	290	289	288	287	286	285	284	283	282	281	280	279	278	277	276	275	274	273	272	271	270	269	268	267	266	265	264	263	262	261	260	259	258	257	256	255	254	253	252	251	250	249	248	247	246	245	244	243	242	241	240	239	238	237	236	235	234	233	232	231	230	229	228	227	226	225	224	223	222	221	220	219	218	217	216	215	214	213	212	211	210	209	208	207	206	205	204	203	202	201	200	199	198	197	196	195	194	193	192	191	190	189	188	187	186	185	184	183	182	181	180	179	178	177	176	175	174	173	172	171	170	169	168	167	166	165	164	163	162	161	160	159	158	157	156	155	154	153	152	151	150	149	148	147	146	145	144	143	142	141	140	139	138	137	136	135	134	133	132	131	130	129	128	127	126	125	124	123	122	121	120	119	118	117	116	115	114	113	112	111	110	109	108	107	106	105	104	103	102	101	100	99	98	97	96	95	94	93	92	91	90	89	88	87	86	85	84	83	82	81	80	79	78	77	76	75	74	73	72	71	70	69	68	67	66	65	64	63	62	61	60	59	58	57	56	55	54	53	52	51	50	49	48	47	46	45	44	43	42	41	40	39	38	37	36	35	34	33	32	31	30	29	28	27	26	25	24	23	22	21	20	19	18	17	16	15	14	13	12	11	10	9	8	7	6	5	4	3	2	1	0	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23	24	25	26	27	28	29	30	31	32	33	34	35	36	37	38	39	40	41	42	43	44	45	46	47	48	49	50	51	52	53	54	55	56	57	58	59	60	61	62	63	64	65	66	67	68	69	70	71	72	73	74	75	76	77	78	79	80	81	82	83	84	85	86	87	88	89	90	91	92	93	94	95	96	97	98	99	100	101	102	103	104	105	106	107	108	109	110	111	112	113	114	115	116	117	118	119	120	121	122	123	124	125	126	127	128	129	130	131	132	133	134	135	136	137	138	139	140	141	142	143	144	145	146	147	148	149	150	151	152	153	154	155	156	157	158	159	160	161	162	163	164	165	166	167	168	169	170	171	172	173	174	175	176	177	178	179	180	181	182	183	184	185	186	187	188	189	190	191	192	193	194	195	196	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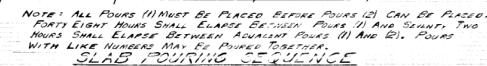
① 2157A - SPAN DTLs - 19086



ANCHOR BOLT DETAIL FOR D-4 EXP. SHOE

Note: For Details of 12" Ø Anchor Bolt to be used with D-1 Exp. and D-4 Fix Shoes, see Dwg. No. 19139

Note: 3" Dia x 6" Sheet Metal Sleeve. Dry Pack With Styrofoam or Urethane Foam or approved equal prior to pouring Concrete. After pouring Bents and prior to erecting Beams; adjust Anchor Bolts to match holes in Masonry Plates. Remove Dry Pack Material from Sleeve and re-fill with Non-Shrink Grout.



NOTE: ALTERNATE WELDED STEEL SHOES MAY BE REQUESTED BY THE STEEL FABRICATOR.

SHEET 5 OF 5
MISC. DETAILS FOR WIDENING
196'-6" CONTINUOUS W-BEAM UNIT
FOR BRIDGE OVER LITTLE SUGAR CR.
BELLA VISTA - MO. LINE
BENTON COUNTY

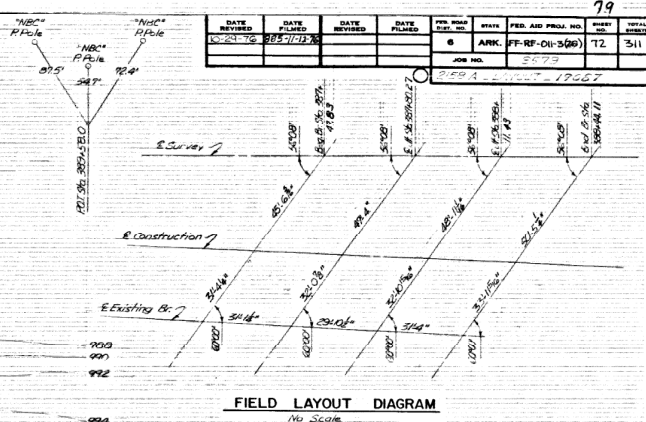
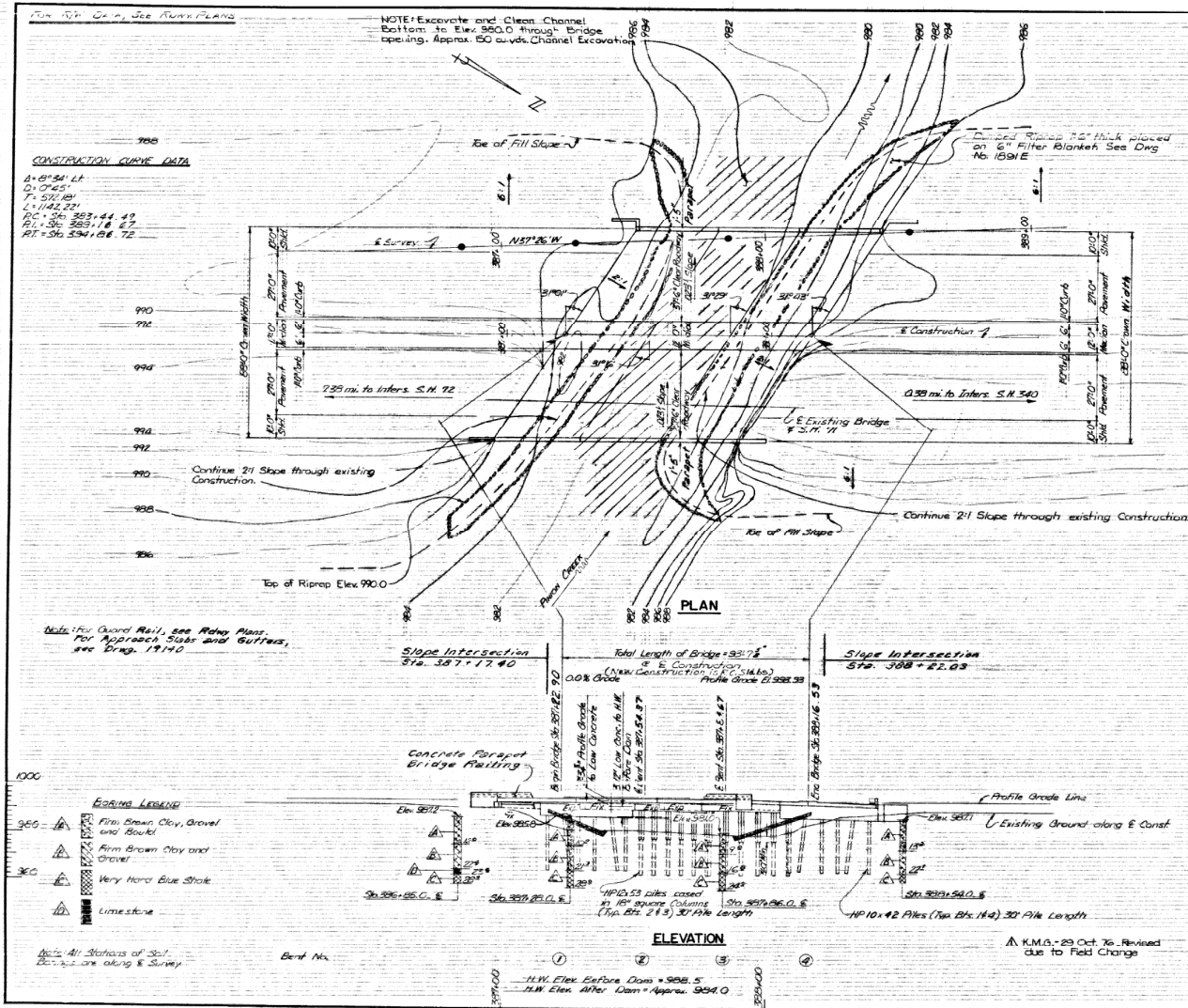
ROUTE 71 SEC. 19
ARKANSAS STATE HIGHWAY COMMISSION

LITTLE ROCK, ARK.
DRAWN BY: KMG. DATE: 22 JULY 74
CHECKED BY: ETE DATE: 18 SEP 73 SCALE: NONE

CHECKED BY: A. L. L. DATE: 2-20-74
BRIDGE NO. 2157A DRAWING NO. 19086

NOTE: Excavate and Clean Channel Bottom to Elev. 980.0 through Bridge opening. Approx. 150 cu. yds. Channel Excavation.

$\Delta = 0^{\circ} 34' \text{ Lt.}$
 $D = 0^{\circ} 45'$
 $T = 572.18'$
 $L = 1142.22'$
 $RC = Stc \ 393 + 44.49$
 $P.L. = Stc \ 389 + 10.67$
 $PT = Stc \ 394 + 06.72$



GENERAL NOTES

BENCH MARK - STANDARD TABLET ON WALKWAY OF BRIDGE, 50' RIGHT, STA. 387+12 (CENTERLINE SURVEY). ELEV. 994.93.

ALL CONCRETE SHALL BE POURED IN THE DRY

PILING IN END BENTS SHALL BE HP10X42 AND SHALL BE DRIVEN WITH AN APPROVED AIR, STEAM, OR DIESEL HAMMER TO A MINIMUM BEARING CAPACITY OF 55 TONS PER PILE AND INTO THE MATERIAL DESIGNATED AS LIMESTONE OR BLUE SHALE ON THE BORING LOGS. LENGTHS OF PILING SHOWN ARE FOR ESTIMATING QUANTITIES ONLY. ORDER LENGTHS SHOWING CUT-OFF OR BUILD-UP, IF NECESSARY, TO BE PAID FOR IN ACCORDANCE WITH THE STANDARD SPECIFICATIONS.

PILING IN INTERMEDIATE BENTS SHALL BE HP12X53 AND SHALL BE DRIVEN WITH AN APPROVED AIR, STEAM, OR DIESEL HAMMER TO A MINIMUM BEARING CAPACITY OF 70 TONS PER PILE, AND INTO THE MATERIAL DESIGNATED AS LIMESTONE OR BLUE SHALE ON THE BORING LOGS. LENGTHS OF PILING SHOWN ARE ASSUMED FOR ESTIMATING QUANTITIES ONLY. ACTUAL LENGTHS TO BE DETERMINED IN THE FIELD. ORDER LENGTHS SHOWN, CUT-OFF OR BUILD-UP, IF NECESSARY, TO BE PAID FOR IN ACCORDANCE WITH THE STANDARD SPECIFICATIONS.

FOR DETAILS OF END BENTS, SEE DWG. NOS. 19088 THRU 19089A & 19092 THRU 19093A
FOR DETAILS OF INTERMEDIATE BENTS, SEE DWG. NO. 19091, 19091A & 19091B
FOR DETAILS OF 30'-0" R.C. SLAB SPANS, SEE DWG. NOS. 19095 THRU 19097
FOR DETAILS OF EXISTING BRIDGE, SEE DWG. NOS. 5769 THRU 5775

SPECIFICATIONS: ARKANSAS STATE HIGHWAY COMMISSION STANDARD SPECIFICATIONS FOR HIGHWAY CONSTRUCTION, EDITION OF 1972, AND APPLICABLE SPECIAL PROVISIONS.

DESIGN SPECIFICATIONS: AASHTO ST

WITH 1974 INTERIM SPI

METHOD OF DESIGN: SUBSTRUCTURE - SERVICE LOAD
SUPERSTRUCTURE - SERVICE LOAD

THE CONTRACTOR SHALL MAKE CHECK MEASUREMENTS AND MAKE ANY ADJUSTMENTS NECESSARY TO FIT THE NEW WORK TO THE EXISTING BRIDGE.

THE WORK CONTEMPLATED CONSISTS OF REMODELING AND
WIDENING EXISTING BRIDGE NO. 2158 IN ACCORDANCE WITH
THESE PLANS AND SPECIAL PROVISIONS.

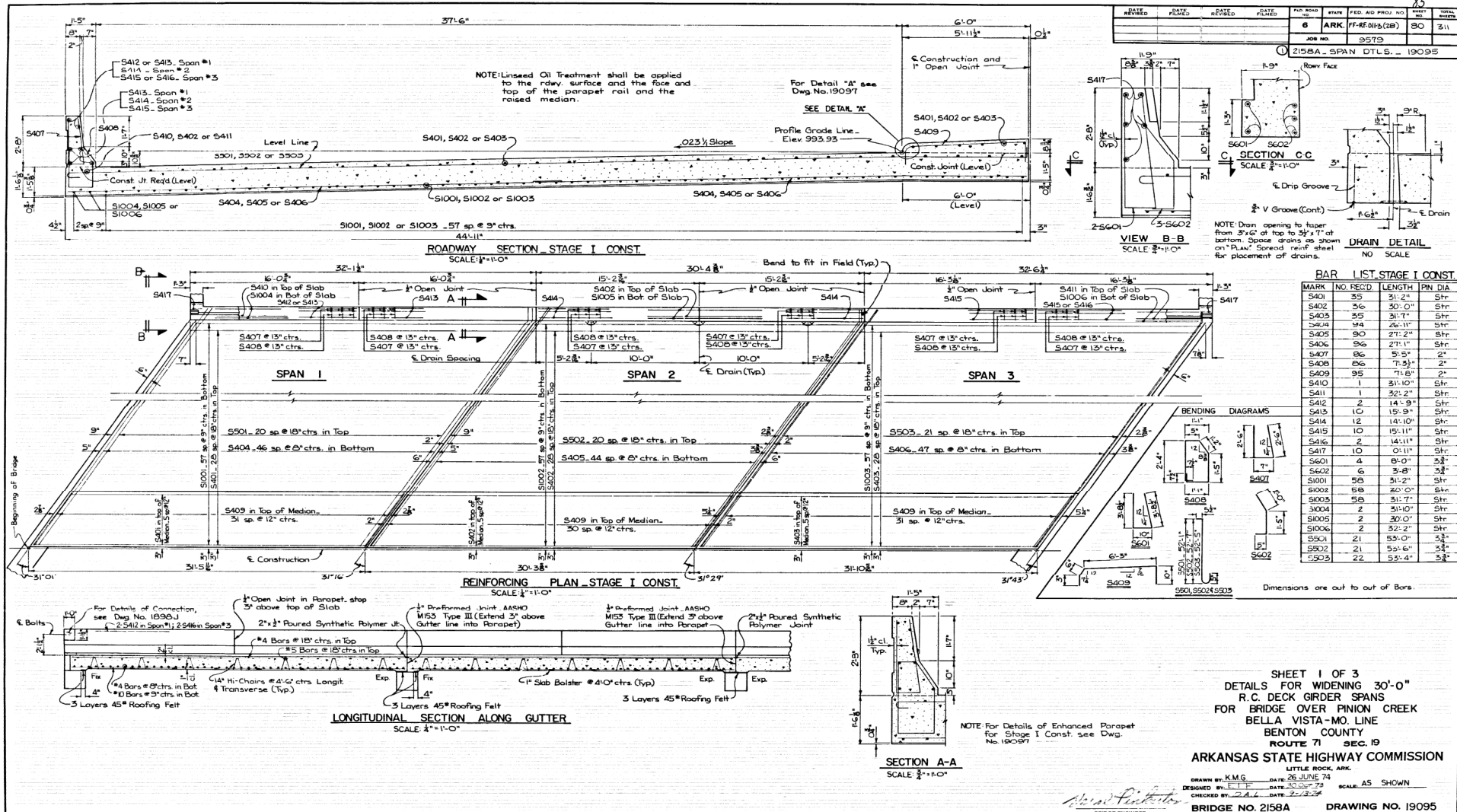
LAYOUT OF
BRIDGE OVER PINION CREEK
BELLA VISTA- MISSOURI LINE
BENTON COUNTY
ROUTE 71 SEC. 19

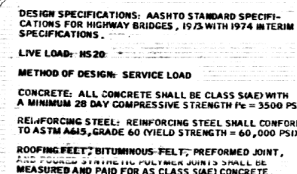
ARKANSAS STATE HIGHWAY COMMISSION
LITTLE ROCK, ARK.

DRAWN BY: K.M.G. DATE: 2/21/73
 CHECKED BY: ETP DATE: 3/26/73 BGA: 1" = 20'-0"
 DESIGNED BY: ETP DATE: 3/27/73

BRIDGE NO. 2158 A DRAWING NO. 19087

Suzal Pinkerton





FIELD CHANGE
SHEET 2 OF 3
DETAILS FOR WIDENING 30'-0"
R.C. DECK GIRDER SPANS
FOR BRIDGE OVER PINION CREEK
BELLA VISTA-MO. LINE
BENTON COUNTY
ROUTE 71 SEC. 19
ARKANSAS STATE HIGHWAY COMMISSION

DRAWN BY: ETF DATE: 27 OCT 76
CHECKED BY: SVL DATE: 1 NOV 76 SCALE: as noted
DESIGNED BY: ETF DATE: 25 OCT 76

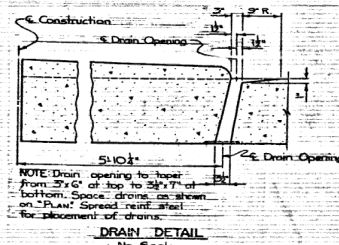
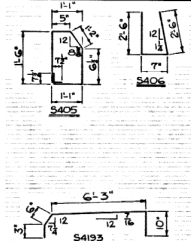
BRIDGE NO. 2158 A DRAWING NO. 19096

BAR LIST-STAGE II CONST**

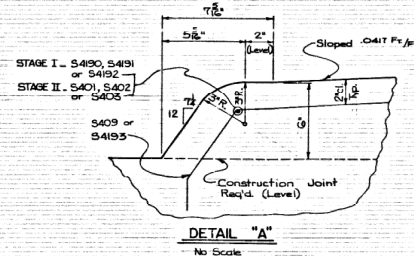
MARK	NO. REOD	LENGTH	PIN DIA.
S401	4	30'-11"	5/8"
S402	1	31'-0"	5/8"
S403	12	15'-3"	5/8"
S405	62	5'-7"	2"
S406	62	5'-7"	2"
S407	4	29'-8"	5/8"
S408	12	14'-0"	5/8"
S409	12	15'-5"	5/8"
S411	3	21'-2"	5/8"
S412	1	31'-4"	5/8"
S414	1 of Each	Var 31'-3" to 30'-11"	5/8"
S425	1 of Each	Var 30'-11" to 29'-8"	5/8"
S434	1 of Each	Var 30'-11" to 29'-8"	5/8"
S435	1 of Each	Var 31'-7" to 31'-5"	5/8"
S446	1 of Each	Var 31'-7" to 31'-5"	5/8"
S447	1 of Each	Var 16'-4" to 17'-0"	5/8"
S448	1 of Each	Var 17'-0" to 17'-11"	5/8"
S449	1 of Each	Var 17'-11" to 18'-11"	5/8"
S4190	6	31'-11"	5/8"
S4191	6	29'-11"	5/8"
S4192	6	31'-6"	5/8"
S4193	35	71'-8"	5/8"
S4194	8	30'-11"	5/8"
S4195	10	20'-8"	5/8"
S4196	10	2'-15"	5/8"
S4197	48	37'-3"	5/8"
S4198	48	34'-9"	5/8"
S4199	48	35'-11"	5/8"
S5224	22	57'-0"	5/8"
S5225	22	36'-9"	5/8"
S5226	22	35'-11"	5/8"
S5227	1 of Each	Var 16'-11" to 17'-7"	2 1/2"
S5228	1 of Each	Var 17'-7" to 18'-6"	2 1/2"
S5229	1 of Each	Var 18'-6" to 19'-6"	2 1/2"
S5230	1 of Each	Var 19'-6" to 20'-6"	2 1/2"
S5231	1 of Each	Var 20'-6" to 21'-6"	2 1/2"
S5232	1 of Each	Var 21'-6" to 22'-6"	2 1/2"
S5233	1 of Each	Var 22'-6" to 23'-6"	2 1/2"
S5234	1 of Each	Var 23'-6" to 24'-6"	2 1/2"
S5235	1 of Each	Var 24'-6" to 25'-6"	2 1/2"
S5236	1 of Each	Var 25'-6" to 26'-6"	2 1/2"
S5237	1 of Each	Var 26'-6" to 27'-6"	2 1/2"
S5238	1 of Each	Var 27'-6" to 28'-6"	2 1/2"
S5239	1 of Each	Var 28'-6" to 29'-6"	2 1/2"
S5240	1 of Each	Var 29'-6" to 30'-6"	2 1/2"
S5241	1 of Each	Var 30'-6" to 31'-6"	2 1/2"
S5242	1 of Each	Var 31'-6" to 32'-6"	2 1/2"
S5243	1 of Each	Var 32'-6" to 33'-6"	2 1/2"
S5244	1 of Each	Var 33'-6" to 34'-6"	2 1/2"
S5245	1 of Each	Var 34'-6" to 35'-6"	2 1/2"
S5246	1 of Each	Var 35'-6" to 36'-6"	2 1/2"
S5247	1 of Each	Var 36'-6" to 37'-6"	2 1/2"
S5248	1 of Each	Var 37'-6" to 38'-6"	2 1/2"
S5249	1 of Each	Var 38'-6" to 39'-6"	2 1/2"
S5250	1 of Each	Var 39'-6" to 40'-6"	2 1/2"
S5251	1 of Each	Var 40'-6" to 41'-6"	2 1/2"
S5252	1 of Each	Var 41'-6" to 42'-6"	2 1/2"
S5253	1 of Each	Var 42'-6" to 43'-6"	2 1/2"
S5254	1 of Each	Var 43'-6" to 44'-6"	2 1/2"
S5255	1 of Each	Var 44'-6" to 45'-6"	2 1/2"
S5256	1 of Each	Var 45'-6" to 46'-6"	2 1/2"
S5257	1 of Each	Var 46'-6" to 47'-6"	2 1/2"
S5258	1 of Each	Var 47'-6" to 48'-6"	2 1/2"
S5259	1 of Each	Var 48'-6" to 49'-6"	2 1/2"
S5260	1 of Each	Var 49'-6" to 50'-6"	2 1/2"
S5261	1 of Each	Var 50'-6" to 51'-6"	2 1/2"
S5262	1 of Each	Var 51'-6" to 52'-6"	2 1/2"
S5263	1 of Each	Var 52'-6" to 53'-6"	2 1/2"
S5264	1 of Each	Var 53'-6" to 54'-6"	2 1/2"
S5265	1 of Each	Var 54'-6" to 55'-6"	2 1/2"
S5266	1 of Each	Var 55'-6" to 56'-6"	2 1/2"
S5267	1 of Each	Var 56'-6" to 57'-6"	2 1/2"
S5268	1 of Each	Var 57'-6" to 58'-6"	2 1/2"
S5269	1 of Each	Var 58'-6" to 59'-6"	2 1/2"
S5270	1 of Each	Var 59'-6" to 60'-6"	2 1/2"
S5271	1 of Each	Var 60'-6" to 61'-6"	2 1/2"
S5272	1 of Each	Var 61'-6" to 62'-6"	2 1/2"
S5273	1 of Each	Var 62'-6" to 63'-6"	2 1/2"
S5274	1 of Each	Var 63'-6" to 64'-6"	2 1/2"
S5275	1 of Each	Var 64'-6" to 65'-6"	2 1/2"
S5276	1 of Each	Var 65'-6" to 66'-6"	2 1/2"
S5277	1 of Each	Var 66'-6" to 67'-6"	2 1/2"
S5278	1 of Each	Var 67'-6" to 68'-6"	2 1/2"
S5279	1 of Each	Var 68'-6" to 69'-6"	2 1/2"
S5280	1 of Each	Var 69'-6" to 70'-6"	2 1/2"
S5281	1 of Each	Var 70'-6" to 71'-6"	2 1/2"
S5282	1 of Each	Var 71'-6" to 72'-6"	2 1/2"
S5283	1 of Each	Var 72'-6" to 73'-6"	2 1/2"
S5284	1 of Each	Var 73'-6" to 74'-6"	2 1/2"
S5285	1 of Each	Var 74'-6" to 75'-6"	2 1/2"
S5286	1 of Each	Var 75'-6" to 76'-6"	2 1/2"
S5287	1 of Each	Var 76'-6" to 77'-6"	2 1/2"
S5288	1 of Each	Var 77'-6" to 78'-6"	2 1/2"
S5289	1 of Each	Var 78'-6" to 79'-6"	2 1/2"
S5290	1 of Each	Var 79'-6" to 80'-6"	2 1/2"
S5291	1 of Each	Var 80'-6" to 81'-6"	2 1/2"
S5292	1 of Each	Var 81'-6" to 82'-6"	2 1/2"
S5293	1 of Each	Var 82'-6" to 83'-6"	2 1/2"
S5294	1 of Each	Var 83'-6" to 84'-6"	2 1/2"
S5295	1 of Each	Var 84'-6" to 85'-6"	2 1/2"
S5296	1 of Each	Var 85'-6" to 86'-6"	2 1/2"
S5297	1 of Each	Var 86'-6" to 87'-6"	2 1/2"
S5298	1 of Each	Var 87'-6" to 88'-6"	2 1/2"
S5299	1 of Each	Var 88'-6" to 89'-6"	2 1/2"
S5300	1 of Each	Var 89'-6" to 90'-6"	2 1/2"
S5301	1 of Each	Var 90'-6" to 91'-6"	2 1/2"
S5302	1 of Each	Var 91'-6" to 92'-6"	2 1/2"
S5303	1 of Each	Var 92'-6" to 93'-6"	2 1/2"
S5304	1 of Each	Var 93'-6" to 94'-6"	2 1/2"
S5305	1 of Each	Var 94'-6" to 95'-6"	2 1/2"
S5306	1 of Each	Var 95'-6" to 96'-6"	2 1/2"
S5307	1 of Each	Var 96'-6" to 97'-6"	2 1/2"
S5308	1 of Each	Var 97'-6" to 98'-6"	2 1/2"
S5309	1 of Each	Var 98'-6" to 99'-6"	2 1/2"
S5310	1 of Each	Var 99'-6" to 100'-6"	2 1/2"

The following bars shown on the original drawing 19097 are no longer required for stage II construction: S501 to S5224; S603; S609 to S644
 * Bars not presently on job site
 + Bars presently on job site

BENDING DIAGRAMS



Note: For longitudinal section along gutter, see drug. 19095



Δ ETF; 10-28-76; Revi. ed due to field change

FIELD CHANGE
 SHEET 3 OF 3
 DETAILS FOR WIDENING 30'-0"
 R.C. DECK GIRDER SPANS
 FOR BRIDGE OVER PINION CREEK
 BELLA VISTA-MO. LINE
 BENTON COUNTY

ROUTE 71 SEC. 19
 ARKANSAS STATE HIGHWAY COMMISSION
 LITTLE ROCK, ARK.
 DRAWN BY: K.M.G. DATE: 3 Sept. 74
 DESIGNED BY: S.T.F. DATE: 3/2/74
 CHECKED BY: S.T.F. DATE: 3/2/74
 SCALE: 1"=10'-0" except as noted
 BRIDGE NO. 2158A DRAWING NO. 19097

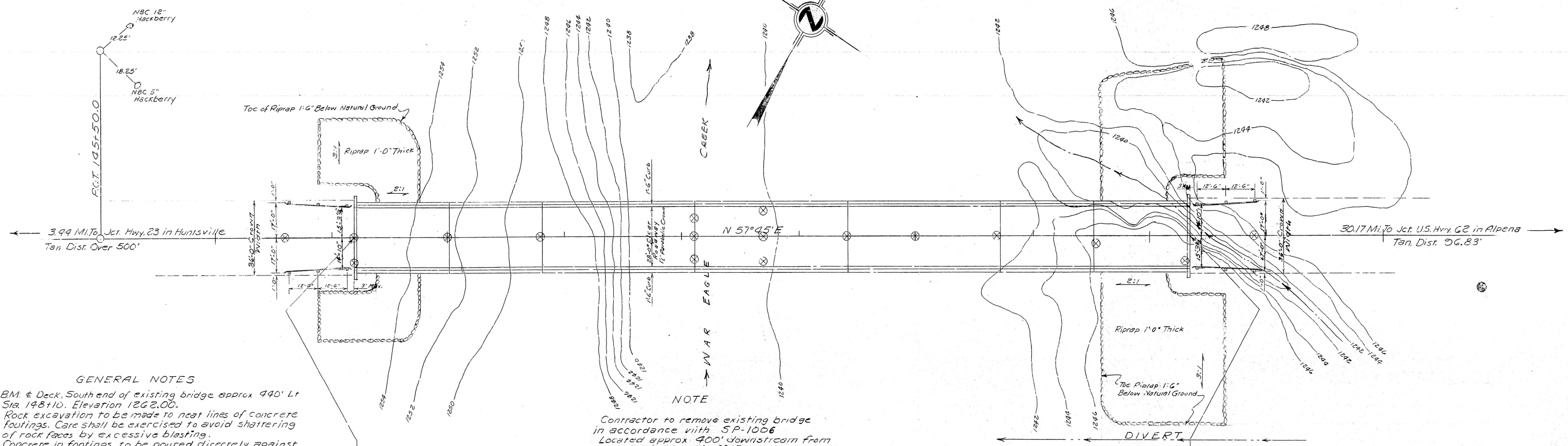
DETAIL "A"
 No Scale

BRIDGE ENGINEER

FED. ROAD DIST. NO.	STATE	PROJECT NO.	SHEET NO.	TOTAL SHEETS
6	ARK.	5-104(6)	5	27
JOB NO.		9422		

R/W DATA

Sta. 135+60 To Sta. 145+00 - 60' Lt. & 60' Rt.
 Sta. 145+00 To Sta. 146+50 - 60' Lt. & 60' Rt.
 Sta. 146+50 To Sta. 150+00 - 120' Lt. & 90' Rt.
 Sta. 150+00 To Sta. 151+50 - 120' Lt. & 90' Rt.
 Sta. 151+50 To Sta. 153+00 - 60' Lt. & 60' Rt.



GENERAL NOTES

BM. & Deck, South end of existing bridge approx 440' Lt Sta. 148+10. Elevation 1262.00.
 Rock excavation to be made to neat lines of concrete footings. Care shall be exercised to avoid shattering of rock faces by excessive blasting.
 Concrete in footings to be poured directly against excavated faces of rock. All concrete to be poured in the dry.

For details of End Bents, See Standard Drwg. No. 5477A
 For details of All Piers, See Drawing No. 10681
 For details of I-Beam Spans, See Drawings No. 5477 & 5462
 SPECIFICATIONS: Arkansas State Highway Commission Standard Specifications for Road & Bridge Construction, adopted March 1, 1940; and Designated Special Provisions.

Contractor to remove existing bridge in accordance with SP-1006
 Located approx 400' downstream from proposed bridge No. 3345.
 205.2' Long, 15' Clear Roadway
 Concrete Arch Type Construction
 2-70' Arch Spans & 2-30' Approach Spans
 All material from the existing bridge shall become the property of the contractor.

DESIGN SPECIFICATIONS: A.A.S.H.O. 1957
 LIVE LOADING: H20-S16
 UNIT STRESSES
 Class A Concrete (n=15) --- 640 p.s.i.
 Class 5 Concrete (n=10) --- 1200 p.s.i.
 Reinforcing Steel --- 20,000 p.s.i.
 Structural Steel --- 18,000 p.s.i.

PILING NOTES

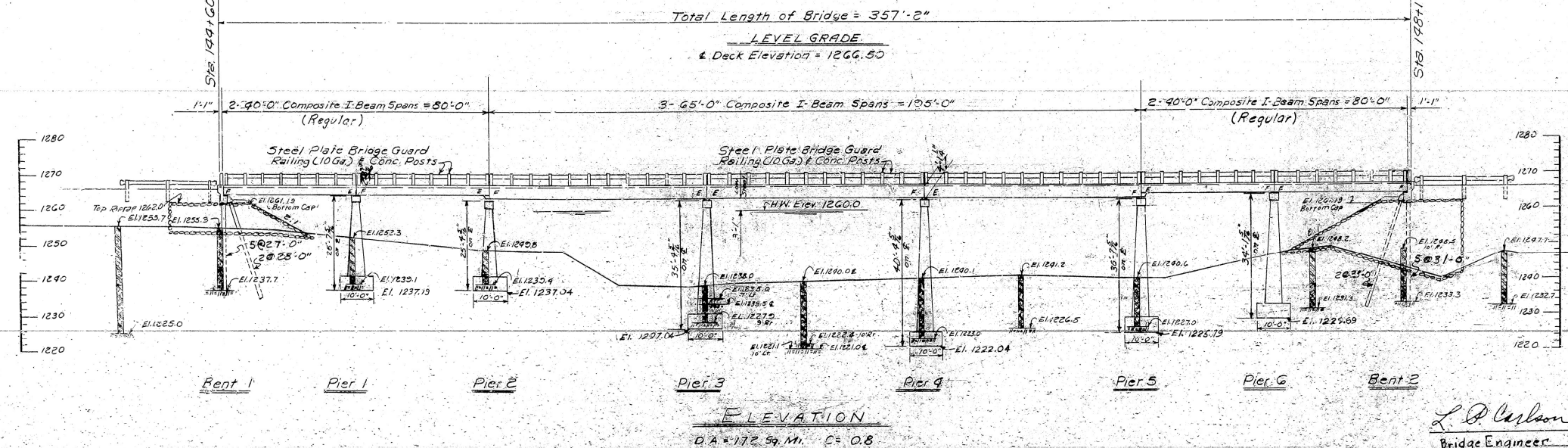
All piling to be driven after embankment at bridge ends is in place.
 All piling to be 12" H @ 53#/ft. Steel bearing piling driven to refusal into the material designated as solid rock on the boring logs with a minimum bearing capacity of 36 tons per pile.
 Order lengths shown. Payment for cut-off and build-up, where necessary, to be in accordance with SP-804.

⊗ Test hole Symbol

Boring Log

- Firm, Sandy Clay
- Compacted, Sandy Clay With Gravel & Small Boulders
- Solid Rock

Note: Foundation Pressure (Calculated) under Pier #4 = 2.0 Tons/sq. ft. (LL+DL)



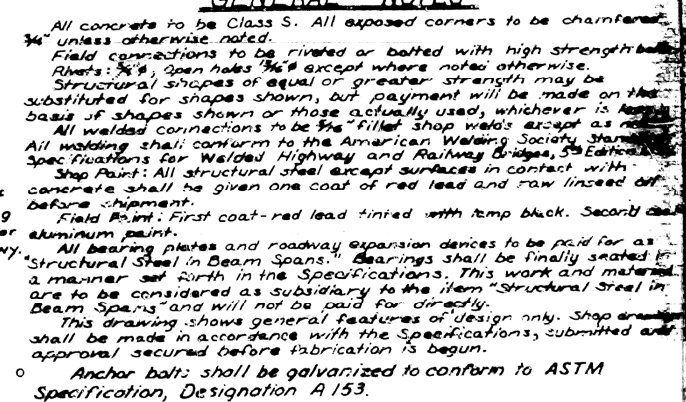
LAYOUT OF BRIDGE OVER WAR EAGLE CREEK MADISON COUNTY ROUTE 68 SEC. 3 ARKANSAS STATE HIGHWAY COMMISSION

LITTLE ROCK, ARK.

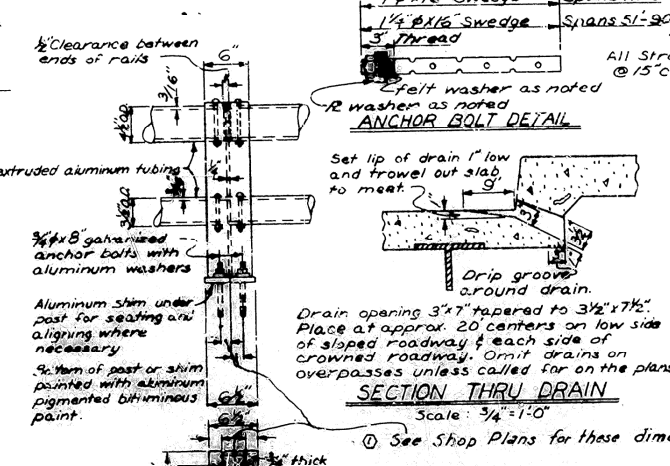
Drawn By: JBC Date: 3-15-59
 Checked By: Gm Date: 6/10/59
 Scale: 1" = 20'

L. D. Carlson
 Bridge Engineer

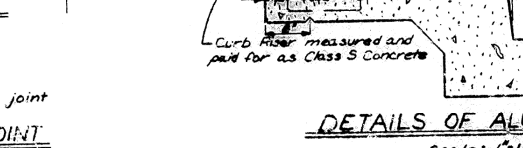
BRIDGE NO. 3345 DRAWING NO. 10680



50' JOINT AT END BENT



DETAILS OF ALUMINUM RAILING



PLAN OF OPEN JOINT

Technical drawing of a mechanical assembly, showing a side view and a detail view.

Side View Dimensions:

- Total height: $9\frac{1}{2}"$
- Upper section height: $7\frac{1}{4}"$
- Base height: $1"$
- Lower section height: $1\frac{1}{2}"$
- Central section height: $3\frac{1}{2}"$
- Lower section height: $3\frac{1}{2}"$
- Base height: $2\frac{1}{4}"$
- Width: $4\frac{1}{2}"$
- Holes: $1\frac{1}{4}"$ Holes

Detail View Dimensions:

- Bolt length: $10"$
- Washer thickness: $1\frac{1}{2}"$
- Washer diameter: $2\frac{1}{2}"$
- Bolt diameter: $1\frac{1}{4}"$
- Washer type: $1\frac{1}{4}" \times \frac{1}{4}" R$ Washer
- Washer type: $1\frac{1}{4}" \times \frac{1}{4}" R$ Washer

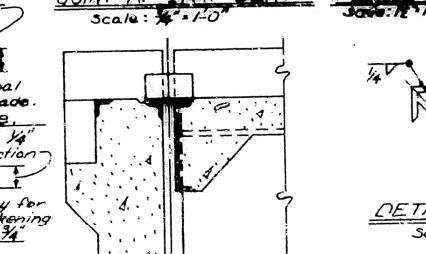
Other Labels:

- FIN TO ASA 250
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- 100

TYPE "A" FIXED SHOE

Note:
If fixed shoe is made from welded plates, all intersecting surfaces of 90° shall be joined by $\frac{1}{4}$ inch fillet welds, all others shall be joined by $\frac{1}{4}$ inch bead welds.

To adjust for grade, increase the thickness of Fixed Bearing, Sole plate or Expansion Bearing masonry plate which ever is on the upgrade side of the Intermediate Bent. See Table of Plate Thickness on Layout of Intermediate Bent Drawing.



DETAIL

Reinforcing steel to be embedded bars of intermediate or hard grade. The reinforcing steel rods to be accurately located in the forms and properly braced in place by steel wire supports, sufficient in number and size to prevent displacement during the course of construction. The wire supports will not be paid for directly but will be considered subsidiary to the item of "Reinforcing Steel."

Shop lists and bending diagrams of reinforcing steel, including wire supports, shall be submitted and approval secured before fabrication is begun.

All chambers of concrete riser for rail are to be 18" deep.

Shop drawings showing details of railing shall be submitted and approved before fabrication is begun.

The aluminum bridge railing, including posts and fasteners, shall be paid for at the unit price bid per linear foot for "Aluminum Bridge Railing."

A rail connection utilizing set screws is an acceptable alternative and may be supplied at the Contractor's option.

Outside surfaces of all classes of cast aluminum works shall be given a No. 25 grit belt finish after which all exposed surfaces of posts shall receive one coat of clear lacquer.

If Steel or Aluminum Plate Guard Bridge Railing is used it shall be the same shown or an equivalent rigid type as approved by the Engineer.

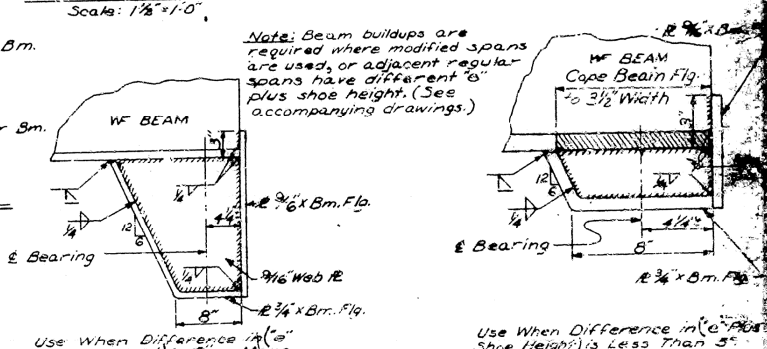
The rail including posts and fasteners shall be paid for at the unit price bid per linear foot for "Steel or Aluminum Plate Guard Bridge Railing."

1. Step Pouring Method

Floor slabs may be poured in one continuous operation with a strikeoff extending over the whole span length, or may be poured in increments with the center one-third to one-half span length poured first. After the center section is poured not less than 12 hours shall elapse before pouring the end sections. The end sections may be poured simultaneously. If not poured simultaneously, 48 hours shall elapse between end section pours.

SPECIFICATIONS:
Arkansas State Highway Commission Standard
Specifications for Highway Construction
Edition of 1959.

DETAIL "A" (Typical)



DETAILS OF BEAM BUILDUP

DETAILS COMMON TO STANDARD 35'-
COMPOSITE I-BEAM SPANS
20', 24', 26', AND 28' ROADWAYS

ARIZONA STATE HIGHWAY COMMISSION

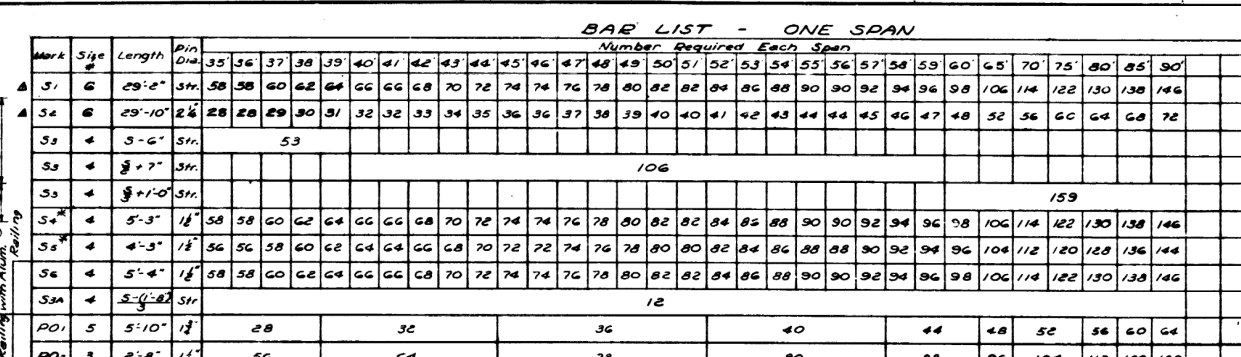
LITTLE ROCK, ARK.
JUL 5-53

DRAWN BY: [signature] DATE: 5-18-70
TRACED BY: [signature] DATE: 5-18-70

SCALE: As Shown

CHECKED BY: A. B. G. DATE: 7/10/50

BRIDGE NO. _____ DRAWING NO. 542



BENDING DIAGRAM

Expansion Device:
 Roadway = 13'-0" x 33'-0" @ 0°
 Curb = 6'-0" x 10'-0"
 Roadway = 9'-0" x 18'-0"

Detail device is high and provides
 of shims using 2" dia. and 1 1/2"
 & 1 1/2" x 10' spacers @ 15 ft.

Holes for 1" Mach Bolts

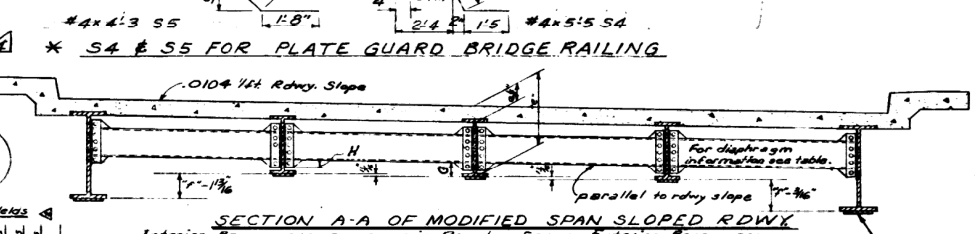
Top & Bottom

Split 1/4" @ 30'

Level to roadway at constant slope up
 level for parabolic crown

HAIR SECTION - R-R MODIFIED OR REGULAR SPANS

OPTIONAL W



HALF SECTION B-B MODIFIED OR REGULAR SPANS
Except when using 21W

SECTION A-A OF MODIFIED SPAN SLOPED RDWY
Interior Beams are same as in Regular Spans. Exterior Beams are of same nominal depths as beams for longest span shown on Bridge Layout.

Note: These dimensions are for interior beams. For exterior beams these dimensions shall be shortened by 1" Cover plates required only on beams listed in the table under Modified Span.

Variable Length of SHEAR CONNECTOR SPACING

SHEAR CONNECTORS
Scale: 1" = 1'-0"

COVER PLATE WELDING NOTE
Max. thickness of part under $\frac{3}{4}$ " = $\frac{1}{4}$ "
 $\frac{3}{4}$ " to $1\frac{1}{2}$ " = $\frac{5}{16}$ "

○ Mit shear connectors on outside beams of modified spans when using beams shown to right of heavy line.


DETAILS OF COVER PLATES
Scale: $\frac{1}{2}$ " = 1'-0"

2"	4"	6"
7"	10"	9"
11"	7"	8"
12"	10"	11"
13"	10"	0"

NOTE:
 ϕ : diameter
 end view
 w/c: weld

Scale 1" = 1'-0"

COVER PLATE WELDING NOTE:
Max. thickness of part under $\frac{1}{4}$ " = $\frac{1}{4}$ "



Omit shear connectors on outside beams of modified spans when using beams shown to right of heavy line.

DETAILS OF COVER PLATES

Scale: $\frac{1}{4}" = 1'-0"$

NOTE: the shear diameter and weld C

LOADING: H2O-SIG (A.A.S.H.O. 1957) and Special Interstate Loading
INTERIOR BEAM EXTERIOR BEAM

a. To WF Beam - 52.6% + 1.1 (wt./ft. of WF) 76.9% + 1.1 (wt./ft. of WF)

(1) Plate Guard Br. Railing	30%
(2) Aluminum Br. Railing	142%

a. To each Comp. Beam - 1.182 wheels + Impact 1.156 wheels + Impa

UNIT STRESSES
Class S Concrete ($n=10$) 1,200 psi

Structural Steel 18,000 psi
Reinforcing Steel 20,000 psi

DIAPHRAGM TABLE

SPAN LENGTHS	Channel Size	Regular span		Modified span		G	H
		Ext. Bm.	Int. Bm.	Ext. Bm.	Int. Bm.		

35-42	12 L 20.7	No. Rivers	No. Rivers	No. Rivers	No. Rivers	3 1/2"	2 1/4"
		5	5	5	5		
43-49	12 L 20.7	7	7	7	7	7"	5"

50-75	15C33.9	8	8	8	8	7"	5"
-------	---------	---	---	---	---	----	----

80-90	15233.9	8	8	8	8	8*	5*
-------	---------	---	---	---	---	----	----

*Steel for these beams and cover plates shall conform to the specifications for Structural Steel for Welding, A.S.T.M. Designation A373.

SPAN LENGTHS	Channel Size	Regular span		Modified span		G	H
		Ext. Br.	Int. Br.	Ext. Br.	Int. Br.		
		Max. br.	Net br.	Max. br.	Net br.		
35-42	12 L 207	5	5	5	5	3 1/2	2 1/4
43-49	12 L 207	7	7	7	7	7"	5"
50-75	15 L 33.9	8	8	8	8	7"	5"
80-90	15 L 33.9	8	8	8	8	8"	5"

DETAILS OF STANDARD
35'-90' COMPOSITE I-BEAM SPANS
28' CLEAR ROADWAY 1'-6" & 1'-7 1/2" CURBS
ROADWAY: 1 1/2" Parabolic Crown 0.0104% SLOPE
ARKANSAS STATE HIGHWAY COMMISSION

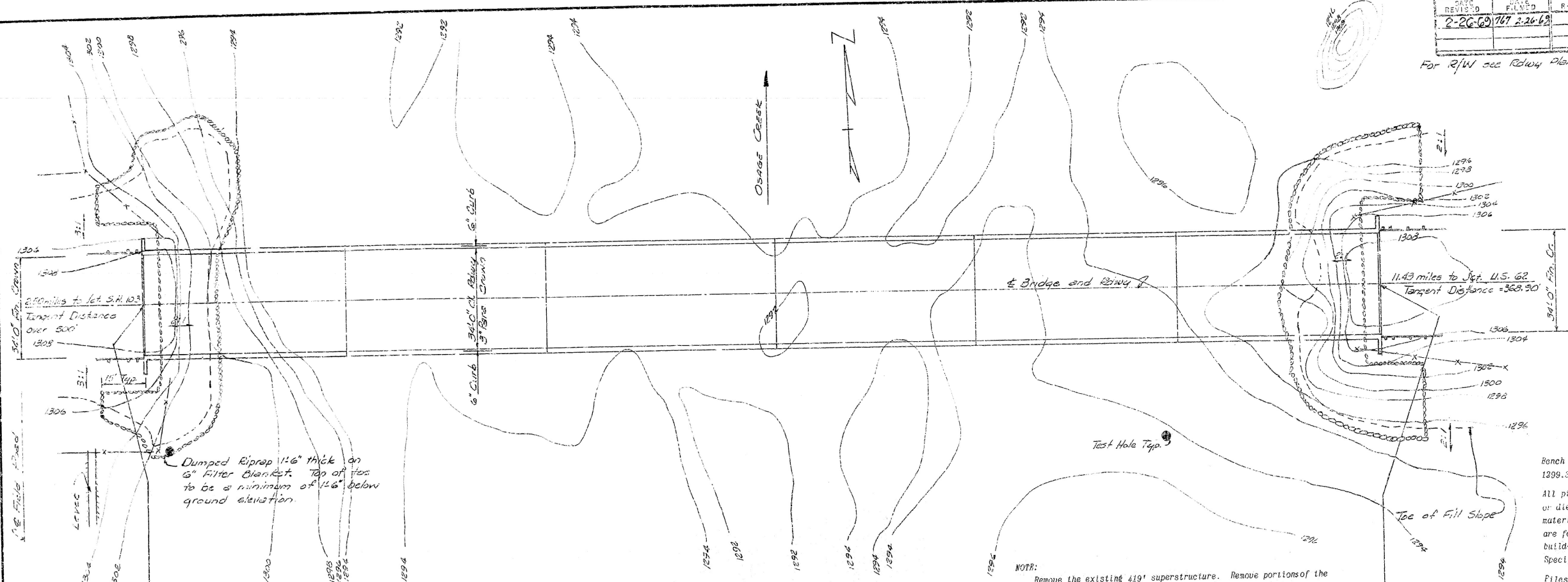
DRAWN BY: FDN DATE: 6-22-59
 TRACED BY: _____ DATE: _____
 CHECKED BY: FRB DATE: 6-12-59
 BRIDGE NO. _____ DRAWING NO. 5477

L. P. Carlson

BRIDGE NO. DRAWING NO. 5477

REVIS'D	FILED	FILED	FILED	FED. ROAD NO.	STATE	FED. AID PROJ.	FISCAL YEAR	SHEET NO.	TOTAL SHEETS
2-26-59	767 2-26-63			6	ARK.	R5-19410			
				JOB NO.		9565		7	21
				CD 2771A - AVANT 15922					

For R/W see Rdwy Plans



Dumped Riprap 1'-6" thick on
6" Filter Blanket. Top of toes
to be a minimum of 1'-6" below
ground elevation.

NOTE: Remove the existing 419' superstructure. Remove portions of the existing end bents so no part extends above top of riprap. Retain the existing intermediate bents. The existing superstructure consists of low steel trusses with concrete decks. See SP Job 9665. Construct a 335' detour bridge approximately 40' upstream with a deck elevation of 1305.0'. Detour to have a 20' clear roadway and be designed for R15 Live Loading. See SP1008-1.

GENERAL NOTES

Bench Mark - Nail in roof 30" Elm, 60' Rt., Station 17 + 60, Elevation 1299.34.

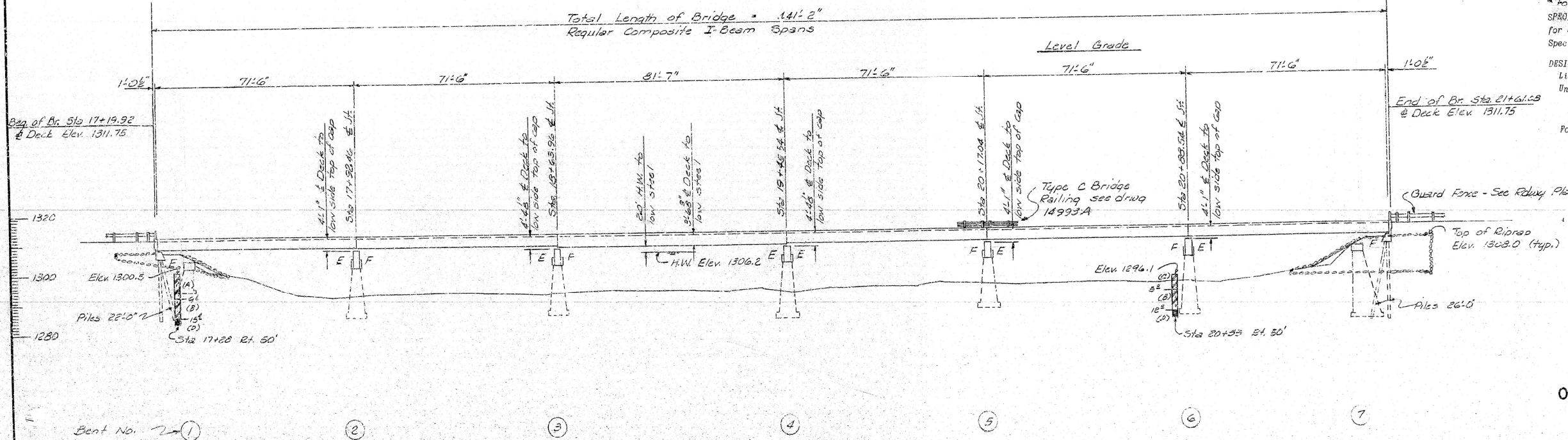
All piling shall be 12BPS3 and shall be driven with an approved air, steam, or diesel hammer to a minimum capacity of 55 tons per pile and into the material designated as limestone on the boring logs. Lengths of pile shown are for estimating quantities only. Order lengths shown; cut-off or build-up, if necessary, to be paid for in accordance with the Standard Specifications.

The Contractor shall make check measurements of the existing structure and determine all dimensions and adjustments necessary to fit the new work to the existing construction.

For Details of End Bents see Dwg. No. 15943
For Details of Intermediate Bents see Dwg. No. 15944
For Details of Composite I-Beam Spans see Dwg. Nos. 15945 and 14920 D
* For Details of Existing Substructure see Dwg. No. 2059
SPRIFICATIONS: Arkansas State Highway Commission Standard Specifications
for Highway Construction, Edition of 1959, the 1966 Supplemental
Specifications, and applicable Special Provisions.

DESIGN SPECIFICATIONS:		AASHTO	1965
Live Loading:	#20		
Unit Stresses:	Class 5 Concrete ($n=10$)	1200 psi	
	Reinforcing Steel	20,000 psi	
	Structural Steel (A-36)	20,000 psi	
Foundation Pressure:			
	Group I	4.70 ksf	
	Group II	6.7 ksf Max.	1.5 ksf min.
	Group III	7.0 ksf Max.	2.8 ksf min.

* Other Existing Details available on request



SOIL LEGEND

- (A) Firm Brown Clay Gravel & few Boulders
- (B) Comp Clay Gravel & Boulders
- (C) Loose Sandy Clay & Gravel
- (D) Solid Limestone

ELEVATION

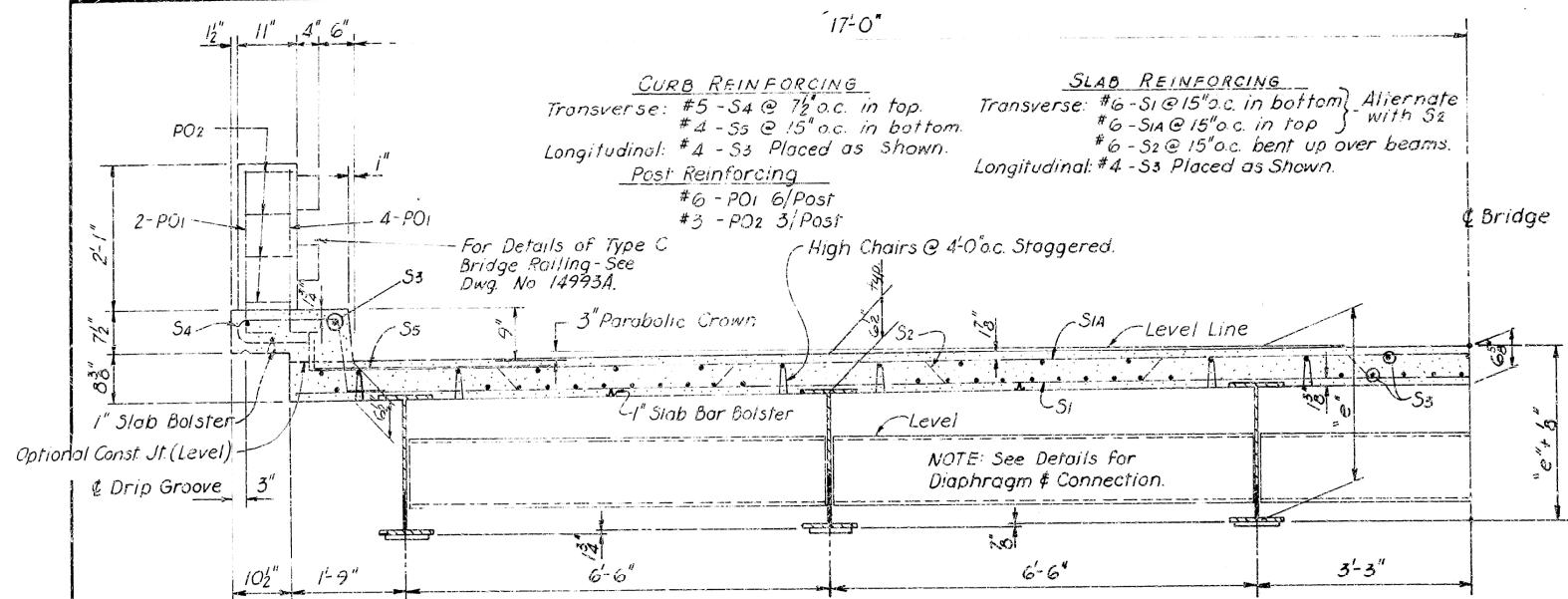
D.A. = 85 sq. mi.
50 year frequency flood = 27,200 cfs
Very extreme H.W. = Elev. 1314.0
Extreme H.W. = Elev. 1306.2
Normal H.W. = Elev. 1302.5
50 year frequency H.W. = Elev. 1303.6

Rev. Slopes at Bent 7 (8-8-68) JAS

LAYOUT OF BRIDGE OVER
OSAGE CREEK
OSAGE CREEK BRIDGE & APPROACHES
CARROLL COUNTY
ROUTE 68 SEC. 4
ARKANSAS STATE HIGHWAY COMMISSION
LITTLE ROCK, ARK.
DRAWN BY: DFL DATE: 7-7-68
TRACED BY: _____ DATE: _____ SCALE: 1"=20'
CHECKED BY: UAS DATE: 7-11-68
BRIDGE NO. 2771A DRAWING NO. 15942

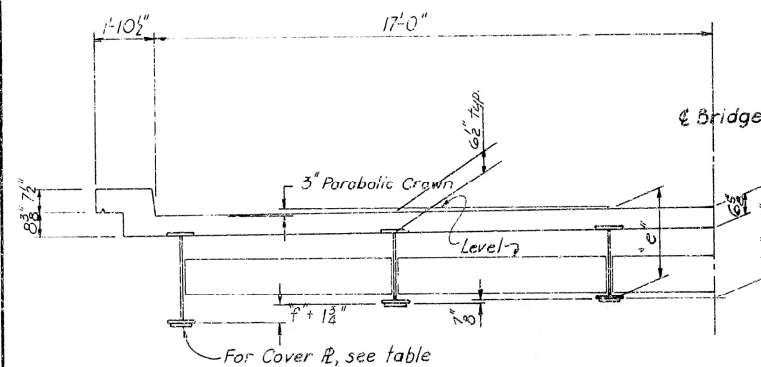
L. P. Carlson
BRIDGE ENGINEER

DATE RECEIVED		FED. ROAD NO.	STATE	FED. AID PCT.	FISCAL YEAR	SHEET NO.	TOTAL SHEETS
2-26-69 770-2469		6	ARK.	R3. 194(10)			
		JOB NO.		9565	10	21	
		S1027710 000115 18025					



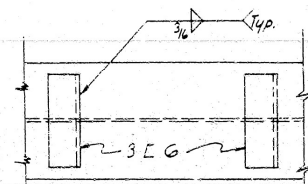
HALF-SECTION A-A OF REGULAR SPAN-PARABOLIC CROWN

Regular Spans have all Beams of Equal Depth

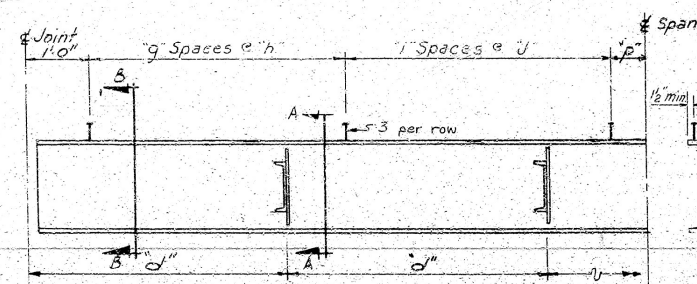
$$\frac{3}{4}'' = 1'-0''$$


HALF-SECTION A-A OF
MODIFIED SPAN-PARABOLIC CROWN

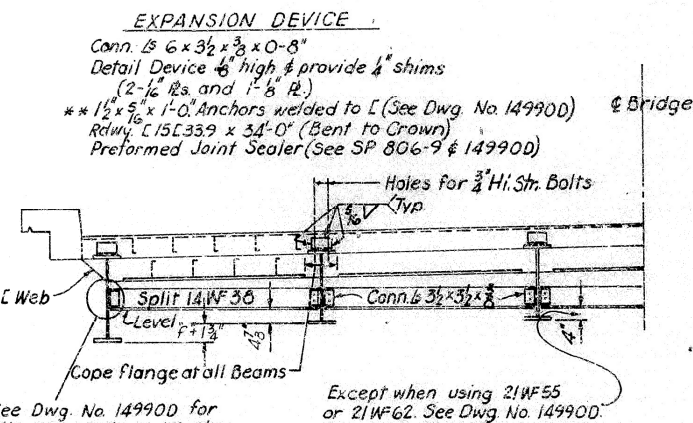
NOTE: "f" = difference in "e" for Interior and Exterior Beams.



OPTIONAL CHANNEL SHEAR CONNECTORS

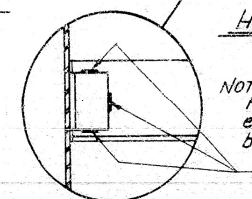


SPACING FOR 3/4" STUD SHEAR
CONNECTORS & DIAPHRAGMS

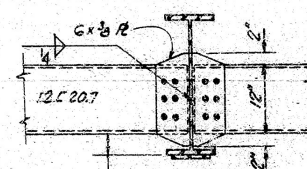


HALF-SECTION B-B - MODIFIED
OR REGULAR SPANS

NOTE: $38" = 1'-0"$
For modified spans interior beams are same as regular spans,
exterior beams are lightest section of same nominal depth as
beams for longest span shown on Bridge Layout.

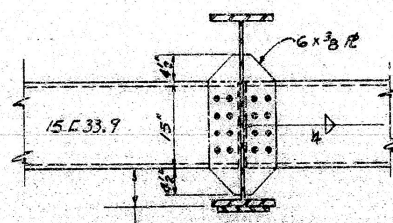


OPTIONAL WELDS

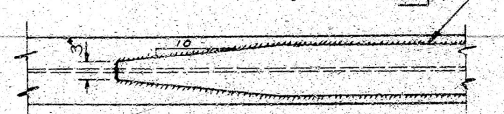


DIAPHRAGM DETAIL FOR
21^{WF} THRU 27^{WF} BEAMS

Max. thickness of part under $\frac{3}{4}'' = \frac{1}{4}''$
 " " " " $\frac{3}{4}''$ to $1\frac{1}{2}'' = \frac{5}{16}''$
 " " " " $1\frac{1}{2}''$ to $1\frac{3}{4}'' = \frac{3}{8}''$



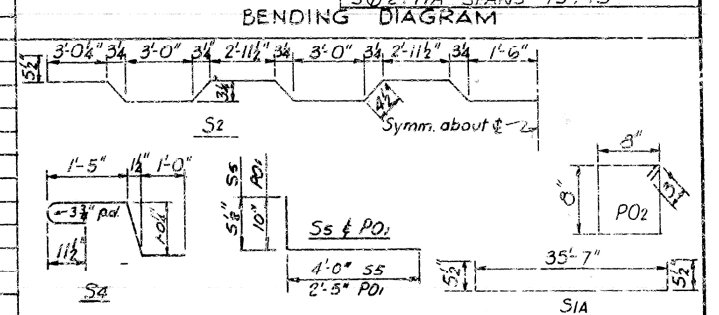
DIAPHRAGM DETAIL FOR
30" THRU 36" BEAMS

$$3A^H = 1.0^H$$


DETAIL OF COVER PLATES

$$3d'' = 1.0^{\circ}$$

				BAR LIST	
MK	SIZE	LENGTH	PIN DIA.	LENGTH OF SPAN	
				7/8	5/4
				NUMBER REQUIRED EACH SPAN	
S1	6	35'-8"	Str.	57	65
S1A	6	36'-6"	2 1/2"	57	65
S2	6	37'-4"	2 1/2"	57	65
S3	4	8'-6"	Str.	-	-
S3	4	5/2 + 7"	Str.	-	-
S3	4	5/3 + 1'-0"	Str.	261	260
S4	5	4'-7"	1 1/2"	228	260
S5	4	4'-5"	1 1/2"	114	130
PO1	6	3'-3"	2 1/2"	120	132
PO2	3	3'-1"	1 1/4"	80	86



Dimensions are ctr. to ctr. of bars.

BRIDGE NO.

2771A

SPAN

INTERIOR BEAM

EXTERIOR BEAM

DIAPHRAGM SPACING

POST SPACING

VARIABLES of SHEAR CONNECTOR SPACING

NO.	LENGTH	TYPE	BEAM SIZE	COVER SIZE	e	DEAD LOAD DEFLECTION		BEAM SIZE	COVER SIZE	e	DEAD LOAD DEFLECTION		a	b	c	g	h	i	j	p
						WITH CONST. JOINT	WITHOUT CONST. JOINT				WITH CONST. JOINT	WITHOUT CONST. JOINT								
2456	71'-6"	Reg.	30WF108	9"x16"x48'-0"	2'-11 1/8"	2 1/16"	2"	30WF108	9"x16"x46'-0"	2'-11 1/8"	1 1/8"	2 1/16"	4@17'-10"	7'-8 1/2"	7'-7"	7"	0	20'-20"	1'	17'-0"
3	81'-6"	Reg.	33WF130	10"x17"x52'-03'-2 1/2"	2'-9 1/2"	2 1/8"	2 1/2"	33WF130	10"x17"x50'-0"	3'-2 1/2"	2 3/8"	3 1/8"	4@20'-4 1/2"	7'-11"	7'-10"	8"	0	22'-2 1/4"	1'	15'-0"

LOADING: H2O (AASHO 1965)

- | 1. Dead Load: (Type A Rail) | | Interior Beam | Exterior Beam |
|------------------------------|-----------------------------|-----------------------------|-----------------------------|
| a. To WF Beam | | | |
| (Without Const. Jt.) | #/' + 1.15(wt/ft of WF) | #/' + 1.15(wt/ft of WF) | #/' + 1.15(wt/ft of WF) |
| (With Const. Jt.) | #/' + 1.15(wt/ft of WF) | #/' + 1.15(wt/ft of WF) | #/' + 1.15(wt/ft of WF) |
| b. To Composite Beam | | | |
| (Without Const. Jt.) | #/' | #/' | #/' |
| (With Const. Jt.) | #/' | #/' | #/' |
| 1A. Dead Load: (Type C Rail) | | | |
| a. To WF Beam | | | |
| (Without Const. Jt.) | 528 #/' + 1.15(wt/ft of WF) | 664 #/' + 1.15(wt/ft of WF) | 664 #/' + 1.15(wt/ft of WF) |
| (With Const. Jt.) | 528 #/' + 1.15(wt/ft of WF) | 426 #/' + 1.15(wt/ft of WF) | 426 #/' + 1.15(wt/ft of WF) |
| b. To Composite Beam | | | |
| (Without Const. Jt.) | 86 #/' | 101 #/' | 101 #/' |
| (With Const. Jt.) | 133 #/' | 196 #/' | 196 #/' |

2. Live Load:
a. To each Composite Beam 1.182 wheels + impact 1.156 wheels + impact

UNIT STRESSES:

Class 3 Concrete (n=10)	1,200 psi
Structural Steel (A-36)	20,000 psi
Reinforcing Steel	20,000 psi

NOTE: 7/8" studs or 3/4" channels may be used in place of the 3/4" studs that are shown, at the ratio of 0.735-7/8" stud or 2.0 inches of 3/4" channel in place of one 3/4" stud. The stud connectors shall be 4" long and may be granular flux filled, solid fluxed, or equal, and automatically welded to the steel flanges in accordance with recommendations of the manufacturer. 3/4" studs will be used as basis for measurement of structural steel in shear connectors.

DETAILS OF STANDARD
35'-90' COMPOSITE I-BEAM SPANS
34'-0" CLEAR RDWY. 6" CURBS
3" PARABOLIC CROWN

ROUTE SEC.
ARKANSAS STATE HIGHWAY COMMISSION

LITTLE ROCK, ARK.

DRAWN BY: RHM DATE: 6-21-68
 TRACED BY: _____ DATE: _____ SCALE: As Noted

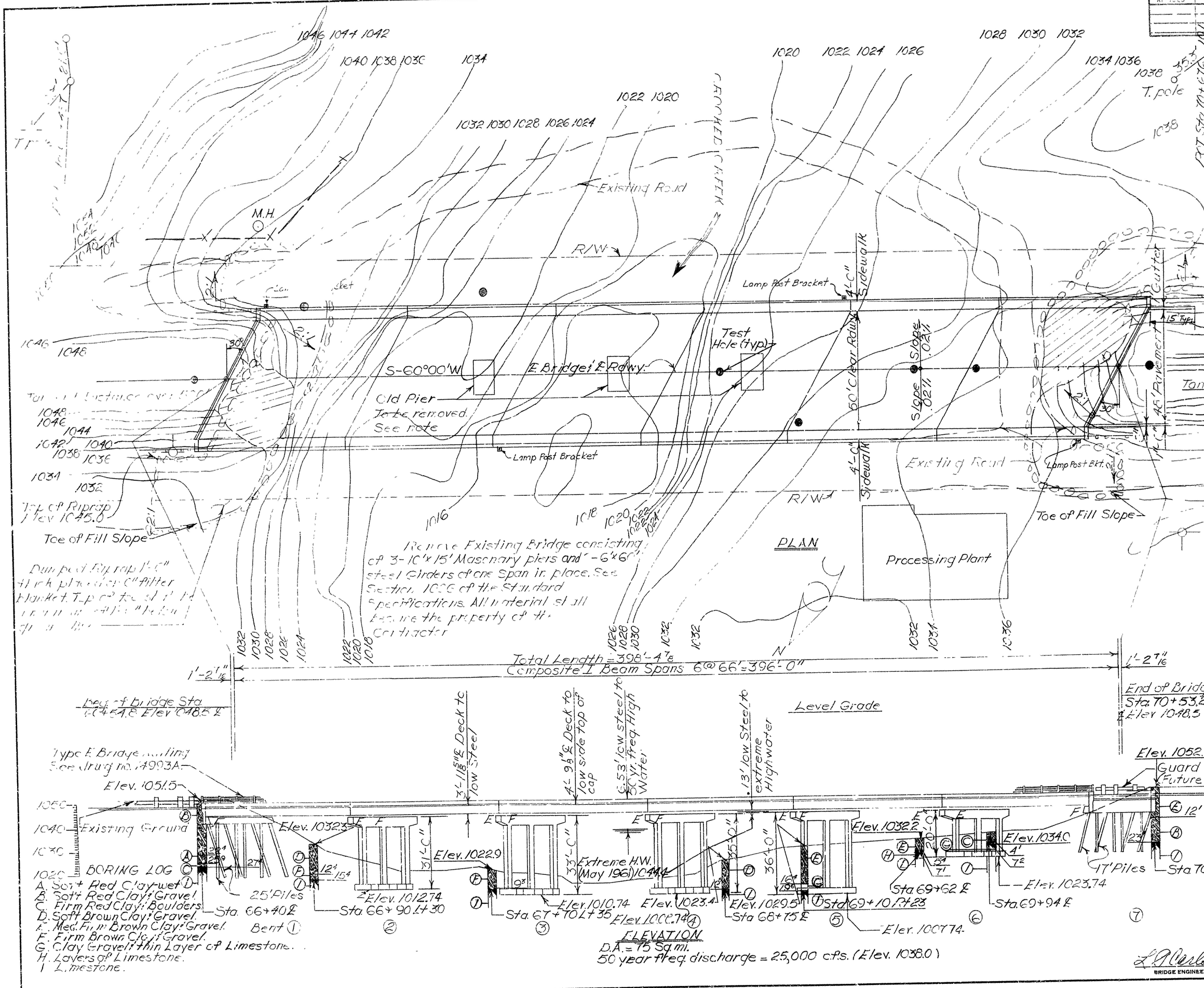
BRIDGE NO. 2771A DRAWING NO. 15945

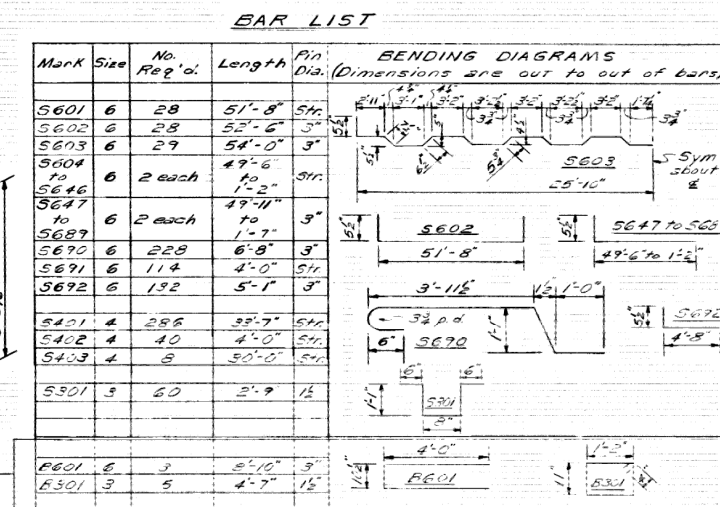
CK DFL 1/26/69

L. P. Carlson
BRIDGE ENGINEER

DO NOT PLACE TEAMS IN END SPANS.

BRIDGE NO. 5330 DRAWING NO. 16553





— For One Lamp Post Bracket
See Layout for location in Spans 1, 3, 4, & 6

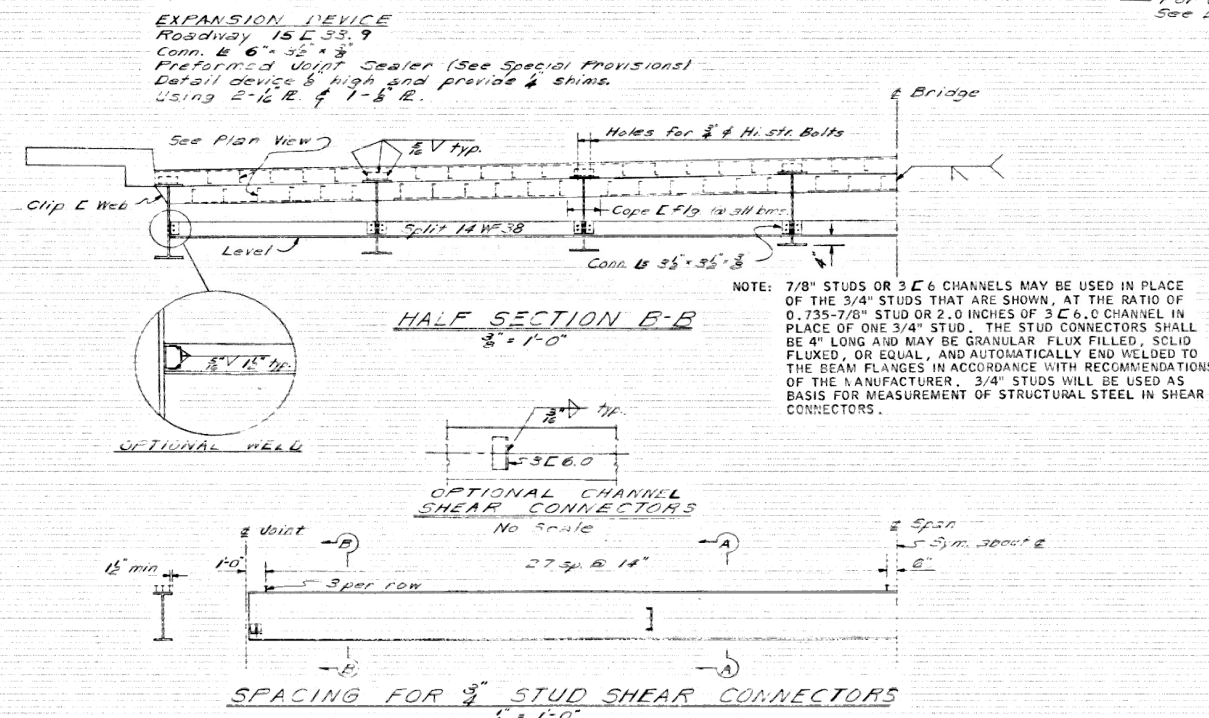
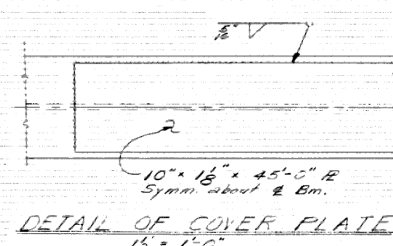
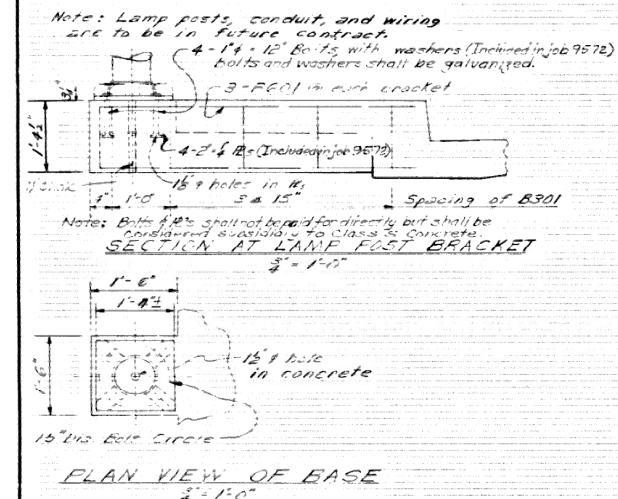
DESIGN SPECIFICATIONS: AASHTO 1963
LIVE LOADING: HS20

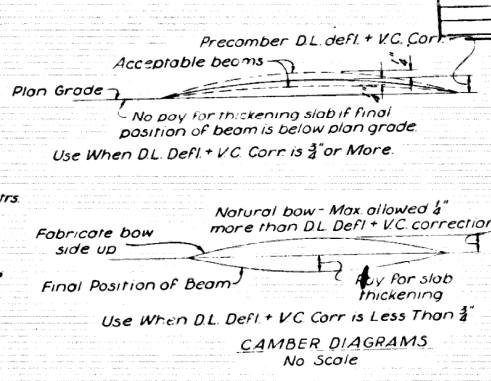
	INTERIOR BEAM	EXTERIOR BEAM
1. DEAD LOAD (TYPE E RAIL)		
a. TO WF BEAM	761 #/l	653 #/l
b. TO COMPOSITE BEAM	175 #/l	310 #/l
2. LIVE LOAD		
a. TO EACH COMPOSITE BEAM	1.273 WHEELS+IMPACT	1.217 WHEELS+IMPACT

UNIT STRESSES: CLASS S CONCRETE (N=10) 1,200 PSI
STRUCTURAL STEEL (A-36) 20,000 PSI
REINFORCING STEEL 20,000 PSI

SHEET NO. 2 OF 2
DETAILS OF SPANS
BRIDGE OVER CROOKED CREEK
HARRISON BYPASS
BOONE COUNTY
ROUTE 65 SEC. 2
KANSAS STATE HIGHWAY COMMISSION
LITTLE ROCK, ARK.

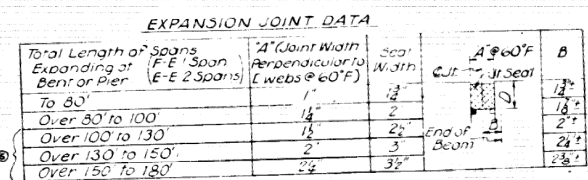
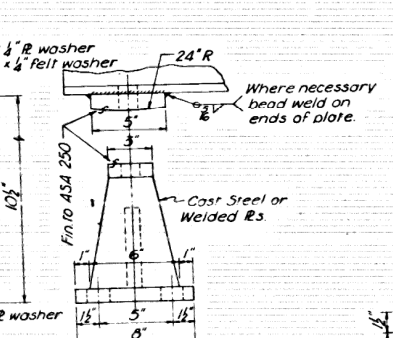
DRAWN BY: UAS DATE: 9-2-69
 TRACED BY: _____ DATE: _____ SCALE: As Noted
 CHECKED BY: JAL DATE: 6-25-69
 BRIDGE NO. 5330 DRAWING NO. 16558





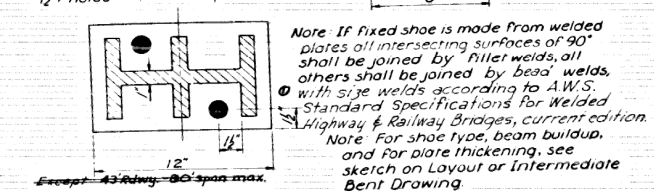
Note: Beam buildups are required where modified spans are used, or adjacent regular spans have different "e" plus shoe height. (See accompanying drawings)

Use when difference in ("e" plus shoe height) is 5" or more.



Note: All joints or Abutments and/or Fix Fix joints shall be 1" The Dimensions of "shall conform to the recommendations of the seal manufacturer as approved by the Bridge Engineer. The depth of the seal shall be approximately equal to the uncompressed width of the seal

③ Joints shown are to be used at skew angles up to and including 15° for joints to be used at skew angles greater than 15° see supplemental details.



DETAILS COMMON TO STANDARD 35'-90'
COMPOSITE I-BEAM SPANS
ALL ROADWAYS
ARKANSAS STATE HIGHWAY COMMISSION
LITTLE ROCK, ARK.

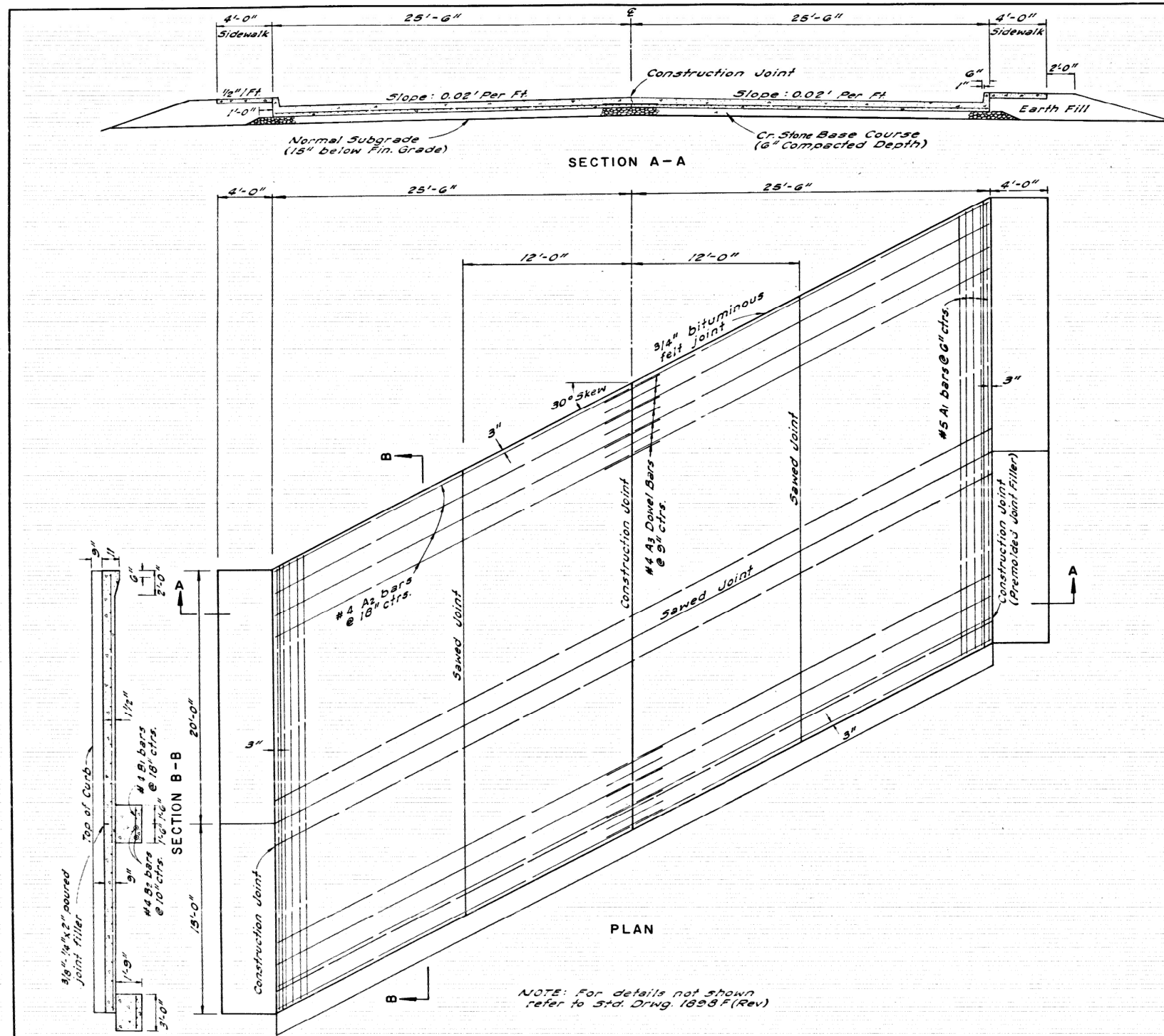
TYPE "A" EXPANSION SHOE
Scale: $\frac{3}{16}$ " = 1"

① Revised note 10-25-67 FMH
② Added 5/8" x 8" Studs 1-11-68 FMH
③ Added Note: 3-13-68 JS
④ Removed Shoe dimensions
⑤ Revised Exp. of seat 2-28-68
Typed from orig 14990C

Exp. Ballou
BRIDGE ENGINEER

LITTLE ROCK, ARK.
DRAWN BY: RWM DATE: 1-4-67
TRACED BY: _____ DATE: _____
CHECKED BY: DFL DATE: 1-5-67
SCALE: As Shown
BRIDGE NO. 5330 DRAWING NO. 14990D

247



DATE REVISED	DATE FILMED	DATE REVISED	DATE FILMED	FED. ROAD DIST. NO.	STATE	FED. AID PROJ. NO.	SHEET NO.	TOTAL SHEETS
7-7-62				6	ARK.			
				JOB NO.		9572	6	28

② SPEC DETAILS

BAR LIST

MARK	SIZE	NO.	LENGTH
A1	#5	102	34'-6"
A2	4	48	28'-10"
A3	4	47	4'-0"
B1	4	48	2'-8"
B2	4	16	28'-10"

QUANTITIES

CONCRETE	REINF. STEEL
CU. YDS.	POUNDS
81.50	5132

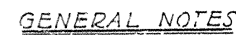
NOTE: Quantities are for estimating purposes only

GENERAL NOTES

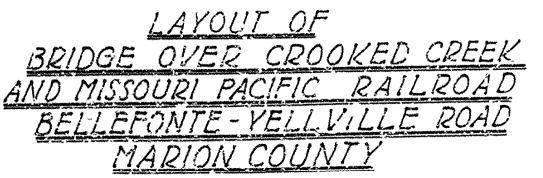
All concrete to be class A or S. Exposed corners to be chamfered 3/4" unless otherwise noted. Reinforcing steel to be deformed bars of intermediate or hard grade. Approach Slabs for structures shall be paid for at the contract unit price each bid for "Approach Slabs" which price shall be full compensation for furnishing all materials, including reinforcing steel and joint materials; for forms, mixing, placing and finishing; for excavation and backfill and for all labor, tools, equipment and incidentals necessary to complete the work. Construction of Joint Supports, including concrete, reinforcing steel and excavation required shall be considered as subsidiary work to "Approach Slabs".

DETAILS OF BRIDGE APPROACH SLABS JOB 9572

SCALE: 1" = 4'



PLAN



ELEVATION

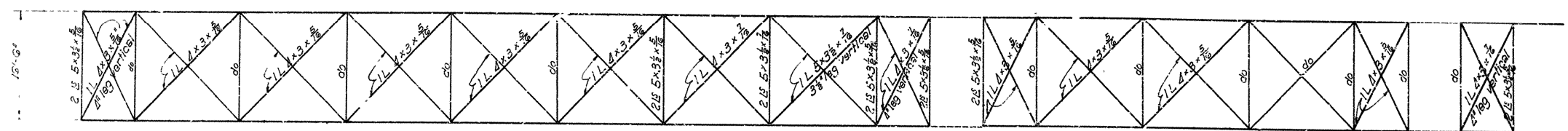
ARKANSAS STATE HIGHWAY COMMISSION
LITTLE ROCK, ARK.

Drawn By: E. S. S. Date: 8-9-47
Typed By: E. S. S. Date: 8-9-47
Checked By: _____ Date: _____

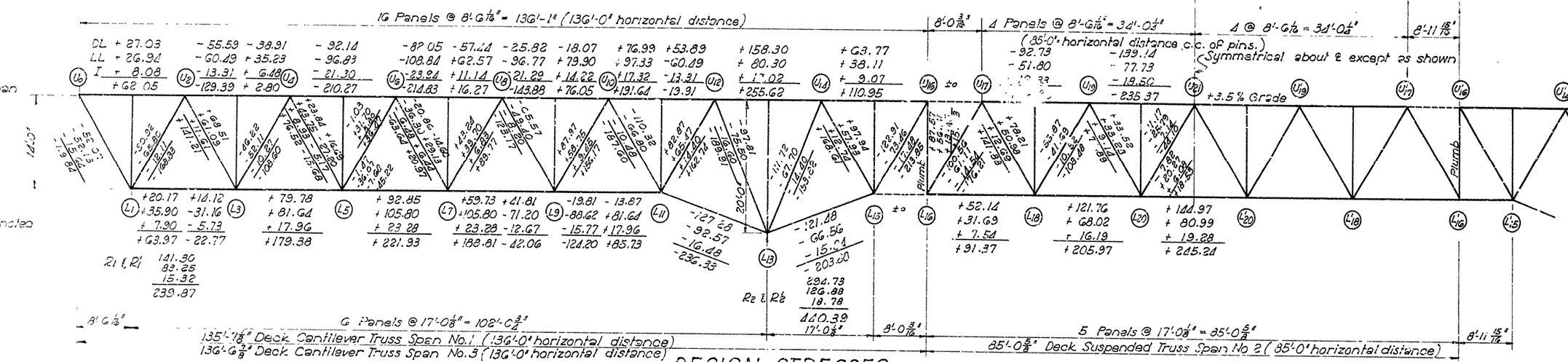
Scale: $\left\{ \begin{array}{l} 1" = 20' \\ \hline \end{array} \right.$

BRIDGE NO. 2469 DRAWING NO 7025

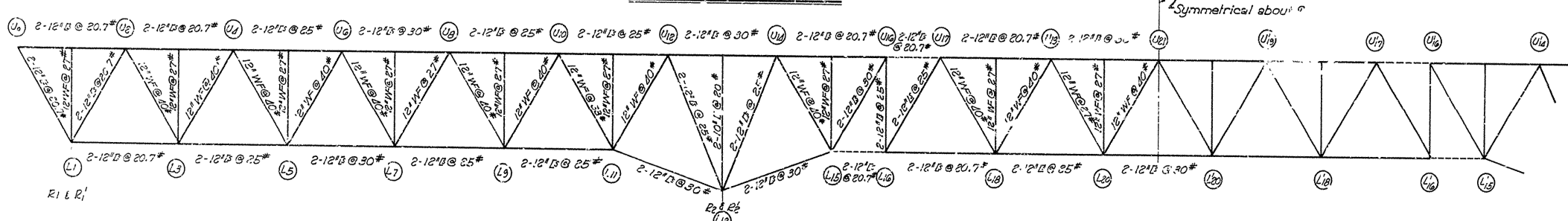
FED. ROAD DIST. NO.	STATE	FED. AID PROJECT NO.	FISCAL YEAR	SHEET NO.	TOTAL SHEETS
6	ARK.	F-370-(6)		23	23
STATE JOB NO. 9221					1797 9



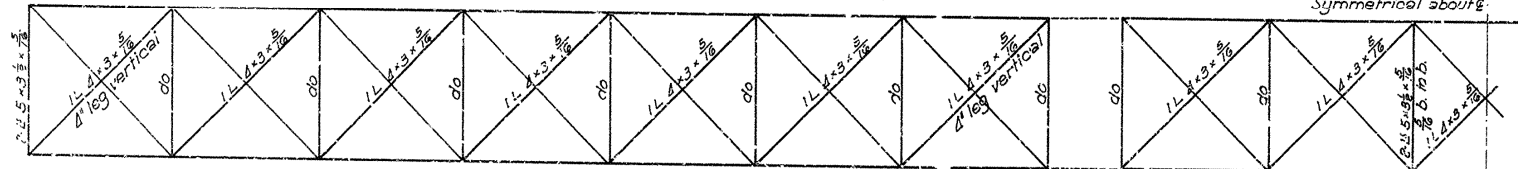
TOP CHORD LATERAL BRACING



DESIGN STRESSES



SELECTION OF MEMBERS



BOTTOM CHORD LATERAL BRACING

GENERAL NOTES

Concrete Deck: All concrete in roadway slab, sidewalk, slab, rail post and brackets to be Class 'S'. All exposed corners to be chamfered $\frac{1}{4}$ " unless otherwise noted.

Rivets: In truss members, floor beams, cross frames and lateral bracing, use $\frac{3}{4}$ " in handrail use $\frac{5}{8}$ ". Use machine bolts where bolts are indicated, unless otherwise noted.

Holes: All holes, unless otherwise noted, shall be punched to $\frac{1}{16}$ " less diameter than nominal size of rivet, and reamed to a diameter $\frac{1}{16}$ " larger than nominal size of rivet.

Camber: Trusses shall be cambered to compensate for deflection due to dead load.

Shop Paint: All parts which come in contact shall be painted one coat of red lead and raw linseed oil before they are riveted together. When assembled and after all shop work has been completed, all steel shall be given one coat of red lead and raw linseed oil before shipment.

Field Paint: 1st coat, white lead. 2nd coat, aluminum paint.

Shapes with equal or greater strength may be substituted for those shown. Payment, however, will be based upon the the shapes shown or actually used, whichever is the lesser.

All welded connections to have $\frac{1}{8}$ " fillet shop welds, except as noted. Welding to be by the electric arc process.

This drawing shows general features of design only. Shop drawings shall be made in accordance with the specifications, and shall be submitted and approved before fabrication is begun.

Specifications: Arkansas State Highway Commission Standard Specifications for Road and Bridge Construction adopted March 1, 1940.

Design Live Load - H-20 Loading A.A.S.H.O. 1944

Unit Stresses:

Class 'S' Concrete (f_c=10) 1000 lbs./sq. in.

Reinforcing Steel 18000 lbs./sq. in.

Structural Steel 18000 lbs./sq. in.

FLOOR BEAM DATA

	Positive	Negative
Dead Load Moment	38940*	359640*
Live Load Moment	1292160*	528000*
30% Impact	397648*	150400*
Totals	1718748*	1036400*
Section Modulus required	= 95.5	
Use 18" CB @ 55 #	Section Modulus = 98.2	

DESIGN STRESSES
SELECTION OF MEMBERS & GENERAL NOTES
FOR DECK TRUSS SPANS

BRIDGE OVER CROOKED CREEK & MO. PAC. R.R.
BELLFONTE - VELLVILLE ROAD
MARION COUNTY

ROUTE 62 SEC. 8

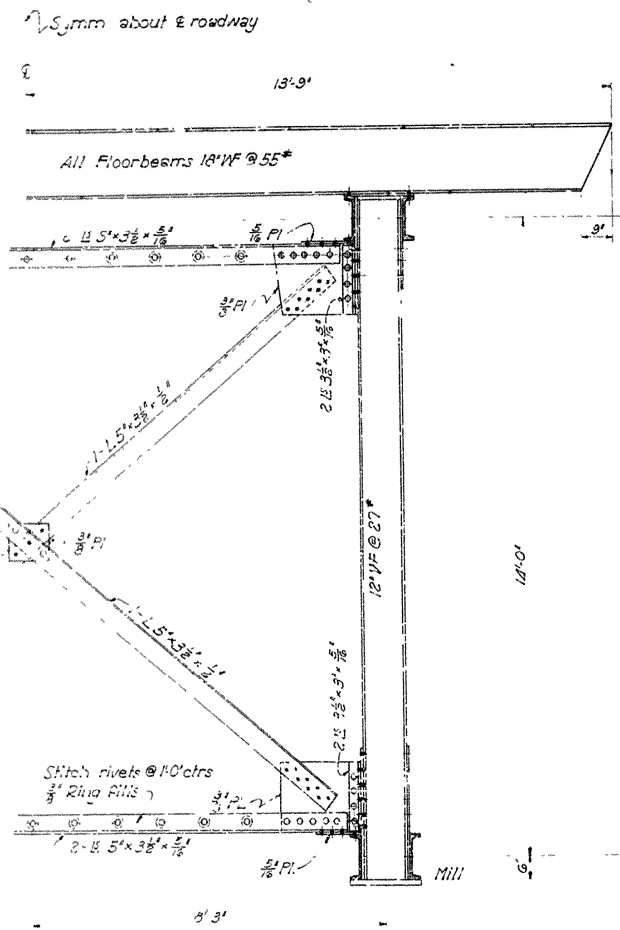
ARKANSAS STATE HIGHWAY COMMISSION
LITTLE ROCK, ARK.

Drawn By: H.B. Date: 5-21-47
Traced By: R.B.S. Date: 6-2-47
Checked By: Date:
BRIDGE NO. 2469 DRAWING NO. 7030

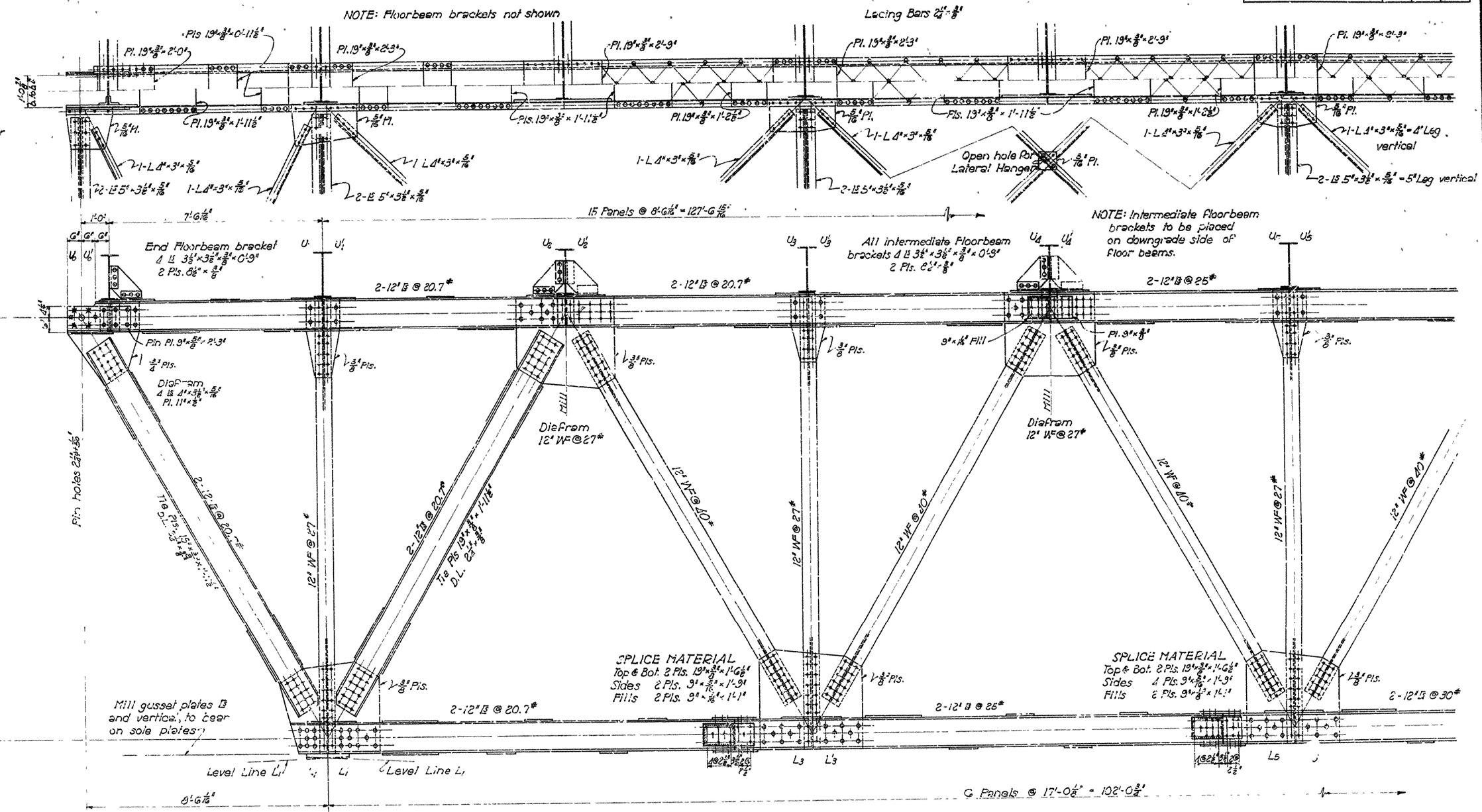
H.B. Gower
PRINCIPAL HIGHWAY ENGINEER (REGISTERED)

FED. ROAD DIST. NO.	STATE	FED. AID PROJECT NO.	FISCAL YEAR	SHEET NO.	TOTAL SHEETS
8	ARK.	F-370-(10)	1947	10	23
STATE JOB NO. 9221					

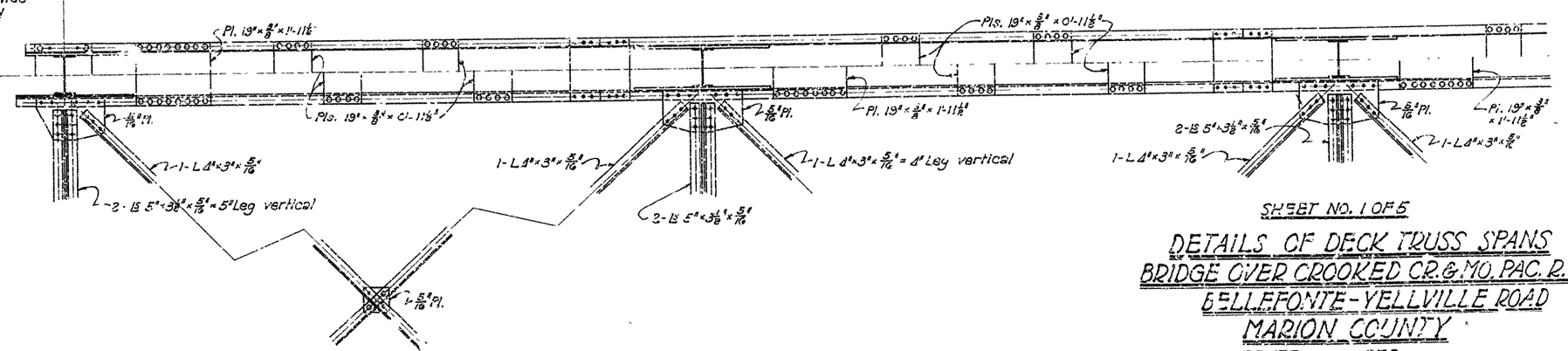
See Drawing Nos. 7038 and 7039 for details of I-beam spans.
See Drawing Nos. 7036 and 7038 for detail of roadway expansion device.



HALF CROSS FRAME AT U1-L1



NOTE: Sole plate to be 18" wide 12" on E and beveled for 3".

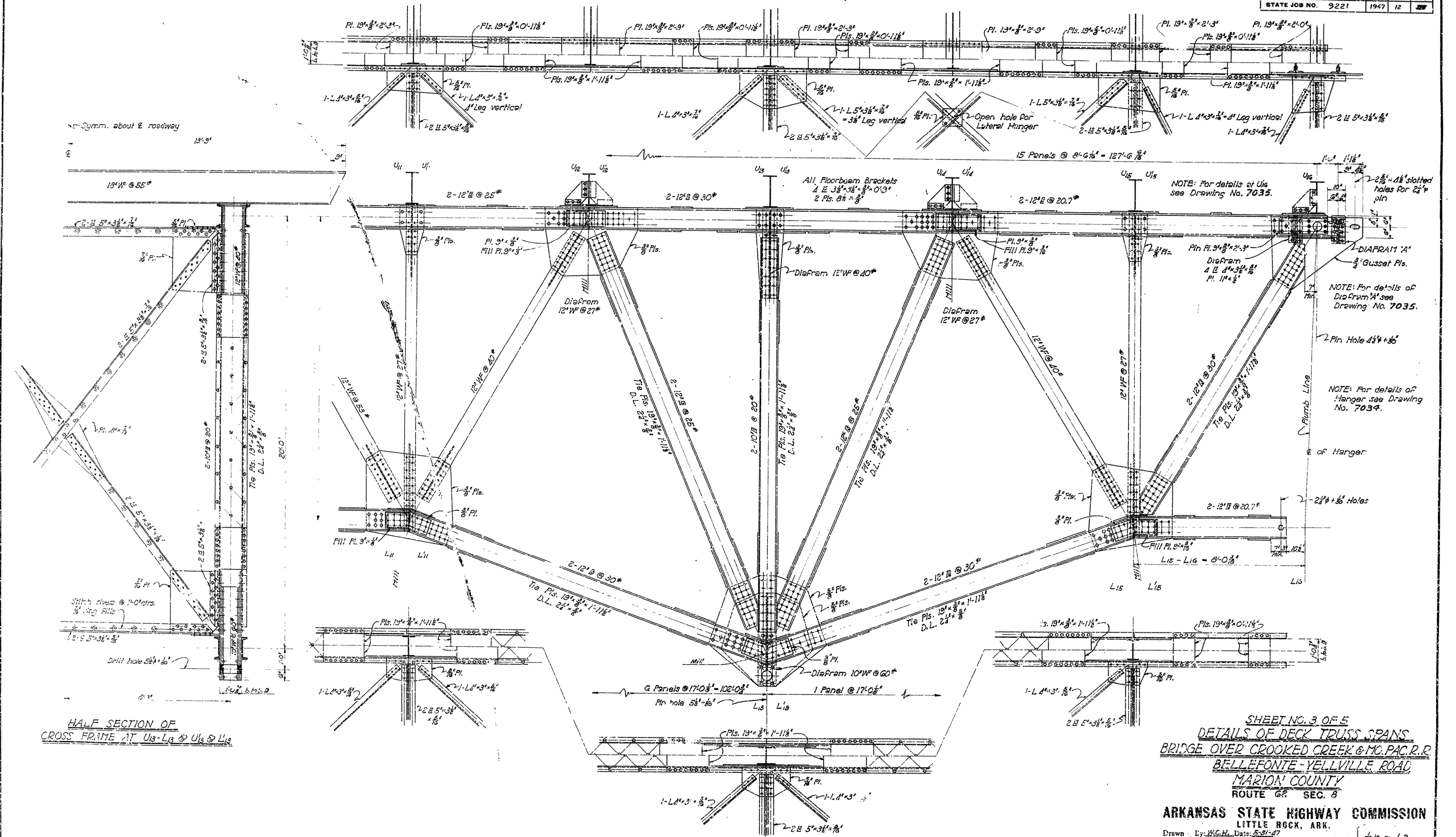


SHEET NO. 1 OF 5
DETAILS OF DECK TRUSS SPANS
BRIDGE OVER CROOKED CR. & MO. PAC. R.R.
BELLFONTE-YELLVILLE ROAD
MARION COUNTY
ROUTE SEC.

ARKANSAS STATE HIGHWAY COMMISSION
LITTLE ROCK, ARK.
Drawn by: W.C.H. Date: 5-22-47
Traced by: S.B.S. Date: 6-2-47
Checked by: _____ Date: _____
BRIDGE NO. 2469 DRAWING NO. 7031

FED. ROAD DIST. NO.	STATE	FED. AID PROJECT NO.	FISC. YEAR	SHEET NO.	TOTAL SHEETS
6	ARK.	F-370-(10)		23	
STATE JOB NO. 9221			1947	12	

NOTE: Floorbeam brackets not shown



Symm. about E roadway

HALF SECTION OF
CROSS FRAME AT U13-L13 & U13-L15

SHEET NO. 3 OF 5
DETAILS OF DECK TRUSS SPANS
BRIDGE OVER CROOKED CREEK & MC. PAC. R.R.
BELLEFONTE-YELLVILLE ROAD
MARION COUNTY
ROUTE 62 SEC. 8

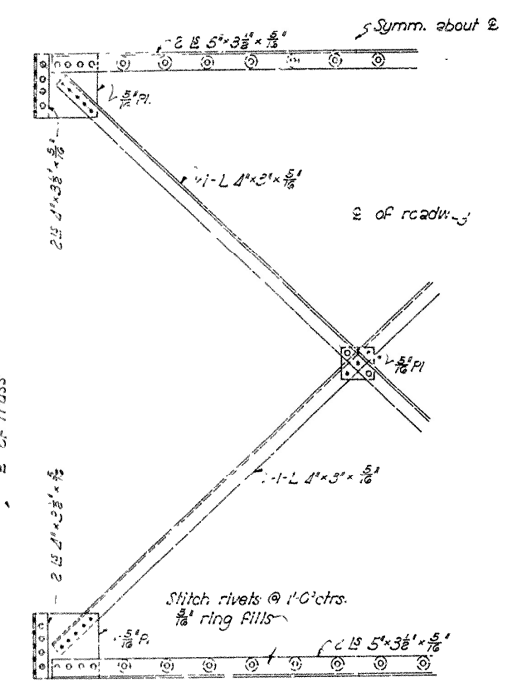
ARKANSAS STATE HIGHWAY COMMISSION
LITTLE ROCK, ARK.
Drawn By: W.C.H. Date: 5-21-47
Traced By: B.W.S. Date: 6-16-47
Checked By: _____ Date: _____
BRIDGE NO. 2469 DRAWING NO. 7033

REVISIONS: Mill joint at L13 & L15. W.C.H. 8-22-47.

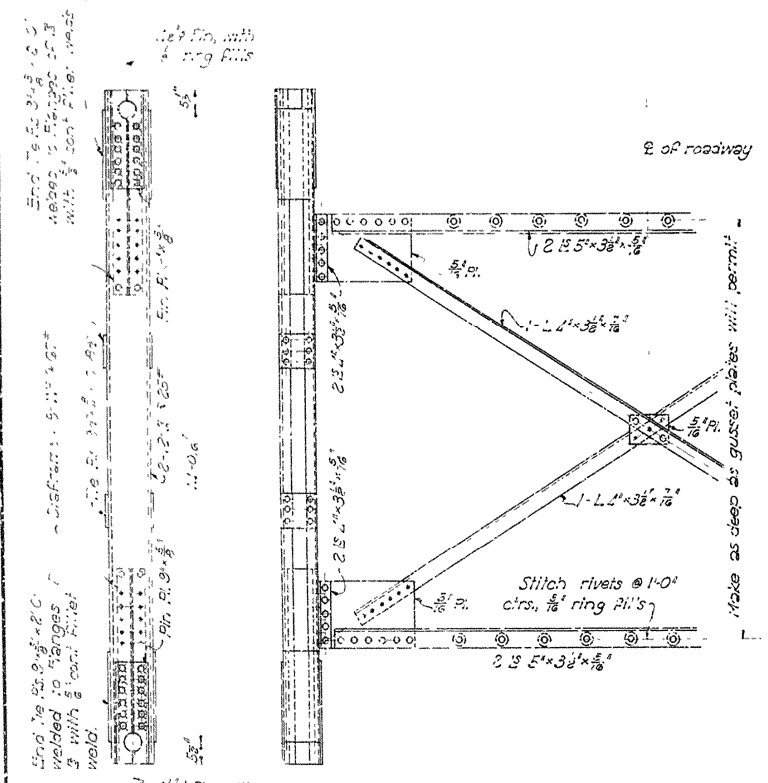
W.C.H. HANCOCK
PRINCIPAL HIGHWAY ENGINEER (BRIDGE)

FED. ROAD DIST. NO.	STATE	FED. AID PROJECT NO.	FISCAL YEAR	SHEET NO.	TOTAL SHEETS
6	ARK.	F-370-107	1947	13	23
STAFF JOB NO. 9221					

NOTE: Floorbeam brackets not shown

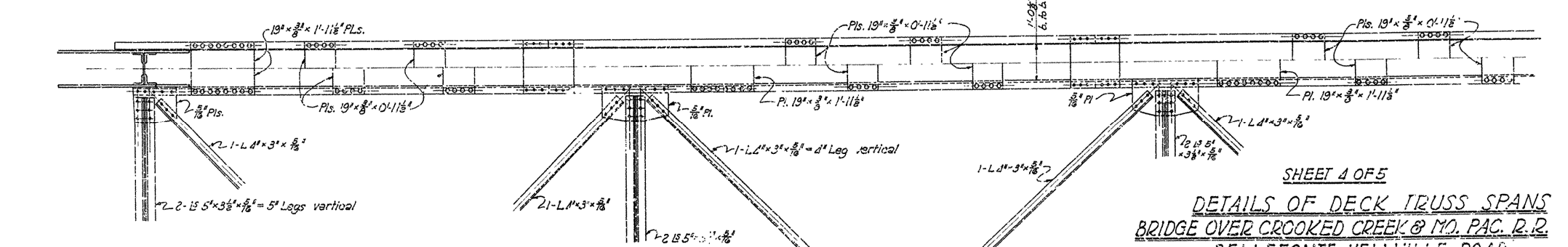
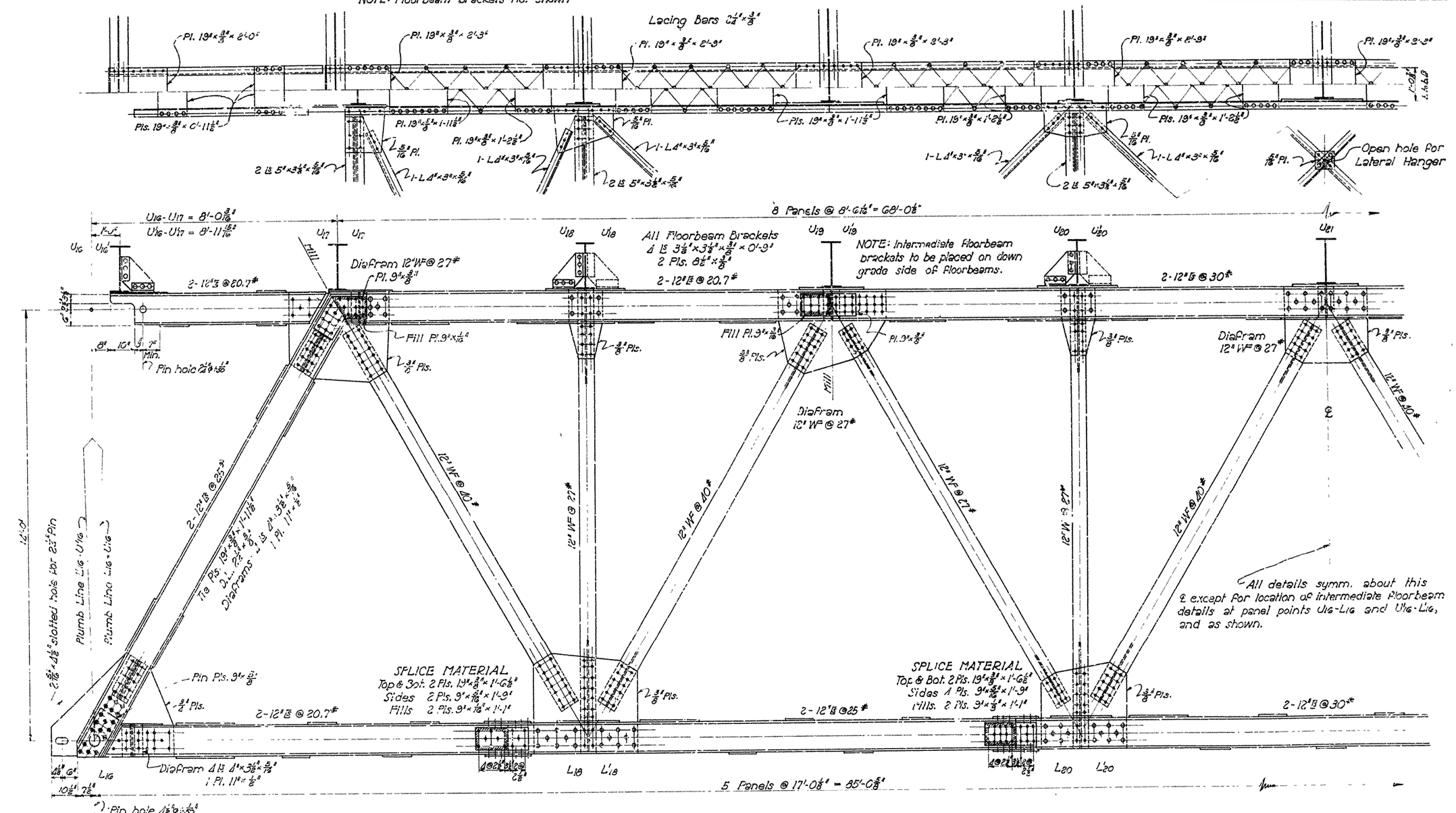


HALF PORTAL CROSS FRAME
AT U16-U17 AND U16-U17



HALF SECTION OF HANGER
CROSS FRAME AT U16-L16

NOTE: Weld edges of pin plates and diafram
Planges outside pin hole with 5/8\"/>



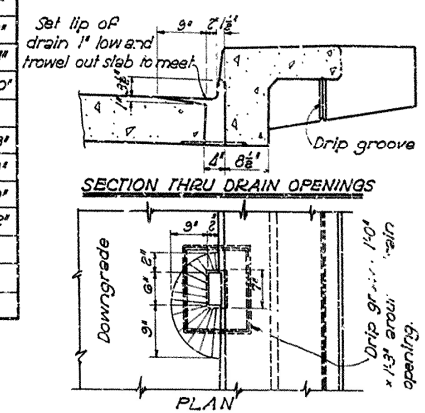
SHEET 4 OF 5
DETAILS OF DECK TRUSS SPANS
BRIDGE OVER CROOKED CREEK @ MO. PAC. R.R.
BELLEFONTE-YELLVILLE ROAD
MARION COUNTY

ROUTE 62 SEC. 8
ARKANSAS STATE HIGHWAY COMMISSION
LITTLE ROCK, ARK.
Drawn By: W.C.H. Date: 5-5-47
Traced By: E.L.S. Date: 6-18-47
Checked By: Date:
BRIDGE NO. 2409 DRAWING NO. 7034

W.C.H.
PRINCIPAL HIGHWAY ENGINEER (BRIDGES)

FED. ROAD DIST. NO.	STATE	FED. AID PROJECT NO.	LOCAL YEAR	SHEET NO.	TOTAL SHEETS
6	ARK.	F-370-(4)	1947	15	23
STATE JOB NO. 9221					

NOTE: Place drain openings on each side of roadway at center of panel in every other panel beginning with panel 0-1 and ending with panel 2-1.



SECTION THRU DRAIN OPENINGS

DETAIL OF DRAIN OPENING

BAR LIST FOR TRUSS SPANS

BENT BARS																	STRAIGHT BARS				
MARK	SIZE	NO. REQ'D	LENGTH	BENDING DIAGRAM													MARK	SIZE	NO. REQ'D	LENGTH	
				A	B	C	D	E	F	G	H	I	J	K	L	M					
S1A	3/4"	192	31'-2 1/2"	30'-4"	4'-18"	4 3/4"	4'-3 1/2"	4 3/4"	3'-5"	4 3/4"	4'-3 1/2"	4 3/4"	3'-5"	4 3/4"	4'-3 1/2"	4 3/4"	4'-1 1/2"	S2A	3/4"	403	28'-0"
S1B	3/4"	48	20'-7 1/2"	25'-9"	1'-7 1/2"	"	"	"	"	"	"	"	3'-5"	4 3/4"	4'-3 1/2"	4 3/4"	2'-0 1/2"	S2B	3/4"	124	25'-9"
S1C	3/4"	48	19'-11"	19'-4"	2'-13"	"	"	"	"	"	"	"	1'-7 1/2"	"	"	"	"	S2C	3/4"	62	18'-2"
S1D, SEE S1E	3/4"	92	* 19'-4"	* 18'-3"	* 1'-0 1/2"	4 3/4"	4'-3 1/2"	4 3/4"	3'-5"	4 3/4"	4'-3 1/2"	4 3/4"	4'-1 1/2"					S2D	3/4"	124	17'-8"
S3	3/4"	294	29'-4"														S2E	3/4"	124	30'-4"	
S4	3/4"	217	27'-11"																		

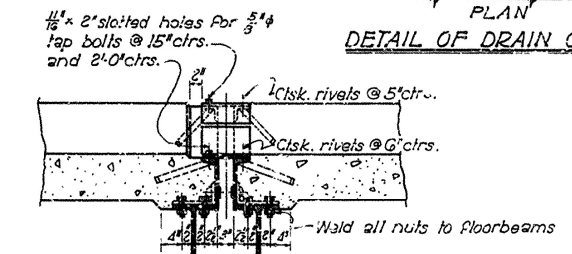
* Dimensions of S1E are 6" less than S1D, while those of S1F are 6" more

GENERAL NOTES

All concrete to be Class 'S'. All exposed corners to be chamfered 3/4" unless otherwise noted.
Reinforcing steel to be deformed bars of structural or intermediate grade. Shop lists and bending diagrams must be submitted and approval secured before fabrication is begun.
All reinforcing steel shall be accurately located in the forms and firmly held in place by means of steel wire supports, sufficient in number and size to prevent displacement during the course of construction and to keep the steel a proper distance from the forms.
Wire supports will not be paid for directly but will be considered subsidiary to the item of reinforcing steel. Shop lists and diagrams of type to be used must be submitted for approval.
Rivets: 3/4". Open holes: 3/4". Where bolts are indicated, use machine bolts.
All welded connections to be 1/2" shop fillet welds unless otherwise noted.

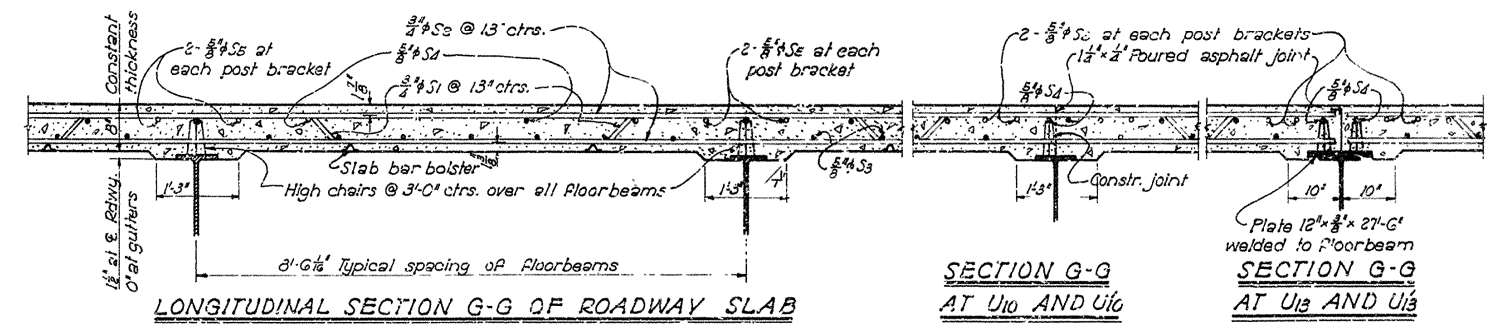
DESIGN LIVE LOAD: H-20 LOADING A.A.S.H.O. 1944

UNIT STRESSES: Class 'S' Concrete (n=10) 1000 #/sq. in.
Reinforcing Steel 18000 #/sq. in.
Structural Steel 18000 #/sq. in.



SECTION H-H SHOWING DECK EXPANSION DEVICE AT PANEL POINTS U10 & U16

NOTE: For expansion devices at U10, see Drawing No. 7038 and at U16, see Drawing No. 7039.



LONGITUDINAL SECTION G-G OF ROADWAY SLAB

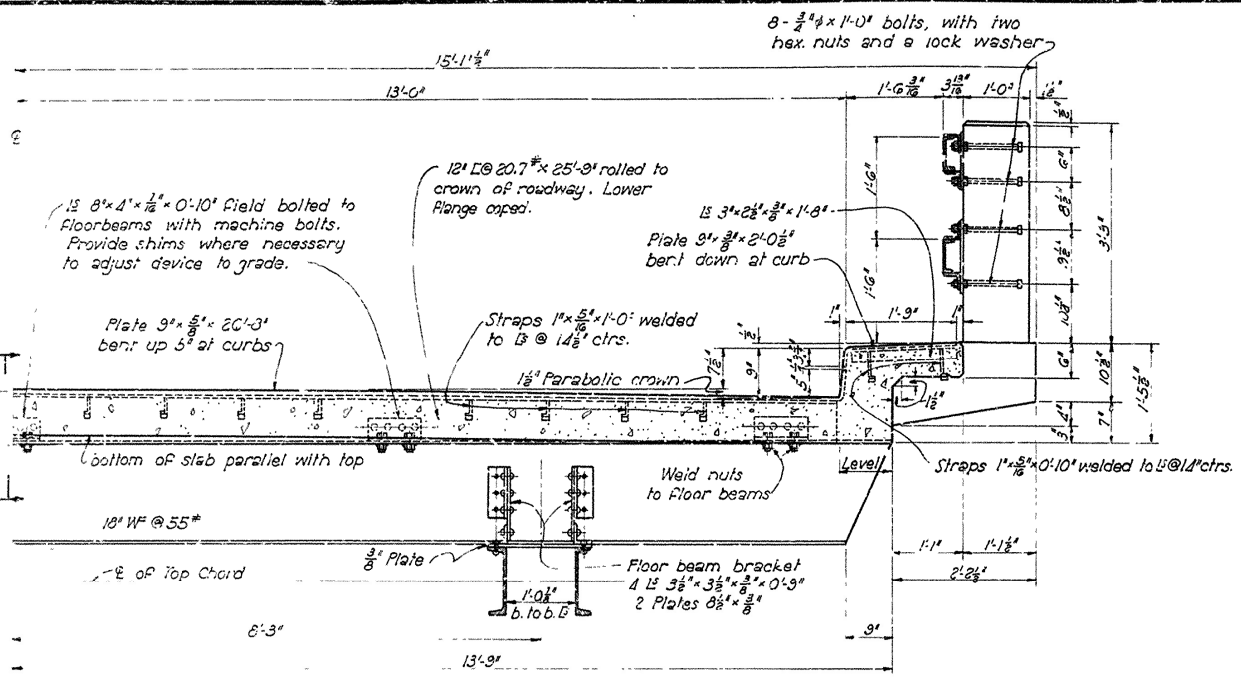
SECTION G-G AT U10 AND U16

SECTION G-G AT U13 AND U15

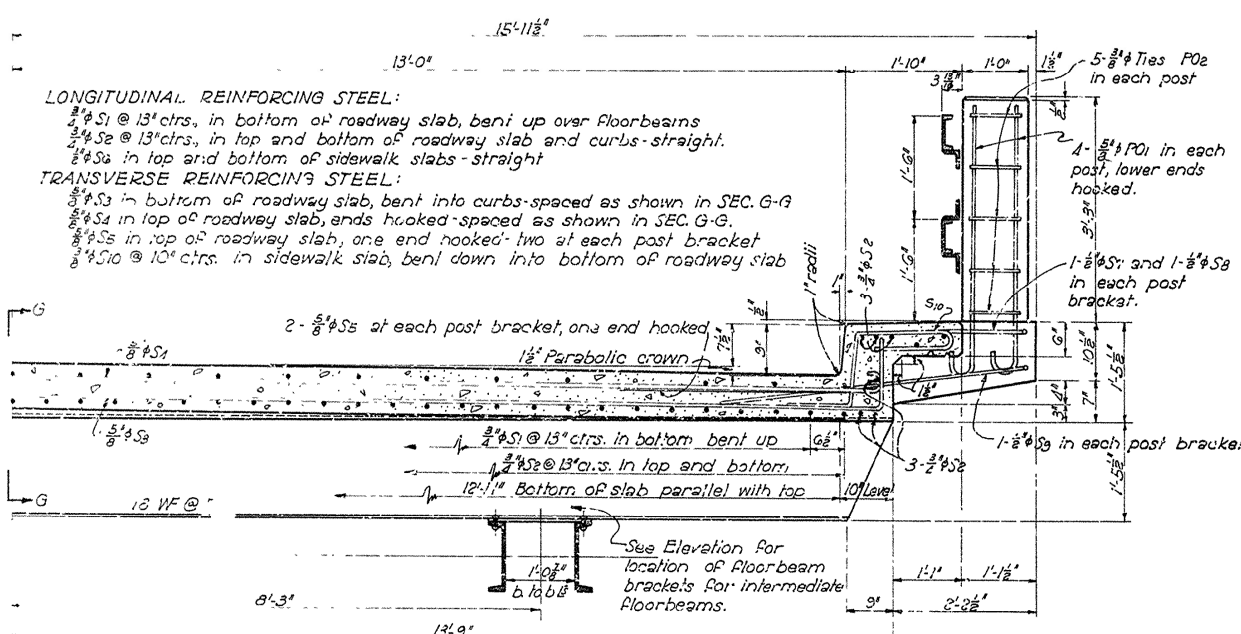
NOTE: See Drawing No. 7037 for Elevation and details of hand rail for Truss Spans

TYPICAL DECK DETAILS FOR DECK CANTILEVER TRUSS SPANS BRIDGE OVER CROOKED CREEK AND MISSOURI PACIFIC RAILROAD BELLEFONTE-YELLVILLE ROAD MARION COUNTY ROUTE 62 SEC. 8

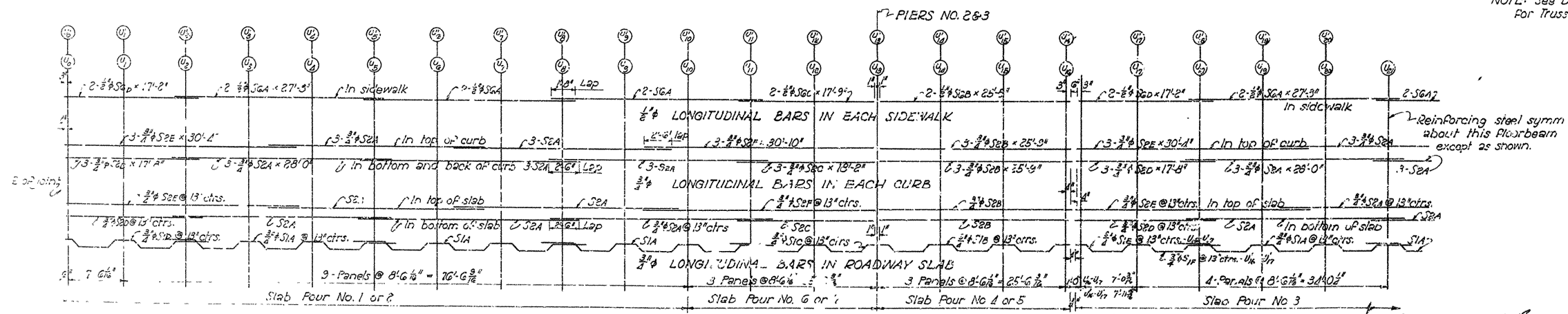
ARKANSAS STATE HIGHWAY COMMISSION
LITTLE ROCK, ARK.
Drawn By: W.C.H. Date: 5-12-47
Traced By: B.B. Date: 6-2-47
Checked By: Date: _____
BRIDGE NO. 2469 DRAWING NO. 7036



HALF SECTION E-E AT EXPANSION JOINTS

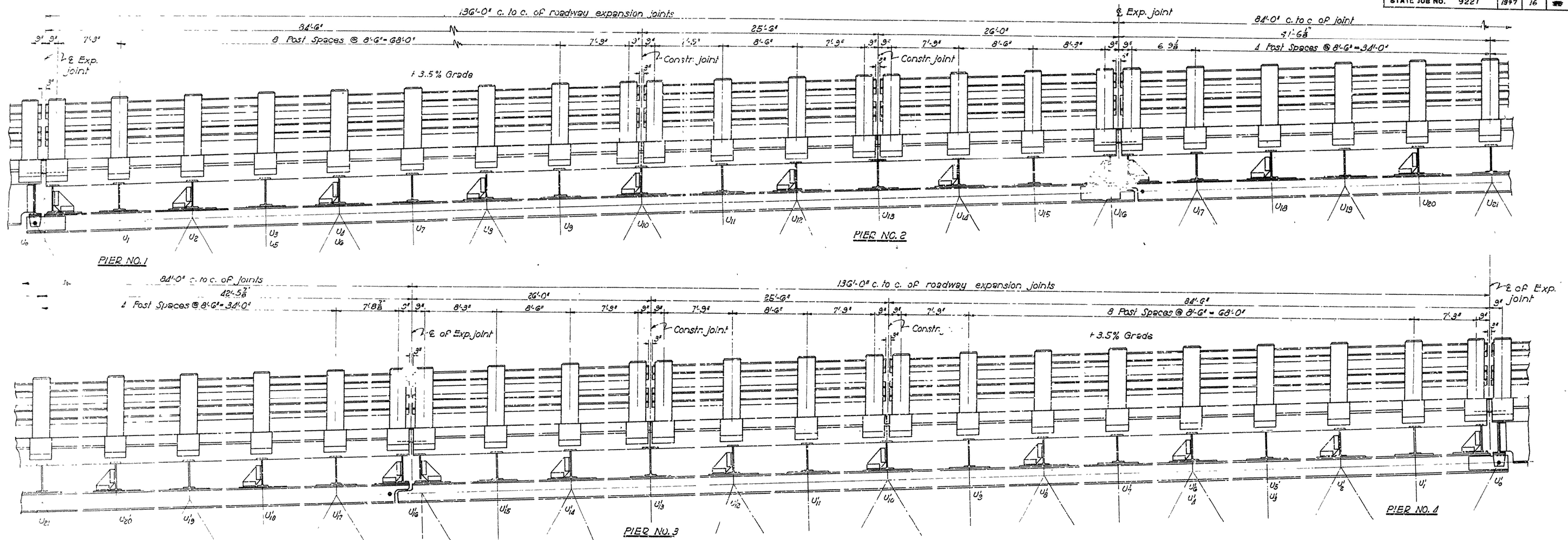


TYPICAL HALF SECTION F-F OF DECK



LAYOUT OF LONGITUDINAL SLAB BARS & SLAB POURING SEQUENCE

FED. ROAD DIST. NO.	LATE	FED. AID PROJECT NO.	FISCAL YEAR	SHEET NO.	TOTAL SHEETS
8	ARK.	F- 370- (10)			23
STATE JOB NO. 9221			1997	16	



SIDE ELEVATION OF TRUSS SPANS - SHOWING RAIL POST SPACING AND LOCATION OF FLOORBEAM BRACKETS

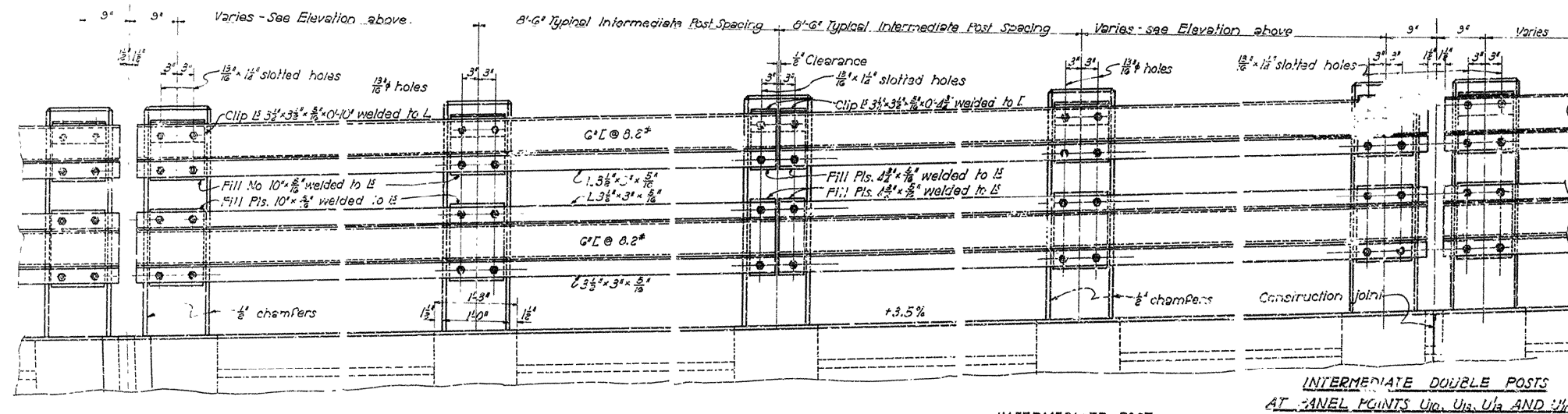
Scale: $\frac{3}{8}'' = 1'-0''$

HANDRAIL NOTES

The concrete rail posts and structural steel rail members shall be paid for at the unit price bid per linear foot for "Concrete and Structural Steel Railing."

Handrail members shall extend over two panels, except between construction joints or double posts when members shall extend over three panels.

All horizontal lines of handrail to be parallel to the finished grade. All vertical lines shall be plumb in their final position, except sides of post bracket adjacent to roadway expansion joint.



DETAILS OF HANDRAILS
FOR DECK CANTILEVER TRUSS SPANS
BRIDGE OVER CROOKED CREEK
AND MISSOURI PACIFIC RAILROAD
BELLFONTE - YELLVILLE ROAD
MARION COUNTY

ARKANSAS STATE HIGHWAY COMMISSION
LITTLE ROCK, ARK.

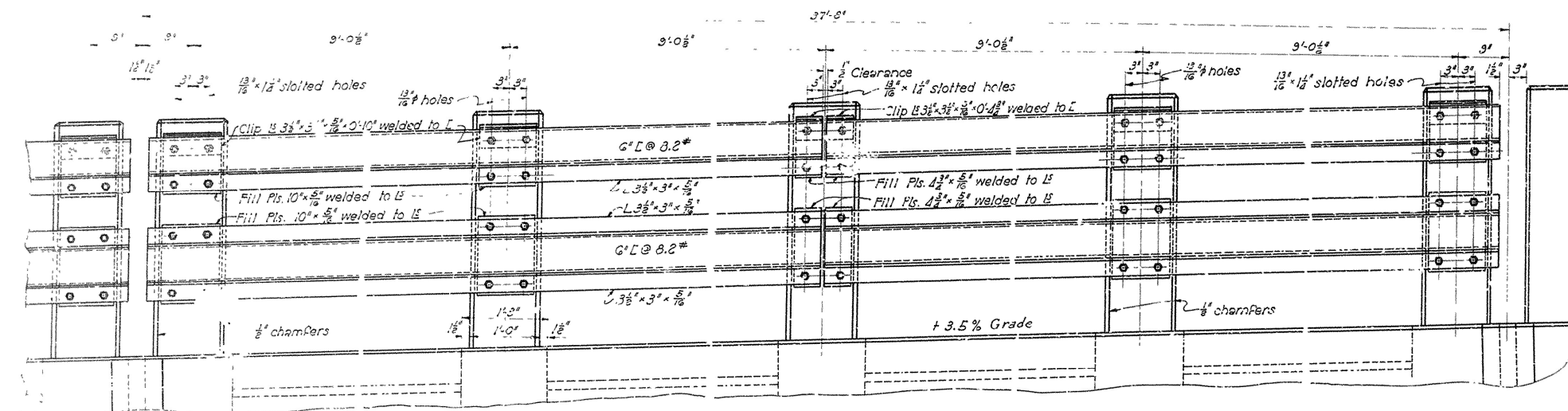
Drawn By: W.C.H. Date: 5-17-47
Traced By: B.B.S. Date: 5-22-47
Checked By: _____ Date: _____

BRIDGE NO. 2469

DRAWING NO. 7037

N. D. Garver
PRINCIPAL HIGHWAY ENGINEER (BRIDGE)

FED ROAD DIST NO	STATE	FED AID PROJECT NO.	FISCAL YEAR	SHEET NO	TOTAL SHEETS
6	ARK.	F-370 (40)			23
STATE JOB NO. 922'			1947	19	23



INSIDE ELEVATION OF HANDRAIL
Scale: 1" = 1'-0"

BLAST PLATE NOTES:

The Blast plates are to be made of wrought iron or alloy steel, U.S. Carbon or Maytag 2, and are to be paid for at the unit price bid per pound for "Blast Plates". Blast plates are to be painted the same as structural steel.

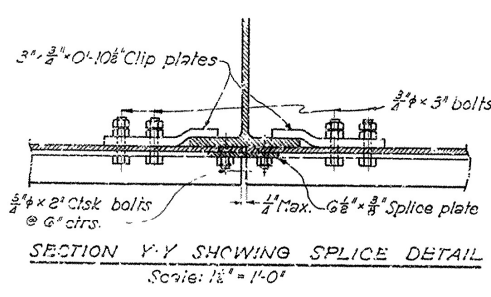
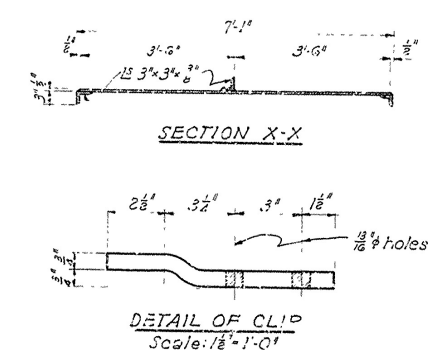
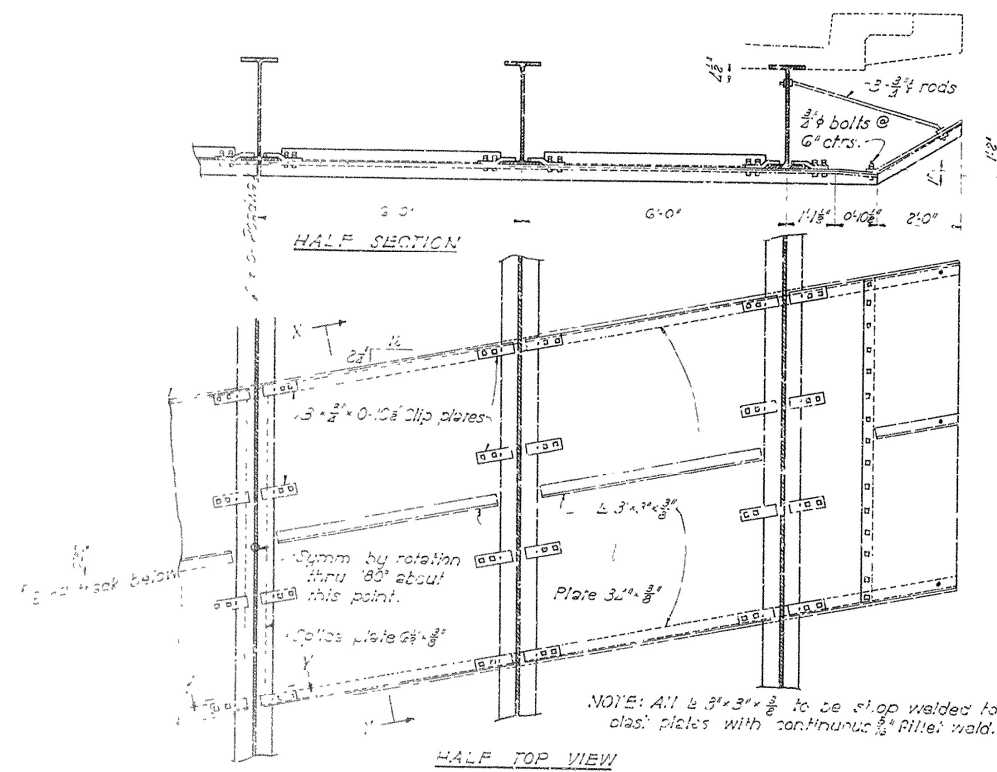
HANDRAIL NOTES:

The concrete rail posts and structural steel rail members shall be paid for at the unit price bid per linear foot foot for "Concrete and Structural Steel Railings".

Handrail members to extend over two panels.

All horizontal lines of handrail to be parallel to the finished grade.

All vertical lines shall be plumb in their final position, except sides of post brackets adjacent to roadway expansion joints.



SHEET 3 OF 3 OF
DETAILS OF HANDRAIL & BLAST PLATES
FOR I-BEAM SPANS
26'-0" CLEAR ROADWAY 2 SIDEWALKS @ 1'-6"
5 GIRDER TYPE
ROUTE SEC.
ARKANSAS STATE HIGHWAY COMMISSION
LITTLE ROCK, ARK.
Drawn By: H.G.H. Date: 5-12-47
Faced By: B.S.S. Date: 5-22-47
Checked By: Date:
BRIDGE NO. 2469 DRAWING NO. 7090

H. E. Garner
PRINCIPAL HIGHWAY ENGINEER (BRIDGE)

STATE	PROJECT NO.	SHEET NO.	TOTAL SHEETS
ARK			
STATE JOB NO.			

LIST OF REINFORCING STEEL

NO. OF BARS IN EACH SPAN	LENGTH	BENDING DIAGRAM
46' 47' 48' 49' 50' 51' 52' 53' 54' 55' 60'		
S1 5 76 78 80 82 84 86 88 90 92 94	25'-0"	2'-9 1/2" 2'-4" 2'-8" 2'-4" 3'-1" 3'-4"
S2 " 37 37 38 39 40 41 41 42 43 44 45	25'-9"	
S3 4	94	
S4 " 76 78 80 82 84 86 88 90 92	4'-5"	
S5 " 74 74 76 78 80 82 82 84 86 88 90	3'-0"	
P0 5	36	40 44 5'-4"
P0 3	54	60 66 8'-8"

Non-pay item
Dimensions are to ctrs of bars

GENERAL NOTES

All concrete to be Class "S". All exposed corners to have 1/4" chamfer unless otherwise noted.

Field Connections for diaphragms to be riveted or bolted with high strength bolts.

Rivets - 3/4" Open holes 1/2" except where noted otherwise.

Structural shapes of equal or greater strength may be substituted for shapes shown but payment will be made on basis of shapes shown or those actually used, whichever is the lesser.

All welded connections to be 1/2" fillet shop welds except as noted. All welding shall conform to the American Welding Society Standard Specifications for Welded Highway and Railway Bridges, 5th Edition 1950.

Shop Paint - All structural steel, except surfaces in contact with concrete shall be given one coat of red lead and raw linseed oil before shipment.

Field Paint - 1st Coat - Red lead lined with lamp black.
2nd Coat - Aluminum Paint.

All bearing plates and roadway expansion devices to be paid for as "Structural Steel in Beam Spans".

Bearings shall be finally sealed in the manner set forth in the Specifications. This work and material are to be considered as subsidiary to the item "Structural Steel in Beam Spans" and will not be paid for directly.

This drawing shows general features of design only. Shop drawings shall be made in accordance with the Specifications, submitted and approval secured before fabrication is begun.

In order to secure a good riding surface it will be required that the floor slab be struck off from curb to curb with at least a half span length longitudinal strike-off. The strike-off shall be sufficiently stiff so as to have no appreciable vertical deflection.

Reinforcing steel to be deformed bars of intermediate or hard grade; Steel to be accurately located in the forms and firmly held in place by means of steel wire supports, sufficient in number and size to prevent displacement during the course of construction and to keep the steel a proper distance from the forms. The wire supports will not be paid directly but will be considered subsidiary to the item of "Reinforcing Steel".

Shop lists and bending diagrams of reinforcing steel, including wire supports shall be submitted and approval secured before fabrication is begun.

Handrail to be Plate Guard Bridge Railing of the type shown or an equivalent type as approved by the Engineer. The rail including posts and fastenings shall be paid for at the unit price bid per linear foot for "Steel or Aluminum Plate Guard Bridge Railing".

SPECIFICATIONS: Arkansas State Highway Commission Standard Specifications for Highway Construction, Edition of Dec 9, 1959.

LOADING HIS (AASHO 1957)

Load Distribution Outside Stringer	Load Distribution Inside Stringer
Dead Load = 760 (Wt. per ft. of W used)	Dead Load = 546 (Wt. per ft. of W used)
Live Load = 180	Live Load = 265
Conc. Live Load = 5100* for moment	Conc. Live Load = 7400* for moment
Truck Live Load = 2300* for shear	Truck Live Load = 10,720* for shear
Truck Live Load = 0.80 wheels	Truck Live Load = 11 wheels

Unit Stresses	
Structural Steel	18,000 #/sq"
Reinft. Steel	20,000 #/sq"
Class "S" Conc. (f=10)	1200 #/sq"

DETAILS OF STANDARD 46'-55' & 60'-I-BEAM SPANS
24'-0" CLEAR RDWY. 1'-0" CURBS

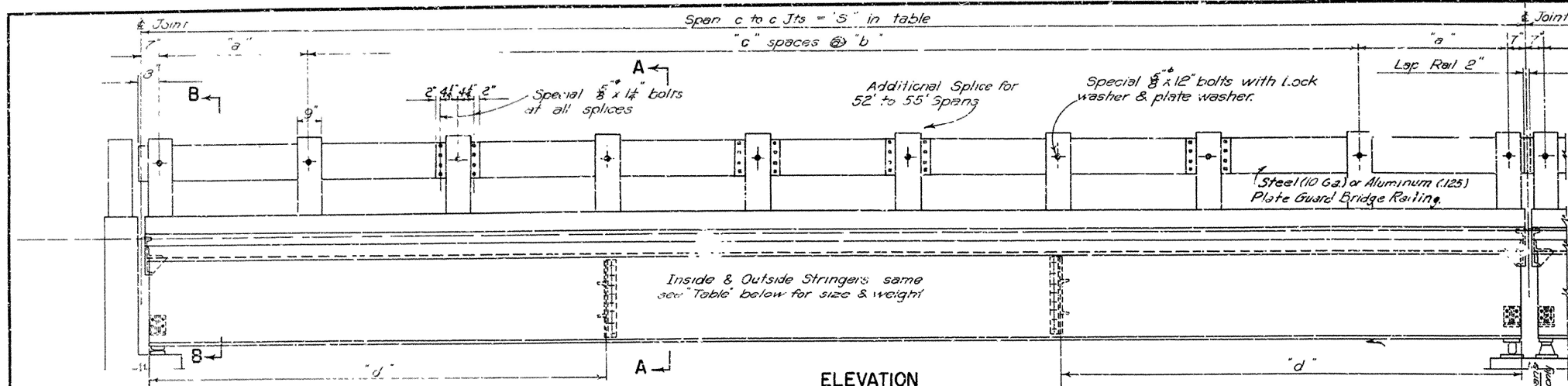
REVISIONS

Changed Camber Diagram WKM 6-24-54
Added 60' Span WKM 6-28-54
Revised: Curb details & bar nos. or 1st step.
Added Detail 11 S.R.B. 11-6-57
Revised: Expansion Device E.R.B. 11-6-57
Revised: Straps or expansion device, E.D.N. 11-14-58
Revised: Optional detail, Steel R.B. Railing, and General Notes FDN 12-19-59

ARKANSAS STATE HIGHWAY COMMISSION
LITTLE ROCK, ARK.

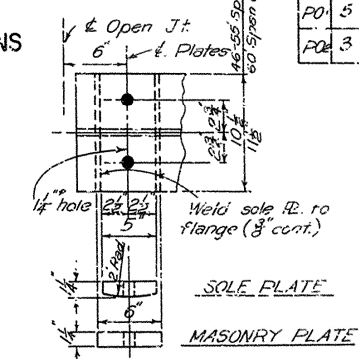
Drawn By: WKM Date: 6-24-54
Traced By: LWH Date: 12-55
Checked By: JHK Date: 3-4-53

BRIDGE NO. 55001
Rev. changed Specs. removed rail section added Alum. Rail 728-50

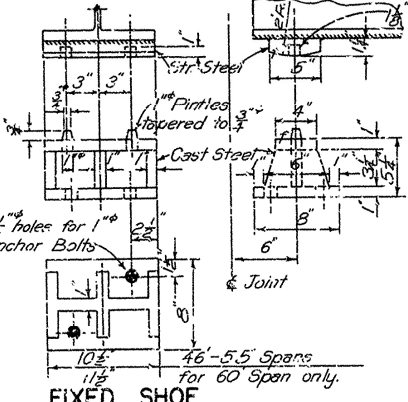


LIST OF VARIABLES 46'-55' & 60' SPANS

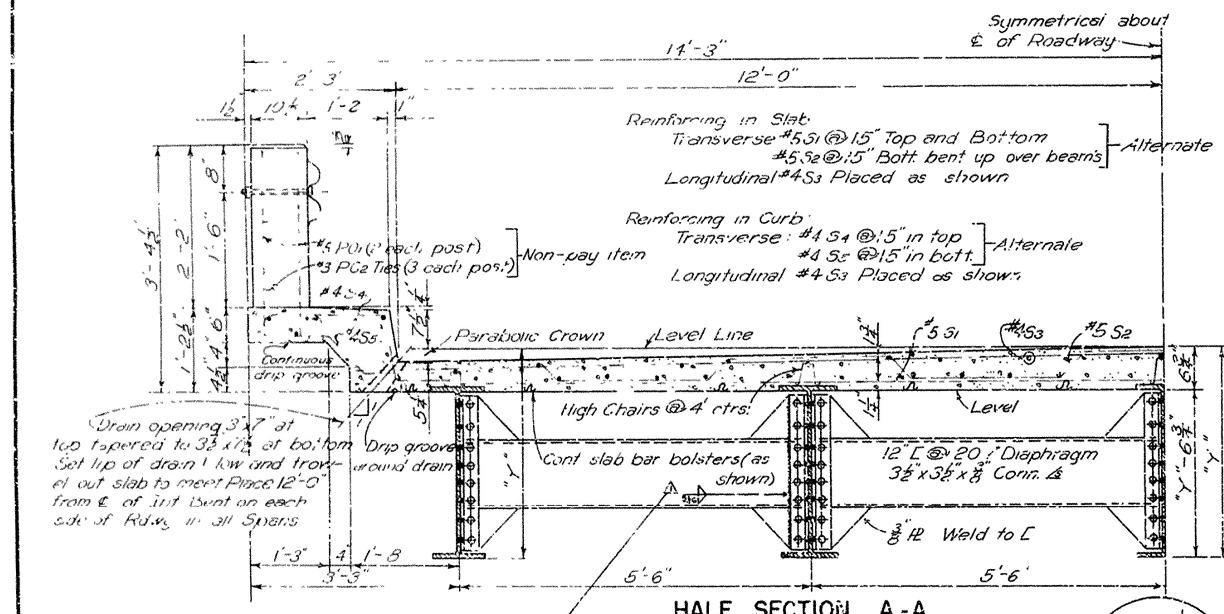
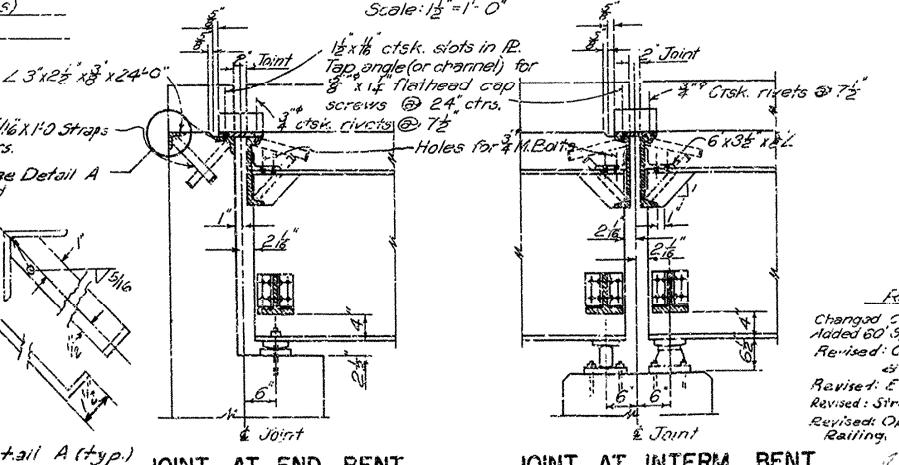
Spans c to c Jts	Reqd. Stringer	Post Spacing	Strut d	D.L. Def	Y
46'-0"	30WF108	5'-6 1/2" 5'-7 1/2"	6	15'-4"	2'-11 1/2"
47'-0"	"	5'-8" 5'-9"	6	15'-8"	"
48'-0"	"	5'-9 1/2" 5'-10 1/2"	6	16'-0"	"
49'-0"	"	5'-11" 6'-0"	6	16'-4"	"
50'-0"	"	6'-0 1/2" 6'-1 1/2"	6	16'-8"	"
51'-0"	30WF116	6'-2" 6'-3"	6	17'-0"	"
52'-0"	"	6'-7" 6'-8"	7	17'-4"	"
53'-0"	"	5'-9 1/2" 5'-9"	7	17'-8"	"
54'-0"	30WF124	5'-10 1/2" 5'-10 1/2"	7	18'-0"	2'-11 1/2"
55'-0"	"	5'-11" 6'-0"	7	18'-4"	"
60'-0"	33WF130	6'-1" 5'-10"	8	20'-0"	3'-3"



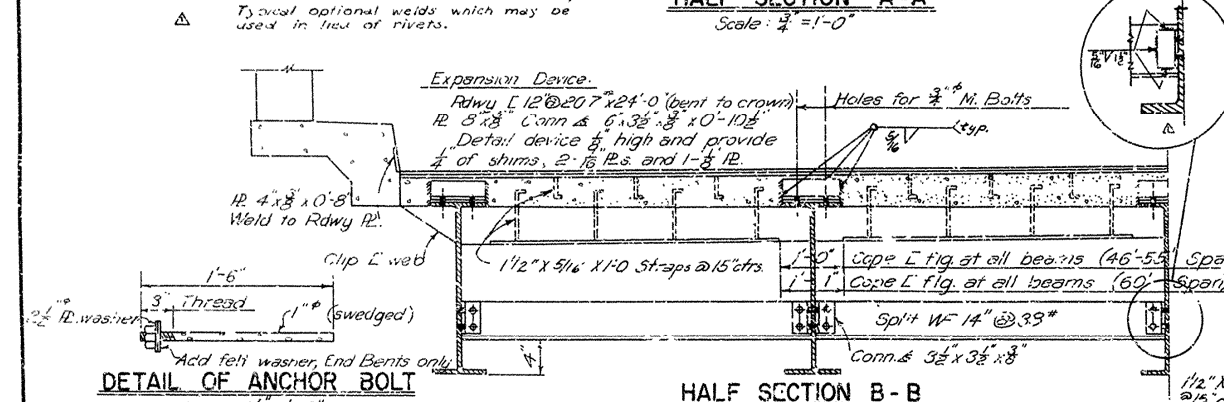
DETAILS OF BEARINGS AT END BENTS - MULTIPLE SPANS



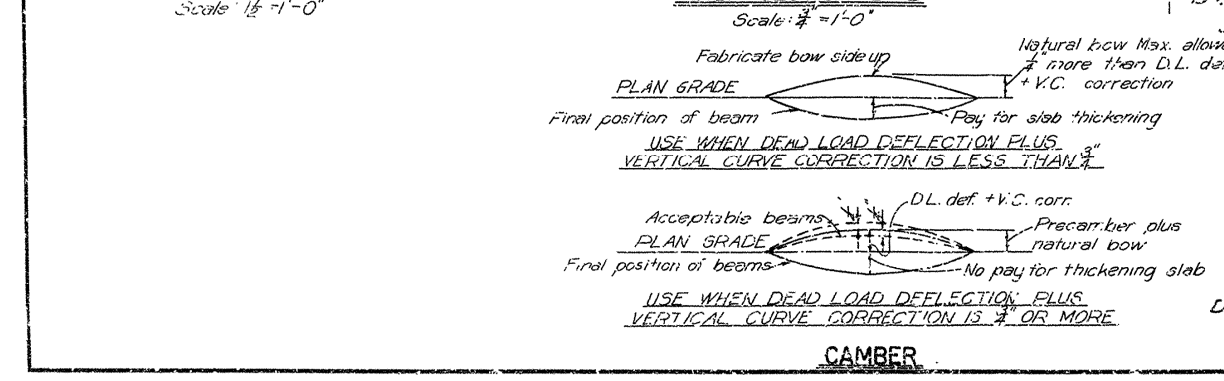
DETAILS OF BEARINGS AT INTERM. BENTS & EXP. END FOR SINGLE SPAN BRIDGE



HALF SECTION A-A



HALF SECTION B-B



CAMBER



Dimensions shown are to centers of bars
* Non-Pay items

All concrete to be Class 3. All exposed corners to be chamfered $\frac{3}{4}$ ".

Field connections for diaphragms to be riveted or bolted with high strength bolts
Rivets: $\frac{3}{4}$ " - Open holes $\frac{13}{16}$ " except where noted otherwise.

Structural shapes of equal or greater strength may be substituted for shapes shown but payment will be made on basis of shapes shown or those actually used, whichever is lesser.

All welded connections to be $\frac{3}{8}$ " fillet shop welds except as noted. All welding shall conform to the American Welding Society Standard Specifications for Welded Highway and Railway Bridges, 5th Edition 1956.

Shop Paint: All structural steel except surfaces in contact with concrete shall be given one coat of red lead and raw linseed oil before shipment.

Field Paint: - 1st Coat - Red lead timed with lamp black.
2nd Coat - Aluminum Paint.

All bearing plates and roadway expansion devices to be paid for as "Structural Steel in Beam Spans. Bearings shall be finally seated in the manner set forth in the Specifications. This work and material are to be considered as subsidiary to the item Structural Steel in Beam Spans and will not be paid for directly.

This drawing shows general features of design only. Shop drawings shall be made in accordance with the Specifications submitted and a, prove secured before fabrication is begun.

① ②

Reinforcing steel to be deformed bars of intermediate or hard grade; See Special Provisions Steel to be accurately located in the forms and firmly held in place by means of steel wire supports, sufficient in number and size to prevent displacement during the course of construction. The wire supports will not be paid for directly but will be considered subsidiary to the item of "Reinforcing Steel".

Shop lists and bending diagrams of reinforcing steel, including wire supports shall be submitted and approval secured before fabrication is begun.

2) Steel or Aluminum Plate Guard Bridge Railing shall be the type shown on an equivalent right of way agreement of the Engineer. The rail including posts and fastenings shall be paid for at unit price bid per linear foot for "Steel (Rysa) or Aluminum (0.25") Plate Guard Bridge Railing."

SPECIFICATIONS: Arkansas State Highway Commission Standard Specifications for Highway Construction, Edition of 1953.

Design Live Load	H-15
------------------	------

Interior Stringer Exterior Stringer

Dead Load
14" Bm Action $122\frac{1}{2}\% + 1.1(\frac{1}{2}\% \text{ of Bm})$ $577\frac{1}{2}\% + 1.1(\frac{1}{2}\% \text{ of Bm})$
Composite Bm Action $90\frac{1}{2}\%$ $60\frac{1}{2}\%$
Live Load (Composite Beam Action)
Each Stringer 1045 Wheels + Impact or 0.52 Lanes + Impact

DESIGN UNIT STRESSES'

Class S Concrete	(f) = 10	: 200 % "
Structural Steel		18,000 % "
Reinforcing Steel		20,000 % "

REVISIONS: Expansion Shoe Detail 8-9-56 H.B.
Added Shear Connection; Note 8-9-56 H.B.
General Notes to conform with new SP. 9-15-58 FUN
(2) Revised General Notes and Slab Pouring Note 8-26-58 GEN

DETAILS OF STANDARD
60'-90' COMPOSITE I-BEAM SPANS
24'-0" CLEAR RDWY. 1'-0" CURBS

ARKANSAS STATE HIGHWAY COMMISSION
LITTLE ROCK, ARK.

L'rawn By: G.W.B. Date: 8-30-55
 Traced By: M.H. Date: 8-12-56
 Checked By: J.H.K. Date: 9-22-55
 JEM 8-11-66

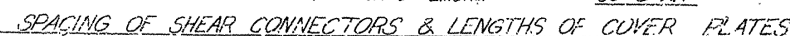
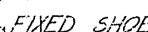
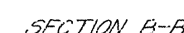
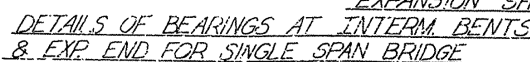
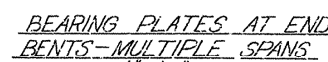
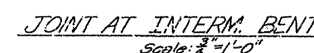
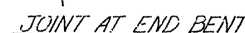
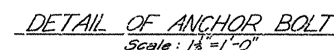
Scale: $\frac{1}{2}$ " = 10' / ft.
Except vs. Notes

BRIDGE NO. 5500P DRAWING NO. 5500P

BRIDGE DESIGN ENGINEER

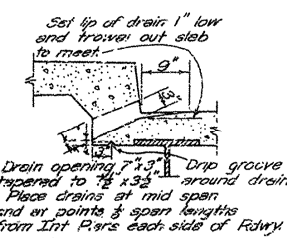


② ① Slab Pouring Note: Floor slabs may be poured in one continuous operation with a strikeoff extending over the whole span length, or may be poured in increments with the center one-third to one-half span length poured first. After the center section is poured not less than 72 hours shall elapse before pouring the end sections. The end sections may be poured simultaneously. If not poured simultaneously, 48 hours shall elapse between end section pours.

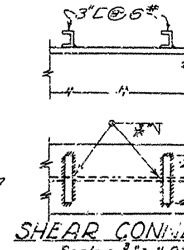


SPECIAL NOTE:
Stud shear connectors, granular fill, solid studs, or equal may be used in place of the channels shown, at the following ratings: $\frac{1}{2}$ diameter stud in place of 1.62 inches channel, $\frac{1}{2}$ diameter stud in place of 2.5 inches channel. The studs shall be $\frac{1}{4}$ long and automatically welded to the beam flanges in accordance with recommendations of the manufacturer.
Channel sections will be used as basis for measurement of structural steel in shear connectors.

VARIABLES											
Span- c to c "s	Rigid Strings	Cover Plate		Port Spacing			Strut No @ d	"a"	D.L. Defl.		
		Int.	Ext.	"a"	E	"			Int.	Ext.	
6.0	30W F108	^{5.18} 10'-0"	^{5.18} 18'-0"	6'-1"	5'-10"	3	3 @ 20'-0"	2'-1 1/8"	1"	1 1/8"	
6.5	30W F108	^{5.18} 20'-0"	^{5.18} 21'-0"	6'-3 1/2"	5'-9"	9	4 @ 16'-3"	2'-1 1/8"	1 1/8"	1 1/8"	
7.0	30W F116	^{5.18} 25'-0"	^{5.18} 26'-0"	5'-8"	5'-9"	10	4 @ 17'-6"	2'-1 1/8"	1 1/8"	2"	
7.5	33W F120	^{5.18} 25'-0"	^{5.18} 25'-0"	6'-1"	6'-2"	10	4 @ 18'-9"	3'-2 1/8"	1 1/8"	2 1/8"	
8.0	33W F141	^{5.18} 33'-0"	^{5.18} 40'-0"	5'-1 1/8"	6'-1"	11	4 @ 20'-0"	3'-2 1/8"	2"	2 1/8"	
8.5	36W F120	^{5.18} 41'-0"	^{5.18} 44'-0"	5'-11"	6'-0"	12	5 @ 17'-0"	3'-4 1/8"	2 1/8"	2 1/8"	
9.0	36W F160	^{5.18} 40'-0"	^{5.18} 40'-0"	5'-11"	5'-11"	13	5 @ 15'-0"	3'-5"	2 1/8"	3"	



DRAIN DETAIL
Scale: $\frac{1}{2}'' = 1'-0''$



SHEAR CONNECTOR

11 REVISIONS:-
 3-12-57 Note on shear connectors J.L.H.
 11-7-57 Revised bar designation
 and added Detail A NEW
 6-4-58 Added Optional Stunt Welding F.R.B.
 ① 5-4-59 Added Skid Paving Note & Revised
 Genl. No. 83 B.L.F.

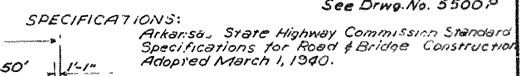
BOTTOM COVER
PLATE
Scale: 7" = 1'-0"

ARKANSAS STATE HIGHWAY COMMISSION
LITTLE ROCK, ARK.

L'rawn By: G.W.B. Date: 8-30-55
 Traced By: M.H. Date: 8-12-56
 Checked By: J.H.K. Date: 9-22-55
 JEM 8-11-66

Scale: $\frac{1}{2}$ " = 10' / ft.
Except as Noted

BRIDGE NO. 5500P DRAWING NO. 5500P



BRIDGE NO. 338 DRAWING NO. 9565