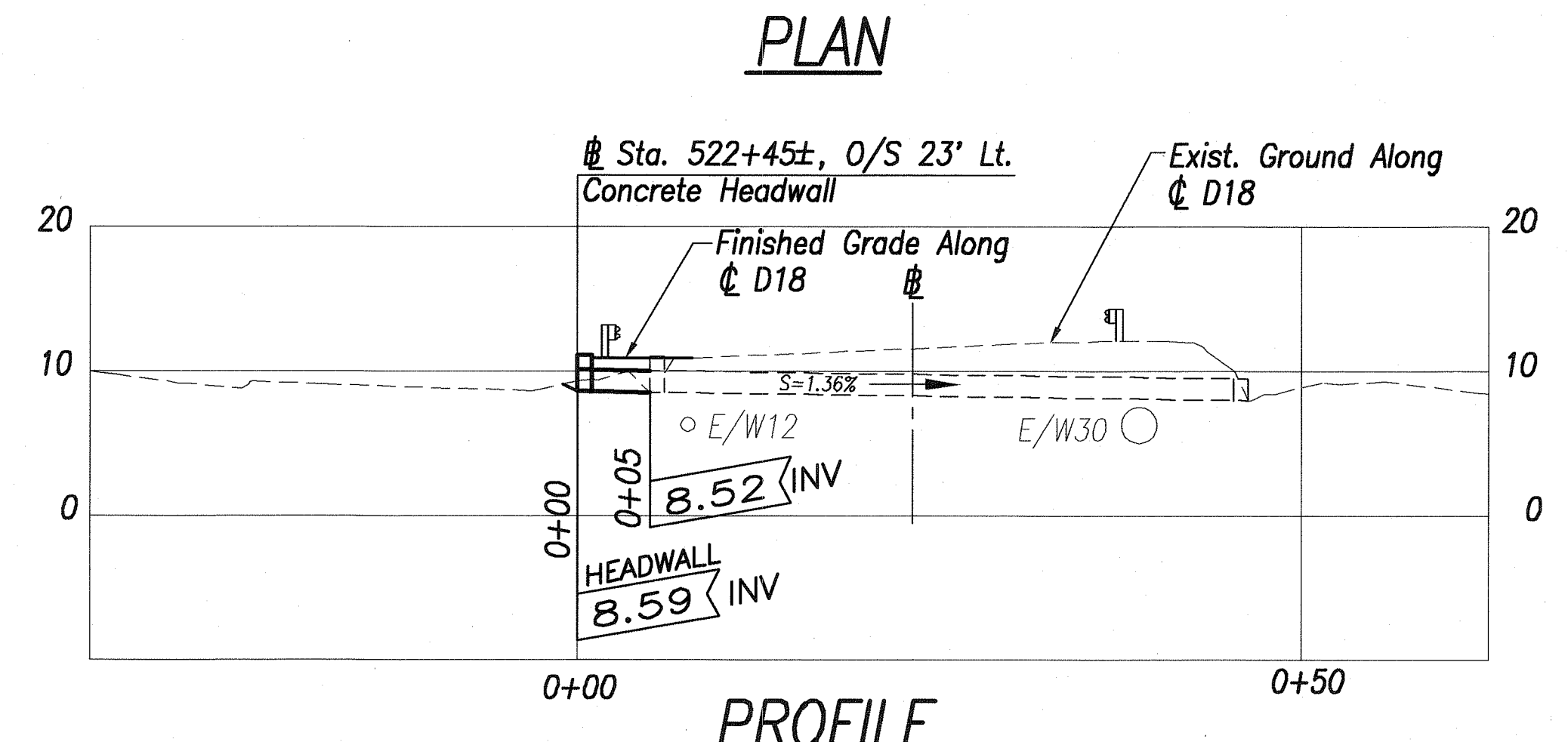
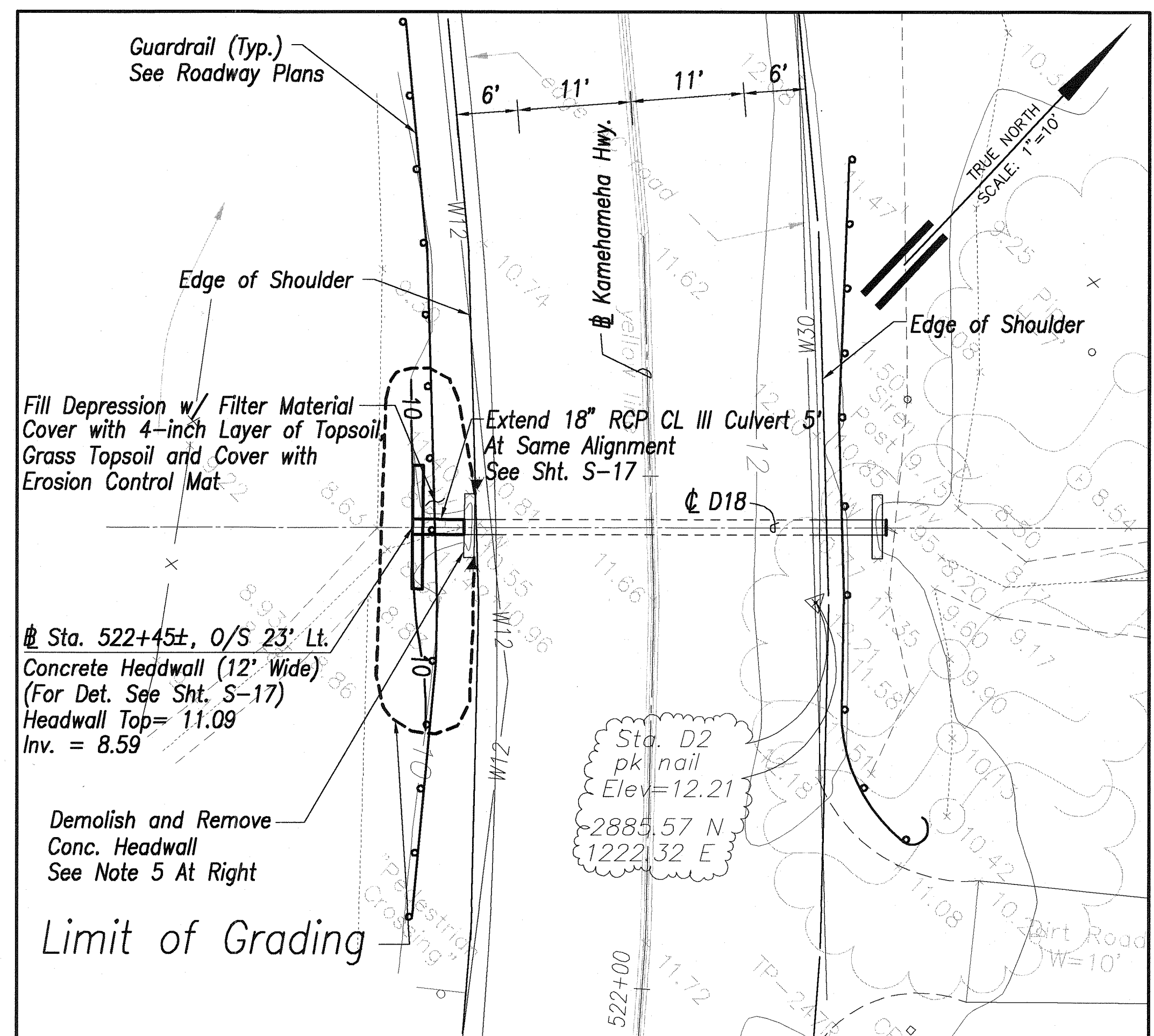


FED. ROAD DIST. NO.	STATE	FED. AID PROJ. NO.	FISCAL YEAR	SHEET NO.	TOTAL SHEETS
HAWAII	HAW.	NH-083-1(43)	2001	C.O. 29	114

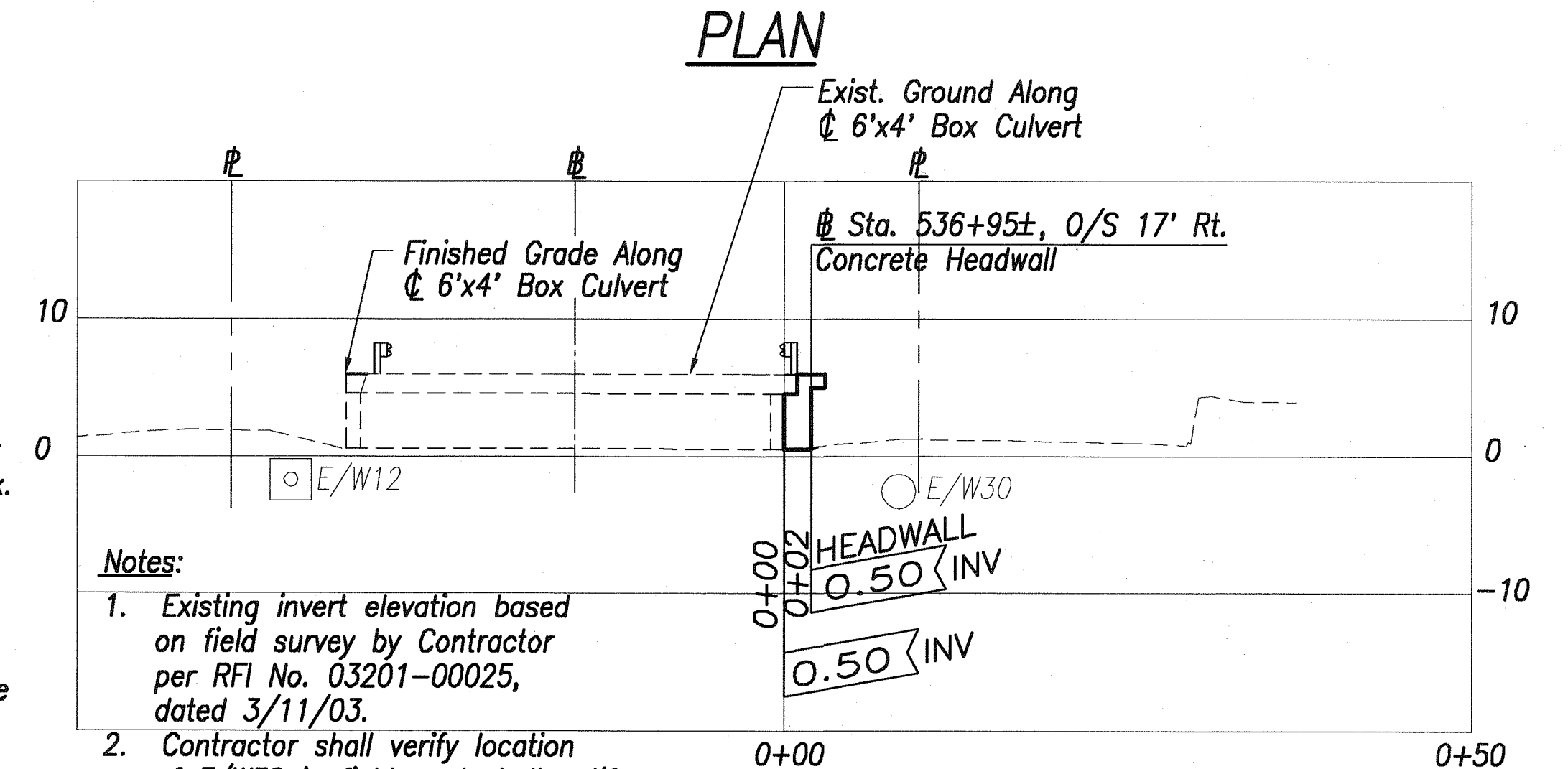
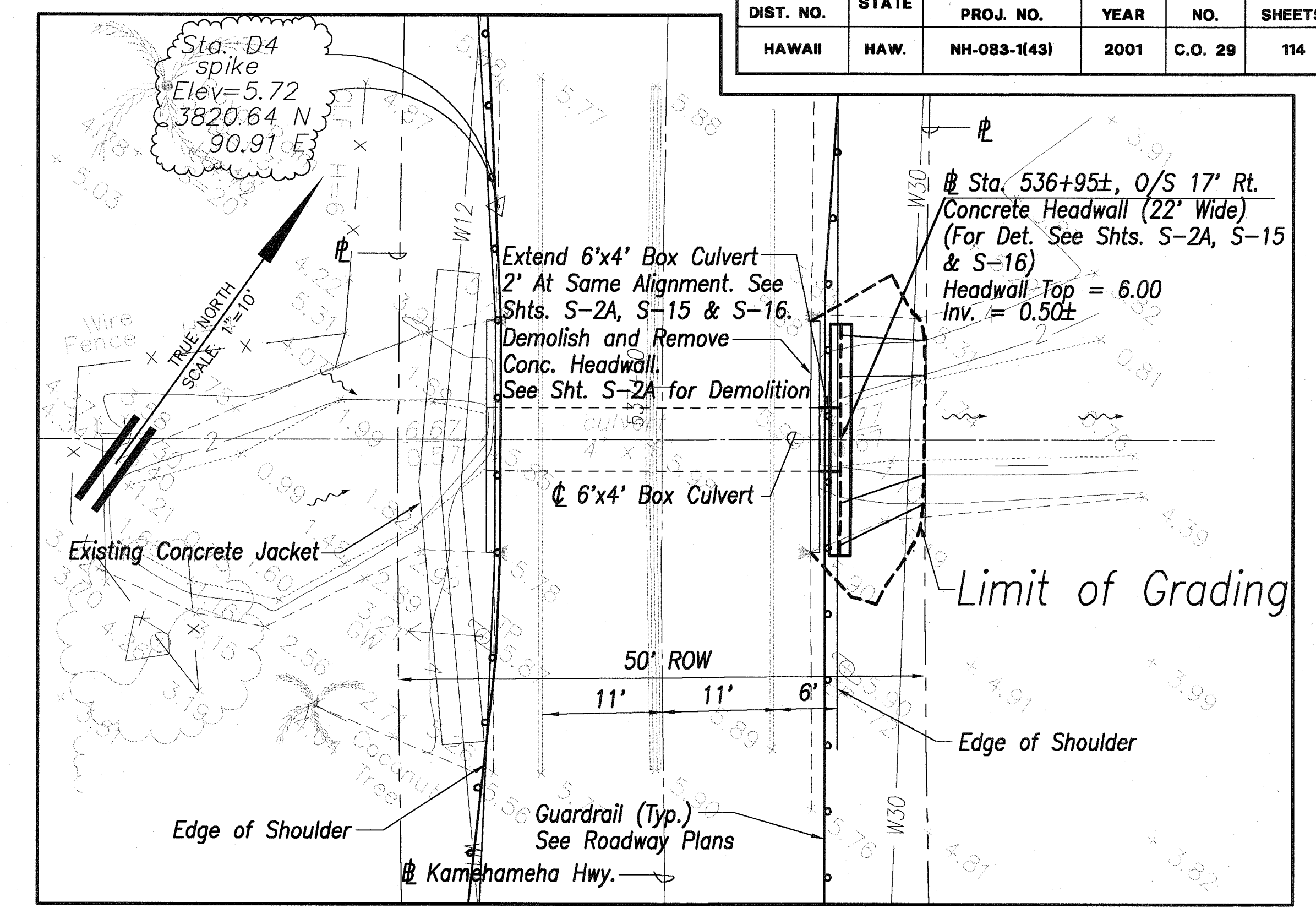


STA. 522+45± DRAINAGE PLAN
Scale: 1" = 10'

Notes:

- 1) The Contractor shall clear debris from drainlines and drainage structures and clear, grub, and grade around pipe extensions and headwalls as required for drainline extensions and headwall construction. All work shall be considered incidental to drainline construction.
- 2) Elevations shown are relative to surrounding ground around each culvert. Contractor shall verify the actual invert elevations of each culvert extension. The work shall be considered incidental to the various contract items.
- 3) The Contractor shall retain a surveyor licensed in the State of Hawaii and submit the ROW limits on the drainage plan 8 (eight) weeks prior to the ordering of required materials for construction of drainage work. All drainage work shall be within the State ROW. If the licensed surveyor determines that drainage work is outside of the ROW, the Contractor shall expect minor revisions to the plans. Surveying work shall be considered incidental to culvert extension work.
- 4) Maximum cut slopes shall be 1.5H:1V and maximum fill slopes shall be 2H:1V, unless otherwise indicated.
- 5) Demolish and remove upper 2' of existing headwall. The top of the headwall that has been cut-off shall be not less than 1' below finish grade. At all pipe culvert locations, a minimum of 1' of headwall shall be maintained above the crown of the pipe for support.
- 6) Provide 3' min. clearance from the edge of the guardrail post to the edge of the water line. Refer to Water Note 23 on Sheet C-3.

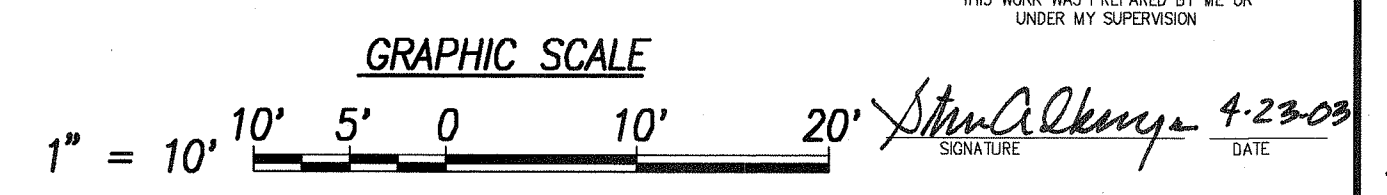
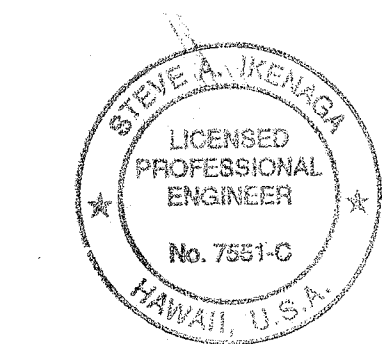
DRAINAGE PLAN - 1
Scale: 1" = 10'



Notes:

1. Existing invert elevation based on field survey by Contractor per RFI No. 03201-00025, dated 3/11/03.
2. Contractor shall verify location of E/W30 in field, and shall notify Engineer immediately if any conflict with proposed work is anticipated.

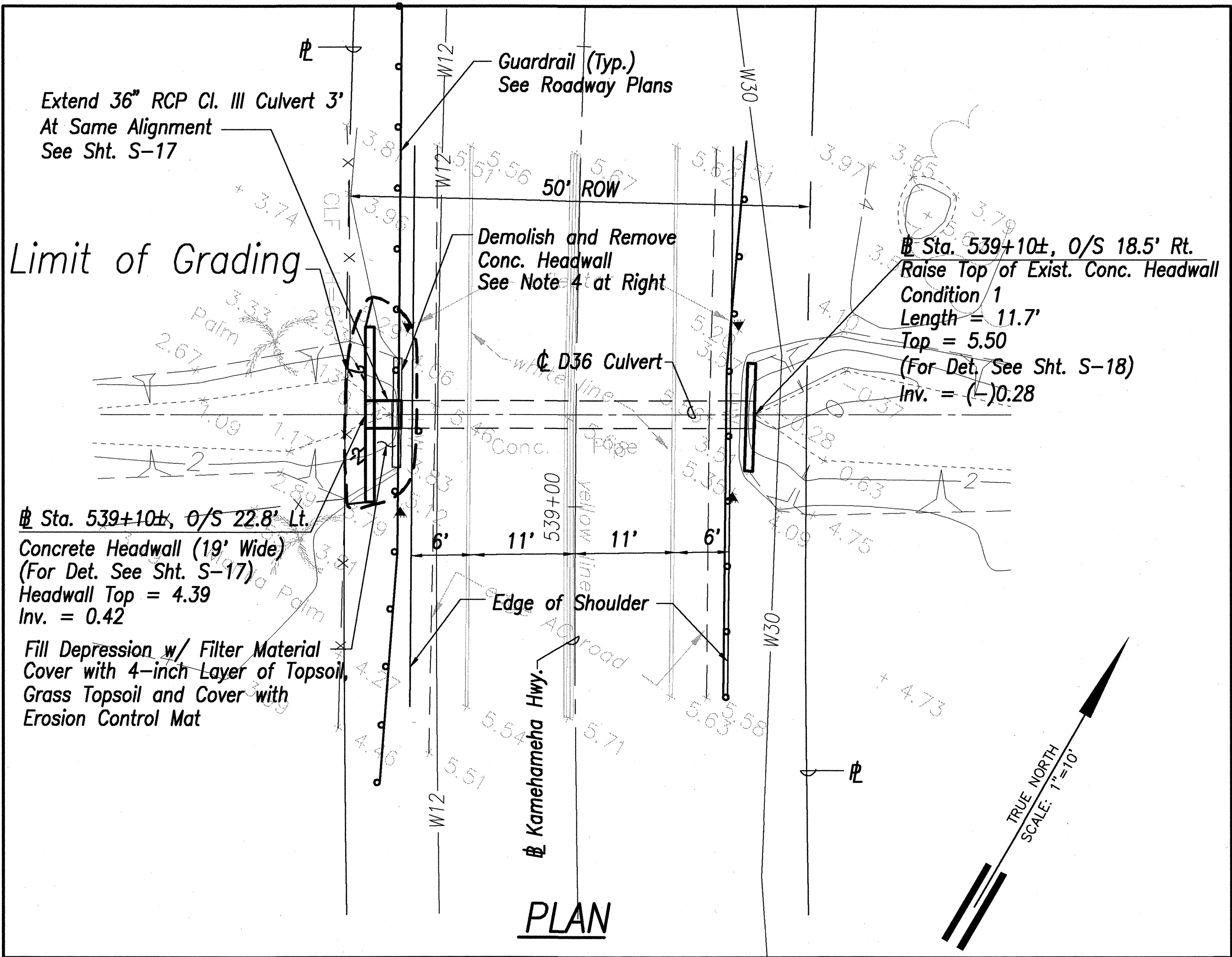
STA. 536+95± DRAINAGE PLAN
Scale: 1" = 10'



4/23/03	Revised 6'x4' Culvert Extension Per Change Order
DATE	REVISION
STATE OF HAWAII DEPARTMENT OF TRANSPORTATION HIGHWAYS DIVISION DRAINAGE PLAN - 1 KAMEHAMEHA HIGHWAY RESURFACING Waiahole Valley Road to Crouching Lion Inn Federal Aid Project No. NH-083-1(43)	
Scale: 1" = 10'	Date: August 1, 2000
SHEET No. C-27 OF 65 SHEETS	

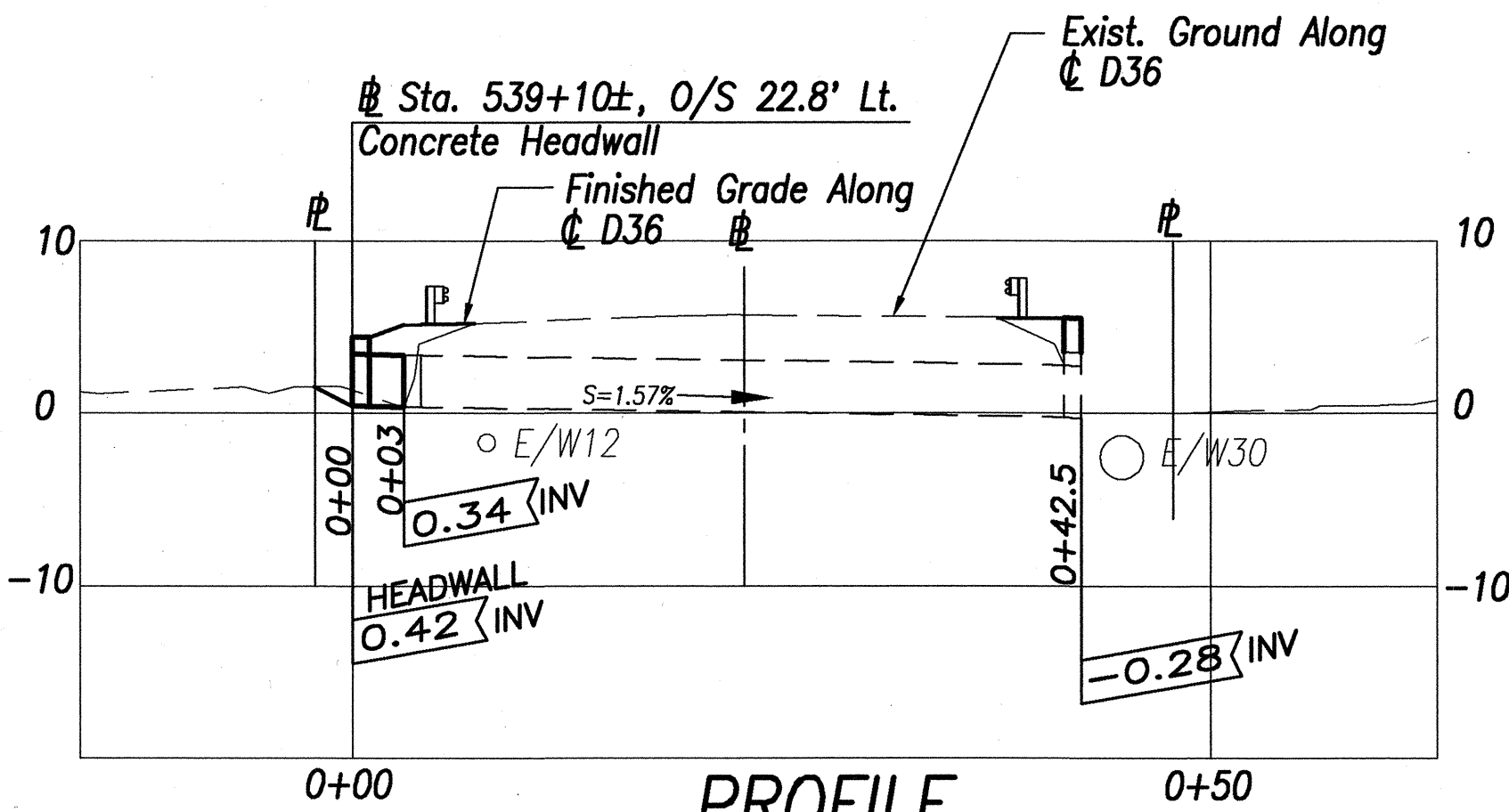
SURVEY PLOTTED BY	DATE
DRAWN BY	
TRACED BY	
DESIGNED BY	
CHECKED BY	
ORIGINAL PLAN	
NOTE BOOK	
No.	

FED. ROAD DIST. NO.	STATE	FED. AID PROJ. NO.	FISCAL YEAR	SHEET NO.	TOTAL SHEETS
HAWAII	HAW.	NH-083-1(43)	2001	30	121



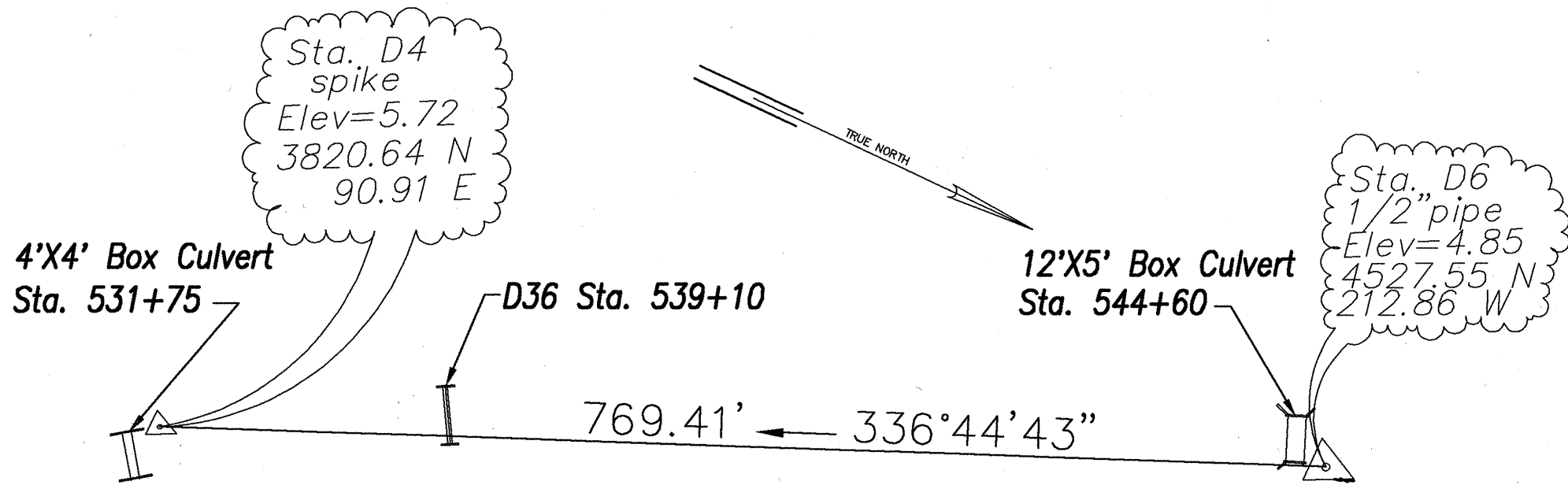
Notes:

- 1) The Contractor shall clear debris from drainlines and drainage structures and clear, grub, and grade around pipe extensions and headwalls as required for drainline extensions and headwall construction. All work shall be considered incidental to drainline construction.
- 2) Elevations shown are relative to surrounding ground around each culvert. Contractor shall verify the actual invert elevations of each culvert extension. The work shall be considered incidental to the various contract items.
- 3) Maximum cut slopes shall be 1.5H:1V and maximum fill slopes shall be 2H:1V, unless otherwise indicated.
- 4) Demolish and remove upper 2' of existing headwall. The top of the headwall that has been cut-off shall be not less than 1' below finish grade. At all pipe culvert locations, a minimum of 1' of headwall shall be maintained above the crown of the pipe for support.
- 5) Provide 3' min. clearance from the edge of the guardrail post to the edge of the water line. Refer to Water Note 23 on Sheet C-3.



STA. 539+10 DRAINAGE PLAN

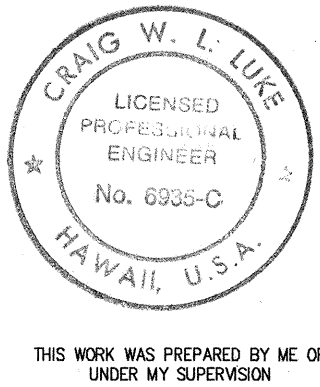
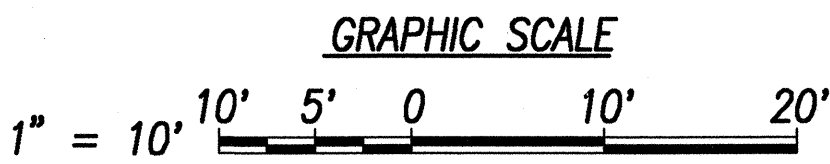
Scale: 1" = 10'



SURVEY PLOTTED BY	DATE
DRAWN BY	
CHECKED BY	
NOTED BY	
QUANTITIES BY	
CHECKED BY	
ORIGINAL PLAN	No.

DRAINAGE PLAN - 2

SCALE: 1" = 10'



THIS WORK WAS PREPARED BY ME OR UNDER MY SUPERVISION

SIGNATURE DATE 8/1/00

STATE OF HAWAII
DEPARTMENT OF TRANSPORTATION
HIGHWAYS DIVISION

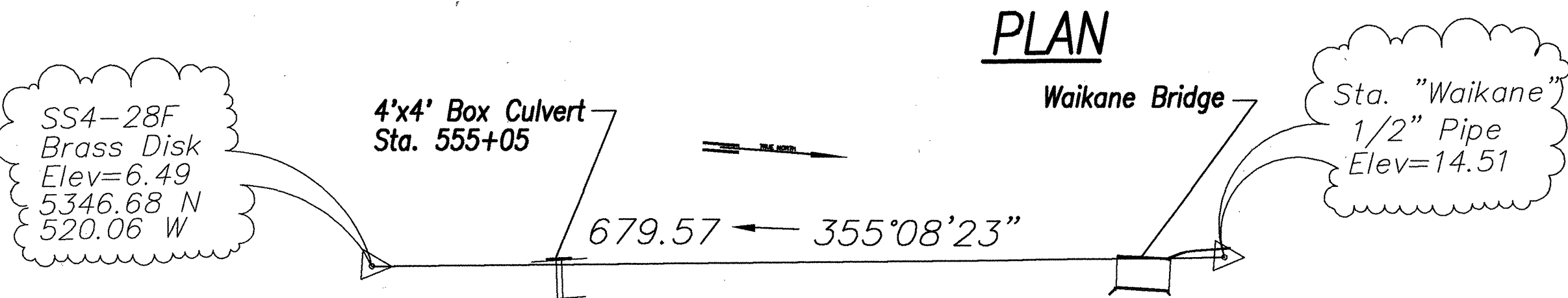
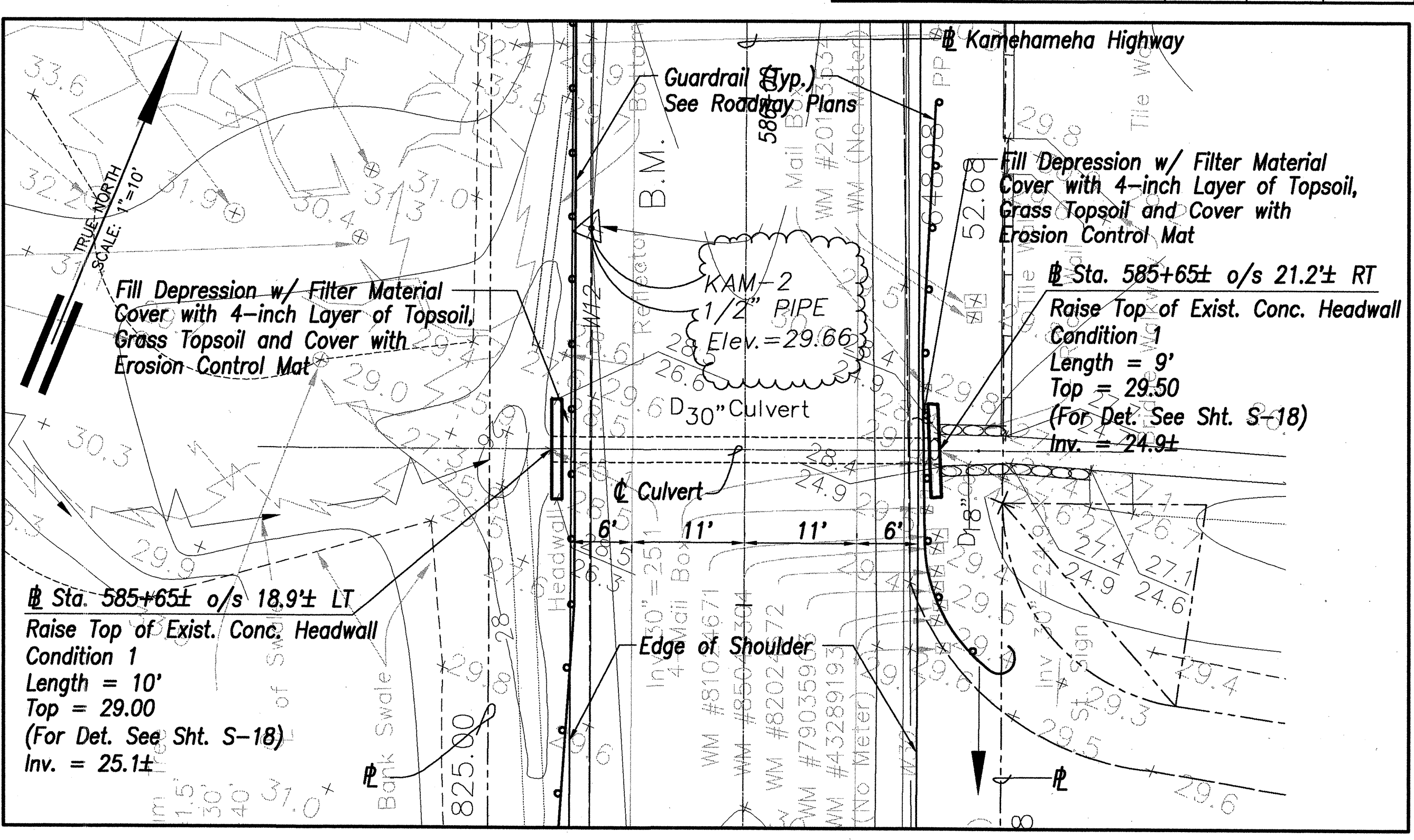
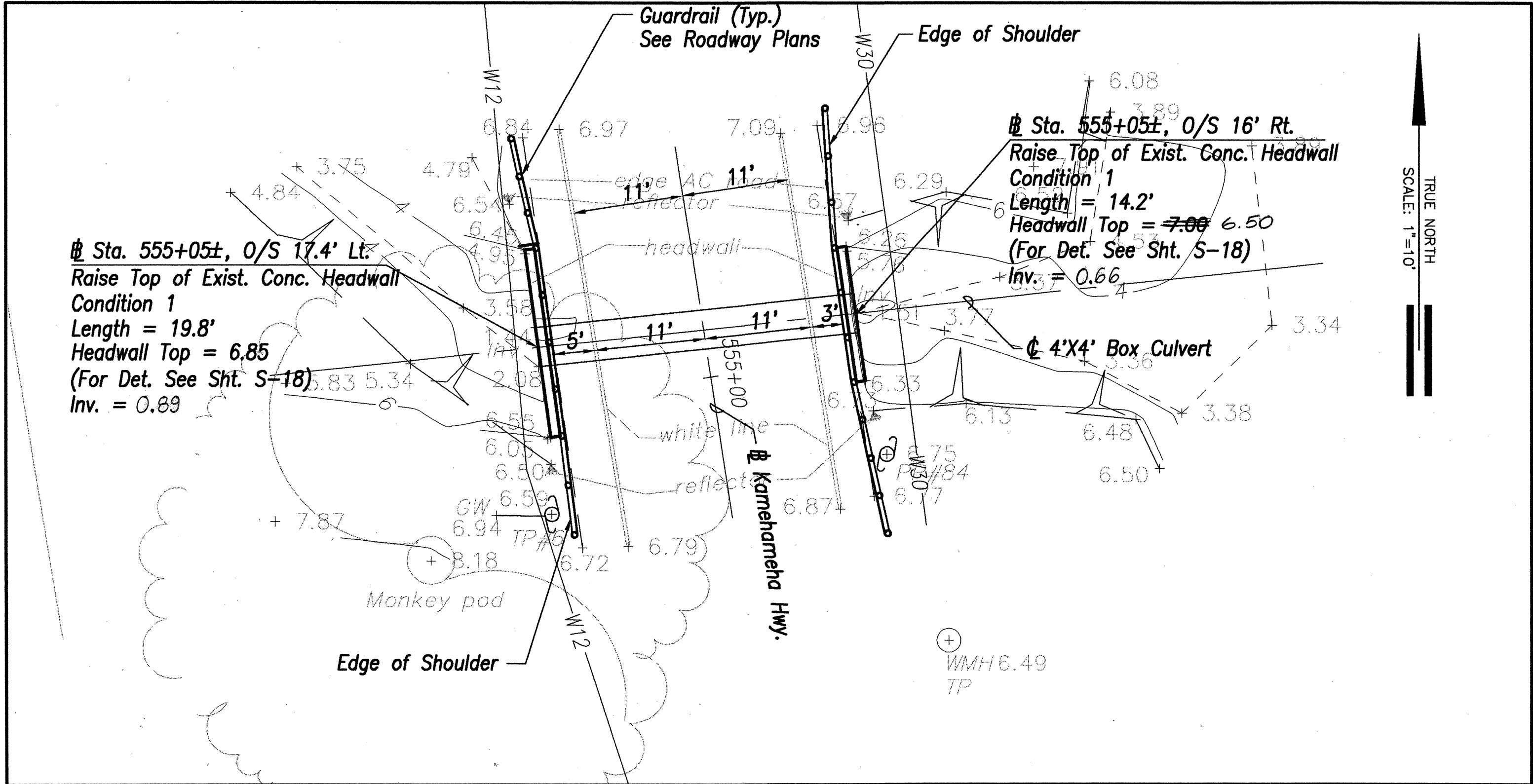
DRAINAGE PLAN - 2

KAMEHAMEHA HIGHWAY RESURFACING
Waiahole Valley Road to Crouching Lion Inn
Federal Aid Project No. NH-083-1(43)

Scale: 1" = 10' Date: August 1, 2000

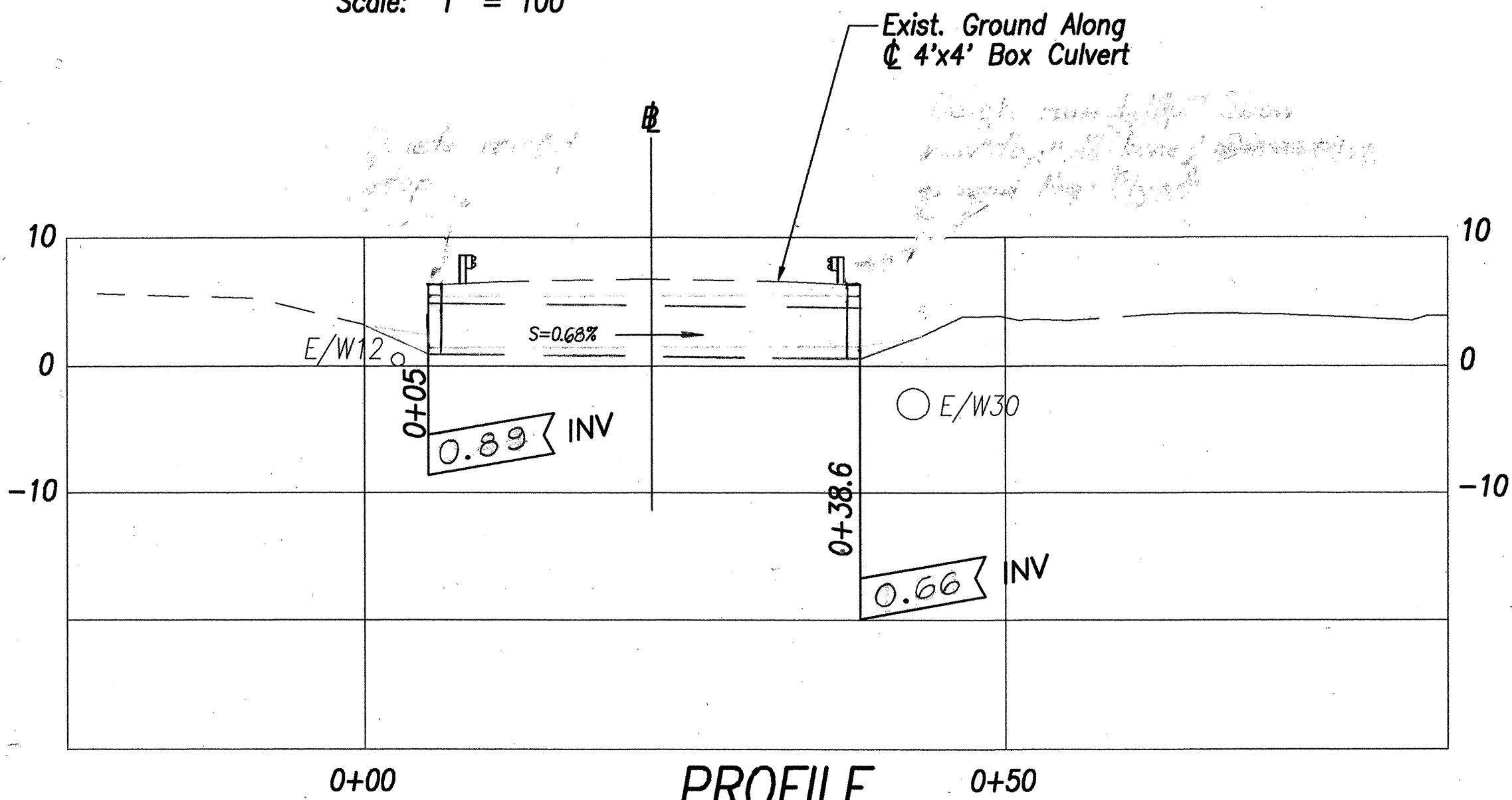
SHEET No. C-28 OF 74 SHEETS

FED. ROAD DIST. NO.	STATE	FED. AID PROJ. NO.	FISCAL YEAR	SHEET NO.	TOTAL SHEETS
HAWAII	HAW.	NH-083-1(43)	2001	ADD. 31	121



STA. 555+05 BENCHMARK ORIENTATION

Scale: 1" = 100'



PROFILE

Sta. 555+05± DRAINAGE PLAN

Scale: 1" = 10'

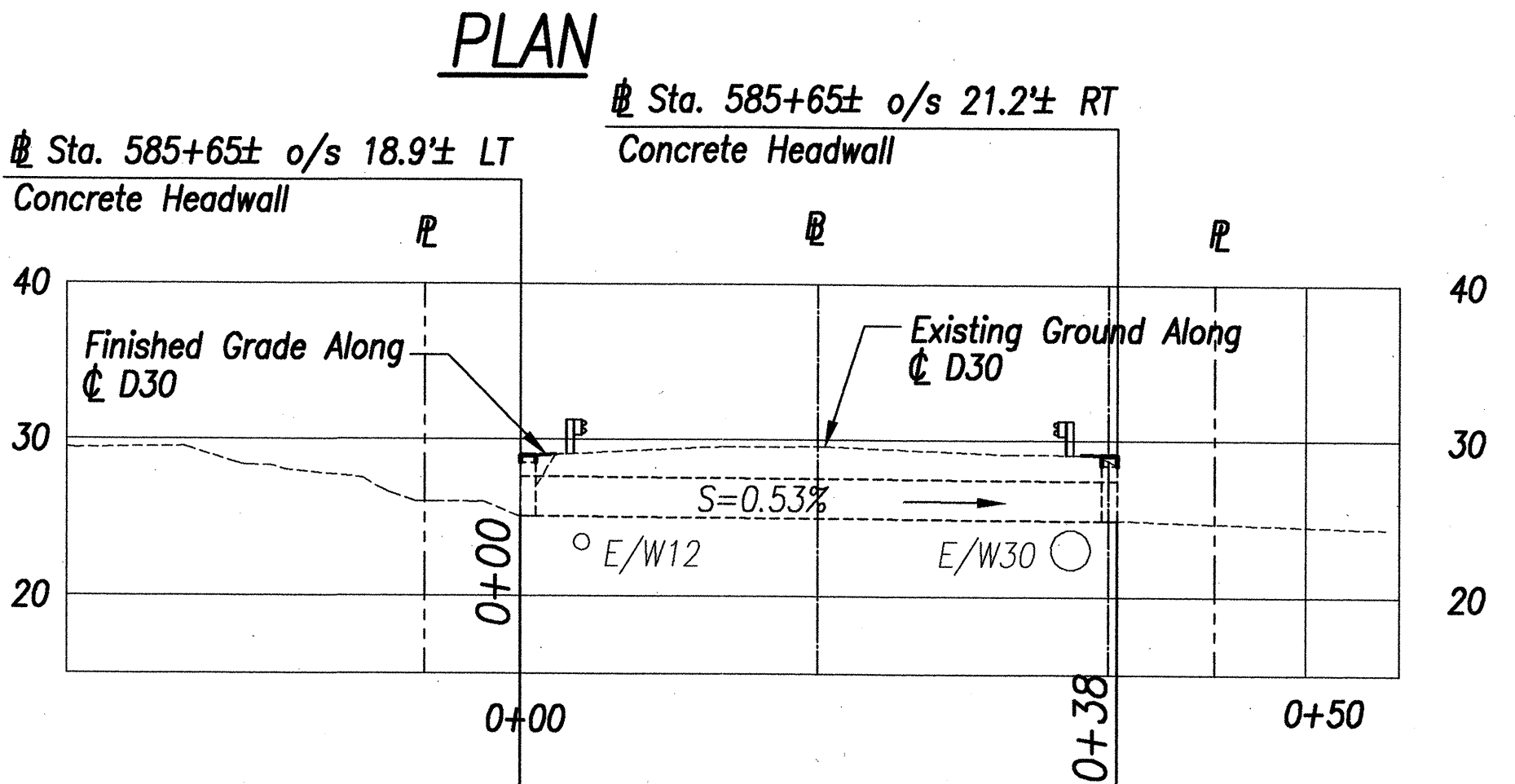
Notes:

- The Contractor shall clear debris from drainlines and drainage structures and clear, grub, and grade around pipe extensions and headwalls as required for drainline extensions and headwall construction. All work shall be considered incidental to drainline construction.
- Elevations shown are relative to surrounding ground around each culvert. Contractor shall verify the actual invert elevations of each culvert extension. The work shall be considered incidental to the various contract items.
- The Contractor shall retain a surveyor licensed in the State of Hawaii and submit the ROW limits on the drainage plan B (eight) weeks prior to the ordering of required materials for construction of drainage work. All drainage work shall be within the State ROW. If the licensed surveyor determines that drainage work is outside of the ROW, the Contractor shall expect minor revisions to the plans. Surveying work shall be considered incidental to culvert extension work.
- Maximum cut slopes shall be 1.5H:1V and maximum fill slopes shall be 2H:1V, unless otherwise indicated.

DRAINAGE PLAN - 3

Scale: (varies)

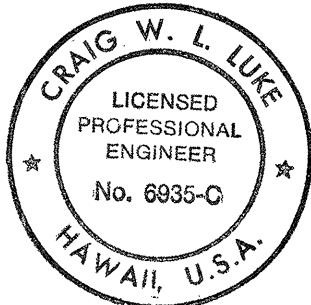
2/4/02	Revised Sta. 555+05 Culvert Inverts Per Addendum No. 2
DATE	REVISION



PROFILE

Sta. 585+65± DRAINAGE PLAN

Scale: 1" = 10'



THIS WORK WAS PREPARED BY ME OR UNDER MY SUPERVISION

Signature and Date: 8/1/00

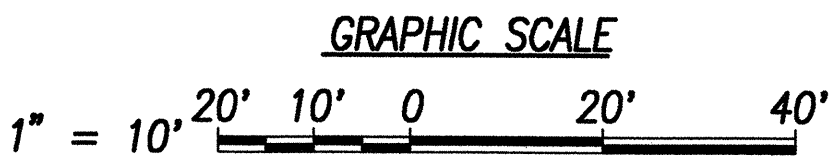
STATE OF HAWAII
DEPARTMENT OF TRANSPORTATION
HIGHWAYS DIVISION

DRAINAGE PLAN - 3

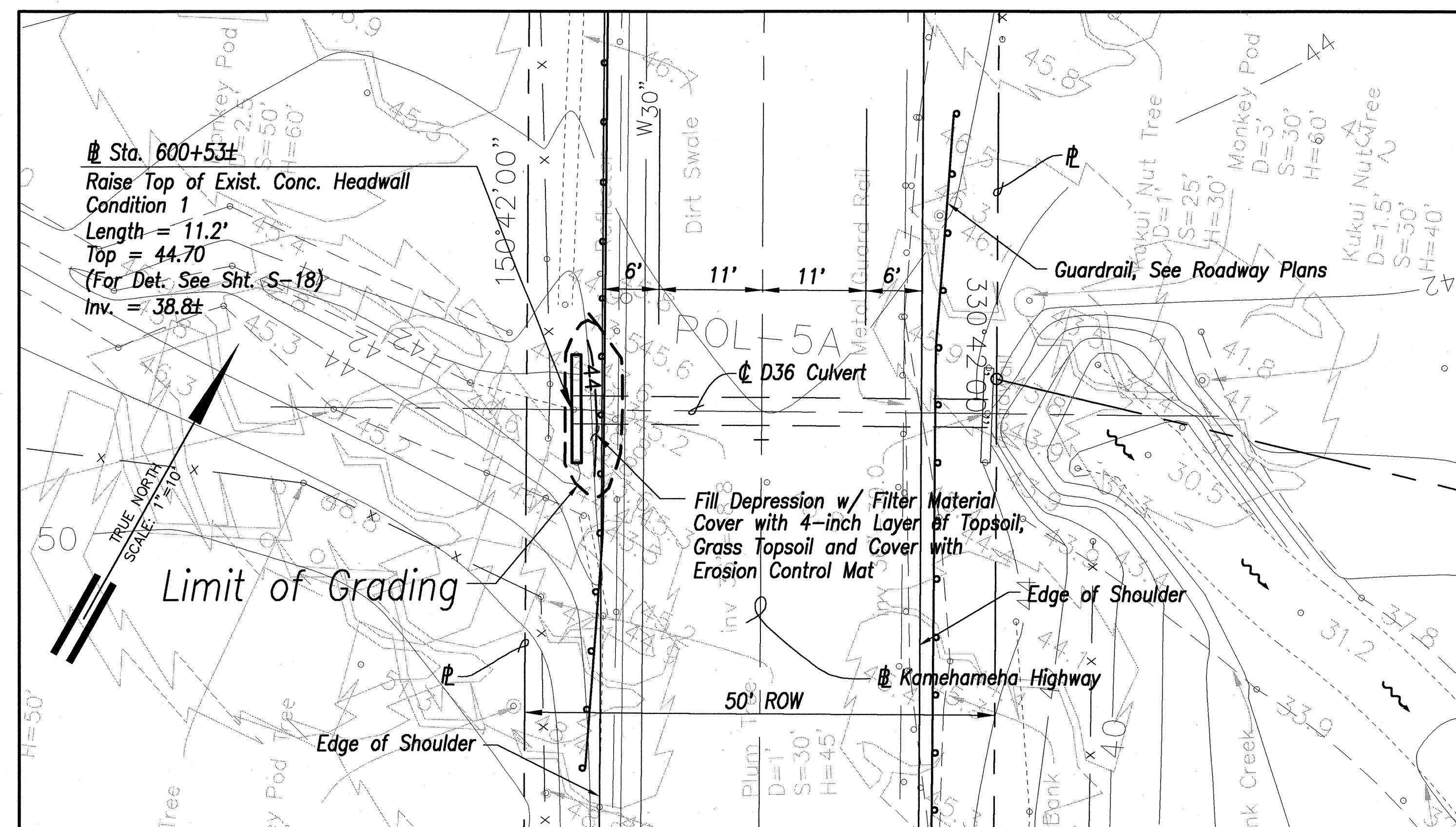
KAMEHAMEHA HIGHWAY RESURFACING
Waiahole Valley Road to Crouching Lion Inn
Federal Aid Project No. NH-083-1(43)

Scale: 1" = 10' Date: August 1, 2000

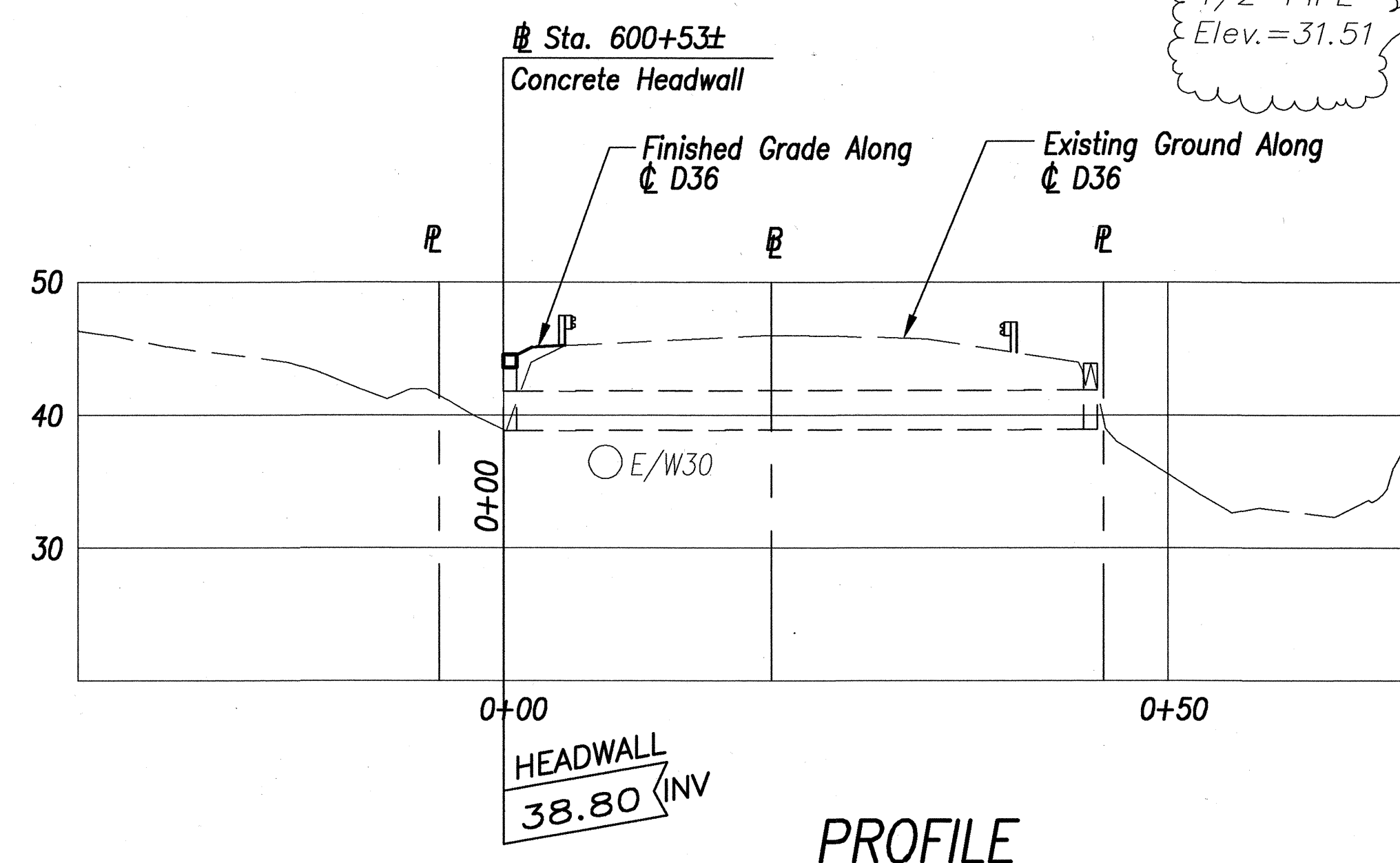
SHEET No. C-29 OF 74 SHEETS



FED. ROAD DIST. NO.	STATE	FED. AID PROJ. NO.	FISCAL YEAR	SHEET NO.	TOTAL SHEETS
HAWAII	HAW.	NH-083-1(43)	2001	33	121



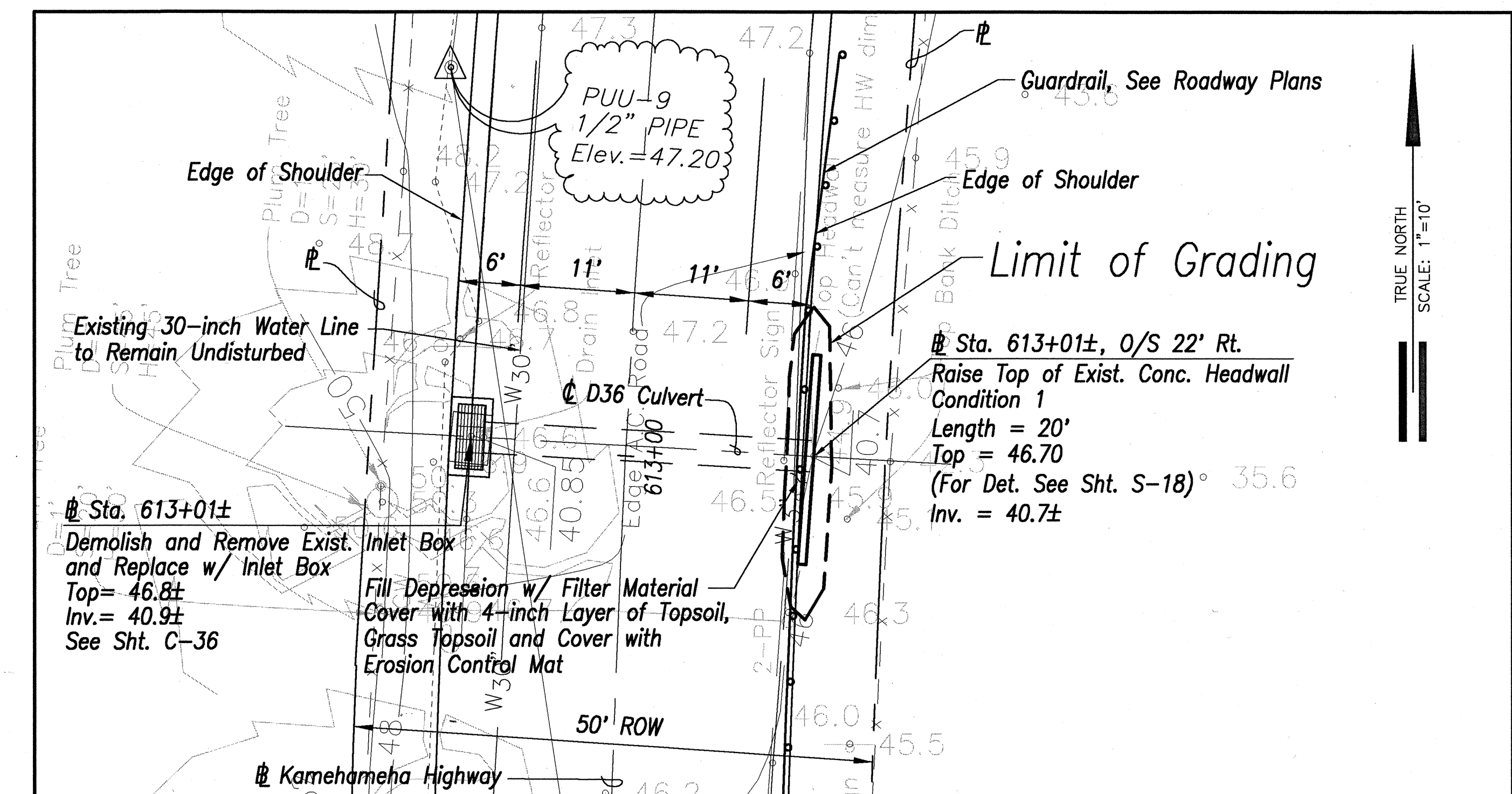
PLAN



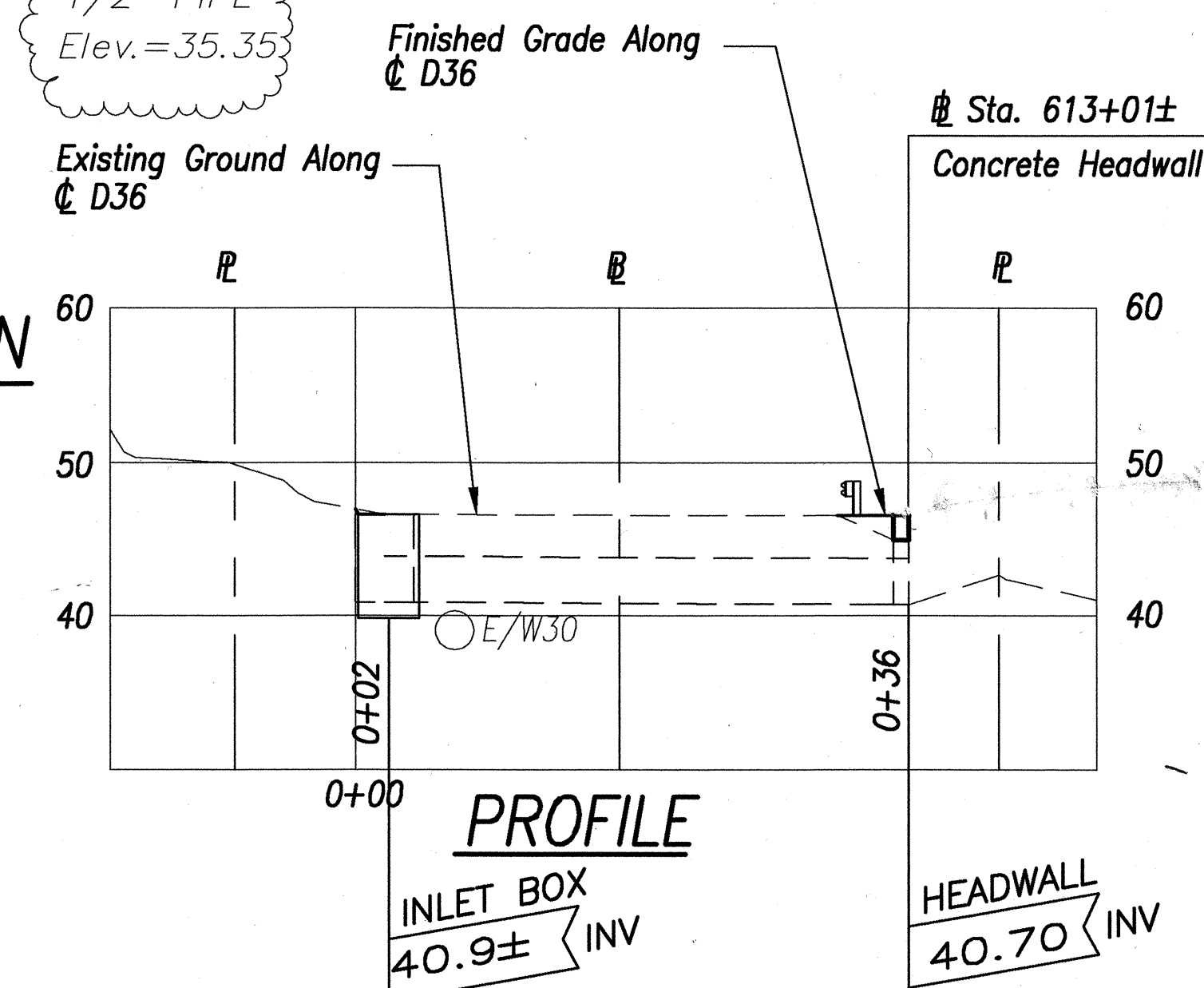
PROFILE

STA. 600+53± DRAINAGE PLAN
Scale: 1"=10'

DRAINAGE PLAN - 5
Scale: 1"=10'



PLAN



PROFILE

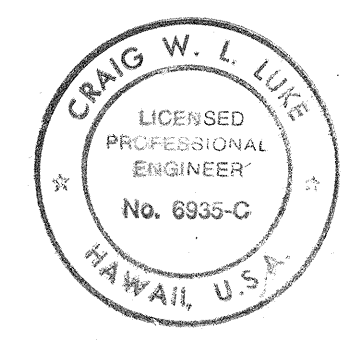
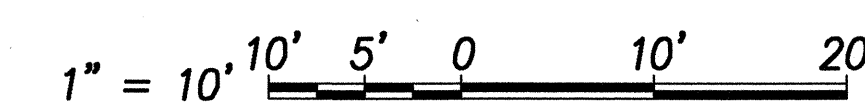
STA. 613+01± DRAINAGE PLAN
Scale: 1"=10'

STA. 600+53 BENCHMARK ORIENTATION
Scale: 1"=200'

Notes:

- 1) The Contractor shall clear debris from drainlines and clear, grub, and grade around pipe extensions and headwalls as required for drainline extensions and headwall construction. All work shall be considered incidental to drainline construction.
- 2) Elevations shown are relative to surrounding ground around each culvert. Contractor shall verify the actual invert elevations of each culvert extension. The work shall be considered incidental to the various contract items.
- 3) Maximum cut slopes shall be 1.5H:1V and maximum fill slopes shall be 2H:1V, unless otherwise indicated.
- 4) Provide 18" min. clearance from the edge of the Inlet Box to the edge of the exist. water line. Provide 3' min. clearance from the edge of the guardrail post to the edge of the water line. Refer to Water Note 23 on Sheet C-3.

GRAPHIC SCALE



STATE OF HAWAII
DEPARTMENT OF TRANSPORTATION
HIGHWAYS DIVISION

DRAINAGE PLAN - 5

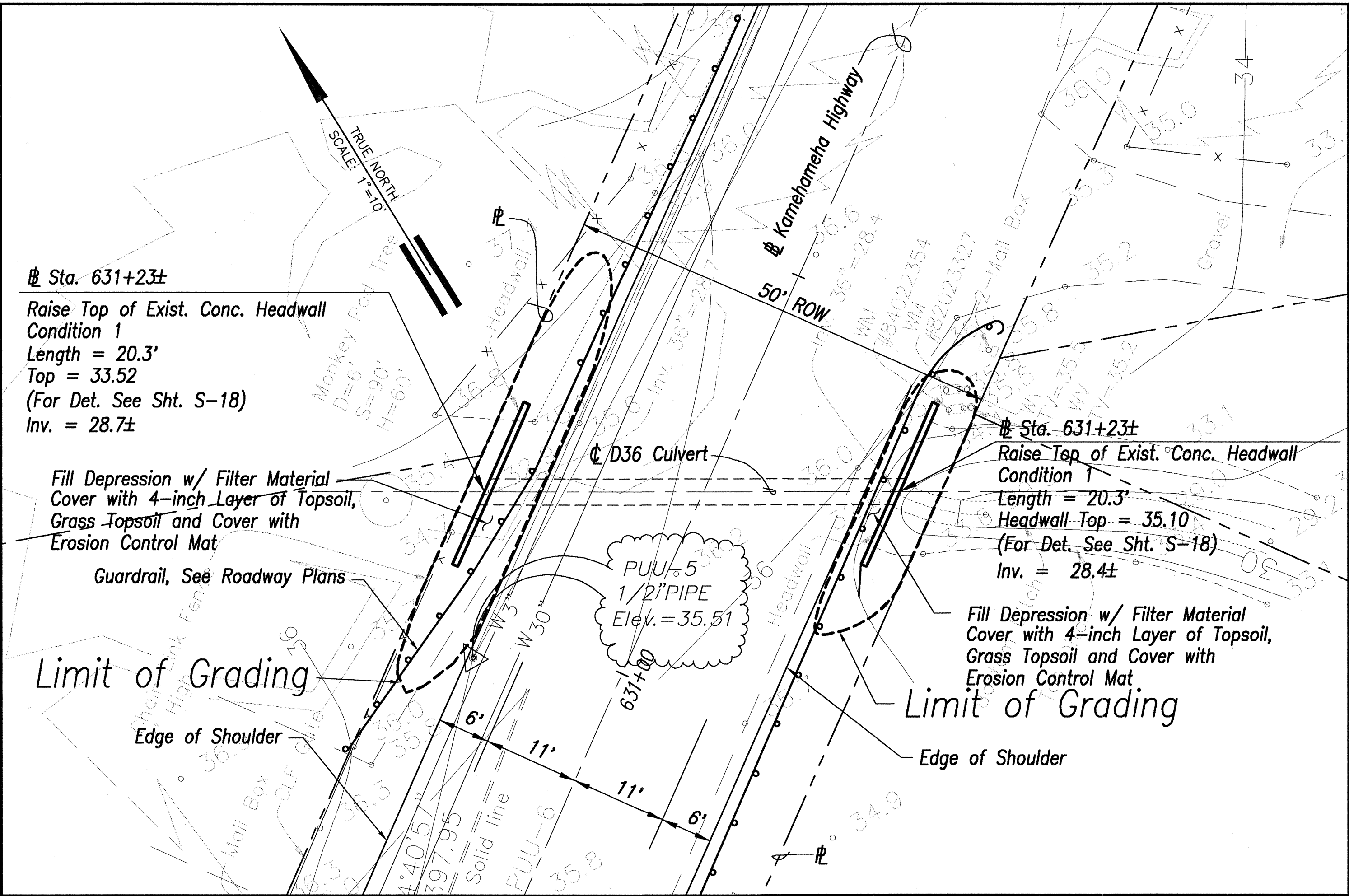
KAMEHAMEHA HIGHWAY RESURFACING
Waiahole Valley Road to Crouching Lion Inn
Federal Aid Project No. NH-083-1(43)

Scale: 1"=10' Date: August 1, 2000

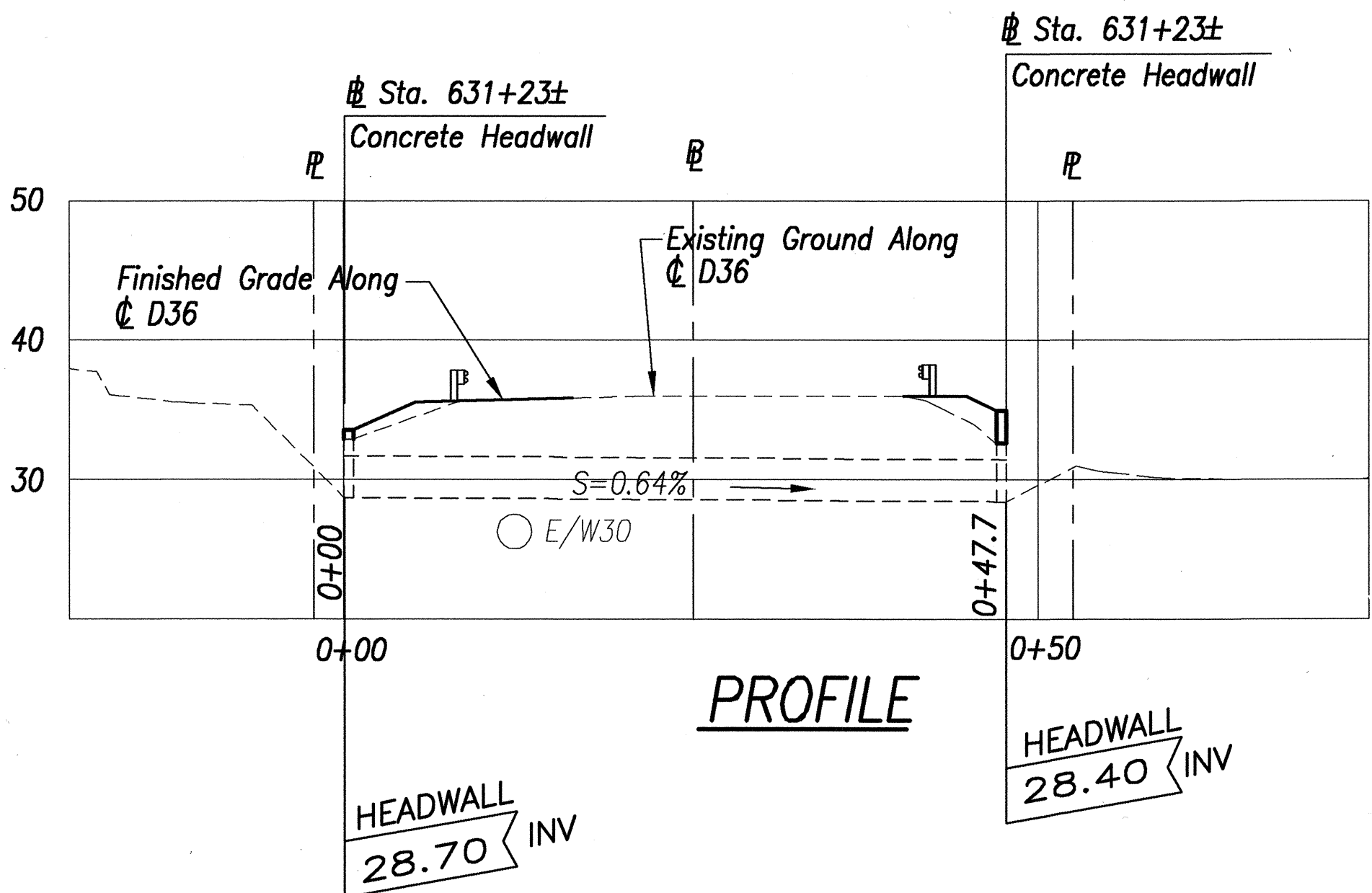
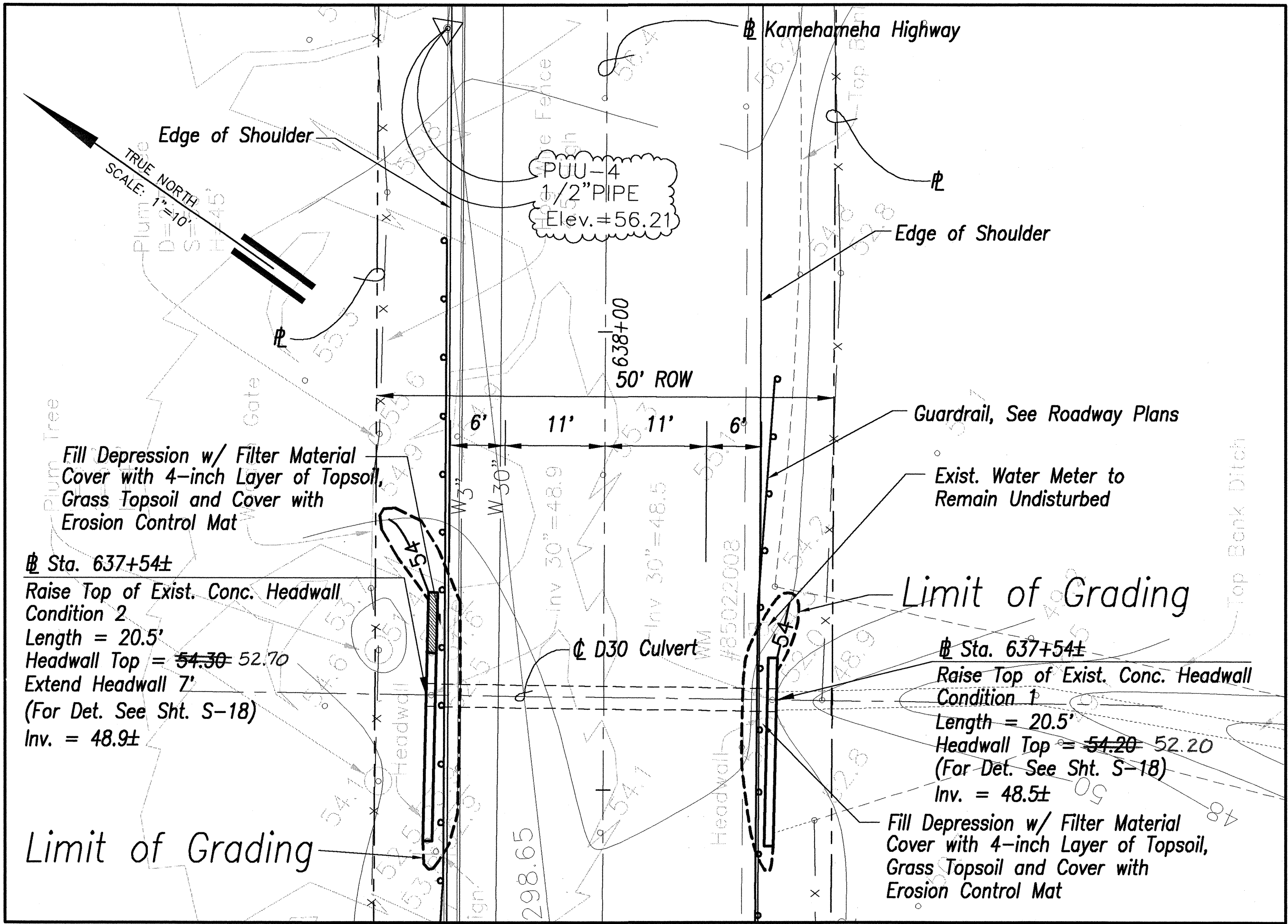
SHEET No. C-31 OF 74 SHEETS

SURVEY PLANNED BY	DATE
DRAWN BY	
CHECKED BY	
NOTED BY	
QUANTITIES BY	
CHECKED BY	
ORIGINAL PLAN	No.

FED. ROAD DIST. NO.	STATE	FED. AID PROJ. NO.	FISCAL YEAR	SHEET NO.	TOTAL SHEETS
HAWAII	HAW.	NH-083-1(43)	2001	34	121



PLAN



PROFILE

Notes:

- 1) The Contractor shall clear debris from drainlines and clear, grub, and grade around pipe extensions and headwalls as required for drainline extensions and headwall construction. All work shall be considered incidental to drainline construction.
- 2) Elevations shown are relative to surrounding ground around each culvert. Contractor shall verify the actual invert elevations of each culvert extension. The work shall be considered incidental to the various contract items.
- 3) Maximum cut slopes shall be 1.5H:1V and maximum fill slopes shall be 2H:1V, unless otherwise indicated.
- 4) Provide 3' min. clearance from the edge of the guardrail post to the edge of the water line. Refer to Water Note 23 on Sheet C-3.

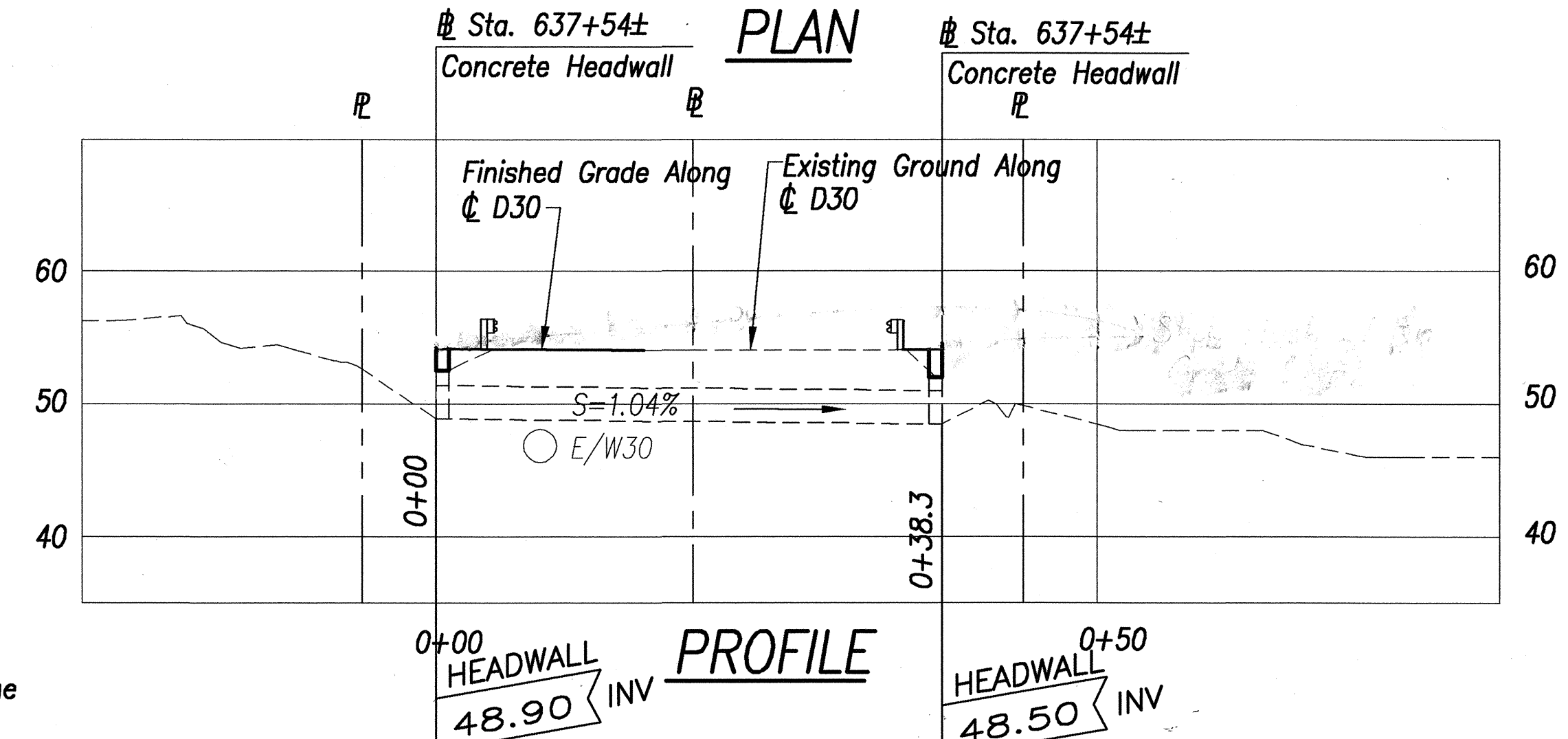
DRAINAGE PLAN - 6

Scale: 1"=10'

APPROVED:

Catherine R. Dungca
Chief, Planning and Engineering, BWS
(For Construction Within State R/W Only)

7/30/01
Date



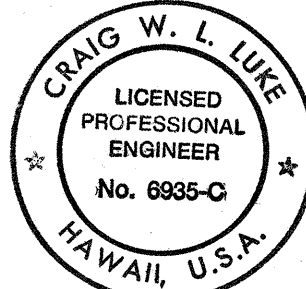
PROFILE

STA. 637+54± DRAINAGE PLAN

Scale: 1"=10'

GRAPHIC SCALE

1" = 10' 10' 5' 0 10' 20'



THIS WORK WAS PREPARED BY ME OR UNDER MY SUPERVISION

7/30/01
Date

STATE OF HAWAII
DEPARTMENT OF TRANSPORTATION
HIGHWAYS DIVISION

DRAINAGE PLAN - 6

KAMEHAMEHA HIGHWAY RESURFACING
Waiahole Valley Road to Crouching Lion Inn
Federal Aid Project No. NH-083-1(43)

Scale: 1"=10'

Date: August 1, 2000

SHEET No. C-32 OF 74 SHEETS

FED. ROAD DIST. NO.	STATE	FED. AID PROJ. NO.	FISCAL YEAR	SHEET NO.	TOTAL SHEETS
HAWAII	HAW.	NH-083-1(43)	2001	C.O.34S-1	121

Sta. 631+16± o/s 17.5' Lt.
Construct: Modified Type "C" SDMH
For details see Sht. No. C-32C
Install: 24" Culvert

Estimated Quantities
Structure Excavation = 35 C.Y.
Plant Mix Glassphalt Concrete Base Course = 15 Tons
24-Inch Culvert = 30 L.F.
Modified Type "C" SDMH = 1 Each
Gutter, Type 2(201214) = 30 L.F.

Sta. 631+50 o/s 17.5' Lt.
Construct: Type 201214P GDI
For details see Sht No. C-32D
Install: 24" Culvert

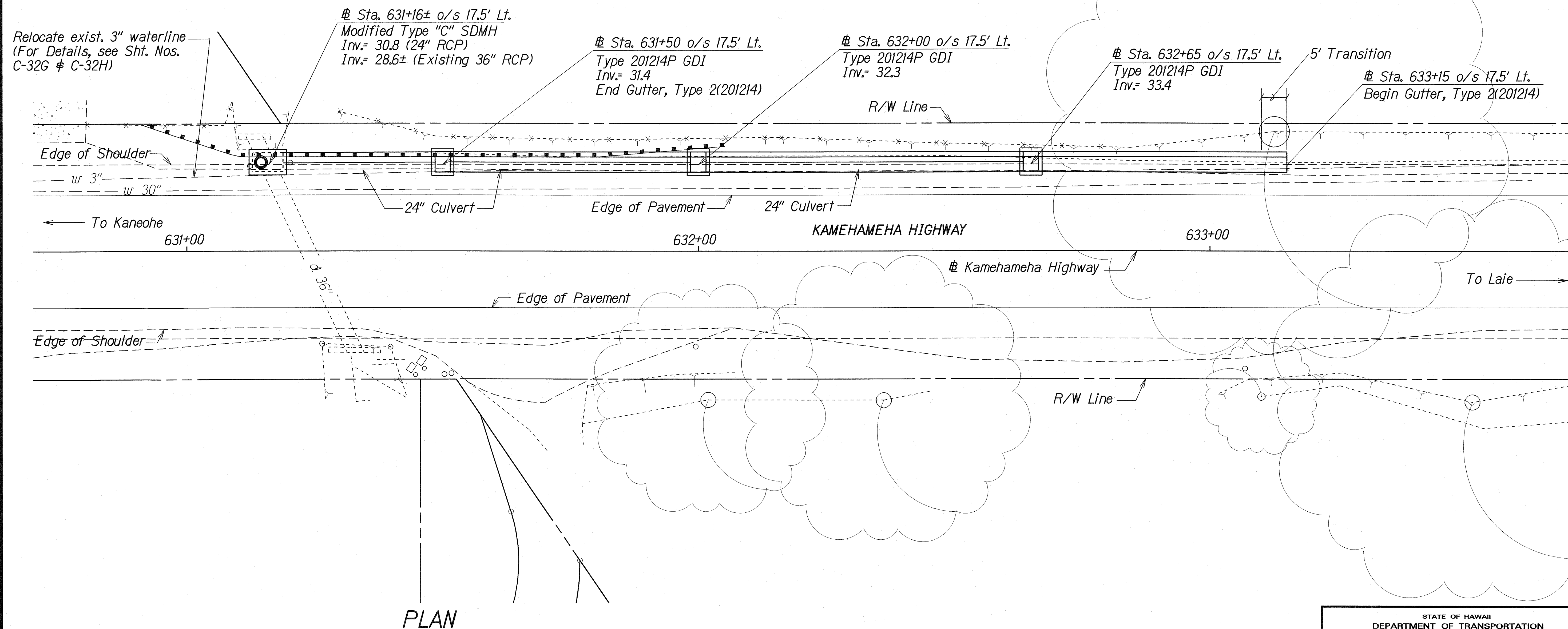
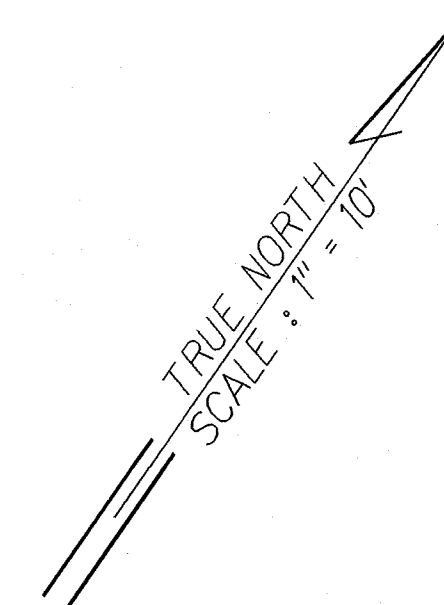
Estimated Quantities
Structure Excavation = 56 C.Y.
Plant Mix Glassphalt Concrete Base Course = 24 Tons
24-Inch Culvert = 47 L.F.
Type 201214P GDI = 1 Each
Gutter, Type 2(201214) = 47 L.F.

Sta. 632+00 o/s 17.5' Lt.
Construct: Type 201214P GDI
For details see Sht No. C-32D
Install: 24" Culvert

Estimated Quantities
Structure Excavation = 75 C.Y.
Plant Mix Glassphalt Concrete Base Course = 32 Tons
24-Inch Culvert = 62 L.F.
Type 201214P GDI = 1 Each
Gutter, Type 2(201214) = 62 L.F.

Sta. 632+65 o/s 17.5' Lt.
Construct: Type 201214P GDI
For details see Sht No. C-32D
Estimated Quantities

Type 201214P GDI = 1 Each
Gutter, Type 2(201214) = 48 L.F.



ORIGINAL PLAN	SURVEY PLOTTED BY	DATE
NOTE BOOK	DRAWN BY	4/10/02
QUANTITIES BY	DESIGNED BY	
CHECKED BY		

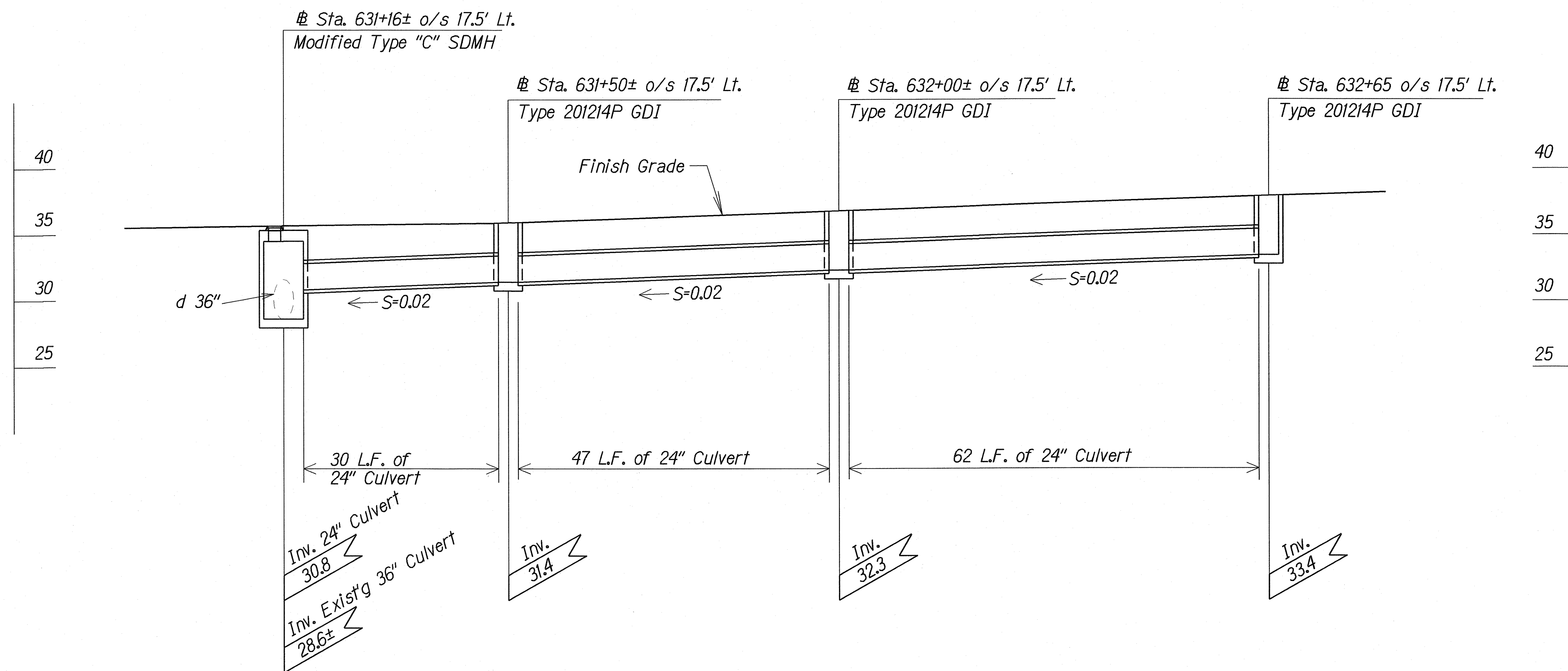
9/3/02	Add drainage plan sheet.
DATE	REVISION

STATE OF HAWAII
DEPARTMENT OF TRANSPORTATION
HIGHWAYS DIVISION
DRAINAGE PLAN

KAMEHAMEHA HIGHWAY RESURFACING
Waiahole Valley Road to Crouching Lion Inn
Federal Aid Project No. NH-083-1(43)

Scale: 1" = 10'
Date: Apr, 2002
SHEET No.C-32A OF 74 SHEETS

FED. ROAD DIST. NO.	STATE	FED. AID PROJ. NO.	FISCAL YEAR	SHEET NO.	TOTAL SHEETS
HAWAII	HAW.	NH-083-1(43)	2001	C.O. 34 S-2	121



☺ PROFILE ALONG 24" CULVERT AT # STA. 631+16± o/s 17.5' LT. TO # STA. 632+65 o/s 17.5' LT.

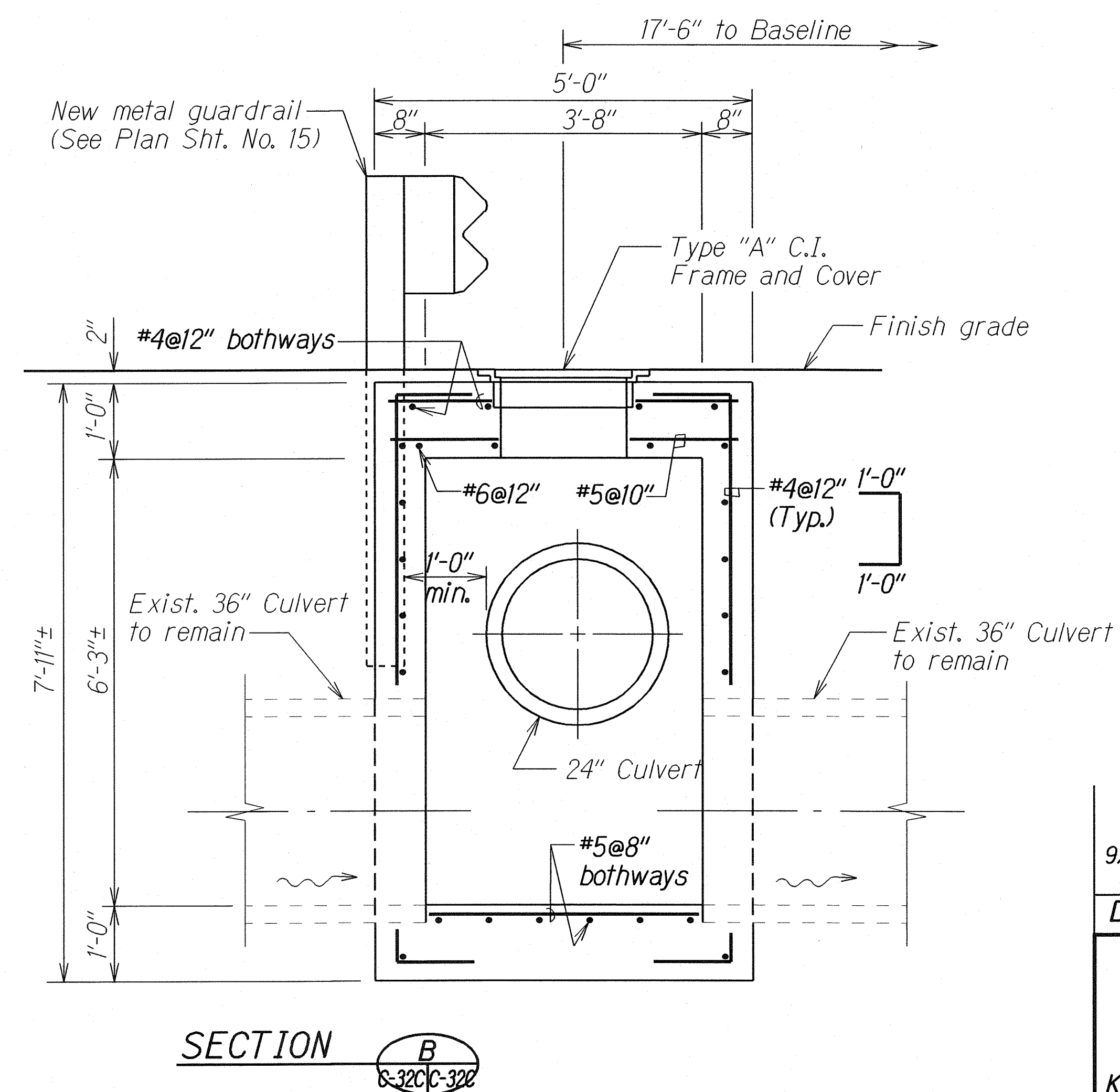
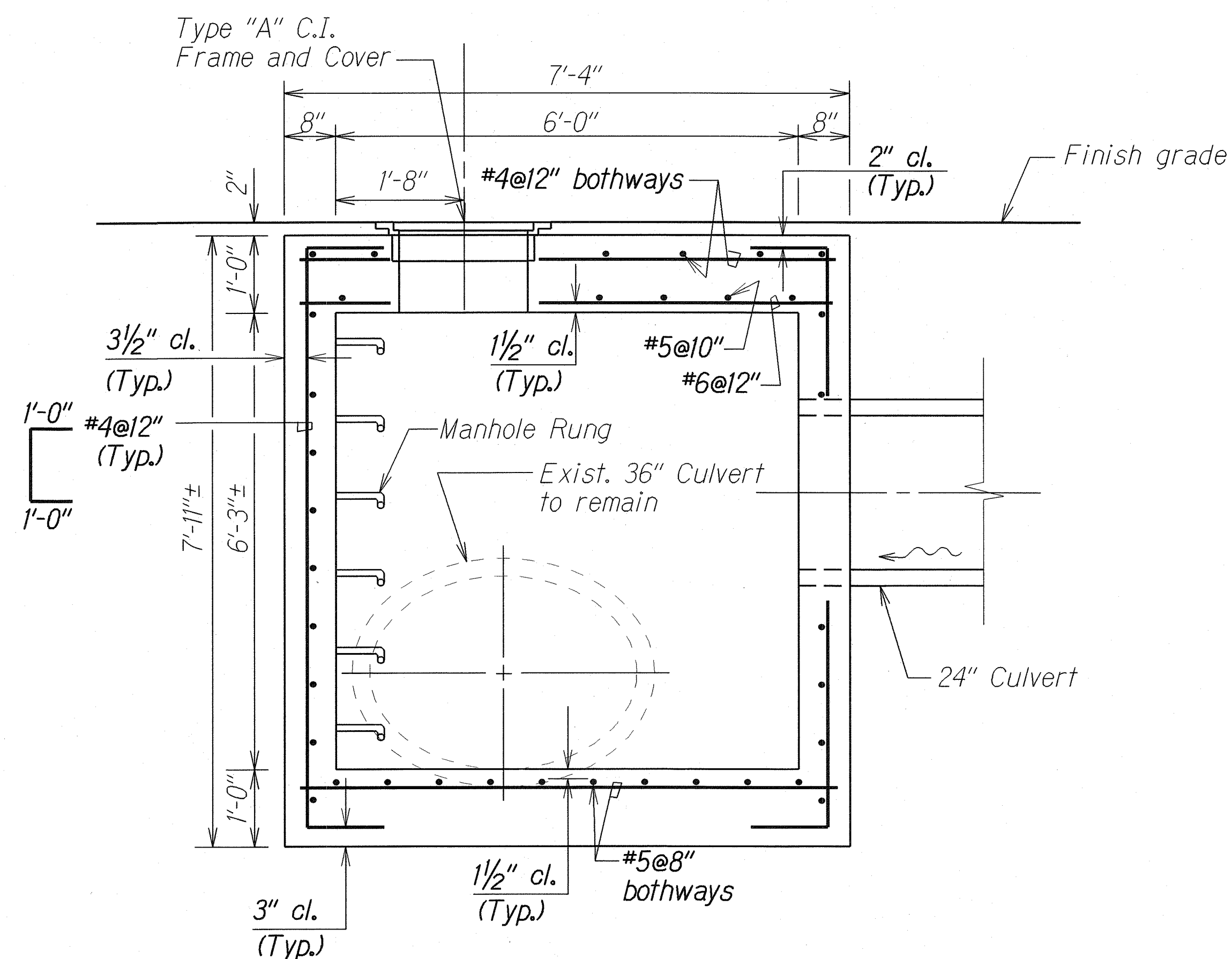
Scale: Horiz. 1"= 10'
Vert. 1"= 5'

ORIGINAL PLAN	SURVEY PLOTTED BY	DATE
NOTE BOOK	DRAWN BY	4/10/02
3/20/02	TRACED BY	
3/20/02	QUANTITIES BY	
3/20/02	CHECKED BY	

9/3/02	Add drainage profile sheet.
DATE	REVISION
STATE OF HAWAII DEPARTMENT OF TRANSPORTATION HIGHWAYS DIVISION DRAINAGE PROFILE KAMEHAMEHA HIGHWAY RESURFACING Waialeale Valley Road to Crouching Lion Inn Federal Aid Project No. NH-083-1(43) Scale: 1" = 10' Date: Apr, 2002 SHEET No.C-32B OF 74 SHEETS	

C.O. 34 S-2

9/3/02	Add detail of Modified Type "C" Storm Drain Manhole.
--------	--



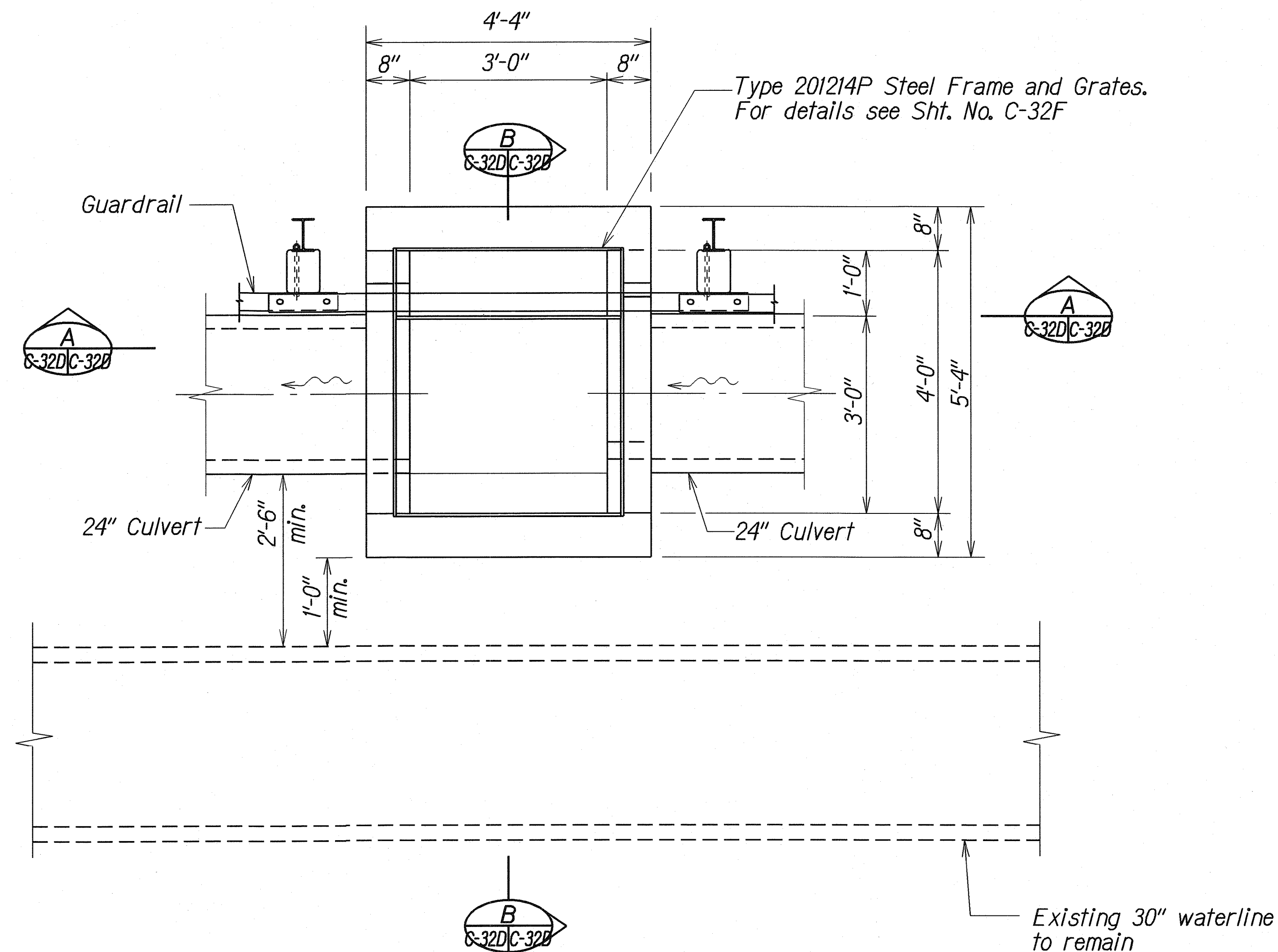
9/3/02	Add detail of Modified Type "C" Storm Drain Manhole.
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Scale: $\frac{3}{4}" = 1'-0"$ Date: March 2002

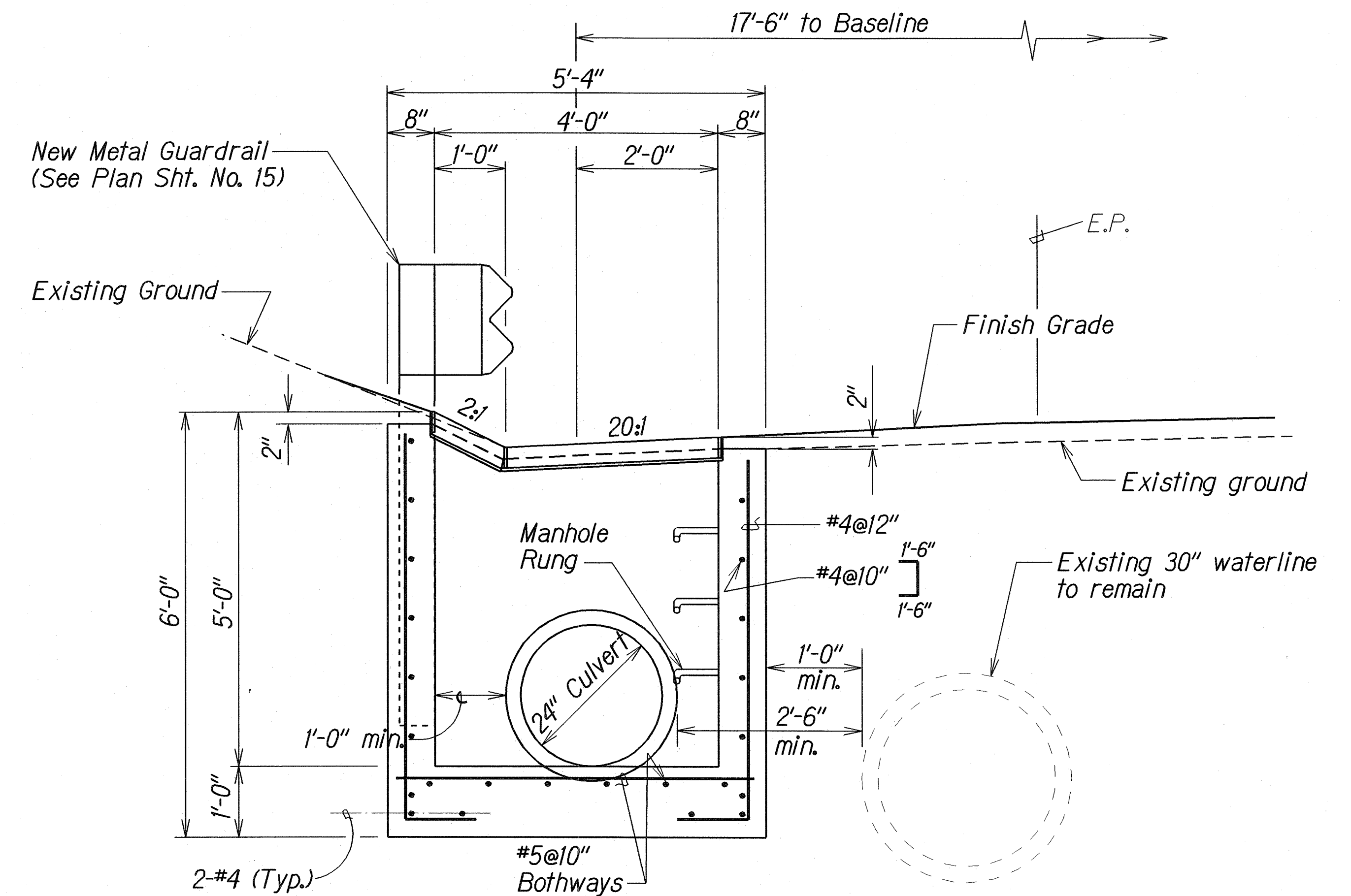
C.O. 34 S-3

ORIGINAL PLAN	SURVEY PLOTTED BY _____	DATE _____
	DRAWN BY <i>J.H.C.</i>	<i>12/01</i>
	TRACED BY _____	*
NOTE BOOK	DESIGNED BY <i>E.T. & C.M.</i>	*
<i>3300a26838k</i>	QUANTITIES BY _____	*
<i>3300a26838k</i>	CHECKED BY _____	*

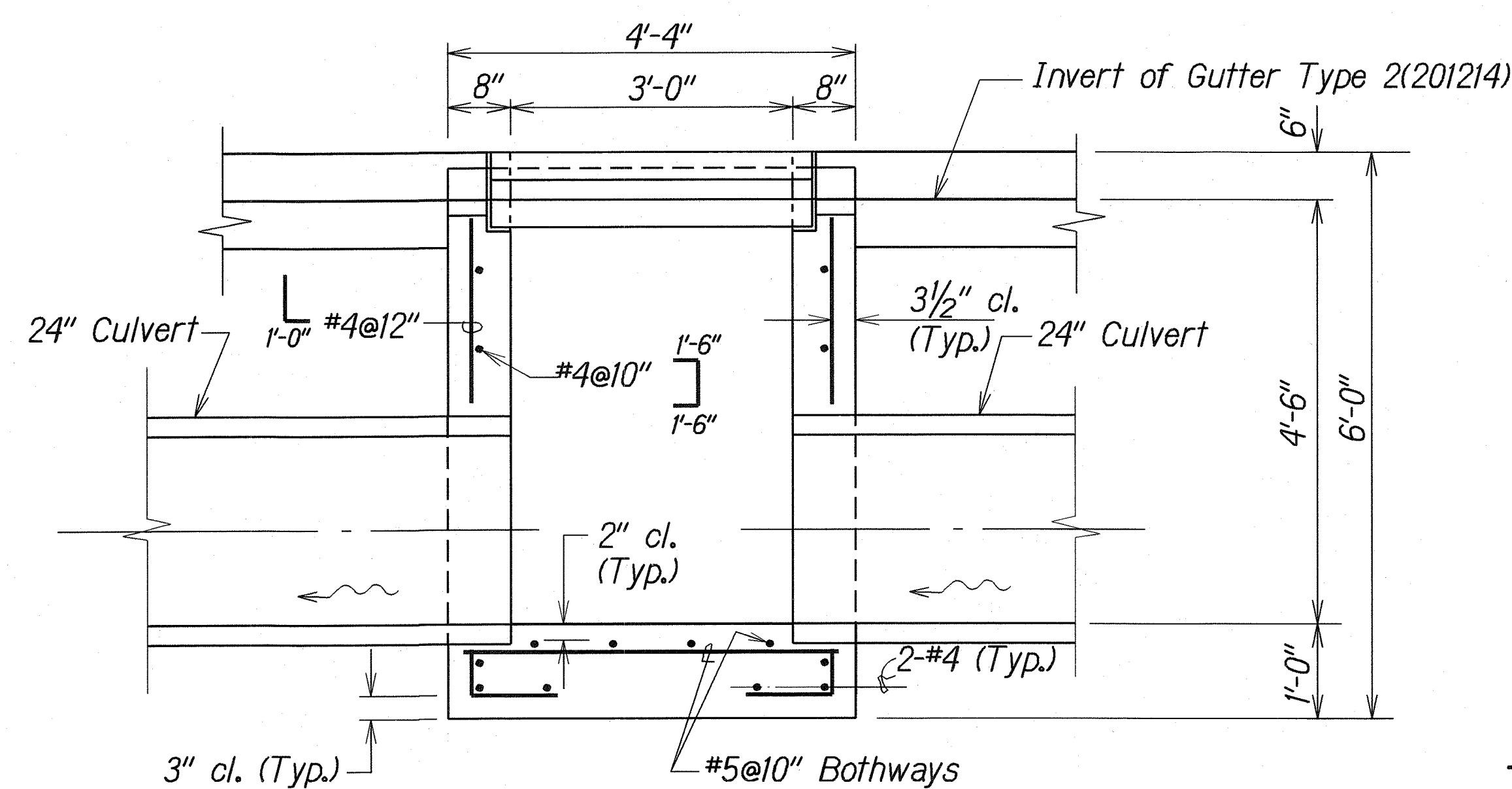
FED. ROAD DIST. NO.	STATE	FED. AID PROJ. NO.	FISCAL YEAR	SHEET NO.	TOTAL SHEETS
HAWAII	HAW.	NH-083-1(43)	2001	C.O. 34 S-4	121



PLAN



SECTION B



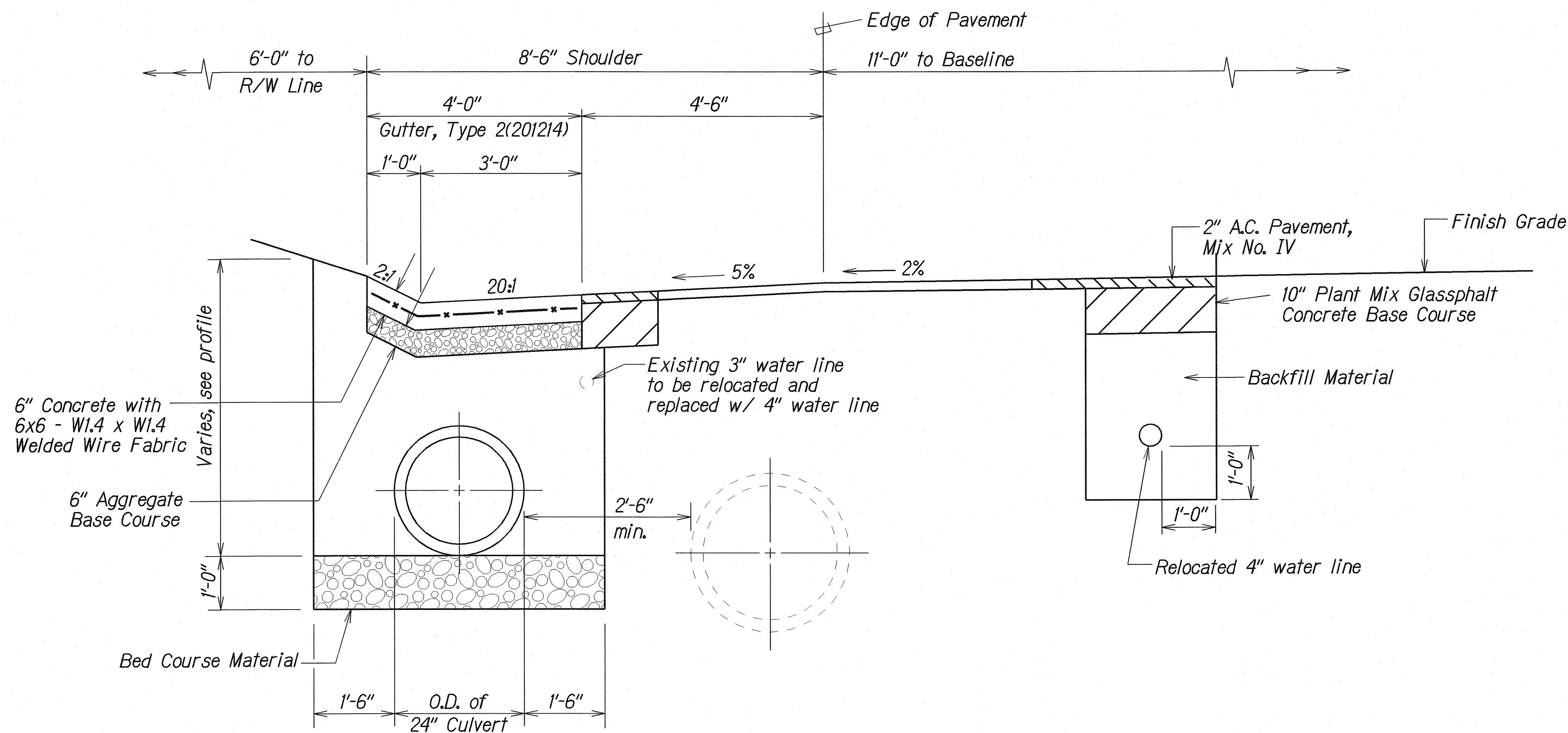
SECTION A

TYPICAL DETAILS OF TYPE 201214P GRATED DROP INLET

ORIGINAL PLAN	DATE	4/02
DRAWN BY LEC		
DESIGNED BY B.L. & C.M.		
QUANTITIES BY		
CHECKED BY		

9/3/02	Add drainage detail of Type 201214P Grated Drop Inlet.
DATE	REVISION
STATE OF HAWAII DEPARTMENT OF TRANSPORTATION HIGHWAYS DIVISION DRAINAGE DETAILS KAMEHAMEHA HIGHWAY RESURFACING Waiahole Valley Road to Crouching Lion Inn Project No. NH-083-1(43) Scale: 3/4" = 1'-0" Date: Apr, 2002 SHEET No. C-32D OF 74 SHEETS	

FED. ROAD DIST. NO.	STATE	FED. AID PROJ. NO.	FISCAL YEAR	SHEET NO.	TOTAL SHEETS
HAWAII	HAW.	NH-083-1(43)	2001	C.O. 34 S-5	121

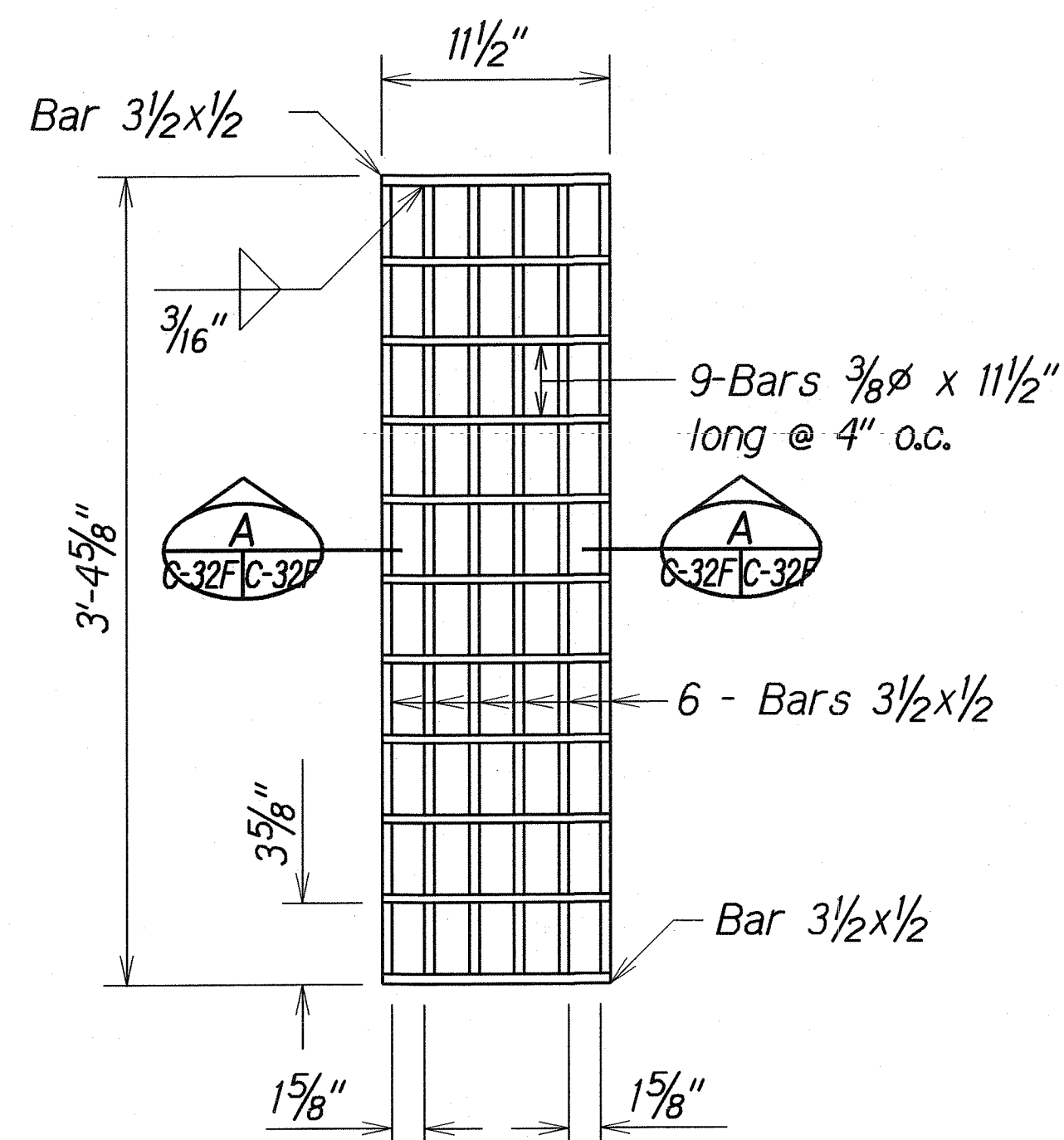


TYPICAL DETAIL OF CULVERT TRENCH AND GUTTER TYPE 2(201214)

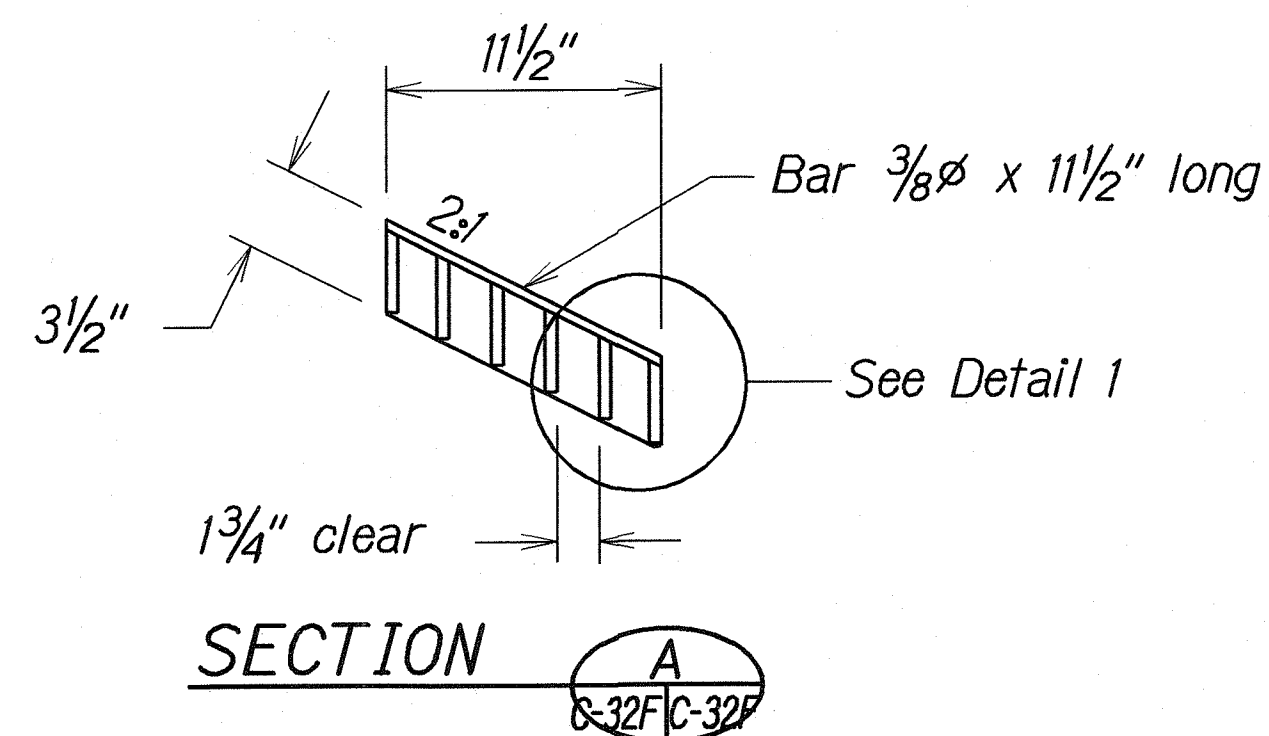
ORIGINAL PLAN	SURVEY PLOTTED BY	DATE
	DRAWN BY	4/02
	DESIGNED BY	
	QUANTITIES BY	
	CHECKED BY	

9/3/02	Add drainage detail of gutter and trench restoration.
DATE	REVISION
STATE OF HAWAII DEPARTMENT OF TRANSPORTATION HIGHWAYS DIVISION DRAINAGE DETAILS KAMEHAMEHA HIGHWAY RESURFACING Waiahole Valley Road to Crouching Lion Inn Federal Aid Project No. NH-083-1(43) Scale: 3/4" = 1'-0" Date: Apr, 2002 SHEET No.C-32E OF 74 SHEETS	

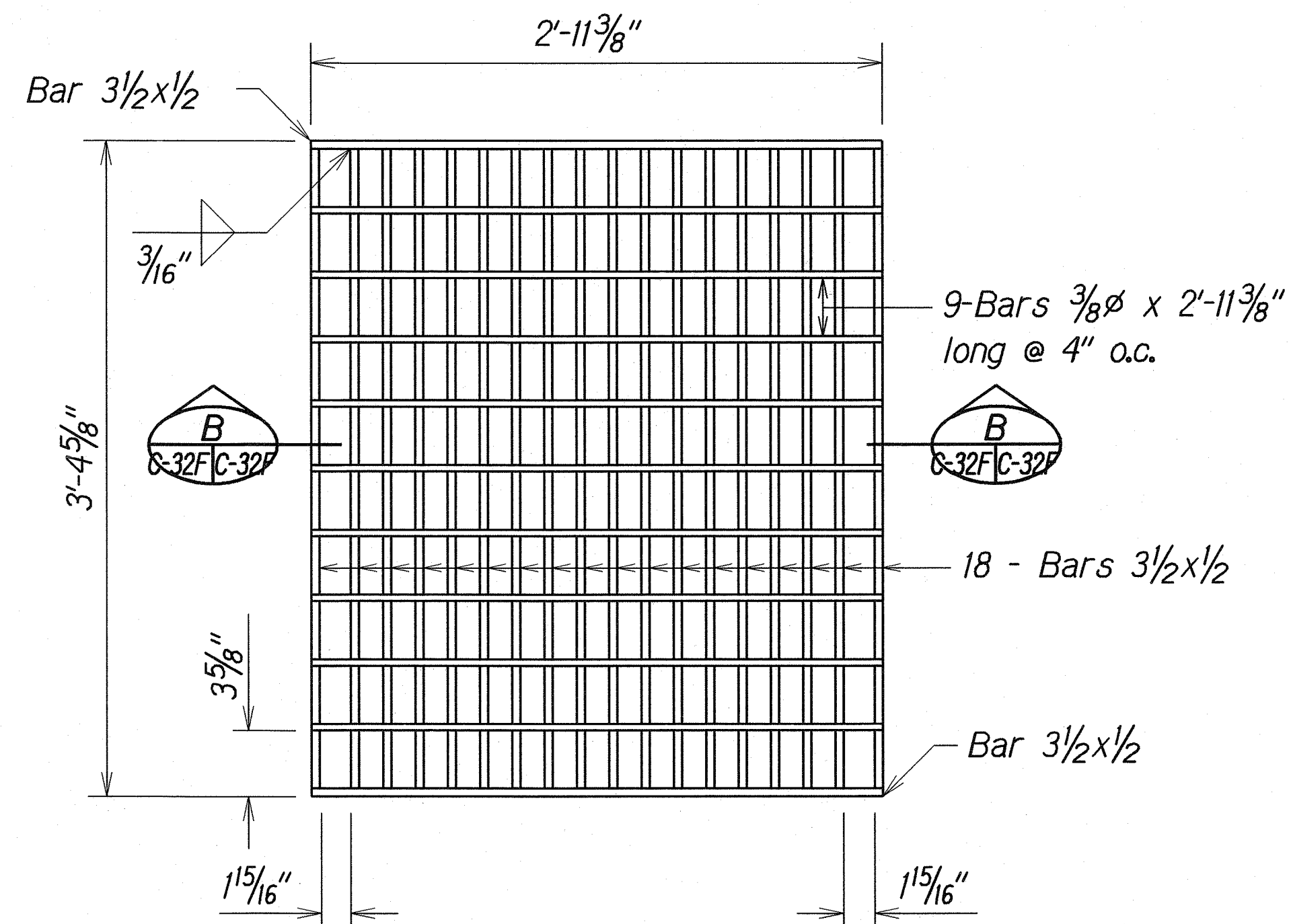
FED. ROAD DIST. NO.	STATE	FED. AID PROJ. NO.	FISCAL YEAR	SHEET NO.	TOTAL SHEETS
HAWAII	HAW.	NH-083-1(43)	2001	C.O. 34 S-6	121



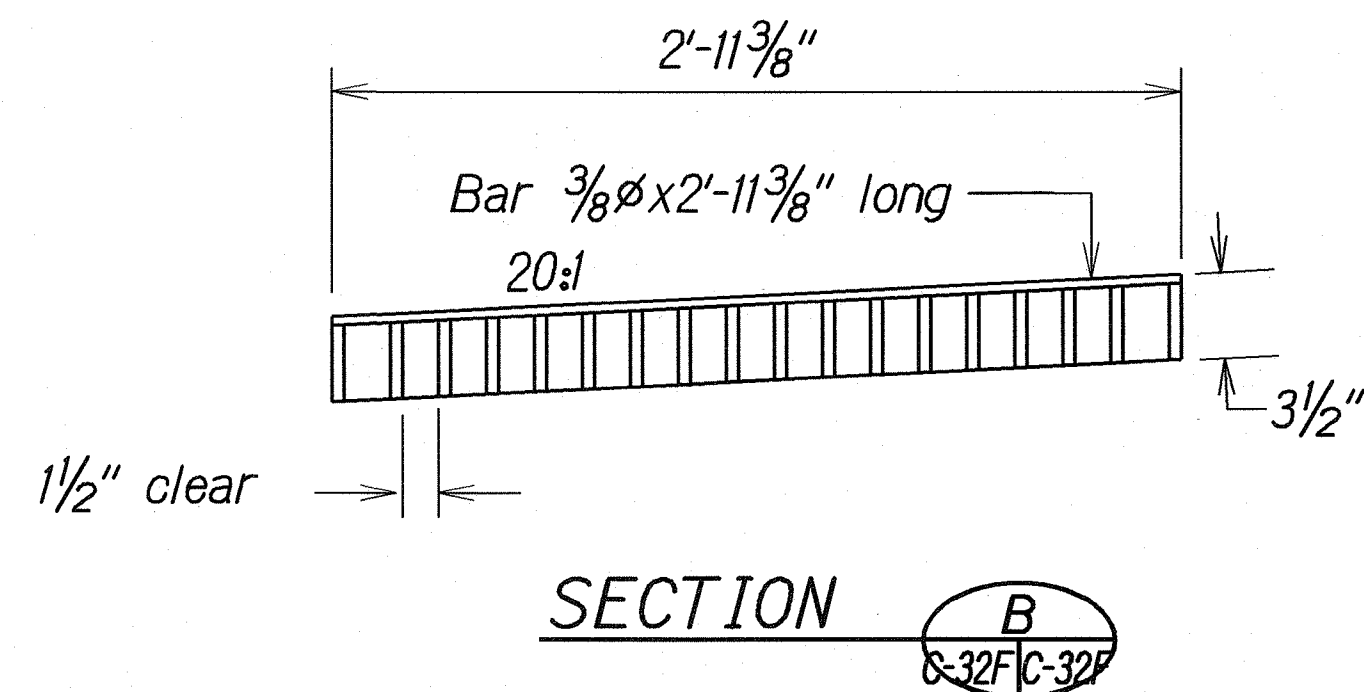
PLAN



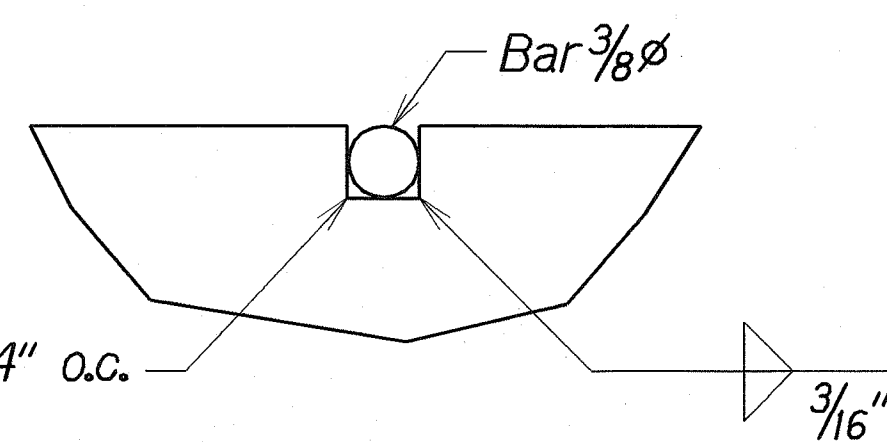
DETAIL 1
Half Size



PLAN



SECTION B



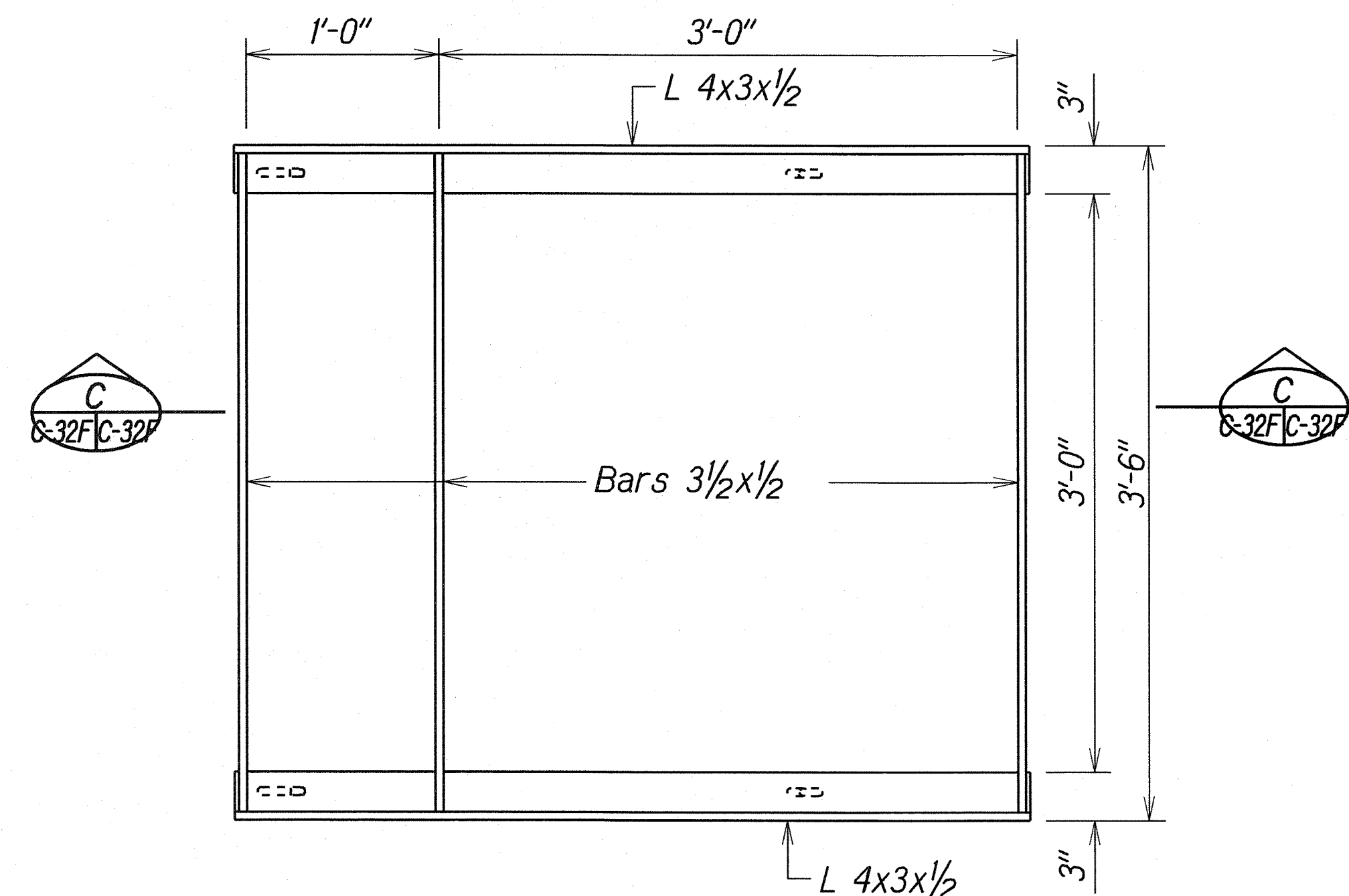
NOTCH DETAIL
Full Size
GRATES

GENERAL NOTES

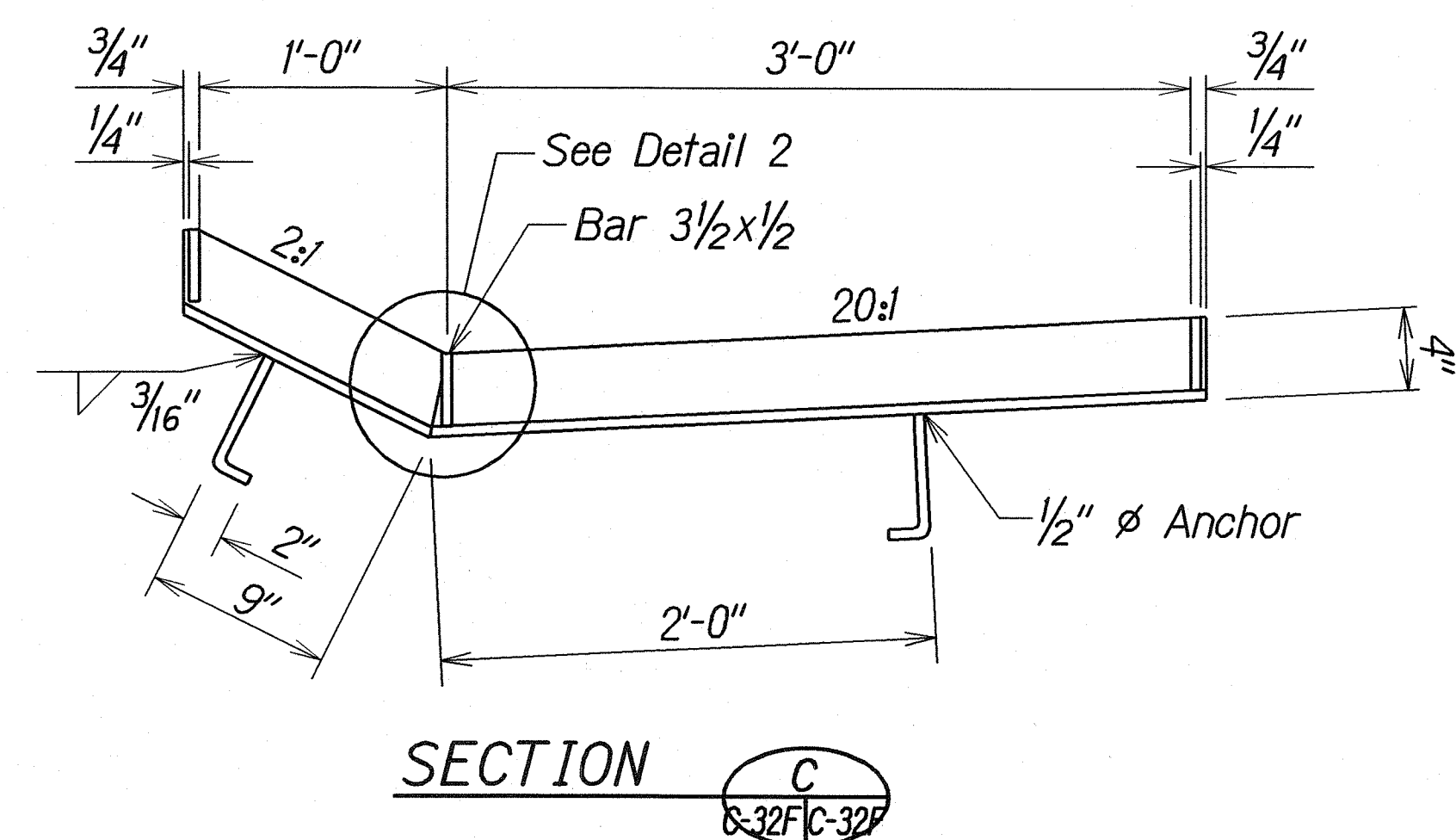
1. All welds 3/8" unless otherwise noted.
2. Frame and Grates shall be hot dip galvanized after fabrication.

TYPE 201214P STEEL FRAME AND GRATES

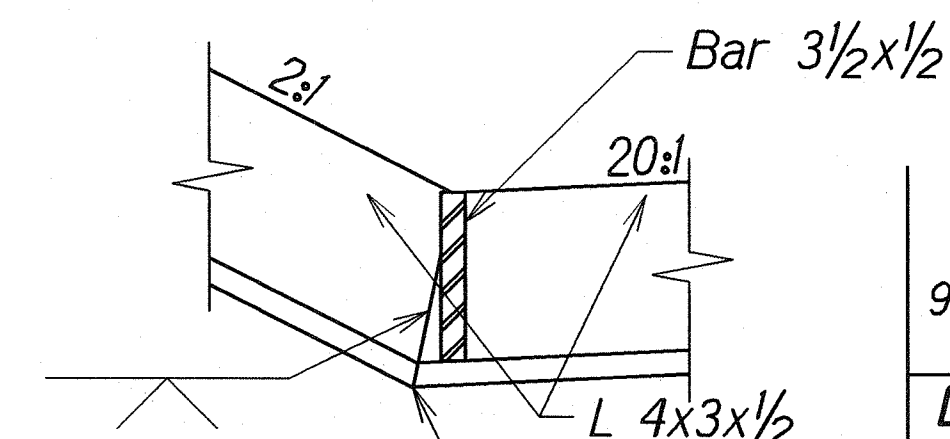
Scale: 1 1/2"=1'-0"



PLAN



SECTION C



DETAIL 2
Half Size

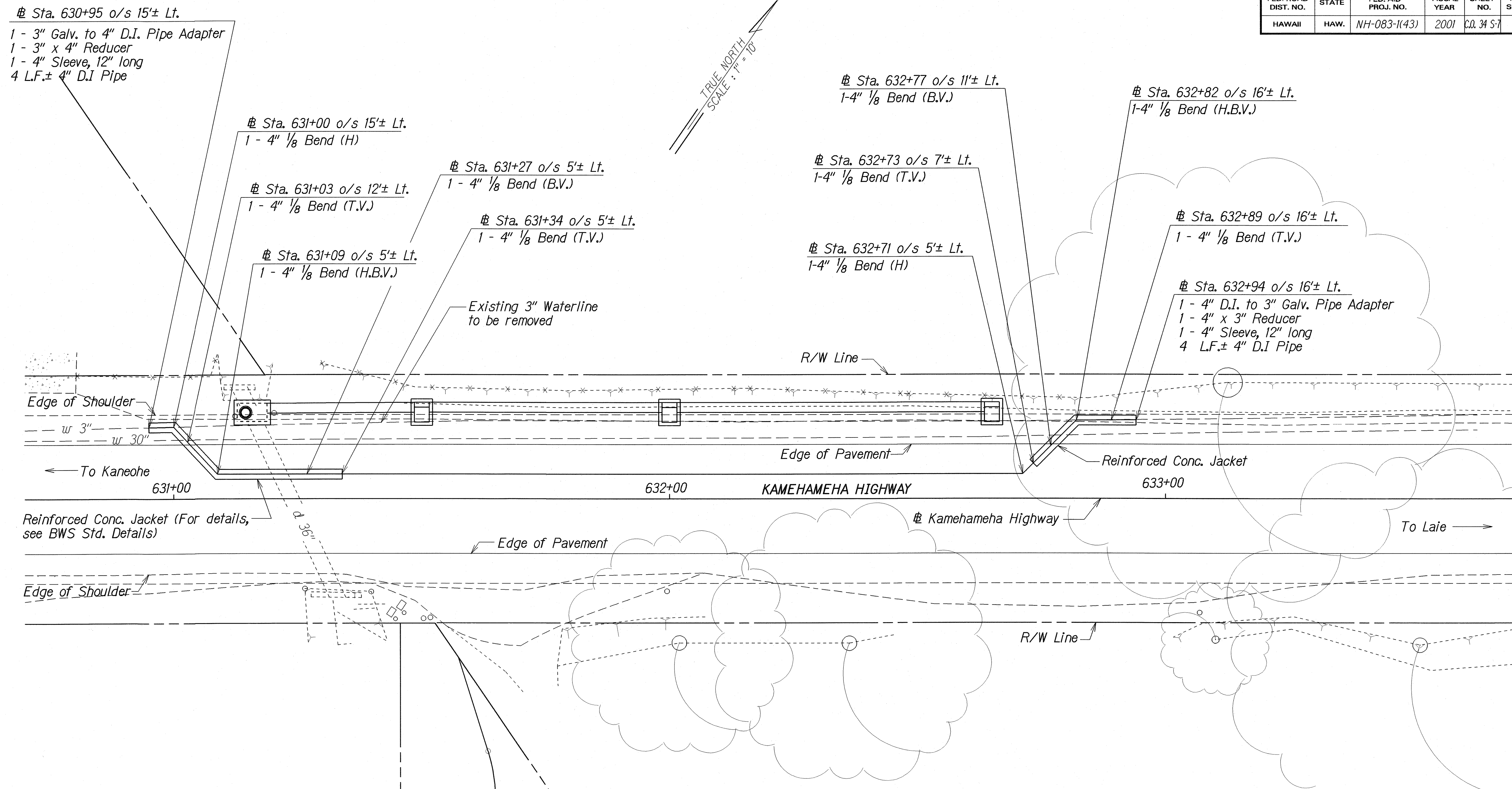
FRAME

9/3/02	Add drainage detail of Type 201214P Frame and Grates.
DATE	REVISION
STATE OF HAWAII DEPARTMENT OF TRANSPORTATION HIGHWAYS DIVISION	
DRAINAGE DETAILS	
KAMEHAMEHA HIGHWAY RESURFACING Waiahole Valley Road to Crouching Lion Inn Federal Aid Project No. NH-083-1(43)	
Scale: As Shown	Date: April 2002
SHEET No.C-32F OF 74 SHEETS	

C.O. 34 S-6

ORIGINAL PLAN	DATE
NOTE BOOK	DESIGNED BY
QUANTITIES BY	CHECKED BY
DATE	

FED. ROAD DIST. NO.	STATE	FED. AID PROJ. NO.	FISCAL YEAR	SHEET NO.	TOTAL SHEETS
HAWAII	HAW.	NH-083-1(43)	2001	C.O. 34 S-7	121



ORIGINAL PLAN	SURVEY PLOTTED BY	DATE
NOTE BOOK	DRAWN BY	
	TRACED BY	
	CHECKED BY	

APPROVED:

Joseph W. Kaulana 9/3/02
 PRINCIPAL EXECUTIVE, MAINTENANCE UNIT, DATE
 BOARD OF WATER SUPPLY,
 CITY AND COUNTY OF HONOLULU

9/3/02	Add utility plan for water line relocation.
DATE	REVISION

STATE OF HAWAII
 DEPARTMENT OF TRANSPORTATION
 HIGHWAYS DIVISION

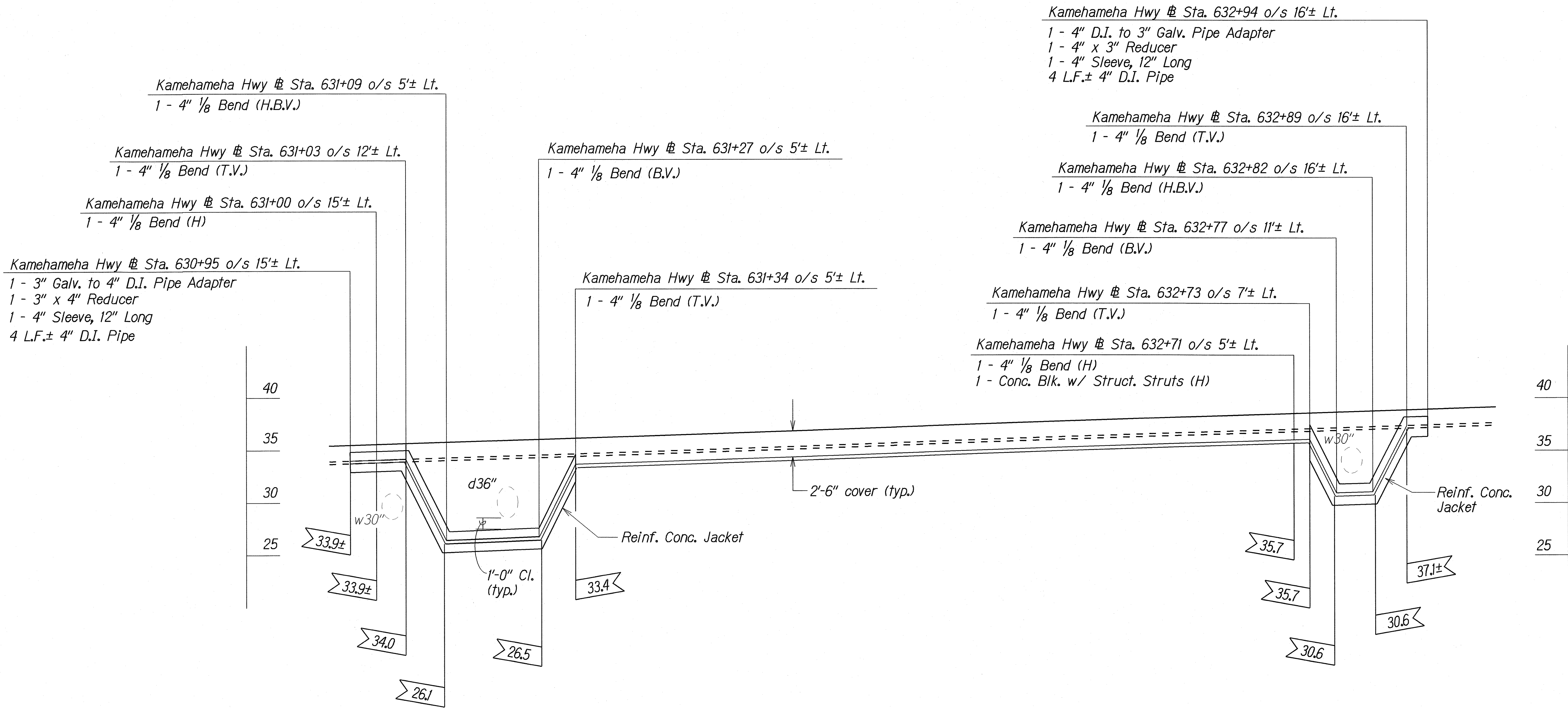
UTILITY PLAN

KAMEHAMEHA HIGHWAY RESURFACING
 Waiahole Valley Road to Crouching Lion Inn
 Federal Aid Project No. NH-083-1(43)

Scale: 1" = 10' Date: Apr, 2002

SHEET No.C-326 OF 74 SHEETS

FED. ROAD DIST. NO.	STATE	FED. AID PROJ. NO.	FISCAL YEAR	SHEET NO.	TOTAL SHEETS
HAWAII	HAW.	NH-083-1(43)	2001	C.O. 34 S-8	121



PROFILE - WATERLINE ADJUSTMENT AT @ STA. 631+00 to @ STA. 632+82

Scale: Horiz.: 1"=10'
 Vert.: 1"=5'

ORIGINAL PLAN	SURVEY PLOTTED BY	DATE
NOTE BOOK	DRAWN BY	
NOTES	TRACED BY	
	QUANTITIES BY	
	CHECKED BY	

APPROVED:

[Signature]
 PRINCIPAL EXECUTIVE, MAINTENANCE UNIT,
 BOARD OF WATER SUPPLY,
 CITY AND COUNTY OF HONOLULU

9/6/02
 DATE

9/3/02 Add waterline adjustment details showing water line relocation profile.

DATE REVISION

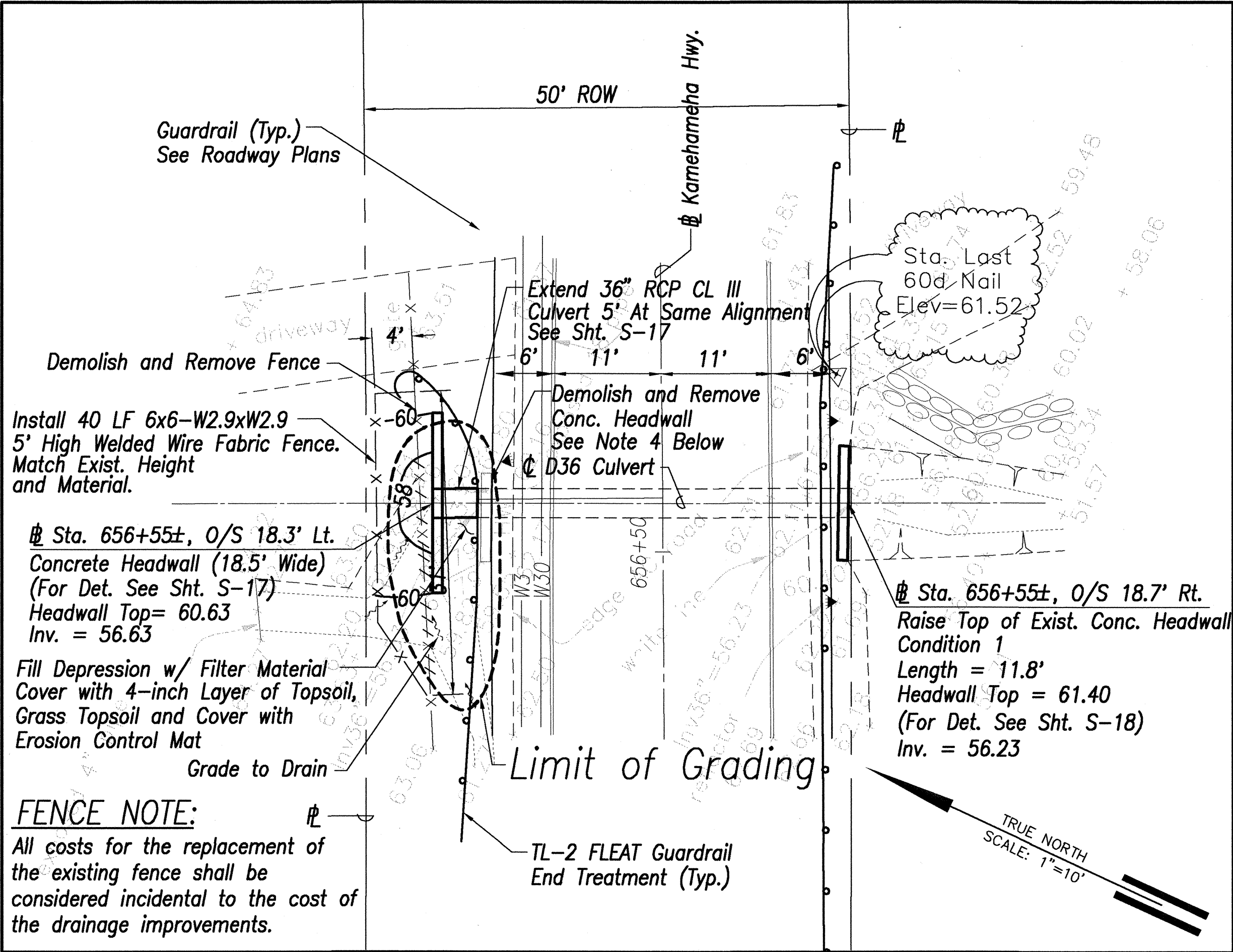
STATE OF HAWAII
 DEPARTMENT OF TRANSPORTATION
 HIGHWAYS DIVISION
WATERLINE ADJUSTMENT DETAILS
 KAMEHAMEHA HIGHWAY RESURFACING
 Waiahole Valley Road to Crouching Lion Inn
 Federal Aid Project No. NH-083-1(43)

Scale: 1' = 10' Date: Apr, 2002

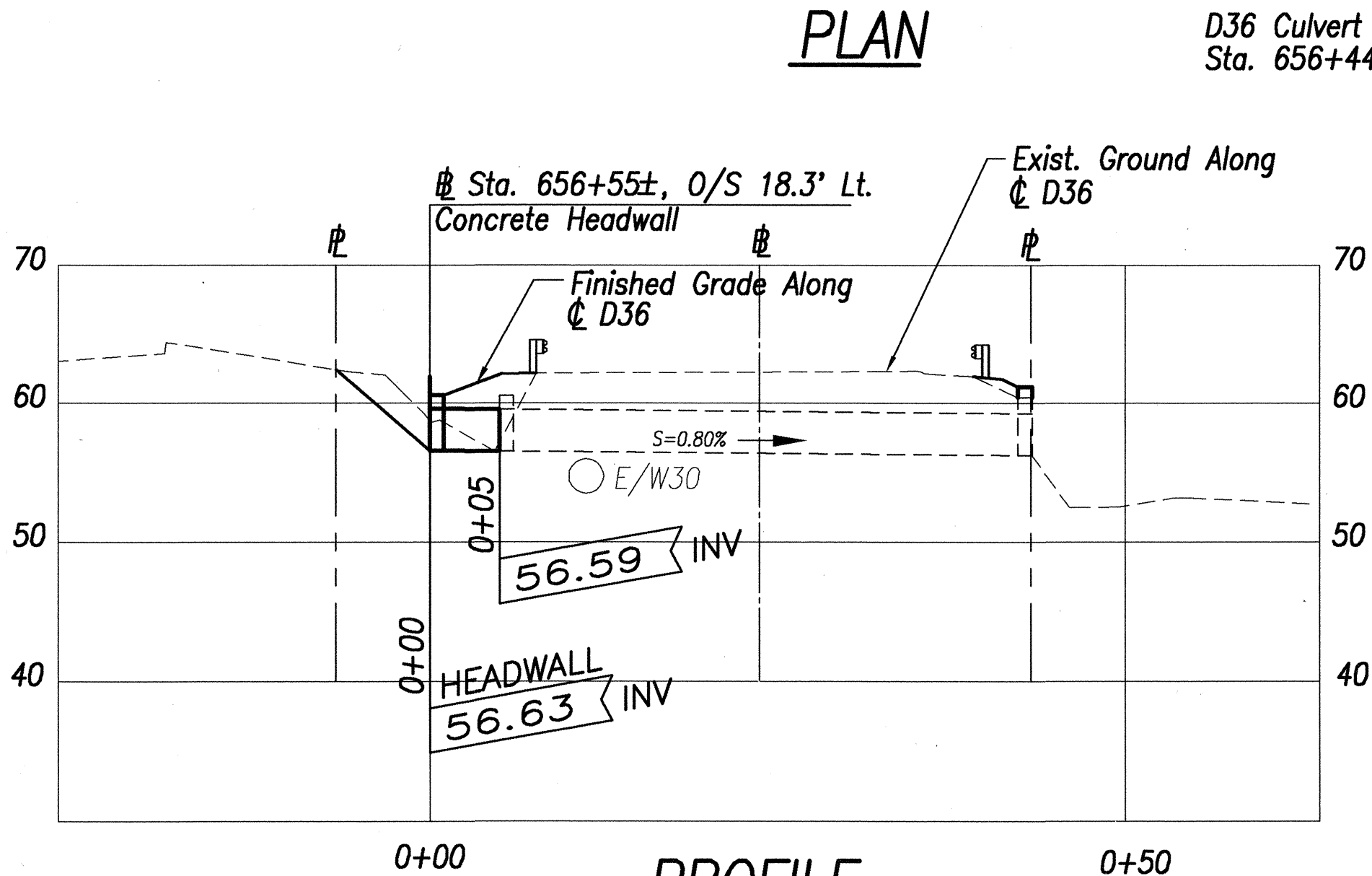
SHEET No.C-32H OF 74 SHEETS

C.O. 34 S-8

FED. ROAD DIST. NO.	STATE	FED. AID PROJ. NO.	FISCAL YEAR	SHEET NO.	TOTAL SHEETS
HAWAII	HAW.	NH-083-1(43)	2001	36	121



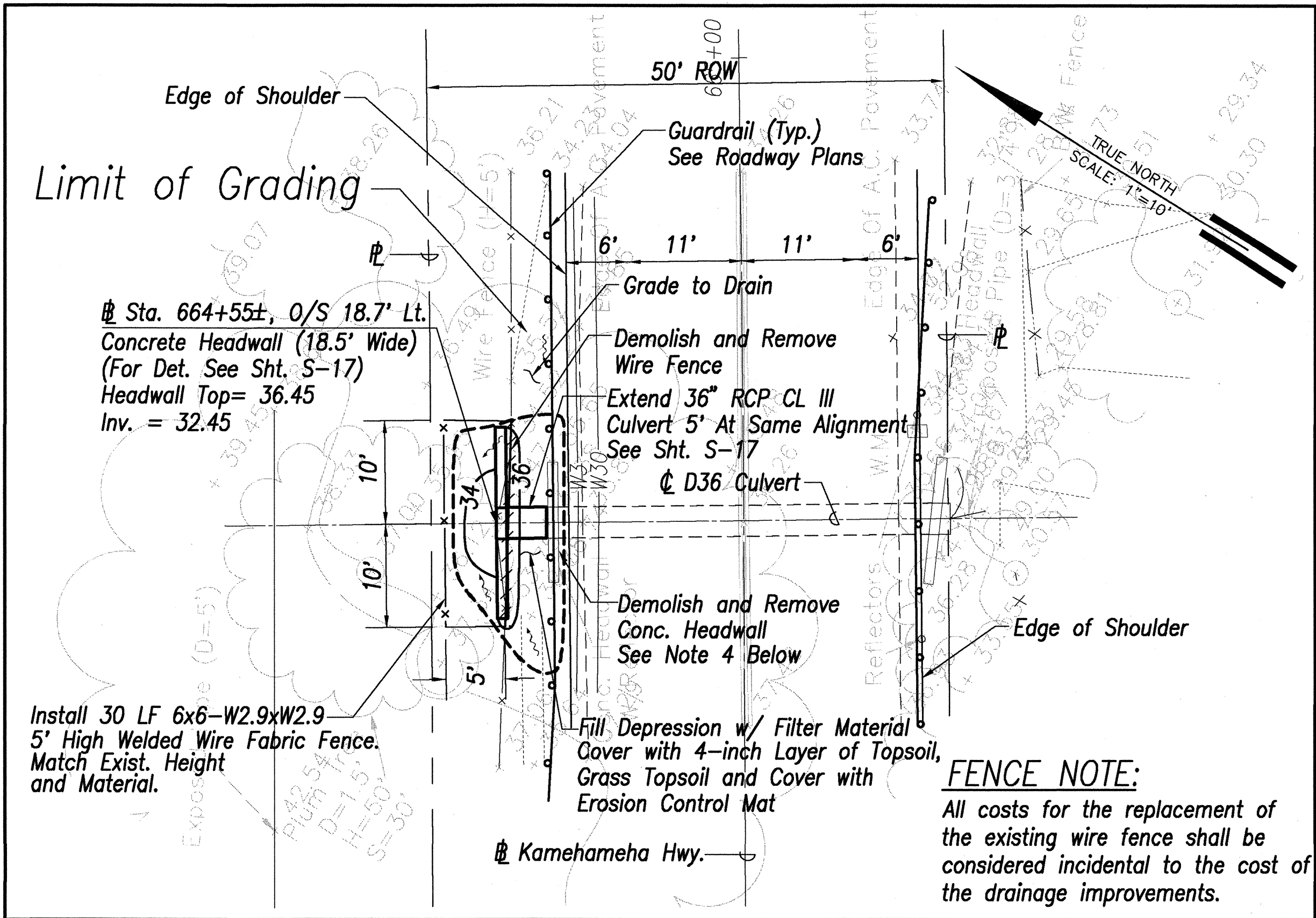
PLAN



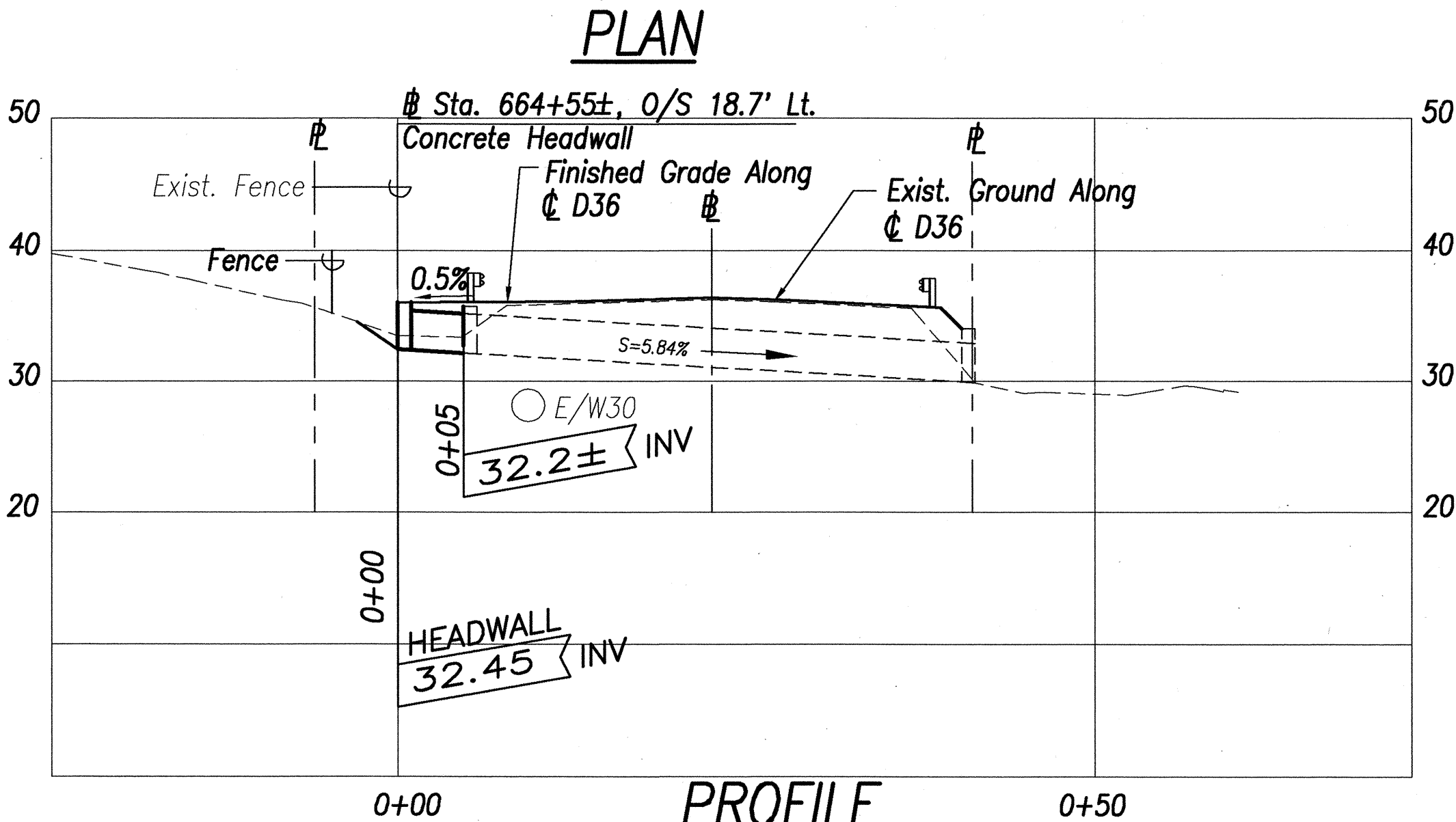
PROFILE

STA. 656+55± DRAINAGE PLAN

Scale: 1" = 10'



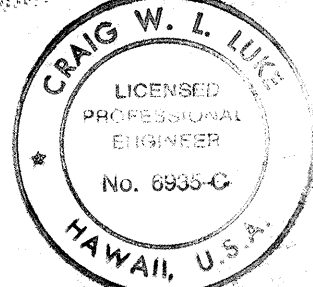
PLAN



PROFILE

STA. 664+55± DRAINAGE PLAN

Scale: 1" = 10'



STATE OF HAWAII
DEPARTMENT OF TRANSPORTATION
HIGHWAYS DIVISION

DRAINAGE PLAN - 8

KAMEHAMEHA HIGHWAY RESURFACING
Waiahole Valley Road to Crouching Lion Inn
Federal Aid Project No. NH-083-1(43)

Scale: 1" = 10'

Date: August 1, 2000

SHEET No. C-34 OF 74 SHEETS

DRAINAGE PLAN - 8

SCALE: 1" = 10'

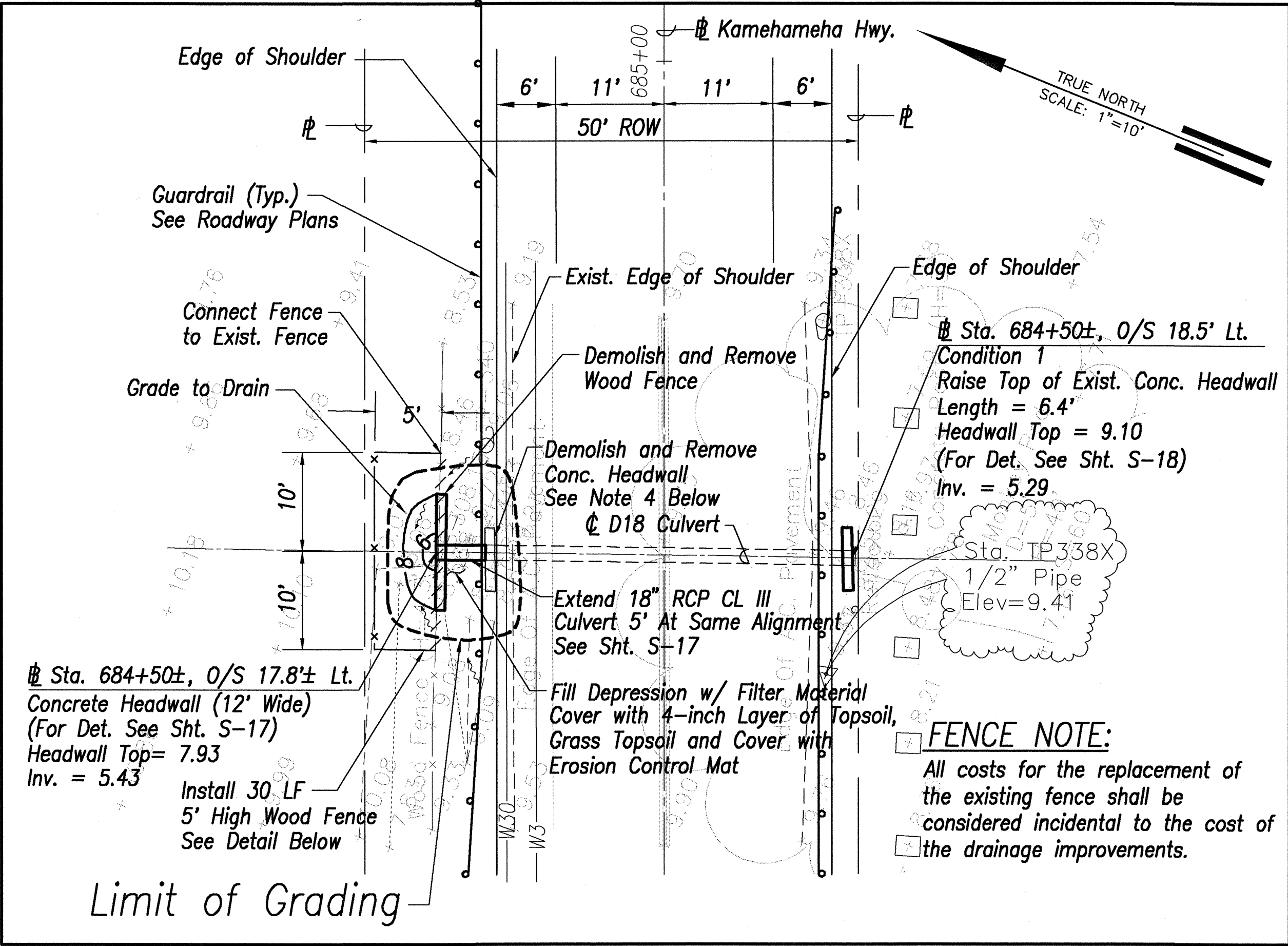
GRAPHIC SCALE

1" = 10' 5' 0 10' 20'

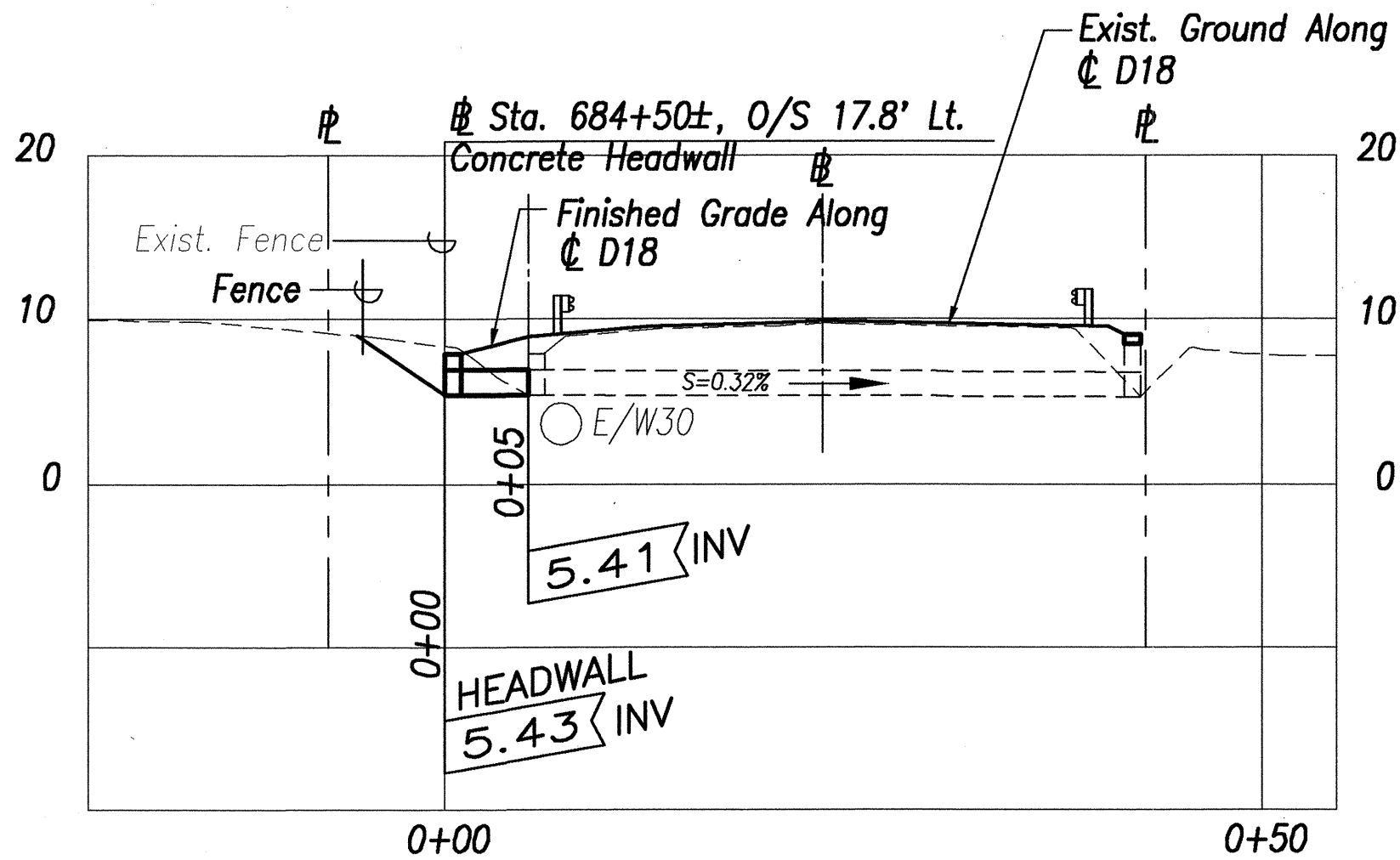
SURVEY PLOTTED BY	DATE
DESIGNED BY	
NOTED BY	
CHECKED BY	
ORIGINAL PLAN	No.

- Notes:
- 1) The Contractor shall clear debris from drainlines and drainage structures and clear, grub, and grade around pipe extensions and headwalls as required for drainline extensions and headwall construction. All work shall be considered incidental to drainline construction.
 - 2) Elevations shown are relative to surrounding ground around each culvert. Contractor shall verify the actual invert elevations of each culvert extension. The work shall be considered incidental to the various contract items.
 - 3) Maximum cut slopes shall be 1.5H:1V and maximum fill slopes shall be 2H:1V, unless otherwise indicated.
 - 4) Demolish and remove upper 2' of existing headwall. The top of the headwall that has been cut-off shall be not less than 1' below finish grade. At all pipe culvert locations, a minimum of 1' of headwall shall be maintained above the crown of the pipe for support.

FED. ROAD DIST. NO.	STATE	FED. AID PROJ. NO.	FISCAL YEAR	SHEET NO.	TOTAL SHEETS
HAWAII	HAW.	NH-083-1(43)	2001	37	121



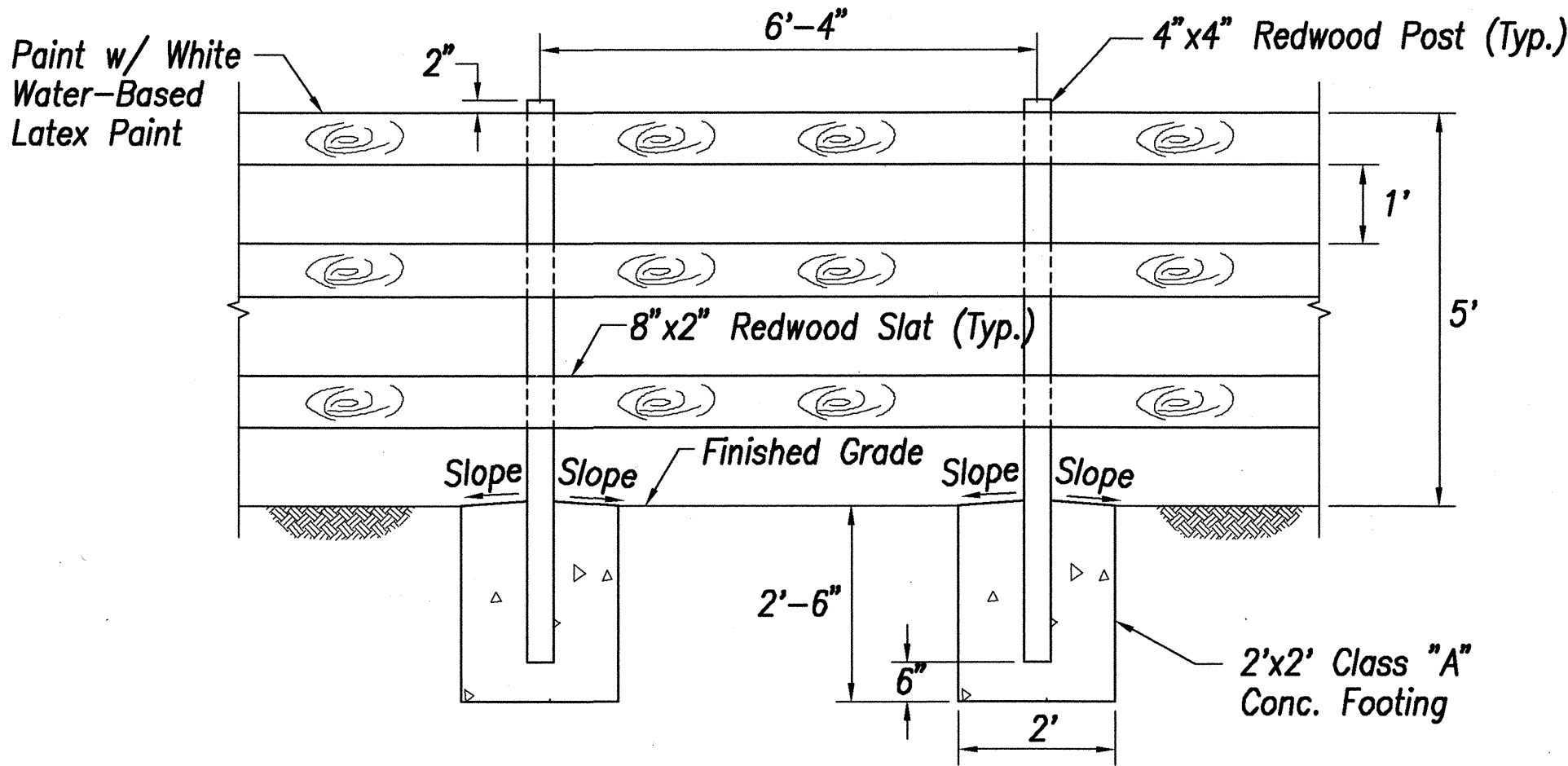
PLAN



PROFILE

STA. 684+50± DRAINAGE PLAN

Scale: 1" = 10'



WOODEN FENCE DETAIL

Scale: 1" = 5'

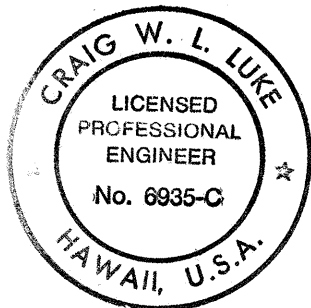
Notes:

- 1) The Contractor shall clear debris from drainlines and drainage structures and clear, grub, and grade around pipe extensions and headwalls as required for drainline extensions and headwall construction. All work shall be considered incidental to drainline construction.
- 2) Elevations shown are relative to surrounding ground around each culvert. Contractor shall verify the actual invert elevations of each culvert extension. The work shall be considered incidental to the various contract items.
- 3) Maximum cut slopes shall be 1.5H:1V and maximum fill slopes shall be 2H:1V, unless otherwise indicated.
- 4) Demolish and remove upper 2' of existing headwall/wingwall. The top of the headwall/wingwall that has been cut-off shall be not less than 1' below finish grade. At all pipe culvert locations, a minimum of 1' of headwall shall be maintained above the crown of the pipe for support.
- 5) Provide 3' min. clearance from the edge of the guardrail post to the edge of the water line. Refer to Water Note 23 on Sheet C-3.

APPROVED:

Catherine R. Duglas
for Chief, Planning and Engineering, BWS
(For Construction Within State R/W Only)

7/30/01
Date



STATE OF HAWAII
DEPARTMENT OF TRANSPORTATION
HIGHWAYS DIVISION

DRAINAGE PLAN - 9

KAMEHAMEHA HIGHWAY RESURFACING
Waiahole Valley Road to Crouching Lion Inn
Federal Aid Project No. NH-083-1(43)

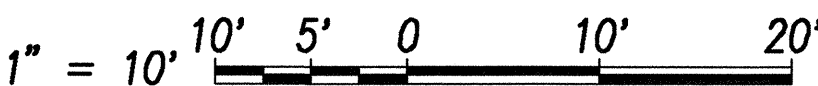
Scale: 1" = 10' Date: August 1, 2000

SHEET No. C-35 OF 74 SHEETS

DRAINAGE PLAN - 9

SCALE: 1" = 10'

GRAPHIC SCALE



THIS WORK WAS PREPARED BY ME OR UNDER MY SUPERVISION

Signature: [Handwritten Signature] Date: 7/30/01