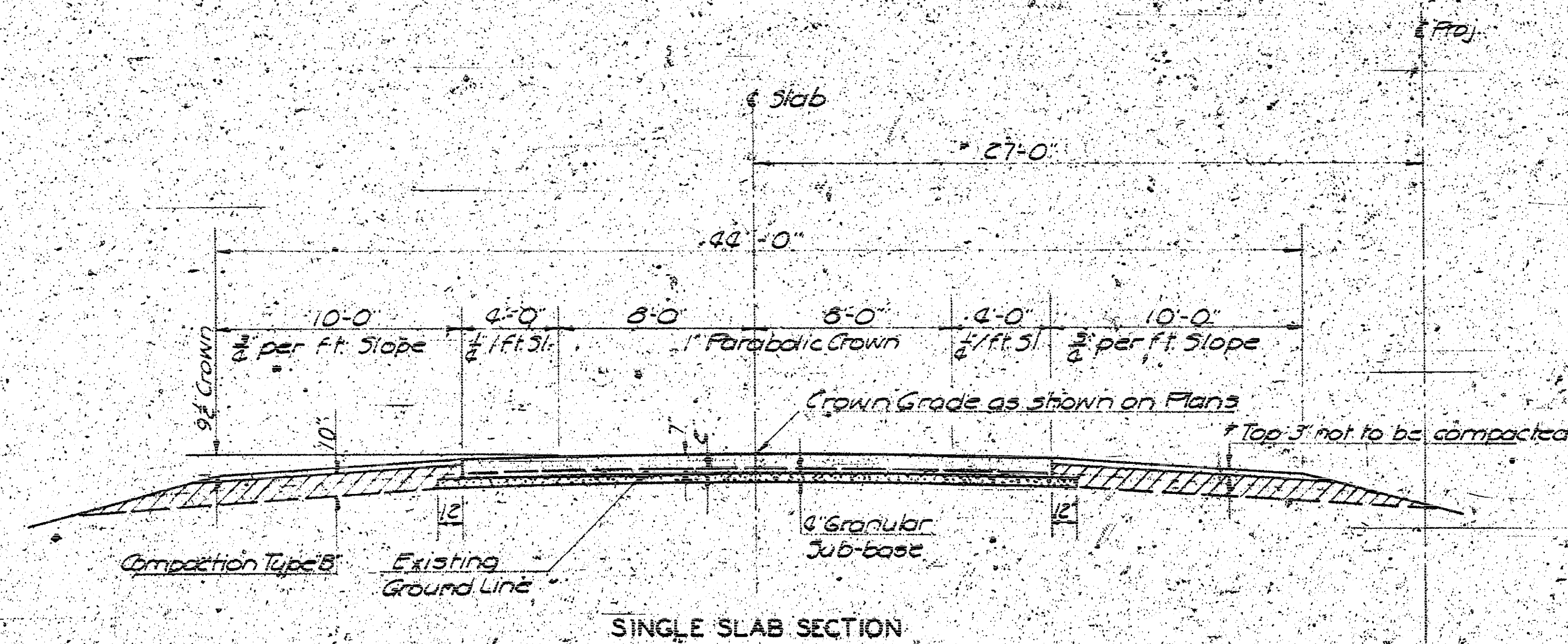
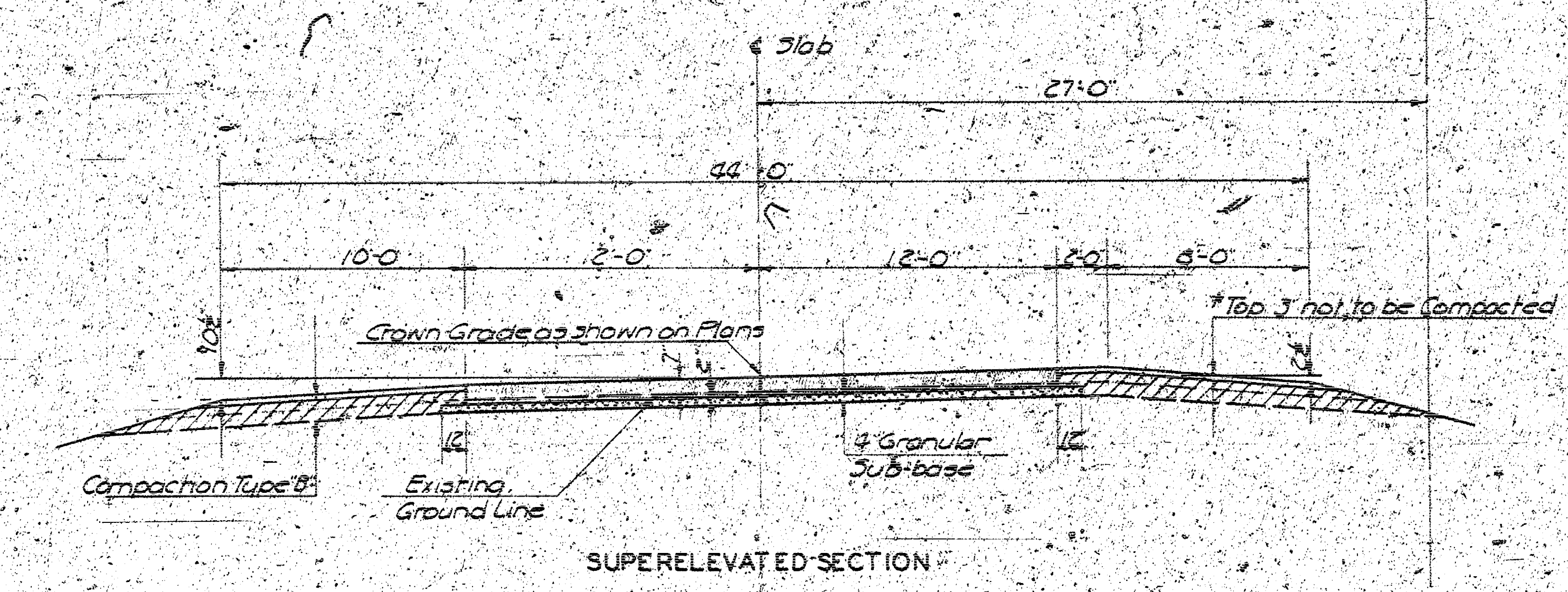




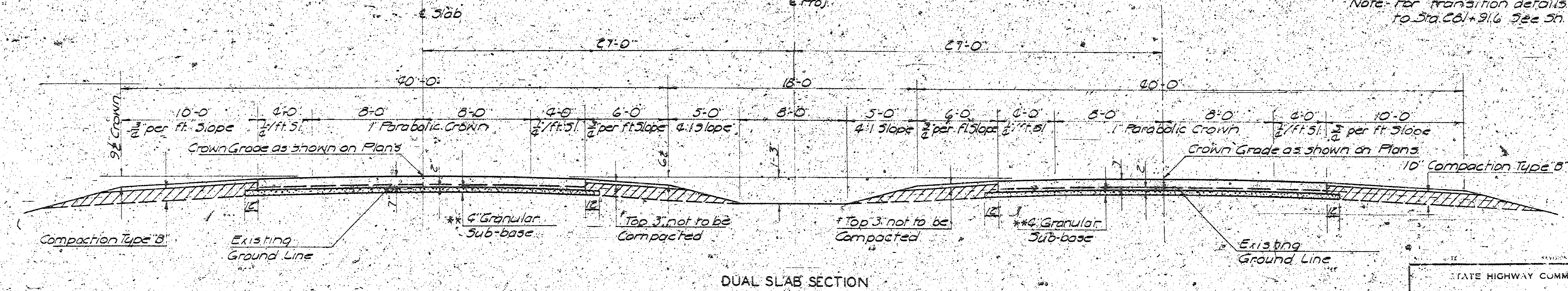
*Varies from 0' at Sta. 17+71.5 to 27' at Sta. 29+40.



*The top 3" of shoulder material is to be obtained from shallow pits so that suitable seedbed material is secured for seeding.

Note: The material excavated by paving contractor is to be used for pavement curing and shouldering.

Note: For transition details Sta. 270+30 to Sta. 281+31.6 See Sht. No. 5.

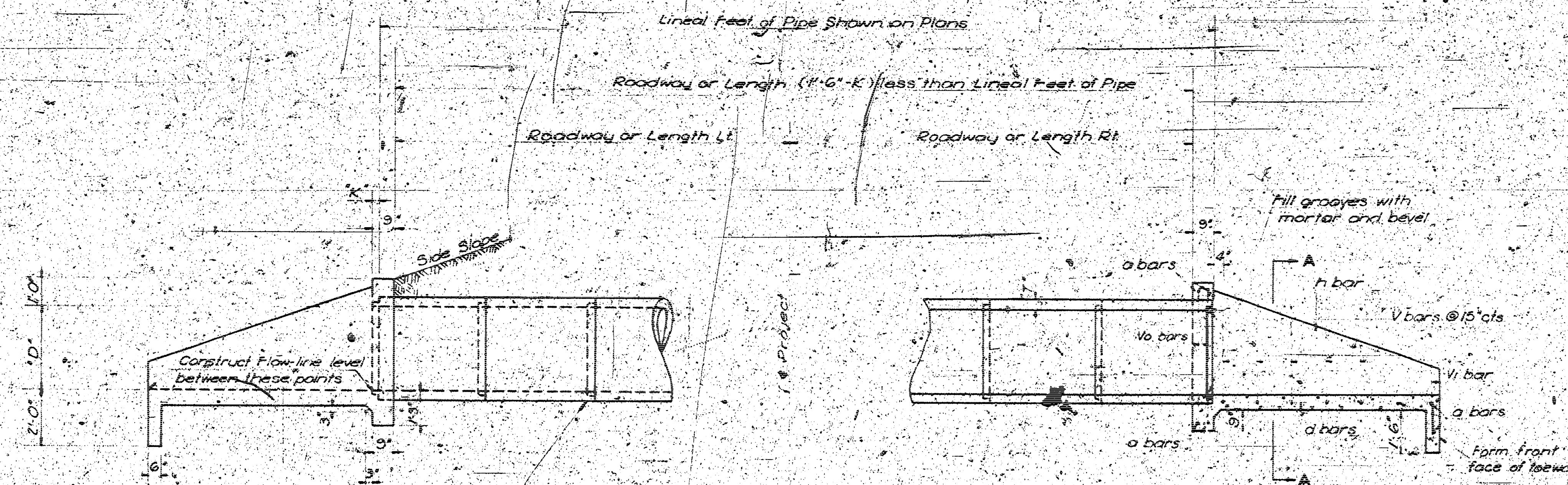


**Note: Granular sub-base not required from Sta. 331+00 to Sta. 399+330.

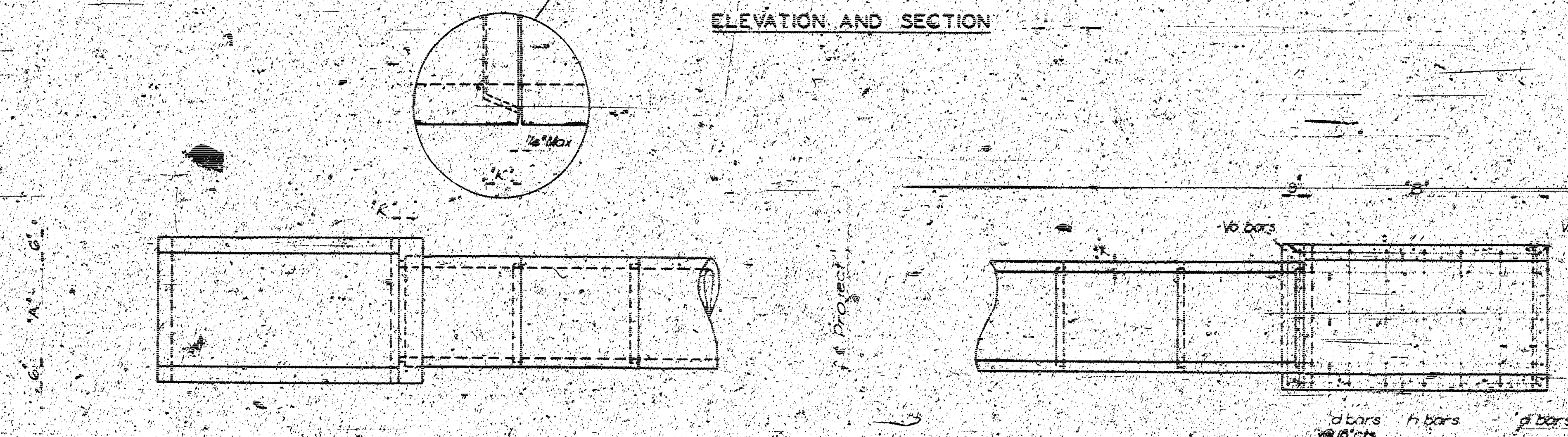
STATE HIGHWAY COMMISSION OF KANSAS

TYPICAL SECTIONS

SHEET NO.	OF	SCALE	APP'D.
DESIGNED	BY	DETAILS	QUANTITIES
DESIGN CK.	BY	DETAIL CK.	QUANT. CK.
		TRACED	STAMP



SECTION A-A



PLAN AND SECTION

LIST OF BARS, DIMENSIONS AND QUANTITIES

TWO HEADFILLS FOR 24" PIPE

Letter	A	B	D	K	T
Dimension	1'-6"	3'-3"	2'-0"	3"	3"
Bar	A	D	H	V	V
Number	12	4	6	8	4
Length	3'-3"	16'-11"	5'-11"	4'-0"	2'-0"
Class A Concrete			24	Cu Yds	
Reinforcing Steel			120	Lbs	

TWO HEADFILLS FOR 36" PIPE

Letter	A	B	D	K	T
Dimension	3'-9"	8'-3"	3'-0"	3'-6"	4'-6"
Bar	A	D	H	V	V
Number	12	4	6	10	4
Length	3'-6"	9'-11"	5'-11"	5'-0"	2'-0"
Class A Concrete			46	Cu Yds	
Reinforcing Steel			210	Lbs	

TWO HEADFILLS FOR 30" PIPE

Letter	A	B	D	K	T
Dimension	3'-0"	6'-3"	2'-6"	3'-6"	3'-6"
Bar	A	D	H	V	V
Number	12	4	4	8	4
Length	3'-3"	8'-5"	7'-6"	4'-6"	2'-0"
Class A Concrete			34	Cu Yds	
Reinforcing Steel			160	Lbs	

TWO HEADFILLS FOR 42" PIPE

Letter	A	B	D	K	T
Dimension	4'-3"	9'-9"	3'-6"	3'-6"	4'-6"
Bar	A	D	H	V	V
Number	12	4	6	12	4
Length	5'-0"	11'-5"	10'-8"	5'-6"	2'-0"
Class A Concrete			58	Cu Yds	
Reinforcing Steel			250	Lbs	

GENERAL NOTES

GENERAL NOTES
LOADING: H20-44, AASHTO Specifications, 1943 Edition
UNIT STRENGTHS: $f'_c = 3000$ psi, $f'_t = 1000$ psi, $f'_s = 20,000$ psi.
CLASS A Concrete shall be used thruout. Bevel
all exposed edges with a $3/8"$ triangular molding.
No deductions shall be made for pipe openings.
All reinforcing shall be billet steel, intermediate
grade. All dimensions are to centerline of
bars, unless otherwise noted.

NOTE: ALL REINFORCING BARS ARE 1/2" Φ

[illegible]

2" Pipe	2' 10"	24" Pipe
1" Pipe	3' 4"	30" Pipe
1" Pipe	3' 9"	36" Pipe
1" Pipe	4' 3"	42" Pipe

Decrease this
Dimension by
5" decr from above length
Cut 2 each length
- V bars -

BENDING DIAGRAMS

6-28-50 Revised Roadway & Length JHB EAB

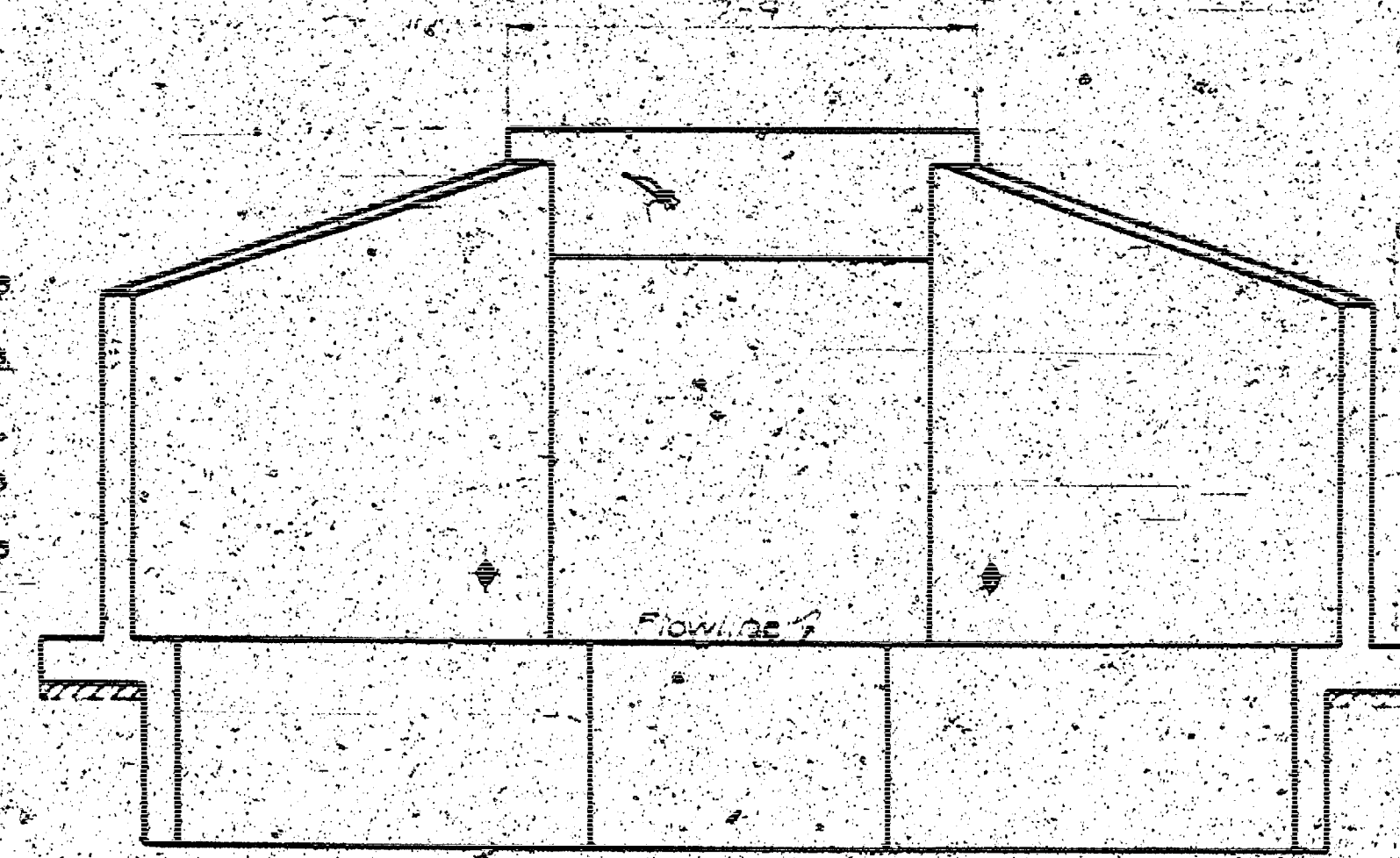
STATE HIGHWAY COMMISSION OF KANSAS

CONCRETE HEADWALL FOR PIPE CULVERTS

STD. NO. 300.1

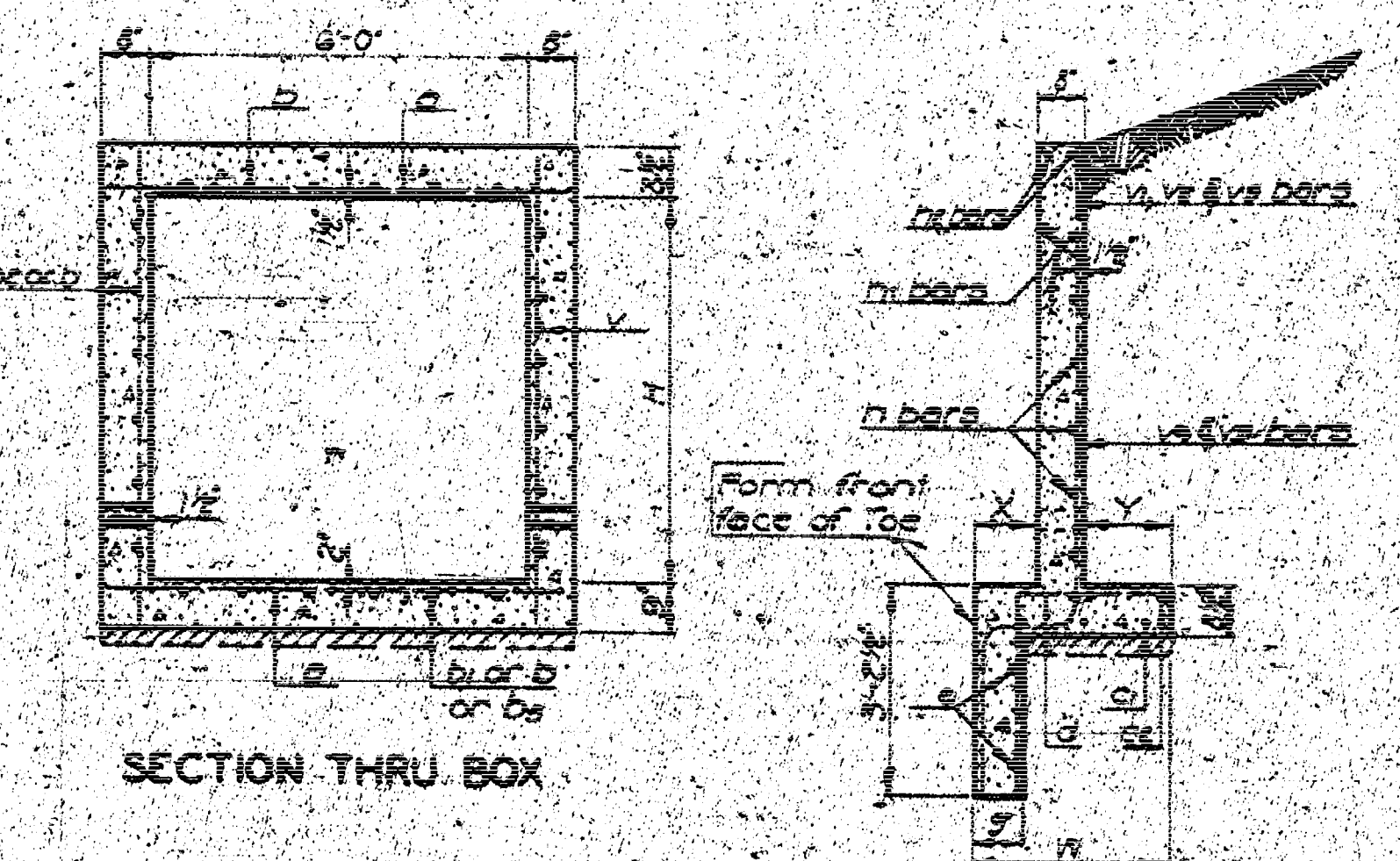
SHEET NO.	OF	SCALE	APPROVED
DESIGNED	JMB	DETAILED	JMB
DESIGN CK	JML	DETAIL CK	JML
			QUANTITIES
			JMB
			QUAN CK
			JML
			TRACE CR
			JMB

LISTS OF BARS AND DIMENSIONS									
2' x 2' CULVERTS									
Letter	A	B	C	D	E	F	G	H	I
Span	2'-0"	2'-0"	2'-0"	2'-0"	2'-0"	2'-0"	2'-0"	2'-0"	2'-0"
Depth	2'-0"	2'-0"	2'-0"	2'-0"	2'-0"	2'-0"	2'-0"	2'-0"	2'-0"
Bar	1	2	3	4	5	6	7	8	9
Bar	10	11	12	13	14	15	16	17	18
Bar	19	20	21	22	23	24	25	26	27
Bar	28	29	30	31	32	33	34	35	36
Bar	37	38	39	40	41	42	43	44	45
Bar	46	47	48	49	50	51	52	53	54
Bar	55	56	57	58	59	60	61	62	63
Bar	64	65	66	67	68	69	70	71	72
Bar	73	74	75	76	77	78	79	80	81
Bar	82	83	84	85	86	87	88	89	90
Bar	91	92	93	94	95	96	97	98	99
Bar	100	101	102	103	104	105	106	107	108
Bar	109	110	111	112	113	114	115	116	117
Bar	118	119	120	121	122	123	124	125	126
Bar	127	128	129	130	131	132	133	134	135
Bar	136	137	138	139	140	141	142	143	144
Bar	145	146	147	148	149	150	151	152	153
Bar	154	155	156	157	158	159	160	161	162
Bar	163	164	165	166	167	168	169	170	171
Bar	172	173	174	175	176	177	178	179	180
Bar	181	182	183	184	185	186	187	188	189
Bar	190	191	192	193	194	195	196	197	198
Bar	199	200	201	202	203	204	205	206	207
Bar	208	209	210	211	212	213	214	215	216
Bar	217	218	219	220	221	222	223	224	225
Bar	226	227	228	229	230	231	232	233	234
Bar	235	236	237	238	239	240	241	242	243
Bar	244	245	246	247	248	249	250	251	252
Bar	253	254	255	256	257	258	259	260	261
Bar	262	263	264	265	266	267	268	269	270
Bar	271	272	273	274	275	276	277	278	279
Bar	280	281	282	283	284	285	286	287	288
Bar	289	290	291	292	293	294	295	296	297
Bar	298	299	300	301	302	303	304	305	306
Bar	307	308	309	310	311	312	313	314	315
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Bar	343	344	345	346	347	348	349	350	351
Bar	352	353	354	355	356	357	358	359	360
Bar	361	362	363	364	365	366	367	368	369
Bar	370	371	372	373	374	375	376	377	378
Bar	379	380	381	382	383	384	385	386	387
Bar	388	389	390	391	392	393	394	395	396
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Bar	406	407	408	409	410	411	412	413	414
Bar	415	416	417	418	419	420	421	422	423
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Bar	469	470	471	472	473	474	475	476	477
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Bar	487	488	489	490	491	492	493	494	495
Bar	496	497	498	499	500	501	502	503	504
Bar	505	506	507	508	509	510	511	512	513
Bar	514	515	516	517	518	519	520	521	522
Bar	523	524	525	526	527	528	529	530	531
Bar	532	533	534	535	536	537	538	539	540
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Bar	559	560	561	562	563	564	565	566	567
Bar	568	569	570	571	572	573	574	575	576
Bar	577	578	579	580	581	582	583	584	585
Bar	586	587	588	589	590	591	592	593	594
Bar	595	596	597	598	599	600	601	602	603
Bar	604	605	606	607	608	609	610	611	612
Bar	613	614	615	616	617	618	619	620	621
Bar	622	623	624	625	626	627	628	629	630
Bar	631	632	633	634	635	636	637	638	639
Bar	640	641	642	643	644	645	646	647	648
Bar	649	650	651	652	653	654	655	656	657
Bar	658	659	660	661	662	663	664	665	666
Bar	667	668	669	670	671	672	673	674	675
Bar	676	677	678	679	680	681	682	683	684
Bar	685	686	687	688	689	690	691	692	693
Bar	694	695	696	697	698	699	700	701	702
Bar	703	704	705	706	707	708	709	710	711
Bar	712	713	714	715	716	717	718	719	720
Bar	721	722	723	724	725	726	727	728	729
Bar	730	731	732	733	734	735	736	737	738
Bar	739	740	741	742	743	744	745	746	747
Bar	748	749	750	751	752	753	754	755	756
Bar	757	758	759	760	761	762	763	764	765
Bar	766	767	768	769	770	771	772	773	774
Bar	775	776	777	778	779	780	781	782	783
Bar	784	785	786	787	788	789	790	791	792
Bar	793	794	795	796	797	798	799	800	801
Bar	802	803	804	805	806	807	808	809	810
Bar	811	812	813	814	815	816	817	818	819
Bar	820	821	822	823	824	825	826	827	828
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Bar	838	839	840	841	842	843	844	845	846
Bar	847	848	849	850	851	852	853	854	855
Bar	856	857	858	859	860	861	862	863	864
Bar	865	866	867	868	869	870	871	872	873
Bar	874	875	876	877	878	879	880	881	882
Bar	883	884	885	886	887	888	889	890	891
Bar	892	893	894	895	896	897	898	899	900
Bar	901	902	903	904	905	906	907	908	909
Bar	910	911	912	913	914	915	916	917	918
Bar	919	920	921	922	923	924	925	926	927
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Bar	946	947	948	949	950	951	952	953	954
Bar	955	956	957	958	959	960	961	962	963
Bar	964	965	966	967	968	969	970	971	972
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Bar	991	992	993	994	995	996	997	998	999
Bar	1000	1001	1002	1003	1004	1005	1006	1007	1008
Bar	1009	1010	1011	1012	1013	1014	1015	1016	1017
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Bar	1027	1028	1029	1030	1031	1032	1033	1034	1035
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Bar	1072	1073	1074	1075	1076	1077	1078	1079	1080
Bar	1081	1082	1083	1084	1085	1086	1087	1088	1089
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Bar	1099	1100	1101	1102	1103	1104	1105	1106	1107
Bar	1108	1109	1110	1111	1112	1113	1114	1115	1116
Bar	1117	1118	1119	1120	1121	1122	1123	1124	1125
Bar	1126	1127	1128	1129	1130	1131	1132	1133	1134
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Bar	1189	1190	1191	1192	1193	1194	1195	1196	1197
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Bar	1243	1244	1245	1246	1247	1248	1249	1250	1251
Bar	1252	1253	1254	1255	1256	1257	1258	1259	1260
Bar									



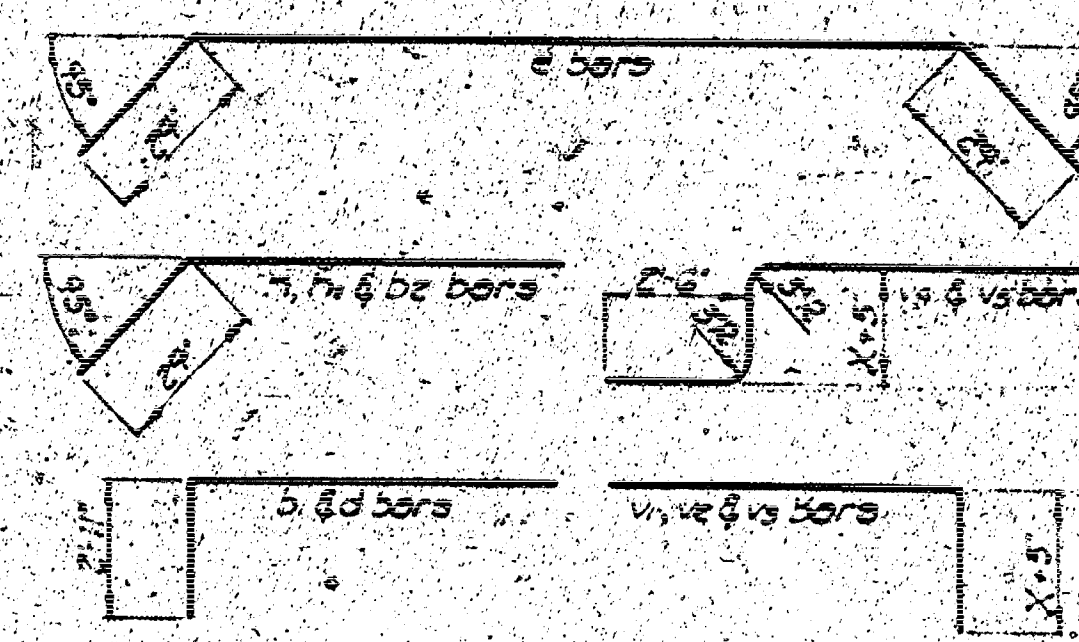
ELEVATION AND SECTION

END ELEVATION



SECTION THRU BOX

SECTION THRU WING



SECTION THRU APRON

NOTE: Keyed joints to be provided as shown and all curves to be 15' or more in length and to be as specified as to divide the box into sections of the length the number of joints to be used shall be as follows:

- 45' to 55' 1 joint
- 60' to 70' 2 joints
- 80' to 90' 3 joints
- 100' to 110' 4 joints
- 120' to 130' 5 joints

Maximum height of fill for
this design - 13'-0"

NOTE: Class A Concrete to be used thruout. Bevel all exposed edges in a dry random mending.

Base Course consisting of a 4" or Class A Concrete to be constructed only where specified on the Plans or by the Engineer. No reinforcing shall be placed until Seal Course has gained sufficient strength to permit working upon it without raveling.

Drainage Apron to be constructed only between down-slopes, wings, or locations subject to scour where specified on the Plans or by the Engineer.

Payment for additional quantities resulting from including Seal Course and Apron, see changes in original Plans, shall be made of unit price bid for various items involved.

Wire reinforcing mesh shall be of the electrically welded square mesh type and shall be composed of No. 10 gauge steel wire spaced at 6 centers each way.

Asst Road Dist No.	State	Fed Aid Dist No.	Fiscal Year	Sheet No.
5	Kansas			

BILL OF MATERIAL

1

2

Item	Unit	Quantity	Unit Price	Total Price	Remarks
1. Concrete per cu yd of box	cu yd	1.00			
2. Reinforcing steel	lb	100			
3. Standard box	box	1			
4. Box seal	box	1			
5. Box apron	box	1			
6. Box beam	box	1			

3	3-89	Revise Max. fill height. (WRD)	WAB	GOM
2	4-96	1-2 bars deleted	WRD	LHV
1	4-96	Notations & Revisions (WRD)	WAB	LHV
NO.	DATE	REVISIONS	BY	APP'D

STATE HIGHWAY COMMISSION OF KANSAS

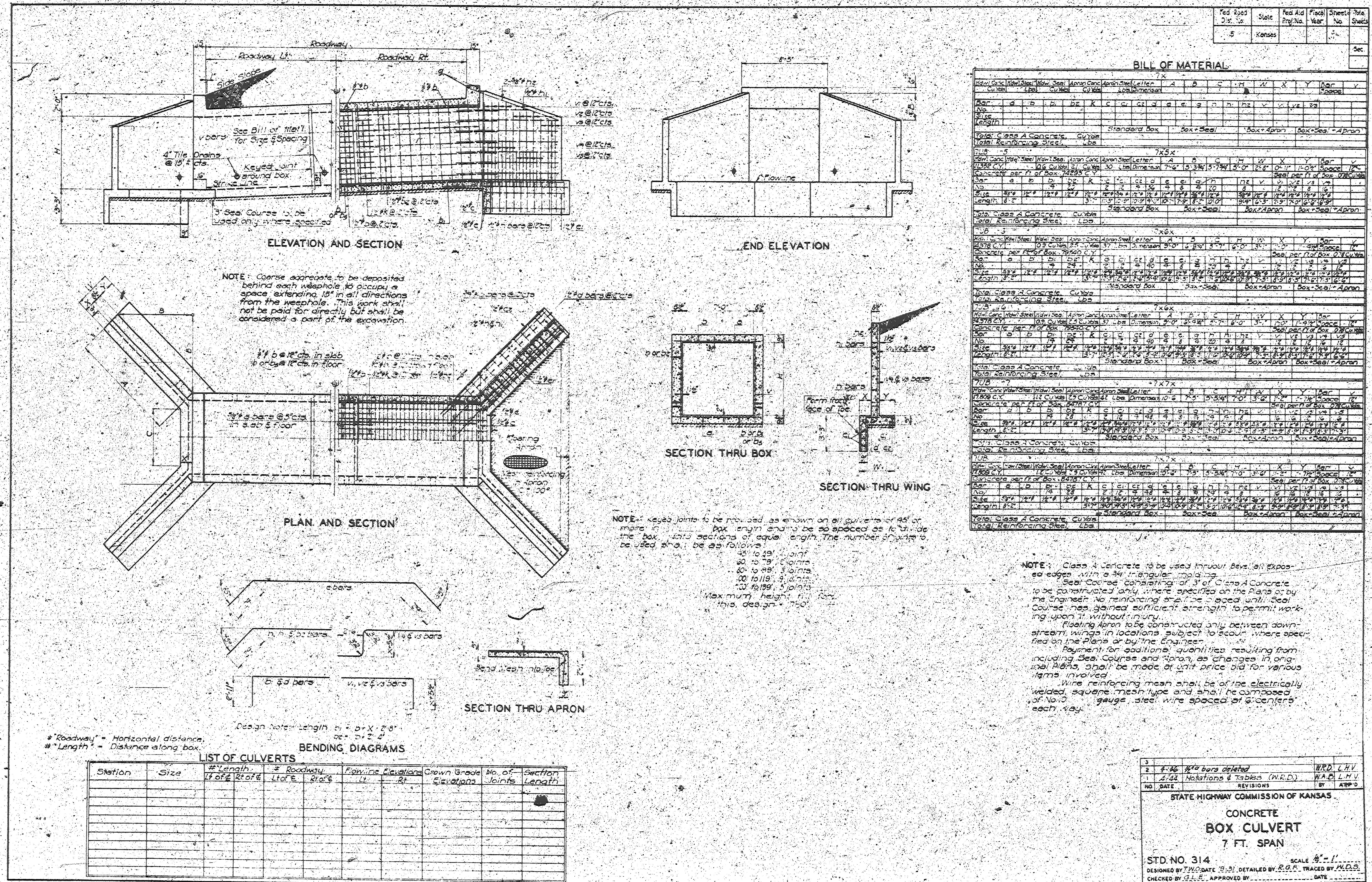
CONCRETE
BOX CULVERT
6 FT. SPAN

STD. NO. 312

SCALE 8" = 1'

DESIGNED BY M.D. DATE 4-8-82 DETAILD BY B.G.G. TRACED BY M.D.S.

CHECKED BY G.L.R. APPROVED BY _____ DATE _____



STATE HIGHWAY COMMISSION OF KANSAS

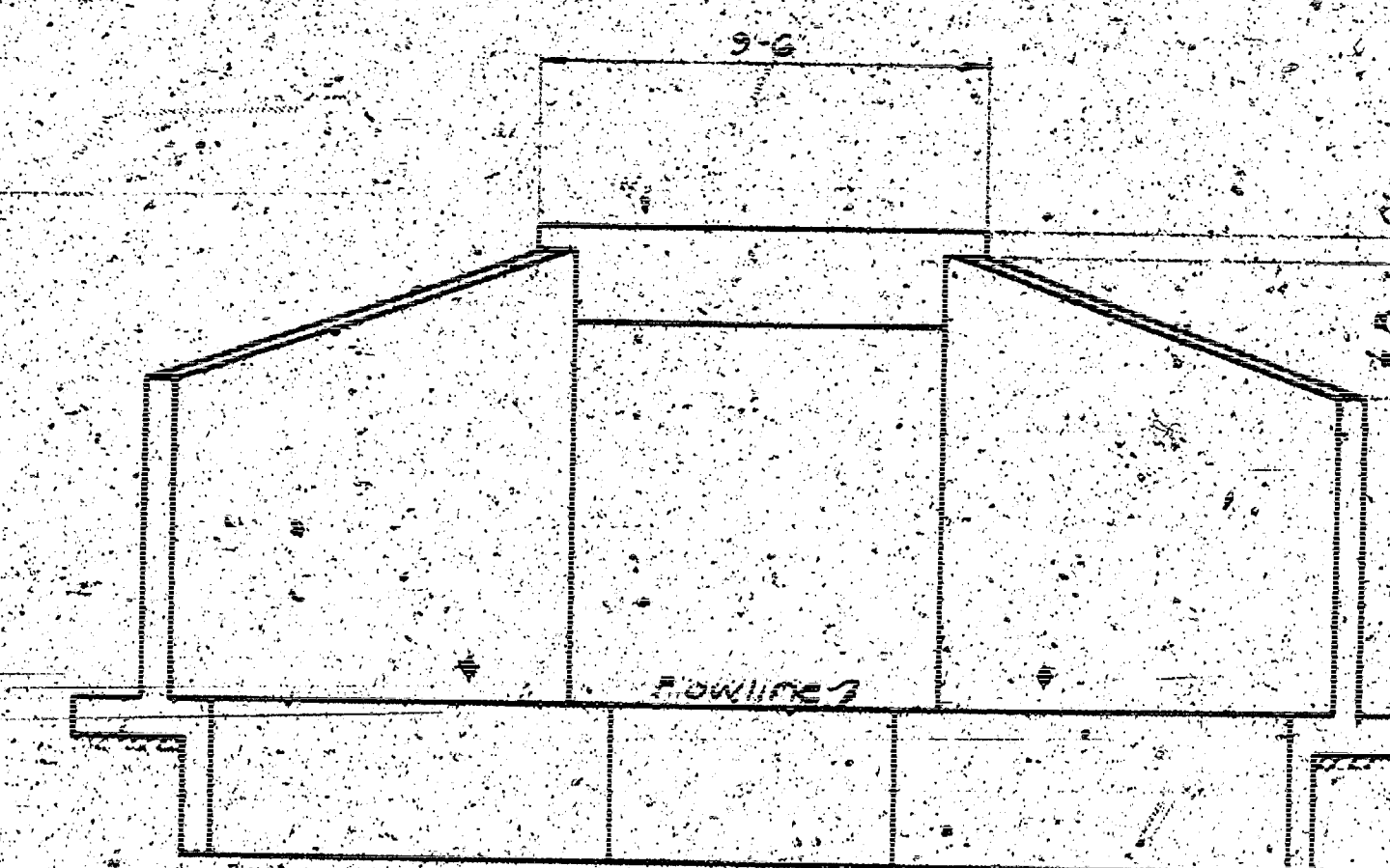
CONCRETE BOX CULVERT

7 FT. SPAN

STD. NO. 314

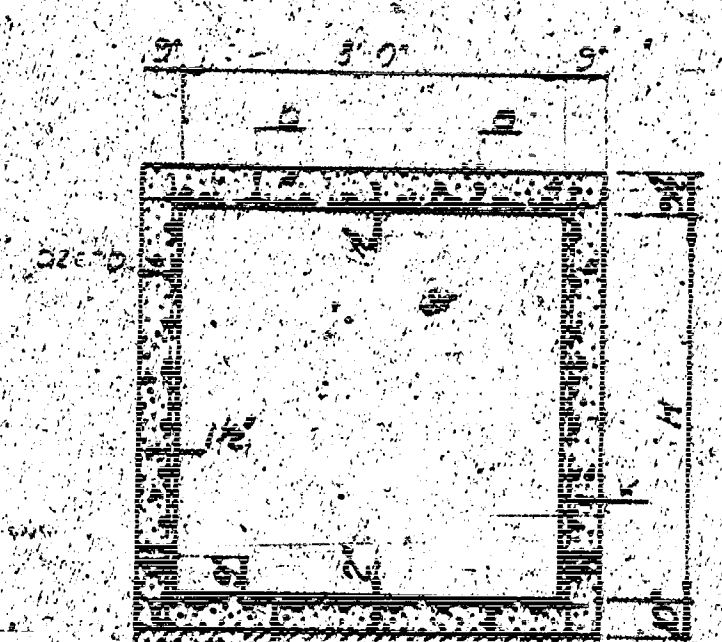
DESIGNED BY T. J. DATE 3-27-37, CHECKED BY J. J. DATE 3-27-37, APPROVED BY J. J. DATE 3-27-37

SCALE 1" = 1'

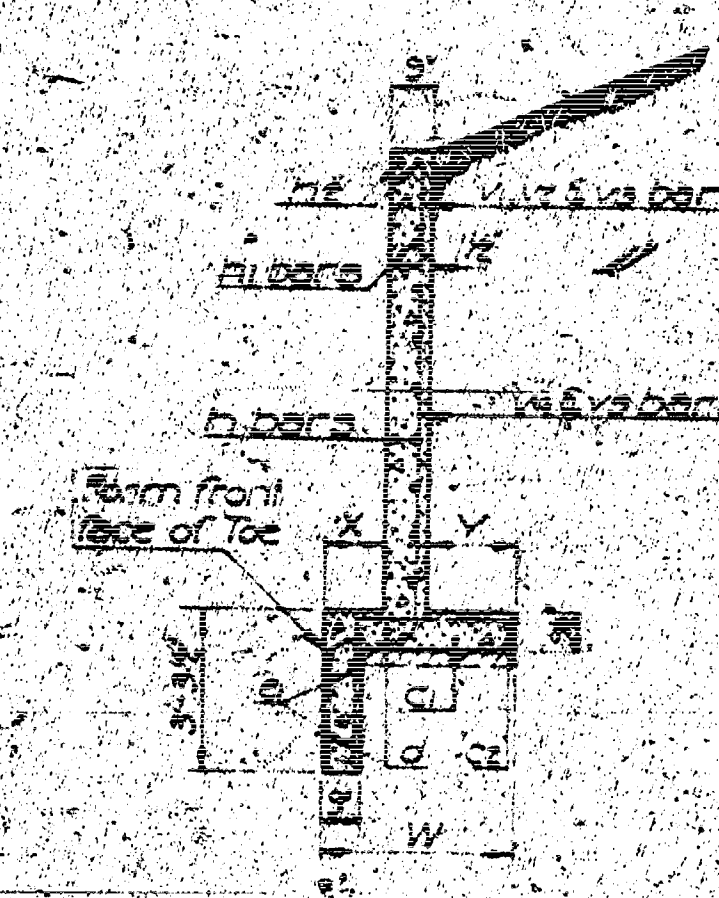


ELEVATION AND SECTION

END ELEVATION



SECTION THRU BOX

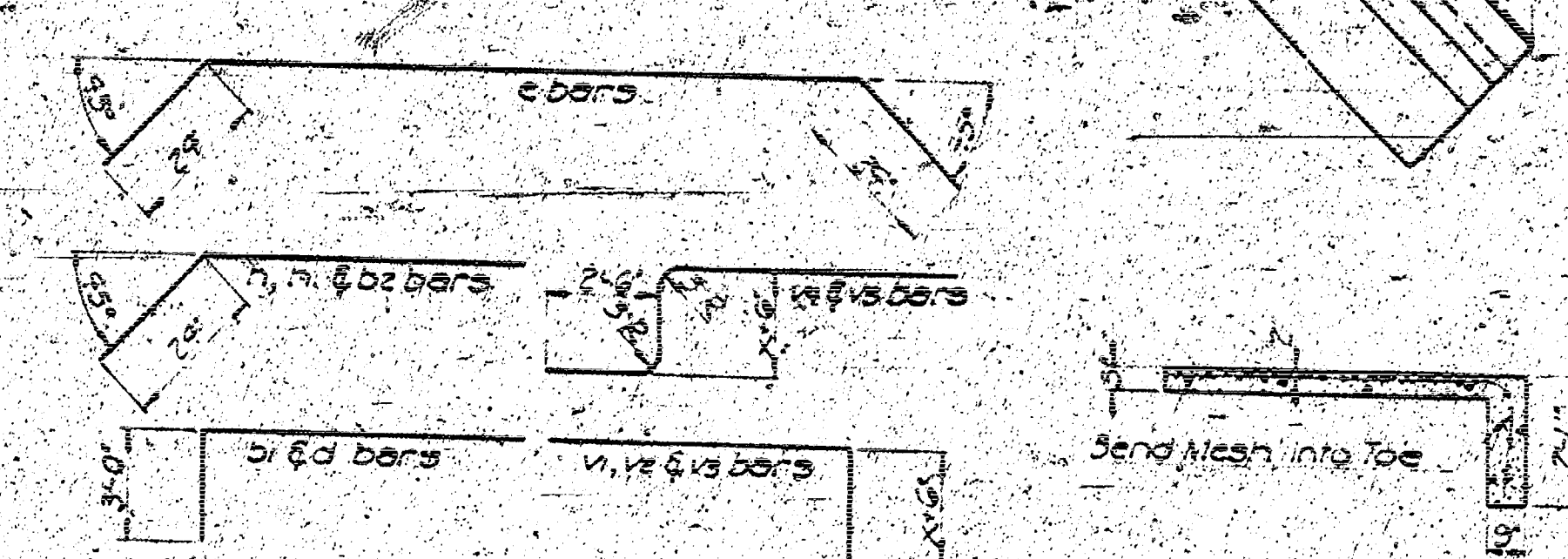


SECTION THRU WING

NOTE: Keyed joints are provided as shown on all culverts
of 36" or more in box length and tube so spaced as
to divide the box into sections of equal length. The number
of joints to be used shall be as follows:

- 45 to 55, 1 joint
- 60 to 70, 2 joints
- 80 to 95, 3 joints
- 100 to 115, 4 joints
- 120 to 135, 5 joints

Maximum height fill
in this design is 5'-0"



SECTION THRU APRON

"Roadway" = Horizontal distance
"Length" = Distance along box

BENDING DIAGRAMS

LIST OF CULVERTS

[illegible][illegible]

NOTE: Class A Concrete to be used thru-out. Bevel all exposed edges with a 3/4" triangular mounding.

Seal Course consisting of 3" of Class A Concrete to be constructed only where specified on the Plans or by the Engineer. No reinforcing steel shall be used until Seal Course has gained sufficient strength to permit working upon it without injury.

Flashing Apron to be constructed only between down stream wing and location subject to scour where specified on the Plans or by the Engineer.

Payment for additional quantities resulting from including Seal Course and Apron, as changes in original Plans, shall be made at unit price bid for various items involved.

Wire reinforcing mesh shall be of the electrically welded, square mesh type and shall be composed of No. 10 gauge steel wire spaced at 6" centers each way.

3	6-96	<i>M/O bars deleted</i>							
NO.	6-84	<i>Notations & tables (W.R.D.)</i>							
		REVIEWS				BY		APP'D	

STATE HIGHWAY COMMISSION OF KANSAS

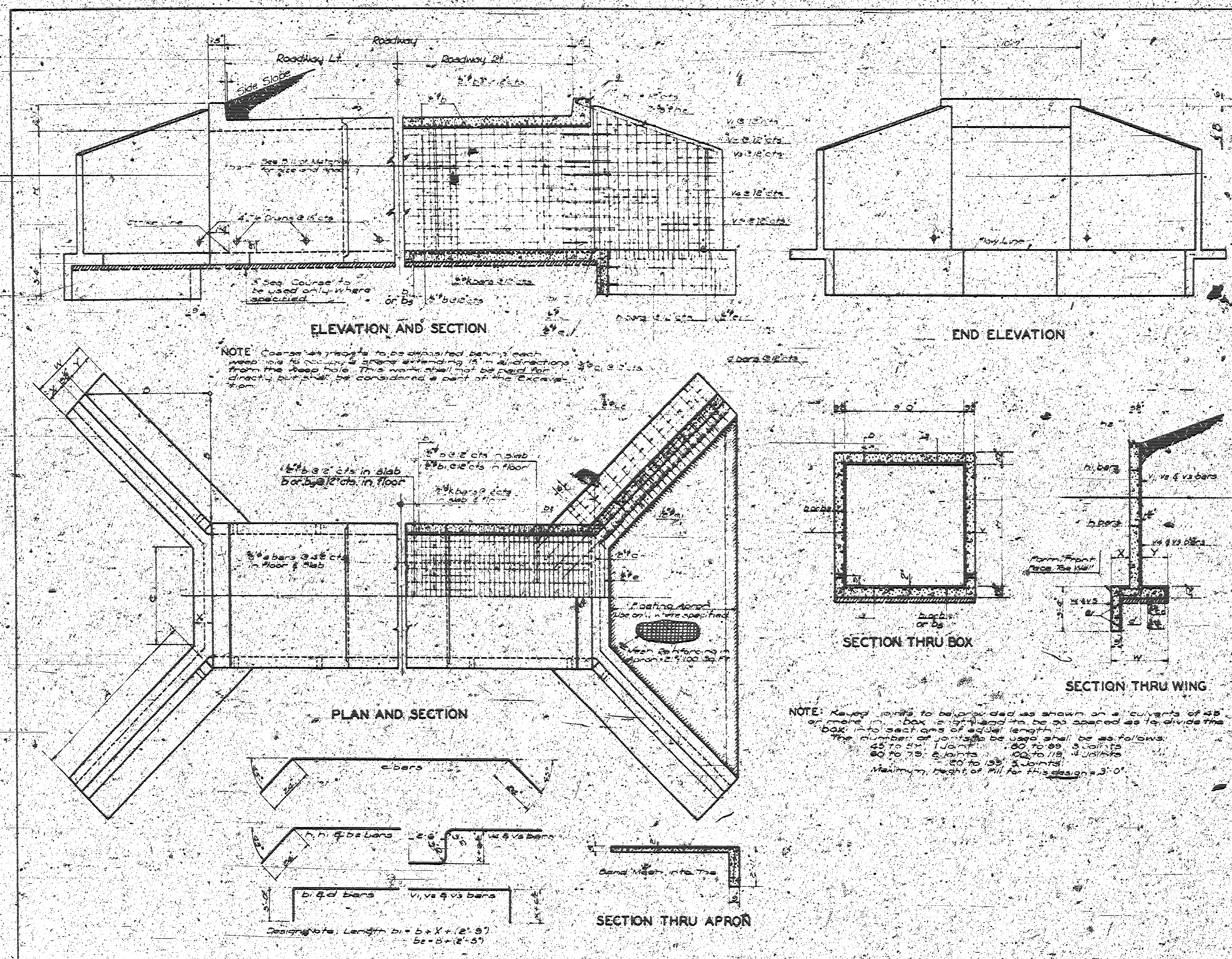
CONCRETE BOX CULVERT

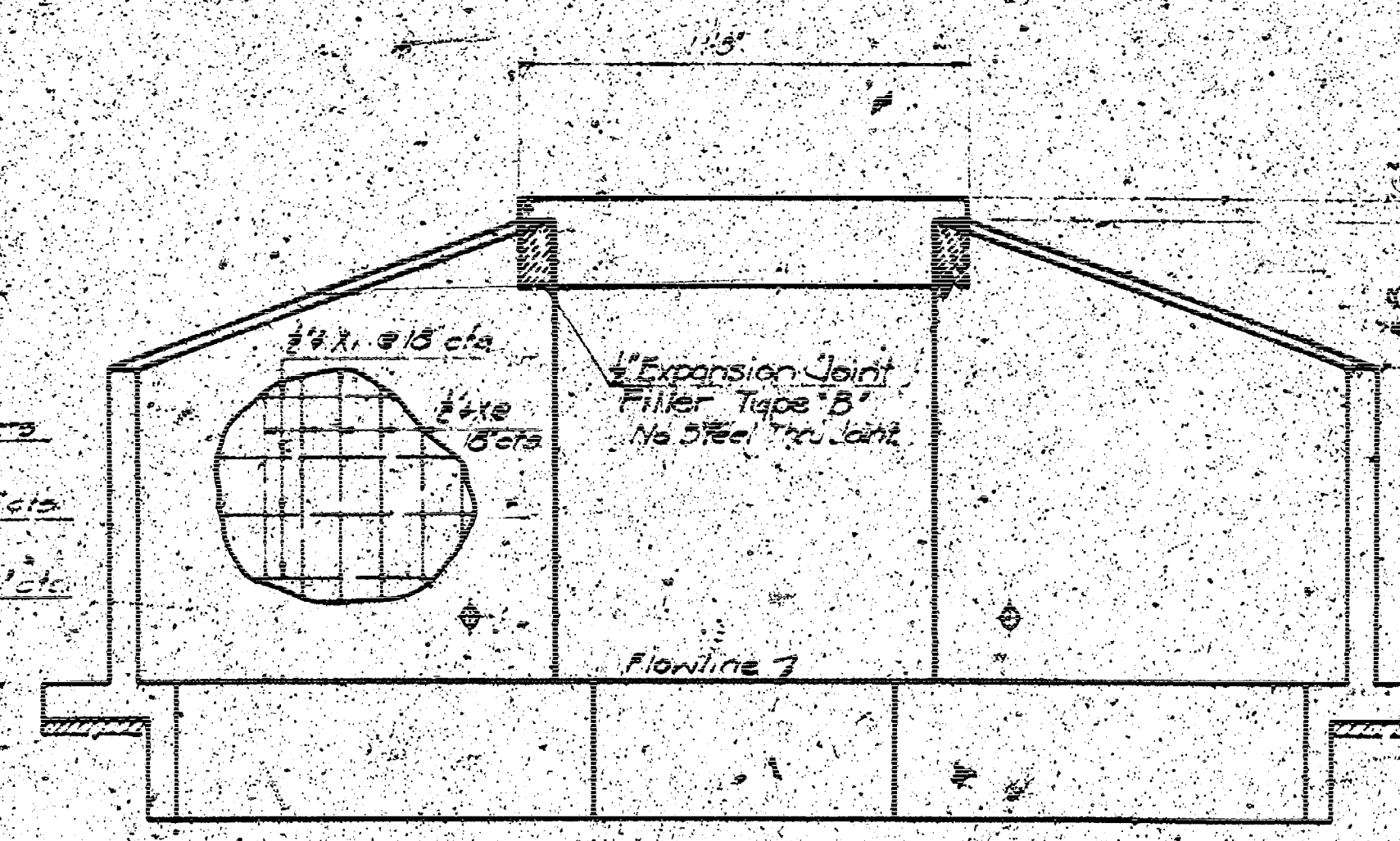
8 FT. SPAN

STD. NO. 315 SCALE - *1" = 10'*

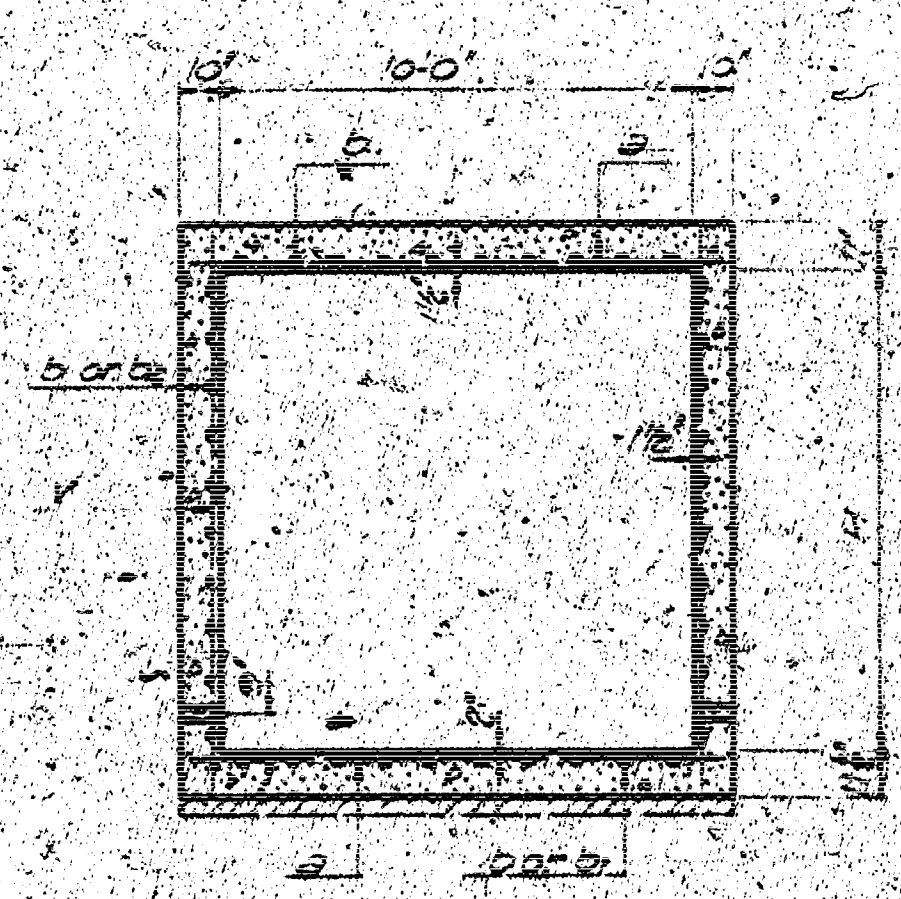
DESIGNED BY *T.M.C. DATE 8-31*, DETAILLED BY *E.S.E.*, TRACED BY *M.O.S.*

CHECKED BY *G.L.F.*, APPROVED BY _____ DATE _____





ELEVATION AND SECTION



SECTION THRU WING

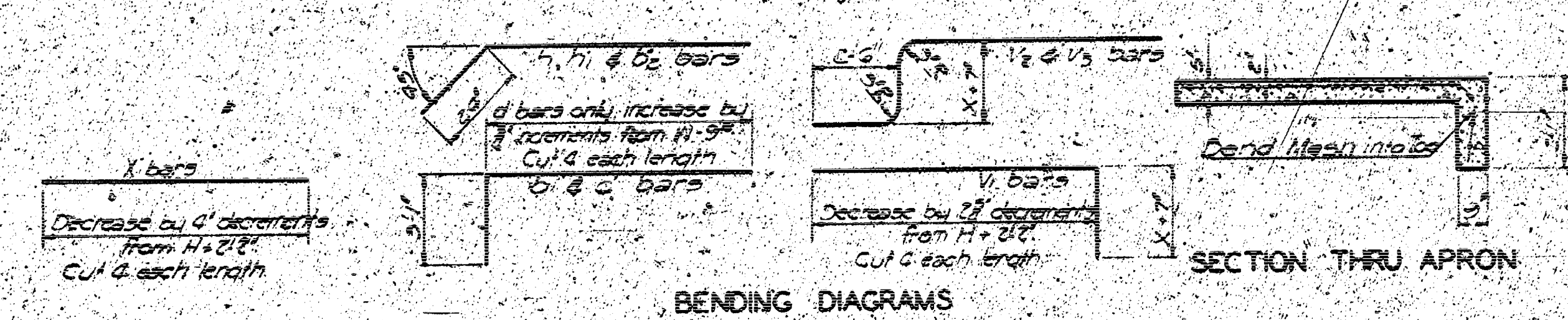
NOTE: Class 4 Concrete to be used throughout. Detail all exposed edges with a 90° triangular mauling.

Concrete consisting of 3" of Class A Concrete to be constructed only where specified on the Plans or in the Specifications and to be maintained until Seal Course has gained sufficient strength to permit working upon it without injury.

Reinforcing Bars to be constructed only between downstream winged in locations. Bars to be used where specified for the Bars by the Engineer.

Payment for additional quantities resulting from, including Seal Course and Bars, as changes in original Plans, shall be made at unit price bid for various items involved.

Wire mesh reinforcement shall be of the electrically welded square mesh type and shall be composed of No. 10 gauge steel wire spaced at 6" centers each way.



SECTION THRU APRON

LIST OF CULVERTS

[illegible][illegible]

3					
2	5-68	1/2 bars deleted		WPD	LTV
1	4-64	Notations & Tables (NRD)		NAB	LTV
NO	DATE	REVISIONS		BY	APP'D

STATE HIGHWAY COMMISSION OF KANSAS

CONCRETE
BOX CULVERT
10 FT. SPAN

STD. NO. 317

DESIGNED BY W.D. GATE DATE 12-28-64 DETAIL BY E.S.S. TRACED BY H.H.H.

CHECKED BY E.S.S. APPROVED BY _____ DATE _____