

CULVERT REPLACEMENT TABLE

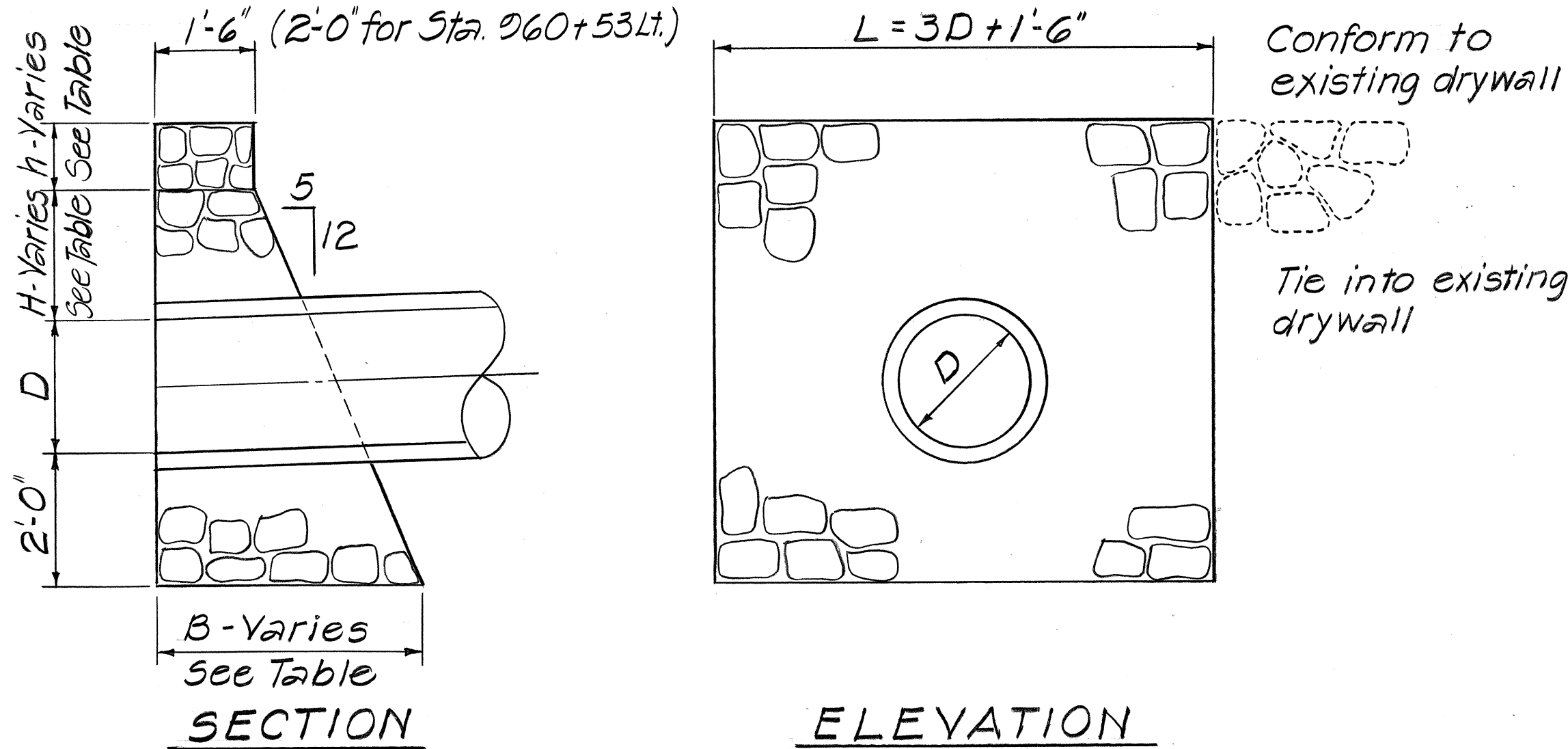
STATION	DRAINAGE STRUCTURES	DETAIL PLAN SHT. NO.
923+33	24" RCP, CL. III TYPE "A" CRM HEADWALL 1 EA. GRP APRON CRM HEADWALL 1 EA.	10
924+98	48" CMP CLASS A CONCRETE LINING GRP APRON 1 EA.	10
929+20	24" RCP, CL. III TYPE "A" CRM HEADWALL 1 EA. STANDARD CRM HEADWALL 1 EA. GRP APRON 1 EA.	11
944+17	24" RCP, CL. III TYPE "A" CRM HEADWALL 1 EA. STANDARD CRM HEADWALL 1 EA. GRP APRON 1 EA.	11
948+89	30" RCP, CL. III TYPE "A" CRM HEADWALL 1 EA. STANDARD CRM HEADWALL 1 EA. GRP APRON 1 EA.	12
960+53	24" RCP, CL. III TYPE "A" CRM HEADWALL 1 EA. STANDARD CRM HEADWALL 1 EA. GRP APRON CRM DROP INTAKE 1 EA.	12
968+18	18" RCP, CL. III STANDARD CRM HEADWALL 2 EA.	13
1024+00	18" RCP, CL. III STANDARD CRM HEADWALL 1 EA. CRM DROP INTAKE 1 EA.	14
1035+22	24" RCP, CL. III STANDARD CRM HEADWALL 2 EA.	15
1037+51	30" RCP, CL. III STANDARD CRM HEADWALL 1 EA. CRM HEADWALL 1 EA.	15
1039+80	18" RCP, CL. III STANDARD CRM HEADWALL 2 EA.	16
1049+42	18" RCP, CL. III STANDARD CRM HEADWALL 2 EA.	17
1053+66	18 RCP, CL. III STANDARD CRM HEADWALL 1 EA. CRM HEADWALL 1 EA.	17
1055+47	18" RCP, CL. III STANDARD CRM HEADWALL 2 EA.	18

CULVERT REPLACEMENT TABLE

STATION	DRAINAGE STRUCTURES	DETAIL PLAN SHT. NO.
1065+65	24" RCP, CL. III TYPE "A" CRM HEADWALL 1 EA. STANDARD CRM HEADWALL 1 EA. GRP APRON 1 EA.	20
1071+74	30" RCP, CL. III STANDARD CRM HEADWALL 2 EA. W/ WINGWALL (RIGHT)	20
1077+35	24" RCP, CL. III STANDARD CRM HEADWALL 1 EA. CRM HEADWALL 1 EA.	21
1079+15 1080+50	24" RCP, CL. III STANDARD CRM HEADWALL 1 EA. CRM DROP INTAKE 1 EA.	21
1092+90	18" RCP, CL. III TYPE "A" CRM HEADWALL 1 EA. CRM DROP INTAKE 1 EA.	18
FIELD DIRECTIVE No. 2 887+88	24" RCP, CL. III TYPE "A" CRM HEADWALL 1 EA. STANDARD CRM HEADWALL 1 EA. W/ WINGWALL 1 EA.	14
1049+48	18" RCP, CL. III STANDARD CRM HEADWALL 1 EA. CRM DROP INTAKE 1 EA.	10
1060+55	6' x 3' BOX CULVERT EXTENSION	19

GENERAL NOTES:

- Inverts shall be same as existing, as shown on plans or as directed by the Engineer.
- Culvert alignment shall be same as existing or as directed by the Engineer.
- Top Elevation of the Type A CRM Headwall shall conform to existing drywall, as shown on plans, or as directed by Engineer.
- The entrance and outlet condition of the culvert shall be graded to the satisfaction of the Engineer. Above work shall be considered incidental to the various contract items.
- Demolishing and removal of existing culverts and structures shall not be paid for separately but shall be considered incidental to the various contract items.

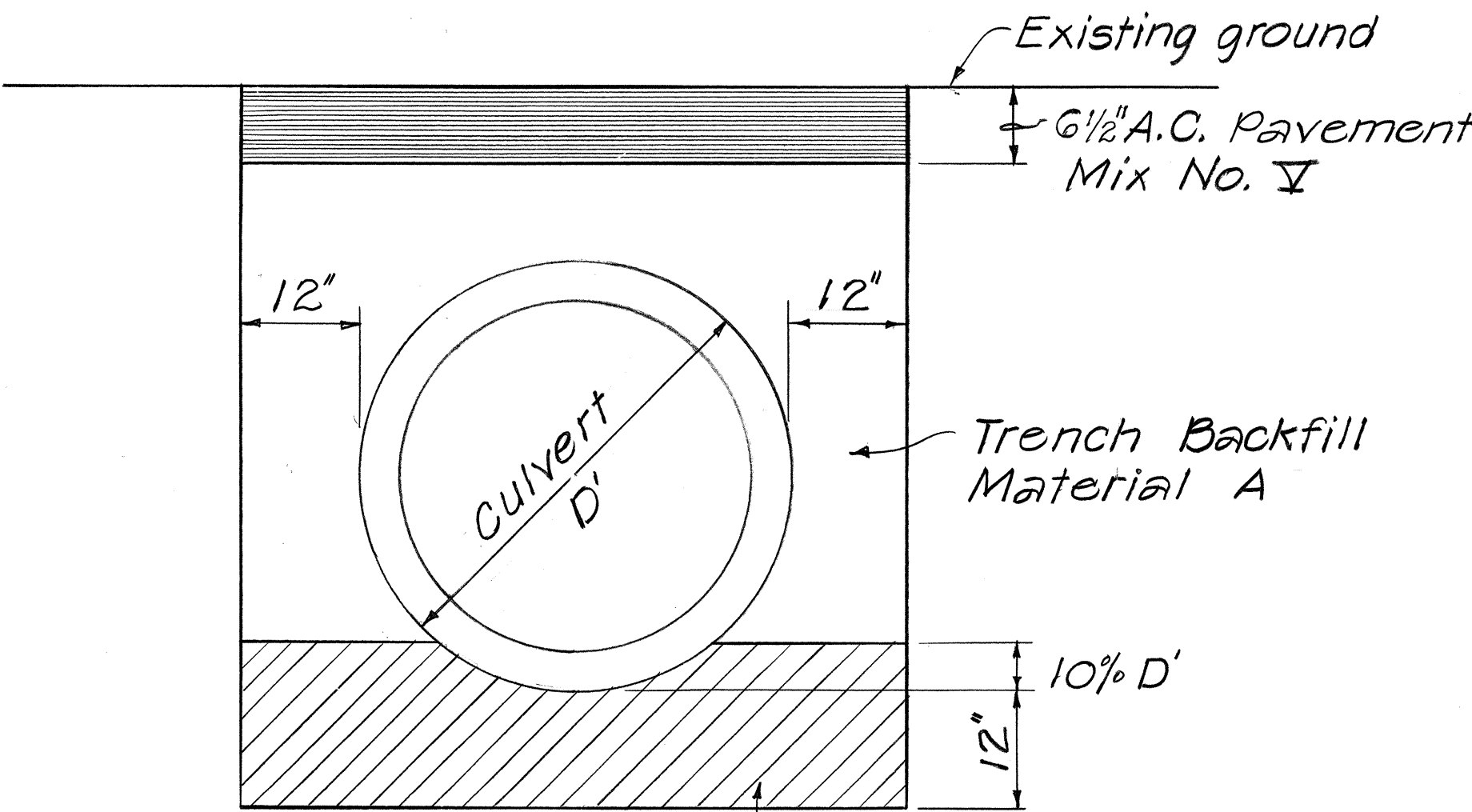


DETAIL OF TYPE A CRM HEADWALL

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

CRM HEADWALL TABLE

STA.	B	H	h	L	887+88 L	4'-0"	3'-0"	0	0'-0"
923+33 L	6'-0"	4'-0"	4'-6"	7'-6"	1055+46 R	1'-0"	1'-0"	1'-0"	6'-0"
923+33 R	5'-0"	3'-6"	1'-6"	7'-6"	1055+47 L/R	1'-0"	1'-0"	1'-0"	6'-0"
929+20 L	5'-3"	5'-0"	0	7'-6"	1077+35 L	2'-0"	1'-0"	1'-6"	7'-6"
944+17 L	5'-0"	4'-6"	1'-6"	7'-6"					
944+17 R	5'-0"	4'-6"	1'-6"	7'-6"					
948+89 L	5'-0"	3'-6"	1'-6"	9'-0"					
948+89 R	5'-0"	3'-6"	1'-6"	9'-0"					
960+53 L	4'-0"	2'-6"	2'-6"	7'-6"					
1065+65 L	3'-0"	1'-6"	2'-0"	1'-6"					
1065+65 R	2'-0"	1'-6"	1'-6"	1'-6"					
1092+90 L	3'-6"	1'-6"	0	6'-0"					
1039+80 L	2'-0"	1'-0"	1'-0"	6'-0"					
1039+80 R	1'-0"	1'-0"	1'-0"	6'-0"					

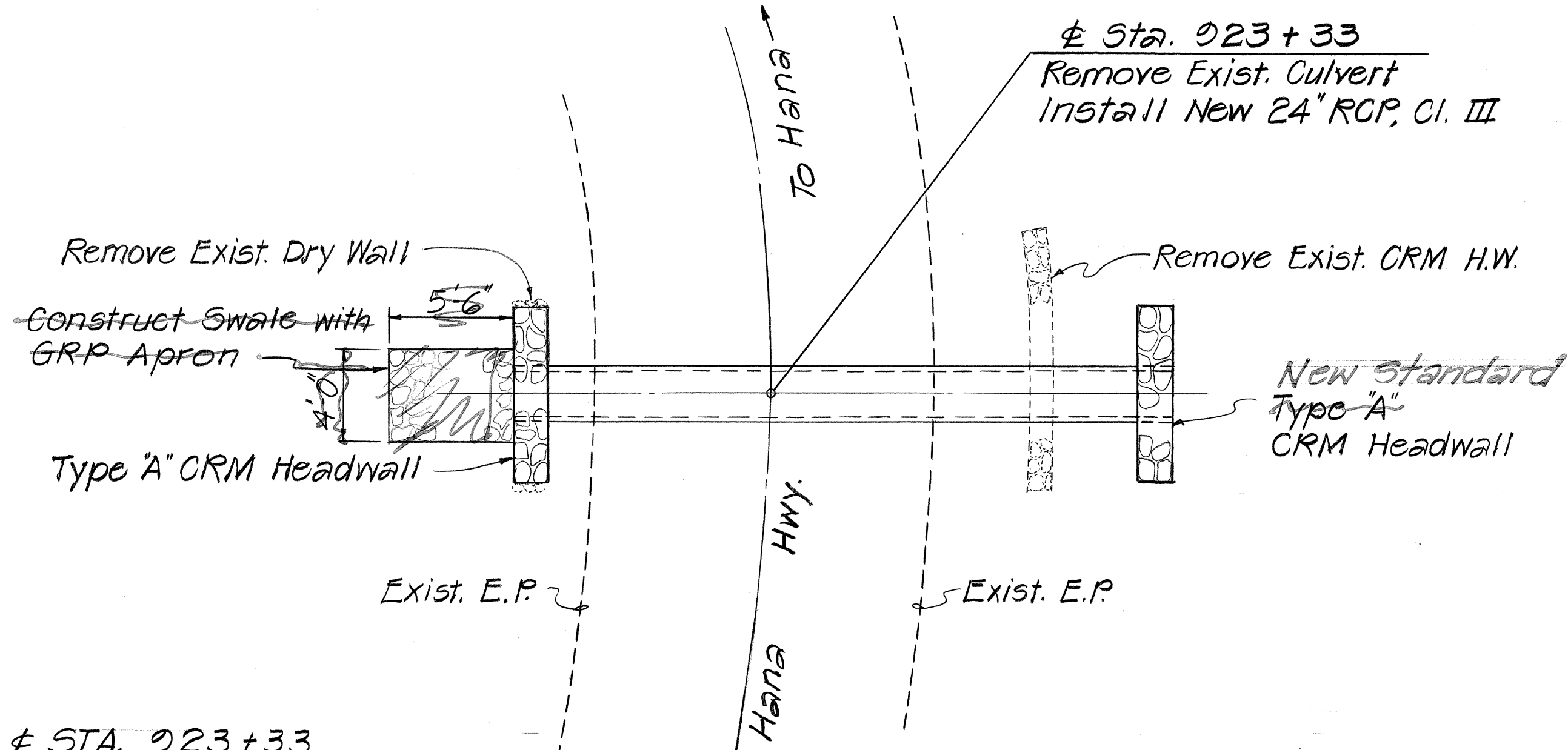


TRENCH DETAIL FOR CULVERTS

Scale: 3/4" = 1'-0"

Note: Payment for above work, except Bedcourse Material, shall be considered incidental to the various contract items.

FED. ROAD DIST. NO.	STATE	PROJ. NO.	FISCAL YEAR	SHEET NO.	TOTAL SHEETS
HAWAII	HAW.	360B-01-85	1985	10	41

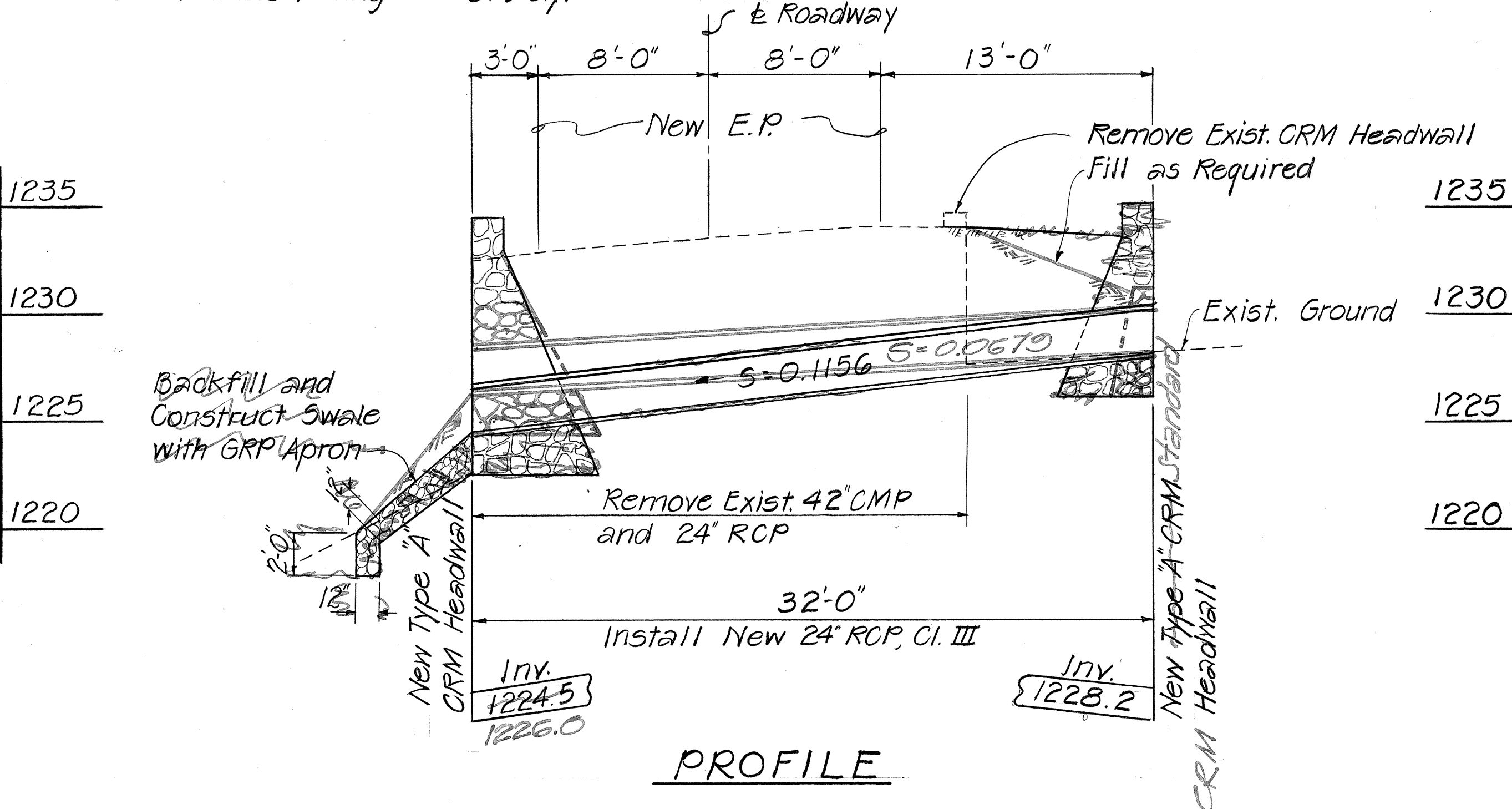


± STA. 923+33
Construct: 1/2 Type "A" CRM Headwall and Standard CRM Headwall
For Detail, See Sht. No. 9
Install: 24" RCP, Cl. III

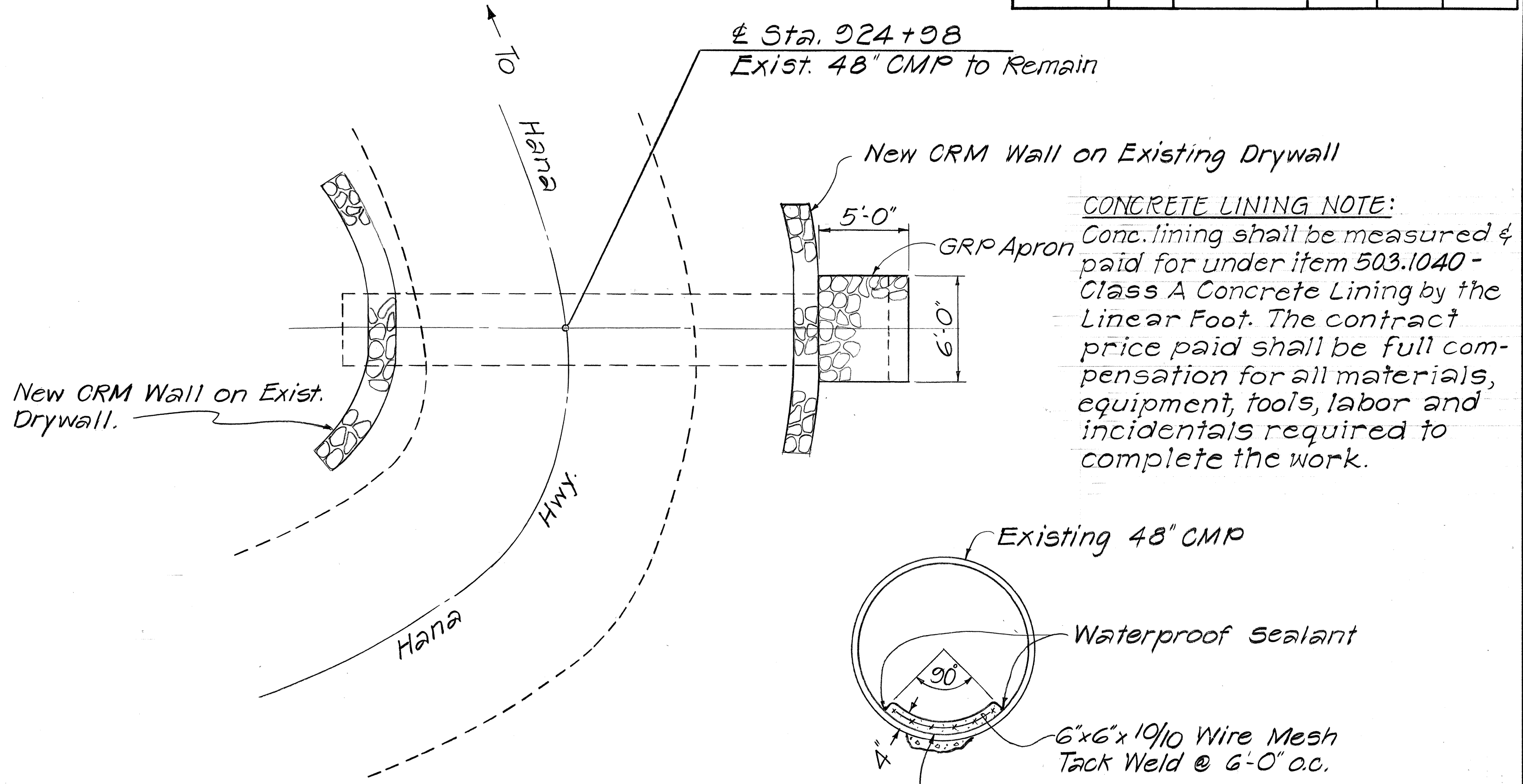
ESTIMATED QUANTITIES

Structure Excavation	=	38.6 c.y.	56.5
Ditch and Channel Exc.	=		
Cement Rubble Masonry	=	17.5 c.y.	10.2
Bedcourse Material	=	4.2 c.y.	4.0
24" RCP, Cl. III	=	32.0 l.f.	
Grouted Rubble Paving	=	0.9 c.y.	0.0

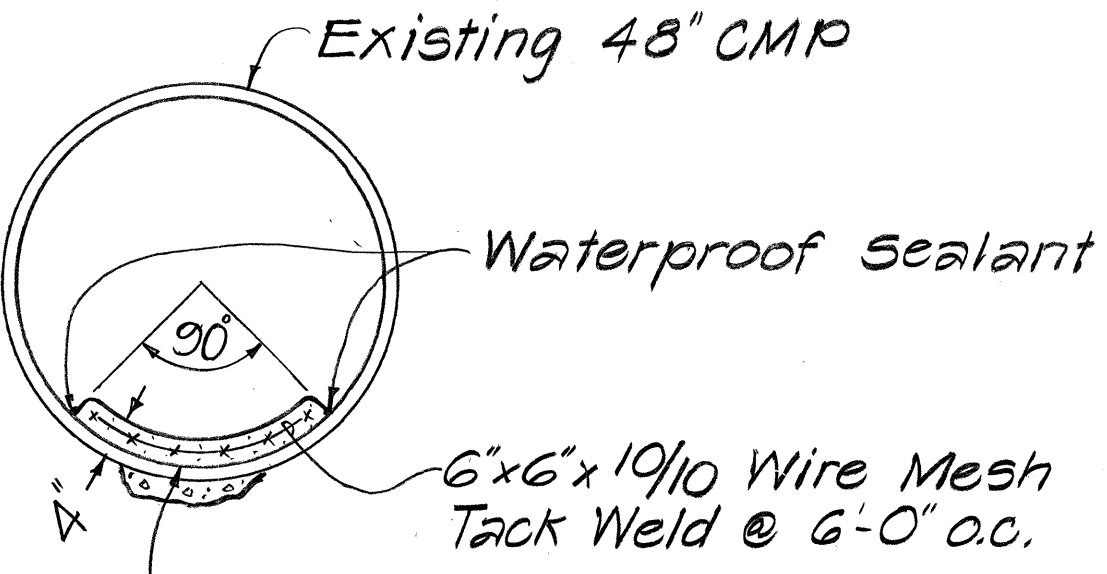
PLAN



24" CULVERT @ STA. 923+33
Scale: 1"=5'-0"

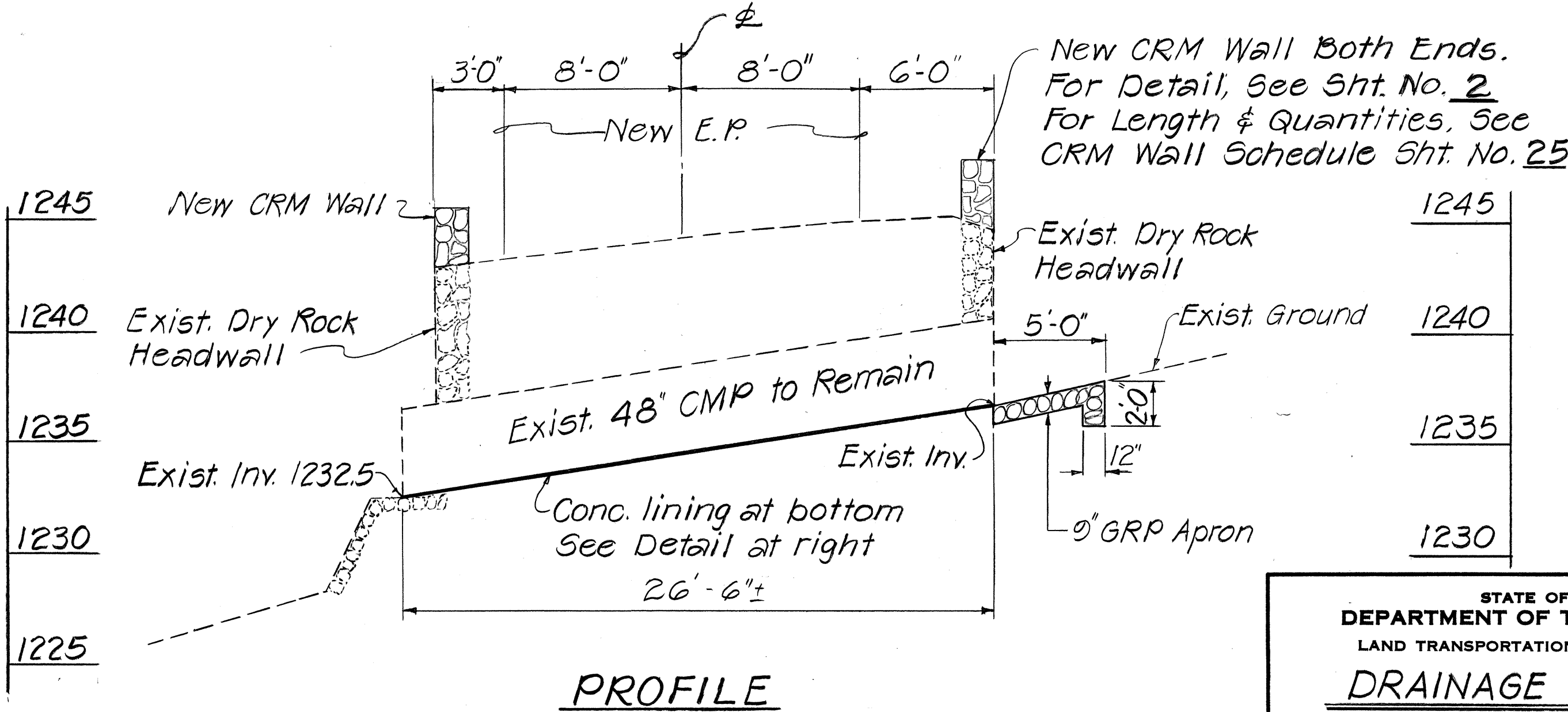


CONCRETE LINING NOTE:
Conc. lining shall be measured & paid for under item 503.1040 - Class A Concrete Lining by the Linear Foot. The contract price paid shall be full compensation for all materials, equipment, tools, labor and incidentals required to complete the work.



Clean invert to satisfaction of Engineer prior to installing concrete lining.
Fill existing void with Cl. A Concrete.

CONCRETE LINING DETAIL
Not to Scale



48" CULVERT @ STA. 924+98
Scale: 1"=5'-0"

STATE OF HAWAII

DEPARTMENT OF TRANSPORTATION

LAND TRANSPORTATION FACILITIES DIVISION

DRAINAGE DETAILS

PLAN AND PROFILE-CULVERTS

HANA HIGHWAY IMPROVEMENTS

WAILUA TOWARDS HANA-PHASE I

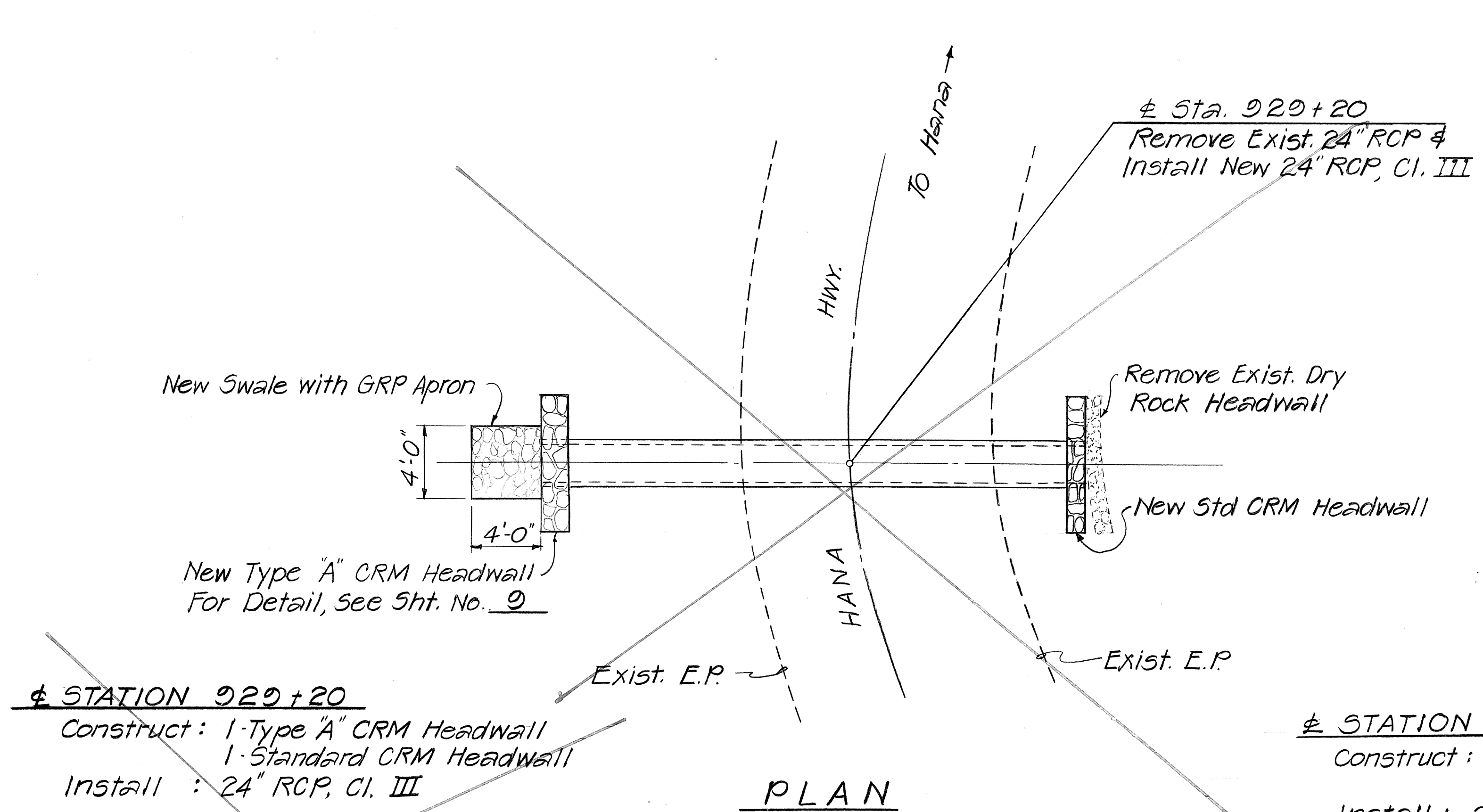
PROJ. NO. 360B-01-85

SCALE: AS SHOWN DATE: SEPT. 1984

SHEET NO. 2 OF 14 SHEETS

ORIGINAL PLAN	SURVEY PLOTTED BY	DATE
DESIGNED BY	DRAWN BY	
NOTED BY	CHECKED BY	
NO.		

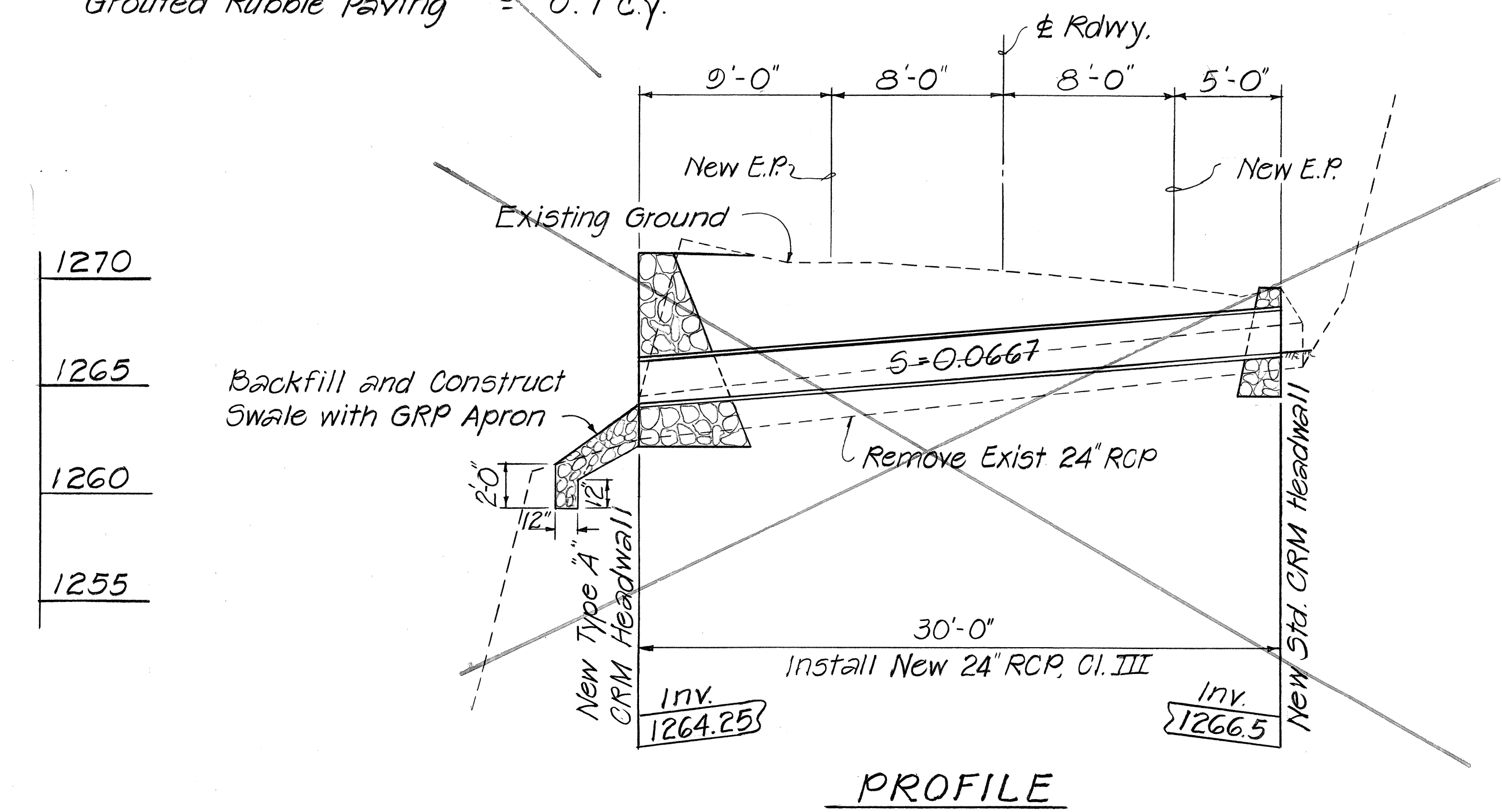
FED. ROAD DIST. NO.	STATE	PROJ. NO.	FISCAL YEAR	SHEET NO.	TOTAL SHEETS
HAWAII	HAW.	360B-01-85	1985	11	41



STATION 929+20
Construct: 1-Type "A" CRM Headwall
1-Standard CRM Headwall
Install: 24" RCP, CI. III

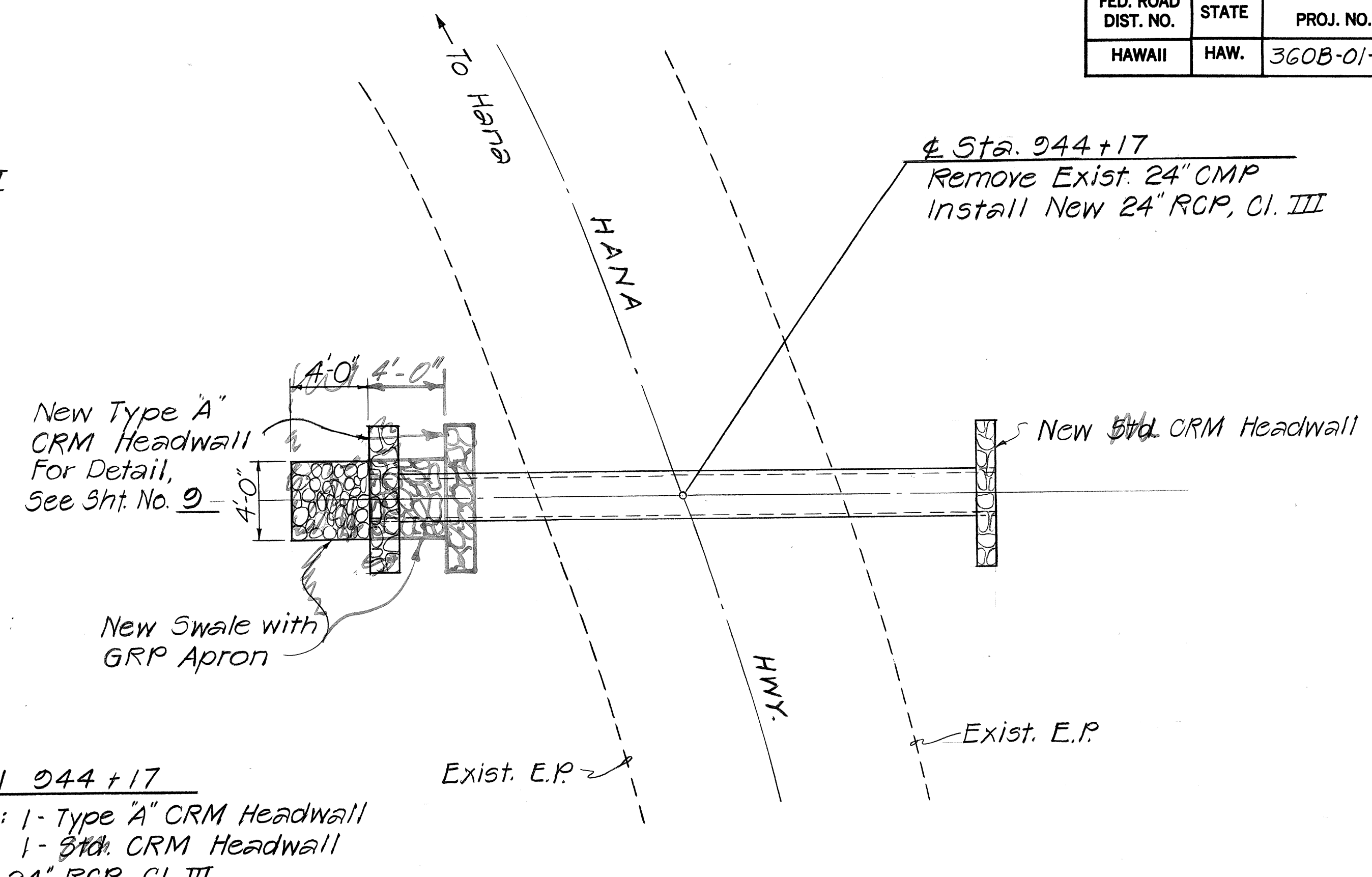
ESTIMATED QUANTITIES
Structure Excavation = 30.4 c.y.
Ditch & Channel Exc. =
Cement Rubble Masonry = 9.5 c.y.
Bedcourse Material = 4.5 c.y.
24" RCP, CI. III = 30.0 l.f.
Grouted Rubble Paving = 0.7 c.y.

PLAN



PROFILE

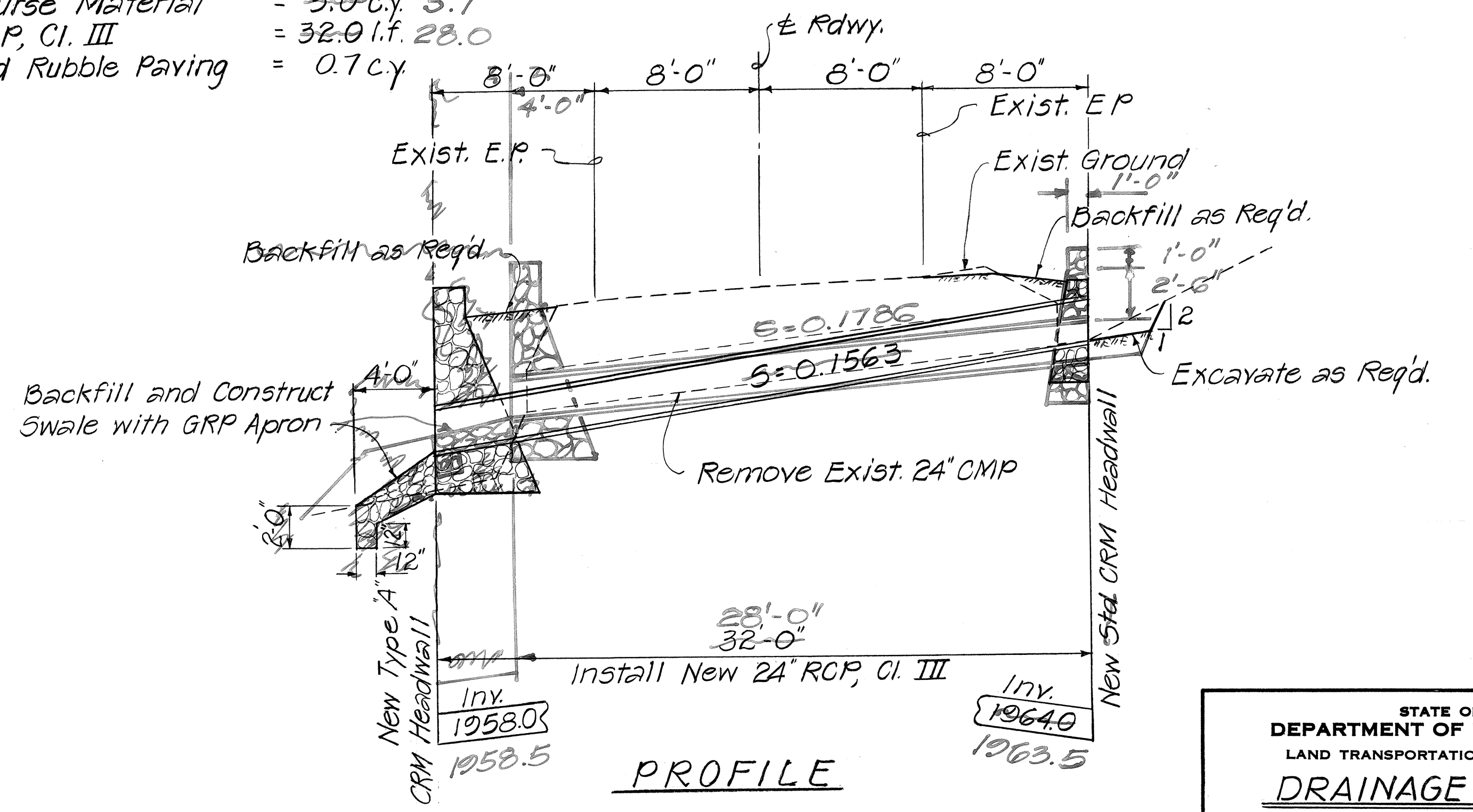
24" CULVERT @ STA. 929+20
Scale: 1"=5'-0"



STATION 944+17
Construct: 1-Type "A" CRM Headwall
1-Std. CRM Headwall
Install: 24" RCP, CI. III

ESTIMATED QUANTITIES
Structure Excavation = 44.7 c.y. 31.6
Ditch & Channel Exc. = 0.2 c.y. 0.0
Cement Rubble Masonry = 9.5 c.y. 8.4
Bedcourse Material = 5.0 c.y. 3.7
24" RCP, CI. III = 32.0 l.f. 28.0
Grouted Rubble Paving = 0.7 c.y.

PLAN



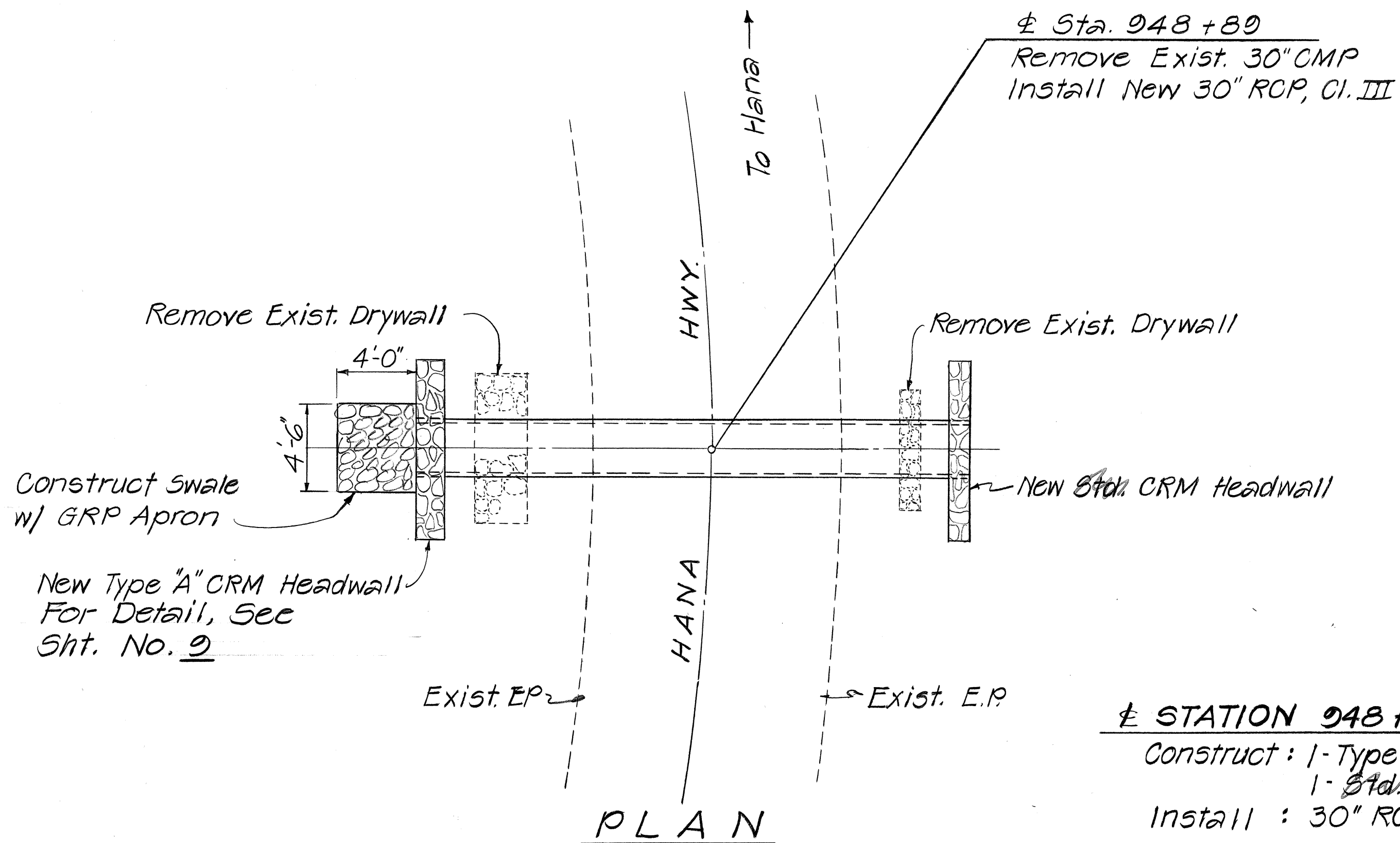
PROFILE

24" CULVERT @ STA. 944+17
Scale: 1"=5'-0"

STATE OF HAWAII
DEPARTMENT OF TRANSPORTATION
LAND TRANSPORTATION FACILITIES DIVISION
DRAINAGE DETAILS
PLAN AND PROFILE-CULVERTS
HANA HIGHWAY IMPROVEMENTS
WAILUA TOWARDS HANA, PHASE I
PROJ. NO. 360B-01-85
SCALE: AS SHOWN DATE: SEPT. 1984
SHEET NO. 3 OF 14 SHEETS

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

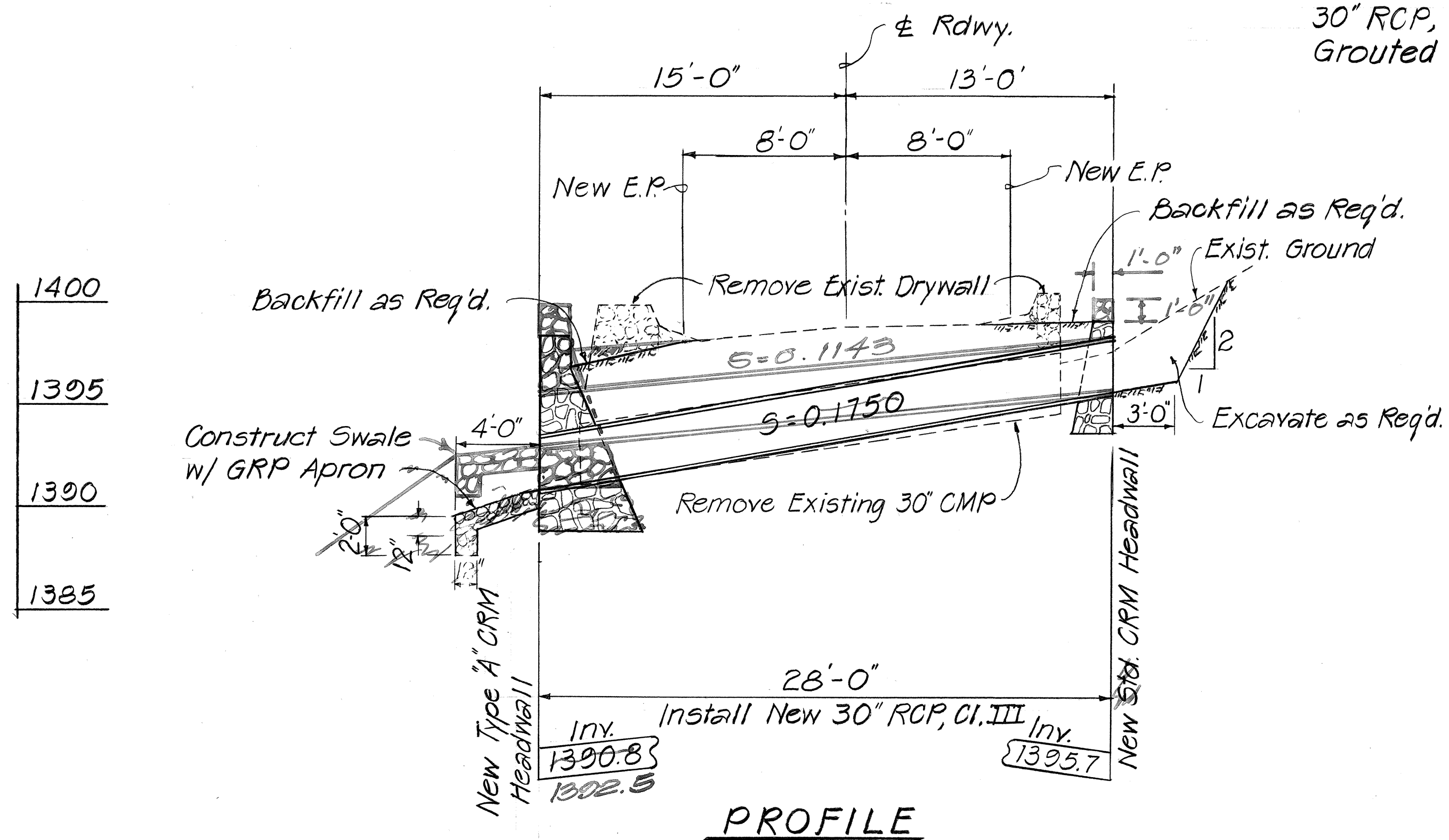
FED. ROAD DIST. NO.	STATE	PROJ. NO.	FISCAL YEAR	SHEET NO.	TOTAL SHEETS
HAWAII	HAW.	360B-01-85	1985	12	41



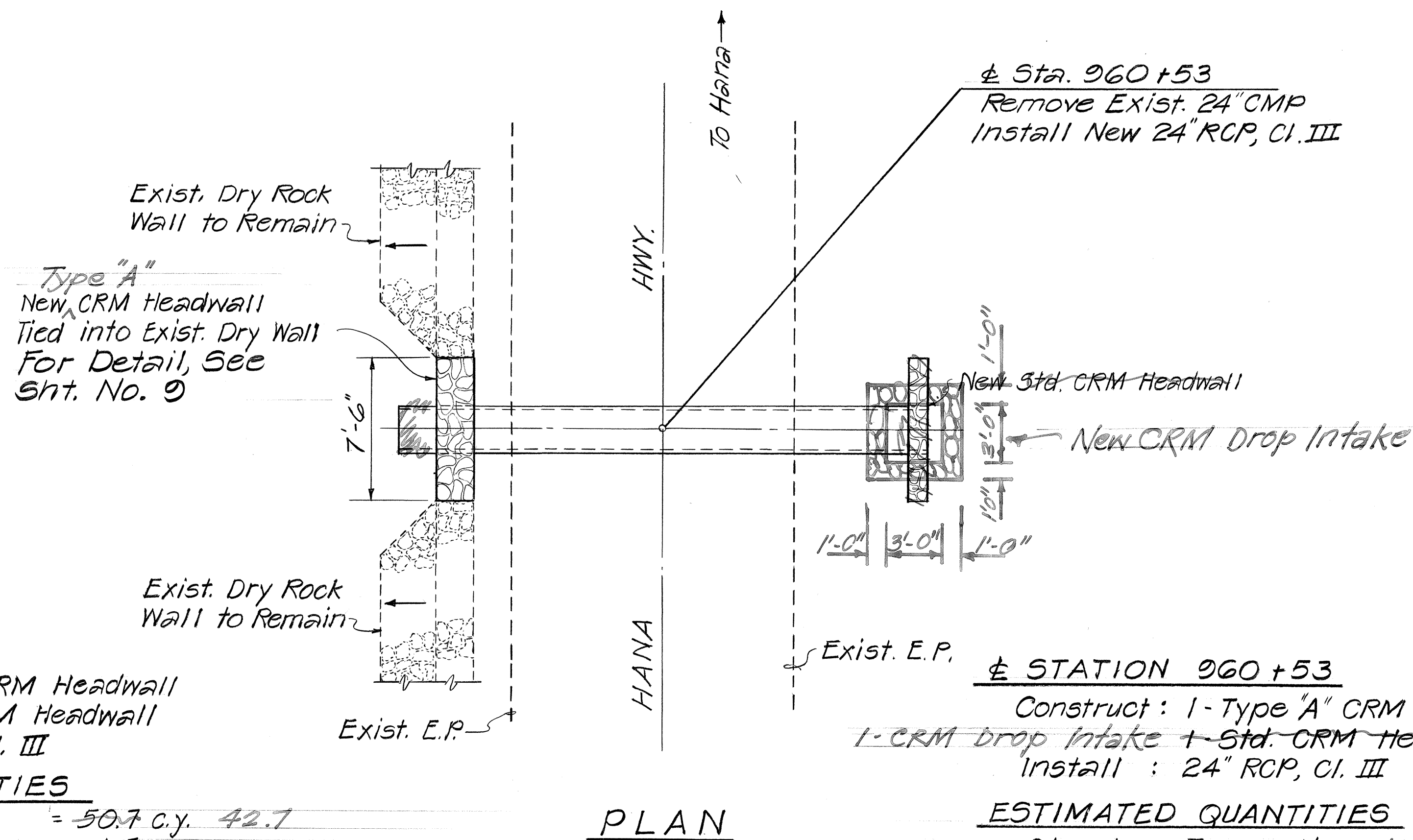
± STATION 948+89
Construct : 1-Type "A" CRM Headwall
1-Std. CRM Headwall
Install : 30" RCP, Cl. III

ESTIMATED QUANTITIES

Structure Excavation = 50.7 c.y. 42.7
Ditch & Channel Exc. = 1.5 c.y. 1.2
Cement Rubble Masonry = 4.4 c.y. 12.3
Bedcourse Material = 4.8 c.y. 4.0
30" RCP, Cl. III = 28.0 l.f.
Grouted Rubble Paving = 0.8 c.y. 0.7



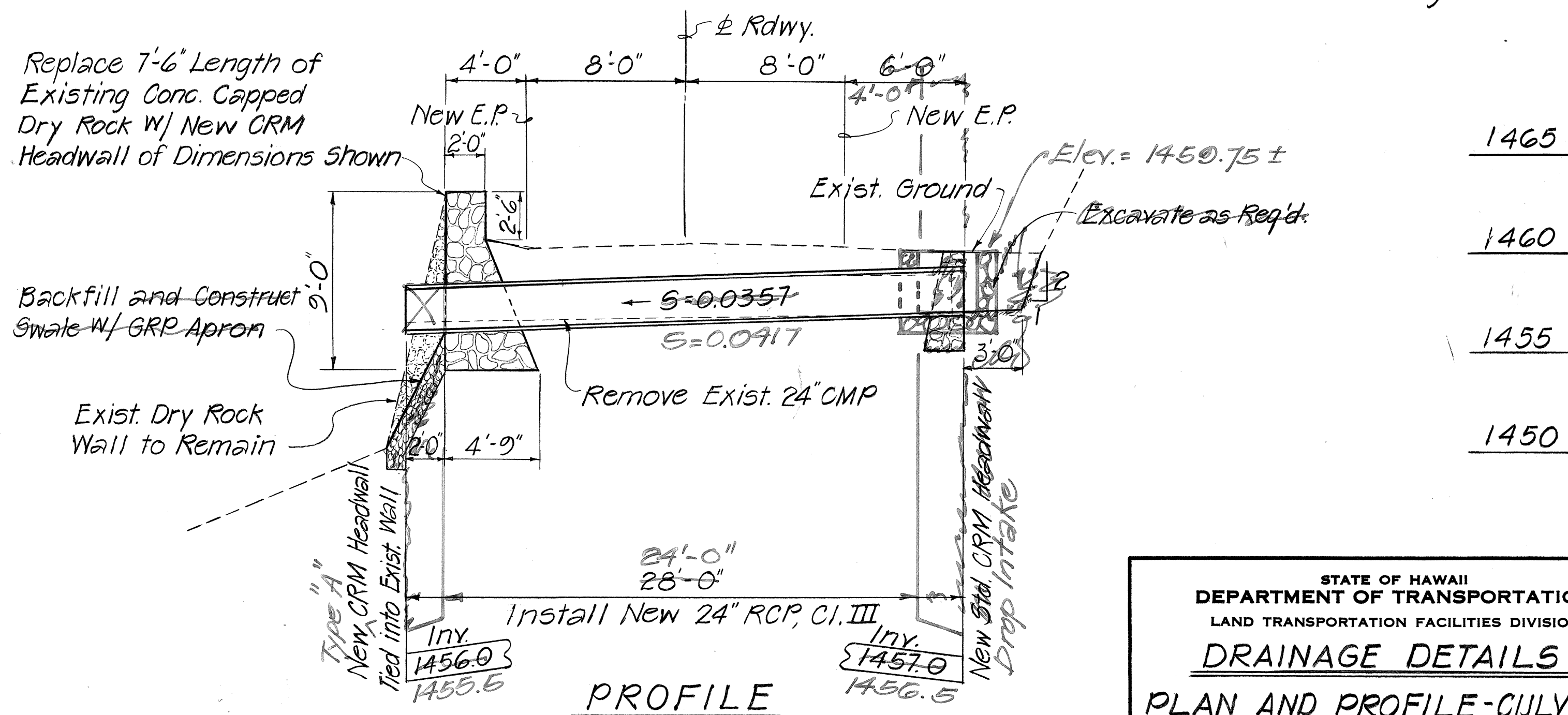
30" CULVERT @ STA. 948+89
Scale : 1" = 5'-0"



± STATION 960+53
Construct : 1-Type "A" CRM Headwall
1-CRM Drop Intake + Std. CRM Headwall
Install : 24" RCP, Cl. III

ESTIMATED QUANTITIES

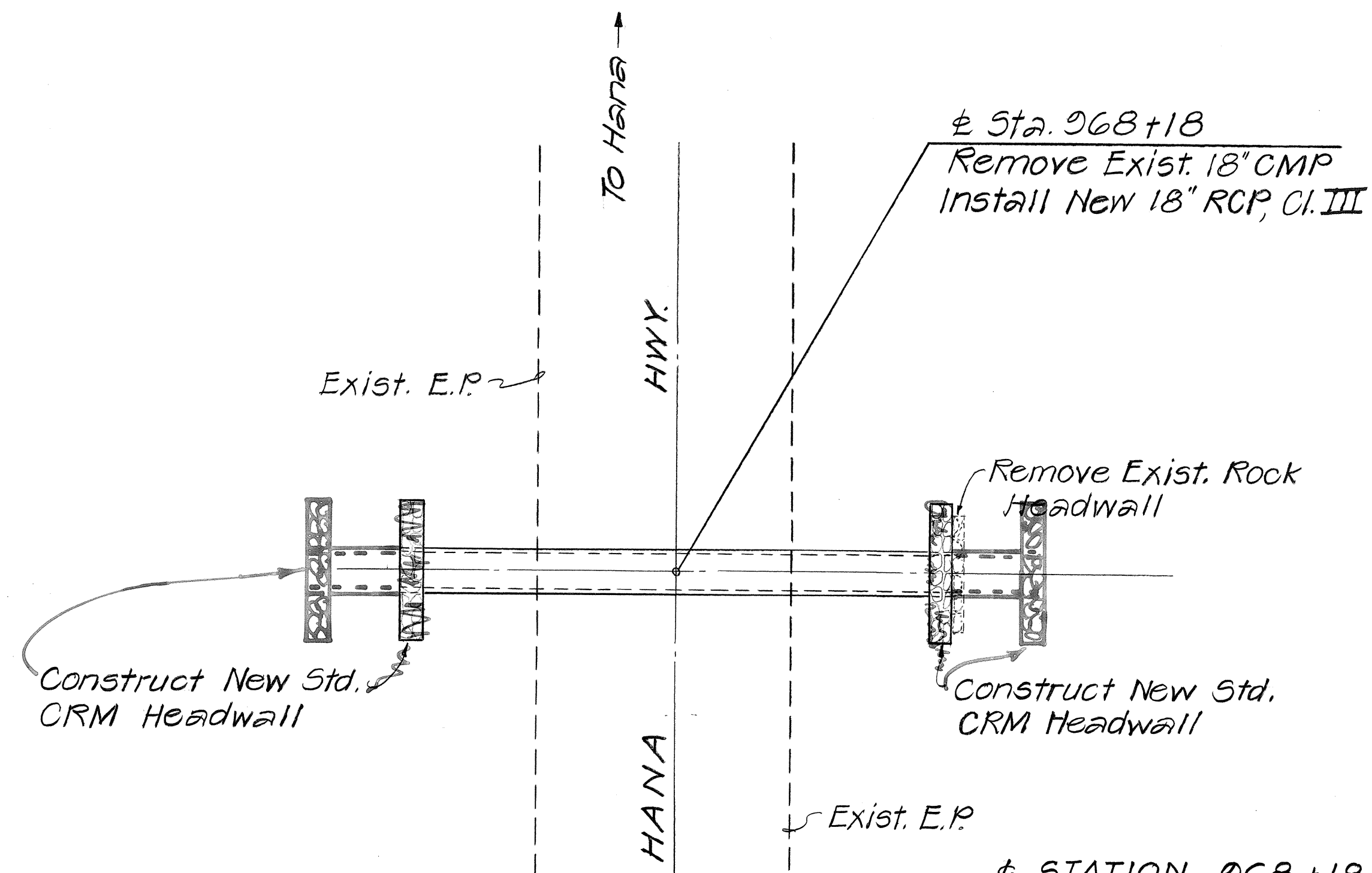
Structure Excavation 46.2 = 38.6 c.y.
Ditch & Channel Excavation 0.0 = 1.2 c.y.
Cement Rubble Masonry 12.3 = 8.7 c.y.
Bedcourse Material 8.2 = 3.8 c.y.
24" RCP, Cl. III 24.0 = 28.0 l.f.
Grouted Rubble Paving 0.0 = 4.4 c.y.



24" CULVERT @ STA. 960+53
Scale : 1" = 5'-0"

STATE OF HAWAII
DEPARTMENT OF TRANSPORTATION
LAND TRANSPORTATION FACILITIES DIVISION
DRAINAGE DETAILS
PLAN AND PROFILE-CULVERTS
HANA HIGHWAY IMPROVEMENTS
WAILUA TOWARDS HANA-PHASE I
PROJ. NO. 360B-01-85
SCALE: AS SHOWN DATE: SEPT. 1984
SHEET NO. 4 OF 14 SHEETS

FED. ROAD DIST. NO.	STATE	PROJ. NO.	FISCAL YEAR	SHEET NO.	TOTAL SHEETS
HAWAII	HAW.	360B-01-85	1985	13	41

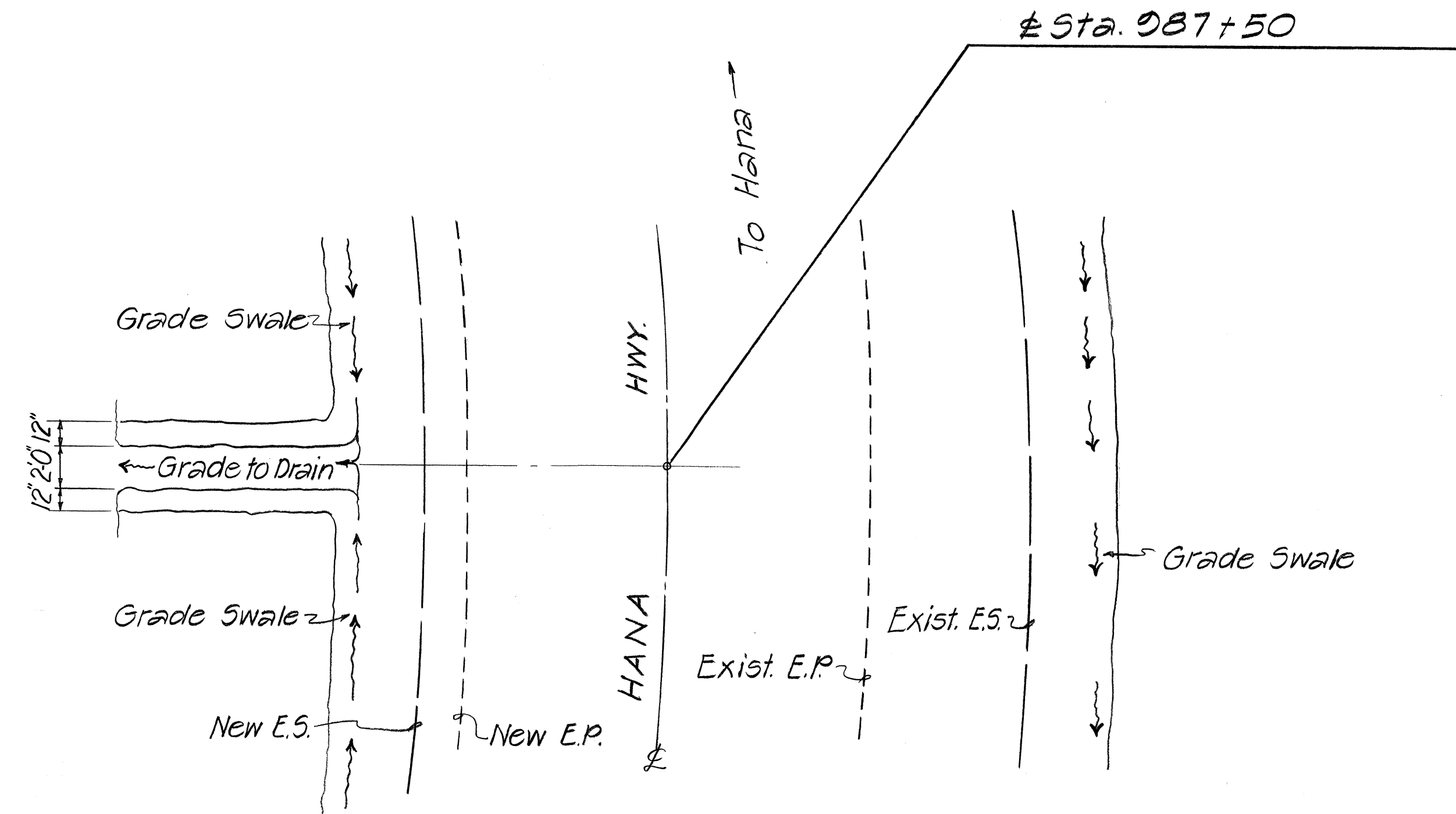


PLAN

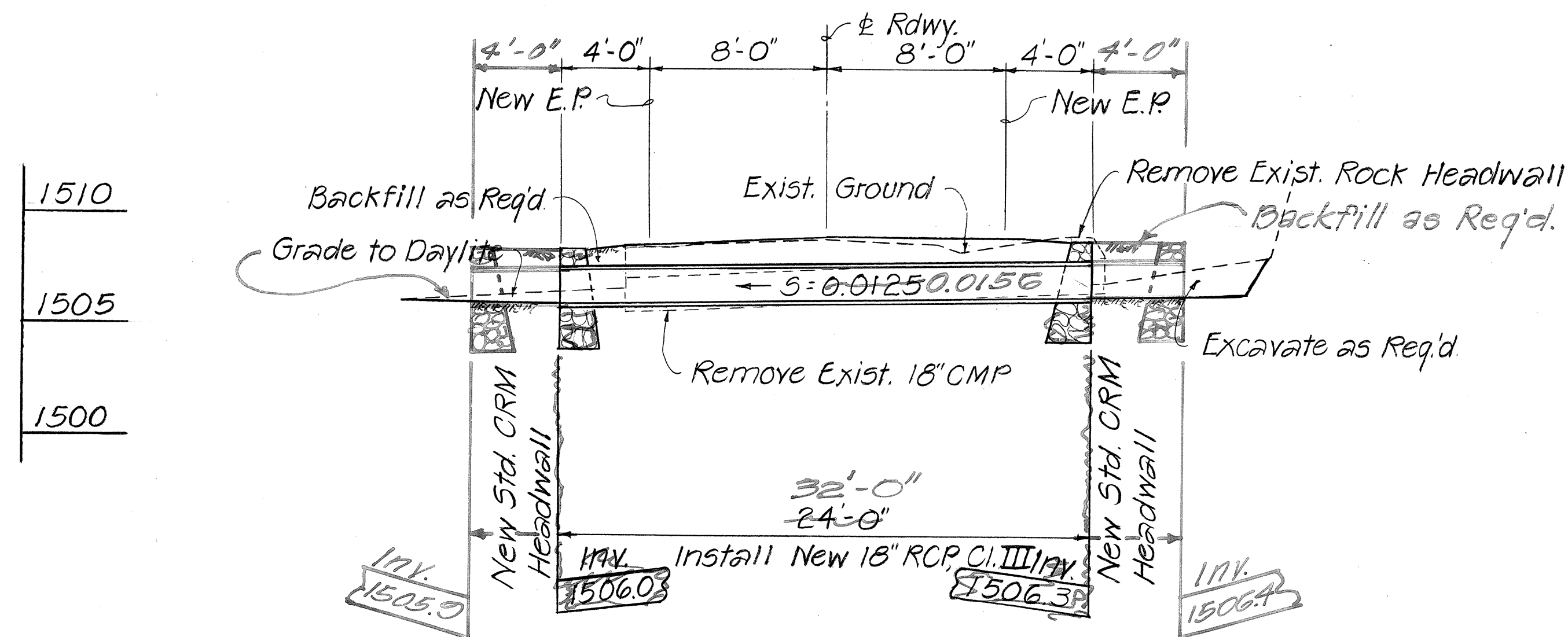
± STATION 968+18
Construct : 2-Std. CRM Headwalls
Install : 18" RCP, CI. III

ESTIMATED QUANTITIES

Structure Excavation = 16.6 c.y. 21.5
Ditch & Channel Exc. = 0.6 c.y. 0.4
Cement Rubble Masonry = 2.5 c.y. 2.4
Bedcourse Material = 3.4 c.y. 4.1
18" RCP, CI. III = 24.0 l.f. 32.0
Grouted Rubble Paving =



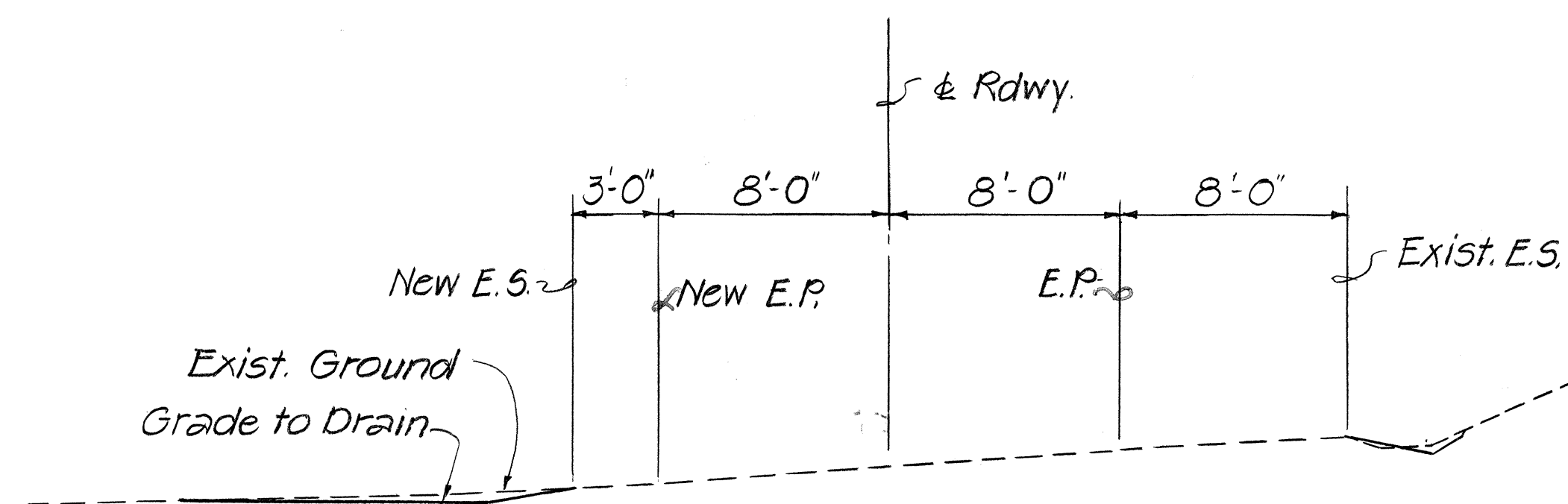
PLAN



PROFILE

18" CULVERT @ STA. 968+18

Scale : 1" = 5'-0"



PROFILE

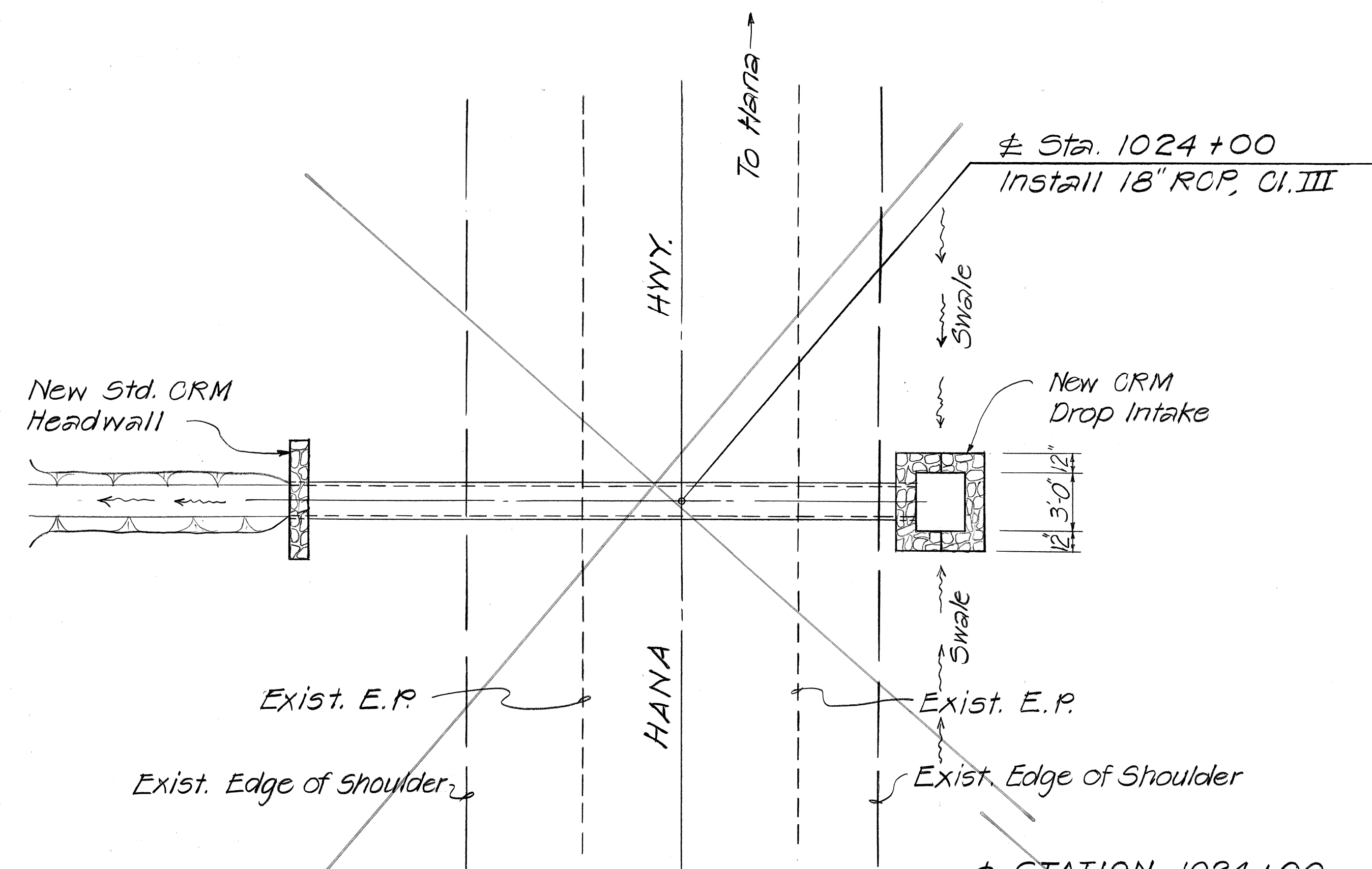
DRAINAGE DETAIL @ STA. 987+50

Scale : 1" = 5'-0"

NOTE: Grade Swale Sta. 986+50 to 988+00 Lt. & Rt. as directed by the Engineer. This work will not be paid for separately but shall be considered incidental to various contract items.

STATE OF HAWAII
DEPARTMENT OF TRANSPORTATION
LAND TRANSPORTATION FACILITIES DIVISION
DRAINAGE DETAILS
PLAN AND PROFILE - CULVERTS
HANA HIGHWAY IMPROVEMENTS
WAILUA TOWARDS HANA, PHASE I
PROJ. NO. 360B-01-85
SCALE: AS NOTED DATE: SEPT. 1984
SHEET NO. 5 OF 14 SHEETS

FED. ROAD DIST. NO.	STATE	PROJ. NO.	FISCAL YEAR	SHEET NO.	TOTAL SHEETS
HAWAII	HAW.	360B-01-85	1985	14	41



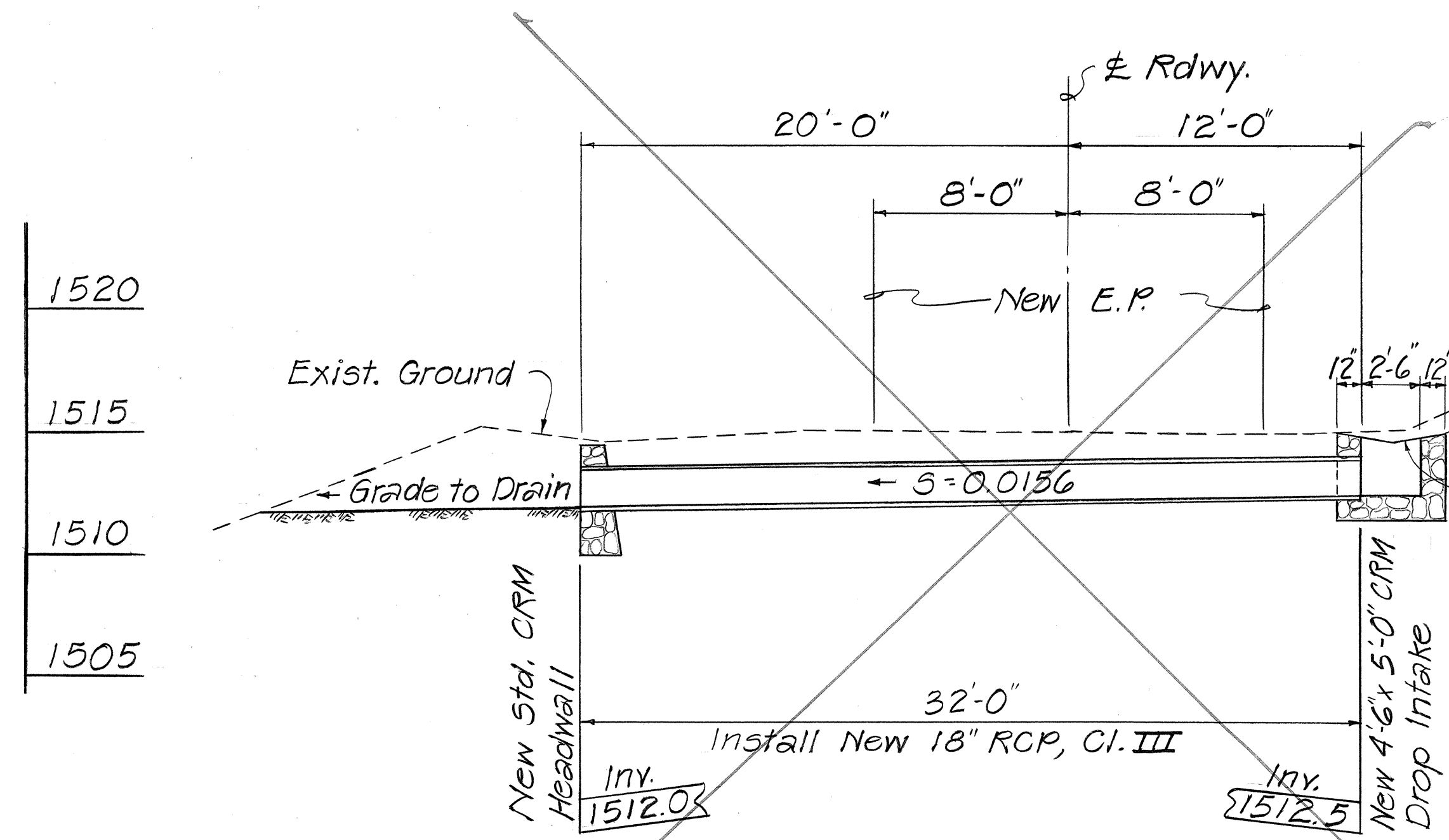
PLAN

± Sta. 1024+00
Install 18" RCP, Cl. III

Construct: 1-Std. CRM Headwall
1-CRM Drop Intake
Install: 18" RCP, Cl. III

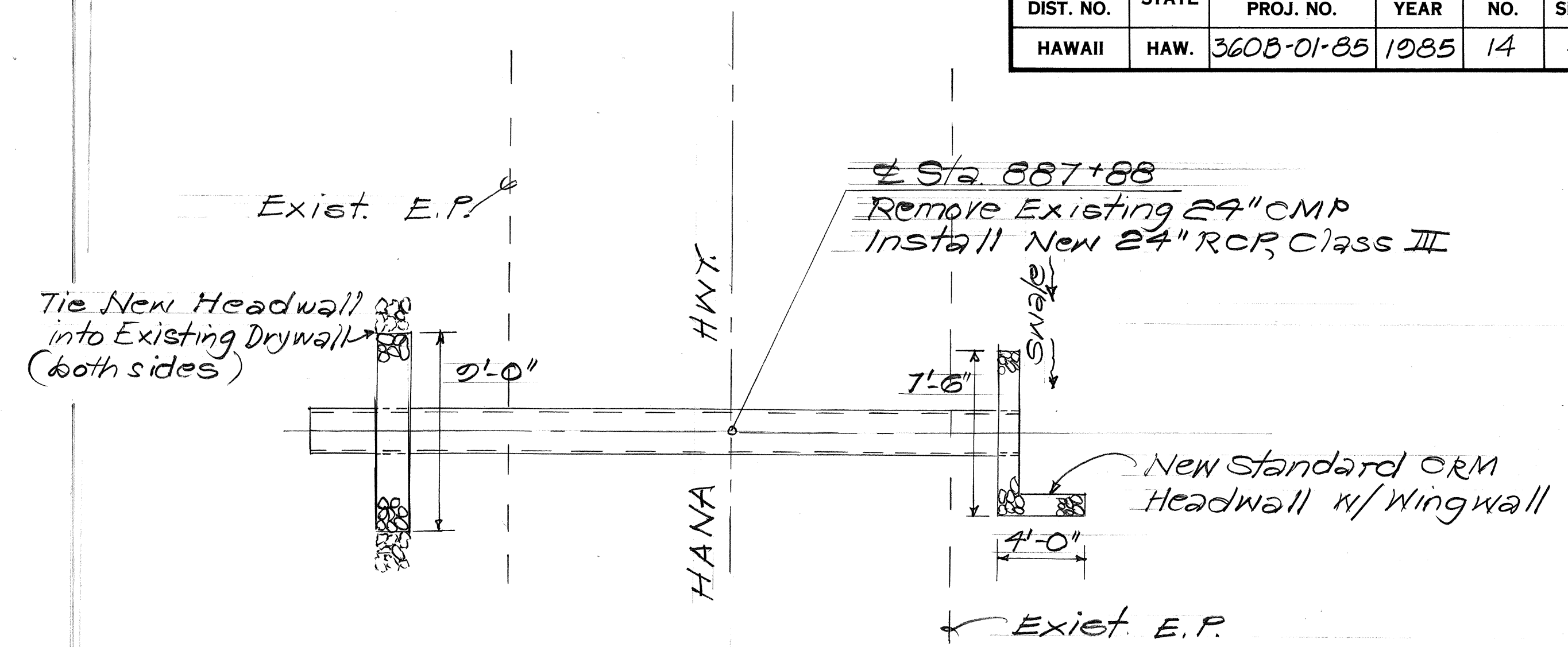
ESTIMATED QUANTITIES

Structure Excavation = 27.8 c.y.
Ditch & Channel Excavation = 4.0 c.y.
Cement Rubble Masonry = 3.3 c.y.
Bedcourse Material = 4.9 c.y.
18" RCP, Cl. III = 32.0 l.f.

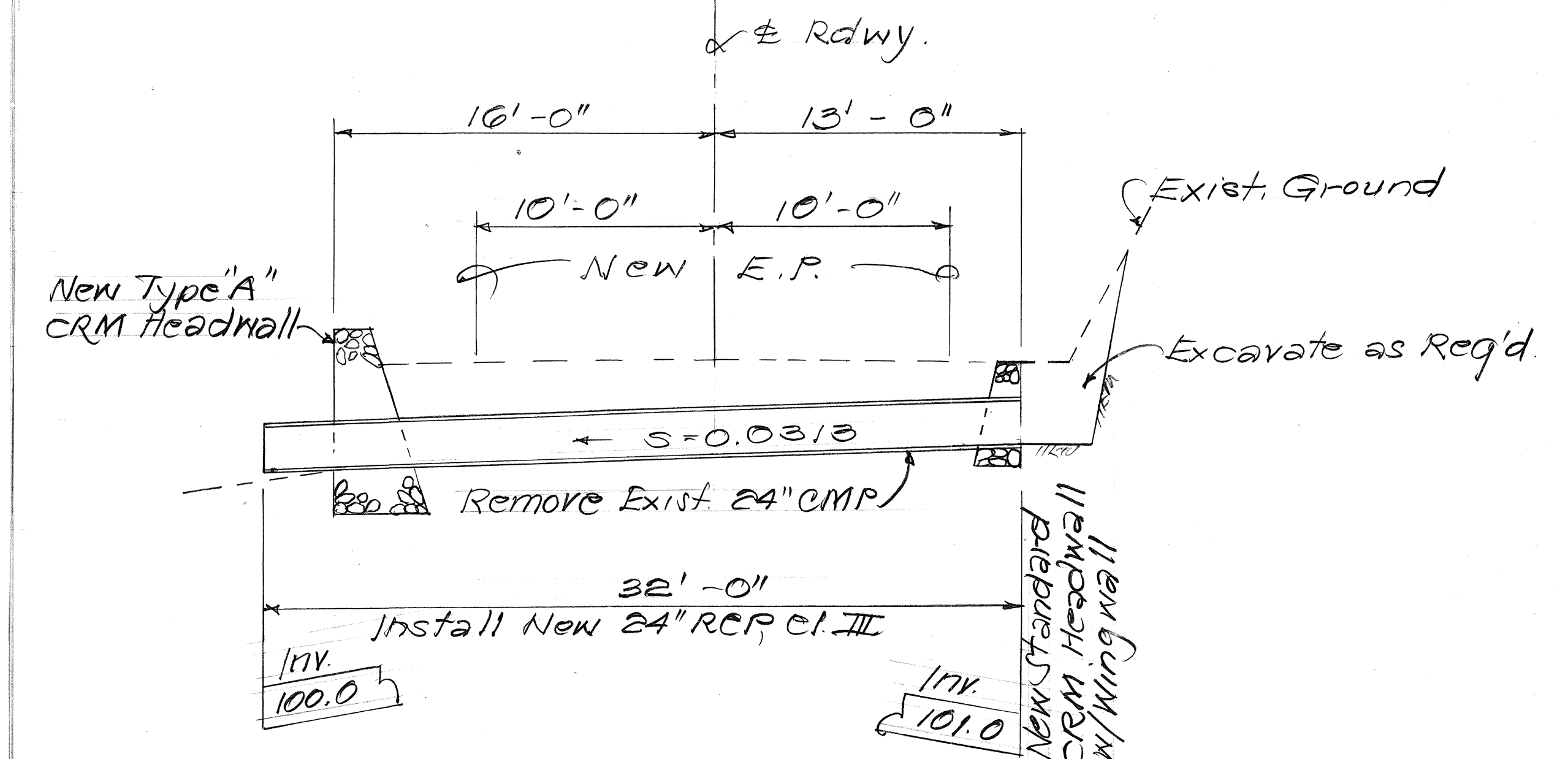


PROFILE

18" CULVERT @ STA. 1024+00
Scale: 1" = 5'-0"



PLAN



PROFILE

24" CULVERT @ STA. 887+88

Scale: 1" = 5'

± Station 887+88
Construct: 1-Type "A" CRM Headwall
1-Std. CRM Headwall w/Wingwall

ESTIMATED QUANTITIES

Structure Excavation 47.0 c.y.
Cement Rubble Masonry 10.2 c.y.
Bedcourse Material 4.3 c.y.
24" RCP, Cl. III 32.0 l.f.

FIELD DIRECTIVE
NO. 2

STATE OF HAWAII
DEPARTMENT OF TRANSPORTATION
HIGHWAYS DIVISION

DRAINAGE DETAILS
PLAN AND PROFILE - CULVERT
HANA HIGHWAY IMPROVEMENTS
WAILUA TOWARDS HANA, PHASE I
PROJ. NO. 360B-01-85
SCALE: AS SHOWN DATE: SEPT. 1984
SHEET NO. 6 OF 14 SHEETS

FED. ROAD DIST. NO.	STATE	PROJ. NO.	FISCAL YEAR	SHEET NO.	TOTAL SHEETS
HAWAII	HAW.	360B-01-85	1985	15	41

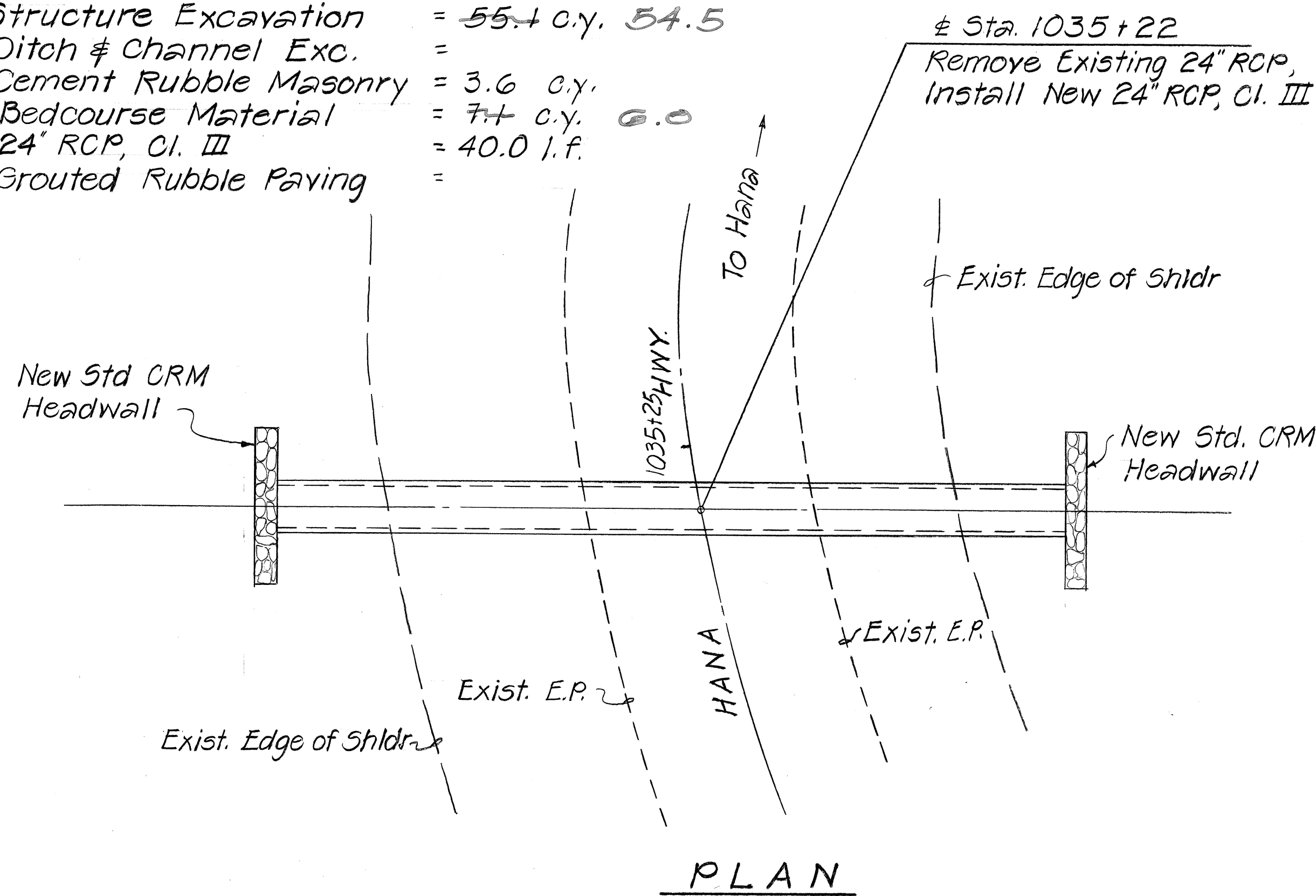
± STATION 1035+22

Construct: 2 Std CRM Headwalls

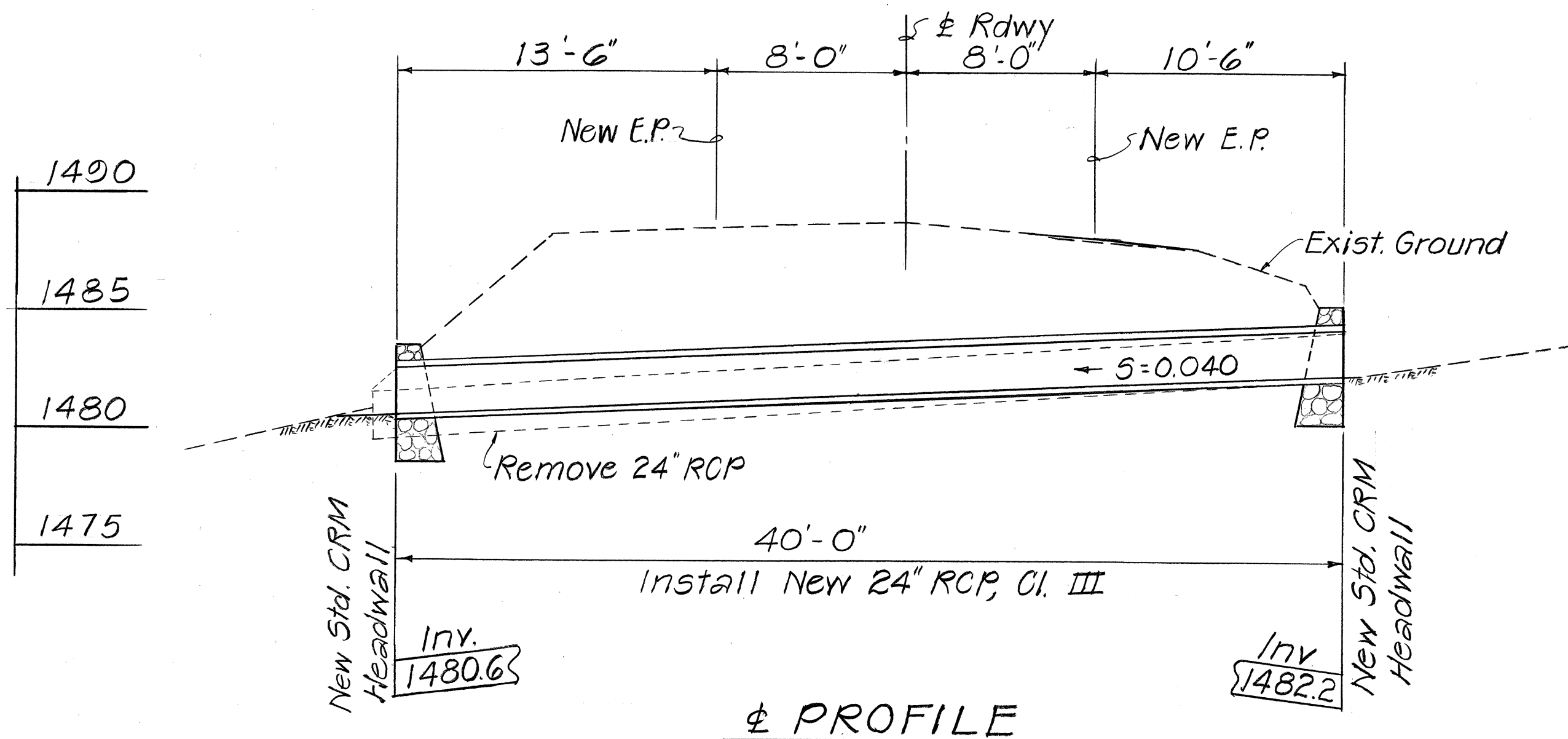
Install: 24" RCP, Cl. III

ESTIMATED QUANTITIES

Structure Excavation = 55.4 c.y. 54.5
Ditch & Channel Exc. =
Cement Rubble Masonry = 3.6 c.y.
Bedcourse Material = 7.4 c.y. 6.0
24" RCP, Cl. III = 40.0 l.f.
Grouted Rubble Paving =



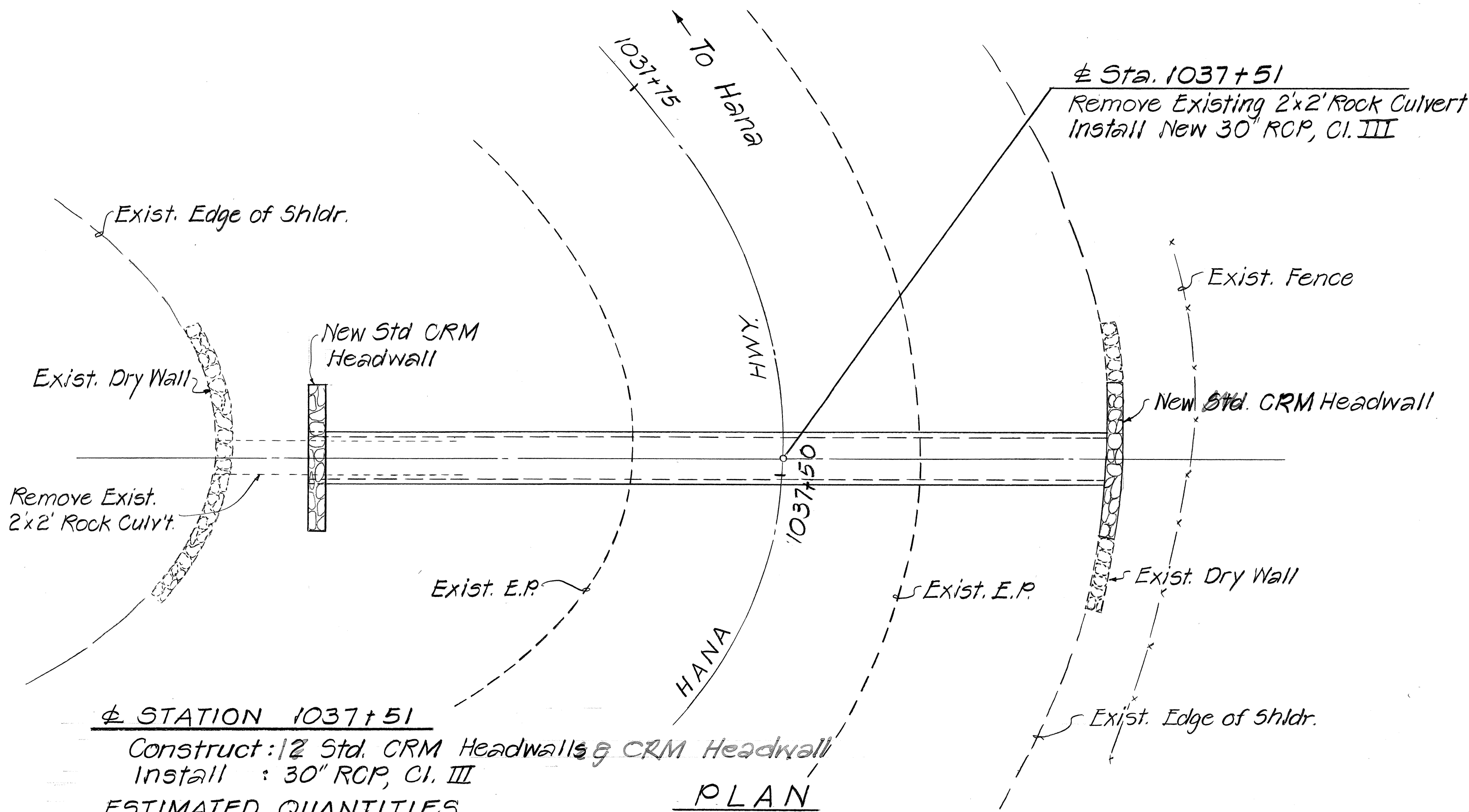
PLAN



± PROFILE

24" CULVERT @ STA. 1035+22

Scale: 1" = 5'-0"



PLAN

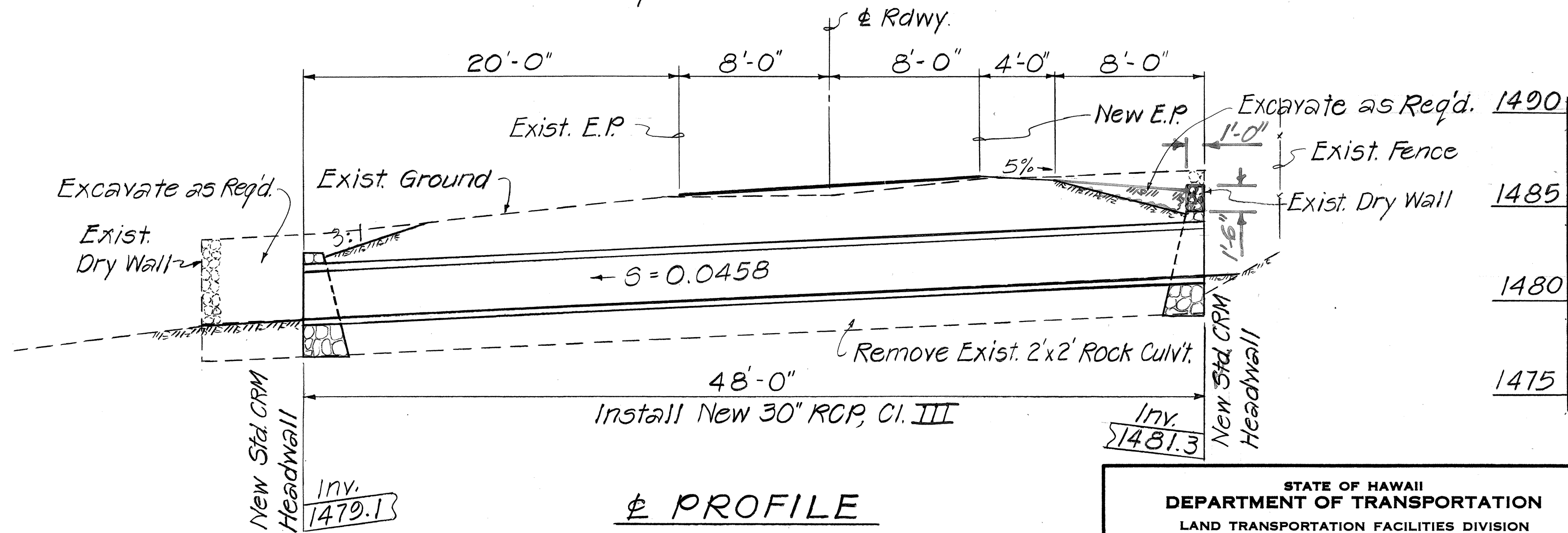
± STATION 1037+51

Construct: 12 Std. CRM Headwalls & CRM Headwall

Install: 30" RCP, Cl. III

ESTIMATED QUANTITIES

Structure Excavation = 79.8 c.y. 74.2
Ditch & Channel Exc. = 0.5 c.y. 0.8
Cement Rubble Masonry = 5.4 c.y. 5.7
Bedcourse Material = 10.4 c.y. 8.1
30" RCP, Cl. III = 48.0 c.y.



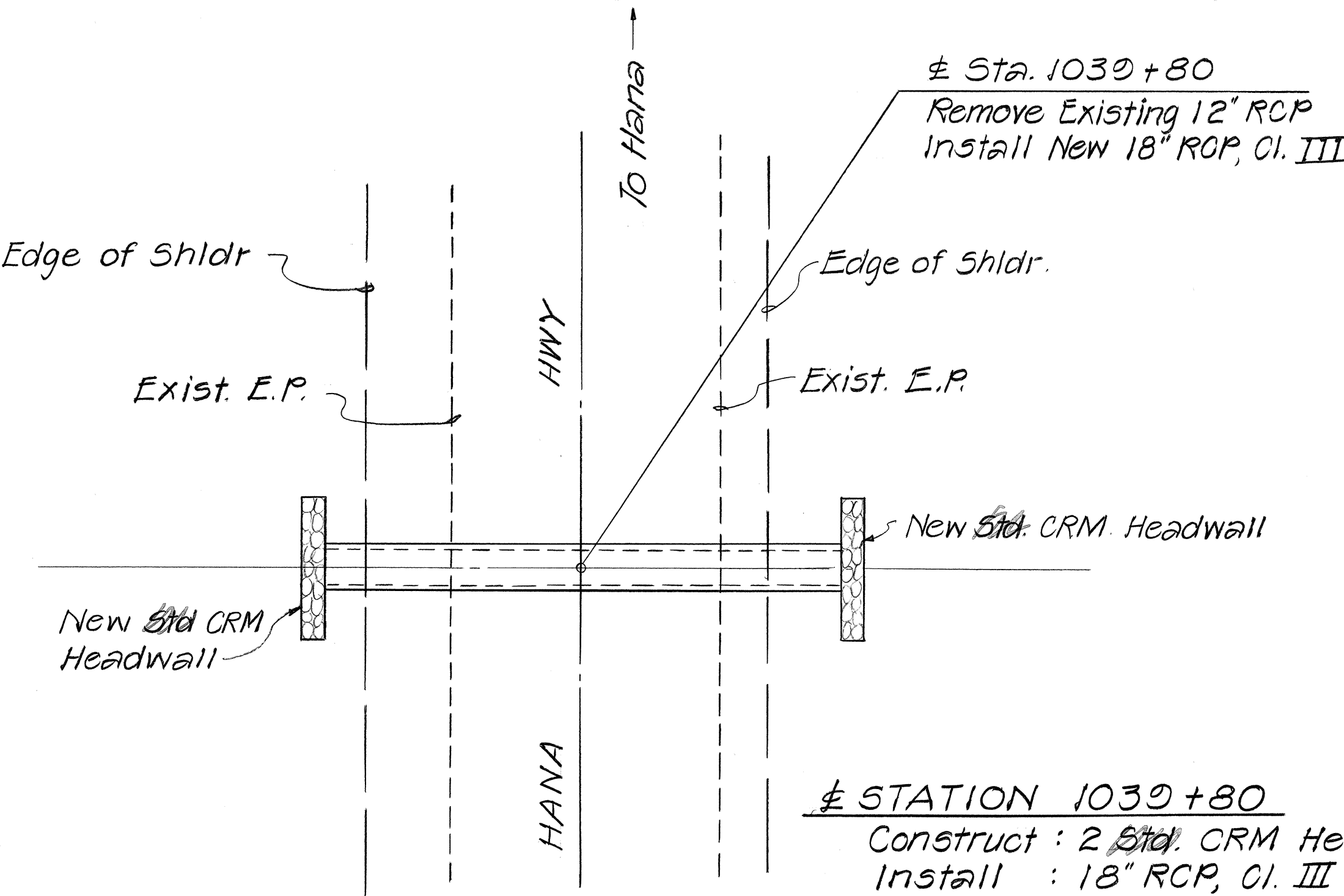
± PROFILE

30" CULVERT @ STA. 1037+51

Scale: 1" = 5'-0"

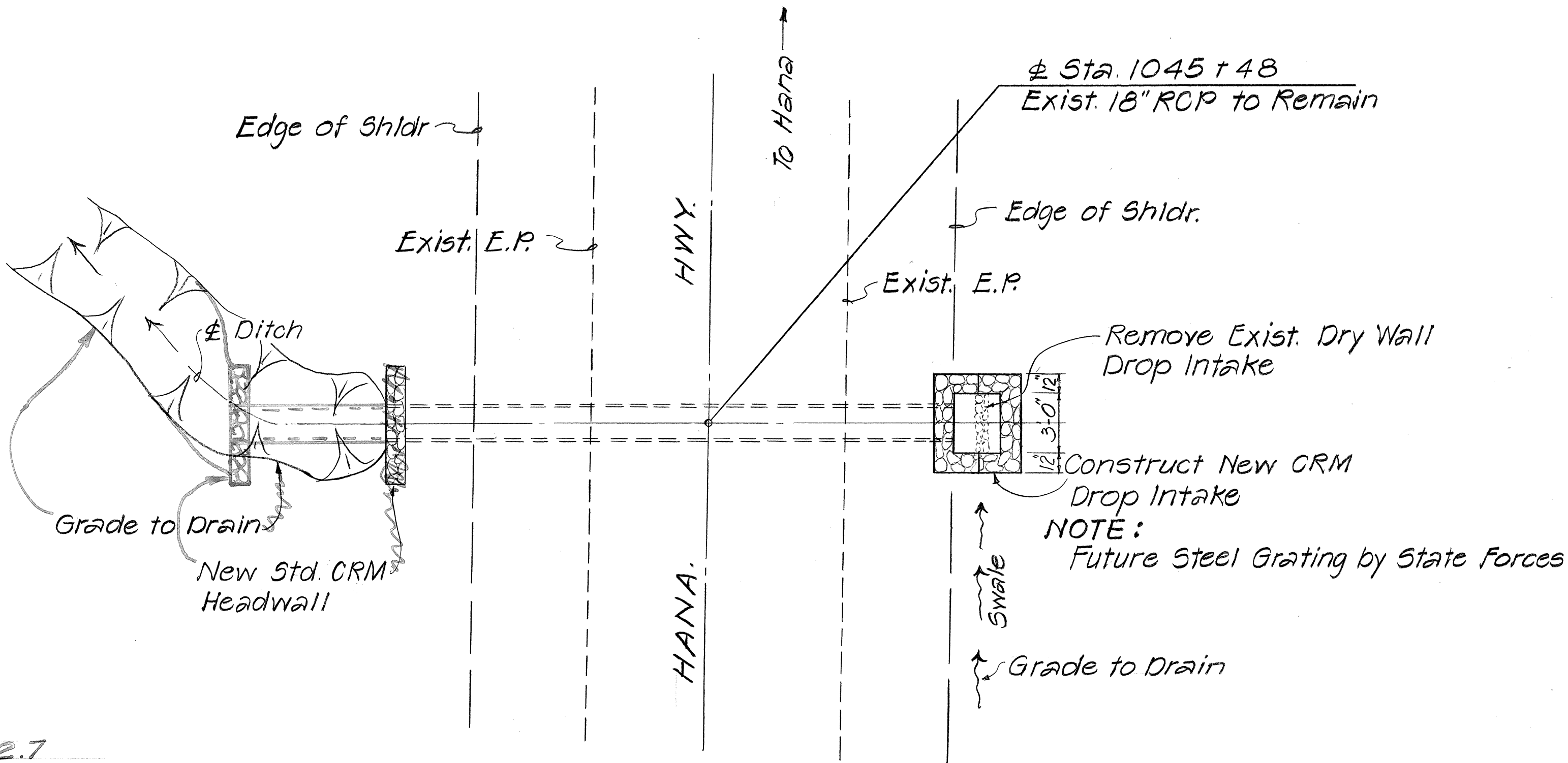
STATE OF HAWAII
DEPARTMENT OF TRANSPORTATION
LAND TRANSPORTATION FACILITIES DIVISION
DRAINAGE DETAILS
PLAN AND PROFILE - CULVERTS
HANA HIGHWAY IMPROVEMENTS
WAILUA TOWARDS HANA, PHASE I
PROJ. NO. 360B-01-85
SCALE: AS SHOWN DATE: SEPT 1984
SHEET NO. 7 OF 14 SHEETS

FED. ROAD DIST. NO.	STATE	PROJ. NO.	FISCAL YEAR	SHEET NO.	TOTAL SHEETS
HAWAII	HAW.	360B-01-85	1985	16	41



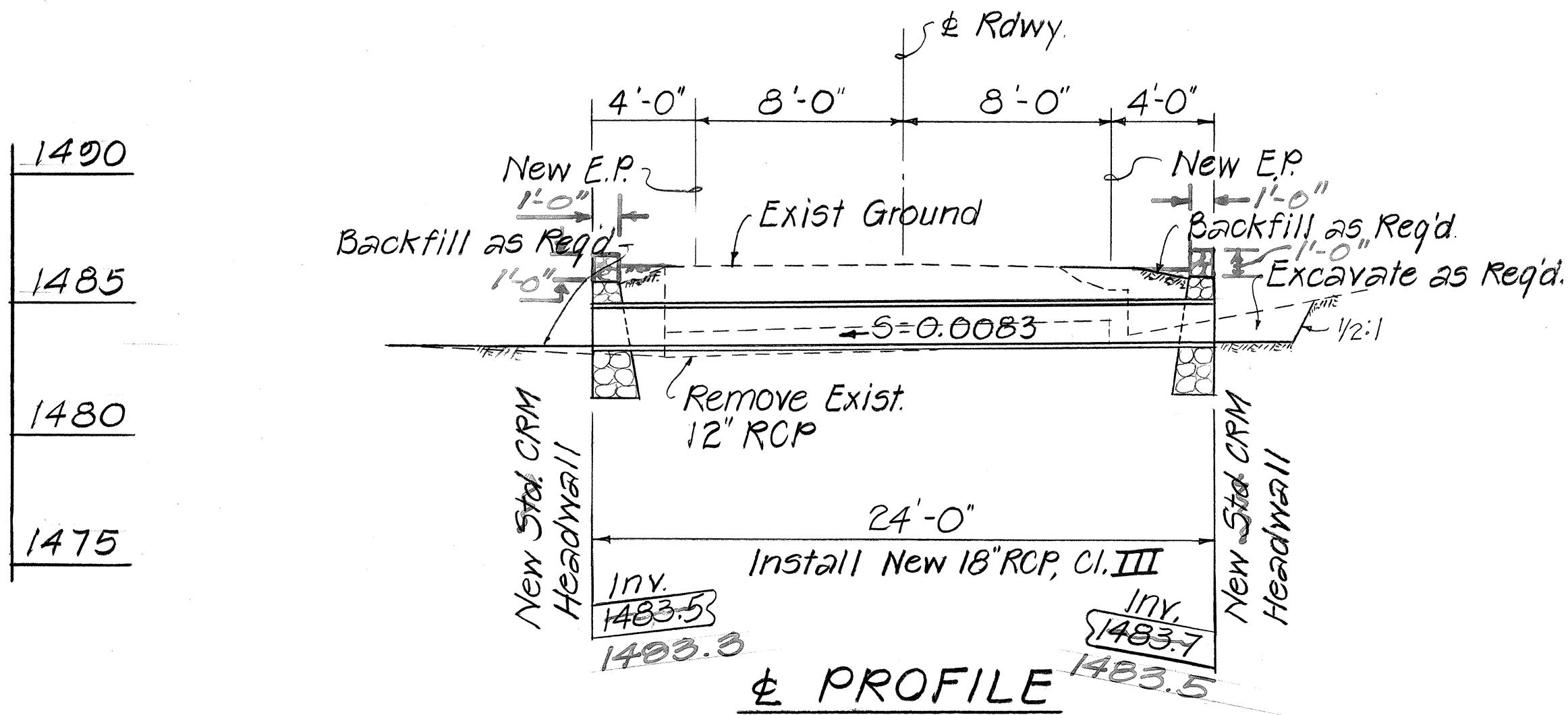
PLAN

± STATION 1039+80
Construct : 2 Std. CRM Headwalls
Install : 18" RCP, Cl. III
ESTIMATED QUANTITIES
Structure Excavation = 10.5 c.y. 22.7
Ditch & Channel Exc. = 0.2 c.y. 0.0
Cement Rubble Masonry = 2.5 c.y. 3.0
Bedcourse Material = 3.4 c.y. 3.0
18" RCP, Cl. III = 24.0 l.f.



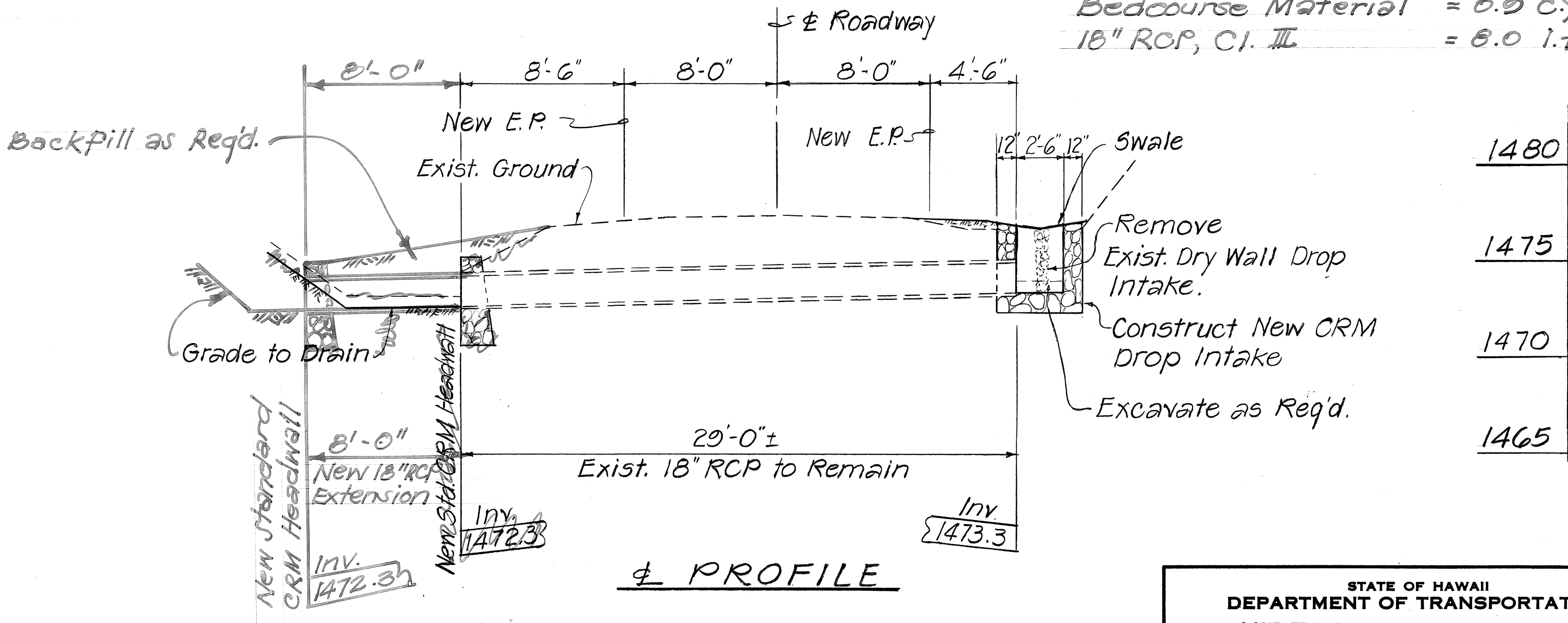
PLAN

± STATION 1045+48
Construct : 1 Standard CRM Headwall
1 CRM Drop Intake
ESTIMATED QUANTITIES
Structure Excavation = 11.8 c.y. 15.0
Cement Rubble Masonry = 3.9 c.y. 4.8
Bedcourse Material = 0.0 c.y.
18" RCP, Cl. III = 8.0 l.f.



± PROFILE

18" CULVERT @ STA. 1039+80
Scale : 1" = 5'-0"

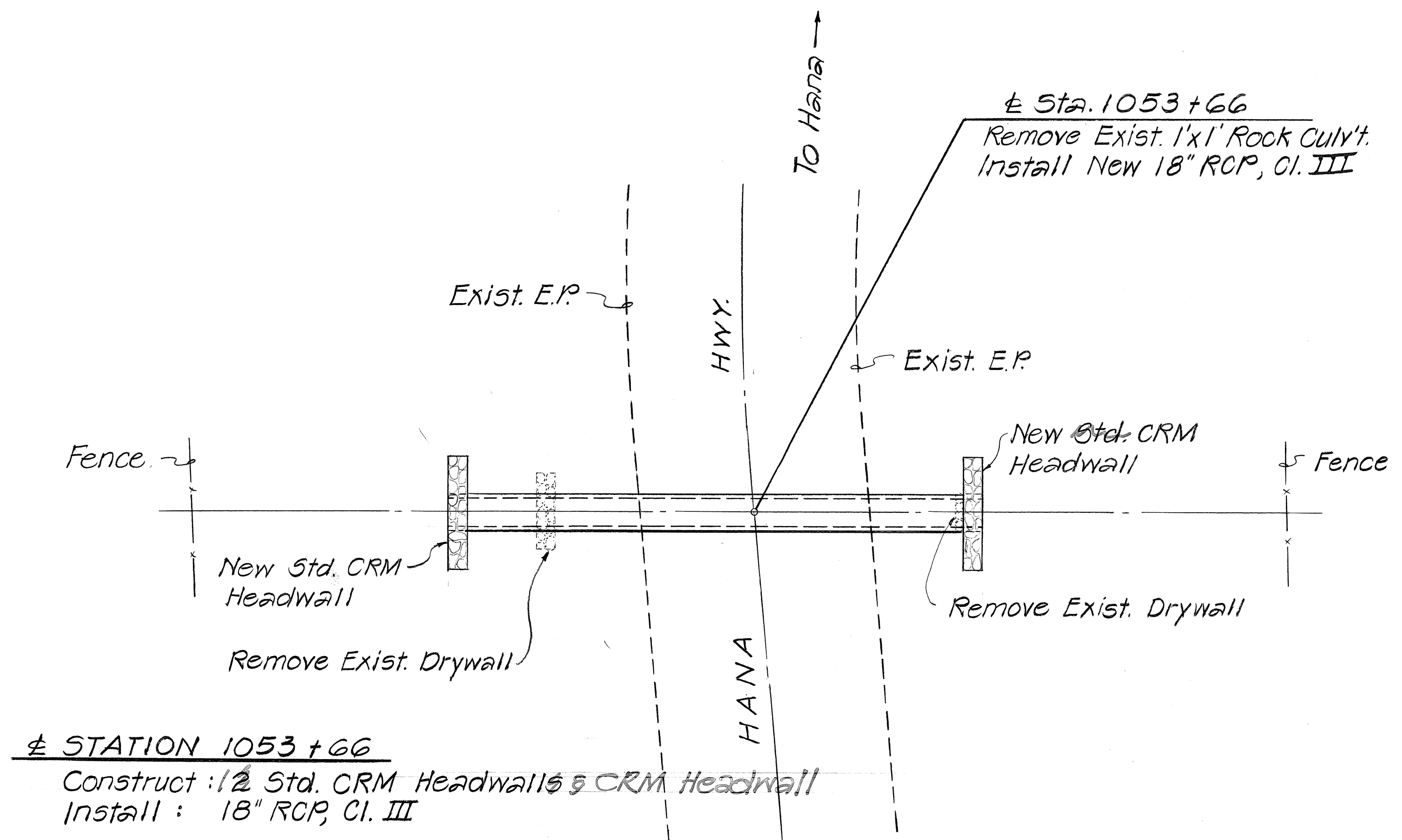


± PROFILE

18" CULVERT @ STA. 1045+48
Scale : 1" = 5'-0"

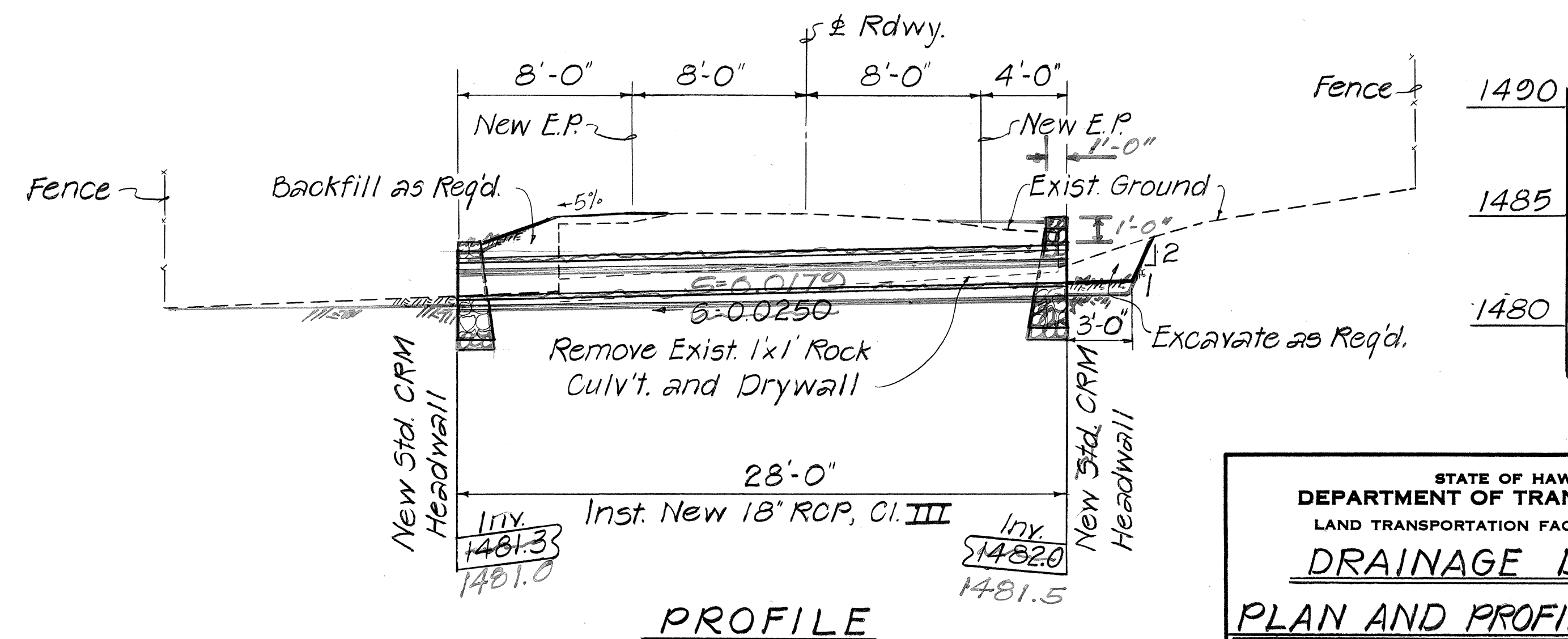
STATE OF HAWAII
DEPARTMENT OF TRANSPORTATION
LAND TRANSPORTATION FACILITIES DIVISION
DRAINAGE DETAILS
PLAN AND PROFILE-CULVERTS
HANA HIGHWAY IMPROVEMENTS
WAILUA TOWARDS HANA, PHASE I
PROJ. NO. 360B-01-85
SCALE: AS SHOWN DATE: SEPT. 1984
SHEET NO. 8 OF 14 SHEETS

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



PLAN

PLAN

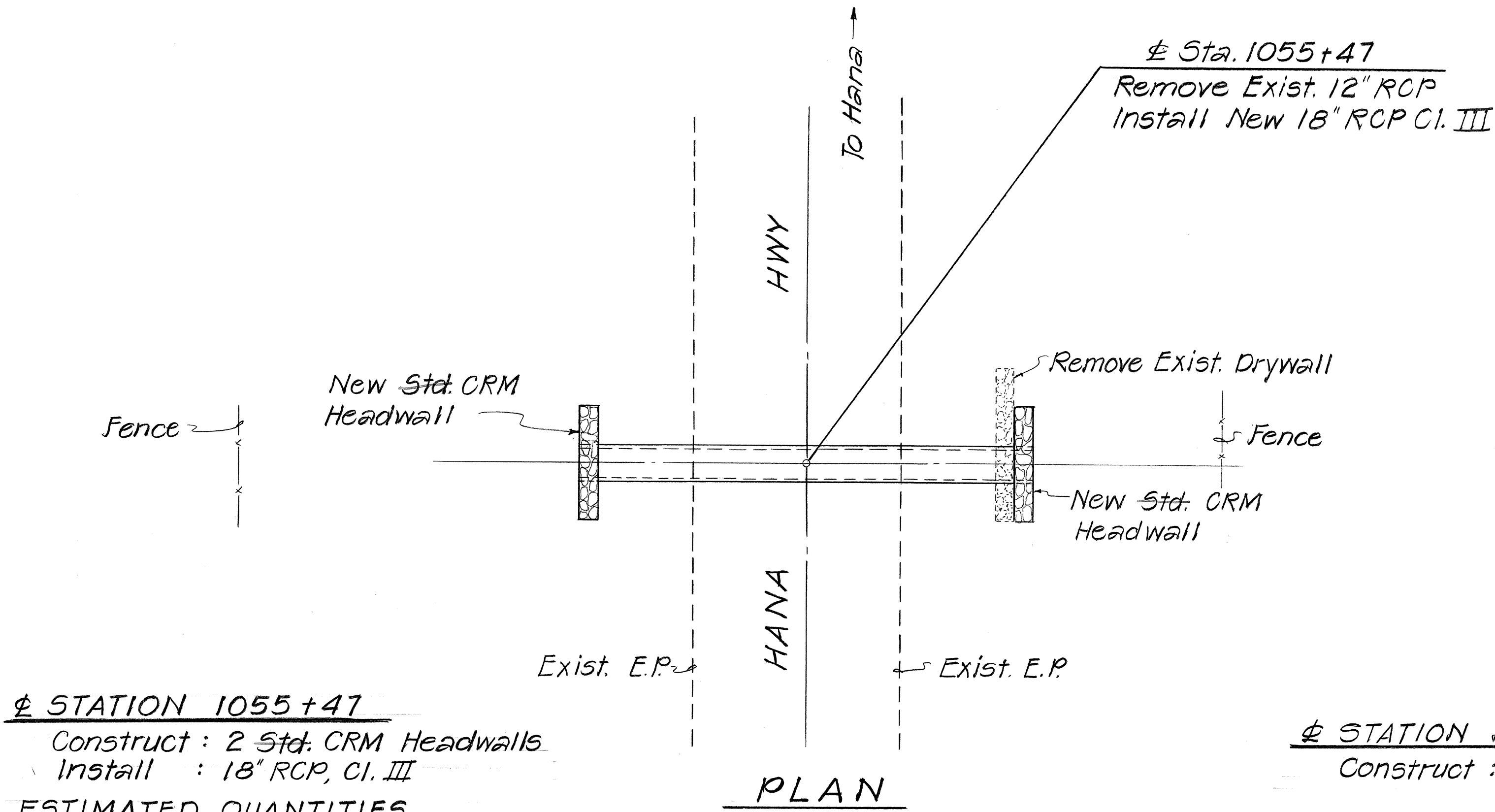


18" CULVERT @ STA. 1053+66

Scale : 1" = 5'-0"

17

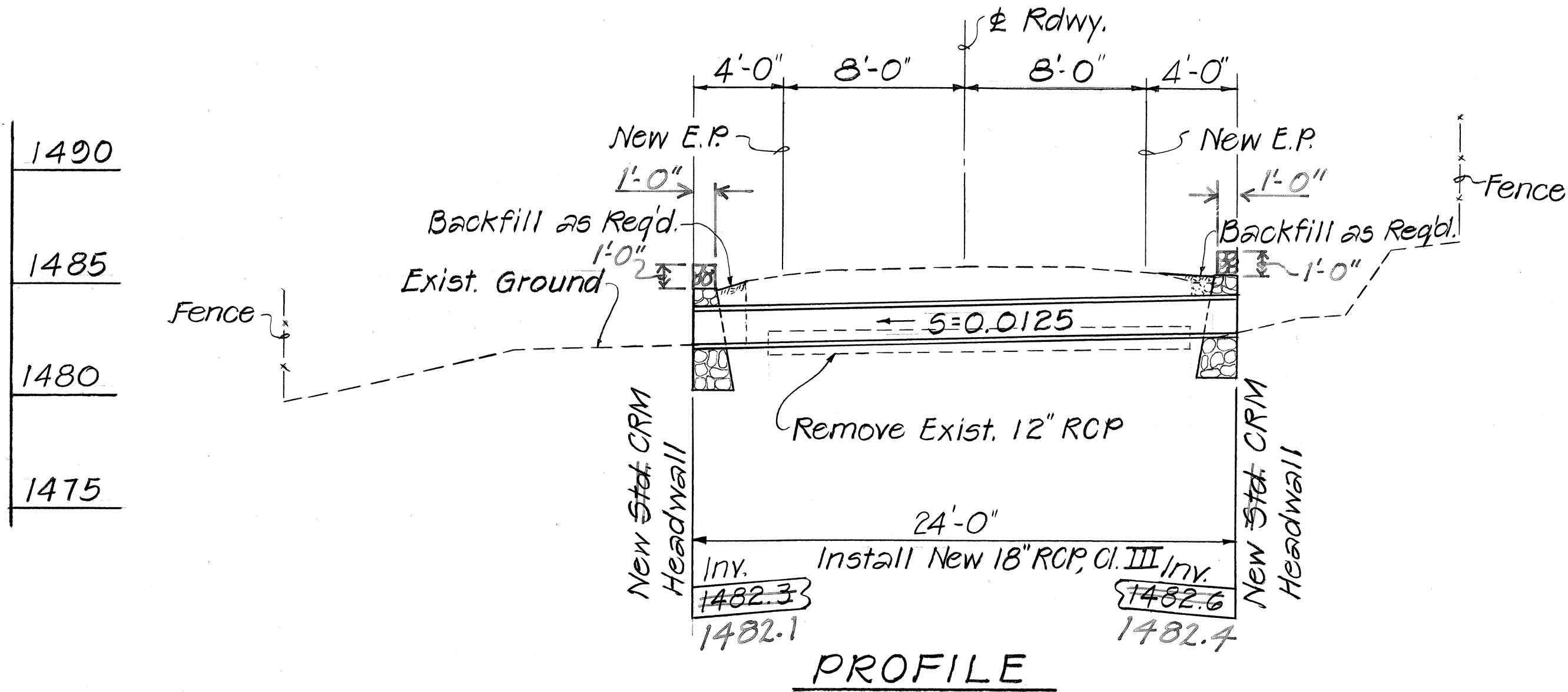
FED. ROAD DIST. NO.	STATE	PROJ. NO.	FISCAL YEAR	SHEET NO.	TOTAL SHEETS
HAWAII	HAW.	360B-01-85	1985	18	41



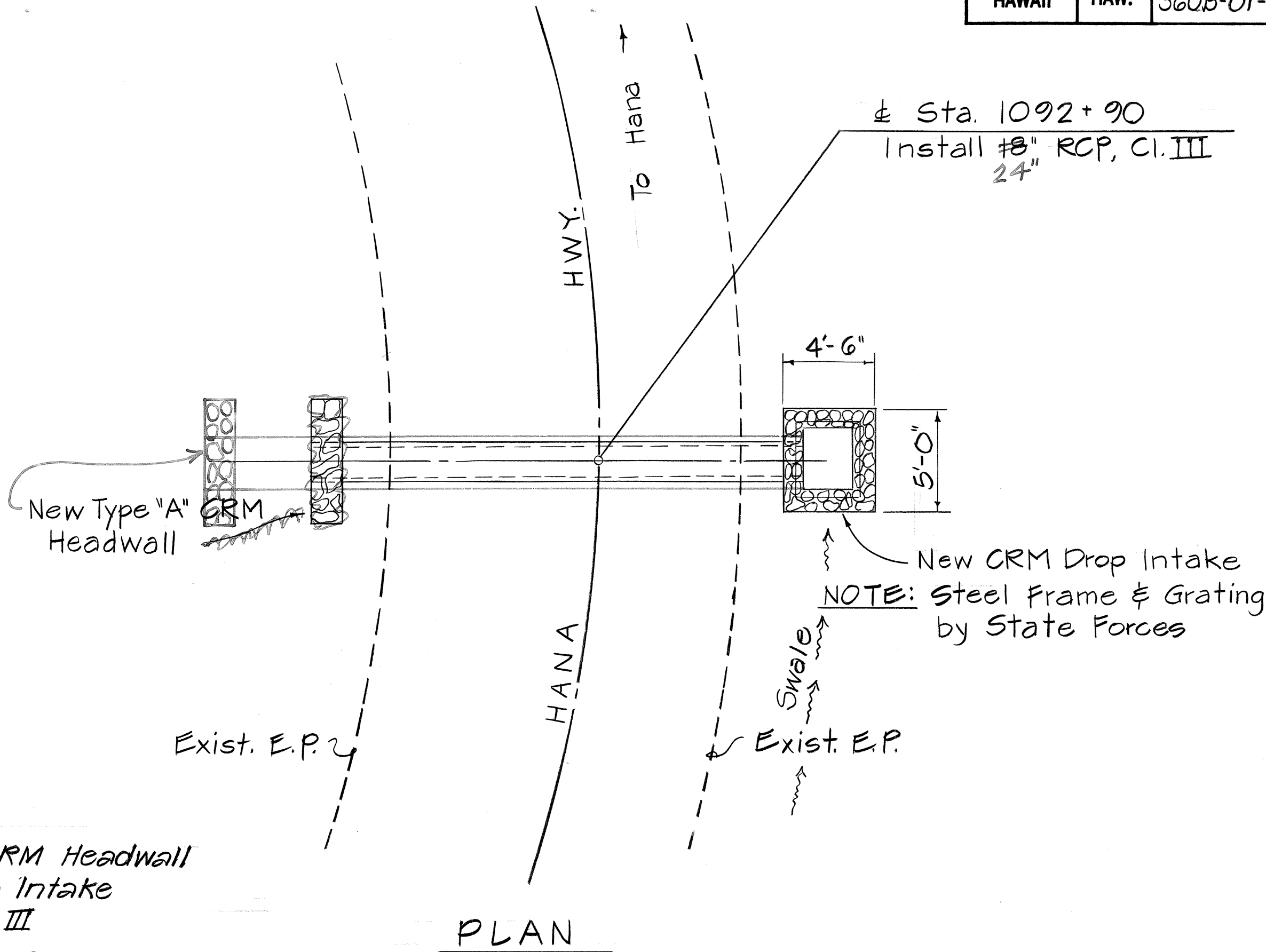
± STATION 1055+47
Construct : 2 Std. CRM Headwalls
Install : 18" RCP, Cl. III

ESTIMATED QUANTITIES

Structure Excavation = 10.7 c.y. 21.8
Ditch & Channel Excavation =
Cement Rubble Masonry = 2.5 c.y. 3.0
Bedcourse Material = 3.4 c.y. 3.0
18" RCP, Cl. III = 24.0 l.f.



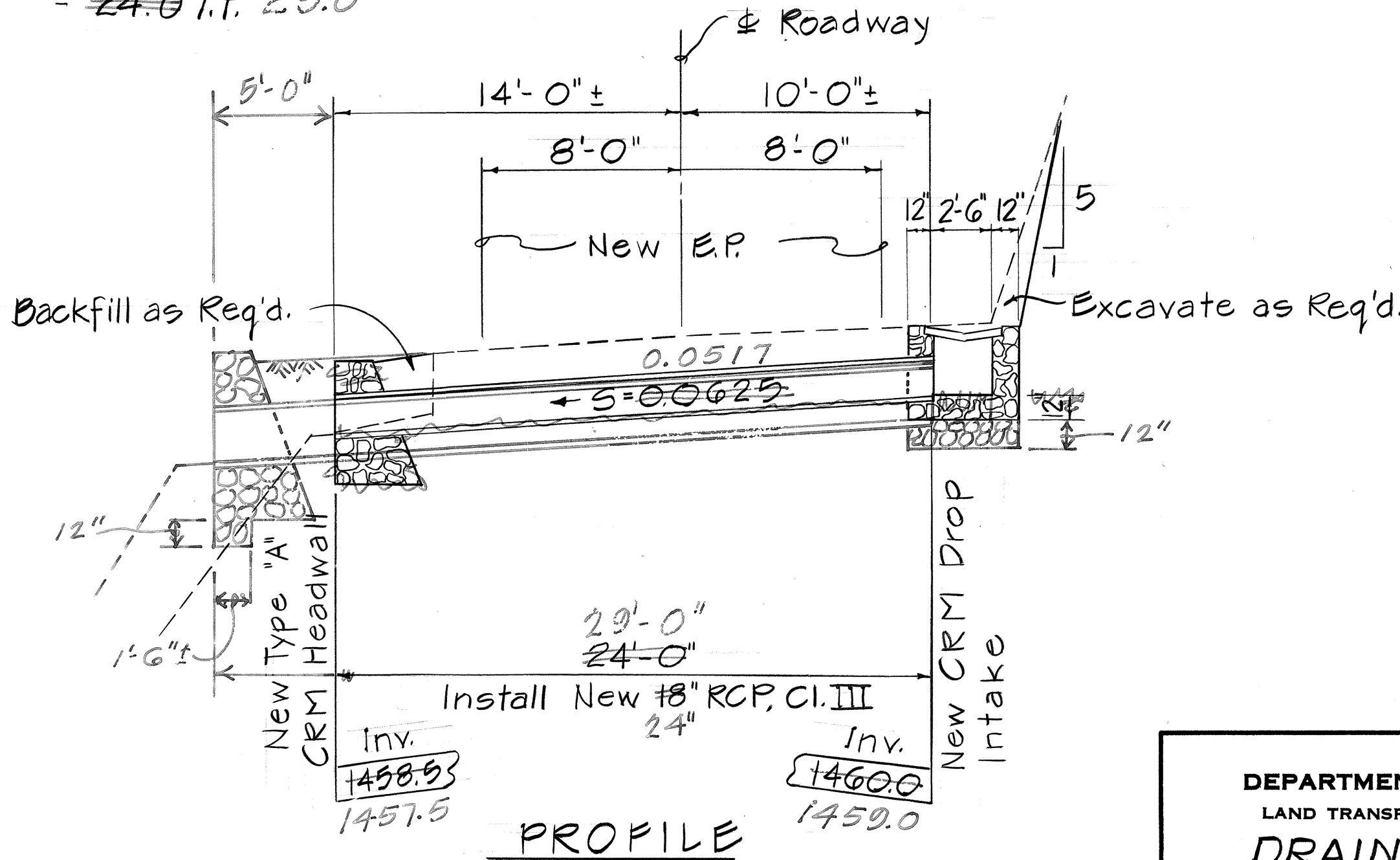
18" CULVERT @ STA. 1055+47
Scale: 1" = 5'-0"



± STATION 1092+90
Construct : 1 Type "A" CRM Headwall
1 CRM Drop Intake
Install : 24" RCP, Cl. III

ESTIMATED QUANTITIES

Structure Excavation = 25.6 c.y. 34.2
Ditch & Channel Exc. =
Cement Rubble Masonry = 4.0 c.y. 6.6
Bedcourse Material = 3.3 c.y. 4.0
24" RCP, Cl. III = 24.0 l.f. 20.0



24" RCP CULVERT @ STA. 1092+90
Scale: 1" = 5'-0"

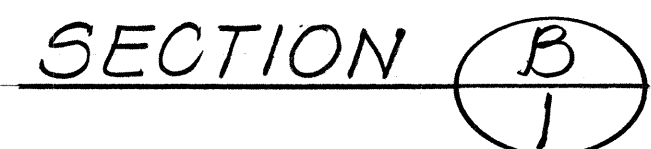
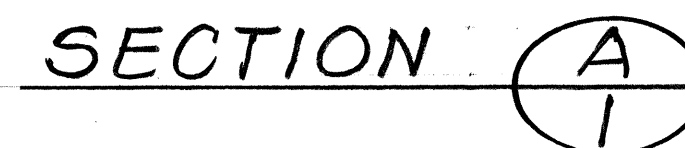
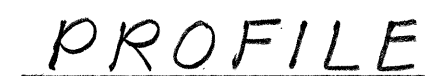
STATE OF HAWAII
DEPARTMENT OF TRANSPORTATION
LAND TRANSPORTATION FACILITIES DIVISION
DRAINAGE DETAILS
PLAN AND PROFILE-CULVERTS
HANA HIGHWAY IMPROVEMENTS
WAILUA TOWARDS HANA-PHASE I
PROJ. NO. 360B-01-85
SCALE: AS SHOWN DATE: OCT. 1985
SHEET NO. 10 OF 14 SHEETS

Note:

- ① - Any cavity or void created beneath the remaining portion of the culvert by the adjacent removal or excavation shall be filled with a minimum of class "D" concrete to a true vertical plane, and to the satisfaction of the Engineer, at the Contractor's expense.



Structure Excavation	=	23.0	c.y.	22.5
Ditch & Channel Exc.	=	4.3	c.y.	5.3
Cement Rubble Masonry	=	7.4	c.y.	
Grouted Rubble Paving	=	1.0	c.y.	1.1
Class A" Concrete	=	3.0	c.y.	2.1
Reinforcing Steel	=	450	lbs.	417



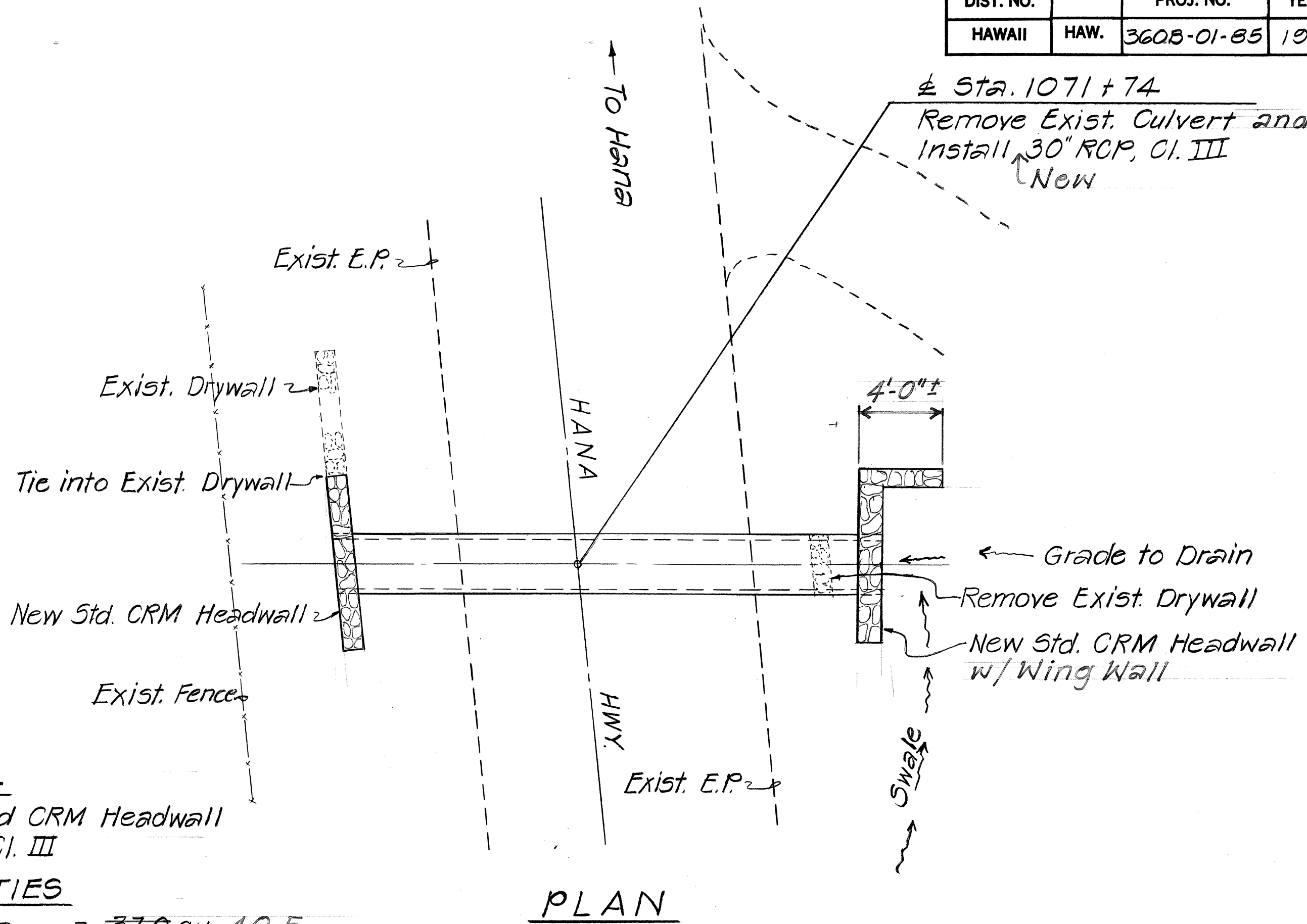
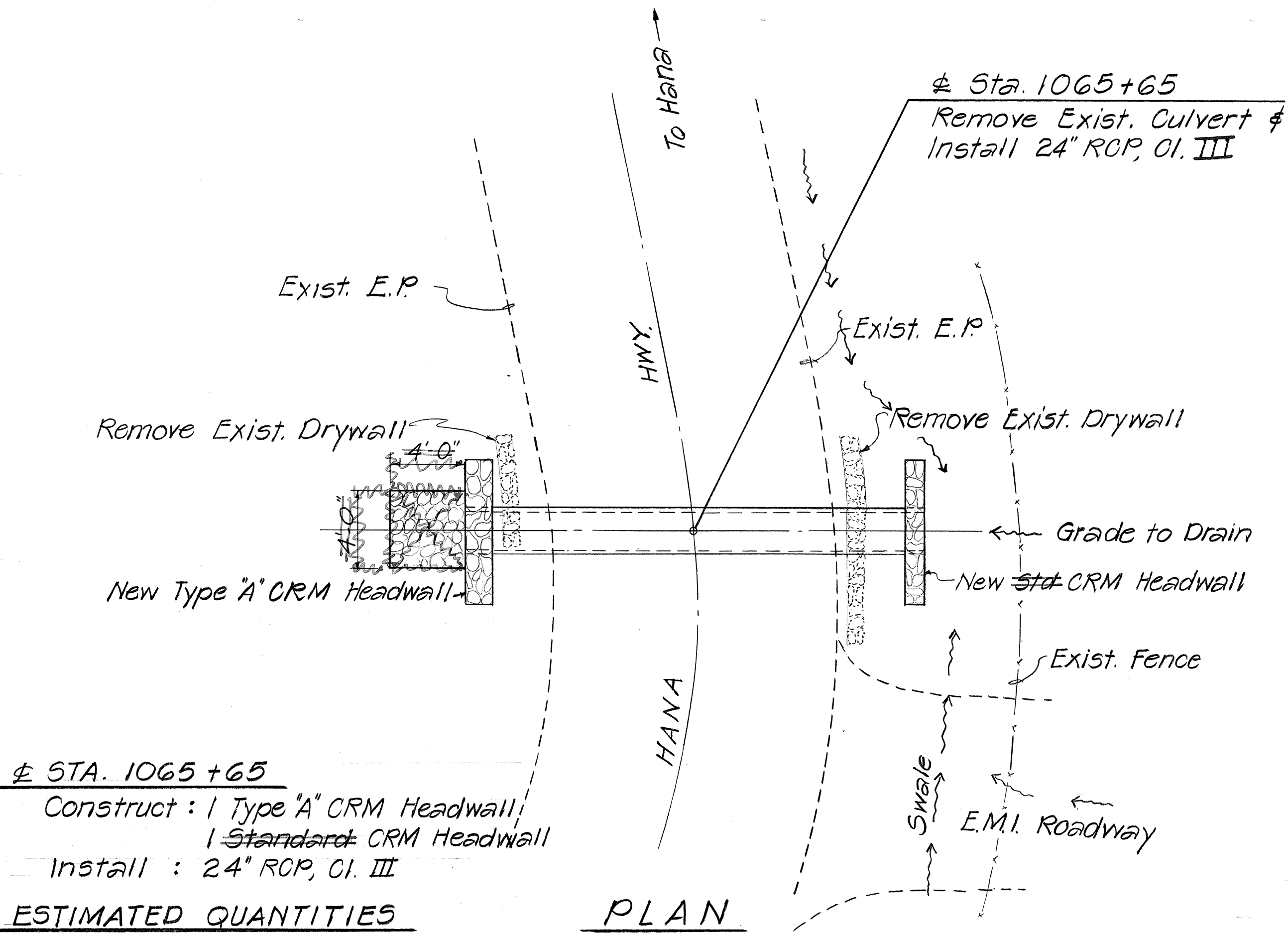
Scale: $3/4" = 1'-0"$

Scale : 1" = 5'-0"

19

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

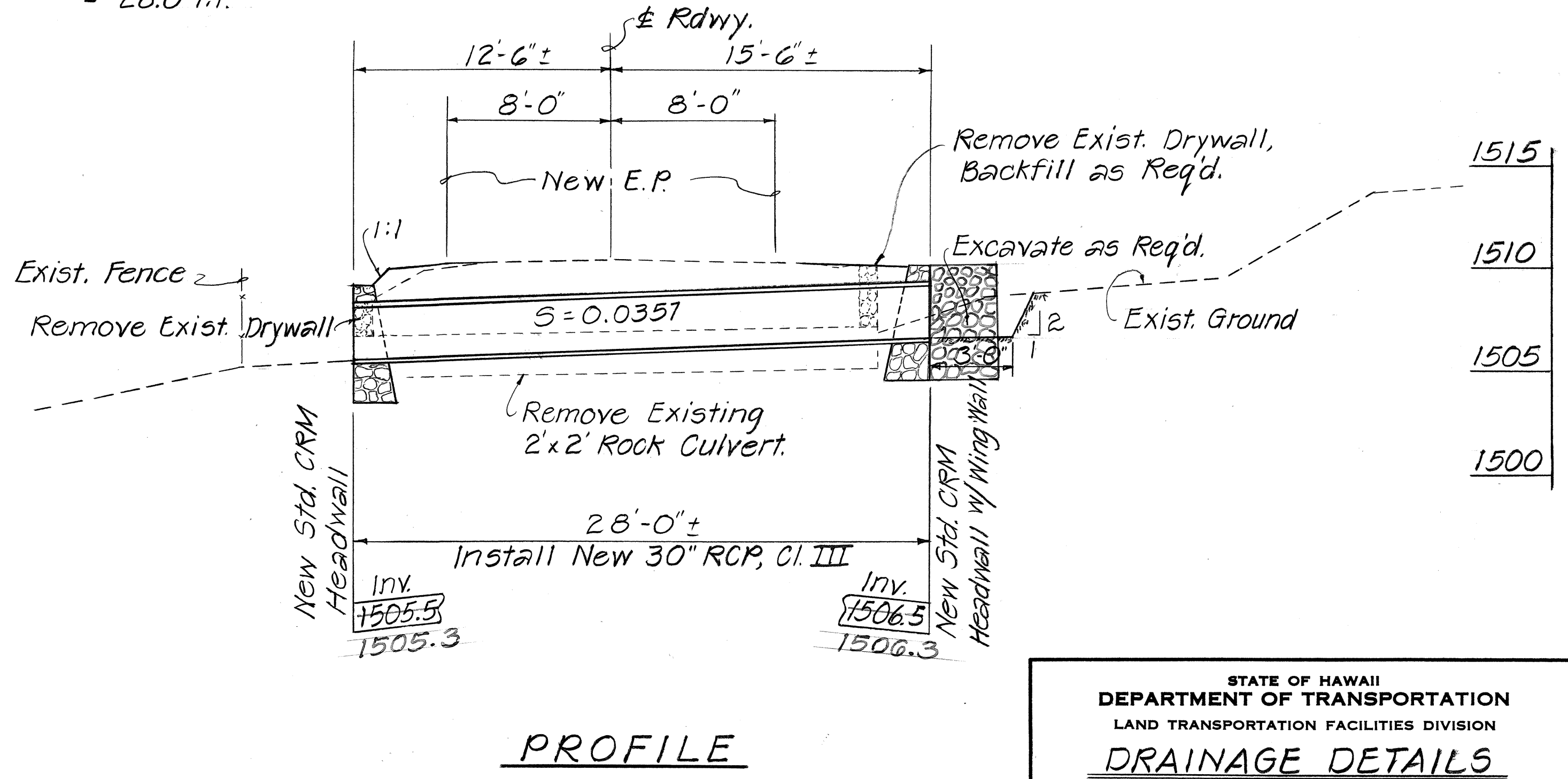
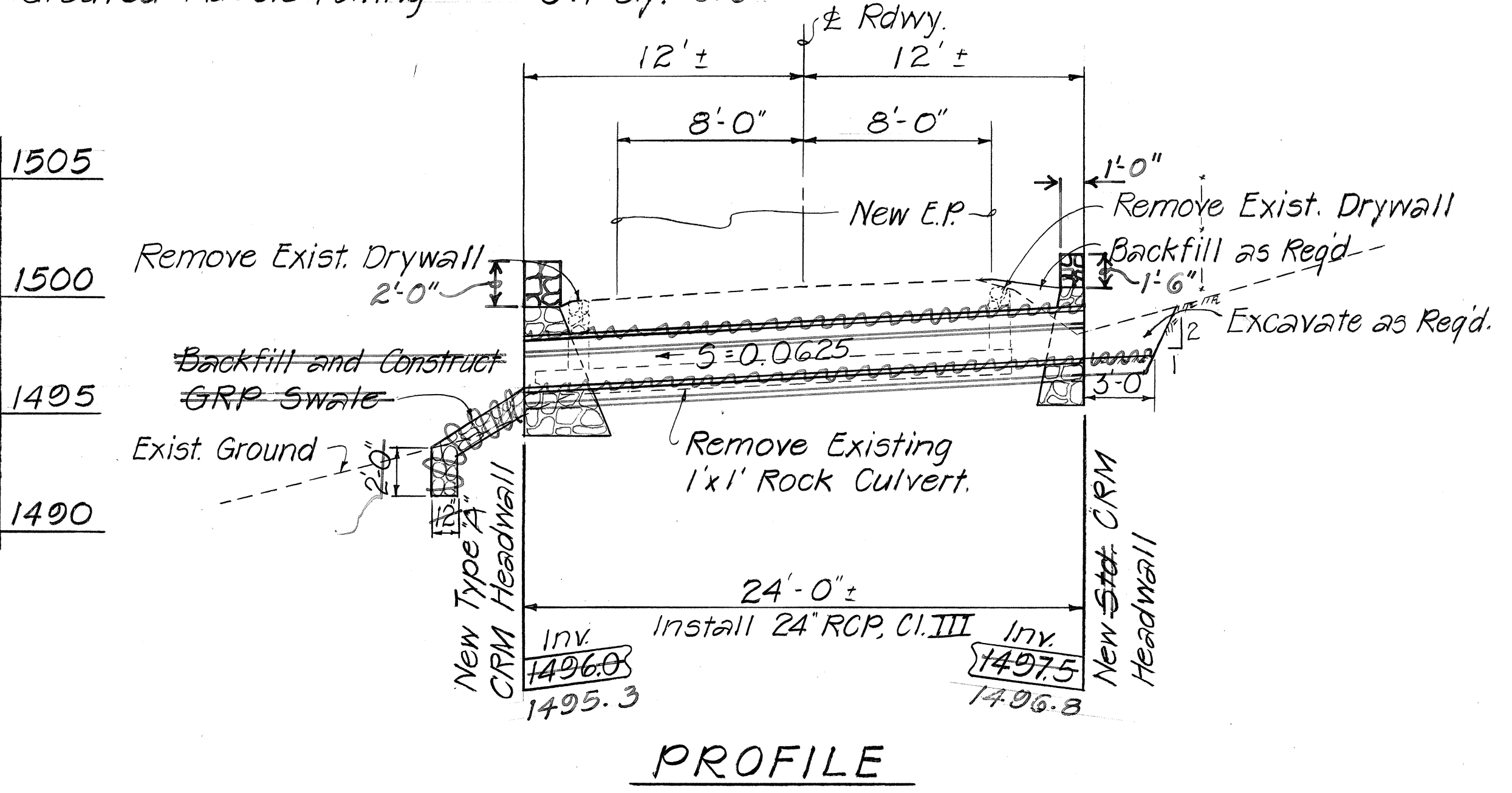
FED. ROAD DIST. NO.	STATE	PROJ. NO.	FISCAL YEAR	SHEET NO.	TOTAL SHEETS
HAWAII	HAW.	3608-01-85	1985	20	41



± STATION 1071+74
Construct : 2 Standard CRM Headwall
Install : 30" RCP, Cl. III

ESTIMATED QUANTITIES

Structure Excavation = 37.8 c.y. 40.5
Ditch & Channel Exc. = 0.5 c.y. 1.0
Cement Rubble Masonry = 5.1 c.y. 6.2
Bedcourse Material = 5.4 c.y. 4.4
30" RCP, Cl. III = 28.0 l.f.



24" CULVERT @ STA. 1065+65
Scale : 1" = 5'-0"

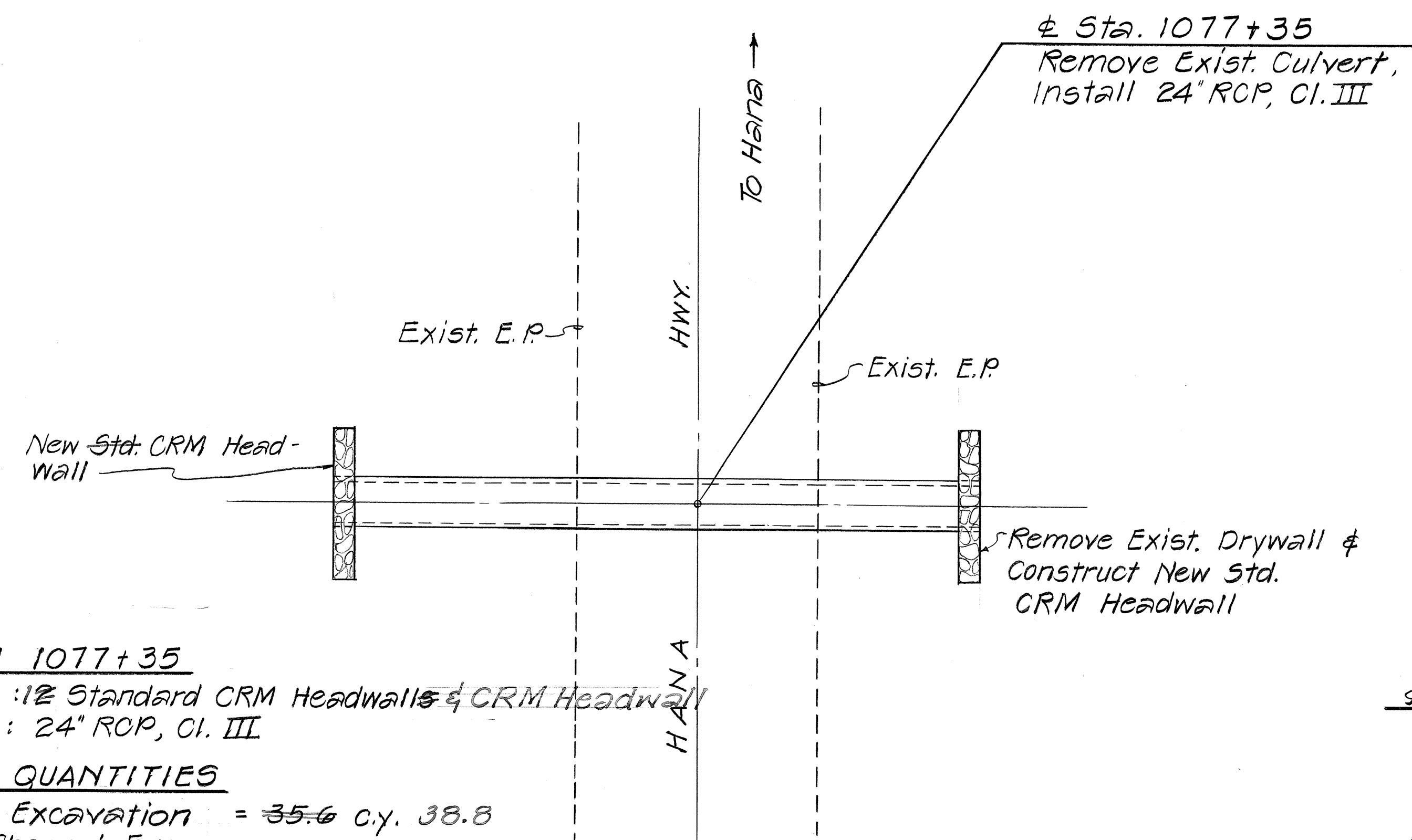
30" CULVERT @ STA. 1071+74
Scale : 1" = 5'-0"

STATE OF HAWAII
DEPARTMENT OF TRANSPORTATION
LAND TRANSPORTATION FACILITIES DIVISION

DRAINAGE DETAILS

PLAN AND PROFILE - CULVERTS
HANA HIGHWAY IMPROVEMENTS
WAILUA TOWARDS HANA-PHASE I
PROJ. NO. 3608-01-85
SCALE: AS SHOWN DATE: SEPT. 1984
SHEET NO. 12 OF 14 SHEETS

FED. ROAD DIST. NO.	STATE	PROJ. NO.	FISCAL YEAR	SHEET NO.	TOTAL SHEETS
HAWAII	HAW.	360B-01-85	1985	21	41



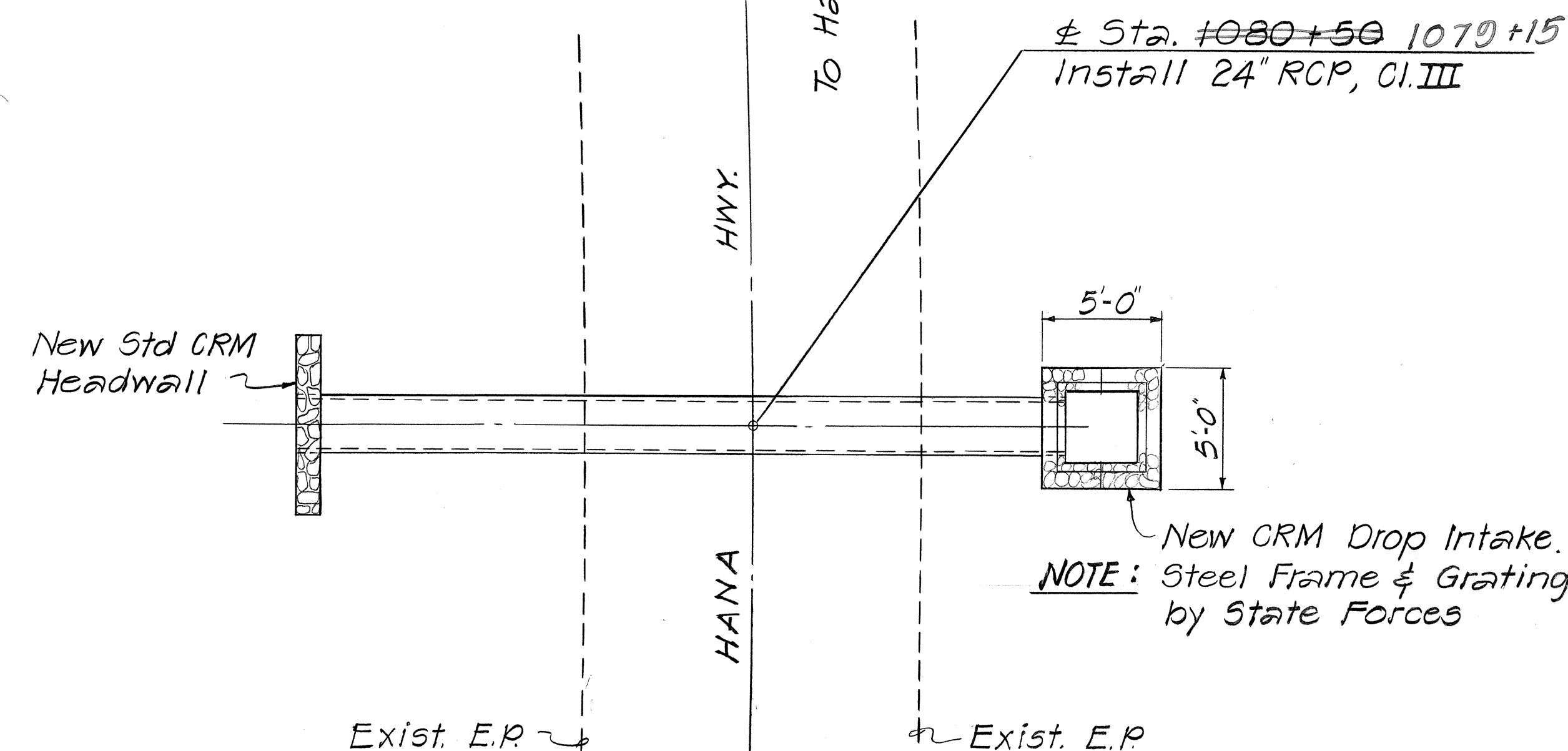
± STATION 1077+35

Construct : 12 Standard CRM Headwalls & CRM Headwall
Install : 24" RCP, Cl. III

ESTIMATED QUANTITIES

Structure Excavation = 35.6 c.y. 38.8
Ditch & Channel Exc. =
Cement Rubble Masonry = 3.7 c.y. 4.0
Bedcourse Material = 5.6 c.y. 4.7
24" RCP, Cl. III = 32.0 l.f.

PLAN



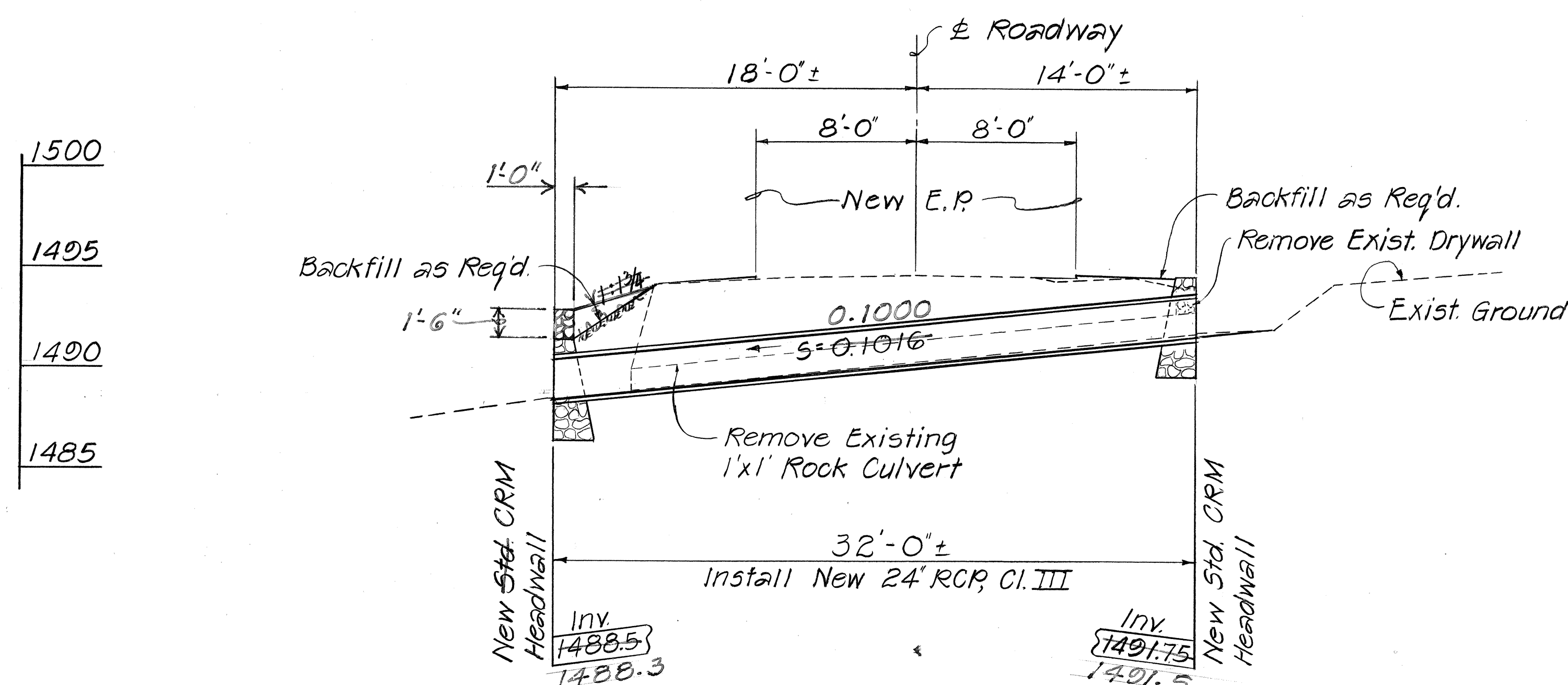
± STATION 1080+50 1079+15

Construct : 1 Standard CRM Headwall
1 CRM Drop Intake
Install : 24" RCP, Cl. III

ESTIMATED QUANTITIES

Structure Excavation = 37.2 c.y. 47.2
Ditch & Channel Exc. = 1.1 c.y. 1.3
Cement Rubble Masonry = 3.1 c.y. 4.4
Bedcourse Material = 5.8 c.y. 4.8
24" RCP, Cl. III = 32.0 c.y.

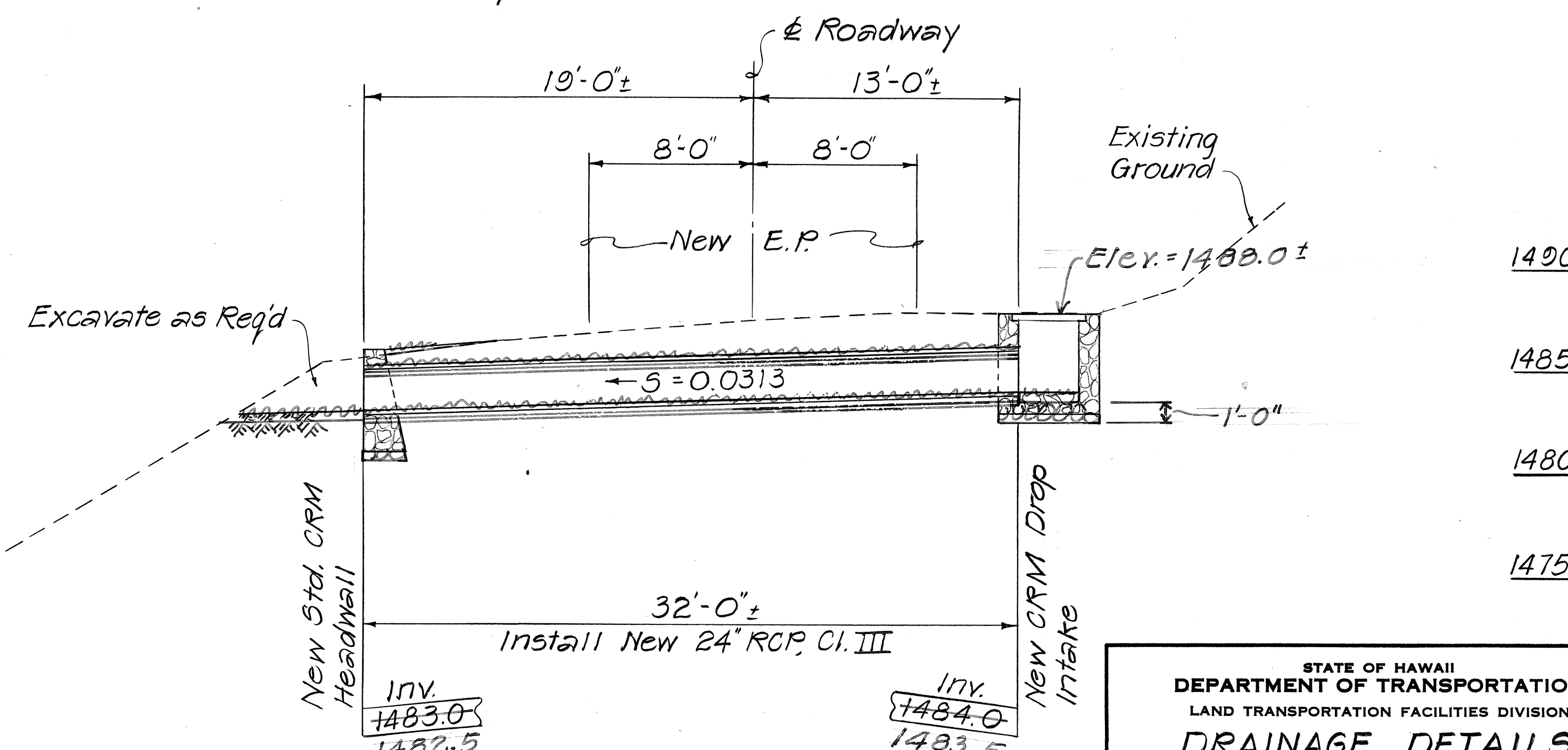
PLAN



PROFILE

24" CULVERT @ STA. 1077+35

Scale : 1" = 5'-0"



PROFILE

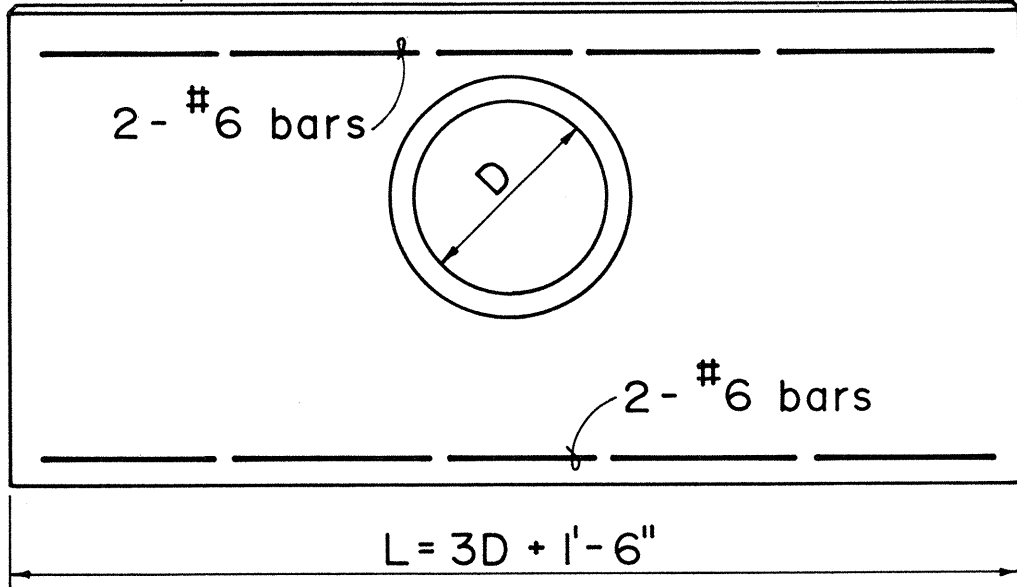
24" CULVERT @ STA. 1080+50

Scale : 1" = 5'-0"

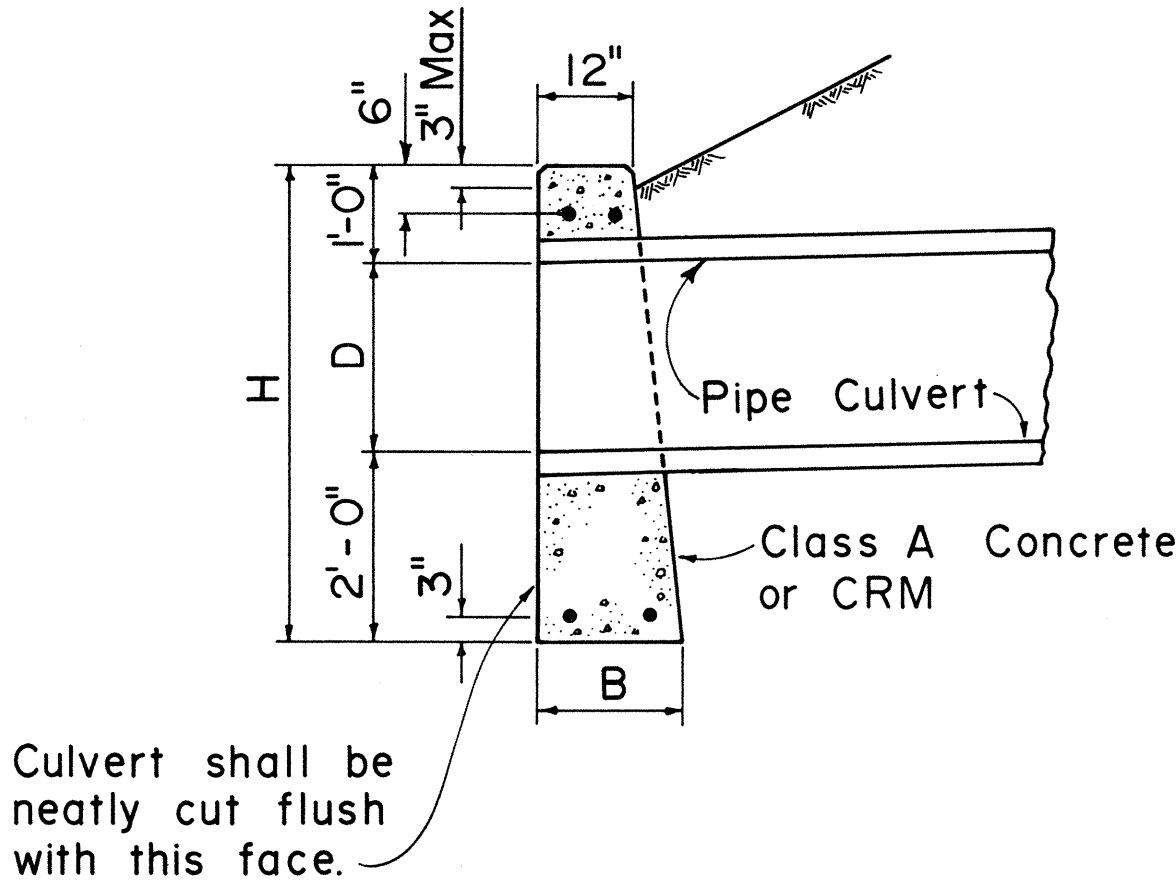
STATE OF HAWAII
DEPARTMENT OF TRANSPORTATION
LAND TRANSPORTATION FACILITIES DIVISION
DRAINAGE DETAILS
PLAN AND PROFILE-CULVERTS
HANA HIGHWAY IMPROVEMENTS
WAILUA TOWARDS HANA, PHASE I
PROJ. NO. 360B-01-85
SCALE : AS SHOWN DATE : SEPT. 1984
SHEET NO. 13 OF 14 SHEETS

FED. ROAD DIST. NO.	STATE	PROJ. NO.	FISCAL YEAR	SHEET NO.	TOTAL SHEETS
HAWAII	HAW.	360B-01-85	1985	22	41

Chamfer all exposed edges one inch



ELEVATION



SECTION

DATA FOR CONC. HDWL.			
D	B	L	H
18"	1'-6"	6'-0"	4'-6"
24"	1'-6"	7'-6"	5'-0"
30"	2'-0"	9'-0"	5'-6"
36"	2'-0"	10'-6"	6'-0"
42"	2'-6"	12'-0"	6'-6"
48"	2'-6"	13'-6"	7'-0"

DATA FOR CRM HDWL.			
D	B	L	H
18"	1'-9"	6'-0"	4'-6"
24"	2'-0"	7'-6"	5'-0"
30"	2'-3"	9'-0"	5'-6"
36"	2'-6"	10'-6"	6'-0"

CONCRETE OR CRM HEADWALL

APPROVAL RECOMMENDED:
T. Nakano 6-19-79
 HYDRAULIC DESIGN ENGINEER DATE
 APPROVED:
Harold Zaleishi 6-22-79
 ASSISTANT CHIEF, ENGINEERING DATE

NO.	REVISION	APPROVED BY	DATE
1.	Supersedes Sht. DH 10 approved 12-17-69	H.T.	6/22/79
2.	Change Class of concrete	H.T.	12/4/80

STATE OF HAWAII DEPARTMENT OF TRANSPORTATION HIGHWAYS DIVISION	
STANDARD DETAILS	
CONCRETE OR CEMENT RUBBLE MASONRY HEADWALLS	
Not To Scale	Date: June 1979

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