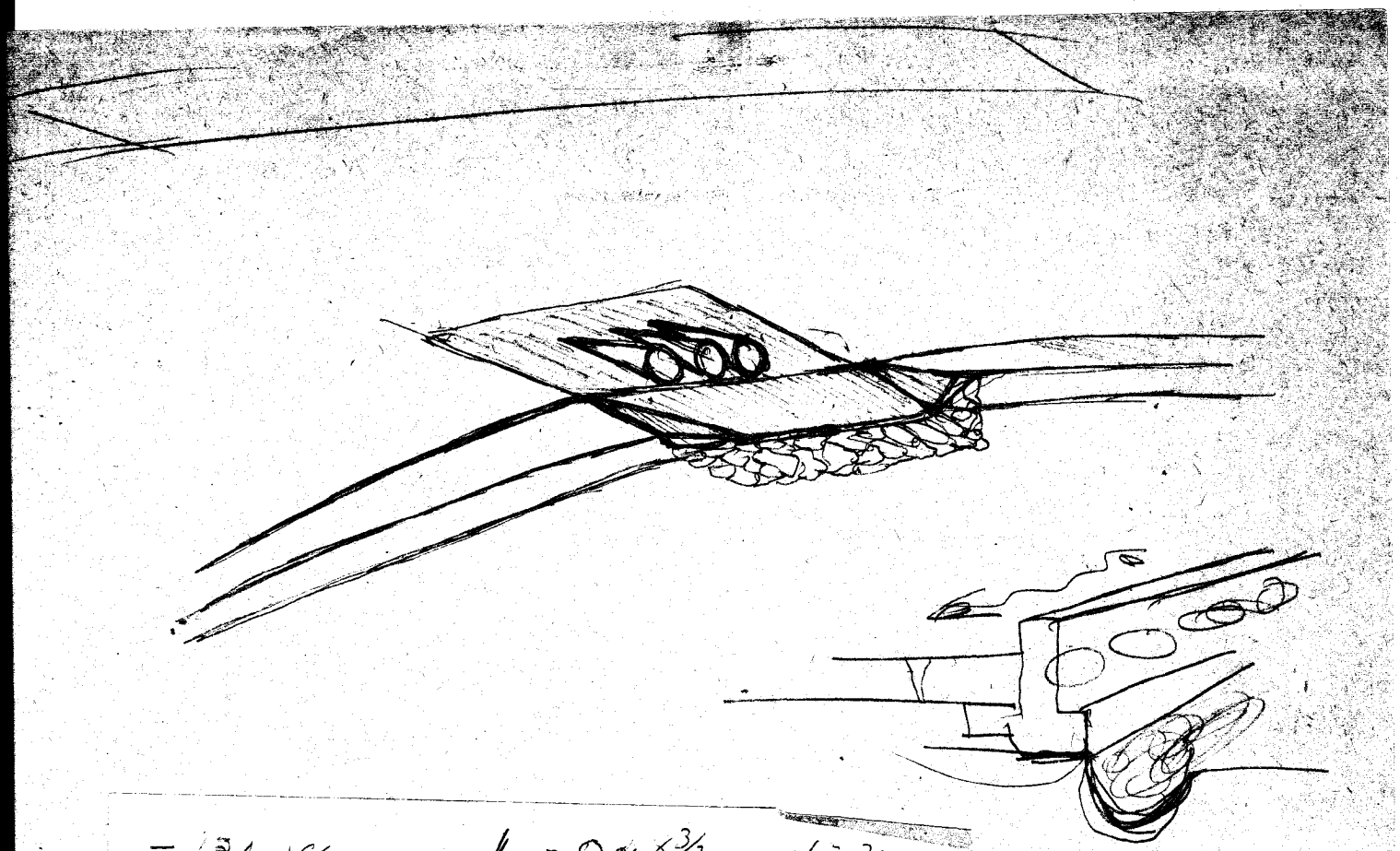
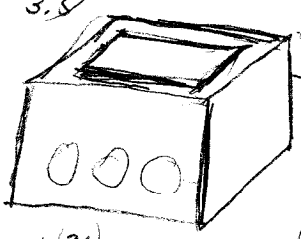


$L = \frac{Q}{3.5}^{3/2}$

$L = \frac{300}{3.5(0.5)^{3/2}}$

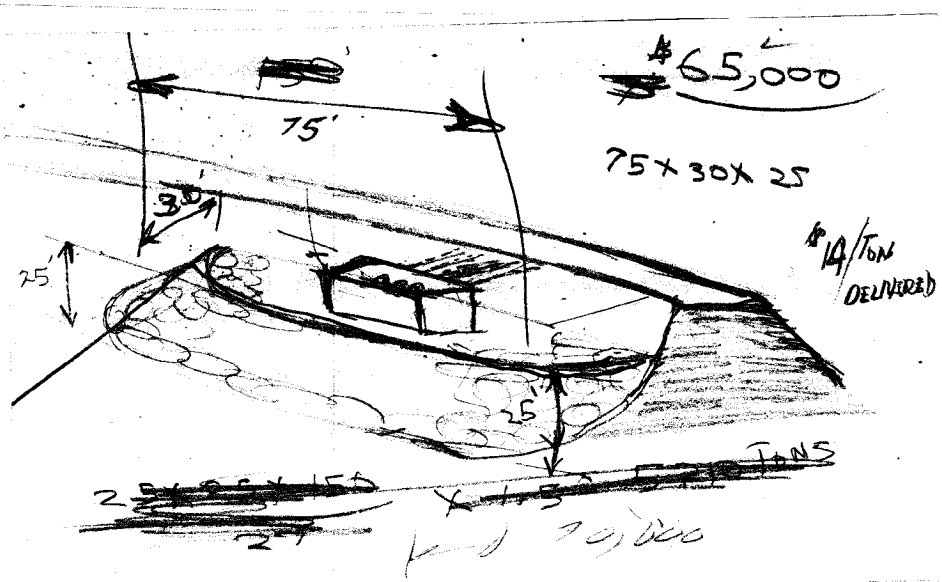


$Q = CwL(H^{3/2})$

$\frac{0300}{1.27} = (3.5)^{3/2}$

$Q = CwLH^{3/2}$

$\frac{Q}{CwH^{3/2}} = L$



$65,000

75 × 30 × 25

$14/TON DELIVERED

250 x 50 x 20'

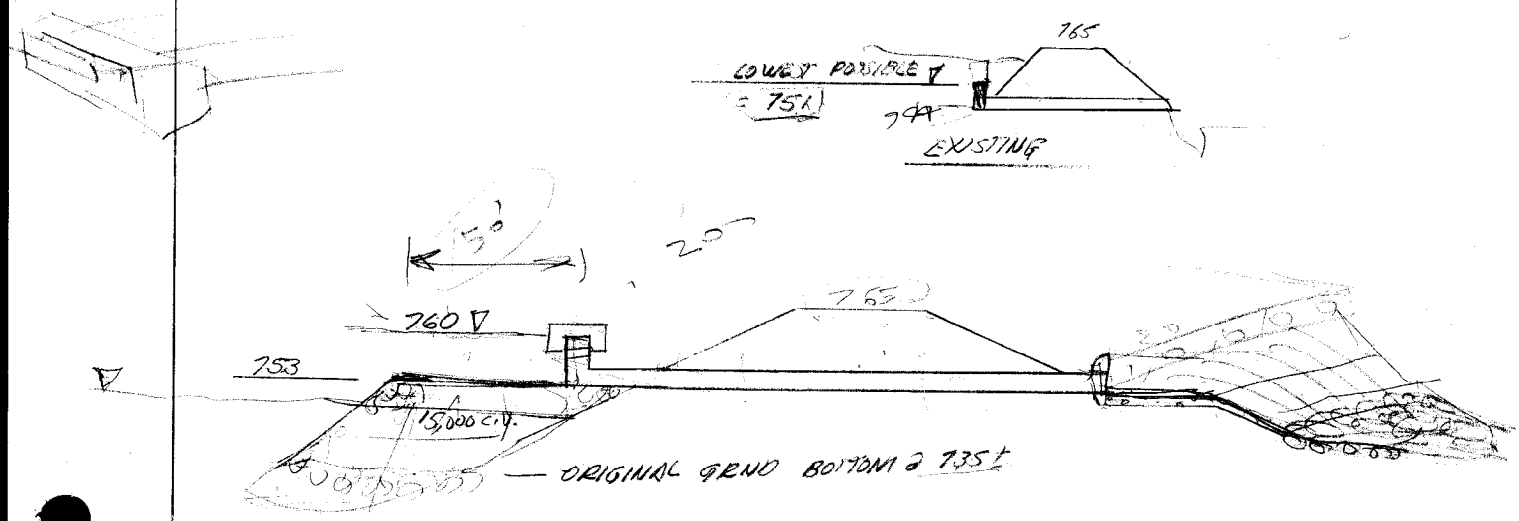
27

SHEET ____ OF ____

COMPUTED ____ DATE ____

CHECKED ____ DATE ____

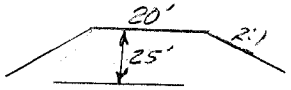
I) RELOCATION OF DISCH. TO DIKE "C"



1.) NOTE: LEAVE EXISTING SPWY "AS IS" (DO NOT PLUG) 1.) WILL BE USED WHEN NECESSARY TO LOWER WATER LEVEL – NEW ▽ MIN EL 760

2.) WILL USE EXISTING WHILE CONST. NEW SPWY.

2.) MUST CONSTRUCT DEFLECTOR DIKE DUE TO SHORT CIRCUIT.



$(50+25)(25)\frac{1000}{27} \approx 70{,}000$ c.y.

3.) REPAIR "C" LEAK

4.) CONST. CONCRETE DISCH. TROUGH

5.) EXIST. EST IS UNDER ESTIMATED @ $150,000 TOT. FIELD CONST.

II. CONC. FLUME - UNDER ESTIMATED @ 139,000 T.F.C.
(UNDER SPEED)

II. 4-10' PIPES - UNDER ESTIMATED @ 106,000 T.F.C. (DON'T KNOW IF ACTUAL TEMP MIX FAIL)

QUESTION: HAS IT BE PROVEN THAT THE POND DISCH. IS SIGNIFICANT IN TEMP. PROBLEM
VOL OF INITIAL MIX IS QUITE LARGE

TVA 11030 (WM-7-75)

FOR

NAME: Bill Martin

DATE: 9-19-85

ADDRESS: W2 D207 C-K

☐ Chatta ☐ M. S. ☒ Knox ☐ Nor.

Fold here for return

FROM

NAME: Ron Clavenger

EXTENSION: 7928

ADDRESS: 11-157 SB-K

☐ Chatta ☐ M. S. ☐ Knox ☐ Nor.

TEL. CALL

CALL NUMBER:

TIME CALL RECEIVED

☐ Returned Your Call

Attached are the 2 informal estimates that you asked for at Kingston Steam Plant. These estimates are for talking purposes only and are not to be used as budget estimates

cc: Larry Knott

☐ Per Your Request ☐ Comment ☐ Note and Return ☐ Approval ☐ Call Me

☐ Information ☐ Handle ☐ Distribute ☐ Signature ☐ See Me

☐ Per Conversation ☐ Prepare Reply ☐ Circulate ☐ Destroy ☐ File

TVA 45 (OS-9-80) INTEROFFICE MAILING SLIP—TELEPHONE CALL SLIP

CEH 85075

TVA 488B (EN DES-3-77) TENNESSEE VALLEY AUTHORITY SHEET 1 OF 1

SUBJECT Relocate 6 Spillway Structure PROJECT

Away From Intake Channel

COMPUTED BY WMMcArthur DATE 9/10/85 CHECKED BY DATE

NO.	ITEM	QUANTITY	UNIT	PRICE	AMOUNT	TOTAL
1.	6-36" RC Spillway Pipes @ 150' ea - Class IV	900	L.F.			33,20
2.	6- Concrete Spillway Structure Base Boxes	6	Ea.			7,59
3.	6- Concrete Junction Boxes	6	Ea.			6,030
4.	48" RC Pipe Culvert-2' Joints Cl. III	24	L.F.			1,320
5.	Excavation For Pipes	2700	C.Y.			6,630
7.	Riprap	700	C.Y.			14,595
8	Filter	150	T			1,745
9	6 Concrete Headwalls-36" Pipe	6	Ea.			5,56
10	Construct Ash Fill Dike	22,000	C.Y.			37,345
11	PLUG EXISTING SPILLWAYS	6	EA			7,120
12	BACKFILL	2700	CY			8,140
	SUBTOTAL DIR CONST					129,282
	CONST. FACILITIES 0.0979%					12,660
	FIELD GENERAL EXPENSE					8,060
	TOTAL FIELD CONSTRUCTION					$150,000

CEI 85074

TVA 488B (EN DES-3-77) TENNESSEE VALLEY AUTHORITY SHEET 1 OF 1

SUBJECT Add 4-10 Ft. Diameter Pipes PROJECT KIF

In Causeway Across Intake Channel

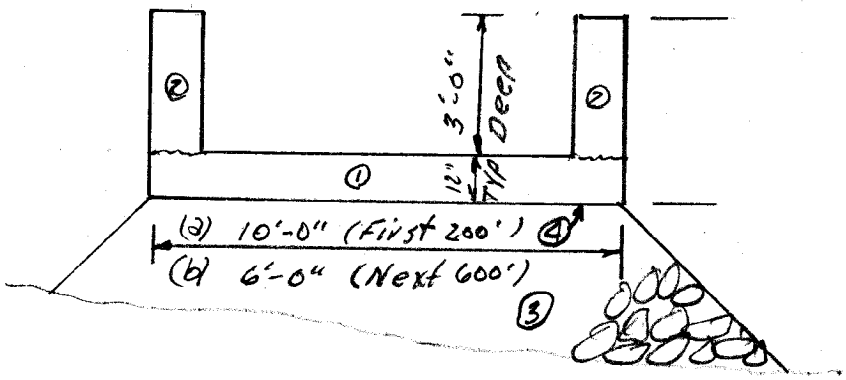
COMPUTED BY WMMartin DATE 9/17/85 CHECKED BY DATE

NO.	ITEM	QUANTITY	UNIT	PRICE	AMOUNT	TOTAL
1.	Excavation for Pipes	3600	C.Y.			16,105
2.	Earth Fill to Facilitate Pipe Installation	3800	C.Y.			
3.	Install 4 lines-120" CMP-12 Gage @100' each	400	L.F.			68,295
4.	Borrow for Backfill Around Pipes to Roadway Grade	3200	C.Y.			6,685
5	Riprap Slopes Around Pipes	340	C.Y.			7,005
	Filter under riprap	150	T			1,660
6.	Crushed Stone Surface	100	T			1,110
	SUBTOTAL DIR. CONST					100,860
	CONST. FACILITIES					3,165
	FIELD GENERAL EXPENSE					1,975
	TOTAL FIELD CONSTRUCTION					106,000

SUBJECT Concrete Flume - Reroute Spillway Discharge to Emory River PROJECT KTF

COMPUTED BY [illegible] DATE 9/25/85 CHECKED BY DATE

Concrete Flume: with min drop of .5'/100' or 0.5% slope



Concrete Quantity - Reinforced:

① Slabs: ⓐ 10' X 1' X 200' ÷ 27 = 74.1 C.Y.
ⓑ 6' X 1' X 600 ÷ 27 = 44.5 C.Y.
118.6 Say 120 C.Y. @ 200.00/C.Y. = $ 24,000.00

② Walls: 2 X 1' X 3' X 800 ÷ 27 = 177.8 C.Y. Say 180 C.Y. @ 250.00/C.Y. = 45,000.00

③ Rock Fill:

ⓐ $\frac{14'+20}{2}$ X 3' Avg Depth X $\frac{200}{27}$ = 380 C.Y.
ⓑ $\frac{10+16}{2}$ X 3' " " X $\frac{600}{27}$ = 870 C.Y.
} 1250 C.Y. @ 21.00 = 27,000.00

④ Choke Stone:
ⓐ (10' X 1' X 200') + (6' X 1' X 600') $\frac{130}{2,000}$ = 365T @ 10.00 = 4,000.00

100,000.00
10,000.00
110,000.00
16,500.00
$ 126,500.00

126,500 Total Constr.
12,500 Engineering
$ 139,000.

Plus 10% Contingencies
Total Direct Field Cost
plus 15% O.H.'s

TVA 488B (EN DES-3-77) TENNESSEE VALLEY AUTHORITY SHEET 1 OF 1

SUBJECT Add 4-10 ft. Diameter Pipes PROJECT KIF

To Causeway Across Intake Channel

COMPUTED BY WMMartin DATE 9/17/85 CHECKED BY DATE

NO.	ITEM	QUANTITY	UNIT	PRICE	AMOUNT	TOTAL
1.	Excavation for Pipes	3600	C.Y.			
2.	Earth Fill to Facilitate Pipe Installation	3800	C.Y.			
3.	Install 4 lines - 120" CMP - 12 Gage @ 100' each	400	L.F.			
4.	Borrow for Backfill Around Pipes to Roadway Grade	3200	C.Y.			
5	Riprap Slopes Around Pipes	340	C.Y.			
	Filter under riprap	150	T			
6.	Crushed Stone Surface	100	T			
						$106,000.
				Engineering	+	10,000
						116,000

TVA-00010807

TVA 488B (EN DES-3-77) TENNESSEE VALLEY AUTHORITY SHEET 1 OF 1

SUBJECT Add 4-10 ft. Diameter Pipes PROJECT KIF

In Causeway Across Intake Channel

COMPUTED BY WWMyarten DATE 9/17/85 CHECKED BY DATE

NO.	ITEM	QUANTITY	UNIT	PRICE	AMOUNT	TOTAL
1.	Excavation for Pipes	3600	C.Y.			
2.	Earth Fill to Facilitate Pipe Installation	3800	C.Y.			
3.	Install 4 lines - 120" CMP - 12 Gage @ 100' each	400	L.F.			
4.	Borrow for Backfill Around Pipes to Roadway Grade	3200	C.Y.			
5	Riprap Slopes Around Pipes	340	C.Y.			
	Filter under riprap	150	T			
6.	Crushed Stone Surface	100	T			
					106,000.	
			Engineering		10,000.	
					116,000	

TVA-00010808

TVA 489H (EN DES-2-78)

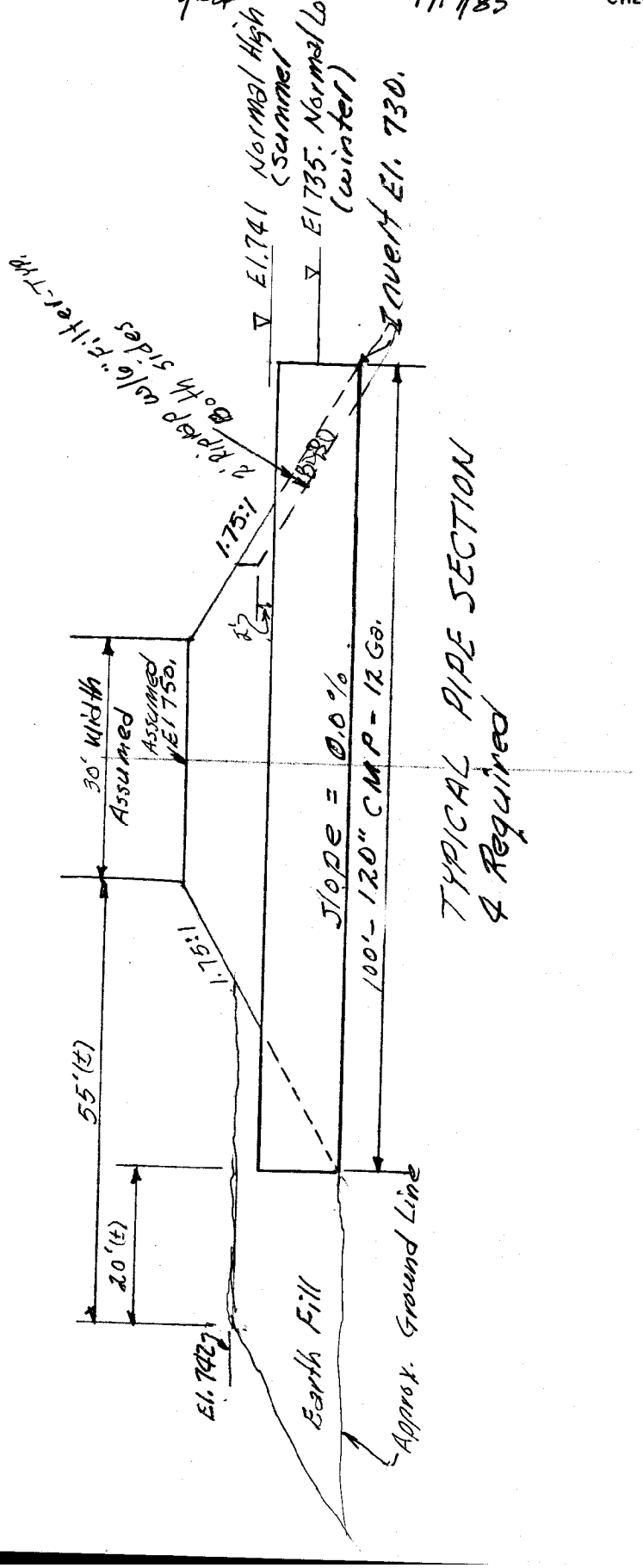
TENNESSEE VALLEY AUTHORITY

SHEET 1 OF 2

SUBJECT Add Pipes @ Causeway South of Bridge PROJECT KIF

Across Intake Channel - Provide Add. cooling water

COMPUTED BY WMMartin DATE 9/17/85 CHECKED BY DATE



SUBJECT Add Pipes @ Causeway So. of Bridge PROJECT KIF

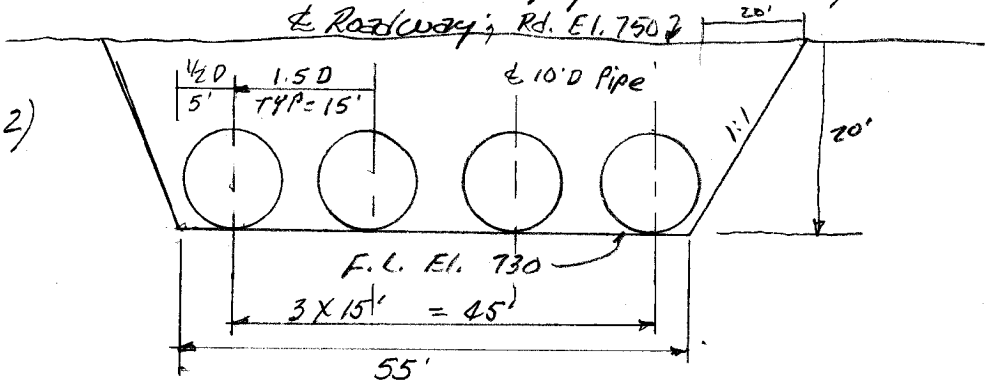
to Provide Additional Cooling Water

COMPUTED BY DATE CHECKED BY DATE

Quantity Estimate:

1) Use 4 lines of 10'D pipe @ 100' Length ea = 400 L.F. of 10'D CMP

2)



Structure Excavation: $A = \frac{95' + 55'}{2} \times 20' = 1500\ D'$

Average length cut = 65' ∴ Vol = 65' X 1500 D' ÷ 27 = 3,612 C.Y.

Say 3600 C.Y.

3) Borrow: to make fill of ends of pipe to facilitate construction

2 X 45' (w) X 12' (h) X 95' (l) ÷ 27 = 3800 C.Y.

4) Riprap: 65' X 35' X 2' ÷ 27 = 168 X 2 = 337 C.Y. Say 340 C.Y.

Filter: 65' X 35' X ½' X 130 #/C.F / 2000 #/T = 74 X 2 = 148. Say 150 T

5.) Compacted Back fill around Pipe:

3600 C.Y. − 4 (31" X 85' ÷ 27) = 3200 C.Y.

6) Surface for roadway: 150'(±) X 26' X 4½' X $\frac{130}{2000}$ = 84.5 Say 100 Tons

SUBJECT Relocate Spillways Away From Intake Channel-6 Structures PROJECT

COMPUTED BY DATE CHECKED BY DATE

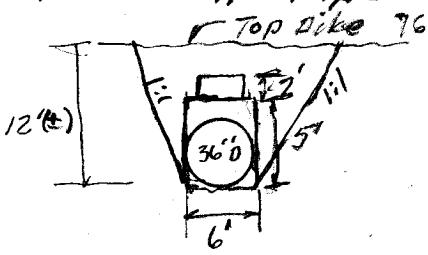
Estimate of Quantities:

1) 6-36" RCP Culverts @ 150' ea. = 900 L.F.

2) 6-Concrete Spillway Structure Base Boxes
   6- " Junction Boxes

3) 48" RCP Pipe in 2' sections for vertical extensions of Base Boxes
   6 structures @ 4 ea = 24 L.F

4) Excavation: for Pipes - Assume Dike cut of 12'(±) for each Pipe

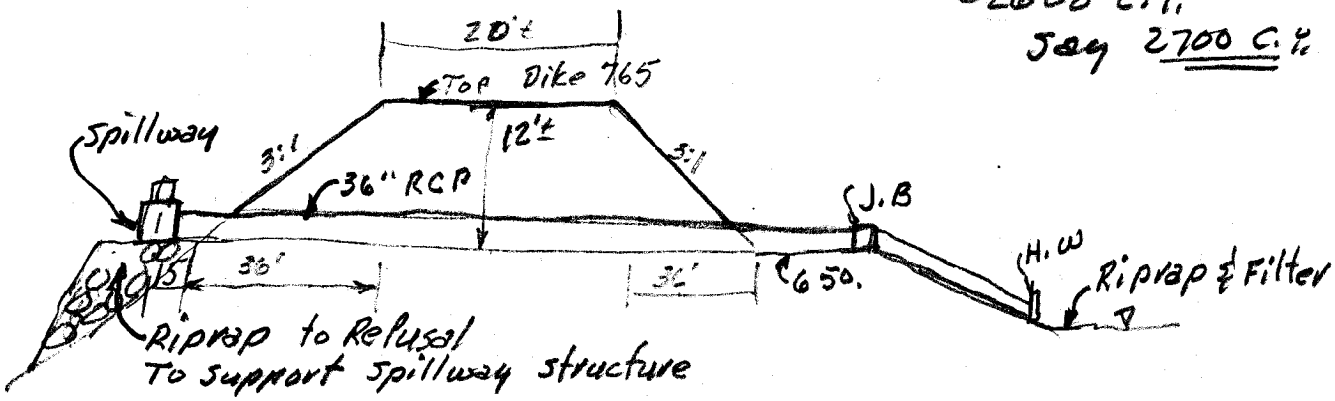


$A = \frac{6+30}{2} \times 12 = 216^{D'}$

$V_{o1} = \left(\frac{20'+92'}{2} \times 216^{D'}\right) 6 \div 27$

$= 2688$ C.Y.

Say 2700 C.Y.

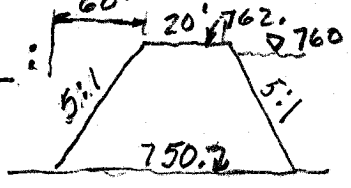


5.) Riprap:
① Under Concrete Spillway Bases $\left(\frac{L}{10'} \times \frac{W}{10'} \times \frac{D}{10'} \div 27\right) 6 = 225$ C.Y.

② At outlet Ends of Pipe $300' \times 20' \times 2' \div 27 = 445$

670 C.Y.

6) Ash Dike:



$A = \frac{140+20}{2} \times 12 = 960$

$V_{o1} = 960^{D'} \times 600' \div 27 = 21{,}333$ C.Y.