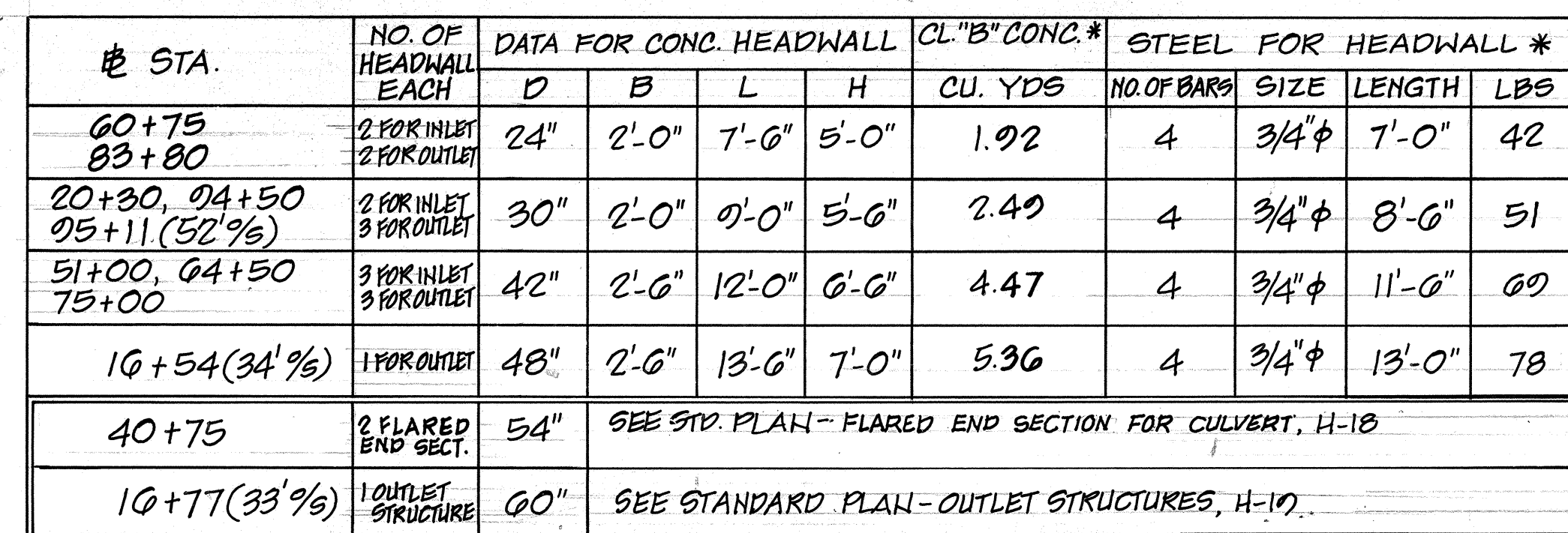
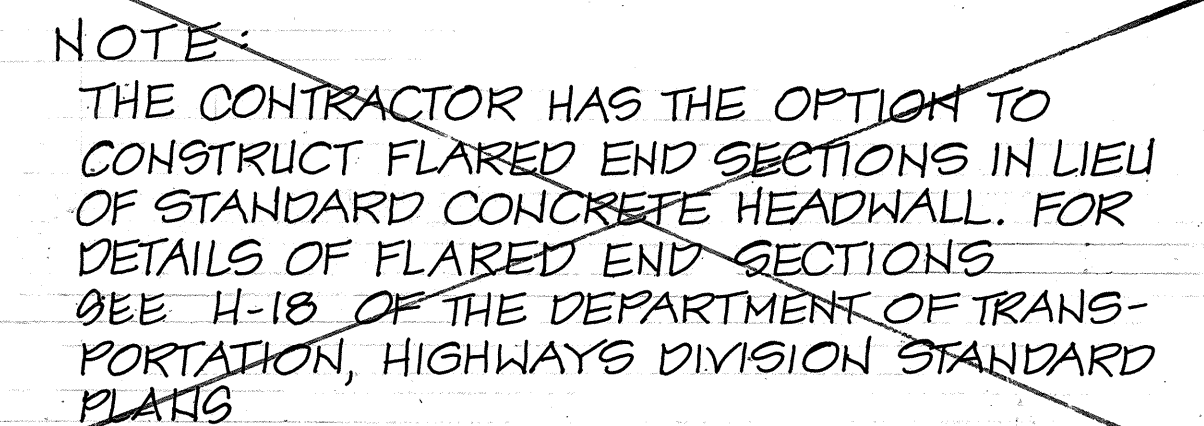
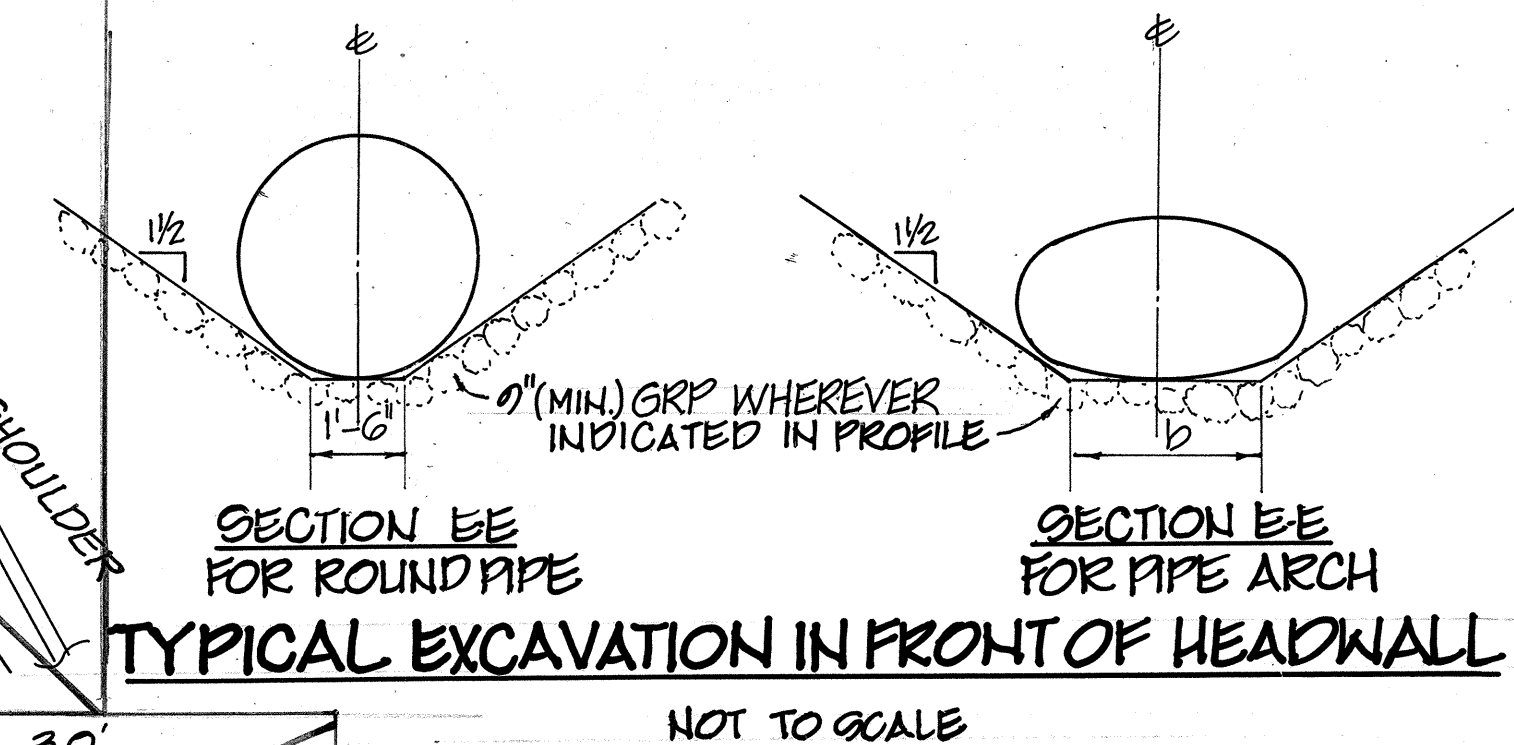


PIPE ARCH SIZE	b (ft.)
40" x 27"	2'-6"
72" x 44"	5'-0"
77" x 40"	5'-6"

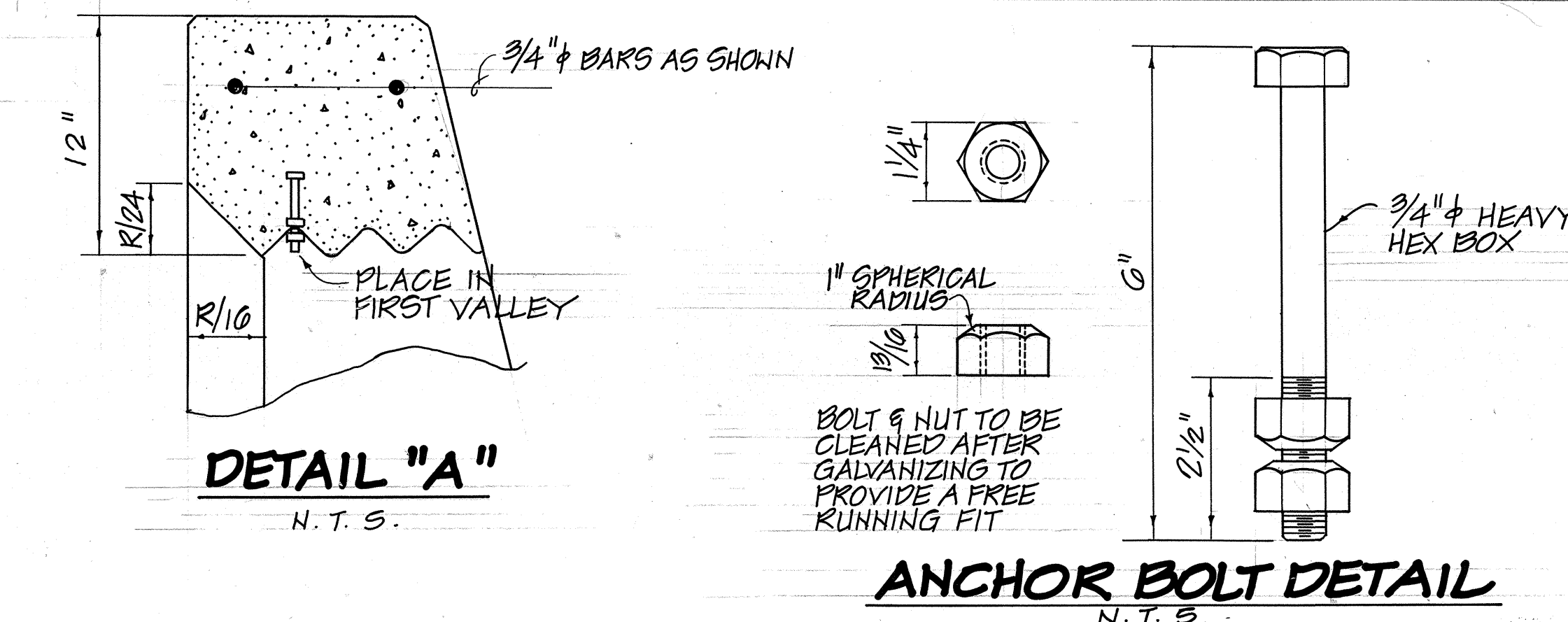
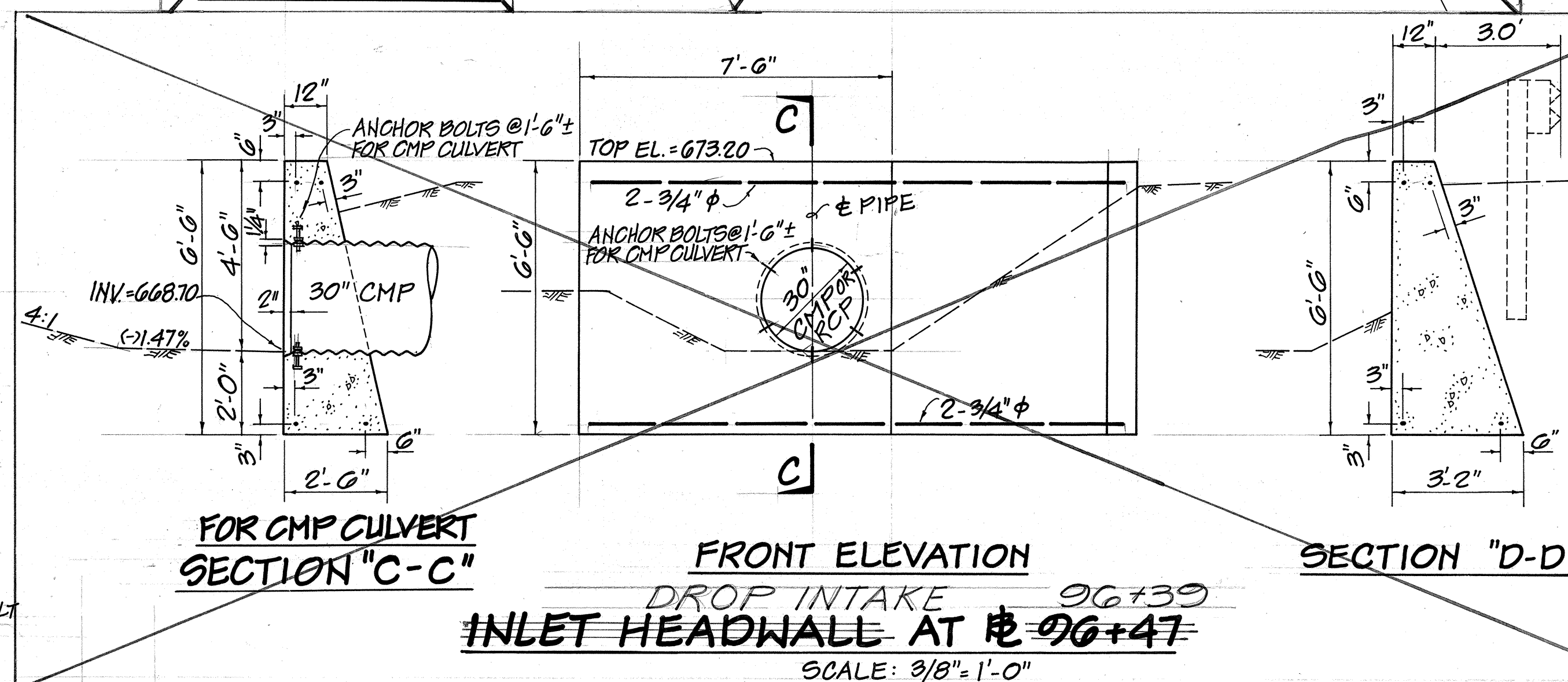


* QUANTITIES FOR CONC. & STEEL ARE FOR EACH HEADWALL

DETAIL OF HEADWALL FOR ROUND PIPE

SIZE 24 IN. TO 48 IN.

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



STA.	NO. OF HEADWALL EACH	DATA FOR CONC. HEADWALL				CL. "B" CONC. * CU. YDS.	NO. OF BARS	STEEL *		
		OMP ARCH SIZE	L	H	B			SIZE	LENGTH	LBS
30+50, 60+50 83+50, 101+50	4 FOR INLET 4 FOR OUTLET	43"x27"	18'-6"	5'-3"	2'-0"	3.31	4	3/4"φ	12'-0"	72
15+10 (31' 9/8)	1 FOR OUTLET	72"x44"	19'-0"	6'-8"	2'-0"	7.16	4	3/4"φ	18'-0"	111
17+75 (35' 9/8)	1 FOR OUTLET	70"x49"	21'-0"	7'-1"	2'-0"	8.19	4	3/4"φ	20'-0"	123

*QUANTITIES FOR CONC. & STEEL ARE FOR EACH HEADWALL

DETAIL OF HEADWALL FOR CMP ARCH

SCALE: 1/2"=1'-0"

ORIGINAL PLAN	SURVEY PLOTTED BY	DATE
	DRAWN BY	"
	TRACED BY	"
NOTE BOOK	DESIGNED BY	"
	QUANTITIES BY	"
	CHECKED BY	"
No.		



THIS WORK WAS PREPARED
 BY ME OR UNDER MY SUPERVISION

George Yokota
 PARK ENGINEERING, INC.

STATE OF HAWAII
DEPARTMENT OF TRANSPORTATION
HIGHWAYS DIVISION

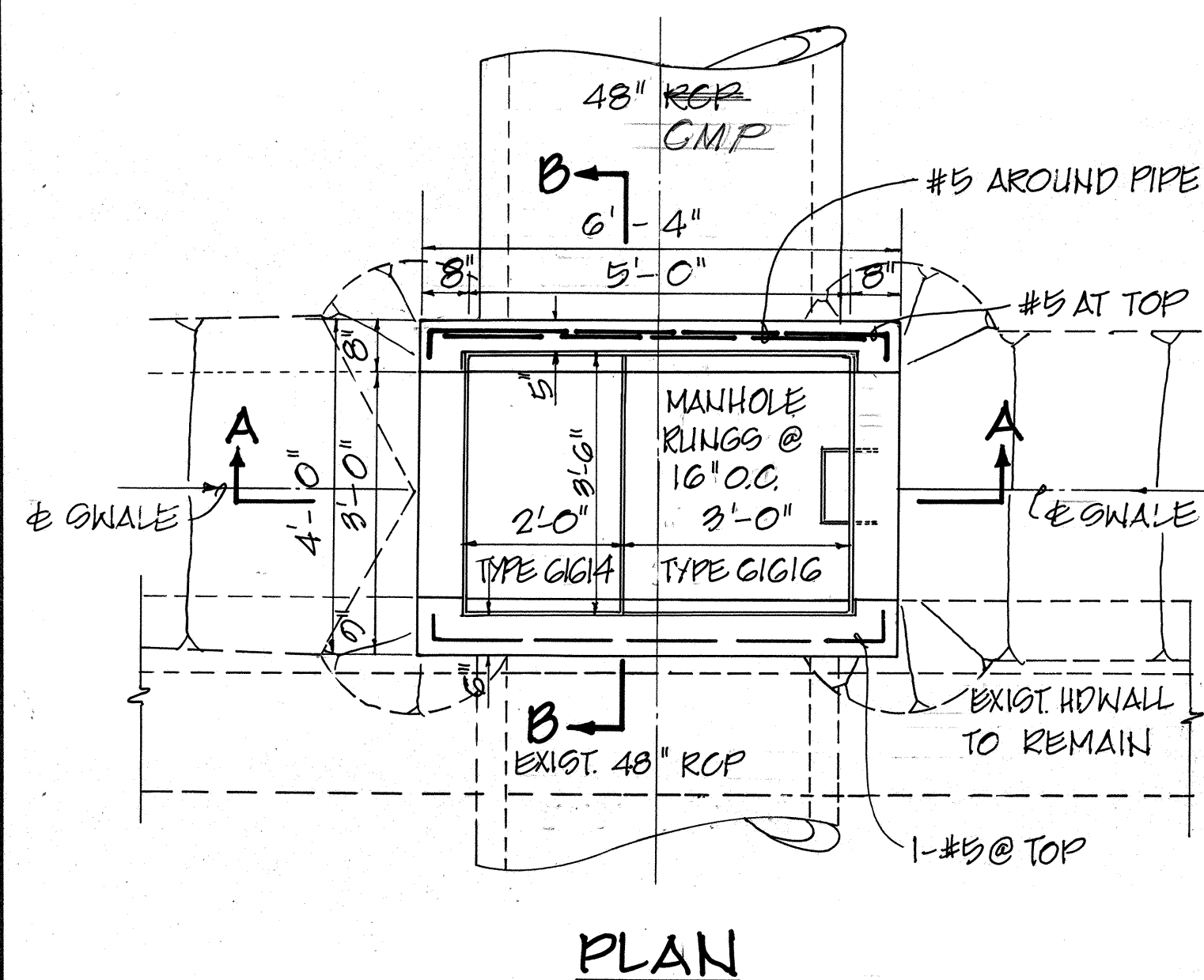
HEADWALL DETAILS

KEAAU PAHOA ROAD
PROJECT NO. RS-0130(20)

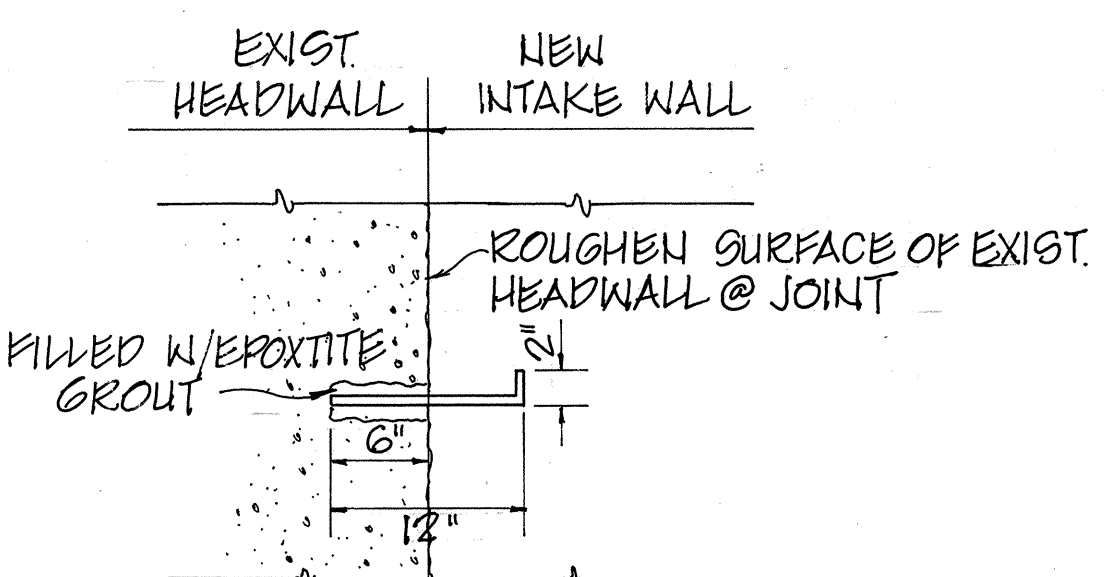
DISTRICT OF PUNA ISLAND OF HAWAII

SHEET No. OF SHEETS

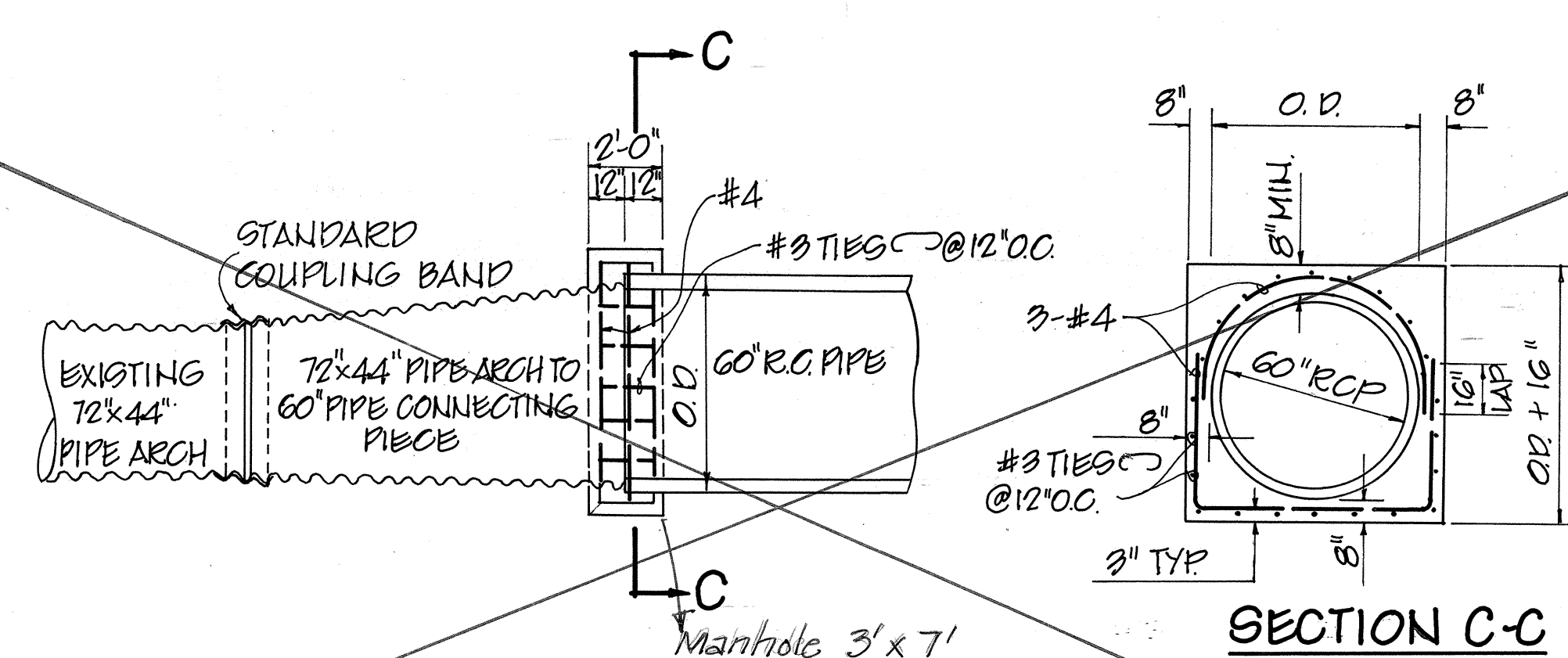
FED. ROAD DIST. NO.	STATE	FED. AID PROJ. NO.	FISCAL YEAR	SHEET NO.	TOTAL SHEETS
HAWAII	HAW.	RS-0130(20)	1080	37	68



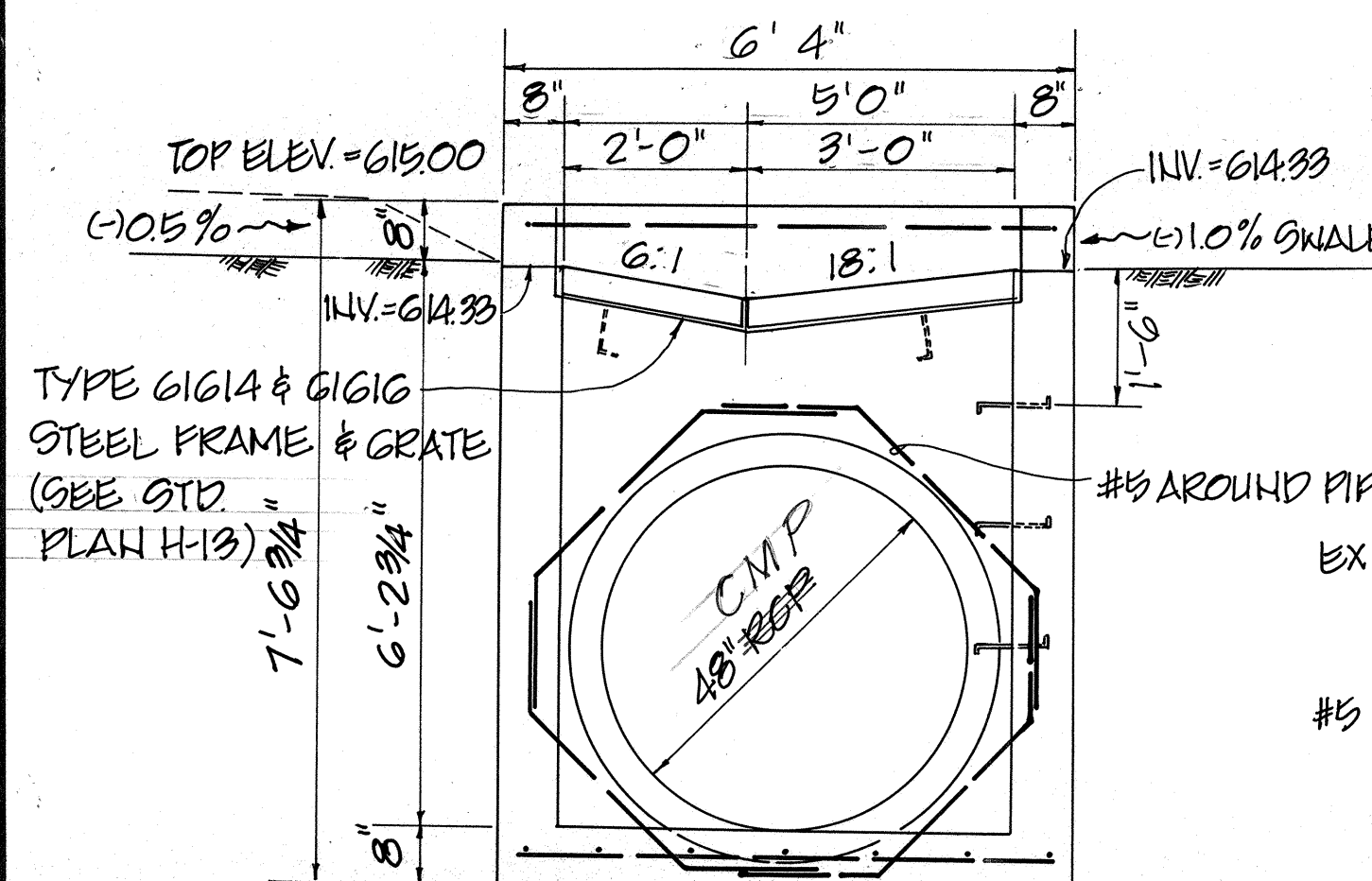
PLAN



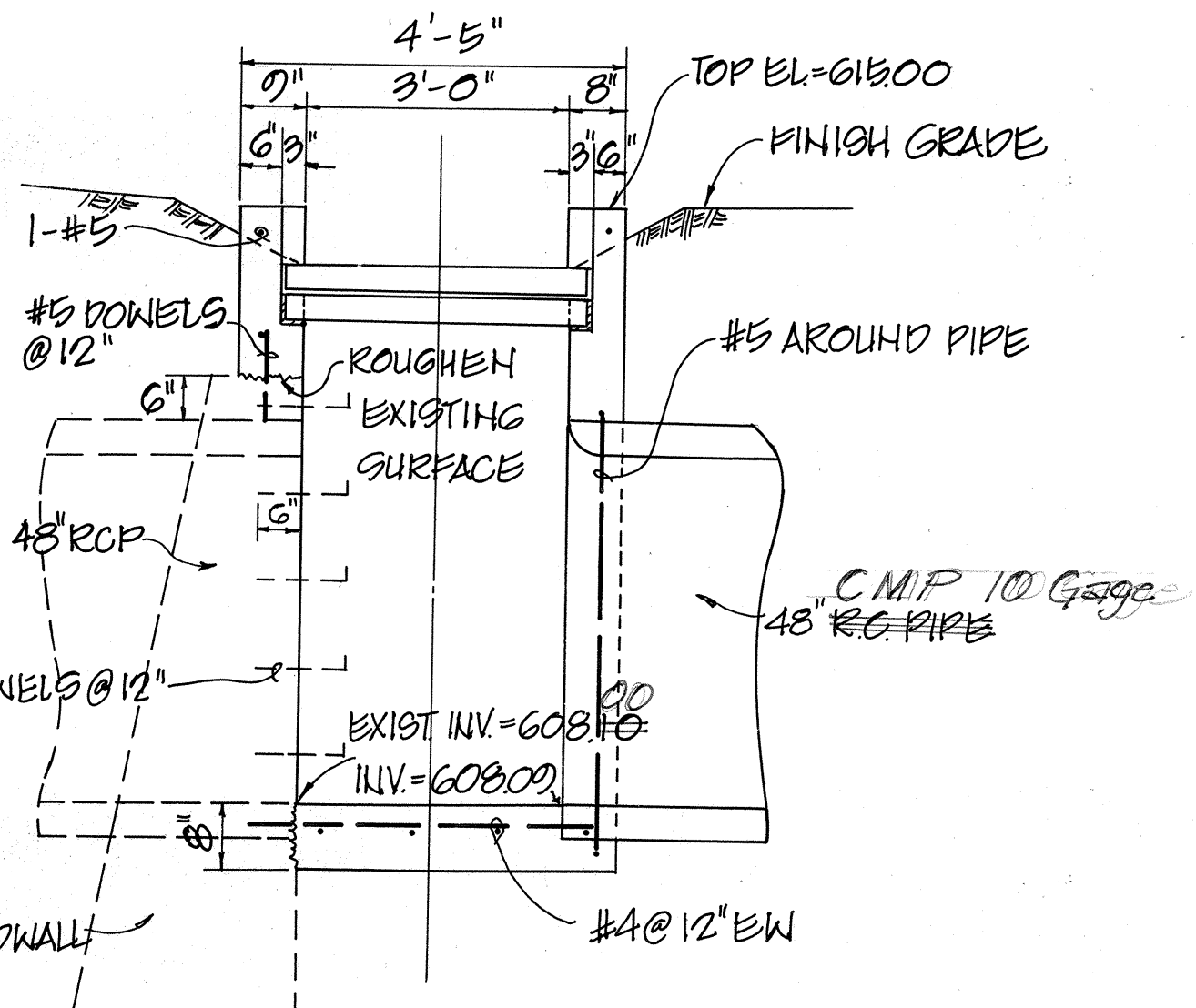
DETAIL FOR JOINING TO
EXISTING HEADWALL
SCALE: 1" = 1'-0"



~~C.M.P. 60"~~
~~R.C. CONNECTING PIECE @ STA. 16+77~~
NOT TO SCALE

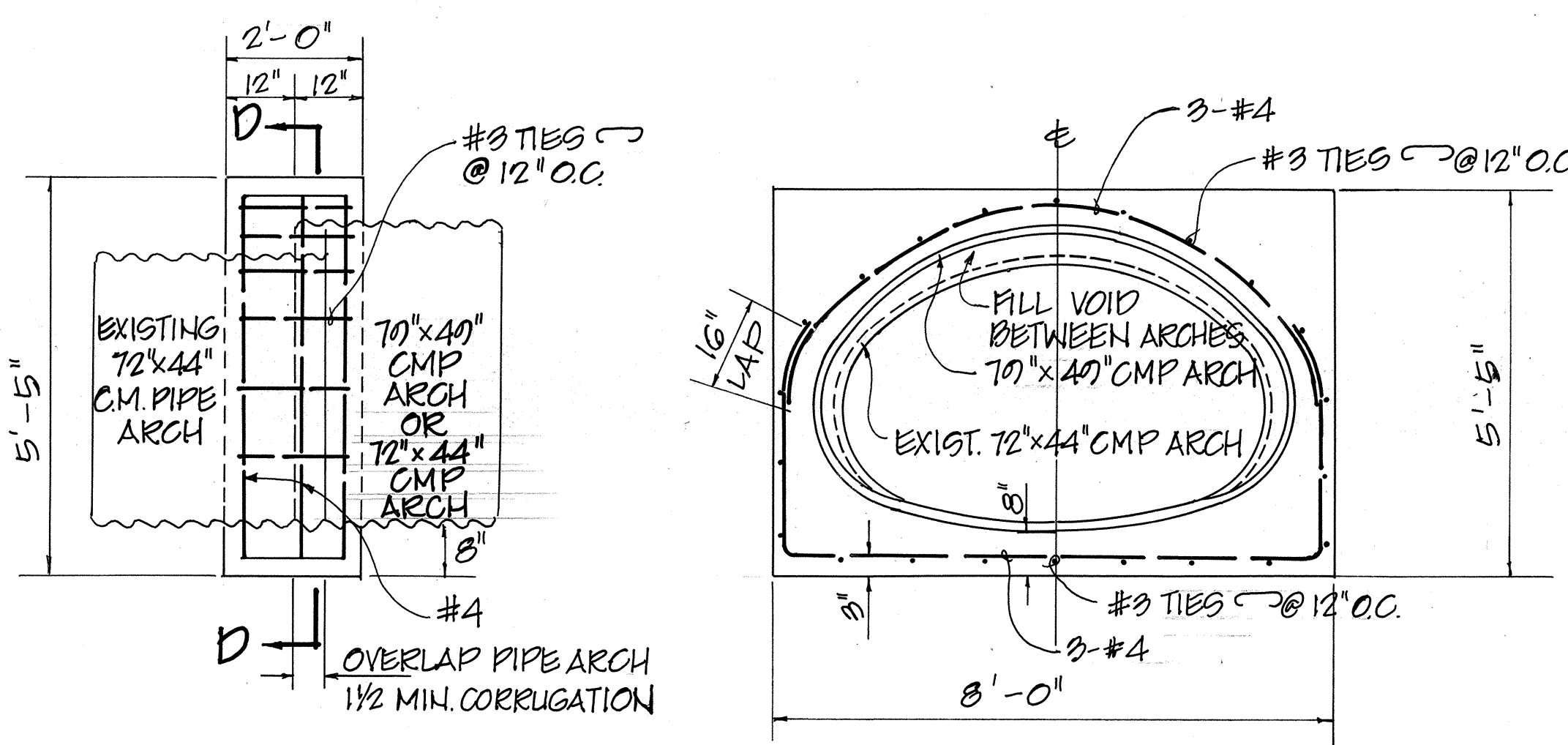


SECTION A-A



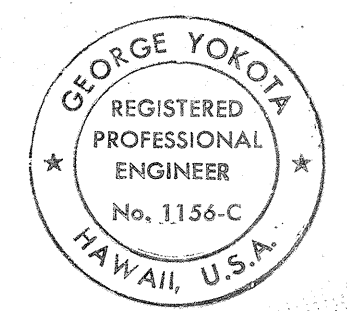
SECTION B-B

INTAKE NO. 1
SCALE: 1/2" = 1'-0"



C.M. PIPE ARCH CONNECTION @ STA. 17+75 & 15+10
SCALE: 1/2" = 1'-0"

ORIGINAL PLAN	DATE
SURVEY PLOTTED BY	
DRAWN BY	
DESIGNED BY	
QUANTITIES BY	
CHECKED BY	
NOTE BOOK	
No.	



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STATE OF HAWAII
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HIGHWAYS DIVISION

DRAINAGE DETAILS
KEAAU PAHOA ROAD
PROJECT NO. RS-0130(20)

DISTRICT OF PUNA, ISLAND OF HAWAII

SHEET NO. OF SHEETS
37