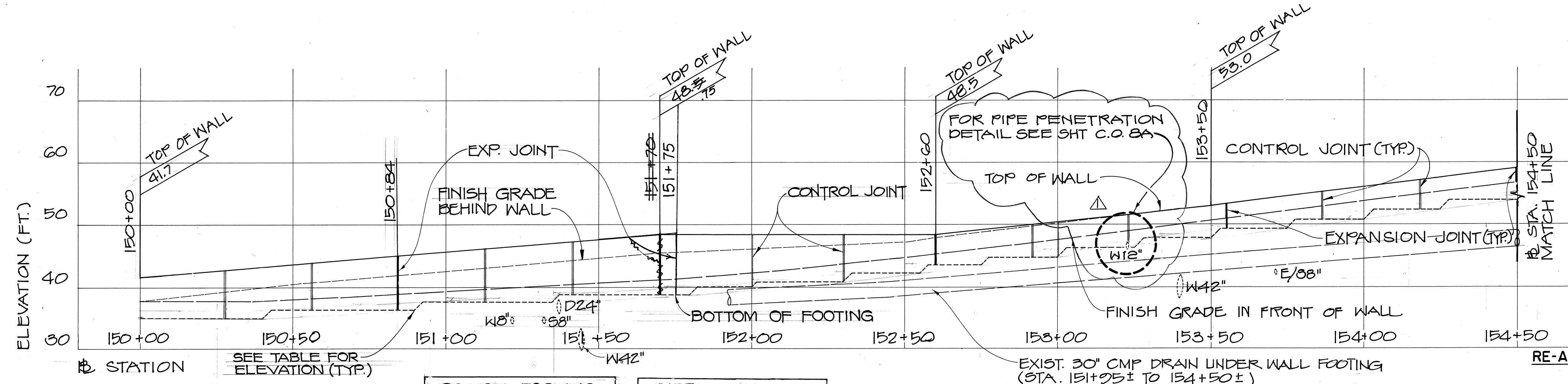
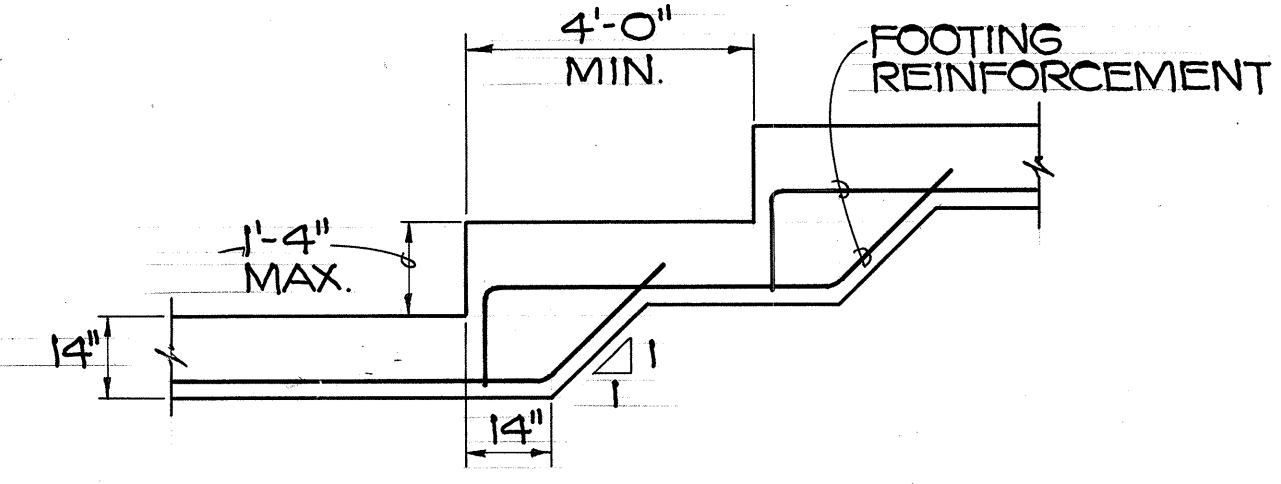




RE-APPROVED: *[Signature]* 4/25/99  
Chief, Planning and Engineering, BWS  
Date

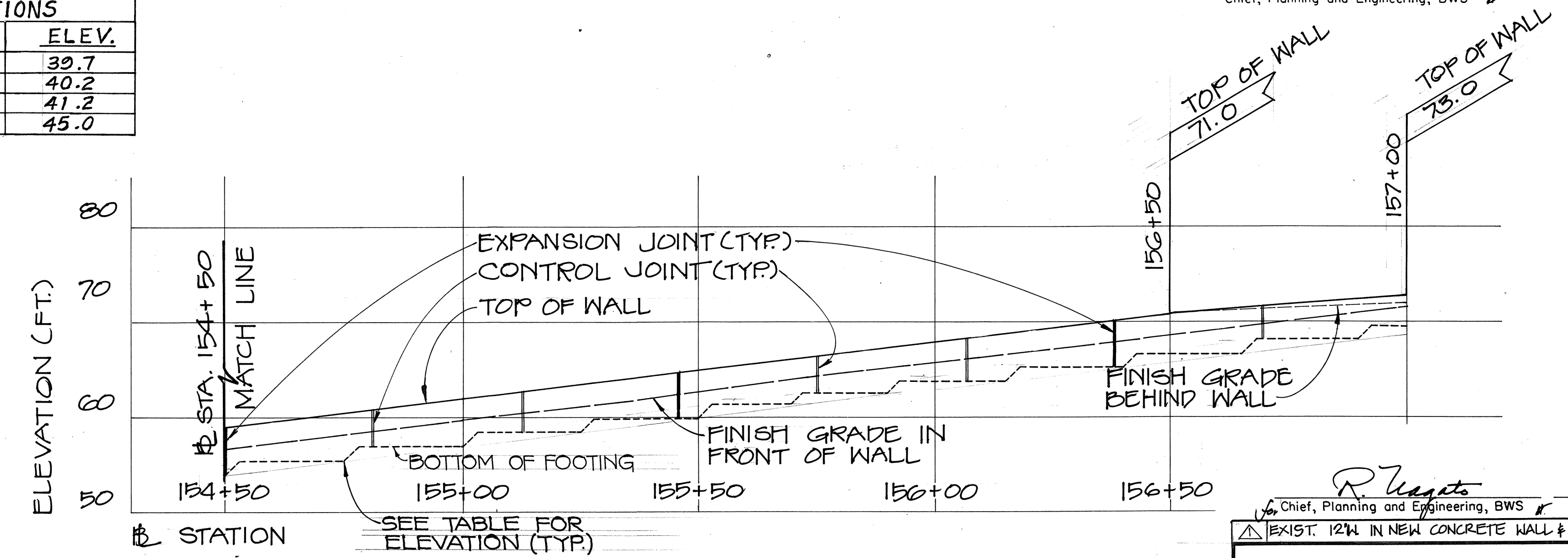
- NOTE:
- CONTRACTOR SHALL VERIFY ALL UTILITY CROSSINGS WITH WALL PRIOR TO EXCAVATION FOR FOOTING.
  - CONTRACTOR SHALL USE EXTREME CAUTION WHILE WORKING IN THE VICINITY OF THE EXISTING HECO "ARCHER" UNDERGROUND TRANSMISSION LINE.



TYP. STEPPED FOOTING DETAIL 2  
NO SCALE 7 7

| BOTTOM FOOTING ELEVATIONS |       |
|---------------------------|-------|
| STATION                   | ELEV. |
| 150+40                    | 34.8  |
| 150+90                    | 36.2  |
| 151+35                    | 37.5  |
| 151+80.75                 | 38.8  |
| 152+00.2                  | 40.5  |
| 152+30.16                 | 40.8  |
| 152+55                    | 42.4  |
| 152+75                    | 43.5  |
| 153+00                    | 44.8  |
| 153+25.18                 | 46.3  |
| 153+50                    | 48.0  |
| 153+75                    | 49.3  |
| 154+00                    | 50.7  |
| 154+25                    | 52.3  |
| 154+50                    | 53.8  |
| 154+75                    | 55.3  |
| 155+00                    | 56.8  |
| 155+25                    | 58.4  |
| 155+50                    | 59.9  |
| 155+70                    | 61.4  |
| 155+90                    | 62.6  |
| 156+15                    | 63.8  |
| 156+40                    | 65.2  |
| 156+65                    | 66.6  |
| 156+90                    | 68.2  |
| 157+00                    | 69.6  |

| BOTTOM FOOTING ELEVATIONS |       |
|---------------------------|-------|
| STATION                   | ELEV. |
| 151+82.5                  | 39.7  |
| 151+88                    | 40.2  |
| 152+34                    | 41.2  |
| 153+38                    | 45.0  |

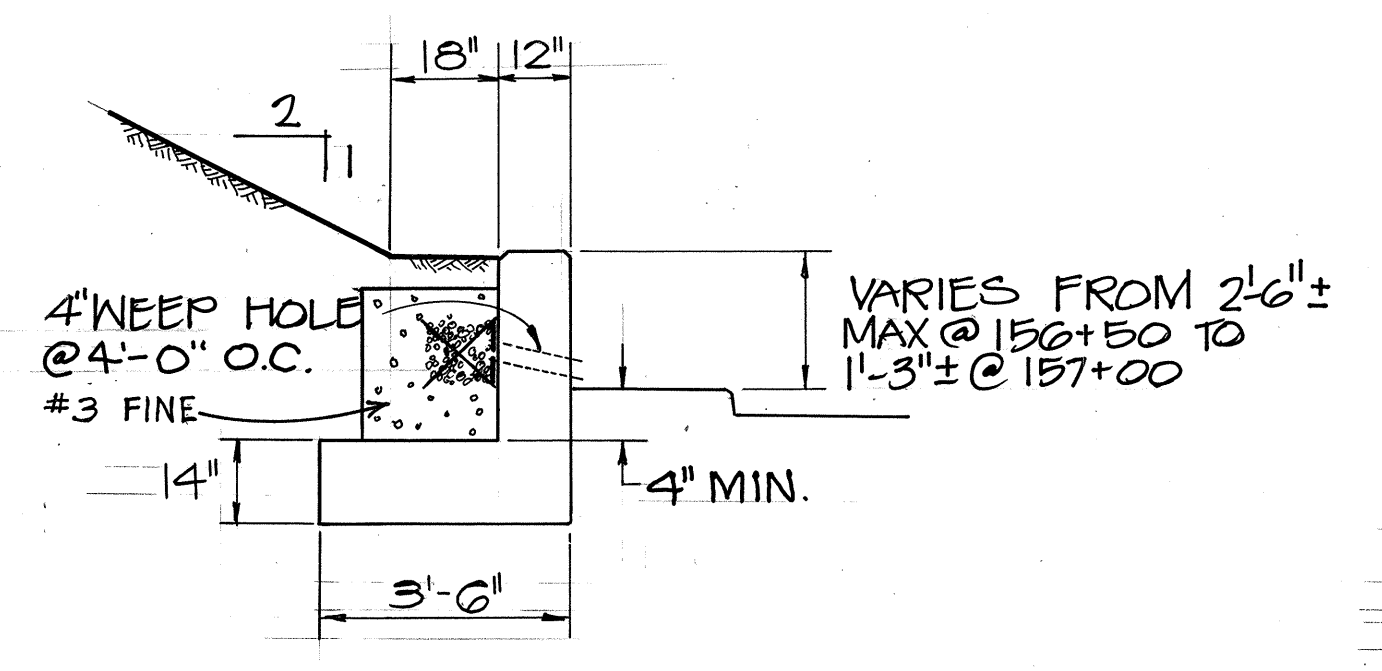


RETAINING WALL PROFILE 1  
SCALE: HORIZ. 1" = 20'  
VERT. 1" = 10' 4,5,6,7

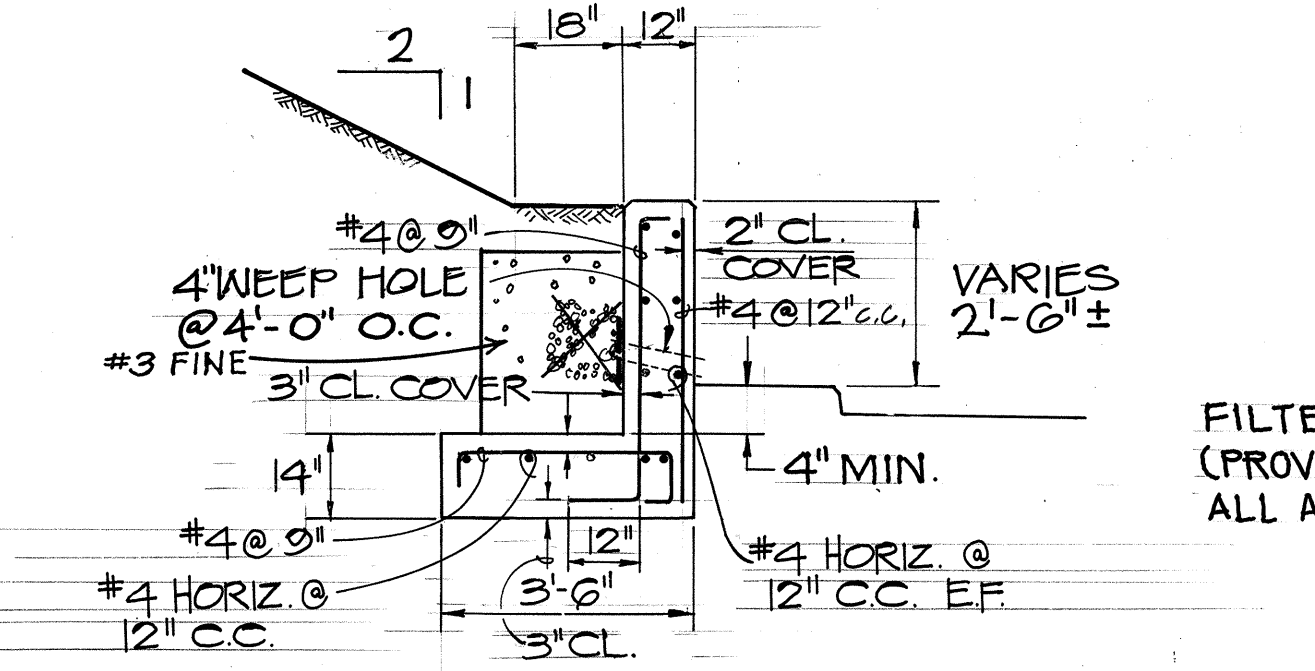
Chief, Planning and Engineering, BWS  
Date 6-20-87

| RET. WALL SECTION | BASE WIDTH B |
|-------------------|--------------|
| 150+00 TO 150+40  | 6'-6"        |
| 150+40 TO 150+84  | 6'-6"        |
| 150+84 TO 152+30  | 6'-6"        |
| 152+30 TO 152+60  | 6'-6"        |
| 152+60 TO 157+00  | 3'-6"        |

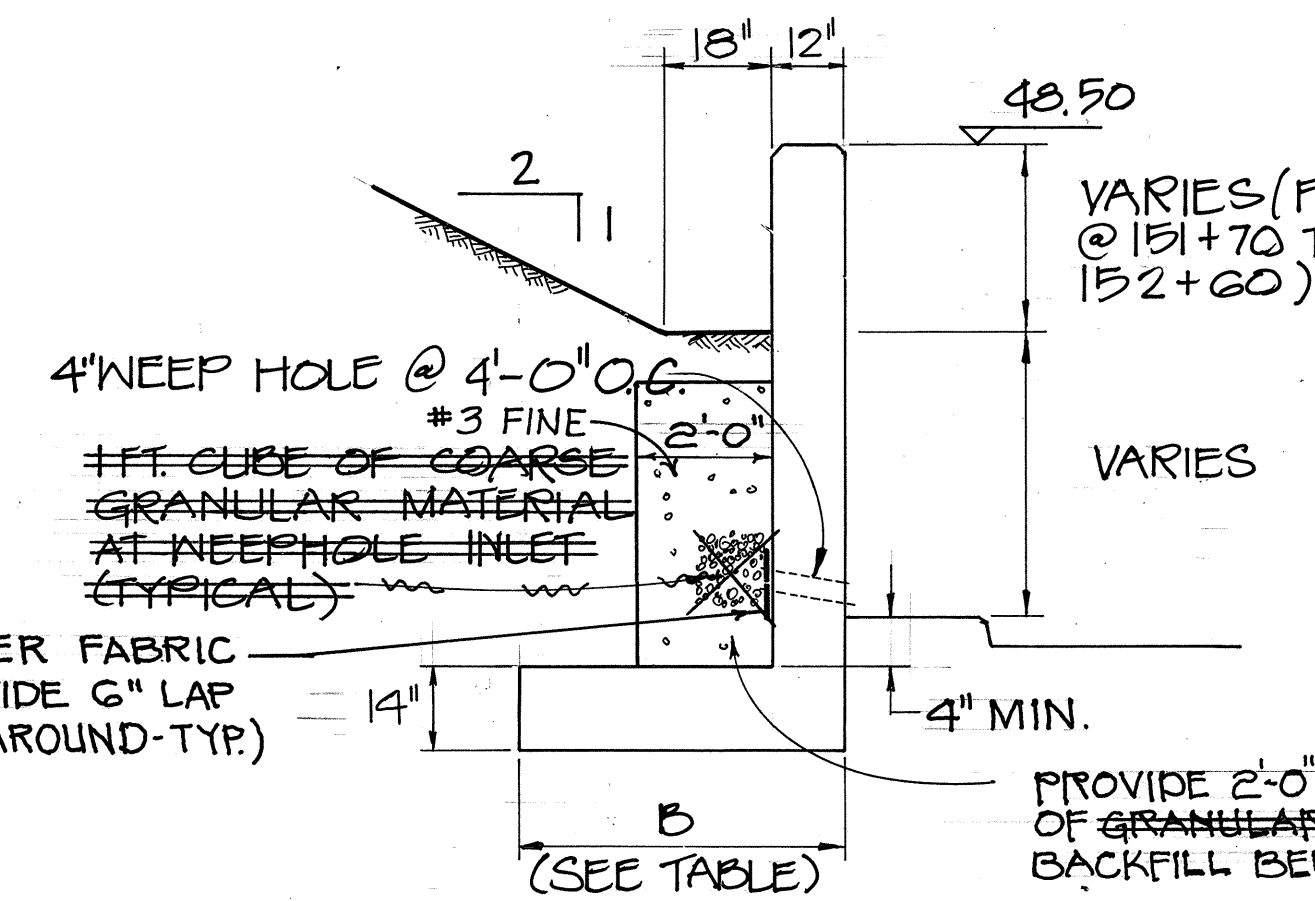
| DATE    | REVISIONS                               |
|---------|-----------------------------------------|
| 9-23-91 | Revised W.L. And Wall Footing Elevation |



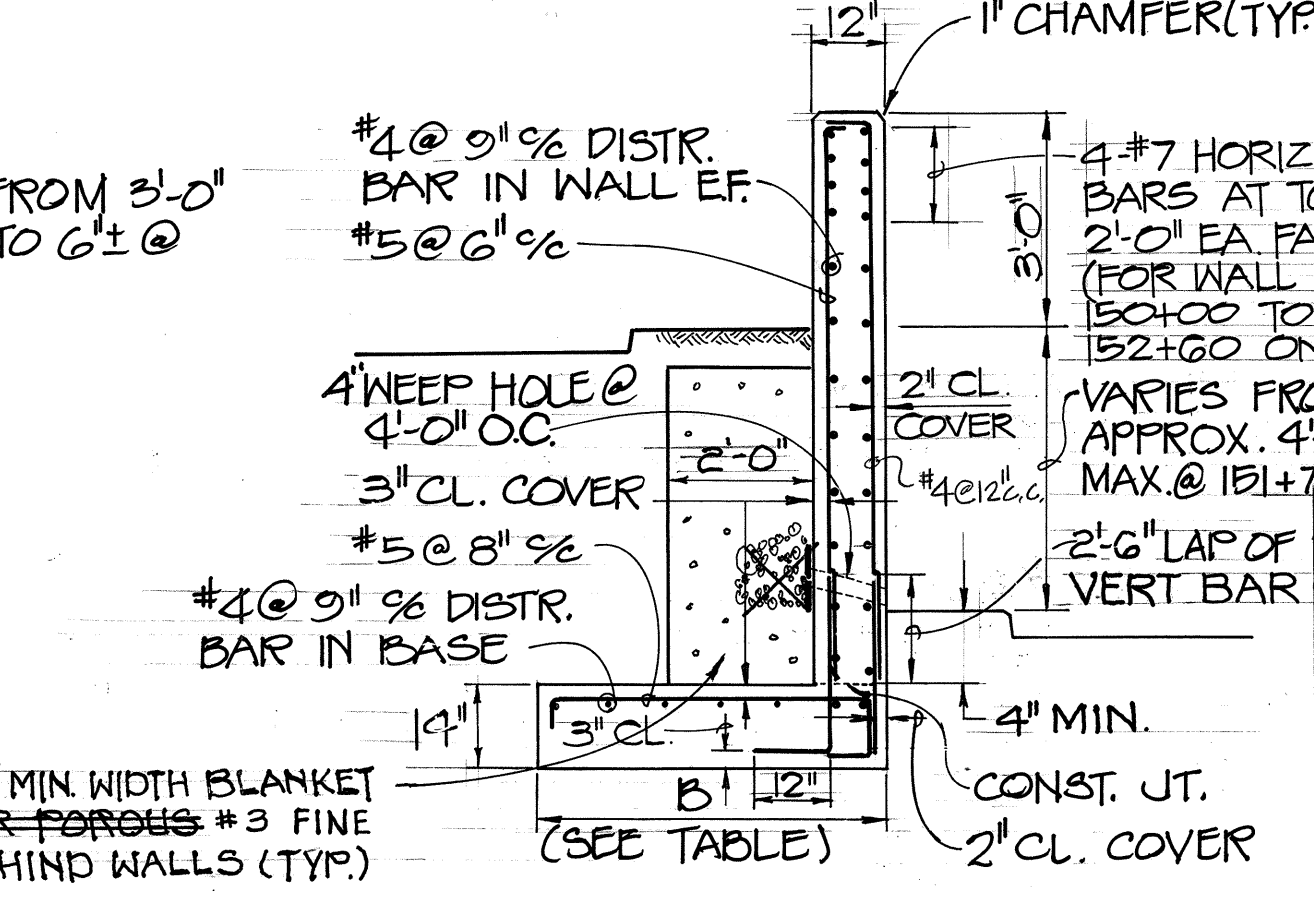
RET. WALL FROM 156+50 TO 157+00  
(REINFORCEMENT DETAIL SAME AS WALL FROM 152+60 TO 156+50)



RET. WALL FROM 152+60 TO 156+50



RET. WALL FROM 151+70 TO 152+60  
(REINFORCEMENT DETAIL SAME AS WALL FROM 150+00 TO 151+70)



RET. WALL FROM 150+00 TO 151+70

WALL SECTIONS (TYP.) 3  
SCALE: 3/8" = 1'-0" 4,5,6,7

NOTE:  
CONCRETE USED SHALL HAVE STRENGTH OF 3000 PSI @ 28 DAYS  
REINFORCEMENT USED SHALL BE OF GRADE 40 DEFORMED BARS.

THIS WORK WAS PREPARED BY *[Signature]* UNDER MY SUPERVISION *[Signature]*

REGISTERED PROFESSIONAL ENGINEER  
No. 2622-S  
HAWAII, U.S.A.

| DATE    | REVISIONS     |
|---------|---------------|
| 3-25-91 | REVISED NOTES |

STATE OF HAWAII  
DEPARTMENT OF TRANSPORTATION  
HIGHWAYS DIVISION

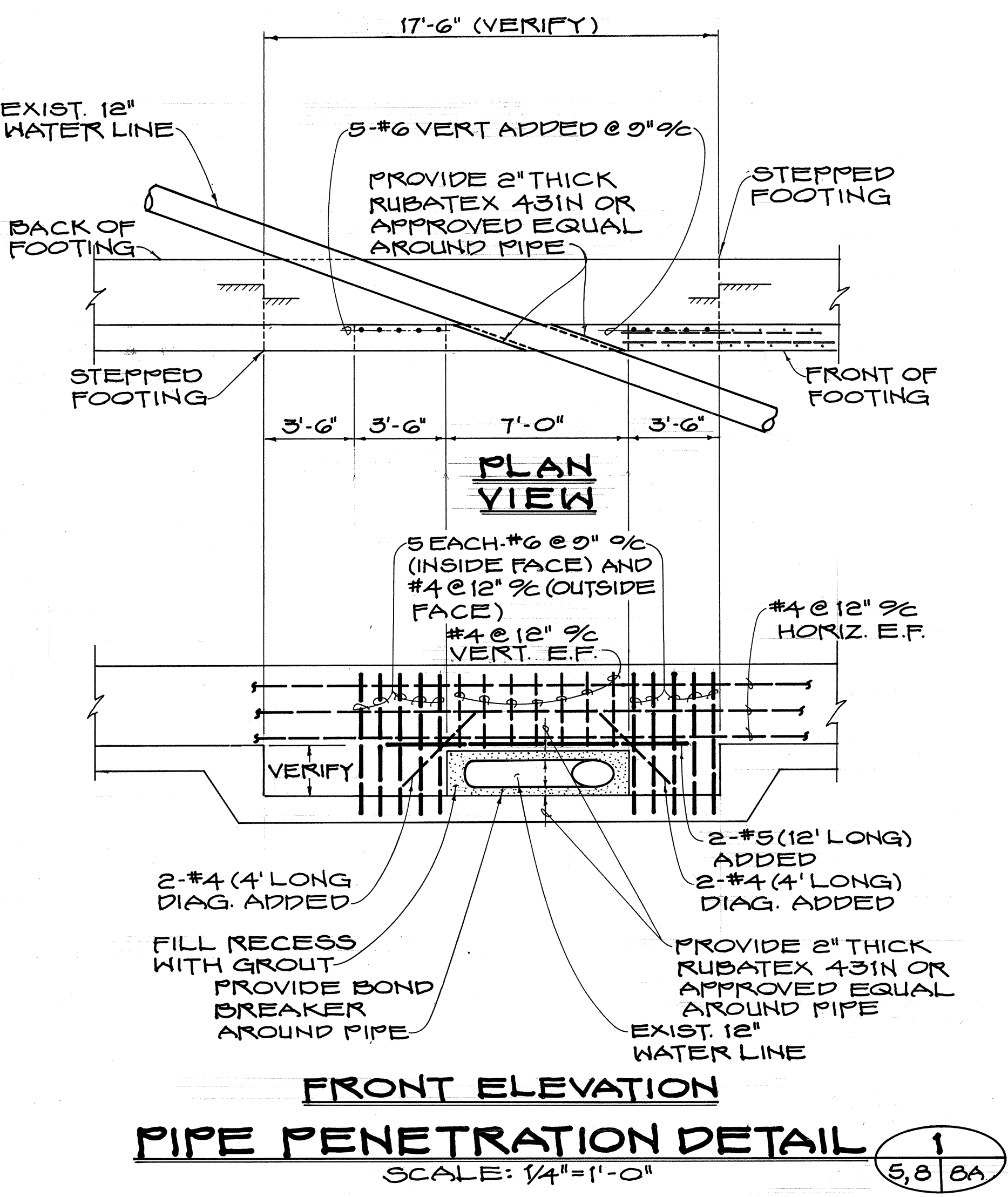
MISCELLANEOUS DETAILS

VINEYARD-PUNCHBOWL  
TRAFFIC IMPROVEMENT PROJECT  
PROJECT NO. 98A-01-89

SCALE: AS SHOWN DATE: APRIL 1990

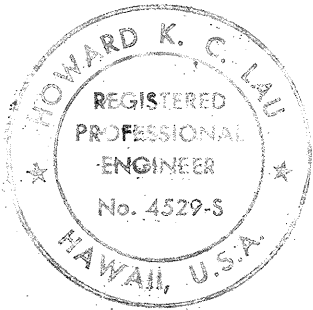
SHEET NO. 1 OF 3 SHEETS

| FED. ROAD DIST. NO. | STATE | FED. AID PROJ. NO. | FISCAL YEAR | SHEET NO. | TOTAL SHEETS |
|---------------------|-------|--------------------|-------------|-----------|--------------|
| HAWAII              | HAW.  | 98A-01-89          | 1991        | 00861     | 28           |



|                   |      |
|-------------------|------|
| SURVEY PLOTTED BY | DATE |
| DRAWN BY          |      |
| TRACED BY         |      |
| DESIGNED BY       |      |
| CHECKED BY        |      |
| ORIGINAL PLAN     |      |
| NOTE BOOK         |      |
| NO.               |      |

OSAKURA, IAU, SAKAKASHI  
 SAKUCHI & ASSOC., INC.  
 CONSULTING STRUCTURAL ENGINEERS



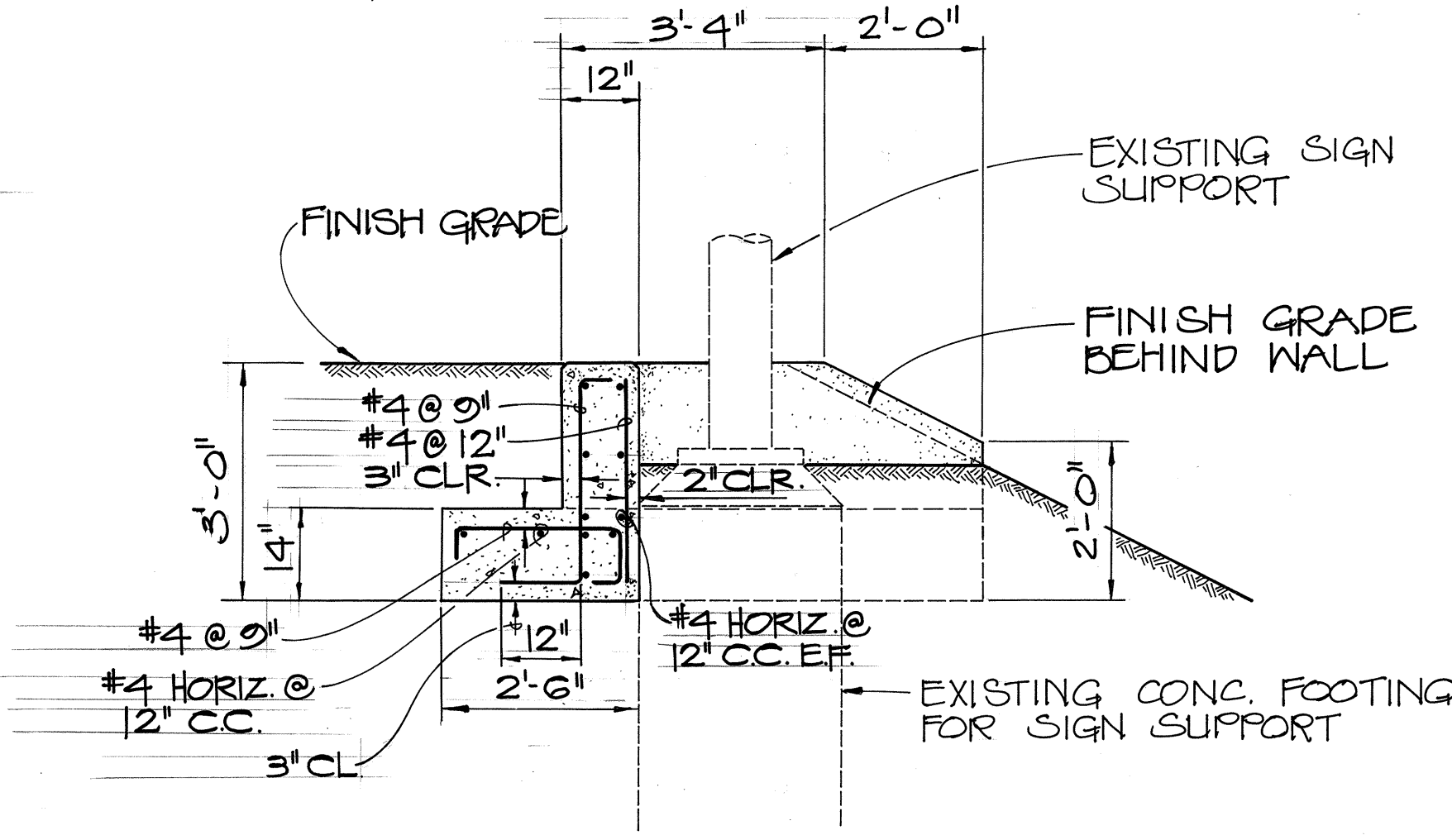
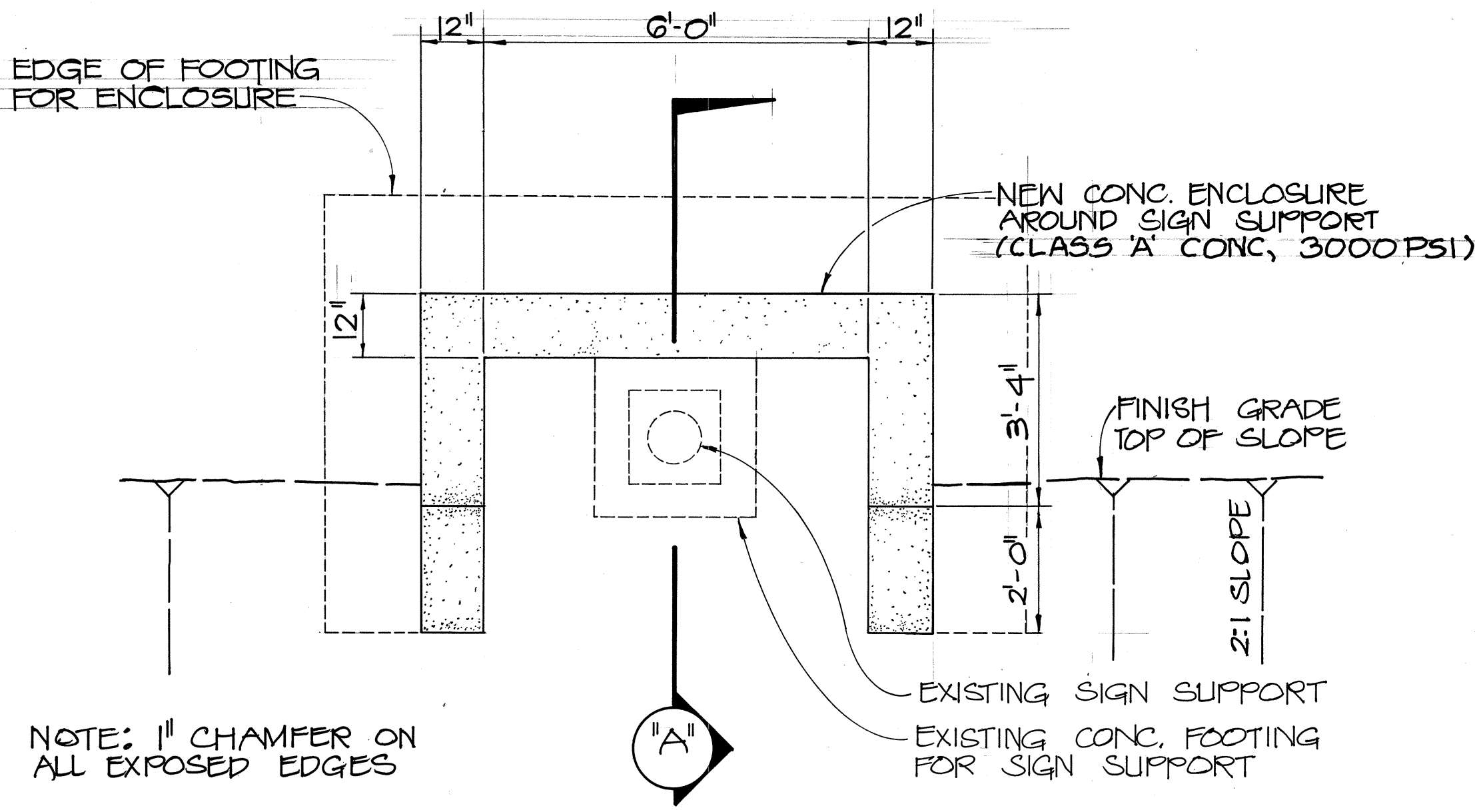
APPROVED: \_\_\_\_\_  
 10/11/91  
 Chief, Planning and Engineering, BKS Date

THIS WORK WAS PREPARED BY  
 ME OR UNDER MY SUPERVISION

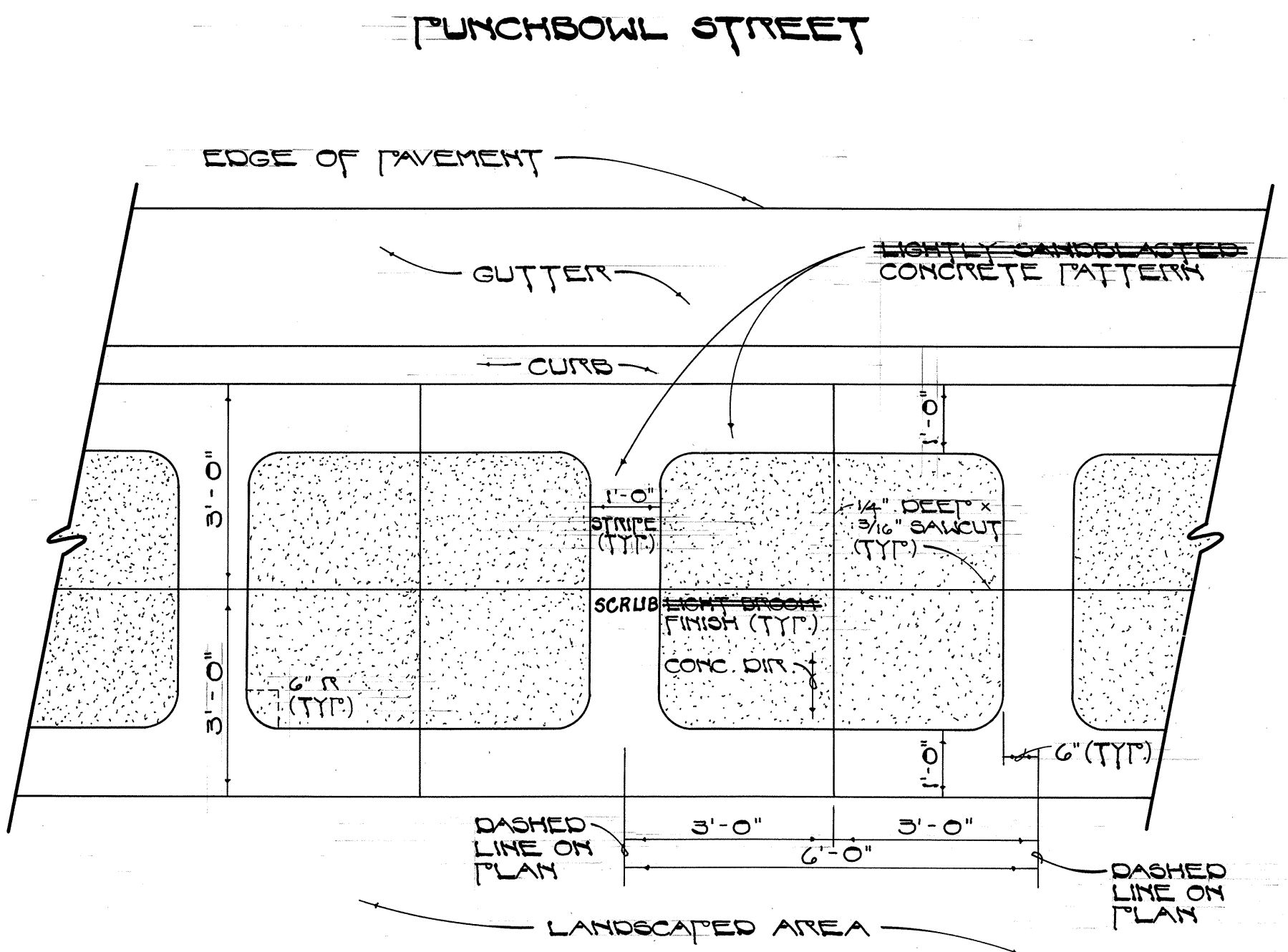
|                                                                              |                                       |
|------------------------------------------------------------------------------|---------------------------------------|
| 0-23-91                                                                      | New Sheet for Pipe Penetration Detail |
| DATE                                                                         | REVISIONS                             |
| STATE OF HAWAII<br>DEPARTMENT OF TRANSPORTATION<br>HIGHWAYS DIVISION         |                                       |
| MISCELLANEOUS DETAILS                                                        |                                       |
| VINEYARD - PUNCHBOWL<br>TRAFFIC IMPROVEMENT PROJECT<br>PROJECT NO. 98A-01-89 |                                       |
| SCALE: AS SHOWN                                                              | DATE: SEP 1991                        |
| SHEET NO. 1A OF 3 SHEETS                                                     |                                       |



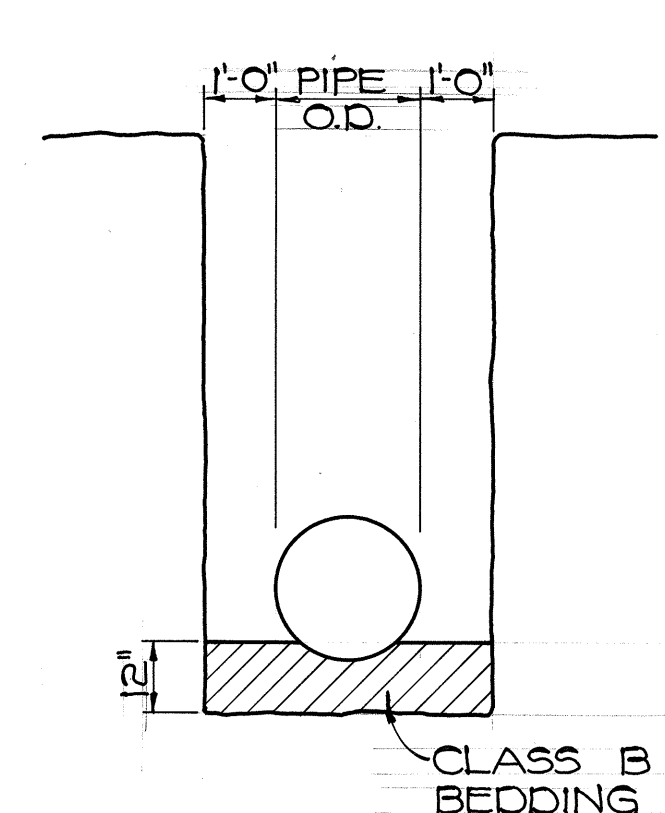
| FED. ROAD DIST. NO. | STATE | PROJ. NO. | FISCAL YEAR | SHEET NO. | TOTAL SHEETS |
|---------------------|-------|-----------|-------------|-----------|--------------|
| HAWAII              | HAW.  | 98A-01-89 | 1991        | 9         | 28           |



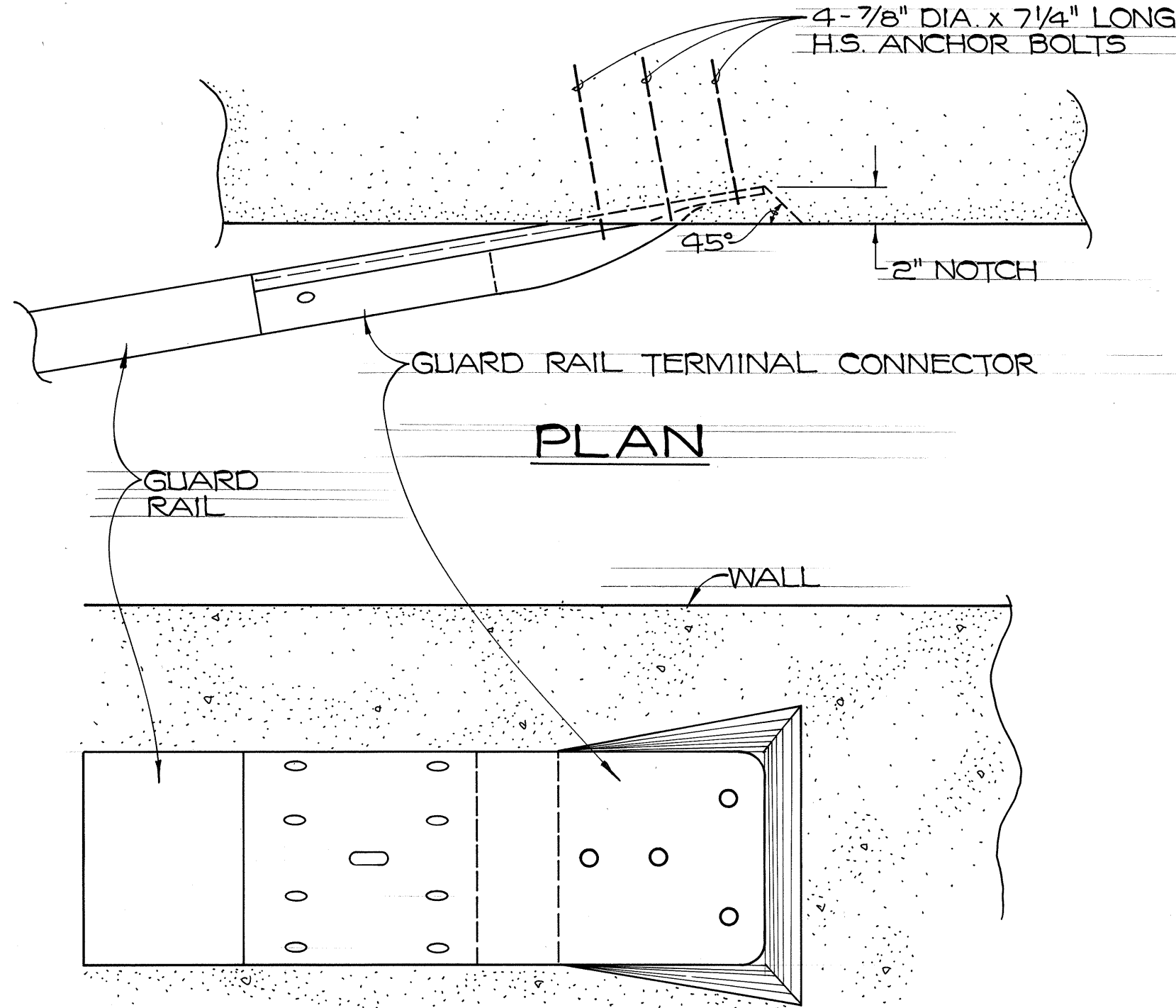
SECTION "A"



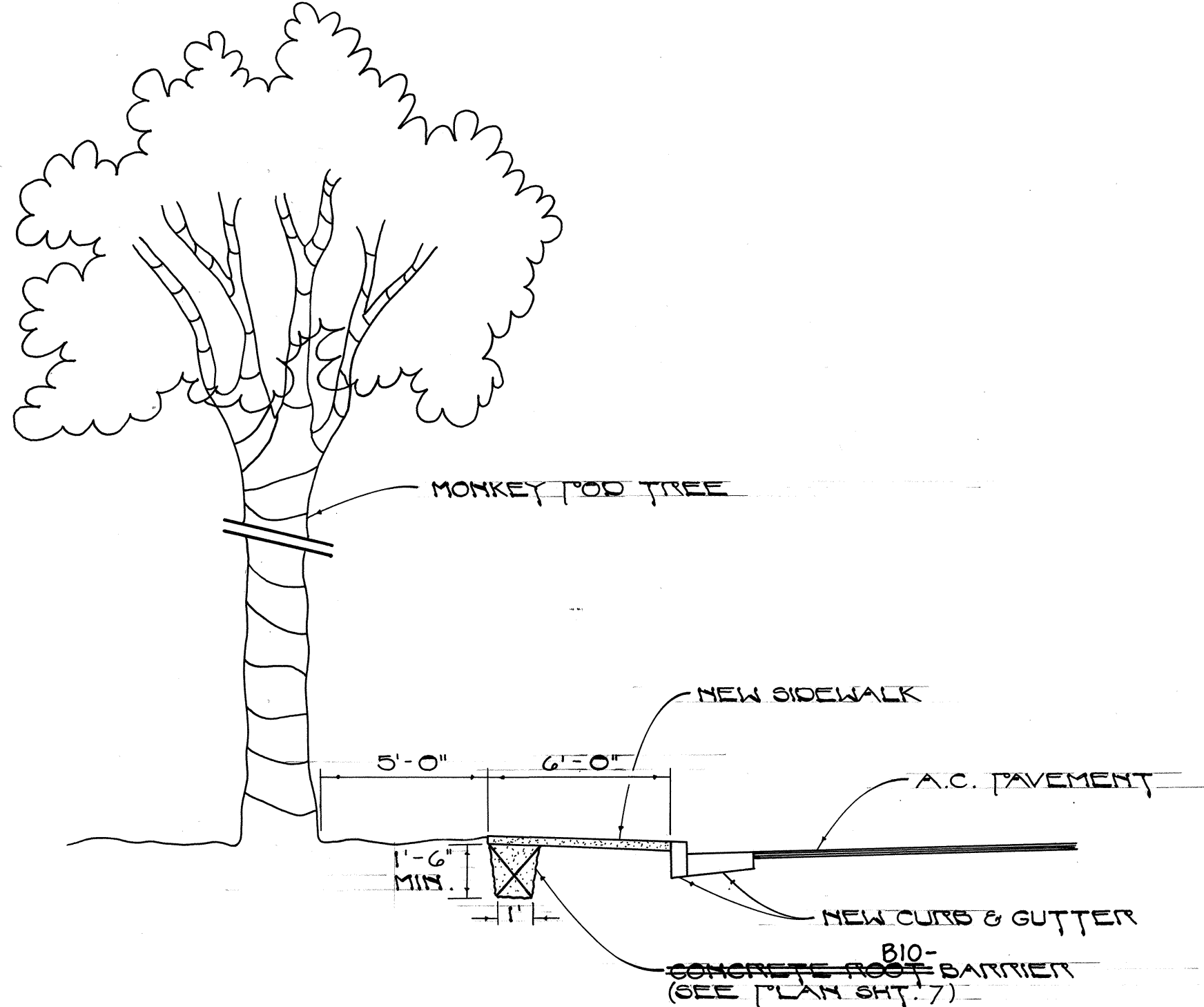
TYPICAL SIDEWALK SURFACE FINISH DETAIL



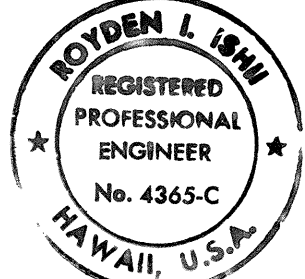
TRENCH DETAIL FOR CULVERT



GUARD RAIL WALL ANCHOR DETAIL



TYPICAL ROOT BARRIER DETAIL



STATE OF HAWAII  
DEPARTMENT OF TRANSPORTATION  
HIGHWAYS DIVISION

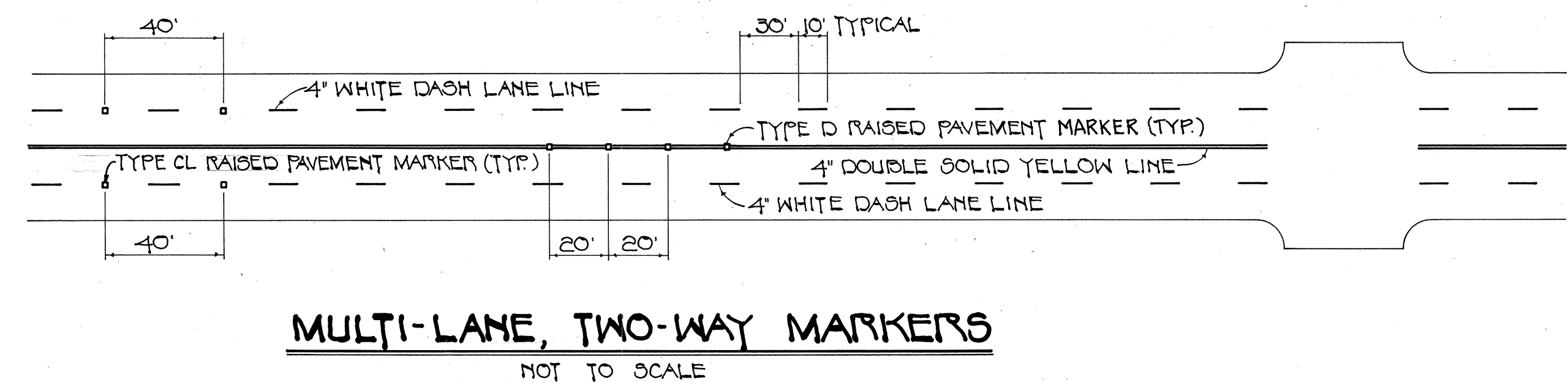
MISCELLANEOUS DETAILS

VINEYARD - PUNCHBOWL  
TRAFFIC IMPROVEMENT PROJECT  
PROJECT NO. 98A-01-89

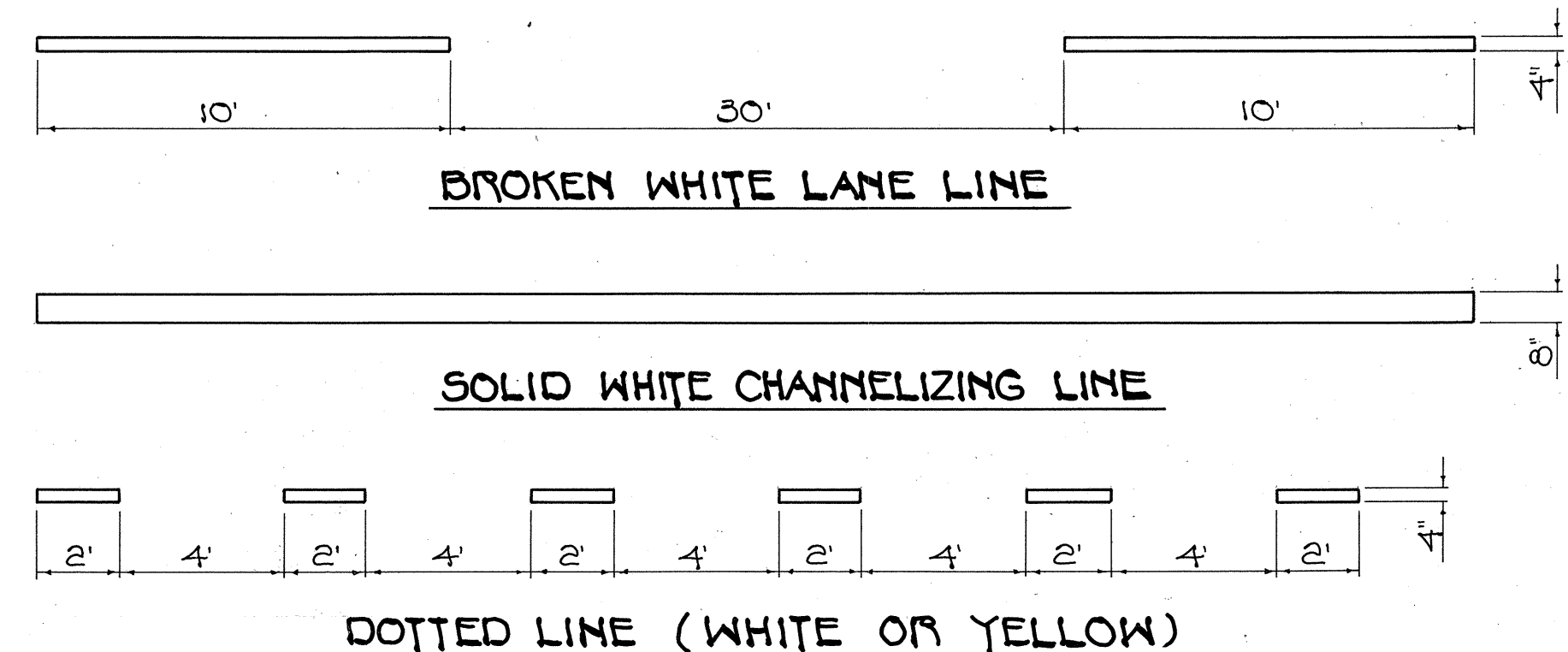
SCALE: AS SHOWN  
DATE: APRIL 1990

|                   |      |
|-------------------|------|
| SURVEY PLOTTED BY | DATE |
| DRAWN BY          |      |
| DESIGNED BY       |      |
| QUANTITIES BY     |      |
| CHECKED BY        |      |
| ORIGINAL PLAN     |      |
| NOTE BOOK         |      |
| NO.               |      |

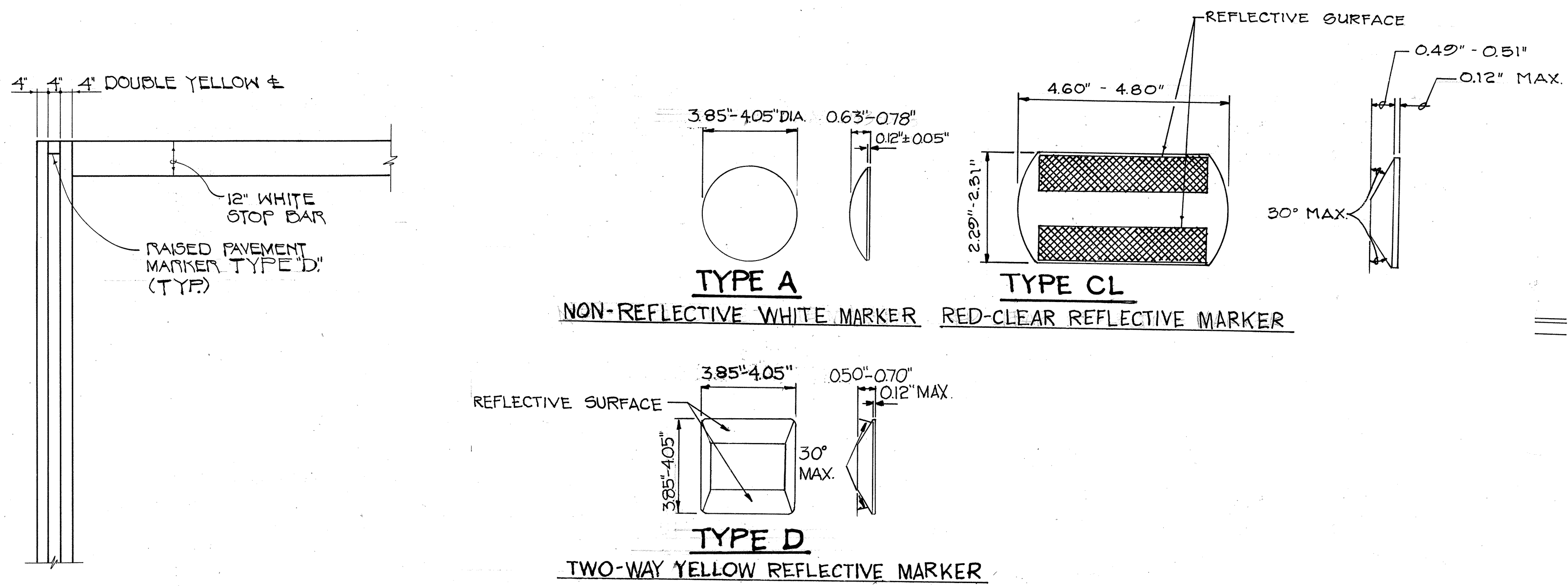
| FED. ROAD DIST. NO. | STATE | PROJ. NO. | FISCAL YEAR | SHEET NO. | TOTAL SHEETS |
|---------------------|-------|-----------|-------------|-----------|--------------|
| HAWAII              | HAW.  | 98A-01-89 | 1991        | 10        | 28           |



**MULTI-LANE, TWO-WAY MARKERS**  
NOT TO SCALE

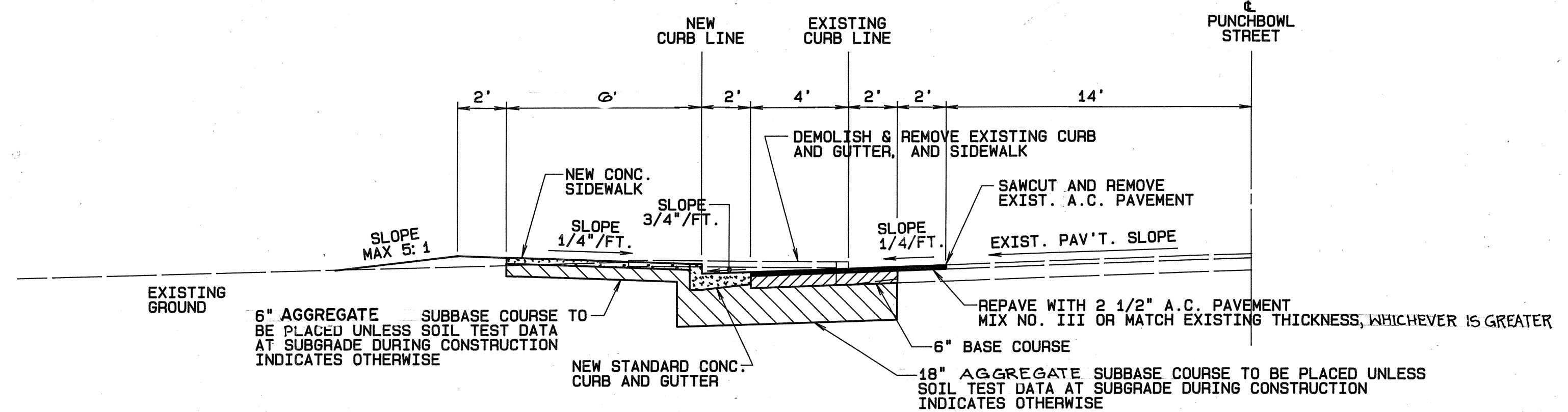


**TYPICAL PAVEMENT MARKINGS**  
NOT TO SCALE

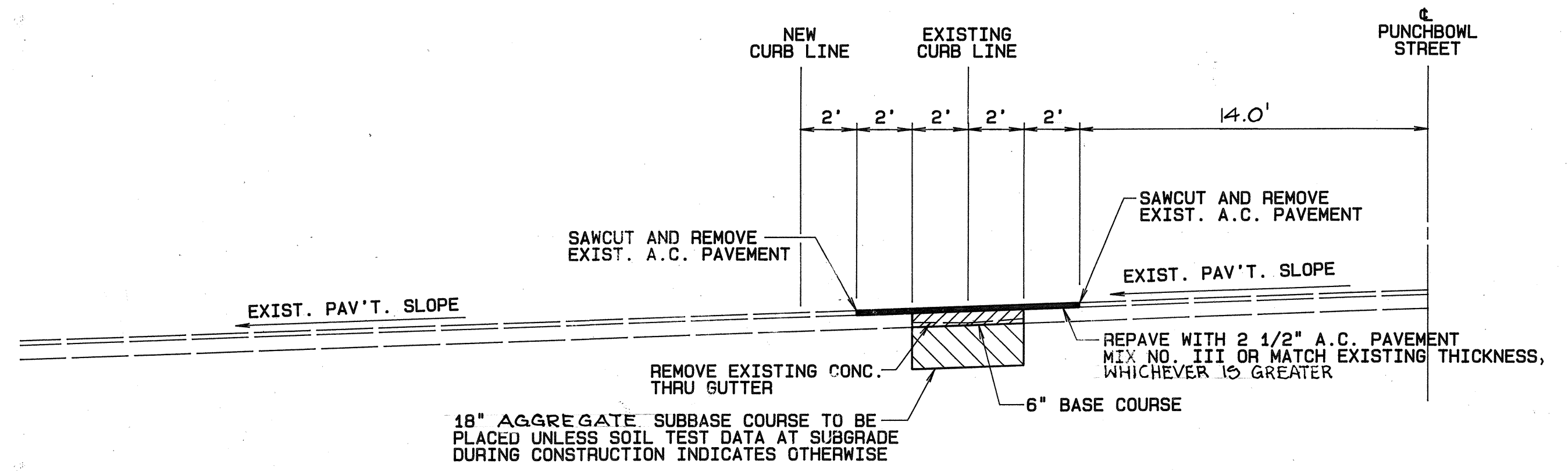


**CENTERLINE AND STOP BAR DETAIL**  
NOT TO SCALE

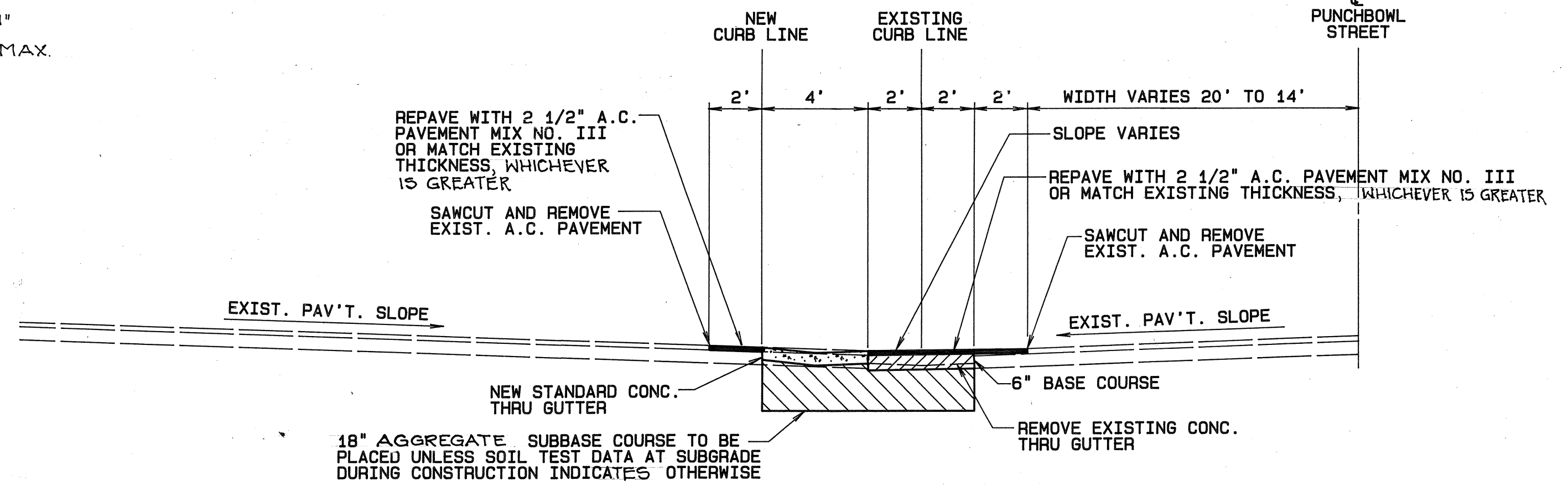
**RAISED PAVEMENT MARKERS**



**TYPICAL ROADWAY SECTION "A-A"**  
SCALE: 1/4" = 1-0"

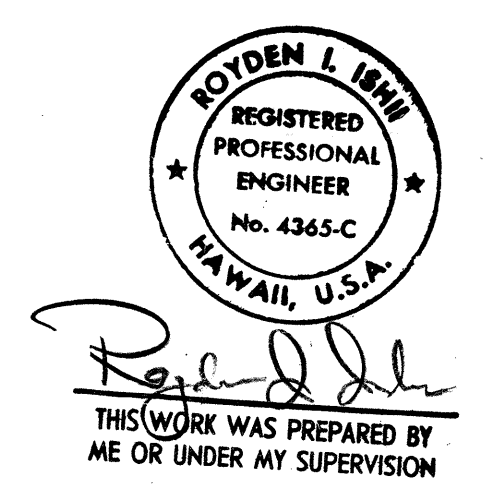


**TYPICAL ROADWAY SECTION "B-B"**  
SCALE: 1/4" = 1-0"



**TYPICAL ROADWAY SECTION "C-C"**  
SCALE: 1/4" = 1-0"

APPROVED:  
M. Fukunaga  
CHIEF, DIVISION OF ENGINEERING, DPW  
(For Work Within City Jurisdiction Only)  
6/21/89  
DATE  
1-22-90  
DATE

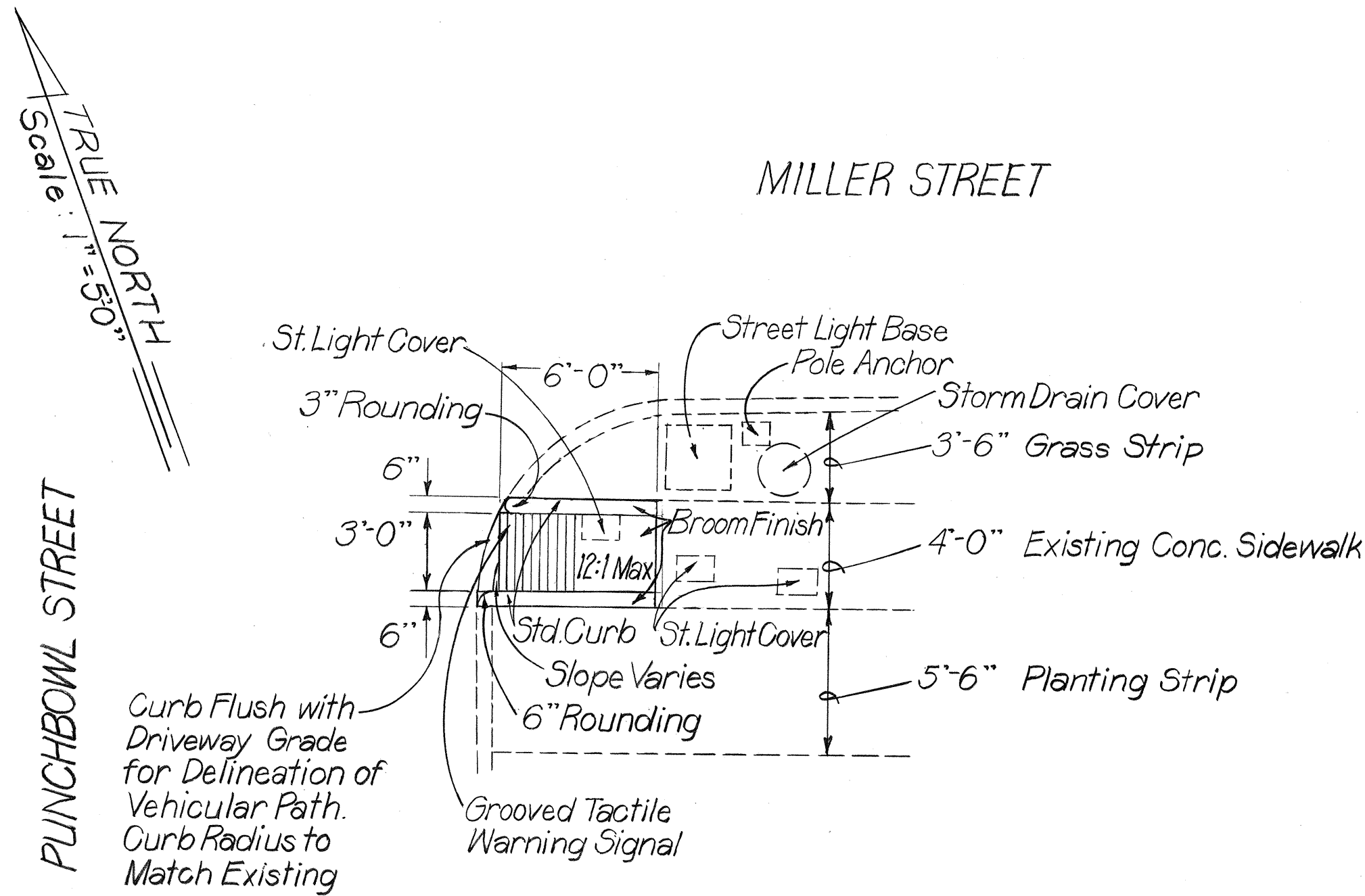


STATE OF HAWAII  
DEPARTMENT OF TRANSPORTATION  
HIGHWAYS DIVISION

MISCELLANEOUS  
DETAILS  
VINEYARD - PUNCHBOWL  
TRAFFIC IMPROVEMENT PROJECT  
PROJECT NO. 98A-01-89  
SCALE AS SHOWN  
DATE: APRIL 1990  
SHEET NO. 3 OF 3 SHEETS

| ORIGINAL PLAN     | DATE |
|-------------------|------|
| SURVEY PLOTTED BY |      |
| DRAWN BY          |      |
| DESIGNED BY       |      |
| CHECKED BY        |      |
| NO.               |      |

| FED. ROAD DIST. NO. | STATE | FED. AID PROJ. NO. | FISCAL YEAR | SHEET NO. | TOTAL SHEETS |
|---------------------|-------|--------------------|-------------|-----------|--------------|
| HAWAII              | HAW.  | 78A-01-89          | 1991        | 00105-1   | 28           |



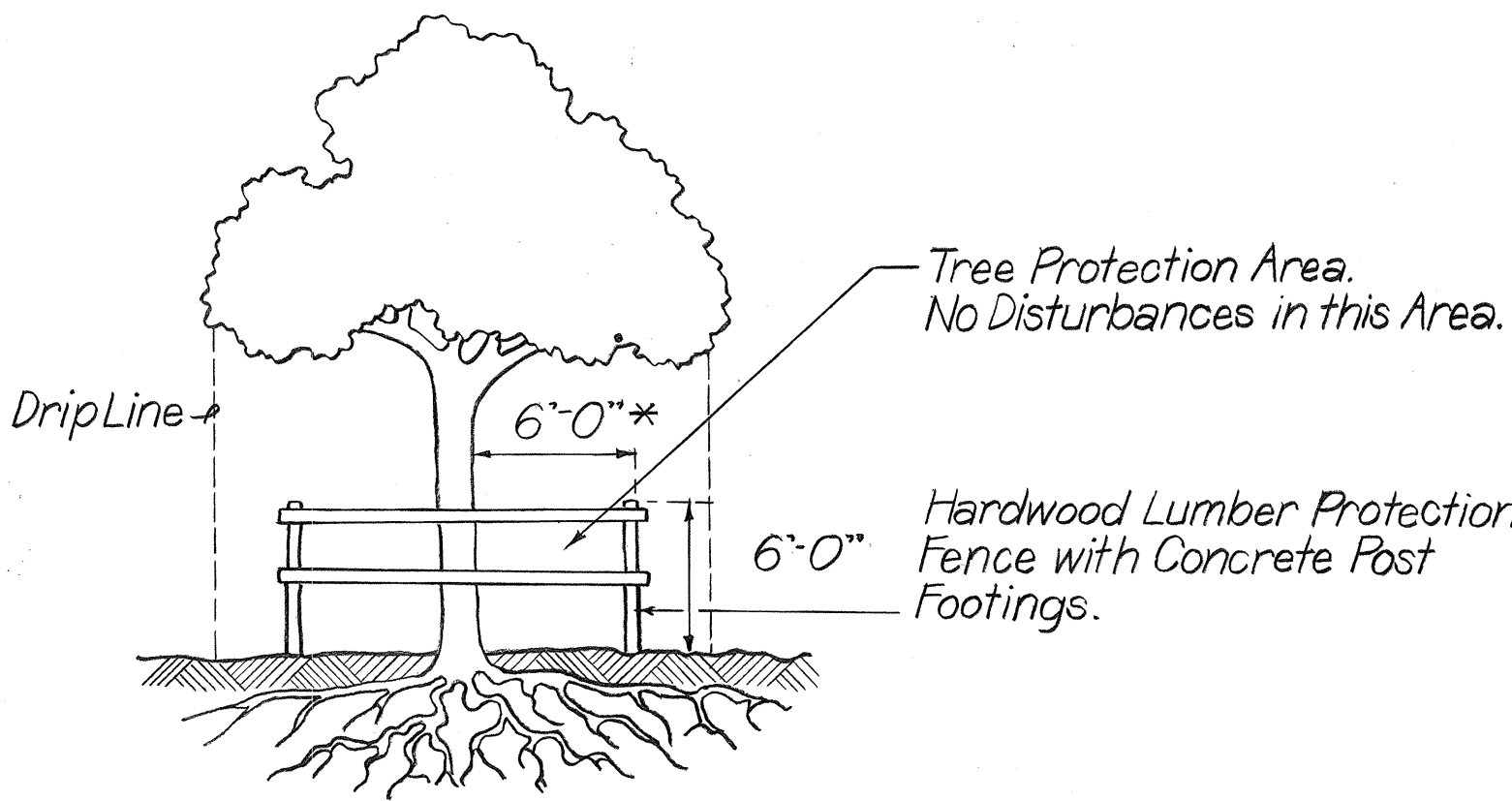
# WHEELCHAIR RAMP

TYPE H  
TYPICAL DETAIL

Scale: 1"=5'-0"

LOCATION: PUNCHBOWL STREET/MILLER STREET

NOTE: Adjust Street Light Box as Required.  
Incidental to Wheelchair Ramp.



# TREE BARRICADE

Not to Scale

\*Or as close to new construction as possible.

STATE OF HAWAII  
DEPARTMENT OF TRANSPORTATION  
HIGHWAYS DIVISION

## MISCELLANEOUS DETAILS

VINEYARD - PUNCHBOWL  
TRAFFIC IMPROVEMENT PROJECT  
PROJECT NO. 98A-01-89

SCALE: AS SHOWN DATE: JULY 1991

SHEET No. 3A OF 3 SHEETS

C.O.105-1

|                   |      |
|-------------------|------|
| SURVEY PLOTTED BY | DATE |
| DRAWN BY          |      |
| TRACED BY         |      |
| NOTED BY          |      |
| QUANTITIES BY     |      |
| CHECKED BY        |      |
| ORIGINAL PLAN     |      |
| NOTE BOOK         |      |
| NO.               |      |