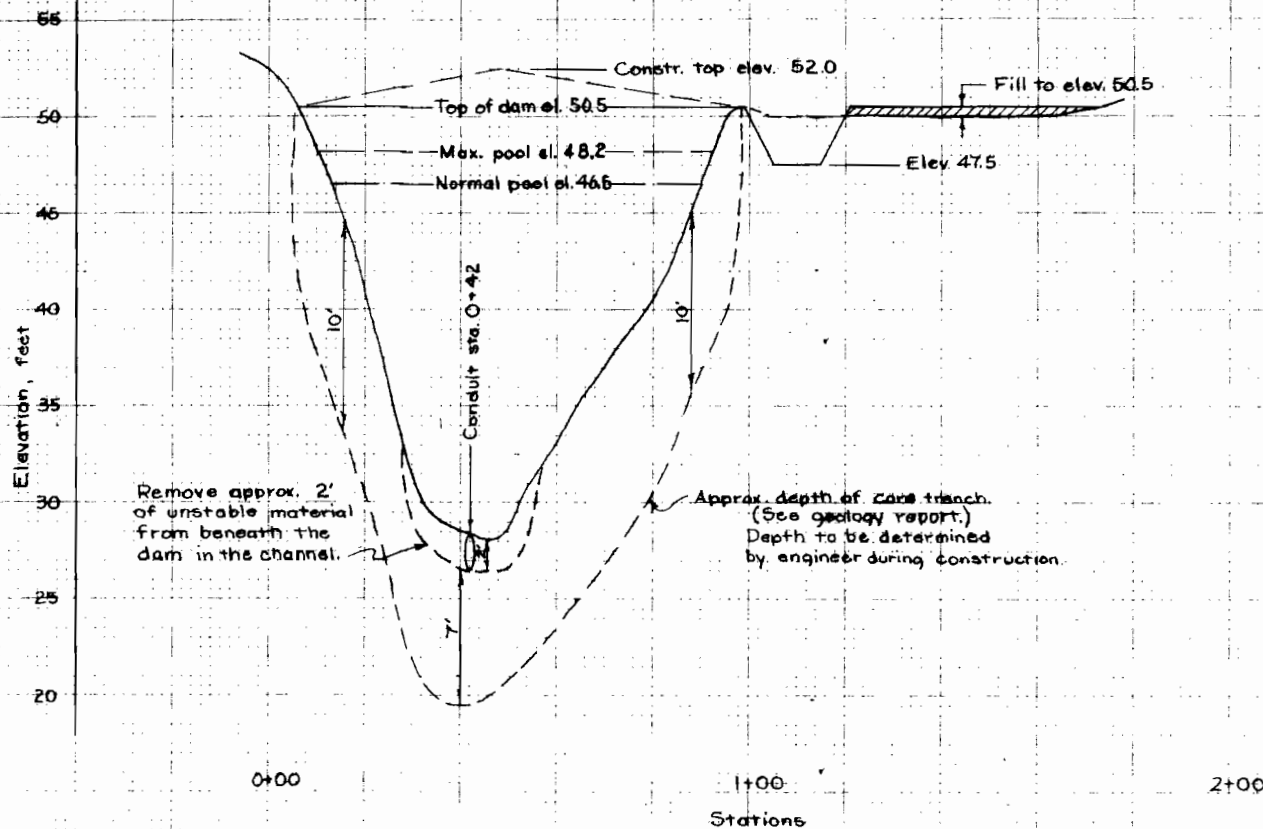
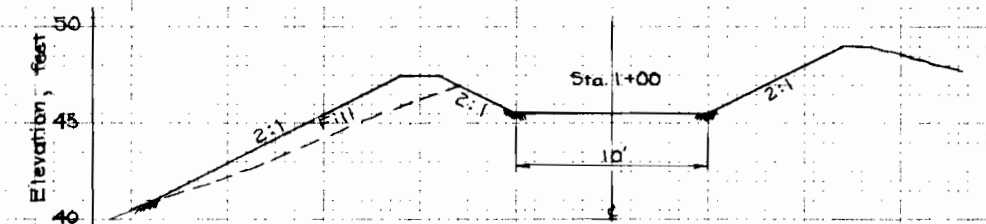
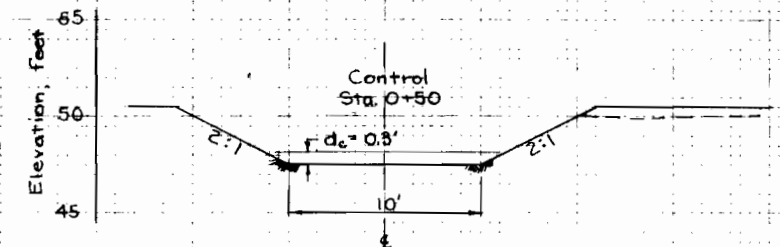
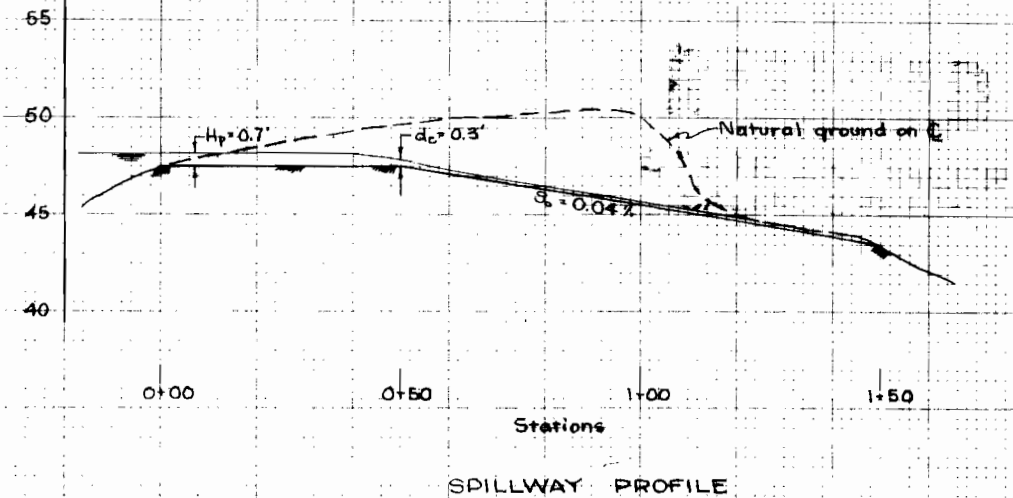


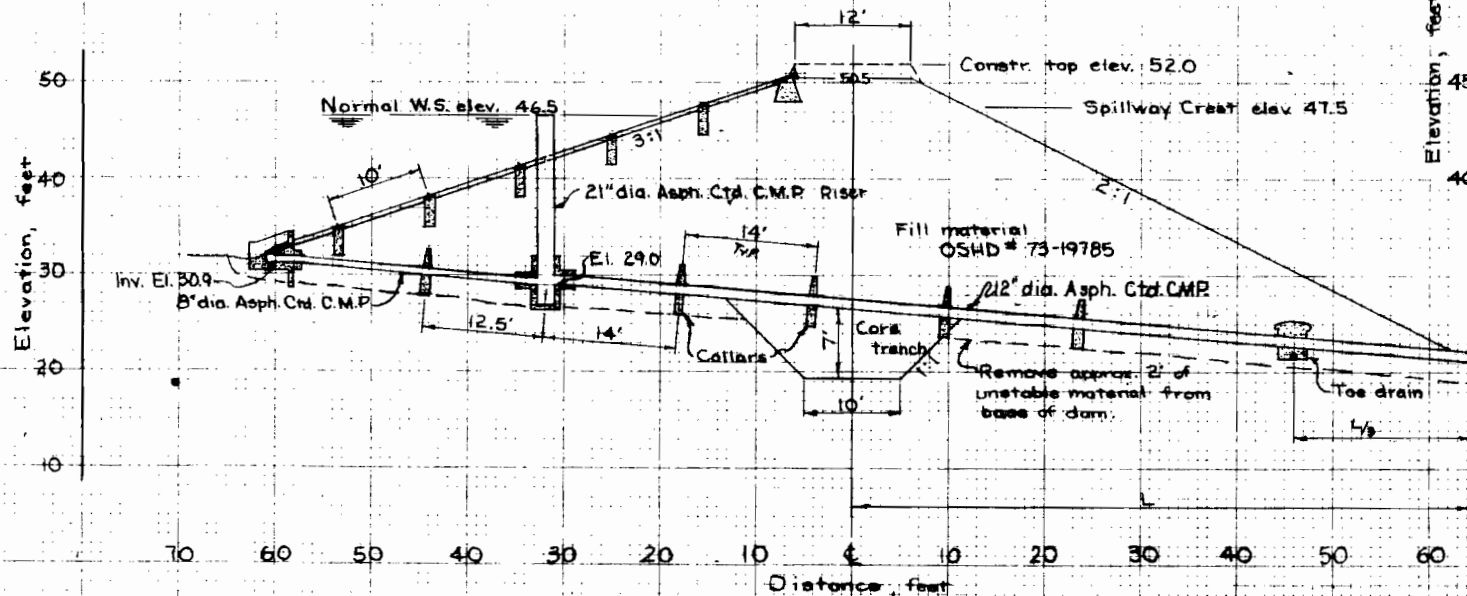


PROFILE ON ϵ OF DAM
(looking downstream)

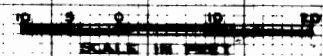
SPILLWAY CHARACTERISTICS	
Q_{50}	= 17.6 cfs
Q_{100}	= 8.6 cfs
Q_{500}	= 10.0 cfs
b	= 10 ft
d_c	= 0.3 ft
H_p	= 0.7 ft
V_c	= 3.2 fps
S_o	= 4.4 fps
S_b	= 0.036 ft./ft.
S_e	= 0.04 ft./ft.
L	= 50 ft.
n	= 0.040
Z	= 2



Application No. R-52058
Permit No. R6068
37349



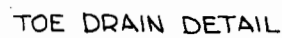
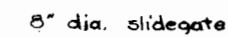
CROSS SECTION THRU FILL



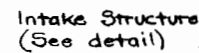
DO NOT SEND OUT

SPILLWAY SECTIONS
SCALE IN FEET

SECTIONS	
FRED HELLER DAM	
COLUMBIA SWCD	OREGON
U. S. DEPARTMENT OF AGRICULTURE SOIL CONSERVATION SERVICE	
WYE & NDW	Approved by: <i>[Signature]</i>



FILTER GRADATION	
SIEVE SIZE	% PASSING
3"	100
# 4	65-100
# 10	44-100
# 40	18-100
# 100	0-80
# 200	0-5



CONDUIT-RISER DETAILS
Not to scale

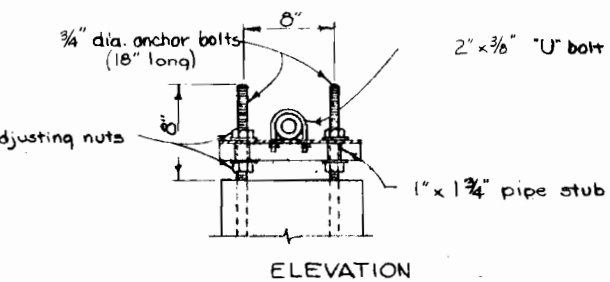
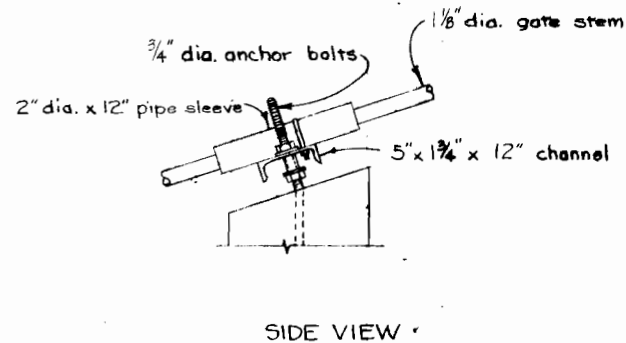
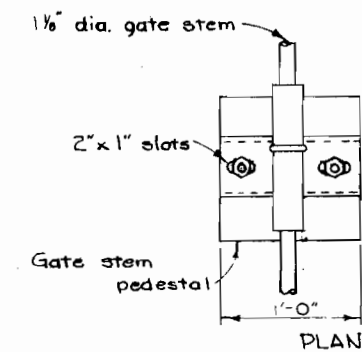
June 24, 1974

Chas. L. Welch

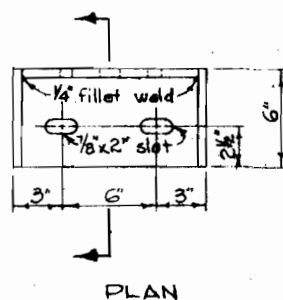
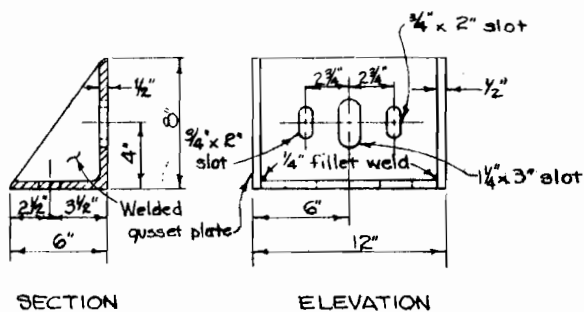
Application No. ⁵²⁰⁵⁹ R-52058
Permit No. R6008

37349

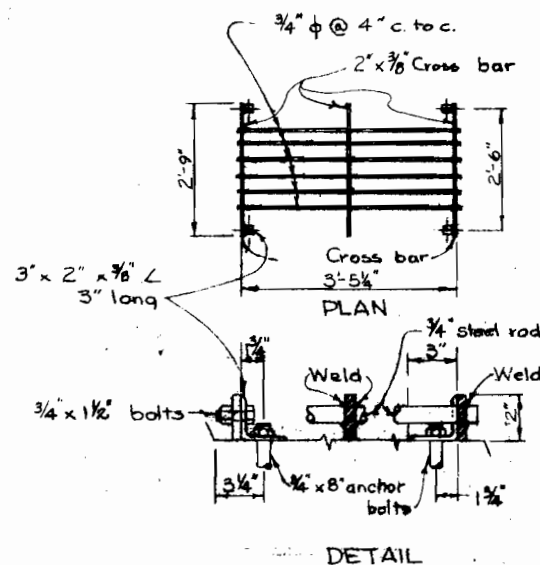
DETAILS	
FRED HELLER DAM	
COLUMBIA SWCD	OREGON
U. S. DEPARTMENT OF AGRICULTURE SOIL CONSERVATION SERVICE	
Designed <u>WYE & NW</u>	Date <u>1-74</u>
Drawn <u>NDW</u>	Approved by <u>John W. D. [Signature]</u> Title <u>AREA ENGINEER</u>
	<u>W. F. [Signature]</u>



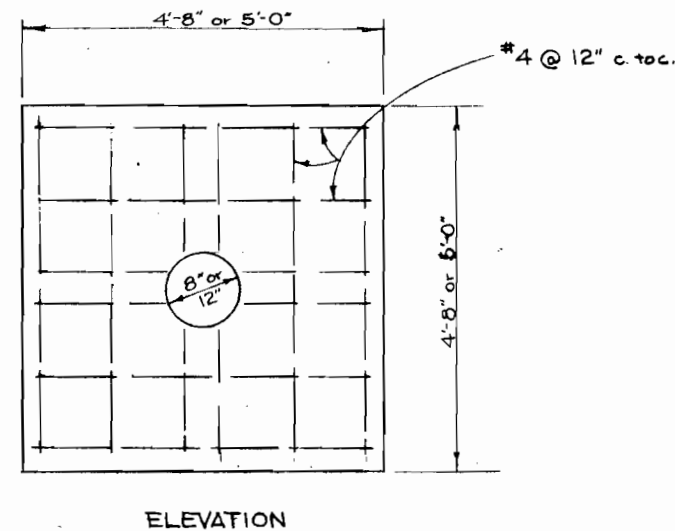
GATE STEM GUIDE
Not to scale



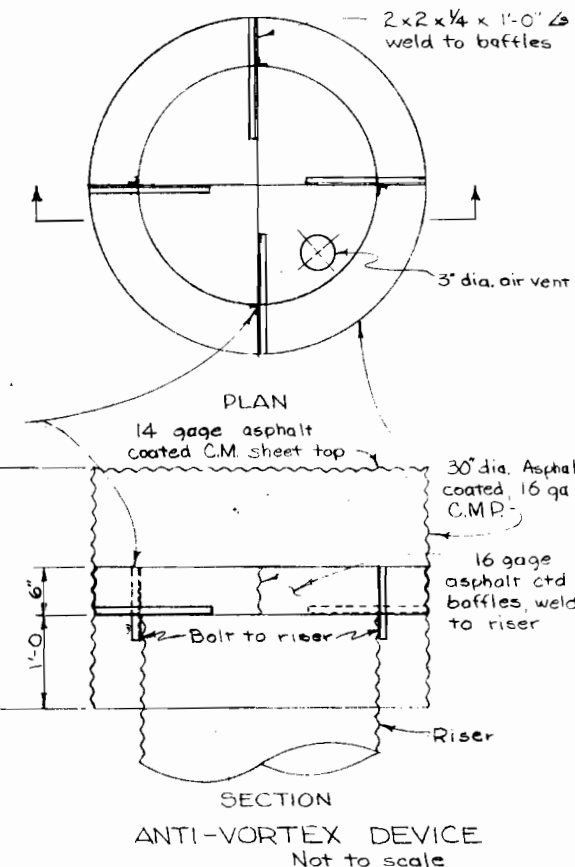
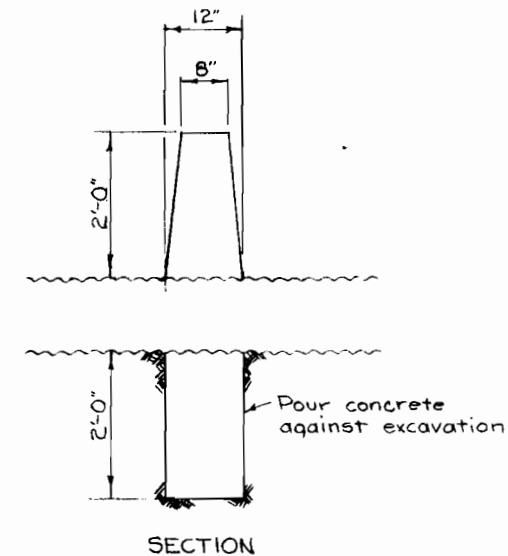
HANDWHEEL BRACKET



TRASH RACK
Not to scale



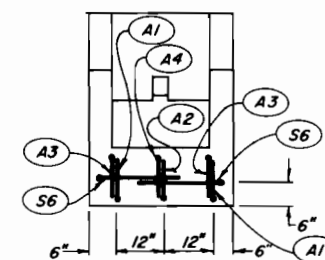
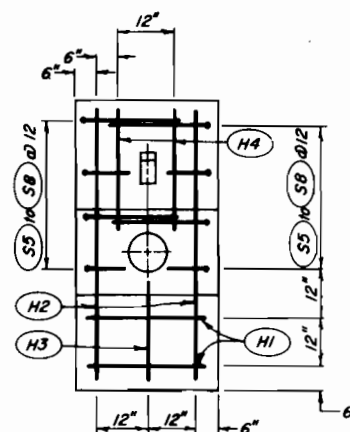
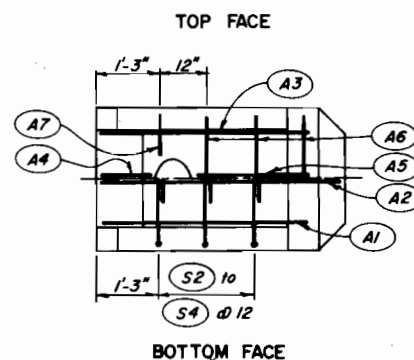
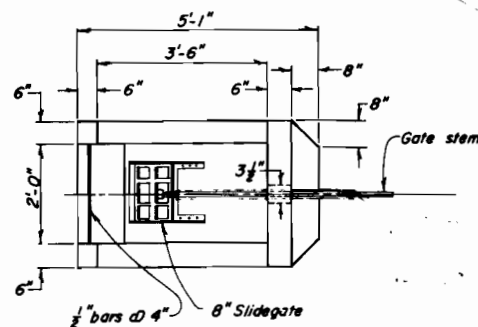
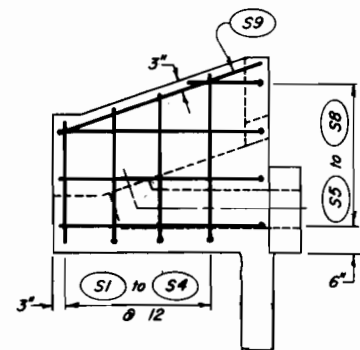
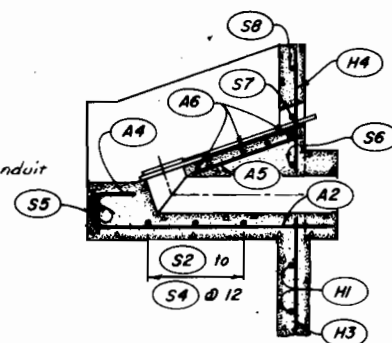
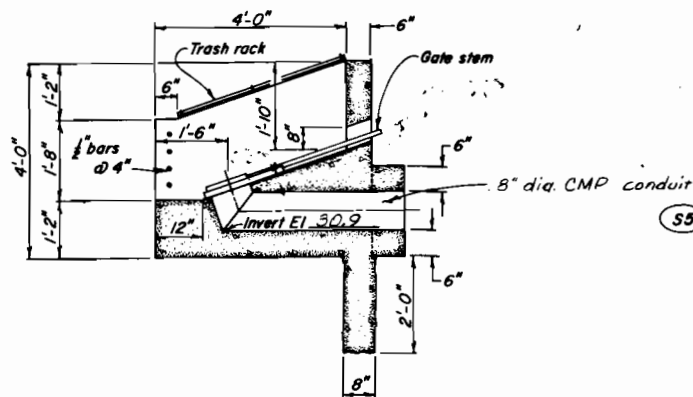
ANTI-SEEP COLLARS
Not to scale



Handwritten signatures and stamps:
Date: 11/21/74
Chris X. Miller
DESIGNED BY
CHECKED BY
DATE 11/21/74

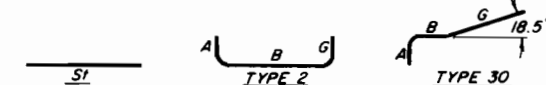
Application No. R-52058

DETAILS	
FRED HELLER DAM	
COLUMBIA SWCD OREGON	
U. S. DEPARTMENT OF AGRICULTURE SOIL CONSERVATION SERVICE	
Designed: WYE & NDW	Date: 1-74
Approved by: [Signature]	AREA ENGINEER



STEEL SCHEDULE

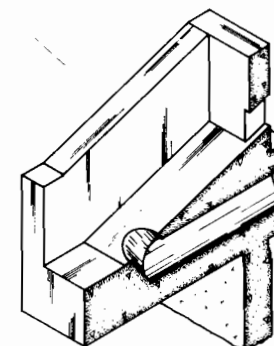
Location	Mark	Size	Quan.	Length	Type	A	B	G	Total Length
Apron	A1	4	2	5'-3"	2	9"	4'-6"		10'-6"
	A2	4	1	5'-6"	2	9"	4'-9"		5'-6"
	A3	4	2	5'-0"	30	10"	9"	3'-5"	10'-0"
	A4	4	1	1'-6"	2	9"	9"		1'-6"
	A5	4	1	2'-3"	SI				2'-3"
	A6	4	3	2'-6"	SI				7'-6"
	A7	4	2	9"	SI				1'-6"
Sidewall	S1	4	2	2'-6"	SI				5'-0"
	S2	4	2	4'-6"	2	1'-10"	2'-8"		9'-6"
	S3	4	2	4'-9"	2	1'-9"	3'-0"		9'-6"
	S4	4	2	5'-0"	2	1'-8"	3'-4"		10'-0"
	S5	4	2	6'-6"	2	1'-9"	4'-0"	9"	13'-6"
	S6	4	2	5'-9"	2	1'-9"	4'-0"		11'-6"
	S7	4	2	5'-0"	2	1'-0"	4'-0"		10'-0"
	S8	4	2	3'-0"	2	1'-4"	1'-8"		6'-0"
	S9	4	2	4'-3"	SI				8'-6"
Headwall	H1	4	2	2'-6"	SI				5'-0"
	H2	4	2	5'-6"	SI				11'-0"
	H3	4	1	2'-0"	SI				2'-0"
	H4	4	2	2'-6"	SI				5'-0"



BAR TYPES

TABLE OF QUANTITIES

Concrete	1.3 Cu. Yds. (Class 3000)
Reinforcing Steel	96 Lbs.
Total Bar Length	144'-3" (No. 4 bars)



Application No. R-52058

INLET STRUCTURE 7-E-20465 SIZE A

E & WP UNIT PORTLAND, OREGON

DETAILS

FRED HELLER DAM

COLUMBIA SWCD OREGON

U. S. DEPARTMENT OF AGRICULTURE
SOIL CONSERVATION SERVICE

Designed by WYE & NDW 1-74 Approved by T. W. D. W. AREA ENGINEER