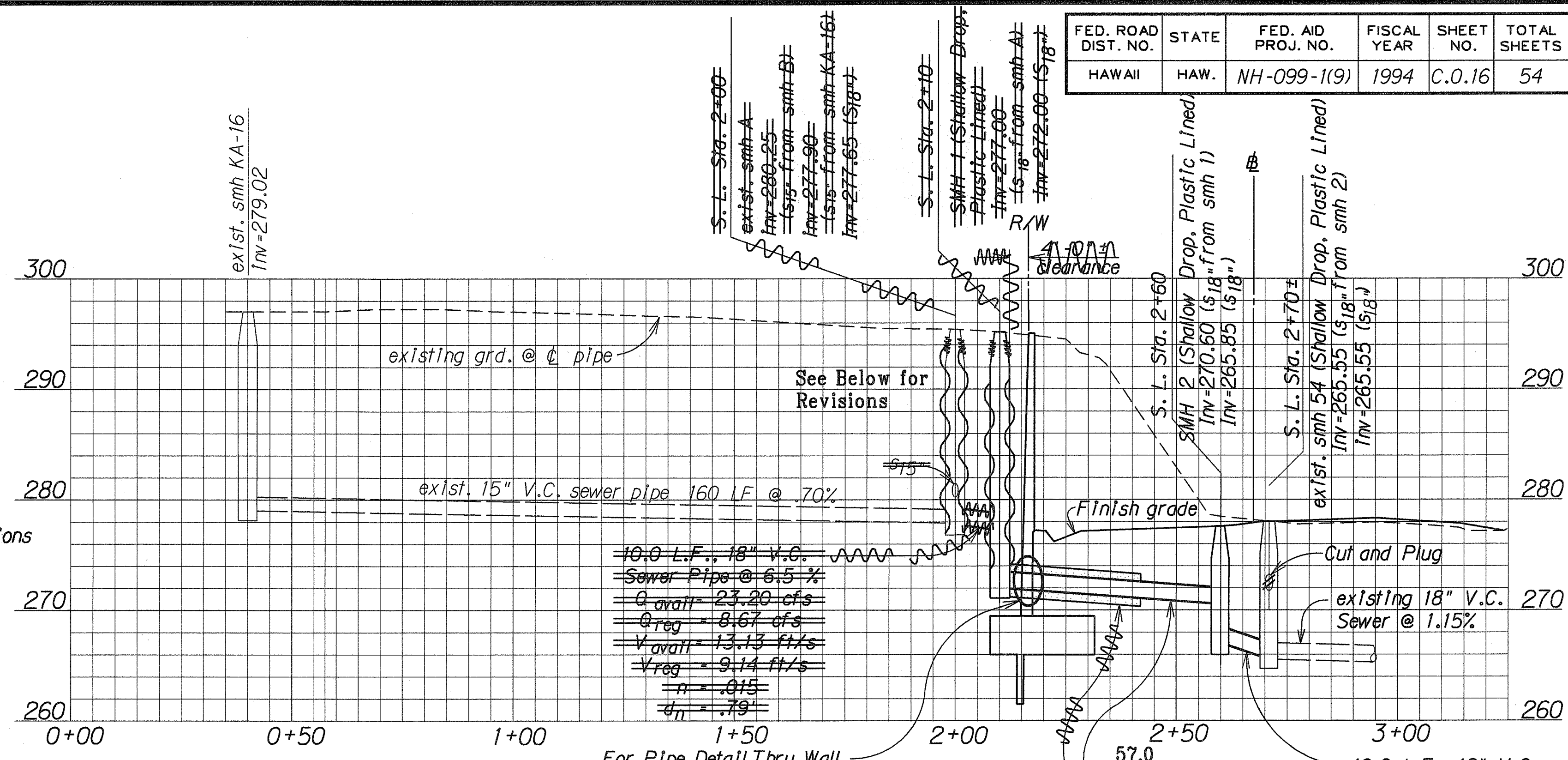
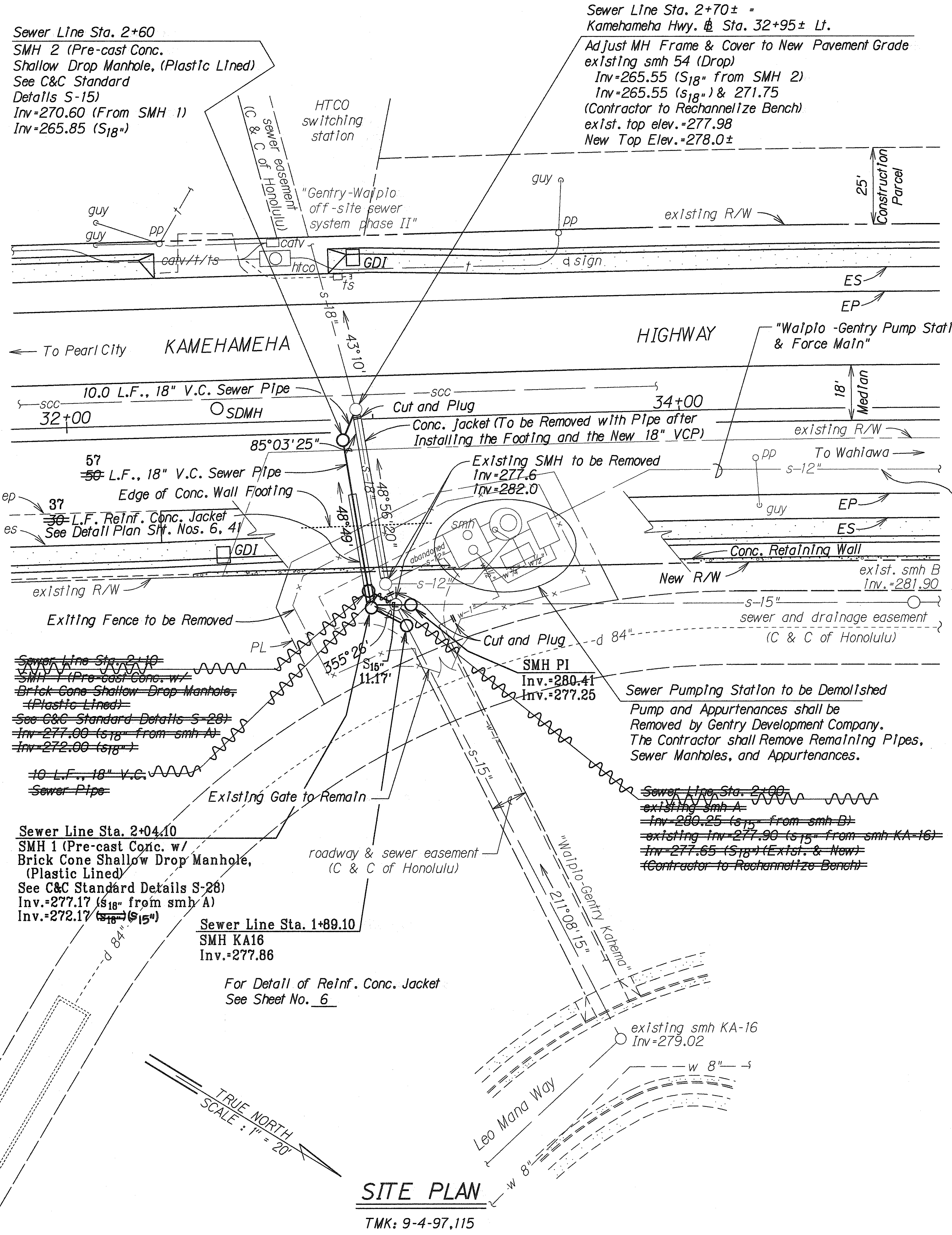
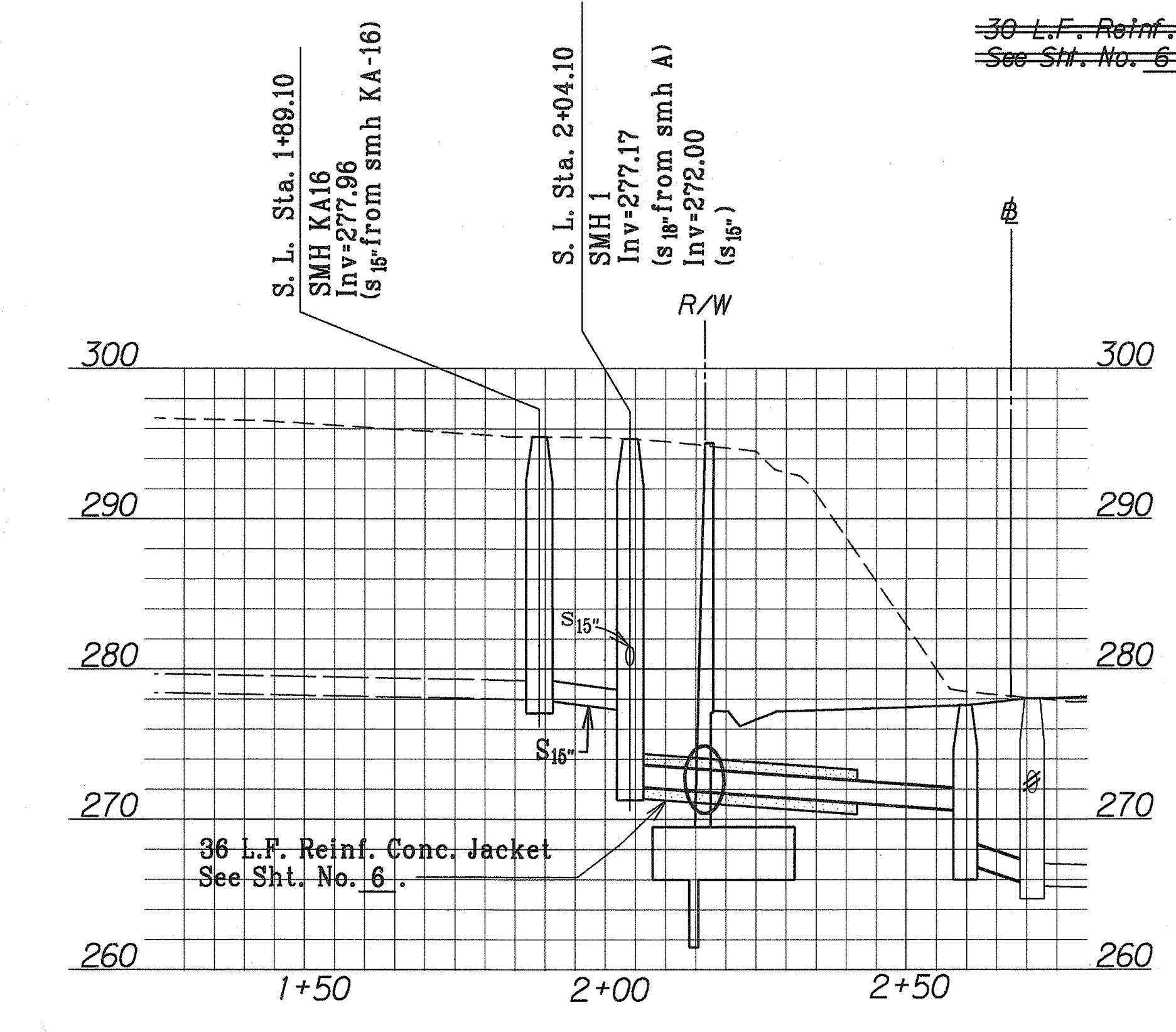


| FED. ROAD DIST. NO. | STATE | FED. AID PROJ. NO. | FISCAL YEAR | SHEET NO. | TOTAL SHEETS |
|---------------------|-------|--------------------|-------------|-----------|--------------|
| HAWAII | HAW. | NH-099-1(9) | 1994 | C.O.16 | 54 |



PROFILE - SEWER LINE

Scale: Horiz. 1"=20'
Vert. 1"=8'



| 2-2-95 | Added Wastewater Management Signature Block. |
|---|--|
| 1-14-93 | Revised sewer manhole # 1 & 2. |
| DATE | REVISION |
| STATE OF HAWAII DEPARTMENT OF TRANSPORTATION HIGHWAYS DIVISION | |
| SEWER RELOCATION PLAN | |
| KAMEHAMEHA HIGHWAY WIDENING Lumala St. to Walpio Uka St. F.A.P. No. NH-099-1(9) | |
| Scale: As Shown | Date: Aug. 1992 |
| SHEET No. 1 OF 1 SHEETS | |

APPROVED:
[Signature]
CHIEF, DIVISION OF PLANNING AND SERVICE CONTROL
DEPARTMENT OF WASTEWATER MANAGEMENT
(FOR SEWER WORK WITHIN PUBLIC R/W AND EASEMENT ONLY)

"AS-BUILT"

C.O. 16

ORIGINAL PLAN
DESIGNED BY: M. CHANG
DRAWN BY: M. CHANG
CHECKED BY: M. CHANG
DATE: 12-13-95

SITE PLAN
TMK: 9-4-97,115

| | |
|-----------------------------------|---------|
| SURVEY PLOTTED BY | DATE |
| DRAWN BY M. Chung/G. Ahumada | 12-2-95 |
| DESIGNED BY B. Takasugi/B. Kimura | |
| QUANTITIES BY | |
| CHECKED BY | |
| ORIGINAL PLAN | |
| NOTE BOOK | |
| 004, Jason | |
| N. Yamamoto | |

SEWER NOTES:

1.

All sewer construction shall be performed in accordance with the City's standard specifications, Sept. 1986, the Department of Public Works standard details, Sept. 1984, current city practices and Revised Ordinances of Honolulu, 1990, as amended, and the Design Standards of the Department of Wastewater Management Vol. 1, July 1993.
2.

In the event that any change in alignment or grade for the proposed sewers are required due to unforeseen conflict with other utilities, the Engineer in charge or the maker of the plans shall be responsible for the required changes which are to be presented to the Department of Wastewater Management for approval.
3.

The Contractor shall notify the Construction Section, Department of Wastewater Management at 527-5820 or 523-4345 to arrange for inspection services and submit four sets of approved construction plans seven days prior to commencement of sewer work.
4.

Crushed rock cradle is permitted where soil is stable. In areas of unstable soil, the maker of the plans and the construction Engineer will determine the pipe support required.
5.

Trees in the road right-of-way shall be situated a minimum of 6'-0" from the City's sewer lines.
6.

The underground pipes, cables or ductlines known to exist by the Engineer from his research of records are indicated on the plans. The Contractor shall verify the location and depth of the facilities and exercise proper care in excavating the area. The Contractor shall be responsible and shall pay for all damaged utilities.
7.

Sewer lateral location measured along the front property line shall be 6'-0" from the property corner unless otherwise noted on the plans and should not straddle electrical transformer pad.
8.

Slope for sewer laterals shall be 1.00% unless otherwise noted.
9.

Building plumbing facilities shall be controlled by sewer lateral inverts.
10.

The Contractor shall be responsible for maintaining continuous sewer service to all affected areas during construction.
11.

The Consulting Engineer shall submit to the Department of Wastewater Management mylar "as-built" tracings of the construction plans as actually constructed, showing all changes from the original plans.
12.

The Contractor shall be responsible for any sewage spills caused during construction. The Contractor shall notify the State Department of Health and utilize appropriate sampling and analyzing procedures.
13.

The Contractor shall install "Rainstopper" manhole inserts in all sewer manholes with Type "SA" frame and cover.

14. For entry by City personnel, including inspectors, into a permit required confined space as defined in 29 CFR Part 1910.146(b), the contractor shall be responsible for providing:

1.

All safety equipment required by the confined space regulations applicable to all parties other than the construction industry, to include, but not limited to, the following:

a.

Full body harnesses for up to two personnel.

b.

Lifeline and associated clips.

c.

Ingress/egress and fall protection equipment.

d.

Two-way radios (Walkie-Talkies) if out of line-of-sight.

e.

Emergency (Escape) respirator (10 minute duration).

f.

Cellular telephone to call for emergency assistance.

g.

Continuous gas detector (calibrated) to measure oxygen, hydrogen sulfide, carbon monoxide and flammables (capable of monitoring at a distance at least 20-feet away).

h.

Personal multi-gas detector to be carried by Inspector.

2.

Continuous forced air ventilation adequate to provide safe entry conditions.

3.

One attendant/Rescue personnel topside (two, if conditions warrant it).

15. All drop and shallow drop sewer manholes shall be lined with plastic liners. Also, if the velocity exceeds 10 FPS, the sewer manhole shall be plastic lined.

16. All sewer pipe joints within easements shall be wrapped with geotextile root barrier.

17. S4C pipe cradle seals shall be installed 10 feet from all sewer manholes to prevent soil migration.

18. Geotextile fabric to envelop the pipe cradle and select backfill material shall be provided where water or unstable soil conditions are encountered.

19. Tops of sewer manholes in grassed areas shall be four inches above finished ground unless otherwise indicated by the Engineer. All sewer manholes within the easement area shall have Brick Cone Sections.

20. The Contractor shall pay for all inspection costs.

| | | | | | |
|---------------------|-------|--------------------|-------------|------------|--------------|
| FED. ROAD DIST. NO. | STATE | FED. AID PROJ. NO. | FISCAL YEAR | SHEET NO. | TOTAL SHEETS |
| HAWAII | HAW. | NH-099-1(9) | 1994 | C.O. 16S-1 | 54 |

2-2-95 Added Wastewater Management Signature Block.

DATE REVISION

STATE OF HAWAII
DEPARTMENT OF TRANSPORTATION
HIGHWAYS DIVISION

SEWER RELOCATION NOTES

KAMEHAMEHA HIGHWAY WIDENING
Lumiala St. to Waipio Uka St.
F.A.P. No. NH-099-1(9)

Date: Aug, 1992

SHEET No. 1 OF 1 SHEETS

APPROVED:

2/15/95

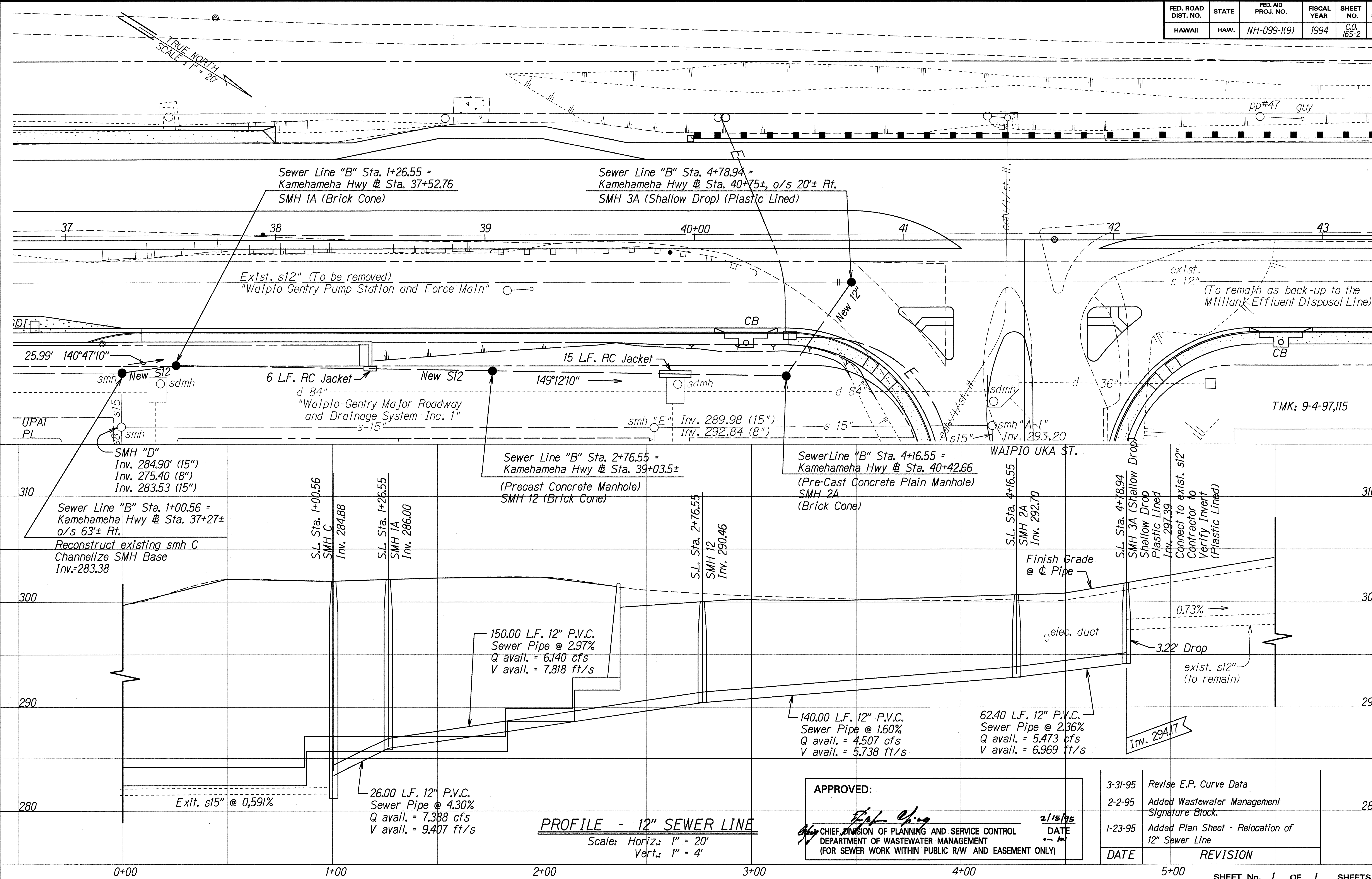
DATE

CHIEF, DIVISION OF PLANNING AND SERVICE CONTROL

DEPARTMENT OF WASTEWATER MANAGEMENT

(FOR SEWER WORK WITHIN PUBLIC R/W AND EASEMENT ONLY)

C.O. 16S-1



ORIGINAL PLAN
 DATE: 12-31-95
 DESIGNED BY: B. Kimura, D. Taniguchi
 CHECKED BY: M. Kimura
 QUANTITIES BY: M. Kimura

APPROVED:

 CHIEF, DIVISION OF PLANNING AND SERVICE CONTROL
 DEPARTMENT OF WASTEWATER MANAGEMENT
 (FOR SEWER WORK WITHIN PUBLIC R/W AND EASEMENT ONLY)
 DATE: 2/15/96

| DATE | REVISION |
|---------|---|
| 3-31-95 | Revise E.P. Curve Data |
| 2-2-95 | Added Wastewater Management Signature Block. |
| 1-23-95 | Added Plan Sheet - Relocation of 12" Sewer Line |