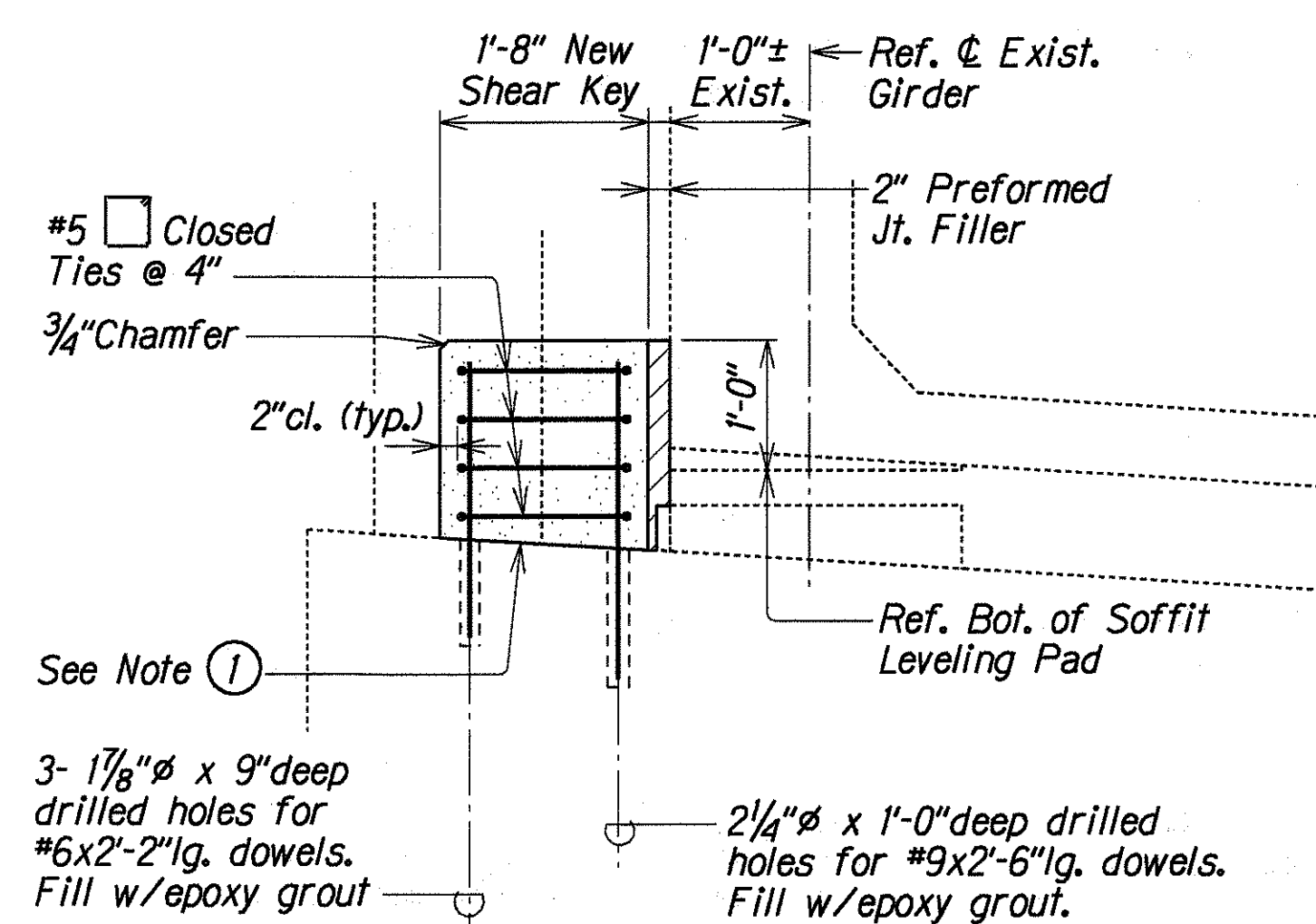
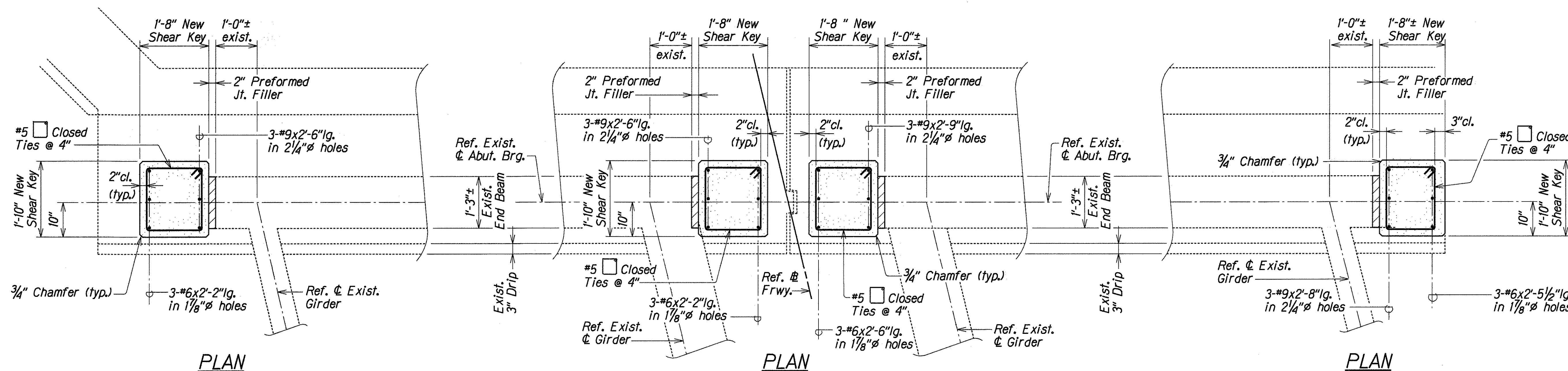
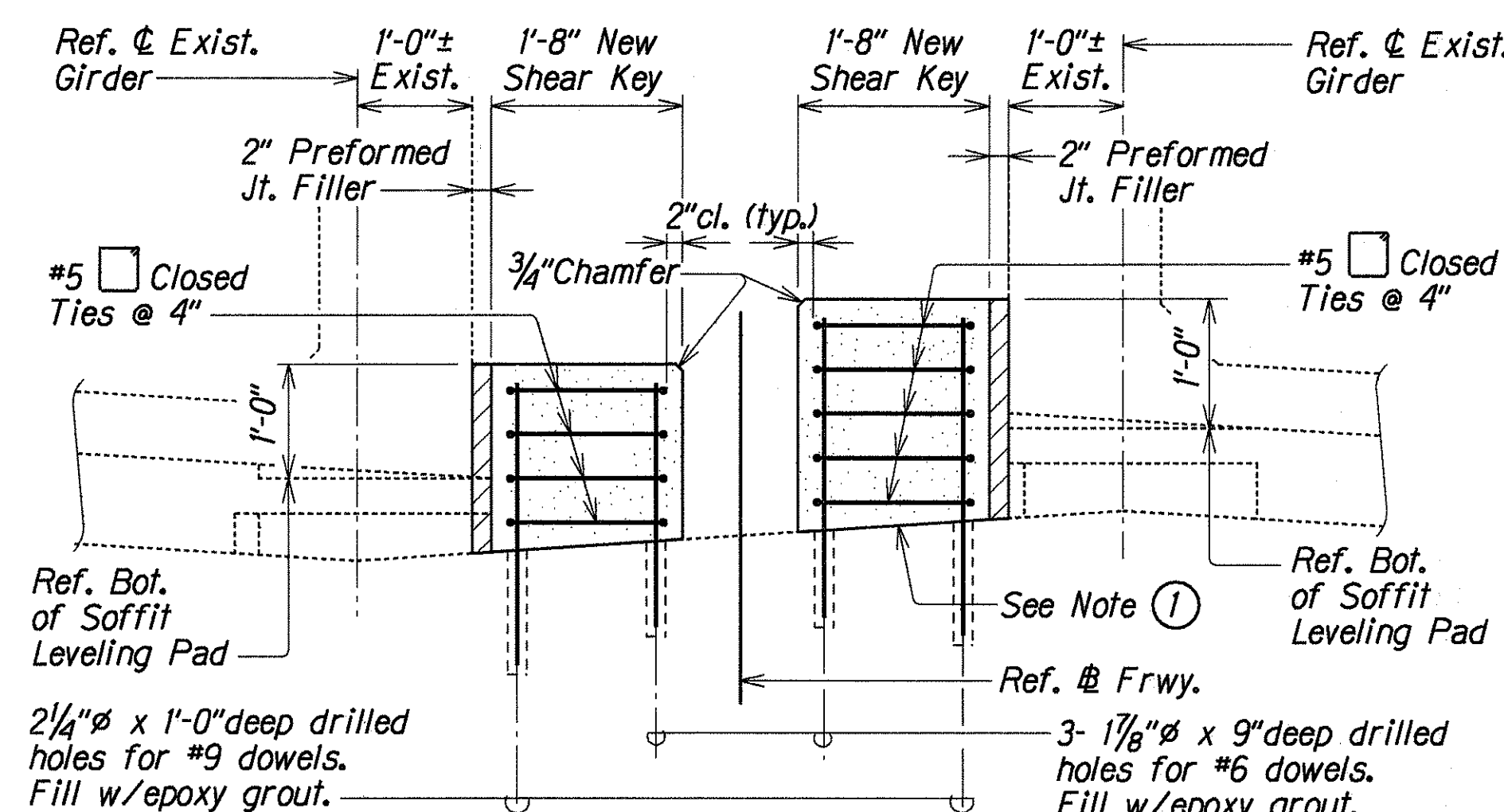


| FED. ROAD DIST. NO. | STATE | FED. AID PROJ. NO. | FISCAL YEAR | SHEET NO. | TOTAL SHEETS |
|---------------------|-------|--------------------|-------------|-----------|--------------|
| HAWAII              | HAW.  | BR-HI-1(225)       | 2000        | 23        | 37           |



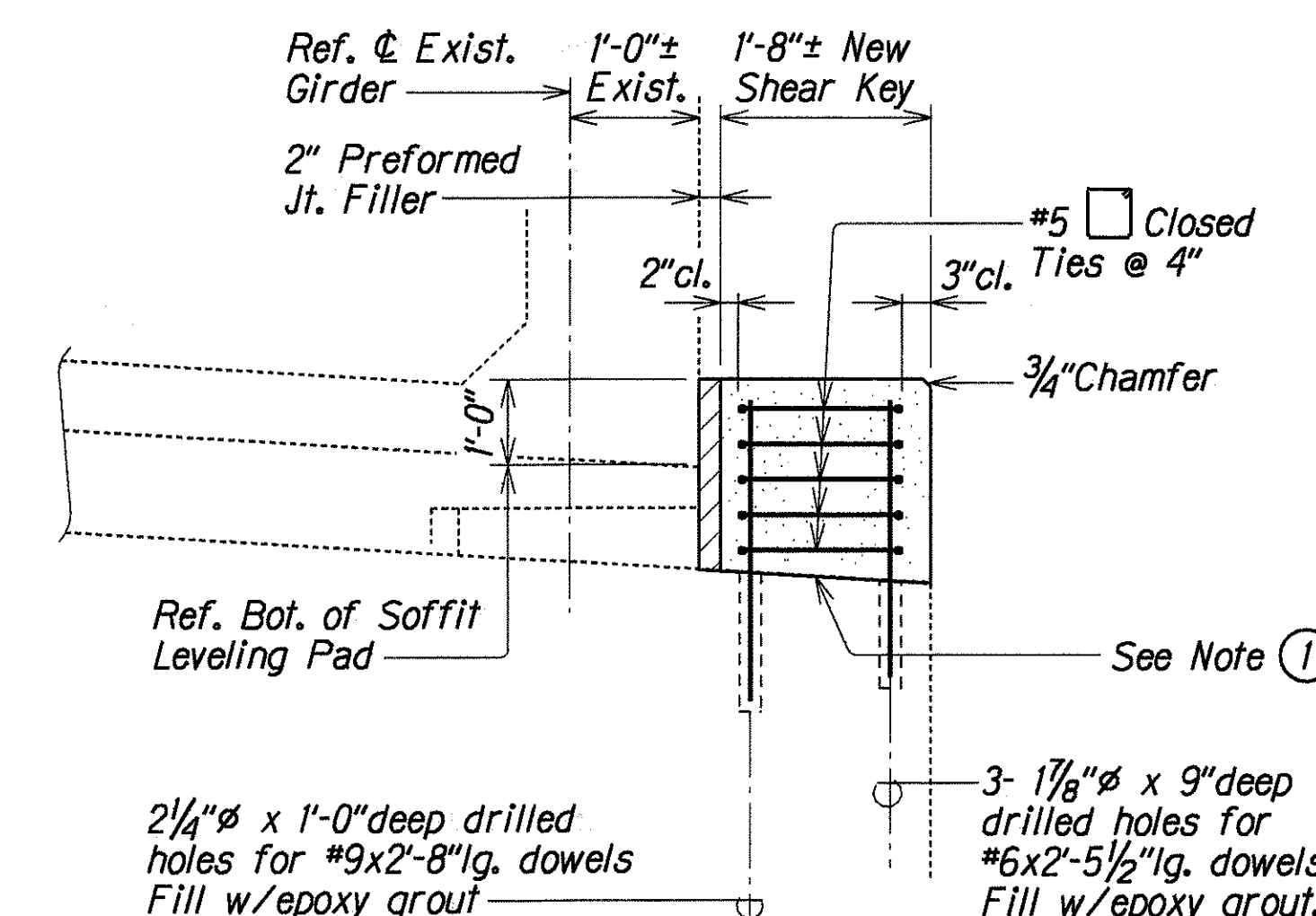
ELEVATION

ABUTMENT NO. 1 WEST END



ELEVATION

ABUTMENT NO. 1 AT FREEWAY



ELEVATION

ABUTMENT NO. 1 EAST END

## PALAMA SEPARATION CONCRETE SHEAR KEY DETAILS

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

### NOTES:

1. Clean interface to manufacturer's requirements and coat with epoxy bonding agent (See Epoxy Resin System of Special Provisions).
2. Drilled holes, epoxy grout, epoxy bonding agent, reinforcing, bolts, joint fillers and concrete shall be incidental to Abutment Key Retrofit.
3. An injectable, self-mixing, two-part epoxy adhesive that meets the requirements of ASTM C 881, Type IV, Class C may be substituted for the epoxy grout. The dowel holes will be per manufacturer's recommendation.

|                   |      |          |
|-------------------|------|----------|
| ORIGINAL PLAN     | DATE | JUL 1999 |
| SURVEY PLOTTED BY | KSG  |          |
| DRAWN BY          | SA   |          |
| CHECKED BY        | SA   |          |
| NOTED BY          | SA   |          |
| QUANTITIES BY     | SA   |          |
| APPROVED BY       | SA   |          |

STATE OF HAWAII  
DEPARTMENT OF TRANSPORTATION  
HIGHWAYS DIVISION

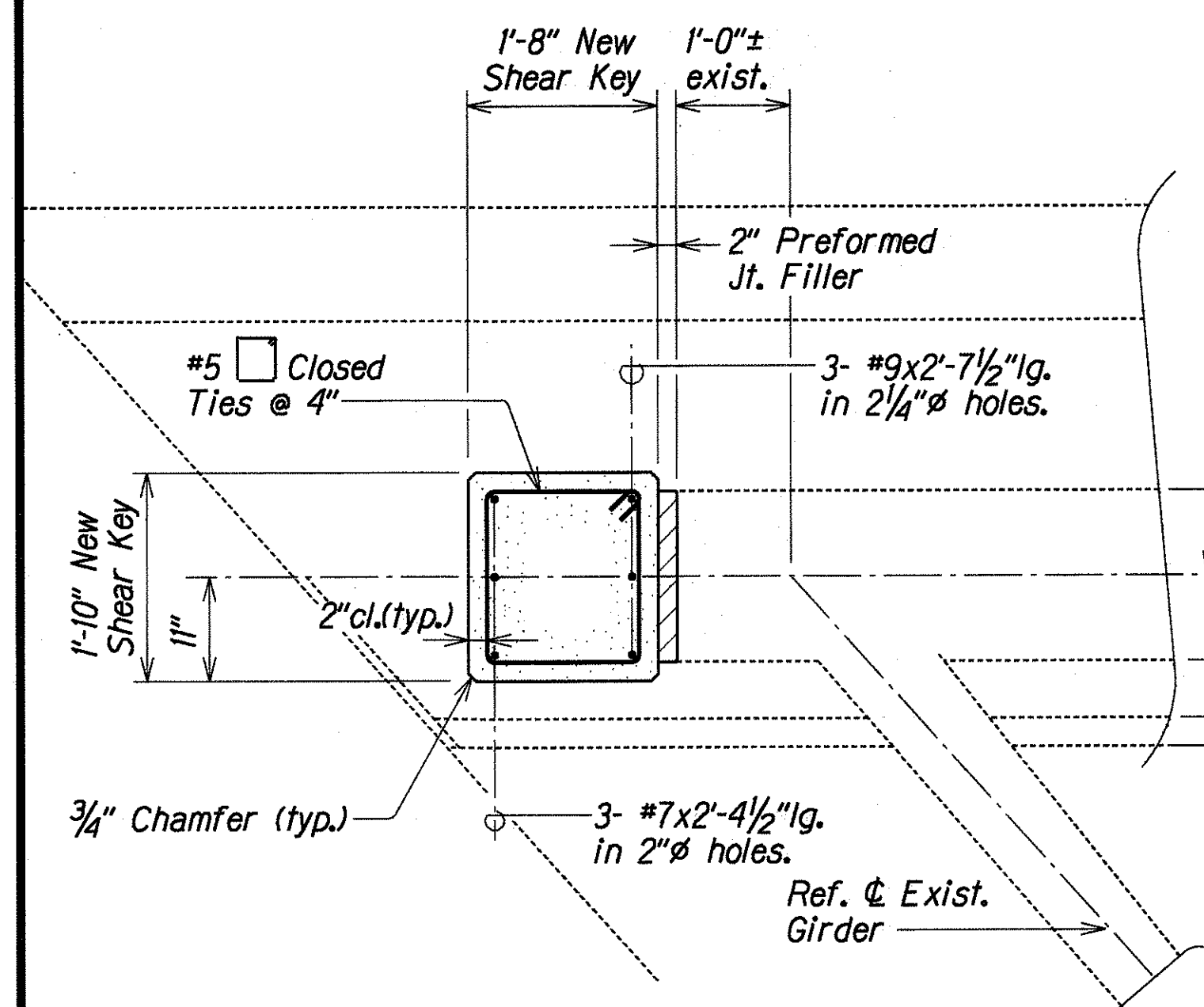
**PALAMA SEPARATION**  
**ABUTMENT NO. 1 RETROFIT**  
**CONCRETE SHEAR KEY DETAILS**

SEISMIC RETROFIT for LUNALILO-VINEYARD OFF-RAMP,  
MAKIKI VIADUCT and PALAMA SEPARATION  
Fed. Aid Proj. No. BR-HI-1(225)

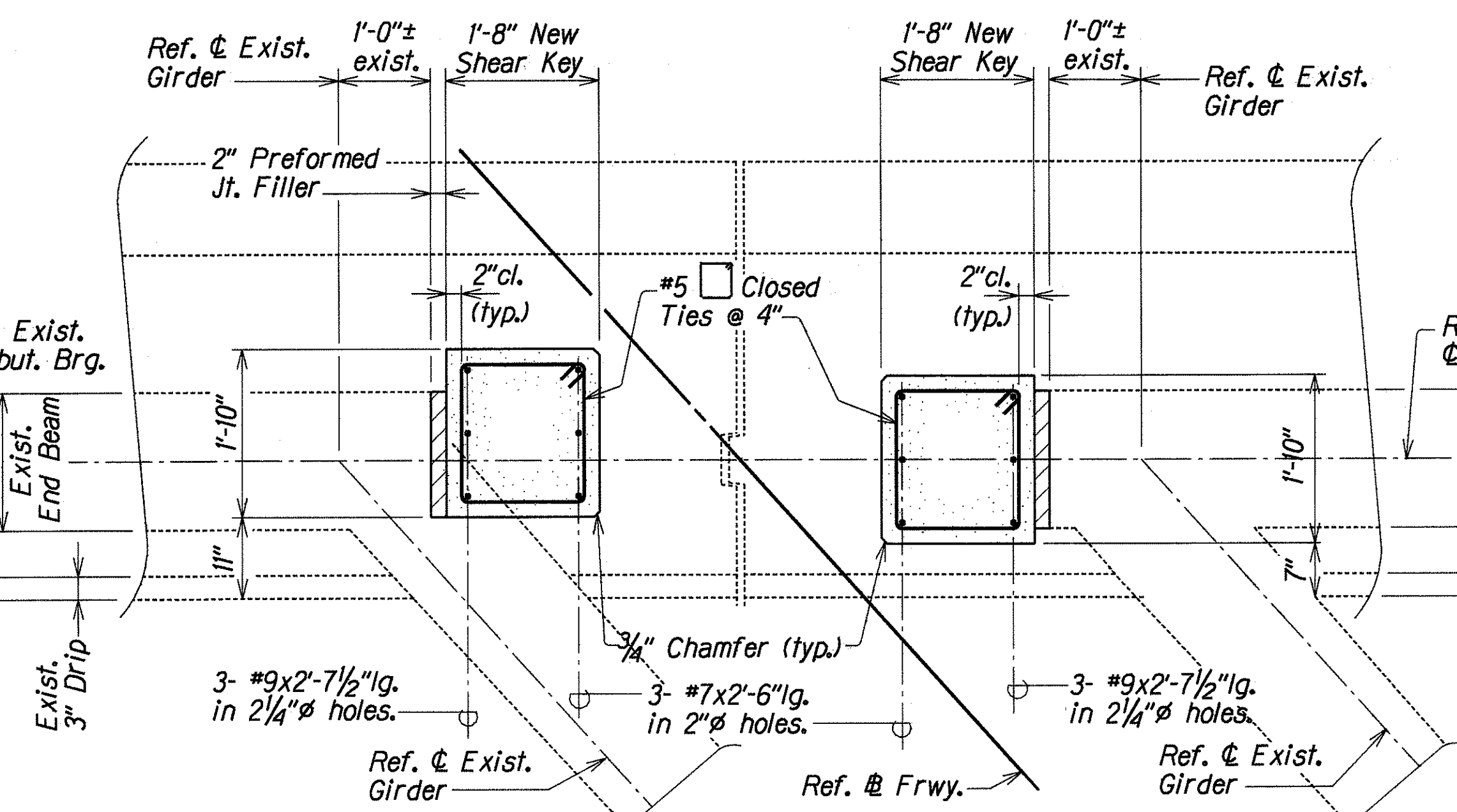
Scale: As Noted Date: Jul, 1999

SHEET No. S17 OF 25 SHEETS

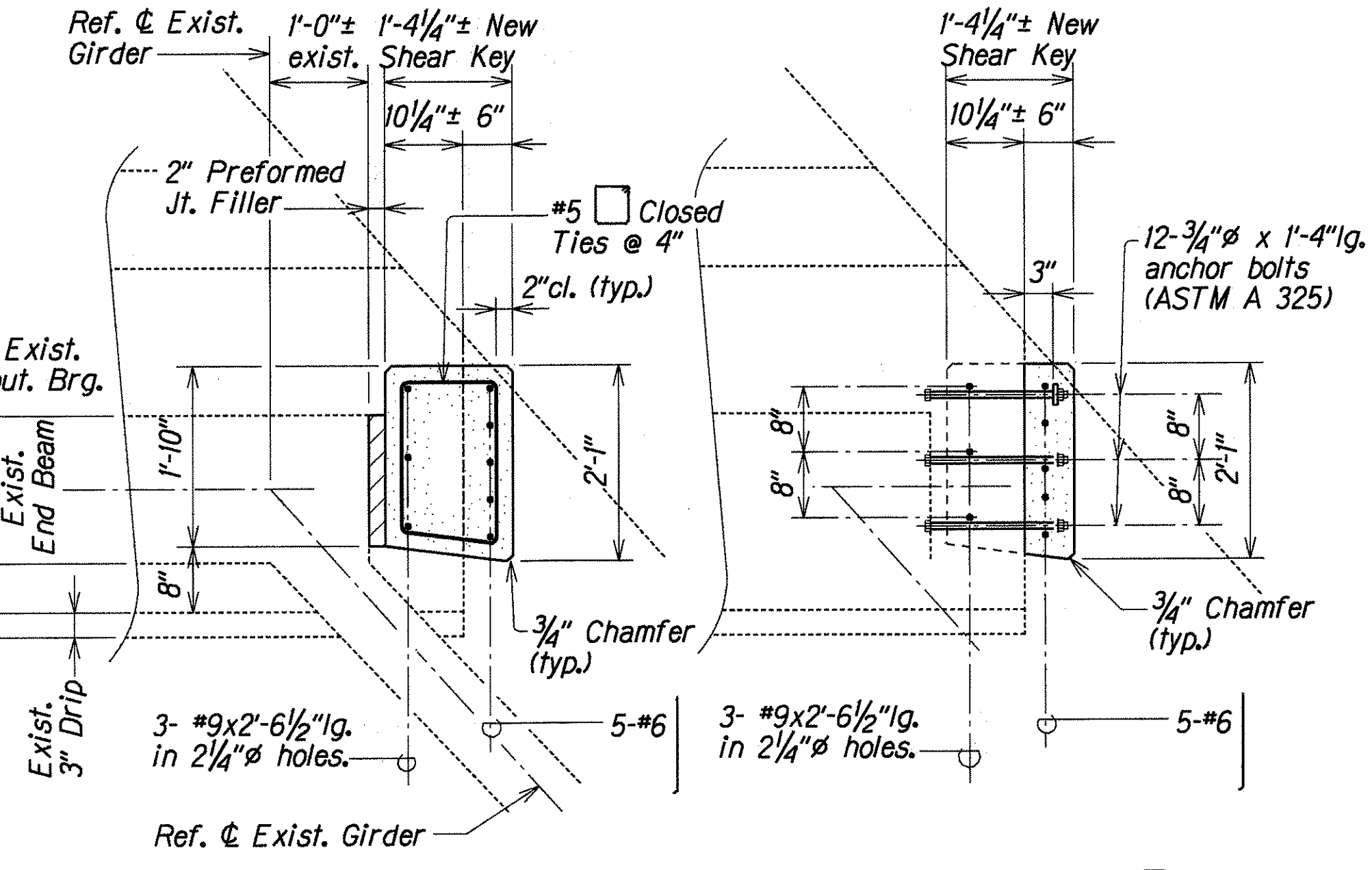
| FED. ROAD DIST. NO. | STATE | FED. AID PROJ. NO. | FISCAL YEAR | SHEET NO. | TOTAL SHEETS |
|---------------------|-------|--------------------|-------------|-----------|--------------|
| HAWAII              | HAW.  | BR-HI-1(225)       | 2000        | 24        | 37           |



PLAN

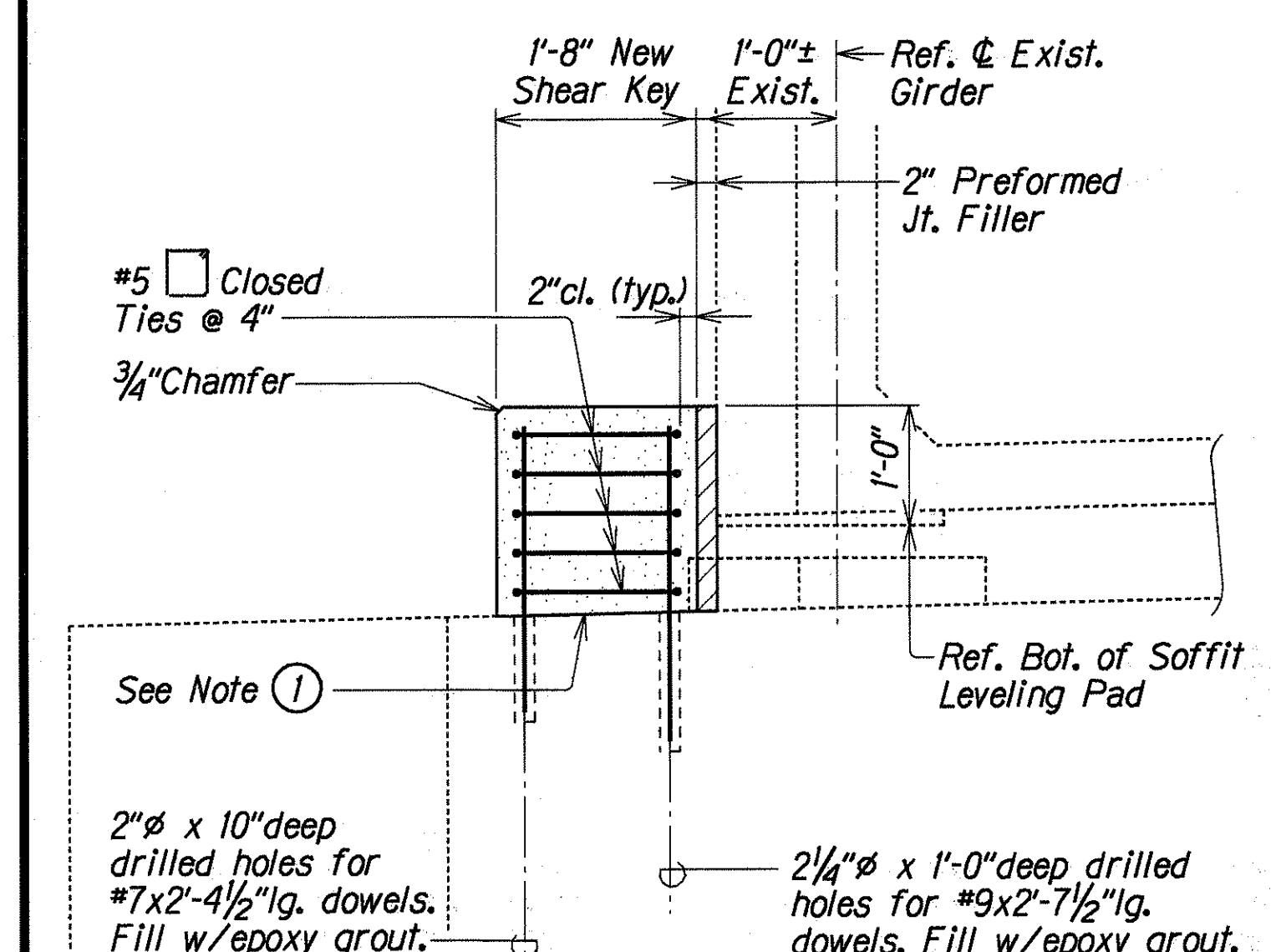


PLAN



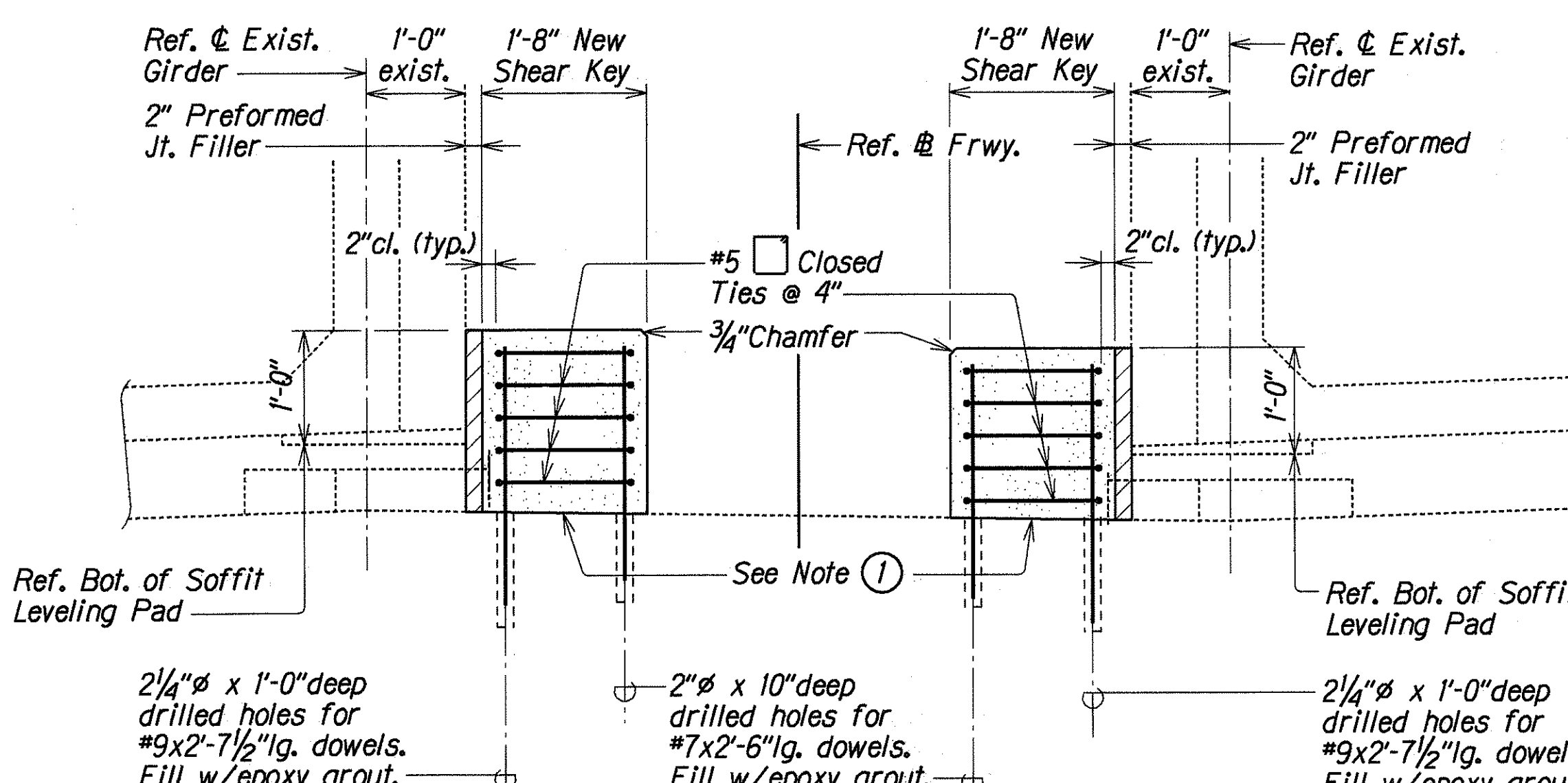
PLAN

SECTION A  
S18 S18



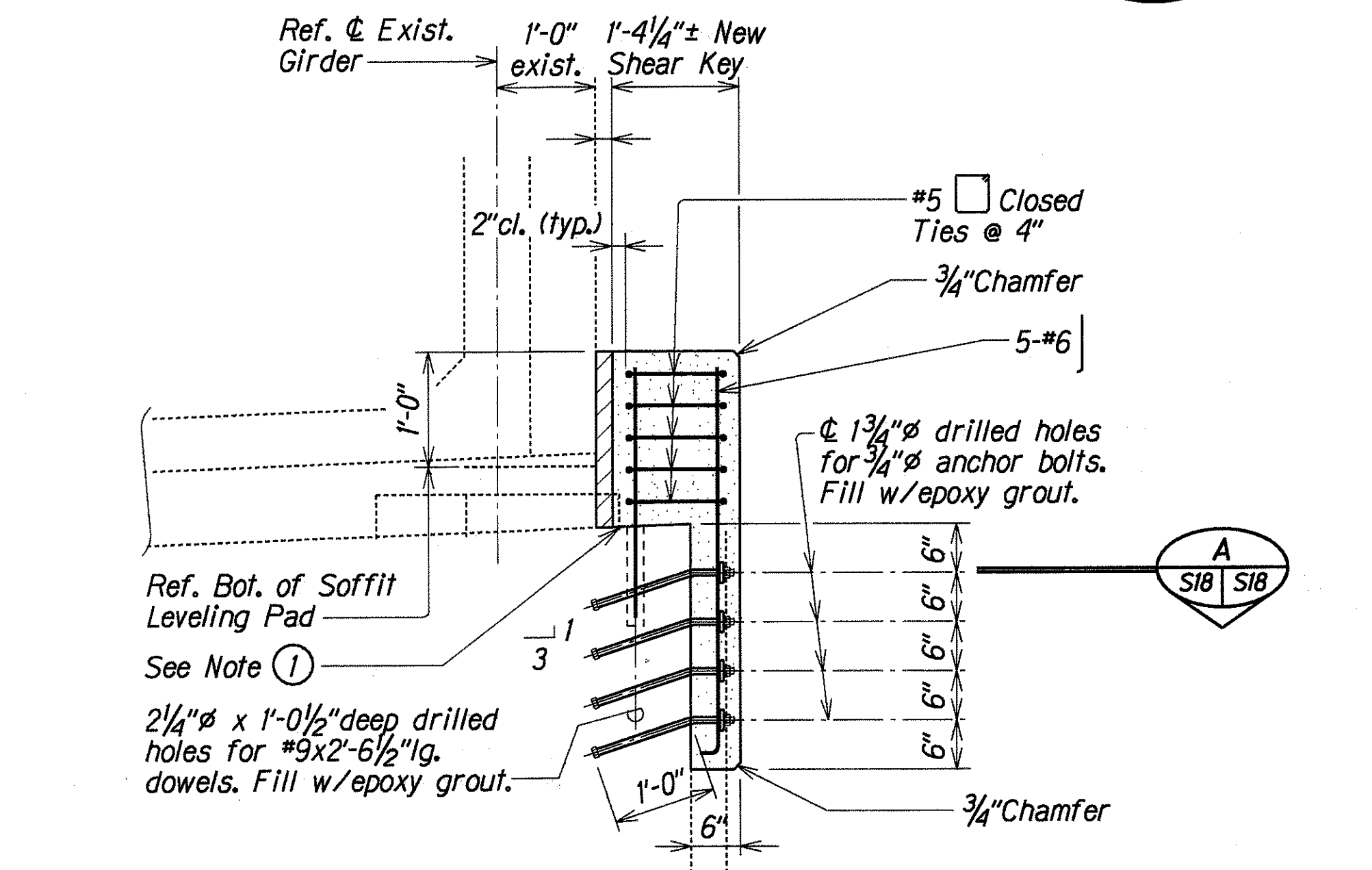
ELEVATION

ABUTMENT NO. 2 EAST END



ELEVATION

ABUTMENT NO. 2 AT FREEWAY



ELEVATION

ABUTMENT NO. 2 WEST END

# PALAMA SEPARATION CONCRETE SHEAR KEY DETAILS

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

|               |          |
|---------------|----------|
| ORIGINAL      | DATE     |
| PLAN          | JUL 1999 |
| NOTED         | JUL 1999 |
| DESIGNED BY   | SA       |
| QUANTITIES BY | SA       |
| CHECKED BY    | SA       |
| APP. RETROFIT | JUL 1999 |

STATE OF HAWAII  
DEPARTMENT OF TRANSPORTATION  
HIGHWAYS DIVISION

**PALAMA SEPARATION**  
**ABUTMENT NO. 2 RETROFIT**  
**CONCRETE SHEAR KEY DETAILS**

SEISMIC RETROFIT for LUNALILO-VINEYARD OFF-RAMP,  
MAKIKI VIADUCT and PALAMA SEPARATION  
Fed. Aid Proj. No. BR-HI-1(225)

Scale: As Noted Date: Jul, 1999

SHEET No. S18 OF 25 SHEETS