



FLOODWATER RETARDING DAM NO. 16
PLUM CREEK WATERSHED PROJECT
HAYS COUNTY, TEXAS

DRAINAGE AREA 3232 ACRES = 5.05
TOTAL STORAGE 2330 AC.FT.
HEIGHT OF DAM 41 FEET
VOLUME OF FILL ~~239,225~~ CU YDS.
234,249

SPONSORED BY

HAYS - CALDWELL - TRAVIS SOIL AND WATER CONSERVATION DISTRICT
PLUM CREEK CONSERVATION DISTRICT

COOPERATING WITH

SOIL CONSERVATION SERVICE

OF THE

U.S. DEPARTMENT OF AGRICULTURE

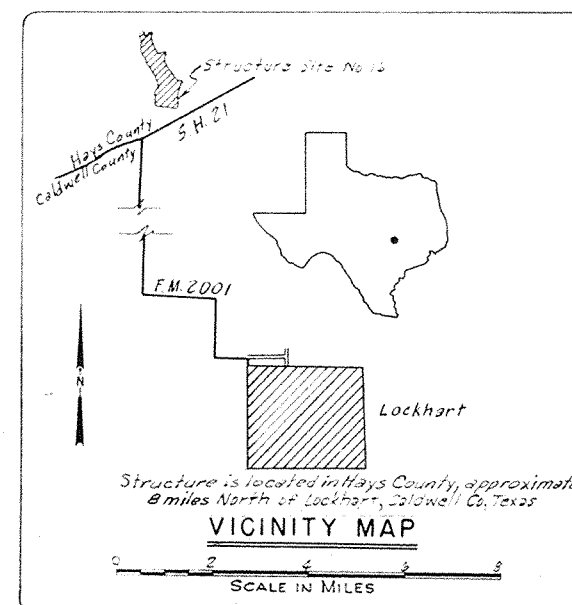
1973

CONSTRUCTION DRAWINGS APPROVED

Gen. C. Vittetoe, (Major) 1-26-73
DATE

INDEX OF DRAWINGS

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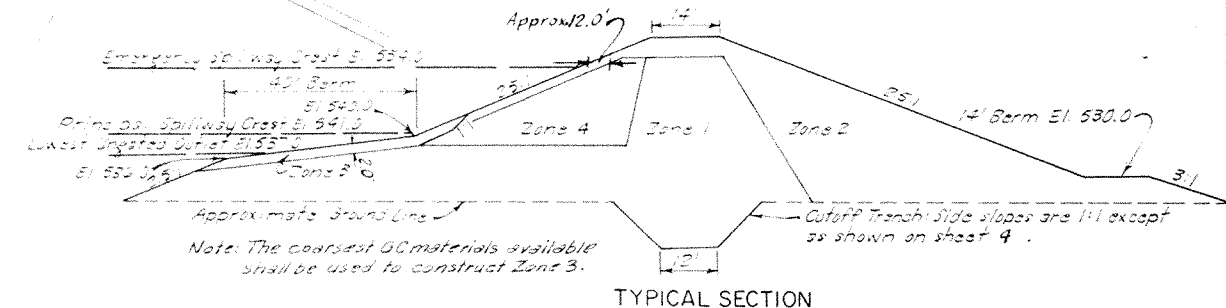


AS-BUILT PLANS
COMPLETED 9-23-75

Drawing No
4-E-32,489

Elevation	Surf Area Acres	Storage	
		Acres	Feet
550	0	0	0
552	5	10	2.54
554	17	56	2.1
556	37	167	3.2
558	54	339	4.6
560	73	507	1.35
562	93	681	1.60
564	113	855	1.80
566	133	1029	2.53
568	153	1203	2.49
570	173	1377	1.12
572	193	1551	8.65
574	213	1725	10.52
576	233	1899	14.8
578	253	2073	20.08
580	273	2247	558.8
582	293	2421	554.6
584	313	2595	550.4
586	333	2769	546.2
588	353	2943	542.0
590	373	3117	537.8
592	393	3291	533.6
594	413	3465	529.4
596	433	3639	525.2
598	453	3813	521.0
600	473	3987	516.8
602	493	4161	512.6
604	513	4335	508.4
606	533	4509	504.2
608	553	4683	500.0
610	573	4857	495.8
612	593	5031	491.6
614	613	5205	487.4
616	633	5379	483.2
618	653	5553	479.0
620	673	5727	474.8
622	693	5901	470.6
624	713	6075	466.4
626	733	6249	462.2
628	753	6423	458.0
630	773	6597	453.8
632	793	6771	449.6
634	813	6945	445.4
636	833	7119	441.2
638	853	7293	437.0
640	873	7467	432.8
642	893	7641	428.6
644	913	7815	424.4
646	933	7989	420.2
648	953	8163	416.0
650	973	8337	411.8
652	993	8511	407.6
654	1013	8685	403.4
656	1033	8859	399.2
658	1053	9033	395.0
660	1073	9207	390.8
662	1093	9381	386.6
664	1113	9555	382.4
666	1133	9729	378.2
668	1153	9903	374.0
670	1173	10077	369.8
672	1193	10251	365.6
674	1213	10425	361.4
676	1233	10599	357.2
678	1253	10773	353.0
680	1273	10947	348.8
682	1293	11121	344.6
684	1313	11295	340.4
686	1333	11469	336.2
688	1353	11643	332.0
690	1373	11817	327.8
692	1393	11991	323.6
694	1413	12165	319.4
696	1433	12339	315.2
698	1453	12513	311.0
700	1473	12687	306.8
702	1493	12861	302.6
704	1513	13035	298.4
706	1533	13209	294.2
708	1553	13383	290.0
710	1573	13557	285.8
712	1593	13731	281.6
714	1613	13905	277.4
716	1633	14079	273.2
718	1653	14253	269.0
720	1673	14427	264.8
722	1693	14601	260.6
724	1713	14775	256.4
726	1733	14949	252.2
728	1753	15123	248.0
730	1773	15297	243.8
732	1793	15471	239.6
734	1813	15645	235.4
736	1833	15819	231.2
738	1853	15993	227.0
740	1873	16167	222.8
742	1893	16341	218.6
744	1913	16515	214.4
746	1933	16689	210.2
748	1953	16863	206.0
750	1973	17037	201.8
752	1993	17211	197.6
754	2013	17385	193.4
756	2033	17559	189.2
758	2053	17733	185.0
760	2073	17907	180.8
762	2093	18081	176.6
764	2113	18255	172.4
766	2133	18429	168.2
768	2153	18603	164.0
770	2173	18777	159.8
772	2193	18951	155.6
774	2213	19125	151.4
776	2233	19299	147.2
778	2253	19473	143.0
780	2273	19647	138.8
782	2293	19821	134.6
784	2313	19995	130.4
786	2333	20169	126.2
788	2353	20343	122.0
790	2373	20517	117.8
792	2393	20691	113.6
794	2413	20865	109.4
796	2433	21039	105.2
798	2453	21213	101.0
800	2473	21387	96.8
802	2493	21561	92.6
804	2513	21735	88.4
806	2533	21909	84.2
808	2553	22083	79.9
810	2573	22257	75.7
812	2593	22431	71.5
814	2613	22605	67.3
816	2633	22779	63.1
818	2653	22953	58.9
820	2673	23127	54.7
822	2693	23301	50.5
824	2713	23475	46.3
826	2733	23649	42.1
828	2753	23823	37.9
830	2773	23997	33.7
832	2793	24171	29.5
834	2813	24345	25.3
836	2833	24519	21.1
838	2853	24693	16.9
840	2873	24867	12.7
842	2893	25041	8.5
844	2913	25215	4.3
846	2933	25389	0.1
848	2953	25563	-0.1
850	2973	25737	-0.3
852	2993	25911	-0.5
854	3013	26085	-0.7
856	3033	26259	-0.9
858	3053	26433	-1.1
860	3073	26607	-1.3
862	3093	26781	-1.5
864	3113	26955	-1.7
866	3133	27129	-1.9
868	3153	27303	-2.1
870	3173	27477	-2.3
872	3193	27651	-2.5
874	3213	27825	-2.7
876	3233	28000	-2.9
878	3253	28174	-3.1
880	3273	28348	-3.3
882	3293	28522	-3.5
884	3313	28696	-3.7
886	3333	28870	-3.9
888	3353	29044	-4.1
890	3373	29218	-4.3
892	3393	29392	-4.5
894	3413	29566	-4.7
896	3433	29740	-4.9
898	3453	29914	-5.1
900	3473	30088	-5.3
902	3493	30262	-5.5
904	3513	30436	-5.7
906	3533	30610	-5.9
908	3553	30784	-6.1
910	3573	30958	-6.3
912	3593	31132	-6.5
914	3613	31306	-6.7
916	3633	31480	-6.9
918	3653	31654	-7.1
920	3673	31828	-7.3
922	3693	32002	-7.5
924	3713	32176	-7.7
926	3733	32350	-7.9
928	3753	32524	-8.1
930	3773	32698	-8.3
932	3793	32872	-8.5
934	3813	33046	-8.7
936	3833	33220	-8.9
938	3853	33394	-9.1
940	3873	33568	-9.3
942	3893	33742	-9.5
944	3913	33916	-9.7
946	3933	34090	-9.9
948	3953	34264	-10.1
950	3973	34438	-10.3
952	3993	34612	-10.5
954	4013	34786	-10.7
956	4033	34960	-10.9
958	4053	35134	-11.1
960	4073	35308	-11.3
962	4093	35482	-11.5
964	4113	35656	-11.7
966	4133	35830	-11.9
968	4153	36004	-12.1
970	4173	36178	-12.3
972	4193	36352	-12.5
974	4213	36526	-12.7
976	4233	36700	-12.9
978	4253	36874	-13.1
980	4273	37048	-13.3
982	4293	37222	-13.5
984	4313	37396	-13.7
986	4333	37570	-13.9
988	4353	37744	-14.1
990	4373	37918	-14.3
992	4393	38092	-14.5
994	4413	38266	-14.7
996	4433	38440	-14.9
998	4453	38614	-15.1
1000	4473	38788	-15.3

U 50 yr Submerged Sediment Capacity
 Note: UPTREAM BERM
 Approx. Sta 5+00 to Sta 11+00
 Construct on 10:1 slope from El 540.0 to ground line
 Sta 11+00 to Approx Sta 21+00
 Construct upstream berm as shown in Typical Section below.

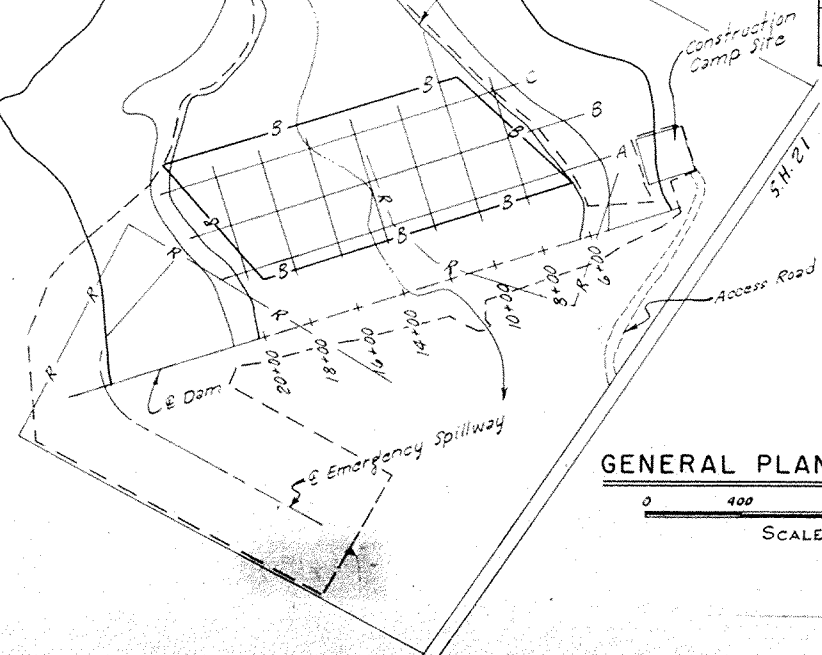


MATERIALS PLACEMENT DATA									
Embankment Zone No.	Type or Unified Classification	Field Control Test		Placement and Compaction Requirements					
		ASTM Test		Max. Allowable Particle Size	Max. Uncompacted Layer Thickness	Specified Compaction Class	Min. Dry Density, Percent of Field Test Max. Dry Density	Moisture Limits, Relative to Field Test Optimum %	
		Number	Method					From	To
1	CH; Silty, Clay	D-1557	A or B	6"	9"	A	85	-4	UP
233	GC; Clayey Gravel	D-1557 (moisture only)	Cor D	6"	9"	C 21	—	-2	UP
4	Shale; CH; Slightly, Silty, Clay	D-1557	A or B	6"	9"	A	85	-2	UP

- The zone boundaries shown in the typical section are approximate. They may be varied as permitted by the Engineer, to allow the use of all suitable and needed materials from the required excavations.
- Class C compaction shall be accomplished by a minimum of 6 complete passes per layer of tamping roller weighing not less than 1200 pounds per foot of roller width at a towing or traveling speed of 2 mph or greater. The placement moisture limits for this material shall be as shown above relative to the optimum moisture content established by field test made using the specified field control test.

ZONED EMBANKMENT DATA

LEGEND
 --- Limits of Work Area.
 --- Limits of Borrow Area
 --- Fence to be Removed.



GENERAL PLAN OF RESERVOIR
 0 400 800 1200 1600
 SCALE IN FEET
 NO CHANGE IN PLANS
 AS-BUILT PLANS
 CONSTRUCTION
 COMPLETED 12-23-75

GENERAL PLAN OF RESERVOIR FLOODWATER RETARDING STRUCTURE SITE No. 16 PLUM CREEK WATERSHED IN HAYS COUNTY, TEXAS			
U.S. DEPARTMENT OF AGRICULTURE SOIL CONSERVATION SERVICE			
DESIGNED D.E.G.	DATE 12-72	APPROVED BY G.C.V.	
DRAWN D.E.G.	DATE 12-72	STATE CONSERVATION ENGINEER, S. C. S.	
TRACED L.S.	DATE 12-72	TEMPLE, TEXAS	
CHECKED M.K.	DATE 1-73	SHEET 4-E-32,489	

Emergency Spillway Diversion and Spillway Diversion (S.D.) shall have 13 ft. minimum base width, 3:1 side slopes, and 8' minimum height. Excessive height may be secured by grading a channel across right-of-way to reduce height of spillway and in low areas, where a channel section is required, the minimum bottom width of channel shall be 12 ft. Stream channel with no embankment area shall be graded and cleared of objectionable material. (See Sheet 14 and Construction Specification 21.) A minimum of 2 ft. slope shall be placed in the Emergency Spillway and on all Earth Fill Areas (See Construction Specification 26.4.)

FENCE LEGEND

- C — Fence to be constructed by contractor
- R — Fence to be removed by contractor

PLAN OF EMBANKMENT AND SPILLWAYS



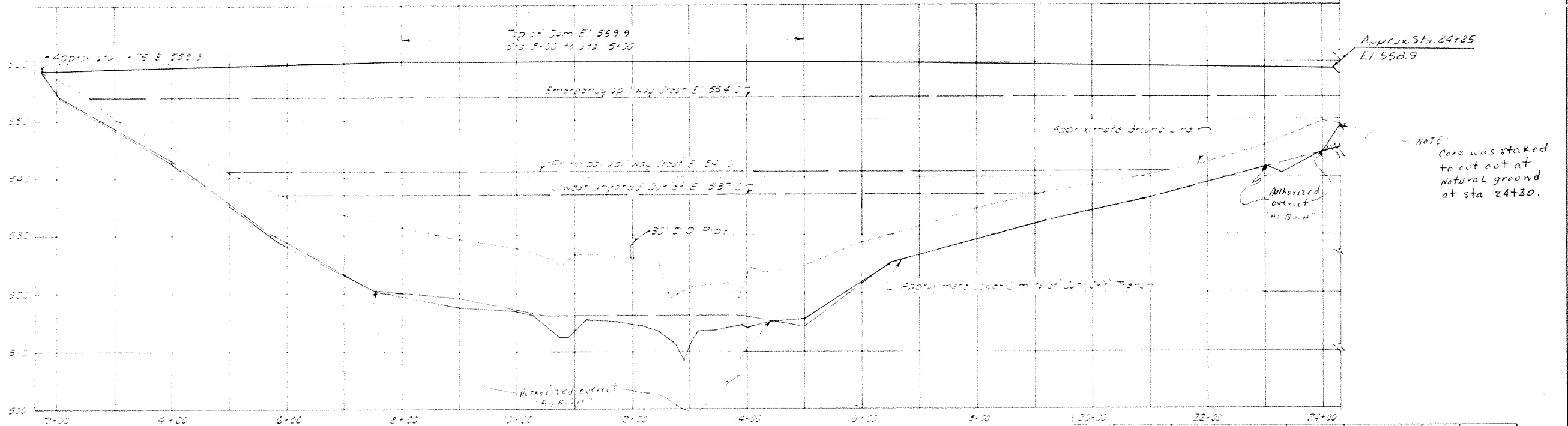
NO CHANGE IN PLANS

AS-BUILT PLANS
SUBMITTAL
COMPLETED 9/23/75

PLAN OF EMBANKMENT AND SPILLWAYS
FLOODWATER RETARDING STRUCTURE SITE NO. 16
PLUM CREEK WATERSHED
IN
HAYS COUNTY, TEXAS

U.S. DEPARTMENT OF AGRICULTURE
SOIL CONSERVATION SERVICE

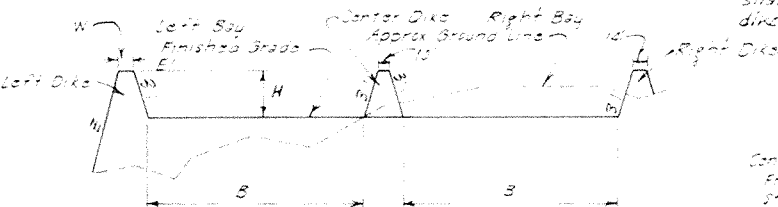
DESIGNED	DATE	APPROVED BY
D.E.G.	12-72	
DRAWN	DATE	
D.E.G.	12-72	
TRACED	DATE	
L.S.	12-72	
CHECKED	DATE	
M.K.	1-73	
SHEET NO. 2		DRAWING NO. 4-E-32,489
OF 15		



PROFILE ON \mathcal{C} OF DAM

Materials forming dikes and transition sections shall be placed and paid for as "Earth Fill, Embankment." See Material Placement Data and Construction Specification 23.

Note: Excavation for the emergency spillway shall include first portion of the center dike below ground line.



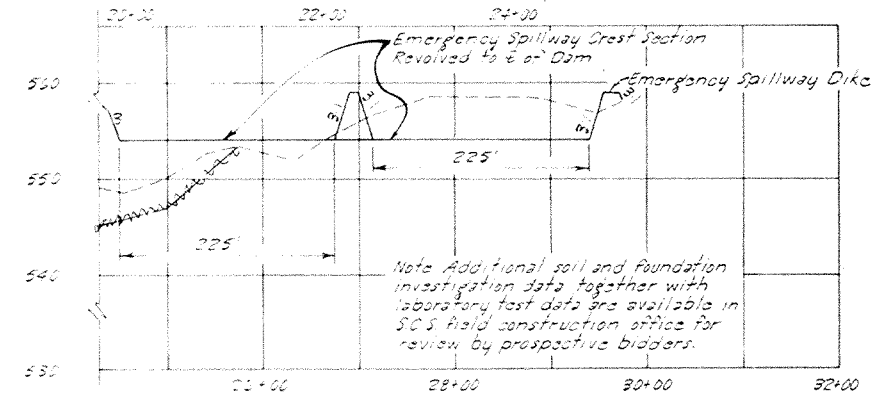
Left Dike
From approx Sta. 6+00 to Sta. 8+75 El. 558.0, W=14', B=25',
Sta. 8+75 to Embankment, El. 558.0, W=variable, B=variable &
Embankment to Sta. 16+00 is transitional.
Sta. 16+00 to approx Sta. 23+16, W=0', B=3', H=2.5'

Right Dike
Sta. 13+80 to Sta. 14+30 transition from diversion to dike
Sta. 14+30 to Sta. 15+00, El. 558.0
Sta. 15+00 to Sta. 16+00 transition from dike to diversion

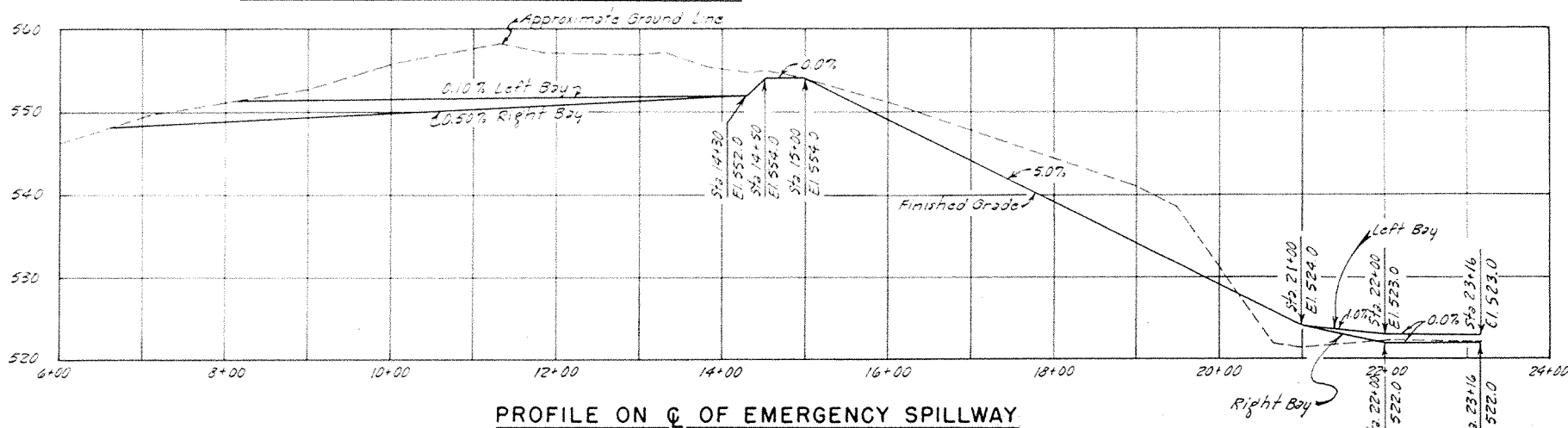
Center Dike
From approx Sta. 7+90 to Sta. 15+00, El. 558.9
Sta. 15+00 to Sta. 16+00, transition section
Sta. 16+00 to Sta. 23+16, W=25', B=225', H=2.5' above Lt. Bay
H=3.5' above Rt. Bay

Bottom Widens
Right Bay
From approx Sta. 5+00 to Sta. 6+40, B=Variable
Approx Sta. 6+40 to Sta. 14+30, B=213'
Sta. 14+30 to Sta. 14+50, B=transitional
Sta. 14+50 to Sta. 23+16, B=225'

Left Bay
Approx Sta. 7+00 to Sta. 7+90, B=Variable
Sta. 7+90 to Sta. 14+30, B=213'
Sta. 14+30 to Sta. 14+50, transitional
Sta. 14+50 to Sta. 23+16, B=225'



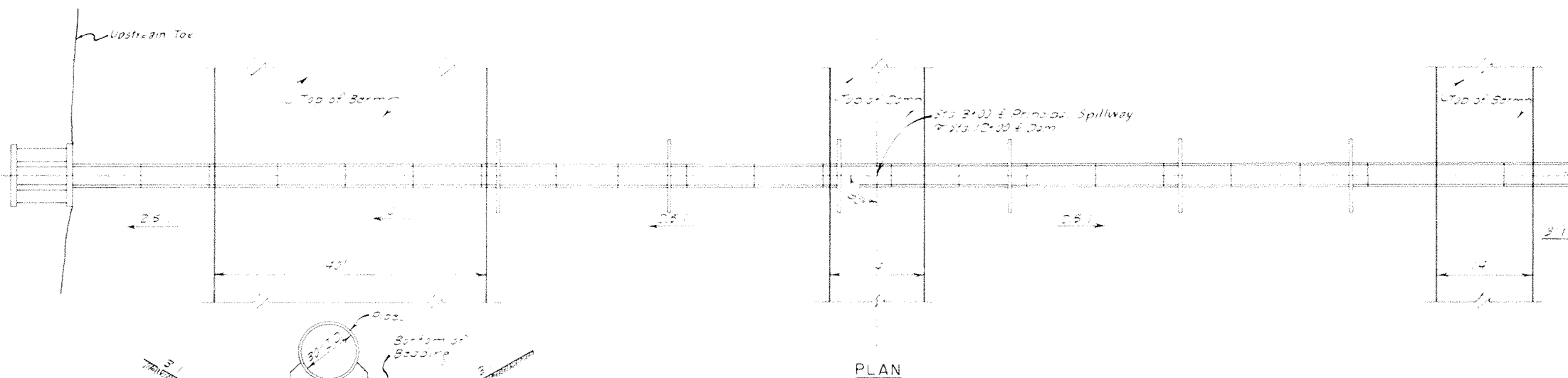
TYPICAL SECTION-EMERGENCY SPILLWAY



PROFILE ON \mathcal{C} OF EMERGENCY SPILLWAY

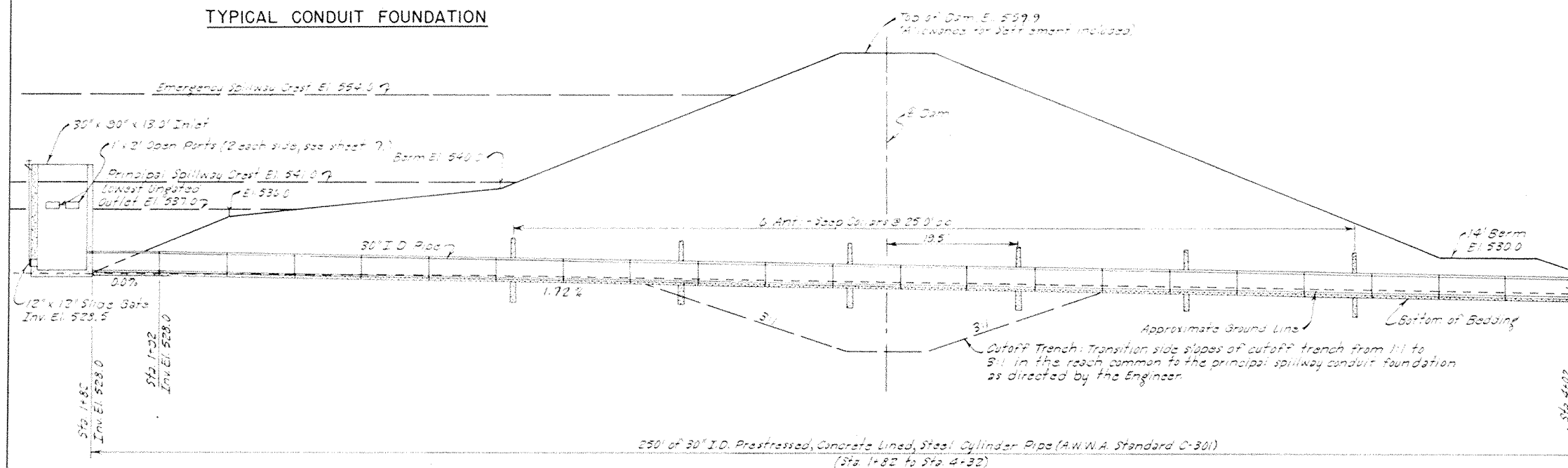
PROFILES AND SECTIONS FLOODWATER RETARDING STRUCTURE SITE NO. 16 PLUM CREEK WATERSHED IN HAYS COUNTY, TEXAS			
U.S. DEPARTMENT OF AGRICULTURE SOIL CONSERVATION SERVICE			
DESIGNED	DATE	APPROVED BY	
D.E.G.	12-72	[Signature]	
DRAWN	DATE	STATE CONSERVATION ENGINEER, S. C. S.	
D.E.G.	12-72	TEMPLE, TEXAS	
TRACED	DATE	SHEET	
L.S.	12-72	3	
CHECKED	DATE	DRAWING NO.	
M.K.	1-73	4-E-32,489	

ADDITIONAL PLANS
ON PLUM CREEK
DATE 9-23-75



Excavate to bottom of bedding, see Construction Specification C. Prior to placing fill material around the completed conduit, the exposed earth surface shall be tamped as necessary and to the depth necessary to remove all cracks caused by wetting and to establish or restore the density and moisture requirements specified for that type of material.

TYPICAL CONDUIT FOUNDATION



PRINCIPAL SPILLWAY

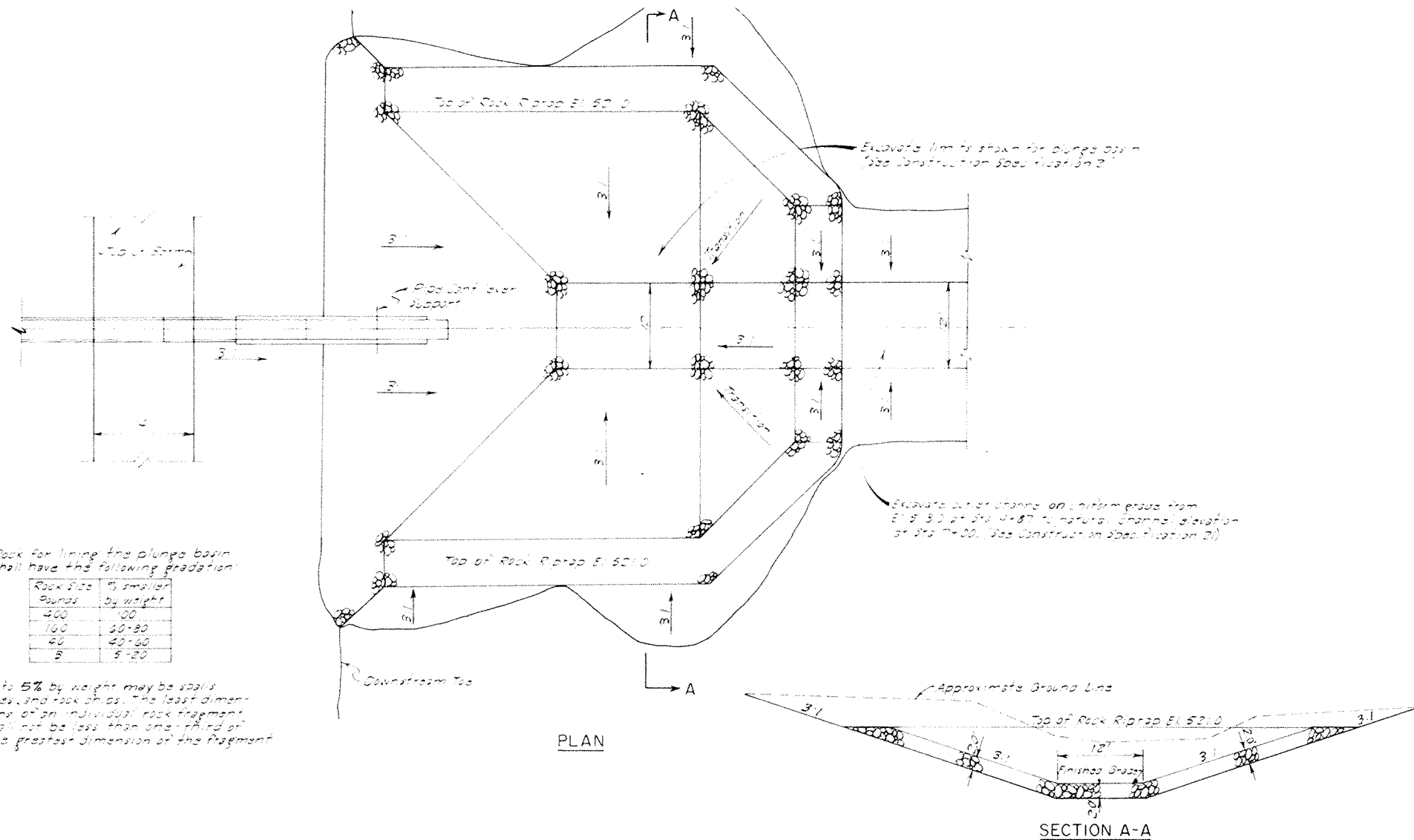
NO CHANGE IN PLANS

AS-BUILT PLANS
CONSTRUCTION
COMPLETED 9-25-28

PRINCIPAL SPILLWAY - PLAN AND SECTION
FLOODWATER RETARDING STRUCTURE SITE NO. 16
PLUM CREEK WATERSHED
IN
HAYS COUNTY, TEXAS

U.S. DEPARTMENT OF AGRICULTURE
SOIL CONSERVATION SERVICE

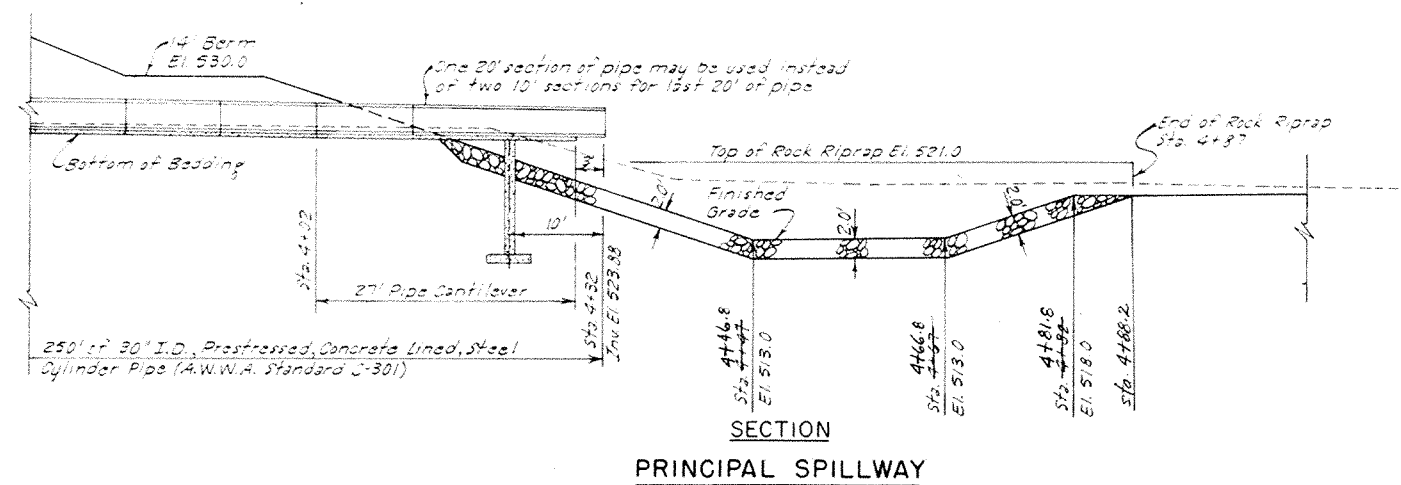
DESIGNED D.E.S.	DATE 12-72	APPROVED BY <i>(Signature)</i>
DRAWN D.E.G.	DATE 12-72	STATE CONSERVATION ENGINEER, S.C.E.
TRACED L.S.	DATE 12-72	TEMPLE, TEXAS
CHECKED M.K.	DATE 1-73	SHEET 4 OF 15
		DRAWING NO. 4-E-32,489



Rock for lining the plunge basin shall have the following gradation:

Rock Size	% smaller
Passes	by weight
400	100
100	80-90
40	40-60
5	5-20

Up to 5% by weight may be soil, fines, and rock chips. The least dimension of an individual rock fragment shall not be less than one-third of the greatest dimension of the fragment.



PRINCIPAL SPILLWAY - PLAN AND SECTION FLOODWATER RETARDING STRUCTURE SITE NO. 16 PLUM CREEK WATERSHED IN HAYS COUNTY, TEXAS			
U.S. DEPARTMENT OF AGRICULTURE SOIL CONSERVATION SERVICE			
DESIGNED D.E.G.	DATE 12-72	APPROVED BY [Signature]	
DRAWN D.E.G.	DATE 12-72	STATE CONSERVATION ENGINEER, S. C. S.	
TRACED L.S.	DATE 12-72	TEMPLE, TEXAS	
CHECKED M.K.	DATE 1-73	SHEET 5 of 15	DRAWING NO. 4-E-32,489

AS-BUILT PLANS
CONSTRUCTION
COMPLETED 9-21-75

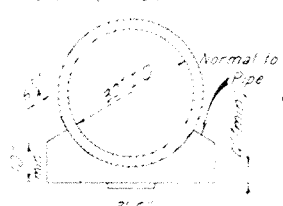
$R = 0.015 \times D$
Radius of
Concrete Pipe

Use 2 or more blocks
per joint of pipe.
Exposed concrete edge
blocks are at least 2" in
thickness to the inside
support block.

SUPPORT BLOCK

Vertical construction joint of
1/2" bituminous preformed
expansion joint filler at
each pipe joint. See detail.

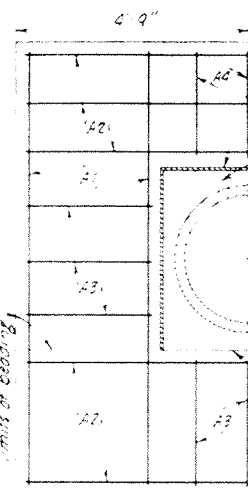
Vertical joints of bedding shall
be formed with wood or
metal forms.



Side Bedding 1.005 cu yds
per linear foot

BEDDING

Limits of
Excavation

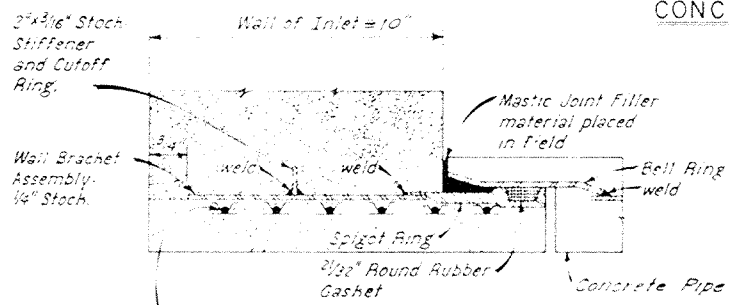


2 x 12 wide bituminous
preformed expansion
joint filler. Secure
filler with asphaltic
mastic at corners
and splices.
Inner concrete
pipe

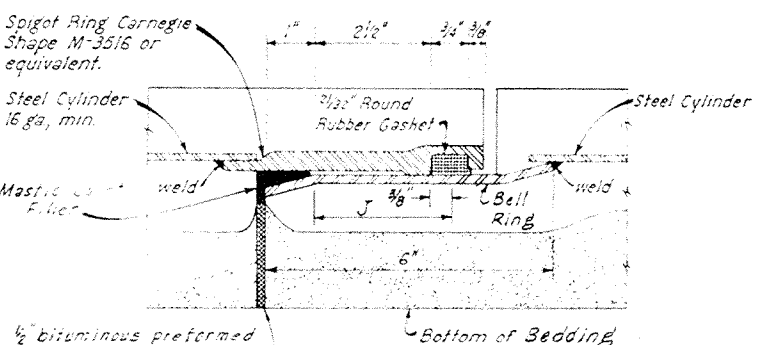
4 layers of 12
mil. heavy duty
surface coating
in 1.4 inches.
Weigh 55 lbs
per square.

2" formed earth forms
are used for the lower
portion of the anti-seep
collar. Vertical walls
with 8" thickness will be
permitted below bottom of
bedding.

ANTI-SEEP COLLAR
CONCRETE PIPE PLACEMENT DETAILS



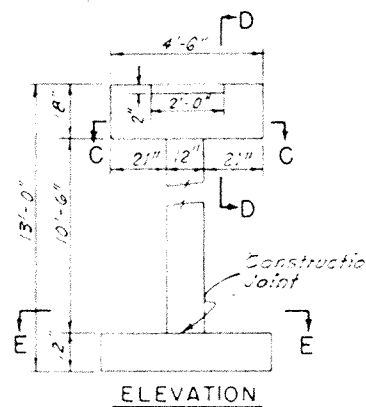
SPIGOT WALL FITTING



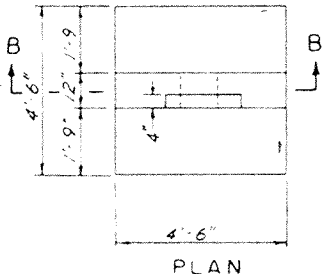
PIPE JOINT

PIPE JOINT DETAILS

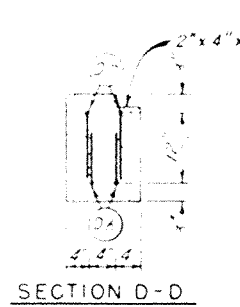
Note: Pipe supplied shall have a minimum
permissible deflection angle of 1".
The minimum value for "J" (as shown
above) shall be 2 inches after
placement of Concrete Bedding.



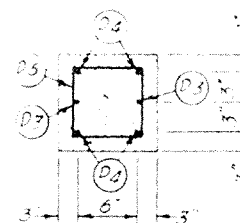
ELEVATION



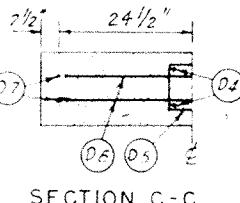
PLAN



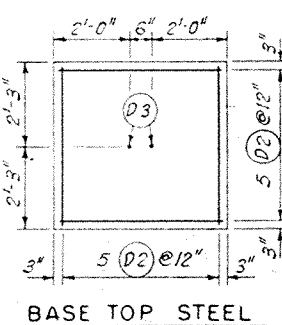
SECTION D-D



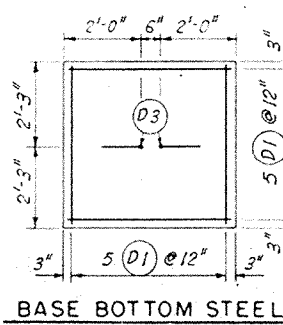
SECTION E-E



SECTION C-C

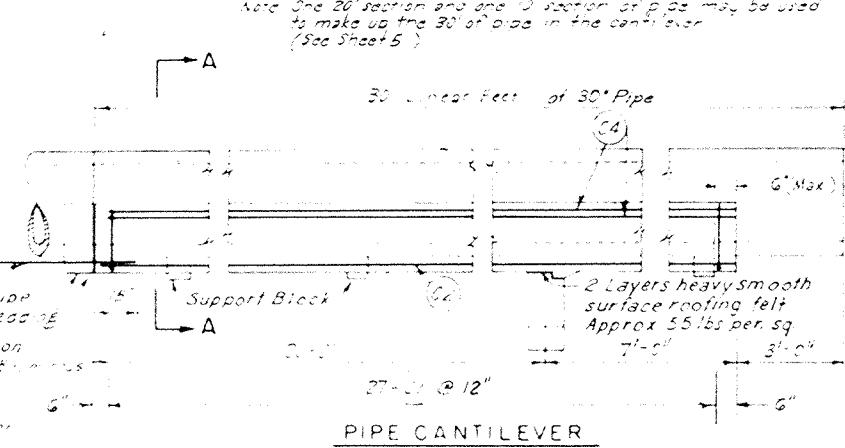


BASE TOP STEEL



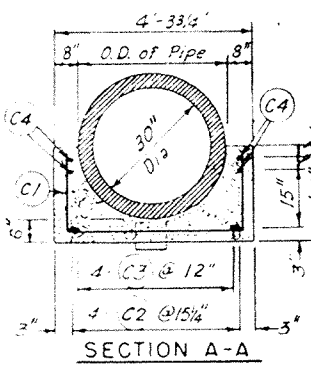
BASE BOTTOM STEEL

PIPE CANTILEVER SUPPORT



PIPE CANTILEVER

Note Sides of Pipe Cantilever
to be formed with lumber or
metal.



SECTION A-A

FOR TYPICAL BAR TYPES REFER TO A.C.I. STANDARD 315

Bar No	Location	Qty	Lgth	Total Length	Size	Type	A	B	C	D	E	F	G	H	J	O
A1	Anti-Seep Collar	8	9'-0"	72'-0"	4"	Str.										
A2		7	9'-2"	64'-4"	4"	Str.										
A3		9	2'-8"	24'-0"	4"	Str.										
A4		3	2'-2"	6'-6"	4"	Str.										

Total Steel in One Anti-Seep Collar (Size #4) = 166'-8" = 111.33 lbs.
Total Reinforced Concrete in One Anti-Seep Collar = 1.64 cu. yds.

C1	Pipe Cantilever Support	4	4'-0"	16'-0"	4"	Str.										
C2		3	4'-0"	12'-0"	4"	Str.										
C3		3	4'-0"	12'-0"	4"	Str.										
C4		4	11'-8"	47'-0"	6"	Str.										
C5		16	3'-2"	50'-8"	6"	Str.	0-4	0-7	0-7	0-7	0-7	0-7	0-7	0-7	0-7	0-7
C6		4	5'-8"	23'-2"	4"	Str.	0-4	0-7	0-7	0-7	0-7	0-7	0-7	0-7	0-7	0-7
C7		2	6'-2"	12'-4"	4"	Str.	0-4	0-7	0-7	0-7	0-7	0-7	0-7	0-7	0-7	0-7

Total Steel in Pipe Cantilever Support (Size #3) = 50'-8" = 19.08 lbs.
Total Steel in Pipe Cantilever Support (Size #4) = 51'-0" = 34.07 lbs.
Total Steel in Pipe Cantilever Support (Size #5) = 40'-0" = 41.72 lbs.
Total Steel in Pipe Cantilever Support (Size #6) = 54'-6" = 81.86 lbs.
Total Steel in Pipe Cantilever Support (Size #7) = 12'-4" = 25.20 lbs.
Total Steel = 201.93 lbs.
Total Reinforced Concrete in Pipe Cantilever Support = 1.38 cu. yds.

C1	Pipe Cantilever	4	4'-0"	16'-0"	4"	Str.	1-6	3-10	1-6							
C2		4	4'-0"	16'-0"	5"	Str.										
C3		4	5'-0"	20'-0"	5"	Str.										
C4		4	4'-0"	16'-0"	7"	Str.										

Total Steel in Pipe Cantilever (Size #4) = 164'-0" = 123.25 lbs.
Total Steel in Pipe Cantilever (Size #5) = 120'-0" = 131.42 lbs.
Total Steel in Pipe Cantilever (Size #7) = 106'-0" = 216.66 lbs.
Total Steel = 471.33 lbs.
Total Reinforced Concrete in Pipe Cantilever = 5.14 cu. yds.

Total Non-Reinforced Concrete in Pipe Bedding = 18.70 cu. yds.
Total Non-Reinforced Concrete in Inner Vokes of Anti-Seep Collars = 0.76 cu. yds.
Total Non-Reinforced Concrete = 19.48 cu. yds.

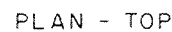
Note All concrete shall equal
or exceed Class 4000

Note
Pipe supplied will be manufactured in accordance with
AWWA Standard C-301 and be prestressed concrete
lined steel cylinder pipe, having a D-load capacity of
not less than 3000 pounds at the 0.001 inch
crack and an internal pressure head capacity equal
to or greater than 50 feet.

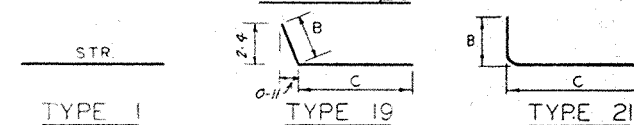
NO CHANGE IN PLANS

AS-BUILT PLANS
CONSTRUCTION
COMPLETED 9-23-75

PIPE DETAILS FLOODWATER RETARDING STRUCTURE SITE No. 16 PLUM CREEK WATERSHED IN HAYS COUNTY, TEXAS	
U. S. DEPARTMENT OF AGRICULTURE SOIL CONSERVATION SERVICE	
Designed: D.E.G.	Date: 12-72
Drawn: D.E.G.	Date: 12-72
Traced: L.S.	Date: 12-72
Checked: M.K.	Date: 1-73
Approved by: [Signature]	Date: 12-72
STATE CONSERVATION ENGINEER: S.C.E.	
Drawing No. 4-E-32,489	



BAR TYPES



1. Bar dimensions are out to out of bar.
2. Radius of bends equals 3 bar diameters for sizes equal to or less than #7.
3. The 2" and 3" dimensions from face of concrete to steel are clear distances.

0 2 4
Scale in Feet

Steel:

# 5 Bars	1861-5	Lin. Ft.	1942	Lbs.
# 6 Bars	250-6	Lin. Ft.	377	Lbs.
# 7 Bars	306-0	Lin. Ft.	626	Lbs.
	Total		2945	Lbs.

- Length of #5 Bars = (1275-11) + (Length of Bars R1, R3, R4, R5, R9, and R10)
- Length of #6 Bars = (184-6) + (Length of Bars R2).

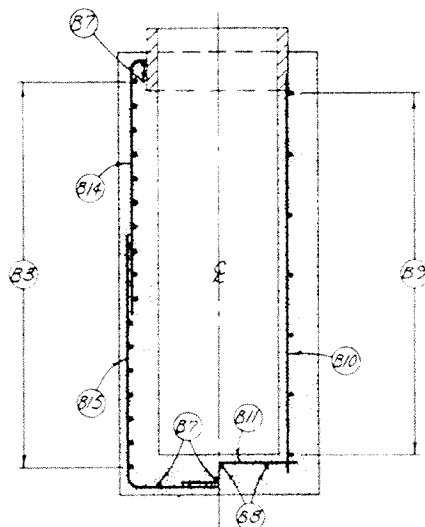
Total Concrete = (11.85) + (0.72V) = 14.01 Cu. Yds.

1. For Spigot Wall Fitting, See Detail Sheet 6.
2. For Trash Rack, Sleeves and Bolts, See Detail Sheet 11.
3. For Construction Joints, See Detail Sheet 11.

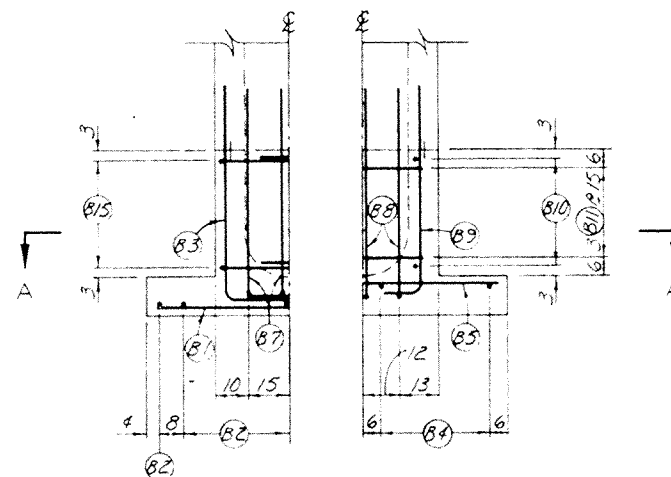
NO CHANGE IN PLANS

AS-BUILT PLANS
CONSTRUCTION
COMPLETED 9-23-75

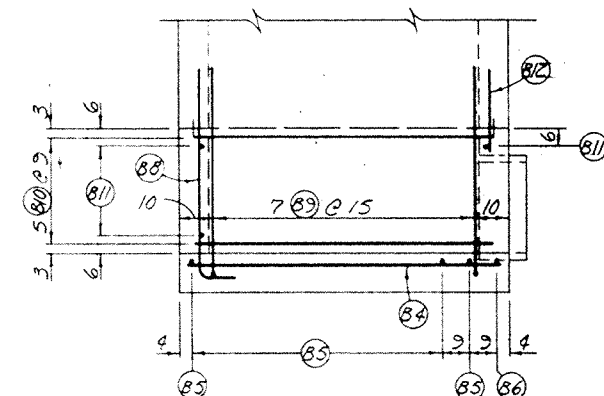
00475-10000 PRINCIPAL SPILLWAY INLET FLOODWATER RETARDING STRUCTURE SITE No. 16 PLUM CREEK WATERSHED IN HAYS COUNTY, TEXAS	
U. S. DEPARTMENT OF AGRICULTURE SOIL CONSERVATION SERVICE	
Designed <i>D.E.G.</i> Drawn <i>D.E.G.</i> Traced <i>L.S.</i> Checked <i>M.K.</i>	Date <i>12-72</i> Approved by <i>gcv</i> STATE ESTIMATION ENGINEER TEMPE, TEXAS Sheet No. <i>7</i> of <i>15</i> Drawing No. <i>4-E-32,489</i>



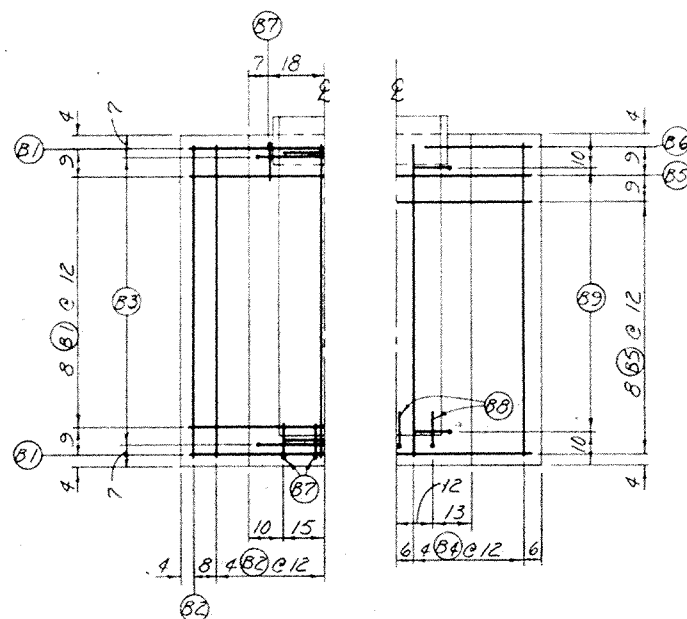
Outside Steel Inside Steel
SECTION A-A
0 1 2 3
Scale in Feet



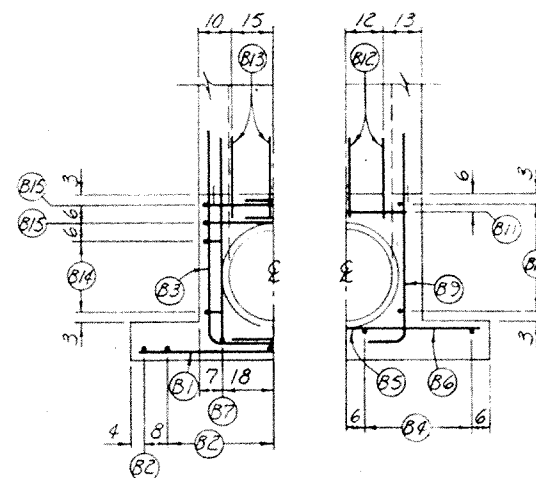
Steel 2" From Outside Face Steel 2" From Inside Face
UPSTREAM ELEVATION



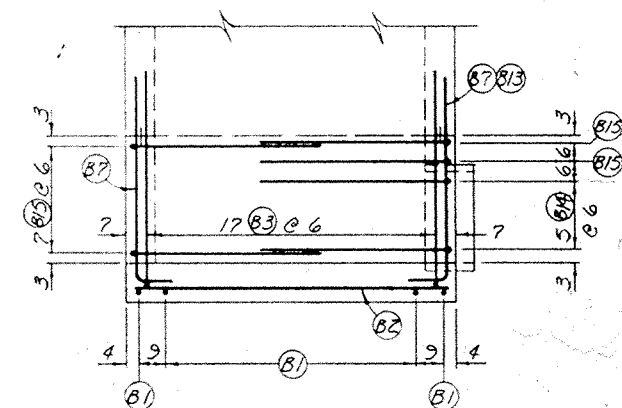
Steel 2" From Inside Face
and 2" From Top of Footing
SIDEWALL ELEVATION



Steel 3" From Bottom of Footing Steel 2" From Top of Footing
PLAN-FOOTING



Steel 2" From Outside Face Steel 2" From Inside Face
DOWNSTREAM ELEVATION



Steel 2" From Outside Face
and 3" From Bottom of Footing
SIDEWALL ELEVATION

0 2 4
Scale in Feet
Unless Otherwise Shown

STEEL PLACEMENT-PRINCIPAL SPILLWAY INLET
FLOODWATER RETARDING STRUCTURE SITE NO.16
PLUM CREEK WATERSHED
IN
HAYS COUNTY, TEXAS

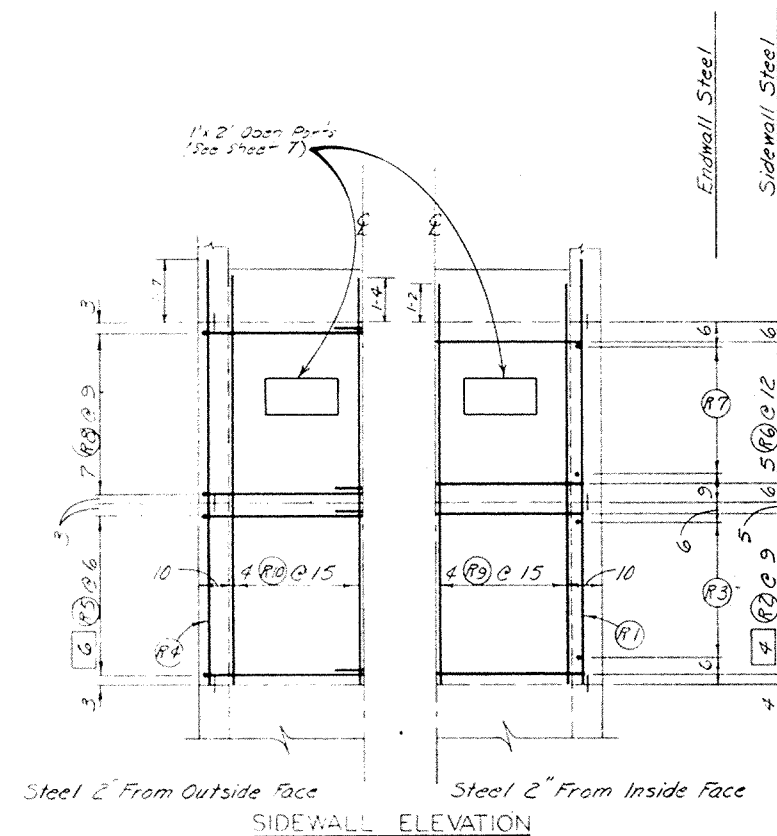
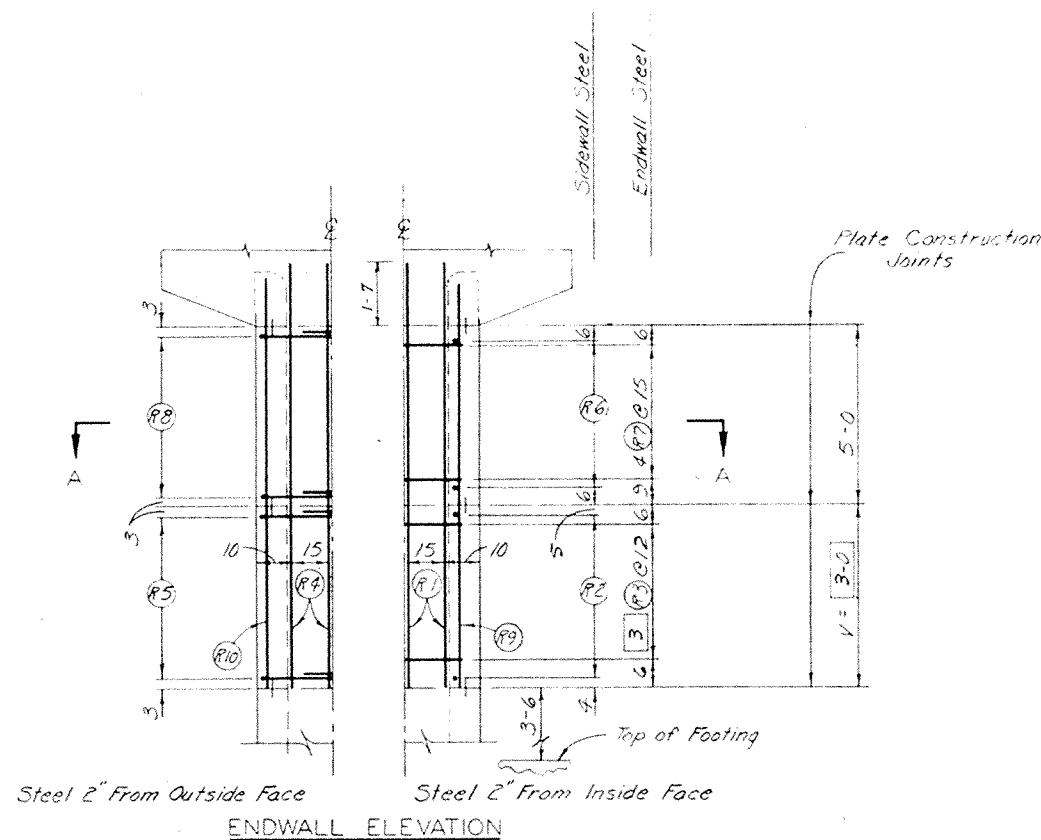
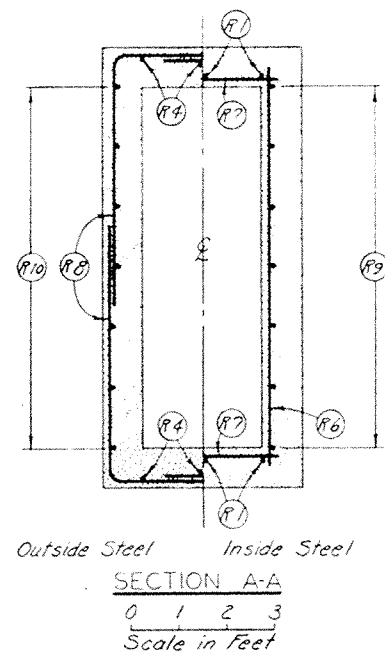
U. S. DEPARTMENT OF AGRICULTURE
SOIL CONSERVATION SERVICE

Designed D.E.G. 12-72 Date 12-72
Drawn D.E.G. 12-72 Approved by J.C.T.
Traced L.S. 12-72
Checked M.K. 1-73
AS-BUILT PLANS
CONSTRUCTION
COMPLETED 8-22-75
STATE CONSERVATION ENGINEER S.C.S.
TEMPLE, TEXAS
Drawing No. 8
4-E-32,489
of 15

NO CHANGE IN PLANS

AS-BUILT PLANS
CONSTRUCTION
COMPLETED 8-22-75

STANDARD OPEN RISER	
STANDARD DWG. NO. ES-3130-1515 R	
DATE 4-67	SHEET 2 OF 4
ADAPTED FROM	
STANDARD COVERED RISER	
DESIGN CONSTANTS	
$f'_c = 4000 \text{ psi}$ $f_c = 1600 \text{ psi}$ $n = 8$ $f_s = 20,000 \text{ psi}$	
STANDARD DWG. NO. ES-3030-2015 R	
DATE 3-65	SHEET 2 OF 4



Cut or deflect bars to clear open ports.

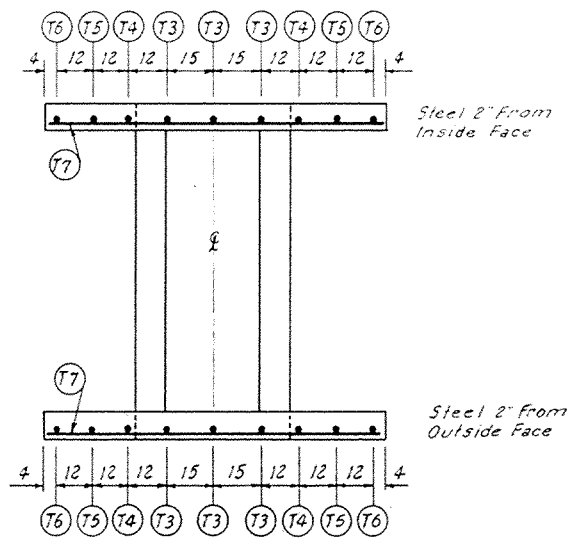
0 2 4
Scale in Feet
Unless Otherwise Shown

NO CHANGE IN PLANS

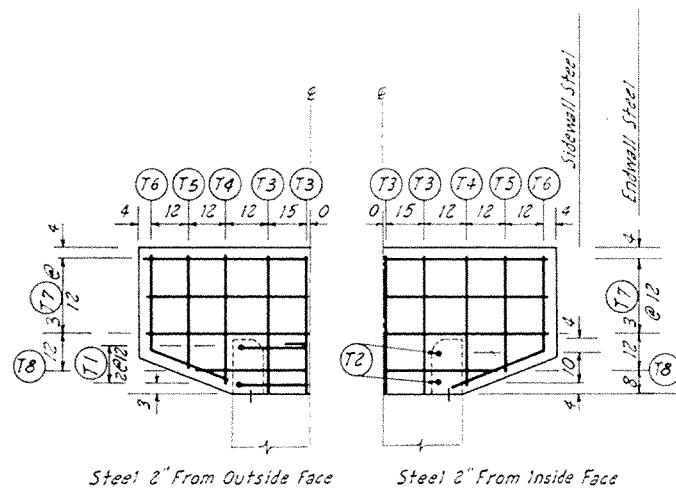
AS-BUILT PLANS
CONSTRUCTION
COMPLETED 9-23-75

STEEL PLACEMENT - PRINCIPAL SPILLWAY INLET FLOODWATER RETARDING STRUCTURE SITE No. 16 PLUM CREEK WATERSHED IN HAYS COUNTY, TEXAS			
U. S. DEPARTMENT OF AGRICULTURE SOIL CONSERVATION SERVICE			
Designed <i>O.E.G.</i> Date 12-72 Drawn <i>O.E.G.</i> Date 12-72 Traced <i>L.S.</i> Date 12-72 Checked <i>M.K.</i> Date 1-73	Approved by <i>[Signature]</i> Date 12-72 STATE CONSERVATION ENGINEER, S.E.S. TEMPLE, TEXAS Drawing No. 4-E-32,489 Sheet 9 of 15	Form SCS-313 (APRIL 1964)	

STANDARD OPEN RISER	
STANDARD DWG. NO. ES-3130-1515 R	
DATE 4-67	SHEET 3 OF 4
ADAPTED FROM	
STANDARD COVERED RISER	
DESIGN CONSTANTS	
$f'_c = 4000 \text{ psi}$	$f_c = 1600 \text{ psi}$
$n = 8$	$f_s = 20,000 \text{ psi}$
STANDARD DWG. NO. ES-3030-2015 R	
DATE 3-65	SHEET 3 OF 4

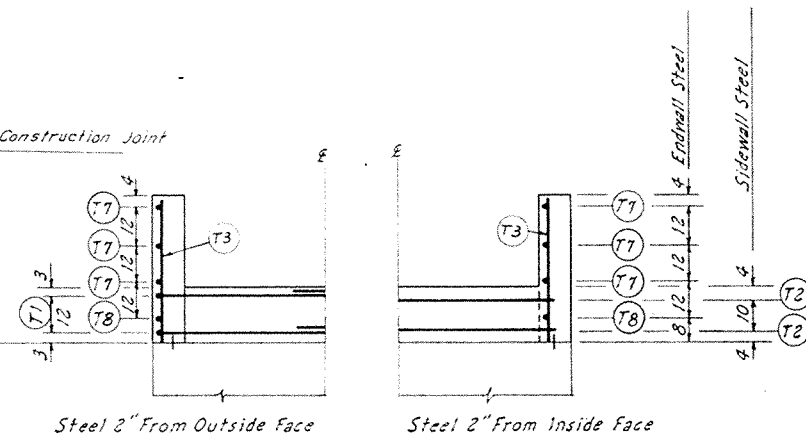


PLAN-TOP

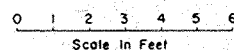


ENDWALL ELEVATION

Plate Construction Joint



SIDEWALL ELEVATION



STANDARD OPEN RISER

DESIGN CONSTANTS
 $f'_c = 4000 \text{ psi}$ $f'_c = 1600 \text{ psi}$
 $n = 8$ $f_s = 20,000 \text{ psi}$

STANDARD DWG. NO.
 ES-3130-1515 R

DATE 4-67 SHEET 4 OF 4

NO CHANGE IN PLANS

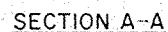
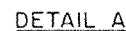
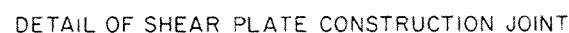
AS-BUILT PLANS
 CONSTRUCTION
 COMPLETED 9-23-75

STEEL PLACEMENT - PRINCIPAL SPILLWAY INLET
 FLOODWATER RETARDING STRUCTURE SITE No. 16
 PLUM CREEK WATERSHED
 IN
 HAYS COUNTY, TEXAS

U. S. DEPARTMENT OF AGRICULTURE
 SOIL CONSERVATION SERVICE

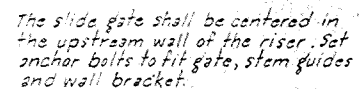
Designed	D.E.G.	Date	12-72	Approved by	
Drawn	D.E.G.	Date	12-72	Checked	
Traced	L.S.	Date	12-72	Sheet	No. 10 of 15
Checked	M.K.	Date	1-73	Drawing No.	4-E-32,489

1/4" min. x 6" Steel Plate to be continuous throughout construction joint. Where a splice is necessary, the ends shall be butt welded, lapped 3" and fillet welded or lapped 3" and bolted.



All parts of the trash guard shall be galvanized. See Construction Specification 81 and Material Specification 5B2.

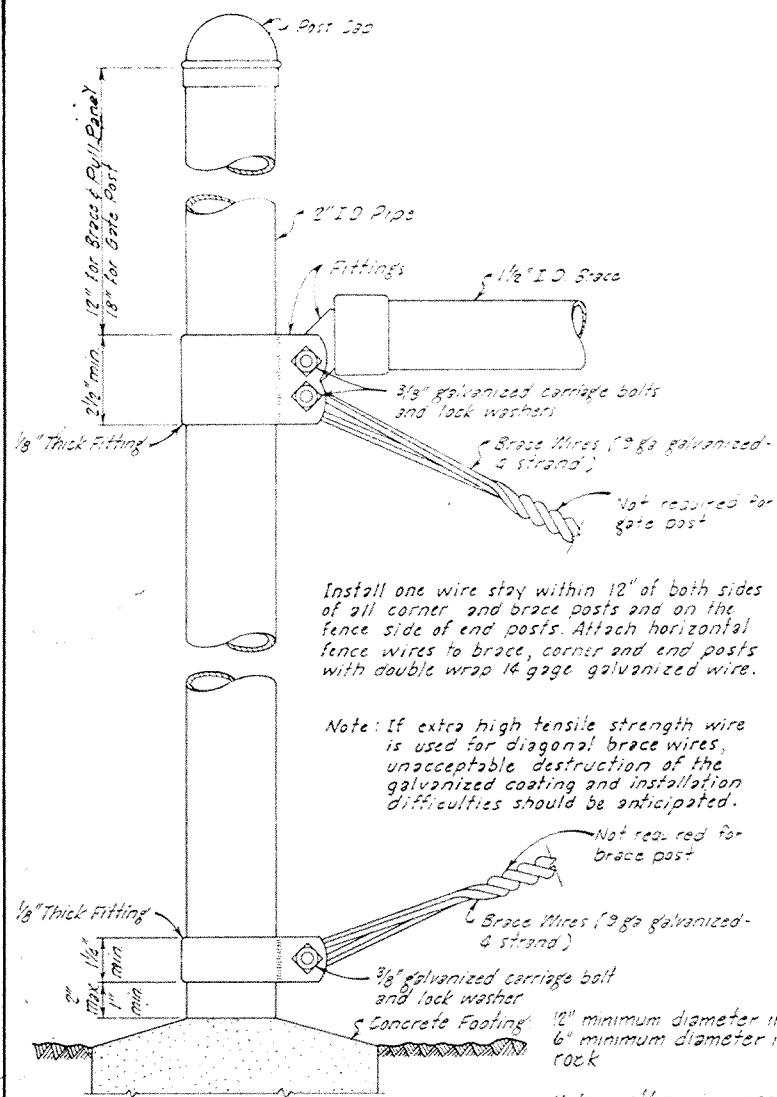
TRASH GUARD



SLIDE GATE

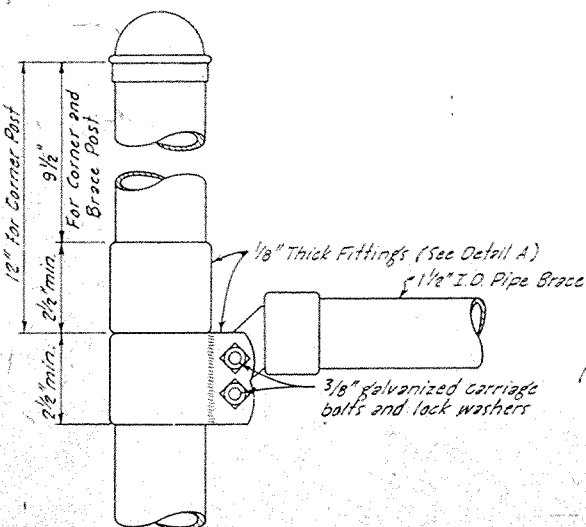
<p>TRASH GUARD AND SLIDE GATE DETAILS FLOODWATER RETARDING STRUCTURE SITE No. 16 PLUM CREEK WATERSHED IN HAYS COUNTY, TEXAS</p>	
<p>U. S. DEPARTMENT OF AGRICULTURE SOIL CONSERVATION SERVICE</p>	
Designed <i>D.E.G.</i>	Date <i>12-72</i>
Drawn <i>D.E.G.</i>	Approved by <i>W.C. [Signature]</i> WATER CONSERVATION DISTRICT, DISTRICT FORT WORTH, TEXAS
Traced <i>L.S.</i>	<i>12-72</i> STATE CONSERVATION DISTRICT, DISTRICT TEMPLE, TEXAS
Checked <i>M.R.</i>	Sheet <i>1-78</i> Drawing No. <i>4-E-32,489</i>

Revised 1-7-72 Checked M.K. 1-73 No 11 4-E-32, 48
 (Revised) Trash Guard for 30" Open Top Full Flow Recirculating Filter (SMA-400)



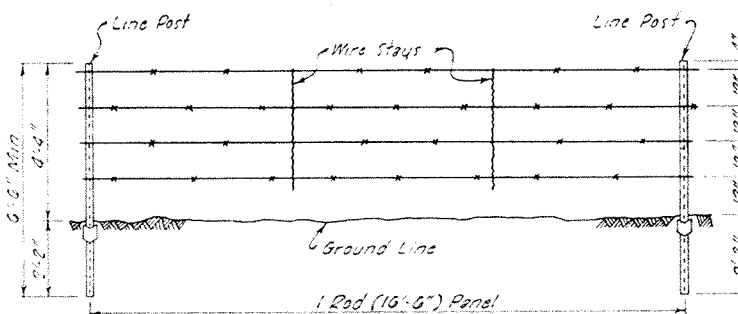
POST DETAIL

For Pull Panel, Brace, and Gate Post



POST DETAIL

(For Corner Post)

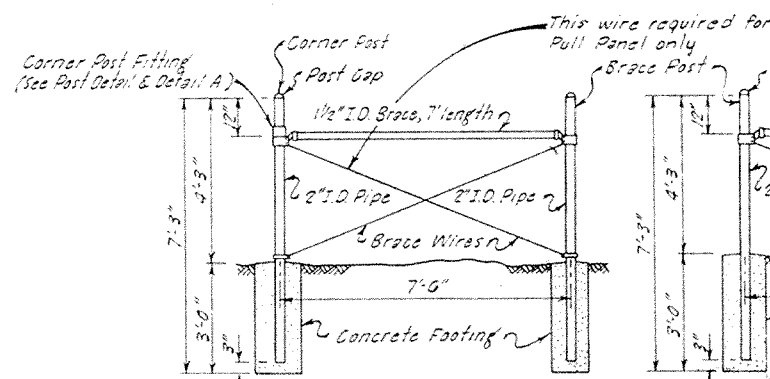


BARBED WIRE

Barbed wire to be 12 1/2 ga galv. double strand barbed wire with 14 ga 2-point barbs at 4" o.c. See Construction Spec. 92 for Fasteners required.

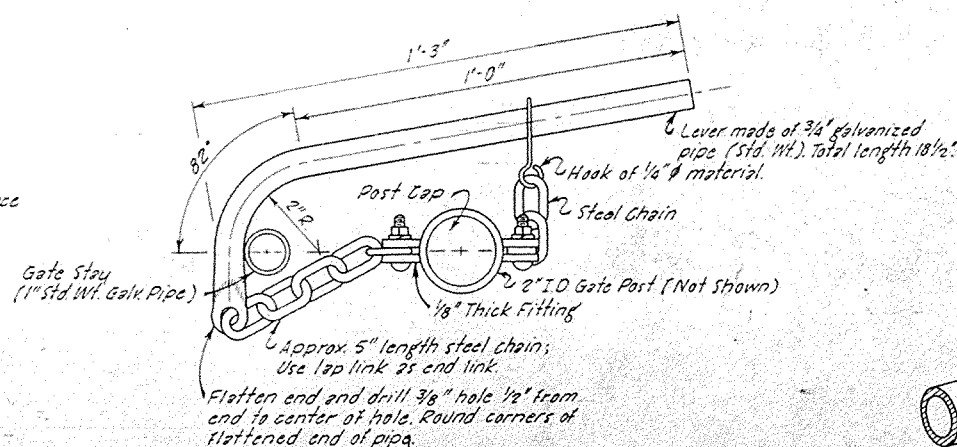
Barbed wire and woven wire shall conform to Federal Spec. RR-F-221 and shall have Class 1 or 2 zinc coating.

Wire stays to be 10 ga (min. size), galv. two strand spiral, twist-on type, spaced equally, two stays per line post panel. Stays to be twisted firmly against top strand. The minimum length for barbed wire fences shall be 40', and for woven wire fences shall be 20'.



CORNER OR PULL PANEL

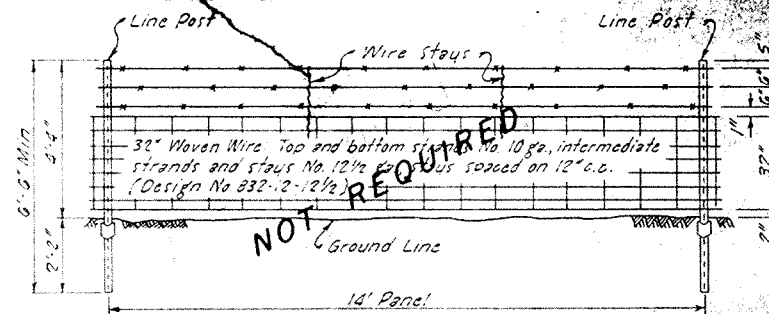
At changes in vertical alignment, such as crossing of stub diversions, line posts or pull panel posts, that restrain upward pull of the fence strands, shall be anchored by setting such post in 18" of concrete. The engineer will designate the locations where this anchorage treatment is required. In addition, anchorage of fence wires to posts where there is a change in vertical alignment that produces upward or downward pull, shall be accomplished with double tie wires to each successive fence wire. The engineer will designate the posts where this special fastening of the fence wires is required.



Note: Chain used shall be straight link, material size from 1/8" to 7/32", links per foot from 10 to 16, wt. per foot from 0.1 to 0.5 lbs. Weldless wire-twist chain will not be permitted.

All metal parts of the wire gap fastener shall be galv. by the hot dip process. Regalvanizing not required.

WIRE GAP FASTENER DETAIL



WOVEN WIRE

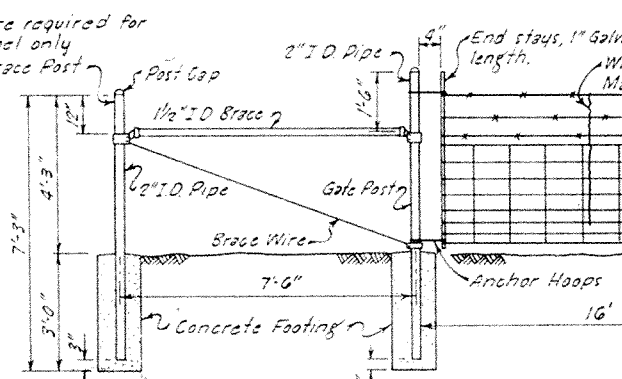
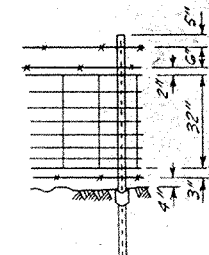
Steel line post will meet Federal Specification RR-F-221, for Style 12, 7-section, painted.

End, pull, brace, and gate post shall be 2" ID standard weight galvanized pipe. (ASTM-A-120)

Pipe braces shall be 1 1/2" ID standard weight galvanized pipe. (ASTM-A-120)

Post caps, braces, and post fittings shall meet the requirements of Federal Specification RR-F-183

When woven wire fence is constructed along upstream wave berm, wire spacing shall be as shown at right; pull panel shall be required at terminal end of berm.

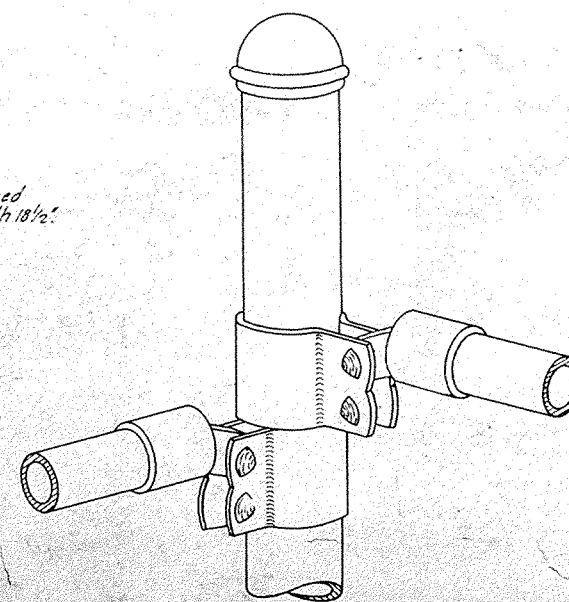


WIRE GAP PANEL

Wire forming gap(s) to be of the same type and spacing as the regular fence. Wire to be double wrapped around end stays and secured in place by drilling 1/4" holes at bottom and top strands of woven wire and at each strand of barbed wire, tying these strands with 16 gauge galvanized wire through the holes. Anchor hoops to be two strands of 9 gauge wire tied to gate post with 9 gauge wire. 2 Gap(s) required.

POST LENGTHS	
Line Posts	6'-6"
Corner and Brace Posts	7'-0"
Gate Posts	7'-6"

Shorter line posts may be used in rock if approved by the Engineer.



DETAIL A

NO CHANGE IN PLANS

AS-BUILT PLANS
CONSTRUCTION
COMPLETED 7-23-75

FENCE DETAILS
FLOODWATER RETARDING STRUCTURE SITE NO. 16
PLUM CREEK WATERSHED
IN
HAYS COUNTY, TEXAS

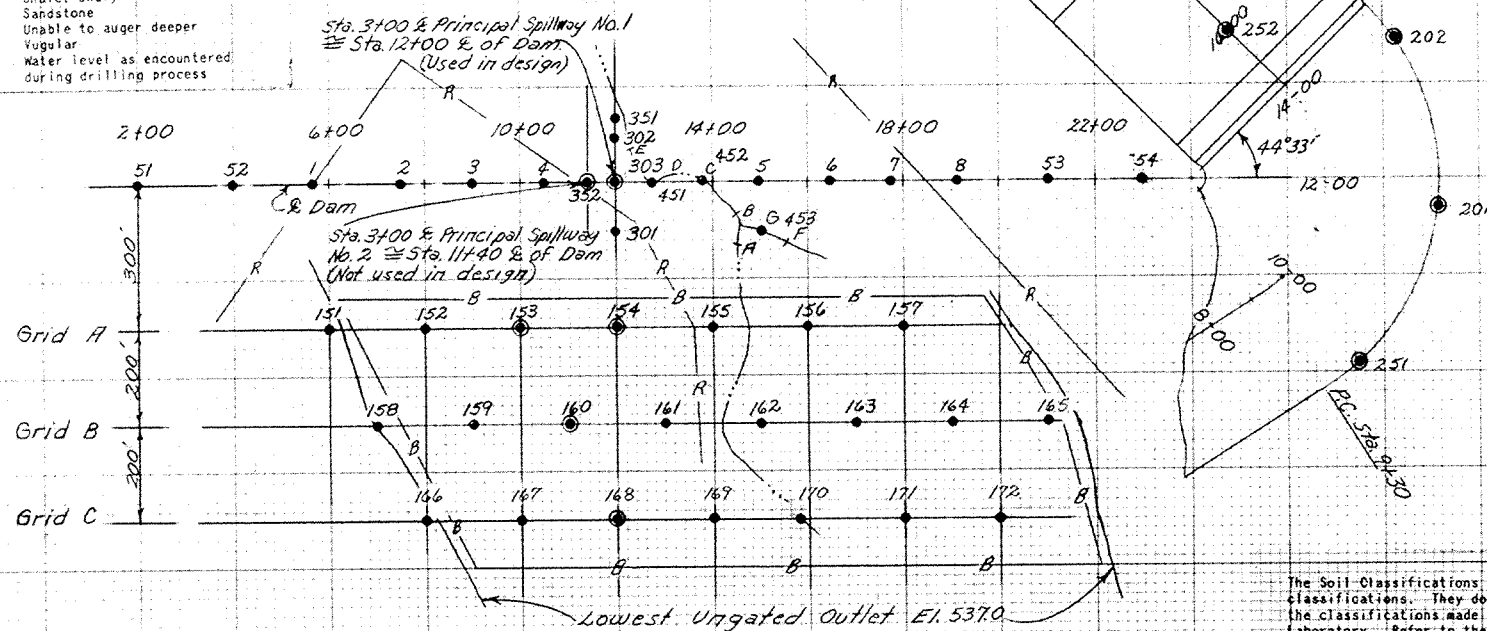
U.S. DEPARTMENT OF AGRICULTURE
SOIL CONSERVATION SERVICE

Designed - D.E.G.	12-72	Approved by - [Signature]
Drawn - D.E.G.	12-72	STATE CONSERVATION ENGINEER, [Signature]
Traced - L.S.	12-72	TEMPLE, TEXAS
Checked - M.K.	1-73	Sheet No. 4-E-32,488

TEST HOLE NUMBERING SYSTEM					
	Combina- tion Rig	Power Auger	Hand Borings	Trench or Pit Excava- tion	Natural Outcrops, Streambanks, and Outcrops
Centerline of Dam	1-49	51-99	100-199	200-299	300-399
Borrow Area	101-149	151-199	1101-1199	1201-1299	1301-1399
Emergency Spillway	201-249	251-299	1201-1299	2201-2299	2301-2399
Principal Spillway	301-349	351-399	1301-1399	2301-2399	3301-3399
Stream Channels	401-449	451-499	1401-1499	2401-2499	3401-3499
Relief Well					
Exploratory Borings	501-549	551-599	1501-1599		
Foundation Drain					
Borings	601-649	651-699	1601-1699	2601-2699	3601-3699
Sediment Pool Drain					
Pipe Borings	701-749	751-799	1701-1799	2701-2799	3701-3799
Miscellaneous	801-849	851-899	1801-1899	2801-2899	3801-3899

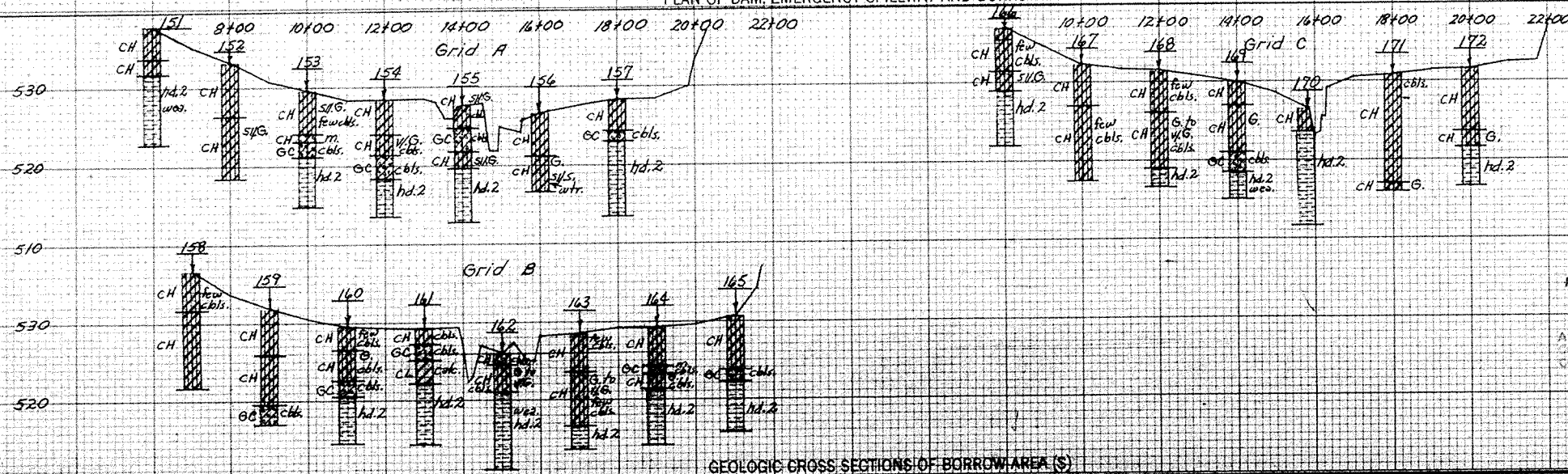
ABBREVIATIONS

B.	Bedded or Bedding	Ms.	Siltstone
Ch.	Chalk, Chalky	Pt.	Peat
Cng.	Conglomerate	Rx.	Rock excavation
Cs.	Claystone	Sat.	Saturated
Dis.	Dispersed	Sh.	Shale, shaly
Flg.	Flagstone, Flaggy	Ss.	Sandstone
Int.	Interbedded	UAD.	Unable to auger deeper
Ls.	Limestone	Vug.	Vugular
M.	Marl, Marly	Wtr.	Water level as encountered during drilling process
Mnt.	Montmorillonitic		



Note: Additional soil and foundation investigation data together with laboratory test data are available in SCS field construction office for review by prospective bidders.

PLAN OF DAM, EMERGENCY SPILLWAY AND BORROW AREA (S)



GEOLOGIC CROSS SECTIONS OF BORROW AREA (S)

LEGEND

SYMBOLS

UNCONSOLIDATED MATERIAL

gravel	sand	silt	clay	cobbles, boulders
gravel, sandy	sand, gravelly	silt, gravelly	clay, gravelly	peat or muck
gravel, silty	sand, silty	silt, sandy	clay, sandy	
gravel, clayey	sand, clayey	silt, clayey	clay, silty	

CONSOLIDATED MATERIAL

Conglomerate	shale	limestone	coal
Cng.	sh.	ls.	
breccia	siltstone	dolomite	gypsum
brc.	Ms.	dol.	gyp.
sandstone	marl	chalk	chert
ss.		Ch.	cht.
Metamorphic Rocks			
gneiss	schist	intrusive	extrusive
quartzite	slate	pyroclastic	
marble	soapstone	Undifferentiated	
	talc		
	serpentine		

Other Symbols

●	hole logged only	—	strike and dip
○	hole sampled	○	pit or trench

ABBREVIATIONS

ang.	angular	lam.	laminated	G	gravel, gravelly
bid.	boulders (> 12")	lse.	loose	S	sand, sandy
calc.	calcareous	mas.	massive	M	silt, silty
cali.	caliche	med.	medium	C	clay, clayey
cav.	cavities	mic.	micaceous	O	organic
cmt.	cemented	mod.	moderately	W	well graded
cse.	coarse	n. r.	no recovery	P	poorly graded
cbl.	cobbles (3"-12")	per.	permeable		
cpt.	compact	po.	poorly		
con.	concretions	rd.	rounded		
xln.	crystalline	sft.	soft		
ds.	dense	sft.	stiff		
dip.	dipping	slo.	some		
d.s.	downstream	stf.	stiff		
fr.	fine	t.b.	thin-bedded		
frm.	firm	tuff.	tuffaceous		
frac.	fractured	u.s.	upstream		
frg.	fragments	var.	variable		
frn.	friable	v.	very		
grn.	grain	w.	with		
gyp.	gypseous	wea.	weathered		
hd.	hard	w.l.	(date) static water level		
h.	highly				

TEST HOLE NUMBERING SYSTEM

Centerline of dam	1-99	Stream channel	401-499
Borrow area	101-199	Relief wells	501-599
Emergency spillway	201-299		601-699
Centerline of outlet structure	301-399		701-799

UNIFIED SOIL CLASSIFICATION SYSTEM SYMBOLS

GW	Well graded gravels; gravel-sand mixtures
GP	Poorly graded gravels
GM	Silty gravels; gravel-sand-silt mixtures
GC	Clayey gravels; gravel-sand-clay mixtures
SW	Well graded sands; sand-gravel mixtures
SP	Poorly graded sands
SM	Silty sand
SC	Clayey sands; sand-clay mixtures
ML	Silts with liquid limit of 50 or less
MH	Silts with liquid limit above 50
CL	Clays with liquid limit of 50 or less
CH	Clays with liquid limit above 50
OL	Organic silts and clays with liquid limit of 50 or less
OH	Organic silts and clays with liquid limit above 50

Revised February 1963

PLAN AND PROFILES FOR GEOLOGIC INVESTIGATIONS FLOODWATER RETARDING STRUCTURE SITE NO. 16 PLUM CREEK WATERSHED

IN
HAYS, CALDWELL AND TRAVIS COUNTIES, TEXAS

U. S. DEPARTMENT OF AGRICULTURE SOIL CONSERVATION SERVICE

Investigated by <i>Robinson</i>	Date <i>7-72</i>	Approved by	
Checked by		Title	
Plotted by <i>K.C.P.</i>	Sheet <i>10-72</i>	Drawing No.	
Checked by <i>E.K.</i>	Sheet <i>10-72</i>	Drawing No.	<i>4-E-32,489</i>

