

FED. ROAD DIST. NO.	STATE	FED. AID PROJ. NO.	FISCAL YEAR	SHEET NO.	TOTAL SHEETS
HAWAII	HAW.	IR-H2-1(26)	1991	25	107

STRUCTURAL NOTES

DESIGN SPECIFICATIONS -- AASHTO:

AASHTO Standard Specifications for Highway Bridges (14th edition), with subsequent Interim Specification 1990.

DESIGN LIVE LOAD:

HS-20-44 or Interstate Loading.

ALLOWABLE DESIGN STRESSES:

- 1. Reinforced concrete: $f_c = 0.40 f'_c$
- 2. Reinforced steel: $f_s = 20,000$ psi for Grade 40; 24,000 psi for Grade 60
- 3. Except as noted otherwise, all structural steel plates and members shall conform to ASTM A36 and hot-dipped galvanized after fabrication.

MATERIALS:

- 1. Reinforced concrete: Class A (all others)
- 2. Reinforced steel: ASTM A615, Grade 40 or Grade 60
- 3. Admixture in concrete: see Special Provisions
- 4. All expansion and premolded joint filler shall be incidental to concrete and will not be paid for separately.

CONSTRUCTION METHODS:

- 1. Refer to Standard Specifications for Road and Bridge Construction, 1985 Edition and Special Provisions.
- 2. In the installation of anchor bolts for highway lighting standards and expressway signs, the Contractor shall provide rigid templates to maintain the proper locations and protection of such anchor bolts at all times during the period of construction. Exact methods shall be approved by the Engineer.
- 3. Except as noted otherwise, all vertical dimensions are measured plumb.
- 4. For concrete finish, see Special Provisions.

REFERENCE:

- 1. Refer to Standard Plans for additional details and notes not covered by details and typical drawings.

GENERAL NOTES:

- 1. All items noted incidental will not be paid for separately.
- 2. The Contractor shall verify the locations of all existing utility lines and notify their respective owners before commencing with any work.
- 3. The Contractor shall verify all grades and dimensions in the field before commencing with any work.
- 4. The Contractor shall be solely responsible for the protection of adjacent property, utility and existing and new structures from damage due to construction and repair any damage at his own expense, to the satisfaction of the Engineer. He shall conduct his work in such a manner and provide such temporary shoring or other measures as may be necessary to insure the safety of all concerned.
- 5. Excavation for all footings and stems shall be accomplished by maintaining as near a vertical cut as possible.
- 6. In the event of over-excavation, the space between the footing and ground shall be filled with a minimum of class D concrete at the Contractor's expense and as directed by the Engineer.

ESTIMATED QUANTITIES			
ITEM NO.	DESCRIPTION	UNIT	QUANTITIES
206.5000	Structural Excavation For Retaining Walls	Cu. Yd.	22,526 cy.
206.7250	Structural Backfill For Retaining Walls	Cu. Yd.	17,974 cy.
206.8300	Filter Material For Retaining Walls	Cu. Yd.	1,676 cy.
503.1051	Concrete In Retaining Walls	Lump Sum	(6,566 cy.)
507.7020	Conc. Barriers And End Posts For Retaining Walls	Lin. Ft.	3,318 lf.
602.0050	Reinforcing Steel In Retaining Walls	Lump Sum	(782,699 lbs.)

DESIGN FILE	DATE
PLAN	JAN 1991
DESIGNED BY	DAK
QUANTITIES BY	DAK
CHECKED BY	SA
DATE	JAN 1991

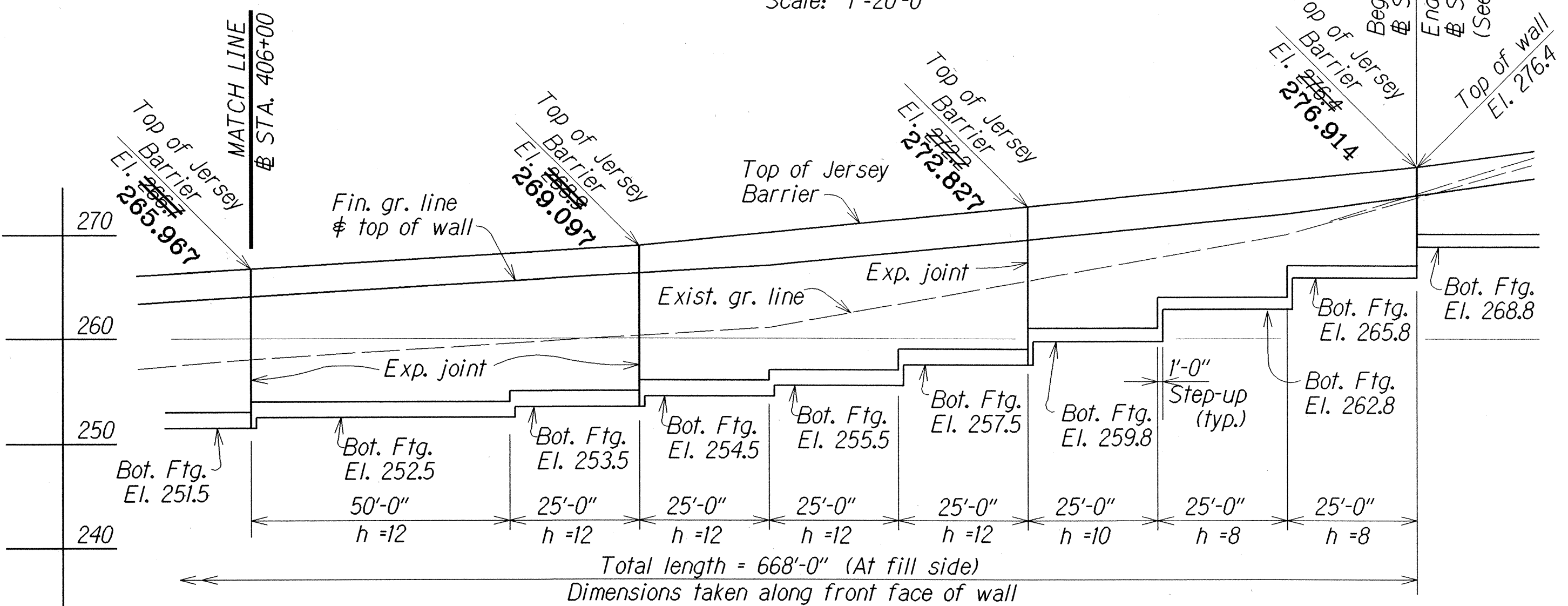
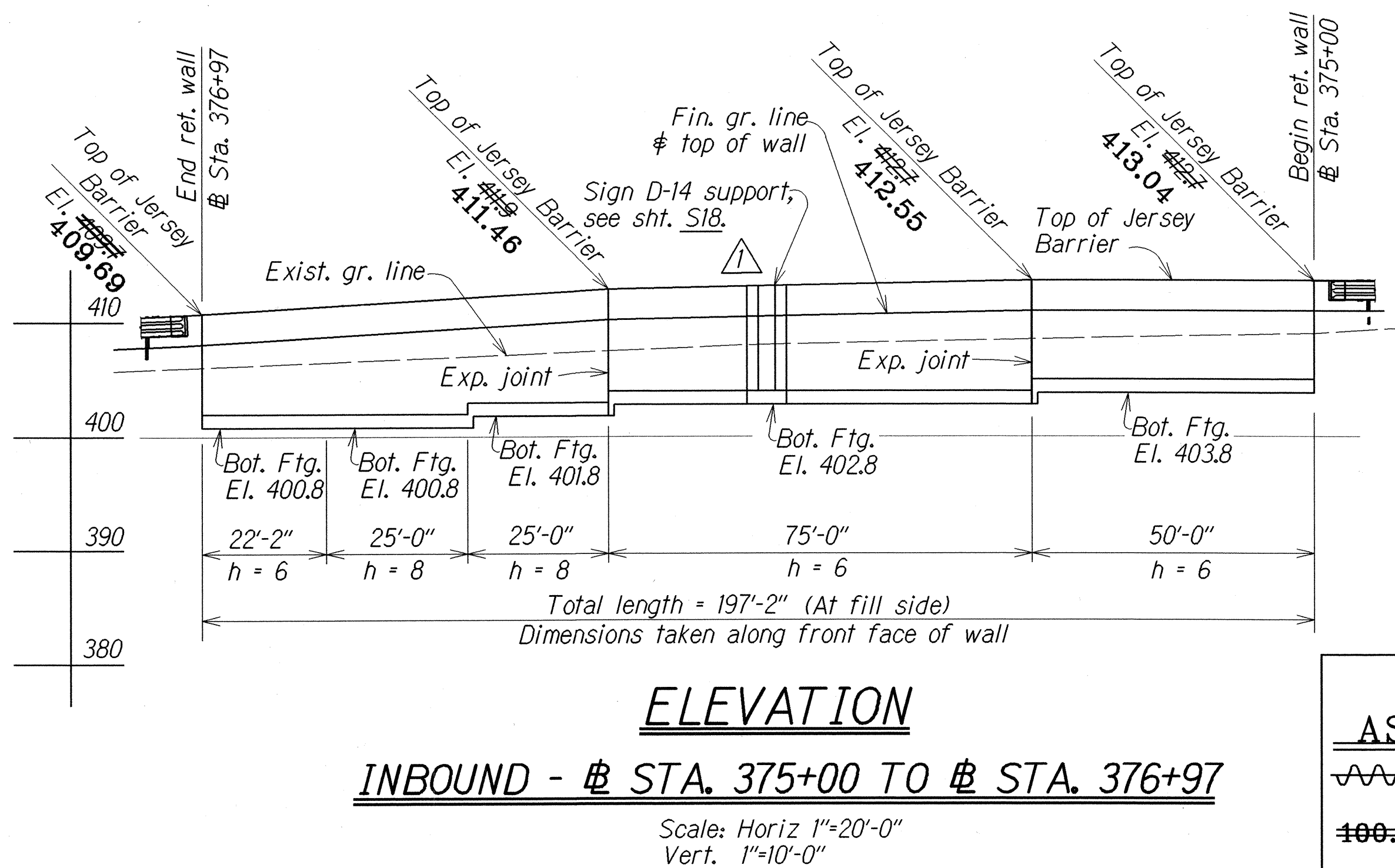
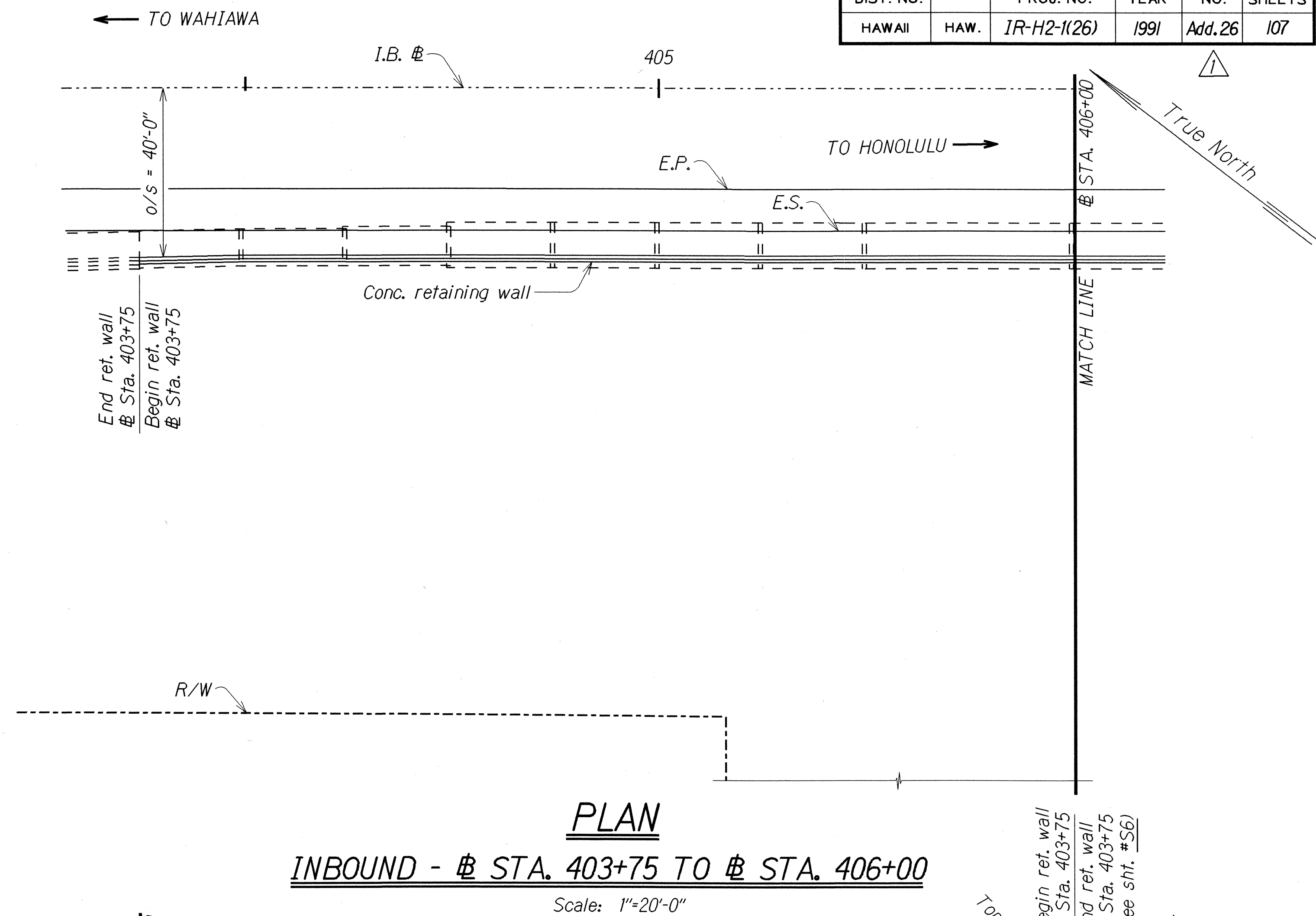
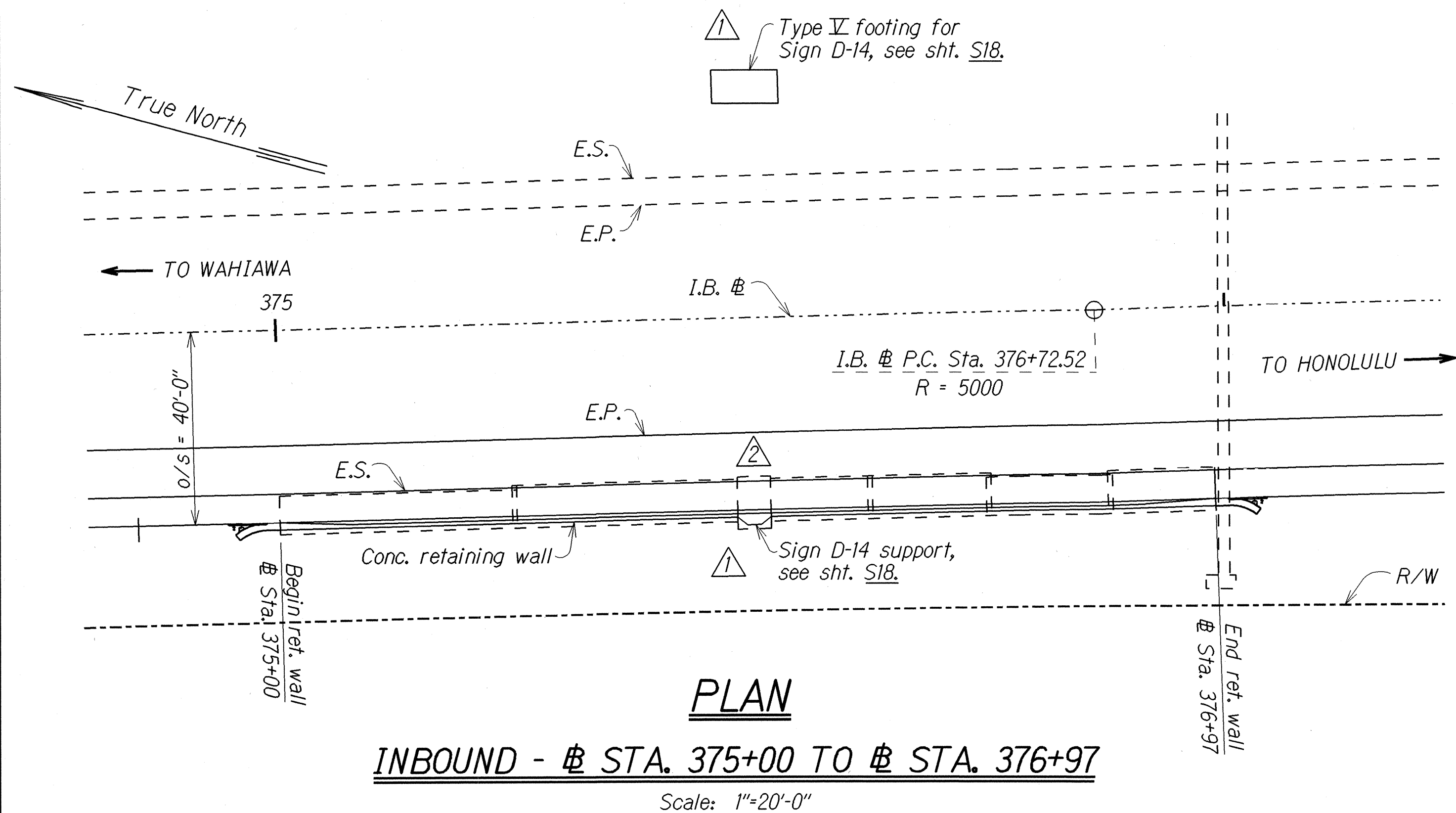
STATE OF HAWAII
DEPARTMENT OF TRANSPORTATION
HIGHWAYS DIVISION

GENERAL NOTES
ESTIMATED QUANTITIES

INTERSTATE ROUTE H-2 HOV LANES, PHASE I
WAIPIO TO WAIAWA INTERCHANGE
Project No. IR-H2-1(26)

Scale: As Noted Date: Jan. 1991

FED. ROAD DIST. NO.	STATE	FED. AID PROJ. NO.	FISCAL YEAR	SHEET NO.	TOTAL SHEETS
HAWAII	HAW.	IR-H2-11(26)	1991	Add.26	107



LEGEND FOR AS-BUILT POSTINGS	
	Squiggly line for as-built deletion
	Double line for as-built deletion
	Text for as-built posting

STATE OF HAWAII DEPARTMENT OF TRANSPORTATION HIGHWAYS DIVISION	
RETAINING WALL PLAN AND ELEVATION	
I.B. STA. 375+00 TO STA. 376+97	
I.B. STA. 403+75 TO STA. 406+00	
INTERSTATE ROUTE H-2, HOV LANES, PHASE I	
WAIPIO INTERCHANGE TO WAIPILO INTERCHANGE	
Project No. IR-H2-11(26)	
Scale: As Noted	Date: Jan. 1991
SHEET No. S2 OF 20 SHEETS	

Note: This tracing prepared during "As-Built" posting.

1/14/92	Footing extended.	5/15/91	Sheet added to Contract Plan set for additional details required on sht. no. ADD. 26, per Addendum No. 1.
DATE	REVISION	DATE	REVISION

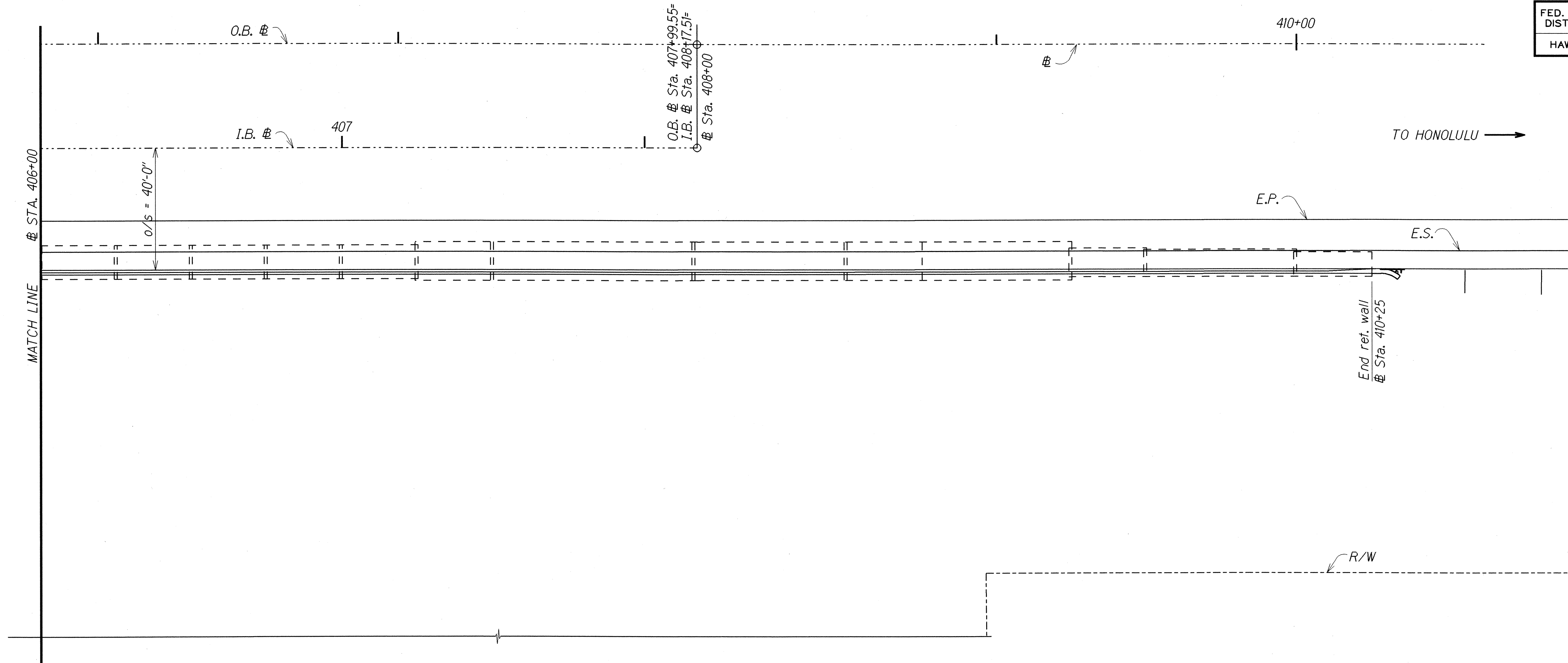
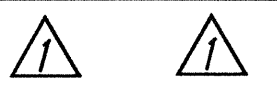
"AS-BUILT"

ADD.26

ORIGINAL PLAN	DATE	1/14/92
SURVEY PLOTTED BY	DATE	1/14/92
DRAWN BY	DATE	1/14/92
DESIGN FILE	DATE	1/14/92
QUANTITIES BY	DATE	1/14/92
CHECKED BY	DATE	1/14/92

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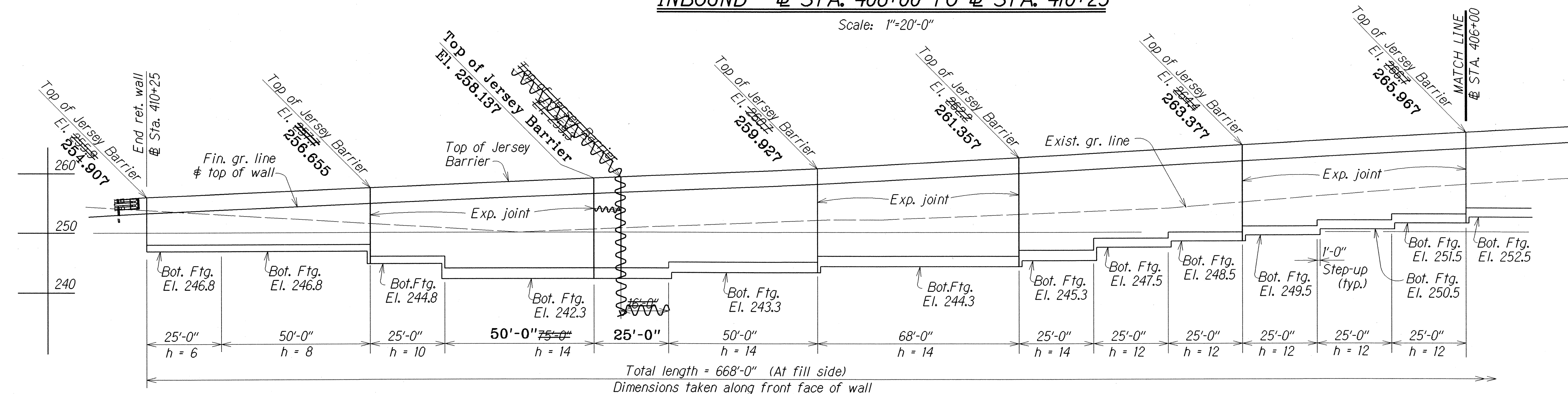
FED. ROAD DIST. NO.	STATE	FED. AID PROJ. NO.	FISCAL YEAR	SHEET NO.	TOTAL SHEETS
HAWAII	HAW.	IR-H2-1(26)	1991	27	107



PLAN

INBOUND - STA. 406+00 TO STA. 410+25

Scale: 1"=20'-0"



ELEVATION

INBOUND - STA. 406+00 TO STA. 410+25

Scale: Horiz 1"=20'-0"
Vert. 1"=10'-0"

LEGEND FOR AS-BUILT POSTINGS	
	Squiggly line for as-built deletion
	Double line for as-built deletion
	Roadway Text for as-built posting

Note: This tracing prepared during "As-Built" posting.

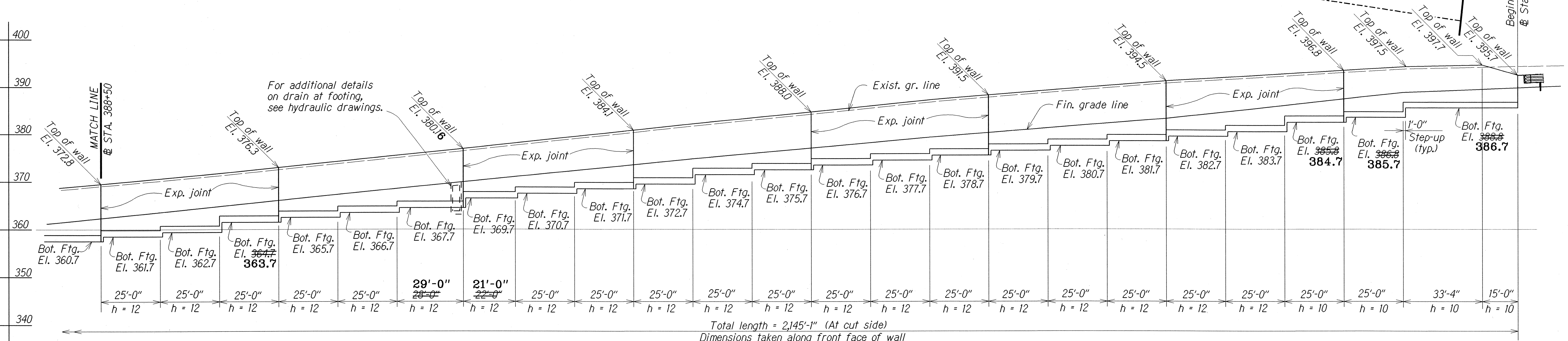
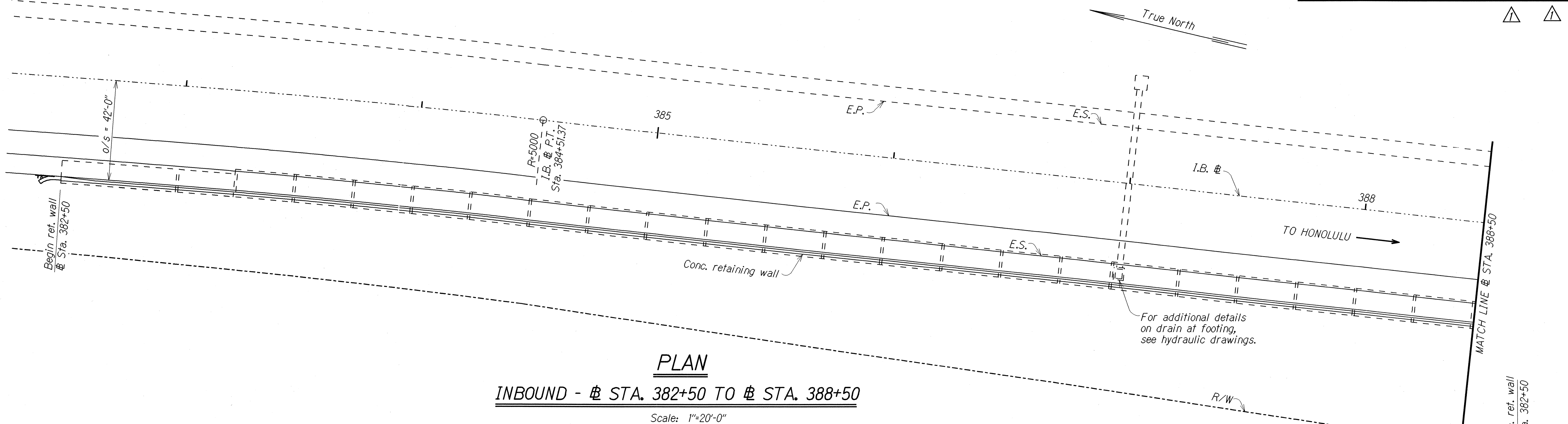
1/5/2001	Replaced manually written numbers with same numbers except done with computer.
DATE	REVISION
STATE OF HAWAII DEPARTMENT OF TRANSPORTATION HIGHWAYS DIVISION RETAINING WALL PLAN AND ELEVATION I.B. STA. 406+00 TO STA. 410+25 INTERSTATE ROUTE H-2, HOV LANES, PHASE I WAIPIO INTERCHANGE TO WAIJAWA INTERCHANGE Project No. IR-H2-1(26) Scale: As Noted Date: Jan. 1991	

SHEET No. S3 OF 20 SHEETS

"AS-BUILT"

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FED. ROAD DIST. NO.	STATE	FED. AID PROJ. NO.	FISCAL YEAR	SHEET NO.	TOTAL SHEETS
HAWAII	HAW.	IR-H2-II(26)	1991	28	107



LEGEND FOR AS-BUILT POSTINGS	
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Note: This tracing prepared during "As-Built" posting.

1/5/2001	Replaced manually written numbers with same numbers except done with computer.
DATE	REVISION

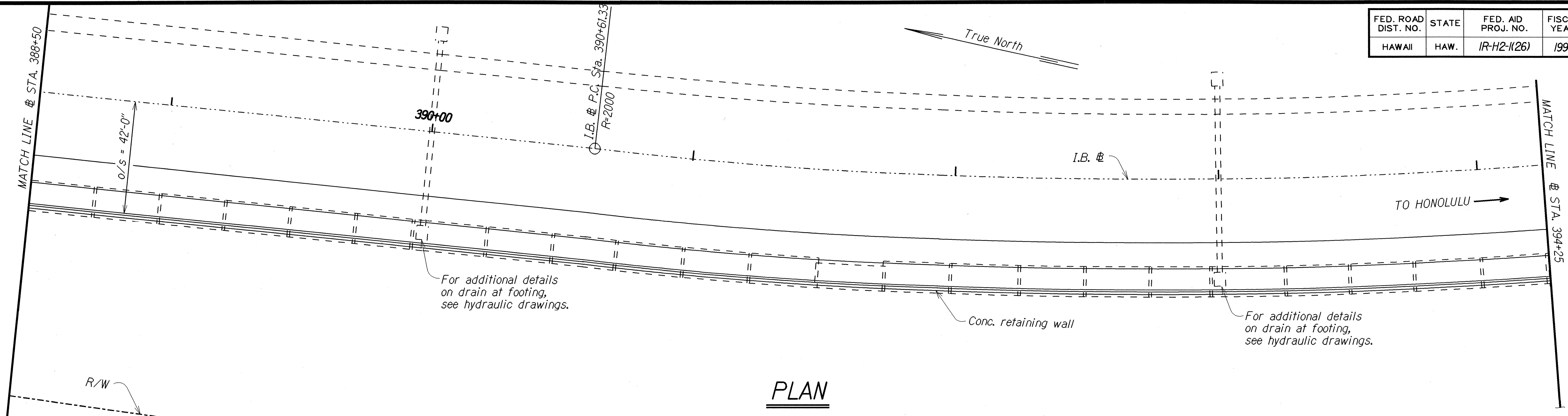
STATE OF HAWAII
DEPARTMENT OF TRANSPORTATION
HIGHWAYS DIVISION

RETAINING WALL PLAN AND ELEVATION
I.B. STA. 382+50 TO STA. 388+50
INTERSTATE ROUTE H-2, HOV Lanes, PHASE I
WAIPIO INTERCHANGE TO WAIJAWA INTERCHANGE
Project No. IR-H2-II(26)

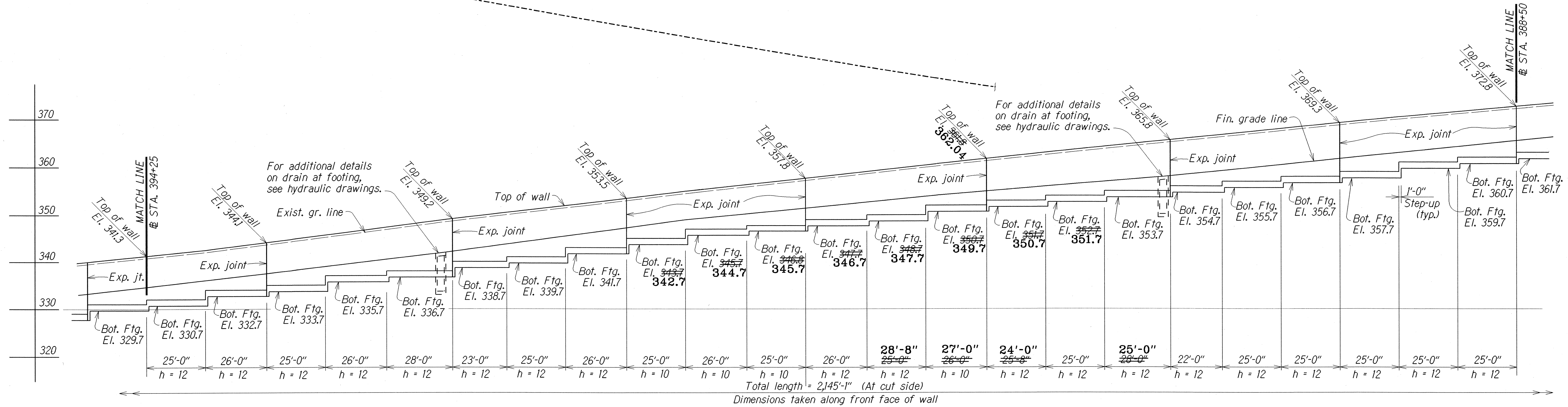
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SHEET No. 54 OF 20 SHEETS

FED. ROAD DIST. NO.	STATE	FED. AID PROJ. NO.	FISCAL YEAR	SHEET NO.	TOTAL SHEETS
HAWAII	HAW.	IR-H2-1(26)	1991	29	107



PLAN
INBOUND - STA. 388+50 TO STA. 394+25
 Scale: 1"=20'-0"



LEGEND FOR AS-BUILT POSTINGS	
	Squiggly line for as-built deletion
	Double line for as-built deletion
Roadway	Text for as-built posting

ELEVATION
INBOUND - STA. 388+50 TO STA. 394+25
 Scale: Horiz. 1"=20'-0"
 Vert. 1"=10'-0"

1/5/2001	Replaced manually written numbers with same numbers except done with computer.
DATE	REVISION

STATE OF HAWAII
 DEPARTMENT OF TRANSPORTATION
 HIGHWAYS DIVISION

RETAINING WALL PLAN AND ELEVATION

I.B. # STA. 388+50 TO STA. 394+25
 INTERSTATE ROUTE H-2, HOV LANES, PHASE I
 WAIPIO INTERCHANGE TO WAIANA INTERCHANGE
 Project No. IR-H2-1(26)

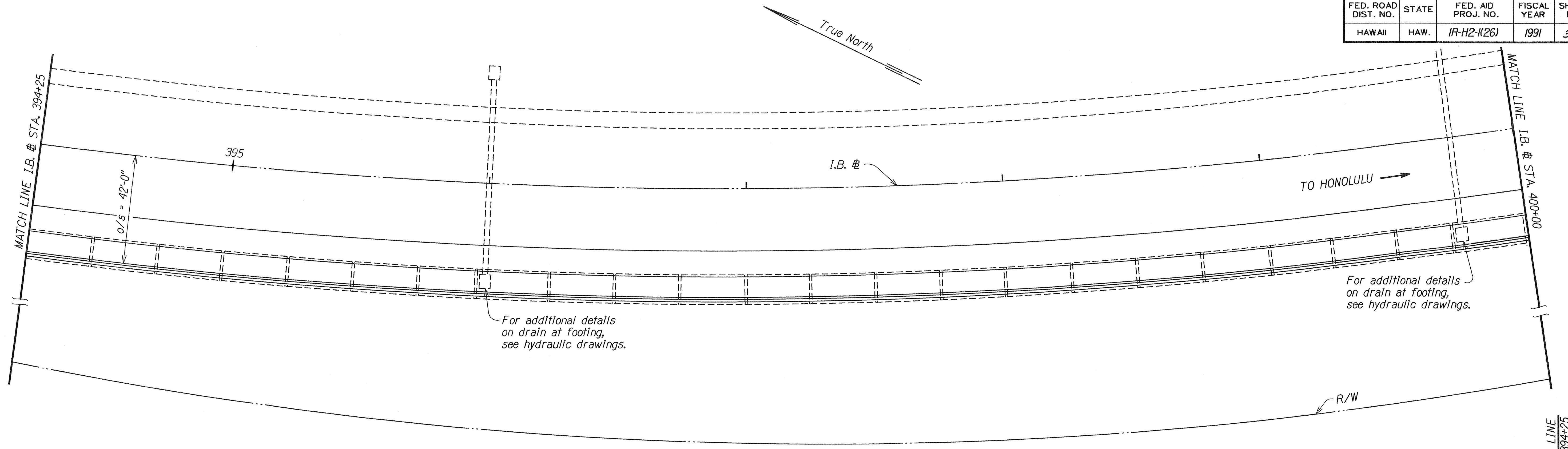
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SHEET No. 55 OF 20 SHEETS

Note: This tracing prepared during "As-Built" posting.

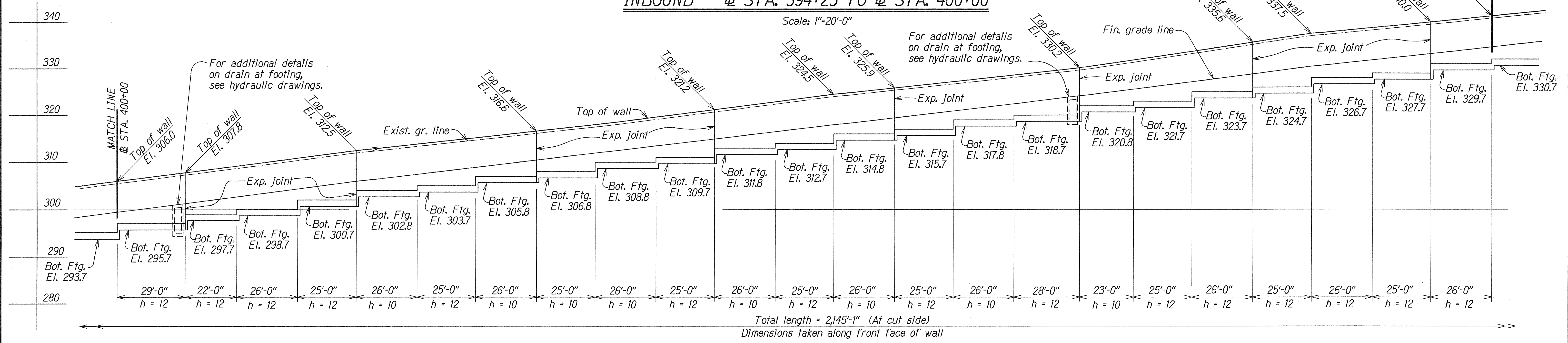
"AS-BUILT"

FED. ROAD DIST. NO.	STATE	FED. AID PROJ. NO.	FISCAL YEAR	SHEET NO.	TOTAL SHEETS
HAWAII	HAW.	1R-H2-1126	1991	30	107



PLAN
INBOUND - STA. 394+25 TO STA. 400+00

Scale: 1"=20'-0"



Total length = 2,145'-1" (At cut side)
Dimensions taken along front face of wall

ELEVATION
INBOUND - STA. 394+25 TO STA. 400+00

Scale: Horiz. 1"=20'-0"
Vert. 1"=10'-0"

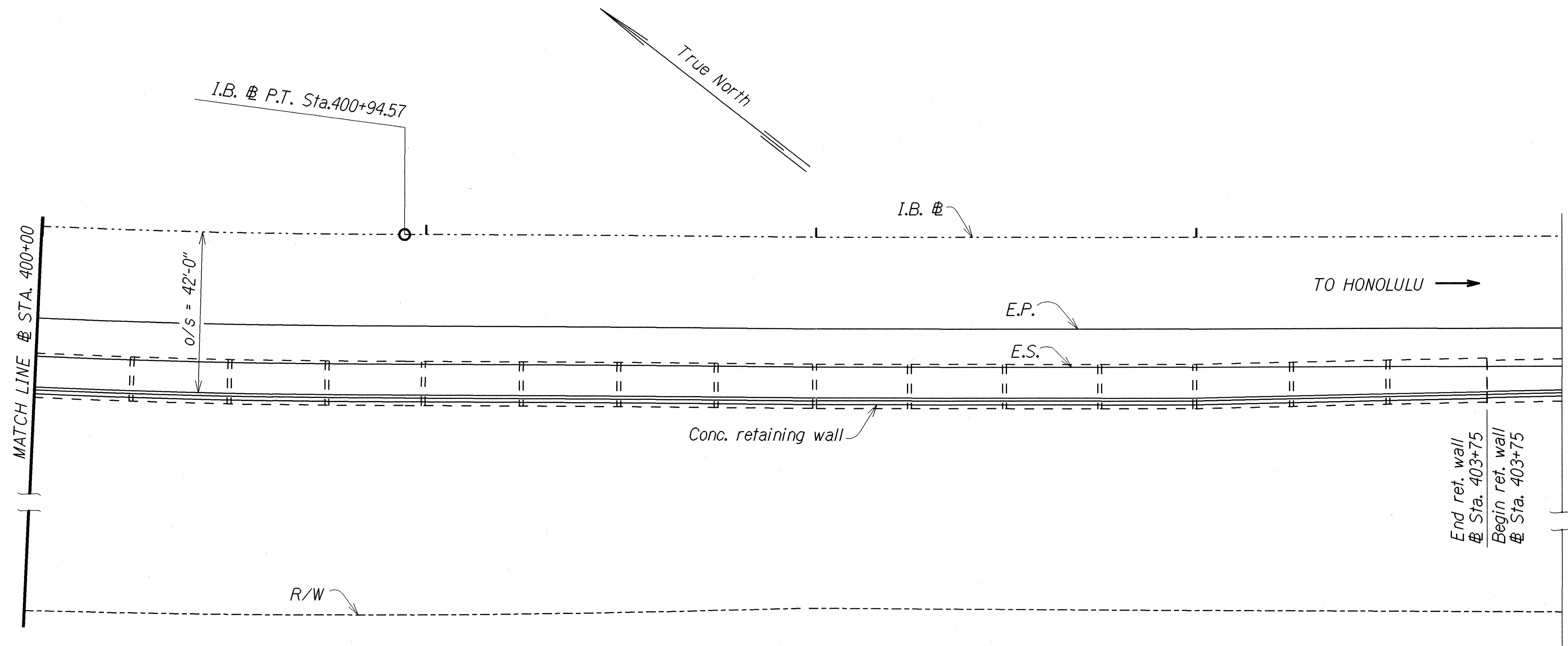
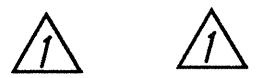
DESIGNED BY	DATE
TRACED BY	JAN 92
NOTED BY	JAN 92
CHECKED BY	JAN 92
DATE	

STATE OF HAWAII
DEPARTMENT OF TRANSPORTATION
HIGHWAYS DIVISION

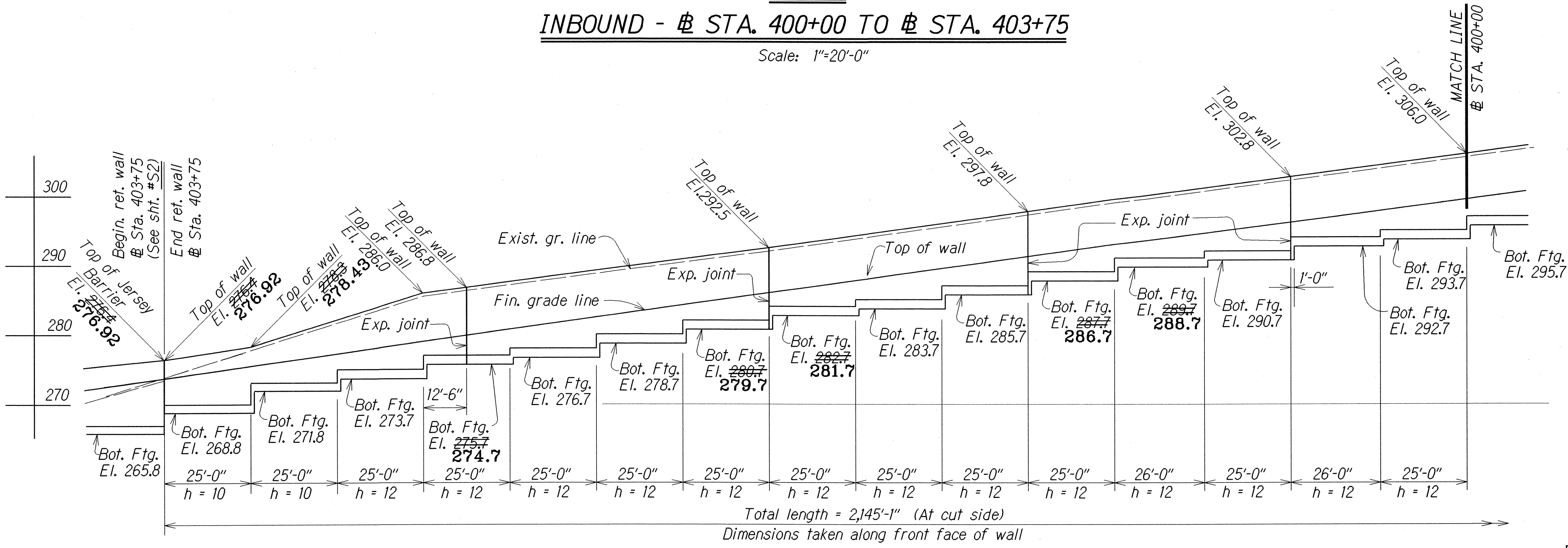
RETAINING WALL PLAN AND ELEVATION
I.B. STA. 394+25 TO STA. 400+00
INTERSTATE ROUTE H-2, HOV LANES, PHASE I
WAIPIO INTERCHANGE TO WAIKANA INTERCHANGE
Project No. 1R-H2-1126

Scale: As Noted
Date: Jan. 1991

FED. ROAD DIST. NO.	STATE	FED. AID PROJ. NO.	FISCAL YEAR	SHEET NO.	TOTAL SHEETS
HAWAII	HAW.	IR-H2-1(26)	1991	28	107



PLAN
INBOUND - STA. 400+00 TO STA. 403+75
 Scale: 1"=20'-0"



ELEVATION
INBOUND - STA. 400+00 TO STA. 403+75
 Scale: Horiz. 1"=20'-0"
 Vert. 1"=10'-0"

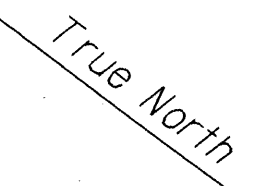
LEGEND FOR AS-BUILT POSTINGS	
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Roadway	Text for as-built posting

1/5/2001	Replaced manually written numbers with same numbers except done with computer.
DATE	REVISION
STATE OF HAWAII DEPARTMENT OF TRANSPORTATION HIGHWAYS DIVISION	
RETAINING WALL PLAN AND ELEVATION	
I.B. STA. 400+00 TO STA. 403+75	
INTERSTATE ROUTE H-2 HOV LANES, PHASE I	
WAIPIO INTERCHANGE TO WAIKAWA INTERCHANGE	
Project No. IR-H2-1(26)	
Scale: As Noted	Date: Jan. 1991

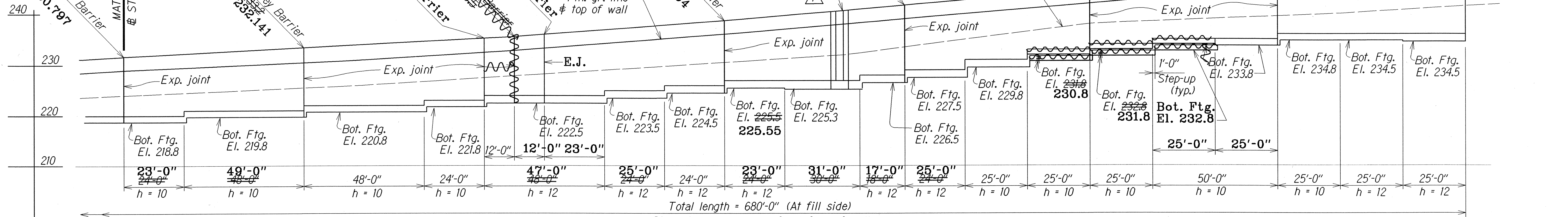
Note: This tracing prepared during "As-Built" posting.

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 DRAWN BY: JMA
 CHECKED BY: SA
 NOTE BOOK: N. 1000
 QUANTITIES BY: SA
 FILED: JAN 91
 lea/oahu/phh2/ln2bibr7.dgn

1



Scale: 1"=20'-0"



	Squiggly line for as-built deletion
100.00	Double line for as-built deletion
Roadway	Text for as-built posting

ORIGINAL PLAN	SURVEY PLOTTED BY	DATE
	DRAWN BY	JAN 1991
	DESIGNED BY	JAN 1991
	DESIGN FILE	JAN 1991
	QUANTITIES BY	JAN 1991
	CHECKED BY	JAN 1991

Scale: Horiz 1"=20'-0"
Vert. 1"=10'-0"

STATE OF HAWAII
DEPARTMENT OF TRANSPORTATION
HIGHWAYS DIVISION

RETAINING WALL PLAN AND ELEVATION

I.B. @ STA. 412+50 TO @ STA.418+00

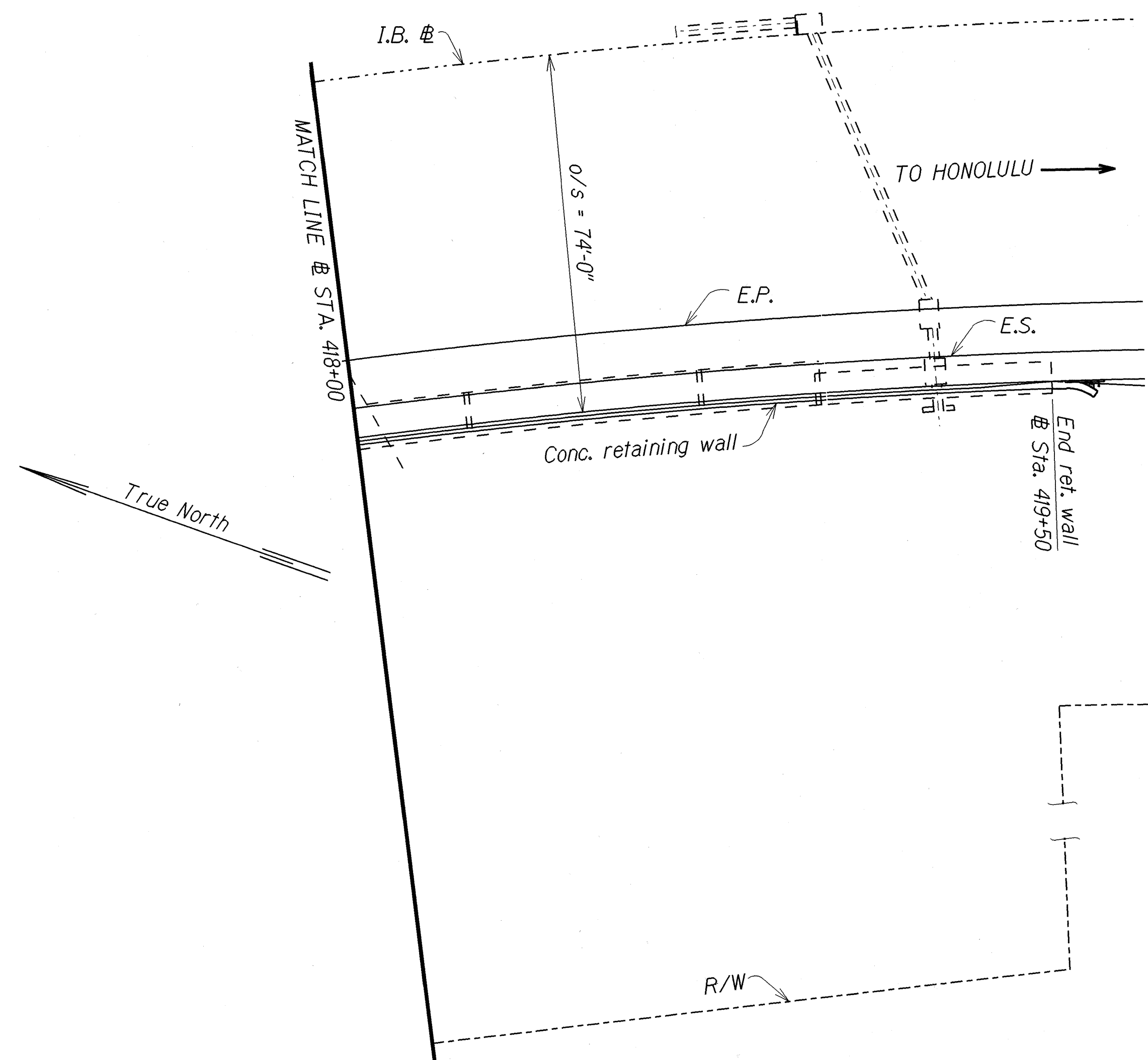
INTERSTATE ROUTE H-2, HOV LANES, PHASE I
WAIPIO INTERCHANGE TO WAIANA INTERCHANGE
Project No. 1R-H2-1(26)

Scale: As Noted Date: Jan. 1991

SHEET No. 58 OF 20 SHEETS

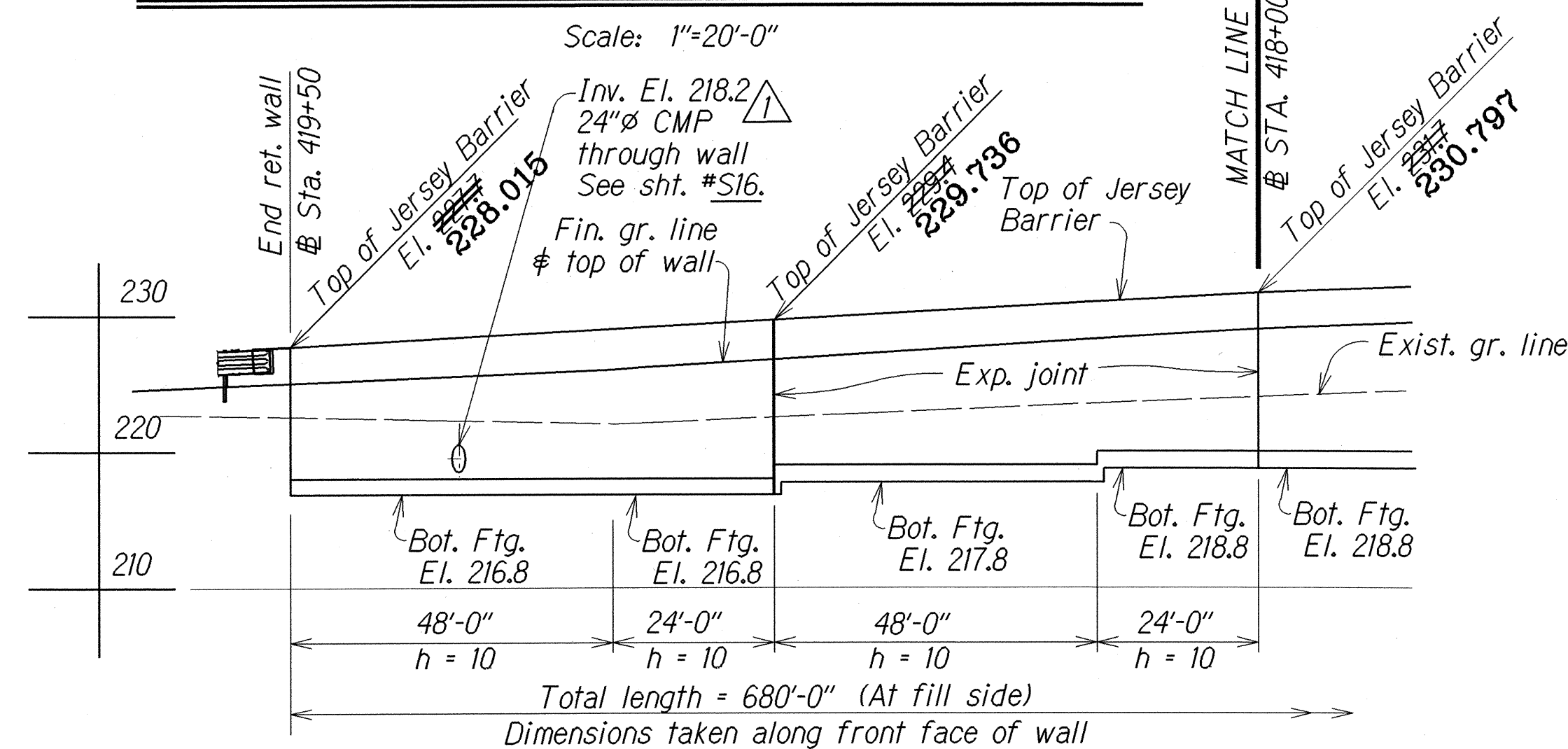
ADD. 32

FED. ROAD DIST. NO.	STATE	FED. AID PROJ. NO.	FISCAL YEAR	SHEET NO.	TOTAL SHEETS
HAWAII	HAW.	IR-H2-1(26)	1991	C.O. ADD. 33	107



PLAN

INBOUND - STA. 418+00 TO STA. 419+50



ELEVATION

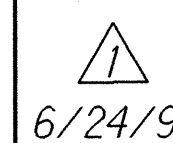
INBOUND - STA. 418+00 TO STA. 419+50

Scale: Horiz 1"=20'-0"
Vert. 1"=10'-0"

LEGEND FOR AS-BUILT POSTINGS

	Squiggly line for as-built deletion
	Double line for as-built deletion
Roadway	Text for as-built posting

Note: This tracing prepared during "As-Built" posting.



Corrected invert elevation & location of CMP at I.B. Sta. 419+25.0

DATE REVISION

STATE OF HAWAII
DEPARTMENT OF TRANSPORTATION
HIGHWAYS DIVISION

RETAINING WALL PLAN AND ELEVATION

I.B. STA. 418+00 TO STA. 419+50

INTERSTATE ROUTE H-2 HOV LANES, PHASE J
WAIPIO INTERCHANGE TO WAIKAWA INTERCHANGE
Project No. IR-H2-1(26)

Scale: As Noted

Date: Jan. 1991

SHEET No. S9 OF 20 SHEETS

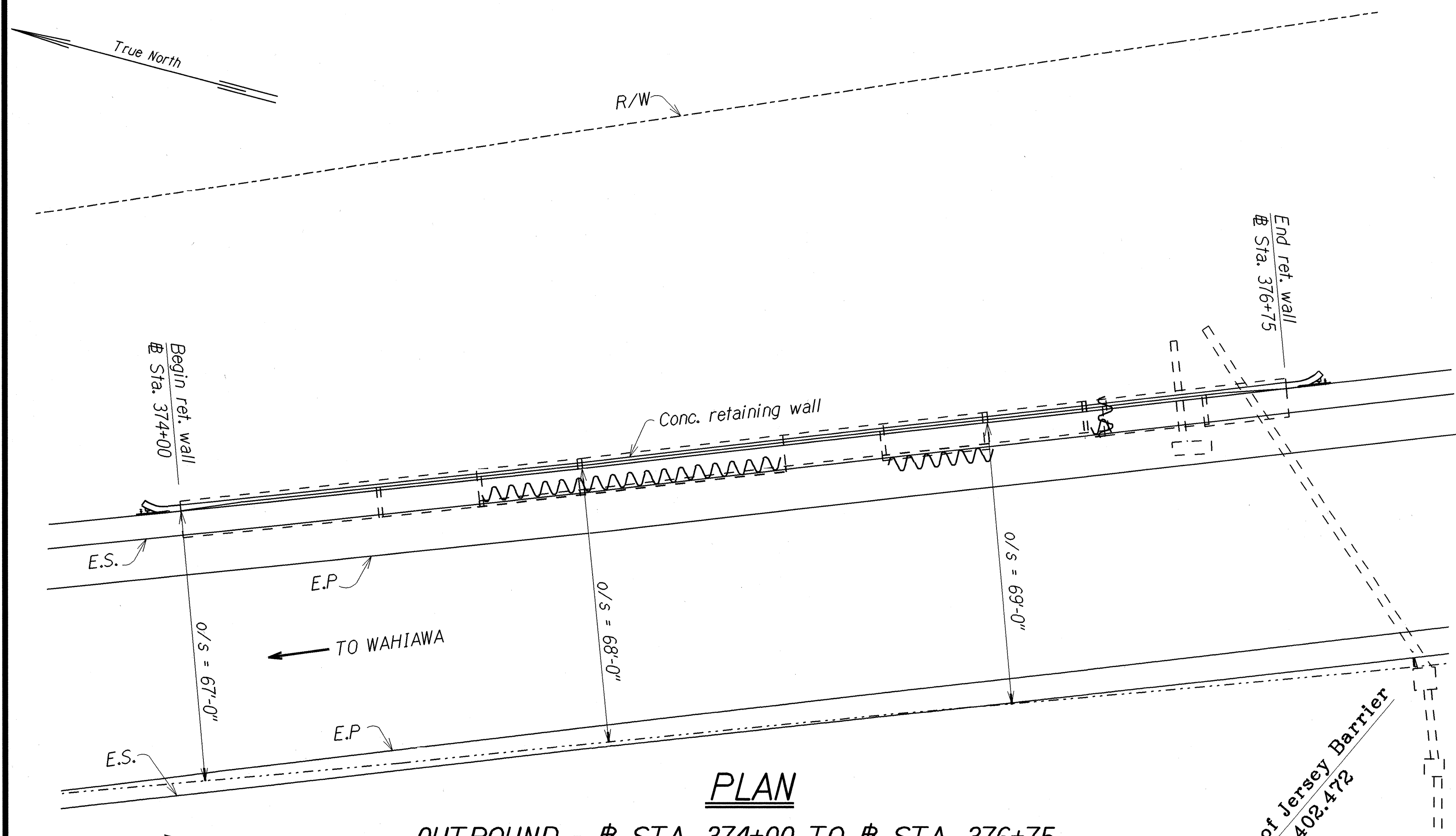
"AS-BUILT"

C.O. ADD. 33

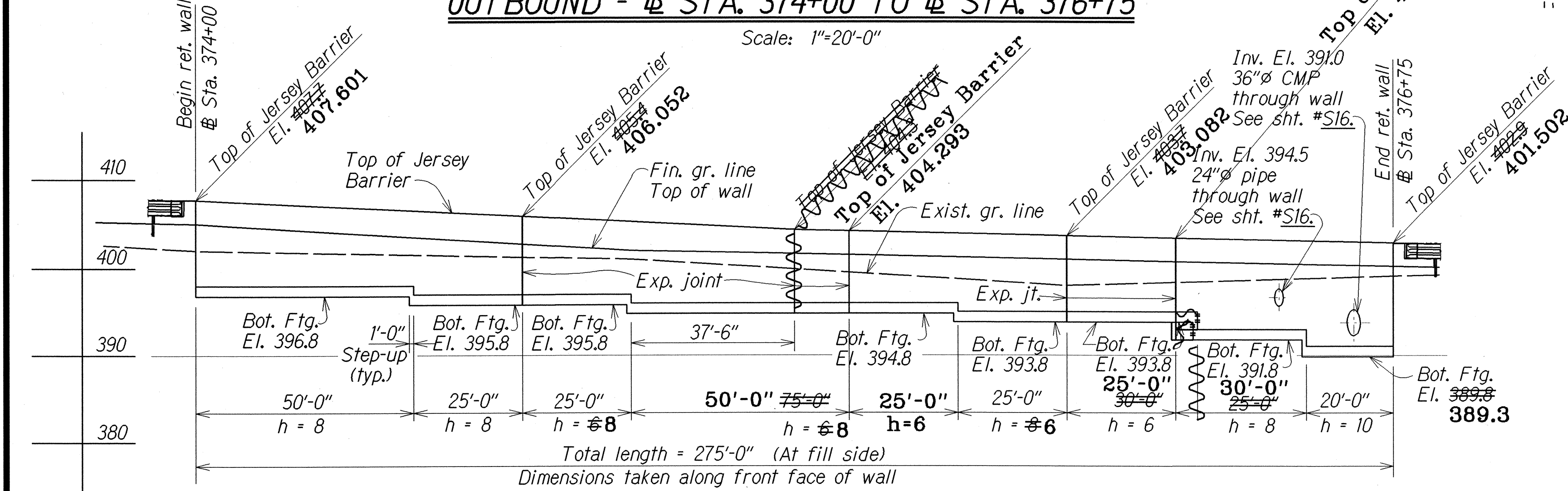
ORIGINAL PLAN	DATE
SURVEY PLOTTED BY	JAN 1991
DRAWN BY	MA
DESIGN FILE	DAI
QUANTITIES BY	DAI
CHECKED BY	SA

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FED. ROAD DIST. NO.	STATE	FED. AID PROJ. NO.	FISCAL YEAR	SHEET NO.	TOTAL SHEETS
HAWAII	HAW.	IR-H2-1(26)	1991	34	107



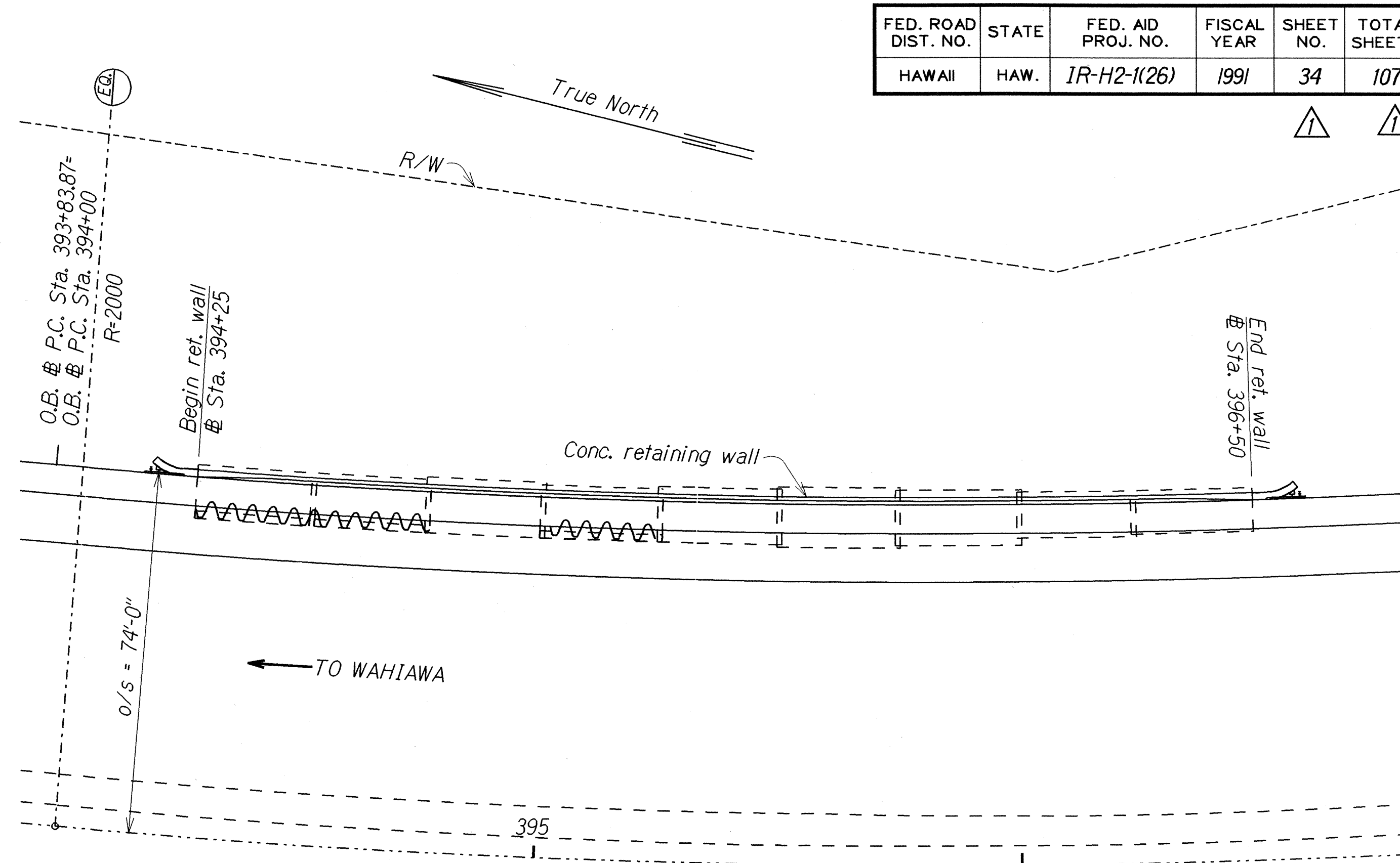
PLAN
OUTBOUND - # STA. 374+00 TO # STA. 376+75
Scale: 1"=20'-0"



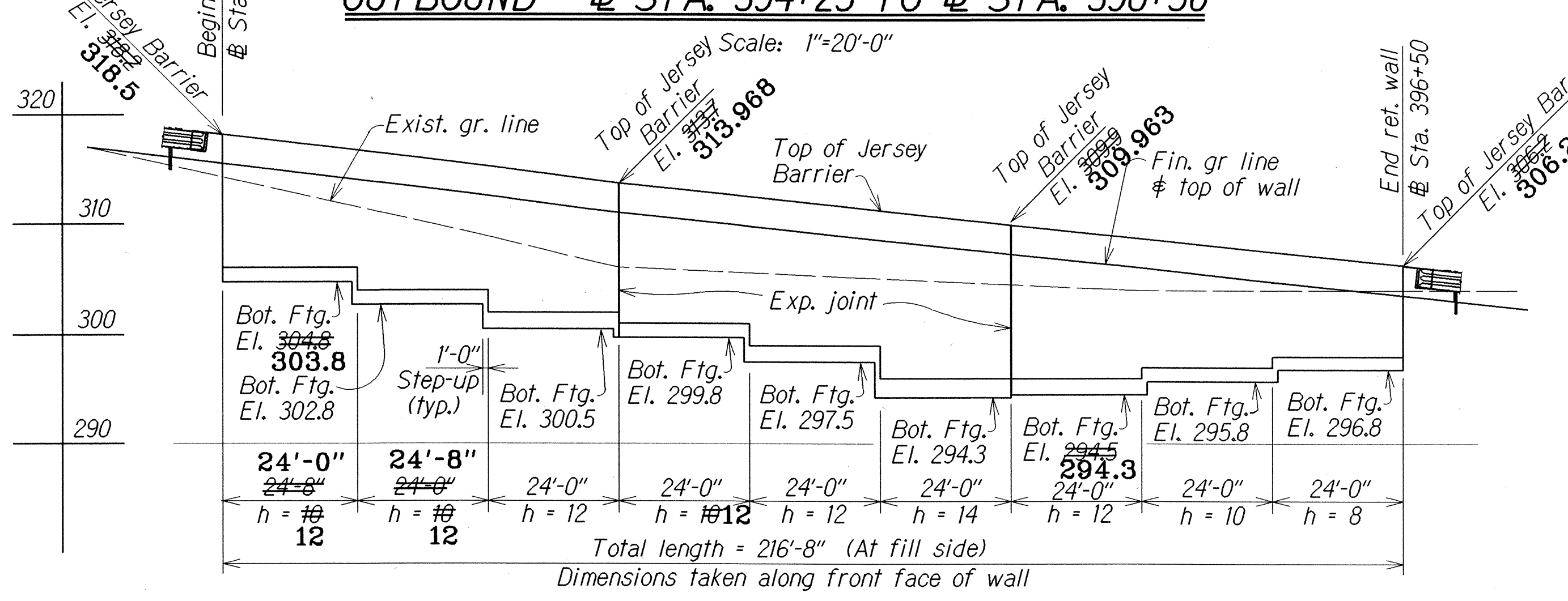
ELEVATION
OUTBOUND - # STA. 374+00 TO # STA. 376+75
Scale: Horiz. 1"=20'-0"
Vert. 1"=10'-0"

LEGEND FOR AS-BUILT POSTINGS	
	Squiggly line for as-built deletion
	Double line for as-built deletion
	Text for as-built posting

Note: This tracing prepared during "As-Built" posting.



PLAN
OUTBOUND - # STA. 394+25 TO # STA. 396+50
Scale: 1"=20'-0"



ELEVATION
OUTBOUND - # STA. 394+25 TO # STA. 396+50
Scale: Horiz. 1"=20'-0"
Vert. 1"=10'-0"

STATE OF HAWAII DEPARTMENT OF TRANSPORTATION HIGHWAYS DIVISION	
RETAINING WALL PLAN AND ELEVATION	
O.B. # STA. 374+00 TO # STA. 376+75 O.B. # STA. 394+25 TO # STA. 396+50 INTERSTATE ROUTE H-2 HOV LANES, PHASE I WAIPIO INTERCHANGE TO WAIPIA INTERCHANGE Project No. IR-H2-1(26)	
Scale: As Noted	Date: Jan. 1991

1/5/2001	Replaced manually written numbers with same numbers except done with computer.
DATE	REVISION

SHEET No. 34 OF 20 SHEETS

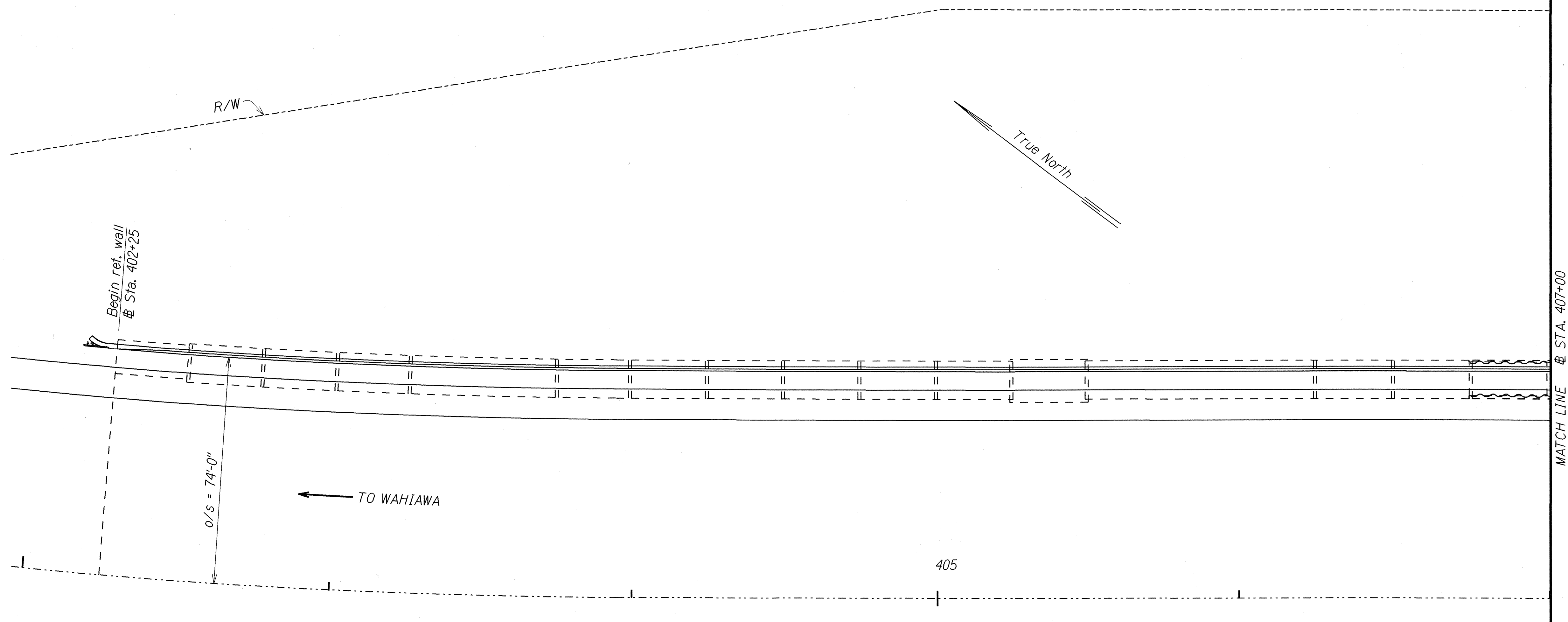
"AS-BUILT"

34

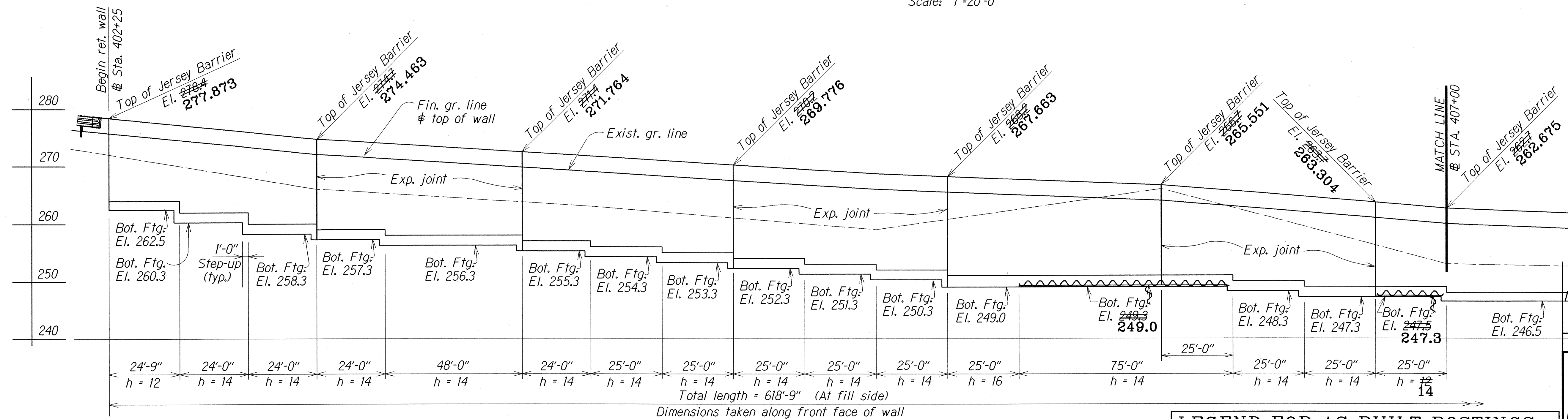
ORIGINAL PLAN	DATE
DRAWN BY LMA	JAN 1991
CHECKED BY DLT	JAN 1991
QUANTITIES BY DLT	JAN 1991
SA	JAN 1991

lea/oahu/ph1h2/in2bob10.dgn

FED. ROAD DIST. NO.	STATE	FED. AID PROJ. NO.	FISCAL YEAR	SHEET NO.	TOTAL SHEETS
HAWAII	HAW.	IR-H2-11(26)	1991	35	107



PLAN
OUTBOUND - # STA. 402+25 TO # STA. 407+00
 Scale: 1"=20'-0"



ELEVATION
OUTBOUND - # STA. 402+25 TO # STA. 407+00
 Scale: Horiz. 1"=20'-0"
 Vert. 1"=10'-0"

LEGEND FOR AS-BUILT POSTINGS	
	Squiggly line for as-built deletion
	Double line for as-built deletion
Roadway	Text for as-built posting

Note: This tracing prepared during "As-Built" posting.

DATE	REVISION
12/5/2001	Replaced manually written numbers with same numbers except done with computer.

STATE OF HAWAII
 DEPARTMENT OF TRANSPORTATION
 HIGHWAYS DIVISION

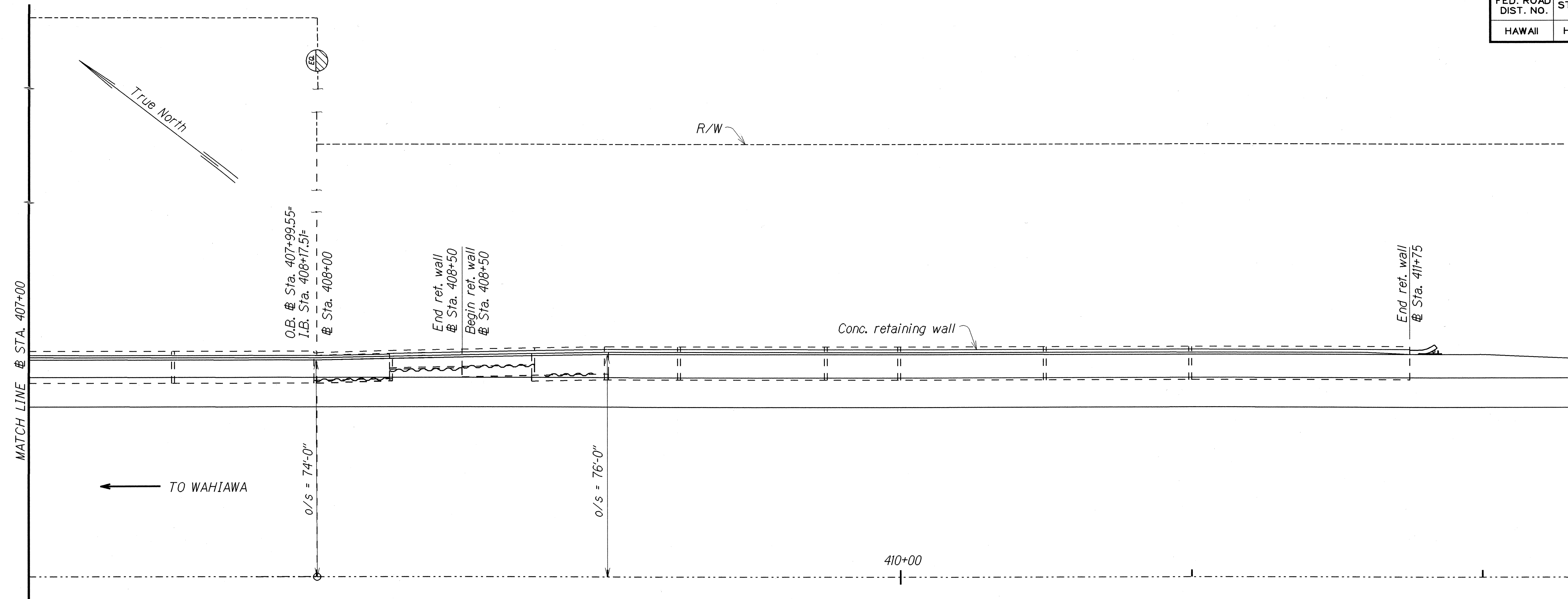
RETAINING WALL PLAN AND ELEVATION

O.B. # STA. 402+25 TO # STA. 407+00
 INTERSTATE ROUTE H-2, HOV LANES, PHASE I
 WAIPIO INTERCHANGE TO WAIKAWA INTERCHANGE
 Project No. IR-H2-11(26)

Scale: As Noted Date: Jan. 1991

ORIGINAL PLAN
 DATE
 DRAWN BY
 CHECKED BY
 N. 1/25/91
 1ea/oahu/ph1h2/1h2bob11.dgn

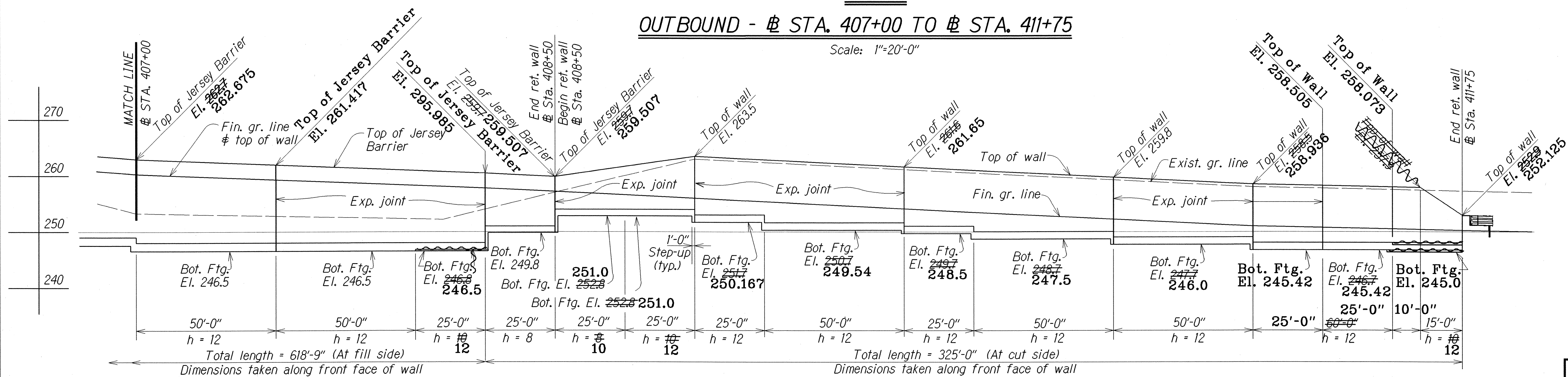
FED. ROAD DIST. NO.	STATE	FED. AID PROJ. NO.	FISCAL YEAR	SHEET NO.	TOTAL SHEETS
HAWAII	HAW.	IR-H2-1(26)	1991	36	107



PLAN

OUTBOUND - # STA. 407+00 TO # STA. 411+75

Scale: 1"=20'-0"



ELEVATION

OUTBOUND - # STA. 407+00 TO # STA. 411+75

Scale: Horiz. 1"=20'-0"
Vert. 1"=10'-0"

LEGEND FOR AS-BUILT POSTINGS

	Squiggly line for as-built deletion
	Double line for as-built deletion
Roadway	Text for as-built posting

Note: This tracing prepared during "As-Built" posting.

STATE OF HAWAII DEPARTMENT OF TRANSPORTATION HIGHWAYS DIVISION	
RETAINING WALL PLAN AND ELEVATION	
O.B. # STA. 407+00 TO # STA. 411+75	
INTERSTATE ROUTE H-2, HOV LANES, PHASE I	
WAIPIO INTERCHANGE TO WAIKAWA INTERCHANGE	
Project No. IR-H2-1(26)	
Scale: As Noted	Date: Jan. 1991
SHEET No. 5/2 OF 20 SHEETS	

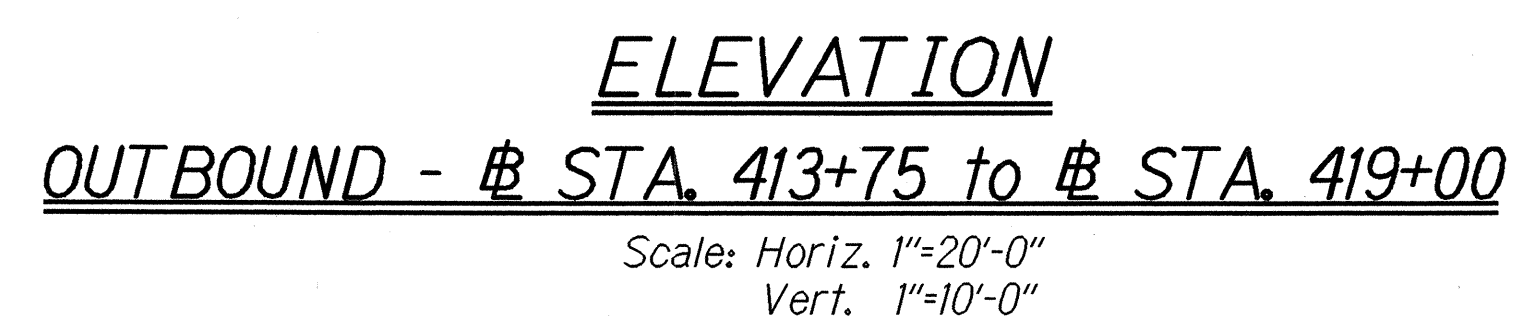
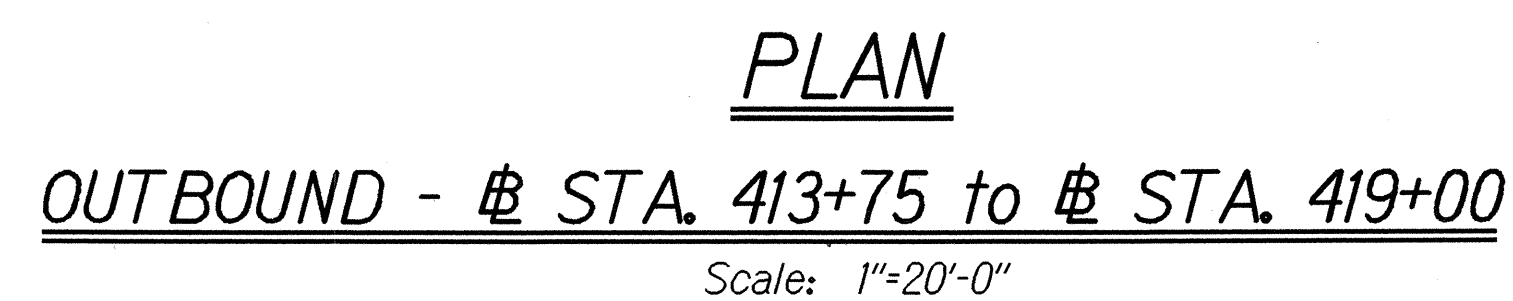
1/5/2001	Replaced manually written numbers with same numbers except done with computer.
DATE	REVISION

"AS-BUILT"

36

ORIGINAL PLAN	DATE
DRAWN BY	JMA
CHECKED BY	JMA
NOTED BY	JMA
QUANTITIES BY	JMA
CHECKED BY	JMA

lea/coahu/ph1h2/1h2bob12.dgn



1/5/2001 	Replaced manually written numbers with same numbers except done with computer.
DATE	REVISION

STATE OF HAWAII
DEPARTMENT OF TRANSPORTATION
HIGHWAYS DIVISION

RETAINING WALL PLAN AND ELEVATION

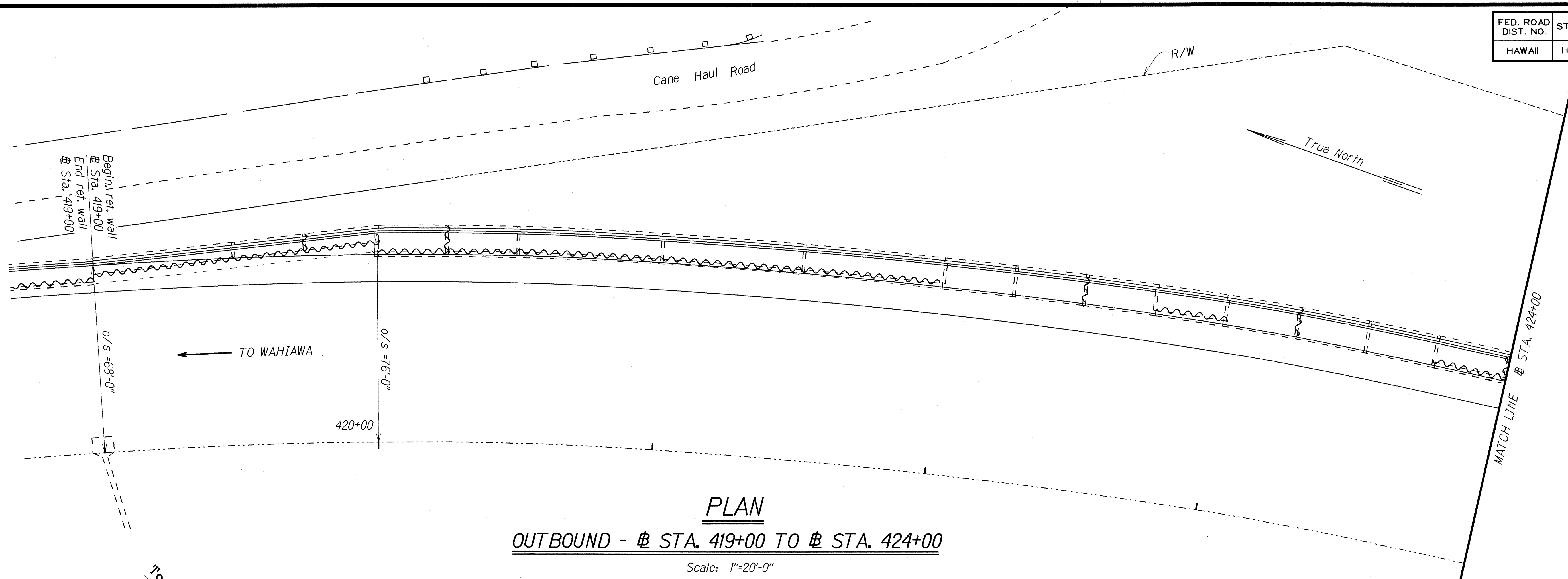
O.B. @ STA. 413+25 TO @ STA. 419+25
INTERSTATE ROUTE H-2, HOV LANES, PHASE I
WAIPIO INTERCHANGE TO WAIJANA INTERCHANGE
Project 1R-H2-1(26)

Scale: As Noted Date: Jan. 1991

SHEET No. 573 OF 20 SHEETS

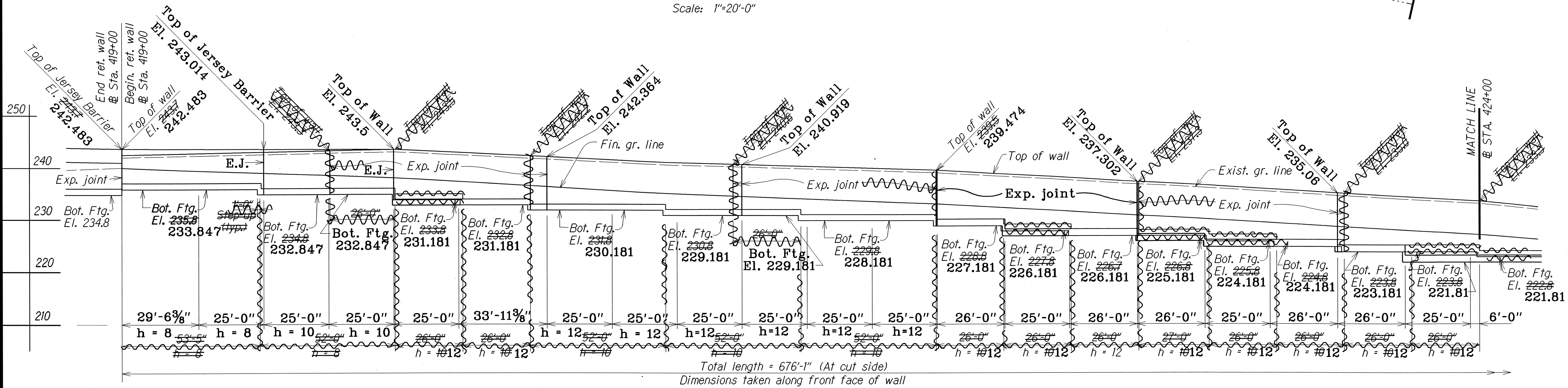
"AS-BUILT"

FED. ROAD DIST. NO.	STATE	FED. AID PROJ. NO.	FISCAL YEAR	SHEET NO.	TOTAL SHEETS
HAWAII	HAW.	IR-H2-1(26)	1991	38	107



PLAN
OUTBOUND - STA. 419+00 TO STA. 424+00

Scale: 1"=20'-0"



LEGEND FOR AS-BUILT POSTINGS	
	Squiggly line for as-built deletion
	Double line for as-built deletion
	Roadway Text for as-built posting

ELEVATION
OUTBOUND - STA. 419+00 TO STA. 424+00

Scale: Horiz. 1"=20'-0"
 Vert. 1"=10'-0"

Note: This tracing prepared during "As-Built" posting.

1/5/2001	Replaced manually written numbers with same numbers except done with computer.
DATE	REVISION

STATE OF HAWAII
 DEPARTMENT OF TRANSPORTATION
 HIGHWAYS DIVISION

RETAINING WALL PLAN AND ELEVATION

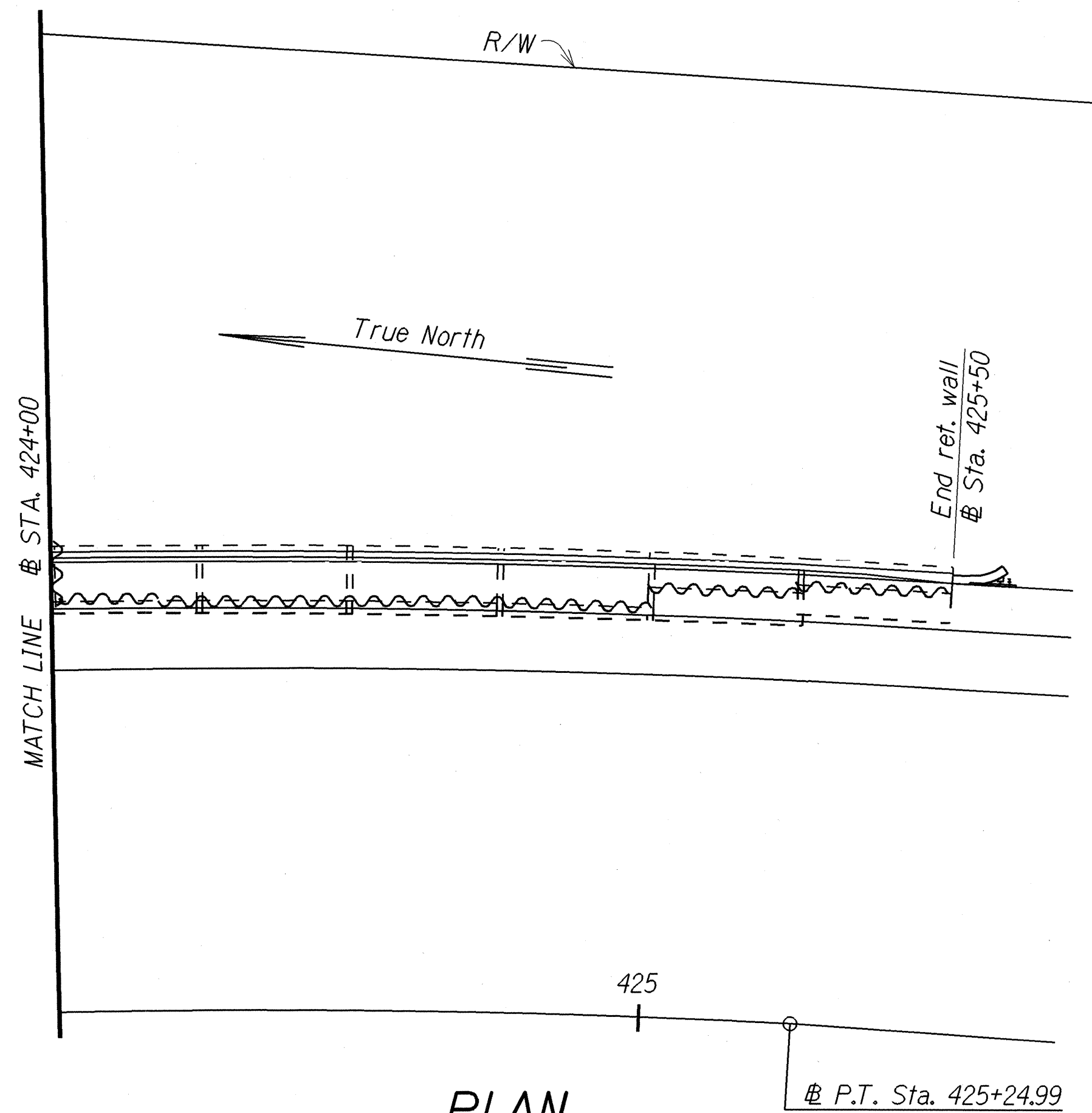
O.B. STA. 419+00 TO STA. 425+00
 INTERSTATE ROUTE H-2, HOV Lanes, PHASE I
 WAIPIO INTERCHANGE TO WAIPIA INTERCHANGE
 Project No. IR-H2-1(26)

Scale: As Noted Date: Jan. 1991

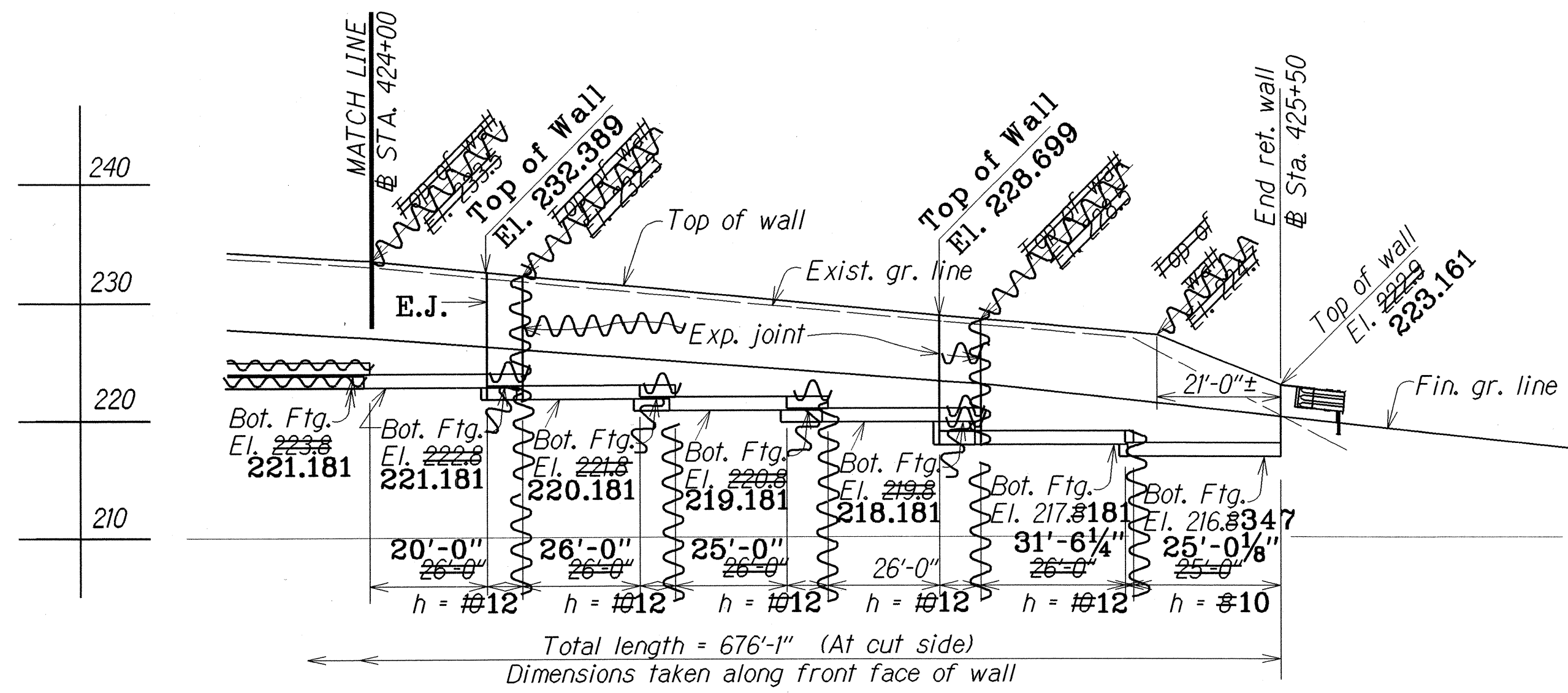
SHEET No. 34 OF 20 SHEETS

"AS-BUILT"

FED. ROAD DIST. NO.	STATE	FED. AID PROJ. NO.	FISCAL YEAR	SHEET NO.	TOTAL SHEETS
HAWAII	HAW.	IR-H2-1(26)	1991	39	107



PLAN
OUTBOUND - STA. 424+00 TO STA. 425+50
 Scale: 1"=20'-0"



ELEVATION
OUTBOUND - STA. 424+00 TO STA. 425+50
 Scale: Horiz. 1"=20'-0"
 Vert. 1"=10'-0"

LEGEND FOR AS-BUILT POSTINGS	
	Squiggly line for as-built deletion
	Double line for as-built deletion
	Text for as-built posting

Note: This tracing prepared during "As-Built" posting.

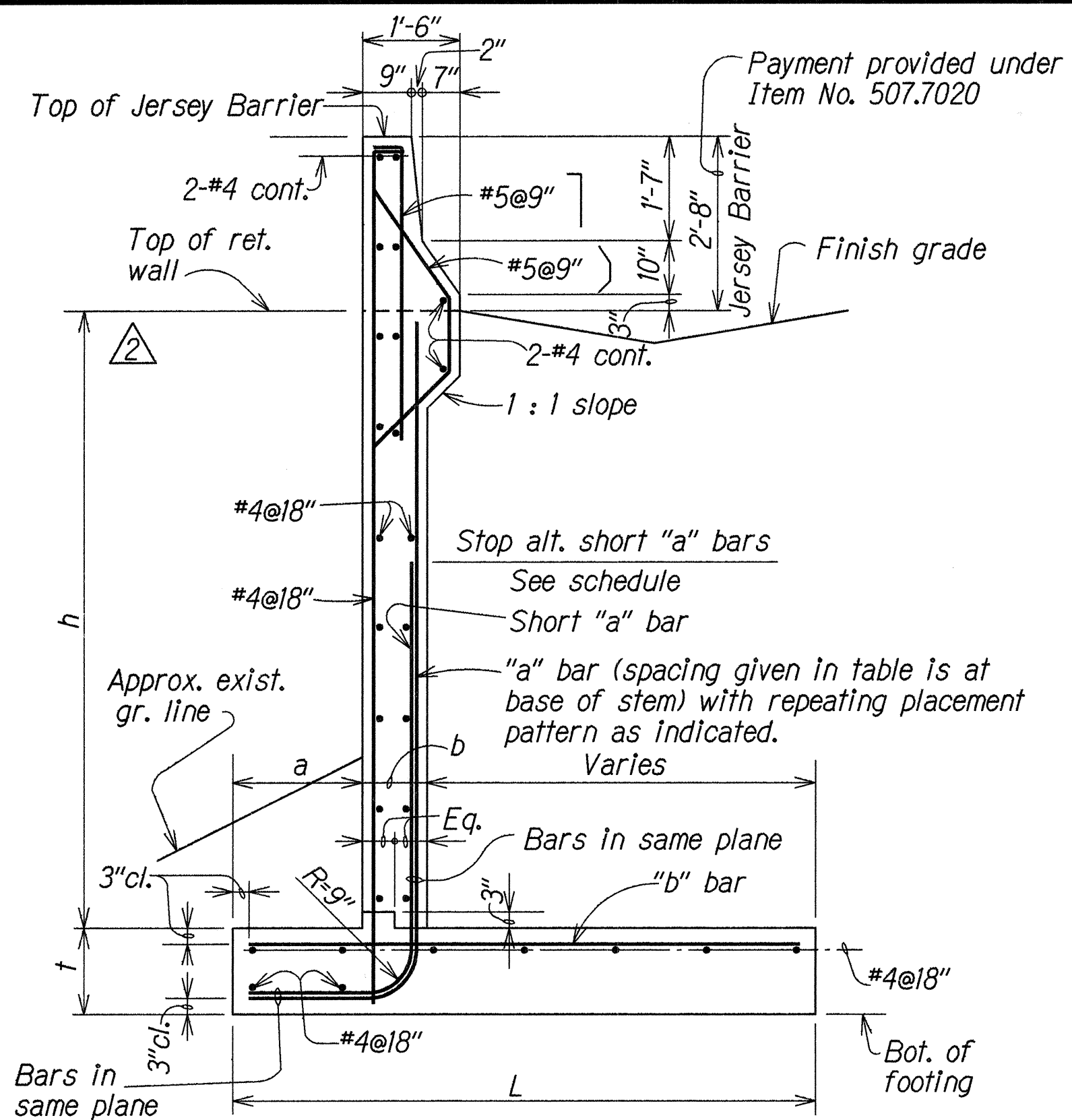
1/5/2001	Replaced manually written numbers with same numbers except done with computer.
DATE	REVISION

STATE OF HAWAII
 DEPARTMENT OF TRANSPORTATION
 HIGHWAYS DIVISION
RETAINING WALL PLAN AND ELEVATION
O.B. STA. 424+00 TO STA. 425+50
 INTERSTATE ROUTE H-2, HOV LANES, PHASE I
 WAIPIO INTERCHANGE TO WAIKAWA INTERCHANGE
 Project No. IR-H2-1(26)
 Scale: As Noted
 Date: Jan. 1991
 SHEET No. 39 OF 20 SHEETS

"AS-BUILT"

ORIGINAL PLAN
 SURVEY PLOTTED BY: LMA
 DATE: JAN 1991
 DRAWN BY: DLT
 DATE: JAN 1991
 CHECKED BY: SA
 DATE: JAN 1991
 lea/oahu/ph1h2/ihbob15.dgn

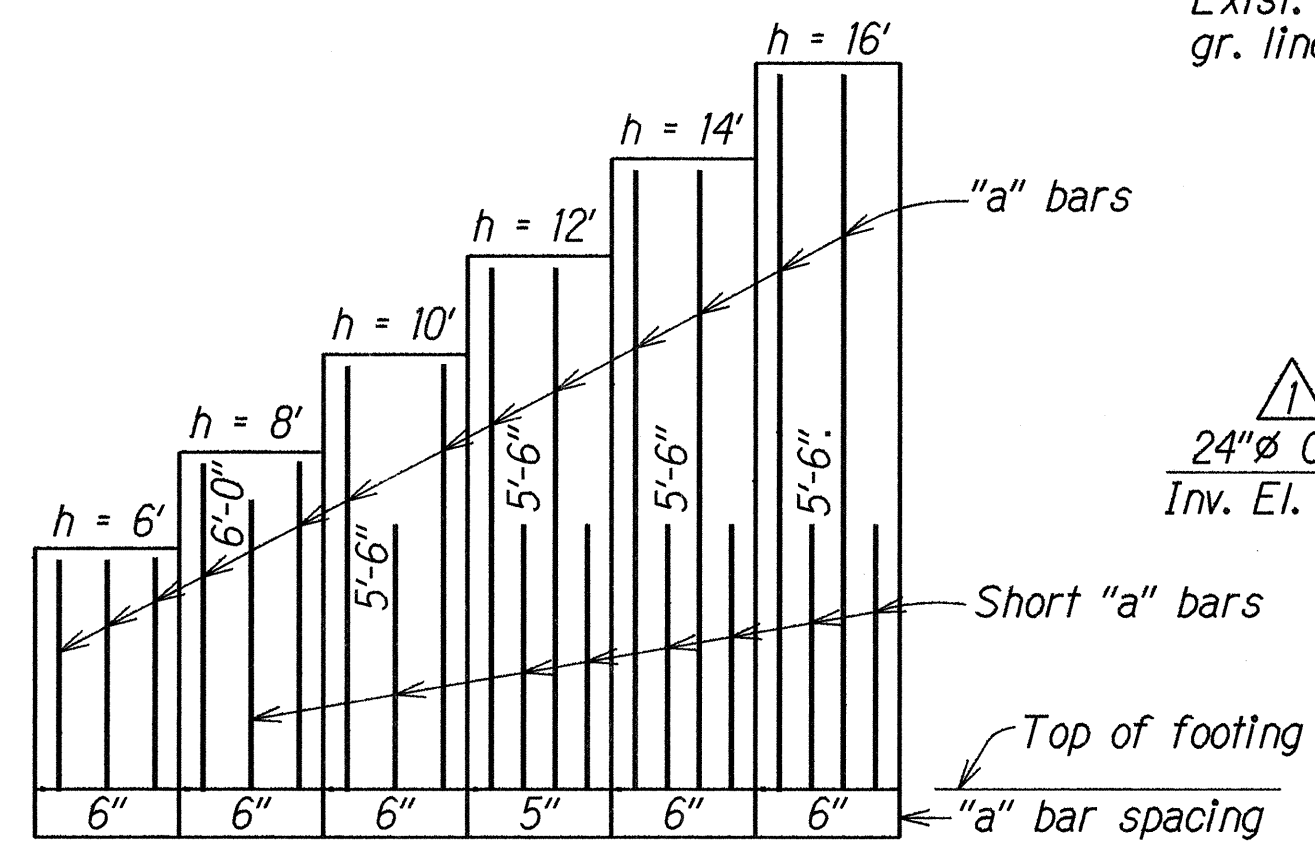
FED. ROAD DIST. NO.	STATE	FED. AID PROJ. NO.	FISCAL YEAR	SHEET NO.	TOTAL SHEETS
HAWAII	HAW.	IR-H2-1126	1991	40	107



AT FILL SIDE

SCHEDULE OF DIMENSIONS & REINFORCING STEEL AT FILL SIDE

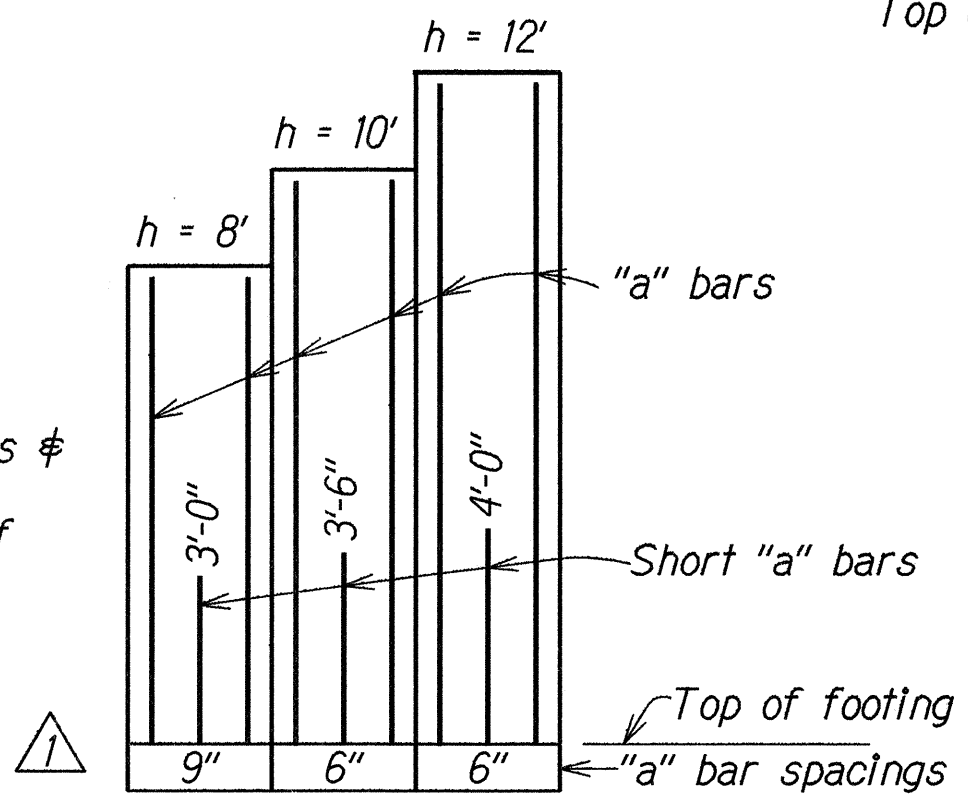
MAXIMUM h	6'	8'	10'	12'	14'	16'
a	1'-0"	1'-0"	1'-0"	1'-6"	2'-0"	2'-6"
b	12"	12"	12"	14"	16"	18"
t	14"	14"	15"	18"	21"	24"
L	8'-6"	9'-0"	9'-6"	11'-0"	12'-6"	14'-0"
"a" bars	#5@6"	#6@6"	#7@6"	#7@5"	#8@6"	#9@6"
Short "a" bars	---	#6@6"	#7@6"	#7@5"	#8@6"	#9@6"
"b" bars	#6@6"	#7@6"	#8@6"	#8@5"	#10@7"	#10@6"



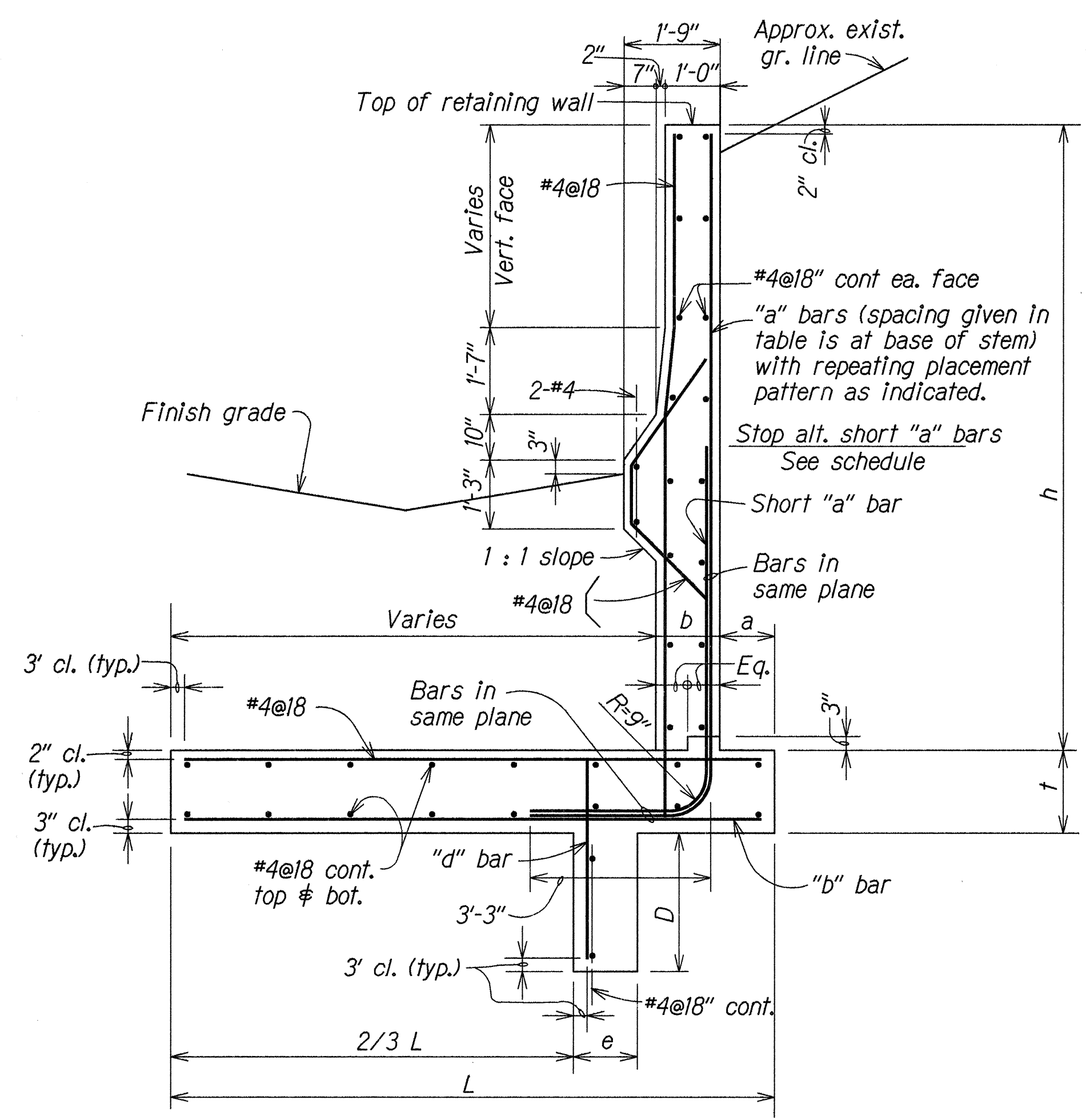
VERTICAL REINFORCING STEEL ARRANGEMENT AT FILL SIDE
N.T.S.

SCHEDULE OF DIMENSIONS AND REINFORCING STEEL AT CUT SIDE

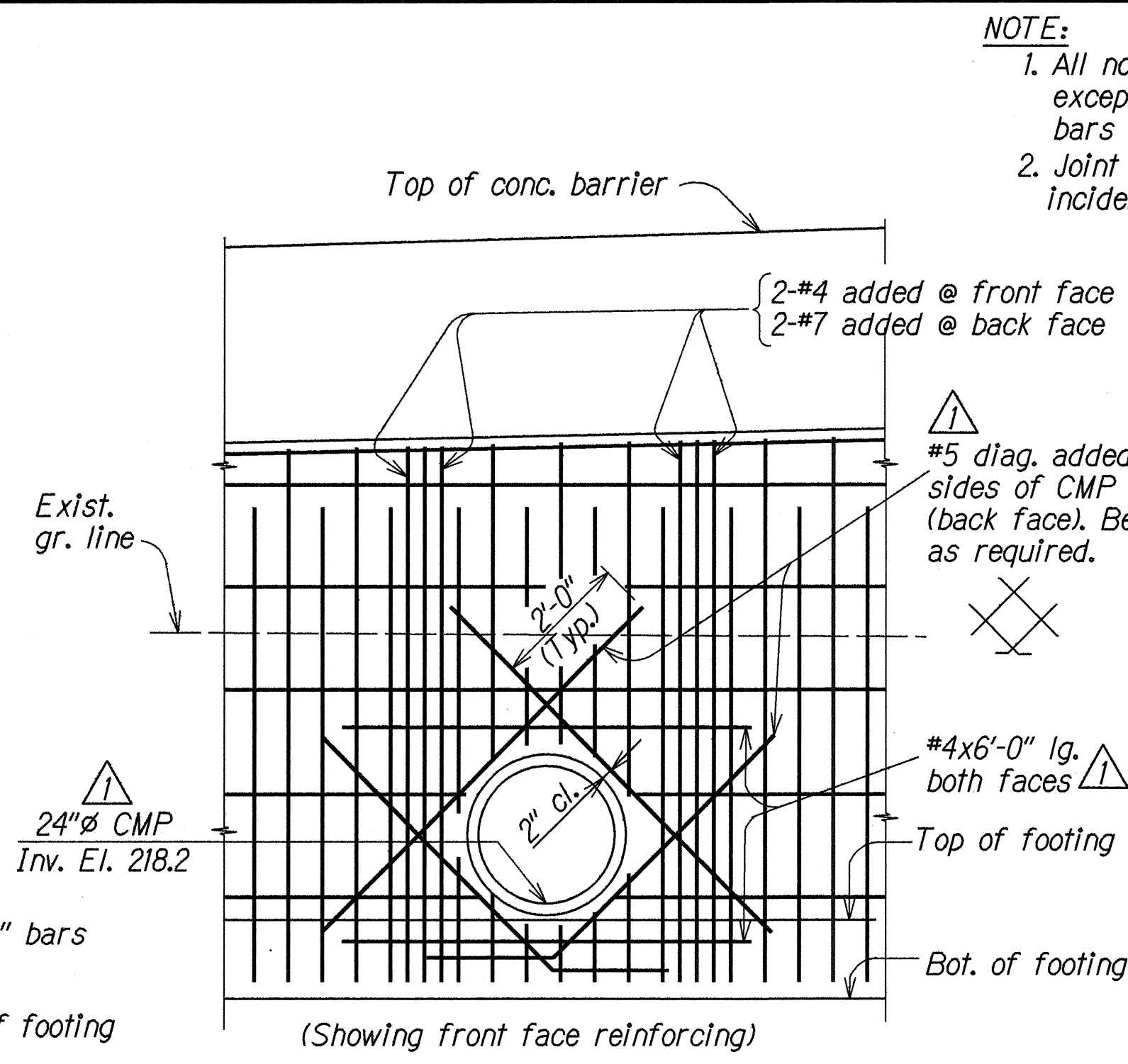
MAXIMUM h	8'	10'	12'
a	1'-0"	1'-0"	1'-0"
b	12"	12"	14"
t	14"	14"	16"
L	6'-0"	9'-6"	11'-6"
D	1'-3"	2'-0"	3'-0"
e	14"	14"	14"
"a" bars	#5@9"	#6@6"	#7@6"
Short "a" bars	#5@9"	#6@6"	#7@6"
"b" bars	#5@9"	#6@5"	#7@5"
"d" bars	#4@12"	#4@12"	#5@9"



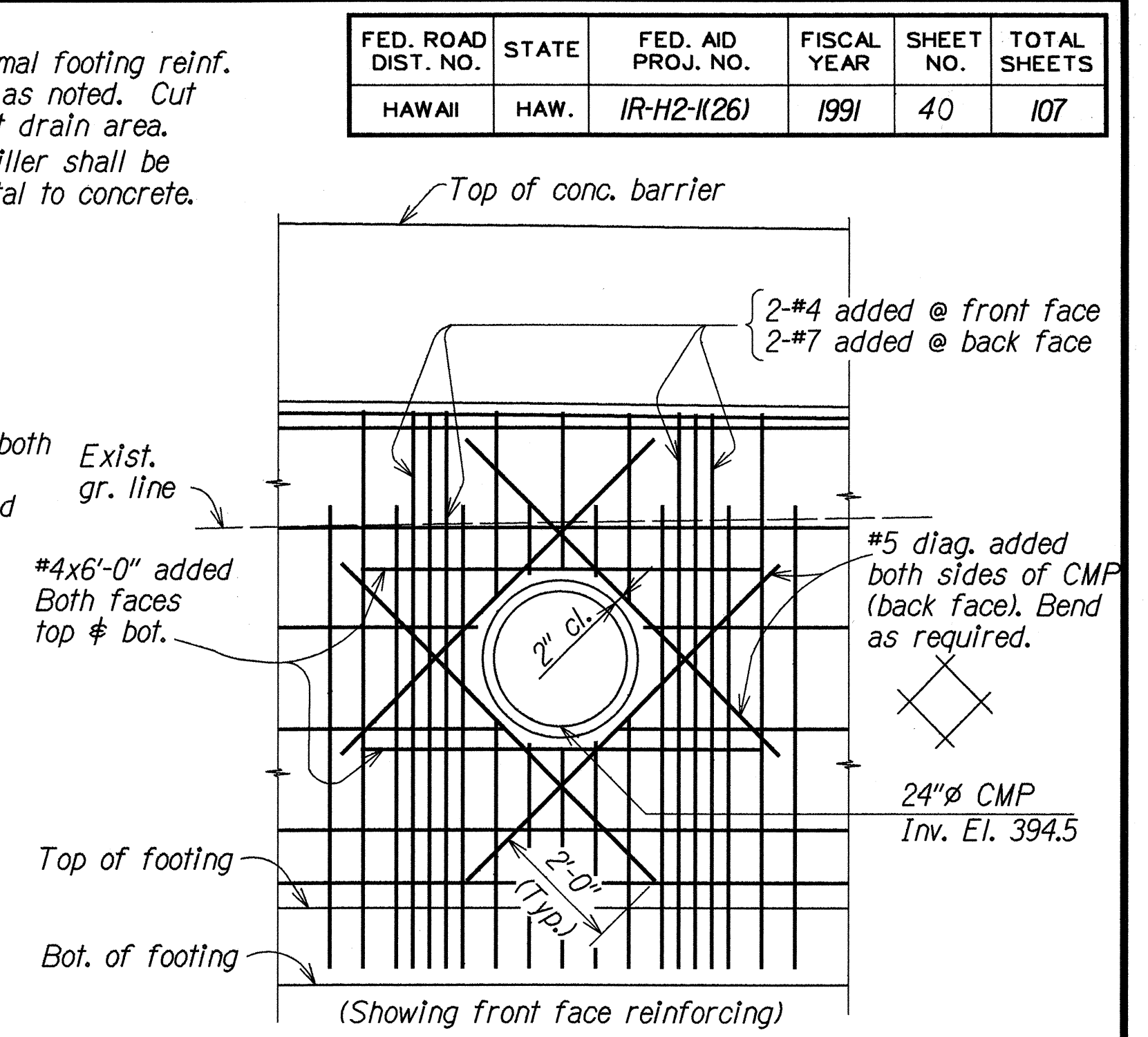
VERTICAL REINFORCING STEEL ARRANGEMENT AT CUT SIDE
N.T.S.



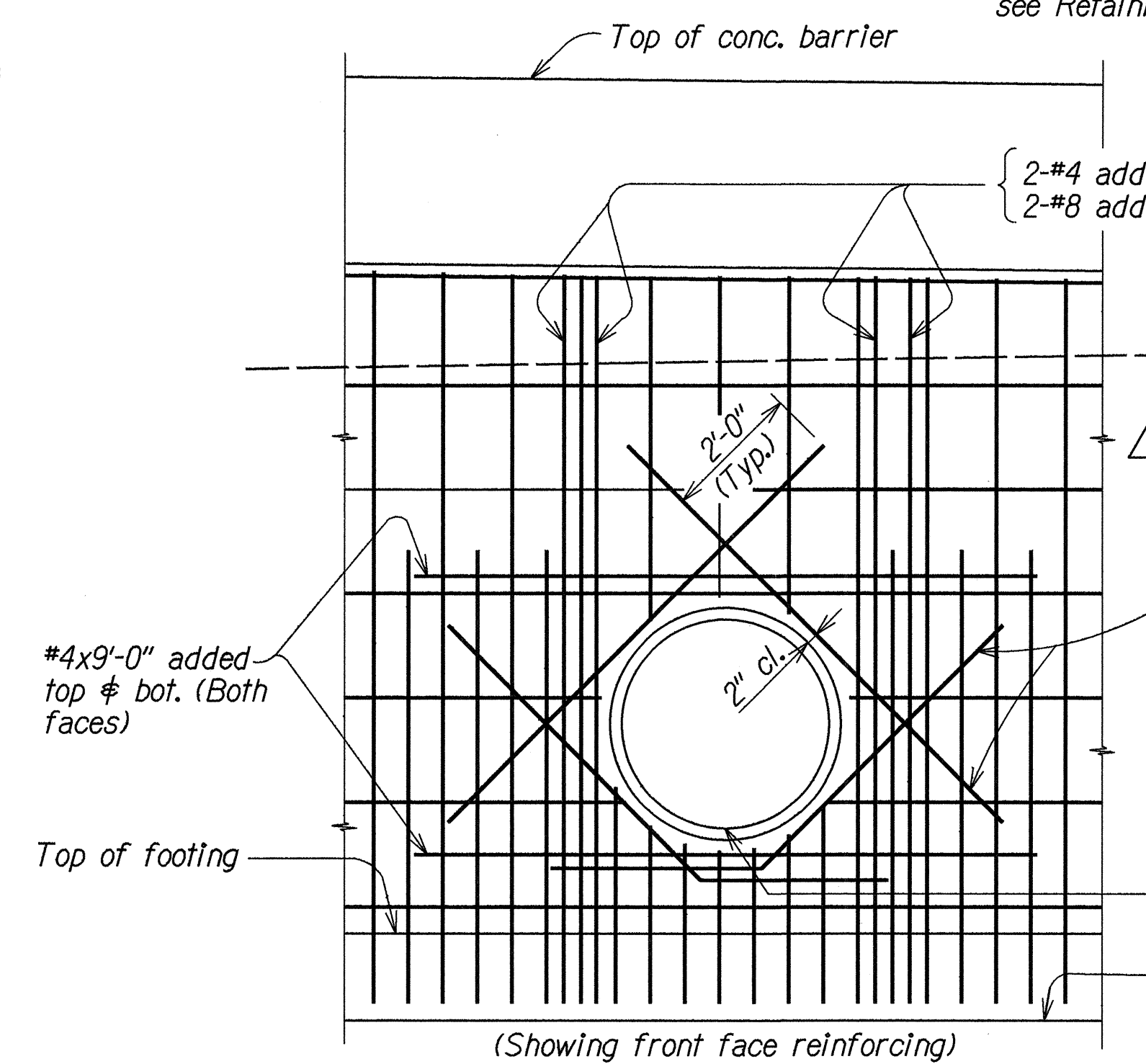
AT CUT SIDE
RETAINING WALL SECTION
Scale: 1/2"=1'-0"



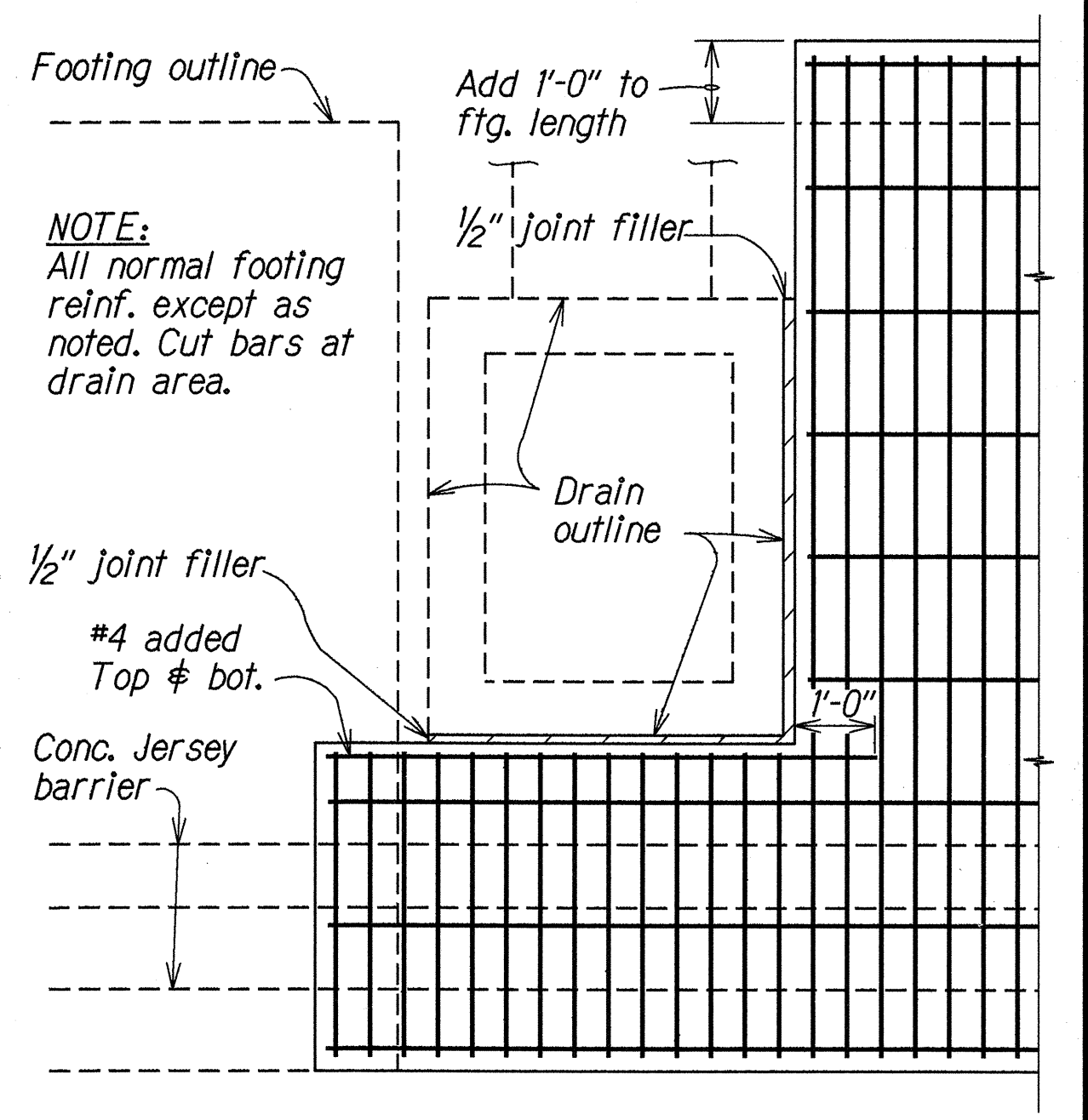
REINFORCING AT 24"Ø CMP
INBOUND @ STA. 419+25.0±



REINFORCING AT 24"Ø CMP
OUTBOUND @ STA. 376+50



REINFORCING AT 36"Ø CMP
OUTBOUND @ STA. 376+67±
PART ELEVATIONS AT CMP OPENINGS
Scale: 1/2"=1'-0"



PART FOOTING PLAN AT DRAINS
Scale: 1/2"=1'-0"

DATE	REVISION
11/14/91	Corrected INBOUND to OUTBOUND. Changed "h" to top ret. wall.
6/24/91	Corrected invert elevation & location of CMP at I.B. @ Sta. 419+25.0 & removed arrows from horizontal reinf. at 36"Ø CMP. Removed h=6' Vertical Reinf. Steel Arrangement At Cut Side.

STATE OF HAWAII
DEPARTMENT OF TRANSPORTATION
HIGHWAYS DIVISION

RETAINING WALL SECTIONS AND SCHEDULES

PART ELEVATIONS AT CMP DRAINS

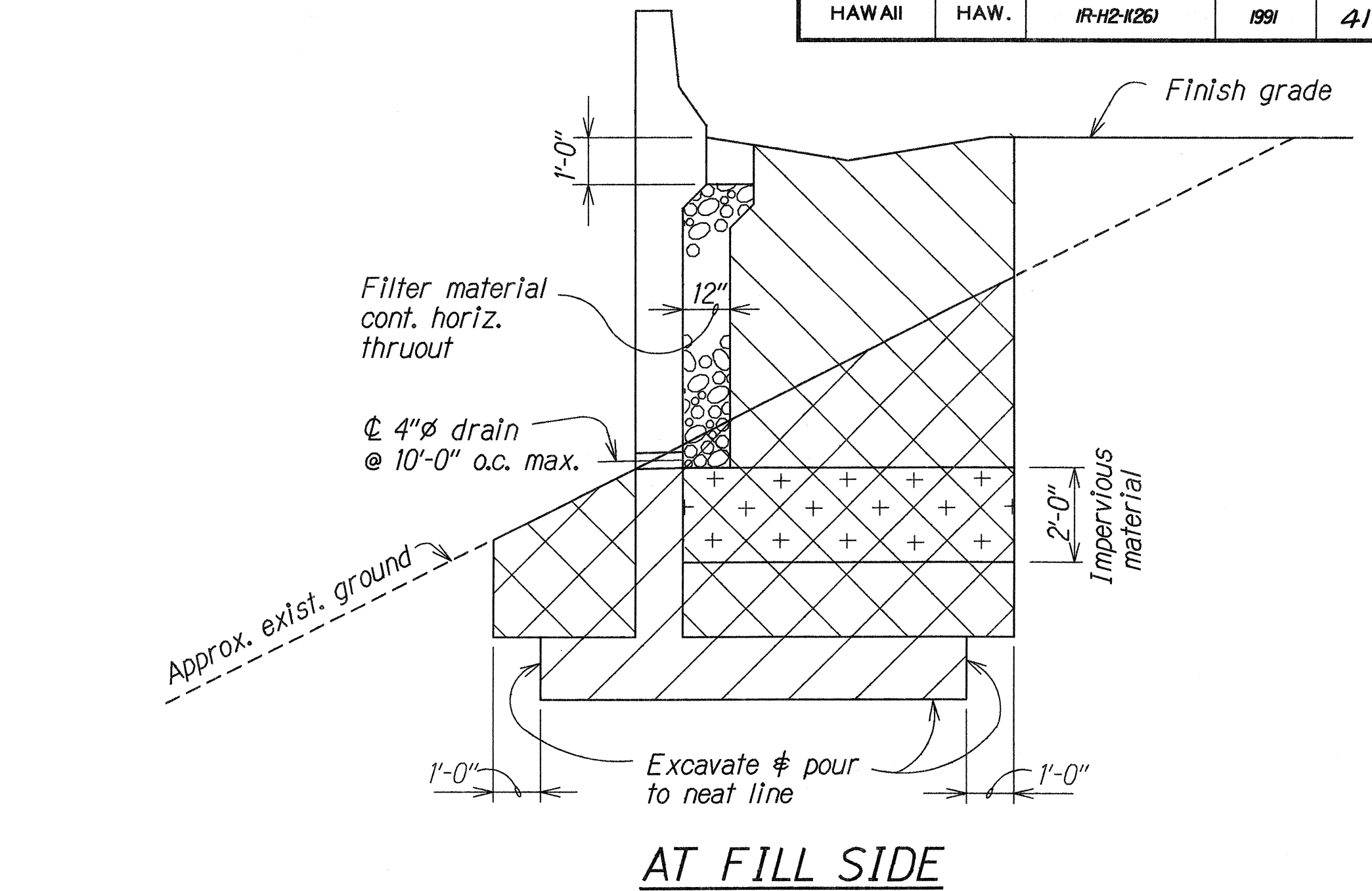
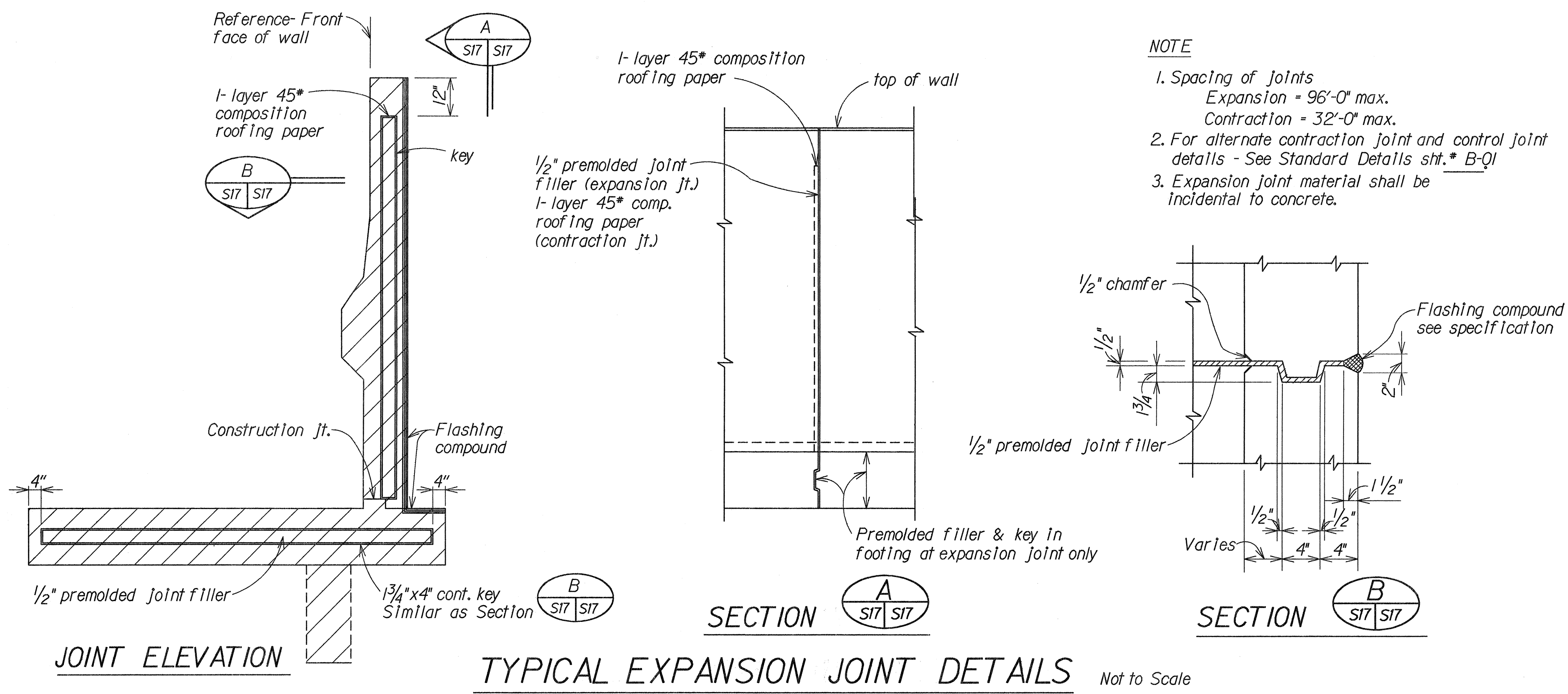
PART FOOTING PLAN AT DRAINS

INTERSTATE ROUTE H-2, HOV LANES, PHASE I
WAIPIO INTERCHANGE TO WAIANA INTERCHANGE
Project No. IR-H2-1126
Scale: As Noted
Date: Jan. 1991

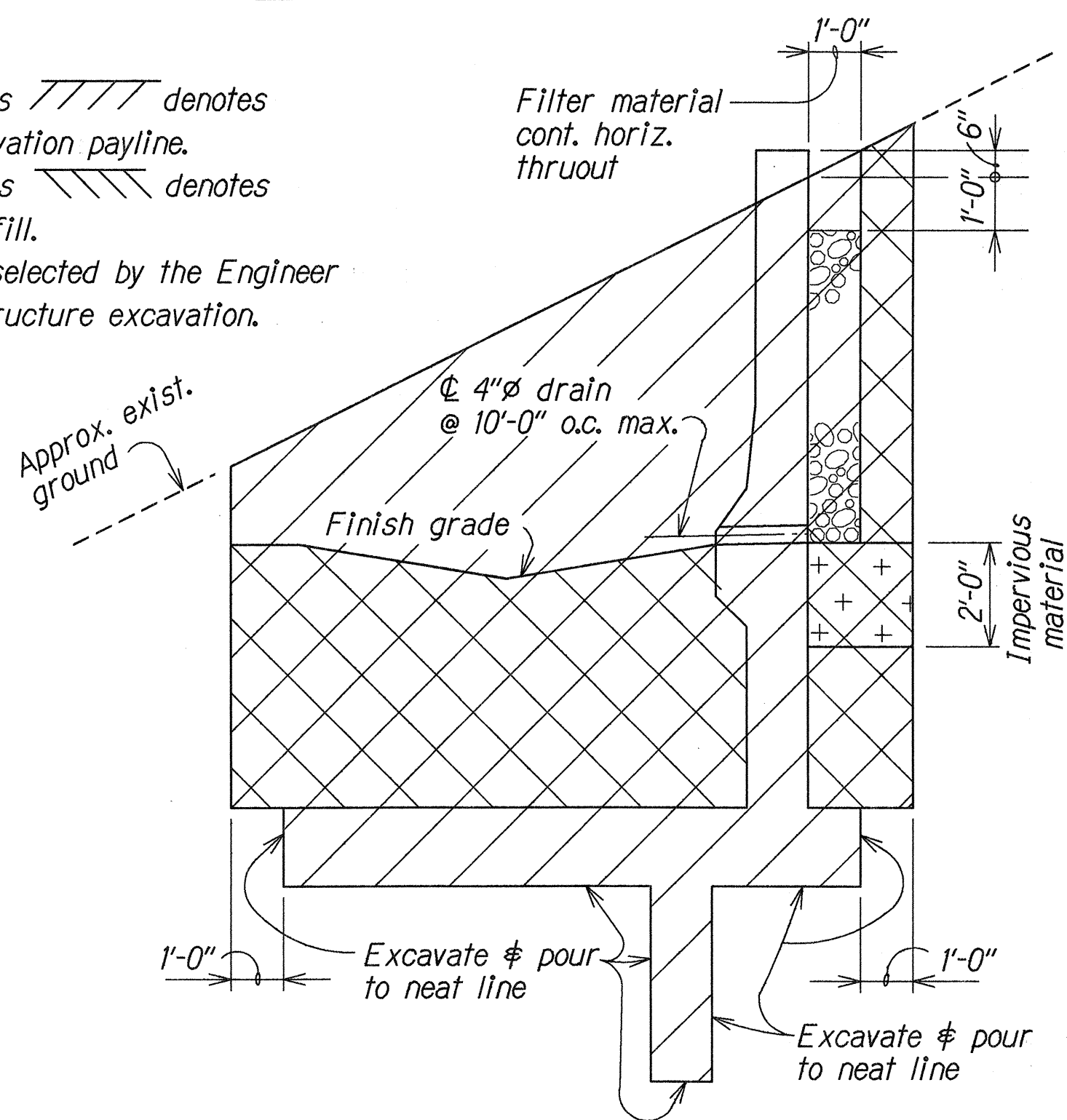
SHEET No. 516 OF 20 SHEETS

DESIGNED BY	DATE
DRAWN BY	JAN 91
CHECKED BY	JAN 91
NOTED BY	JAN 91
APPROVED BY	JAN 91

FED. ROAD DIST. NO.	STATE	FED. AID PROJ. NO.	FISCAL YEAR	SHEET NO.	TOTAL SHEETS
HAWAII	HAW.	IR-H2-1(26)	1991	41	107



- Note:
1. Hatched area shown thus denotes limits of structure excavation payline.
 2. Hatched area shown thus denotes limits of structure backfill.
 3. Impervious material as selected by the Engineer shall be incidental to structure excavation.



TYP. EXCAVATION & BACKFILL PAY LIMITS

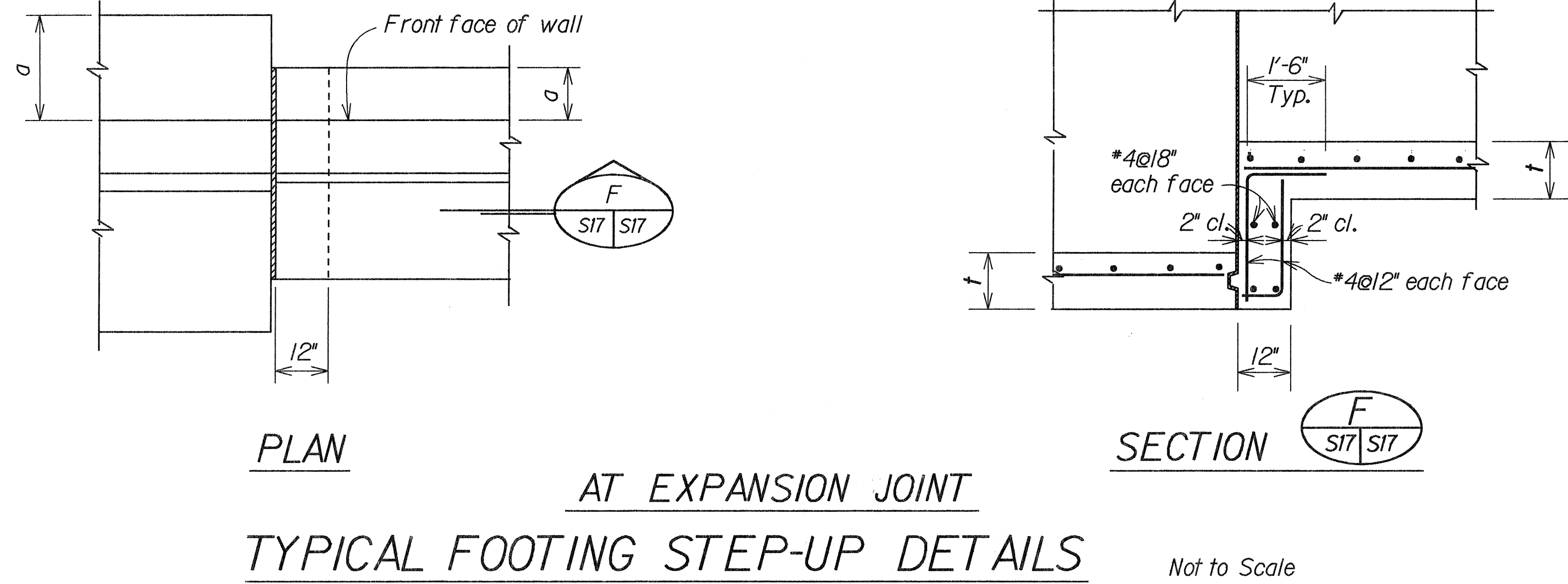
Scale: 3/8"=1'-0"

STATE OF HAWAII
DEPARTMENT OF TRANSPORTATION
HIGHWAYS DIVISION

TYPICAL WALL EXPANSION JOINT.
FOOTING STEP-UP DETAILS
TYPICAL EXCAVATION AND BACKFILL PAY LIMITS
INTERSTATE ROUTE H-2, HOV LANES, PHASE I
WAIPIO INTERCHANGE TO WAIKAWA INTERCHANGE
Project No. IR-H2-1(26)

Scale: As Noted
Date: Jan. 1991

DESIGNED BY	DATE
BRANS BY	JAN 89
NOTED BY	JAN 89
QUANTITIES BY	JAN 89
CHECKED BY	JAN 89



FED. ROAD DIST. NO.	STATE	FED. AID PROJ. NO.	FISCAL YEAR	SHEET NO.	TOTAL SHEETS
HAWAII	HAW.	1R-H2-1126	1991	Add. 42	107



TYPE D TWO TRUSS SPAN				
SIGN NO.	I.B. STATION	CROSS BEAMS	POST LEFT & RIGHT	BASE PLATE
D-14	376 + 00	0 ga. 18"	2x3 ga. 18"	26 1/2"x26 1/2"x2 1/2"
D-17	415 + 00	0 ga. 16.5"	0 ga. 18"	26 1/2"x26 1/2"x2 1/2"

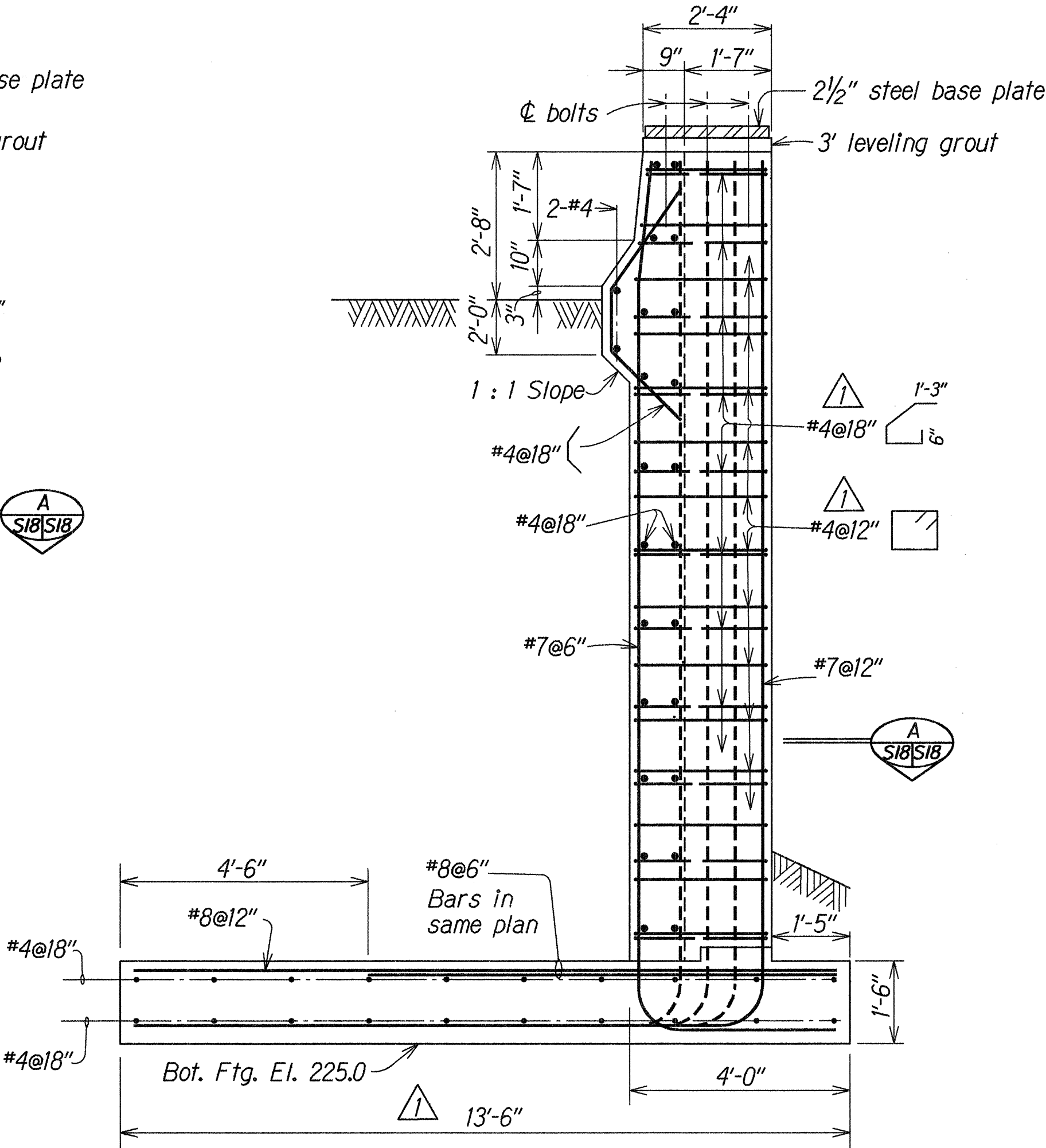
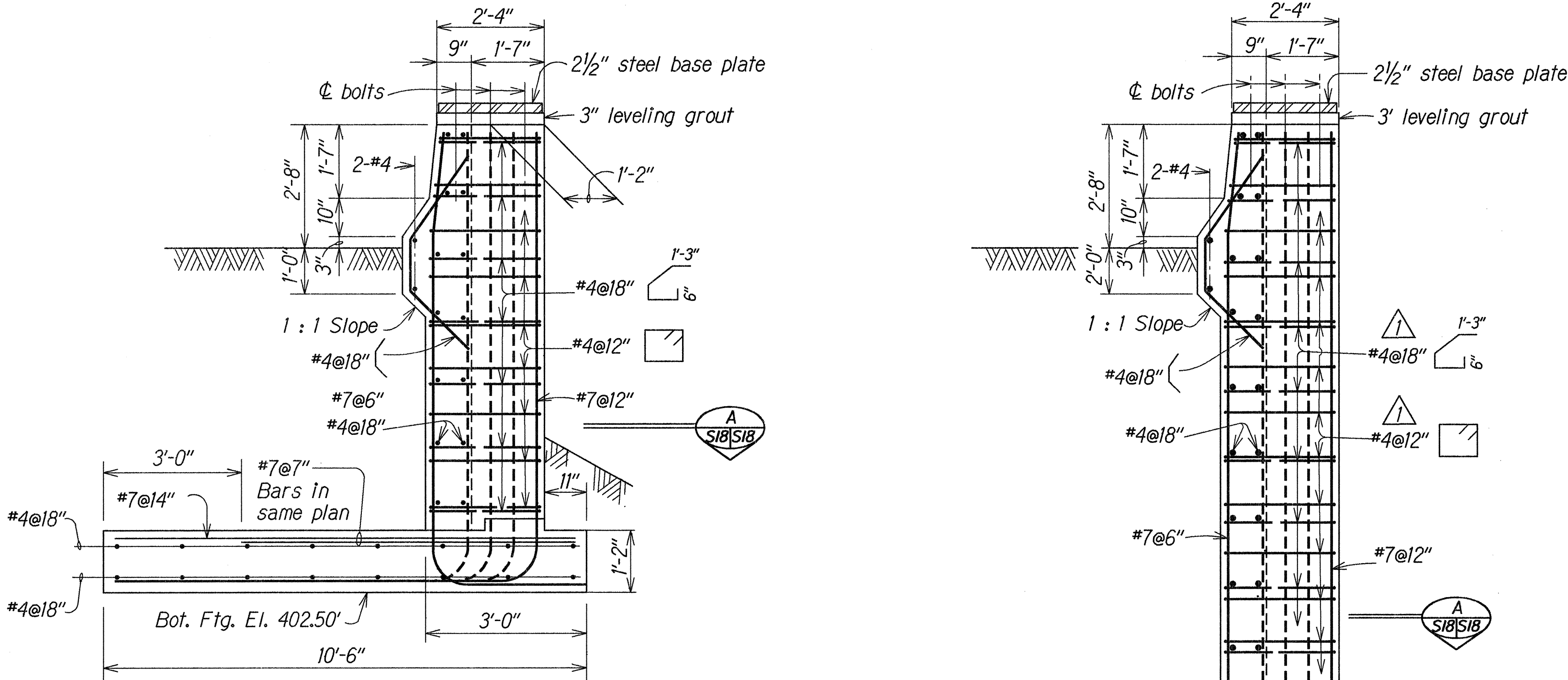
NOTE: For further detail see Standard sht. TE-20 To be paid for under Item No. 621.1400 & Item No. 621.1410.

BASE PLATE SCHEDULE								
B	C	F	H	P	R	S	T	Bolt Dia.
25 1/2"	33"	18"	27 3/8"	4 3/4"	5 1/2"	26 1/2"	2 1/2"	2 1/4"

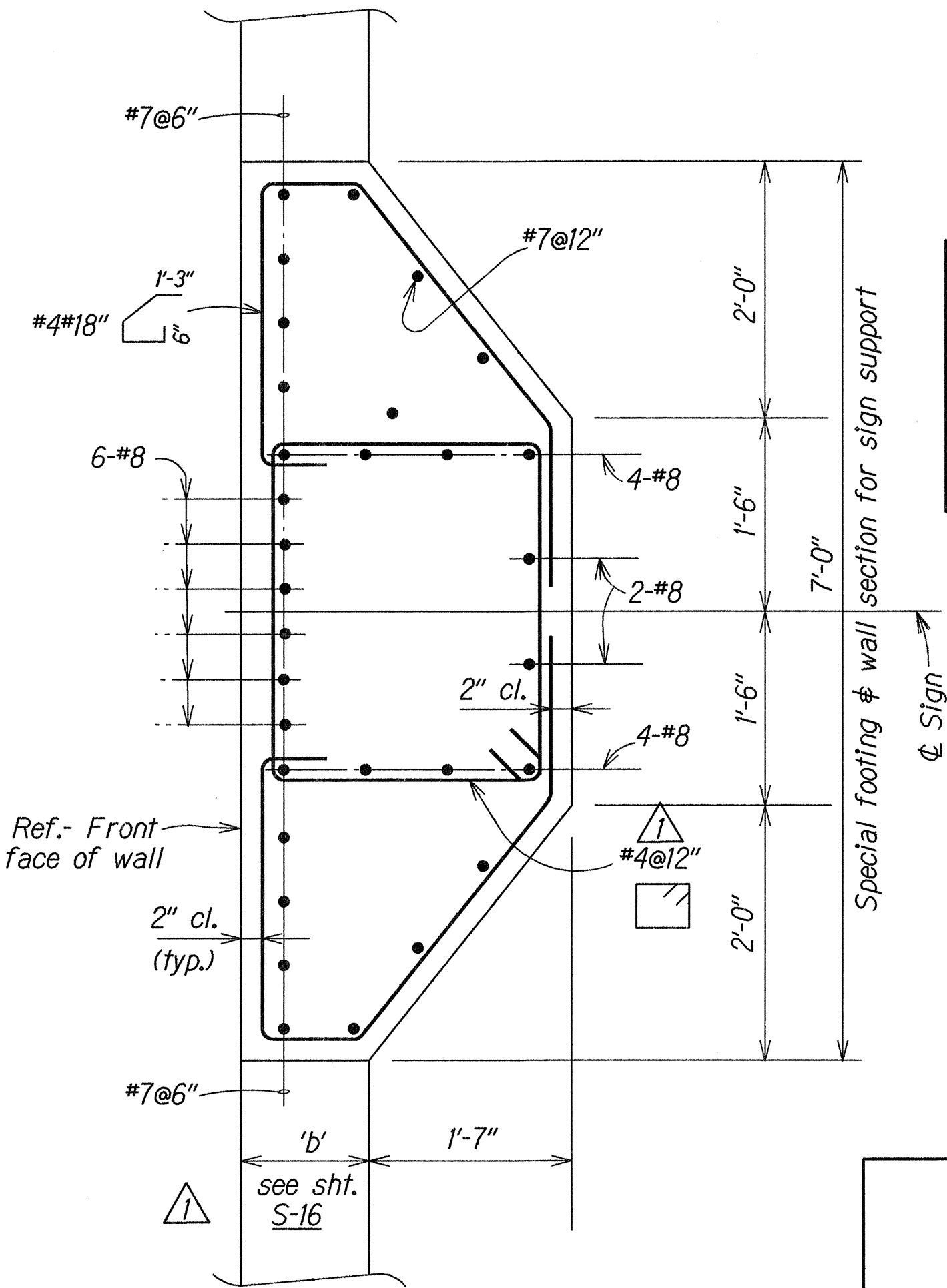
NOTE: Bolts to be galvanized ASTM A307 For further detail, see Standard sht. TE-22. To be paid for under Item No. 621.1400. (Base Plate, Bolts, Nuts & Washers)

FOUNDATION SCHEDULE FOR SIGN D-14 AT STA. 376+00 LEFT									
Type	Dimension		Depth	Bot. Reinf.		Top Reinf.		Pedestal	
	A	B		L.W.	S.W.	L.W.	S.W.	Size	Vert. Reinf. Height
I	14'-0"	7'-0"	2'-0"	8-#11	19-#4	#4@12 ea. way	2'-9"	10-#11	3'-9"

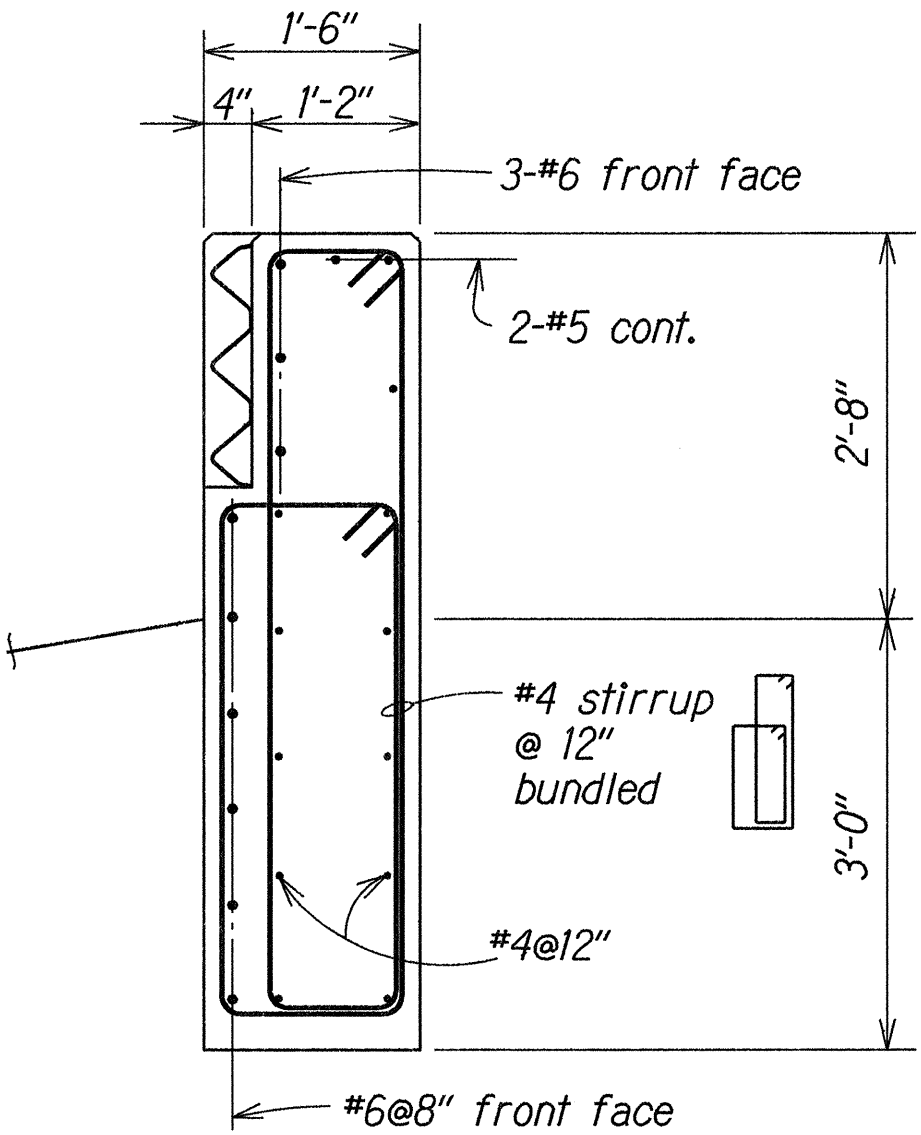
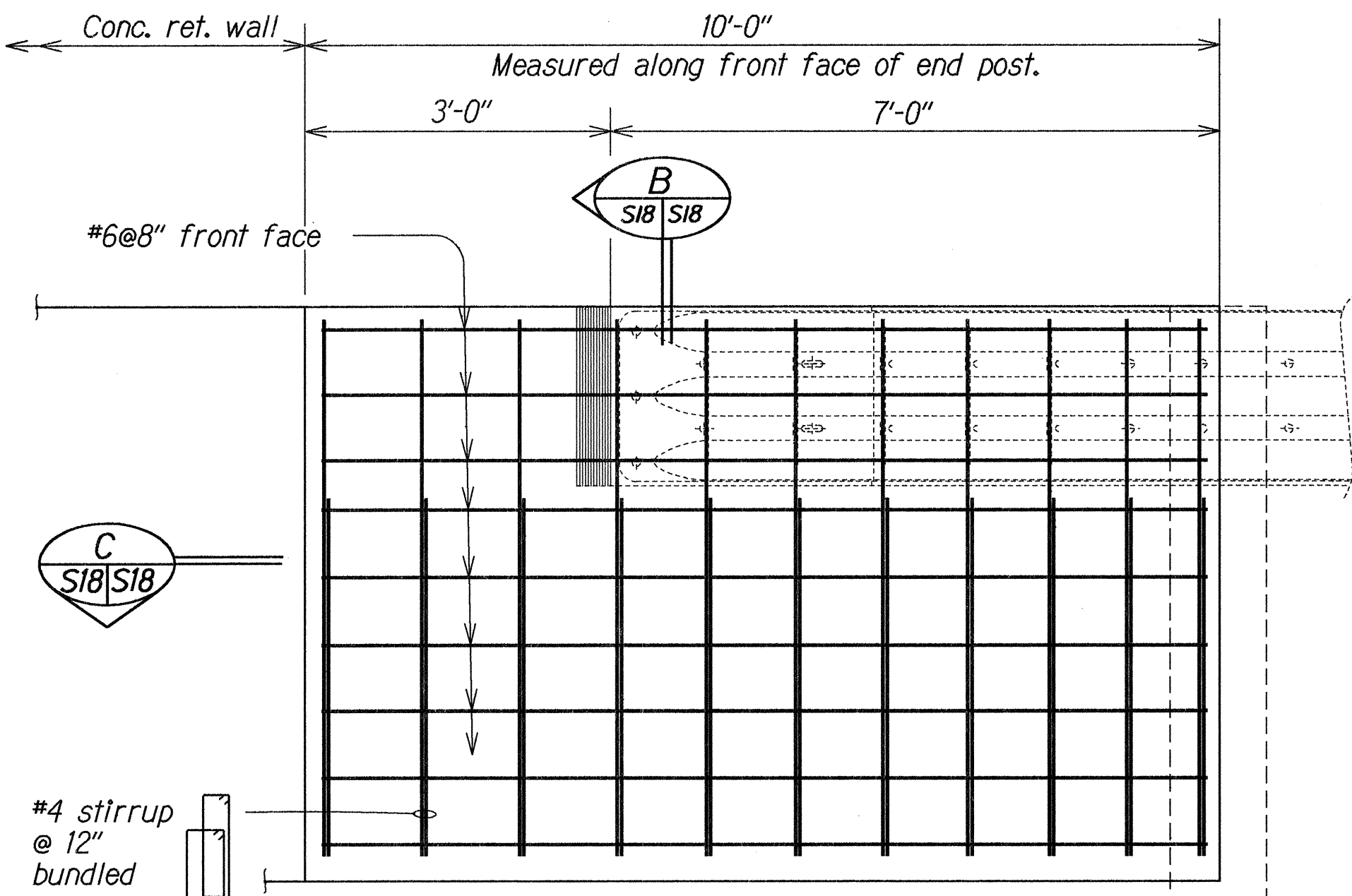
NOTE: For further detail, see Standard sht. TE-22. To be paid for under Item No. 621.1400.



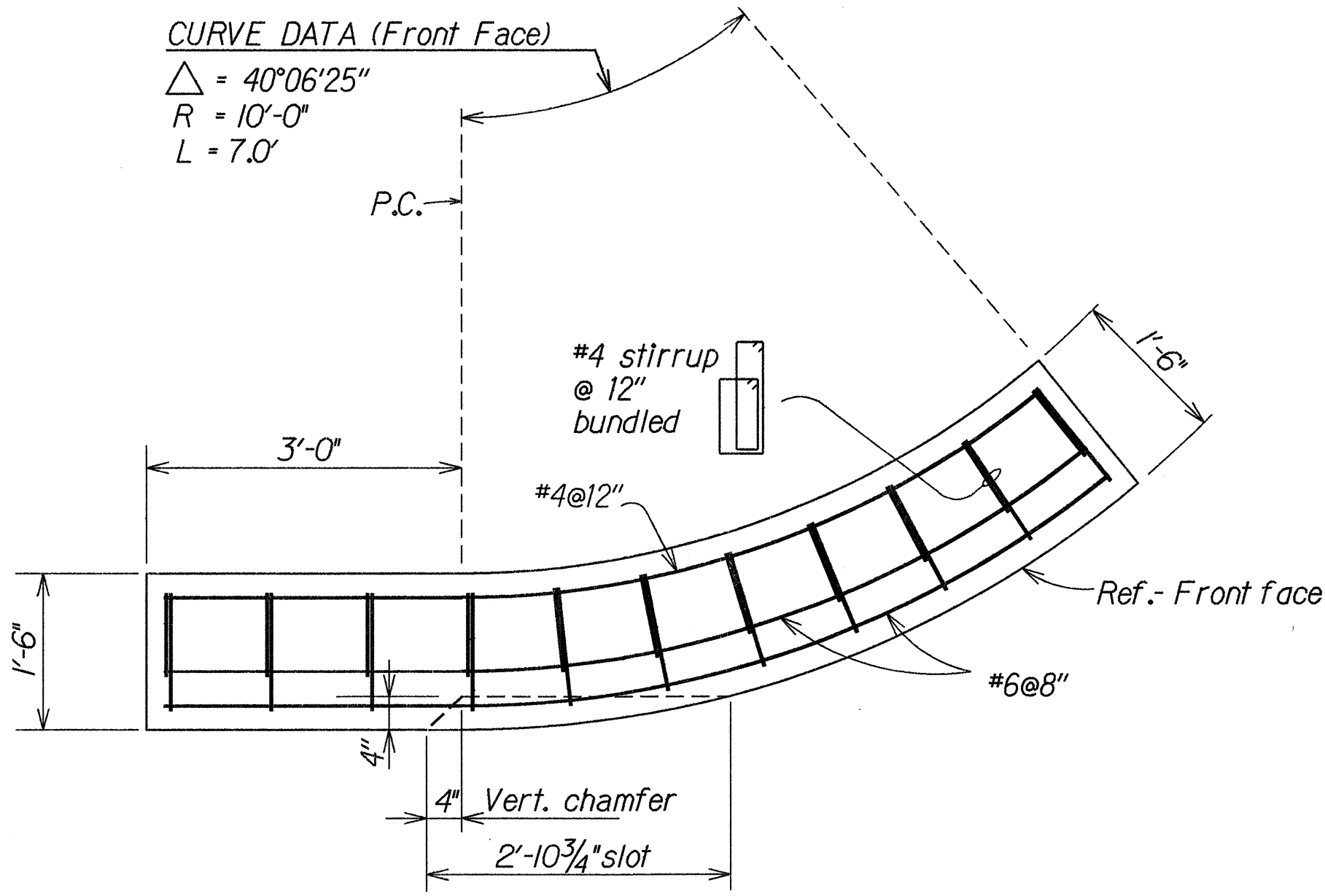
SECTION - TYPE D-17 (AT FILL SIDE)
Scale: 1/2"=1'-0"



SECTION
Scale: 1"=1'-0"



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



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

5/15/91	Sheet added to Contract Plan set for additional details required on sht. no. ADD. 42, per Addendum No. 1.
---------	---

DATE	REVISION
	STATE OF HAWAII DEPARTMENT OF TRANSPORTATION HIGHWAYS DIVISION RETAINING WALL SECTIONS TYPE D-14 AND TYPE D-17 END POST DETAILS INTERSTATE ROUTE H-2 HOV LANES, PHASE I WAIPIO INTERCHANGE TO WAIKANA INTERCHANGE Project No. 1R-H2-1126 Scale: As Noted Date: Jan. 1991

SHEET No. S18 OF 20 SHEETS

ADD. 42

DATE	JAN 91
DESIGNED BY	JAL
TRACED BY	JAL
NOTE BOOK	DAL
QUANTITIES BY	DAL
CHECKED BY	SA
ORIGINAL PLAN	N. 10/10/90

STATE OF HAWAII
DEPARTMENT OF TRANSPORTATION
HIGHWAYS DIVISION

CONCRETE BRIDGE RAIL TRANSITION WITH
CURVED END AND GUARDRAIL CONNECTION DETAILS

INTERSTATE ROUTE H-2 HOV LANES, PHASE I
WAIPIO INTERCHANGE TO WAIANA INTERCHANGE
Project No. IR-H2-1(26)

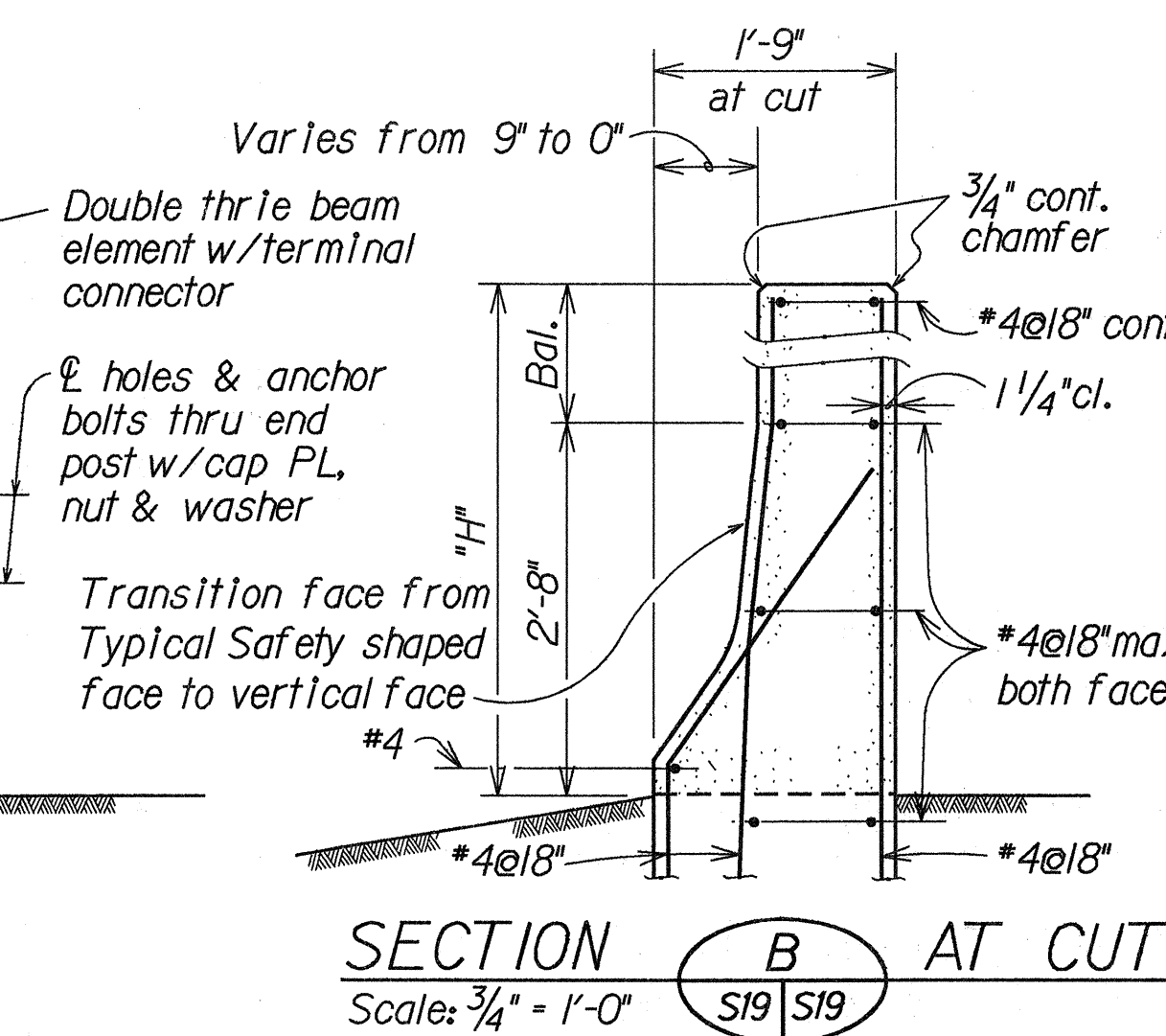
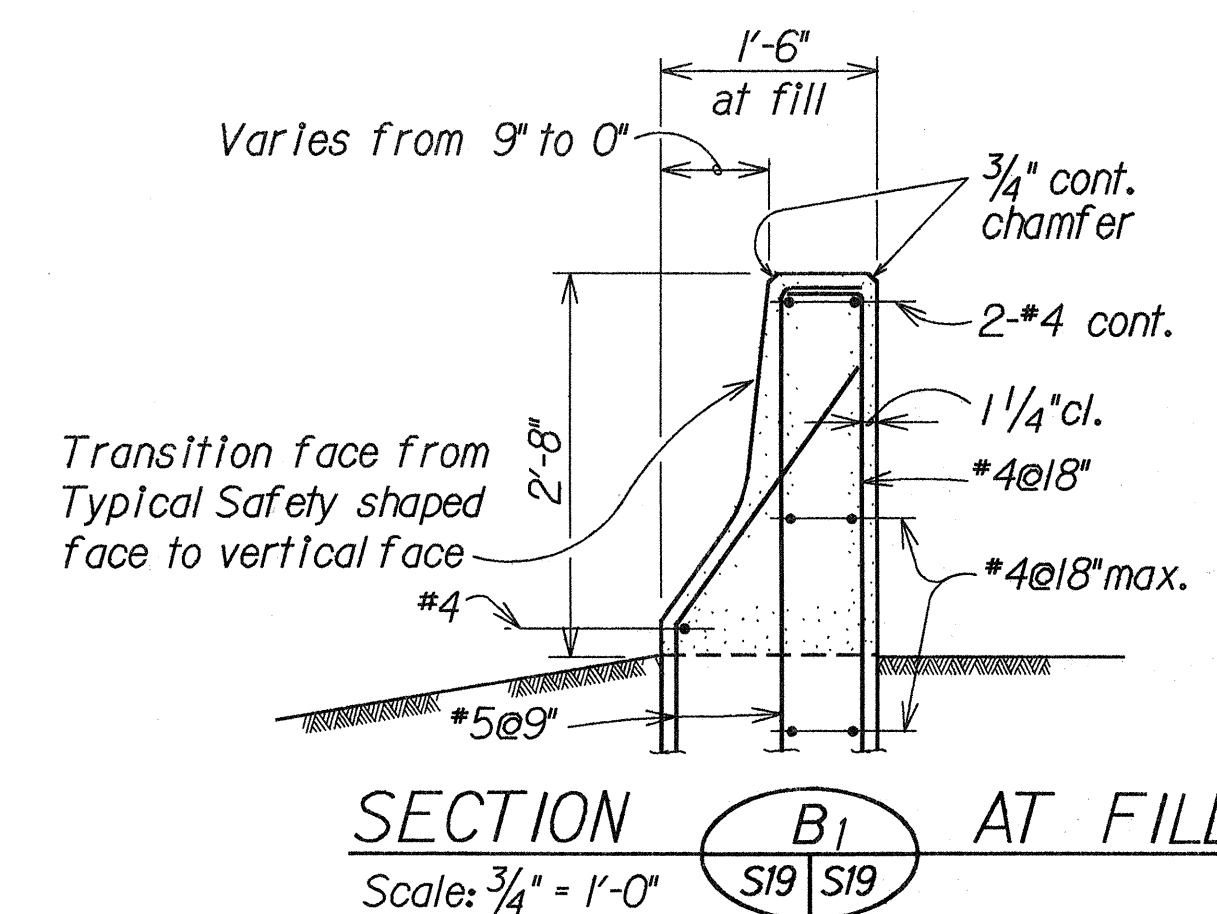
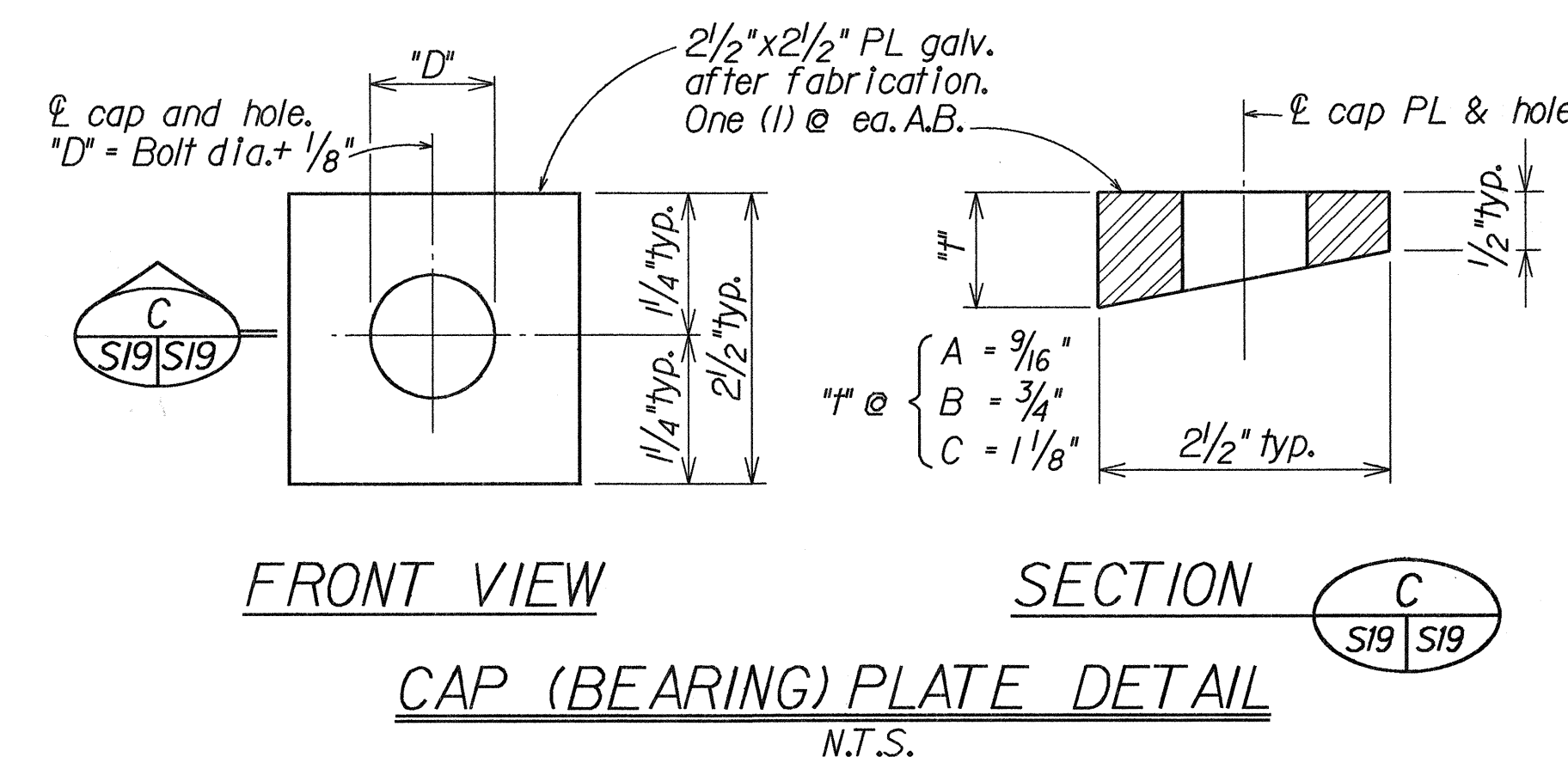
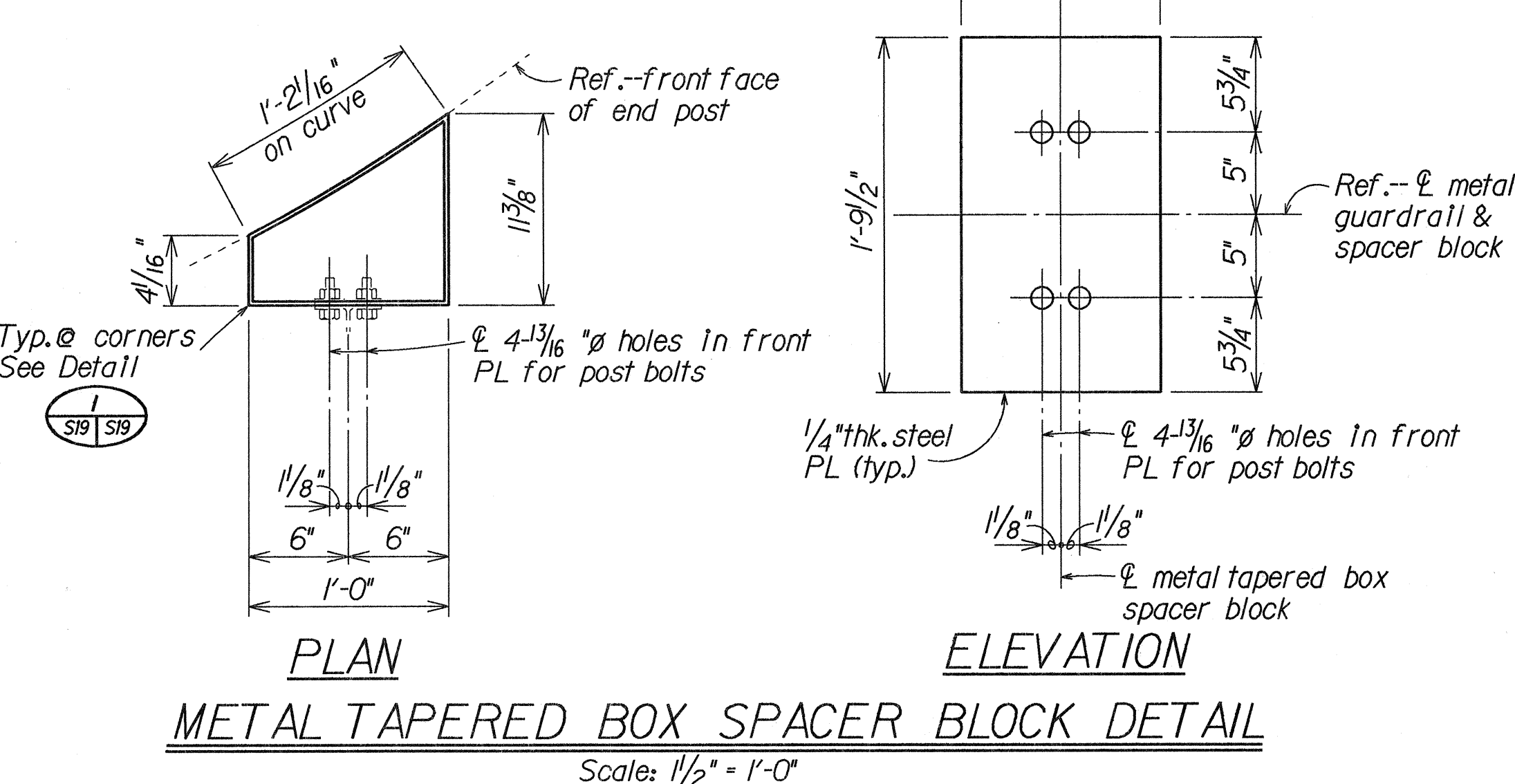
SHEET No. 5/9 OF 20 SHEETS

Date: Jan 1991

SHEET No. 5/9 OF 20 SHEETS

43

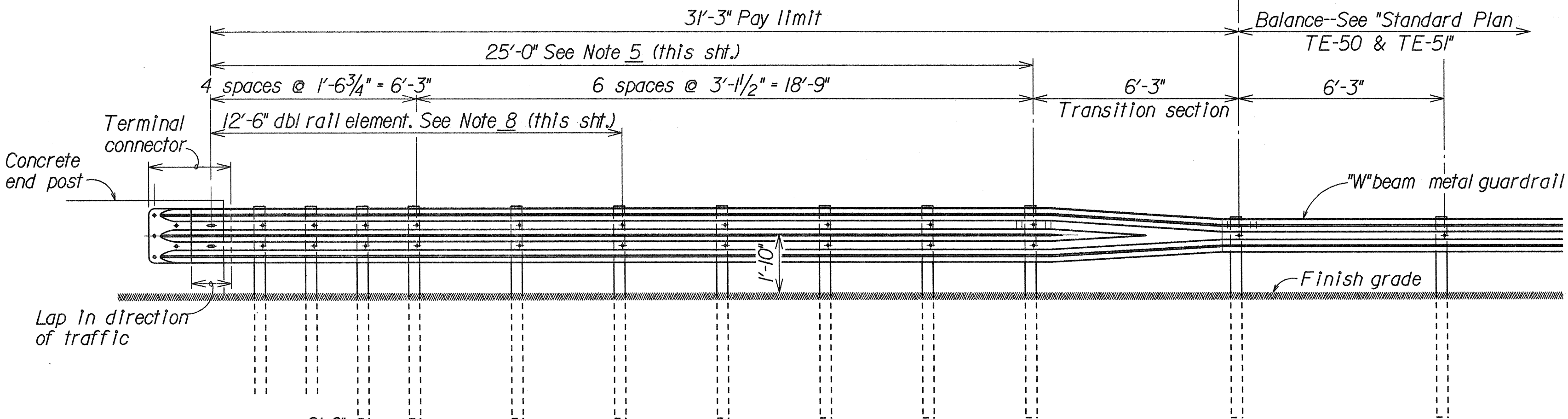
1. Cap PL and tapered box spacer block shall be fabricated from ASTM A36 steel and hot-dip galvanized after fabrication.
2. Cap PL(s), tapered box spacer block, anchor bolts including nuts and washers and other appurtenances shall be incidental to beam type guardrail and will not be paid for separately.



FED. ROAD DIST. NO.	STATE	FED. AID PROJ. NO.	FISCAL YEAR	SHEET NO.	TOTAL SHEETS
HAWAII	HAW.	1R-H2-1(26)	1991	44	107

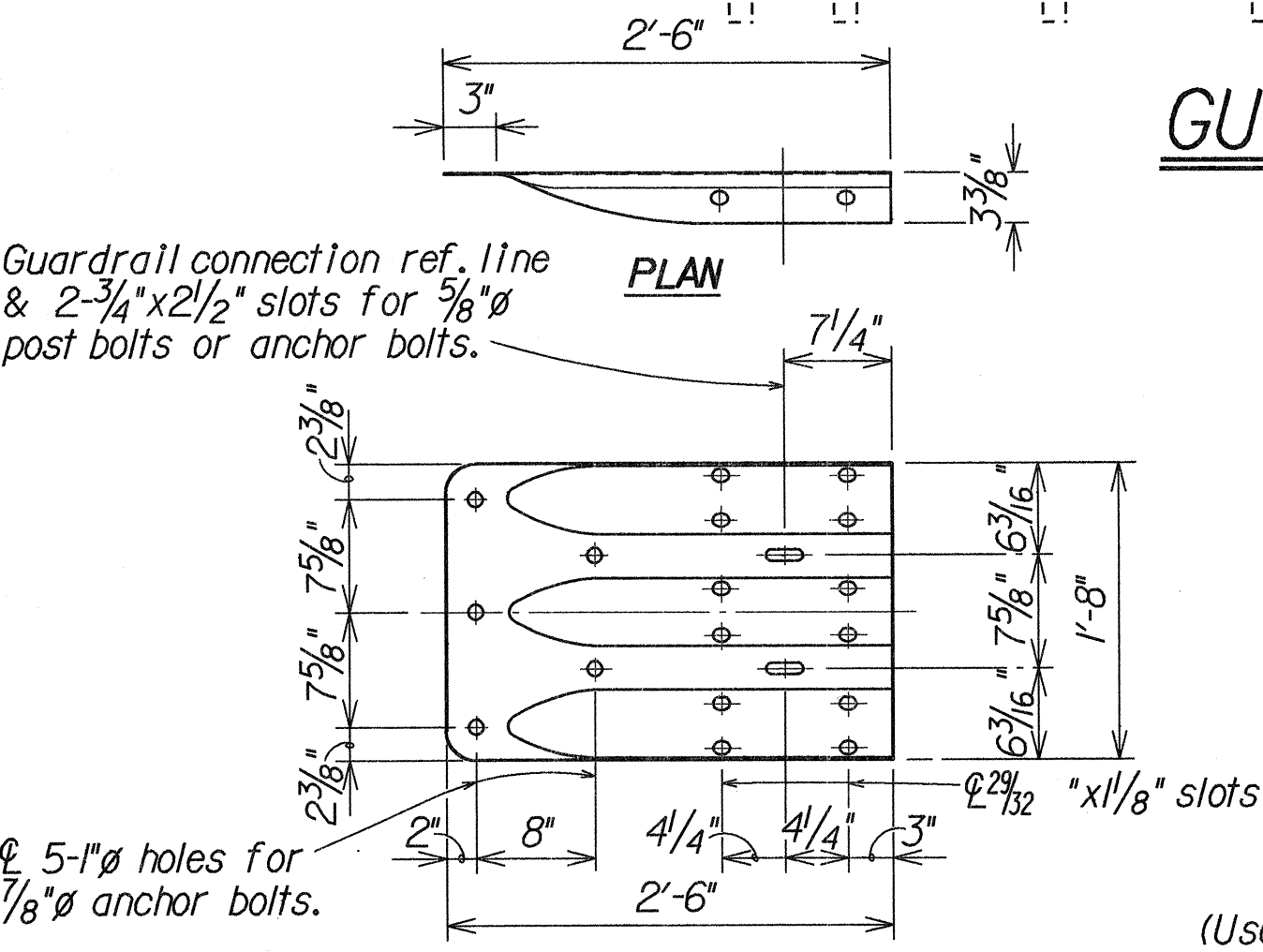
NOTES:

- "Terminal Connector" shall be fabricated from 10 gauge steel conforming to the requirements of AASHTO M180.
- All anchor bolts shall be high strength bolts conforming to the requirements of ASTM 325.
- Anchor bolt length shall be such that a snug fit of the elements and full thread engagement plus 1/4"(max) is attained.
- "Terminal Connector", tapered box and standard spacer; including all anchor bolts, cap PL, nuts and washers; shall be hot-dip galvanized after fabrication.
- First 25'-0" of guardrail adjoining "Terminal Connector" shall be of galvanized steel and supports spaced as shown on the detail drawings.
- Heads of through anchor bolts shall be placed on the traffic side of the end block; those at the thru spacer block excepted.
- Where double (nested) beam occur, 12" "Backup Plate" not required.
- Double (nest 1st panel) thrie beam elements at all end post connections, except on highways with one-way traffic pattern, use single thrie beam element at end post on trailing end only.



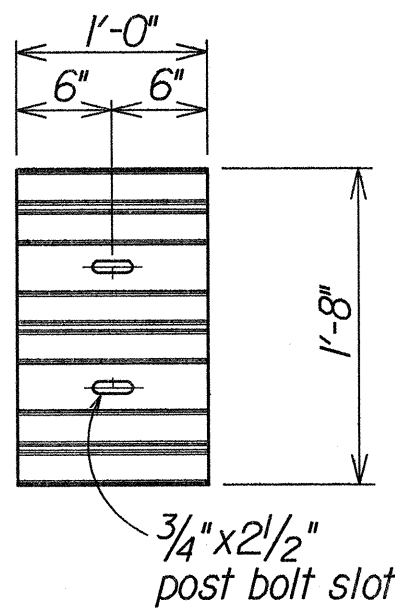
GUARDRAIL POST SPACING DETAIL

Scale: 3/8" = 1'-0"



TERMINAL CONNECTOR

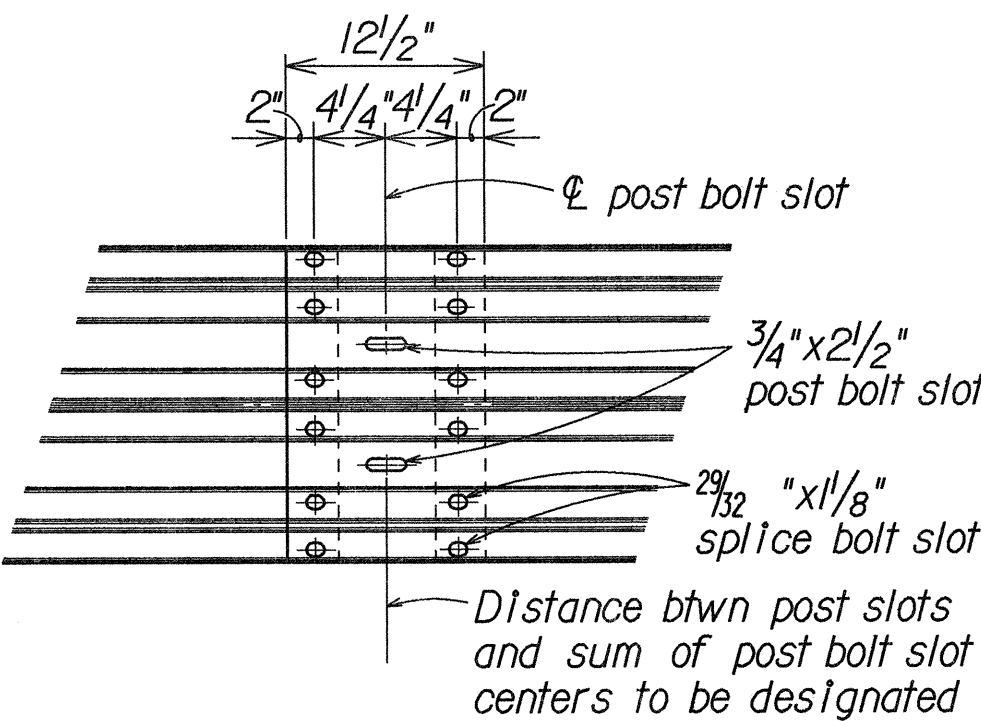
Scale: 1" = 1'-0"



BACKUP PLATE

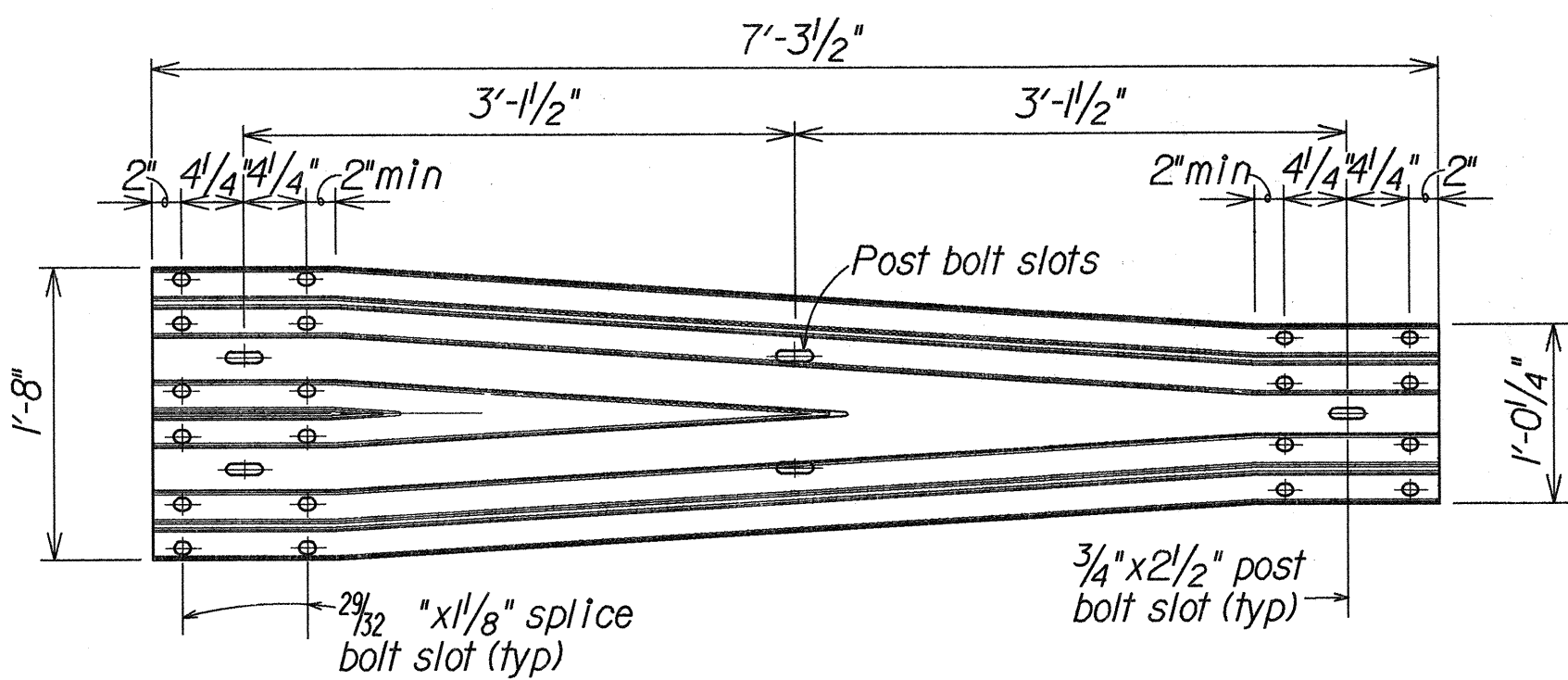
Scale: 1" = 1'-0"

(Use at posts where splices do not occur. Omit at double rail element section)



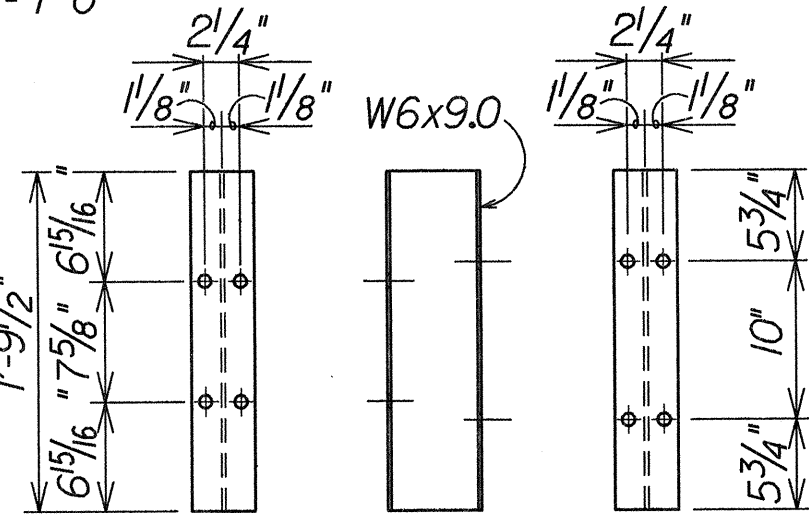
RAIL SPLICE

Scale: 1" = 1'-0"



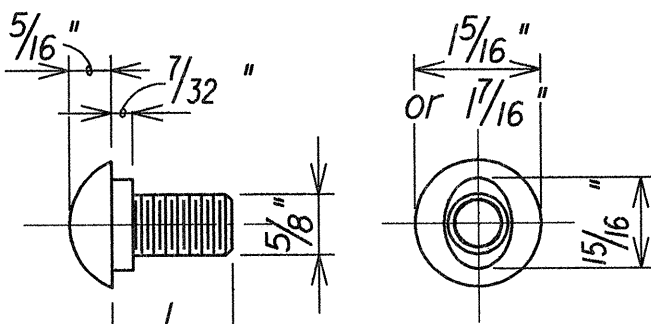
TRANSITION SECTION

Scale: 1" = 1'-0"



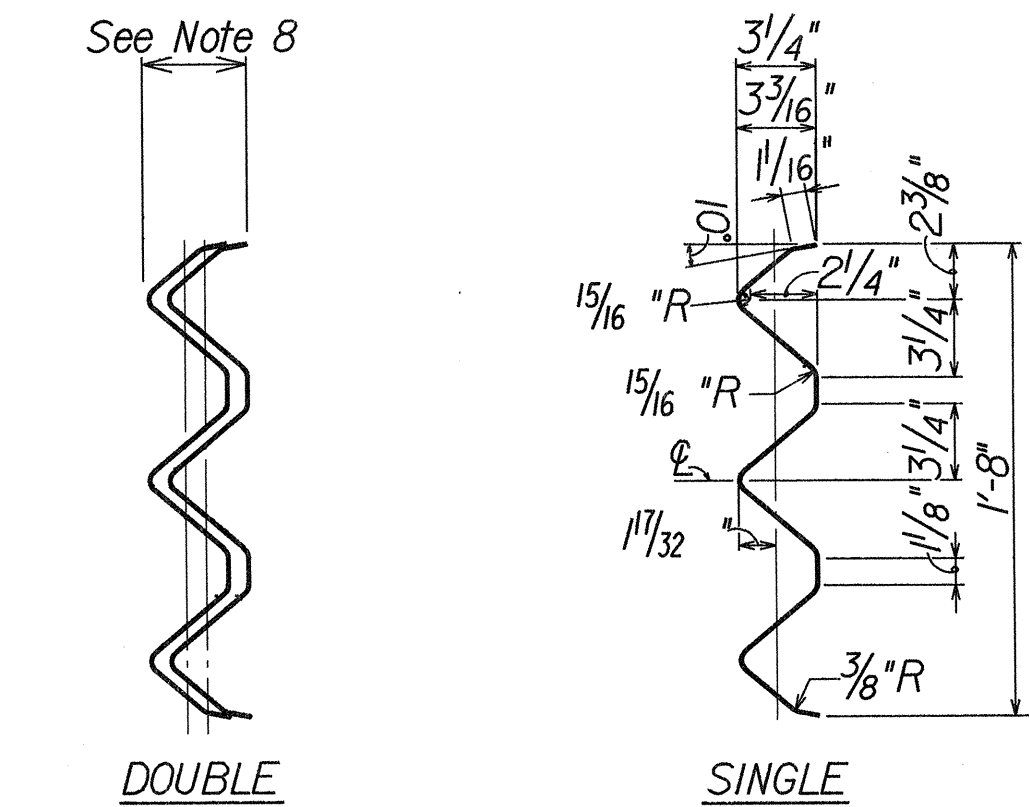
SPACER BLOCK DETAILS

Scale: 1" = 1'-0"



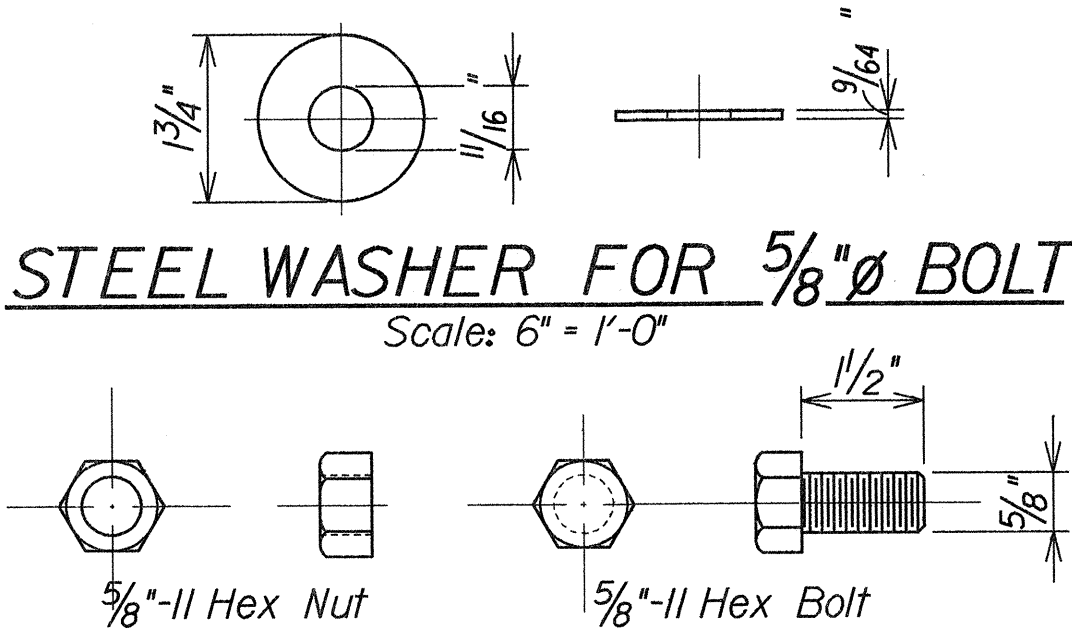
5/8"Ø BUTTON HEAD BOLT & RECESS NUT

Scale: 6" = 1'-0"



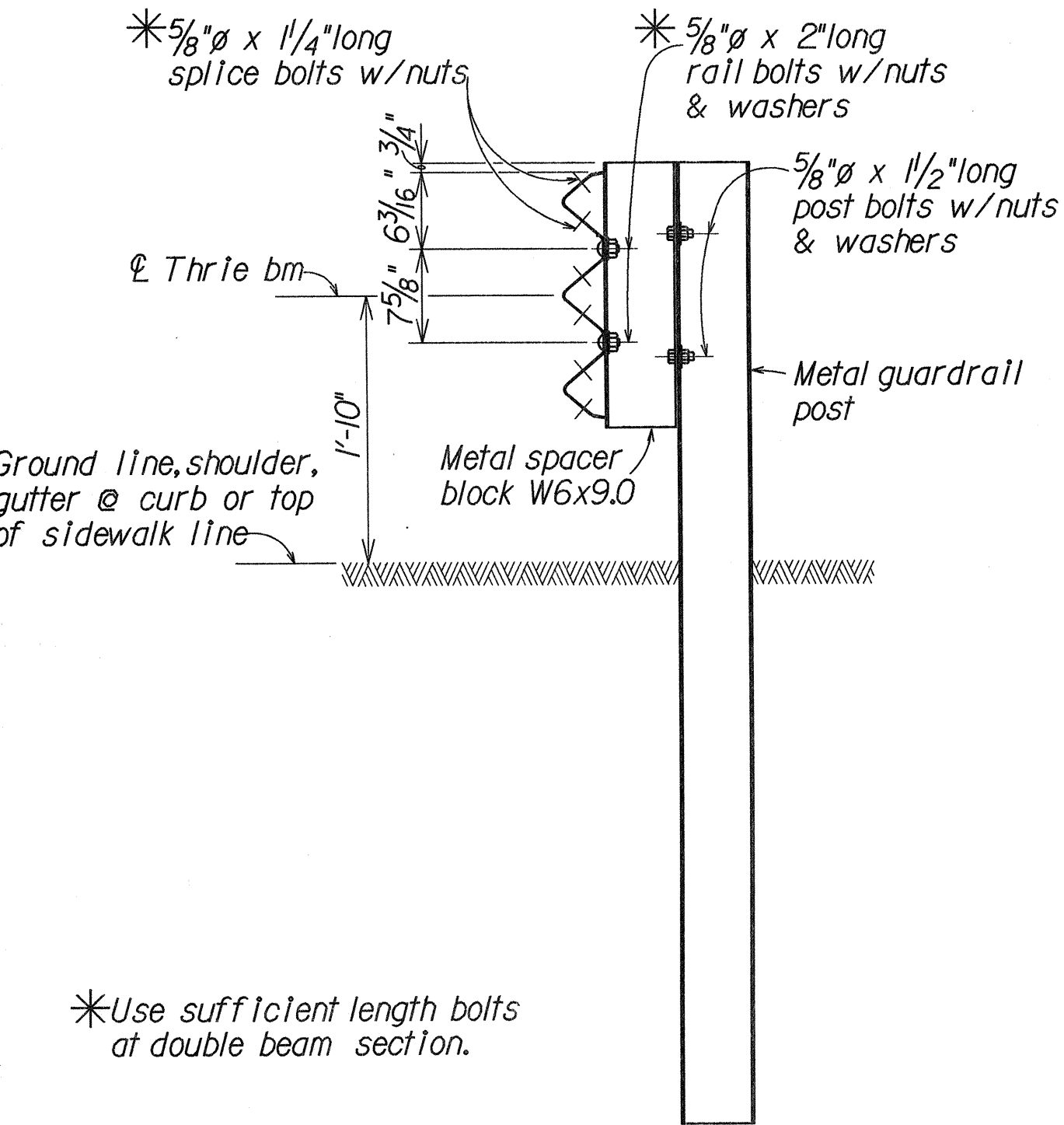
SECTION THRU RAIL ELEMENT

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



5/8"Ø HEX BOLT & NUT

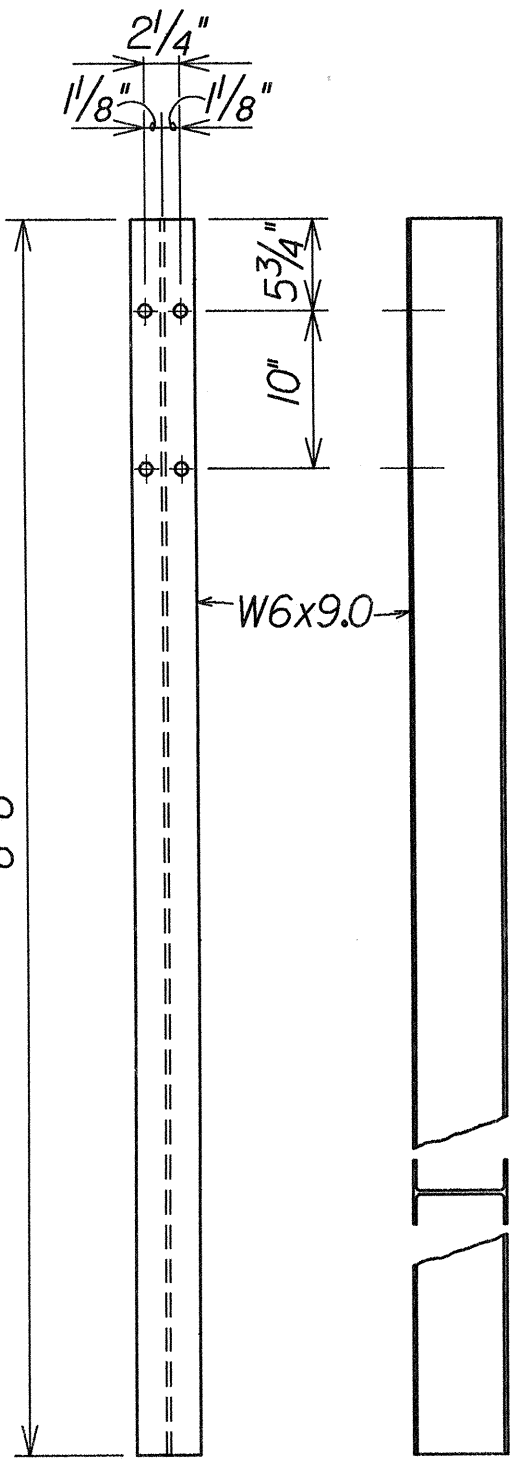
Scale: 6" = 1'-0"



TYPICAL SECTION

METAL GUARDRAIL ON METAL POST WITH METAL SPACER BLOCK

Scale: 1" = 1'-0"



POST DETAILS

Scale: 1" = 1'-0"

TYPE 3 THRIE BEAM GUARDRAIL AND APPURTENANCES DETAILS

DESIGNED BY	DATE
DRAWN BY	APR 089
CHECKED BY	APR 089
IN CHARGE	APR 089
NOTE BOOK	17415 & 17416
NO. OF SHEETS	174

STATE OF HAWAII
DEPARTMENT OF TRANSPORTATION
HIGHWAYS DIVISION

GUARDRAIL TYPE 3 THRIE BEAM

APPURTENANCES AND POST SPACING DETAILS

INTERSTATE ROUTE H-2, HOV LANES, PHASE I

WAIPIO INTERCHANGE TO WAIKAWA INTERCHANGE

Project No. 1R-H2-1(26)

Scale: As Shown

Date: Jan, 1991

SHEET No. S20 OF 20 SHEETS