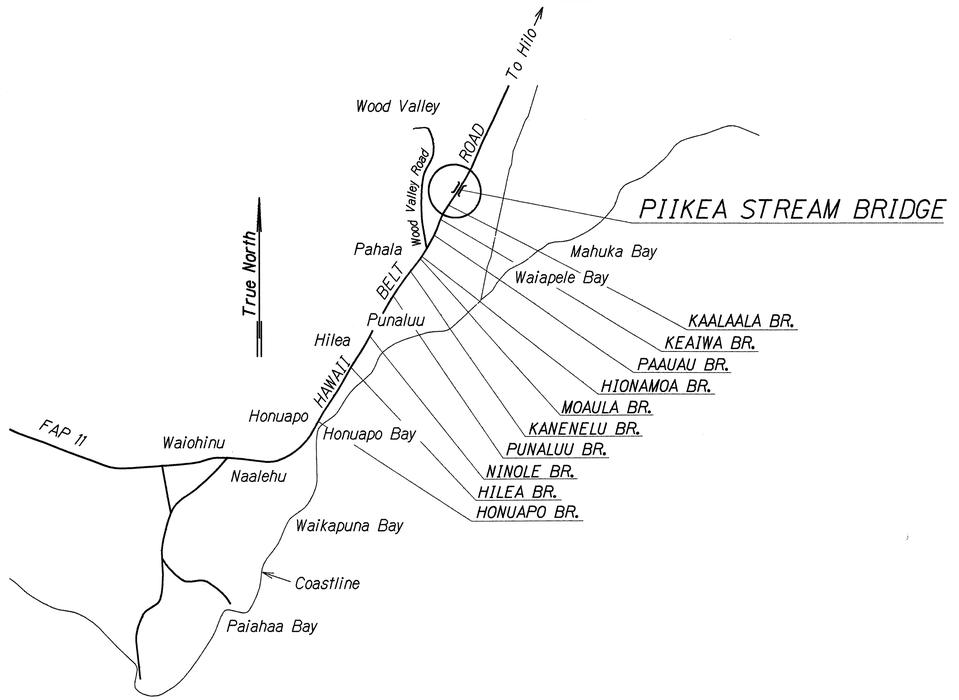
FED. ROAD DIST. NO.	STATE	FED. AID PROJ. NO.	FISCAL YEAR	SHEET NO.	TOTAL SHEETS
HAWAII	HAW.	STP-011-2(25)	1995	12	39

INDEX TO DRAWINGS



PROJECT LOCATION

Not to Scale

ORIGINAL PLAN	SURVEY PLOTTED BY	DATE
	DRAWN BY LHM	SEP 1993
NOTE BOOK	TRACED BY	
	DESIGNED BY SK	SEP 1993
N. Piikea1.dgn	QUANTITIES BY SK	SEP 1993
	CHECKED BY LTA	SEP 1993

STATE OF HAWAII
DEPARTMENT OF TRANSPORTATION
HIGHWAYS DIVISION

PIIKEA STREAM BRIDGE
INDEX TO DRAWINGS AND PROJECT LOCATION
MAMALAHOA HIGHWAY DRAINAGE IMPROVEMENT
Project No. STP-011-2(25)

Scale: As Noted Date: Sep. 1993

SHEET No. S1 OF 25 SHEETS

FED. ROAD DIST. NO.	STATE	FED. AID PROJ. NO.	FISCAL YEAR	SHEET NO.	TOTAL SHEETS
HAWAII	HAW.	STP-011-2(25)	1995	ADD. 13	39

GENERAL NOTES

DESIGN SPECIFICATIONS

AASHTO Standard Specifications for Highway Bridges (15th edition), including interim specifications for bridges.

AASHTO Standard Specifications for Seismic Design of Highway Bridges. Seismic performance category D, acceleration coefficient of 0.34.

DESIGN LIVE LOAD:

HS-20-44

DESIGN STRESSES:

1. Reinforced concrete: Class A: $f_c = 0.40\ f'c$ $f'_c = 3{,}000$ psi
   Class BD: $f_c = 0.40\ f'c$ $f'_c = 3{,}750$ psi (Bridge deck)
2. Reinforcing 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 shapes shall conform to ASTM A 36.

2 MATERIALS:

1. Reinforced concrete: Class A
   Class BD (Bridge deck)
2. Reinforcing steel: ASTM A 615, Grade 40
   ASTM A 615, Grade 60
3. Epoxy: Epoxy shall meet the requirements of Subsection 712.02 of the Standard Specifications, shall be Type V, high early strength (1,000 psi minimum, compressive strength at 4 hours) approved by the Engineer, and shall be applied in strict accordance with manufacturer's recommendation.
4. Admixture in concrete: See Subsection 711.43 of the Standard Specifications.
5. Bed Course Material: Material for culvert shall conform to the requirements of subsection 703.16 of the Standard Specifications.
6. P.V.C. Perforated Pipe: Perforated pipe shall conform to the requirement of subsection 706.12 of the Standard Specifications.
7. Geotextile: Geotextile shall conform to the requirements of subsection 716.02 of the Standard Specifications.
8. Aggregate: Aggregate size No. 57 shall meet the requirements listed in Table 1 of AASHTO M43.
9. Joint sealer: Joint sealer shall conform to the requirement of subsection 705.04 of the Standard Specifications.

1 CONSTRUCTION REQUIREMENTS:

1. Refer to Standard Specifications for Road, Bridge, and Public Works Construction, (Hawaii 1994 Edition) and Special Provisions.
2. High strength anchor bolts (ASTM A 325) and structural steel shapes and plates (ASTM A 36), shall be hot-dip galvanized after fabrication.
3. The Contractor shall furnish shop placement and detailed drawings for all structural steel work.
4. All items designated for removal shall be removed in such a manner as to preclude any damage to the existing structure.
5. Large impacting or vibratory type of equipment will not be permitted in the removal operation nor in drilling holes to any part of the existing structure.
6. Small vibratory hand tools, approved by the Engineer, will be permitted. Any damage to the existing or new structure shall be repaired at the Contractor's expense, to the satisfaction of the Engineer.
7. Bars shall be arranged and located so that no interference will occur between vertical and horizontal reinforcements.
8. In general, top of concrete deck slab shall be constructed to follow the finish roadway vertical and horizontal curves and grades.
9. Concrete Finish: See Standard Specifications

GENERAL:

1
1. All items noted incidental will not be paid for separately.
2. The Contractor shall verify all grades and dimensions before commencing with any work.
3. The Contractor shall verify the locations of all existing utility lines near bridge and notify their respective owners before commencing with work.
4. The Contractor shall shore the exterior portion of the existing rigid frame slab for contributory dead and live loads and construction loads to minimize deflection.
5. At location where existing rebars are cut in the removal of existing concrete, all exposed ends of existing rebars shall be undercut a minimum of 1½" below the surface of concrete and patched with mortar. The cutting of reinforcing and patching with mortar and removing a portion of structure shall be incidental to removal of structure item.
6. The Contractor shall not simultaneously excavate the front and back face of existing footings. The Contractor shall take extra care not to undermine the existing footing during excavation operations for Phase II and Phase III at back face of abutment.
7. 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.
8. Prior to placing concrete in new bridge deck, adjoining concrete face of existing deck shall be thoroughly wetted with clean water and scrubbed with a solution of not more than one (1) part of hydrochloric (muriatic) acid to nine (9) parts of clean water, followed immediately by thorough rinsing with clear water.
9. Backfill behind the abutment of the rigid frame structure shall not be placed until the concrete in the deck has attained a strength of 3,750 psi.

3 ESTIMATED QUANTITIES

ITEM NO.	ITEM	UNIT	QUANTITY
202.0210	Removal of portion of existing concrete structure (including wingwalls & temp. hdwl.)	L.S.	(57 cu.yd.)
202.0470	Removal of cement rubble masonry (temporary wall)	Cu.Yd.	16 cu.yd.
206.2025	Rock excavation for channel lining	Cu.Yd.	97 cu.yd.
206.3500	Structure rock excavation for rigid frame & culvert (including wingwalls)	Cu.Yd.	435 cu.yd.
206.4200	Structure excavation for box culvert (including wingwalls)	Cu.Yd.	835 cu.yd.
206.5100	Structure excavation for cement rubble masonry (temporary wall)	Cu.Yd.	29 cu.yd.
206.6200	Structure excavation for bridge (including wingwalls)	Cu.Yd.	103 cu.yd.
206.7310	Structure backfill for bridge (including culvert & wingwalls)	Cu.Yd.	216 cu. yd.
206.9000	#57 aggregate (for filter material & backfill)	Cu.Yd.	49 cu.yd.
503.0010	Class A concrete in channel lining	L.S.	(39 cu.yd.)
503.1032	Class A concrete in box culvert (including wingwalls)	L.S.	(296 cu.yd.)
503.1092	Class A (includes Class BD) concrete in bridge (including wingwalls)	L.S.	(64 cu.yd.)
503.1093	Class A concrete in footings for bridge.	L.S.	(7 cu.yd.)
503.1095	Drill 1¼" diameter hole	L.S.	(85 ea.)
507.6000	Concrete railing and end post	Lin.Ft.	190 lin.ft.
508.0100	Cement rubble masonry (C.R.M.) temporary wall	Cu.Yd.	16 cu.yd.
602.0032	Reinforcing steel in box culvert (including wingwalls)	L.S.	(64,100 lb)
602.0091	Reinforcing steel in bridge (including wingwalls)	L.S.	(12,400 lb)
602.1025	Reinforcing steel in channel lining	L.S.	(6,820 lb)
606.9000	Guardrail Type 3 double with steel post (temporary rail)	Lin.Ft.	66 lin.ft.
612.0200	Grouted rubble slope protection	Cu.Yd.	36 cu.yd.

ORIGINAL PLAN	SURVEY PLOTTED BY	DATE SEP 1993
	DRAWN BY LHM	• • • • •
	TRACED BY	
NOTE BOOK	DESIGNED BY SK	SEP 1993
	QUANTITIES BY SK	SEP 1993
No. pikea2.dgn	CHECKED BY LTA	SEP 1993

3	03/22/96	Deleted Estimated Quantities Item No. 606.3000 and Revised Item No. 606.3200 to 606.9000.
2	03/11/96	Revised General Notes; Materials: Notes Nos. 6, 7, and 9.
1	03/07/96	Revised General Notes; Construction Requirements: Notes No. 1, and 2.
	DATE:	REVISION:

STATE OF HAWAII
DEPARTMENT OF TRANSPORTATION
HIGHWAYS DIVISION

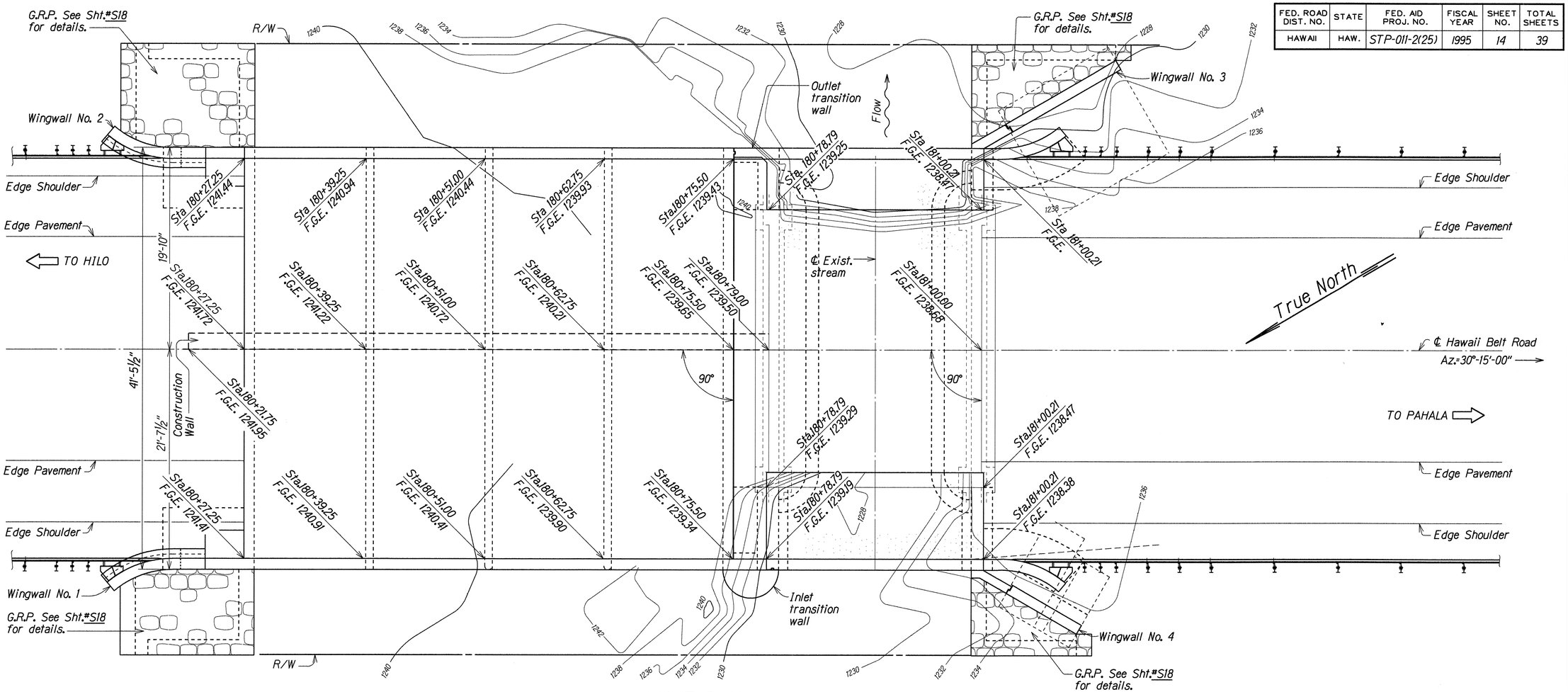
PIIKEA STREAM BRIDGE
GENERAL NOTES AND ESTIMATED QUANTITIES
MAMALAHOA HIGHWAY DRAINAGE IMPROVEMENT
Project No. STP-011-2(25)

Scale: As Noted Date: Sep. 1993

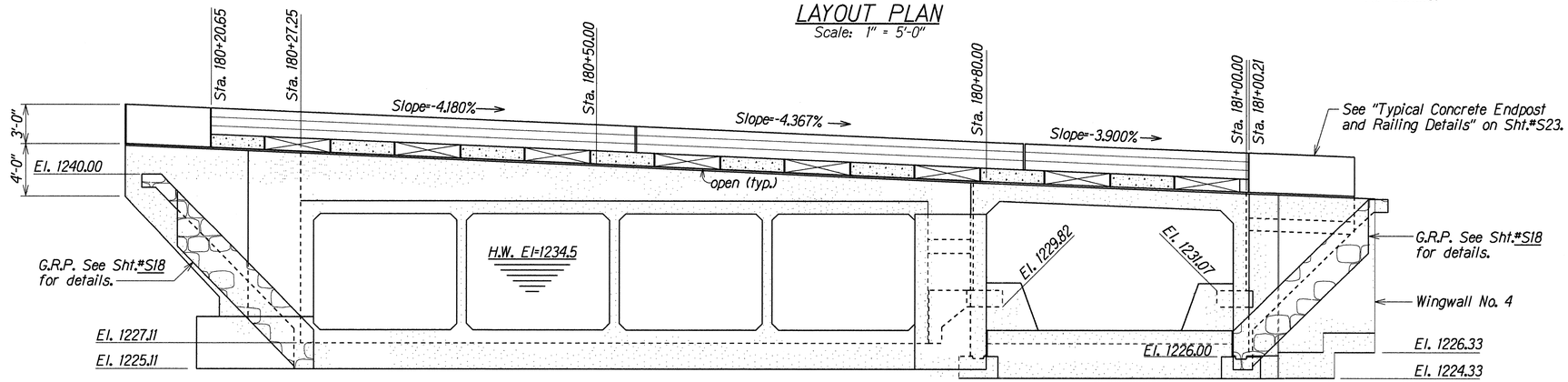
SHEET No. S2 OF 25 SHEETS

ADD. 13

FED. ROAD DIST. NO.	STATE	FED. AID PROJ. NO.	FISCAL YEAR	SHEET NO.	TOTAL SHEETS
HAWAII	HAW.	STP-011-2(25)	1995	14	39



LAYOUT PLAN
Scale: 1" = 5'-0"



INLET DEVELOPED ELEVATION
Scale: 1" = 5'-0"

ORIGINAL PLAN	SURVEY PLOTTED BY	LHM — SEP 1993
	DRAWN BY	LHM
	TRACED BY	
	NOTE BOOK	DESIGNED BY — SK — SEP 1993
		QUANTITIES BY — SK — SEP 1993
	N. Pikake\1.dgn	CHECKED BY — LTA — SEP 1993

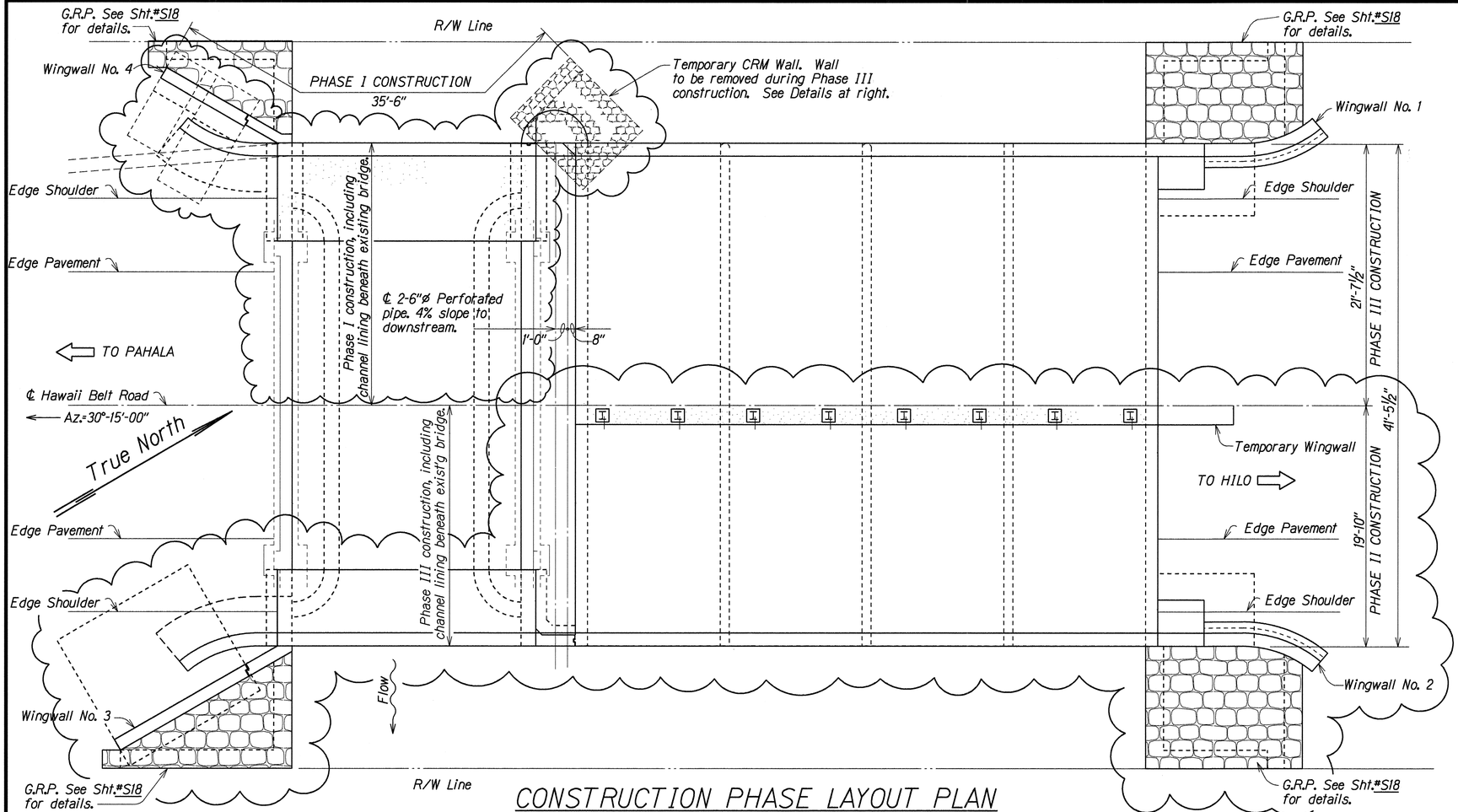
STATE OF HAWAII
DEPARTMENT OF TRANSPORTATION
HIGHWAYS DIVISION

PIIKEA STREAM BRIDGE
LAYOUT PLAN AND INLET DEVELOPED ELEVATION
MAMALAHOA HIGHWAY DRAINAGE IMPROVEMENT
Project No. STP-011-2(25)

Scale: As Noted — Date: Sep. 1993

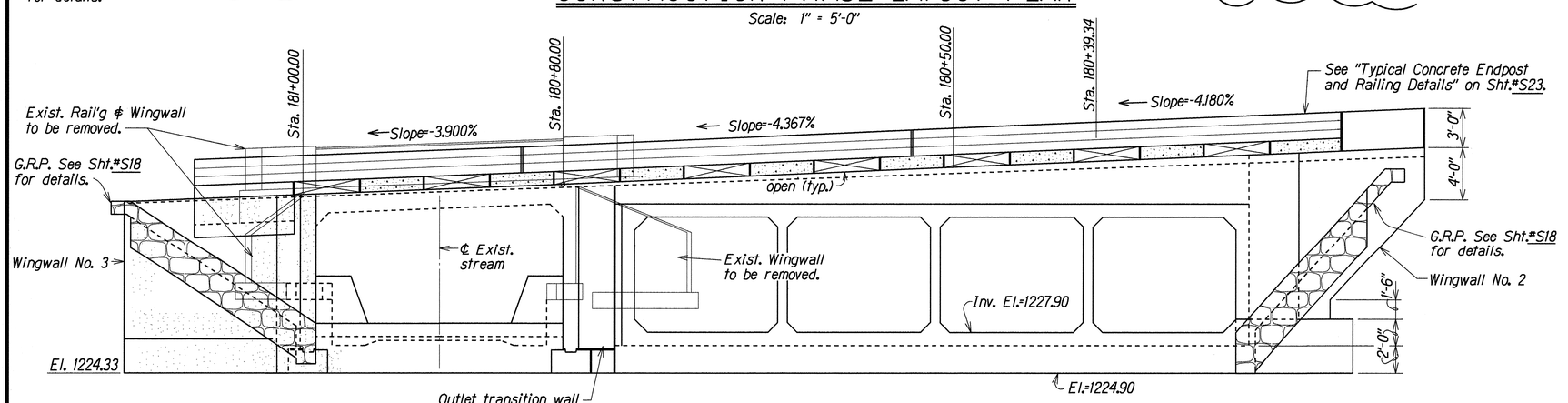
SHEET No. S3 OF 25 SHEETS

FED. ROAD DIST. NO.	STATE	FED. AID PROJ. NO.	FISCAL YEAR	SHEET NO.	TOTAL SHEETS
HAWAII	HAW.	STP-011-2(25)	1995	15	39



CONSTRUCTION PHASE LAYOUT PLAN

Scale: 1" = 5'-0"



OUTLET ELEVATION

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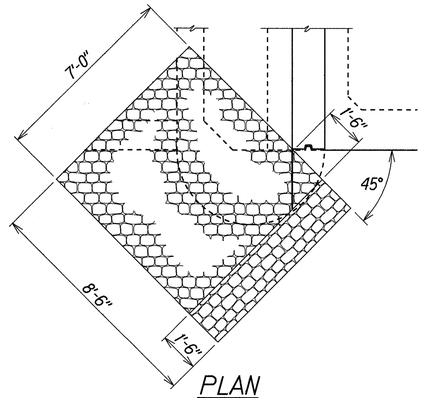
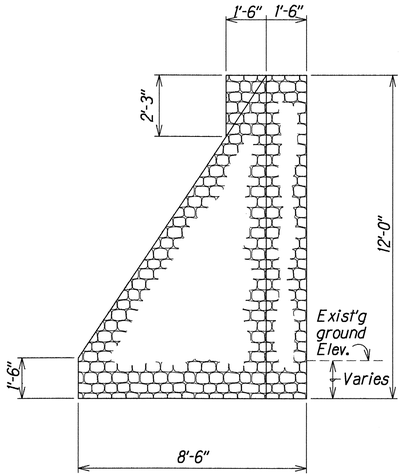


PLAN



DEVELOPED ELEVATION

TEMPORARY CRM WALL

Scale: ⅜" = 1'-0"

ORIGINAL PLAN	SURVEY PLOTTED BY	LHM — SEP 1992
	DRAWN BY	SEP 1993
	TRACED BY	SEP 1993
NOTE BOOK	DESIGNED BY	SK — SEP 1993
N. Nikaido dgn	QUANTITIES BY	SK
	CHECKED BY	LTA — SEP 1993

STATE OF HAWAII
DEPARTMENT OF TRANSPORTATION
HIGHWAYS DIVISION

PIIKEA STREAM BRIDGE

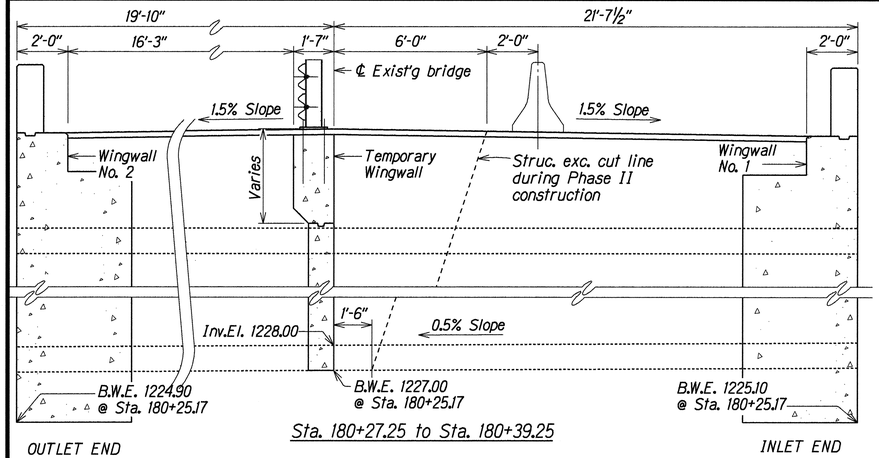
CONSTRUCTION PHASE LAYOUT PLAN, OUTLET ELEVATION AND TEMPORARY CRM WALL DETAILS

MAMALAHOA HIGHWAY DRAINAGE IMPROVEMENT
Project No. STP-011-2(25)

Scale: As Noted — Date: Sep. 1993

SHEET No. S4 OF 25 SHEETS

FED. ROAD DIST. NO.	STATE	FED. AID PROJ. NO.	FISCAL YEAR	SHEET NO.	TOTAL SHEETS
HAWAII	HAW.	STP-01-2(25)	1995	16	39



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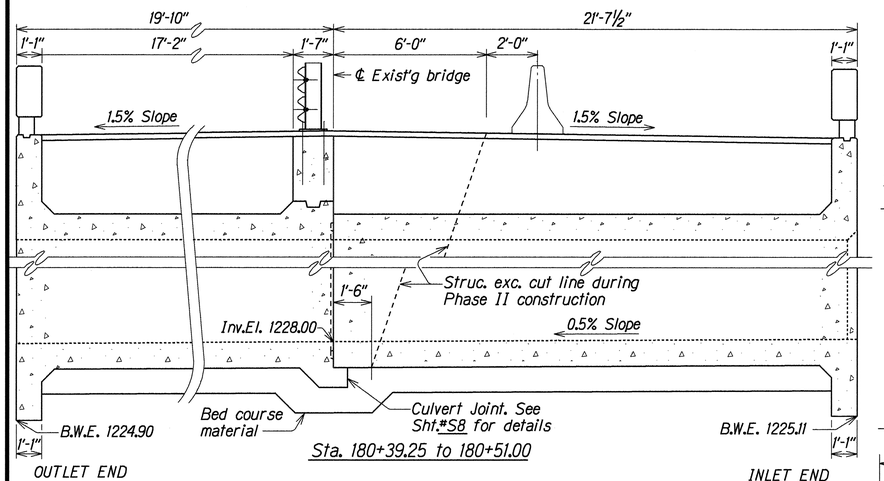

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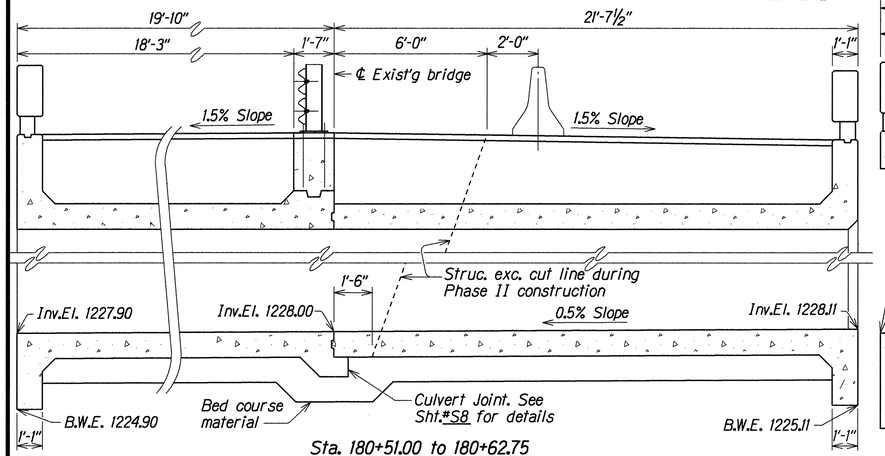
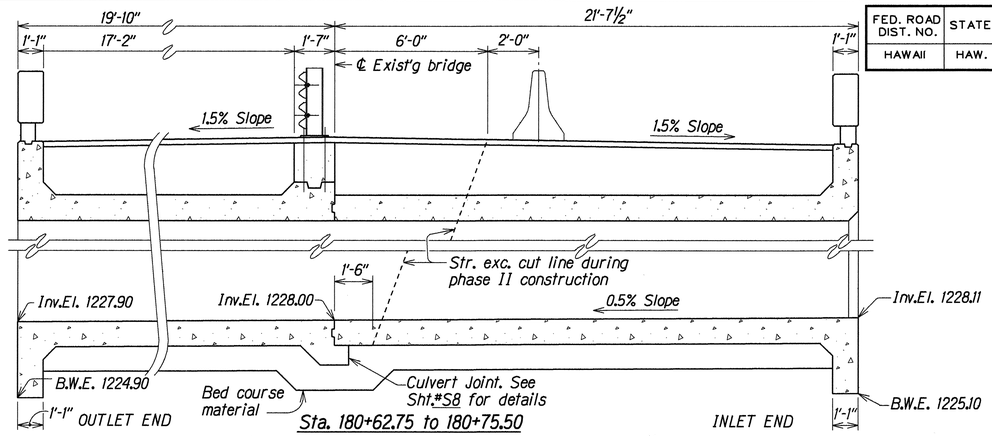


Sta. 180+51.00 to 180+62.75



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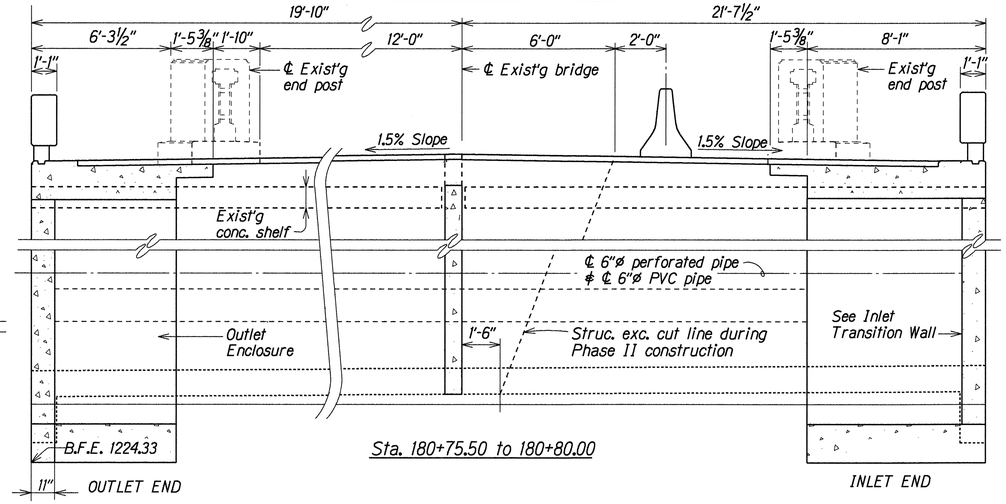
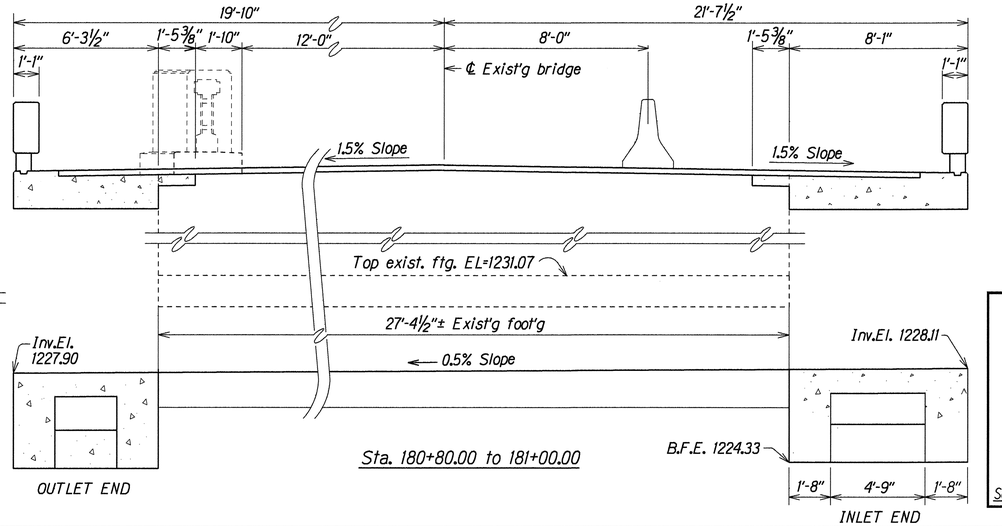


Sta. 180+75.50 to 180+80.00



Sta. 180+80.00 to 181+00.00

ORIGINAL PLAN	SURVEY PLOTTED BY	LHM
	DRAWN BY	LHM
	TRACED BY	SEP 1993
	NOTE BOOK	SK SEP 1993
	DESIGNED BY	SK
	QUANTITIES BY	SEP 1993
	CHECKED BY	LTA SEP 1993
	DATE	

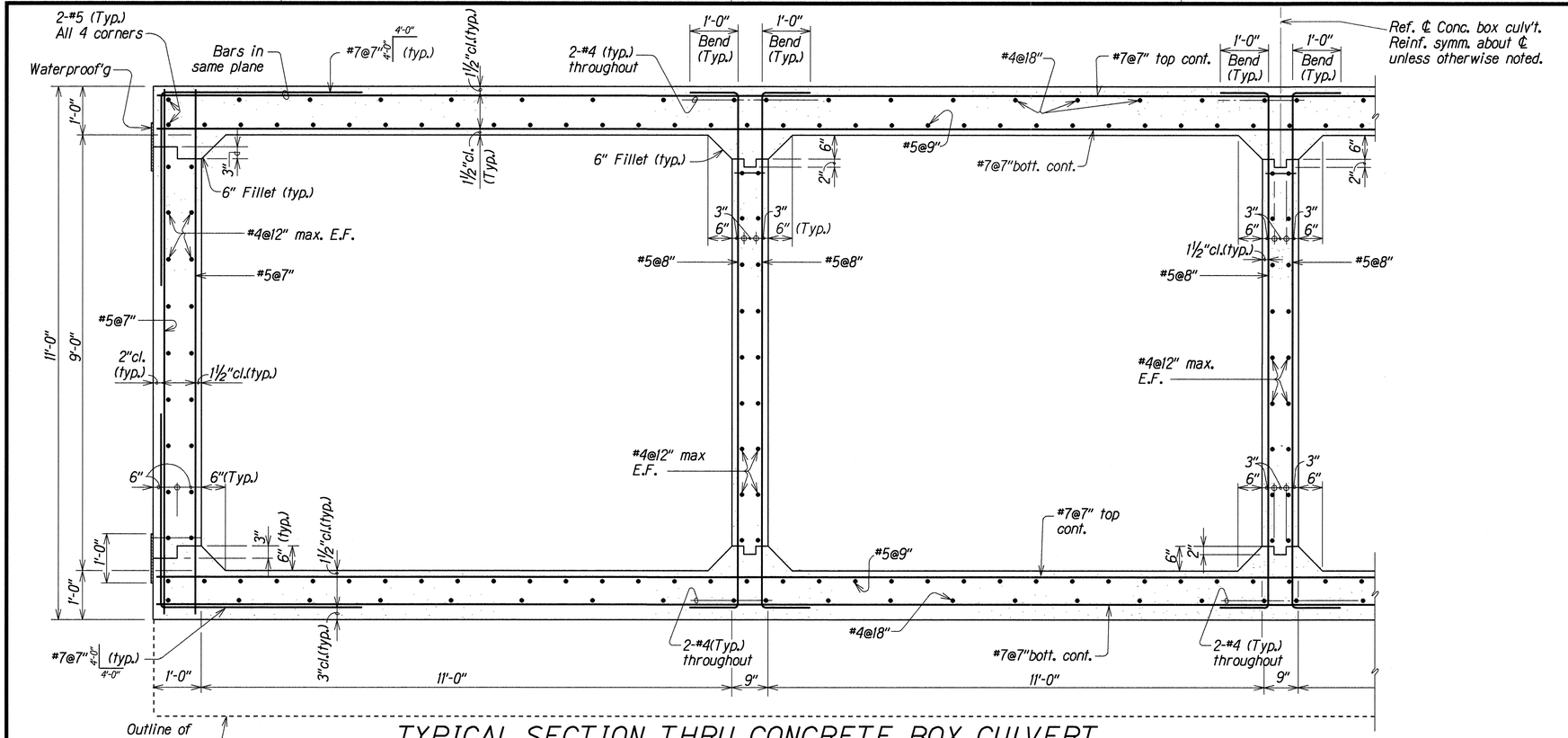
STATE OF HAWAII
DEPARTMENT OF TRANSPORTATION
HIGHWAYS DIVISION

PIIKEA STREAM BRIDGE
CONSTSRUCTION PHASING DETAILS
MAMALAHOA HIGHWAY DRAINAGE IMPROVEMENT
Project No. STP-01-2(25)

Scale: Not to Scale Date: Sep. 1993

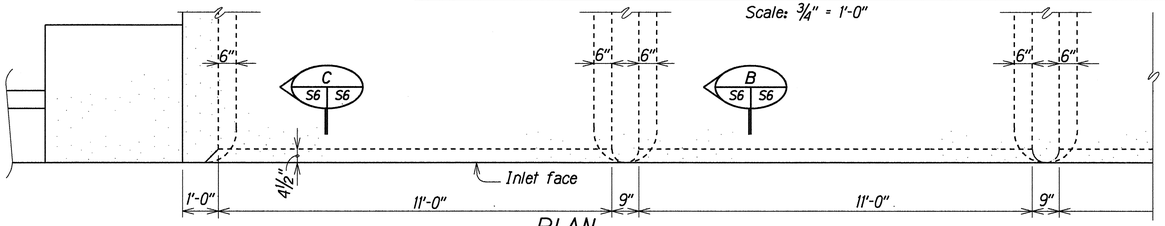
SHEET No. S5 OF 25 SHEETS

FED. ROAD DIST. NO.	STATE	FED. AID PROJ. NO.	FISCAL YEAR	SHEET NO.	TOTAL SHEETS
HAWAII	HAW.	STP-011-2(25)	1995	17	39

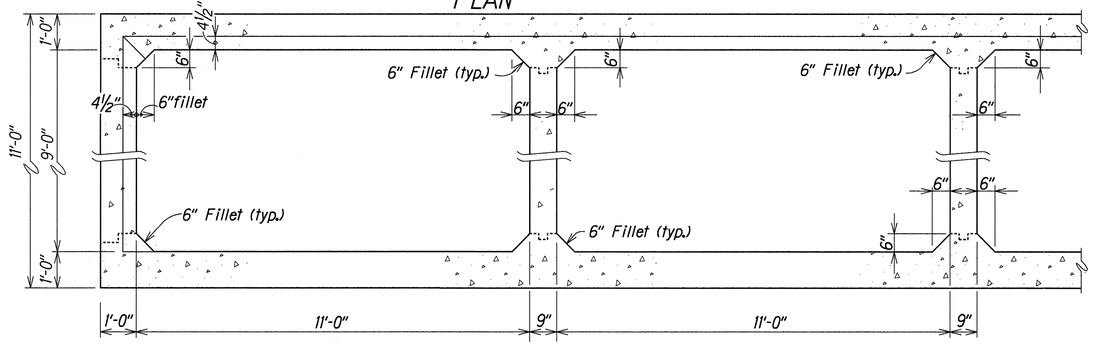


TYPICAL SECTION THRU CONCRETE BOX CULVERT

Scale: ¾" = 1'-0"

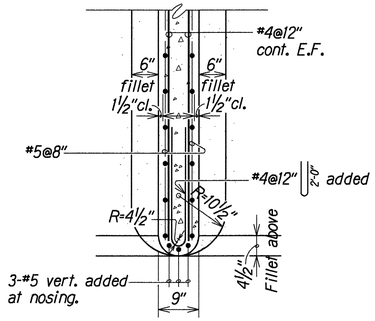


PLAN



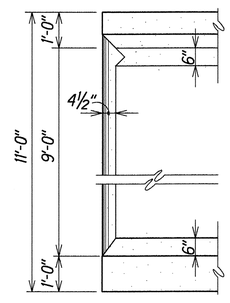
FILLET DIAGRAM AT CONCRETE BOX CULVERT - INLET ONLY

Scale: ½"=1'-0"



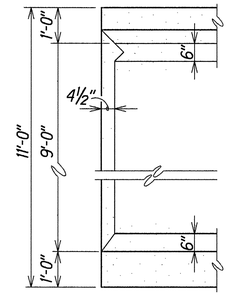
PLAN--INTERIOR WEB (INLET ONLY)

Scale: ¾" = 1'-0"



SECTION B

Scale: ½" = 1'-0"



SECTION C

Scale: ½" = 1'-0"

ORIGINAL PLAN	SURVEY PLOTTED BY	LHM	DATE SEP 1993
	DRAWN BY		
	TRACED BY		
NOTE BOOK	DESIGNED BY	SK	SEP 1993
	QUANTITIES BY	SK	SEP 1993
No. piikeob.dgn	CHECKED BY	LTA	SEP 1993

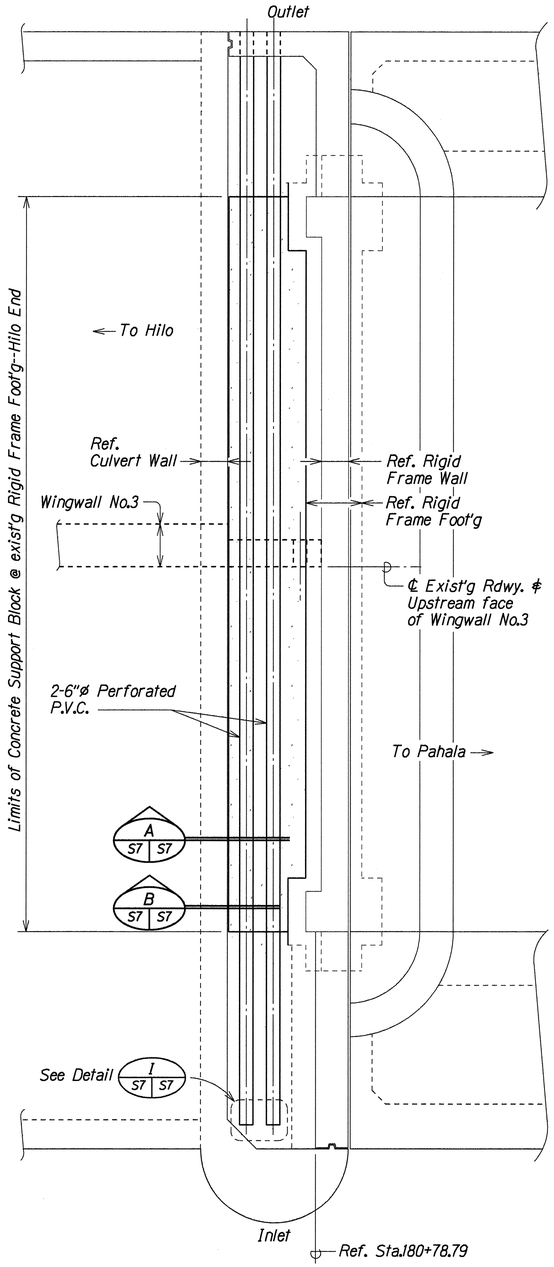
STATE OF HAWAII
DEPARTMENT OF TRANSPORTATION
HIGHWAYS DIVISION

PIIKEA STREAM BRIDGE
CONCRETE BOX CULVERT DETAILS
MAMALAHOA HIGHWAY DRAINAGE IMPROVEMENT
Project No. STP-011-2(25)

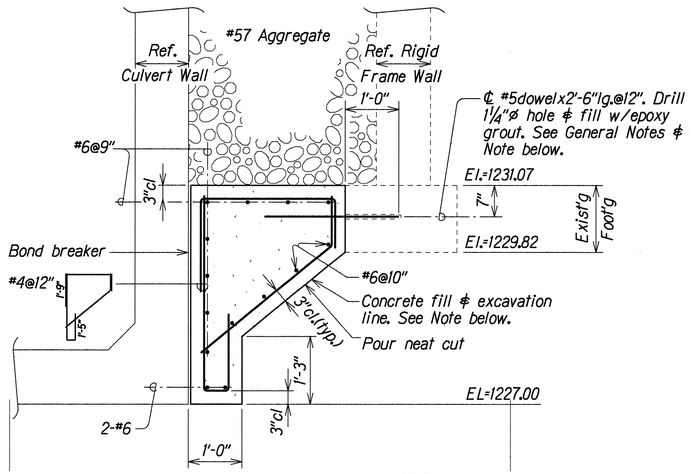
Scale: As Noted — Date: Sep. 1993

SHEET No. S6 OF 25 SHEETS

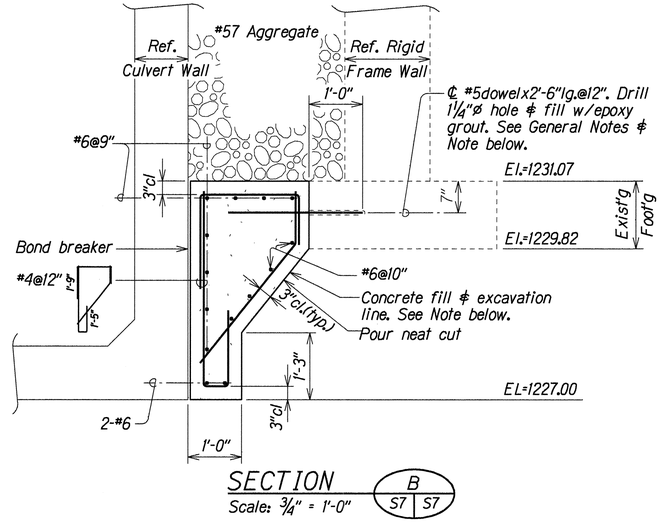
FED. ROAD DIST. NO.	STATE	FED. AID PROJ. NO.	FISCAL YEAR	SHEET NO.	TOTAL SHEETS
HAWAII	HAW.	STP-011-2(25)	1995	18	39



PARTIAL PLAN AT TRANSITION WALL
Scale: 3/8" = 1'-0"



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



SECTION B
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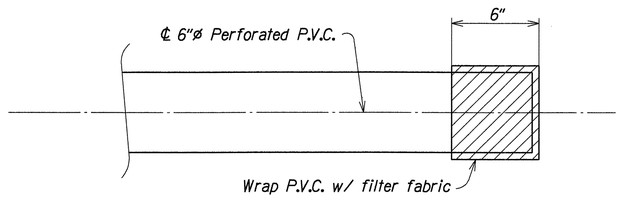


DETAIL I
Not to scale S7 S7

Note:

1. Each drilled hole shall be free from fine particles before application of epoxy grout. Drilling of holes shall be paid under pay item 503.1095.
2. Concrete and reinforcing bars shall be paid under Box Culvert contract items.
3. 6"ø Perforated P.V.C. shall be incidental to pay item 206.900 - #57 aggregate.

CONCRETE SUPPORT BLOCK DETAILS AT EXISTING RIGID FRAME FOOTING--HILO END

ORIGINAL PLAN		
NOTE BOOK		
SURVEY PLOTTED BY	LHW/KSC	DATE SEP 1992
DRAWN BY		SEP 1993
TRACED BY		SEP 1993
DESIGNED BY	SK	SEP 1993
QUANTITIES BY	SK	SEP 1993
CHECKED BY	LTA	SEP 1993

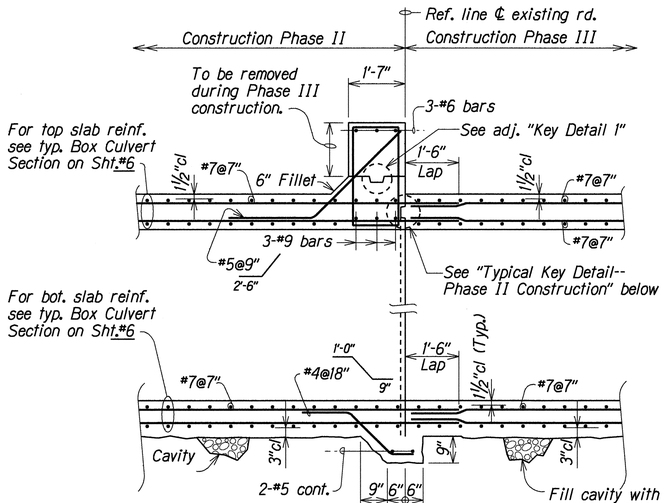
STATE OF HAWAII
DEPARTMENT OF TRANSPORTATION
HIGHWAYS DIVISION

PIIKEA STREAM BRIDGE
CONCRETE SUPPORT BLOCK DETAILS AT EXISTING RIGID FRAME FOOTING--HILO END
MAMALAHOA HIGHWAY DRAINAGE IMPROVEMENT
Project No. STP-011-2(25)

Scale: As Noted Date: Sep. 1993

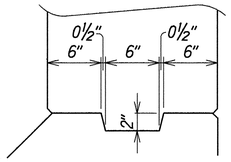
SHEET No. S7 OF 25 SHEETS

FED. ROAD DIST. NO.	STATE	FED. AID PROJ. NO.	FISCAL YEAR	SHEET NO.	TOTAL SHEETS
HAWAII	HAW.	STP-011-2(25)	1995	19	39



CULVERT JOINT DETAIL

Scale: ½" = 1'-0"

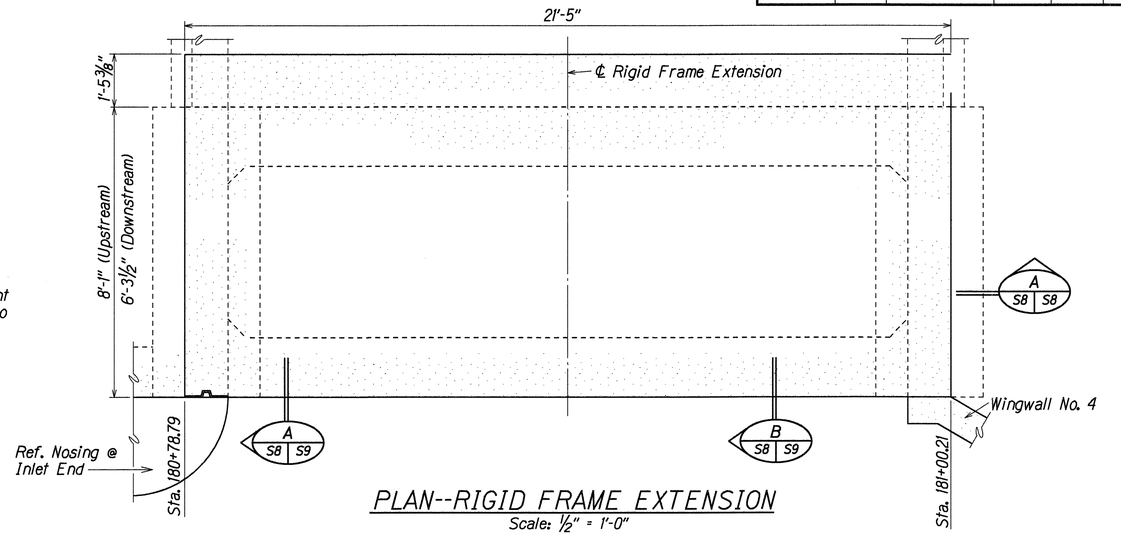


KEY DETAIL 1

Scale: 1½" = 1'-0"

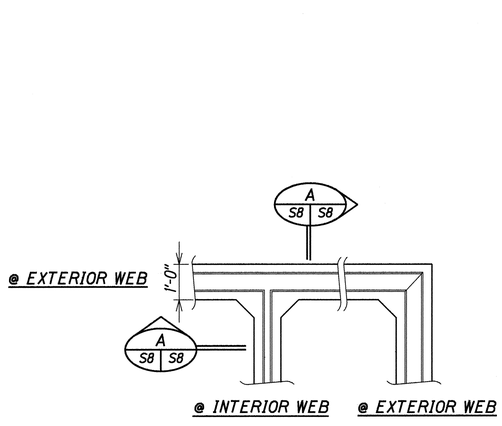
NOTE:

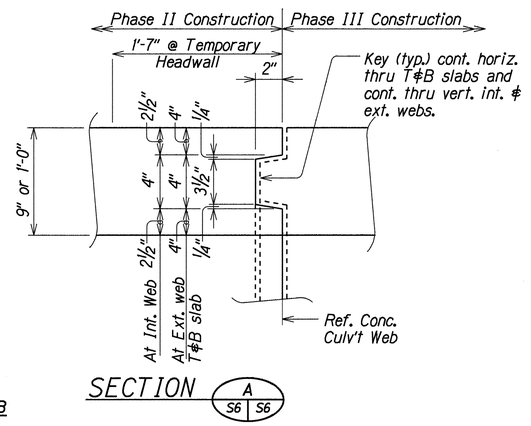
During excavation, wherever hollow or cavity occurs, fill with bed course material. Payment fore bed course material shall be incidental to structure excavation and will not be paid for separately.



PLAN--RIGID FRAME EXTENSION

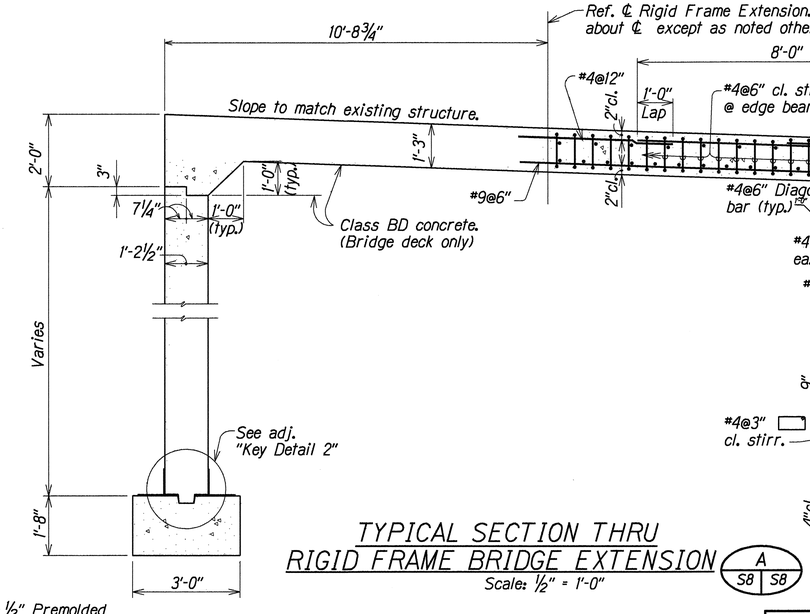
Scale: ½" = 1'-0"





TYPICAL KEY DETAIL--PHASE II CONSTRUCTION

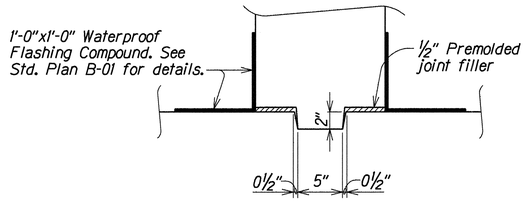
Not to Scale



TYPICAL SECTION THRU RIGID FRAME BRIDGE EXTENSION

Scale: ½" = 1'-0"

A S8 S8



KEY DETAIL 2

Scale: 1½" = 1'-0"

ORIGINAL PLAN	SURVEY PLOTTED BY		DATE
	DRAWN BY	LHM	SEP 1993
	TRACED BY		
NOTE BOOK	DESIGNED BY	SK	SEP 1993
No. Hilo 8 dgn	QUANTITIES BY	SK	SEP 1993
	CHECKED BY	LTA	SEP 1993

STATE OF HAWAII
DEPARTMENT OF TRANSPORTATION
HIGHWAYS DIVISION

PIIKEA STREAM BRIDGE

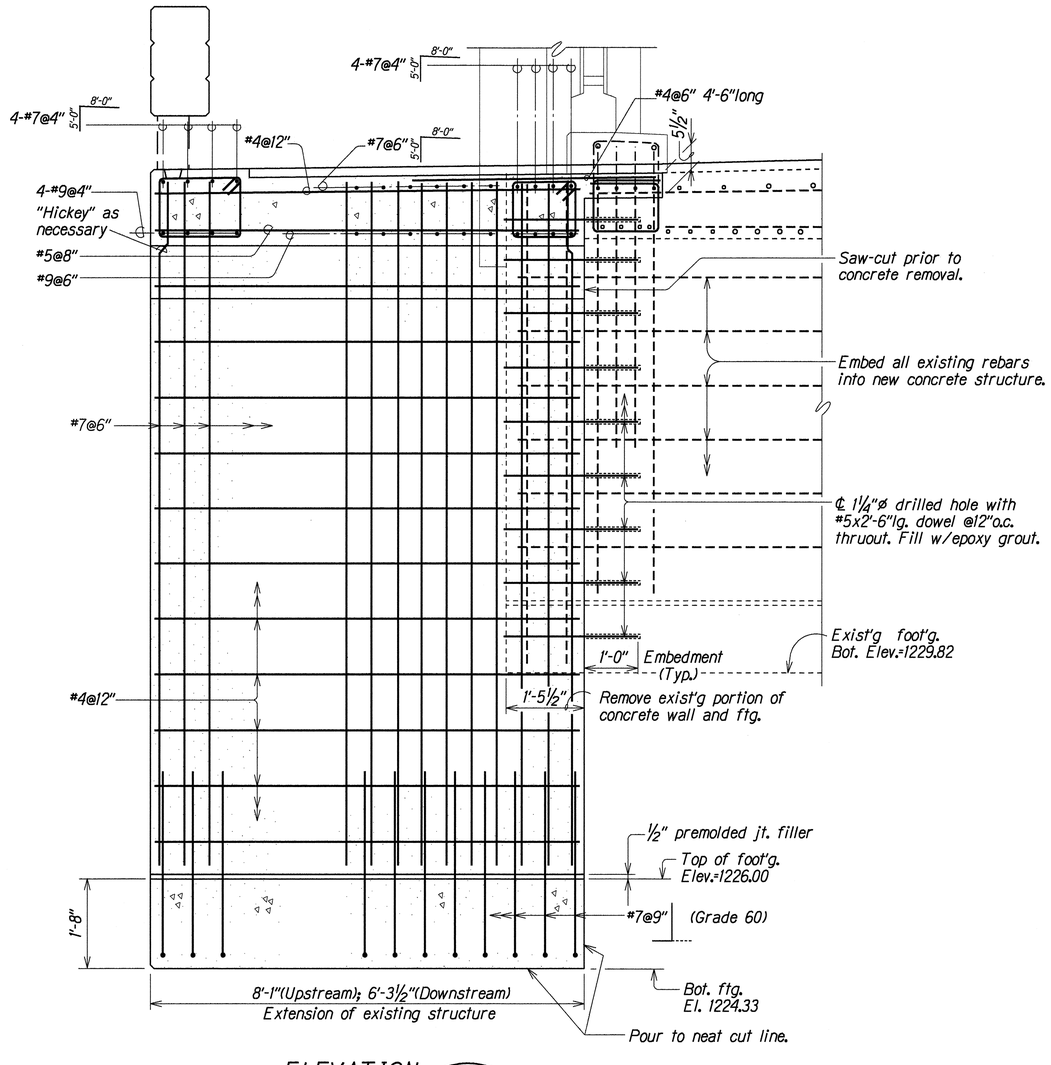
RIGID FRAME EXTENSION DETAILS

MAMALAHOA HIGHWAY DRAINAGE IMPROVEMENT
Project No. STP-011-2(25)

Scale: As Noted — Date: Sep. 1993

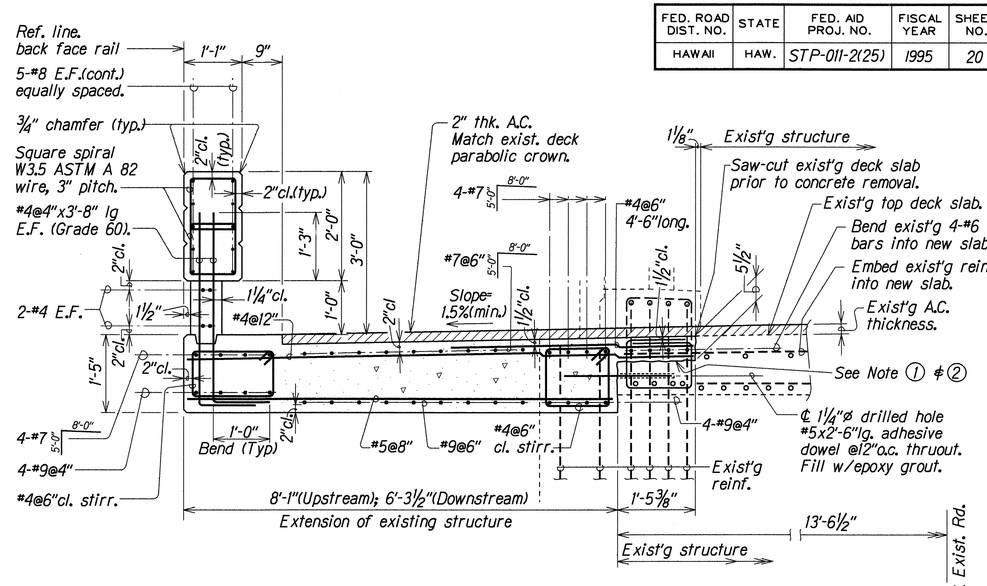
SHEET No. S8 OF 25 SHEETS

FED. ROAD DIST. NO.	STATE	FED. AID PROJ. NO.	FISCAL YEAR	SHEET NO.	TOTAL SHEETS
HAWAII	HAW.	STP-011-2(25)	1995	20	39



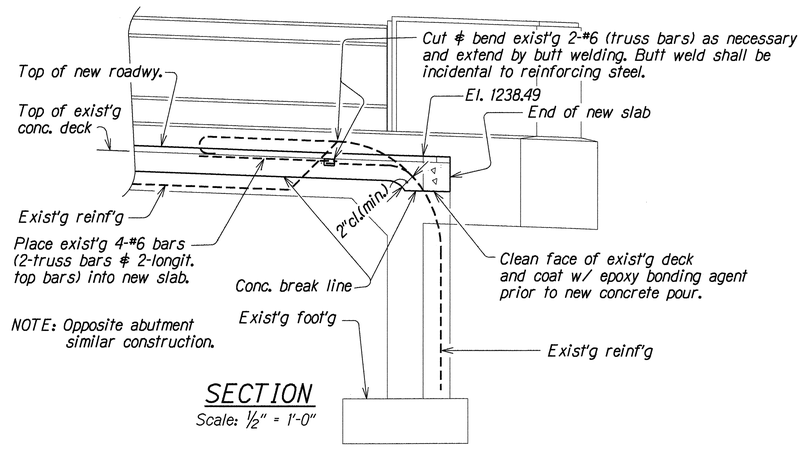
ELEVATION (A | S8 | S9)

Scale: ¾" = 1'-0"



TYPICAL SECTION AT EXTENSION (B | S8 | S9)

Scale: ¾" = 1'-0"



SECTION

Scale: ½" = 1'-0"

NOTES:

1. Remove existing concrete a minimum of 5½" from top of deck.
2. Clean face of existing deck and coat w/epoxy bonding agent prior to new concrete pour. See General Notes.
3. Adhesive anchor and epoxy material shall be incidental to bridge extension concrete.
4. Removal of portion of existing concrete deck slab shall be paid under Contract Item No. 202.0210, "Removal of Portion of Existing Concrete Structure".
5. Exercise caution in saw-cutting existing concrete so as to avoid cutting of existing reinforcement.
6. All existing reinforcement which can be incorporated into the new section shall be cleaned and lapped with the new reinforcement, unless noted otherwise.

ORIGINAL PLAN	SURVEY PLOTTED BY		DATE
	DRAWN BY	LHM	SEP 1993
	TRACED BY		
NOTE BOOK	DESIGNED BY	SK	SEP 1993
	QUANTITIES BY	SK	SEP 1993
No. Pikea0.dgn	CHECKED BY	LA	SEP 1993

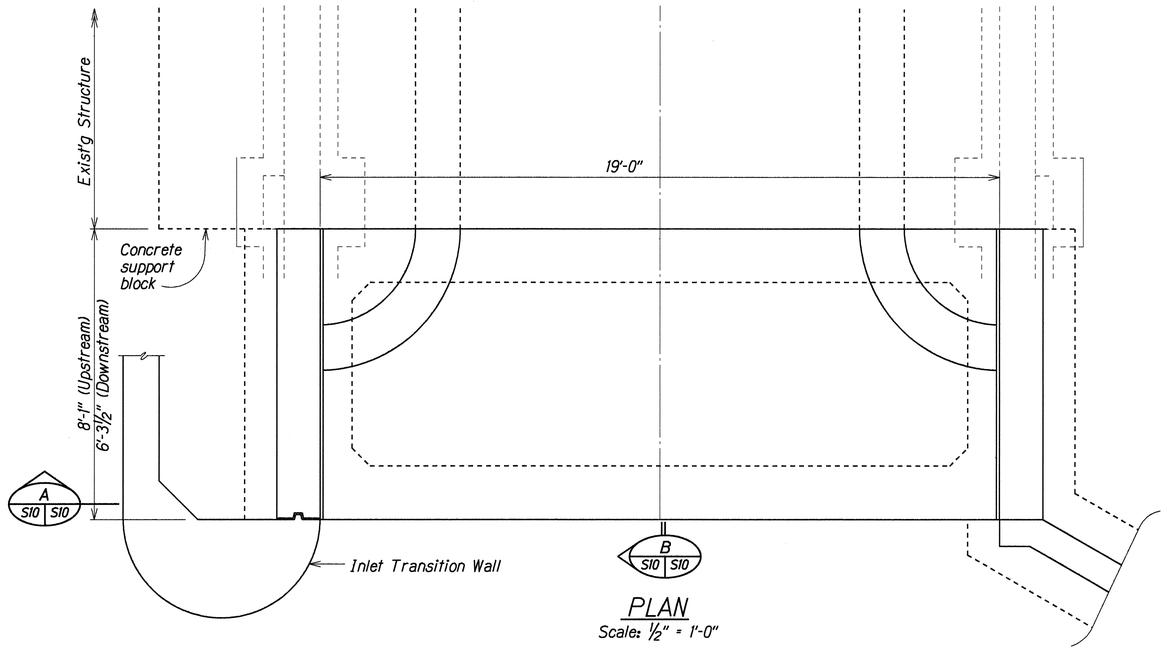
STATE OF HAWAII
DEPARTMENT OF TRANSPORTATION
HIGHWAYS DIVISION

PIIKEA STREAM BRIDGE
RIGID FRAME EXTENSION DETAILS
MAMALAHOA HIGHWAY DRAINAGE IMPROVEMENT
Project No. STP-011-2(25)

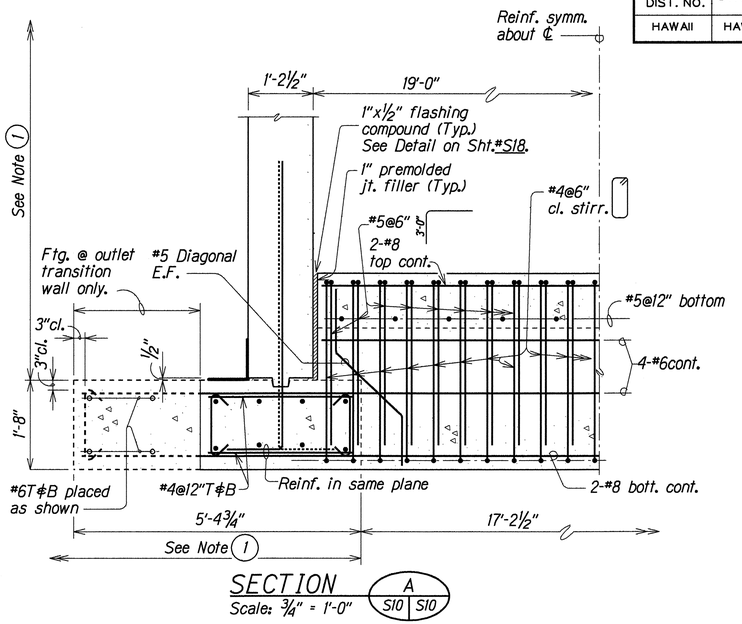
Scale: As Noted — Date: Sep. 1993

SHEET No. S9 OF 25 SHEETS

FED. ROAD DIST. NO.	STATE	FED. AID PROJ. NO.	FISCAL YEAR	SHEET NO.	TOTAL SHEETS
HAWAII	HAW.	STP-011-2(25)	1995	21	39

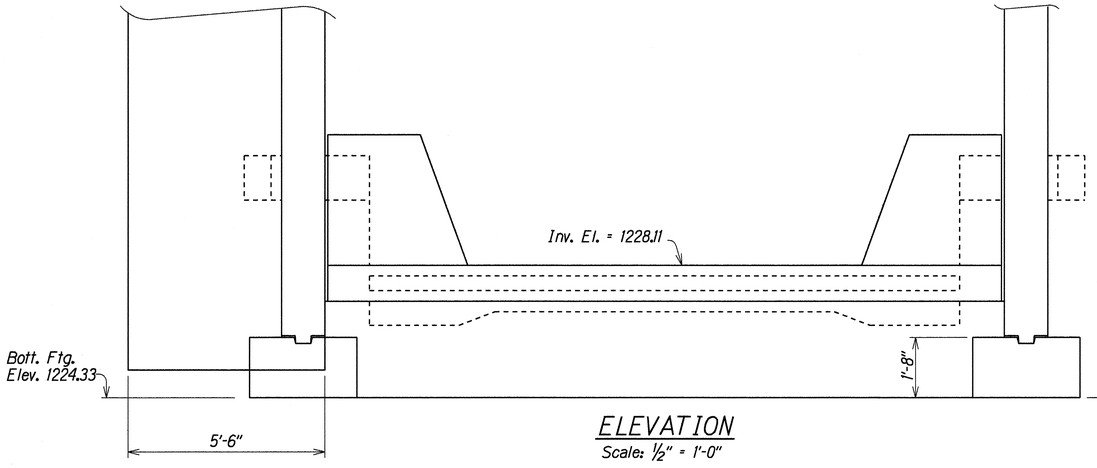


PLAN
Scale: ½" = 1'-0"

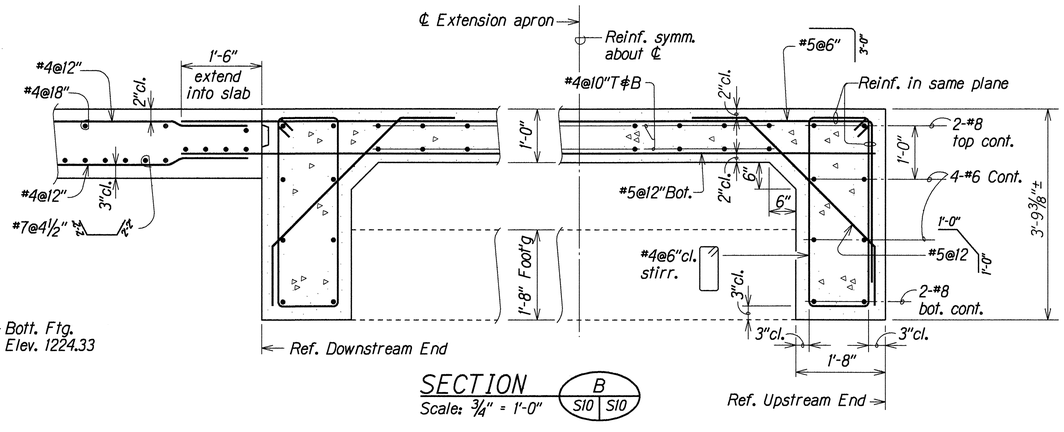


SECTION
Scale: ¾" = 1'-0"

Note 1: Refer to Sht.#S15 "Transition Wall at Inlet End Details" for additional information.



ELEVATION
Scale: ½" = 1'-0"



SECTION
Scale: ¾" = 1'-0"
B S10 S10

TYPICAL CONCRETE LINING DETAILS AT STRUCTURE EXTENSION

ORIGINAL PLAN	SURVEY PLOTTED BY	LHM
	DRAWN BY	
	TRACED BY	
NOTE BOOK	DESIGNED BY	SK
	QUANTITIES BY	SK
N:\Piikea10.dgn	CHECKED BY	LTA
	DATE	SEP 1993
		SEP 1993
		SEP 1993
		SEP 1993

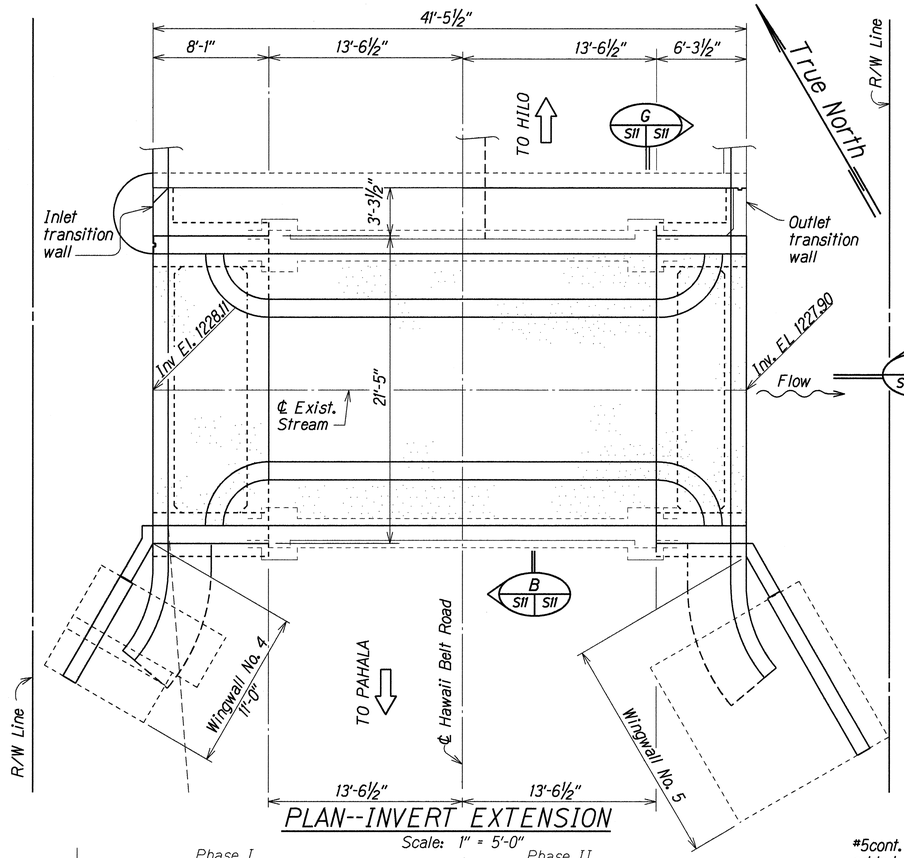
STATE OF HAWAII
DEPARTMENT OF TRANSPORTATION
HIGHWAYS DIVISION

PIIKEA STREAM BRIDGE
CONCRETE LINING DETAILS AT STRUCTURE EXTENSION
MAMALAHOA HIGHWAY DRAINAGE IMPROVEMENT
Project No. STP-011-2(25)

Scale: As Noted — Date: Sep, 1993

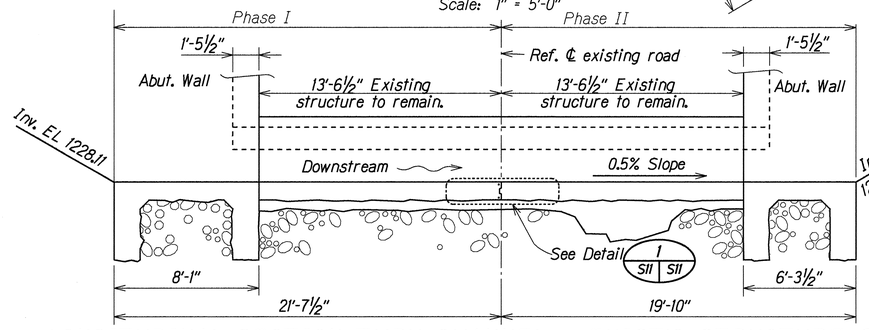
SHEET No. S10 OF 25 SHEETS

FED. ROAD DIST. NO.	STATE	FED. AID PROJ. NO.	FISCAL YEAR	SHEET NO.	TOTAL SHEETS
HAWAII	HAW.	STP-011-2(25)	1995	22	39



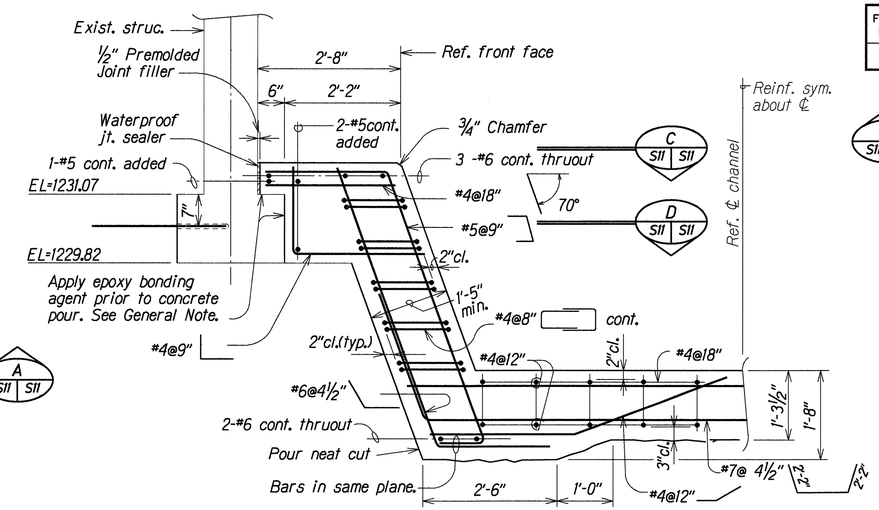
PLAN--INVERT EXTENSION

Scale: 1" = 5'-0"



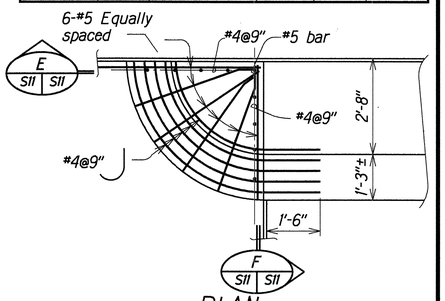
LONGITUDINAL SECTION THRU CHANNEL @ EXIST'G STRUCTURE A S11 S11

Scale: ¼" = 1'-0"



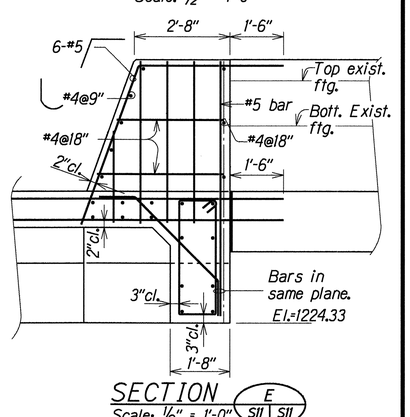
SECTION B S11 S11

Scale: ¾" = 1'-0"



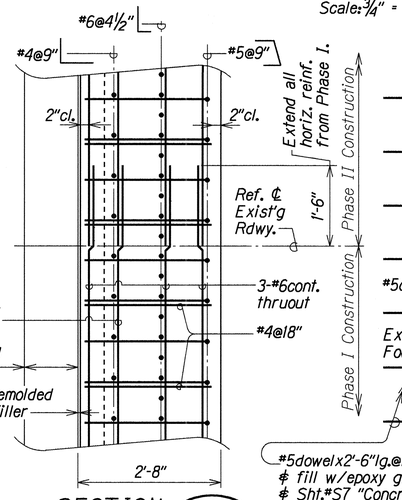
PLAN

Scale: ½" = 1'-0"



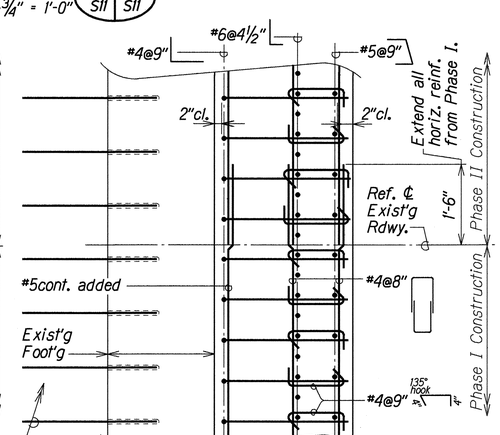
SECTION E S11 S11

Scale: ½" = 1'-0"



SECTION C S11 S11

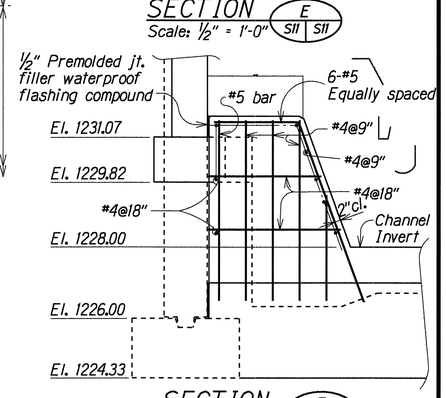
Scale: ¾" = 1'-0"



#5dowelx2'-6"lg.@12". Drill 1¼"ø hole ℄ fill w/epoxy grout. See General Notes ℄ Sht.#S7 "Concrete Support Block Details" for more information.

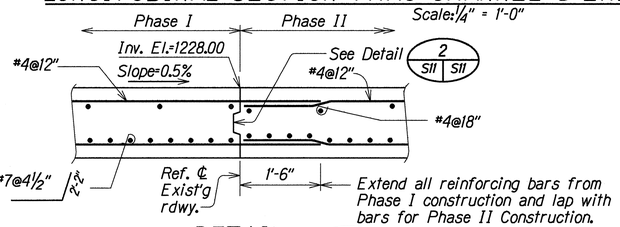
SECTION D S11 S11

Scale: ¾" = 1'-0"



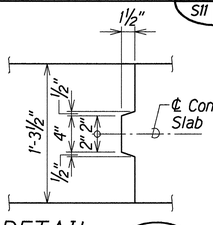
SECTION F S11 S11

Scale: ½" = 1'-0"



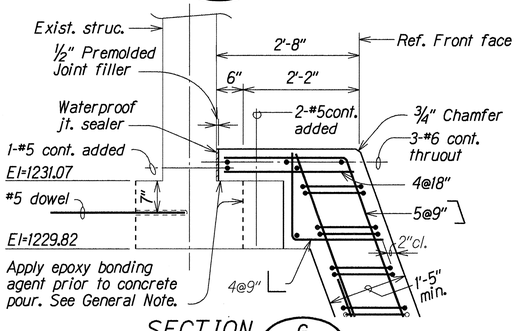
DETAIL 1 S11 S11

Scale: ¾" =1'-0"



DETAIL 2 S11 S11

Scale: ¾" =1'-0"



SECTION G S11 S11

Scale: ¾" = 1'-0"

ORIGINAL PLAN		DATE
	SURVEY PLOTTED BY	SEP 1993
	DRAWN BY LHM	
	TRACED BY	
	DESIGNED BY SK	SEP 1993
	QUANTITIES BY SK	SEP 1993
	CHECKED BY LTA	SEP 1993
	NOTE BOOK	
	No.	

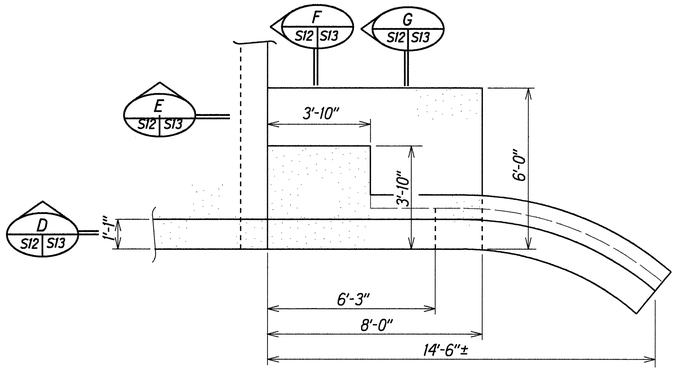
STATE OF HAWAII
DEPARTMENT OF TRANSPORTATION
HIGHWAYS DIVISION

PIIKEA STREAM BRIDGE
EXISTING STRUCTURE APRON EXTENSION DETAILS
MAMALAHOA HIGHWAY DRAINAGE IMPROVEMENT
Project No. STP-011-2(25)

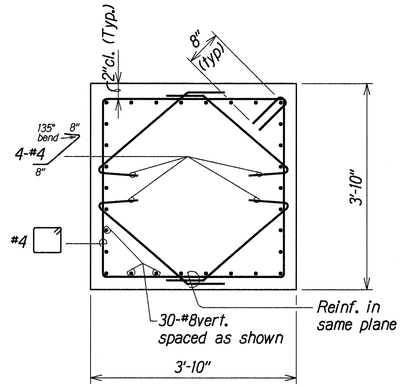
Scale: As Noted — Date: Sep. 1993

SHEET No. S11 OF 25 SHEETS

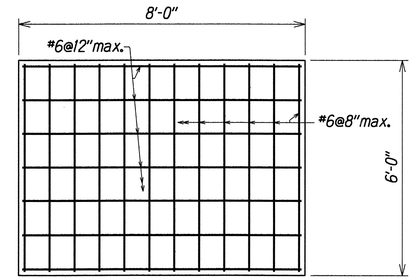
FED. ROAD DIST. NO.	STATE	FED. AID PROJ. NO.	FISCAL YEAR	SHEET NO.	TOTAL SHEETS
HAWAII	HAW.	STP-011-2(25)	1995	23	39



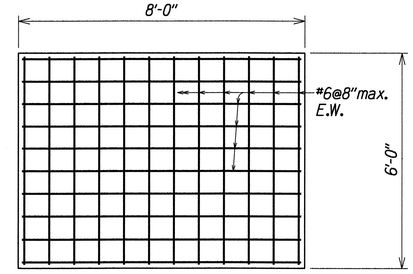
PLAN
Scale: 3/8" = 1'-0"



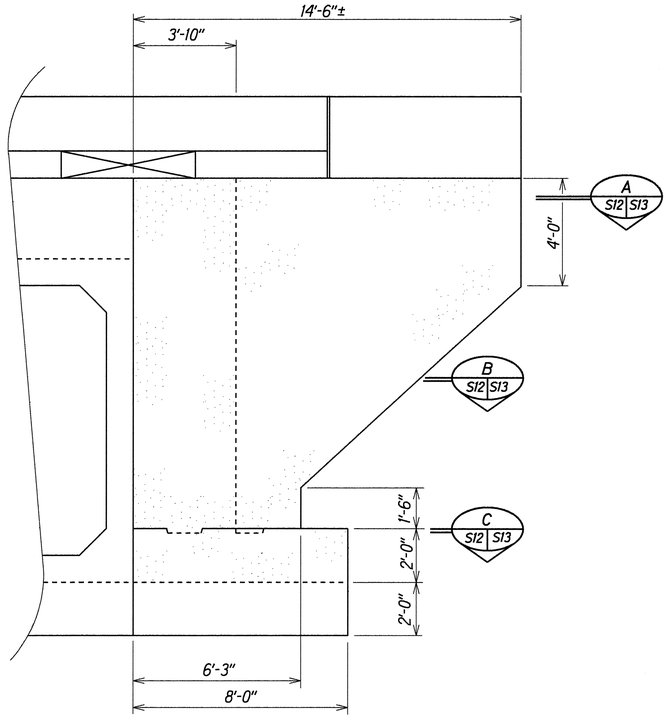
TYPICAL COLUMN SECTION
Scale: 3/4" = 1'-0"



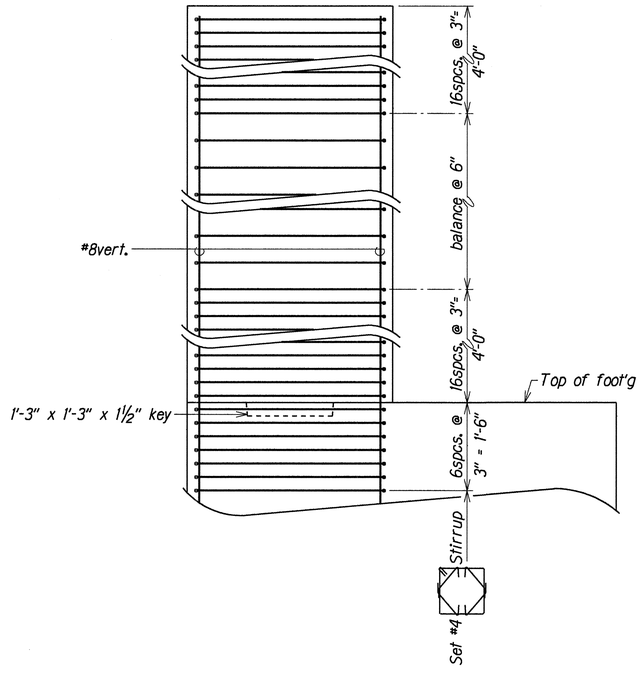
TOP FOOTING SLAB REINFORCEMENT
Scale: 1/2" = 1'-0"



BOTTOM FOOTING SLAB REINFORCEMENT
Scale: 1/2" = 1'-0"



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



COLUMN STIRRUP DETAIL
Scale: 3/4" = 1'-0"

ORIGINAL PLAN	SURVEY PLOTTED BY	LHM/KSG	DATE SEP 1993
	DRAWN BY		
	TRACED BY		SEP 1993
NOTE BOOK	DESIGNED BY	SK	SEP 1993
N:\Pilot\Dgn	QUANTITIES BY	SK	SEP 1993
	CHECKED BY	LTA	SEP 1993

STATE OF HAWAII
DEPARTMENT OF TRANSPORTATION
HIGHWAYS DIVISION

PIIKEA STREAM BRIDGE

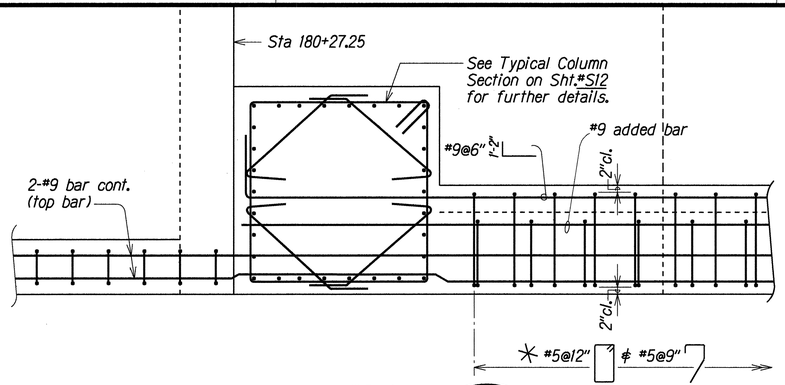
COLUMN DETAILS AT WINGWALL NO. 1 AND NO. 2
STA. 180+25.17

MAMALAHOA HIGHWAY DRAINAGE IMPROVEMENT
Project No. STP-011-2(25)

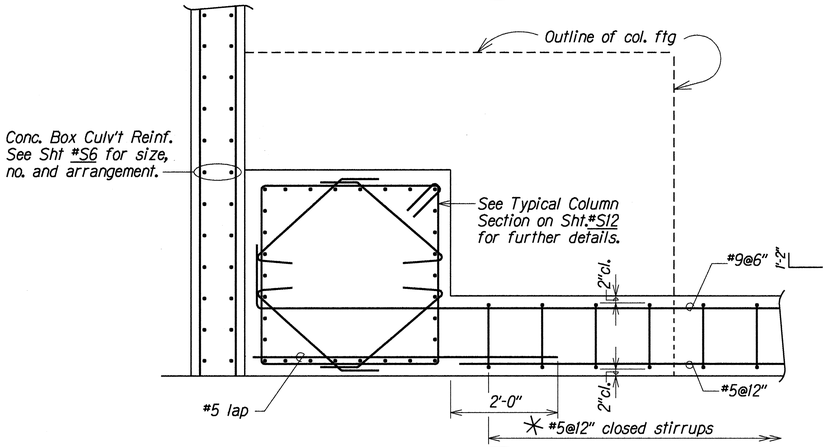
Scale: As Noted Date: Sep. 1993

SHEET No. S12 OF 25 SHEETS

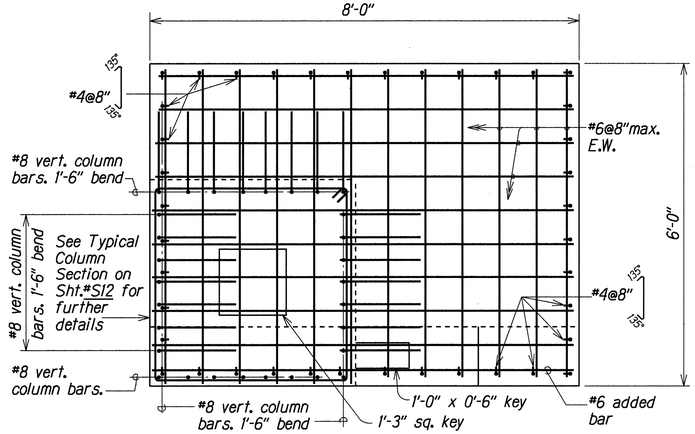
FED. ROAD DIST. NO.	STATE	FED. AID PROJ. NO.	FISCAL YEAR	SHEET NO.	TOTAL SHEETS
HAWAII	HAW.	STP-011-2(25)	1995	24	39



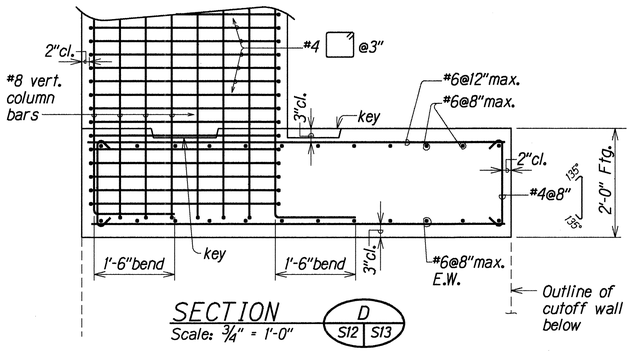
SECTION A (S12 | S13)
Scale: 3/4" = 1'-0"



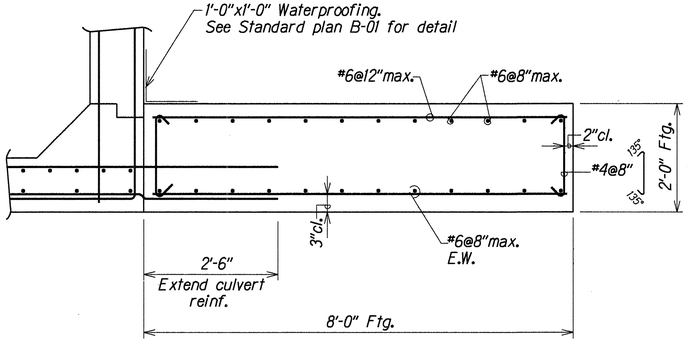
SECTION B (S12 | S13)
Scale: 3/4" = 1'-0"



SECTION C (S12 | S13)
Scale: 3/4" = 1'-0"

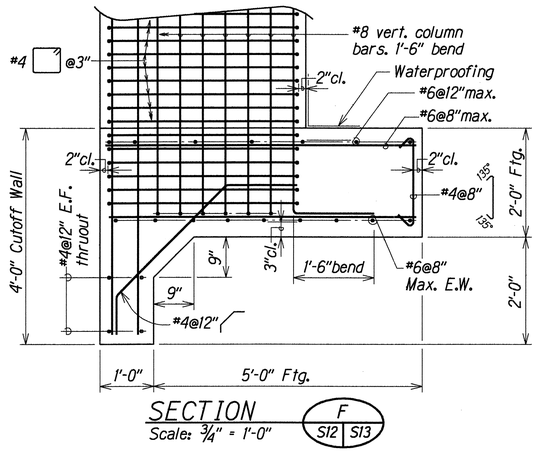


SECTION D (S12 | S13)
Scale: 3/4" = 1'-0"

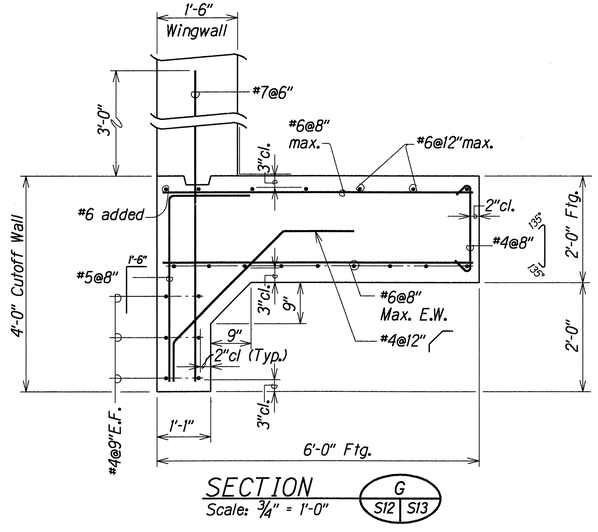


Note: Wingwall, wingwall footing and column shall be poured separately from culvert slab.

SECTION E (S12 | S13)
Scale: 3/4" = 1'-0"



SECTION F (S12 | S13)
Scale: 3/4" = 1'-0"



SECTION G (S12 | S13)
Scale: 3/4" = 1'-0"

ORIGINAL PLAN	SURVEY PLOTTED BY	LHM/KSG DATE SEP 1992
	DRAWN BY	• • • • •
	TRACED BY	SEP 1993
	DESIGNED BY	SK SEP 1993
NOTE BOOK	QUANTITIES BY	SK SEP 1993
N:\pikea\1.dgn	CHECKED BY	LTA SEP 1993

STATE OF HAWAII
DEPARTMENT OF TRANSPORTATION
HIGHWAYS DIVISION

PIIKEA STREAM BRIDGE

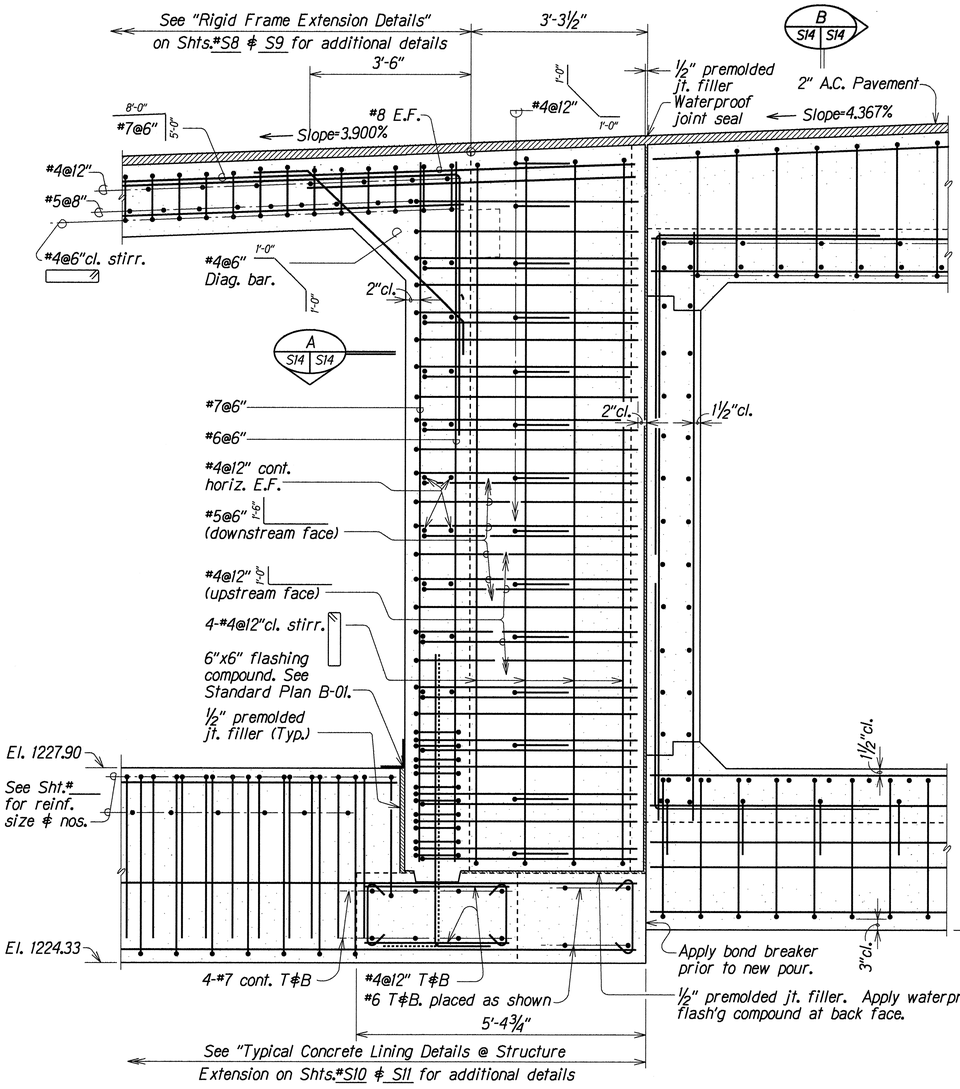
COLUMN DETAILS AT WINGWALL NO. 1 AND NO.2 STA. 180+25.17

MAMALAHOA HIGHWAY DRAINAGE IMPROVEMENT
Project No. STP-011-2(25)

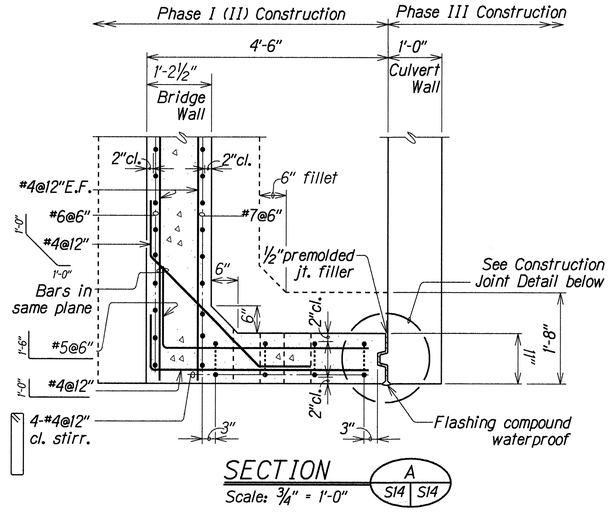
Scale: As Noted Date: Sep. 1993

SHEET No. S13 OF 25 SHEETS

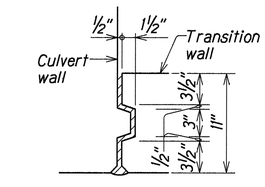
FED. ROAD DIST. NO.	STATE	FED. AID PROJ. NO.	FISCAL YEAR	SHEET NO.	TOTAL SHEETS
HAWAII	HAW.	STP-011-2(25)	1995	25	39



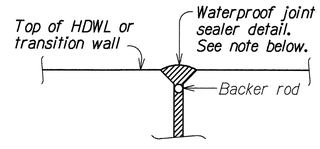
PARTIAL ELEVATION--OUTLET TRANSITION WALL
Scale: ¾" = 1'-0"



SECTION
Scale: ¾" = 1'-0"

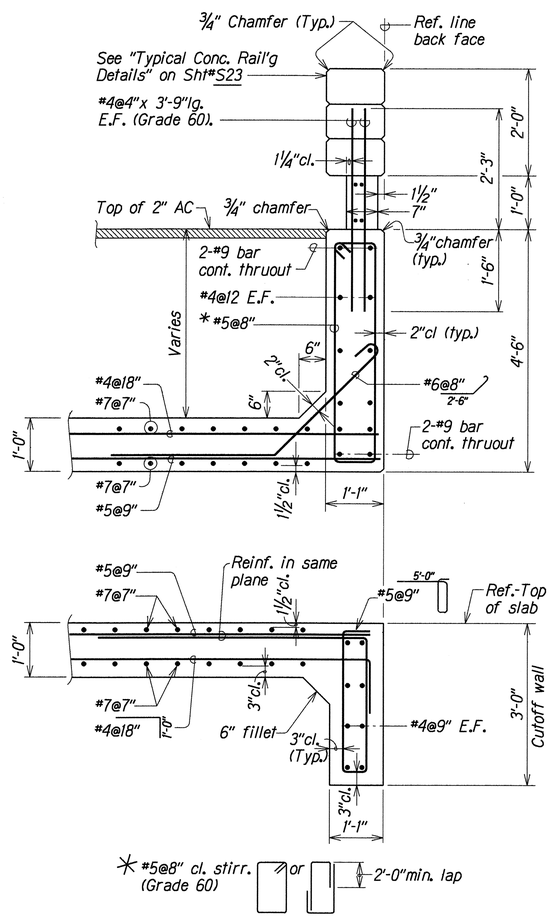


CONSTRUCTION JOINT DETAIL
Scale: 1½" = 1'-0"



WATERPROOF JOINT SEAL DETAIL
Not to Scale

NOTE: Joint seals shall be incidental to concrete pay items and shall not be paid for separately.



TYPICAL SECTION AT CULVERT HEADWALL AND CUTOFF WALL--OUTLET END
B S14 S14
(INLET END SIMILAR BUT OPPOSITE HAND)
Scale: ¾" = 1'-0"

ORIGINAL PLAN	SURVEY PLOTTED BY		DATE
	DRAWN BY	LHM	SEP 1993
	TRACED BY		
NOTE BOOK	DESIGNED BY	SK	SEP 1993
	QUANTITIES BY	SK	SEP 1993
No. pikeA1.dgn	CHECKED BY	LTA	SEP 1993

STATE OF HAWAII
DEPARTMENT OF TRANSPORTATION
HIGHWAYS DIVISION

PIIKEA STREAM BRIDGE

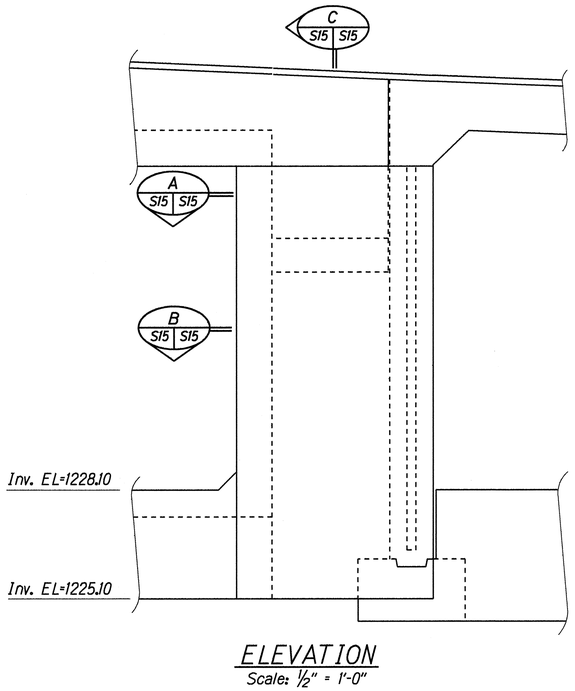
OUTLET TRANSITION WALL DETAILS AND TYPICAL CULVERT HEADWALL AND CUTOFF WALL SECTION

MAMALAHOA HIGHWAY DRAINAGE IMPROVEMENT
Project No. STP-011-2(25)

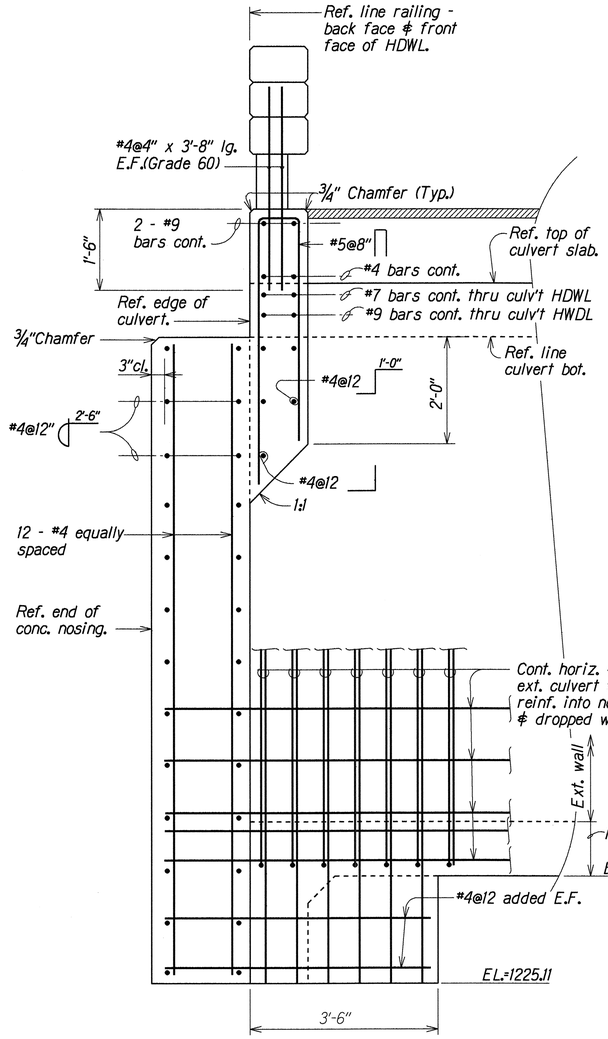
Scale: As Noted
Date: Sep. 1993

SHEET No. S14 OF 25 SHEETS

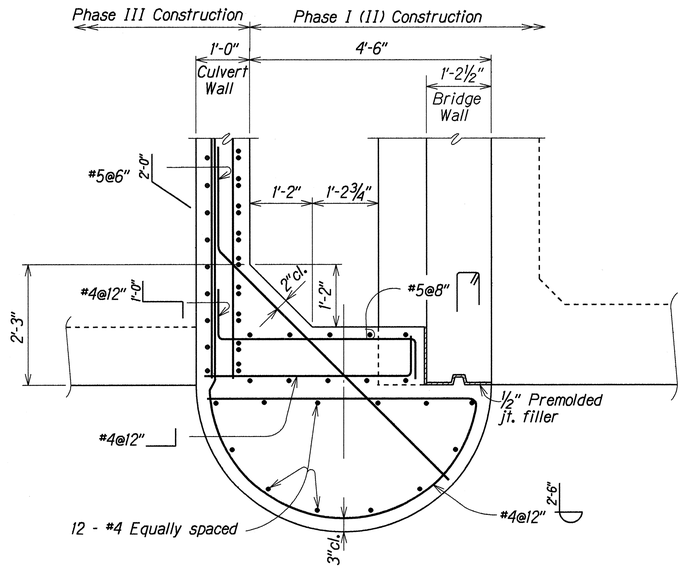
FED. ROAD DIST. NO.	STATE	FED. AID PROJ. NO.	FISCAL YEAR	SHEET NO.	TOTAL SHEETS
HAWAII	HAW.	STP-011-2(25)	1995	26	39



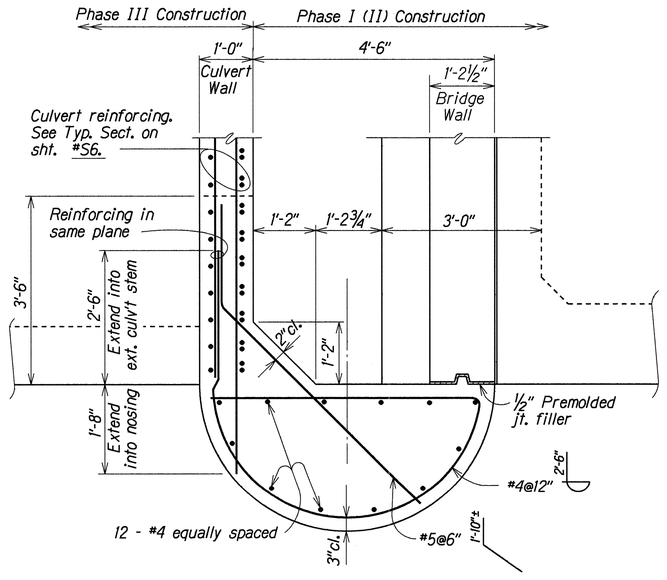
ELEVATION
Scale: ½" = 1'-0"



SECTION C
Scale: ¾" = 1'-0" (S15 | S15)



SECTION A
Scale: ¾" = 1'-0" (S15 | S15)



SECTION B
Scale: ¾" = 1'-0" (S15 | S15)

INLET TRANSITION WALL NOSING DETAILS

ORIGINAL PLAN	SURVEY PLOTTED BY	LHW	DATE SEP 1993
	DRAWN BY		
	TRACED BY		SEP 1993
NOTE BOOK	DESIGNED BY	SK	SEP 1993
	QUANTITIES BY	SK	SEP 1993
	CHECKED BY	LTA	

nikon15.dgn

STATE OF HAWAII
DEPARTMENT OF TRANSPORTATION
HIGHWAYS DIVISION

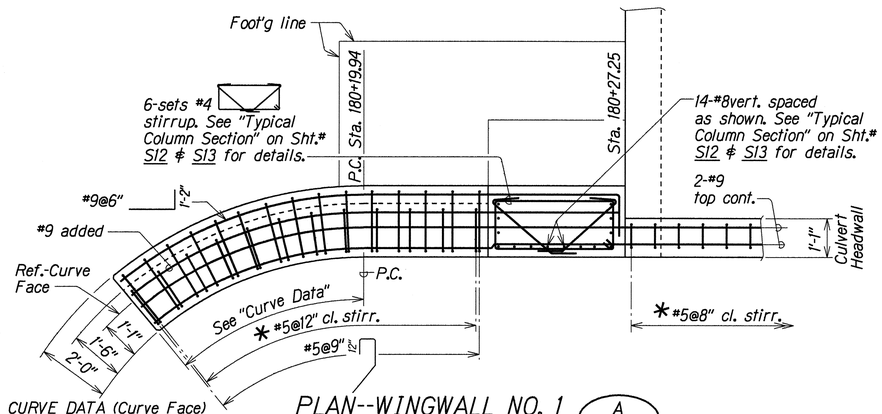
PIIKEA STREAM BRIDGE
INLET TRANSITION WALL NOSING DETAILS
MAMALAHOA HIGHWAY DRAINAGE IMPROVEMENT
Project No. STP-011-2(25)

Scale: As Noted — Date: Sep. 1993

SHEET No. S15 OF 25 SHEETS

FED. ROAD DIST. NO.	STATE	FED. AID PROJ. NO.	FISCAL YEAR	SHEET NO.	TOTAL SHEETS
HAWAII	HAW.	STP-011-2(25)	1995	27	39

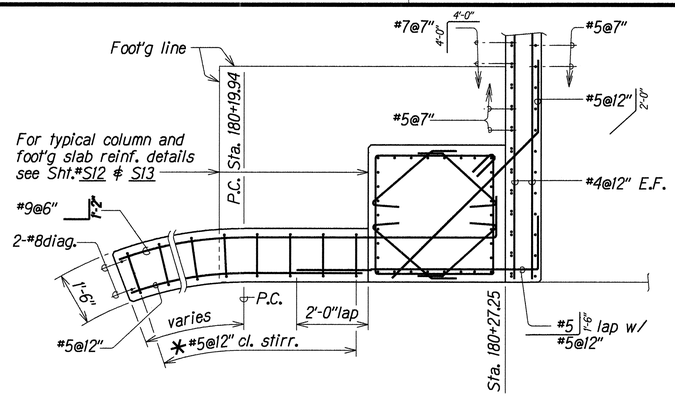
* #5@12 cl. stirr. (Grade 60) or 2'-0" min. lap



CURVE DATA (Curve Face)
△ = 40°06'25"
R = 10'-0"
L = 7'-0"

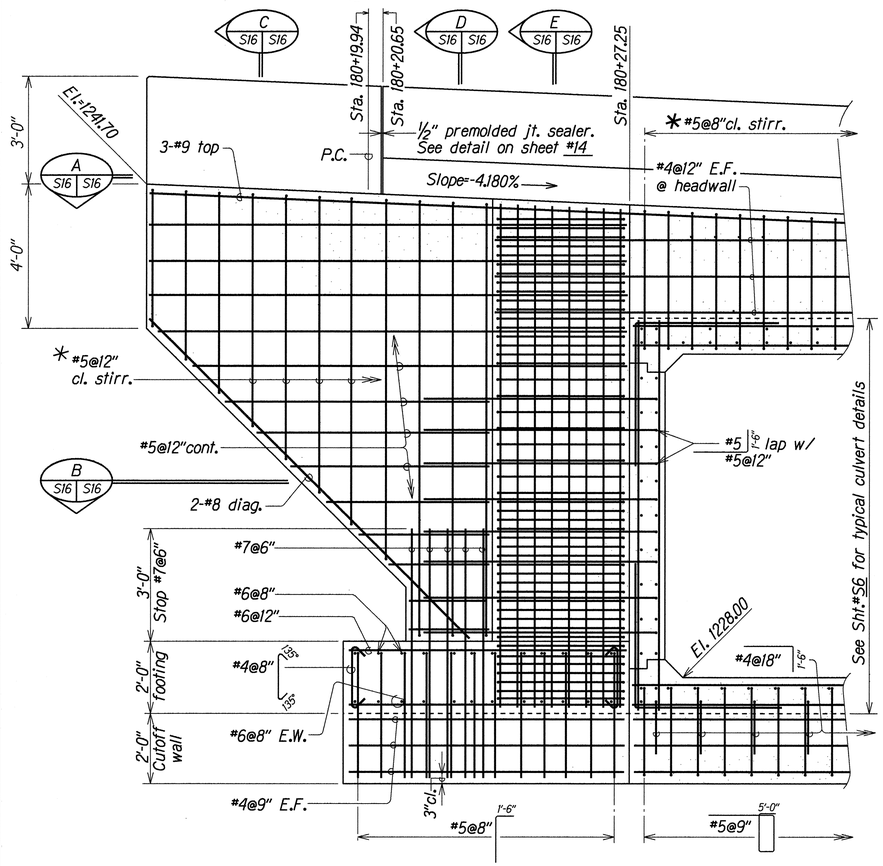
PLAN--WINGWALL NO. 1 (A S16 | S16)

(WINGWALL NO. 2 SIMILAR EXCEPT OPPOSITE HAND)
Scale: ½" = 1'-0"



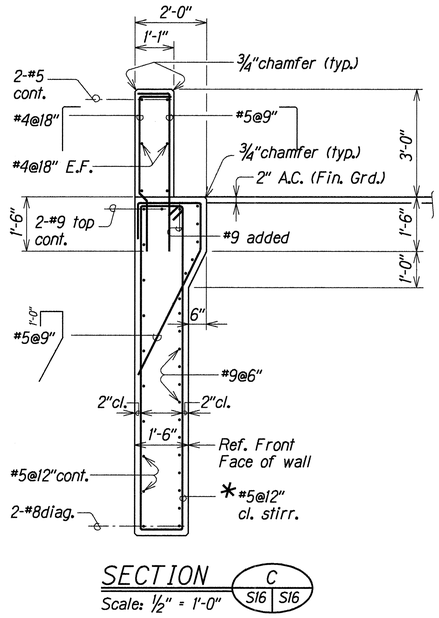
SECTION (B S16 | S16)

Scale: ½" = 1'-0"



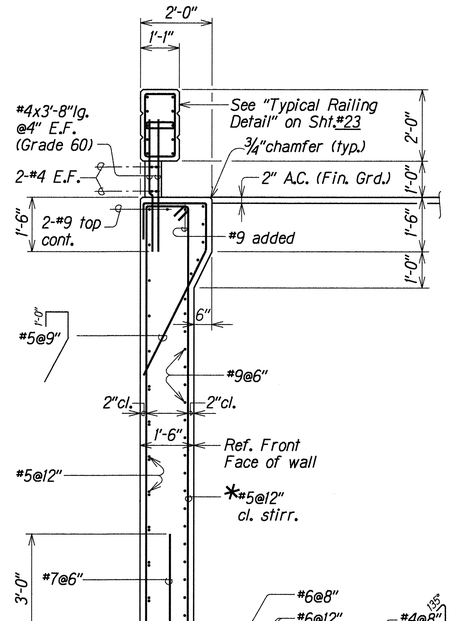
ELEVATION--WINGWALL NO. 1

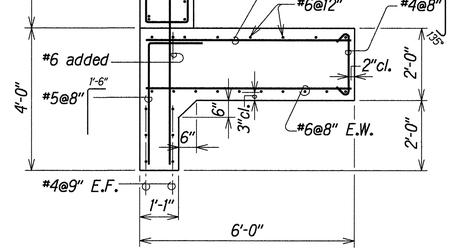
(WINGWALL NO. 2 SIMILAR EXCEPT OPPOSITE HAND)
Scale: ½" = 1'-0"



SECTION (C S16 | S16)

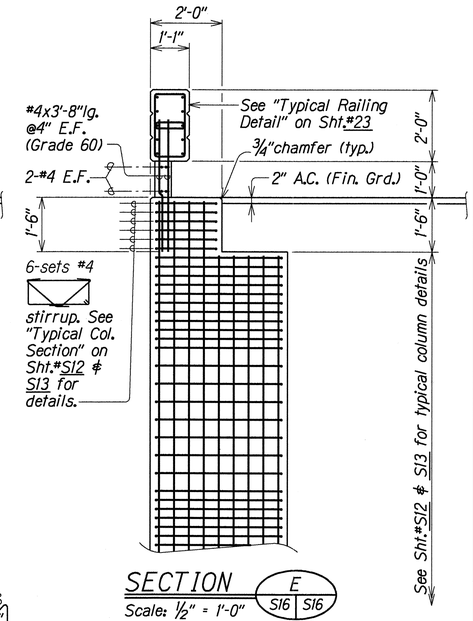
Scale: ½" = 1'-0"





SECTION (D S16 | S16)

Scale: ½" = 1'-0"



SECTION (E S16 | S16)

Scale: ½" = 1'-0"

ORIGINAL PLAN	SURVEY PLOTTED BY	LHW/KSG	SEP 1992
	DRAWN BY	LHW/KSG	SEP 1992
	TRACED BY	SK	SEP 1993
NOTE BOOK	DESIGNED BY	SK	SEP 1993
N:\pikea\s16.dgn	QUANTITIES BY	LTA	SEP 1993
	CHECKED BY		

STATE OF HAWAII
DEPARTMENT OF TRANSPORTATION
HIGHWAYS DIVISION

PIIKEA STREAM BRIDGE

WINGWALL NO.1 AND NO.2 DETAILS

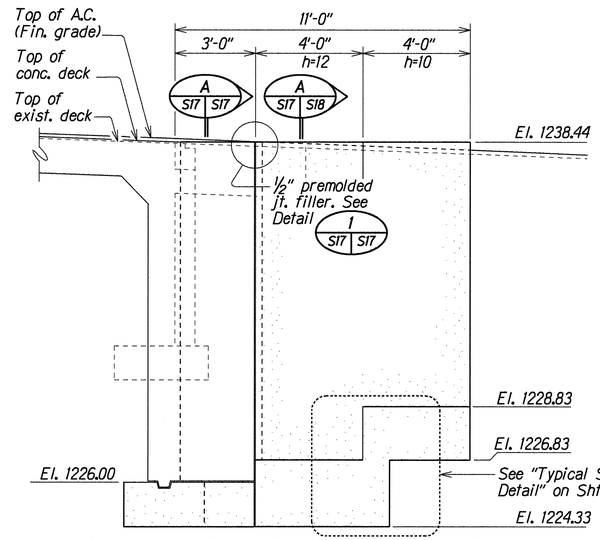
MAMALAHOA HIGHWAY DRAINAGE IMPROVEMENT
Project No. STP-011-2(25)

Scale: As Noted — Date: Sep. 1993

SHEET No. S16 OF 25 SHEETS

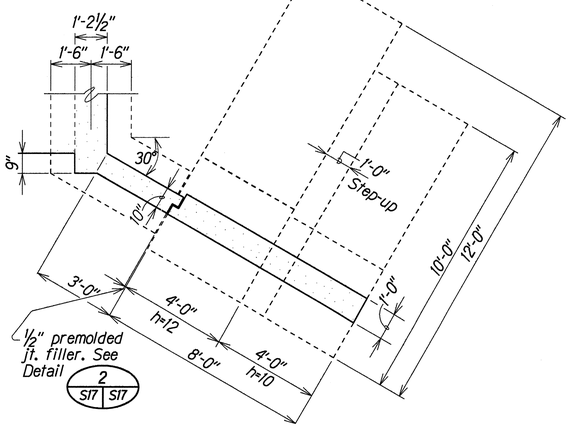
WINGWALL NO. 1 AND WINGWALL NO. 2 DETAILS

FED. ROAD DIST. NO.	STATE	FED. AID PROJ. NO.	FISCAL YEAR	SHEET NO.	TOTAL SHEETS
HAWAII	HAW.	STP-011-2(25)	1995	28	39



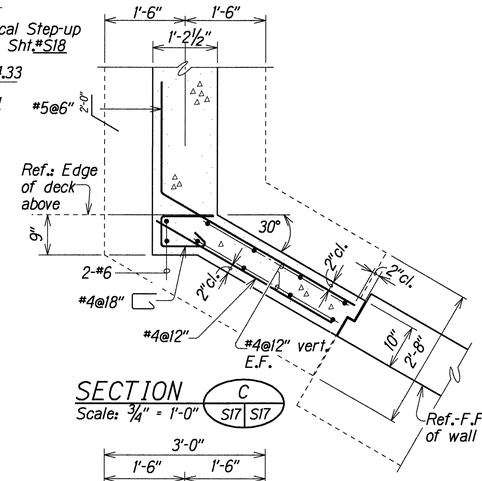
DEVELOPED ELEVATION WINGWALL NO.4

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



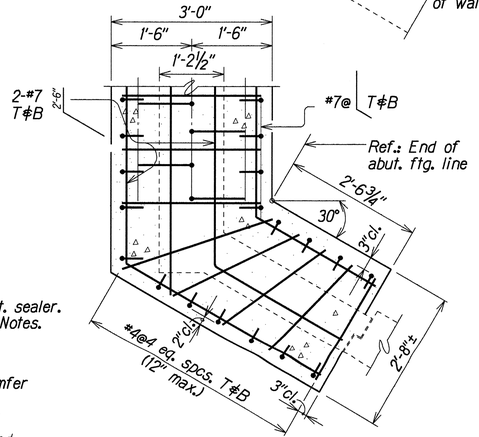
PARTIAL PLAN WINGWALL NO.4

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



SECTION C

Scale: 3/4" = 1'-0" (S17 S17)

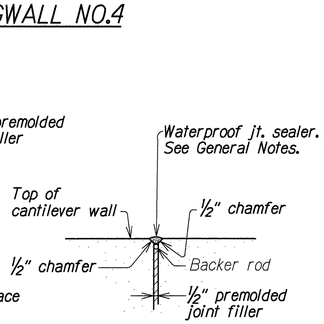


SECTION D

Scale: 3/4" = 1'-0" (S17 S17)

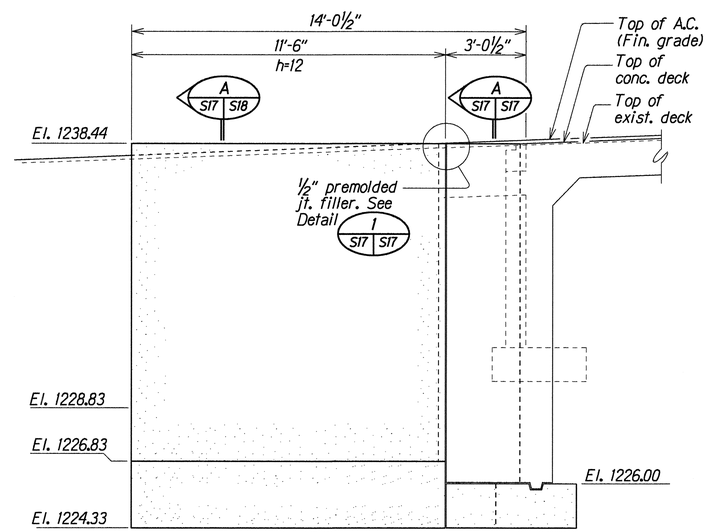
DETAIL 1

Scale: 1½" = 1'-0" (S17 S17)



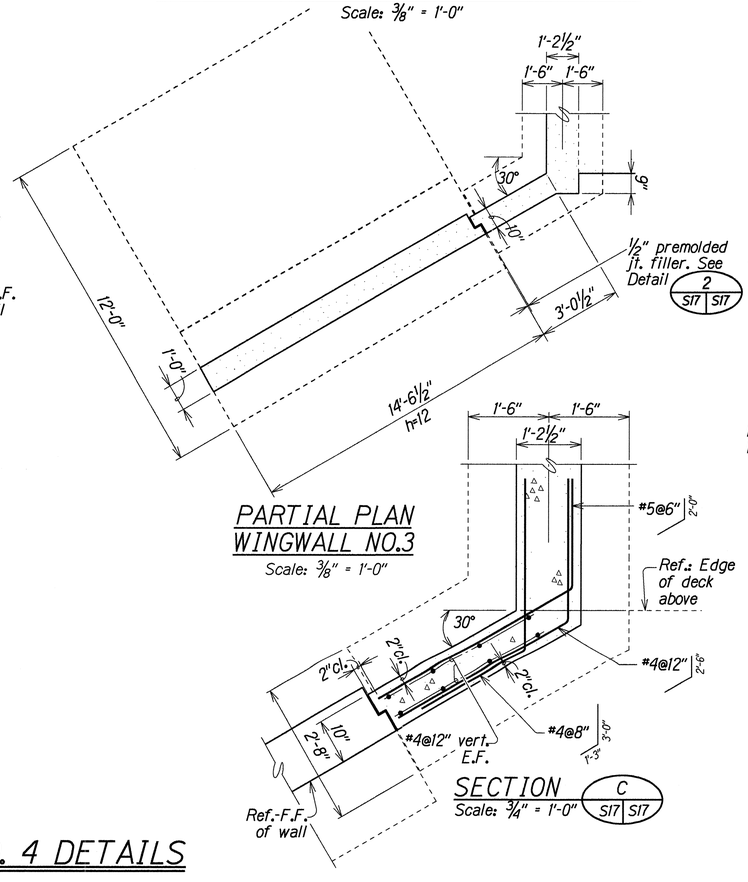
DETAIL 2

Scale: 1½" = 1'-0" (S17 S17)



DEVELOPED ELEVATION WINGWALL NO.3

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

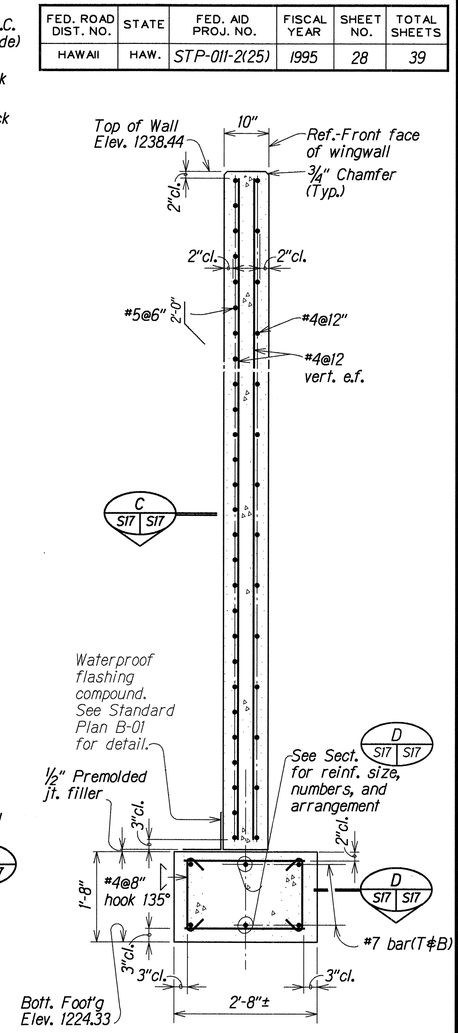


PARTIAL PLAN WINGWALL NO.3

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

SECTION C

Scale: 3/4" = 1'-0" (S17 S17)



TYPICAL WALL SECTION A

Scale: 3/4" = 1'-0" (S17 S17)

ORIGINAL PLAN	SURVEY PLOTTED BY	LHW	DATE SEP 1992
	DRAWN BY	TAM	SEP 1993
	TRACED BY	SK	SEP 1993
	DESIGNED BY	SK	SEP 1993
	NOTE BOOK		
	QUANTITIES BY	LTA	SEP 1993
	CHECKED BY		
N:\pikea17.dgn			

STATE OF HAWAII
DEPARTMENT OF TRANSPORTATION
HIGHWAYS DIVISION

PIIKEA STREAM BRIDGE

WINGWALL NO. 3 AND NO. 4 DETAILS

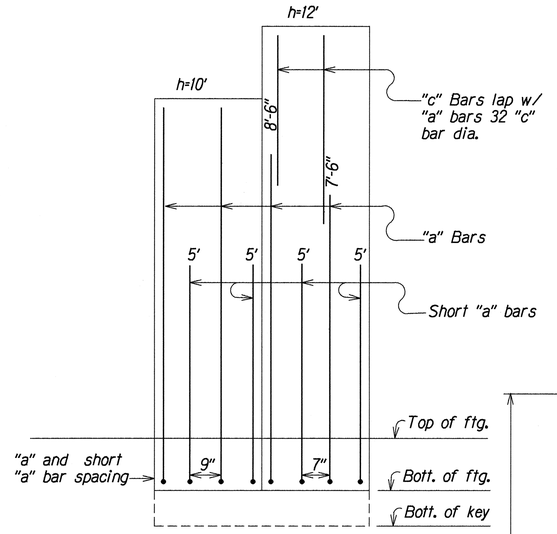
MAMALAHOA HIGHWAY DRAINAGE IMPROVEMENT
Project No. STP-011-2(25)

Scale: As Noted — Date: Sep. 1993

SHEET No. S17 OF 25 SHEETS

WINGWALL NO. 3 AND NO. 4 DETAILS

FED. ROAD DIST. NO.	STATE	FED. AID PROJ. NO.	FISCAL YEAR	SHEET NO.	TOTAL SHEETS
HAWAII	HAW.	STP-011-2(25)	1995	29	39



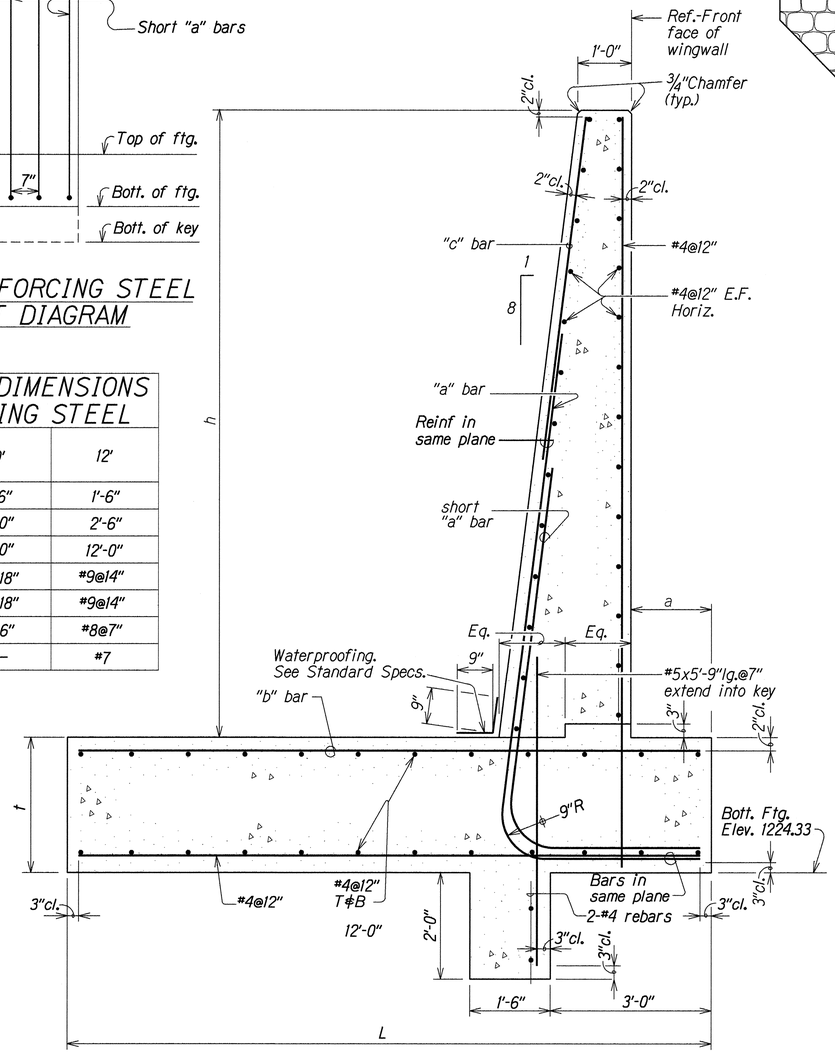
VERTICAL REINFORCING STEEL ARRANGEMENT DIAGRAM

NOTES:

Dimension of "a" bars and short "a" bars given in Table is at base of stem with repeating pattern as indicated.

Numbers atop "a" bars indicate dimension from top of footing to upper end of "a" bars.

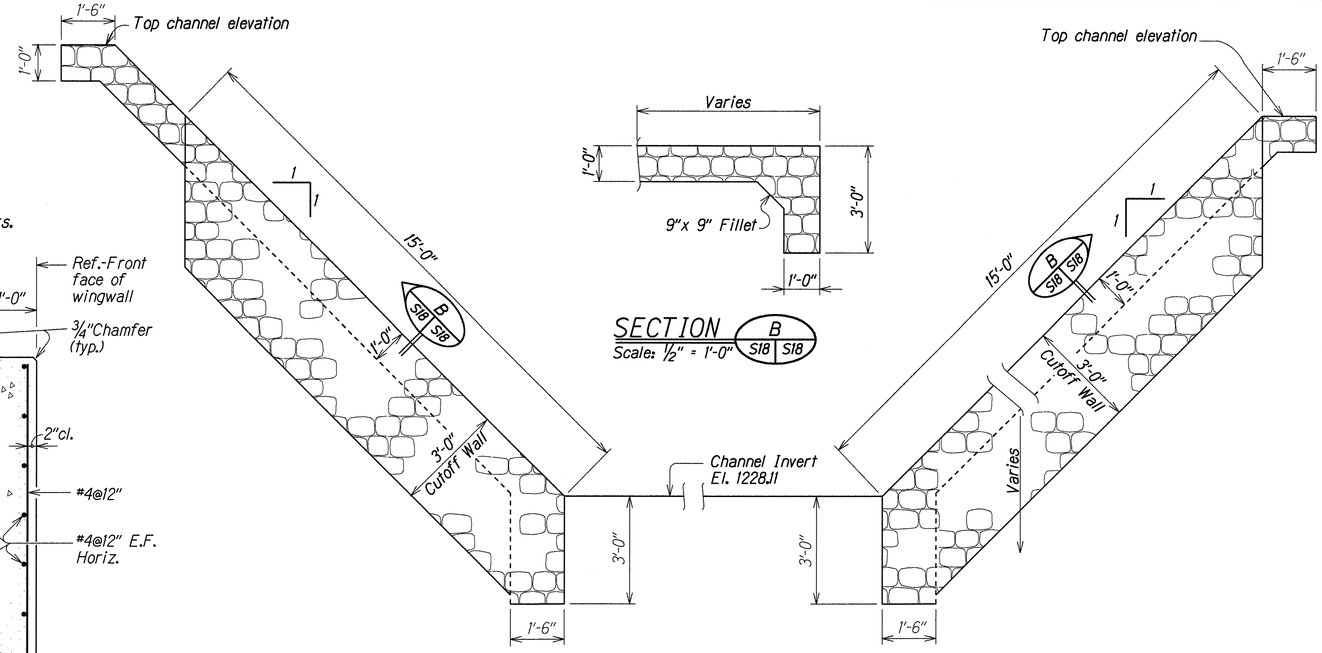
SCHEDULE OF DIMENSIONS AND REINFORCING STEEL		
MINIMUM "h"	10'	12'
a	1'-6"	1'-6"
t	2'-0"	2'-6"
L	10'-0"	12'-0"
"a" bars	#9@18"	#9@14"
Short "a" bars	#9@18"	#9@14"
"b" bars	#7@6"	#8@7"
"c" bars	—	#7



TYPICAL SECTION--WINGWALL NO. 3 AND NO. 4

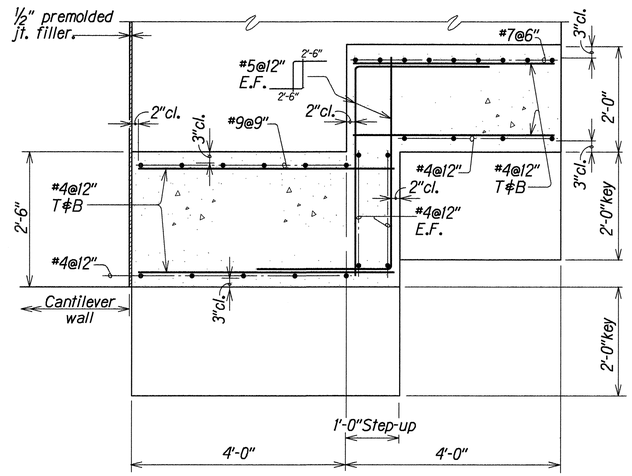
Scale: 3/4" = 1'-0"

A S17 | S18



INLET CHANNEL GRP SLOPE PROTECTION (OUTLET END SIMILAR EXCEPT OPPOSITE HAND)

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



TYPICAL STEP-UP DETAIL

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

ORIGINAL PLAN	SURVEY PLOTTED BY	LHM	DATE SEP 1992
	DRAWN BY		
	TRACED BY		SEP 1993
NOTE BOOK	DESIGNED BY	SK	SEP 1993
N:\pikea18.dgn	QUANTITIES BY	SK	SEP 1993
	CHECKED BY	LTA	SEP 1993

STATE OF HAWAII
DEPARTMENT OF TRANSPORTATION
HIGHWAYS DIVISION

PIIKEA STREAM BRIDGE

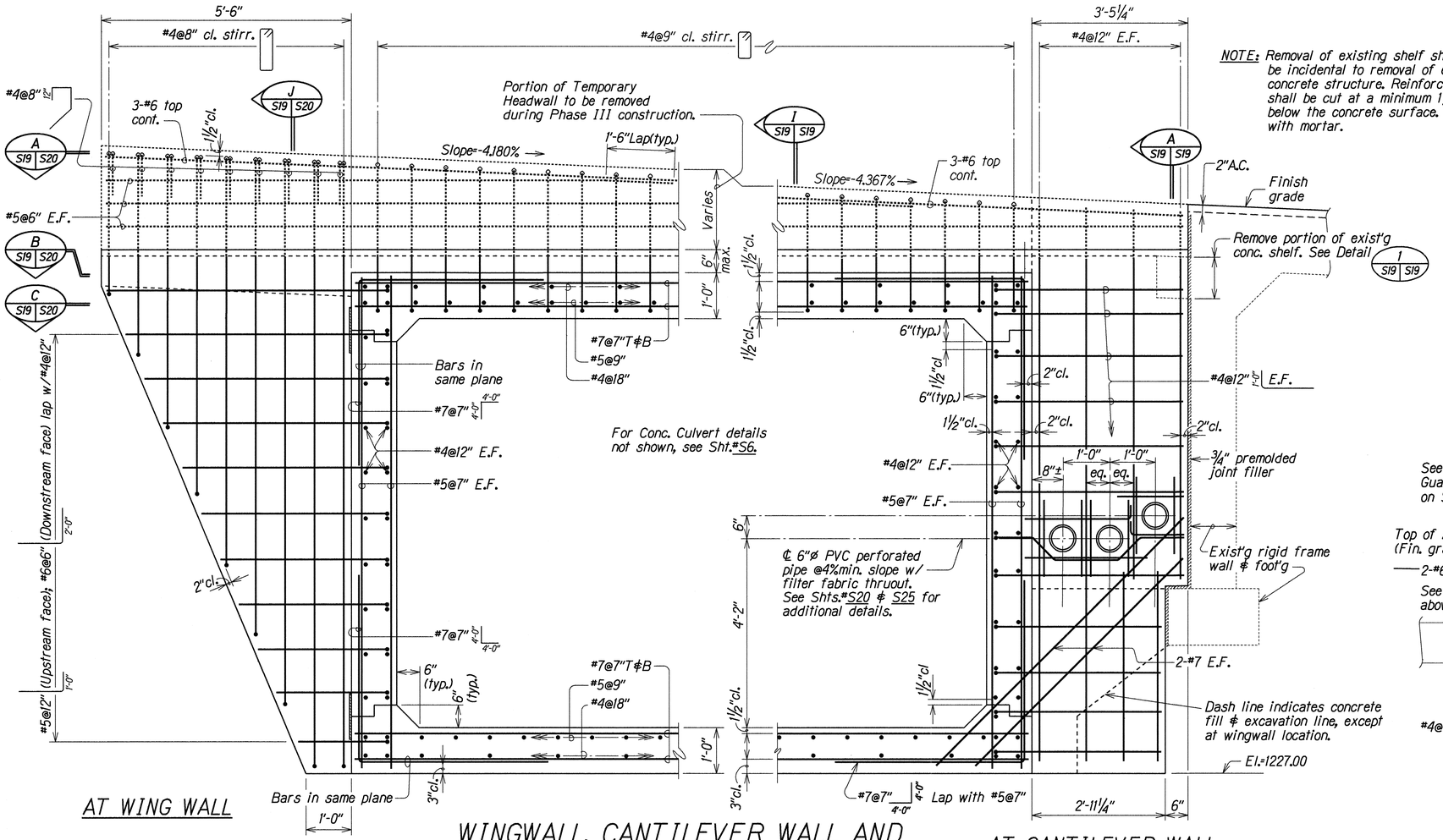
WINGWALL NO. 3 AND NO. 4 DETAILS AND CHANNEL GRP SLOPE PROTECTION DETAILS

MAMALAHOA HIGHWAY DRAINAGE IMPROVEMENT
Project No. STP-011-2(25)

Scale: As Noted — Date: Sep. 1993

SHEET No. S18 OF 25 SHEETS

FED. ROAD DIST. NO.	STATE	FED. AID PROJ. NO.	FISCAL YEAR	SHEET NO.	TOTAL SHEETS
HAWAII	HAW.	STP-011-2(25)	1995	30	39

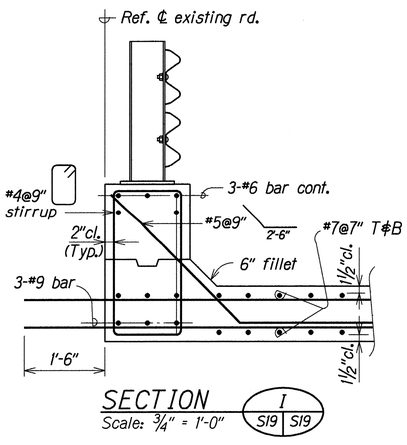


AT WING WALL

AT CANTILEVER WALL

WINGWALL, CANTILEVER WALL AND TEMPORARY HEADWALL DETAILS AT ¢ EXISTING ROADWAY

SECTION
Scale: ¾" = 1'-0"
A S20 S19



SECTION
Scale: ¾" = 1'-0"
I S19 S19

ORIGINAL PLAN	SURVEY PLOTTED BY		DATE
	DRAWN BY	THW/KSG	SEP 1993
	TRACED BY		SEP 1993
NOTE BOOK	DESIGNED BY	SK	SEP 1993
N. Piikea10.dgn	QUANTITIES BY	SK	SEP 1993
	CHECKED BY	LYA	

STATE OF HAWAII
DEPARTMENT OF TRANSPORTATION
HIGHWAYS DIVISION

PIIKEA STREAM BRIDGE

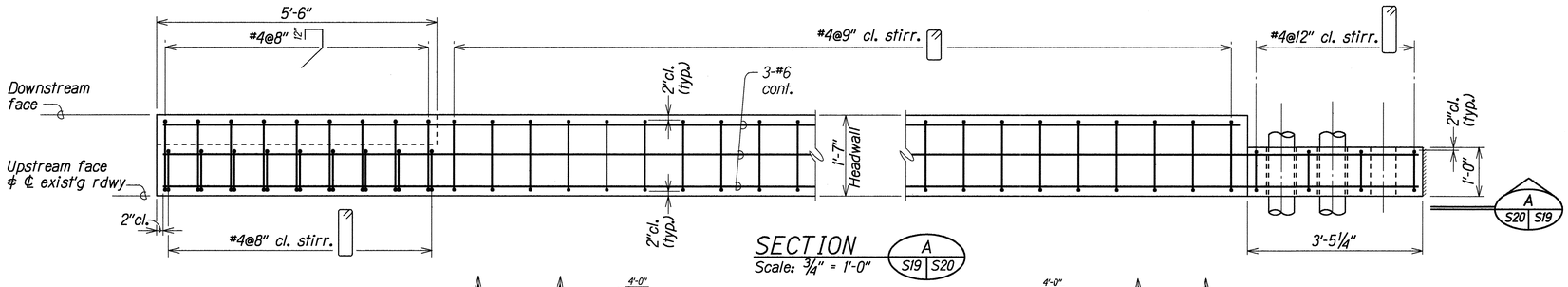
WINGWALL, CANTILEVER WALL AND TEMPORARY HEADWALL DETAILS AT ¢ EXIST. ROADWAY

MAMALAHOA HIGHWAY DRAINAGE IMPROVEMENT
Project No. STP-011-2(25)

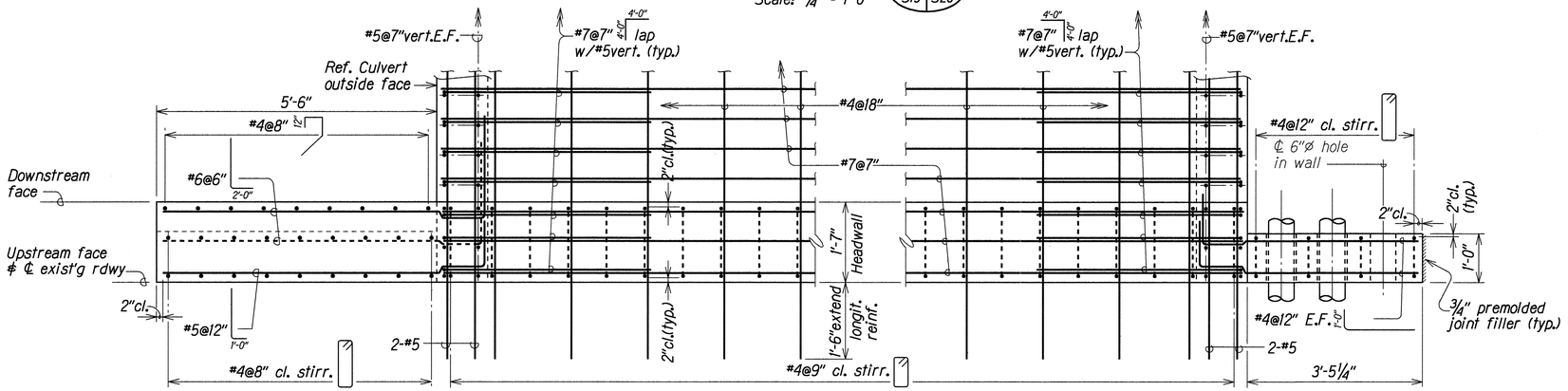
Scale: As Noted — Date: Sep. 1993

SHEET No. S19 OF 25 SHEETS

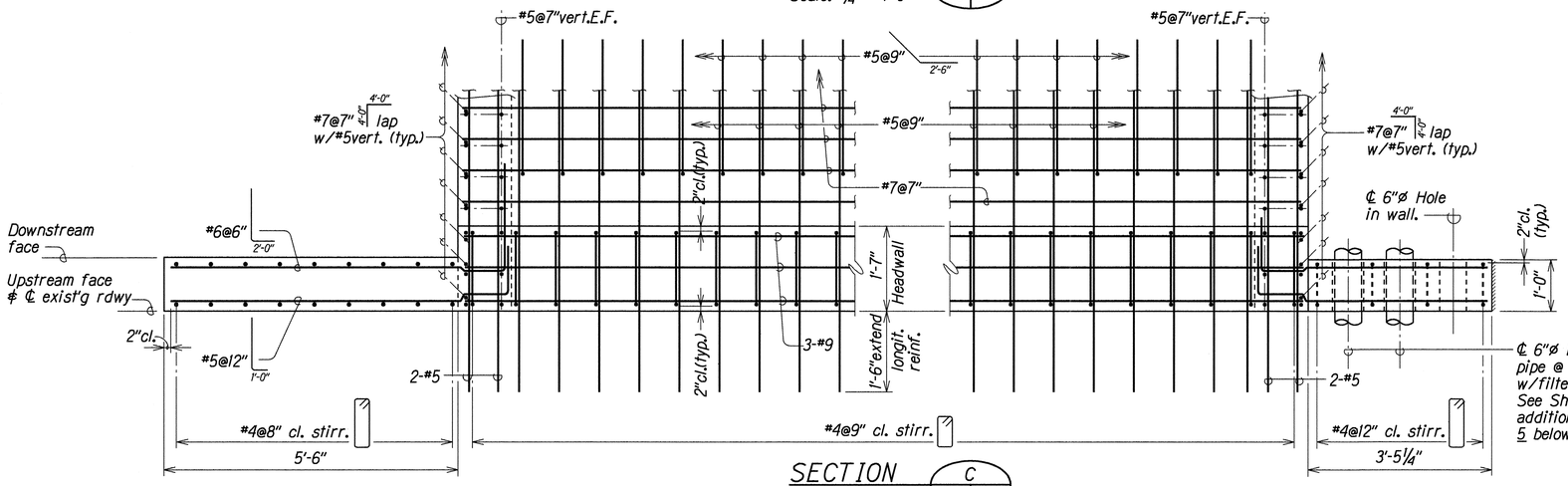
FED. ROAD DIST. NO.	STATE	FED. AID PROJ. NO.	FISCAL YEAR	SHEET NO.	TOTAL SHEETS
HAWAII	HAW.	STP-011-2(25)	1995	31	39



SECTION A (S19 | S20)
Scale: ¾" = 1'-0"



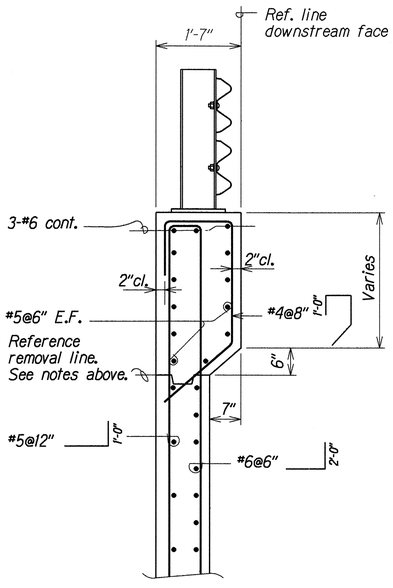
SECTION B (S19 | S20)
Scale: ¾" = 1'-0"



SECTION C (S19 | S20)
Scale: ¾" = 1'-0"

NOTES:

1. *Extend horiz. reinf. 1'-6" (Typ.) beyond and lap w/ corresponding reinf. during Phase III Construction.
2. Removal of concrete headwall will be included with pay item no. 202.0210, removal of portion of existing concrete structure.
3. Removal of temporary guardrail shall be incidental with pay item no. 606.3200, (guardrail type 3, single with rub rail on steel post) and item no. 606.3000, (guardrail type 3 thrie beam), and will not be paid for seperately.
4. Apply removal of portion of headwall, apply mortar cement to exposed surface.
5. P.V.C. perforated pipe and geotextile filter fabric shall be incidental to aggregate size #57 under pay item no. 206.9000, and will not be paid for seperately.



SECTION J (S19 | S20)
Scale: ¾" = 1'-0"

ORIGINAL PLAN	SURVEY PLOTTED BY	DATE
	DRAWN BY THM/ASC	SEP 1993
	TRACED BY	
NOTE BOOK	DESIGNED BY SK	SEP 1993
	QUANTITIES BY SK	SEP 1993
	CHECKED BY LTA	SEP 1993

STATE OF HAWAII
DEPARTMENT OF TRANSPORTATION
HIGHWAYS DIVISION

PIIKEA STREAM BRIDGE

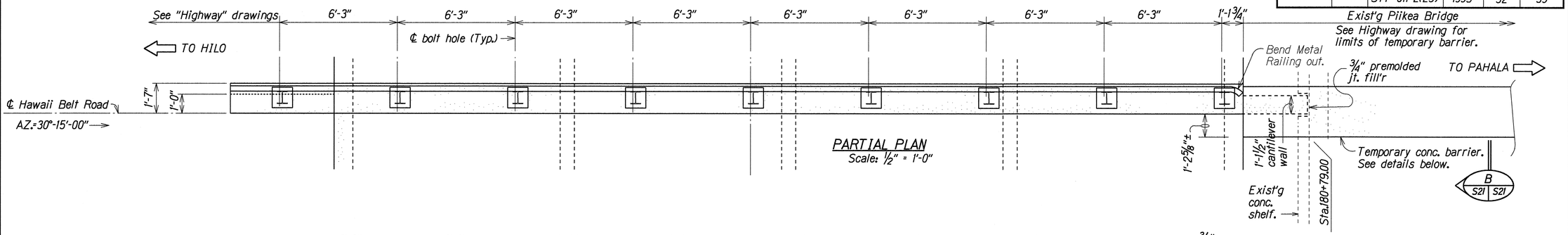
TEMPORARY HEADWALL DETAILS AT ℄ EXISTING ROADWAY

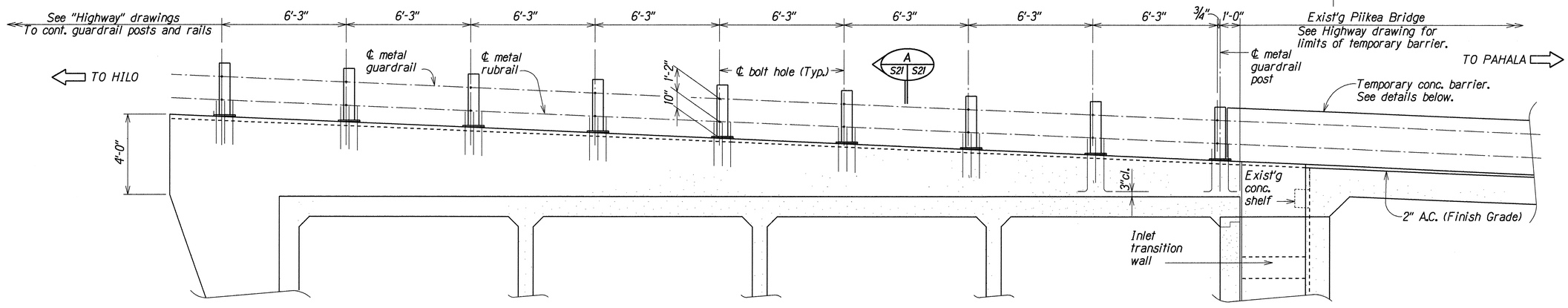
MAMALAHOA HIGHWAY DRAINAGE IMPROVEMENT
Project No. STP-011-2(25)

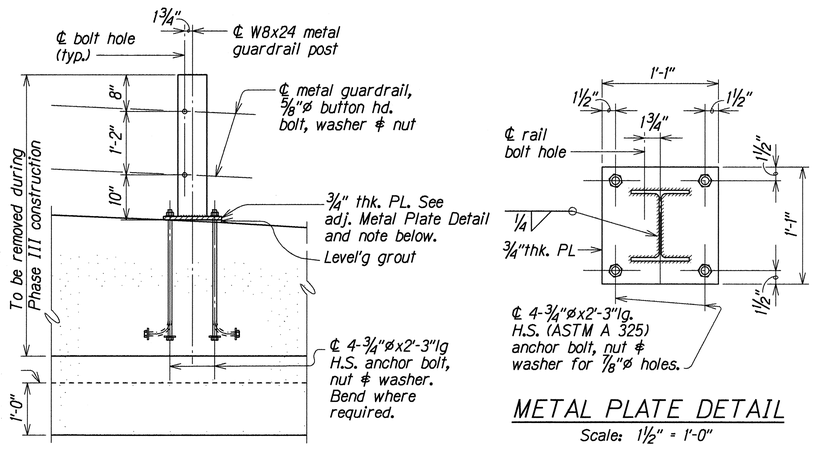
Scale: As Noted — Date: Sep. 1993

SHEET No. S20 OF 25 SHEETS

FED. ROAD DIST. NO.	STATE	FED. AID PROJ. NO.	FISCAL YEAR	SHEET NO.	TOTAL SHEETS
HAWAII	HAW.	STP-011-2(25)	1995	32	39



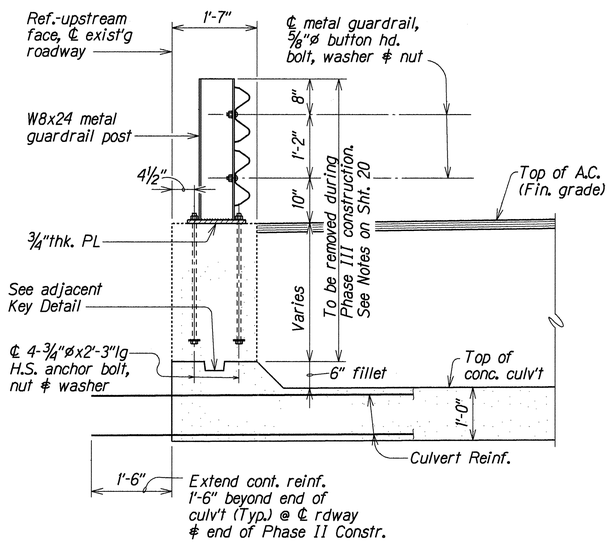




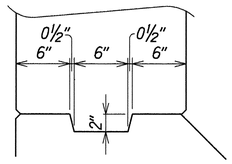
PARTIAL ELEVATION
Scale: ¾" = 1'-0"

METAL PLATE DETAIL
Scale: 1½" = 1'-0"

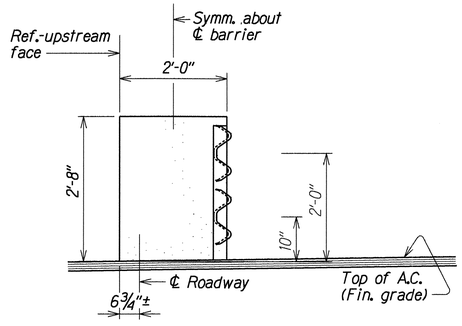
NOTE:
Guardrail metal plate shall be incidental to metal guardrail and will not be paid for separately.



SECTION A S21 S21
Scale: ¾" = 1'-0"



KEY DETAIL
Scale: 1½" = 1'-0"



SECTION B S21 S21
Scale: ¾" = 1'-0"

ORIGINAL PLAN	SURVEY PLOTTED BY	DATE
	DRAWN BY LHW	SEP 1993
	TRACED BY	SEP 1993
NOTE BOOK	DESIGNED BY SK	SEP 1993
	QUANTITIES BY SK	SEP 1993
N:\piikea\21dgn	CHECKED BY LTA	SEP 1993

STATE OF HAWAII
DEPARTMENT OF TRANSPORTATION
HIGHWAYS DIVISION

PIIKEA STREAM BRIDGE

PHASE II CONSTRUCTION--TEMPORARY METAL GUARDRAIL POST DETAILS AT ℄ EXISTING ROADWAY

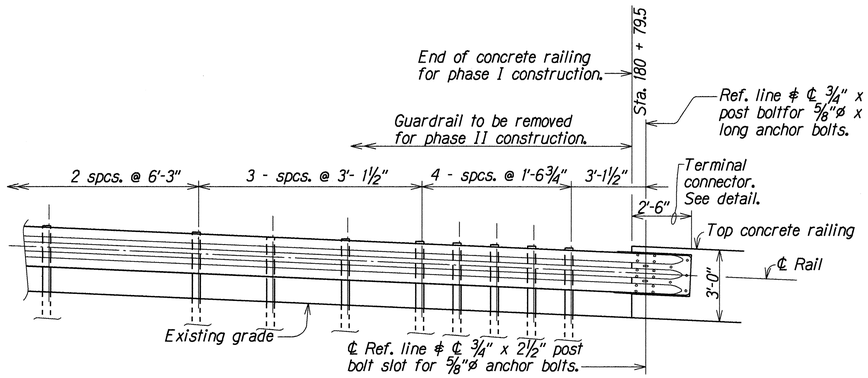
MAMALAHOA HIGHWAY DRAINAGE IMPROVEMENT
Project No. STP-011-2(25)

Scale: As Noted — Date: Sep. 1993

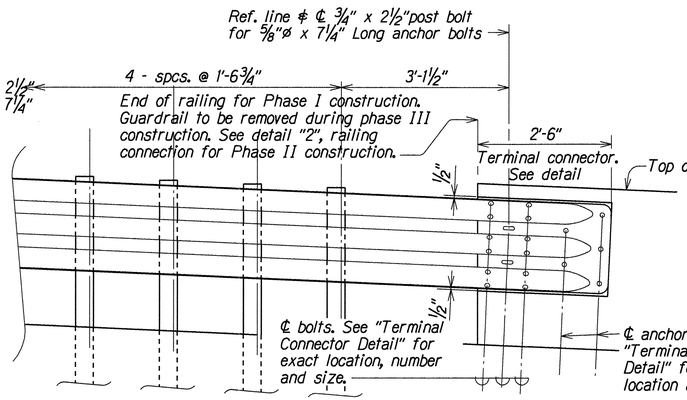
SHEET No. S21 OF 25 SHEETS

WINGWALL NO. 3, TEMPORARY HEADWALL AND CANTILEVER WALL AT EXISTING ℄ ROADWAY

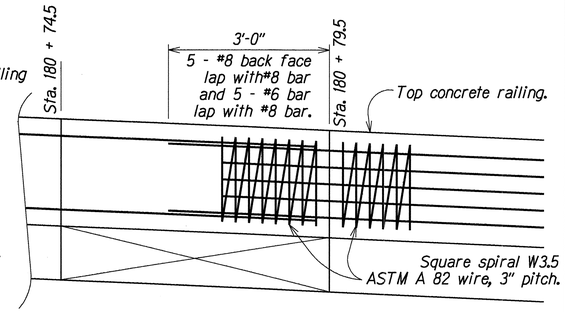
FED. ROAD DIST. NO.	STATE	FED. AID PROJ. NO.	FISCAL YEAR	SHEET NO.	TOTAL SHEETS
HAWAII	HAW.	STP-011-2(25)	1995	33	39



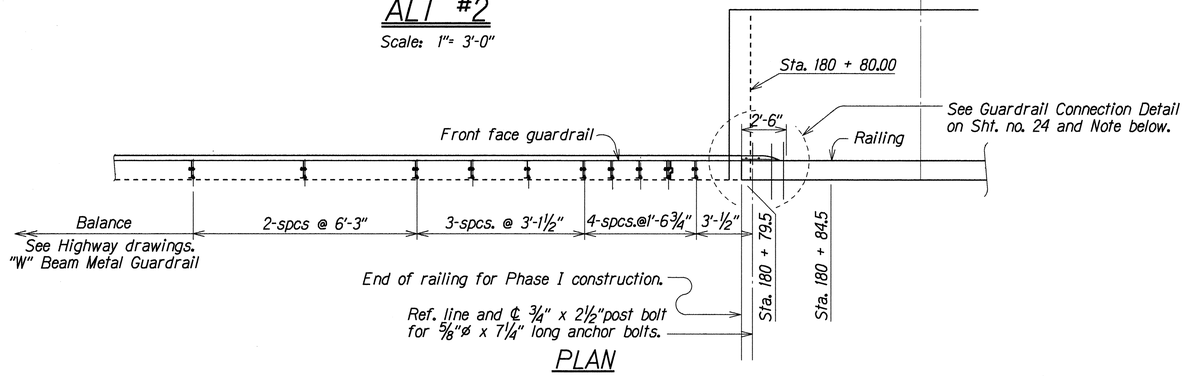
ELEVATION
UPSTREAM TEMPORARY RAILING FOR PHASE III CONSTRUCTION ALT #2
Scale: 1"= 3'-0"



ELEVATION
@ UPSTREAM TEMPORARY METAL RAILING
Scale:¾"= 1'-0"

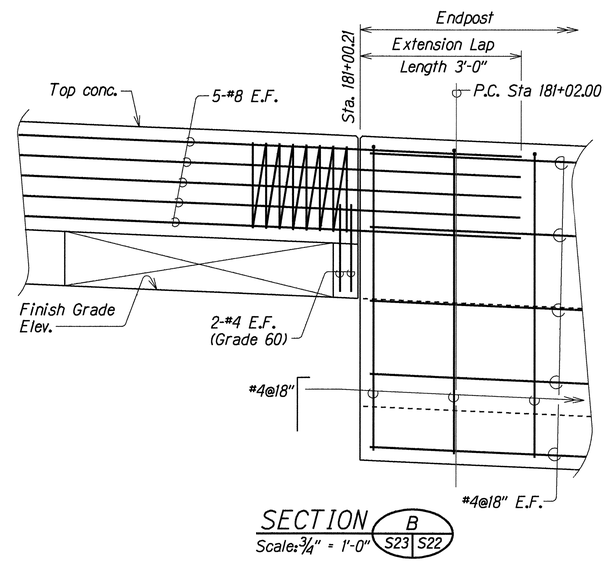


DETAIL 2 (S22 | S22)
Scale:¾" = 1'-0"



PLAN
UPSTREAM TEMPORARY RAILING FOR PHASE II CONSTRUCTION ALT #1
Scale: ¼" = 1'-0"

NOTE:
Prior to temporary guardrail connection to concrete railing, provide premade holes for anchor bolts. All holes shall be filled with grout.



SECTION B (S23 | S22)
Scale:¾" = 1'-0"

ORIGINAL PLAN	SURVEY PLOTTED BY	DATE
	DRAWN BY LHW	SEP 1993
NOTE BOOK	TRACED BY	SEP 1993
	DESIGNED BY SK	SEP 1993
N:\dlkea22.dgn	QUANTITIES BY SK	SEP 1993
	CHECKED BY LTA	SEP 1993

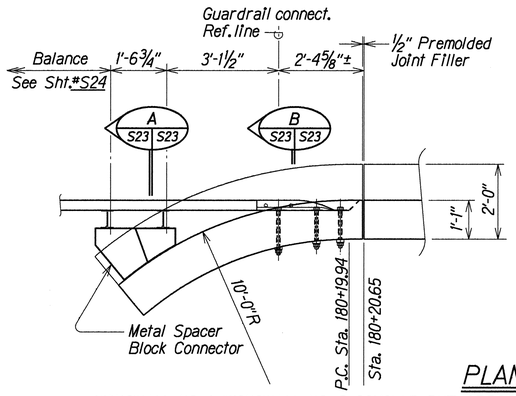
STATE OF HAWAII
DEPARTMENT OF TRANSPORTATION
HIGHWAYS DIVISION

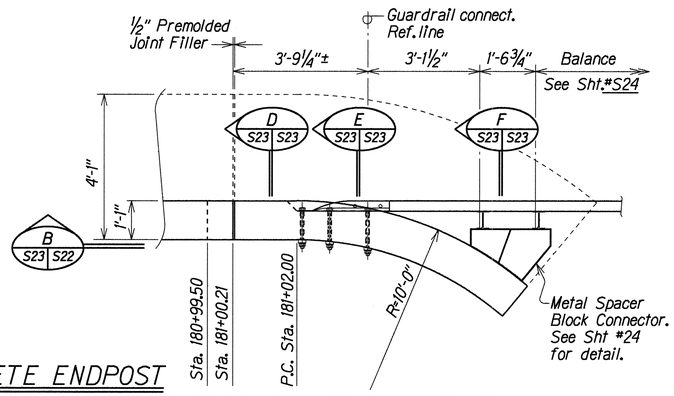
PIIKEA STREAM BRIDGE
TEMPORARY RAILING CONSTRUCTION FOR PHASES I, II AND III
MAMALAHOA HIGHWAY DRAINAGE IMPROVEMENT
Project No. STP-011-2(25)

Scale: As Noted — Date: Sep. 1993

SHEET No. S22 OF 25 SHEETS

FED. ROAD DIST. NO.	STATE	FED. AID PROJ. NO.	FISCAL YEAR	SHEET NO.	TOTAL SHEETS
HAWAII	HAW.	STP-011-2(25)	1995	34	39

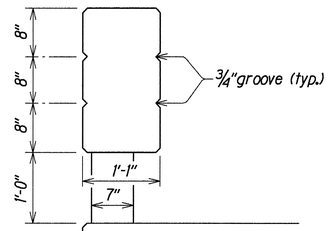




PLAN--CONCRETE ENDPOST

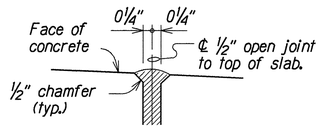
WINGWALL NO. 1 (WINGWALL NO. 2 SIMILAR BUT OPPOSITE HAND)
Scale: ½" = 1'-0"

WINGWALL NO. 4 (WINGWALL NO. 3 SIMILAR BUT OPPOSITE HAND)
Scale: ½" = 1'-0"



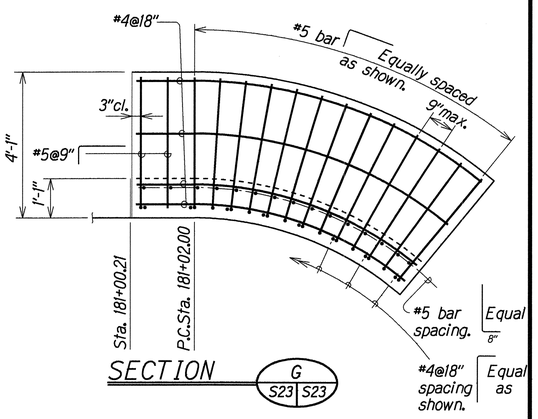
PARTIAL SECTION--CONCRETE RAILING

Scale: 1" = 1'-0"

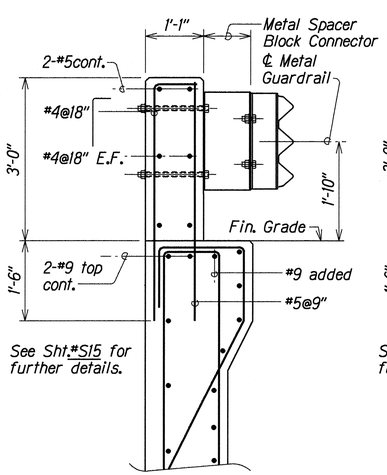


PLAN--RAILING JOINT DETAIL

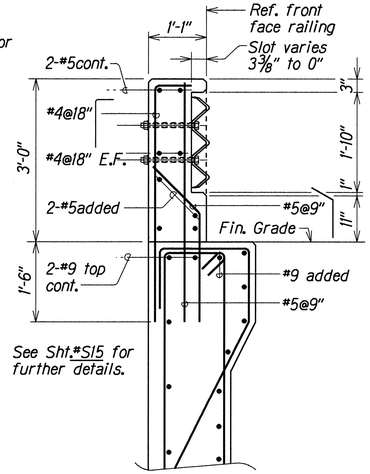
Scale: 6" = 1'-0"



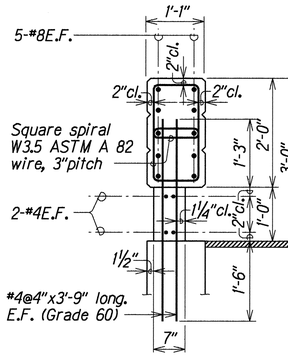
SECTION



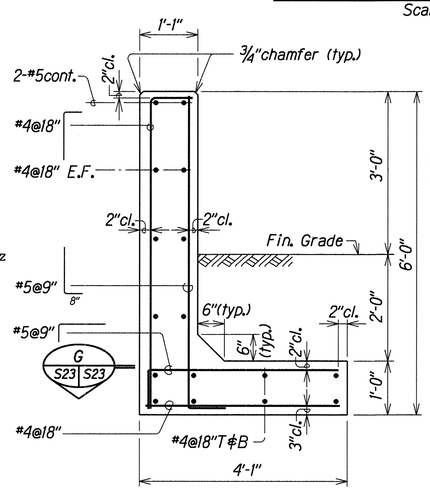
SECTION A S23 S23



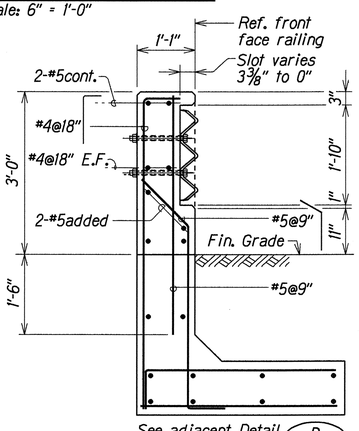
SECTION B S23 S23



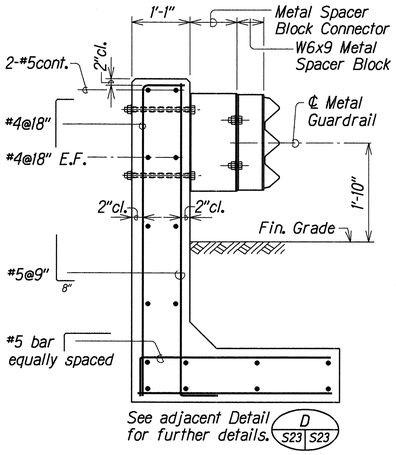
SECTION C S23 S23



SECTION D S23 S23



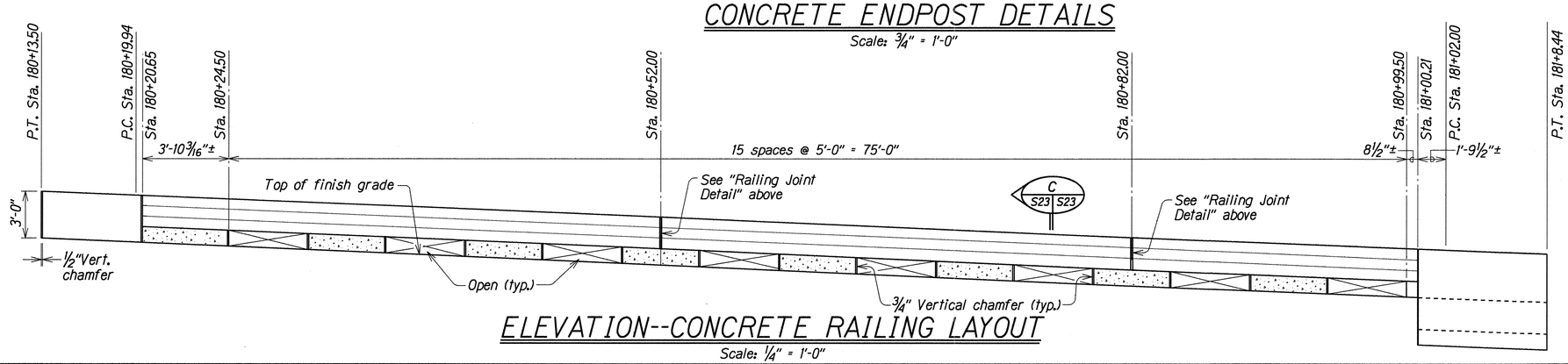
SECTION E S23 S23



SECTION F S23 S23

CONCRETE ENDPOST DETAILS

Scale: ¾" = 1'-0"



ELEVATION--CONCRETE RAILING LAYOUT

Scale: ¼" = 1'-0"

ORIGINAL PLAN	SURVEY PLOTTED BY	LHW/KSC	SEP 1993
	DRAWN BY	. . . . .	. . . .
	TRACED BY	SK	SEP 1993
	NOTE BOOK	SK	SEP 1993
	QUANTITIES BY	LTA	SEP 1993
	CHECKED BY		

N:\Piikea\23.dgn

STATE OF HAWAII
DEPARTMENT OF TRANSPORTATION
HIGHWAYS DIVISION

PIIKEA STREAM BRIDGE

CONCRETE ENDPOST AND RAILING DETAILS

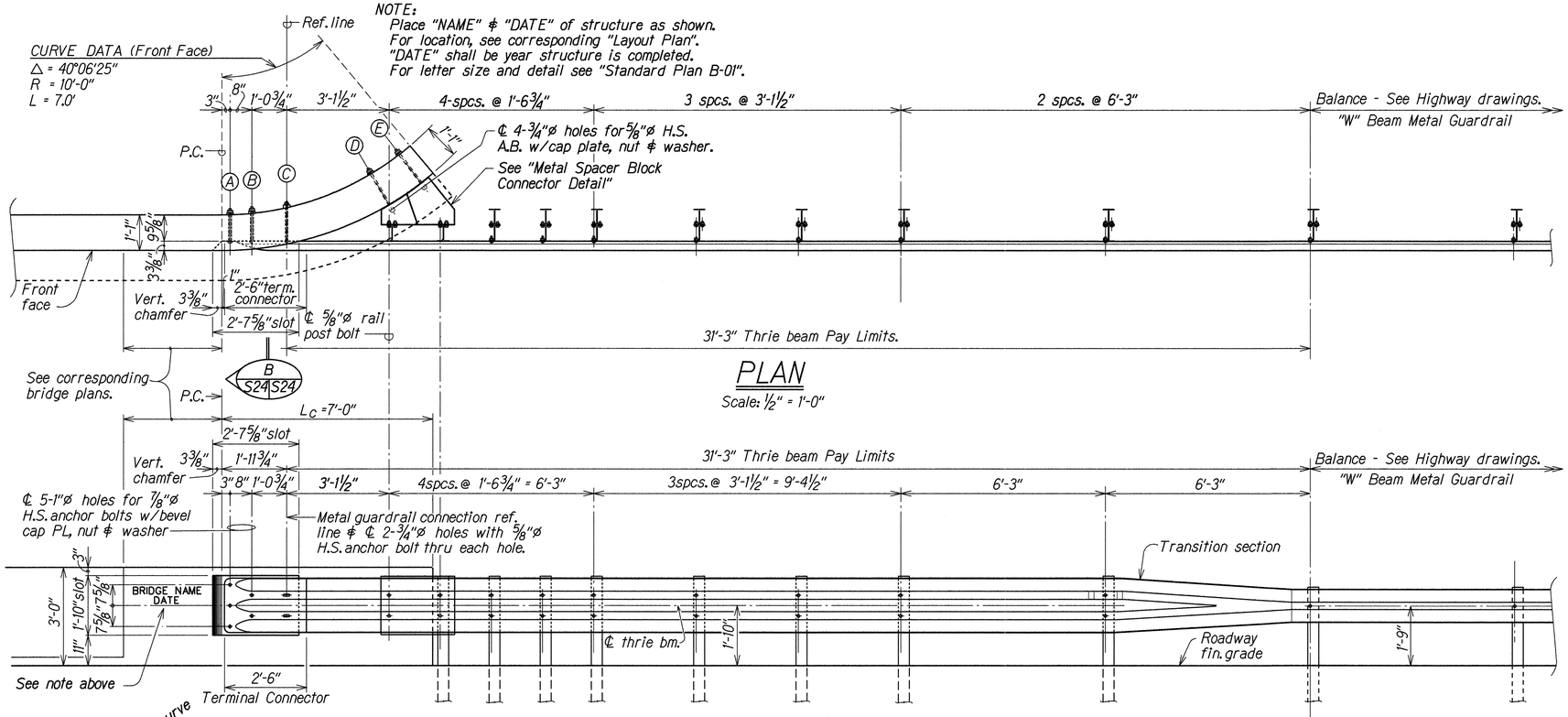
MAMALAHOA HIGHWAY DRAINAGE IMPROVEMENT
Project No. STP-011-2(25)

Scale: As Noted — Date: Sep. 1993

SHEET No. S23 OF 25 SHEETS

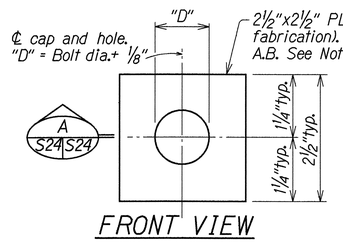
FED. ROAD DIST. NO.	STATE	FED. AID PROJ. NO.	FISCAL YEAR	SHEET NO.	TOTAL SHEETS
HAWAII	HAW.	STP-011-2(25)	1995	35	39

NOTE:
Place "NAME" & "DATE" of structure as shown.
For location, see corresponding "Layout Plan".
"DATE" shall be year structure is completed.
For letter size and detail see "Standard Plan B-01".

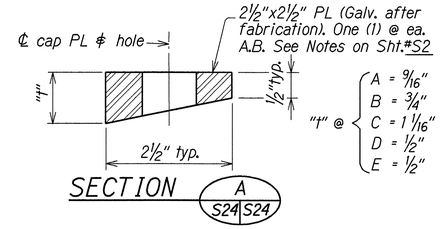


PLAN
Scale: ½" = 1'-0"

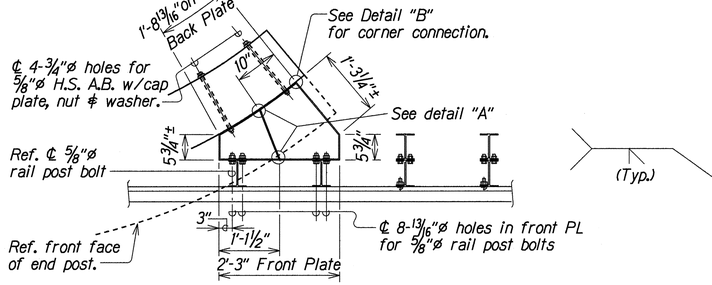
ELEVATION
Scale: ½" = 1'-0"



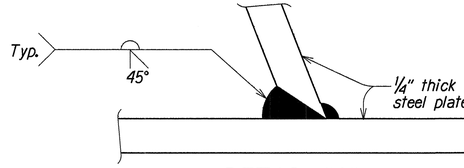
FRONT VIEW



CAP (BEARING) PLATE DETAIL
N.T.S.

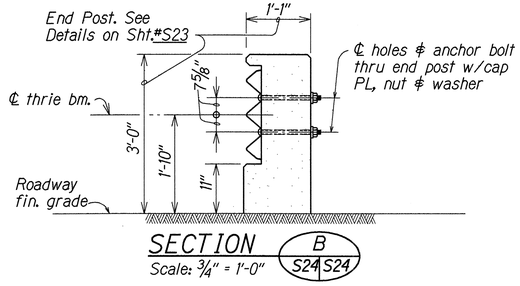


PLAN

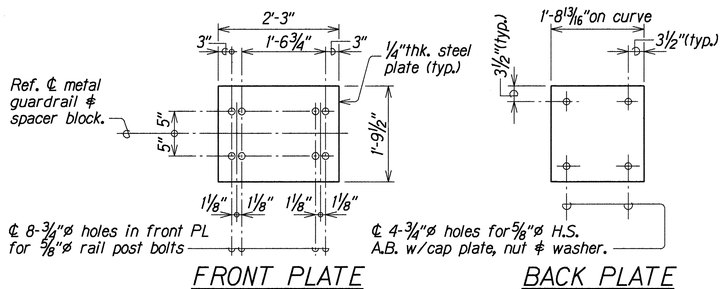


DETAIL "B"
Not to scale

DETAIL "A"
Not to scale

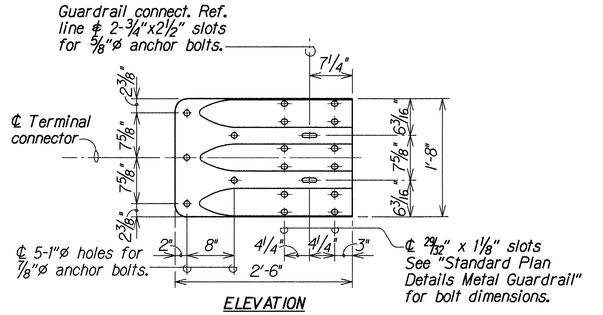


Scale: ¾" = 1'-0"



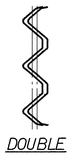
FRONT PLATE — BACK PLATE

METAL SPACER BLOCK CONNECTOR DETAIL
Scale: ¾" = 1'-0"



ELEVATION

TERMINAL CONNECTOR
Scale: 1" = 1'-0"



DOUBLE

SECTION THRU RAIL ELEMENT
Scale: 1" = 1'-0"

ORIGINAL PLAN	SURVEY PLOTTED BY	LHM	DATE	SEP 1993
	DRAWN BY			
	TRACED BY	SK		SEP 1993
	NOTE BOOK		DESIGNED BY	SK SEP 1993
			QUANTITIES BY	LA SEP 1993
			CHECKED BY	

Revised 4.0pr

STATE OF HAWAII
DEPARTMENT OF TRANSPORTATION
HIGHWAYS DIVISION

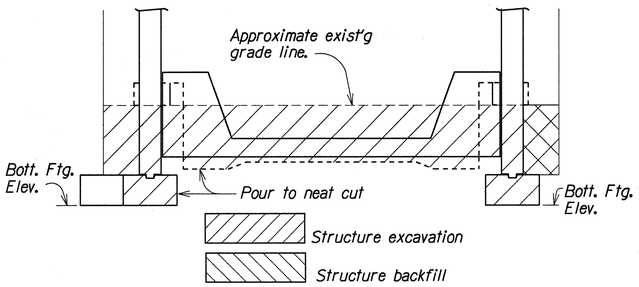
PIIKEA STREAM BRIDGE
METAL GUARDRAIL CONNECTION TO CONCRETE ENDPOST DETAILS
MAMALAHOA HIGHWAY DRAINAGE IMPROVEMENT
Project No. STP-011-2(25)

Scale: As Noted — Date: July, 1993

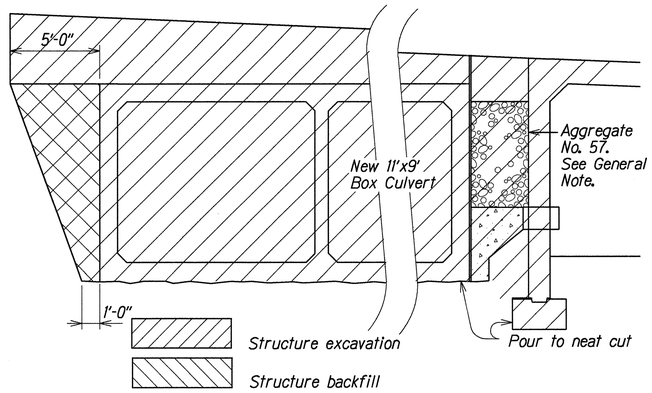
SHEET No. S24 OF 25 SHEETS

FED. ROAD DIST. NO.	STATE	FED. AID PROJ. NO.	FISCAL YEAR	SHEET NO.	TOTAL SHEETS
HAWAII	HAW.	STP-011-2(25)	1995	ADD.36	39

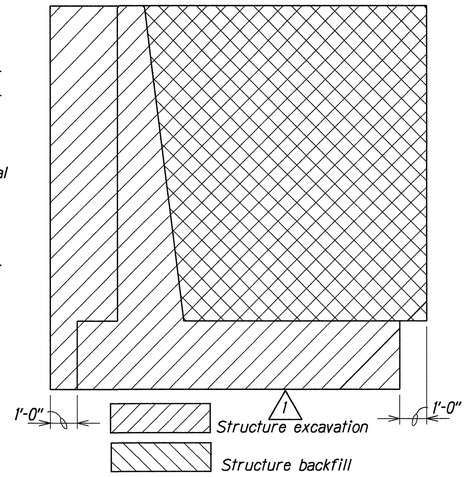
1



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

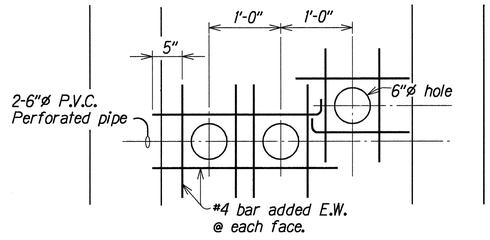


INLET DEVELOPED ELEVATION
Scale: 1/4" = 1'-0"

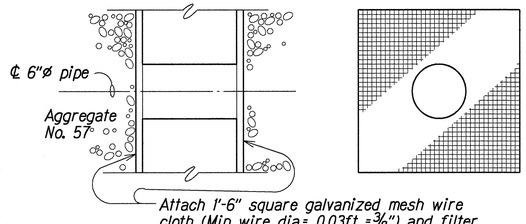


WINGWALL SECTION
Scale: 3/8" = 1'-0"

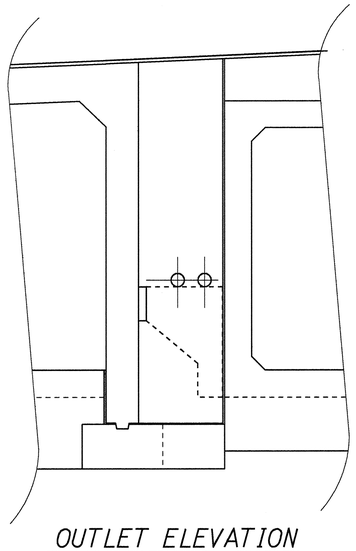
TYPICAL EXCAVATION & BACKFILL PAY LIMITS @ RIGID FRAME, BOX CULVERT & WINGWALL



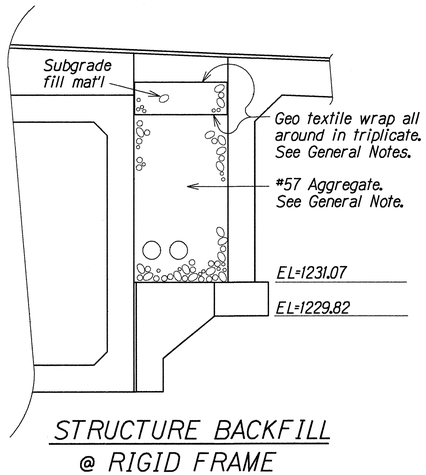
Scale: 1" = 1'-0"



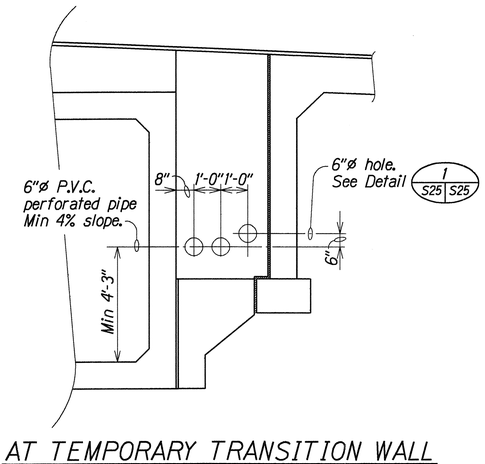
DETAIL (1 / S25 | S25)
Scale: 1 1/2" = 1'-0"



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



STRUCTURE BACKFILL @ RIGID FRAME
Scale: 3/8" = 1'-0"



AT TEMPORARY TRANSITION WALL
Scale: 3/8" = 1'-0"

ORIGINAL PLAN		DATE
	SURVEY PLOTTED BY	SEP 1993
	DRAWN BY LHM	
	TRACED BY	
NOTE BOOK	DESIGNED BY SK	SEP 1993
N:\pilkea\25.dgn	QUANTITIES BY SK	SEP 1993
	CHECKED BY LTA	SEP 1993

STATE OF HAWAII
DEPARTMENT OF TRANSPORTATION
HIGHWAYS DIVISION

PIIKEA STREAM BRIDGE
STRUCTURE EXCAVATION AND BACKFILL PAY LIMITS
MAMALAHOA HIGHWAY DRAINAGE IMPROVEMENT
Project No. STP-011-2(25)

Scale: As Noted — Date: Sep. 1993

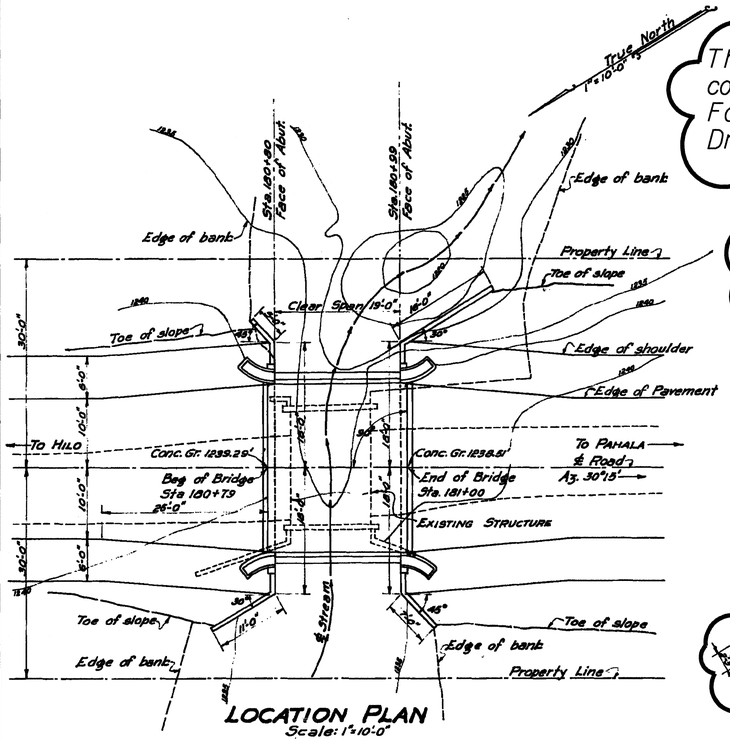
DATE	REVISION
03/22/96 1	Revised Wingwall Section, Structure Excavation Hash Lines.

SHEET No. S25 OF 25 SHEETS

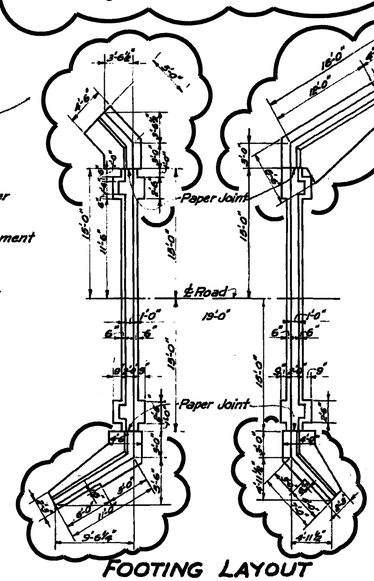
ADD. 36

FED. ROAD DIST. NO.	STATE	FED. AID PROJ. NO.	FISCAL YEAR	SHEET NO.	TOTAL SHEETS
~~HAWAII~~	~~HAW.~~	~~18-B~~	~~1937~~	~~4~~	~~55~~
HAWAII	HAW.	STP-011-2(25)	1995	37	39

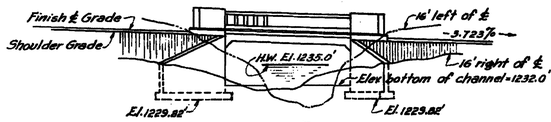
This drawing is in part original contract plans of existing bridge. For information & guidance only. Drawings are not to scale.



LOCATION PLAN
Scale: 1"=10'-0"

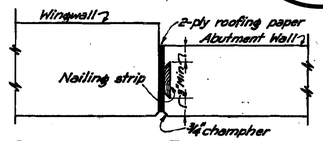


FOOTING LAYOUT
1/8" Scale

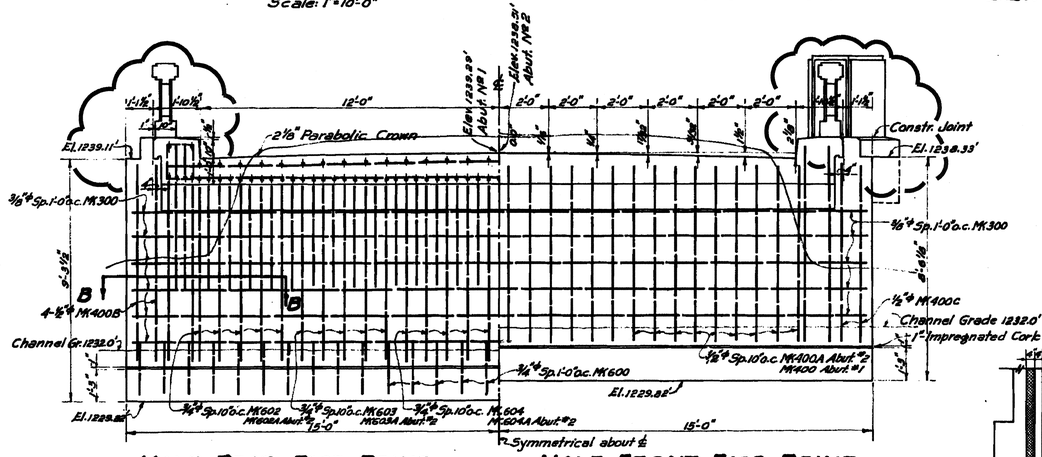


UPSTREAM ELEVATION
Scale: 1"=10'-0"

NOTE:
= Areas designated for removal during Phase I & II construction.

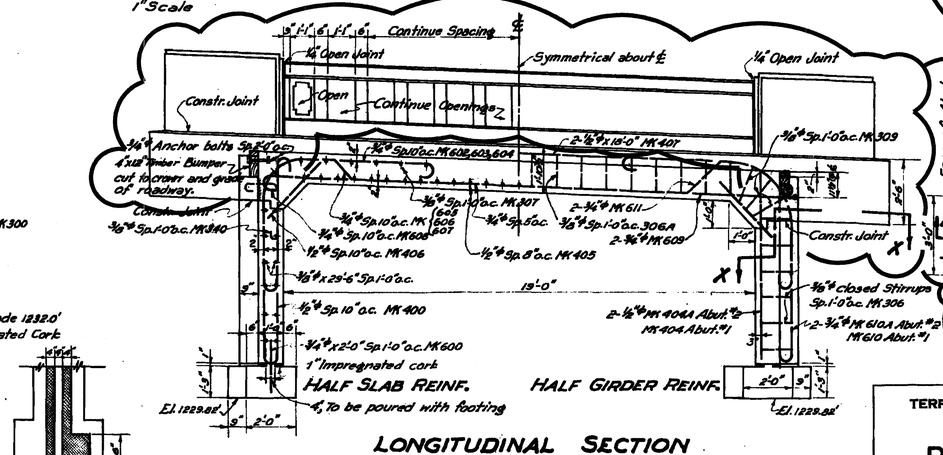


DETAIL OF PAPER JOINT
1" Scale

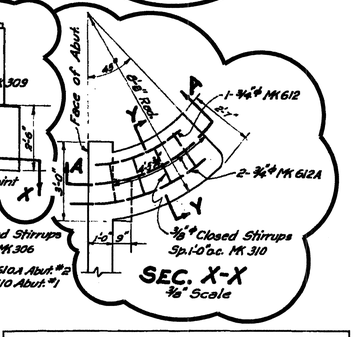


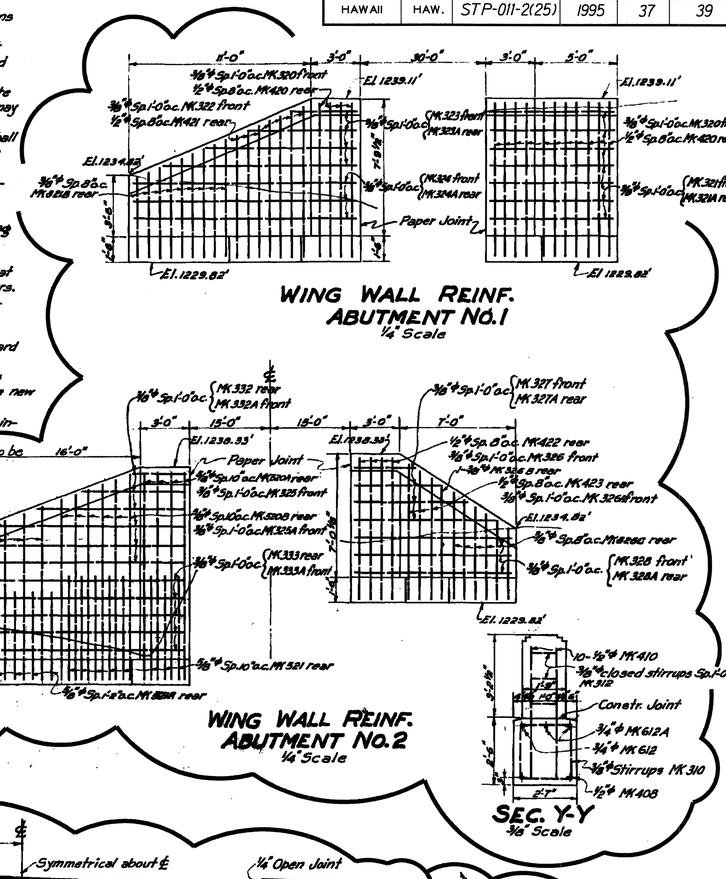
HALF REAR FACE REINF.
ABUTMENT NO. 1
⅜" Scale

HALF FRONT FACE REINF.
ABUTMENT NO. 2
⅜" Scale



LONGITUDINAL SECTION
⅜" Scale





DETAIL OF CORK JOINT
AT END COLUMNS
⅜" Scale

ORIGINAL PLAN	SURVEY PLOTTED BY	DATE Feb 1937
	DESIGNED BY H.H. Bartels	
	DRAWN BY C.H. Hayes	
NOTE BOOK	TRACED BY L. Fellis	
	QUANTITIES BY C.H. Hayes	" June "
No.	CHECKED BY W.P. Bellinger	" June "

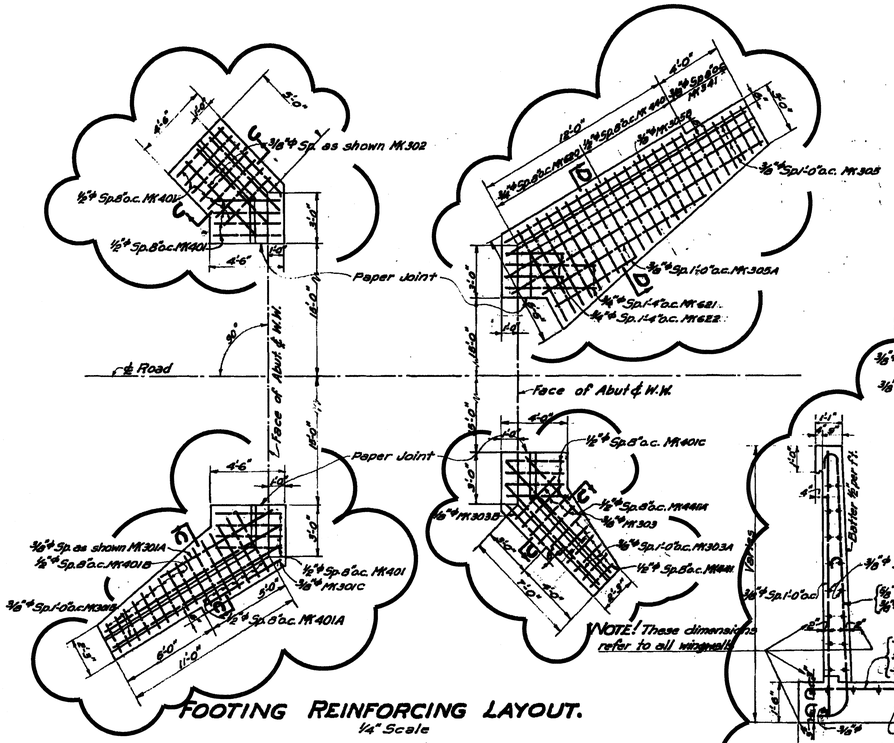
TERRITORIAL HIGHWAY DEPARTMENT
TERRITORY OF HAWAII

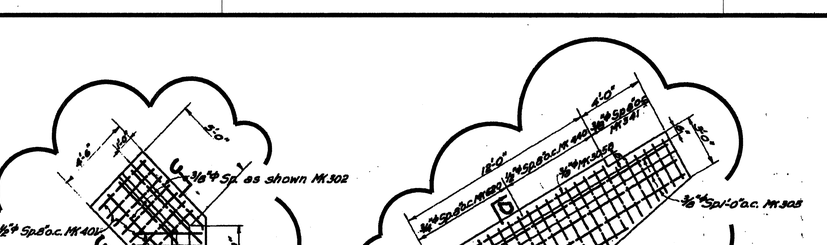
PIIKEA BRIDGE

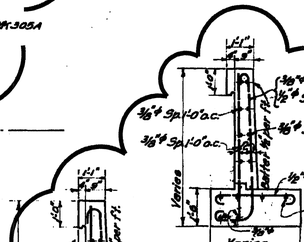
HAWAII BELT ROAD ~~FAP 18-B~~ STP-011-2(25)
~~BRIDGE No. 1~~ STA. 180+79 TO STA. 181+00
DATE: ~~FEB. 1937~~ SEP. 1993 SCALES AS NOTED
SHEET No 1 OF 2 SHEETS

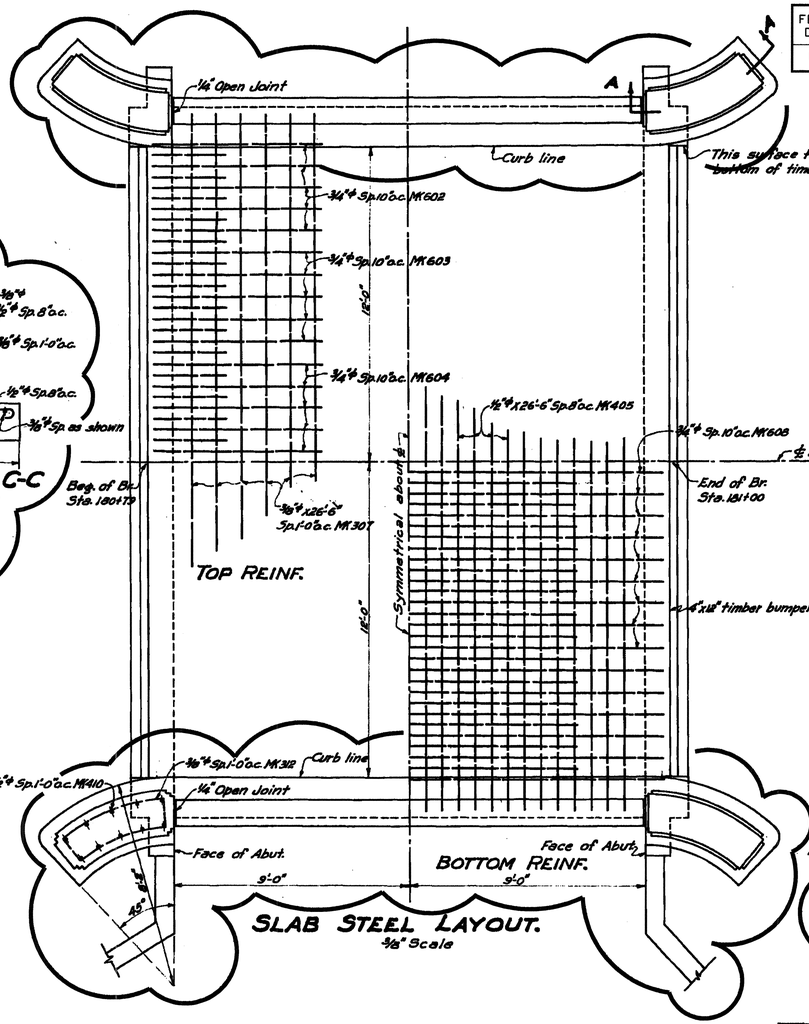
37 ~~4406.4~~

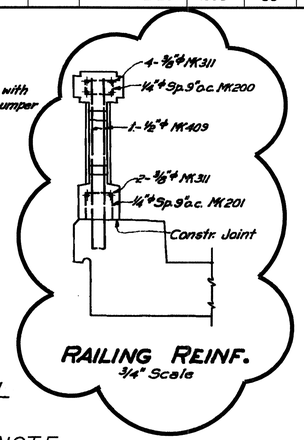
FED. ROAD DIST. NO.	STATE	FED. AID PROJ. NO.	FISCAL YEAR	SHEET NO.	TOTAL SHEETS
~~HAWAII~~	~~HAW.~~	~~18-B~~	~~1937~~	~~5~~	~~35~~
HAWAII	HAW.	STP-011-2(25)	1995	38	39





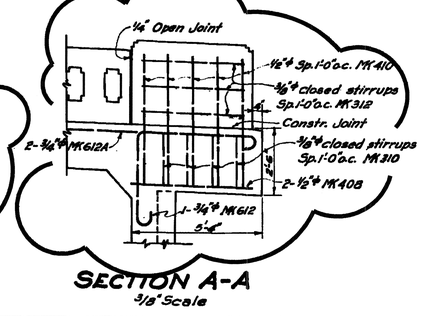


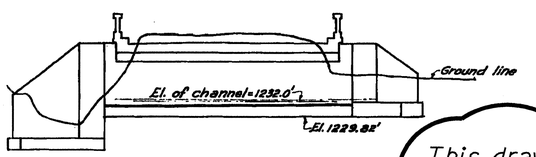




NOTE:

= Areas designated for removal during Phase I & II concstruction





ESTIMATED QUANTITIES

	LOCATION	CHANNEL EX. C.Y.	STR. EX. C.Y.	CLASS "A" CONC. C.Y.	REINF. STEEL LBS.
BRIDGE	FOOTINGS	36.0	30.0	6.3	180
	ABUTMENTS			14.1	2,443
	SUPERSTR.			33.9	3,664
	RAILING			6.3	418
WING WALLS	FOOTINGS		60.0	10.8	396
	WALLS			13.1	1,016
	TOTAL	36.0	90.0	84.5	8,117

This drawing is in part original contract plans of existing bridge. For information & guidance only. Drawings are not to scale.

TERRITORIAL HIGHWAY DEPARTMENT
TERRITORY OF HAWAII

PIIKEA BRIDGE

HAWAII BELT ROAD ~~F.A.P. 18-B.~~ STP-011-2(25)
~~BRIDGE No. 1~~ STA. 180+79 TO STA. 181+00
DATE: ~~FEB. 1937~~ SEP, 1993 SCALES AS NOTED
SHEET NO ES2 OF 2 SHEETS

ORIGINAL PLAN	SURVEY PLOTTED BY	DATE ~~Feb. 1937~~
	DRAWN BY	" " ~~June 4~~
NOTE BOOK	TRACED BY	" " ~~June 4~~
No.	QUANTITIES BY	" " ~~June 4~~
	CHECKED BY	" " ~~June 4~~

38 ~~4406.5~~