

GENERAL NOTES

GENERAL SPECIFICATIONS:

Refer to Hawaii Department of Transportation Standard Plans, Standard Specifications for Road and Bridge Construction (1994 edition), together with Special Provisions prepared for this contract.

DESIGN SPECIFICATIONS:

The 15th edition of AASHTO Standard Specifications for Highway Bridges, 1992, with subsequent interim specifications.

MATERIALS:

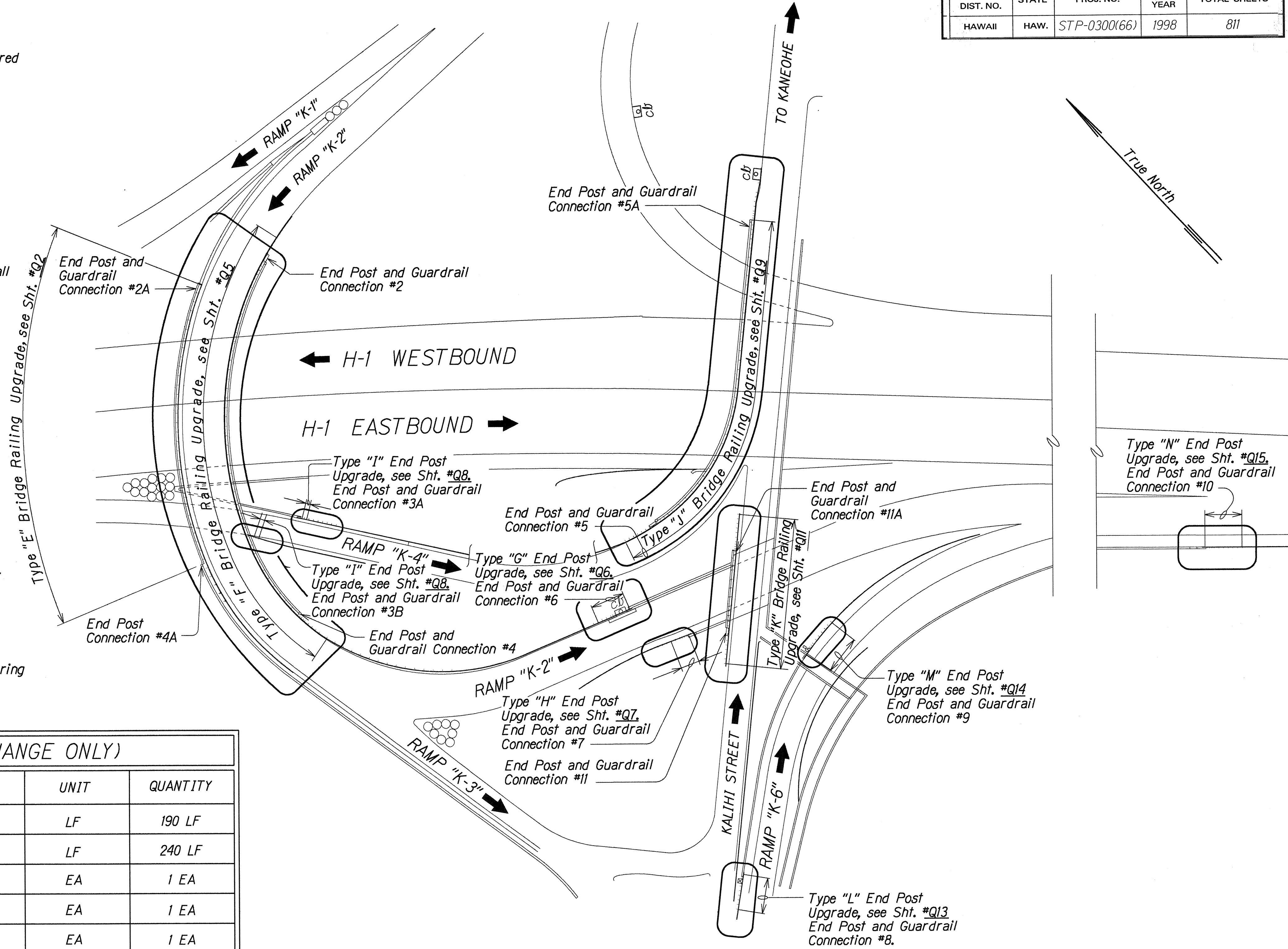
1. Concrete shall be Class A unless noted otherwise.
2. All reinforcing steel shall be ASTM A 615, grade 40 unless noted otherwise.
3. All structural steel shall be ASTM A 36 hot-dip galvanized, unless noted otherwise.
4. All anchor bolts, washers and nuts shall be ASTM A 325, hot-dip galvanized after fabrication, unless noted otherwise.

CONSTRUCTION NOTES:

1. The Contractor shall verify all existing conditions as specified on the plans and shall verify all dimensions in the field prior to commencing with the work.
2. The Contractor shall verify the locations of all utility lines near structures and notify their respective owners before commencing with work.
3. All vertical dimensions are measured plumb unless noted otherwise.
4. All items noted incidental will not be paid for separately.
5. Existing structure shown by hatched lines.
6. Limits of removal of existing structure shown by x-hatched lines.
7. Saw cut 1" deep along cut line of existing structure.
8. Removal shall be done in such a manner as to preclude any damage to the existing structures.
9. Large vibratory type of equipment will not be permitted in the removal operation, nor for drilling of holes.
10. Only small vibratory hand tools approved by the Engineer will be allowed.
11. Any damage to the existing structure due to the Contractor's operation or negligence shall be repaired by the Contractor at his expense to the satisfaction of the Engineer, with no additional cost to the State.
12. All existing reinforcing and anchor bolts that can be incorporated in the new work shall be bent or cut as required and cleaned before being utilized in the new work.
13. All existing reinforcing or anchor bolts that cannot be incorporated in the new work shall be completely removed or removed to a minimum depth of 1 1/2 inches below finish grade and the area patched with mortar.
14. All existing concrete face, receiving new concrete in the finish product, shall be roughened and cleaned prior to placement of new pour, unless indicated otherwise or as directed by the Engineer.
15. Drilling of through holes shall be done in such a manner as to prevent cone puncturing of the daylighting end. During placement of bolts, holes shall be filled with mastic, except as noted otherwise.

ESTIMATED QUANTITIES (KALIHI INTERCHANGE ONLY)

ITEM NO.	ITEM	UNIT	QUANTITY
507.7610	Type "E" Bridge Railing Upgrade Including End Post	LF	190 LF
507.7620	Type "F" Bridge Railing Upgrade	LF	240 LF
507.7620	Type "G" End Post Upgrade	EA	1 EA
507.7620	Type "H" End Post Upgrade	EA	1 EA
507.7620	Type "I" End Post Upgrade	EA	1 EA
507.7620	Type "J" Bridge Railing Upgrade	LF	249 LF
507.7620	Type "K" Bridge Railing Upgrade	LF	48 LF
507.7620	Type "L" End Post Upgrade	EA	1 EA
507.7620	Type "M" End Post Upgrade	EA	1 EA
507.7620	Type "N" End Post Upgrade	EA	1 EA
606.3112	Guardrail Type 3 Thrie Beam	LF	200 LF



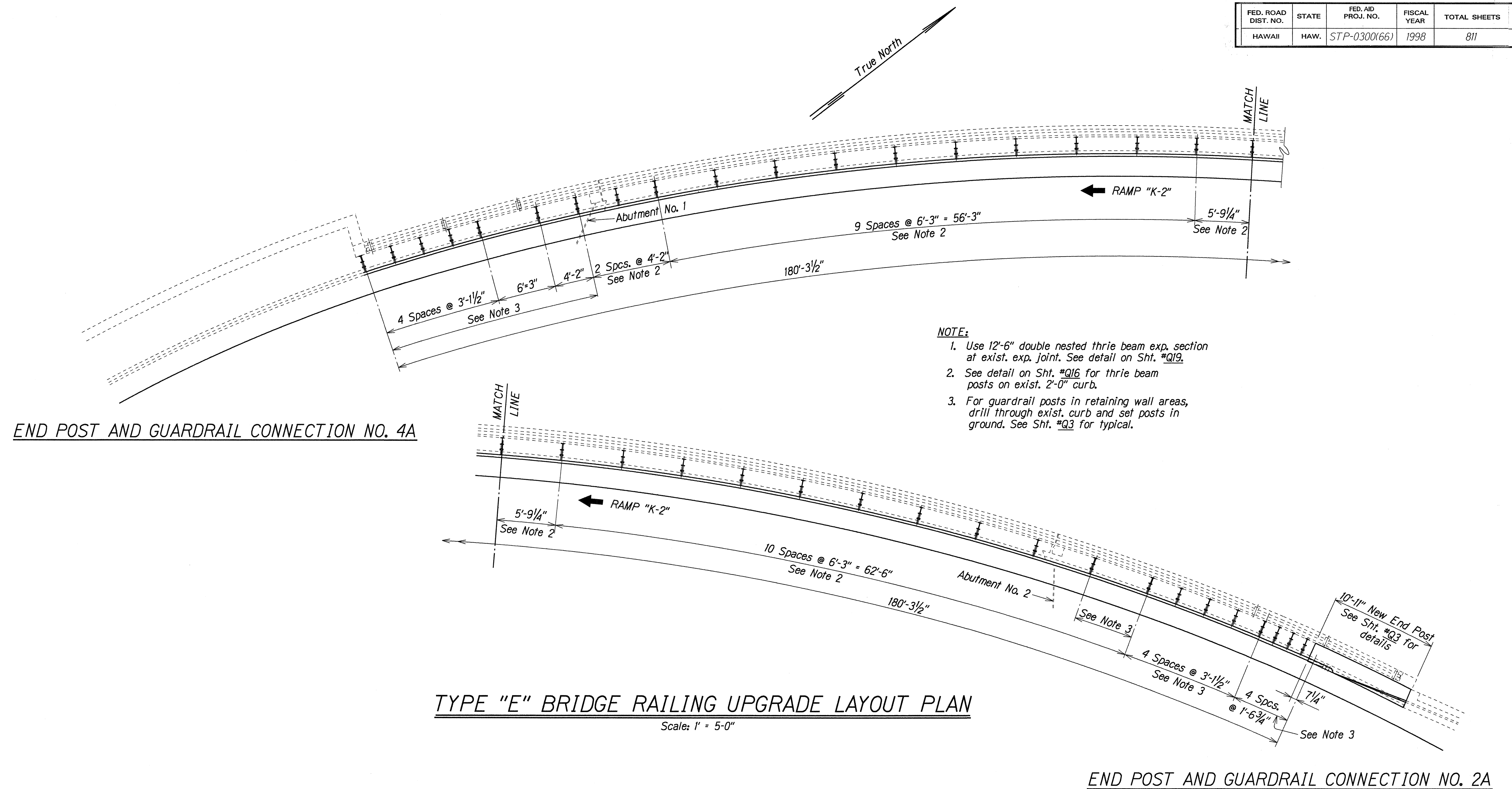
LOCATION PLAN
Not to scale

FED. ROAD DIST. NO.	STATE	FED. AID PROJ. NO.	FISCAL YEAR	TOTAL SHEETS
HAWAII	HAW.	STP-0300(66)	1998	811

DESIGNED BY	DATE
DRAWN BY	JUN 1995
CHECKED BY	JUN 1995
NOTED BY	JUN 1995
IN CHARGE	JUN 1995

STATE OF HAWAII
DEPARTMENT OF TRANSPORTATION
HIGHWAYS DIVISION
KALIHI INTERCHANGE
END POST CONNECTION, LOCATION PLAN,
GENERAL NOTES AND ESTIMATED QUANTITIES
KALIHI STREET RESURFACING
Dillingham Blvd. to School St. Including Interchange On/Off Ramps
Fed. Aid Project No. STP-063-1(20)
Scale: As Noted Date: June 1995

FED. ROAD DIST. NO.	STATE	FED. AID PROJ. NO.	FISCAL YEAR	TOTAL SHEETS
HAWAII	HAW.	STP-0300(66)	1998	811



ORIGINAL PLAN	DATE	BY
NOTE BOOK	DATE	BY
NO. 1000	DATE	BY
CHECKED BY	DATE	BY

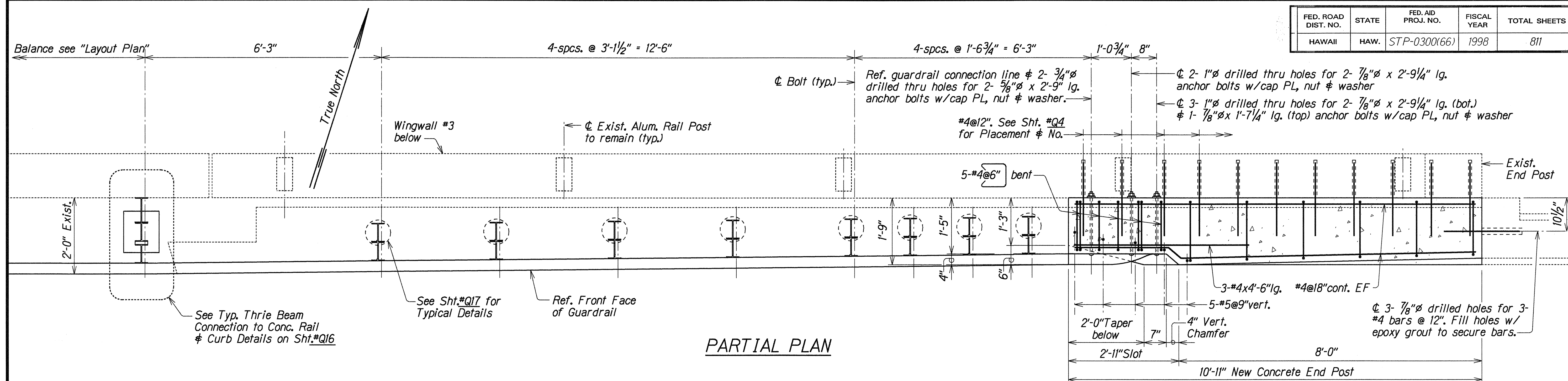
STATE OF HAWAII
DEPARTMENT OF TRANSPORTATION
HIGHWAYS DIVISION

KALIHI INTERCHANGE
TYPE "E" BRIDGE RAILING UPGRADE LAYOUT PLAN
KALIHI INTERCHANGE
Dillingham Blvd. to School St. Including Interchange On/Off Ramps
Fed. Aid Project No. STP-063-1(20)

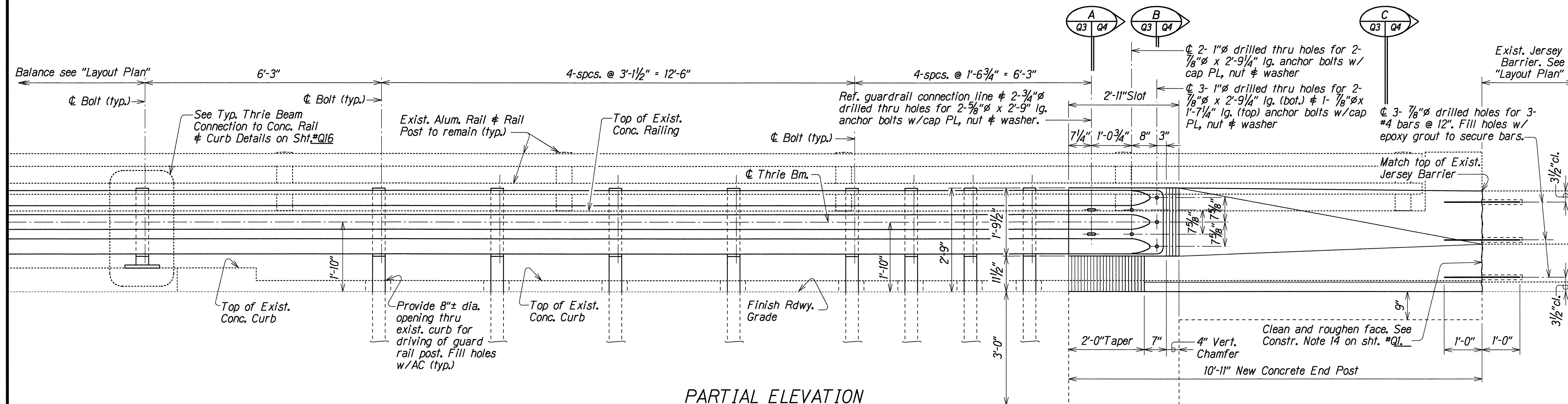
Scale: As Noted
Date: June 1995

SHEET No. Q2 OF 19 SHEETS

FED. ROAD DIST. NO.	STATE	FED. AID PROJ. NO.	FISCAL YEAR	TOTAL SHEETS
HAWAII	HAW.	STP-0300(66)	1998	811



PARTIAL PLAN



PARTIAL ELEVATION

END POST AND GUARDRAIL CONNECTION NO. 2A DETAIL AT RAMP "K-2"

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

ORIGINAL PLAN	DATE	JUN 1995
DRAWN BY	KSJ	
DESIGNED BY	JFU	
QUANTITIES BY	JFU	
CHECKED BY	DOO	

STATE OF HAWAII
DEPARTMENT OF TRANSPORTATION
HIGHWAYS DIVISION

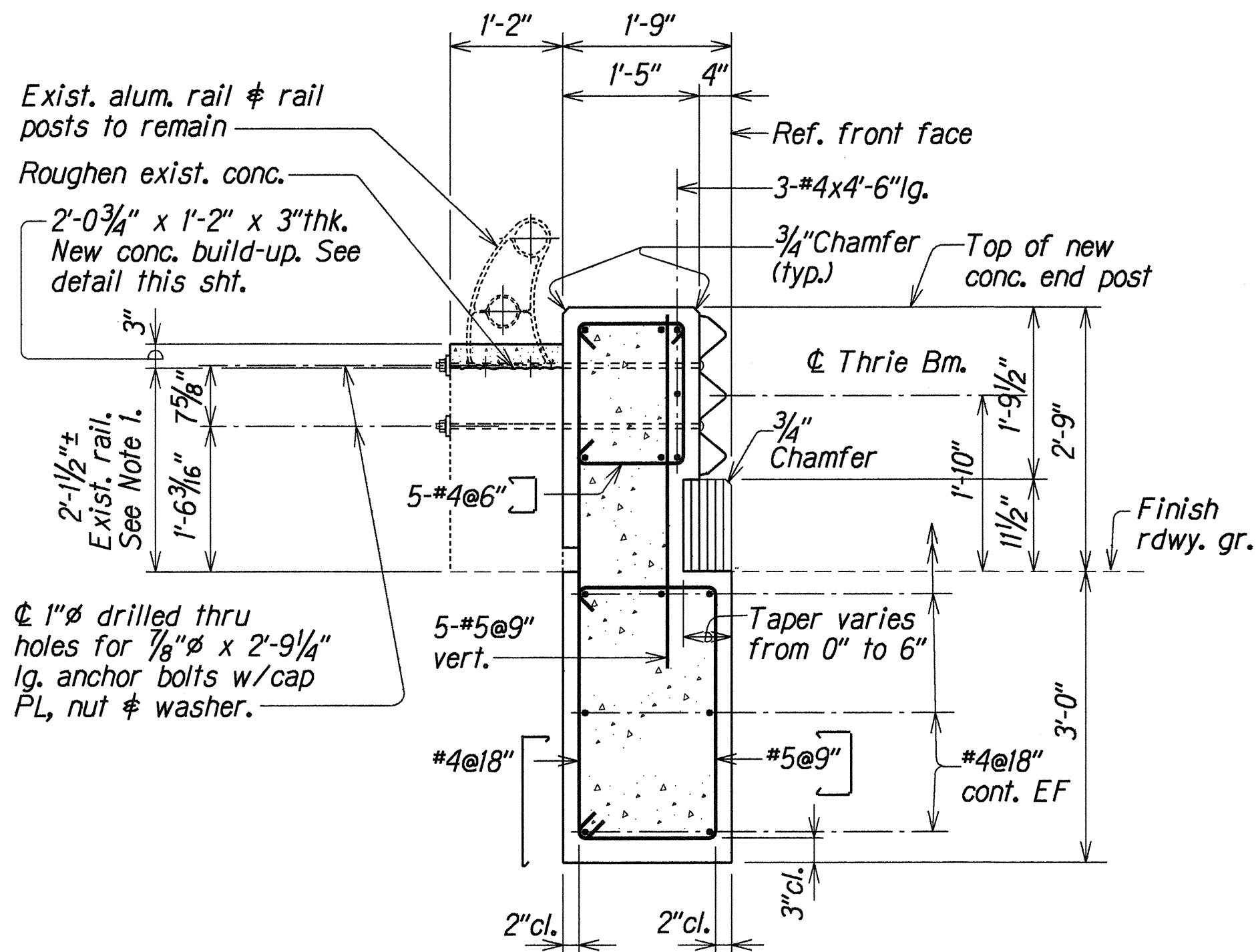
KALIHI INTERCHANGE
TYPE "E" BRIDGE RAILING UPGRADE DETAILS
PARTIAL PLAN AND ELEVATION

KALIHI STREET RESURFACING
Dillingham Blvd. to School St. Including Interchange On/Off Ramps
Fed. Aid Proj. No. STP-063-1(20)

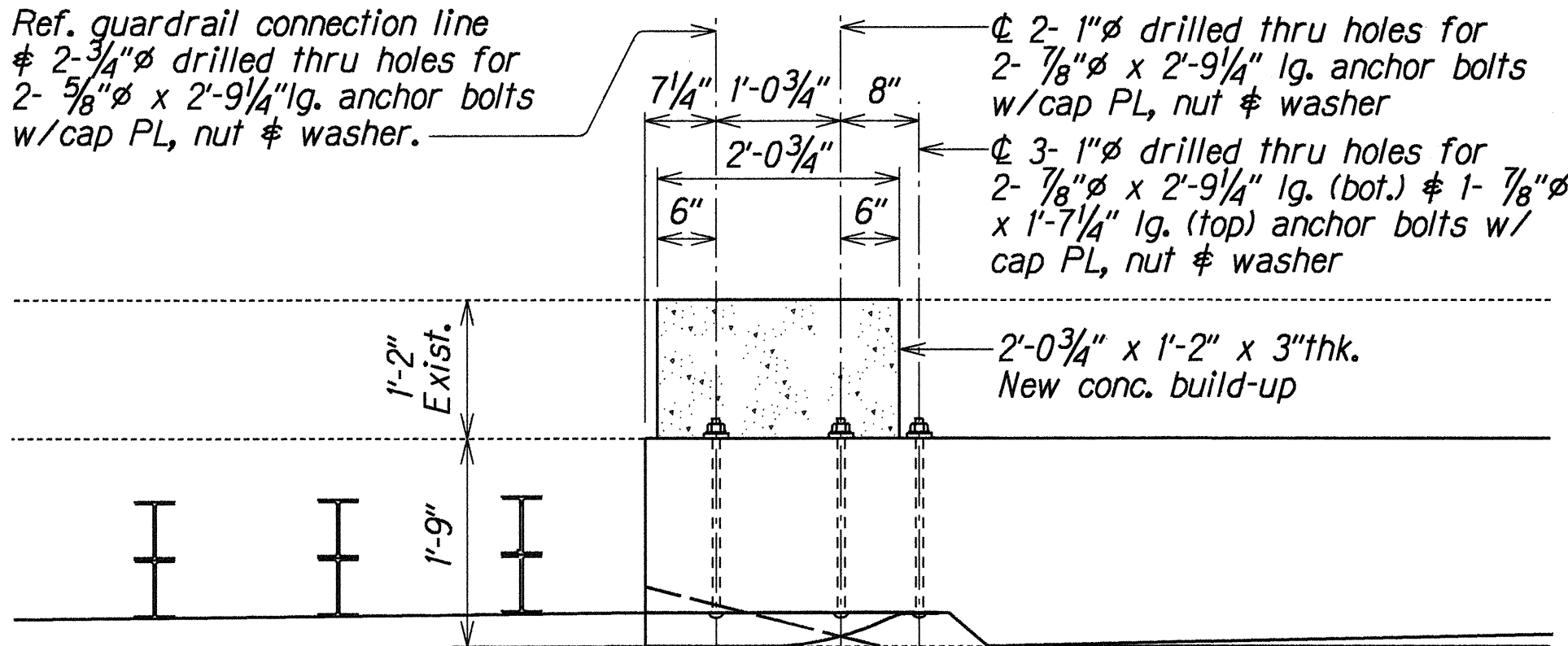
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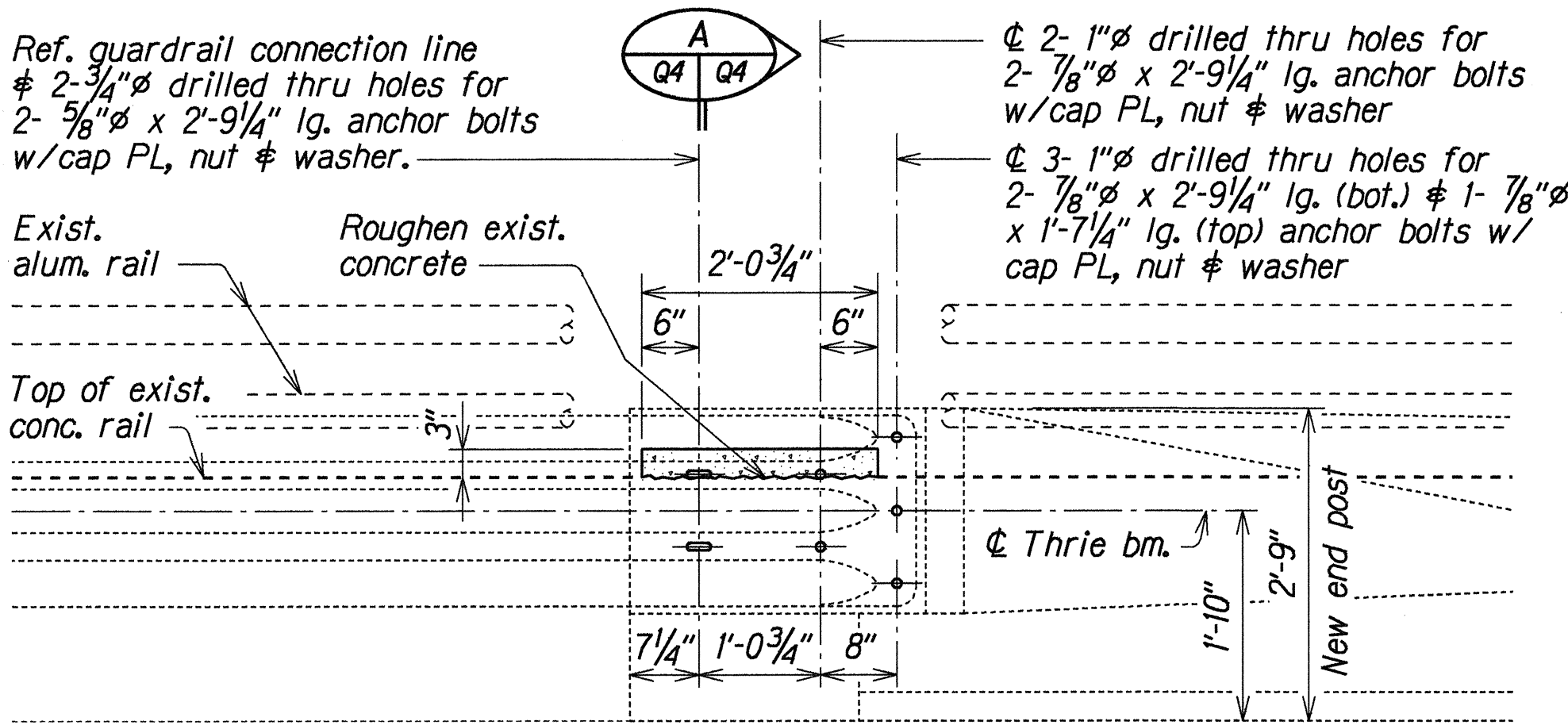
FED. ROAD DIST. NO.	STATE	FED. AID PROJ. NO.	FISCAL YEAR	TOTAL SHEETS
HAWAII	HAW.	STP-0300(66)	1998	811



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



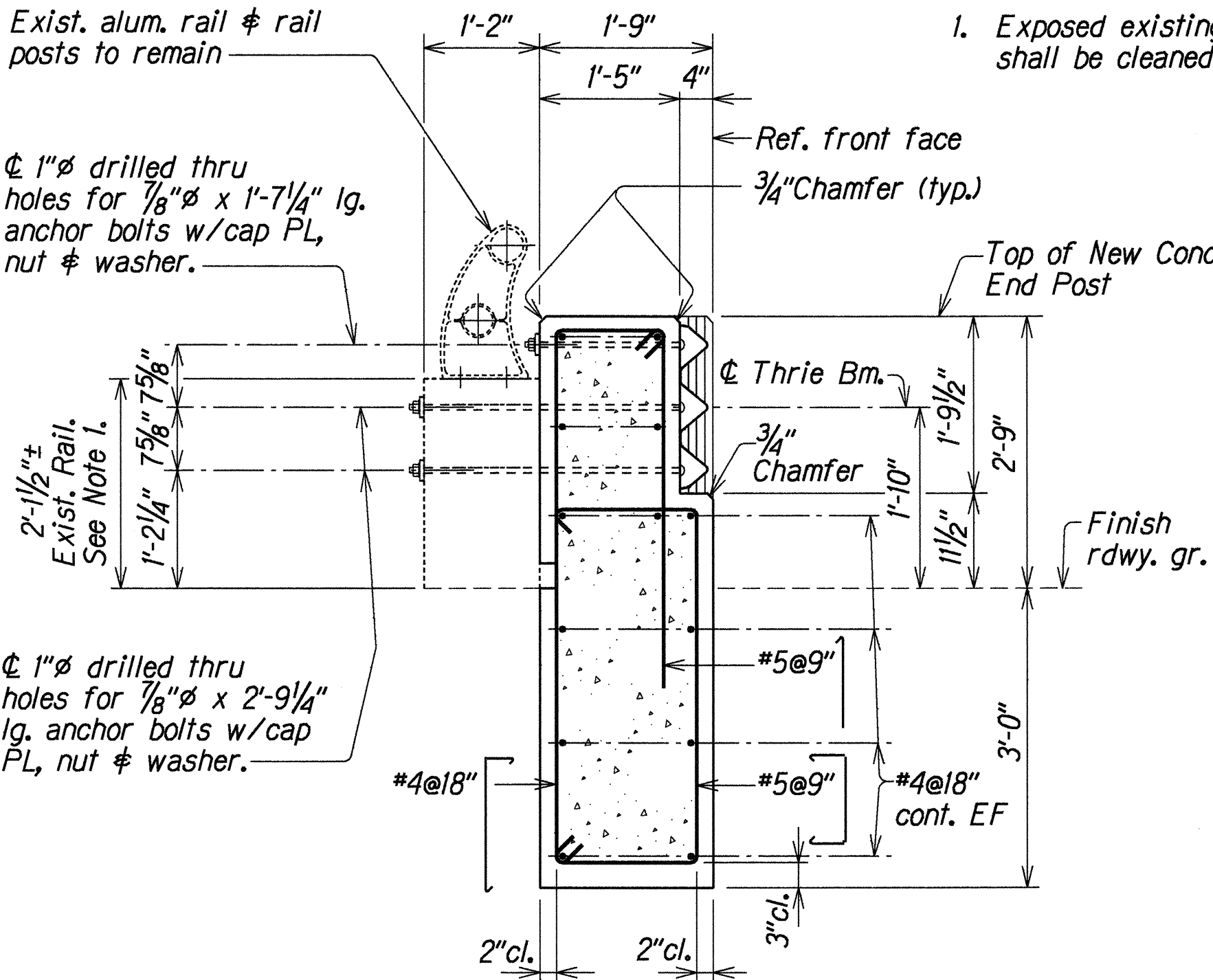
PARTIAL PLAN



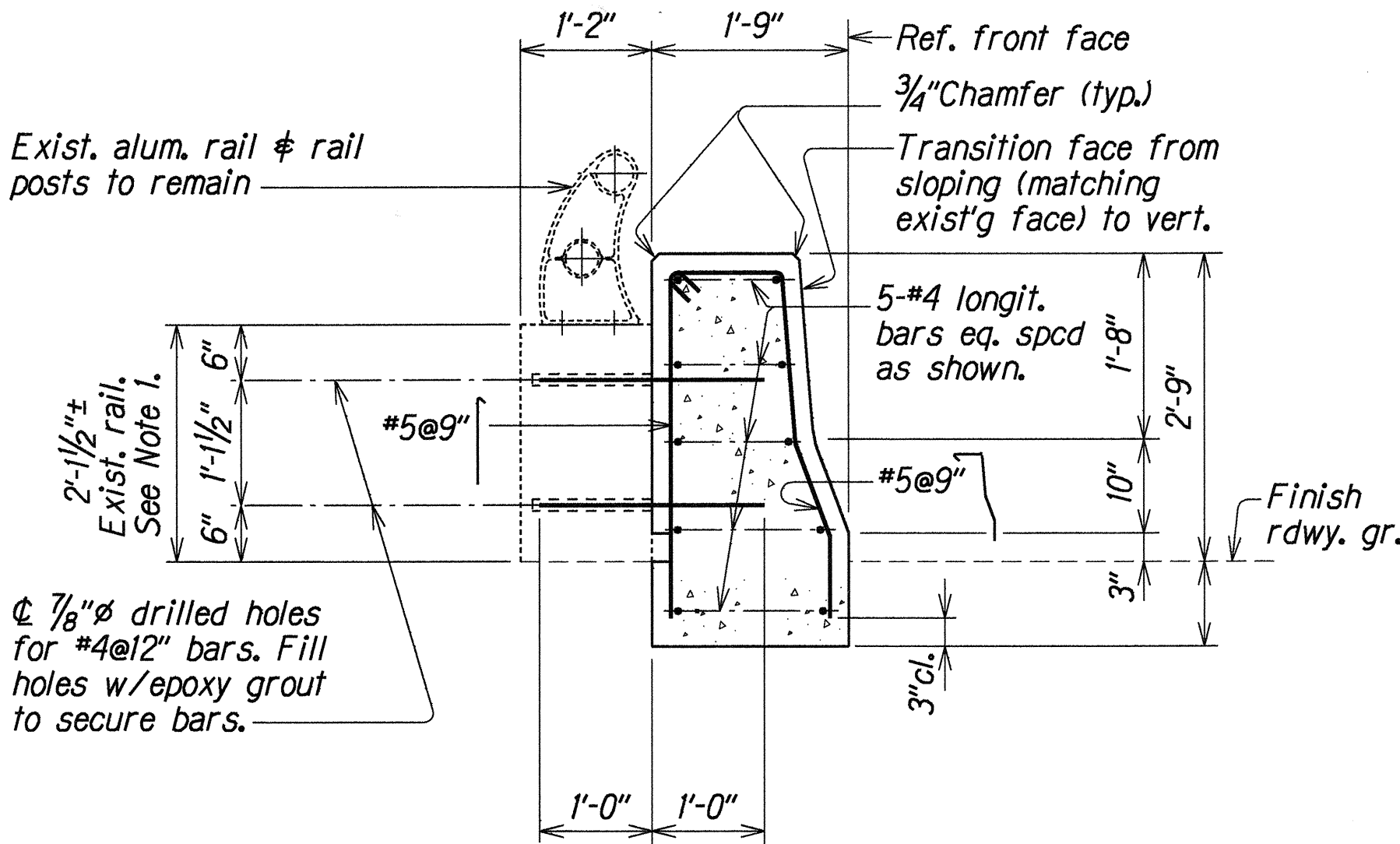
PARTIAL ELEVATION

EXISTING CONCRETE RAIL BUILD-UP DETAIL

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



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



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

NOTE:

- Exposed existing reinforcement to remain and shall be cleaned and incorporated in the new pour.

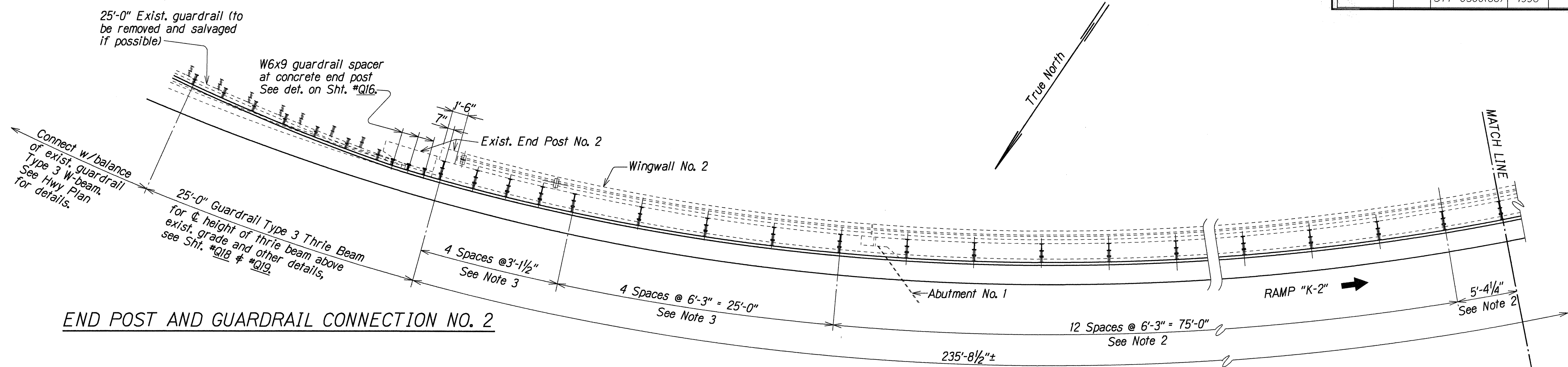
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DRAWN BY	JUN 1995
DESIGNED BY	JUN 1995
QUANTITIES BY	JUN 1995
CHECKED BY	JUN 1995
ORIGINAL PLAN	
NOTE BOOK	
NO.	KIC04

STATE OF HAWAII
DEPARTMENT OF TRANSPORTATION
HIGHWAYS DIVISION

KALIHI INTERCHANGE
TYPE "E" BRIDGE RAILING UPGRADE DETAILS
SECTIONS AND EXISTING RAIL BUILD-UP DETAILS
KALIHI STREET RESURFACING
Dillingham Blvd. to School St. Including Interchange On/Off Ramps
Fed. Aid Proj. No. STP-063-1(20)
Scale: As Noted Date: June 1995

SHEET No. Q4 OF 19 SHEETS

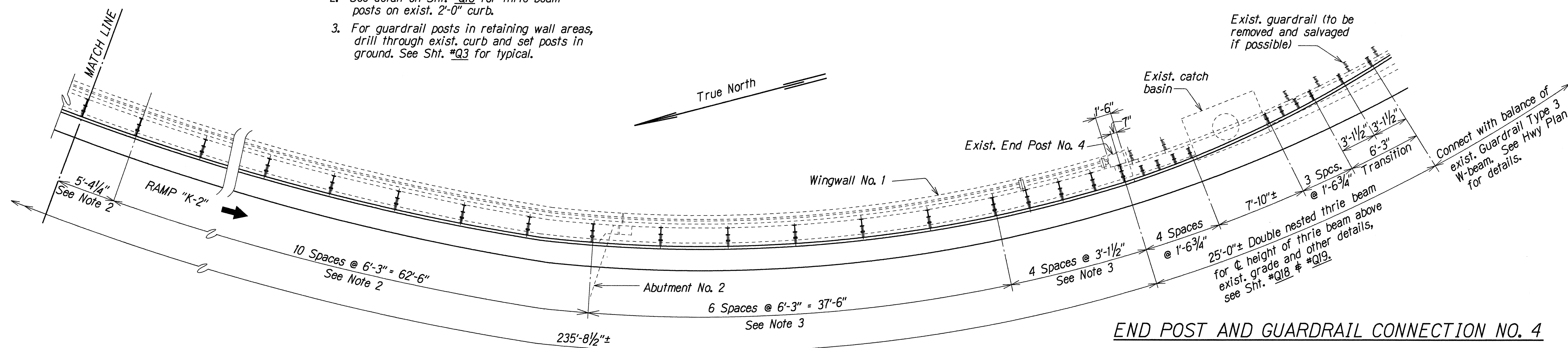
FED. ROAD DIST. NO.	STATE	FED. AID PROJ. NO.	FISCAL YEAR	TOTAL SHEETS
HAWAII	HAW.	STP-0300(66)	1998	811



END POST AND GUARDRAIL CONNECTION NO. 2

NOTE:

1. Use 12'-6" double nested thrie beam exp. section at exist. exp. joint. See detail on Sht. #Q19.
2. See detail on Sht. #Q16 for thrie beam posts on exist. 2'-0" curb.
3. For guardrail posts in retaining wall areas, drill through exist. curb and set posts in ground. See Sht. #Q3 for typical.



END POST AND GUARDRAIL CONNECTION NO. 4

TYPE "F" BRIDGE RAILING UPGRADE LAYOUT PLAN

Scale: 1" = 5'-0"

SURVEY PLOTTED BY	DATE
DRAWN BY	JUN 1995
DESIGNED BY	JUN 1995
QUANTITIES BY	JUN 1995
CHECKED BY	JUN 1995
ORIGINAL PLAN	
NOTE BOOK	
N.	1000000

STATE OF HAWAII
DEPARTMENT OF TRANSPORTATION
HIGHWAYS DIVISION

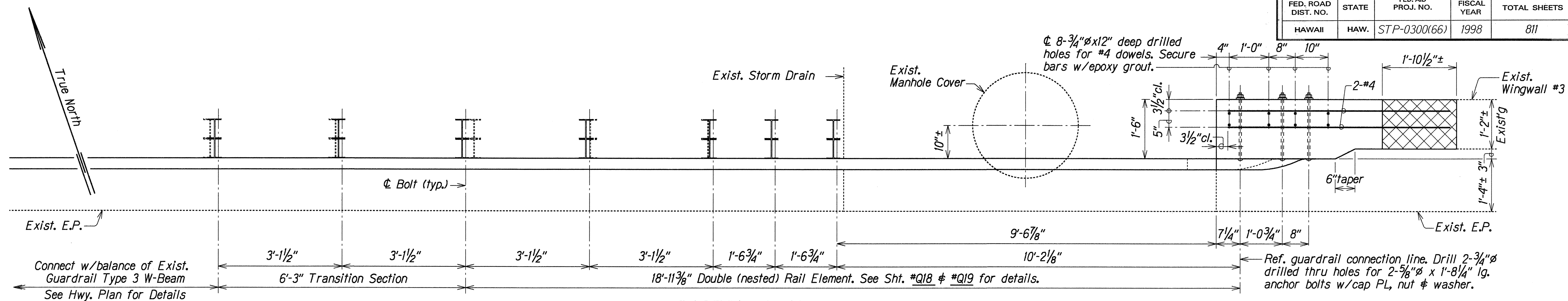
KALIHI INTERCHANGE
TYPE "F" BRIDGE RAILING UPGRADE
LAYOUT PLAN

KALIHI STREET RESURFACING
Dillingham Blvd. to School St. Including Interchange On/Off Ramps
Fed. Aid Project No. STP-063-1(20)

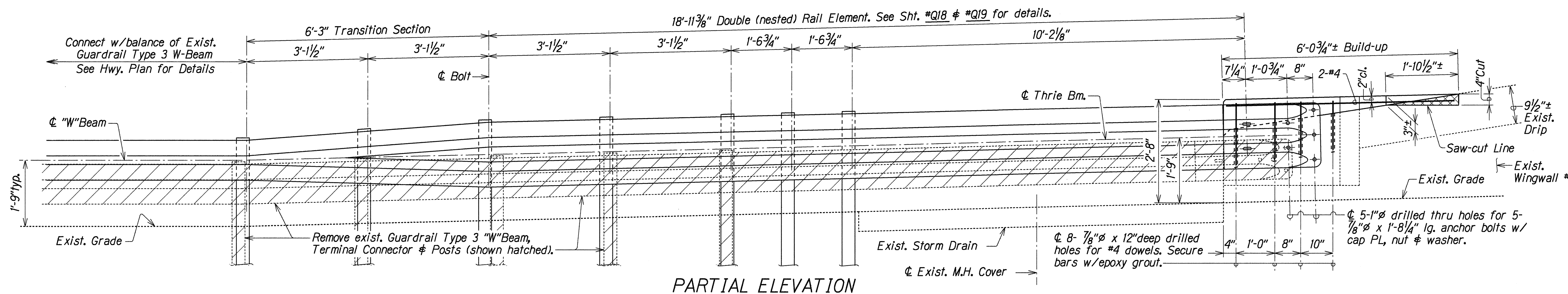
Scale: As Noted Date: June, 1995

SHEET No. Q5 OF 19 SHEETS

FED. ROAD DIST. NO.	STATE	FED. AID PROJ. NO.	FISCAL YEAR	TOTAL SHEETS
HAWAII	HAW.	STP-0300(66)	1998	811



PARTIAL PLAN



PARTIAL ELEVATION

END POST AND GUARDRAIL CONNECTION NO. 6 AT RAMP "K-2"

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

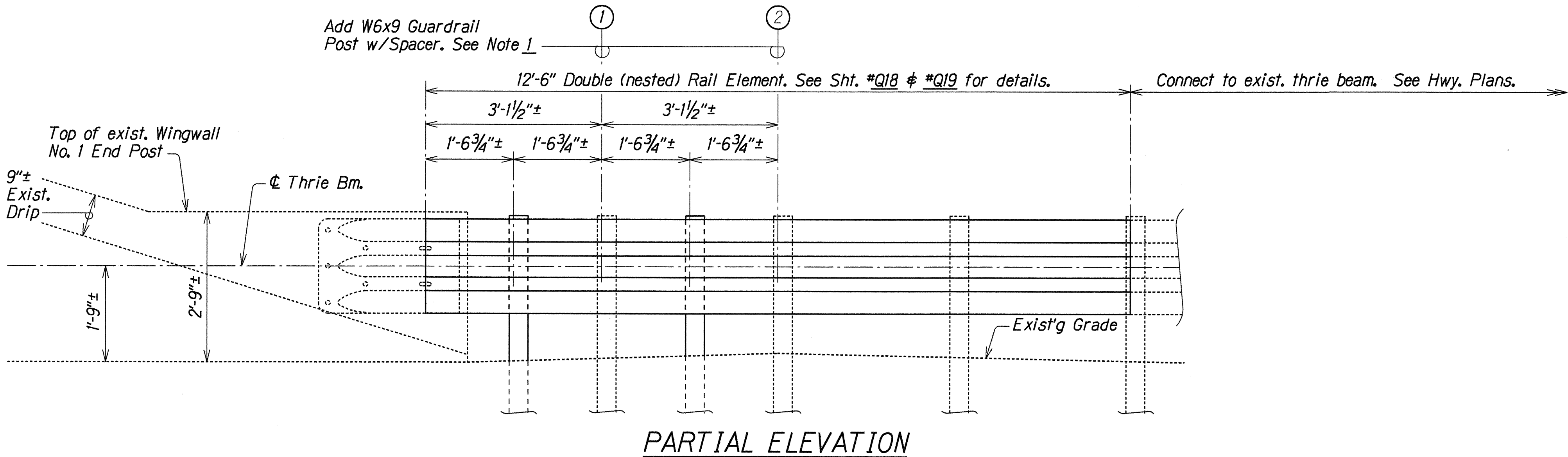
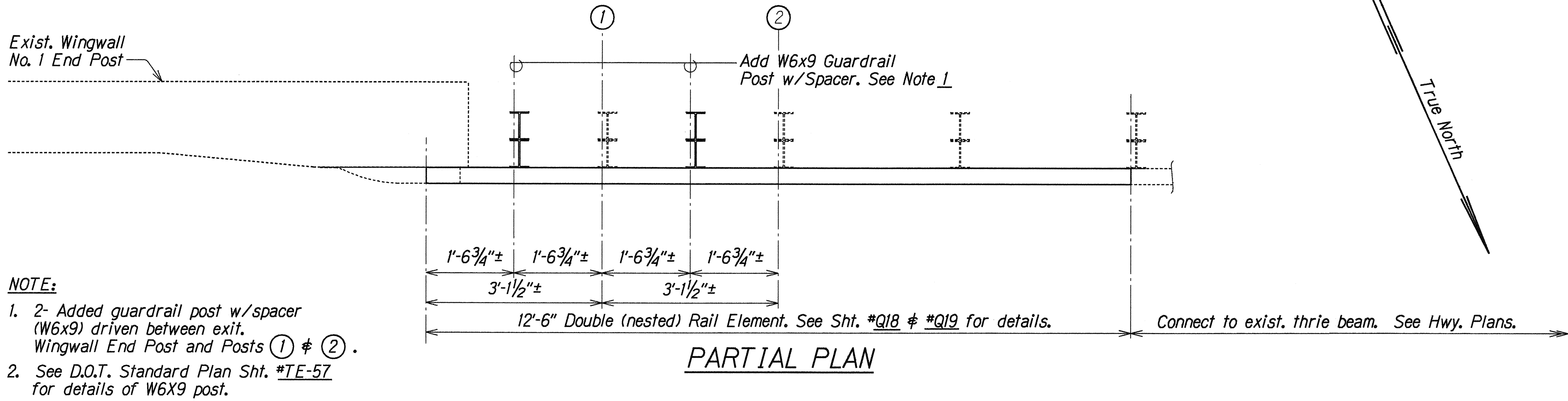
ORIGINAL PLAN	SURVEY PLOTTED BY	DATE
NOTE BOOK	DRAWN BY	JUL 1995
DESIGNED BY	KSG	JUL 1995
QUANTITIES BY	JFU	JUL 1995
CHECKED BY	DCO	JUL 1995
IN	KCS	JUL 1995

STATE OF HAWAII
DEPARTMENT OF TRANSPORTATION
HIGHWAYS DIVISION

KALIHI INTERCHANGE
TYPE "G" END POST UPGRADE
PARTIAL PLAN AND ELEVATION
KALIHI STREET RESURFACING
Dillingham Blvd. to School St. Including Interchange On/Off Ramps
Fed. Aid Proj. No. STP-063-1(20)

Scale: As Noted Date: June, 1995

FED. ROAD DIST. NO.	STATE	FED. AID PROJ. NO.	FISCAL YEAR	TOTAL SHEETS
HAWAII	HAW.	STP-0300(66)	1998	811



END POST AND GUARDRAIL CONNECTION NO. 7 AT RAMP "K-2"

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

ORIGINAL PLAN	SURVEY PLOTTED BY	DATE
NOTE BOOK	DRAWN BY	JUN 1995
N. 7	DESIGNED BY	JUN 1995
	QUANTITIES BY	JUN 1995
	CHECKED BY	JUN 1995

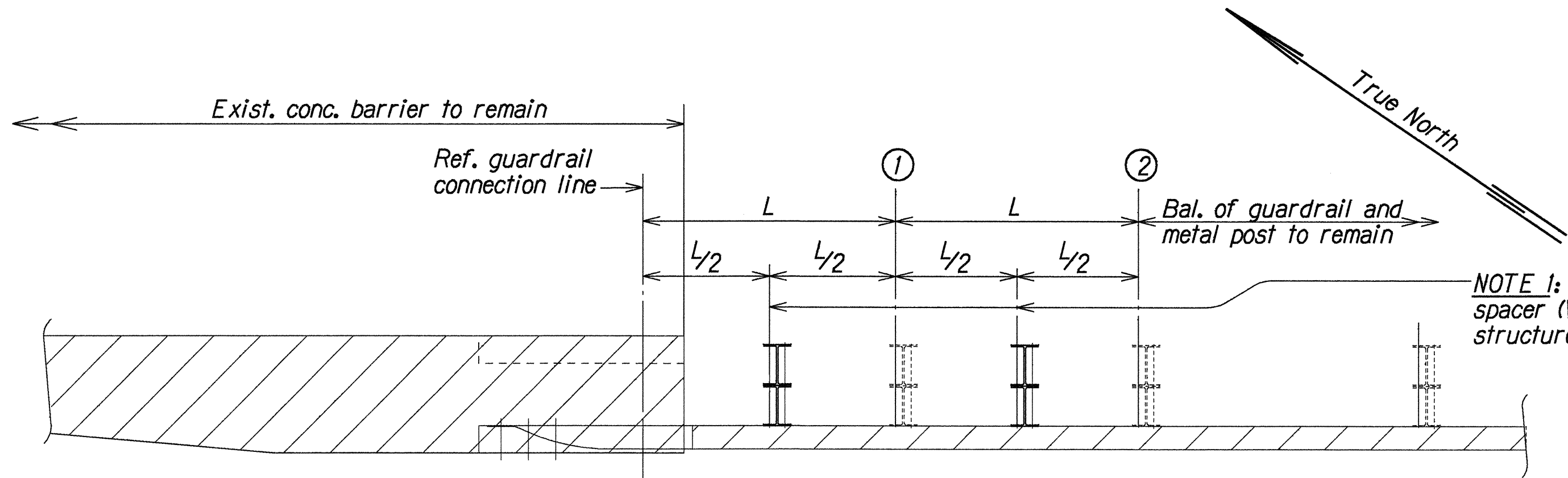
STATE OF HAWAII
DEPARTMENT OF TRANSPORTATION
HIGHWAYS DIVISION

KALIHI INTERCHANGE
TYPE "H" END POST UPGRADE
PARTIAL PLAN AND ELEVATION
KALIHI STREET RESURFACING
Dillingham Blvd. to School St. Including Interchange On/Off Ramps
Fed. Aid Proj. No. STP-063-1(20)

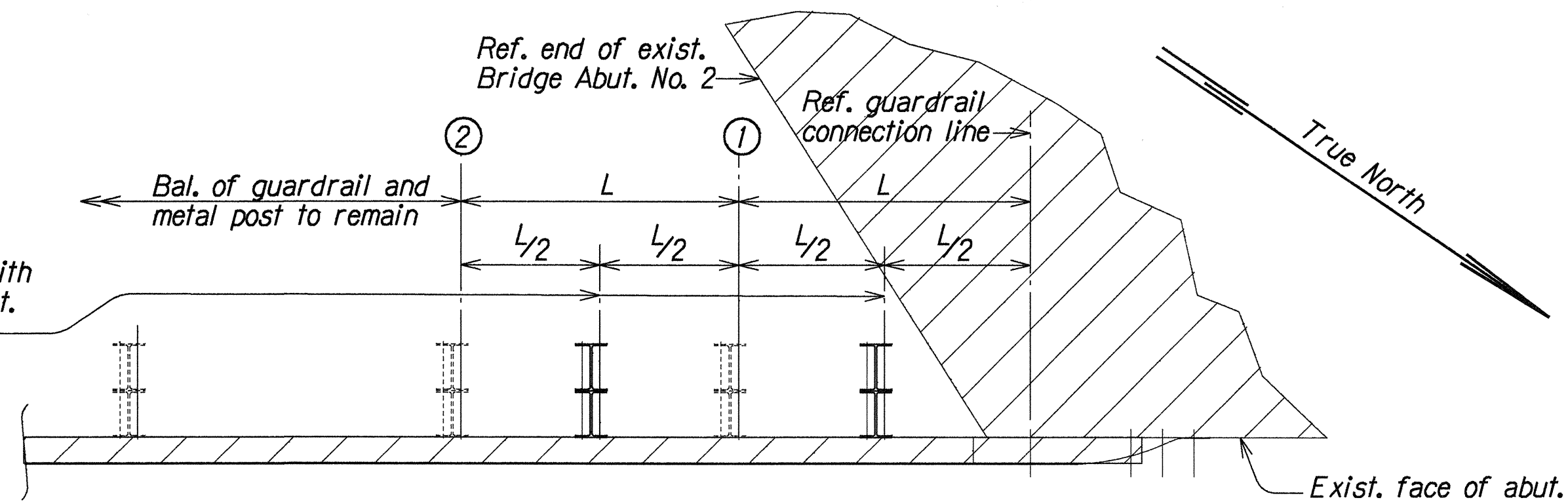
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Date: June, 1995

SHEET No. Q7 OF 19 SHEETS

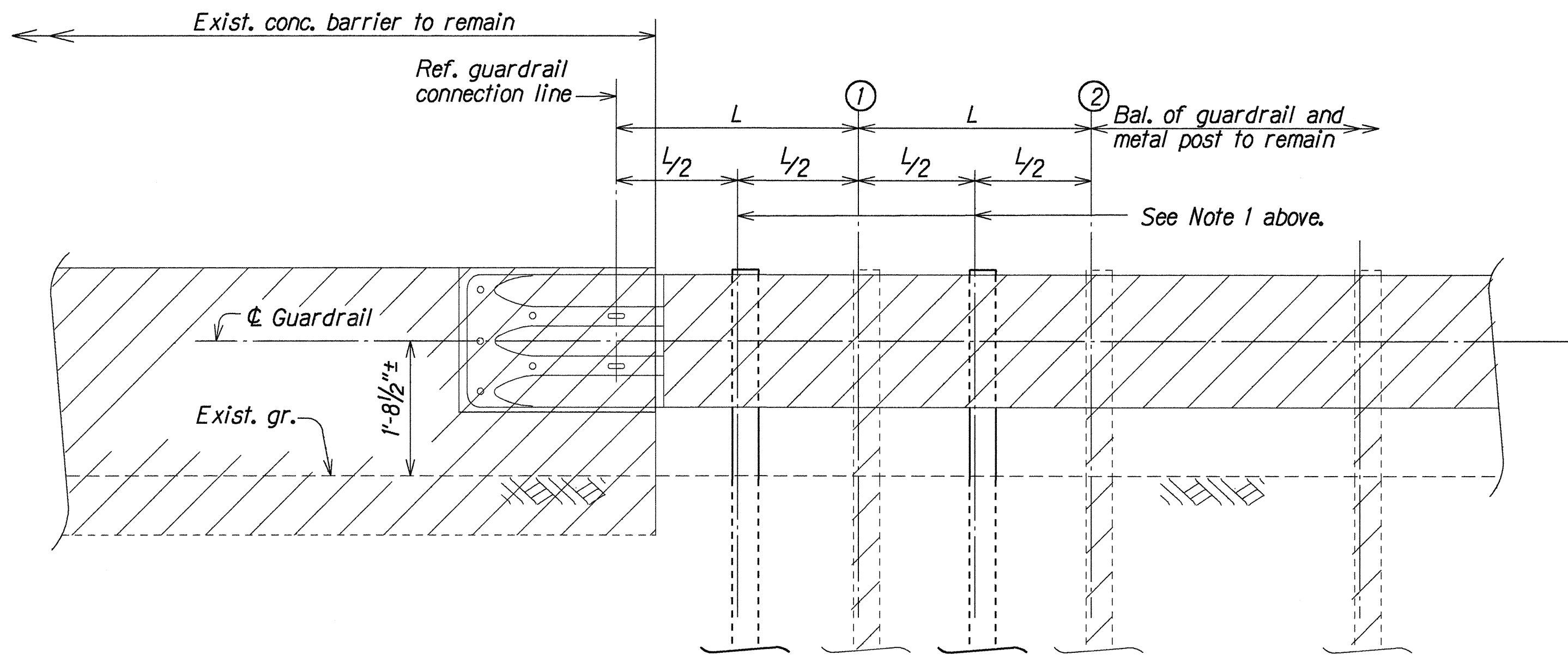
FED. ROAD DIST. NO.	STATE	FED. AID PROJ. NO.	FISCAL YEAR	TOTAL SHEETS
HAWAII	HAW.	STP-0300(66)	1998	811



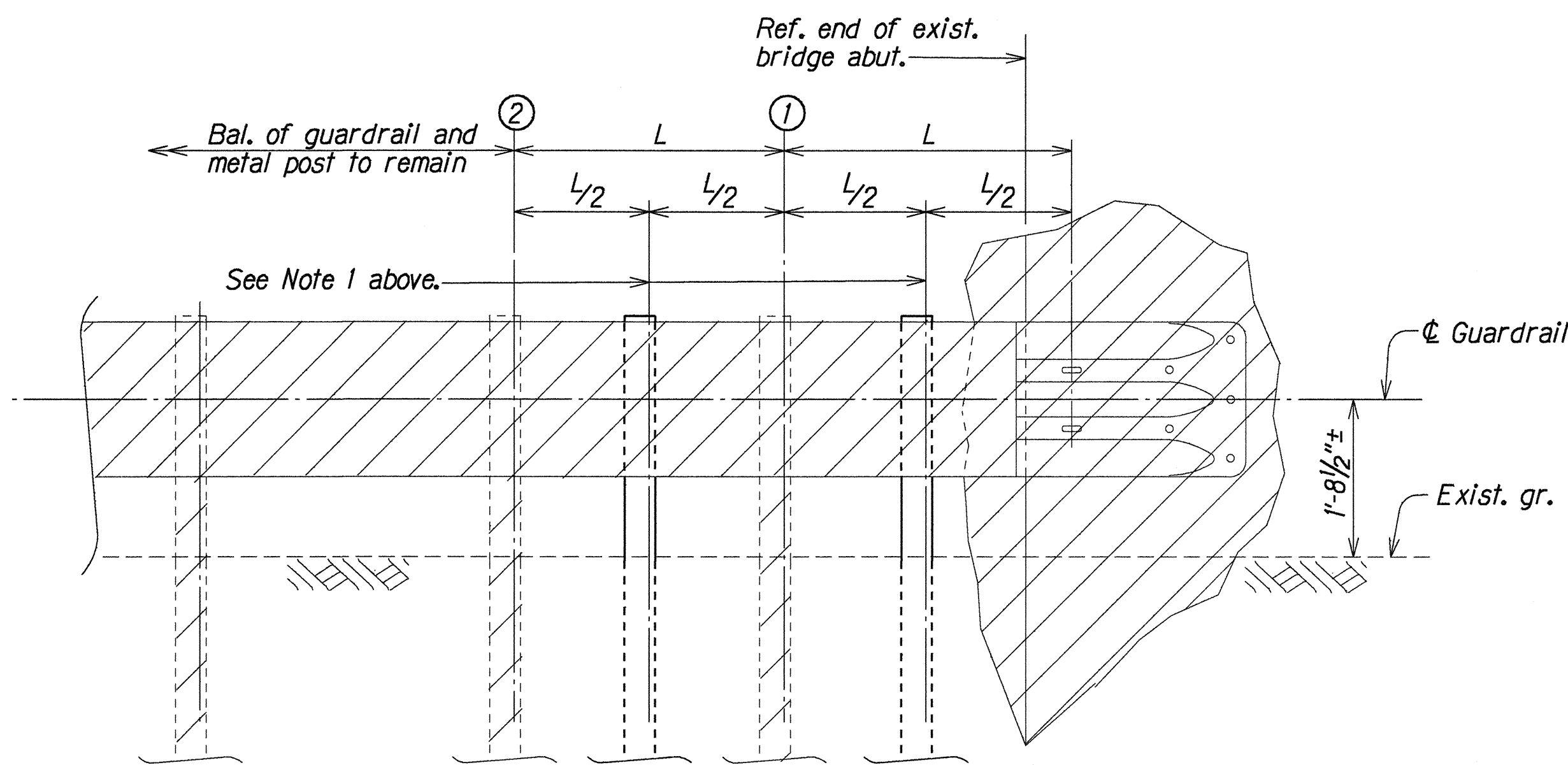
PARTIAL PLAN



PARTIAL PLAN



PARTIAL ELEVATION



PARTIAL ELEVATION

CONCRETE BARRIER GUARDRAIL CONNECTION NO. 3A AT RAMP "K-4"

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

ABUTMENT GUARDRAIL CONNECTION NO. 3B AT RAMP "K-4"

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

NOTE:
See Sht. #Q18 & #Q19 for details of W6x9 post.

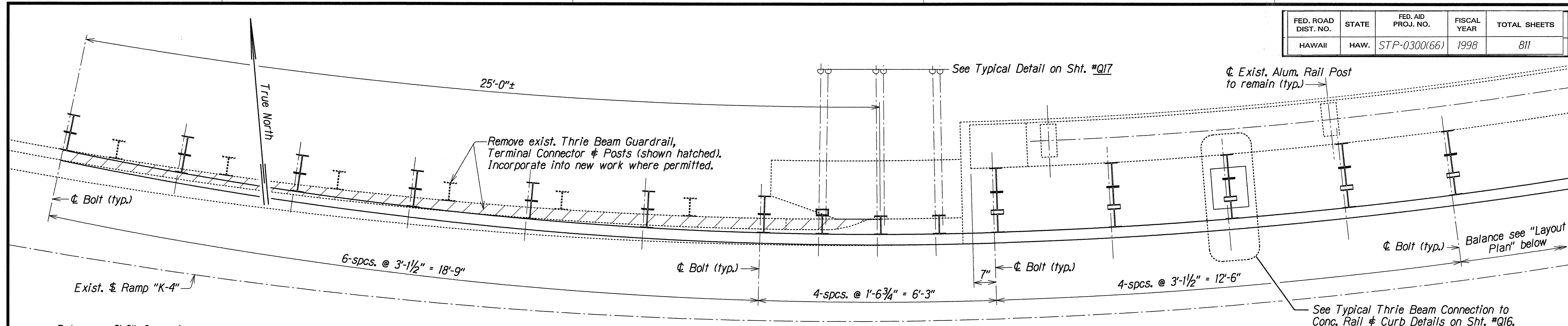
SURVEY PLOTTED BY	DATE
DRAWN BY	JUN 1995
DESIGNED BY	JUN 1995
QUANTITIES BY	JUN 1995
CHECKED BY	JUN 1995

STATE OF HAWAII
DEPARTMENT OF TRANSPORTATION
HIGHWAYS DIVISION

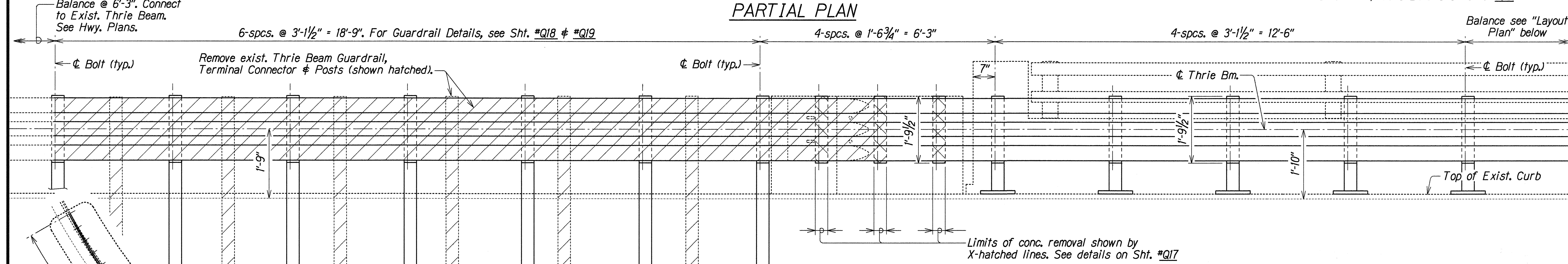
KAILIHI INTERCHANGE
TYPE "I" END POST UPGRADE
PARTIAL PLAN AND ELEVATION
KAILIHI STREET RESURFACING
Dillingham Blvd. to School St. Including Interchange On/Off Ramps
Fed. Aid Proj. No STP-063-1(20)

Scale: As Noted
Date: June, 1995

FED. ROAD DIST. NO.	STATE	FED. AID PROJ. NO.	FISCAL YEAR	TOTAL SHEETS
HAWAII	HAW.	STP-0300(66)	1998	811



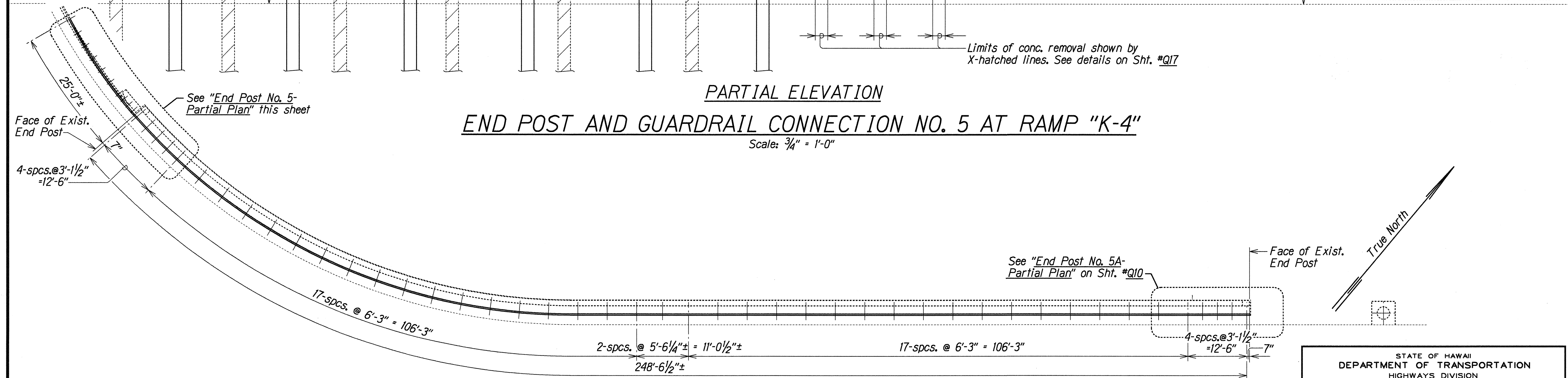
PARTIAL PLAN



PARTIAL ELEVATION

END POST AND GUARDRAIL CONNECTION NO. 5 AT RAMP "K-4"

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



LAYOUT PLAN

Not to Scale

END POST AND GUARDRAIL CONNECTION NOS. 5 & 5A AT RAMP "K-4"

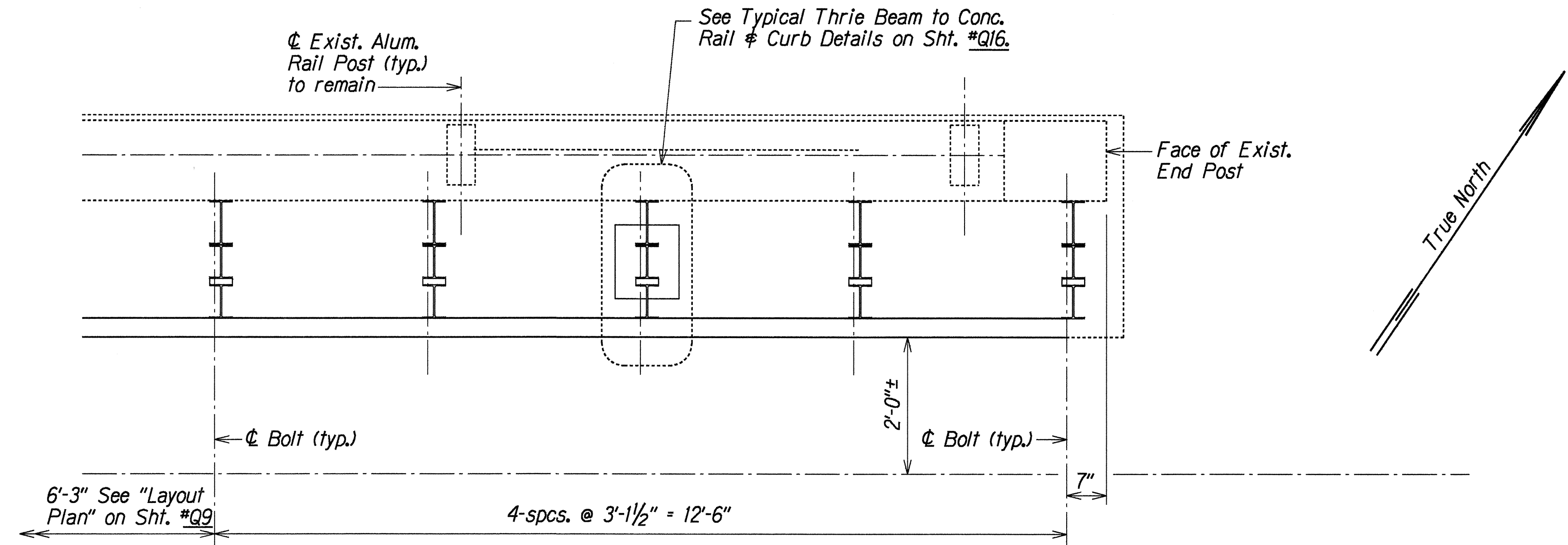
ORIGINAL PLAN	DATE	DESIGNED BY	CHECKED BY
PLAN	JUN 1995	KS6	JFL
NOTE BOOK	JUN 1995	JFL	JFL
QUANTITIES BY	JUN 1995	JFL	JFL
CHECKED BY	JUN 1995	JFL	JFL

STATE OF HAWAII
DEPARTMENT OF TRANSPORTATION
HIGHWAYS DIVISION

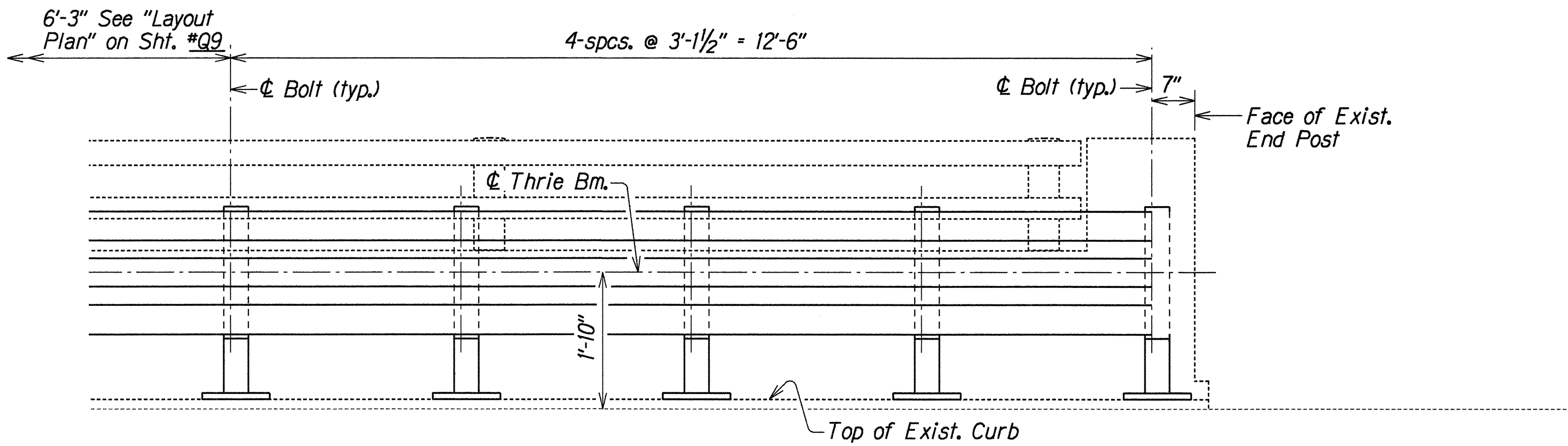
KALIHI INTERCHANGE
TYPE "J" BRIDGE RAILING UPGRADE
LAYOUT PLAN, PARTIAL PLAN AND ELEVATION
KALIHI STREET RESURFACING
Dillingham Blvd. to School St. Including Interchange On/Off Ramps
Fed. Aid Proj. No. STP-063-1(20)

Scale: As Noted Date: June, 1995

FED. ROAD DIST. NO.	STATE	FED. AID PROJ. NO.	FISCAL YEAR	TOTAL SHEETS
HAWAII	HAW.	STP-0300(66)	1998	811



PARTIAL PLAN



PARTIAL ELEVATION

END POST AND GUARDRAIL CONNECTION NO. 5A AT RAMP "K-4"

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

ORIGINAL PLAN	DATE
DRAWN BY KSG	JUN 1995
DESIGNED BY JFU	JUN 1995
QUANTITIES BY JFU	JUN 1995
CHECKED BY DCO	JUN 1995

STATE OF HAWAII
DEPARTMENT OF TRANSPORTATION
HIGHWAYS DIVISION

KALIHI INTERCHANGE

TYPE "J" BRIDGE RAILING UPGRADE

PARTIAL PLAN AND ELEVATION

KALIHI STREET RESURFACING

Dillingham Blvd. to School St. Including Interchange On/Off Ramps

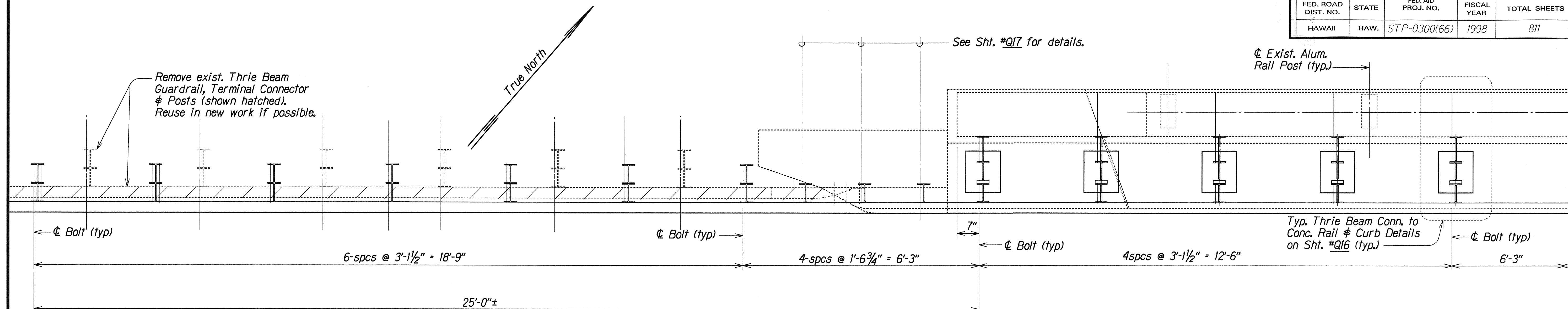
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Scale: As Noted

Date: June, 1995

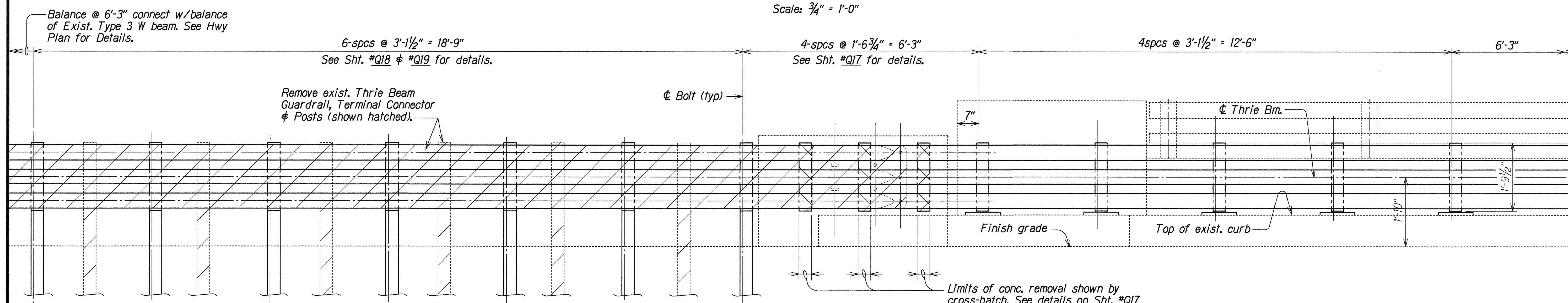
SHEET No. Q10 OF 19 SHEETS

FED. ROAD DIST. NO.	STATE	FED. AID PROJ. NO.	FISCAL YEAR	TOTAL SHEETS
HAWAII	HAW.	STP-0300(66)	1998	811



PARTIAL PLAN

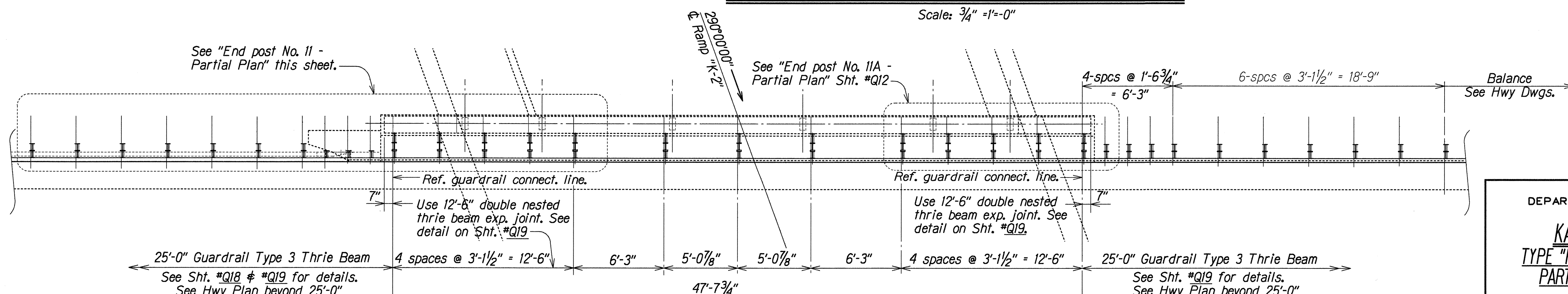
Scale: $\frac{3}{4}" = 1'-0"$



PARTIAL ELEVATION

END POST NO. 11 AT KALIHI STREET

Scale: $\frac{3}{4}" = 1'-0"$



END POST AND GUARDRAIL CONNECTION NO. 11 & 11A AT KALIHI STREET

Scale: $\frac{1}{4}" = 1'-0"$

SURVEY PLOTTED BY	DATE
LHM	JUN 1995
DRAWN BY	
DESIGNED BY	
QUANTITIES BY	
CHECKED BY	
NO.	

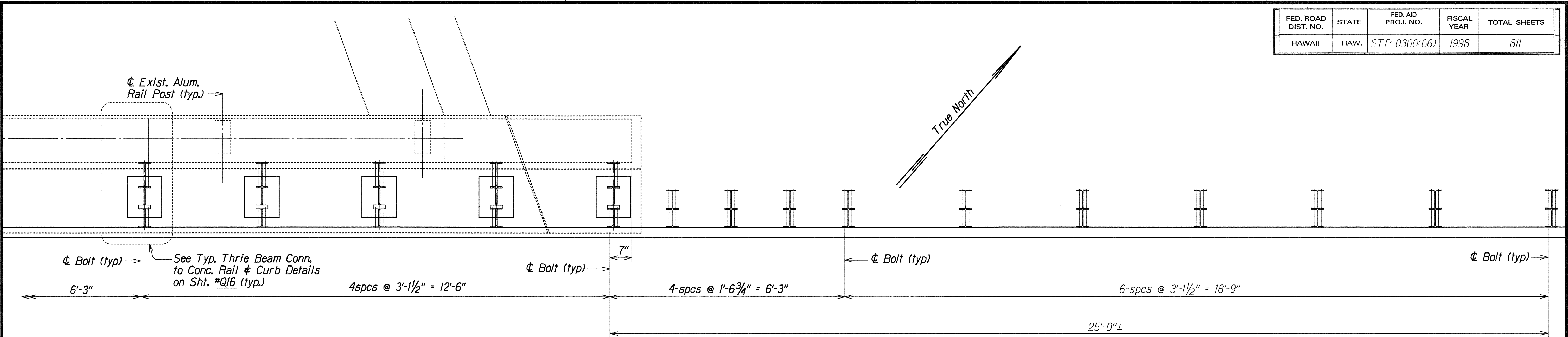
STATE OF HAWAII
DEPARTMENT OF TRANSPORTATION
HIGHWAYS DIVISION

KALIHI INTERCHANGE
TYPE "K" BRIDGE RAILING UPGRADE
PARTIAL PLAN AND ELEVATION
KALIHI STREET RESURFACING
Dillingham Blvd. to School St. Including Interchange On/Off Ramps
Fed. Aid Project No. STP-063-1(20)

Scale: As Noted Date: June, 1995

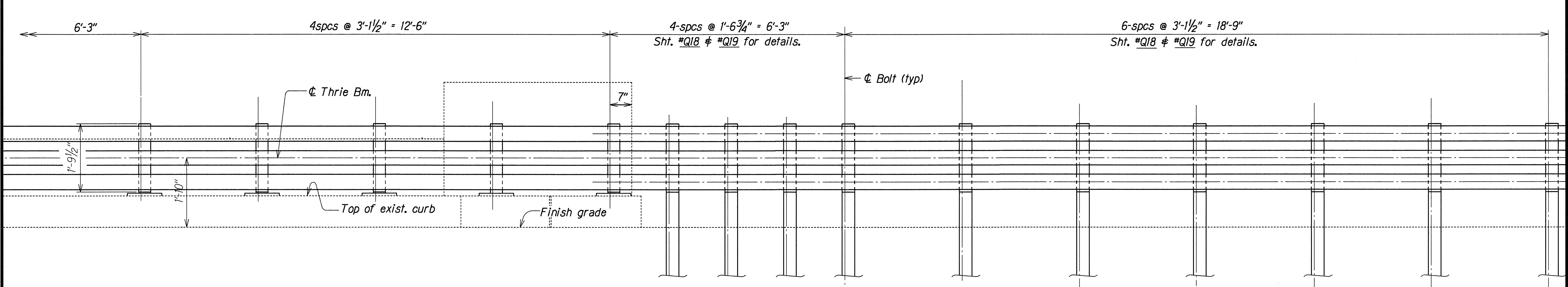
SHEET No. 011 OF 19 SHEETS

FED. ROAD DIST. NO.	STATE	FED. AID PROJ. NO.	FISCAL YEAR	TOTAL SHEETS
HAWAII	HAW.	STP-0300(66)	1998	811



PARTIAL PLAN

Scale: $\frac{3}{4}'' = 1'-0''$



ELEVATION

END POST AND GUARDRAIL CONNECTION NO. 11A AT KALIHI STREET

Scale: $\frac{3}{4}'' = 1'-0''$

ORIGINAL PLAN	SURVEY PLOTTED BY	DATE
PLAN	LHM	JUN 1995
NOTE BOOK	TRACED BY	JUN 1995
NOTE BOOK	QUANTITIES BY	JUN 1995
NOTE BOOK	CHECKED BY	JUN 1995

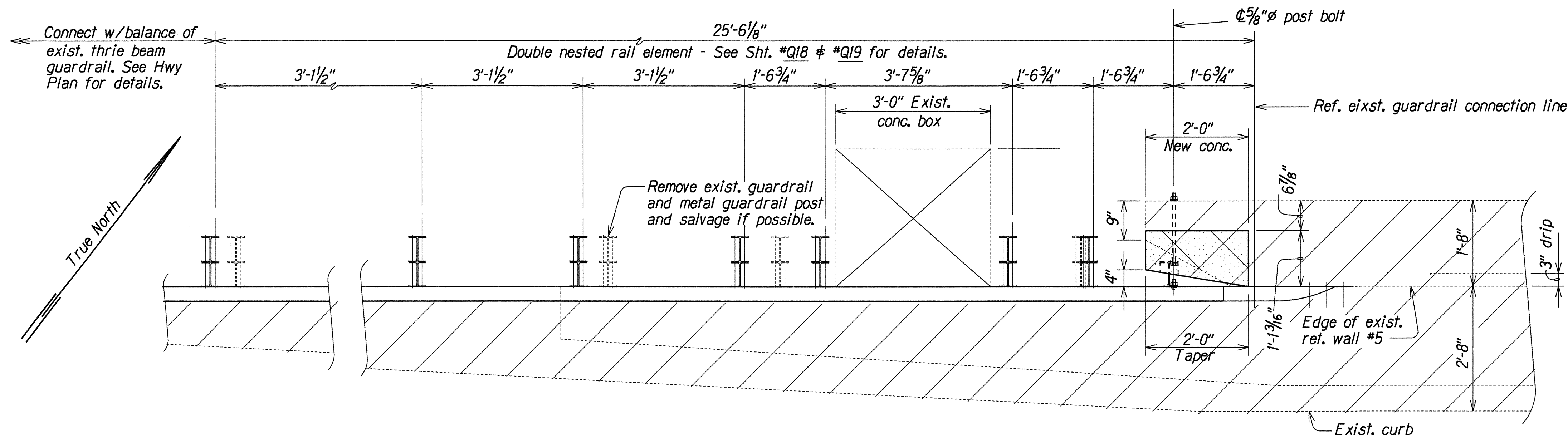
STATE OF HAWAII
DEPARTMENT OF TRANSPORTATION
HIGHWAYS DIVISION

KALIHI INTERCHANGE
TYPE "K" BRIDGE RAILING UPGRADE
PARTIAL PLAN AND ELEVATION
KALIHI STREET RESURFACING
Dillingham Blvd. to School St. Including Interchange On/Off Ramps
Fed. Aid Project No. STP-063-1(20)

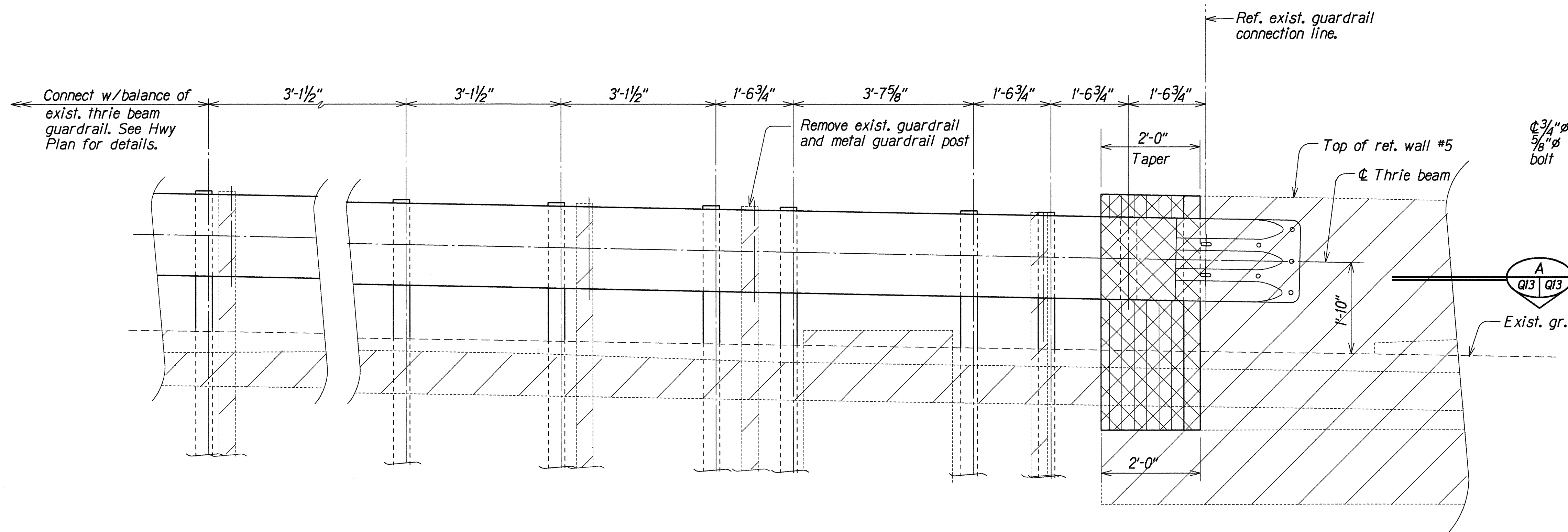
Scale: As Noted Date: June, 1995

SHEET No. Q12 OF 19 SHEETS

FED. ROAD DIST. NO.	STATE	FED. AID PROJ. NO.	FISCAL YEAR	TOTAL SHEETS
HAWAII	HAW.	STP-0300(66)	1998	811



PARTIAL PLAN



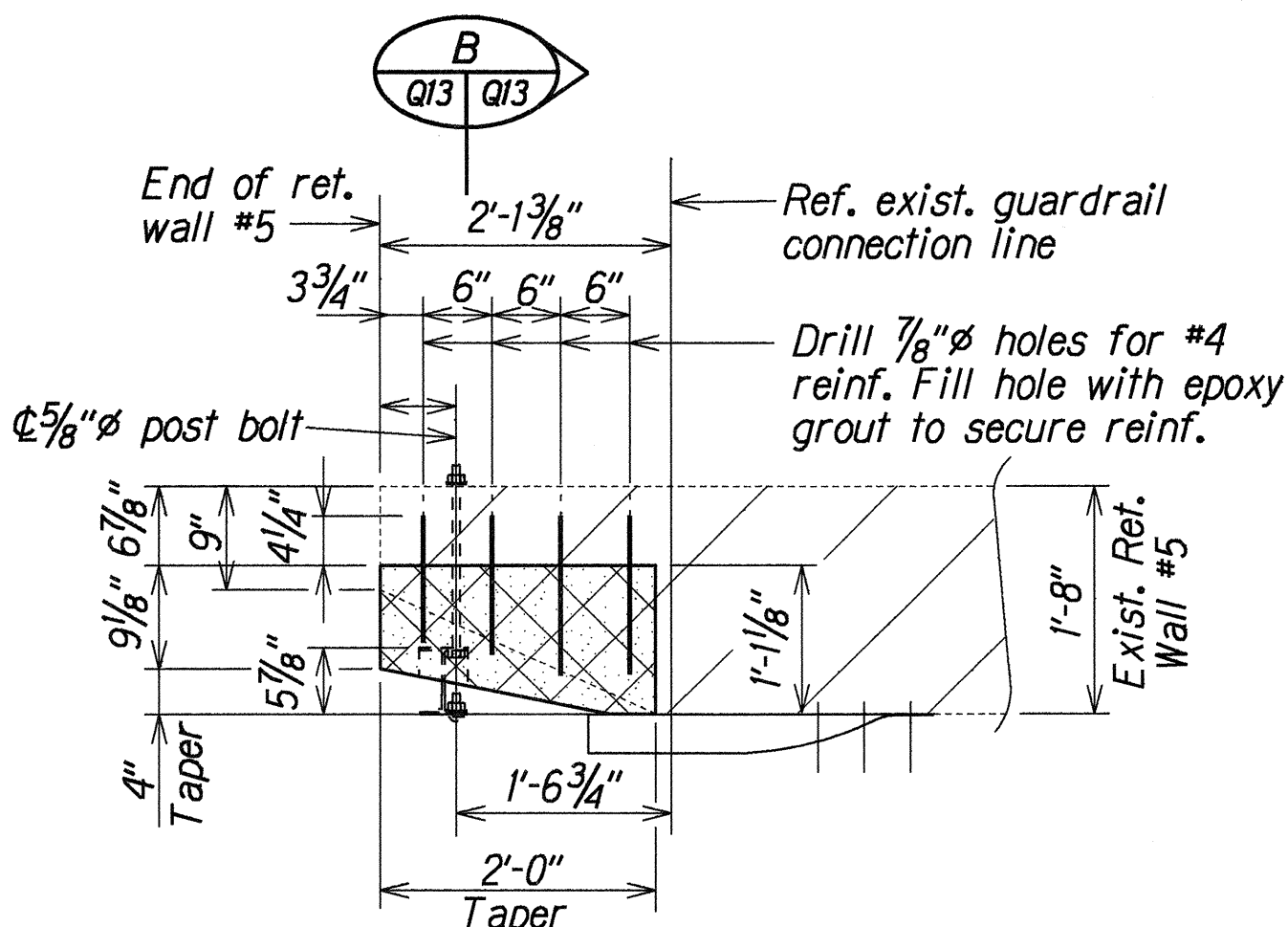
PARTIAL ELEVATION

NOTES:

- Existing structure shown by hatched lines.
- Limits of removal of existing structure shown by x-hatched lines.
- See "DOT Standard Plan" Sht. #TE-57 for W6x9 spacer details.
- See Sht. #Q18 and #Q19 for other guardrail details.

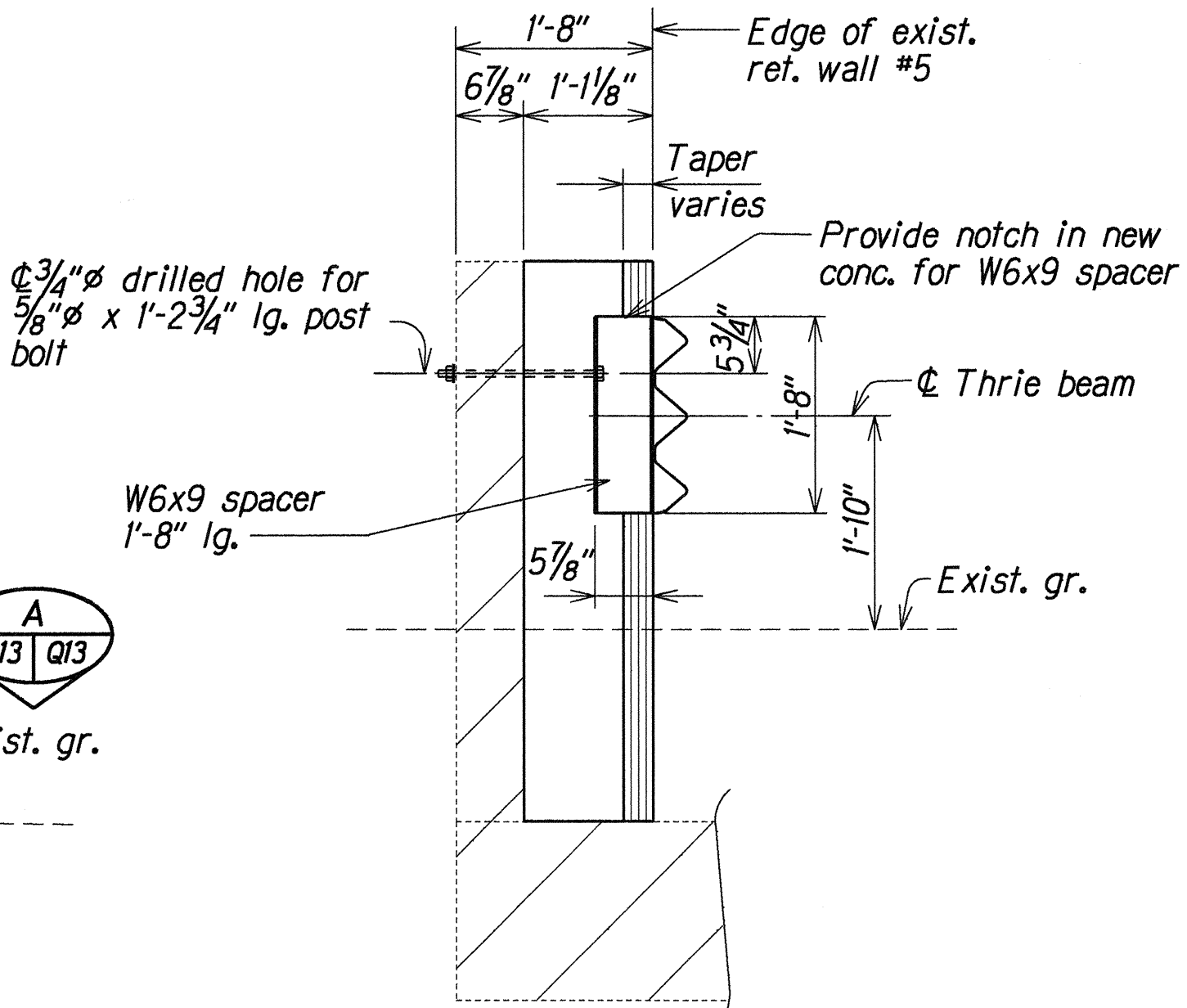
END POST AND GUARDRAIL CONNECTION NO. 8 AT RAMP "K-6"

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



SECTION A

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



SECTION B

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

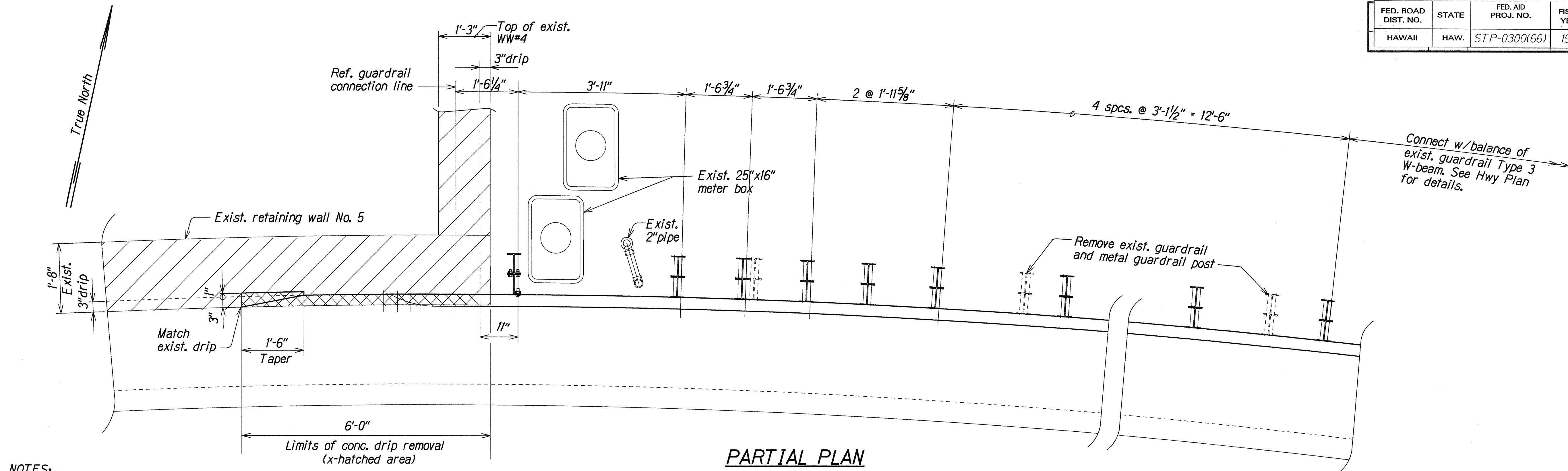
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NOTE BOOK	JUN 1995	JFU	JUN 1995	JFU
QUANTITIES BY	JUN 1995	DOO	JUN 1995	DOO
CHECKED BY	JUN 1995	DOO	JUN 1995	DOO
NO. KCC013.dgn				

STATE OF HAWAII
DEPARTMENT OF TRANSPORTATION
HIGHWAYS DIVISION

KAILIHI INTERCHANGE
TYPE "I" END POST UPGRADE
PARTIAL PLAN AND ELEVATION AND SECTIONS
KAILIHI STREET RESURFACING
Dillingham Blvd. to School St. Including Interchange On/Off Ramps
Fed. Aid Proj. No STP-063-1(20)
Scale: As Noted Date: Jun, 1995

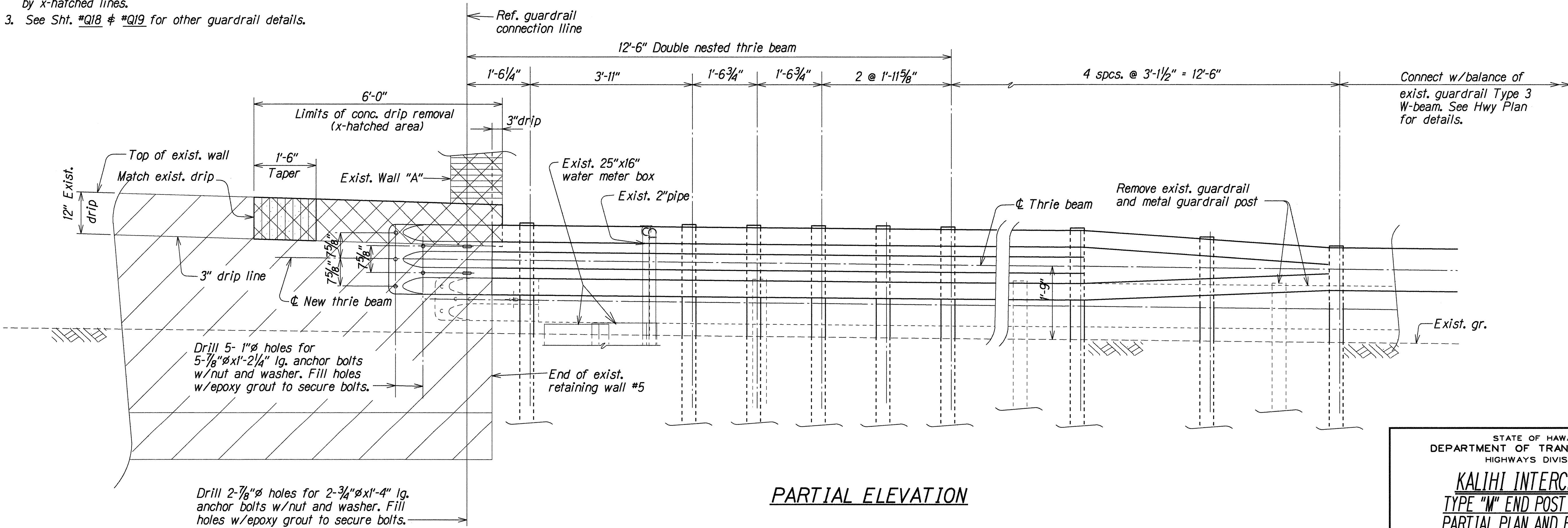
SHEET No. Q13 OF 19 SHEETS

FED. ROAD DIST. NO.	STATE	FED. AID PROJ. NO.	FISCAL YEAR	TOTAL SHEETS
HAWAII	HAW.	STP-0300(66)	1998	811



NOTES:

- Existing structure show by hatched lines.
- Limits of removal of existing structure shown by x-hatched lines.
- See Sht. #Q18 & #Q19 for other guardrail details.



RETAINING WALL GUARDRAIL CONNECTION NO. 9 AT RAMP "K-6"

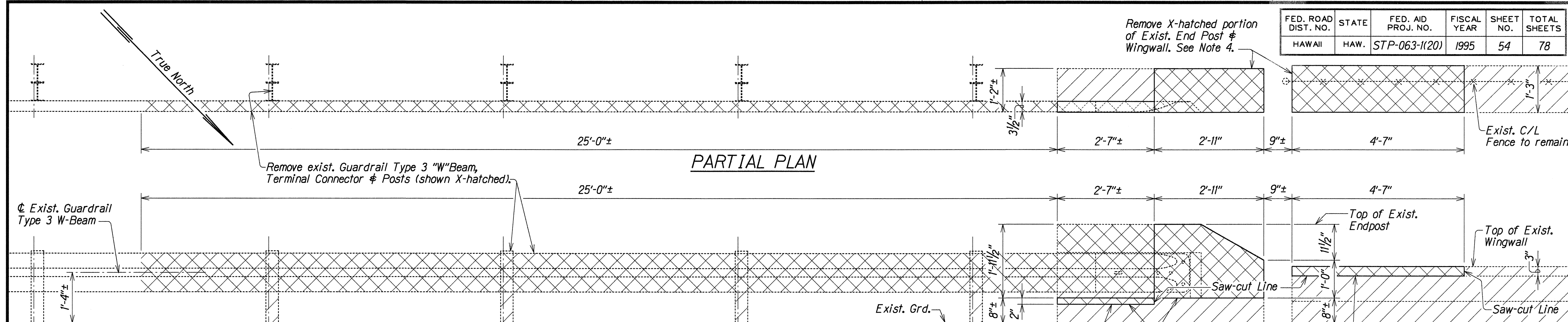
Scale: 3/4"=1'-0"

SURVEY PLOTTED BY	DATE
DRAWN BY	JUN 1995
DESIGNED BY	JUN 1995
QUANTITIES BY	JUN 1995
CHECKED BY	JUN 1995

STATE OF HAWAII
DEPARTMENT OF TRANSPORTATION
HIGHWAYS DIVISION

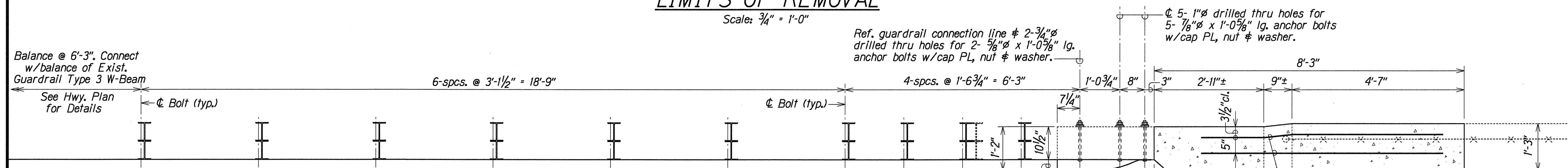
KALIHI INTERCHANGE
TYPE "M" END POST UPGRADE
PARTIAL PLAN AND ELEVATION
KALIHI STREET RESURFACING
Dillingham Blvd. to School St. Including Interchange On/Off Ramps
Fed. Aid Proj. No. STP-063-1(20)
Scale: As Noted Date: Jun, 1995

FED. ROAD DIST. NO.	STATE	FED. AID PROJ. NO.	FISCAL YEAR	SHEET NO.	TOTAL SHEETS
HAWAII	HAW.	STP-063-1(20)	1995	54	78

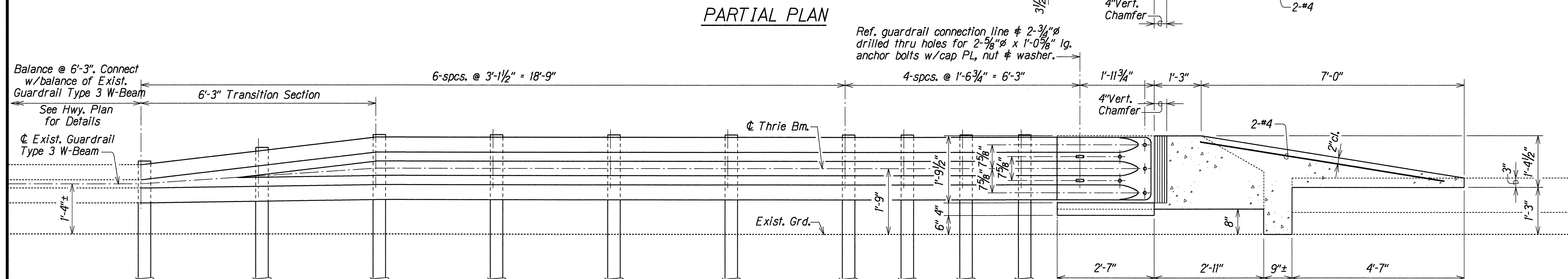


PARTIAL ELEVATION LIMITS OF REMOVAL

Scale: $\frac{3}{4}" = 1'-0"$



PARTIAL PLAN



PARTIAL ELEVATION

END POST & GUARDRAIL CONNECTION NO. 10 AT RAMP "K-6"

Scale: $\frac{3}{4}" = 1'-0"$

NOTES:

- Existing structure shown by hatched lines.
- Limits of removal of existing structure shown by X-hatched lines.
- See Sht. #Q18 & #Q19 for other guardrail details.
- Exposed existing reinforcement to remain and shall be cleaned and incorporated in the new pour.

ORIGINAL PLAN	DATE	JUN 1995
DRAWN BY	KSC	
DESIGNED BY	JFL	
QUANTITIES BY	JFL	
CHECKED BY	DKO	
IN CHARGE	McG	

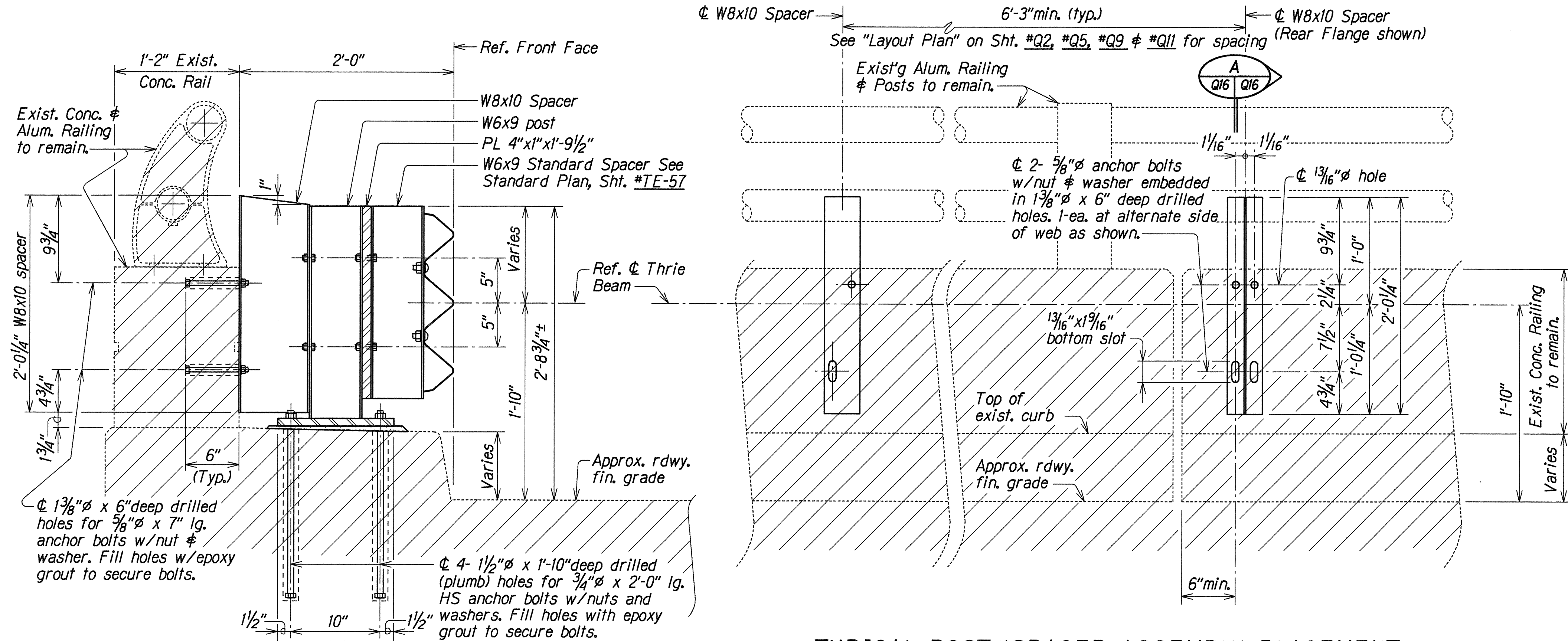
STATE OF HAWAII
DEPARTMENT OF TRANSPORTATION
HIGHWAYS DIVISION

KALIHI INTERCHANGE
TYPE "N" END POST UPGRADE
PARTIAL PLAN AND ELEVATION
KALIHI STREET RESURFACING
Dillingham Blvd. to School St. Including Interchange On/Off Ramps
Fed. Aid Proj. No. STP-063-1(20)

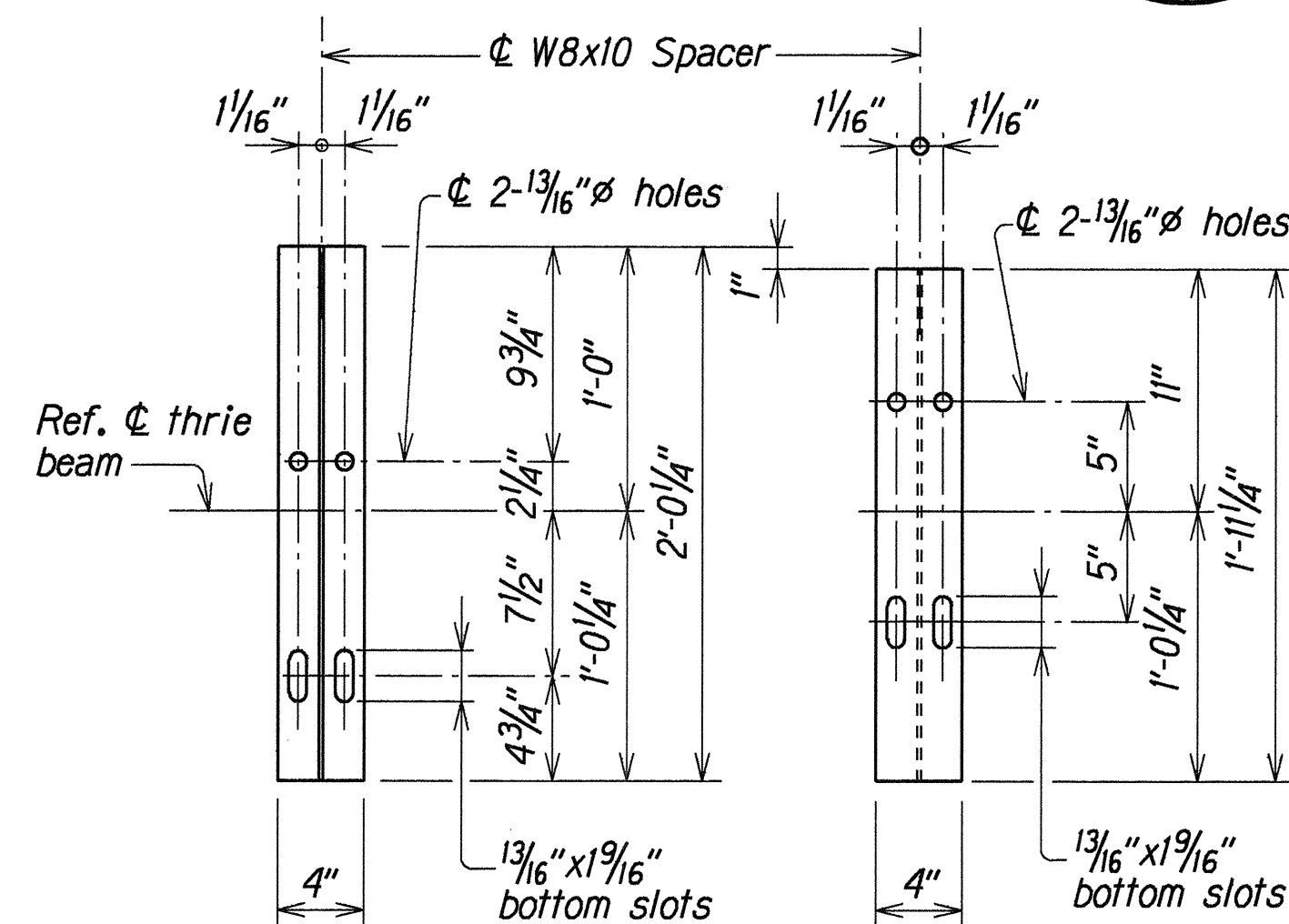
Scale: As Noted Date: June, 1995

SHEET No. Q15 OF 19 SHEETS

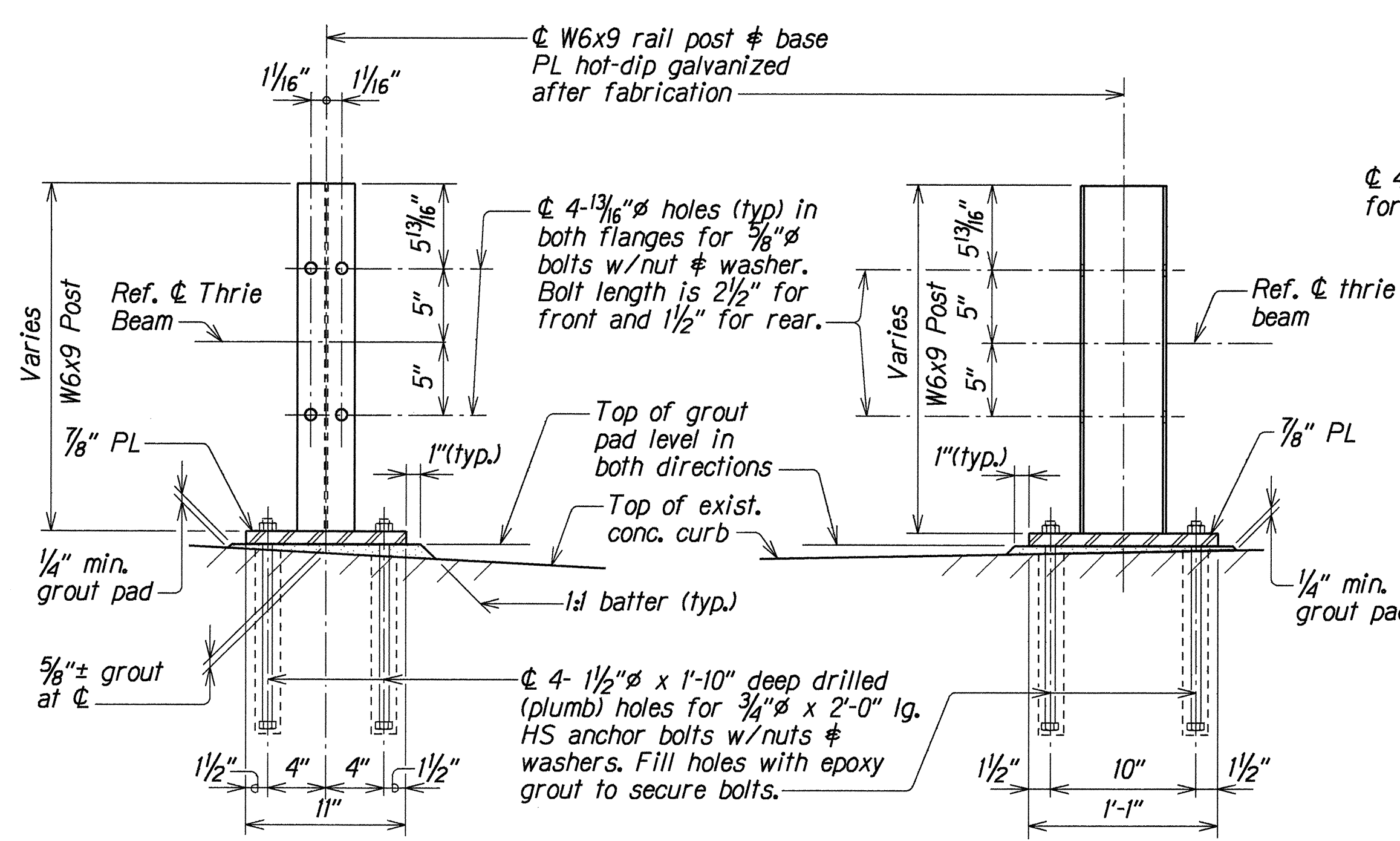
FED. ROAD DIST. NO.	STATE	FED. AID PROJ. NO.	FISCAL YEAR	TOTAL SHEETS
HAWAII	HAW.	STP-0300(66)	1998	811



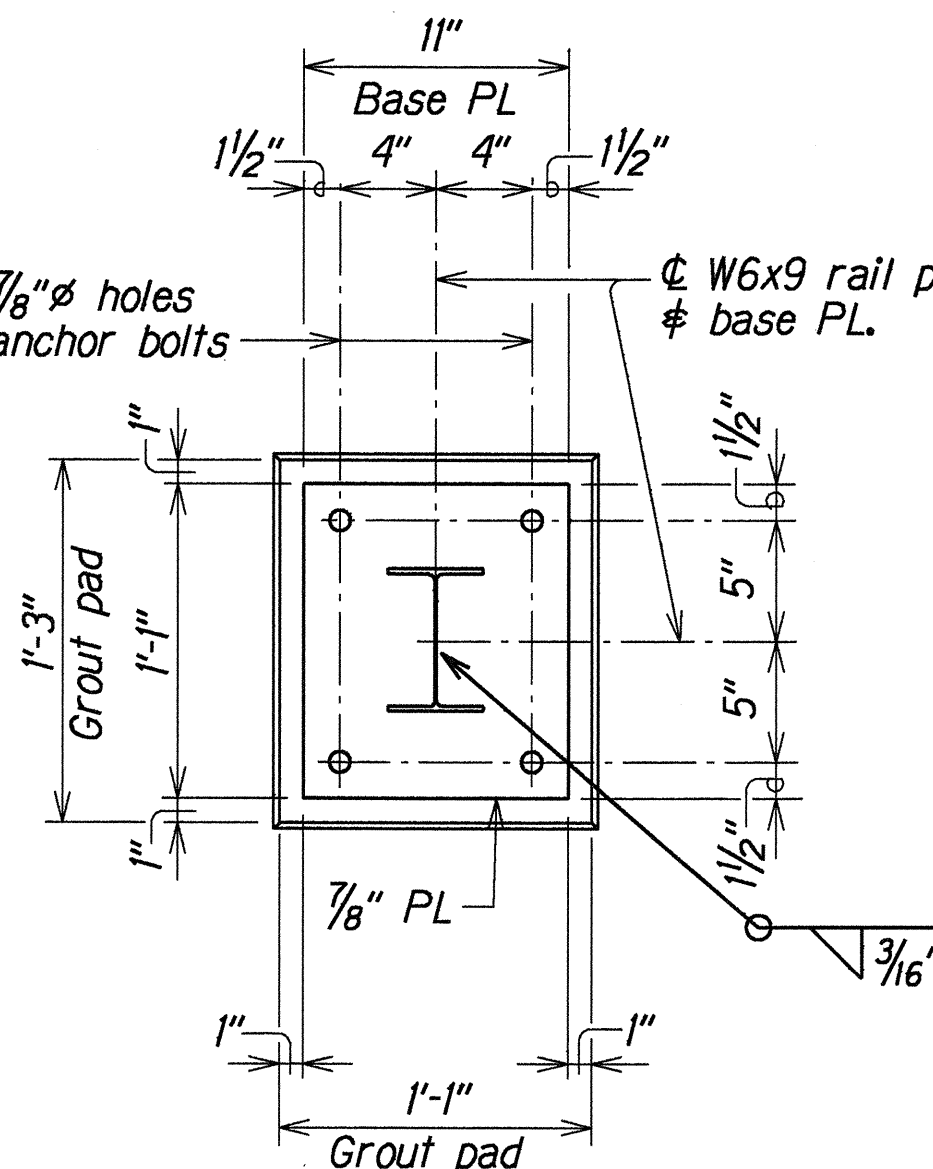
TYPICAL POST/SPACER ASSEMBLY PLACEMENT
 SHOWING W8x10 SPACER REAR FLANGE DETAIL



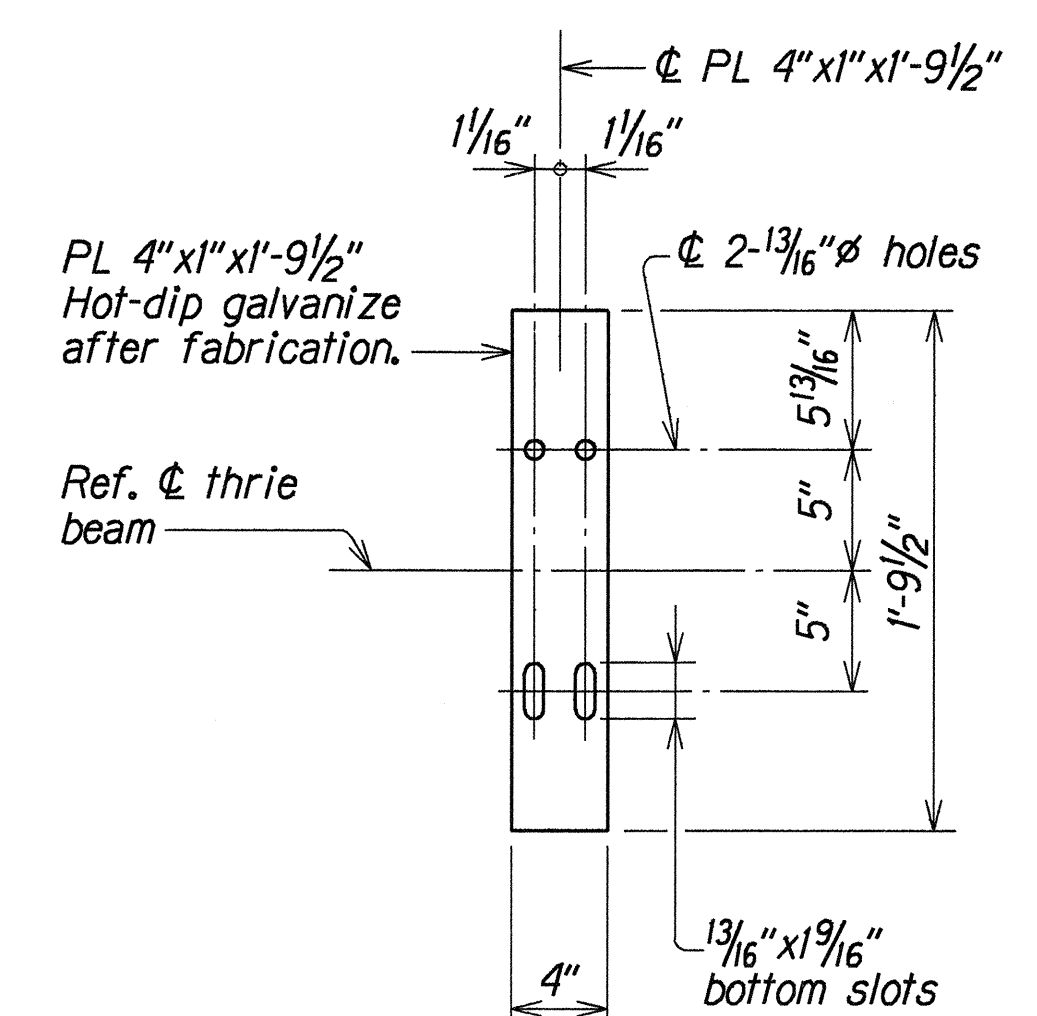
REAR FLANGE FRONT FLANGE
W8x10 SPACER DETAIL



FRONT VIEW SIDE VIEW
W6x9 POST ON BASE PLATE DETAIL



PLAN
BASE PLATE DETAIL



SPACER PLATE DETAIL

TYPICAL THRIE BEAM CONNECTION TO CONCRETE RAILING AND CURB DETAILS

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

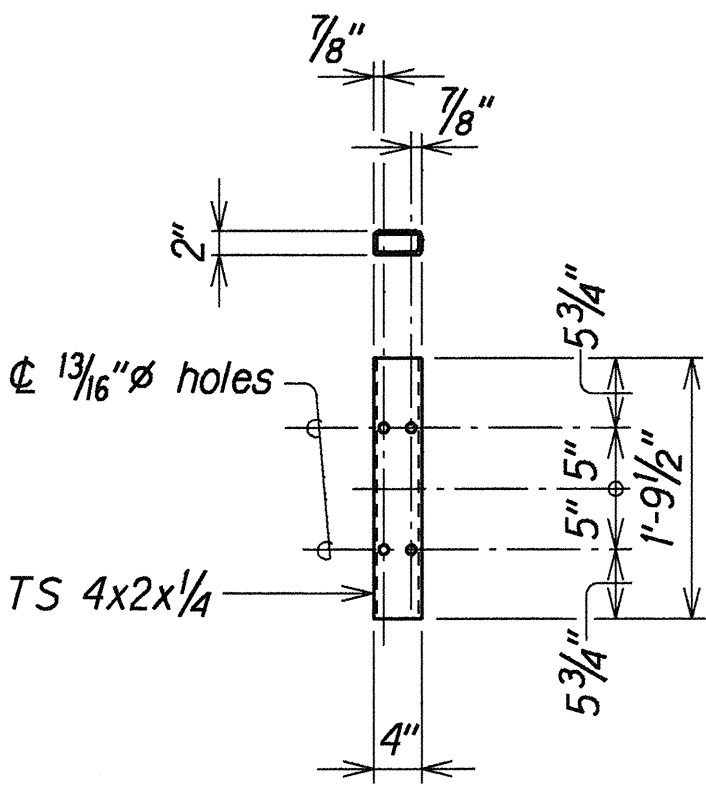
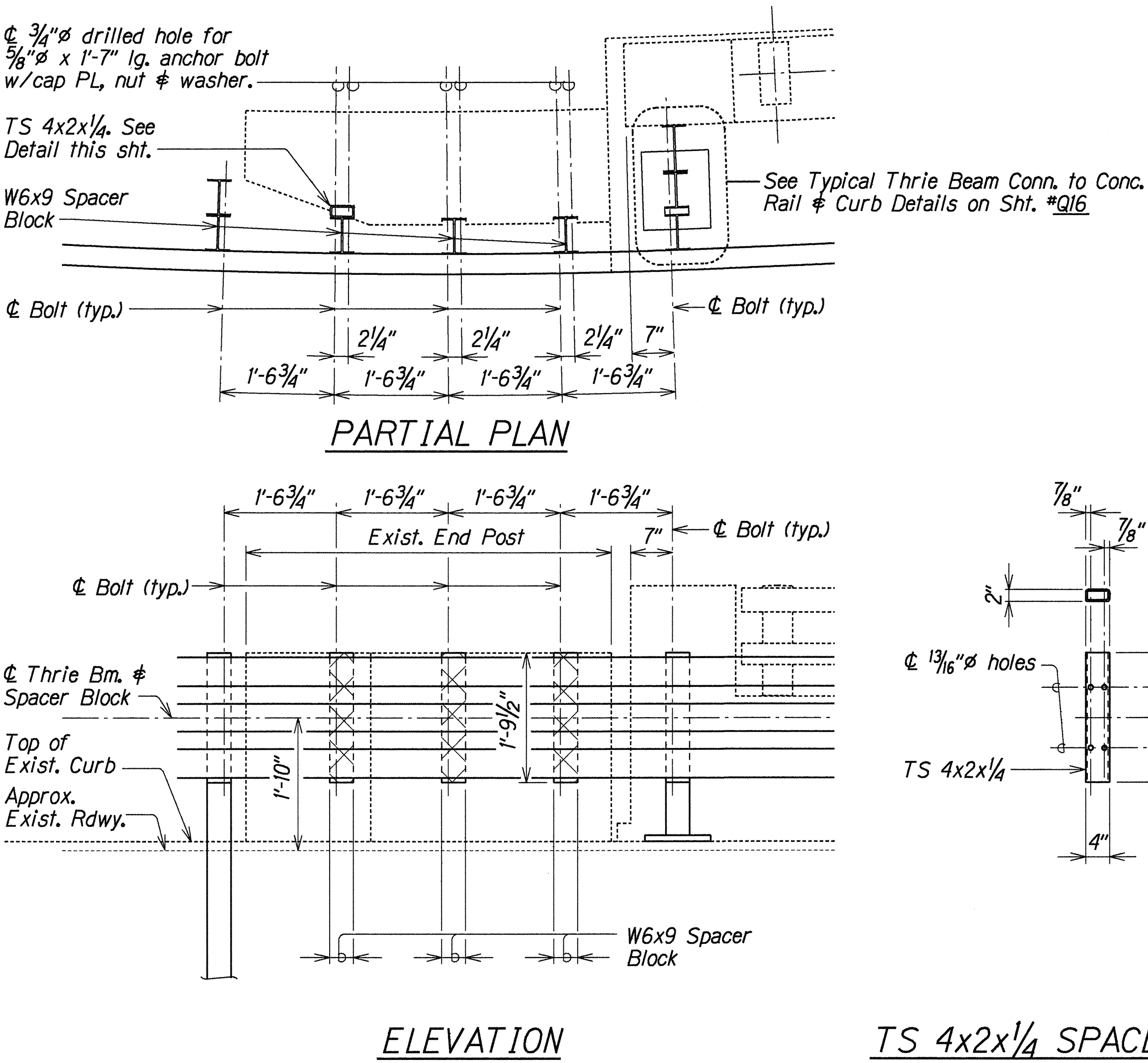
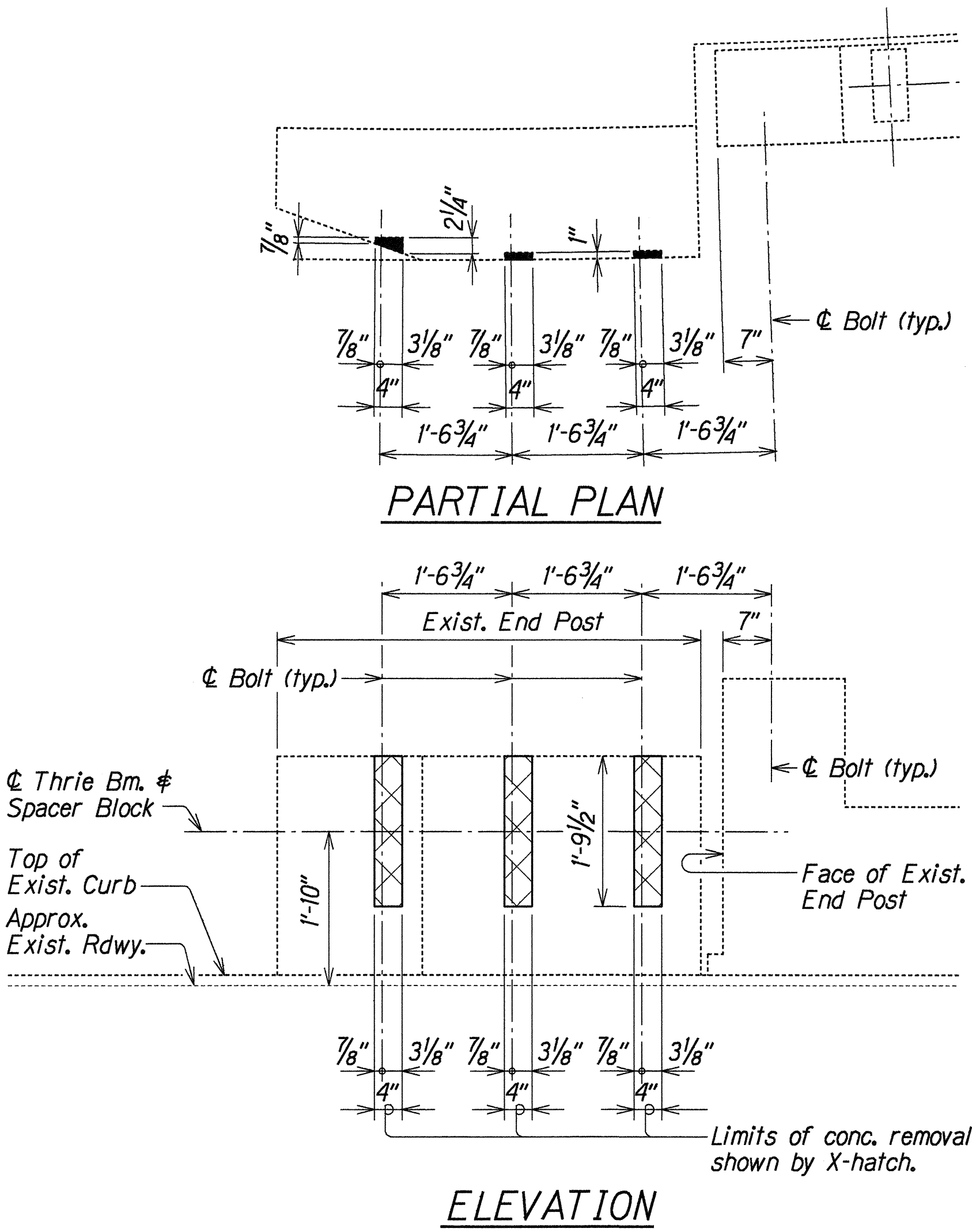
SURVEY PLOTTED BY	DATE
DRAWN BY	JUN 1995
DESIGNED BY	JUN 1995
CHECKED BY	JUN 1995
ORIGINAL PLAN	
NOTE BOOK	
QUANTITIES BY	
CHECKED BY	

STATE OF HAWAII
 DEPARTMENT OF TRANSPORTATION
 HIGHWAYS DIVISION

KALIHI INTERCHANGE
 TYPE "E", "F", "J" & "K" BRIDGE RAILING UPGRADE
 TYP THRIE BM CONN TO CONC RAIL & CURB DETS
 KALIHI STREET RESURFACING
 Dillingham Blvd. to School St. Including Interchange On/Off Ramps
 Fed. Aid Proj. No. STP-063-1(20)

Scale: As Noted Date: June, 1995

FED. ROAD DIST. NO.	STATE	FED. AID PROJ. NO.	FISCAL YEAR	TOTAL SHEETS
HAWAII	HAW.	STP-0300(66)	1998	811



GUARDRAIL TO EXISTING END POST CONNECTION NOS. 2, 5 & 11

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

ORIGINAL PLAN	SURVEY PLOTTED BY	DATE
NOTE BOOK	DRAWN BY	JUN 1995
NO. 10047.0001	DESIGNED BY	JUN 1995
	QUANTITIES BY	JUN 1995
	CHECKED BY	JUN 1995

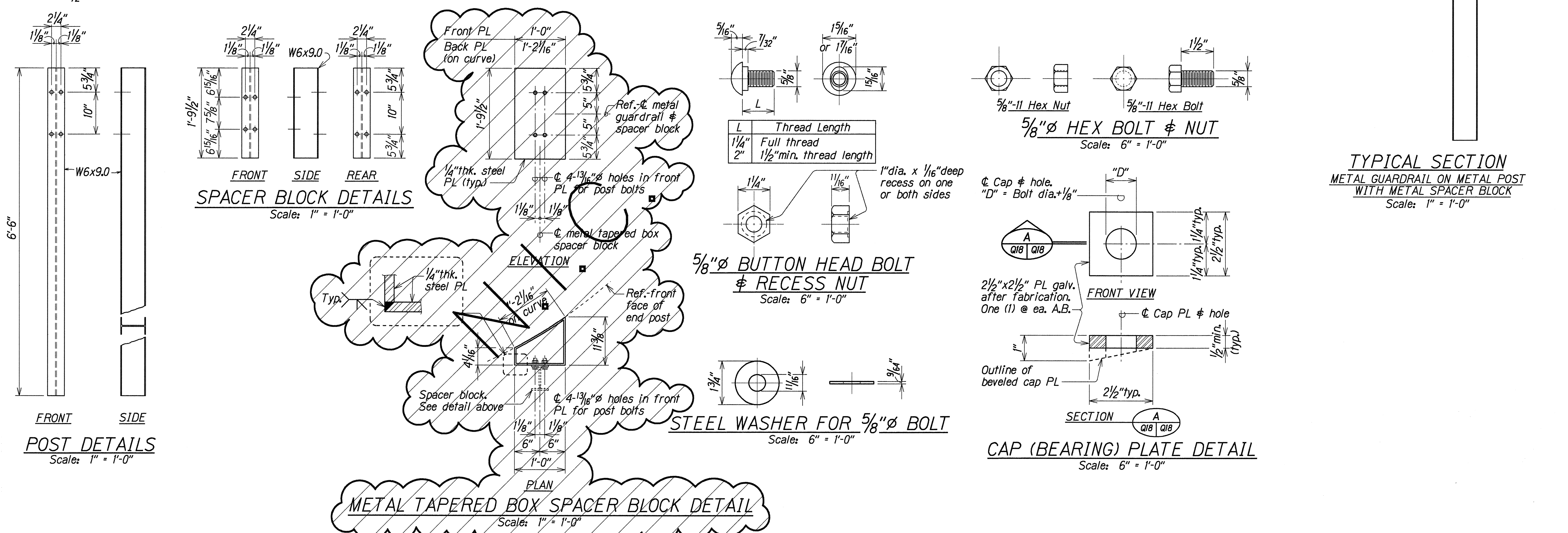
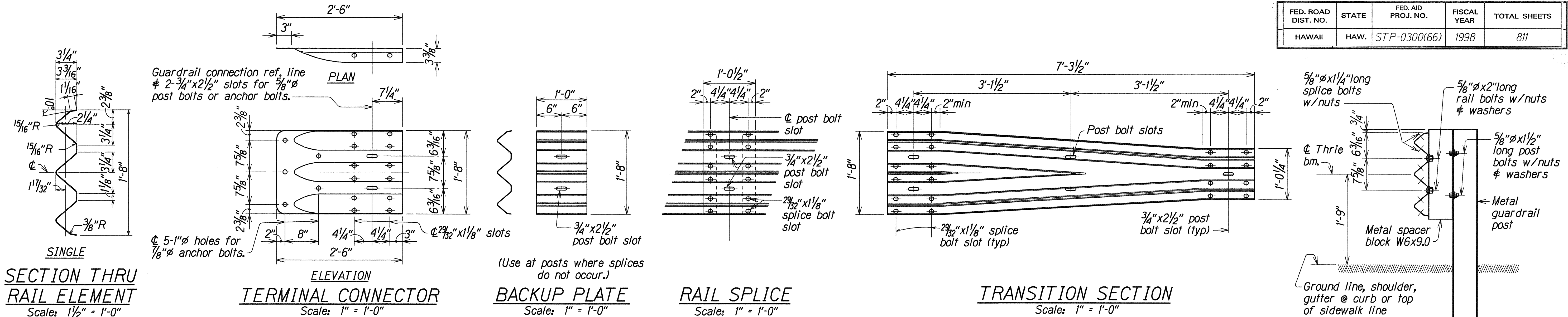
STATE OF HAWAII
DEPARTMENT OF TRANSPORTATION
HIGHWAYS DIVISION

KALIHI INTERCHANGE
TYPES "F", "J" & "K" BRIDGE RAILING UPGRADE
GUARDRAIL TO EXISTING END POST CONNECTION DETAILS
KALIHI STREET RESURFACING
Dillingham Blvd. to School St. Including Interchange On/Off Ramps
Fed. Aid Proj. No. STP-063-1(20)

Scale: As Noted
Date: June, 1995

SHEET No. Q17 OF 19 SHEETS

FED. ROAD DIST. NO.	STATE	FED. AID PROJ. NO.	FISCAL YEAR	TOTAL SHEETS
HAWAII	HAW.	STP-0300(66)	1998	811



NOTES:

- "Terminal Connector" shall be fabricated from 10gauge steel conforming to the requirements of AASHTO M 180.
- 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" 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 galvanized steel and supports spaced as shown on the detail drawings. This section of rail shall be placed on tangent to end post or parallel to roadway, unless conditions at site renders it impossible to do so. Flare point to be determined in field.
- Anchor bolts, nuts and cap PL shall be incidental to metal guardrail, unless noted otherwise.
- Cap PL shall be fabricated from ASTM A 36.

TYPE 3 THRIE BEAM GUARDRAIL AND APPURTENANCES DETAILS

STATE OF HAWAII
DEPARTMENT OF TRANSPORTATION
HIGHWAYS DIVISION

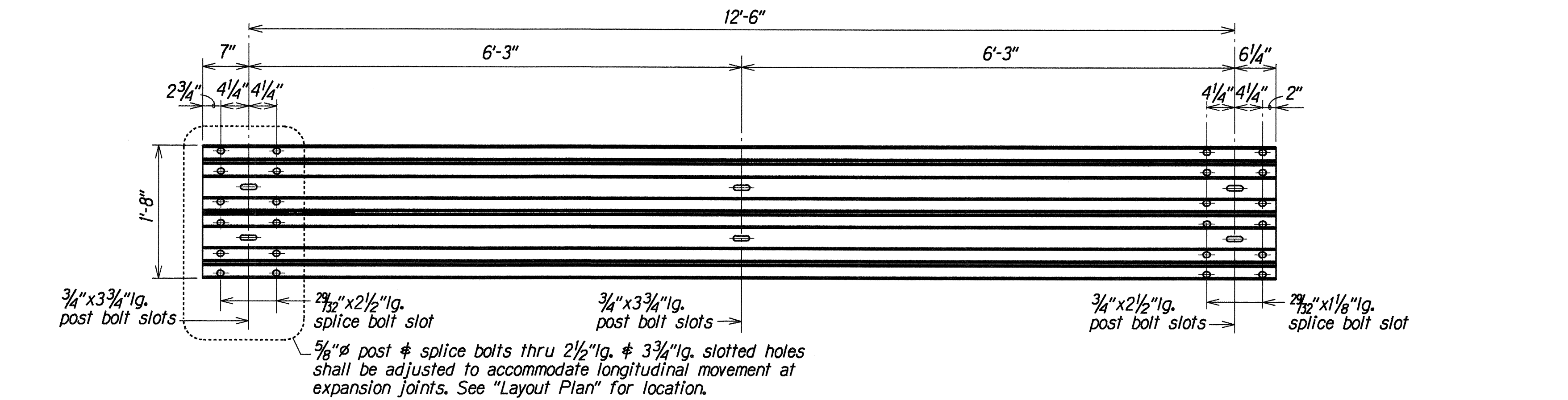
KALIHI INTERCHANGE
TYPE 3 THRIE BEAM GUARDRAIL
AND APPURTENANCES DETAILS

KALIHI STREET RESURFACING
Dillingham Blvd. to School St. Including Interchange On/Off Ramps
Fed. Aid Proj. No. STP-063-1(20)

Scale: As Noted Date: June, 1995

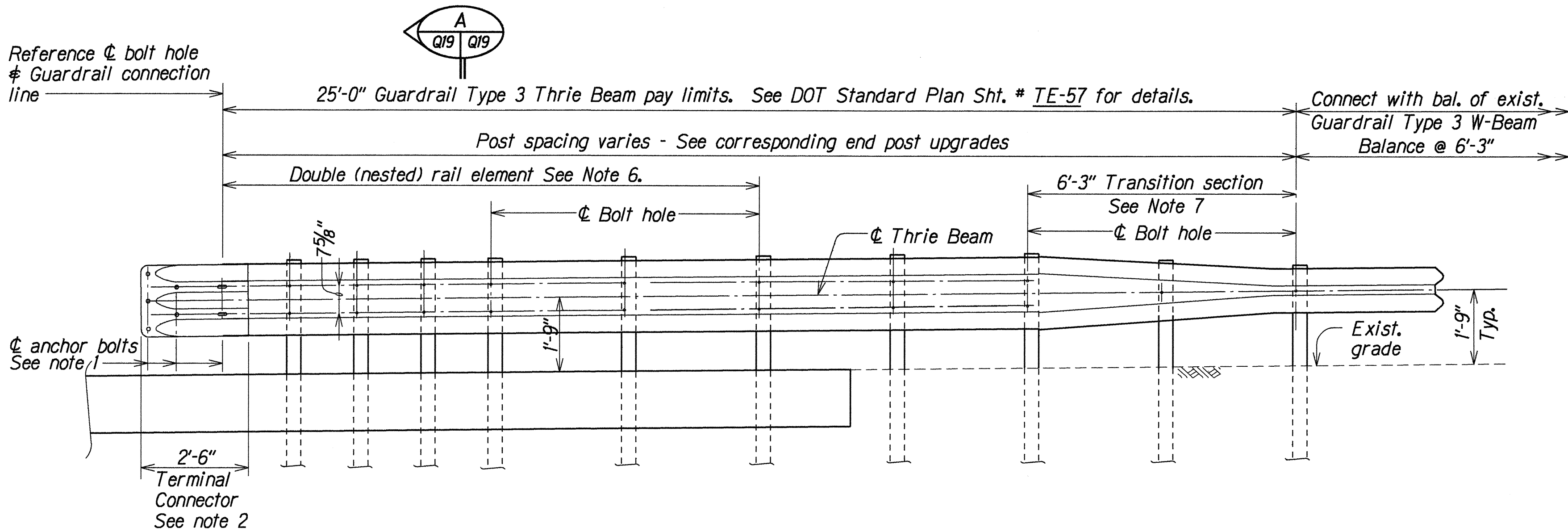
SHEET No. Q18 OF 19 SHEETS

FED. ROAD DIST. NO.	STATE	FED. AID PROJ. NO.	FISCAL YEAR	TOTAL SHEETS
HAWAII	HAW.	STP-0300(66)	1998	811



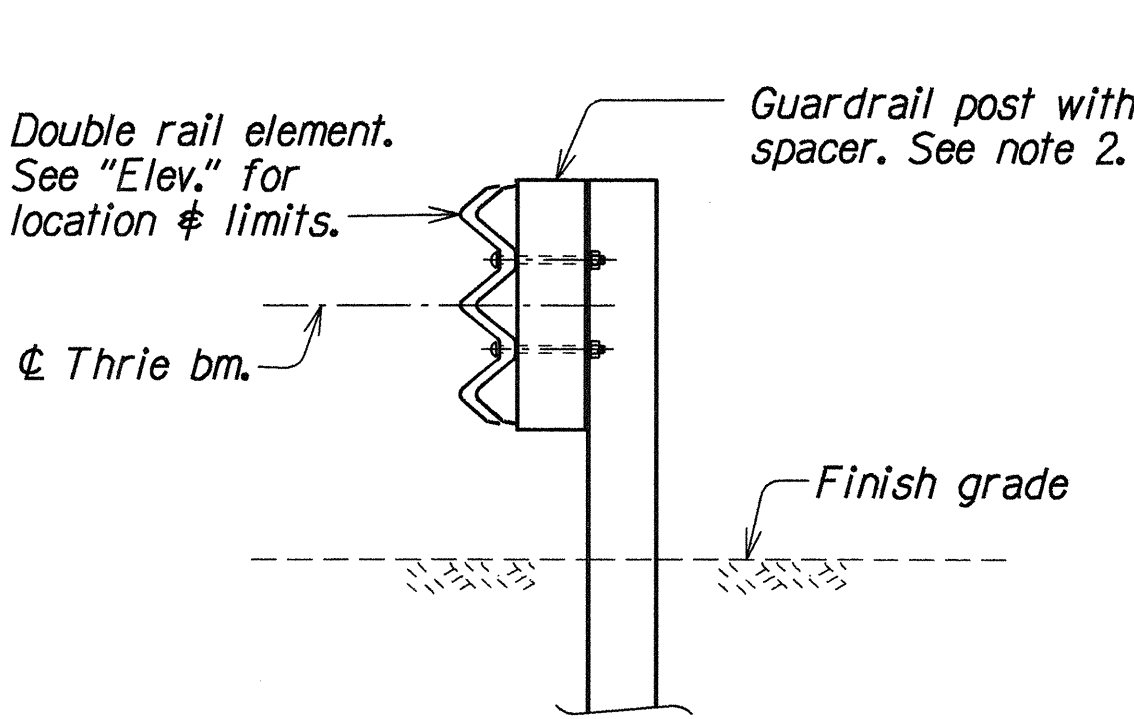
THRIE BEAM EXPANSION SECTION

Scale: 1" = 1'-0"



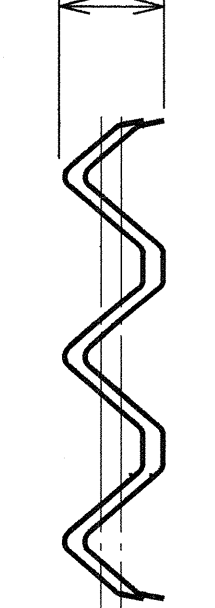
TYPICAL TYPE 3 THRIE BEAM METAL GUARDRAIL UPGRADE

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

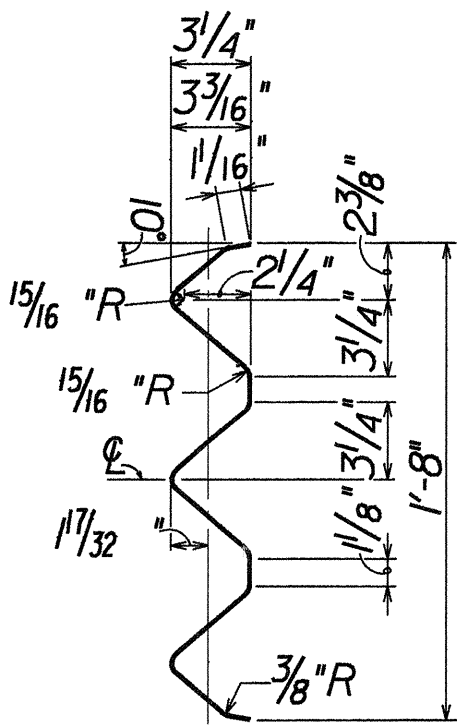


SECTION A
Scale: 3/4"=1'-0"

See Note 6



DOUBLE



SINGLE

SECTION THRU RAIL ELEMENT

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

NOTES:

1. The work necessary to connect guardrail to concrete end post shall include all labor, materials, tools, equipment and incidentals necessary to complete the work and shall be incidental to the metal guardrail and will not be paid for separately.
2. See "DOT Standard Plan" Sht.*TE-57 for guardrail Type 3 thrie beam details and Sht.*TE-50 and *TE-51 for W beam metal guardrail details. Lap terminal connector and rail element in direction of traffic to prevent snagging.
3. Terminal connector not required at Types "E", "F", "J" and "K" Bridge Railing Upgrade.
4. See "General Notes" on Sht.*Q1 for additional guardrail and drilling information.
5. Where double (nested) beam occur, 12" "Back-up Plate" not required.
6. Double (nest 1st panel) thrie beam elements at all end post connections, except on highways with one-way traffic pattern, use single thrie beam elements at end post on trailing end only.
7. Transition Section is not needed for Types "J" and "K" Bridge Railing Upgrade and for Type "L" End Post Upgrade.
8. Terminal Connector, W8x10 Spacer, W6x9 Rail Post on Base PLate and Standard Spacer; including all anchor bolts, cap plates, nuts and washers shall be hot-dip galvanized after fabrication. (Clip washers shall be used as required).
9. Heads of through anchor bolts shall be placed on the traffic side of the rail.
10. Field drilled holes in existing metal railing to match location of metal spacer bolt holes at added W6x9 posts.

SURVEY PLOTTED BY	DATE
LHM	JUN 1995
DRAWN BY	DATE
JFU	JUN 1995
DESIGNED BY	DATE
JFU	JUN 1995
QUANTITIES BY	DATE
DCO	JUN 1995
CHECKED BY	DATE
N. Kucukoglu	JUN 1995

STATE OF HAWAII
DEPARTMENT OF TRANSPORTATION
HIGHWAYS DIVISION

KALIHI INTERCHANGE
TYPICAL TYPE 3 THRIE BEAM GUARDRAIL
UPGRADE AND EXPANSION SECTION DETAILS
KALIHI STREET RESURFACING
Dillingham Blvd. to School St. Including Interchange On/Off Ramps
Fed. Aid Proj. No. STP-063-1(20)
Scale: As Noted
Date: June, 1995